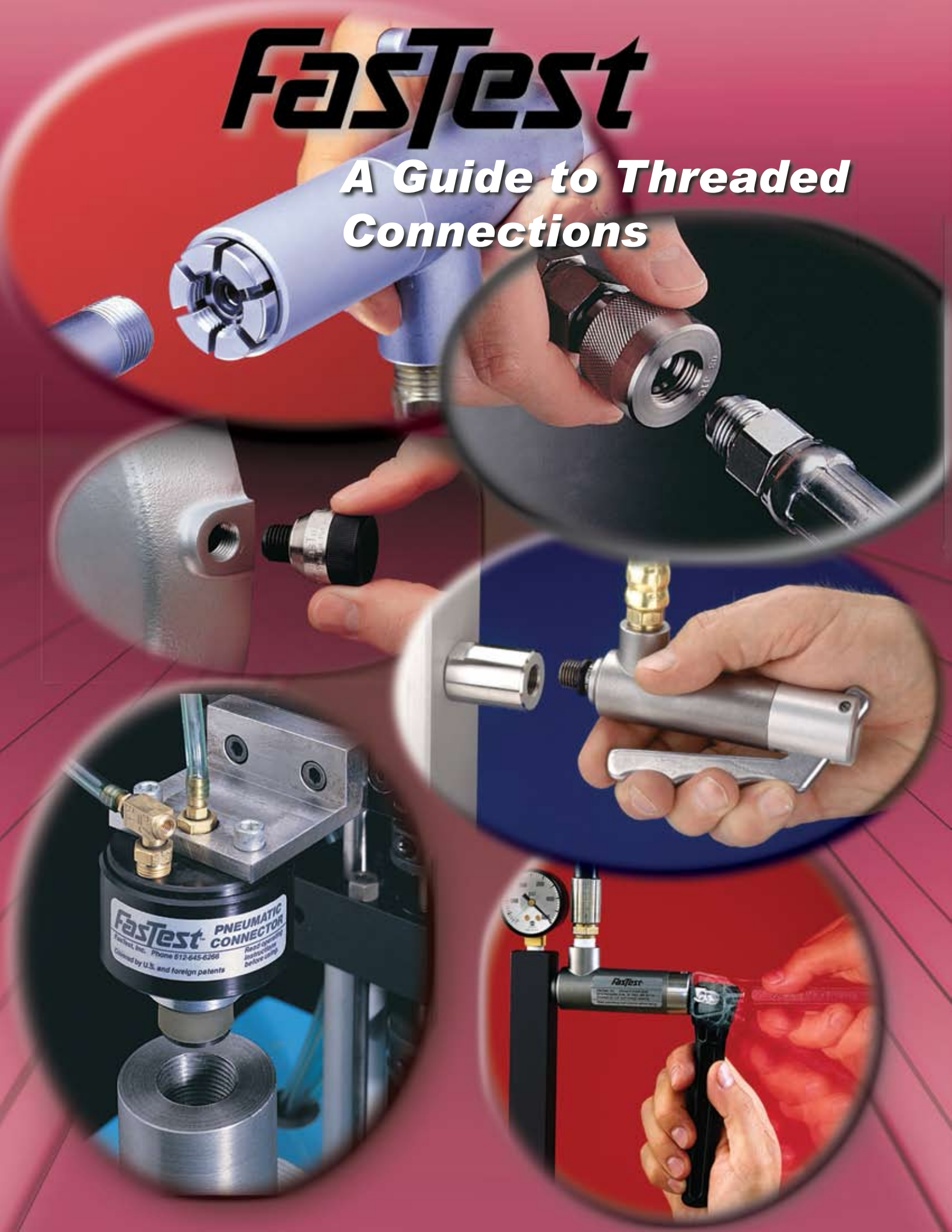


# ***FastTest***

## ***A Guide to Threaded Connections***





## Advanced Engineered Connectors

FasTest, Inc. is a dedicated manufacturer of productivity and quality improvement tools for pressure and vacuum testing. Our complete line of specialty connectors are designed to provide leak-tight, reliable connections for industrial applications.

FasTest products are temporary connections that mate and seal with the proprietary and/or standard interface of your products. FasTest connectors are not fittings but rather precision tools—engineered and manufactured (often built-to-order) to satisfy the exacting demands of your application. We take great care to assure your specifications are completely met. A thorough engineering process, precision machining, advanced post treatments and complete testing are the lengths to which we go to assure value, longevity, reliability and safety with every FasTest product. At

FasTest Inc., we are committed to fulfilling customer needs by providing the highest value solution and the lowest total cost in consideration of initial investment, quality improvement, productivity gains, reliability, ergonomics, safety and maintenance.

### Eliminate testing bottlenecks.

Cumbersome leak testing methods using jury-rigged adapters, fittings and test jigs is time-consuming, unreliable and may be unsafe for your workers. FasTest connecting tools streamline your testing process with product specific connectors.

FasTest connecting tools not only work better, they work smarter and faster. Available in several models to support many different sizes in both internal and external models, there's a FasTest connection solution that will help you increase production efficiency and

ensure a higher degree of quality control. Thousands of satisfied customers have made the switch from their older manual and homemade solutions to FasTest engineered testing and filling solutions. With FasTest, you can expect immediate increases in operational throughput and immediate payback.

Since 1985, FasTest has been providing problem-solving solutions to meet the specific testing requirements of quality-conscious manufacturers. Our customers produce a wide range of products, from micro-medical components to heavy-duty hydraulic equipment. They also make products you see every day, like faucets, air conditioners, automobiles, and aircraft. By using FasTest connectors, our customers have ensured the quality and performance of the products they make.

Durable elastomer seals are

made for continuous duty testing and are easily replaced when worn.

—“A product for today, that meets the needs of tomorrow.”—

We possess the experience to meet your needs no matter how unusual the test application requirements.

FasTest appreciates your interest in our products and welcomes your specific application requirements. We hope you find our engineering guide informative and helpful when selecting a solution to meet your thread connection requirements.

**FasTest...**  
**Your Connection to Quality!**

### Industries Served

#### COMPRESSED GAS FILLING



#### MANUFACTURING



#### PROCESSING WITH REFRIGERANTS



#### MEDICAL DEVICE TESTING



***FasTest Threaded Connecting Tools Increase  
Production and Quality While Reducing Costs.***

This guide includes information on our most commonly requested threaded products. For complete product information and additional sizes and options, please visit us at [www.fastestinc.com](http://www.fastestinc.com)

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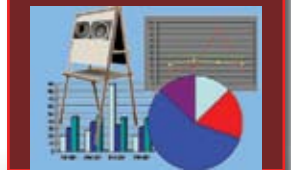
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### ISO 9001:2000 Registered

FasTest is an ISO 9001:2000 Standard Registered organization, including Design. We take pride in seeking and implementing improvement opportunities to maximize customer satisfaction in all phases of our business.

### Thread Specifications and Sources

There are many thread specifications available, and we offer the most frequently requested ones in this catalog. We have designed many other threaded solutions that are also available; if you don't see the one you need, you can send us an application sheet and we'll advise regarding availability. Listed below are contacts for thread specifications, and you can also obtain them readily on the web from your choice of threaded fitting suppliers.

### Product Availability

Whether your solution requires one of our standard connectors or a custom design solution, FasTest is prepared to meet your needs. Stocked products are available for immediate shipment while non-stocked connectors may require lead times up to 6 weeks. Custom connectors, which require a 2-week design cycle, may require an additional 6 weeks from design sign-off, depending on the complexities of the connector. At FasTest, we understand that the occasional crisis requires flexibility, and we are prepared to respond to your needs as best we can. All orders are reviewed for availability and acknowledged with delivery dates that will be met.



### Document Sources for Connector Specifications

#### ANSI

American National Standards Institute  
11 West 42nd Street, 13th Fl  
New York, New York 10036-8002  
Phone: 212-642-4900 Fax: 212-398-0023

#### BSI

British Standards Institution  
389 Chiswick High Road  
London, W4 4AL  
United Kingdom  
Phone: 44-181-996-9000 Fax: 44-181-996-7400  
*British Standards are also available from ANSI*

#### SAE

SAE International  
400 Commonwealth Drive  
Warrendale, PA  
15096-0001  
Phone: 412-776-4841  
Fax: 412-776-0002



#### DIN

Deutsches Institut für Normung  
(German Institute For Standards)  
Burggrafenstrasse 6  
Postfach 1107  
D - 1000 Berlin 30, Germany  
*English translations of some German Standards can be obtained from: ANSI or Global Engineering Documents*  
15 Inverness Way East  
Englewood, CO 80112-9660  
Phone: 1-800-854-7179

#### FED-STD

Federal Standard  
Department of Defense  
Single Stock Point  
Commanding Officer  
Naval Publications and Forms Center  
5801 Taber Avenue  
Philadelphia, PA  
19120-5099

#### ISO

International Organization for Standardization  
Case Postale 56  
1, Rue de Varembe  
CH - 1211 Geneve 20  
Switzerland  
*ISO Documents are also available from ANSI*

#### JIS

Japanese Industrial Standards  
Published by Japanese Standards Association  
4-1-24 Akasaka  
Minto-ku, Tokyo 107

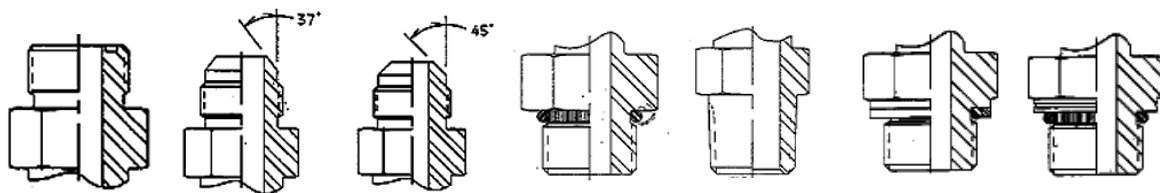
Japan  
Phone: 03-3583-8003  
Fax: 03-3586-2029  
*English translations of some Japanese Standards can be obtained from ANSI*



# FastTest® Identifying Your Threads

There are many styles of threads used in industry today. This page will help you identify the threads used on your part.

## Male Threads



		SAE O-ring Face Seal (J1453)	SAE 37o Flare (J514)	SAE 45o Flare (J512)	SAE Straight Thread (J1926)	NPT/NPTF (SAE J476)	BSPP (ISO 228/1)	Metric (ISO 6149)
Dash Size	Tube O.D.	Thread Size	Thread Size	Thread Size	Thread Size	Thread Size	Thread Size	Thread Size
4	1/4	9/16-18	7/16-20	7/16-20	7/16-20	1 /8-27	-	M10X1
6	3/8	11/16-16	5/8-18	5/8-18	9/16-18	1/4-18	G 1/8	M12X1.5
8	1/2	13/16-16	3/4-16	3/4-16	3/4-16	3/8-18	G 1/4	M14X1.5
10	5/8	1-14	7/8-14	7/8-14	7/8-14	1/2-14	G 3/8	M16X1.5
12	3/4	1 3/16-12	1 1/16-14	1 1/16-14	1 1/16-12	3/4-14	G 1/2	M18X1.5
14	7/8		1 3/16-12		1 3/16-12	3/4-14	G 3/4	M20X1.5
16	1	1 7/16-12	1 5/16-12		1 5/16-12	1-11 1/2	G 1	M22X1.5
20	1 1/4	1 11/16-12	1 5/8-12		1 5/8-12	1 1/4-11 1/2	G 1 1/4	M27X2
24	1 1/2	2-12	1 7/8-12		1 7/8-12	1 1/2-11 1/2	G 1 1/2	M30X2
32	2		2 1/2-12		2 1/2-12	2-11 1/2	G 2	M33X2
								M42X2
								M48X2
								M60X2

\*- All dimensions in inches

## How to Identify Steel Pipe STANDARD PIPE – SCHEDULE 40

Pipe Size	OD	Wall	ID
1/8	0.405	0.068	0.269
1/4	0.540	0.088	0.364
3/8	0.675	0.091	0.493
1/2	0.840	0.109	0.622
3/4	1.050	0.113	0.824
1	1.315	0.133	1.049
1 1/4	1.660	0.140	1.380
1 1/2	1.900	0.145	1.610
2	2.375	0.154	2.067
2 1/2	2.875	0.203	2.469
3	3.500	0.216	3.068
3 1/2	4.000	0.226	3.548
4	4.500	0.237	4.026

\*- All dimensions in inches

## Female Threads



SAE O-ring Port SAE J1926 or DIN 11926	BSPP/T ISO 228/1 or DIN 259	NPT SAE J476a	ISO Metric (6149)	Din Metric (3852)
-4 (7/16-20)	1/8"	1/8"	M10 X 1.0	M10 X 1.0
-6 (9/16-18)	3/8"	3/8"	M14 X 1.5	M14 X 1.5
-8 (3/4-16)	1/2"	1/2"	M16 X 1.5	M16 X 1.5
-10 (7/8-14)	3/4"	3/4"	M18 X 1.5	M18 X 1.5
-12 (1 1/16-12)	1"	1"	M20 X 1.5	M20 X 1.5
-16 (1 5/16-12)			M22 X 1.5	M22 X 1.5

### For Female Threaded Parts

#### Brief Overview

For complete product information log on to [www.fastestinc.com](http://www.fastestinc.com)



**Twistmate® MIT** Manually threaded connectors for threaded parts. Generally applied best in smaller volume production lots where quick changeover is required. Lower cost product recommended where speed is not the priority. Seals with a tough urethane o-ring at the threaded face; for best results the part should have a smooth face which is perpendicular to the thread. Irregular, small or rough surfaces may require a custom solution. Connectors are readily adapted with other Twistmates, quick disconnect couplings or thread adapters to suit almost any application requirement. See page 18 for MIT's for curved surfaces



**FasMate** Insert the connector into the threaded port and activate the clamping lever for an instant connection. Generally applied best when speed is desired or where it will be exposed to side load and dynamic pressure cycles. Seals with an O-ring at the threaded face; for best results the port should have a smooth face which is perpendicular to the thread. Cast, irregular, or rough surfaces may require a custom solution. The media port is readily adaptable for quick changeover to other threaded port sizes on your production line.



**WEH 17** Activate the connector either with a squeeze lever or pneumatic pressure; insert connector into the port and release the actuator. Generally applied best when speed or pneumatic operation is preferred. Not recommended for heavy side-load connections or dynamic pressure cycles. Seals with an O-ring at the threaded face; for best results the port should have a smooth face which is perpendicular to the thread. Cast, irregular, or rough surfaces may require a custom solution. The media port is readily adaptable for quick changeover to other threaded port sizes on your production line.



**WEH 05** Sleeve activated connector which is internally valved for instant connection and pressure testing in one motion. Generally applied best for rapid connections for run testing where the media is compressed air. Seals with an O-ring at the thread face; for best results the port should have a smooth face which is perpendicular to the thread. Cast, irregular or rough surfaces may require a custom solution. Not recommended for pressure decay or mass spectrometer testing.



**FI** Pneumatic pressure is used to activate an elastomer creating an instant, leak tight seal. Generally applied best in automated or semi-automated applications where speed is a priority. Seals are readily achieved on rough surfaces or on the face of threaded ports with increased activation pressure. Can be used unfixed in low pressure or vacuum applications where inadvertent separation would not be a hazard. Connectors can be supplied with extensions to permit use in tighter confines.

NPTF per SAE J476	SAE O-Ring Face per SAE J1926	ISO O-Ring per ISO 6149	BSP per ISO 7 and 228
vacuum to 5,000 psi	vacuum to 5,000 psi	vacuum to 5,000 psi	vacuum to 5,000 psi
1/8" to 4"	7/16"-20 to 1 5/8"-12	M10 to M22	1/8" to 1"
quick threading	quick threading	quick threading	quick threading
Go to pg. 8	Go to pg. 10	Go to pg. 11	Go to pg. 12
vacuum to 5,000 psi	vacuum to 5,000 psi	vacuum to 5,000 psi	
1/4" to 1" sizes	7/16"-20 to 1 5/16"-12	M12 to M22	
clamping lever	clamping lever	clamping lever	
Go to pg. 8	Go to pg. 10	Go to pg. 11	
0 to 5,000 psi	0 to 5,000 psi	0 to 5,000 psi	0 to 5,000 psi
1/8" to 1" sizes	7/16"-20 to 1 5/16"-12	M10 to M22	1/8" to 1" sizes
Lever or pneumatic	Lever or pneumatic	Lever or pneumatic	Lever or pneumatic
Go to pg. 9	Go to pg. 10	Go to pg. 11	Go to pg. 12
50 to 175 psi			
1/8" to 3/8"			
pneumatic sleeve			
Go to pg. 9			
vacuum to 120 psi	vacuum to 120 psi	vacuum to 120 psi	vacuum to 120 psi
1/8" to 2 1/2"	7/16"-20 to 1 5/16"-12	M10-M27	1/8" to 2 1/2"
pneumatic actuation	pneumatic actuation	pneumatic actuation	pneumatic actuation
Go to pg. 21	Go to pg. 21	Go to pg. 21	Go to pg. 21

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)

### For Male Threaded Parts

#### Brief Overview

For complete product information log on to [www.fastestinc.com](http://www.fastestinc.com).



**Twistmate MET** Manually threaded connector for threaded parts. Excellent for smaller volume production lots where quick changeover is required. This lower cost product is recommended where speed is not a priority. Seals with a tough urethane o-ring at the threaded face; for best results the part should have a smooth face which is perpendicular to the thread. Irregular, small or rough surfaces may require a custom solution. Connectors are readily adapted with other Twistmates, quick disconnect couplings or threaded adaptors to suit most applications. See page 16 for MET's for cut threads



**WEH 60** The sleeve-action, collet-locking design of the WEH 60 compact connectors make instant leak tight connections to threaded parts. Designed for helium leak testing, run testing, proof testing, pressure decay, water dunk and other related processes. Works well in confined areas and needs no operator adjustment. Standard sizes available. Custom applications can include an internal valve, a safety sleeve lock and other features as required by your specific application.



**WEH 18** Activate the connector either with a squeeze lever or pneumatic pressure; insert connector into the port and release the actuator. The perfect choice when speed or pneumatic operation is preferred. Not recommended for heavy side-load connections or dynamic pressure cycles. Seals with an O-ring at the threaded face; for best results the port should have a smooth face, perpendicular to the thread. Irregular, small or rough surfaces may require a custom solution.

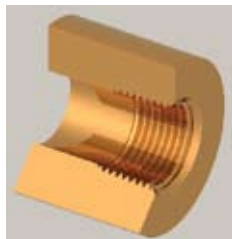


**FE** Pneumatic pressure is used to activate an elastomer creating an instant, leak tight seal. Generally applied best in automated or semi-automated applications where speed is a priority. Sealing is readily achieved on rough surfaces or over threaded ports using the Pilot Pressure Booster. Can be used un-fixture in low pressure or vacuum applications where inadvertent separation would not be a hazard.

NPTF per SAE J476a	37° Flare per SAE J514	O-Ring Face Seal per SAE J1453	45° Flare per SAE J512/J513	BSP per ISO 7 and 228
vacuum to 10,000 psi	vacuum to 10,000 psi		vacuum to 5,000 psi	vacuum to 750 psi
1/8" to 3" sizes	7/16"-20 to 1 1/16"-12		7/16"-20 to 1 1/16"-14	1/8" to 1" sizes
quick threading	quick threading		quick threading	quick threading
Go to pg. 13	Go to pg. 14		Go to pg. 15	Go to pg. 15
vacuum to 750 psi	vacuum to 750 psi	vacuum to 750 psi	vacuum to 750 psi	
1/8" to 1" sizes	7/16"-20 to 1 5/16"-12	9/16"-18 to 13/16"-16	7/16"-20 to 1 3/8"-12	
sliding sleeve	sliding sleeve	sliding sleeve	sliding sleeve	
Go to pg. 13	Go to pg. 14	Go to pg. 14	Go to pg. 15	
vacuum to 5,000 psi	vacuum to 5,000 psi	vacuum to 5,000 psi	vacuum to 750 psi	
1/8" to 1/2"	7/16"-20 to 7/8"-14	9/16"-18 to 13/16"-16	7/16"-20 to 7/8"-14	
Lever or pneumatic	Lever or pneumatic	Lever or pneumatic	Lever or pneumatic	
Go to pg. 13	Go to pg. 14	Go to pg. 14	Go to pg. 15	
vacuum to 500 psi	vacuum to 500 psi	vacuum to 500 psi	vacuum to 500 psi	vacuum to 500 psi
1/8" to 2 1/2" sizes	7/16"-20 to 1 5/16"-12	9/16"-18 to 1 5/16"-1/2	7/16"-20 to 1 1/16"-14	1/8" to 2 1/2" sizes
pneumatic actuation	pneumatic actuation	pneumatic actuation	pneumatic actuation	pneumatic actuation
Go to pg. 22	Go to pg. 22	Go to pg. 22	Go to pg. 22	Go to pg. 22

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)





**NPT Female Pipe Thread**  
per SAE J476

### MIT Series- Twist-on Connectors

Connects to Female Thread	Rated Pressure (psi)	Connector Type	Part Numbers	Termination Port (Female)	Major Dia (in.)	OAL Dia (in.)	Flow Dia (in.)
1/8" NPTF	5,000	Plug	MIT-022P	1/8" NPTF	0.82	1.24	0.11
1/8" NPTF	5,000	Connector	MIT-022021X	1/8" NPTF	0.82	1.24	0.11
1/8" NPTF	5,000	Swivel	MIT-022021	1/8" NPTF	0.82	1.68	0.11
1/4" NPTF	5,000	Plug	MIT-042P	1/4" NPTF	1	1.41	0.22
1/4" NPTF	5,000	Connector	MIT-042041X	1/4" NPTF	1	1.41	0.22
1/4" NPTF	5,000	Swivel	MIT-042041	1/4" NPTF	1	1.87	0.22
3/8" NPTF	4,000	Plug	MIT-062P	3/8" NPTF	1.18	1.48	0.34
3/8" NPTF	4,000	Connector	MIT-062061X	3/8" NPTF	1.18	1.48	0.34
3/8" NPTF	4,000	Swivel	MIT-062061	3/8" NPTF	1.18	2.08	0.34
1/2" NPTF	4,000	Plug	MIT-082P	1/2" NPTF	1.36	1.85	0.43
1/2" NPTF	4,000	Connector	MIT-082081X	1/2" NPTF	1.36	1.85	0.43
1/2" NPTF	4,000	Swivel	MIT-082081	1/2" NPTF	1.36	2.56	0.43
3/4" NPTF	4,000	Connector	MIT-122121X	3/4" NPTF	1.68	1.94	0.7
1" NPTF	4,000	Connector	MIT-162161X	1" NPTF	2	2.07	0.87
1-1/4" NPTF	4,000	Connector	MIT-202201X	1-1/4" NPTF	2.38	2.13	1.19
1-1/2" NPTF	3,000	Connector	MIT-242241X	1-1/2" NPTF	2.74	2.4	1.44
2" NPTF	2,500	Connector	MIT-322161X	1" NPTF	3.47	2.68	.94*
2-1/2" NPTF	1,500	Connector	MIT-402161X	1" NPTF	3.97	3.42	.94*
3" NPTF	1,500	Connector	MIT-482161X	1" NPTF	4.73	3.68	.94*
4" NPTF	1,000	Connector	MIT-642161X	1" NPTF	5.73	3.68	.94*



**MIT Series**  
**Plug**  
**Non-swivel Connector**  
**Swivel Connector**

### FasMate- Lever Action Connectors

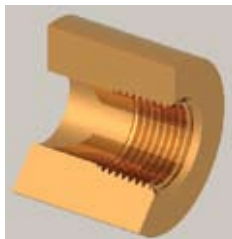
Connects to Female Thread	Rated Pressure (psi)	Part Numbers	Termination Port (Female)	Major Dia. (in.)	Installed OAL (in.)
1/4" NPTF	5,000	T042041	1/4" NPTF	1.06	4.63
3/8" NPTF	5,000	T062061	3/8" NPTF	1.26	5.14
1/2" NPTF	5,000	T082081	1/2" NPTF	1.46	5.14
3/4" NPTF	3,500	T122121	3/4" NPTF	1.58	5.76
1" NPTF	3,500	T162161	1" NPTF	2.13	6.58



**FasMate Series**

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)





**NPT Female Pipe Thread**  
per SAE J476

### WEH 17- Lever Action Connectors



**WEH 17**

Connects to Female Thread	Rated Pressure (psi)	Part Numbers	Termination Port (Female)	Major Dia. (in.)	Installed OAL (in.)
1/8" NPTF	750	17H-40202-021-1BB0	1/8" NPTF	0.99	2.96
1/8" NPTF	5,000	17H-40202-021-1BB1	1/8" NPTF	0.99	2.96
1/4" NPTF	750	17H-40204-041-1BB0	1/4" NPTF	1.07	2.96
1/4" NPTF	5,000	17H-40204-041-1BB1	1/4" NPTF	1.07	2.96
3/8" NPTF	750	17H-40206-061-1BB0	3/8" NPTF	1.26	3.47
3/8" NPTF	5,000	17H-40206-061-1BB1	3/8" NPTF	1.26	3.47
1/2" NPTF	750	17H-40208-081-1BB0	1/2" NPTF	1.46	3.47
1/2" NPTF	5,000	17H-40208-081-1BB1	1/2" NPTF	1.46	3.47
3/4" NPTF	750	17H-40212-121-1BB0	3/4" NPTF	1.58	5.71
3/4" NPTF	3,500	17H-40212-121-1BB1	3/4" NPTF	1.58	5.71
1" NPTF	750	17H-40216-161-1BB0	1" NPTF	1.93	6.62
1" NPTF	3,500	17H-40216-161-1BB1	1" NPTF	1.93	6.62

\* See page 24 for additional order details

### WEH 05- Push-on Connectors

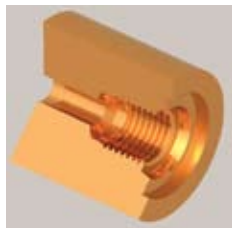


**WEH 05**

Connects to Female Thread	Rated Pressure (psi)	Part Numbers	Termination Port (Female)	Major Dia. (in.)	Installed OAL (in.)
1/8" NPTF	50 to 175	05-40202-041	1/4" NPTF	1.5	2.96
1/4" NPTF	50 to 175	05-40204-041	1/4" NPTF	1.5	2.96
3/8" NPTF	50 to 175	05-40206-081	1/2" NPTF	1.89	3.15

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)

## Quick Guide to Manual Connectors for Female SAE O-ring Threads



**SAE O-ring**  
per SAE J1926 or ISO 11926

### MIT Series- Twist-on Connectors

Connects to Female Thread	Rated Pressure (psi)	Connector Type	Part Numbers	Termination Port (Female)	Major Dia (in.)	OAL Dia (in.)	Flow Dia (in.)
-04 (7/16-20)	5,000	Connector	MIT-044021X	1/8" NPTF	0.82	1.29	0.17
-06 (9/16-18)	5,000	Connector	MIT-064041X	1/4" NPTF	1	1.41	0.28
-08 (3/4-16)	4,000	Connector	MIT-084081X	1/2" NPTF	1.36	1.85	0.39
-10 (7/8-14)	4,000	Connector	MIT-104081X	1/2" NPTF	1.36	1.85	0.49
-12 (1 1/16-12)	4,000	Connector	MIT-124121X	3/4" NPTF	1.68	1.94	0.69
-14 (1 3/16-12)	4,000	Connector	MIT-144161X	1" NPTF	2	2.13	0.72
-16 (1 5/16-12)	4,000	Connector	MIT-164161X	1" NPTF	2	2.13	0.87
-20 (1 5/8-12)	4,000	Connector	MIT-204201X	1 1/4" NPTF	2.38	2.13	1.19

**MIT Series Non-swivel Connector**



### FasMate- Lever Action Connectors

Connects to Female Thread	Rated Pressure (psi)	Part Numbers	Termination Port (Female)	Major Dia. (in.)	Installed OAL
-6 (9/16-18)	5,000	T064041	1/4" NPTF	1.06	4.63
-8 (3/4-16)	5,000	T084061	3/8" NPTF	1.26	5.14
-10 (7/8-14)	5,000	T104081	1/2" NPTF	1.46	5.14
-12 (1 1/16-12)	3,500	T124121	3/4" NPTF	1.78	5.85
-16 (1 5/16-12)	3,500	T164161	1" NPTF	2.13	6.58

**FasMate Series**



### WEH 17- Lever Action Connectors

Connects to Female Thread	Rated Pressure (psi)	Part Numbers	Termination Port (Female)	Major Dia. (in.)	Installed OAL (in.)
-4 (7/16-20)	750	17H-044021-1BB0	1/8" NPTF	0.99	2.96
-4 (7/16-20)	5,000	17H-044021-1BB1	1/8" NPTF	0.99	2.96
-6 (9/16-18)	750	17H-064041-1BB0	1/4" NPTF	1.07	2.96
-6 (9/16-18)	5,000	17H-064041-1BB1	1/4" NPTF	1.07	2.96
-8 (3/4-16)	750	17H-084061-1BB0	3/8" NPTF	1.26	3.47
-8 (3/4-16)	5,000	17H-084061-1BB1	3/8" NPTF	1.26	3.47
-10 (7/8-14)	750	17H-104081-1BB0	1/2" NPTF	1.46	3.47
-10 (7/8-14)	5,000	17H-104081-1BB1	1/2" NPTF	1.46	3.47
-12 (1 1/16-12)	750	17H-124121-1BB0	3/4" NPTF	1.58	5.71
-12 (1 1/16-12)	3,500	17H-124121-1BB1	3/4" NPTF	1.58	5.71
-16 (1 5/16-12)	750	17H-164161-1BB0	1" NPTF	1.93	6.62
-16 (1 5/16-12)	3,500	17H-164161-1BB1	1" NPTF	1.93	6.62

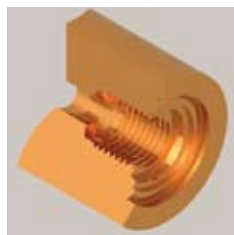
**WEH 17**



\* See page 24 for additional order details

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)

## Quick Guide to Manual Connectors for Female ISO O-ring Threads



**ISO O-ring**  
per ISO 6149 or SAE J2244

### MIT Series- Twist-on Connectors

Connects to Female Thread	Rated Pressure (psi)	Connector Type	Part Numbers	Termination Port (Female)	Major Dia (in.)	OAL Dia (in.)	Flow Dia (in.)
M10 x 1	5,000	Connector	MIT-108025X	1/8" BSPP	0.82	1.30	0.09
M12 x 1.5	5,000	Connector	MIT-128045X	1/4" BSPP	1.00	1.42	0.20
M14 x 1.5	5,000	Connector	MIT-148045X	1/4" BSPP	1.00	1.42	0.28
M16 x 1.5	4,000	Connector	MIT-168065X	3/8" BSPP	1.18	1.56	0.34
M18 x 1.5	4,000	Connector	MIT-188065X	3/8" BSPP	1.18	1.56	0.36
M22 x 1.5	4,000	Connector	MIT-228085X	1/2" BSPP	1.36	1.87	0.48



**MIT Series Non-swivel Connector**

### FasMate- Lever Action Connectors

Connects to Female Thread	Rated Pressure (psi)	Part Numbers	Termination Port (Female)	Major Dia. (in.)	Installed OAL (in.)
M12 x 1.5	5,000	T128041	1/4" NPTF	1.06	4.63
M14 x 1.5	5,000	T148041	1/4" NPTF	1.06	4.63
M16 x 1.5	5,000	T168061	3/8" NPTF	1.26	5.14
M18 x 1.5	5,000	T188061	3/8" NPTF	1.26	5.14
M22 x 1.5	5,000	T228081	1/2" NPTF	1.46	5.14



**FasMate Series**

### WEH 17 - Lever Action Connectors

Connects to Female Thread	Rated Pressure (psi)	Part Numbers	Termination Port (Female)	Major Dia. (in.)	Installed OAL (in.)
M10 x 1	750	17H-40718-021-1BB0	1/8" NPTF	0.99	2.96
M10 x 1	5,000	17H-40718-021-1BB1	1/8" NPTF	0.99	2.96
M12 x 1.5	750	17H-40723-041-1BB0	1/4" NPTF	1.07	2.96
M12 x 1.5	5,000	17H-40723-041-1BB1	1/4" NPTF	1.07	2.96
M14 x 1.5	750	17H-40727-041-1BB0	1/4" NPTF	1.07	2.96
M14 x 1.5	5,000	17H-40727-041-1BB1	1/4" NPTF	1.07	2.96
M16 x 1.5	750	17H-40730-061-1BB0	3/8" NPTF	1.26	3.47
M16 x 1.5	5,000	17H-40730-061-1BB1	3/8" NPTF	1.26	3.47
M18 x 1.5	750	17H-40734-061-1BB0	3/8" NPTF	1.26	3.47
M18 x 1.5	5,000	17H-40734-061-1BB1	3/8" NPTF	1.26	3.47
M22 x 1.5	750	17H-40741-081-1BB0	1/2" NPTF	1.46	3.47
M22 x 1.5	5,000	17H-40741-081-1BB1	1/2" NPTF	1.46	3.47



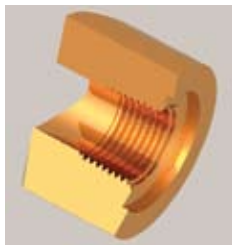
**WEH 17**

\* See page 24 for additional order details

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)



## Quick Guide to Manual Connectors for Female BSPP Threads



**BSPP/BSPT**

per ISO 228 or ISO 7 or DIN 259

### MIT Series- Twist-on Connectors



**MIT Series  
Non-  
swivel  
Connector**

Connects to Female Thread	Rated Pressure (psi)	Connector TypeNumbers	Part Port (Female)	Termination Dia (in.)	Major Dia (in.)	OAL Dia (in.)	Flow
1/8" BSPP/T	5,000	Connector	MIT-026025X	1/8" BSPP	0.82	1.24	0.11
1/4" BSPP/T	5,000	Connector	MIT-046045X	1/4" BSPP	1.00	1.41	0.22
3/8" BSPP/T	4,000	Connector	MIT-066065X	3/8" BSPP	1.18	1.48	0.34
1/2" BSPP/T	4,000	Connector	MIT-086085X	1/2" BSPP	1.36	1.85	0.43
3/4" BSPP/T	4,000	Connector	MIT-126125X	3/4" BSPP	1.68	1.94	0.70
1" BSPP/T	4,000	Connector	MIT-166165X	1" BSPP	2.00	2.07	0.87

### WEH 17- Lever Action Connectors

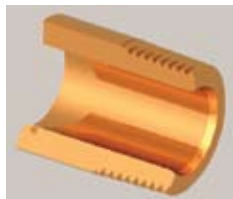


**WEH 17**

Connects to Female Thread	Rated Pressure (psi)	Part Numbers	Termination Port (Female)	Major Dia. (in.)	Installed OAL (in.)
1/8" BSPP	750	17H-40102-021-1BB0	1/8" NPTF	0.99	2.96
1/8" BSPP	5,000	17H-40102-021-1BB1	1/8" NPTF	0.99	2.96
1/4" BSPP	750	17H-40104-041-1BB0	1/4" NPTF	1.07	2.96
1/4" BSPP	5,000	17H-40104-041-1BB1	1/4" NPTF	1.07	2.96
3/8" BSPP	750	17H-40106-061-1BB0	3/8" NPTF	1.26	3.47
3/8" BSPP	5,000	17H-40106-061-1BB1	3/8" NPTF	1.26	3.47
1/2" BSPP	750	17H-40108-081-1BB0	1/2" NPTF	1.46	3.47
1/2" BSPP	5,000	17H-40108-081-1BB1	1/2" NPTF	1.46	3.47
3/4" BSPP	750	17H-40112-121-1BB0	3/4" NPTF	1.58	5.71
3/4" BSPP	3,500	17H-40112-121-1BB1	3/4" NPTF	1.58	5.71
1" BSPP	750	17H-40116-161-1BB0	1" NPTF	1.93	6.62
1" BSPP	3,500	17H-40116-161-1BB1	1" NPTF	1.93	6.62

\* See page 24 for additional order details

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)



**NPTF**  
per SAE J476a

### MET Series- Twist-on Connectors

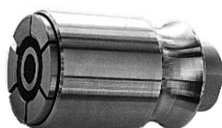


**MET Series**

Connects to Male Thread	Rated Pressure (psi)	Part Numbers	Termination Thread (Male/Female)	Major Dia. (in.)	OAL Dia. (in.)	Flow Dia. (in.)
1/8" NPTF	5,000	MET-021022	1/8" NPTF (M)	0.82	1.51	0.19
1/4" NPTF	5,000	MET-041042	1/4" NPTF (M)	0.94	1.74	0.28
3/8" NPTF	4,000	MET-061062	3/8" NPTF (M)	1.18	1.78	0.38
1/2" NPTF	4,000	MET-081082	1/2" NPTF (M)	1.60	2.05	0.50
3/4" NPTF	4,000	MET-121122	3/4" NPTF (M)	1.68	2.34	0.66
1" NPTF	4,000	MET-161162	1" NPTF (M)	2.00	2.74	0.87
1-1/4" NPTF	2,500	MET-201202	1-1/4" NPTF (M)	2.37	3.27	1.12
1-1/2" NPTF	1,000	MET-241161	1" NPTF (F)	2.37	3.27	.94*
2" NPTF	750	MET-321161	1" NPTF (F)	3.00	2.53	.94*
2-1/2" NPTF	500	MET-401161	1" NPTF (F)	3.40	2.54	.94*
3" NPTF	500	MET-481161	1" NPTF (F)	4.25	2.61	0.94

Note: For sealing schedule 40 pipe see MET-PT pg. 14

### WEH 60 - Push-on Connectors



**60 Series**

Connects to Female Thread	Rated Pressure (psi)	Part Numbers	Termination Port (Female)	Major Dia. (in.)	Installed OAL (in.)
1/8" NPTF	750	60G-1T02	1/8" NPTF	0.95	2.95
1/4" NPTF	750	60G-1T04	1/4" NPTF	1.18	2.95
3/8" NPTF	750	60G-1T06	3/8" NPTF	1.38	3.15
1/2" NPTF	750	60G-1T08	3/8" NPTF	1.38	3.15
3/4" NPTF	750	60G-1T12	1/2" NPTF	1.57	3.15
1" NPTF	750	60G-1T16	3/4" NPTF	1.97	3.54

### WEH 18- Lever Action Connectors



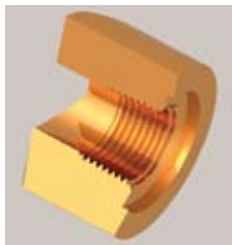
**WEH 18**

Connects to Female Thread	Rated Pressure (psi)	Part Numbers	Termination Port (Female)	Major Dia. (in.)	Installed OAL (in.)
1/8" NPTF	5,000	18H-1T02	1/2" BSPP	1.26	6.54
1/4" NPTF	5,000	18H-1T04	1/2" BSPP	1.26	6.54
3/8" NPTF	5,000	18H-1T06	1/2" BSPP	1.26	6.54
1/2" NPTF	5,000	18H-1T08	1/2" BSPP	1.54	6.86

\* See page 25 for additional order details

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)

## Quick Guide to Manual Connectors for Female BSPP Threads



**BSPP/BSPT**

per ISO 228 or ISO 7 or DIN 259

### MIT Series- Twist-on Connectors



**MIT Series  
Non-  
swivel  
Connector**

Connects to Female Thread	Rated Pressure (psi)	Connector TypeNumbers	Part Port (Female)	Termination Dia (in.)	Major Dia (in.)	OAL Dia (in.)	Flow
1/8" BSPP/T	5,000	Connector	MIT-026025X	1/8" BSPP	0.82	1.24	0.11
1/4" BSPP/T	5,000	Connector	MIT-046045X	1/4" BSPP	1.00	1.41	0.22
3/8" BSPP/T	4,000	Connector	MIT-066065X	3/8" BSPP	1.18	1.48	0.34
1/2" BSPP/T	4,000	Connector	MIT-086085X	1/2" BSPP	1.36	1.85	0.43
3/4" BSPP/T	4,000	Connector	MIT-126125X	3/4" BSPP	1.68	1.94	0.70
1" BSPP/T	4,000	Connector	MIT-166165X	1" BSPP	2.00	2.07	0.87

### WEH 17- Lever Action Connectors



**WEH 17**

Connects to Female Thread	Rated Pressure (psi)	Part Numbers	Termination Port (Female)	Major Dia. (in.)	Installed OAL (in.)
1/8" BSPP	750	17H-40102-021-1BB0	1/8" NPTF	0.99	2.96
1/8" BSPP	5,000	17H-40102-021-1BB1	1/8" NPTF	0.99	2.96
1/4" BSPP	750	17H-40104-041-1BB0	1/4" NPTF	1.07	2.96
1/4" BSPP	5,000	17H-40104-041-1BB1	1/4" NPTF	1.07	2.96
3/8" BSPP	750	17H-40106-061-1BB0	3/8" NPTF	1.26	3.47
3/8" BSPP	5,000	17H-40106-061-1BB1	3/8" NPTF	1.26	3.47
1/2" BSPP	750	17H-40108-081-1BB0	1/2" NPTF	1.46	3.47
1/2" BSPP	5,000	17H-40108-081-1BB1	1/2" NPTF	1.46	3.47
3/4" BSPP	750	17H-40112-121-1BB0	3/4" NPTF	1.58	5.71
3/4" BSPP	3,500	17H-40112-121-1BB1	3/4" NPTF	1.58	5.71
1" BSPP	750	17H-40116-161-1BB0	1" NPTF	1.93	6.62
1" BSPP	3,500	17H-40116-161-1BB1	1" NPTF	1.93	6.62

\* See page 24 for additional order details

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)



## Quick Guide to Manual Connectors for Male 45° Flare and BSPP Threads



**45° FLARE**  
per SAE J512 OR J513



**MET Series**

### MET Series- Twist-on Connectors

Connects to Male Thread	Rated Pressure (psi)	Part Numbers	Termination Thread (Male/Female)	Major Dia. (in.)	OAL Dia. (in.)	Flow Dia. (in.)
-4 (7/16-20)	5,000	MET-04A042B	1/4" NPTF	0.95	1.76	0.19
-6 (5/8-18)	5,000	MET-06A062N	3/8" NPTF	1.20	1.83	0.28
-8 (3/4-16)	4,000	MET-08A082N	1/2" NPTF	1.38	2.00	0.40
-10 (7/8-14)	4,000	MET-10A082N	1/2" NPTF	1.51	2.35	0.50
-12 (1 1/16-14)	4,000	MET-12A122N	3/4" NPTF	1.70	2.52	0.66



**WEH 60**

### 60 Series- Push-on Connectors

Connects to Female Thread	Rated Pressure (psi)	Part Numbers	Termination Port (Female)	Major Dia. (in.)	Installed OAL (in.)
-4 (7/16-20)	750	60G-A04	1/8" NPTF	0.95	2.95
-6 (5/8-18)	750	60G-A06	3/8" NPTF	1.38	3.15
-8 (3/4-16)	750	60G-A08	3/8" NPTF	1.38	3.15
-10 (7/8-14)	750	60G-A10	3/4" NPTF	1.77	3.54
-12 (1-1/16-14)	750	60G-A12	3/4" NPTF	1.77	3.54
-14 (1-1/4-12)	750	60G-A14	3/4" NPTF	1.97	3.54
-16 (1-3/8-12)	750	60G-A16	3/4" NPTF	1.97	3.54

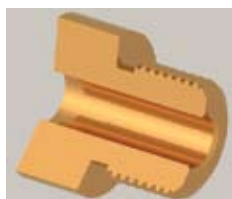


**WEH 18**

### WEH 18- Lever Action Connectors

Connects to Female Thread	Rated Pressure (psi)	Part Numbers	Termination Port (Female)	Major Dia. (in.)	Installed OAL (in.)
-4 (7/16-20)	750	18H-04A	1/2" BSPP	1.26	6.54
-6 (5/8-18)	750	18H-06A	1/2" BSPP	1.26	6.54
-8 (3/4-16)	750	18H-08A	1/2" BSPP	1.54	6.86
-10 (7/8-14)	750	18H-10A	1/2" BSPP	1.54	6.86

\* See page 25 for additional order details



**BSPP/BSPT**  
per ISO 228



**MET Series**

### MET Series- Twist-on Connectors

Connects to Male Thread	Rated Pressure (psi)	Part Numbers	Termination Thread (Male/Female)	Major Dia. (in.)	OAL Dia. (in.)	Flow Dia. (in.)
1/8" BSPP	750	MET025026	1/8" BSPP	0.82	1.24	0.12
1/4" BSPP	750	MET045046	1/4" BSPP	1.00	1.41	0.22
3/8" BSPP	750	MET065066	3/8" BSPP	1.18	1.48	0.34
1/2" BSPP	750	MET085086	1/2" BSPP	1.36	1.85	0.43
3/4" BSPP	750	MET125126	3/4" BSPP	1.68	1.94	0.65
1" BSPP	750	MET165166	1" BSPP (F)	2.00	2.07	0.83

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)

### TwistMate MET-PT Connectors Seal Male Threaded Pipes with Greater Ease

Manually sealing male-threaded steel pipe is a difficult application. The edges of the pipe are often rough from the cutting and threading process causing pre-mature seal failure. Our TwistMate MET-PT connectors with machined over-sized seals can seal these pipes better and with less effort and without thread sealants or wrench tightening.

### How to Identify Steel Pipe STANDARD PIPE – SCHEDULE 40

Pipe Size	OD	Wall	ID
1/8	0.405	0.068	0.269
1/4	0.540	0.088	0.364
3/8	0.675	0.091	0.493
1/2	0.840	0.109	0.622
3/4	1.050	0.113	0.824
1	1.315	0.133	1.049
1 1/4	1.660	0.140	1.380
1 1/2	1.900	0.145	1.610
2	2.375	0.154	2.067
2 1/2	2.875	0.203	2.469
3	3.500	0.216	3.068
3 1/2	4.000	0.226	3.548
4	4.500	0.237	4.026

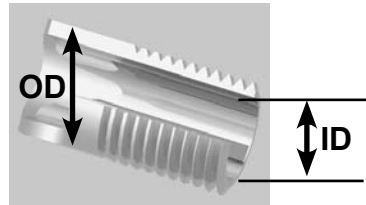


Cut Pipe w/  
NPT Thread

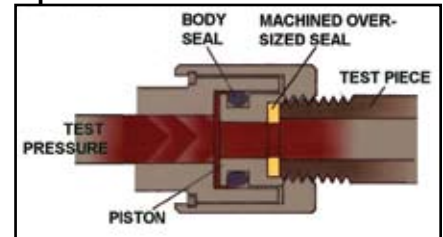
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If your part looks like this see part #s on page 17



Fitting  
w/ NPT thread



### Operation of MET-PT



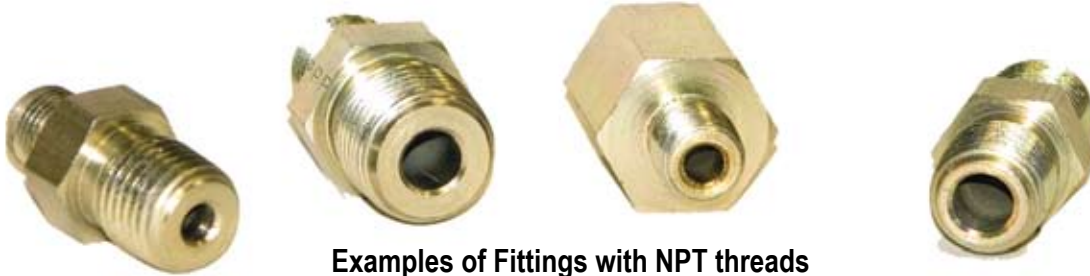
### MET PT Specifications

Connector Part Number	Connects Male Thread	Major Dia	OAL	Flow Dia	PSI Rating	QPQ	Replacement Seal Set
MET-041042-PT	1/4" NPT	0.82	1.51	0.19	750	Steel	METB-04PT
MET-061062-PT	3/8" NPT	1.18	1.78	0.38	750	Steel	METB-06PT
MET-081082-PT	1/2" NPT	1.6	2.05	0.5	750	Steel	METB-08PT
MET-121122-PT	3/4" NPT	1.68	2.34	0.66	750	Steel	METB-12PT
MET-161162-PT	1" NPT	2	2.74	0.87	750	Steel	METB-16PT
MET-201202-PT	1-1/4" NPT	2.37	3.27	1.12	750	Steel	METB-20PT
MET-241161	1-1/2" NPT	2.37	3.27	0.94	750	Steel	METB-24
MET-321161	2" NPT	3	2.53	0.94	750	Steel	METB-32
MET-401161	2-1/2" NPT	3.4	2.54	0.94	500	Steel	METB-40

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)

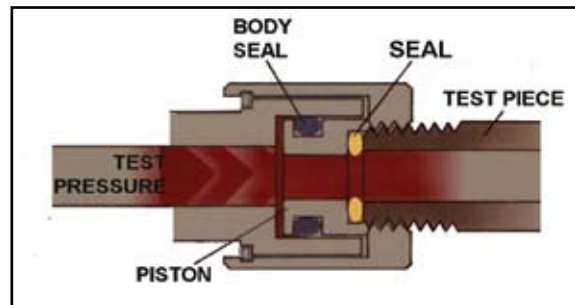
### TwistMate MET is a Quick Threading Connector for Testing Male NPT Threads

The Twistmate MET is perfect for testing, filling, flushing, or calibrating parts with a smooth face perpendicular to the threads. Just spin the MET finger-tight onto the threads until face seal contacts test piece. Air or hydraulic test pressure automatically seals the part.



Examples of Fittings with NPT threads

### Operation of MET



### NPTF Pipe Thread



per SAE J476

Connects to Male Thread	Rated Pressure (psi)	Part Numbers	Termination Thread (Male/Female)	Major Dia. (in.)	OAL Dia. (in.)	Flow Dia. (in.)
1/8" NPTF	5,000	MET-021022	1/8" NPTF (M)	0.82	1.51	0.19
1/4" NPTF	5,000	MET-041042	1/4" NPTF (M)	0.94	1.74	0.28
3/8" NPTF	4,000	MET-061062	3/8" NPTF (M)	1.18	1.78	0.38
1/2" NPTF	4,000	MET-081082	1/2" NPTF (M)	1.60	2.05	0.50
3/4" NPTF	4,000	MET-121122	3/4" NPTF (M)	1.68	2.34	0.66
1" NPTF	4,000	MET-161162	1" NPTF (M)	2.00	2.74	0.87
1-1/4" NPTF	2,500	MET-201202	1-1/4" NPTF (M)	2.37	3.27	1.12
1-1/2" NPTF	1,000	MET-241161	1" NPTF (F)	2.37	3.27	.94*
2" NPTF	750	MET-321161	1" NPTF (F)	3.00	2.53	.94*
2-1/2" NPTF	500	MET-401161	1" NPTF (F)	3.40	2.54	.94*
3" NPTF	500	MET-481161	1" NPTF (F)	4.25	2.61	.94*

For Pressures up to 10,000 psi, log on to [www.fastestinc.com](http://www.fastestinc.com)

\*Flow diameter based on a threaded fitting.

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)



### TwistMate MITC Connectors Seal Female Ports On Curved Surfaces Consistently and Accurately

Manually sealing female ports on curved surfaces presents a huge problem. The Twistmate MITC Series connector is designed to seal the port on the round surface better and with less effort. The unique chamfer seal design provides positive sealing with no thread sealants or wrench tightening.



If your part looks like this..



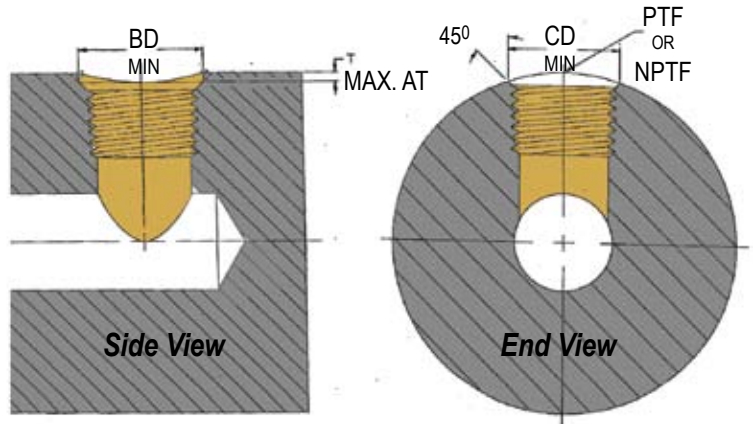
Sealing is as easy as 1..2..3...



Standard MIT



Chamfered Style MIT



PTF/NPTF	BD	T	CD	MIN. BODY DIA.	MIT Part Numbers	Replacement Seal Set
1/8	0.500	0.030	0.440	0.880	MITC022021X	S1010U70
1/4	0.625	0.045	0.570	1.200	MITC042041X	S1013U70

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)



# Simplify Your Lab Connections with Twistmate (MET/MIT)

## Get Connected Now!

Expand your lab testing capabilities by combining Twistmate connectors. Available for test pressures up to 5,000 psi, now you can expand your connection capabilities using the combinations listed below. Threaded connections are made easily with no thread sealants or wrench tightening. For combinations not listed, contact FasTest.

		Female						Male					
		1 NPT/NPTF	3/4 NPT/NPTF	1/2 NPT/NPTF	3/8 NPT/NPTF	1/4 NPT/NPTF	1/8 NPT/NPTF	1 NPT/NPTF	3/4 NPT/NPTF	1/2 NPT/NPTF	3/8 NPT/NPTF	1/4 NPT/NPTF	1/8 NPT/NPTF
Female	1/8 NPT/NPTF						21021					42021	22021
	1/4 NPT/NPTF					41041	21041					42041	22041
	3/8 NPT/NPTF				61061	41061				82061	62061	42061	
	1/2 NPT/NPTF			81081	61081				122081	82081	62081		
	3/4 NPT/NPTF		121121	81121				162121	122121	82121			
	1 NPT/NPTF	161161	121161					162161	122161				
Male	1/8 NPT/NPTF											42022	22022
	1/4 NPT/NPTF											62042	42042
	3/8 NPT/NPTF									82062	62062		
	1/2 NPT/NPTF								122082	82082			
	3/4 NPT/NPTF							162122	122122				
	1 NPT/NPTF							162162					

For connections not listed contact FasTest: 1-800-444-2373

## Product examples

Part # 21041

Connects 1/4" NPT male to 1/8" NPT male



Part # 41041

Connects 1/4" NPT male to 1/4" NPT female

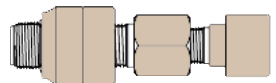
## Example: To connect



1/2" NPT/NPTF to 3/8" NPT/NPTF

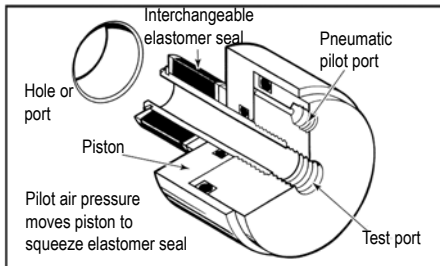
## Order

Part # 62081



For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)

### FI



#### Technical Data

Seals: Neoprene or Urethane (Standard)  
Other seal materials available upon request

Materials: Aluminum and Stainless Steel

Test Pressure: Vacuum to 120 psi.

The connector and test piece should be secured or fixtured to prevent separation at unsafe pressure and to provide the best elastomer life.

Pneumatic Pilot Operation: Requires 60 psi to 90 psi air supply depending on the seal material, surface finish and test pressure. Urethane seals are recommended for high duty or abrasive applications and may require higher pilot pressure to seal rough surfaces.

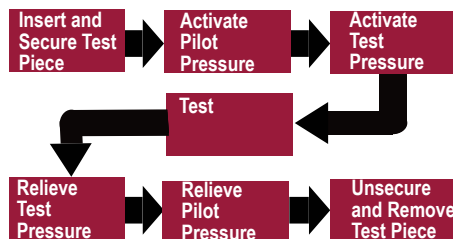
#### Extensions

Connectors are available with extensions to fit in tight locations or to provide closer center-to-center mounting to seal multiple test ports. Please visit our web site or contact us directly for additional information

### FI/FE Similarities



#### Operation



#### Applications

Leak Testing: Pressure decay, water dunk, helium mass spectrometer, etc.

Other Uses: Filling, material handling, pressure and proof testing, manufacturing processes, flushing, etc.

Components: Cylinders, tanks, valves, regulators, meters, plastic containers, plumbing fixtures, pumps, medical devices, filters, pressure vessels, tube assemblies, etc.

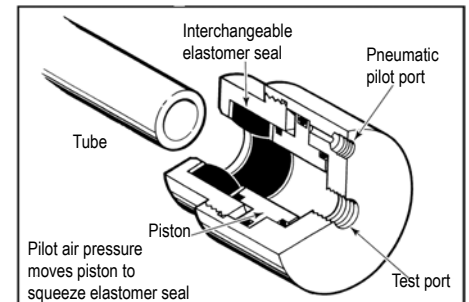
**High speed automated seals provide big gains in productivity**

*Improved quality in your test and manufacturing process*

*Excellent for robotics and pick-and-place applications*

*Soft touch elastomers seal without scratching or damaging your product*

### FE



#### Technical Data

Seals: Neoprene or Urethane (Standard)  
Other seal materials available upon request

Materials: Aluminum and Stainless steel

Test Pressure: Vacuum to 500 psi. The connector and test piece should be secured or fixtured to prevent separation at unsafe pressure and to provide the best elastomer life.

Pilot Operation: Generally requires 60 to 90 psi air supply when using neoprene seals with smooth parts. Higher pressure is required for rough parts, urethane seals, or extended sealing ranges. Urethane seals and the Pilot Booster (page 19) are required to seal threads and similar features.

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)

### Female Pipe Threads



Seals these thread styles:  
NPTF per SAE J476a  
BSPP per ISO 228  
BSPT per ISO 7  
JIS B8363 and B2351

Connector Thread Size	Connector and Main Seal Set	Main Seal Set Includes seal(s) and metal parts for one complete seal change	Bulk Pack Includes 5 seal changes per package
1/8"	FI01-1/8NPT	FIS01-1/8NPT	FIB01-1/8NPT
1/4"	FI1-1/4NPT	FIS1-1/4NPT	FIB1-1/4NPT
3/8"	FI2-3/8NPT	FIS2-3/8NPT	FIB2-3/8NPT
1/2"	FI2-1/2NPT	FIS2-1/2NPT	FIB2-1/2NPT
3/4"	FI3-3/4NPT	FIS3-3/4NPT	FIB3-3/4NPT
1"	FI4-1NPT	FIS4-1NPT	FIB4-1NPT
1 1/4"	FI5-1 1/4NPT	FIS5-1 1/4NPT	FIB5-1 1/4NPT
1 1/2"	FI6-1 1/2NPT	FIS6-1 1/2NPT	FIB6-1 1/2NPT
2"	FI7-2NPT	FIS7-2NPT	FIB7-2NPT
2 1/2"	FI7-2 1/2NPT	FIS7-2 1/2NPT	FIB7-2 1/2NPT

### SAE O-Ring Port



O-Ring Port  
per SAE J1926  
or ISO 11926

-4 (7/16-20)	FI01-4SAE	FIS01-4SAE	FIB01-4SAE
-6 (9/16/18)	FI1-6SAE	FIS1-6SAE	FIB1-6SAE
-8 (3/4/16)	FI2-7SAE	FIS2-7SAE	FIB2-7SAE
-10 (7/8/14)	FI3-8SAE	FIS3-8SAE	FIB3-8SAE
-12 (1 1/16-12)	FI3-9SAE	FIS3-9SAE	FIB3-9SAE
-14 (1 3/16-12)	FI4-10SAE	FIS4-10SAE	FIB4-10SAE
-16 (1 5/16-12)	FI4-11SAE	FIS4-11SAE	FIB4-11SAE

### ISO O-Ring Port

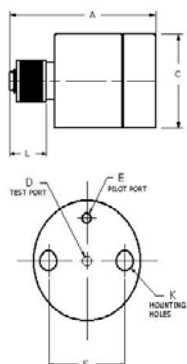


O-Ring Port  
per ISO 6149

Metric Flat Face Port  
per DIN 3852  
Part 1 (ISO 9974)

M10 X 1.0	FI01-M10	FIS01-M10	FIB01-M10
M12 X 1.5	FI1-M12	FIS1-M12	FIB1-M12
M14 X 1.5	FI1-M14	FIS1-M14	FIB1-M14
M16 X 1.5	FI1-M16	FIS1-M16	FIB1-M16
M18 X 1.5	FI2-M18	FIS2-M18	FIB2-M18
M20 X 1.5	FI2-M20	FIS2-M20	FIB2-M20
M22 X 1.5	FI2-M22	FIS2-M22	FIB2-M22
M24 X 1.5	FI3-M24	FIS3-M24	FIB3-M24
M26 X 1.5	FI3-M26	FIS3-M26	FIB3-M26
M27 X 2	FI3-M27	FIS3-M27	FIB3-M27

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



### FI Connector Dimensions

FI	A	C	D	E	F	G	H	J	K	L†	Flow Dia.
FI01	1.98	1.25	10-32 UNF	10-32 UNF	.80	.40	.48	.62	10-32 UNF	.48	0.06"
FI1	2.44	1.57	1/8" NPTF	1/8" NPTF	1.02	.51	.57	.88	1/4-28 UNF	.57	0.13"
FI2							.57	1.07			0.17"
FI3	2.61	2.36	1/8" NPTF	1/8" NPTF	1.60	.80	.71	1.26	1/4-28 UNF	.71	0.21"
FI4							.71	1.57			0.28"
FI5	3.68	3.49	1/2" NPTF	1/8" NPTF	2.31	1.16	1.24	1.88	1/4-28 UNF	1.24	0.56"
FI6							1.24	2.13			0.72"
FI7	3.36	4.20	3/4" NPTF	1/8" NPTF	3.00	1.50	1.33	2.75	1/4-28 UNF	1.33	0.92"
FI8											0.92"

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)

### Male Pipe Thread



Seals these  
thread styles:  
NPTF per SAE J476  
BSPP per ISO 228  
BSPT per ISO 7

Connector Thread Size	Connector and Main Seal Set	Main Seal Set Includes seal(s) and metal parts for one complete seal change	Bulk Pack Includes 5 seal changes per package
1/8"	FE01-1/8 NPT	FES01-1/8 NPT	FEB01-1/8 NPT
1/4"	FE1-1/4 NPT	FES1-1/4 NPT	FEB1-1/4 NPT
3/8"	FE1-3/8 NPT	FES1-3/8 NPT	FEB1-3/8 NPT
1/2"	FE2-1/2 NPT	FES2-1/2 NPT	FEB2-1/2 NPT
3/4"	FE2-3/4 NPT	FES2-3/4 NPT	FEB2-3/4 NPT
1"	FE2-1 NPT	FES2-1 NPT	FEB2-1 NPT
1 1/4"	FE3-1 1/4 NPT	FES3-1 1/4 NPT	FEB3-1 1/4 NPT
1 1/2"	FE3-1 1/2 NPT	FES3-1 1/2 NPT	FEB3-1 1/2 NPT
2"	FE4-2 NPT	FES4-2 NPT	FEB4-2 NPT

### Male Inch Threads



All Male Inch  
Straight Threads

Common Examples:

O-Ring Face Seal  
per SAE J1453  
37° Flare per SAE J514  
45° Flare per SAE J512/513  
24° Cone per SAE J514

7/16"	FE01-0450UR	FES01-0450UR	FEB01-0450UR
1/2"	FE1-0510UR	FES1-0510UR	FEB1-0510UR
9/16"	FE1-0570UR	FES1-0570UR	FEB1-0570UR
5/8"	FE1-0640UR	FES1-0640UR	FEB1-0640UR
11/16"	FE1-0700UR	FES1-0700UR	FEB1-0700UR
3/4"	FE2-T0760UR	FES2-T0760UR	FEB2-T0760UR
13/16"	FE2-T0800UR	FES2-T0800UR	FEB2-T0800UR
7/8"	FE2-T0885UR	FES2-T0885UR	FEB2-T0885UR
1"	FE2-T1010UR	FES2-T1010UR	FEB2-T1010UR
1 1/16"	FE2-3/4NPT	FES2-3/4 NPT	FEB2-3/4 NPT
1 3/16"	FE2-T1200UR	FES2-T1200UR	FEB2-T1200UR
1 1/4"	FE2-T1260UR	FES2-T1260UR	FEB2-T1260UR
1 5/16"	FE2-1NPT	FES2-1NPT	FEB2-1NPT

### Male Metric Threads



Male Metric  
Straight Threads

Common Examples:

24° Cone Flareless  
per ISO 8434-1 and-4  
24° Cone Flareless  
per JIS B2351  
24° Cone Flareless  
per DIN 3902/3853/3861  
60° Cone  
per DIN 7831/7647

M10	FE01-1/8NPT	FES01-1/8 NPT	FEB01-1/8 NPT
M12	FE1-0480UR	FES1-0480UR	FEB1-0480UR
M14	FE1-0570UR	FES1-0570UR	FEB1-0570UR
M16	FE1-0640UR	FES1-0640UR	FEB1-0640UR
M18	FE1-0720UR	FES1-0720UR	FEB1-0720UR
M20	FE2-T0800UR	FES2-T0800UR	FEB2-T0800UR
M22	FE2-T21UR	FES2-T21UR	FEB2-T21UR
M24	FE2-T22UR	FES2-T22UR	FEB2-T22UR
M26	FE2-T23UR	FES2-T23UR	FEB2-T23UR
M27	FE2-T1075UR	FES2-T1075UR	FEB2-T1075UR

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

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)



## Pilot Pressure Booster

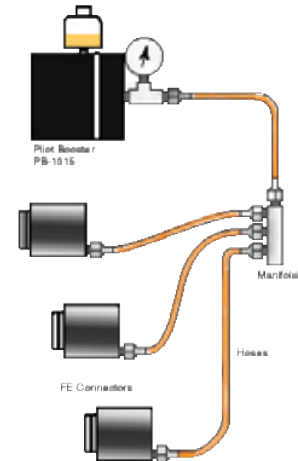
Used with FE Connectors for sealing external threads or irregular surfaces

### Features

- Uses 30–65 psi regulated compressed air to produce up to 600 psi hydraulic pressure
- Simple in-line installation with standard FE Connectors
- Safe air over oil pressure intensifier with limited displacement
- Multiple FE Connector capacity
- Compact, lightweight design 4 1/2" x 4 1/4" body size weighs less than 5 pounds

### Booster Installation for Multiple FE Connector Applications

Production testing of threads and hard to seal surfaces can now be automated using the sealing system of a PB-1015 Pilot Pressure Booster and a proper sized urethane seal set in a FE Connector.



The Pilot Pressure Booster has the capacity to handle multiple FE Connectors for multiple station applications. The table below lists the maximum number of FE Connectors that can be piloted by one booster. Consult the PB-1015 product instructions for complete installation information. The booster capacity to handle multiple connectors is also affected by the hydraulic fluid displaced within the entire system.

FE01	8 FE Connectors
FE1	4 FE Connectors
FE2	2 FE Connectors
FE3	1 FE Connector
FE4	1 FE Connector

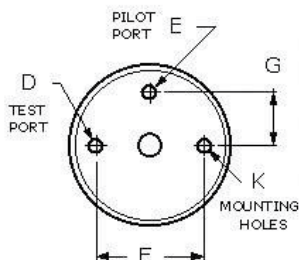
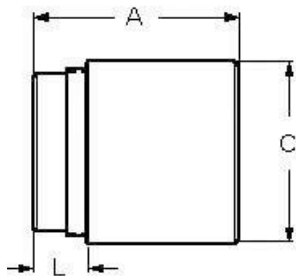
### Technical Data

Seals:	Nitrile
Materials:	luminum
Inlet Pressure:	65 psi max.
Outlet Pressure:	600 psi max.
Pressure Ratio:	9.2:1
Displacement:	1.5 in. <sup>3</sup>
Inlet Port:	1/4" NPTF

### Part #

### Description

PB-1015	Pilot Pressure Booster
PBH32	1 quart hydraulic oil, 60 SSU petroleum based
PBA-01	10-32 Accessory Kit for FE01 Connectors Includes: 1 qt. oil, 0-600 psi gauge, run tee, 10-32 male x 1/8" NPTF male – 72" length hose
PBA-02	1/8" NPTF Accessory Kit for FE1-FE6 Connectors Includes: 1 qt. oil, 0-600 psi gauge, run tee, 1/8" NPTF male x 1/8" NPTF male – 72" length hose
PBG022600	Gauge 0-600 psi, 1/8" mpt
AT021R	Run Tee 1/8" NPTF
H012X036	Hose – 10-32 male x 1/8" NPTF male – 36" length
H012X072	Hose – 10-32 male x 1/8" NPTF male – 72" length
H022X018	Hose – 1/8" NPTF male x 1/8" NPTF male – 18" length
H022X036	Hose – 1/8" NPTF male x 1/8" NPTF male – 36" length
H022X072	Hose – 1/8" NPTF male x 1/8" NPTF male – 72" length
A02M3	Manifold – 1/8" NPTF inlet w/three 1/8" NPTF outlets
A02M4	Manifold – 1/8" NPTF inlet w/four 1/8" NPTF outlets
A02M5	Manifold – 1/8" NPTF inlet w/five 1/8" NPTF outlets



### FE Connector Dimensions

FE	A	C	D	E	F	G	K*	L
FE01	2.05	1.49	1/8" NPTF	10-32 UNF	1.10	.55	10-32 UNC	.58
FE1	2.72	2.22	1/4" NPTF	1/8" NPTF	1.62	.81	1/4-28 UNC	.61
FE2	3.50	3.11	1/2" NPTF	1/8" NPTF	2.50	1.25	1/4-28 UNC	.69
FE3	4.48	4.23	1" NPTF	1/8" NPTF	3.25	1.63	1/4-28 UNC	.89
FE4	4.60	5.48	1 1/2" NPTF	1/8" NPTF	4.25	2.13	1/4-28 UNC	.89

\* FE4, has 3 mounting holes

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)



*Fast, leak tight sealing  
of threaded components*

### WEH 17

#### Introduction and Application

The WEH 17 provides instant connections for both male and female threads with multiple operational choices; ergonomic squeeze lever, push-button pneumatic operation or externally controlled pneumatic operation for automated applications. These series are designed for ease and flexibility of operation and are not intended for applications with heavy side loads or dynamic pressure pulses or spikes. They are manufactured in stainless steel with nitrile seals—other seal materials and custom designs are available for all your applications.

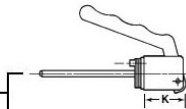
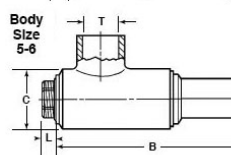
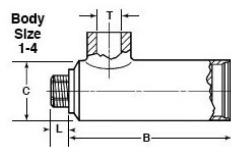
#### Dimensional Data for WEH 17 Connector

All dimensions in inches

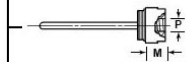
Body Size	1	2	3	4	5	6
B	2.96	2.96	3.47	3.47	5.71	6.62
C	0.99	1.07	1.26	1.46	1.58	1.93
D	-	-	-	-	1.26	1.26
K	1.26	1.26	1.26	1.26	1.26	1.26
L	0.32	0.36	0.48	0.48	0.56	0.56
M	0.71	0.71	0.71	0.71	0.71	0.71
N	0.71	0.71	0.71	0.71	0.71	0.71
P	1/4" NPTF	1/4" NPTF	1/4" NPTF	1/4" NPTF	1/4" NPTF	1/4" NPTF
Q	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/8" NPTF
T	1/8" NPTF	1/4" NPTF	3/8" NPTF	1/2" NPTF	3/4" NPTF	1" NPTF
Thread Sizes	1/8" NPTF	1/4" NPTF	3/8" NPTF	1/2" NPTF	3/4" NPTF	1" NPTF
SAE O-Ring Boss	-4 (7/16-20)	-5 (1/2-20) -6 (9/16-18)	-8 (3/4-16)	-10 (7/8-14)	-12 (1 1/16-12)	-16 (1 5/16-12)
Metric Threads	M10X1	M12X1.5 M14X1.5	M16X1.5 M18X1.5	M22X1.5		

#### \* Note:

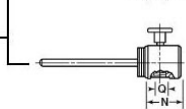
Replace the (H) in the part numbers with a (V) for push button operation or (P) for external pneumatic operation. See pages 8-15.



H Hand lever – manual operation (standard)



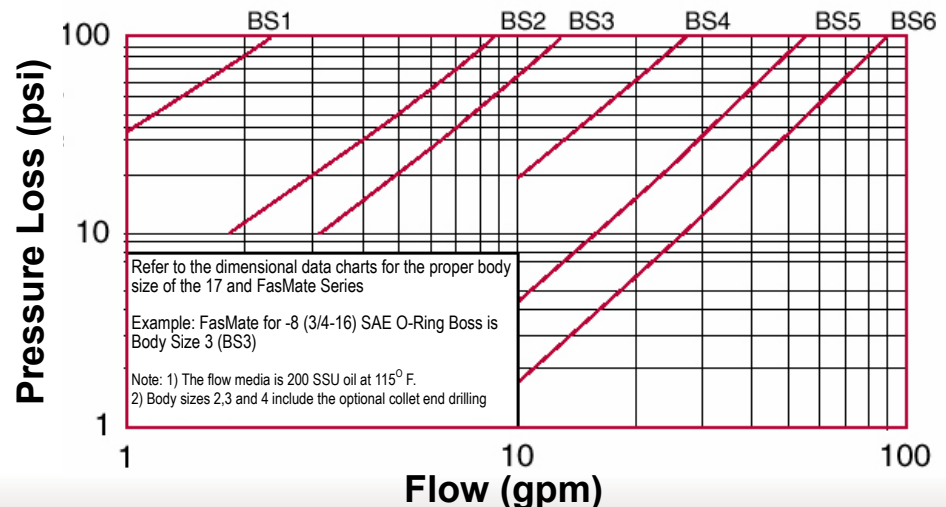
P Pneumatic – external venting required



V Pneumatic for manual use. Thumb valve

### WEH 17 and FasMate Series

#### Flow vs. Pressure Loss

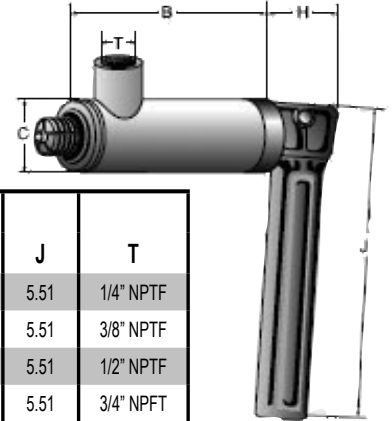




### FasMate®

#### Introduction and Application

FasMate® was designed specifically for applications with side-load from hoses and dynamic pressure cycles. The clamping mechanism provides a much stronger spring preload than the WEH 17 to maintain the connector rigid in the thread before introduction of media and pressure. This higher clamping force in-effect pre-stresses the gripping mechanism so rapid pressure rises or side-loads do not shock or impact it. Due to the high clamping force and mechanical advantage of the toggle lever, it is imperative that the threads are mated properly before activation or damage can result from forcing the lever in a cross-threaded mode. These connectors feature pressure assisted gripping and sealing which resists removal when high pressure is present in the line. Flow is somewhat restricted due to the collet and activation pin, but it is negligible for most high pressure flow applications—see the flow versus pressure loss data in the WEH 17 section for verification that it will meet your flow needs.



Body Size	NPT Thread	SAE O-Ring Boss	B	C	H	J	T
2	1/4" NPTF	-5 (1/2-20) -6 (9/16-18)	3.48	1.06	1.15	5.51	1/4" NPTF
3	3/8" NPTF	-8(3/4-16)	3.99	1.26	1.15	5.51	3/8" NPTF
4	1/2" NPTF	-10 (7/8-14)	3.99	1.46	1.15	5.51	1/2" NPTF
5	3/4" NPTF		4.61	1.58	1.15	5.51	3/4" NPTF
5.5		-12 (11/16-12)	4.7	1.78	1.15	5.51	3/4" NPTF
6	1"	-16 (15/16-12)	5.43	2.13	1.15	5.51	1/4" NPTF

### WEH 18

#### Introduction and Application

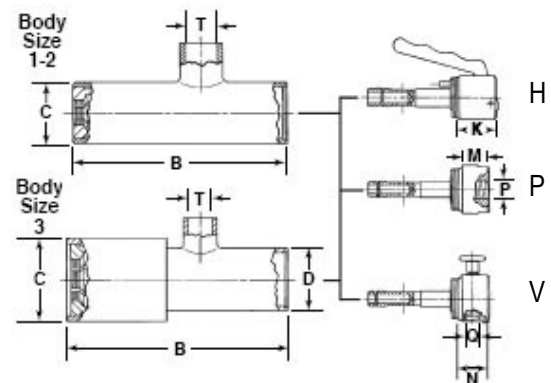
The WEH 18 provides instant connections for both male and female threads with multiple operational choices; ergonomic squeeze lever, push-button pneumatic operation or externally controlled pneumatic operation for automated applications. These series are designed for ease and flexibility of operation and are not intended for applications with heavy side loads or dynamic pressure pulses or spikes. They are manufactured in stainless steel with nitrile seals—other seal materials and custom designs are available for all your applications.

#### \* Note:

Replace the (H) in the part numbers with a (V) for push button operation or (P) for external pneumatic operation. See pages 8-15.

#### Dimensional Data for WEH 18 Connector

Body Size	1	2
B	5.28	5.6
C	1.26	1.54
D	-	-
K	1.26	1.26
M	0.71	0.71
N	0.71	0.71
P	1/4" BSPP	1/4" BSPP
Q	1/8" BSPP	1/8" BSPP
T	1/2" NPTF	1/2" NPTF
NPTF	1/8" thru 3/8"	1/2"
37 Flare	-3 thru -6	-8 thru 10
ORFS	9/16	11/16 thru 13/16
45 Flare	-8 thru -10	-8 thru 10



For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)



# Seals – The Backbone of Every Connector

## Testing and Processing

Our products are most often used for leak testing and typical examples include water dunk testing, mass flow, pressure decay, halogen, and helium mass spectrometer. With the exception of the FE Series, most of our products seal near the face of the thread. It is therefore important to have a good sealing surface adjacent to the thread without spiral tool marks, nicks, burrs, etc. We have provided solutions for items such as schedule 40 pipe ends, however, leak integrity, seal life and original tool expense generally prevent them from being the most cost effective total solution. Oftentimes, minor changes in process control or component features can have a significant effect on your total costs, and prevent wasted labor efforts.



Filling or flushing applications generally require the least flow restriction, and most of our products offer good flow characteristics. Full flow or low-restriction flow is readily available in the Twistmate, 60/850 and FE Series. Instant internal connections such as WEH 17, and FasMate have some flow restriction, but it is generally insignificant in high pressure systems.

Pressure and performance testing require particular attention to the type of pressure application. Most products are used in a static pressure application where the pressure is achieved without spikes or continuous pulses.

High pressure, side-loading, pressure pulses, or spikes are all cause for careful selection and implementation. Generally, the Twistmate, 850 and FasMate Series are the recommended choices for dynamic applications below 5,000 psi. Heavy side-loads should always be avoided if possible, as they make it more difficult to maintain a seal and add to the cost and complexity of the connector. The detrimental effects of side-loading can be overcome with good work station design such as vertical suspension, spring reels or other supporting means.

For safety and best results, please read and follow the operating instructions included with each connector prior to use.

## Elastomers

Our threaded products use nitrile o-rings internally as the standard. Fluorocarbon, silicone, fluorosilicon, ethylene propylene and other elastomers are available for your specific media or application requirement. Polyurethane seals are supplied as the mating seal in many cases due to their excellent resistance to cutting, abrasion and extrusion, and are generally compatible with many of the same medias used with nitrile. However, polyurethane is not recommended for use with hot water, steam or applications above 200° F.

## Design Safety

All of our products have been designed with safety in mind, however, it is the responsibility of the users of our products to design each process in such way to avoid mishaps that can cause physical hazard or property loss. A good general rule of thumb is to take the approach that if something can go wrong it will, and design secondary safety steps into the process. High pressure gases and hazardous medias are two especially important issues. High volume pressurized gas contains large amounts of potential energy that can cause severe damage if suddenly released. Safety chains, shields, cages or fixtures are all good choices depending on the application. We can design and quote secondary backup systems or assist you in clarifying potential hazards depending on your application. Use of hazardous medias are generally controlled through local, state and federal authorities and require special processes, equipment, and certifications or registration. We do not offer products that have been approved (UL, etc.) for such use. Most of our products do not have internal valving to check-off flow because the customer supplied interface of the connection doesn't either. However, they generally have design features to enhance both the sealing and latching, so inadvertent disconnects are minimized. Please consult the operating instructions or the factory as needed regarding safety issues and understanding the features and limitations of your product choice prior to implementation and use.

## Operator Safety

FasTest maintains the highest standards in product quality and operator safety. The use of pressurized media for testing requires a thorough understanding of the FasTest Connector Installation and Operating Instructions. Do not use FasTest connectors without first reading and understanding the operating instructions included with each FasTest product. If the instructions are not completely understood by the operator, contact FasTest for additional assistance before attempting use of the connector. It is also suggested that your entire testing system be periodically checked to make sure all connections, fittings and components are properly secured and maintained.

**WARNING:** FasTest connectors are not designed for or intended as permanent connections and are not internally valved. Use as permanent connections or attempts to disconnect while pressurized may cause rapid separation, loss of media and/or physical harm.



## Recommendation Chart for Optimum Seal Material Used In FasTest Connectors

FasTest will help you select the most desirable seal material for your application. This chart lists the commonly available seals from FasTest, and the application which its most typically used. Remember, not all seal materials are the same. The individual seal's compound, durometer hardness and coatings are what makes some seals perform better than others.

Industry Application		Seal Material Recommendation							
		Neoprene	Urethane	Buna-N	EPDM	Silicone	Viton	FDA Viton	FDA Neoprene
Automotive	Heating & Cooling Components (Air / Nitrogen /Tracer) Gas)	X	X						
	Reservoir Bottles (Air / Nitrogen / Tracer Gas)	X	X						
	Manifolds & Castings (Air / Nitrogen / Tracer Gas)	X	X						
	Suspension / Struts (Air / Nitrogen / Tracer Gas)	X	X						
	Drive Line Components (Air / Nitrogen / Tracer Gas)	X	X						
	Lamp Assemblies (Air / Nitrogen / Tracer Gas)	X							
	Sensors / Gauges (Air / Nitrogen / Tracer Gas)	X	X						
	Fuel System Components (Air / Nitrogen / Tracer Gas)	X	X						
	Fuel System Components (Fuel / Stoddard /Solvent)			X			X		
	Brake System Components (Air / Nitrogen /Tracer) Gas)	X	X						
	Brake System Components (Brake Fluid)				X				
HVAC-R	Coils & Heat Exchangers (Air / Nitrogen / Tracer Gas)	X	X						
	Compressors (Air / Tracer Gas)	X	X						
	Compressors (R22 )	X							
	Compressors (R134a & POE Oil)	X							
	Compressors (R410a )	X							
	Chillers (Air / Nitrogen / Water)	X	X						
	Service Valves (Air / Nitrogen / Tracer Gas)	X	X						
	Control Valves (Air / Nitrogen / tracer Gas)	X	X						
Plumbing	For water pipe testing	X	X						
Medical	Luers, Lumens & Tubes (Air / Nitrogen / Tracer Gas)	X	X			X		X	X

For more details, options and replacement seal material information log on to [www.fastestinc.com](http://www.fastestinc.com)



To Convert . . .	Into . . .	Multiply by . . .
Atmospheres	Bars	1.013
Atmospheres	Pounds/Sq In	14.7
Bars	Atmospheres	0.987
Bars	Pounds/Sq In	14.5
Centimeters	Inches	0.394
Centimeters	Millimeters	10
Degree Fahrenheit	Degrees Celsius	(T°F - 32)/1.8
Degree Celsius	Degrees Fahrenheit	(T°C X 1.8) +32
Gallons	Cubic Inches	231
Inches	Centimeters	2.54
Inches	Millimeters	25.4
Inches Of Mercury	Atmospheres	0.033
Inches Of Mercury	Pounds/Sq In	0.491
Inches Of Water (At 4°C)	Pounds/Sq In	0.036
Kilograms/Sq Cm	Pounds/Sq In	14.22
Liters	Cubic Inches	61.02
Millimeters	Inches	0.039
Pascal (Pa)	Bars	10-5
Pascal (Pa)	Pounds/Sq In	1.45 X 10-4
Pounds/Sq In	Pascal (Pa)	6.895 X 10+3

### Calculating Air Leak Rate

$$LR = \frac{V * \Delta P * 60}{T * 14.7}$$

LR = Leak Rate

V = Volume of test part (cc)

ΔP = Change in pressure

T = Test time (sec.)

**Example:** Part Volume = 1500 cc  
Pressure Drop = 0.050 psi  
in 60 secs

$$LR = \frac{(1500 \text{ cc}) (0.050 \text{ psi}) (60 \text{ secs})}{(60 \text{ secs}) (14.7 \text{ psi})}$$

$$LR = 5.10 \text{ cc/s}$$

### Area of a Square/ Rectangle

= Length x Width

### Area of a Circle

= .7854 X Diameter<sup>2</sup>

### Cylinder Volume

= .7854 X Diameter<sup>2</sup> X Length

### Separation Force

= PSI x Area

### Pressure in PSI

= Force/Area

### Boyle's Law for Behavior of Gases:

$$P_1 V_1 = P_2 V_2$$

P1 and V1 are initial pressure and volume; P2 and V2 are final conditions.

### Compressibility of hydraulic oil:

Volume reduction is approximately 1/2% for every 1000 PSI of fluid pressure.

### Compressibility of water:

Volume reduction is about 1/3% for every 1000 PSI pressure.

### Recommended Flow Velocities

Pressure lines - 25 ft./sec. or 7.62 meters/sec.

Return lines - 10 ft./sec/ or 3.05 meters/sec

Suction lines - 4 ft./sec/ or 1.22 meters/sec

### Comparison of different leak measuring methods

Typical leak rates	Std cc/sec	Time for lb of freon to leak	Time for cc to leak	Time for Bubble in Water
Typical leak rate for automotive, and hydraulic applications	10 <sup>-1</sup>	10 Days	10 seconds	1.3 seconds
	10 <sup>-2</sup>	3 Months	100 seconds	13.3 seconds
	10 <sup>-3</sup>	2.7 Years	16.67 minutes	14.5 minutes
Typical leak rate for pneumatic applications	10 <sup>-4</sup>	27 Years	2.78 hours	24 minutes
	10 <sup>-5</sup>	270 Years	27.8 hours	4 hours
Typical leak rate for refrigeration applications	10 <sup>-5</sup>	270 Years	27.8 hours	4 hours
	10 <sup>-6</sup>	2,700 Years	11.57 days	
Laboratory testing	10 <sup>-7</sup>	27,000 Years	3.86 months	
	10 <sup>-8</sup>	270,000 Years	3.22 years	
	10 <sup>-9</sup>	2,700,000 Years	32 years	

One cubic centimeter of Freon gas flow per second at 14.7 psi of pressure and a temperature of 77°

### Common Leak Testing Methods

*FastTest Connectors can be used with the following tests:*

Ultrasonic Leak Testing  
Mass Spectrometer  
Bubble test  
Hydrostatic test  
Pressure Change  
Liquid Tracer  
Halogen  
Acoustic  
Electronic Gas Detector



## Case Study: Applications support

### Situation

A manufacturer of a successful product line had a problem. The success of their product meant that they had 22 different sizes to leak test. The test required that the connectors be rigidly fixtured to allow the test operator to quickly load the product to be tested and to view the test in process. The testing volumes had grown to the point that it was no longer feasible to use a twist on leak test connector. It took too much time and they were concerned about the repetitive motion on the operators.

They called Fastest concerned that the 22 different sizes would require them to have 22 different test stations, which would be expensive and would require more space than they had. They were considering a relatively complex scheme of changing out complete test fixtures to save testing space but the cost, inconvenience, and change out time made this not a desirable solution.

### Solution

After reviewing the situation with them, Fastest application engineers were able to come up with a solution that allowed them to test all 22 styles with quick connectors using only four permanent test stations.



Fastest recommended that they permanently mount 4 different body sizes of the Type 18 style connector. This combined with 4 different jaw sets and 3 different internal piston styles allowed them to test their full range of parts. Change over for a different size required no special tooling. Color coding of the parts with the correct size made it easy for the operator to select the correct connector parts and change them by hand.

### Results

By calling Fastest this customer is enjoying several benefits, including:

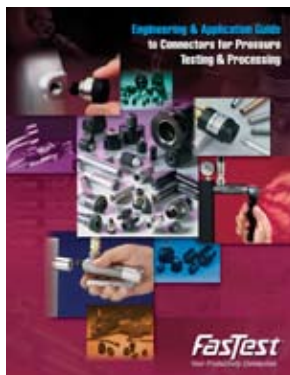
- Minimize connector cost
- Reduced the number of test stations required saving both money and space
- Testing through-put doubled due to faster loading times
- Improved repeatability of the test by automating more of the process
- Greatly improved ergonomic environment

**If you have a difficult or special application you would like to discuss, please call our technical staff at 651-645-6266 or 800-444-2373, or log on to [fastestinc.com](http://fastestinc.com) - Support and access our Ask an Engineer feature.**



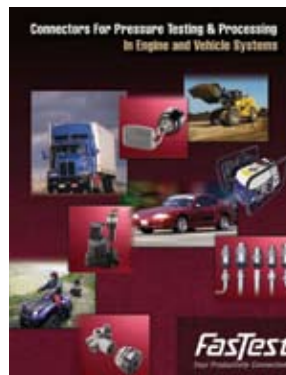
## Additional Product

In addition to products for testing threaded connections, FasTest offers a wide range of products to leak test all types of connections, including all smooth, cast, flared, hose barbed, union, beaded and other unthreaded surfaces, plus complete custom capabilities.



### FasTest® Product Catalog

This 52 page catalog details FasTest's complete line of 500+ standard connectors and custom capabilities designed to provide leak-tight, reliable connections for industrial applications.



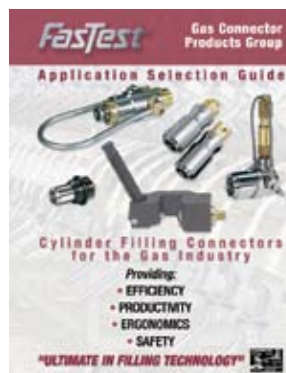
### Connectors for Pressure Testing & Processing in Engine and Vehicle Systems

FasTest has engineered connectors specifically for engine hot and cold testing. Now get the technical information you need to choose the right solution for testing your vehicle systems



### CoreMax Processing System

CoreMax® shortens the time to evacuate, test and charge with refrigerants in both the manufacturing and service environments. Works with a new high-flow valve, providing up to six times the processing flow plus improved sealing and faster access connections.



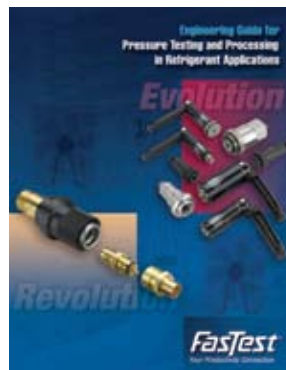
### Industrial and Medical Gas Cylinder Filling Products

Innovative connectors to make gas filling faster and more productive. Variety of connector types allow use for numerous applications and types of gasses.



### FasTest Web Site

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



### Engineering Guide for Pressure Testing and Processing in Refrigerant Applications

From evolution to revolution, FasTest has led the way with innovative solutions. Now see how FasTest completes the revolution with the CoreMax system.

### **FasTest, Inc. Limited Express Warranty**

FasTest, Inc. warrants its products against defects in workmanship and materials for 90 days from the date of sale by FasTest, Inc. or its authorized distributor. This warranty is void if the product is misused, tampered with or used in a manner that is contrary to FasTest, Inc.'s written recommendations and/or instructions. FasTest, Inc. does not warrant the suitability of the product for any particular application. Determining product application suitability is solely the customer's responsibility. FasTest, Inc. is not liable for consequential or other damages including, but not limited to, loss, damage, personal injury, or any other expense directly or indirectly arising from the use of or inability to use its products either separately or in combination with other products.

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

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

The logo for FasTest, Inc. features the word "FasTest" in a bold, italicized, sans-serif font. The "F" and "T" are particularly prominent. A registered trademark symbol (®) is located to the upper right of the "t".