SMARTFLOW®

FASTIE® - Quick Ejector Tie-In System

FASTIE Couplers
U.S. Patent No. 6,379,072

FASTIE Studs

Description & Use

In an injection molding press, the ***FASTIE*** system quickly "ties-in" the mold ejector plate to the press ejection system, dramatically reducing mold change time. The greatest time savings are realized in presses where space is limited and the ejector system is difficult to tie in using solid knock-out bars.

The ***FASTIE*** coupler may be permanently mounted to the press ejector plate. The quick-connect locking mechanism in the coupler snaps mechanically onto the mold-mounted stud during mold installation.

To release the ejectors, apply shop air to the coupler. The coupler opens to release the stud, disconnecting the press and tooling ejector plates. The coupler remains in the open position, ready for a new mold to be set.

For multiple ejector locations, an air manifold is recommended to release all couplers simultaneously. See inside catalog pages for installation examples.

The FasTie couplers and studs are available in 3 sizes to suit various applications: 1", 1-3/8" and 2".

Features & Benefits

- ***FASTIE*** installs easily into existing tapped holes, no additional machining is required.
- ***FASTIE*** reduces mold setting time by quickly uncoupling, plus there are no loose parts to stow.
- ***FASTIE*** remains coupled during mold cycling for increased "tie-in" reliability and reduced wear.
- ***SPEEDBAR®*** adjustable ejector bar changes length quickly without tools [±1/2"(12.7mm) from nominal in .006"(.15mm) increments].*
- ***SPEEDBAR*** saves molders time and cost of machining individual ejector bars to fit different molds.*

* 1-inch only

burger & brown engineering, inc.
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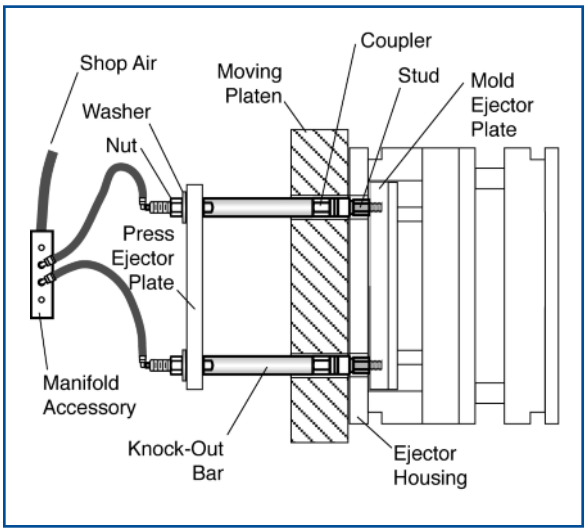
www.smartflow-usa.com

FasTie® Installation Examples

Typical Application for 2 or 4 Ejector Positions



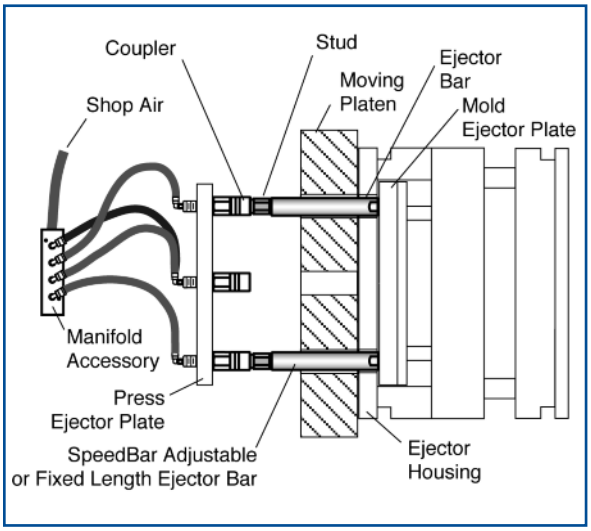
This setup is designed for captive molders, or shops with tools using a standard ejector stroke.

Couplers are located at the end of the ejector bars mounted to the press ejector plate.
Studs are mounted to each mold in storage. Ejector connection is made without changing ejector bars.
Ejector housing shown is 1.062" thick.
Air Manifold supplies compressed air to the end of each ejector bar for simultaneous coupler release.
Fixed length bars are finished on site, cut to length and tapped with 1/2-13 female thread.

Parts List

Qty	Part
2 or 4	FasTie Stud
2 or 4	FasTie Coupler
2 or 4	Fixed Length Ejector Bars or SpeedBar® Adjustable Length Bars
1	Air Manifold with tubing

Alternate Application for 2 or 4 Ejector Positions



This setup is designed for custom molders who use a variety of injection molds with different ejector patterns and ejector strokes.

Couplers are installed next to the Press Ejector Plate. Studs are placed at the end of the mold-mounted ejector bars for easy removal. Molds are changed quickly without accessing the back of the Press Ejector Plate.

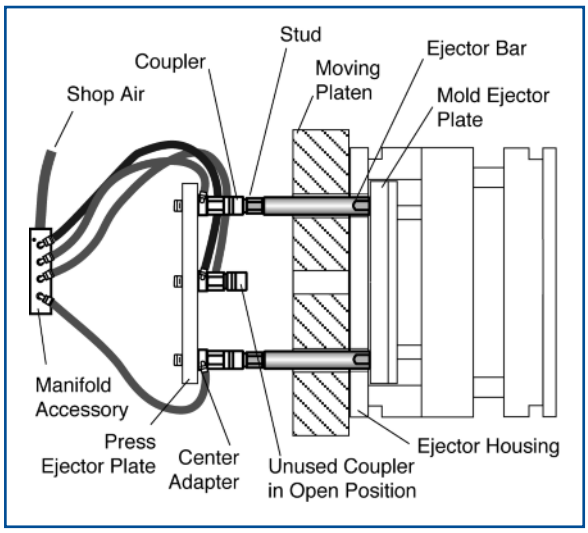
For example, a press with 4 ejector positions may be running molds using only the horizontal positions, but the next mold may need the 2 vertical ejector positions.
Ejector housing shown is 1.062" thick.
Air Manifold supplies air to the end of each ejector bar for simultaneous coupler release.

Parts List

Qty	Part
2 or 4	FasTie Stud
2 or 4	FasTie Coupler
2 or 4	Fixed Length Ejector Bars or SpeedBar Adjustable Length Bars
1	Air Manifold with tubing

FasTie® Installation Examples

Alternate Application for 2 or 4 Ejector Positions



This setup is used where there is limited access to the back of the Press Ejector Plate. Custom molders using smaller presses will benefit from this application.

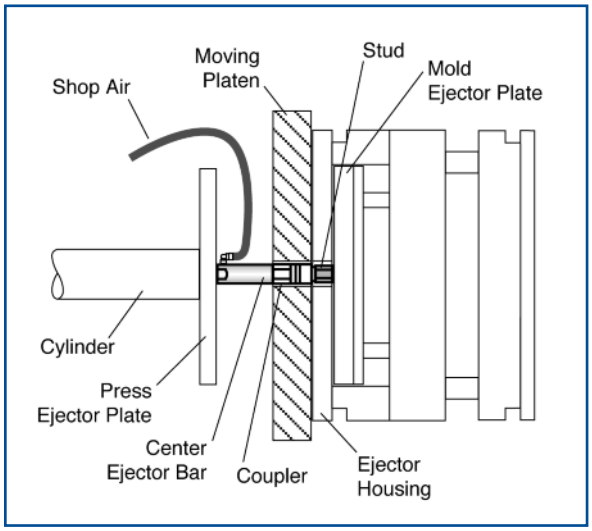
Couplers are installed next to the Press Ejector Plate. Studs are placed at the end of the mold-mounted ejector bars for easy removal. Molds are changed quickly without accessing the back of the Press Ejector Plate.

For example, a press with 4 ejector positions may be running molds using only the horizontal positions, but the next mold may need the 2 vertical ejector positions. Ejector housing shown is 1.062" thick.
Air Manifold supplies air to the mold side of the Press Ejector Plate with the use of adapters.

Parts List

Qty	Part
2 or 4	FasTie Stud
2 or 4	FasTie Coupler
2 or 4	Center Adapters
2 or 4	Fixed Length Ejector Bars or SpeedBar® Adjustable Length Bars
1	Air Manifold with tubing

Center Ejector Position



For small presses with a center ejector, replace the cylinder bolt with a Center Ejector Bar and FasTie coupler.

Center Ejector Bar and Coupler are installed into the Press Ejector Plate, with the Coupler attached to the end. Stud is installed in the Mold Ejector Plate. Molds are changed quickly without accessing the back of the Press Ejector Plate.
Ejector housing shown is 1.062" thick.
Shop air is supplied to the side of the center adapter. No Air Manifold is needed. Fully-threaded Center Ejector Bar may be shortened to proper length on-site. In many small machines, there may not be room for an ejector bar.

Parts List

Qty	Part
1	FasTie Stud
1	FasTie Coupler
1	Center Ejector Bar

High Strength Couplers and Studs are recommended for 1" applications.

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FASTIE® Specifications and Accessories

Specifications

Maximum operating temp. .....300°F (149°C)
Air pressure range .....80 - 100 psi
Stud material .....Hardened Steel (58-62 Rc)
Ejector bar and coupler material .....High Strength Steel
Threaded Studs .....B7 Alloy or Comparable
Air manifold material .....Aluminum
Air tubing material .....1/8"OD Nylon

Press requirements:

	Coupler Size		
	1-inch	1-3/8-inch	2-inch
Platen thru hole min.	ø1.063"	ø1.45"	ø2.063"
	ø27mm	ø36.8mm	ø52.4mm
Ejector plate thru hole min.	ø0.512"	ø0.641"	ø0.765"
	ø14mm	ø16.5mm	ø19.4mm
Ejector force per coupler max.	2.5 tons	5.5 tons	7.5 tons

Recommended FasTie Size per Press Size & Knockout Qty

	Knockout Quantity		
Press Tonnage	1 (Center)	2	4
0-250	1"HS	1"HS	1"HS
250-500	1-3/8"	1"HS or 1-3/8"	1"HS or 1-3/8"
500-750	2"	1-3/8" or 2"	1-3/8" or 2"
750-1000	2"	1-3/8" or 2"	1-3/8" or 2"
1000 +	Do not use	2"	2"

For best results, use the largest FasTie that will fit into the press.

Accessories

Additional parts to aid installation and use:

- ***SPEEDBAR Adjustable Length Ejector Bar**** changes length without tools ±1/2" in increments of .006". Air passes through the bar for air hook-up at the back of the press ejector plate.
- ***Fixed Length Ejector Bar*** provides an air passage to the back of the press ejector plate. Several lengths are stocked with one blank end for on-site finishing.
- ***Center Ejector Bar*** and ***Center Adapter*** provide an air passage in front of the press ejector plate for center knockout. Also use for multiple knockouts.
- ***Air Manifold*** splits single air supply into four circuits to aid air connection. Comes with 1/8" diameter tubing and pneumatic connectors.

* 1-inch, 1/2-13 threaded only

SPEEDBAR
U.S. Patent No. 6,315,544

Fixed Length Ejector Bar

Center Ejector Bar

Center Adapter

Air Manifold

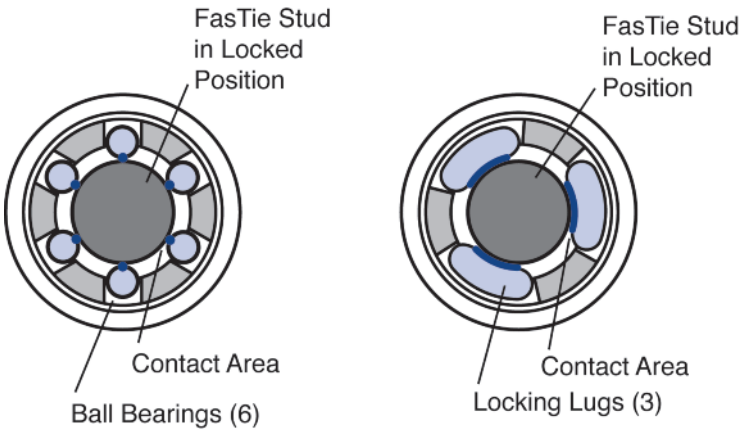
Ask about special thread sizes for Ejector Bars and Center Adapters

FasTie® 1-Inch Couplers and Studs

FasTie Coupler Bearing Surface Cross-Sections

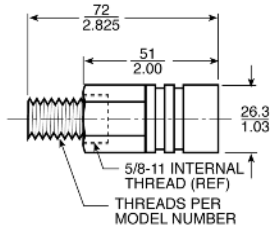
Original FasTie Coupler Design uses 6 ball bearings supplying 6 points of contact for load-bearing surface area.

High Strength Coupler Design employs three locking lugs, dramatically increasing the load-bearing surface area of the components.



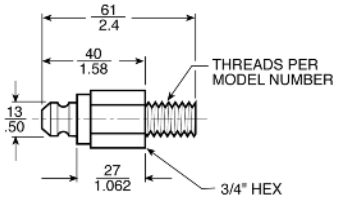
Original 1" FasTie **High Strength 1" FasTie**

Original FasTie Couplers and Studs (replacements only, use High Strength for new installations)



FTF-❑❑ FasTie Coupler

Model Number	Thread Size
FTF-50	1/2-13
FTF-63	5/8-11
FTF-M12	M12 x 1.75
FTF-M16	M16 x 2



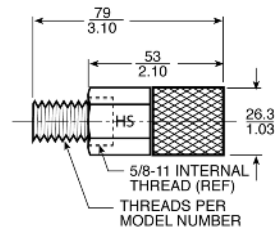
FTM-❑❑ FasTie Stud

Model Number	Thread Size
FTM-38	3/8-16
FTM-50	1/2-13
FTM-63	5/8-11
FTM-M12	M12 x 1.75
FTM-M16	M16 x 2
FTM-M20	M20 x 2.5

High Strength FasTie Couplers and Studs

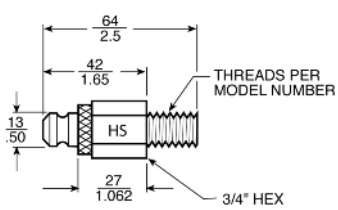
Do not use HS FasTie Couplers in combination with original version (above). Damage to couplers will result.

Center knock-out, multiple and high speed ejection indicate the need for High Strength FasTie Couplers and Studs. High Strength Couplers and Studs are longer than the original parts (see above), and are not to be used in combination with Original Couplers and Studs. All Accessories are compatible with both styles of Couplers and Studs.



FTFHS-❑❑ FasTie High Strength Coupler

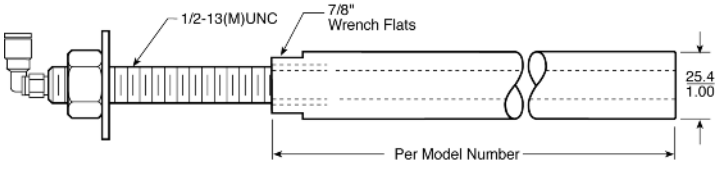
Model Number	Thread Size
FTFHS-50	1/2-13
FTFHS-63	5/8-11
FTFHS-M12	M12 x 1.75
FTFHS-M16	M16 x 2



FTM-❑❑ FasTie High Strength Stud

Model Number	Thread Size
FTMHS-38	3/8-16
FTMHS-50	1/2-13
FTMHS-63	5/8-11
FTMHS-M12	M12 x 1.75
FTMHS-M16	M16 x 2
FTMHS-M20	M20 x 2.5

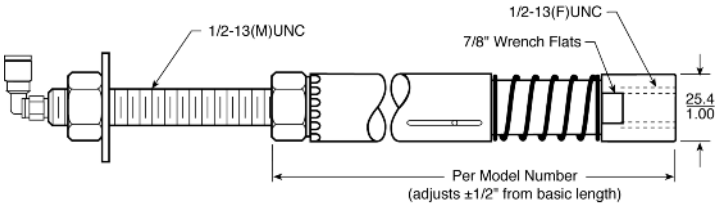
FASTIE® 1-Inch Accessories



Fixed Length Ejector Bar 1/2-13 threads

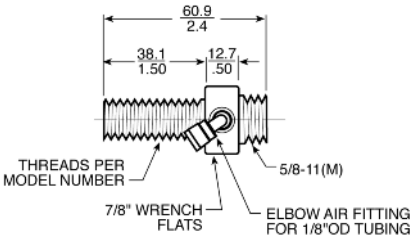
Model Number	Length
FTBB-50-8	8"
FTBB-50-10	10"
FTBB-50-12	12"
FTBB-50-14	14"

See back page to determine ejector bar length



***SPEEDBAR* Adjustable Ejector Bar** 1/2-13 threads

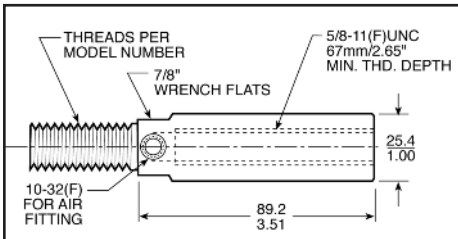
Model Number	Length	Model Number	Length
SBAB-50-6	6"	SBAB-50-11	11"
SBAB-50-7	7"	SBAB-50-12	12"
SBAB-50-8	8"	SBAB-50-13	13"
SBAB-50-9	9"	SBAB-50-14	14"
SBAB-50-10	10"		



Center Adapter

Model Number	Thread Size
FTCA-63	5/8-11
FTCA-M16	M16 x 2
FTCA-M20	M20 x 2.5

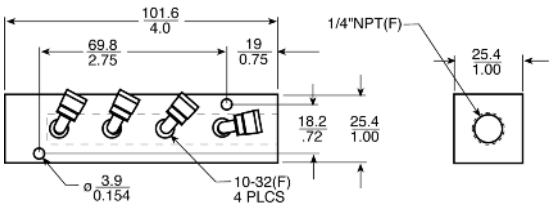
Air Handling Parts	
FTAM-100	Air Manifold Assembly
FTPF-2	Pneumatic Fitting 90° Elbow, 10-32 x 1/8"OD tube
FTT-125	Tubing 1/8"OD, nylon



Center Bar
(use with FTF-63 or FTFHS-63 only)

Model Number	Thread Size
FTCA-63-63	5/8-11
FTCA-M16-63	M16 x 2

Call for a quote on thread sizes not shown



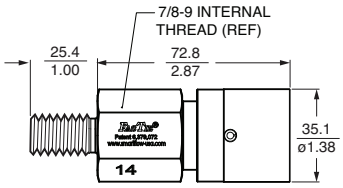
Air Manifold

FTAM-100
Includes:
- manifold
- (4) 1/8" elbow pneumatic fitting
- (4) ø1/8" x 4ft nylon tubing

Linear= mm / inch (TYP)

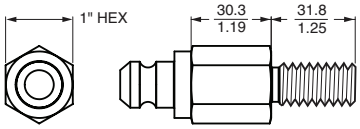
FasTie® 1-3/8-Inch Components

1-3/8" FasTie Coupler



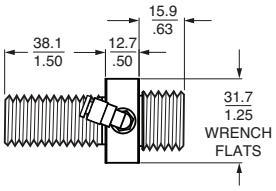
Model Number	Thread Size
FTF1.4-63	5/8-11
FTF1.4-75	3/4-10
FTF1.4-M16	M16 x 2
FTF1.4-M20	M20 x 2.5

1-3/8" FasTie Stud



Model Number	Thread Size
FTM1.4-63	5/8-11
FTM1.4-75	3/4-10
FTM1.4-M16	M16 x 2
FTM1.4-M20	M20 x 2.5

1-3/8" Center Adapter

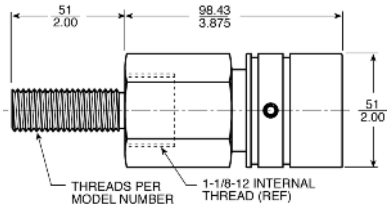


Model Number	Thread Size
FTCA1.4-75	3/4-10
FTCA1.4-M16	M16 x 2
FTCA1.4-M20	M20 x 2.5

Ejector Bars for 1-3/8-Inch and 2-Inch FasTie's are available as special orders. Contact your representative for information.

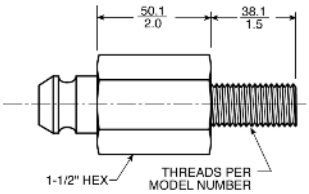
FasTie® 2-Inch Components

2" FasTie Coupler



Model Number	Thread Size
FTF2-63	5/8-11
FTF2-75	3/4-10
FTF2-M16	M16 x 2
FTF2-M20	M20 x 2.5

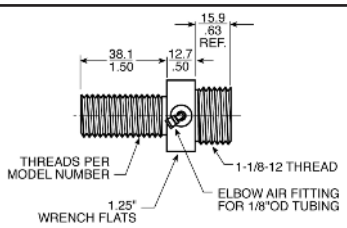
2" FasTie Stud



Model Number	Thread Size
FTM2-63	5/8-11
FTM2-75	3/4-10
FTM2-M16	M16 x 2
FTM2-M20	M20 x 2.5

2" Center Adapter

Linear= mm / inch (TYP)



Model Number	Thread Size
FTCA2-75	3/4-10
FTCA2-M16	M16 x 2
FTCA2-M20	M20 x 2.5

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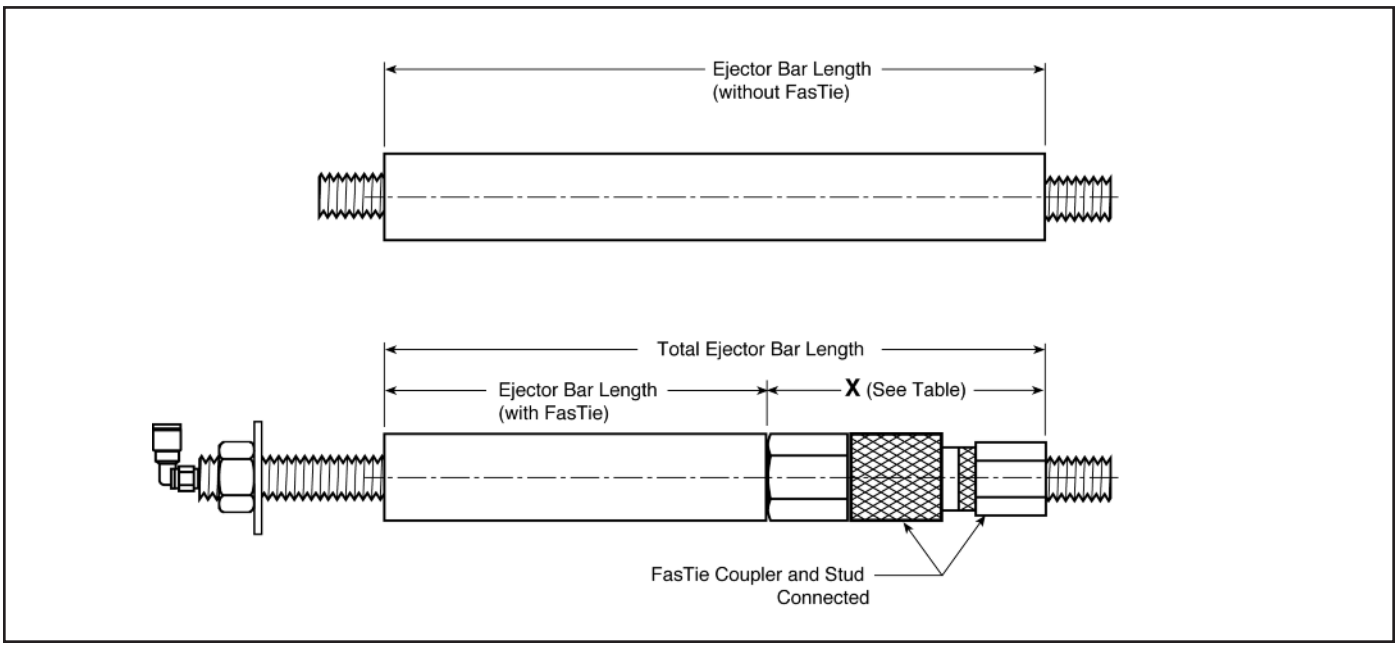
Determine Ejector Bar Length

- Determine length of Solid Ejector Bar
- Select Connected Fastie Length from table
- Subtract Connected FasTie Length from Solid Ejector Bar Length
- Subtract Center Adapter Length if needed
- Result is FasTie Ejector Bar Length

Connected FasTie Lengths		
Description	**Part Numbers**	**"X" Length**
Original 1" FasTie	FTF-xx and FTM-xx	3.062"/77.8mm
High Strength 1" FasTie	FTFHS-xx and FTMHS-xx	3.162"/80.3mm
1-3/8" FasTie	FTF1.4-xx and FTM1.4-xx	4.300"/109.2mm
2" FasTie	FTF2-xx and FTM2-xx	5.875"/149.2mm



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