



Quick Start Manual



FLEX-18

Threaded Insert Power Tool

**Part of the FLEX family of modular-based tooling.
FLEX tooling has the capability to be upgraded from the original base tool.
Upgrades include process-monitoring.**

SAFETY.....	2
TOOL OVERVIEW.....	3
TOOL SPECIFICATIONS.....	4
AIR SERVICE.....	5
STANDARD HEAD SET ASSEMBLY.....	5
LARGE THREAD HEAD SET ASSEMBLY.....	6
HEAD SET COMPONENTS.....	7
TOOL SETUP.....	8
GENERAL SETTING.....	8
FORCE ADJUSTMENT.....	9
STROKE ADJUSTMENT.....	10
OPERATION.....	11
MAINTENANCE.....	12
TROUBLESHOOTING.....	13
SHEREX PRODUCT LINE SHOWCASE.....	14

Sherex Warranty

Sherex Fastening Solutions FLEX-18 carries a 6 month warranty against defects that are caused by faulty materials or workmanship. Sherex warranty period commences from the date of delivery which is confirmed either by the invoice or delivery note. The warranty becomes invalidated if the installation tool is misused or not serviced, maintained, and operated according to the instructions in the Quick Start and Repair Manuals.

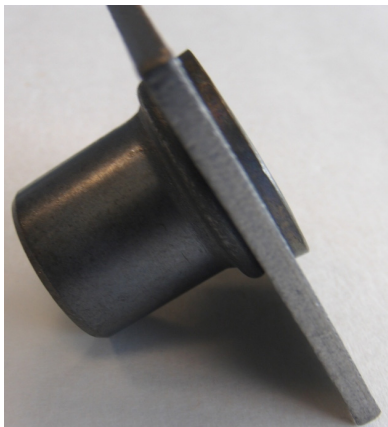
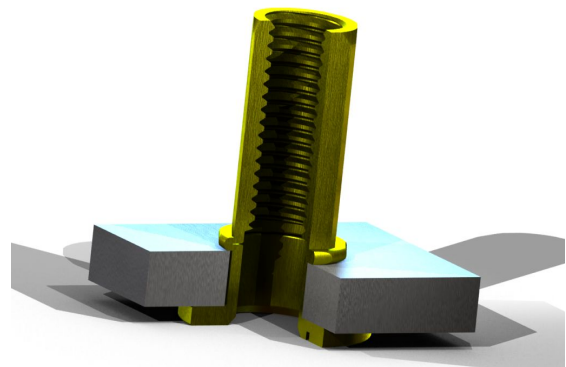
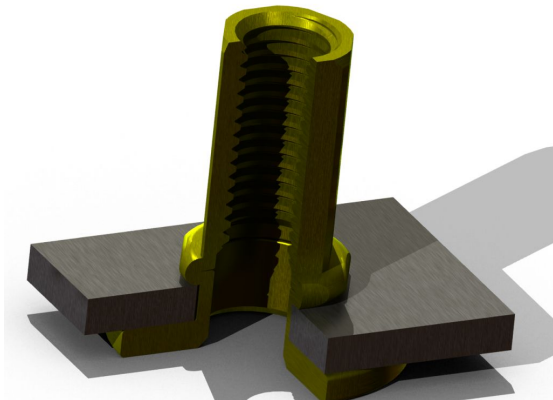
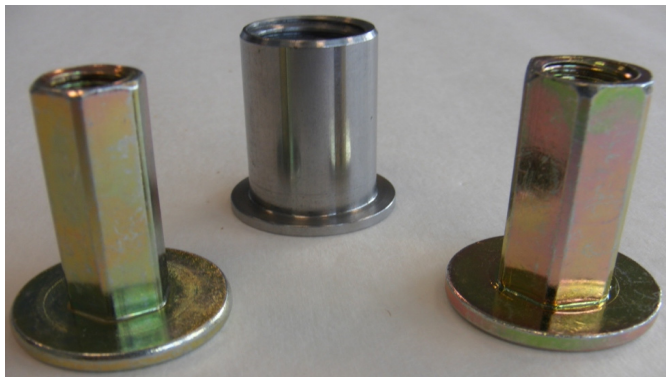
S SAFETY

- ⓘ **DO NOT USE THIS TOOL FOR ANY PURPOSE OTHER THAN THOSE SPECIFIED.**
- ⓘ **DO NOT USE ANY EQUIPMENT ALONG WITH THE TOOL THAT HAS NOT BEEN RECOMMENDED OR PROVIDED BY SHEREX FASTENING SOLUTIONS.**
 - Failure to do so could result in voided warranty and/or personal injury
- ⓘ **THIS TOOL MUST BE KEPT IN EXCELLENT CONDITION AND SHOULD BE CHECKED BY SPECIALIZED PERSONNEL ON A REGULAR BASIS TO DETECT DAMAGES AND EVALUATE ITS OPERATING CONDITION.**
- ⓘ **ALWAYS DISCONNECT THE AIR SUPPLY BEFORE SET UP, ADJUSTMENT, OR REMOVAL OF THE NOSE ASSEMBLY.**
- ⓘ **AIR INLET SHALL NOT EXCEED 7 BAR (102 PSI).**
- ⓘ **DO NOT USE THE TOOL WITHOUT OIL PLUG IN PLACE.**

TOOL OVERVIEW

The FLEX-18 tool is designed for installing Sherex threaded insert/rivet nuts. The tool has the ability to utilize a pull to pressure or pull to stroke installation method depending on the application. The advantage with the pull to pressure method is that the same insert can be installed into different material thicknesses (within the part grip range) without any adjustments to the tool once the proper pulling pressure (force) has been set. The pull to stroke (distance) method allows the insert to be installed to the same distance each time. This is helpful when installing into soft materials (prevents crushing of the base material) or when a specific installed length is required.

The tool is designed to install rivet nuts from M8 to M20 & 5/16-18 to 3/4-16. The recommended operating air pressure is between 5 - 7 bar (72.5 - 101.5 PSI).



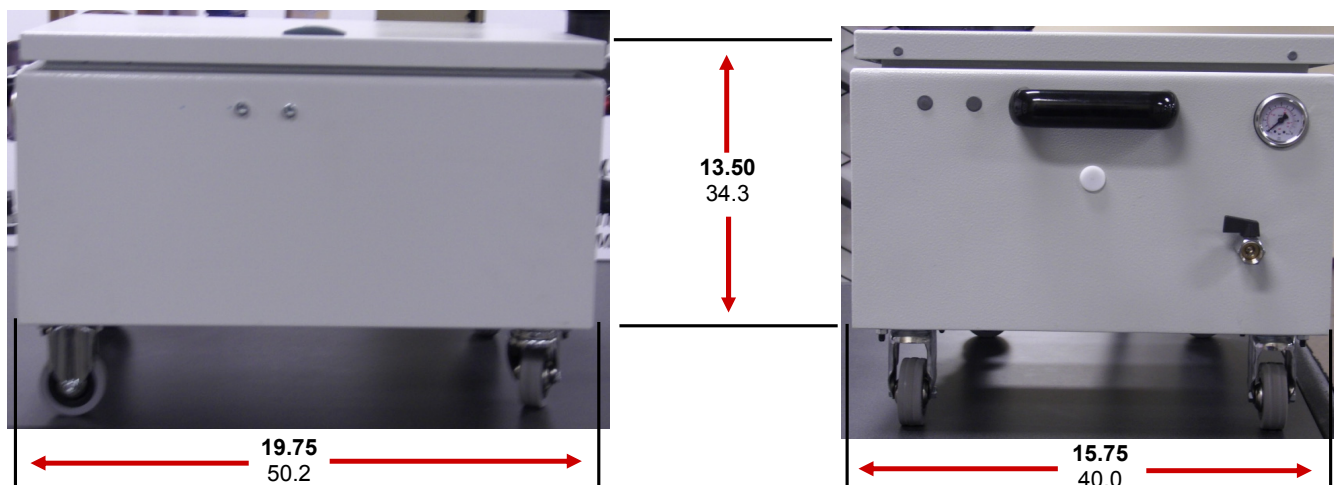
SPECIFICATIONS

FLEX-18 Tool Specifications			
AIR PRESSURE	Minimum - Maximum	5 – 7 bar	72-101 psi
STROKE	Maximum	15 mm	.591 in
MOTOR SPEED	SPIN ON	2000 rpm	
	SPIN OFF	2000 rpm	
PULL FORCE	@ 6.2 bar	80 kN	18,000 lbf
CYCLE TIME	Approximately	2.5 sec	
NOISE LEVEL	Less than	75 dB(A)	
WEIGHT	Without kit	2.3 kg	5.1 lbs
VIBRATION	Less than	2.5 m/s²	
THREAD SIZE	Inserts	M8 – M20 5/16-18 – 3/4-16	

FLEX-18 BOOSTER BOX DIMENSIONS

Standard Hose Length - **15 Feet** (457.2 cm)

Extended Hose Length - **22 Feet** (670.56 cm)



Dimensions shown in **bold** are in inches.
The other dimensions are in centimeters.

AIR SUPPLY

We suggest you use a pressure regulator and automatic oiling / filtering system on the main air supply, to ensure its maximum life cycle with reliable trouble free use.

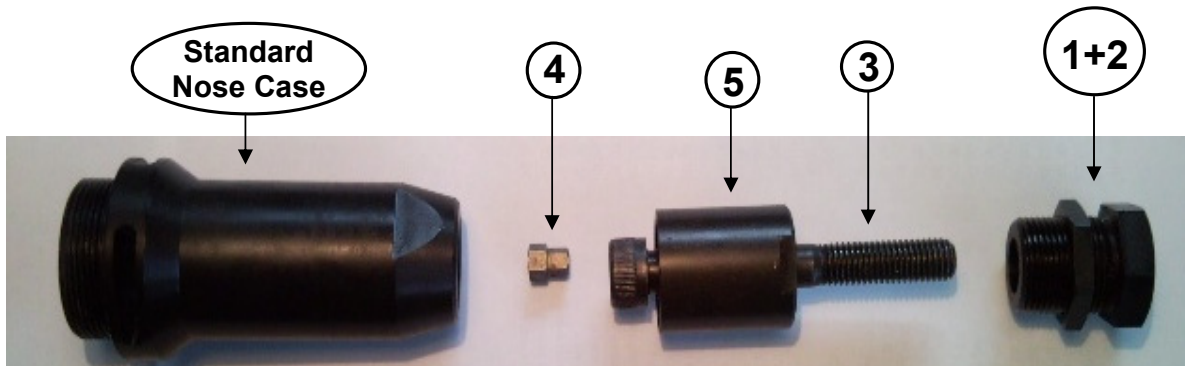
STANDARD HEAD SET ASSEMBLY

For Thread Sizes M8-M14 & 5/16-18 to 1/2-20

ASSEMBLY INSTRUCTIONS

IMPORTANT
DISCONNECT THE AIR SUPPLY WHEN SETTING UP OR REMOVING A HEAD SET.

- Choose the proper head set according to the insert that will be installed.
- Remove the standard nose case, if still mounted.
- Insert Hex Driver **4** into hex hole on spindle; place the mandrel **3** on to hex driver **4** and adaptor nut **5** on mandrel **3**.
- Screw on Adaptor Nut **5** completely and tighten.
- Screw on the standard nose case into the handle casting and tighten.
- Screw on the anvil **1** and lock nut **2** onto the standard nose case.
- To remove the equipment, do the reverse operation



PLACING RIVET NUT ONTO MANDREL- LENGTH CHECK

- Keeping the tool disconnected from air supply, place an insert on mandrel **3** and adjust anvil **1** and lock nut **2** in order to match the insert and mandrel end. It is ideal to have 1-2 threads of the mandrel protruding from the back of the rivet nut; this will ensure full thread engagement during the installation process. Lock position by tightening lock nut **2** against the standard nose case.

Head Sets should be serviced weekly. Any damaged or worn out parts should be replaced. Check for mandrel wear and replace when necessary. Sherex recommends using high quality socket head cap screws such as Unbrako® and Holo-Krome®.

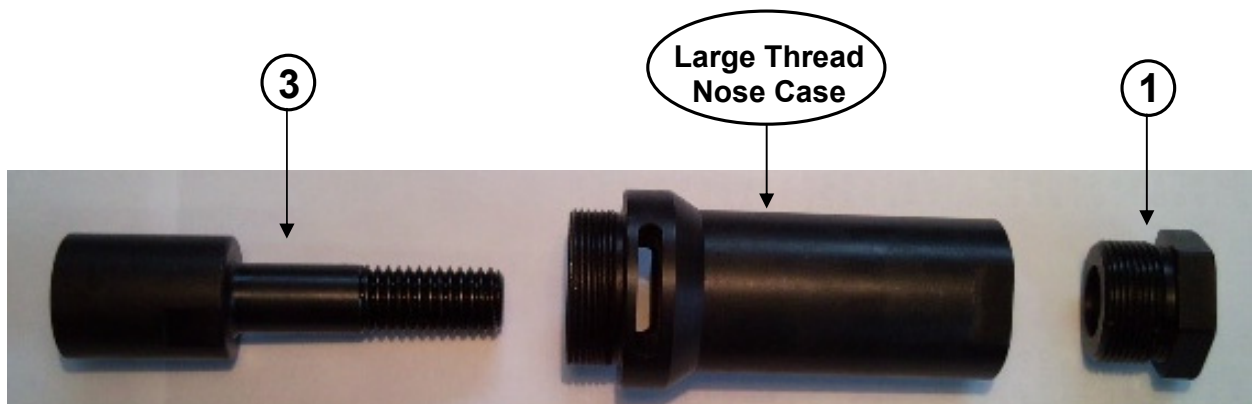
LARGE THREAD HEAD SET ASSEMBLY

For Thread Sizes M16-M20 & 5/8-11 to 3/4-16

ASSEMBLY INSTRUCTIONS

IMPORTANT
DISCONNECT THE AIR SUPPLY WHEN SETTING UP OR REMOVING A HEAD SET.

- Choose the proper head set according to the insert that will be installed.
- Remove the large thread nose case, if still mounted.
- Thread the mandrel **3** on the spindle and tighten.
- Screw on the large thread nose case into the handle casting and be sure to fully tighten.
- Screw on the anvil **1** onto the large thread nose case.
- To remove the equipment, do the reverse operation



PLACING RIVET NUT ONTO MANDREL- LENGTH CHECK

- Keeping the tool disconnected from air supply, place an insert on mandrel **3** adjust anvil **1** in order to match the insert and mandrel end. It is ideal to have 1-2 threads of the mandrel protruding from the back of the rivet nut; this will ensure full thread engagement during the installation process.

Nose assemblies should be serviced weekly. Any damaged or worn out parts should be replaced. Check for mandrel wear and replace when necessary. Sherex recommends using high quality socket head cap screws such as Unbrako® and Holo-Krome®.

HEAD SET COMPONENTS

Head Sets vary in shape according to the insert thread size. Each head set represents a unique group of components that can be ordered individually and are unique to the size of the fastener. We suggest you keep the components listed below in stock to be used as replacements.
(Numbers refer to sketches on pages 5 & 6).

FLEX-18 TOOL HEAD SET COMPONENTS					
STANDARD NOSE CASE					
THREAD SIZE	COMPLETE HEADSET	1+2 ANVIL	3 MANDREL	4 HEX DRIVER	5 ADAPTOR NUT
M8	FL18-HS-M8	FL18-HS-00908	M-M8-65	FL5-HS-01008	FL18-HS-09108
M10	FL18-HS-M10	FL18-HS-00910	M-M10-65	FL5-HS-01010	FL18-HS-09110
M12	FL18-HS-M12	FL18-HS-00912	M-M12-65	FL18-HS-01012	FL18-HS-09112
5/16-18 UNC	FL18-HS-3118	FL18-HS-00908	M-3118-250	FL5-HS-00740	FL18-HS-09108
5/16-24 UNF	FL18-HS-3124	FL18-HS-00908	M-3124-250	FL5-HS-00740	FL18-HS-09108
3/8-16 UNC	FL18-HS-3716	FL18-HS-00910	M-3716-300	FL5-HS-00742	FL18-HS-09110
3/8-24 UNF	FL18-HS-3724	FL18-HS-00910	M-3724-300	FL5-HS-00742	FL18-HS-09110
1/2-13 UNC	FL18-HS-5013	FL18-HS-00950	M-5013-300	FL18-HS-00750	FL18-HS-09150
1/2-20 UNF	FL18-HS-5020	FL18-HS-00950	M-5020-300	FL18-HS-00750	FL18-HS-09150
BIG NOSE CASE					
THREAD SIZE	COMPLETE HEADSET	1 ANVIL	3 MANDREL		
M16	FL18-HS-M16	FL18-HS-00916	M-M16-FL18		
5/8-11	FL18-HS-6211	FL18-HS-00962	M-6211-FL18		
3/4-10 UNC	FL18-HS-7510	FL18-HS-00975	M-7510-FL18		

Contact Sherex for FLEX-18 Repair Part Numbers

TOOL SETUP

Once the tool has been set up with the proper head set for the rivet nut thread size, it is now time to set up the tool for installing blind rivet nuts. At this point you must determine the proper installation method for installing the rivet nuts. Feel free to call Sherex to discuss your application and proper installation method, but included below is a brief outline of considerations for tool set up.

This tool utilizes both pull to force and pull to distance installation methods and these two methods can be used simultaneously as well. The two methods are described in detail in the following section of the manual but here is a brief summary:

Pull to Force (Pressure): The tool is set to a specified pull force and the tool will pull to this force when the trigger is actuated. Once the tool reaches the specified pull force, the tool will engage the auto-reverse function and thread out of the rivet nut.

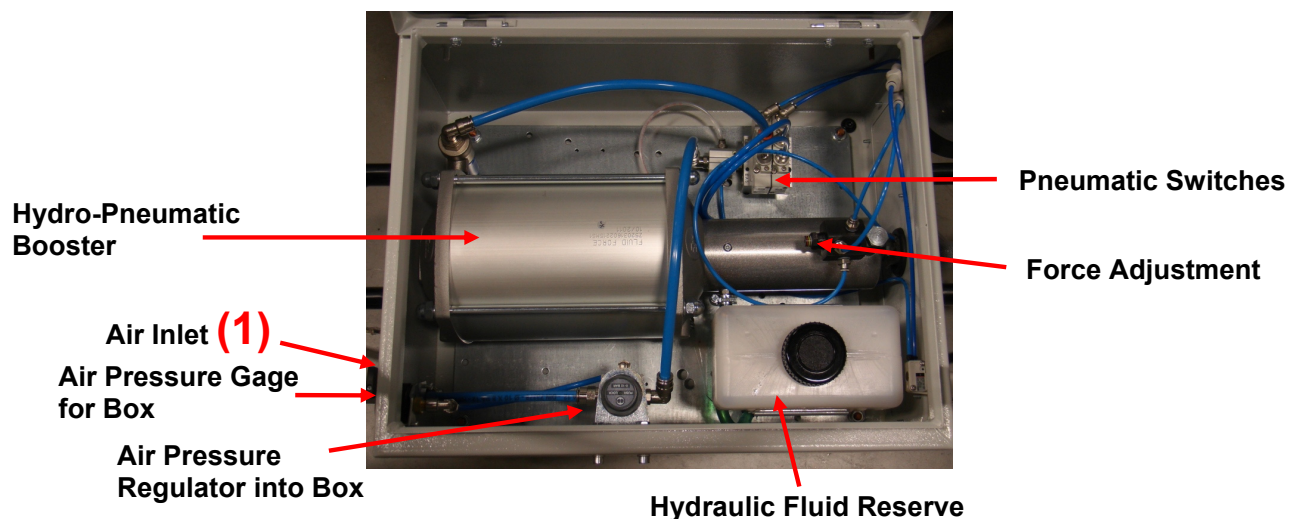
Pull to Distance (Stroke): The stop block is set on the tool so that it pulls to a specific distance (At MAX Force). Once the tool pulls to the specified distance the tool will engage the auto-reverse and thread out of the rivet nut.

Sherex recommends the Pull to Force installation method for applications involving steel, aluminum, stainless base materials. The tool will compensate for any variation in material thickness and ensure the part is pulled to the proper force. In this case, typically the pull to distance stop block is positioned at the MAX distance of the tool. However, in some applications you may want to position the stop block so that the tool will pull the lesser of Pull to Force set up, or the stop block distance setting. An example of this is if you are installing steel and aluminum rivet nuts and you want to be sure that the Pull Force setting for the steel rivet nuts does not strip the threads of the aluminum rivet nuts. By setting to the tool up this way, you are able to install both rivet nuts without adjustment.

Sherex recommends Pull to Distance installation method for applications going into soft materials like composites. In this situation the Pull to Distance method ensures that the base material is not crushed during the installation process.

Choosing between these two installation methods (or a combination) is critical for proper rivet nut installation. Please contact Sherex for support.

GENERAL SETTING



FORCE ADJUSTMENT

Numbers refer to the images on pages 8 through 10

Install the proper nose assembly for the rivet nut thread size that you will be using. Attach an air supply to the Air Inlet (1) per the recommendations in this manual.

Using a 3 mm allen key, unscrew the force adjustment screw (3) out until it stops. When pulling the trigger the tool should not pull back as this is at minimum force.

Thread an insert/rivet nut on to the mandrel 1 or 2 turns. Apply pressure to the insert and the auto-spin on feature will engage thereby spinning the rivet nut up the mandrel until it comes in contact with the anvil.

Take the force adjustment tool (2) that is provided, and place it into the force adjustment screw (3). Attempt to set the rivet nut insert by depressing the trigger fully and holding it until the tool has reversed out. To adjust the force, turn the force adjustment tool (2) a ½ turn in (clockwise) to increase the force or ½ turn out (counter clockwise) to decrease the force. Continue turning the tool a ½ turn after each setting attempt until there is deformation of the rivet nut. Continue to adjust the force until the rivet nut fully installs. For second grip parts and larger, you may need to test in material thickness to achieve a proper installation.

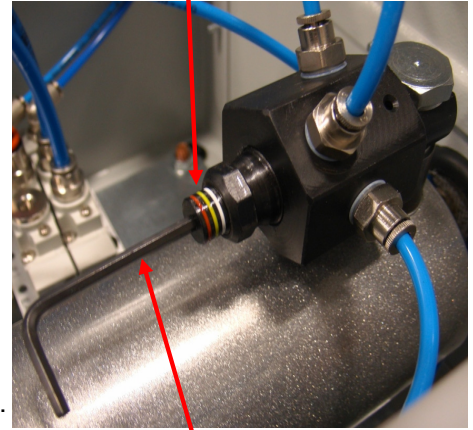
Test the tool set up by installing rivet nuts in to the representative material thickness to be used in the application and increase the force if needed.

If you will be installing rivet nuts into different material thicknesses, test the rivet nut in the thickest material location. This position will require the most installation force.

If during the set up process the tool does not automatically reverse out of the rivet nut press the manual reverse button (4).

Should the mandrel bind in the application (manual reverse button will not work), use the included tool (5) to reverse the mandrel from the insert.

Force Adjustment Screw (3)



Force Adjustment Tool (2)



Manual Reverse Button (4)



STROKE ADJUSTMENT

Numbers refer to the images on pages 8 through 10

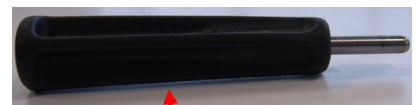
Install the proper nose assembly for the rivet nut thread size that you will be using. Attach an air supply to the Air Inlet (1) per the recommendations in this manual.

Determine the proper stroke distance of the tool based on the size and style of rivet nut insert you are using for your application material thickness. Contact Sherex should you require assistance determining the appropriate stroke. **Warning**** A stroke setting that is too large for the application may cause an over installed installation condition which may damage the mandrel, the base material, and/or the rivet nut insert.

Adjustment of the pull distance (stroke) is accomplished by using the provided stroke adjustment tool (5) to adjust the stop ring at the back of the tool. The stop ring is threaded into the back of tool casing and is a positive stop for the air motor. By turning the stop ring closer to the casing (Clockwise) you reduce the pull distance (stroke) of the tool. By turning the stop ring away from the casing (Counter clockwise) you increase the pulling distance (stroke) of the tool.

If during the set up process the tool does not automatically reverse out of the rivet nut press the manual reverse button (4).

Should the mandrel bind in the application (manual reverse button will not work), use the included tool (5) to reverse the mandrel from the insert.



Stroke Adjustment Tool (5)



Manual Reverse Button (4)

O PERATION

Operating Procedure

- Head Set assembled, tool connected to air supply, force/pull distance adjustment complete. We recommend you set the pull distance (stroke) at the maximum distance you would want the rivet nut installed, and then adjust the force to the size of the rivet nut. This will provide the correct installation and prevent over installation of the rivet nut (and the potential damage this can cause).
- Screw the rivet nut onto the mandrel (2) a quarter turn, then apply a light pressure on the rivet nut which will start the spinning of the mandrel (push to spin). The mandrel will automatically stop when the rivet nut comes in contact with the nose piece.
- Insert fastener into the application.
- Depress the trigger fully and hold until tool has reversed out of the rivet nut. This tool has a timer based auto reverse system so releasing the trigger prior to reverse will stop the reverse process. If this occurs, press the red button on the top of the booster box for manual reverse.

IMPORTANT

Do not push the mandrel without a rivet nut as this will cause the mandrel to spin automatically. Ensure pressure settings are correct.

Servicing should be performed on a regular basis and a complete inspection will be needed once a year or every 500,000 cycles, whichever comes first.

IMPORTANT

The employer is the sole responsible party for ensuring the training of staff on proper tool use and maintenance. The operator should not perform any servicing or repairs, unless properly trained.

DAILY SERVICING

- Every day, before use, pour a few drops of light lubricating oil on tool air inlet, if the air supply is not equipped with lubricator.
- Check for air leaks. If damaged, hoses and coupling should be replaced.
- Make sure you are using the proper nose assembly.
- Make sure the pull force is correct for the selected rivet nut.
- Check the mandrel for wear or damage and replace if needed.

WEEKLY SERVICING

- Check for oil and air leaks.
- Check oil level in reservoir (add as needed)

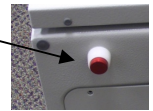
MAINTENANCE

Every 500,000 cycles the tool should be completely checked and parts that are worn or damaged should be replaced. O rings should be replaced and lubricated with Molykote® 55M grease before assembly.

Only a trained technician should service the Flex-18 tool. Should the Flex-18 tool require repair please contact Sherex.

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Pneumatic motor runs slowly	<ul style="list-style-type: none"> ⇒ Motor air leaks ⇒ Low air pressure ⇒ Air vanes jammed 	<ul style="list-style-type: none"> ⇒ Check for worn out seals. Replace ⇒ Increase it ⇒ Lubricate tool through air inlet
Insert does not deform properly	<ul style="list-style-type: none"> ⇒ Pull force/Pull Stroke not set properly ⇒ Air pressure outside limits ⇒ Low oil level ⇒ Insert out of the grip 	<ul style="list-style-type: none"> ⇒ Adjust ⇒ Adjust ⇒ Add oil ⇒ Check the insert grip range
Mandrel does not spin	<ul style="list-style-type: none"> ⇒ Mandrel worn/damaged ⇒ Hex Driver worn/damaged ⇒ Loose locking ring 	<ul style="list-style-type: none"> ⇒ Replace Mandrel ⇒ Replace Hex Driver ⇒ Tighten Locking Ring
Insert does not spin on the mandrel	<ul style="list-style-type: none"> ⇒ Incorrect insert thread ⇒ Incorrect mandrel ⇒ Mandrel out or damaged 	<ul style="list-style-type: none"> ⇒ Replace with proper insert ⇒ Replace with proper mandrel ⇒ Replace
Tool is locked in installed insert	<ul style="list-style-type: none"> ⇒ Excessive pull force or distance ⇒ Defective insert ⇒ Defective or worn out or damaged mandrel 	<ul style="list-style-type: none"> ⇒ Depress manual spin off ⇒ If this does not work, disconnect air, insert a pin through nose casing slots and unscrew. ⇒ Reduce pull force or distance ⇒ Contact Sherex ⇒ Replace Mandrel
Mandrel breaks prematurely	<ul style="list-style-type: none"> ⇒ Excessive pull force or distance ⇒ Side load on mandrel 	<ul style="list-style-type: none"> ⇒ Reduce pull force or distance ⇒ Keep the tool square to the application when placing insert
Tool does not spin on insert	<ul style="list-style-type: none"> ⇒ No air supply ⇒ Insufficient distance between locknut and spindle ⇒ Air motor jammed 	<ul style="list-style-type: none"> ⇒ Connect ⇒ Set distance between 1.5 and 2 mm?? ⇒ Lubricate through air inlet or if required contact Sherex authorized repair center
Auto reverse stops working but the manual reverse does work	<ul style="list-style-type: none"> ⇒ Oil level 	<ul style="list-style-type: none"> ⇒ Check oil level and if low add more oil to the tool



Sherex Product Line Showcase

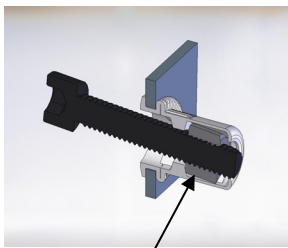
The FLEX line of tooling is just one of many Product lines that Sherex offers to help meet your application requirements

BLIND RIVET NUTS



Blind rivet nuts are suitable for providing load-bearing threads in thin materials & blind applications. Sherex Fastening Solutions offers the most comprehensive line of blind rivet nuts from thin wall parts to heavy duty. Rivet Nuts are available in both an Inch Body Style & Metric Body Style. Special designs are available to meet customer specific needs.

RIV-FLOAT®



Internally Floating Threads

RIV-FLOAT® is the next generation of fastening technology. Internally floating threads allow for component attachment in off-center applications. RIV-FLOAT® was designed for post finish installation in applications where cage nuts, clinch nuts, floating nut plates or weld nuts are typically used. By aligning to the drive angle of the screw, RIV-FLOAT® accounts for tolerance stack up, saving rework of components and downtime associated with stripped or cross threaded fasteners. RIV-FLOAT®-SHORT is available for applications requiring backside clearance similar to that of various riveted nut plates and cage nuts.

BRASS INSERTS



Brass inserts from Sherex Fastening Solutions are designed to provide a threaded hole in plastics that are not strong enough to support a thread. Brass inserts are available in many options such as ultrasonic, press-in, flanged and molded-in. These inserts have a self aligning lead for accurate installation and can be easily mounted. Suitable industry applications include: automotive, communication and computer equipment, or almost anywhere strong, durable threads are required in plastics.

CLINCH NUTS



Sherex offers three different kinds of clinch nuts to meet the specific requirements of the customer's application. Sherex clinch nuts can be used in various high strength steels such as dual phase alloy, HSLA, and TRIPS to meet class 10 nut strength requirements. Sherex clinch nuts can be used in any material that offers access from both sides of the base material.

FASTENER AUTOMATION



Sherex combines world class fastener manufacturing and design capability with industry leading automation equipment to offer the best solution for your application. This "One Source" service ensures that you are receiving the best support before and after the start of production. Whether you are using 10,000 pieces or 10 million pieces, Sherex offers different levels of automation and fastener capability to meet both your budget and performance requirements.



SHEREX FASTENING SOLUTIONS, LLC

400 Riverwalk Pkwy., Suite 600

Tonawanda, NY 14150

Phone: 866-474-3739

Fax: 716-875-0358

Email: info@sherex.com

www.sherex.com

SHEREX TAIWAN

No. 201, Sandong Road, Chungli City

Tao-Tuan Hsien, Taiwan, R.O.C.

Phone: 011-886 3 4988689

Fax: 011-886 3 4989395

Email: sales@sherex.com.tw

www.sherex.com.tw

SHEREX MEXICO S. de R. L. de C.V.

Riego 6

Col. Los Arquitos

Queretaro, Queretaro

C.P. 76090

Mexico

Phone: 52 (442) 196-8075

Email: ventas_mexico@sherex.com

www.sherex.com