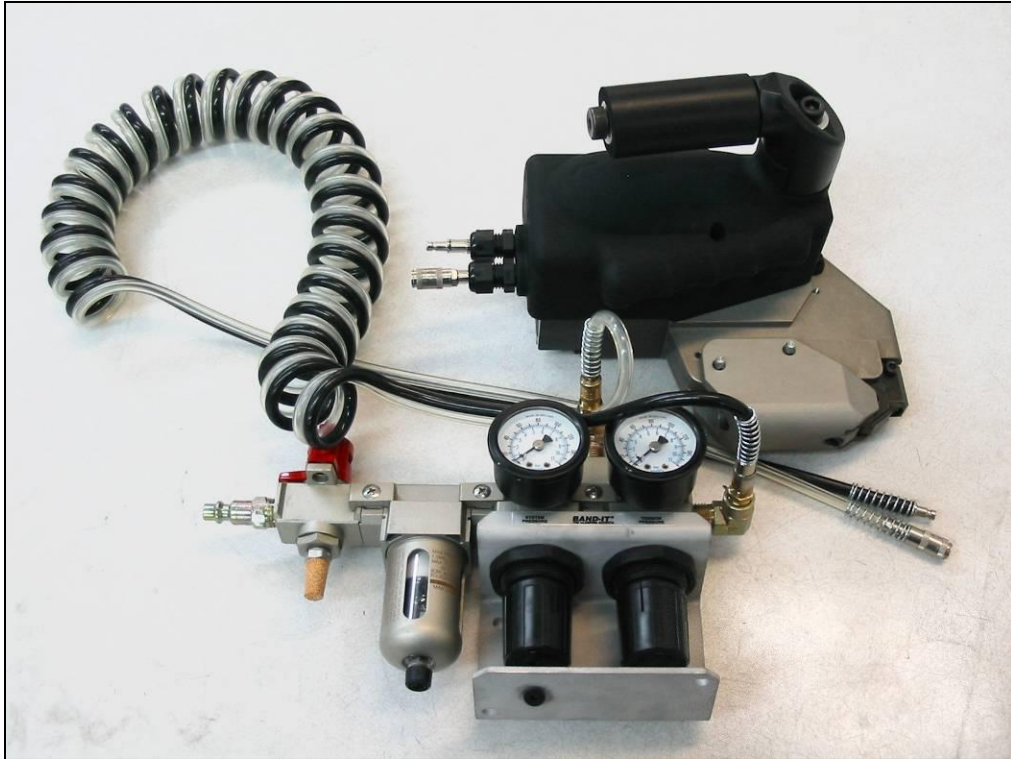


# Owner's Manual



## IT4000-AB

### 5/16" Band-Lok Tool



**IT4000** — **A B** — **0 0 0**

Base part number

Product level  
Revisions are not  
compatible

Tool revision  
Revisions are  
compatible

Other options:

0 – None (standard)

Trigger options:

0 – Standard thumb trigger

1 – Connection for a remote trigger

(I17490, Foot Control Kit, is  
available to purchase separately)

Packaging options:

0 – Tool with all accessories (standard)

1 – Tool only

BAND-IT-IDEX, Inc.  
A Unit of IDEX Corporation  
4799 Dahlia Street Denver, CO 80216-0307 USA  
P: 1-800-525-0758 F: 1-800-624-3925



WWW.CABLEJOINTS.CO.UK  
THORNE & DERRICK UK  
TEL 0044 191 490 1547 FAX 0044 477 5371  
TEL 0044 117 977 4647 FAX 0044 977 5582  
WWW.THORNEANDDERRICK.CO.UK



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**IT4000-AB**

**5/16" Band-Lok  
Tool**

# Warranty & Safety Guidelines

## Warranty:

For Warranty information visit the following URL

**[www.BAND-IT-IDEX.com/Warranty.html](http://www.BAND-IT-IDEX.com/Warranty.html)**

## Safety Guidelines

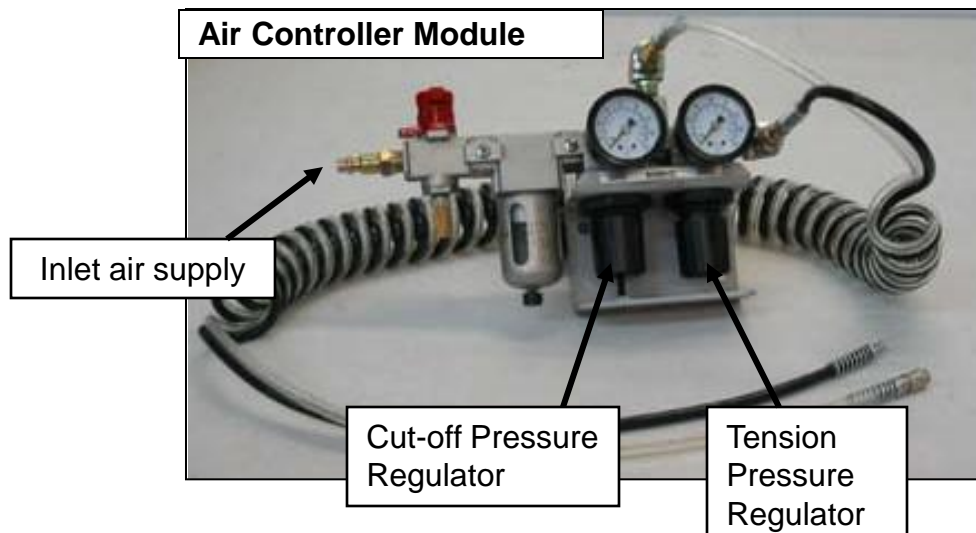
- Read this manual and become familiar with the tool before installing any clamps.
- Protective eyewear should be worn when connecting and disconnecting the tool to compressed air sources and during operation.
- Wear appropriate gloves for handling steel while operating this tool, applying stainless steel clamps and removing scrap clamp tail.
- Clamp tensioning can be immediately stopped by releasing the tool trigger system.
- When applying clamps, care should be taken to insure fingers and loose clothing are not in the way of the clamp being applied.
- Never attempt to clamp objects which have a potential to burst, shatter or otherwise cause bodily harm.
- Disconnect air supply and electrical power prior to maintenance and disassembly of tool components.
- Liquids or lubricants should never be put into the air lines.

The IT4000 is a pneumatic tool that needs a clean and dry air supply. The BAND-IT Air Controller Module includes a filter to meet these requirements. For proper tool performance, the air requirements at the inlet to the BAND-IT Air Controller Module of the IT4000 must be:

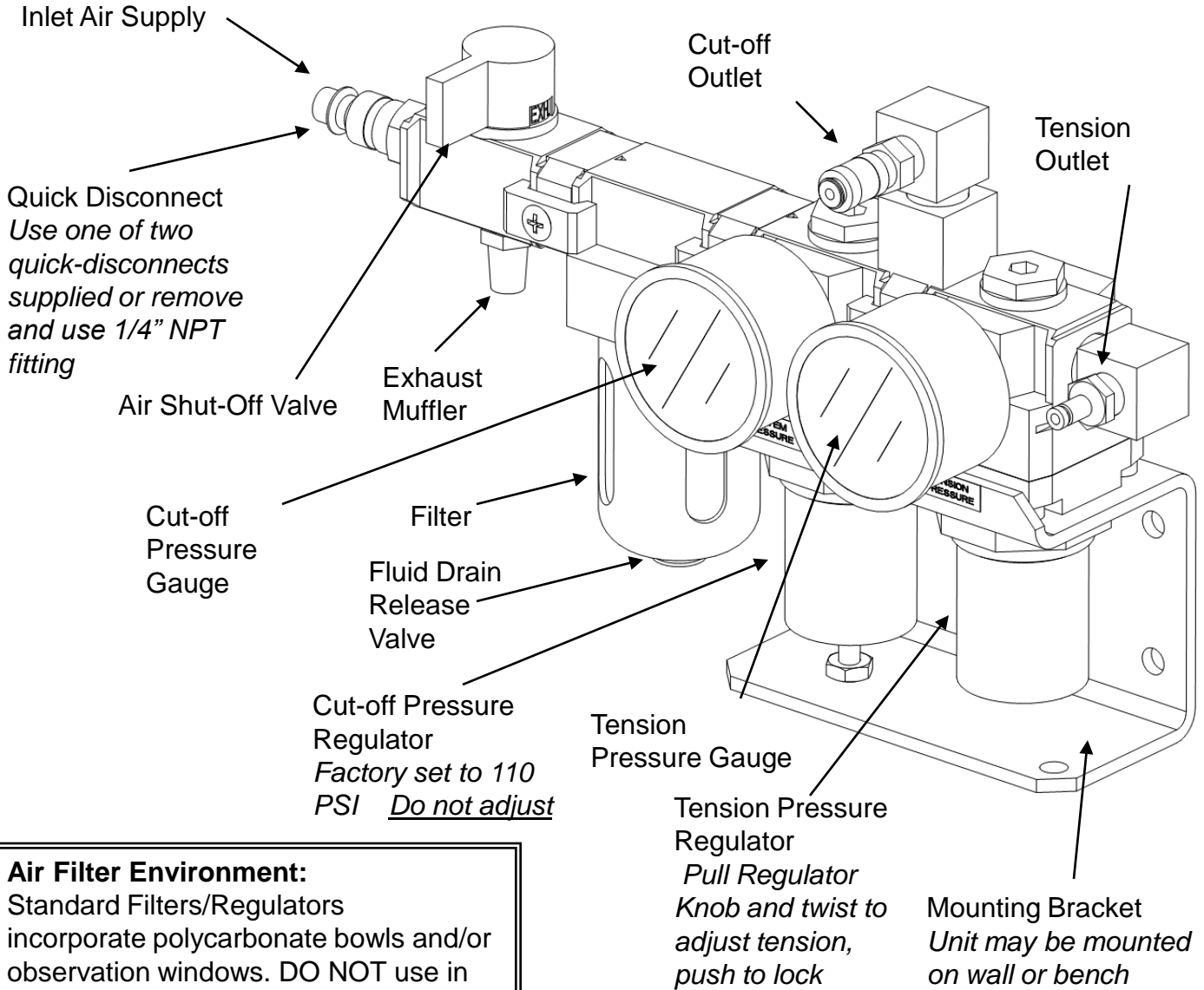
Item	Min	Max
Inlet Supply Pressure (PSI)	100	140
Inlet Supply Air Flow (SCFM)	1.5	
Particle Size In Air Supply (microns)		5
Air Moisture Content		20% RH
Tension Pressure Settings (PSI)	50	70
Cut-off Pressure Setting (PSI)	110	115

**Note** – An Air Booster Unit is now available to meet air pressure requirements. Please have tool model and serial #'s available when calling the factory for service assistance. Contact BAND-IT-IDEX customer service, 303-320-4555.

**Caution** – Do not exceed a Tension pressure of 70 PSI. Pressures above 70 PSI may cause premature clamp failure.



### Air Controller Module



#### **Air Filter Environment:**

Standard Filters/Regulators incorporate polycarbonate bowls and/or observation windows. **DO NOT** use in an environment that will expose the above mentioned components to synthetic fluids, organic solvents, chemicals, cutting lubricants, thread lock solutions or similar materials.

**Note:** Air Controller Module must be mounted and operated in a horizontal position.

**The standard IT4000 shipping container includes:** Air Controller Module, IT4000 tool body, coiled air line, owner's manual and tool kit. (tools with packaging option 1 include the tool and manual only)

### Initial Setup - Pneumatics

- Connect the tool body to the Air Controller Module using the included Coiled Hose Assembly. The hose assembly includes both a clear and black hose. Each hose end includes a female and male fitting, arranged to prevent reversing of connections.
- Connect Air Controller Module to air source (assure air supply meets requirements on **page 4**) and turn RED Shut-off Valve counter clockwise to pressurize tool (supply position).
- **Cut-off Pressure: 110 PSI recommended.** Make sure the Cut-off Pressure Gauge located on the left side of the module reads a pressure of 110 PSI min and 115 PSI max..
- **Tension Pressure: 70 PSI recommended.** The Tension Pressure Gauge monitors the tension applied to the clamp tail. Recommended air pressure at the Tension Gauge should be 50-70 PSI for BAND-IT 5/16" Band-Lok ties.
- **Caution:** Tension pressures above 70 PSI may cause premature clamp failure and/or tool wear.

### Setting the Tool Air Pressure

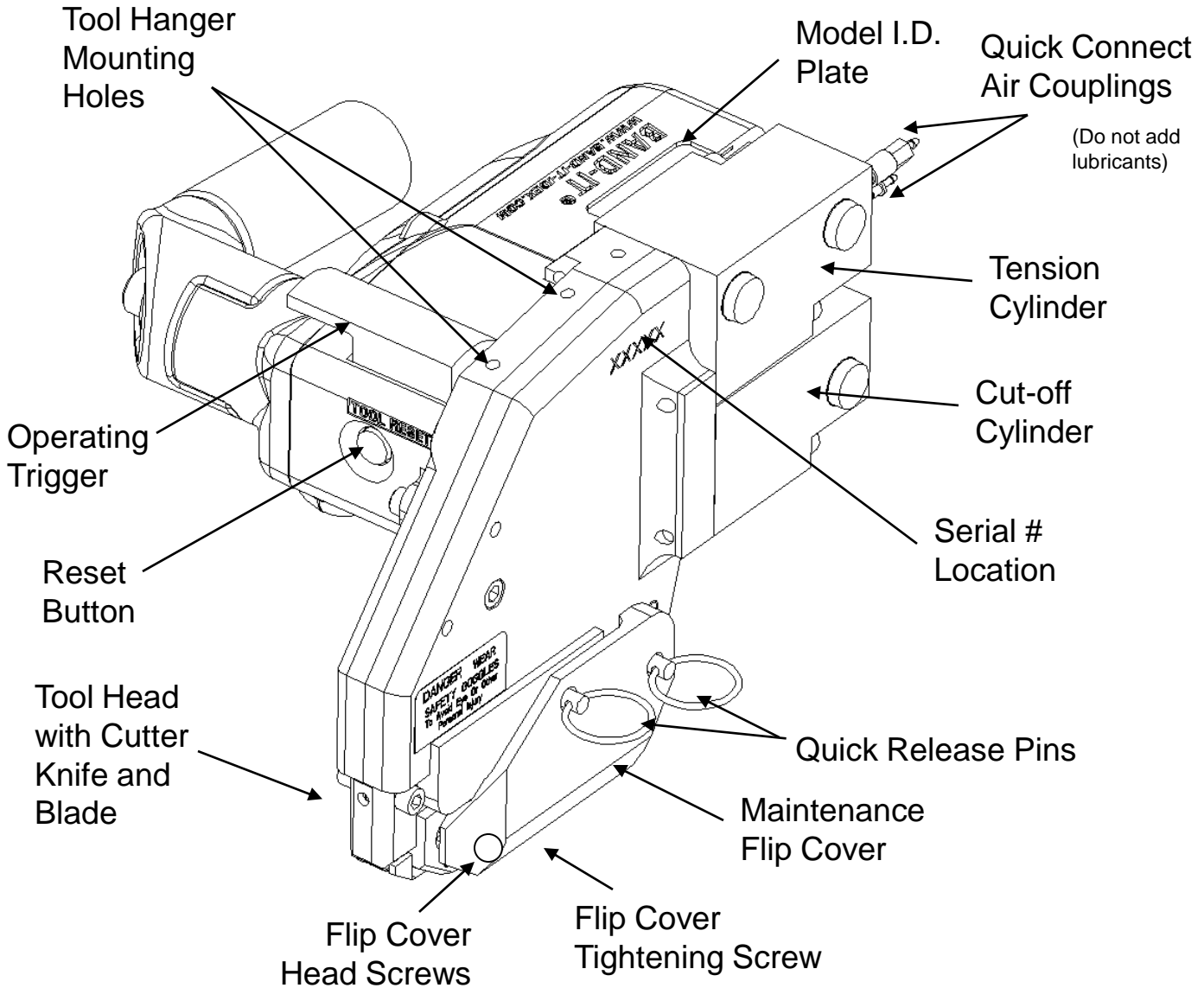
The tension pressure directly affects the force applied to the clamp.

To correctly set the air pressure from the air controller module going to the tool, hook up the air supply to the tool. Activate the tool by depressing the trigger for a few seconds. Re-read the pressure when the tool is at rest and adjust again if necessary. Repeat until the desired pressure is shown on the tension pressure gage.

Tension pressure may need to be adjusted depending on the application.

**Parts  
Identification**

**IT4000-AB Tool Body**



**Important:** Before disassembling tool, be sure to shut-off air supply on the Air Controller Module.

# Tool Overview

## Pneumatic System:

The pneumatic valves and cylinders contain seals and o-ring components which can experience accelerated wear associated with quality of the supply. Worn cylinder o-rings allow air to bypass the pistons in the cylinders, affecting the performance of the tool and cause the output force of the tool to drift. Although cylinders are permanently lubricated, premature wear can be caused by contaminants in the air supply or the presence of water and oil. The tool's internal valves can also be affected by contaminants in the air lines causing a valve malfunction.

BAND-IT recommends the use of an Air Booster System to address the potential problems associated with low air supply. In addition to filtering and drying the air supply, it will assure pressure of 110 PSI improving the consistency of tool performance.

## Tool Function:

The IT4000 tool utilizes the conditioned air supply to actuate the mechanical linkage. The linkage activates a gripping system which tensions BAND-IT Band-Lok clamps. The tension output of the tool can vary depending upon the air pressure supplied to the tool. If the pressure is increased, the output force increases.

During the tension cycle, the tool continues to tension the band until the pre-set tension is achieved. The tool stops tensioning when the pressure in the tension cylinder equals the inlet tension pressure coming from the air controller module. After the tool has achieved the preset tension, its valve switches over to the cutoff cycle. The gripping system retains force on the clamp until a knife is actuated down, forming the lock, and cutting the excess clamp tail.

# Setup & Assembly Instructions



## IT4000-AB

### 5/16" Band-Lok Tool

#### Handle adjustment:

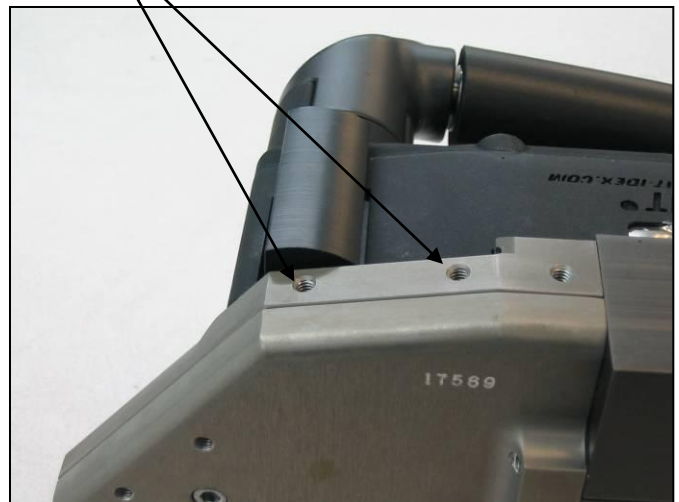
- Using 1/4" hex key (supplied), adjust the Support Arm/Handle to ergonomically match the operators hand.
- Be sure not to adjust the Handle too far outward (beyond interlocking legs) or the handle will not function properly or provide support to the operator.



#### Hanger Support Instructions:

1. An aluminum hanger (accessory) can be utilized for supporting the tool.
2. A hanger can be installed (as shown) into the two threaded holes.
3. Secure the hanger against the tool body with the two supplied screws.
4. A light application of vibratite is already included on the screw's thread.

#### Hanger Mount



# Setup & Assembly Instructions



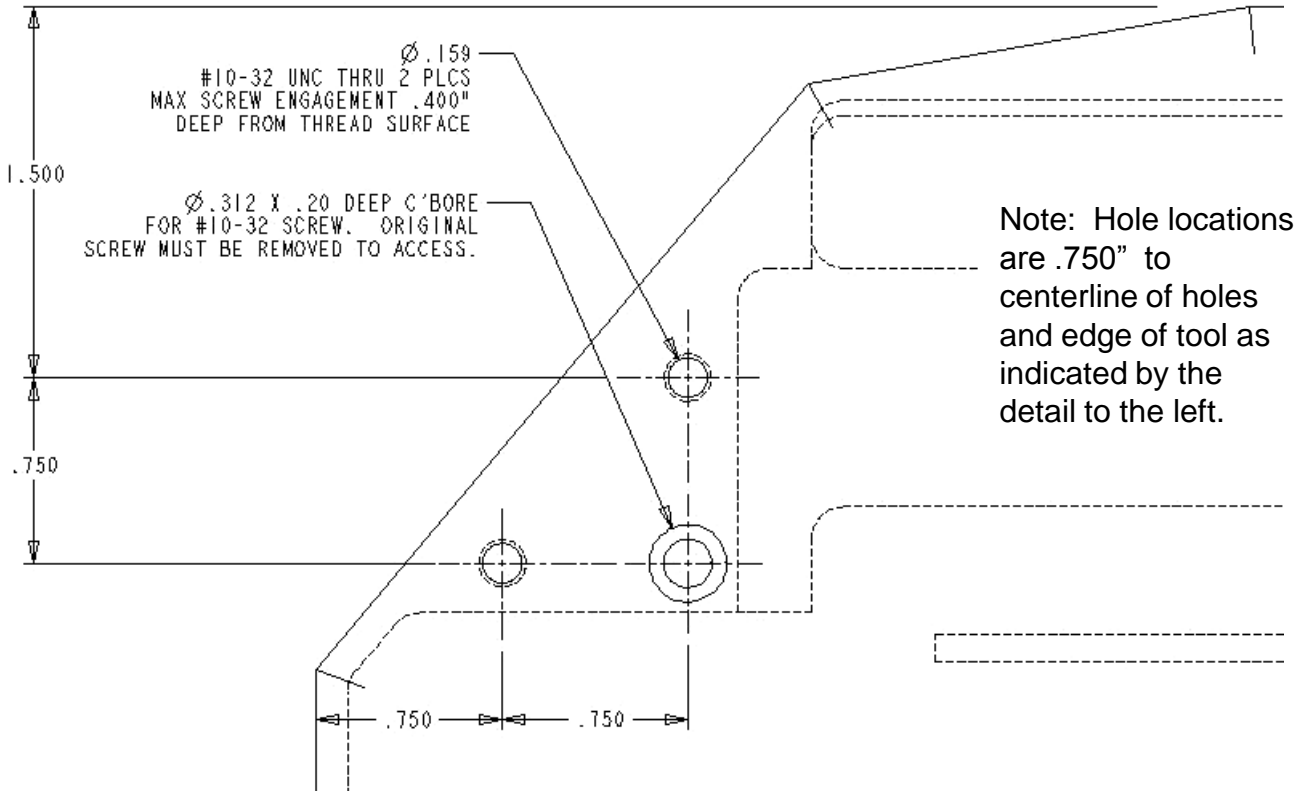
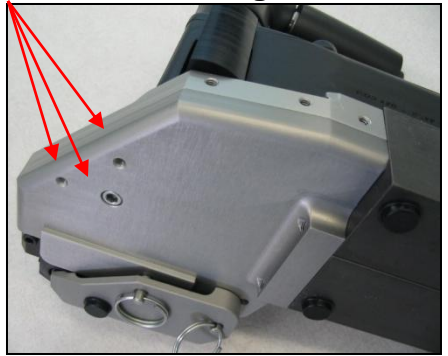
## IT4000-AB

### 5/16" Band-Lok Tool

#### Fixture Locating Points

Three additional fixture mounting holes are available to assist with mounting the IT4000. Thread size is #10-32 for each of the holes. Usable thread depth is .400" for two of the three fixture holes. One hole is utilized to attach and lock the tool body halves together. This hole may also be used for fixturing, provided the #10-32 cap screw is replaced with a similar threaded screw with appropriate thread length secure the two halves together in addition to fixturing.

#### Fixture Mounting Locations



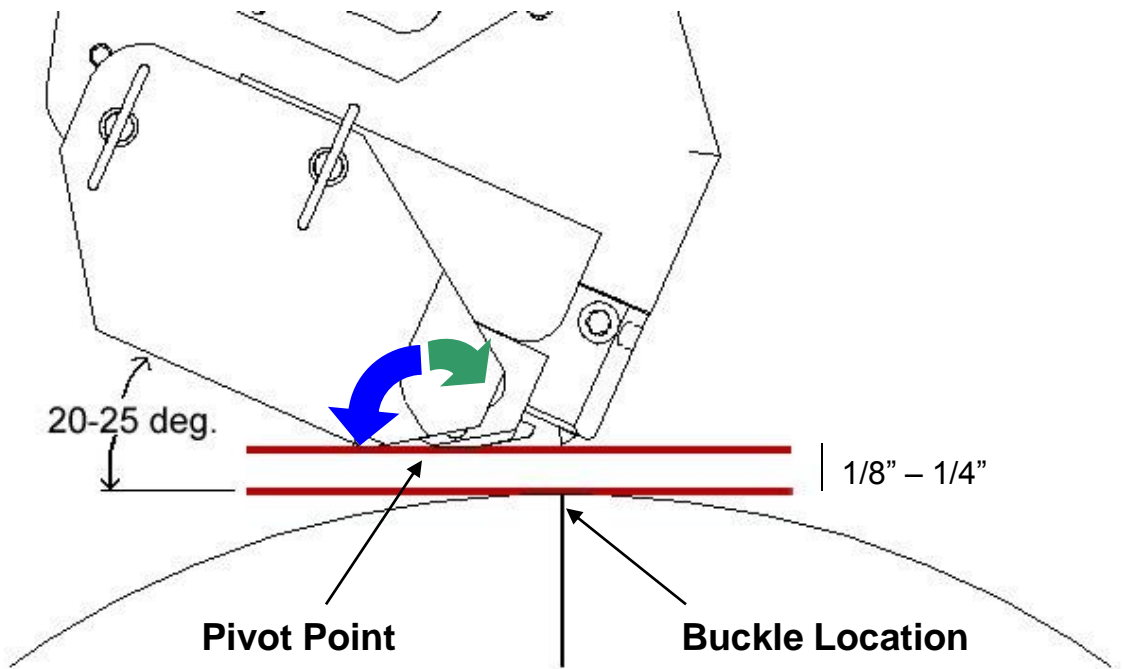
# Setup & Assembly Instructions



## IT4000-AB

### 5/16" Band-Lok Tool

Part of insuring that the tool is producing a strong lock is making sure that it approaches the application correctly and is fixtured to allow repeatability of application. The tool should approach the surface tangent to where the buckle of the band is to be applied. The tool should be allowed to float 1/8" – 1/4" above the surface to allow the buckle to move to the proper position for cut-off. Once the tool begins tensioning, the band will pull the tool down to the surface.



As the band is tensioning, the tool may rotate clockwise up to 5 degrees about the pivot point (Green Arrow). During the cut-off cycle, the tool must be allowed to rotate counter-clockwise up to 35 degrees (Blue Arrow). Because of this movement, **BAND-IT recommends that the tool be mounted in a fixture that will provide adequate rotation during both cycles.**

### IT4000 Orientation Requirements:

- The IT4000 tool has a number of Tool/Clamp/Object Being Clamped orientation requirements that must be followed in order to reach an acceptable end result.
- In concept, the fixture maker should attempt to replicate the natural human wrist/elbow/shoulder motions that would occur when operating the tool in the hand-held configuration, allowing the tool to float along a plane through the entire Tension (pull-up) and Cut-Off (lock) process.

### The tool **MUST**:

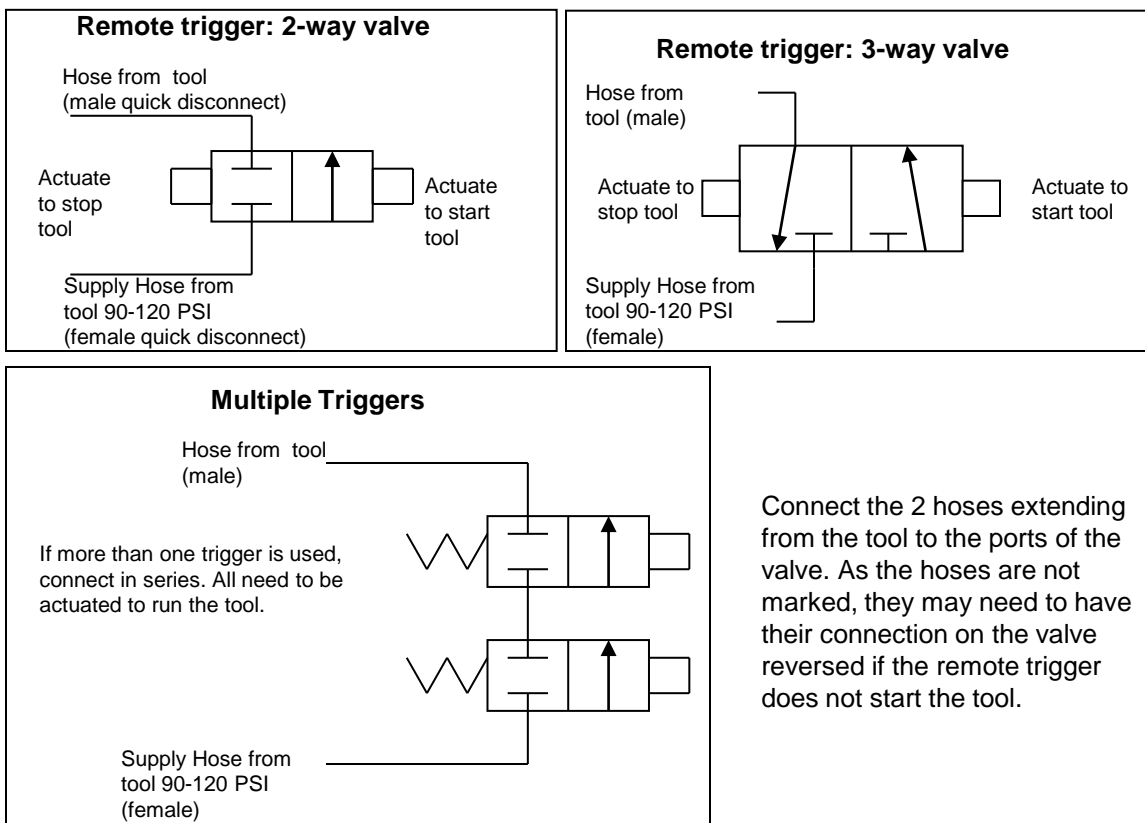
- Contact the object being clamped without restricting or forcing.

### Suggestions Include:

- The tool fixture should be able to accommodate some longitudinal rotational movement, i.e. "wrist like", at the final moment of applied tension. The purpose being, to allow the tool freedom of movement to orient itself in its best natural orientation as relates to the clamp and the object-being-clamped.
- A home or neutral position should be established at the optimal final position with +/- 10-12½ degrees of rotational freedom being allowed from the pivot point.
- The tool fixture should be able to accommodate some extensive movement, i.e. "elbow like", during the tension phase to allow the tool to be "pulled" up to the object being clamped.
- Deviations from accommodating the natural inclination of the tool/clamp/object being clamped, may negatively impact the integrity of the final assembly. The clamp should fully rest upon the object being clamped at the time of final tension and cut-off. If the tool can not reach the object being clamped and attempts to cut-off, the clamp and/or lock may not form optimally.

### IT4000 Configured for Remote Actuation:

- The IT4000 with trigger option 1 and is a modified version of the base unit. A tool with trigger option 0 is manually operated via the incorporated thumb actuation lever. A tool with trigger option 1 is configured to allow remote operation via palm button or other device permitting the tool to be incorporated into the customer's fixture or assembly process. Band-It offers a Foot Control Kit (I17490) for this purpose.
- The modification consists of deactivating the thumb lever actuation switch and installing two 6-ft X 1/8" O.D. hoses to accomplish the same task via the use of a remote actuation device such as a palm button or other device that can provide a pneumatic signal to pilot the tension control valve.
- Various actuation devices can be incorporated based upon end user requirements. Basic schematic for 2-way & 3-way valves included below. The valve should be set up in the normally closed mode and upon opening the circuit a supply of air is provided.
- The customer is responsible for incorporating this tool into their process, BAND-IT is available to provide advice and recommendations.



#### Clamp Installation:

When installing a clamp, a random visual check to verify the presence of a locking lip after the clamp has been applied is recommended. The lip is the locking element of an installed band. The IT4000 forms a dimple into the band at the buckle edge with the knife. By controlling and monitoring the items that are needed to form a good lock, an operator can help insure that the clamp will be applied correctly without having to inspect every assembly.

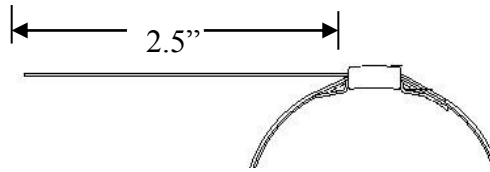
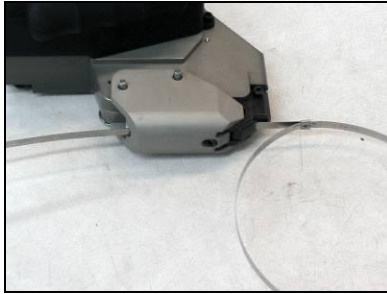
These items are:

- Adequate air pressure and volume (see **page 4, 6**)
- Setting the tool air pressure (see **page 4, 6**)
- Following recommended PM Schedule (see **page 21**)
- Fixture mounting the tool properly (see **page 10-13**)

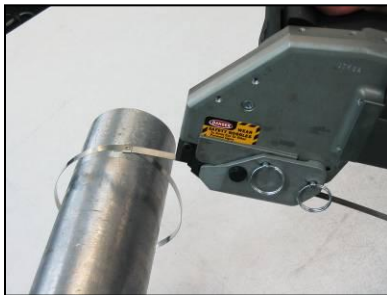
#### For best performance and to extend tool life:

- Follow preventative maintenance and parts replacement instructions (**page 21**) at appropriate service intervals.
- Do not remove factory applied lubrication from inside tool unless performing a thorough maintenance procedure and then replacing with fresh lubricant immediately.
- Do not use degreaser in the tool body.
- Do not spray any lubricant or cleaner into the Quick Connect Air Couplings.
- Use nominal recommended tension setting (listed on **page 4, 6**). Higher pressure may not result in a tighter clamp, but increases the likelihood of clamp tail jamming and premature worn parts.
- Do not over-tighten Knife Pin access screws. Over tightening of these screws may result in stripping screw threads.
- For maintenance beyond what is described in this manual, consult BAND-IT.

# Operating Instructions



1. Insert clamp tail into tool as shown. Clamp tail length extending into tool must be at least 2.5" (6.4 cm) long. The head of the tool should rest against the buckle. **Note - Do not activate tool while inserting clamp tail. This can cause clamp tail to jam in the Tension Block Assembly.**



2. Begin tensioning clamp by pushing and holding down operating trigger

3. Band should be applied to a uniform solid surface allowing the buckle adequate support during the clamp locking and clamp tail cut-off operation.



4. While tensioning clamp, hold tool slightly tipped forward. This will assist proper clamp installation. Continue to hold down operating trigger until tool completely tensions and cuts off clamp. Release trigger after cut off.

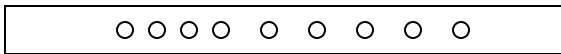


5. After clamp is completed, clamp tail scrap must be removed from tool. Clamp tail scrap is not ejected automatically. Tool is now ready for next clamp.

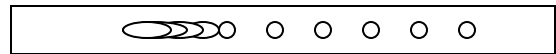
#### Tool fails to fully tension clamp:

Failure to fully tension the clamp can be caused by a variety of factors. The two most common factors are: incorrect tension pressure and problems in the Tension Block Assembly.

- Check tension pressure setting on Tension Pressure Gauge of Air Controller Module. Adjust pressure per the settings in the **Setup & Assembly Instructions** section found on (pages 9-11).
- After air pressure settings are verified or corrected, if failure to fully tension clamps continues, evaluate the clamp tail dimple pattern. If elongated dimples are present, the problem may be with the Tension Block.



*Normal clamp tail  
dimple pattern.*



*Clamp tail dimple pattern indicates  
problem in the tension block  
assembly.*

- If a problem is indicated, follow the instructions on **page 24** to remove the tension block assembly.
- Examine the Tension Block components for excess lubrication. Refer to lubrication instructions on **pages 24, 27**.
- If dirt or debris is visible, follow the cleaning instructions on **page 24**.
- Examine the Tension Block and Gripper for wear (see below).
- If excessive wear is determined, follow the instructions on **page 24** to replace the worn parts.

### Tool fails to cut off clamp tail:

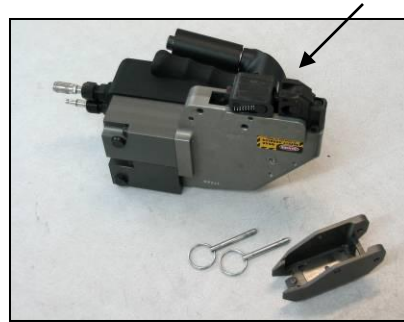
- The Inlet Air Pressure may be low. Check air supply to Air Controller Module. Cut-off Pressure Gauge should indicate 105 PSI minimum, 110 PSI maximum. See **pages 4 - 6** for air supply requirements.
  - The scrap clamp tail from the previous clamp may not have been removed. Press the Reset Button to release the tension on the clamp and remove the scrap clamp tail.
  - The Cutter Blade or Knife may be worn. See below for Cutter Blade inspection and replacement.
- **Note:** The Flip Cover Tightening Screw and Flip Cover Head Screws are factory tensioned and will need to have thread locking compound reapplied and be re-tensioned after the quick release pins are reinstalled upon completion of maintenance.

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### Cutter Blade inspection and replacement:



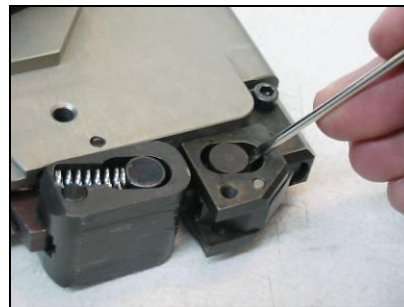
1. Loosen the Flip Cover Tightening Screw and Flip Cover Head Screws (**see note above**) to remove both Quick Release Pins as shown.



2. Remove Flip Cover and Tension Block Assembly for cleaning and lubrication.



3. Remove the Cutter Blade Pin and Cutter Blade.



4. When installing the Cutter Blade Pin, use a small screwdriver to push the front gripper toward the back of the tool.

# Troubleshooting Matrix

Symptom	Probable cause	Recommended Fix	Page
Tool will not tension properly (i.e. slipping, slow etc.)	Rear tension block slipping, therefore tool does not reach cut off tension.	Remove and inspect gripper block assembly. Replace as required.	24
	Front gripper slipping	Remove and inspect front gripper and gripper guide arm. Replace if worn.	*
	Dirty front and rear gripper interfaces	Remove and clean contact surfaces surrounding grippers.	24
	Air leaks when trigger is not activated	Listen for air leaks. Check red valve , Air lines, and replace as required. No air leaks allowed. Remove and replace as required or contact BAND-IT.	28
	Worn flip cover and tool body	Inspect inside of flip cover and bottom of tool body for excessive wear. Replace flip cover as required. For tool body wear contact BAND-IT for evaluation.	28
	Water or oil in pneumatic lines.	Purge pneumatic lines and red four way valve assembly. Install a desiccant air dryer or similar which meets tool set up requirements.	*
Tool will not cut off clamp tail	Tool cutting before full tension applied.	Verify cut-off timing. If required, remove right side body and adjust timing valve. Replace if damaged.	28
	Premature release of trigger	Hold trigger down until tool completes cut off cycle	15
	Fluctuating facility air pressure	Verify if facility air pressure meets tool set up requirements (see manual). Air booster system may be	4-8
	Worn knife/blade	Remove and replace knife and blade. Refer to maintenance schedule.	21,22
	Timing valve adjustment	Verify timing. If required, remove right side body and adjust timing valve. Replace if damaged.	28
	Rear tension block slipping, therefore tool does not reach cut off tension.	Remove and inspect gripper block assembly. Replace as required.	24
	Coiled hose line has air leak	Verify no air leaks in coiled hose assembly. Remove and replace as required.	4-8
	Front gripper slipping	Remove and inspect front gripper and gripper guide arm. Replace if worn.	*
Red four way valve malfunction	Remove clean and inspect. Replace as required.	*	
Worn blade pin or housing	Remove and replace blade pin and/or Maintenance Flip Cover	23	

**Troubleshooting  
Matrix**

Symptom	Probable cause	Recommended Fix	Page
Tool will not cut off clamp tail - Continued.	Linkage components damaged, causing interference	Remove tool left side body and verify linkage mechanism. Remove and replace damage as required or contact BAND-IT.	27
	Cut-off cylinder seal damaged or leaking	Remove left side tool body and verify seal integrity	*
	Cut off pneumatic air leak	Verify Coiled Hose Assembly is free of air leaks. Remove handle cover and inspect for leaks on gray anodized valve assembly and red valve assembly. Inspect for leaks in pneumatic system.	*
	Water or oil in pneumatic lines.	Purge pneumatic lines and red four way valve assembly. Install a desiccant air dryer or similar equipment which meets tool requirements).	4
	Screws holding Cutter Knife Pin too long or loose	Verify proper length screws and Cutter Knife Pin seated properly.	23
	Coiled hose line is reversed (i.e. cut off pressure is actually going to tension cylinder.	Verify coiled hose air line from right side of control module enters bottom fitting on tool.	4,5,7
Loose clamp after cut-off	Improper tool use	Verify operator properly trained and familiar with tool manual.	5,7,8,14
	Tension setting too low	Adjust Air Controller Module's tension setting per instructions.	4
	Improper buckle location or application	Locate buckle on smallest radius area. Buckle must be supported underneath during application. Contact BAND-IT for application verification / recommendation.	15
	Tool cuts clamp tail before reaching full tension.	Verify timing. If required remove right side handle and adjust Timing Valve. Replace if damaged.	28
	Worn Cutter Knife/ Cutter Blade	Remove and replace Cutter Knife and Cutter Blade. Refer to maintenance schedule.	17
	Air leaks when trigger is not activated	Listen for air leaks. Check red valve, Air lines, and replace as required. No air leaks allowed. Remove and replace as required or contact BAND-IT.	Contact BAND-IT for assistance
Tool will not operate when trigger is depressed	Control Module air pressure valve is in "off" position.	Rotate Control Module valve to open position. Verify gauges read air pressure.	5
	Pinched coil hose line	Loosen fitting on coiled hose assembly where it enters tool body.	4,7
	Kinked or pinched air line	Remove right side handle and inspect air lines. Remove and replace as required.	28
	Tension piston interference with hanger screw holes.	Loosen Hanger Screw on top of tool. Thread engagement cannot exceed .125 in.	11
	Quick disconnect fittings not positively engaged.	Disconnect and firmly reconnect.	5,8

**Troubleshooting  
Matrix**

<b>Symptom</b>	<b>Probable cause</b>	<b>Recommended Fix</b>	<b>Page</b>
Clamp will not insert into tool	Control Module air pressure valve is in "off" position.	Rotate Control Module valve to open position. Verify gauges read air pressure and check all air connections.	5
	Clamp tail inside tool	Remove clamp tail, if jammed remove maintenance/flip cover and remove clamp material.	15,17
	Knife is in down position.	Remove or replace knife. Verify missing and or damaged linkage.	23
	Wrong clamp type for tool	Verify proper tool for selected clamp.	cover
Handle will not adjust	Handle nut is damaged/misaligned.	Remove handle assembly and inspect nut/housing for damage. Replace as required.	9

\* = for additional assistance, contact BAND-IT

**Tool Preventative Maintenance:**

The tool has some wear components that must be checked and replaced on a certain schedule. BAND-IT has developed a Preventative Maintenance (PM) schedule to help facilitate these requirements. If tools are experiencing difficulties during function or there audible air leaks coming from inside the handle, the tool should be returned to BAND-IT-IDEX, Inc. for servicing.

BAND-IT recommends that the tool be sent in for general overhaul every 100,000 clamps installed.

**Preventative Maintenance Schedule**

<b>Clamps Installed</b>	<b>Maintenance Item</b>	<b>Maintenance Action</b>
Every 12,500	Tension Block Assembly	Clean & Re-Lubricate
	Flip Cover	Clean & Re-Lubricate
Every 25,000	Mechanical Linkage	Clean & Re-Lubricate
	Tool Head	Clean & Re-Lubricate
	Cut-off Blade	Replace
	Cut-off Knife	Replace
	Front Gripper	Clean & Re-Lubricate
Every 50,000	Blade, Blade pin, Knife and Knife pin	Replace
	Tension Block Assembly	Replace Assembly
	Front Gripper	Replace Gripper

Production tools will experience wear of specific parts. Preventative maintenance, including regular cleaning and lubrication, will reduce the replacement frequency of these parts. To maximize life, use synthetic gel lubricant containing Teflon. See **(pages 22-28)** for tool maintenance. When repairing tools, threaded fasteners should be secured using a small amount of Loctite, Blue - Medium strength being careful to apply sparingly.

Part #	Replacement Parts Description	Quantity per Tool
I16087	Knife	1
I13887	Knife pin	1
I17687	Knife mounting screws	2
I16187	Blade	1
I13987	Blade pin	1
I30187	Tension block	1
I30190	Tension Block Assembly (Includes I30187, I10388, I10888, and 2 A38487)	1
I24199	Flip Cover Assembly (Includes assembled flip cover and 2 quick release pins)	1
I16387	Lubricant (synthetic gel lubricant containing Teflon)	

**Note** –Please have tool model and serial #'s available when calling the factory for service or assistance. Contact BAND-IT-IDEX customer service, 800-525-0758.

Part numbers are subject to change.

#### Knife Assembly Replacement:



A) Remove Cutter Blade as described on **page 17**.

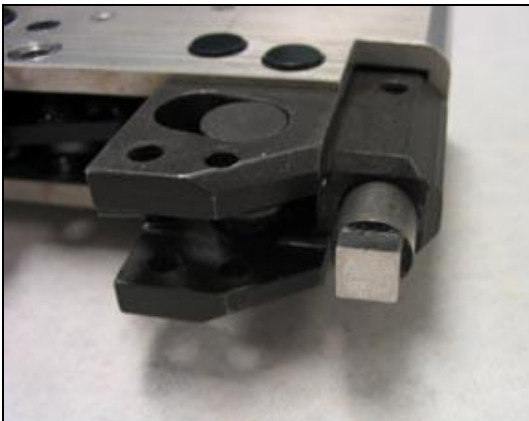
B) Remove the 2 Knife Pin access screws. These are special length screws.

**Important:** When repairing tools, threaded fasteners should be secured using Loctite, Blue - Medium strength.



To remove Cutter Knife Pin the Knife Assembly must be in its uppermost position indicated by the Cutter Knife Pin in line with the access hole. If not aligned, connect the tool to the Air Controller Module. Open the Air Shut-off Valve to momentarily pressurize the tool. Close the valve and disconnect the tool from the Air Controller Module. Then push out the Cutter Knife Pin with a piece of wire (for example, a bent paper clip).

Note the orientation of the knife prior to removal.

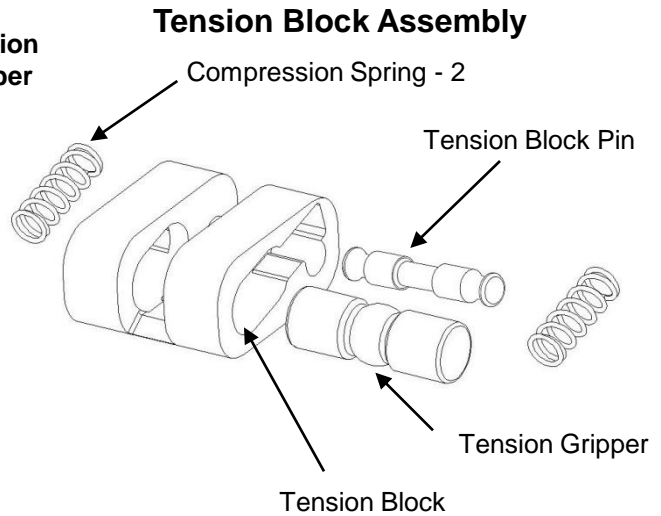
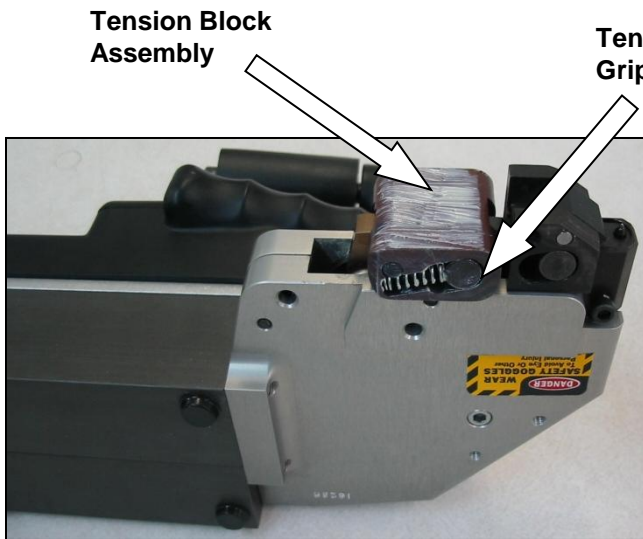


Once the pin is removed, grasp the Knife Assembly with a pair of needle-nose pliers and pull out of tool head. Examine for wear and replace if needed.

Re-install all parts in reverse order. After the Maintenance Flip Cover is installed and Quick Release Pins are in place, apply tension to the Flip Cover Tightening Screw and Flip Cover Head Screws.

#### Tension Block Assembly Maintenance:

Remove the Maintenance Flip Cover by loosening the Maintenance Cover Tightening Screw and Flip Cover Screws on the Maintenance Flip Cover and removing both Quick Release Pins as shown on **page 17**.



#### Tension Block Assembly, inspection and parts replacement:

##### Disassembly:

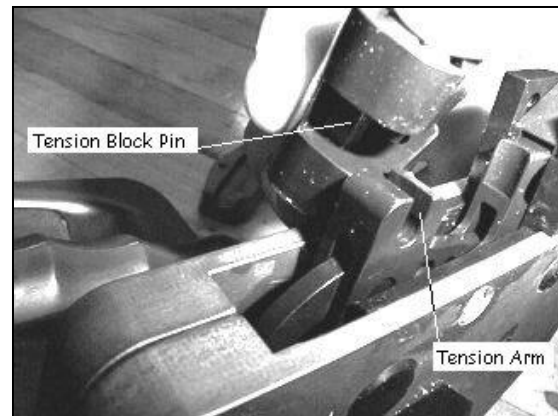
- Lift and remove the Tension Block Assembly from the notch on the Tension Arm.
- Push out the Gripper. remove the loose Gripper Springs.
- Push out the Gripper Pin.

##### Inspection:

- Inspect and replace the Tension Block if worn.
- Inspect and replace the Tension Gripper if worn.
- Inspect and replace the Gripper Pin if worn.

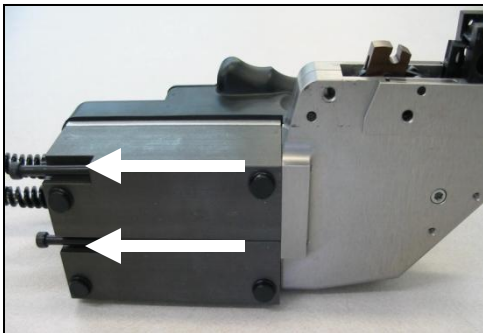
##### Reassembly:

- Lubricate the Gripper surfaces as shown on **page 27**.
- Install the Gripper in the Tension Block.
- Lubricate the Tension Pin surfaces as shown on **page 27**.
- Install the Gripper Pin in the Tension Block.
- Reinstall the Gripper Springs.
- Reinstall the Tension Block Assembly. Be sure to engage the Tension Block Pin with the notch on the Tension Arm.
- Lubricate the Maintenance Flip Cover as described on **page 27**.
- Reinstall the Maintenance Flip Cover and insert Quick Release Pins.
- Tension the Flip Cover Tightening Screw and Flip Cover Head Screws to complete reassembly.

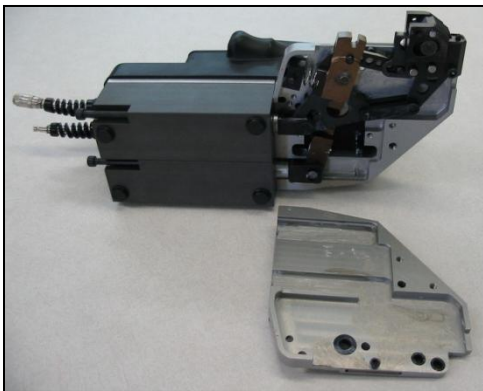


- Remove the Maintenance Flip Cover. Examine all moving parts and linkages for wear.
- Using an air nozzle, gently clean the parts of any dirt and metal filings in the tensioning cavity.
- Using cotton swabs or a short bristled brush, continue to wipe away any foreign debris and purge once again with the air nozzle.
- After thoroughly cleaning all moving parts, re-lubricate all surfaces. Following are lubrication instructions.
- For mechanical parts lubrication use a synthetic gel lubricant containing Teflon.

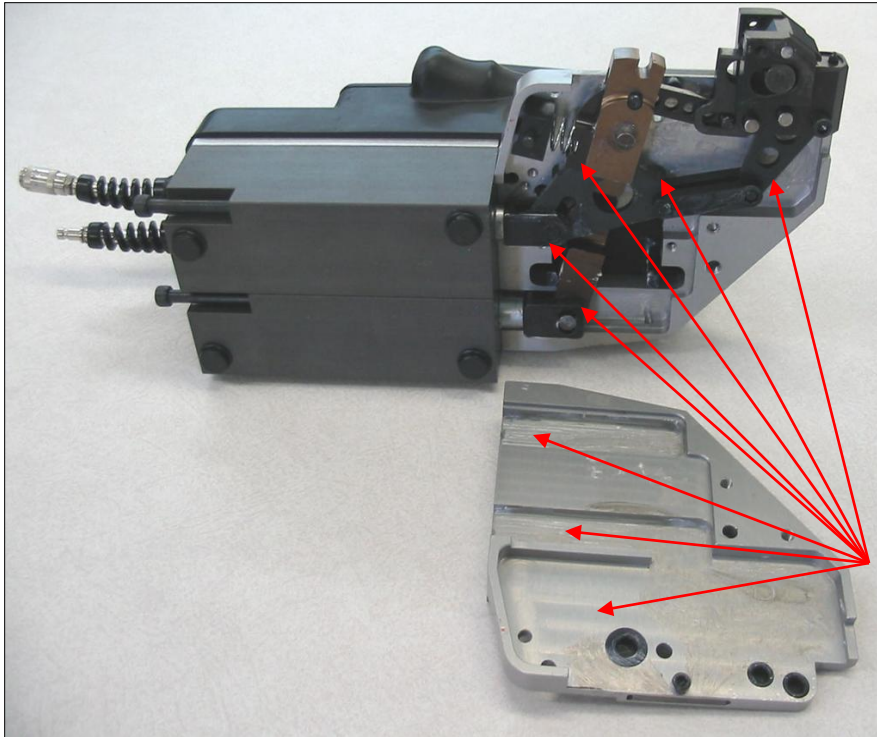
### Procedure for disassembly to clean and lubricate the mechanical linkage points



- 1) Remove the two screws located at the back of the cylinders. Remove third screw holding the side bodies together. Holding the tool in place, gently lift the side cover exposing the mechanical linkage. This side cover is a close fit and may require a slight rocking motion to separate the cover from the tool.



- 2) Examine the linkage for over-all condition such as dirt, metal filings, liquid contamination and lubrication.
- 3) Examine the upper cylinder (tension cylinder), for evidence of air leaks, noted by residue around the piston.
- 4) Clean tool cavity, including tool body, linkage, and already removed tool cover.



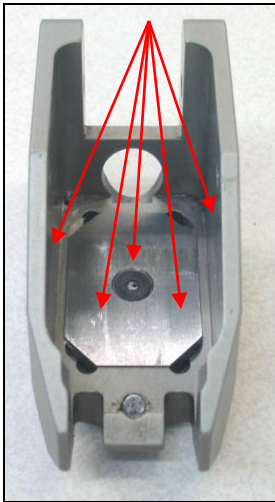
- 4) Lubricate the removed cover as shown with red arrows above. Also, lubricate the tool body, linkage and Tension Block Assembly as shown on **page 27**.
- 5) Inspect all mechanical linkage for lubrication, proper placement and refit cover.
- 6) Secure the tool side cover by inserting and tightening (2) #10 – 32 X 4" length cap screws through the Cylinder Housing and into the Cover. Apply a light dab of Blue Loctite to one or two threads to prevent loosening during operation.

**Lubrication** – Follow recommended intervals – Use a synthetic gel lubricant containing Teflon for the internal parts as shown and described. Lubricate all pivot points and internal surfaces of maintenance flip cover with a light coating of the lubricant.

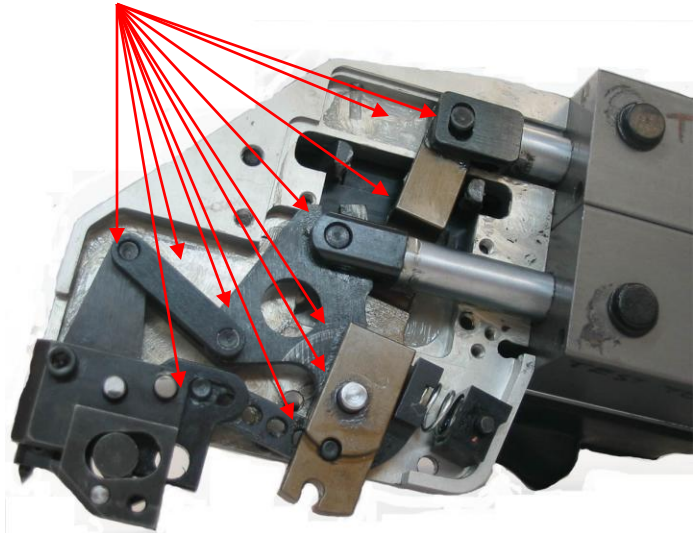
**Caution** – Excessive amounts of lubricant may result in gripper slippage, requiring a full repeat of cleaning process.

*Lightly lubricate all points indicated with red arrows.*

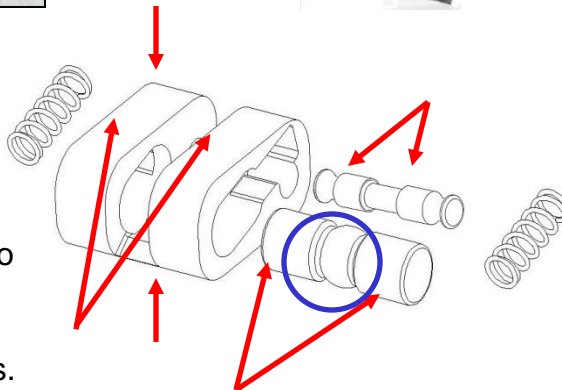
Maintenance Flip Cover  
every 12,500 cycles



Tool mechanics  
every 25,000 cycles



After the Maintenance Flip Cover is cleaned, lubricated, installed and Quick Release Pins are in place, apply tension to the Flip Cover Tightening Screw and Flip Cover Head Screws. Refer to **pages 7, 17.**



Tension Block Assembly  
every 12,500 cycles

Note: Ensure no lubrication is present in the center of Gripper. (indicated by the **blue circle**)

### Procedure to adjust the timing of the clamp tail cut-off:



The Timing Valve will be affected over time by contaminants in the air system. Moisture, dirt particles, oil and solvents can cause blockage or fluctuations in the tool performance.

Cycle should be .5 – 1.0 seconds.

Cut-off timing set too short will not allow the clamp to achieve the desired tension before switching to the cut-off function causing a loose clamp. Clamping on softer objects requires a longer timing.

Cut-off timing set too long may slow production and cause operator to twist the tool during application. This may damage tool.

### Procedure:

- 1) Remove the two cap screws in the Handle Cover with a 9/64" hex key. Remove cover and lay aside during their removal. The Brass Needle Valve used to adjust timing is highlighted in view to the left.
- 2) To adjust: Hold the valve in position being careful not to kink tubing inside tool. Start by gently turning the Adjusting Valve Screw clockwise until snug. Back out the Adjusting Screw counterclockwise 1 1/2 turns. This should be the proper setting, yielding a .5-1.0 second delay.
- 3) To test and verify proper adjustment: Connect the tool to the Air Control Module, then turn supply valve on. Gently kink the coiled air supply tube connected to the bottom Quick Connect Air Coupling (top photo), then activate the Tool Trigger. This action causes the tool to cut off, allowing the timing to be reviewed. Adjusting the Timing Screw in by 1/2 turn will slow the tool's cut-off action. Adjusting the Timing Screw out by a half turn increases the speed of the cut-off activation. Repeat this entire step until timing is set at a .5 – 1.0 second delay. **Caution: Setting timing to less than .5 may result in loose clamps.**

