



SYSTEM OPERATOR & SAFETY MANUAL



US PATENT: US8397969B2
PATENT PENDING





**DO NOT OPERATE THE NITROSET TOOL
UNLESS YOU HAVE COMPLETELY READ
AND UNDERSTOOD THE SAFETY
MANUAL!**

THIS TOOL IS TO BE USED BY ONLY
PROPERLY TRAINED OPERATORS.
HANDLING OR OPERATING THIS TOOL WITHOUT
PROPER TRAINING MIGHT RESULT IN SERIOUS
INJURY TO THE OPERATOR OR BYSTANDERS.

Safety Precautions

Basic Instructions

- You are required to understand and follow all safety instructions for proper and safe use of NITROSET® tools. If you require any assistance, please contact your jobsite safety foreman.

Required Safety & Protective Equipment

- **Always** wear proper safety equipment including safety glasses, hard hats, hearing protection, and gloves while operating the tool.



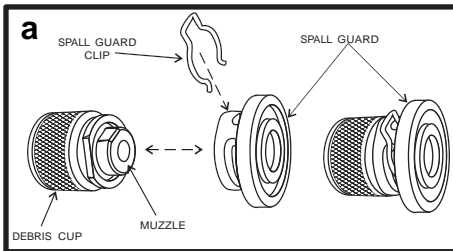
Misuse of the Tool

- Manipulation or modification of the tool is not permitted. Any alteration of the tool or use of non-genuine NITROSET® parts might impair function or cause damage to the tool. Use of non-genuine parts will void any warranties.
- Do not operate in an explosive or inflammable environment.
- Never put your hand over the muzzle end of the tool.
- Never point the tool at yourself or any bystanders.
- Never press the muzzle-end of the tool against any part of your body or anyone else's body.
- Only fasten into appropriate substrates. Use of inappropriate substrates may cause injuries.
- Never attempt to disassemble, modify or alter the fastener assemblies. Use only the required length and type of pin (with correct muzzle) for the application.
- Use only genuine NITROSET® Fasteners with the NITROSET® system. Use of incorrect fasteners might lead to injury or damage to the tool.

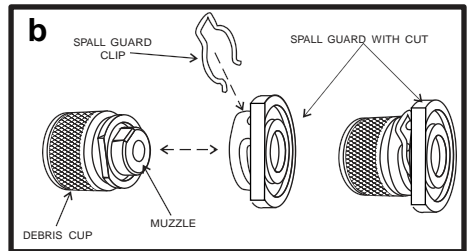
General Safety Precautions

- Inspect the tool to ensure that the tool is complete, undamaged, and all parts **secure** prior to use. Damaged parts should be replaced using genuine NITROSET® parts.
- Insert the fastener assembly completely into the muzzle to ensure the correct function of the tool. Fasteners that do not completely insert into the muzzle should not be used and should be disposed of appropriately.
- Never leave a loaded tool unattended. Only load the tool prior to making a fastening.
- Always remove fasteners and any debris from the muzzle prior to cleaning, servicing, maintenance, or storage of the tool.
- Always hold the tool securely and at right angles to the working surface when making a fastening.
- Use the provided NITROSET® Spall Guard to prevent concrete spall.

Round Spall Guard



Spall Guard with cut



For Pins & Pins with Washers

For Clip Assemblies

Spall Guard Usage Instructions

1. Install appropriate spall guard to nosepiece.
 - a. Regular Spall Guard - Use with Pins & Pins with Washers
 - b. Spall Guard with Cut - Use with Fastener Assemblies with Clips
2. Ensure spall guard is installed flush.
3. Install the retention clip to the nosepiece to hold spall guard in place.

According to ANSI A10.3 and DOT (ref: EX2009040168) NITROSET® tools are not classified as a powder actuated tool, thus no licensing is required.

Worksite Preparation

Acceptable Base Materials

The NITROSET® tool is for fastening into the following base materials only:

- Concrete
- Structural Steel

Never attempt to fasten into any other materials other than those listed above.

Inappropriate Base Materials

The NITROSET® tool is **NOT** for fastening into the following base materials:

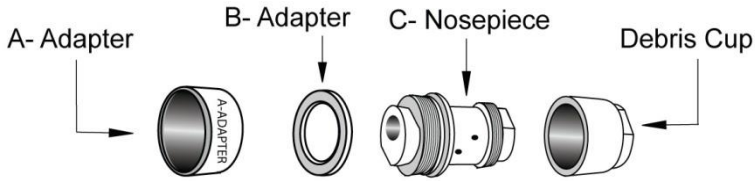
- Wood
- Drywall
- Glass
- Tile
- Rock

These materials may shatter causing the fastener or base substrate to fly free and might cause serious injury to the operator or bystanders.

Substrate Appropriateness

Check the thickness and type of base material before fastening, following your specific jobsite instructions and building code requirements. Minimum concrete thickness is **three times** the fastener penetration (ie. 3" of concrete base material is a minimum for a 1" penetration). In fastening into steel substrate, the minimum thickness of substrate must be 3/16".

NTS8X Universal Nosepiece



The new Universal Nosepiece for the Nitroset Fastening System eliminates the need for two different nosepieces; one length nosepiece and two different spacers/adapters that will be used for different length pin or clip assemblies.

*All adapters/spacers are placed between the muzzle and the reset sleeve.

Equivalent NTS5X configurations to NTS8X

NTS5X	NTS8X Equivalent Configuration
NTS5X A Nosepiece	NTS8X with A-Adapter (Red)
NTS5X B Nosepiece with gray spacer	NTS8X with B-Adapter (Blue)
NTS5X B Nosepiece with no spacer	NTS8X with no adapter

Appropriate Fasteners for each nosepiece configuration.

A-Nosepiece	CLAS532L - CLSUPL532 - PIN332 - PIN332W PIN525 - C90525
B-Nosepiece	CLAS525L - CLU222 - CLSUPL525 - CLC1-222 CLC12-222 - CLC34-222 - CLC38-222 - CLR14-222 CLR38-222 - PIN222W - PIN222SW - PIN222
C-Nosepiece	PIN219 - PIN319 - PIK313

SELECT THE RIGHT ADAPTER FOR THE RIGHT FASTENER ASSEMBLY. SEE CHART ABOVE FOR THE RIGHT COMBINATION.

FAILURE TO USE PROPER COMBINATION MAY CAUSE MISFIRES

Operating Instructions

Nosepiece Usage Table

Nosepiece	Pin Size Range	Pin w/Clip Size Range
C-Nosepiece w/ A-Adaptor	1" Track Pins	1-1/4" Pin & Clip Assembly
C-Nosepiece w/ B-Adaptor	7/8" Track Pins	7/8" – 1" Pin & Clip Assemblies or 7/8" – 1" Pin & Washer
C-Nosepiece w/ No Adaptor	3/4" Track Pins 1/2" Knurl Pins	1/2" – 3/4" Pin & Clip Assemblies or 1/2" – 3/4" Pin & Washer

Loading and Actuating Instructions

1. Reset the tool before each fastening to ensure the muzzle barrel is clear of any debris.
 - a) Pull back on front of muzzle until reset spring fully collapses.
 - b) Ensure firing pin guide clears all debris from muzzle chamber prior to inserting new fastener assembly.
2. Insert the fastener **fully** into the muzzle of the tool. Fasteners must be **fully** seated in muzzle to ensure proper actuation.



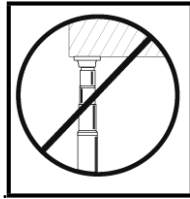
If the fastener assembly cannot be inserted into the muzzle, do not force the fastener into the muzzle. This can jam the fastener in the tool and damage the fastener. Fasteners that cannot be inserted should be removed and discarded appropriately.

In case of jammed fasteners – Refer to the troubleshooting guide for proper removal of all jammed fasteners.

3. Place the NITROSET® tool perpendicular (right angle) against the fastening surface.



Fasteners should not be driven close to the edge of the base substrate. Always maintain a distance of at least 3" from the concrete edge or 1" from steel edge



Too close to edge

4. Position the tool and push directly to feel the engagement of the firing spring. Follow with a smooth and forceful motion to compress the firing spring to trigger the firing mechanism. This is the correct fastening procedure to minimize spalling and noise.

Important: DO NOT BOUNCE FIRE THE TOOL!

5. Reset the tool to ensure the muzzle barrel is clear of debris and repeat from Step (1) to (4).

If the tool fails to fasten, remove the spent fastener assembly while pointing the tool away from yourself and any bystanders.



After the tool has been in use, the muzzle and other parts may be hot.
Always wear gloves to handle these areas.

Using NITROSET® Tool with a NITROSET® Pole

The use of NITROSET® pole is recommended for maximum efficiency on ceiling fastening applications. The end of the wire assembly should be placed inside the pole for better control. Actuate by following the actuating instructions as detailed.



When using an electrically conductive or metallic pole, be sure to maintain a minimum 10 foot clearance from all electrical lines to avoid electrical hazard.

NITROSET® Tool Cleaning Procedure

It is recommended that the NITROSET® tool be cleaned every day after use. Proper maintenance and cleaning of the tool enables the tool to operate at peak performance.

First, be sure all fastener assemblies and debris are ejected from the tool by resetting it pointed away from yourself or any bystanders.

Remove the muzzle by unscrewing it from the tool shank. Then, remove the end cap and disassemble the entire tool following the tool disassembly instructions.

Empty the debris cup.

To clean, you should use diluted industrial cleaner & degreaser to spray or wipe the tool surface. Allow contact time of 3 to 5 minutes before scrubbing. Rinse with water and wipe it dry with towel or paper.

Re-assemble the tool. Use degreaser lubricant similar to Strike-Hold or other similar non-oil base degreaser. (See Tool Cleaning and Maintenance Instruction manual for details).

Interim Cleaning Procedure

Empty the debris cup after every 500 fastenings, or as needed to optimize performance.

A liquid shot of degreaser lubricant at approximately every 500 to 1000 fastenings is recommended to maintain a smooth operation.

This will help tool performance and actuating consistency, making your end-of-day cleaning easier.

DOs and DON'Ts

DOs

- DO** read and understand the correct and safe usage instructions for the NITROSET® Fastening System.
- DO** remove defective tools, parts and/or accessories from service immediately.
- DO** check the thickness and type of base material before attempting any fastening.
- DO** wear safety goggles and other suitable personal protective items while using NITROSET® tool.
- DO** make sure that the tool is square to the surface before fastening.
- DO** recognize that operator and bystander safety is the most important factor when considering a NITROSET® tool application.
- DO** ensure all individuals working in the same area as those using the NITROSET® system also are wearing proper safety equipment.
- DO** reset the tool pointed away from yourself and any bystanders and eject any debris from muzzle piece before inserting the fastener into the barrel.
- DO** make sure when fastening into concrete, the base material thickness is at least 3 times the shank penetration.
- DO** make sure when fastening into steel substrate, the minimum thickness of the substrate must be 3/16".
- DO** only use genuine NITROSET® repair parts. Any parts from different manufacturers might impair function or cause damage to the tool and lead to injury.
- DO** clean the tool daily and empty the debris cup every 500 fastenings or as needed.
- DO** only use the correct tools to disassemble the NITROSET® Tool. Use of pipe wrenches or vise grips can damage the tool.

DO NOTs

- DO NOT** use to fasten into brittle materials such as brick, tile, rock or glazed material.
- DO NOT** attempt to drive fasteners into soft materials such as wood or drywall.
- DO NOT** attempt to drive fasteners into hardened steel, tool grade steel, cast iron, or natural rock such as marble.
- DO NOT** drive fasteners into base steel thinner than the shank diameter of the fastener.
- DO NOT** fasten into cracked or spalled areas of concrete.
- DO NOT** drive fasteners closer than 3" to the edge of the concrete materials and 1" to the edge of steel base materials.

- DO NOT** place hand over the muzzle end of a tool to reset the tool, or clean the barrel of the tool.
- DO NOT** use NITROSET® tools in a hazardous environment.

- DO NOT** use the tool prior to ensuring that all parts are in good working order and securely attached to the tool. All parts should be fully threaded and hand tight.

Troubleshooting Guide

- I. The fastener is jammed inside the nosepiece.
 - A. If cycling the tool does not clear the jammed fastener, remove the nosepiece completely. The jammed fastener can then be removed from the other end.
 - B. **DO NOT** strike the tool against the substrate to dislodge the fastener.
 - C. If the fastener remains permanently jammed, please contact the appropriate support personnel.

- II. The tool does not fire?
 - A. Check if you are fastening to the appropriate substrate material.
 - B. Check the nosepiece is free of debris and reset the tool
 - C. Check if the correct nosepiece is being used (According to Nosepiece Guide).
 - D. Ensure the tool is assembled properly according to the manual and instructions.
 - E. Before firing, make sure the nosepiece is perpendicular (right angle) to the material surface. The tool is not designed to fasten at other angles.
 - F. Check if the firing pin is piercing the NITROSET pill. If it's piercing the pill and not firing, then check for damage to the firing pin. Replace firing pin if damaged.
 - G. If the tool still does not actuate after checking all the above, follow the manual and disassemble to check for broken parts.

- III. The tool fires loudly?
 - A. Check if you are fastening to the appropriate substrate material.
 - B. Check if the correct nosepiece is being used.

- C. Before firing, make sure the nosepiece is perpendicular (right angle) to the material surface. The tool is not designed to fasten at other angles.
 - D. Check and clean the debris cup. Ensure the vents in the debris cup are clear of debris.
 - E. Ensure the debris cup and nosepiece is securely fastened to the tool.
- IV. The tool is difficult to depress and fire.
- A. Ensure the tool is assembled properly according to the manual and instructions.
 - B. Clean and lubricate according to the operator's manual.
 - C. Check that the springs are clean and straight.
- V. Firing Pin Holder and Guide are damaged.
- A. Disassemble the tool and check to see if the buffer is in place. This part acts as a shock absorber. Damage to the tool is possible if used without the buffer properly inserted.
 - B. Clean to the tool to ensure no debris has gotten into the main body of the tool.

If all of the above fails, please contact your local supplier's technical support personnel to address the issues.

Tool Disassembly

1. Unscrew the debris cup and the muzzle counter-clockwise to remove.
2. Unscrew the pole mounting base from the tool counter-clockwise. Remove the firing spring and buffer. DO NOT LOSE THE BUFFER. Operation without the buffer will damage the tool.
3. Slide off the outer cover sleeve from the trigger body. This will expose the main assembly pin.
4. Compress the tool, then eject the main assembly pin. The remainder of parts will be released. (reset spring, reset sleeve, trigger body, firing pin guide)
5. Depress the trigger ball and holding it down, carefully slide the firing pin assembly from the firing pin guide. Follow instructions under "Changing the Firing Pin"

Changing the Firing Pin

Note When removing the firing pin, depress the trigger ball, and guide the pin out. Keep the trigger ball depressed until the pin exits the guide, otherwise the spring will propel the trigger ball away.



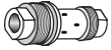




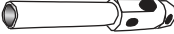



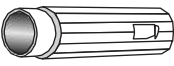
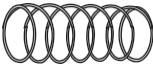

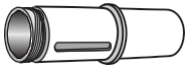



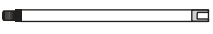


1. Use the provided Roll Pin Punch to knock out the 1/8" pin.
2. Remove the worn firing pin from the firing pin holder
3. Seat a new 1/8" roll pin into the holder. Do not insert the roll pin completely.
4. Insert new firing pin into the slot in the firing pin holder. Ensure that the holes on the back of the firing pin line with the holes in the front of the holder.
5. Using a hammer, fully insert the 1/8" pin.
6. Reinstall the trigger spring and trigger ball into the appropriate slot on the firing pin holder.
7. While depressing the trigger ball spring, insert the firing assembly into the firing pin guide.

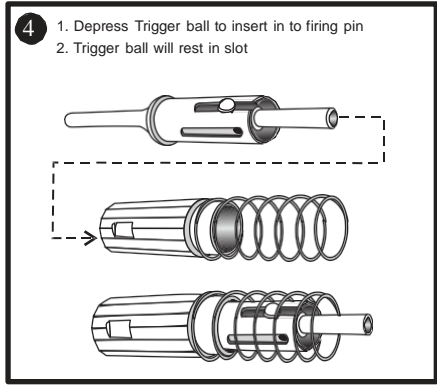
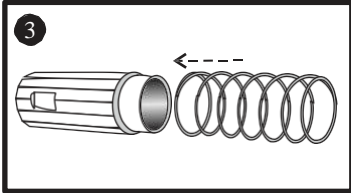
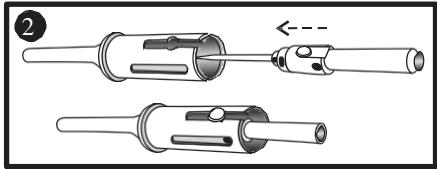
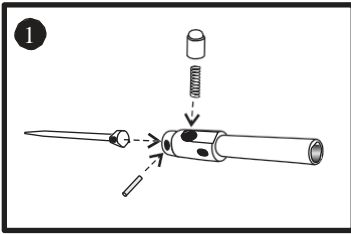
Tool Assembly

1. Insert the firing pin guide in to the reset sleeve. You will know when it is inserted correctly when the bottom half of the guide is protruding and the trigger ball is visible.
2. Place the reset spring on to the small end of the reset sleeve.
3. Slide the trigger body on to the reset sleeve, spring, and firing pin guide. The Align Arrow (trigger key inside the main trigger body) should be aligned with the trigger ball. This will ensure that the main assembly pin hole will be accessible.
4. Compress the tool and insert the main assembly pin BEHIND the reset spring, in to the firing pin guide.
5. Prepare the pole mounting base by inserting the buffer, tapered end first, in to the mounting base. Place the firing spring inside the mounting base.
6. Slide the outer cover sleeve on to the trigger body.
7. Take the tool in one hand, and pole mounting base in another. Screw the pole mounting base clockwise on to the trigger body. The firing spring should be over the firing pin holder.
8. Screw the nosepiece clockwise on to the reset sleeve.
9. Screw the debris cup clockwise on to the nosepiece.
10. Install appropriate spall guard for the application (Spall guard with cut for fasteners with clip or regular spall guard for straight pins & pins with washers)

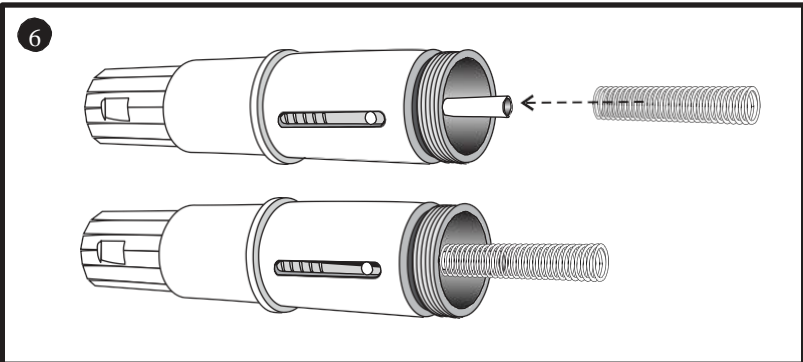
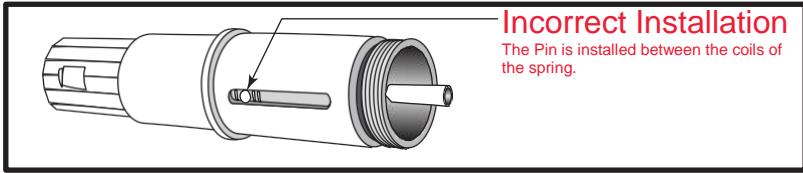
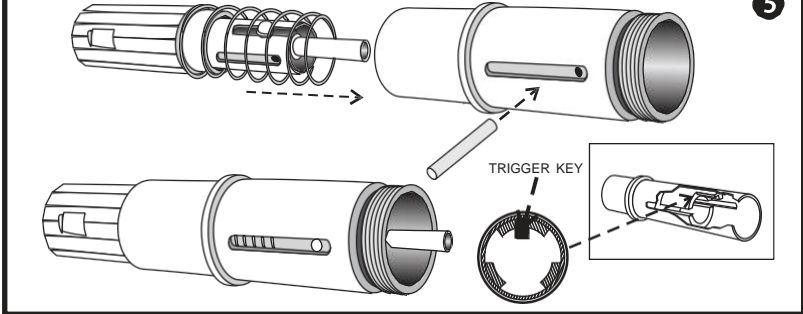
If you are still having difficulties, please refer to www.nitroset.com for a video tutorial on assembly and disassembly.

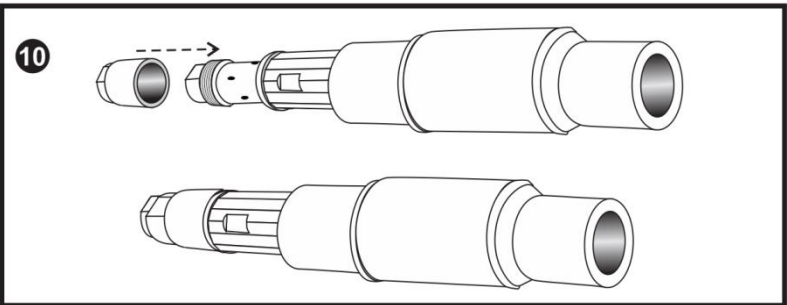
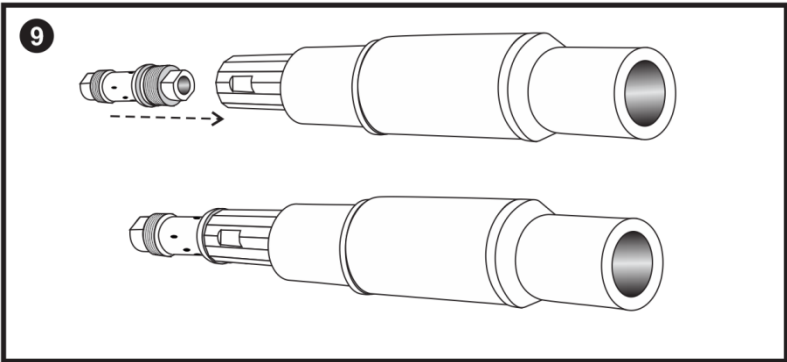
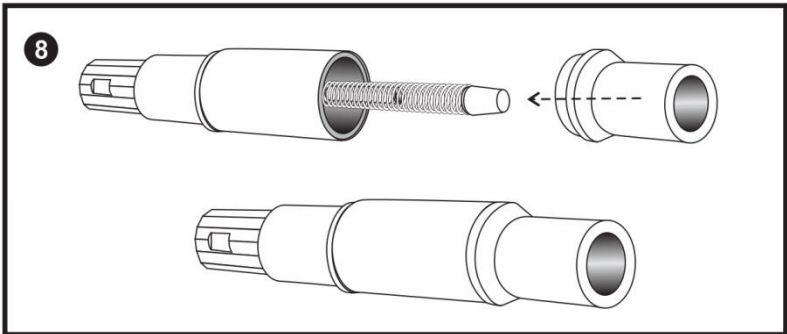
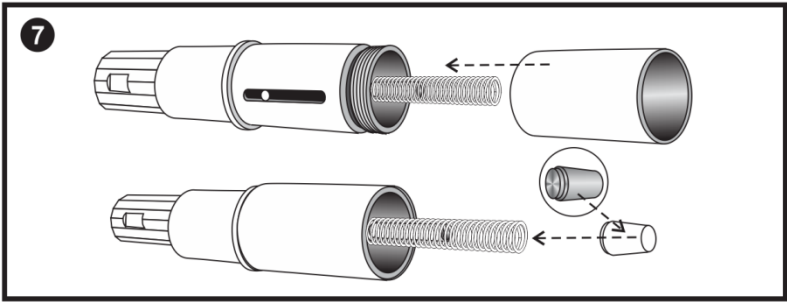
Parts List

	DESCRIPTION	ITEM #
	SPALL GUARD	NTS 101 -0
	SPALL GUARD CLIP.....	NTS101-24
	NOSEPIECE	NTS101-1-A3 NTS101-1-B3
	DEBRIS CUP	NTS 101 -2-A(61.0mm) NTS 101 -2-B(54.5mm)
	FIRING PIN GUIDE	NTS 5X -3
	FIRING PIN	NTS 101 - 4
	TRIGGER BALL SPRING.....	NTS 101 - 5
	FIRING PIN HOLDER	NTS 101 - 6
	TRIGGER BALL RELEASE.....	NTS 101 - 7
	1/8" ROLL PIN	NTS 101 - 8
	FIRING SPRING	NTS 101 - 9
	RESET SLEEVE.....	NTS 5X - 10
	RESET SPRING.....	NTS 5X - 11
	1/4" MAIN ASSEMBLY PIN ..	NTS 5X - 12
	TRIGGER BODY.....	NTS 5X - 13
	OUTER COVER SLEEVE	NTS 5X - 14
	END CAP	NTS 5X - 15
	BUFFER.....	NTS 101 - 16
	TRIPLE PLAY EXTENSION	NTS 101 - 18
	HAND GRIP	NTS 101 - 19
	NOSEPIECE SPACER	NTS 101 - 17



1. Insert main assembly in to trigger body
2. Align Trigger key in the trigger body with the trigger ball.
3. Insert 1/4" main assembly pin. Ensure pin is not inserted between coils of the reset spring







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