



# PT-22H Powder Actuated Tool

## IMPORTANT

Never use this powder actuated tool without first reading and understanding the information in this manual. It will help you operate the tool with the greatest safety and efficiency by providing you with an understanding of the safety features, operating principles and limitations of the tool and its use. You must understand ALL operating principles, safety features and fastening limitations of this tool in order to use it without risk of serious injury or death to yourself or bystanders. **Simpson Strong-Tie disclaims any responsibility for incidents resulting from the disregard of these instructions and warnings.**

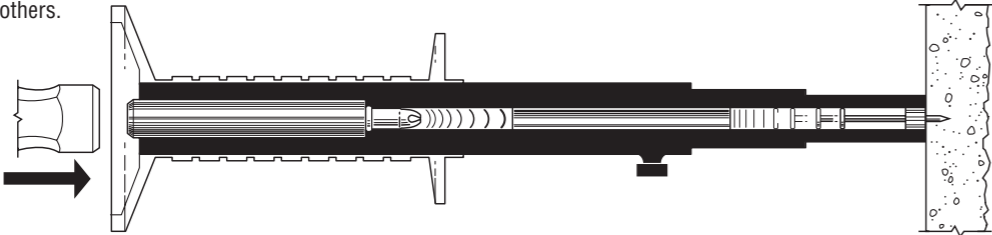
Once you have read and understood the entire manual, you must then pass a certification test administered by an authorized Simpson Strong-Tie representative or taken on the Simpson Strong-Tie Anchor Systems website ([www.simpsonanchors.com](http://www.simpsonanchors.com)).

Always observe the safety precautions in this manual.

If at any time during the operation of the tool you feel as if it is not functioning properly, or if you are confused in any way by these instructions, **STOP** using the tool and call your Simpson Strong-Tie representative or call Simpson directly at 800-999-5099 (U.S.) or 800-465-1515 (Canada).

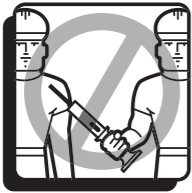
## GENERAL INFORMATION

The Simpson Strong-Tie PT-22H is referred to as a powder actuated tool because it utilizes a powder load (similar to a firearm, but NOT interchangeable) to drive the fastener through the object to be fastened and into the base material. The PT-22H is a low velocity, indirect acting tool. The tool is discharged by striking the firing pin which discharges the powder load. The expanding gases from the discharged powder load drive a captive piston which then forces the fastener into the work. The PT-22H is capable of fastening into concrete and steel. The fastener enters the base material with an extreme amount of energy. Do not direct this energy towards yourself or others.



## GENERAL SAFETY

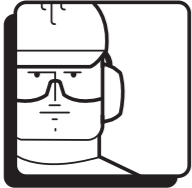
- ALWAYS point the tool away from yourself and others.



- NEVER place your hand or any other part of your body over the muzzle of the tool when a powder load is in the chamber. The fastener or piston can cause serious injury or death in the event of an accidental discharge.



- ALWAYS wear eye, ear and head protection.



- ALWAYS make sure that the area is free of bystanders before operating a powder actuated tool.



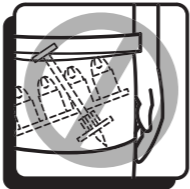
- ALWAYS post warning signs when powder actuated tools are in use. Signs should state "Powder Actuated Tool in Use" and should be posted within 50 feet of the area where the tool is being used.



- ALWAYS store and transport powder actuated tools unloaded. Tools and powder loads should be stored in a locked container out of the reach of children.



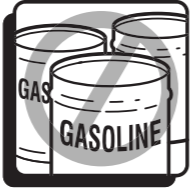
- NEVER transport fasteners or other hard objects in the same pocket or container with powder loads. These objects may strike the powder loads, thereby setting them off and causing serious injury or death.



- NEVER drink alcoholic beverages or take medications that can impair your vision, balance or judgement before operating a powder actuated tool.

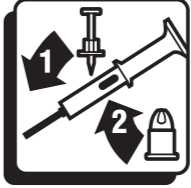
- NEVER attempt to bypass or circumvent any of the safety features on a powder actuated tool.

- NEVER load or fire the tool in an explosive atmosphere (e.g. gas is present) or when flammable materials are nearby.



## PRE-USE INSPECTION BEFORE LOADING AND FIRING

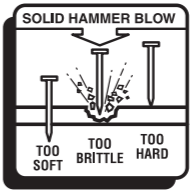
- ALWAYS pick up a powder actuated tool as if it is loaded. Always point the tool away from yourself and others. Immediately open the tool to make sure that it is unloaded.
- ALWAYS inspect the tool to make sure that it is clean and in good working order before use. Make sure that the barrel is free from obstructions.
- BEFORE loading the tool operate it a few times on a solid surface, making sure all parts are moving freely.
- ALWAYS check the barrel to make sure that you do not double-load two fasteners into the tool at one time.
- ALWAYS insert the fastener into the barrel of the tool first, and then insert the powder load. This will prevent misfire of the fastener during loading.



## BASE MATERIAL SUITABILITY

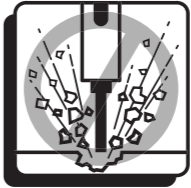
The term base material refers to the material to be fastened into. This can either be concrete or steel. It does not refer to the material you are fastening through to fix it to the base material (e.g. wood, thin steel, etc.). Not all base materials are suitable for powder actuated fastening. Some base materials are too hard, may shatter or may allow the fastener to pass completely through and fly freely, possibly causing serious injury or death.

- BEFORE fastening into a base material whose properties are questionable or unknown, conduct the Center Punch Test to determine suitability.
- CENTER PUNCH TEST: This test is used to determine the suitability of a specific base material for powder actuated fastening. The test is performed by using a hammer to test drive the fastener to be used into the base material in question. Strike the fastener with a solid blow.
- If the fastener point penetrates easily or passes through the base material, the material in question is too soft. The fastener can pass completely through and strike someone causing serious injury or death.
- If the point of the fastener becomes blunt, the base material is too hard. The fastener can ricochet and strike you or a bystander causing serious injury or death.
- If the base material cracks or shatters it is too brittle. The fastener can ricochet and strike you or a bystander causing serious injury or death. In addition, shattered debris may strike you or a bystander causing serious injury or death.
- The point of the fastener should make an indentation in the base material without blunting the tip of the fastener.

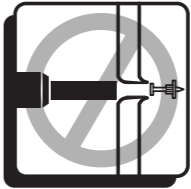


If the Center Punch Test shows the base material to be unsuitable, do not fasten into it using the PT-22H or any other powder actuated tool. Doing so can cause serious injury or death.

- NEVER fasten into concrete that is less than 3 times the shank penetration of the fastener. NEVER fasten into steel that is thinner than the shank diameter of the fastener being used. Fastening into a base material that is too thin can allow the fastener to pass completely through the material and fly freely, causing serious injury or death.
- NEVER fasten into material that is too brittle such as glass, tile, brick or cast iron because they can shatter, causing sharp fragments and the fastener to fly freely, causing serious injury or death.



- NEVER attempt to fasten into soft material like wood or drywall. Fastening into a base material that is too soft can allow the fastener to pass completely through the material and fly freely, causing serious injury or death. Fastening through soft materials into an appropriate base material may be allowed if the application is appropriate.



- Do not use powder actuated tools to fasten into the following materials:
  - Vertical mortar joints between brick or block
  - Brick
  - Hollow block or clay tile
  - Glazed tile
  - Glass
  - Hardened or tool grade steel
  - Spring steel
  - Cast Iron
  - Welded areas or torch cuts
  - Natural rock

## LIMITED WARRANTY

Simpson Strong-Tie Co. Inc. ("Simpson") provides this limited warranty to original purchaser. This product, if properly used and maintained in compliance with all instructions and warnings, will be free from substantial defects in material and manufacturing for 90 days from purchase. Purchaser's sole remedy is replacement upon return to Simpson within 90 days of purchase (shipping prepaid). WHERE LAWFUL, SIMPSON DISCLAIMS ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE BEYOND THIS WARRANTY PERIOD. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. WHERE LAWFUL, UNDER NO CIRCUMSTANCES SHALL SIMPSON BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OR DIRECT OR INDIRECT LOSS OF ANY KIND, INCLUDING BUT NOT LIMITED TO BODILY INJURY, DEATH OR PROPERTY DAMAGE. SIMPSON'S ENTIRE LIABILITY IS LIMITED TO THE PURCHASE PRICE OF THIS PRODUCT. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. SIMPSON IS IN NO WAY LIABLE FOR INCIDENTS RESULTING FROM USE WITHOUT PROPER CERTIFICATION OR DISREGARD OF INSTRUCTIONS AND WARNINGS. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

OPERATING INSTRUCTIONS

SAFETY WARNINGS AND USE

- NEVER use improper powder loads or fasteners in a powder actuated tool, as they may be unsafe or damage the tool. Never use powder load intended for firearms in a powder actuated tool. This tool is designed for use with 22 caliber neck-down crimped loads, levels 1 (gray) through 4 (yellow) only. Never attempt to alter, modify or manufacture parts for use in the tool.



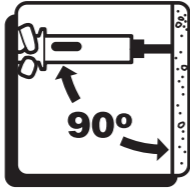
Simpson P22AC: 22 caliber neck-down crimped load

- NEVER attempt to use powder actuated fastening loads in a firearm. They are more powerful than normal small arms ammunition.
- ALWAYS begin with the lowest level powder load (Level 1 = Gray color) when fastening into unfamiliar base materials. Increase power level until a correct fastening is made. Consult the table below for the correct load levels.

Load Level	Load Color	Simpson Part #
1	Gray	P22AC1
2	Brown	P22AC2
3	Green	P22AC3
4	Yellow	P22AC4

Note: Not for use with 22 cal. straight wall loads.

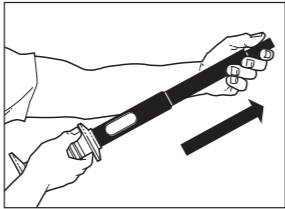
- ALWAYS hold the tool perpendicular (90°) to the fastening surface to prevent ricocheting fasteners. Make sure that the fastening area is free from debris.
- NEVER attempt to fasten to a spalled, cracked or uneven surface. Fasten at least 3" from the outer edge of a spalled area.



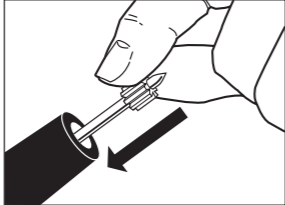
- NEVER fasten less than 3" from the edge of concrete, or 1/2" from the edge of steel.
- NEVER fasten too close to another set fastener as this can cause a ricochet. Maintain a 3" spacing in concrete. In steel, maintain a 1 1/2" spacing.
- NEVER attempt to fasten through a metal disc to use it as a washer. If a washer is required, use only pre-assembled fasteners and washers intended for powder actuated fastening such as Simpson's PDPW or PDPWL series of fasteners.
- NEVER fasten through an existing hole in any fixture or material because the fastener could strike the edge of the hole and ricochet.
- ALWAYS remove both the load and fastener from the tool if you decide not to make a fastening once the tool is loaded.
- ALWAYS properly brace yourself when working on scaffolding or ladders.
- ALWAYS check the breech faces to make sure they are clean and free from debris.

LOADING THE PT-22H

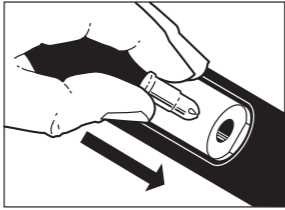
1. Pull the barrel forward firmly until it stops. This sets the piston and opens the chamber area. Make sure there is no powder load in the chamber.



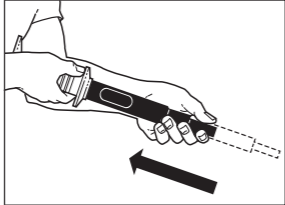
2. Insert the proper fastener into the muzzle of the tool. Insert the fastener head first so that the plastic flutes are inside the muzzle. The flutes center the fastener in the muzzle and hold the fastener in the tool.



3. Insert the powder load, small end first, into the chamber while holding the tool muzzle end down. Make sure to hold the muzzle end down and away from you.

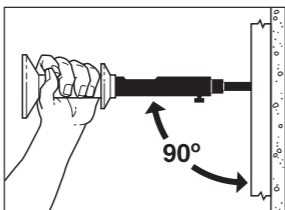


4. With the muzzle still pointed down, push the barrel into the receiver until the tool is in the closed position.

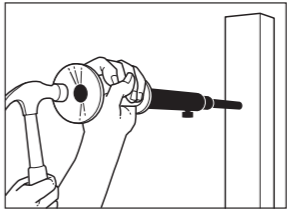


FIRING THE PT-22H

1. Place the muzzle of the PT-22H against the work surface at 90°. Do not tilt. Hold tool grip in one hand and press down on the tool until it is fully compressed. This is evident when the groove around the barrel is aligned with the two notches in the side of the breech. The tool must be held firmly against the work surface and fully compressed in order for it to work properly. Keep the tool firmly pressed against the work surface until the power load is discharged.



2. Hit the firing pin on top of the handle squarely with a sharp hammer blow to discharge the tool.



NOTE: If the powder load does not discharge with the first blow, wait 30 seconds and follow all of the "Ejection" and "Troubleshooting" instructions below. Do not strike the tool a second time to attempt to discharge a non-firing load. The first blow to the tool will jar the drive piston out of position. While a second blow to the powder load may cause it to discharge, it will result in less penetration into the base material.

3. After the fastening is made, remove the tool from the work surface.

EJECTING THE POWDER LOAD

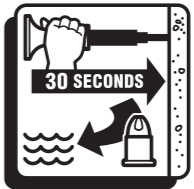
Eject the powder load by holding the barrel and pulling it forward rapidly. The powder load will be ejected from the chamber and the piston will be reset into the firing position, ready for re-loading.

- Unfired powder loads must never be thrown into trash receptacles or disposed of carelessly in any way. Remove the unfired powder load and dispose of it in a container of water.



TROUBLESHOOTING

- If the powder load does not fire when the trigger is pulled, hold the tool firmly against the base material for at least 30 seconds. Carefully lift the tool from the base material being careful not to point it at yourself or others.
- Remove the powder load and dispose of it in a container of water. Unfired powder loads must never be thrown into trash receptacles



or disposed of carelessly in any way.



- NEVER attempt to force or pry an unfired powder load from the breech with a sharp or pointed object, as this may cause an accidental discharge.
- NEVER attempt to disassemble a jammed tool containing a live powder load. Tag the tool "DO NOT USE" and store it safely in a locked case. Call your Simpson Strong-Tie representative for tool repair services.
- If the piston is protruding from the end of the muzzle after fastening, the tool has been overdriven. This can be caused by discharging the tool without a fastener in the muzzle, or by using a power load that is too powerful for the base material. If this occurs, pull the barrel forward with some extra force and the piston will reset itself. NOTE: Repeatedly overdriving the piston 1/2" or more past the end of the muzzle will damage the tool and void the warranty.
- If the load does not discharge, repeat the "Ejection" steps outlined above.

CLEANING AND MAINTENANCE

A powder actuated tool should be cleaned and maintained before and after each use to insure its proper functioning. Excess dirt or debris on the breech faces may cause the tool to accidentally discharge causing serious injury or death.

For modification or alterations, contact Simpson Strong-Tie. Do not modify or alter the tool in any way unless authorized in writing by Simpson Strong-Tie.

Never proceed with cleaning and maintenance until you are certain the tool is unloaded.

- Barrel Assembly
  - Nosepiece: Must be cleaned and inspected daily to make sure the inside is clean and free of debris and damage.
  - Barrel: Make certain the breech face and chamber are clean and free from dirt and carbon deposits. Sparingly use a non-flammable lubricant to lubricate the tool. Excess amounts of lubricant will accelerate the build up of powder residue and dirt.
  - Piston: Must be brushed clean daily and checked for damage or excessive wear.
- Firing Mechanism
  - Breech faces: Must be wiped clean with a cloth and non-flammable lubricant. Check carefully around the firing pin opening for dirt or carbon build up.
  - Cleaning of all parts in the firing mechanism should be conducted by an authorized Simpson Strong-Tie repair facility twice annually or every 5,000 fastenings whichever comes first.

**WARNING:** Avoid injury or death: Read Operators Manual and obtain certification of training before use. Use only as directed. Follow all safety instructions including pre-use inspection, base material suitability, operating, troubleshooting, maintenance, and handling instructions. Wear eye, ear, and head protection. Perform Center Punch Test before use. Use at a 90° angle on clean, level surfaces in ventilated areas away from heat and flammable materials. Brace self properly if used from scaffolding or ladder. Insert fastener in empty barrel before powder load. Never point towards self or others or cover muzzle with a body part. Post proper signs. Do not permit bystanders. Transport powder loads separately from hard objects. Store unloaded in a cool, dry, locked container. Do not use if impaired by alcohol or medication. Follow maintenance and disposal guidelines. Wash hands thoroughly after use. Contains chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

Keep out of reach of children.

If the instructions, safety features, limitations or warnings are unclear or confusing, do not use and contact Simpson Strong-Tie. For technical information on powder actuated fastening systems, call: 800-999-5099 (USA) or 800-465-1515 (CAN).

FIRST AID: Seek medical care.