# Propane Hammer™ C3H8

**Self Contained Propane Powered Hammer**
**Owner's Manual** *by Tippmann*


TIPPMANN
INDUSTRIAL PRODUCTS

rev. # 2: 6-1-2008

Propane Hammer™ C3H8

CONGRATULATIONS on the purchase of your Tippmann Propane Hammer. We believe the Tippmann Propane Hammer is the most versatile and user friendly post driver available. Proudly manufactured in the U.S.A., the Tippmann Propane Hammer will give many years of dependable service if cared for properly.

Please take time to read this manual thoroughly. Become familiar with the parts, operation and safety precautions before attempting to operate.

# PROPANE HAMMER OPERATOR'S MANUAL

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# WARNING / LIABILITY STATEMENT:

This propane hammer  is surrendered by Tippmann Industrial Products, Inc. with the understanding that the purchaser assumes all liabilities resulting from unsafe operation.  Tippmann Industrial Products, Inc., shall not be liable for personal injury resulting from the use of this machine under any circumstance.

All information in this manual is subject to change without notice. We reserve the right to make changes and improvements to products without incurring any obligation to incorporate such improvements in products previously sold.

If you as a user do not accept liability, Tippmann Industrial Products, Inc. requests that you do not use a Tippmann Propane Hammer.  By using this driver, you release Tippmann Industrial Products, Inc. of any and all liability associated with its use.

## WARNING

**PLEASE TAKE TIME TO READ THROUGH THIS MANUAL THOROUGHLY AND BECOME FAMILIAR WITH THE TIPPMANN PROPANE HAMMER'S PARTS, OPERATION, AND SAFETY PRECAUTIONS BEFORE YOU ATTEMPT TO OPERATE THE MACHINE.**

# SAFETY IS YOUR RESPONSIBILITY:

The ownership of this machine places upon you the total responsibility of its safe operation.  You must observe the same safety precautions as you would any piece of equipment to assure the safety of not only yourself but everyone around you.

We have outlined some of the general precautions which the operator should be aware of; ***The operator should at all times use common sense when using this machine and be sure others who may operate are also familiarized, responsible and safety conscious.  Do not attempt to operate this machine until you have read and are familiar with this manual.***

- Eye, face and ear protection should by worn by user and any person within range of flying debris.
- Never use in close proximity to someone who is not wearing the proper safety attire.
- Pressurize the post driver, only when the post driver will be immediately used.
- Keep your finger off of the ignition switch until ready to fire.

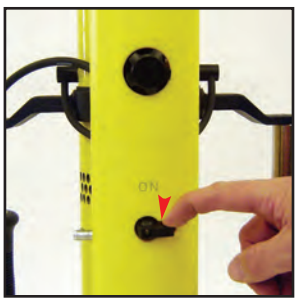
**safety is your responsibility** (continued on page 3)

**safety is your responsibility** (continued from page 2)

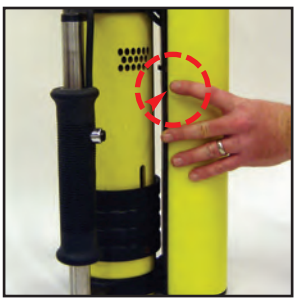
- Do not fire on or near flammable objects.
- **Use only in well ventilated areas.**
- Do not install or remove cylinder near flames or other ignition source.
- Keep exposed skin away from escaping gas when installing or removing propane supply cylinder or if the propane pounder or propane supply is leaking. Compressed propane gas is very cold and can cause frostbite under certain conditions.
- Do not inhale propane fumes.
- Avoid alcoholic beverages before and during the use of this product.
- **Other than briefly when attaching or detaching propane cylinder, if you smell propane - remove the propane cylinder and seek qualified repair from Tippmann Industrial Products, Inc. Do not fire the propane hammer if you smell propane.**

## BEFORE STORING OR DISASSEMBLING:

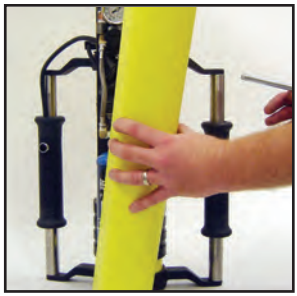
- **Remove the propane supply (illustration A, B,C, D, E) at bottom of page.**
- **Prime and fire the Propane Hammer to make sure there is no propane left in the system. (see pages 13 and 14)**
- Store the propane hammer degassed in a secure place.
- Do not pressurize a partially assembled propane hammer with propane.
- **Always Follow safe propane cylinder handling and storage procedures as outlined on the cylinder label and on page 4.**




**A.** Turn on/off valve to the off position.



**B.** Push ball lock pin through cover.



**C.** Pull ball lock pin and remove cover.

**⚠ WARNING**

**EVEN AFTER THE PROPANE CYLINDER HAS BEEN REMOVED, THE PROPANE HAMMER WILL STILL FIRE UNTIL ALL GAS HAS BEEN REMOVED FROM THE SYSTEM.**

**D.** Remove tank from the tank mounting bracket.

**E.** Carefully unscrew tank from the tank adapter.

## WARNING

**FOLLOW HANDLING AND STORAGE INSTRUCTIONS ON PROPANE CYLINDER IN ADDITION TO THE FOLLOWING.**

**CARBON MONOXIDE HAZARD:**
**BURNING PROPANE CAN MAKE CARBON MONOXIDE WHICH IS INVISIBLE, HAS NO SMELL AND CAN KILL YOU. BURNING PROPANE IN AN ENCLOSED AREA CAN BE DANGEROUS. USE ONLY IN WELL-VENTILATED AREAS. IF YOU EXPERIENCE HEADACHE, DROWSINESS, OR NAUSEA, STOP USING THE PROPANE HAMMER AND GET FRESH AIR QUICKLY.**
**PROPANE CYLINDER HANDLING AND STORAGE:**
1. **KEEP OUT OF REACH OF CHILDREN.**
2. **DO NOT EXPOSE TO HEAT, SPARKS OR FLAME.**
3. **DO NOT LEAVE IN DIRECT SUNLIGHT.**
4. **NEVER REFILL A PROPANE CYLINDER. REFILLING MAY CAUSE EXPLOSION. FEDERAL LAW FORBIDS TRANSPORTATION IF REFILLED. PENALTY UP TO $500,000 AND 5 YEARS IMPRISONMENT. (49 U.S.C. 5124)**
5. **NEVER PUT IN LUGGAGE OR TAKE ON TRAINS OR AIRCRAFT.**
6. **TO DISCARD, CONTACT LOCAL REFUSE HAULER OR RECYCLE CENTER.**

**FIRE / EXPLOSION HAZARD: EVEN SMALL PROPANE CYLINDERS CONTAIN ENOUGH GAS TO CAUSE SERIOUS FIRE, EXPLOSION AND BURNS. TO REDUCE CHANCE OF LIQUID OR GAS LEAK, OR EXPLOSION:**

**<u>BEFORE USE:</u>**
1. **CHECK CYLINDER AND PROPANE HAMMER SEALS. NEVER USE WITH DAMAGED OR MISSING SEALS.**
2. **HOLD CYLINDER UPRIGHT WHILE ATTACHING.**
3. **ATTACH OUTDOORS AWAY FROM PILOT LIGHTS, FLAMES, SPARKS OR OTHER IGNITION SOURCES. THEY CAN IGNITE LEAKING GAS.**
4. **HAND TIGHTEN ONLY. OVER-TIGHTENING MAY DAMAGE SEALS. NEVER USE TOOLS TO TIGHTEN.**
5. **CHECK FOR LEAKS IN ONE OR MORE WAYS: APPLY SOAPY WATER TO CONNECTIONS. LOOK FOR BUBBLES. LISTEN FOR HISS OF ESCAPING GAS. FEEL FOR EXTREME COLD. SMELL FOR ROTTEN EGG ODOR. DO NOT USE IF LEAKING.**

**<u>AFTER USE:</u>**
1. **LET PROPANE HAMMER COOL OFF.**
2. **DETACH CYLINDER WHEN NOT IN USE.**
3. **DETACH OUTDOORS AWAY FROMM PILOT LIGHTS, FLAMES, SPARKS, OR OTHER IGNITION SOURCES. THEY CAN IGNITE LEAKING GAS.**

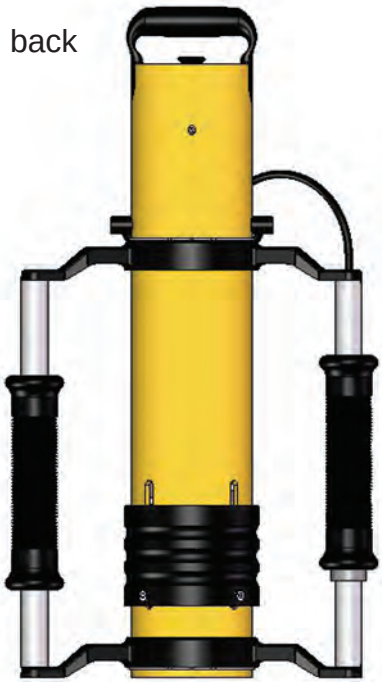
**<u>IN CASE OF FIRE:</u>**
1. **LEAVE AREA QUICKLY.**
2. **CALL FOR EMERGENCY HELP.**
3. **LET CYLINDER BURN OUT.**

# GENERAL DESCRIPTION

The Propane Hammer is designed to drive posts up to 2 5/8” in diameter as a stock unit and we do offer attachments that will allow you to drive up to 3.5” in diameter. This unit is completely self contained and operates off of a standard 14.1 oz. propane tank.

front

back



- Make.....Tippmann
- Model.....Propane Hammer C3H8
- Weight (with 14.1 oz. tank).....45 lbs.
- Driving Force.....700 lbs.
- Cycles Per Tank.....Approximately 5000
- Operating Pressure.....45-75 psi
- Overall Dimensions.....14.25”w x 25.25””h x 8.625”d
- Power / Propane Supply..... Disposable 14.1oz. Cylinder

# SIMPLE ADJUSTMENT FOR DRIVING LARGER POSTS.

The stock Propane Hammer is set up to drive posts up to 1 5/8” in diameter. You can quickly enlarge the opening to accommodate up to 2 5/8” by removing the ram insert.

**Figure A.** shows the propane hammer with the ram insert in place. This is how you will receive your machine.

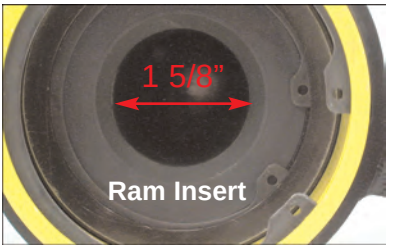
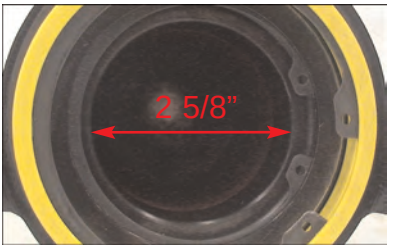
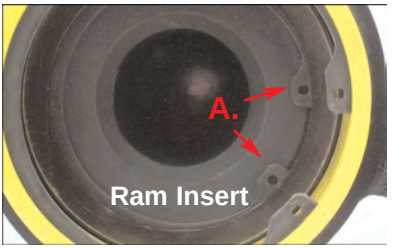



**Figure B.** shows the propane hammer with the ram insert removed.




# REMOVING THE RAM INSERT TO ENLARGE THE DIAMETER.

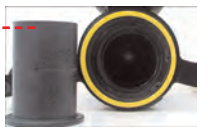
- Lay your machine on it side, handles down.




- Locate the snap ring and snap ring holes, on the inside of the ram assembly. (illustration A.)

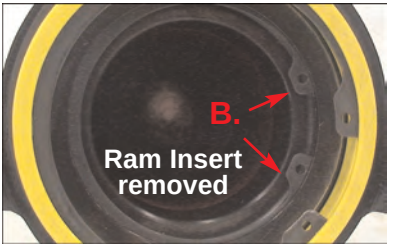
- Remove the snap ring from the ram assembly, using snap ring pliers.

**Ram Insert**



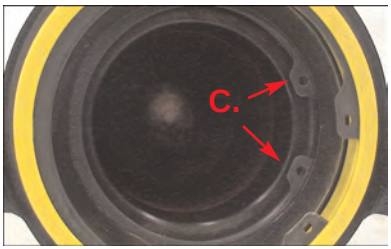
- Remove the ram insert.

- Replace snap ring, using snap ring pliers. (illustration B.)

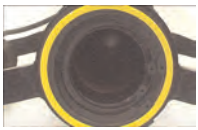


# REPLACING THE RAM INSERT TO DECREASE THE SIZE OF THE DIAMETER.

- Lay your machine on it side, handles down.



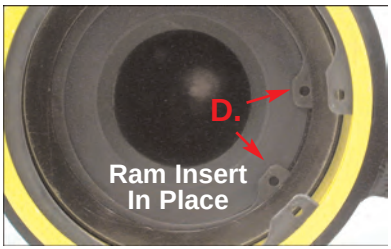

- Locate the snap ring and snap ring holes, on the inside of the ram assembly. (illustration C.)



- Remove the snap ring from the ram assembly, using snap ring pliers.

- Re-install the ram insert.

- Replace the snap ring, using snap ring pliers. (illustration D.)




# DRIVING WITH VARIOUS ATTACHMENTS..

Tippmann offers a variety of attachments and can also custom manufacture specific attachments to fit your special need. Please view our web site or give us call to find out which attachments we have available or to get a quote on a custom attachment.

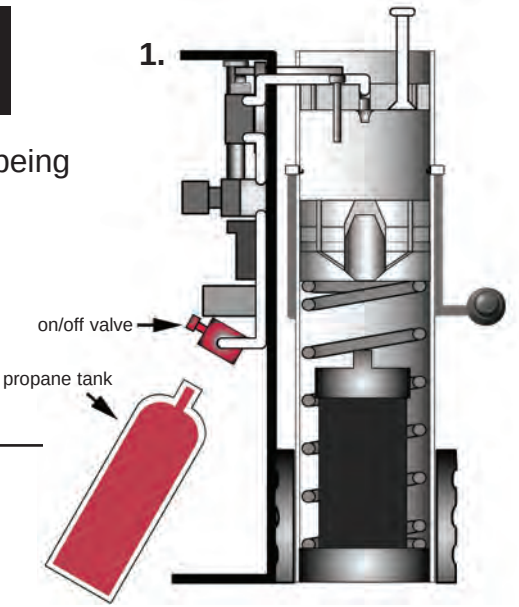
You can view all of our attachments by visiting:

**propanehammer.com**

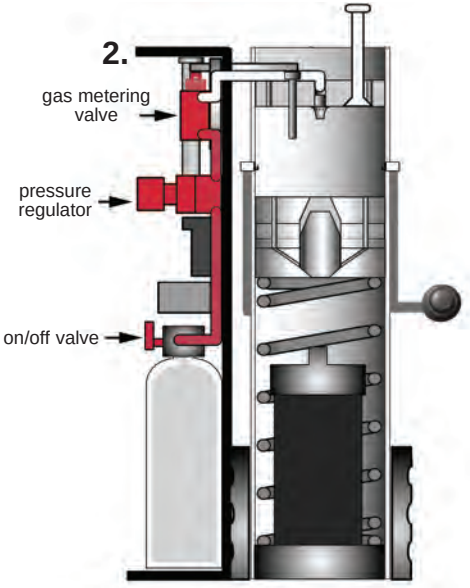
**You may also give us a call Toll Free: 866-286-8046**

# How The Propane Hammer Works

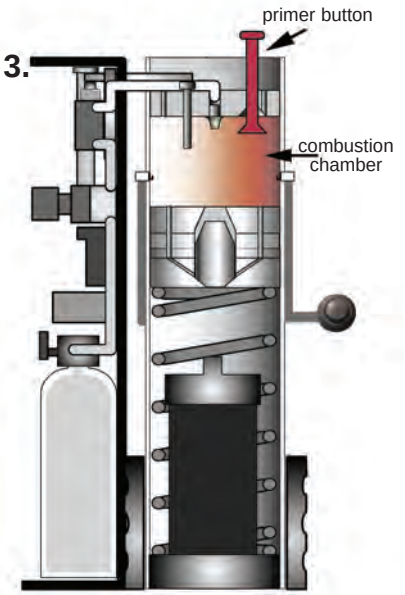
We have highlighted the areas being discussed in each step.




**1. Tank installation:**
Propane gas fuels the hammer. When the propane tank is connected propane gas will flow to the on/off valve.




**2. Pressure regulator:**
Once the on/off valve has been turned to the on position (pointing up), gas flows to the pressure regulator. The pressure regulator is adjustable to help the hammer fire consistently in different climates and at different altitude. After being regulated, propane flows into the gas metering valve.

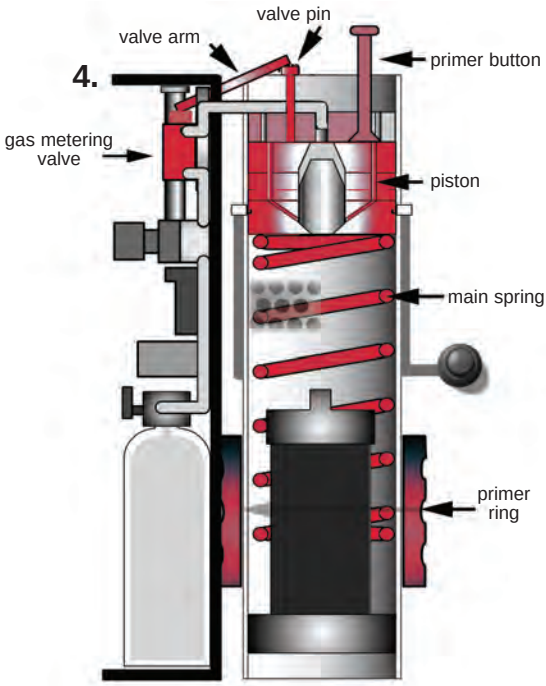



**3. Opening the primer valve:**
When the primer button is depressed a valve inside the head is opened, exposing the combustion chamber to the atmosphere. This allows the combustion chamber to be exhausted during the priming cycle.

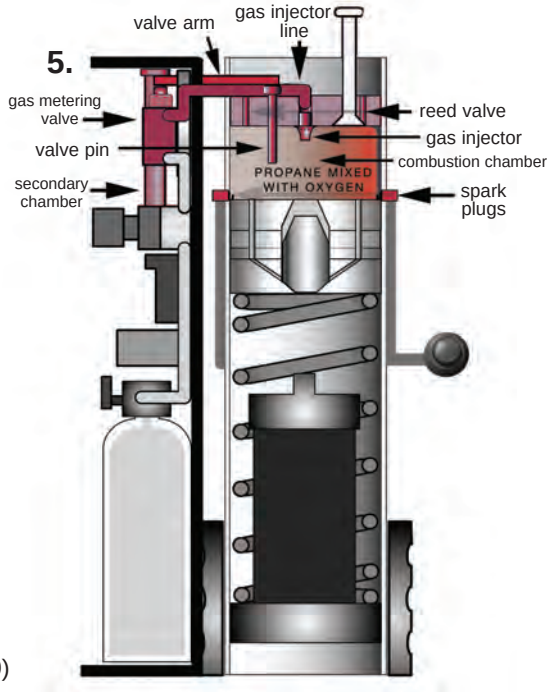
**how it works** (continued on page 9)

**how it works** (continued from page 8)

**4. Priming the hammer:**
In order to prime the hammer, the priming ring must be raised until it stops and is then returned to its starting position. This cycle will raise the piston to the top of the combustion chamber until it comes into contact with the cylinder head. When the piston reaches the top, the primer button will be closed and the gas metering valve will be activated. This will start the process for the new gas / air mixture during the intake stroke.



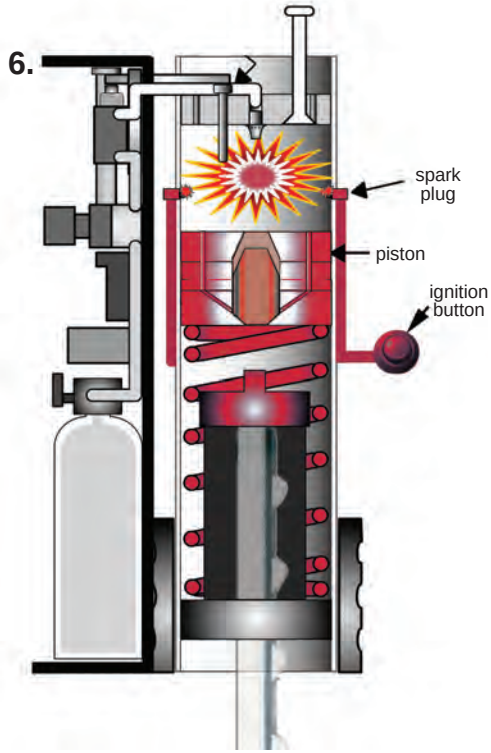

**5. Intake stroke:**
During the intake stroke, gas and air are mixed into the combustion chamber. Before the piston reaches the top on the priming stroke, it comes into contact with the valve pin that activates the gas metering valve. When the gas metering valve is activated a secondary chamber is filled with a volume of propane gas. When the piston starts downward on the intake stroke, fresh air is drawn into the combustion chamber, through a reed valve in the cylinder head. Once the piston reaches a set distance from the cylinder head, the gas valve pin is released and propane is injected into the combustion chamber through the gas injector. During the rest of the downward stroke, air is drawn in through the reed valve and continues to mix with the propane in the combustion chamber until the spark plugs are exposed.



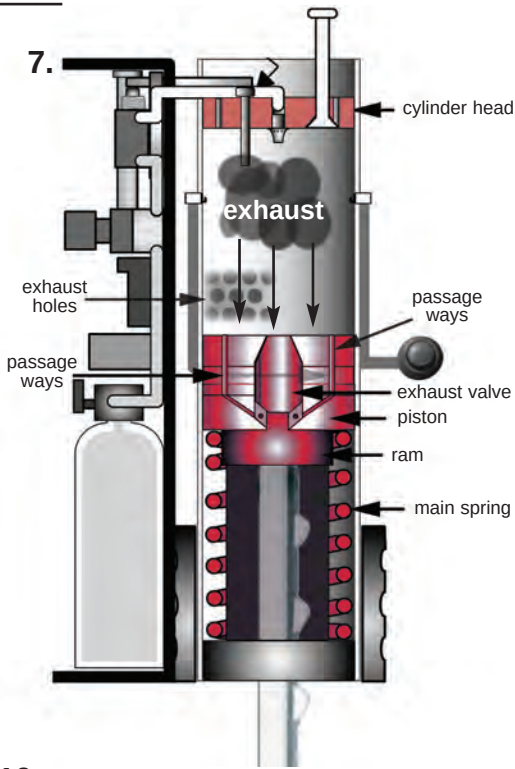

**how it works** (continued on page 10)

**how it works** (continued from page 9)

**6. Igniting the gas mixture:**
The propane hammer runs on a manual direct ignition system (igniter). After the spark plugs have been exposed to the combustion chamber on the intake stroke, the igniter button can be held to initiate the spark. The ignition circuit will spark as long as the button is depressed. ( For automatic mode, continue to hold the ignition button down.) The spark ignites the gas air mixture and forces the piston down, compressing the main spring until the piston comes into contact with the ram and opens the exhaust valve.




**7. Exhaust Stroke:**
When the piston comes into contact with the ram, the combustion pressure vents to the atmosphere through holes in the cylinder. The ram forces the object to be driven downward and opens an exhaust valve in the piston. The exhaust valve opens passage ways in the piston. The passage ways allow the remaining exhaust to flow through, while the spring returns the piston to the cylinder head. This removes the remaining exhaust from the combustion chamber, closing the piston valve.

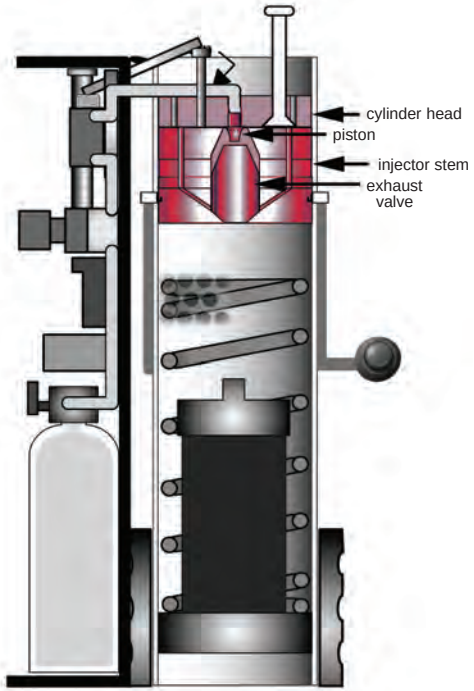



**how it works** (continued on page 11)

**how it works** (continued from page 10)

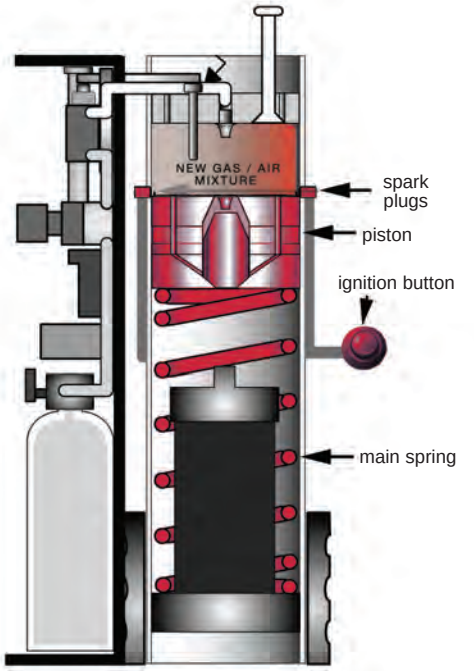
**8. Closing the piston valve:**
The exhaust valve in the piston is closed when it comes into contact with the injector stem on the cylinder head. At this point, all of the combusted gas has been exhausted through the center of the piston and gravity starts the intake stroke again.

8.




**9. Automatic cycling:**
If the ignition button remains depressed, gravity returns the piston to the firing position and exposes the spark plugs to the new gas/air mixture. The sparking plugs ignite the new mixture, driving the piston down into the ram and starting the cycle over.

9.



# SETTING UP THE PROPANE HAMMER

Do not proceed until you have both familiarized yourself with and are prepared to always follow guidelines for proper propane cylinder and Propane Hammer handling and storage.

**DANGER**

- **EXTREMELY FLAMMABLE**
- **FIRE / EXPLOSION HAZARD**
- **CONTENTS UNDER PRESSURE**
- **CARBON MONOXIDE HAZARD**

## Step 1.

## Installing / Replacing the 9 volt battery.

- Remove control panel cover by pulling ball lock pin. (figure **A.** page 13)
- Remove battery band. (figure **B1.** on right)
- Insert two 9 volt batteries. (figure **B2, B3.** on right)
- Replace battery band. (figure **B4.** on right)
- Replace control panel (figure **A.** page 13)

**figure B1.**

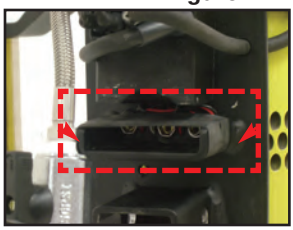
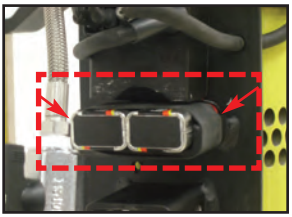


**figure B2.**

**figure B3.**

**figure B4.**



## Step 2.

## Propane Cylinder Installation

- Set Propane Hammer on a flat surface before installing propane cylinder.
- Insert the cylinder valve end Into Propane Hammer tank adapter and twist cylinder clockwise until it stops. (figure **C**. on right)
- **Do not install damaged or leaking propane cylinders.**
- Slide propane cylinder into the mounted position. (figure **CC.** on right)
- Replace control panel cover. (figure **A.** page 13)

**figure C.**

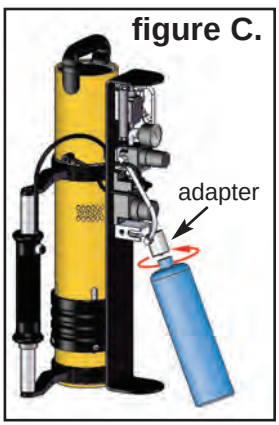
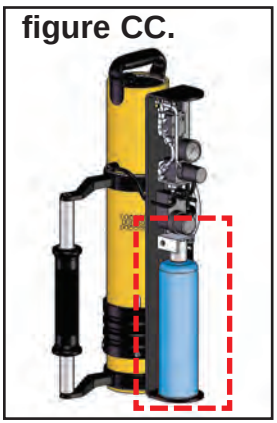



**figure CC.**



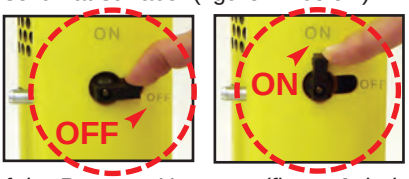
**setting up** (continued on page 13)

**setting up** (continued from page 12)

## Step 3.

# Priming the Propane Hammer:

- Place the propane hammer on a solid flat surface. (figure **D.** below)
- **Turn the on / off button to the on positon.**




- Push the primer **button**, on top of the Propane Hammer. (figure **1.** below)
- Next, grab the primer ring with both hands and slide it all the way up and then let it drop back down. This will clear the combustion chamber and mix propane gas with air for the next shot (figure **2., 3., 4.** below).

**figure 1.** **Push primer button.**

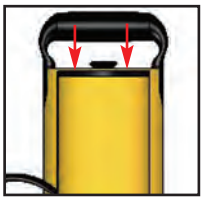


**figure 2.** **figure 3.** **figure 4.** **Grab primer ring with both hands.**

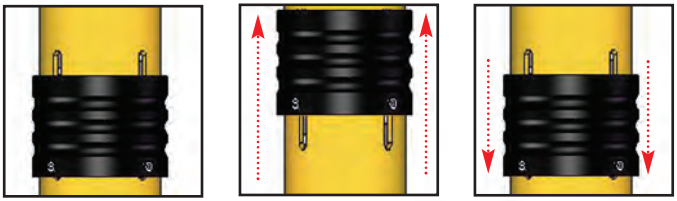


**figure A.**

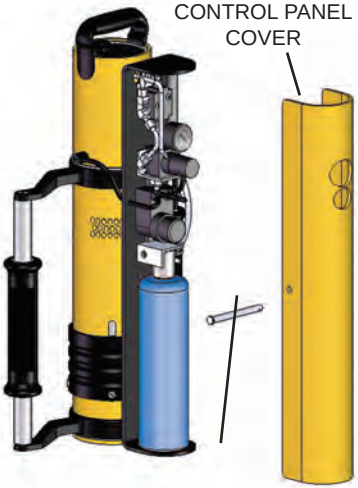
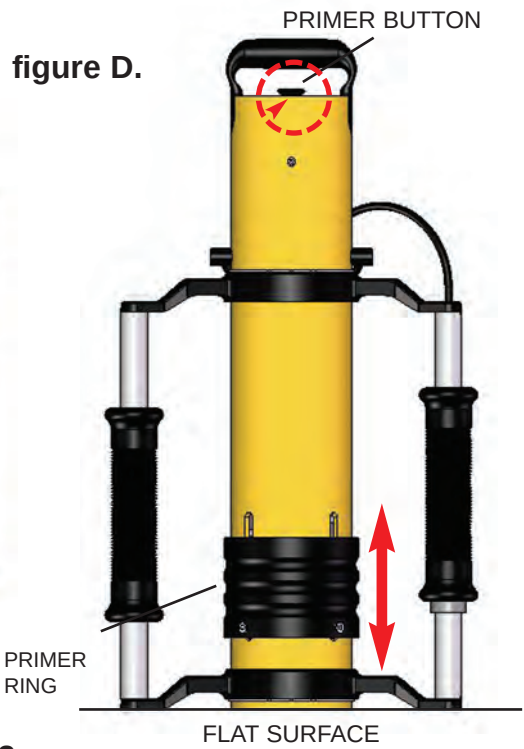



**figure D.**



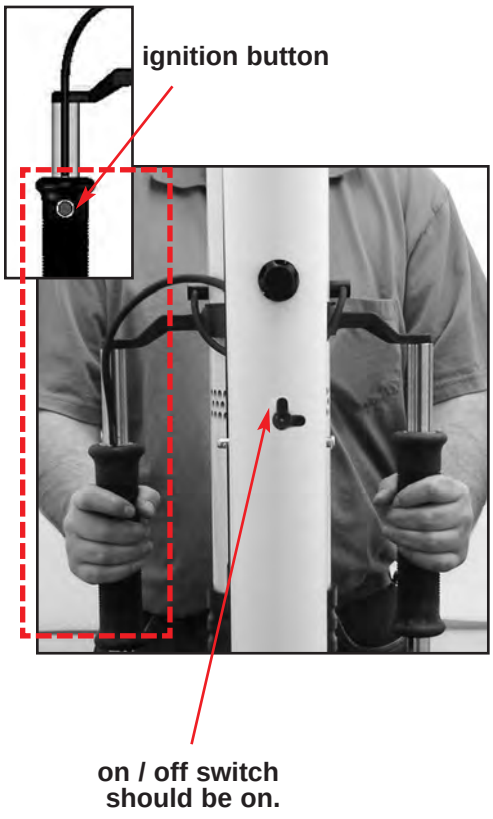
## Step 4.
## Test firing

**WARNING**

**PLEASE TAKE TIME TO READ THROUGH THIS MANUAL THOROUGHLY AND BECOME FAMILIAR WITH THE TIPPMANN PROPANE HAMMER'S PARTS, OPERATION, AND SAFETY PRECAUTIONS BEFORE ATTEMPTING TO OPERATE.**

Once the Propane Hammer has been primed **(see step 3.** page 13**)**, it is ready to be fired. Leave the propane hammer on a solid flat surface for test firing.

- To fire the first shot, place both hands on the rubber handles
- Holding tightly, squeeze the ignition button with your right index finger.
- If the propane hammer is misfiring or not firing consistently, you may need to adjust the regulator pressure. **(see step 5. page 15)**



## Step 5.

# Checking the regulator pressure:

- Remove cap from the Schrader Valve. (figure **A.** below)
- Apply pressure gauge firmly to the Schrader Valve. (figure **B.** below)
- The propane pressure should read between 45 and 75 psi.
  55 PSI is a good starting point when trouble shooting the gas pressure.

**figure A.**

**Schrader Valve with cap removed**

**figure B.**

**Pressure gauge on Schrader Valve.**

**NOTE:** 55 PSI is a good starting point when trouble shooting the gas pressure. However, the optimal running pressure will vary slightly depending on altitude and climactic conditions.

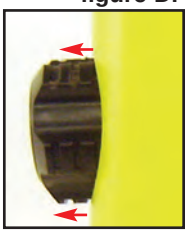
# Adjusting the regulator pressure.

- Pull the adjustment knob out slightly to unlock. (figure **C.**,**D.** below)

**figure C.**

knob pushed in

**figure D.**



pull knob out slightly

**figure E.**

**Turn knob clockwise to increase pressure.**

**figure F.**

**Turn knob counter clockwise to decrease pressure.**

**To increase pressure**

- Turn the knob clockwise. (figure E. above)
- If the mixture of gas to air is too lean, the propane hammer may not fire. A lean mixture results from a high air to gas mixture.
- Increase pressure in 5 lb. increments or less, (approximately 1/2 turn), priming twice between each adjustment until hammer starts to fire.
- **Once the Propane Hammer is set at the desired pressure, push the adjustment knob back in to lock .**

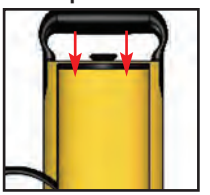
**To decrease pressure**

- Turn the knob counter clockwise. (figure F. above)
- If the mixture of gas to air is too rich, the propane hammer may not fire at all. The required operating pressure may vary slightly based on humidity, altitude and temperature.
- Decrease pressure in 5lb. increments or less, (approximately 1/2 turn.) priming twice between each adjustment until the hammer starts to fire.
- **Once the Propane Hammer is set at the desired pressure, push the adjustment knob back in to lock .**

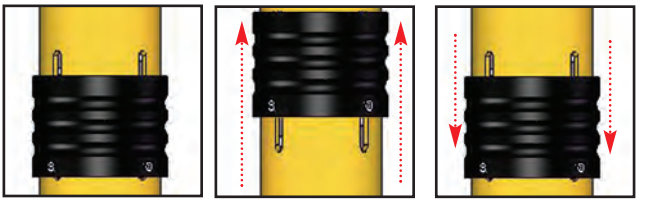
## Step 6.

## Pounding the post

1. Push the primer button on top of the propane hammer.

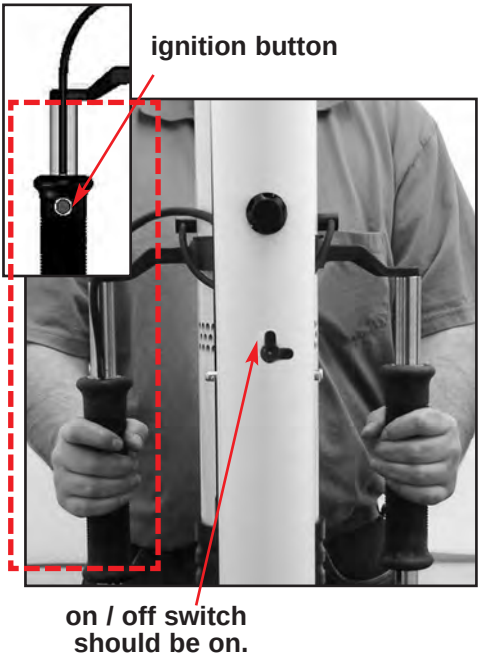



2. Set the Propane Hammer on top of the post.
3. Slide the priming ring up and let it drop back down.



4. To fire the first shot, place both hands on the rubber handles. Holding tightly, squeeze the ignition button with your right index finger. **(see step 4** page 14 **or as illustrated below in figure A)**
5. Drive the post to desired depth.
6. Remove post driver and move to next post and repeat.

**figure A.**



## Step 7.

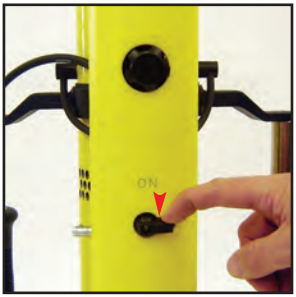
# Finishing up / Storage

**WARNING**

**FIRE PROPANE HAMMER ON A FLAT, SOLID SURFACE TO REMOVE EXCESS GAS FROM LINE BEFORE STORAGE**

## STORAGE:

1. Turn on/off valve to the off position.
2. Push ball lock pin through cover
3. Pull ball lock pin
4. Remove tank from mounting bracket.
5. Carefully unscrew tank from tank adapter.
6. Prime and fire the propane hammer to make sure that no propane is left in the system. **(see steps 3. & 4.** pages 13 & 14**)**



**1.** Turn on/off valve to off position.

**2.** Push ball lock pin through cover.

**3.** Pull ball lock pin and remove cover.

**WARNING**

**EVEN AFTER THE PROPANE CYLINDER HAS BEEN REMOVED, THE PROPANE HAMMER WILL STILL FIRE UNTIL ALL GAS HAS BEEN REMOVED FROM THE SYSTEM.**

**4.** Remove tank from the tank mounting bracket.

**5.** Carefully unscrew tank from the tank adapter.

# PARTS SCHEMATIC:

01...Cylinder
02...Control Panel Shroud
03...Gas Valve Pivot Arm
04...Gas Valve Pin

05...Valve Spacer Block
06...Priming Valve
07...Bronze Head Bushing
08...Gas Injector
09...Cylinder Head

10...Left Handle Slider
11...Handle Shaft
12...Left Rubber Handle Grip
13...Piston Valve
14...Bottom Half of Piston

15...Top Half of Piston
16...Valve Friction Plate
17...Valve Friction Material
18...Push Button Ignitor Switch
19...Handle Base Bottom

20...Handle Base Top
21...Top Handle
22...Base Plate
23...Main Spring
24...Tank Plunger

25...Tank Gasket
26...Tank Adapter
27...Regulator
28...Gas Tube Reservoir
29...Gas Metering Valve

30...Ignitor 9 Volt
31...Regulator Mounting Bracket
32...Tank Mounting Bracket
34...Ram Cap
35...Ram Collar

36...Ram Hose
37...Crimp Collar
38...On/Off Ball Valve
39...Top Cover Plate
40...Primer Button

39...Top Cover Plate
40...Primer Button
41...Spark Plug Cap
43...Piston Seal Ring Bronze
44...Handle Mounting Bushing

45...Primer Mounting Ring
46...Primer Ring
47...Spark Plug Base
48...90 Degree Ferral Fitting
49...Vent Fitting

50...Vent Gasket
51...Handle Spring
52...90 1/8" Pipe Fitting
53...Gas Valve Suppline Line
54...Straight Ferral Fitting

56...90 Degree Steeel Elbow
57...Injector Gas Line
58...Spark Plug Wire
59...Braided Gas Line
60...Right Handle Grip (switch)

61...Right Handle Slider (switch)
62...Ferral
63...Ferral Nut
64...Shroud Lock Pin
66...Pipe Nipple

67...Bradley Seal
68...Dowel Pin Locating
69...External Snap Ring
70...Internal Snap Ring
71...Bolt (primer ring)

72...Bushing (primer ring)
73...Ball Bearing
74...Handle Screws - counter sunk
75...Wood Screw #6
76...Primer Button Detent Spring

77...Detent Set Screw
78...Head Lock Screw
79...Handle Snap Ring
80...Handle Dowel Pin
81...Ignitor Washer

82...Ignitor Screw
83...Valve Arm Screw
84...Valve Arm Dowel
85...Gas Valve Screw
86...Internal Valve O'ring

87...Head O'ring
88...Primer Button O'ring
89...Spring Divider
90...Piston Screw
91...Regulator Mounting Stud

92...Regulator Mounting Nut
94...Vent Tube
95...Piston Ring Fiber
96...Handle Base Assembly
97...Ram Assembly

98...Left Handle Assembly
99...Right Handle Assembly
100..Rubber Switch Wire Cover
101..Electrical Connector
102..Tank Adapter Washer

109..Manual
110..DVD
111..Compression Fitting Insert
112..1 5/8 Ram Insert
113..Ram Insert Snap Ring

114..90 Degree Brass Elbow Long
115..Schrader Valve
116..1/4 Pipe Plug Set Screw
117..100 PSI Dial Tire Guage
118..9 Volt Battery

119..Battery Band
120..Regulator Adjustment Cap
121..Wood Crate
122..Battery Bracket
124..Handle Grip Snap Ring

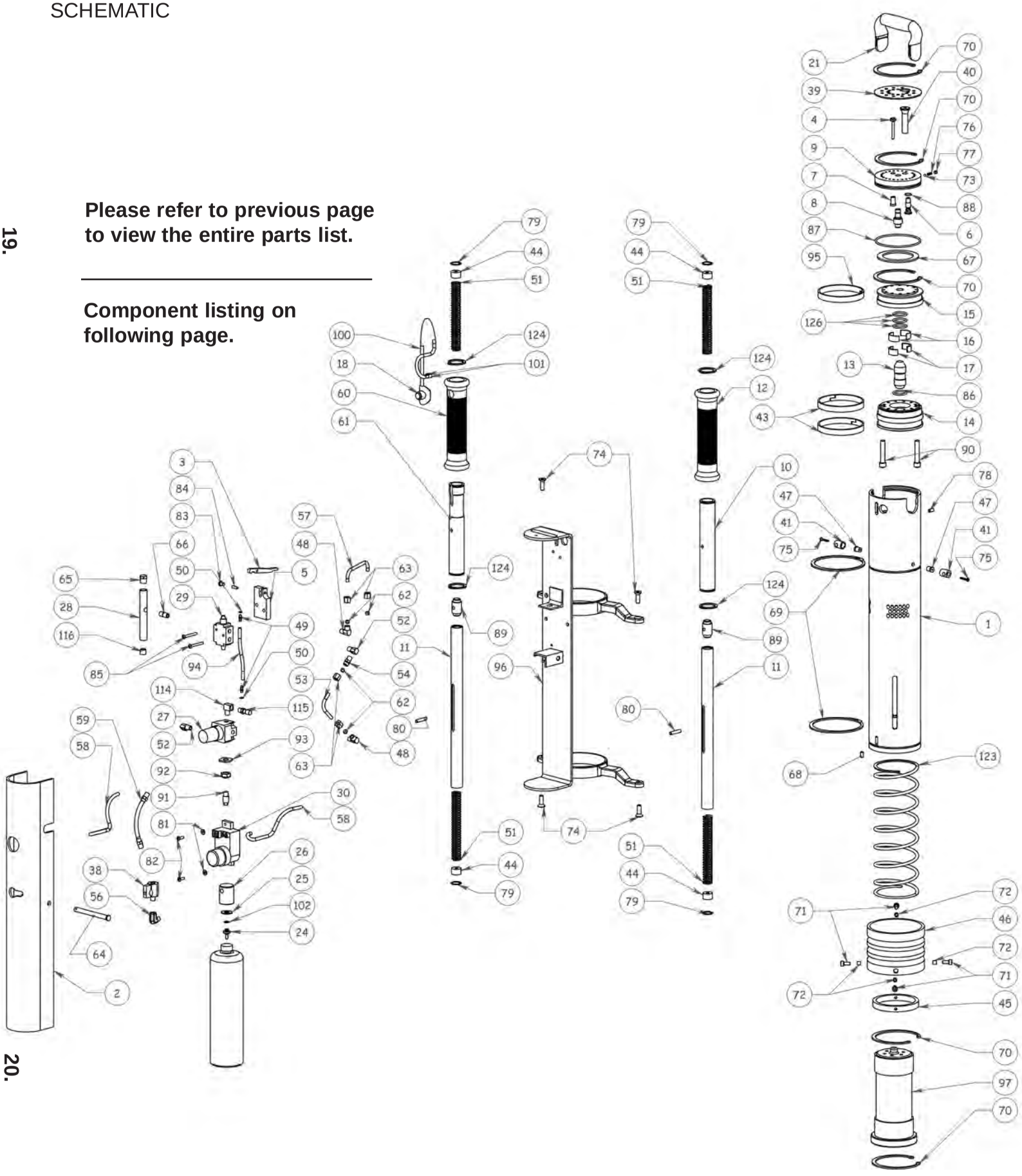
125..Regulator Set Screw
126..Valve Tension O'ring
130..9 Volt 4" lead connector
131..Serial Number Plate
200..Wooden Crate

# TIPPMANN PROPANE HAMMER

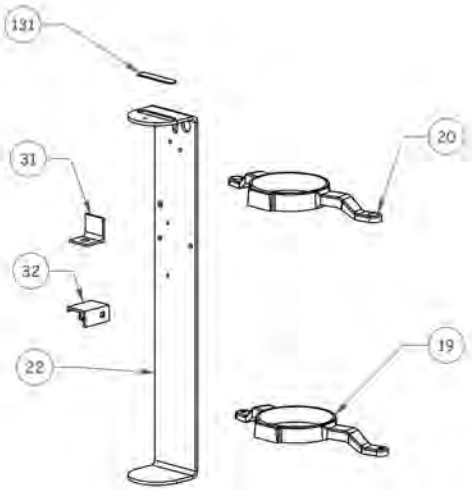
SCHEMATIC

**Please refer to previous page to view the entire parts list.**

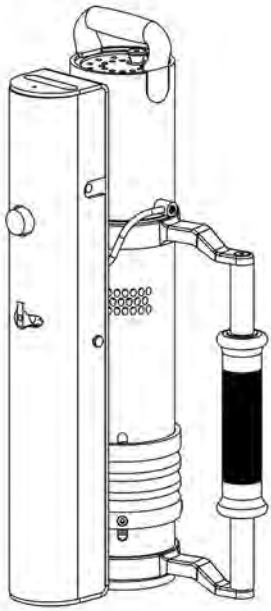
**Component listing on following page.**

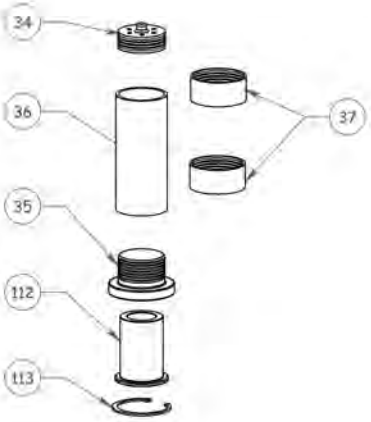


## ASSEMBLIES:




Ram Assembly 0097






Handle Base Assembly 0096

## TROUBLE SHOOTING

### Problem:

Hammer will not fire or fires inconsistent

### Cause A :

• Your propane cylinder is empty or low.

**Diagnosis:**

• Make sure the regulator is set to the correct pressure.

**Explanation:**

• When the propane cylinder gas pressure drops below or close to the operating pressure, the hammer may fire inconsistently or not at all.

**Solution:**

• Change the propane cylinder

**IF YOU HAVE DETERMINED YOUR CYLINDER IS NOT EMPTY OR LOW, CONTINUE TO CAUSE B**

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### Cause B:

• Regulator pressure is set too high or (rich)

**Diagnosis:**

To determine if the mixture is too rich:

• First check the regulator output pressure. **(see page 14)**

• If the reading is 70 psi or above, the air to fuel mixture may be too rich. Normally in a rich condition, the hammer will hesitate or not want to ignite the fuel air mixture after the priming cycle. Once the priming cycle has been ignited, the hammer may cycle in auto or semi auto mode.

**Explanation:**

• If the mixture of gas to air is too rich, the propane hammer may not fire at all. The required operating pressure may vary slightly based on humidity, altitude and temperature.

**Solution:**

• Decrease pressure in 5lb. increments or less, (approximately 1/2 turn.) priming twice between each adjustment until the hammer starts to fire. (Prime twice so the regulator pressure stabilizes before test firing).

**IF YOU HAVE DETERMINED THAT YOUR REGULATOR PRESSURE IS NOT SET TOO HIGH OR RICH, CONTINUE TO CAUSE C**

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(continued on page 23)

## TROUBLE SHOOTING

(continued from page 22)

### Cause C:

• Regulator pressure is set too low or (lean).

**Diagnosis:**

• If the hammer does not fire after checking for a rich mixture, the mixture may be too lean. Normally in a lean condition, the hammer will fire after the priming cycle, but will not run in semi auto or auto modes.

**Explanation:**

• If the mixture of gas to air is too lean, the propane hammer may not fire. A lean mixture results from a high air to gas mixture.

**Solution:**

• Increase pressure in 5 lb. increments or less, (approximately 1/2 turn), priming twice between each adjustment until hammer starts to fire. (Prime twice so that the regulator pressure stabilizes before test firing).

**IF YOU HAVE DETERMINED THAT YOUR REGULATOR PRESSURE IS NOT SET TOO LOW OR LEAN, CONTINUE TO CAUSE D**

### Cause D:

**WARNING**

**EVEN AFTER THE PROPANE CYLINDER HAS BEEN REMOVED, THE PROPANE HAMMER WILL STILL FIRE UNTIL ALL GAS HAS BEEN REMOVED FROM THE SYSTEM.**

• No spark

**Diagnosis:**

• Make sure propane cylinder is removed from the hammer before starting this test. After cylinder is removed, prime the hammer 6 to 10 times to make sure all propane is out of the system.

**This test is best done in a quiet area.** Depress the primer button. This will help you to better hear the spark. Next, put your ear close to the primer button while holding down the ignition button. You should hear a ticking sound with a rate of approximately 20 ticks per second. If the ticks are slow or do not exist, there is a problem with the spark.

**Explanation:**

• The propane hammer operates on a manual direct spark electric ignition system. If the spark is weak or does not exist, the hammer will not fire properly.

**Solution:**

• Replace the batteries and test again.

• If there is still no spark, check to make sure there are no loose wire connections.

• If still no spark, there may be a problem with the igniter.

**Contact Tippmann Industrial Products, Inc. TOLL FREE: 866-286-8046**

## SAFETY IS YOUR RESPONSIBILITY

The ownership of this machine places upon you the total responsibility of its safe operation. You must observe the same safety precautions as you would any piece of equipment to assure the safety of not only yourself but everyone around you.

Outlined here are some general precautions to be aware of ; ***The operator should at all times use common sense when using this machine and be sure others who may operate are also familiarized, responsible and safety conscious. Do not attempt to operate this machine until you have read and are familiar with this manual.***

## WARRANTY AND REPAIR POLICY

Tippmann Industrial Products, Inc., is dedicated to providing you with the Tippmann Propane Hammer's, accessories and the quality support necessary for utmost satisfaction in our product. In the event warranty or other non-warranty related repairs are required, we are here to serve you. For assistance with warranty and repair:

**CALL TOLL FREE: 866-286-8046**

## WARRANTY STATEMENT

For a period of one year from the time of purchase by the original owner/purchaser, Tippmann Industrial Product Inc. warrants this product free from defects in materials and workmanship. On claims submitted as outlined in (WARRANTY REPAIR PROCEDURE) Tippmann Industrial Product, Inc. will repair or replace without charge, any parts that have failed through defect in material or workmanship.

## WARRANTY OR REPAIR PROCEDURE

<u>For warranty and non warranty repair:</u>

1. Ship or deliver your product(s) to:
   Tippmann Industrial Products, Inc.
   3518 Adams Center Rd.
   Fort Wayne, IN 46806
2. Postage or delivery charges must be prepaid.
3. Include a brief statement regarding the requested repair, your name, return address and telephone number where you can be reached during normal business hours, if possible.

Our policy is to complete the necessary repairs within 24 hours and return it to you via regular ground, U.P.S. If you wish to have it returned using a faster service, you can request for NEXT DAY AIR UPS OR SECOND DAY AIR U.P.S. You will be charged for this service and must include your credit card number with the expiration date. Your card will be charged the difference in additional cost over regular ground shipping service.