

# OPERATION & MAINTENANCE MANUAL



**SAVAGE**®  
**RANGE SYSTEMS**

Proof & Function Trap  
Model PF13000

Box Trap Models  
R24/R36/R48  
P24/P36/P48



SavageRangeSystems.com  
Tel: 800-370-0712  
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## EXCLUSIVE LIMITED WARRANTY

**PAYMENT REQUIRED:** This Exclusive Limited Warranty will become effective and binding only upon timely receipt of payment in full to Savage Range Systems, Inc. ("SRS") for all amounts agreed to be paid to SRS for all services, or goods received or to be received, and will last for a period of one year from installation or delivery. Upon this Exclusive Limited Warranty becoming effective as set forth herein, SRS warrants that materials, equipment, goods, or services provided under this contract shall remain free from defects for a period of one (1) year. If within said 1-year period, SRS determines that a defect exists, then SRS will, at no charge to the customer, repair or replace materials and/or perform services so as to correct any defect covered under this warranty. Any claim made or submitted under this warranty must be issued or confirmed via a written notice received by SRS prior to the expiration of the 1-year period from the date of delivery or commissioning of the equipment. In the event warranty service, repair or replacement is requested, claimant shall (1) timely deliver written notice to SRS within the warranty period; (2) maintain a receipt of delivery of such timely notice; (3) fully cooperate with providing complete information necessary or as requested by SRS; and, (4) Upon request by SRS, provide access upon the premises as necessary to enable to SRS or its agent(s), to inspect, investigate or service the equipment.

SRS's obligations, and customer rights under this warranty, **shall become null and void** should customer fail to comply as set forth above or should the defect occur as the result of customer's failure to maintain the equipment as recommended herein. Additionally, this warranty **shall become null and void upon** misuse, abuse, usage of weapons or ammunition or procedures which exceed or differ from the specifications and parameters set forth in SRS product manuals, failure to timely deliver payment, or failure to timely provide written notice to SRS of a claim for warranty service, repair, or replacement, failure to take appropriate action under the circumstances so as to mitigate the damages or potential damages or injury. SRS accepts no liability for, and hereby specifically disclaims any direct, indirect, incidental, consequential or other damages incurred by the customer as a result of use or ownership of the equipment covered hereunder. The remedies detailed in this warranty shall represent SRS's sole and exclusive obligation and the customer's sole and exclusive rights under this warranty. No other warranties expressed or implied, **INCLUDING BUT NOT LIMITED TO WARRANTY FOR FITNESS FOR A PARTICULAR PURPOSE OR WARRANTY OF MERCHANTABILITY** shall apply to this contract, or the goods or services sold, performed or delivered.

## I. INTRODUCTION

Congratulations on the purchase of your new Wet Snail™ Trap. The Snail Trap is the safest, cleanest, most cost effective method for capturing bullets available. Following the simple Operation & Maintenance procedures described herein will ensure that your Snail Trap will provide you with many years of trouble free, safe, containment of the ammunition used in your range.

The spent bullets from the Wet Snail Trap do not contain lead dust particles and can be sold directly to a metal salvage company.

The **P-Series (pistol rated) Box Trap** will safely contain all ammunition rated up to 1400 Foot Pounds Energy (at Muzzle) excluding steel core, ceramic tipped or AP / API ammunition.

The **R-Series (rifle rated) Box Trap** will safely contain all ammunition rated up to 8100 Foot Pounds Energy (at Muzzle) excluding steel core, ceramic tipped or AP / API ammunition.

The **Model PF13000 Proof & Function Trap** is designed for high volume proof & function testing of firearms. The trap will safely contain proof loads for all ammunition rated up to 13000 Foot Pounds Energy (at Muzzle) excluding steel core, ceramic tipped or AP / API ammunition. Automatic or semiautomatic fire of .50 caliber BMG ammunition is not allowed.

Using ammunition that exceeds the above specification may result in damage to the Snail Trap and could result in injury to the Range Users.

To prolong the life of the unit, we recommend that the position of the shooting jack be adjusted (left to right) on a regular basis (we suggest weekly) so that the bullets are not striking the same point of the ramp.

In the unlikely event that a warranty issue arises, you may contact Savage Range Systems Customer Service at 800-370-0712. Working with you, we will evaluate the problem and agree a solution. Failure to contact Savage Range Systems prior to taking corrective may limit our responsibilities under the warranty.

## II. SAFEGUARDS & WARNINGS

### IMPORTANT SAFEGUARDS

Savage Range Systems, Inc. accepts no responsibility for the manner in which this trap is used and maintained. The owner completely accepts all risk and responsibility for the use of this trap, and shall take every precaution necessary to operate the trap in a safe manner. The owner must ensure that all applicable safety rules and regulations are followed. The trap should only be used as detailed in the attached instructions. This trap should be operated only by personnel trained in the safe use of firearms, and as instructed by the manual.

- Read all instructions
- Discard all bullets and bullet material in proper containers, as required by law and local ordinances
- Only use manufacturer's recommended products with this unit.
- Isolate the power supply to the pump prior to performing any maintenance on the Snail Trap unless otherwise instructed in this manual.
- Do not exceed the ammunition rating as printed in these instructions.

## WARNINGS

THE EQUIPMENT IS RATED TO SAFELY CONTAIN ALL AMMUNITION RATED UP TO:-

- P-SERIES BOX TRAPS: 1,400 FOOT POUNDS ENERGY (AT MUZZLE)
- R-SERIES BOX TRAPS: 8,100 FOOT POUNDS ENERGY (AT MUZZLE)
- MODEL PF13000: 13,000 FOOT POUNDS ENERGY (AT MUZZLE)

EXCLUDING STEEL CORE, CERAMIC TIPPED OR AP / API AMMUNITION. USING AMMUNITION THAT EXCEEDS THIS SPECIFICATION MAY RESULT IN DAMAGE TO THE SNAIL TRAP AND INJURY TO THE RANGE USERS.

SHOOTING ANY FIREARM INTO ANY BULLET TRAP OR CONTAINMENT SYSTEM PRESENTS A POTENTIAL RISK OF HARM TO PERSONS AND / OR PROPERTY. EXTREME CAUTION SHOULD ALWAYS BE USED.

- Close proximity shooting is by nature dangerous and we recommend the User wear proper Personal Protective Equipment (PPE) when using or maintaining the Snail Trap.
- To protect against risk of electrical shock do not operate the trap with a damaged pump or electrical cord. Use caution if the pump is dropped or damaged in any manner. A GFI receptacle is recommended.
- Certain types of bullets may result in fragments being emitted from the trap.
- Wash hands after each use or maintenance procedure.

## III. INSTALLATION & STARTUP

### NECESSARY TOOLS

- Channel Locks or Adjustable Pliers
- Drill with screwdriver attachment
- Rubber Adhesive
- Screw driver
- Utility knife
- Hacksaw
- Teflon Tape

### INSTALLATION PROCESS

1. Unpack unit to verify that all components are accounted for as listed on the packing slip.
2. Place the trap in a safe, well-ventilated location.

**PF13000 Traps:** Position the trap in its intended location. Ensure that the shooting port lines up with the muzzle position. The PF13000 is designed for the bullets to strike the replacement scroll section just forward of the top end of the lower ramp. If the bullets strike too far back, they will impart too much energy to the ramp and reduce its life expectancy. The life of the trap can be greatly enhanced by varying the point of impact across the width of the trap. If the bullets strike the same point, they will cut a groove over time, creating a dangerous condition.

3. Insert the bullet collection tray into the tank. Place the tank beneath the bullet discharge chute so that the tray is directly beneath the opening.
4. Apply Teflon tape to the 1" threaded barb fitting and thread the fitting into the pump.
5. Connect the 1" vinyl tubing to the barb fitting and secure with one of the hose clamps.
6. Place the pump into the weir in the tank so that it is easily accessible.
7. Apply Teflon tape to the 1" threaded barb fitting and thread the fitting into the spraybar (for Box Traps) or the coupling in the side of the trap (for PF13000 units).
8. Cut the 1" vinyl tubing to the desired length and connect the free end to the barb fitting in the spray bar. Secure with the 2<sup>nd</sup> hose clamp provided.
9. Fit the 4" rubber couplings on the 4" pipe spigot on the front trough discharge. (for Box Traps)

10. Attach the 90° elbow to one end of the 4" pipe and cut the pipe to the required length so that the elbow discharges into the tank (see front cover photo). Connect the PVC to the front trough using the rubber coupling. Tighten all hose clamps securely. **(for Box Traps)**
11. Cut the rubber skirting to the required height. The skirting, when attached to the discharge chute, should be no more than 1/8" - 1/4" above the perforated bullet collection tray. Attached the skirting to the discharge chute using the TEK screws and fender washers provided. We recommend that the ends of the skirting overlap so as to prevent the gap from opening. Remove any excess material. **(for Box Traps)**
12. Add fresh, clean water to the tank until it reaches a depth of approximately 10" - generally to the top of the pump.
13. Add Snail Oil to the tank. The ideal concentration is 2 - 3% oil / water. A useful guide is 1/2 cup of oil per gallon of water. Use three (3) quarts for the PF13000 and Model R24, five (5) quarts for the Model R36 and six (6) quarts for the Model R48.
14. Plug the pump into a GFI protected outlet and allow the pump to run for several minutes while you check the hose & pipe connections for leaks. Tighten as necessary.
15. Open the inspection door and verify that water is being sprayed into the deceleration chamber. If not, please refer to the troubleshooting section of this manual.
16. Secure the door.

## IV. OPERATION & MAINTENANCE

### OPERATION

***WARNING - DO NOT EXCEED THE AMMUNITION RATING FOR THE SNAIL TRAP.***

1. Plug in pump. Allow the pump to run for a few minutes to properly wet the bottom ramp and inside the deceleration chamber.
2. When finished using the trap, unplug the pump.
3. **Box Traps:** Remove all litter / debris from the front trough and lower ramps.

### ROUTINE & PREVENTIVE MAINTENANCE

#### Daily

- Check water level in tank with the pump switched off. Water should be above pump housing (or at least 10" deep). Top up with clean water as necessary.
- Check level of spent bullets in the tray. Remove salvage material before the level reaches the top of the tray. To empty the tray, remove the bullets from the tray using a small shovel and dispose of the spent rounds in the proper recycling container.
- **Box Traps:** Remove any debris (target backing, shot gun wads, etc.) from the front trough.
- Check Pump condition and operation
- Check the spray pattern of the spray bar to ensure that the ramps and deceleration chamber are being properly wetted.
- **PF13000:** Look through the shooting tube to ensure fluid is flowing down the lower ramp.
- Ensure that access door is tight. The vibrations from rounds striking the trap can loosen the bolt.

**Weekly**

- Check Snail Oil concentration using a refractometer. Oil concentration should be between 2% & 3%. Add oil as necessary.
- Inspect the trap for signs of damage or excessive wear. If any damage is noted, stop use of the trap and call Savage Range Systems 800-370-0712 immediately and speak to Range Product Support.
- PF13000: Check the tightness of the bolts on the replacement scroll section.
- Using a metal scoop, remove any sludge build-up on the bottom of the tank and place in the proper container for either recycling or disposal.

**V. REPLACEMENT OF PARTS / COMPONENTS**

Replacement or repair of parts can be ordered directly from Savage Range Systems, Inc. Call 800.370.0712, Range Product Support, for assistance or visit our Website at [www.savagerangesystems.com](http://www.savagerangesystems.com).

Item	Part No.	Manufacturer / Supplier
Bullet Collection Tray		Savage Range Systems
Pump - 5MSP	030121	Savage Range Systems
Spraybar	A4300	Savage Range Systems
Front Trough Screen		Savage Range Systems
Replacement Scroll	PF-A2500	Savage Range Systems
Snail Lubricant		Savage Range Systems
Quart	030158	
1-gallon	191160	
5-gallon	191170	
Anti-Foam (1-gallon)	710001	Savage Range Systems
Splash Guards	191240	Savage Range Systems
Refractometer*	190121	*Optional Add-on Purchase with Trap

## VI. TROUBLESHOOTING

Problem	Probable Cause	Possible Solution
No water flow	Pumps not turned on	Switch on pumps
	No power to pumps	Ensure pumps are plugged in Check circuit breaker
Poor water coverage/Low-flow	Pump is not working	Check power supply
		Plug pump into socket Reset pump - See Manufacturer's manual Replace pump
Pump is not working	Low water level	Add water until level to top of pump housing.
	Spraybar is blocked	Clean spraybar
	No power to pump	Check plug Check circuit breaker
	Pump has overheated and tripped out	Reset pump  Low water level - bring water level to top of pump Excessive sludge around pump - remove sludge
Lubricating fluid is foaming	Faulty pump	Replace pump
	Excessive Snail Oil concentration	Reduce concentration by removing fluid and replacing with clean water
	Insufficient foaming retardant	Add anti-foaming agent - contact SRS

## VII. MAINTENANCE PROCEDURES

### Cleaning / Adjusting Spraybars

#### Box Trap

The spraybar should be producing a uniform sheet of water that covers the entire wet ramp while spraying the inside of the deceleration chamber. Before removing the spraybar, check the water level and the bottom of the pump to verify that there are no obstructions or lead sediment restricting the impeller from spinning freely. Check the T-Strainer screen, to make sure it's clean. If no obvious obstructions / problems are discovered, the spraybar should be removed and cleaned.

1. Unplug the pump to ensure that it cannot be switched on while the spraybar is removed.
2. Remove the hose clamps on the 90° barb fittings and disconnect the 1" vinyl tubing.
3. Loosen the two bolts that hold the bar in place. Remove the spraybar from the deceleration chamber.
4. Check the spray holes in the bar for any obvious blockage. Use a piece of wire to clear any obstructions.
5. To flush the debris from the inside the spraybar, remove the plugs from each end of the spraybar. Using a garden hose, flush with clean water until all foreign material is removed.
6. Replace the plugs.
7. To re-install the spraybar, reverse the sequence on Steps 1 - 3 above.

#### PF13000:

1. Unplug the pump to ensure that it cannot be switched on while the spraybar is removed.
2. Remove the hose clamps on the barb fittings and disconnect the 1" vinyl tubing.
3. Remove the barb fitting.
4. Insert a long handle wire brush into the spray to clear the obstruction.
5. Check the spray holes in the bar for any obvious blockage. Use a piece of wire to clear any obstructions.
6. To flush the debris from the inside the spraybar, remove spray nozzles (if necessary), reconnect the vinyl tubing and run the pump.

### Checking Snail Oil Concentration

For an accurate reading, run the system for at least 5 minutes to circulate / mix the water and Snail Oil.

1. Remove the refractometer\* from the bag along with the dropper that is in a small Velcro pouch inside.
2. With the dropper, collect a sample of the fluid from the tank.
3. Open the clear plastic flap on the refractometer\* and apply a few drops to the glass portion that was covered by the plastic flap.
4. Keeping the drops centered on the glass, close the clear plastic flap.
5. Hold the refractometer\* to the light and read the concentration percentage in the viewfinder. Adjust the focus by turning the rubber section at the eyecup.
6. Additional oil should be added if the concentration is below 2%. The recommended concentration is between 2% and 3%.
7. After testing the oil level, rinse off the end of the refractometer\*, dry and return to the bag.

\*Optional add-on purchase with Specialty Box Trap Series.



### Cleaning the Bullet Collection Tray

Depending on the amount of material on the tray, it may be possible to simply remove the tray from the tank and place the spent material in the proper container. For larger amounts of debris, it will be necessary to remove the material from the tray using a small flat-faced shovel.

1. Run the pumps for 2 - 3 minutes prior to clearing the trap to ensure that there is no dried dust on the material in the tray.
2. Use the flat-faced shovel to remove the bullets from the tray and place in your chosen reclamation container.
3. Repeat Step 2 until all material is removed from the bullet collection tray.

### Removing the Sludge from the Fluid Tank

Recommended tools for removing the sludge from the tank are flat head shovel, trowel and pump for transferring the fluid. We recommend that you wear rubber / latex gloves when handling the sludge. As the sludge is wet, inhalation exposure is not an immediate concern.

1. Remove the spent bullets from the bullet collection tray.
2. Remove the trays from the tank and set aside. Take this opportunity to inspect the condition of the tray and make any necessary repairs.
3. Either using a separate sump pump or the existing pump in the tank, transfer the fluid from the tank to 55-gallon, open top drum. If you use the trap pump, it will be necessary to disconnect it from the spray bar assembly. Pump as much fluid from the tank as possible.
4. After the fluid has been removed from the tank, use the flat head shovel to remove the sludge from the tank. The sludge should be placed in containers appropriate for disposal of lead waste. It may be necessary to use a trowel to get the sludge from in the corners of the tank and along the edges.
5. After the sludge has been removed, using the pump from Step 3, transfer the fluid from the holding barrels / drums back to the tank. You may wish to pump the fluid through a bag filter to remove suspended sediment. Top up the water level as necessary. Check the Snail Oil Concentration and add oil as necessary to obtain the correct concentration.
6. Reinstall the bullet collection tray.
7. Turn on the pumps to ensure proper operation of all units.

### Replacing a Pump

1. Unplug / isolate the electrical supply to the pump.
2. Remove the bullet collection tray. If necessary, remove the spent bullets from the tray as described previously.
3. Remove the pump from the tank.
4. Loosen the hose clamp securing the vinyl tubing to the barb fitting.
5. Remove the vinyl tubing from the fitting. It may be necessary to use a pair of channel locks to loosen the tubing on the fitting. Care should be taken not to damage the tubing.
6. Remove the barb fitting from the old pump.
7. Install the barb fitting removed above into the new pump. Attached the vinyl tubing to the fitting using the hose clamp to secure it.
8. Place the pump into the tank. Run the pump to verify that the proper flow rate is obtained.
9. Replace the bullet collection tray if there is no conveyor.

**Welding Procedures for Leak Repair**

When working in areas that have lead deposits on the plates, it is imperative that the proper PPE is worn, the area is properly cleaned and adequate ventilation is provided.

1. Use Ledizolv (or similar) to clean the work area.
2. Heat the area to be repaired with a heating torch to dry thoroughly and remove all Snail Oil residues.
3. Clean the area with a wire wheel or grinder.
4. Groove out the crack in the weld. This assures good penetration for the repair.
5. After the repair area is cleaned, weld the crack using 7018 welding rods.
6. Allow the weld to cool before leak testing.
7. Dry the area using the heating torch and touch up with gray primer.

**VIII. MANUFACTURER'S LITERATURE**

- Little Giant Pump
- Snail Oil (MSDS)