



MINI TURTLE FIRE SYSTEM OPERATING MANUAL

Read this manual before using this product.
Failure to follow these instructions and
safety precautions can result in serious
injury or death.

Keep this manual nearby in a safe location
for future reference.

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DISCLAIMER, ASSUMPTION OF RISK, AND LIMITATION OF LIABILITY

Turtle Fire Systems, LLC provides this product and its accompanying documentation for use **solely by trained emergency response personnel**. By using the Mini Turtle Fire System, the user acknowledges and agrees to the following:

- **Assumption of Risk:** Firefighting and emergency operations are inherently dangerous. The user assumes all risks associated with the deployment and use of the Product, including but not limited to the risk of injury, death, or property damage.
- **Proper Use Only:** The Product is designed to be used in accordance with the procedures outlined in this manual. Failure to follow the operating instructions, safety precautions, and warnings provided may result in injury, death, or damage and will void any warranty or liability of the Company.
- **No Guarantee of Outcome:** The Company makes no guarantee that use of the Product will prevent injury, extinguish all fires, or mitigate all hazards. Fire behavior and emergency conditions are unpredictable, and outcomes depend on numerous external factors outside the Company's control.
- **Product Inspection and Maintenance:** It is the sole responsibility of the end user to ensure that the Product is properly inspected, maintained, and used only when in serviceable condition. Any defective or damaged components must be removed from service immediately.
- **Limitation of Liability:** To the fullest extent permitted by law, Turtle Fire Systems, LLC shall not be liable for any direct, indirect, incidental, consequential, or punitive damages arising from the use or misuse of the Product.
- **No Modifications:** The Product must not be altered, modified, or adapted in any way.

By using this Product, the user affirms they have read and understood this disclaimer and the entire Operating Manual, and acknowledges that it is their responsibility to ensure they are properly trained in its safe operation.



MINI TURTLE FIRE SYSTEM

The Mini Turtle Fire System consists of:

- 1 The MINI TURTLE™ electric vehicle nozzle
- 2 Cam and groove connection with a safety lock
- 3 27.75" of 1.5" powder coated Schedule 40 steel pipe
- 4 Male to double female swivel coupling connection
- 5 27.6" of 1.5" powder coated Schedule 40 steel pipe
- 6 Double female swivel coupling for connection to 1.5" coupling

All mentions of the Mini Turtle Fire System within this document refer to all components listed and shown above.



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PRODUCT WARNINGS



- The Mini Turtle Fire System is intended only for use by firefighters or trained personnel.
- When deploying the Mini Turtle Fire System at any type of emergency, personal protective equipment (PPE) must be worn.
- Deploying the Mini Turtle Fire System during an emergency is always to be done under the protection of a handline flowing 150 GPM or greater. To maximize the safety of the firefighter deploying the Mini Turtle Fire System, a fog nozzle is recommended for a cone and capture technique.
- In an emergency involving an electric vehicle, firefighters face an inherent risk of shock or electrocution.
 - If responding firefighters ascertain that the safest deployment method is to push the Mini Turtle Fire System into place using pike poles, the pike poles must be constructed of non-conductive material.
- If, after assessment, on scene personnel deem the risk too high to safely deploy the Mini Turtle Fire System, traditional fire extinguishment tactics should be employed instead. If unsure, do not deploy the Mini Turtle Fire System. Situations of this nature include, but are not limited to:
 - Exposed wiring under the vehicle
 - Electrical arcing around the battery
 - Too heavy a fire present to safely approach the vehicle
 - Insufficient water available to supply the protective handline, the Mini Turtle Fire System, or both.
- The Mini Turtle Fire System has been designed to safely operate at a maximum of 150 PSI.
- The Mini Turtle Fire System is a master stream. Always open/close gates slowly to avoid water hammer.
- Do not over tighten any hose connections to the Mini Turtle Fire System.
- Never attempt a direct firehose to Mini Turtle nozzle head connection. Always employ the Mini Turtle Fire System supply pipes. Reference Assembly Instructions.
- Step back prior to charging. Charging the Mini Turtle Fire System while too close to the nozzle may result in serious injury.
- After positioning the Mini Turtle Fire System, charge it as soon as safely possible. The water flowing through the Mini Turtle Fire System acts to protect it from heat damage and will serve to prolong its service life.
 - If there is an unexpected delay in flowing water through the Mini Turtle Fire System, repurpose the protective 1¾" handline to cool the Mini Turtle Fire System until it can be supplied. Only deploy this measure after the deployment firefighter is safely away from the vehicle.
- The Mini Turtle Fire System is not to be modified or altered in any way.
- Prior to every use, the Mini Turtle Fire System must be inspected to ensure readiness and safe operation. If there is any question that the Mini Turtle Fire System has been damaged or is unfit for deployment in any way, it is to be taken out of service.

ASSEMBLY INSTRUCTIONS

1

First assemble the supply pipe by inserting the male end of the first pipe to the double female coupling at the end of the second pipe, making sure not to over tighten.



2

Next, insert the Turtle into the quick connect on the supply pipe, making sure the clamps are extended.



3

Once inserted, hold the pipe level and push down on each clamp until you hear a click. Tug the clamps to ensure they're secured.



4

Insert the male end of the 1 $\frac{3}{4}$ " hose to the double female coupling at the end of the supply pipe, making sure not to over tighten.



The Mini Turtle Fire System is now ready to be deployed.

OPERATING INSTRUCTIONS

- **The Mini Turtle Fire System is designed to:**

- Mitigate electric vehicle (EV) fires
- Extinguish internal combustion engine vehicle fires
- Cool exposures under threat of ignition
- Cool pressure vessels – propane, natural gas, etc.
- Cool liquid fuel storage tanks – gasoline, fuel oil, aviation fuel, etc.
- Address deep seated fires in untenable or hard to reach areas of a structure
- For a more comprehensive list of alternate uses, please visit our website:
www.turtlefiresystems.com

Note: When dealing with other Alternative Fuel Vehicles such as Hydrogen, LNG (Liquified Natural Gas), CNG (Compressed Natural Gas), etc., please refer to vehicle manufacturer Emergency Response Guides for best practices.

- **Deploying the Mini Turtle Fire System:**

- Attempt to position the apparatus up hill and up wind from the fire.
- After a 360° size up and assessment, the Company Officer will determine whether it is safe to deploy the Mini Turtle Fire System.
- A minimum of two firefighters in full PPE and on breathing air are required to execute deployment:
 - FF 1 operates the protective 1¾" handline to perform a cone and capture technique.
 - FF 2 assembles and deploys the Mini Turtle Fire System.
- Once deployment is ordered, FF 1 will stretch the protective 1¾" handline. This line serves to suppress fire and protect FF 2.
- FF 2 will then assemble the Mini Turtle Fire System, affix the supply hose, and push the uncharged Mini Turtle nozzle under the EV.
- Once the Mini Turtle Fire System is positioned in place, the pump operator will charge the line up to 150 PSI at the panel depending on the situation.

Note: Cribbing and wheel chocking should be attempted at the earliest opportunity if conditions allow for it to be done with relative safety.

Note: EV battery fires can require thousands of gallons of water to achieve extinguishment. The Mini Turtle Fire System is capable of flowing 300+ GPM if required. Obtaining a water source as soon as possible is imperative.

OPERATING INSTRUCTIONS

- **Supplying/Operating the Mini Turtle Fire System:**

- The Mini Turtle Fire System is capable of flowing at a rate up to 300+ GPM.
- The Mini Turtle Fire System is a master stream. Open and close valves slowly to avoid water hammer and undue stress on components.
- It is recommended that, at a minimum, the Mini Turtle Fire System be supplied with 100' of 1¾" hose pressurized to 150 PSI at the pump, at which the Mini Turtle will flow 300+ GPM.
- When supplied with a single 1¾", do not exceed more than 100' of supply line. The high flow rate will result in a restrictive level of friction loss in the 1¾" hose causing excessive pump pressures.
- Stretches greater than 100' or flows greater than 300 GPM, increase hose size to 2", 3", LDH or parallel 2½".
- When supplying the Mini Turtle Fire System by way of standpipe:
 - Use a lead length of 2½" or 3" hose connected to a gated wye. This will grant firefighters the ability to supply a handline along with the Mini Turtle Fire System.

- **Operating Pressures:**

	Pump PSI		
	100	125	150
Hose Size	GPM		
100' of 1¾"	250	285	315
100' of 2"	320	350	380
100' of 2½"	343	375	410

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MAINTENANCE & INSPECTION

- Fires produce harmful byproducts. After each use, the Mini Turtle Fire System should be cleaned with mild dish soap and warm water before it is returned to service.
- If the Mini Turtle Fire System is supplied with salt or brackish water, it must be flushed with fresh water.
- Drain and let dry the Mini Turtle Fire System fully after each use.
- Before and after deploying the Mini Turtle Fire System, whether it be an emergency or training environment, all threaded couplings must be inspected for proper fitment. If any threaded coupling is found to be loose, the coupling must be tightened prior to use.
- If in doubt of proper fitment of threaded couplings, remove the tool from service, and contact Turtle Fire Systems for further guidance: info@turtlefiresystems.com



Male cam and groove coupling on nozzle head



Double female coupling and female cam and groove coupling on middle section of pipe



Double female coupling on either side of second section of pipe