



International 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.

TURTLE FIRE SYSTEM OPERATING MANUAL



TURTLE FIRE SYSTEM

The Turtle Fire System consists of:

- 1 The Turtle full spectrum nozzle
- 2 Cam and groove connection with a secondary lock
- 3 1.5m of 63.5mm powder coated Schedule 40 steel pipe
- 4 Coupling for connection to 63.5mm hose line

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

TURTLE FIRE SYSTEM OPERATING MANUAL



PRODUCT WARNINGS



- The Turtle Fire System is intended only for use by firefighters or trained personnel.
- When deploying the Turtle Fire System at any type of emergency, personal protective equipment (PPE) must be worn.
- Deploying the Turtle Fire System during an emergency is always to be done under the protection of a hand line flowing 568 LPM or greater. To maximize the safety of the firefighter deploying the 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 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 Turtle Fire System, traditional fire extinguishment tactics should be employed instead. If unsure, do not deploy the 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 Turtle Fire System, or both.
- The Turtle Fire System has been designed to safely operate at a maximum of 1,034 kPa.
- The 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 Turtle Fire System.
- Never attempt a direct firehose to Turtle connection. Always employ the Turtle Fire System supply pipe. Reference Assembly Instructions Step 3.
- After it has been positioned, step away from the Turtle Fire System prior to charging. Charging the Turtle Fire System while too close to the nozzle may result in serious injury.
- After positioning the Turtle Fire System, charge it as soon as safely possible. The water flowing through the 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 Turtle Fire System, repurpose the protective 44.45mm handline to cool the Turtle Fire System until it can be supplied.
- The Turtle Fire System is not to be modified or altered in any way.
- Prior to every use, the Turtle Fire System must be inspected to ensure readiness and safe operation. If there is any question that the 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

To assemble the Turtle Fire System, insert the Turtle into the quick connect on the supply pipe, making sure the clamps are extended.



2

Once inserted, hold the pipe level and push down on the clamps until locked. If the pipe is not level, this will create tension on the cam and groove connection and impact your ability to fasten both locks. Tug the clamps to ensure they're secured.



3

Insert the male end of the 63.5mm hose to the double female coupling at the end of the supply pipe, making sure not to over tighten.



The Turtle Fire System is now ready to be deployed.

OPERATING INSTRUCTIONS

- The 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, hydrogen, 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
- Deploying the Turtle Fire System:
 - Attempt to position the apparatus up hill and up wind from the fire.
 - After a 360° size up and assessment, the most senior officer will determine whether it is safe to deploy the 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 44.45mm handline to perform a cone and capture technique.
 - FF 2 assembles and deploys the Turtle Fire System.
 - Once deployment is ordered, FF 1 will stretch the protective 44.45mm handline. This line serves to suppress fire and protect FF 2.
 - FF 2 will then assemble the Turtle Fire System and affix the supply hose.
 - Lifting the pipe for leverage and utilizing the front slide plate, FF 2 will push the uncharged Turtle Fire System in place.
 - Once the Turtle Fire System is positioned in place, the chauffer will charge the line up to 1,034 kPa at the Turtle.

Note: Cribbing and wheel chocking should be attempted at the earliest opportunity during deployment of the Turtle Fire System if conditions allow for it to be done safely.

Note: EV battery fires can require thousands of gallons of water to achieve extinguishment. The Turtle Fire System is capable of flowing 1,893+ LPM if required. Hooking to a hydrant as soon as possible is imperative to maintain this volume over a period of time.

OPERATING INSTRUCTIONS

- Supplying/Operating the Turtle Fire System:
 - The Turtle Fire System is a full spectrum nozzle capable of flowing at a rate of 568 to 1,893+ LPM.
 - The Turtle Fire System will flow up to 1,893+ LPM at a nozzle pressure of 690 kPa.
 - The Turtle Fire System is a master stream. Open and close valves slowly to avoid water hammer and undue stress on components.
 - 1,893+ LPM can be achieved in several ways:
 - When supplied with a single 63.5mm, do not exceed more than 30.48m of supply line. The high flow rate will result in a restrictive level of friction loss in the 63.5mm hose causing excessive pump pressures.
 - Stretches greater than 30.48m should be comprised of parallel 63.5mm, 76.2mm, or LDH.
 - When supplying the Turtle Fire System by way of standpipe:
 - A siamese appliance should be affixed to the Turtle Fire System
 - This will grant firefighters the ability to supply the Turtle Fire System from two separate standpipe outlets utilizing two sets of 63.5mm high rise packs.
 - If the situation dictates a lower flow, a 44.45mm hose can be affixed to the Turtle Fire System with a 38.1mm to 63.5mm increaser.
- Maintenance:
 - Fires produce harmful byproducts. After each use, the Turtle Fire System should be cleaned with mild dish soap and warm water before it is returned to service.
 - If the Turtle Fire System is supplied with salt or brackish water, it must be flushed with fresh water.
 - Drain and let dry the Turtle Fire System fully after each use.

THE TURTLE FIRE SYSTEM

EV NOZZLE



The Turtle Fire System was founded in response to the growing concern of electric vehicle fires and the need for a simple, safe, and effective water delivery system.

Its unique design and operation allows for applications beyond EV fires, such as internal combustion engine fires, cooling fuel storage tanks, deep-seated fires, exposure protection, hazmat incidents and more.

VOLUME

Full spectrum nozzle capable of effectively delivering 75 to 500+ GPM and anywhere in between.

SAFE

Once deployed, the Turtle Fire System operates unmanned, reducing exposure to fire and harmful toxic gasses.

EFFECTIVE

Low-profile design easily deployed under a vehicle to deliver copious amounts of water directly onto an EV battery case.

DURABLE

Made in the USA of 100% welded American steel. Its strength is reinforced by its patent pending dome shape.

SIMPLE

Able to be assembled and deployed rapidly with minimal manpower.

FORCE MULTIPLIER

The Turtle Fire System enables departments to repurpose manpower and do more with less.



The Turtle Fire System is the first full spectrum EV nozzle capable of quickly adapting to the demands of the fireground. Its flow pattern is equipped to accommodate both low- and high-profile vehicles and the while deployed flow rate can be adjusted from 75 to 500+ GPM to address water availability and the varying stages of thermal runaway.



Every feature of the Turtle Fire System was designed to allow for quick and safe deployment using tactics already familiar to the fire service.



TURTLE FIRE SYSTEM Specifications

- 1 Patent pending dome shape and hole placement allows for full coverage of EV battery case.
- 2 Hole sizes emit a column of water which allows for rapid heat absorption and permits the passing of debris.
- 3 Slide plate allows for maneuverability across various surfaces.
- 4 A carabiner can be attached to the front loop to assist with deployment.
- 5 Pike poles can utilize the side handles to push or reposition the Turtle Fire System.
- 6 Cam and groove connection allows for quick assembly and includes a secondary lock as an added safety measure.
- 7 Powder coated steel pipe provides leverage for deployment, added heat barrier for the hose, and ensures that water flow is maintained should the tires fail causing the vehicle to drop.

MINI TURTLE FIRE SYSTEM

EV NOZZLE



The Mini TURTLE™ Fire System offers the same key benefits of our original nozzle but in a more compact form.

At 33% smaller and supplied with two 1½" pipes, the Mini Turtle Fire System has been optimized for the following scenarios:

- Ferries and tunnels operating with limited pump pressures
- A standpipe in a parking structure to accommodate a gated wye for a handline
- Limited water supply
- Engine storage restrictions

VOLUME

Capable of effectively delivering low to high flows up to 300+ GPM.

SAFE

Once deployed, the Mini Turtle nozzle operates unmanned, reducing exposure to fire and harmful toxic gasses.

EFFECTIVE

At only 2.5" high, the Mini Turtle is easily deployed under a low-profile electric vehicle.

DURABLE

Made of welded steel. Its strength is reinforced by its patented dome shape.

SIMPLE

Able to be assembled and deployed rapidly with minimal manpower.

FORCE MULTIPLIER

Enables departments to repurpose manpower and do more with less.



Operating Pressures

	Pump PSI		
	100	125	150
Hose Size	GPM		
100' of 1½"	250	285	315
100' of 2"	320	350	380
100' of 2½"	343	375	410