Frozenfire High Expansion HX Mini Foam Generator

Product Overview

The Frozenfire High Expansion HX Mini Foam Generator is a compact, portable, and high-performance air foam generating device designed to produce high-expansion foam for rapid suppression of fires in enclosed and semi-enclosed areas. The unit utilizes a high-capacity water-driven fan to generate large volumes of foam from a relatively small quantity of foam concentrate, making it an efficient solution for total flooding applications.



Manufactured with a stainless steel body, corrosion-resistant components, and a lightweight portable design, the HX Mini Foam Generator is suitable for industrial, marine, aviation, mining, warehouse, and utility applications where rapid foam generation is essential.

The generator is designed for easy transportation, quick installation, and reliable operation, providing excellent foam expansion and effective fire suppression while minimizing water damage.

Working Principle

The Frozenfire HX Mini Foam Generator operates on the principle of high-expansion foam generation.

Pressurized water is supplied through the inlet coupling and passes through an inline foam proportioning system where foam concentrate is mixed at the required concentration (typically 3% or 6%). The foam solution is then directed to specially designed spray nozzles positioned ahead of a high-speed water-powered fan.

The fan draws a large volume of atmospheric air through the stainless steel mesh screen. As the foam solution passes over the mesh, it traps air and produces high-expansion foam.

The resulting foam expands rapidly, filling the protected area and forming a thick foam blanket that:

- Smothers the fire by excluding oxygen.
- Suppresses flammable vapours.
- Provides cooling through water content.
- Prevents re-ignition.
- Minimizes water damage compared to conventional firefighting methods.

Construction

The Frozenfire HX Mini Foam Generator is manufactured using premium-quality materials to ensure durability and long service life.

FROZENFIRE INDUSTRIES LLP
Factory Office:
Plot No.C-73, Maruti Industrial Park, Naroda Memco Road,
Opp. Naroda Fire Station, Ahmedabad–382324, INDIA
Email: info@frozenfire.in
Website: www.frozenfire.in

The assembly includes:

- Stainless Steel (SS304) cylindrical housing
- High-efficiency water-driven fan
- Stainless steel protective mesh screen
- Integrated foam solution spray nozzles
- Heavy-duty carrying handle
- Water inlet MALE INST coupling
- Matching Inline Inductor of 225lpm
- Corrosion-resistant fasteners
- Stable tubular support legs
- Precision-balanced fan impeller
- Polythene duct for Foam expansion
- Collapsible duct for Smoke exhausting (Optional)
- Maintenance access cover

Optional construction in SS316 is available for marine and corrosive environments.

Key Features

- Compact and lightweight portable design
- High-expansion foam generation
- Stainless Steel SS304 construction
- SS316 construction available upon request
- Water-powered fan (no electrical supply required)
- High foam expansion ratio
- Rapid total flooding capability
- Excellent vapour suppression
- Low water consumption
- Corrosion-resistant construction
- Easy transportation using integrated carrying handle
- Minimal maintenance requirements
- Quick installation and operation
- Long service life

FROZENFIRE INDUSTRIES LLP
Factory Office:
Plot No.C-73, Maruti Industrial Park, Naroda Memco Road,
Opp. Naroda Fire Station, Ahmedabad–382324, INDIA
Email: info@frozenfire.in
Website: www.frozenfire.in

Performance Advantages

The Frozenfire HX Mini Foam Generator provides fast and efficient protection for enclosed spaces by generating large volumes of high-expansion foam capable of filling hazardous areas within minutes.

Its water-driven fan eliminates the need for electrical power, making the unit suitable for hazardous environments and emergency response situations. The stainless steel construction ensures excellent resistance to corrosion, moisture, chemicals, and harsh industrial conditions.

The generator delivers superior foam quality while reducing water usage, helping to minimize damage to equipment and property during firefighting operations.



Applications

The Frozenfire HX Mini Foam Generator is suitable for protecting:

Oil & Gas Industry

- Pump Rooms
- Compressor Rooms
- Fuel Storage Areas
- Loading Bays

Marine & Offshore

- Ship Engine Rooms
- Cargo Holds
- Pump Compartments
- Offshore Platforms

Aviation

- Aircraft Hangars
- Maintenance Bays
- Fuel Storage Rooms

Mining Industry

- Underground Mines
- Conveyor Tunnels
- Equipment Rooms

Industrial Facilities

- Warehouses
- Cable Tunnels
- Basements
- Utility Rooms
- Chemical Storage Areas
- Transformer Rooms
- Paint Storage Facilities
- Manufacturing Plants

FROZENFIRE INDUSTRIES LLP
Factory Office:
Plot No.C-73, Maruti Industrial Park, Naroda Memco Road,
Opp. Naroda Fire Station, Ahmedabad–382324, INDIA
Email: info@frozenfire.in
Website: www.frozenfire.in

Compatible Foam Concentrates

The HX Mini Foam Generator is compatible with:

- High Expansion Foam Concentrate
- Synthetic High Expansion Foam
- AFFF High Expansion Foam
- Protein High Expansion Foam (where applicable)

Typical foam proportioning:

- **3%**
- **6%**

Typical Technical Specifications

Parameter	Specification
Product	HX Mini Foam Generator
Type	High Expansion Foam Generator
Body Material	SS304 Stainless Steel
Optional Material	SS316
Turbine Material	Stainless Steel
MEFG Nozzle	Stainless Steel / GM
Inline Inductor	Aluminum / Stainless Steel
Inductor size / Flow	63mm / 225Lpm
Foam Expansion Ratio	Up to 1:250 (depending on foam concentrate)
Operating Pressure	3.5 Bar
Water Inlet	2½" Instantaneous
Drive System	Water Powered Fan
Duct	Polythene
Finish	Natural Stainless Steel
Installation	Portable
Application	Total Flooding Fire Protection

FROZENFIRE INDUSTRIES LLP
Factory Office:
Plot No.C-73, Maruti Industrial Park, Naroda Memco Road,
Opp. Naroda Fire Station, Ahmedabad–382324, INDIA
Email: info@frozenfire.in
Website: www.frozenfire.in

Operation Procedure

1. Preparation

- Inspect the foam generator for visible damage.
- Ensure the fan rotates freely without obstruction.
- Check the inlet coupling and foam solution connection.
- Verify that the mesh screen is clean and free from debris.
- Ensure compatible foam concentrate is available.

2. Positioning

- Place the generator on a stable, level surface.
- Position the foam discharge towards the protected area.
- Ensure adequate air intake behind the mesh screen.
- Keep the air inlet free from obstructions.

3. Connection

- Connect the water supply hose to the inlet coupling.
- Connect the foam proportioning system or foam inductor.
- Ensure all couplings are securely tightened.

4. Start-Up

- Open the water supply slowly.
- Allow the water-driven fan to reach full operating speed.
- Introduce foam concentrate through the foam induction system.
- Observe foam generation and ensure a continuous discharge.

5. Firefighting Operation

- Direct the foam discharge toward the hazard area.
- Continue operation until the area is completely flooded with foam.
- Maintain foam production until the fire is extinguished and re-ignition risk is eliminated.

6. Shutdown

- Stop the foam concentrate supply.
- Flush the generator with clean water for several minutes.
- Shut off the water supply.
- Disconnect all hoses and drain any remaining water.

FROZENFIRE INDUSTRIES LLP
Factory Office:
Plot No.C-73, Maruti Industrial Park, Naroda Memco Road,
Opp. Naroda Fire Station, Ahmedabad–382324, INDIA
Email: info@frozenfire.in
Website: www.frozenfire.in

Maintenance Procedure

After Every Use

- Flush the entire system thoroughly with clean water to remove foam residue.
- Clean the stainless steel mesh screen.
- Wash the spray nozzles with clean water.
- Drain all residual water from the unit.
- Wipe the exterior clean and dry before storage.

Weekly Inspection

- Check the housing for dents or damage.
- Inspect the protective mesh for blockage or deformation.
- Ensure the fan rotates smoothly.
- Verify that the carrying handle is securely fastened.
- Inspect inlet coupling and threads.

Monthly Inspection

- Inspect the fan impeller for wear or corrosion.
- Check spray nozzles for clogging.
- Tighten all nuts and bolts.
- Lubricate moving parts (if applicable).
- Inspect support legs for stability.
- Verify smooth operation under water flow.

Annual Maintenance

- Perform a complete operational test.
- Replace worn seals or gaskets.
- Inspect the fan bearings.
- Replace damaged mesh screens if necessary.
- Check foam expansion performance.
- Verify all components against manufacturer specifications.
- Repaint any damaged non-stainless components (if applicable).

FROZENFIRE INDUSTRIES LLP
Factory Office:
Plot No.C-73, Maruti Industrial Park, Naroda Memco Road,
Opp. Naroda Fire Station, Ahmedabad–382324, INDIA
Email: info@frozenfire.in
Website: www.frozenfire.in

Storage Guidelines

- Store in a clean, dry, and well-ventilated area.
- Protect from mechanical damage during transportation.
- Do not place heavy objects on the generator.
- Keep the mesh screen clean and protected.
- Flush thoroughly before long-term storage.
- Cover the unit to prevent dust accumulation.

Advantages

- Generates large volumes of high-expansion foam quickly.
- Water-powered operation requires no electricity, making it ideal for hazardous areas.
- Compact and lightweight design for easy portability.
- Durable SS304 construction with optional SS316 for marine environments.
- Low water consumption and reduced water damage.
- Simple installation and operation with minimal maintenance.
- Suitable for total flooding of enclosed spaces.
- Compatible with a variety of high-expansion foam concentrates.
- Long service life with corrosion-resistant materials.
- Reliable performance for industrial, marine, aviation, and mining fire protection.

Summary

The Frozenfire HX Mini Foam Generator is engineered to deliver rapid, efficient, and dependable high-expansion foam generation for total flooding fire protection. Its rugged stainless steel construction, water-driven fan system, and high foam expansion capability make it an ideal solution for safeguarding enclosed spaces against high-risk fire hazards. Designed for ease of operation, low maintenance, and long-term reliability, it provides exceptional firefighting performance in demanding industrial and commercial environments.

FROZENFIRE INDUSTRIES LLP
Factory Office:
Plot No.C-73, Maruti Industrial Park, Naroda Memco Road,
Opp. Naroda Fire Station, Ahmedabad–382324, INDIA
Email: info@frozenfire.in
Website: www.frozenfire.in