

**S.Sh&E.W 05**

ChloroMaster

ECS Co. Ltd

## **EMERGENCY SAFETY SHOWER AND EYE WASH**



### **INSTRUCTION MANUAL**



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## 1. Intended Use

The Emergency Safety Shower and Eye Wash unit is designed to provide **immediate first-aid decontamination** for personnel who may be exposed to hazardous chemicals, corrosive substances, or other harmful materials within industrial facilities, laboratories, chemical handling areas, and similar environments.

This equipment serves as a **final layer of protection** in the event of accidental chemical exposure, offering rapid flushing of the eyes, face, and body to minimize injury and prevent long-term damage.

The unit is intended to be installed in locations where hazardous materials are stored, handled, or transported, and must remain **visible, unobstructed, and readily accessible at all times** to ensure immediate use in an emergency.

The design and performance of this equipment comply with the requirements of **ANSI/ISEA Z358.1-2014: American National Standard for Emergency Eyewash and Shower Equipment**, which establishes the minimum performance, installation, and operational criteria for emergency decontamination systems.

## 2. General Safety Instructions

The Emergency Safety Shower and Eye Wash unit is a critical safety device designed for immediate use during chemical exposure incidents. To ensure safe and effective operation, the following general safety instructions must be observed:

### 2.1 Personnel Safety

- Only trained personnel should work in areas where hazardous chemicals are handled.
- All users must be familiar with the location, operation, and purpose of the emergency shower and eye wash unit.
- Access routes to the equipment must remain clear, unobstructed, and well-lit at all times.

### 2.2 Water Supply & Temperature Safety

- The equipment must be connected to a reliable water supply capable of delivering the required flow rates.
- Water temperature must remain within the safe range defined by ANSI Z358.1 (16–38°C) to prevent thermal shock or further injury.
- Regular flushing must be performed to remove stagnant water and prevent bacterial growth.

### 2.3 Chemical Safety

- Areas surrounding the unit must be free from stored chemicals, drums, or equipment that could obstruct access during an emergency.
- Personnel must avoid handling corrosive materials without proper PPE, even with the presence of an emergency shower.

### 2.4 Inspection & Maintenance

- Conduct visual inspection **daily** to ensure accessibility, cleanliness.
- Perform functional testing **weekly** to confirm adequate water flow and drainage.
- Maintenance and repair must only be performed by qualified technicians using approved spare parts.

### 2.5 Emergency Use

- In the event of chemical exposure, the affected person must activate the equipment immediately without hesitation.
- The shower or eye wash must be used continuously for a minimum of **15 minutes** or as recommended by the chemical safety data sheet.

## 3. Description

The Emergency Safety Shower & Eye Wash system is supplied as a complete, fully assembled safety unit that includes the following components:

### A. Emergency Shower Assembly

- Overhead emergency shower head (stainless steel / corrosion-resistant material).
- Shower activation handle (pull-rod type).
- High-flow shower valve designed for instant full-flow operation.

### B. Eye Wash Station

- Dual spray eye wash nozzles with integrated flow regulators.
- Dust covers for nozzles (automatically open upon activation).
- Push-plate or paddle-type activation mechanism.
- Eye wash bowl (stainless steel or chemical-resistant plastic).

### C. Piping & Valves

- Factory-assembled internal piping made of galvanized steel / stainless steel / corrosion-resistant material according to specifications.

- High-performance activation valves for both shower and eyewash.

#### D. Water Supply & Drain Connections

- Standard inlet connection for potable water supply.
- Drain outlet connections for shower and eyewash bowls.

#### E. Support Frame & Mounting Accessories

- Heavy-duty support structure suitable for floor mounting.
- All installation hardware and mounting brackets.

#### F. Identification & Safety Markings

- Highly visible safety signs (ANSI/ISEA Z358.1 compliant).
- Color-coded marking (typically safety green).
- Instruction plate for emergency operation.

#### G. Optional Accessories (If included in project scope)

- Freeze protection valves / insulation (for outdoor installation).
- Foot pedal activation for eye wash.
- Flow switch for alarm integration.
- Mixing valve (tempered water supply).
- Lighting or protective enclosure.

### 3.2 Technical Data

#### A. . General Specifications

Item	Specification
Compliance Standard	ANSI/ISEA Z358.1–2014
Application	Industrial chemical handling, laboratories, chlorination rooms
Operation Mode	Manual activation (Pull rod / Push plate / Foot pedal – depending on model)
Water Supply Type	Direct connection to freshwater line
Activation Time	Immediate full-flow upon activation

**B. Emergency Shower Specifications**

Item	Specification
Shower Type	Overhead Emergency Safety Shower
Flow Rate	75–110 L/min (per ANSI standard)
Shower Head Material	Stainless Steel / ABS Chemical-Resistant Head (depends on model)
Valve Type	1" Ball Valve, stay-open design
Activation Method	Pull rod
Minimum Water Pressure	2 bar
Recommended Pressure	3–6 bar

**C. Eye Wash Station Specifications**

Item	Specification
Flow Rate	11–20 L/min
Spray Nozzles	Twin aerated nozzles with dust caps
Nozzle Material	Stainless Steel / ABS (chemical-resistant)
Valve Type	1/2" stay-open ball valve
Activation Method	Push plate / Foot pedal (depending on model)
Minimum Water Pressure	2 bar
Nozzle Protection	Automatic dust cover lift-up upon activation

**D. . Construction & Materials**

Component	Material
Main Piping	Galvanized Steel / Stainless Steel 304
Shower Head	SS 304 or ABS Chemical-Resistant Polymer
Eye Wash Bowl	SS 304 or ABS Heavy-Duty Polymer
Valves	Brass / Stainless Steel

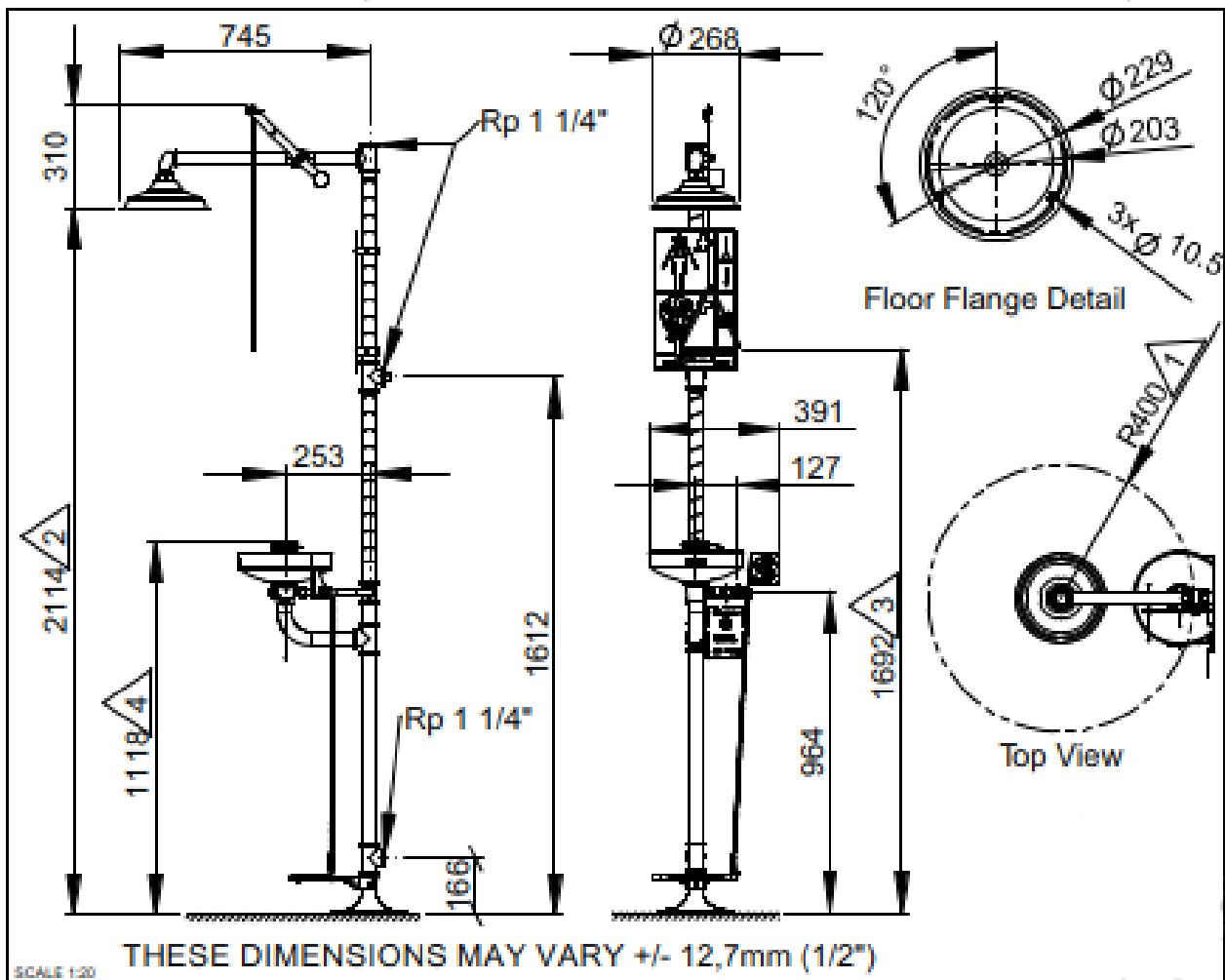
<b>Pull Rod</b>	Stainless Steel
<b>Coating</b>	Anti-corrosion chemical-resistant coating

#### E. Environmental Requirements

Item	Specification
<b>Water Temperature</b>	15–37°C (Tepid water requirement per ANSI)
<b>Operating Temperature</b>	0–50°C
<b>Installation Area</b>	Clear, visible, unobstructed, within 10 seconds from hazard area
<b>Drainage Requirement</b>	Floor drain mandatory to avoid flooding
<b>Visibility</b>	Must include sign board & yellow/green marking

#### F. . Optional Accessories

Item	Description
<b>Foot Pedal</b>	Hands-free activation for eye wash
<b>Freeze Protection</b>	For outdoor installations (heat-trace cable)
<b>Alarm System</b>	Audible/visual alarm upon activation
<b>Flow Regulator</b>	Automatic flow control valve



- ❖ This manual has been prepared to ensure the safe, correct, and reliable operation of the Emergency Safety Shower and Eye Wash system. Adhering to the instructions, safety precautions, and maintenance guidelines provided herein, it is essential for maintaining optimal performance and ensuring maximum protection for all personnel. For further assistance or technical support, please contact ChloroMaster Co.