# WORK INSTRUCTIONS FOR HIGH PRESSURE PUMP

**Criteria: Cleaning of PCM roof &walkway**

**Responsibility: General shift Engineers.**

**Activities:**

1. **Cleaning of PCM roof & walkway**

**Identified Hazards**:

* Noise Generation
* Vibration
* High pressure water discharge,
* Electrical shock.
* Fire & explosion
* Dust fumes
* Contact with lime power
* Contact with foreign metallic particles
* Hot steaming while cleaning the PCM roof

**Aspect for the Activity:**

* Water Consumption
* Resource depletion (Electrical Energy)
* Oil leakage’s
* Generation of graphite/ lime dust.

**Procedure:**

**Before Starting:**

1. Machine (High Pressure Pump) should be used exclusively for High pressure cleaning and water blasting by pressurized water jet by using clean water.
2. Check the oil level of the pump & maintain the same between normal and full on the indicator.
3. Clean mesh of the Y type suction strainer at the suction of the pump.
4. Maintain the water level in the tank to full mark**.** (Temperature not exceeding 50°C.)
5. Keep water inlet valve in open position.
6. Check electrical supply for operation of start /stop switch on panel.
7. Ensure electrical interlock for water level low & tripping.
8. Use high pressure hoses and fittings as per the manufacturer’s recommendation.
9. Automatic guns (pistol) should have proper secured fittings and safety lock.
10. Proper Nozzles is to be fitted on gun assembly as per the process requirement.

**Starting:**

1. Connect one end of the high-pressure hose with the quick-change coupler to the outlet connection on the machine firmly by hand grip and also the other end to the automatic spray gun firmly without using any spanner.
2. Connect the water supply to the INLET port of the Y type suction strainer by means of 25 mm hose connected to the water reservoir.
3. Do not cover the machine during operation and use the machine in well-ventilated area.
4. After ensuring all above checks/ interlocks start the pump and adjust desire working pressure by adjusting the knob.
5. Do not leave the machine running for more than 3 min. with the pistol in closed position. This is to avoid increase in water temperature, which may cause damage to machine.
6. The pressure of the inlet water should not exceed 3 bars.
7. In this case the outlet flow of the water jet cleaner is 25l/min then inlet flow.
8. Ensure water inlet valve is open, then push ON button on the panel, wait for 5 sec. for the motor to attain full speed.
9. Actuate the gun triggers with nozzle end in upward direction and keep in open position to allow air to escape from the hose.

**Stopping of High Pr. Pump:**

1. At the end of working session turn the machine to the OFF position.

2. Keep the connected hoses in proper position.

3. Put the safety lock on the gun when machine is not in use.

**SAFETY AND ENVIRONMENT.**

* Use all PPE, s , Ear plugs , Heat resistant hand gloves, Dust mask and other  required safety appliances during Operation and maintenance High Pressure Pump
* To reduce risk of injury, close supervision is necessary. Only trained persons are allowed to work on machine.
* Do not operate machine on unbalanced surfaces.
* Never direct the jet at persons/ animals / electrical appliances or machine itself.
* High pressure water jet causes a recoil effect on the gun (pistol).
* While operating use protective clothing, goggles and rubber slip proof boots.
* Persons should be alert and trained for starting, stopping, bleeding and regulating pump pressure quickly.
* Barricade the operating area with work in progress tape.
* To prevent from fire hazards, do not use with or near inflammable material such as gasoline grain dust, solvents, and thinners.
* Pump must be properly installed and earthed to avoid Electrocution.
* To avoid ejection injury, do not direct high pressure water jet on persons.
* During Oil Fire, and Major accident refer procedure laid in **SP 42**
* Use DCP/CO2 Type fire Extinguishers for Electrical fire and foam type Fire Extinguisher for Oil fire.
* Whenever oil spillage occurs, clean the area with the help of cotton cloth, cotton waste same to be disposed at appropriate locations in PP area.
* Waste generated is segregated and stored in containers provided at appropriate location and same is disposed as per the procedure laid in **SP 44**
* Wastewater generated is diverted in to the thickener for reuse in the gas cleaning system.

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| **Date: 10.07.2023** | **Date: 10.07.2023** | **Date: 10.07.2023** |

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