

## 1.1 Basic Safety Information



### WARNING!

The following instructions are those that should **ALWAYS** be observed in operation of construction equipment.

### Know yourself

Operators and service personnel must wear appropriate safety equipment, including hearing protection, respirator, hardhat, safety shoes, eye protection, heavy gloves etc, as required.

**Note:** The wearing of loose clothing or any accessories such as neckties, scarves, untied shoe laces, rings, wrist watches or long hair could cause personal injury or death.

Always use the proper tools for inspection or maintenance work, which must only be carried out after ensuring that the equipment has been stopped completely, and it is placed suitably in a safe place.



Figure 1

### Know your equipment

Before installation or operation of the hammer, the operator and maintenance personnel must read and understand the safety messages, operation manual and service instructions.

Only the operator who has been trained and qualified to operate the carrier and hammer should do so. Be skilled and knowledgeable in all operational and technical aspects of the carrier and hammer.

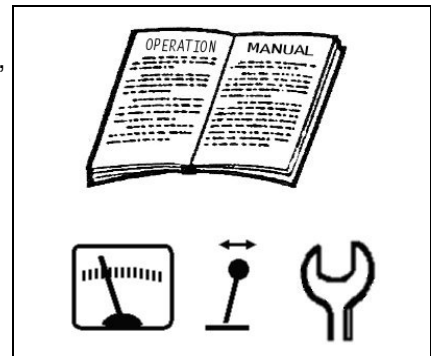


Figure 2

### Know the work site

Before operating the hammer, check the area of work site for any unusual conditions that could be dangerous, and prepare the appropriate warnings for safe working. Be careful, particularly when working in the vicinity of electric power lines, gas pipes or other buried services.

Pay particular attention to other workers, bystanders and other machinery that may pass by near to the work site. Immediately stop operation of the hammer if personnel enter the danger area.

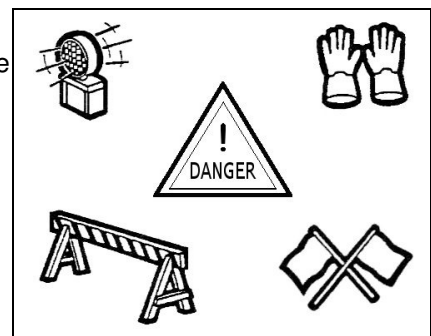


Figure 3

## Know the rules

Everybody who operates or maintains the equipment should know the meaning of the rules and laws in terms of handling the equipment. Use the hammer in accordance with all regulations regarding construction practice and public safety.

For emergency use, keep the fire extinguisher and the first-aid case in the operator's cab.

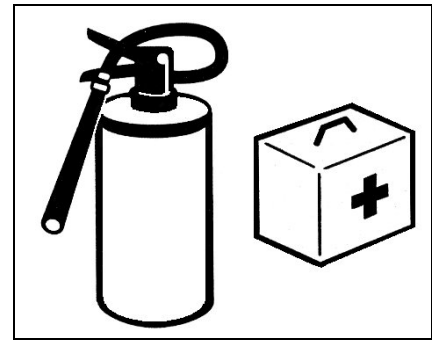


Figure 4

## 1.2. Preparation for safe operation

Some prior checks and scheduled maintenance must be performed on installing a new hydraulic hammer.

- The hydraulic hammer should only be mounted on a carrier with sufficient load capacity.
- In case of using a quick coupler (hitch), determine the total weight including the quick coupler.
- Carriers below this weight class will not provide the required degree of stability and could even fall over during hammer use, causing personnel injury or machine damage. Carriers above this weight class may apply excessively high mechanical loads to the hammer.
- Make sure the hammer is compatible and match in capacity with carrier hydraulic systems.
- To protect the operator from injury due to flying rock splinters, the operator's cab should be equipped with a protective shield or splinter guard. For information on the cab protector, consult carrier manufacturer or PRODEM dealer.
- Mounting the hydraulic hammer requires the presence of an assistant, who must be instructed by the carrier driver. The carrier driver and assistant should agree beforehand on clear hand signals.
- To avoid equipment damage, follow the carrier maintenance schedule before operating the hammer.
- Check the hammer for wear, getting loose, breakage or crack. Do not operate in case any damages or failure is found.

### Recommended carrier weight (in tonne) for hammer models:

Hammer Model	Carrier class (Standard)	Hammer Model	Carrier class (Standard)
PRB008	0.7 ~ 1.0	PRB150	12 ~ 16
PRB010	0.7 ~ 1.2	PRB170	18 ~ 22
PRB020	1.0 ~ 2.0	PRB200	20 ~ 24
PRB030	1.5 ~ 3.0	PRB250	20 ~ 26
PRB040(H)	2.5 ~ 4.5	PRB300	26 ~ 32
PRB050	4.0 ~ 6.0	PRB400	32 ~ 40
PRB060	6.0 ~ 8.0	PRB500	40 ~ 60
PRB100	8.0 ~ 12	PRB700	60 ~ 110

### **1.3. Safety information on safe operating**

- Always operate the hammer from the operator's seat in the carrier cab, and also close the splinter guard on the driver's cab during hammer operations.
- The hydraulic hammer must not be used for disallowed applications. Refer to Section "6.2. **Correct working methods**" of this manual for instructions on how to handle the hydraulic hammer, and applications for which the hydraulic hammer is unsuitable and must not be used.
- Stop the operation if an abnormal noise or vibration is detected during the operation. Check the carrier and hammer.
- Never use the hammer in or underwater unless compressed air is supplied to the hammer. Refer to Section "6.2. **Correct working methods** for details".

### **1.4. Safety information on maintenance**

Always follow the instructions described in this manual when performing maintenance work on the hammer.

- Pay careful attention to all relevant safety regulations. Most accidents occur when the instructions are not observed.
- Maintenance work should be performed with the carrier completely stopped, the stop valves shut off. The carrier must be on firm and flat ground with all the control levers switched off.
- Use only the lifting points provided and sufficiently strong lifting equipment when lifting the hammer.
- Do not start maintenance on the hammer until it has cooled because the hammer is heated up during operation. Some components, for example, chisel (tool), valve, piston or hydraulic connection parts become very hot.
- The hydraulic oil may be very hot and may cause severe scald. Before disconnecting hydraulic lines, bleed all hydraulic pressure in the lines. And, always relieve tank pressure of the carrier.
- Oil spouted out from the crack or small hole on hydraulic system can penetrate the skin and cause serious injury. Therefore, be sure that all the connections are tight and pipes and hoses are in good condition. Use a sheet of cardboard or wood to search for suspected oil leaks.
- To avoid an explosion and equipment damage, use only pure nitrogen gas (99.8% or over) in the gas chamber of the back-head and accumulator.
- Only the proper tools should be used for maintenance. Use of improper tools may cause personal injury, or damage to the hammer.
- Oily, greasy ground may be very slippery. Collect any oil and grease, and dispose it correctly for safety and environment.
- Keep personnel away from the hammer while servicing the chisel, gas chambers or hydraulic system.
- Unauthorized alteration on the hammer may cause the hammer serious troubles or reduce hammer life and performance. These cases cannot be guaranteed by PRODEM.