Operation of Hydro Ram Hydraulic Hammers

Important! Please read the Operation Manual !

Don'ts !

1. Do not pry with the working tool.
2. Do not stay on the same object for more than 1 minute.
3. Aboid idle strike always.
4. Do not hardface or sharpen the working tool with a cutting torch.
5. Do not stand in front of the working tool when charg the nitrogen gas into the chamber.

Operation of Hydro Ram Hydraulic Hammers

Important! Please read the Operation Manual !

Do !

1. Grease at least once a day.

   Grease the working tool at least every 1 or 2 hours, more often if the working tool become dry or material is extremely dusty or abrasive.

2. Check the tightness of bolts according to Operation Manual.

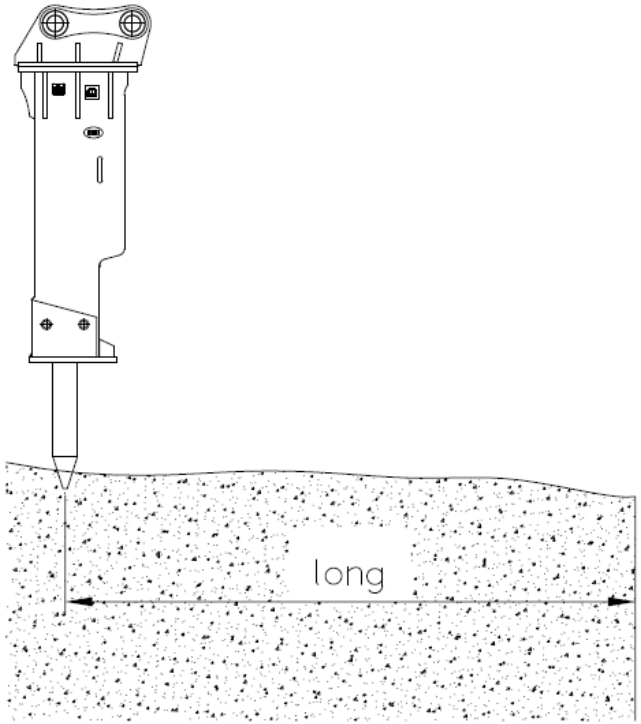
3. Check hydraulic oil if it is clean and at adequate level.

4. Warm up the hydraulic oil every morning before breaking.

5. Listing to the breaking sound during the operation and correct the misalignment at once when it is inconsitent.

Operation of Hydro Ram Hydraulic Hammers

- **Important! Please read the Operation Manual !**

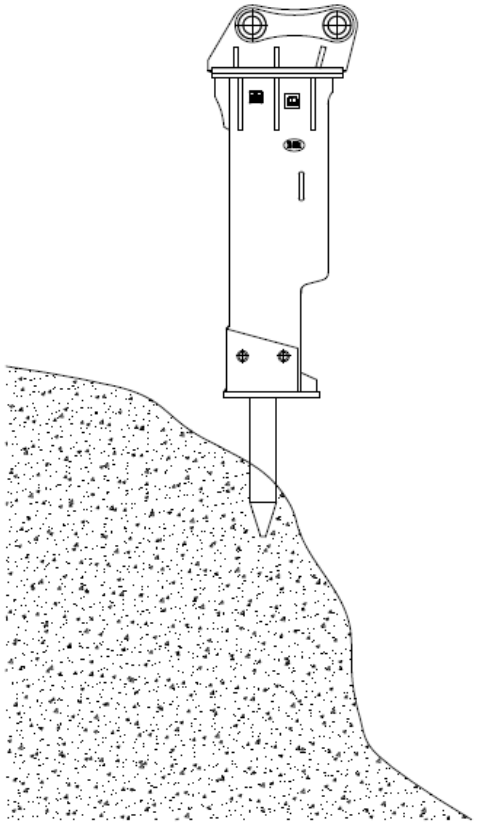


Wrong way

Never try to break off rock which is too big!
If the rock is not broken off within 30 seconds, please move the hammer near to the edge.

Operation of Hydro Ram Hydraulic Hammers

- **Important! Please read the Operation Manual !**

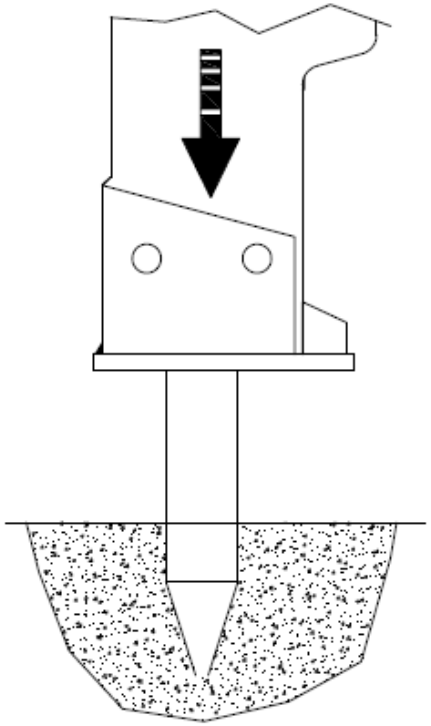


Wrong Hammer angle

Working tool will slide off the surface of the rock if you use hammer at the wrong angle.
It may cause blank fire and damages the hammer.

Operation of Hydro Ram Hydraulic Hammers

- **Important! Please read the Operation Manual !**

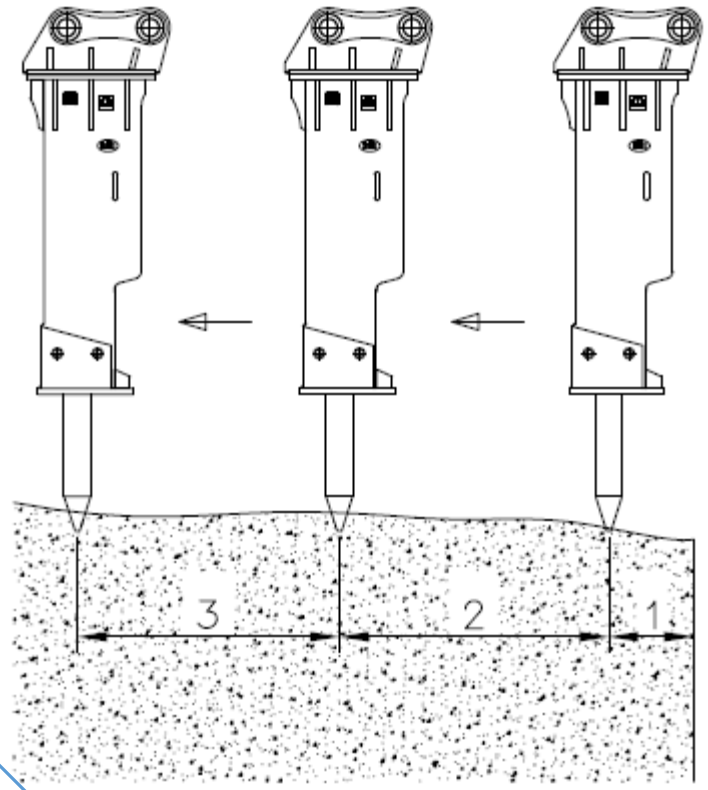


Never work working tool into the rock

Bottom of working tool will be getting hot and softened if you work working tool into the rock.
Therefore operate with correct method and keep out of dust while you are working.

Operation of Hydro Ram Hydraulic Hammers

- **Important! Please read the Operation Manual !**

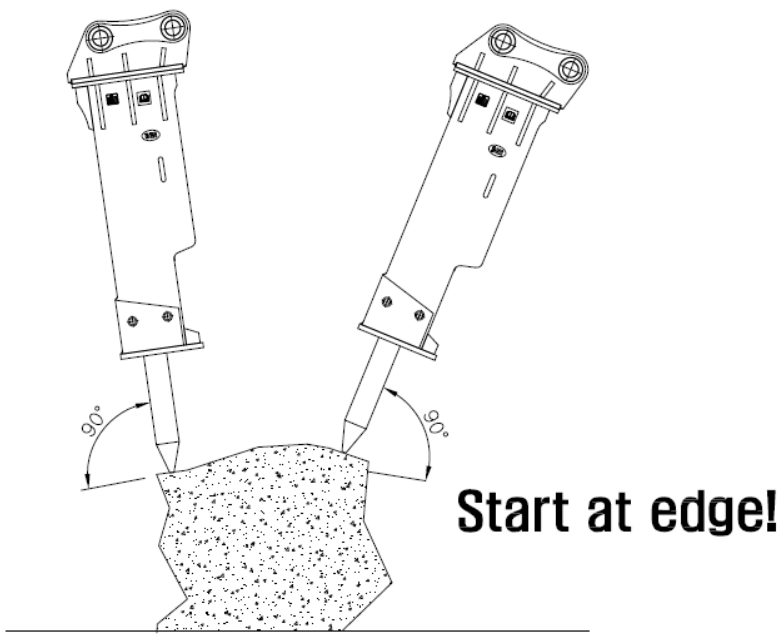


Right way
You must break off the rock piece by piece in small.

Start at the edge!

Operation of Hydro Ram Hydraulic Hammers

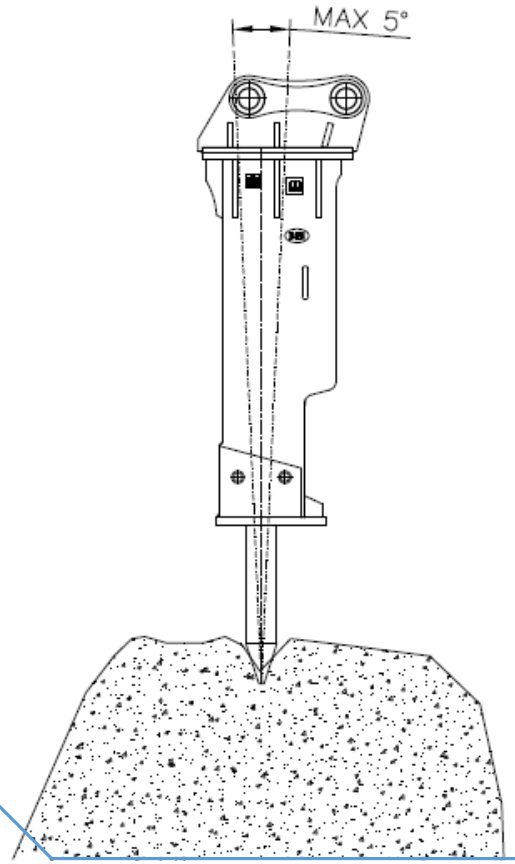
- **Important! Please read the Operation Manual !**



Right Hammer angle
The hammer must be used at the right angle to the surface of the rock.

Operation of Hydro Ram Hydraulic Hammers

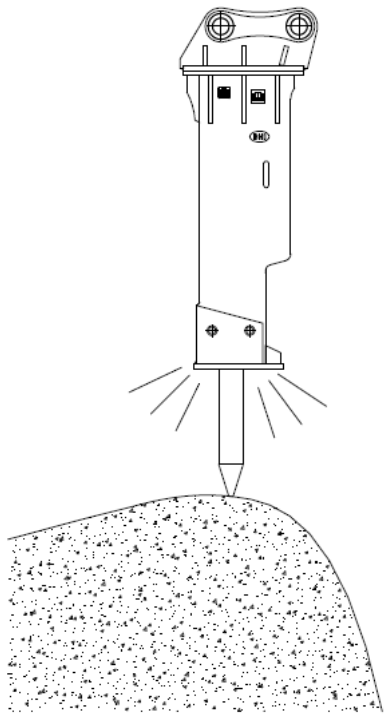
- **Important! Please read the Operation Manual !**



Dust
Added impact on cushion when working tool hits the rock and hammer efficiency will be decreased.
Dust will disappear if you tilt hammer slightly(not more than 5 degrees).

Operation of Hydro Ram Hydraulic Hammers

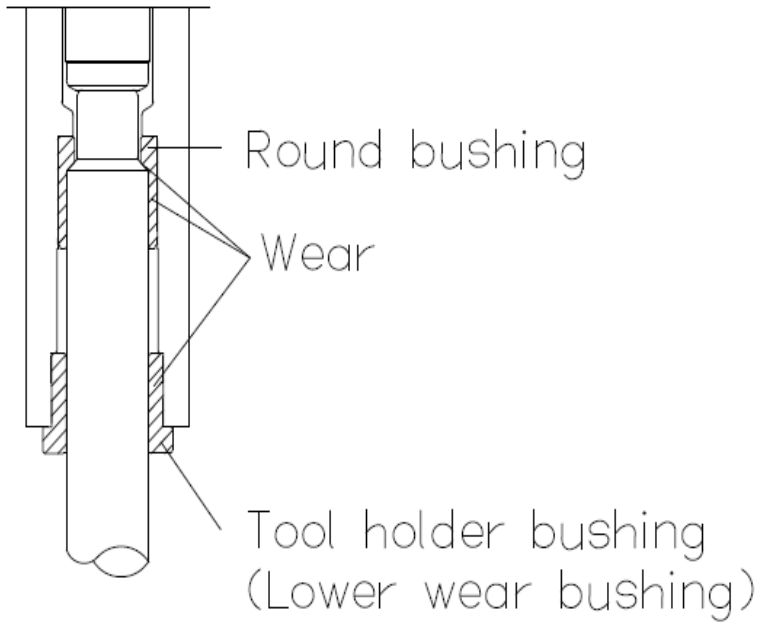
- **Important! Please read the Operation Manual !**



Blank fire
Blank fire is no good for hammer.
Press the working tool down onto the rock before starting the hammer.
Turn the hammer off immediately when the rock is broken off.

Operation of Hydro Ram Hydraulic Hammers

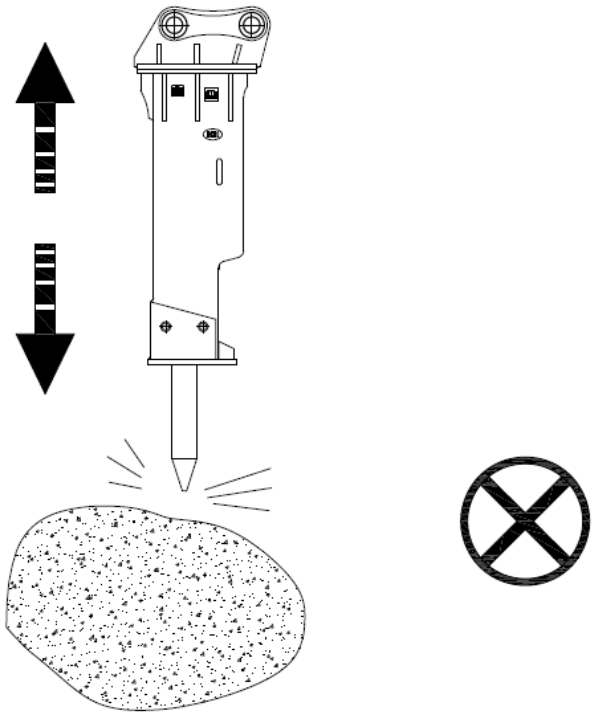
- **Important! Please read the Operation Manual !**



Wear bushing
If you work with worn out bushing and working tool, it damages the hammer. Check the tool holder bushing, round bushing and replace them if necessary.

Operation of Hydro Ram Hydraulic Hammers

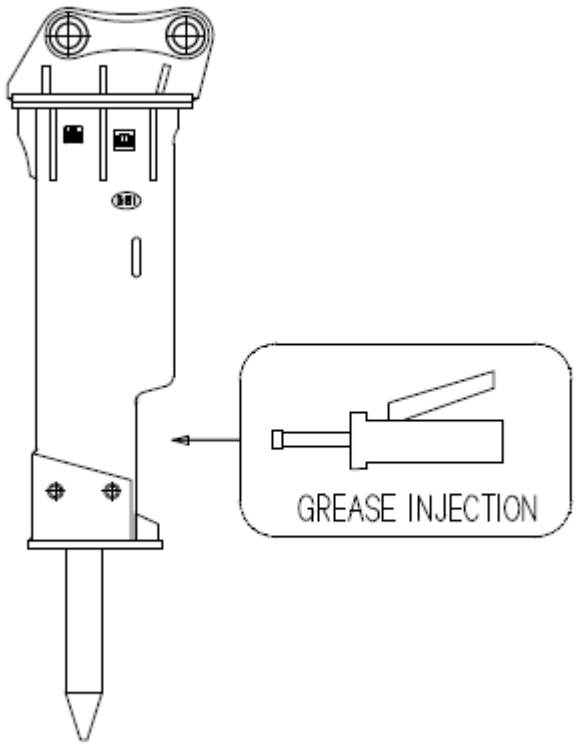
- **Important! Please read the Operation Manual !**



Never hack at the rock
It is possible to have defect to the hammer if you hack at the rock.

Operation of Hydro Ram Hydraulic Hammers

- **Important! Please read the Operation Manual !**



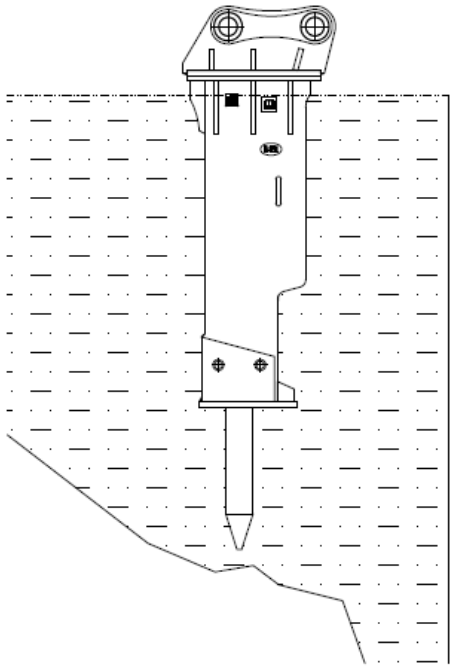
Lubrication

Hammer will be damaged if grease is not supplied properly on the surface of working tool.

You must lubricate with grease every 2 hours.

Operation of Hydro Ram Hydraulic Hammers

- **Important! Please read the Operation Manual !**

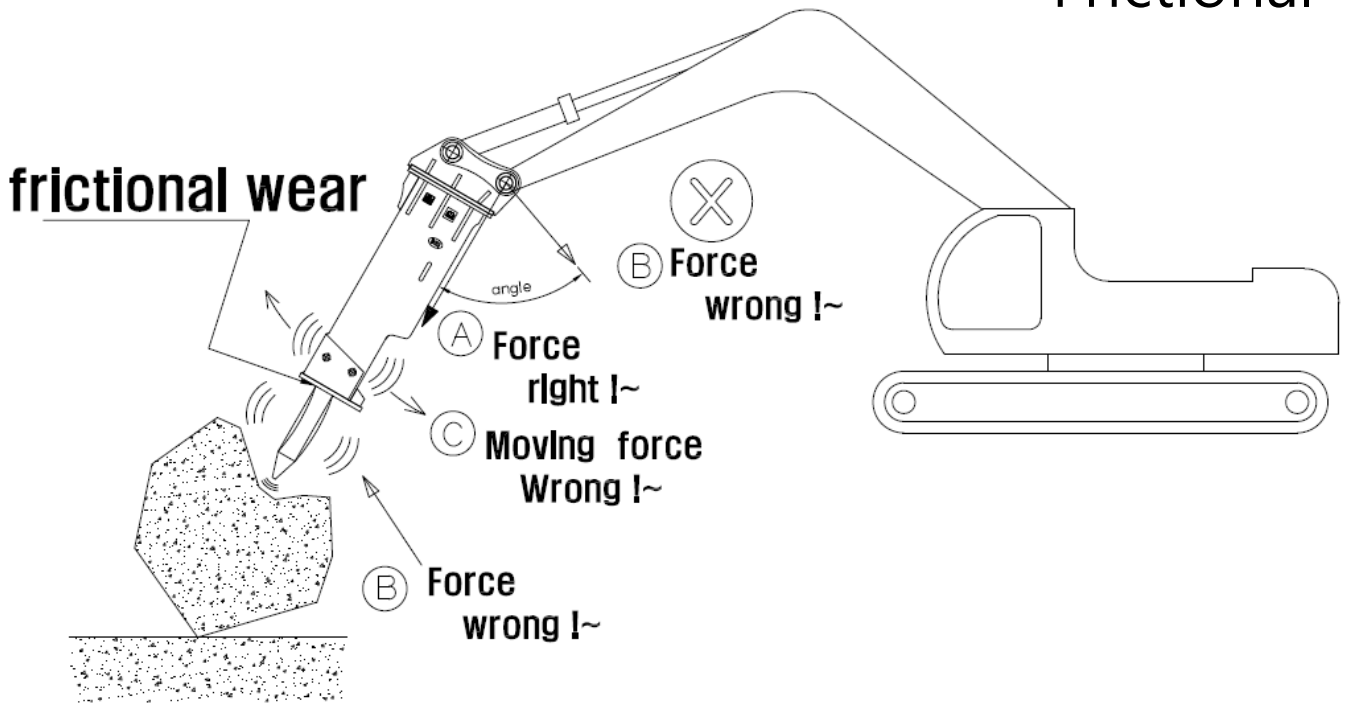


Prohibited underwater operations
If there is no underwater operation kit on the hammer, please do not work underwater.

Operation of Hydro Ram Hydraulic Hammers

- **Important! Please read the Operation Manual !**

Frictional wear



Operation of Hydro Ram Hydraulic Hammers

- **Important! Please read the Operation Manual !**

Operating Pressure

Mostly the hammer setting pressure is higher when it is delivered from the factory because factory even doesn't know that the hammer is mounted on which excavator model.

So, install flow gauge to check the litter per minute and setting pressure for relief valve.

Operation of Hydro Ram Hydraulic Hammers

- **Important! Please read the Operation Manual !**

Please inspect periodically!!!
The hammer and excavator can be damaged
if you don't inspect periodically and don't replace with new parts on time, following Operation Manual.
Please inspect periodically!!!

Operation of Hydro Ram Hydraulic Hammers

- **Important! Please read the Operation Manual !**

BLANK FIRING(1)

To understand “Blank Firing”, the operator needs to be aware that if the working tool is not pressed against the work surface the working tool will drop down in the lower body cavity far enough so that the piston cannot strike it.

Blank firing occurs whenever the hammer is operating and the piston is not able to strike the working tool solidly or not strike the working tool at all. Blank Firing accelerates wear and tear on hammer and excavator components and may result in failure of one or more components. Excessive blank firing may be considered equipment abuse and may result in voiding warranties.

Operation of Hydro Ram Hydraulic Hammers

- **Important! Please read the Operation Manual !**

BLANK FIRING(2)

Break-through or difficult surface contact results in blank firing when the material being broken fractures and the working tool is no longer in "hard contact" with the material but is still pushed high enough in the tool holder bushing cavity so that the piston can strike it. In this condition, the piston strikes the working tool and the working tool, in turn, is driven against the retainer pins because it is not in sufficient contact with the material to be broken. The energy is absorbed by the retainer pins, other hammer components, and the excavator boom components. Blank firing of this type can be experienced in trench work where obtaining striking contact with the work surface is difficult or the wrong working tool is used, or in flat rock work where the operator fails to stop operation of the breaker when slippage, fracturing or material break-through occurs.

Operation of Hydro Ram Hydraulic Hammers

- **Important! Please read the Operation Manual !**

BLANK FIRING(3)

Blank firing as a result of operator error occurs when the working tool is not in contact with the work surface to be broken and is allowed to drop down in the lower body cavity so that the piston is not able to strike it. Instead, the downward movement of the piston will be stopped by an internal oil cushion located at the bottom of the piston's stroke and the energy of the piston will be absorbed by hammer components and excavator boom components. Blank firing of this type can be experienced when the operator fails to stop operation of the hammer when the material fractures or material break-through occurs, or during re-positioning of the hammer.

While blank firing cannot always be avoided, it can be kept to a minimum by avoiding the above conditions as much as possible.