



# “Reinforcement construction and Reinforcement joint work”

## The important points for Safety and health

### pressure welded joint/mechanical joint work

(1) Minute attention is required in a pressure welding because it handles flammable hazardous materials!

**Explosion accidents are actually happening!**  
**Be sure to check the cylinders and tools before starting the work!**

**The correct way to move the cylinder**

\* Do not shoulder or roll the cylinder!

**The correct way to install cylinders**

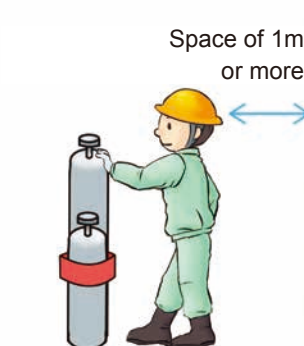
\* Install on a flat place to prevent cylinders from falling over or falling down!

\* Fix cylinders with a band, chain, etc. to prevent falling!

\* Avoid sunlight, and install a fire extinguisher nearby.



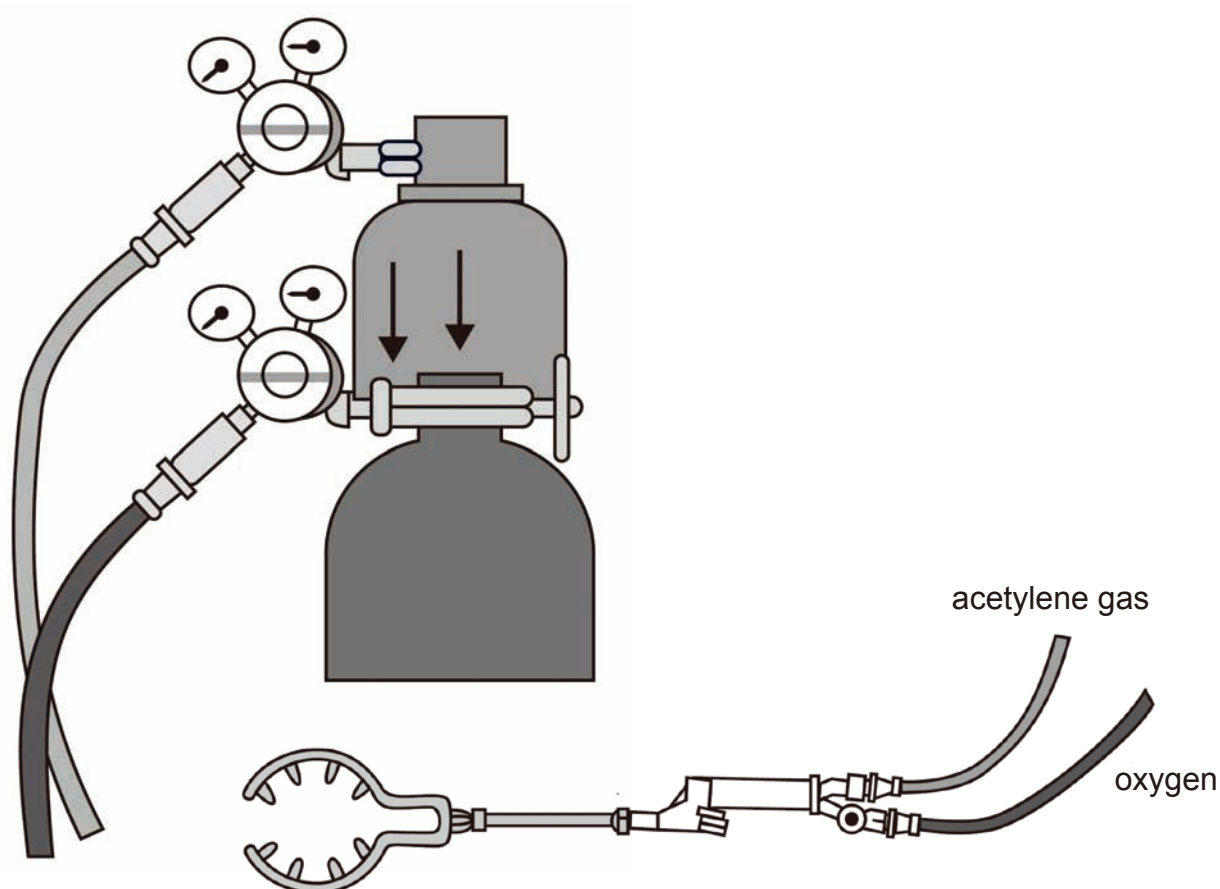
Fixed with the dedicated band



Horizontal and stable place

## (2) Inspection of gas leak before starting the work in pressure welding

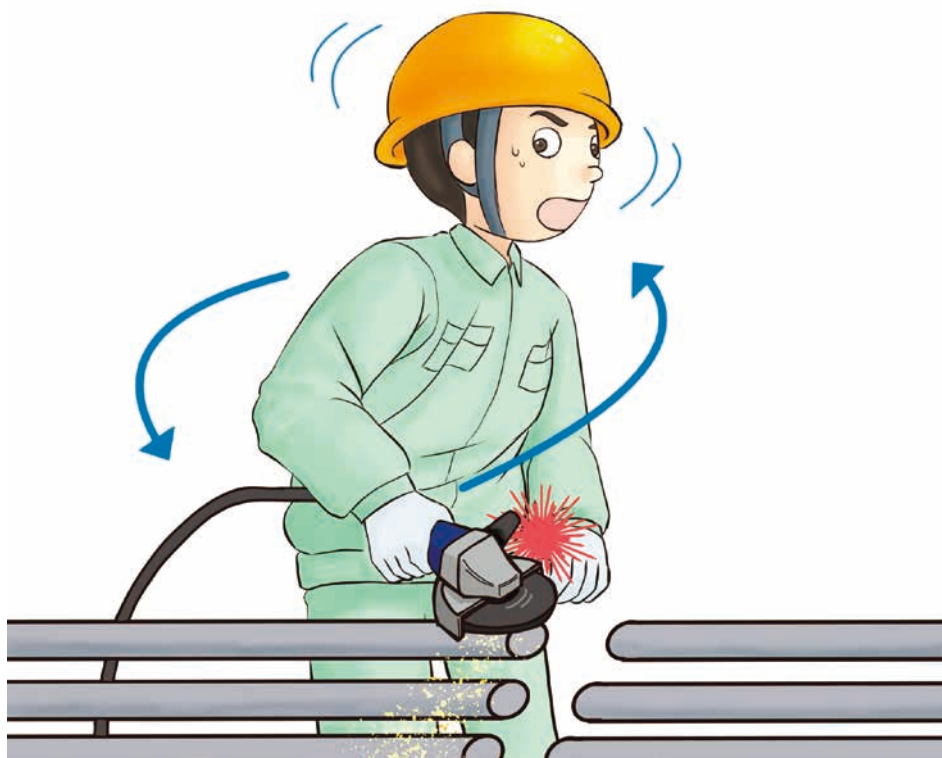
- \* Check looseness and deposits on hose fittings!
- \* Check for looseness in each valve!
- \* Make sure there is no whishing sound after the cylinder is released!
- \* Use soapy water to check gas leaks in each part of the fittings!



### **Do not forget to check the suction**

- \* Remove an acetylene hose from the blowpipe, open an oxygen valve, and make sure your hand is sucked into an acetylene gas inlet! Be sure to do it as it may cause a fire!

### (3) Accident case No.1 in a pressure welding work



#### Occurrence situation

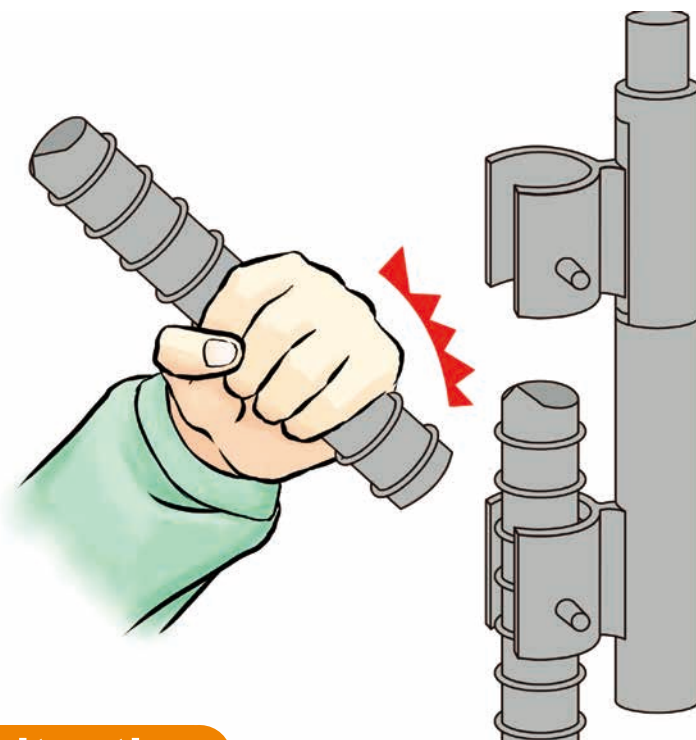
Gloves were caught in a gap between a safety cover and a grinding wheel when try to turn the body while polishing the end of a reinforcing bar, and the wrist was cut with a rotary grinding wheel. With the grinding wheel rotating, the worker tried to take another action with the grinder switched on.

#### Matters to pay attention

Check the dangerous points before starting the grinder work!

1. Never leave your eyes off the blade when the grinding wheel is rotating.
2. When performing any operation other than polishing, be sure to turn off the switch and stop the grinder.

## (4) Accident case No.2 in the pressure welding work



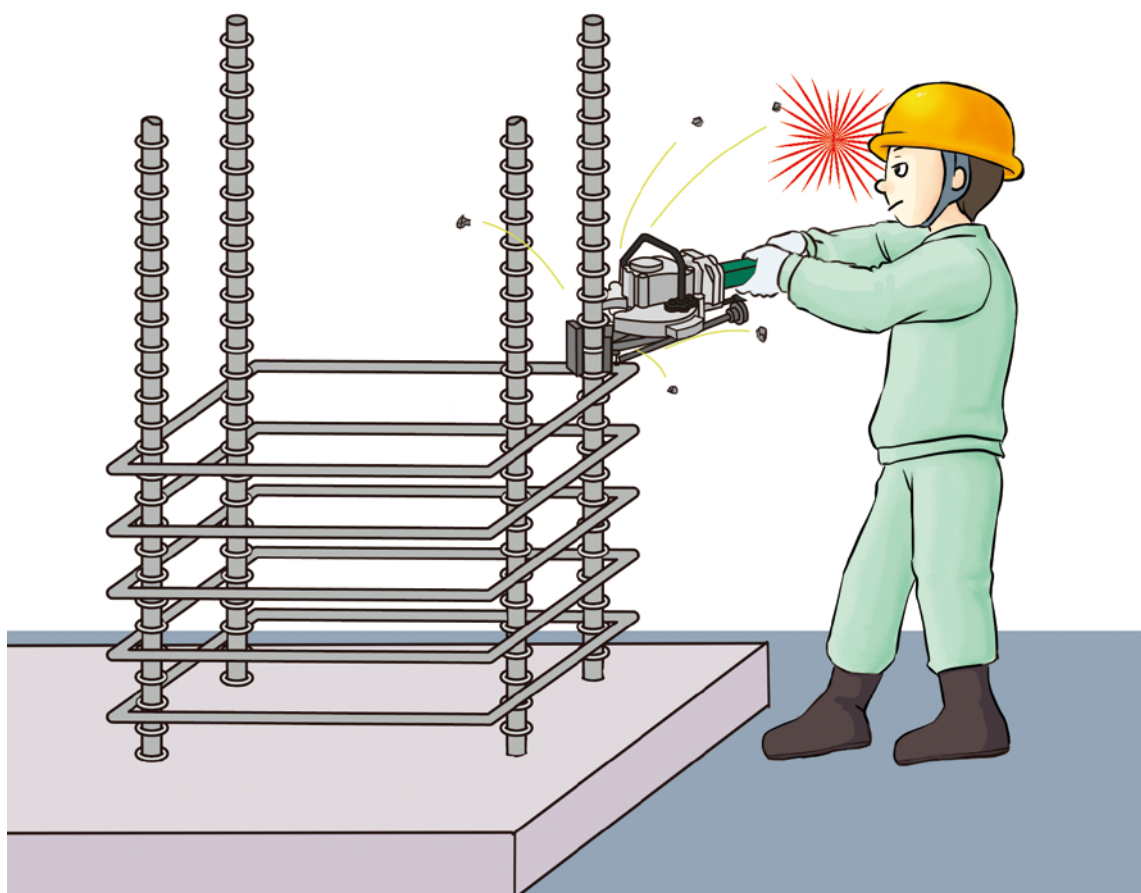
### Occurrence situation

During the pressure welding work of columns, the column reinforcing bar and a crimp support was displaced, and the column was inclined. When the worker loosened a fixing bolt to correct the inclination, the column fell down and his finger was pinched between the support and the reinforcing bar. The victim tried to correct the inclination of the column bar alone.

### Matters to pay attention

1. When you correct a column and a crimp support, do it with two people!
2. Develop a work flow to avoid the worker's rush.
3. Re-acknowledge "There's a catch to the work what you are used to.", and remember your original intentions every day.

## (5) Accident case No.3 in the pressure welding work



### Occurrence situation

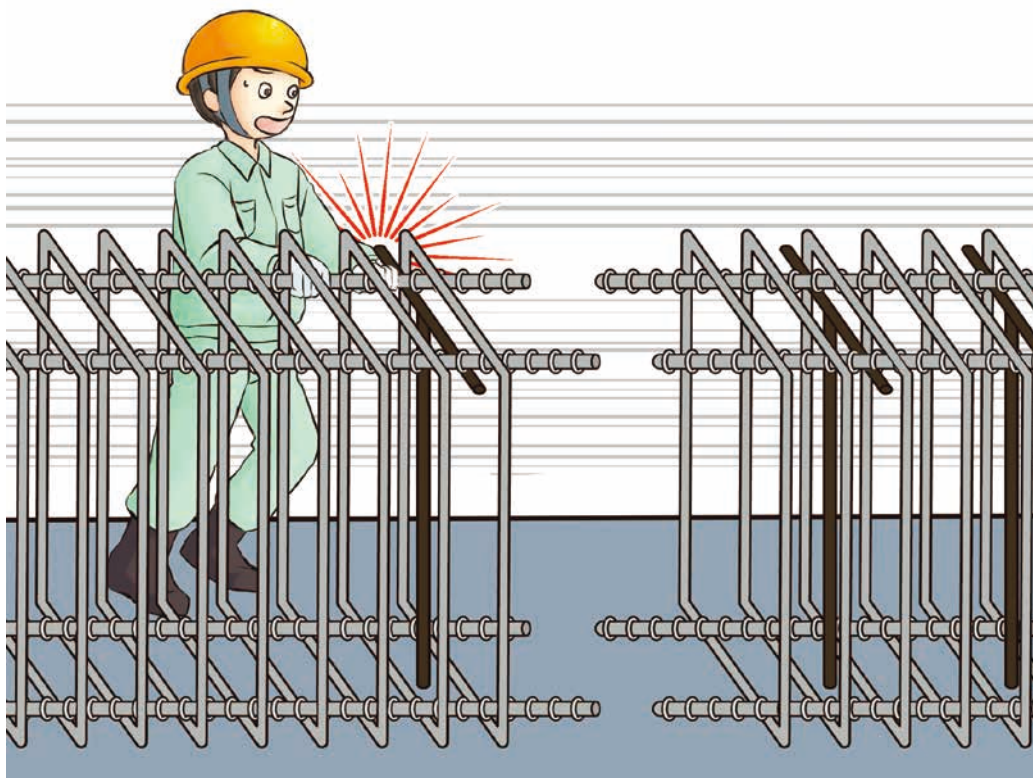
While cutting the end of a column bar at the eye level using a right-angle cold cutting machine, chips from the reinforcing bar got into the victim's eye. The victim carried out the work without safety glasses.

### Matters to pay attention

1. If the joint level of a column is high, use a portable workbench, etc.
2. Wear protective glasses properly.
3. Avoid the postures to where steel chips fall.



## (6) Accident case No.1 in a mechanical joint work



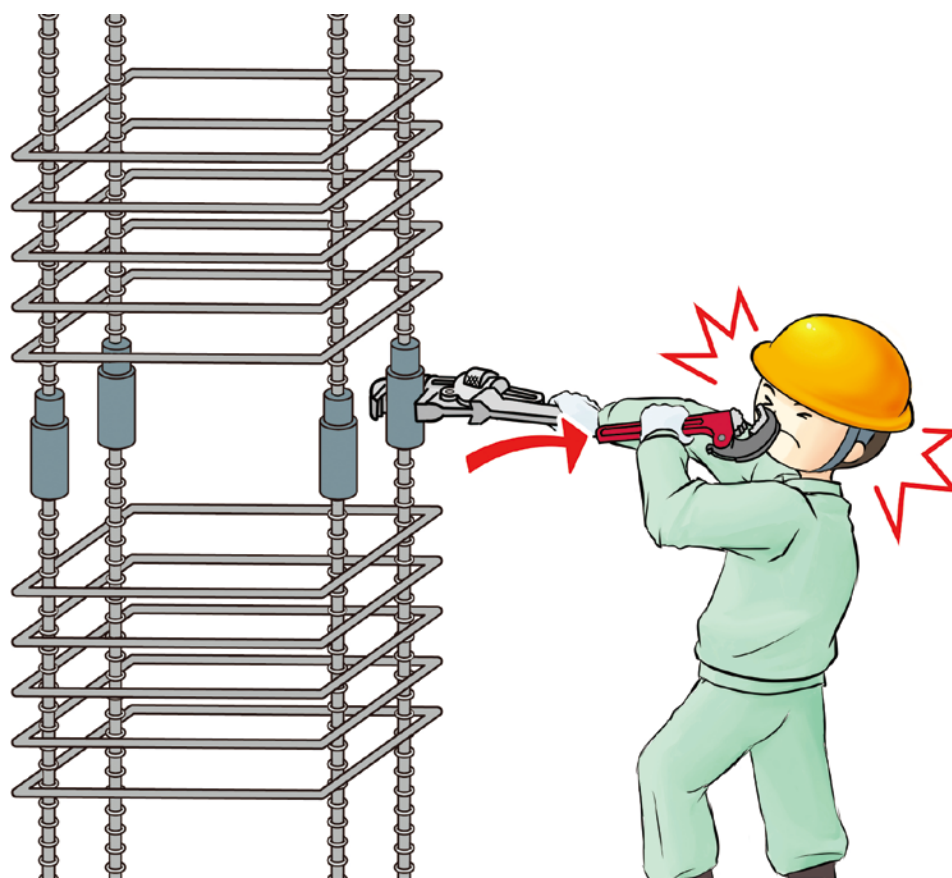
### Occurrence situation

During a mechanical joint work of an underground beam, because the beam main reinforcement could not set in the fitting position widely, when a beam main reinforcement was pulled by two people, the finger was pinched between a footing reinforcement assembly stand and a reinforcement bar. The two-person work requires a good combination, but, they didn't call out and didn't get their timing right with.

### Matters to pay attention

1. When two or more perform the same work, call out each other.
2. Work in a position where an injury does not occur even if the material moves at an unexpected timing.

## (7) Accident case No.2 in a mechanical joint work



### Occurrence situation

During fastening of a torque nut of a column main reinforcement bar joint, a hook of a pipe wrench that was holding a joint coupler became loose and the pipe wrench hit the worker's face vigorously.

### Matters to pay attention

1. Make sure that a pipe wrench and a torque wrench are properly hooked before applying torque.
2. To get the proper height for the work, use a portable workbench, etc.
3. Work always assuming (predicting) the worst case may occur.

## (8) Cautions to avoid injuries in pressure welding works and mechanical joint works (summary)

- Careful attention is required in a pressure welding work because combustible hazardous materials are used!
- Gas cylinders must be installed not falling over due to vibration, etc.!
- Before starting a pressure welding work, be sure to carry out the start-up inspection before the work and confirm that everything is all right!
- Be careful not to get gloves caught in a grinder!
- Be careful as there are many accidents that occur when a column main reinforcement bar falls or leans!
- Be careful of flying chips when cutting column main reinforcement bars!
- A work which is carried out cooperatively by a plurality of workers at the same time, such as moving heavy objects, often leads to an accident!
- Many accidents occurred in applying the power with a pipe wrench, so be careful when using it!

**Flammable hazardous materials are handled in a pressure welding!**

**Always carry out the start-up inspection and do a safe work using the specified protective equipment! Be careful of injuries with power rotary tools and burns by touching a joint that is pressure welded!**