

まんがでわかる



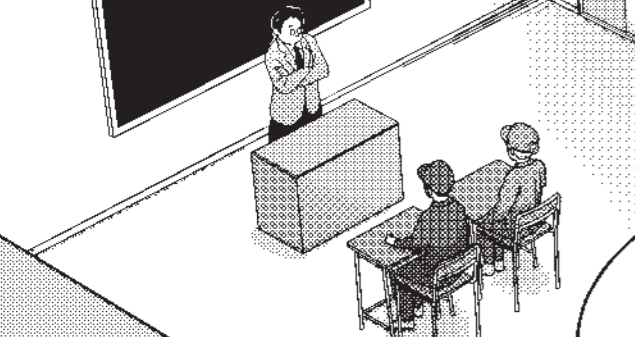
English
英語

めっきの安全衛生

Learn Through Manga
Health and Safety in the Plating Industry



These audiovisual materials have been prepared for the purpose of teaching the basics of safety and health for all those employed at workplaces doing electroplating.



Today we're going to learn about safety and health for plating work!



You've got to be careful about your safety because this work requires machines too, not just manual labour.

That's right!



Chemical solutions are used too.

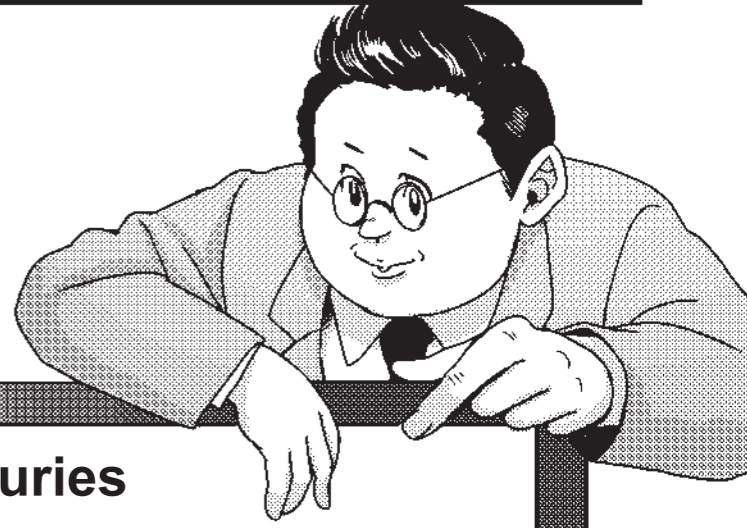
I wonder what kind of things we need to watch out for.



Industrial accidents happen even in such workplaces.

Huh?!

Alright, let's take a look at the main causes of industrial accidents.

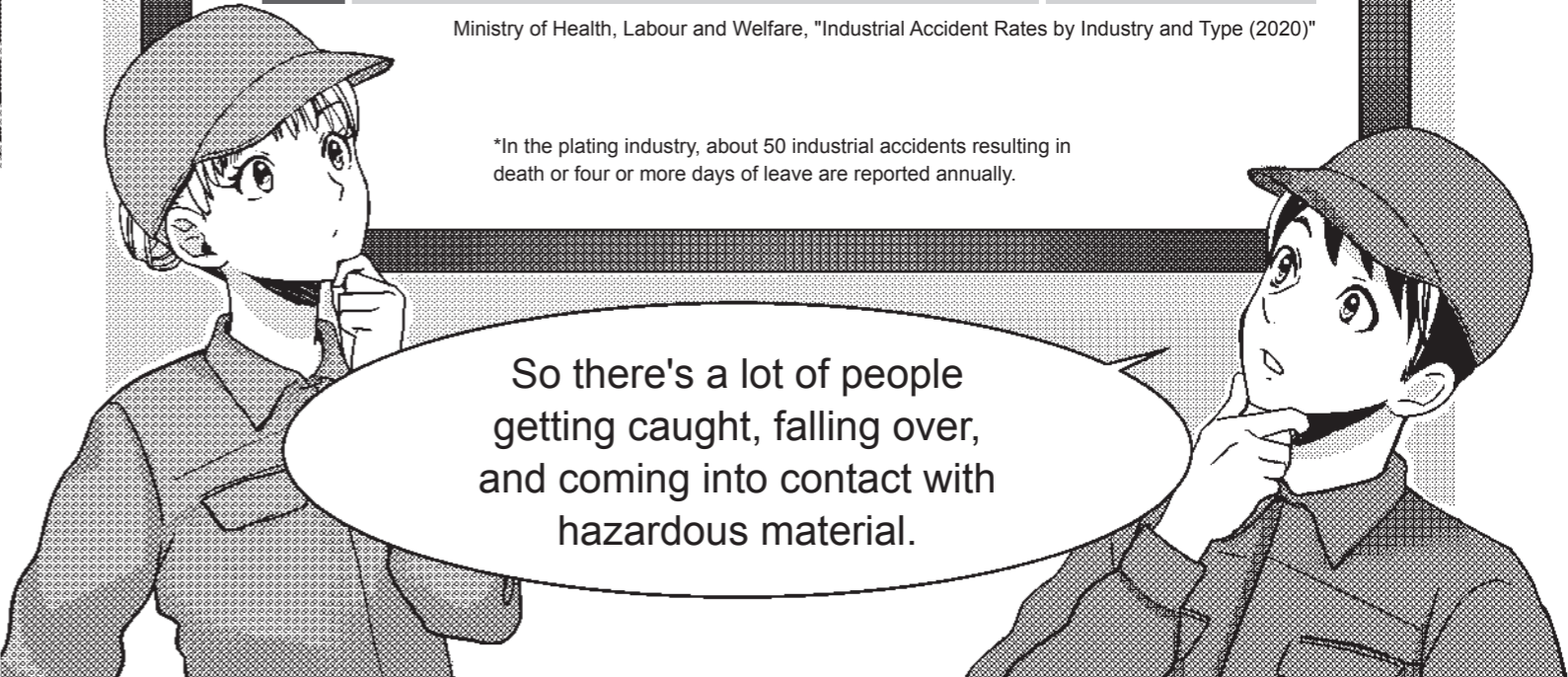


Rate of Deaths and Injuries in the Plating Industry

1	Getting caught/trapped	20 %
2	Falling over	16 %
3	Contact with hazardous material	14 %
4	Crashes and falls	10 %
5	Flying/falling objects	10 %

Ministry of Health, Labour and Welfare, "Industrial Accident Rates by Industry and Type (2020)"

*In the plating industry, about 50 industrial accidents resulting in death or four or more days of leave are reported annually.



So there's a lot of people getting caught, falling over, and coming into contact with hazardous material.

That's right. Next, let's take a look at specific causes of industrial accidents!

For example, there have been reports of people getting their fingers caught in the rotating parts of machines, or slipping and falling on wet floors.

How come industrial accidents like this happen? Mainly because the rules meant to ensure safety weren't followed.

*Rules meant to ensure safety are based not only on laws and regulations, but also on lessons learned from many past failures and accidents.

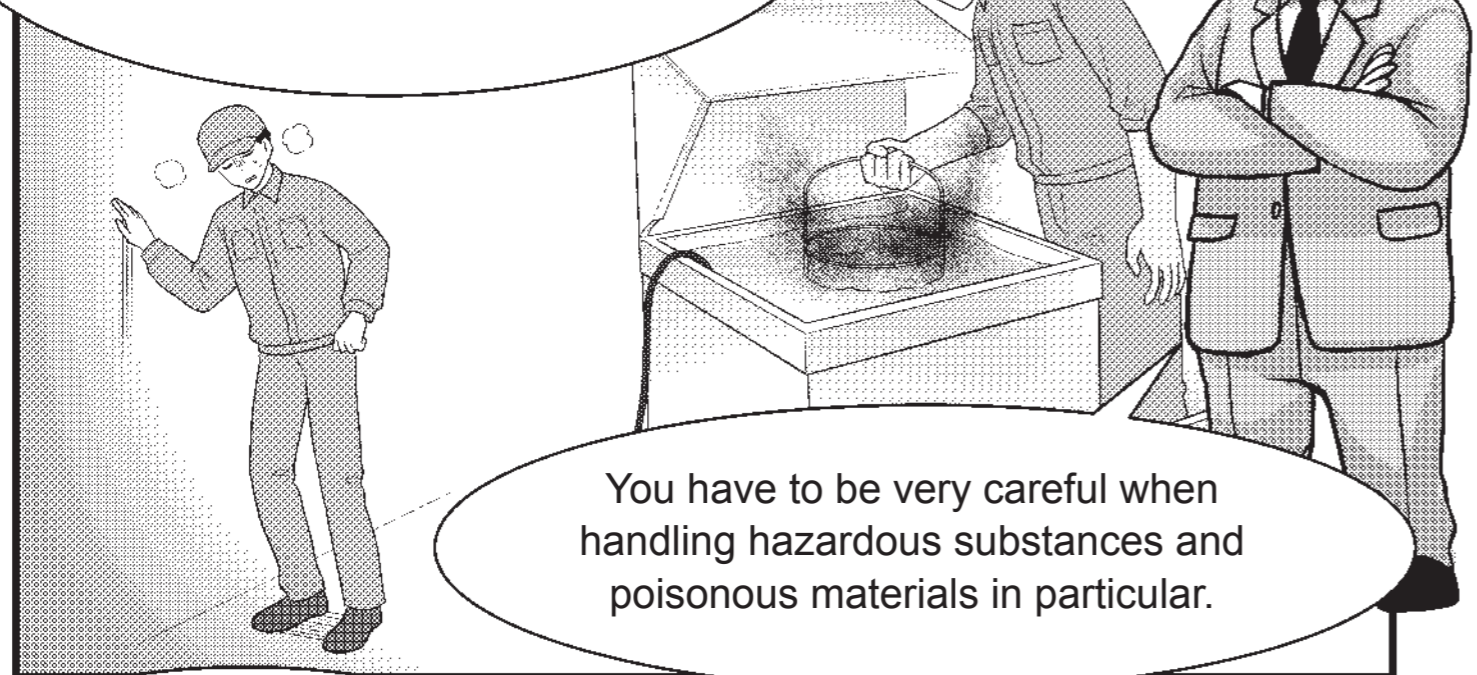
What kind of rules are there for example?

Performing site safety checks before starting work. Always wearing the right protective equipment is also important.

Is that it? I thought there would be more complicated rules than that. Huh?

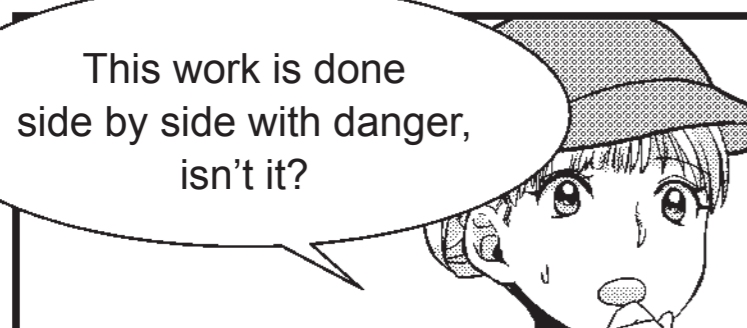
It's important to enforce the rules thoroughly to prevent industrial accidents! Ye, yes sir!

Some chemical solutions that are highly dangerous are used in plating work, like sulfuric acid and hydrochloric acid, so be careful not to touch them directly.



You have to be very careful when handling hazardous substances and poisonous materials in particular.

This work is done side by side with danger, isn't it?



That's why it's so important to make sure you follow the rules.



Wearing protective equipment is critical to protect yourself.



There's lots of different types, so you need to choose the correct ones depending on your work.

What kind of things do we need to watch out for on a regular basis?



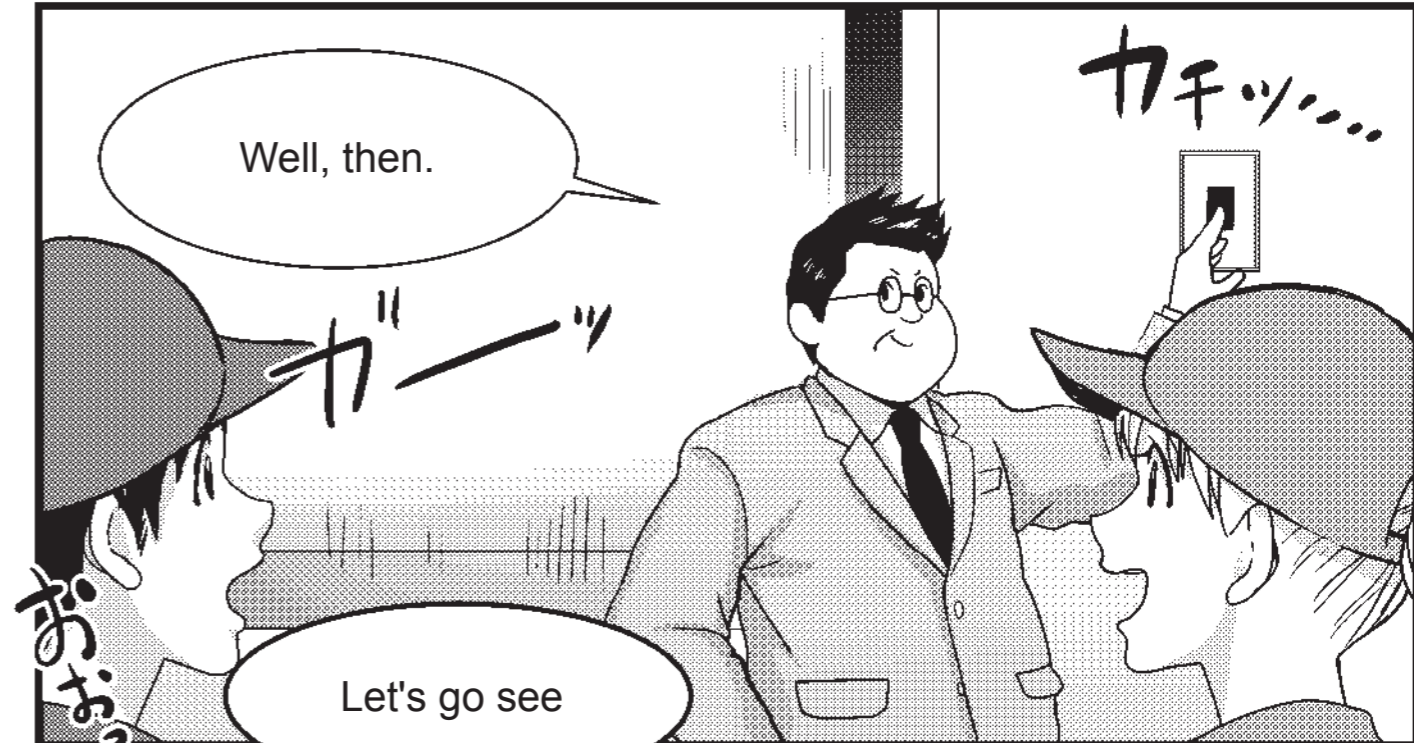
Do you know about 4S?

4S stands for Seiri (sorting), Seiton (set in order), Seiso (shine), and Seiketsu (standardize). These form the basis of safety and health.

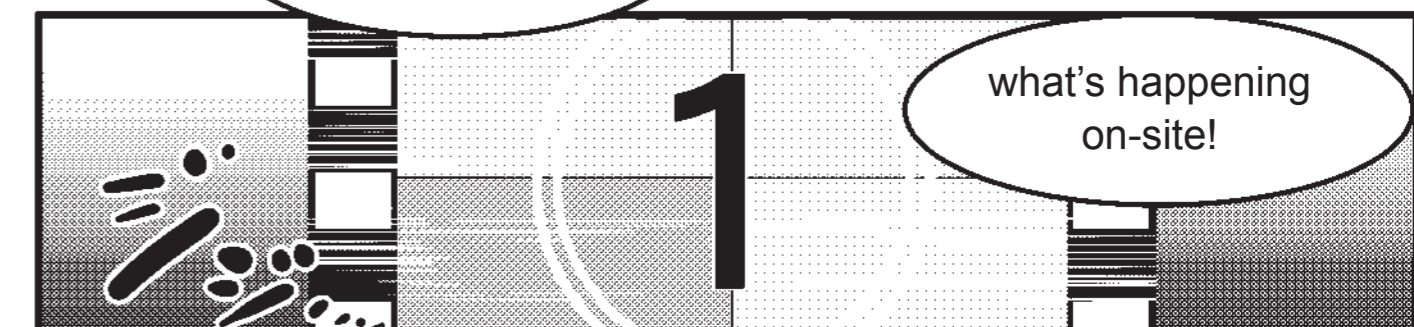


Well, then.

Let's go see

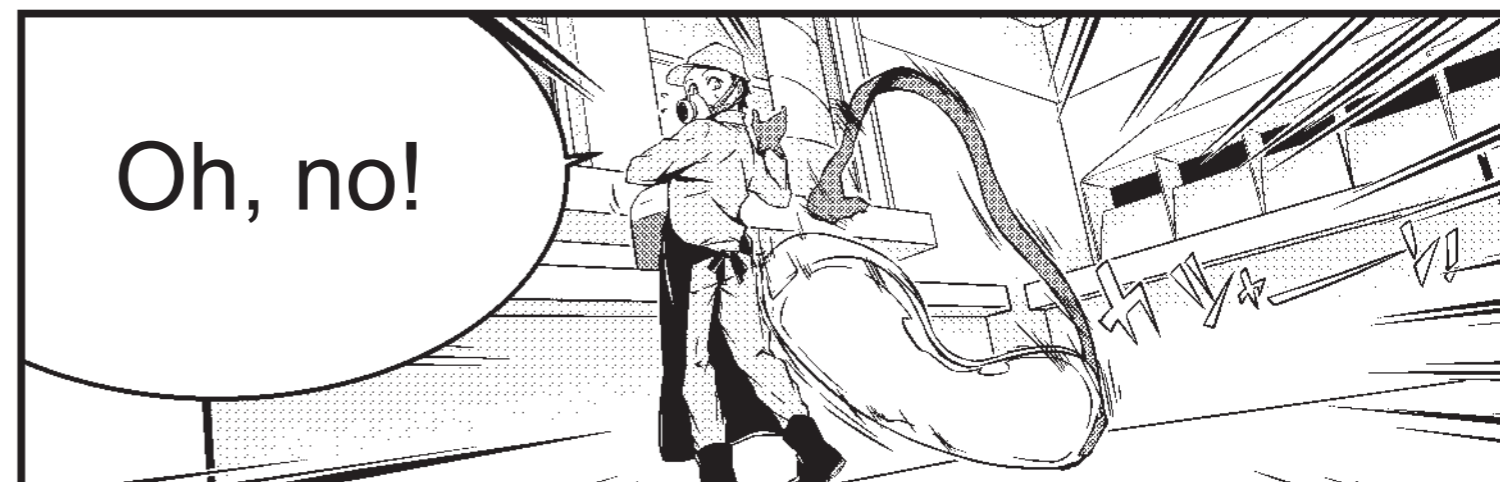
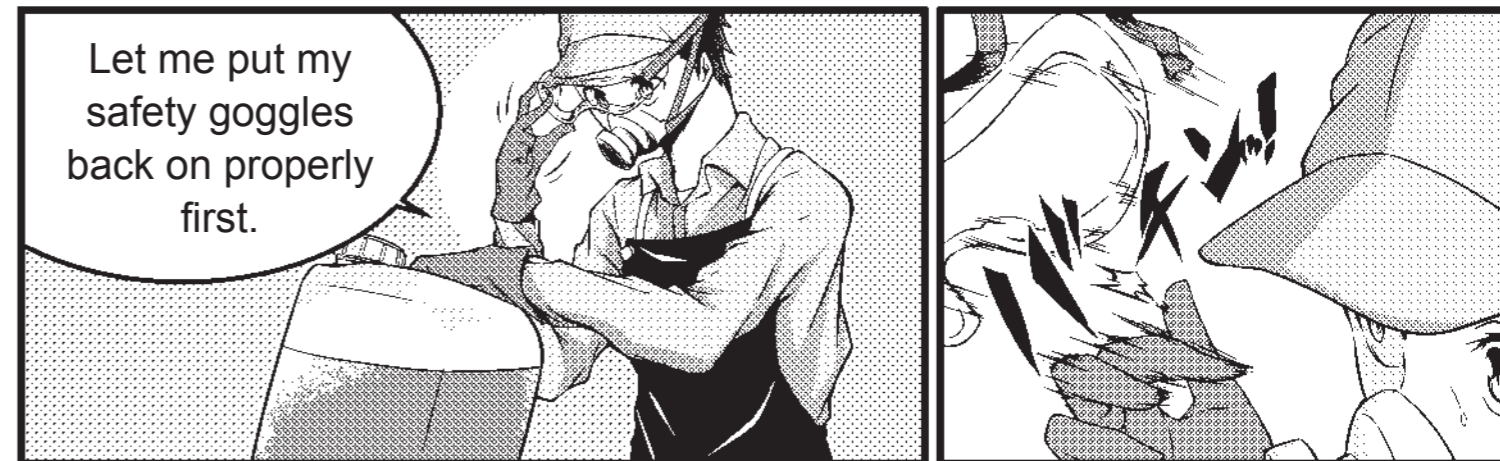
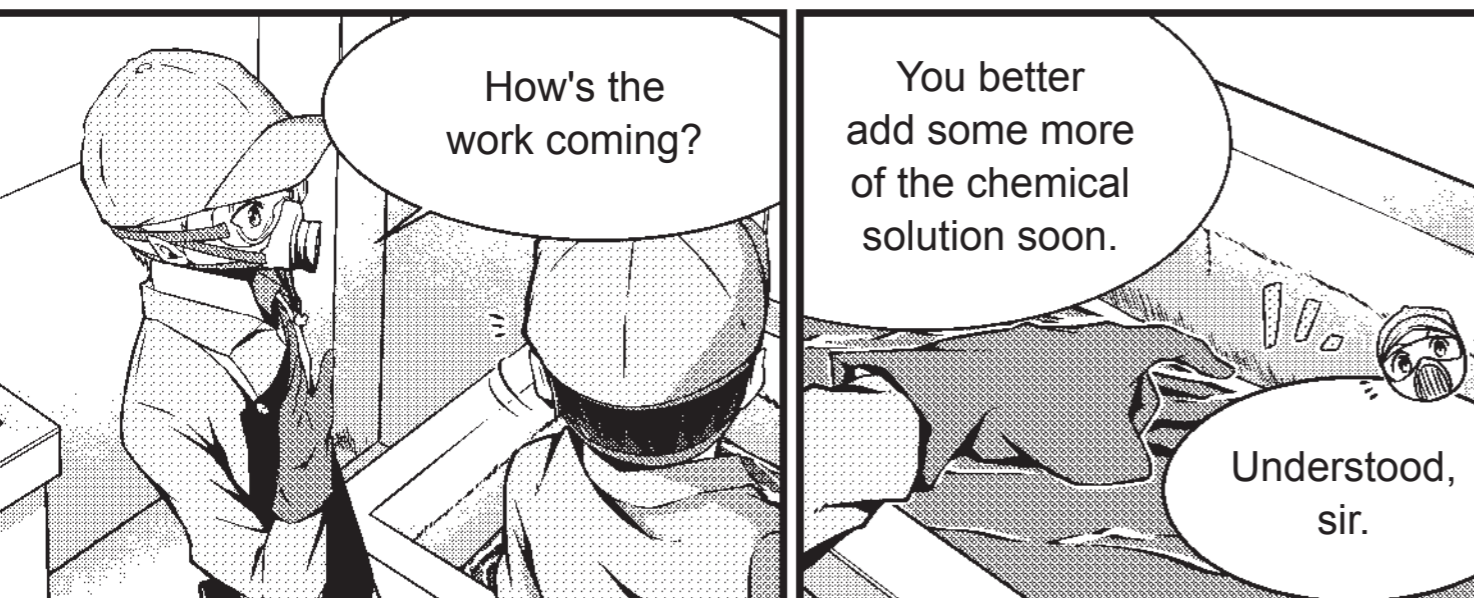
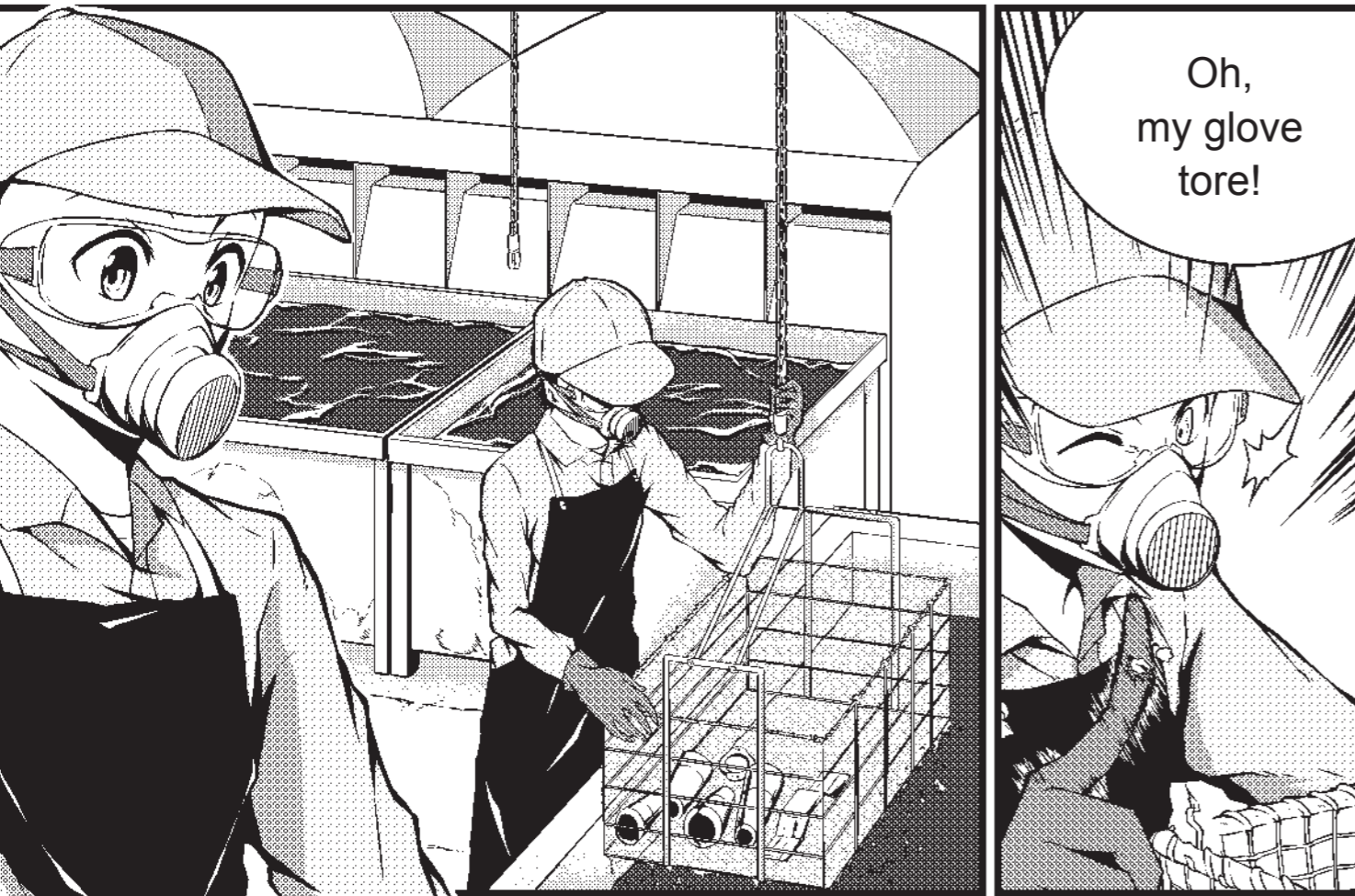


what's happening on-site!



CASE 1

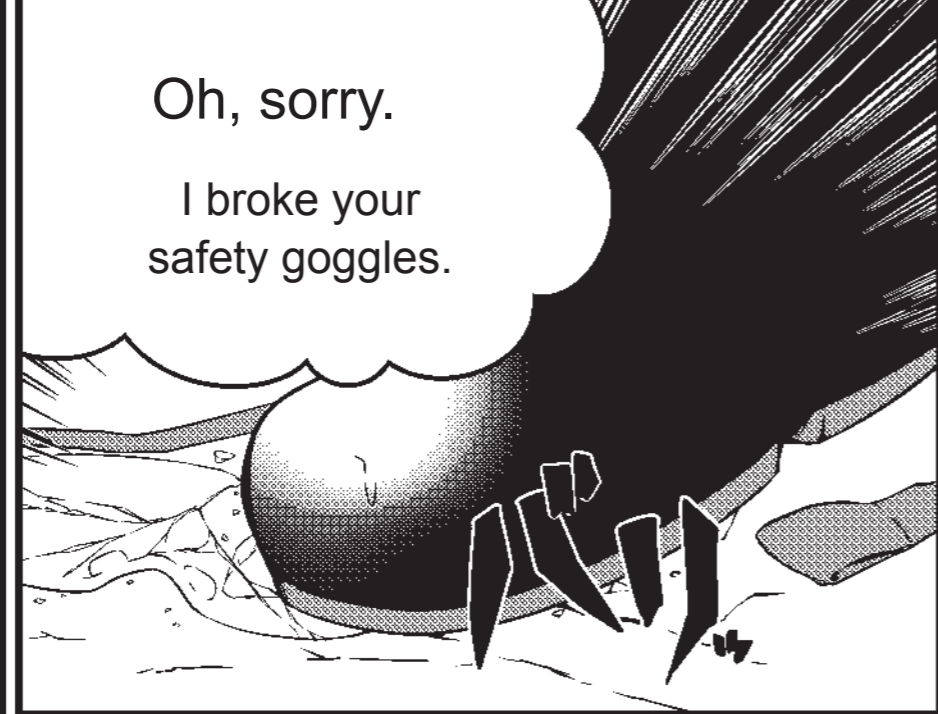
Be careful with chemical solutions





Hey, how are you doing?

Huh? I stepped on something.



Oh, sorry.

I broke your safety goggles.



Oh no, it got in my eye!



Ow, that hurts!
Ouch!



Hold on a second, I'll get you another pair right away.



I should be fine even without safety goggles. Let's get to work already.



Hey, are you alright?



Let me see your eye, I'll spray it with water.



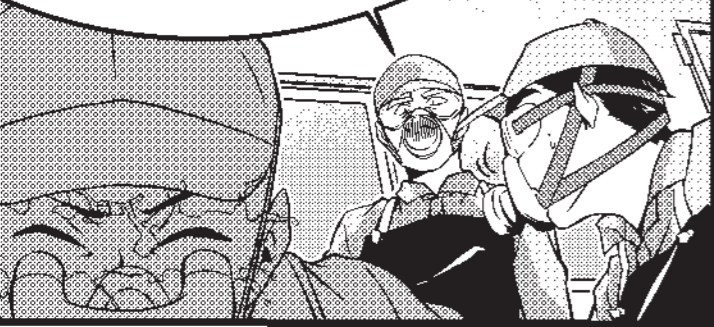
My finger's tingling a little bit.



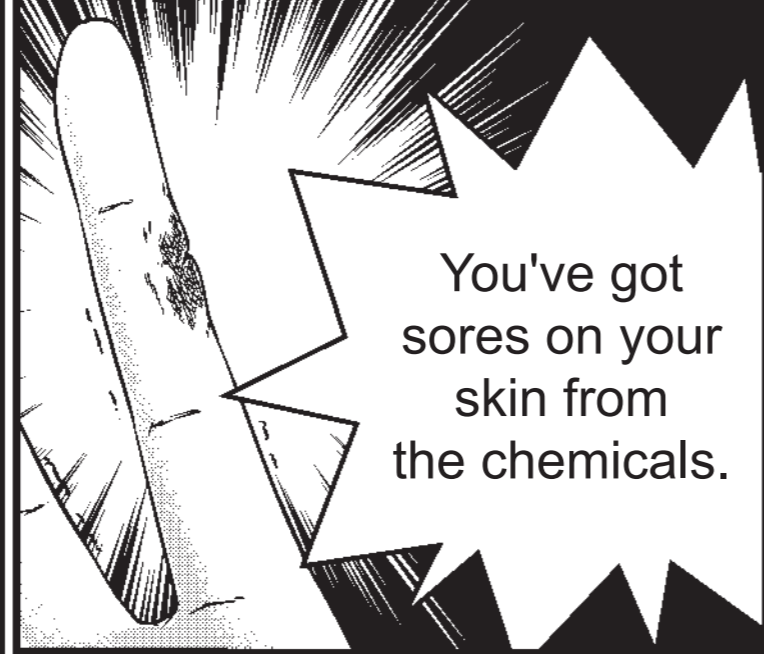
All right, let's go wash it out at the eyewash station!



Your glove is torn, take it off.



You've got sores on your skin from the chemicals.



We need to get you to a hospital right away, get in the car!

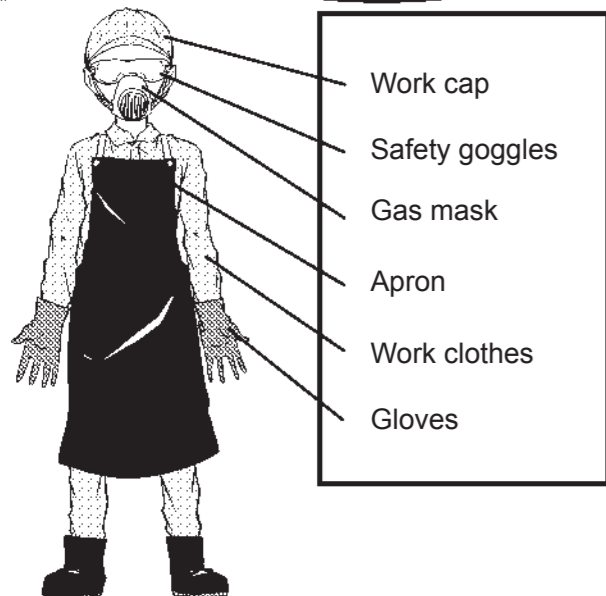


I'm sorry I caused so much concern.

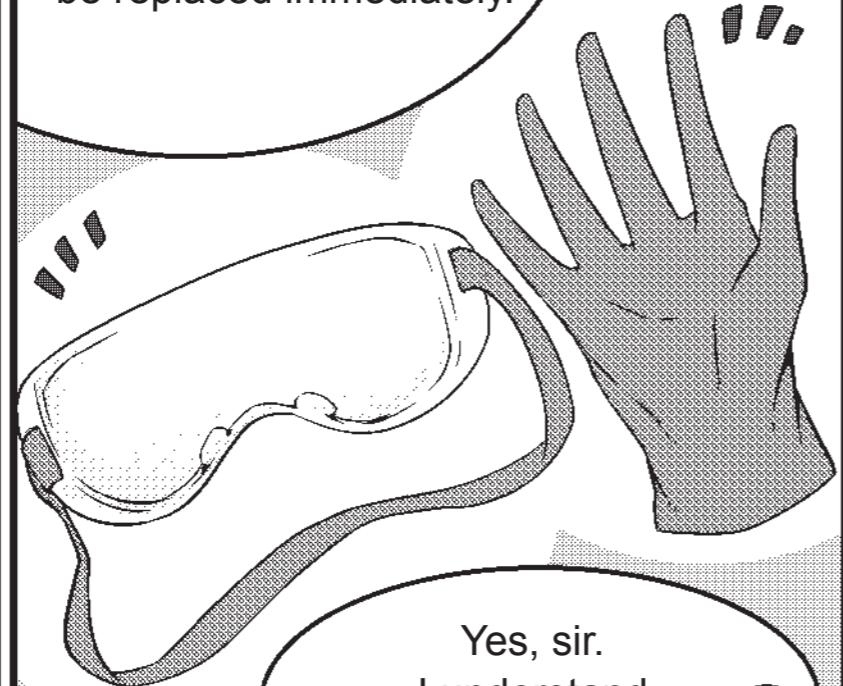


Protective equipment is meant to protect you.

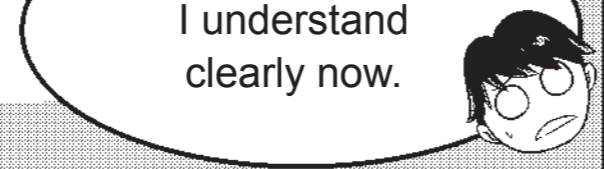
Always wear it while working, even if it's just for a short period of time.



Protective equipment that's torn or damaged should not be used and be replaced immediately.



Yes, sir. I understand clearly now.



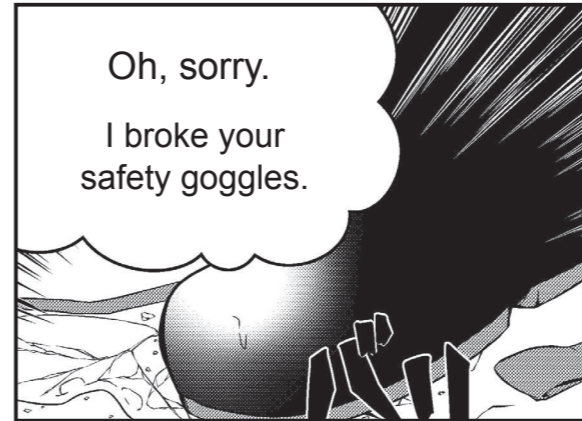
CASE 1 Summary

1 Handle protective equipment with care!



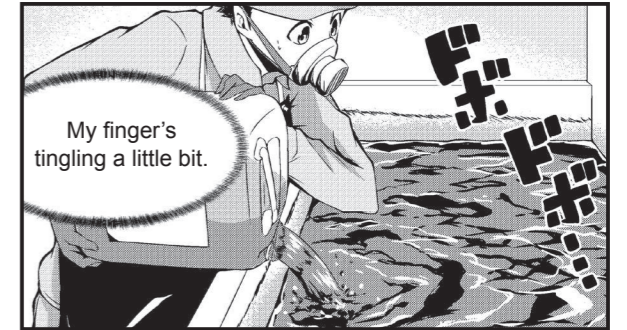
It's got a hole in it now. But it's just a tiny one, so it should be fine.

Oh, sorry. I broke your safety goggles.



Pay attention to the ground in front of you when you walk by people working.

2 Wear protective equipment while working!



My finger's tingling a little bit.



Ow, that hurts! Ouch!

When pouring chemical solutions, keep the spout of the plastic container facing up, pour gently, and be careful not to let liquid splash out of the tank.

*It is important to understand the hazards of the chemicals being used. Ask your manager.

TIPS

Keep your face away from the degreasing tank!

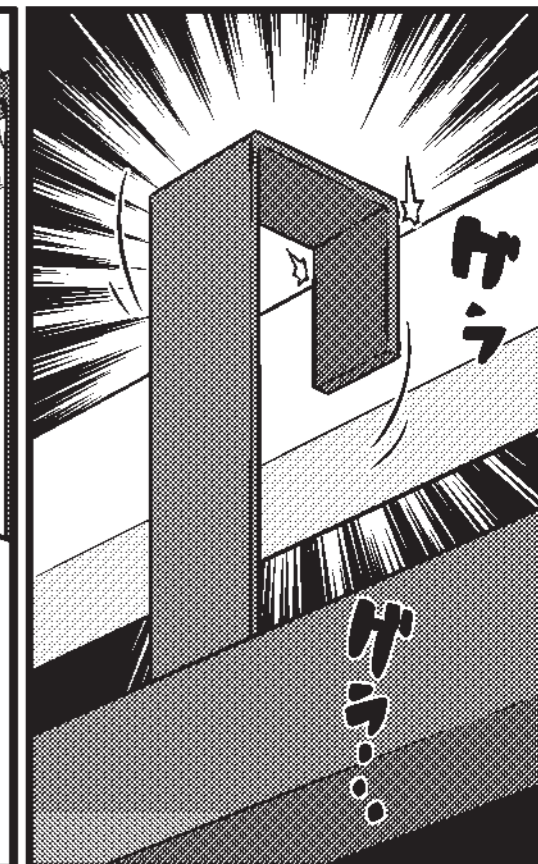
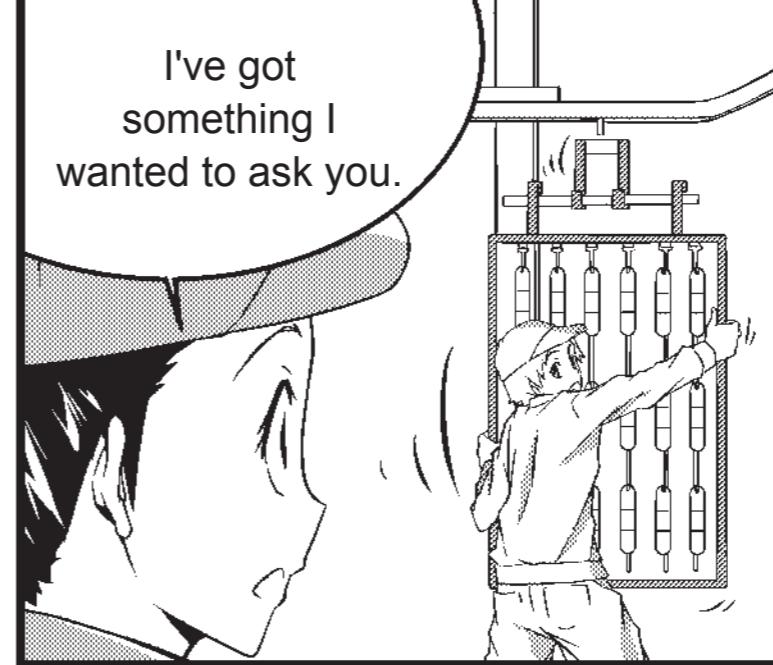
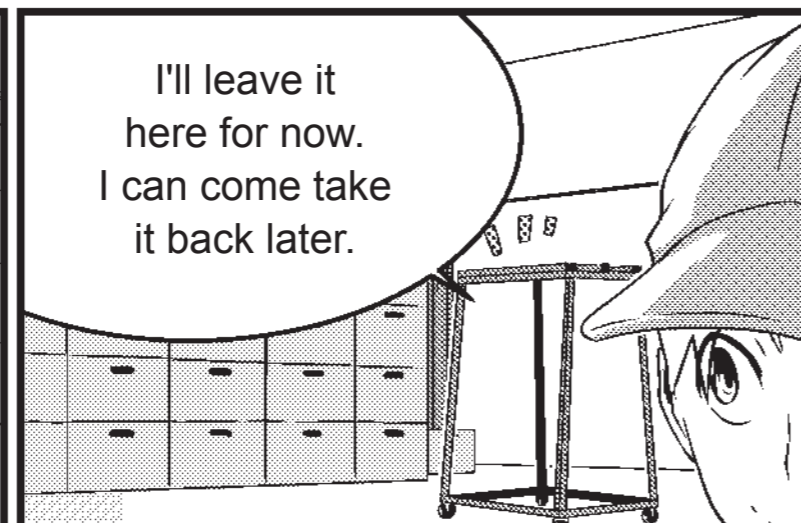
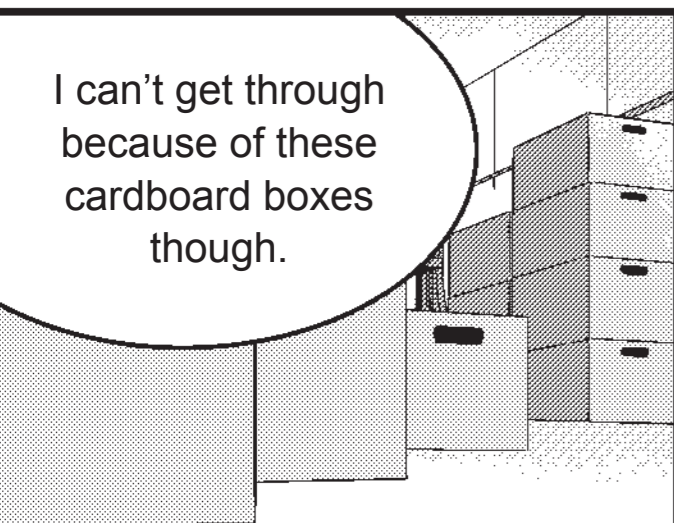
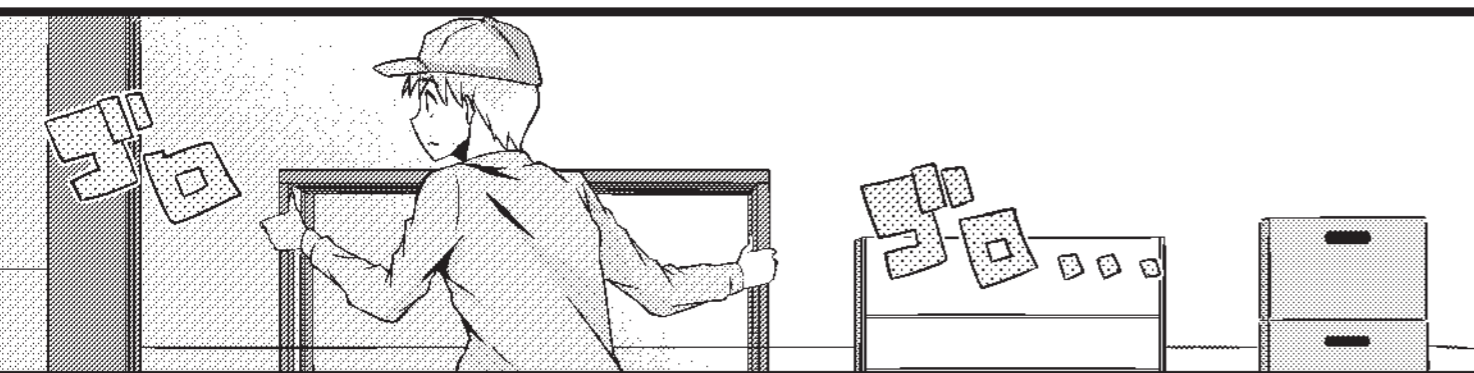
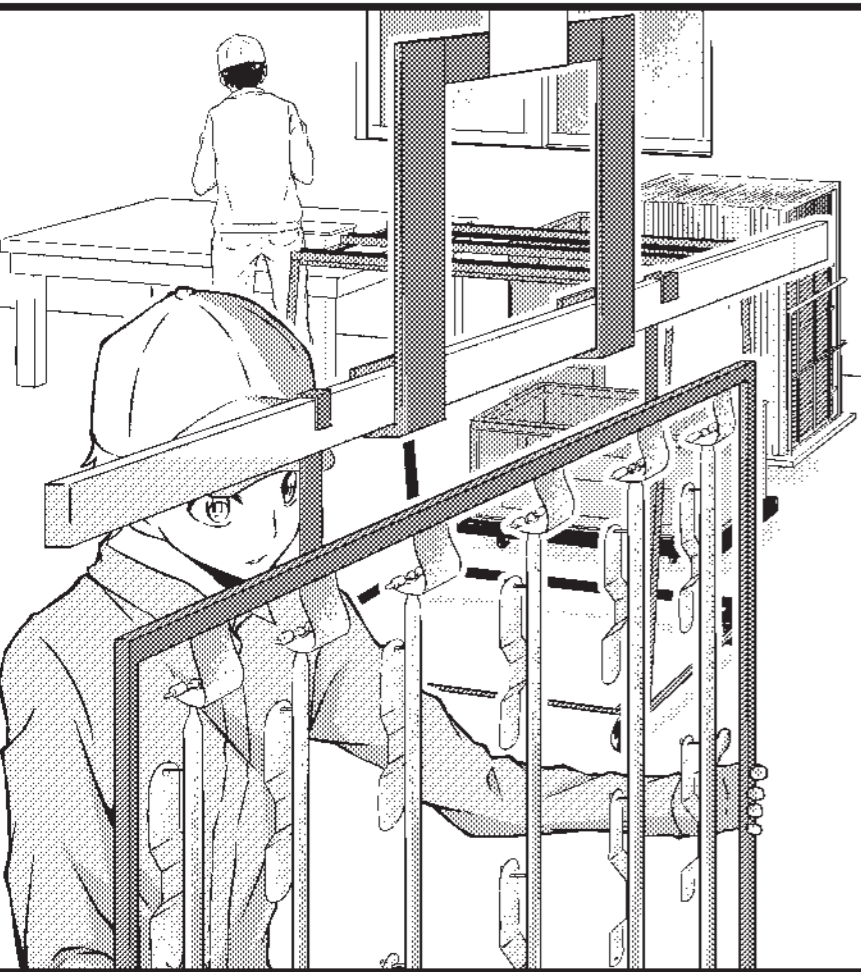
NG



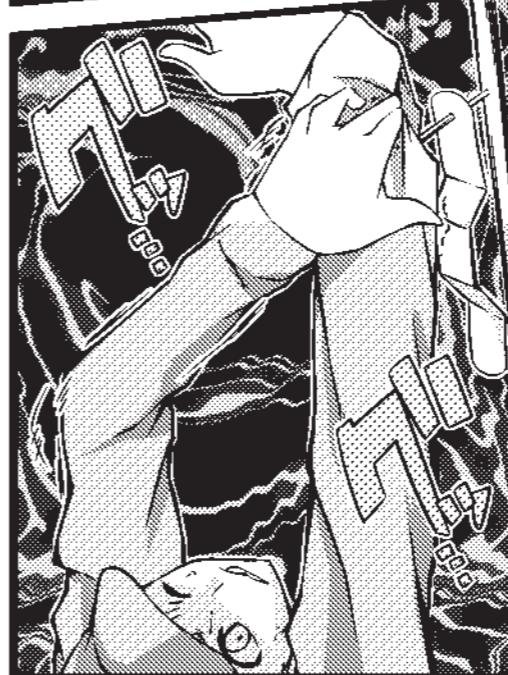
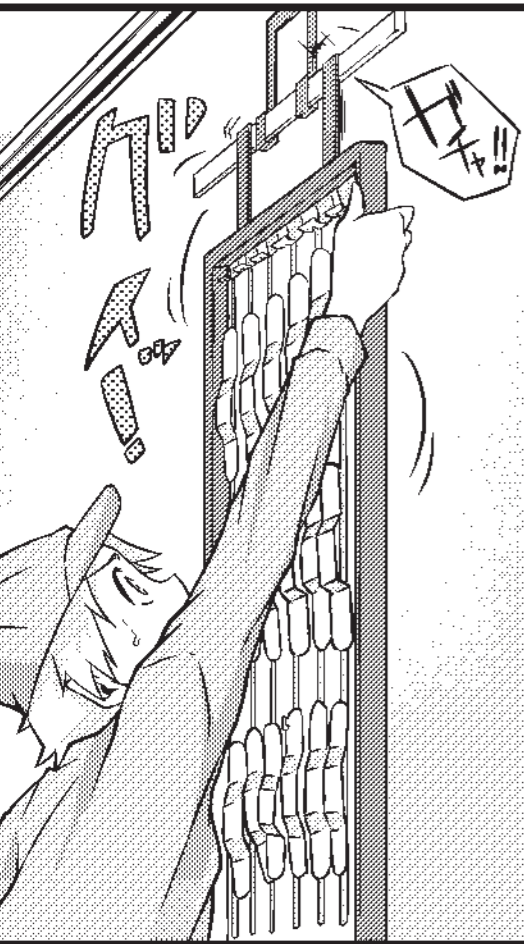
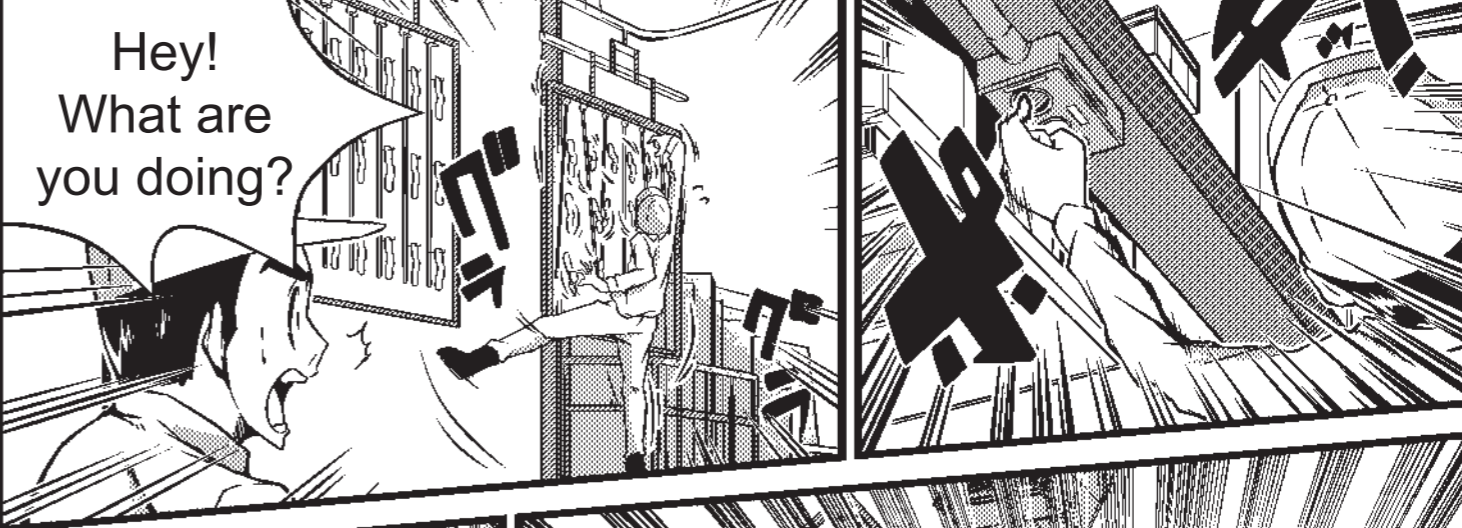
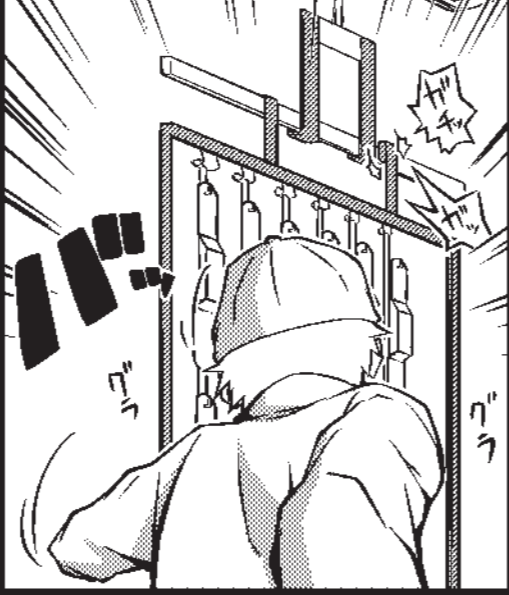
- The solvents used for degreasing may cause asphyxiation or acute poisoning if their vapors are inhaled.
- Some solvents have no color or odor.
- Do not work alone at night or on days off. You would be discovered late if you were to collapse.

CASE 2

Be careful with the transport line

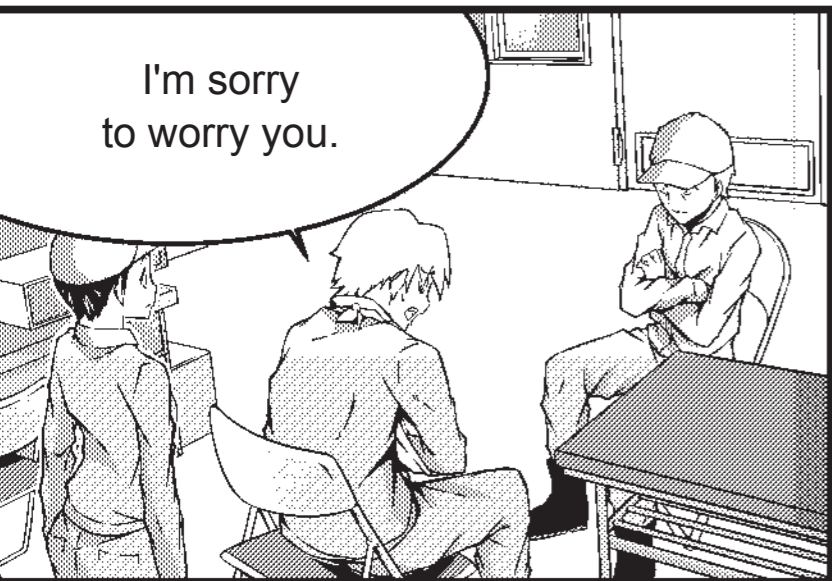


The hanger's about to fall off! I've gotta hang it back up quickly!





Hey, are you okay!?



I'm sorry to worry you.



I was looking away when I was hanging up the hanger.



Hangers should be hung up with both hands, even if you're used to it.



If you notice an abnormality on the production line, call out to the people around you and hit the emergency stop.

It's dangerous to touch moving machinery.



I'm sorry. I'll try to speak to you at more appropriate times from now on too.

CASE 2 Summary

1 When there are abnormalities on the production line, call out and hit stop!



Hey! What are you doing?

In the event an abnormality occurs, stop the equipment immediately while calling out to those around you, and make sure that the equipment has come to a complete stop before touching it. Be particularly careful when restarting it as well.

*Observe the situation before speaking out to people who are working.

2 Return racks and other implements to their designated places



I'll leave it here for now. I can come take it back later.

Do not leave things along passageways. They can cause people to trip, which may lead to an accidental fall.

TIPS Precautions when polishing

Be careful not to get caught!



Fingers, work sleeve cuffs, apron edges, etc.

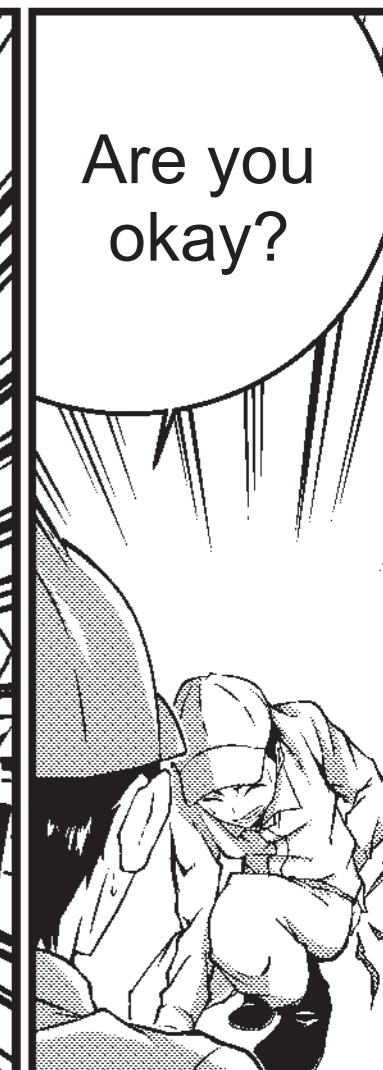
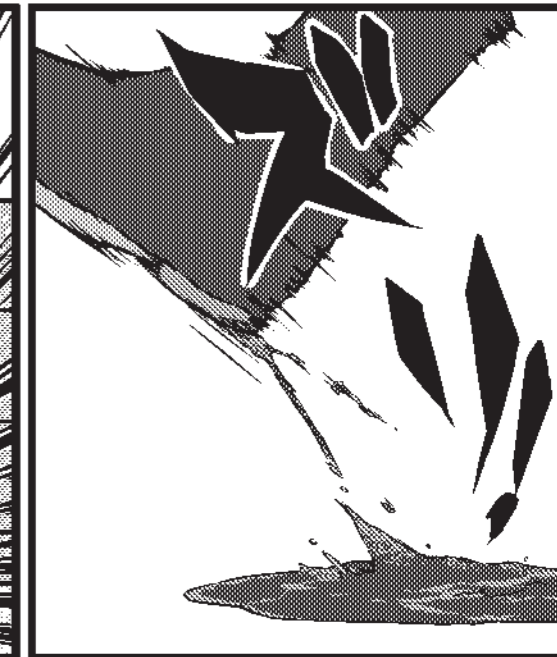
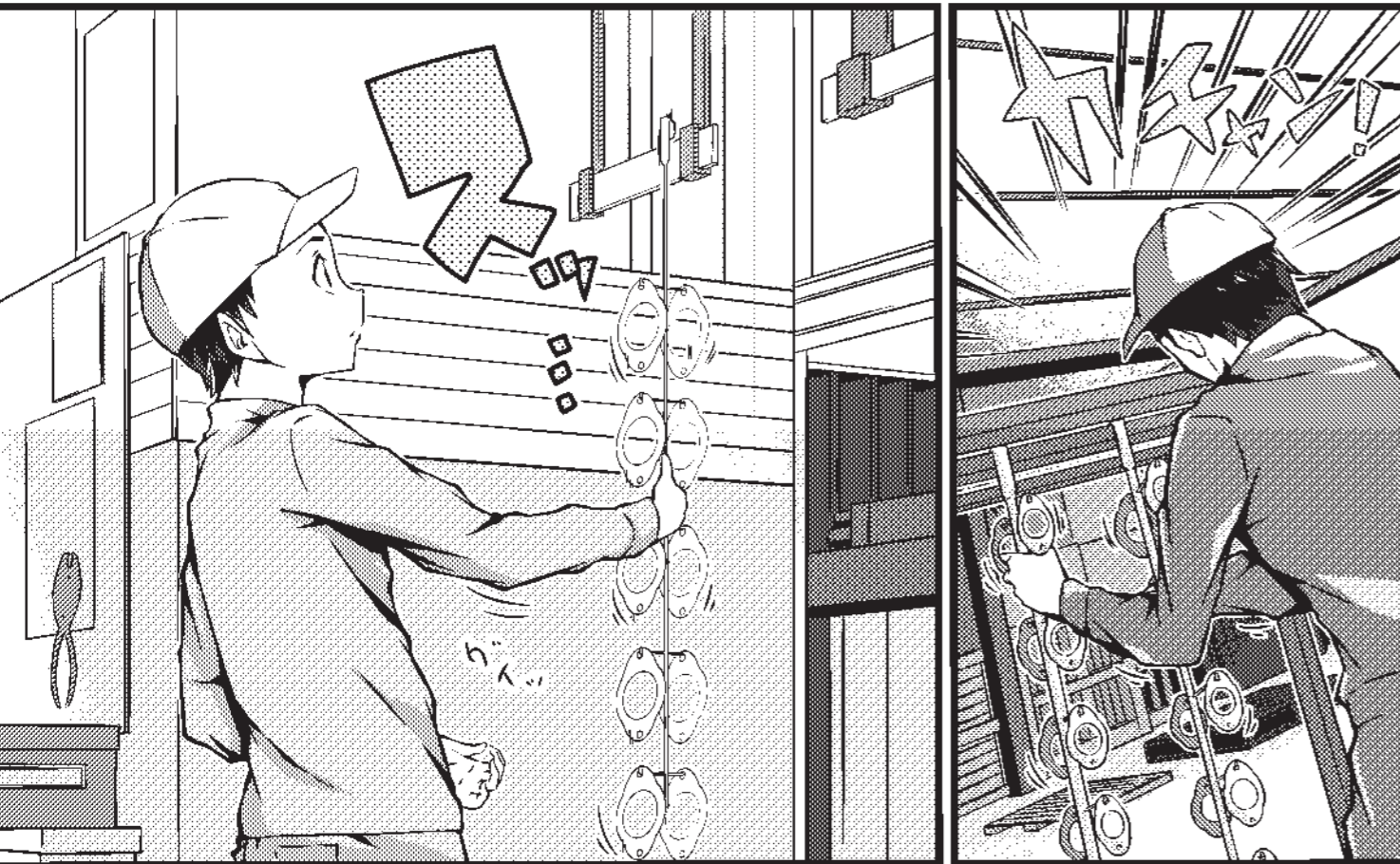
Always wear protective equipment!

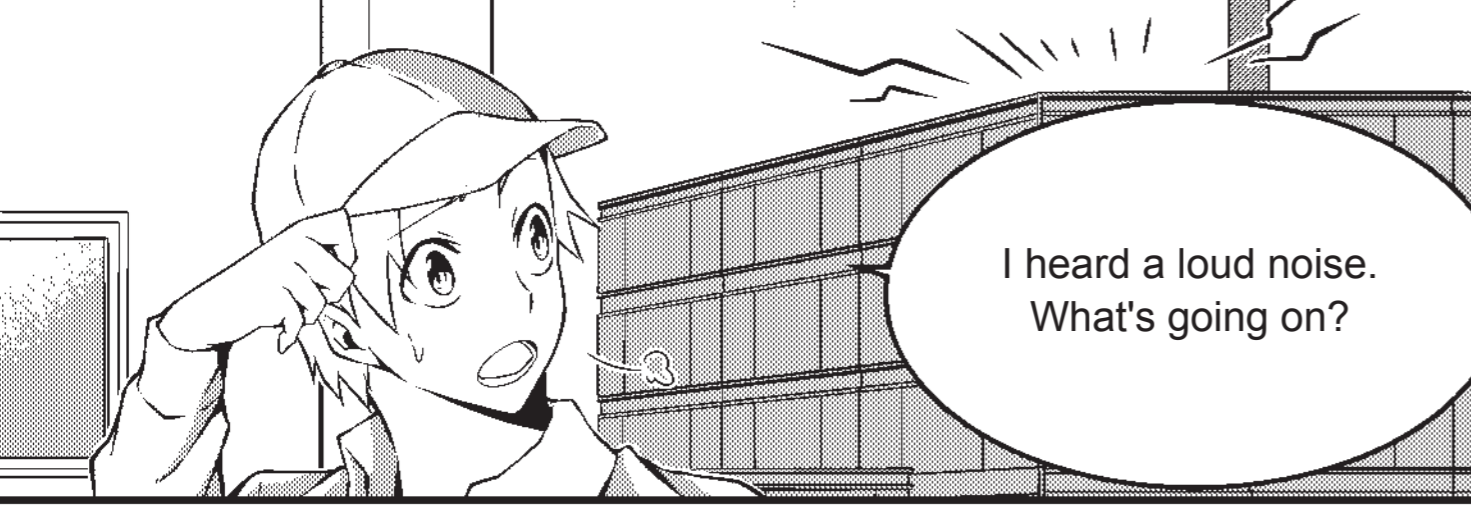


Protect your eyes, mouth, nose, hands, etc.

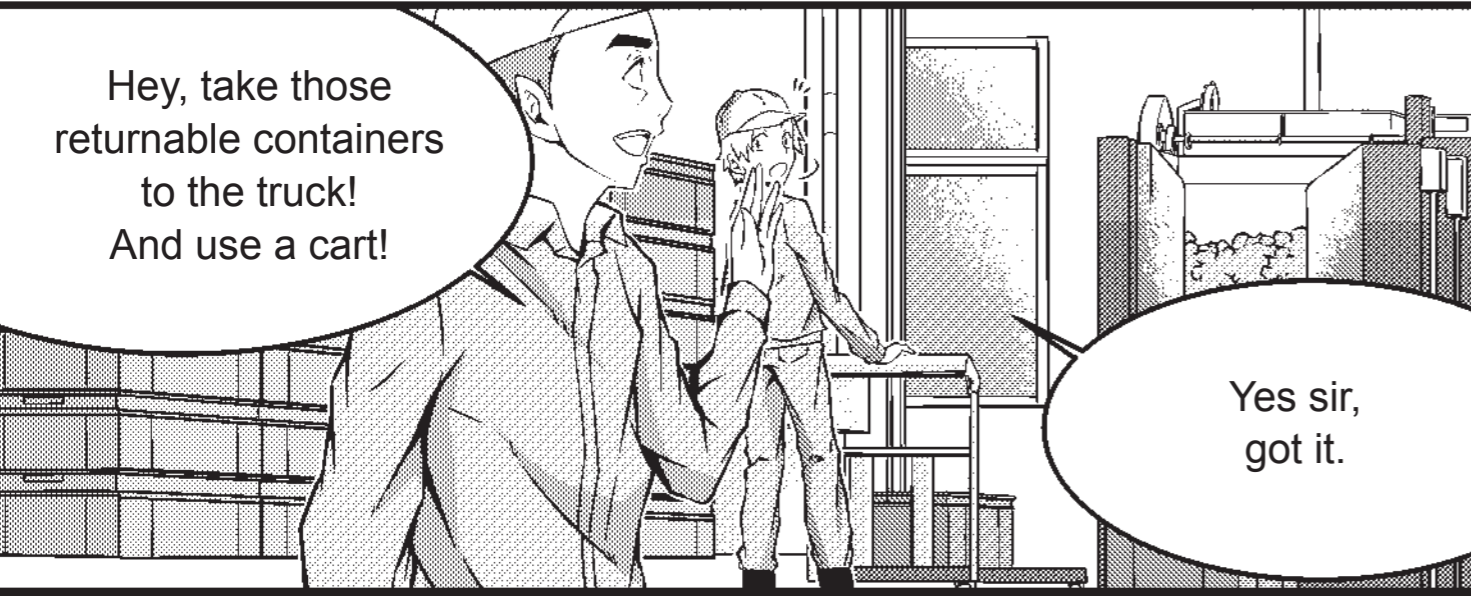
*Follow your supervisor's instructions as to whether or not you can wear gloves when polishing.

CASE 3
Watch your step



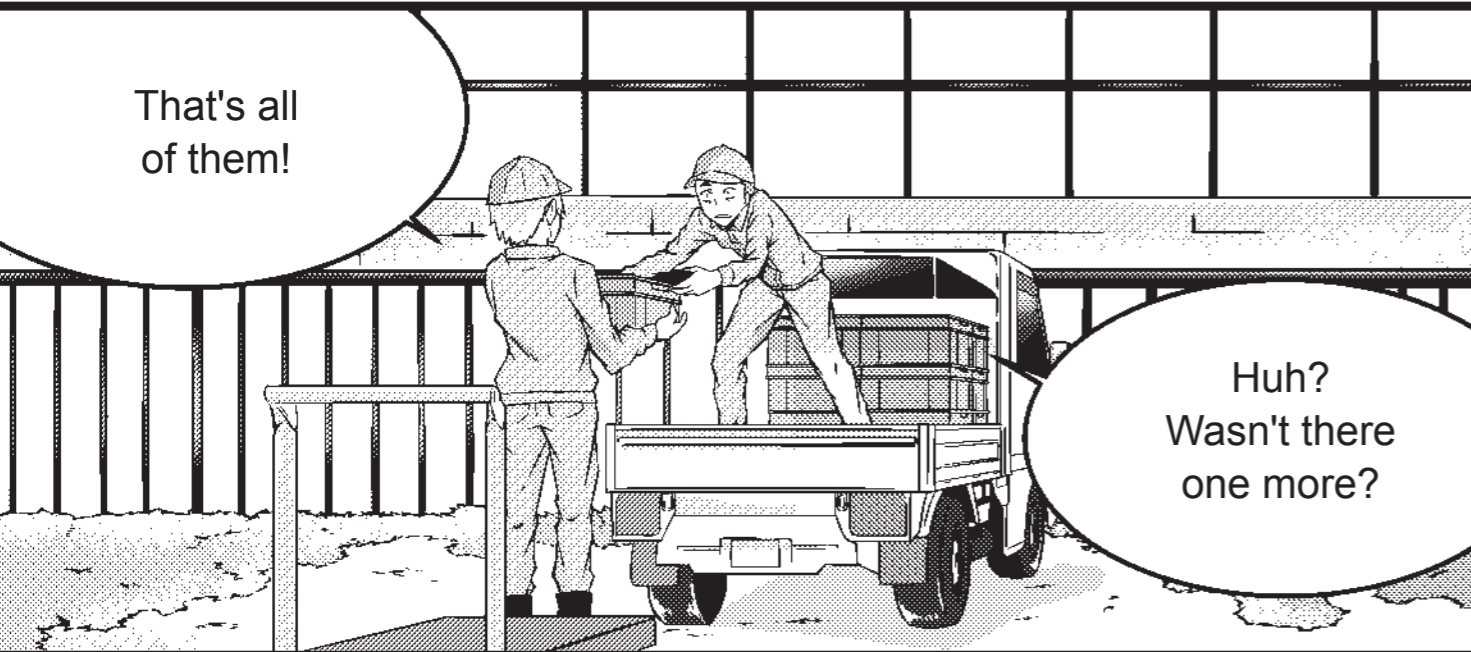


I heard a loud noise.
What's going on?



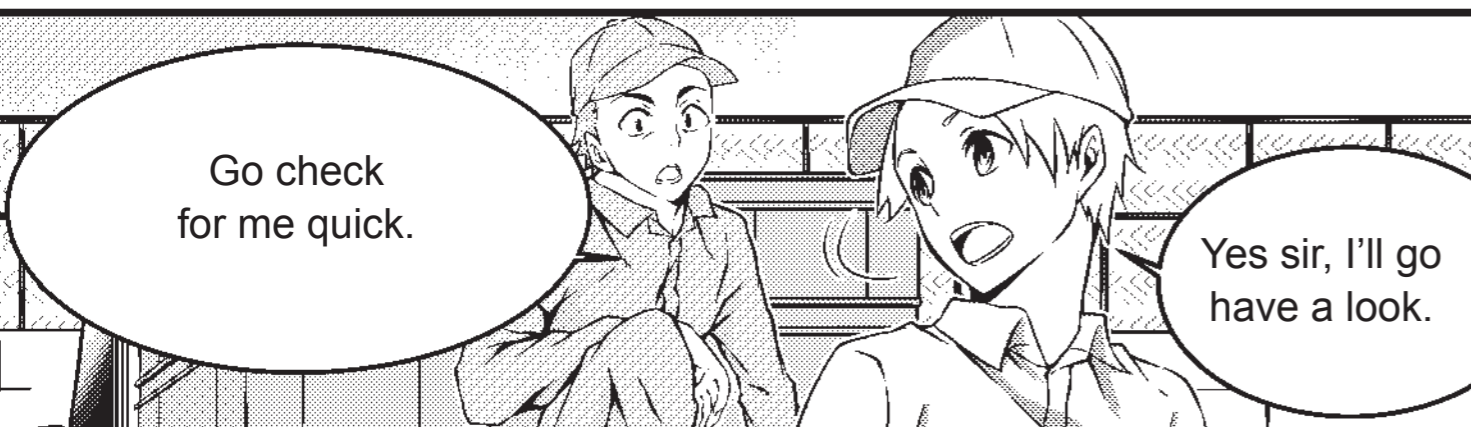
Hey, take those
returnable containers
to the truck!
And use a cart!

Yes sir,
got it.



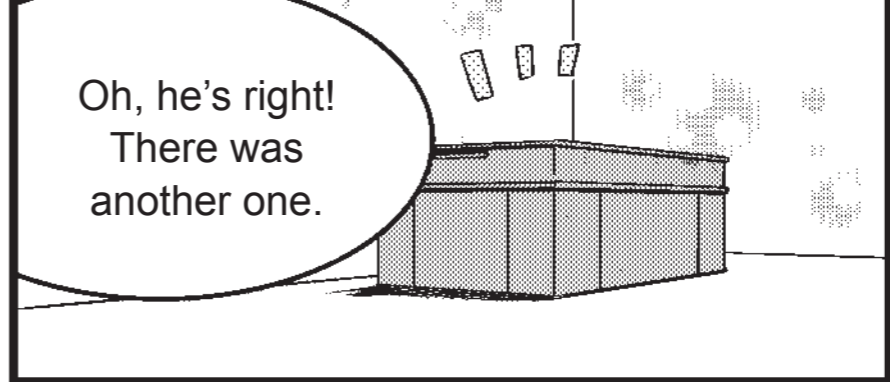
That's all
of them!

Huh?
Wasn't there
one more?



Go check
for me quick.

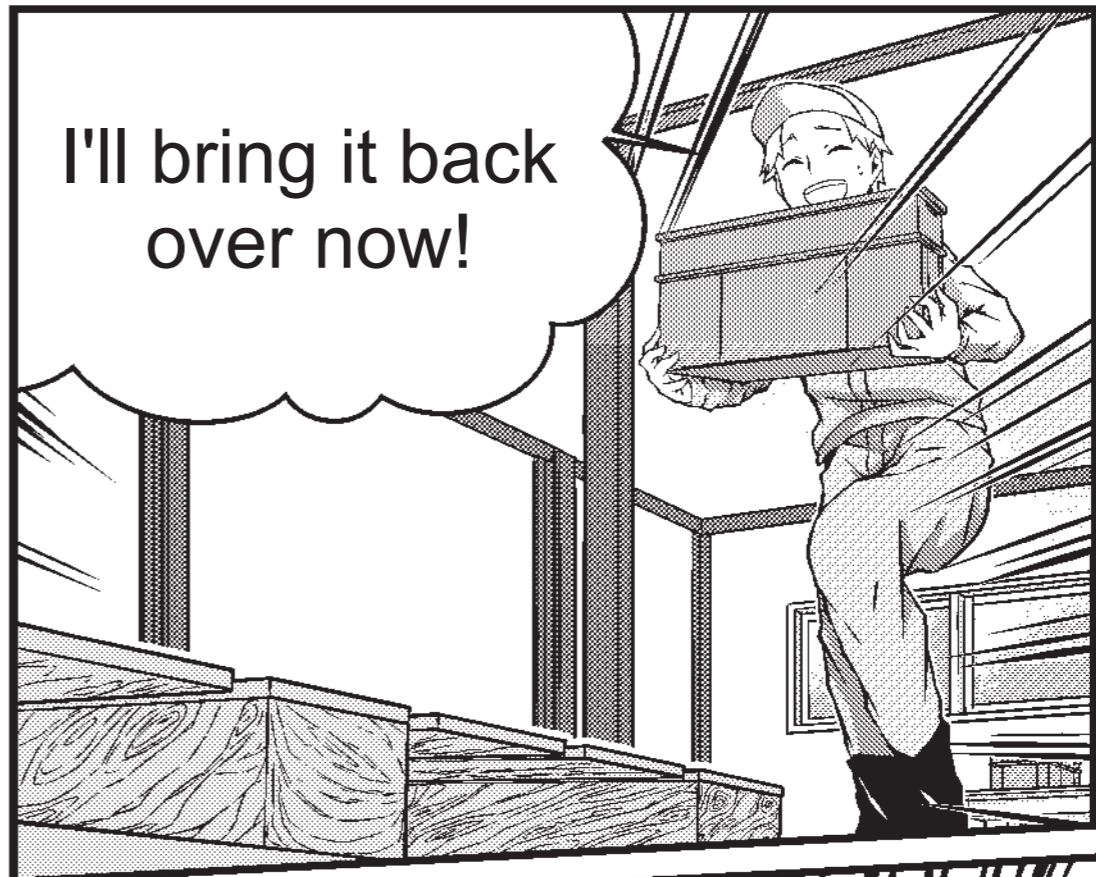
Yes sir, I'll go
have a look.



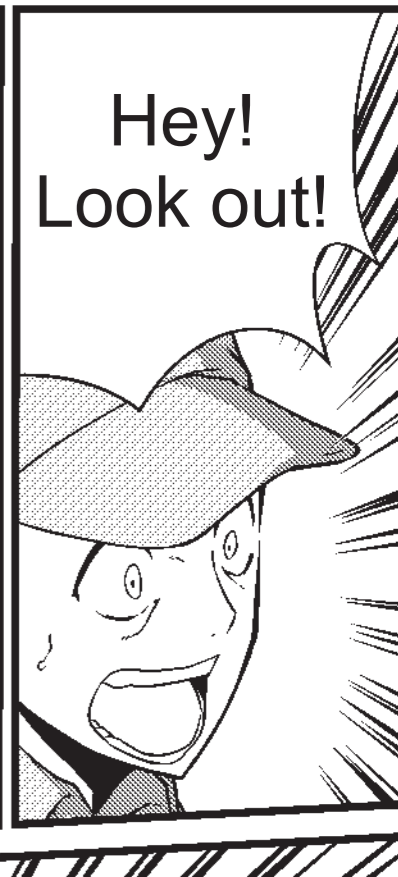
Oh, he's right!
There was
another one.



Senpai!
Found it!



I'll bring it back
over now!



Hey!
Look out!



Are you okay!?

The racks should be moved one at a time without straining yourself.

And watch your step when you're carrying things, it's dangerous. Use a cart, got it?

OK

NG

There's always a reason why rules must be followed.

Wipe the floor when it's wet since it's easy to fall,

and clear away things you don't need.

Yes, sir. We'll keep that in mind from now on.

CASE 3 Summary

1 Watch out for wet floors!



It's easy to slip on floors, so walk slowly. Also, wipe the floor immediately when wet.

2 Watch out for steps in the floor and pallets!



If you are carrying things in your hands, you may not be able to see the ground in front of you. Also, keep passageways clear of unnecessary items.

TIPS Watch out for these too!



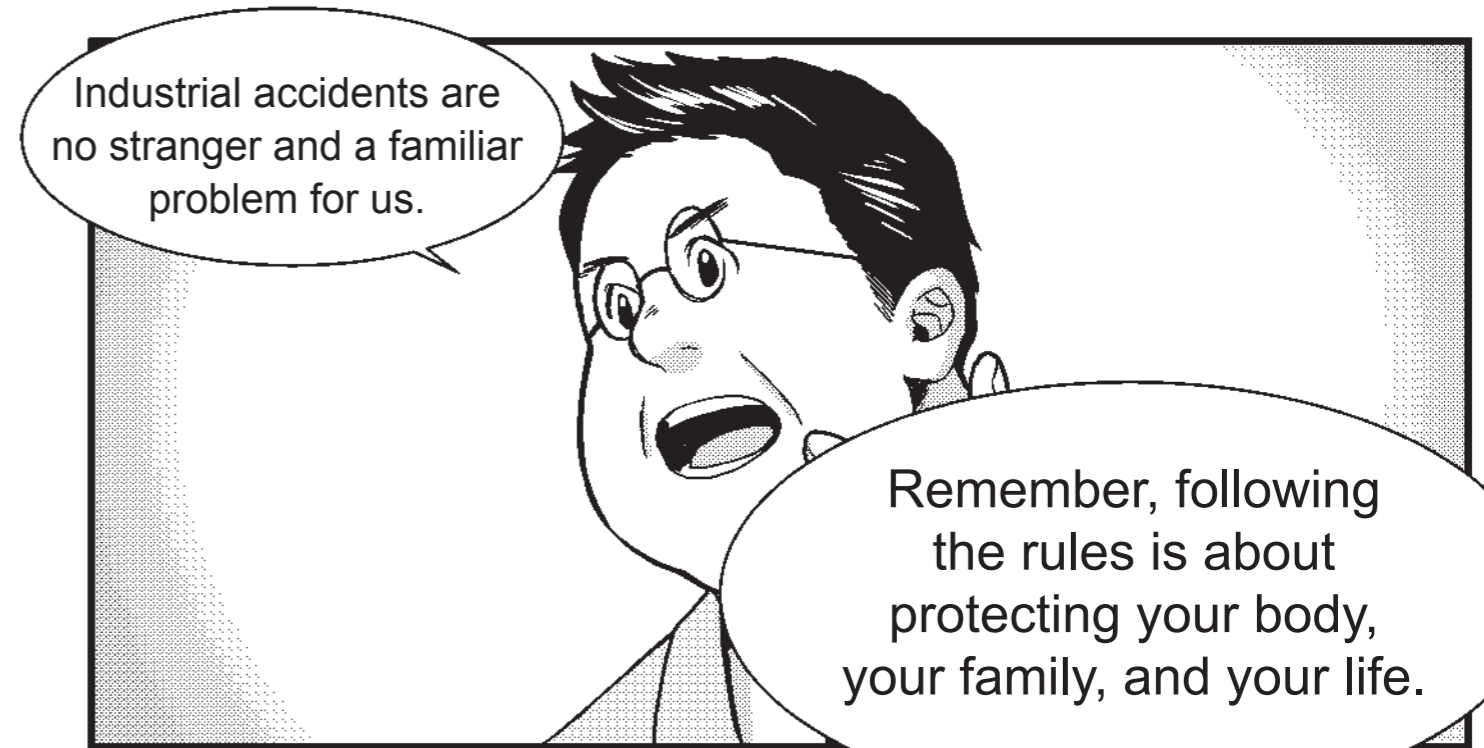
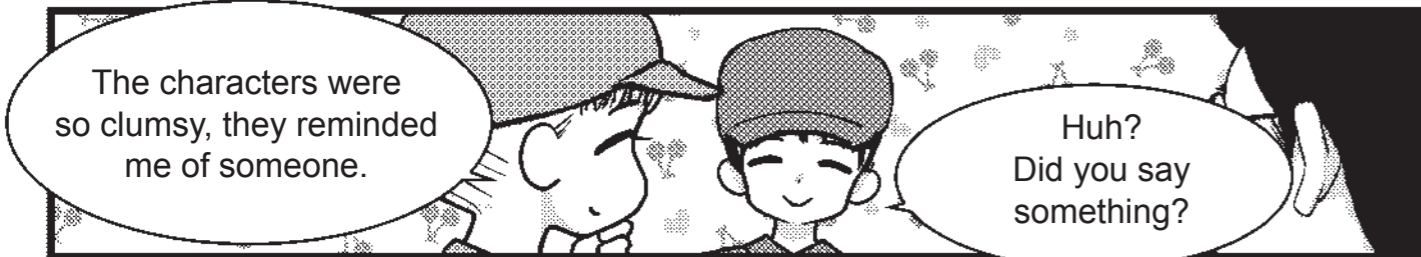
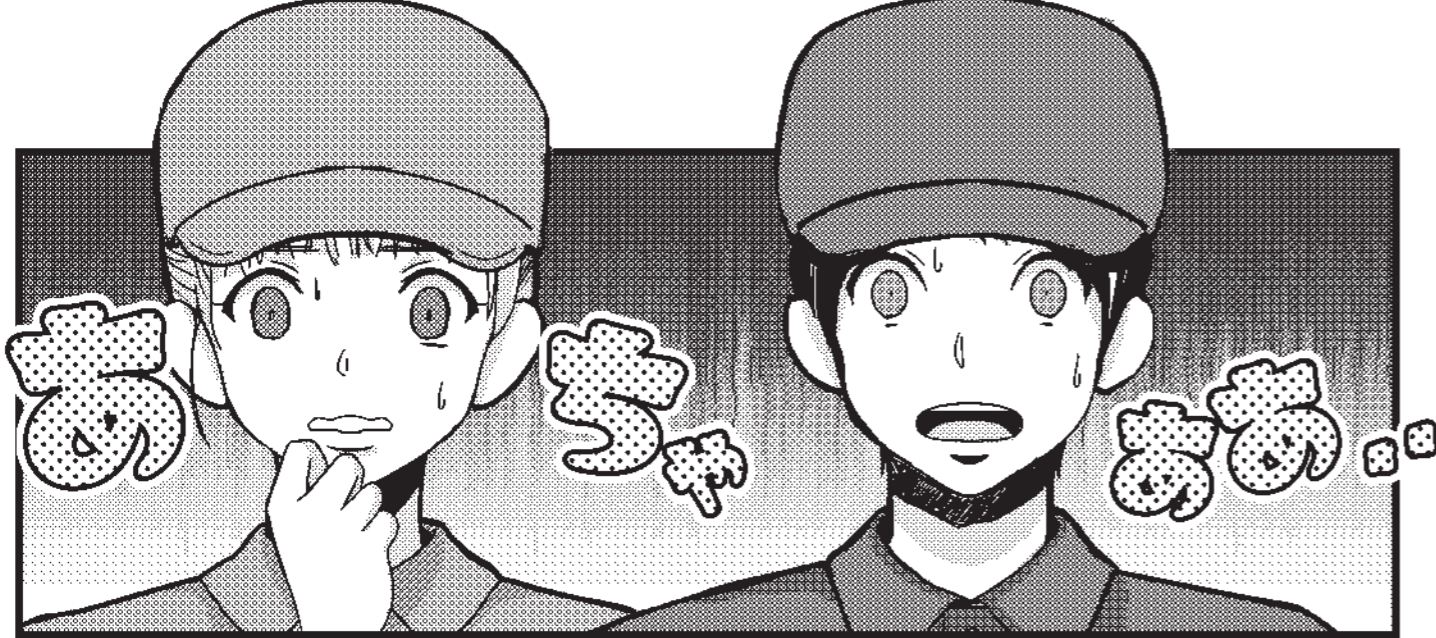
Forks of stopped forklifts



Stairs and steps



Hoses, wires, and ropes



Protective and Other Equipment

Use the right protective equipment for the job!



Gloves

Protect your hands from chemical solutions, sharp objects, etc.

Use gloves made of chemical-resistant materials that are suited for the chemical solutions you will be handling.



Safety goggles

Protect your eyes from chemical solutions, flying objects, etc.

Use a pair that is right for the job.



Aprons

Protect you from chemical solutions and other substances.

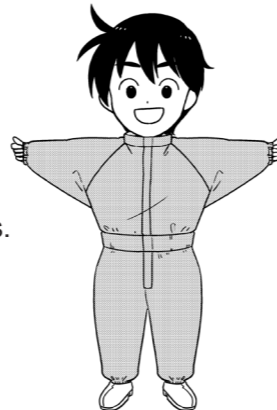
Wear them as high up as possible.



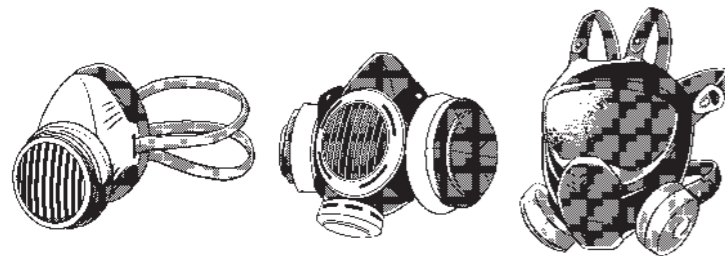
Protective suits

Protect you from chemical solutions and other substances.

Wear the correct size for you.



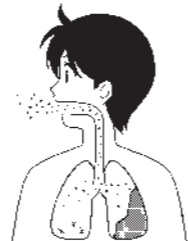
Respiratory protective equipment



Gas masks

Prevent you from breathing in toxic fumes, vapors, etc.

- Use one that is appropriate for the type of hazardous substance and concentration.
- Check the mask is snug (check the fit).
- Change out the mask's filter and canisters.
- Adhere to the usage limits for disposable masks.



Inhaling chemicals over a long period of time may result in bodily injury.

Hats

Protect your head from chemical solutions, flying objects, etc.

Wear a hat that is the right size for you. Long hair should be tied up and tucked inside.



Helmets

Protect your head against impact.

Adjust and tighten the chin strap to prevent it from shifting around. Replace it if it's been struck even once.



Rubber boots

Protect your feet from chemical solutions, etc.

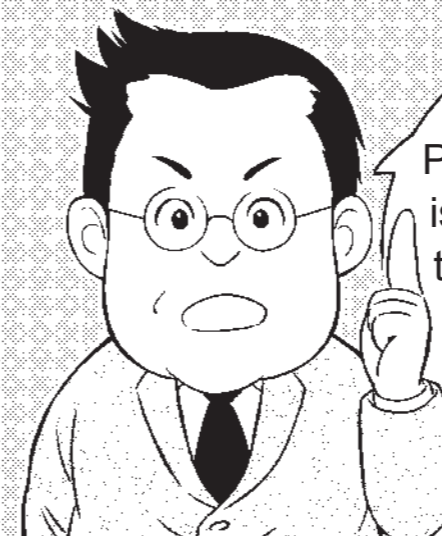
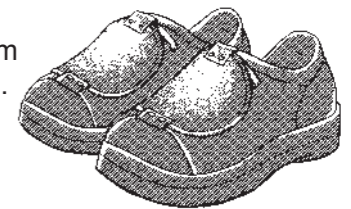
Wear a pair that is the right size for you. Use a pair that is right for the job.



Safety boots

Protect your feet from heavy falling objects.

Wear a pair that is the right size for you. Use a pair that is right for the job.



Protective equipment is useless unless it's the right kind for the task and used correctly!

Key Point 1

Wear and use equipment correctly!

Make sure there are no gaps or misalignments!



Key Point 2

Use protective equipment that is the right size for you!

If equipment doesn't fit, swap it out immediately.



Key Point 3

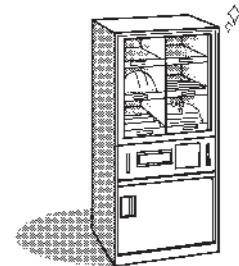
Never leave equipment dirty or damaged!



Remove dirt.



If damaged or punctured, replace it.



Store it a clean location.

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Health and Safety in the Plating Industry

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