

まんがでわかる



English

英語版

製造業3分野の安全衛生

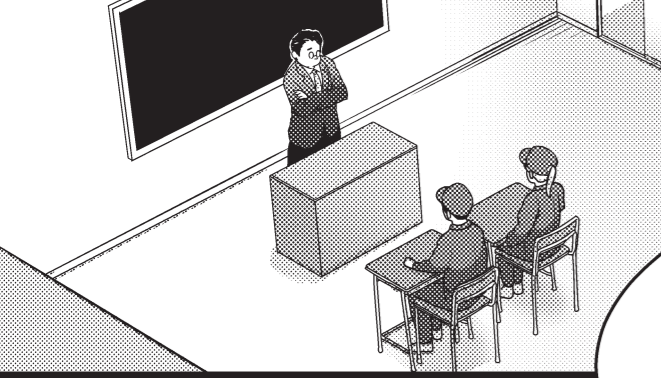
※ここでの製造業3分野とは、素形材産業、産業機械製造業、電気・電子情報関連産業のこと。

Learn through Manga

The Safety and Health of the Three Fields of Manufacturing

* The three fields of manufacturing referred to in this booklet are the casting and forging, industrial machinery manufacturing, and electrical and electronic information engineering industries.





Today, we're going to learn about health and safety in factories.



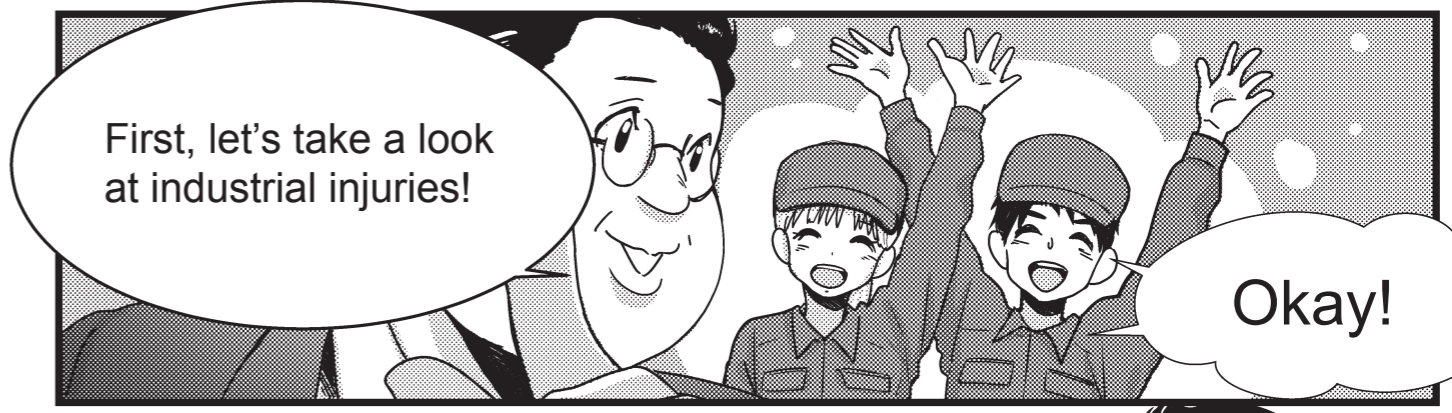
Because you'll be dealing with heavy materials and machinery, it's important to pay attention to safety.

You're right.



I imagine that people who are skilled with their hands work in factories.

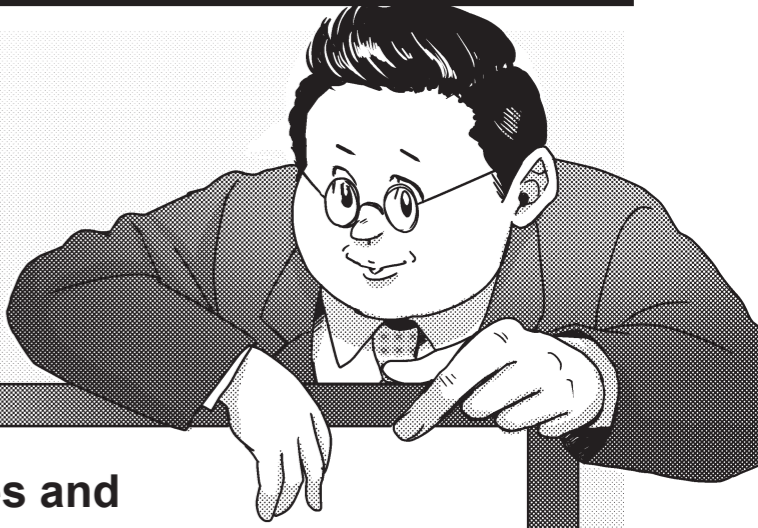
I'm pretty interested in what kind of work they do.



First, let's take a look at industrial injuries!

Okay!

Here are the main causes of industrial injuries.



Occurrence ratio of injuries and deaths in the three fields of manufacturing

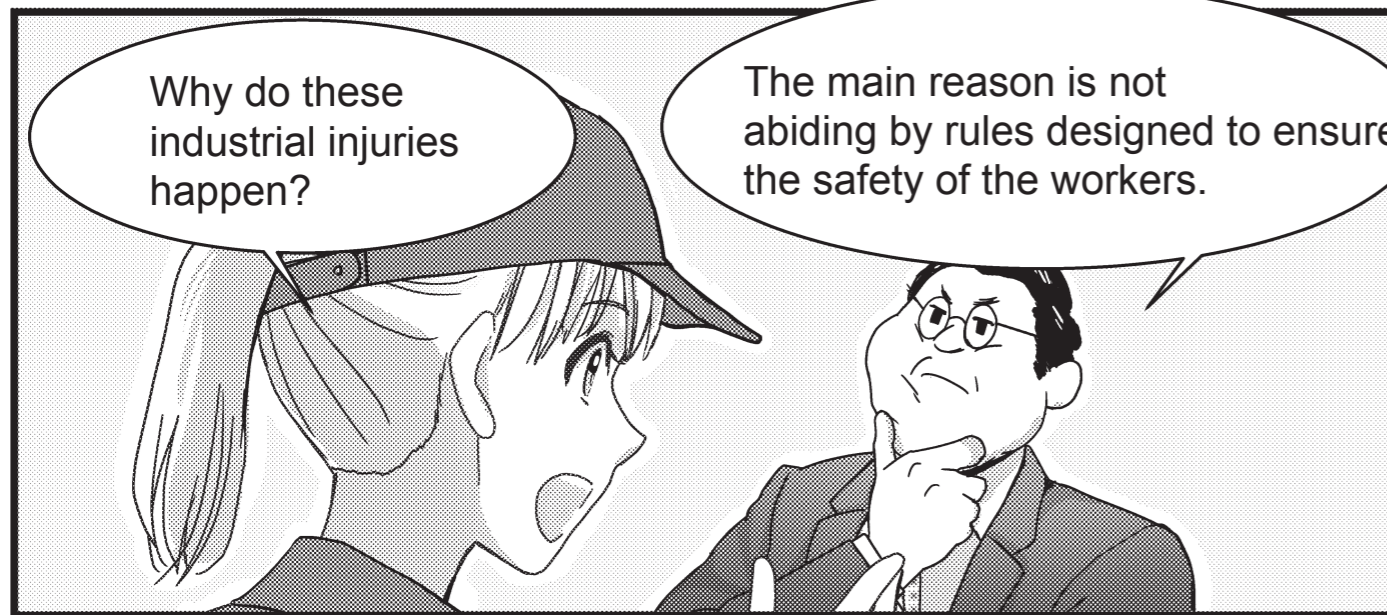
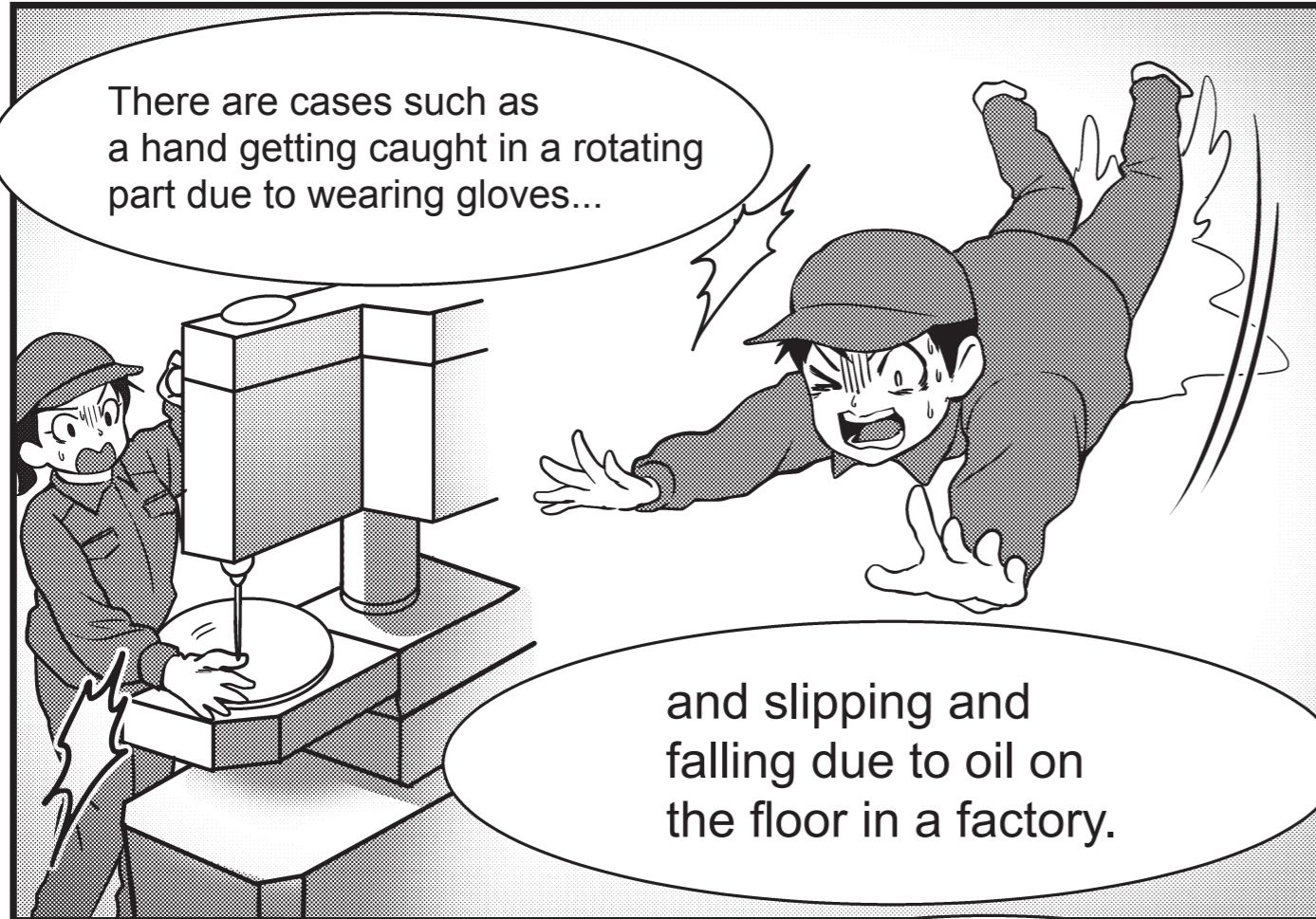
1	Person or body part being caught in, under, or between machinery or tools	32 %
2	Strikes by moving/falling objects	13 %
3	Slip and fall accidents	12 %
4	Falls from elevated areas	10 %
5	Injuries from worker inattention/recklessness or improper body mechanics	8 %
6	Cuts/Abrasions	8 %

Table created from the total numbers corresponding to the casting and forging, industrial machinery manufacturing, and electrical and electronic information engineering industries based on *Occurrence Status of Worker Deaths and Injuries from "Reports of Worker Deaths, Illnesses, or Injuries"* (2009–2018) by the Ministry of Health, Labor, and Welfare.



"Person or body part being caught in, under, or between machinery or tools" comprises one third of all injuries.





For example, if you don't have protective gear on, you could get hurt by touching a machine while metalworking.



If you're welding, you could breathe in fumes and there is also a risk of hurting your skin or eyes without the gear.

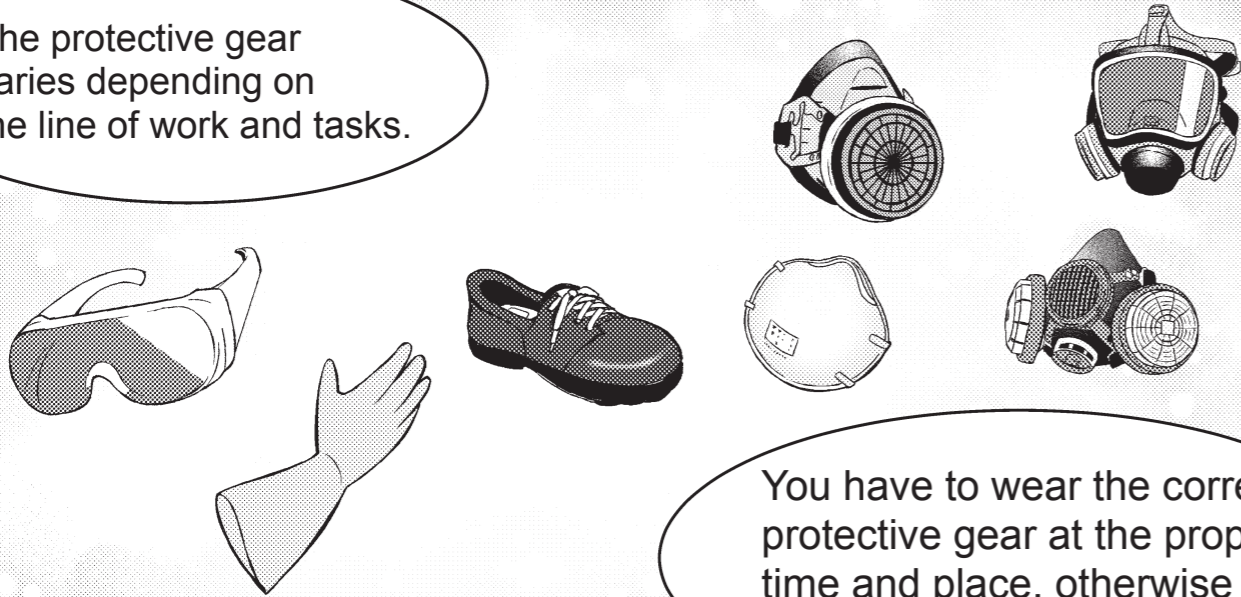
The work sounds so dangerous.



That's exactly why the protective gear is important.



The protective gear varies depending on the line of work and tasks.



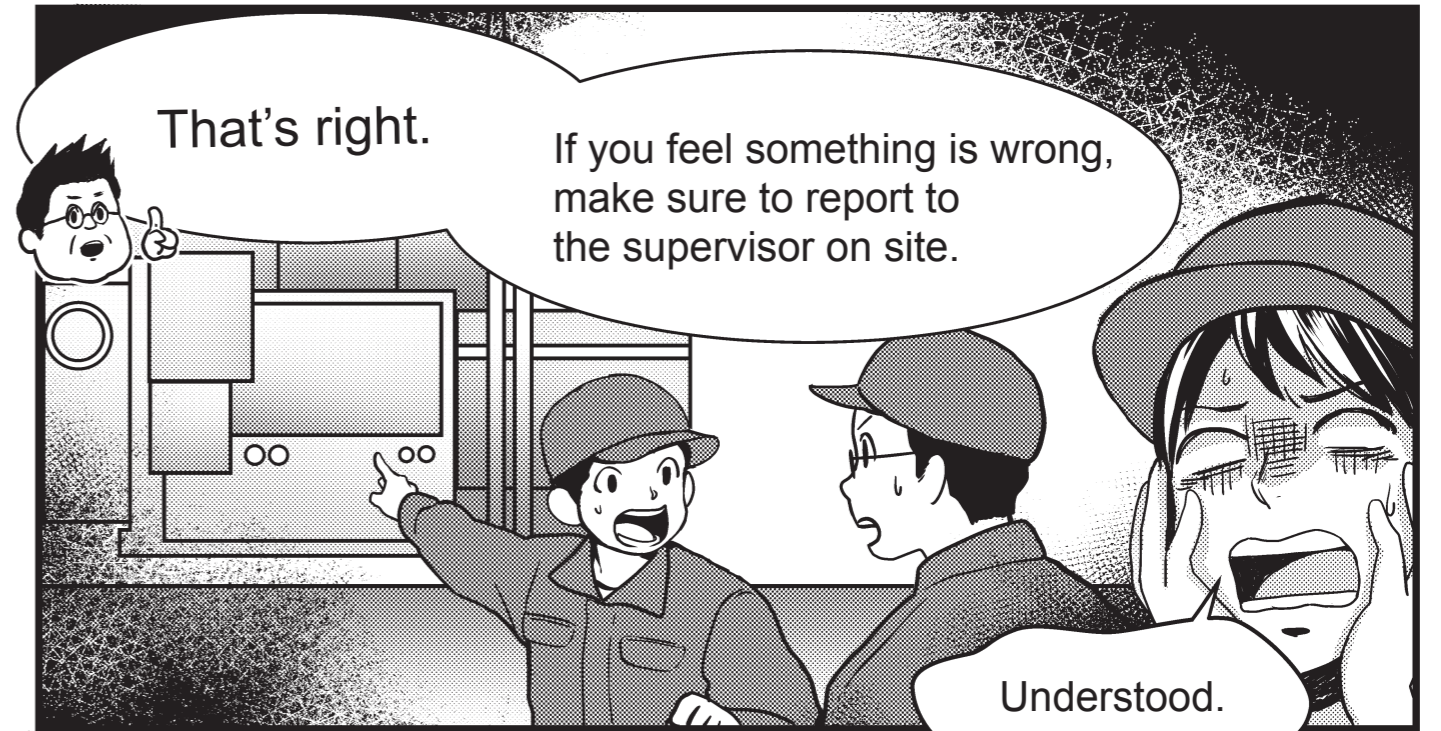
You have to wear the correct protective gear at the proper time and place, otherwise it wouldn't mean anything.

Continuing to use machinery and tools that are broken is also dangerous, correct?



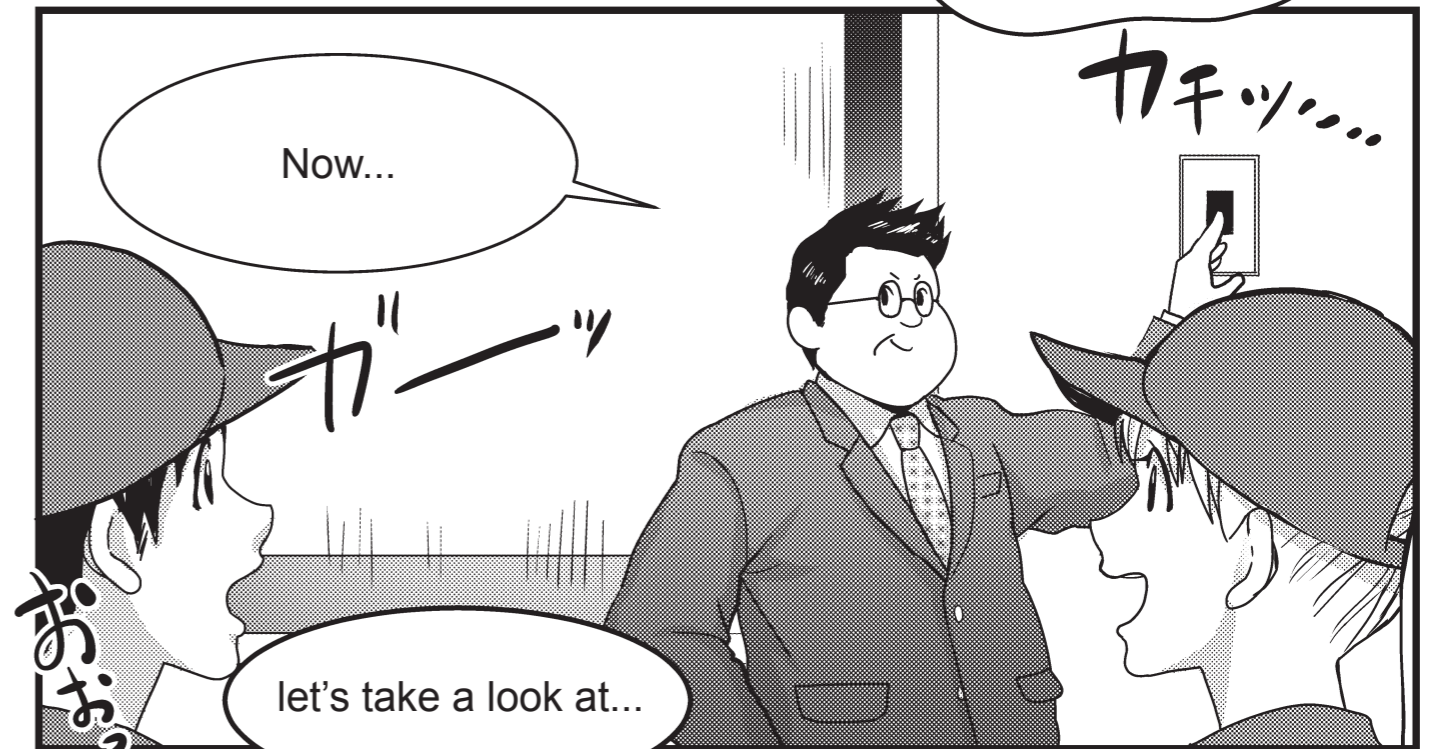
That's right.

If you feel something is wrong, make sure to report to the supervisor on site.



Understood.

Now...



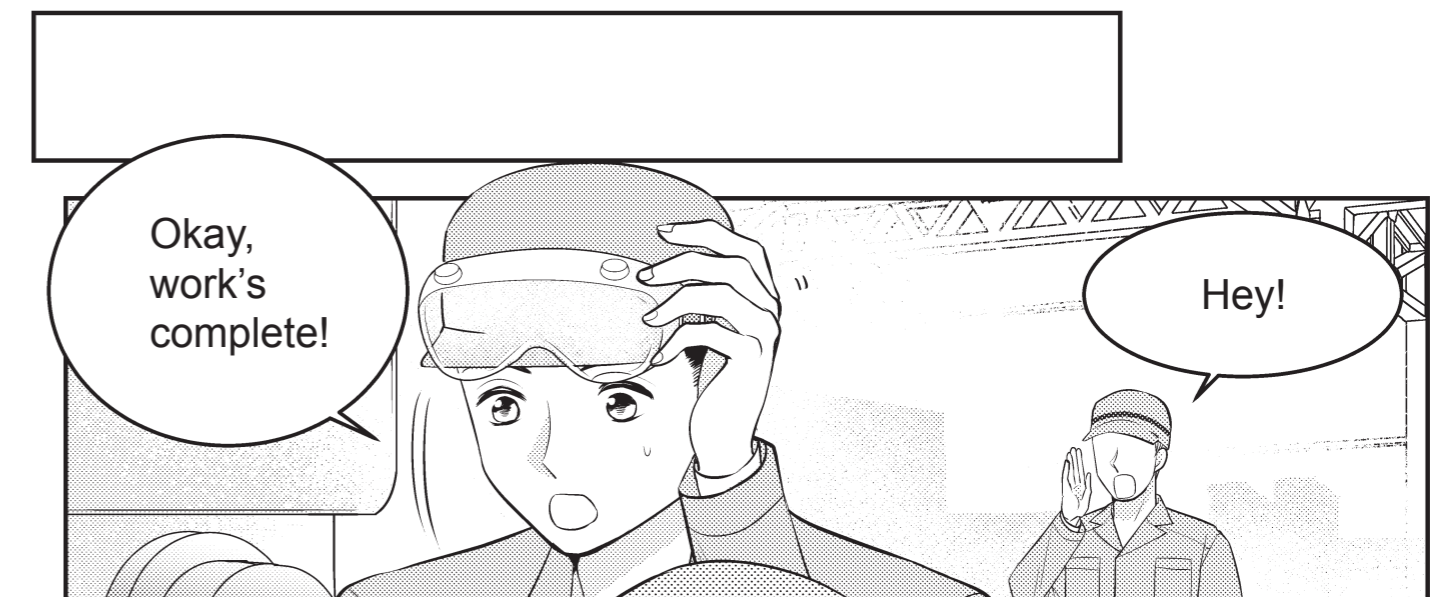
let's take a look at...

the actual site!



Case 1

Getting caught in a drill press

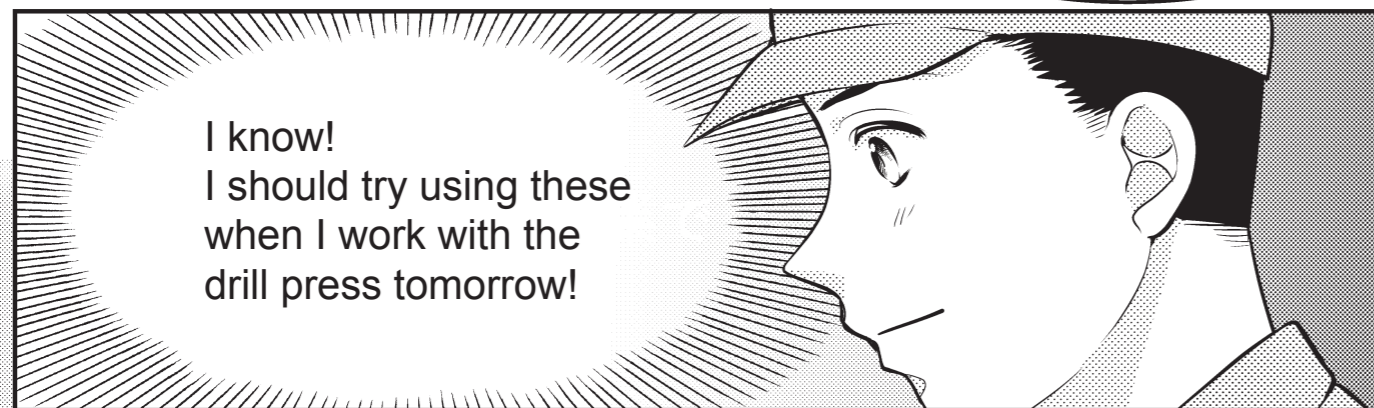




These gloves are really handy.

They're a tad big, but very thin.

I don't think they'll get in the way of detailed work.



I know! I should try using these when I work with the drill press tomorrow!

Next day



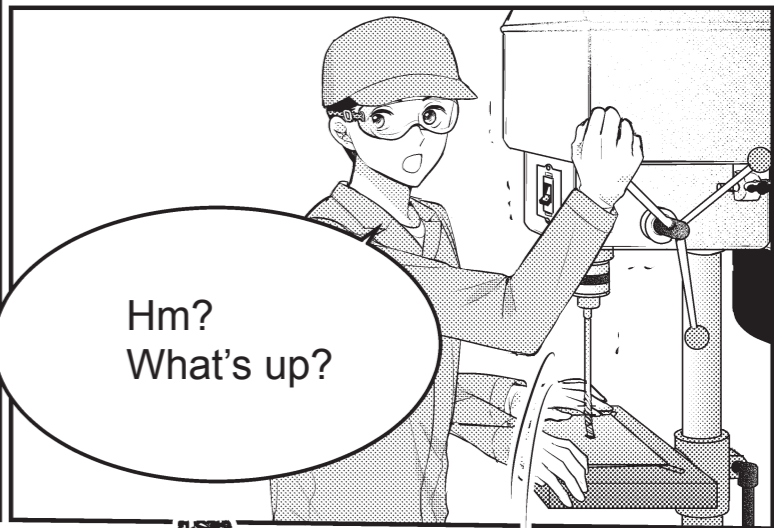
Just as I thought, these gloves are convenient.



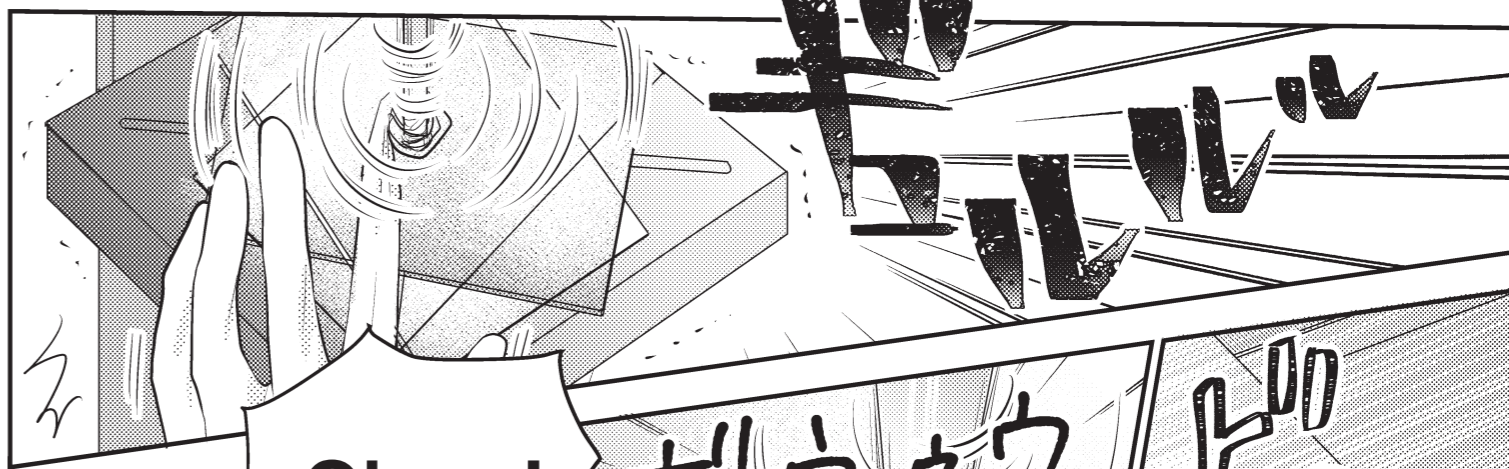
They're a bit big, but if I'm careful, I'll be fine.



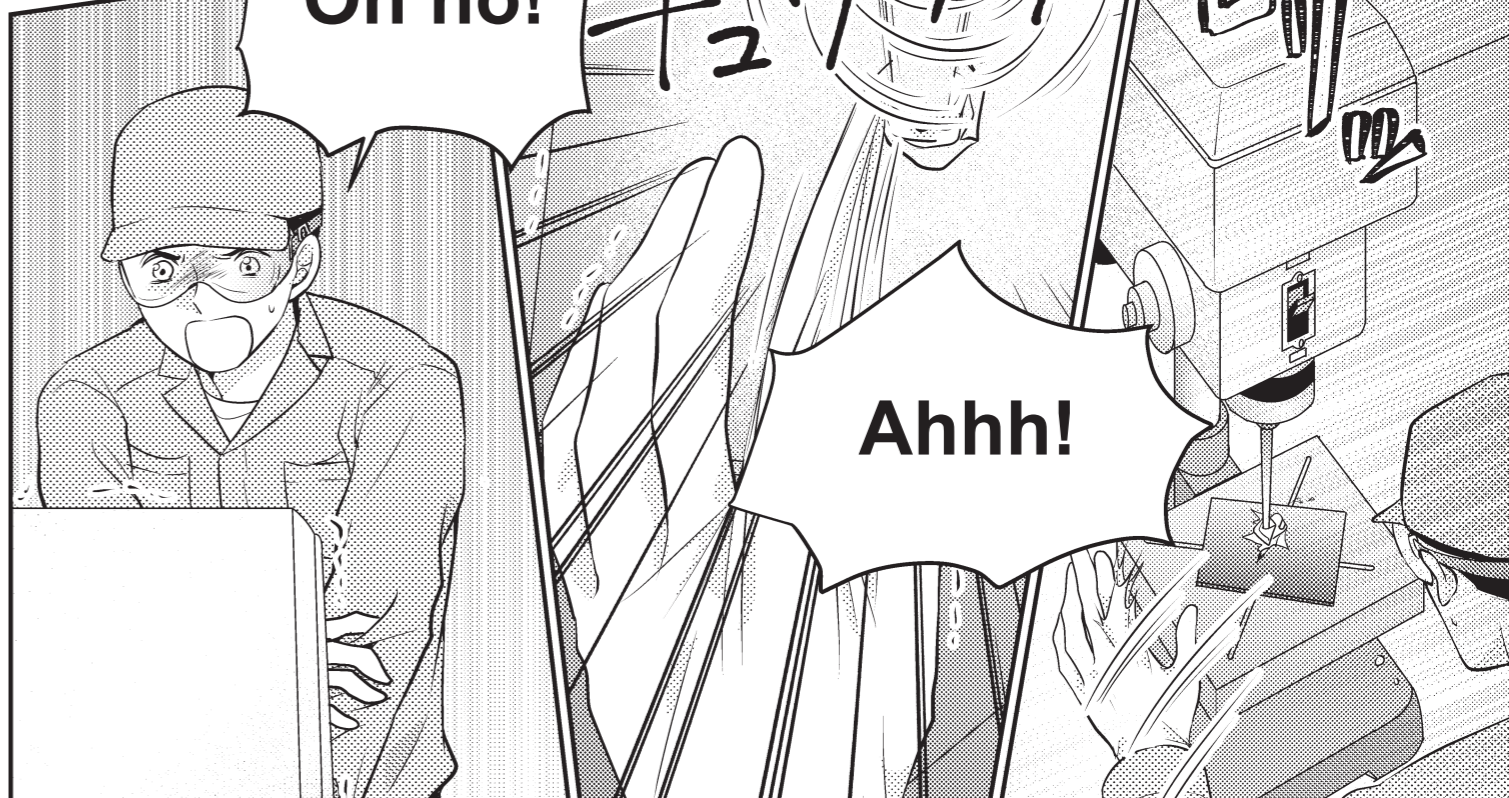
Hey!



Hm? What's up?



Oh no!



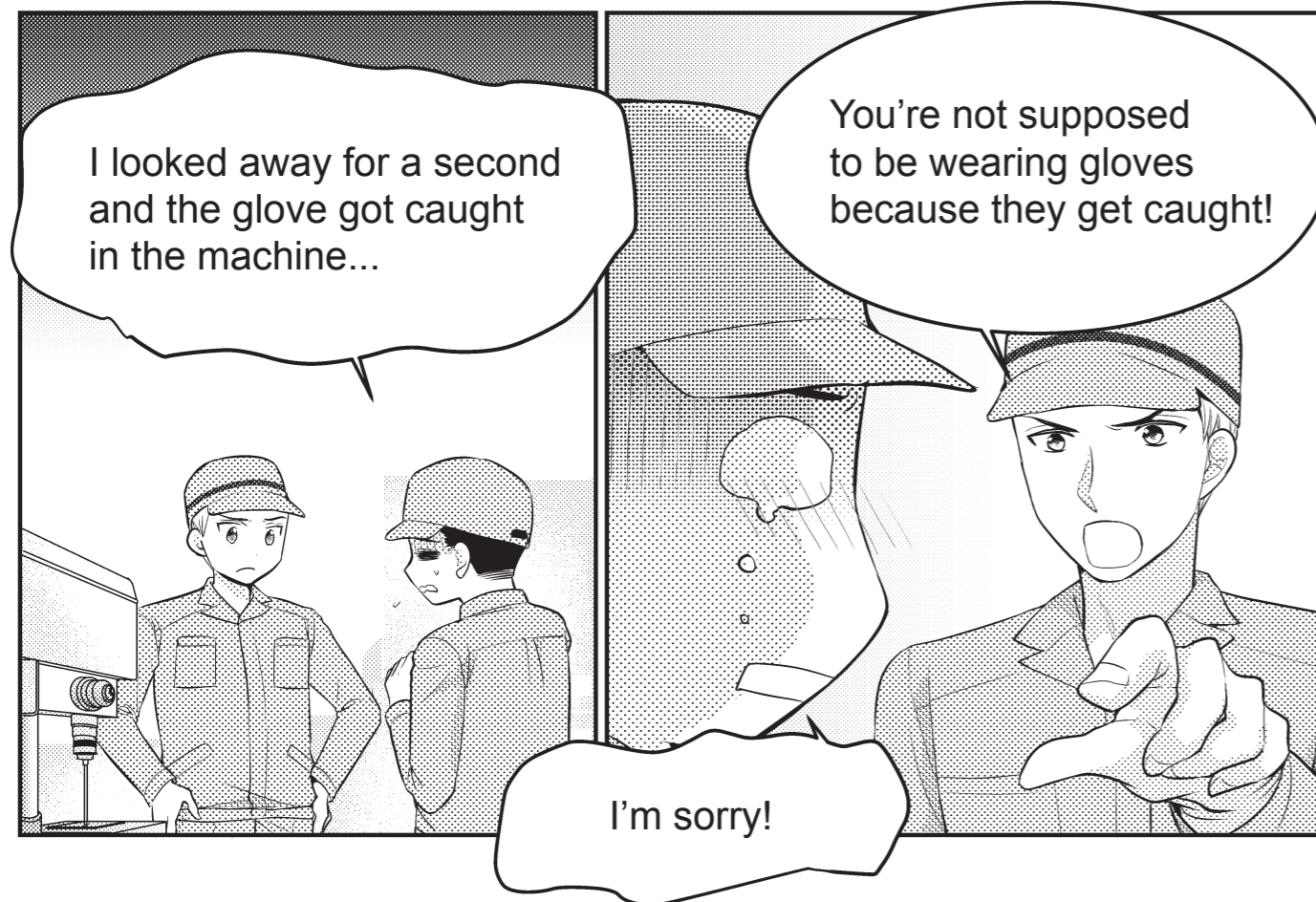
Ahhh!



That was close!

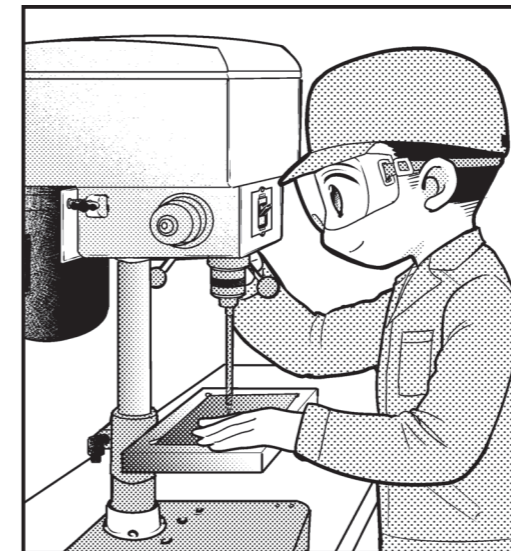


What are you doing?!

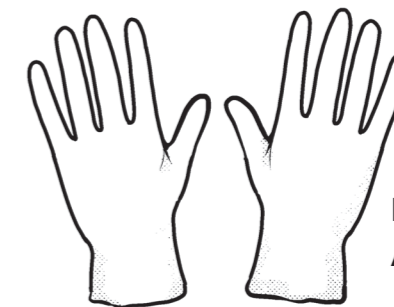


Precautions for operating machinery

No. 1 | Gloves will get caught in the machine!

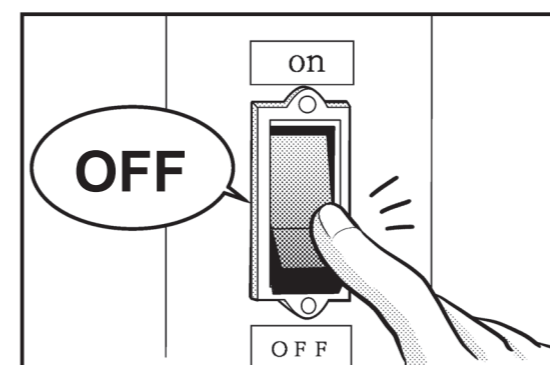


When working with a rotating machine, your gloves can get caught, so you must not wear them.



NO GLOVES ALLOWED!

No. 2 | Turn the machine off when you step away from it!

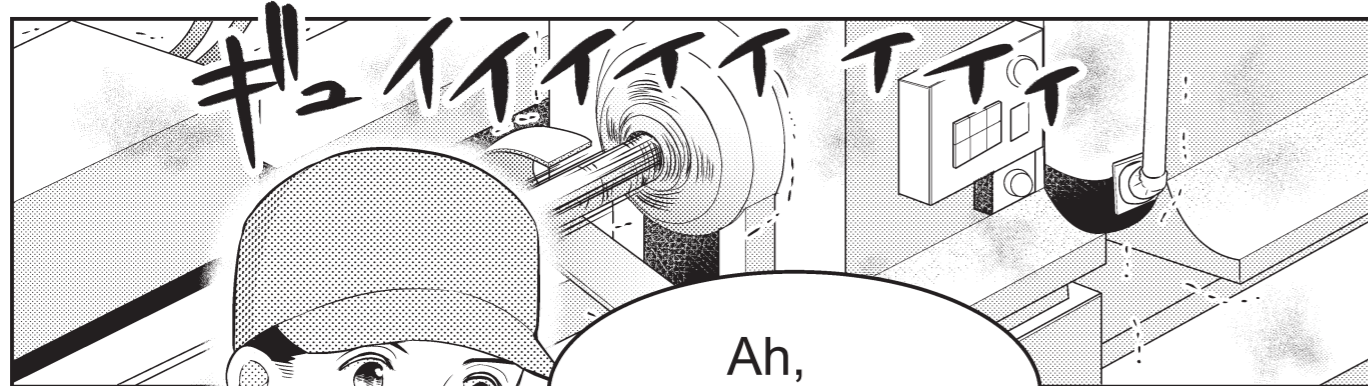
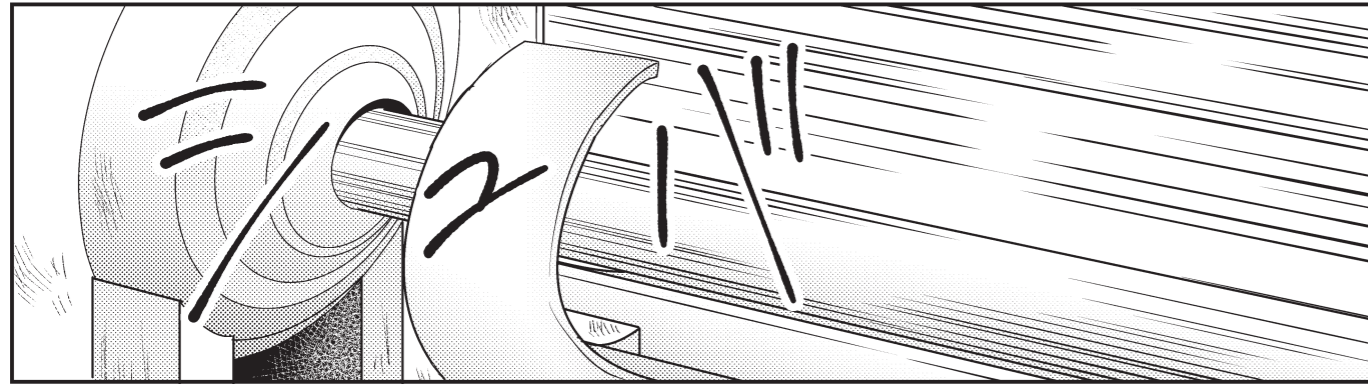


When you step away from the machine or when you temporarily stop your work, make sure to turn off the machine.

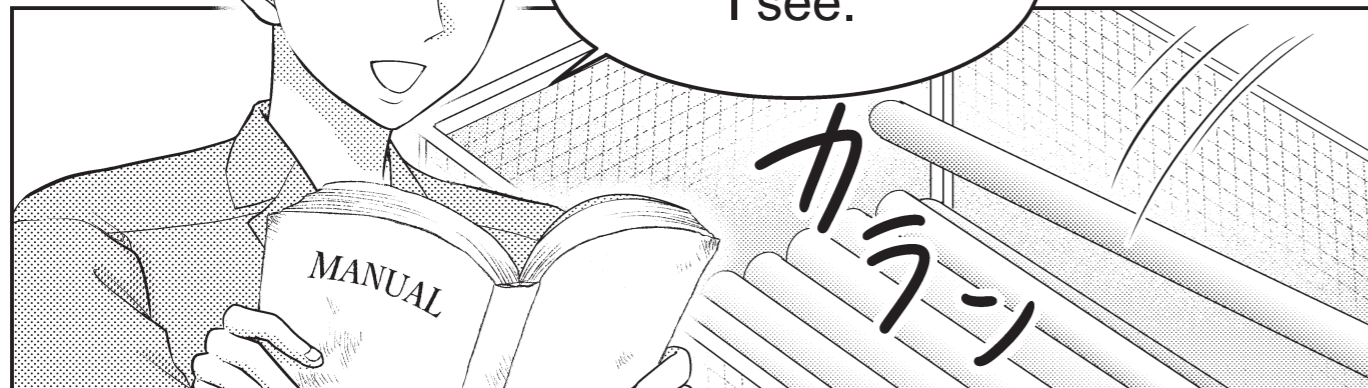
Be extra careful when operating machines that rotate!



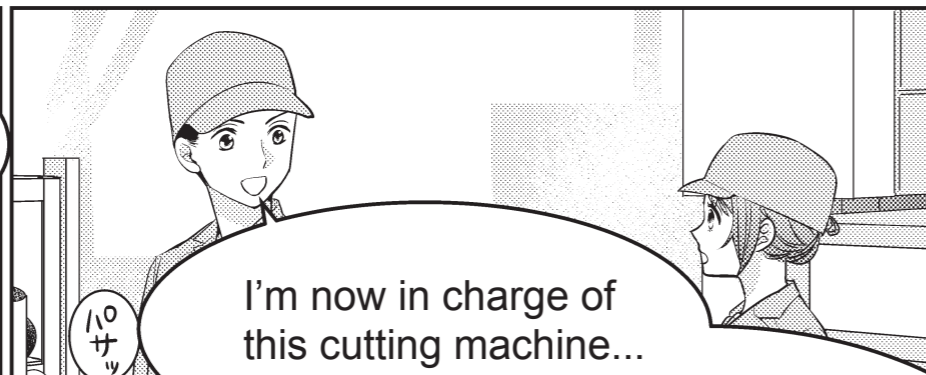
Case 2
Contact accident in metalworking



Ah, I see.

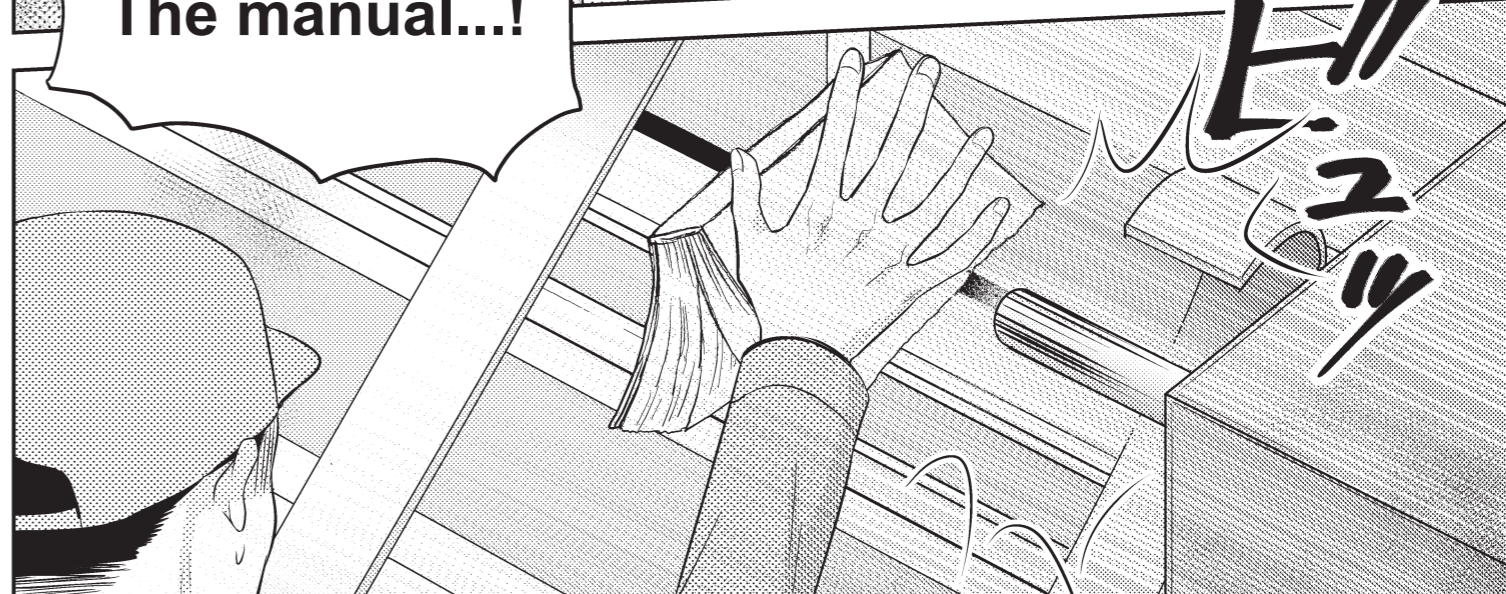
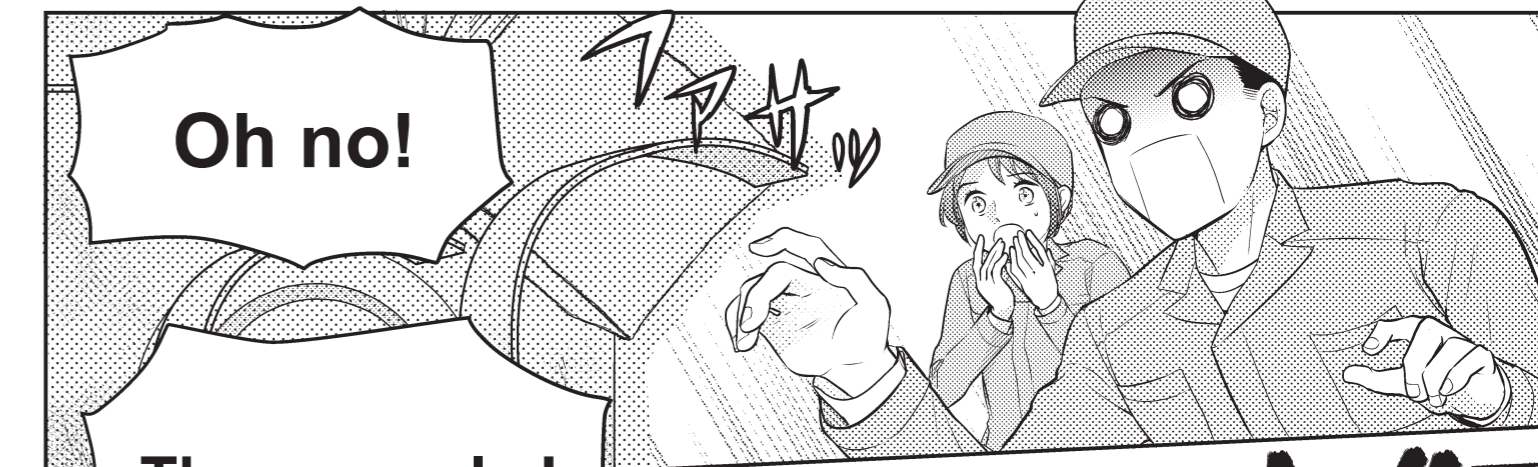
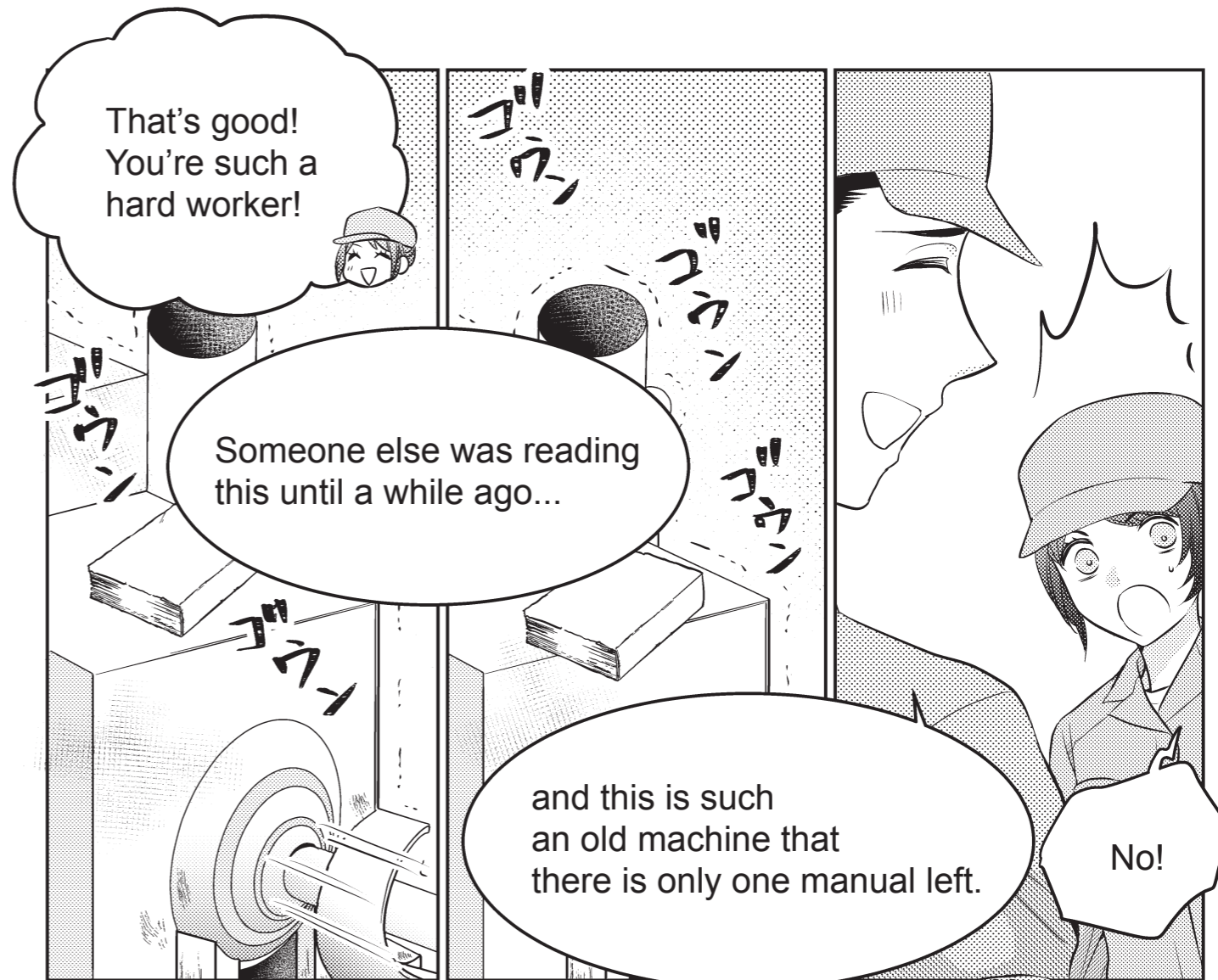


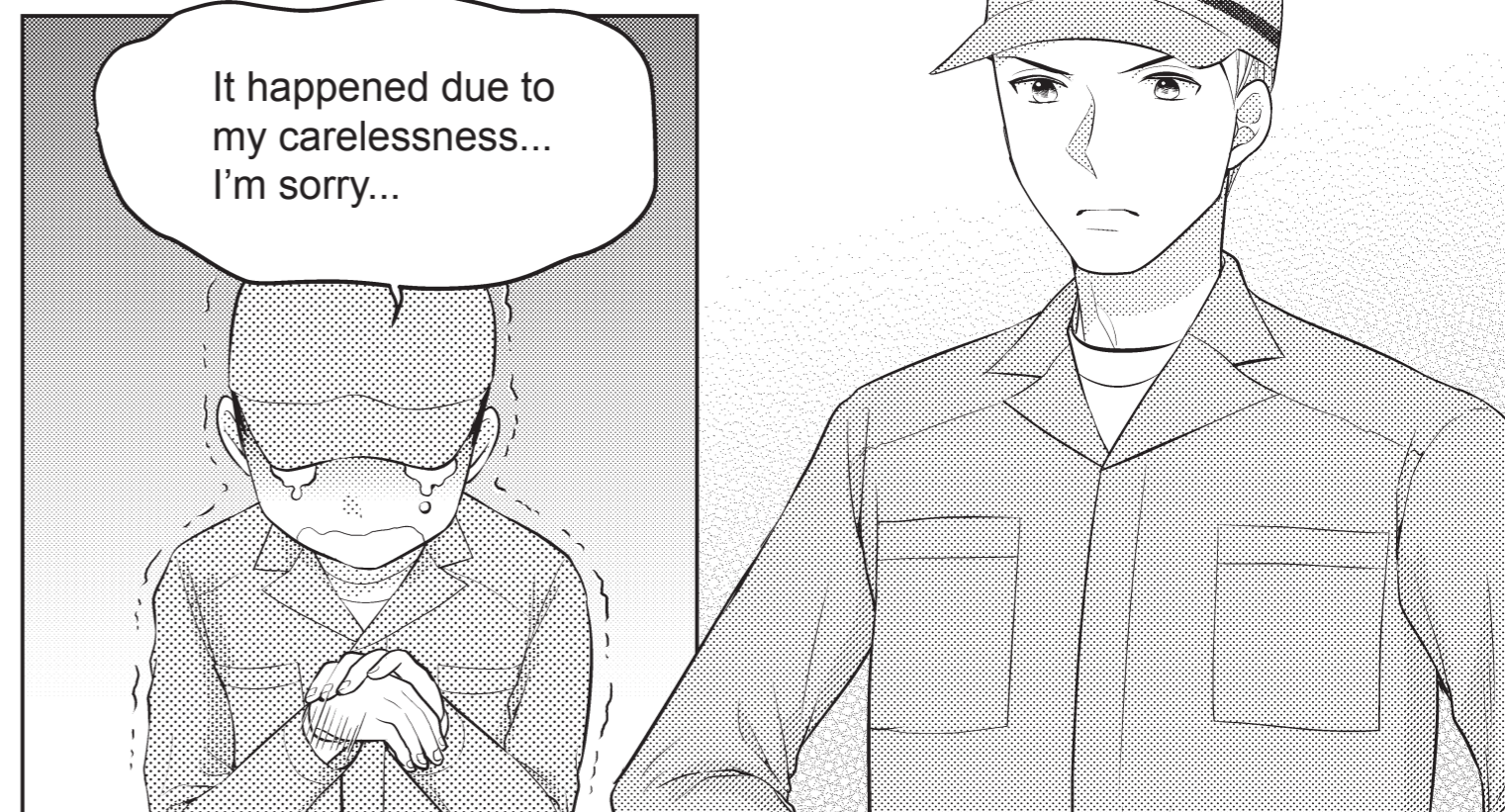
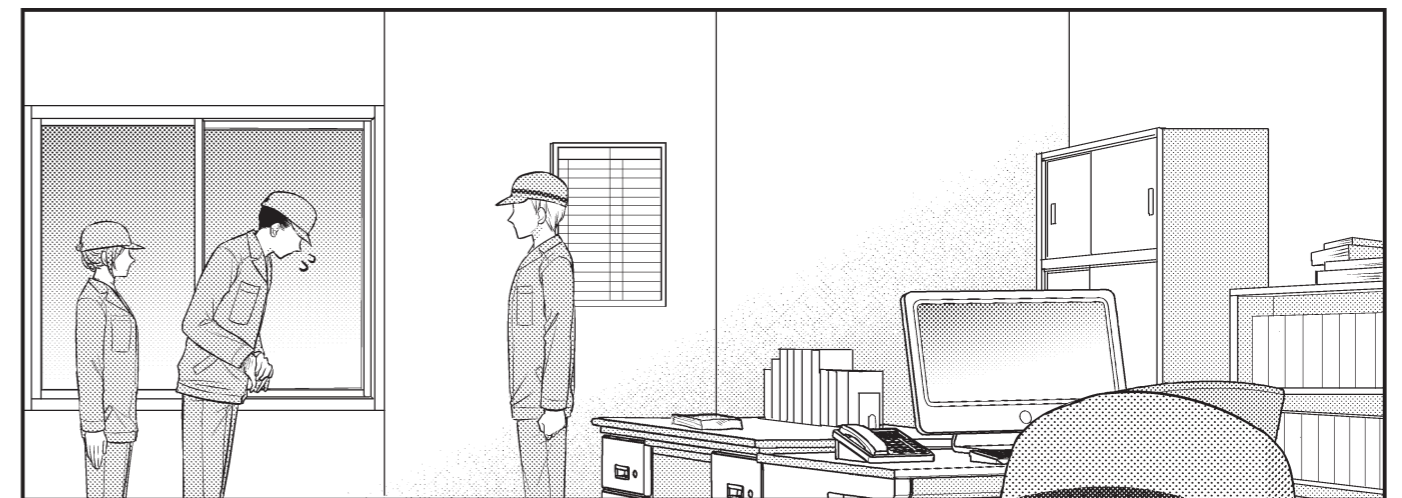
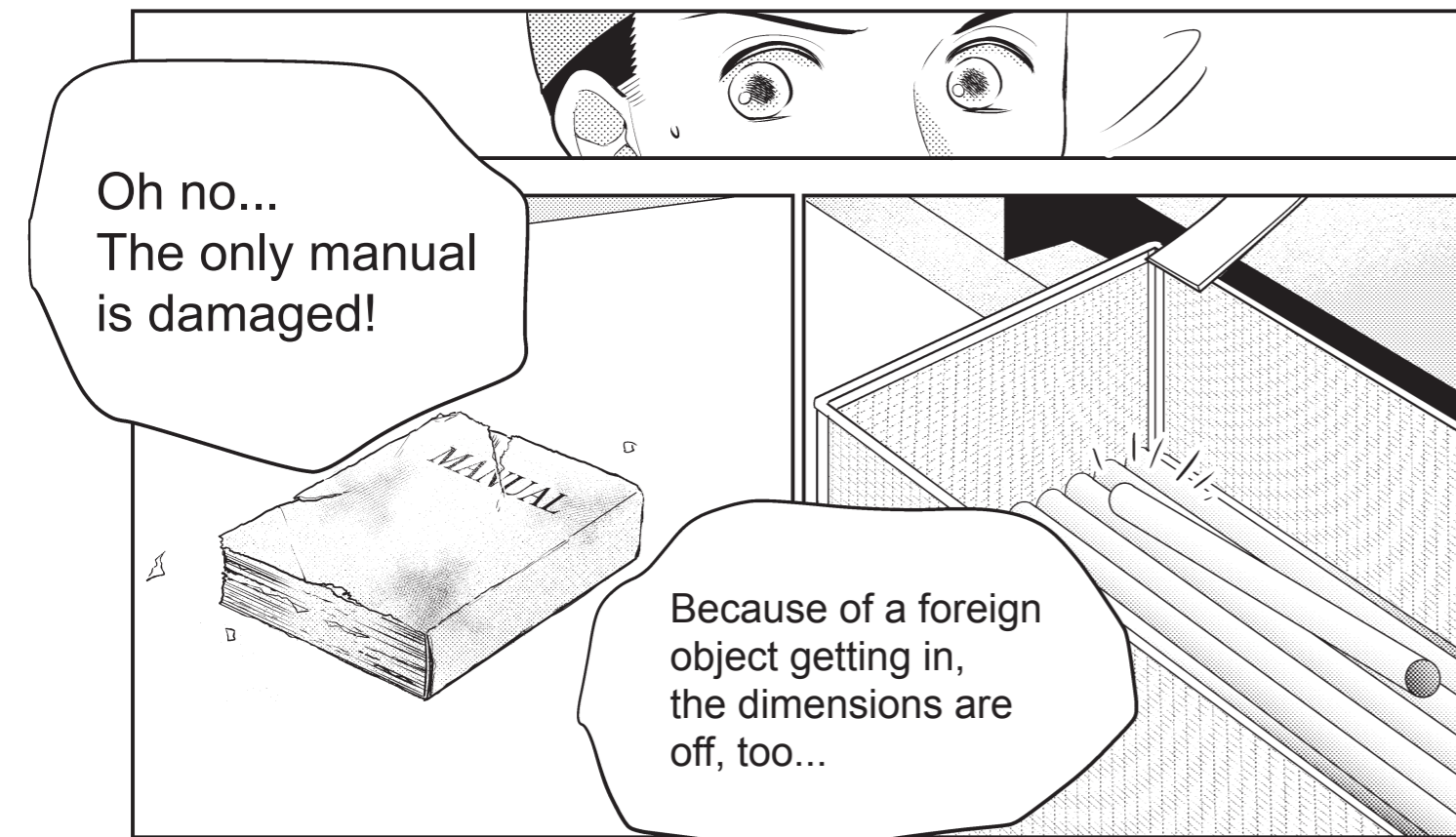
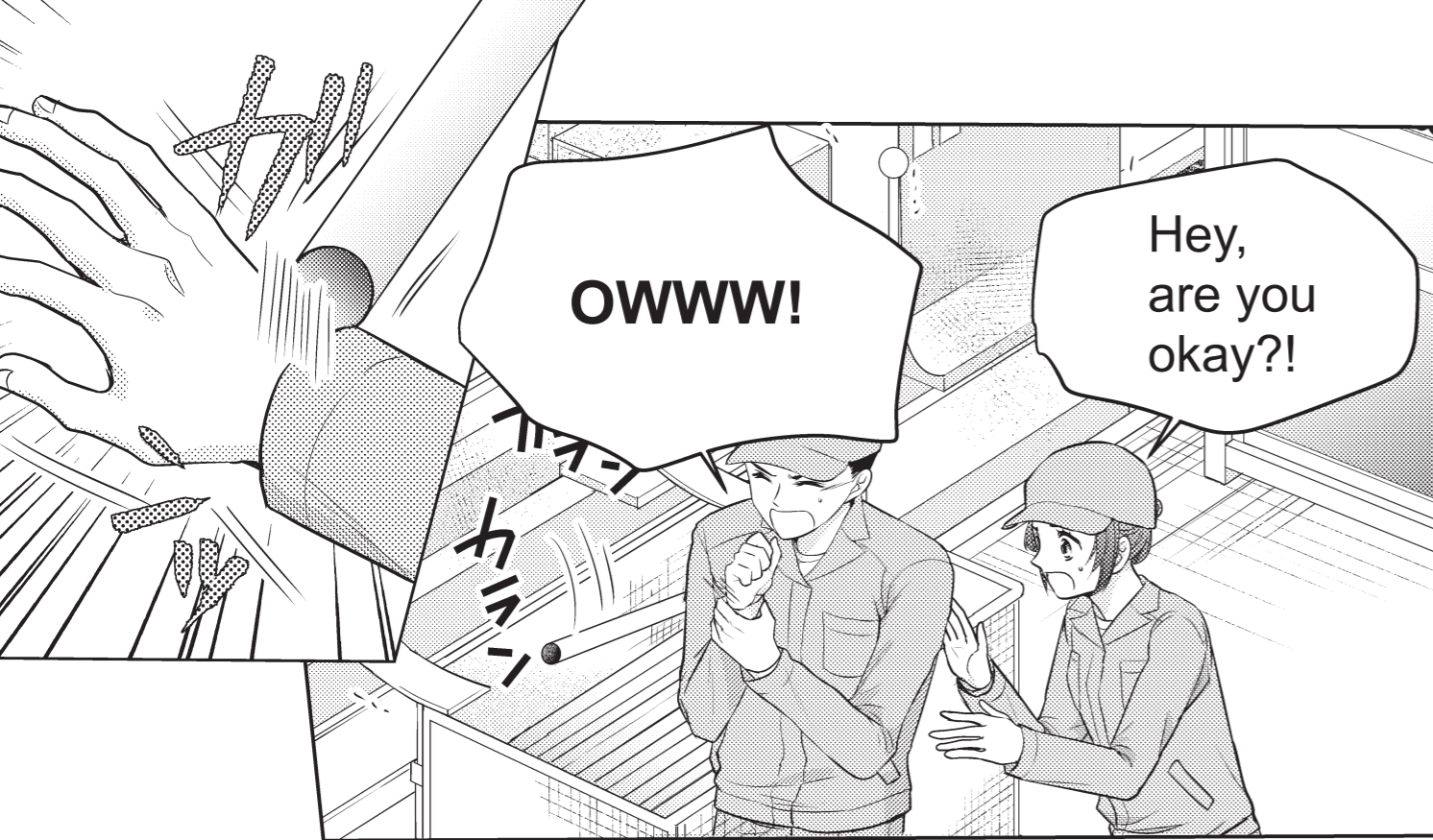
What are you reading?



Hm?

I'm now in charge of this cutting machine...
but I wanted to check something, so I was reading the operation manual.







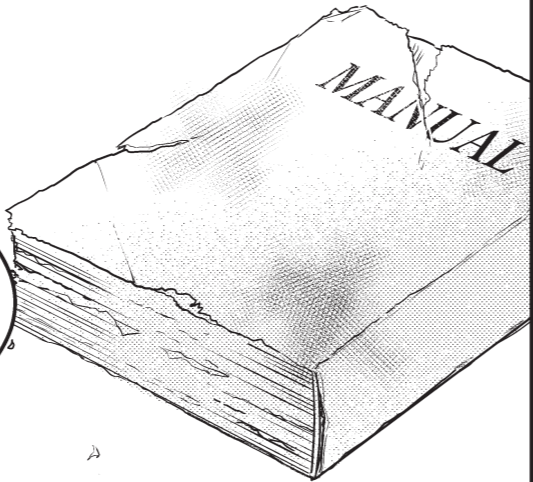
I'm glad it wasn't a big injury.

Hm?



We can get another manual or remake a product.

Of course, your health and safety comes before anything.



If you get hurt,

your family and coworkers will be worried.



You wouldn't want to get hurt either, right?

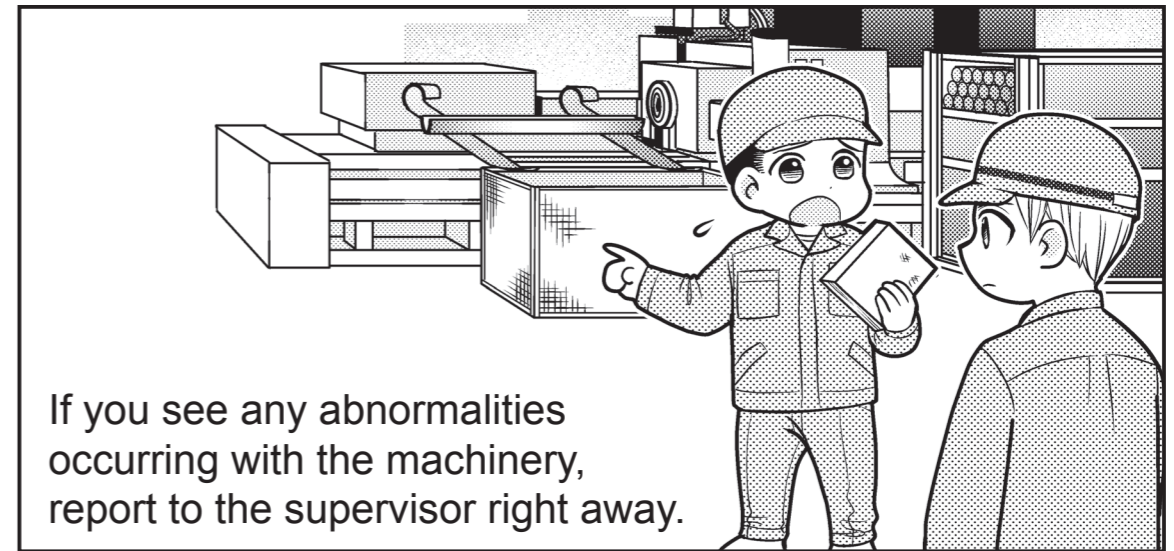
I'm sorry... and thank you...



Let's go over what we should look out for!

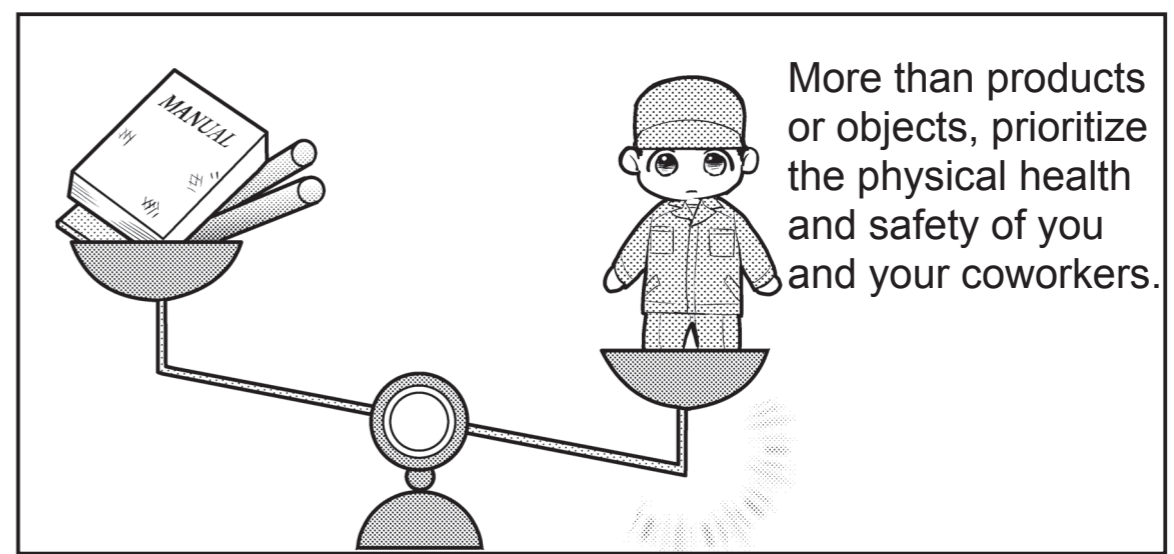
Precautions during metalworking

No. 1 | Report any abnormalities that occur!



If you see any abnormalities occurring with the machinery, report to the supervisor right away.

No. 2 | Safety first!

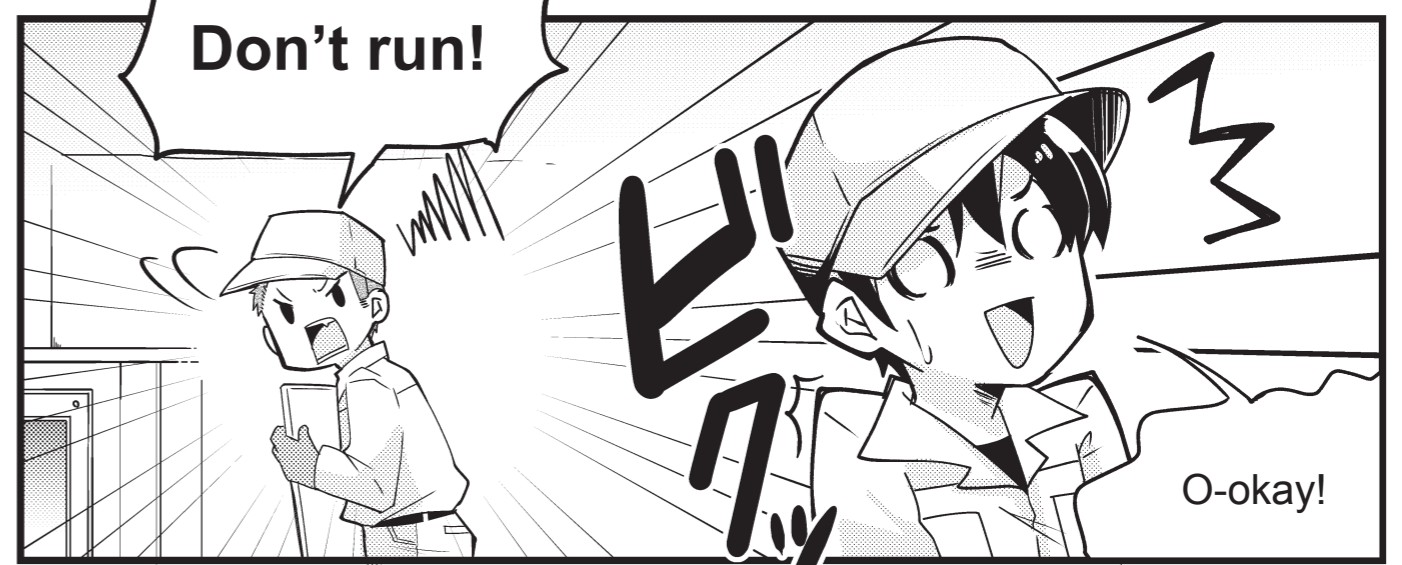
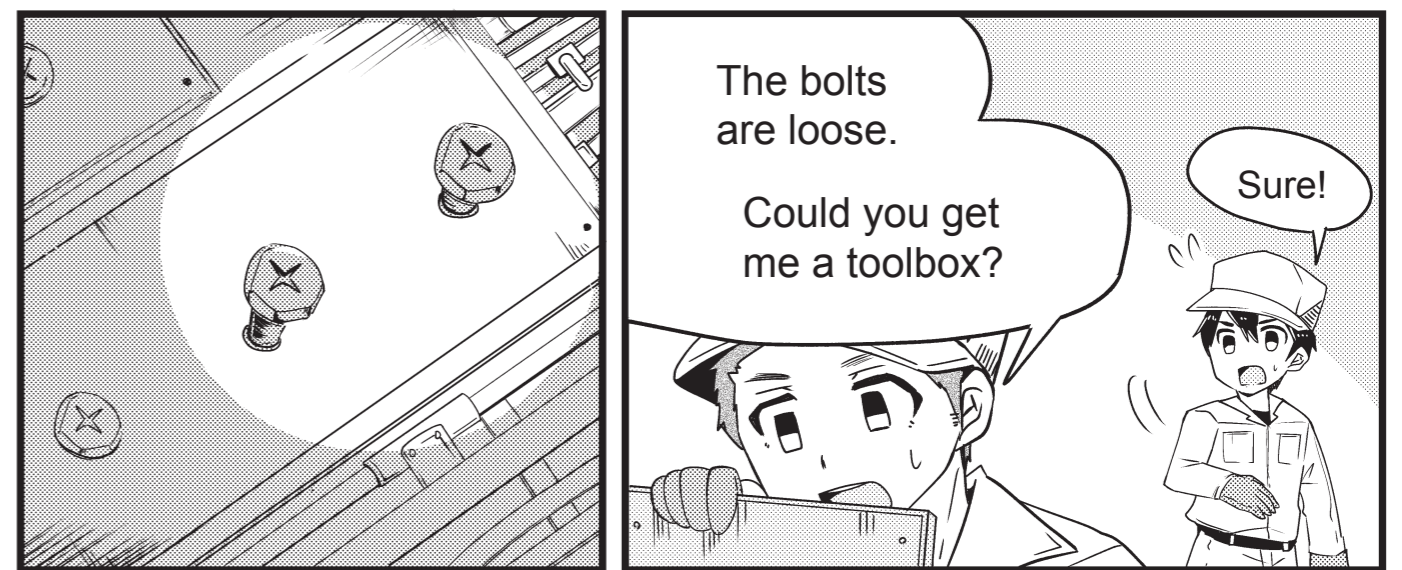
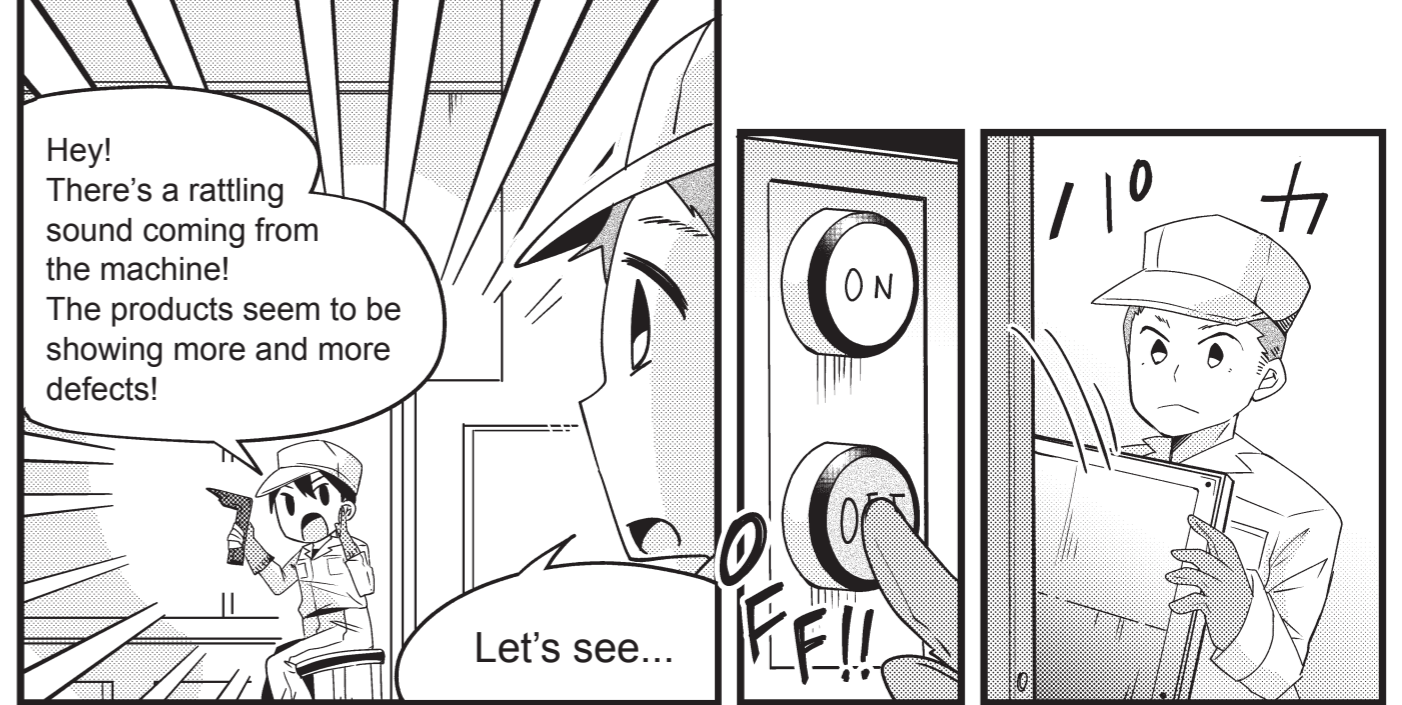
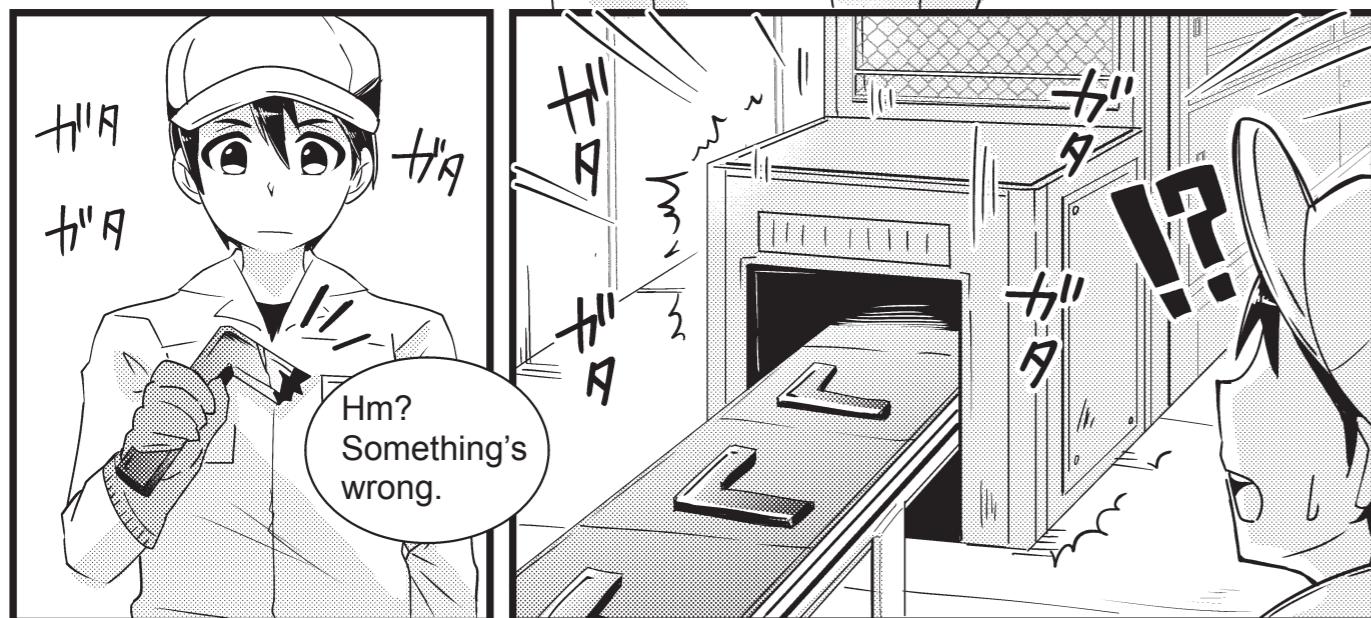


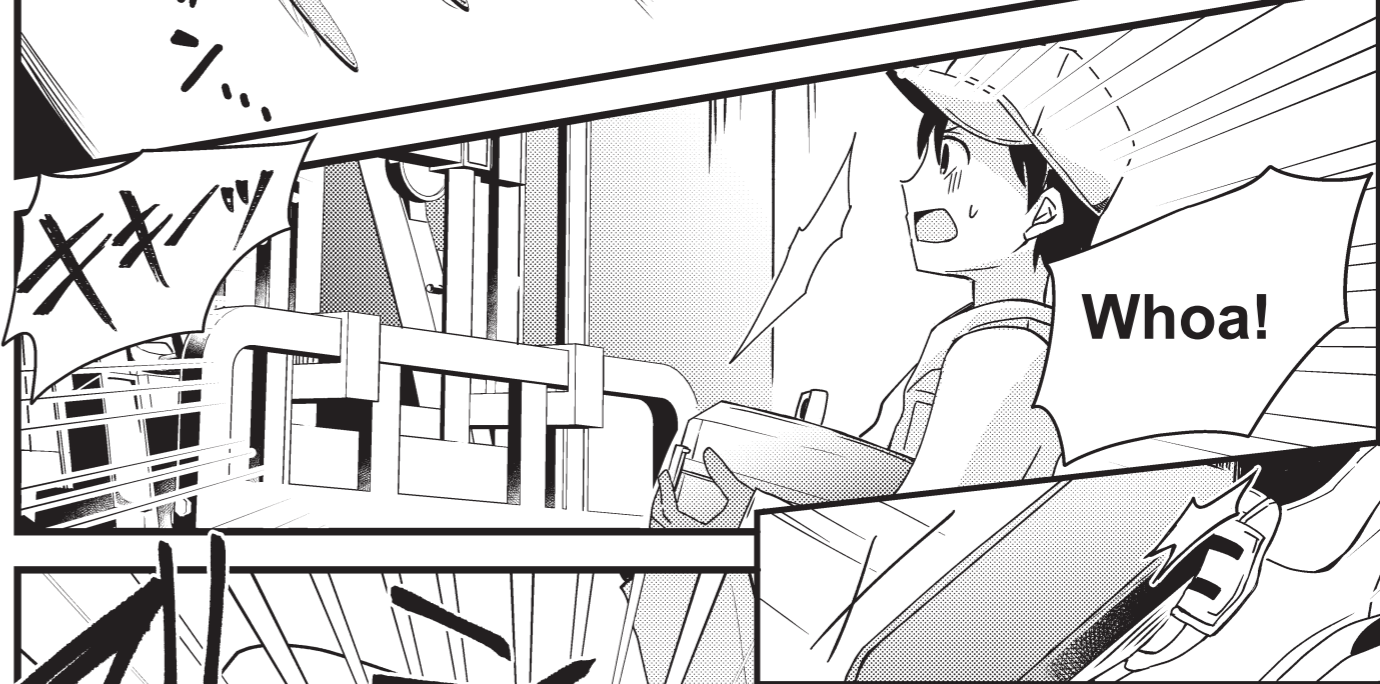
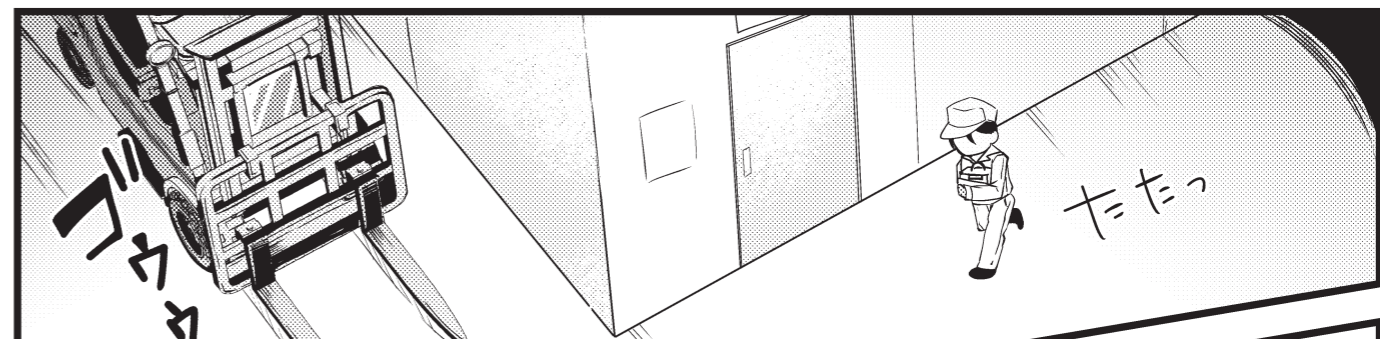
More than products or objects, prioritize the physical health and safety of you and your coworkers.

Do NOT put a hand in a working machine!

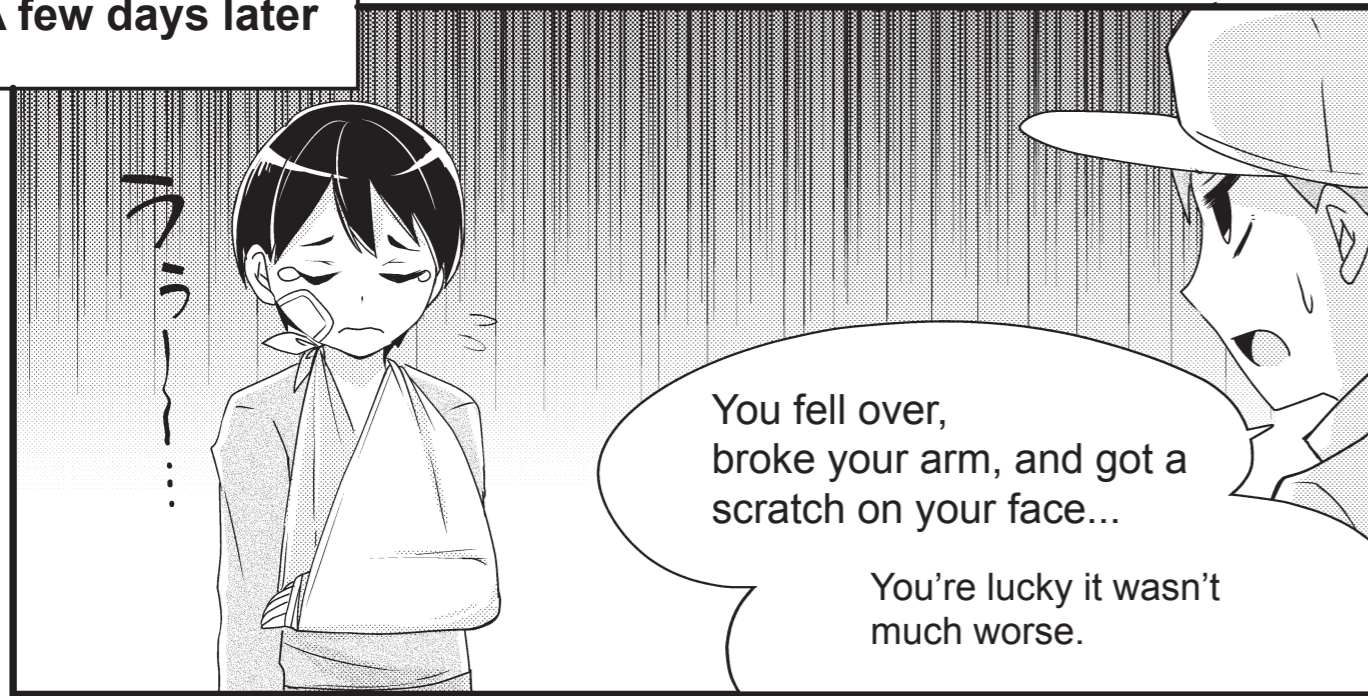


Case 3
Fall accident in a factory



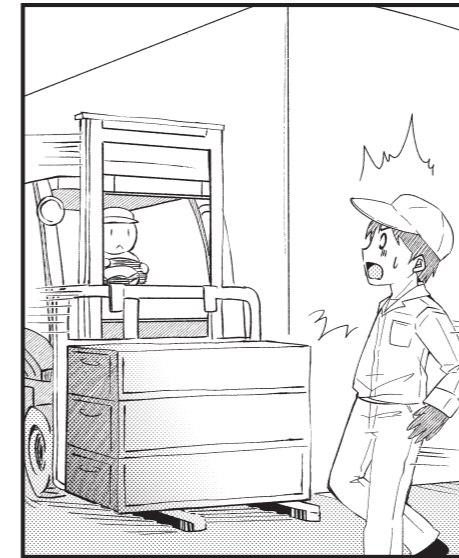


A few days later



Precautions in a factory

No. 1 Do NOT run in a factory, and watch out for corners!



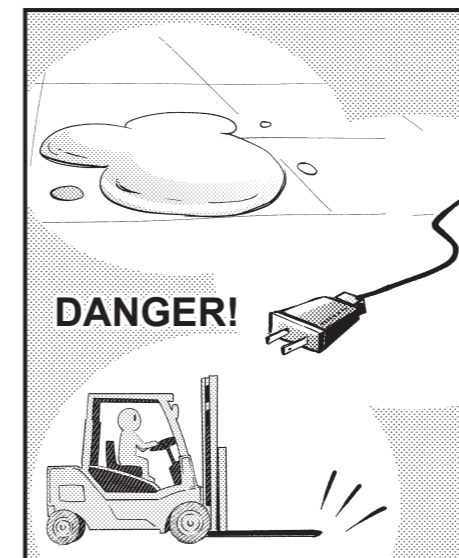
Do not run in a factory or warehouse, and at corners or intersections, make sure to stop and check that your path is clear.

No. 2 Wear the right type of shoes specified in the rules!



Shoes with worn out soles, slippers, and shoes with heels should never be worn.

No. 3 Watch where you're going to avoid falls!



Watch out for wet floors, protruding objects, power cables, dollies, and the forks of forklifts.

Be extra careful not to fall!



Case 4
Contact accident during grinder use



I'm sorry!
I overslept!



You're late!

You have lots of
work to do!



Today's grinding work needs
to be done by you and I.

Because you were late,
the next process is being
affected as we speak!

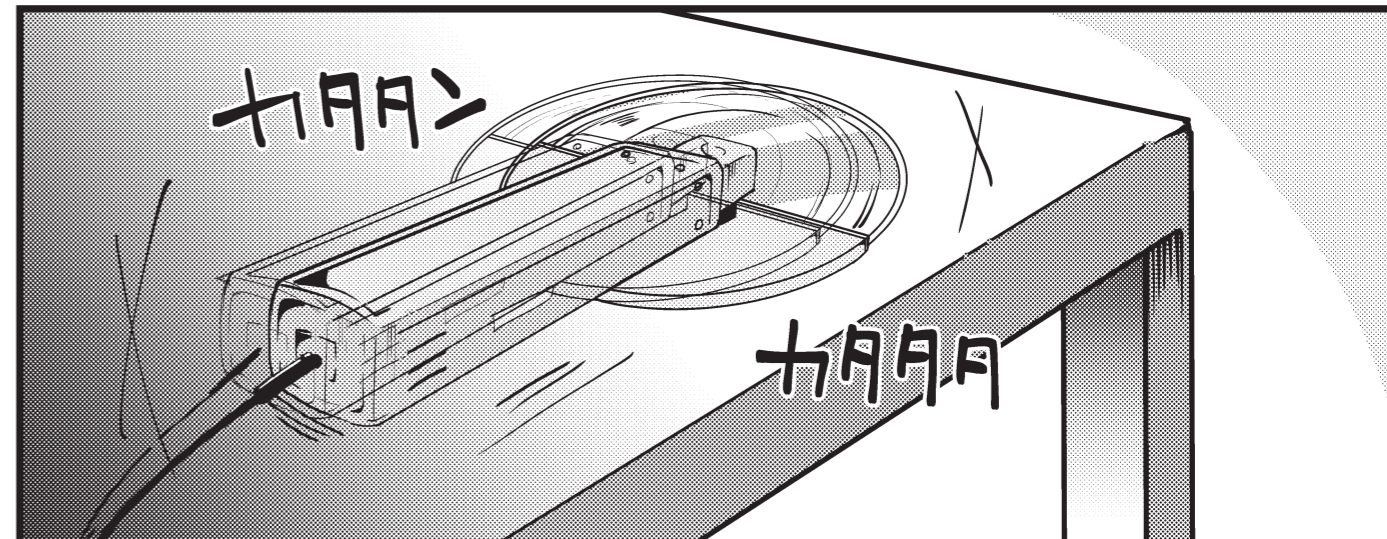
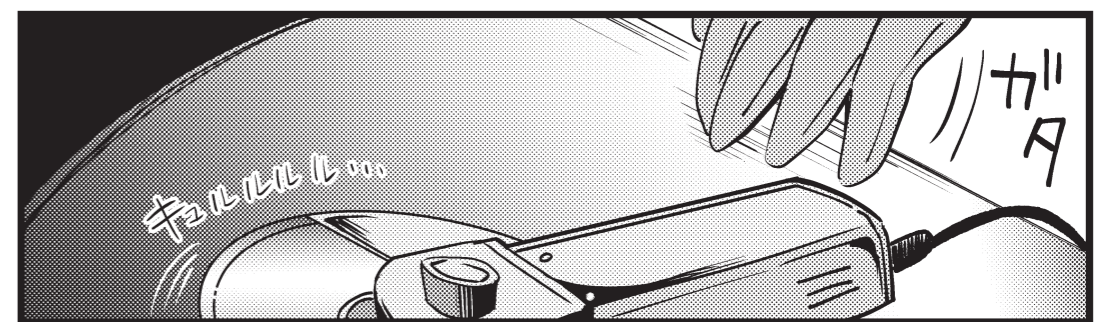
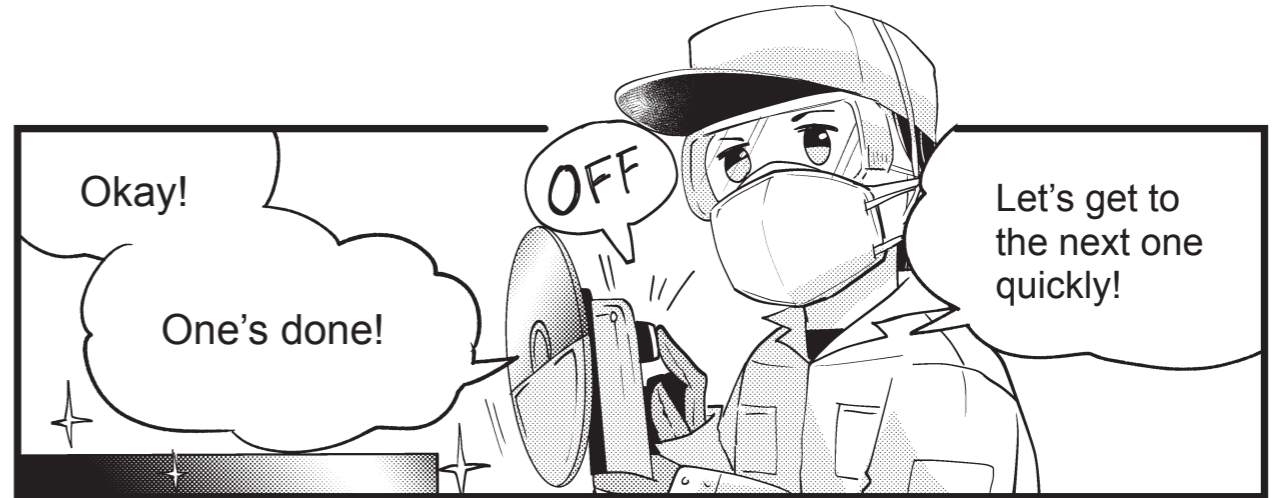
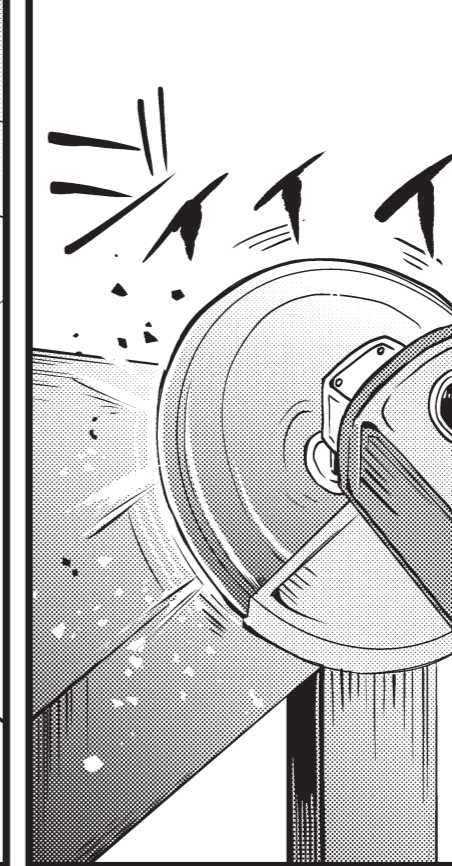
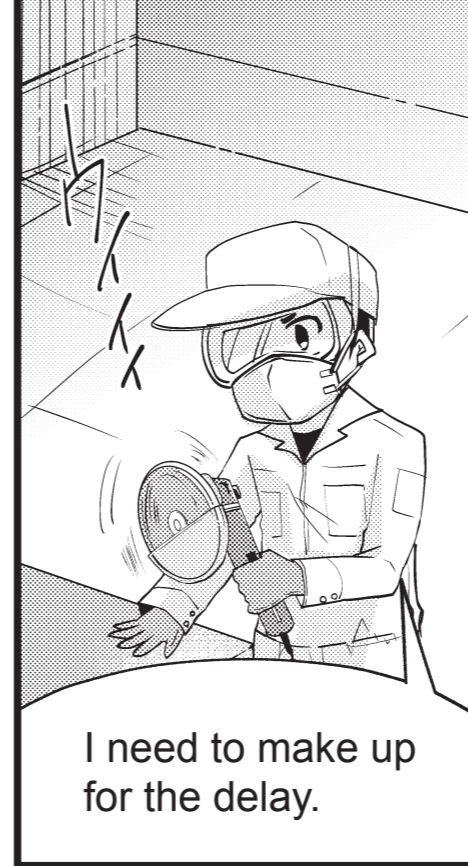
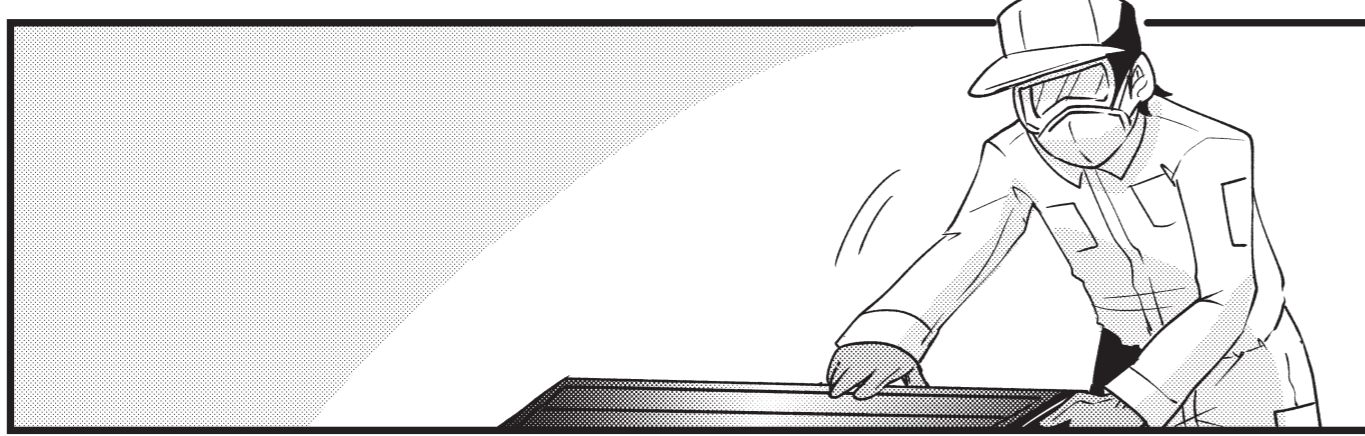
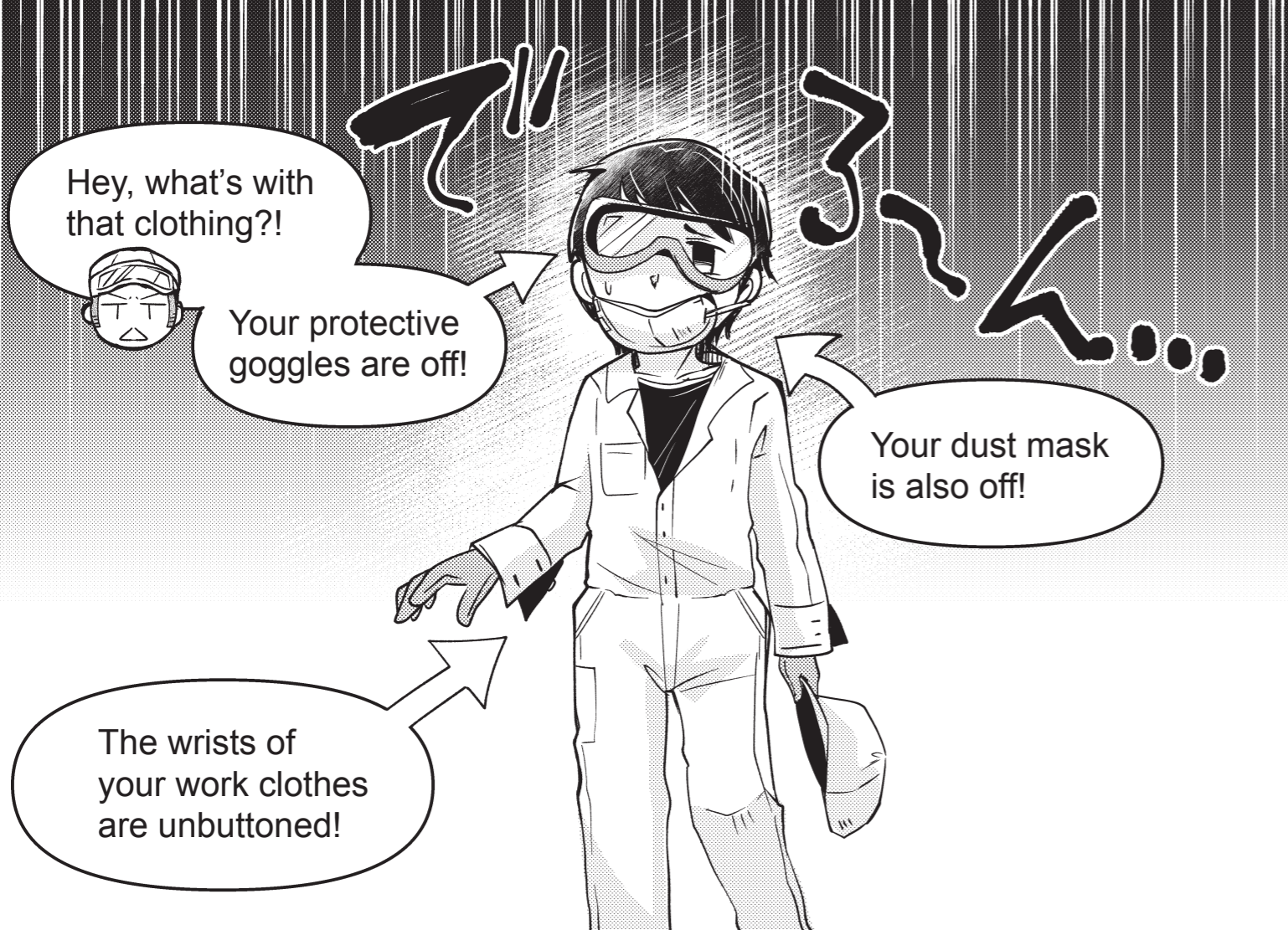
I'm sorry!

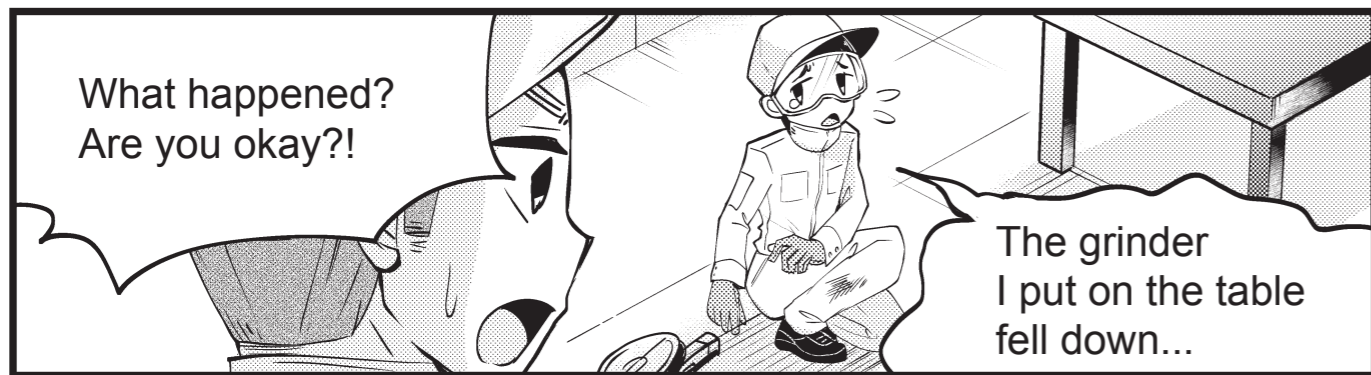
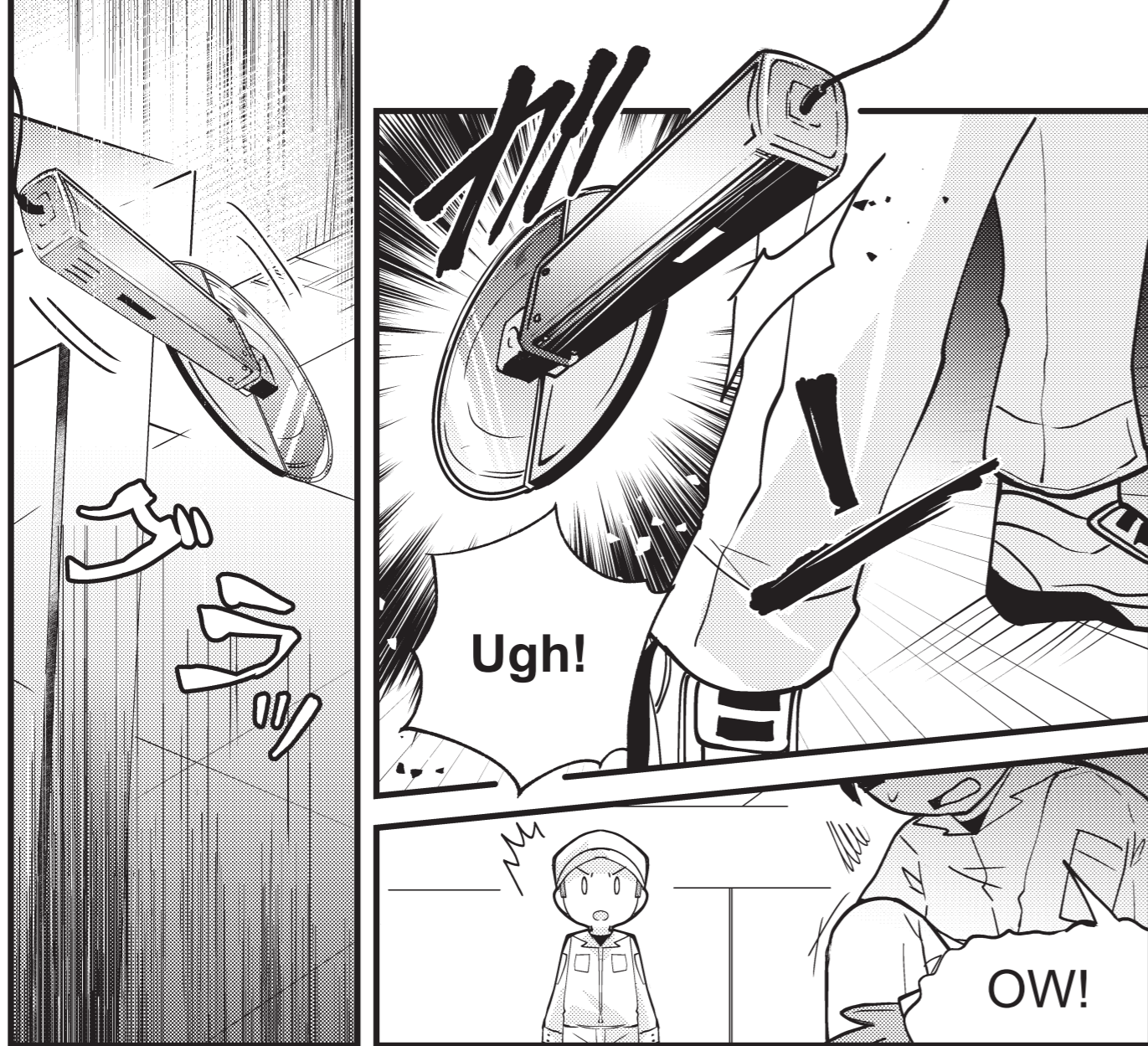


Get your gear
on quickly!

Yes, sir!







Precautions when dealing with tools

No. 1 | Wear your work clothes and protective gear in the manner required.



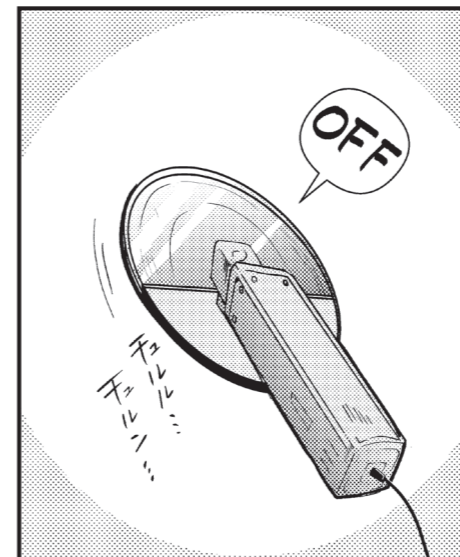
Work clothes and protective gear (ex.: safety goggles, dust mask) need to be worn according to the rules.

No. 2 | Make sure to check your surroundings for dangerous objects.



Make sure that no organic solvents or flammable objects are too close to you.

No. 3 | Pay attention to the machinery until it completely stops!

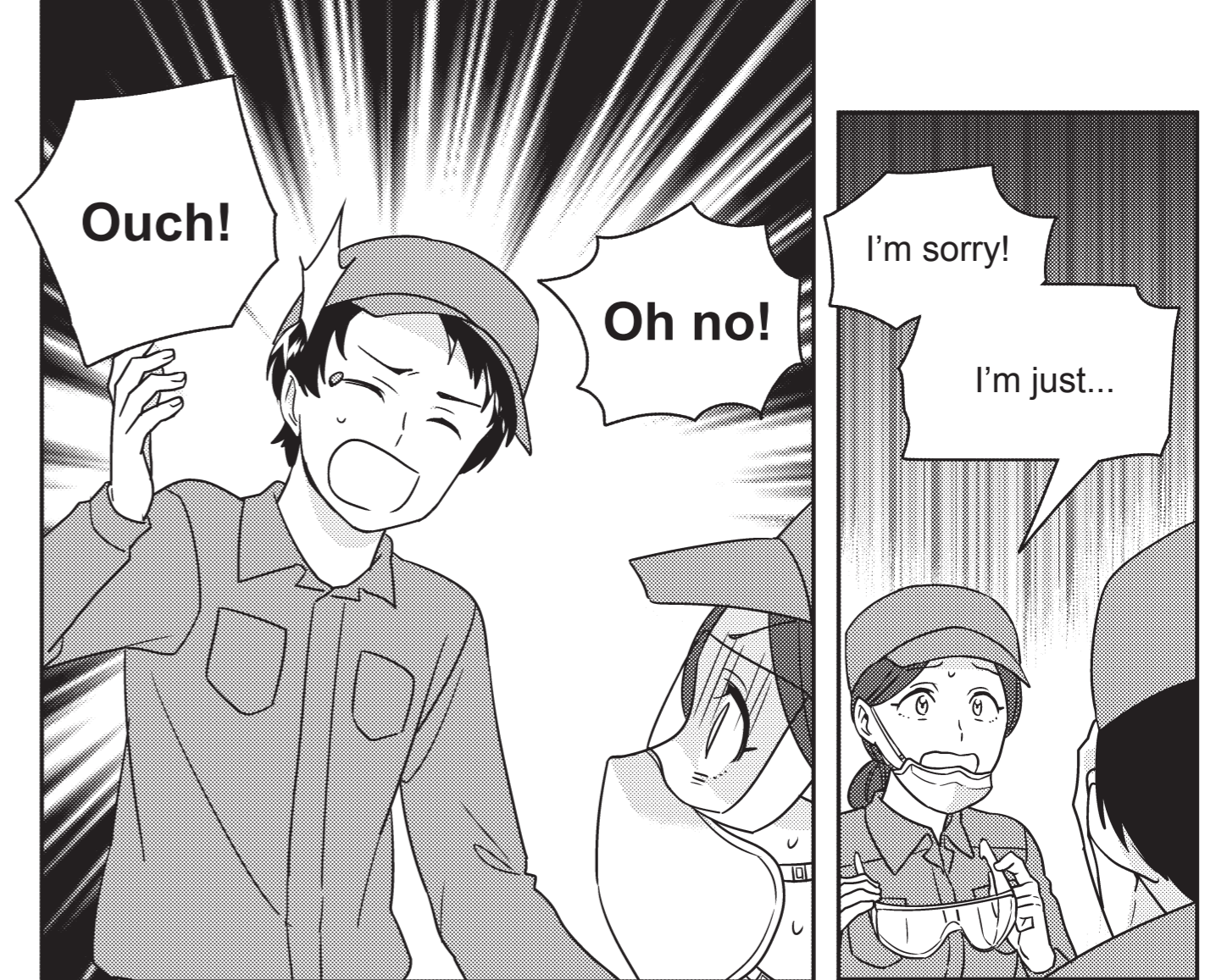
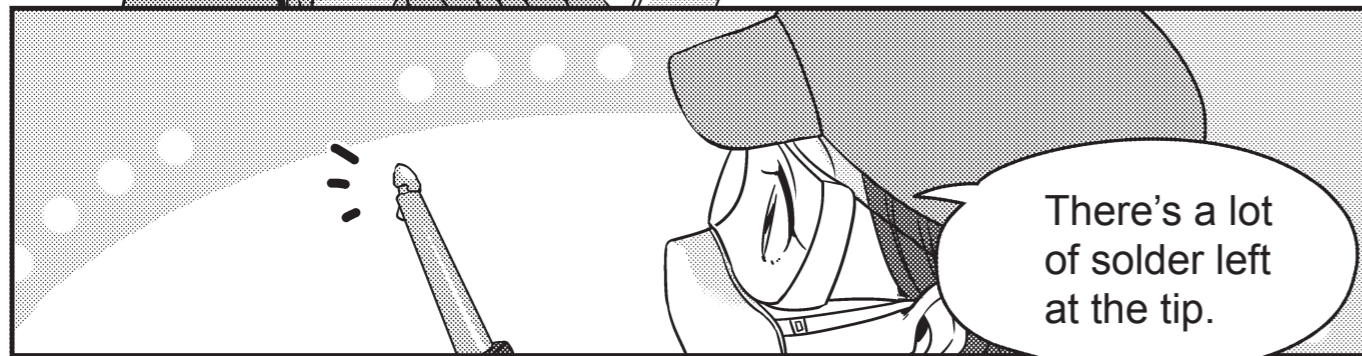
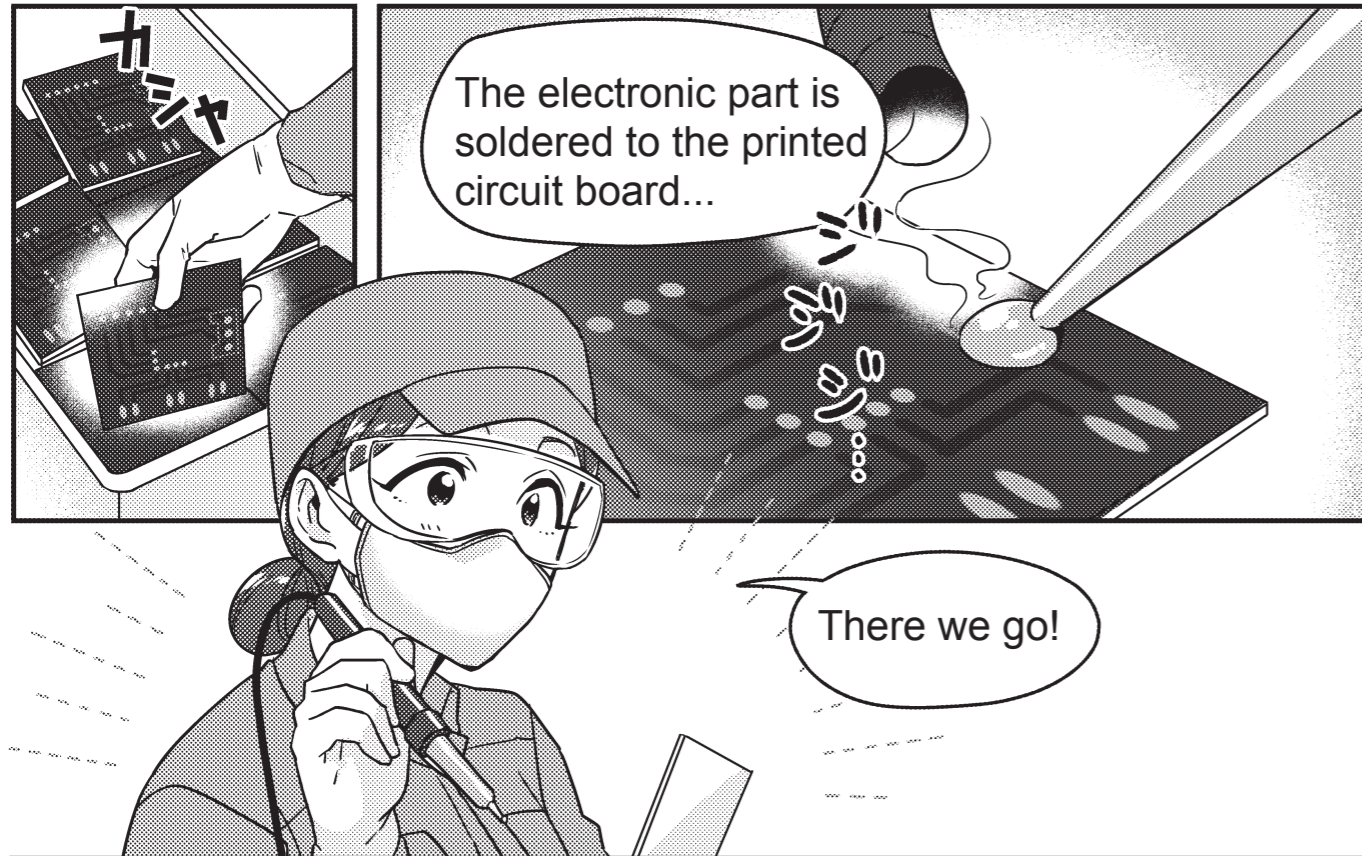


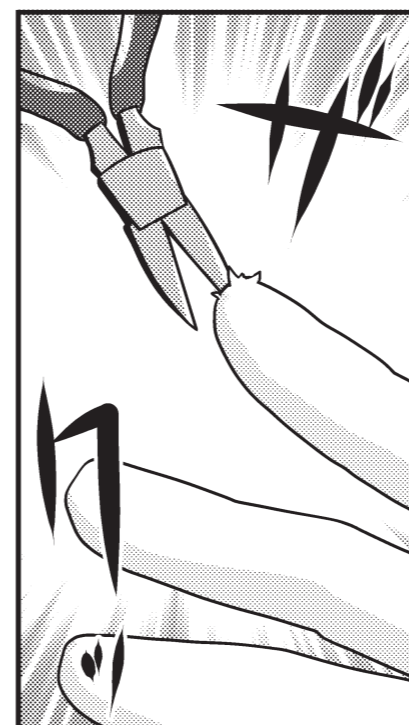
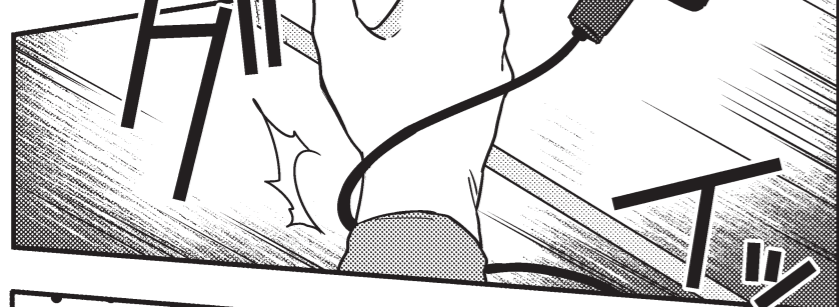
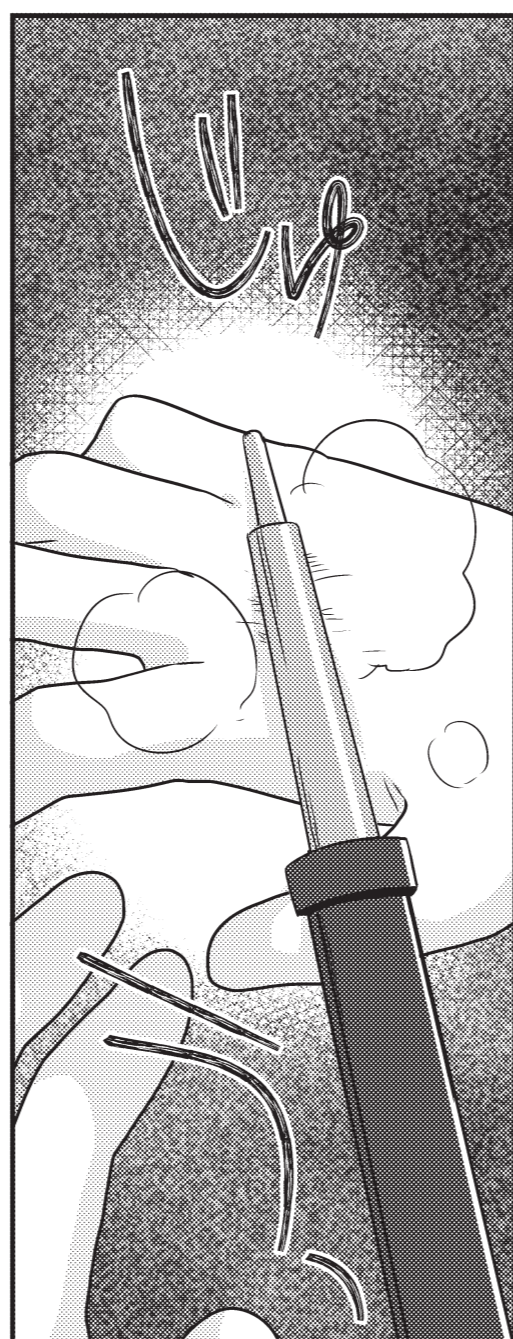
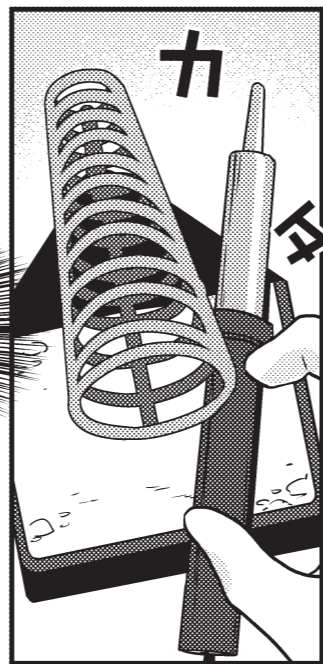
Make sure to wait for the machinery, such as a rotating machine like a grinder, to completely stop after you turn it off before you put it down.

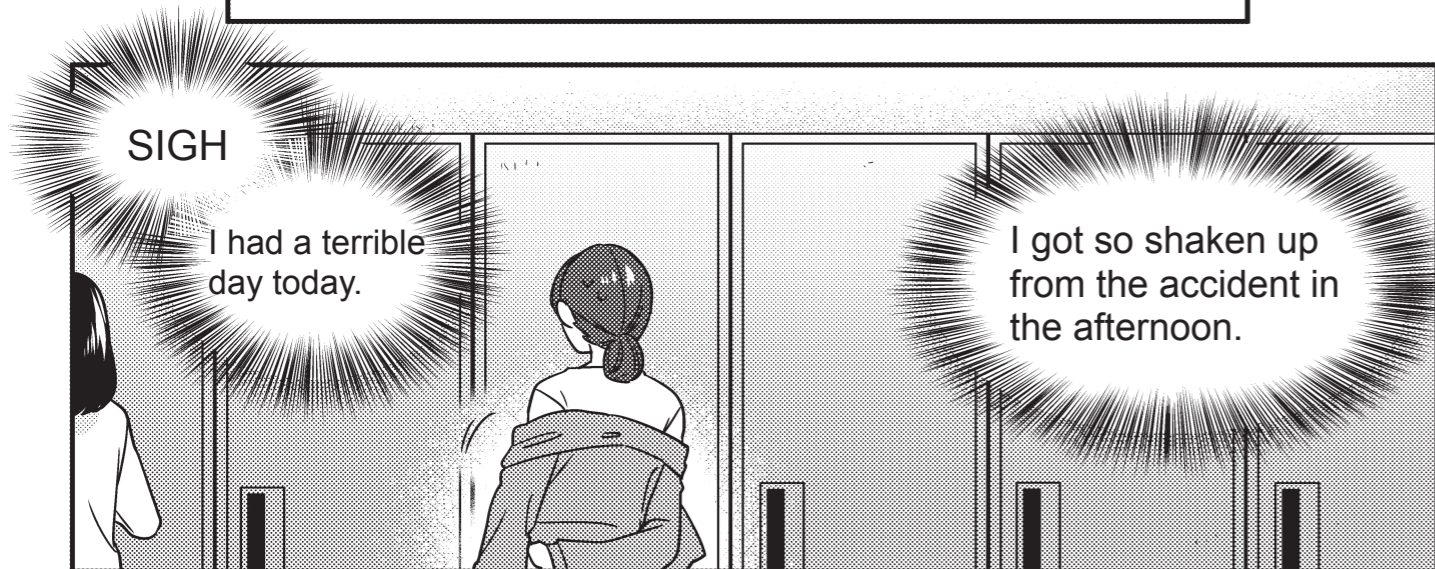
Be extra careful when working with a grinder!



Case 5
Accident due to inappropriate handling of tools







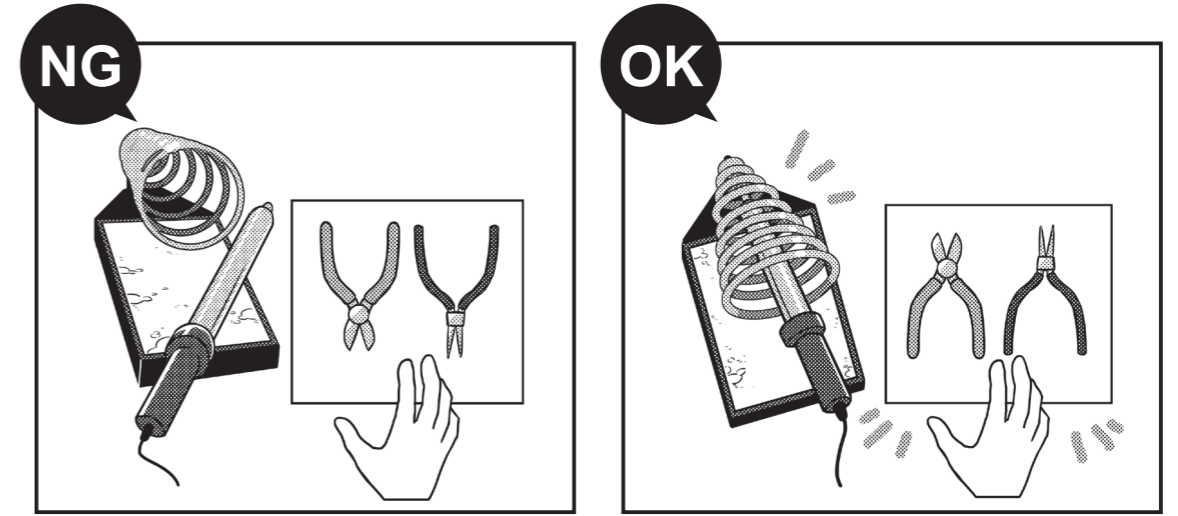
Precautions for dealing with tools

No. 1 | Do NOT swing around a soldering iron!



You must not swing around a soldering iron as it's very dangerous.

No. 2 | Place your tools in the correct location and position when not in use.

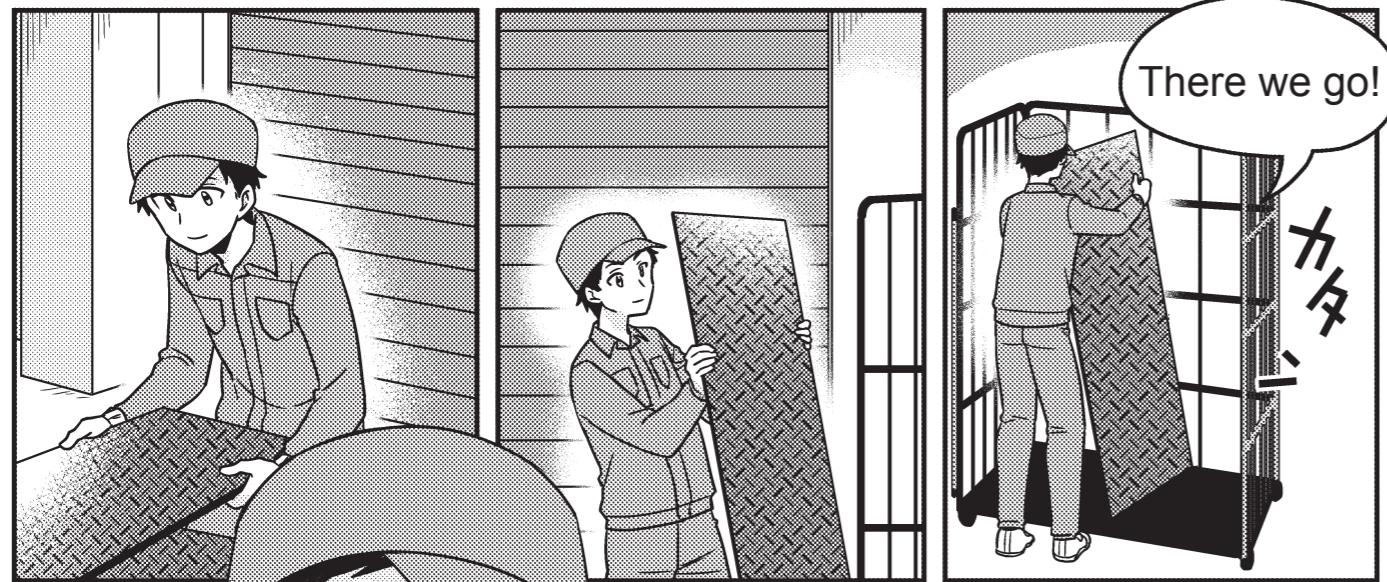


Always put a soldering iron in its designated holder, and position sharp tools like nippers in a way that the tips don't point towards you.

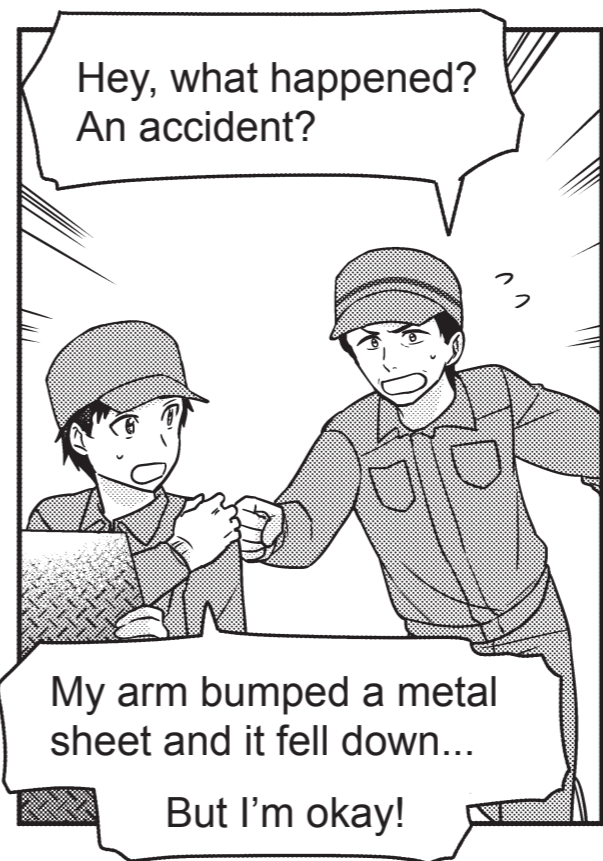
Be extra careful when handling tools!

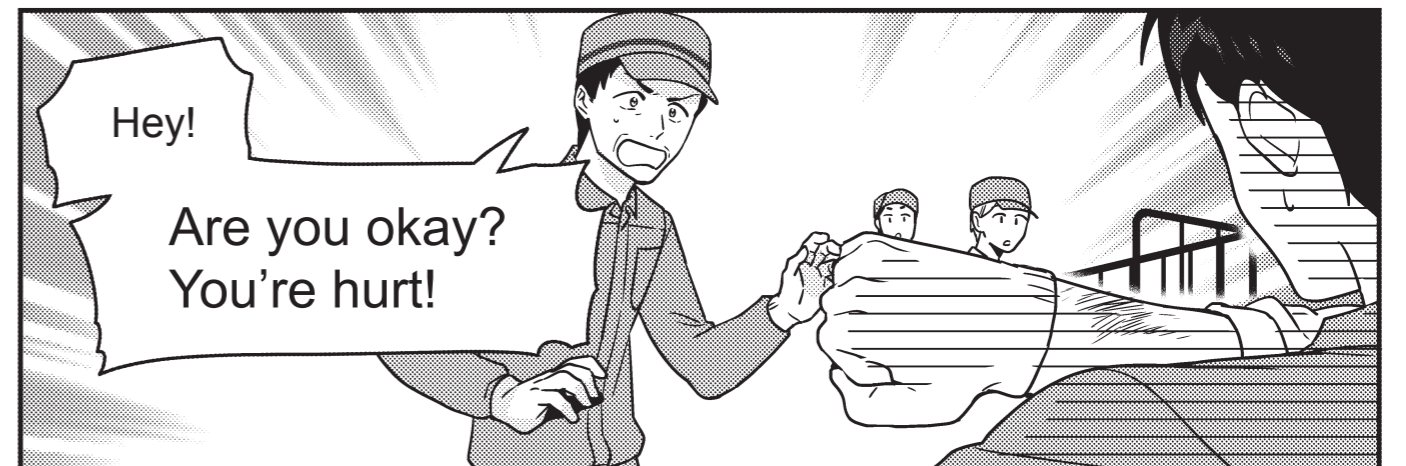
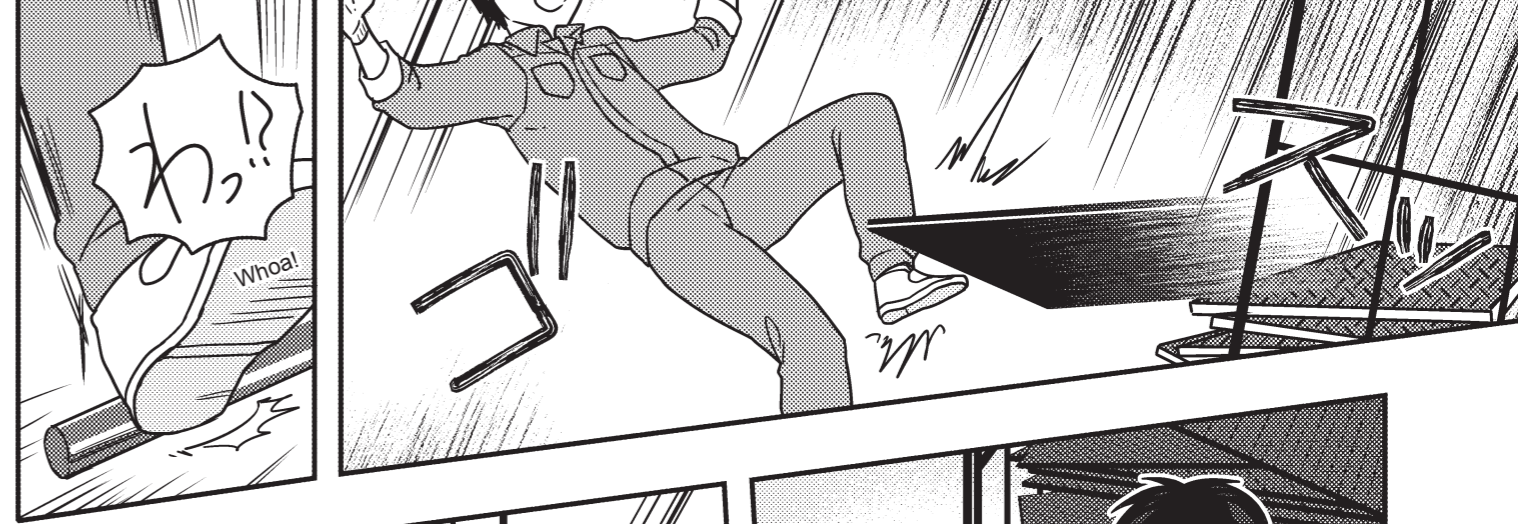
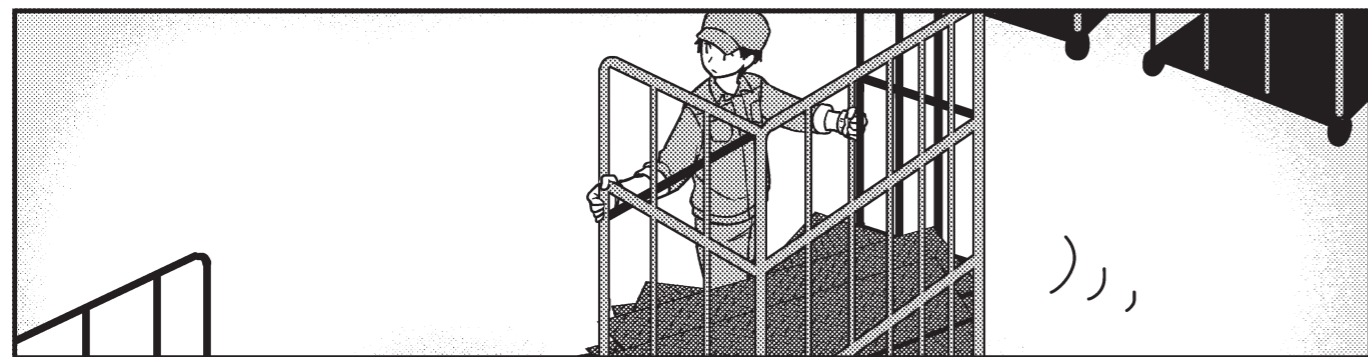
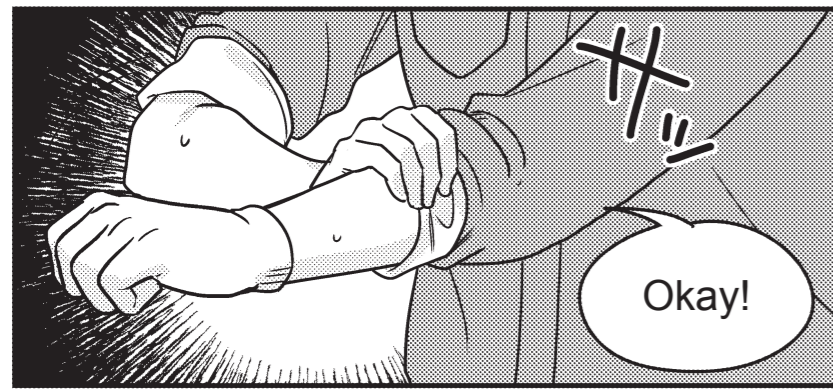
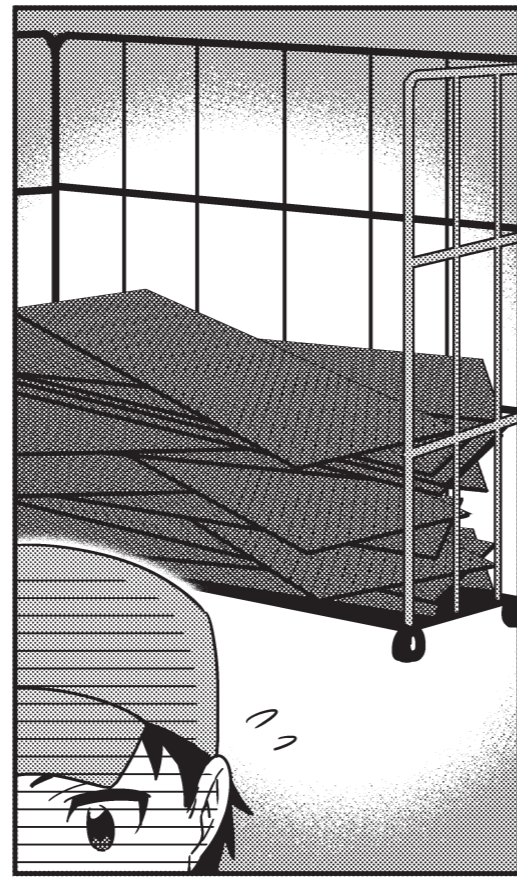
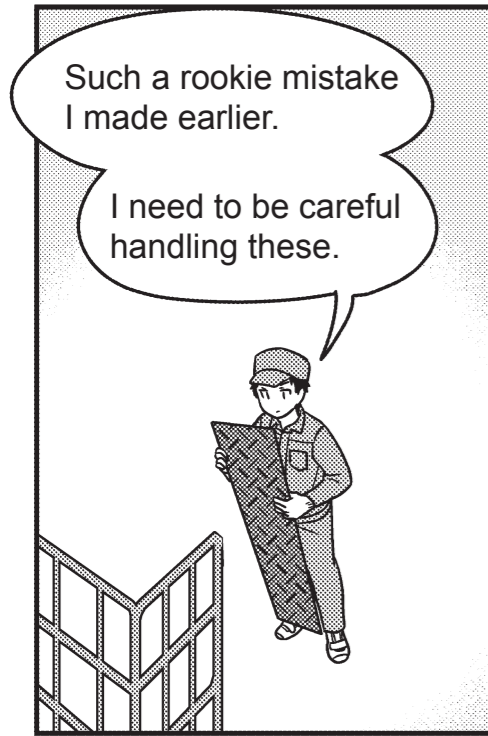


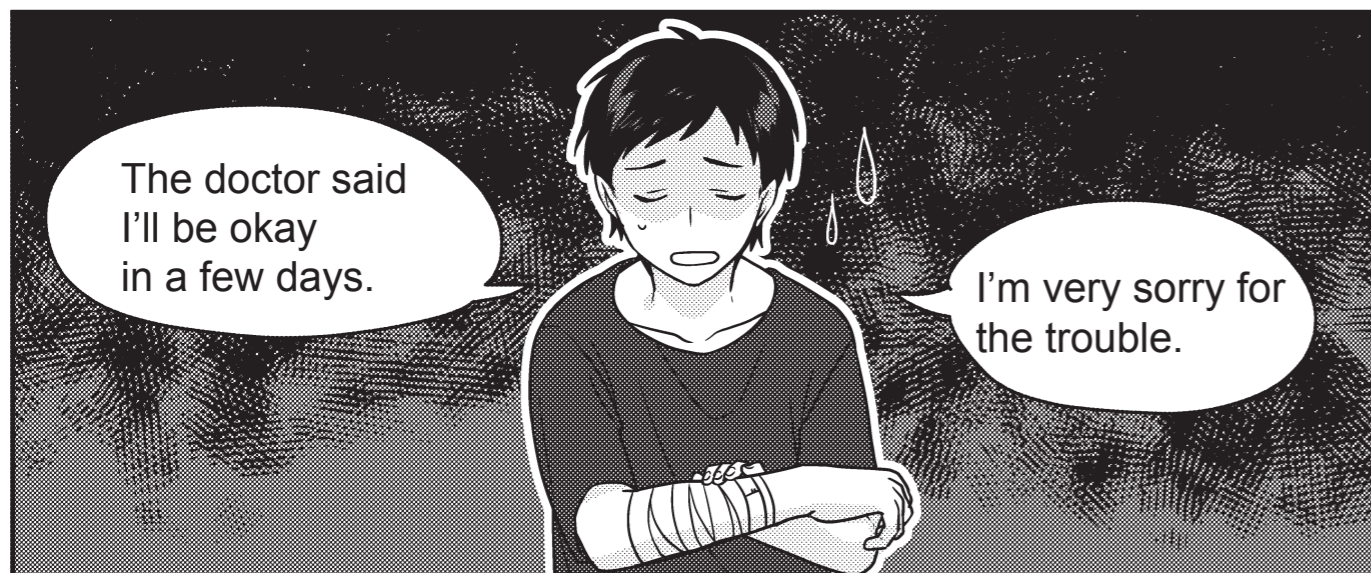
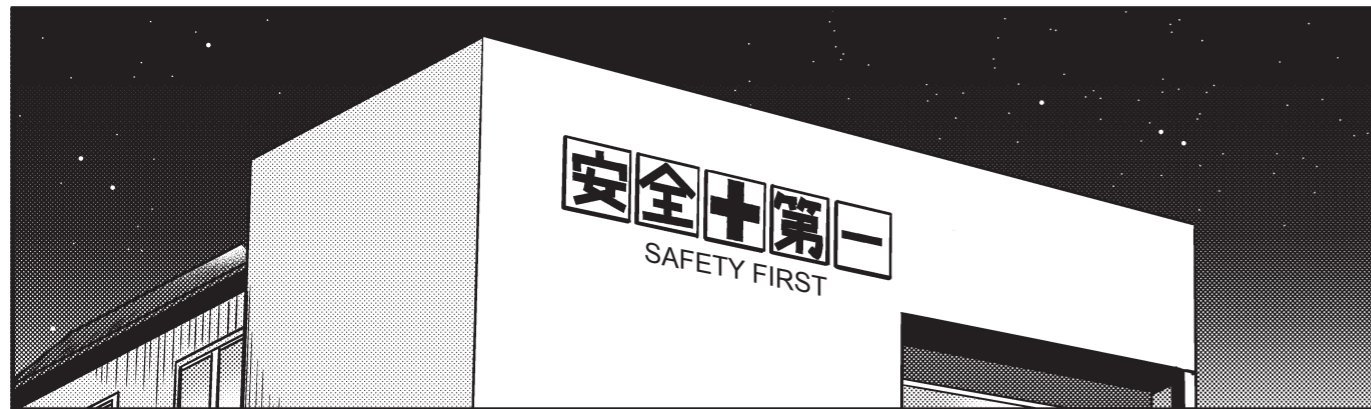
Case 6
Accident while handling materials



Metal sheets are pretty heavy,
but I am pretty good with heavy lifting.

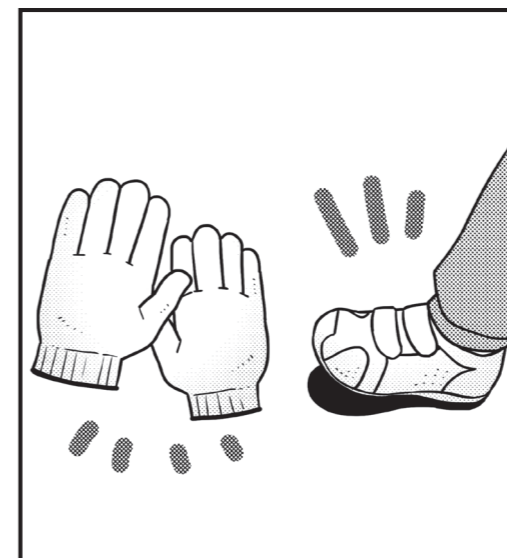






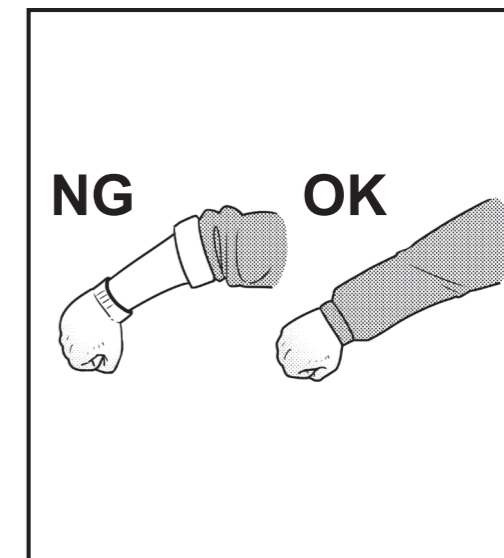
Precautions when carrying metal sheets

No. 1 | Wear your protective gear according to the rules!



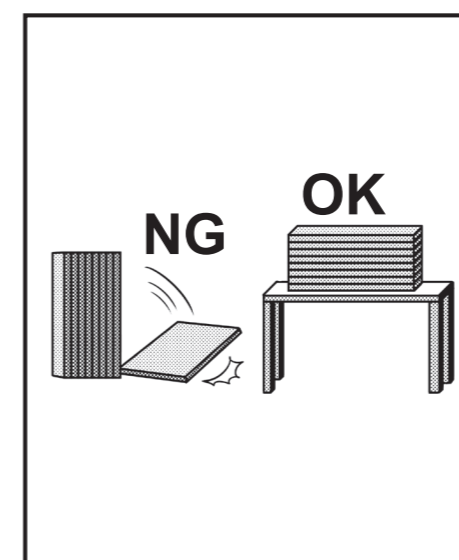
Wear gloves and footwear as designated.

No. 2 | Do NOT roll up the sleeves on work clothes!



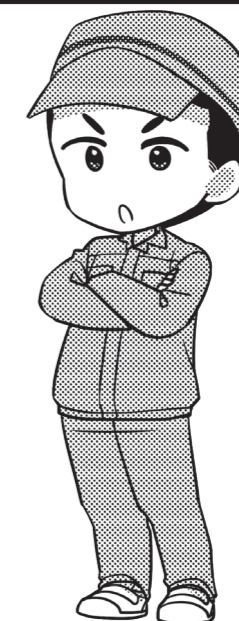
When you work, you must not roll up the sleeves.

No. 3 | Do NOT place metal sheets vertically!

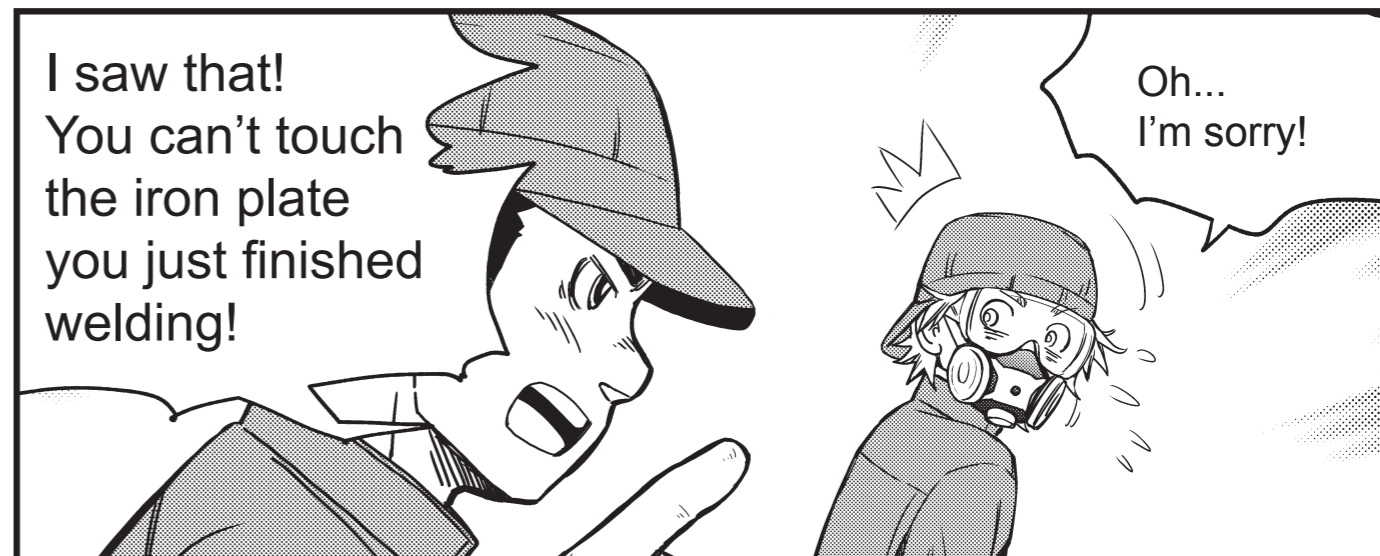
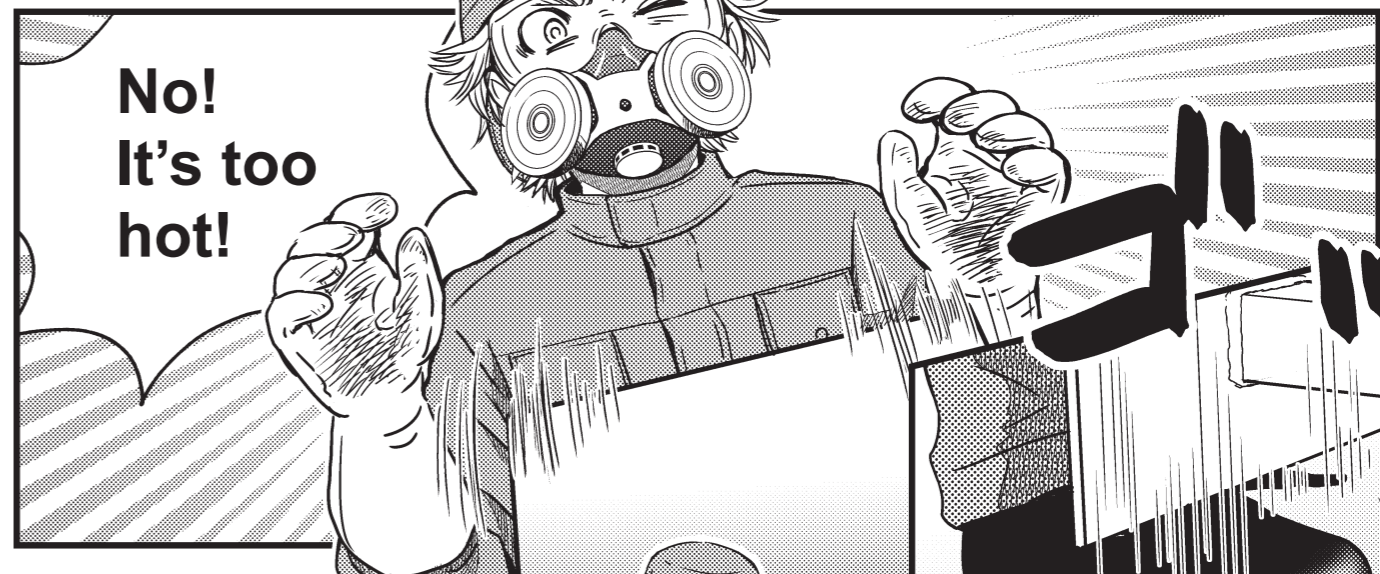
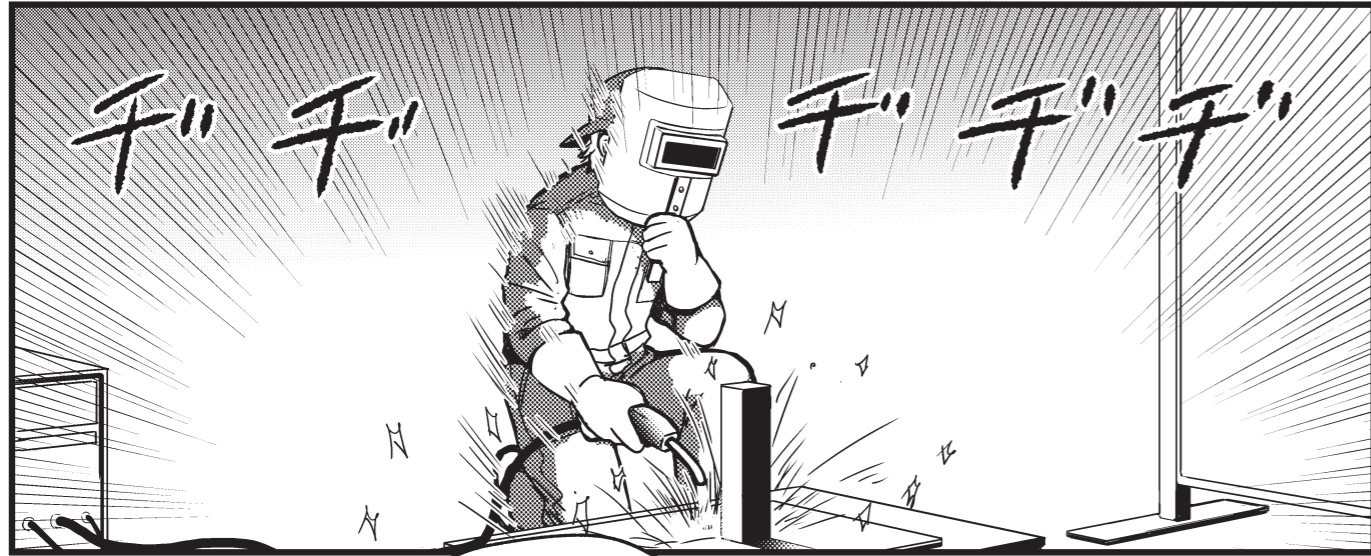


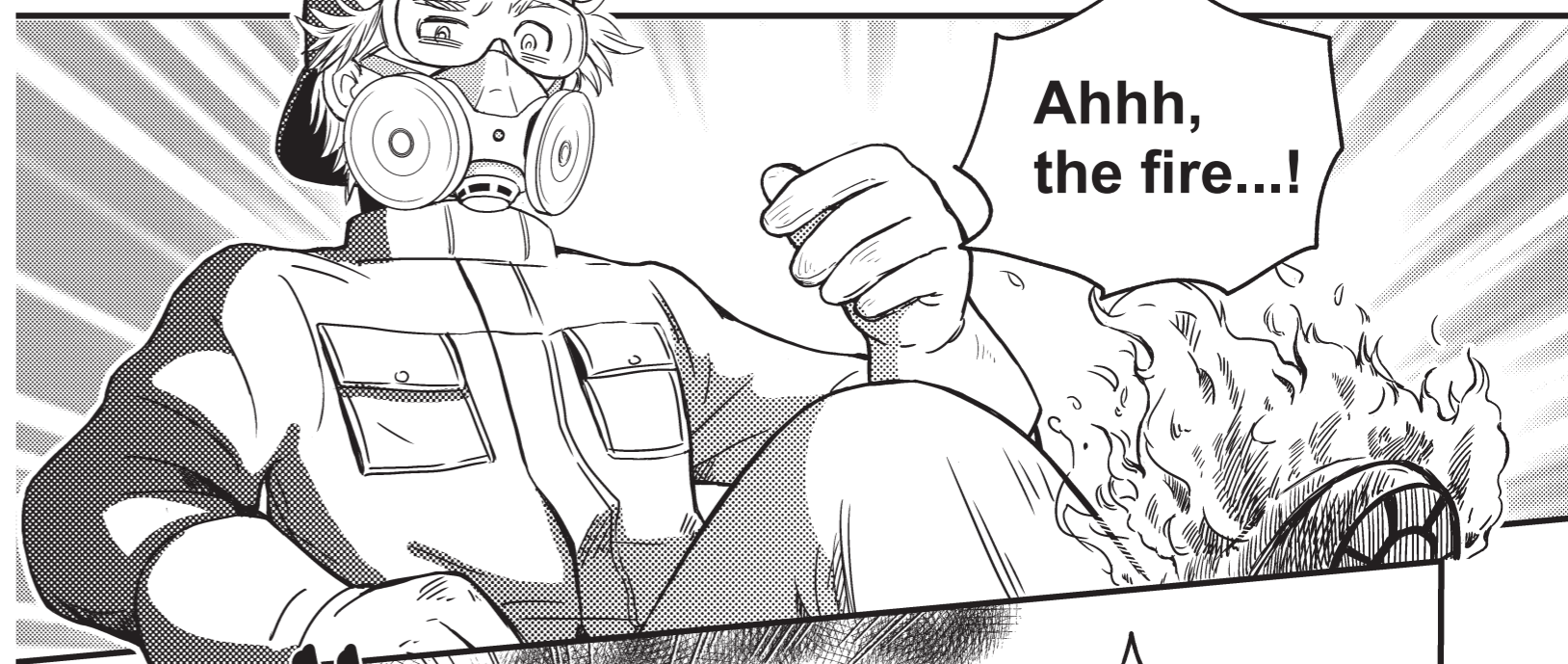
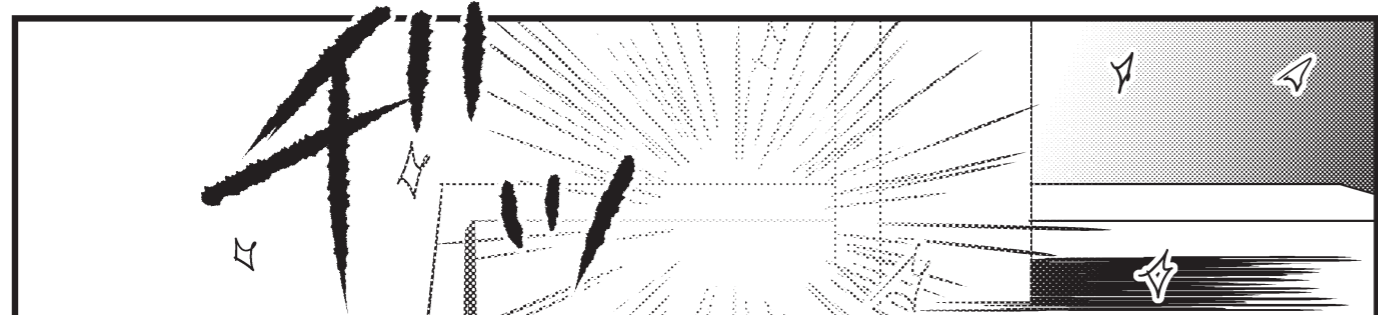
If you lean metal sheets vertically, they might fall over, so stack them horizontally and lay them flat.

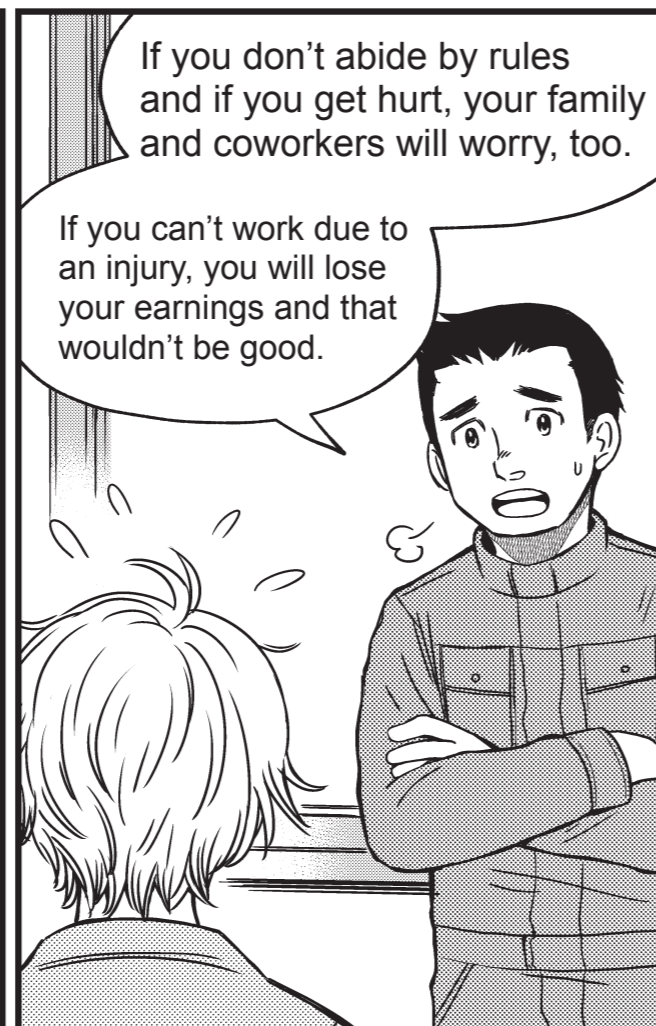
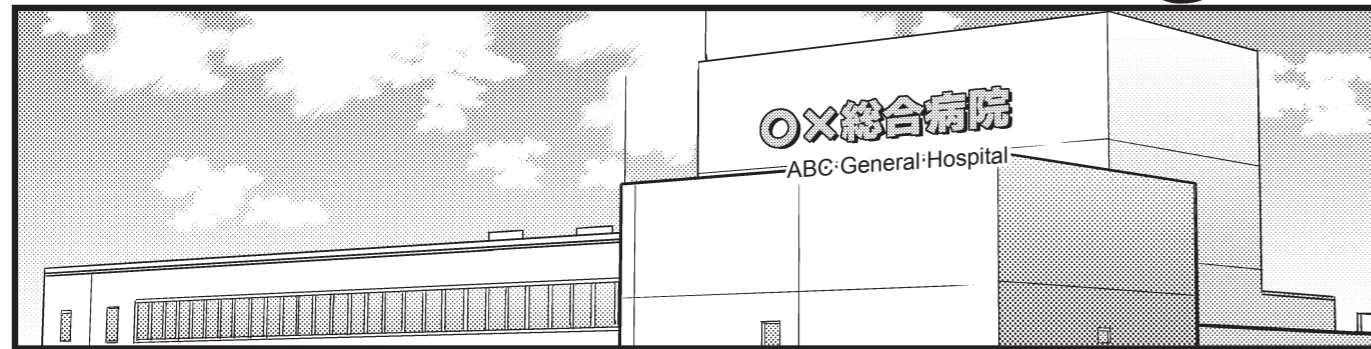
Be extra careful handling heavy objects!



Case 7
Burn / Fire during welding work

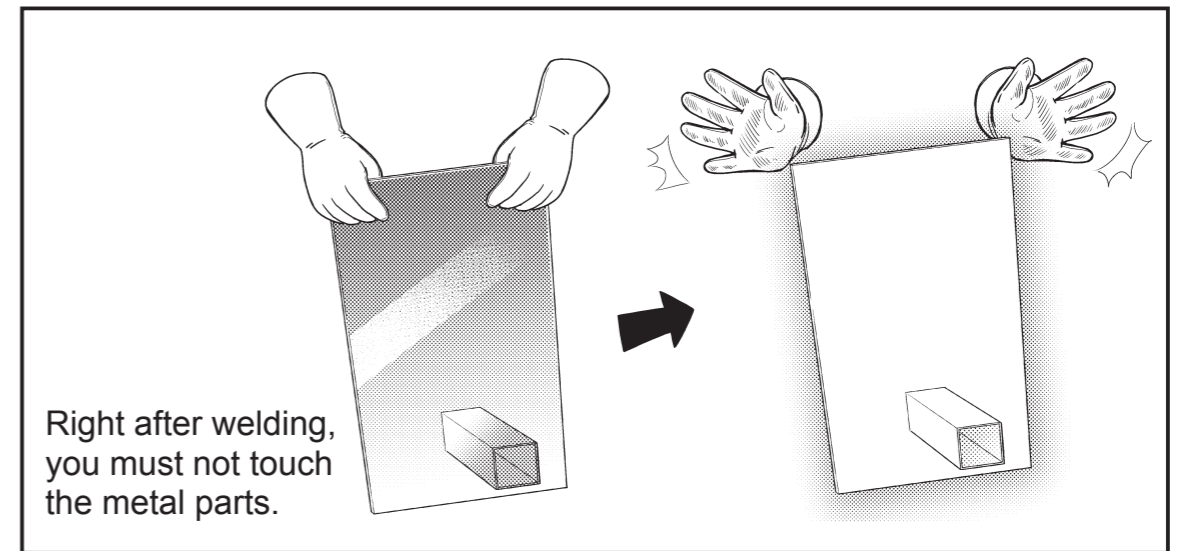






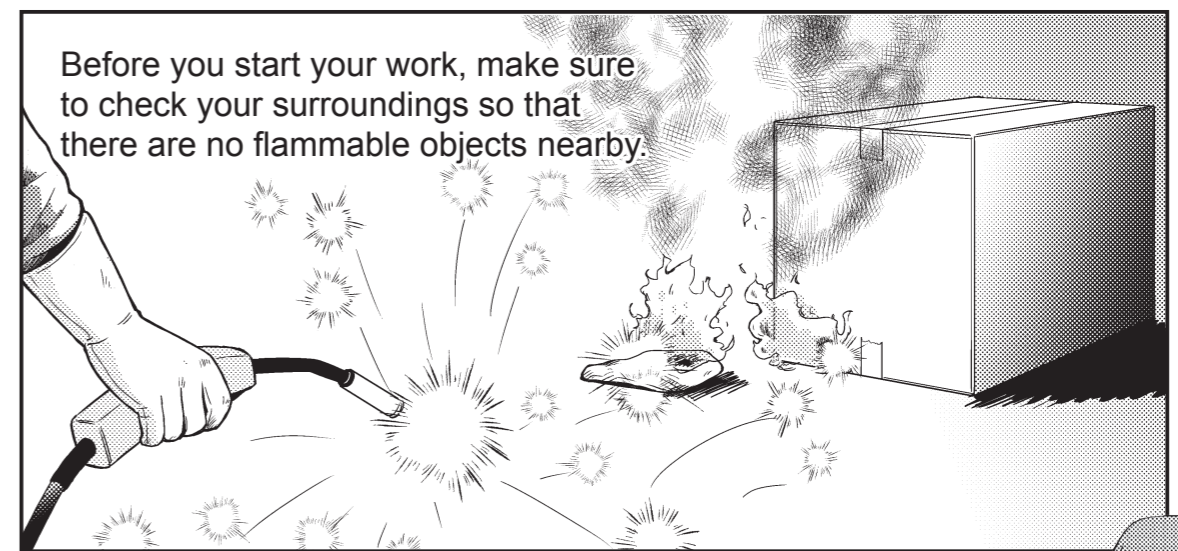
Precautions during welding

No. 1 | Do NOT touch the plate right after you finish welding!

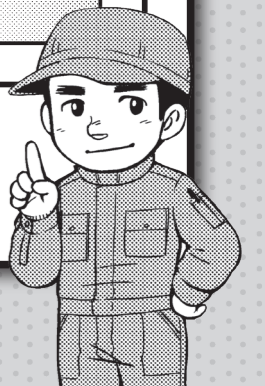


Right after welding, you must not touch the metal parts.

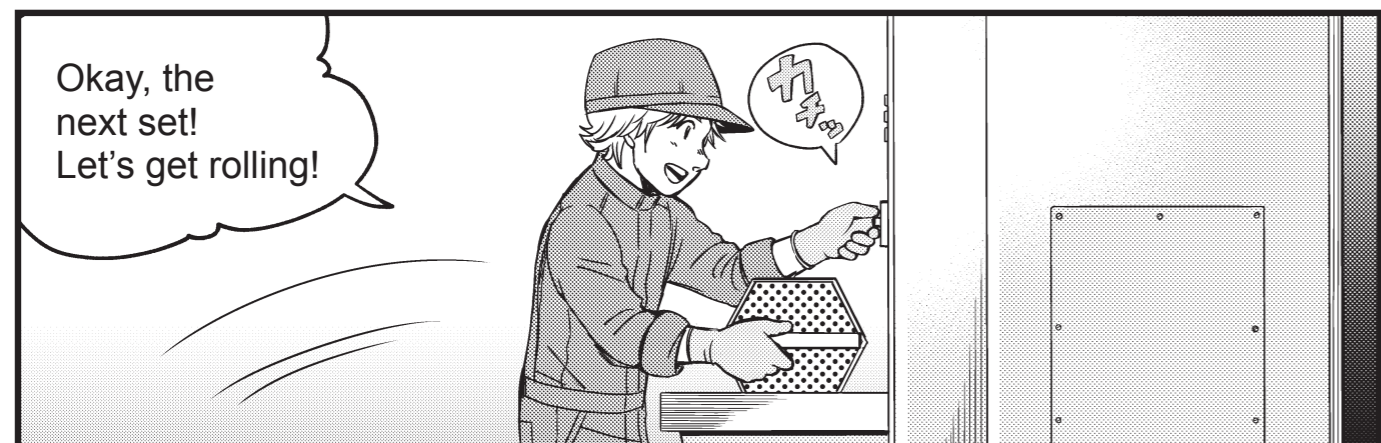
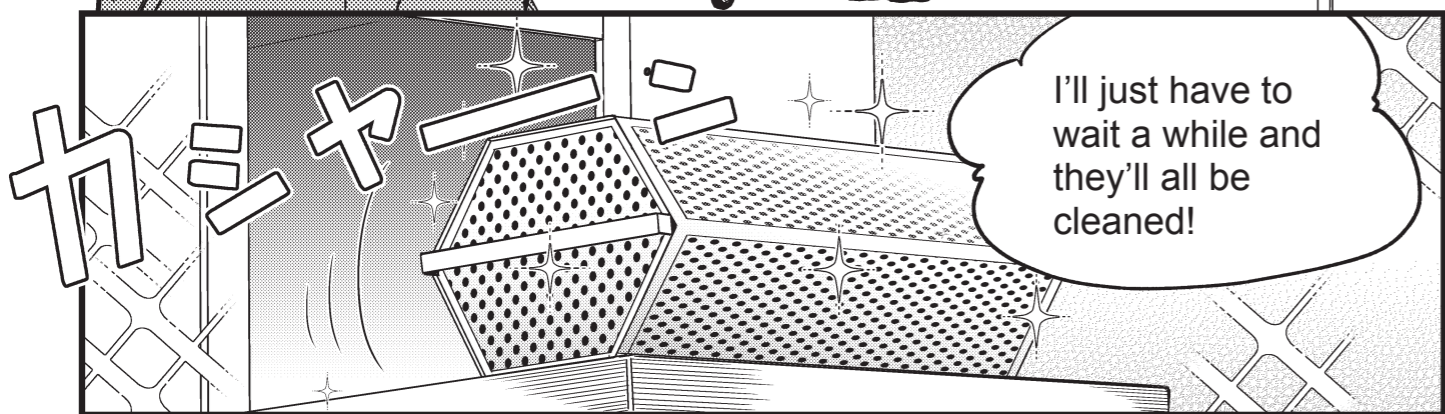
No. 2 | Check your surroundings before welding!



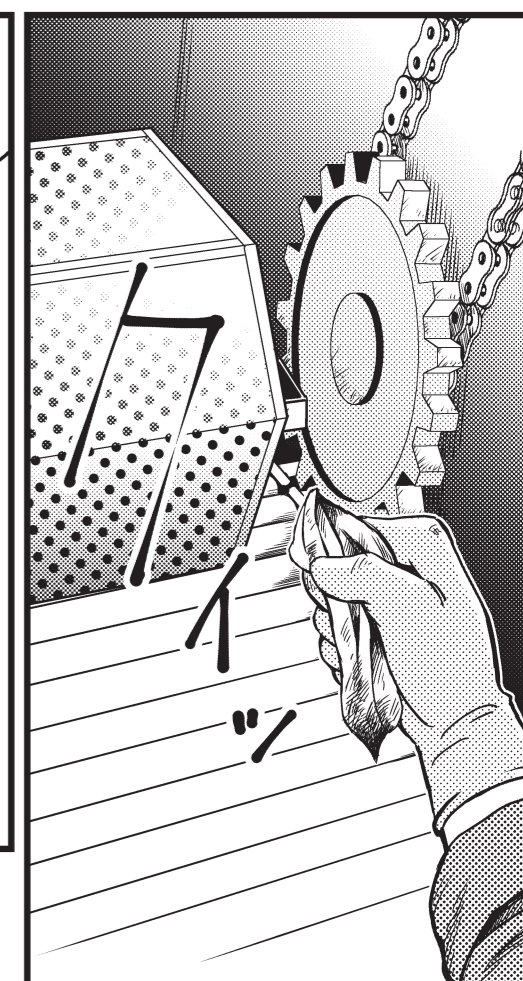
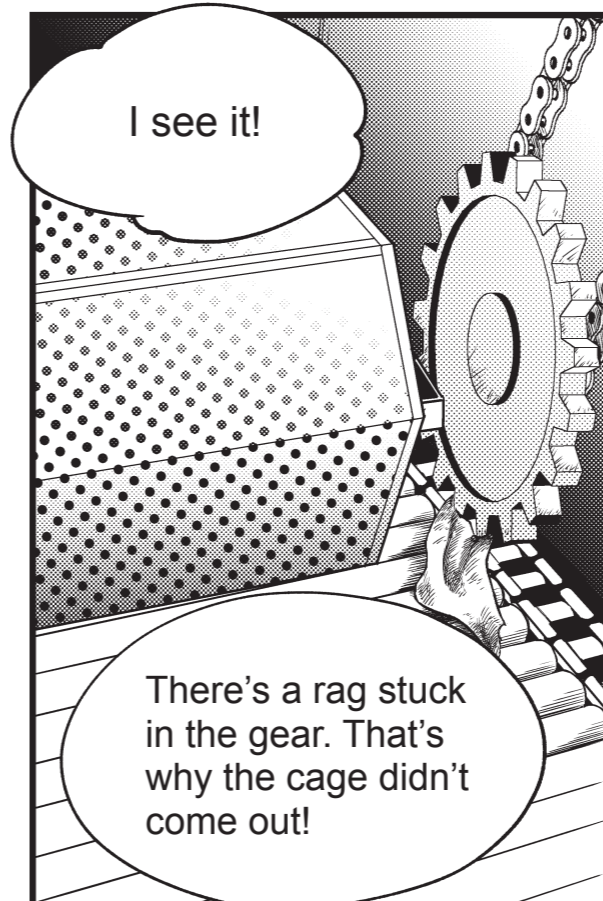
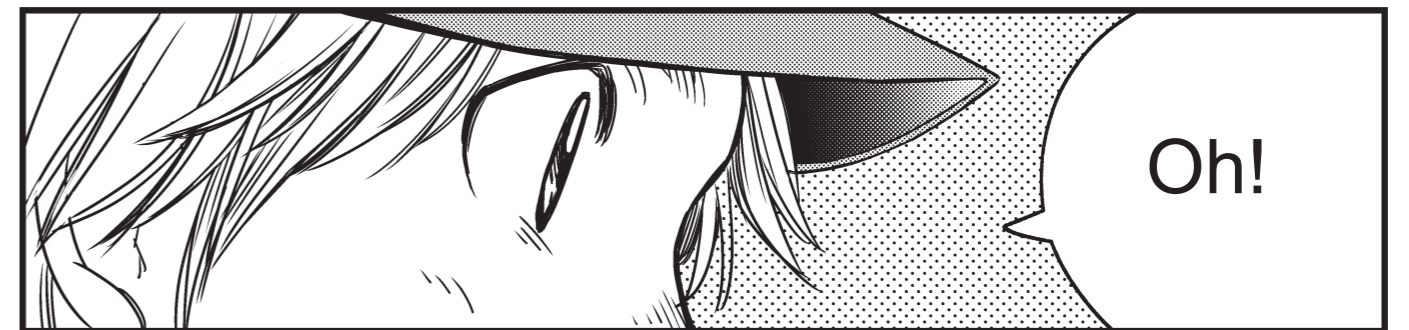
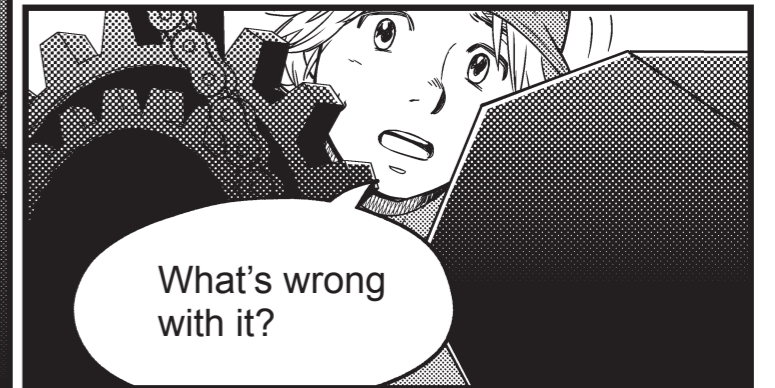
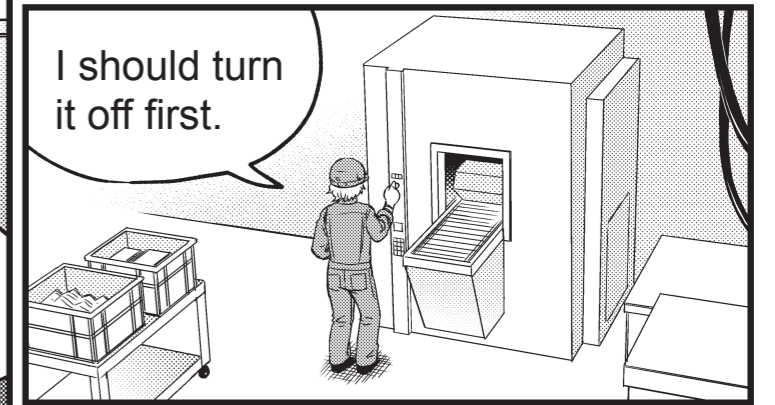
Be extra careful not to get burned or start a fire when welding!

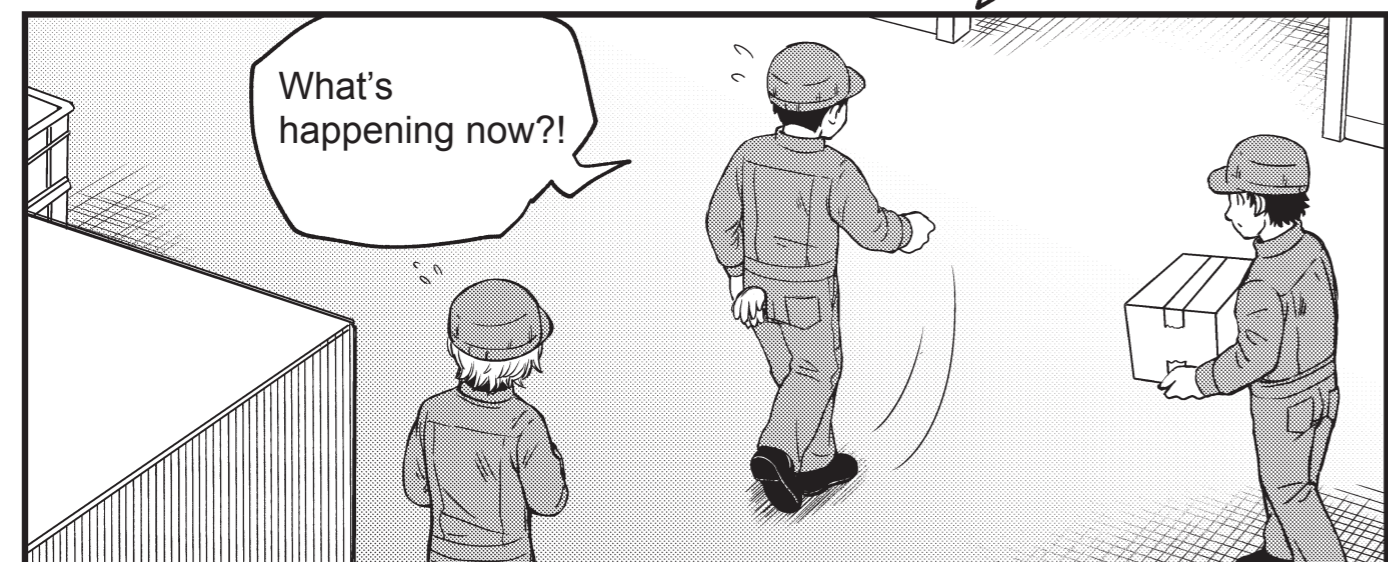
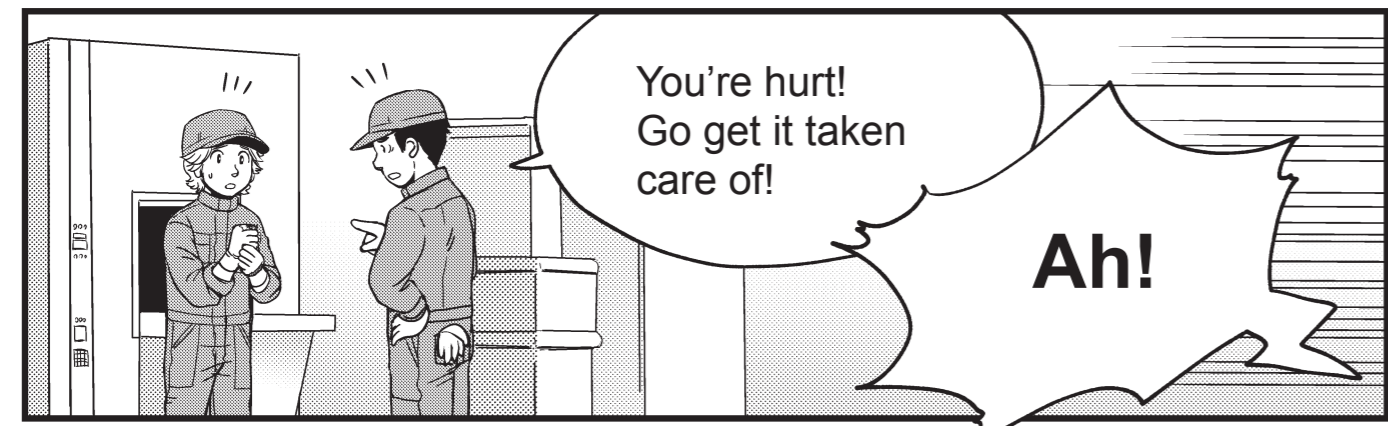
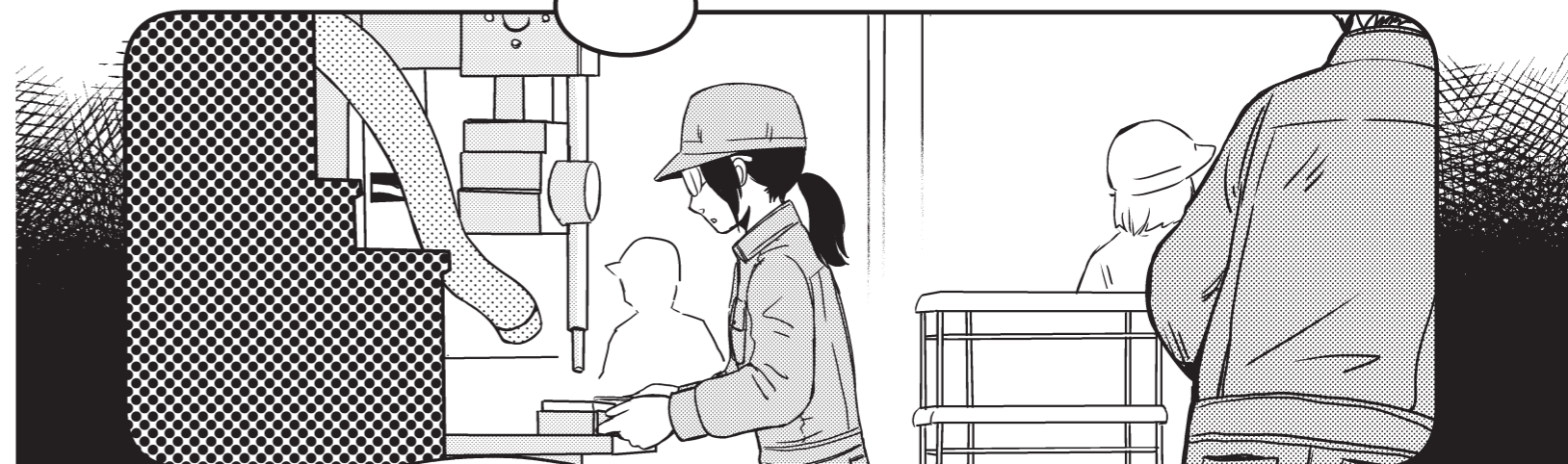
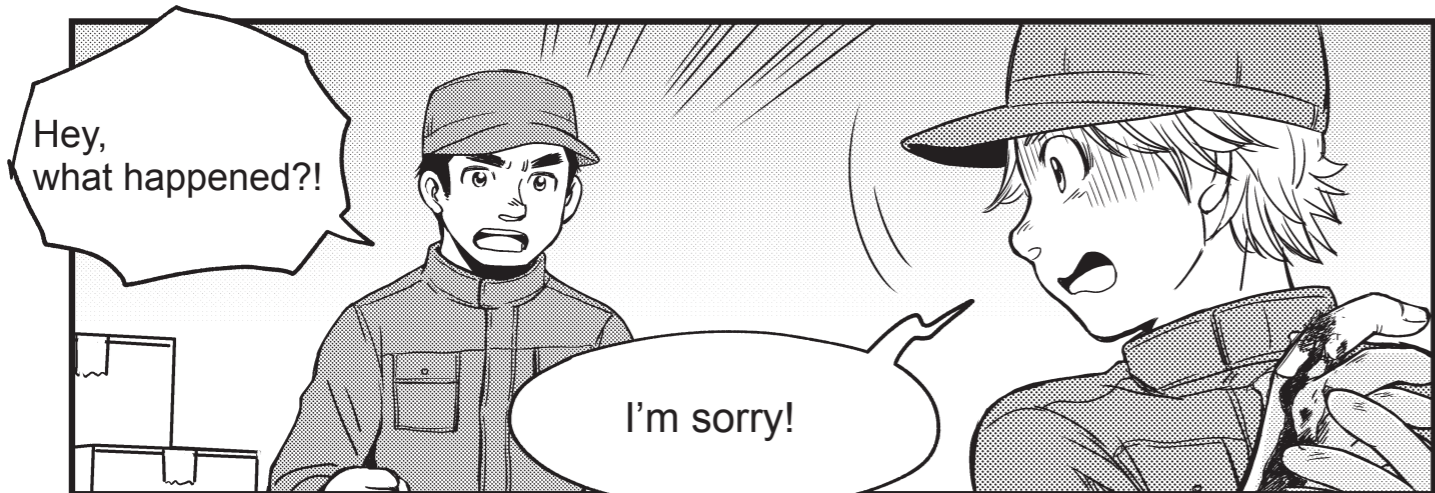
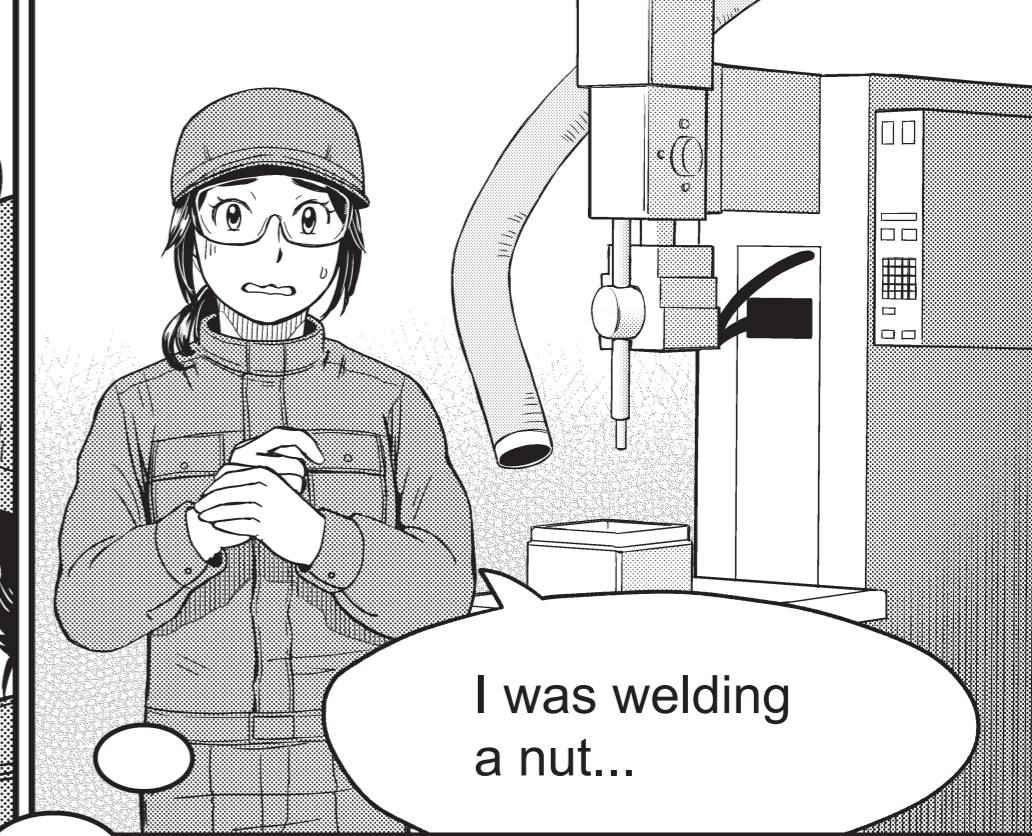
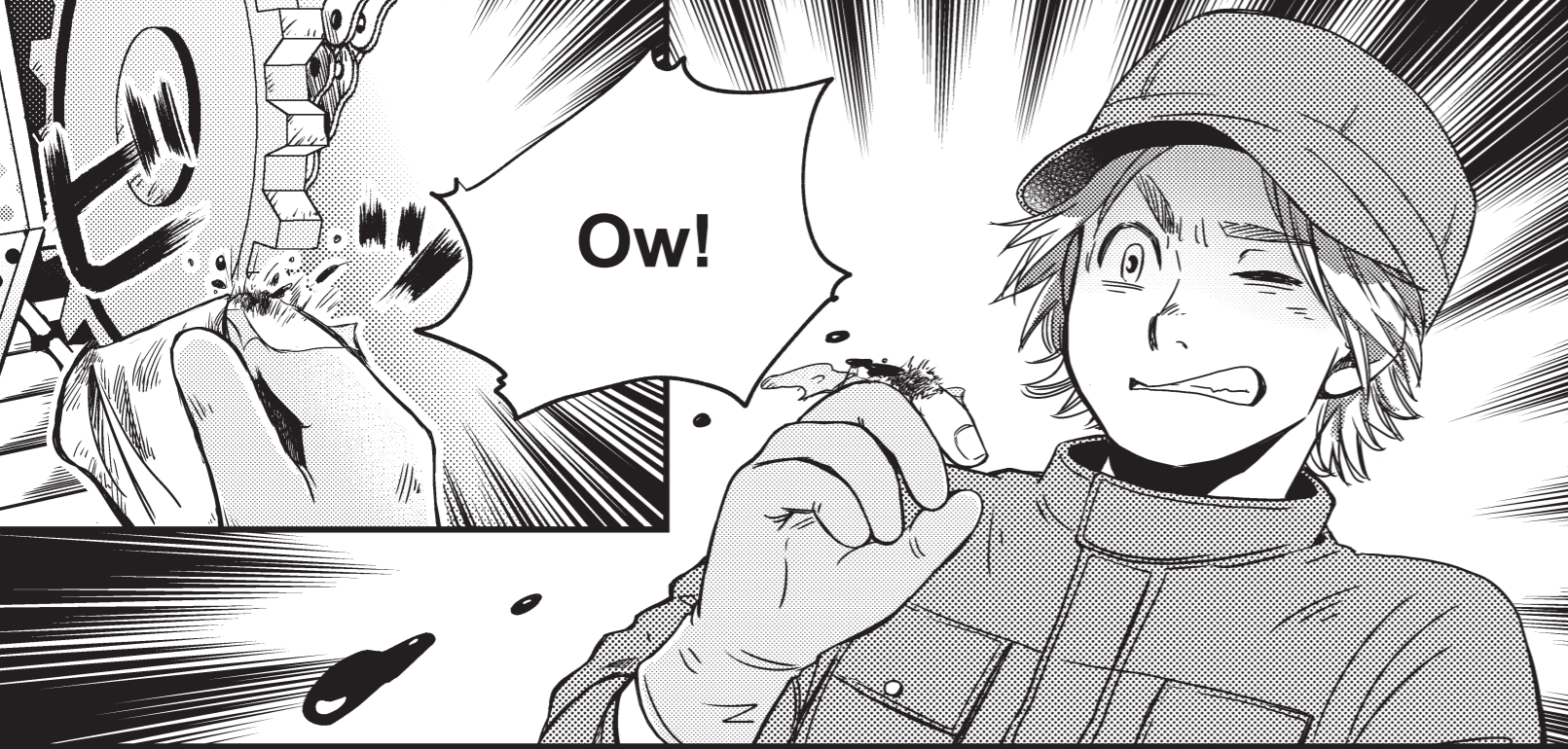


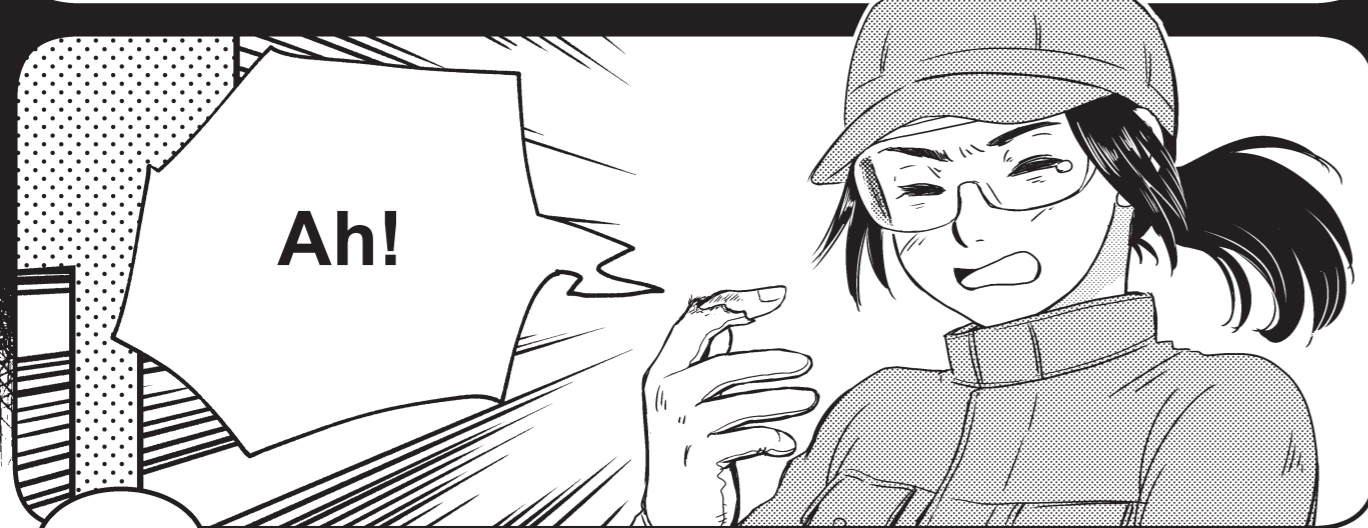
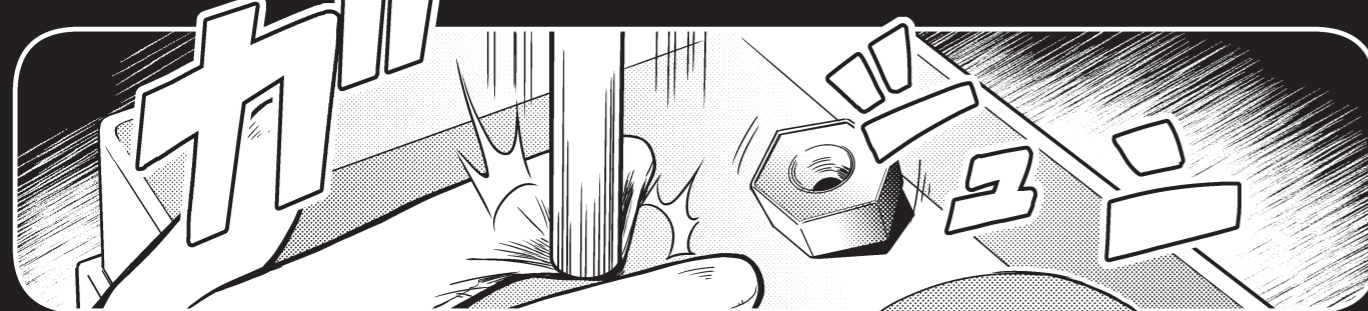
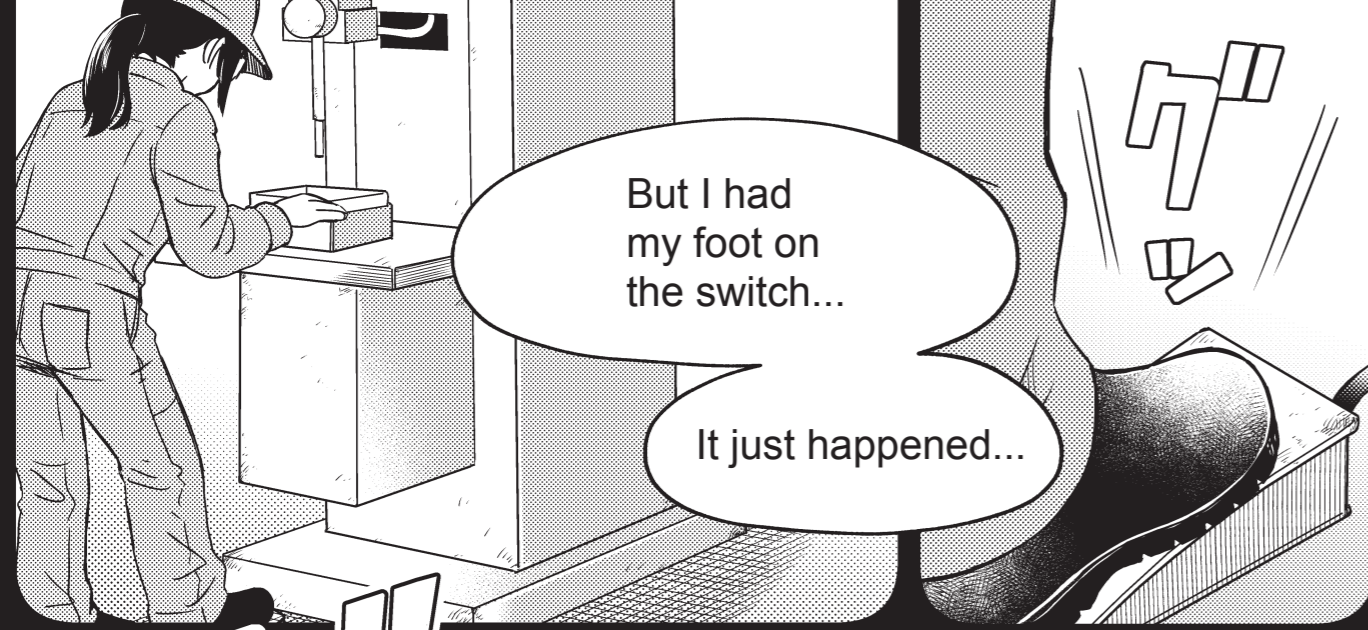
Case 8
Accident during trouble with machinery



A few minutes later







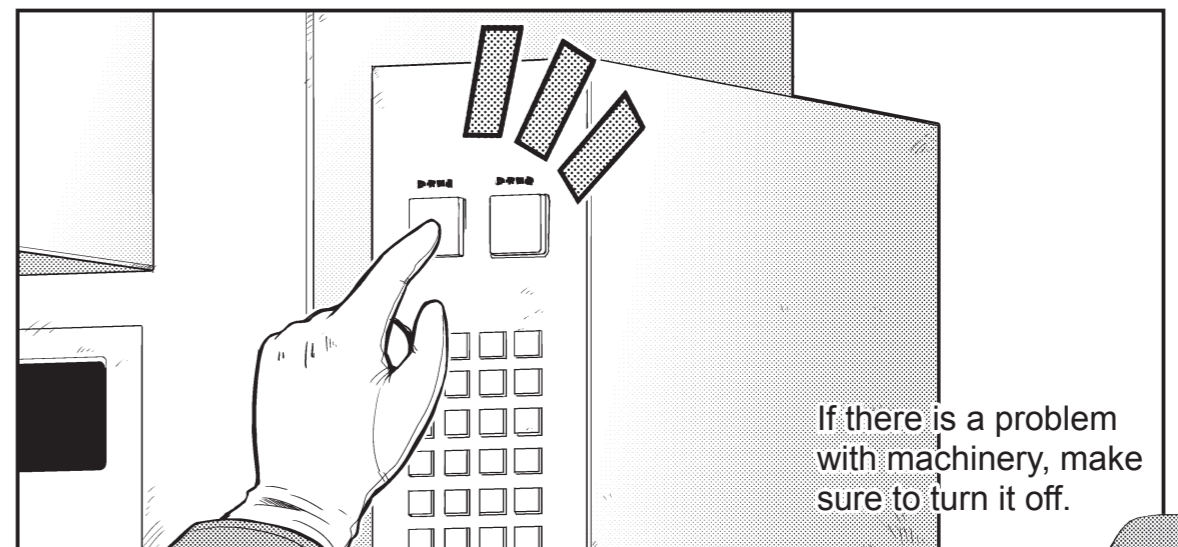
Precautions when an abnormality occurs with machinery

No. 1 | Do NOT deal with it alone. Report it right away!

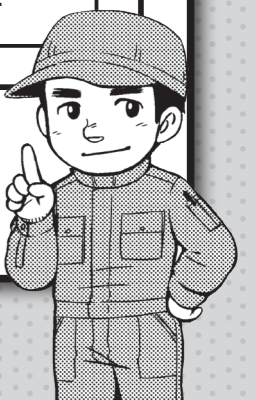
When something is wrong with machinery, you must not deal with it on your own. Report to the supervisor right away.

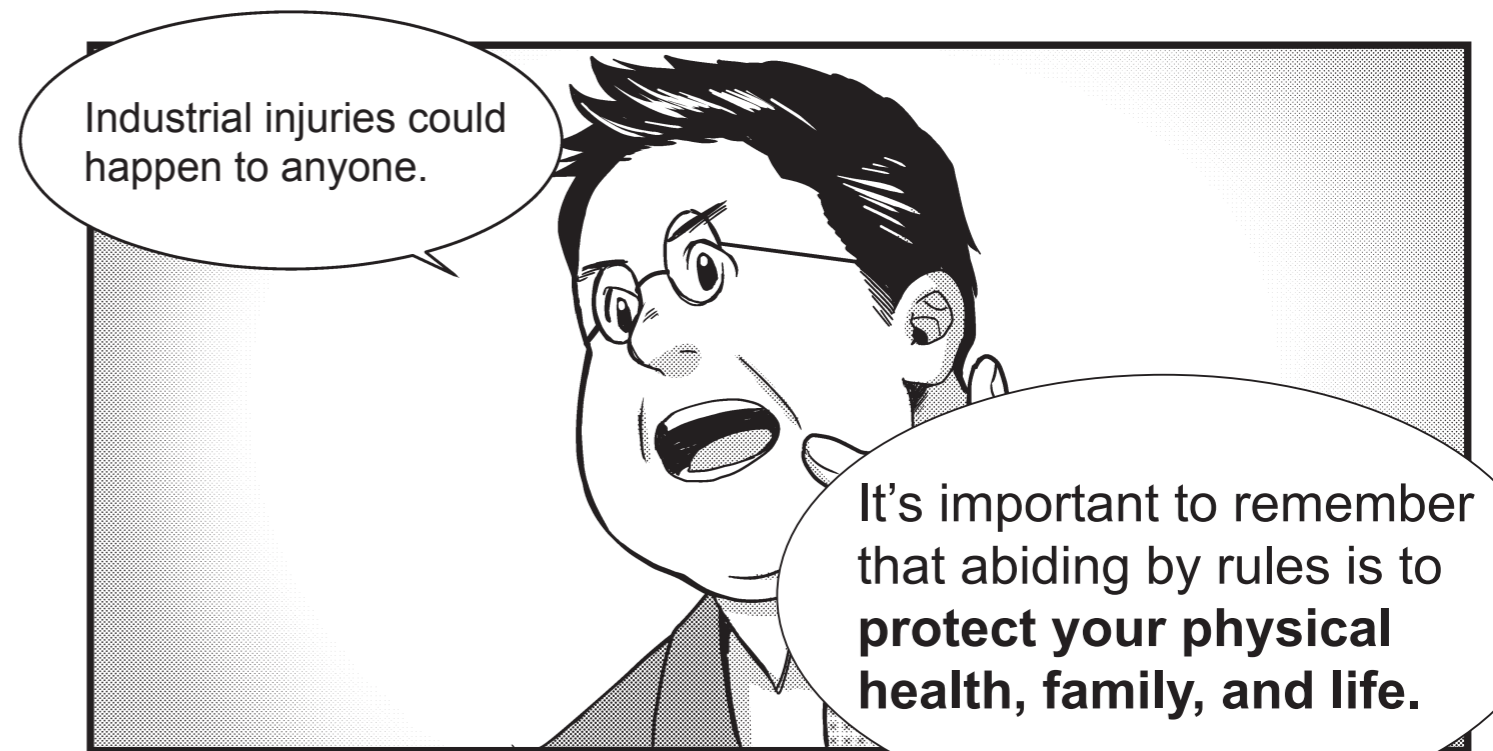
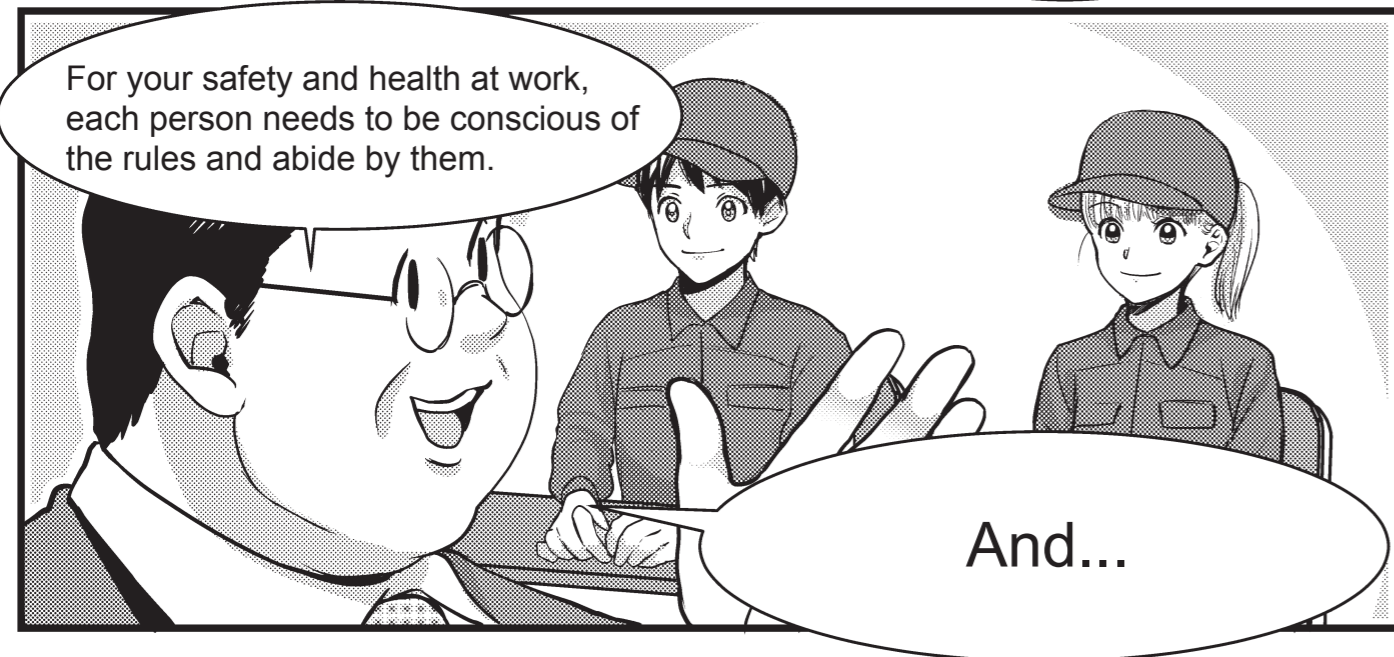
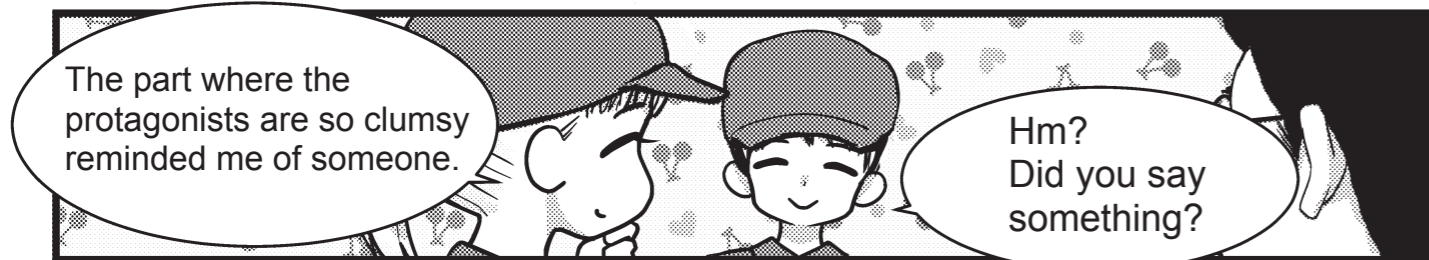


No. 2 | If an abnormality occurs with machinery, turn it off right away!



Be extra careful not to get burned or start a fire when welding!





Three Fields of Manufacturing

Things to watch out for!
Tips for safety and health!

Abide by the rules and protect yourself from industrial injuries!



1 | Avoid working with unkempt work clothes!



Rolling up your sleeves or wearing accessories during work is very dangerous, so make sure to wear your work clothes correctly.



Long hair could get caught in machinery, so make sure to tie it up and put it under your cap.

2 | Wear your protective gear properly!



Make sure to wear your protective gear according to the rules and without negligence.



If your gear is broken, deformed, or too dirty to use safely, replace it with a new one.

3 | Comply with operational procedures!



Your tasks must be carried out by the defined procedures. You must not change a procedure or omit a step.

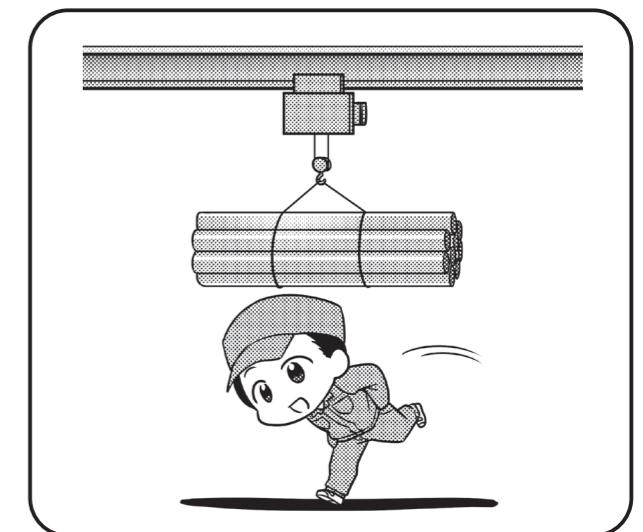


The workplace and areas around it need to be 4S, sorted, set in order, shiny, and standardized (please refer to the common teaching materials).

4 | Avoid careless actions!



Do NOT use your mobile phone while walking as it is very dangerous.



Do NOT get too close to the payload of a crane.



Learn through Manga

The Safety and Health of the Three Fields of Manufacturing

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