

What You Should Know When Working in Automobile Maintenance Industry in Japan - Truck and Bus Maintenance Edition -



Preface

This material supplements the handbook “What You Should Know When Working in Automobile Maintenance Industry in Japan” and explains various points to pay attention to during maintenance work especially on trucks and buses (heavy-duty vehicles).

There are many "dangerous" tasks in automotive maintenance that might lead to serious accidents. Not only you get hurt by yourself, but you might also injure the others.

In order to prevent such accidents, let's learn about safety tips in truck and bus maintenance work with this handbook.



Preface

Accidents in automotive maintenance are often caused when

“Pinched or Caught in”

“Colliding or falling down”.

There are many hidden dangers during the work.

We must always keep in mind "safety is the most important" and never think that "I'll be fine”.

Safety is always the MOST important thing.



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1 Safety Precaution



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3 Vehicle Guidance



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5 Calling out during Work

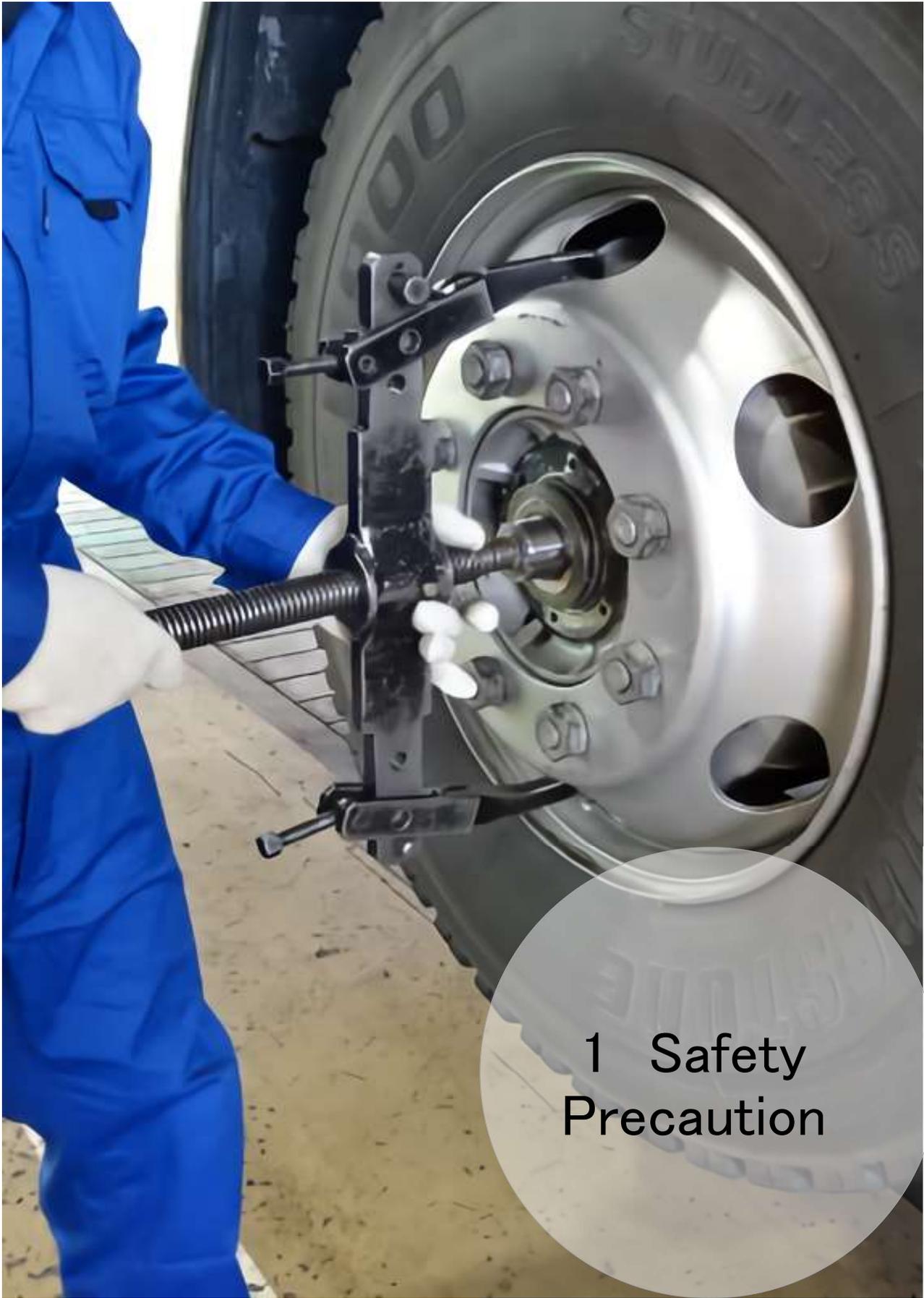


6 Unsafe Work



7 Summary





1 Safety Precaution

【What is Safe Working?】

If automobile maintenance work is done incorrectly or unsafely, **accidents** may occur, and you or other people may be **injured**.

Moreover, the customer's vehicle will be damaged, and you will not be able to finish your work by the appointed time.

Always keep any kind of **“dangers”** in your mind and **“check”** every task and procedure during maintenance work.

1 Safety Precaution



Always keep 「might happen」 in your mind

People (gets)

- Sandwiched
- Electric Shock
- Pinched
- Slipped back
- Hit
- Fall down
- Fall
- Burned

+ 「might happen」

Objects

- Move
- Burn
- Spin
- Fall down
- Fly
- Collapse
- Fall
- Explode
- Fall out
- Leak out

+ 「might happen」

Always think that the WORST thing might happen



2 Personal
Appearance

2 Personal Appearance

“Personal Appearance” means to clean up your clothing and appearance so that everyone can work comfortably and your customers will not feel bad.

In particular, “coveralls” are uniforms for automobile mechanics, and they protect your body from danger during maintenance work.

By wearing them properly, you can work safely, prevent accidents, and improve the impression of your company.

Let’s wear the coveralls properly by following the next points.

2 Personal Appearance

How to wear “Coveralls” properly

Points to be checked

Choose the size that fits you

Wear your hat forward

Close the zipper

Button up the sleeves

It is not dirty

No holes or frayed spots

Wear safety shoes

※ Safety shoes : Shoes with toe

protection and non-slip function



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2 Personal Appearance

Incorrect way of wearing “Coveralls”

	(Example)	(Reason)
	Wearing your hat backwards	You will get dirt in your eyes
	Taking off the upper part	Cannot protect you from injury
	Putting your hand in pocket	Cannot protect when something falls and get hurt
	Not wearing safety shoes	Cannot protect your feet



3 Vehicle Guidance

3 Vehicle Guidance

Accidents are more likely to happen when a vehicle is moving backwards.

Drivers can hardly see behind them.

Therefore, another person must guide the vehicle and assist the driver when he is moving backwards.

Follow the next points when you guide a vehicle.

3 Vehicle Guidance

【Points to check】

- ① Check whether there are no **obstacles** around the vehicle before moving it.
- ② Pay attention to other vehicles, obstacles, and people around it , and also check your **own safety**.
- ③ The person who guides the driver should secure **enough space** from the vehicle and stand **where the driver can see** him/her.

View from the Driver's mirror



View from the driver's seat



3 Vehicle Guidance

【Points to check】

④ Call for "All Right" or "Stop" **in a loud voice** and with your hand **signal** so that the driver can hear you.



<https://youtu.be/CGRTI04elnw>



<https://youtu.be/jILRPS03aqE>



4 Preparation for Work

4 Preparation for Work

Maintenance work without proper "preparation" leads to accidents and injuries.

Let's learn some of the tips on how to prepare before starting the maintenance work.

4 Preparation for Work

【Parking the vehicle】

- ① Park the vehicle in a flat area.
- ② Put the vehicle's gear shift **in N or P position**.
- ③ Apply the **parking brake** of the vehicle.
- ④ Put the **“Wheel stopper”** in the front and rear of the right side front tire of the vehicle.
- ⑤ Hung a hook on the doorknobs.

If you forget to apply the parking brake properly, the vehicle will move.

Caution



Accidents occurred because the vehicles moved, and you got hit or ran over during work. When you park the vehicle, make sure to put a wheel stopper.

4 Preparation for Work

Caution  When moving the vehicle, remove the wheel stopper. If you move the vehicle without removing it, it is dangerous because you will lose control of the vehicle.



<https://youtu.be/3yOT4kYR-Mo>

4 Preparation for Work

Caution



If you don't clear the things inside the cabin before you start working, they may fall and damage the glass of the vehicle or themselves.

Caution



When the cabin is moving or pausing in an uncompleted position, do not get under the cabin as you may get stuck or be hit by the cabin.

Inside the cabin

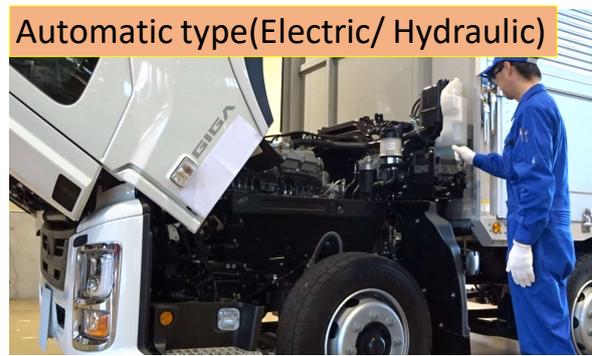
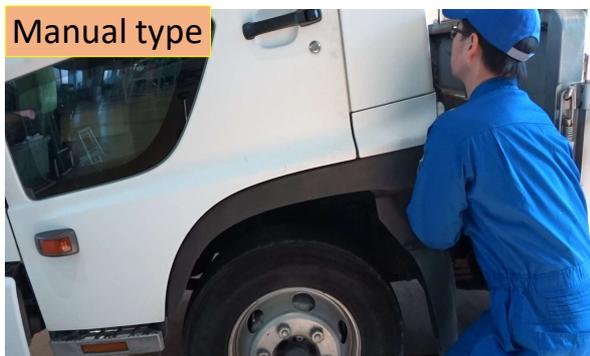


<https://youtu.be/tOkQFYWnmcw>

4 Preparation for Work

【 Tilting the cab (Manual type / Automatic type) 】

The truck's engine is located under the cabin, so the cabin must be tilted.



- ① **Make plenty of space** between the front of the vehicle and the ceiling.
- ② Clear the **things inside the cabin** or **fix them** to prevent from tipping over or falling. Otherwise, **put them outside the cabin**.
- ③ Make sure to **unload any items** from the roof rack.
- ④ Make sure to **close both** left and right **doors**.
- ⑤ Look around you, then make a call by saying **“I 'm tilt up the cabin”** .

4 Preparation for Work

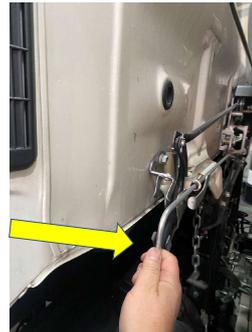
【Tilt the cabin manually】

If you can't tilt the cabin by yourself, ask for assistance.



Lock pin

Lock lever



① Look around you, then make a call by saying

"I 'm tilt up the cabin !"

② Remove the lock pin and pull the lever to unlock.

③ Tilt the cabin while holding the cabin lock lever.

⑥ Confirm the position of lock lever by your hand, then

make a call saying **"Lock is OK !"**.

Lock is OK !



4 Preparation for Work

Caution



Even if the cabin is tilted and its locked, there is a possibility that the lock is disengaged by hitting “tilt stay”.

Make sure to lock it with a lock pin or cabin stay lock.



<https://youtu.be/OYDY1hf3LyU>

4 Preparation for Work

【Lift up the vehicle】

※ Lift up the vehicle means raising a vehicle horizontally by a lift.



① Select **the right attachment for the vehicle.**

② Make sure set the attachment to the lift.

*Always hold the handle of attachment to prevent injury your hand.

③ Place the attachment firmly against the frame.

⑤ Confirm the safety of surrounding area of the vehicle.

⑥ Before lifting, **make a call by saying "I'll lift," and**

confirm that the other workers reply to you as

"Yes/OK" . This communication is extremely important.

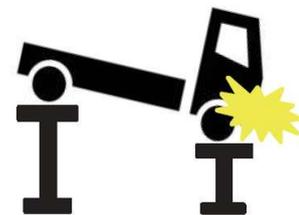
4 Preparation for Work



Caution Attachment must be set firmly on the lift.



Otherwise the vehicle may fall.



Caution Do not get under the vehicle when operating



the lift.

If the vehicle starts to fall, get out immediately.

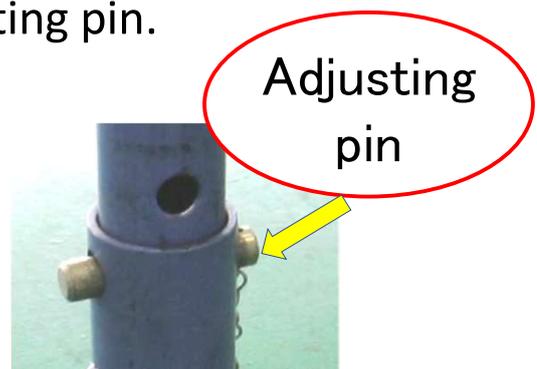
4 Preparation for Work

【Jack up a vehicle】

※Jack up means raise/down the front or rear of the vehicle with a jack.



- ① Select the appropriate jack for the vehicle.
- ② Set the jack at the jack-up point of the vehicle.
- ③ When using a rigid rack, set it at the jack-up point and adjust the height with the adjusting pin.



- ④ Jack up the vehicle after confirming the safety of the surrounding area.

4 Preparation for Work

【 Engine Operation 】

① Remove/Pull off the key.

To prevent to start the engine during the maintenance



https://youtu.be/grYZrL4u_g4

② In case of a large bus, Turn on the "Safety switch" before maintenance work (In case rear engine type)



【 Safety switch 】

• A switch that prevent to starting the engine while maintenance work. It is installed in the engine room of buses.

Caution



If the engine is mistakenly started during maintenance work, it will lead to accident or injury.



<https://youtu.be/sMluP59jYik>



5 Calling Out
during Work

5 Calling Out during Work

Normally, two or three people do the maintenance work together for trucks and buses. The workers **call out** to each other, and make sure that there is no danger in starting the engine or operating the lift, etc. Check whether you can start the work or not, and start only after hearing a reply saying **"OK," "No," "Not yet,"** from other workers.

Also, by calling out loud when you work, you can alert those around you and **prevent accidents.**

Let's learn about the cases in which you should "call out" to the others and how you should do it.

5 Calling Out during Work

【Calling out for tilting the cabin -Manual type-】

① Confirm the safety of your surroundings and call out by saying "I 'm tilt up the cabin !" in a loud voice.

② Check the operation of the tilt stay lock by hand.

Then call out by saying "Locked OK !".



<https://youtu.be/OYDY1hf3LyU>

5 Calling Out during Work

【Calling out for tilting the cabin –Automatic type-】

- Confirm the safety of your surroundings and call out by saying “I’m tilt up the cabin !” in a loud voice. Make sure you hear “Yes !” from other workers, then tilt the cabin.



<https://youtu.be/39MX3FFvjRM>

5 Calling Out during Work

【Calling out to unload the cabin】

- Confirm the safety of your surroundings and call out by saying "I'm unloading the cabin !" in a loud voice.

Make sure you hear the reply "Yes" from other workers, then unload the cabin.



https://youtu.be/AWRyIr_WstY

5 Calling Out during Work

【Calling out when lifting the vehicle】

▪ Confirm the safety of your surroundings and call out by saying “I’m lifting !” in a loud voice. Make sure you hear the reply “Yes !” from other workers, then lift the vehicle.



<https://youtu.be/1lWa9vvaTtM>

5 Calling Out during Work

【Calling out to unload the vehicle from the lift】

- Confirm the safety of your surroundings and call out by saying "I'm unloading the lift !" in a loud voice. Make sure you hear the reply "Yes !" from the other workers, then unload the lift.



<https://youtu.be/qdLr13gOjew>

5 Calling Out during Work

【Calling out when lifting the dump truck】

- Confirm the safety of your surroundings and call out by saying “I’m lifting the cargo bed !”. Make sure you hear the reply “Yes !” from the other workers, then lift the cargo bed.
- After lifting the cargo bed up, make sure to set the safety bar.

The safety bar hold the cargo bed in case that damper breaks.

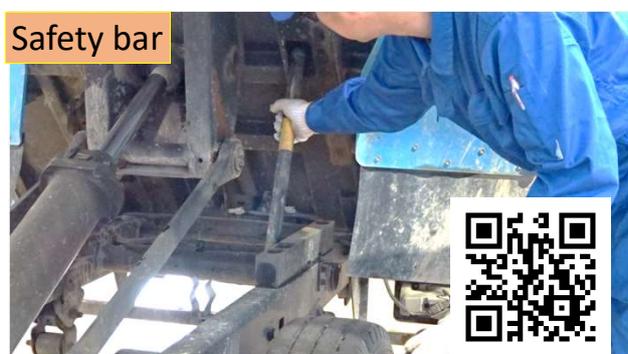
Caution



When the cargo bed has been lifted, set the safety bar and confirm that it is in a proper place.



<https://youtu.be/NWCQPOZAUcw>



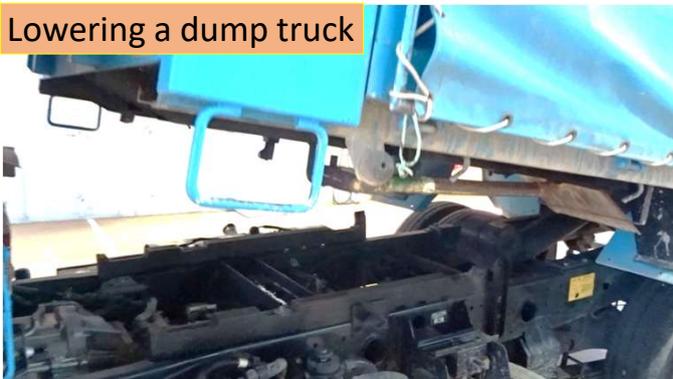
<https://youtu.be/c1Jvs5P-YLE>

5 Calling Out during Work

【Calling out when lowering the dump truck】

- Confirm the safety of your surroundings and call out by saying “Lowering down the Cargo bed !” in a loud voice. Make sure to hear the reply “Yes !” from the other workers, then lower the dump truck.

Lowering a dump truck



<https://youtu.be/5YJ-xWKFdxI>

Make sure the dump truck will not move

Caution



down before removing the safety bar. If you feel any danger, get away immediately.

5 Calling Out during Work

【Calling out when lifting the wing】

- Confirm the safety of your surroundings and call out by saying "I'm lifting the wing !" in a loud voice. Make sure to hear the reply "Yes !" from the other workers, then lift the wing.

【Calling out when lowering the wing】

- Confirm the safety of your surroundings and call out by saying "I'm lowering the wing !" in a loud voice. Make sure to hear the reply "Yes !" from the other workers, then lower the wing.

5 Calling Out during Work

Wing trucks are vehicles which left and right cargo

Caution beds open up. Since they are opened and closed by  a switch controller, make sure to check that whether there is no obstacles not only in around the vehicle, but also on the ceiling.

Lifting the wing



<https://youtu.be/kr9jszWnqCg>

Closing the wing



<https://youtu.be/Jwo3L6uHKMM>

5 Calling Out during Work

【Calling out when starting the engine】

- Confirm the safety of your surroundings and call out by saying "I'm starting the engine !" in a loud voice. Make sure to hear the reply "Yes !" from the other workers, then start the engine.



<https://youtu.be/nfgma9fKVRg>



6 Unsafe Work

6 Unsafe Work

This section describes unsafe practices and actions. Since there are many dangers in automobile maintenance work, the following examples will help you avoid unsafe practices.

6 Unsafe Work

【"AORI" on truck bed】

✘AORI is the doors when you close the cargo bed.

- **Get injured by clipping your hand when closing the "AORI".**



<https://youtu.be/IRQSjcj3EmA>

【Truck mirrors】

- When walking in front of the truck, you may hit your head on the mirror.



<https://youtu.be/j68ROd-atmo>

6 Unsafe Work

【Truck driver's seat】

- If you **jump out** from the driver's seat, you may fall and injure yourself.



https://youtu.be/tOUv_wOwTxA

- If you **rush to get on** the vehicle in a hurry, your foot will slip and you will get hurt.



<https://youtu.be/Vb8a-ygiMU>

6 Unsafe Work

【Heavy items】

- If you do not lift the heavy items in a right way, you may hurt your back. Do not carry heavy items alone.

Lift up a heavy item

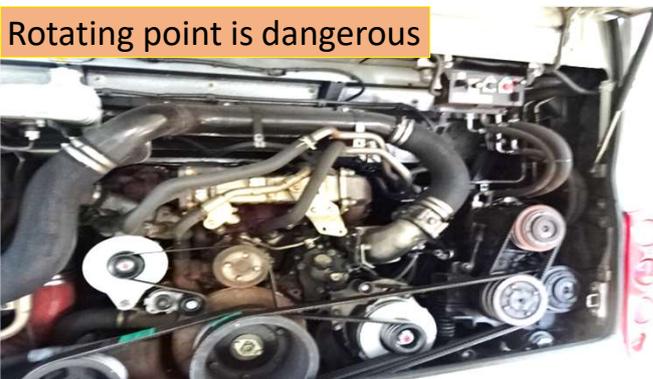


https://youtu.be/-eDjl_XXOt4

【When the engine is running】

- Hands might get caught in the rotating parts of the engine, such as the belt.

Rotating point is dangerous



<https://youtu.be/3jXcVaHqQp8>

6 Unsafe Work

【Ten things you must keep in your mind】

1. Do not touch any object that is moving or rotating.
2. Use gloves when using rotating tools such as drills and buffing grinders.
3. Do not remove installed covers, fences, or any safety devices by your own.
4. Do not stand on lifts, pits, or pallets.
5. Do not touch any objects that may cause injury, such as sharp objects, metal powder, or battery acid.

6 Unsafe Work

【Ten things you must keep in your mind】

6. When you are not confident to do something, ask a senior staff member an instruction. Do not do by yourself.

7. Do not rush, do not put your hands in your pockets when going up or down the stairs.

8. Do not put cigarettes on. Keep any other fire away from the vehicle.

9. Do not get under the cranes or other objects that are hanged from the vehicle.

10. Do not jump out at the entrances or around the corners.





7 Summary

7 Summary

Safety is the basic of automobile maintenance work. To make a "safe" working place, it is important to make sure that your uniform and working area is neat and tidy.

Let's work on automobile maintenance with "safety first".

