

Cleaning the tip nozzle for the precision head

Reference

RE0004

Contents

1. Outline	1
2. Cleaning the tip nozzles by air blow	1
3. Cleaning the tip nozzles by ultrasonic cleaner (YAMAHA Recommendation)	3

Record of changes

It is the description of changes of this manual in the table.

File No.	Description of changes	Date
RE0004	First Edition	July.2006
RE0004-01	Clerical error correction	August.2006

1. Outline

If solder adheres to a nozzle tip, the nozzle may be mistaken for a component or other problems may occur. If nozzle spring-action is poor or the nozzle tip is nicked, pickup errors tend to occur frequently. To prevent these troubles, check the nozzle condition and keep the nozzles clean weekly or biweekly.

2. Cleaning the tip nozzles by air blow

Required tools

- Air gun assy (KU4-M8590-000) / Option
- Custom handle (KV8-M8881-A0X) / Option
- Nozzle cleaning wire ((KV8-M8883-A0X) / Option
- Double-sided tape (KGT-M8895-00X) / Option
- Lubrication syringe - Turbine oil, VG32 (KV8-M8870-00X) / Option
- Alcohol (IPA or ethanol)
- Rag

Step 1 Remove the nozzle from the head and clean the chip nozzles with alcohol.

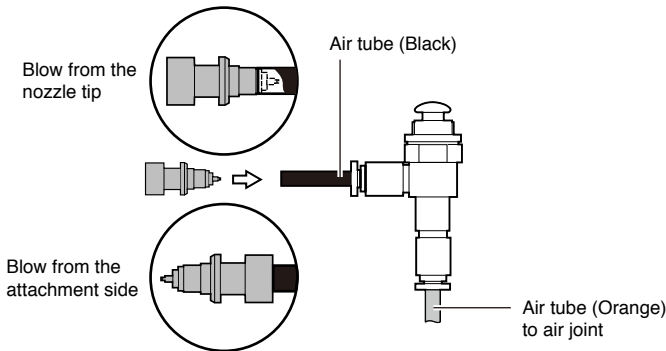


1. Press (Emergency stop) button for safe maintenance work.
2. Remove the nozzle from the head.
3. Immerse the nozzles in alcohol. Leave them immersed in alcohol for about 3 to 5 minutes.

Step 2 Blow the air into the nozzles to clean the nozzle inside.

1. Use the air gun to blow the air inside the nozzle from attachment side.
2. Then blow the air inside the nozzle from the nozzle tip side.

Air blowing inside the nozzle

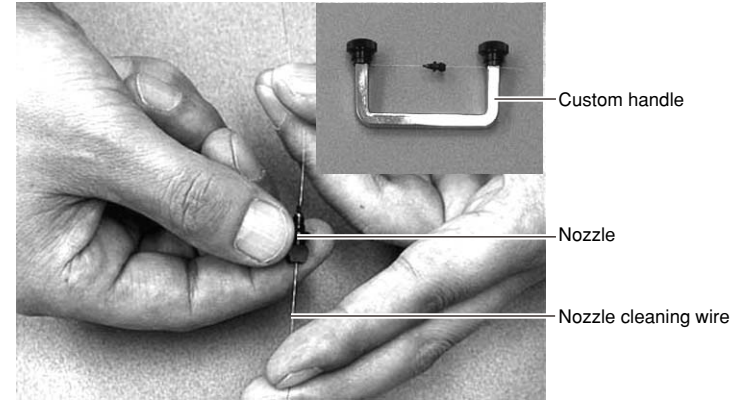


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Step 3 Clean the nozzle hole.

1. Pass the nozzle cleaning wire through the nozzle hole. While holding both ends of the wire with fingers as shown or using a custom handle, gently move the nozzle back and forth to remove the adherence inside of it.
2. After removing the cleaning wire, blow air onto the nozzle tip with the air gun again.

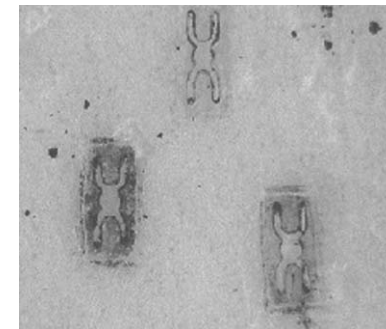
Clean the nozzle hole



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Step 4 Use the recommended strong double-sided tape to clean grime adherence on to the nozzle tip surface.

Adherence on the nozzle tip surface

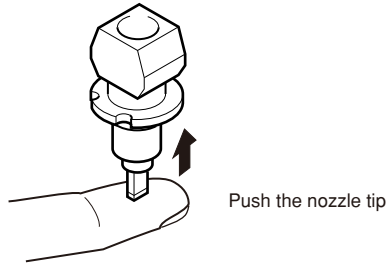


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Step 5 Immerse the nozzles in alcohol again.

1. To remove the adhesive strength of the double-sided tape on the nozzle tip surface, immerse the nozzle in 3 to 5 minutes.
2. Push the nozzle tip to clean the spring-action section.

Cleaning the spring-action section



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Step 6 Remove the excess alcohol in the nozzle inside and its surface by air gun.

Step 7 Lubricate the spring-action section.

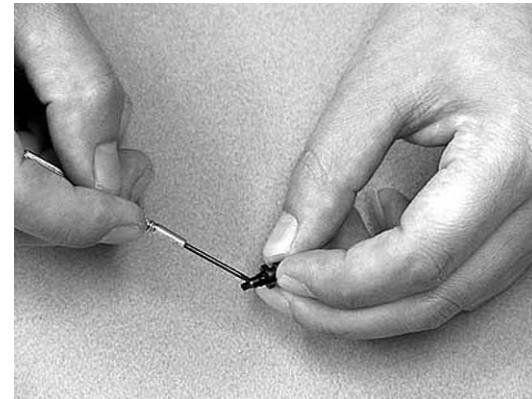
1. Drop a small amount of turbine oil to a flat-blade driver from a lubrication syringe, and apply the oil to the spring-action section.

Lubrication syringe



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Lubrication to the spring-action section



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2. Push the nozzle tip several times so the turbine oil spreads inside.
3. Clean around the nozzle with rag or lint-free cleaning cloth to wipe away excess oil.



CAUTION It will wear out the spring-action section if not applying the oil. Be sure to apply the turbine oil (VG32) to the nozzle after cleaning.

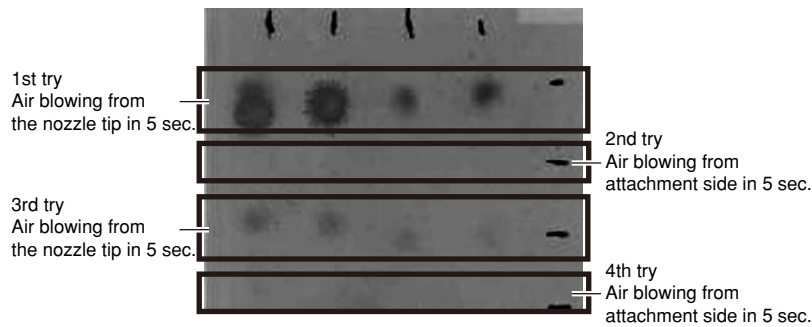
Step 8 Remove the excess turbine oil inside the nozzles.

Use the air gun to blow the air inside the nozzle from nozzle tip and then from the attachment side in 5 seconds each. Repeat the air blowing 2 or 3 times till the excess oil removed inside the nozzles. (It is enough to have a thin coat of oil at the spring-action section)

NOTE

If not to remove the excess oil enough, the oil may drop to the board in the operation. It helps to check the excess oil inside the nozzle using an oil control film. Please refer the result in 4th try in the following picture.

Removing the turbine oil



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Step 9 Check the nozzle condition after cleaning.

Check any clogging, nicks and foreign matter adhering on the cleaned nozzle tip. And also check the nozzle spring-action.

1. If the solder adheres to a nozzle tip is not removable, try to clean it again.
2. If the nozzle is nicked or immovable adhering on the nozzle tip, replace the nozzle with a new one.
3. If the spring-action is still poor even after cleaning, replace the nozzle with a new one.

3. Cleaning the tip nozzles by ultrasonic cleaner (YAMAHA Recommendation)

Required tools

- Double-sided tape (KGT-M8895-00X) / Option
- Ultrasonic cleaner (KV7-M8890-00X) / Option
- Air gun assy (KU4-M8590-000) / Option
- Lubrication syringe - Turbine oil, VG32 (KV8-M8870-00X) / Option
- Water
- Alcohol (IPA or ethanol)
- Urethane tube (Ø4, Ø6, Ø8)
- Rag

Step 1 Remove the nozzle from the head and clean grim adherence on the nozzle tip surface with the double-sided tape.



1. Press (Emergency stop) button for safe maintenance work.
2. Use the recommended strong double-sided tape to remove the grim adherence on the nozzle tip surface.

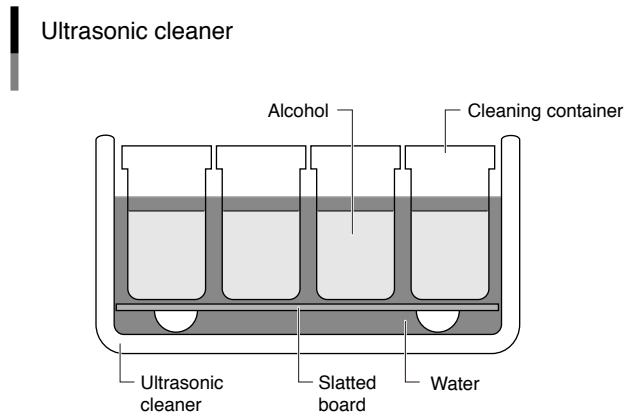
Adherence on the nozzle tip surface



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Step 2 Prepare the ultrasonic cleaner.

1. Pour the water into the ultrasonic cleaner bath.
2. Pour the alcohol into the cleaning container.

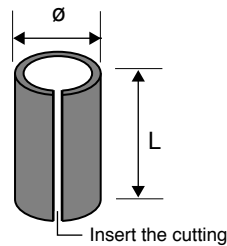


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Step 3 To protect the nozzle tip, attach a urethane tube to the nozzles.

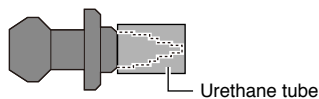
Cut the urethane tube to the same length with the nozzle tip to cover the nozzle tip when attached, and cap the urethane tube on the nozzle.

Urethane tube



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Protecting the nozzle tip



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Model type	Urethane tube	
YV88Xg, YV88X, YG88	FNC	φ 8
	ANC	φ 6
YV100-2, YVL88-2, YV64	ANC	φ 6
YV100X, YV100XT, YV180X, YV100Xg, YV100XTg, YV180Xg, YG100, YG200, YG200L	FNC	φ 4
	ANC	φ 6



CAUTION

Please use the proper length of urethane tube. It would be difficult to fall off the adherence if the tube length is too long.

Step 4 Perform ultrasonic cleaning.

1. Put the nozzles into the cleaning container, and cap it.
2. Start ultrasonic cleaning. Cleaning time should be 5 to 10 minutes.

Step 5 Remove the excess alcohol in the nozzle inside and its surface.

1. After cleaning with the ultrasonic cleaner, remove the urethane tube from the nozzles.
2. Use the air gun to blow the air inside and surface of the nozzle.

Step 6 Lubricate the spring-action section.

1. Drop a small amount of turbine oil to a flat-blade driver from a lubrication syringe, and apply the oil to the spring-action section.

Lubrication syringe



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Lubrication to the spring-action section



R3010-E0-00_0004

2. Push the nozzle tip several times so the turbine oil spreads inside.
3. Wipe clean around the nozzle with rag or lint-free cleaning cloth to wipe away excess oil.



CAUTION

It will wear out the spring-action section if not applying the oil. Be sure to apply the turbine oil (VG32) to the nozzle after cleaning.

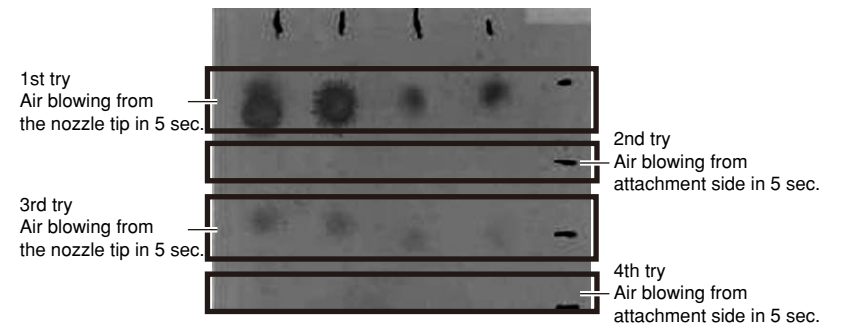
Step 7 Remove the excess turbine oil inside the nozzles.

Use the air gun to blow the air inside the nozzle from attachment side and from the nozzle tip side in 5 seconds each. Repeat the air blowing 2 or 3 times till the excess oil removed inside the nozzles. (It is enough to have a thin coat of oil at the spring section)

NOTE

If not to remove the excess oil enough, the oil may drop to the board in the operation. It helps to check the excess oil inside the nozzle using an oil control film. Please refer the result in 4th try in the following picture.

Removing the turbine oil



R3005-E0-00_0004



CAUTION

It may cause the exfoliation of nozzle surface treating by cleaning with the ultrasonic cleaner for many hours. So, please follow the instruction for the long time use of the nozzles.

Step 8 Check the nozzle condition after cleaning.

Check any clogging, nicks and foreign matter adhering on the cleaned nozzle tip. And also check the nozzle spring-action.

1. If the solder adheres to a nozzle tip is not removable, try to clean it again.
2. If the nozzle is nicked or immovable adhering on the nozzle tip, replace the nozzle with a new one.
3. If the spring-action is still poor even after cleaning, replace the nozzle with a new one.