

MAXJET® 5i Nozzle

Installation and Maintenance



OMAX Corporation
21409 72nd Avenue South
Kent, WA USA 98032

Information:	253-872-2300
Technical Support:	1-800-838-0343
E-Mail:	techsupport@omax.com
Web:	http://www.omax.com

This document contains subject matter to which OMAX® Corporation has proprietary rights. Recipients of this document shall not duplicate, use, or disclose information contained herein, in whole or in part, for any use other than the purpose for which this document was provided.

OMAX Corporation believes the information described in this document is accurate and reliable. From time to time, design improvements will be made to the OMAX equipment. Photographs, text, and sketches within the body of this document may not exactly represent your equipment. In general, this document contains the most up-to-date information available. However, OMAX Corporation cannot accept any responsibility, financial or otherwise, for any consequences arising out of the use of material in this document. The information contained herein is subject to change, and revisions may be issued to advise of such changes or additions. OMAX strives to continually improve user documentation. If you have any questions or concerns about the content of this document, please email us at tech_writing@omax.com, or contact us by mail at:

OMAX Corporation
Technical Publications
21409 72nd Avenue South
Kent, WA, USA 98032

OMAX Corporation is continually improving their equipment to bring you the best in abrasive waterjet machining technology. For that reason, your abrasive waterjet may differ slightly from what is described in this document. If you have any questions, please feel free to contact us at 1-800-838-0343 or email us at techsupport@omax.com. You can also receive technical support online at <http://www.omax.com> (user name and password required for technical support access).

Original Instructions in English
October 2020

© 2020 OMAX Corporation. All rights reserved.

Contents

SAFETY	4
Equipment Labels	4
Safety Legend	5
REQUIRED TOOLS	6
Customer Tools	6
OMAX Tools	7
REFERENCES	7
Documents	7
Videos	8
DOCUMENT SCOPE	8
OVERVIEW	8
Nozzle Assembly	9
Filter Assembly	9
Mixing Tube	10
INSTALL THE NOZZLE	10
Install the Nozzle Body on an A-Jet	10
Install the Nozzle Body on a Motorized Z-Axis	12
Install the Nozzle Body on a Tilt-A-Jet	14
Install the Mixing Tube	16
REMOVE THE NOZZLE	18
Remove the Mixing Tube	18
Remove the Nozzle Body from an A-Jet	19
Remove the Nozzle Body from a Motorized Z-Axis	20
Remove the Nozzle Body from a Tilt-A-Jet	21
MAINTENANCE	22
Maintenance Schedule	23
Prepare For Maintenance	23
Rotate the Mixing Tube	24
Clean or Replace the Final Filter	25
Replace the Final Filter Assembly	26
Clean the Metal Screen Filter Assembly	27
Clean and Examine the Nozzle Assembly	29
Examine the Abrasive Feed Tube	30
CUSTOMER SUPPORT	31

SAFETY

This section contains important safety information for the equipment. Careful observance of the safety information will help prevent physical injury, damage to the equipment, and extend the equipment life.

Equipment Labels

The following safety labels may appear on the equipment. If ignored, physical injury, death, or equipment damage may occur. Read the safety information in the equipment operation guides before installing, operating, or maintaining the equipment.



WARNING Electrical Shock Hazard

This symbol indicates the presence of life-threatening voltages. Never access areas labeled as such without first taking appropriate safety precautions: locking out power, verifying no voltage is present on circuits prior to maintenance activities, etc.



WARNING Flying Debris/Loud Noise

Eye and ear protection are required during operation. Removing the abrasive feed tube from the nozzle while under pressure will blow abrasive particles into the air, getting into eyes, and could contaminate tools and machines.



No Open Flame

Do not allow smoking near the machine. Do not operate the equipment in an explosive atmosphere. Make sure that no ignition source (such as open flame or electrostatic discharge) is nearby the equipment. Do not store flammable materials near the equipment. Do not use equipment in or around flammable gases or liquids. Do not allow explosive or flammable vapors to accumulate in the area of the equipment. Proper ventilation in the work area will assist in dissipating the accumulation of gas, vapor, and fumes. Be especially careful when cutting materials that create sparks, such as titanium—these can ignite gases in the tank.



Lock Out Power

Never do maintenance on the equipment with the main AC disconnect ON, unlocked, or with the pump in operation. Always follow standard lockout/tagout procedures.



Wear Eye Protection

Always wear approved safety glasses whenever cutting. Regular glasses do not provide sufficient eye protection! The garnet abrasive is not a chemical irritant, but if not quickly washed out, it can injure an eye just as any sand would. In addition, tank water could contain particles from the material or chemical irritants. Have an eyewash station located near the work area in the event abrasive spray splashes into the eyes.

Read the product labels and refer to product Safety Data Sheets (SDS) to identify properties and hazards of chemical products and materials referenced in this document. Handle in accordance with good industrial hygiene and safety practice. Use personal protective equipment as specified in the SDS.



Wear Gloves

Bacteria in the tank water can build up. A minor break in the skin can introduce harmful bacteria into a wound. Always wear protective gloves if there are cuts or open wounds on the hands. When setting up material for cutting, wear gloves that provide protection against sharp metal edges.

Read the product labels and refer to product Safety Data Sheets (SDS) to identify properties and hazards of chemical products and materials referenced in this document. Handle in accordance with good industrial hygiene and safety practice. Use personal protective equipment as specified in the SDS.



Read Manual

Read the equipment operator's guide for specific operator instructions and additional safety requirements. Do not attempt to operate this machine until all safety precautions and operating instructions are read and understood.



Electrostatic Discharge

Attention! Observe precautions for handling electrostatic sensitive devices.

Safety Legend

The following safety signal word panels and paragraph notifications may appear throughout this and other documentation. Each provides safety issue identification and recommended actions to avoid the hazard. Be alert! Follow the recommended safety actions and precautions to prevent injury or damage to the equipment.

⚠ WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Used to address practices not related to physical injury—property damage only.

NOTE

Used to provide supplementary information, emphasize a point or give a tip for easier operation.

REQUIRED TOOLS






These tools are required to perform the procedures described in this document.

NOTE

Additional tools needed to install and maintain the equipment are listed in referenced documents.




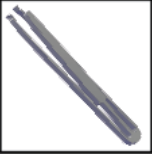

Customer Tools

These tools are not provided by OMAX or included with the equipment.

Icon	Tool	Size(s)
	Torque wrench	25 ft-lb (34 N·m) 8–15 ft-lb (11–20 N·m)
	Crowfoot	11/16 in., 1 in., 1-1/4 in.
	Wrench, open-end	1/2 in., 11/16 in., 1 in., 1-1/4 in.
	Clean water	
	Clean, dry, compressed air	

OMAX Tools

These tools are provided by OMAX and are included with the equipment.

Icon	Tool	Size(s)
	Blue Goop® P/N 100271	
	A-Jet link wrench P/N 313379	
	Nozzle filter seal tool P/N 304157	
	Final filter removal tool P/N 319947	
	Lubriplate® P/N 201304	

REFERENCES

Documents

These documents and diagrams are associated with these instructions and can be found in the [Dashboard](https://support.omax.com) at <https://support.omax.com>.

Part Number	Title
400565	Diagram, Exp Pict, MAXJET 5i Nozzle
400610	A-Jet Users Guide
400805	Diagram, Exploded Pictorial, MAXJET 5i Nozzle

Videos

Videos associated with these instructions are located at <https://elearning.omax.com>.

- [A-Jet Nozzle Removal and Installation](#)

OMAX

- [Preparing for Maintenance of your OMAX Equipment](#)
- [MAXJET 5i Nozzle Maintenance](#)

MAXIEM

- [Preparing for Maintenance of your MAXIEM Equipment](#)
- [MAXJET 5i Nozzle Maintenance](#)

DOCUMENT SCOPE

This document contains the following instructions for the MAXJET 5i nozzle assembly and inlet body filter assemblies on an A-Jet, Tilt-A-Jet, or Motorized Z-Axis installed on an OMAX or MAXIEM Abrasive Waterjet Systems.

OVERVIEW

The MAXJET 5i nozzle assembly has a 500-hour warranty (prorated for use) when installed, operated, and maintained using the correct procedures. The integrated nozzle assembly's diamond orifice and carbide disc are factory aligned and permanently installed inside the nozzle to produce an accurate jet stream while cutting. There are two styles of nozzle, nozzle with abrasive tubing **retention tube** [1] or nozzle with abrasive **inlet** [2] (Figure 1). The style used is dependent on nozzle availability and equipment. Both nozzles operate the same.

Replace the nozzle assembly after 500 or more hours of operation and the water jet stream quality degrades. Speak with [Customer Support](#) when the water jet stream quality degrades prematurely (less than 500 hours of operation).

NOTICE

Do not disassemble the MAXJET 5i nozzle body. The nozzle body components are factory assembled and aligned. Disassembling the nozzle body can damage the nozzle body and voids the warranty.

Handle the nozzle body with care to prevent damage to the abrasive tubing retention tube [1].



Figure 1

Nozzle Assembly

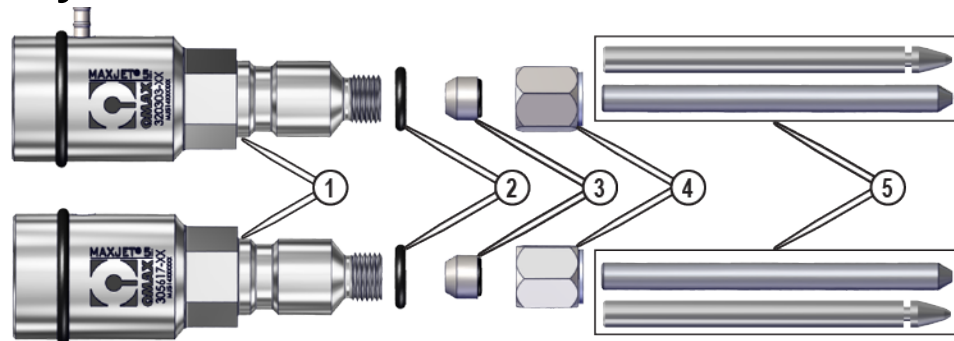


Figure 2

- [1] Nozzle body
- [2] O-ring
- [3] Mixing tube collet and O-ring
- [4] Mixing tube nut
- [5] Mixing tube

Filter Assembly

There are two types of filter assemblies available for the MAXJET 5i nozzle.

The metal filter screen filter assembly is used on the A-Jet and has a metal filter that can be used again.

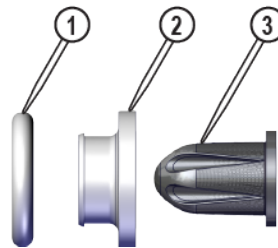


Figure 3

- [1] O-ring
- [2] Ring seal
- [3] Metal filter screen

The final filter assembly is used on the Tilt-A-Jet and Motorized Z-Axis and has a replaceable plastic filter assembly.

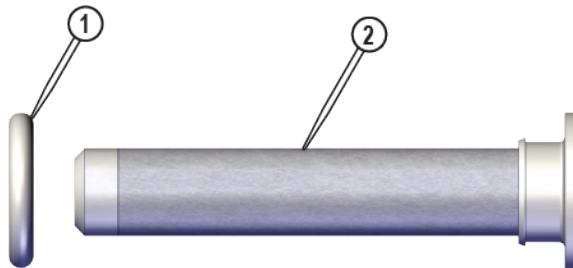


Figure 4

- [1] O-ring
- [2] Filter and seal assembly

Mixing Tube

Mixing tubes vary on equipment. The **fusible mixing tube** [2] is required on the A-Jet.



Figure 5

[1] Mixing tube [2] Fusible mixing tube

INSTALL THE NOZZLE

NOTICE

To avoid damage to high-pressure components (such as lines, tubing, nipples, gland nuts, safety valves, nozzle, inlet body) use two wrenches to counteract the torque when adjusting, attaching, or removing high-pressure components. Binding and twisting of the high-pressure components may cause leaks and water damage.

- To install on an A-Jet, go to [Install the Nozzle Body on an A-Jet](#).
- To install on a Motorized Z-Axis, go to [Install the Nozzle Body on a Motorized Z-Axis](#).
- To install on a Tilt-A-Jet, go to [Install the Nozzle Body on a Tilt-A-Jet](#).

Install the Nozzle Body on an A-Jet

⚠ WARNING

Do not install or remove the nozzle while the A-Jet motor on or active. Severe injury and damage to the A-Jet may occur. Make sure the primary power, water, and air sources are turned off. Follow the lockout and tagout procedures to notify others maintenance is in progress.

NOTICE

Remove the mixing tube BEFORE installing or removing the nozzle to prevent damage. Large upward forces from an installed mixing tube can misalign the internal nozzle components.

1. Remove the **mixing tube** if it is installed in the **nozzle body**. See [Remove the Mixing Tube](#).

NOTICE

Handle the nozzle carefully to prevent damage to the abrasive tubing retention tube.

2. Install the **O-rings** on the **nozzle body**.

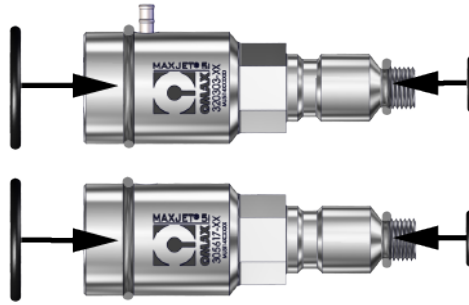


Figure 6

3. Apply a light coat of Blue Goop to the **top** [1] and **bottom** [2] threads of the **nozzle body**.

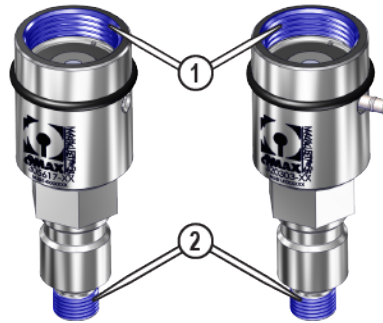


Figure 7

4. Install the **nozzle flap splash guard** on the **nozzle body**. Make sure the abrasive **inlet** or **retention tube** aligns with the slot in the **nozzle flap splash guard**.

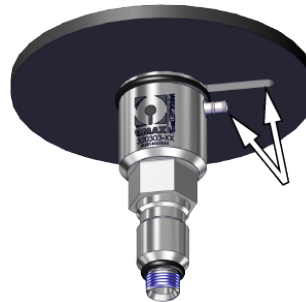


Figure 8

5. Carefully install the **nozzle body** onto the **inlet body**.

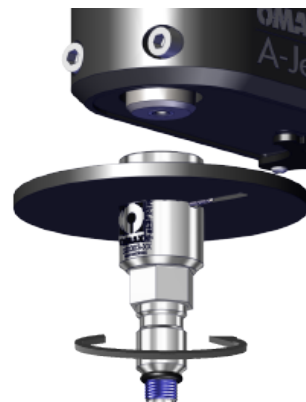


Figure 9

NOTICE

Do not over or under tighten the nozzle body. Tighten the nozzle body to the specified torque. Under tightening can cause leaks and equipment damage. Over tightening damages the sealing surface between the orifice assembly and the nozzle filter assembly. Do not tighten the nozzle body to more than 25 ft-lb (34 N·m).

6. Hold the **A-Jet** to counteract the torque, then tighten the **nozzle body**.



Figure 10

7. Install the **mixing tube**. See [Install the Mixing Tube](#).
8. Connect the **abrasive feed tube** to the **nozzle** and the **abrasive hopper**, if needed. Make sure the **abrasive tube** is inserted through the slot in the **nozzle flap splash guard**.

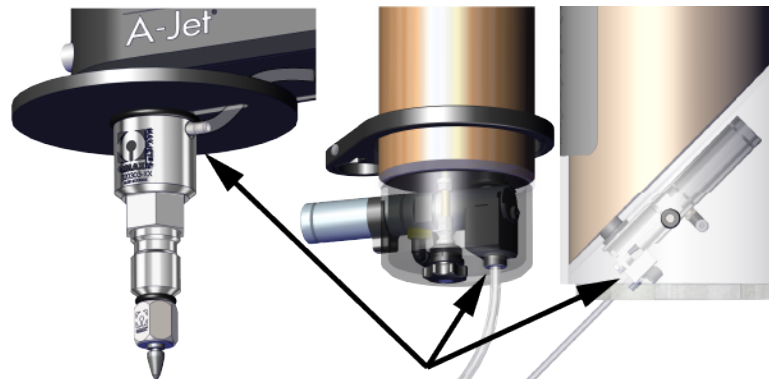


Figure 11

9. Recalibrate the **A-Jet**. See *400610 A-Jet Users Guide*.

Install the Nozzle Body on a Motorized Z-Axis

NOTICE

Remove the mixing tube **BEFORE** installing or removing the nozzle to prevent damage. Large upward forces from an installed mixing tube can misalign the internal nozzle components.

1. Remove the **mixing tube** if it is installed in the **nozzle body**. See [Remove the Mixing Tube](#).

NOTICE

Handle the nozzle carefully to prevent damage to the abrasive tubing retention tube.

2. Install the **O-rings** on the **nozzle body**.

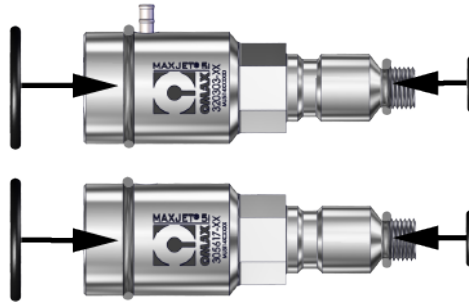


Figure 12

3. Apply a light coat of Blue Goop to the **top** [1] and **bottom** [2] threads of the **nozzle body**.

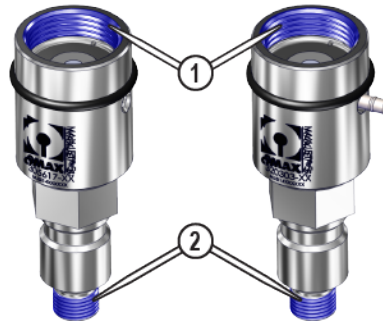


Figure 13

4. Carefully install the **nozzle body** onto the **inlet body**.

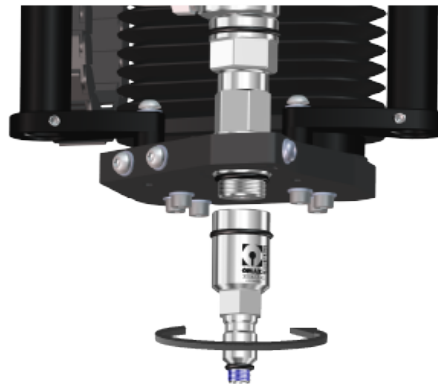


Figure 14

NOTICE

Do not over or under tighten the nozzle body. Tighten the nozzle body to the specified torque. Under tightening can cause leaks and equipment damage. Over tightening damages the sealing surface between the orifice assembly and the nozzle filter assembly. Do not tighten the nozzle body to more than 25 ft-lb (34 N·m).

5. Hold the **inlet body** to counteract the torque, then tighten the **nozzle body**.



Figure 15

6. Install the **mixing tube**. See [Install the Mixing Tube](#).
7. Connect the **abrasive feed tube** to the **nozzle** and the **abrasive hopper**, if needed.

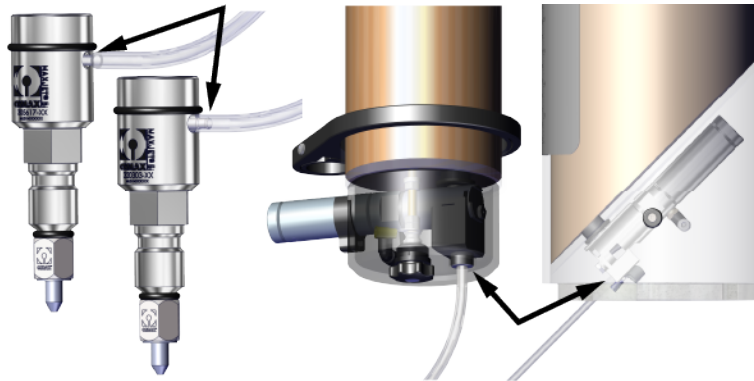


Figure 16

Install the Nozzle Body on a Tilt-A-Jet

NOTICE

Remove the mixing tube **BEFORE** installing or removing the nozzle to prevent damage. Large upward forces from an installed mixing tube can misalign the internal nozzle components.

1. Remove the **mixing tube** if it is installed in the **nozzle body**. See [Remove the Mixing Tube](#).

NOTICE

Handle the nozzle carefully to prevent damage to the abrasive tubing retention tube.

2. Install the **O-rings** on the **nozzle body**.

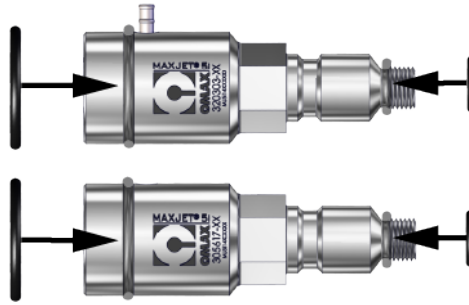


Figure 17

3. Apply a light coat of Blue Goop to the **top** [1] and **bottom** [2] threads of the **nozzle body**.

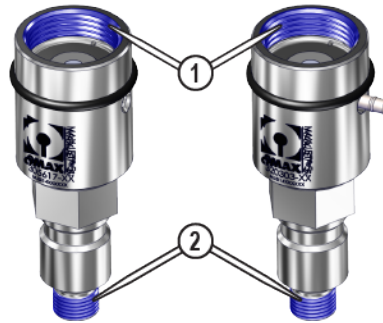


Figure 18

4. Put the **retainer ring** [1] on the nozzle body.



Figure 19

5. Carefully install the **nozzle body** onto the **inlet body**.



Figure 20

NOTICE

Do not over or under tighten the nozzle body. Tighten the nozzle body to the specified torque. Under tightening can cause leaks and equipment damage. Over tightening damages the sealing surface between the orifice assembly and the nozzle filter assembly. Do not tighten the nozzle body to more than 25 ft-lb (34 N·m).

6. Hold the top of the **inlet body** to counteract the torque, then tighten the **nozzle body**.

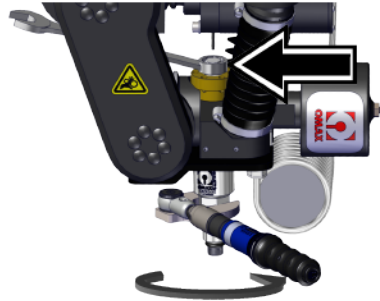
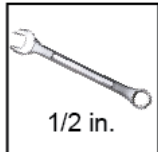


Figure 21

7. Install the **mixing tube**. See [Install the Mixing Tube](#).
8. Connect the **abrasive feed tube** to the **nozzle** and the **abrasive hopper**, if needed.

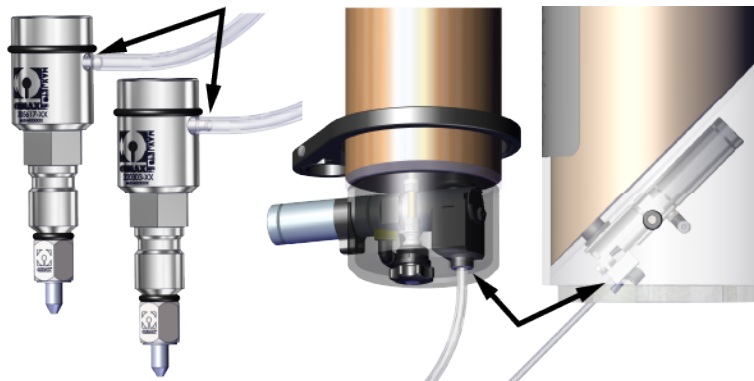


Figure 22

Install the Mixing Tube

Replace the mixing tube when the cutting performance degrades beyond adjustment of the tool offset. Cut a kerf check part, then measure and examine it for dimensional differences.

NOTICE

Remove the mixing tube **BEFORE** installing or removing the nozzle to prevent damage. Large upward forces from an installed mixing tube can misalign the internal nozzle components.

1. Put the **mixing tube** into the **nozzle body**, then push the **mixing tube** until it sits firmly against the **mixing chamber** [1].

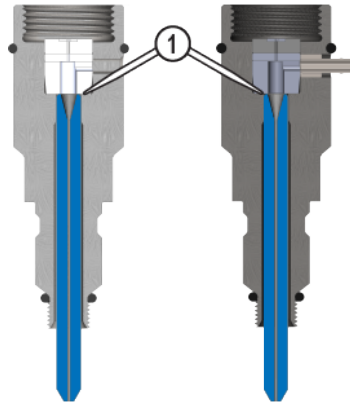


Figure 23

2. Hold the **mixing tube** in place, install the **collet** (tapered end toward the **nozzle body**), **O-ring**, and **mixing tube nut**.



Figure 24

3. Tighten the **mixing tube nut** by hand.



Figure 25

NOTICE

Do not over or under tighten the mixing tube nut. Over tightening the mixing tube nut can cause the mixing tube and the orifice to become misaligned and cause damage. Under tightening the mixing tube nut can cause the mixing tube to come out of the nozzle when high-pressure water is activated.

4. Hold the **nozzle body** to counteract the torque, then torque the **mixing tube nut** to secure the **mixing tube**.

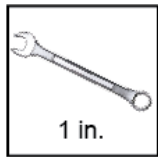


Figure 26

REMOVE THE NOZZLE

NOTICE

To avoid damage to high-pressure components (such as lines, tubing, nipples, gland nuts, safety valves, nozzle, inlet body) use two wrenches to counteract the torque when adjusting, attaching, or removing high-pressure components. Binding and twisting of the high-pressure components may cause leaks and water damage.

When removing the nozzle assembly, first [Remove the Mixing Tube](#), then remove the nozzle body.

- To remove on an A-Jet, go to [Remove the Nozzle Body from an A-Jet](#).
- To remove on a Motorized Z-Axis, go to [Remove the Nozzle Body from a Motorized Z-Axis](#).
- To remove on a Tilt-A-Jet, go to [Remove the Nozzle Body from a Tilt-A-Jet](#).

Remove the Mixing Tube

NOTICE

Remove the mixing tube **BEFORE** installing or removing the nozzle to prevent damage. Large upward forces from an installed mixing tube can misalign the internal nozzle components.

1. Hold the **nozzle body** to counteract the torque and loosen the **mixing tube nut**.



Figure 27

2. Remove the **mixing tube** [1], **mixing tube nut** [4], **collet** [3], and **O-ring** [1].

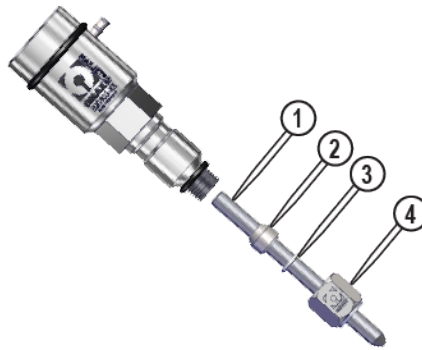


Figure 28

3. If needed, replace the **O-ring** and clean the **mixing tube**, **mixing tube nut** and **collet**. See [Clean and Examine the Nozzle Assembly](#).

Remove the Nozzle Body from an A-Jet

⚠ WARNING

Do not install or remove the nozzle while the A-Jet motor on or active. Severe injury and damage to the A-Jet may occur. Make sure the primary power, water, and air sources are turned off. Follow the lockout and tagout procedures to notify others maintenance is in progress.

NOTICE

Failure to remove power to A-Jet actuators prior to removing the nozzle could result in damage to the A-Jet assembly.

NOTICE

Handle the nozzle carefully to prevent damage to the abrasive tubing retention tube.

1. Remove the **abrasive feed tube** from the **nozzle** and the **abrasive hopper**.

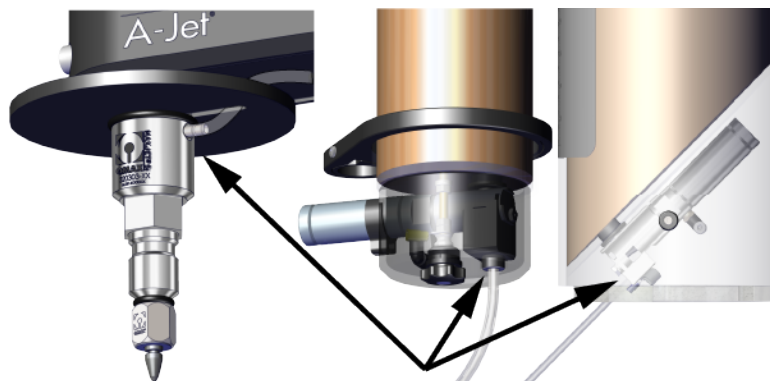


Figure 29

NOTICE

Remove the mixing tube **BEFORE** installing or removing the nozzle to prevent damage. Large upward forces from an installed mixing tube can misalign the internal nozzle components.

2. Remove the **mixing tube**. See [Remove the Mixing Tube](#).

3. Hold the **A-Jet** to counteract the torque, then loosen the **nozzle body**.

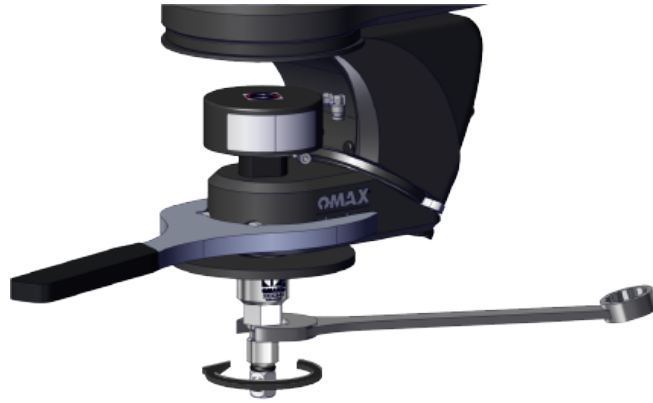
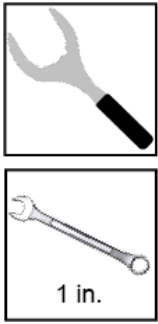


Figure 30

4. Remove the **nozzle body** from the **A-Jet**.
5. Carefully remove the **nozzle flap splash guard**.



Figure 31

For cleaning the nozzle assembly, go to [Clean and Examine the Nozzle Assembly](#).

For cleaning or replacing the final filter assembly, go to [Clean or Replace the Final Filter](#).

Remove the Nozzle Body from a Motorized Z-Axis

NOTICE

Handle the nozzle carefully to prevent damage to the abrasive tubing retention tube.

1. Remove the **abrasive feed tube** from the **nozzle** and the **abrasive hopper**.

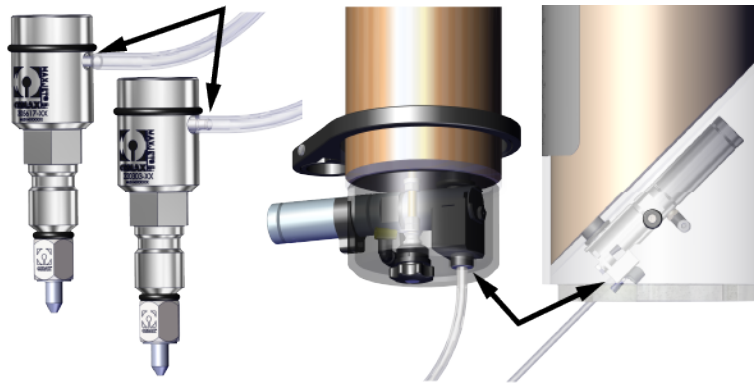


Figure 32

2. Remove the **mixing tube**. See [Remove the Mixing Tube](#).

NOTICE

Remove the mixing tube **BEFORE** installing or removing the nozzle to prevent damage. Large upward forces from an installed mixing tube can misalign the internal nozzle components.

3. Hold the **inlet body** and loosen the **nozzle body**.

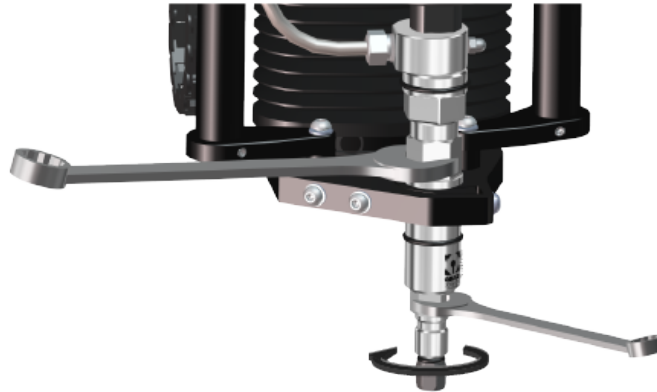
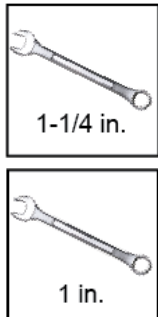


Figure 33

4. Remove the **nozzle body** from the **motorized z-axis**.

For cleaning the nozzle assembly, go to [Clean and Examine the Nozzle Assembly](#).

For cleaning or replacing the final filter assembly, go to [Clean or Replace the Final Filter](#).

Remove the Nozzle Body from a Tilt-A-Jet

NOTICE

Handle the nozzle carefully to prevent damage to the abrasive tubing retention tube.

1. Remove the **abrasive feed tube** from the **nozzle** and the **abrasive hopper**.

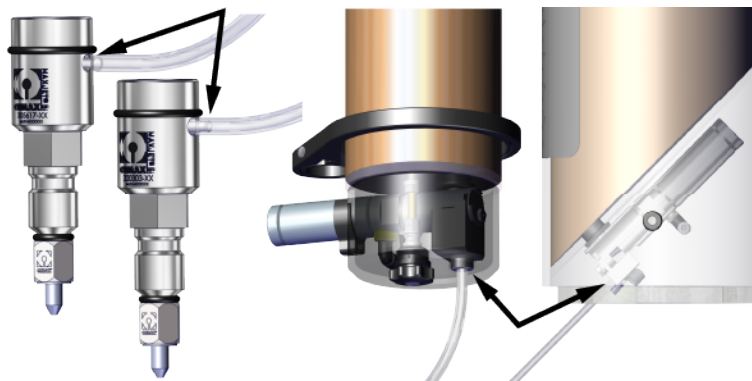


Figure 34

2. Remove the **mixing tube**. See [Remove the Mixing Tube](#).

NOTICE

Remove the mixing tube **BEFORE** installing or removing the nozzle to prevent damage. Large upward forces from an installed mixing tube can misalign the internal nozzle components.

3. Hold the top of the **inlet body** to counteract the torque, loosen the **nozzle body**.

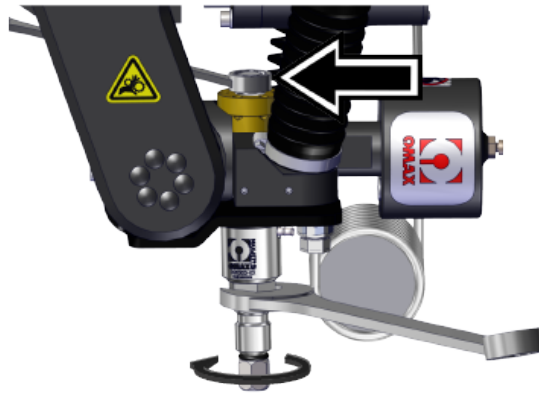
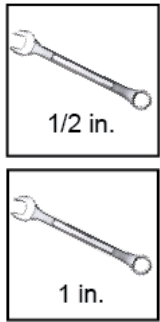


Figure 35

4. Remove the **nozzle body** from the **Tilt-A-Jet**.
5. Remove the **retainer ring** [1] and set it aside.



Figure 36

For cleaning the nozzle assembly, go to [Clean and Examine the Nozzle Assembly](#).

For cleaning or replacing the final filter assembly, go to [Clean or Replace the Final Filter](#).

MAINTENANCE

NOTICE

All maintenance activities must be performed by qualified personnel to prevent damage to the machine.

Follow the maintenance schedule to make sure the equipment performance is reliable. The frequency of most maintenance activities depends on the length of time the equipment has been in operation. However, harsher than usual environmental conditions may require more frequent scheduled maintenance activities than shown in the maintenance schedule.

Maintenance Schedule

Use the following maintenance activities and schedule to develop a successful equipment maintenance program. Reference documents and videos provide instructions for performing the specific task.

NOTE

- The expected life of components varies based on specific use cases and environmental conditions.
- The hours listed in this schedule for recommended maintenance are NOT warranty hours.
- The filter assembly and mixing tube vary with equipment.

See the [OMAX MAXJET 5i Nozzle Maintenance](https://elearning.omax.com) or [MAXIEM MAXJET 5i Nozzle Maintenance](https://elearning.omax.com) video, located at <https://elearning.omax.com>.

Task	Frequency	Reference
Nozzle Body		
Clean the nozzle body to prevent mineral buildup in the jewel assembly	Every 40 hours	Clean and Examine the Nozzle Body
Replace the nozzle body	Every 500 hours or when cutting performance degrades	Remove the Nozzle Install the Nozzle
Mixing Tube		
Rotate the nozzle mixing tube 90 degrees (one-quarter turn) to even out the wear	Every 8 hours of cutting	Rotate the Mixing Tube
Clean or replace the mixing tube	As needed	Remove the Mixing Tube Install the Mixing Tube
Filters and seals		
Replace the final filter assembly (plastic)	Every 40 hours, or more frequently as needed	Replace the Final Filter Assembly
Clean the metal filter screen	Every 40 hours, or more frequently as needed	Clean the Metal Screen Filter Assembly
Examine the ring seal assembly for damage	Replace as needed	Clean the Metal Screen Filter Assembly
Abrasive Tube		
Examine the abrasive tubing (hopper to nozzle)	Daily, replace as needed	Do an Inspection of the Abrasive Feed Tube

Prepare For Maintenance

CAUTION

Before performing service on the equipment, turn the air supply to the system OFF and bleed the entire pneumatic system to make sure it is exhausted of air pressure, including any accessories. Failure to release the pressure may result in injury.

See the [OMAX Preparing for Maintenance](https://elearning.omax.com) video or [MAXIEM Preparing for Maintenance](https://elearning.omax.com) video, located at <https://elearning.omax.com>.

1. Move the **Z-axis** to the **table** edge.
2. Clean the work area and make sure there is no abrasive or other debris.
3. Turn the primary power breaker **OFF** and put a lockout tag on the power disconnect to alert others that maintenance is in progress.
4. Close the air and water supply valves.
5. Bleed the system of remaining pressure.
6. Put a tray or board under the **Z-axis** to prevent tools and small components from falling into the **catcher tank**.

Rotate the Mixing Tube

Rotate the mixing tube one-quarter of a turn (90 degrees) every 8 hours of cutting to even the wear and prolong the life of the mixing tube. Cut a kerf check part, then measure and examine it for dimensional differences.

NOTICE

Handle the nozzle carefully to prevent damage to the abrasive tubing retention tube.

1. Hold the **nozzle body** to counteract the torque, and loosen the **mixing tube nut**.

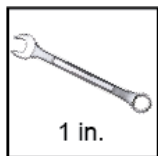


Figure 37

2. Rotate the **mixing tube** clockwise 90 degrees or one-quarter turn.

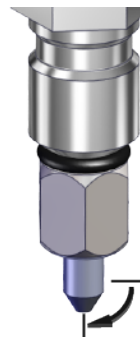


Figure 38

3. Make sure the **mixing tube** remains flush and sits firmly against the **mixing chamber** [1], then tighten the **mixing tube nut** by hand.

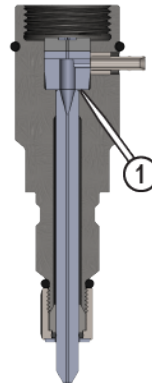


Figure 39

NOTICE

Do not over or under tighten the mixing tube nut. Over tightening the mixing tube nut can cause the mixing tube and the orifice to become misaligned and cause damage. Under tightening the mixing tube nut can cause the mixing tube to come out of the nozzle when high-pressure water is activated.

4. Hold the **nozzle body** to counteract the torque and torque the **mixing tube nut**.

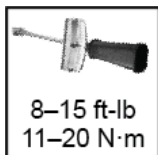


Figure 40

Clean or Replace the Final Filter

There are two types of filter assemblies available for the MAXJET 5i nozzle. The [metal filter screen assembly](#) has a metal filter screen that is cleaned and used again. The [final filter assembly](#) has a plastic filter and is replaced when clogged.

NOTICE

If there is a leak between the inlet body and the nozzle body, make sure that the inlet body, nozzle, and filter components are clean and free from dirt and abrasive. On the A-Jet, clean the components, then replace the ring seal and O-ring. See [Clean the Metal Screen Filter Assembly](#). Over tightening the nozzle body damages the sealing surface.

- To clean the metal filter screen, go to [Clean the Metal Screen Filter Assembly](#)
- To replace the plastic filter assembly, go to [Replace the Final Filter Assembly](#)

Replace the Final Filter Assembly

Replace the final filter assembly and O-ring a minimum of once per week, or when the nozzle body is removed.

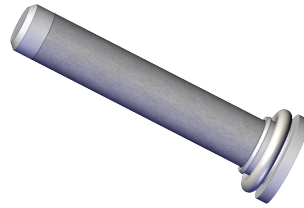


Figure 41

1. Turn the nozzle filter seal tool into the **final filter assembly**.

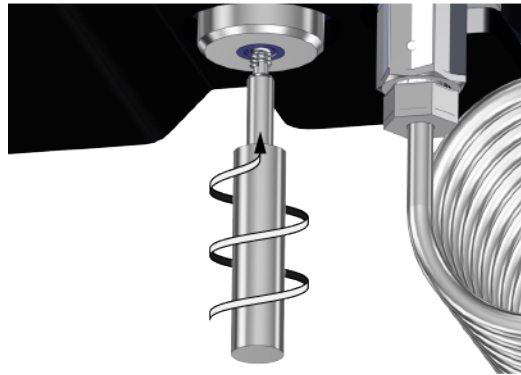


Figure 42

2. Pull the nozzle filter seal tool straight down to remove the **final filter assembly** from the **inlet body**.

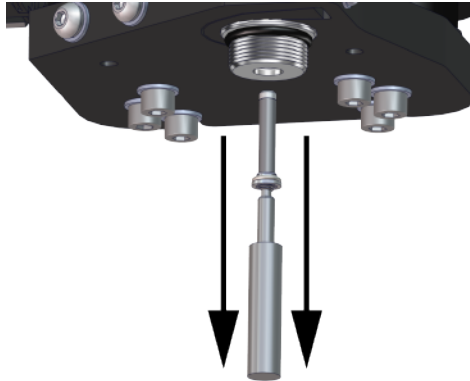


Figure 43

3. Remove the **final filter assembly** from the nozzle filter seal tool, then discard it.

4. Apply a light coat of Lubriplate to a new **O-ring** [1], then install it on the new **final filter assembly**. Make sure the **O-ring** is between the ridges on the **seal** [2].

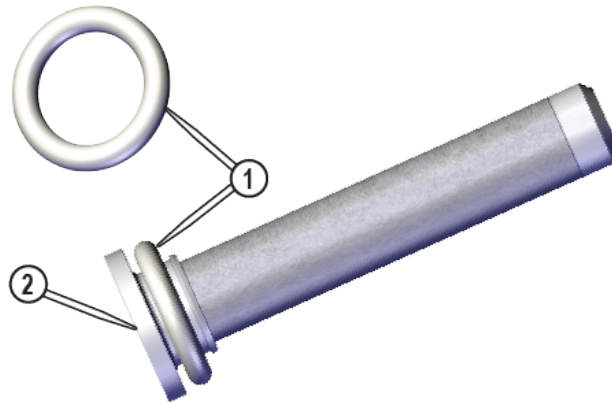


Figure 44

5. Install the **final filter assembly** into the **inlet body**.

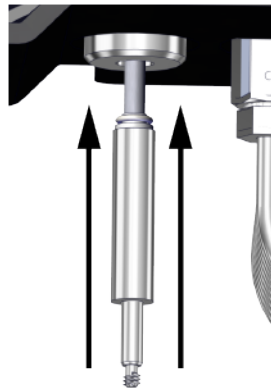


Figure 45

6. Install the **nozzle body**. See [Install the nozzle body](#).

Clean the Metal Screen Filter Assembly

Clean the metal screen filter screen every 40 hours or more often if needed. Replace the metal screen filter if it is damaged.

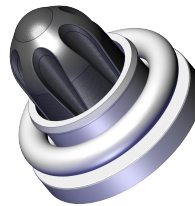


Figure 46

NOTICE

To prevent damage, always use non-metal or softer metal tools (such as brass, copper, or aluminum) to remove the metal screen filter assembly or a light blast of air. Scratches can cause leaks and low pressure in the system. Replace damaged components.

1. Remove the **metal filter screen assembly** from the **nozzle inlet body**.

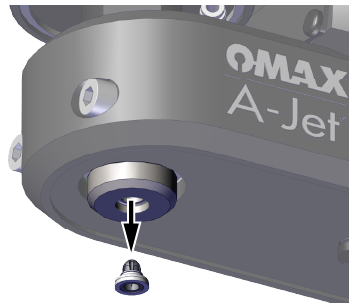
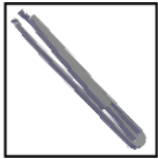


Figure 47

2. Discard the **O-ring** [1] and **ring seal** [2].

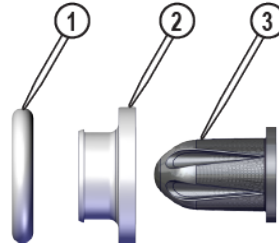


Figure 48

3. Clean the **metal screen filter** [3] using an ultrasonic cleaner (Figure 48). Replace **metal filter screen** if damaged .

NOTICE

The ring seal assembly must be replaced each time the nozzle assembly is removed.

4. Apply a light coat of Lubriplate to the new **O-ring** and install it on the new **ring seal**, then install the **metal screen filter** into the **ring seal assembly**.

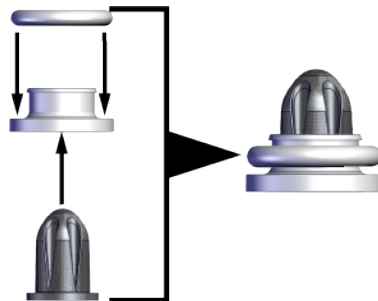


Figure 49

5. Install the **metal screen filter assembly** into the **inlet body**.

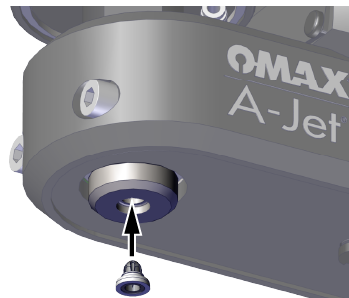


Figure 50

6. Install the **nozzle body**. See [Install the Nozzle Body](#).

Clean and Examine the Nozzle Assembly

Clean the nozzle assembly once a week, or more frequently if needed, to keep the orifice assembly free of mineral buildup that degrades cutting performance. A clean orifice assembly also helps to prolong the life of the mixing tube.

NOTICE

Handle the nozzle carefully to prevent damage to the abrasive tubing retention tube.

1. Remove the **mixing tube**. See [Remove the Mixing Tube](#).
2. Remove the nozzle body.
 - For the A-Jet, go to [Remove the Nozzle Body from an A-Jet](#).
 - For the Motorized Z-Axis, go to [Remove the Nozzle Body from a Motorized Z-Axis](#).
 - For the Tilt-A-Jet, go to [Remove the Nozzle Body from a Tilt-A-Jet](#).
3. Fill an ultrasonic cleaner with white vinegar.
4. Remove the **mixing tube collet** [1], **collet O-ring** [2], and **mixing tube nut** [3].

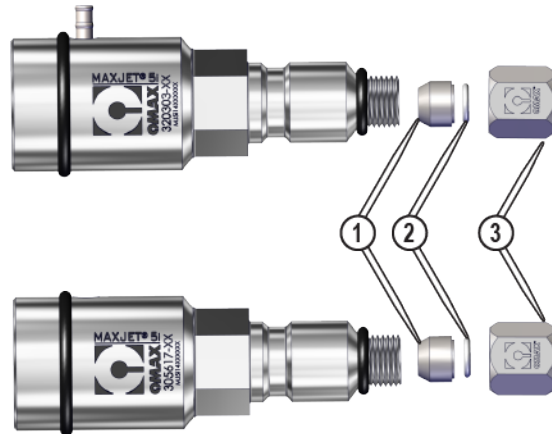


Figure 51

5. Remove the **O-rings** from the **nozzle body**.

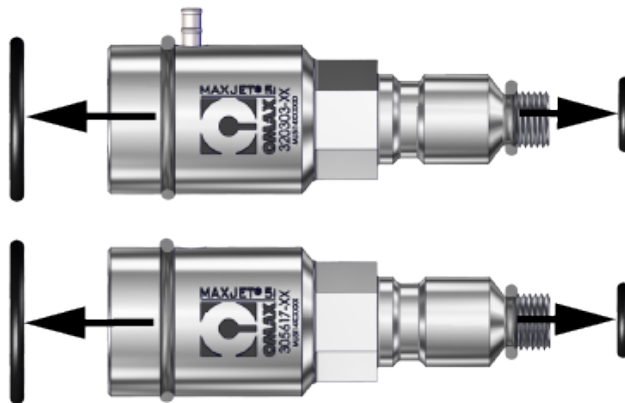
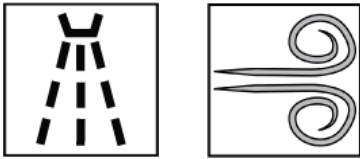


Figure 1

6. Put the **nozzle body**, **mixing tube**, **mixing tube nut**, and **collet** in the ultrasonic cleaner for 3–5 minutes or until the **jewel orifice** is clean.

7. Rinse the **nozzle body** with clean water, then air dry.



8. Examine the components for wear and damage. If damaged or worn, replace the component.
9. Install the nozzle body.
 - For the A-Jet, go to [Install the Nozzle Body on an A-Jet](#).
 - For the Motorized Z-Axis, go to [Install the Nozzle Body on a Motorized Z-Axis](#).
 - For the Tilt-A-Jet, go to [Install the Nozzle Body on a Tilt-A-Jet](#).
10. Install the **mixing tube**. See [Install the Mixing Tube](#).

Examine the Abrasive Feed Tube

Abrasive feed tubes wear as garnet flows from the hopper to the nozzle assembly. A cracked, worn, wet, or damaged tube can degrade cutting performance.

Examine the abrasive feed tube daily and replace if needed. For operations that use high volumes of abrasive, examine the abrasive feed tube daily.

1. Remove the **abrasive feed tube** from the **hopper** and the **nozzle**.

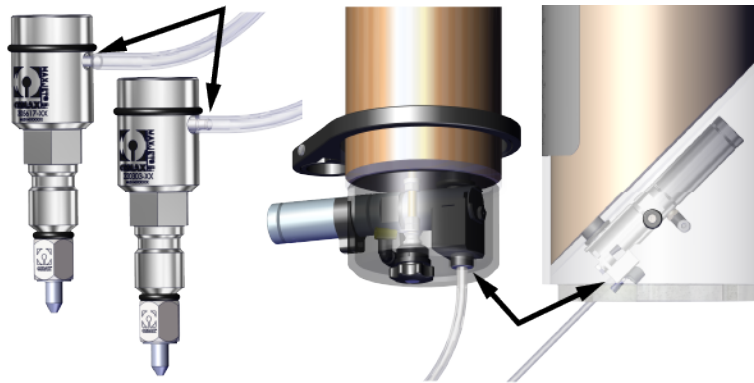


Figure 2

2. Examine the **abrasive feed tube** for cracks and moisture. Make sure that the tube is flexible and the walls are not worn or thin. Replace if needed.

If the **abrasive feed tube** has a small piece of **tubing** [1] at the end, it requires special attention as it is smaller and subject to the most wear.

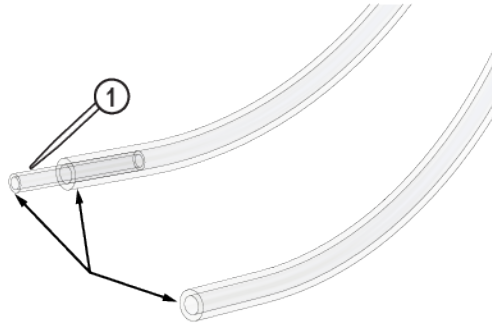


Figure 3

NOTE

The short tubing [1] is only required on nozzles that do not have the abrasive tube retention tube (Figure 3).

3. Connect the **abrasive feed tube** to the **abrasive inlet** or to the **retention tube** on the **nozzle**, then connect the other end to the **abrasive hopper**.

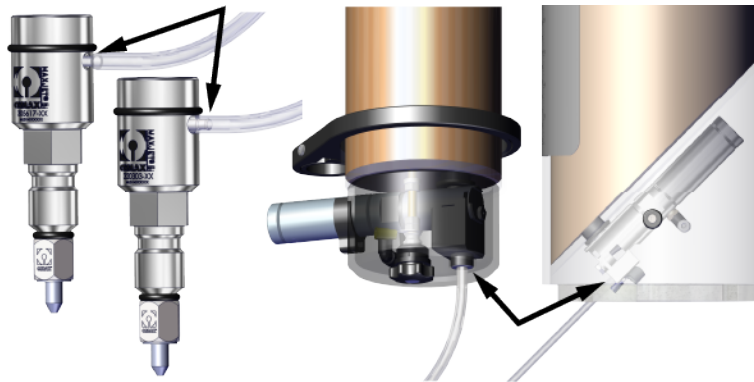


Figure 4

CUSTOMER SUPPORT

For service and support, go to omax.com.

