Hydraulic Flaring Tool

User Manual

Read Carefully Before Use
Keep for Future Reference



Orion Motor Tech

UM-FTK-0001-V5


OMT
Orion Motor Tech

Disclaimer

Read this disclaimer completely and carefully before proceeding with the rest of the manual content.

1. **Product Modifications**

   Any modifications or alterations to OMT products void any warranties and may result in damage or injury. OMT shall not be liable for any damages resulting from such modifications or alterations.

2. **Compliance with Laws**

   Customers shall be liable for ensuring that the use of OMT products complies with all applicable laws and regulations in their respective jurisdictions. OMT assumes no responsibility for any violations of laws or regulations resulting from the use of OMT products.

3. **Correct Use**

   Always use OMT products only as directed in the accompanying manuals. Failure to follow instructions may result in injury or damage.

   Always ensure the assembly, installation, operation, maintenance, or repair of OMT products is carried out by a competent person.

   Always make maintenance regularly throughout OMT products' lifecycles; you have the liability to keep the products operating as intended.

   Always wear appropriate protective gear.

4. **Third-Party Products**

   OMT shall not be liable for any damages or losses resulting from the use of third-party products in conjunction with OMT products. Customers shall refer to the third-party's guidelines and/or warranties (if any) for any third-party products used.

5. **Limitation of Liability**

   OMT shall not be liable for any direct, indirect, punitive, incidental, special, or consequential damages to property or life, whatsoever arising out of or connected with the use or misuse of OMT products. In no event shall OMT's liability exceed the value of the products sold.

6. **Warranty**

   Refer to the sales page for the warranty information.

This disclaimer states the entire obligation of OMT with respect to OMT products. If any part of this disclaimer is determined to be void, invalid, unenforceable, or illegal, including but not limited to the warranty disclaimers, liability disclaimers, and liability limitations set forth above, the invalid or unenforceable provision will be deemed superseded by a valid and enforceable provision that most closely matches the intent of the original provision and the remainder of the agreement shall remain in full force and effect.

Contact Us

Thank you for choosing our products! If you have any questions or comments, contact us and we'll address your issues ASAP!

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Safety Information

- The instructions provided herein are only for general information. **ALWAYS** perform all repairs in full compliance with your machinery's service manual. After repairs, test your engine and vehicle at low speed in your workshop **BEFORE** resuming use. Failure to do so may lead to serious property damage and severe personal injury.
- **DO NOT** allow children, persons whose mental or physical condition precludes safe use, or anyone unfamiliar with this product and its compatible systems to use it.
- **DO NOT** use while under the influence of alcohol, drugs, or any medication that negatively affects your judgment or reflexes. Keep children and bystanders away during use.
- Keep your work site clean and well-lit. Cluttered and dark work areas increase the risk of accidents.
- For best results, keep the kit clean and dry. Remove any fluid, oil, or grease before and after work.
- **ALWAYS** use personal protective equipment (PPE) suitable to your task. **ALWAYS** wear ANSI and OSHA-approved eye, breathing, and hand protection while using this product. Regular use of this product typically produces microscopic particles known to the state of California to cause cancer, congenital disabilities, or other reproductive harm. Nonslip footwear is also highly recommended. Other equipment such as ear, head, and body protection may also be necessary depending on your work, work environment, and other equipment.
- **ALWAYS** know and understand your machinery's specific safety warnings and instructions before using this kit. Use the correct fluids, pressures, adapters, etc., for your machinery. Make sure the machinery is fully supported and parked before beginning any work. Ensure you do not make any contact with the heated surface.
- Dress appropriately for automotive servicing. **DO NOT** wear loose clothing or jewelry, and keep hair, clothing, gloves, hoses, and tools away from any moving parts during use.
- Before servicing your machinery, turn off its engine and refer to its manufacturer's service and repair manual for instructions on safely securing the machinery with chocks, jacks, stands, etc.
- In case of an accident or injury, have a first aid kit and a communication device (e.g., a phone) readily available. Know the location of emergency medical facilities.
- Maintain this product. Check for misalignment, binding, wear, or other damage before use. If any damage is detected, repair or replace the problematic components before continued use. In a large shop, mark such tools "**DO NOT USE**" until they have been repaired. **ONLY** replace components with identical parts.
- Machinery repair is an inherently dangerous activity. This manual and the separate machinery service manual cannot cover all possible situations that may arise. **ALWAYS** exercise discretion and good judgment. Seek training if needed.

Specifications

Dimensions	17.5 × 10.1 × 3.4 in.	44.5 × 25.5 × 8.5 cm
Weight	13.4 lb.	6.08 kg

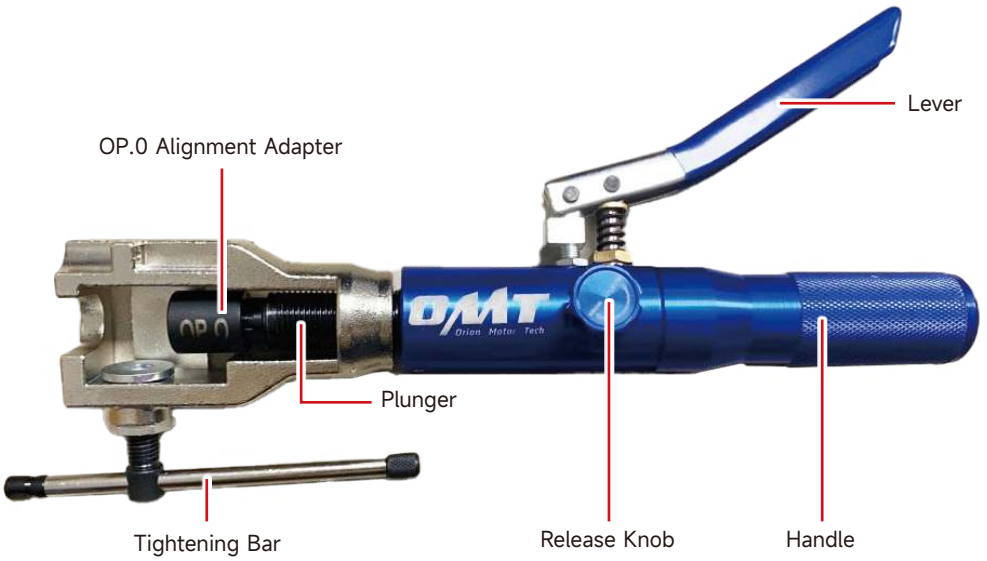
Parts List



Package List

No.	Item		Qty.
A	Hydraulic Flaring Tool		1
B	Cutter		1
C	Deburring Tool		1
D	45° Inverted Dies	3/16 in.	5
		5/16 in.	
		1/2 in.	
		3/8 in.	
		1/4 in.	
E	ISO Dies	10 mm	4
		8 mm	
		6 mm	
		4 mm	
F	GM–TC Dies	3/8 in.	2
		1/2 in.	
G	ISO Adapter	10 mm	4
		8 mm	
		6 mm	
		4 mm	
H	Push Connect Dies	3/8 in.	1
K		5/16 in.	2
		1/4 in.	
I	GM Fuel Line Dies	3/8 in.	1
J		5/16 in.	1
L	45° Inverted Adapters	3/16 in.	5
		5/16 in.	
		1/2 in.	
		3/8 in.	
		1/4 in.	
M	GM Fuel Line Adapters	5/16 in.	2
		3/8 in.	
N	Push Connect Adapters	3/8 in.	3
		5/16 in.	
		1/4 in.	
O	GM–TC Adapters	3/8 in.	2
		1/2 in.	
P	45° Flaring Cone Adapter		1
Q	Grease		1
R	Sealing Rings		5
S	Gloves		1 (Pair)
T	Replacement Blades		2
U	OP.0 Alignment Adapter		1

Product Diagram



Operation

⚠ Warning

- Use the correct tools and personal protective equipment (PPE) before operating. Be **EXTREMELY** careful around possible pinching points, moving parts, or parts that may suddenly spring out.
- Make sure your surroundings are safe when using the tool. Avoid operating in crowded or unstable areas.
- Inspect the tool and hydraulic system for any leaks or damage before use.
- Use the appropriate dies and adapters based on the pipe diameter and type to ensure quality flares.
- Maintain cleanliness of the pipes and dies to prevent debris from affecting the flaring process.
- Apply pressure uniformly to avoid rapid or excessive force, which could deform or rupture the pipe.
- For added safety, we recommend training before using these tools. A lack of training could result in serious injury.

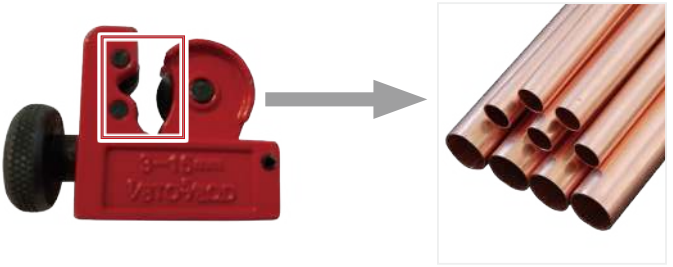
Preparing Your Pipe

Prepare pure copper pipes, copper-plated pipes, and other soft metal pipes.

> **Caution**
>
> - The pipe wall thickness must **NOT** exceed 1 mm.
> - **DO NOT** use stainless steel pipes.

Cutting Your Pipe (Optional)

1. Use the cutter (B) to cut the pipe to your desired length by turning its knob.



> **Warning**
>
> - **DO NOT** use a hacksaw or cut-off wheel to cut the pipe.
> - **DO NOT** place your finger or any part of your body near the blade of the cutter.

2. Remove any burrs from the cut edges using the deburring tool (C).

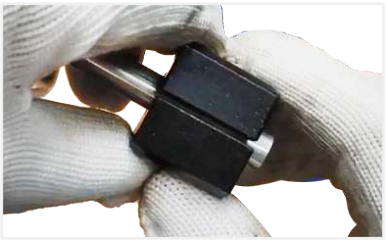


> **Note:** Be sure to clear metal chips from inside the pipe.

Choosing the Appropriate Dies for Your Pipe

1. Choose the dies according to your pipe's outer diameter.
   - For a standard-sized pipe (such as 3/8″), choose dies of the same size from the provided dies.
   - For a non-standard pipe, measure the pipe's outer diameter and select the dies closest to the measured diameter.
2. Sandwich the tube between the dies. Without applying pressure, a slight gap will remain between them. If there is no gap, replace the pipe or the dies.

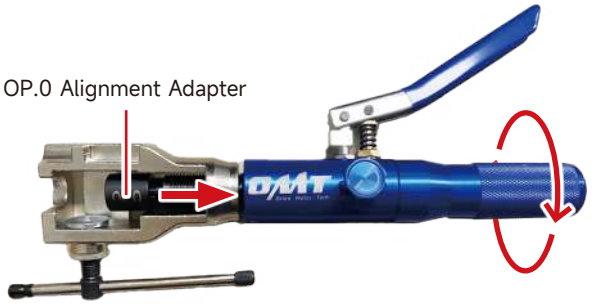
> **Note:** Maintain a gap of 0.2–0.3 mm when the die specification is ≤ 3/16″ (imperial) or ≤ 6 mm (metric). For specifications exceeding these measurements, maintain a 0.3–0.5 mm gap.



Forming Line Flares

If forming push connect lines, GM fuel lines, GM transmission cooling lines, or ISO bubble flares:

1. Place the OP.0 alignment adapter (U) onto the adapter seat. If necessary, rotate the handle of the hydraulic flaring tool (A) counterclockwise to leave space for the dies.



2. Place the dies with the sandwiched pipe into the yoke.

> **⚠ Caution**
>
> The edge of the pipe must **NOT** be indented in the dies.

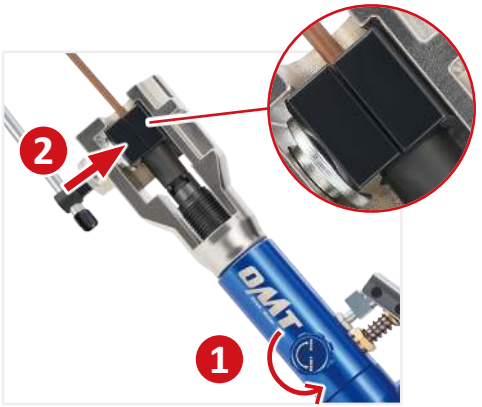
3. Rotate the tightening bar clockwise to secure the dies **WITHOUT** fully tightening them.
4. Rotate the hydraulic handle clockwise until the alignment adapter is against the pipe.



5. Rotate the release knob fully in the **WORK** direction. Squeeze the lever to push the alignment adapter against the dies until you feel significant resistance from the pumping action, ensuring the pipe's edge aligns with the dies' edge.

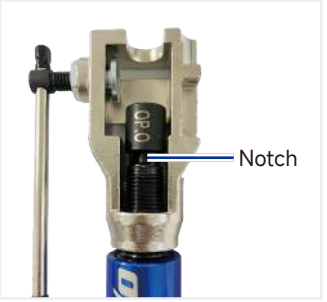


6. Rotate the release knob fully in the **RESET** direction to release the pressure.
7. Rotate the tightening bar clockwise to tighten the dies further until there is almost no gap between them.

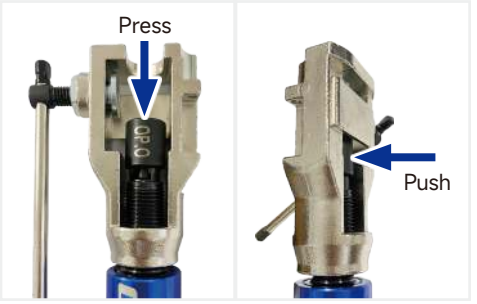


8. Repla ce the alignment adapter with the corresponding adapter.

   a. Turn the hydraulic handle counterclockwise until the notch on the plunger faces you.



   b. Press the adapter and gently push the adapter from the backbackward at the same time to release it from the plunger.



   c. Select and insert the appropriate dies and adapter based on your needs.

Note:

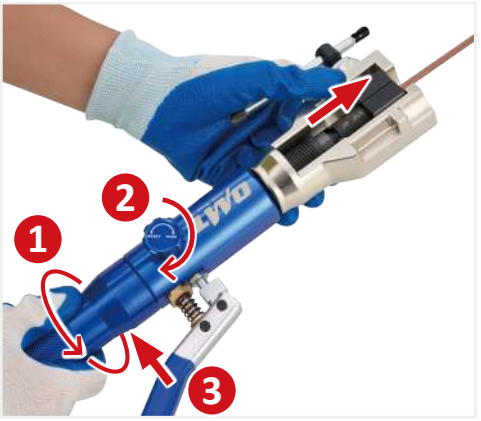
- The dies and adapter must be properly matched. For example, the 8 mm ISO dies must be used with the 8 mm ISO adapter.



- Lubricating the adapter with the provided grease (Q) **BEFORE** replacement helps remove the pipe later.



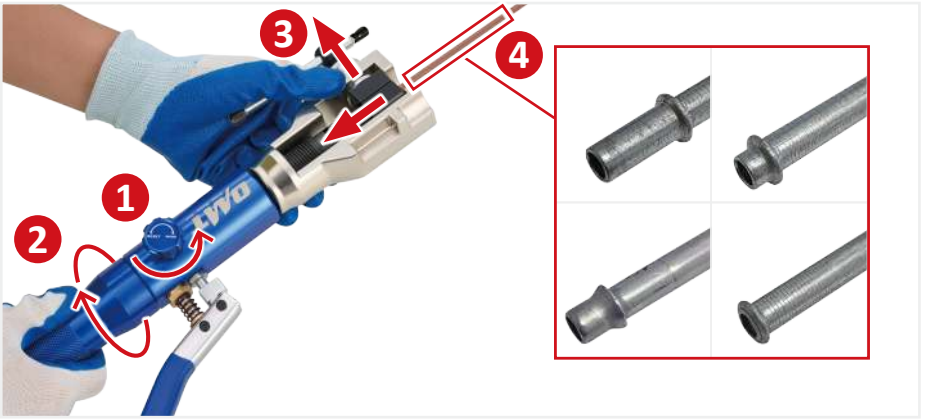
9. Rotate the hydraulic handle clockwise until the handle cannot be turned further. The adapter should engage the dies.
10. Rotate the release knob fully in the **WORK** direction. Squeeze the lever to push the adapter against the dies until you feel significant resistance from the pumping action.



11. Rotate the release knob fully in the **RESET** direction to release the pressure.
12. Rotate the hydraulic handle counterclockwise to keep the adapter away from the dies.

> **⚠ Warning**
>
> - **DO NOT** loosen the tightening bar until the adapter is outside of the dies.

13. Loosen the tightening bar, and then remove the dies and pipe.



If forming 45˚ and double flares:

1. Follow Steps 1–12 in Forming Push Connect or GM Fuel Line Flares.
2. Replace the male adapter with the 45° flaring cone adapter (P).



3. Follow Steps 9–13 in Forming Push Connect or GM Fuel Line Flares.



Maintenance

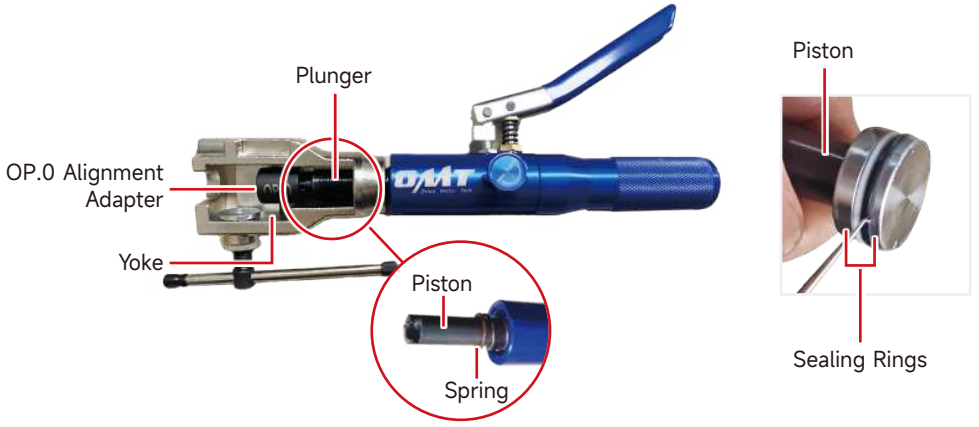
- After use, clean the tools with a soft, damp cloth and a mild detergent or solution. **DO NOT** rinse them or use abrasive cleaners or caustic chemicals.
- For best results, lubricate the tools with high-quality anti-corrosive oil between uses.
- Check the tool's parts periodically for wear or damage after each use. Repair or replace any problematic parts before continued use.
- If the tools will not be used for an extended period, clean and lubricate them and store them in a cool, dry place inaccessible to children.
- If the blade of the deburring tool is no longer sharp enough, you can replace it with the replacement blade provided.

> ⚠ **Warning**
>
> Wear protective gloves to avoid scratching your hands with the blade.

a. Press the button on the deburring tool and pull out the blade.
b. Press the button and fully insert the blade until the button pops back up.



- If the hydraulic oil leaks at the plunger, replace the sealing rings inside the hydraulic flaring tool.
  a. Remove the OP.0 alignment adapter, yoke, plunger, spring, and piston.
  b. Remove the black sealing ring. Then, cut and remove the white ring. Install the provided sealing rings in place.



Troubleshooting

Problems	Solutions
After squeezing the lever, the adapter either does not rise or bounces back after ascending.	1. Rotate the release knob fully in the **RESET** direction. Squeeze the lever quickly for about 10 seconds to allow the hydraulic oil inside the machine to circulate.  2. Rotate the knob fully in the **WORK** direction. Squeeze the lever a few times to check if the adapter is pushed up properly.  3. If not, repeat the steps 2 to 3 times.
	If it still doesn't work, contact customer service or seek a professional to repair the internal hydraulic system.
Poor sealing after flaring	Ensure the pipe is made of soft metal, such as pure copper or copper-plated. **NEVER** use stainless steel. The pipe's thickness must **NOT** exceed 1 mm.
	Before flaring, clean the pipe surface thoroughly to remove dirt, oxide layers, and other contaminants and ensure that it is smooth and flat.
	Ensure the appropriate dies and adapters are used based on the pipe diameter and type.
	Ensure the lever is squeezed evenly and regularly during pressurization. Avoid applying too much or too fast pressure.
	Correctly use the OP.0 alignment adapter and dies to ensure the pipe's edge is aligned with the dies' edge, ensuring the pipe maintains the correct position and angle during the expansion process.
Hydraulic oil leaks at the plunger or lever	If the oil leaks at the plunger, check whether the sealing rings show signs of aging. If it does, replace the faulty rings.
	If the oil leaks at the lever, contact customer service or seek a professional to replace the inner sealing rings.

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