



Anderson Thermal Solutions (Suzhou) Co., LTD

FF050 Burner Operation Manual

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This manual has been written for those who are already familiar with all aspects of nozzle mix burner and its add-on components. Main contents of the manual including safety rules, burner installation, commissioning, operation parameters, maintenance and troubleshooting, spare parts, etc.

1. Disclaimer Notice

Anderson Thermal Solutions (Suzhou) Co., Ltd. reserves the right to change the construction and/or configuration of our product at any time without informing customers.

If the product or its individual modules are used for purposes other than the designated purpose, their effectiveness and suitability must be confirmed.

Anderson warrants that the product itself will not infringe any patents. Every effort has been made to make this manual as accurate and complete as possible. If you find errors or omissions, please contact us so we can correct them.

2. Liability And Warranty

Due to negligence, breach of warranty or other reasons, Anderson's liability for its products is limited to the provision of such replacement parts and will not be liable for any other injury, loss or expense, whether direct or indirect, including but not limited to Loss of or damage to the use of materials that sell, install, use, fail to use or repair or replace Anderson related products.

The warranty is void if: any operation explicitly prohibited in this manual, any adjustment or assembly process not recommended or authorized.

3. Safety Guide

Only those who were trained and qualified person can follow the manual to operate or adjust the combustion system. The fire was prohibited within a radius of 5 meters of the combustion system. Flame, non-covered light sources or heat sources shall not be brought to the combustion area unless it is related to the process. Welding in combustion control area shall be approved to ensure the safety in the area and also preventive measures should be taken into consideration.



Before starting, the operator must confirm whether the burner and gas pipeline are in normal working condition, and there is no flammable substance around the burner. The burner must be operated with fuel and oxygen or air. The ignition and operation of the burner must be performed at the specified position. The burner has been correctly and safely installed before ignition. The ignition of the burner needs to be performed after the combustion chamber is purged. If it is ignited at a low temperature, it needs to be replaced with 5 times the volume of the combustion chamber to avoid explosion.

However, it is not necessary to purge when the temperature is higher than 750°C. Air pipe or gas pipe connected with burner should be tight enough with no leakage, also the periodically check air or fuel nozzles of the burners to prevent to be blocked by dust, slag or other materials.

ATTENTION: DANGER OF BEEN BURNT



When burner in operation, combustion is severe, so the burner must be fixed. Hoses or cables in area of the combustion system must be suitable for high temperature, to prevent high temperature failure or cause safety accidents. Burners should be periodically inspected and cleaned. Copper wire brush may be used, if necessary, to clean burner head. The burner system should be checked twice a year for safety operation.

4. Configuration

FFO50 FlexFire® Oxygen Fuel Burner configuration as Fig 1 shown.it is made up by gas and oxygen inlet, adjustment device and fix device.

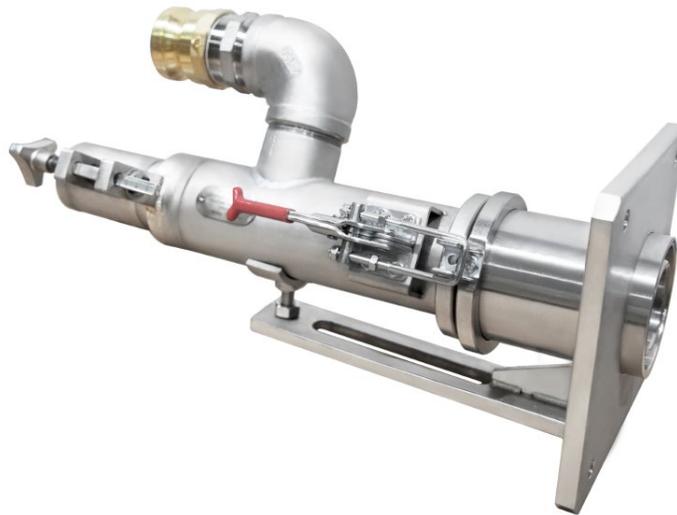
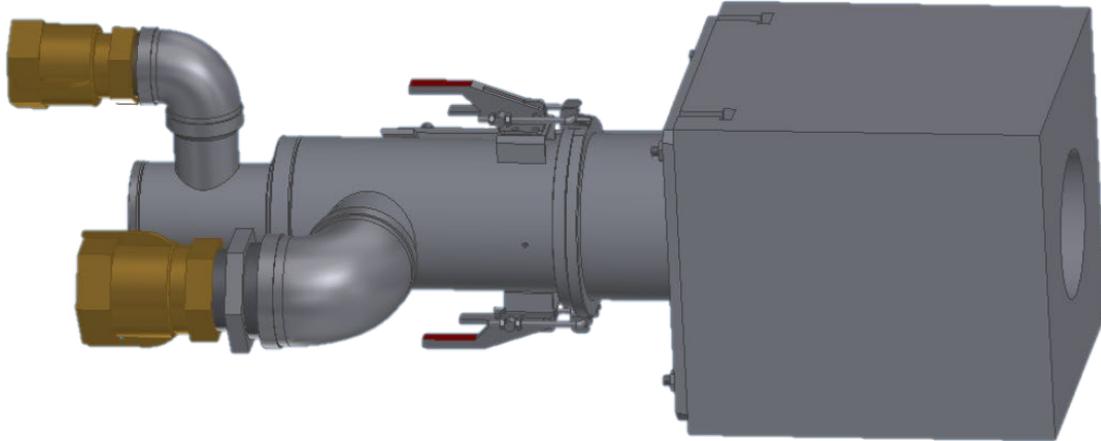


Figure 1: FFO50 FlexFire® Oxygen Fuel burner Standard configuration

5. Installation

1. Fix burner bracket with bolts, gasket and washers to make sure the horizontal plate is level, burner and burner block shown as Fig 2 shown.
2. Fix burner to burner bracket with clamp attached tightly.
3. Connect hose of the down comer to burner with quick connectors.

Figure 2: FFO50 Flex Fire® Oxygen Fuel burner and burner block



6. Start-up

1. Make sure gas hose and oxygen hose are properly connected to the burner.
2. Open the oxygen shut-off valve closest to burner, let the oxygen go through the burner with 30 Nm³/h as coolant to burner.
3. Open the gas flow control valve.
4. Adjust the oxygen flow to make sure oxygen/gas ratio is about 2.
5. The flow of oxygen and gas can be adjusted if needed.

Warning

Burner flame should be level and align with the centerline of combustion chamber.

7. Adjustment

1. When the gas flow reaches the normal flow rate, the flame length could be adjusted by flame length adjustment knob, shown in Figure 3.
2. Rotating the guide bolt (clockwise) to shorten the flame, shown in figure 3.
3. Rotating the guide bolt (counterclockwise) to extend the flame, is shown in figure 3.

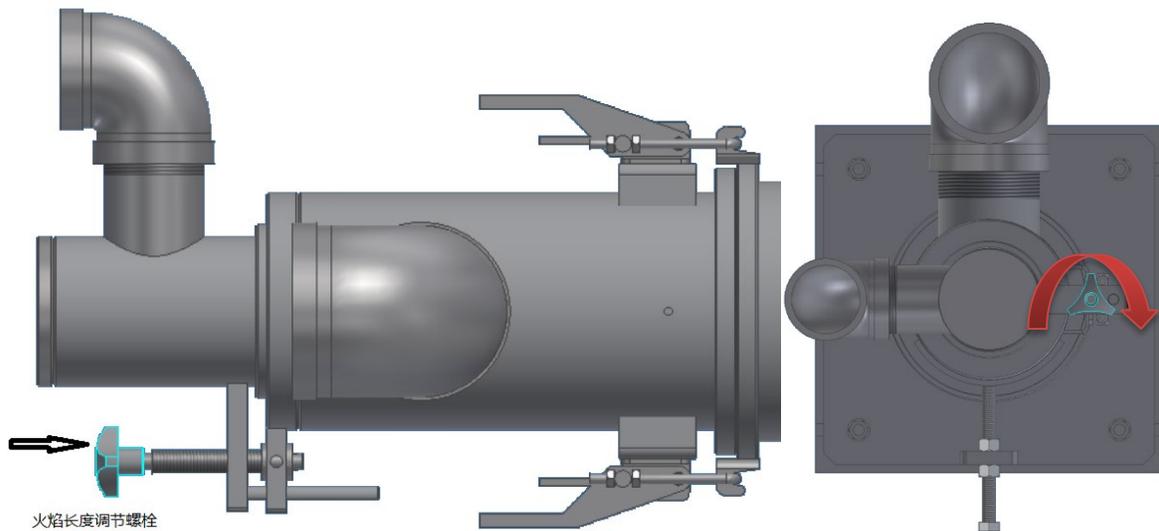


Figure 3: Diagram of FFO50 FlexFire® Oxygen Fuel burner adjustment knob

8. Stop burner

1. For temporarily shut down, the burner does not need to remove from the burner brick, oxygen must continue to be supplied at the flow of 30 Nm³/h as coolant.
2. For long time shut down, the burner needs to be taken out.
Turn off the gas and oxygen shut-off valve closest to the burner.
3. Loosen the burner fixing clamp from the fixing bracket then remove burner.
4. Block the nozzle hole with high-temperature material to prevent heat leaking from burner block opening.

Warning

Oxygen and gas to the burner are interrupted for more than 10-15 minutes, please remove the burner. Adjust the burner, loosen the corresponding fixing bolts and re-lock after adjustment. Do not remove the metal hose or locking device when the gas and oxygen are not completely closed. When the burner is deactivated, keep the oxygen pipeline equipment clean and sealed to prevent pollution.



9. Appendix

9.1 Training Record

Each trained person must verify that he has read and understood the contents of the operating manual and know how to operate and maintain this series of burners correctly.

Manual Number and Revision	Date	Who (Name)	Signature

9.2 Bi-annual Audit Record

Routine audit must be made every 6 months. Please sign the following table.

Function Audit	Date	Inspector	Problem description	Next Audit Time
Flame sensor state				
air and gas pressure				
Alarm signals				
igniter electrode				
Control motors				
Ventilate equipment				
Interlock Function				
Shut off cock function				
Combustion air blower				

9.3 Annual Audit Record

Yearly audit list as follow but not only included

Function Audit	Date	Inspector	Problem description	Next Audit Time
Leak test				
Pressure switch test				
Cable and connectors				
Burner bodies and air wings				

Attention: Safety audit is prohibited when burner is running, otherwise, an accident could be caused!



If you have any questions. Please call us or send an e-mail to get more information

Our telephone no. is +86 (512) 6592 4663

Our email address is: info@andtecs.com

Meanwhile, you can also visit our website www.andtecs.com to get more product information.