

HOPE

HG1A124E

**INSTRUCTION MANUAL
FOR
HOPE NEO FLAME JET GAS BURNER
TYPE ASG**



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Thank you very much for your purchase of our HOPE Neo Flame Jet Gas Burner Type ASG. In order for you to fully utilize the performance of this product, ensure its safety and facilitate its maintenance, read this instruction manual thoroughly.

Also, have this instruction manual reached the end user as well as the constructor.

1. Inspection, Outline, Specifications of Product

Inspection

Check the contents to confirm with the nameplate on the product and the below specifications that the product is as per your order. Also check for damage and other troubles caused during the transportation.

Outline

Hope Flame Jet Gas Burner Type ASG is an excellent burner which can make the temperature distribution within a furnace uniform by stirring the gas within the furnace with high-speed combustion gas of 80 m/sec. This burner has a high turn-down ratio of 10:1, and can also be used for hot air. Furthermore, this burner is so excellent in low excess air combustion characteristics and in-furnace stirring with high-speed flame that particularly there is no production of smoke and there is a little free oxygen in use at under theoretical air ratio. Therefore, this burner is the most suitable for use in nonoxidated heating.

Specifications

Type	Capacity kW	Connection(Rc)		Mass kg
		Gas	Air	
ASG-1	58	3/4	1-1/2	19
ASG-2	93	3/4	1-1/2	20
ASG-3	151	3/4	2	26
ASG-4	233	1-1/2	2-1/2	37
ASG-5	372	1-1/2	3	51
ASG-6	580	1-1/2	4	78

●Reference pressure: Gas : 2~10 kPa Air : 6 kPa

2. Precautions for safety

Before starting installation, trial run and adjustment, or maintenance and inspection, be sure to read this instruction manual and other relevant documents attached hereto carefully, and ensure your good understanding.

In this instruction manual, the safety precautions are ranked according to the degree of risk as “warning,” “caution” and “note.”



For warning against such a danger that improper handling of this product would cause an extremely dangerous situation and death or severe injury may be assumed.



For cautioning against such a danger that improper handling of this product would cause a dangerous situation and death or severe injury may be assumed.



For warning against such a danger that improper handling of this product would cause a dangerous situation and medium or light injury or only physical loss or damage may be assumed.

Even if the situation of



occurs, it may lead even to serious results depending on the situation.

Since all these safety precaution symbols indicate important contents, be sure to observe them.

Indication of precaution symbol		Example
 Compulsion	This symbol indicates the contents that force or direct an action. Specific contents of such action are given nearby.	 Be sure to do!
 Prohibition	This symbol indicates the contents that prohibit an action. Specific contents of such action are given nearby.	 Don't touch!
 Precaution	This symbol indicates the contents that call attention. Specific contents of such attention calling are given nearby.	 Be careful. It's hot!

3. Be sure to read the following

●WARNING



Be sure to pre-purge the burner before ignition. If ignition is repeated consecutively, explosion may be caused due to residual gas in the furnace.

◇CAUTION



Electric shock

When detaching the spark plug for the purpose of checking or the like, be sure to turn off the power supply to the transformer.



When igniting or during combustion, never remove the site hole.
※Otherwise, hot gas may be blown out of the furnace.

△NOTE



Don't touch!

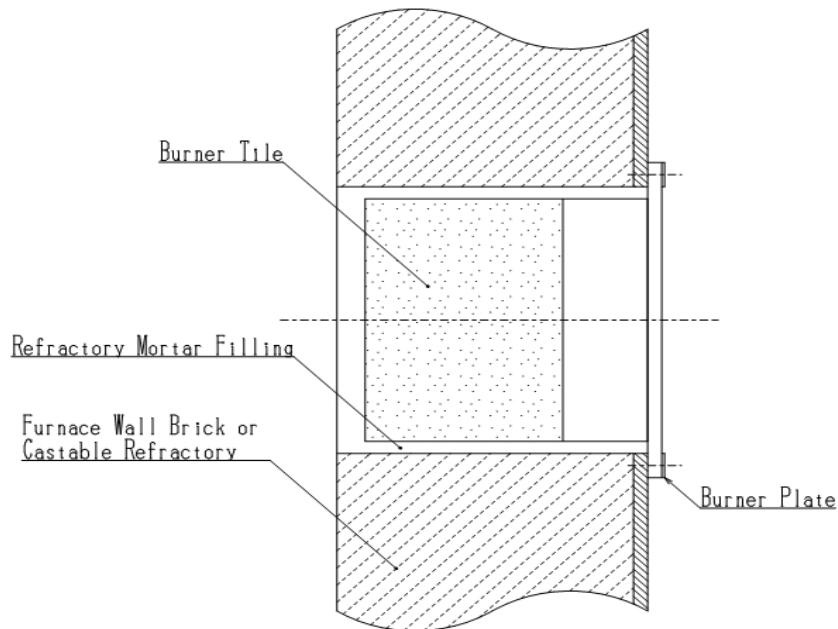
Do not touch the burner front panel or the circumference of the burner installed part since they are hot during combustion.

4. Installation

Installation

1. Back up the outside surfaces, particularly the bottom surface, of the burner tiles with refractory bricks, castable refractory or the like to prevent the burner tiles from dropping.
※Back up by a Ceramic Fiber (wool or blanket, etc.), there is a fear that burner tile falls.
Be sure to back up with Refractory Bricks, Castables, etc.
2. In installing the burner to the furnace body, fill up the clearance between the burner mount of the furnace and the burner tiles with refractory mortar and fix the burner to the furnace.

· Reference drawing



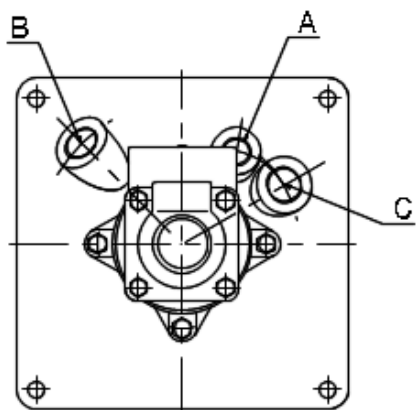
Piping

1. Direct good care to the inside of the pipe not to leave seal tape fractions, bond, cutting chips, etc. there which may cause malfunction of the solenoid valve, governor, valve, etc.
2. In connecting the pipes, provide pipe support in proper positions to prevent the application of any excess force.

Installation of equipment

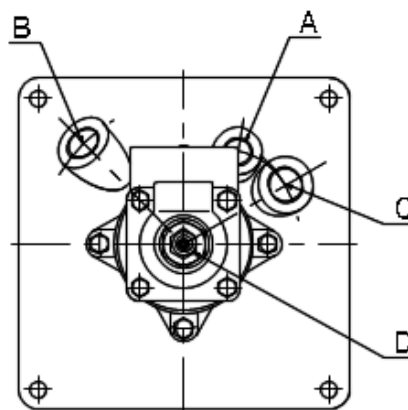
Install (Sight-Hole, Ultra-Adapter, Pilot Burner, Ignition Plug) to a following position

PILOT BURNER Method



- A:Sight-Hole
- B:Ultra-Adapter
- C:Pilot Burner

DIRECT IGNITION Method



- A:Sight-Hole
- B:Ultra-Adapter
- C:Plug
- C:Direct Ignition Plug

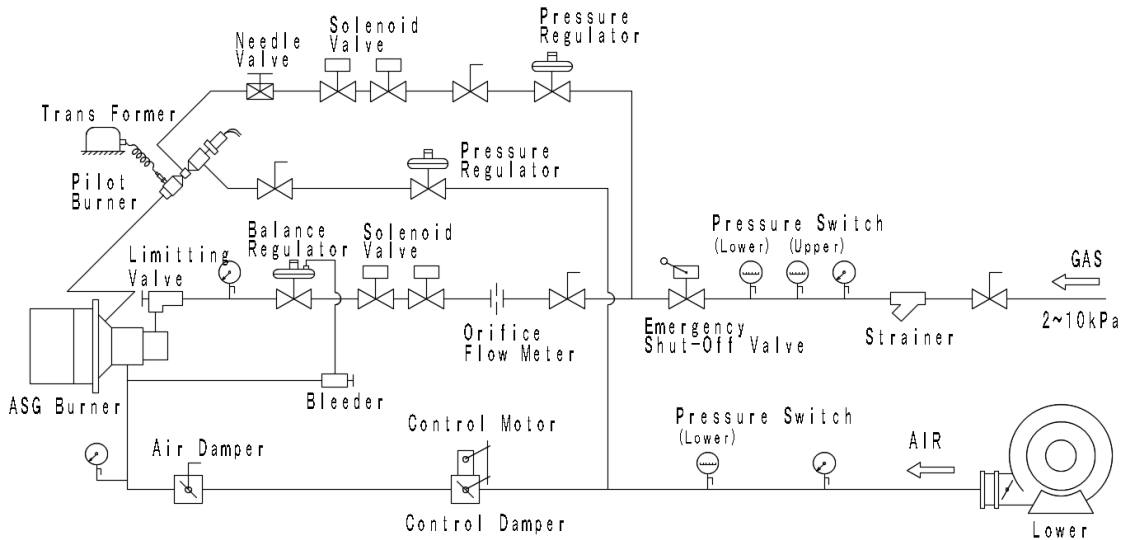
※Direct ignition is a center attachment type.

※About UV when using the direct ignition type.

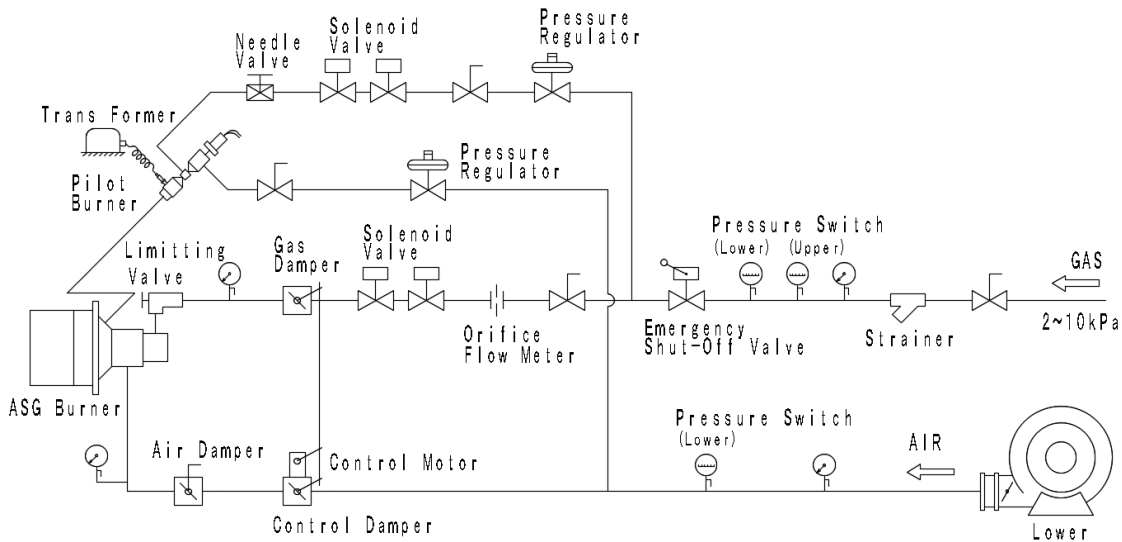
When it magnetize by a spark, please do the measure for installing a timer,

5. Flow sheet

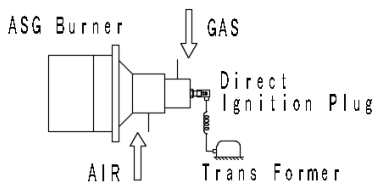
(1) Pressure balance Valve Method



(2) Connection Method



※Direct Ignition



※When using gas-air-ratio regulator by the direct ignition type, please install an solenoid valve in the secondary side of the gas-air-ratio regulator. In case of the secondary side of the electromagnetic valve, it's sometimes difficult for gas-air-ratio regulator to ignite.

[supply → gas-air-ratio → solenoid-valve → Burner]

6. Operation

Preparing

1. Check to confirm that all the gas cocks have been closed.
2. Check for in-pipe gas leakage with air or nitrogen.
3. Check to confirm that each component unit of the air and gas lines are in normal operation.
4. Check to confirm that gas is being supplied under the specified pressure and that the inside of the pipe has been subjected to replacement purge.
5. Start the blower, and check to confirm that the outlet pressure is at the specified pressure level.
6. Set the pressure to the pressure in the maximum combustion (6kPa) and to the pressure of the minimum combustion (0.1-0.5kPa) by using the damper.
7. Fully open the control damper, and air-purge the inside of the furnace. (Use approx. 5 times as much as the furnace volume as the reference volume of air-purge.)
8. Set the control damper to the position for the minimum combustion.

Igniting

1. Check to confirm that the cock, solenoid valve and limiting valve located immediately before the burner have fully been closed.
2. Ignite the pilot burner by pressing the ignition push button. (Be sure to check to confirm visually or by using a flame detector that the pilot burner has been ignited.)
3. Fully open the cock and solenoid valve located immediately before the burner, slowly open the limiting valve, and check to confirm that the main burner has exactly been ignited.

※Since a shock is large, please avoid ignition by high load of a main burner.

In the case of direct ignition type, please ignition in the combustion capacity rating less than 1/3 to make it light certainly.

Adjusting

1. Read the air quantity referring to the burner air quantity characteristic table (burner PQ characteristic table).
2. Calculate the necessary gas quantity, and adjust the gas quantity by using an orifice flow meter (MO) or other flow meter and manipulating the limiting valve until the specified excess air ratio is obtained.
3. When the equalizing valve method is used, slowly open the control damper to the position for the maximum combustion while checking the combustion state, and check to confirm the flowrates of gas and air.
4. When a safety circuit has been incorporated into the flame detector, also check to conform the flame current value.
5. After setting the excess air ratio, return the control damper to the position for the minimum combustion.
6. When the control motor is used, joint the control damper to the specified position.

Caution

During combustion, the pressure in a burner tile becomes high, and if a site hole is removed, a flame will blow-off.

Be careful of slack of a site hole, or breakage of glass enough.

Extinguishing

Fully close the cock and solenoid valve located immediately before the burner, and check to confirm that the fire has been extinguished.

※ Stop the combustion blower after the in-furnace temperature lowers to below 500°C to protect the nozzle.

Inspection (Nozzle, Burner Tiles)

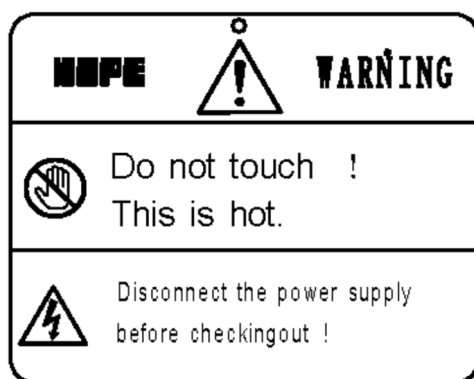
※ Inspection must be made after the furnace has sufficiently been cooled. In inspecting, be sure to wear heat insulating gloves and other protective gear.

1. Check to confirm that the combustion blower, as well as the shut-off valve and the solenoid valves, are in the OFF position.
2. Loosen the union, etc. of the gas pipe.
3. Loosen the hexagon bolts setting the air body① and the gas body⑥.
4. Firmly hold the gas body⑥ and slowly pull out the gas nozzle⑧ and the gas pipe⑦.
5. Remove the union or flange of the air pipe.
6. Loosen the hexagon nuts setting the burner plate② and the air body①.
7. Remove the air body①, and remove the air nozzle④ set in the burner plate②.
8. In replacing the gas nozzle⑧ by a new gas nozzle, remove the old gas nozzle by applying a pipe wrench to the gas pipe⑦ and a monkey wrench to the gas nozzle.
9. Inspect the inner surface of the burner tiles. If the burner tiles are damaged, as it may often affect combustion, contact us for instructions.
10. Reassemble the burner by reversing the order of the above steps.

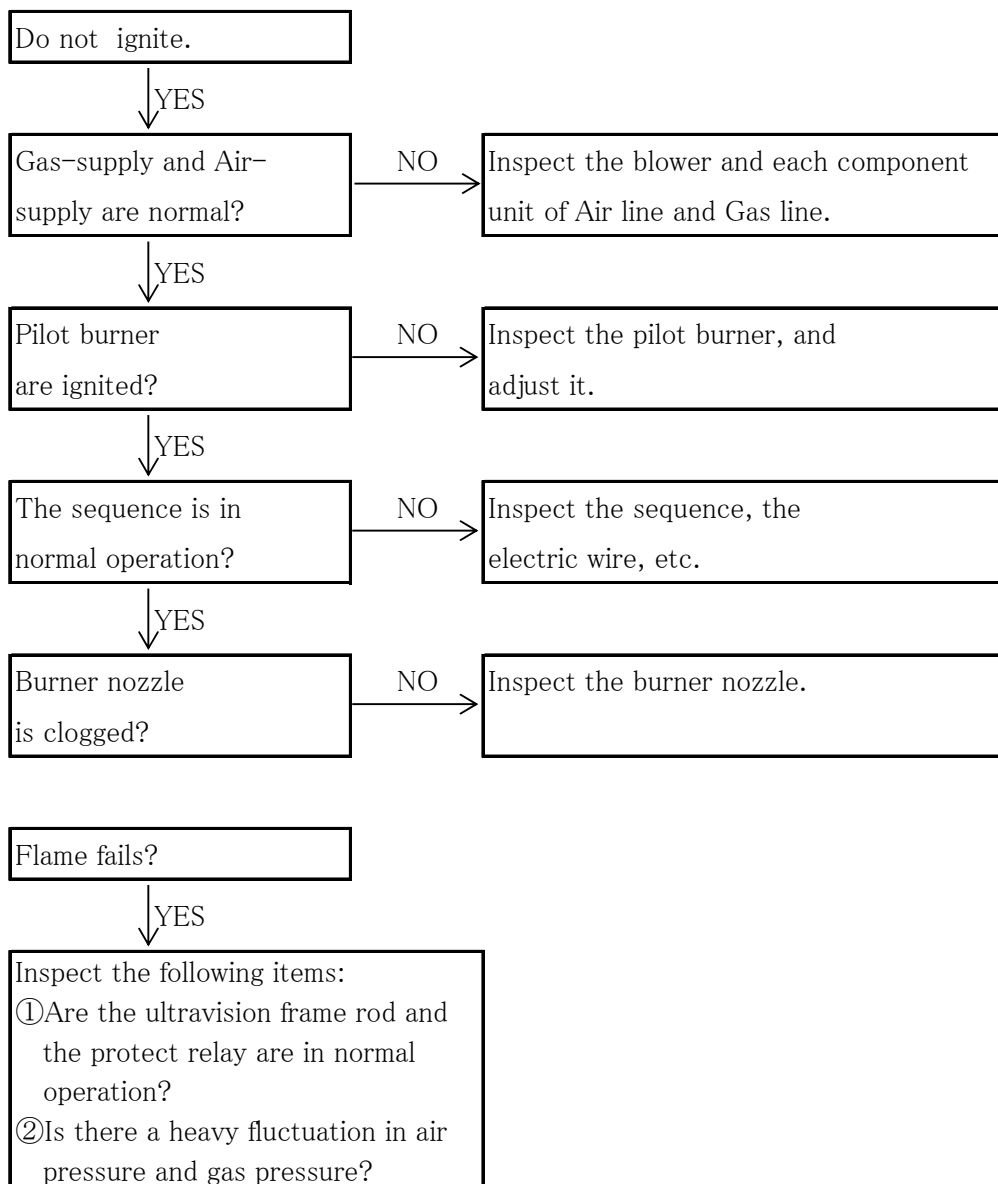
※ Inspect and clean the burner and its accessories from time to time according to the operational conditions.

7. Warning Plate

When the installation construction has been completed, check to confirm that the warning plate shown below is firmly attached to the burner body. If the warning plate is lost, immediately contact our sales department for instructions.



8. Troubleshooting



※ Before inspecting the burner and its peripheral units, carefully read the instruction manual attached to each equipment.

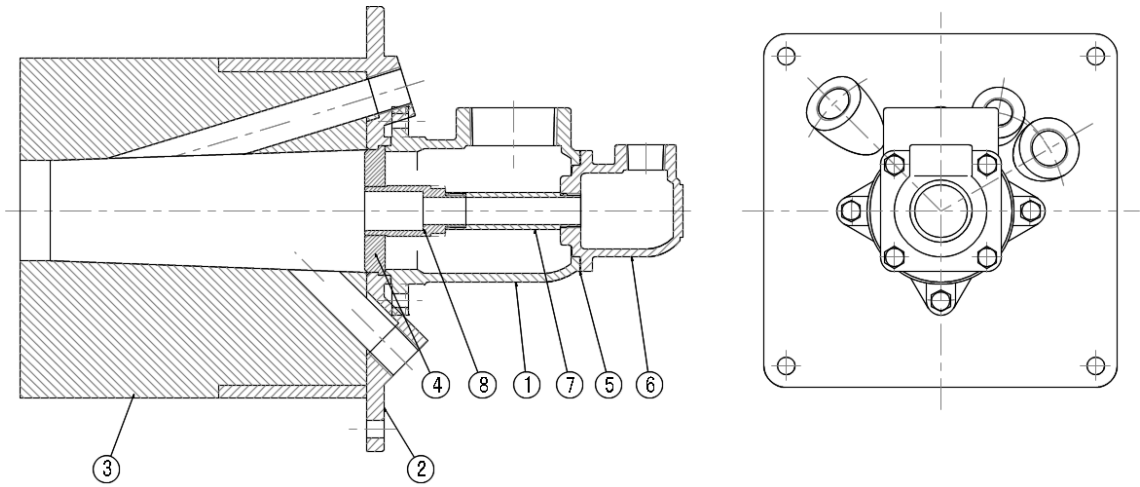
※ If there is any questions, contact our sale department.

TEL 052-736-0773

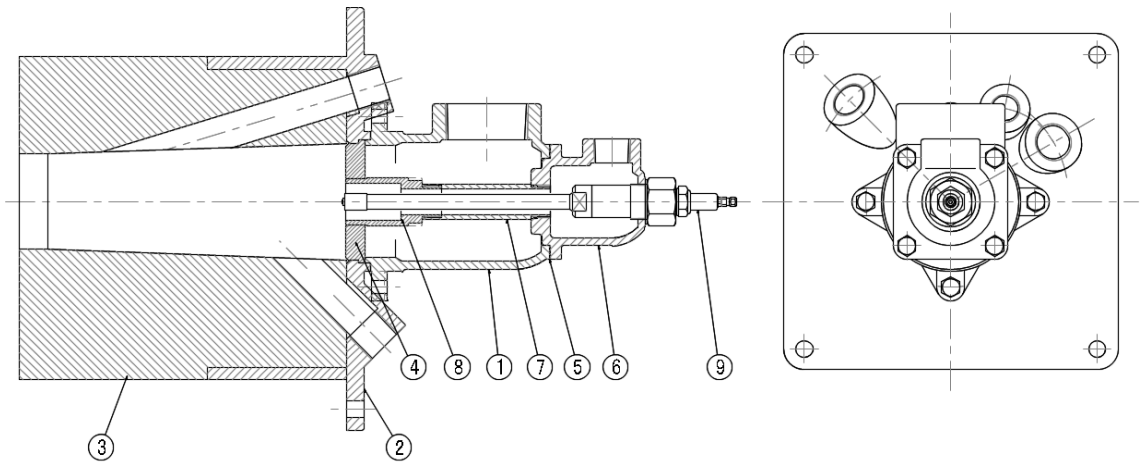
FAX 052-736-0258

9. Type-ASG Construction Drawing

Pilot Burner Method



Direct Ignition Method



NO.	Particulars	Quan.	Note
1	Air Body	1	
2	Burner Plate	1	
3	Burner Tile	1	
4	Air Nozzle	1	
5	Packing	1	
6	Gas Body	1	
7	Gas Pipe	1	
8	Gas Nozzle	1	
9	Direct Ignition Plug	1	

※ Direct ignition is a center attachment type.