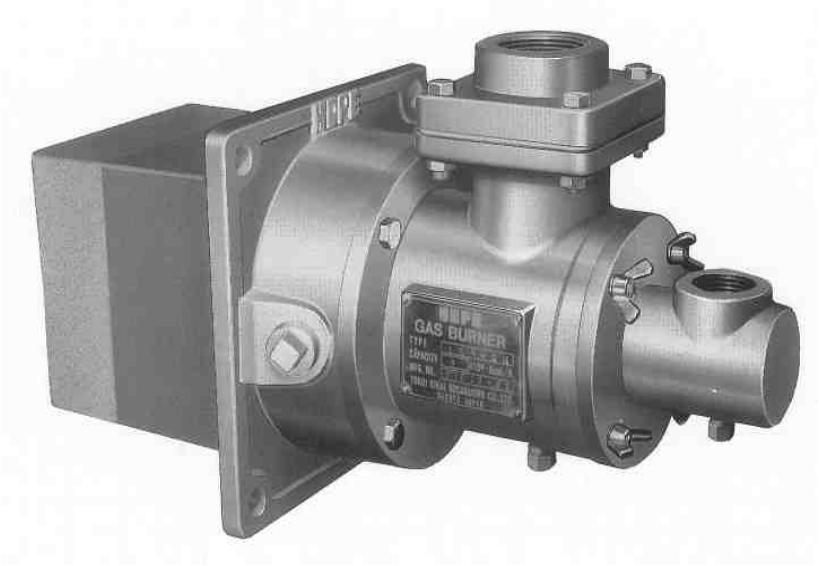
HOPE

HOPE LXG

NEW LUMINOUS GAS BURNER

HANDLING MANUALS



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Thank you very much for choosing the HOPE LXG type new luminous gas burner. To get maximum performance out of your new gas burner and to properly maintain and inspect the unit, please read through this manual carefully. Keep it handy for future reference. Please ensure that both construction company and end user will get this manual.

Inspection after Purchase

Check the name plate and the following specification table to make sure that the product is per your order. Also check if it is free from any transportation damage.

Overview

The LXG type new luminous gas burner allows you to obtain luminous flame over the full range of turndown. It improves transmission efficiency for various applications such as heat treatment, heating and melting furnaces. In addition to the simple construction, the LXG burner uses wing bolt for its main body. This makes it very easy to remove and fit the nozzle cone section during the maintenance.

Specification

<table>
<tr><th rowspan="2">Model</th><th rowspan="2">Capacity kW
(×1,000kcal/h)</th><th colspan="2">Connection</th><th rowspan="2">Weight(kg)</th></tr>
<tr><th>Air</th><th>Gas(Rc)</th></tr>
<tr><td>LXG-1</td><td>58 (50)</td><td rowspan="2">Rc 1 1/2</td><td rowspan="4">1</td><td rowspan="2">22</td></tr>
<tr><td>LXG-2</td><td>93 (80)</td></tr>
<tr><td>LXG-3</td><td>140 (120)</td><td rowspan="2">Rc 2</td><td rowspan="2">23</td></tr>
<tr><td>LXG-4</td><td>174 (150)</td></tr>
<tr><td>LXG-5</td><td>233 (200)</td><td>Rc 2 1/2</td><td rowspan="2">1 1/2</td><td>53</td></tr>
<tr><td>LXG-6</td><td>350 (300)</td><td>Rc 3</td><td>R47</td></tr>
<tr><td>LXG-7</td><td>465 (400)</td><td rowspan="2">Rc 4</td><td rowspan="2">2</td><td>82</td></tr>
<tr><td>LXG-8</td><td>700 (600)</td><td>R68</td></tr>
<tr><td>LXG-9</td><td>1,163 (1,000)</td><td>125A</td><td rowspan="2">2 1/2</td><td rowspan="2">R157</td></tr>
<tr><td>LXG-10</td><td>1,744 (1,500)</td><td>150A</td></tr>
</table>

※ Standard pressure: Gas 2～10kPa
Air 3～6kPa

Matters to be attended for safety

Before installing, trial- operating, maintaining or inspecting this burner,please learn the inside of this burner, information of safety and other matless to be attended by reading this instruction manual and all of attached documents.

The rank of the matters to be attended is classifie to "Top danger"
"Danger "and "Caution" in this instruction manual,

In case of wrong perating, it is predicted that serious dangerous situation will happen and the operator or other people.
May die or may be seriously injured.

In case of wrong operating,it is predicted that dangerous situation will happen and operator or other people may die or may be seriously injured.

In case of wrong operating, it is predicted that dangerous situation will happen and the opertor or other people will be injured or only material described.

NOTE, Even the matters classified to CAUTION have a possibility of causing serious results. Then,never fail to abide by matters discaribed.

	Meaning of the mark	Sample
COMPULSON	This is to tell that there is indication to in-strut compulsorily your action. Ontents of the instruction must be described definitely nearly.	**Never fuel** to do
PROHIBITION	This is to tell the prohibited action. Specifically prohibited action are described.	**TOUCH PROHIBITED**
CAUTION	This is to tell that three is a thing to be at attended. The specifically attended thing is described nerrily. described.	**CAUTION HIGH TEMPE RATURE**

Read without foil

Never foil to exhaust the air in the farnace (pr-purge) before igniting.
Repeated ignitions may cause explosion due to the gas stagnated in the furnace, please install safety devices like a flame supper visor.

ELECTRIC SHOCK CAUTION

Never fail to cut the electricity of transformer when you take off the ignition plug in order to i check the spark of it.

Never fail to take off the site hole when igniting or firinf the burner.
※flame in the furnace may blow out.

TOUCHING PROHIBITED

Never touch the mounting plate of the burner and fitting parts of the pilotburner.
These area are high temperature when the burner is burning.

1. Do not use the attached gasket for sering this burner.
2. Put the replaced old gaskets pouch and thrae'away therm according to the waste disposal regulation or the waste cleaning regulation.
   Never burn up them.

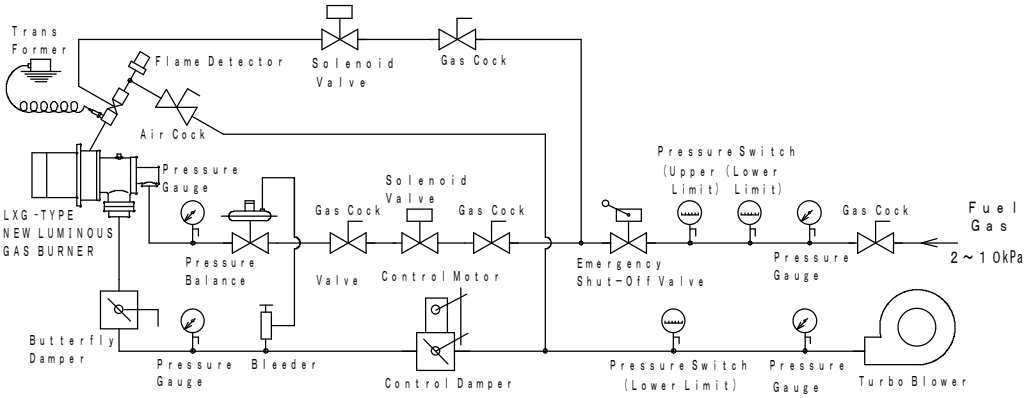
Mounting

1) Support the exterior surface of the burner tile, particularly the bottom face with fire block, castable refractories or other appropriate materials so that the burner tile will not fall down.
2) When mounting the burner to the furnace, secure it by filling the space between the mounting hole and the burner tile with the fire-resisting mortar.

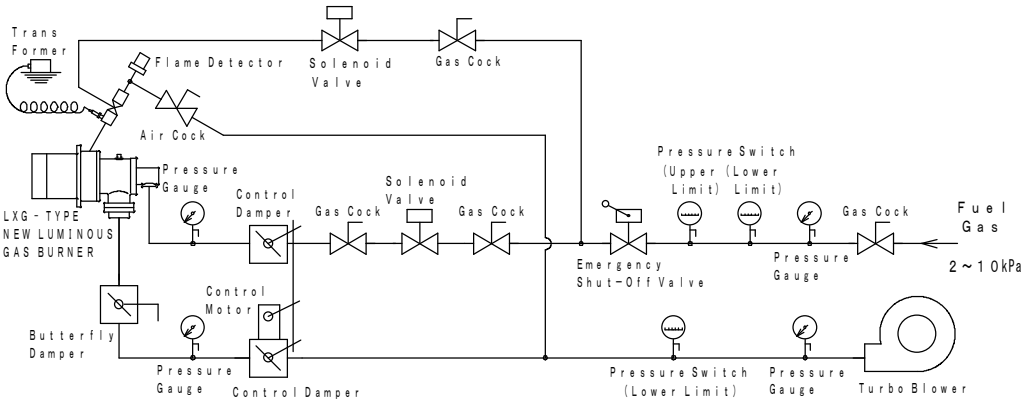
Piping

1) Clean the piping thoroughly so that any seal tape, bond, chip or other materials will not be left inside. Failure to do so may result in the malfunction of solenoid valve, governor, other valves and parts.
2) Attach piping support when connecting the pipes so that the burner will not be under unnecessary load.
3) The air orifice is built in to the LXG. Perform piping in such a way so that the straight pipe before the burner entrance will be at least 3 times longer than the pipe diameter. Attach pressure cocks to the air and gas pressure difference detection taps (4 areas).
4) When you choose the fan, pay attention to the non-combustion air capacity listed in the catalog.

(1) PRESSURE BALANCE VALVE METHOD



(2) INTERLOCKING METHOD



OPERATION MANUAL

Preparation

1) Make sure that all the gas cocks are closed.
2) Use air, nitrogen or other appropriate gas to check the leak inside the gas piping.
3) Check if all the equipment for air and gas lines work properly.
4) Make sure that the gas is supplied as per specified pressure and that the gas inside the piping has been replaced.
5) Start the blower and check if the outlet pressure is per specifications.
6) Use the control damper to set the maximum combustion (6kPa) and the minimum combustion (0.1～0.5kPa).
7) Fully open the control damper and purge inside the furnace with air (You need to purge area that is approximately 3 times larger than the furnace capacity)
8) Set the control damper to the minimum combustion.

Ignition

1) Make sure that the cock before the burner, solenoid valve and limiting valve are fully closed.
2) Ignite the pilot burner by pressing the ignition button. (Always use the pilot burner. Use of torch or igniter rod is dangerous. Also, check if the ignition was made securely.)
3) Fully open the cock before the burner and the solenoid valve. Slowly open the limiting valve and check if the main burner was ignited securely.

Adjustment

1) Measure the pressure difference of air orifice and acquire the air capacity from the table.
2) Calculate the required gas capacity and acquire the pressure difference of orifice that suits the flow. Use the limiting valve to set the pressure difference. At this time, make sure to convert the specific gravity of the atmosphere.
3) When using the equalizing valve control, slowly open the control damper to the maximum combustion as you check the combustion status. Check the flow rates.
4) Use the flame detector to check the current value,
5) When the air ratio setting is completed, set the control damper to the minimum combustion again. Joint the control motor and the control damper so that the necessary turndown will be obtained.

Notes

1) The pressure inside the burner tile becomes high during the combustion, and removing the sight hole may expose you to the flame. Pay special attention to the looseness of the sight hole or glass damage.
2) There are 3 types of orifices available depending on the type of gas. A plate that indicates the orifice size is attached to the flange bolt where the gas orifice is fitted. Use the following table to confirm the orifice size.
3) An orifice built in to the burner is intended to serve as adjustment guide. If you need more accurate value, we recommend to install MO type metering orifice at some midpoint in the piping.

Extinction

Fully close the cock before the burner and the solenoid valve, and check if the flame has been extinguished. To protect the nozzle, wait until the furnace temperature falls down below 500℃ before stopping the combustion blower.

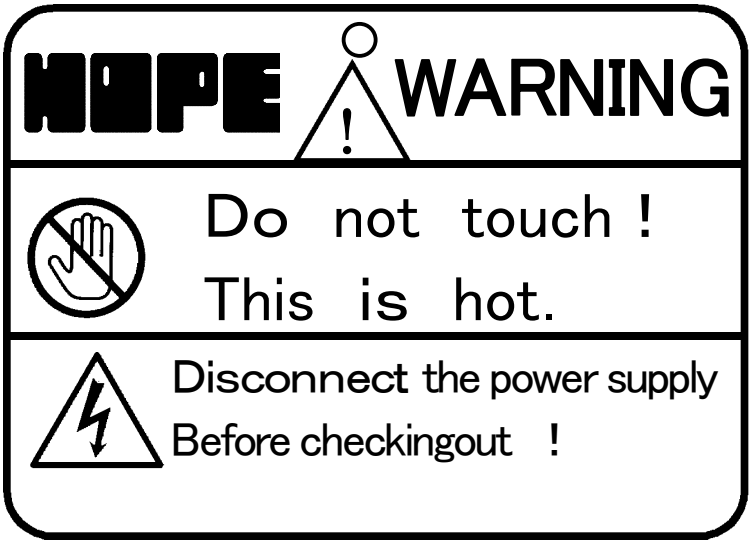
Inspection (Inspection of Nozzle and Burner Tile)

※ Inspection should be performed when the furnace has been cooled. Always wear protective gloves and other safety devices.

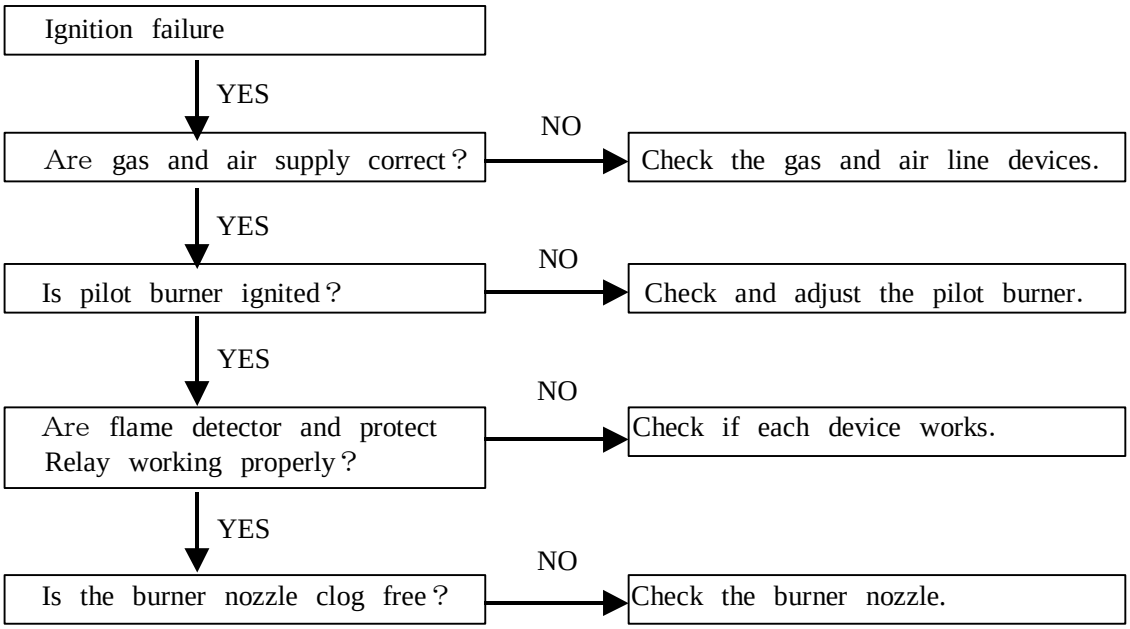
1 Make sure that all the powers such as of the combustion blower have been turned off.
2 Check if all the cocks have been closed.
3 Loosen the union and other sections of the gas piping.
4 Loosen the wing bolt (14) that secures the air body (3) and the gas body (4) (The wing bolt cannot be pulled out because it is secured to the gas body with the E ring (13).)
5 Hold the gas body (4) securely and remove the nozzle cone ((5), (7), (8) and (9)). At this time, handle it with extra caution as hot air in the furnace may blow out from between the air body (3) and the gas body (4).
6 When the nozzle and the gas body have been removed from the air body, check for any deposits of foreign particles around the gas and air nozzles. Check for any loose parts.
7 When you need to replace the nozzle cone set with new parts, use a pipe wrench to remove the gas pipe (9) and fit the new nozzle cone set.
Then check the burner tile:
8 Clean it free of any foreign particles. Contact us if the burner tile is damaged. It may adversely affect the combustion.
10 Reassemble the parts when you make sure that they are not defective (Do not forget to tighten any parts or piping).
※ Check the burner and accessories as adequate, depending on the conditions of use.

※WARNING PLATE

Please check whether the warning plate shown below is removed from the burner body after installation looks finished. If the warning plate was lost , please let our sales department know it.



Troubleshooting



※For details on how to inspect the burner and peripheral devices, see the user's manual of each unit.

* Contact our Sales Department for any questions:
Tel +81-52-736-0773
Fax +81-52-736-0258

LXG－TYPE
NEW LUMINOUS GAS BURNER

No.	PARTICULARS	QUAN	REMARKS
1	Burner Plate	1	
2	Burner Tile	1	
3	Air Body	1	
4	Gas Body	1	
5	Cone	1	
6	Air Ring	1	
7	Air Nozzle Plate + Straighting Cone	1	Weld Assembly
8	Gas Nozzle	1	
9	Gas Pipe	1	
10	Air Orifice	1	
11	Orifice Flange	2	
12	Air Flange	1	
13	E-Ring	4	
14	Butterfly Bolt	4	
15	Hexagon Headed Bolt	4	
16	Hexagon Headed Bolt	4	
17	Hexagon Headed Bolt	4	
18	Set Screw	4