Eclipse Combustion

# Eclipse Gas Burners

## GENERAL INSTRUCTIONS

## 1. Installation instructions

- Before installation and start-up these instructions must be studied carefully, in order to get acquainted with the installation and its operation.
- Consult the list of spare parts to guarantee good maintenance.
- Normal maintenance requires the replacement of parts, which should be available in sufficient quantities.
- Keep the installation clean and in a good mechanical condition.
- Inspect the burner installation carefully upon arrival. Transport damage must be communicated immediately in order to have a right on an indemnity.
- When the discharge is made by means of a fork-lift truck attention should be paid to a right division of the weights.
- During the unpacking and positioning of the installation, same must be kept in upright position.
- During the installation, take care that sufficient space is available around the burner installation for good accessibility and maintenance of the apparatus.
- For technical apparatus, the maximum surrounding temperature is 60°C. Take care that this is not exceeded.
- Check the presence of plastic plugs or packing-material, before installing piping or apparatus.

  The color-code of the piping is

  Air - Blue
  Gas - Yellow
  Oil - Brown

- Storage of the burner installation must be made in a dry space.

## 2. Start-up instructions

Operations to be made before the start-up.

- Check whether all gas piping has been connected.
- Check whether all air and possible compressed air piping has been connected.
- Check whether all electrical connections have been made.
- Check whether all external safety apparatus, such as process air pressure switches, exhaust air pressure switches, protecting thermo regulators, etc. have been installed and connected.
- Check whether the gas pressure is in conformity with the value submitted by us.

## 3. Start-up

- Newly installated gas piping must be purged by means of the air release valve in the gas train.
- Open all gas cocks.
- In case a gas pressure regulator has been supplied, same has been adjusted in advance, so that the projected gas pressure can be read from the manometer supplied.
- Adjust the min. gas pressure switch on 80% of the prevailing gas pressure.
- The max. gas pressure switch has been installed in most cases downstream of the gas capacity regulator and serves to control the gas pressure at the burner max. capacity. Adjust this max. gas pressure switch to 20% above the prevailing preliminary gas pressure.
- When the max. gas pressure switch (HP) has been installed next to the min. gas pressure switch (LP) adjust the HP to 20% above the prevailing premilinary gas pressure.
- Check the right direction of rotation fans.
- Start the combustion air fan and adjust the air pressure according to the burner instruction sheet. With the Eclipse air heat burner type "AH", bulletin 140, this air pressure is constant and the adjusting valve on the suction part of the fan must be adjusted in such a way, that this air pressure is being reached. The air pressure must be measured by means of a U-tube manometer filled with water + measuring hoses. In order to facilitate these measurements, 1/8" measuring nipples are available, provided internally of a small stop-screw.

In most cases burner installation are controlled by an automatic burner programmer installed in the electrical control panel. Start-up must be undertaken in close co-operation with suitably qualified electrical personnel.

**It is very dangerous to operate without flame safety control!**

Study in advance the electrical wiring diagram, which has been supplied in the electrical control panel. File the wiring diagram after use carefully in the electrical control panel box.

## 4. Adjustment of main burner capacity

The adjustment of max. capacity is reached, when the capacity control device is in a fully open position. This capacity control device can be:

- A gas butterfly valve (for adjustment see instruction sheet 721) or
- Varitrol gas adjusting valve (for adjustment see instruction sheet 726) or
- Air butterfly valve, by which the quantity of gas is supplied in proportion by means of a proportional gas adjusting valve (for adjustment see instruction sheet 688) or
- Air butterfly valve, by which the quantity of gas is supplied in proportion through an LP gas/air mixer (for adjustment see instruction sheet 652) or a Variset gas/air mixer (for adjustment see instruction sheet 654) or
- Air butterfly valve, by which the quantity of gas is supplied in proportion through a mechanically coupled gas butterfly valve (for adjustment see instruction sheet 721) or a Varitrol gas adjusting valve (for adjustment see instruction sheet 726)

In fully open position of the gas butterfly valve the max. burner capacity is now adjusted, by adjusting the gas pressure by means of the installed gas pressure regulator ( see relevant instruction sheet).
In fully open position of the air butterfly valve the max. burner capacity is adjusted, by adjusting the air pressure or mixing pressure of the burner inlet by means of the installed manual butterfly valve and/or air adjusting valve on the combustion air fan.

## 5. Maintenance instructions

1. Study the list of recommended spare parts.
2. See to it that the required spare parts are, available in sufficient quantities.
3. Clean every month the gas filters (please refer to the instructions of the filter).
4. Clean each month the UV scanner or ionisation probe.
5. Clean each month the ignition electrode.
6. Keep the combustion air fan clean. Clean the air filters, if available, each month.
7. Keep the air release openings free from dust.
8. Check every month that the electrical safety shut-off valves are gas tight in a de-energized position, including the pressure test nipple installed between the two valves.

# 6. Failures and possible causes

| Failures | Possible cause |
|---|---|
| Gas pressure too low | - gas pressure switch out of order<br>- main gas cock closed<br>- gas filter partially blocked<br>- min.gas pressure switch out of order<br>- adjustment of gas pressure switch too critical |
| Gas pressure too high | - second gas pressure switch out of order<br>- max. gas pressure adjustment changed<br>- max. gas pressure switch out of order<br>- adjustment of gas pressure switch too critical |
| Combustion air pressure too low | - combustion air fan inlet partially blocked<br>- combustion air adjustment changed<br>- air pressure switch out of order<br>- adjustment of air pressure switch too critical<br>- impulse pipes to air pressure switch partially blocked |
| Low flame start | - end switch on butterfly valve is not closed |
| Main gas valvenot closed | - end switch on main gas valve is not closed |
| Flame failure at burner start | Pilot burner in not ignited<br>- spark not available<br>- spark plug gap incorrect<br>- spark plug dirty<br>- ignition gas valve out of order<br>- ignition transformer out of order<br>- electric connection to spark plug out of order<br>- flame safety device out of order<br>- flame electrode/UV scanner dirty<br>- electrical connection flame electrode/UV scanner out of order<br>Pilot burner fires but main burner is not ignited<br>- min. position capacity adjustment valve is too small<br>- main gas valve(s) out of order |
| Flame failure during operation | - Main flame blows of the burner due to<br>* lack of air at the flame base<br>* excess of gas at the flame base<br>- mass contact between the flame electrode and the metal part of the burner<br>- Flame electrode/UV scanner dirty<br>- Electrical connection flame electrode/UV scanner out of order<br>- Flame safety device out of order |
| Temperature too high | - temperature control out of order<br>- too little process air along the burner<br>- heat is not discharged sufficiently<br>- max. temperature safety switch or temperature sensor out of order<br>- max. temperature adjustment too critical |
| Process air pressure too low | - process air adjustment changed<br>- process air pressure switch out of order<br>- adjustment air pressure switch too critical<br>- impulse pipes to air pressure switch partially blocked |

NOTE:

After each locking operation and failure indication on the electrical panel, the "RESET" button must be pushed to start the burner again.

REMARKS OF THE INSTALLER

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