

C-B11

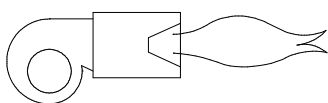
rev. 09/95

ICAM



TYPE SP
GAS BURNER

COMTHERM
PACKAGE BURNER



THE SP BURNER

The 'SP' series of gas burners are pre-packaged fan assisted units designed to fire applications where fresh air is to be heated from ambient temperatures up to plant requirements; typical applications include industrial spray booths and drying rooms.

The SP can be fitted into air ducts having air velocities of 5 to 25m/sec. (recommended = 7.5m/sec).

Air flow should be uniform across the air duct, both upstream and downstream of the burner.

- ◆ **The burners can be installed in air systems where it is not possible to construct a combustion chamber and install a conventional type of burner assembly.**

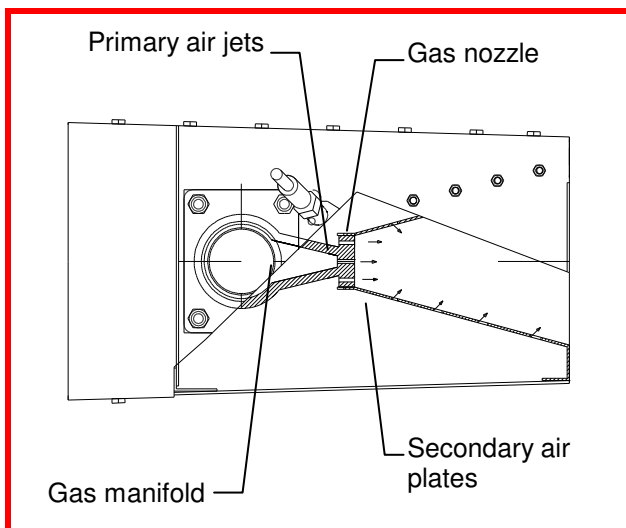
The 'SP' burners consist of an 'in-line PH' type combustion head mounted on a sideplate so as to fire parallel to the sideplate in the direction of air flow.

All the air required for combustion is supplied by an integral combustion air fan mounted on the burner head and situated inside the process air duct.

Air temperatures up to 40C can be accepted upstream of the burner - downstream temperatures should be limited to 120C

A heat resistant viewing window and small access plate is fitted into the sideplate and allows visual inspection of the flame during operation.

The nozzle mix design of the burner and the progressive air mixing feature of the combustion head ensure that burners can operate with high turn down capability; turndown ratios up to 40:1 are possible depending on burner applications and selection.



PREPACKAGED ASSEMBLIES

Each burner unit is supplied with a packaged and prepped valve assembly, including the safety valves and controls necessary to form a fully pre-packaged combustion module.

All burners have a combustion air pressure switch, ignition spark plug and flame sensor; all the electrical components on the burner are prewired to a terminal enclosure mounted on the burner assembly.

The electrical terminal enclosure would normally be fitted with burner run and flame failure indication lights.

Burners are normally supplied complete with a gas valve assembly consisting of pilot/start valve assembly, safety shut off valves, pressure switches, gas regulators/governors and temperature control valve; the exact type of valve assembly will depend on the application and the country of installation.

Burners are normally fitted with complete prewired automatic ignition and flame safety equipment.

Most types of flame failure and automatic ignition control units can be supplied; utilising either flame rectification or ultra-violet flame sensing equipment.

Burners can be supplied with extra large control consoles containing special control gear and switchgear to suit the requirements of any specific application; burners can be supplied with special valve arrangements; burners are supplied with left handed (SF) valve assemblies unless otherwise specified.

Fully prebuilt burner packages are fully tested and the operation of all components checked before despatch from the factory.

AIR DUCT PRESSURES

Because the standard range of SP burners have combustion air fans mounted inside the process air stream they can be mounted on either the negative or positive pressure side of the main process air supply fan.

Burners are supplied with process air duct pressure back loading onto all gas pressure governors and regulators so as to compensate for variations in process air pressure.

Extra gas pressure may be required from the gas supply point to overcome excessive process air duct pressures.

GAS SUPPLY

Series SP burners can be supplied for operation on natural or LP gases and are available in a wide range of sizes and shapes, ranging from nominal thermal capacities of 150KW to more than 10MW.

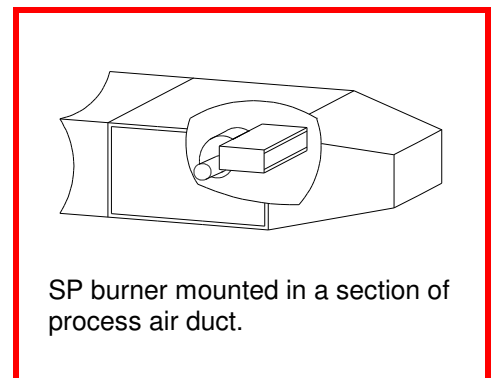
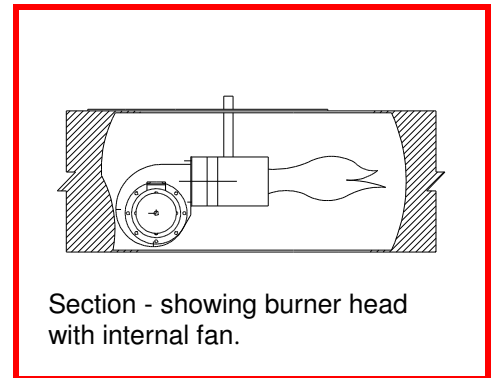
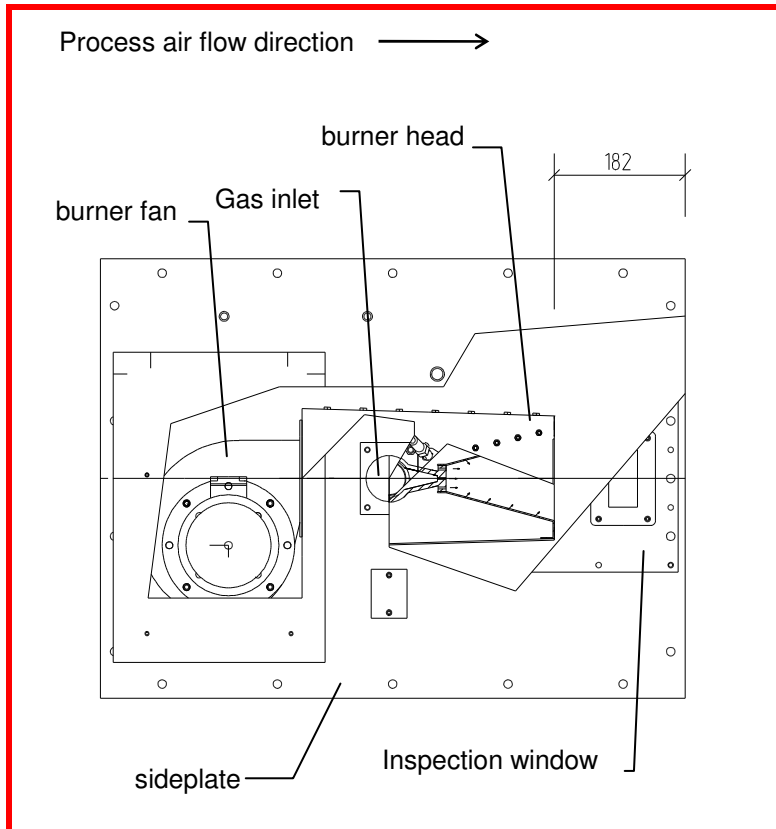
All valve assemblies on the burners are sized to suit an inlet gas pressure of 17.5 mbar (natural gas) or 30mbar (LP gases) unless otherwise specified. Burners can be supplied to suit other gas types and supply pressures.

TYPES OF CONTROL AVAILABLE

SP burners can be supplied suitable for high-low control operation; however the majority of burners are supplied as fully modulation controlled units.

Burners are normally fitted with electrical motorised gas butterfly valves although other types of control valve can be fitted when required (e.g. pneumatic)

The control valves can be fitted with all types of control motor to accept all types of input control signal.



DIRECTION OF AIR FLOW

Standard SP burners are supplied with uninsulated sideplates and arranged to fire horizontal in the direction of air flow.

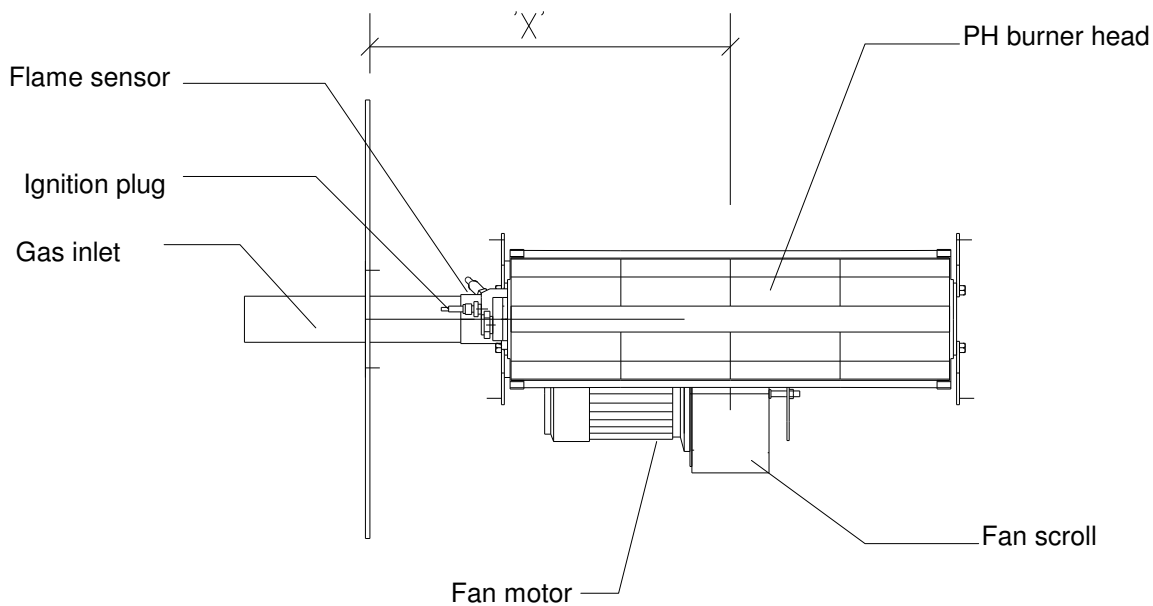
Burner units can be supplied for firing into duct sections with vertical upwards or downwards air flow.

In cases where the process air flow is vertical downwards care should be taken to ensure process air fan run on after burner shut down for a controlled time period in order to prevent problems caused by heat transfer damage to burner components after plant shutdown.

ELECTRICAL SUPPLY

Because SP burners are generally installed into industrial process plants where reliability and easy maintenance is an important feature, SP burners are fitted with combustion air fans fitted with industrial quality three phase electric motors.

Burners can be supplied to suit almost all types of electrical supply; including all common industrial three phase (50 or 60Hz) power supplies and with 110/120v or 220/240v control circuits. Burners to suit other electrical supply voltages can be supplied specially to suit specific application requirements.



USEFUL FACTS TO ASSIST IN BURNER SELECTION.

1KW = 3412 Btu.hr = 859Kcal.hr = 3.6MJ.hr.

1mbar = 0.4" w.c. = 10mm w.c. = 100Pa.

WHEN ORDERING SP GAS BURNERS PLEASE SPECIFY THE FOLLOWING INFORMATION:-

Type of gas and supply pressure to burner.

Combustion chamber/duct pressure.

Electric supply data :

Burner motor voltage (1 or 3 phase)

Control circuit voltage (1 phase)

Type of temperature control required.

Type of control signal to be used.

Valve and burner specification required.

Details of application.

Direction of firing (SF, OF or vertical)

Process air duct size. (dimensions 'X')

INSTALLATION, COMMISSIONING AND MAINTENANCE :-

If required a complete delivery, installation and commissioning service can be supplied, including the manufacture and installation of associated steel fabrications and ductwork.

An installation and maintenance manual is supplied for all burners; commissioning must be carried out by competent engineers in accordance with the instructions in the manual.

Maintenance and service contracts are available - this normally includes scheduled site visits by our engineer and the free of charge supply of burner consumables such as ignition electrode and flame rectification electrode.

A selection of information data sheets (C-B11-INF***) are available showing physical dimensions of types of SP burners and some technical detail.

A selection of complete general arrangement drawings (M3-SP-) are available showing burner assemblies complete with valve assembly and ancillary equipment.

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