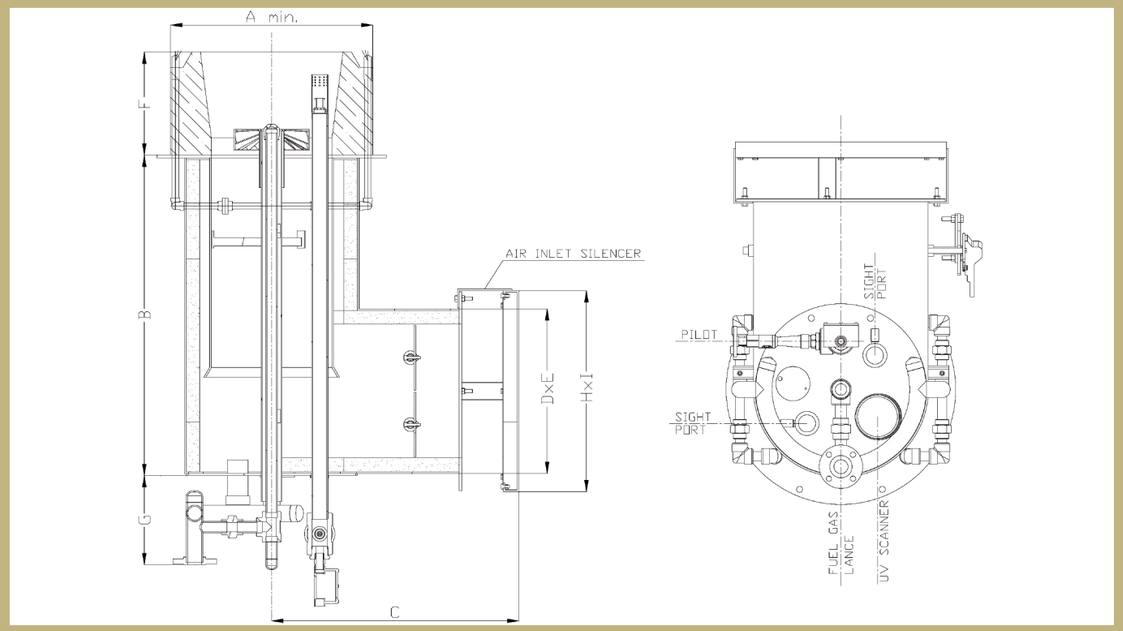
Fuel gas staging natural draft burner

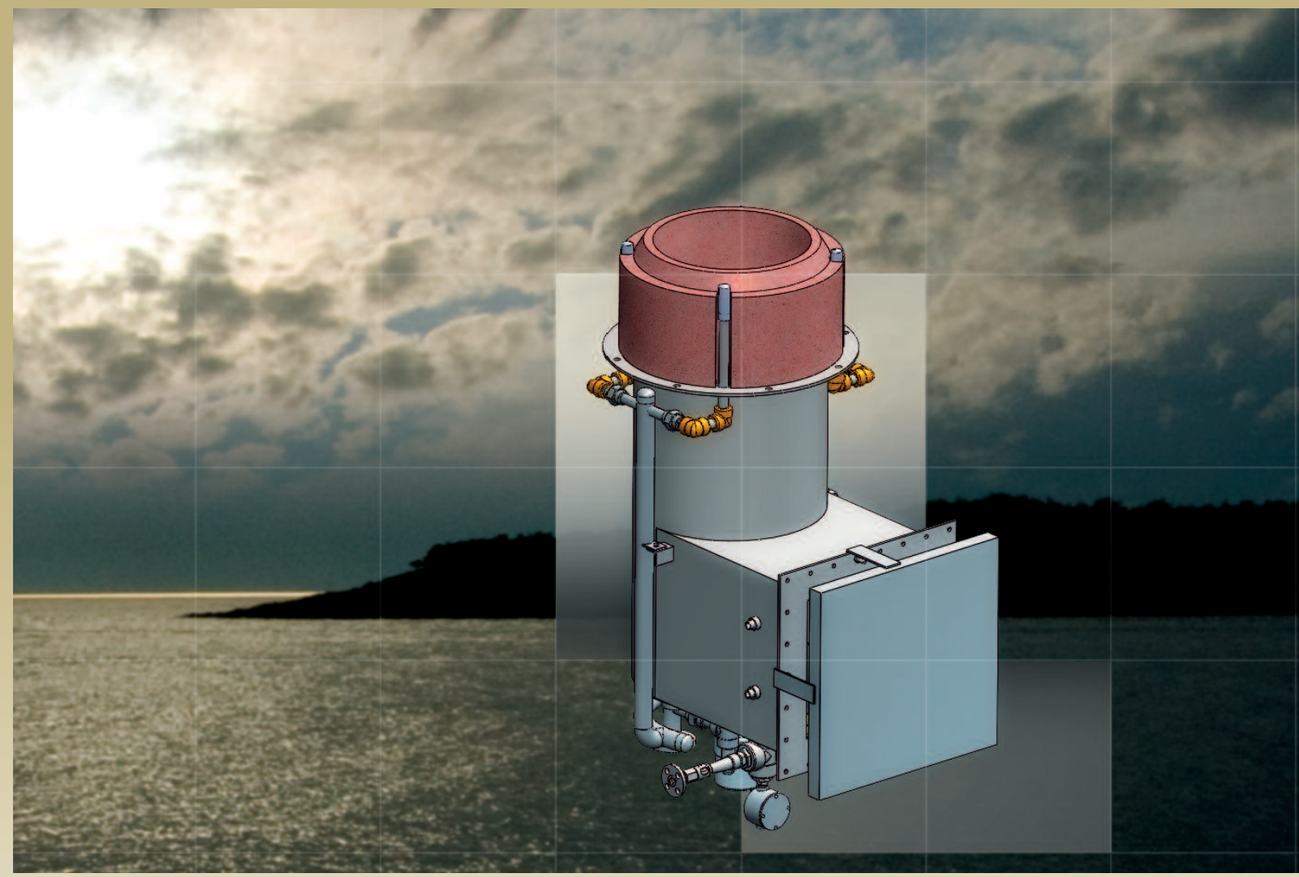


burner dimensions[1]

Burner Size MW	DIM A (dia.)	DIM B	DIM C	DIM D	DIM E	DIM F	DIM G	DIM H	DIM I
0,5	700	800	700	450	500	300	300	750	800
0,8	700	800	700	450	500	300	300	750	800
1,2	800	900	800	500	600	300	300	800	950
1,8	800	900	800	500	600	300	300	800	950
2,6	800	1000	900	550	650	350	300	900	1050
3,8	800	1000	1000	600	700	350	300	950	1150
5,7	1000	1100	1000	600	700	400	300	950	1150
8,8	1000	1100	1100	650	750	400	300	1050	1200
14	1100	1200	1200	700	750	450	300	1150	1200
20	1100	1200	1200	700	800	450	300	1150	1300

[1] Dimensions in case of order can be changed to suit design data.

ITAS Fuel Gas Staging Natural Draft Burner mod. RF-NDG-FS



E/P/B/**RF-NDG-FS**/0112/0

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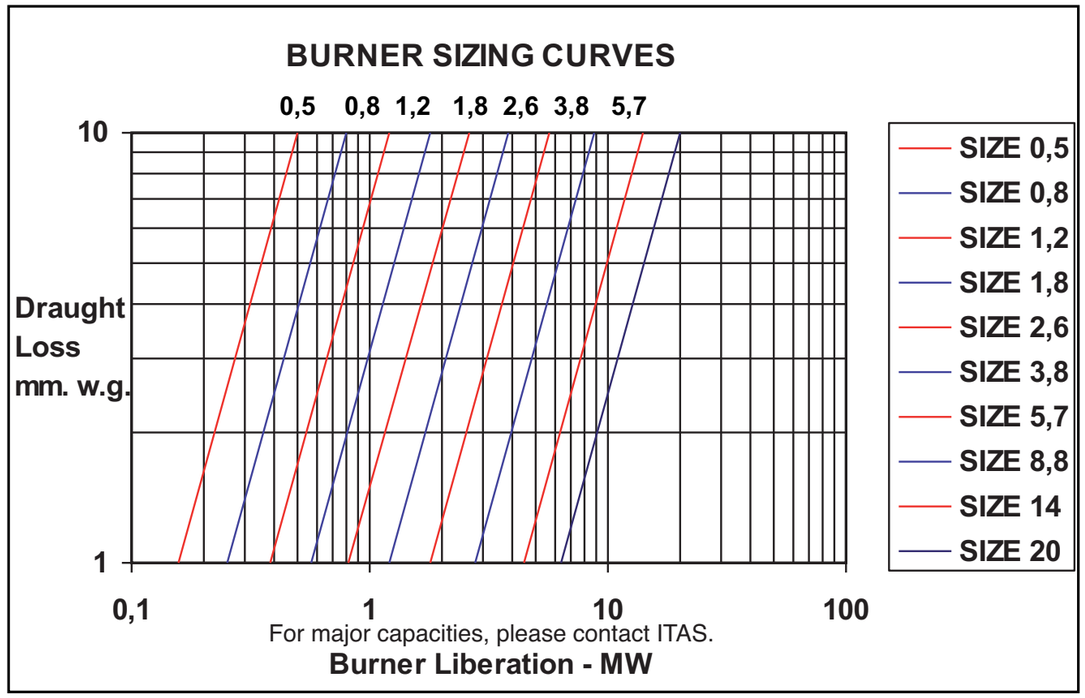
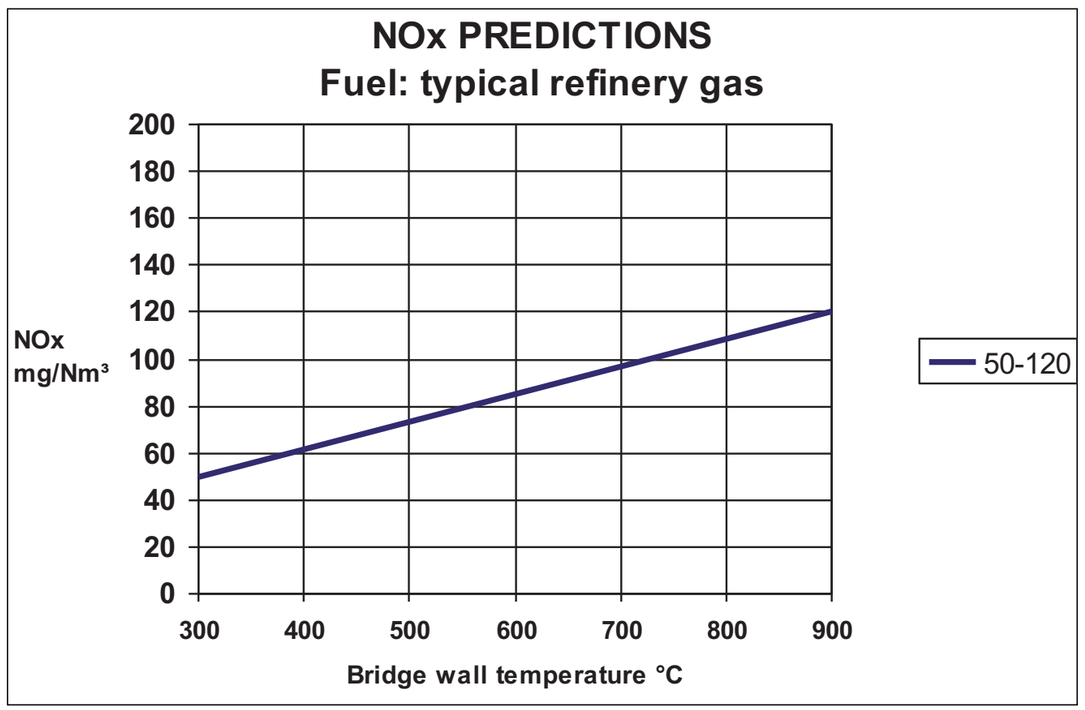
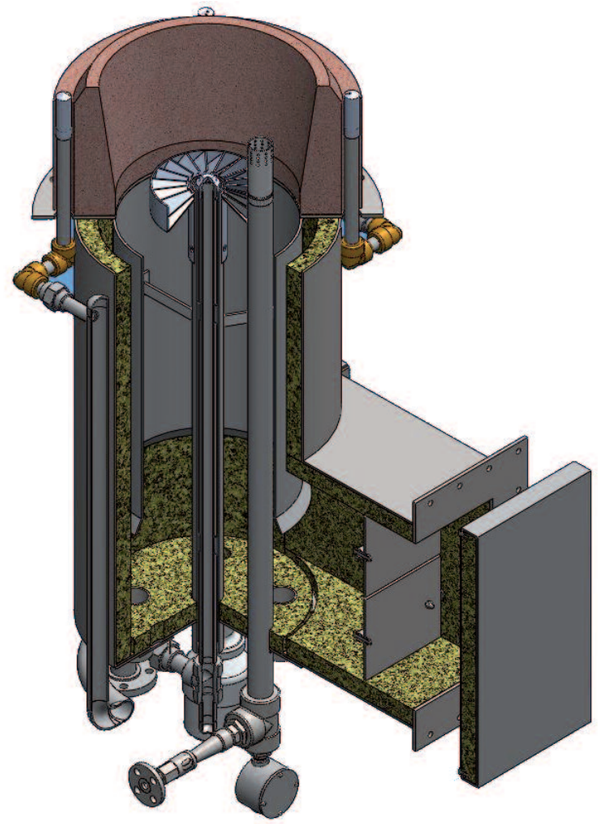




ITAS profile

ITAS S.p.a. is an engineering company designing and supplying, amongst many other products, burners and accessories for combustion system as well as entire turn-key combustion plants.

RF-NDG: fuel gas staging natural draft burner



Fuel gas staged combustion is an effective technique for lowering NOx. Staging means that fuel is added downstream of the main combustion zone.

For example, there may be primary and secondary fuel inlets where a portion of the fuel is injected into the main flame zone, and the balance of the fuel is injected downstream of the main flame zone.

In fuel staging, some of the fuel is injected into the primary combustion zone, while the balance is directed into secondary and even tertiary zones in some cases.

This reduce to NOx formation when compared to stoichiometric conditions. The excess of O_2 from the primary zone is then used to combust the fuel added in the secondary and tertiary zones.

While the overall stoichiometry can be the same as in a conventional burner, the peak flame temperature is much lower in the staged fuel case, because the combustion process is staged over some distance, while heat is simultaneously being released from the flame.

The lower temperatures in the staged fuel flame help to reduce the NOx emissions. Thus, fuel staging is effective for two reasons: (1) the peak flame temperatures are reduced, which reduces NOx; and (2) the fuel-rich chemistry in the primary flame zone also reduces NOx.

In natural-draft burners, the air used for combustion is induced into the burner by the negative draft produced in the combustor.

In this type of burner, the pressure drop and furnace stack height are critical in producing enough suction to induce enough combustion air into the burners.

This burner can be installed either as bottom burner or as side wall burner. The NOx development is below 120 mg/Nm^3.
Our experience is based on a capacity up to 20 MW. Burners are available in the capacity range