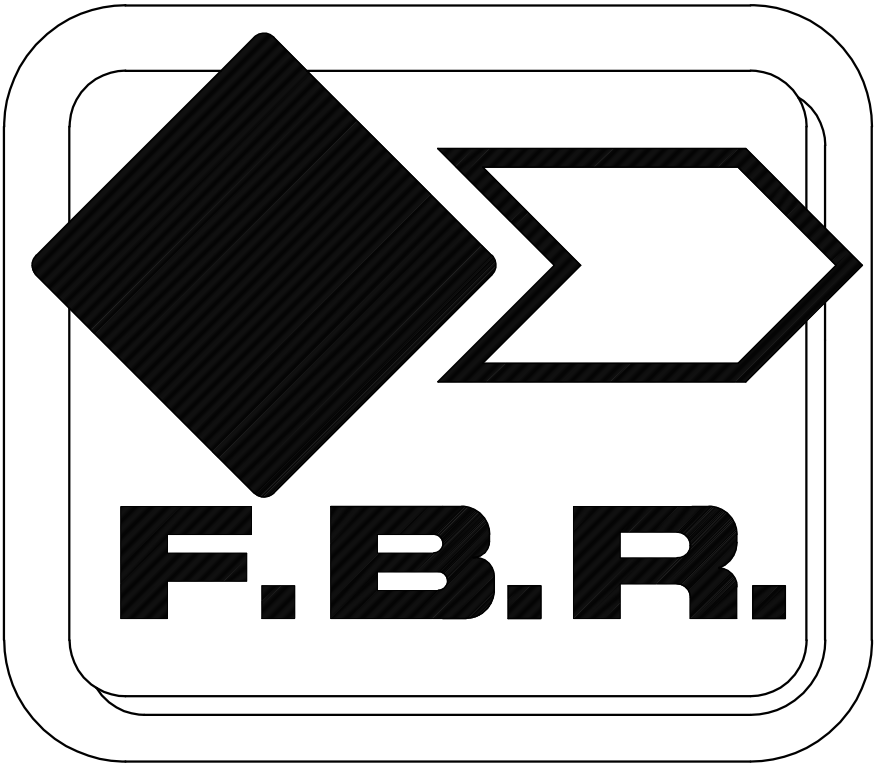
070065_3



INSTRUCTIONS MANUAL FOR BURNERS MODEL:

G X4/2 – G X5/2

TECHNICAL DATA

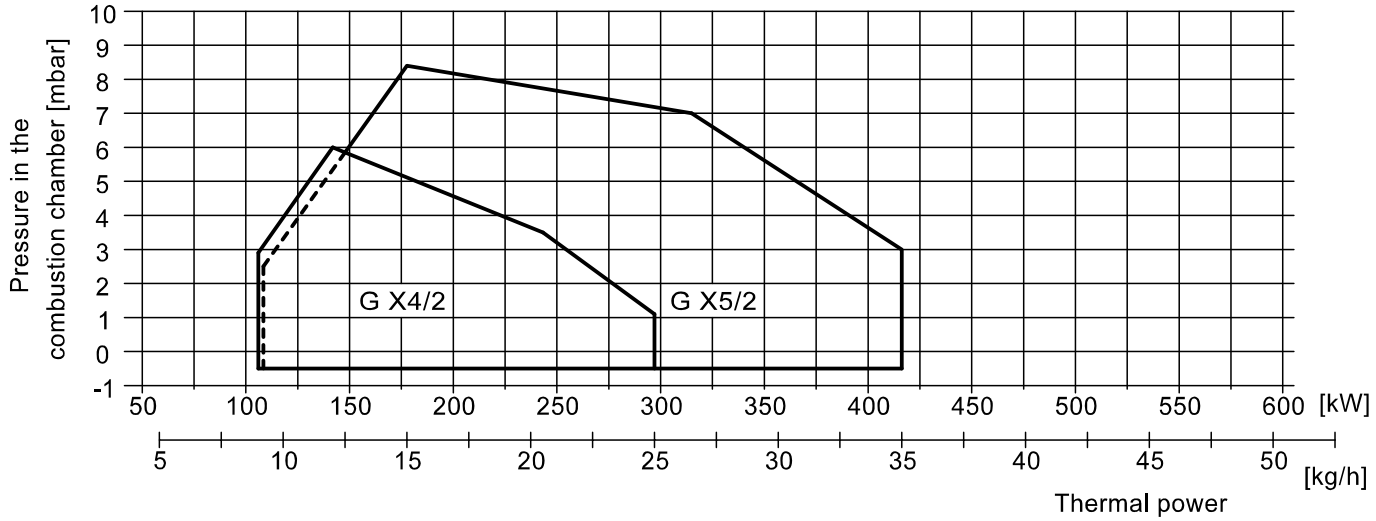
MODEL		G X4/2	G X5/2
Flow min 1° st./min 2° st.-max 2° st. *	[kg/h]	8/12-25	8.5/15-35
Thermal power min 1° st./min 2° st.-max 2° st. *	[Mcal/h]	82/122-255	87/153-357
Thermal power min 1° st./min 2° st.-max 2° st. *	[kW]	95/142-296	101/178-415
Fuel : LIGHT-OIL 1.5° E to 20° C = 6.2 cSt = 35 sec Redwood N° 1			
Intermittent working operation (min. 1 arrest every 24 hours) two stages			
Environmental conditions operation / storage : -15...+40°C / -20...+70°C , rel. humidity max. 80%			
Max temperature combustion air	[°C]	60	60
Nominal electric power	[W]	300	600
Motor fan	[W]	250	450
Nominal absorption power	[A]	1.3	2.7
Power supply:		1/N~230V-50Hz	1/N~230V-50Hz
Degree of electric protection:		IP40	IP40
Noisiness ** min-max	[dBA]	68-69	71-72
Weight burner ***	[kg]	15,5	25

* Conditions of reference: Environment temperature 20°C - barometric pressure 1013 mbars - Altitude 0 m o.s.l.

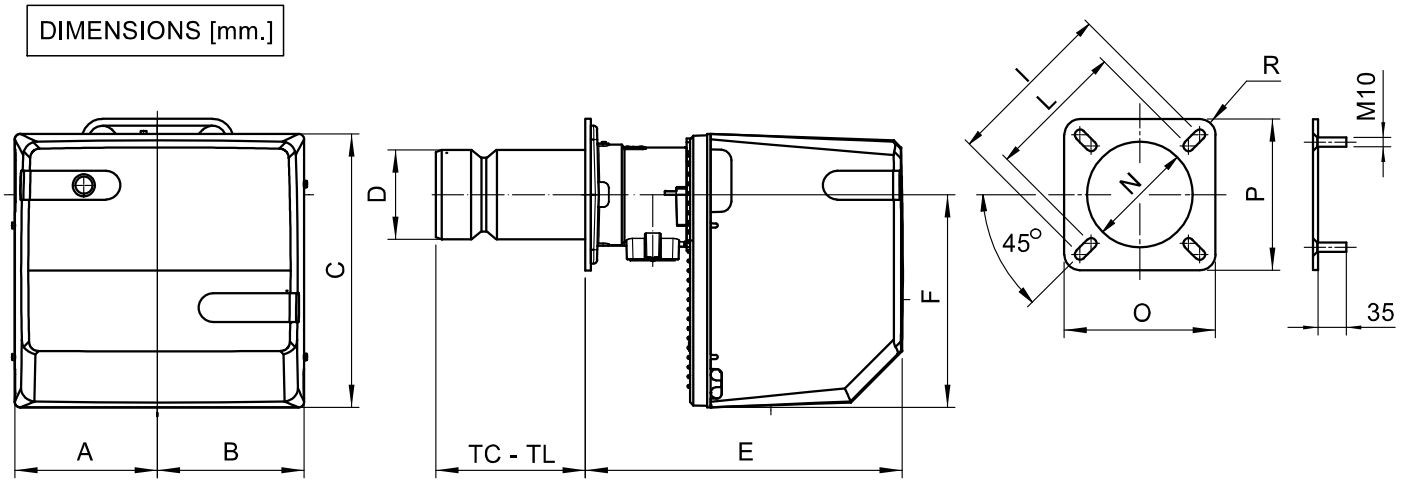
** Measured sonorous pressure in the laboratory combustion, with functional burner on beta boiler to 1m of distance. (UNI EN ISO 3746).

*** For burner with long head add 1 kg weight.

OPERATING RANGE DIAGRAM: Thermal power-Pressure in the combustion chamber

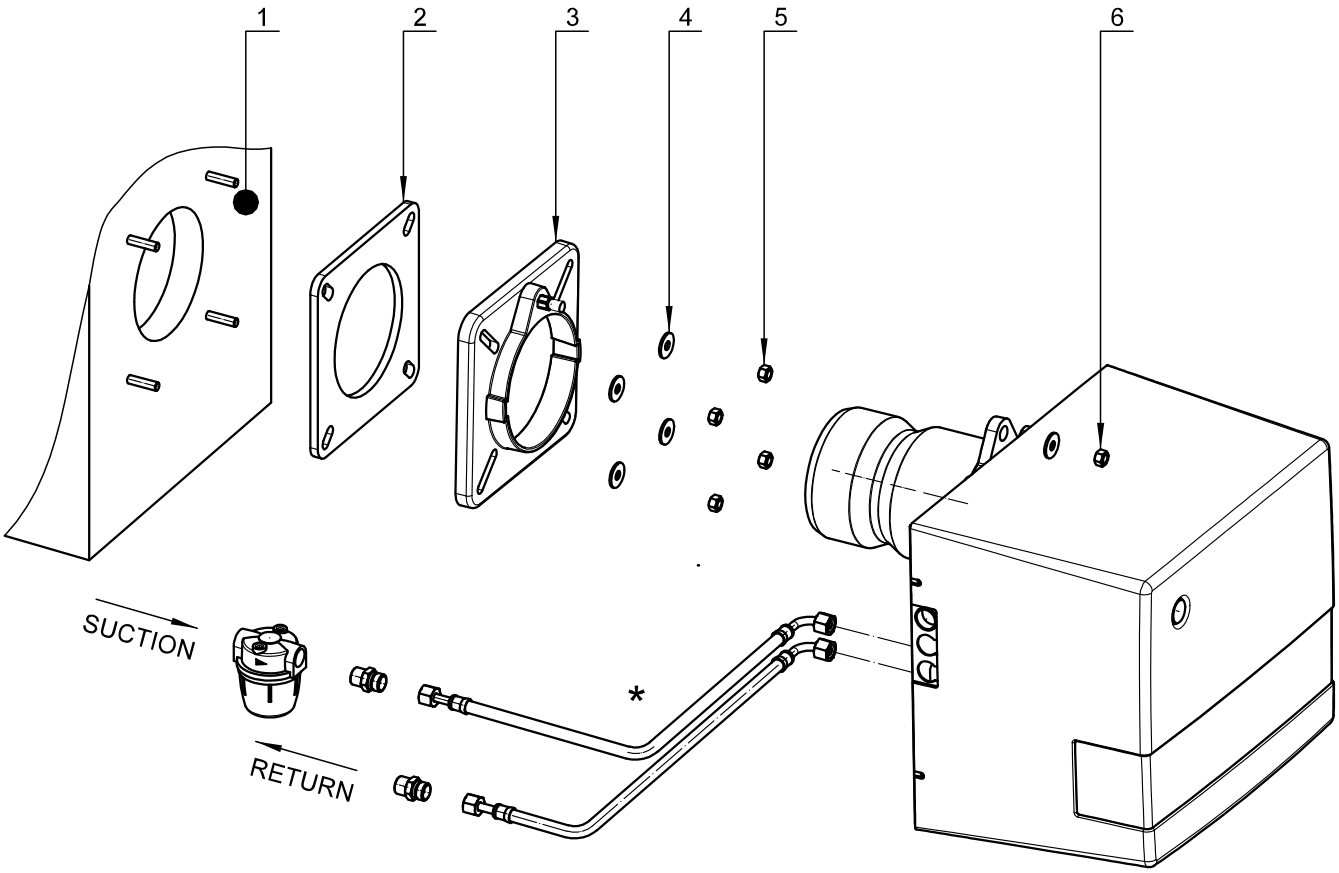


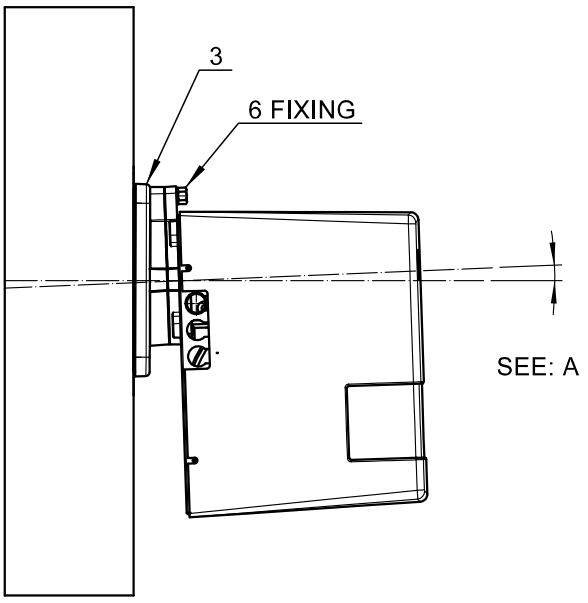
DIMENSIONS [mm.]



MODEL	A	B	C	D	E	F	I	L	N	O	P	R	TC	TL
G X4/2	179	189	318	124	306	248	226	160	135	200	200	R20	130	250
G X5/2	207	213	400	130	461	310	226	205	140	220	220	R30	215	335

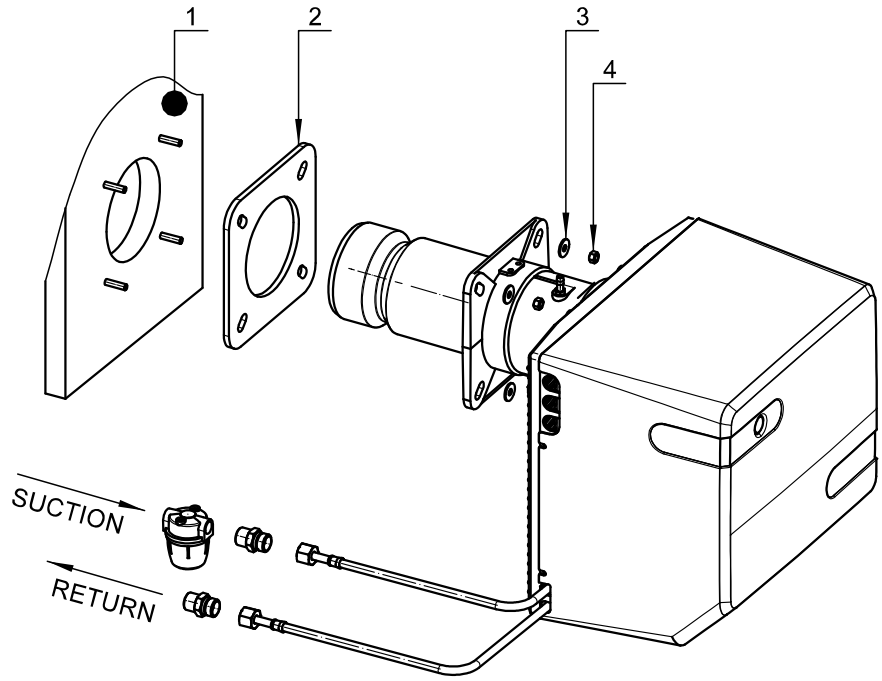
INSTALLATION





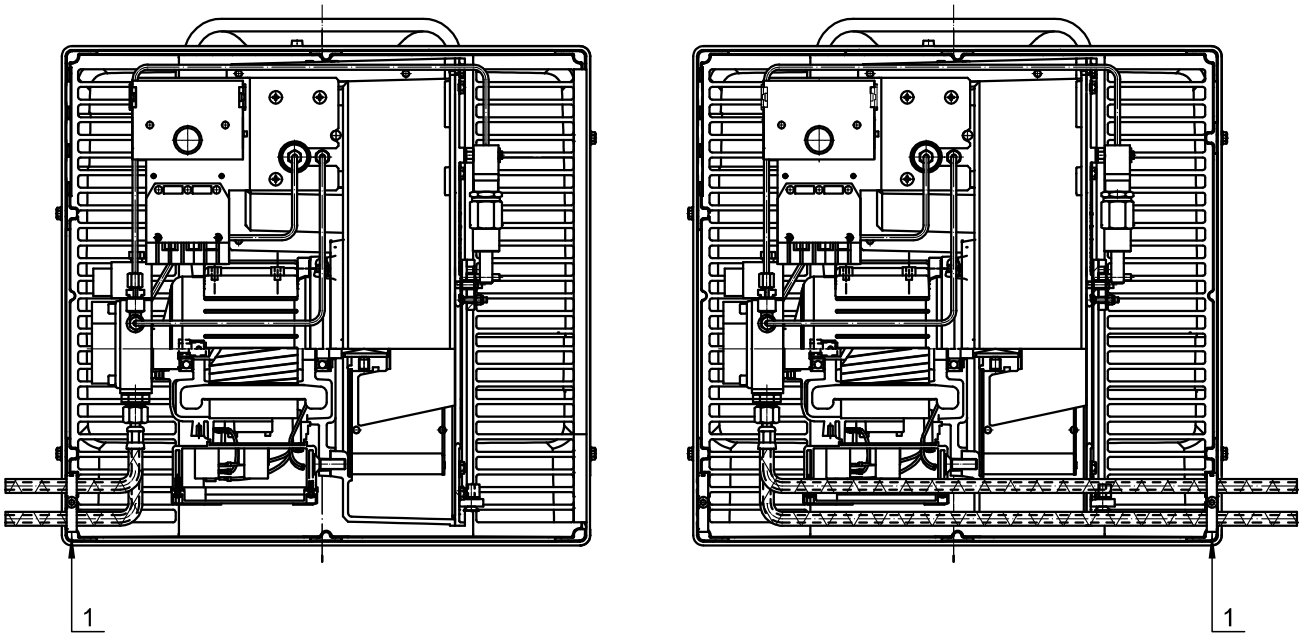
Fix the flange (3) to the boiler door (1) through the washers (4) and the nuts (5), putting in the middle the insulating sheet (2).
Then put the burner on the flange (3) and tighten the nut (6).
After finishing the installation, verify that the burner is lightly inclined (see A).
* The burner is arranged to receive the light oil feeding pipes from right side, left side, upward or down word indifferently.

INSTALLATION



Fix to the boiler door (1) through the washers (3) and the nuts (4), putting in the middle the insulating sheet (2).

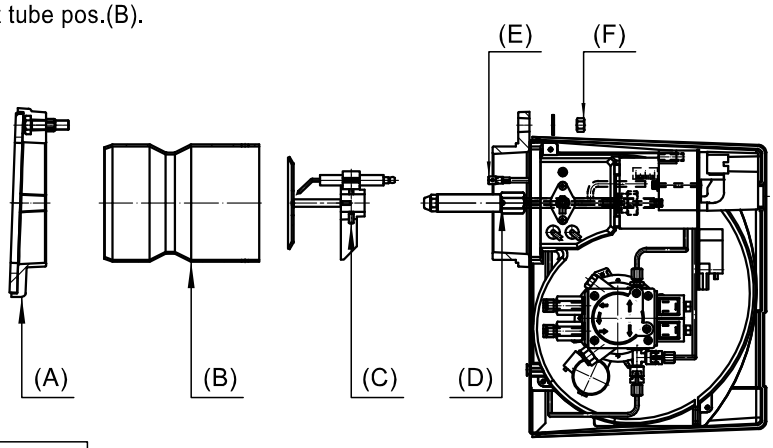
FUEL FEEDING



The burner is arranged to receive the light oil feeding pipes from right side or left side.
Depending on pipes exit (that should be right side or left side), it is necessary to invert the fixing plate (1).

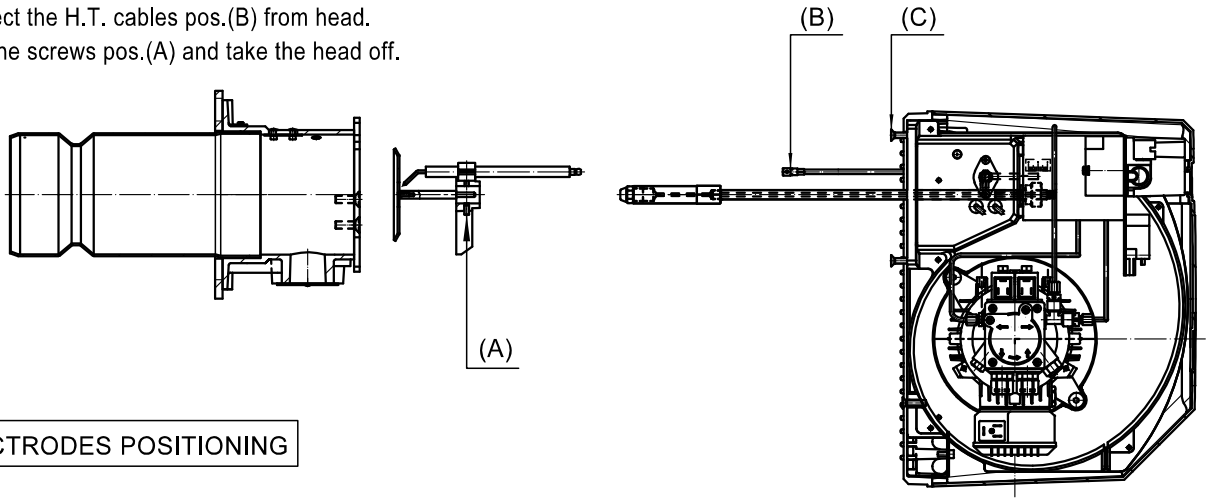
COMBUSTION HEAD EXTRACTION - MOD.: G X4/2

1- Take off the burner from the boiler flange attack pos.(A) by loosening the nut pos.(F).
2- Take off the screws pos.(D) and take off the blast tube pos.(B).
3- Disconnect the H.T. cables pos.(E) from head.
4- Loosen the screws pos.(C) and take the head off.

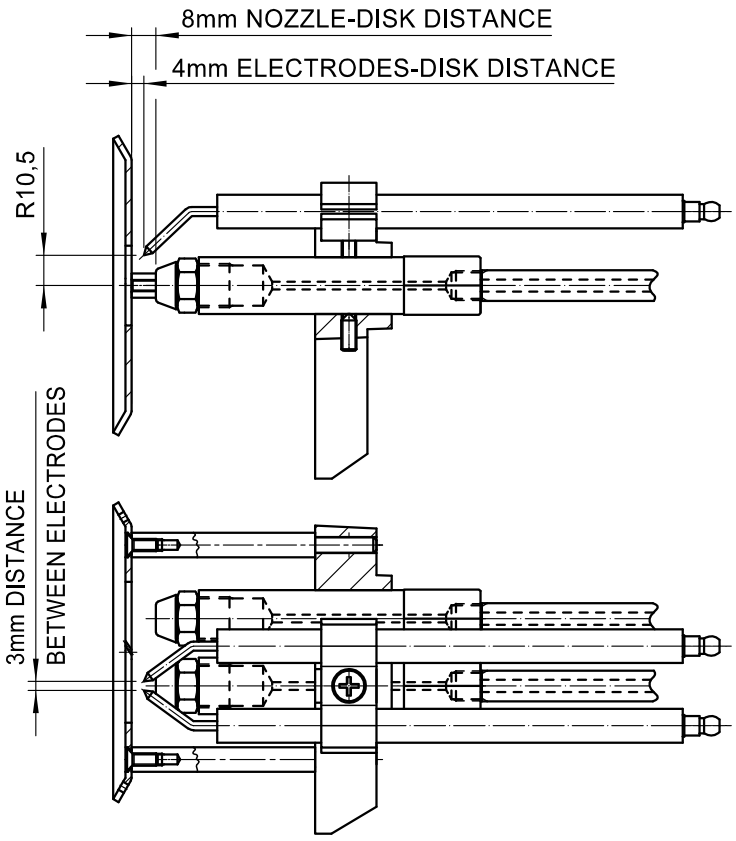


COMBUSTION HEAD EXTRACTION - MOD.: G X5/2

1- Take off the burner from the flange group by the loosening the 4 screws pos.(C) and by rotating the flange, until you can unfasten it.
2- Disconnect the H.T. cables pos.(B) from head.
3- Loosen the screws pos.(A) and take the head off.



ELECTRODES POSITIONING

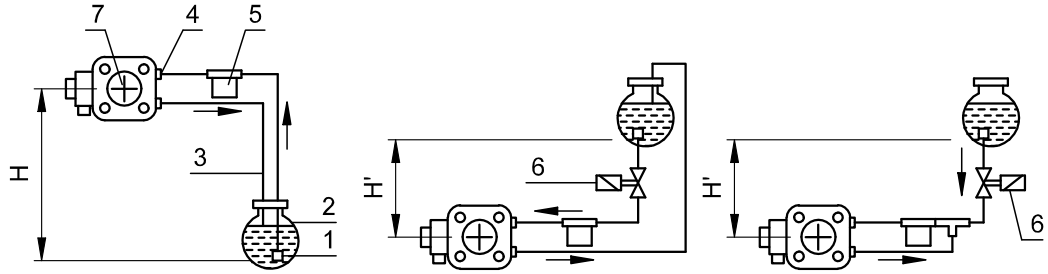


PUMP PRIMING

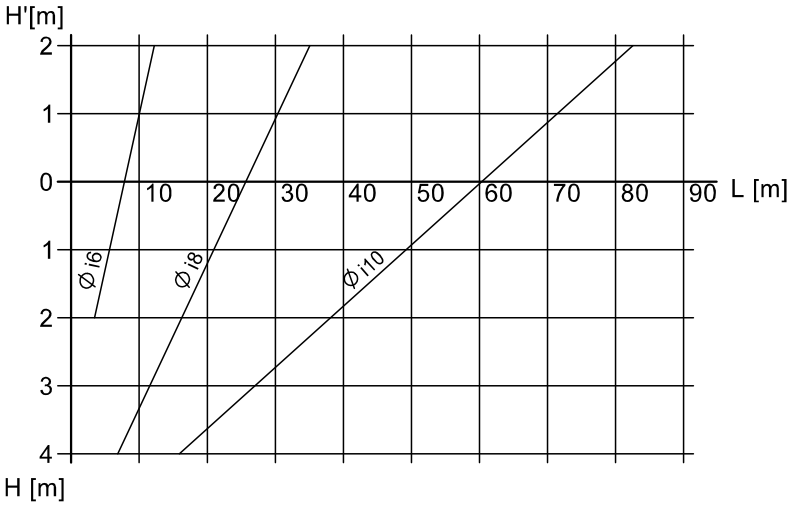
Connect correctly the suction and the return pipes (see the arrows on the pump), make sure that no closed gates exist on the return, then ignite the burner by keeping lighted the photoresistance and by bleeding from the pressure switch connection up until the light-oil comes out.

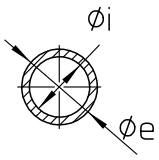
HYDRAULIC SYSTEM SCHEME AND PIPE DIAMETERS

1 : Filter
2 : Tank
3 : Return
4 : Suction
5 : Line filter
6 : Valve
7 : Pump



THE INSTALLATION MUST BE IN CONFORMITY WITH LOCAL LEGISLATION.

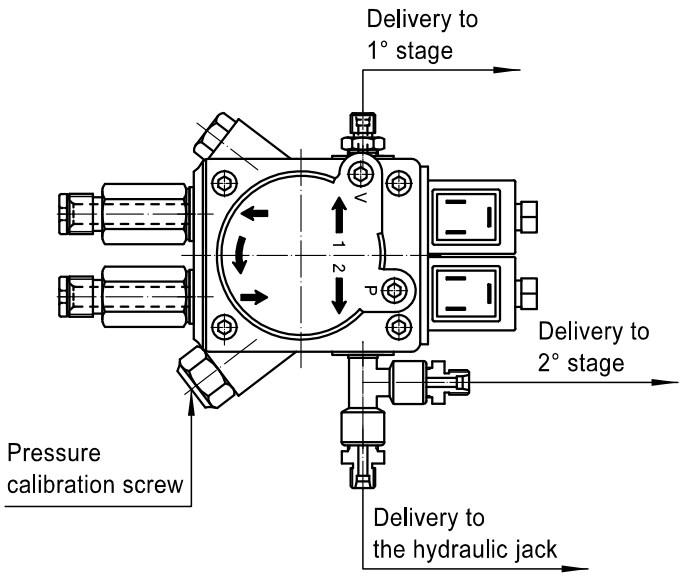




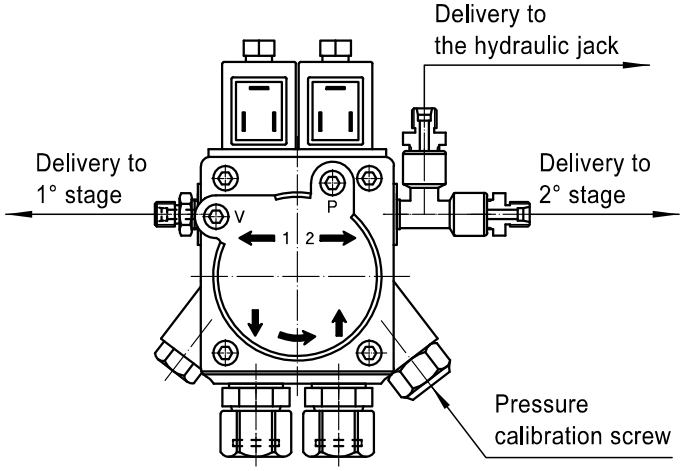
Details are referred to installatios without strugglings and perfectly sealing.
Copper pipes are recommended.
Negative pressure must not be higher than max. 0.4 bar.

PUMP CALIBRATION

G X4/2



G X5/2



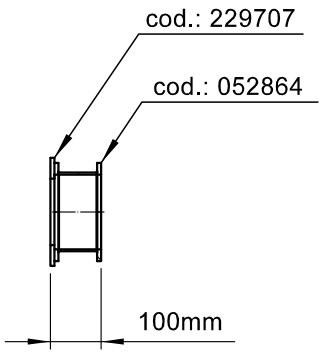
BURNER TRANSFORMATIONS

For the trasformations from short head to long head, and viceversa it is necessary to replace the NOZZLE-HOLDER GROUP 1°STAGE, NOZZLE-HOLDER GROUP 2°STAGE and the BLAST TUBE. After every trasformation it is indispensable to recalibrate the burner.

BURNER		NOZZLE-HOLDER GROUP 1°STAGE	NOZZLE-HOLDER GROUP 2°STAGE	BLAST TUBE
MODEL	CODE	CODE	CODE	CODE
G X4/2 TC	001628	055646	055648	054064
G X4/2 TL	001629	055638	055641	054538
G X5/2 TC	001617	055632	055653	022915
G X5/2 TL	001618	055659	055658	022924

Legend
TC = Short head
TL = Long head

For the transformations from long head to short head or from short head to extra-short head it is sufficient mount between burner and boiler a GASKET and a SPACER.
After every trasformation it is indispensable to recalibrate the burner.



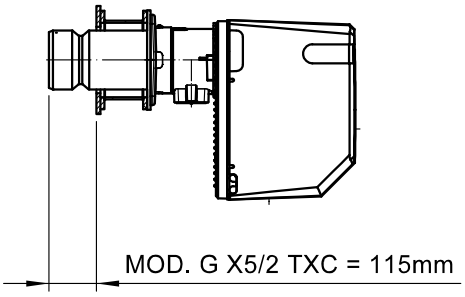


TABLE OF INDICATIVE CALIBRATIONS

Calibrations effected with pressure in chamber 0,1 mbar.
The definitive calibration must be done in operation by means of a combustion analiser.

NOZZLES G.P.H. I° - II° (60° - 45°)	PRESSURE bar	FLOW kg/h	HEAD ADJUSTMENT notches N°	AIR OPEN 1° STAGE	AIR OPEN 2° STAGE
2.00 - 1.00	12	12	0	8°	17.5°
2.00 - 1.50	12	14	3	8°	22.5°
2.00 - 2.00	12	16	6	8°	25°
2.25 - 2.25	12	18	9	10°	30°
2.50 - 2.50	12	20	12	10°	35°
2.75 - 2.75	12	22	15	12.5°	40°
3.00 - 3.00	12	24	18	12.5°	45°
3.00 - 3.00	13	25	20	15°	45°

RECOMMENDED NOZZLES = DANFOSS S or STEINEN S or SS

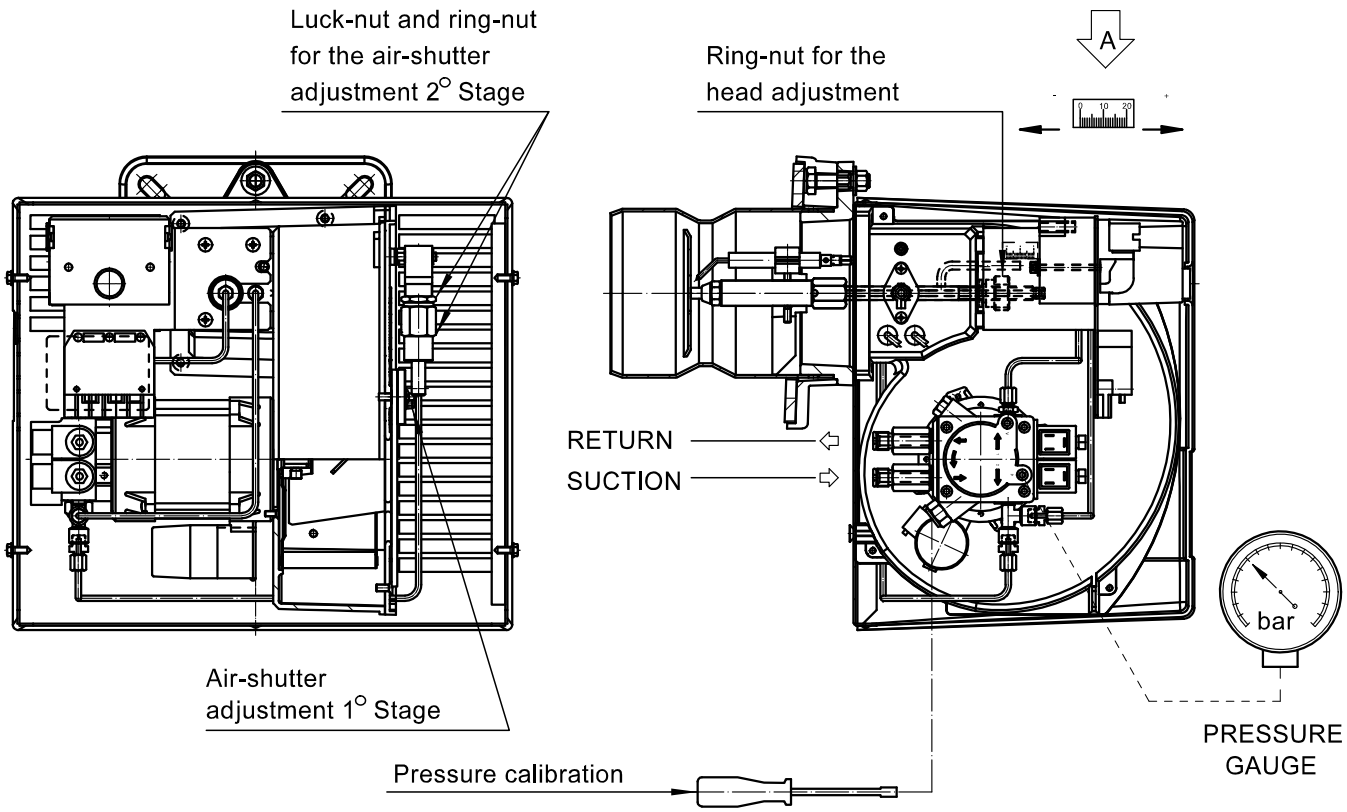
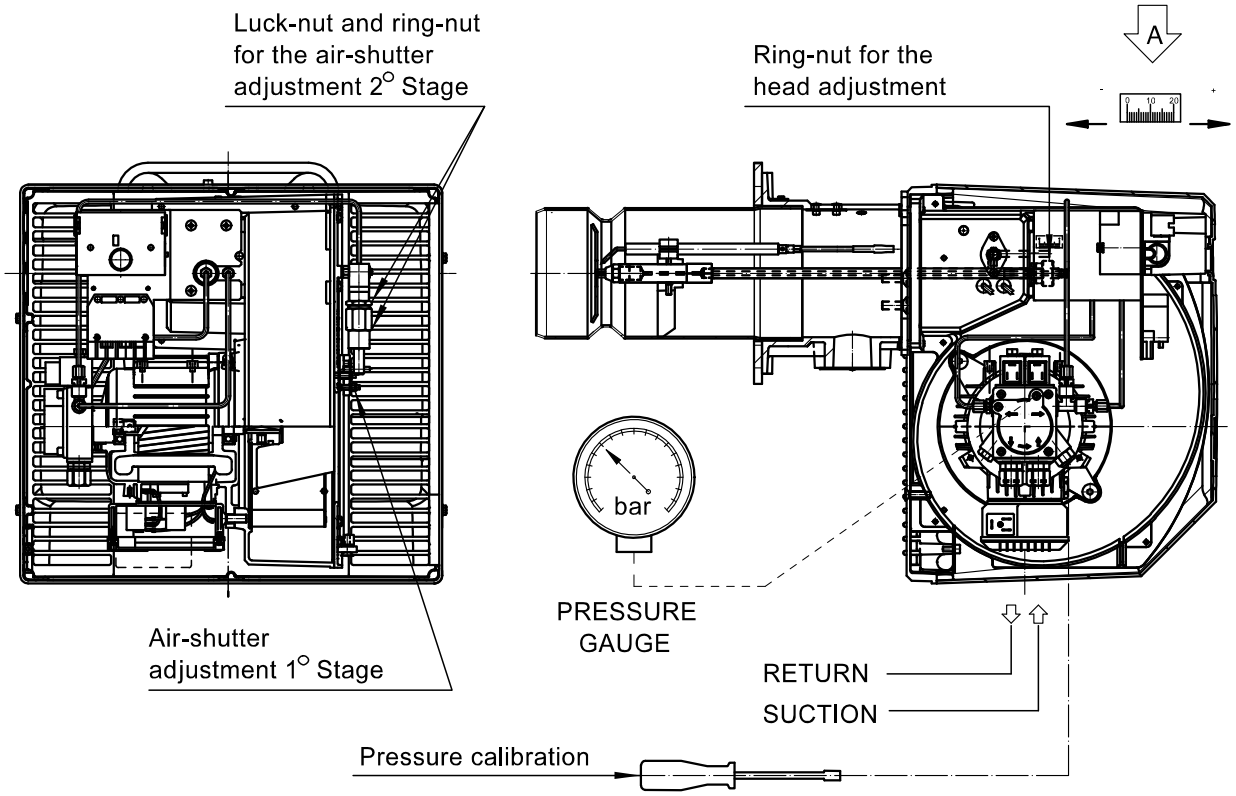


TABLE OF INDICATIVE CALIBRATIONS

Calibrations effected with pressure in chamber 0,1 mbar.
The definitive calibration must be done in operation by means of a combustion analiser.

NOZZLES G.P.H. I° - II° 60° 45°	PRESSURE bar	FLOW kg/h	HEAD ADJUSTMENT notches N°	AIR OPEN 1° STAGE	AIR OPEN 2° STAGE
2.00 - 2.00	10	15	0	5°	15°
2.00 - 2.00	12	16	1	5°	17.5°
2.25 - 2.25	12	18	3	5°	20°
2.50 - 2.50	12	20	6	7.5°	20°
2.75 - 2.75	12	22	8	10°	22.5°
3.00 - 3.00	12	24	9	10°	25°
3.25 - 3.25	12	26	11	10°	25°
3.50 - 3.50	12	28	13	10°	25°
3.50 - 4.00	12	30	15	10°	27.5°
4.00 - 4.00	12	32	17	12.5°	30°
4.00 - 4.50	12	34	18	12.5°	32.5°
4.50 - 4.50	12	35	20	15°	35°

RECOMMENDED NOZZLES = DANFOSS S or STEINEN S or SS



COMBUSTION CONTROL

In order to obtain the best combustion performance and efficiency, and for respect of the environment, checks and adjustment of the combustion must be carried out, and with appropriate tools.
Basic values to be considered are:

CO_2 indicates the amount of excess air during combustion; if air is increased, CO_2% values decrease, and if combustion air is decreased, CO_2% values increase .

SMOKE SCALE (Bacharach) indicates that solid un-burnt particles are present in the smoke. If N°2 on the BH scale is exceeded the nozzle must be checked for faults and that it is adapt to the burner and boiler (trade, type, pulverization angle). Usually the BH scale number tends to decrease, increasing pump pressure, in this case keep the increasing combustion levels under control.

SMOKE TEMPERATURE is a level which indicates heat loss through the chimney; higher the temperature, greater is the loss and lower combustion efficiency. If the temperature is too high the quantity of burned light oil needs to be lowered.

IMPORTANT :

Existing laws in some countries can require a different adjustment to that given here and may also have different parameters. The burners are designed to meet the toughest international laws on energy saving and respect of the environment.

FAULT FINDING

PROBLEM	PROBABLE CAUSE	SOLUTION
Motor does not work.	No power supply.	a) check fuses. b) check thermostats.
Motor works but there is no flame formation and with lock-out.	a) electrodes are not discharged. b) nozzle is dented. c) it doesn't arrive combustible.	a) check correct position of tips and clean them. b) clean or replace nozzle. c) check light oil level in tank and that there are no shutters closed along the light oil line.
Burner starts and flame forms, there is flame formation and goes in lock-out.	a) photoresistance is dirty. b) nozzle is pulverizing badly.	a) clean the photoresistance. b) clean or replace nozzle.
Flame is irregular, small and with sparks.	a) nozzle is pulverizing badly. b) pump pressure is too low. c) water in the light-oil.	a) clean or replace nozzle. b) check and increase pressure. c) extract water from tank,clean the filters.
Flame is smokey.	a) nozzle is pulverizing badly. b) little air of combustion.	a) clean or replace nozzle. b) check atmospheric air flap opens normally. Clean the fan.