



HEAVY OIL BURNERS AT ONE STAGE

MOD.: FNL 8-16-25

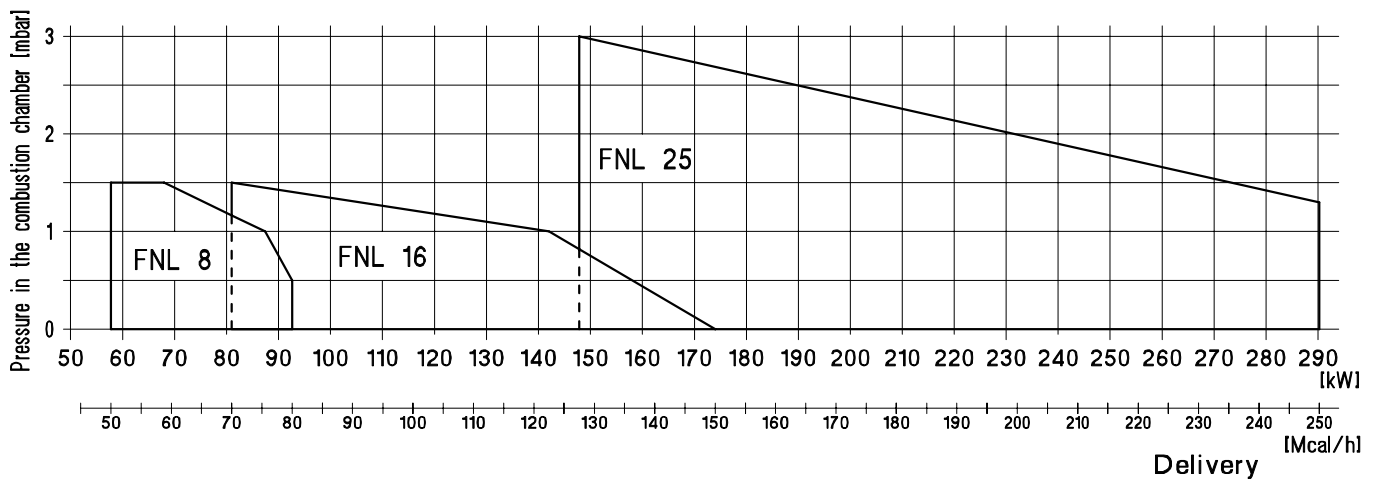
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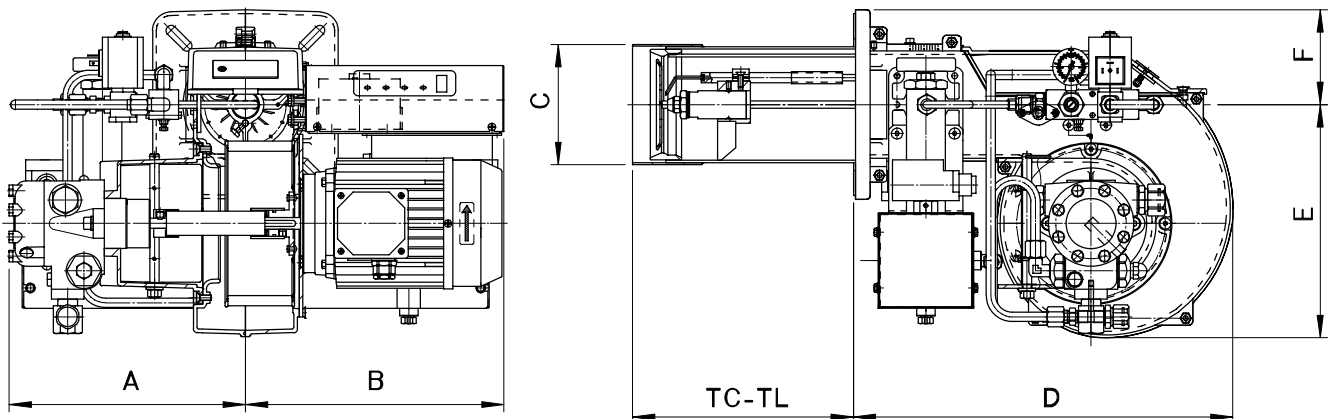
TECHNICAL DATA

MODEL		FNL 8	FNL 16	FNL 25
Fuel delivery	(Kg/h)	5.1-8.2	7.1-15.3	12.7-25.5
Thermal power	(Mcal/h)	50-80	70-150	125-250
Thermal power	(kW)	58-92.8	81-174	145-290
Motor power	(kW)	0.24	0.25	0.55
Resistances power	(kW)	1.2	1.5	2.4
Electrical supply		monophase 230V(-15%+10%) 50Hz	monophase 230V(-15%+10%) 50Hz	treephase 230/400V(-15%+10%) 50Hz
Fuel		Heavy oil MAX 5°E to 50°C		
Pump pressure		24bar (standard calibration)-28bar MAX		

OPERATING RANGE DIAGRAM: Delivery-Pressure in the combustion chamber



OVERALL DIMENSIONS [mm.]



MODEL	A	B	C	D	E	F	TC	TL
FNL 8	253	280	107	410	251	102	120	240
FNL 16	253	280	107	410	251	102	120	240
FNL 25	253	280	107	410	251	102	120	240

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HEAVY OIL BURNERS AT ONE STAGE

MOD.: FNDL 8-16-25

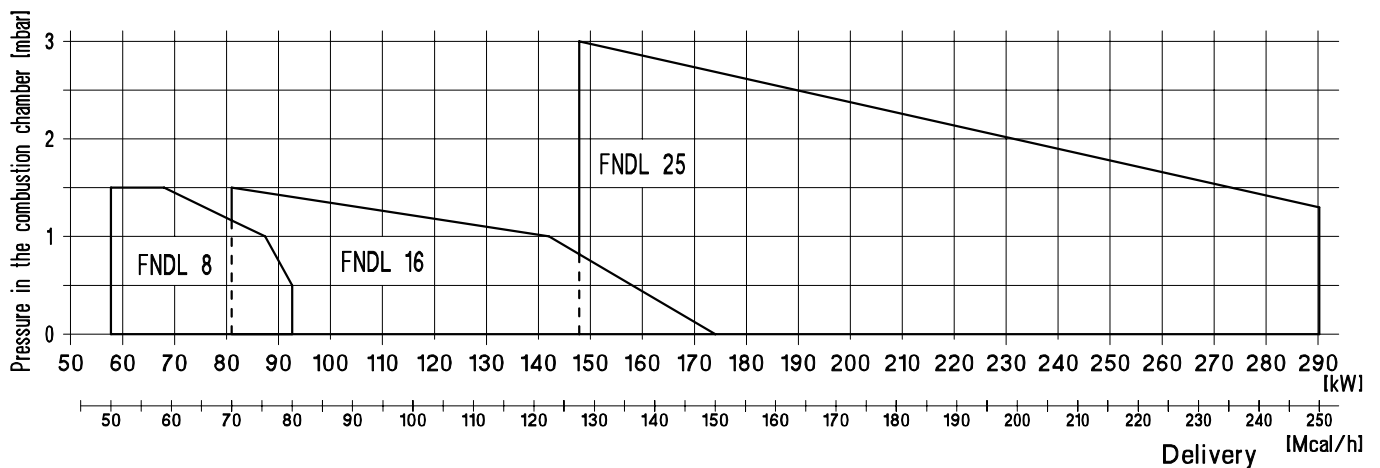
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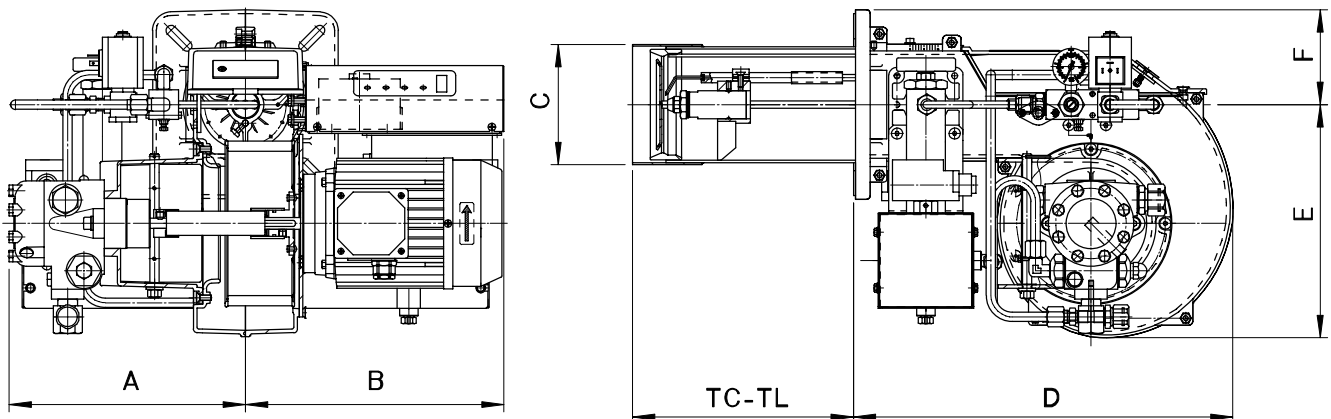
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Motor power	(kW)	0.24	0.25	0.55
Resistances power	(kW)	1.2	2.4	2.4
Electrical supply		monophase 230V(-15%+10%) 50Hz	monophase 230V(-15%+10%) 50Hz	treephase 230/400V(-15%+10%) 50Hz
Fuel		Heavy oil 20°E to 50°C		
Pump pressure		24bar (standard calibration)-28bar MAX		

OPERATING RANGE DIAGRAM: Delivery-Pressure in the combustion chamber



OVERALL DIMENSIONS [mm.]

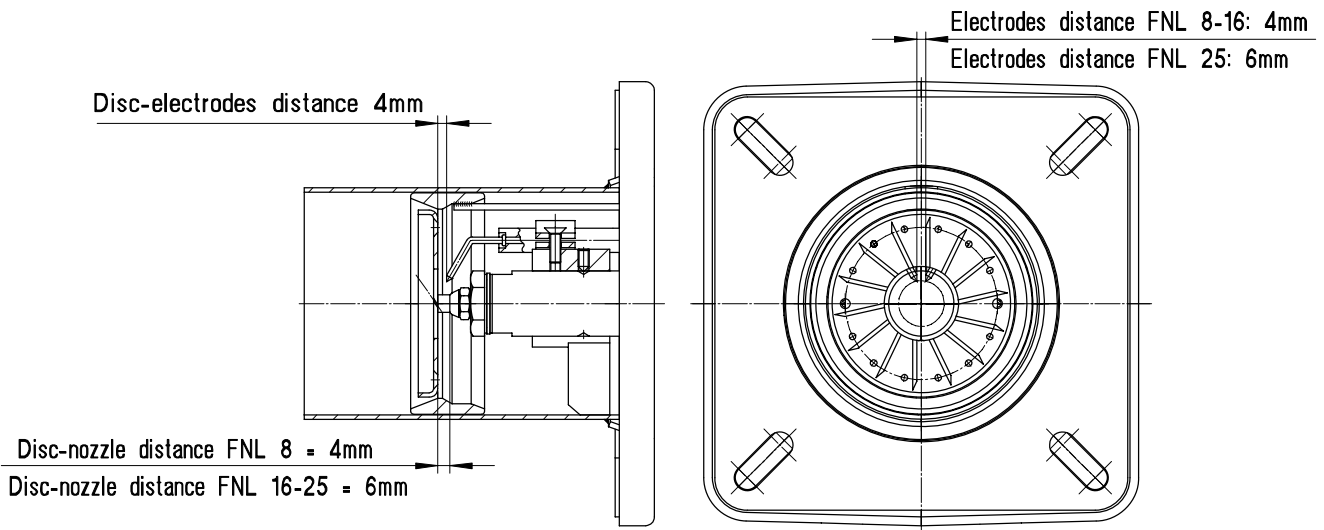


MODEL	A	B	C	D	E	F	TC	TL
FNDL 8	253	280	107	410	251	102	120	240
FNDL 16	253	280	107	410	251	102	120	240
FNDL 25	255	280	130	410	251	102	120	240

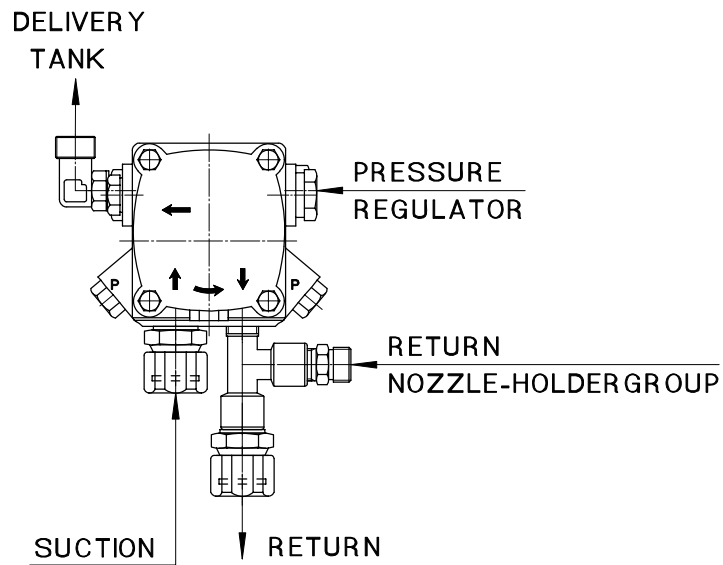
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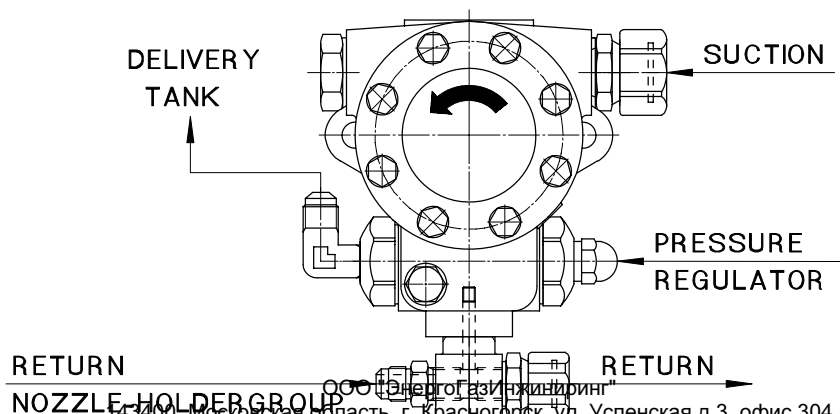
CORRECT POSITION OF THE ELECTRODES



PUMP CALIBRATION FNL 8-16



PUMP CALIBRATION FNDL 25



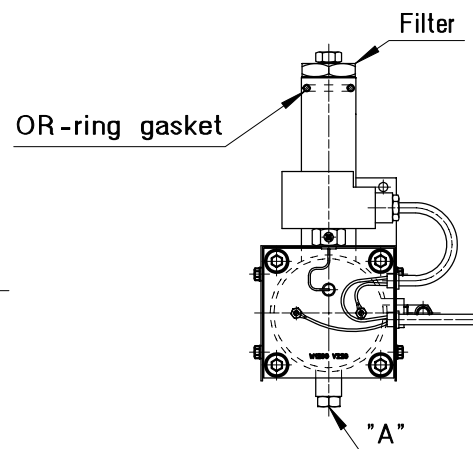
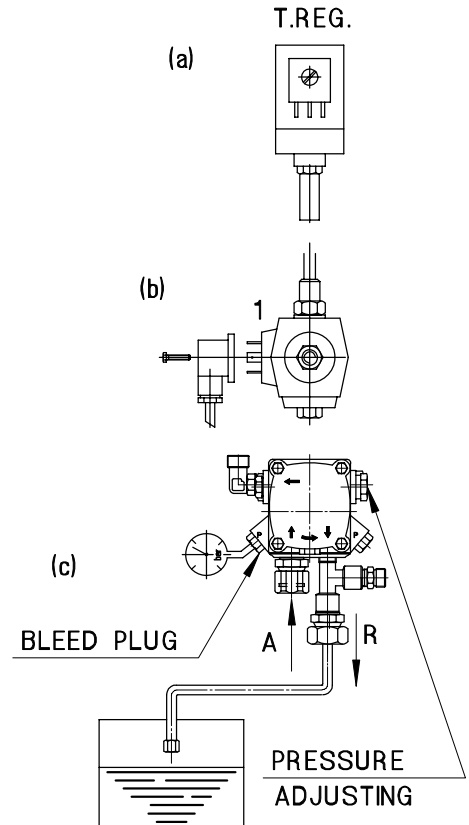
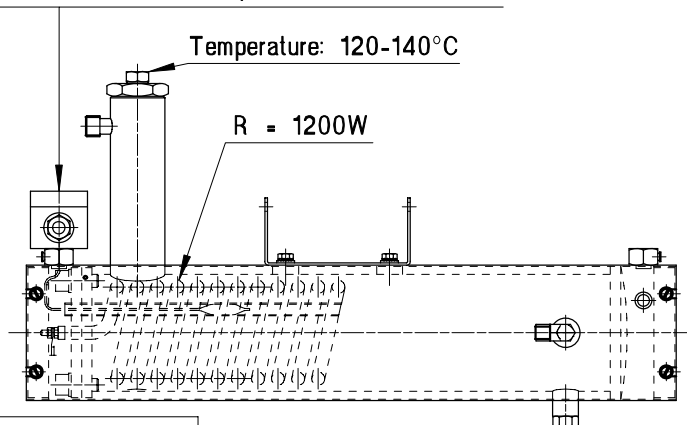
**TANK LOADING**

When the pre-heater tank is empty, it is necessary to refill it by clearing the resistances; to do that act as per following routine:

- Abbassare e portare il termostato a 0°
- Take off the connector from the valve.
- Take off the return pipe and insert it into a little bucket.
- Start up the motor and light-up the photoresistance until the fuel oil comes out from the return pipe; if the pump has got some difficulties in priming, take off the bleed plug and insert it again as soon as the fuel oil comes out.
- Place again T.REG. thermostat of 120° , the valve plug, the return pipe, insert the photoresistance in its seat and regularly switch-on the burner.

PRE-HEATER TANK

Adjusting thermostat: calibrated at 120°C allows the burner START when the fuel oil has reached such a temperature.

**MAINTENANCE****1ST - DELIVERY FILTER CLEANING**

When the pressure of the manometer placed on the valve block gets lower than the advised calibration values, it is necessary to clean the deliver filter placed on the exit of the preheater tank.

Note: Before disassembling the filter, unload the tank pressure through the proper valve.

2ND - PUMP FILTER AND LINE FILTERS CLEANING

When the pump becomes noising and the delivery pressure becomes instable, this means that the fuel does not arrive to the pump: it is necessary to clean all the filters on the suction line and the pump filter.

3RD - RESISTANCES CLEANING

When the burner is functioning and the exit temperature keeps on falling until causing the lock-out, it is necessary to disassemble the resistances and to clean them.

Note: Before disassembling the resistances, discharge the pressure of the tank.

ATTENTION: During the 4th step the tank is under a high pressure. Before every maintenance open the "A" release.

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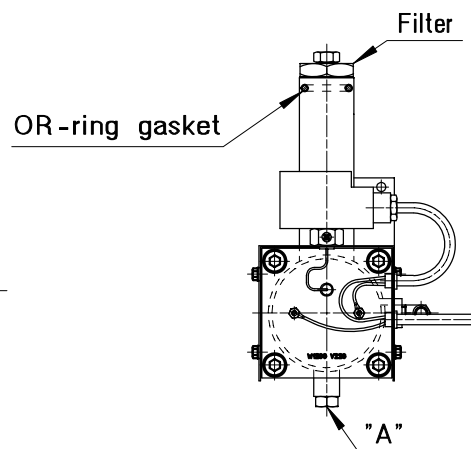
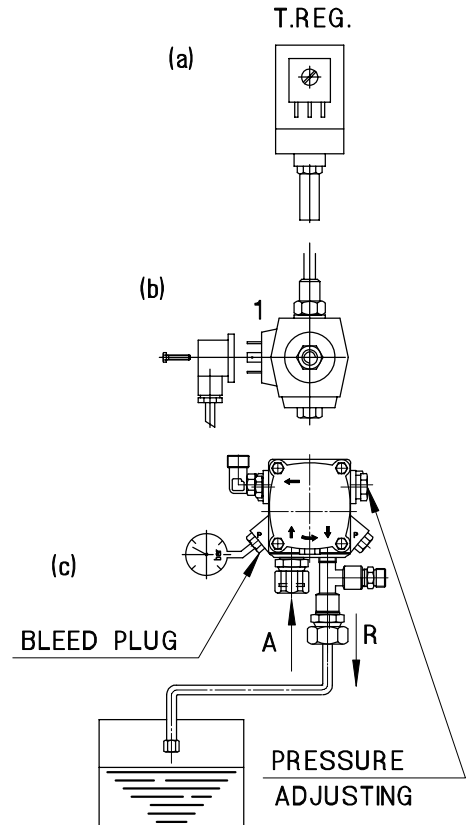
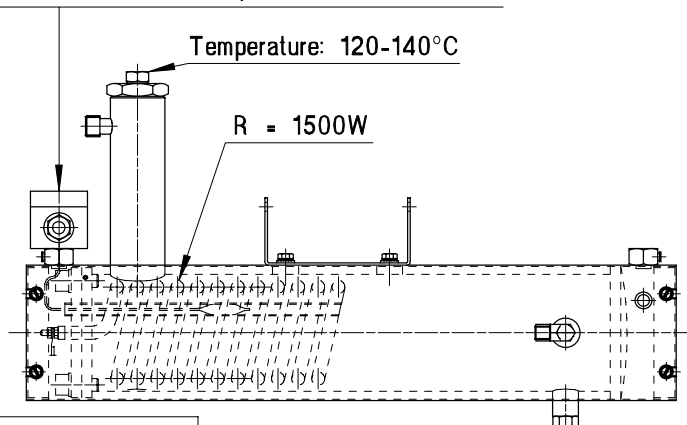
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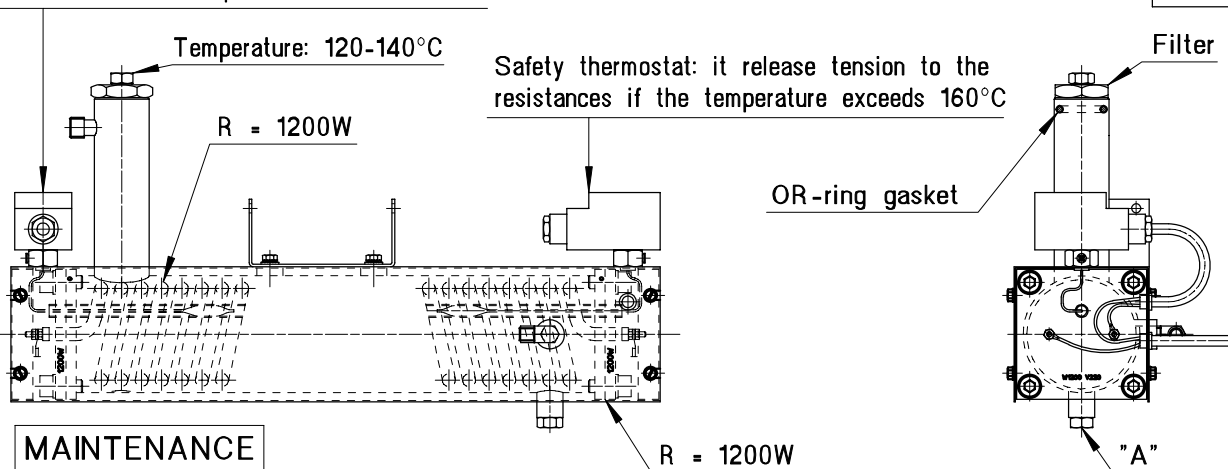
**TANK LOADING**

When the pre-heater tank is empty, it is necessary to refill it by clearing the resistances; to do that act as per following routine:

- Reduce the thermostat and set it at 0°
- Take off the connector from the valve.
- Take off the return pipe and insert it into a little bucket.
- Start up the motor and light-up the photoresistance until the fuel oil comes out from the return pipe; if the pump has got some difficulties in priming, take off the bleed plug and insert it again as soon as the fuel oil comes out.
- Place again T.REG. thermostat of 120°, the valve plug, the return pipe, insert the photoresistance in its seat and regularly switch-on the burner.

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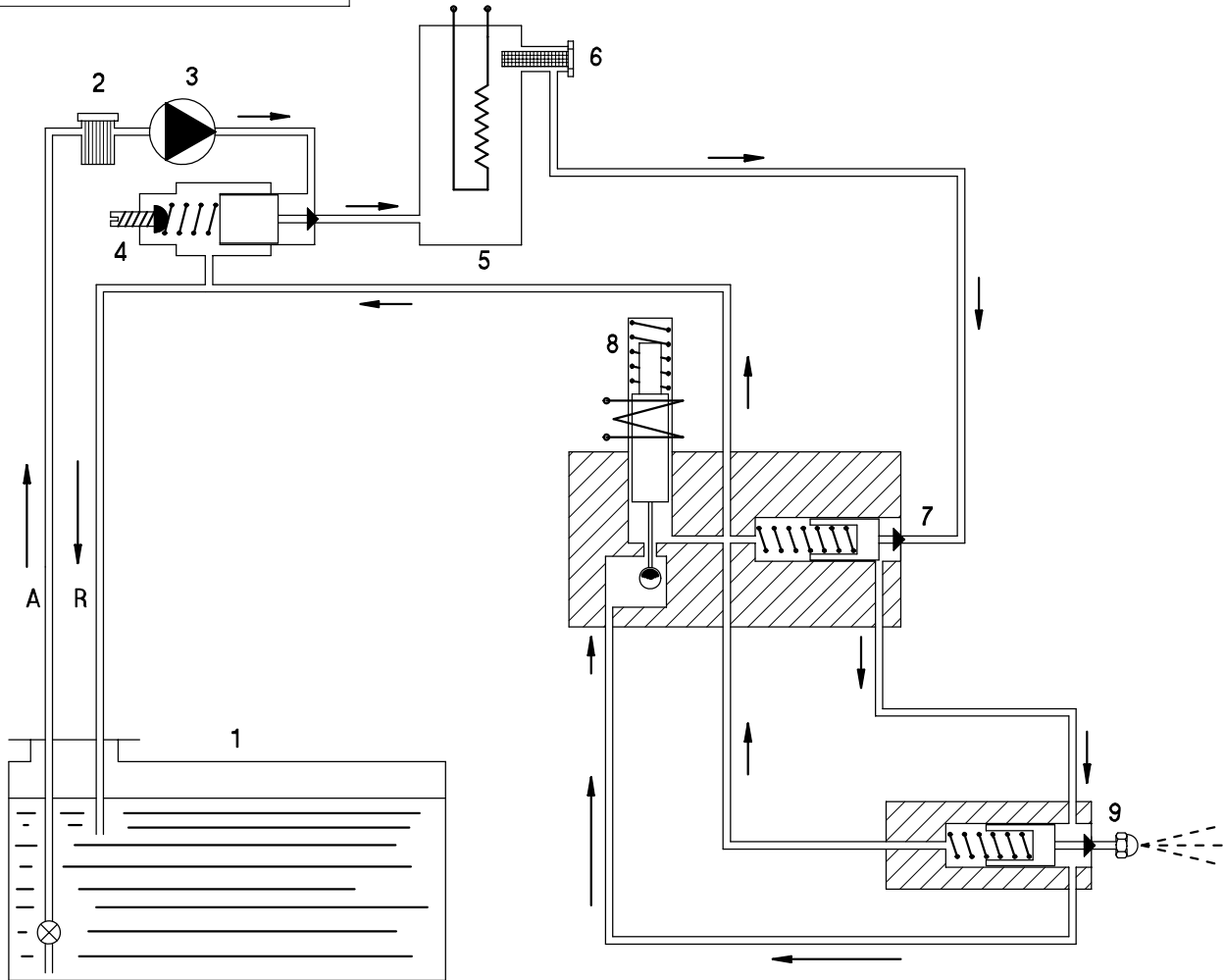
Note: Before disassembling the resistances, discharge the pressure of the tank.

ATTENTION: During the dwell the tanks is under a light pressure. Before every maintenance open the "A" release.

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HYDRAULIC DIAGRAM



PRE-WASHING

At each starting the fuel oil, which is inside the tank 1), is sucked by the pump 3), cleaned by the filter 2), and sent to the pressure regulator 4). Then it goes to the preheater tank 5), to the filter 6), to the antigas valve 7), to the plunger 9), to the valve 8), (usually open) and then it goes back to the tank trough the return pipe.

IGNITION

After about 10 secs. of pre-washing, the control box actuates the valve 8): the oil under pressure lifts the plunger 9) and comes out atomized by the nozzle. The voltaic arc generated by the transformer ignites the fuel.

FUNCTIONING

The sparkle of the flame is noted by the photoresistance and the electrical equipment keeps on functioning.

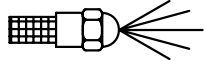



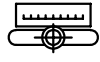
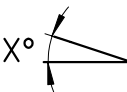
SAFETY TIME

Since the electrovalve 8) excitation, the burner has 10 secs. to ignite, after what (if the flame is not noted by the photoresistance) the control box causes a "lock-out stop" of the burner: the RED push-button switches on and (230V) tension arrives to the terminal 8.



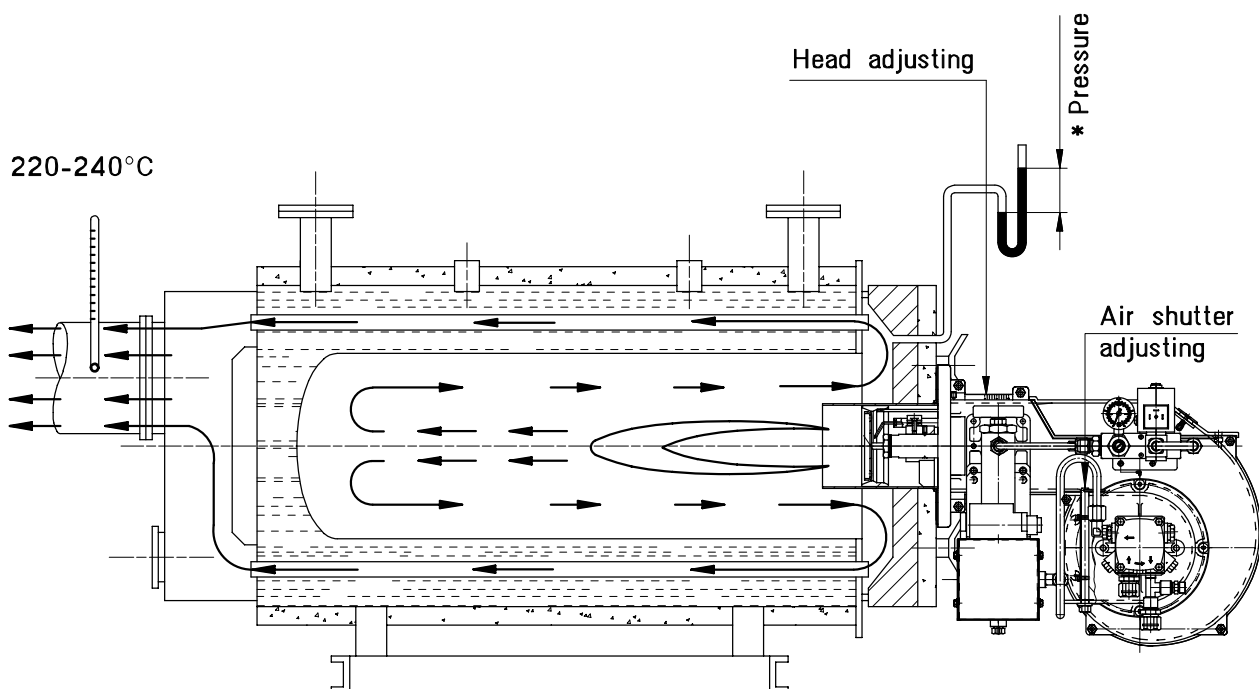
MODEL : FNL-FNDL 8

TABLE OF ADVISABLE CALIBRATIONS

 NOZZLE G.P.H.	 PUMP PRESSURE bar	 NOZZLE DELIVERY kg/h	 THERMAL POWER Kcal/h	 COMBUSTION HEAD ADJUSTING NOTCH NO.	 AIR SHUTTER OPENING X°	* PRESSURE IN THE COMBUSTION CHAMBER mbar
0.85 x 45°	22	5.1	50.000	0	15	0.1
1.00 x 45°	22	6	58.800	0.5	20	0.1
1.25 x 45°	22	7.7	75.500	1	20	0.1
1.25 x 45°	25	8.2	80.500	1.5	20	0.1

It is suggested to employ nozzles "MONARCH" type "R" - "STEINEN" type "S"

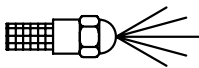


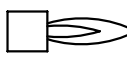
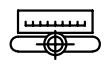
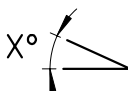
- As to furnace thermal power, consider 1 Kg of heavy oil = About 9.800 Kcal/h.
- To increase the heavy oil delivery, it is possible to adjust the pump up to a MAX of 28bar.
- The definite calibration must be done while the burner is functioning and up to obtain:
CO₂ = 12% - Bacharach <= 3 - Exhaust gas temperature of 220°C.





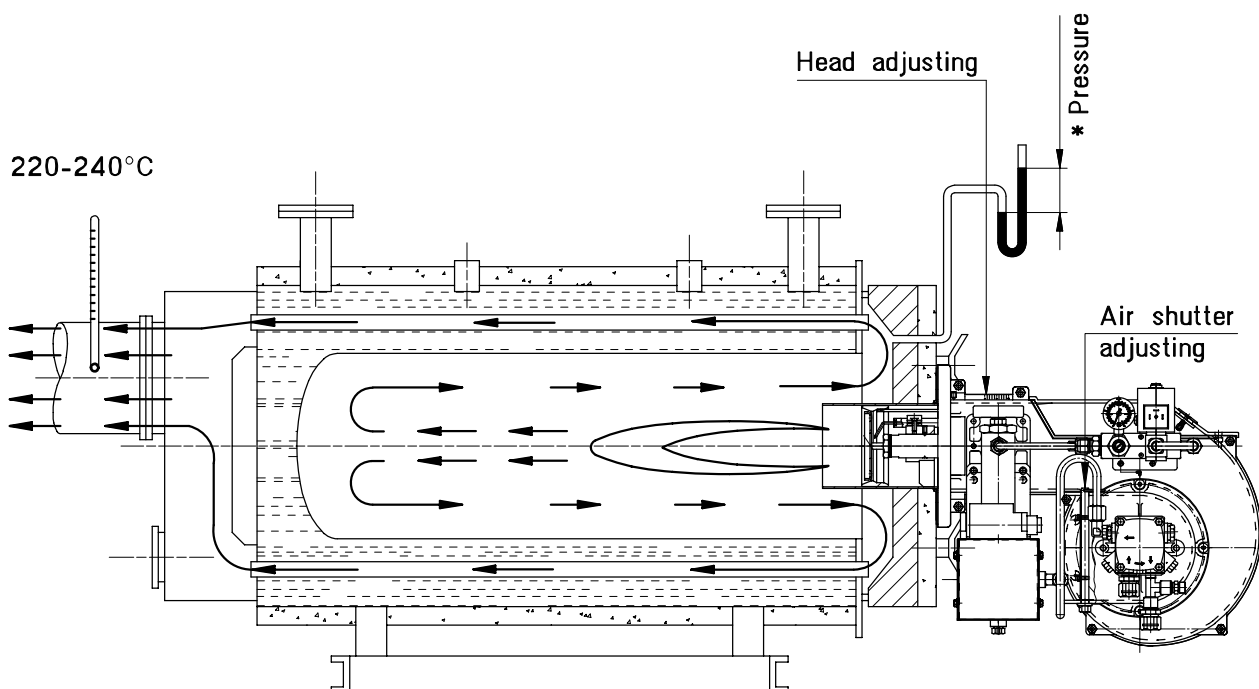
MODEL : FNL-FNDL 16

TABLE OF ADVISABLE CALIBRATIONS

 NOZZLE G.P.H.	 PUMP PRESSURE bar	 NOZZLE DELIVERY kg/h	 THERMAL POWER Kcal/h	 COMBUSTION HEAD ADJUSTING NOTCH NO.	 AIR SHUTTER OPENING X°	* PRESSURE IN THE COMBUSTION CHAMBER mbar
1.25 x 45°	22	7.5	73.500	1	20	0.1
1.50 x 45°	22	9.5	93.100	3	25	0.1
1.75 x 45°	22	11	107.800	5	25	0.1
2.00 x 45°	22	12.5	122.500	6	30	0.1
2.25 x 45°	22	14	137.200	8	30	0.1
2.50 x 45°	22	15.5	152.000	10	35	0.1

It is suggested to employ nozzles "MONARCH" type "R" - "STEINEN" type "S" up to 2 GPH - type "P.L.P." >= 2.25 GPH

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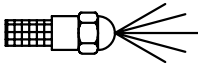




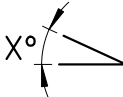


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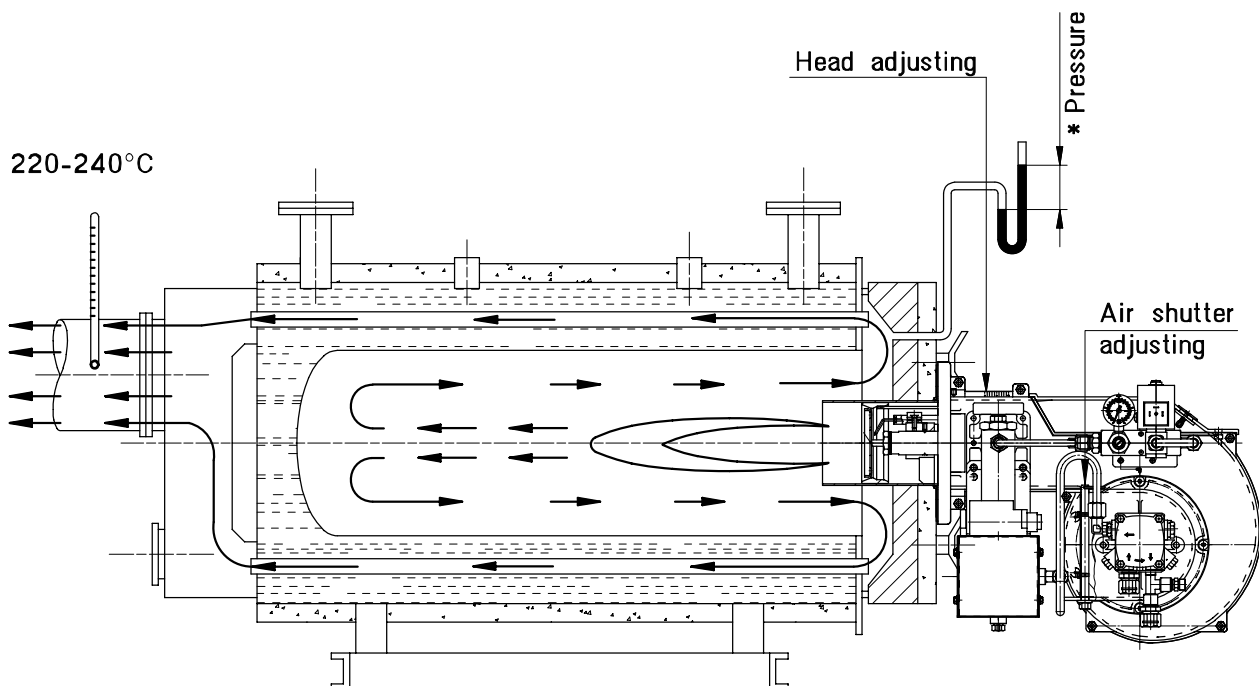
MODEL : FNL-FNDL 25

TABLE OF ADVISABLE CALIBRATIONS

 NOZZLE G.P.H.	 PUMP PRESSURE bar	 NOZZLE DELIVERY kg/h	 THERMAL POWER Kcal/h	 COMBUSTION HEAD ADJUSTING NOTCH NO.	 AIR SHUTTER OPENING X°	* PRESSURE IN THE COMBUSTION CHAMBER mbar
2.00 x 45°	25	13	127.500	2	25	0.1
2.25 x 45°	25	14.5	142.000	3	25	0.1
2.50 x 45°	25	16.5	162.000	4	25	0.1
2.75 x 45°	25	18	176.500	5	30	0.1
3.00 x 45°	25	20	196.000	6	30	0.1
3.25 x 45°	25	21.5	210.500	7	30	0.1
3.50 x 45°	25	23	225.500	8	35	0.1
4.00 x 45°	25	26	255.000	10	40	0.1

It is suggested to employ nozzles "MONARCH" type "R" - "STEINEN" type "S" up to 2 GPH - type "P.L.P." >= 2.25 GPH

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