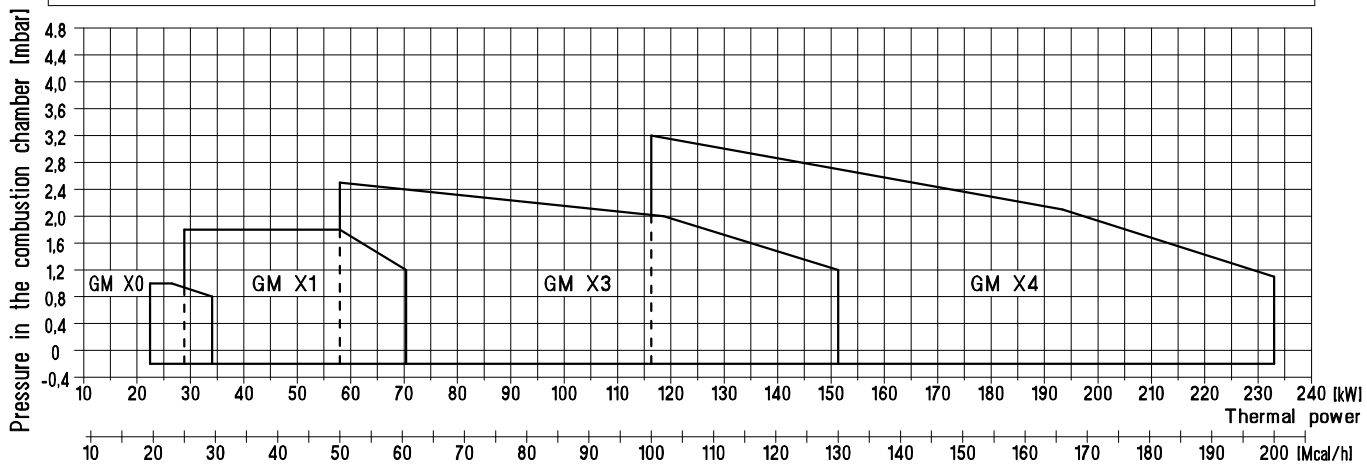
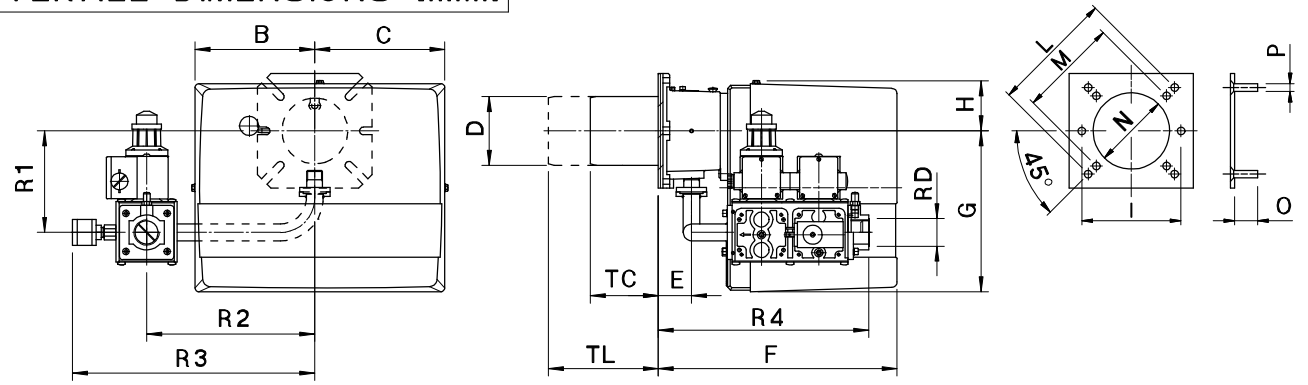
TECHNICAL DATA

MODEL		GM X0	GM X1	GM X3	GM X4
Thermal power	[Mcal/h]	19.5-29.5	25-60	50-130	100-200
Thermal power	[kW]	22.6-34	29-70	58-151	116-232
Delivery G20 (NATURAL GAS)	[Nm^3/h]	2.3-3.4	2.9-7	5.8-15.2	11.6-23.2
Delivery G31 (L.P.G.)	[Nm^3/h]	0.9-1.3	1.1-2.7	2.2-5.9	4.5-9
Nominal pressure G20 (NATURAL GAS)	[mbar]	20	20	20	20
Nominal pressure G25	[mbar]	25	25	25	25
Nominal pressure G30	[mbar]	29	29	29	29
Nominal pressure G31 (L.P.G.)	[mbar]	37	37	37	37
Maximum pressure	[mbar]	40	40	40	40
Delivery Light-oil	[Kg/h]	2-3	2.5-6	5-13	10-20
Fuel	G 20 (natural gas)-G31 (LPG) / light-oil 1.5°E a 20°C = 6.2 cSt = 35 sec Redwood N°1				
Pump pressure	10-12 bar (standard calibration) Max: 15 bar				
Fan motor power	[W]	100	100	150	200
Maximum absorbed power	[W]	210	240	290	340
Electrical supply	single-phase 230V (-15% +10%) 50Hz				
Level of electrical protetion	IP40				
Safety time of control box	<= 3 sec.				

OPERATING RANGE DIAGRAM: Delivery-Pressure in the combustion chamber

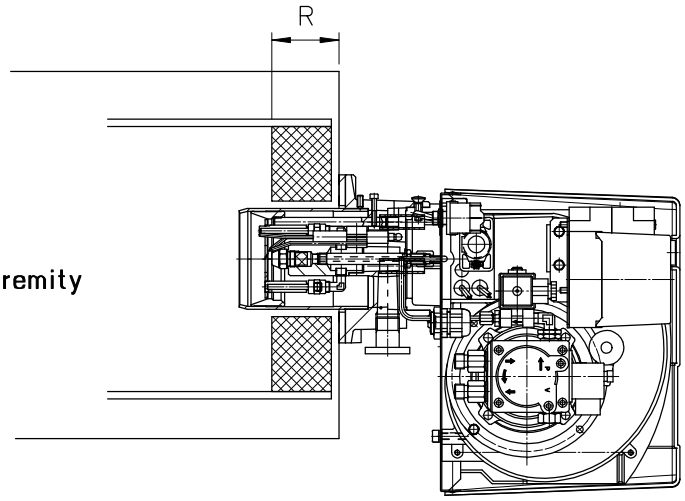


OVERALL DIMENSIONS [mm.]

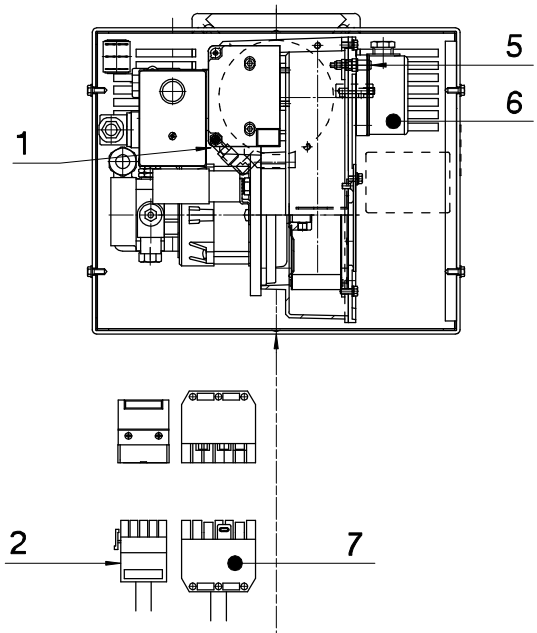


MODEL	B	C	D	E	F	G	H	I	L	M	N	O	P	TC	TL	R1	R2	R3	R4	RD
GM X0-D1/2"	168	168	90	45	305	210	65	130	160	130	100	30	M8	85	145	133	200	254	244	G 1/2"
GM X1-D1/2"	168	168	90	45	305	210	65	130	160	130	100	30	M8	85	145	133	200	254	244	G 1/2"
GM X1-D3/4"	168	168	90	45	305	210	65	130	160	130	100	30	M8	85	145	138	220	318	275	G 1"
GM X3-D1"	185	195	108	52	340	210	70	160	170	150	120	30	M8	135	255	168	280	378	308	G 1"
GM X4-D1"	185	195	125	78	368	210	70	-	226	170	135	40	M10	160	280	173	280	378	334	G 1"

INSTALLATION OF THE BURNER

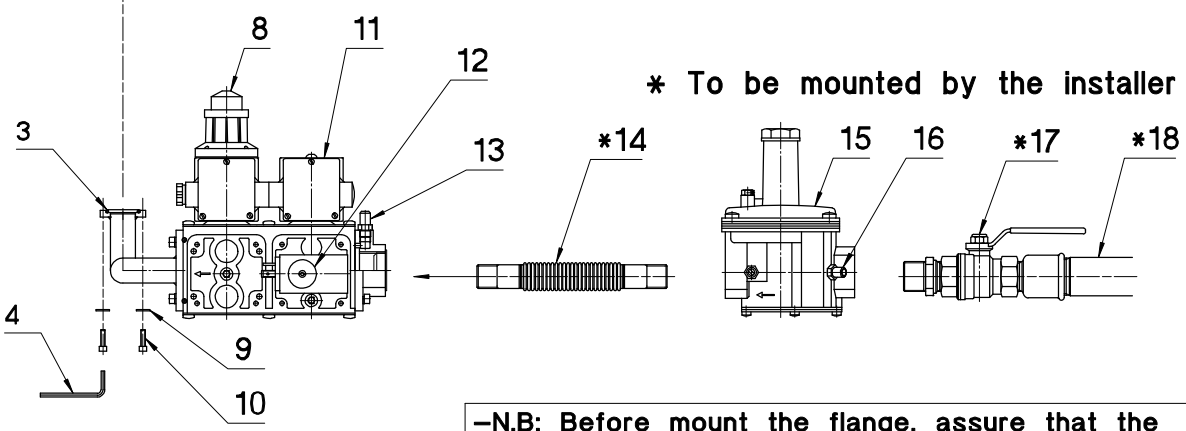


[L > R]
The coating of the breeder must not overcome the extremity of the head of combustion.



LEGEND

1 Combustion head pressure outlet
2 Train plug
3 OR-ring
4 Hexagonal spanner
5 Air pressure outlet
6 Air pressure switch
7 Alimentation socket
8 Operating valve
9 Washer
10 Screw
11 Safety valve
12 GAS Minimum pressure switch
13 GAS pressure outlet
14 Antivibration coupling
15 Pressure stabilizing filter
16 Pressure outlet
17 GAS tap
18 GAS pipe

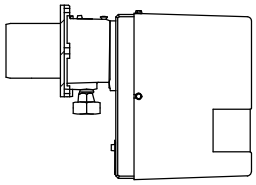
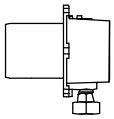
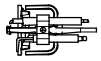


*** To be mounted by the installer**

–N.B: Before mount the flange, assure that the OR–ring (Pos.3) is well installed in his venue.
VERY IMPORTANT: Remove the cork.

BURNER TRANSFORMATIONS

For the transformations from Methane to GPL and contrarily and enough to replace the HEAD KIT.
Otherwise for the model GM X3 and enough to remove the HEAD KIT and
to add (LPG) or to remove (NATURAL GAS) the tablet.
Whilst for the trasformations from short head to long head it is necessary to require the HEAD GROUP.
After every transformation it is indispensable to recalibrate the burner.

BURNER  MODEL			CODE	 HEAD GROUP CODE	 HEAD KIT CODE	 TABLET GAS CODE
GM X0		NATURAL GAS	004001	053394	054191	-
GM X0	TL	NATURAL GAS	004003	054187	054192	-
GM X0		L.P.G.	004002	053395	054193	-
GM X0	TL	L.P.G.	004004	054188	054194	-
GM X1		NATURAL GAS	004005	051887	054195	-
GM X1	TL	NATURAL GAS	004007	054189	054196	-
GM X1		L.P.G.	004006	051888	054197	-
GM X1	TL	L.P.G.	004008	054190	054198	-
GM X3		NATURAL GAS	004122	054750	054746	-
GM X3	TL	NATURAL GAS	004123	054752	054748	-
GM X3		L.P.G.	004124	054751	054747	022463
GM X3	TL	L.P.G.	004125	054753	054749	022463
GM X4		NATURAL GAS	004126	054838	054834	-
GM X4	TL	NATURAL GAS	004127	054840	054836	-
GM X4		L.P.G.	004128	054839	054835	-
GM X4	TL	L.P.G.	004129	054841	054837	-

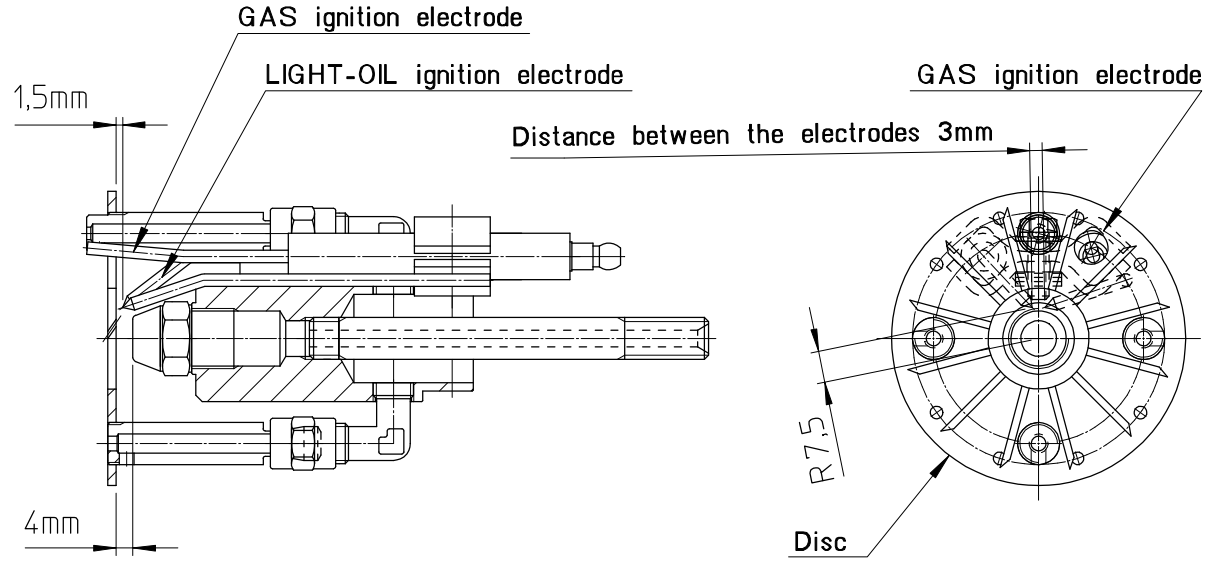
Legenda

TL = Long head

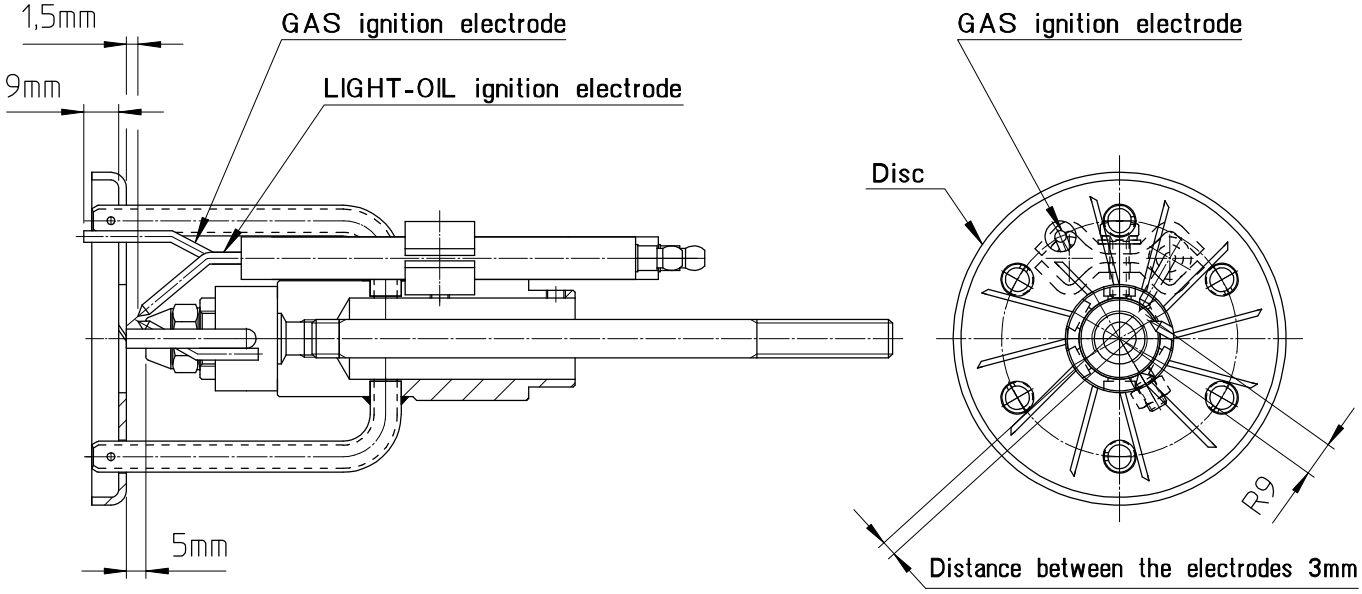
ATTENTION

Different mixing KITS are used for the combustion of the various gases.
Therefore the burner must be used only for the kind of gas indicated on the label.
Then, in case of trasformation, it is necessary to apply the labels indicating the
new kind of utilized gas.

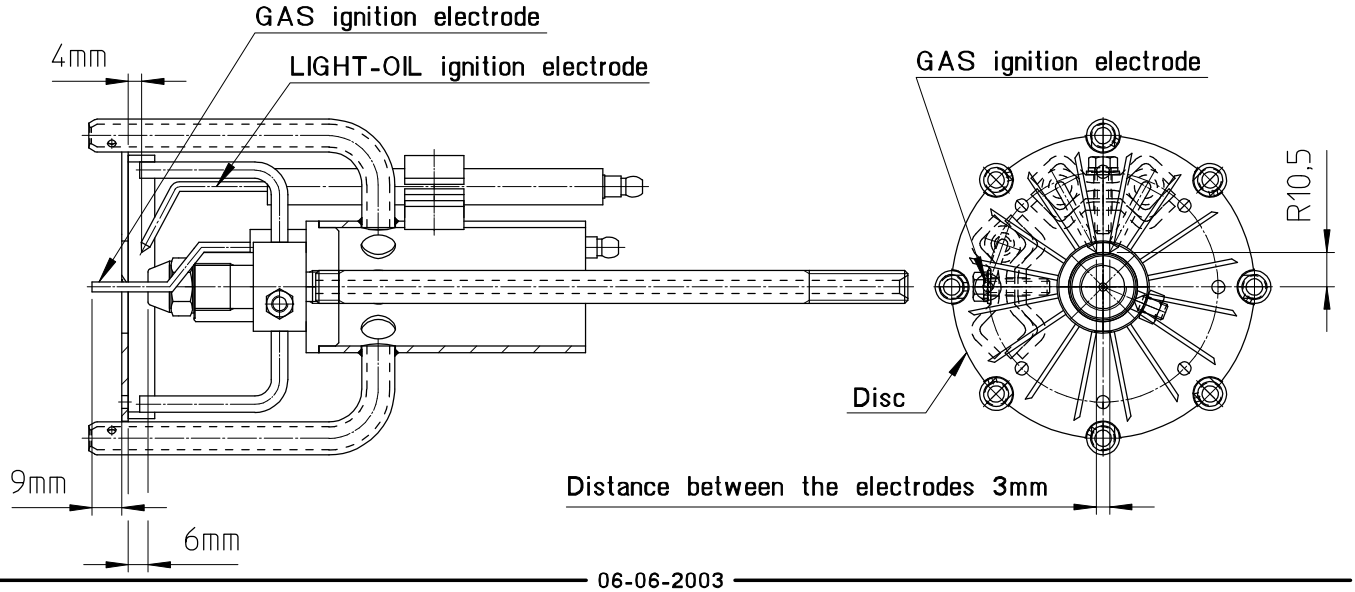
SCHEME OF POSITIONING ELECTRODES LIGHTING GM X0-X1



SCHEME OF POSITIONING ELECTRODES LIGHTING GM X3



SCHEME OF POSITIONING ELECTRODES LIGHTING GM X4



CALIBRATION OF THE BURNER

ATTENTION: before start the burner is necessary respect the general norms of security, in peculiar check:

- electric alimentation.
- type of gas.
- pressure gas.
- the holding of the plant and his correct realization.
- the presence of the water in the plant.
- the ventilation of the local boiler.
- the intervention of the thermostat boiler.

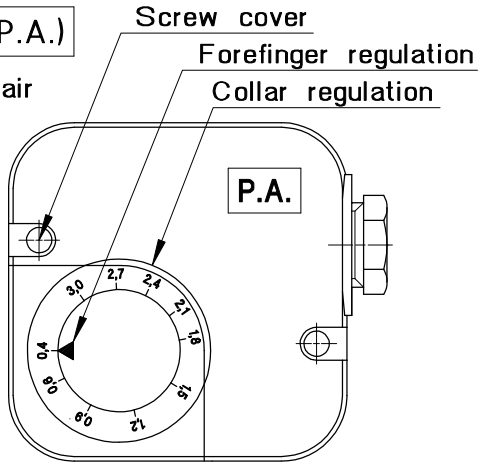
Before climbing on the burner, to check that the nozzle is proper to the potentiality of the boiler. (you see chart indicative settings).
Then to set the selector "GAS-GAS-OIL" in the position GAS-OIL, to check the exact connection of the pipes of feeding and to turn on the burner to gas-oil.
To effect the setting of the burner to gas-oil.
Made this stop the burner and to commute the selector on "GAS".
N.B.: For the setting of the burner to GAS never touching air and the regulation to the shutter wakes a will (already set for the gas-oil) but to act only on the course of the GAS.

Open the faucet and start the burner.
Wait the formation of the flame to the term of the pre-ventilation.
Set the potentiality of the burner according to the tablet of indicatif calibrations.
with the help of the combustion analyser depend to the definitive setting of the burner.
(NATURAL GAS: 9.5-10% CO_2 ; LPG: 11.5-12% CO_2)
Set the air pressure switch and audit his intervention obstructing the aspiration air in partial way.
Audit besides the intervention of the minimum gas pressure switch closing the faucet slowly.

CALIBRATION OF THE AIR PRESSURE SWITCH (P.A.)

The air pressure switch checks the least pressure of the air of the fun. For the setting is necessary the help of the combustion analyser; then depend like it follows:

A) Obstruct the aspiration air gradually, leaving unaffected the position of the shutter, until to obtain a defect of air: CO<=10.000 ppm.
B) Revolve the collar of regulation of the pressure switch slowly until to obtain the safety block of the burner.
C) Free the aspiration air completely and start the burner.
D) Repeat the point A) and audit the intervention of the pressure switch.



CALIBRATION OF THE MINIMUM GAS PRESSURE SWITCH (P.G. min)

It has connected in series with the thermostat and service the burner when the pressure of the gas in line descends under the value of setting (setting 20% inferior the pressure gas of operation). The minimum gas pressure switch it has mounted on the gas train in correspondence of the valve VS, for the setting depend like you follows:

A) Bring the burner to the maximum power (relative to the generator of heat).
B) Measure the pressure on the pressure outlet of the pressure switch and close slowly the faucet until to lower the pronounced pressure of the 20%.
C) Revolve the collar of regulation of the pressure switch slowly until to obtain the block of the burner.
D) Open the faucet completely and stary the burner.
E) Repeat the point A) and audit the intervention of the pressure switch.

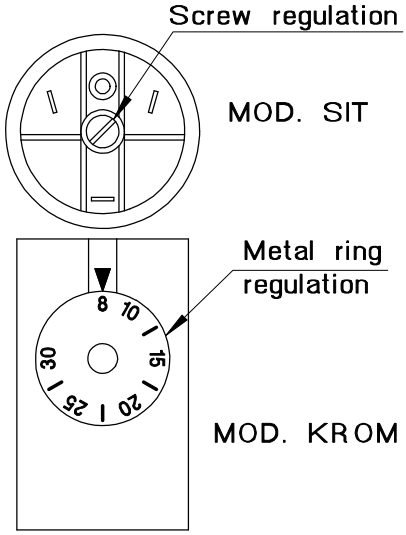


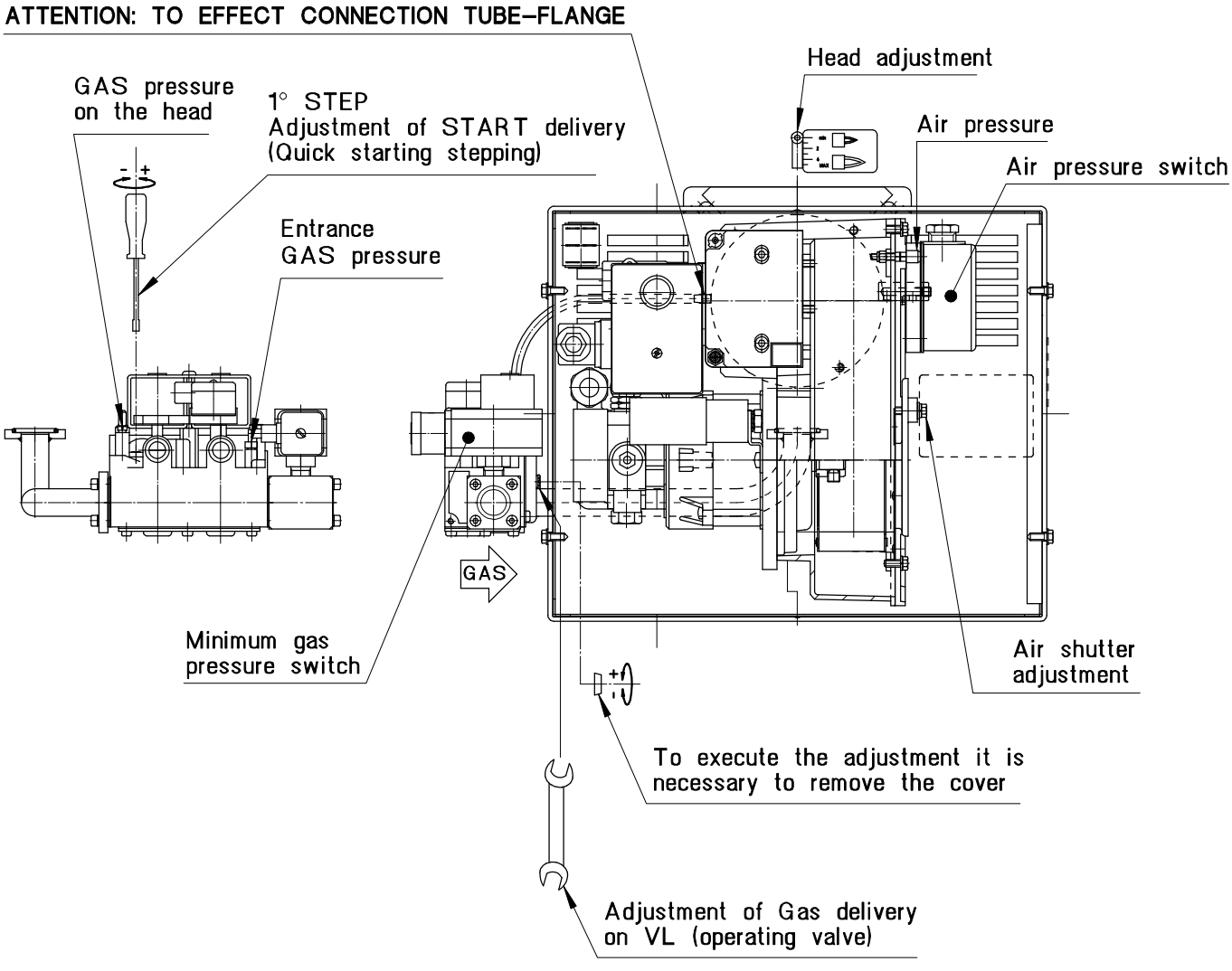
TABLE OF INDICATIVE CALIBRATIONS

Calibrations effected with pressure in chambers 0,1 mbar.

The definitive calibration must be done in operation by means of a combustion analyser.

NOZZLE G.P.H. x a°	PRESSURE [bar]	DELIVERY [Kg/h]	THERMAL POWER [KW-Mcal/h]	AIR [NOTCH N°]	HEAD [NOTCH N°]	PRESSURE AIR OF VENTILATION [mbar]	G20 (NATURAL GAS) DELIVERY [Nm^3/h]	G20 (NATURAL GAS) HEAD PRESSURE [mbar]	G31 (L.P.G.) DELIVERY [Nm^3/h]	G31 (L.P.G.) HEAD PRESSURE [mbar]
0.50 x 60°	10	1,9	22,5-19,4	6	0	1,3	2,3	3,1	0,9	8,3
	12	2,1	24,8-21,4	6,5	1	1,6	2,5	3,7	1	10,1
0.65 x 60°	10	2,5	29,6-25,5	7	2	1,9	3	5,3	1,2	14,3
	11	2,6	30,7-26,5	8	2,5	2,1	3,1	5,7	1,2	15,5
0.75 x 60°	10	2,7	31,9-27,5	8,5	3	2,3	3,2	6,2	1,2	16,7
	11	2,9	34,2-29,5	9	3,5	2,6	3,5	7,1	1,3	19,2

N.B.: To use Only Nozzles STEINEN 60°S



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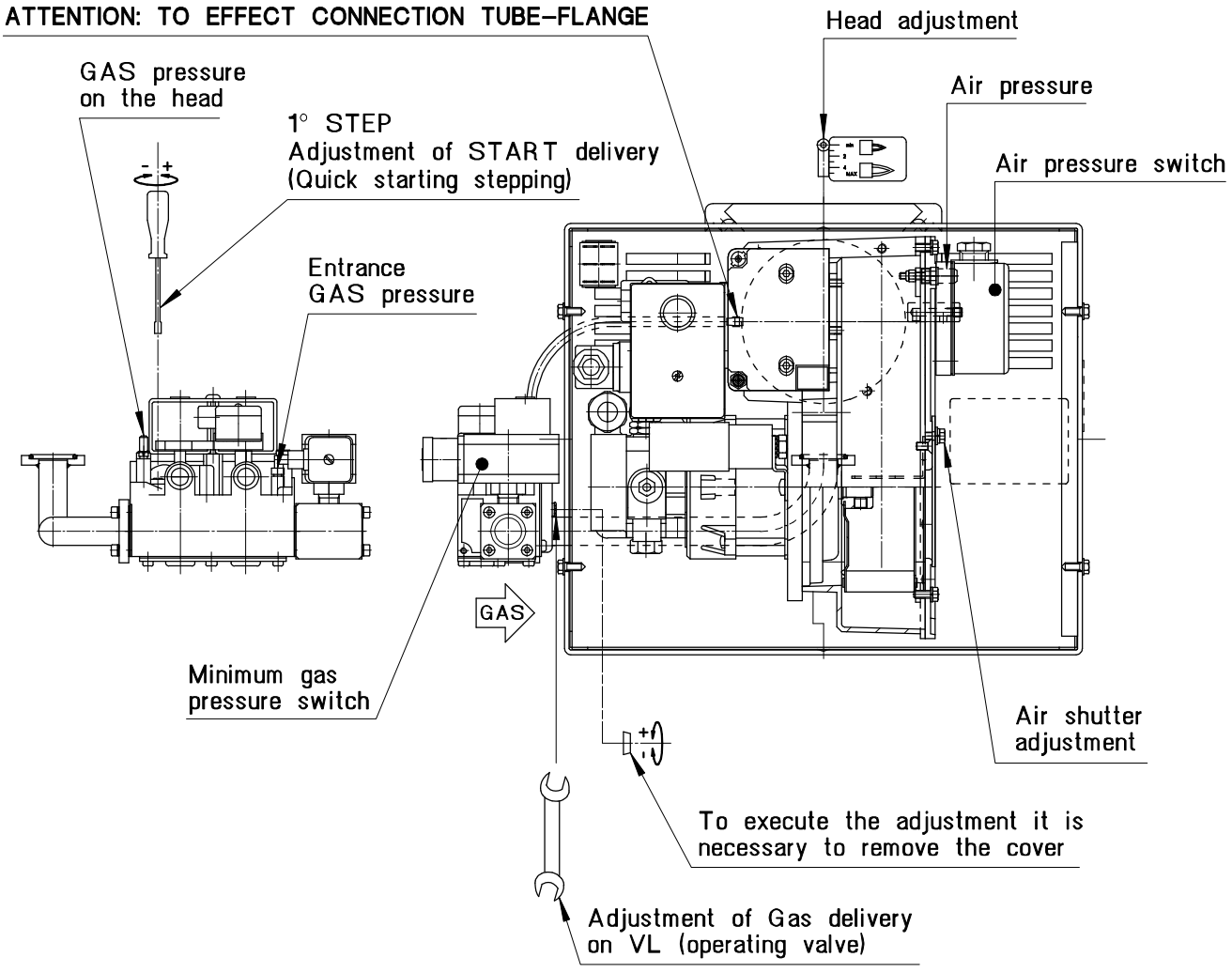
0.75 x 60°	12	2,9	34,8-30	6	0	2,3	3,5	5,2	1,4	7,8
1.00 x 60°	10	3,4	40,6-35	6,5	1	2,1	4,1	6,5	1,6	10,5
	12	3,9	46,4-40	7	2	1,8	4,7	8	1,8	13,8
1.25 x 60°	10	4,4	52,2-45	8	2,5	1,9	5,3	9,7	2	17,4
	12	4,9	58-50	8,5	3	2,3	5,8	11,9	2,3	21,5
1.50 x 60°	10	5,4	63,8-55	9	3,5	2,6	6,4	14,4	2,5	26
	12	5,9	69,6-60	9,5	4	2,7	7	16,9	2,7	31

N.B.: To use Only Nozzles STEINEN 60°S



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Calibrations effected with pressure in chambers 0,1 mbar.

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NOZZLE G.P.H. x a°	PRESSURE [bar]	DELIVERY [Kg/h]	THERMAL POWER [KW-Mcal/h]	AIR [NOTCH N°]	HEAD [NOTCH N°]	PRESSURE AIR OF VENTILATION [mbar]	G20 (NATURAL GAS) DELIVERY [Nm^3/h]	G20 (NATURAL GAS) HEAD PRESSURE [mbar]	G31 (L.P.G.) DELIVERY [Nm^3/h]	G31 (L.P.G.) HEAD PRESSURE [mbar]
0.75 x 60°	12	2,9	34,8-30	6	0	2,3	3,5	5,2	1,4	7,8
1.00 x 60°	10	3,4	40,6-35	6,5	1	2,1	4,1	6,5	1,6	10,5
	12	3,9	46,4-40	7	2	1,8	4,7	8	1,8	13,8
1.25 x 60°	10	4,4	52,2-45	8	2,5	1,9	5,3	9,7	2	17,4
	12	4,9	58-50	8,5	3	2,3	5,8	11,9	2,3	21,5
1.50 x 60°	10	5,4	63,8-55	9	3,5	2,6	6,4	14,4	2,5	26
	12	5,9	69,6-60	9,5	4	2,7	7	16,9	2,7	31

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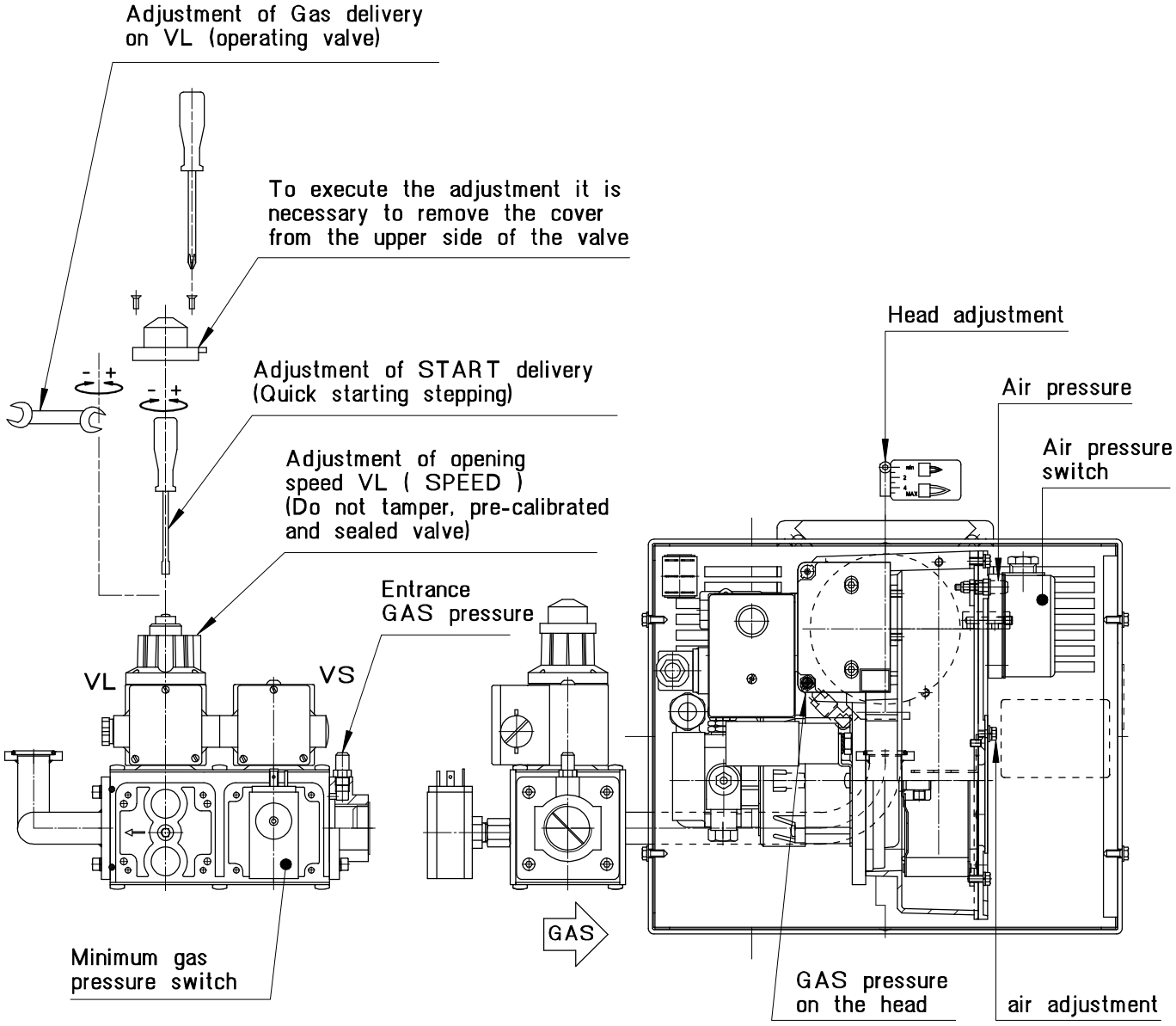

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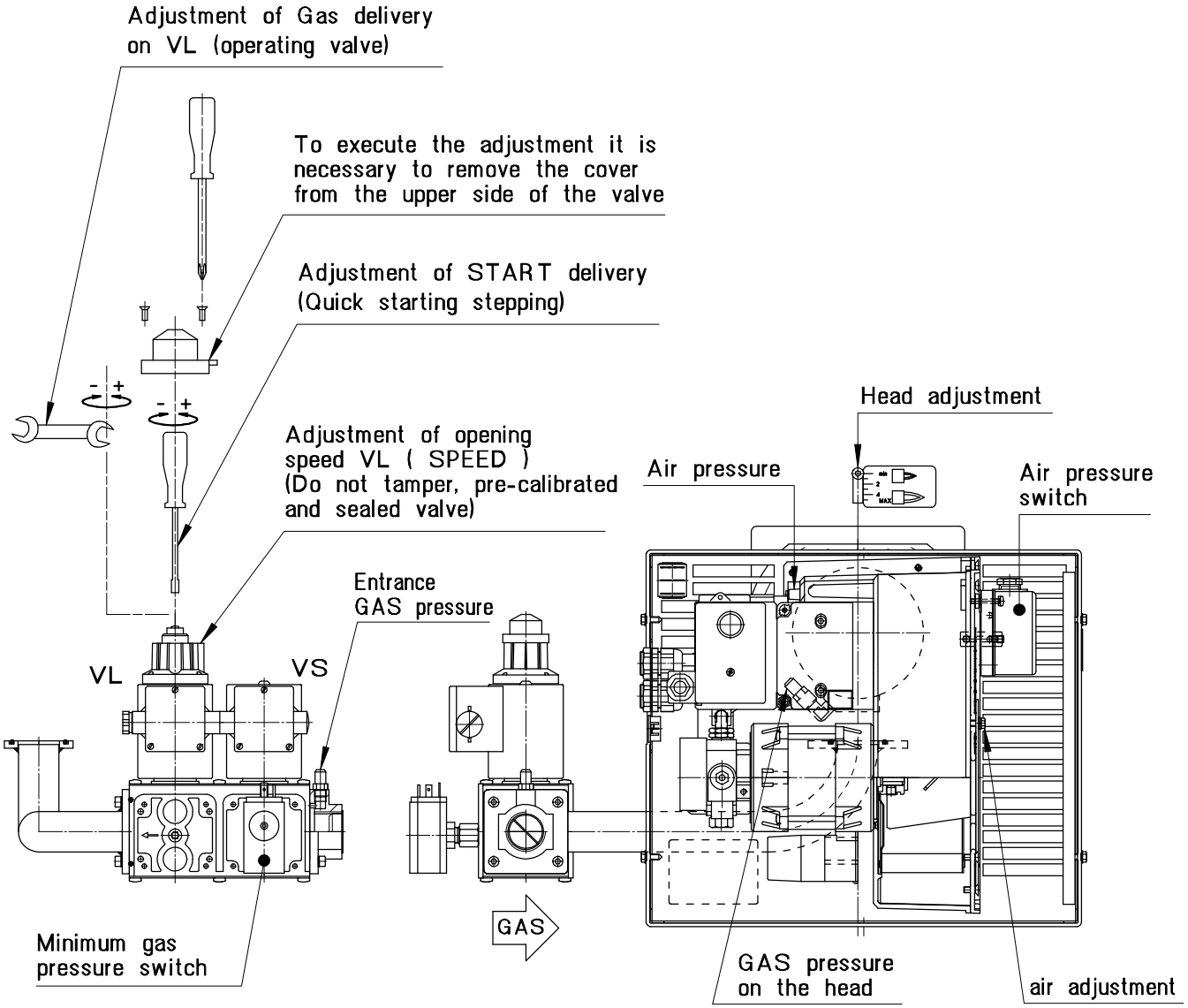
1.25 x 60°	11	4,9	58-50	6	0	2,6	5,8	2,3	2,3	4,5
1.50 x 60°	11	5,9	69,6-60	8	0,5	2,8	7	3,5	2,7	6,4
1.75 x 60°	11	6,9	81,2-70	10	1	3,1	8,2	5,1	3,2	8,9
2.00 x 60°	10	7,8	92,8-80	12,5	2	2,4	9,4	6,6	3,6	11,7
2.25 x 60°	11	8,8	104,4-90	12,5	3	2	10,5	8,2	4,1	14,3
2.50 x 60°	10	9,8	116-100	15	3,5	2,2	11,7	11	4,5	17
2.75 x 60°	11	10,8	127,6-110	17,5	4	2,5	12,9	13,6	5	21,3
3.00 x 60°	11	11,8	139,2-120	18	4,5	2,8	14	15,7	5,4	25,1
3.50 x 60°	10	12,7	150,8-130	20	5	3,1	15,2	17,9	5,9	28,5

N.B.: To use Only Nozzles STEINEN 60°S



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NOZZLE G.P.H. x a°	PRESSURE [bar]	DELIVERY [Kg/h]	THERMAL POWER [KW-Mcal/h]	AIR [NOTCH N°]	HEAD [NOTCH N°]	PRESSURE AIR OF VENTILATION [mbar]	G20 (NATURAL GAS) DELIVERY [Nm^3/h]	G20 (NATURAL GAS) HEAD PRESSURE [mbar]	G31 (L.P.G.) DELIVERY [Nm^3/h]	G31 (L.P.G.) HEAD PRESSURE [mbar]
2.50 x 60°	11	10	116-100	15	1	2,8	11,7	2,7	4,5	7,6
2.50 x 60°	12	11	127,6-110	15	1,5	2,9	12,9	3,3	5,0	9,1
3.00 x 60°	11	12	139,2-120	17,5	2,5	3	14,0	3,9	5,4	10,9
3.00 x 60°	12	13	150,8-130	20	3	3	15,2	4,6	5,9	12,8
3.50 x 60°	11	14	162,4-140	22,5	4	3,1	16,4	5,3	6,3	14,8
3.50 x 60°	11	15	174-150	25	4,5	3,1	17,5	6,1	6,8	17,0
4.00 x 60°	11	16	185,6-160	27,5	5	3,2	18,7	7,0	7,2	19,3
4.00 x 60°	12	17	197,2-170	30	6	3,3	19,9	7,9	7,7	21,8
4.50 x 60°	11	18	208,8-180	32,5	6,5	3,3	21,1	8,8	8,1	24,5
4.50 x 60°	12	19	220,4-190	35	7,5	3,4	22,2	9,8	8,6	27,3
5.00 x 60°	11	20	232-200	40	8	3,5	23,4	10,9	9,0	30,2

N.B.: To use Only Nozzles STEINEN 60°S