

Burners



LOW NO_x

Dual fuel lateral burners

ENM-NxT-DF (E3400D rev. 02 - 11/11/2010)

GENERAL WARNINGS:



- All installation, maintenance, ignition and setting must be performed by qualified staff, respecting the norms present at the time and place of the installation.
- To avoid damage to people and things, it is essential to observe all the points indicated in this handbook. The reported indications do not exonerate the Client/User from observing general or specific laws concerning accidents and environmental safeguarding.
- The operator must wear proper DPI clothing (shoes, helmets...) and respect the general safety, prevention and precaution norms.
- To avoid the risks of burns or high voltage electrocution, the operator must avoid all contact with the burner and its control devices during the ignition phase and while it is running at high temperatures.
- All ordinary and extraordinary maintenance must be performed when the system is stopped.
- To assure correct and safe use of the combustion plant, it is of extreme importance that the contents of this document be brought to the attention of and be meticulously observed by all personnel in charge of controlling and working the devices.
- The functioning of a combustion plant can be dangerous and cause injuries to persons or damage to equipment. Every burner must be provided with certified combustion safety and supervision devices.
- The burner must be installed correctly to prevent any type of accidental/undesired heat transmission from the flame to the operator or the equipment.
- The performances indicated in this technical document regarding the range of products are a result of experimental tests carried out at ESA-PYRONICS. The tests have been performed using ignition systems, flame detectors and supervisors developed by ESA-PYRONICS. The respect of the above mentioned functioning conditions cannot be guaranteed if equipment, which is not present in the ESA-PYRONICS catalogue, is used.

DISPOSAL:



To dispose of the product, abide by the local legislations regarding it.

GENERAL NOTES:



- In accordance to the internal policy of constant quality improvement, ESA-PYRONICS reserves the right to modify the technical characteristics of the present document at any time and without warning.
- It is possible to download technical sheets which have been updated to the latest revision from the www.esapyronics.com website.
- The ENM-NxT-DF products have been designed, manufactured and tested according to the most correct construction practices and following the applicable requirements described in **UNI EN 746-2-2010** "Industrial heating process equipment - Part 2: Safety requirements for combustion and for the handling and processing of fuels'. We emphasize that the burners described in this data sheet **are provided as independent units and are excluded from the scope of the Machine Directive 2006/42/EC** not having any mobile items that are not exclusively manual.
- Certified in conformity with the **UNI EN ISO 9001** Norm by DNV GL.



- For ESA-PYRONICS, the NxT symbol has the following two meanings which are connected to each other: **NEXT GENERATION**, or new generation burners that maintain functionality, reliability and performance. **NOx TECHNOLOGY** energy saving and low polluting emissions.

CERTIFICATIONS:



The products conform to the requests for the Euroasia market (Russia, Belarus and Kazakhstan).

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The ENM-NxT-DF series identifies a family of lateral long flame dual fuel burners that are used on various types of furnaces. According to the size and use, the ENM-NxT-DF burners guarantee a substantial decrease in polluting emissions (CO & NOx) and lower consumption compared with traditional burners, thanks to the design that has been optimized for the use of preheated air upto 500°C.

APPLICATIONS

- Walking beam furnaces
- Walking earth furnaces
- Frit melting furnaces
- Pusher type furnaces
- Aluminim melting furnaces
- Thermal treatment furnaces.
- Forge furnaces.
- Stretching furnaces.
- Brick manufacturing furnaces.



F3400D103

CHARACTERISTICS

GENERAL:

- Capacity: from 700 to 4400 kW
- Preheated air upto: 500°C
- Air pressure to burner: 50 mbar
- Gas pressure to burner: 50 mbar
- Air atomization pressure: 500 mbar
- Oil pressure to burner: 5 bar
- Functioning with light oils, max. viscosity: 3°E
- Extremely low NOx e CO content
- Ample flow ratio (in media 6 : 1)
- Maximum working temperature: 1600°C

MATERIAL COMPOSITION:

- Burner body: carbon steel
- Gas collector: cast iron G25
- Air diffuser: refractory cement (T.max=1750°C)
- Gas tube: AISI304/AISI310S
- Body insulation: ceramic fibre
- Surface treatment: zinc coating, pickling, high temperature painting



F3400D104

CAPACITY PARAMETERS AND FLAME LENGTH

ENM-NxT-DF burner ignition takes place via a PBC-FR/X series pilot burner. The detection instead, is carried out through a UV-2 scanner (not included with the supply). The use of flame control systems is highly recommended

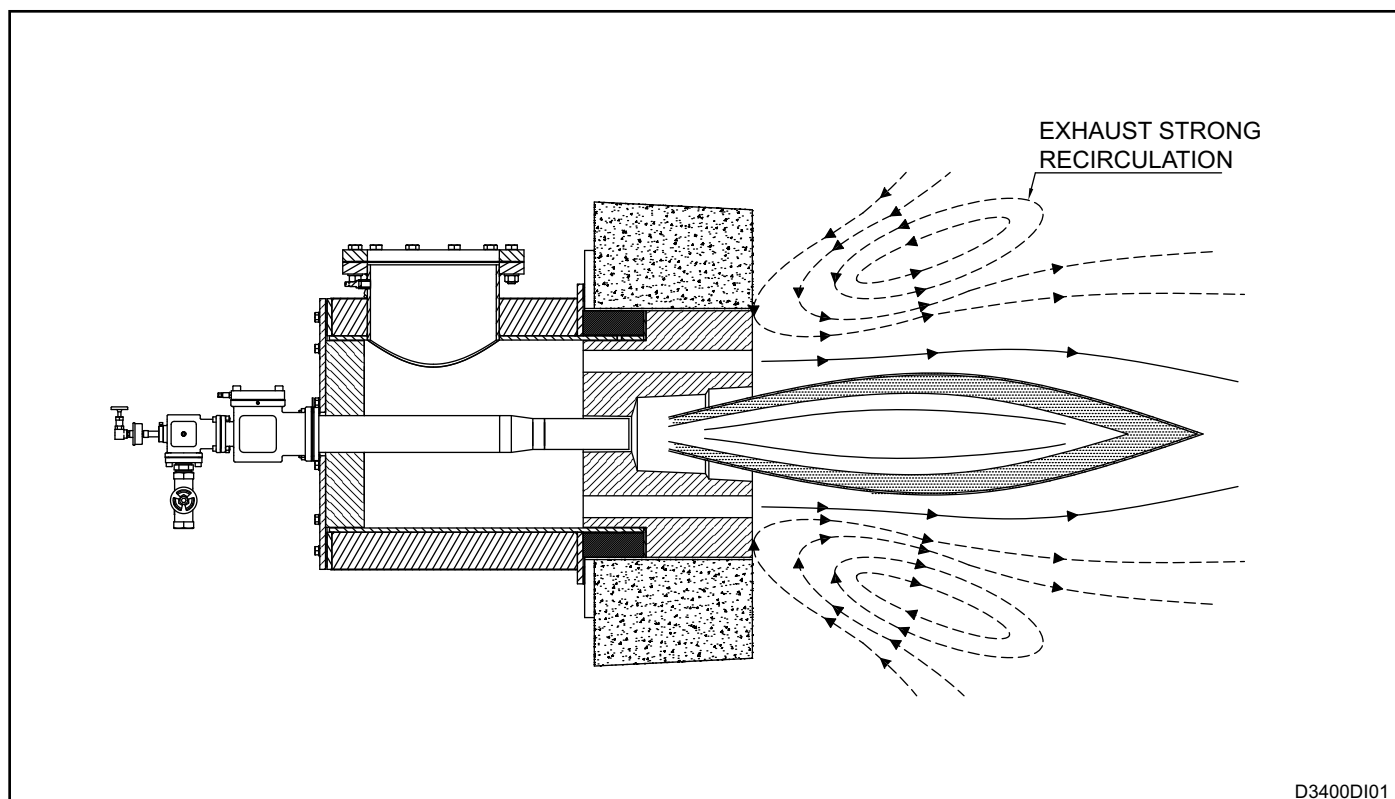
in all plants operating at temperatures lower than 750°C (UNI EN746-2 Regulation).

Model	Capacity kW	Flame Length mm	Ignition	Detection
ENM-7-NxT-DF	700	2200	42PBC-FR/X	UV-2
ENM-8-NxT-DF	1000	3000	42PBC-FR/X	UV-2
ENM-9-NxT-DF	1500	4000	64PBC-FR/X	UV-2
ENM-10-NxT-DF	2000	4800	64PBC-FR/X	UV-2
ENM-11-NxT-DF	2800	5800	86PBC-FR/X	UV-2
ENM-12-NxT-DF	3600	6500	86PBC-FR/X	UV-2
ENM-13-NxT-DF	4400	7000	86PBC-FR/X	UV-2

DESCRIPTION

The ENM-NxT-DF burners are LOW NO_x burners and apply the most recent technological inventions to guarantee low NO_x e CO emissions, remaining functional, however, even at low chamber temperatures during ignition with the furnace off.

The burners are solid and robust, with contained dimensions and mass (the main insulation is in ceramic fibre), with separate air and gas inlets and nozzle mixing (where flame backfire is impossible).



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Multistage technology, together with the high combustive gas recirculation, guarantees low NO_x and CO emissions, even with pre-heating temperature values of upto 500°C.

When it is necessary, the FLAMELESS version satisfies the strictest standards, in terms of emissions, maintaining however, the same air and gas feeding pressures as the standard version.

BURNER PERFORMANCE

The flame capacity, length and speed refer to natural gas (8600 Kcal/Nm³) or fuel (10200 Kcal/Kg) fed burners, placed in combustion chambers at zero pressure at sea level and functional with 10% of excess air.

ers, placed in combustion chambers at zero pressure at sea level and functional with 10% of excess air.

- MIN/MAX (ON/OFF) functioning.
- Chamber temperature 1200°C
- Preheated air temperature 500°C

MAXIMUM CAPACITY

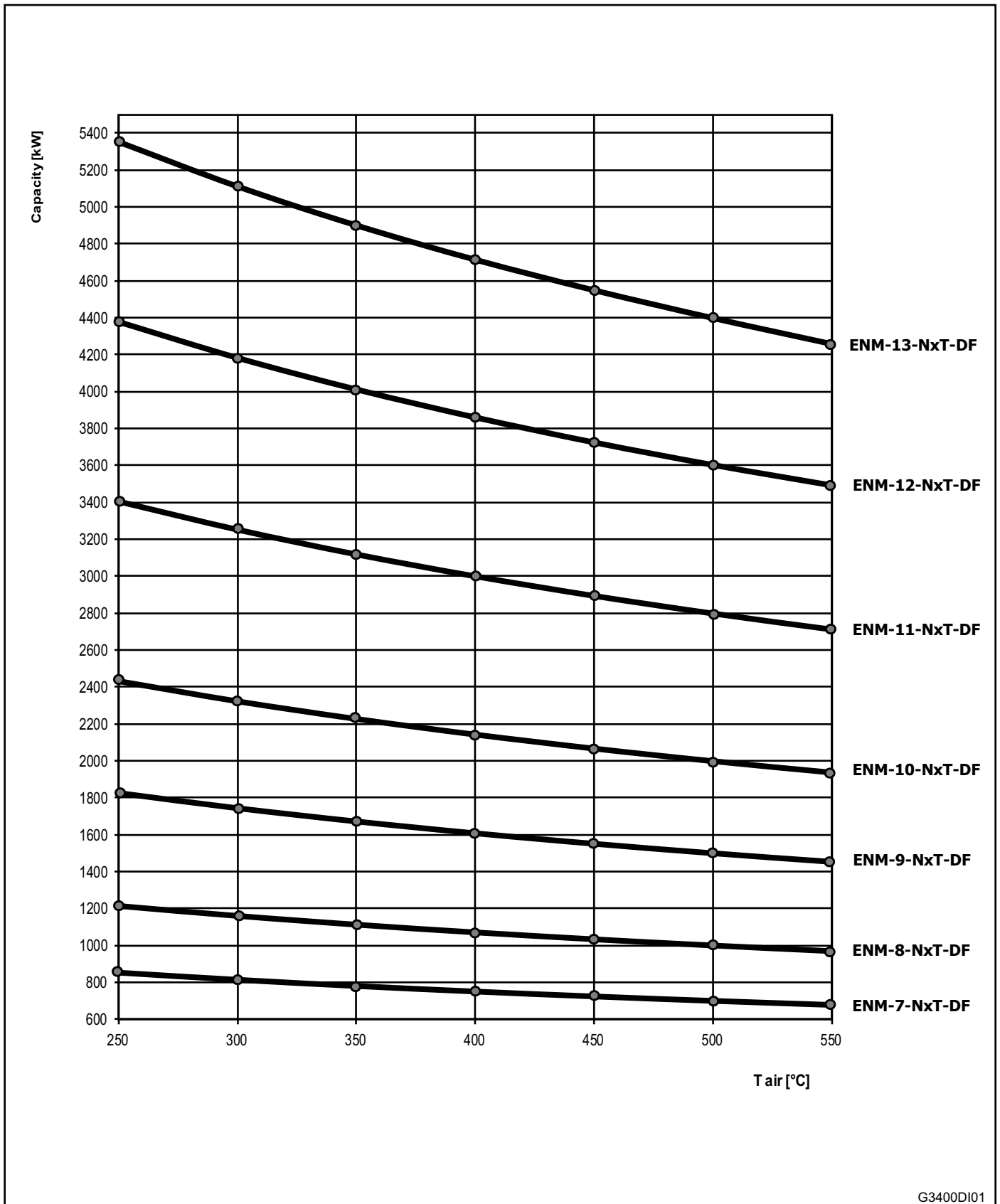
			Burner model						
			ENM-7-DF	ENM-8-DF	ENM-9-DF	ENM-10-DF	ENM-11-DF	ENM-12-DF	ENM-13-DF
Max. capacity	Burner capacity (2% O₂)	[kW]	700	1000	1500	2000	2800	3600	4400
	Combustion air flow	[Nm ³ /h]	745	1063	1600	2128	2992	3855	4710
	Gas flow	[Nm ³ /h]	70	100	150	200	280	360	440
	Oil flow	[lt/h]	70	100	150	200	280	360	440
	Atomized air flow	[Nm ³ /h]	25	37	50	72	88	105	130
	Burner air inlet pressure	[mbar]	50						
	Burner gas inlet pressure	[mbar]	50						
	Lance oil inlet pressure	[bar]	5						
	Atomized air pressure (*)	[mbar]	500						

MINIMUM CAPACITY

			Burner model						
			ENM-7-DF	ENM-8-DF	ENM-9-DF	ENM-10-DF	ENM-11-DF	ENM-12-DF	ENM-13-DF
Min. capacity	Burner capacity (2% O₂)	[kW]	120	170	250	350	470	600	700
	Combustion air flow	[Nm ³ /h]	107	150	225	313	429	555	570
	Gas flow	[Nm ³ /h]	12	17	25	35	47	60	70
	Oil flow	[lt/h]	12	17	25	35	47	60	70
	Atomized air flow	[Nm ³ /h]	25	37	50	72	88	105	130
	Burner air inlet pressure	[mbar]	1,5						
	Burner gas inlet pressure	[mbar]	1,5						
	Lance oil inlet pressure	[bar]	0,15						
	Atomized air pressure (*)	[mbar]	500						

(*) The atomized oil air flow remains constant throughout the entire range of the burner functioning.

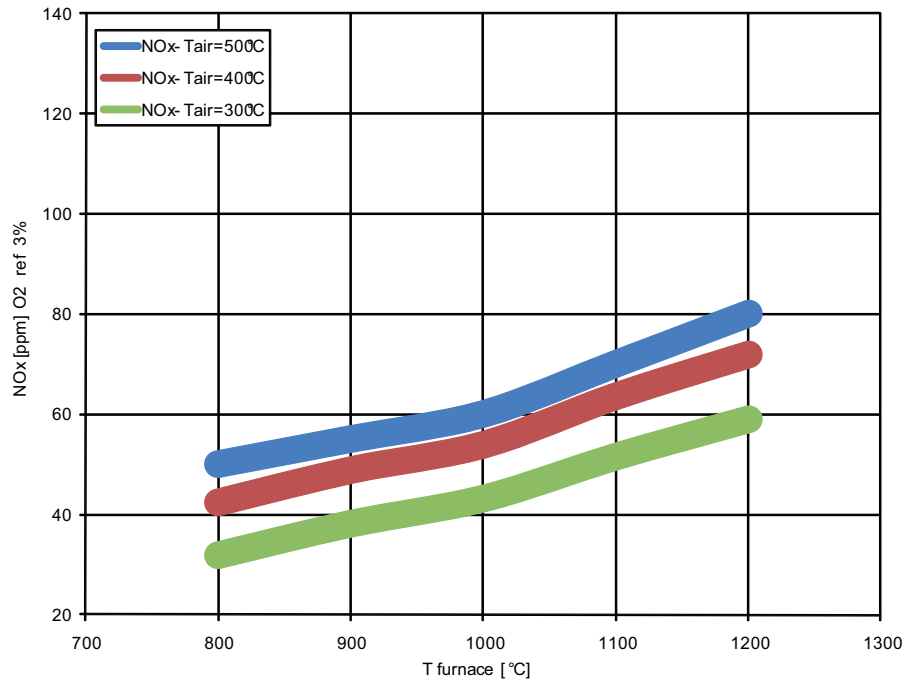
BURNER CAPACITY ACCORDING TO PREHEATED AIR TEMPERATURE



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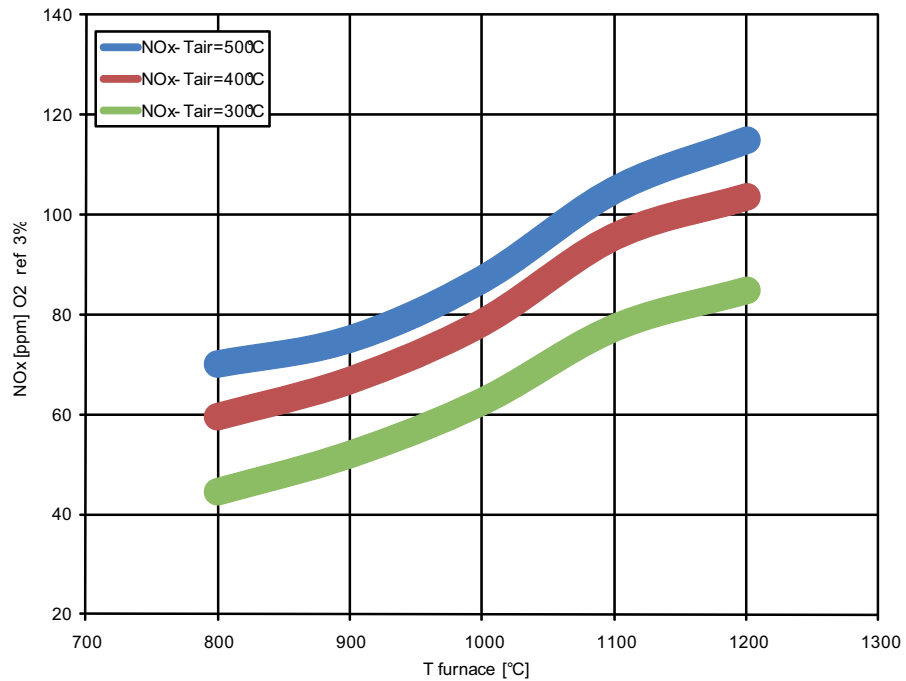
NO_x EMISSIONS TABLE

STANDARD COMBUSTION (NATURAL GAS)



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STANDARD COMBUSTION (OIL)



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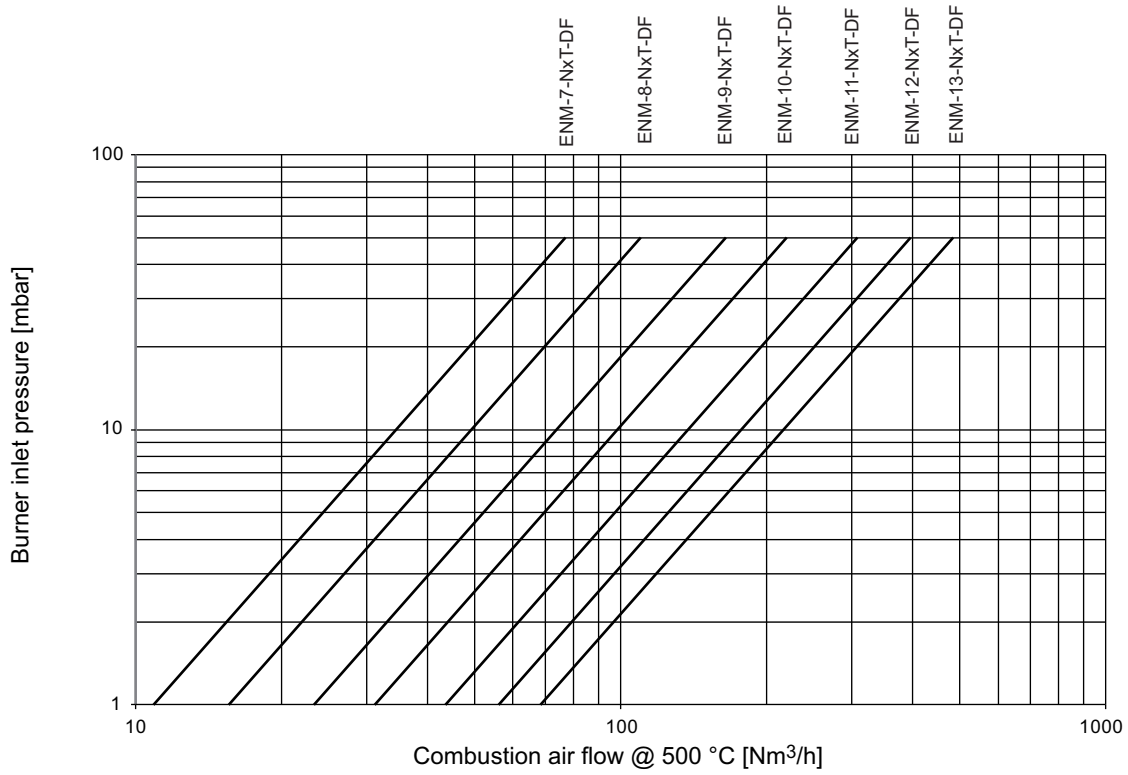
Burner at 100% capacity with 10% of excess air

The emission value may vary depending on different factors such as:

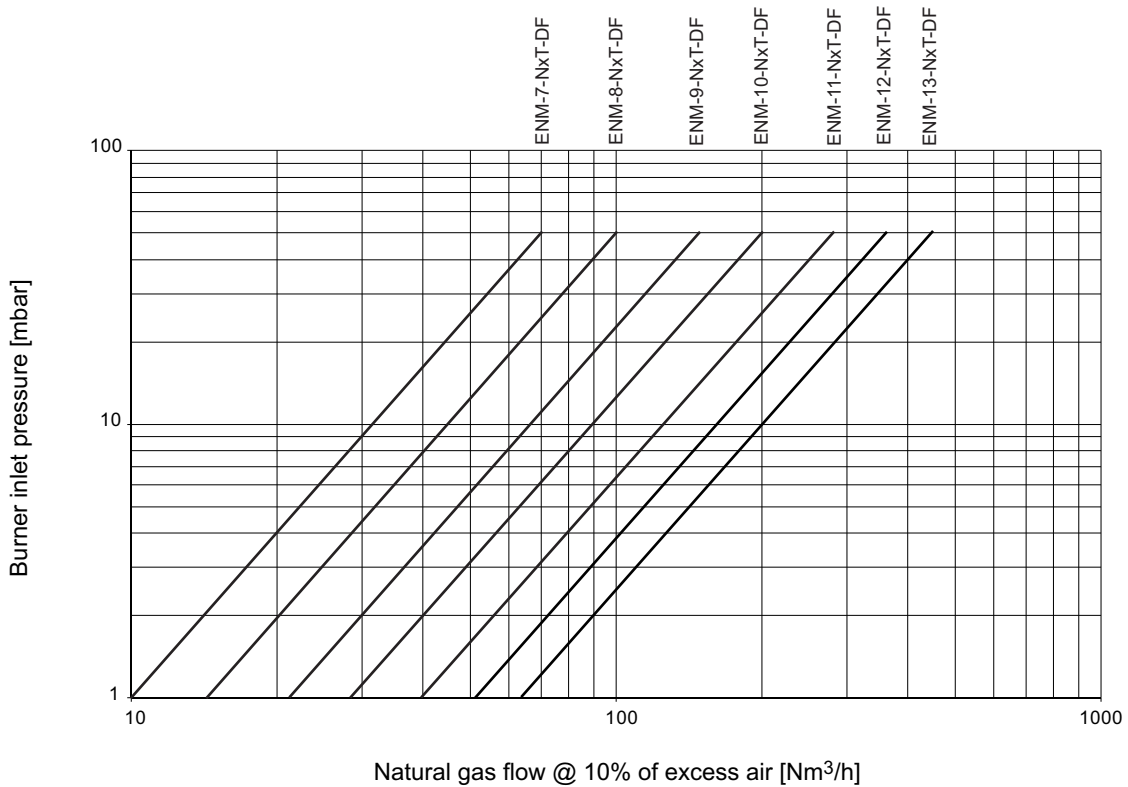
- Furnace working temperature.
- Heated air temperature.
- Excess air.
- Fuel chemical composition.

The guaranteed value will thus be fixed, depending on each specific case and according to the indications given by the client.

CAPACITY FLOW CHART

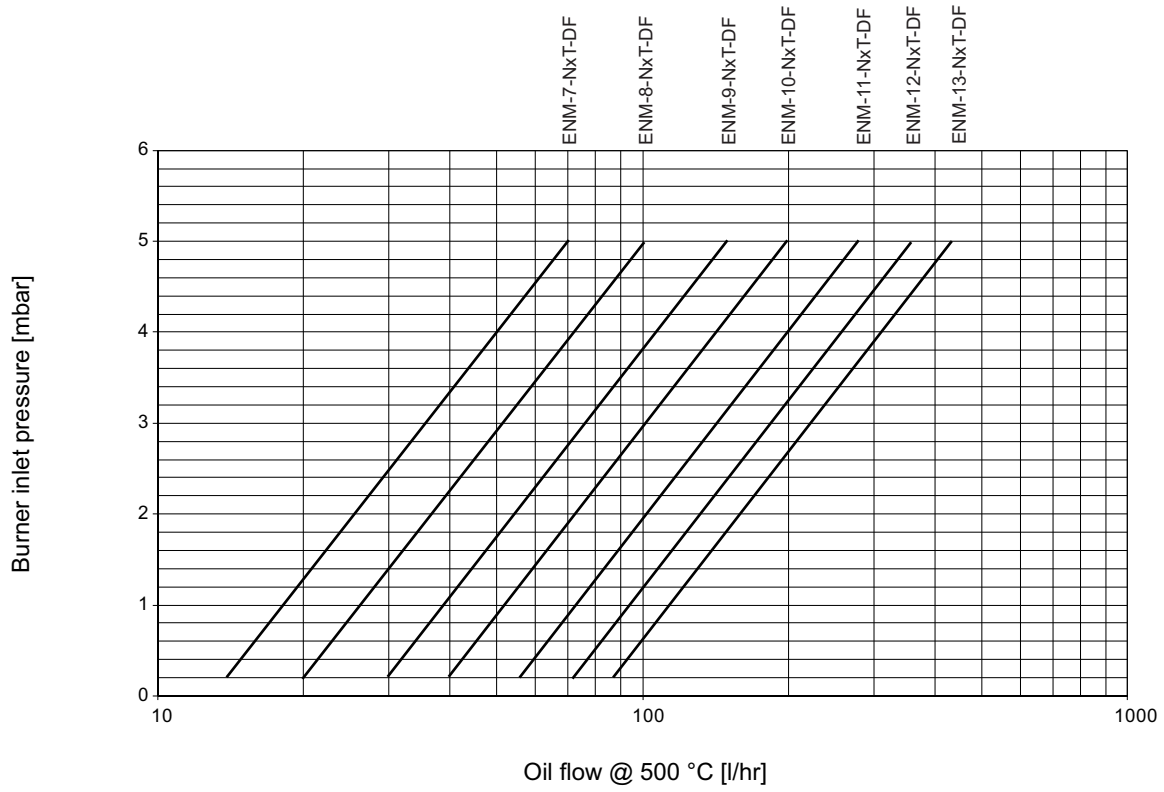


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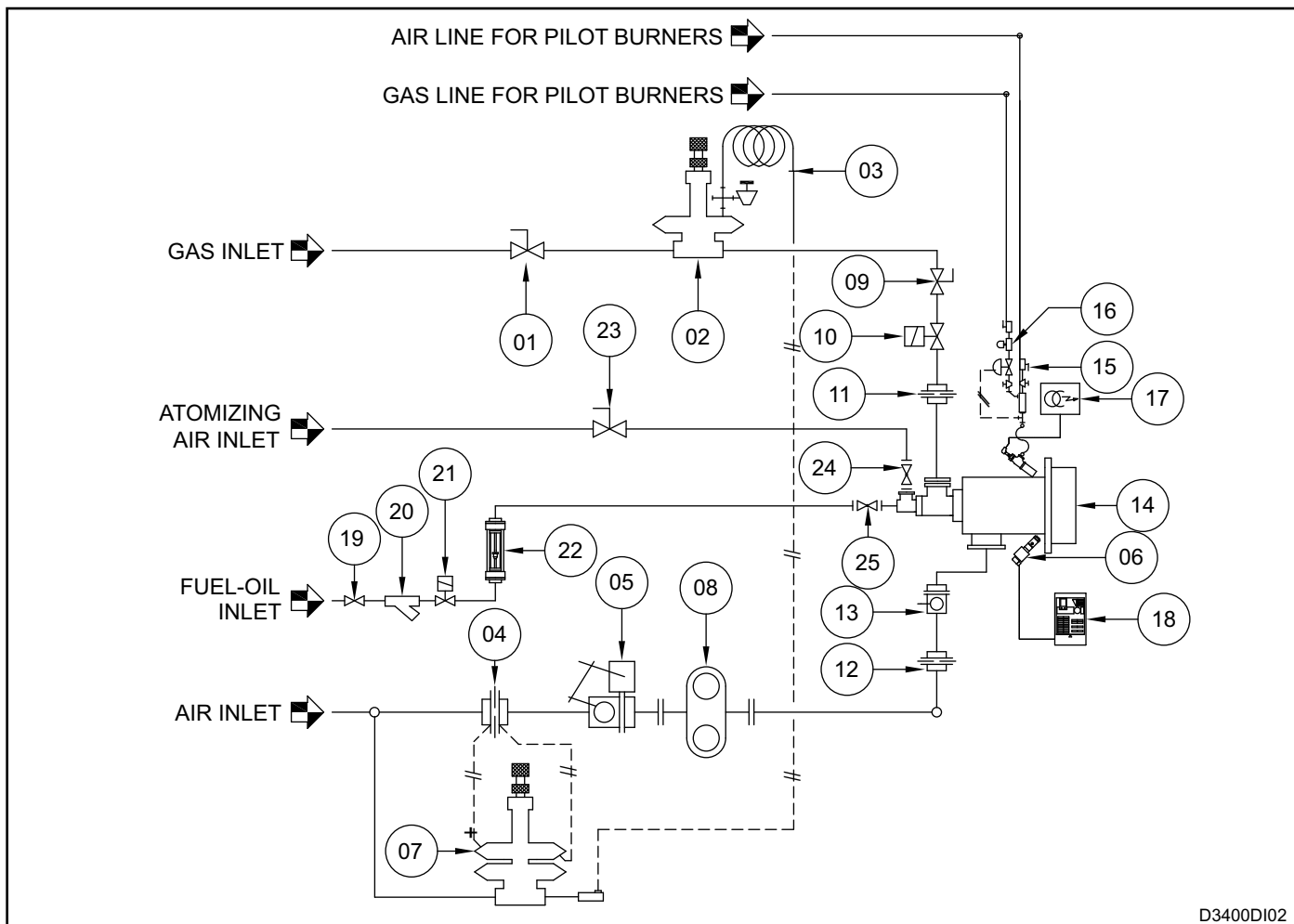
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CAPACITY FLOW CHART



G3400DI04

FLOW SCHEME - ZONE REGULATION



Pos.	Description	Included	Not Included
1	Main gas interception ball valve		X
2	Zerogovernor		X
3	Impulse line		X
4	ΔP air measurement calibrated flange		X
5	Air regulation butterfly valve		X
6	UV flame detector		X
7	Ratio regulator		X
8	Heat exchanger		X
9	Single burner gas interception ball valve		X
10	Main burner gas safety solenoid valve		X
11	Single burner ΔP gas measurement calibrated flange		X
12	Single burner ΔP air measurement calibrated flange		X
13	Manual air regulation butterfly valve		X
14	Main burner with oil lance	X	
15	Pilot burner		X
16	Pilot burner gas safety solenoid valve		X
17	Ignition transformer		X
18	Flame control		X
19	Oil interception valve		X
20	Oil filter		X
21	Oil safety solenoid valve		X
22	Flowmeter		X
23	Compressed air interception valve		X
24	Compressed air regulation valve	X	
25	Oil regulation pin valve	X	

WARNINGS

- The ENM-NxT-DF series burners are to be used in fixed installations. If mobile installations should be necessary (bell furnaces, etc ...), take into consideration that possible damages could be caused due to the movement of the actual furnace.
- Check that the kinematic viscosity of the fuel available is compatible with what is required by the characteristics of the oil lance. If necessary, use an oil fuel pre heater.
- Burner ignition must always be carried out at minimum power, to then modulate towards the maximum, thus facilitating ignitions and reducing outlet overpressures.
- The passing from the minimum to the maximum power, and vice-versa, must be gradual and not immediate.
- For all applications at low temperatures (upto 750°C), the burner ignition as well as the combusive gas solenoid valve command must be carried out using a certified burner control device.
- The use of flexible joints is always necessary in the presence of pre-heated air.
- To avoid possible damage to the burners, make sure that the blower does not blow air which is fouled by combustion products, oils solvents or other. To avoid these phenomena from taking place, preferably install the blower or the suction duct outside the establishment and far from exhaust pipes.
- Check the correct connection of the feeding lines after installation. Before switching the burner on, check that the comburent air pressure and combusive gas pressure values are correct.
- The burner can only function within the indicated power range. Functioning with excessive power could compromise burner performance and life span. In that case the ESA PYRONICS general warranty conditions will automatically expire and ESA PYRONICS will not be held responsible for any damage caused to persons or objects.
- In case there are problems with the other devices during the burner start-up phase, for the connection of high tension cable to the ignition electrode, use the connector with an antidisturbance filter.
- Avoid burner ignition close to each other so as not to overheat the ignition command system devices (solenoid valves and transformers). Prewash time lapse + first safety time lapse + min. of 5 sec. = time lapse between one ignition and another. (however, do not attempt more than 2 ignitions during a 30sec. time lapse).
- Make sure the power supply is TURNED OFF when intervening on the burner and its devices. In case of burner malfunctioning, follow the indications in the 'Maintenance' chapter of the present manual or contact ESA-PYRONICS assistance.
- Any modification or repair done by third parties can compromise the application safety and automatically cause the general warranty conditions to expire.

INSTALLATION

The ENM-NxT-DF series burners are generally sidewall burners. Roof installation is not advised and in case it is necessary, please specify during the order phase.

The light made for the burner positioning must leave space around the actual burner which is then to be filled with ceramic fibre cushion (vd. pag. 16).

The use of flexible pipes in AISI is compulsory for the connection of the air and gas lines to the burner. The air and gas inlets can be rotated to 90° and have flanges (UNI or ESA-PYRONICS) to be welded.

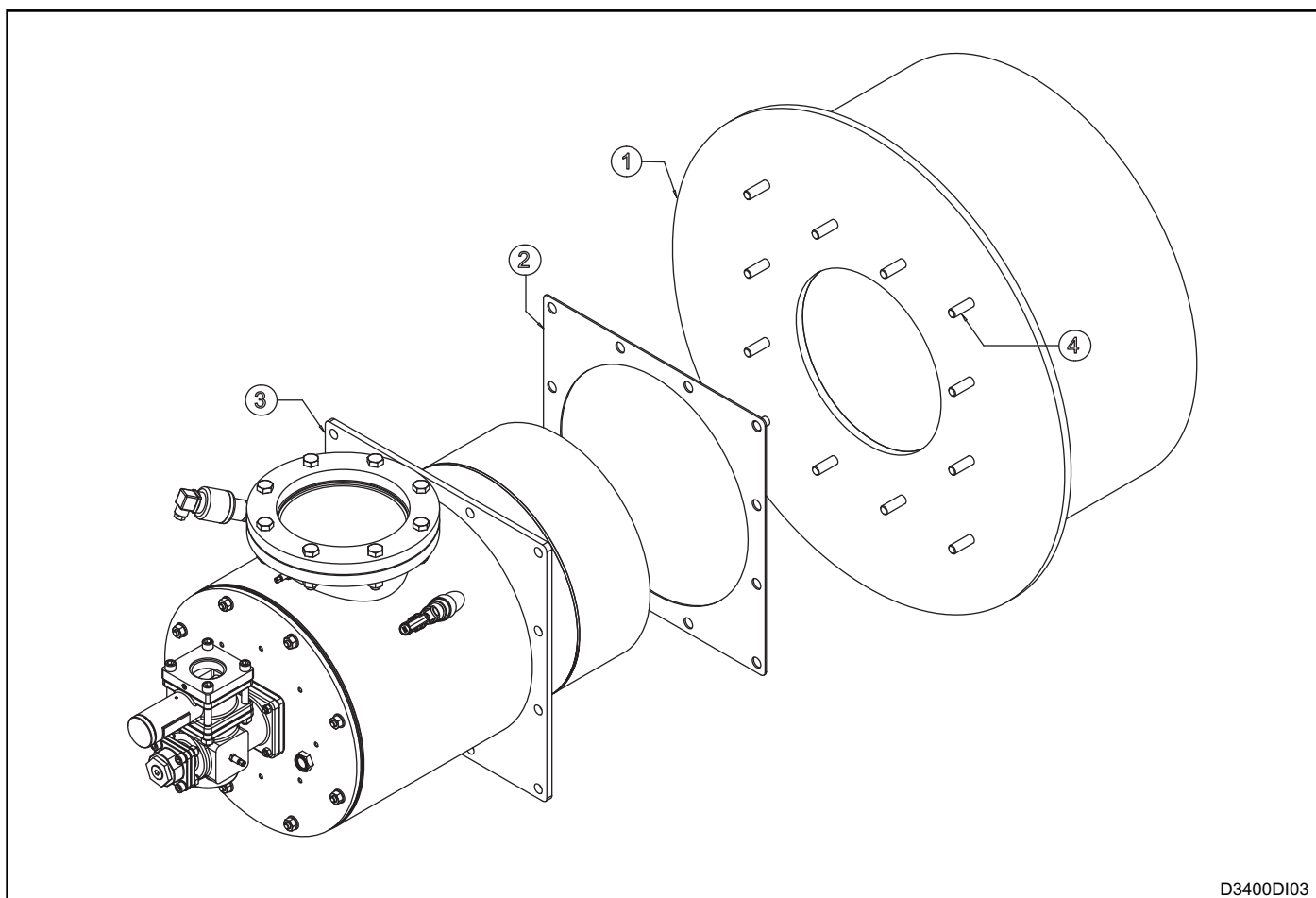
For installation, carefully carry out the following instructions:

1 - insert the burner body gasket (**pos.02**) on the wall of the furnace (**pos.01**).

2 - lift the burner up (**pos.03**) and fix it to the stud bolts (**pos.04**), checking that the gasket (**pos.02**) has not moved and is not deformed.

3 - tighten the anchor bolts.

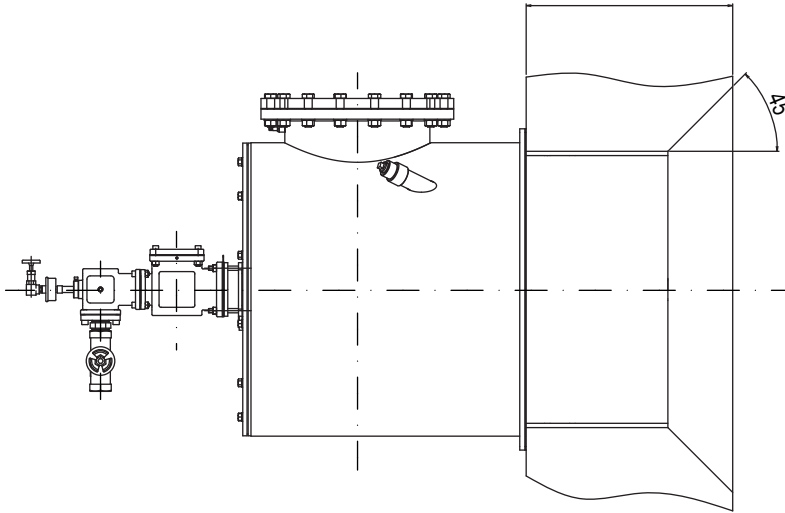
4 - connect the air and gas lines to the burner using the flanges to be welded.



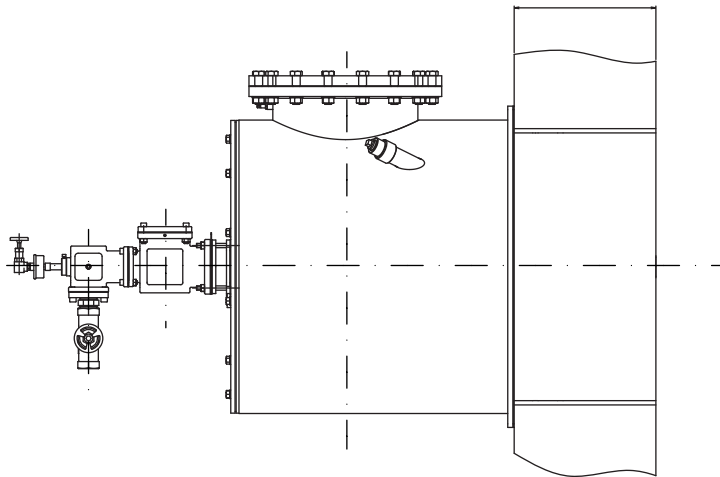
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INSTALLATION CARD ON FURNACE WALL

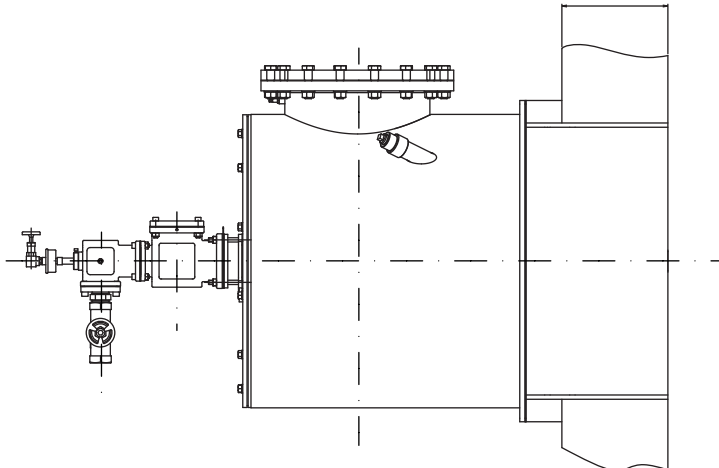
WALL THICKNESS > DIFFUSER LENGTH



WALL THICKNESS = DIFFUSER LENGTH



WALL THICKNESS < DIFFUSER LENGTH



D3400DI04

START-UP AND GAS SETTING

The procedures indicated in the following chapter must be carried out by expert technicians. The non-observance of the instructions given can provoke dangerous conditions.

1 - Check that the combustion air pressure exiting the blower and the combustive fuel pressure are both within the allowed range.

2 - Adjust the working pressure and the safety device pressure of the combustion plant, whether there is one per burner or one for the whole plant i.e. gas pressure reduction gear, block valve, relief valve, pressure switches etc. Simulate the intervention of all the safety devices including the intervention of the safety over temperature, checking that the fuel safety block devices react properly.

3 - Place the air regulation valve in the maximum opening position and adjust the burner inlet pressure referring to the values indicated in the 'Burner Performances' chapter.

4 - Place the air regulation valve in the minimum opening position and adjust its opening to obtain (in burner inlet and ejector) the relative minimum power pressure.

5 - Activate the burner control device and attempt the pilot burner (*) ignition until it switches on. While attempting to ignite the burner, act on the gas adjustment valve and, starting from the totally closed position, open it gradually until the main burner ignites.

6 - Completely open the motorized air regulation valve and via the gas regulation valve, regulate the maximum fuel flow, checking the differential pressure created on the calibrated gas flange.

7 - Double check that, at minimum and maximum power, the burner inlet pressures correspond to the values in the 'Burner Performances' chapter. These values may differ depending on whether the burner is on or off.

8 - If necessary, with both burners running at the same power, analyse the combustion products in the chamber (where possible).

9 - Repeatedly attempt ignition at minimum burner power, with maximum amplitude, to check the ignition reliability and flame stability during the adjustment.

(*) For pilot burner ignition and setting, please refer to n. E3280 technical data sheet.

START-UP - OIL SETTING

The procedures indicated in the following chapter must be carried out by expert technicians. The non-observance of the instructions given can provoke dangerous conditions.

1 - Check that the combustion air pressure exiting the blower and the combustive fuel pressure are both within the allowed range.

2 - Adjust the working pressure and the safety device pressure of the combustion plant, whether there is one per burner or one for the whole plant i.e. gas pressure reduction gear, block valve, relief valve, pressure switches etc. Simulate the intervention of all the safety devices including the intervention of the safety over temperature, checking that the fuel safety block devices react properly.

3 - Open the atomization air interception globe valve until obtaining the feeding pressure requested in the "BURNER PERFORMANCE" chapter on pag. 5.

4 - Place the air regulation valve in the maximum opening position and adjust the burner inlet pressure referring to the values indicated in the 'Burner Performances' chapter.

5 - Place the air regulation valve in the minimum opening position and adjust its opening to obtain (in burner inlet and ejector) the relative minimum power pressure.

6 - Activate the burner control device and attempt the pilot burner (*) ignition until it switches on. While attempting to ignite the burner, act on the gas adjustment valve and, starting from the totally closed position, open it gradually until the main burner ignites.

7 - Fully open the air regulation valve and adjust, via the gas adjustment valve, the maximum fuel capacity, checking the differential pressure created on the calibrated gas flange.

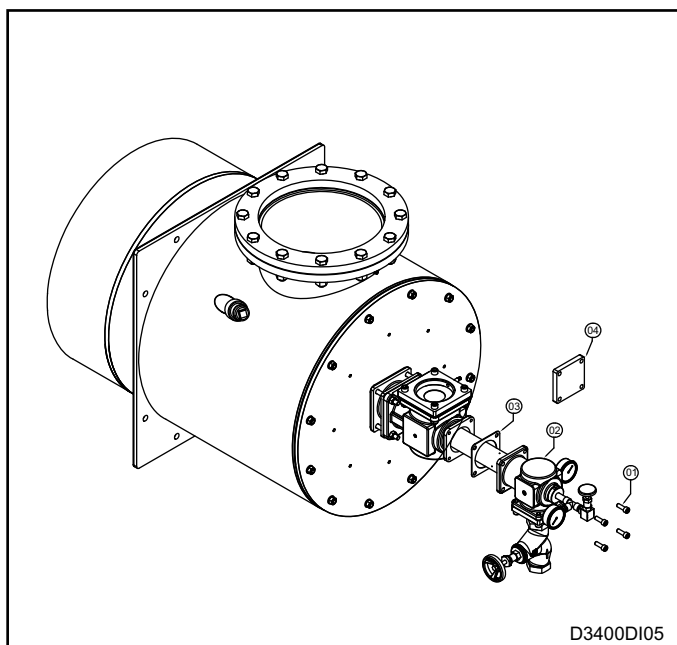
8 - Double check that, at minimum and maximum power, the burner inlet pressures correspond to the values in the in the 'Burner Performances' chapter. These values may differ depending on whether the burner is on or off.

9 - If necessary, with both burners running at the same power, analyse the combustion products in the chamber (where possible).

10 - Repeatedly attempt ignition at minimum burner power, with maximum amplitude, to check the ignition reliability and flame stability during the adjustment.

(*) For pilot burner ignition and setting, please refer to n. E3280 technical data sheet.

PASSING FROM OIL SUPPLY TO GAS SUPPLY



1 - Disconnect the flexible oil and compressed air supply hoses.

2 - Unscrew and extract the four screws. **pos.01**

3 - Completely extract the oil lance **pos.02** from the gas body inlet.

4 - Check that the gasket **pos.03** is not damaged and if necessary replace it with a new one.

5 - Assemble the blind flange **pos.04** on the body gas inlet, interposing the gasket **pos.02** with the four screws **pos.01**.

6 - Check the settings of the new fuel according to the indications given in the chapter "START-UP AND SETTINGS".

7 - Once the burner is on, check that there are no gas fuel leaks from the gasket **pos.03**.

Repeat the procedure backwards to change from gas supply to oil supply.

GENERAL MAINTENANCE PLAN

Operation	Type	Advised time	Notes
Pilot burner high tension electrode connector	O	annual	check the integrity of the outer plastic and oxidization of the internal connector and of the electrode terminal
Pilot burner high tension electrode connector	O	every three months	clean with compressed air and remove all dust particles to avoid possible risks connected to electrical conduction and /or flammability.
Pilot burner ignition electrode	O	annual	replace if the kantal terminal is worn
Air diffuser integrity	E	annual	at every maintenance check with furnace turned off, from the inside, make sure there are no cracks in the refractory material. Any cracks must be filled with special refractory material or liquid fibre.
Cleaning of uv-scanner watch glass	O	every semester	reduce to quaterly check in dusty environments
Uv-scanner replacement	O	10.000 h. of functioning	in any case, every two years
Gas side gasket replacement (*)	O	every two years	see note
Burner settings	O	annual	repeat all the steps in the "START-UP AND SETTINGS" chapter
Oil lance check	O	annual	check that the compressed air and oil holes are not occluded

NOTES:

Key: O = ordinary / E = extraordinary

(*) it is suggested that the gaskets on the gas side be replaced after every dismantling of the gas feeding line and that high temperature gaskets be used.

ORDINARY MAINTENANCE

For correct dismantling and better maintenance of the ENM-NxT burners, meticulously follow the instructions below with the plant turned off.

CLEANING OF UV-SCANNER WATCH GLASS

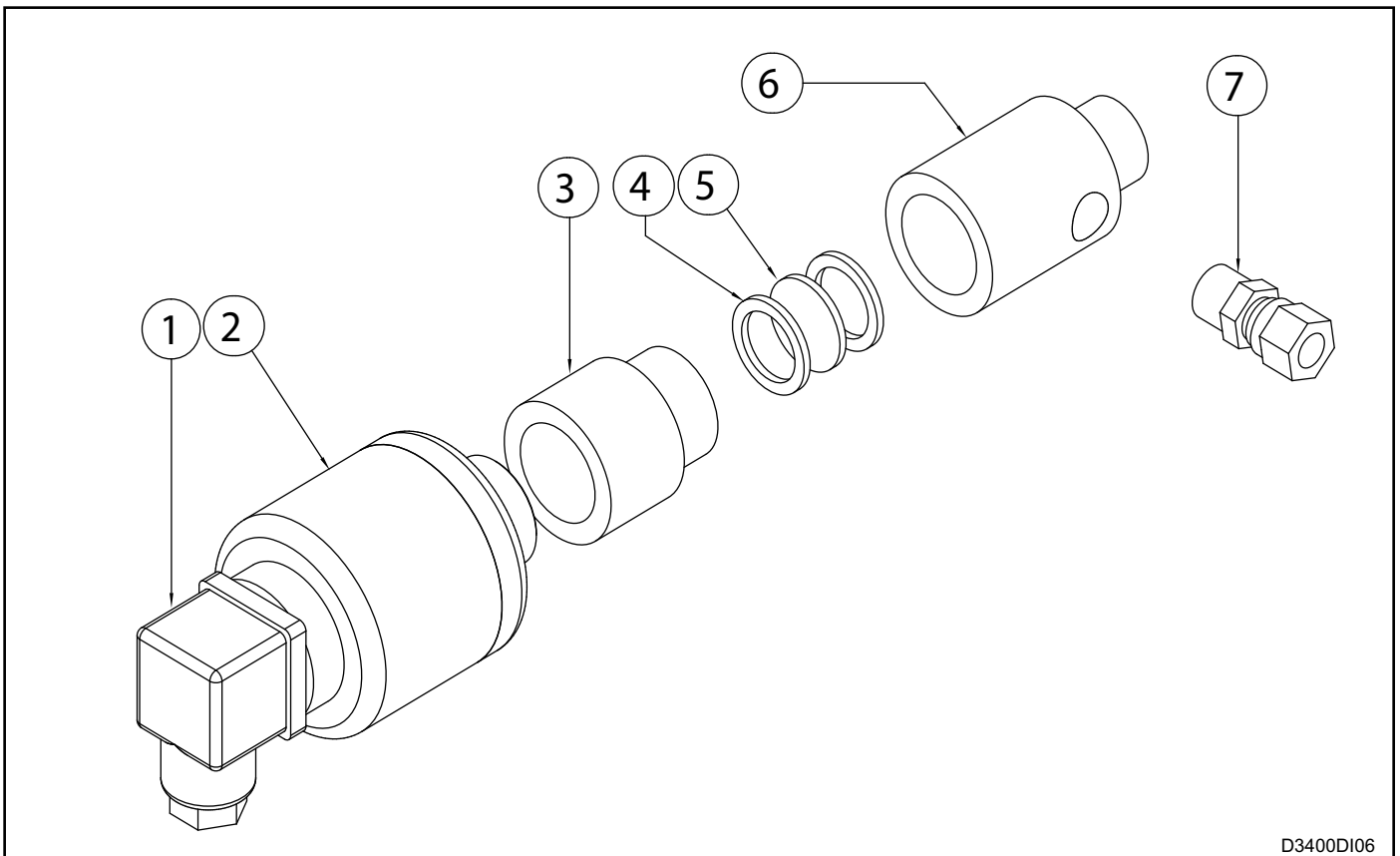
1 - Check that the burner control device is not connected.
2 - Disconnect power supply to the uv-scanner (**pos.01**) and the cooling line (where present **pos.07**).
3 - Unscrew the aluminium pipe fitting (**pos. 06**) at the base of the gas collector, removing the uv-scanner with its spacer.

4 - Unscrew the aluminium fitting from the insulation teflon connector (**pos. 03**) and remove the quartz watch glass (**pos. 05**).

5 - Clean the quartz watch glass with a damp cloth and proceed to reassemble everything making sure that both the glass as well as the gaskets are put back in the correct positions (**pos. 04**) between the aluminium teflon spacer, before tightening.

6 - Restore the cooling hoses and power connection.

7 - Check the correct flame detection of the uv-scanner.



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EXTRAORDINARY MAINTENANCE

For correct dismantling and better maintenance of the ENM-NxT-DF burners, meticulously follow the instructions below with the plant turned off.

BURNER IN LOCKOUT

In burner lockout conditions refer to the indications of the burner control device as well as the relative manual to identify the cause. After this, the main cases have been indicated below:

■ **Illegal flame detection:** lockout due to illegal flame signal detection during the phases that precede the ignition or following the switching off. The causes could be due to the detection system (broken sensor or presence of humidity), or else in the gas drawn by the safety solenoid valve which allows the burner to remain on.

■ **Ignition failure:** lockout due to missing flame formation during start-up. The causes could be due to the ignition system (missing spark, broken electrodes or electrodes not in correct position), in bad regulation of the flow of fuel or combustive agents or in the detection system (broken sensor or interrupted cables). Specifically, in the first two cases the flame does not trigger off, whilst in the last case, the flame forms but the burner control device is unable to detect it.

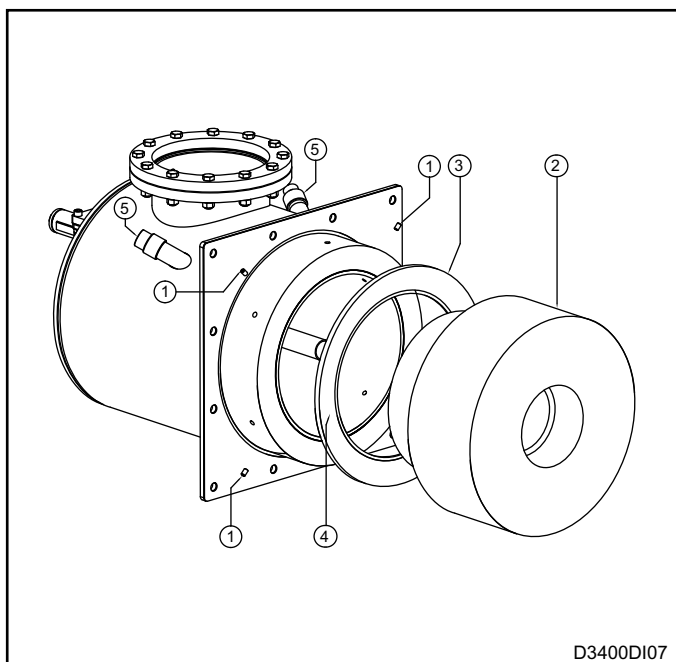
■ **Flame signal loss:** lockout due to flame signal loss during the normal functioning of the burner. The causes may be found in the regulation of the fuel flow or combustive agents (rapid flow variations, regulation out of allowed range) or in the detection system (broken, dirty or badly positioned sensors).

UV-SCANNER REPLACEMENT

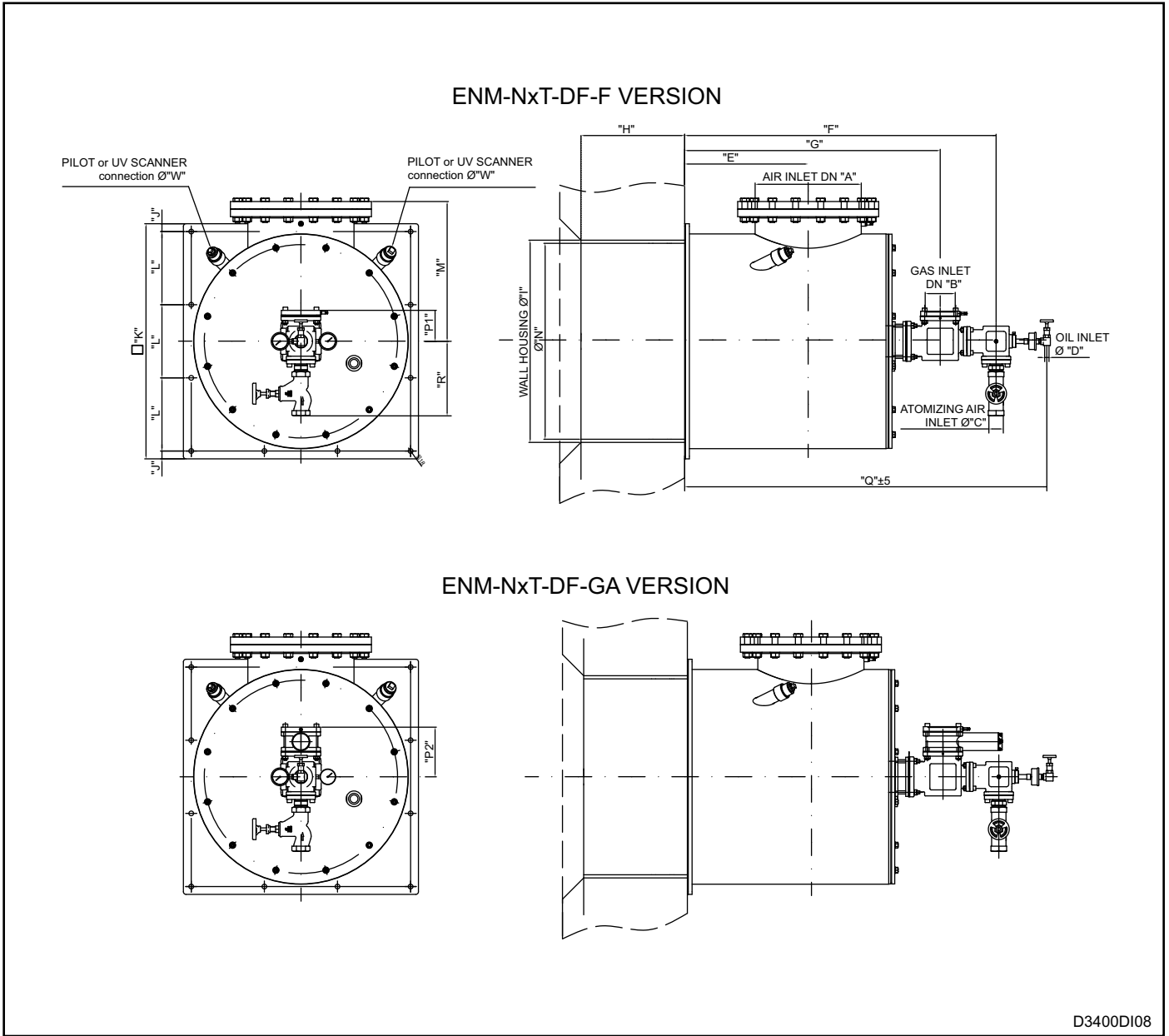
- 1 - Check that the burner control device is not connected.
- 2 - Disconnect the electrical flow to the uv-scanner (**pos. 01**) and to the cooling line (where present).
- 3 - Unscrew the aluminium pipe fitting at the base of the gas collector (**pos. 02**), removing the uv-scanner with its spacer.
- 4 - Screw the new component back on, in the same position, after having checked the correct position of the watch glass insulation between the aluminium and teflon spacers.
- 5 - Restore the cooling pipes and the electrical connection.
- 6 - Check the correct uv-scanner flame detection.

AIR DIFFUSER REPLACEMENT

- 1 - Disconnect all the air and gas lines to the burner.
- 2 - Dismantle the burner from the furnace wall and place it with the diffuser facing upwards, fixing it onto a special support plate (concerning this, check the dimensions and weight in the "OVERALL DIMENSIONS" section).
- 3 - Unscrew the uv-scanner and pilot burner fixing connections (**pos.5**) and extract them from their position.
- 4 - After having removed any possible parts of ceramic fibre insulation from around the air diffuser, uscrew the security dowels (**pos.1**) and remove them from the burner body refractory element.
- 5 - Extract the damaged air diffuser (**pos.2**) and clean the area in which it is positioned making sure it is free from material that could obstruct the positioning of the new diffuser. Pay close attention to not damage the refractory inserts (**pos.4**), where present. If necessary, replace them with integral spare parts.
- 6 - Replace the gasket (**pos.3**) between the diffuser and the burner body, placing the new diffuser in the exact same position.
- 7 - Place the new air diffuser so that the holes of the security dowels correspond to the holes on the diffuser, respecting its proper keying compared to the burner body.
- 8 - Reposition the security dowels and check the actual blocking of the diffuser.
- 9 - Place the burner fixing connections back into the special slots (**pos.5**) and make sure that they do not interfere with the holes on the actual diffuser.
- 10 - Visually inspect the correct positioning of the flame and pilot burner uv-scan detector, both on the outside of the burner as well as on the part inside the air diffuser.

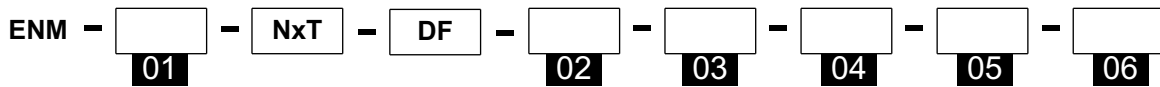


OVERALL DIMENSIONS - ENM-NxT-DF



Burner Model	DN "A"	DN "B"	øC	øD	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	J [mm]	K [mm]	L [mm]	øM [mm]	øN [mm]	P1 [mm]	P2 [mm]	Q [mm]	R [mm]	øW [mm]	Mass [Kg]
ENM-7-NxT-DF	DN150	DN40	Rp 1/2"	Rp 1/4"	387	762	675	263	384	15	450	140	307	364	71	110	946	133	Rp 3/4"	141
ENM-8-NxT-DF	DN200	DN50	Rp 3/4"	Rp 1/4"	412	889	730	273	450	20	520	160	319	430	93	152	1058	188	Rp 3/4"	197
ENM-9-NxT-DF	DN250	DN65	Rp 1"	Rp 1/4"	442	961	800	348	544	30	630	190	381	524	93	156	1125	208	Rp 1"	338
ENM-10-NxT-DF	DN300	DN65	Rp 1.1/4"	Rp 1/4"	472	1123	908	368	600	25	680	210	411	580	115	192	1295	254	Rp 1"	443
ENM-11-NxT-DF	DN350	DN80	Rp 1.1/2"	Rp 3/8"	487	1153	938	368	720	30	810	250	493	700	119	192	1348	286	Rp 1,1/4"	612
ENM-12-NxT-DF	DN400	DN80	Rp 2"	Rp 3/8"	563	1280	1065	397	780	30	900	280	535	760	119	192	1475	316	Rp 1,1/4"	796
ENM-13-NxT-DF	DN400	DN100	Rp 2"	Rp 3/8"	613	1320	1105	417	885	25	980	310	575	865	119	195	1536	325	Rp 1,1/4"	1035

ORDERING CODE - COMPLETE BURNER



Model		01
ENM-7-NxT-DF	7	
ENM-8-NxT-DF	8	
ENM-9-NxT-DF	9	
... (see capacity table)	

04 ignition	
Pilot	P*
Without ignition	NI

Gas adjuster		02
With gas adjuster	GA*	
Without gas adjuster	F	

05 Flame detection	
UV flame detection	UV*
Without flame detection	ND

Fuel		03
Natural gas	CH4 *	
LPG	GPL	
Poor gas (1)	GP	

06 Flange type	
Acc.to ESA drawing	E*
Acc. to client drawing	C

The codes indicated by the asterisc (*) identify the standard items.

Notes:

¹ Special manufacturing done according to the characteristics of the type of gas used.