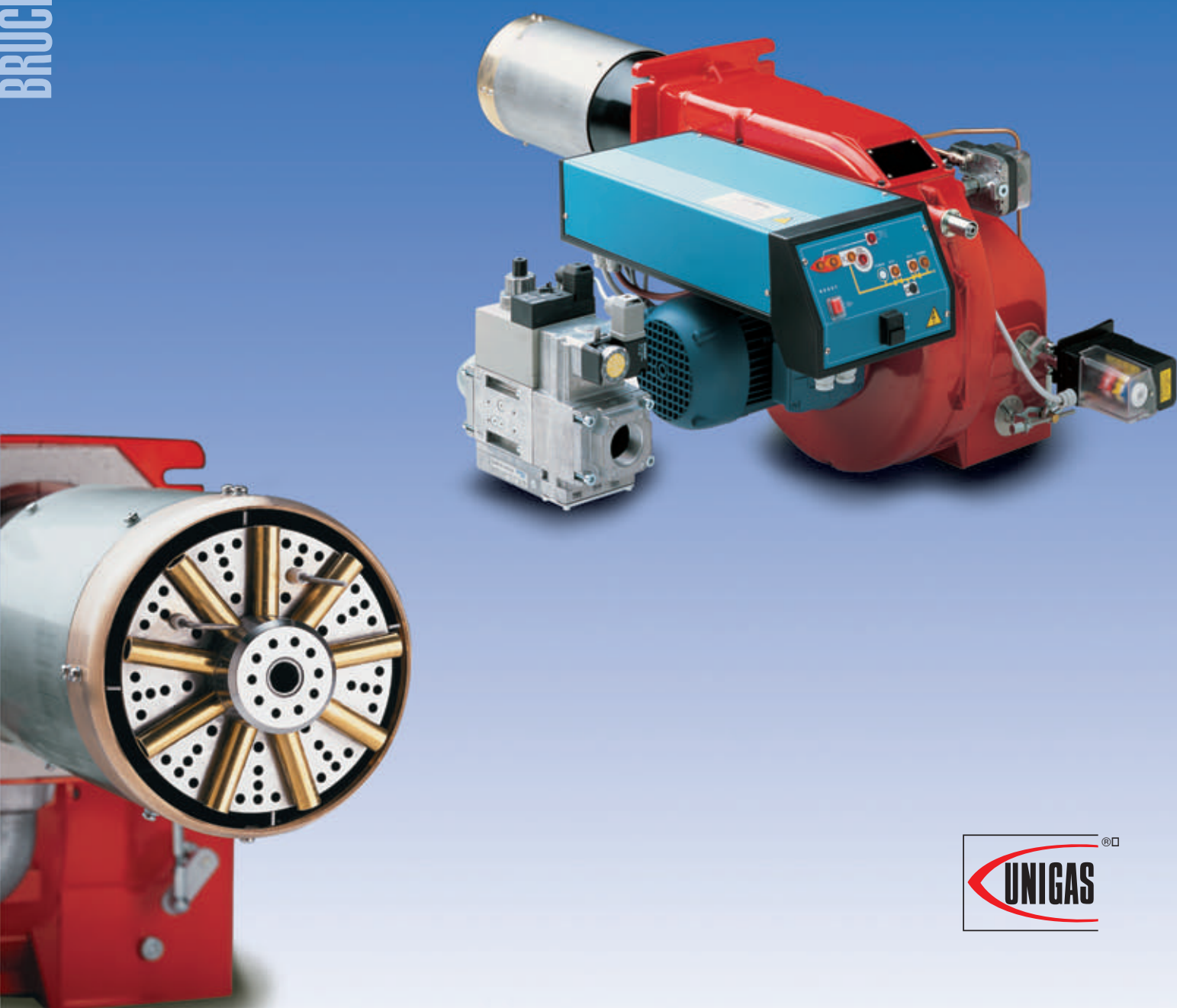


BRUCIATORI A BASSA EMISSIONE DI NOx  
LOW NOx EMISSION BURNERS - BRULEURS A BAS NOx



# BRUCIATORI A BASSA EMISSIONE DI NOx

LOW NOx EMISSION BURNERS  
BRULEURS A BAS NOx





Questo nostro nuovo progetto ha avuto come obiettivo lo sviluppo di una gamma di bruciatori

a basso impatto ambientale: questi bruciatori sono equipaggiati con teste di combustione speciali che consentono di ottenere valori di emissioni allineati ai più bassi fra quelli richiesti dalle norme Europee.

Tra gli aspetti fondamentali che qualificano questo prodotto rispetto agli altri già esistenti sul mercato, va ricordato che la ricerca e l'ottimizzazione della testa di combustione sono stati svolti tenendo sempre in primo piano l'obiettivo di realizzare un prodotto semplice in grado di garantire un funzionamento ottimale sulle comuni caldaie commerciali del tipo pressurizzato e ad inversione di fiamma.

È noto che questa configurazione del focolare rende più difficoltoso il conseguimento di bassi valori delle emissioni di ossidi di azoto (NOx).

Infatti, nei focolari ad inversione sono richieste configurazioni della fiamma che favoriscano lo sfruttamento di tutta la lunghezza della camera di combustione.

In altri termini questo significa che la testa di combustione deve garantire che la fiamma si sviluppi progressivamente ed in tutta la lunghezza del focolare.

Questo obiettivo viene generalmente perseguito con opportune distribuzioni delle velocità e delle direzioni del flusso dell'aria comburente.

Anche per realizzare teste di combustione a basse emissioni si deve agire sul flusso dell'aria per ottimizzare la miscelazione comburente - combustibile: da qui sono derivate le grosse difficoltà che si sono dovute superare per realizzare quelle soluzioni di compromesso che soddisfacessero egregiamente entrambe gli scopi.



The aim of the project was to develop a low-environmental impact range of burners

equipped with special combustion heads allowing emission matching the lowest values required by the European Directives.

At all times our research and development of the combustion head had one goal – to create and produce a simple product offering maximum operational efficiency during operation on pressurised and forced draught boilers.

It is generally accepted that for this type of furnace it is more difficult to achieve low nitrogen oxide (NOx) emission values. In forced-draught furnaces it is necessary to use the whole length of the combustion head to provide “whole – length” progressive development of the flame. This has been achieved through suitable control of gas distribution and combustion air flow directions. Low – emission combustion heads also require precise control of air flow to optimise the mixture of combustion air and fuel.

These burners incorporate all of the above parameters, resulting in a series of units offering, what we believe to be the lowest NOx emissions available.



Le but de notre programme était l'élaboration d'une gamme de brûleurs répondant à la demande

d'une réduction des émissions. Par adaptation de la tête de combustion nous avons obtenu la comptabilité avec les normes inférieures des standards européens

En permanent notre programme de recherche et développement avait une exigence en priorité ; l'élaboration et la production d'un produit simple permettant un fonctionnement optimal et efficace sur des chaudières en contre-pression et ventilées.

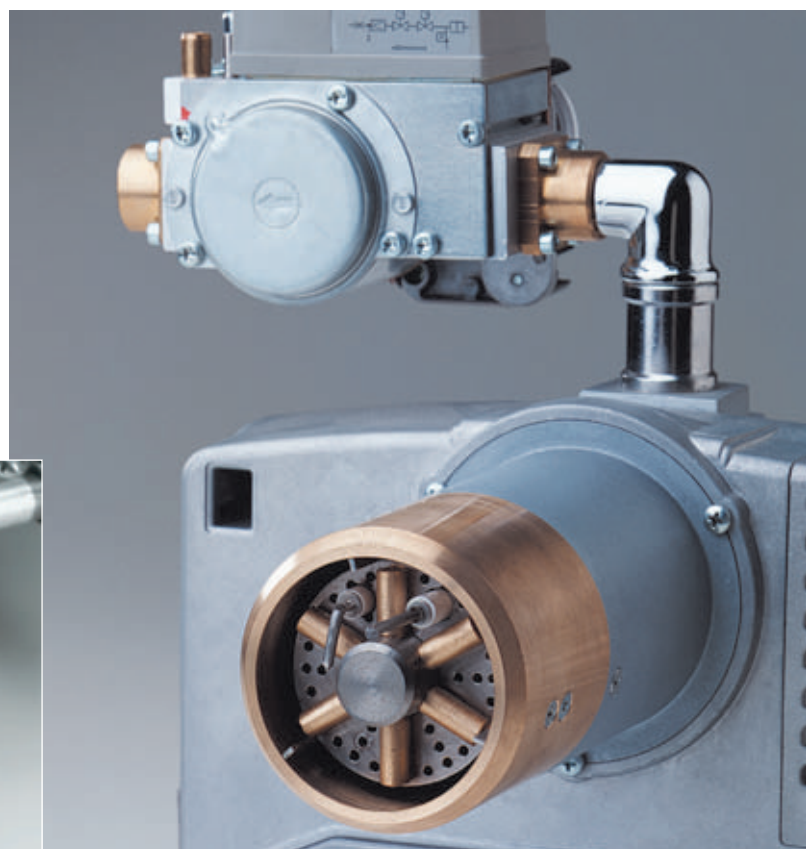
Généralement pour ce type de chaudières il est plus difficile d'obtenir des émissions bas Nox. Pour les foyers ventilés il est nécessaire d'utiliser la longueur totale de la tête de combustion permettant une flamme longue et progressive.

Ceci a été obtenu par le dosage contrôlé de l'alimentation gaz et le guidage de l'air de combustion. La gestion précise de l'alimentation gaz par rapport à l'air est un critère important et sensible pour le mélange air gaz des têtes de combustion bas Nox.

Nos brûleurs intègrent les paramètres sus mentionnés garantissant une gamme de brûleurs avec des émissions les plus bas possibles.



Testa a Basso NOx - Low NOx combustion head - Tête a bas NOx



Bruciatore tipo NGX35 - Burner type NGX35 - Brûleur type NGX35

# BRUCIATORI A BASSA EMISSIONE DI NO<sub>x</sub>

## LOW NO<sub>x</sub> EMISSION BURNERS

### BRÛLEURS A BAS NO<sub>x</sub>



Bruciatore tipo LX60  
Burner type LX60  
Brûleur type LX60

I test condotti nei nostri laboratori, su caldaie europee e di altri tipi, dimostrano che le emissioni sono al di sotto dei valori prescritti.

È da considerare che i risultati ottenuti tengono conto della camera di combustione, del carico termico specifico per m<sup>3</sup> e delle richieste dell'impianto.

Tests carried out in our laboratories both on European, traditional & other types of boilers demonstrate that combustion emissions are below minimum values illustrated in the performance table.

It is important to remember that for each boiler, results obtained take into account combustion chambers, specific heat load per m<sup>3</sup>, temperature and process requirements.

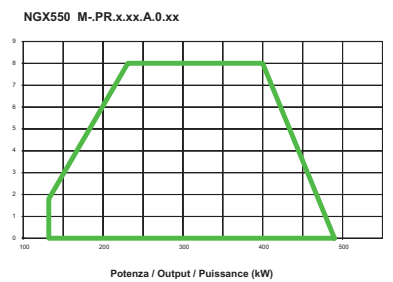
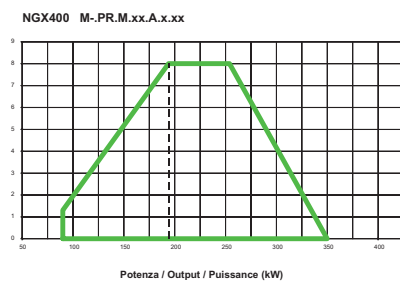
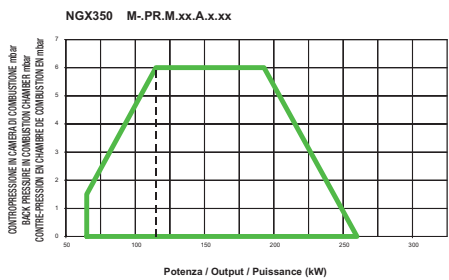
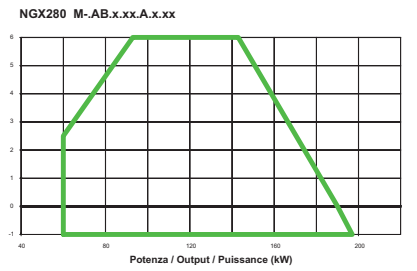
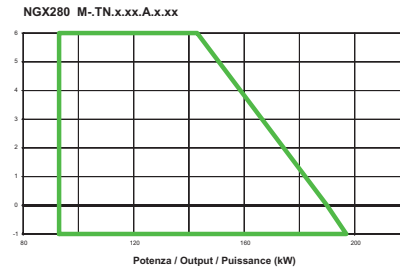
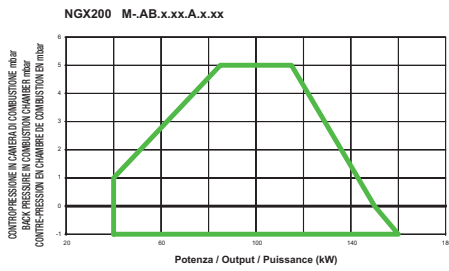
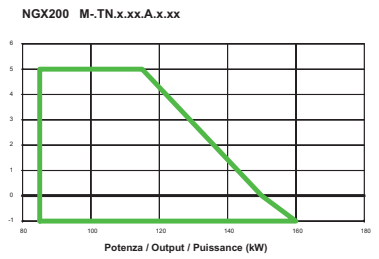
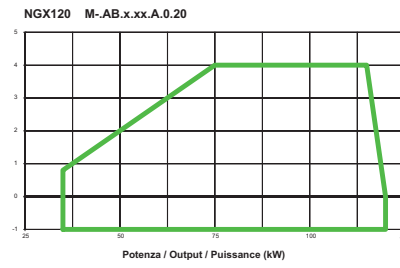
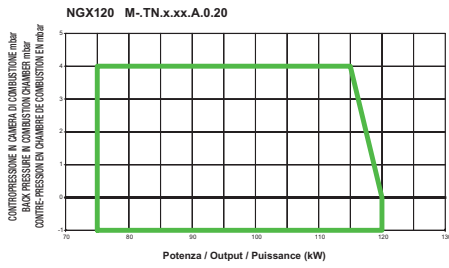
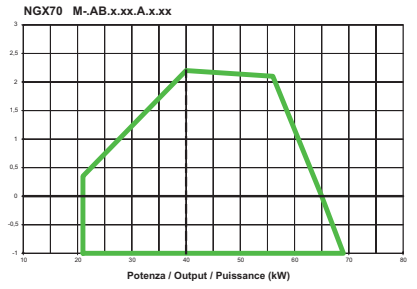
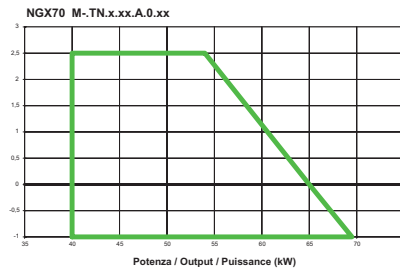
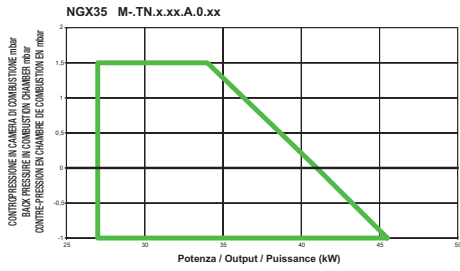
Les essais élaborés sur des chaudières conventionnelles comme sur les autres types de chaudières démontrent que les émissions sont en dessous des valeurs minimales figurant dans les graphiques de performance.

Il est important de noter que pour chaque chaudière les résultats obtenus prennent compte des formes du foyer, de la charge spécifique par m<sup>3</sup>, des exigences procès et température.

## DATI TECNICI

### Specifications - Données techniques

Tipo Type	Regolazione Operation Réglage	Potenzialità Output Puissance kW		Pressione gas Gas Pressure Pression gaz mbar	Portata gas Gas rate Débit gaz	Attacchi gas Gas connections Raccordements gaz	Alimentazione elettrica Power supply Alimentation électrique	Motore Motor Moteur 2800 rpm	Potenza elettrica totale Tot. power consumption Puissance électrique
		min. mini.	max. maxi.	max. maxi.	Stm <sup>3</sup> /h				
NGX35	TN	27	41	65 (0.10) - 360 (0.15)	4,3	Rp1/2"	230V 1N ac	0,075	0,375
NGX70	TN	40	65	360	6,9	Rp1/2" - Rp3/4"	230V 1N ac	0,1	0,4
NGX70	AB	21	65	360	6,9	Rp1/2" - Rp3/4"	230V 1N ac	0,1	0,4
NGX120	TN	75	120	360	12,7	Rp3/4"	230V 1N ac	0,18	0,48
NGX120	AB	35	120	360	12,7	Rp3/4"	230V 1N ac	0,18	0,48
NGX200	TN	85	150	360	16	Rp3/4" - Rp1"	230V 1N ac	0,25	0,55
NGX200	AB	40	150	360	16	Rp3/4" - Rp1"	230V 1N ac	0,25	0,55
NGX280	TN	93	190	360	20	Rp1"-Rp1"1/4-Rp1"1/2	230V 1N ac	0,25	0,55
NGX280	AB	60	190	360	20	Rp1"-Rp1"1/4-Rp1"1/2	230V 1N ac	0,25	0,55
NGX350	PR-MD	65	260	360	27,5	Rp1"-Rp1"1/4-Rp1"1/2	230V 1N ac	0,37	0,67
NGX400	PR-MD	90	350	360	37	Rp1"-Rp1"1/4-Rp1"1/2-Rp2"	230V 1N ac	0,45	0,75
NGX550	PR-MD	132	490	360	52	Rp1"1/4-Rp1"1/2-Rp2"	230V 1N ac	0,62	0,92
LX60	AB	165	540	360-500	57	Rp1"1/2	230/400V 3N ac	1,1	1,6
LX60	PR-MD	165	720	360-500	76	Rp2"-DN65	230/400V 3N ac	1,1	1,6
LX65	AB-PR-MD	270	970	360-500	103	Rp2"-DN65	230/400V 3N ac	1,5	2
LX72	AB-PR-MD	300	1200	360-500	127	Rp2"-DN65-DN80	230/400V 3N ac	2,2	2,7
LX90	PR-MD	288	1480	500	157	Rp2"-DN65-DN80-DN100	230/400V 3N ac	3	3,5
LX91	PR-MD	674	2008	500	213	Rp2"-DN65-DN80-DN100	230/400V 3N ac	4	4,5
LX510	PR-MD	800	3250	500	344	Rp2"-DN65-DN80-DN100	230/400V 3N ac	7,5	8

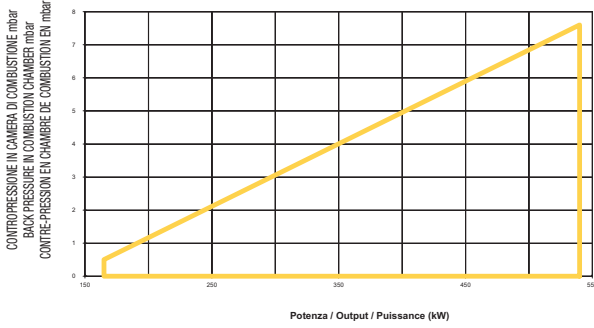


----- Minimo alta fiamma - Minimum high flame - Mini. 2ème allure

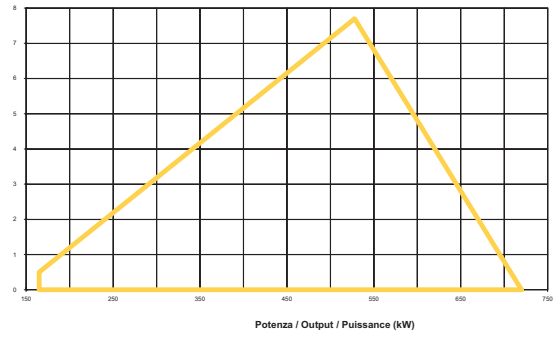


# CAMPI DI LAVORO PERFORMANCE CURVES - PLAGES DE TRAVAIL

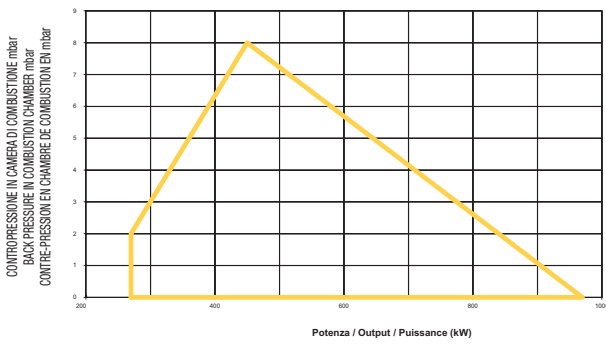
LX60 M-xx.x.xx.A.0.40



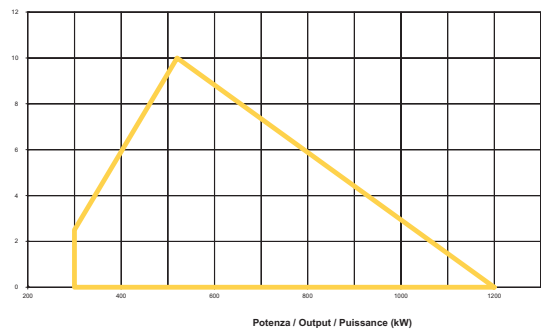
LX60 M-xx.x.xx.A.0.xx



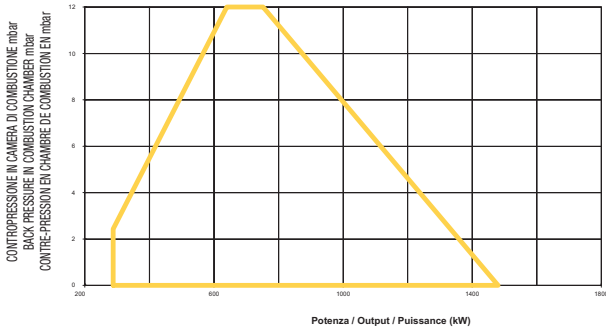
LX65 M-xx.x.xx.A.x.xx



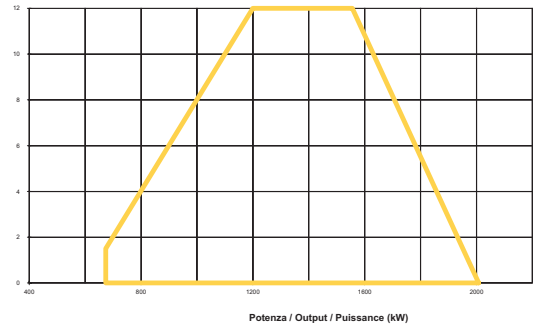
LX72 M-xx.x.xx.A.0.xx



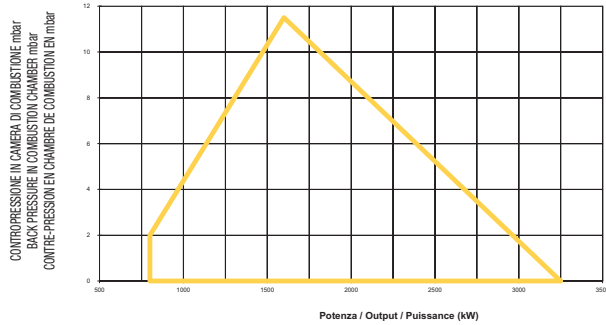
LX90 M-.PR.S.xx.A.1.xx



LX91 M-.PR.S.xx.A.1.xx

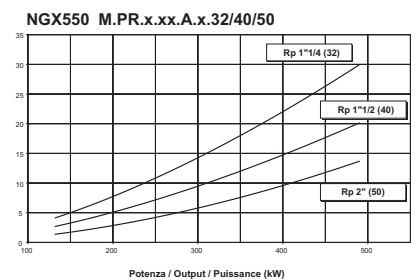
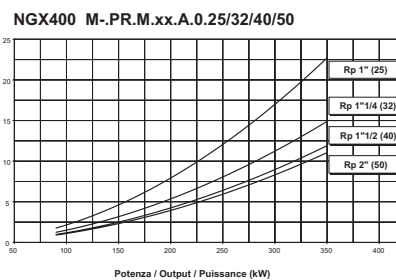
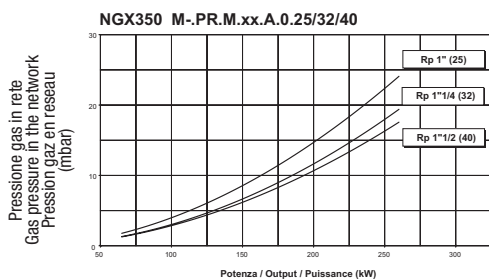
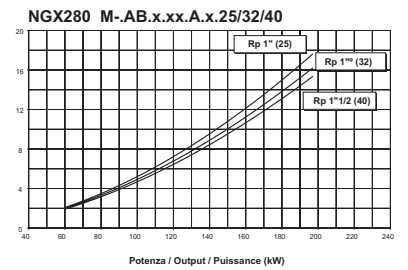
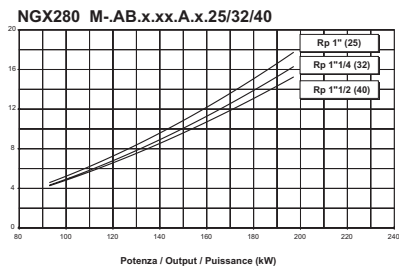
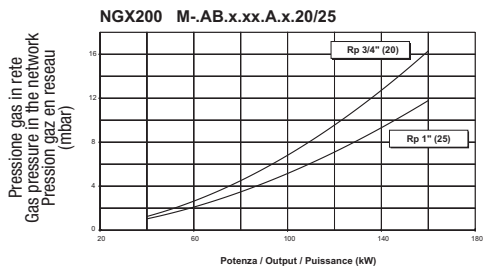
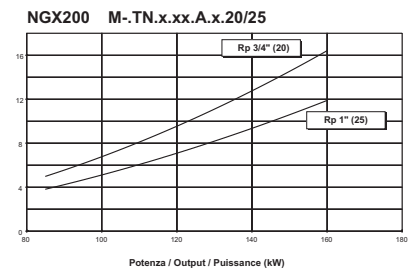
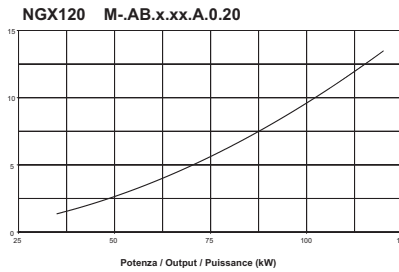
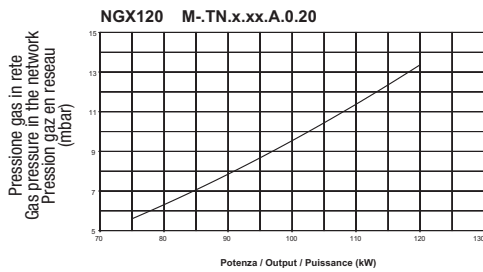
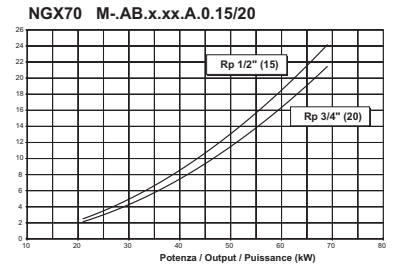
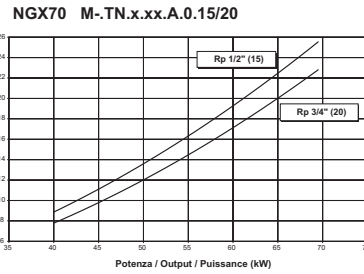
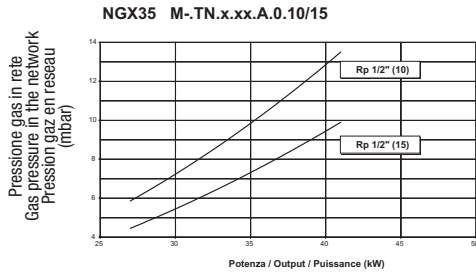


LX510 M-.PR.S.xx.A.1.xx



# CURVE PRESSIONE-PORTATA IN RETE

## PRESSURE/RATE IN THE NETWORK CURVES - COURBES DE PRESSION DU DEBIT EN RESEAU

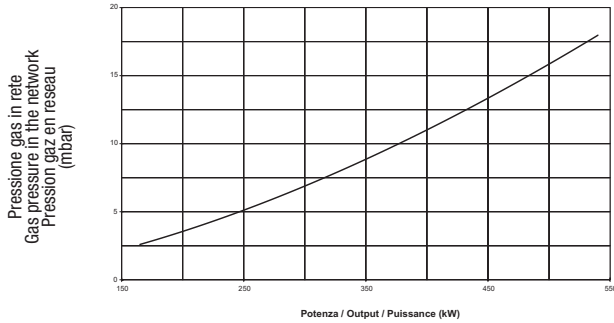


# CURVE PRESSIONE-PORTATA IN RETE

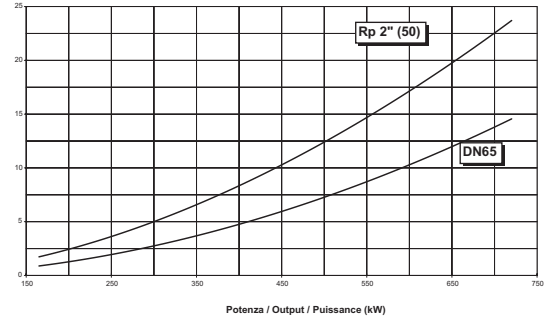
## PRESSURE/RATE IN THE NETWORK CURVES - COURBES DE PRESSION DU DEBIT EN RESEAU

CURVE PRESSIONE-PORTATA IN RETE PRESSURE/RATE IN THE NETWORK CURVES COURBES DE PRESSION DU DEBIT EN RESEAU

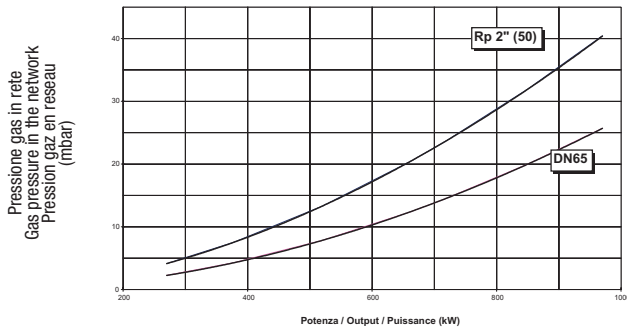
**LX60 M-.x.xx.A.0.40**



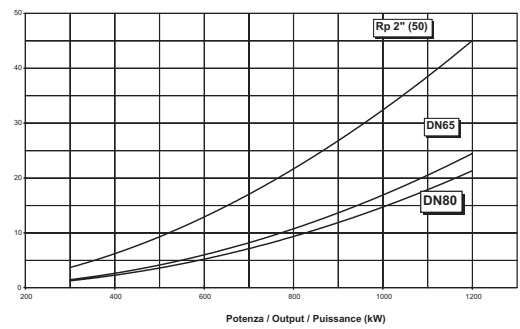
**LX60 M-.xx.x.xx.A.0.50/65**



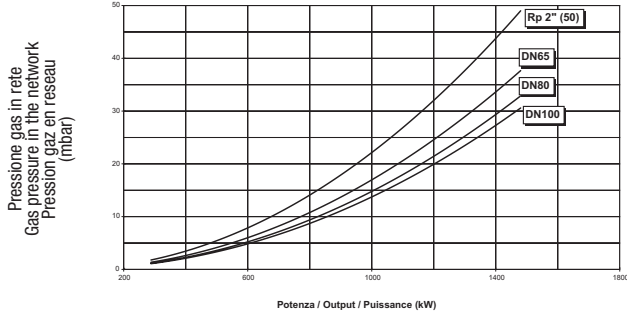
**LX65 M-.xx.x.xx.A.0.50/65**



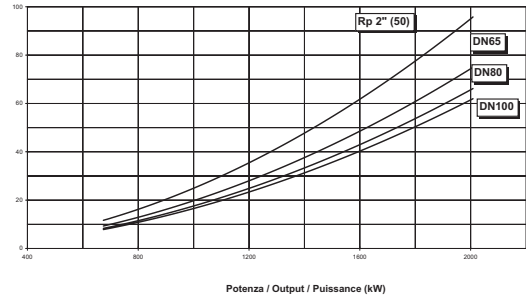
**LX72 M-.xx.x.xx.A.x.50/65/80**



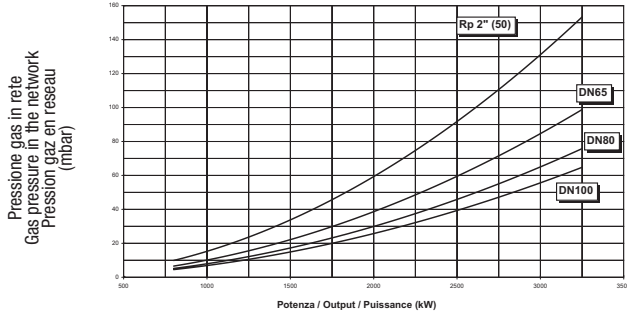
**LX90 M-.xx.x.xx.A.1./50/65/80/100**



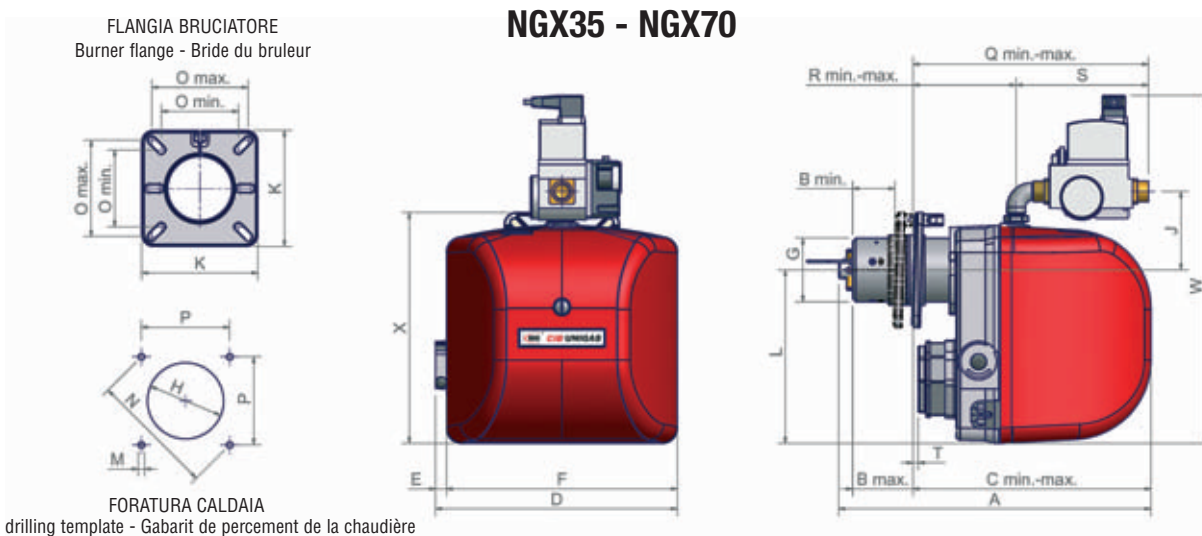
**LX91 M-.xx.x.xx.A.1.50/65/80/100**



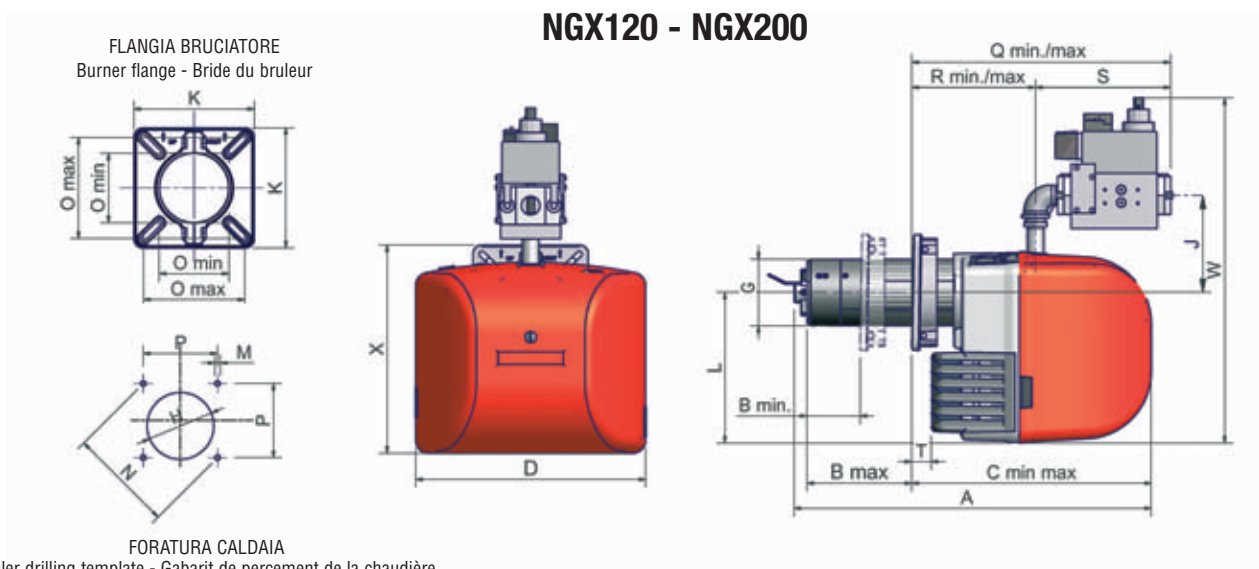
**LX510 M-.xx.x.xx.A.1.50/65/80/100**



## DIMENSIONI DI INGOMBRO IN mm OVERALL DIMENSIONS (mm) - COTES D'ENCOMBREMENT EN mm



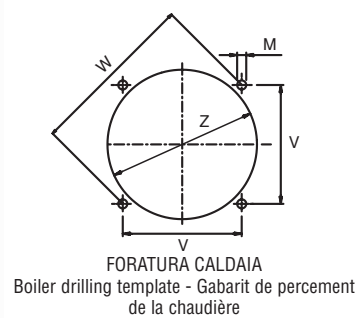
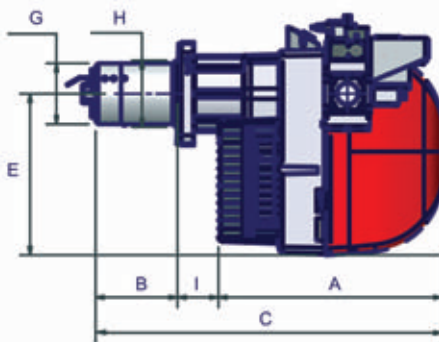
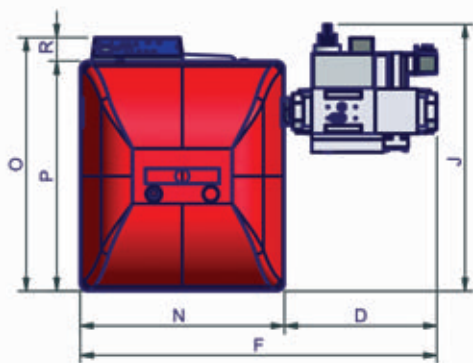
TIPO TYPE	MODELLO MODEL- MODÈLE	A	B		C		D	E	F	G	H	J	K	L	M	N	O		P	Q		R		S	T	W	X
			min.	max.	min.	max.											min.	max.		min.	max.	min.	max.				
<b>NGX35</b>	M-.TN.S.xx.A.0.xx	337	48	100	237	289	268	14	291	64	98	85	145	193	M8	153	96	120	110	260	93	167	2	438	291		
<b>NGX35</b>	M-.TN.L.xx.A.0.xx	415	48	178	237	367	268	14	291	64	98	85	145	193	M8	153	96	120	110	260	93	167	2	438	291		
<b>NGX70</b>	M-.xx.S.xx.A.0.xx	393	76		299	304	14	291	80	98	99	145	218	M8	153	96	120	110	296	130	167	7	438	291			
<b>NGX70</b>	M-.xx.L.xx.A.0.xx	461	66	149	294	377	304	14	291	80	98	99	145	218	M8	153	96	120	110	292	375	125	208	167	2	438	291



TIPO TYPE	MODELLO MODEL- MODÈLE	A	B		C		D	G	H	J	K	L	M	N	O		P	Q		R		S	T	W	X
			min.	max.	min.	max.									min.	max.		min.	max.						
<b>NGX120</b>	M-.xx.S.xx.A.0.20	581	85	170	390	475	373	108	125	158	188	245	M8	188	108	158	133	421	506	201	286	220	32	560	340
<b>NGX120</b>	M-.xx.L.xx.A.0.20	681	85	270	390	575	373	108	125	158	188	245	M8	188	108	158	133	421	506	201	286	220	32	560	340
<b>NGX200</b>	M-.xx.S.xx.A.0.xx	581	85	170	390	475	373	115	125	158	188	245	M8	188	108	158	133	421	506	201	286	220	32	560	340
<b>NGX200</b>	M-.xx.L.xx.A.0.xx	681	85	270	390	575	373	115	125	158	188	245	M8	188	108	158	133	421	506	201	286	220	32	560	340



## NGX280 - NGX350 - NGX400 - NGX550

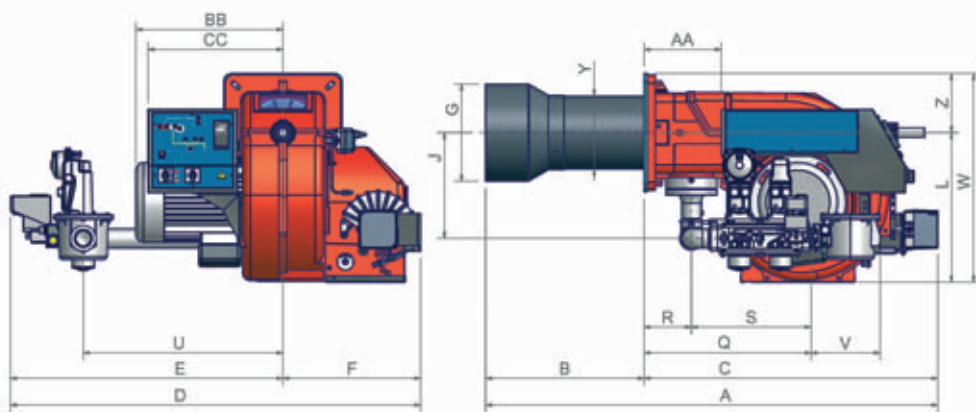
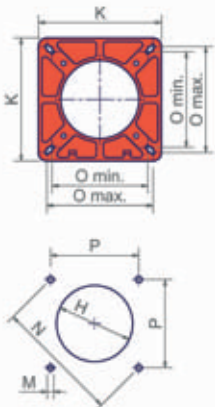


TIPO TYPE	MODELLO MODEL- MODÈLE	A	B	BL	C	CL	E	G	H	I	N	O	P	R	M	V	W	Z
<b>NGX280</b>	M-xx.x.xx.A.0.xx	572	188	318	750	880	347	114	144	90	395	491	446	46	M10	155	219	164
<b>NGX350</b>	M-xx.x.xx.A.0.xx	572	178	308	750	880	347	125	144	90	395	491	446	46	M10	155	219	164
<b>NGX400</b>	M-xx.x.xx.A.0.xx	572	198	328	770	900	347	144	144	90	395	491	446	46	M10	155	219	164
<b>NGX550</b>	M-xx.x.xx.A.0.xx	589	253	353	842	942	384	165	165	70	426	536	-	-	M10	174	247	175

TIPO TYPE	MODELLO MODEL- MODÈLE	D				F				G			
		Rp 1"	Rp 1" 1/4	Rp 1" 1/2	Rp 2"	Rp 1"	Rp 1" 1/4	Rp 1" 1/2	Rp 2"	Rp 1"	Rp 1" 1/4	Rp 1" 1/2	Rp 2"
<b>NGX280</b>	M-xx.x.xx.A.x.xx	215	215	343	-	611	611	739	-	473	508	568	-
<b>NGX350</b>	M-xx.M.xx.A.0.xx	215	215	343	-	611	611	739	-	473	508	568	-
<b>NGX400</b>	M-xx.M.xx.A.0.xx	286	286	343	343	682	682	739	739	518	518	568	568
<b>NGX550</b>	M-xx.x.xx.A.0.xx	-	296	369	369	-	722	795	795	-	543	553	603

## LX60 - LX65 - LX72 - LX90 - LX91 - LX510

FLANGIA BRUCIATORE  
Burner flange - Bride du bruleur



FORATURA CALDAIA

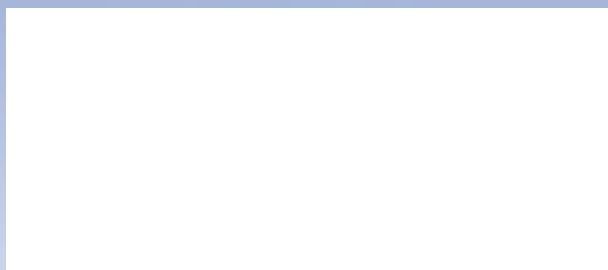
Boiler drilling template - Gabarit de percement de la chaudière

TIPO TYPE	MODELLO MODEL- MODÈLE	A	AL	B	BL	C	D	E	F	G	J	L	Q	U	V	Y	H	M	N	P	K	O	
		min.	max.																				
<b>LX60</b>	M-xx.x.xx.A.0.xx	992	1172	252	432	740	945	685	320	185	250	420	600	540	365	250	204	M10	269	190	240	190	190
<b>LX65</b>	M-xx.x.xx.A.0.xx	1131	1221	326	416	805	1060	750	340	185	230	375	650	560	385	265	228	M10	330	233	300	216	250
<b>LX72</b>	M-xx.x.xx.A.0.xx	1105	1190	300	385	805	1165	825	340	220	265	375	650	560	385	265	249	M10	330	233	300	216	250
<b>LX90</b>	M-xx.S.xx.A.1.xxx	1218	-	300	-	918	1480	1045	431	220	447	592	672	824	405	228	258	M12	417	295	360	280	310
<b>LX91</b>	M-xx.S.xx.A.1.xxx	1218	-	300	-	918	1480	1045	431	265	447	592	672	824	405	228	295	M12	417	295	360	280	310
<b>LX510</b>	M-xx.S.xx.A.1.xxx	1420	-	390	-	1030	1540	1045	520	310	393	490	772	824	405	238	368	M14	552	390	460	390	390

**BL - Boccaglio lungo - Long blaste tube - Buse longue**







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