

# TX BURNERS DATA

Lanemark TX series high efficiency, small diameter immersion tube tank heating systems offer end users the most cost effective method of heating process liquids which are used in many areas of industry.

Specific advantages compared with alternative tank heating methods –

- Low operating costs – operating efficiencies of  
≥80% (based on gross calorific value of gas)  
≥90% (based on net calorific value of gas)
- TX small diameter immersion tube heat exchangers occupy minimal tank space. This enables smaller tanks to be used for new plant designs and allows simple replacement of other heating systems for retrofit applications.
- TX immersion tubes can be configured in multi-pass shapes to ensure that they remain well clear of internal tank fittings or processing areas
- Tank heat input and immersion tube performance calculations are easily carried out using Lanemark's dedicated TxCalc design software
- Heat exchangers can be configured to fit rectangular tanks and horizontal or vertical cylindrical tanks utilising helical coil heat exchanger arrangements where necessary
- Induced draught combustion air arrangement allows multiple burner systems to be connected to a common flue, retaining individual burner control
- Simple heat exchanger installation requires only two pipe flange drillings, usually in one tank wall
- Firing into rubber lined or fibre glass tanks is permitted due to low initial heat exchanger surface temperatures at tank flange connection
- Operates with low gas supply pressures

## TYPICAL APPLICATIONS

- **Product finishing** (metal parts, steel strip, wire products, etc.)

Pre-treatment and treatment processes including:

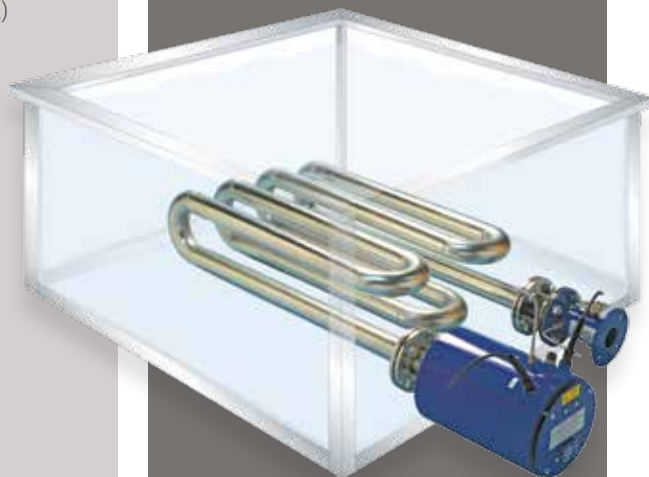
- Alkali / caustic degreasing
- Phosphating
- Hot water rinsing
- Aluminium etching
- Anodising
- borax and lime coatings
- Dip tanks
- Spray systems
- Hot water supply systems

- **Cleaning - industrial washing machines:**

- Plastic crate washers
- Parts washers
- Bottle washers

- **Food and Drink Production**

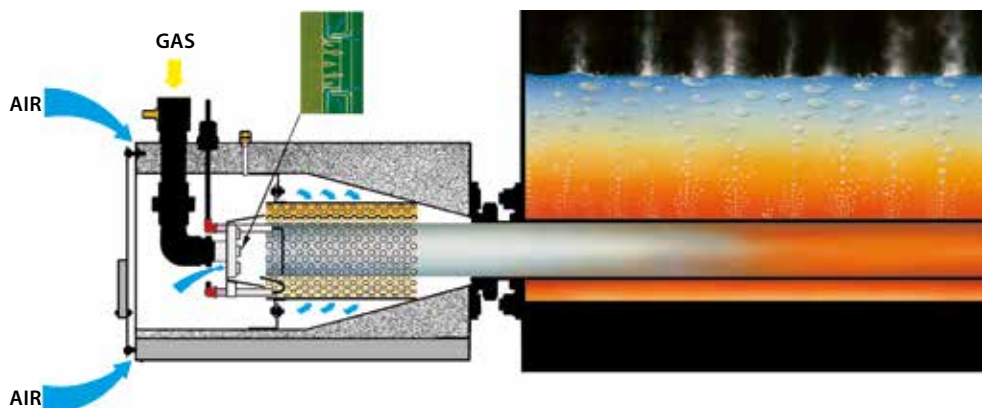
- Hot water tanks
- Mini brewery wort coppers
- Cleaning in place (CIP) tanks
- Food blanchers



Typical system arrangement

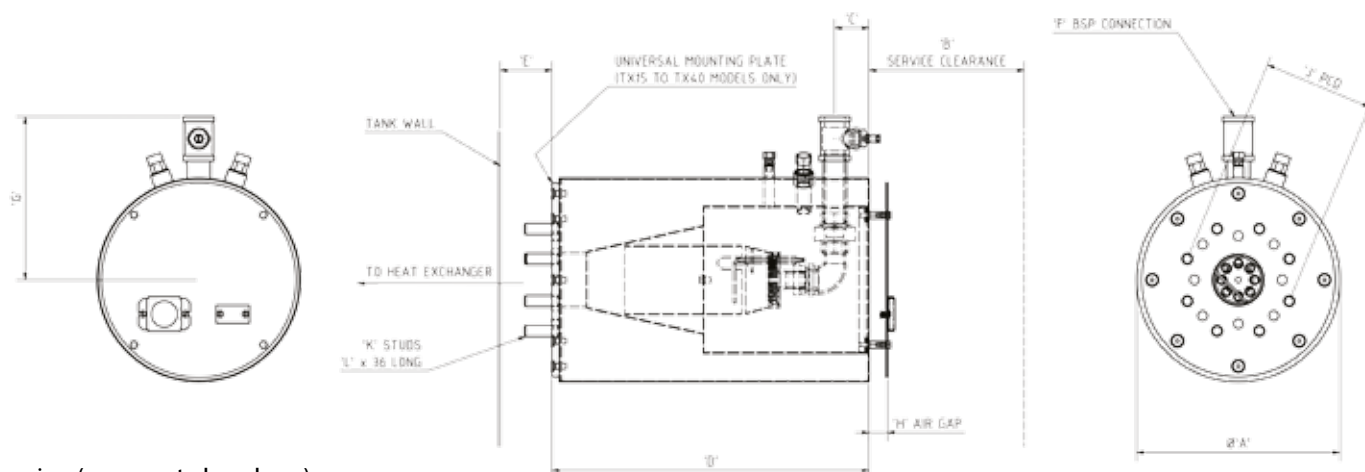
MODEL	TUBE SIZE	MAXIMUM HEAT INPUT
TX15	1½" (40 mm)	15 - 45 kW
TX20	2" (50 mm)	20 - 80 kW
TX25E	2½" (65 mm)	35 - 140 kW
TX30	3" (75 mm)	55 - 220 kW
TX40	4" (100 mm)	100 - 400 kW
TX60	6" (150 mm)	190 - 730 kW
TX80	8" (200 mm)	300 - 1150 kW

## TX Burner - Induced draught operating principle



## PRODUCT DESCRIPTION

A modular Lanemark TX immersion tube burner system includes a cylindrical burner assembly built to withstand typical tank heating operating environments, a compact monoblock gas valve train, burner controls mounted in a protective control box (which can include a digital temperature controller), exhaust damper and an exhaust fan which can be coupled to multiple TX burner installations.



Dimensions (mm, except where shown)

MODEL	TX15	TX20	TX25E	TX30	TX40	TX60	TX80
A mm	220	220	295	295	295	405	405
B mm	150	150	225	225	300	320	320
C mm	40	40	50	50	50	120	60
D mm	305	305	450	450	500	625	625
E mm	75	75	75	75	100	100	100
F	1/2"	1/2"	1"	1"	1"	1 1/2"	2"
G mm	160	160	210	210	230	305	355
H mm	12	12	25	25	25	35	35

DIN PN16 FLANGE CONNECTION

MODEL	TX15	TX20	TX25E	TX30	TX40	TX60	TX80
J mm	110	125	146	160	180	240	295
K qty	4	4	4	8	8	8	12
L size	M16	M16	M16	M16	M16	M20	M20

BS TABLE 'D' OR 'E' FLANGE CONNECTION

MODEL	TX15	TX20	TX25E	TX30	TX40	TX60	TX80
J mm	98	114	127	146	178	235	N / A
K qty	4	4	4	4	4	8	N / A
L size	M12	M16	M16	M16	M16	M16	N / A

SPECIFICATIONS	STANDARD EQUIPMENT	OPTIONS
Fuels	Natural gas	Propane
Control voltages	230 V / 1ph / 50 Hz	110 V / 1ph / 50-60 Hz
Exhaust fan electrical supplies	400 V / 3ph / 50 Hz	230 V / 1ph / 50 Hz or 460 V / 3ph / 60 Hz
Flame sensing	Flame electrode	UV scanner
Heat output control options	On / off or High / low	Modulating (gas and air)

Lanemark TX burner gas valve train and control panel assemblies are pre-wired / tested prior to despatch and conform with relevant sections of European Standard EN 746 Part 2 or NFPA 86 for US applications.

**LANEMARK**  
BurnerCare

All TX burners benefit from Lanemark's BurnerCare customer support. BurnerCare services can include burner system installation, commissioning / start-up, system training, regular servicing and the supply of spare parts. BurnerCare can provide a service agreement plan incorporating a rapid response facility individually designed to ensure the continued, reliable operation of Lanemark equipment worldwide.



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# FDGA BURNERS DATA

**Lanemark FDGA series packaged burners offer flexible, high turndown (gas and air) control for process air heating applications in convection ovens, dryers and spray booths where maximum combustion efficiency and minimum emissions are of prime importance.**

FDGA series burners are particularly suited to directfired applications and can be mounted directly on to the wall of a dryer, oven or process air heating duct to operate either in line with or at 90° to the process airflow.

FDGA burners utilise the latest 'Air Pressure Lead' (APL) monoblock gas valve technology. Changes in process heat demand are transmitted to the burner by a modulating signal connected to a motor speed controller which varies the speed of the burner combustion air fan and increases or decreases the burner windbox differential air pressure. These pressure changes are transmitted to the master gas control valve, simultaneously adjusting the gas flow rate. This ensures that safe and efficient gas / air ratios are maintained at all times, even under variable plant operating conditions.

The main advantages of this control method are:

1. Alternative fixed gas / air valve linkage control arrangements are not capable of making these gas flow adjustments in direct response to changing plant conditions
2. There are no mechanical linkages between the gas and combustion air control valves / dampers. On process plants mechanical linkages are prone to moving 'out of adjustment' or in extreme cases 'sticking' which can lead to potentially dangerous combustion conditions

Vertical alignment



## TYPICAL APPLICATIONS ☰

### • Product finishing

- Pre / final treatment dryers / ovens for paint drying and curing
- Conveyor and batch ovens
- Spray booths

### • Textile and fabric dryers

### • Rotary moulding machines

### • Food processing

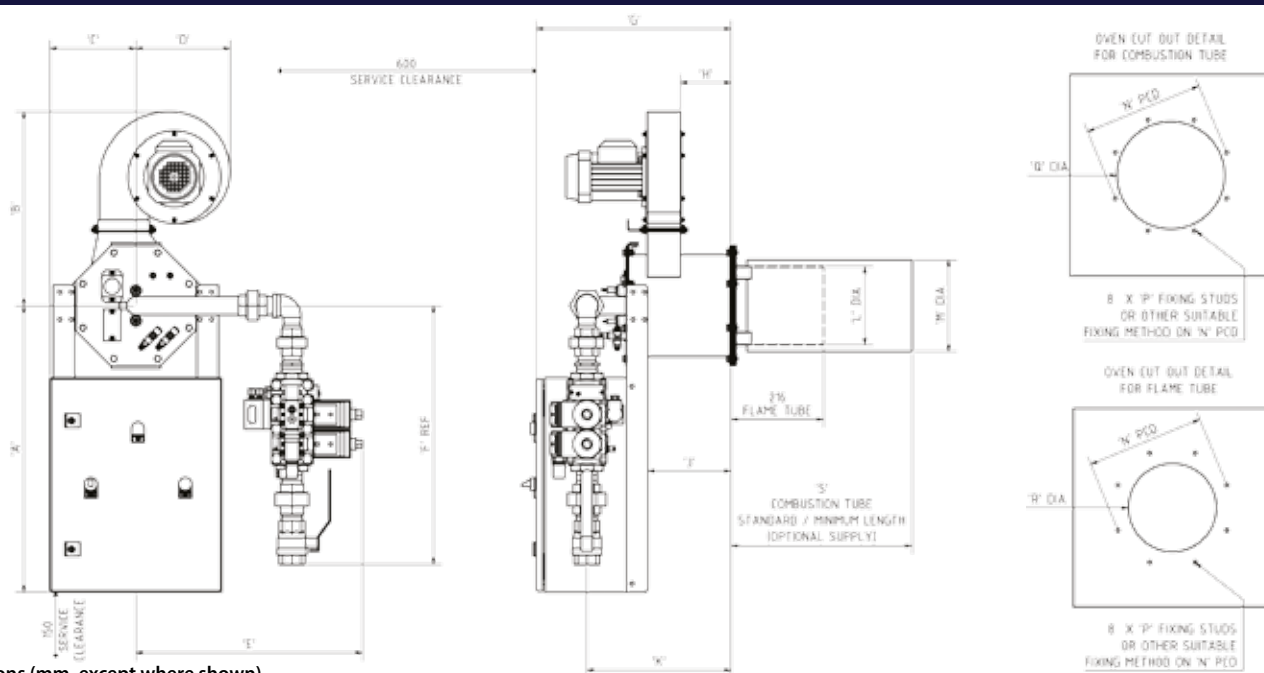
### • Powder and grain dryers

MODEL	HEAT INPUT RANGE	TYPICAL GAS CONNECTION SIZE
FD 5GA	9 - 220 kW	1"
FD10GA	13 - 350 kW	1"
FD10GA	13 - 440 kW	1½"
FD15GA	18 - 660 kW	1½"
FD20GA	25 - 880 kW	2"
FD25GA	45 - 1150 kW	2"
FD30GA	45 - 1350 kW	2"
FD35GA	45 - 1550 kW	2"

## PRODUCT DESCRIPTION ⚙️


FDGA burners comprise a burner windbox, combustion air fan, a compact monoblock air / gas valve gas train and gas burner controls, including the combustion air fan motor speed controller, mounted within a control panel.

Standard control items include a burner controller ignition transformer and differential air pressure switch. Two 3-way air valves perform safety checks on the air pressure switch in both open and closed modes each time the burner fires, allowing the independent operation of the combustion air fan in conjunction with oven / dryer main recirculation fans.



Dimensions (mm, except where shown)

MODEL	GAS TRAIN	A	B	C	D	E	F	G	H	J	K	L DIA	M DIA	N PCD	P	Q DIA	R DIA	S
FD5	VCV1	643	423	200	207	361	456	416	101	156	294	150	175	225	M8x50	195	160	360
FD10	VCV1	668	452	200	220	506	486	449	118	185	336	183	214	268	M8x50	240	200	410
FD10	VCV2	668	452	200	220	528	602	449	118	185	336	183	214	268	M8x50	240	200	410
FD15	VCV2	693	507	217	218	535	624	516	153	256	432	232	270	330	M8x50	295	250	460
FD20	VCV3	742	562	199	219	626	684	556	180	315	473	267	315	380	M10x50	335	290	510
FD25	VCV3	742	743	199	346	620	684	556	158	315	473	267	315	380	M10x50	335	290	510
FD30	VCV3	766	706	233	375	653	705	646	190	359	550	307	370	445	M10x50	390	330	585
FD35	VCV3	766	795	233	417	653	705	646	190	359	550	307	370	445	M10x50	390	330	585

SPECIFICATIONS	STANDARD EQUIPMENT	OPTIONS 
Fuels	Natural gas	Propane
Control voltages	230 V / 1ph / 50 Hz	110 V / 1ph / 50-60 Hz
Exhaust fan electrical supplies	400 V / 3ph / 50 Hz or 230 V / 3ph / 50 Hz	–
Flame sensing	Flame electrode	UV scanner
Heat output control options	Modulating (gas and air) 4-20 mA / 0-10 V DC / 3 Wire Direct Drive	Ultra low

Lanemark FDGA burners are pre-wired / tested prior to despatch and conform with relevant sections of European Standard EN 746 Part 2 or NFPA 86 for US applications.



All Lanemark FDGA burners benefit from Lanemark's BurnerCare customer support. BurnerCare services can include burner system installation, commissioning / start-up, system training, regular servicing and the supply of spare parts. BurnerCare can provide a service agreement plan incorporating a rapid response facility individually designed to ensure the continued, reliable operation of Lanemark equipment worldwide.



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# FDC BURNERS DATA

Lanemark FDC series packaged burners are designed to offer low cost, high turndown (gas only) control for process air heating applications in convection ovens and dryers.

FDC series burners are particularly suited to direct fired applications and can be mounted directly on to the wall of a dryer, oven or process air heating duct to operate either in line with or at 90° to the process airflow.

FDC series burners produce short flame profiles – an important requirement for industrial oven design. Combustion air and gas is progressively mixed within the internal burner cone assembly, guaranteeing stable combustion over a wide range of oven / dryer process airflows.

## TYPICAL APPLICATIONS



### • Product finishing

- Pre-treatment dryers
- Final treatment ovens for paint drying and curing
- Conveyor and batch ovens

### • Textile and fabric dryers

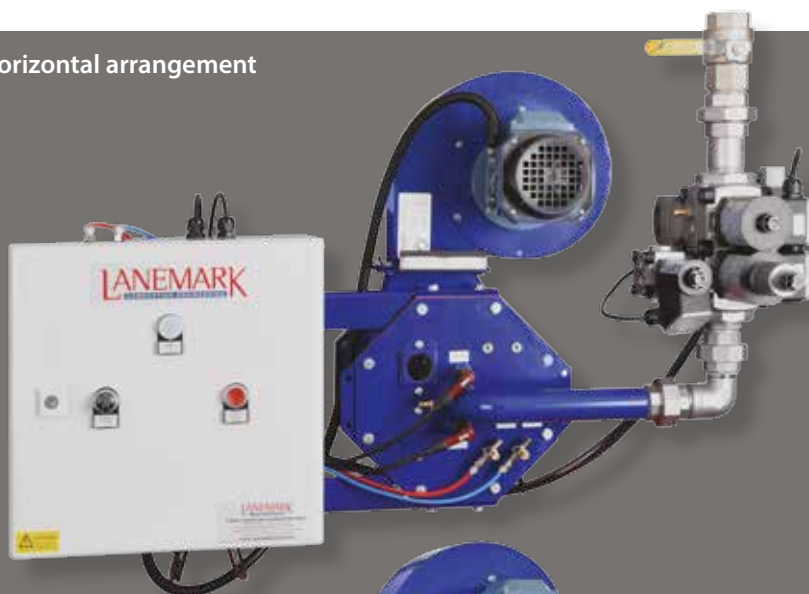
### • Rotary moulding machines

### • Food processing

### • Powder and grain dryers

MODEL	HEAT INPUT RANGE	TYPICAL GAS CONNECTION SIZE
FD5-C	9 - 117 kW	¾"
FD5-C	9 - 220 kW	1"
FD10-C	13 - 350 kW	1"
FD10-C	13 - 440 kW	1½"
FD15-C	18 - 660 kW	1½"
FD20-C	25 - 880 kW	2"
FD25-C	45 - 1150 kW	2"
FD30-C	45 - 1350 kW	2"
FD35-C	45 - 1550 kW	2"

Horizontal arrangement



Vertical arrangement

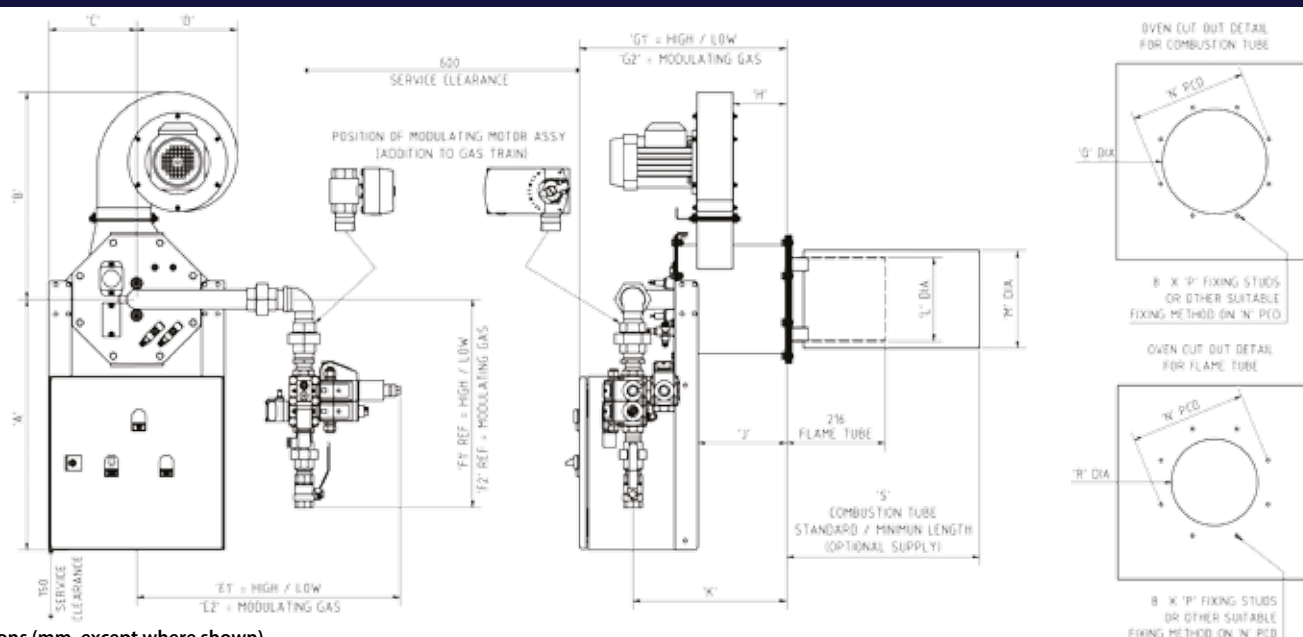


## PRODUCT DESCRIPTION




Lanemark FDC burners comprise a burner windbox, combustion air fan, a manual sliding damper fitted between the combustion air fan and the air entry flange on the burner windbox, a compact monoblock train and gas burner controls mounted within a control panel.

Standard control items include a burner controller, ignition transformer and differential air pressure switch. Two 3-way air valves perform safety checks on the air pressure switch in both open and closed modes each time the burner fires, allowing the independent operation of the combustion air fan in conjunction with oven / dryer main recirculation fans.



Dimensions (mm, except where shown)

MODEL	GAS TRAIN	A	B	C	D	E1	E2	F1	F2	G1	G2	H	J	K	L DIA	M DIA	N PCD	P	Q DIA	R DIA	S
FD5	G96	528	423	193	207	398	506	485	671	416	416	101	156	294	150	175	225	M8x50	195	160	360
FD5	VCD1	528	423	193	207	571	571	426	748	416	439	101	156	294	150	175	225	M8x50	195	160	360
FD10	VCD1	548	452	193	220	577	577	456	591	450	482	118	185	336	183	214	268	M8x50	240	200	410
FD10	VCD2	548	452	193	220	600	600	568	692	450	482	118	185	336	183	214	268	M8x50	240	200	410
FD15	VCD2	581	507	217	218	610	610	571	685	514	577	150	253	430	232	270	330	M8x50	295	250	460
FD20	VCD3	621	562	199	219	640	640	684	842	560	560	177	315	473	267	315	380	M10x50	335	290	510
FD25	VCD3	621	743	199	346	640	640	684	842	560	560	158	325	473	267	315	380	M10x50	335	290	510
FD30	VCD3	646	706	233	375	667	667	705	853	637	695	190	359	550	307	370	445	M10x50	390	330	585
FD35	VCD3	646	795	233	417	667	667	705	853	637	695	185	359	550	307	370	445	M10x50	390	330	585

SPECIFICATIONS	STANDARD EQUIPMENT	OPTIONS 
Fuels	Natural gas	Propane
Control voltages	230 V / 1ph / 50 Hz	110 V / 1ph / 50-60 Hz
Combustion air fan electrical supplies	400 V / 3ph / 50 Hz	230 V / 1ph / 50 Hz
Flame sensing	Flame electrode	UV scanner
Heat output control	On / off ; High / low. High / low / ultra low	Modulating (gas only) 4-20 mA / 0-10V DC / 3 Wire Direct Drive

Lanemark FDC burners are pre-wired / tested prior to despatch and conform with relevant sections of European Standard EN 746 Part 2 or NFPA 86 for US applications.



All FD burners benefit from Lanemark's BurnerCare customer support. BurnerCare services can include burner system installation, commissioning / start-up, system training, regular servicing and the supply of spare parts. BurnerCare can provide a service agreement plan incorporating a rapid response facility individually designed to ensure the continued, reliable operation of Lanemark equipment worldwide.



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# FDE BURNERS DATA

Lanemark FDE series packaged burners are designed to offer low cost, high turndown (gas only) control for process air heating applications in convection ovens and dryers.

FDE series burners are particularly suited to direct fired applications and can be mounted directly on to the wall of a dryer, oven or process air heating duct to operate either in line with or at 90° to the process airflow.

FDE series burners produce short flame profiles – an important requirement for industrial oven design. Combustion air and gas is progressively mixed within the internal burner cone assembly, guaranteeing stable combustion over a wide range of oven / dryer process airflows.

## TYPICAL APPLICATIONS



### • Product finishing

- Pre-treatment dryers
- Final treatment ovens for paint drying and curing
- Conveyor and batch ovens

### • Textile and fabric dryers

### • Rotary moulding machines

### • Food processing

### • Powder and grain dryers



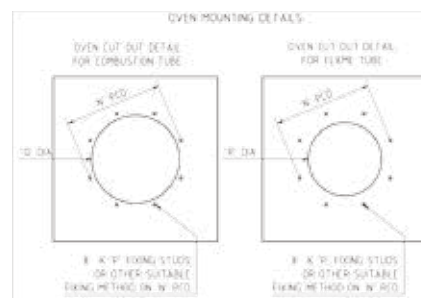
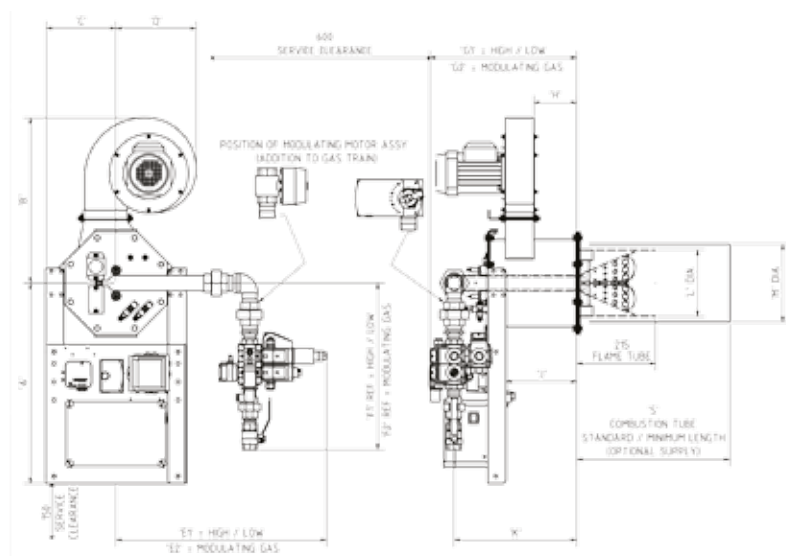
## PRODUCT DESCRIPTION



FDE burners comprise a burner windbox, combustion air fan, a manual sliding damper fitted between the combustion air fan and the air entry flange on the burner windbox, a compact monoblock train and gas burner controls mounted on a control plate.


Standard control items include a burner controller, ignition transformer and differential air pressure switch. Two 3-way air valves perform safety checks on the air pressure switch in both open and closed modes each time the burner fires, allowing the independent operation of the combustion air fan in conjunction with oven / dryer main recirculation fans.

MODEL	HEAT INPUT RANGE	TYPICAL GAS CONNECTION SIZE
FD5-E	9 - 117 kW	¾" BSP
FD5-E	9 - 220 kW	1" BSP
FD10-E	13 - 350 kW	1" BSP
FD10-E	13 - 440 kW	1½" BSP
FD15-E	18 - 660 kW	1½" BSP



**Dimensions (mm, except where shown)**

MODEL	GAS TRAIN	A	B	C	D	E1	E2	F1	F2	G1	G2	H	J	K	L DIA	M DIA	N PCD	P	Q DIA	R DIA	S
FD5	G96	528	423	193	207	605	467	485	671	407	439	101	156	294	150	175	225	M8x50	195	160	360
FD5	VCD1	528	423	193	207	571	573	448	532	366	439	101	156	294	150	175	225	M8x50	195	160	360
FD10	VCD1	548	452	193	220	576	576	456	581	401	481	118	185	336	183	214	268	M8x50	240	200	410
FD10	VCD2	548	452	193	220	598	680	548	694	420	481	118	185	336	183	214	268	M8x50	240	200	410
FD15	VCD2	573	507	217	220	610	610	571	685	543	543	150	253	429	232	270	330	M8x50	295	250	460

Specifications	Standard Equipment	Options 
Fuels	Natural gas	Propane
Control voltages	230 V / 1ph / 50 Hz	110 V / 1ph / 50-60 Hz
Combustion air fan electrical supplies	400 V / 3ph / 50 Hz	230 V / 1ph / 50 Hz
Flame sensing	Flame electrode	UV scanner
Heat output control	On / off ; High / low. High / low / ultra low	Modulating (gas only) 4-20 mA / 0-10 V DC / 3 Wire Direct Drive

Lanemark FDE burners are pre-wired / tested prior to despatch and conform with relevant sections of European Standard EN 746 Part 2 or NFPA 86 for US applications.



All FD burners benefit from Lanemark's BurnerCare customer support. BurnerCare services can include burner system installation, commissioning / start-up, system training, regular servicing and the supply of spare parts. BurnerCare can provide a service agreement plan incorporating a rapid response facility individually designed to ensure the continued, reliable operation of Lanemark equipment worldwide.



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## HMA2A BURNER HEADS DATA

Lanemark Midco HMA2A series gas fired air heating duct burners are designed to provide a high efficiency, high turndown, low emission solution for air replacement or "make-up" air heating applications.

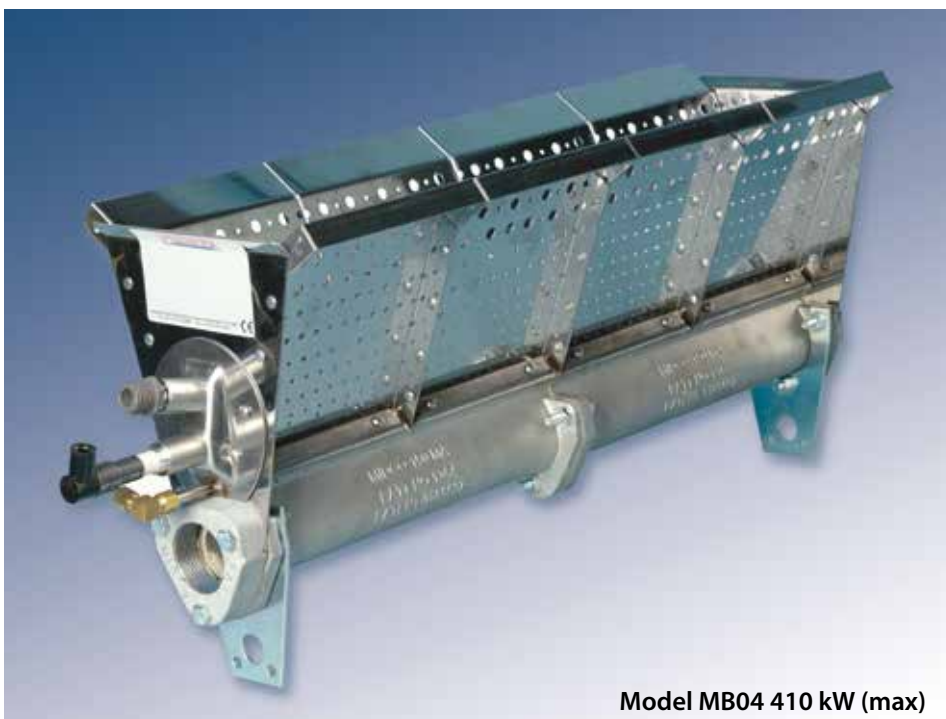
Lanemark Midco series burners operate directly within the heated airflow and can be located either upstream or downstream of the main air supply fans.

### KEY FEATURES

- High heat output per unit length
- Low emissions – suitable for manned / unmanned operations
- Wide acceptable process air velocity range
- High turndown (up to 30:1)
- Short flame length
- Common burner head for natural gas and propane gas

### TYPICAL APPLICATIONS

- Paint spray booth air heating – spray and bake cycles
- Paint drying and curing ovens
- HVAC air replacement schemes for factories, warehouses, distribution centres ...
- Crop dryers
- Print media dryers



Model MB04 410 kW (max)

MODEL	MAXIMUM HEAT INPUT	BURNER LENGTH	TYPICAL GAS CONNECTION SIZE
MB01	73 - 103 kW	152 mm	1½" BSP (side entry)
MB02	146 - 205 kW	305 mm	1½" BSP (side entry)
MB03	220 - 308 kW	456 mm	1½" BSP (side entry)
MB04	293 - 410 kW	610 mm	1½" BSP (side entry)
MB05	366 - 513 kW	762 mm	1½" BSP (side entry)
MB06	440 - 615 kW	915 mm	1½" BSP (side entry)
MB07	513 - 718 kW	1067 mm	1½" BSP (side entry)
MB08	586 - 820 kW	1220 mm	1½" BSP (side entry)
MB09	659 - 923 kW	1372 mm	2" BSP (rear entry)
MB10	730 - 1025 kW	1525 mm	2" BSP (rear entry)

For higher inputs, 146 - 205 kW gas input is available for each 305 mm of added burner length.

### PRODUCT DESCRIPTION

Lanemark Midco HMA2A series air heating duct burner systems can be configured either as straight sections or in various shapes such as H or I designs by the use of compact elbows and tees\* to fit within required duct dimensions.

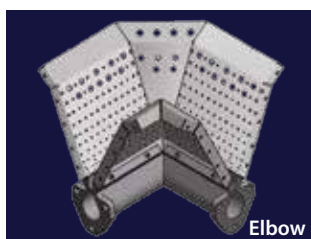
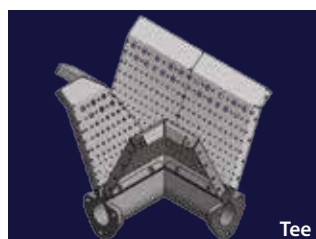
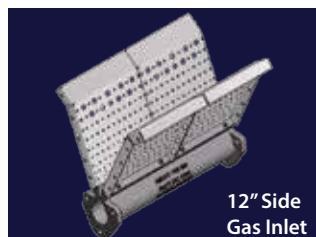
Gas manifolds are available in both cast iron and aluminium which significantly reduces the weight of larger burner assemblies.

Pilot or direct spark ignition.

Flame rod or UV scanner connections.



## BURNER HEAD SECTION CONFIGURATIONS



## SPECIFICATIONS

Heat input	max 205 kW per 305 mm section
Air velocity	7.5 – 18 m / s
Required air pressure	0.5 – 3.0 mbar (50 – 300 Pa)
Turndown	30:1 max
Typical flame length	Natural gas : 280 – 405 mm Propane gas : 205 – 330 mm
Efficiency	100% (LHV) or 92% (HHV)
Burner head gas pressure	Natural gas : 8.8 – 19.5 mbar Propane gas : 3.3 – 7.5 mbar
Burner head orientation	Parallel to process airflow – horizontal or vertical
Burner head configurations	Straight 6" (150 mm) or 12" (305 mm) sections with side or rear gas inlets H or I arrangements incorporating elbows and tees also available (see above)
Burner head construction	Stainless steel baffles fitted to cast iron or lightweight aluminium gas manifolds



All Lanemark Midco burners benefit from Lanemark's BurnerCare customer support. BurnerCare services can include burner system installation, commissioning / start-up, system training, regular servicing and the supply of spare parts. BurnerCare can provide a service agreement plan incorporating a rapid response facility individually designed to ensure the continued, reliable operation of Lanemark equipment worldwide.



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# DB BURNERS DATA

Lanemark DB series gas fired air heating duct burner systems are designed to provide a high efficiency, high turndown, low emission solution for air replacement or 'make-up' air heating applications.

Lanemark DB series burners operate directly within the heated airflow and can be located either upstream or downstream of the main air supply fans.

**Lanemark's DbCalc® software is available to determine burner ratings and to design suitable duct profile plate arrangements at firing rates of up to 205 kW per 305 mm burner length.**

## KEY FEATURES

- High heat output per unit length
- Low emissions – suitable for manned / unmanned operations
- Wide acceptable process air velocity range

## TYPICAL APPLICATIONS



- Paint spray booth air heating – spray and bake cycles
- Paint drying and curing ovens
- HVAC air replacement schemes for factories, warehouses, distribution centres ...
- Crop dryers
- Print media dryers



Model DB02 burner head / duct profile plate arrangement

MODEL	MAX HEAT INPUT RANGE	BURNER LENGTH	TYPICAL GAS CONNECTION SIZE
DB-01	73 - 103 kW	152 mm	1" BSP
DB-02	146 - 205 kW	305 mm	1" BSP
DB-03	220 - 308 kW	456 mm	1" BSP
DB-04	293 - 410 kW	610 mm	1½" BSP
DB-05	366 - 513 kW	762 mm	1½" BSP
DB-06	440 - 615 kW	915 mm	1½" BSP
DB-07	513 - 718 kW	1067 mm	2" BSP
DB-08	586 - 820 kW	1220 mm	2" BSP
DB-09	659 - 923 kW	1372 mm	2" BSP
DB-10	730 - 1025 kW	1525 mm	2" BSP

For higher inputs, 146 - 205 kW gas input is available for each 305 mm of added burner length.

## PRODUCT DESCRIPTION

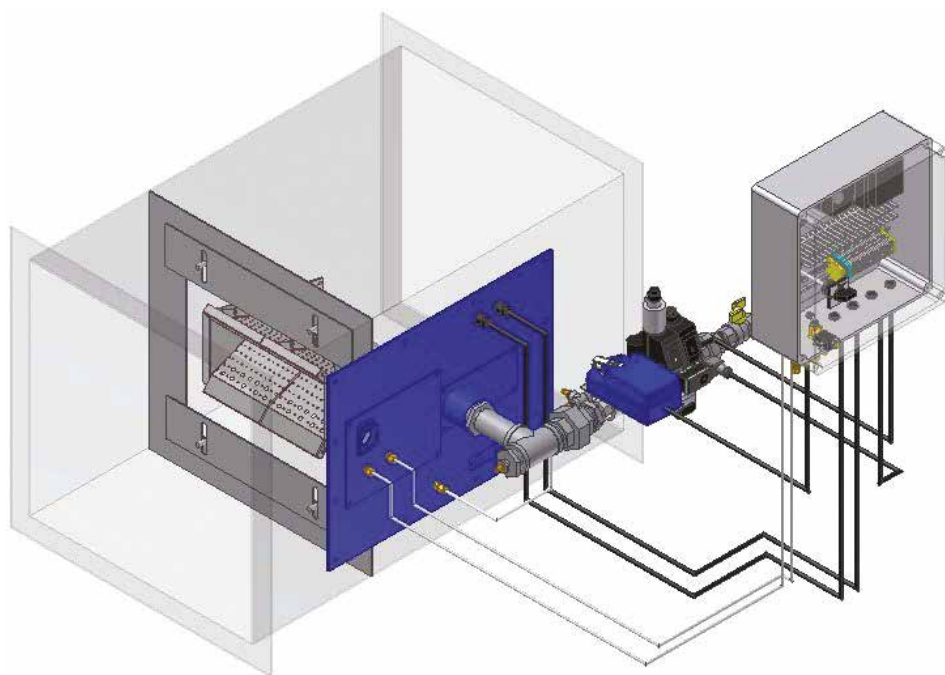


Lanemark DB Duct Burner systems are supplied in a packaged or semi-packaged format. In a packaged format the Lanemark Midco HMA2A Series Burner is supplied fixed to a mounting plate, which is designed to be bolted to the side of the process air duct – normally supplied by others but available on request.

Each DB Duct Burner system can include a compact pre-piped modulating gas valve train and control panel that can either be supplied attached to the mounting plate or as a separate assembly to be installed on site at a convenient location within 3 metres of the burner location.

The control panel includes, as standard, burner controller, ignition transformer, differential air pressure switch and two 3-way air valves which enable an air pressure switch safety check to be carried out at burner start up. Additional control components, including temperature controllers, can also be included when requested.





Typical arrangement



Burners can be configured either as straight sections or in various shapes such as H or I designs by the use of compact elbows and tees\*, to fit within required duct dimensions.

Gas manifolds are available in both cast iron and aluminium which significantly reduces the weight of larger burner assemblies.

\* Please refer to Lanemark Midco HMA2 Burner Data Sheet

SPECIFICATIONS	STANDARD EQUIPMENT	OPTIONS	
Fuels	Natural gas	Propane	
Control voltages	230V / 1ph / 50 Hz	110V / 1ph / 50-60 Hz	
Flame sensing	Flame electrode	UV scanner	
Heat output control	Modulating (gas only) 4-20 mA / 0-10 V DC / 3 Wire Direct Drive	High / low or High / low / ultra low	

Lanemark DB burners conform with relevant sections of European Standard EN 746 Part 2 or NFPA 86 for US applications.

**LANEMARK**  
BurnerCare

All Lanemark DB burners benefit from Lanemark's BurnerCare customer support. BurnerCare services can include burner system installation, commissioning / start-up, system training, regular servicing and the supply of spare parts. BurnerCare can provide a service agreement plan incorporating a rapid response facility individually designed to ensure the continued, reliable operation of Lanemark equipment worldwide.



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# FDB BURNERS DATA

Lanemark FDB series packaged burners offer flexible, high turn-down (gas and air) control for process air heating applications in convection ovens, dryers and spray booths where maximum combustion efficiency, short flame lengths and minimum emissions are of prime importance.

FDB series direct fired gas burners can be mounted within an enclosure or duct or mounted directly on to the wall of a dryer, oven or process air heating duct to operate either in line with, or at 90° to, the process airflow.

FDB burners can incorporate Lanemark's 'Air Pressure Lead' (APL) technology, so that all FDB series burners offer an excellent combination of combustion efficiency and emissions control and are especially suited to applications utilising variable process airflows.

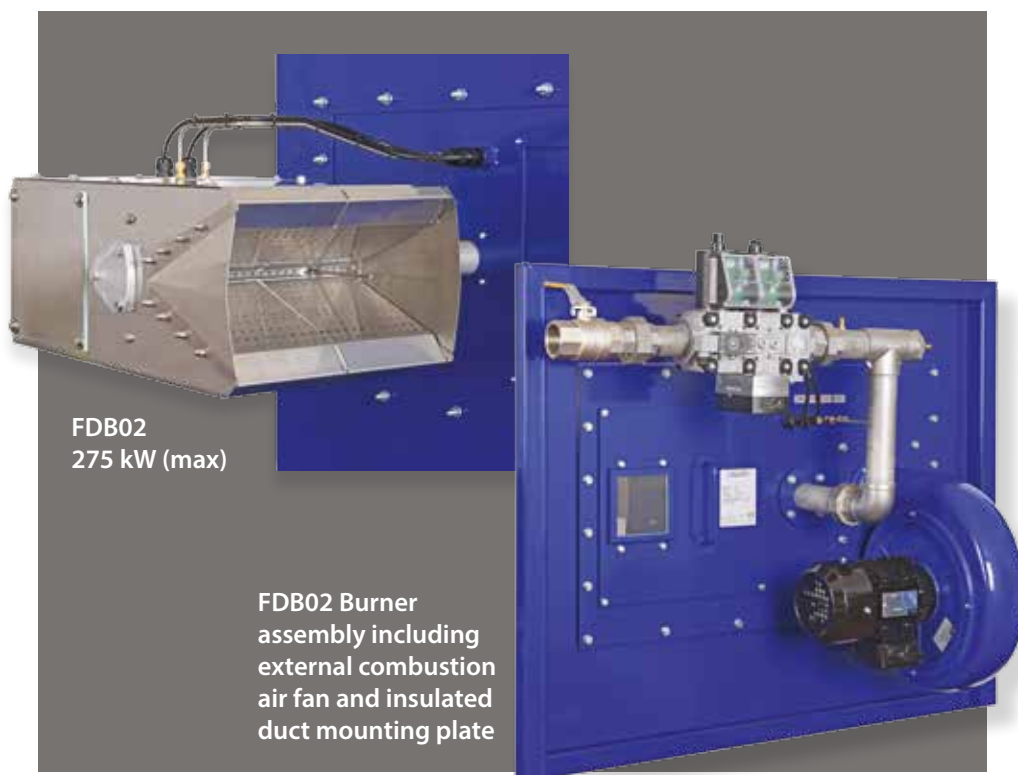
Variable combustion air fan speed control combined with modulating monoblock gas valve technology ensures that safe and efficient gas / air ratios are maintained even under changeable plant operating conditions.

**Lanemark's DbCalc® software is available to determine burner ratings.**

## TYPICAL APPLICATIONS



- Paint spray booth air heating – spray and bake cycles
- Paint drying and curing ovens
- HVAC air replacement schemes for factories, warehouses, distribution centres ...
- Crop dryers



FDB02  
275 kW (max)

FDB02 Burner assembly including external combustion air fan and insulated duct mounting plate

MODEL	MAX HEAT INPUT RANGE	BURNER LENGTH	TYPICAL GAS CONNECTION SIZE
FDB01	9 - 175 kW	184 mm	1" BSP
FDB02	13 - 275 kW	337 mm	1" BSP
FDB02	13 - 350 kW	337 mm	1½" BSP
FDB03	18 - 525 kW	490 mm	1½" BSP
FDB04	18 - 600 kW	642 mm	1½" BSP
FDB04	25 - 700 kW	642 mm	2" BSP
FDB05	30 - 875 kW	795 mm	2" BSP
FDB06	30 - 925 kW	947 mm	2" BSP
FDB06	45 - 1050 kW	947 mm	CALL
FDB07	45 - 1225 kW	1099 mm	CALL
FDB08	45 - 1400 kW	1252 mm	CALL

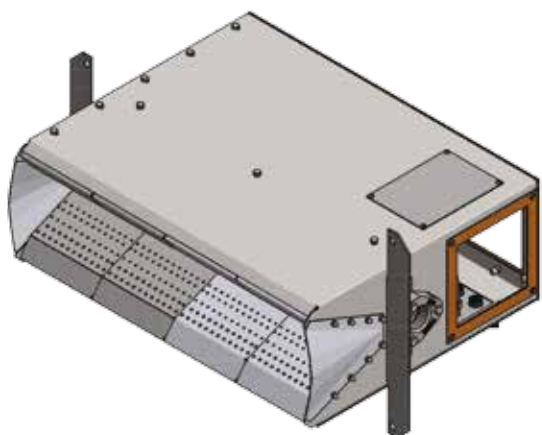
## PRODUCT DESCRIPTION



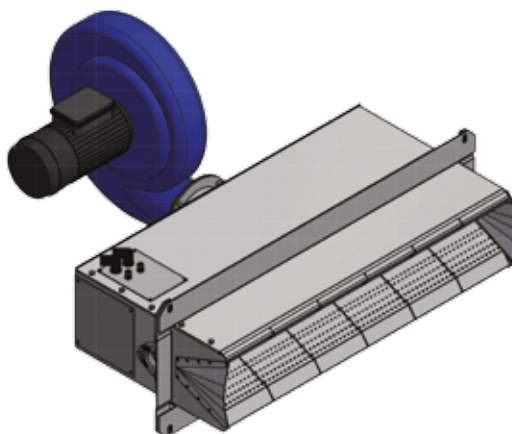
Lanemark FDB Duct Burner systems are supplied in a packaged or semi-packaged format. In a packaged format the Lanemark Midco VA Burner housing is supplied fitted to a mounting plate, which is designed to be bolted to the side of the process air duct – normally supplied by others, but available on request.

Each FDB Duct Burner system can include a compact pre-piped modulating gas valve train and control panel that can either be supplied attached to the mounting plate or as a separate assembly to be installed on site at a convenient location within 3 metres of the burner location.

The control panel includes, as standard, burner controller, ignition transformer, differential air pressure switch and two 3-way air valves which enable an air pressure switch safety check to be carried out at burner start up. Additional control components, including temperature controllers, can also be included when requested.



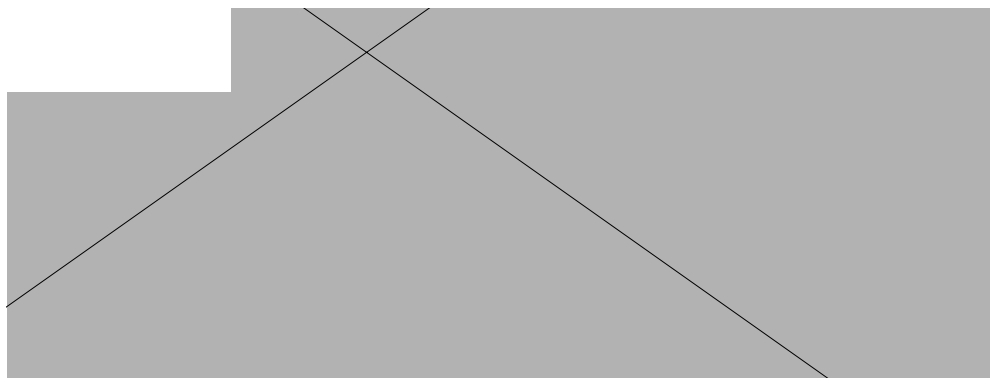
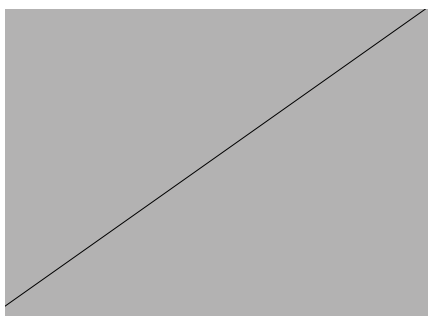
*FDB04 Burner and side combustion air connection flange*



*FDB06 Burner and rear mounted combustion air fan*

Dimensions (mm, except where shown)

Model	A	B	C
FDB01	185	190	195
FDB02	337	343	345
FDB03	490	492	500
FDB04	642	648	650
FDB05	795	800	805
FDB06	947	952	1000
FDB07	1099	1105	1110
FDB08	1252	1257	1260



SPECIFICATIONS	STANDARD EQUIPMENT	OPTIONS
Fuels	Natural gas	Propane
Control voltages	230 V / 1ph / 50 Hz	110 V / 1ph / 50-60 Hz
Combustion air fan electrical supplies	400 V / 3ph / 50 Hz or 230 V / 3ph / 50Hz	-
Flame sensing	Flame electrode	UV scanner
Heat output control	Modulating (gas only) 4-20 mA / 0-10 V DC / 3 Wire Direct Drive	Ultra low

Lanemark FDB burners are pre-wired / tested prior to despatch and conform with relevant sections of European Standard EN 746 Part 2 or NFPA 86 for US applications.

**LANEMARK**  
BurnerCare

All Lanemark FD burners benefit from Lanemark's BurnerCare customer support. BurnerCare services can include burner system installation, commissioning / start-up, system training, regular servicing and the supply of spare parts. BurnerCare can provide a service agreement plan incorporating a rapid response facility individually designed to ensure the continued, reliable operation of Lanemark equipment worldwide.



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At Lanemark, we firmly believe that the supply of top quality, proven process gas burner equipment should only be part of our service to customers. It is vital that ongoing, reliable operations are ensured throughout the life of each installation.

## That's why we have created BurnerCare.

The concept, of value to all Lanemark and non-Lanemark based burner installations, comprises an individually designed installation, commissioning, spares supply, service and support package that enables customers to gain the most from their investment. Peace of mind, which comes with the knowledge that efficient, highly controllable burner.



## OVERVIEW



BurnerCare has been developed to offer the optimum choice of key services – each designed to help ensure ongoing efficient, reliable process gas burner performance. Available to all users of process gas burner systems, the service comprises a number of key elements from advice on health and safety and commissioning through to planned maintenance and emergency call out support.

All Lanemark service engineers are comprehensively trained and highly qualified and can be on site quickly, anywhere in the UK.

The support service also extends overseas where our worldwide network of carefully selected distributors can provide the key elements of the BurnerCare package – all with the benefit of back-up and support directly from our UK head office.

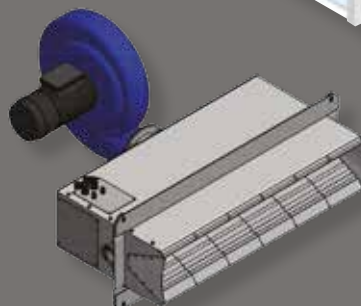
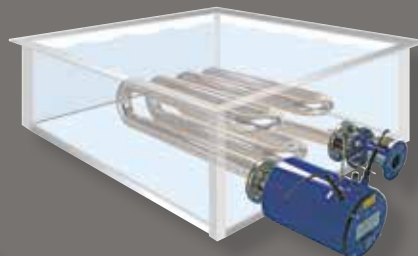
By working closely with all customers throughout the life of each burner installation, we believe Lanemark not only provides the best equipment for the job, but also offers complete confidence to every process gas burner user.

## SERVICE AGREEMENTS

The Service Agreement structure allows for scheduled servicing – programmed to suit system and customer requirements. It includes access to an extensive range of spares and parts with beneficial discounts available.

Service Agreements work in conjunction with other key BurnerCare features to offer the most economic and reliable means of ensuring the long-term function of process gas burner installations.

*Lanemark TX high efficiency small diameter gas fired immersion tube tank heating burner systems*



*Lanemark Midco gas fired duct burner systems for air replacement / makeup air applications for spray booths, dryers etc...*

*Lanemark FD gas fired, high turndown process air heating burners for industrial ovens and dryers.*





## INSTALLATION

During installation, and even before your Lanemark burner system arrives on site.

BurnerCare offers vital support –

- Energy conservation advice and survey
- Guidance on health and safety issues
- Provision of risk assessment and method statements
- Heat exchanger design and supply
- Mechanical and electrical installation
- Design and installation of electrical controls
- Gas train upgrades and replacements where required
- Gas flow meters supplied and installed



## COMMISSIONING AND SERVICING

The selection of system components is at the heart of the Lanemark success record and is optimised through the BurnerCare commissioning and ongoing service programme –

- On site installation service links directly into commissioning procedures using Lanemark's trained and experienced specialist engineers
- Ongoing monitoring maintains optimum performance established at commissioning
- Service plans extend to all types of process gas burner installations – Lanemark and "non-Lanemark" – to ensure commissioning / servicing procedures are of the highest standard



## AFTERCARE AND SUPPORT

The ongoing commitment of Lanemark BurnerCare is central to ensuring the long term, reliable performance of every process gas burner installation –

- Tailored to suit system and customer installation requirements
- Maintenance programme planning with intervals selected to match process and customer needs – ensuring processes are accommodated within production procedures
- Supply of spares and consumable parts – covering both Lanemark and non-Lanemark burner systems
- Provision of burner operating manuals in a selection of languages
- Rapid response capability – via UK ACS qualified, Gas Safe and Corgi registered engineers
- Fully equipped service engineer support with engineers trained to IPAF3aSL – mobile vertical scissor lift and IPAF3b – mobile booms access equipment
- Telephone helpline provides continuous access to Lanemark expertise with 24-hour emergency call out cover also available
- Training for customer / site maintenance staff in basic burner care

## WORLDWIDE SERVICE

The benefits of Lanemark BurnerCare extend worldwide to our full range of carefully selected international distributors. Covering almost every corner of the globe, expertise and equipment is available rapidly, with full and immediate access to the head office of Lanemark Combustion Engineering in the UK.



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