

NICHE



Product guide

Direct gas-fired
heating systems



Introduction

Niche is a specialist manufacturer and supplier of direct gas-fired heating and make up air solutions suitable for industrial, commercial and civic buildings. Niche offers unparalleled engineering expertise in its field to offer the optimum solution to meet the exact heating, ventilation or make up air requirements for the application. Niche direct gas-fired technology has also been applied to a variety of process applications within the industrial, agricultural and food preparation market.

Niche offers a supply based service to meet the needs of end users, specifiers and contractors including system design and on site technical support.

The Niche service team provides on site technical training and support, is ACS accredited and has expansive knowledge of Trend® control systems.

Concept of direct gas fired heating

Direct gas-firing is an effective, cost efficient method of space heating for open areas. It provides a positive ventilation rate, gently pressurizing the building and ensuring a fresh and warm atmosphere with minimal stratification. Niche's fully modulating burner system provides the optimum heat required at maximum efficiency – so reducing running costs.

Where air is extracted from a building either for process or environmental reasons, a supply of heated 'make up' air is introduced ensuring an even comfortable environment without draughts or cold spots.

System benefits

- Reduced running costs.
- Low installation costs.
- Even heat distribution without stratification.
- Rapid warm up – even in the largest buildings.
- Improved air quality.
- Ventilation at no extra cost.
- No ductwork necessary.
- Low maintenance costs.



The Niche range

Niche offers the most comprehensive range of direct fired heating units in the market place. There are four distinct ranges of product providing heating capacities between 29kW and 879kW as standard with airflows from 0.56m³/s to 16m³/s. The ranges have been developed to cater for differing needs and applications yet all units are capable of being tailor-made to specific customer requirements. All Niche products are CE approved to the Gas Appliance Directive.

Applications overview

- Industrial premises
- Restaurants and public houses
- Night clubs and casinos
- Swimming pools
- Churches
- Retail outlets
- Distribution depots
- Sports centres
- Greenhouses
- Woodworking shops
- Theatres and cinemas
- Hostile or contaminated environments
- Agricultural drying
- Industrial process heating



TTW range

The TTW is a cost effective product solution for smaller industrial, workshop environments and specific commercial applications; particularly those with flammable dust or vapor in the atmosphere. Available as a standard 'on/off' heater, in sizes from 29kW to 150kW. Fan ratings from 0.56-2.78m³/s.

TTW standard features

- 100% thermal efficient based on net c.v.
- On/off unit.
- 29 to 150kW input.
- Single phase.
- Construction from aluminum extruded section with panels made from galvanized steel.
- Standard integral controls and time clock.
- 30 and 60kW models standard with direct drive fans.

TTW optional features

- Range of airflows and external pressures.
- Insulated cases.
- Double skin steel panels.
- Plastic coated steel case or painted to match surroundings.
- Three phase.
- 60kW unit has optional pulley driven fan.
- Unit available in 'flat-pack' for on site assembly.



TTW benefits

- Suitable for smaller industrial and workshop environments.
- 'Free cooling' available in summer.
- Can be installed internally or externally.

LSD range

The LSD is an extremely flexible engineered product, particularly suited to where there is a requirement for precise heating and ventilation control, low noise operation and aesthetic integration with the building. The LSD is an ideal solution for the more prestigious environment, including churches, libraries and indoor domestic swimming pools. Available as a fully modulating heater, in sizes from 29kW to 103kW. Fan ratings from 0.56-1.95m³/s.



LSD standard features

- 100% thermal efficient based on net c.v.
- 29 to 103kW input.
- Fully modulating gas burner with 25:1 turndown.
- Mixed-flow fan for higher efficiency and lower noise.
- Maximum static pressure of 425 Pa.
- Single phase.
- Construction from 30mm aluminum extruded section with panels made from galvanized steel.
- Insulated panels.
- Trend® controls fitted as standard.

LSD optional features

- Modular heat recovery.
- Extract module.
- Plastic coated steel case or painted to match surroundings.
- Variable air volume system incorporating box burner and speed inverters.
- Three phase.
- Unit available in 'flat-pack' for on site assembly.

LSD benefits

- Very quiet operation.
- Compact, slimline construction.
- Aesthetically pleasing.
- Can be used in conjunction with heat recovery.



MUA range

The MUA is the core of the Niche direct fired range, offering a diversity of solutions for a whole range of industrial and commercial applications from large factories to pubs, casinos and warehouses. The units are specifically built to meet the needs of each client and can be enhanced with variable air volume, cooling, specialist filtration and a customized control system. MUA is available as a fully modulating heater in sizes from 29kW to 879kW as standard with extra duties being available on request. Fan ratings from 0.56-16.01m³/s.

MUA benefits

- Very flexible in its design and operation.
- Suited to many types of industrial and commercial applications.
- Can be customized to include heat recovery.

The Niche box burner

The box burner is a concept that is unique to the Niche range. It is a pressurized burner assembly with integral combustion fans that maintains the optimum conditions for combustion and provides the basis for the variable air volume system. The box burner is fitted as standard to the LSD range, and can be added to the MUA range to increase its flexibility and operation. The box burner can also be used as a pressurized burner in its own right for in-duct heater battery replacement, inclusion within air handling units and agricultural/process drying applications.



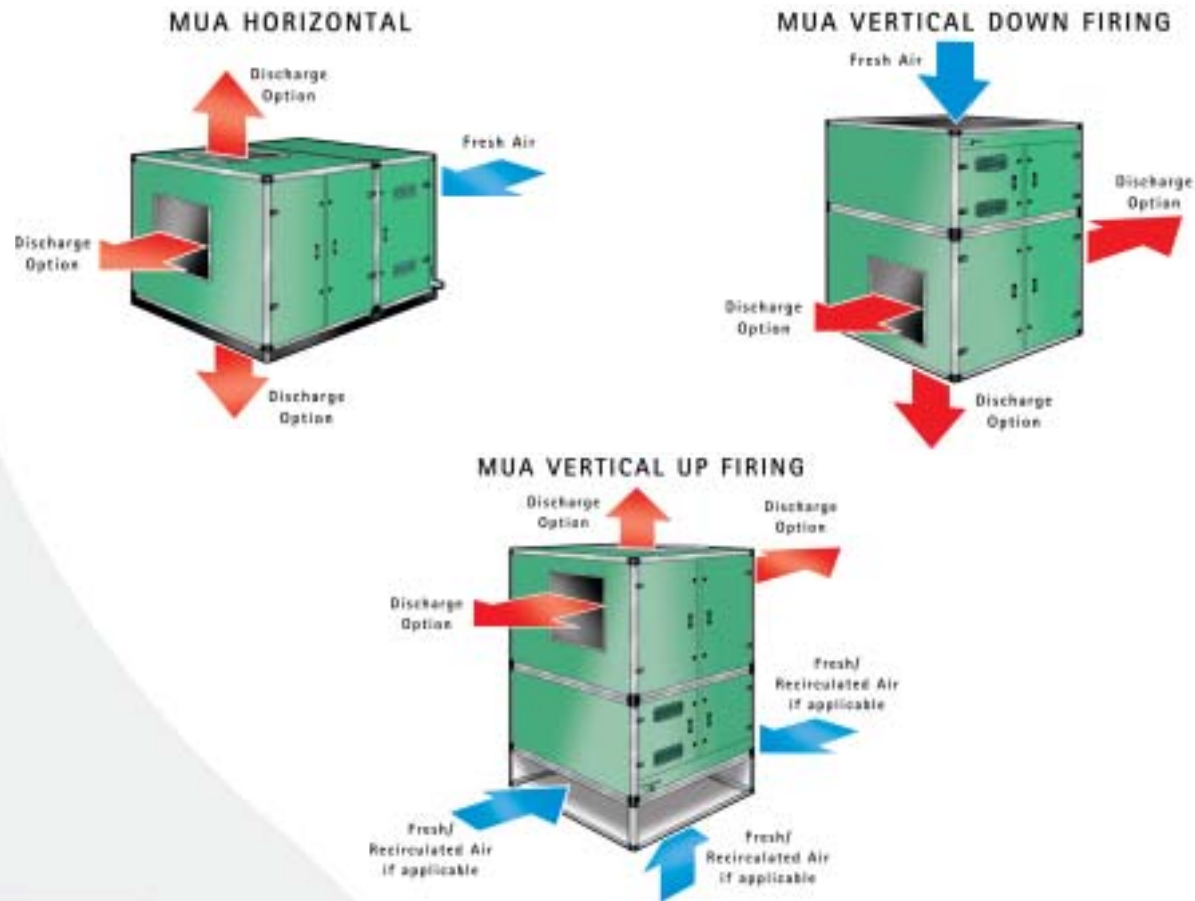
MUA standard features

- 100% thermal efficient based on net c.v.
- 29 to 879kW input.
- Fully modulating gas burner with 25:1 turndown.
- Combination of motor and fan rating to achieve required external static pressures.
- Anti-vibration mountings on fan and motor assembly.
- Single phase or three phase.
- Construction from aluminum extruded section with panels made from galvanized steel.
- Single skin steel panels.
- Trend® controls fitted as standard.
- Forward curved fan.
- Orientations: horizontal, vertical with various discharges.

MUA optional features

- Backward curve fans for high external static pressures.
- Variable air volume system incorporating box burner and speed inverters.
- Plastic coated steel case or painted to match surroundings.
- Double skin steel panels.
- Insulated single and double skin panels.
- Modular heat recovery.
- Extract module.
- Unit available in 'flat-pack' for on site assembly.

Discharge options



Trend® controls

Each product in the Niche range is controlled by a powerful and flexible Trend® microprocessor system. It has been programmed to give the most efficient operation of the heater and incorporates many operator selectable options. Niche's engineering and after sales service team are fully trained in the design, use and application of Trend® systems on all its product range.

Trend® features and options

- 7 day programmable time clock with 3 on/off switching operations per day.
- Standard and special week settings.
- Optimum start and optimum stop.
- Modulating control of room temperature – to 0.5°C.
- PIN secured adjustments on key pad.
- High accuracy room sensor.
- Temperatures displayed at remote terminal screen.
- Night setback or frost protection.
- Control on a combination of temperature, humidity and static pressure.
- Heater discharge controlled between set bands – maximum and minimum discharge temperature.
- Remote display of faults – with audible alarm.
- Removable fascia panel for remote control (hard wired).
- Hour run meter on fan and burner.
- Programmable in house.
- Network/BMS compatible.
- Remote monitoring via modem access.
- Remote start relay.
- Range of customized features.



Specification and technical data

TTW

Model	Airflow (m³/s)	Input (kW)	Output (kW)	Gas rate (m³/h)	Gas connection (BSP)	Motor size kW @ ESP 75Pa	Full load current (amps)	Electrical supply (volts)
TTW 30	0.56	29	27	2.83	1/2"	0.37	2.2	230V
TTW 30PD	0.56	29	27	2.83	1/2"	0.55	3.5/1.45	230V/400V
TTW 60	1.13	59	54	5.66	1/2"	0.92	8.5	230V
TTW 60PD	1.13	59	54	5.66	1/2"	0.75	4.5/1.9	230V/400V
TTW 100	1.96	103	95	9.91	3/4"	1.1	6.7/2.59	230V/400V
TTW 150	2.82	146	136	14.16	3/4"	2.2	12/4.8	230V/400V

Note

The table above details typical units based upon space heating applications on a temperature rise of 45°C. Alternative airflows, heat outputs and static pressures may be specified to match precise application requirements up to a maximum temperature rise of 55°C. External pressure available up to 525 pascals with increased motor sizes. Gas rates and gas connections listed are for natural gas. LPG options are available on request. For higher pressures consult Niche.

LSD

Model	Airflow (m³/s)	Input (kW)	Output (kW)	Gas rate (m³/h)	Gas connection (BSP)	Motor size kW @ ESP 75Pa	Full load current (amps)	Electrical supply (volts)
LSD 100	0.56	29	27	2.83	1/2"	0.31	1.35	230V
LSD 150	0.86	44	41	4.25	1/2"	0.96	4.3	230V
LSD 200	1.11	59	54	5.66	1/2"	1.45	6.1	230V
LSD 200 3PH	1.11	59	54	5.66	1/2"	1.35	2.3	400V
LSD 350	1.95	103	95	9.91	3/4"	1.45	6.1	230V
LSD 350 3PH	1.95	103	95	9.91	3/4"	2.4	4.3	400V

Note

The table above details typical units based upon space heating applications on a temperature rise of 45°C. Alternative airflows, heat outputs and static pressures may be specified to match precise application requirements. Gas rates and gas connections listed are for natural gas. LPG options are available on request. External pressure available up to 375 pascals with increased motor sizes.

MUA

Model	Airflow (m³/s)	Input (kW)	Output (kW)	Gas rate (m³/h)	Gas connection (BSP)	Motor size kW @ ESP 75Pa	Full load current (amps)	Electrical supply (volts)
MUA 10DD	0.56	29	27	2.83	1/2"	0.37	2.2	230V
MUA 10PD	0.56	29	27	2.83	1/2"	0.55	3.5/1.45	230V/400V
MUA 20DD	1.13	59	54	5.66	1/2"	0.92	8.5	230V
MUA 20PD	1.13	59	54	5.66	1/2"	0.75	4.5/1.9	230V/400V
MUA 25	1.41	73	68	7.08	1/2"	1.1	6.7/2.59	230V/400V
MUA 35	1.96	103	95	9.91	3/4"	1.1	6.7/2.59	230V/400V
MUA 50	2.82	146	136	14.16	3/4"	2.2	12/4.8	230V/400V
MUA 75	4.00	220	204	21.24	1	3	6.48	400V
MUA 100	5.18	293	272	28.32	1 1/4"	3	6.48	400V
MUA 125	6.59	366	341	35.40	1 1/4"	5.5	11.1	400V
MUA 150	8.00	439	409	42.48	1 1/2"	5.5	11.1	400V
MUA 175	9.42	513	477	49.55	1 1/2"	7.5	14.8	400V
MUA 200	10.36	586	545	56.63	2	7.5	14.8	400V
MUA 225	11.77	659	613	63.71	2	11	21.5	400V
MUA 250	13.18	732	681	70.79	2	11	21.5	400V
MUA 275	14.60	806	749	77.87	2	7.5	15.4	400V
MUA 300	16.01	879	817	84.95	2	11	23	400V

Note

The table above details typical units based upon space heating applications on a temperature rise of 45°C. Alternative airflows, heat outputs and static pressures may be specified to match precise application requirements up to a maximum temperature rise of 55°C. External pressure available up to 525 pascals with increased motor sizes. Gas rates and gas connections listed are for natural gas. LPG options are available on request. For higher pressures consult Niche.

Dimensions and weights

TTW

Model	Case dimension				Duct connections		Weight approx (kg)
	Length (mm)	Width (mm)	Height (mm)	Base height (mm)	Width (mm)	Height (mm)	
TTW 30	1350	545	585	n/a	485	525	140
TTW 30PD	1800	860	700	50	800	640	300
TTW 60	1800	860	700	50	800	640	300
TTW 60PD	1800	860	700	50	800	640	300
TTW 100	2000	1100	900	50	1040	840	350
TTW 150	2000	1100	900	50	1040	840	350

Note

The table above details units in horizontal configuration, with horizontal inlet and discharge.

Duct connections will vary with discharge orientation options.

The base height must be added to case height to obtain overall height for the horizontal configuration.

Weights are approximate and can vary depending on fan and motor assembly selected.

Insulation will add weight to units.

LSD

Model	Case dimension				Duct connections		Weight approx (kg)
	Length (mm)	Width (mm)	Height (mm)	Base height (mm)	Width (mm)	Height (mm)	
LSD 100	900	700	1700	500	various	various	350
LSD 150	900	700	1700	500	various	various	350
LSD 200	1050	800	1700	500	various	various	400
LSD 200 3PH	1050	800	1700	500	various	various	400
LSD 350	1050	800	1700	500	various	various	400
LSD 350 3PH	1050	800	1700	500	various	various	400

Note

The table above details units in vertical configuration, with bottom inlet and top discharge.

Duct connections will vary with discharge orientation options.

The base height must be added to case height to obtain overall height for the vertical configuration.

Consult Niche for orientation, discharge options and X plate heat exchanger options.

Weights are approximate and can vary depending on fan and motor assembly selected.

MUA

Model	Case dimension				Duct connections		Weight approx (kg)
	Length (mm)	Width (mm)	Height (mm)	Base height (mm)	Width (mm)	Height (mm)	
MUA 10DD	1800	860	700	50	800	640	300
MUA 10PD	1800	860	700	50	800	640	300
MUA 20DD	1800	860	700	50	800	640	300
MUA 20PD	1800	860	700	50	800	640	300
MUA 25	1800	860	700	50	800	640	300
MUA 35	2000	1100	900	50	1040	840	350
MUA 50	2000	1100	900	50	1040	840	350
MUA 75	2200	1350	1150	75	1250	1050	450
MUA 100	2400	1805	1350	75	1705	1250	550
MUA 125	2400	1805	1350	75	1705	1250	550
MUA 150	2550	1900	1745	100	1800	1645	700
MUA 175	2550	1900	1745	100	1800	1645	700
MUA 200	2550	2100	1950	100	2000	1850	900
MUA 225	2550	2100	1950	100	2000	1850	900
MUA 250	2750	2400	1950	100	2300	1850	1200
MUA 275	3200	2640	2210	100	2540	2110	1420
MUA 300	3200	2640	2210	100	2540	2110	1420

Note

The table above details units in horizontal configuration, with horizontal inlet and discharge.

Duct connections will vary with discharge orientation options.

The base height must be added to case height to obtain overall height for the horizontal configuration.

MUA 150 and above consists of burner module and fan assembly module.

Weights are approximate and can vary depending on fan and motor assembly selected.

Insulation will add weight to units.



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