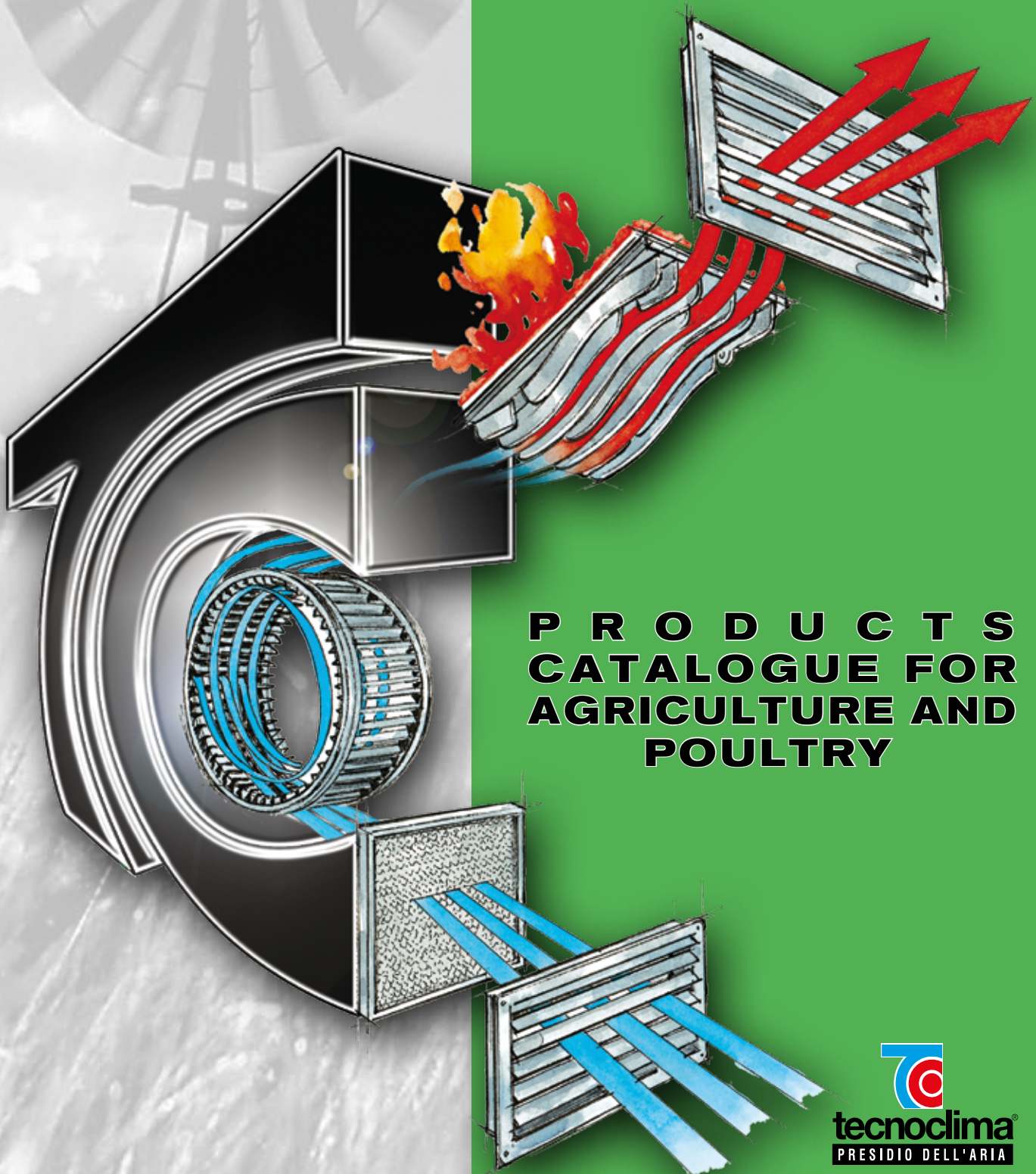




DRY SYSTEM TECNOCLIMA



**P R O D U C T S
C A T A L O G U E F O R
A G R I C U L T U R E A N D
P O U L T R Y**

SERIES

AGRI-P

SUSPENDED AGRICULTURAL HEATERS



CERTIFIED IN ACCORDANCE WITH:

GAS DIRECTIVE 90/396/CEE

LOW TENSION DIRECTIVE 73/23/CEE

MACHINE DIRECTIVE 89/392/CEE

**ELECTROMAGNETIC COMPATIBILITY
DIRECTIVE 89/336/CEE**

Warm air heaters either for direct or tubing air distribution, working with light oil or gas burner. Stainless steel combustion chamber and heat exchanger completely in stainless steel AISI 430, either with high performance axial or centrifugal fans, electronic control and safety system Cabinet heater robustly constructed formed by galvanized pre-coated steel panels fitted with radiant sheet insulation Tecnoclima's 5 models have been designed for greenhouses heating: agrarian structure or garden, greenhouses but also zoo-technical breeding. A huge range of accessories is available for Tecnoclima AGRI SERIES.

Available in both gas and oil burner version.

The special stainless steel exchanger: heart of the machine.



Patented highest efficiency heat exchanger, with air flow completely in counter current to the exhaust flow, made exclusively in 18% chromium stainless steel, which guarantees total protection against corrosion both from humidity and combustion by-products.

The heat exchanger is made up of:

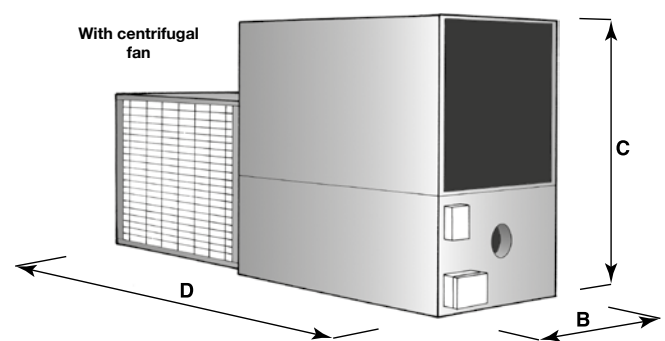
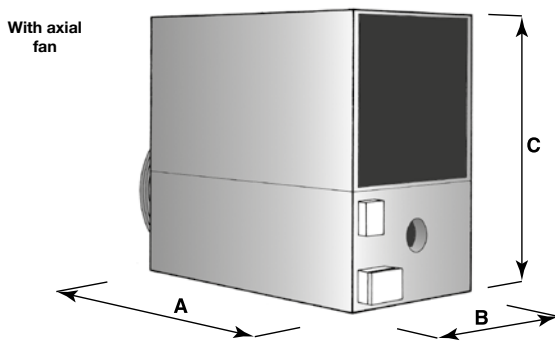
- Combustion chamber, cylindrical flame inversion model, perfectly cooled at every point, with outlet to oil-fired burner and visual control of flame
- Exchange elements, inclined upwards, with flat tubular section exhaust flues and with swirl impressions for maximum thermal efficiency.
- Exhaust manifold with wide inspection door for easy cleaning of the exchanger and chimney inlet.

Specific advantages of the suspended version.

- **obstruction on ground is avoided**, consequently increasing the area destined for cultivation
- **installation can be permanent**, without having to remove the heater when season ends
- **placing close to the front side of the greenhouse** allows the inlet of fresh air and the frontal outlet of the chimney, thus avoiding perforating the roof
- **irrigation water** does not collide directly with heater
- **particularly warm air heaters AGRI-P with axial fan can be installed either vertically or horizontally**, thus adequate for the shape of the greenhouse.



OVERALL DIMENSIONS



Model	Overall dimensions mm				Chimney Ø mm	* Weight Kg	
	A	B	C	D		AGRI-P	AGRI-P/R
AGRI-P AGRI-P/R 60	950	500	860	1.620	130	92	115
AGRI-P AGRI-P/R 85	950	550	925	1.715	130	107	132
AGRI-P AGRI-P/R 120	1.210	650	1.080	2.045	180	160	191
AGRI-P AGRI-P/R 175	1.470	750	1.230	2.370	180	220	275
AGRI-P 240	1.900	950	1.500	-	200	380	-

*Heaters equipped with burner and circular duct panel.

TECHNICAL SPECIFICATIONS

AGRI-P SERIES

Model		Unit	AGRI-P 60	AGRI-P 85	AGRI-P 120	AGRI-P 175	AGRI-P 240
Heating capacity input		kW	60,0	85,0	115,9	175,0	240,0
		kcal/h	51.600	73.100	99.700	150.500	206.400
Heating capacity OUTPUT		kW	52,2	74,0	100,8	152,3	208,8
		kcal/h	44.900	63.590	86.680	130.930	179.570
Air flow rate		Nm ³ /h	4.100	5.700	8.300	12.500	17.000
Electrical motor	axial fan	kW	0,40	0,53	1,00	1,30	2,20
	centrifugal fan	kW	0,75	0,75	1,50	2,00	-
Electrical supply	single-phase	V - 50Hz	230 ~	230 ~	230 ~	-	-
	three-phases	V - 50Hz	-	400 3N ~	400 3N ~	400 3N ~	400 3N ~

Thermic performance certified

SERIES

AGRI-C

**MOBILE
AGRICULTURAL HEATERS**



CERTIFIED IN ACCORDANCE WITH:
GAS DIRECTIVE 90/396/CEE
LOW TENSION DIRECTIVE 73/23/CEE
MACHINE DIRECTIVE 89/392/CEE
**ELECTROMAGNETIC COMPATIBILITY
DIRECTIVE 89/336/CEE**

Warm air heaters either for direct or tubing air distribution, working with light oil or gas burner stainless steel combustion chamber and heat exchanger completely in stainless steel AISI 430, either with high performance axial or centrifugal fans, electronic control and safety system. Cabinet heater robustly constructed with galvanized pre-coated steel panels fitted with radiant sheet insulation.

Tecnoclima's 5 models have been designed for greenhouses heating: agrarian structure or garden, greenhouses but also zoo technical breeding. A huge range of accessories is available for Tecnoclima AGRI SERIES.

Available in both gas and oil burner version.

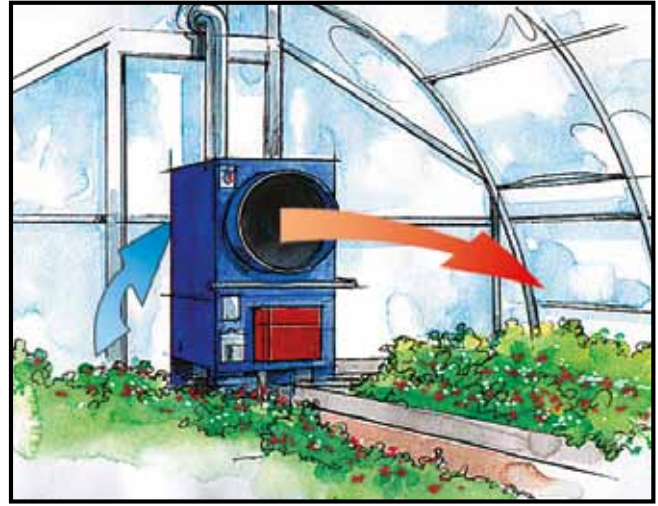
The special stainless steel exchanger: heart of the machine.



Patented highest efficiency heat exchanger, with air flow completely in counter current to the exhaust flow, made exclusively in 18% chromium stainless steel, which guarantees total protection against corrosion both from humidity and combustion by-products.

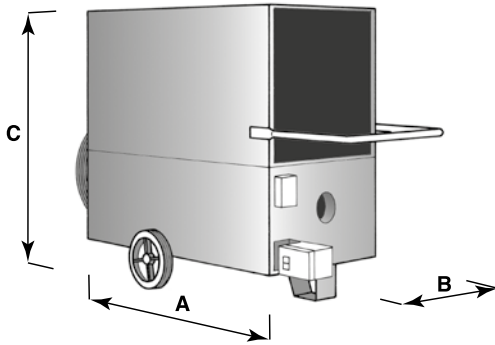
The heat exchanger is made up of:

- Combustion chamber, cylindrical flame inversion model, perfectly cooled at every point, with outlet to oil-fired burner and visual control of flame
- Exchange elements, inclined upwards, with flat tubular section exhaust flues and with swirl impressions for maximum thermal efficiency.
- Exhaust manifold with wide inspection door for easy cleaning of the exchanger and chimney inlet.

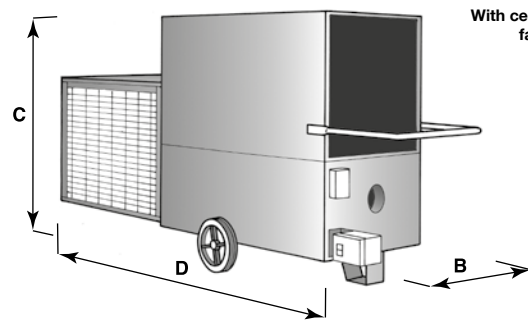


OVERALL DIMENSIONS

With axial fan



With centrifugal fan



Model	Overall dimensions mm				Chimney Ø mm	* Weight Kg	
	A	B	C	D		AGRI-C	AGRI-C/R
AGRI-C AGRI-C/R 60	950	500	1000	1.535	130	96	119
AGRI-C AGRI-C/R 85	950	550	1065	1.595	130	114	139
AGRI-C AGRI-C/R 120	1.214	650	1.220	1.990	180	168	199
AGRI-C AGRI-C/R 175	1.470	750	1.400	2.365	180	230	285
AGRI-C 240	1.900	950	1.700	-	200	400	-

* Heaters equipped with burner and four ways plenum with fins

TECHNICAL SPECIFICATIONS

AGRI-C SERIES

Model	Unit	AGRI-C 60	AGRI-C 85	AGRI-C 120	AGRI-C 175	AGRI-C 240	
Heating capacity input	kW	60,0	85,0	115,9	175,0	240,0	
	kcal/h	51.600	73.100	99.700	150.500	206.400	
Heating capacity OUTPUT	kW	52,2	73,9	100,8	152,3	208,8	
	kcal/h	44.890	63.590	86.680	130.930	179.570	
Air flow rate	Nm ³ /h	4.100	5.700	8.300	12.500	17.000	
Electrical motor	axial fan	kW	0,40	0,53	1,00	1,30	2,20
	centrifugal fan	kW	0,75	0,75	1,50	2,00	-
Electrical supply	single-phase	V - 50Hz	230 ~	230 ~	230 ~	-	-
	three-phases	V - 50Hz	-	400 3N ~	400 3N ~	400 3N ~	400 3N ~

Thermic performance certified

SERIES

TC-D-F

GROUND HEATING WARM AIR HEATERS



CERTIFIED IN ACCORDANCE WITH:

GAS DIRECTIVE 90/396/CEE

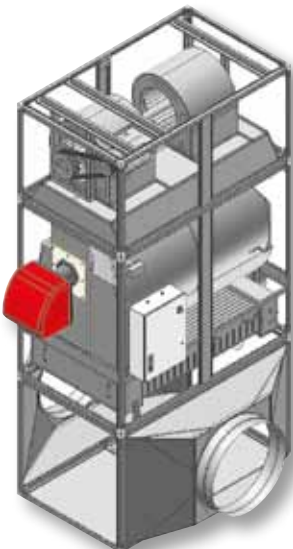
LOW TENSION DIRECTIVE 73/23/CEE

MACHINE DIRECTIVE 89/392/CEE

**ELECTROMAGNETIC COMPATIBILITY
DIRECTIVE 89/336/CEE**

High efficiency warm air heater TC Down Flow series vertical version with gas or diesel burner provides warm air to be supplied mainly to greenhouse structures, but also in all cases where diffusion through an air-to-ground distributing device is required. The equipment consist mainly of an isolated cabinet receiving the air flow produced by the ventilator group. The cabinet contains a high-efficiency INOX stainless steel heat exchanger which transfers the thermal power by means of direct exchange between combustion products and the air flow to be treated. Such air is heated when passing onto the exchanger's hot surface and it is then distributed to the premises. The warm air heater, if connected to main sleeves with secondary branch sleeves, allows the heating only the plant's sensitive parts such as roots and leaves, thereby creating a kind of "drip heating" through an air-to-ground distributing device, granting a global energy saving. The centrifugal fan's characteristics make the equipment suitable to be installed where air is to be distributed through pipings or – more generally – where high static pressure is required. The warm air heater is complete with electrical device for heater functions control and a particular flange (both outlet- and inletwise) allows equipment connection to the pipings. **On request all the models are available for functioning with double stage or modulating burners for the total control of the greenhouse's temperature. This allows to reach the maximum global plant efficiency.**

CONSTRUCTION CHARACTERISTICS



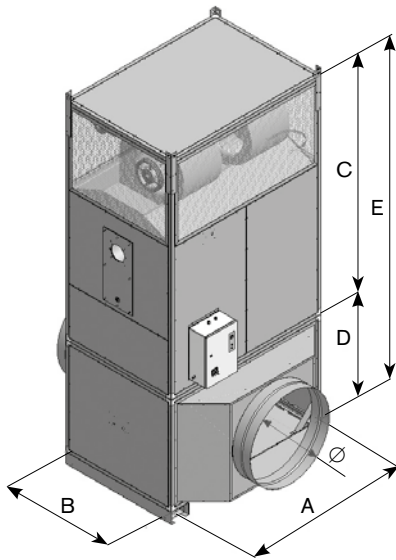
- **Cabinet** - consists of a steel sheet supporting structure, with detachable closing panels internally lined with radiation-proof heat insulation and finely epoxy-painted.
- **Fan group** - includes one or more centrifugal double intake fans, statically and dynamically balanced, driven through a variable gear transmission by an electric motor complete with belt tightner.
- **Electric equipment** - for automatic or manual fan control and for the emergency stopping of the burner in case of air overheating. Inclusive of electric switchboard and FAN-LIMIT double thermostat.

Heat exchanger: heart of the equipment.

- **Combustion chamber** - made of AISI 430 18% chromium INOX stainless steel, flame-inversion model with low thermal load, cylindrical or ellipsoidal, perfectly cooled in all of its points.
- **Exchange elements** - made of AISI 430 18% chromium INOX stainless steel plate exhaust flues, flat tubular sections, with swirl impressions for maximum thermal efficiency.
- **Exhaust manifold** - front and rear, made of AISI 430 18% chromium INOX stainless steel, with wide inspection doors for rational and easy cleaning.



OVERALL DIMENSIONS



Model	Overall dimensions mm					Chimney Ø mm	Weight Kg
	A	B	C	D	E		
TC 160 DF	1.300	900	2.120	1.000	3.120	200	515
TC 190 DF	1.300	900	2.120	1.000	3.120	200	535
TC 225 DF	1.500	1.000	2.120	1.000	3.120	250	620
TC 255 DF	1.500	1.000	2.120	1.000	3.120	250	625
TC 320 DF	1.700	1.200	2.350	1.320	3.670	250	800
TC 390 DF	1.700	1.200	2.350	1.320	3.670	250	835

TECHNICAL SPECIFICATIONS

TC-DF SERIES

Model	Unit	TC 160 DF	TC 190 DF	TC 225 DF	TC 255 DF	TC 320 DF	TC 390 DF	TC 460 DF	TC 590 DF	TC 645 DF	TC 770 DF
Heating capacity input	kW	161,2	190,0	225,8	258,8	322,6	391,0	460,6	590,0	645,3	769,0
	kcal/h	138.632	163.400	194.188	222.568	277.436	336.260	396.166	507.400	554.958	661.340
Heating capacity output	kW	145,3	168,2	203,5	230,3	290,7	347,6	415,0	523,2	581,4	682,9
	kcal/h	124.958	144.652	175.010	198.058	250.002	298.936	356.900	449.952	500.004	587.294
Air flow rate	Nm ³ /h	10.600	12.500	14.500	16.000	21.000	23.500	31.000	36.000	42.000	50.000
Usefull static pressure	Pa	150	150	150	150	150	150	150	150	150	150
Electric motor	Kw	3,00	4,00	4,00	2 x 2,20	5,50	7,50	9,20	11,00	11,00	15,00
Circular outlet diameter	mm	600	600	600	600	900	900	900	900	1.200	1.200
								On request			

Thermic performance certified

SERIES

TCO-DF

GROUND HEATING WARM AIR HEATERS



CERTIFIED IN ACCORDANCE WITH:

GAS DIRECTIVE 90/396/CEE

LOW TENSION DIRECTIVE 73/23/CEE

MACHINE DIRECTIVE 89/392/CEE

**ELECTROMAGNETIC COMPATIBILITY
DIRECTIVE 89/336/CEE**

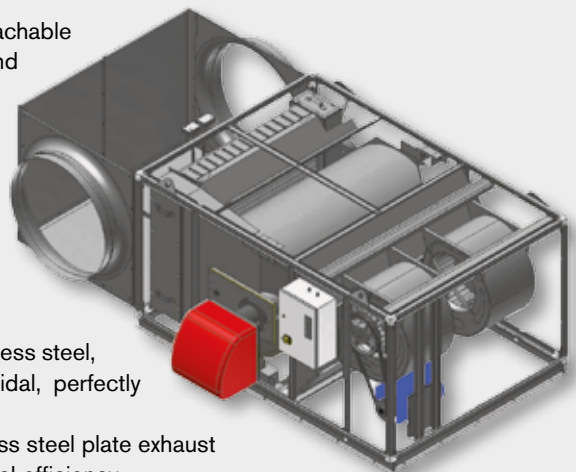
High efficiency warm air heater TCO Down Flow series horizontal version with gas or diesel burner provides warm air to be supplied mainly to greenhouse structures, but also in all cases where diffusion through an air-to-ground distributing device is required. The equipment consist mainly of an isolated cabinet receiving the air flow produced by the ventilator group. The cabinet contains a high-efficiency INOX stainless steel heat exchanger which transfers the thermal power by means of direct exchange between combustion products and the air flow to be treated. Such air is heated when passing onto the exchanger's hot surface and it is then distributed to the premises. The warm air heater, if connected to main sleeves with secondary branch sleeves, allows the heating only the plant's sensitive parts such as roots and leaves, thereby creating a kind of "drip heating" through an air-to-ground distributing device, granting a global energy saving. The centrifugal fan's characteristics make the equipment suitable to be installed where air is to be distributed through pipings or – more generally – where high static pressure is required. The warm air heater is complete with electrical device for heater functions control and a particular flange (both outlet- and inletwise) allows equipment connection to the pipings. **On request all the models are available for functioning with double stage or modulating burners for the total control of the greenhouse's temperature. This allows to reach the maximum global plant efficiency.**

CONSTRUCTION CHARACTERISTICS

- **Cabinet** - consists of a steel sheet supporting structure, with detachable closing panels internally lined with radiation-proof heat insulation and finely epoxy-painted.
- **Fan group** - includes one or more centrifugal double intake fans, statically and dynamically balanced, driven through a variable gear transmission by an electric motor complete with belt tightner.
- **Electric equipment** - for automatic or manual fan control and for the emergency stopping of the burner in case of air overheating. Inclusive of electric switchboard and FAN-LIMIT double thermostat.

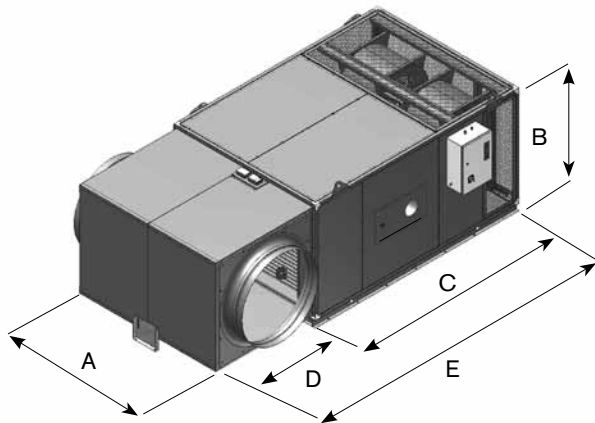
Heat exchanger: heart of the equipment.

- **Combustion chamber** - made of AISI 430 18% chromium INOX stainless steel, flame-inversion model with low thermal load, cylindrical or ellipsoidal, perfectly cooled in all of its points.
- **Exchange elements** - made of AISI 430 18% chromium INOX stainless steel plate exhaust flues, flat tubular sections, with swirl impressions for maximum thermal efficiency.
- **Exhaust manifold** - front and rear, made of AISI 430 18% chromium INOX stainless steel, with wide inspection doors for rational and easy cleaning.





OVERALL DIMENSIONS



Model	Overall dimensions mm					Chimney Ø mm	Weight Kg
	A	B	C	D	E		
TC 160 DF	1.300	900	2.120	700	2.820	200	492
TC 190 DF	1.300	900	2.120	700	2.820	200	517
TC 225 DF	1.500	1.000	2.120	700	2.820	250	620
TC 255 DF	1.500	1.000	2.120	700	2.820	250	625
TC 320 DF	1.700	1.200	2.350	1.100	3.450	250	834
TC 390 DF	1.700	1.200	2.350	1.100	3.450	250	874
TC 460 DF	2.090	1.270	2.870	1.100	3.970	300	1.222
TC 590 DF	2.090	1.270	2.870	1.100	3.970	300	1.312
TC 645 DF	2.500	1.500	3.120	1.400	4.520	350	1.687
TC 770 DF	2.500	1.500	3.120	1.400	4.520	350	1.812

TECHNICAL SPECIFICATIONS

TCO-DF SERIES

Modello	Unit	TCO 160 DF	TCO 190 DF	TCO 225 DF	TCO 255 DF	TCO 320 DF	TCO 390 DF	TCO 460 DF	TCO 590 DF	TCO 645 DF	TCO 770 DF
Heating capacity input	kW	161,2	190,0	225,8	258,8	322,6	391,0	460,6	590,0	645,3	769,0
	kcal/h	138.632	163.400	194.188	222.568	277.436	336.260	396.166	507.400	554.958	661.340
Heating capacity output	kW	145,3	168,2	203,5	230,3	290,7	347,6	415,0	523,2	581,4	682,9
	kcal/h	124.958	144.652	175.010	198.058	250.002	298.936	356.900	449.952	500.004	587.294
Air flow rate	Nm³/h	10.600	12.500	14.500	16.000	21.000	23.500	31.000	36.000	42.000	50.000
Usefull static pressure	Pa	150	150	150	150	150	150	150	150	150	150
Electric motor	Kw	3,00	4,00	4,00	2 x 2,20	5,50	7,50	9,20	11,00	11,00	15,00
Circular outlet diameter	mm	600	600	600	600	900	900	900	900	1.200	1.200

Thermic performance certified

SERIES

SUPERCIKKI 80

**RE-CIRCULATING
WARM AIR HEATER**

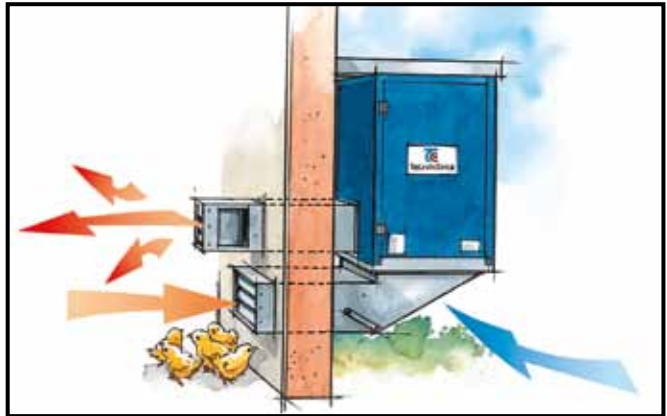
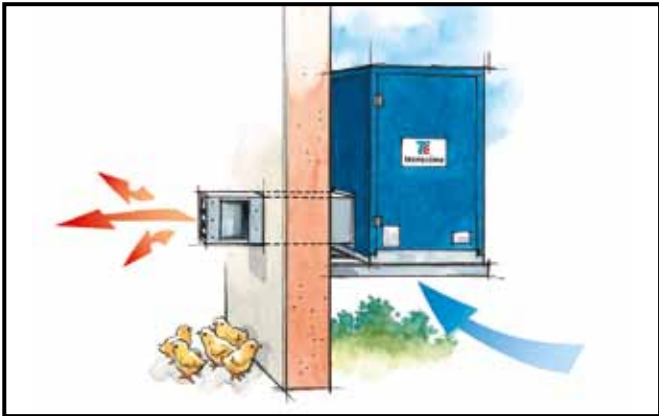
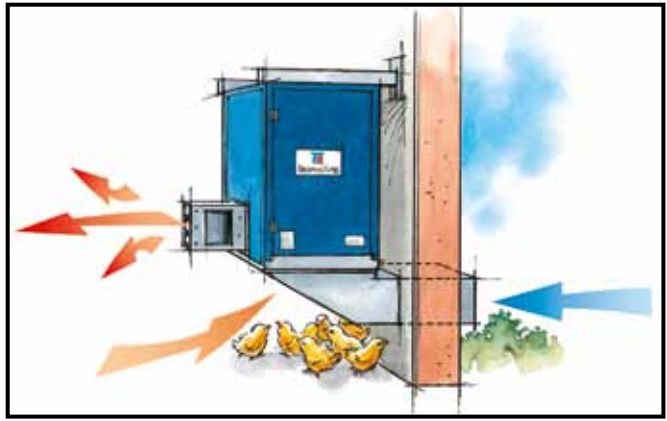
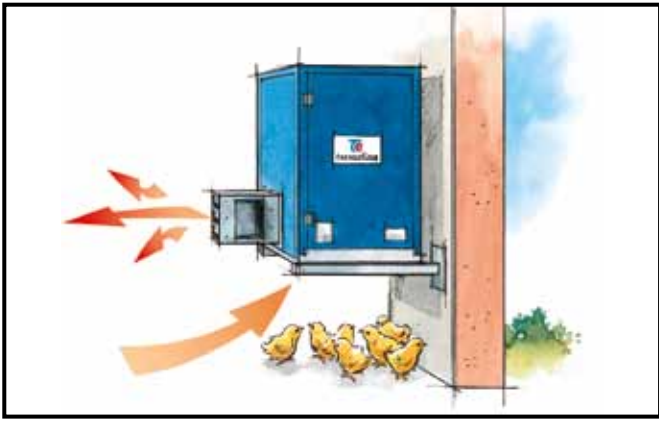


CERTIFIED IN ACCORDANCE WITH:
GAS DIRECTIVE 90/396/CEE
LOW TENSION DIRECTIVE 73/23/CEE
MACHINE DIRECTIVE 89/392/CEE
**ELECTROMAGNETIC COMPATIBILITY
DIRECTIVE 89/336/CEE**

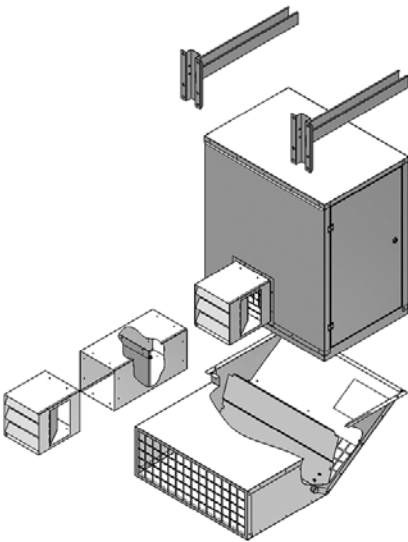
Direct fired air heaters with 100% thermal efficiency, special atmospheric gas burner anti-dust working either with methane, propane or butane gas, hot surface ignition and flame control by ionisation, combustion chamber aluminium steel plate preventing high temperature and oxidation, high pressure radial fan for the air diffusion, external casing made by pre-painted galvanized steel with IP44 protection degree which gives the heater an absolute weather-proof. The external cabinet can be quick disassembled without disconnecting wires, assuring very easy accessibility and simple maintenance operations. SUPERCIKKI has been designed for heating poultry, livestock buildings and intensive breeding. SUPERCIKKI is also ideal for heating greenhouses and sheltered cultures.

EXAMPLE OF INSTALLATIONS

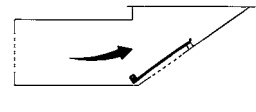
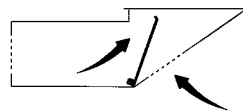
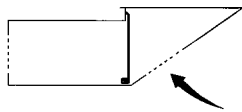




OVERALL DIMENSIONS



Overall dimensions mm			Weight Kg
Lenght	Width	Height	
705	495	800	63



Air recirculation plenum with damper, for the total or partial environment air inlet, even in case of outside installation of the unit. It permit fuel saving up to 30%!

TECHNICAL SPECIFICATIONS

SUPERCIKKI 80 SERIES

Model	Unit	SUPERCIKKI 80
Heating capacity ouput	kW	80,0
	kcal/h	68.800
Air flow rate (+15 °C)	m ³ /h	2.000
Temperature deviation	°K	135
Air throw	m	30
Monophase electric supply	L+N+E	230V - 50 Hz

the reasons of its **CONVENIENCE**

Unlike the traditional air heating via an intermediate fluid (WET) using water as vector fluid, the innovative direct exchange air heating technology (DRY), uses air as the vector fluid, producing a concrete reduction in operating costs, as well as tangibly lowering the system costs.

The most important feature of this system is that the produced energy, is directly and immediately transferred to the room to be treated, thereby substantially improving and partially avoiding the inefficient transformation stages.

Therefore, with the same power input - also thanks to the absence of thermal inertia - the innovative direct exchange technology (DRY) makes it possible to cut the time required to reach steady conditions inside the greenhouse, thereby guaranteeing a better global efficiency of the system and consequently a remarkable energy saving, as well as a reduction in the amount of noxious emissions.

As a result, the DRY technology guarantees far better results, in terms of global efficiency in the air heating.



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Since the company is constantly engaged in making improvements to its production, the appearance and dimensions, technical data and equipment and accessories may be subject to alterations.