# FORCED AIR SPACE HEATERS NORTH AMERICA RANGE



**CATALOG 2024** 







### **SUMMARY**

ABOUT US	4
CONSTRUCTION AND EVENTS	9
FIRE	13
GE - GE HC	17
GE/N	21
EC - EC HC	23
PHOEN HC	27
PHOEN/N AVAILABILITY TO BE AGREED	31
JUMBO	35
TITAN	43
SCUDO AVAILABILITY TO BE AGREED	51
EK AVAILABILITY TO BE AGREED	57
AGRICULTURE AND BREEDING	61
GA/N	63
EQUIPMENT	67

We are a world wide leader in the professional portable heater market in the construction, equipment rental, agricultural and military sectors. All our products are completely manufactured in our Headquarters in Italy, Cherasco (CN). Our facility covers more then two hundred thousand square feet with corporation offices, R&D, testing lab, two warehouses and state of the art production plant. For the North American market we manufacture our heaters cus-

tomized on our customer's specifications mainly under private label. We offer a comprehensive line of heaters ranging from 100K to 1M Btu/h in size in both oil and gas version. For more then 15 years we have been developing our products specifically for the North American market need. All our heaters are CSA approved for both USA and Canada. To insure high quality standard all the components and incoming material are quality controlled

and every manufacturing step is in compliance with the UNI EN ISO 9001:2008 quality control procedures. These are a few of the reasons why BIEMMEDUE is today one of the most important manufactures of portable heaters in the world.









### **ABOUT US**











2019 will be a very important year for Biemmedue . In October we will celebrate 40th anniversary of the company. Founded in 1979, Biemmedue has been meeting the needs of its customers for 40 years, designing and building machines that have evolved over the years and which continues to do so today to keep pace with the times but not only: "we like to think to be able to anticipate the needs of our customers".

Via our experience over all these years with models, studies, trials, mistakes and successes that today we are designing the path of the future, to continue with the same spirit that has pushed us here.



Foundation of BIEMMEDUE S.p.A. (Bonfante Elio, Marengo Franco, Marengo Luciano), a company distributing the ARCOM SPA range (Hot air generators and Hydro cleaners) in Piedmont, Liguria and Valle D'Aosta.



Partnership with Mr. Charles Wittmer and internationalization of sales of BIEMMEDUE products worldwide.



The second Oklima line join the Arcotherm hot air generator line.



1982

1984

1992

1994

2001



BIEMMEDUE S.p.A. takes over the ARCOM SPA legacy and starts the production of Hot air generators and Hydro cleaners for the local and Italian market.



The production of the PROFESSIONAL DEHUMIDIFIER is added to hot air generator and pressure washer.



Achievement of the certification UNI EN ISO 9001, now UNI EN ISO 9001: 2015.





Acquisition of the 100% of shares of Biemmedue S.p.A. by the brothers Mariano and Pier Antonio Costamagna.



Winter Olympic Games Turin 2006 Biemmedue is the exclusive supplier to General Electric Co. (main sponsor of the event) of space heaters and related accessories.



Acquisition of the Solo S.r.l. in Codogno (LO), a company producing commercial vacuum cleaners,



2003

2005



2007

2013

industrial vacuum cleaners and single disc brush units.

2018



Acquisition of Batclean S.r.l. company in of Summaga di Portogruaro (VE), a company producing motorized sweepers.



Obtaining of the CSA (Canadian Standard Association) approval for the export of hot air generators in the North American market (United States and Canada).



Moving of the whole cleaning division to a dedicated facility in Cherasco: modern, bigger and in front of the company's head quarters.





# CONSTRUCTION AND EVENTS



#### **CONSTRUCTION AND EVENTS**

In this sector Biemmedue offer portables heaters for temporary and emergency heating, outdoors or indoors affordable solutions and, most importantly, without the need of installation. These heaters are easy to handle and move, sturdy, reliable, and flexible, making them perfect for the construction sector (job-sites, building projects, etc.) and in temporary structures or events (shelters, tents, etc.).

These heaters are generally both direct or indirect fired models (diesel or gas) with wheels and/or handles, and and exhaustive set of accessories for a wide variety of applications.

For Construction and Events, Biemmedue suggests the following models:



**FIRE:** infrared diesel heater (direct-fired), with embedded burner with dedicated fan for combustion air. The FIRE models are characterized by the absence of moving air: the flame generated by the burner heats the front plate that reaches high temperature. This helps to burn and stop all combustion residues, guaranteeing a clean combustion and 100% efficiency. They are used for heating very large spaces (warehouses, industrial sheds, yards, open spaces, etc.) or where suspended dust particles must be avoided.



**GE and GE HC:** diesel direct-fired portable heaters with embedded burner with combustion air obtained from the main air fan. The GE heaters generate hot air and the combustion residues produced by the burner are expelled with the hot air and contribute to its heating. They transform all of nominal input power (from the fuel) into heat, 100% efficiency. They are the most economical models available in terms for upfront cost and consumption. On the other hand, they can be used only in well-ventilated rooms and where indirect-fired heaters are not required by law.



**GE/N:** gas (propane or natural gas) direct-fired portable heaters with embedded burner with combustion air obtained from the main ventilation fan. The GE/N heaters generate hot air and the combustion residues produced by the burner are expelled with the hot air and contribute to its heating. They transform all of nominal input power (from the fuel) into heat, 100% efficiency. They are the most economical models available in terms of upfront cost and consumption. On the other hand, they can be used only in well-ventilated rooms and where indirect-fired heaters are not required by law.



**EC and EC HC:** diesel indirect-fired portable heaters with embedded burner with combustion air obtained from the main ventilation fan. The EC heaters feature a heat exchanger that contains the flame and expels fumes throughout a chimney connected to the outside. Being indirect-fired, they can be operated indoor and can also be ducted. On the other hand, they have higher upfront costs and about 85% US efficiency due to the heat lost through the chimney.



**PHOEN HC:** heavy-duty diesel indirect fired portable heaters with embedded burner with dedicated fan for combustion air. The PHOEN HC heaters feature a heat exchanger that contains the flame and expels fumes throughout a chimney connected to the outside. Being indirect-fired, they can be operated indoor and can also be ducted. On the other hand, they have higher upfront costs and about 85% US efficiency due to the heat lost through the chimney.



**PHOEN/N:** heavy-duty gas (propane or natural gas) indirect-fired portable heaters with embedded burner with dedicated fan for combustion air. The PHOEN/N heaters feature a heat exchanger that contains the flame and expels fumes throughout a chimney connected to the outside. Being indirect fired, they can be operated indoor and can also be ducted. On the other hand, they have higher upfront costs and about 85% US efficiency due to the heat lost through the chimney.



**JUMBO:** direct fired heater with considerable size, ideal for large buildings. It features external burner that can be chosen between gas (GPL or natural gas) and diesel. Equipped with axial fun, it is a good compromise for efficiency (90%), low noise and static pressure, characteristic particularly usefully where ducts are needed.



**TITAN:** direct fired heater with considerable size, ideal for large buildings. It features external burner that can be chosen between gas (GPL or natural gas) and diesel. Equipped with centrifugal fan that guarantees low noise operations as well as high static pressure (300 Pa), that makes it suitable in installation with long ducts. The combustion chamber features 5-loop smoke technology to ensure 96% thermal efficiency.

#### AVAILABILITY TO BE AGREED



**SCUDO:** derivation from the TITAN model, strong and sturdy space heaters, particularly suitable for the heating and drying of large spaces, technical structures such as construction sites, work places, and also residential areas.



**EK:** BM2 series fan-forced electric heaters provides industry professionals with climate control needed for indoor heating applications. No refueling or monitoring units while in use and can also be ducted Operates with no open flame, no danger of carbon monoxide poisoning and no noxious gas odors. EK heaters transform all of nominal input power (from the electricity) into heat, 100% efficiency. They are made of steel with a powder color finish for long lasting Each unit is equipped with overheat protection, stays cool even when the heater is running and an internal adjustable thermostat provide optimal performance. UL Approved. Available in varying dimensions, BTU, CFM and 120, 240 voltage.







# FIRE

INFRARED PORTABLE HEATERS

#### FIRF - INFRARED PORTABLE HEATERS

- CSA approved for construction US-C
- Direct heat flow by radiation with no air movement
- Low noise level
- Built-in oil burner with gear pump
- Electronic flame control unit
- No supervision required: can be controlled by thermostat, humidistat or timer
- 1ft power cord
- AISI 430 stainless steel combustion chamber
- Metallic forced air insulation pocket between the combustion chamber and the external protection cone
- Automatic post-ventilation cycle to cool down the combustion chamber
- Fuel lines in hydrocarbon-resistant rubber wiremesh protected
- Shockproof polythene fuel tank
- Screw-on fuel cap

- Fuel tank drain plug
- Possibility of directing the cone up with locking mechanism
- Single point lift bail
- Oil Filter included (optional pre-heated oil filter)
- Overheating thermostat (safety device: turn off unit and requires manual reset)
- 12" (155) 10" (115) reinforced plastic wheels
- Floor protection sliding shield
- Stainless steel frontal bumber

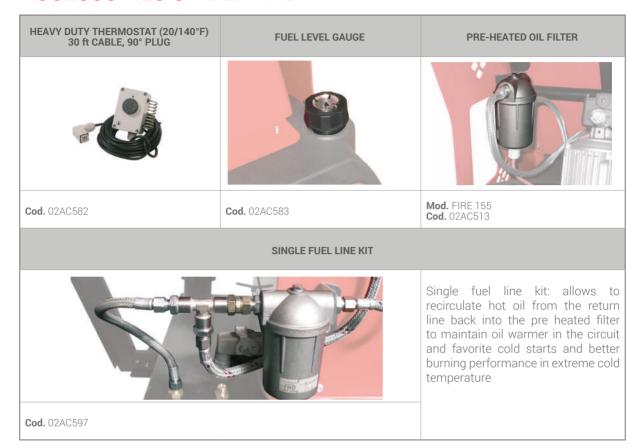








#### **ACCESSORIES ON DEMAND**









			WEIGHTS AND DIMENSIONS MACHINE				PACKAGING				
Α	В		MOD	А	В	С	Net	Х	Υ	Н	Gross
7				[in]	[in]	[in]	[lb]	[in]	[in]	[in]	[lb]
45	c	H	FIRE 115	35.2	21	31.9	92.6	29.1	22.4	27.7	104
01		YX	FIRE 155	54.8	31.4	41.4	161	40.4	27.8	41.0	200

		FIRE 115	FIRE 155
code number		06VA203	06VA201
max power	BTU/h	115,159	154,237
fuel consumption	US gal/h	0.849	1.11
power supply	V, ph, Hz	120, 1, 60	120, 1, 60
fan motor power	Hp (rpm)	1/7 (3,300)	1/4 (3,300)
current rating	amps	2.15	4.1
tank capacity	US gal	11.35	17.2
run time 2nd stg - 1st stg	hour	13.4	16
unit/pallet	qty.	6	1
unit/container 20'	qty.	84	32
unit/container 40' and 40' HC	qty.	180	68

#### FIRE - INFRARED PORTABLE HEATERS



#### **BM2 INNOVATION**

The innovation of the FIRE infrared heater, lies in the elimination of the refractory material cone, that surround the conical combustion chamber, typical of other competitor's units. Our heater features a metallic forced air insulation pocket between the combustion chamber and the external protection cone. The cooling air is blown through the pocket by the burner fan. This innovative technology overcame the well know problem of the fragility and brittleness of the ceramic cone. Moreover, there is a relevant improvement in the effectiveness of cooling of the cone.

#### Lower protection sliding shield to avoid the floor overheating





### Possibility of directing the cone up and down with locking mechanism











### GE-GEHC

DIRECT-FIRED PORTABLE HEATERS

#### GE - GE HC DIRECT-FIRED SPACE HEATERS

- CSA approved for construction US-C
- Built-in oil burner with gear pump
- Electronic flame control unit
- Combustion air pressure switch (safety device: turns off unit and requires manual reset)
- No supervision required: can be controlled by thermostat, humidistat or timer
- 1ft power cord
- AISI 430 stainless steel combustion chamber
- Automatic post ventilation cycle to cool down the combustion chamber

- Fuel lines in hydrocarbon-resistant rubber wiremesh protected
- Overheat thermostat
- Two size steel fuel tank available with upgraded tank, HC version (High Capacity tank)
- Bayonet-type fuel tank cap
- Fuel tank drain plug
- Oil filter; pre-heated oil filter (GE 400 GE 400 HC GE 600)
- 10" pneumatic tire



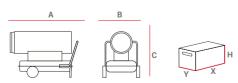






#### **ACCESSORIES ON DEMAND**

HEAVY DUTY THERMOSTAT (20/140°F) 30 ft CABLE, 90° PLUG	FUEL LEVEL GAUGE	LIFTING BRACKETS (4 PIECES)
<b>Cod.</b> 02AC582	Mod. GE 360 - GE 400 Cod. 02AC508 Mod. GE 400 HC - GE 600 Cod. 02AC510	<b>Cod.</b> 02AC511
PRE-HEATED OIL FILTER	EXTERNAL FUEL TANK CONNECTION KIT	EXTERNAL FUEL TANK CONNECTION KIT
Cod. 02AC513	Mod. Single pipe with de-aerator Cod. 02AC632	Mod. Double pipe Cod. 02AC512
SINGLE FU	EL LINE KIT	
	Single fuel line kit: allows to recirculate hot oil from the return line back into the pre-heated filter to maintain oil warmer in the filter and favorite cold starts and better burning performance in extreme cold temperature	
<b>Cod.</b> 02AC597		







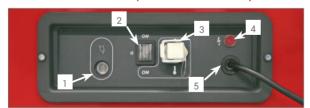
WEIGHTS AND DIMENSIONS MACHINE					PACKAGING			
MOD	А	В	С	Net	Χ	Υ	Н	Gross
	[in]	[in]	[in]	[lb]	[in]	[in]	[in]	[lb]
GE 360	56.4	22.5	35.6	142	51.6	20.1	38	186
GE 360 HC	56.4	26.4	35.6	153	55.1	21.9	38	197
GE 400	55.6	28.8	42.5	190	66.5	24.4	41.4	245
GE 400 HC	55.6	28.8	44	212	66.5	24.4	44.1	267
GE 600	68.5	28.8	44	243	66.5	24.4	44.1	298

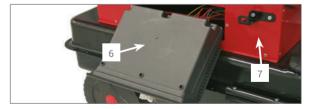
#### GE - GE HC DIRECT-FIRED SPACE HEATERS

		GE 360	GE 400	GE 600
code number		02GE207	02GE205	02GE206
max power	BTU/h	361,439	396,376	599,524
fuel consumption	US gal/h	2.6	2.83	4.32
heated airflow	cfm	1,795	2,500	2,800
power supply	V, ph, Hz	120, 1, 60	120, 1, 60	120, 1, 60
fan motor power	Hp (rpm)	5/8 (3,300)	1 (1,700)	1(1,700)
current rating	amps	6	7,5	11,1
tank capacity	US gal	27.7	27.7	35.6
run time	hour	11	10	8
unit/pallet	qty.	1	1	1
unit/container 20'	qty.	28	24	24
unit/container 40' and 40'HC	qty.	58	52	52

		GE 360 HC	GE 400 HC
code number		02GE257	02GE255
max power	BTU/h	361,439	396,376
fuel consumption	US gal/h	2.6	2.83
heated airflow	cfm	1,795	2,500
power supply	V, ph, Hz	120, 1, 60	120, 1, 60
fan motor power	Hp (rpm)	5/8 (3,300)	1 (1,700)
current rating	amps	6	7,5
tank capacity	US gal	35.6	35.6
run time	hour	14	13
unit/pallet	qty.	1	1
unit/container 20'	qty.	28	24
unit/container 40' and 40'HC	qty.	58	52

#### Dust and water proof electric panel





#### Legend

- 1 Reset button with lock out (red), working (green) and stand-by (orange) indicator light
- 2 Three way control switch:
   position 0 for stop
   position 1 for "continuous" on
   position 2 for ONwith remote thermostat, humidostat, timer
- 3 Socket for remote thermostat, humidostat, timer
- 4 Voltage warning light (connected to the mains)
- 5 Power cord
- 6 Plastic cover
- 7 Power cord bracket







# GE/N

DIRECT-FIRED LOW PRESSURE GAS PORTABLE HEATERS (DUCTABLE)

#### GE/N - DIRECT-FIRED LOW PRESSURE GAS PORTABLE HEATERS (DUCTABLE)

- CSA approved for construction, greenhouses and brooders US-C
- Very low particulate emission (CO, NOx, Ethylene and Ethere)
- Built-in gas burner (dual fuel: natural gas or propane)
- No supervision required: can be controlled by thermostat, humidistat or timer
- High-grade powder coated design
- Automatic ignition
- Flame monitored by ionisation probe
- Combustion air pressure switch (safety device: turns off unit and requires manual reset)
- Overheating thermostat (safety device: turns off unit and requires manual reset)
- Gas train: gas filter, gas governor, gas valve and gas pressure test points

- Two post ventilation modes (fan always on or 30 sec temporized) selectable by switch on control board
- Ventilation only mode (fan can be operated when burner is off)
- Single point lift bail
- Back-pressure air switch to prevent bad flexible duct installation
- Electric control panel
- Removable front disk for easy maintenance
- 10" pneumatic wheels
- Manual ball valve to shut off gas to the burner and easily switch between natural gas and propane. Includes safety locking device to keep valve from moving once set.

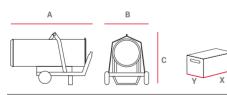






#### **ACCESSORIES ON DEMAND**

HEAVY DUTY THERMOSTAT (20/140°F) 30 ft CABLE, 90° PLUG	ONE-WAY DUCT ADAPTER	FLEXIBLE AIR DUCT 20 ft LONG
		T MAX 212° F
<b>a</b> 1 0040500	<b>Mod.</b> GE/N 250 - 16" <b>Cod.</b> 02AC592	<b>Mod.</b> 16" <b>Cod.</b> 02AC564
<b>Cod.</b> 02AC582	<b>Mod.</b> GE/N 400 - 20" <b>Cod.</b> 02AC589	<b>Mod.</b> 20" <b>Cod.</b> 02AC566



WEIGHTS AND DIMENSIONS MACHINE					PACKAGING			
MOD	А	В	С	Net	Χ	Υ	Н	Gross
	[in]	[in]	[in]	[lb]	[in]	[in]	[in]	[lb]
GE/N 250	45.4	31.1	21.7	139	42.3	21.9	29.5	172
GE/N 400	60.6	34.4	39	233	57.7	24.4	32.6	267

		GE/N 250	GE/N 400
code number		03GA201	03GA202
max power NG/LP	BTU/h	241,520	403,752
fuel consumption NG	cfh	241,520	381,348
fuel consumption LP	cfh	88.98	145.12
heated airflow	cfm	2,766	4,120
temperature rise (@68 °F)	°F	86	103
max lenght flex. duct	ft	50	50
max air static pressure available	Pa	150	140
power supply	V, ph, Hz	120, 1, 60	120, 1, 60
fan motor power	hp (rpm)	5/8 (3,300)	1 (1,700)
current rating	amps	5	8.5
unit/pallet	qty.	1	1
unit/container 20' / 40' / 40' HC	qty.	60/129/129	26/54/81







## EC - EC HC

INDIRECT-FIRED PORTABLE HEATERS

#### EC - EC HC: INDIRECT-FIRED PORTABLE HEATERS

- CSA approved for construction US-C
- Built-in oil burner with Danfoss gear pump
- No supervision required: can be controlled by thermostat, humidistat or timer
- 1ft power cord
- AISI 430 stainless steel combustion chamber with four-pass heat exchanger technology (EC 200 - EC 300)
- Automatic post ventilation cycle to cool down the combustion chamber
- Electronic flame control unit
- Overheating thermostat (safety device: turn off unit and requires manual reset)
- Fuel lines in hydrocarbon-resistant rubber wiremesh protected

- Steel fuel tank also available with one size upgraded tank (HC version)
- Bayonet-type fuel tank cap
- Fuel tank drain plug
- Electric control panel
- Oil filter; pre-heated oil filter (EC 200 EC 300)
- Combustion air pressure switch (safety device: turns off unit and require manual reset)
- 10" pneumatic wheels
- Single fuel line kit: allows to recirculate hot oil from the return line back into the preheated filter to maintain oil warmer in the filter and favorite cold starts and better burning performance in extreme cold temperature





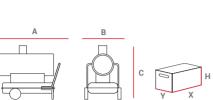




#### **ACCESSORIES ON DEMAND**

HEAVY DUTY THERMOSTAT (20/140°F) 30 ft CABLE, 90° PLUG	FUEL LEVEL GAUGE	LIFTING BRACKETS (4 PIECES)
<b>Cod.</b> 02AC582	Mod. EC 100 Cod. 02AC507 Mod. EC 100 HC - EC 200 - EC 200 HC - EC 300 Cod. 02AC508 Mod. EC 300 HC Cod. 02AC510	<b>Cod.</b> 02AC511
PRE-HEATED OIL FILTER	EXTERNAL FUEL TANK CONNECTION KIT	EXTERNAL FUEL TANK CONNECTION KIT
	80	
<b>Cod.</b> 02AC513	Mod. Single pipe with de-aerator Cod. 02AC632	Mod. Double pipe Cod. 02AC512
SINGLE FUEL LINE KIT	ONE-WAY DUCT ADAPTER	TWO-WAY DUCT ADAPTER
		HICA
0-1 0000007	Mod. EC 100 - 12" Cod. 02AC501 Mod. EC 200 - 14"	<b>Mod.</b> EC 200 - 12"+12" <b>Cod.</b> 02AC546
<b>Cod.</b> 02AC597	<b>Cod.</b> 02AC502 <b>Mod.</b> EC 300 - 16" <b>Cod.</b> 02AC503	<b>Mod.</b> EC 300 - 12"+12" <b>Cod.</b> 02AC505
FLEXIBLE AIR DUCT 20 ft LONG	AIR INLET DUCT ADAPTER	AIR INLET FLEXIBLE DUCT 20 ft LONG
T MAX 212° F		
Mod. EC 100 - 12" Cod. 02AC562	Mod. EC 200 - 17" Cod. 02AC678	<b>Mod.</b> EC 200 - 17" <b>Cod.</b> 02AC647
<b>Mod.</b> EC 200 - 14" <b>Cod.</b> 02AC563		<b>Mod.</b> EC 300 - 20" <b>Cod.</b> 02AC795
<b>Mod.</b> EC 300 - 16" <b>Cod.</b> 02AC564	<b>Mod.</b> EC 300 - 20" <b>Cod.</b> 02AC679	Mod. All - clip for flexible duct (16" - 30") Cod. 02AC663

#### EC - EC HC: INDIRECT-FIRED PORTABLE HEATERS



WEIGHTS AND DIMENSIONS MACHINE						PACKAGING			
MOD	А	В	С	Net	Χ	Υ	Н	Gross	
	[in]	[in]	[in]	[lb]	[in]	[in]	[in]	[lb]	
EC 100	49.3	20	30.5	120	45.9	19.9	28.2	143	
EC 200	56.5	21.9	37	207	51.6	20.1	38	238	
EC 300	68.5	27.6	41.3	275	66.5	24.4	41.4	330	
EC 100 HC	49.3	20	33.3	142	49.3	19.9	28.3	165	
EC 200 HC	56.5	27.6	37	220	55.1	21.9	38	251	
EC 300 HC	65.5	27.6	44.1	297	66.5	24.4	44.09	352	

		EC 100	EC 200	EC 300	EC 100 HC	EC 200 HC	EC 300 HC
code number		02EC202	02EC203	02EC204	02EC252	02EC253	02EC254
heat input	BTU/h	112,141	204,873	293,982	112,141	204,873	293,982
heat output	BTU/h	94,759	183,362	258,704	94,759	183,362	258,704
fuel consumption	US gal/h	0.81	1.48	2.17	0.81	1.48	2.17
heated airflow	cfm	1,020	1,530	2,530	1,020	1,530	2,530
temperature rise (@ 64°F)	°F	95	136	126	95	136	126
power supply	V, ph, Hz	120, 1, 60	120, 1, 60	120, 1, 60	120, 1, 60	120, 1, 60	120, 1, 60
fan motor power	Hp (rpm)	1/4 (3,300)	5/8 (3,300)	1 (1,700)	1/4 (3,300)	5/8 (3,300)	1 (1,700)
current rating	amps	4.05	7.65	11.80	4.05	7.65	11.80
max lenght flex. duct (one-way)	ft	25	48	75	25	48	75
max lenght flex. duct (two-way)	ft		24	35		24	35
flue size	in	5.9	5.9	5.9	5.9	5.9	5.9
tank capacity	US gal	11	17.2	27.7	17.2	27.7	35.6
run time	hour	14	14	13	21	22.4	16.4
unit/pallet	qty.	6	1	1	6	1	1
unit/container 20'	qty.	54	38	24	54	28	24
unit/container 40'	qty.	132	82	52	132	58	52
unit/container 40' hc	qty.	132	82	52	132	58	52



#### FOUR-PASS HEAT EXCHANGER TECHNOLOGY

All BIEMMEDUE combustion chambers are manufactured using AISI 430 stainless steel with aluminised steel heat excenger to increase performance. The new four-pass heat exchanger technology allows exhaust gases to increase heat exchange with the cooling air and obtain maximum thermal efficiency. Our heaters are the most efficient in the industry. Available on EC 200, EC 300 and all PHOEN heaters.







### PHOEN HC

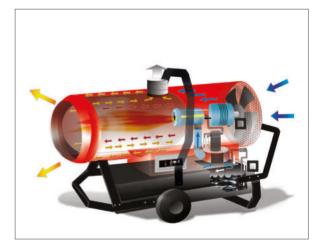
INDIRECT-FIRED PORTABLE HEATER WITH DEDICATED
TWO-STAGE BURNER

#### PHOEN HC: INDIRECT-FIRED PORTABLE HEATER WITH DEDICATED TWO-STAGES BURNER

- CSA approved for construction US-C
- Separated burner blower
- Two-stage dedicated burner (low and high fire selector)
- No supervision required: can be controlled by thermostat, humidistat or timer
- 1ft power cord
- AISI 430 stainless steel combustion chamber with four-pass heat exchanger technology
- Convection fan is controlled by thermostat that measures combustion chamber temperature
- Combustion chamber pre-heating cycle
- Electronic flame control unit
- Combustion air pressure switch (safety device: turns off unit and requires manual reset)
- Fuel lines in hydrocarbon-resistant rubber wiremesh protected
- Overheat thermostat

- Bayonet-type fuel tank cap
- Fuel tank drain plug
- Ventilation only mode (fan can be operated when burner is off)
- Pre-heated oil filter
- Anti-shock frame with foldable handle
- Single point lift bail and forklift pockets
- 16" pneumatic wheels (16" for HC version)
- Optional return air adapter for inside warm air recirculation
- Heater is shipped fully assembled
- Single fuel line kit: allows to recirculate hot oil from the return line back into the preheated filter to maintain oil warmer in the filter and favorite cold starts and better burning performance in extreme cold temperature









#### **ACCESSORIES ON DEMAND**

HEAVY DUTY THERMOSTAT (20/140°F) 30 ft CABLE, 90° PLUG	FUEL LEVEL GAUGE	FRESH AIR INTAKE DUCT ADAPTER		
<b>Cod.</b> 02AC582	<b>Cod.</b> 02AC510	Mod. 4" Cod. 02AC535		
		<b>Mod.</b> Duct - 4",  =16,5 ft <b>Cod.</b> 02AC577		
PRE-HEATED OIL FILTER	EXTERNAL FUEL TANK CONNECTION KIT	EXTERNAL FUEL TANK CONNECTION KIT		
<b>Cod.</b> 02AC575	<b>Mod.</b> Single pipe with de-aerator <b>Cod.</b> 02AC632	Mod. Double pipe Cod. 02AC512		
SINGLE FUEL LINE KIT	ONE-WAY DUCT ADAPTER	TWO-WAY DUCT ADAPTER		
Cod. 02AC597	Mod. 20" Cod. 02AC504	Mod. 16"+16" Cod. 02AC506		
Cod. 02AC597  THREE-WAY DUCT ADAPTER				
	Cod. 02AC504  AIR INLET DUCT ADAPTER WITH SLIDING DOOR + FLEXIBLE AIR	<b>Cod.</b> 02AC506		
	Cod. 02AC504  AIR INLET DUCT ADAPTER WITH SLIDING DOOR + FLEXIBLE AIR	Cod. 02AC506  FLEXIBLE AIR DUCT 20 ft LONG		
	Cod. 02AC504  AIR INLET DUCT ADAPTER WITH SLIDING DOOR + FLEXIBLE AIR INLET DUCT  Mod. 20"	FLEXIBLE AIR DUCT 20 ft LONG  T MAX 212° F  Mod. 12"		

#### PHOEN HC INDIRECT-FIRED PORTABLE HEATER WITH DEDICATED TWO-STAGE BURNER

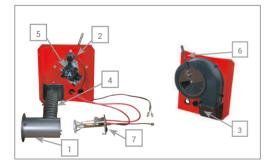






WEIGHTS AND DIMENSIONS MACHINE			PACKAGING					
MOD	А	В	С	Net	Χ	Υ	Н	Gross
	[in]	[in]	[in]	[lb]	[in]	[in]	[in]	[lb]
PHOEN 400 HC	85	33.9	53.3	456	85.6	29.2	52	511

OEN 400 HC
02EC260
411,905
272,189
354,239
231,360
2.97-1.96
3,250
132-108
120, 1, 60
1(1,700)
/4 (3,300)
13
100/60
30
15
6
57
29 - 19
1
7
16
31



#### DEDICATED TWO-STAGE OIL BURNER

The Phoen line of heaters features a built-in burner specifically designed and optimized for cylindrical combustion chambers typical of our cannon-type heaters. The burner features a two-stage oil pump and a separated combustion air blower. Combined to the four-pass heat exchanger, enables to run the unit at 85% efficiency, one of the highest in the industry. Legend

- 1 Combustion head
- 2 Fan-motor burner
- 3 Burner fan
- 4 Flexible hose connecting fan-motor and combustion head
- 5 Double stage diesel pump (Suntec)
- 6 Air regulation flap
- 7 Electrodes Nozzle



#### **FOLDABLE HANDLE**

Anti-shock frame with foldable handle (PHOEN 400 HC)

#### AVAILABILITY TO BE AGREED







## PHOEN/N

INDIRECT-FIRED HEATERS WITH DEDICATED LOW PRESSURE

GAS BURNER

### PHOEN/N - INDIRECT-FIRED HEATERS WITH DEDICATED LOW PRESSURE GAS BURNER

- CSA approved for construction, greenhouses and brooders US-C
- BM2 dedicated burner, with separated burner blower
- No supervision required: can be controlled by thermostat, humidistat or timer
- 1ft power cord
- AISI 430 stainless steel combustion chamber with four-pass heat exchanger technology
- Convection fan is controlled by thermostat that measures combustion chamber temperature
- Combustion chamber pre-heating cycle
- Electronic flame control unit
- Combustion air pressure switch (safety device: turns off unit and requires manual reset)

- Ionization flame detector
- Gas train: gas filter, gas governor, gas valve, gas pressure test points
- Ventilation only mode (fan can be operated when burner is off)
- Lifting and suspending brackets
- Anti-shock frame with foldable handle
- Single point lift bail and forklift pockets
- 16" pneumatic wheels for easy mobility
- Optional return air adapter for inside warm air recirculation
- Heater is shipped fully assembled









#### **ACCESSORIES ON DEMAND**

HEAVY DUTY THERMOSTAT (20/140°F) 30 ft CABLE, 90° PLUG	FRESH AIR INTAKE DUCT ADAPTER	ONE-WAY DUCT ADAPTER		
<b>Cod.</b> 02AC582	<b>Cod.</b> 02AC535	Mod. 20"		
Cod. UZAC36Z	<b>Mod.</b> Duct - 4", I=16,5 ft <b>Cod.</b> 02AC577	Cod. 02AC504		
TWO-WAY DUCT ADAPTER	THREE-WAY DUCT ADAPTER	FLEXIBLE AIR DUCT 20 ft LONG		
		T MAX 212° F		
		<b>Mod.</b> 12" <b>Cod.</b> 02AC562		
<b>Mod.</b> 16"+16" <b>Cod.</b> 02AC506	<b>Mod.</b> 12"+12"+12" <b>Cod.</b> 02AC579	<b>Mod.</b> 16" <b>Cod.</b> 02AC564		
		<b>Mod.</b> 20" <b>Cod.</b> 02AC566		
AIR INLET DUCT ADAPTER WITH SLIDING DOOR	FLEXIBLE AIR INLET DUCT			
Mod. 20"	Mod. Duct - 20" Cod. 02AC795			
Cod. 02AC558	Mod. All - clip for flexible duct (16" - 30") Cod. 02AC663			

code number heat input heat output fuel consumption natural / propane cfh heated airflow cfm temperature rise (@64°F) power supply V, ph, Hz fan motor power Hp (rpm) burner motor power Hp (rpm) current rating amps max lenght flex. duct (one-way) ft max lenght air inlet flex.duct (one-way) ft max lenght fresh air intake duct flue size in unit/pallet qty. unit/container 40' gruph ft ft ft ft qty. unit/container 40' gty.	
heat input heat output BTU/h fuel consumption natural / propane cfh heated airflow cfm temperature rise (@64°F) power supply V, ph, Hz fan motor power Hp (rpm) burner motor power Hp (rpm) current rating amps max lenght flex. duct (one-way) ft max lenght air inlet flex.duct (one-way) ft max lenght fresh air intake duct flue size in unit/pallet unit/container 20' qty. unit/container 40'  gfh  BTU/h BTU/h BTU/h BTU/h PATURE BTU/H PAT	PHOEN/N 380
heat output fuel consumption natural / propane cfh heated airflow cfm temperature rise (@64°F) power supply V, ph, Hz fan motor power Hp (rpm) burner motor power Hp (rpm) current rating amps max lenght flex. duct (one-way) ft max lenght air inlet flex.duct (one-way) ft max lenght fresh air intake duct ft flue size in unit/pallet unit/container 20' qty. unit/container 40'  gfm  cfh heated output fer cfh heated airflow cfm cfh heated airflow cfh heated airflow cfh ft ft ft ft ft qty. unit/container 40' gty.	03GP261
fuel consumption natural / propane  cfh heated airflow  cfm  temperature rise (@64°F)  power supply  function of the power  power supply  function of power  temperature rise (@64°F)  PF  power supply  function of power  function of power  Hp (rpm)  burner motor power  Hp (rpm)  current rating  max lenght flex. duct (one-way)  ft  max lenght flex. duct (two-way)  ft  max lenght air inlet flex.duct (one-way)  ft  max lenght fresh air intake duct  ft  flue size  in  unit/pallet  qty.  unit/container 20'  qty.  unit/container 40'  gty.	380,548
heated airflow  temperature rise (@64°F)  °F  power supply  V, ph, Hz  fan motor power  Hp (rpm)  burner motor power  Hp (rpm)  current rating  amps  max lenght flex. duct (one-way)  ft  max lenght air inlet flex.duct (one-way)  ft  max lenght fresh air intake duct  ft  flue size  in  unit/pallet  unit/container 20'  qty.  unit/container 40'  cfm  Hp (rpm)  ft  ft  ft  ft  ft  qty.  qty.	329,174
temperature rise (@64°F)  power supply  V, ph, Hz  fan motor power  Hp (rpm)  burner motor power  Hp (rpm)  current rating  max lenght flex. duct (one-way)  ft  max lenght air inlet flex.duct (one-way)  ft  max lenght fresh air intake duct  ft  flue size  in  unit/pallet  qty.  unit/container 20'  qty.	355.97/147.24
power supply fan motor power Hp (rpm) burner motor power Hp (rpm) current rating max lenght flex. duct (one-way) ft max lenght flex. duct (two-way) ft max lenght air inlet flex.duct (one-way) ft max lenght fresh air intake duct ft flue size in unit/pallet qty. unit/container 20' qty. unit/container 40'	3,250
fan motor power Hp (rpm) burner motor power Hp (rpm) current rating amps max lenght flex. duct (one-way) ft max lenght flex. duct (two-way) ft max lenght air inlet flex.duct (one-way) ft max lenght air inlet flex.duct (one-way) in unit/pallet qty. unit/container 20' qty. unit/container 40' qty.	126
burner motor power Hp (rpm) current rating amps max lenght flex. duct (one-way) ft max lenght flex. duct (two-way) ft max lenght air inlet flex.duct (one-way) ft max lenght air inlet flex.duct (one-way) ft mux lenght fresh air intake duct ft flue size in unit/pallet qty. unit/container 20' qty. unit/container 40'	120, 1, 60
current rating amps  max lenght flex. duct (one-way) ft  max lenght flex. duct (two-way) ft  max lenght air inlet flex.duct (one-way) ft  max lenght air intake duct ft  ft  flue size in  unit/pallet qty.  unit/container 20' qty.  unit/container 40' qty.	1 (1,700)
max lenght flex. duct (one-way)  ft  max lenght flex. duct (two-way)  ft  max lenght air inlet flex.duct (one-way)  ft  max lenght fresh air intake duct  ft  flue size  in  unit/pallet  qty.  unit/container 20'  qty.  unit/container 40'  ft  qty.	1/4 (3,300)
max lenght flex. duct (two-way)  ft  max lenght air inlet flex.duct (one-way)  ft  max lenght fresh air intake duct  ft  flue size  in  unit/pallet  qty.  unit/container 20'  qty.  unit/container 40'  gty.	12.5
max lenght air inlet flex.duct (one-way)  ft  max lenght fresh air intake duct  ft  flue size  in  unit/pallet  qty.  unit/container 20'  qty.  unit/container 40'  qty.	100
max lenght fresh air intake duct ft flue size in unit/pallet qty. unit/container 20' qty. unit/container 40' qty.	60
flue size in unit/pallet qty. unit/container 20' qty. unit/container 40' qty.	30
unit/pallet qty. unit/container 20' qty. unit/container 40' qty.	15
unit/container 20' qty. unit/container 40' qty.	6
unit/container 40' qty.	1
	7
14 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1	16
unit/container 40' HC qty.	31

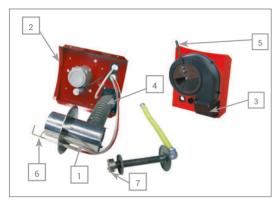
#### PHOEN/N - INDIRECT-FIRED HEATERS WITH DEDICATED LOW PRESSURE **GAS BURNER**







WEIGHTS AND DIMENSIONS MACHINE				PACKAGING				
MOD	А	В	С	Net	Χ	Υ	Н	Gross
	[in]	[in]	[in]	[lb]	[in]	[in]	[in]	[lb]
PHOEN/N380	82.6	33.9	48.9	430	85.8	29.1	49.7	485



Dedicated gas burner
The Phoen line of heaters features a built-in burner specifically designed and optimized for cylindrical combustion chambers typical of our cannon-type heaters. The burner features a separated combustion air blower that, in addition to the four-pass heat exchanger, enables to run the unit at 85% US efficiency, one of the highest in the industry.

Legend

- 1 Combustion head
- 2 Blower motor
- 3 Combustion air blower
- 4 Flexible hose connecting blower to combustion head
- 5 Combustion air regulation valve
- 6 Electrodes
- 7 Gas nozzle



#### Anti-shock frame with foldable handle

- A Side protective bumper
- B Brackets for anchoring to body
- C Front protective bumper
- D Forklift pockets
- E Rear protective bumper with foldable handle
- F Single point lift bail



#### Manual gas valve

Manual gas valve to easily switch between natural gas and propane. Includes safety locking device to keep valve from moving once set.











### **JUMBO**

INDIRECT COMBUSTION HEAVY DUTY MOBILE SPACE HEATERS WITH AXIAL FAN

#### JUMBO - INDIRECT COMBUSTION HEAVY DUTY MOBILE SPACE HEATERS WITH AXIAL FAN.

- CSA approved for construction, (greenhouses and brooders) US-C
- Burner cover: protects the burner against blows, dust, water, weather and collect diesel fuel/condensation recovery basin
- ◆ The new heat exchanger with the newly designed higher performance fans ensure heat US efficiency of 90%
- Better anchorage to the machine's weight bearing structure through sturdy attachment rods which allow for movement on any floors
- Bearing structure with removable panels for interior washing, also in hanging models
- Panels with reinforcement cross pleats to ensure superior rigidity and strength
- Combustion chamber inspection glass peep-hole
- Exclusive use of metric screws and inserts for fastening, no self-tapping screws
- Ventilator:
  - dust and water IP 55 protection
  - very low noise fan (noise level  $\leq$  66db at 6,5 ft for 400-600 models,  $\leq$  69db at 6,5 ft for 800 model)
  - 6-blade fan with high performance (air flow and static pressure) for uniform diffusion of warm air through duct

- fan outlet cone to convey air and ensure high static pressure
- Control rear electrical panel (IP 65):
  - located at the top rear of the machine to avoid contact with dust, water, snow
  - supplied with a sturdy metal cover to prevent damage and unauthorized access; also handy for storage of tools, papers, etc;
- Service front electrical panel:
  - located at the front of the machine inside the burner cover lid: to prevent contact with dust, water, snow; for easier maintenance; to facilitate controls and maintenance by the operator
- Every main component (fan, burner, thermostats, etc.) is supplied with quick couplings of electrical connections:
  - dust and water IP 68 protection
  - fast assembly, disassembly and technical maintenance
  - eliminates installation/disassembly mistakes



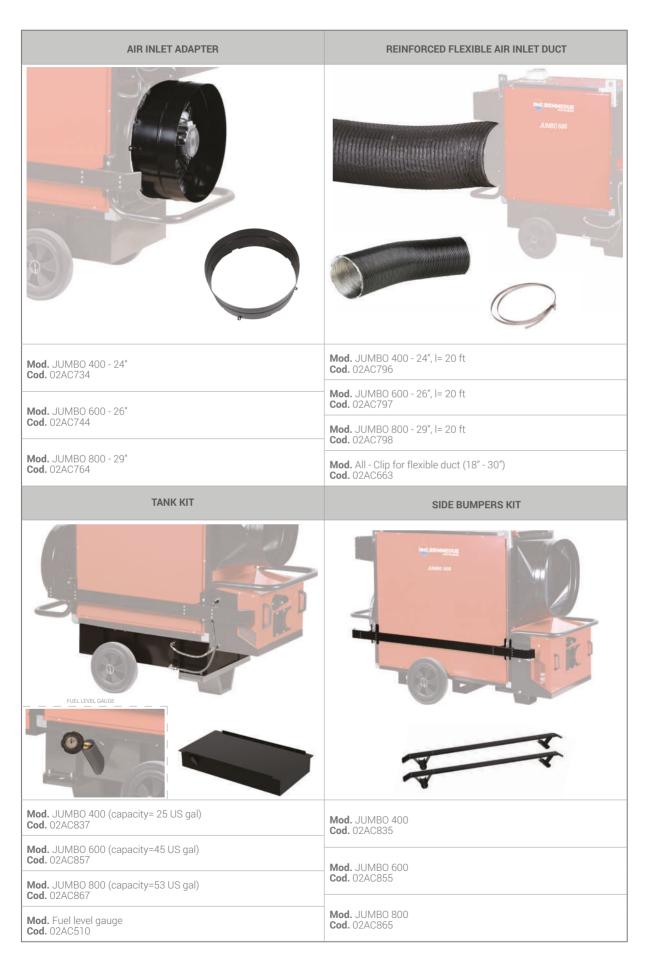






### ACCESSORIES ON DEMAND

ONE WAY ADAPTER	TWO WAYS ADAPTER
DEC MEMMEDUR  AMAD SOI	DOC SIL MANEDLE  AMAD (CEI
Mod. JUMBO 400 - 20" Cod. 02AC831	Mod. JUMBO 400 - 16" each Cod. 02AC832
Mod. JUMBO 600 - 28" Cod. 02AC851	Mod. JUMBO 600 - 20" each Cod. 02AC852
Mod. JUMBO 800 - 28" Cod. 02AC861	<b>Mod.</b> JUMBO 800 - 24" each <b>Cod.</b> 02AC862
FOUR WAYS ADAPTER	FLEXIBLE AIR DUCTS 19,6' LONG WITH BAG AND BELT
	239.5
BASE SECTION ASSESSMENT OF THE PROPERTY OF THE	J.UABO SOO
A party (ce)	
Mod. JUMBO 600 - 14" each Cod. 02AC853	Mod. 14" Cod. 02AC563  Mod. 18" Cod. 02AC564  Mod. 20"



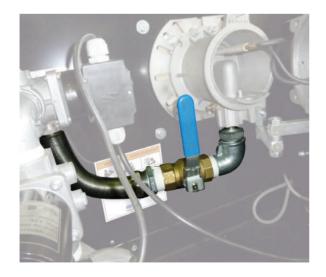
### JUMBO - INDIRECT COMBUSTION HEAVY DUTY MOBILE SPACE HEATERS WITH AXIAL FAN





### Manual gas valve

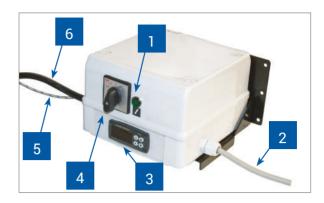
Manual gas valve to easily switch between natural gas and propane. Includes safety locking device to keep valve from moving once set.





### Rear electrical panel





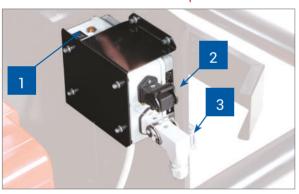
### Legend

- 1 Electrical power supply
- 2 Motor cable
- 3 Thermoregulator allows for:
  - -FAN thermostat setting to control the fan: before heating and after ventilation of combustion chamber
  - -LIMIT thermostat setting for burner control
  - -display of machine's hours of work
  - -temperature of air exiting the outlet
  - -setting changes with password

### 4 Switch 4 positions:

- O= STOP
- V= VENTILATION (NO HEATING)
- H= HEATING
- H+V= HEATING WITH CONTINUOUS VENTILATION
- 5 Heat adjustment probe
- 6 Power cable

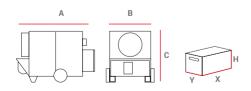
### Service front electrical panel



# 5

### Legend

- 1 OVERHEATING: safety thermostat in case of overheating, with manual reset
- 2 Pre-heating filter socket
- 3 Socket for thermostat ambient/ humidistat/timer
- 4 Overheat thermostat overheat indicator light (overheating)
- 5 Burner indic
- 6 Electric power indicator light



WEIGHTS AND DIMENSIONS MACHINE *				PACI	KAGING			
MOD	А	В	С	Net	Χ	Υ	Н	Gross
	[in]	[in]	[in]	[lb]	[in]	[in]	[in]	[lb]
JUMBO 400	69.5	31.5	47.8	441	69.8	28	48.8	485
JUMBO 600	79.3	36	55.7	595.2	78	31.5	54.7	639.3
JUMBO 800	88.4	38.7	62.4	773.8	87.4	34.6	61.4	818

<sup>\*</sup> Complete machine with burner and one way adapter

### JUMBO - INDIRECT COMBUSTION HEAVY DUTY MOBILE SPACE HEATERS WITH AXIAL FAN

		JUMBO 400 OIL*	JUMBO 600 OIL*	JUMBO 800 OIL*
code number		02AG241	02AG251	02AG262
heat input	BTU/h	400,000	600,000	800,000
heat output	BTU/h	357,057	532,844	706,411,35
US heat efficiency	%	90	90	90
heated airflow	cfm	5,297	7,063	10,005.8
available static pressure	Pa - inwc	120 - 0.48	150 - 0.60	200 - 0.80
temperature rise (@ 68°F)	°F	108°	109.8°	102.6°
diesel consumption	USA gal/h	2.83	4.23	5.59
natural gas consumption	cfh	-	-	-
input pressure	inc	-	-	-
LPG consumption	cfh	-	-	-
input pressure	inc	-	-	-
power supply	V - ph - Hz	120-1-60	120-1-60	240-1-60
electrical power	W	990	1,400	3,000
flue diameter	in	7.87	7.87	7.87
			1 WAY 28"-60	1 WAY 28"-90
		1 WAY 20"-60		2 WAYS 24"-45
air outlet duct diameter /L.max	in - feet	0.1441/0.75",05	2 WAYS 20"-36	4 WAYS 18"-45
		2 WAYS 16"-36	4 WAY 14"-30	5 WAYS 14"-36
recovery duct diameter /L.max	in - feet	24"-12	26"-12	28.8"-18
unit/pallet	qty.	1	1	1
unit/container 20"	qty.	8	7	6
unit/container 40"	qty.	16	15	13
unit/container 40" HC	qty.	32	15	13

		JUMBO 400 GAS*	JUMBO 600 GAS*	JUMBO 800 GAS*
code number		02AG241	02AG251	02AG262
heat input	BTU/h	400,000	600,000	800,000
heat output	BTU/h	354,878	533,911	722,765
US heat efficiency	%	90	90	90
heated airflow	cfm	5,297	7,063	10,005.8
available static pressure	Pa - inwc	120 - 0.48	150 - 0.60	200 - 0.80
temperature rise (@ 68°F)	°F	108°	109.8°	102.6°
diesel consumption	USA gal/h	-	-	-
natural gas consumption	cfh	384,308	581,418	771,999
input pressure	inc	8.00	8.00	8.00
LPG consumption	cfh	158,400	239,225	317,156
input pressure	inc	12.01	12.01	12.01
power supply	V - ph - Hz	120-1-60	120-1-60	240-1-60
electrical power	W	950	1,400	3,000
flue diameter	in	7.87	7.87	7.87
		1 WAY 20"-60	1 WAY 28"-60	1 WAY 28"-90
lair outlet duct diameter /L.max	in - feet	1 VVAY 20 -00	2 14/4/2007 26	2 WAYS 24"-45
air outlet duct diameter / L.max	m - reet	0.1414.70.16".06	2 WAYS 20"-36	4 WAYS 18"-45
		2 WAYS 16"-36	4 WAY 14"-30	5 WAYS 14"-36
recovery duct diameter /L.max	in - feet	24"-12	26"-12	28.8"-18
unit/pallet	qty.	1	1	1
unit/container 20"	qty.	8	7	6
unit/container 40"	qty.	16	15	13
unit/container 40" HC	qty.	32	15	13

<sup>\*</sup> Machine without burner











# TITAN

INDIRECT COMBUSTION HEAVY DUTY MOBILE SPACE HEATERS WITH CENTRIFUGAL FAN

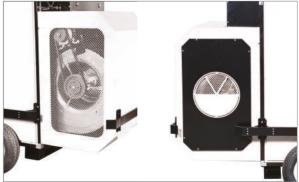
- CSA approved for construction, greenhouses and brooders US-C
- Burner cover: protects the burner against blows, dust, water, weather and collect diesel fuel/condensation recovery basin
- ◆ The new heat exchanger with the newly designed higher performance fans ensure heat US efficiency of 92%
- Better anchorage to the machine's weight bearing structure through sturdy attachment rods which allow for movement on any floors
- Bearing structure with removable panels for interior washing, also in hanging models
- Panels with reinforcement cross pleats to ensure superior rigidity and strength
- Combustion chamber inspection glass peep-hole
- Exclusive use of metric screws and inserts for fastening, no self-tapping screws
- Protection cap of combustion chamber exhaust in plastic material with retention chains guards
- Ventilator:
  - dust and water IP 55 protection
  - very low noise fan (noise level ≤ 69db at 2 meters)

- high output, high performance fan guarantees increased air flow and static pressure (300 Pa) for uniform and long distance diffusion of warm air through channels or ducts
- fan anchorage on machine's bearing structure through sturdy rods
- adjustable fresh air re-uptake shutter
- Control rear electrical panel (IP 65):
  - located at the top rear of the machine to avoid contact with dust, water, snow
  - supplied with a sturdy metal cover to prevent damage and unauthorized access; also handy for storage of tools, papers, etc;
- Service front electrical panel (IP 65):
  - located at the front of the machine inside the burner cover lid: to prevent contact with dust, water, snow; for easier maintenance; to facilitate controls and maintenance by the operator
- Every main component (fan, burner, thermostats, etc.) is supplied with quick couplings of electrical connections:
  - fast assembly, disassembly and technical maintenance
  - eliminates installation/disassembly mistakes



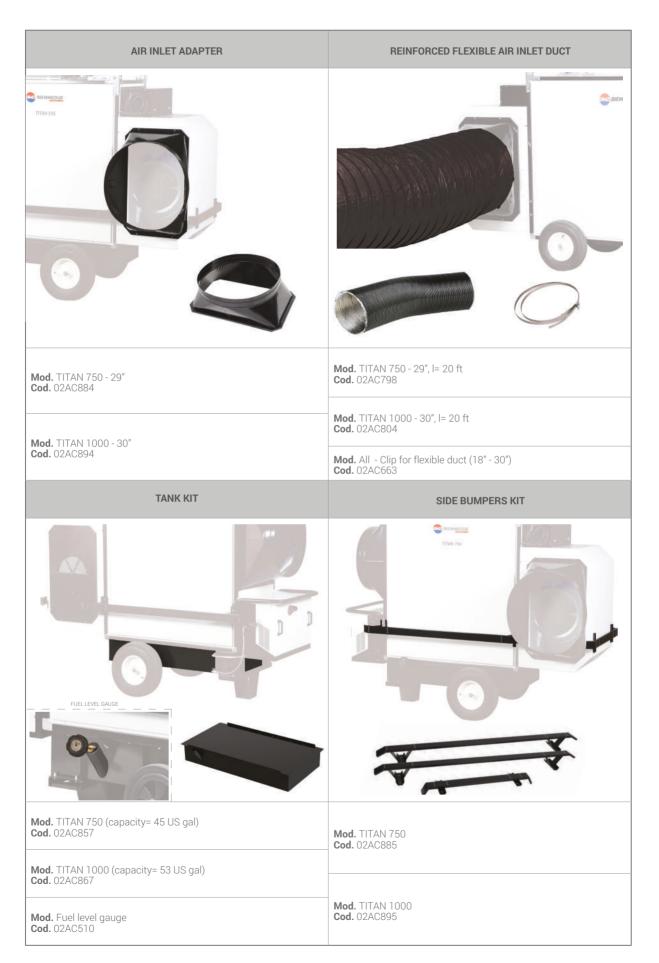






### **ACCESSORIES ON DEMAND**

ONE WAY ADAPTER	TWO WAYS ADAPTER
Paragas Triar 78	Transpired in the second of th
Mod. TITAN 750 - 26" Cod. 02AC881	Mod. TITAN 750 - 20" each Cod. 02AC882
Mod. TITAN 1000 - 28" Cod. 02AC891	Mod. TITAN 1000 - 24" each Cod. 02AC892
FOUR WAYS ADAPTER	FLEXIBLE AIR DUCT
TIME TO	That is
Mod. TITAN 750 - 14" each Cod. 02AC883	Mod. 14" Cod. 02AC563  Mod. 18" Cod. 02AC564  Mod. 20"
Mod. TITAN 1000 - 18" each Cod. 02AC893	Cod. 02AC566  Mod. 24" Cod. 02AC567  Mod. 28" Cod. 02AC568

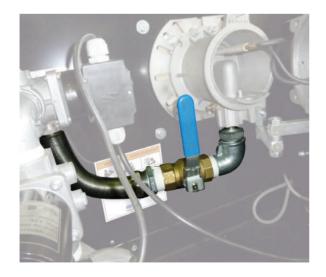


LIFTING KIT	SWIVELLING WHEELS KIT	HEAVY DUTY THERM23/+122°F CABLE 32,8', PLUG 90°
Mod. TITAN 750 Cod. 02AC856	Mod. TITAN 750 - 6" Cod. 02AC816	• Logges
Mod. TITAN 1000 Cod. 02AC866	Mod. TITAN 1000 - 7" Cod. 02AC817	<b>Cod.</b> 02AC582
RIELLO DIESEL BURNER	RIELLO LPG/NATURAL GAS BURNER + GAS TRAIN	TWO-PIPE EXTERNAL FUEL TANK CONNECTION KIT (I=16,4') + QUICK CONNECTIONS KIT
Mod. TITAN 750 Cod. 076B205	Mod. TITAN 750 Cod. 074B108-12	Mod. Two-pipe external tank connection kit Cod. 02AC668
Mod. TITAN 1000 Cod. 076B204	Mod. TITAN 1000 Cod. 074B110-13	Mod. Quick connections kit (M+F x 2) Cod. 02AC669
PRE-HEATED FUEL FILTER	SINGLE PIPE EXTERNAL FUEL TANK CONNECTION KIT WITH DE AERATOR	CHIMNEY SUPPORT KIT
<b>Cod.</b> 02AC899	<b>Cod.</b> 02AC819	Mod. TITAN 750/1000 Cod. 02AC814



### Manual gas valve

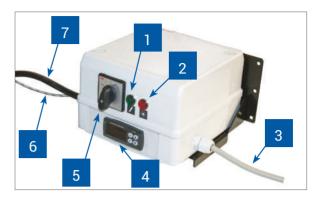
Manual gas valve to easily switch between natural gas and propane. Includes safety locking device to keep valve from moving once set.





### Rear electrical panel



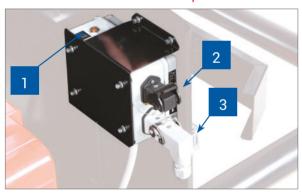


### Legend

- 1 Electrical power supply
- 2 Motor overheat
- 3 Motor cable
- 4 Thermoregulator allows for:
  - -FAN thermostat setting to control the fan: before heating and after ventilation of combustion chamber
  - -LIMIT thermostat setting for burner control
  - -display of machine's hours of work
  - -temperature of air exiting the outlet

- -setting changes with password
- 5 Switch 4 positions:
  - O= STOP
  - V= VENTILATION (FRESH AIR)
  - H= HEATING
  - H+V= HEATING WITH CONTINUOUS VENTILATION
- 6 Heat adjustment probe
- 7 Power cable

### Service front electrical panel





### Legend

- 1 OVERHEATING: safety thermostat in case of overheating, with manual reset
- 2 Pre-heating filter socket
- 3 Socket for thermostat ambient/ humidistat/timer
- 4 Thermostat overheat indicator light (overheating)
- 5 Burner indicator light
- 6 Electric power indicator light

Α	В	
		C Y X

WEIGHTS AND DIMENSIONS MACHINE*				PAC	KAGING	;		
MOD	А	В	С	Netto/Net	Χ	Υ	Н	Lordo/ <i>Gross</i>
	[in]	[in]	[in]	[lb]	[in]	[in]	[in]	[lb]
TITAN 750	95	36.2	63.8	948	-	-	-	-
1/2	-	-	-	-	84.2	31.5	62.8	959
2/2	-	-	-	-	30	15.7	19.7	33
TITAN 1000	103.5	41	72.4	1,179.5	-	-	-	-
1/2	-	-	-	-	91.6	33.9	69.4	1,155.2
2/2	-	-	-	-	32.3	17.7	22	48.5

<sup>\*</sup> Complete machine with burner and one way adapter

		TITAN 750 OIL*	TITAN 1000 OIL*
code number		02AG282	02AG292
nominal heating power	[BTU/h]	750,000	1,000,000
heating power output	[BTU/h]	692,612	957,553
US heat efficiency	[%]	92.50	93
airflow	[cfm]	9,417.2	11,182.9
available static pressure	[Pa - inwc]	280-1.12	300-1.20
heat rise	[°F]	93.6°	109.8°
diesel consumption	[USA gal/h]	5.33	7.16
natural gas consumption	[cfh]	-	-
input pressure	[inc]	-	-
LPG consumption	[cfh]	-	-
input pressure	[inwc]	-	-
power supply	[V - ph - Hz]	240-1-60	240-1-60
electrical power	[W]	3,850	4,100
flue diameter	[in]	7.87	7.87
		1 WAY 28"-150	1 WAY 28"-150
air outlet duct diameter /L.max	lin foot	2 WAYS 20"-90	2 WAYS 24"-90
air outlet duct diameter / L.max	[in - feet]	Z WAYS ZU -9U	4 WAYS 16"-75
		4 WAYS 14"-75	5 WAYS 14"-45
recovery duct diameter /L.max	[in - feet]	29"-30	30"-30
unit/pallet	qty.	1	1
unit/container 20"	qty.	7	6
unit/container 40"	qty.	15	13
unit/container 40" HC	qty.	15	13

		TITAN 750 GAS*	TITAN 1000 GAS*
code number		02AG282	02AG292
nominal heating power	[BTU/h]	750,000	1,000,000
heating power output	[BTU/h]	673,638	917,057
US heat efficiency	[%]	92.50	93
airflow	[cfm]	9,417.2	11,182.9
available static pressure	[Pa - inwc]	280-1.12	300-1.20
heat rise	[°F]	93.6°	109.8°
diesel consumption	[USA gal/h]	-	-
natural gas consumption	[cfh]	721,485	971,518
input pressure	[inc]	8.00	8.00
LPG consumption	[cfh]	290,601	398,883
input pressure	[inc]	12.01	12.01
power supply	[V - ph - Hz]	240-1-60	240-1-60
electrical power	[W]	3,360	4,150
flue diameter	[in]	7.87	7.87
		1 WAY 28"-150	1 WAY 28"-150
	[:- f+]	0.14141/0.00//.00	2 WAYS 24"-90
air outlet duct diameter /L.max	[in - feet]	2 WAYS 20"-90	4 WAYS 16"-75
		4 WAYS 14"-75	5 WAYS 14"-45
recovery duct diameter /L.max	[in - feet]	29″-30	30"-30
unit/pallet	qty.	1	1
unit/container 20"	qty.	7	6
unit/container 40"	qty.	15	13
unit/container 40 HC	qty.	15	13

<sup>\*</sup> Machine without burner

# **AVAILABILITY TO BE AGREED**











# SCUDO

BASE FRAMED INDIRECT COMBUSTION SPACE HEATERS WITH CENTRIFUGAL FAN

- CSA approved for construction, greenhouses and brooders US-C
- Base adapted for moving with a fork lift
- Front protective casing with lockable door for burner cover
- Rear protective casing for the centrifugal fan with air intake/aspiration side joint
- Protective base for the upper part with lifting/ fastening hooks
- Central lifting hook
- Removable panels for internal washing with reinforcement cross folds to ensure more rigidity and strength
- Exclusive use of metric screws and inserts for fastening, no self-tapping screws
- ◆ The new heat exchanger combined with the new higher performance fans, achieve a thermal output of 96%

- Fan protection IP55:
  - very silent (noise level ≤ 69 db at 2 meters);
  - high output and performances which ensure high air delivery and static pressure (500
     Pa) for uniform diffusion and through long distances of warm air through canals or ducts;
  - fan anchored to weight-bearing structure through sturdy beams and fastening brackets;
  - adjustable shutter for fresh air restoration;
- Rear electric control panel (IP65):
  - situated at the rear of the machine to avoid contact with dust, water, snow, etc...
  - supplied with a sturdy metal cover which can also be used to stow tools and documents;
- Front service control panel (IP 65):
  - situated at the front of the machine, inside the burner cover casing: to avoid contact with dust, water, snow; for easier maintenance; for more convenient control and intervention operations

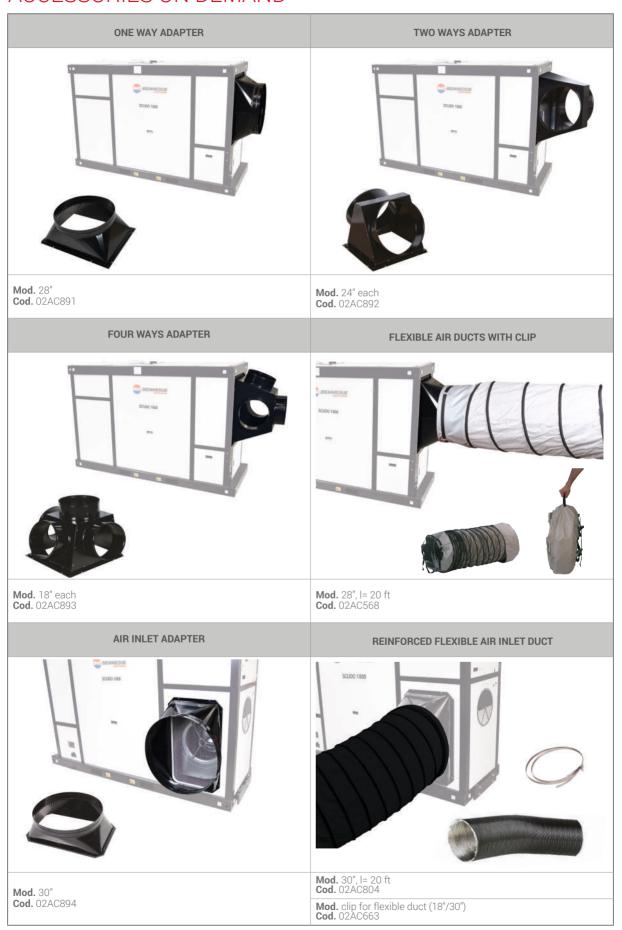








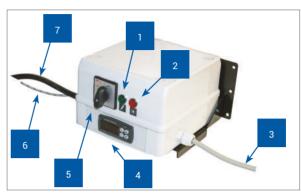
### **ACCESSORIES ON DEMAND**



HEAVY DUTY THERM23/+122°F CABLE 32,8', PLUG 90°	RIELLO DIESEL BURNER	RIELLO LPG/NATURAL GAS BURNER + GAS TRAIN
Cod. 02AC582	<b>Cod.</b> 076B204	<b>Cod.</b> 074B110-13
TWO-PIPE EXTERNAL FUEL TANK CONNECTION KIT (I=16,4") + QUICK CONNECTIONS KIT (M + F x 2)	PRE-HEATED FUEL FILTER	SINGLE PIPE EXTERNAL FUEL TANK CONNECTION KIT WITH DE AERATOR
Mod. Two-pipe external tank connection kit Cod. 02AC668  Mod. Quick connections kit (M+F x 2) Cod. 02AC669	<b>Cod.</b> 02AC899	<b>Cod.</b> 02AC819
CHIMNEY SUPPORT KIT		
<b>Cod.</b> 02AC814		

### Rear electrical panel





### Legend

- 1 Electrical power supply
- 2 Motor overheat (only for three-phase)
- 3 Motor cable
- 4 Thermoregulator allows for:
  - -FAN thermostat setting to control the fan: before heating and after ventilation of combustion chamber
  - *-LIMIT thermostat setting for burner control*
  - -display of machine's hours of work
  - -temperature of air exiting the outlet
  - -setting changes with password

5 Switch 4 positions:

**0**= STOP

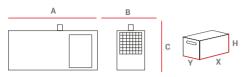
**V**= VENTILATION (FRESH AIR)

**H**= HEATING

**H+V**= HEATING WITH CONTINUOUS VENTILATION

6 Heat adjustment probe

7 Power cable



WEIGHTS AND DIMENSIONS MACHINE*					PAC	KAGING	·	
MOD	MOD A B C Net					Υ	Н	Gross
	[in]	[in]	[in]	[lb]	[in]	[in]	[in]	[lb]
SCUDO 1000	110	35	69,5	1887	100	35	69,5	1887

<sup>\*</sup> Complete machine with burner and one way adapter

		SCUDO 1000 OIL*	SCUDO 1000 GAS*	
code number		02A	G296	
nominal heating power	[BTU/h]	1,000,000	1,000,000	
heating power output	[BTU/h]	957,553	917,057	
US heat efficiency	[%]	93	93	
airflow	[cfm]	11,182.9	11,182.9	
available static pressure	[Pa - inwc]	300-1.20	300-1.20	
heat rise	[°F]	109.8°	109.8°	
diesel consumption	[USA gal/h]	7.16	-	
natural gas consumption	[cfh]	-	971,518	
input pressure	[inc]	-	8.00	
LPG consumption	[cfh]	-	398,883	
input pressure	[inwc]	-	12.01	
power supply	[V - ph - Hz]	240-1-60	240-1-60	
electrical power	[W]	4,100	4,150	
flue diameter	[in]	7.87	7.87	
		1 WAY 28"-150	1 WAY 28"-150	
lair outlet duct diameter /L.max	[in_foot]	2 WAYS 24"-90	2 WAYS 24"-90	
air outlet duct diameter / L. max	[in - feet]	4 WAYS 16"-75	4 WAYS 16"-75	
		5 WAYS 14"-45	5 WAYS 14"-45	
recovery duct diameter /L.max	[in - feet]	30″-30	30″-30	
unit/pallet	qty.	1	1	
unit/container 20"	qty.	6	6	
unit/container 40"	qty.	13	13	
unit/container 40" HC	qty.	13	13	

<sup>\*</sup> Machine without burner and air adapter

### AVAILABILITY TO BE AGREED





EΚ

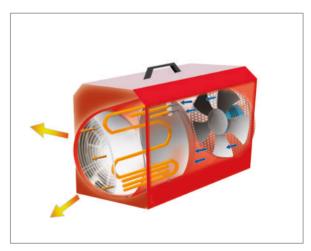
ELECTRICAL MOBILE SPACE HEATERS

### EK - ELECTRICAL MOBILE SPACE HEATERS

- Heating, drying and ventilating
- Heating high efficiency resistences design
- Built to run non-stop without a break
- Room thermostat integrated
- Extra strength elements AISI 321 for long life performance
- Power selector switch
- Manual reset over heat thermostat
- Stainless steel front grid
- Duct able up to 6 m long (EK 35 EK 60)

- Stack-ability
- ◆ EK 5 and EK 10 equipped with power cord length 4,5 feet and NEMA 5-15P plug (EK5) and NEMA 6-15P plug (EK 10)
- EK 35 and EK 60 equipped with power cord length 4,5 feet, no plugs









### **ACCESSORIES ON DEMAND**

DUCT ADAPTER	FLEXIBLE AIR DUCT 19,6 ft LONG WITH CLIP				
EX 35	To die Medice Property of the Control of the Contro				
Mod. 12"	Mod. 12"				
Cod. 06AC101	Cod. 02AC562				
Mod. 14"	Mod. 14"				
Cod. 06AC106	Cod. 02AC563				



### Legend for EK 35

- 1 Reset
- 2 Power selector
- 3 Light
- 4 Room thermostat
- 5 Ambient probe



### Legend for EK 60

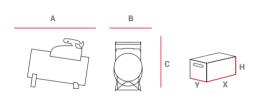
- 1 Power switch
- 2 Resistence power light
- 3 Over heat thermostat push button manual reset
- 4 Room thermostat
- 5 Ambient probe

### EK - ELECTRICAL MOBILE SPACE HEATERS



### Legend for EK 5 - 10

- 1 Overheat thermostat reset button
- 2 Power switch
- 3 Room thermostat
- 4 Room thermostat sensor
- 5 High-low power switch



PESI E DIMENSIONI MACCHINA WEIGHTS AND DIMENSIONS MACHINE			IMBALLO PACKAGING					
MOD	А	В	С	Netto/Net	Χ	Υ	Н	Lordo/Gross
	[in]	[in]	[in]	[lb]	[in]	[in]	[in]	[lb]
EK 5	14.5	7.1	11.0	11.0	15.4	10.9	8.5	13.2
EK 10	14.5	7.1	11.0	11.0	15.4	10.9	8.5	13.2
EK 35	22.6	10.9	20.1	33.0	24.0	15.3	12.4	37.5
EK 60	27.6	12.5	21.2	46.3	28.8	17.0	13.8	50.7

			EK 5	EK 10	EK 35	EK 60
code			06EK701	06EK702	06EK703	06EK704
	supply voltage	V	120	240	240	240
electric supply	phases		1~	1	1	3~
	frequency	Hz	60	60	60	60
	power	kW	1.5	3	10	18
max power	-	BTU/h	5,115	10,230	34,100	61,380
	current	А	12.5	12.5	42	47
	power	kW	0.75	1.5	-	12
min power	-	BTU/h	2,558	5,115	-	40,920
temperature rise a 68°F [max/min]		F°	80/58	80/58	100	117/81
airflow		CFM	200	265	1,200	1,500
room thermostat setting temperatu	ıre	F°	32 ÷ 104	32 ÷ 104	32 ÷ 104	32 ÷ 104
plugs		plug	Nema 5-15P	Nema 6-15P	-	-
power cord		AWG	12	12	8	8
unit/pallet		qty.	72	72	24	18

# AGRICULTURE AND BREEDING



### AGRICULTURE AND BREEDING

This family includes fix or suspended space heaters for agriculture and breeding applications. They solve numerous problems in heating structures such as greenhouses and stalls, where an inexpensive investment is a priority. In general, these heaters have hooks or brackets for installation on the ceiling and/or a support for installation on the ground.

The burner can be integrated or separate. Heaters with integrated burner are not recommended for use in spaces that are dusty, dirty, or low in oxy-

gen, whereas those with separate burner can be used in these types of spaces provided a sheath is connected to the burner with a snorkel intake to pull in fresh air from the outside.

This family includes:



**GA/N:** in stainless steel, can be powered by low-pressure LPG or methane (20-30 mbar), with integrated burner and direct combustion. Can easily be driven by a remote control unit.







# GA/N

DIRECT COMBUSTION LOW PRESSURE SUSPENDED SPACE HEATERS

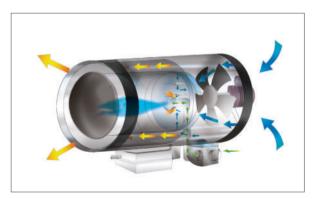
### GA/N - DIRECT COMBUSTION LOW PRESSURE SUSPENDED SPACE HEATERS

- CSA approved for construction, greenhouses and brooders US-C
- Automatic built-in LPG o natural gas burner to give very low emissions of CO, NOx and Ethylene
- Electric board (dust and water IP65 protection)
- Set to be connected to a thermostat or a humidistat or a timer
- High-grade AISI 430 stainless steel design
- Automatic ignition
- Flame monitored by ionisation probe
- Overheating thermostat
- Connectable for climate computer
- Monitoring the fan air flow by a vane switch (dust and water IP65 protection)

- Gas train: gas filter, gas governor, safety gas valve and slow open working gas valve, gas pressure connections
- IP 55 motor installed in a easy clean position to avoid overheating
- Continue post ventilation (fan always switch on) or temporized post ventilation (30 seconds)
- Summer-winter switch to use as a fan
- Suspending brackets
- Low voltage control
- Work with natural or propane gas with different nozzle gas ring









### **ACCESSORIES ON DEMAND**

HEAVY DUTY THERM23/+122°F CABLE 32,8', PLUG 90°	ELECTRONIC THERMOSTAT IP55 WITH DISPLAY +14/+158°F WITHOUT POWER CORD AND PLUG	SINGLE UNIT REMOTE CONTROL
	A THE	
Cod. 02AC582	<b>Cod.</b> 02AC294	<b>Mod.</b> GA/N 250/400 (Cable 16,5') <b>Cod.</b> 02AC584
DELAYED AND SEQUENTIAL STARTING RELAY	ANTI-MOISTURE PTC THERMISTOR RESISTENCE ON COMBUSTION HEAD	
<b>Mod.</b> GA/N 250/400 <b>Cod.</b> 02AC586	<b>Cod</b> . 02AC587	

### Electrical control board



### Legend

- 1 Burner switch
- 2 Fan switch
- 3 Remote thermostat plug
- 4 Reset button with red block / diagnostics/low voltage
- 5 Overheating thermostat reset
- **6** Red light operation of overheating thermostat
- 7 Alert light presence of current

### Two-switch control

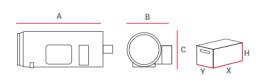
Switch 1 off + Switch 2 on: ventilation only

Switch 1 on + Switch 2 off: burner on with timed post ventilation
Switch 1 on + Switch 2 on: burner on

with continuous ventilation

### GA/N - DIRECT COMBUSTION LOW PRESSURE SUSPENDED SPACE HEATERS

		GA/N 250 C	GA/N 400 C (120V - 60 Hz)	GA/N 400 C (208/230V - 60 Hz)
		03GA721	03GA722	03GA822
heat input (G20)	BTU/h	250,000	400,000	400,000
inlet pressure (G20)	in wc	8-10	8-10	8-10
consumption (G20)	cfh	233,505	355,520	355,520
heat input (G31)	BTU/h	250,000	400,000	400,000
inlet pressure (G31)	in wc	8-13	8-13	8-13
consumption (G31)	cfh	85,941	141,950	141,950
US max efficiency	%	100	100	100
heated airflow	cfm	2,766	4,120	4,120
temperature rise (@68°F)	°F	540	612	612
electrical power	W	530	1,000	1,050
power supply	V - ph - Hz	120-1-60	120-1-60	208/230-1-60
unit/pallet	qty	1	1	1
unit/container 20"	qty	36	33	33
unit/container 40"	qty	84	75	75
unit/container 40" HC	qty	112	75	75



WEIGHTS AND DIMENSIONS MACHINE			PACKAGING					
MOD	MOD A B C Net					Υ	Н	Gross
	[in]	[in]	[in]	[lb]	[in]	[in]	[in]	[lb]
GA/N 250 C	45.1	23.2	17.4	101	46.9	26.0	24.57	134
GA/N 400 C	46.7	26.9	21.1	123	48.8	29.5	28.27	163

### **EQUIPMENT**



### **BACHARACH TEST SET**

Measures the quantity of black smoke residual present in exhaust fumes. Suited for burner calibration.

**Cod.** 99AM001



### **COMBUSTION FUME ANALYSER**

Analizes the gas exhaust fumes elements: CO, CO<sub>2</sub>,  $\lambda$ , smoke temperature, O<sub>2</sub>.

**Cod.** 99AM011



### **MANOMETER**

Measures oil fuel pressure.

**Cod.** 99AM003



### **GAS MICROMANOMETER**

Measures gas pressure.

**Cod.** 99AM014



## SPANNER WRENCH FOR OIL NOZZLE

To remove or substitute the oil nozzle in the burners.

**Cod.** 99AM004



### DIGITAL THERMOMETER

To measure the exhaust and air temperature.

**Cod.** 99AM005



### **DECANTER**

Separates water present in the fuel

**Cod.** 99AM018



