



JUMBO

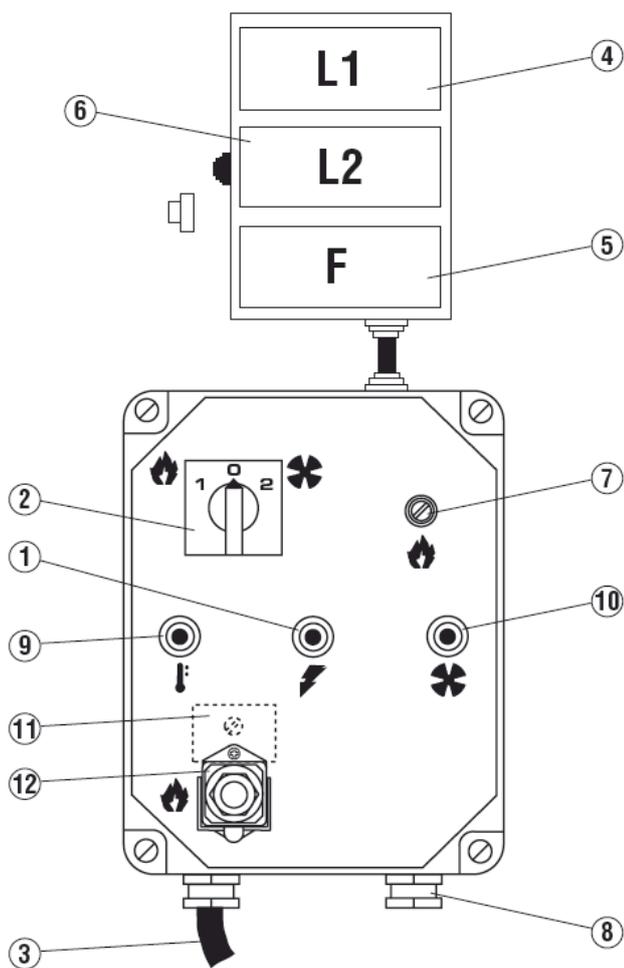
INDIRECT FIRED DIESEL HEATER



OPERATING INSTRUCTIONS

Before using the heater, read and understand all instructions and follow them carefully.
 The manufacturer is not responsible for damages to goods or persons due to improper use of units.

CONTROL BOARD



- 1 CONTROL LAMP
- 2 CONTROL KNOB HEAT - STOP - VENTILATION ONLY
- 3 POWER CORD
- 4 OVERHEAT SAFETY THERMOSTAT, L1
- 5 FAN THERMOSTAT, F
- 6 LIMIT THERMOSTAT WITH MANUAL RESTART, L2
- 7 BURNER FUSE HOLDER
- 8 CABLE FASTENER FOR ROOM THERMOSTAT
- 9 OVERHEAT THERMOSTATS CONTROL LAMP, L1, L2
- 10 FAN STOP CONTROL LAMP
- 11 FAN RESET
- 12 BURNER PLUG

DESCRIPTION

JUMBO space heaters have been designed for use in small to medium-sized rooms and buildings where a fixed or mobile heating system is required.

Heat is produced by combustion and the heat from the smoke is transmitted to the fresh air through the metal walls of the combustion chamber and the heat exchanger. The combustion chamber is of the type where smoke circulates twice.

The air and smoke pass through separated ducts, both of which are welded and sealed. When, after combustion, the waste gases have cooled, they are expelled through a duct which must be connected to a chimney or chimney flue. The chimney or chimney flue must be big enough to guarantee that the smoke is expelled efficiently.

The air which is used in combustion is aspirated directly from the room or building which is being heated. It is therefore of utmost importance that the room or building be properly ventilated so that enough fresh air is circulating at all times.

The air heads can be replaced by heads of the following types:

- a head with two or four openings, all of which must be kept open.
- a head of the “plenum” type with four lateral openings and adjustable fins which send the hot air in the desired direction (Fig.1).

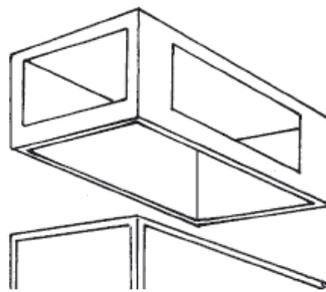


Fig.1

Warning



During use, two of the four sides must be left open so as to avoid overheating the combustion chamber.

Jumbo heaters can operate with burners that are fuelled by heating oil, methane (G20) or L.P.G. (butane G30 and propane G31) of the ON-OFF type.

Warning



Only the burners which are chosen and supplied by the manufacturer can be used. If another type of burner is used the heater no longer complies with CE regulations.

There are three safety devices which are activated in case of serious malfunction. The Burner Control Device, which is mounted on the burner and has a restart button, automatically stops the burner if the flame goes out. The Overheat Thermostat, L2, of the manual restart type, is activated if the temperature of the combustion chamber rises above the set maximum limit; the warning light (9) lights up and the heater stops working. The Thermal Relay, RM, is activated if the fan motor starts to use more electrical current than the maximum permitted limit; the warning light (10) lights up and the heater stops working. If any of these safety devices are activated you should check carefully what the problem actually is before pressing the restart button and starting the heater off again (“OBSERVED FAULTS, CAUSES AND REMEDIES”).

Overheat safety thermostat, L1, shuts down the heater if air flow is not sufficient to cool off combustion chamber: the heater will restart automatically as soon as the heater has cooled down enough (The lamp (9) lights up and then it cuts down).

GENERAL ADVICES

The space heater must be installed, set up and used in accordance with existing laws.

Here are a few general guidelines which should be followed:

- Follow the instructions in this booklet very carefully.
- Don't install the heater in places where there may be a risk of fire or explosion.
- Inflammable material should be kept at a safe distance from the heater (Minimum 3 meters).
- All fire prevention regulations must be adhered to.
- The room or building which is being heated must be sufficiently ventilated so that the heater has enough air to function properly.
- The heater must be near a chimney or chimney flue and a suitable electric switchboard.
- Don't let animals or children near the heater.
- After use make sure the disconnecting switch is off.

When using any type of space heater it is obligatory:

- not to exceed the maximum level of heat output of the furnace ("TECHNICAL SPECIFICATION TABLE");
- to make sure that there is adequate air circulation and air supply to the heater and that nothing is obstructing the aspiration and expulsion of air; movement of air may be obstructed in various ways including placing covers or other objects on the heater or positioning the heater too near a wall or other large object. If the airflow is not adequate, the combustion chamber will overheat and the overheat safety thermostat L1 will turn the burner off and on continuously ("OBSERVED FAULTS, CAUSES AND REMEDIES").

INSTALLATION

Warning



The following operations must be carried out by qualified personnel only.

ELECTRICAL CONNECTIONS AND SETTINGS

Every space heater is supplied along with the safety and control devices which are indispensable to the correct functioning of the unit. The electric switchboard, burner, the fan thermostat, overheat safety thermostat and the overheat thermostat with manual restart have already been connected.

Warning



The mains supply to the heater must be earthed and have a magneto-thermal switch with differential.

The power cord must be connected to a switch board which has a disconnecting switch.

The following operations must now be carried out:

- Plug in the power cord having read the adhesive label which details electricity supply characteristics (Tab.1). Tab. 2 shows the adhesive label on units which have three-phase supply;
- The burner must be connected to the fuel supply (Burner Instruction Manual).
- Connect the burner to the electricity supply with the burner plug.
- Connect accessories such as the room thermostat or clock to the unit's electric switchboard: electric wire must be connected by means of the cable fastener (8) to the terminals 6 and 7.

Having completed all these operations check carefully that all electrical connections correspond to the wiring diagram. When the heater is first turned on you must check that the fan does not use more current than the maximum permitted limit. Finally, to regulate the burner follow the instructions in the Burner Instruction Manual.

	<i>Model M - M/C</i>	<i>Model T - T/C</i>
Number of phases	1	3
Tension [V]	230	230/400
Frequency [Hz]	50	50

Table 1

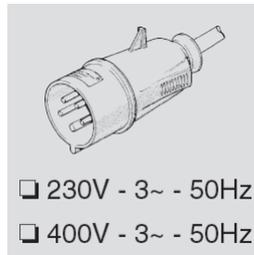


Table 2

CONNECTION TO HOT AIR DUCTS

The space heater provides heat by releasing and dispersing hot air. An air head is supplied with each unit but it can be replaced by other types of head with two or four openings which allow for flexible tubes in heat distribution. The screws which hold the original outlet in place should be removed and the new outlet should be screwed on in place of the old.

The air head can also be replaced by one of the “plenum” type. In this case the front panel is removed and replaced by the “plenum”.

The new head with the exception of the “plenum”, may be connected to new air ducts if the user wishes to satisfy specific needs. In this case and in particular if the diameter and length of the ducts have been changed or if the number of bends has been modified, air output may vary. Consequently it is very important to check and regulate air output when any modification is made to air heads or air ducts. In all circumstances you must ensure that:

- The fan motor does not absorb more current than the maximum permitted limit;
- The volume of air flow corresponds to the recommended level. If the heater is equipped with centrifugal fan and if the volume of hot air differs from preset values proceed as follows (Fig.2):

- 1) Remove the aspiration grill which is on fan motor side of the unit.
- 2) Remove the screws (2) from the motor slide.
- 3) Remove the belt (1).
- 4) Loosen the bolts (3).
- 5) Turn the pulley clockwise and anti-clockwise in order to increase or reduce the volume of air.
- 6) Tighten the bolts (3).
- 7) Put back the aspirations grill
- 8) Repeat operations from (1) to (7) until the correct volume of air flow has been achieved.

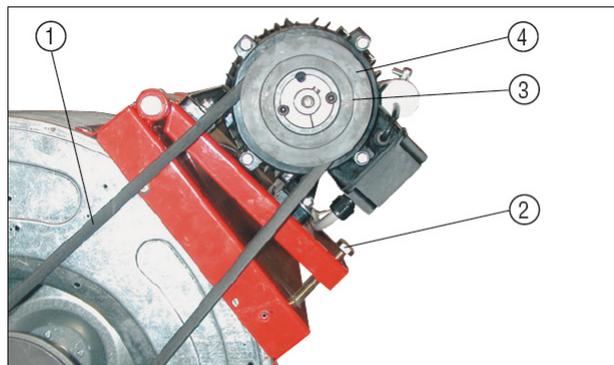


Fig. 2

DRAFT

The evacuation smoke flues have to be in steel and of conforming to the norm EN 1443.

Efficient combustion and trouble-free working of the burner depend on efficient flue draft. The unit must be connected to the chimney flue in accordance with current legal regulations and in line with the following guidelines:

- The tube which carries the smoke should cover as short a distance as possible and should slant upwards.
- There should be no sharp bends in the tubes and the diameter of the tubes must never be reduced.
- Every heater must have its own chimney.
- Flue draft must at least correspond to the minimum compulsory level in the Technical Specifications.

ANALYSIS OF COMBUSTION WASTE PRODUCTS

The probes which check the composition of combustion waste products and smoke temperature must be positioned as indicated in Fig.3.

When these tests have been completed the hole which was drilled for the probe must be sealed with a material which is resistant to high temperatures and which ensures that the tube remains airtight.

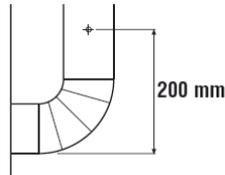


Fig.3

CONNECTION TO FUEL SUPPLY AND CHANGING FROM ONE TYPE OF GAS TO ANOTHER

To connect the burner to the fuel supply follow the instructions in the Burner Instruction Manual.

The burner can use both methane gas and L.P.G. The gas used to predispose the heater at factory has been declared on data plates applied on the box and on the heater itself (methane, G20, or L.P.G., G30, G31).

To change from methane gas to L.P.G. or vice-versa you must:

- Adjustments to be carried out are described in the burner instructions manual.
- repeat regulation of combustion while composition of combustion waste products are checked.
- correct data plate on the heater writing which type of gas must be used.

REGULATION OF COMBUSTION - 1° OPERATION

After having checked the hermetic seal and of combustion waste products line, heater may be operated for the first time.

To perform regulation of combustion correctly, combustion waste products must be analyzed using appropriate instruments: values recommended by actual standards must be reached.

The regulation procedure has been on the Burner Instruction Manual; final values of CO₂ shall be correspondant to excess air factor of 1,2 (12,5 for gas-oil, 9,7% for G20, 9,6% for G25, 11,7% for G30 and 11,7% for G31) while CO level shall be less than 75 ppm.

INSTRUCTIONS FOR USE

SWITCHING ON

- Set the control knob (2) in position "0";
- Turn on the disconnecting switch on the electric switchboard;
- If the unit is operated manually turn the control knob to 🔥. The burner starts up, the combustion chamber heats up and then the fan starts;
- If the unit operates automatically set the room thermostat at the desired level and turn the control knob (2) to 🔥: the heater will now start and stop automatically.
- If the heater doesn't start after you have completed the above operations consult the Troubleshooting section of this manual.

TURNING OFF

In manual operation turn control knob (2) to "0" or turn off control in automatic operation.

The burner stops while the fan turns itself on and off until the combustion chamber has completely cooled down.

Warning



Never stop the heater by simply turning off the disconnecting switch on the electric switchboard. The electrical supply must only be disconnected when the fan has come to a complete stop.

VENTILATION

When the control knob is turned to the symbol  the heater operates in continuous fan mode.

MAINTENANCE

Warning



The following operations must be carried out by qualified personnel only.

Before carrying out any maintenance operation the heater must be disconnected from the mains.

Therefore:

- **Stop the machine as instructed above**
- **Turn off the disconnecting switch on the electric switchboard.**
- **Wait until the heater has cooled.**

CLEANING THE HEAT EXCHANGER AND THE COMBUSTION CHAMBER

For the heater to operate efficiently the heat exchanger and combustion chamber must be cleaned after a period of prolonged use and more frequently if too much soot builds up. Soot builds up when there is not enough chimney draft, when the fuel is of very poor quality, when the burner is regulated incorrectly or when the heater is switched on and off too frequently. If the heater starts vibrating when it is turned on there is probably too much soot.

To get at the heat exchanger (1) take off the front panel (3) and then remove the smoke box panel (2) and remove baffle plates (7). To get at the combustion chamber (4) remove the burner (5).

CLEANING THE FAN

Remove any dirt or extraneous material from the mesh of the aspiration grill (6) and if necessary clean the propeller with an air-suction tool.

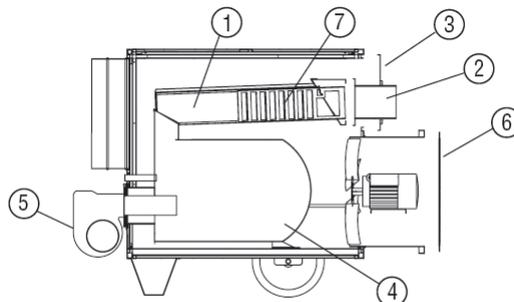


Fig.4

CLEANING THE BURNER

For the heater to work efficiently the burner must be serviced regularly by an Authorized Service Technician. All cleaning, servicing and regulation operations must be carried out as indicated in the Burner Instruction Manual.

Warning



After every type of technical maintenance, please verify that the machine starting regularly.

TRANSPORTING AND MOVING THE HEATER

To move the Jumbo use the front handles and back wheels.

Warning



Before moving the unit:

- **Turn it off as indicated above.**
- **Disconnect electricity by pulling out the plug.**
- **Wait until the heater cools down**

Suitable equipment must always be used when moving a unit and the instructions given above must be scrupulously adhered to.

Warning



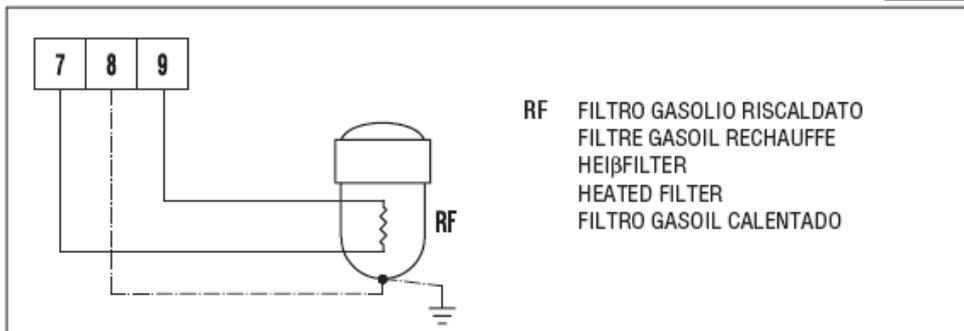
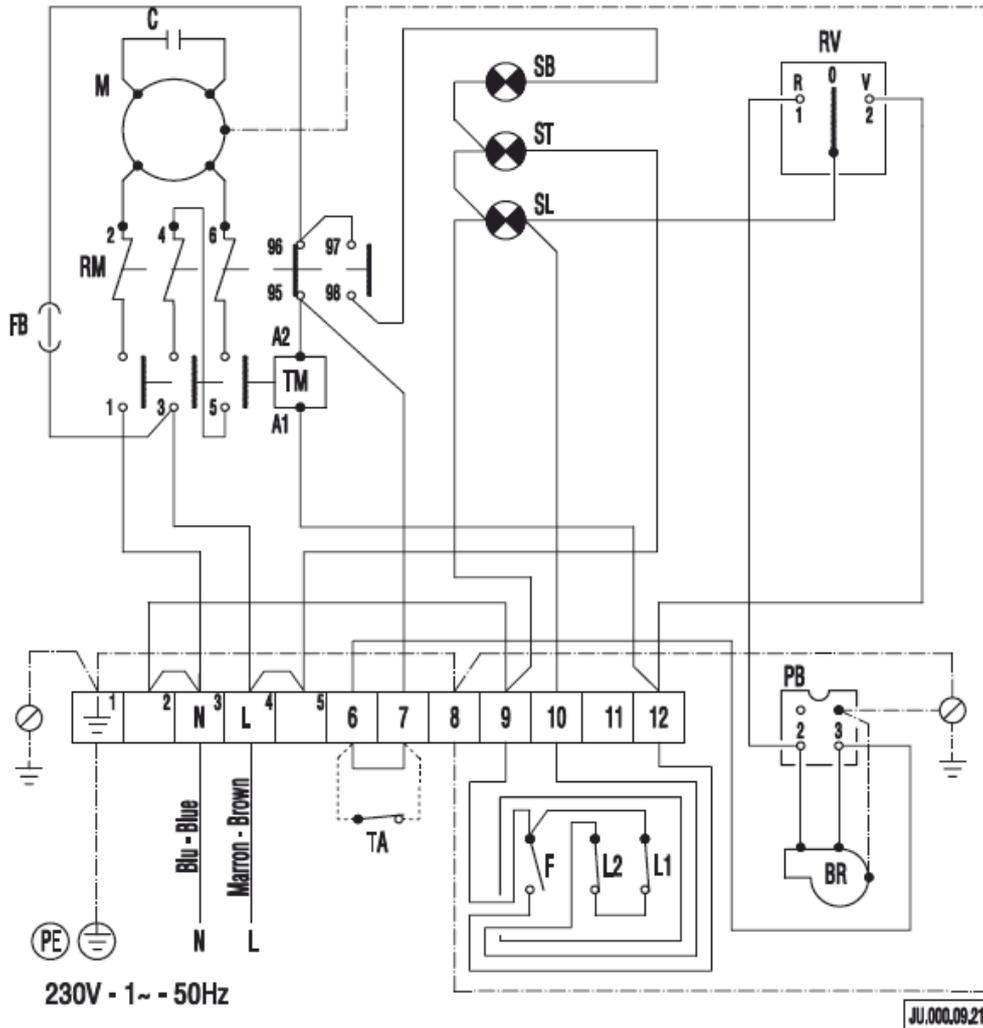
Never try to lift the heater manually. Doing so could result in physical injury.

OBSERVED FAULTS, CAUSES AND REMEDIES

<i>OBSERVED FAULT</i>	<i>CAUSE</i>	<i>REMEDY</i>
<ul style="list-style-type: none"> • The heater won't start 	<ul style="list-style-type: none"> • Faulty electrical supply 	<ul style="list-style-type: none"> • Check function and positioning of main switch • Check power cord • Check electrical connections • Check fuses
	<ul style="list-style-type: none"> • Wrong positioning of main switch 	<ul style="list-style-type: none"> • Put main switch in correct position
	<ul style="list-style-type: none"> • Wrong setting of room thermostat 	<ul style="list-style-type: none"> • Check setting of room thermostat
		<ul style="list-style-type: none"> • Check function of room thermo-stat
	<ul style="list-style-type: none"> • Safety device (burner, thermostat L2, fan thermal relay) not restarted after repairs 	<ul style="list-style-type: none"> • Press the appropriate restart button: <ul style="list-style-type: none"> • burner (button on control device) • thermostat (button (6)) • fan thermal relay (button (11))
<ul style="list-style-type: none"> • Thermostat L1 cuts in (the lamp (9) light up and then it cuts down) 	<ul style="list-style-type: none"> • The combustion chamber has overheated 	<ul style="list-style-type: none"> • Check fuel flow • Check position registers, draw - holes, etc. • Remove extraneous material from air ducts and ventilation grills
<ul style="list-style-type: none"> • Thermostat L2 cuts in (Warning lamp (9) lights up) 	<ul style="list-style-type: none"> • Excessive combustion chamber over heating 	<ul style="list-style-type: none"> • Check as indicated above • If fault persists contact our Service Center
<ul style="list-style-type: none"> • Thermal relay RM cuts in (warning light (10) lights up) 	<ul style="list-style-type: none"> • Fan motor current absorption is excessive 	<ul style="list-style-type: none"> • Heater with helicoidal ventilator: remove eventual debris preventing free flow of air on intake and outlet. Check length of air ducts, reduce if excessive.
		<ul style="list-style-type: none"> • Heater with centrifugal ventilator: check setting of transmission belt as indicated in chapter ("CONNECTION TO HOT AIR DUCTS").
		<ul style="list-style-type: none"> • Always check that current absorption remains below value indicated on motor manufacturer plate
<ul style="list-style-type: none"> • The burner starts up, the flame doesn't light up and the restart light on the control device comes on 	<ul style="list-style-type: none"> • Burner not working correctly 	<ul style="list-style-type: none"> • Press the restart button to turn on the heater. If the same problem arises again call an Authorized Service Technician
<ul style="list-style-type: none"> • The fan doesn't start up or starts up late 	<ul style="list-style-type: none"> • No electrical power 	<ul style="list-style-type: none"> • Check fuses • Check electrical connections
	<ul style="list-style-type: none"> • F thermostat out of order 	<ul style="list-style-type: none"> • Check the thermostat, set it and replace it if necessary
	<ul style="list-style-type: none"> • Winding of motor burnt or interrupted 	<ul style="list-style-type: none"> • Replace the fan motor
	<ul style="list-style-type: none"> • Condenser burnt (mod. "M") 	<ul style="list-style-type: none"> • Replace the condenser
	<ul style="list-style-type: none"> • Motor bearings blocked 	<ul style="list-style-type: none"> • Replace the bearings
<ul style="list-style-type: none"> • The fan vibrates or makes unusual noise 	<ul style="list-style-type: none"> • Extraneous material on fan blades 	<ul style="list-style-type: none"> • Remove extraneous material
	<ul style="list-style-type: none"> • Not enough air circulation 	<ul style="list-style-type: none"> • Remove obstacles to air circulation
<ul style="list-style-type: none"> • Not enough heat 	<ul style="list-style-type: none"> • Wrong burner 	<ul style="list-style-type: none"> • Call an Authorized Service Technician

WIRING DIAGRAM

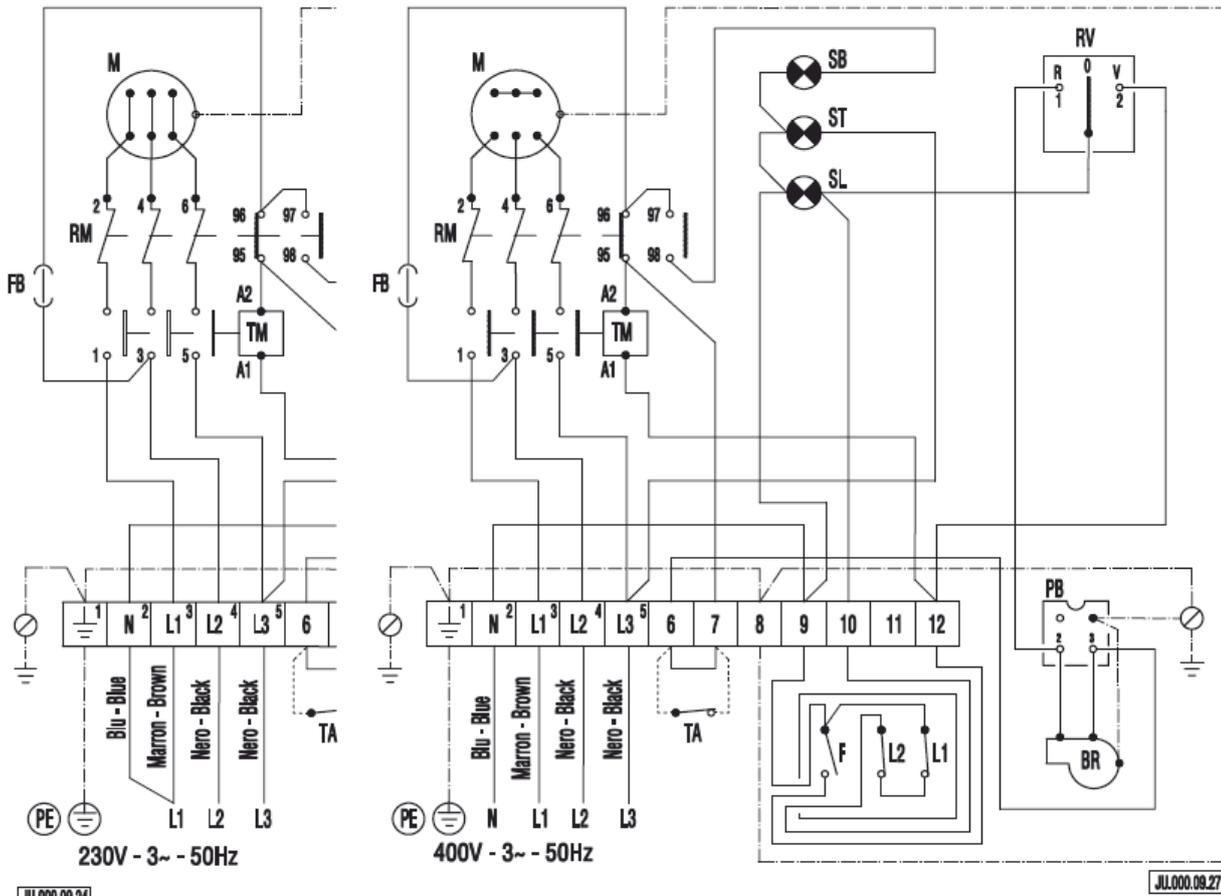
JUMBO M, M/C



- | | | | | | |
|----|---------------------|----|-----------------------|----|---|
| M | FAN MOTOR | ST | CONTROL LAMP | L1 | OVERHEAT SAFETY THERMOSTAT, L1 |
| F | FAN THERMOSTAT, F | SB | FAN STOP CONTROL LAMP | L2 | LIMIT THERMOSTAT WITH MANUAL RESTART, L2 |
| FB | BURNER FUSE 6A | BR | BURNER | RV | CONTROL KNOB HEAT-STOP-VENTILATION ONLY |
| TM | FANS TELE-CONTACTOR | TA | ROOM THERMOSTAT | SL | OVERHEAT THERMOSTATS CONTROL LAMP, L1, L2 |
| RM | FANS THERMAL RELAY | C | CONDENSER | | |

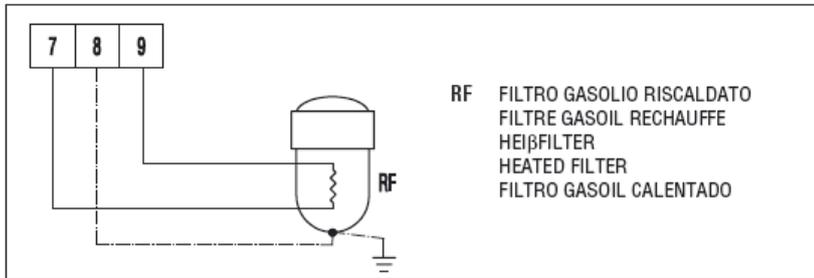
WIRING DIAGRAM

JUMBO T, T/C



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RF FILTRO GASOLIO RISCALDATO
 FILTRE GASOIL RECHAUFFE
 HEIßFILTER
 HEATED FILTER
 FILTRO GASOIL CALENTADO

M	FAN MOTOR	ST	CONTROL LAMP	L1	OVERHEAT SAFETY THERMOSTAT, L1
F	FAN THERMOSTAT, F	SB	FAN STOP CONTROL LAMP	L2	LIMIT THERMOSTAT WITH MANUAL RESTART, L2
FB	BURNER FUSE 6A	BR	BURNER	RV	CONTROL KNOB HEAT-STOP-VENTILATION ONLY
TM	FANS TELE-CONTACTOR	TA	ROOM THERMOSTAT	SL	OVERHEAT THERMOSTATS CONTROL LAMP, L1, L2
RM	FANS THERMAL RELAY	PB	BURNER		

OIL VERSION

CARATTERISTICHE TECNICHE - CARACTERISTIQUES TECHNIQUES TECHNISCHEN DATEN - TECHNICAL SPECIFICATIONS CARACTERÍSTICAS TÉCNICAS		JUMBO 65 M JUMBO 65 T	JUMBO 90 M JUMBO 90 T	JUMBO 90 M/C	JUMBO 115 M JUMBO 115 T	JUMBO 115 M/C JUMBO 115 T/C	JUMBO 150 M JUMBO 150 T	JUMBO 150 M/C JUMBO 150 T/C	JUMBO 200 M JUMBO 200 T	JUMBO 200 T/C
HI	Potenza termica max - Puissance thermique max Wärmeleistung max - Max heating output Potencia térmica máx Portata d'aria - Débit d'air Nenn-Luftleistung - Air output Capacidad aire	70.000/62.000 81,4/72,09	90.000/76.500 104,65/88,95	90.000/76.500 104,65/88,95	115.000/95.000 133,72/110,47	115.000/95.000 133,72/110,47	150.000/130.000 174,42/151,16	150.000/130.000 174,42/151,16	190.000/170.000 220,93/197,67	190.000/170.000 220,93/197,67
	Potenza termica netta* - Puissance thermique nette* Nennwärmeleistung* - Net heating output* Potencia térmica neta* Rendimento, h - Rendement, h Wärmeleistung, h - Efficiency, h Rendimiento, h	59.512/55.040 69,20/64,0	79.650/69.140 92,62/80,40	79.650/69.140 92,62/80,40	101.890/85.785 118,48/99,75	101.890/85.785 118,48/99,75	131.250/117.000 152,62/136,06	131.250/117.000 152,62/136,06	170.430/154.700 198,17/179,88	170.430/154.700 198,17/179,88
	Fase - Phase Phase - Phase Fase	1/3	1/3	1	1/3	1/3	1/3	1/3	1/3	3
	Alimentazione elettrica - Alimentation électrique Netzanschluss - Power supply Alimentación eléctrica	230 400	230 400	230	230/400	230/400	230/400	230/400	230 230/400	230/400
	Consumo - Consumption Brennstoffverbr. - Consumption Consumo	50	50	50	50	50	50	50	50	50
	Temperatura dei fumi - Température des fumées Rauchtemperatur - Temperature of smokes Temperatura de los humos	8,82/7,50	8,82/7,50	8,82/7,50	11,27/9,31	11,27/9,31	14,71/12,75	14,71/12,75	18,63/16,67	18,63/16,67
	Portata dei fumi - Débit des fumées Rauchdurchsatz - Smokes flow Capacidad de los humos	282	282	260	220	220	249	249	200	200
	Potenza elettrica ventilatore - Puissance électrique ventilateur Ventilatormotor Leistungsaufnahme - Fan power consumption Potencia eléctrica del ventilador	165	213	213	223	223	306	306	400	400
	Potenza elettrica totale* - Puissance électrique* Leistungsaufnahme* - Total power consumption* Potencia eléctrica total*	523 - 433	1.060 - 750	1.470	1.500 - 1.300	2.420 - 2.620	1.860 - 1.600	2.130 - 2.340	2.650 - 2.820	4.130
	Pressione statica disponibile - Pression statique disponible Verfügbare Stat. Pressung - Available static pressure Presión estática disponible	728 - 607	1.240 - 930	1.760	1.690 - 1.460	2.600 - 2.780	2.120 - 1.860	2.300 - 2.600	2.850 - 2.540	4.330
	Contropressione in camera di combustione* - Contre pression fumées* Rauchgaswiderstand* - Burned gases pressure* Contrapresión en cámara de combustión*	10	10	10	10	20	10	20	10	20
	Tiraggio minimo al camino* - Tirage minimum nécessaire* Erforderlicher Kaminzug* - Compulsory flue draft* Tiro mínimo a la chimenea*	1	1	1	1	1	1	1	1	1
	Diametro uscita fumi - Diamètre sortie fumées Abgasrohr Durchmesser - Flue diameter Diámetro salida humos	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
	Uscita aria - Sortie air Warmluftausblasstutzen - Air outlet Salida aire	150	150	150	200	200	200	200	200	200
	Temperatura avviamento ventilatore - Température démarrage ventilateur Ventilatorthermostat - Fan starting temperature Temperatura puesta en marcha ventilador	450	500	500	600	600	600	600	700	700
	Temperatura limite di sicurezza - Température limite de sécurité Temperaturwächter - Safety limit temperature setting Temperatura límite de seguridad	35	35	35	35	35	35	35	35	35
	Livello sonoro a 1 m* - Niveau sonore à 1 m* Geräuschpegel a 1 m* - Noise level at 1 m* Nivel sonoro a 1 m*	85	85	85	85	85	85	85	85	85
	Dimensioni, L x P x A - Dimensions, L x P x H Masse, H x B x T - Dimensions, L x W x H Dimensiones, L x P x A	72,7	78,1	73,8	79,6	75	82	80	81,3	75,7
	Peso - Poids Gewicht - Weight Peso	1.375x920x672	1.520x960x702	1.775x960x702	1.695x1.090x772	2.075x1.090x772	1.895x1.230x724	2.340x1.230x724	2.180x1.400x804	2.660x1.400x804
		128	160	165	195	200	250	255	360	370

* Con bruciatore Ecoflam - Avec brûleur Ecoflam - Mit Ecoflam Brenner - With Ecoflam burner - Con quemador Ecoflam

GAS VERSION

CARATTERISTICHE TECNICHE - CARACTERISTIQUES TECHNIQUES TECHNISCHE DATEN - TECHNICAL SPECIFICATIONS CARACTERÍSTICAS TÉCNICAS			JUMBO 90 M JUMBO 90 T			JUMBO 90 M/C			JUMBO 115 M JUMBO 115 T			JUMBO 115 M/C JUMBO 115 T/C		
Potenza termica max - Puissance thermique max Wärmeleistung max - Max heating output Potencia térmica máx	Hi	[kcal/h] [kW]	90.000 104,65			90.000 104,65			115.000 133,72			115.000 133,72		
Categoria - Catégorie Kategorie - Category Categoría	(Gas, Gaz)		H _{2820P}											
Portata d'aria - Débit d'air Nenn-Luftleistung - Air output Capacidad aire		[m³/h]	6.000			6.000			8.000			8.000		
Potenza termica netta* - Puissance thermique nette* Nennwärmeleistung* - Net heating output* Potencia térmica neta*		[kcal/h] [kW]	79.650 92,62			79.650 92,62			101.890 118,48			101.890 118,48		
Rendimento, h - Rendement, h Wärmeleistung, h - Efficiency, h Rendimiento, h		[%]	88,5			88,5			88,6			88,6		
Protezione IP - Protection IP Schutz IP - IP protection Protección IP			IP 20											
Brucciatores Gas - Brûleur Gaz Brenner Gas - Burner Gas Quemador Gas			Ecoflam BLU 170P TC											
Temperatura min. di servizio - Température min. de service Min. Service-Temperatur - Min. service temperature Temperatura min. de servicio		[°C]	-20											
Temperatura max. di servizio - Température max. de service Max. Service-Temperatur - Max. service temperature Temperatura máx. de servicio		[°C]	40											
Tipo - Type Typ - Type Tipo			B ₂₃											
Alimentazione elettrica - Alimentatione électrique Netzanschluss - Power supply Alimentación eléctrica	Fase - Phase - Phase -		1 / 3			1			1 / 3			1 / 3		
	Tensione - Tension Spannung - Voltage Tension	[V]	230			230			230			230		
	Frequenza - Fréquence Frequenz - Frequency Frecuencia	[Hz]	50			50			50			50		
			400			400			230 / 400			230 / 400		
Combustibile - Combustible Brennstoff - Fuel Combustible			G20	G30	G31	G20	G30	G31	G20	G30	G31	G20	G30	G31
Consumo - Consommation Brennstoffverbr. - Consumption Consumo	[kg/h]	-	8,25	8,13	-	8,25	8,13	-	10,55	10,39	-	10,55	10,39	
	[Nm³/h]	10,5	-	-	10,5	-	-	13,4	-	-	13,4	-	-	
Pressione gas - Pression gaz Betriebsdruck - Gas pressure Presión gas		[mbar]	20	29	37	20	29	37	20	29	37	20	29	37
Temperatura dei fumi - Température des fumées Rauchtemperatur - Temperature of smokes Temperatura de los humos		[°C]	260			260			250			250		
Portata dei fumi - Débit des fumées Rauchdurchsatz - Smokes flow Capacidad de los humos		[Nm³/h]	213			213			272			272		
Potenza elettrica ventilatore - Puissance électrique ventilateur		[W]	1.060 / 750			1.470			1.500 / 1.300			2.420 / 2.620		
Ventilatormotor Leistungsaufnahme - Fan power consumption Potenza elettrica totale* - Puissance électrique* Leistungsaufnahme* Total power consumption* Potencia eléctrica total*		[W]	1.240 / 930			1.760			1.690 / 1.460			2.600 / 2.780		
Pressione statica disponibile - Pression statique disponible Verfügbare Stat. Pressung Max. - Available static pressure Presión estática disponible		[mm H ₂ O]	10			10			10			20		
Contropressione in camera di combustione* - Contre pression fumées*		[mbar]	1			1			1			1		
Rauchgaswiderstand* - Burned gases pressure* tiraggio minimo al camino* - Tirage minimum nécessaire* Erforderlicher Kaminzug* - Compulsory flue draft*		[mbar]	0,1			0,1			0,1			0,1		
Tiro minimo a la chimenea* Diametro uscita fumi - Diamètre sortie fumées Abgasrohr Durchmesser - Flue diameter Diámetro salida humos		[mm]	150			150			200			200		
Uscita aria - Sortie air Warmluftausblasstutzen - Air outlet Salida aire		[mm]	500			500			600			600		
Temperatura avviamento ventilatore - Température démarrage ventilateur		[°C]	35			35			35			35		
Ventilatorthermostat - Fan starting temperature Temperatura limite di sicurezza - Température limite de sécurité		[°C]	85			85			85			85		
Temperaturwächter - Safety limit temperature setting Livello sonoro a 1 m* - Niveau sonore à 1 m* Gerauschspeigel a 1 m* - Noise level at 1 m* Nivel sonoro a 1 m*		[dBA]	78,1			73,8			79,6			75		
Dimensioni, L x P x A - Dimensions, L x P x H Masse, H x B x T - Dimensions, L x W x H Dimensiones, L x P x A		[mm]	1.520x960x702			1.775x960x702			1.695x1.090x772			2.075x1.090x772		
Peso - Poids Gewicht - Weight Peso		[kg]	160			165			195			200		

* Con bruciatore Ecoflam - Avec brûleur Ecoflam - Mit Ecoflam Brenner - With Ecoflam burner - Con quemador Ecoflam

GAS VERSION

CARATTERISTICHE TECNICHE - CARACTERISTIQUES TECHNIQUES TECHNISCHE DATEN - TECHNICAL SPECIFICATIONS CARACTERÍSTICAS TÉCNICAS			JUMBO 150 M JUMBO 150 T			JUMBO 150 M/C JUMBO 150 T/C			JUMBO 200 M JUMBO 200 T			JUMBO 200 T/C		
Potenza termica max - Puissance thermique max Wärmeleistung max - Max heating output Potencia térmica máx	Hi	[kcal/h] [kW]	150.000 174,30			150.000 174,30			190.000 220,93			190.000 220,93		
Categoria - Catégorie Kategorie - Category Categoría	(Gas, Gaz)													
Portata d'aria - Débit d'air Nenn-Luftleistung - Air output Capacidad aire		[m³/h]	10.500			10.500			12.500			12.500		
Potenza termica netta* - Puissance thermique nette* Nennwärmeleistung* - Net heating output* Potencia térmica neta*		[kcal/h] [kW]	131.250 152,62			131.250 152,62			170.430 198,17			170.430 198,17		
Rendimento, h - Rendement, h Wärmeleistung, h - Efficiency, h Rendimiento, h		[%]	87,5			87,5			89,7			89,7		
Protezione IP - Protection IP Schutz IP - IP protection Protección IP			IP 20											
Bruciatore Gas - Brûleur Gaz Brenner Gas - Burner Gas Quemador Gas			Ecoflam BLU 250P TC						Ecoflam BLU 250P TL					
Temperatura min. di servizio - Température min. de service Min. Service-Temperatur - Min. service temperature Temperatura mín. de servicio		[°C]	-20											
Temperatura max. di servizio - Température max. de service Max. Service-Temperatur - Max. service temperature Temperatura máx. de servicio		[°C]	40											
Tipo - type Typ - Type Tipo			B _{2s}											
Alimentazione elettrica - Alimentatione électrique Netzanschluss - Power supply Alimentación eléctrica	Fase - Phase - Phase -		1 / 3			1 / 3			1 / 3			3		
	Tensione - Tension Spannung - Voltage Tensión	[V]	230			230			230			230 / 400		
	Frequenza - Fréquence Frequenz - Frequency Frecuencia	[Hz]	50			50			50			50		
Combustibile - Combustible Brennstoff - Fuel Combustible			G20	G30	G31	G20	G30	G31	G20	G30	G31	G20	G30	G31
Consumo - Consommation Brennstoffverbr. - Consumption Consumo		[kg/h]	-	13,75	13,55	-	13,75	13,55	-	17,42	17,16	-	17,42	17,16
		[Nm³/h]	17,5	-	-	17,5	-	-	22,2	-	-	22,2	-	-
Pressione gas - Pression gaz Betriebsdruck - Gas pressure Presión gas		[mbar]	20	29	37	20	29	37	20	29	37	20	29	37
Temperatura dei fumi - Température des fumées Rauchtemperatur - Temperature of smokes Temperatura de los humos		[°C]	287			287			237			237		
Portata dei fumi - Débit des fumées Rauchdurchsatz - Smokes flow Capacidad de los humos		[Nm³/h]	354			354			446			446		
Potenza elettrica ventilatore - Puissance électrique ventilateur Ventilatormotor Leistungsaufnahme - Fan power consumption		[W]	1.860 / 1.600			2.130 / 2.340			2.650 / 2.820			4.130		
Potenza elettrica del ventilador Potenza elettrica totale* - Puissance électrique* Leistungsaufnahme* Total power consumption* Potencia eléctrica total*		[W]	2.120 / 1.860			2.300 / 2.600			2.850 / 2.540			4.330		
Pressione statica disponibile - Pression statique disponible Verfügbare Stat. Pressung Max. - Available static pressure Presión estática disponible		[mm H ₂ O]	10			20			10			20		
Contropressione in camera di combustione* - Contre pression fumées* Rauchgaswiderstand* - Burned gases pressure* Tiraggio minimo al camino* - Tirage minimum nécessaire*		[mbar]	1			1			1			1		
Erforderlicher Kaminzug* - Compulsory flue draft* Tiro minimo a la chimenea*		[mbar]	0,1			0,1			0,1			0,1		
Diametro uscita fumi - Diamètre sortie fumées Abgasrohr Durchmesser - Flue diameter Diámetro salida humos		[mm]	200			200			200			200		
Uscita aria - Sortie air Wärmluftausblasstutzen - Air outlet Salida aire		[mm]	600			600			700			700		
Temperatura avviamento ventilatore - Température démarrage ventilateur Ventilatorthermostat - Fan starting temperature		[°C]	35			35			35			35		
Temperatura limite di sicurezza - température limite de sécurité Temperaturwächter - Safety limit temperature setting Temperatura límite de seguridad		[°C]	85			85			85			85		
Livello sonoro a 1 m* - Niveau sonore à 1 m* Geräuschspegel a 1 m* - Noise level at 1 m* Nivel sonoro a 1 m*		[dBA]	82			80			81,3			75,7		
Dimensioni, L x P x A - Dimensions, L x P x H Masse, H x B x T - Dimensions, L x W x H Dimensiones, L x P x A		[mm]	1.895x1.230x724			2.340x1.230x724			2.180x1.400x804			2.660x1.400x804		
Peso - Poids Gewicht - Weight Peso		[kg]	250			255			360			370		

* Con bruciatore Ecoflam - Avec brûleur Ecoflam - Mit Ecoflam Brenner - With Ecoflam burner - Con quemador Ecoflam



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