

Installation manual

Tumble dryer

D7-190
Type N1190..



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The manufacturer reserves the right to make changes to design and component specifications.

1 Safety Precautions

- Servicing shall be carried out only by authorized personnel.
- Only authorized spare parts, accessories and consumables shall be used.
- The machine is not to be used if industrial chemicals have been used for cleaning.
- Do not dry unwashed items in the machine.
- Items that have been soiled with substances such as cooking oil, acetone, alcohol, petrol, kerosene, spot removers, turpentine, waxes and wax removers should be washed in hot water with an extra amount of detergent before being dried in the machine.
- Items such as foam rubber (latex foam), shower caps, waterproof textiles, rubber backed articles and clothes or pillows fitted with foam rubber pads should not be dried in the machine.
- Fabric softeners or similar products should be used as specified by the fabric softener instructions.
- The final part of a drying cycle occurs without heat (cool down cycle) to ensure that the items are left at a temperature that ensures that the items will not be damaged.
- Remove all objects from pockets such as lighters and matches.
- **WARNING.** Never stop the machine before the end of the drying cycle unless all items are quickly removed and spread out so that the heat is dissipated.
- Adequate ventilation has to be provided to avoid the back flow of gases into the room for appliances burning other fuels, including open fires.
- Exhaust air must not be discharged into a flue which is used for exhausting fumes from appliances burning gas or other fuels.
- The machine must not be installed behind a lockable door, a sliding door or a door with a hinge on the opposite side to that of the machine in such a way that a full opening of the machine is restricted.
- If the machine has a lint trap this has to be cleaned frequently.
- The lint must not be accumulated around the machine.
- **DO NOT MODIFY THIS APPLIANCE.**
- When performing service or replacing parts, the power must be disconnected.
- When the power is disconnected, the operator must see that the machine is disconnected (that the plug is removed and remains removed) from any point to which he has access. If this is not possible, due to the construction or installation of the machine, a disconnection with a locking system in the isolated position shall be provided.
- In accordance with the wiring rules: mount a multi-pole switch prior to the machine to facilitate installation and service operations.
- Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III, means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
- **WARNING:** The appliance must not be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly switched on and off by a utility.
- If different rated voltages or different rated frequencies (separated by a /) are stated at the machine data plate, instructions for adjusting the appliance for operation at the required rated voltage or rated frequency are stated in the installation manual.
- The openings in the base, shall not be obstructed by a carpet.

- Oil-affected items can ignite spontaneously, especially when exposed to heat sources such as in a tumble dryer. The items become warm, causing an oxidation reaction in the oil. Oxidation creates heat. If the heat cannot escape, the items can become hot enough to catch fire. Piling, stacking or storing oil-affected items can prevent heat from escaping and so create a fire hazard.
- If it is unavoidable that fabrics that contain vegetable or cooking oil or have been contaminated by hair care products be placed in a tumble dryer they should first be washed in hot water with extra detergent – this will reduce, but not eliminate, the hazard.
- Maximum mass of dry cloth: 10.6 kg.
- A-weighted emission sound pressure level at working stations: <70 dB(A).
- Maximum inlet water pressure: 1000 kPa
- Minimum inlet water pressure: 50 kPa
- Additional requirements for the following countries; AT, BE, BG, HR, CY, CZ, DK, EE, FI, FR, DE, GR, HU, IS, IE, IT, LV, LT, LU, MT, NL, NO, PL, PT, RO, SK, SI, ES, SE, CH, TR, UK:
 - The appliance can be used in public areas.
 - This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- Additional requirements for other countries:
 - This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

1.1 General safety information

In order to prevent damage to the electronics (and other parts) that may occur as the result of condensation, the machine should be placed in room temperature for 24 hours before being used for the first time.







1.2 Commercial use only

The machine/machines covered by this manual is/are made for commercial and industrial use only.

1.3 Copyright

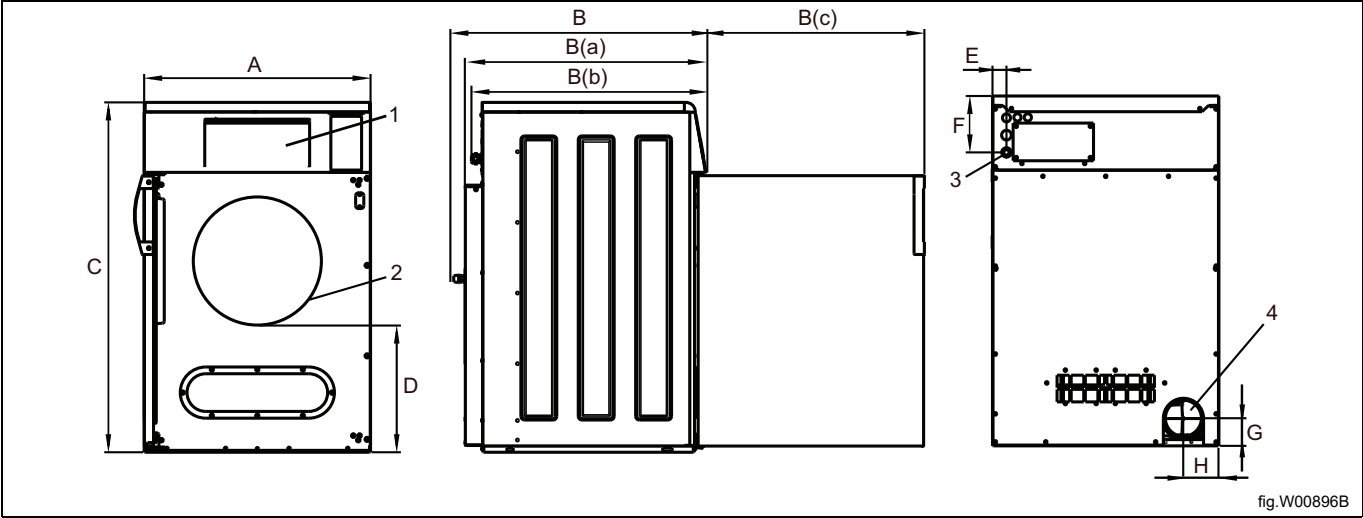
This manual is intended solely for consultation by the operator and can only be given to third parties with the permission of .

1.4 Symbols

	Caution
	Caution, hot surface
	Caution, high voltage
	Warning, risk of fire / flammable material
	Danger, crush hazard
	Read the instructions before using the machine

2 Technical data

2.1 Drawing



1	Operating panel
2	Door opening, \varnothing 400 mm
3	Electrical connection
4	Exhaust connection

	A	B	B(a)	B(b)	B(c)	C
mm	720	805	765	750	695	1115

	D	E	F	G	H
mm	405	45	180	90	115

2.2 Technical data

Weight, net	kg	99
Drum volume	litres	190
Drum diameter	mm	680
Drum depth	mm	555
Drum speed	rpm	47
Rated capacity, filling factor 1:18 (Max. load)	kg	10.6
Rated capacity, filling factor 1:22 (Recommended. load)	kg	8.6
Heating: Electricity	kW	6
	kW	8
Air consumption, Electric heating, 6 kW	m ³ /h	270
Air consumption, Electric heating, 8 kW	m ³ /h	290
Pressure drop, Electric heating, 6 kW	Max. Pa	380
Pressure drop, Electric heating, 8 kW	Max. Pa	350
A-weighted emission sound pressure level at working stations	dB(A)	<70
Heat emission of installed power, max	%	15

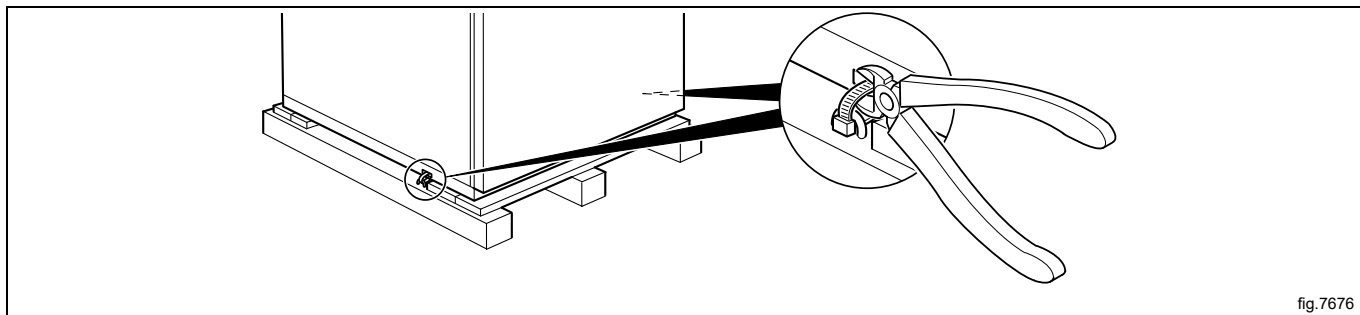
2.3 Connections

Air outlet	ø mm	125
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3 Setup

3.1 Unpacking

Cut and remove the two plastic straps between the machine and pallet. There is one strap on each side of the machine.



Remove the machine from the pallet.

Note!

When moving the machine, handle it with care. The drum has no transport clamps.

Place the machine on its final position.

4 Recycling instruction for packaging

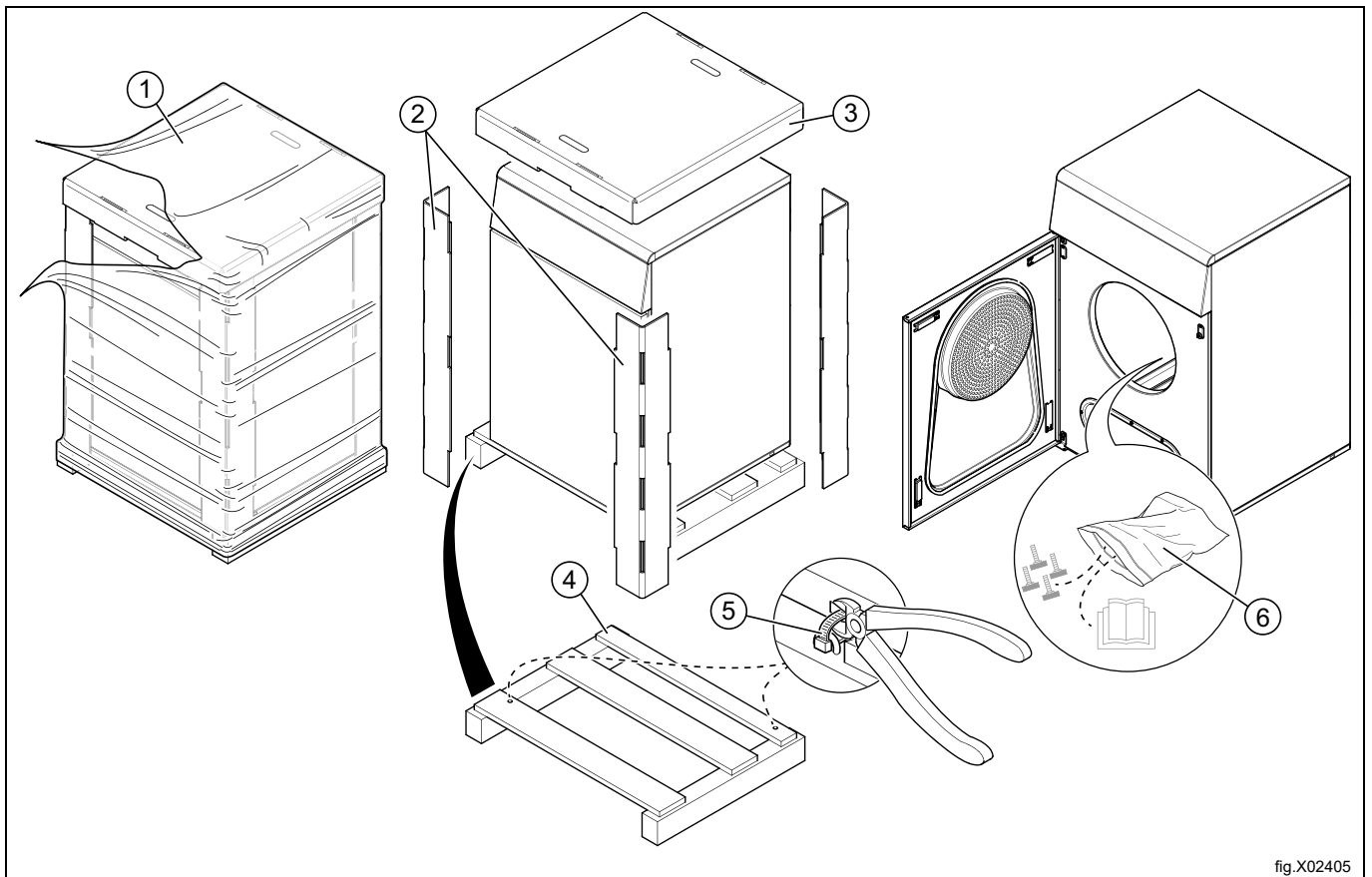
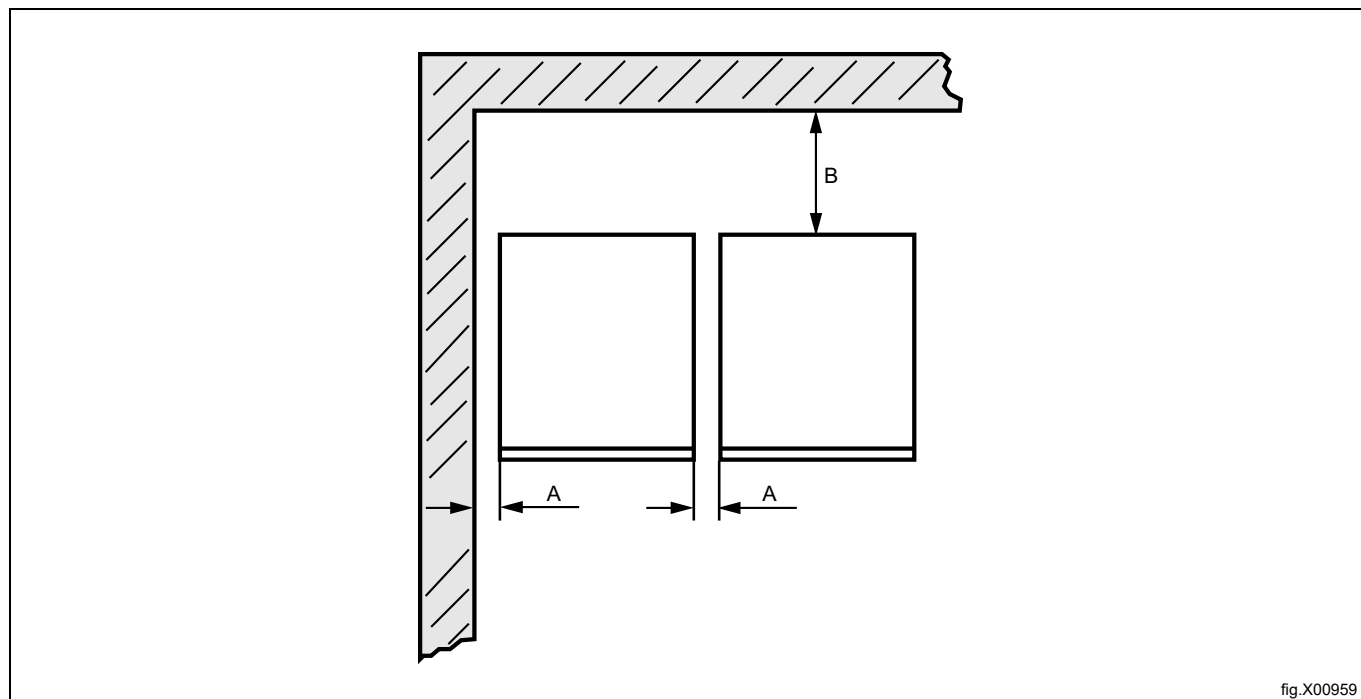


fig.X02405

Fig.	Description	Code	Type
1	Wrapping film	LDPE 4	Plastics
2	Corner protection	PS 6	Plastics
3	Cardboard packaging	PAP 20	Paper
4	Pallet	FOR 50	Wood
5	Cable Tie		Nylon
6	Plastic bag	PET 1	Plastics

5 Siting

The figure shows recommended distance to walls and/or other machines.



A	5–500 mm (Min. 5 mm)
B	500 mm (Min. 200 mm)

Note!

The machine should be positioned so that there will be enough space for working, both for the user and service personnel.

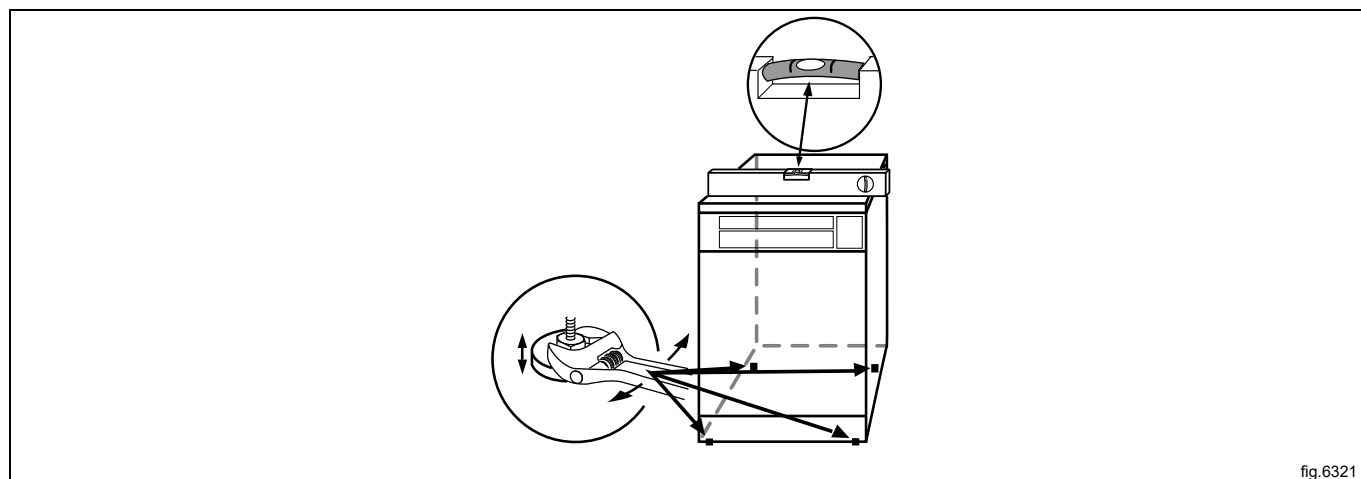
Respecting the given recommendations will provide easy access for maintenance and service operations.

In case of space limitations, it is possible to install machines without respecting to the given recommendations. If so, keep in mind that it might be necessary to disconnect and move other machines to be able to reach and perform service on affected machine.

6 Mechanical installation

Level the machine with the feet of the machine. The maximum height adjustment of the feet is 50 mm.

If the machine is mounted on a base it needs to be fastened to the base.



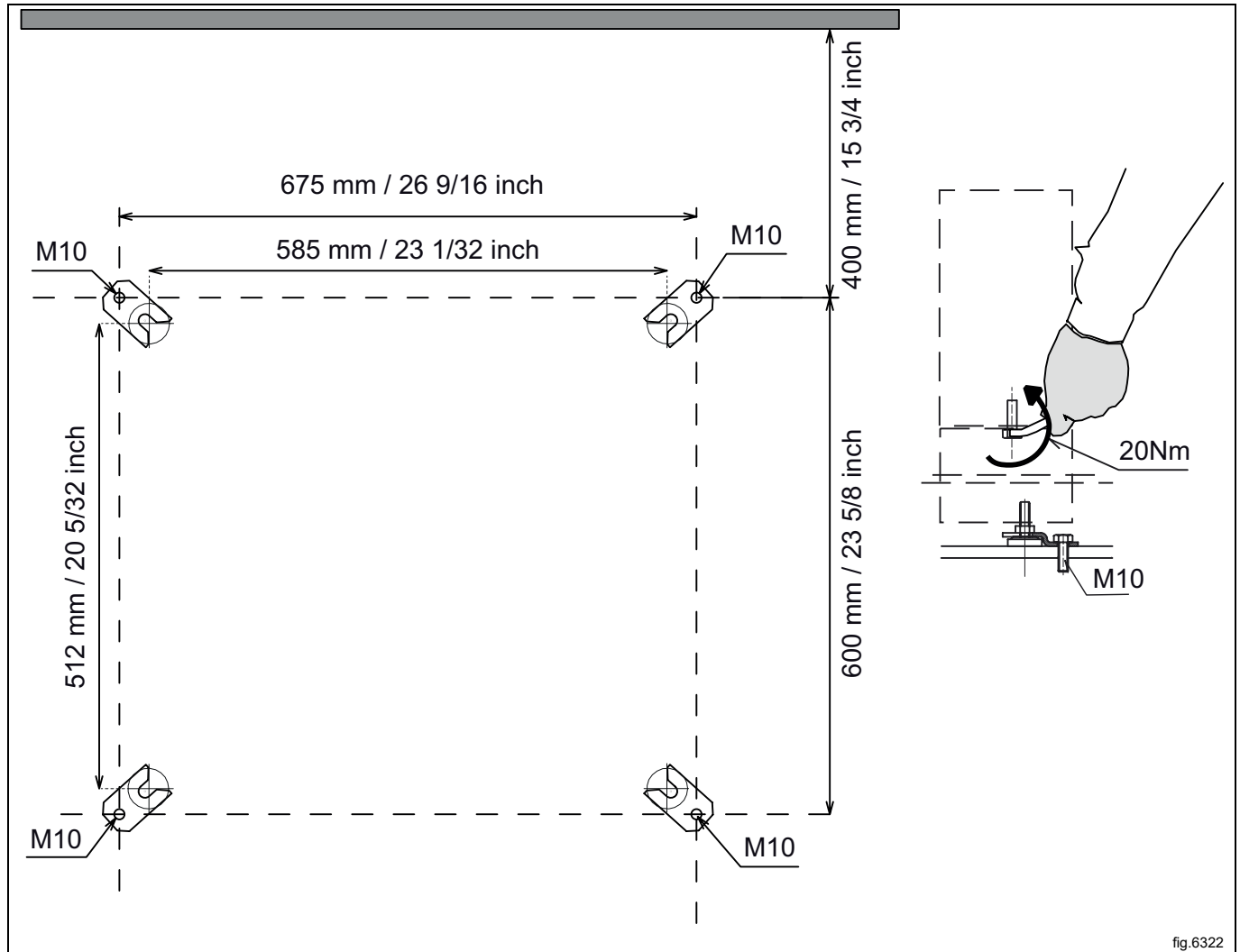
7 Marine installation

To ensure steadiness of the machine it is important to fasten the machine to the foundation.
Fasten four fittings to the foundation using four x M10 set screws.

Note!

The four fittings are not supplied with the machine and must be ordered as kit No. 487193544.

Fasten the machine to the fittings.



8 Evacuation system

8.1 Air principle

The fan creates low pressure in the machine, drawing air into the drum via the heating unit.

The heated air passes through the garments and the drum holes.

The air then flows out through a lint filter positioned in the door. After this, the air is evacuated through the fan and exhaust system.

Note!

It is very important that the machine gets enough fresh air in order to get the best drying result.

8.2 Fresh air

For maximum efficiency and the shortest possible drying time, it is important to ensure that fresh air is able to enter the room from the outside in the same volume as that is blown out of the room.

To avoid draught in the room it is important to place the air inlet behind the machine.

Provisions for adequate air supply: The area of the air inlet opening should be five times the size of the exhaust pipe area. The area of the inlet opening is the area through which the air can flow without resistance from the grating/slatted cover.

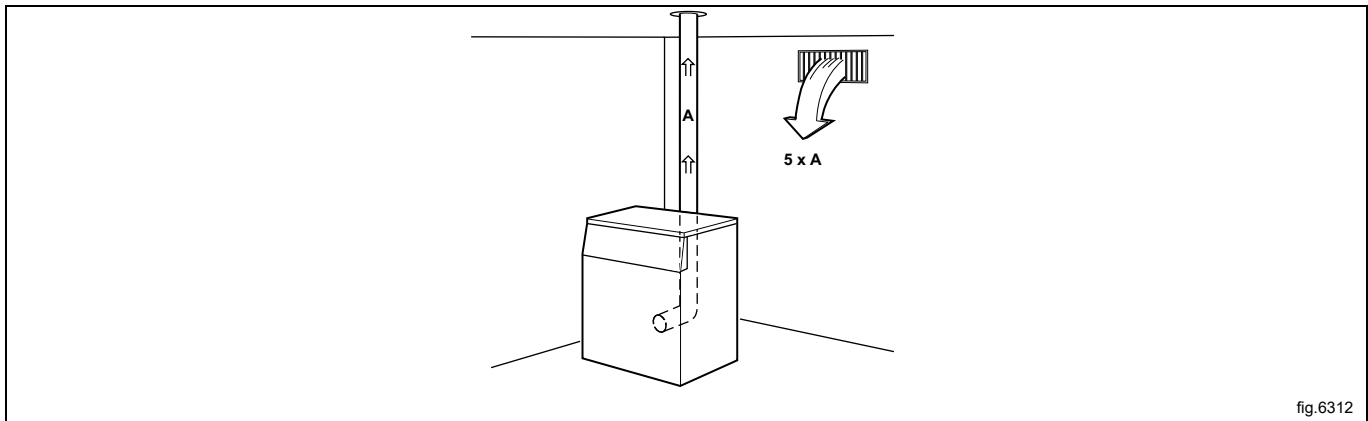


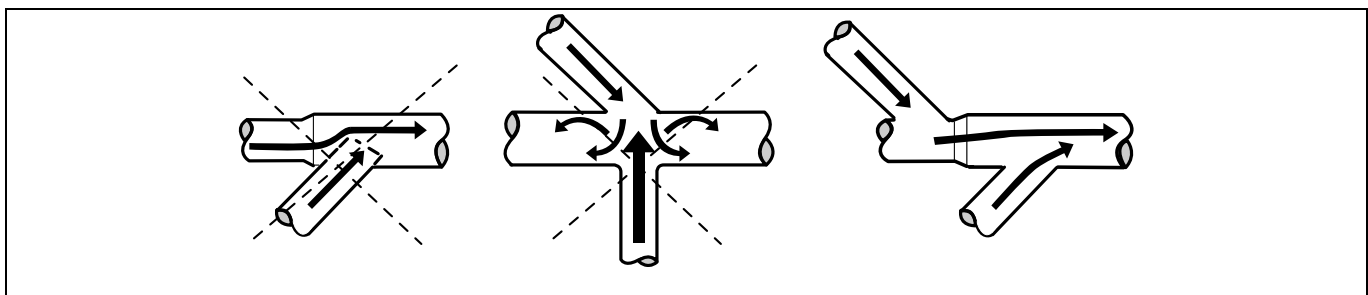
fig.6312

Note!

Gratings/slatted covers often block half of the total fresh air vent area. Remember to take this into account.

8.3 Exhaust duct

- Only rigid or flexible metal duct should be used for exhausting.
- Plastic ducting is not to be used.
- Recommended material for exhaust is galvanized steel.
- The duct is not to be assembled with screws or other fastening means that extend into the duct and catch lint.
- The exhaust air should not be vented into a wall, a ceiling, or a concealed space of building.
- The exhaust duct must lead clear of the building as condensation may cause frost damage to the building.
- The exhaust duct must lead to the outdoors.
- The exhaust duct must be placed in such a way that it is protected on the outside.
- The exhaust duct must be smooth on the inside (low air resistance).
- The exhaust duct must have gentle bends.



8.4 Shared exhaust duct



It is recommended that each machine is connected to a separate exhaust duct.



When several machines shall use the same exhaust duct the exhaust duct must increase after each machine. The recommended diameter increase progression is the one in the table.

If several machines are installed on the same exhaust pipe, it is recommended to adjust the airflow on the machines when all machines are started and running a program with no heat.

Please consider that unnecessarily large ducts create issues with the draught.

The exhaust duct must have a nonreturn flap after each dryer.

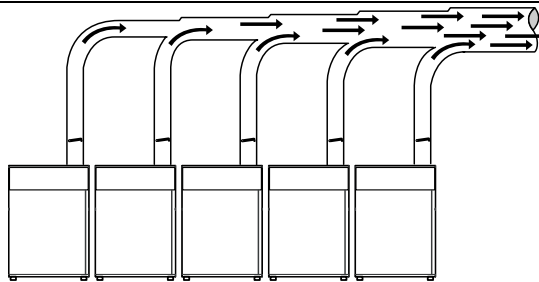


fig.6329

Number of machines		1	2	3	4	5	6	7	8	9	10
Exhaust duct	ø mm	125	200	250	250	315	315	400	400	400	400
Recommended area of fresh air intake	m ²	0.06	0.16	0.25	0.25	0.39	0.39	0.63	0.63	0.63	0.63
Minimum area of fresh air intake	m ²	0.03	0.06	0.09	0.12	0.15	0.18	0.21	0.24	0.27	0.3



The exhaust duct diameter must not be reduced.



8.5 Exhaust dimensioning

It is important that the machine has correct air volume compared to each machines power.

If the air flow is smaller or larger this will result in a longer drying period.

If the outlet pipe is long or the ventilation is not properly designed we recommend to clean the outlet pipes periodically. Usually, longer ducts need more frequent cleaning.

The exhaust pipes shall be short in order for the machine to work in the best way.

All cover panels must be mounted in order for the machine to work in the best way.

8.6 Adjusting the dryer

It is important that the machine has the correct air flow compared to each machines heat input. If the air flow is below the minimum, the machine will be forced to switch the heating off which will result in longer drying time.

An air flow above the needed is unnecessary and can result in a cold laundry room and noise from the piping and outlet and in extreme cases prolonged drying time



For brief evacuations and where there are high airflows, the tumble dryer must be adjusted to optimal flow. One way in which this can be done is by using an "Iris valve", a valve specially designed to regulate airflow.

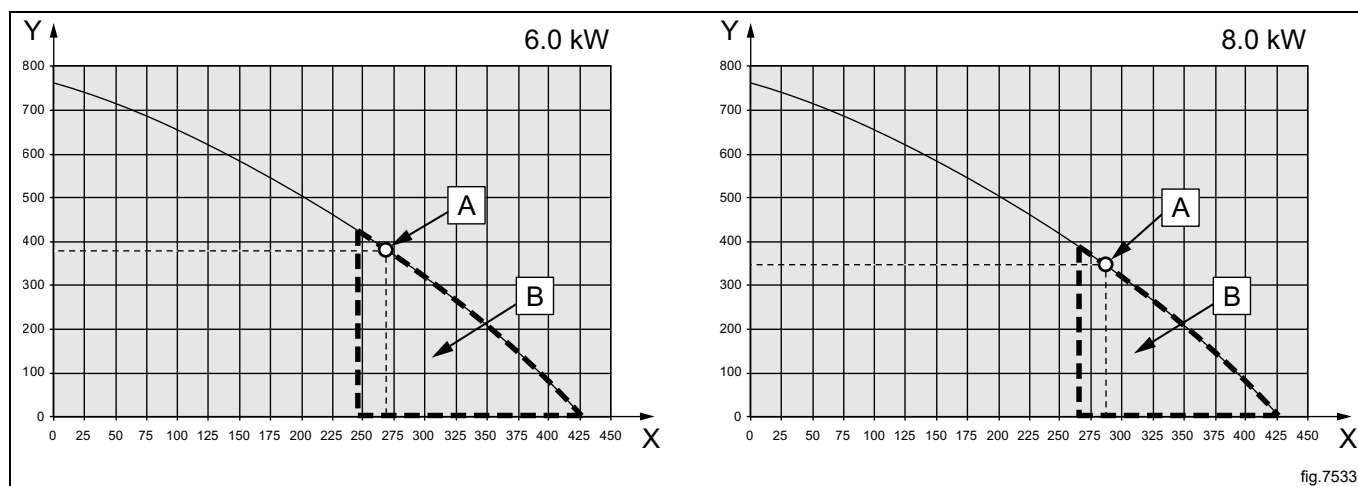
Effect kW	Optimum air volume m ³ /h	Corresponding back pressure Pa
6.0	270	380
8.0	290	350

Air volume

The curves shows the characteristics of the dryer. By measuring or calculating the back pressure of the outlet pipe it is hereby possible to find the corresponding air flow into the room and through the dryer and exhaust.

A = Optimum air volume

B = Working area



9 Electrical connection

9.1 Electrical installation



The electrical installation may only be carried out by qualified personnel.



Machines with frequency-controlled motors can be incompatible with certain types of earth leakage circuit breaker. It is important to know that the machines are designed to provide a high level of personal safety, which is why items of external equipment such as earth leakage circuit breakers are not necessary but is recommended. If you still want to connect your machine across an earth leakage circuit breaker, please remember the following:

- contact a skilled, authorised installation company to ensure that the appropriate type of breaker is chosen and that the dimensioning is correct
- for maximum reliability, connect only one machine per earth leakage circuit breaker
- it is important that the earth wire is properly connected.

In instances where the machine is not equipped with an omni-polar switch, one must be installed beforehand.

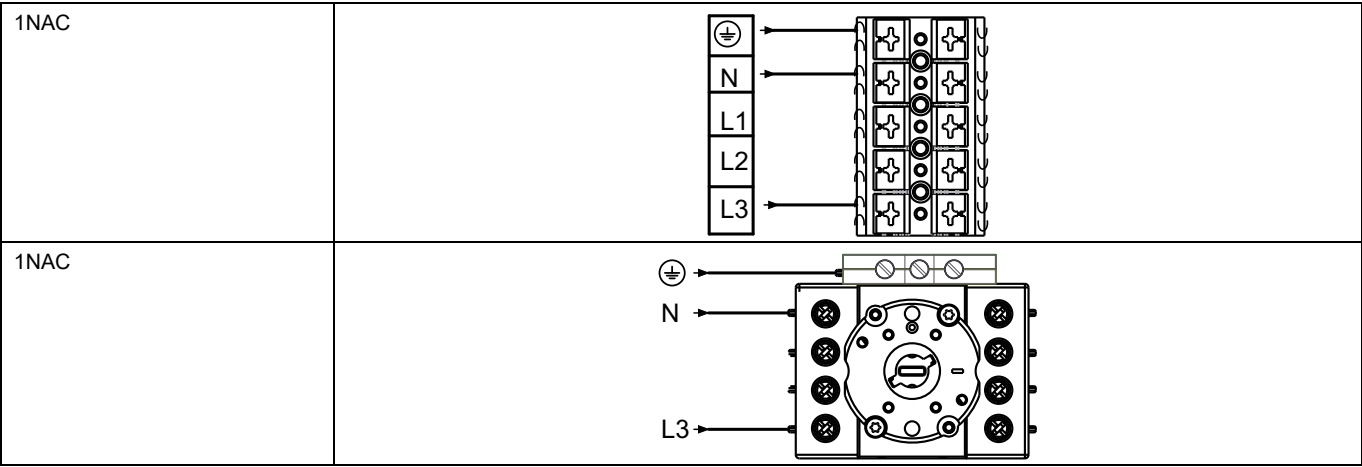
In accordance with the wiring rules: mount a multi-pole switch prior to the machine to facilitate installation and service operations.

The connecting cable shall hang in a gentle curve.

For AU/NZ: Fixed wiring is in accordance with AS/NZS 3000.

9.2 Single-phase connection

Demount the cover panel from the supply unit. Connect the earth and other wires as shown.

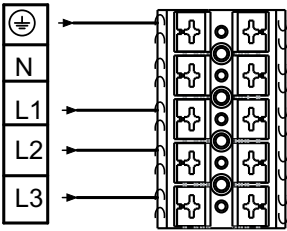
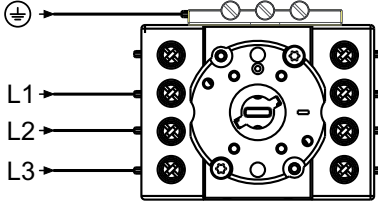
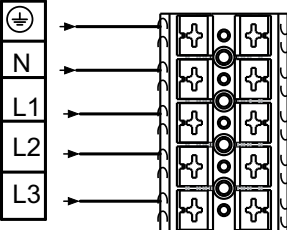
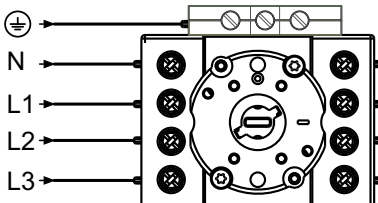


When the installation is completed remount the cover panel and check:

- That the drum is empty.
- That the machine operates by connecting the power to the machine and start a program with heat.

9.3 Three-phase connection

Demount the cover panel from the supply unit. Connect the earth and other wires as shown.

3AC	
3AC	
3NAC	
3NAC	

When the installation is completed remount the cover panel and check:

- That the drum is empty.
- That the machine operates by connecting the power to the machine and start a program with heat.

9.4 Electrical connections

Electrical connections					
Heating alternative	Main voltage	Hz	Heating power kW	Total power kW	Recommended fuse A
Electric heated	220–240V 1/1N~	50/60	6.0/8.0	6.4/8.4	32/50
	220–230V 3~	50/60	6.0/8.0	6.4/8.4	20/25
	220–240V 3~	50/60	6.0/8.0	6.4/8.4	16/25
	380–415V 3N/3~	50/60	6.0/8.0	6.4/8.4	10
	440V 3~	60	6.0/8.0	6.4/8.4	10/16
	480V 3~	60	6.0/8.0	6.4/8.4	10/16
	115V 3~	60	4.1	4.5	25

9.5 Functions for I/O-cards

The electrical schematic can be one of the following:

9.5.1 Central payment (2J)

To start the machine from a central payment system, the payment system must transmit a start pulse 300–3000 ms (500 ms is recommended) with a minimum pause of 300 ms (500 ms is recommended) between two pulses. The start pulse can be either 230V or 24V. In order to receive a feedback signal once the machine has started, 230V or 24V must be connected to connection 19. The feedback signal on connection 18 remains active (high) during the entire program.

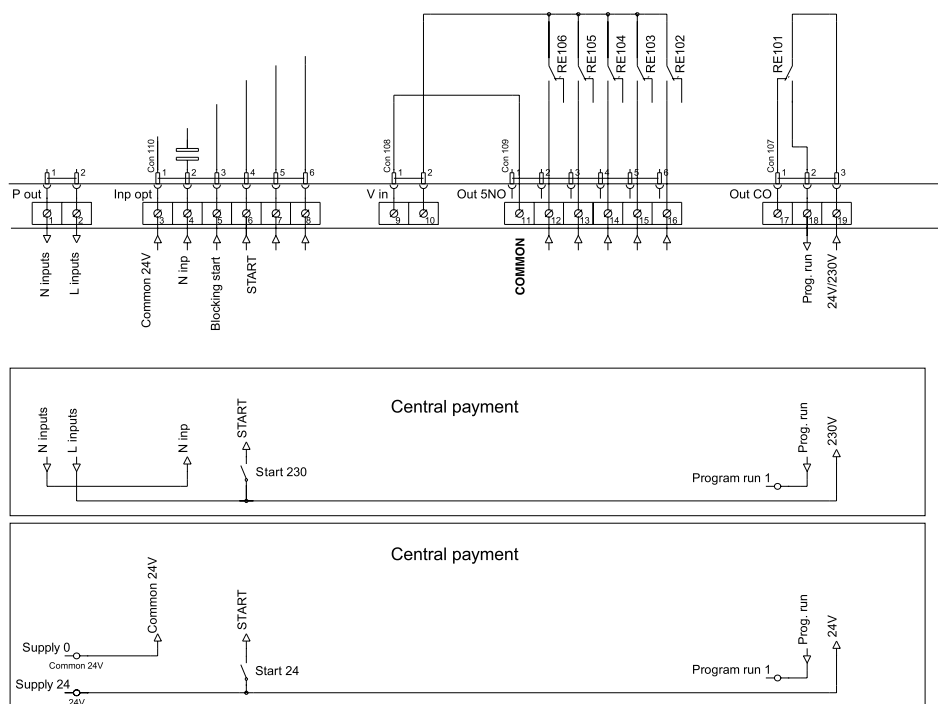


fig.7440

9.5.2 Central payment (2J)

The central payment or booking system shall transmit an active (high) signal to the machine once permission has been granted to start the machine. The signal must remain active (high) during drying. When the signal gets inactive (low) the machine will abort ongoing program and enter cooling. The signal can be either 230V or 24V. In order to receive a feedback signal once the machine has started, 230V or 24V must be connected to connection 19. The feedback signal remains active (high) during the entire program.

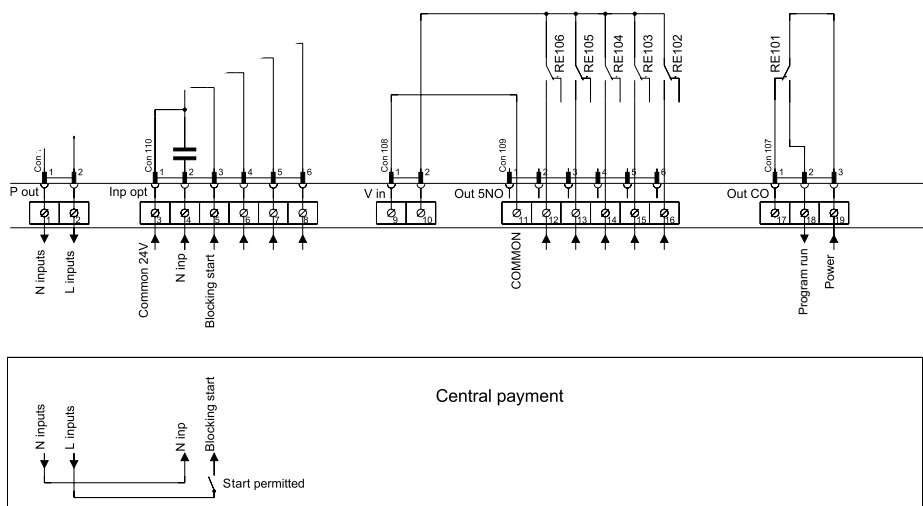


fig.7439

9.5.3 External coin meter/Central payment (2K)

The signal received from external coin meters must be a pulse between 300–3000 ms (500 ms is recommended) with a minimum pause of 300 ms (500 ms is recommended) between two pulses.

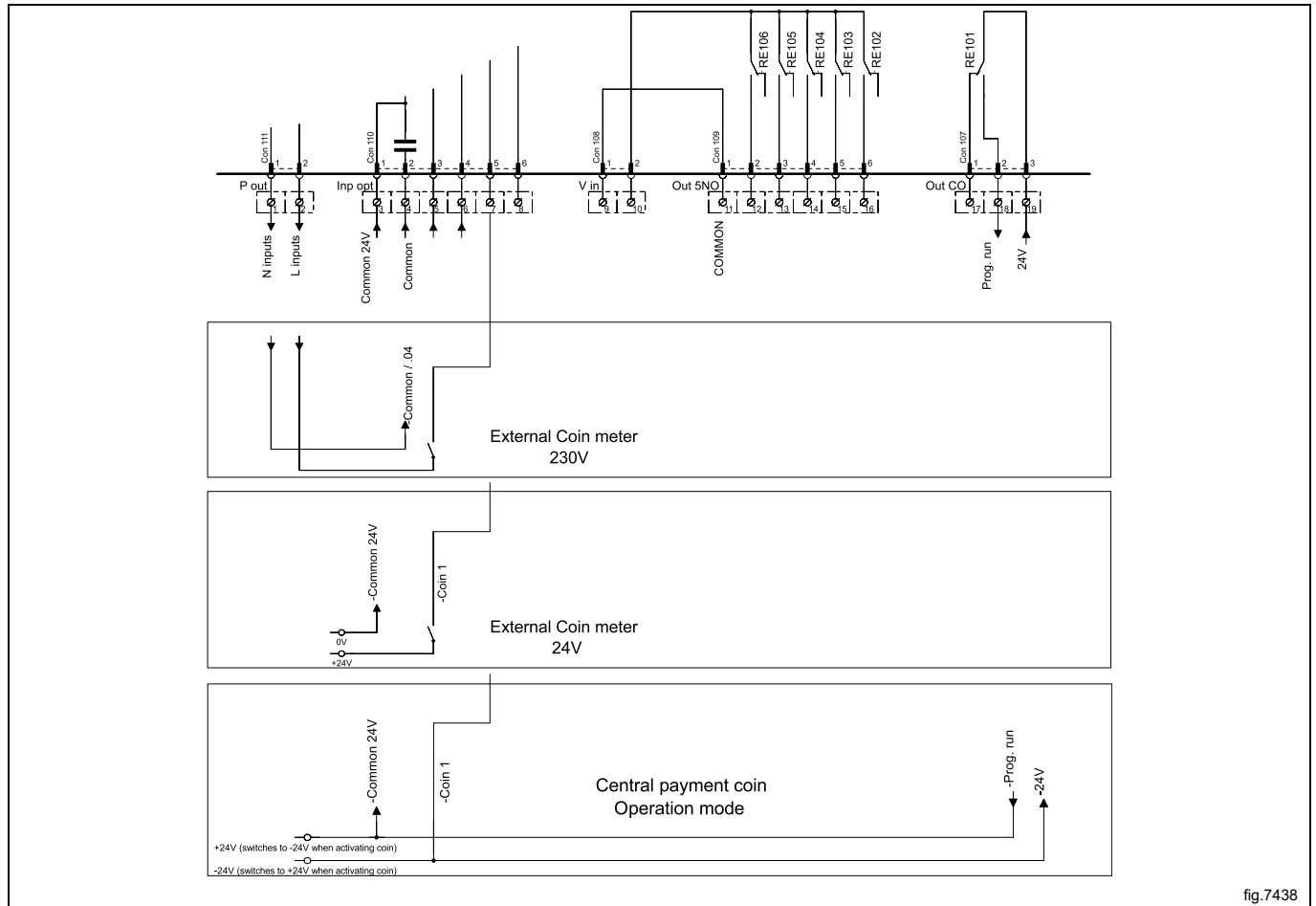


fig.7438

9.5.4 Price reduction (2K)

By maintaining an activated (high) signal on connection 5 ("Price red"), the price of the program can be reduced. This function has a number of uses, including providing reductions during a specific period of the day. Whilst the signal remains active (high), the price of the program is reduced (or the time is increased on time programs), by the percentage entered in the price programming menu.

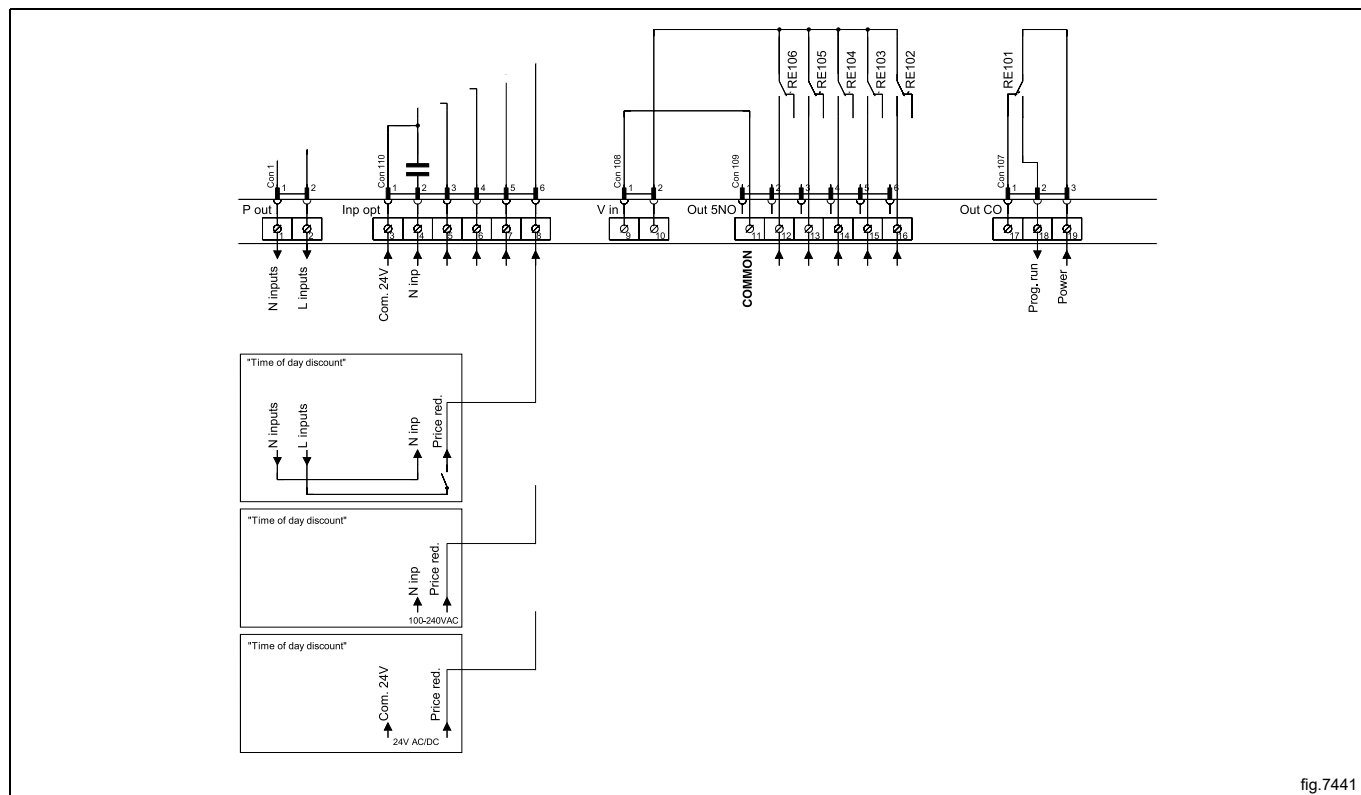


fig.7441

9.6 Option

9.6.1 External connection 100 mA

A special connection terminal is located on the connection console.

This connection can be used as external control of a fan or a condensing unit.

3AC

The terminal for external control is equipped with 220–240V max. 100 mA and is intended solely for the operation of a contactor.

Max. connection 100 mA.

3NAC or 1AC/1NAC

The maximum connection is 1.25A / 230V AC.

Gnd. must not be used for earthing of external board.

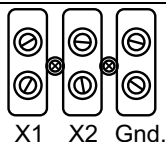


fig.7154

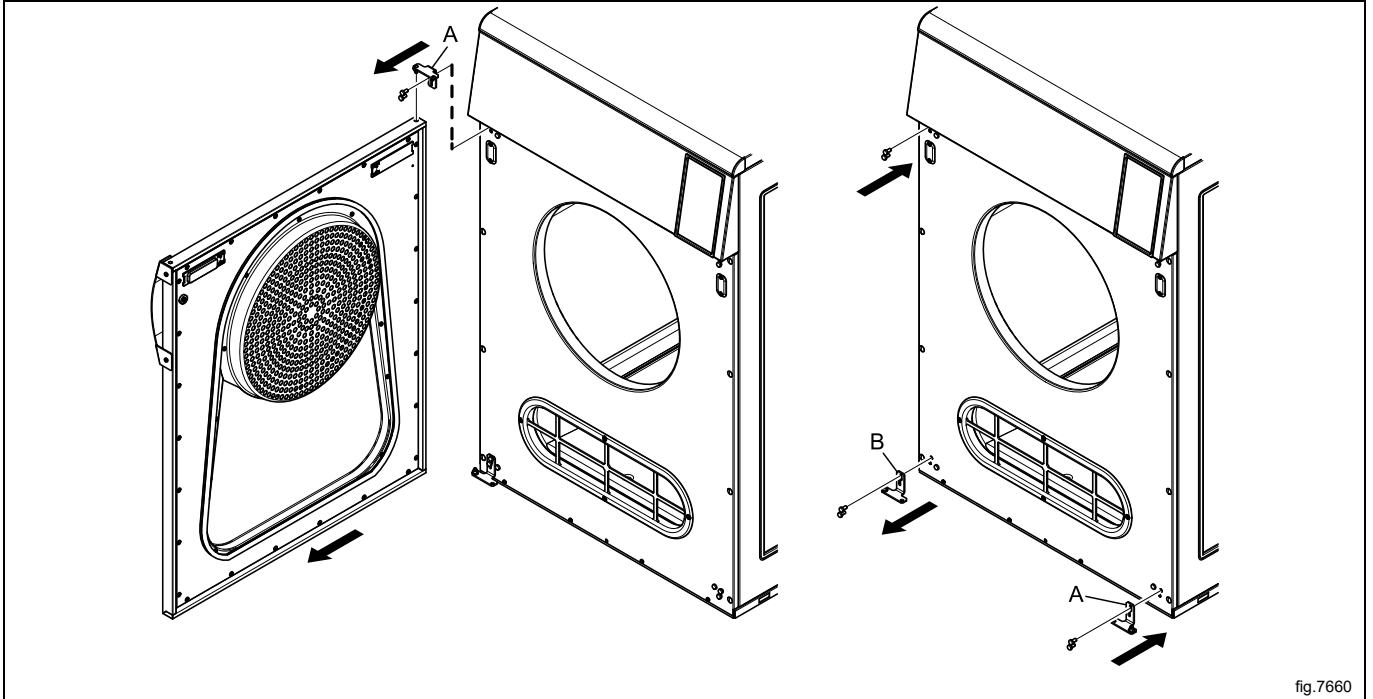
10 Reversing the door

Disconnect the power to the machine. Gas heated machine: Shut off the manual gas valve.

Demount the hinge (A) and refit the screws into the same holes in order to secure the panel on the back. Mount the hinge (A) at the bottom of the opposite side.

Demount the door by carefully lifting it off the front.

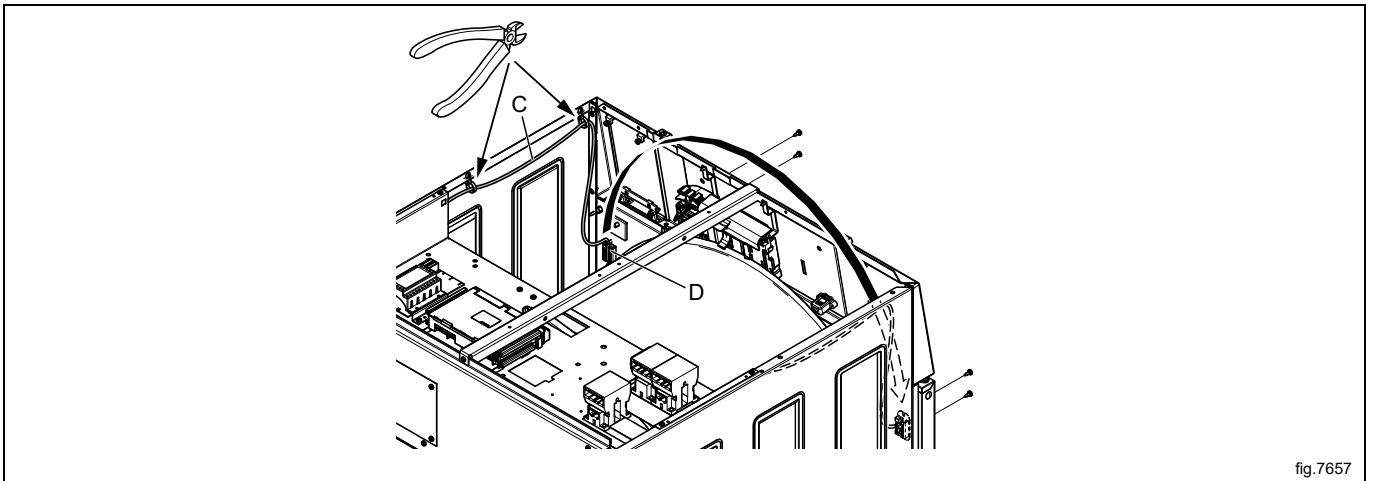
Demount hinge (B).



Demount the top panel.

Cut the cable tie and remove cable (C) to the opposite side.

Demount the plastic cover with door switch (D) and mount on the opposite side.



Demount the door handle and remount the screws. Mount the door handle on the opposite side using the existing screws.

Mount the door by lifting it back on the fitting on the opposite side.

Mount the hinge (B) at the top.

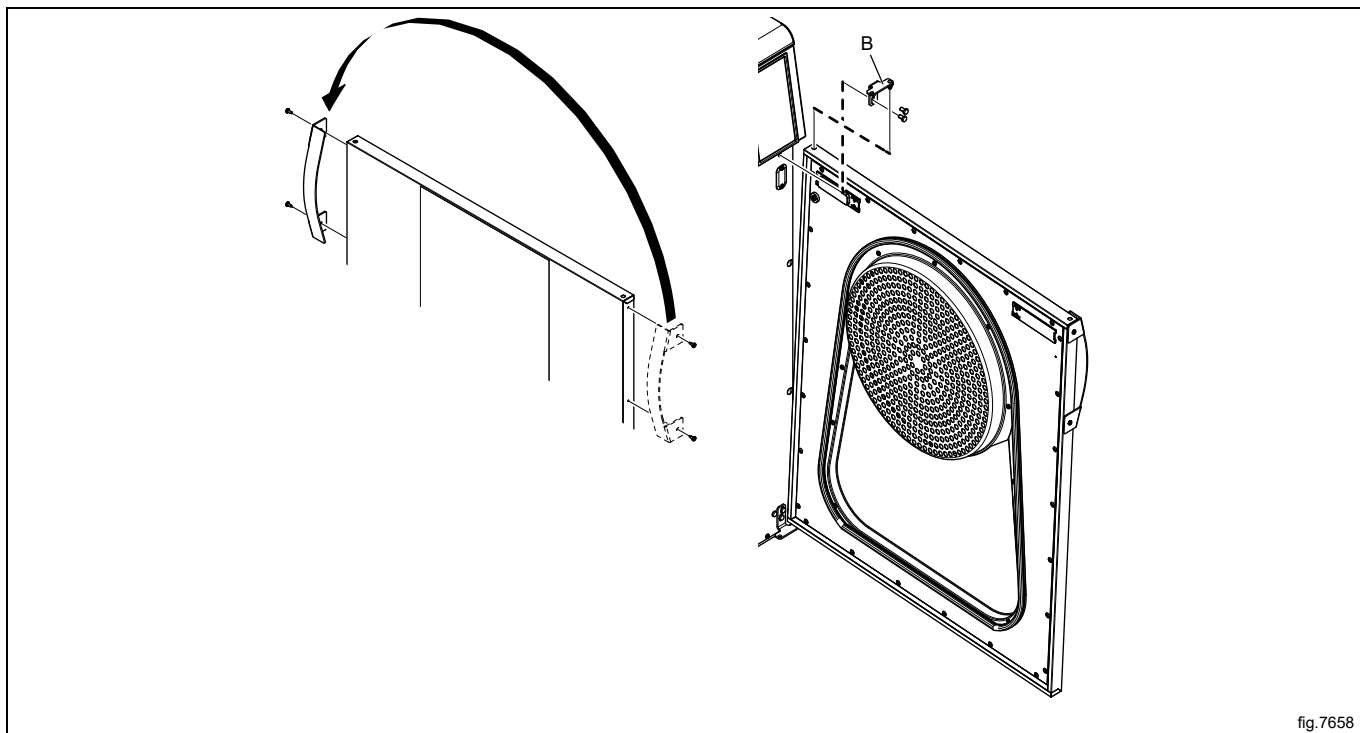


fig.7658

Demount the magnetic door lock (E) and magnet for switch (F) and mount on the opposite side.

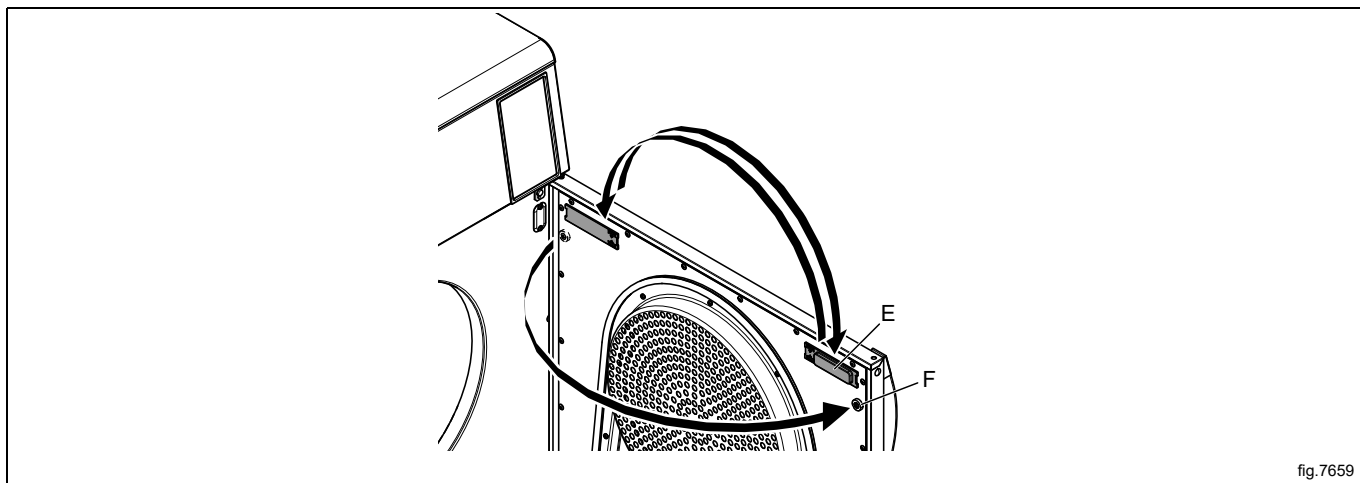


fig.7659

Connect the power to the machine.

Test run the machine.

11 At first power up

When the installation is complete and the power is connected for the first time you will be forced to make the following settings. When one setting is ready you will automatically enter the next one.

- Select language
- Set time and date
- Activate/deactivate the service alarm

For more information about the following settings please refer to the Programming and configuration manual.

11.1 Select language

Select language from the list on the display.

This will be the language that all display messages, program names etc will be presented in.

11.2 Set time and date

Select **YES** and press the control knob to get to the menu **TIME/DATE**.

Activate the **SET TIME** menu and set the correct time.

Save the settings.

Activate the **SET DATE** menu and set the correct date. Start by setting the year.

- Set the year. Exit to continue with a long press on the control knob.
- Set the month. Exit to continue with a long press on the control knob.
- Set the day. Exit with a long press on the control knob and then save with a long press on the control knob.

Exit the menu when ready.

12 Function check



May only be carried out by qualified personnel.



A function check must be made when the installation is finished and before the machine can be ready to be used. Whenever a repair has been made, a function check must be performed before the machine can be used again.

Check the automatic stop of the machine

- Start the machine.
- Check if the micro switches are working properly:
The machine must stop if the door is opened.

Check the direction of rotation (only on machines with 3-phase power supply, marine installation)

Demount the top panel and start a program. Check that the drum rotation is clockwise.

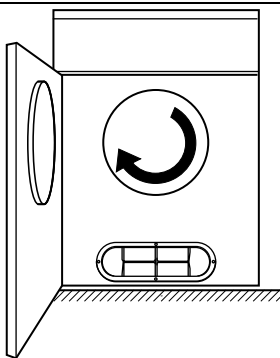


fig.6311

If the direction is wrong, swap two of the three phases to the left on the connection terminal.

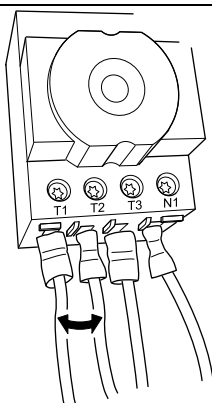


fig.7119

Check the heat

- Let the machine work for five minutes on a program with heat.
- Check that the heating is working by opening the door and feel if there is heat in the drum.

Ready to use

If all tests are OK the machine is now ready to be used.

If some of the tests failed, or deficiencies or errors are detected, please contact your local service organisation or dealer.

13 Disposal information

13.1 Disposal of appliance at end of life

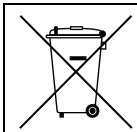
Before disposing of the machine, make sure to carefully check its physical condition, and in particular any parts of the structure that can give or break during scrapping.

The machine's parts must be disposed of in a differentiated way, according to their different characteristics (e.g. metals, oils, greases, plastic, rubber, etc.).

Different regulations are in force in the various countries, therefore comply with the provisions of the laws and competent bodies in the country where scrapping takes place.

In general, the appliance must be taken to a specialised collection/scrapping centre.

Dismantle the appliance, grouping the components according to their chemical characteristics, remembering that the compressor contains lubricant oil and refrigerant fluid which can be recycled, and that the refrigerator and heat pump components are special waste assimilable with urban waste.



The symbol on the product indicates that this product should not be treated as domestic waste, but must be correctly disposed of in order to prevent any negative consequences for the environment and human health. For further information on the recycling of this product, contact the local dealer or agent, the Customer Care service or the local body responsible for waste disposal.

Note!

When scrapping the machine, any marking, this manual and other documents concerning the appliance must be destroyed.

13.2 Disposal of packing

The packing must be disposed of in compliance with the current regulations in the country where the appliance is used. All the packing materials are environmentally friendly.

They can be safely kept, recycled or burned in an appropriate waste incineration plant. Recyclable plastic parts are marked as following examples.

	Polyethylene: <ul style="list-style-type: none"> • Outer wrapping • Instructions bag
	Polypropylene: <ul style="list-style-type: none"> • Straps
	Polystyrene foam: <ul style="list-style-type: none"> • Corner protectors



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