Installation manual

DOC. NO. 438 9054-05/US EDITION 2012.06.04

Tumble dryer

TD35

Type N2...

WASCOMAT CUSTOMER SUPPORT

Whether you need spare parts or technical advice to guide you to the source of a malfunction, our nationwide network of authorized dealers are able and ready to serve your needs, or call the Wascomat Customer Service Hotlines listed below.

SPARE PARTS

516-371-2000

Before ordering parts, refer to the Wascomat spare parts manual (also available on www.wascomat.com) to determine the **part number(s)** for the item(s) you need.

For quick service, please have the following information available:

1. Part Number of the item(s) you need.
2. Model of the machine.
3. Serial number of the machine.
4. Electrical data for the machine:
   - 120 or 208-240 Volt?
   - Single or three phase?
   - 50 or 60 Cycle?

To insure parts order accuracy, only fax or email parts orders are accepted:

- **Fax: 516-371-4029**
- **email: parts@wascomat.com**

TECHNICAL SUPPORT

516-371-0700

For service information, first contact your local authorized Wascomat dealer.

Wascomat technical support can assist you or your technician to diagnose and repair your laundry machines over the phone. Please call from the location where the machines are installed (we suggest you use a cellular or cordless phone), and have the following information available:

1. Model of the machine.
2. Serial number of the machine.
3. Electrical data for the machine:
   - 120 or 208-240 Volt?
   - Single or three phase?
   - 50 or 60 Cycle?
4. An accurate description of the malfunction.

To expedite parts order shipment, please use your credit card.

We accept: American Express, Mastercard, Visa, Discover, Diner's Club.

WARRANTY CLAIMS

Wascomat's Technical Support staff will honor valid manufacturer's parts warranty claims providing your Wascomat machines are registered for warranty coverage upon installation. If they are not registered, you can validate your warranty claim by providing information about when and where you purchased the Wascomat machine(s), the model and serial number(s). Additional warranty proof may also be required.

461 Doughty Blvd., Inwood, N.Y. 11096-0338 | Sales and Administration – Tel: 516-371-4400 • Fax: 516-371-4204 • e-mail: sales@wascomat.com
Spare Parts – Tel: 516-371-2000 • Fax: 516-371-4029 • e-mail: parts@wascomat.com | Technical Support – Tel: 516-371-0700 • Fax: 516-371-4029
En Mexico: Llame gratis a este numero 001-800-010-1010


WARNING – Risk of fire

Clothes dryer installation must be performed by a qualified installer.

Install the clothes dryer according to the manufacturer's instructions and local codes.

Do not install a clothes dryer with flexible plastic venting materials. If flexible metal (foil type) duct is installed, use duct that has been investigated and found acceptable for use with clothes dryers. Flexible venting materials are known to collapse, be easily crushed, and trap lint. These conditions will obstruct clothes dryer airflow and increase the risk of fire.

To reduce the risk of severe injury or death follow all installation instructions.

Save these instructions.

WARNING: The dryer is intended for use only with fabrics that have been washed with water.

WARNING: To avoid fire hazard, do not use heat when drying articles containing foam rubber or similarly textured rubberlike materials.

WARNING: ALL OPERATING AND MAINTENANCE PROCEDURES SHOWN ON THE NEXT PAGE OF THIS MANUAL MUST BE FOLLOWED DAILY FOR PROPER OPERATION OF YOUR MACHINE.

PLEASE ENTER THE FOLLOWING INFORMATION AS IT APPEARS ON THE MACHINE(S) DATA PLATE(S).

MACHINE TYPE OR MODEL	
MACHINE SERIAL NUMBER(S)	
ELECTRICAL CHARACTERISTICS:_____ VOLTS,_ _____ PHASE,_____ HZ.	

Warning: For your safety the information in this manual must be followed to minimize the risk of fire or explosion or to prevent property damage, personnel injury or death.

NOTICE TO: OWNERS, OPERATORS AND DEALERS

IMPROPER INSTALLATION AND INADEQUATE MAINTENANCE, POOR HOUSEKEEPING AND WILLFUL NEGLECT OR BYPASSING OF SAFETY DEVICES MAY RESULT IN SERIOUS ACCIDENTS OR INJURY. TO ASSURE THE SAFETY OF CUSTOMERS AND/OR OPERATORS OF YOUR MACHINE, THE FOLLOWING MAINTENANCE CHECKS MUST BE PERFORMED ON A DAILY BASIS.

FR NOTICE À L'ATTENTION DES PROPRIÉTAIRES, UTILISATEURS ET REVENDEURS DE MACHINES

UNE INSTALLATION INCORRECTE ET UN ENTRETIEN INADÉQUAT, DE MÊME QUE LA NÉGLIGENCE OU LA NEUTRALISATION DÉLIBÉRÉES DES DISPOSITIFS DE SÉCURITÉ, PEUVENT ÊTRE CAUSES DE BLESSURES OU D'ACCIDENTS SÉRIEUX. POUR ASSURER LA SÉCURITÉ DES CLIENTS ET/OU DES UTILISATEURS DE VOTRE MACHINE, IL EST INDISPENSABLE DE PROCÉDER CHAQUE JOUR AUX CONTRÔLES DE ROUTINE CI-APRÈS.

ES AVISO PARA LOS PROPIETARIOS, USUARIOS Y REVENDEDORES DE LAS MÁQUINAS

UNA MALA INSTALACIÓN Y UN MANTENIMIENTO POCO ADECUADO, ASÍ COMO UNA NEGLIGENCIA O NEUTRALIZACIÓN DELIBERADA DE LOS DISPOSITIVOS DE SEGURIDAD PUEDEN CAUSAR LESIONES U ACCIDENTES GRAVES. PARA GARANTIZAR LA SEGURIDAD DE LOS CLIENTES Y/O USUARIOS DE SU MÁ- QUINA, RESULTA INDISPENSABLE EFECTUAR A DIARIO LAS SIGUIENTES COMPROBACIONES RUTINARIAS

1. **Prior to operation of the machine**, check to make certain that all operating instructions and warning signs are affixed to the machine and legible. Missing or illegible ones must be replaced immediately. Be sure you have spare signs and labels available at all times. These can be obtained from your dealer.

2. **Check the door safety interlock, as follows:**

   a. OPEN THE DOOR of the machine and attempt to start in the normal manner:

      For coin-operated models, insert the proper coins to start the machine.

      For manually operated models, place the ON-OFF switch in the ON position and press the Start switch.

THE MACHINE(S) MUST NOT START !

   b. CLOSE THE DOOR to start machine operation and, while it is operating, attempt to open the door without exerting extreme force on the door handle. The door should remain locked!

      If the machine can start with the door open, or can continue to operate with the door unlocked, the door interlock is no longer operating properly. The machine **must** be placed **out of order** and the interlock immediately replaced.

3. DO NOT UNDER ANY CIRCUMSTANCES ATTEMPT TO BYPASS OR REWIRE ANY OF THE MACHINE SAFETY DEVICES AS THIS CAN RESULT IN SERIOUS ACCIDENTS.

4. **Be sure to keep the machine(s) in proper working order:** Follow **all** maintenance and safety procedures. Further information regarding machine safety, service and parts can be obtained from your dealer.

   All requests for assistance must include the model, serial number and electrical characteristics as they appear on the machine identification plate. Insert this information in the space provided on the previous page of this manual.

5. **WARNING:** DO NOT OPERATE MACHINE(S) WITH SAFETY DEVICES BYPASSED, REWIRED OR INOPERATIVE! DO NOT OPEN MACHINE DOOR UNTIL DRUM HAS STOPPED ROTATING!

   FR **AVERTISSEMENT:** NE PAS FAIRE FONCTIONNER LA (LES) MACHINE(S) AVEC UN DISPOSITIF DE SÉCURITÉ NEUTRALISÉ, RECÂBLÉ OU NON OPÉRATIONNEL! NE PAS OUVRIR LA MACHINE TANT QUE LE TAMBOUR NE S'EST PAS IMMOBILISÉ!

   ES **ADVERTENCIA:** NO USAR NINGUNA MÁQUINA SI SE HA NEUTRALIZADO EL DISPOSITIVO DE SEGURIDAD, SE HAN CAMBIADO LOS CABLES O SI NO FUNCIONA CORRECTAMENTE. NO ABRIR LA MÁQUINA HASTA QUE EL TAMBOR SE HAYA DETENIDO POR COMPLETO.

NOTICE TO INSTALLER

Improper installation of this machine:

- May cause serious damage to the machine.
- May result in other property damage.
- May cause personal injury.
- Will void the manufacturer's warranty.

Connection to line Voltage or over-current protection devices other than those specified on the data plate may result in severe damage to machine components, and will void the manufacturer's warranty.

Refer to complete installation instructions provided in manuals accompanying the machine.

Contact Wascomat Technical Support with any questions BEFORE installing this machine. Damage resulting from inadequate installation materials or improper installation techniques will void the manufacturer's warranty.

Electrical Information

It is your responsibility to have **ALL** electrical connections (including grounding) made by a properly licensed and competent electrician to assure that the electrical installation is adequate and conforms with local and state regulations or codes.

In the absence of such codes, ALL electrical connections, material, and workmanship must **conform** to the applicable requirements of the NATIONAL ELECTRIC CODE ANSI/NFPA NO. 70 or the CANADIAN ELECTRICAL CODE, CSA C22.1 - both the latest edition.

IMPORTANT: Failure to comply with these codes or ordinances and/or the requirements stipulated in this manual can result in personal injury or component failure.

NOTE: Component failure due to improper installation will **VOID THE WARRANTY.**

IMPORTANT: A separate circuit serving each dryer must be provided. The dryer must be connected to copper wire only. **DO NOT** use aluminum wire which could cause a fire hazard.

NOTE: The use of aluminum wire will **VOID THE WARRANTY**

CAUTION: Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper operation or component failure.

Electrical Service

Steam and gas dryers ONLY

IMPORTANT: The dryer must be connected to the electrical supply shown on the data label affixed to the dryer. In the case of 208 VAC or 240 VAC, the supply voltage **must match** the electric service specifications of the data label **exactly.** Wire **must be** properly sized to handle the rated current.

WARNING: 120 VAC, 208 VAC and 240 VAC ARE NOT THE SAME. Any damage done to dryer components due to improper voltage connections will **VOID THE WARRANTY.**

Electric dryers ONLY

IMPORTANT: ALL electrically heated dryers must be connected to the electric supply service shown on the dryers data label which is affixed to the back side of the control (service) door. The connecting wires must be properly sized to handle the rated current.

NOTE: Component failure due to improper voltage application will **VOID THE WARRANTY.**

Gas Information

It is your responsibility to have **ALL** plumbing connections made by a qualified professional to insure that the installation is adequate and conforms with local and state regulations or codes. In the absence of such codes, **ALL** plumbing connections, material, and workmanship must conform to the applicable requirements of **the National Fuel Gas Code ANSI Z223.1** or the **CAN/CGA-B149, INSTALLATION CODES** - both the latest edition.

IMPORTANT: Failure to comply with these codes or ordinances, and/ or the requirements stipulated in this manual, can result in personal injury and improper operation of the dryer.

The dryer **must be** isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply piping system at test pressures equal to or greater than 1/2 psig (3.5 kPa).

IMPORTANT: Failure to isolate or disconnect the dryer from the gas supply as noted can cause irreparable damage to the gas valve and will **VOID THE WARRANTY.**

WARNING: **FIRES or EXPLOSION COULD RESULT.**

Gas Supply

The gas dryer installation must meet the American National Standard, National Fuel Gas Code Z223.1-LATEST EDITION, as well as local codes and ordinances and **must be** done by a qualified professional,

NOTE: Undersized gas piping will result in ignition problems, slow drying, increased use of energy, and can create a safety hazard.

The dryer **must be** connected to the type of heat/ gas indicated on the dryer data label. If this information does not agree with the type of gas available, **do not** operate the dryer. Contact your local dealer or the Wascomat Sales Department.

IMPORTANT: Any burner changes or conversions must be made by a qualified licensed professional.

The input ratings shown on the dryer data label are for elevations of up to 1,999 feet. The adjustment or conversion of the dryer(s) in the field for elevations over 2,000 feet are made by changing each burner orifice. If these conversions are necessary, contact your local dealer or the Wascomat Sales Department.

Natural Gas

If the pressure is too low, ignition failure and/or slow drying times may result. Excessively high supply pressure will result in erratic operation of the gas valves internal pressure regulator. Further information in section: Gas connection.

Propane Gas

Dryers made for use with propane gas have the gas valve pressure regulator blocked open, so that the gas pressure **must be** regulated upstream of the dryer. In accordance with American Gas Association (AGA) standards, a gas pressure regulator, when installed indoors, must be equipped with a vent limiter or a vent line must be installed from the gas pressure regulator vent to the outdoors. The water column pressure **must be** regulated at the source (propane tank), or an external regulator must be added to each dryer. Further information in section: Gas connection.

Piping/Connections

The dryer is provided with a 1/2" N.P.T. inlet pipe connection extending out the rear area or through the top of the dryer. For ease of servicing, the gas supply line of each dryer should have its own shut-off valve.

The size of the gas supply line (header) will vary depending on the distance this supply line travels from the gas meter or, in the case of propane gas, the supply tank, the number of tees, other gas-operated appliances, etc. Specific information regarding supply line size should be determined by the gas supplier.

NOTE: Undersized gas supply piping can create a low or inconsistent gas pressure which will result in erratic operation of the burner ignition system.

Consistent gas pressure is essential at **ALL** gas connections. It is recommended that a 3/4-inch pipe gas loop be installed in the supply line serving the bank of dryers. An in-line pressure regulator **must be** installed in the gas supply line (header) if (natural) gas line pressure exceeds 12-inches water column pressure.

IMPORTANT: The information regarding the settings of the water column pressure for Natural gas dryers and Propane gas dryers is found in section: Gas connection. The pressure is required at the gas valve pressure tap of each dryer for proper and safe operation.

A 1/8" N.P,T. plugged tap, accessible for test gauge connection, **must be** installed in the main gas supply line immediately upstream of each dryer.

IMPORTANT: Pipe joint compounds that resist the action of natural gas and propane gas **MUST BE** used.

WARNING: Test **ALL** connections for leaks by brushing on a soapy water solution (liquid detergent also works well). **NEVER TEST FOR GAS LEAKS WITH AN OPEN FLAME.**

ALL components / materials **must conform** to NATIONAL FUEL GAS CODE specifications. It is important that gas pressure regulators meet applicable pressure requirements and that gas meters are rated for the total amount of appliance BTU's being supplied.

Contents

1 Safety Precautions


The machine 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 machine.

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.

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.

Gas heated tumble dryer:

Before installation, check that the local distribution conditions, nature of gas and pressure and the adjustment of the appliance are compatible.

The machine is not to be installed in rooms containing cleaning machines with perchloroethylene, TRICHLOROETHYLENE or CHLOROFLUOROCONTAINING HYDROCARBONS as cleaning agents.

If you can smell gas:

- **Do not switch on any equipment**
- **Do not use electrical switches**
- **Do not use telephones in the building**
- **Evacuate the room, building or area**
- **Contact the person responsible for the machine**

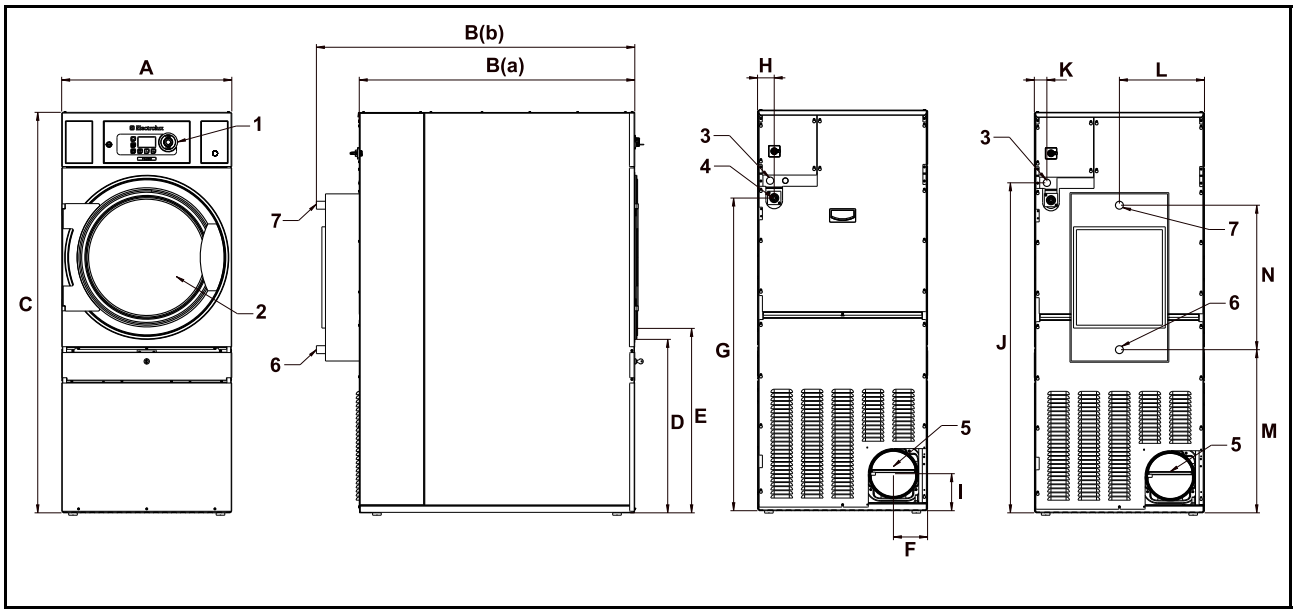

All external equipment which is connected to the machine must be CE/EMC-approved and connected using an approved shielded cable.


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.


Servicing shall be carried out only by authorized personnel.

2 Technical data

2.1 Drawing



1	Operating panel
2	Door opening, ⌀ 580 mm / ⌀ 22 13/16 inch
3	Electrical connection
4	Gas connection
5	Exhaust connection
6	Steam: in
7	Steam: out

	A	B(a)	B(b)	C	D	E	F	G
mm inch	710 27 15/16	1155 45 1/2	1335 52 9/16	1675 65 15/16	725 28 9/16	780 30 11/16	140 5 1/2	1310 51 9/16

	H	I	J	K	L	M	N
mm inch	70 2 3/4	155 6 1/8	1380 54 5/16	55 2 3/16	355 14	685 26 15/16	605 23 13/16

2.2 Technical data

Weight, net	kg lbs	220 485
Drum volume	litres ft³	290 10.2
Drum diameter	mm inch	680 26 3/4
Drum depth	mm inch	770 30 5/16
Drum speed, medium load	rpm	47
Rated capacity, filling factor 1:18 (Max. load)	kg lbs	16.1 35.5
Rated capacity, filling factor 1:22 (Recommended. load)	kg lbs	13.2 29.1
Heating: Electricity	kW	18
	kW	13.5
Heating: Gas	kW	21
Heating: Steam	kW	23
Maximum air flow, Electric 50 Hz / 60 Hz	m³/h ft³/h	550 / 550 19423 / 19423
Maximum air flow, Gas 50 Hz / 60 Hz	m³/h ft³/h	610 / 610 21542
Maximum air flow, Steam 50 Hz / 60 Hz	m³/h ft³/h	690 / 690 24367
Airborne sound level	dB(A)	70
Maximum static back pressure, Electric 50 Hz / 60 Hz	Pa Psi	400 / 700 0.058 / 0.102
Maximum static back pressure, Gas 50 Hz / 60 Hz	Pa Psi	400 / 550 0.058 / 0.080
Maximum static back pressure, Steam 50 Hz / 60 Hz	Pa Psi	600 / 1100 0.087 / 0.160

2.3 Connections

Air outlet	⌀ mm ⌀ inch	200 7 7/8
Steam outlet	1”	ISO 7/1–Rp1/2
Condensate outlet	-	ISO 7/1–Rp1/2
Gas connection	1/2”	ISO 7/1–R1/2

3 Setup

3.1 Unpacking

Note!

Two persons is recommended for the unpacking.

The machine is delivered complete with supporting feet.

The machine is delivered bolted onto the transport pallet and packed in a crate or box.

Remove packing from the machine.

Remove the bolts between the machine and pallet. There are two bolts in the front of the machine and two in the back of the machine. Remove the lower front panel and remove the two bolts in the front of the machine. Remove the lower back panel and remove the two bolts in the back of the machine. Remount the panels when done.

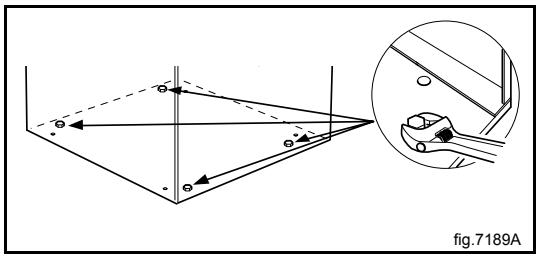


fig.7189A

Remove the machine from the pallet.

Note!

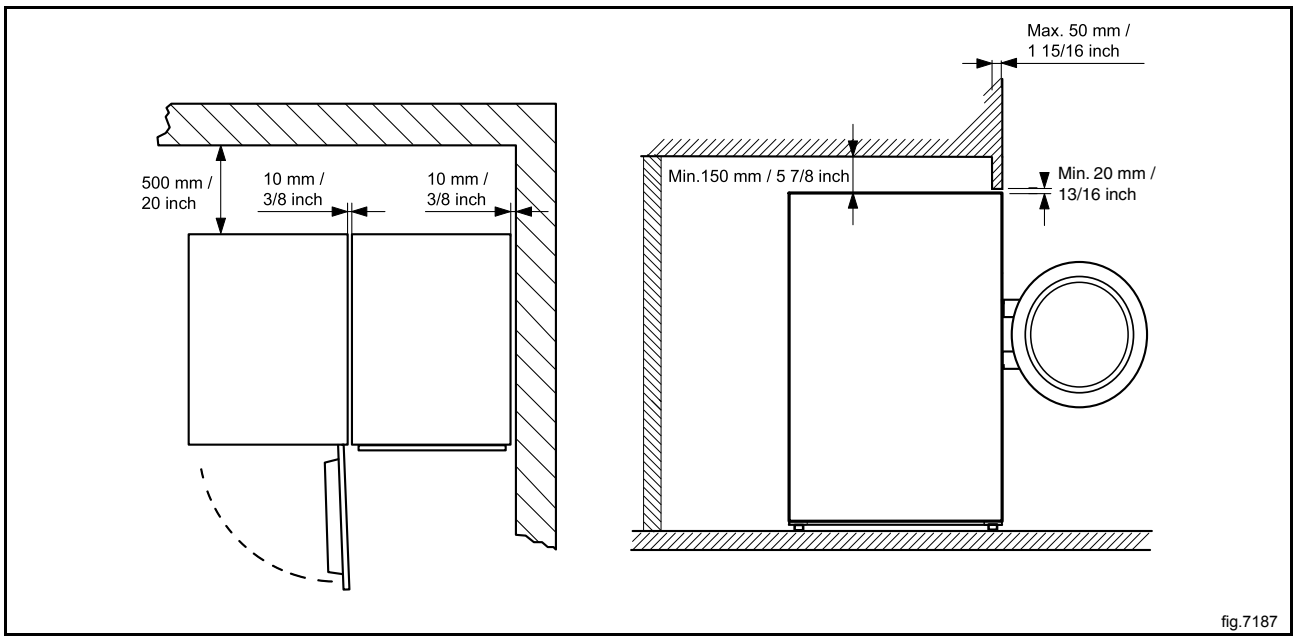
When removing the machine, handle it with care. The drum has no transport clamps.

Place the machine on its final position.

3.2 Siting

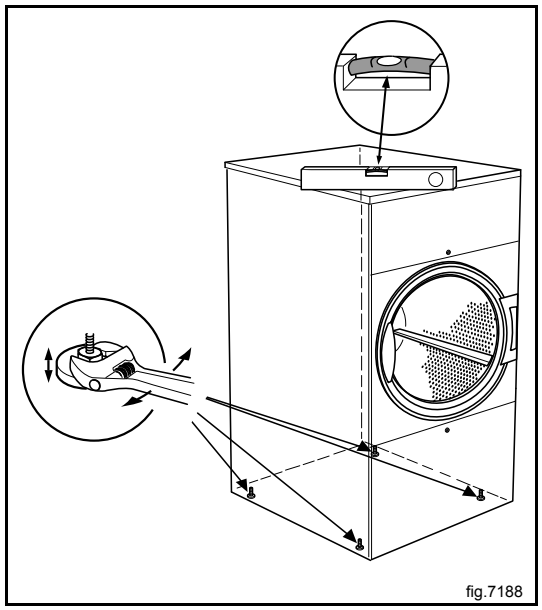
The machine should be positioned so that there is plenty of room for working, both for the user and service personnel.

The figure shows minimum distance to a wall and/or other machines.



3.3 Mechanical installation

Level the machine with the feet of the machine. The maximum height adjustment of the feet is 15 mm / 9/16 inch.



4 Marine installation

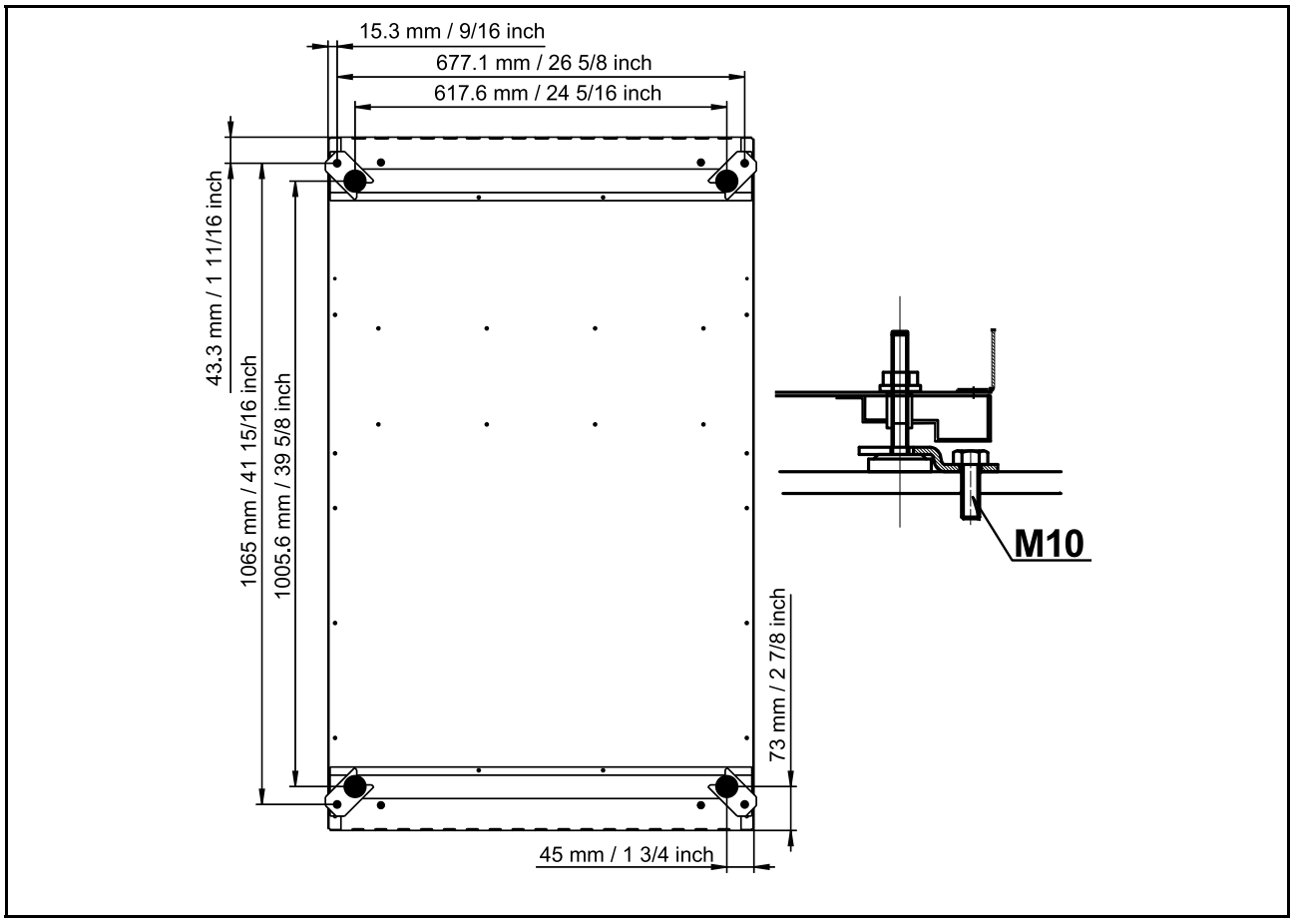
To ensure steadiness of the machine it is important to fasten the machine to the foundation.

Fasten the four fittings (supplied with the marine machine model) to the foundation using four x M10 set screws. If the four fittings are not supplied, order kit No. 487193544.

Fasten the machine to the fittings.

Note!

Marine installation is not applicable for gas heated machines.



5 Reversing the door

Disconnect the power to the machine.

Demount the hinges and remove the door. Remove the upper hinge first.

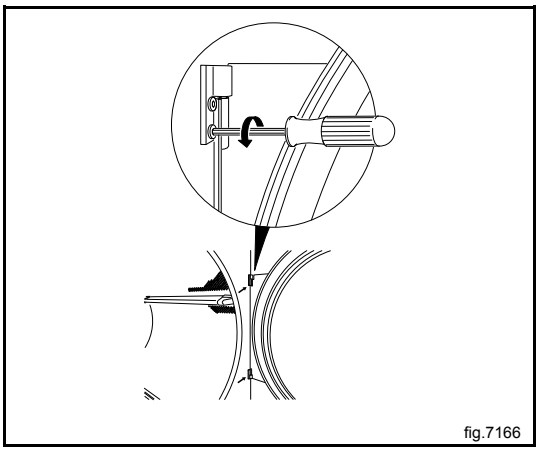


fig.7166

Remove the screws on the front panel and carefully loosen the panel. Push the door switch cable down through the hole in order to access the cable and then disconnect the cable. Remove the panel.

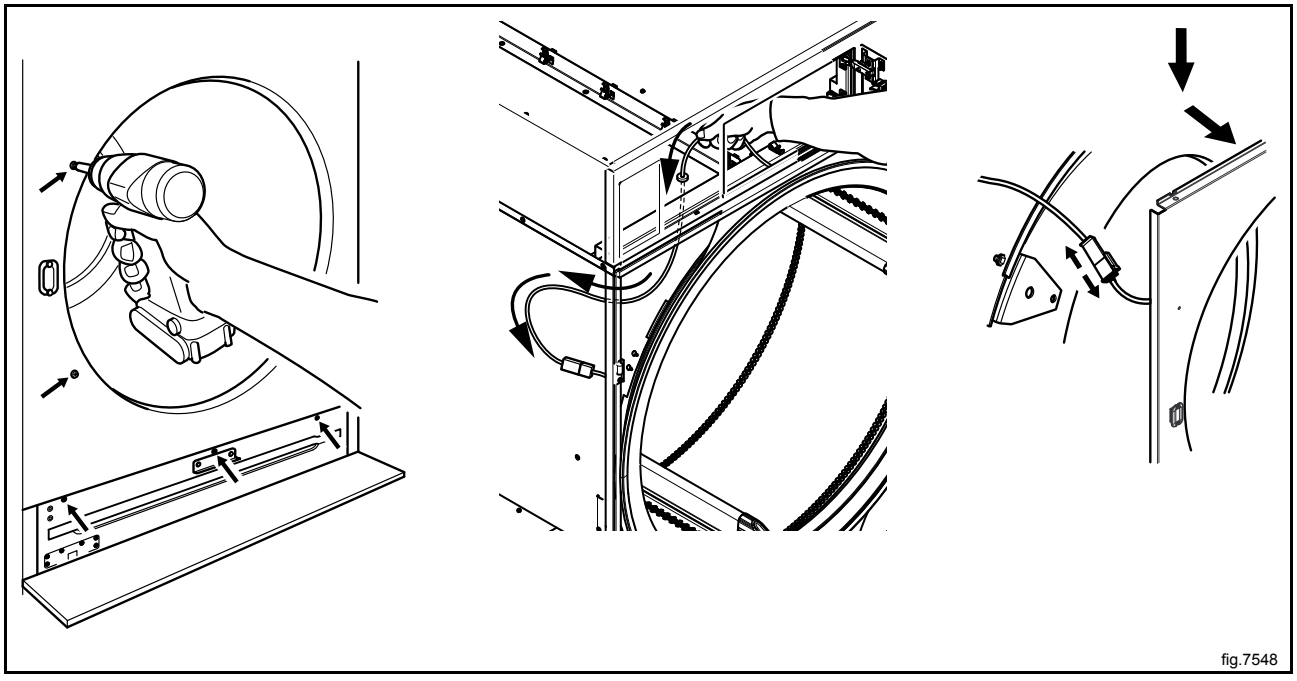


fig.7548

Move the door switch cable to the opposite side.

Note!

The plastic plug MUST be placed in the hole where the door switch cable was before.

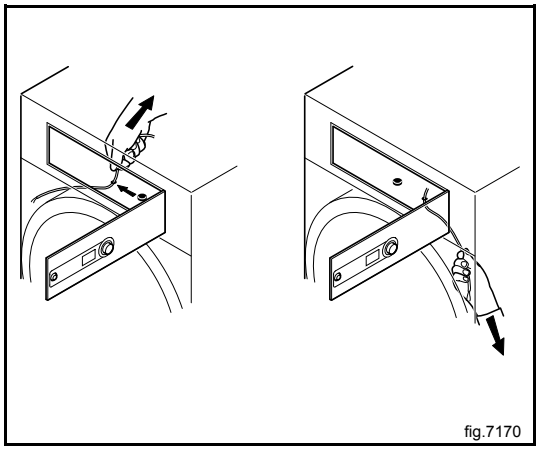


fig.7170

Loosen the nuts and move the two brackets to the opposite side.

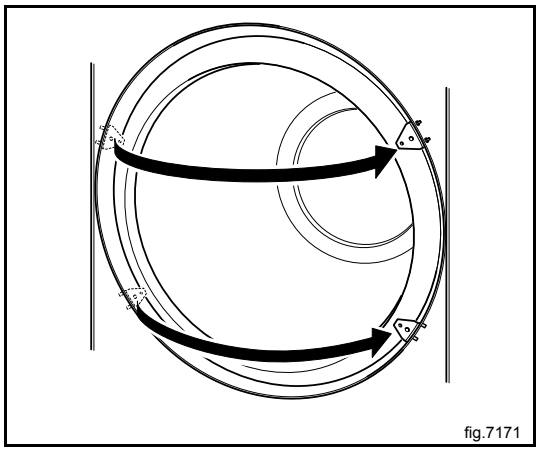


fig.7171

Reversing the door

Move the door switch on the front panel.

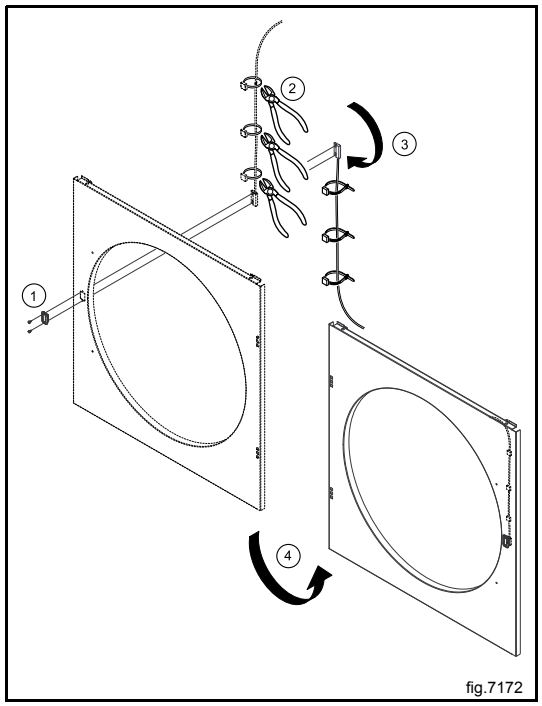


fig.7172

Move the four metal clips from the opposite side.

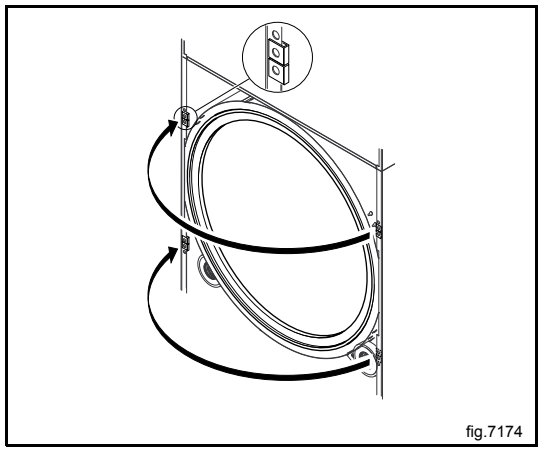


fig.7174

Connect the door switch cable and push the cable in over the drum and pull it upwards.

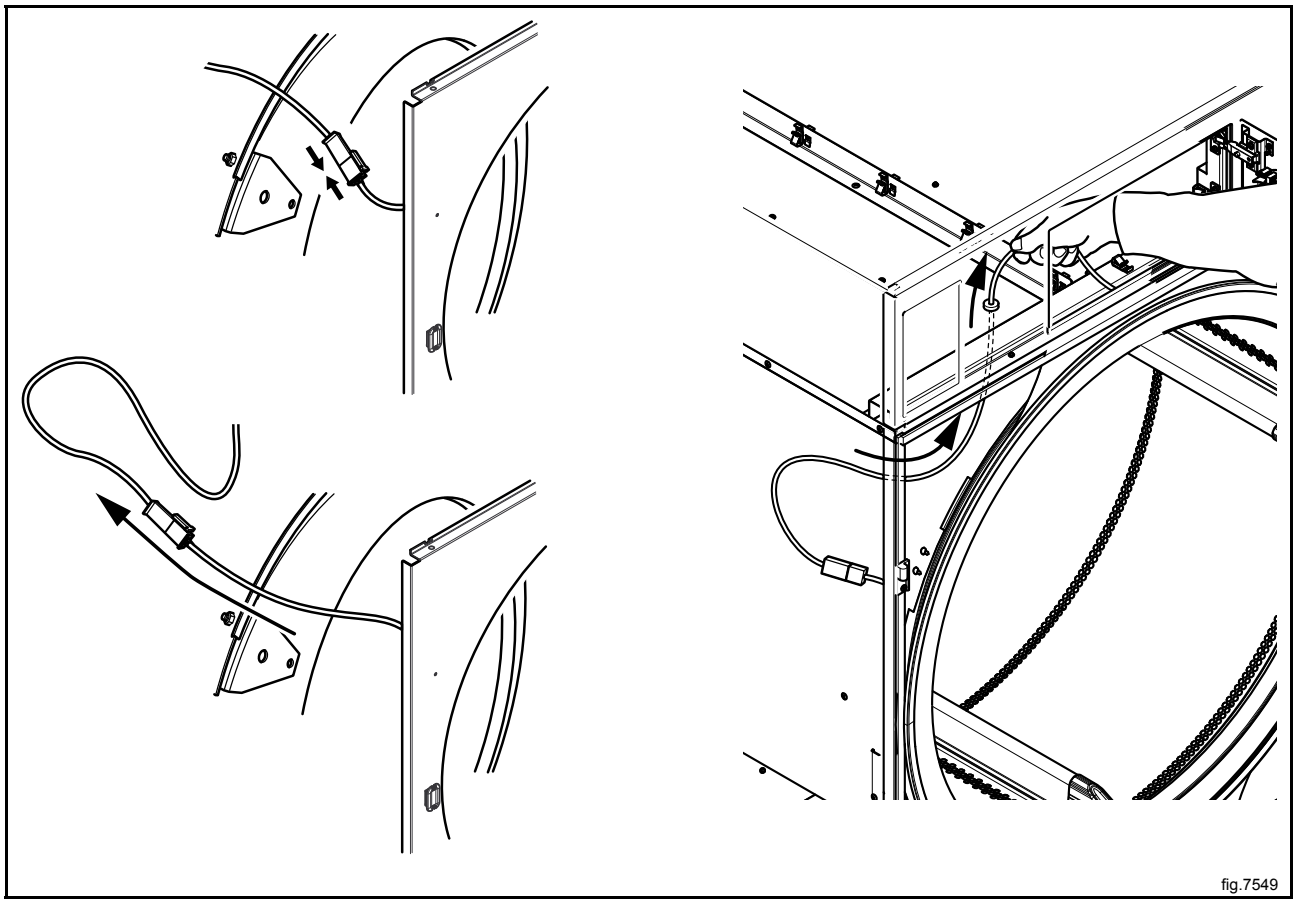


fig.7549

Remount the front panel.

Ensure that the door switch cable does not get damaged when remounting the front panel.

Fasten the hinges and mount the door on the opposite side.

Connect the power to the machine.

Test run the machine.

6 Evacuation system

6.1 Air principle

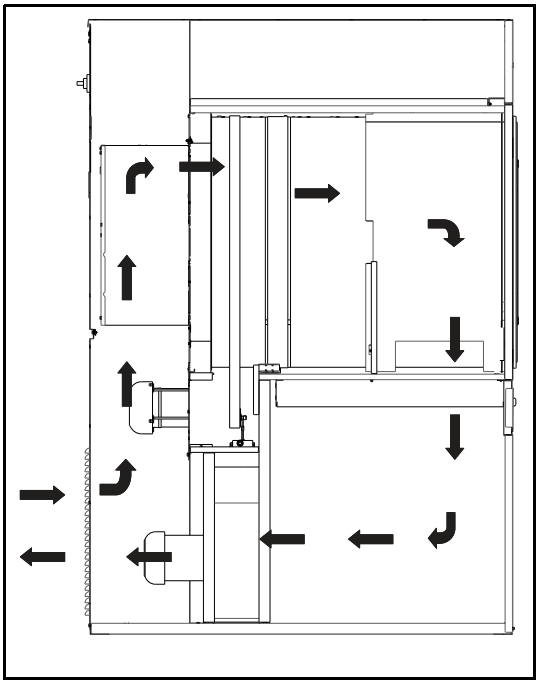
The fan creates low pressure in the machine, drawing air into the drum via the heating unit.

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

The air then flows outh through a lint filter positioned below the drum. Then 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.

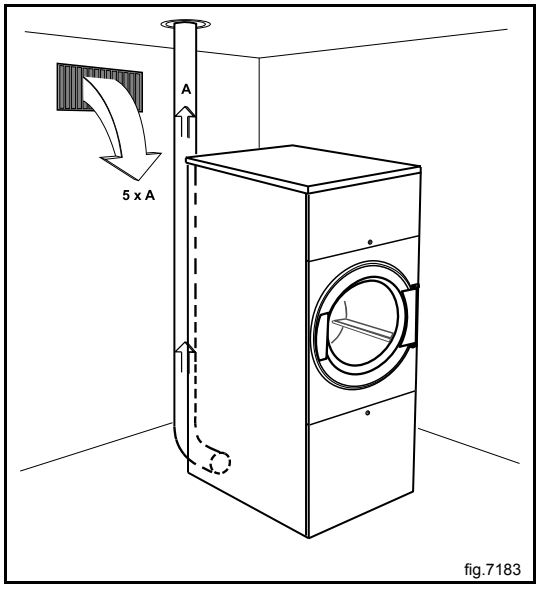


6.2 Fresh air

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 blown out of the room.

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

The area of the air inlet opening must 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.

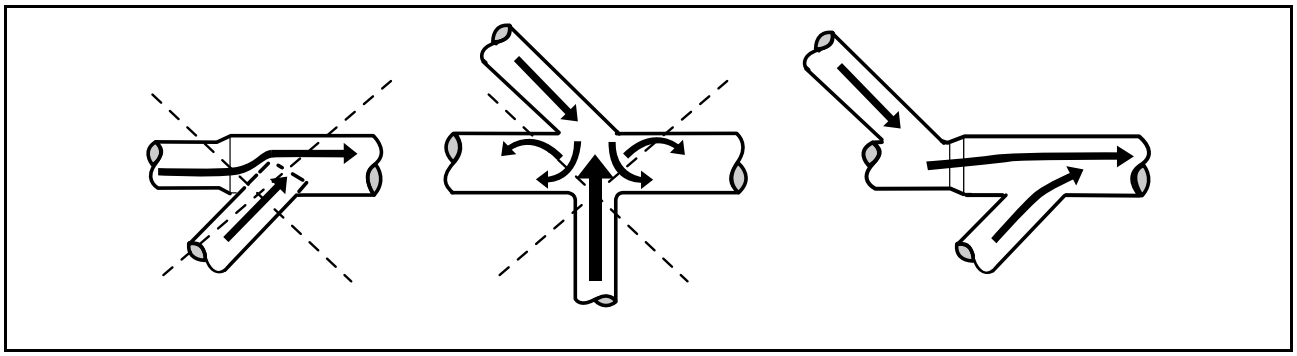


Note!

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

6.3 Exhaust duct

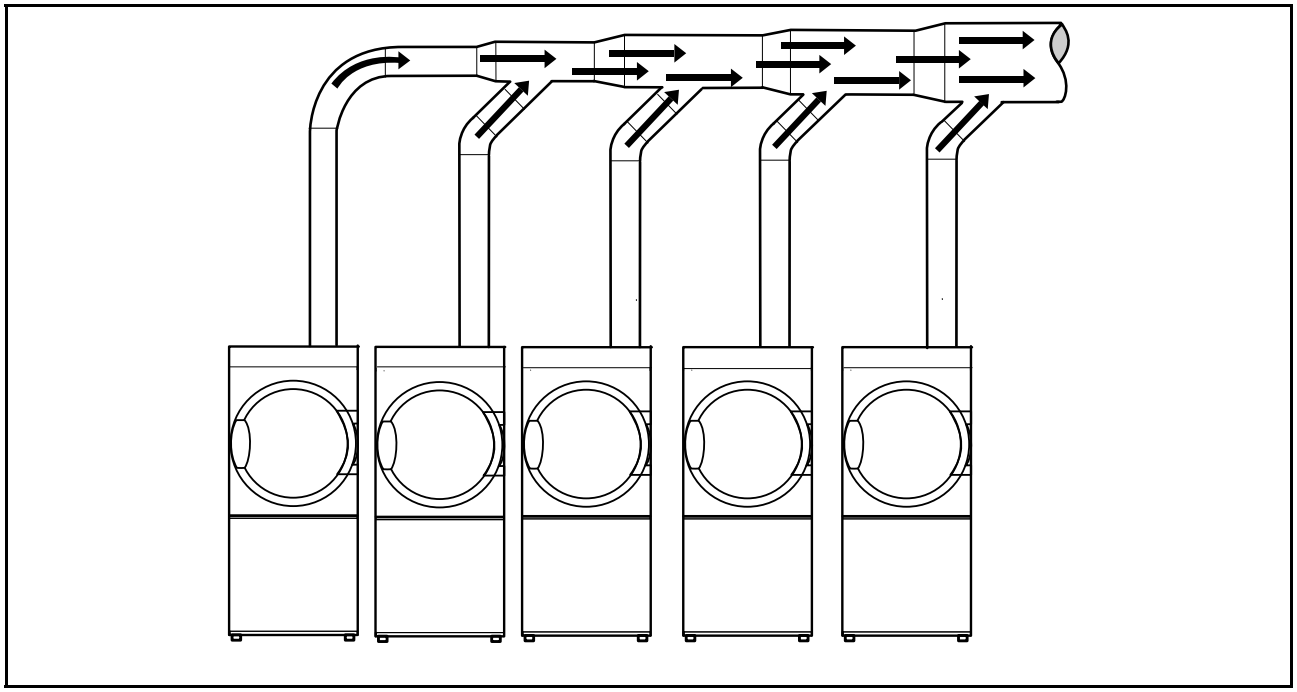
- Only rigid or flexible metal duct should be used for exhausting.
- Plastic ducting is not to be used.
- Recommended material for exhaust is galvanised steel.
- The duct is not to be assembled with screws of other fastening means that extend into the duct and catch lint.
- The exhaust air should not 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.
- The exhaust duct must not be a shared duct between machines and appliances using gas or other fuels as their energy source.



6.4 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.



Number of machines		1	2	3	4	5	6
Exhaust duct	⌀ mm ⌀ inch	200 7 7/8	280 11	315 12 3/8	355 14	400 15 3/4	450 17 11/16
Minimum area of fresh-air intake	m^2 ft^2	0.15 1.6	0.30 3.2	0.45 4.8	0.60 6.5	0.75 8.1	0.90 9.7

Number of machines		7	8	9	10
Exhaust duct	⌀ mm ⌀ inch	475 18 11/16	500 19 11/16	535 21 1/16	560 22 1/16
Minimum area of fresh-air intake	m^2 ft^2	1.05 11.3	1.20 12.9	1.35 14.5	1.50 16.1

The exhaust duct diameter must not be reduced.

6.5 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.

The machine is designed to work with 50 m / 1968 7/8 inch outlet pipe and two 90 degree bends. Each bend is equal to 2.5 m / 98 7/16 inch. If more than two bends is needed the length should maximum be shortened with 2.5 m / 98 7/16 inch per bend.

The exhaust duct must be designed so the static back pressure measured 1 m / 39 3/8 inch from the exhaust outlet does not exceed the maximum allowable back pressure specified in Technical data.

If the outlet pipe is longer or the ventilation is not properly designed we recommend to clean the outlet pipes periodically.

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

6.6 Adjusting the dryer

Adjusting the dryer may only be carried out by authorized personnel.

Adjust the dryer by demounting the lower back panel and measure the pressure in the fan housing.

Demount the lower back panel.

Demount the heating sensor (NTC sensor) (A) and insert the measuring device. Make sure the connection is tight to prevent air leakage.

Loosen the screws on the damper and open the damper (B) as much as possible.

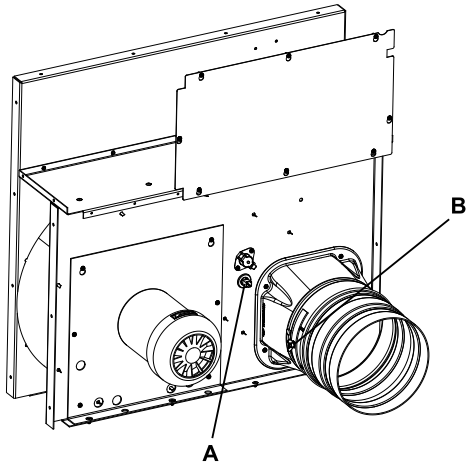


fig.7525

Measure with a pressure measuring instrument (manometer) with an empty drum and with a program without heat.

By opening and closing the damper (B) the pressure at the heating sensor (NTC sensor) (A) is either lowered or raised.

The optimum drying performances are achieved when the measured static pressure correspond to the value listed in the following table.

Model name	**Heating / Frequency**	**Static pressure in NTC sensor position (Pa / PSI)**	**Resulting Nominal air flow cold empty machine (m^3/h / ft^3/h)**
TD35	Electric / 50 Hz	400 / 0.058	550 / 19423
TD35	Electric / 60 Hz	850 / 0.123	550 / 19423
TD35	Gas / 50 Hz	400 / 0.058	610 / 21542
TD35	Gas / 60 Hz	850 / 0.123	610 / 21542
TD35	Steam / 50 Hz	600 / 0.087	690 / 24367
TD35	Steam / 60 Hz	1100 / 0.159	690 / 24367

Alternative measuring meathod

Adjusting the dryer may only be carried out by authorized personnel.

Use a home made U tube manometer, a hose (max ⌀ 10 mm / 3/8 inch), with water. Insert one end of the hose in the hole, hold the hose according to the picture so that the water is in level.

Start the machine and measure the difference between the water in one of the hose ends with the other.

1 mm water column = 10 Pa.

1/16 inch water column = 0.0014 PSI

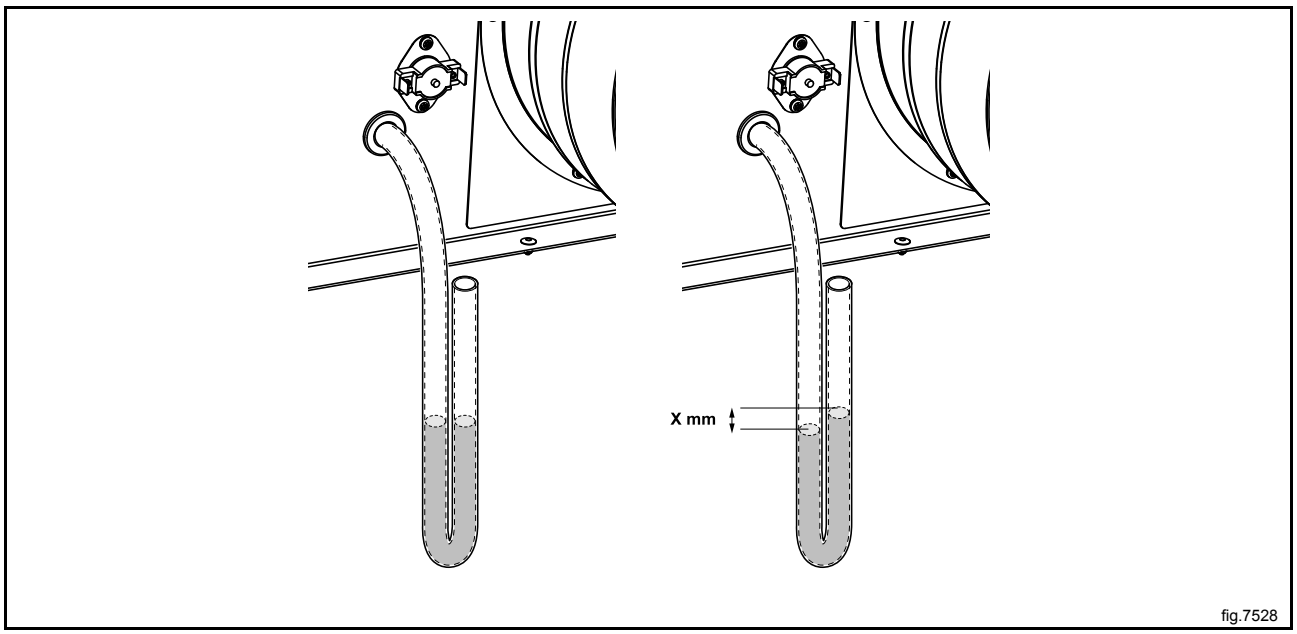


fig.7528

When the dryer is adjusted remount the heating sensor (NTC sensor) (A) and lock the damper (B) in the new position with the screws.

Remount the lower back panel.

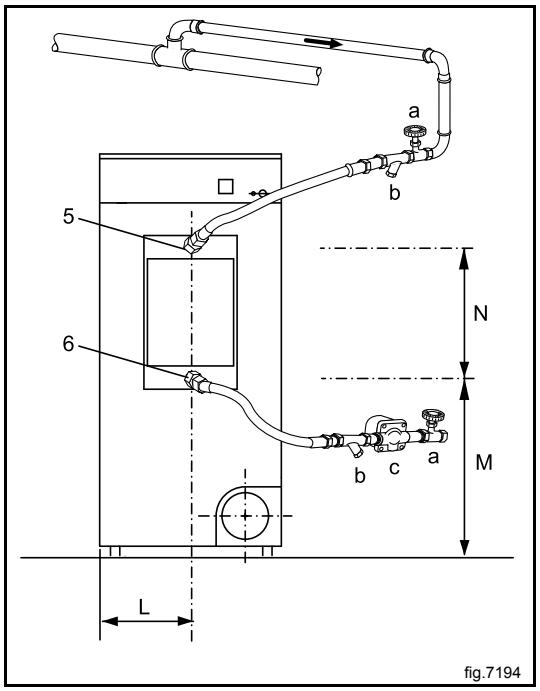
7 Steam connection

7.1 Connecting the steam

Note!

The steam pipe must be cut off and must not be under pressure.

- The branch pipe's must be located at the top of the main steam pipe to prevent condensation in the steam.
- The branch pipe must have a descending gradient and must end at a height above the inlet connecting branch (5). For measurements L, M and N, please refer to the dimension drawing in Tehnical data.
- Mount a plug valve (a) and a dirt collector (c) in the brach pipe.



Condensate return

It is important that the brach pipe for condensed water on return to the main condensate pipe has a descending gradient and is lower than the outlet connecting branch (6).

- Mount a dirt collector (b) in the return pipe.
- Mount a mechanical water discharger behind the dirt collector (c).
- Mount a plug valve (a).
- Mount pressure hoses between the branch pipes and the machine. Note that hoses are not supplied.

Pipe insulation

All pipes must be insulated in order to reduce risk of burning. Insulation also reduces loss of heat to the surroundings.

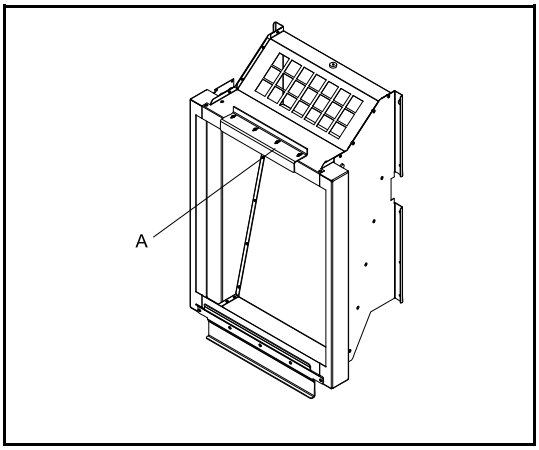
7.2 Steam calorifier

Mount the steam calorifier

Unpack the steam calorifier.

Demount the back panel on the machine.

Demount the supporting rail on the machine (A). Note which way the supporting rail turns as it has to be remounted the same way.



Hang the calorifier on the bottom supporting rail on the machine.

Hold the calorifier towards the machine and remount the supporting rail. Make sure that it grasps the calorifier.

Fasten the calorifier into the supporting rail with the screws.

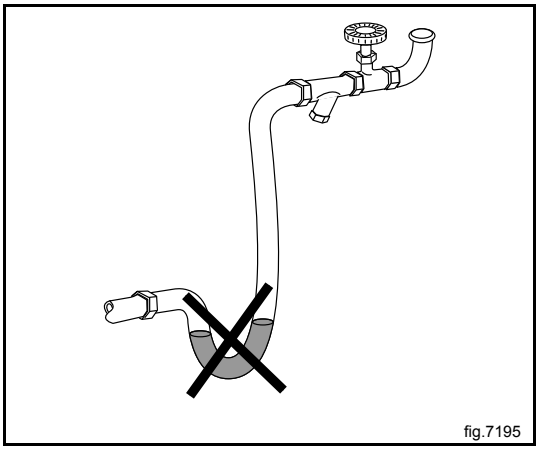
Note!

There must be no space between the machine and the calorifier.

Mount the back panel.

Attatch the pressure hoses to the machines inlet and outlet connecting branches. It is important to support the inlet and the outlet connecting branches in order to prevent deformation.

The pressure hoses must not hang down.



When ready

- Leak test the system.
- Clean the dirt collectors.
- Perform a function chek.

8 Gas connection

8.1 General

Caution

It is your responsibility to have all plumbing connections made by a qualified professional to insure that the gas plumbing installation is adequate and conforms with local and state regulations or codes. In the absence of such codes, ALL plumbing connections, material, and workmanship must conform to the applicable requirements of the National Fuel Gas Code ANSI Z223.1 LATEST EDITION or the CAN/CGA—B149, INSTALLATION CODES, both the latest edition.

Mount a shut-off valve upstream from the machine.

The gas connection to the machine should be dimensioned to an output depending upon the kW-rating of the machine.

The factory nozzle pressure setting must correspond to the fuel value given on the data label.

Check that the nozzle pressure and fuel value correspond with the values in the gas tables on the following pages. If not, contact the supplier.

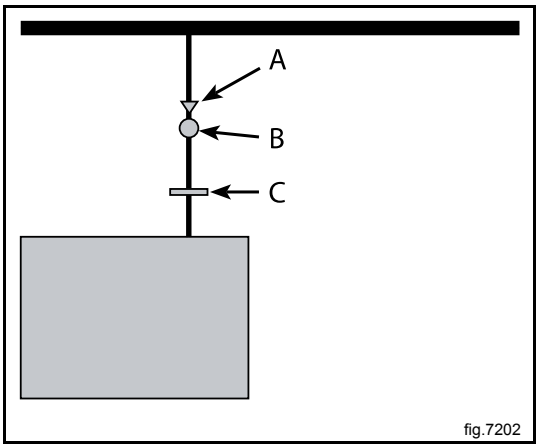
Bleed the pipe system before connecting the machine.

After connection, test all joints for leaks.

The machine and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of the system at test pressures in excess of 1/2 psi (3.5 kPa).

The machine must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or greater than 1/2 psi (3.5 kPa).

A minimum 1/8 inch NPT plugged tap, accessible for test gage connection, must be installed immediately upstream from the gas supply connections to the dryer.



A = Pressure regulator (option) propane only

B = Gas shutoff valve

C = 1/8 inch NPT plugged tap

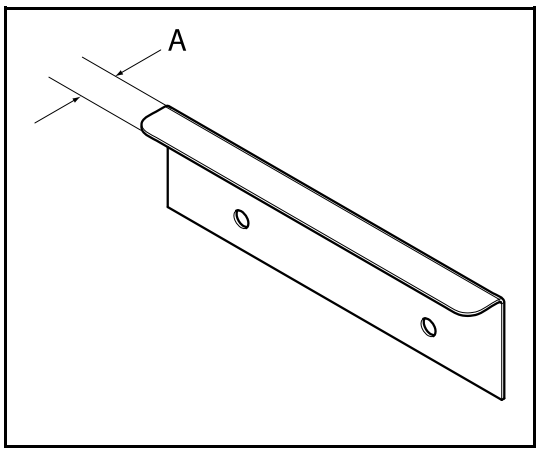
8.2 Gas installation

This machine has been build to run on natural gas. If the machine is to be converted to another type of gas, the gas nozzle must be replaced.

Conversion kit for propane gas is enclosed in secondary packing. Please contact your dealer if the current gas type is not propane/ natural gas.

8.3 Table of pressure and adjustment

Gas category	Heating power (BTH/h)	Inlet pressure (WC")	Burner pressure (WC")	Injector size (mm)	Air reducing plate (mm)	Label number
Natural	71700	7	3.2	4	487230035 A = 14	Default
Propane	71700	11	11	2.4	487230035 A = 14	490375741



8.4 Test run

- Loosen the measuring branch screw (2) 1/4 turn; connect a manometer to the measuring branch.
- Select a program with heat.
- Start the machine.
- Check the nozzle pressure, see table.
- If necessary adjust the regulator setting screw (4) behind the cover screw (3). Replace the cover screw (3) if removed.
- Check that the gas is burning evenly.

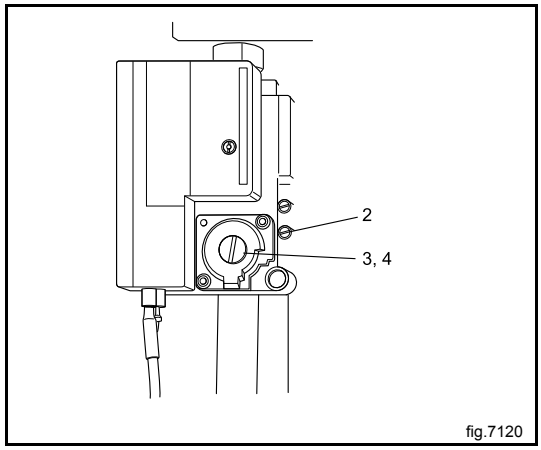


fig.7120

8.5 Converting instructions

- Disconnect the power to the machine.
- Demount the lower back panel.
- Remove the nozzle (1).
- Mount the new supplied nozzle.

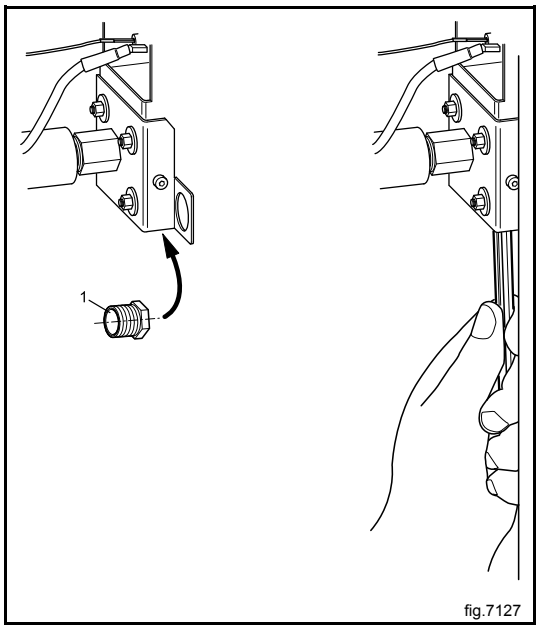


fig.7127

- Loosen the measuring branch screw (2) 1/4 turn; connect a manometer to the measuring branch.
- Connect the power to the machine and select a program with heat.
- Start the machine.
- Set the correct nozzle pressure according to the table on setting screw (4) under the cover screw (3).

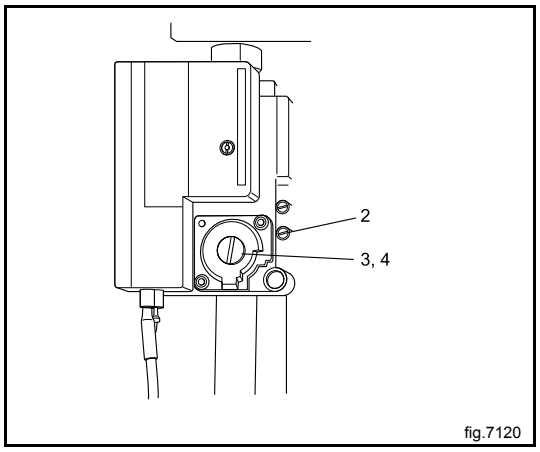


fig.7120

- Check that the gas flame burns evenly.
- Mount the cover screw (3).
- Remount the lower back panel.

8.6 Data label

When the machine is to be converted to another gas type, the data label at the rear of the machine must be updated in order for the data to be correct.

Place the data label enclosed in the conversion kit on top of the data label as shown below. If there are more than one data label, select the label with the correct country code and gas type.

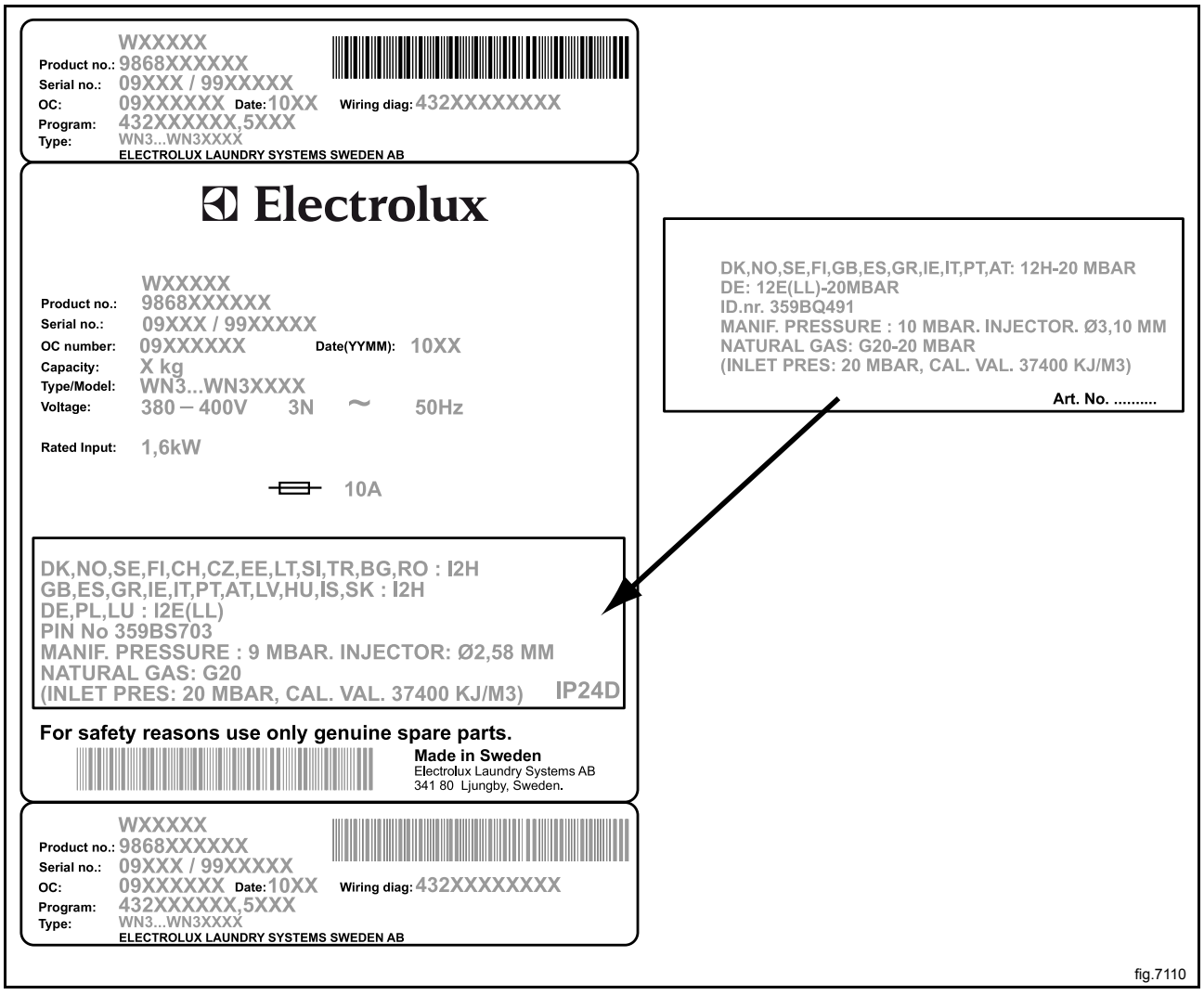


fig.7110

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. 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, including to the earth leakage circuit breaker.**

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

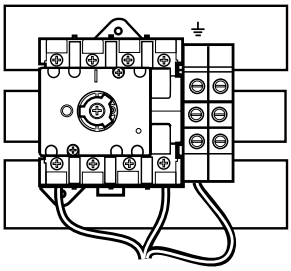
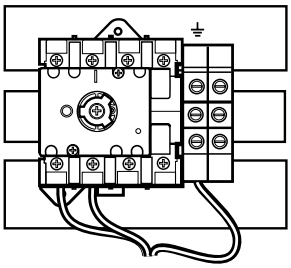
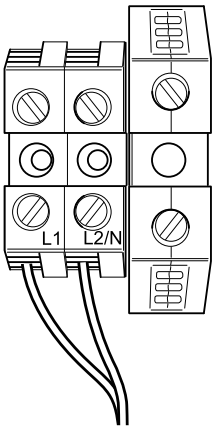
Mount a multi-pole switch prior to the machine to facilitate installation and service operations.

The connecting cable should hang in a gentle curve.

Fuse size, see table.

9.2 Single-phase connection

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

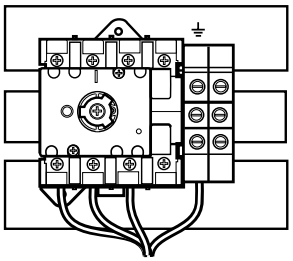
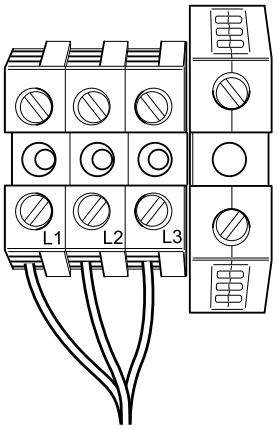
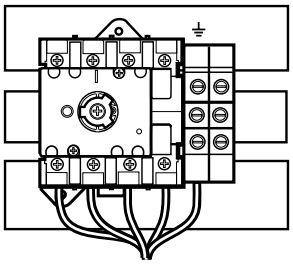
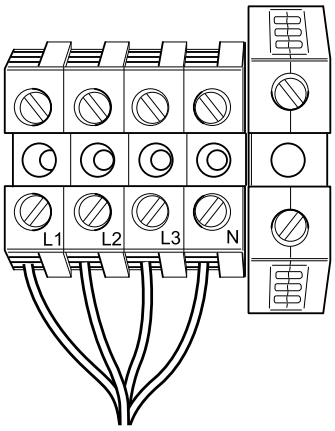
1NAC	
1AC	
1AC	

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

Heating alternative	Main voltage	Hz	Heating power kW	Total power kW	Recommended fuse ITCB A
Electric heated	208–240V 3N ~	60	9.8–13.0	10.9–14.4	45
	208–240V 3N ~	60	13.5–18.0	14.4–18.9	60
Gas heated/Steam heated	208–240V 3N ~	60	-	0.9	15
	208–240V 1N ~	60	-	0.8	15
	120V 1N ~	60	-	0.9	15

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 to the machine. 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.

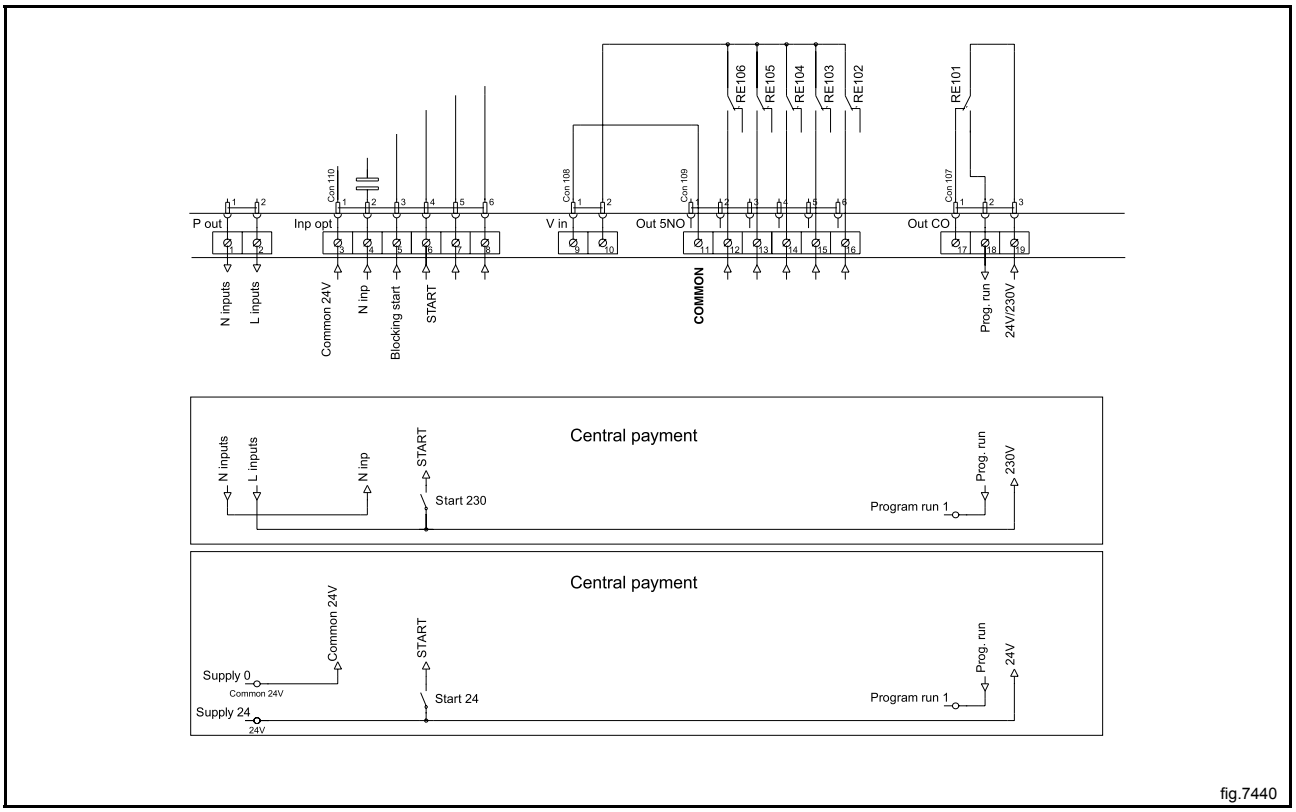


fig.7440

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. 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.

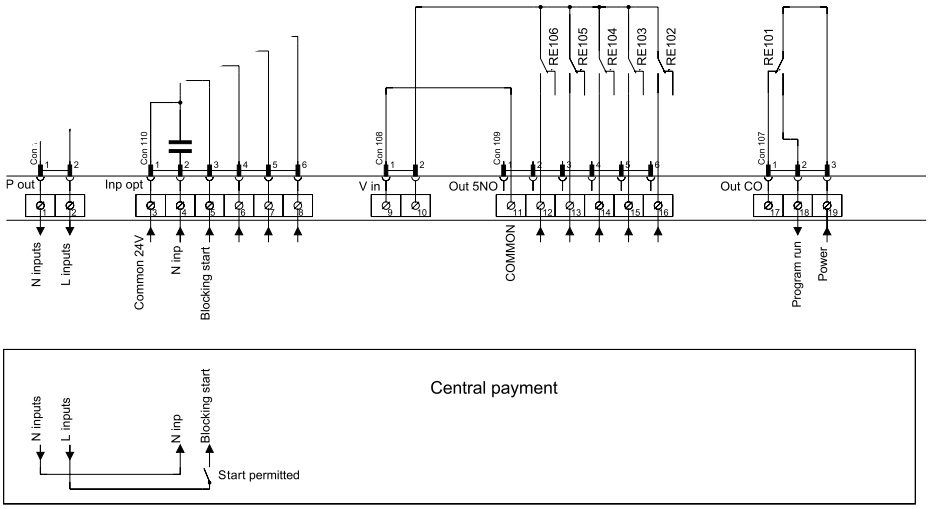


fig.7439

9.5.3 External coin meter/Central payment (2K)

The signal received from external coin meters must be a pulse.

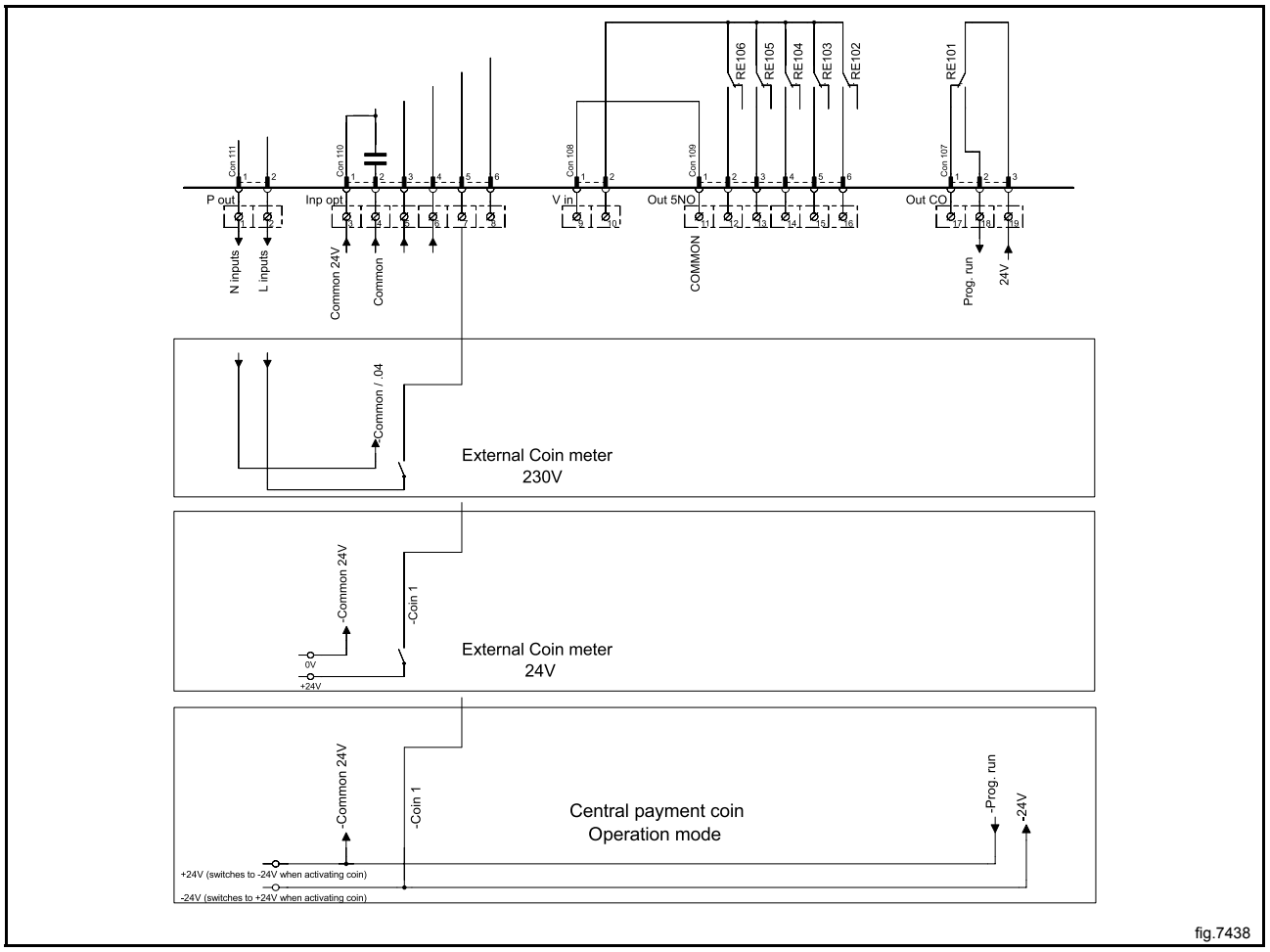


fig.7438

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 by the percentage entered in the price programming menu.

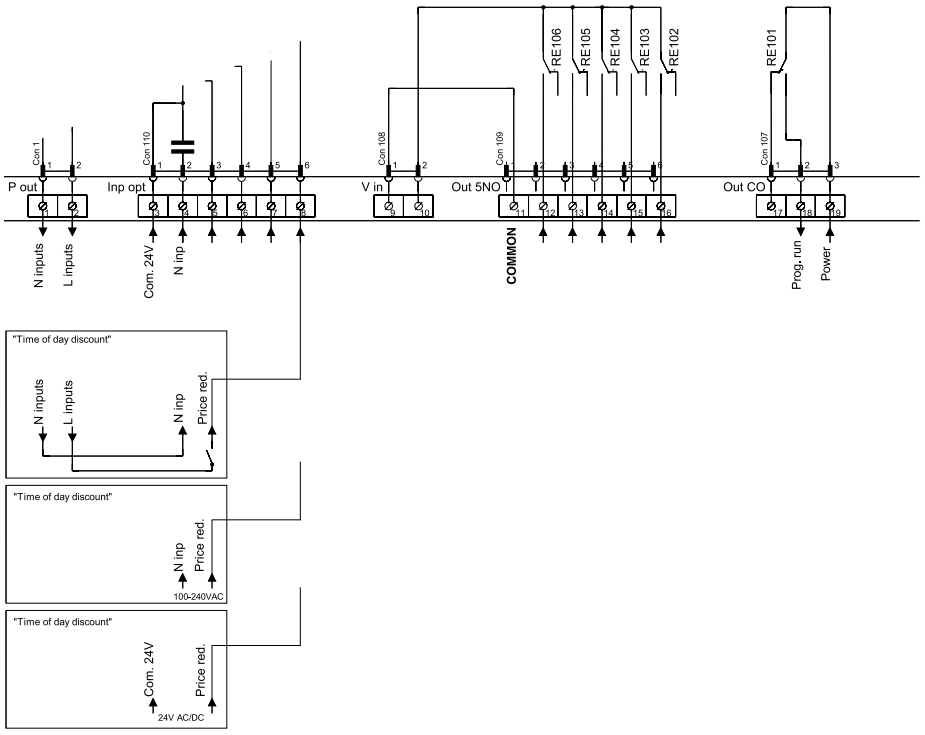


fig.7441

9.6 Option

9.6.1 External connection 100 mA

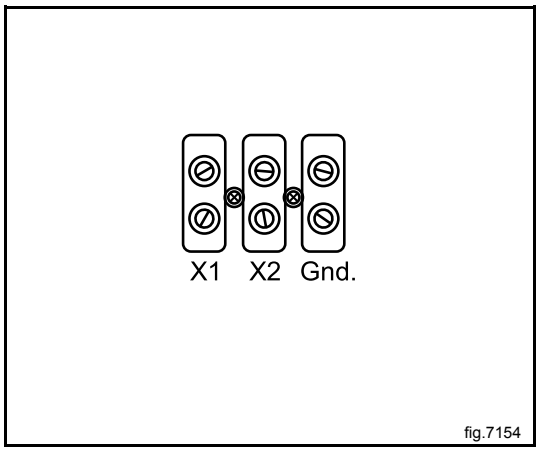
A special connection terminal is located on the connection console.

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

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.

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



10 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.

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)

- Demount the lower back panel of the machine.
- Check that the direction of the fan wheel is correct.

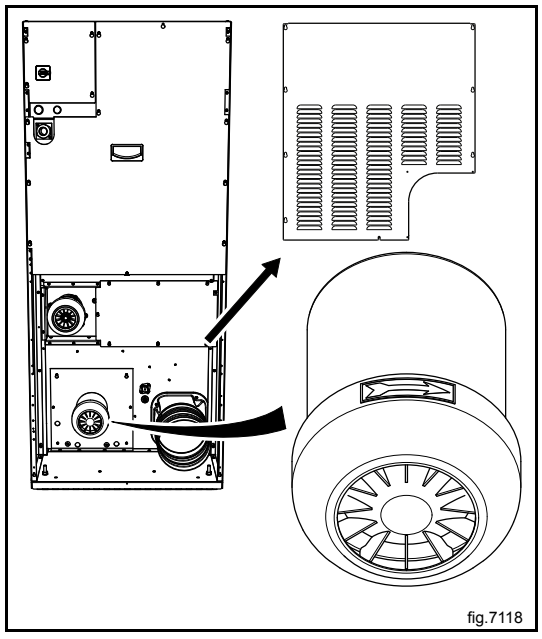


fig.7118

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

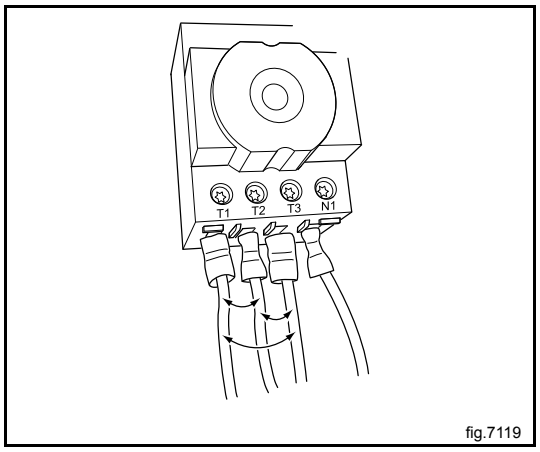


fig.7119

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.

The installer shall instruct the user on the operation of the appliance before leaving.

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