Gas heated dryer from serial number: 0112 / 0002312

SERVICE MANUAL

T3300S, TD30•30

Gas and electric heated dryer

487 03 29 21.02
GB

WARNING

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, personal injury or death.

– Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

– WHAT TO DO IF YOU SMELL GAS:

- **Do not try to light any appliance.**
- **Do not touch any electrical switch; do not use any phone in your building.**
- **Clear the room, building or area of all occupants.**
- **Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.**
- **If you cannot reach your gas supplier, call the fire department.**

– Installation and service must be performed by a qualified installer, service agency or the gas supplier.

NOTICE TO SERVICE PERSONNEL

INSTALLATION

Improper installation of Wascomat laundry and wet cleaning equipment can result in personal injury and severe damage to the machine.

REFER INSTALLATION TO QUALIFIED PERSONNEL!

RISK OF ELECTRIC SHOCK

The equipment utilizes high Voltages. Disconnect electric power before servicing.
The use of proper service tools and techniques, and the use of proper repair procedures, is essential to the safety of service personnel and equipment users.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL!

RISK OF PERSONAL INJURY

This equipment contains moving parts, and some components that may have sharp edges. Improper or careless service procedures may result in serious injury to service personnel.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL!

ABOUT THIS MANUAL

This manual is intended to provide service guidance to qualified service personnel. Wascomat and its authorized dealers make no determination regarding the qualification of individuals requesting this service manual. The service provider assumes all risks inherent to the servicing of this equipment and any risks that arise as result of the lack of knowledge or ability of any person servicing this equipment.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL!

NOTE:

Improper installation or servicing of Wascomat equipment will void the manufacturer's warranty!

Service manual

Safety rules

This machine is only intended for drying water-washed garments.

Clothes that have been cleaned with chemicals/flammable liquids, must NOT be dried in the machine.

Remove clothes from the tumble dryer as soon as they are dry. This prevents them from becoming creased, and reduces the risk of spontaneous ignition.

The machine must not be used for drying foam rubber or foam-like materials.

The machine must not be used for drying floor mops.
(This applies only to floor mops containing polypropylene).

The machine must not be used by children.

The machine must not be hosed down with water.

Mechanical, electrical and gas installations must only be carried out by qualified, licensed personnel.

Report machine malfunctions to qualified service personnel immediately. This is important for your own safety and for the safety of others.

Gas dryers only:

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

What to do if you smell gas:

Do not try to light any appliance.

Do not touch any electrical switch; do not use any phone in your building.

Evacuate the room, building or area.

Contact appropriate authorities.

Servicing the dryer

Refer servicing to qualified personnel.
Improper servicing can result in hazardous conditions, fire, explosion, property damage, and personal injury.

Some components may have sharp edges!
Wear gloves when handling mechanical components.

Contents

Technical data, type 3300S, Gas heating

Drum volume:		2 x 300 litre
Weight:	Net	282 kg
Drum:	Diameter	760 mm
	Depth	660 mm
	Revolutions per minute	45 rpm
Capacity:		2 x 13.6 kg
Motor:	Effect without reverse	2 x 1 kW
	Effect with reverse	2 x 1 kW
	Revolutions per minute	
	Motor 50 Hz	2700 rpm
	Motor 60 Hz	3200 rpm
Heat effect:	Gas heating	2 x 21 kW
Air consumption:	Gas 2 x 21 kW	2 x 650 m^3/h
Piping:	Exhaust	Ø 200
Pressure drop:	Exhaust (max.)	90 Pa
Gas piping:		ISO 7/1-R1/2
Gas pressure:	See page regarding pressure in the installation manual supplied with the dryer	
Sound pressure level:		< 70 dB (A)

Technical data, TD30•30, Gas heating

Up to serial number 0205/ 0003290

Cylinder volume:		2 x 10.6 cu.ft.
Weight:	Net	620 lb
Cylinder:	Diameter	29 15/16”
	Depth	26”
	Revolutions per minute	45 rpm
Capacity:		2 x 30 lb
Motor single phase:	Effect of cylinder/vent motor	2 x 0.54 hp
Revolutions per minute:	Motor 60 Hz	3200 rpm
Heat effect:	Gas heating	2 x 71600 BTU/h
Air consumption:	Gas 2x 21 kW	2x383 cu.ft/min
Piping:	Exhaust	ø8”
Pressure drop:	Exhaust (max.)	0.35”W.C
Gas piping:		1/2” NPT
Gas pressure:	See page regarding pressure in the installation manual supplied with the dryer	
Sound pressure level:		< 70 dB (A)

Technical data, TD30•30, Gas heating

After serial number 0205/ 0003291

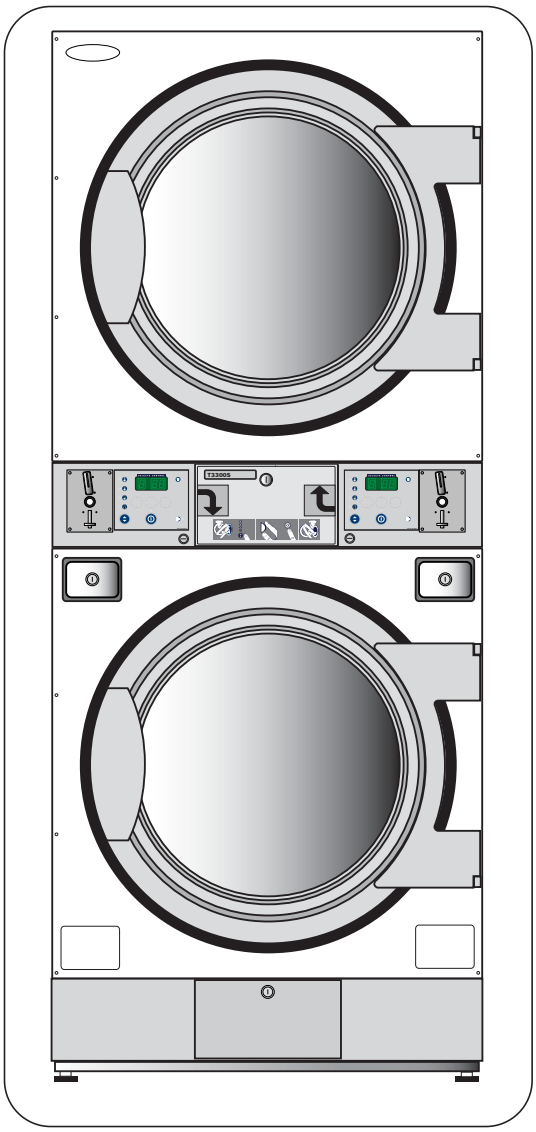
Cylinder volume:		2 x 10.6 cu.ft.
Weight:	Net	620 lb
Cylinder:	Diameter	29 15/16”
	Depth	26”
	Revolutions per minute	45 rpm
Capacity:		2 x 30 lb
Motor single phase:	Effect of vent motor	1 x 0.54 hp
	Effect of cylinder motor	1 x 0.7 hp
Revolutions per minute:	Motor 60 Hz	3200 rpm
Heat effect:	Gas heating	2 x 71600 BTU/h
Air consumption:	Gas 2x 21 kW	2x383 cu.ft/min
Piping:	Exhaust	ø8”
Pressure drop:	Exhaust (max.)	0.35”W.C
Gas piping:		1/2” NPT
Gas pressure:	See page regarding pressure in the installation manual supplied with the dryer	
Sound pressure level:		< 70 dB (A)

Technical data - T3300S, Electric heated

Cylinder volume:	2x300 liter	
Weight:	Net	292 kg
Cylinder:	Diameter	760 mm
	Depth	660 mm
	Revolutions per minute	45 rpm
Capacity:		2 x 13,6 kg
Motor:	Effect without reverse	2 x 1 kW
	Effect with reverse	2 x 1 kW
	Revolutions per minute:	
	Motor 50 Hz	2700 rpm
Heat effect:		2 x 9 kW
		2 x 13 kW
Air consumption:	2 x 9 kW	2 x 680 m^3/h
	2 x 13 kW	2 x 680 m^3/h
Piping:	Exhaust	Ø 200
Pressure drop:		max. 90 Pa
Sound pressure level:		< 70 dB (A)

Contents

Description - gas heating



Dryer T3300S or TD30•30 is a stack dryer.

The dryer has 2 independent pockets. Each pocket has a drum volume of 300 litres (10.6 cu.ft).

Motors

The dryer has 2 motors per pocket - one to run the drum and one to run the fan.

Programs, Selecta Control (Non-Coin version)

Each pocket has an independent operating panel and an independent main control circuit board.

The dryer's control provides diagnostic error codes which offer guidance in troubleshooting.

OPL with RMC

On OPL with RMC (non-coin operated) models, there are nine factory-provided drying programs in the dryer control's memory.
It is also possible to directly select the desired drying time.

The dryer stops automatically when the clothes have the chosen residual moisture.

OPL with Auto Stop

On OPL (non-coin operated) models, there are five factory-provided drying programs in the dryer control's memory.
It is also possible to directly select the desired drying time.

The dryer stops automatically when the clothes are dry (Auto Stop).

Coin drop/card reader

The dryer is available with a factory-installed coin drop, a factory-installed card-start system, or it can be prepared for field installation of a card start system. On vending models, insertion of a coin or card vends an owner- programmed drying time.

Heating

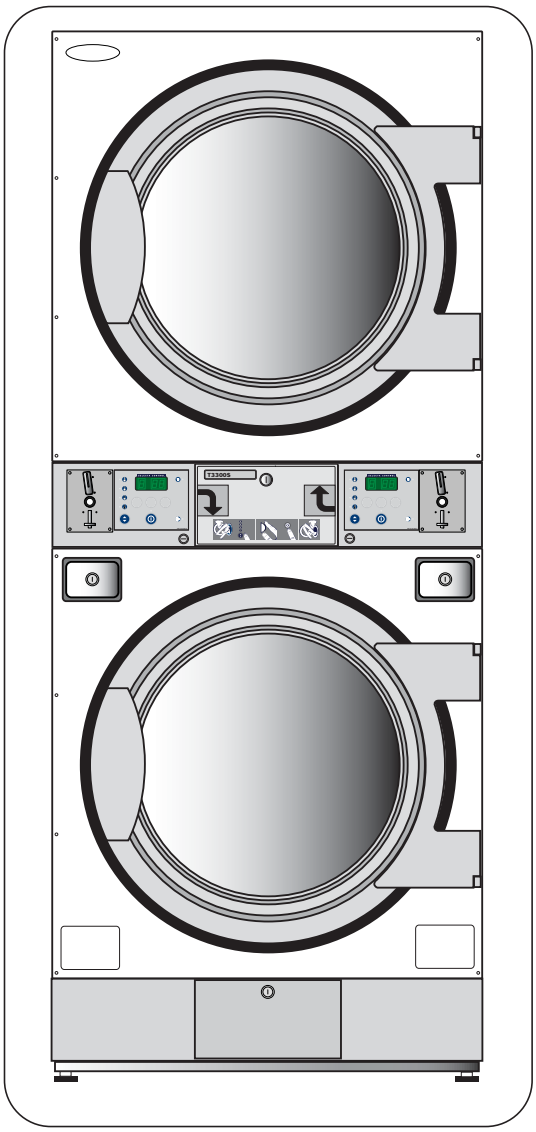
The standard configuraion is equipped for natural gas.

An LPG (bottle gas) conversion kit is available see section 40.

Use

The dryer is designed for coin-operated laundries or on premises laundries.

Description - electric heating



Dryer T3300S is a stack dryer.

The dryer has 2 independent pockets. Each pocket has a drum volume of 300 litres.

Motors

The dryer has 2 motors per pocket - one to run the drum and one to run the fan.

Programs, Selecta Control (Non-Coin version)

Each pocket has an independent operating panel and an independent main control circuit board.

The dryer's control provides diagnostic error codes which offer guidance in troubleshooting.

OPL with RMC

On OPL with RMC (non-coin operated) models, there are nine factory-provided drying programs in the dryer control's memory.
It is also possible to directly select the desired drying time.

The dryer stops automatically when the clothes have the chosen residual moisture.

OPL with Auto Stop

On OPL with Auto Stop (non-coin operated) models, there are five factory-provided drying programs in the dryer control's memory.
It is also possible to directly select the desired drying time.

The dryer stops automatically when the clothes are dry (Auto Stop).

To be continued on the following page

Programs, Selecta Control continued (Non-Coin version)

AHL with Auto Stop

On AHL with (non-coin operated) models, there are 2 factory-provided drying programs in the dryer control's memory.
It is also possible to directly select the desired drying time.

The dryer stops automatically when the clothes are dry (Auto stop).

AHL with RMC

On AHL with RMC (non-coin operated) models, there are 2 factory-provided drying programs in the dryer control's memory.
It is also possible to directly select the desired drying time.

The dryer stops automatically when the clothes have the chosen residual moisture.

Coin drop/card reader

The dryer is available with a factory-installed coin drop, a factory-installed card-start system, or it can be prepared for field installation of a card start system. On vending models, insertion of a coin or card vends an owner- programmed drying time.

Heating

The dryer is electric heated.

Use

The dryer is designed for coin-operated laundries or on premises laundries (OPL) or apartment house laundry (AHL).

Contents

Function check

Check that the drum is empty and the loading door is closed.

Checking the micro switches

Start the dryer.

Check if the micro switches are working properly:

• The dryer **must** stop if the loading door is opened.

If the dryer operates with the loading door open, go to section 29.

• The dryer **must** stop when the lint drawer is opened.

If the dryer operates with the lint drawer open, go to section 29.

Correct direction of rotation

For dryers with a 3-phased motor the direction of rotation must be checked.

Check the direction of rotation of the **blower motor:**

1. **Fig. 1** Correct direction of rotation must be **clockwise** when viewed through the ventillation holes on the motor cover on the rear of the dryer.

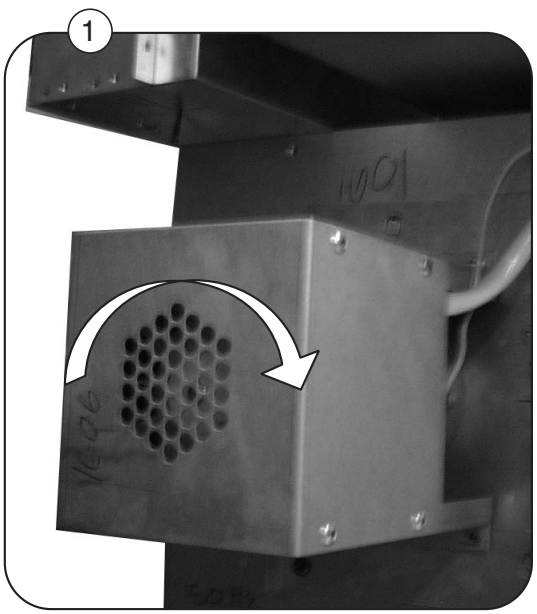
If the direction of rotation is not correct, swap two phases on the power input connection terminal block.

Final test

1. Start the dryer and allow it to operate for 5 minutes on a program that requires heat.

2. Check whether the heating is working by opening the loading door and feeling the heat.

If the above test-points are in order, the dryer is ready for use.



Maintenance

• Exhaust plenum

Check that (after three months, then every three to six months, as necessary) the exhaust plenum on the rear of the dryer has not become blocked with lint or other debris.

Dismounting

1. Dismount the external exhaust duct from the dryer.

2. **Fig. 1** Dismount the dryer's exhaust plenum by removing the two screws **A** from the flange at the top of the plenum, and lifting it away.

The inside part of the exhaust plenum can be cleaned.

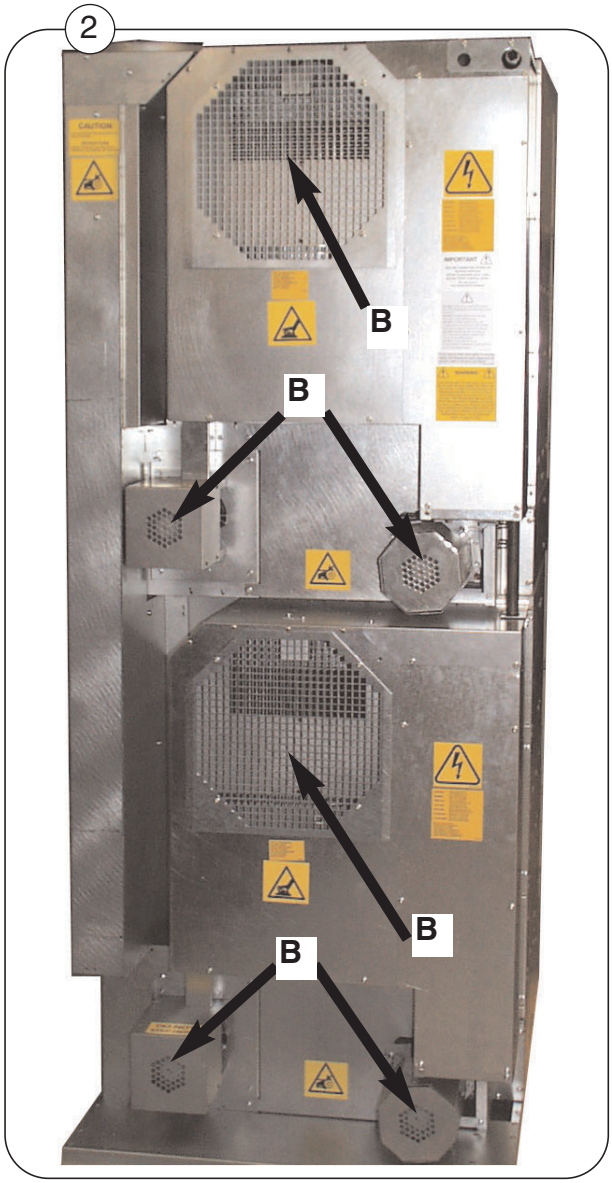
• Perforations

1. **Fig. 2** Check (weekly) that perforations **B** are not blocked with lint and dust.

2. Clean them with a vacuum cleaner.

1

2



Maintenance

• Blower compartment

Check (after three months, then every three to six months, as necessary) that the blower compartment has not become blocked with lint or other debris.

Dismounting

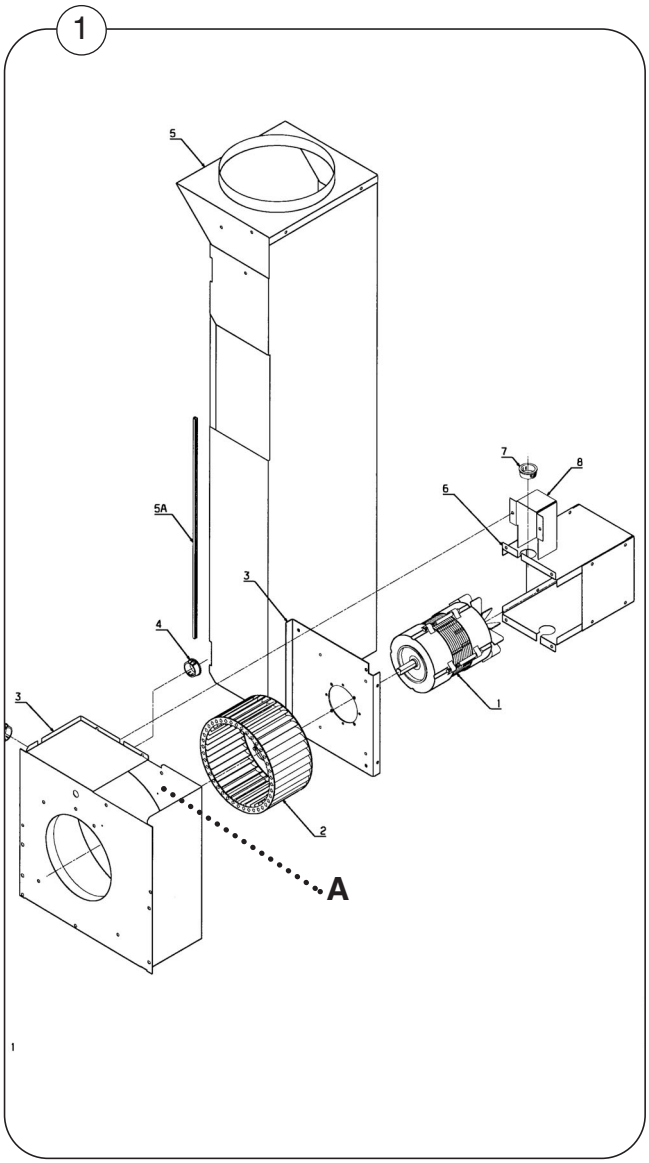
1a. **Fig.1** Carefully dismount the blower to get to the blower compartment, see section 30.

1b. If the dryer has a heavy accumulation of lint, the exhaust plenum should be removed The top of the blower compartment **A** can now be cleaned.

• Door gasket

Check that the loading door gasket is clean and in good condition. Use a suitable cleaner. Do not use solvents that may damage sensitive plastics or painted finish.

1



Maintenance

• Lint drawer

1. Check (at least once daily) that the lint screen in the drawer **B** is clean and in good condition.

2. Remember to clean the lint drawer in both the top and bottom dryers!

3. Clean the lint drawer gaskets. Use a suitable cleaner. Do not use solvents that may damage sensitive plastics or painted finish.

• Secondary lint screen

Check (at least every other day) that the secondary lint screen **A** behind the lint drawer **B** has not become blocked with lint or other debris.

The secondary lint screen **A** is essential for reducing lint accumulation in the blower.

ALWAYS reinstall this screen after cleaning it!

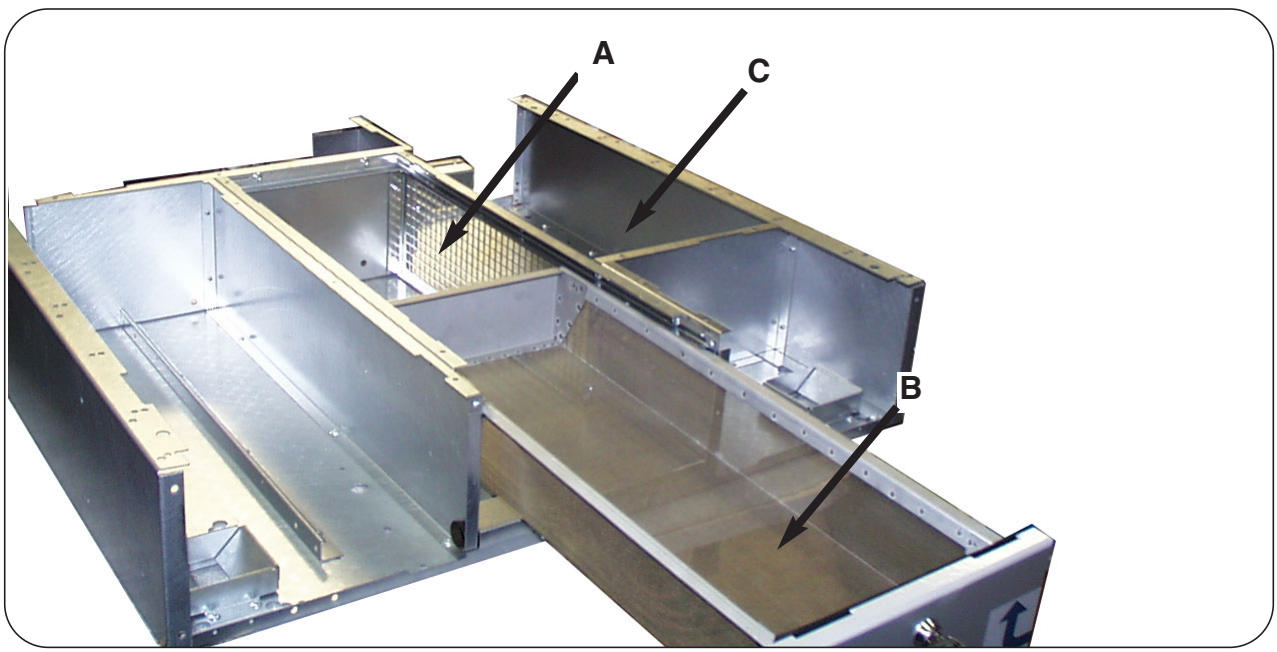
Dismounting

1. Remove the screen drawer **B** from the dryer.

2. Remove the 2 wing nuts.

3. Remove the secondary lint screen **A** and clean the screen and the area **C** behind the screen by using a vacuum cleaner.

4. Remember to clean the lint screens in both the top and bottom dryers!



Maintenance

• Dryer with RMC

To ensure that the moisture tracing is always working optimally it is important to clean the lifters.

Lack of cleaning the lifters can reduce the automatic residual moisture control in the clothes resulting in the clothes being moister than requested when the program has ended.

Cleaning

Wipe off/clean drum and lifters with citric acid (Acidum citricum). If soap/softener residue remains, it is recommended also to use a coarse sponge.

The frequency of cleaning should depend on the operating frequency - with a minimum of once a week.

Maintenance - Internal wearing parts

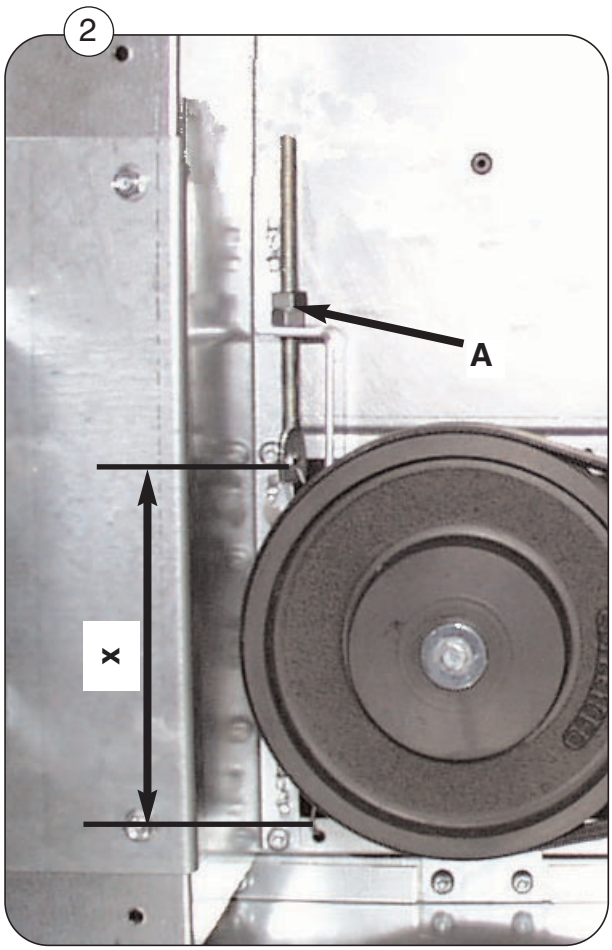
Maintenance should be conducted to an extent related to operation frequency and the conditions on the premises, or at least once a year.

- **Cleaning around the drum**

1. Disconnect the power supply from the dryer.
2. **Fig. 1** Dismount the front panel (See section 42: Replacing support rollers).
3. Remove the lint using a vacuum cleaner.
4. Inspect the two support rollers and replace them if necessary.
5. Re-assemble the dryer.
6. Connect the power supply - remember to carry out a **function check** as decribed earlier in this section.

- **Tightening drive belt**

1. Remove the plate in front of the transmission module. (See section 30: Dismounting transmission module).
2. **Fig. 2** Check that the springs are tightend as shown. Spring length **x** should be 130 mm ±5 mm (5” ± 3/16”).



The area surrounding the dryer

Fresh-air intake to the room

Check that the fresh-air intake to the room and the exhaust ducts/pipes from the room are not clogged by lint/dust or blocked in any other way.

Dryer area

Check that the dryer area is clear and free from combustible materials, gasoline and other flammable vapours and liquids.

Safety and warnings signs (USA only)

Product safety signs or labels should be replaced when they no longer meet the legibility requirements for safe viewing.

Check that all the safety and warning signs are located on the dryer as shown in the installation manual supplied with the dryer. A copy of this manual is available from your dealer.

Replacement of safety signs or labels should be in accordance with the installation manual.

Contents

Circuit boards MUST be protected from static electricity!

Remember!

- Always use an earthed wrist strap.
- Without the antistatic wrapping, the board is unprotected.
- Keep all items that can cause static discharge (such as plastic bags, fabric, and the like) away from the circuit board.
- Items like plastic, foam plastic, nylon, or cellophane wrapping are all big generators of static electricity.
- Static electricity can not be felt, heard or seen till the voltage reaches 2500V.
- Board components can be damaged by static electricity under 100V.

Control locations

User module circuit board

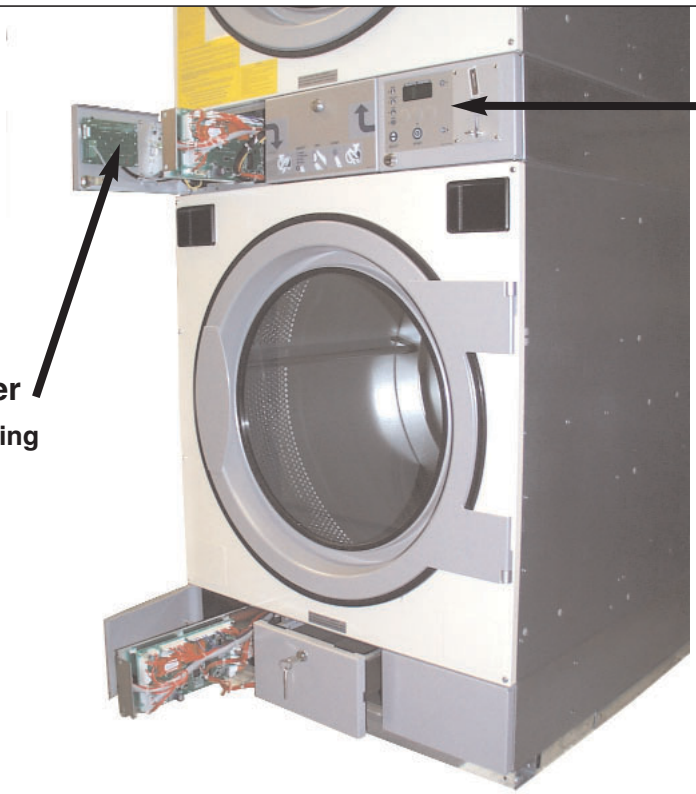
One user module is placed on each hinged door to the left and right side of the top lint drawer, fig. 1.

Each user module contains a circuit board with display, indicator lamps, a connector for the user keypad, and electronics to communicate commands to the main circuit board via a serial interface.

The circuit board also contains a slide switch **A** for changing to programming mode, fig.2.

See Servicemanual Selecta Control for programming the dryer.

1



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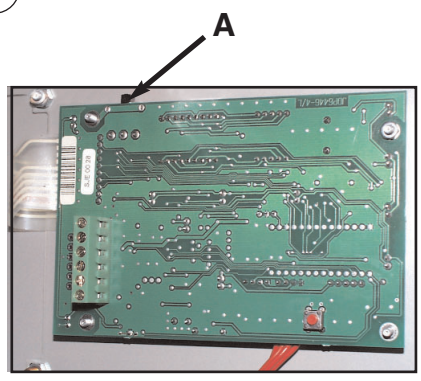


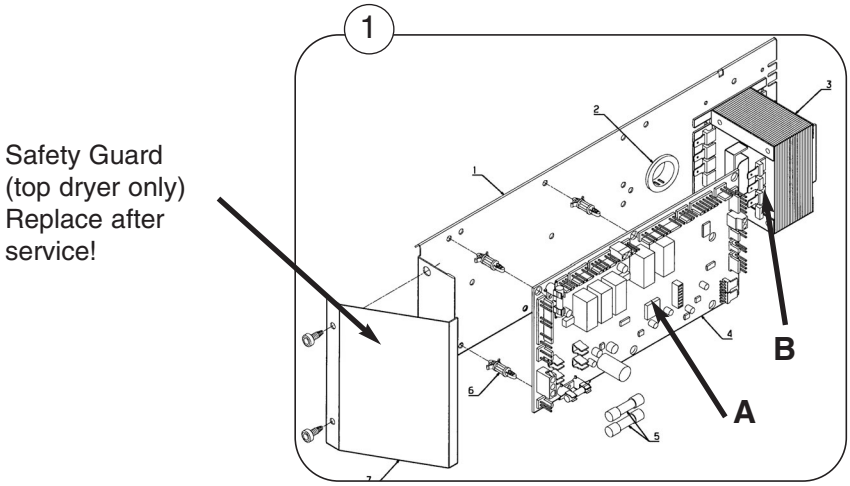
Control locations

Control unit with main circuit board

Control units for top and bottom dryer respectively are placed as shown on fig. 2.

Control unit contains main circuit board **A** and transformer **B**, fig. 1.

1



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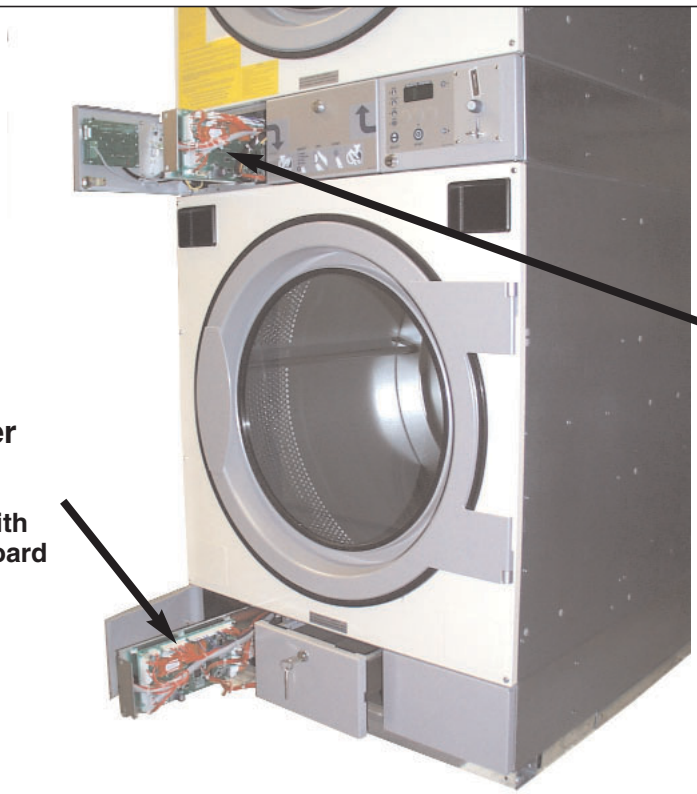


Replacement of main circuit board

The main circuit board (Selecta Control) is not serviceable. It must be replaced if it fails.

The main circuit board can be ordered as a spare part.

The spare part consists of: Circuit board with fuses in anti-static packing and instructions.

The new main circuit board (Selecta Control) is pre-programmed with specific features and may need to be “post-programmed” after installation.

Follow the instructions when replacing and programming the main circuit board.

Following settings have to be programmed:

- Reversing (Yes or No). *(Parameter 4 01).
- Heating type (Gas, electric). *(Parameter 4 02).
- Payment settings (Time per coin, standby display value, display flashing). *(Parameter 4 03).
- Panel type. *(Parameter 4 04).
- Program type. *(Parameter 4 05).

* See the service manual Selecta Control for further details.

Service Manual Selecta Control

Certain main circuit board parameters need to be set after installation, according to the characteristics of the dryer and the preferences of the owner.

See the service manual Selecta Control for further details.

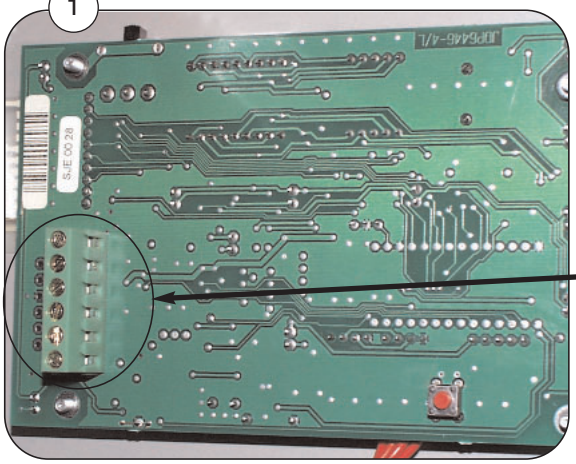
Connecting accessory systems

Different payment systems can be connected to the user module or the main circuit board (Process Module).

Please see the instructions enclosed with the particular payment system.

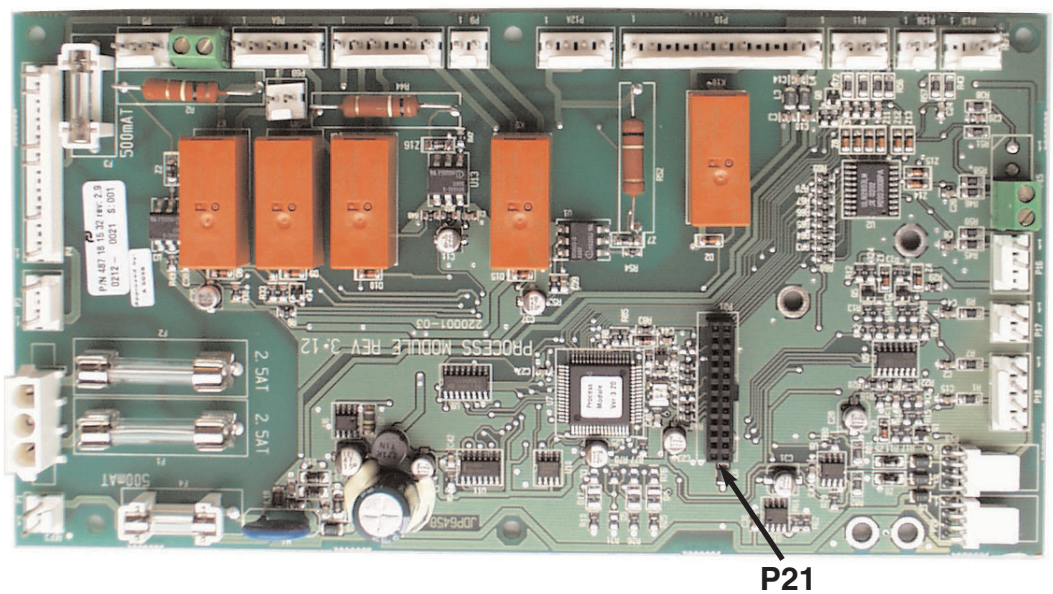
Features	User module fig. 1	Main circuit board fig. 2 (Process Module)
Coin drop	x	
Single System	x	P8
CP time, (external time control)	x	
CP coin, (external payment)	x	
Gateway	x	
CMIS	-	P21

1



x = Screw terminal

2



Contents

Inlet air - Overheating thermostat - Gas heated dryer

Function

The inlet overheating thermostat opens in the event of overheating, and shuts off the dryer.

The thermostat opens automatically and has to be reset manually.

Resetting

The overheating thermostat is located behind the grille near the fresh air inlet.

1. **Fig. 1** In order to reset the thermostat, remove the cover plate **A**

2. **Fig. 2** Reach one finger into hole and depress the reset button on the back of the thermostat.

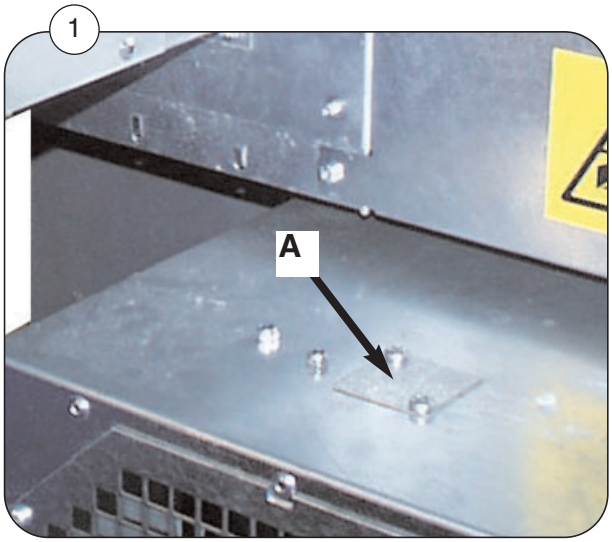
Error code

The following error code is related to this section.

E08

Refer the Service Manual Selecta Control, section 12 for more information.

1



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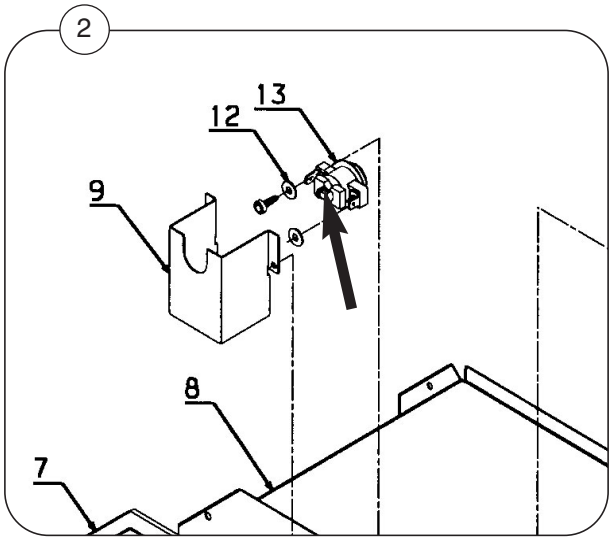


Gas heated dryer
Inlet air - Thermistor element (NTC sensor)

Function

The thermistor element measures the temperature of the heated air entering the drum. The resistance of this device is normally 80 to 100 kOhms at 20°C (68°F) and drops as its temperature increases.
The signal is returned to the main circuit board and this ensures that the inlet air does not become excessively hot, thus preventing scorching of garments.

Replacement

The element is located in the heating unit, and is visible from the front of the machine, through the perforations in the rear of the drum.

Fig. 1 and fig. 2 The heating unit can be dismounted for easier replacement of the element. It is important that the sensor is placed above holder A.

Fig. 3 and fig. 4 Check that the sensor is placed correctly by shining, from the front, through the holes in the end plate of the drum.

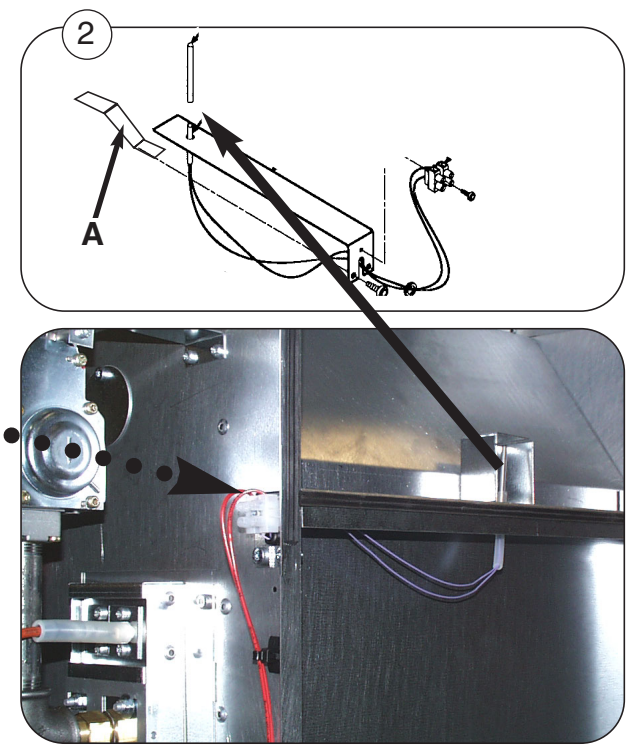
For dismounting the heating unit see section 40: Heating.

Error codes

The following error codes are related to this section.

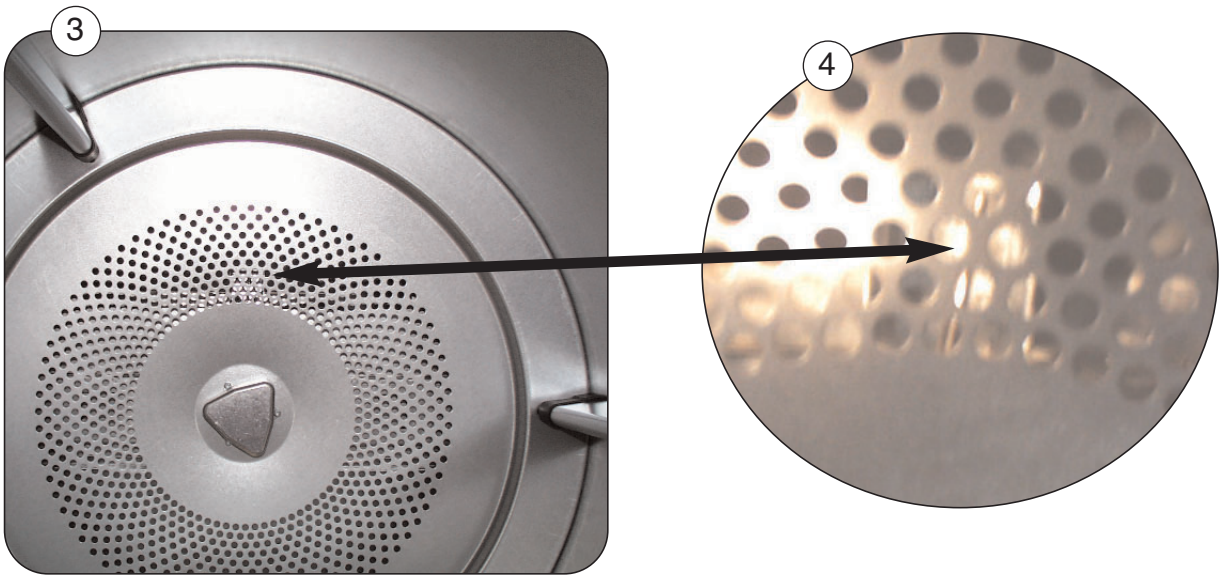
E01, E03, E17

Refer to Service Manual Selecta Control section 12 for more information.



To be continued ont the following page.

Gas heated dryer
Inlet air - Thermistor element (NTC sensor)
Replacement, continued



Electric heated dryer
Inlet air - Overheating thermostat

Function

The inlet overheating thermostat opens in the event of overheating, and shuts off the dryer.

The thermostat opens automatically and has to be reset manually.

Resetting

Fig. 1 The overheating thermostat is located behind the grille near the fresh air inlet.

Fig. 2 In order to reset the thermostat, remove the two nuts see arrow and remove the cover plate **A**.

Fig. 3 Reach one finger into the hole and press the reset button **B** on the thermostat.

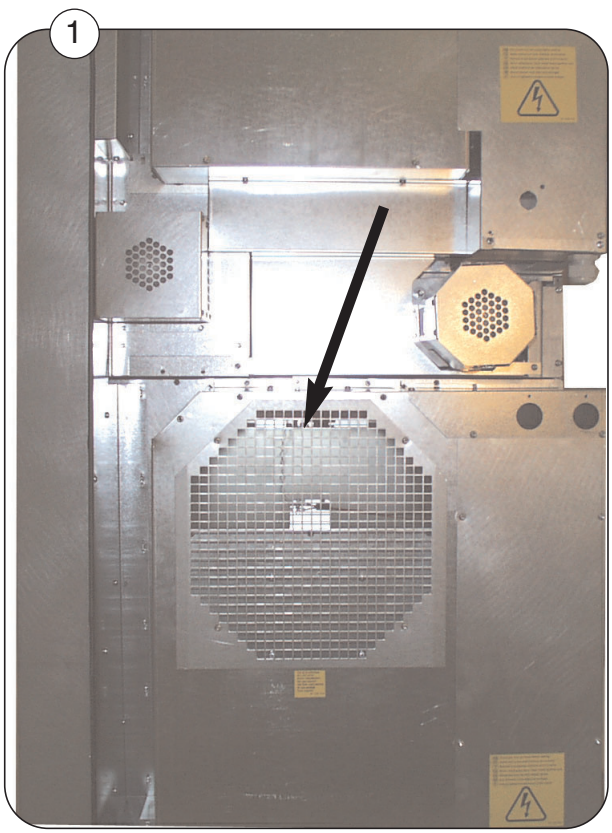
After resetting mount the plate **A.**

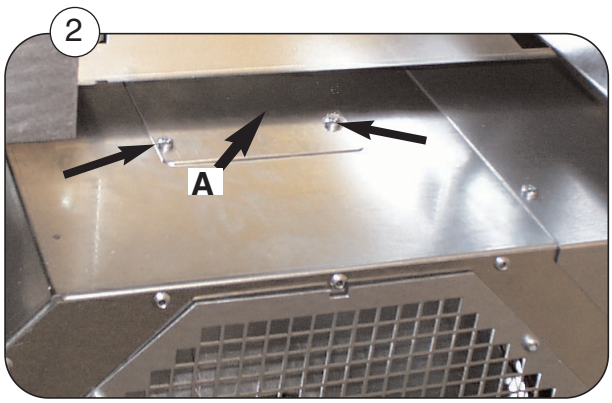
Error code

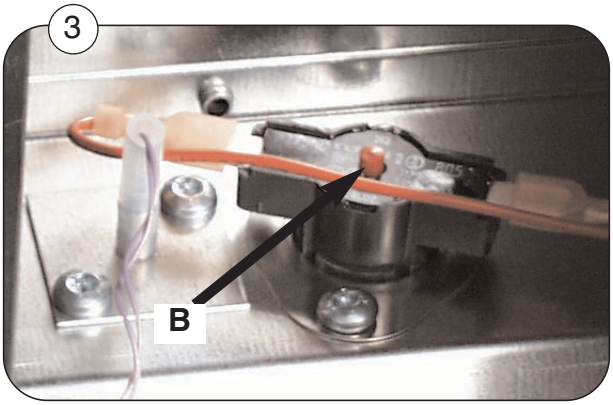
The following error code is related to this section.

E08

Refer the Service Manual Selecta Control, section 12 for more information.







Electric heated dryer
Inlet air - Thermistor element (NTC sensor)

Function

The thermistor element measures the temperature of the heated air entering the drum. The resistance of this device is normally 80 to 100 kOhms at 20°C (68°F) and drops as its temperature increases.
The signal is returned to the main circuit board and this ensures that the inlet air does not become excessively hot, thus preventing scorching of garments.

Replacement

The element is located in the top of the heating unit.

Fig. 1 In order to be able to replace the sensor it is necessary to dismount the heating unit.

See **Dismounting of the heating unit**: Section 40, Electric heated dryer.

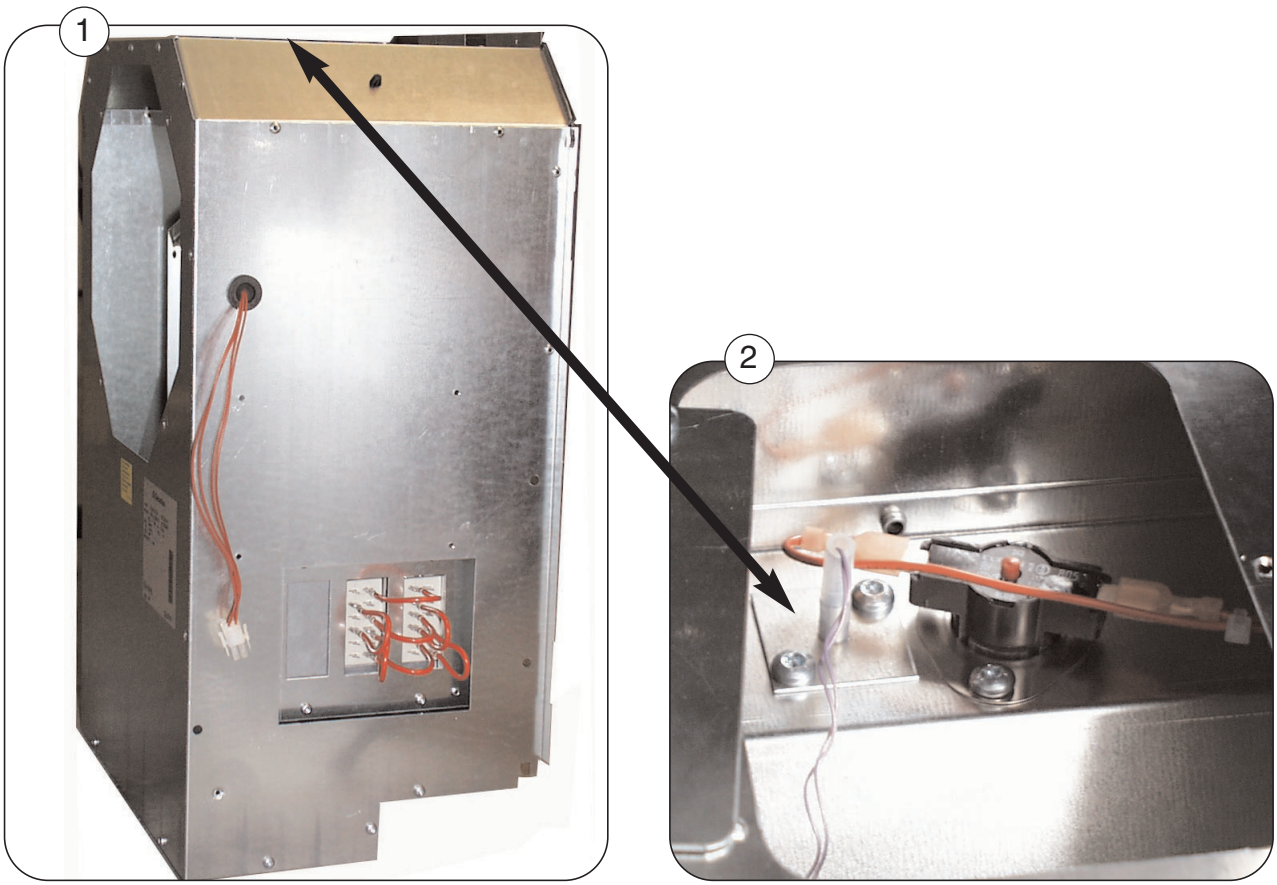
Fig. 2 It is posssible to replace the sensor.

Error codes

The following error codes are related to this section.

E01, E03, E17

Refer to Service Manual Selecta Control section 12 for more information.



Outlet air - Overheating thermostat

Function

The outlet air overheating thermostat is located in the air flow path between the secondary lint screen and the blower.

To access the assembly, remove the blower from the rear of the dryer (see section 30).

The overheating thermostat ensures that the dryer does not overheat during program operation.

The thermostat opens automatically and has to be reset manually.

1. Disconnect the power supply.

After this the thermostat can either be:

Reset from the front of the dryer

2a. Pull out lint drawer **A**.

3a. Dismount grille **B**. The thermostat can now be reset manually by pressing on the tab on the back of the holder.

Reset from the back of the dryer

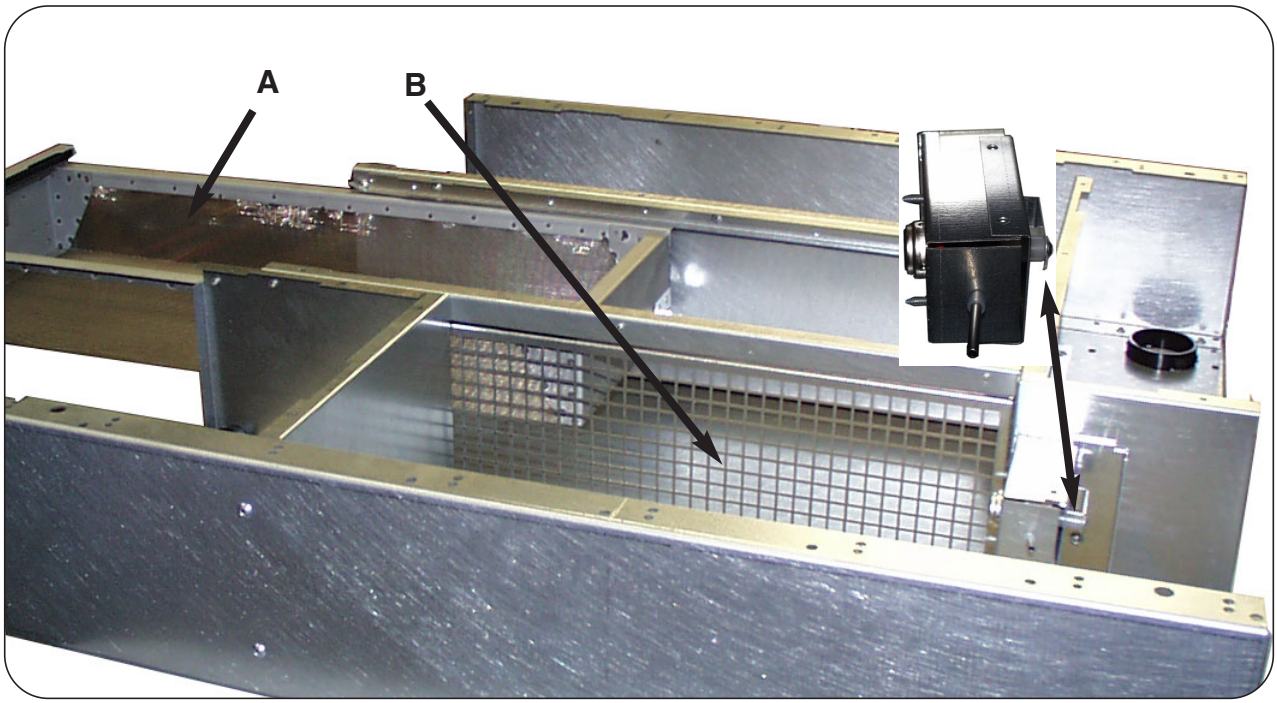
2b. By dismounting the blower assembly the thermostat can be reset.

Error code

The following error code is related to this section.

E08

Refer to Service Manual Selecta Control section 12 for more information.



Outlet air - Thermistor element (NTC sensor)

Function

The sensor measures the temperature in the outlet air and the signal is returned to the main circuit board.
The main circuit board turns the heating unit off when the outlet air thermistor indicates that the required temperature has been reached.

The resistance of this device is normally 80 to 100 kOhms at 20°C (68F) and it drops as its temperature increases.

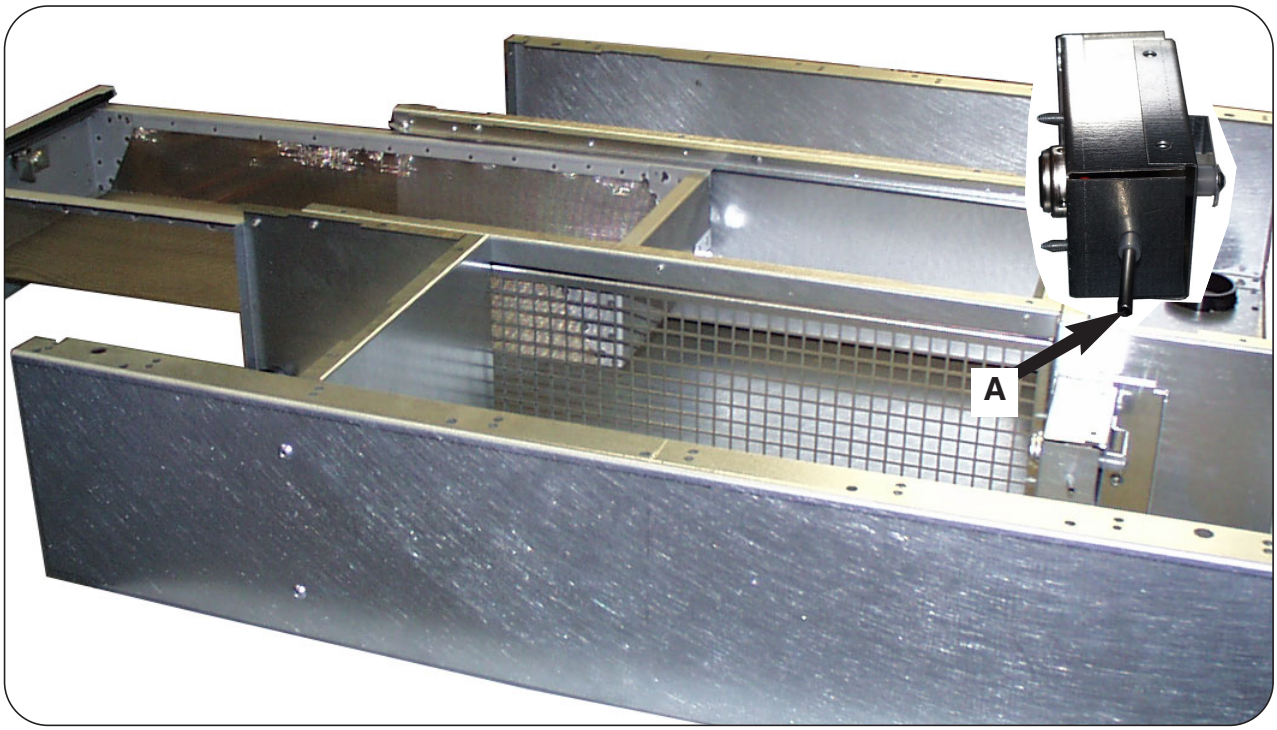
The sensor **A** is mounted on the same bracket as the outlet air overheating thermostat.

Error codes

The following error codes are related to this section.

E02, E04, E18

Refer to Service Manual Selecta Control section 12 for more information.



Vacuum shutter and switch

Function

The vacuum switch ensures the necessary airflow in the dryer.

Adjustment

The distance from the vacuum shutter plate to the body of the dryer should be approx. 7 mm (1/4 inch).

If the distance is too big, the vacuum shutter may not close properly.

Fig. 1 Vacuum shutter and shutter switch are located behind plate **A**.

Fig. 2 The top screw on the switch (see arrow) is used for adjusting the vacuum shutter distance from the body of the dryer.

Error codes

The following error codes are related to this section.

E15, E16

Refer to Service Manual Selecta Control section 12 for more information.

Contents

Loading door switch

A switch is mounted by the loading door hinge.

The switch ensures that the dryer stops automatically if the loading door is opened during operation.

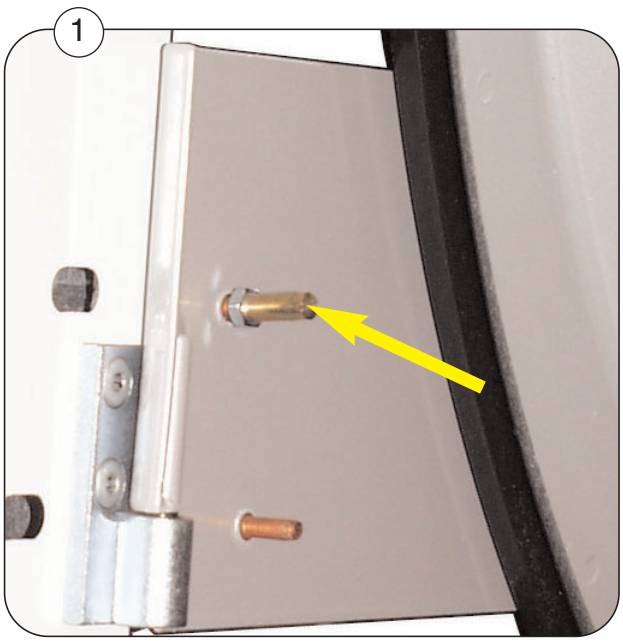
If the dryer does not stop when the loading door is opened, the switch needs replacing.

Replacing the door switch

1. Disconnect the power supply from the dryer.
2. Remove the door and the front panel from the dryer.
3. Disconnect the wires from the door switch.
4. Dismount the door switch.
5. Mount the new switch.
6. Connect the wires.
7. Re-assemble and test the new door switch, as follows:

Testing the door switch

1. Connect the power supply.
2. Start the dryer.
3. Check that the fan, drum rotation and heat all stop when the door is opened max. 10 mm(3/8”). If it is possible to open the door more than 10 mm(3/8”) before the dryer shuts off, it is necessary to adjust the activating pin on the door **fig. 1**.



On some models

On some models, the loading door switch alone is connected to P12A on the main circuit board.

On other models, the loading door switch and the lint drawer switch are in series, and the combined circuit is connected to P12A on the main circuit board.

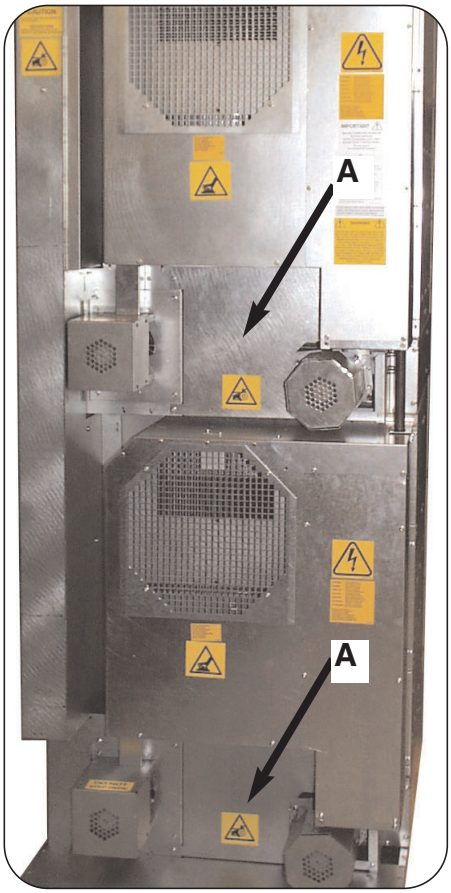
Refer to the wiring diagram included with the machine being serviced to identify the appliccable configuration.

Lint drawer switch

Function

The lint drawer switch ensures that the dryer will not operate when the drawer is open.

If the dryer does not operate with the lint drawer closed and locked, the lint drawer switch may need to be replaced.



Replacement

Replacement of the switch is performed from the back of the dryer,

1. Disconnect the power supply.
2. Remove back panel **A** - depending on whether it is the top dryer or the bottom dryer which is faulty.
3. Unscrew the switch mounting bracket and pull out the bracket with switch.
4. Disconnect the wires from the switch.
5. Mount the new switch on the bracket.
6. Connect wires to the new switch.
7. Remount the bracket with the new switch.
8. Remount back panel **A**.

Testing the lint drawer switch

1. Connect the power supply.
2. Start the dryer.
3. If the dryer does not start when the drawer is closed and the Start button is pressed, check that the tab on the lint drawer is pressing the lever on the lint drawer switch.
4. Confirm that the fan, drum and heat all stop when the lint drawer is opened while the dryer is operating.

On some older models

On some older models, the lint drawer switch is alone connected to P12B on the main circuit board.

On other models, the loading door switch and the lint drawer switch are in series, and the combined circuit is connected to P12A on the main circuit board.

Refer to the wiring diagram included with the machine being serviced to identify the applicable configuration.

Contents

Drum motor, general

Drum motors are equipped with thermal overheat protection.

If the motor overheats, the control current is switched off and the control displays an error code.

The overheat protection switch inside the motor windings re-closes automatically when the motor cools sufficiently. The dryer can then be re-started.

The drum motor is located at the right-rear of the dryer and is mounted on the transmission support plate.

Motors for reversing (except USA)

On dryers where the drum reverses, the reversing action is controlled by two contactors.

The contactors switch the phase sequence.

The contactors are located inside the control console at the rear of the machine.

Transmission module

The transmission module must be dismounted when repairs are necessary.

Fig. 1 After dismounting, the following parts can be replaced:

a. Drum motor.

b. Transmission belt.

c. Transmission bearings.

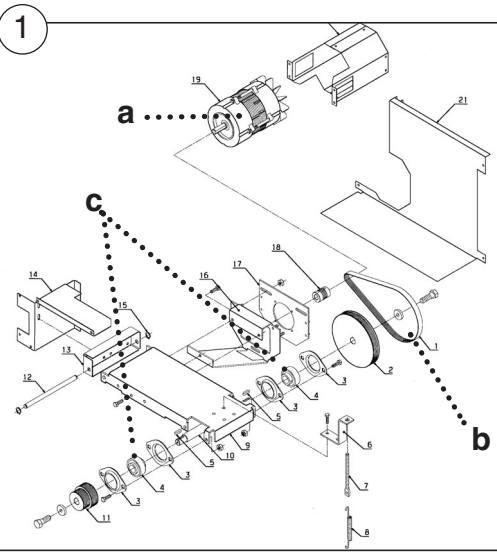
Error code

The following error code is related to this section.

E06

Refer to Service Manual Selecta Control section 12 for more information.

1



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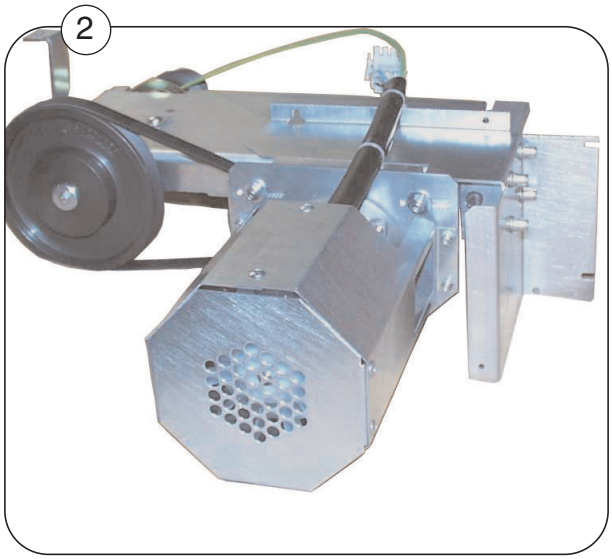
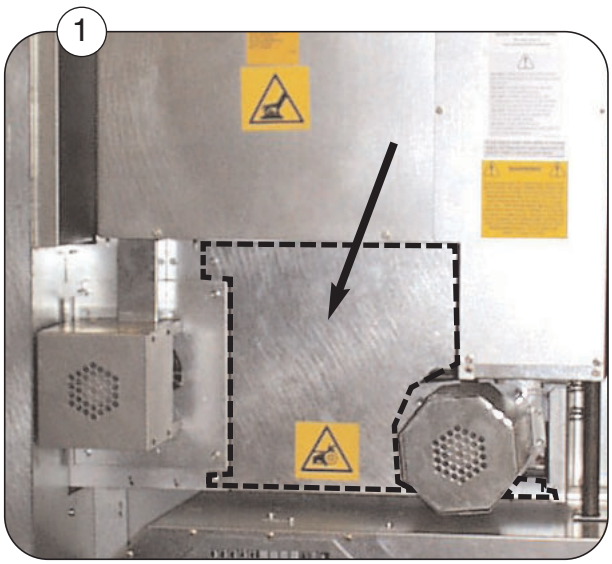
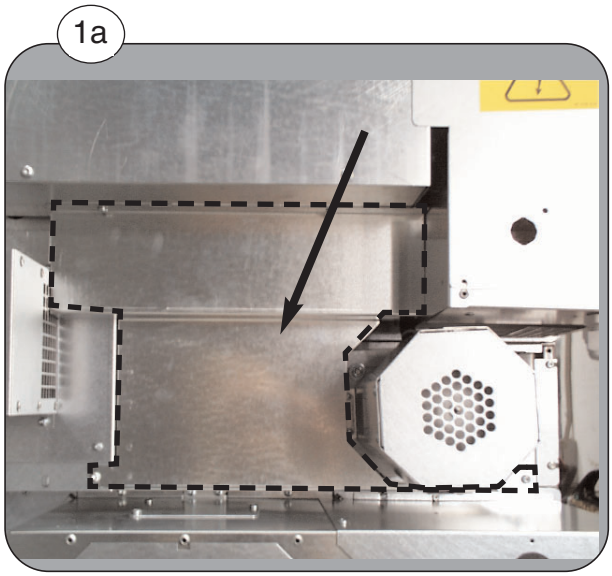
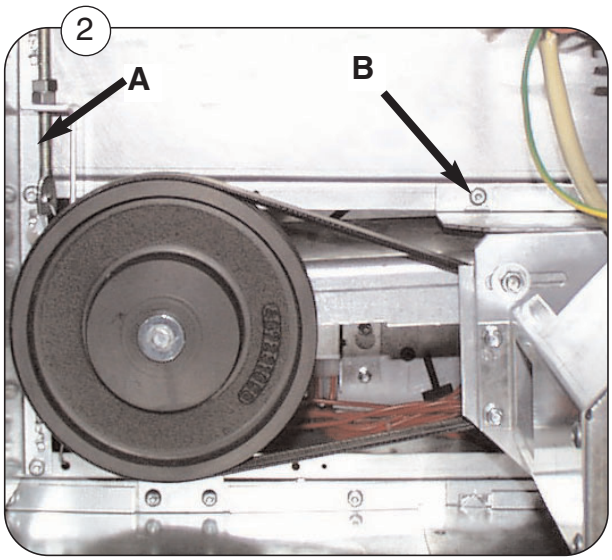


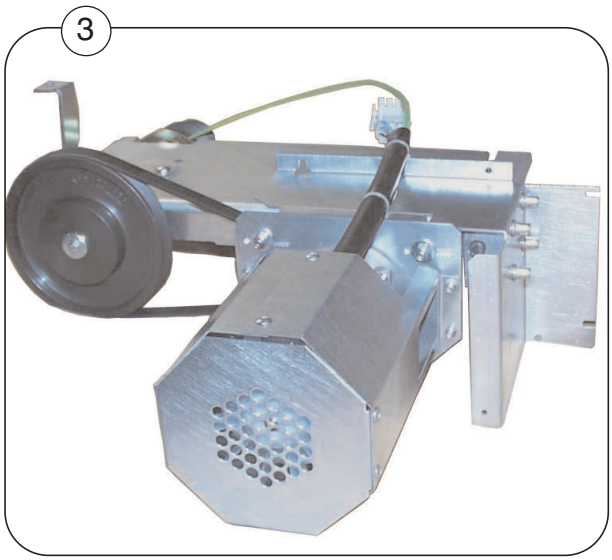
Dismounting of transmission module

1. Switch off the power to the dryer.
2. **Fig. 1 Gas dryer** Remove the back plate, see arrow.
   Fig. 1a Electric dryer Remove the back plate, see arrow.
3. **Fig. 2** Remove belt tensioner **A**.
4. Lift the drum belt off the pulley.
5. Disconnect the motor plug.
6. Remove screws **B** along the edge (5 pcs).
7. **Fig. 3** Lift off the transmission module.







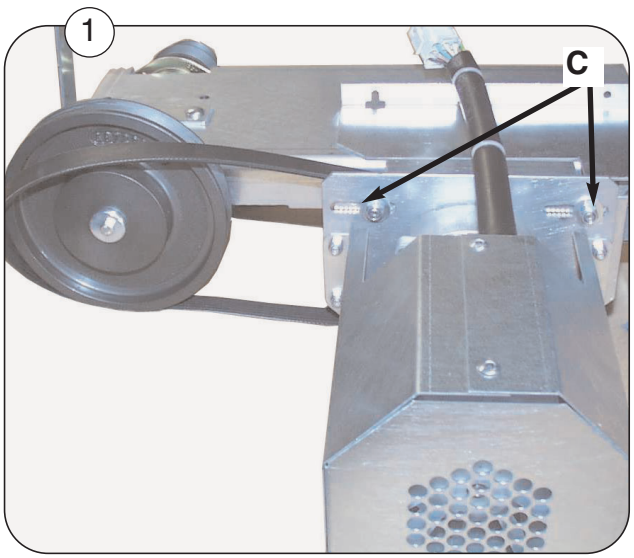


Replacement of drum motor belt

Dismount the transmission module, see section: **Dismounting of transmission module**.

1. **Fig. 1** Loosen 3 screws **C**; please note that the third screw is underneath the module.
2. Replace the belt.
3. Pull the motor pulley and transmission pulley apart, until the belt is tight.
4. Tighten the screws.

After **Replacement of drum motor belt,**
see section: **Mounting of transmission module**.



487 0329 21

Replacement of drum motor

Dismount the transmission module, see section: **Dismounting of transmission module.**

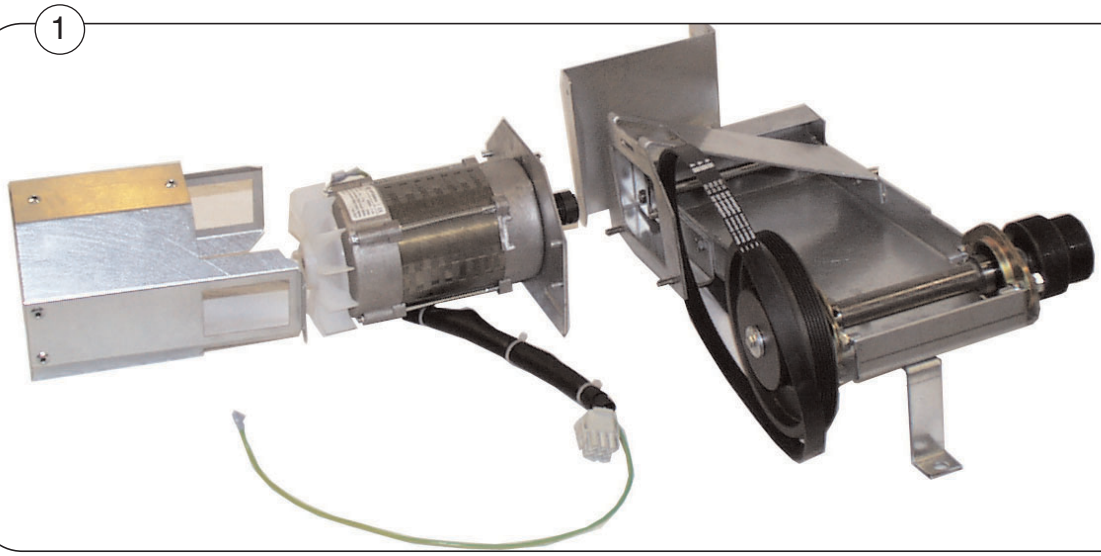
1. **Fig. 1** Dismount the motor's cooling fan housing.
2. **Fig. 1** Dismount the motor and remove the pulley from the motor shaft (for reuse).

On the new motor

3. **Fig. 2** Lube the shaft at the motor **A** with anti-fretting paste.
4. Fit the pulley to the shaft and seal the pointed screws with a screw protection product such as Omnifit Seal 40M or similar quality.
5. Mount the new motor on the transmission module (check the motor data plate for proper voltage and speed as compared to the old motor).
6. Mount the cooling fan housing.

After **Replacement of drum motor**
see section **Mounting of transmission module**.

1



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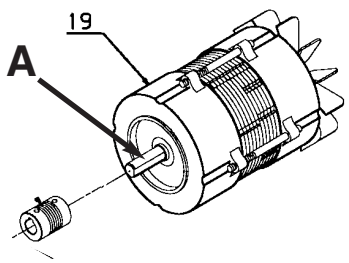
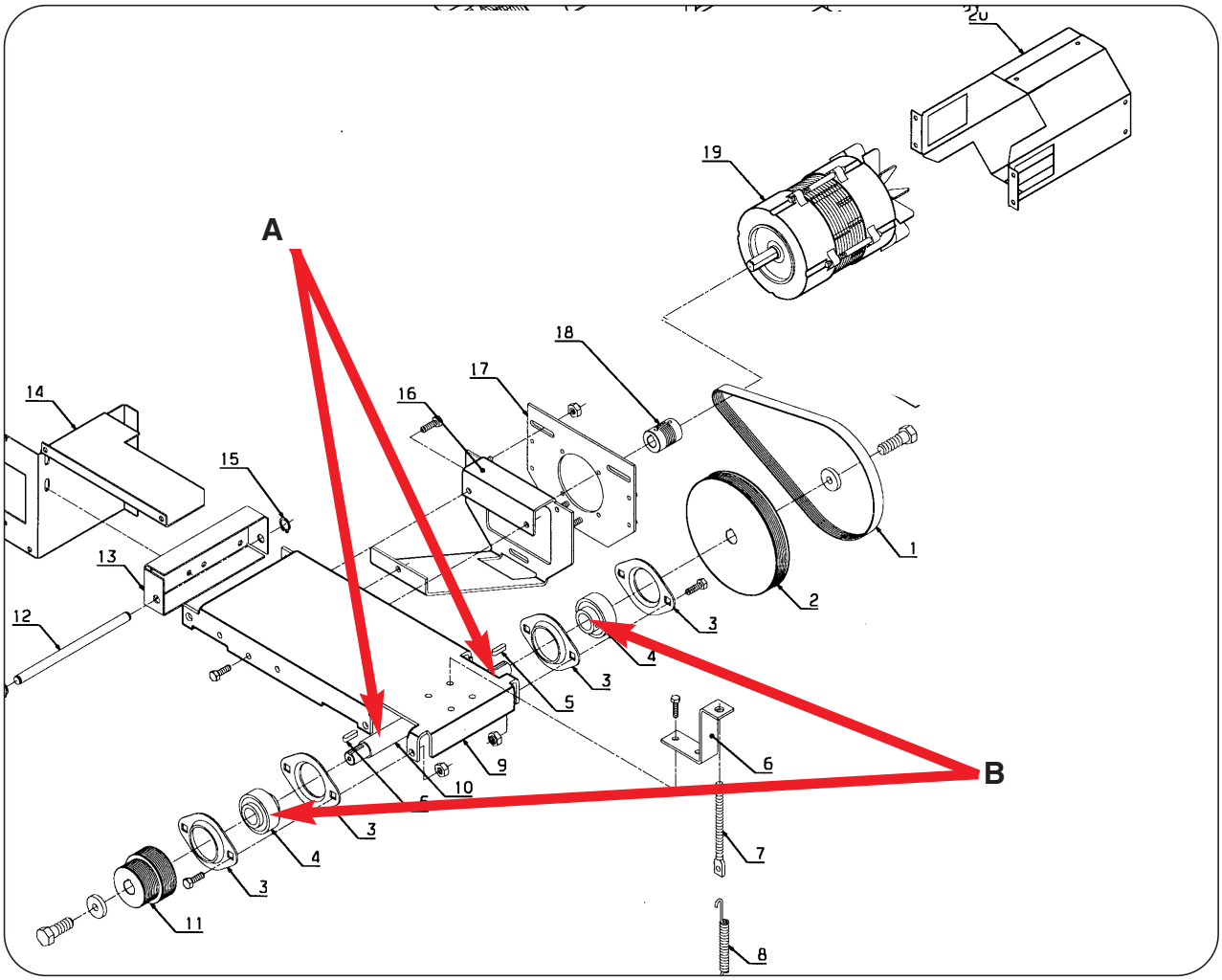


Replacement of bearings

Dismount the transmission module, see section: **Dismounting of transmission module**.

1. Remove the defective ball bearings.
2. Lubricate shaft **A** under the bearings with anti-fretting paste.
3. Fit the new ball bearings **B**. Fasten pointed screws at 5 Nm(44.2 in-lbs).
4. Seal with a screw protection product such as Omnifit Seal 40M or similar quality.
5. Fit the transmission pulley (lubricate shaft with anti-fretting paste).
6. Mount the drum motor belt, see section: **Replacement of drum motor belt**.

After **Replacement of bearings**
see section: **Mounting of transmission module**.



Mounting of transmission module

1. Mount the module with the five screws removed earlier.
2. Fit the drum belt onto the transmission pulley.

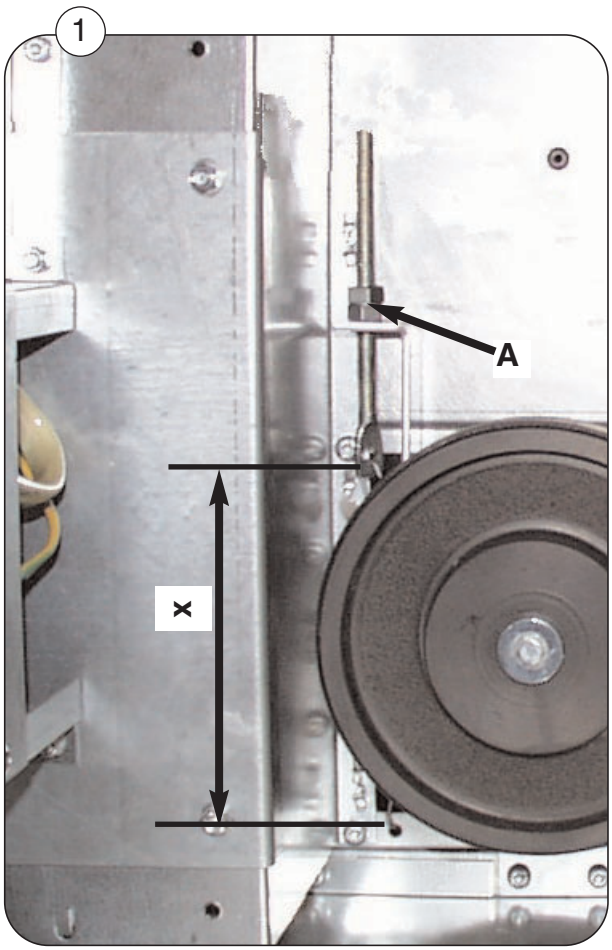
   NOTE! It is important to fit the belt at the right place on the pulley.

   The small diameter of the pulley is used for **60 Hz**.

   The large diameter of the pulley is used for **50 Hz**.
3. **Fig. 1** Fit belt tensioner and tighten **A** until the spring has a length **x** of 130 mm±5 (5 inches ± 3/16 inch) .
4. Assemble the dryer.
5. Switch on the power.

Function check

Test the dryer see section 11: **Function check**.



Blower motor, general

The blower motor features a thermal overheat protection device.

If the motor overheats, the control current is switched off and the control displays an error code.

The overheat protection switch inside the motor windings re-closes automatically when the motor cools sufficiently.

The dryer can then be re-started.

The fan wheel is fitted directly on the blower motor shaft.

Dismount the blower motor together with the fan wheel.

Blower motor with fan wheel

Fig. 1 After dismounting, it is possible to replace:

a Blower motor.

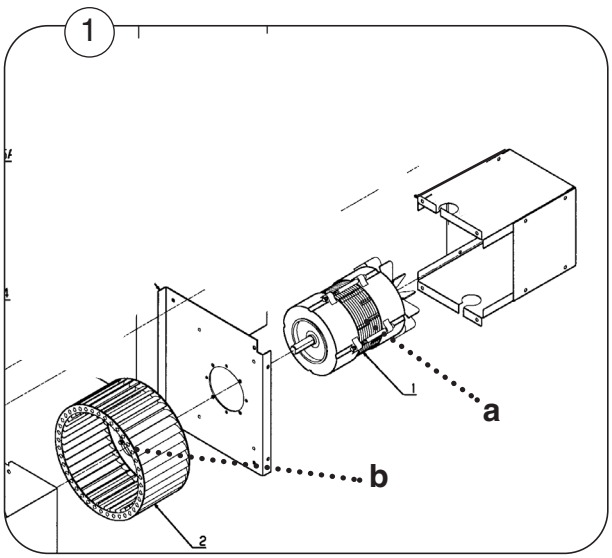
b Fan wheel.

Error code

The following error code is related to this section.

E05

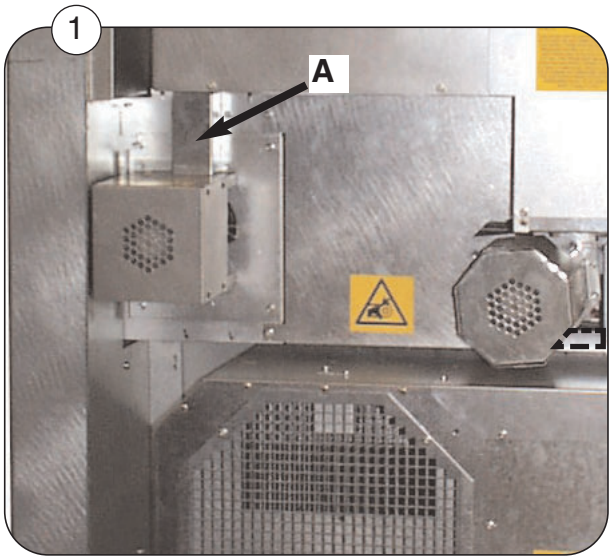
Refer to Service Manual Selecta Control section 12 for more information.

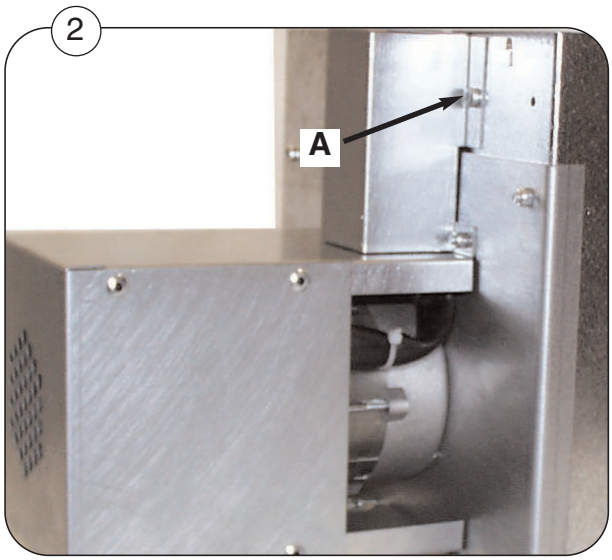


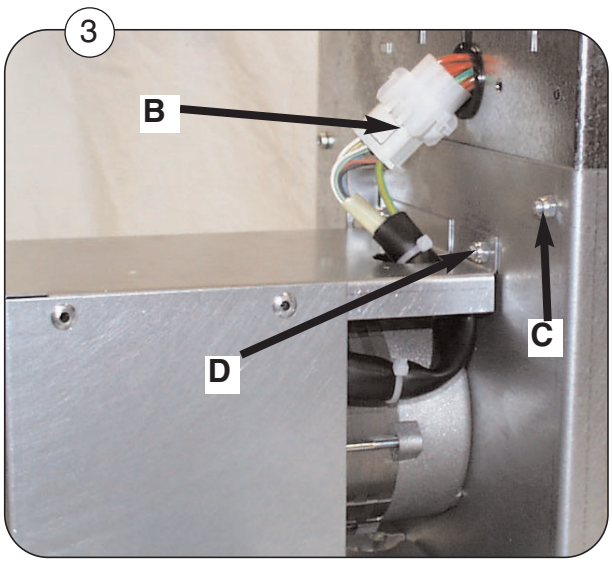
487 0329 21

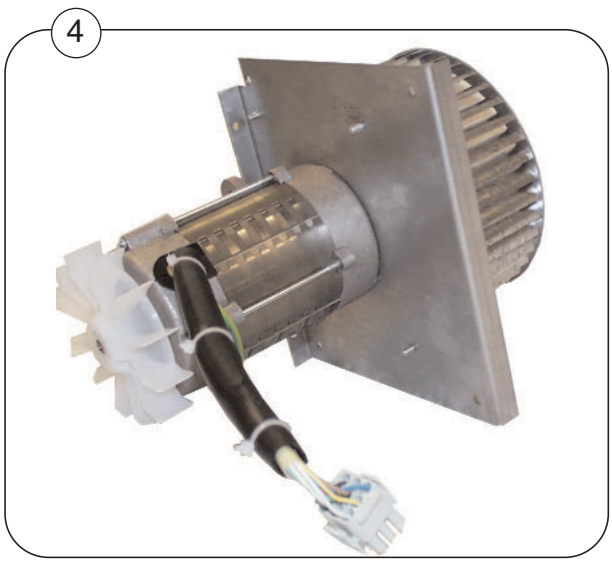
Dismounting of blower motor with fan wheel
Up till serial no. 0211/0005435 (gas heated dryer only)

1. Switch off the power to the dryer.
2. **Fig. 1 and 2** Remove the connector cover **A**.
3. **Fig. 3** Unplug the blower motor **B**.
4. **Fig. 3** Remove the four "Nylock" nuts **C** that secure the blower motor mounting plate to the dryer and remove the blower motor and fan-wheel assembly med forsigtighed (Blæserhjulet kan let beskadies).
5. **Fig. 4** The blower motor module.
6. Following can be replaced:
   • The motor can be replaced when the cooling fan cover is removed **D**.
   • The fan-wheel can be replaced.



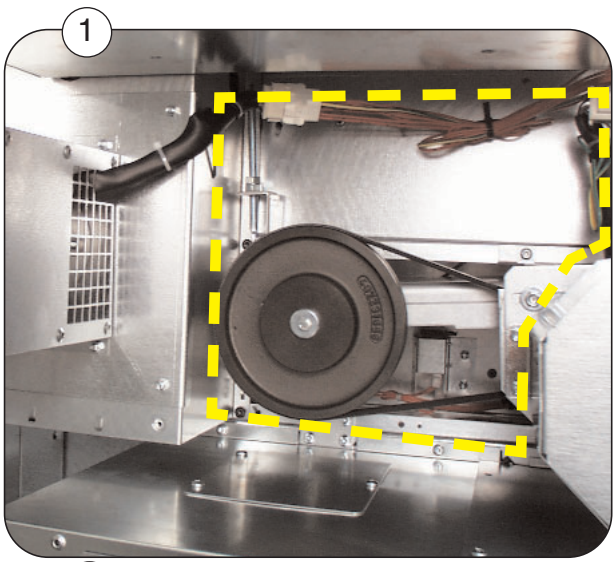


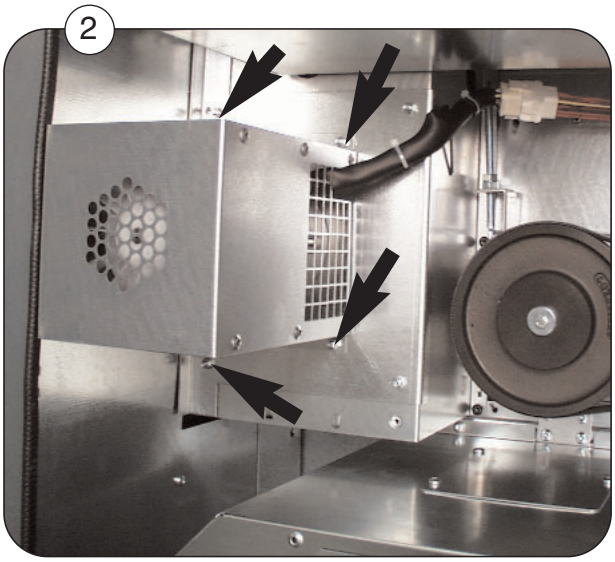


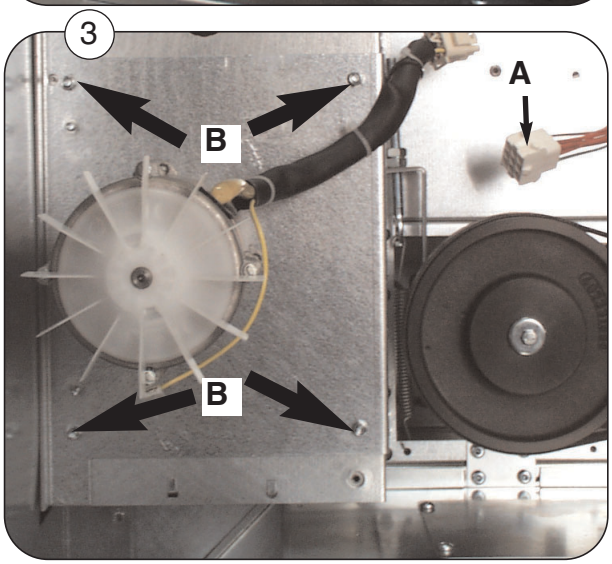


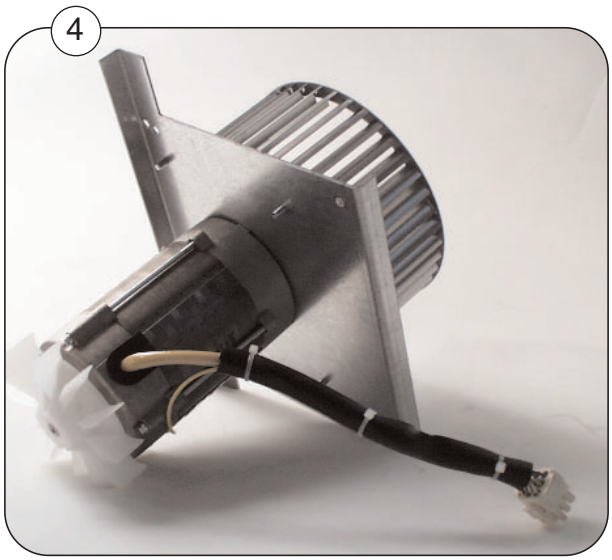
Dismounting of blower motor with fan wheel
From serial no. 0211/0005435

1. Switch off the power to the dryer.
2. **Fig. 1** Remove transmission cover.
3. **Fig. 2** Remove the four "Nylock" nuts in the plate that secures the blower motor.
4. **Fig. 3** Unplug the blower motor **A**.
5. Trigger the black strip which holds the wire to the fan.
6. **Fig. 3** Remove the four "Nylock" nuts **B**.
7. **Fig. 3** Carefully release blower motor with fan wheel (the fan wheel is easily damaged).
8. **Fig. 4** Now the blower motor and the fan wheel can be replaced.









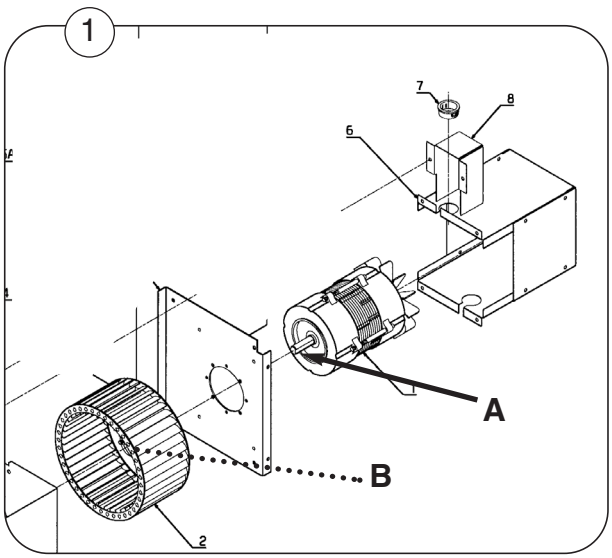
Mounting of blower motor with fan wheel

After replacement of blower motor / fan-wheel

1. Lubricate the motor shaft **A** with anti-fretting paste.
2. Place the mounting plate over the motor shaft, taking care to orient it properly for re-assembly to the dryer. Protect the screws with Omnifit Seal 40M.
3. Fit fan wheel **B** and protect the pointed screw of the fan wheel with Omnifit Seal 40M or similar quality.
4. Re-install blower and fan-wheel in the reverse order. See dismounting of blower motor with fan-wheel.
5. Assemble the dryer.
6. Switch on power to the dryer and test.

Function check

Test the dryer, see section 11: **Function check**.



Contents

Gas heated dryer - Dismounting of the heating unit

Description

The heating unit contains the gas burner, the gas valve and a nozzle.

The unit is located at the back of the dryer.

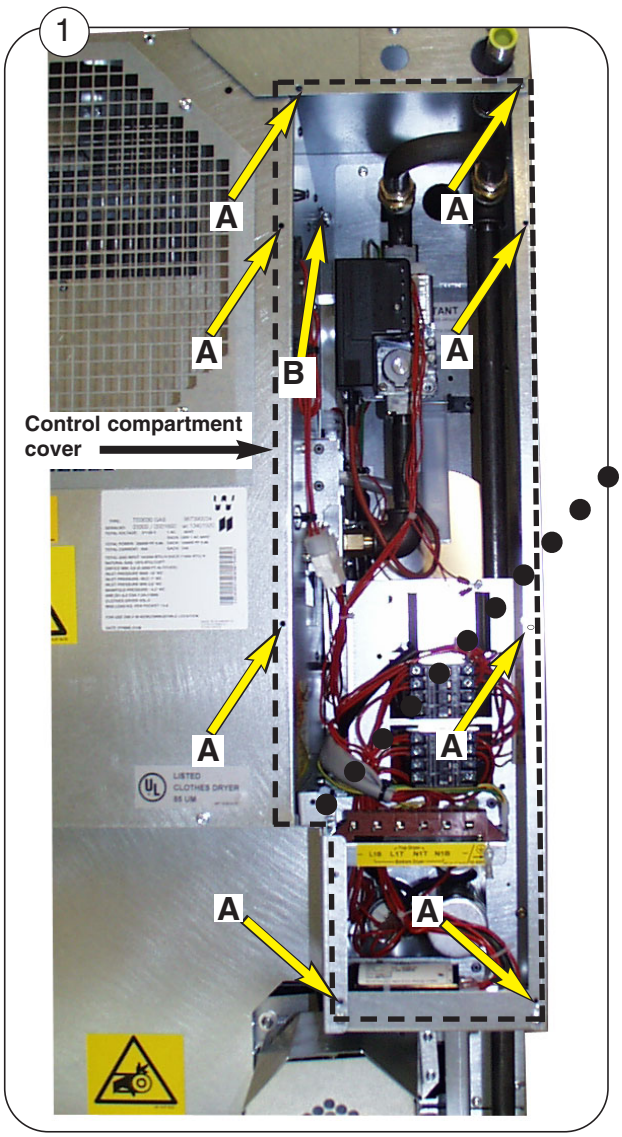
Dismounting

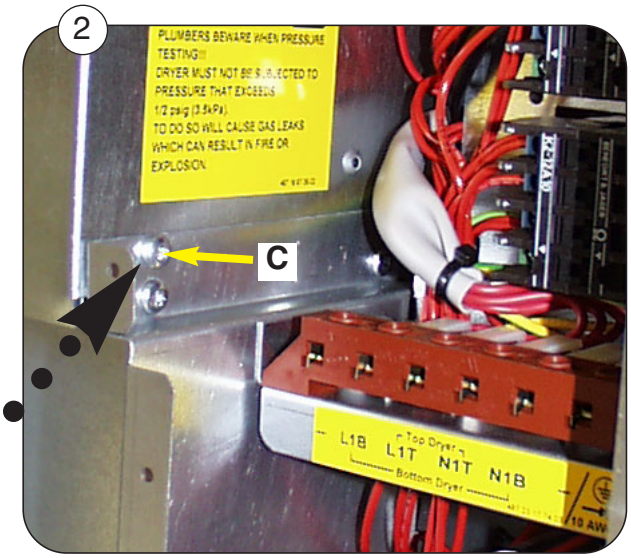
1. Shut off the manual gas valve.
2. Disconnect the electrical power supply.

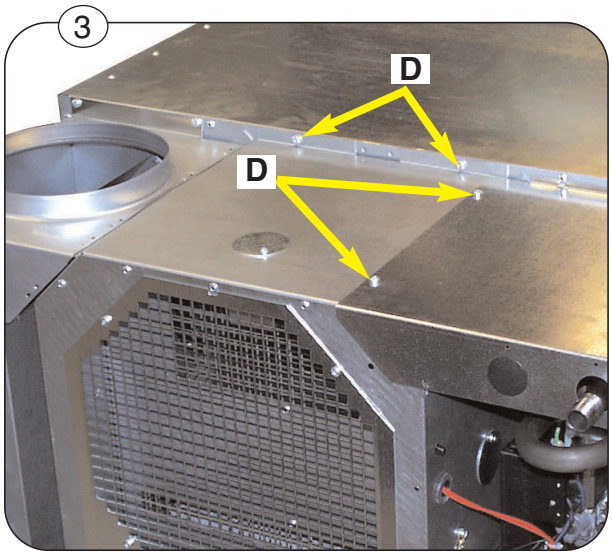
In order to release the unit from the dryer: Refering to pictures following pages.

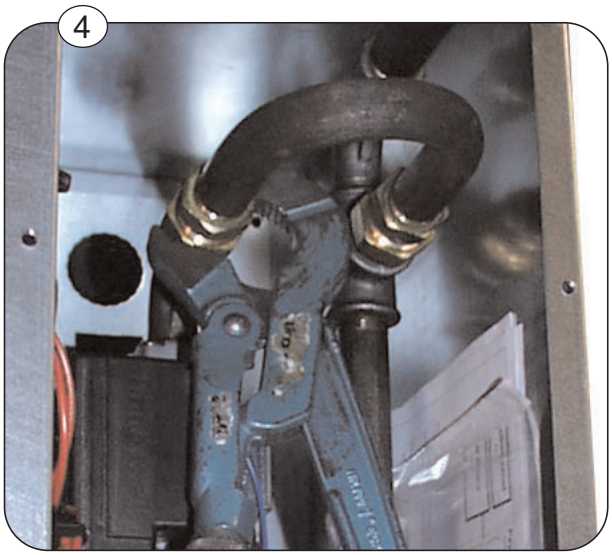
3. **Fig. 1** Remove the 8 screws **A** which secure the control compartment cover and then remove the cover. Loosen screw **B** which secure the unit to the dryer.
4. **Fig. 2** Remove screw **C** in the connection unit console.
5. **Fig. 3** Remove 4 screws **D** at the top of the unit.
6. **Fig. 4** Disconnect the gas pipe union.
7. **Fig. 5** Disconnect the temperature sensor plug.
8. **Fig. 6** Dismount the gas control box **I,** disconnect the ignition cable **II** and flame sensor wire **III**.
9. **Fig. 7** The heating unit can now be lifted off of the machine.

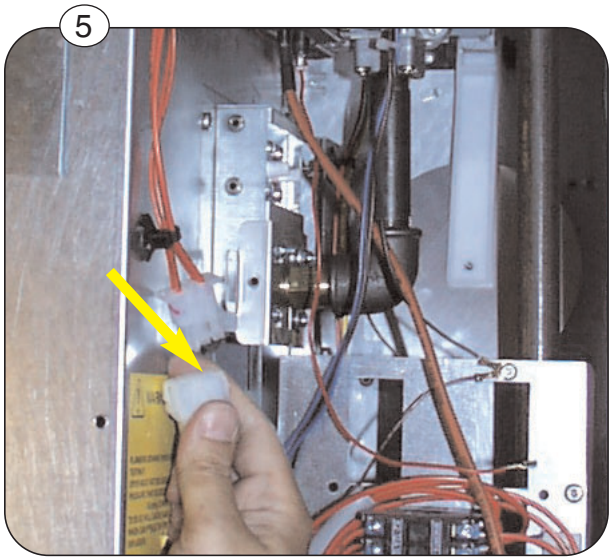
Gas heated dryer - Dismounting of the heating unit





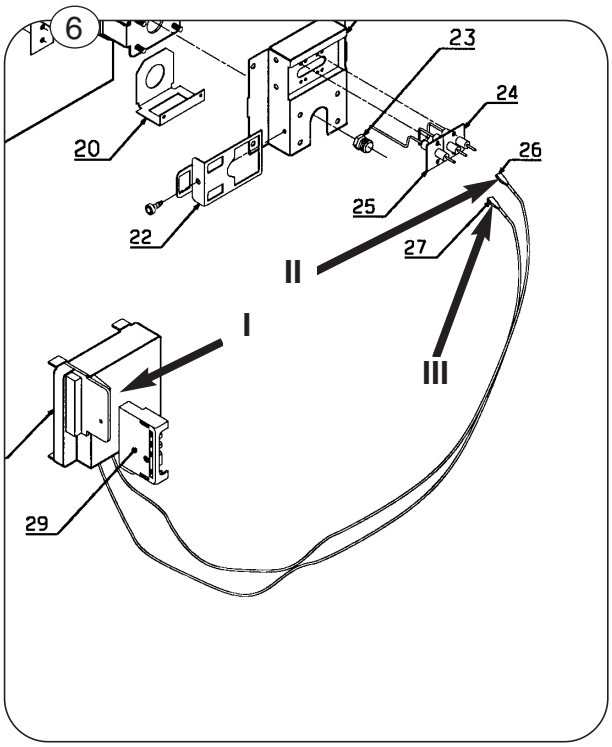






To be continued on the following page.

Gas heated dryer - Dismounting of the heating unit



Replacement of gas burner tube

When the gas heating unit is dismounted it is possible to replace the gas burner tube.

Dismount gas pipe with gas valve.

1. Fig. 1 Remove screws **A** in holder.

2. Fig. 1 Remove screws **B** in screening.

3. Lift gas burner tube with gas valve, gas pipe and screening with holder out of the heating unit.

4. Dismount nozzle lock plate, air flow reducing plate, holder with electrode fitted and remove the burner tube.

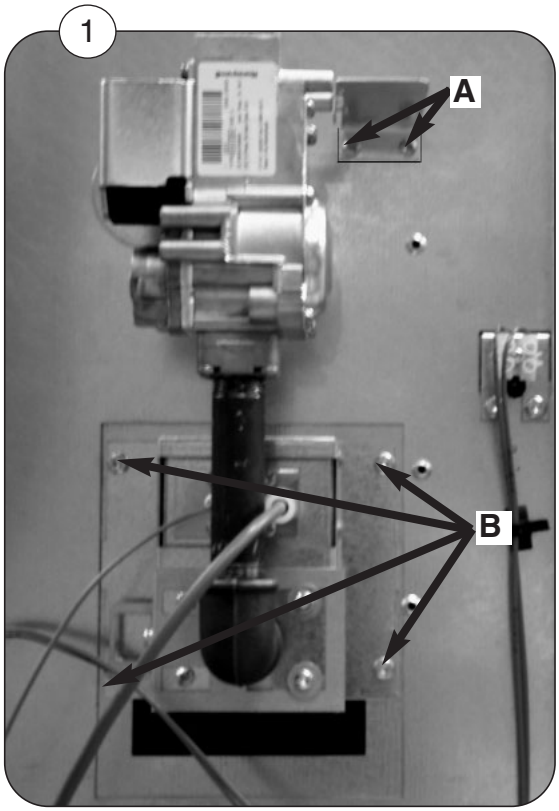
5. Fig. 2 Remove nut **C** on the old burner and screw it onto the new one. Don't screw it all the way in, but leave room for fitting **D**.

6. Fig. 2 Install the new burner tube. The burner is mounted correctly when it is controlled by fitting **D**.

7. Mount all the parts from step 4 the way they were mounted before.
Tighten the gas pipe union with 50Nm

8. Mount screws **B** and **A**.

1



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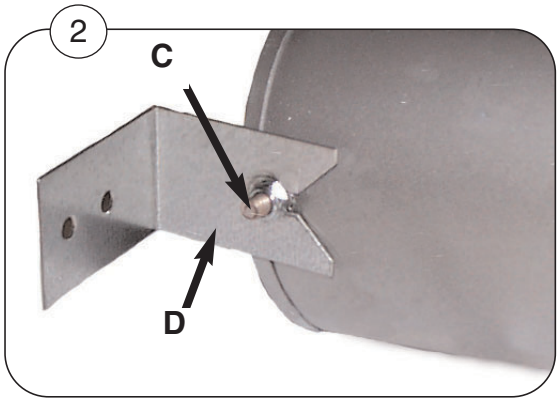

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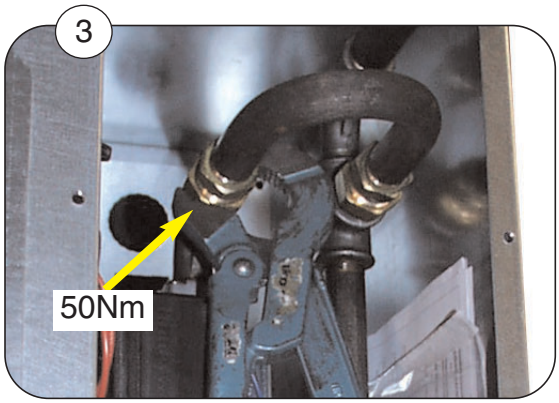
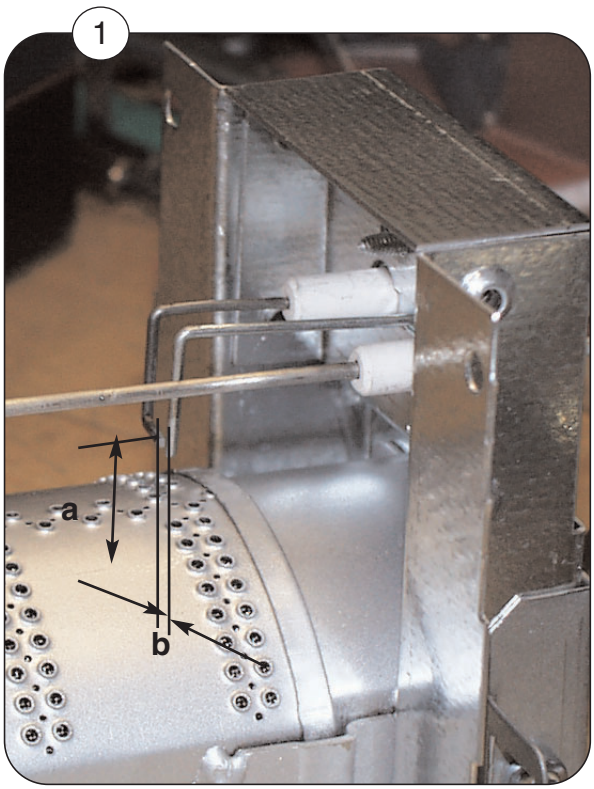


Adjustment of ignition electrode

Fig. 1 Illustrates proper ignition electrode adjustment.

Dimension a: The distance from the electrode to the burner tube **a** must be 5 mm (13/64 inch).

Dimension b: The spark gap **b** must be 3 mm (1/8 inch).



487 0329 21

Replacement of gas valve, up to serial no 0205/0003357

When the gas heating unit is dismounted it is possible to replace the gas valve.

1. **Fig. 1** Unscrew screw **A** from the control box.
2. Pull the control box out of the valve.
3. Unscrew the four screws **B** in each of the 2 flanges.
4. Replace the valve.
5. **Fig. 2** Make sure that the O-rings **C** in both flanges are intact and placed as shown below.
6. Screw the screws back into the flanges. Remember to tighten the screws diagonally.
7. Push the control box back into place. Be careful not to bend the terminals.
8. Install the control box retaining screw removed in step 1.

Testing for leaks

Leak test all the joints which were taken apart.

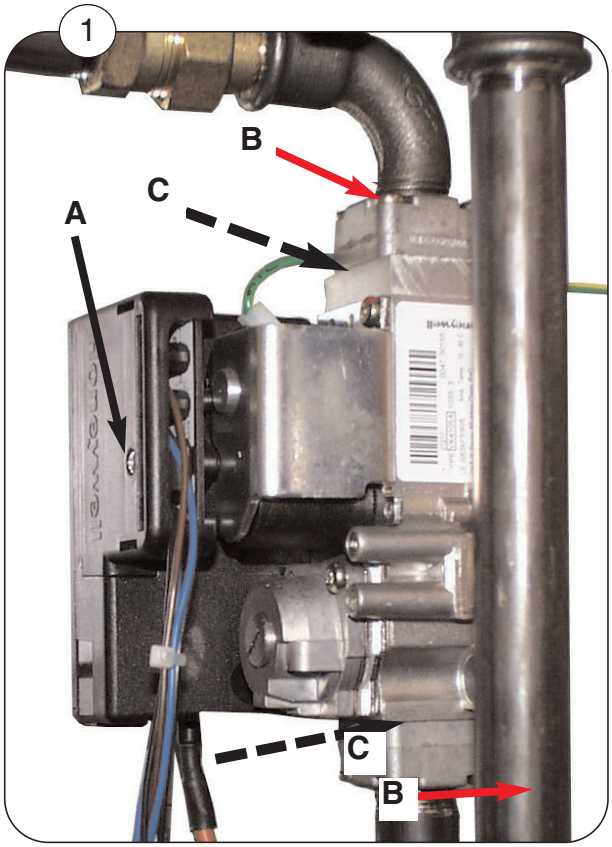
Use approved leak testing materials and techniques.

Adjusting the gas valve

The new gas valve has to match the machine.

Re. adjustment see section 47.

1



2

Replacement of gas valve, from serial no. 0205/0003357

To replace the gasvalve follow the procedure below:

1. Shut off the manual gas valve.
2. Disconnect the electrical power supply.
3. Remove the control compartment cover.
4. Fig. 1. Unscrew screw **A** from the control box.
5. Pull the control box out of the valve.
6. Fig. 2 or fig. 3. Take the union joint **B** apart
7. Fig. 4. Remove the screw **C** on the side of the nozzle retaining plate.
8. Fig. 4. Pull the retaining plate toward the rear of the dryer to release gas pipe with nozzle.
9. Remove nozzle **D** and keep it for later mounting.
10. Replace the valve.
11. Remount nozzle.
12. Tighten the union joint **B** (50Nm).
13. The nozzle retaining plate must be pushed back in the right possition and firmly be secured with the screw **C**.
14. Push the control box back into place. Be carefull not to bend the terminals.
15. Install the control box retaining screw removed in step 4.
16. After leak testing and adjusting the nozzle pressure install the control compartment cover.

Testing for leaks

If the replacement has taken place without the gas heating unit being demounted all the joints which were taken apart have to be leak tested.

Use approved leak testing materials and techniques.

Adjusting the gas valve

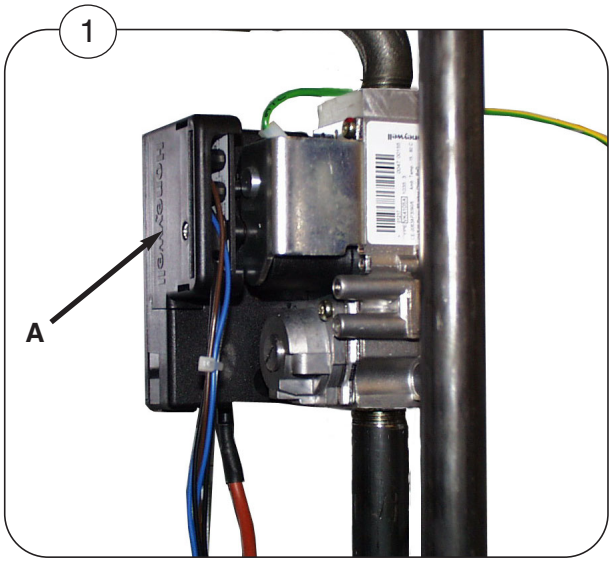
The new gas valve has to match the machine.

Re. adjustment see section 47.

Replacement of gas valve, from serial no. 0205/0003357

Upper drum

1



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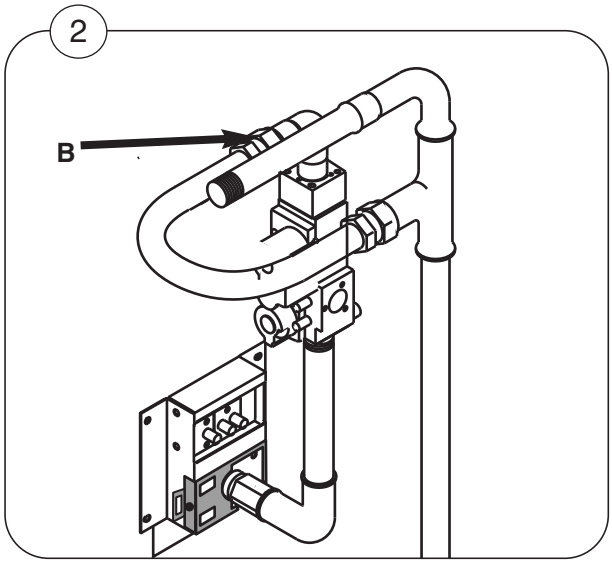
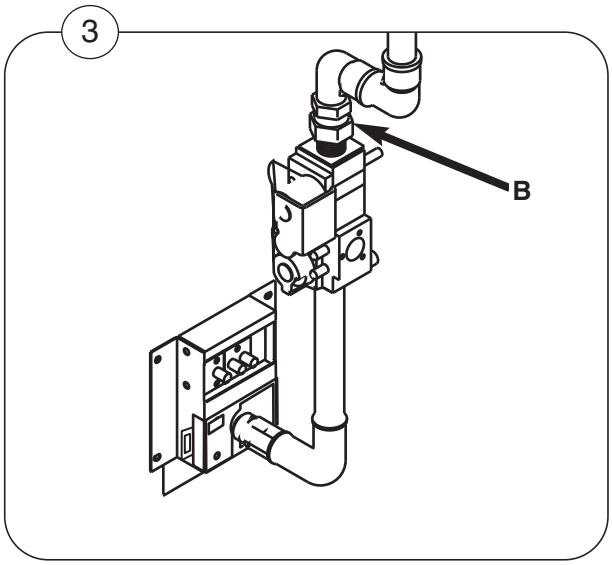


Lower drum

3



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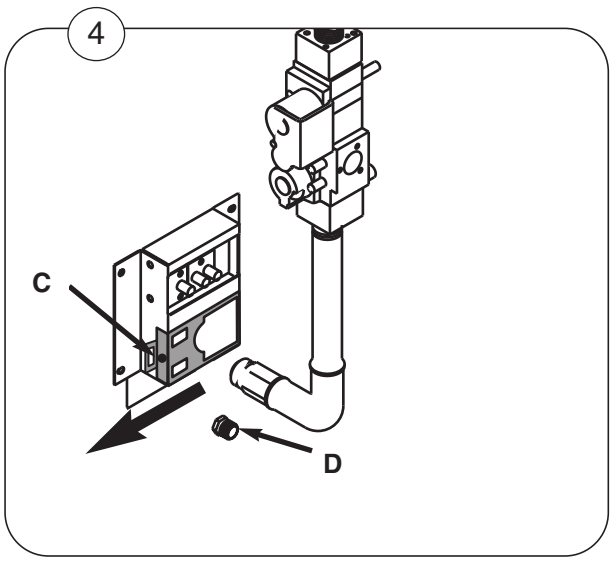


Gas heated dryer - Remounting of the heating unit

1. Reinstall the gas valve and nozzle pipe with nozzle onto the gas heating unit.

The following refers to the pictures in the section “Dismounting of the heating unit”

2. **Fig.7** Mount the gas heating unit assembly onto the dryer, replacing all screws removed earlier.
3. **Fig. 6** Reconnect the ignition and sensor cables.
4. **Fig. 5** Reconnect the gas union.
5. **Fig. 4** Tighten this fitting securely.
6. Re-connect the temperature sensor plug.
7. After re-installing the burner assembly, all the joints which were taken apart need leak testing. Use approved materials and techniques for leak testing.
8. **Fig. 1-3** Install the control compartment cover.

Test run

1. Turn on the manual gas valve
2. Switch on power to the dryer and test.

Resetting gas error

When the ignition control fails to detect a flame, a signal is sent to the main circuit board, and error code E14 is displayed.

When this condition occurs, the gas valve is shut off and the ignition control must be reset manually.

Resetting

Fig. 1 Open the operating panel and press the gas reset button on the back of the user module board for one second.

NOTE! When resetting the system the dryer **must** operate on a program with heat and when the heat indicator is on.

Error code

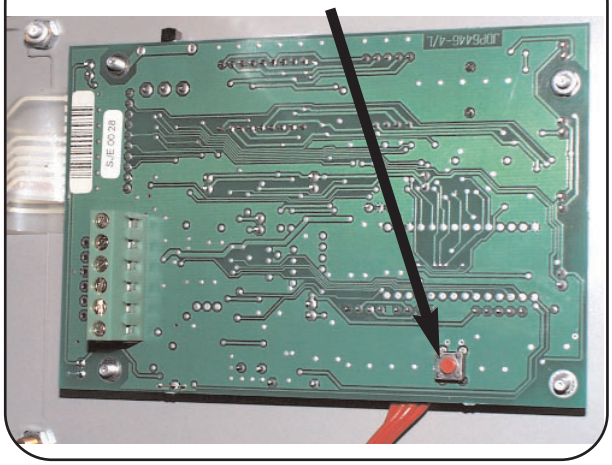
Error code 14 is a normal occurance when first starting up a dryer, since air in the gas line must be purged.

If the problem persists, refer to **Error code 14**.

Refer to Service Manual Selecta Control section 12 for more information.

1

Gas reset button



Conversion to another type of gas

The standard configuration is equipped for natural gas.

If the machine is to be converted to another type of gas, the gas nozzle must be replaced.

The current nozzle can be ordered separately in a conversion kit. Refering to the Installations manual supplied with the dryer.

The conversion kit contains 2 nozzles as well as instructions.

Follow the instructions supplied with the kit.

Conversion to another type of gas (USA and Canada only)

The standard configuration is equipped for natural gas.

If the machine is to be converted to another type of gas, the gas nozzle must be replaced.

The current nozzle can be ordered separately in a conversion kit.

Contact your dealer, or Wascomat, for the part number of the LP conversion kit appropriate for your altitude.

The conversion kit contains 2 nozzles as well as instructions.

Follow the instructions supplied with the kit.

Electric heated dryer - Heating unit types

Description

The unit is located at the back of the dryer.

The heating unit has 2 or 3 heating elements depending on voltage and effect.

Heating unit types

Heating effect	Voltage	Number of elements
9 kW	230 - 240V 3F	2 + 1 dummy
9 kW	400 - 440V 3F	2 + 1 dummy
13.5 kW	230 - 240V 3F	3
13.5 kW	400 - 440V 3F	3

Spare part number, effect, and voltage are printed on the heating element.

Before replacement

1. Check that effect and voltage on the new elements are corresponding with the old ones.

2. Mark up the heating element wires.

Note! It is important to mount the dummy correctly on a 9 kW dryer. It must be placed furthest away from the drum.

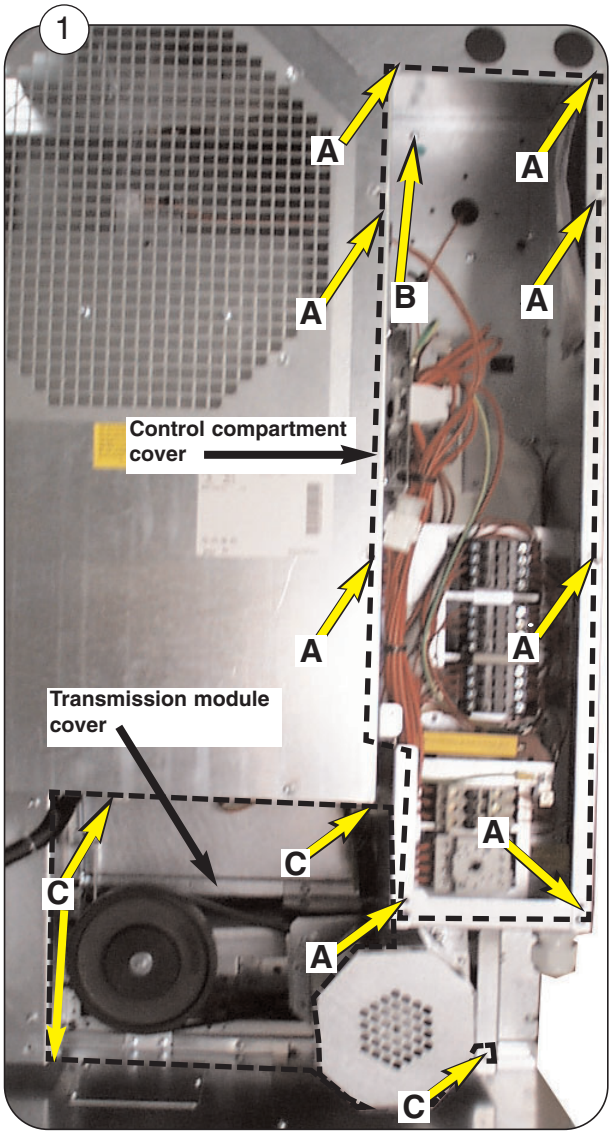
Electric heated dryer - Dismounting of the heating unit

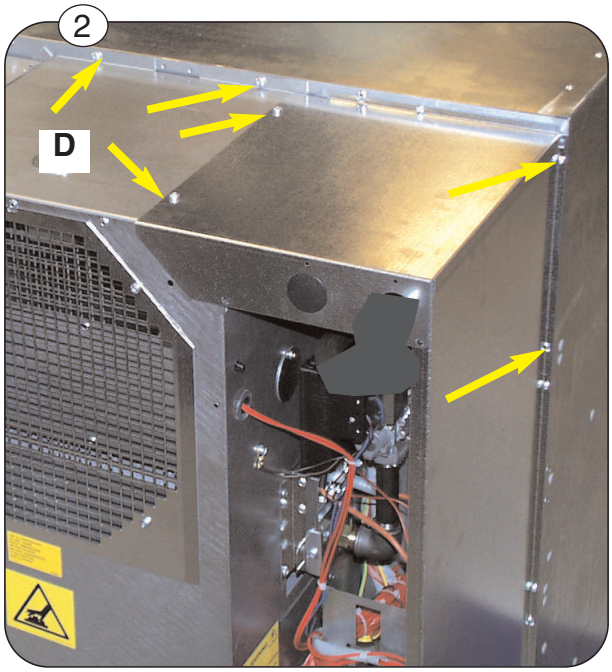
1. Disconnect the electrical power supply.
2. Dismount the exhaust duct, see section 11.

In order to release the unit from the dryer: Refer to the pictures on the following pages.

3. Remove the supply disconnector in the control compartment cover, if any.
4. **Fig. 1** Remove the 8 screws **A** which secure the control compartment cover and then remove the cover. Loosen screw **B** which secures the unit to the dryer.
5 **Fig. 1** Remove 4 screws **C** which secure the transmission module cover.
6. **Fig. 2** Remove 4 screws **D** at the top of the unit and the 4 screws along the side at the bottom of the front.
7. Remove the 2 panels (top panel and side panel).
8. **Fig. 3** Dismount the 3 wires **E** (V2+V4+V6) from the heating unit.
9. **Fig. 3** Trigger strip **F** and **G** to release temperature sensor plug wire.
10. **Fig. 3** Disconnect the temperature sensor plug **H**.
11. **Fig. 3** Release the console **I** from the heating unit.
12. **Fig. 3** Remove the screw **K** in the connection unit console.
13. **Fig. 4** Now carefully lift the heating unit off of the machine.

Electric heated dryer - Dismounting of the heating unit

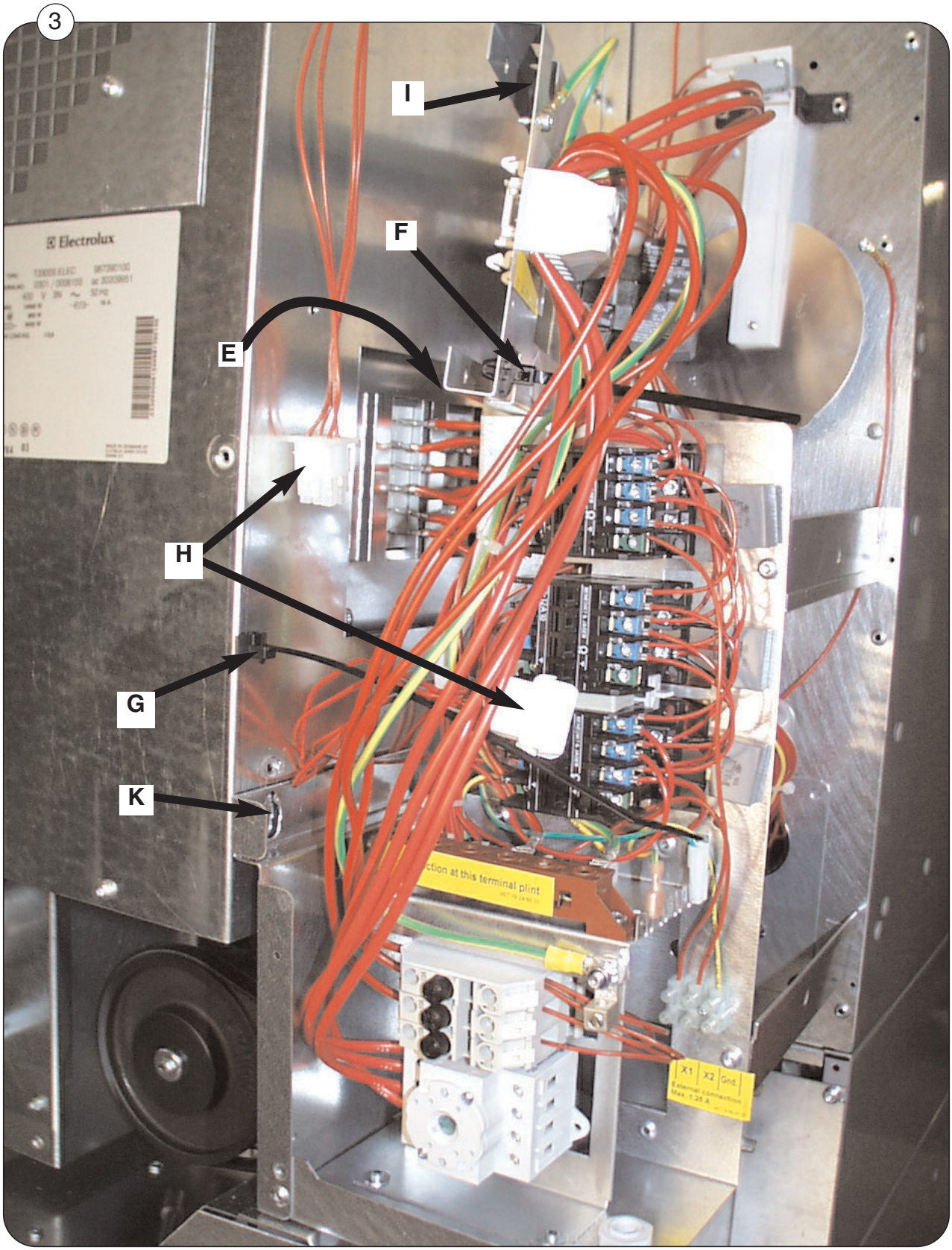




See fig 3 next page

To be continued on the following page.

Electric heated dryer - Dismounting of the heating unit



Mounting of the heating unit

The following refers to the pictures in the section “Dismounting of the heating unit”

1. **Fig. 4** Mount the electric heating unit assembly onto the dryer, replacing all screws removed earlier.
2. **Fig. 3** Mount the console **I**.
3. **Fig. 3** Mount the 3 wires **E** onto the heating elements, see diagram supplied with the dryer.
4. **Fig. 3** Mount screw **K**.
5. Re-connect the temperature sensor plug **H**.
6. **Fig. 3** Fasten other wires in the strips **F** and **G**.
7. Mount the panels and the exhaust plenum.
8. Mount the control compartment cover and the transmission module cover.

Test run

1. Switch on power to the dryer and test.

Contents

Dismounting of drum / replacement of drum belt

At the back of the dryer, loosen the belt as follows:

1. Disconnect the power to the dryer.
2. **Fig. 1** Remove the back plate.
3. **Fig. 2** Loosen the screw at the belt tensioner.
4. **Fig. 3** Remove plate **A** at the top to gain access to the belt around the drum; lift the belt off the drum and pull it backwards.

At the front of the dryer, remove the drum as follows:

1. Remove the top door hinge.
2. Lift the door off the bottom hinge; remove the bottom hinge.
3. Remove the screws that hold the front panel on the dryer and remove the panel.
4. Unscrew the 3 screws at the bearing cover and remove the bearing cover at the rear of the drum.
5. **Fig. 4** Unscrew and remove bolt and washer from the main drum bearing.
6. **Fig. 5** Pull out the drum.

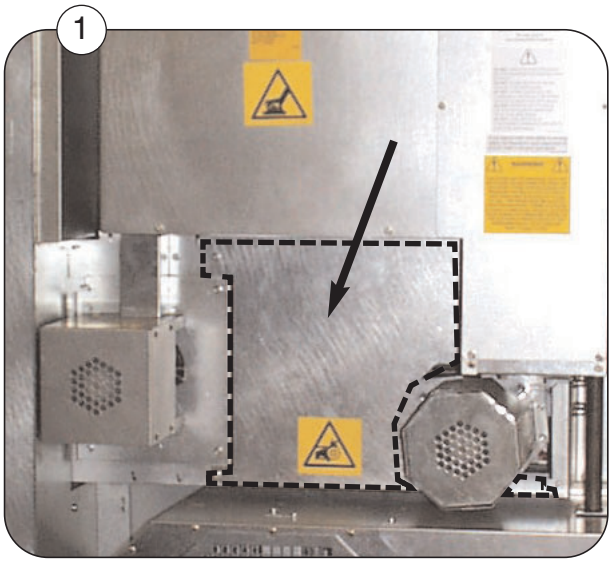
Replacement of belt

1. Remove belt, if defective.
2. **Fig. 6** Hang the new belt on the felt seal flange at the back of the drum compartment.

   Also inspect the felt seal on the flange at the back of the drum compartment (Fig 6, **B**). Replace the seal if necessary.
3. **Fig. 7** Inspect the felt seal on the drum **C** and, if necessary, remove and replace it. Clean any residual adhesive from the drum before installing a new felt seal.

Refering to the pictures next pages.

1



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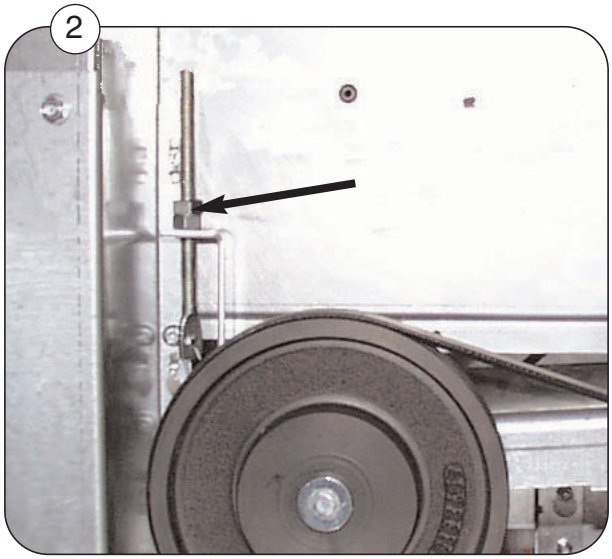
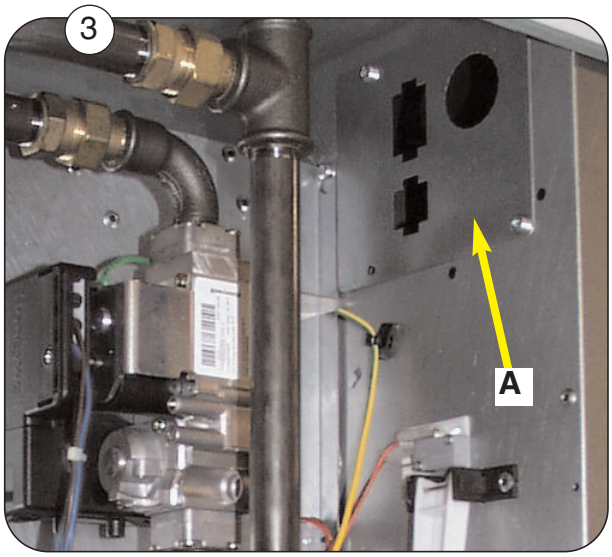


Dismounting of drum / replacement of drum belt

3



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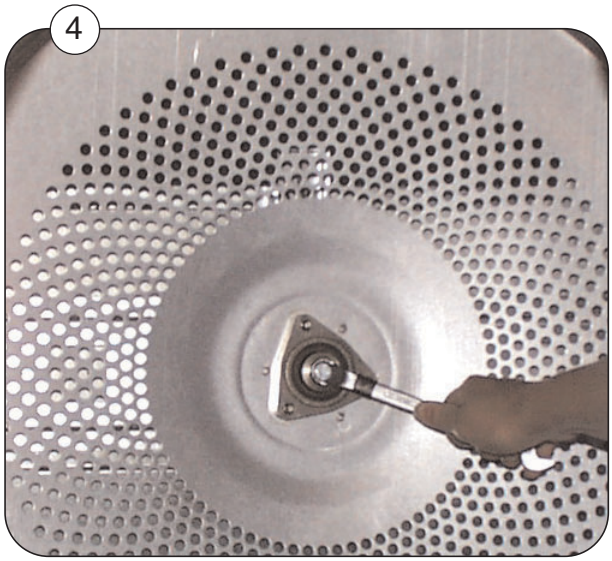

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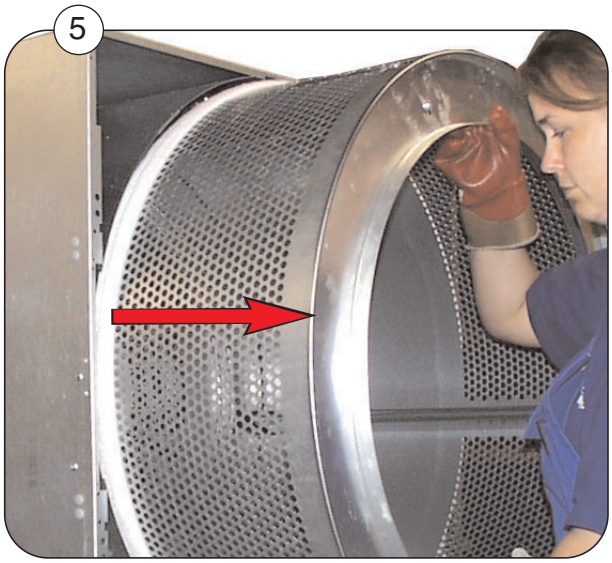

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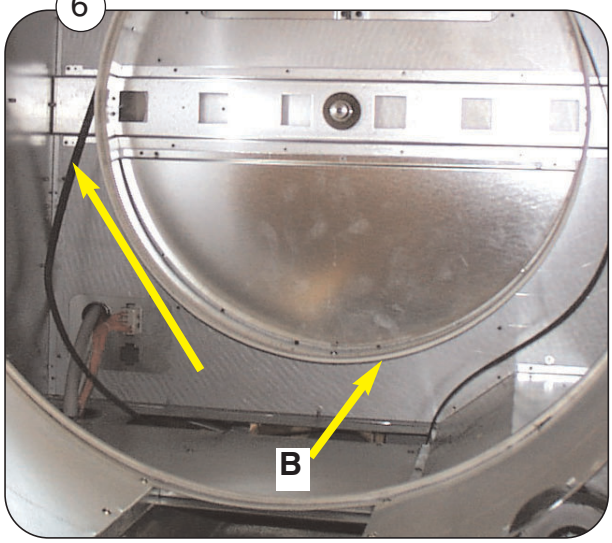

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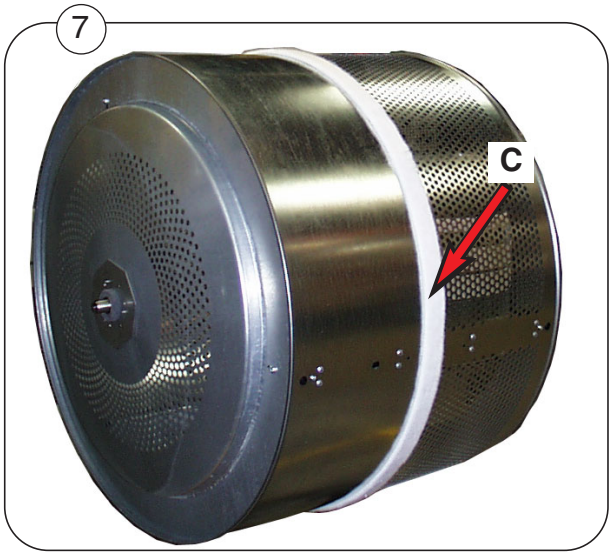


Mounting of drum

At the front of the dryer, mount the new drum as follows:

1. **Fig. 1** Carefully push the new drum into the dryer.

   Be careful not to damage the felt seal on the drum.
2. **Fig. 2** Reinstall the bolt and washer into the drum bearing. Tighten the bolt to 20 Nm (15 ft-lbs).
3. **Fig 3** Reinstall the bearing cover **A** and mount the 3 screws **B**.

At the back of the dryer, guide the belt onto the drum as follows:

4. Use the hole at the top to put the new belt on the drum.
5. **Fig. 4** Place the belt around the pulley at the transmission.

   NOTE It is important to fit the belt at the right place on the pulley.

   The small diameter is used for **60 Hz**.

   The large diameter is used for **50 Hz**.
6. Turn the drum until the belt is in the proper position on the drum and on the pulley.
7. **Fig. 5** Place 4 pcs. terminal strips on the casing.
8. **Fig. 6** Fasten the belt tensioner to the drum motor and adjust it to the proper tension.
9. Reassemble the front panel, door hinges, and door.
10. Connect the power.

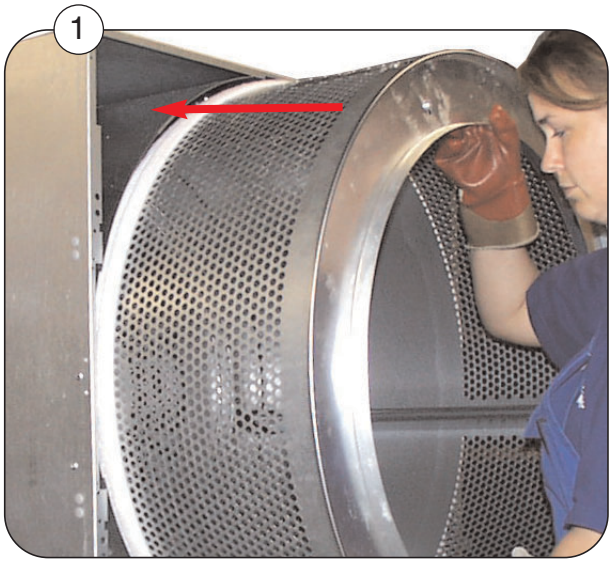
Refering to the pictures next page.

Function check

Test the dryer, see section 11: **Function check**.

Mounting of drum

1



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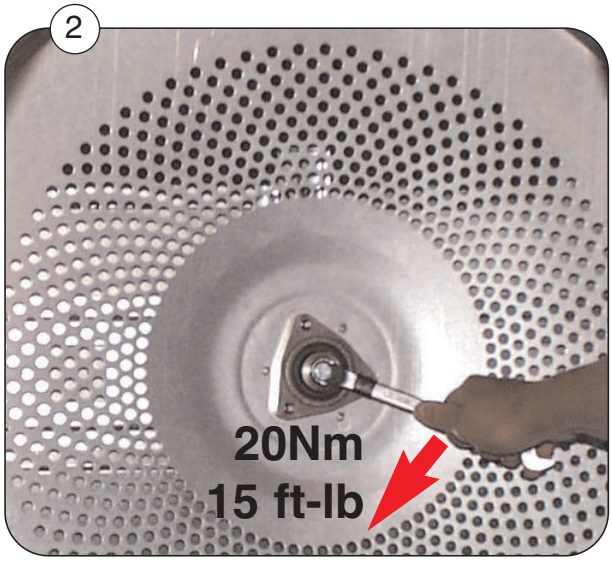

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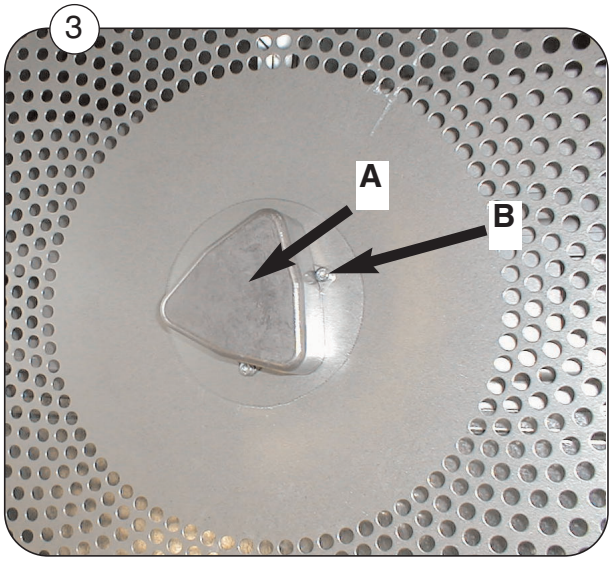

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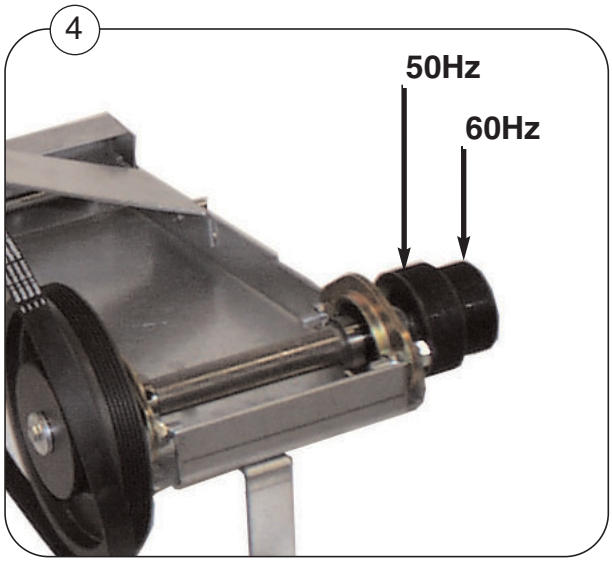

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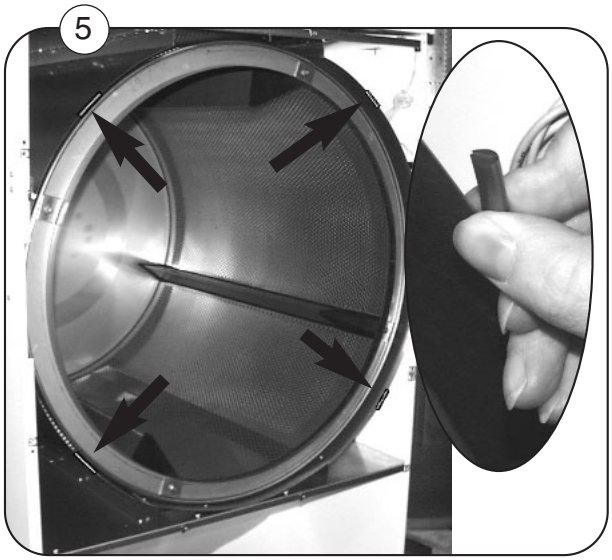
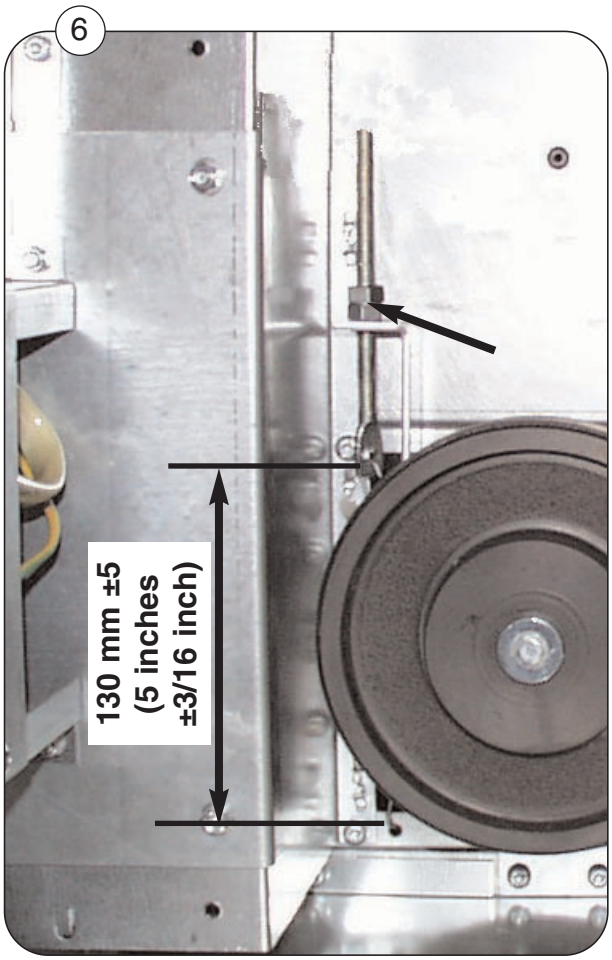


Fig 6 next page

Mounting of drum



Replacement of support rollers

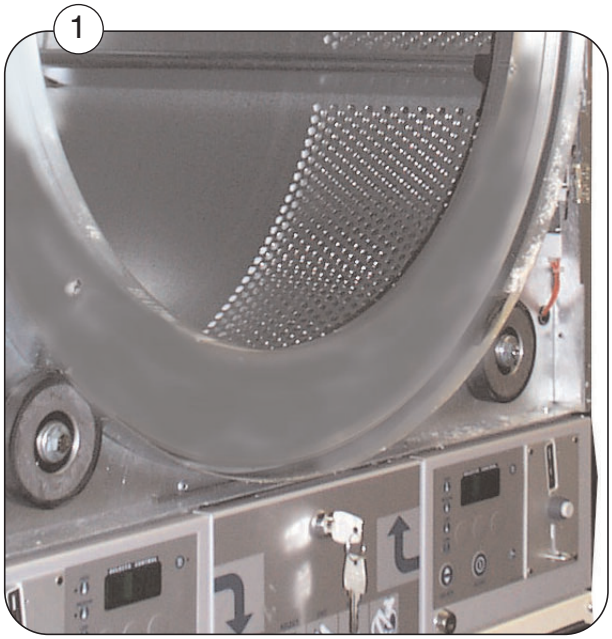
At the front of the dryer, the support rollers are replaced as follows:

1. Disconnect the power to the dryer.
2. Remove the top door hinge.
3. Lift the door off the bottom hinge; remove bottom hinge.
4. **Fig. 1** Remove the screws that hold the front panel on the dryer and remove the panel.
5. **Fig. 2** Unscrew bolts at support rollers.
6. Replace support rollers and tighten with 20 Nm (15 ft-lb).
7. Reassemble the front panel, door hinges, and door.
8. Connect the power.

Function check

Test the dryer, see section 11: **Function check**.

1



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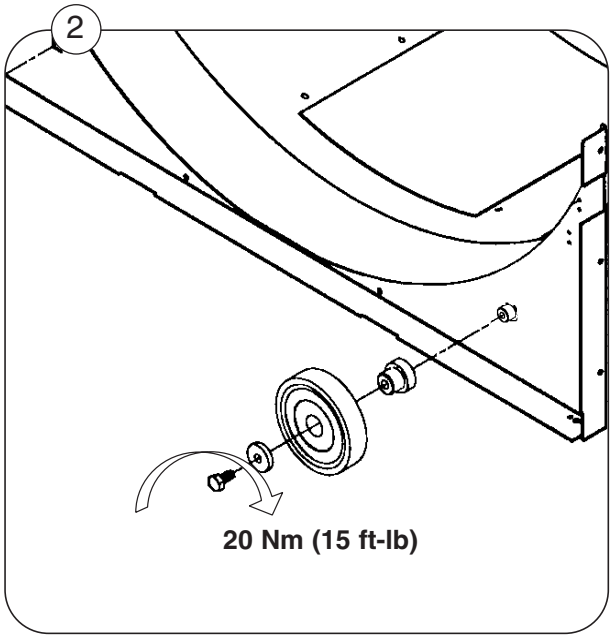


Contents

WARNING !
FIRE AND / OR EXPLOSION HAZARD!

Gas heating system service procedures must be carried out by qualified service personnel!

DO NOT OPERATE THIS MACHINE WITH IMPROPER SUPPLY OR NOZZLE PRESSURES, AS THIS CAN CAUSE FIRE AND/OR EXPLOSION!

Improper installation, adjustment or operation of this gas-heated appliance may result in the risk of fire and/or explosion, damage to property, serious injury, or death.

Gas valve, general

Pos. 1. Nozzle

The nozzle orifice size must be correct for the installation altitude and the type of gas being used.

Refer to the installation manual to determine proper orifice size.

Pos. 2. Measuring tap, nozzle pressure

Measuring see page 47.4.

Pos. 3 + 4. Nozzle pressure adjustment screw and cap

Set the nozzle pressure by using adjusting screw (4) found behind cover screw (3).
Clockwise higher pressure.
Counter-clockwise lower pressure.

Pos. 5. Control box, gas valve

Except Canada.

Pos. 6. Measuring tap, supply pressure

Measuring see page 47.5.

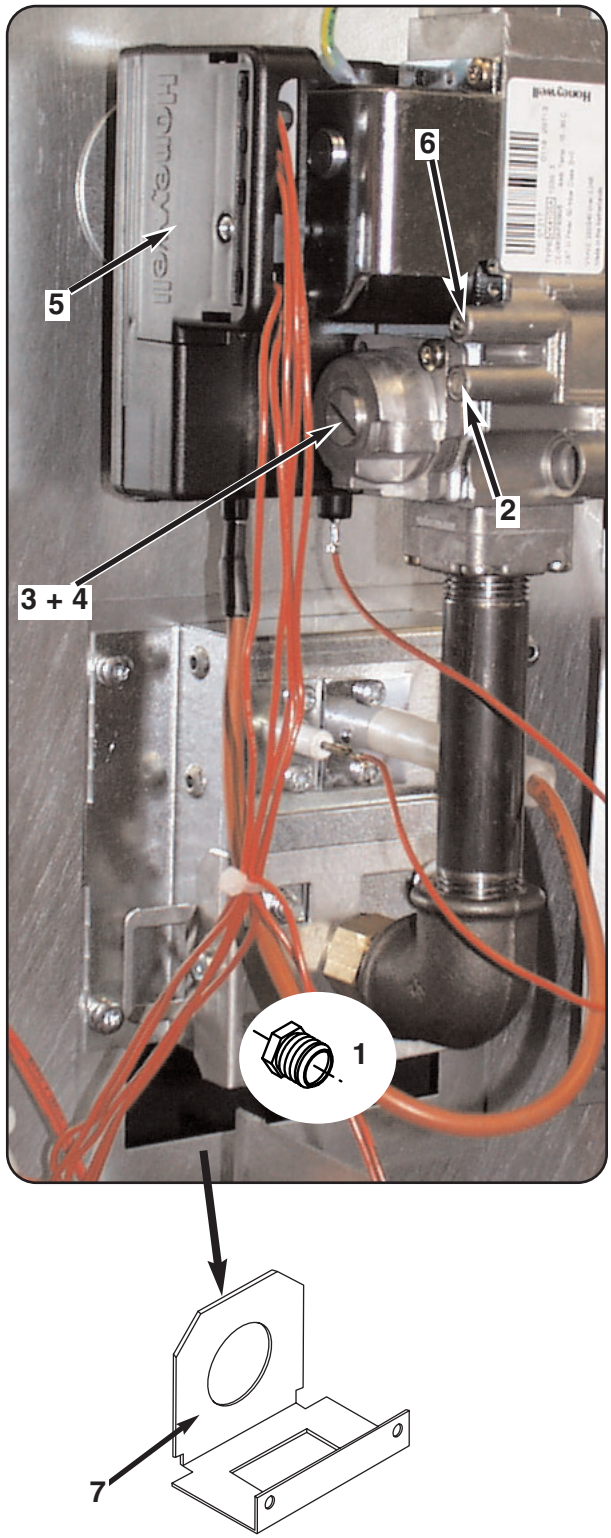
Supply pressure see installation manual.

NOTE that the gas supply MUST be turned off before loosening tap pos. 6 (SUPPLY) or gas will escape.

Pos. 7. Primary air flow reducing plate

An air reducing plate has been installed in all dryers.

In France and Belgium, the accompanying air reducing plate must be replaced if converting to another type of gas.
If the plate is not replaced, an error code, E 14, will appear.



Canada only, from serial number 0205/0003554 up to serial number 0301/0006128

Pos. 1. to pos. 4.

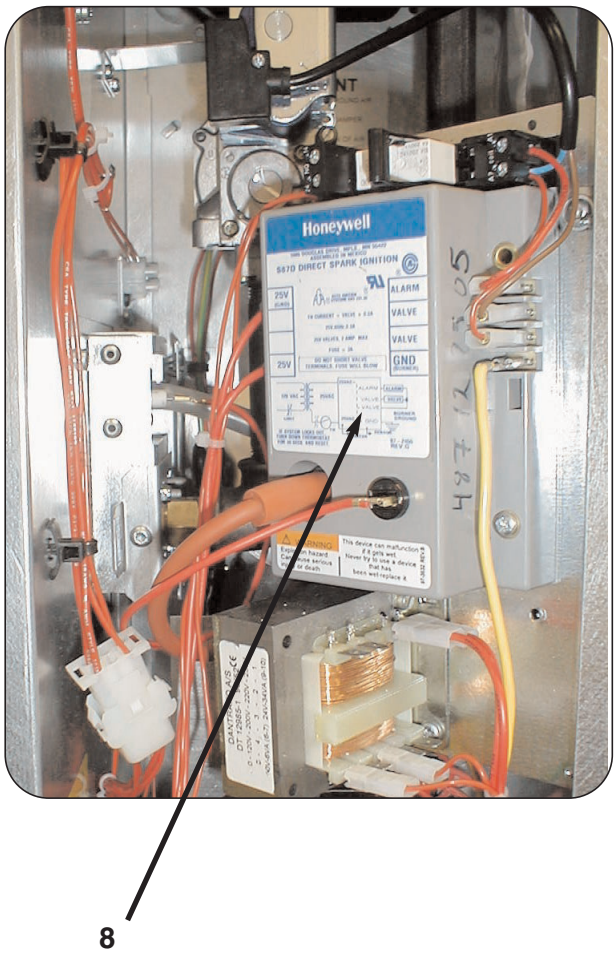
See gasvalve general.

Pos. 6.+ 7.

See gasvalve general.

Pos. 8. Ignition control

Ignition control only for 24V, Canada only.



Measuring tap, nozzle pressure (pos. 2)

1. With the dryer off, loosen the gas pressure tap (pos. 2) one-quarter of a turn and connect a manometer to the tap.

2. Remove the ignition cable from the ignition electrode and position it so the end of the cable is at least 2 inches from any metal surface and away from any area into which you must reach to carry out this procedure.

This prevents the burner from lighting.

3. Start the dryer with High heat selected.

After a few seconds, the ignition control will energize the gas valve.

Check that the nozzle pressure reading on the manometer is within the allowable range specified in the installation manual for the gas type being used.

Too high nozzle pressure

If the nozzle pressure is too high, adjust it by removing the cap (pos. 3) and turning the screw (pos. 4) beneath this cap counter-clockwise until the nozzle pressure is correct.

Too low nozzle pressure

If the nozzle pressure is too low, it may be due to limited gas flow (and pressure) on the supply side of the valve.

1. Turn off the dryer

2. Close the nozzle pressure measuring tap (pos. 2) and measure the supply pressure tap (as described in section Measuring tap, supply pressure below).

The supply pressure must remain AT LEAST 1.5 inches WC above the desired nozzle pressure.

If it does not, corrective action must be taken on the gas supply system to the dryer.

If the supply side pressure remains at least 1.5 inches WC above the desired nozzle pressure, the nozzle pressure can be increased as described above, with the manometer connected to pressure tap (pos. 2) by turning screw (pos. 4) beneath cap (pos. 3) clockwise.

Measuring tap, supply pressure (pos. 6)

> **NOTE** that the gas supply **MUST** be turned off before loosening tap pos. 6 (SUPPLY) or gas will escape.

Refer to the installation manual for the proper supply pressure for the type of gas being used.

1. Turn off the manual gas valve to the machine and the dryer started on High heat.

2. Loosen the gas pressure tap (pos. 6) one-quarter of a turn and connect a manometer to the tap.

3. Turn on the manual gas supply valve.

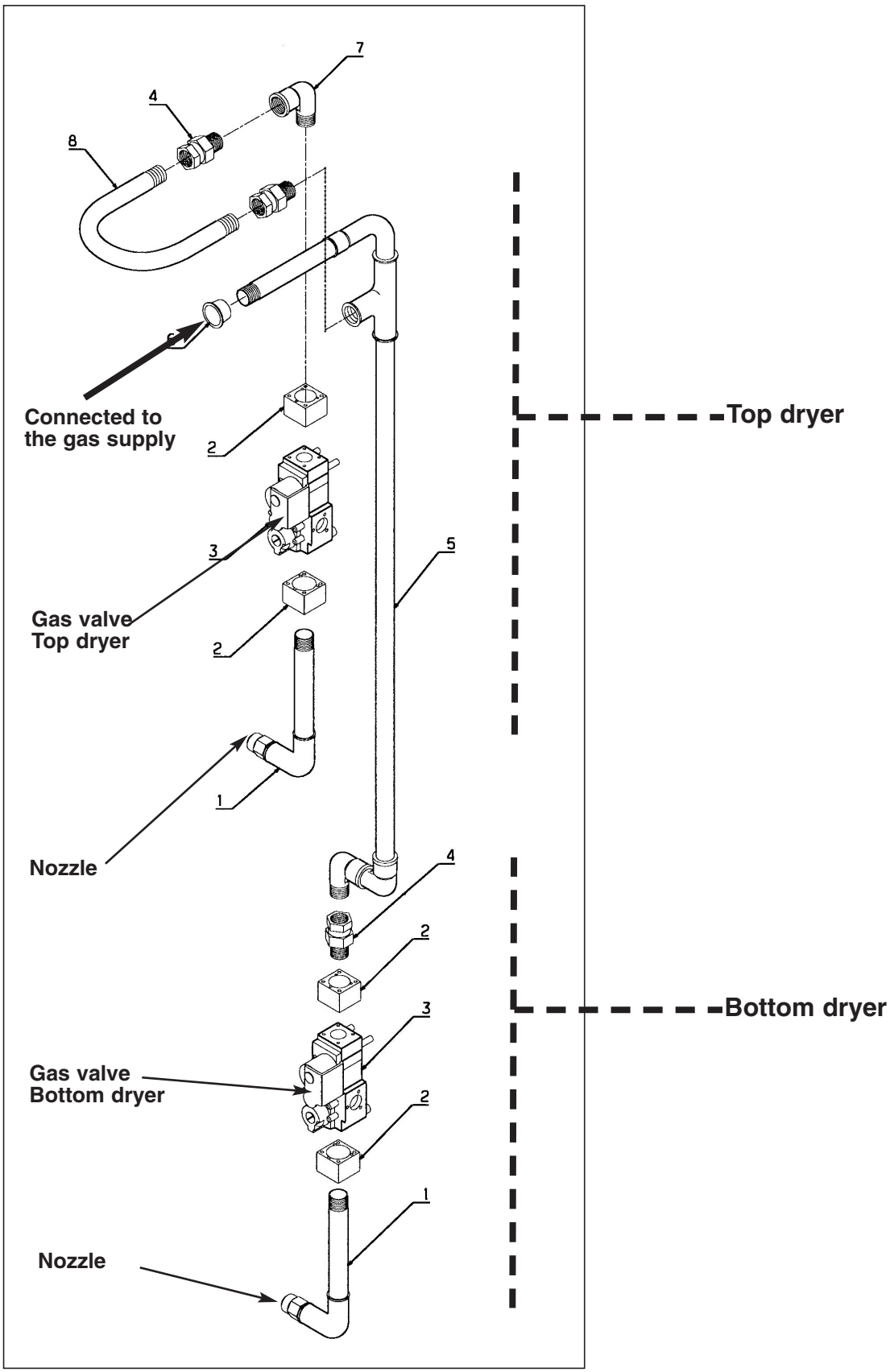
4. Start the dryer on High heat and check that the supply pressure is within the allowable range.

Note: If the pressure is not within the range specified in the installation manual,

DO NOT OPERATE THE DRYER.

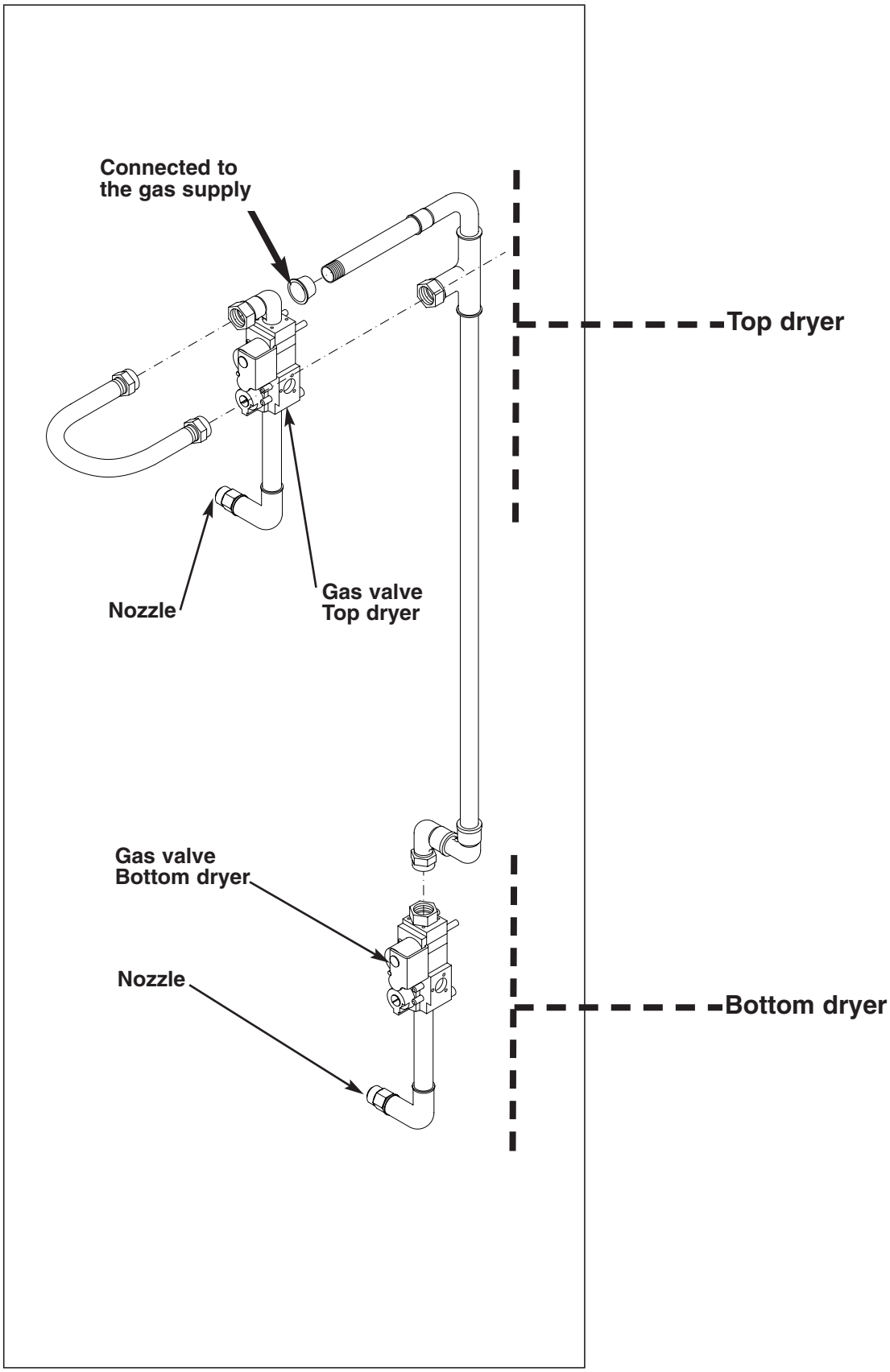
Contact your gas supplier.

Gas system, overview - up till serial number 0205/0003357



487 0329 21

Gas system, overview - from serial number 0205 / 0003357



Test run

Test all joints for leaks.

Before operating the dryer with a flame, check the supply and nozzle pressures as described earlier in this section.

Check that the gas is burning evenly and with a bluish flame.

After testing, prepare the dryer for use.

Contents

RMC, general

The purpose of RMC is to be able to stop the dryer when a pre-selected moisture level has been reached in the clothes.

Also see section 11, **Dryer with RMC**

Replacing or checking the collector graphite

If the measuring system is interrupted / defective the dryer stops within a few minutes without the clothes being dry.

If this happens it could be due to the collector graphite needing cleaning or being defective in which case it must be replaced.

To replace or check the collector graphite:

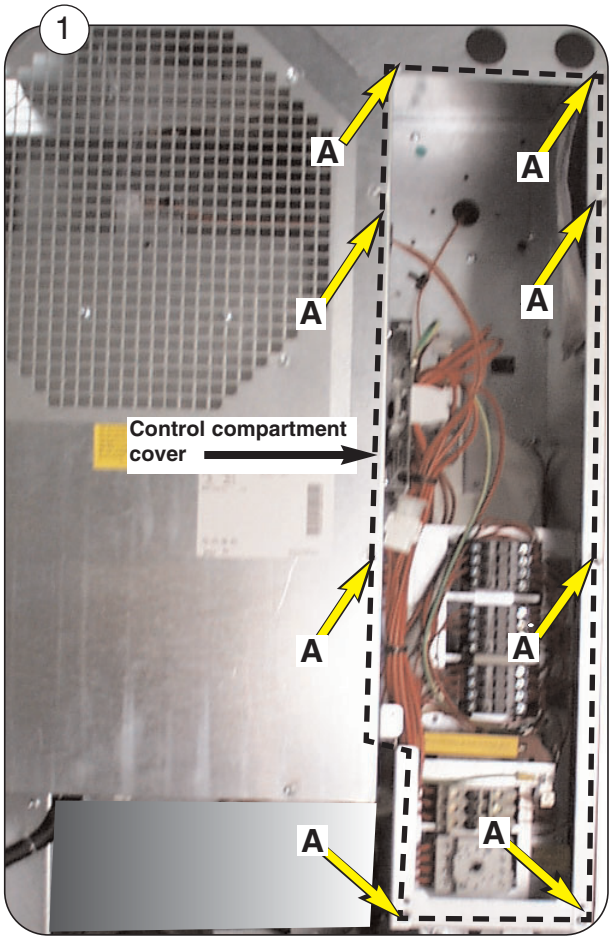
1. Disconnect the power supply from the dryer.
2. **Fig. 1** Remove the 8 screws **A** which secure the control compartment cover and then remove the cover.
3. **Fig. 2** Remove plate **B**.
4. **Fig. 3** Illustrates the collector graphite either needing cleaning or replacing.
5. Assemble the dryer.
6. Connect the power and test the dryer.

Function check

Test the dryer, see section 11: **Function check**.

Replacing or checking the collector graphite

1



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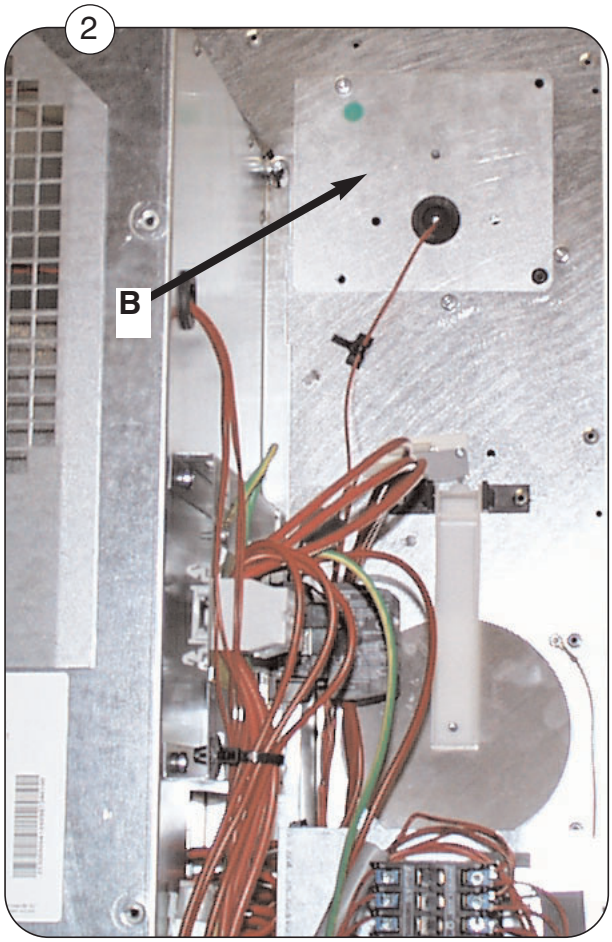

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