



Duplex-Cleaning-Machines



@Duplex UK



Duplex CleaningUK



Duplex Cleaning Machines

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DUPLEX ESCALATOR 550 PROFESSIONAL

Translation of the original instructions

WARNINGS



**READ THE INSTRUCTIONS OF THIS BOOKLET
CAREFULLY BEFORE USING THE MACHINE.**

See Directive ISO 7000-0434-1691-0790

WARNING: This appliance cannot be used to collect hazardous dusts

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1.1 CONGRATULATIONS ON HAVING CHOSEN DUPLEX MACHINES

These are the main characteristics of DUPLEX machines:

- Cleaning of any type of flooring thanks to a patented centrifugal system which allows dirt to be recovered automatically and in real time;
- Great ease of handling thanks to the possibility of orientating the handle to change the cleaning direction;
- Easy access to 'critical' points (wall edges, corners, grooves and joints);
- Quite operation.

The experience and know-how gained over our years of production (tens of thousands of machines in various models), the testing and application in different environments 550 PROFESSIONALned with the expertise of our Engineers have allowed us to improve our product constantly. We were able to achieve perfect cleaning results even in the deep grooves in the steps of escalators and reach the side edges, which is still extremely difficult for other escalator cleaning machines.

While cleaning moving escalators, DUPLEX escalator cleaning machines remain still and stable in their position thanks to the especially patented self-guiding system.

Professional models equipped with a full set of accessories and special trolleys have been created from two simpler and cheaper machine models. Apart from facilitating the transport of the appliance within the workplace, these also allow for easy positioning of the machines themselves on the steps of escalators in motion, resulting in minimal cleaning times.

1.2 GENERAL WARNINGS

POWER CORD WITH PLUG

- Check the power cord regularly to see if there is any sign of damage: cracking, peeling, ageing.
- **If the power cord is damaged, replace it before using the machine.**
- Use a cable of the same type used by the Manufacturer, certified according to “ENEC” European standards
- Cable replacement must be performed by qualified personnel.
- Avoid any contact of the power cord with the brushes.



IMPORTANT:

Should the power cord get caught under the machine brushes, do not attempt to get it out while the machine is working. Stop operation immediately, remove the plug from the power socket, check the cord. If damaged, do not try to repair it simply putting a tape around it, but replace it.

OTHER WARNINGS

- Ensure the machine does not sit on the brushes when in rest position. The machine should be supported and raised by the parking support. If this not the case, the machine weight could warp the brushes.
- Be careful not to let the water used for cleaning enter into the plastic casing (gear cover). Never use pressure washers to clean the Duplex Escalator.
- Unplug the power cord plug from the power socket or battery before any maintenance intervention.
- Store the machine in a closed and dry place after use.
- The machine is designed and constructed exclusively to clean escalators or moving walkways. Any other use is considered improper.



WARNING

CLEANING AND MAINTENANCE OPERATIONS MUST BE PERFORMED WITH THE MACHINE DISCONNECTED FROM THE MAINS.

1.3 GENERAL FEATURES AND FUNCTIONS

The DUPLEX brand name is synonymous with double efficiency and distinguishes a machine that actually has a dual function thereby providing numerous advantages for the best possible floor cleaning and hygiene.

The ESCALATOR 550 PROFESSIONAL escalator and moving walkways cleaning machine is fitted with a full set of accessories and moves on two large wheels, which in addition to making its transport easier in the workplace, also allows the machine to be easily positioned on the steps of escalators in motion, and simplify any other operation necessary for proper use, considerably reducing working times.

The ESCALATOR 550 PROFESSIONAL consists of two separate machine parts:

- a) machine body and**
- b) 550 cleaning head joined by a tilting bracket which is screwed to the machine body.**

a) The machine body in stainless steel is covered by a polypropylene casing, that incorporates a powerful vacuum cleaner, all electrical controls, a brake to control the machine on the escalators and the detergent tank.

b) The machine head is fitted with special stainless steel brush-covering fairings that contain the automatic detergent dispenser system.

The patented self-guiding support with grooved wheels keeps the machine cleaning head stable and fixed in the work position.

A parking brake ensures the machine is fixed on the step while it is working on escalators in motion.

The tilting bracket lifts the cleaning head and makes its reversal easier to allow the cleaning of the right and left sides of the escalator.

1.4 ASSEMBLY

The machine is shipped packed in wooden and/or cardboard boxes.

On receipt of the package and prior to use, the user must carry out the assembly of parts which due to their overall dimensions are disassembled before being shipped.

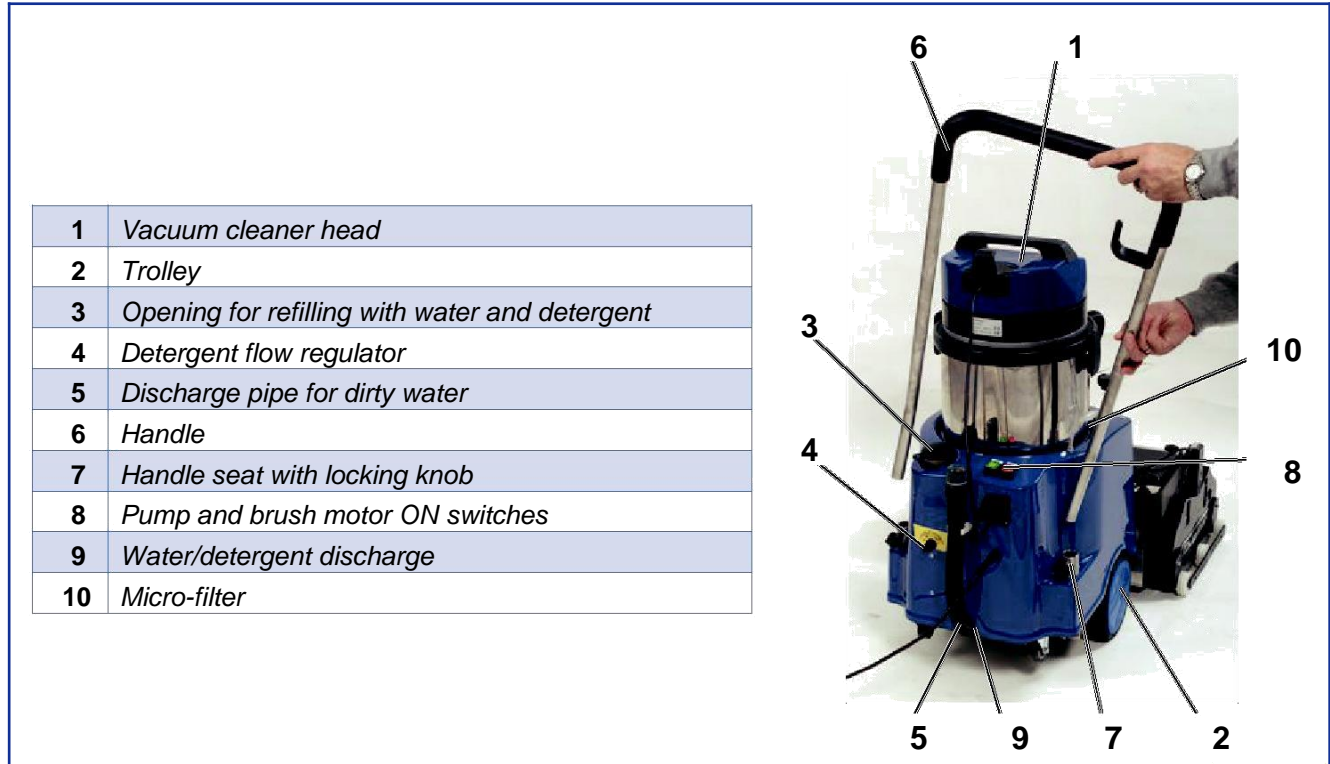


Figure 1.3

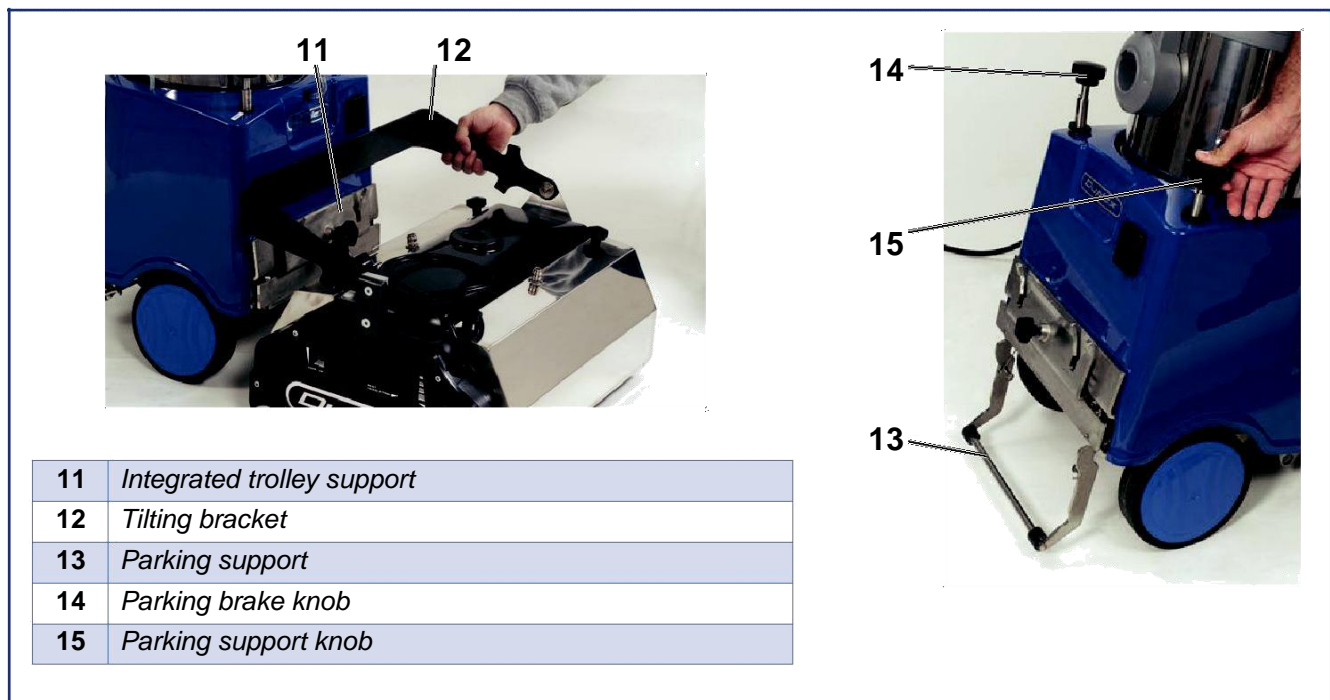


Figure 1.4

ASSEMBLING THE HANDLE

- Insert the handle (6) right into the two seats and tighten the locking knobs firmly.

ASSEMBLING THE HEAD WITH THE BRUSHES

- In order to reach the far right and left hand edges of the steps of the escalator or moving walkway, the head with the brushes protruding laterally can easily be assembled by means of its tilting bracket (12). The bracket can be inserted into the trolley support (11) and positioned either to the right or left. After inserting the bracket, lock it into place with the knob.

PARKING POSITION

- Lift the head by pressing the parking support knob (14). To make the head touch the floor, lift the head and the spring mechanism will be released.

CLEANING HEAD COMPONENTS

12	<i>Tilting bracket</i>
16	<i>Tank cover</i>
17	<i>Escalator Brushes</i>
18	<i>Attachment for detergent</i>
19	<i>Brush-covering fairings with Teflon detergent dispensers.</i>
20	<i>Patented self-guiding trolley</i>

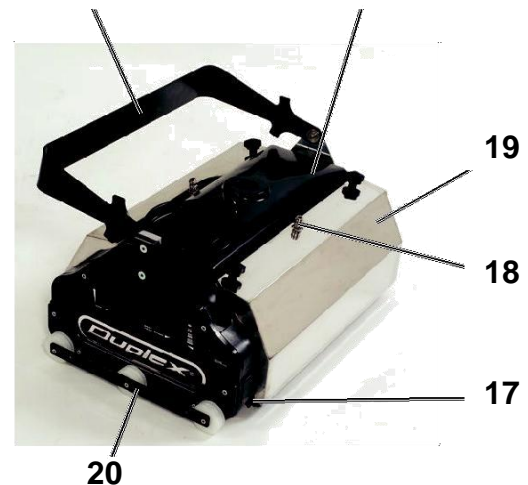


Figure 1.5



1.5 TECHNICAL FEATURES

ESCALATOR 550 PROFESSIONAL		MOD. 350	MOD. 550
Length	mm	475	475
Handle height	mm	986	986
Width	mm	465	665
Vacuum cleaner/trolley unloaded weight	Kg	43	43
Weight of head with brushes	Kg	31	41
Detergent tank capacity	l	18	18
Recovery tank capacity	l	25	25
Brush diameter	mm	120	120
Brush width	mm	350	550
Electric motor		Single-phase	
Tropicalized winding		Single-phase	
Insulation class		1 st	
Voltage	Volt	115-230	115-230
Frequency	Hertz	60 / 50	60 / 50
Maximum brush motor power	Watt	1250 / 1000	1480 / 1600
Vacuum cleaner power	Watt	1250	1250
Pump power	Watt	40	40
Dust filtration system		water operated	

THE MACHINE IS REGISTERED

Trademark:	DUPLEX INT.
Country:	Italy
Universal identification	Mod. DUPLEX ESCALATOR 550 PROFESSIONAL
Power	Watt.
Power supply:	Volt. xxx
Frequency:	Hz. 50 or 60
Serial number	Serial no. xxxx
Month and year of manufacture:	Current month and year
Self-certification marking:	CE
Weight	Kg.

ELECTRIC MOTOR EQUIPPED WITH:

Original nameplate applied by the manufacturer

*Built in compliance with EN 30335-2-07-1998-2006/42/EC
Duplex machines have been approved by the following Quality Institutes: EC - ENEC*

MACHINES MADE EXCLUSIVELY IN ITALY

1.6 PRODUCT FOR INDUSTRIAL USE “DUPLEX DETEX”

Special detergent to wash and degrease escalators with Duplex Escalator machines. The product eliminates mineral oils and all types of petrol derivatives, organic residues of animal and vegetable origin. **It does not damage aluminium alloys or components of the machine.**

INSTRUCTIONS FOR USE

Dilute from 1% to 5% according to your requirements, directly into the tank and use as per machine instructions.

DISPOSING OF THE CONTAINER:

Dispose of the container properly and do not burn it. Rinse the tank out three times and recycle, or make holes in it and have it collected by a regularly authorized facility.

STORING:

Store in a cool, well-ventilated place, protected from direct sunlight.

PRECAUTIONS:

Wear suitable clothes and gloves. Protect your eyes and face. Irritant in its pure state. In case of contact with your eyes or face, wash immediately with plenty of water and consult a physician.

BIODEGRADABILITY:

90% (Art. 2 and 4 L.26/04/1983 no. 136) -
Dir. EEC 73/405 and 82/242.

CHEMICAL COMPOSITION:

(Art. 8 L.//86 - Rec. EEC 89/542)

COMPONENTS:

Phosphates
Glycols
Non-ionic ampholytic
surface-acting agents.

PHYSICAL AND CHEMICAL DATA:

Status: Liquid
Ph: 9 to 1 %
Foam: Low
Colour: Blue
Odour: Pleasant



WARNING:

The product can pollute seas, lakes and rivers. Do not use in excessive amounts and dispose of the container properly after use.

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1.7 HOW TO USE



WARNING

Before inserting the cable plug into a power point, which must be earthed, make sure the ON switches of the wet and dry vacuum cleaner and the machine are in the “OFF” position.

IT IS RECOMMENDED THAT YOU LUBRICATE THE CONVEYOR BELTS WITH COMMERCIAL SILICONE SPRAY BEFORE STARTING UP THE MACHINE.

HOW TO CLEAN AND WASH ESCALATORS AND MOVING WALKWAYS

Fit the special brushes provided, with their equidistant bristles to reach right down into the tracks forming the stair tread of the escalators.

The pitch of these tracks or channels may vary from manufacturer to manufacturer. Optional OTIS/KONE – THYSSEN – SCHINDLER/MITSUBISHI brushes are available upon request.

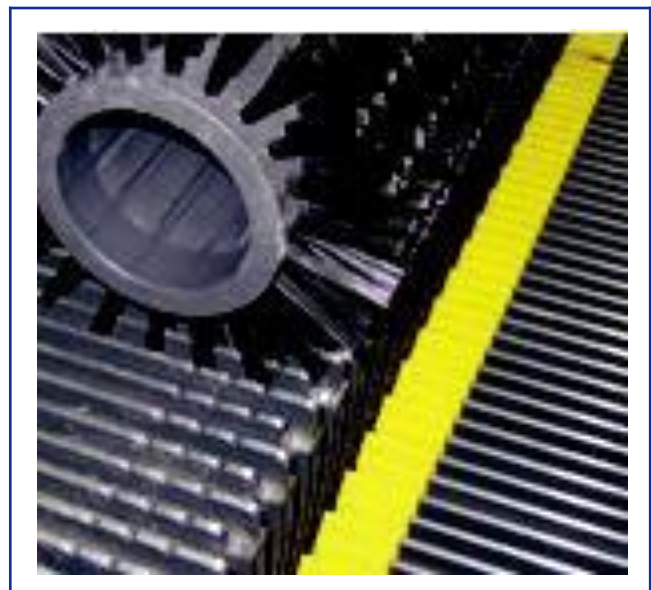


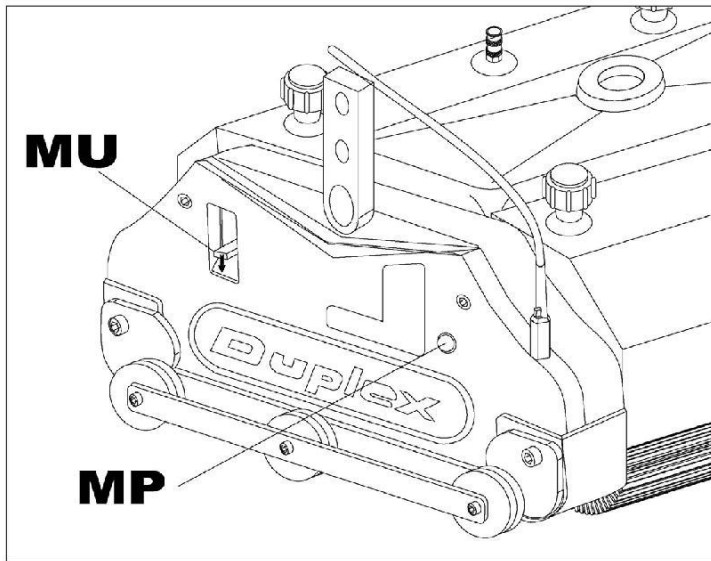
Figure 1.6

The brushes of the **DUPLEX ESCALATOR 550 PROFESSIONAL** machines are made from a special plastic material with no abrasive coating, ensuring that no damage is caused to the metal steps of escalators or moving walkways.



WARNING:

Good cleaning results and a longer lifespan of the brushes can only be achieved if the bristles can enter into the stair tracks or channels precisely. The use of inappropriate brushes cannot only compromise the cleaning quality but also damage the brushes.



MP	MOTOR PROTECTOR
MU	"Mop-Up": conveyor belt activator. Keep this switch in the low position (7) for the simultaneous recovery of dirt.

Figure 1.7



IMPORTANT:

Unplug the power cord plug from the power socket before removing the brushes or inserting new brushes.

BEFORE AND AFTER PICTURES

Comparison of washing and cleaning results between a dirty step and one washed with the Duplex Escalator.



Figure 1.8

AUTOMATIC MOTOR PROTECTION "MOTOR PROTECTOR" MP

The "Motor Protector" is a safety device which stops the machine in case conditions occur that overload the electric motor (e.g. foreign bodies caught in the brushes which can prevent their rotation, poor supply of power, overheating, etc.).



WARNING:

Disconnect the machine from the power socket before removing any foreign bodies caught in the brushes.

After checking and possibly eliminating the cause which led to motor overload, press the "Motor protector" button (after about 60 seconds) to restore machine operation.

1.8 HOW TO WASH ESCALATORS AND MOVING WALKWAYS

1st PHASE - DRY BRUSHING



IMPORTANT:

All dry dust will be sucked up using this procedure, which is essential to prevent dust from turning into mud when the washing phase is carried out. We recommend to pour the water into the central recovery tank during the suction phase.

For better cleaning results it is recommended to have the escalators or moving walkways move towards the operator.

1. Position the machine at the foot of the escalator (preferably on the bottom floor);
2. Position the machine on the first step making sure that the narrow side is lined up against the edge of the step, and that the stabilising wheels are in the channels, regardless of the position of the machine, which can either be on the right or the left hand side;
3. Remove the head of the wet and dry vacuum cleaner and fill the tank up with water to a height of about 10cm from the bottom (important for the filtering of dust);
4. Insert the suction hose into the appropriate opening in the cover **(16)** supplied;
5. **MU "Mop-Up": Conveyor belt activator.** Keep this switch in the low position (7) for the simultaneous recovery of dirt.

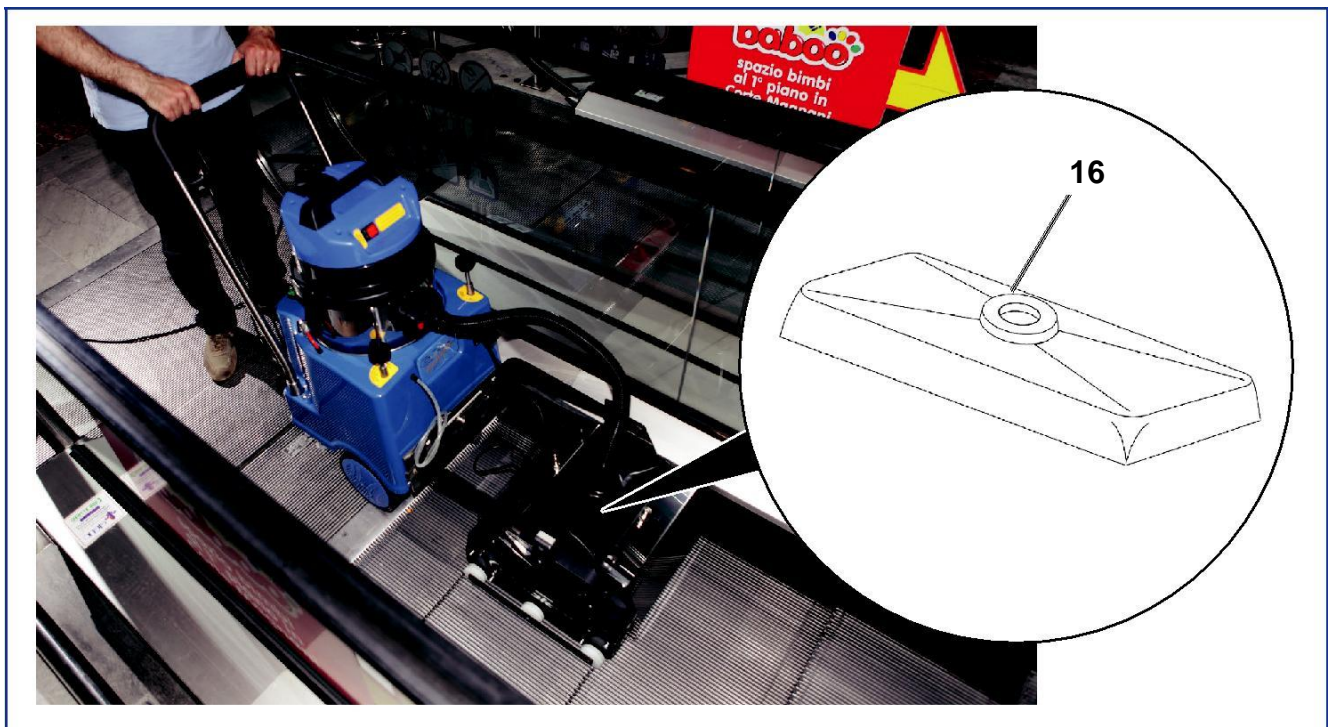


Figure 1.9

6. Turn on the motor and the wet and dry vacuum cleaner.
7. Activate the escalator or moving walkway (always moving towards the operator);
8. Grab the machine firmly and make the escalator (or walkway) complete at least three full rotations;
9. Then, lift the machine cleaning head, turn off the motors and empty any dust collected from the recovery tank.
10. Move the machine to the other side of the step and carry out the same procedure, following the same sequence as above.

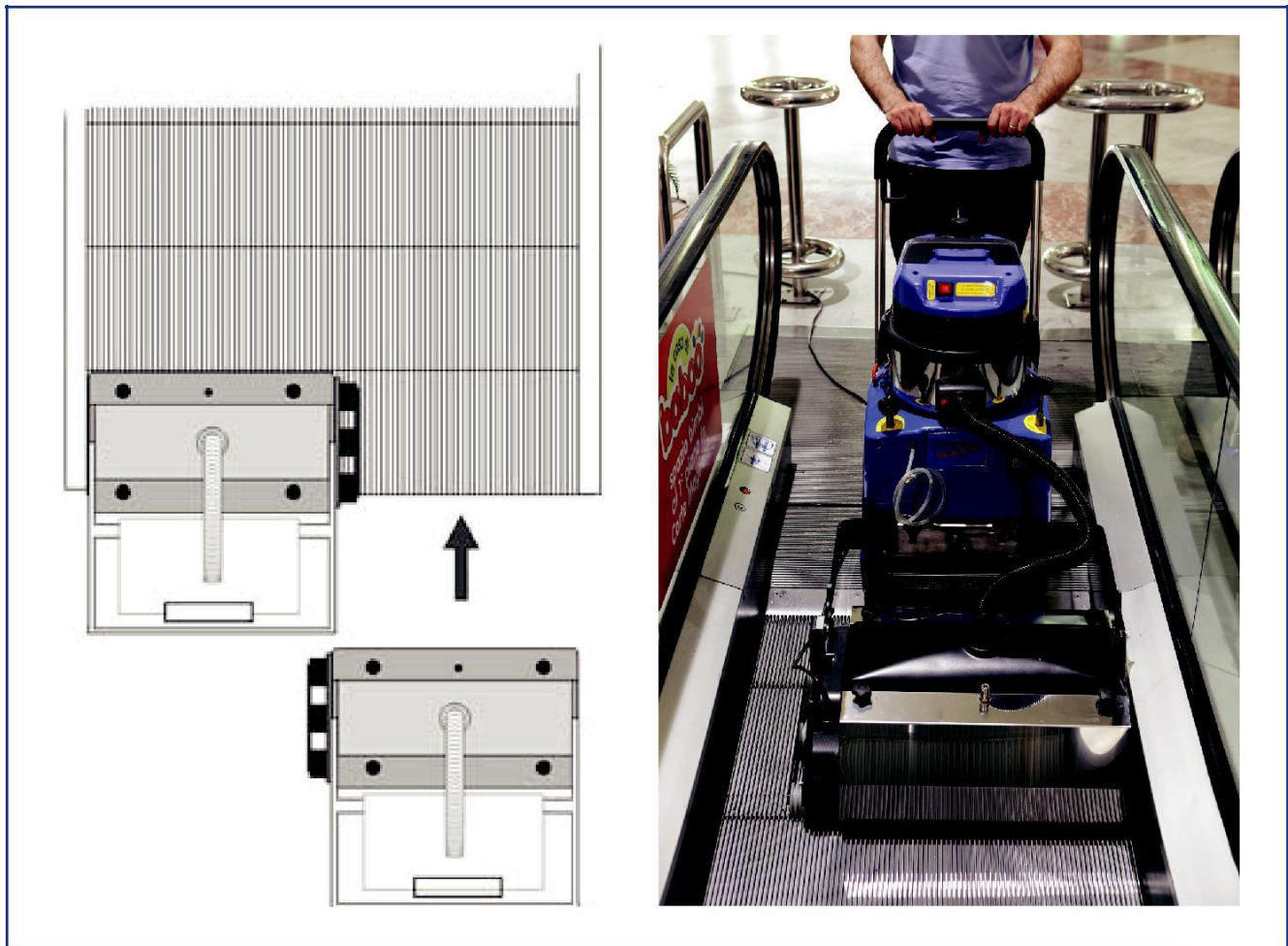


Figure 1.10

2nd PHASE - WASHING

For better cleaning results it is recommended to always have the escalators or moving walkways move towards the operator.

1. Prepare a detergent solution consisting 95% of water and 5% of Detex (specific product to clean escalators - see technical sheet).
2. Fill the tank with this solution via the tank opening for the detergent.



IMPORTANT:

DETEX is a product expressly designed and developed for the cleaning of escalators or moving walkways.

It does NOT damage surfaces, metal parts or components and rubber or plastic components and the machine paintwork.

The use of products other than those specified will invalidate any warranty and relieve the manufacturer from any liability deriving from damage caused by the use of unsuitable products.

3. Insert the hose of the wet and dry vacuum cleaner into the opening in the recovery tank cover (16);
4. Attach the pipe for detergent dispensing (18) into the snap-connector;
5. Position the machine on the first step;
6. Start the brush and vacuum cleaner motors.
7. Turn on the pump switch, grip the trolley handle firmly;
8. Activate the escalator or moving walkway (preferably moving towards the operator).
9. Make the escalator rotate several times until all dirt has been fully removed.
10. Turn off the pump and make a few dry rotations in order to finish the work. Then let the escalator dry completely.



Figure 1.11

11. After having stopped the motor, reverse the position of the machine and follow the same sequence on the opposite side.

During the washing procedure it may be necessary to stop the machine and empty the dirty liquid recovery tank. This operation is made easier using the wet and dry vacuum cleaner supplied, which sucks up the dirty water directly from the recovery tank without requiring it to be removed from its seat.



IMPORTANT:

It is important for all three stabilising guide wheels to be inserted into the same channel or track, otherwise the machine could move crossways and work in an irregular manner.

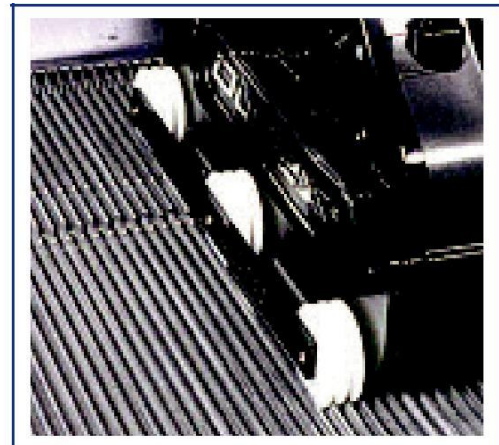


Figure 1.12

Should the escalator or moving walkway be covered in layers of dirt and muck due to wear, more frequent and long washing may be required. Once the escalators' and moving walkways' optimal condition has been restored, routine maintenance gets easier, quicker and cheaper.

The positioning of the Duplex Escalator 550 PROFESSIONAL on escalator steps or moving walkway requires a certain dexterity and ability that the operator can acquire only after carrying out various washing operations.



TIP:

To check whether the escalator/moving walkway has completed a full rotation, and consequently a full washing session, apply a sticker to the rubber handrail in the same direction of rotation. As the sticker reappears it means that the rotation has completed.

3rd PHASE - SOAKING *(optional)*

Very often, older escalators or walkways present greasy black deposits in the corners of the steps which have built up over the years following the use of lubricants for the escalator mechanisms that became impregnated with dust and dirt.

In this case the washing operation may be preceded by a **preventive soaking phase**. We recommend that you use a standard pressure spray pump. Fill it with the same DETEX product, either diluted or undiluted, and spray the product over the entire surface to be treated evenly while the walkway is running.

1.9 GENERAL MAINTENANCE



WARNING:

During cleaning and maintenance operations the machine must always be disconnected from the mains.



WARNING:

Never use a pressure washer for cleaning operations.

The procedures described below must be carried out after each use of the machine.

CLEANING THE MACHINE

- Remove and thoroughly clean the casings covering the brushes, the recovery tank and the detergent dispensers with water.
- Remove the machine head from the trolley and clean its interior with water.
- Clean the lower section of the machine laying the machine on its side (Duplex logo facing upwards), taking care not to let water get inside the casing. Leave to dry.
- Wash the inside of the wet and dry vacuum cleaner with running water, rinse and empty.
- Lubricate the two rubber conveyor belts evenly using Duplex silicone spray.

CLEANING AND MAINTENANCE OF THE BRUSHES

DUPLEX brushes require little routine maintenance.

The high rotation speed during cleaning manages to centrifugate dirt and keep them efficient at all times.

However, check their status and clean them, if necessary.



WARNING:

Remove the plug from the power socket before cleaning the brushes.

ROUTINE MAINTENANCE

In addition to cleaning, it is necessary to perform the following operations periodically:

- Remove the brushes from the machine (see following section);
- Dip them in a container with cold or lukewarm water and let them soak for a few hours;
- Stir and rinse the brushes well;
- Re-fit the brushes in reversed position in relation to the one they had before. This is necessary as the bristles tend to bend when the brushes always rotate in the same direction.

The mechanical parts of the **DUPLEX ESCALATOR** do not require any particular maintenance.

HOW TO REMOVE THE BRUSHES

1. Unscrew the two screws anchoring the stainless steel casing using the supplied wrench.
2. Remove the brushes.

STORING THE MACHINE

- After use, store the machine in a covered and dry place, protected from atmospheric agents.

1.10 TROUBLESHOOTING TIPS

The brushes fail to turn on:

- Power supply cord disconnected or interrupted.
- Faulty plug.
- Motor protector deactivated.
- Excessive friction of the brushes on the steps (raise the head slightly).

The brushes stop during operation:

- Too low voltage.
- Excessive friction of the brushes on the steps (raise the head slightly).

Dirt is not collected:

- Conveyor belts fail to rotate due to the MOP-UP lever being disconnected
- Brushes worn out (replace them).
- Recovery tank scrapers dirty or worn out (replace them)

The detergent is not dispensed:

- Lack of detergent: fill the container with detergent.
- Pump turned off or faulty (replace it).
- Dispenser extraction micro-filter clogged (replace it).
- Detergent dispensers dirty (clean them)

The wet and dry vacuum cleaner does not collect dust or dirty water

- Vacuum cleaner head inserted incorrectly.
- Discharge pipe open (screw its cap on and tighten).
- Suction hose not fitted on properly.

Copious amounts of dust coming out of the vacuum cleaner

- Lack of water for the filtering of the interior of the containment tank: fill up to the indicated level.
- Extraction pipe inside the containment tank missing or not locked correctly into place.

The manufacturer declines all responsibility for any damage deriving from incorrect use of the machine

1.11 “INTERNATIONAL PATENT“ SELF-GUIDING SUPPORT

The DUPLEX ESCALATOR machines are protected by INTERNATIONAL PATENTS.

The self-guiding supports fitted with stabilising wheels are marked with the DUPLEX brand and a serial number.

The following cases are considered infringement of the patent:

- Construction of guide supports.
- Use of a higher or lower number of wheels.
- Construction of wheels of different sizes or with a different number of guide channels.
- Use of stabilising wheels on other machines even if installed in front of or at the back of the brushes.

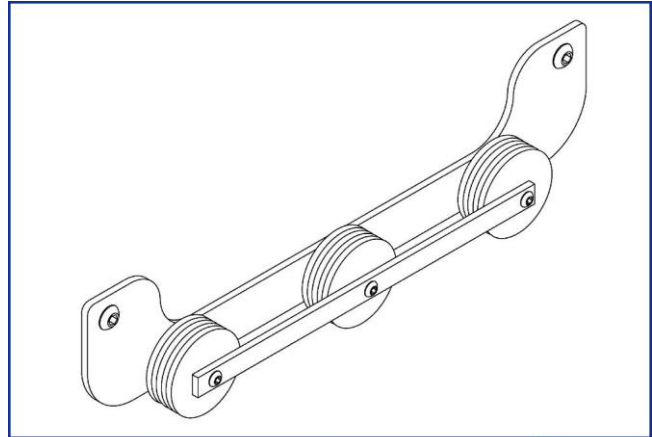


Figure 1.13

The international DUPLEX ESCALATOR patents anticipate numerous claims, including the illicit use or application of the same invention concept to other machines, entitling DUPLEX INTERNATIONAL S.r.l to full protection for industrial inventions by the National and International rights.



WARNING:
International patent infringement will be prosecuted!

1.12 DISMANTLING OF THE MACHINE

When the machine is no longer able to operate after years of work, it must be dismantled and rendered unusable.

At the time of demolishing/disposing of the machine, disconnect the electrical connections and entrust the dismantling operations to qualified and authorised personnel.

DIFFERENTIATED SUBDIVISION OF THE MATERIALS

Electrical components:

Material that can be disposed of with the urban waste collection, in compliance with the legal provisions in force in the country of use.

Mechanical components:

The machine is built with aluminium, steel and plastic materials.

Steel and aluminium will not damage the environment if recycled by qualified and authorised companies.

The plastic materials may cause environmental damage, therefore they should be handed over to specialised companies authorised for disposal.

The disposal of the packaging must be carried out in accordance with the regulations in force.

1.13 WARRANTY

The machine is guaranteed by the manufacturer for a 12-month period from the date of shipping. Warranty acknowledgement can be achieved showing a photocopy of the receipt (or invoice) along with the machine serial number.



IMPORTANT:

Without these documents the warranty will not be recognised.

The warranty does not cover normal wear components such as:

- Brushes;
- Scrapers;
- Conveyor belts;
- Hoses;
- Power cords;
- ON switches;
- Wheels of the transport trolley.

The following are excluded from the warranty:

- Suction motor;
- Pump;
- Plastic or metal parts broken due to negligent use.

The warranty will be invalid in the following cases:

- The machine is used for purposes not complying with those for which it has been designed and constructed;
- Failure to observe the instructions for use described in this booklet;
- Failure to observe the maintenance and cleaning instructions;
- The machine is damaged due to the use of detergents that are different from the one indicated (Duplex Detex).



NOTES

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European Mark of conformity



Made in Italy

