

High spin hygienic barrier washer extractors

18kg
24kg

Original installation, maintenance and user's manual

549172 C
Publication date: 14 Apr 2014

Contents

Contents

Safety precautions	5
Operation	9
Symbols on the machine	9
Before washing	11
Placing the laundry into the machine	11
Add detergents	13
Program selections	13
Wash programs overview	14
Start the washer	14
End of wash cycle	15
How to remedy incorrect position of drum.....	15
Power cut	15
How to open the door by failure.....	15
First service at technical problem	16
Technical data	18
Machines 18-24 kg / 40-55 lb – standard version.....	19
Machines 18-24 kg / 40-55 lb – version with weighing system and drain placed underneath the machine in the central part (on request)	21
Machines 18-24 kg / 40-55 lb – version with weighing system, with drain placed underneath the machine in the central part and with a handling base (on request)	22
Installation	24
Transportation and unpacking	24
Placement into hygienic barrier	24
Placement into hygienic barrier with guards – on request	26
Mechanical installation	28
Mechanical installation - version with weighing system (on request)	29
Mechanical installation – version with weighing system and drain placed underneath the machine in the central part (on request).....	30
Mechanical installation – version with weighing system, with drain placed underneath the machine in the central part and with a handling base (on request)	31
Water connections	32
Recuperated water connection	33
Treatment of the recuperated water.....	34
Water recycling tank properties	34
The use of a float in the recycling tank	34
Drain connection (standard)	35
Drain – version with weighing system and drain placed underneath the machine in the central part (on request)	35
Side drain (on request).....	36
Main drain channel-pipe	38
Venting	38
Steam connection	38
Liquid soap connection	39
Electrical connection of the liquid soap supply system	40
End of cycle indication (on request).....	41
Electrical installation.....	42
General.....	42
Residual current device (RCD).....	43
Supply protection device	43
Supply cable	43
Machine protective earth connection and equipotential bonding	44
Multiple machines in line single phase.....	45
Maintenance and adjustments	46
Checking and maintenance daily.....	46
Checking and maintenance every three months	46
Checking and maintenance every six months	46
Adjusting of safety switch	47
Belt replacement and adjusting tension	47
Lubrication	48
Water filters	49

Safety Precautions

Tightening moments.....	49
Replacement washer fuses	49
Trouble shooting aids.....	50
Unblocking of the door lock in case of emergency	50
How to remedy incorrect position of drum.....	50
Error indication shown on display	50
List of recommended spare parts	50
Putting the machine out of service	51
Disconnecting the machine.....	51
Machine disposal	51

Safety Precautions

Safety precautions



WARNING - SAVE THESE INSTRUCTIONS FOR LATER USE.

Failure to comply with the instructions may lead to incorrect use of the appliance, and may result in risk of fire, bodily injuries or death and/or damage to the laundry and/or the appliance.



WARNING - Read the IMPORTANT SAFETY INSTRUCTIONS in this manual carefully before operating the appliance. Improper use of the appliance may cause risk of fire, electrical shock or serious body injuries or death as well as serious damage to the appliance.

- ◆ This English version is the original version of this manual. Without this version, the instructions are incomplete.
- ◆ Before installation, operation and maintenance of the machine read carefully the complete instructions, i.e. this "Installation, maintenance and user's manual", "Programming manual" and "Spare parts manual".
The Programming manual and Spare parts manual are not delivered with a machine by default. You shall ask the supplier / manufacturer to obtain Programming manual and Spare parts manual.
- ◆ Follow the instruction written in manuals and keep the manuals in a proper place by the machine for later use.
- ◆ Safety instructions included in manuals for personnel operating the appliance must be printed and posted on a visible place near the machine in the laundry room.
- ◆ The washer extractor is designed for fabrics washing only, other objects can damage the washer and can cause damage or injuries.
- ◆ If the machine is used for special applications follow the instructions and warning to avoid person injury.
- ◆ The manufacturer is not responsible for the damage to the fabrics that are washed by an inappropriate washing method.
- ◆ Always follow the instructions and/or warnings that are stated on the fabrics, washing products or cleaning products mentioned by the manufacturer.
- ◆ The washer must be set up in accordance with the instructions. All drain, inlet, electrical connections, ventilation, groundings and other connections must be done in according to the installation manual, in compliance with the local standards done by qualified technicians with proper authorization.
- ◆ The valid standards for connecting to the local power network (TT, TN, IT, ...) must be followed.
In the standard execution, the appliance may not be suitable for connecting to an IT supply system.
Contact your commercial distributor for assistance.
- ◆ All appliances are produced according the EMC-directive (Electro-Magnetic-Compatibility). They can be used in restricted surroundings only (comply minimally with class A requirements). For safety reasons there must be kept the necessary precaution distances with sensitive electrical or electronic device(s).
- ◆ Do not change the parameters of the frequency inverter. This can cause serious injury, fire, washer damage, etc.
- ◆ During transportation and storage never use excessive forces on the packing because components can be damaged protruding the contour line of the appliance.
- ◆ Use copper conductors only. This appliance must be connected to a supply circuit to which no lighting units or general-purpose receptacles are connected.
- ◆ Any changes concerning the installation which are not described in this Installation Manual must be approved by the supplier or manufacturer. Otherwise, the supplier and manufacturer are not responsible for potential injuries to operators or for any damages. Interventions in the appliance execution or functions are not allowed, and the manufacturer refuses any responsibility in such cases.
- ◆ The washer extractor must be installed on level. If not, the washer may become unbalanced during extraction and, although fitted with an unbalance safety, the washer may become seriously damaged what may result in bodily injuries.
- ◆ Never put the washer in operation when the transporting braces are not removed. The washer should always be tested before use.
- ◆ It is possible that there are residues of products used during the production process in the new washer. These residues could cause stains on your laundry. Therefore, you must first run at least 1 hot wash with old rags before using for your normal laundry.
- ◆ Keep the appliance top and surface and the area around clean and clear of combustible or flammable products.
- ◆ The use of hypochlorite will cause corrosion which may cause component failure under certain circumstances.
- ◆ The warranty of the machine cannot be accepted in case corrosion was caused by chlorine and chlorine compounds impact.
- ◆ The washer extractor is not designed for work which may create an explosive atmosphere inside the machine and will not be used for this purpose.
- ◆ Do not expose the washer extractor to the weather, extreme low or high temperature and humidity.
- ◆ Do not store flammable materials around the appliances. Define the dangerous areas in the laundry room and obstruct an admission to them during appliances operating.

Safety Precautions

- ◆ Do not wash articles that have been previously cleaned in, wash in soaked in, or spotted with gasoline, dry-cleaning solvents, or other flammable or explosive substances as they give off vapors that could ignite or explode. Such fabrics must first be washed by hand and air dried.
- ◆ Do not add gasoline, dry-cleaning solvents, or other flammable or explosive substances to the wash water. These substances give off vapors that could ignite or explode.
- ◆ Under certain conditions, hydrogen gas may be created in the hot water system that has not been used for two or more weeks. HYDROGEN GAS IS EXPLOSIVE. If the hot water system has not been used for such period open all hot water taps and let the water run out for few minutes. This will release any accumulated gas. As this gas is flammable, do not smoke or use open flames during this time.
- ◆ TEMPERATURE IN WASHING MACHINE TUB: The electronic controller uses the temperature sensor in the tub to control the temperature of the washing bath. There are a lot of things that have influence on the temperature measurement. Therefore the temperature control of the washing bath is not very precise.
- ◆ Always strictly comply with the instructions that are written on the laundry chemicals-, laundry aids-, dry-cleaning solvents- and disinfectants packaging to avoid personal injury. Keep these agents out of the reach of children, preferably in a locked cabinet.
- ◆ Do not tamper the washer-extractor controls and do not bypass the safety instructions and the warnings.
- ◆ By danger turn off the main switch or other emergency disconnection devices.
- ◆ Do not put some part on the soap dispenser lid to held it open by filling or when the machine operates.
- ◆ Do not open the soap dispenser lid after the machine is started. The discharge or splashing of hazardous liquid can cause serious scalding and burning.
- ◆ Do not operate the appliance when parts are broken or missing or when covers are open. The appliance must not be operated until the fixed guards are put correctly in place.
- ◆ The appliance must not be stored, installed or exposed to the weather, extreme low or high temperature and humidity levels. Do not hose down the washer. NEVER allow the appliance to get wet. Avoid damp conditions where water or moisture could run down the walls and covers of the washer or cover the floor around the washer. Do not install the washer above an open gutter. Close any nearby gutters so that waste water steam cannot collect near/inside the washer.
- ◆ Check the functioning of the door lock mechanism on regular base. NEVER bypass the doorlock mechanism.
- ◆ Disconnect the power and close all water and steam supply before cleaning, servicing and at the end of each operating day.
- ◆ Vapour or hot air can escape out of the venting. Do not cover the vent but protect it sufficiently. It serves air gap and as a vapor outlet to prevent pressure building in the washer.
- ◆ Do not repair or replace any part of the appliance or attempt any servicing unless specifically recommended in the service manual or published user-repair instructions that you understand and have the skills to carry out. Only qualified service personnel may open the appliance to carry out servicing.
- ◆ Information contained in this manual is intended for use by a qualified service technician familiar with proper and safe procedures to be followed when repairing an electrical appliance. All tests and repairs should be performed by a qualified service technician equipped with proper tools and measuring devices. All component replacements should be made by a qualified service technician using only factory approved replacement parts.
- ◆ Improper assembly or adjustment may occur if service or repair is attempted by persons other than qualified service technicians or if parts other than approved replacement parts are used. Improper assembly or adjustment can create hazardous conditions.
- ◆ There can be a risk of injury or electrical shock while performing services or repairs. Injury or electrical shock can be serious or even fatal. Consequently, extreme caution should be taken while performing voltage checks on individual components or a product. PLEASE NOTE: Except as necessary to perform a particular in servicing a product, the electrical power supply should ALWAYS be disconnected when servicing a product.
- ◆ All industrial (OPL - On Premise Laundry) washers are designed for use in Laundry with professionally trained attendants.
- ◆ Before the appliance is removed from service or discarded, remove the door.
- ◆ Any Water or Steam Leaks Must Be Repaired Immediately. Closed supply immediately.
- ◆ If any problems or failures should arise, immediately contact your dealer, serviceman or manufacturer.
- ◆ The manufacturer reserves the right to change the manuals without previous notice.
- ◆ Norm IEC335 is applied for machines with a net usable cage volume between 60 and 150 l. Norm EN60204-1 is used for a net usable cage volume above 150 l.

Safety Precautions

⚠ WARNING

IF THE INSTALLED APPLIANCE OPERATE WITH COIN, TOKEN OR SIMILAR OPERATION FOR USE IN SELF-SERVICE SITUATIONS, THEN THE OWNER-INSTALLER MUST PROVIDE A REMOTE-LOCATED EMERGENCY STOP DEVICE. THIS DEVICE MUST BE PLACED IN SUCH A WAY THAT IT IS EASY AND SAFELY ACCESSIBLE FOR THE USERS. THE EMERGENCY STOP DEVICE TAKES CARE THAT AT LEAST THE CONTROL CIRCUIT OF THE APPLIANCE IS INTERRUPTED.

⚠ WARNING

DO NOT TOUCH THE DOORGLASS UNTIL CYCLE HAS BEEN COMPLETED. DO NOT OPEN DOOR UNTIL CYLINDER REMAINS STOPPED AND WATER HAS BEEN DRAINED FROM CYLINDER. DO NOT PUT ARTICLES SOILED WITH EXPLOSIF SOLVENTS AND/OR DANGEROUS CHEMICAL PRODUCTS IN THE MACHINE. THIS MACHINE SHOULD NOT BE USED BY CHILDREN. DO NOT LET CHILDREN PLAY IN, ON, OR AROUND THE MACHINE. BEFORE TURNING THE MACHINE "ON", MAKE SURE THAT THERE ARE NO PEOPLE (CHILDREN) OR ANIMALS PRESENT IN OR AROUND THE MACHINE.

⚠ WARNING

ORIGINAL OR IDENTICAL PARTS MUST BE USED FOR REPLACEMENT IN THIS MACHINE. AFTER SERVICING REPLACE AND SECURE ALL PANELS IN THE ORIGINAL WAY. TAKE THESE MEASURES FOR CONTINUED PROTECTION AGAINST ELECTRICAL SHOCK, INJURY, FIRE AND/OR PROPERTY DAMAGE.

⚠ WARNING

LOOKING AT THE MACHINE FROM THE PULLEY SIDE THE DRUM ROTATION DURING EXTRACTION MUST BE CLOCKWISE.

⚠ WARNING

THIS APPLIANCE MUST BE CONNECTED TO A GROUNDED METAL, PERMANENT WIRING SYSTEM, AND ADDITIONALLY AN EQUIPMENT-GROUNDING CONDUCTOR MUST BE RUN WITH THE CIRCUIT CONDUCTORS AND CONNECTED TO THE EQUIPMENT-GROUNDING TERMINAL OR LEAD ON THE APPLIANCE.

⚠ WARNING

IN ORDER TO MINIMIZE THE RISK OF FIRE, ELECTRICAL SHOCK AND INJURY, THIS WASHER MUST BE PROPERLY GROUNDED. NEVER PLUG IN OR DIRECT-WIRE AN APPLIANCE UNLESS IT IS PROPERLY GROUNDED IN ACCORDANCE WITH ALL LOCAL AND NATIONAL CODES. IF MORE APPLIANCES IN THE SAME LOCATION, MUTUAL GROUNDING MUST BE APPLIED WHERE POSSIBLE.

⚠ WARNING

ALWAYS CONSULT THE STATIC REQUIREMENTS WITH A STATIC ENGINEER IN ORDER TO MEET THE REQUIREMENTS OF PERMISSIBLE LOADS, VIBRATIONS AND NOISE LEVEL IN THE BUILDING! THE MANUFACTURER DOES NOT RECOMMEND INSTALLING THE WASHING MACHINE IN A ROOM WITH A CELLAR UNDERNEATH OR ON A FLOOR HAVING ROOMS UNDERNEATH. THE WASHER EXTRACTOR IS INTENDED TO BE PERMANENTLY CONNECTED, IT MUST BE SECURED MOUNTED TO A NON-COMBUSTIBLE, ADEQUATE FLOOR STRUCTURE. A CONCRETE FOUNDATION IS REQUIRED. METAL REINFORCED WOOD FLOORS ARE NOT ALLOWED DUE TO THE RISK OF FIRE AND EXCESSIVE VIBRATIONS. NEVER INSTALL THE WASHER ON A BASEMENT WITHOUT A LOAD SUPPORT DESIGNED BY A STRUCTURAL ENGINEER.

⚠ WARNING

ALTHOUGH THE APPLIANCE MAY BE IN THE "OFF" POSITION, THERE IS STILL ELECTRICAL POWER TO THE SWITCH SUPPLY TERMINALS.

Safety Precautions

WARNING

WHEN POWER SUPPLY HAS BEEN SWITCHED OFF WAIT FOR AT LEAST 10 MINUTES BEFORE STARTING INSPECTION OR SERVICING THE WASHER. BEFORE STARTING INSPECTION OF FREQUENCY INVERTER, CHECK FOR RESIDUAL VOLTAGE ACROSS MAIN CIRCUIT TERMINALS + AND -. THIS VOLTAGE MUST BE BELOW 30 VDC BEFORE YOU CAN ACCESS THE INVERTER FOR INSPECTION.

WARNING

DO NOT ALLOW CHILDREN TO PLAY ON, IN OR AROUND THE APPLIANCE AT ANY TIME. CLOSE SUPERVISION OF CHILDREN IS NECESSARY WHEN THE APPLIANCE IS USED NEAR CHILDREN. NEVER PERMIT CHILDREN TO OPERATE THE APPLIANCE.

WARNING

IF THE DOOR SAFETY LOCK DOES NOT WORK, DO NOT USE WASHER UNTIL THE DOOR LOCK MECHANISM IS REPAIRED.

WARNING

FOLLOW ALL VALID BASIC SAFETY RULES AND LAWS. THE INSTRUCTIONS IN THIS MANUAL CANNOT ACCOUNT FOR EVERY POSSIBLE DANGEROUS SITUATION. THEY MUST BE GENERALLY UNDERSTOOD. CAUTION AND CARE ARE FACTORS WHICH CAN NOT INCLUDED IN THE DESIGN OF THE APPLIANCE AND ALL PERSONS WHO INSTALL, OPERATE OR MAINTAIN THE APPLIANCE MUST BE QUALIFIED AND FAMILIAR WITH THE OPERATING INSTRUCTIONS. IT IS UP TO THE USER TO TAKE PROPER CARE WHEN OPERATING THE APPLIANCE.

WARNING

DO NOT REMOVE WARNING SIGNS PLACED ON THE APPLIANCE. OBSERVE SIGNS AND LABELS TO AVOID PERSONAL INJURIES. SAFETY LABELS APPEAR AT CRUCIAL LOCATIONS ON THE APPLIANCE. FAILURE TO MAINTAIN LEGIBLE SAFETY LABELS COULD RESULT IN INJURY TO THE OPERATOR OR SERVICE TECHNICIAN.

CAUTION!

MACHINE WITH WEIGHING SYSTEM:

NEVER CARRY LOAD SENSORS BY THEIR CABLES!

AVOID ELECTRIC WELDING NEAR THE LOAD SENSORS!

AN IMPACT MIGHT CAUSE PERMANENT DAMAGE TO THE LOAD SENSORS! AVOID UNEQUAL LOAD DISTRIBUTION BETWEEN THE LOAD SENSORS WHEN PUTTING THE MACHINE DOWN.

WHEN THE POWER OF THE MACHINE IS SWITCHED ON, THE SYSTEM NEEDS A 10-MINUTES WARM-UP TIME. THIS IS IMPORTANT WHEN THE POWER HAS BEEN OFF FOR MORE THAN FIVE MINUTES. IGNORING WARM-UP MIGHT RESULT IN A MAJOR ERROR IN WEIGHING.

WARNING

THE RECYCLING TANK MUST BE INSTALLED BY QUALIFIED AND AUTHORISED TECHNICIANS ONLY. THE INSTALLATION MUST BE DONE IN ACCORDANCE WITH ALL LOCAL STANDARDS AND REGULATIONS.

Operation

Operation

Symbols on the machine



Caution, dangerous electrical tension, electrical devices



Caution, other danger, read and follow written instructions



Caution - Increased temperature



Do not close or cover



The machine hot air outlet



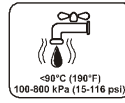
In case of emergency press the emergency button to stop the machine



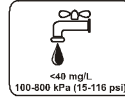
Steam



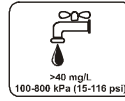
Main switch



Warm water inlet
(red color of the label)



Soft cold water inlet
(light blue color of the label)



Hard cold water inlet
(dark blue color of the label)



The holes to be drilled not punched



Lighting



Steam heating



Electrical heating

541845

Operation

Xcontrol Plus



START
(ADVANCE function)



STOP (program interruption)



CONFIRM THE SELECTION



CANCEL THE SELECTION



MOVE UP



MOVE DOWN



SELECTION NO
DECREASING THE TIME SEQUENCE



SELECTION YES
INCREASING THE TIME SEQUENCE



INFO
(overview of available wash programs and
program information)



SERVIS (servicing information)



DELAYED START FUNCTION
(the delay starts running upon the pressing
of the "start" button)

0 to 9 NUMERIC KEYPAD

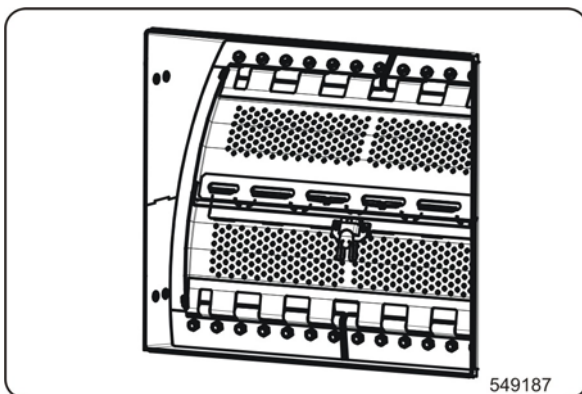
Operation

Before washing

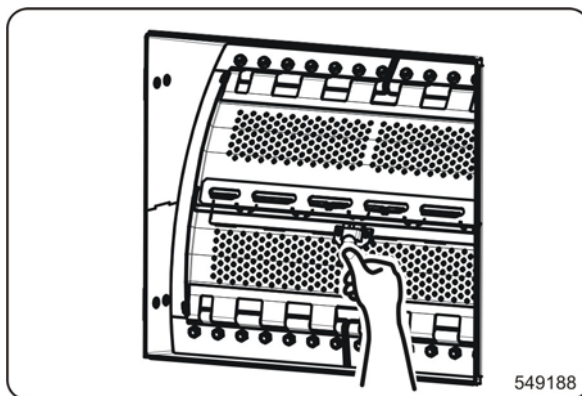
- Sort the linen according on the temperature and the instructions of the manufacturer of the fabrics. Check if there aren't any strange objects between the linen like nails, screws, needles, etc. in order not to damage the washer-extractor or the linen. Turn sleeves of shirts, blouses, etc. inside out. To get a better washing result, you have to unfold the fabrics and mix the bigger and smaller pieces of fabrics.
- **CAUTION!**
The optimal washing load is determined by the filling factor. The proper filling factor is determined by the type of linen and other factors. Cotton textiles normally require a filling factor of 1:10-1:13, which is a full drum load. Put the linen in the drum depending on the maximum capacity of the washer. Do not overload the washer extractor. Overloading the machine can lead to a bad wash result. Half washing loads can obstruct a proper function. Synthetics and blended fabrics usually require a filling factor of 1:18-1:20, which is half drum load. Loading more will reduce the wash result and can damage the linen.

Placing the laundry into the machine

- Put the main switch into the position "ON". The display of the control panel lights up. If it does not light up, check whether any of the emergency stop buttons are activated – release them.
- The following is displayed: "**Select program**", "**Door position**" and the symbol "**arrow down**".
- Press the "arrow down" symbol. The drum then turns slightly and stops in a position which allows opening of the door (inner door) on the side of the machine where the door for loading dirty laundry is located.
- Use the door handle and open the door of the loading side (outer door).

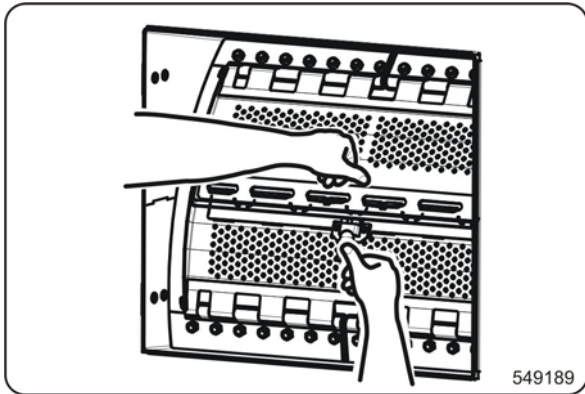


- Closed drum door (inner door).

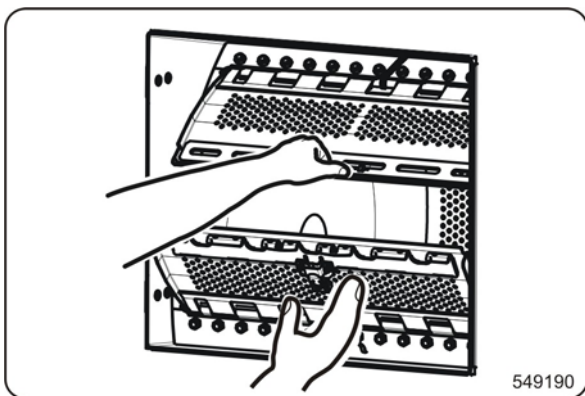


- First phase of opening the door. Press safety pin spring.

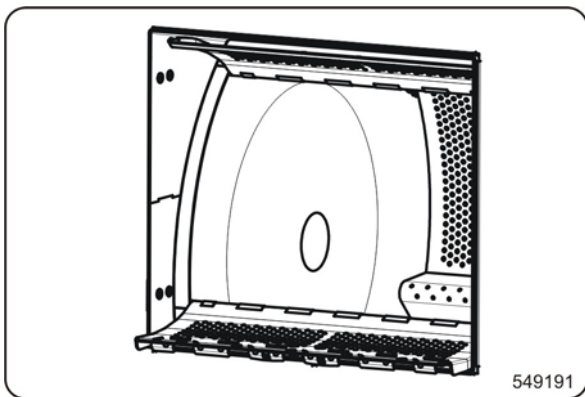
Operation



- Using both hands force push both door parts inside until the latches on one door part are released from the openings on the other door part.



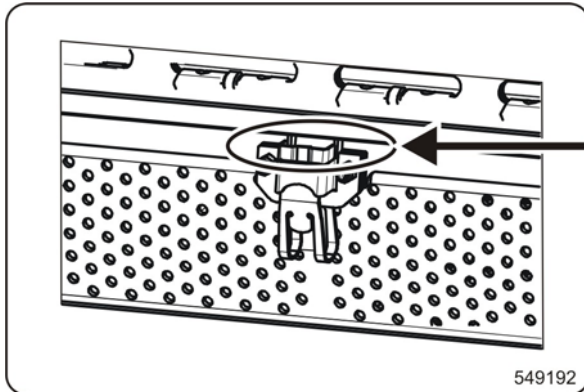
- Opening the door, while reducing the hand pressure on the door.



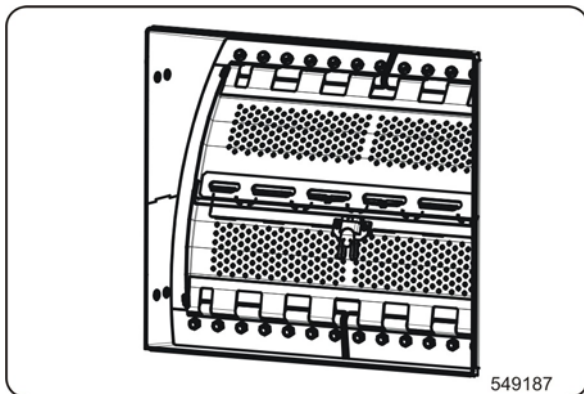
- Drum door opened. Open the upper part of the drum door into the uppermost position - you must overcome the force of its spring. Thus, the upper part of door is secured.

Operation

- Version with weighing system: Before you insert the laundry, always tare (set zero weight) by pressing the 0-button.
- Insert the laundry into the drum.
- Close the drum door (inner door) by following the same procedure as for opening the door but in reversed order.



- Check proper securing the door by the safety pin spring, so that it avoids pushing the door inside the washing drum. This means that it is not possible to open the door again without another push of the safety pin spring. There must be a gap between the safety pin spring and the upper door edge.



- Closed drum door (inner door).

⚠ WARNING!
MAKE SURE THAT THE DRUM DOOR IS CLOSED PROPERLY. IT MEANS THAT IT IS NOT POSSIBLE TO OPEN THE DOOR AGAIN WITHOUT ANOTHER PUSH OF THE SAFETY PIN SPRING. MAKE SURE THAT THERE IS A GAP BETWEEN THE SAFETY PIN SPRING AND THE UPPER DOOR EDGE.

- Use the door handle and close the door of the loading side (outer door). It is not necessary to turn the handle completely around. Otherwise slipping of the safety system would occur. When the machine is operating, the safety system serves as a protection against violent handling and the possibility of the door lock sustaining damage.

Add detergents

- Fill the soap dispenser depending of the chosen program.



- Pre-wash in the soap dispenser **I** : detergent for the pre-wash.
- Main wash in the soap dispenser **II** : detergent for the main wash.
- Main wash in the soap dispenser **III** : liquid detergent for the main wash or liquid bleach etc.
- Fabric softener or starch in the soap dispenser ***** : liquid fabric softener or liquid starch for the last rinse.

Program selections

- Choose one of the available wash programs, best corresponding to the quality of the garments and allowed wash temperature in the wash load. Enter the wash program number utilizing the numeric keypad. The selection of the program determines the temperature and the time for washing and rinsing.

Operation

- **NOTE:**

- For locking a program mode, changing factory settings and possibilities of program changes and setup - see Programming manual.

Wash programs overview

Wash program 1	Hot wash intensive	90°C	
Wash program 2	Warm wash intensive	60°C	
Wash program 3	Coloured wash intensive	40°C	
Wash program 4	Bright wash intensive	30°C	
Wash program 5	Woollens	15°C	
Wash program 6	Hot wash	90°C	ECONOMY level
Wash program 7	Warm wash	60°C	ECONOMY level
Wash program 8	Coloured wash	40°C	ECONOMY level
Wash program 9	Bright wash	30°C	ECONOMY level
Wash program 10	Eco hot wash	90°C	ECONOMY level
Wash program 11	Eco warm wash	60°C	ECONOMY level
Wash program 12	Eco color wash	40°C	ECONOMY level
Wash program 13	Eco bright wash	30°C	ECONOMY level
Wash program 14	Extraction		low speed
Wash program 15	Extraction		high speed
Wash program 16	Sport	60°C	
Wash program 17	Mops	60°C	
Wash program 18	Horse cloths	40°C	
Wash program 19	Jeans	60°C	
Wash program 20	Starching	-	

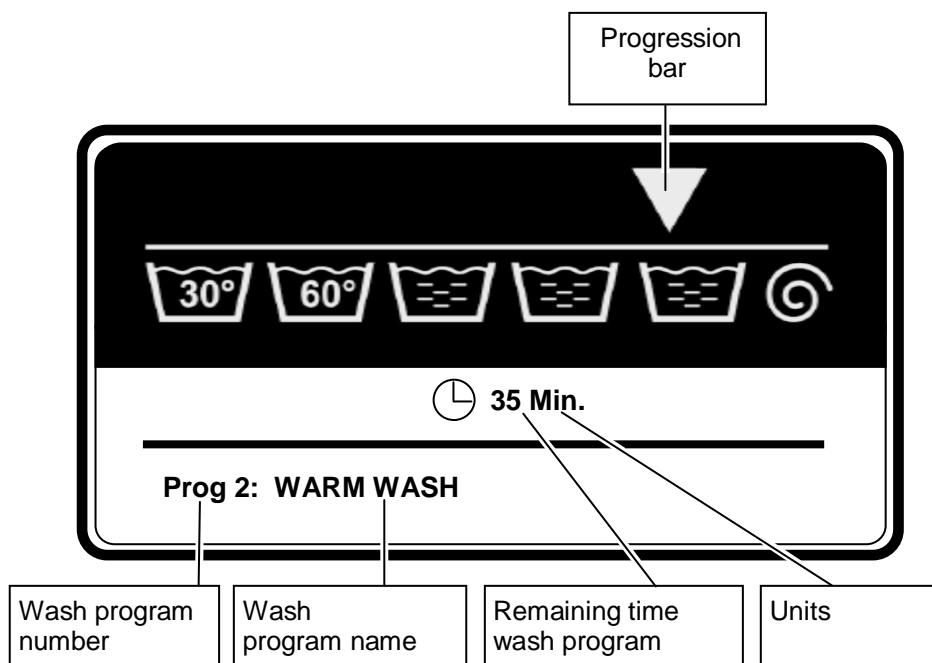
- **NOTE:**

- It is advisable to use only detergents with “foam breaker”, which can easily be found in retail shops. We do not recommend using gel detergents. The dosage of soap to use is generally mentioned on the packing. An overdose of detergent can lead to poor wash results and “suds”, overflow which can damage the machine.
- Take care that the lid of the soap dispenser is closed if the machine starts.

Start the washer

- After you have selected the required wash program, push the **START** button. The following message will appear on the display: “**Did you lock the inner door?**”. If you are sure the inner door is locked correctly you confirm that by pushing of **YES** button. The wash cycle starts. In case you are not sure of proper locking, push the **NO** button – the programme will not start.
- If you enter a number that does not correspond to any of the available programs, the display shows the message “**INVALID**”. During the wash cycle the user can follow the progress of the wash sequence and the remaining wash cycle time on the display.
- During the wash cycle, the indication light is on (light situated on the side of machine where the door for removing clean laundry is located).

Operation



End of wash cycle

- The wash cycle time is counted down to zero on the display. When the wash cycle finishes, the message **UNLOAD** is displayed on the side of the machine where the door for loading dirty laundry is located. An indicating light flashes on the side of the machine where the door for removing clean laundry is located. The drum then turns slightly and stops in a position which allows opening of the door (inner door) on the side of the machine where the door for removing clean laundry is located.
- Use the door handle and open the door of the unloading side (outer door).
- Remove the laundry. Close the drum door (inner door) and the door of the unloading side (outer door).

How to remedy incorrect position of drum

- See chapter "How to remedy incorrect position of drum".

Power cut

- If a power cut occurs in an idle condition of the machine and no wash program is running, the machine remains in the idle condition.
- If a power cut occurs during the wash process, the message "**CONTINUE / STOP**" appears as soon as the power supply is restored. If you press the "**STOP**" button, the wash program will be cancelled. If you press the "**START**" button, the wash program will continue beginning from the step in which the program was interrupted.

⚠ WARNING!
BEFORE YOU OPEN THE DOOR, MAKE SURE THAT THE DRUM IS COMPLETELY STILL AND THAT THE WATER HAS DRAINED FROM IT.

How to open the door by failure

- See chapter "Unblocking of the door lock in case of emergency".

Operation

First service at technical problem

N°	Failure message	Failure	Action	Fault occurrence
E2	No Drain End	Drain failure	Full Stop + tumble	Draining
E3	Tilt Fault	Safety switch activated	Full stop + tumble	Whole cycle, revolutions under the distribution revolutions level.
E4	Imbalance	Safety switch activated during the transition from distribution into spin sequence.	Skip + continue	Spin
E5	Tilt High Sp	Safety switch activated at high revolutions.	Full stop + safety time	High revolutions
E6	Door Switch	Door switch failure	Full stop + safety time	Whole cycle
E7	Door Coil	Door lock failure	Full stop + safety time	Whole cycle
E8	Door Start	Door lock failure in the beginning of cycle	Don't start	In the beginning of cycle
E9	Door End	Door lock opening failure at the end of cycle.	Don't start	End cycle
E11	No Fill	Fill failure	Full stop + request for Continue	While filling
E12	OverFill	Failure due to water overflow (water level above the pre-set value)	Full stop + tumble	After filling or during the filling procedure.
E13	No Heating	Heating failure	Full stop + tumble	While heating
E14	Heat. Time	Heating time failure	Full stop + request for continue	While heating
E15	Too Hot	Too Hot	Full stop + tumble	While heating
E21	OverFlow	Water level too high	Full stop + tumble	After filling or during the filling procedure
E24	Level Sens.	Defective level sensor	Continue + Don't start	Before start up
E25	Temp Sensor	Defective temperature sensor	Continue + Don't start	Before start up
E26	Mitsub. Code	Undefined frequency inverter error code	Full stop + tumble	Whole cycle
E27	Invert.Com.	Communication fault inverter	Full stop + safety time	Whole cycle
E28	THT time	THT Time out	Full stop + safety time	At spin sequence
E29	OV3/OP time	OV3 Time out / E.OP	Full stop + safety time	At spin sequence
E31	Load Par	Initialization fault frequency inverter	Don't start	When setting up parameters
E32	Verify Par	Verification fault frequency inverter parameters	Don't start	At loading parameters
E35	Wrong Softw	Wrong software version	Don't start	New software version
E36	Imbalance	Unbalance detection system activated.	Reduction of spinning sequence revolutions. For Info only.	Spinning sequence

Operation

N°	Failure message	Failure	Action	Fault occurrence
E37	No Drain Spr	Drain failure at the Spray Sequence	Full stop + tumble	Spray Sequence
E38	No Recycle	The tank with recuperated water is empty	Warning at the End. Front soap dispenser Mach. only	Wash step
E39	Out of Soap	The Soap Supplies are running Out of Soap	For Info only	Wash step
E41	Service Due	Service Due Warning	For Info only Open door = reset	End cycle
E42	Connection	No Network Connection	For Info only	Data Transfer Networking
E43	Voltage Par	Wrong Voltage Range Selection	Make correct selection	Configuration menu
E44	Model Type	Incorrect selection of machine type	Make correct selection	Configuration menu
E80	SoapTimeOut	Incorrect signal for liquid detergent dispensing	Full stop + tumble.	Whole cycle
E81	No Reheat	Heating Failure	Full stop + tumble.	Wash Step (Traceability only)
E82	No Refill	Refill failure	Full stop + request for Continue	Wash Step (Traceability only)
E83	Power Interruption	No successful wash cycle termination	Info that the wash cycle has to be repeated.	Abnormal Cycle Termination (Traceability only)
E85	RTC Reset Bat	Real Time Clock, No Battery or battery low power	For Info only.	End cycle (Traceability only)
E100	Weigh No Comm	Communication fault weighing system	Full Stop Tumble	(machines with weighing system only)
E101	Weigh Low	Weight machine is too low	Don't Start	(machines with weighing system only)
E102	Weigh High	Weight machine is too high	Don't Start	(machines with weighing system only)
E103	Weigh Balance	Weight is not balanced over 4 load cell's.	Don't Start	(machines with weighing system only)
E104	Weigh Overload	Weight on individual load cell exceeds max.	Full Stop Tumble	(machines with weighing system only)
E300-E353	MITS ERR	Specific Mitsubishi Inverter Alarm	Full stop + safety time	Whole cycle
E500-E525	MEMORY ERR	Memory Error	Full stop + safety time	Any time
E550	TRACEYBILITY WRITE	Internal memory Error data for traceability	For Info only	Traceability function, whole cycle
E551	TRACEYBILITY FULL	Internal Traceability memory is full	For Info only	Traceability function, whole cycle
E560-E563	USB ERRORS	Errors in communication with USB flash disk	For Info only	Only in Advanced menu Data Export/Import
E600-E628	SOFTW. ERR	Software Error	Full stop + safety time	Any time

Technical data

Technical data

MACHINE	kg / lb	18 / 40	24 / 55
Inner drum			
volume	l	180	240
diameter	mm / inch	750 / 29.53	750 / 29.53
Drum speed			
wash		42	42
extraction	rpm	939	939
Heating			
electricity	kW	12 / 18	18
steam	bar	3 - 8	3 - 8
hot water	°C / °F	90 / 194	90 / 194
G-factor		370	370
Net weight	kg / lb	430 / 948	460 / 1014
Water valves connection	BSP	3 x DN20 ¾"	3 x DN20 ¾"
Water pressure	kPa	100 - 800	100 - 800
Recommended water pressure	kPa	300 - 500	300 - 500
Capacity	l/min	20	20
Drain valve	outer ø mm	76	76
Flow amount with drain valve	l/min	210	210
Steam valve connection	BSP	DN15 ½"	DN15 ½"
Steam pressure	kPa	100 - 800	100 - 800
General data			
Ambient temperature	°C / °F	5 do 35 / 41 do 95	
Relative humidity		30% to 90% without condensation	
Height above sea level	m / ft	do 1000 / 3280	
Storage temperature	°C / °F	1 do 55 / 34 do 131	
Maximum static load on floor	kN	5.32	5.85
Maximum dynamic load on floor	kN	4.5 ± 0.7	4.9 ± 1.2
Frequency of dynamic load	Hz	15.65	15.65

Table 1

Technical data

Machines 18-24 kg / 40-55 lb – standard version

18 kg / 40 lb

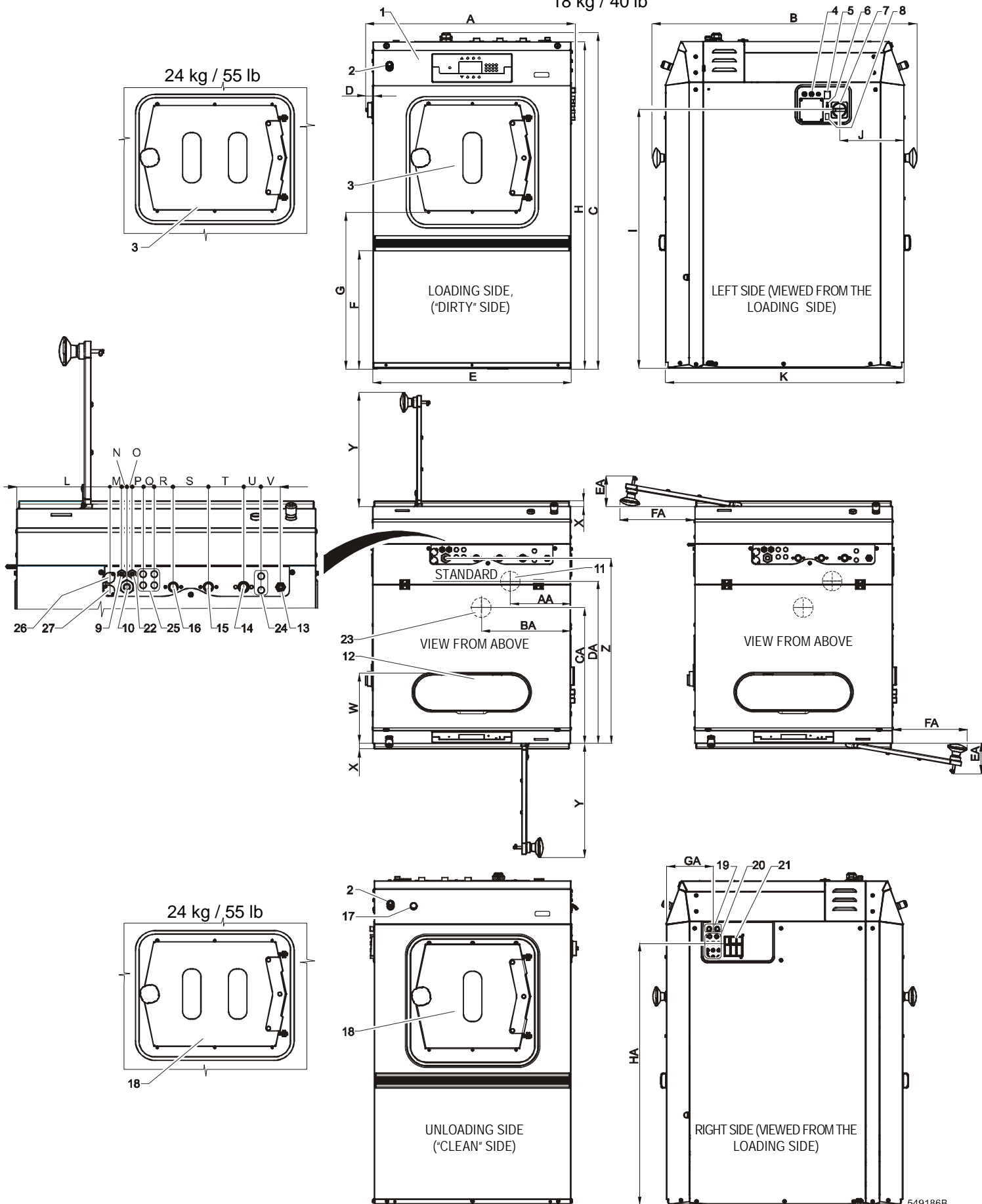


Figure 1

549186B

Technical data

1. Control panel
2. Emergency stop button "CENTRALSTOP"
3. Door for loading dirty laundry (outer door), i.e. the "dirty side", door opening (width x high):
18 kg / 40 lb: 376 x 325 / 14.8" x 12.79",
24 kg / 55 lb: 496 x 325 / 19.52" x 12.79"
4. Main switch
5. Heating change-over switch (electric heating, steam heating), (on request)
6. USB port, (on request)
7. Fuses
8. Trace-Tech connection (RS485), (on request)
9. Electrical connection to liquid soap pumps
10. Electrical supply connection
11. Drain, (standard 1 x 3")
12. Soap dispenser
13. Steam connection (steam version) ½"
14. Cold water soft
15. Cold water hard
16. Hot water
17. Signal of machine running
18. Door for removing clean laundry (outer door), i.e. the "clean side"
19. Inlet of water from the recycle (external diameter 19)
20. Connection liquid soap
21. Air relieve
22. Cable inlet - cable for control of the valve or pump of water from the water recycle (on request for water recycle)
23. Drain into the water recycle, (1 x 3", on request for water recycle)
24. Additional inlets of liquid soap detergents, placed on the panel (on request)
25. Lubrication system – external placement (on request), (see chapter "Lubrication")
26. Connector for connecting visual end of cycle indication, unloading side ("clean side"), (on request)
27. Connector for connecting visual end of cycle indication, loading side ("dirty side"), (on request)

MACHINE	A	B	C	C(1)	D	E	F	F(1)	G	G(1)	H	H(1)	I	I(1)	J	K	L	M	N	O
18/40	900	1145	1455	1605	31	850	515	665	655	805	1423	1573	1127	1277	277	1025	263	35	15	15
	35.43					33.46			25.79	31.69										
24/55	1020	45.08	57.28	63.19	1.22	970	20.28	26.18	675	825	56.02	61.93	44.37	50.27	10.91	40.35	10.35	1.38	0.59	0.59
	40.16					38.18			26.58	32.48										

MACHINE	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BA	CA	DA	EA	FA	GA	HA	HA(1)
18/40	31	32	54	100	100	50	55	300	25	496	803	259	384	588	703	133	321	202	1150	1300
	1.22		2.13			1.97				19.53		10.19	15.11			5.24	12.64			
24/55	76	1.26	99	3.94	3.94	80	2.17	11.81	0.98	619	31.61	252	397	23.14	27.67	153	442	7.95	45.28	51.18
	2.99		3.90			3.15				24.37		9.92	15.62			6.02	17.40			

(1) – Version with weighing system or with a steel base

Table 2 – Layout of machine components (dimensions stated in mm / inches)

Technical data

Machines 18-24 kg / 40-55 lb – version with weighing system and drain placed underneath the machine in the central part (on request)

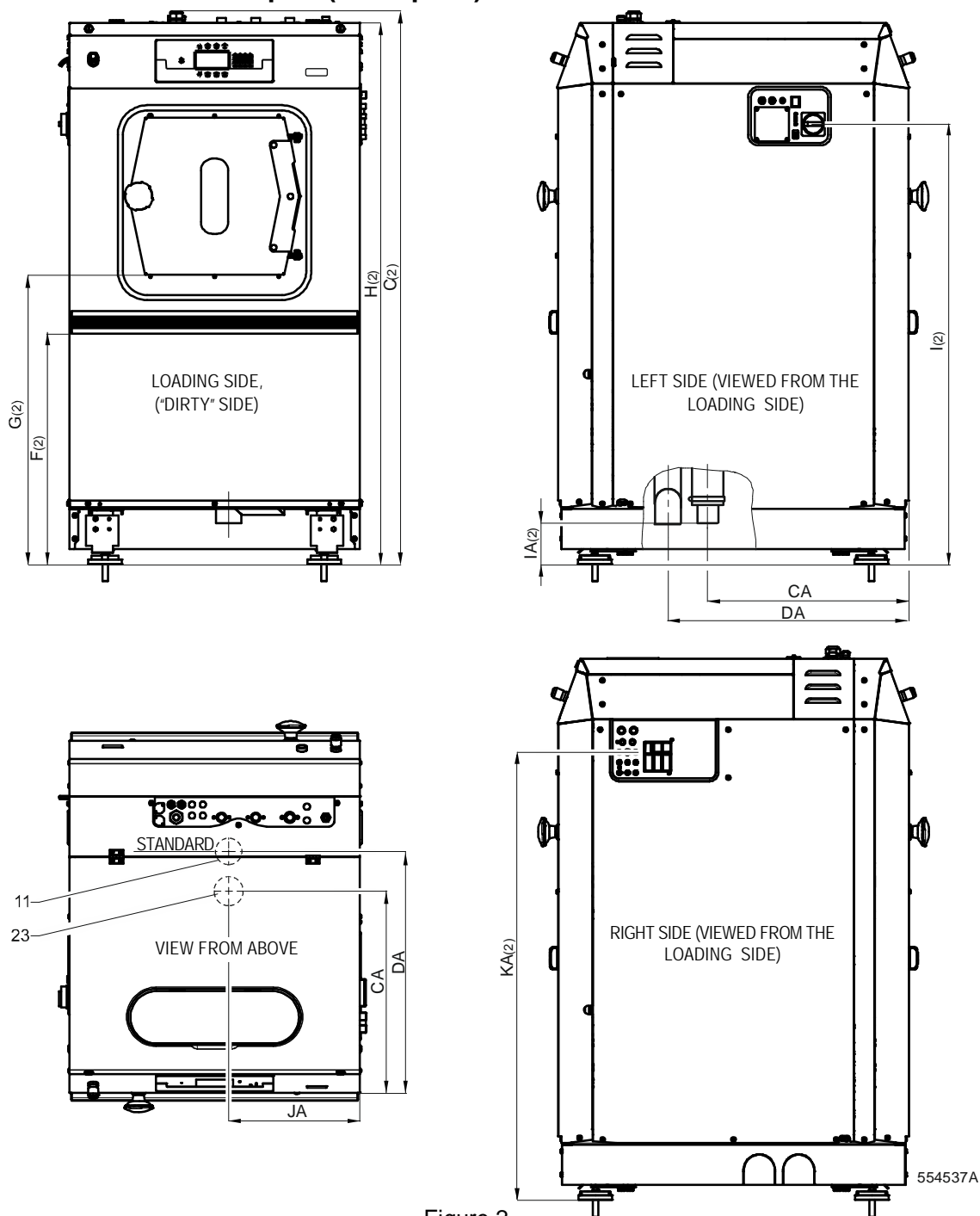


Figure 2

MACHINE	C(2)	F(2)	G(2)	H(2)	I(2)	CA	DA	IA(2)	JA	KA(2)
18/40	1614	674	820	1582	1286	see Table 2		~ 120	384	1309
	63.54	26.54	32.28	62.28	50.63				15.12	
24/55			840					~ 4.72	444	51.54
			33.07						17.48	

(2) – version with weighing system and drain placed underneath the machine in the central part – dimensions specified with anchoring pads (should you need dimensions without the anchoring pads, deduct 9 mm), other dimensions – see Table 2

Table 3 – version with weighing system and drain placed underneath the machine in the central part (on request), (dimensions stated in mm / inches)

Technical data

Machines 18-24 kg / 40-55 lb – version with weighing system, with drain placed underneath the machine in the central part and with a handling base (on request)

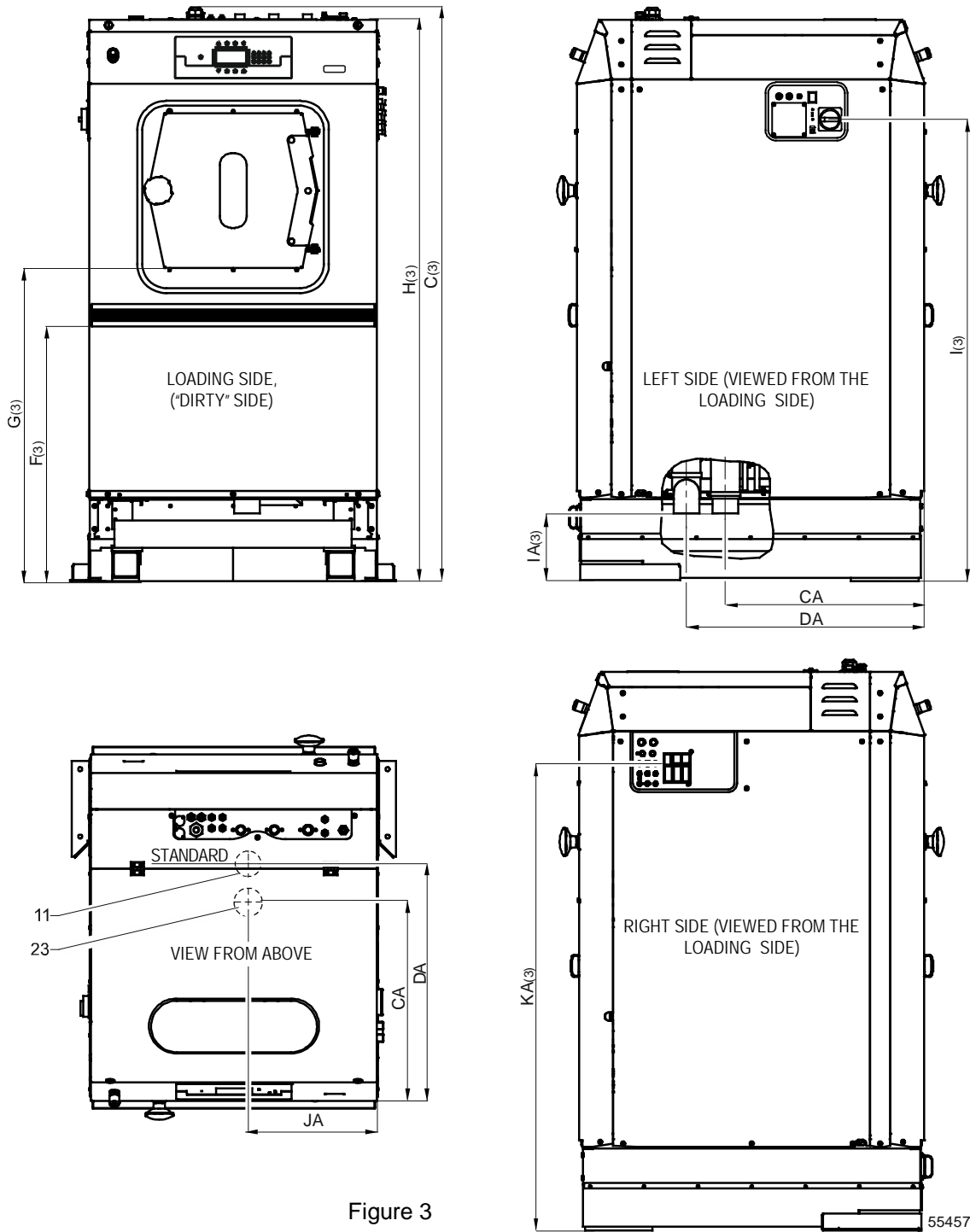


Figure 3

MACHINE	C(3)	F(3)	G(3)	H(3)	I(3)	CA	DA	IA(3)	JA	KA(3)
18 / 40	1695	755	901	1663	1367	see table 2		~ 201	384	1390
			35.47						15.12	
24 / 55	66.73	29.72	921	65.47	53.82			~ 7.91	444	54.72
			36.26						17.48	

(3) – version with weighing system and drain placed underneath the machine in the central part and with a handling base – other dimensions – see Table 2

Table 4 – version with weighing system and drain placed underneath the machine in the central part and with a handling base (on request), (dimensions stated in mm / inches)

Technical data

Machine 18 kg / 40 lb				not standard			
Phase	Voltage [V]	Frequency [Hz]	Total power [kW]	Fuse [A]	Motor output [kW]	Heating [kW]	Internal protection IP
1	200-240	50/60	2.4	20	2.2	0	43
3	200-240	50/60	2.4	20	2.2	0	43
3	200-240	50/60	13.6	40	2.2	12	43
3	200-240	50/60	19.6	63	2.2	18	43
3	380-415 + N	50/60	2.4	20	2.2	0	43
3	380-415 + N	50/60	13.6	25	2.2	12	43
3	380-415 + N	50/60	19.6	32	2.2	18	43
3	380-415	50/60	2.4	16	2.2	0	43
3	440-480	50/60	2.4	16	2.2	0	43
3	380-415	50/60	13.6	25	2.2	12	43
3	440-480	50/60	13.6	25	2.2	12	43
3	380-415	50/60	19.6	32	2.2	18	43
3	440-480	50/60	19.6	32	2.2	18	43

Table 5

Machine 24 kg / 55 lb				not standard			
Phase	Voltage [V]	Frequency [Hz]	Total power [kW]	Fuse [A]	Motor output [kW]	Heating [kW]	Internal protection IP
1	200-240	50/60	3.2	20	3	0	43
3	200-240	50/60	3.2	20	3	0	43
3	200-240	50/60	20.2	63	3	18	43
3	380-415 + N	50/60	3.2	20	3	0	43
3	380-415 + N	50/60	20.2	32	3	18	43
3	380-415	50/60	3.2	16	3	0	43
3	440-480	50/60	3.2	16	3	0	43
3	380-415	50/60	20.2	32	3	18	43
3	440-480	50/60	20.2	32	3	18	43

Table 6

Installation

Installation

Transportation and unpacking

- The machine is delivered bolted onto the transport pallet and packed in a shrink-wrap foil or box.
 - Remove packing from the machine.
 - Remove side panels, see Figure 4., pos. 1. Remove the bolts between the machine and pallet.
 - Mount side panels.
 - When the machine is lifted off the pallet: Make sure that the machine does not come down on the floor with either of the corners first. The panel of the machine can be damaged.
 - Place the machine on its final position – see Figures 5, 6.
 - The machine also comes with transport safety devices (four plate angles between the support and the drum).
- In order to remove the safety devices:
 - Remove side panels, see Figure 4., pos. 1.
 - Remove metal transport holders, pos. 2, 3.
 - Mount side panels.
- The machine may not be moved with the transport holders removed. Save the transport securities for future use.

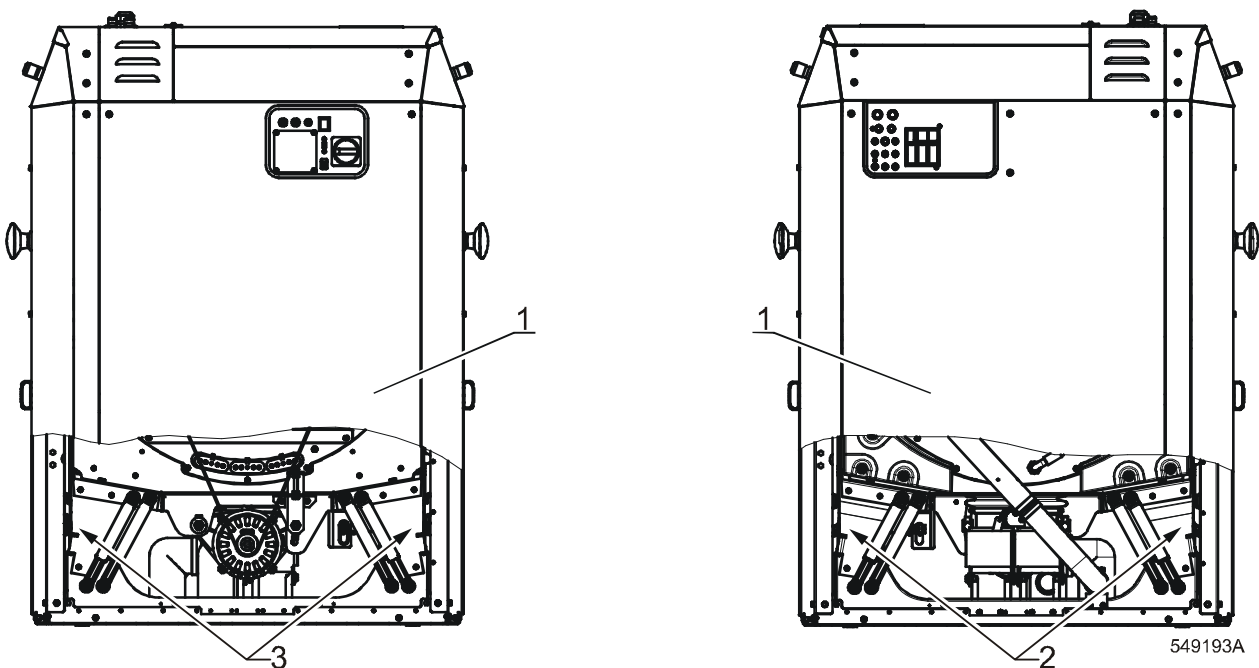


Figure 4

Installation

Placement into hygienic barrier

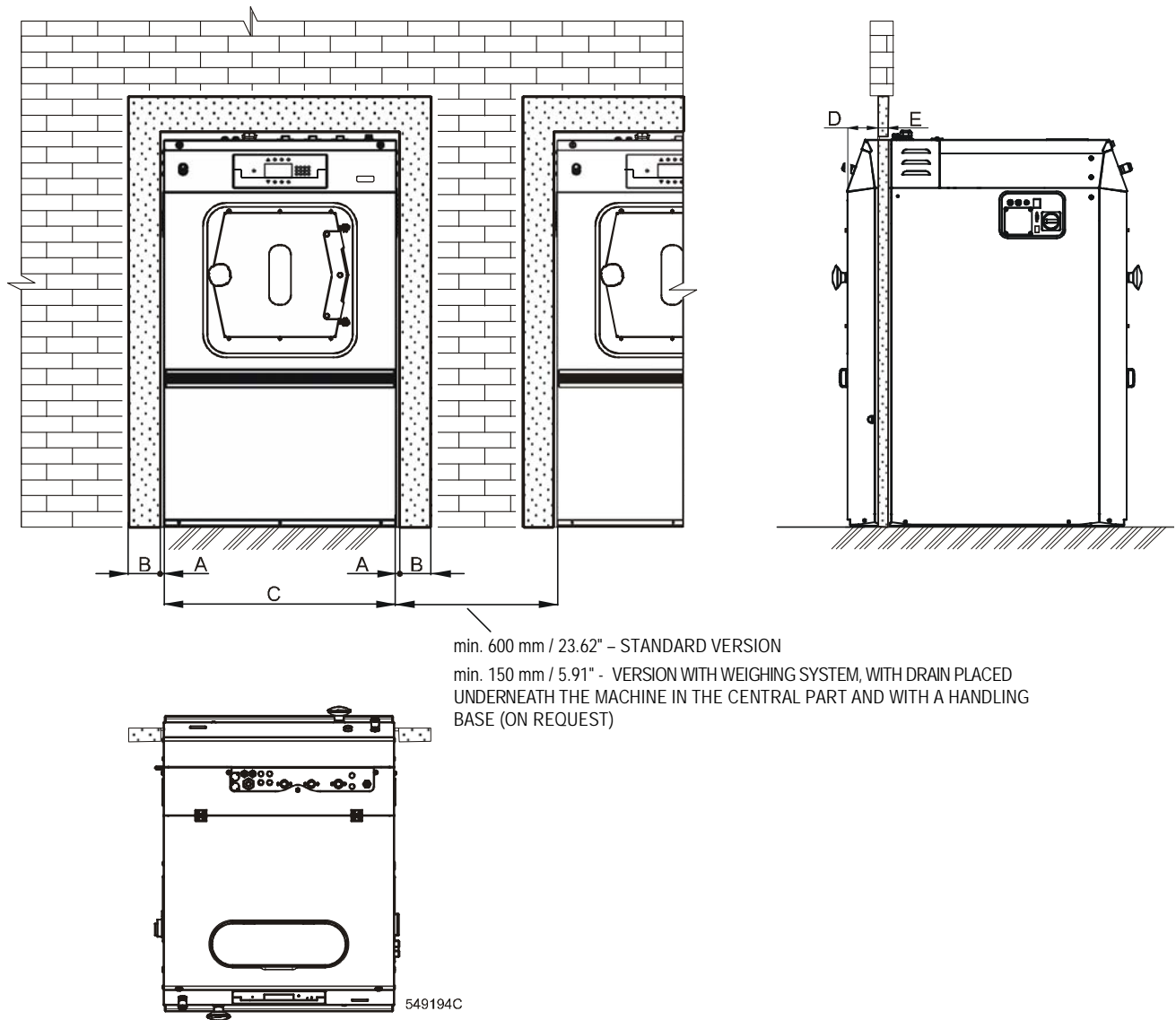


Figure 5

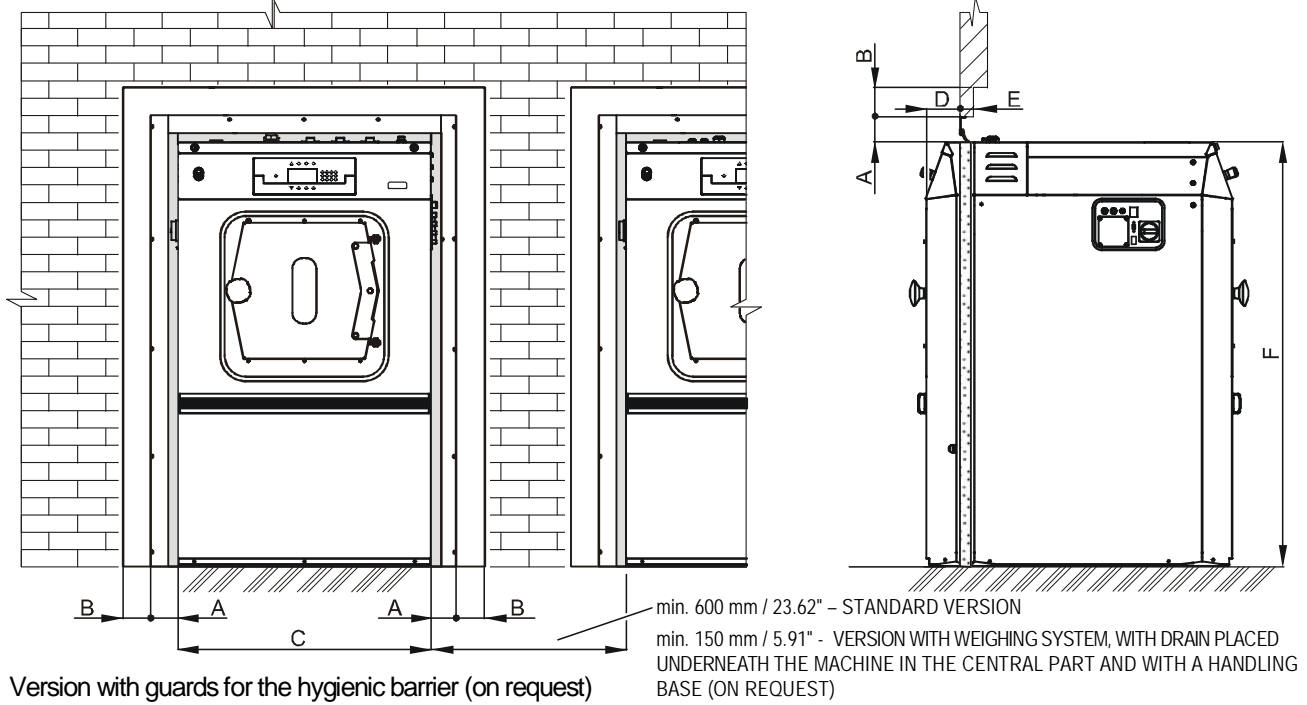
MACHINE	A	B	C	D	E
18/40	25	175	see Table 2,	110	max. 50
24/55	0.98	6.88	dimension "E"	4.33	max. 1.97

Table 7 – (dimensions stated in mm / inches)

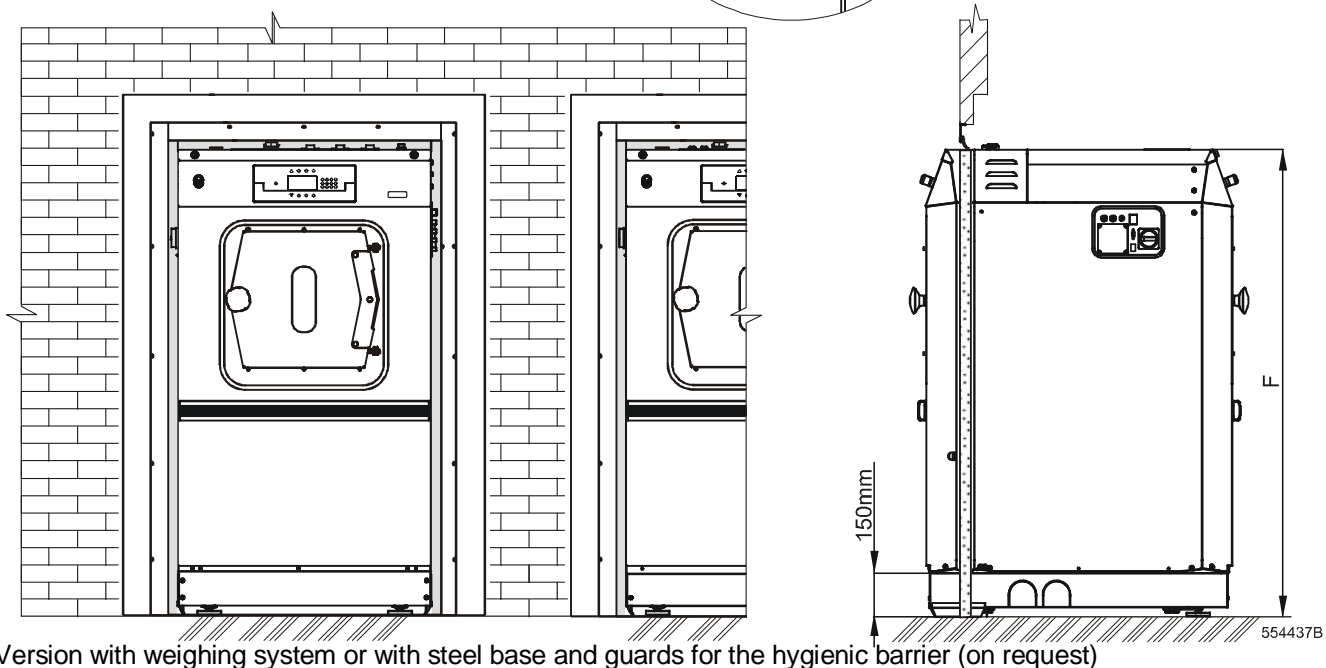
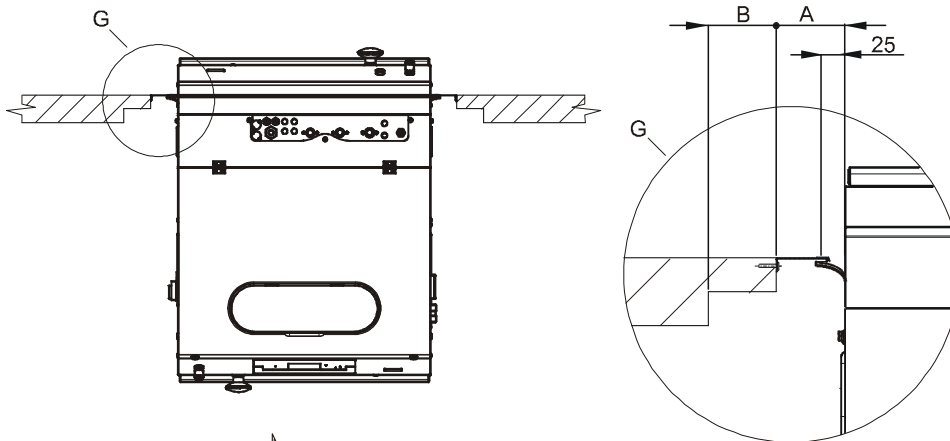
- Fill up the space between the wall and machine with plaster cardboard layer of maximum width 50mm / 1.97". Fix the plaster cardboard to the wall by means of a thin-profiled structure. Fill up the gap between the machine and structure with foam rubber or any other compressible material, which will not affect the weighing process.

Installation

Placement into hygienic barrier with guards – on request



Version with guards for the hygienic barrier (on request)



Version with weighing system or with steel base and guards for the hygienic barrier (on request)

Figure 6

Installation

MACHINE	A	B	C	D	E	F
18/40						see Table 2 – dimension “H”, or “H (1)”
24/55	100 3.94	100 3.94	see Table 2, dimension “E”	110 4.33	max. 50 max. 1.97	see Table 3 – dimension “H (2)” see Table 4 – dimension “H (3)”

Table 8 – (dimensions stated in mm / inches)

- Fill up the space between the wall and machine with plaster cardboard layer of maximum width 50mm / 1.97". Fix the plaster cardboard to the wall by means of a thin-profiled structure. Fill up the gap between the machine and structure with foam rubber or any other compressible material, which will not affect the weighing process.

Installation

Mechanical installation

Standard version and version with a steel base (plinth)

⚠ WARNING!

ALWAYS CONSULT THE STATIC REQUIREMENTS WITH A STATIC ENGINEER IN ORDER TO MEET THE REQUIREMENTS OF PERMISSIBLE LOADS, VIBRATIONS AND NOISE LEVEL IN THE BUILDING! THE MANUFACTURER DOES NOT RECOMMEND INSTALLING THE WASHING MACHINE IN A ROOM WITH A CELLAR UNDERNEATH OR ON A FLOOR HAVING ROOMS UNDERNEATH. IT IS OF UTMOST IMPORTANCE THAT THE MACHINE IS PLACED IN LEVEL, FROM SIDE TO SIDE AS WELL AS FRONT TO REAR. IF THE MACHINE IS NOT PROPERLY LEVELED, IT MAY RESULT IN OUT-OF-BALANCE WITHOUT A REAL OUT OF BALANCE IN THE DRUM. NEVER INSTALL THE MACHINE ON SURFACE CONSISTING OF VINYL!

- For the version with weighing system or version with weighing system and drain underneath the machine in the central part see the following chapters.
- Secure the machine to the floor by two anchoring bolts. The anchoring bolts are not supplied with the machine.
- Drill 2 holes of diameter 20 mm / 0.78" and depth 95 mm / 3.74" in the positions shown (Figure 7) for the anchoring bolts (on request).

“○” - Drilling points for anchoring bolts

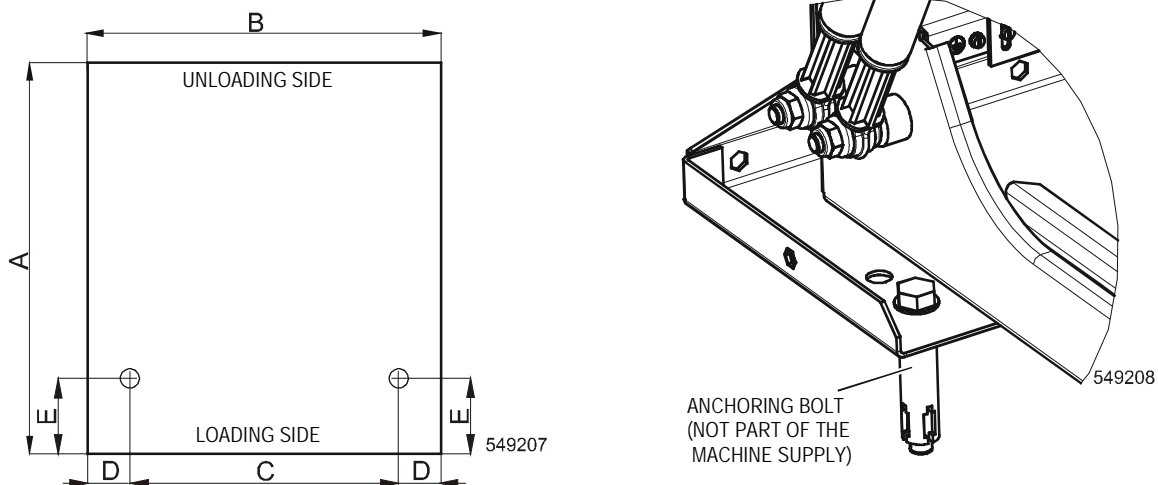


Figure 7

Mechanical installation					
MACHINE	A	B	C	D	E
18 / 40	see Table 2, dimension "K"	see Table 2, dimension "E"	660	95	215
24 / 55			795	87,5	
			25.98	3.74	8.46
			31.29	3.44	

Table 9 – (dimensions stated in mm / inches)

- The machine shall be lifted in the bottom frame.
- Place the machine over the two drilled holes.
- Check that the machine is in level. If not, use appropriate washers to level it up.
- Mount the anchoring bolts in the holes drilled in the floor. Fit the washers and nuts, and tighten well.

Installation

Mechanical installation - version with weighing system (on request)

- Lift up the machine. Install the stands (1) underneath the machine.
- Install load sensors (2) with their rubber feet (3) and sensor guards (9) – (on request) onto the stands.
- Check that all the stands and load sensors with rubber feet are correctly placed on the machine frame and tightened.
- Place the machine in the required position.
- Check that all the rubber feet of the load sensors are stable.
- Remove the transport safety devices (transport props).
- Use a water-level to check that the lower frame of machine is positioned totally level.
- Attach hoses for water supply to the machine.
 - **NOTE:** The machine is not anchored into the floor; it stands on the load sensor feet. Take into consideration that the entire machine acts as a “measuring gauge”. Therefore, anything that you place onto the machine or anything that is in physical contact with it influences the weighing process. Make sure that the water connection, as regards the pressure in the hoses, does not interfere with the weighing. The hoses must not “pull” or “push” the machine in any direction or prop it up in any way.

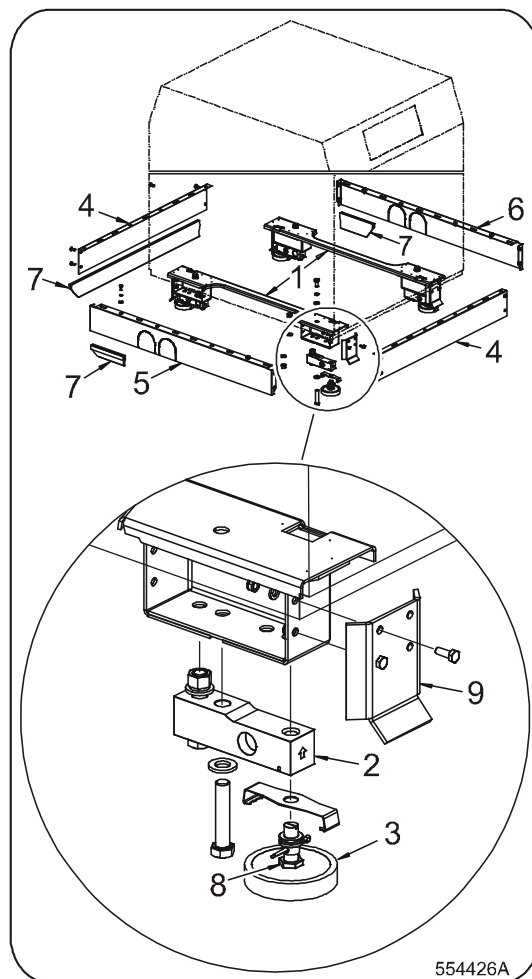


Figure 8

- Install the covers (4), (5) and (6). In case that the machine is placed in a hygienic barrier, install also the sealing profile (7).
- Check and if necessary adjust the height of the load sensor feet so that an even load distribution among all the load sensors is ensured - see Figure 9.

Advanced menu → Weighing → Load cell calibration

- X1, X2, X3, X4: **10 - 40%** – load on each load sensor in (%) must be in the specified range.
- Y1, Y2, Y3, Y4 – load of each load sensor in (kg).
- In case that the load sensors are outside the specified range, it is necessary to adjust the feet of load sensors. Each load sensor foot can be adjusted within the range of 5mm. Adjustment procedure:
 1. Lift up the machine.
 2. Loosen the nut (8) and turn the foot (3) in order to achieve the required position.
 3. Tighten the nut (8).
 4. Put the machine down and verify that the load applied to each sensor is within the specified range.

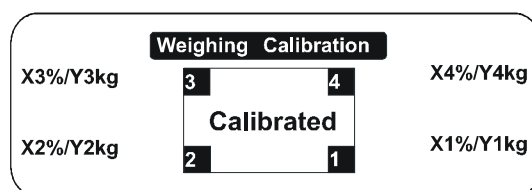


Figure 9

Installation

Mechanical installation – version with weighing system and drain placed underneath the machine in the central part (on request)

- Placement of drain underneath the machine - approximately in the middle of it - is only possible in combination with the weighing system.
- This solution enables installation of machines in a row next to one another with a minimum clearance of 120 mm / 4.72" between the machines.
- The machine can be slidden out of the row (for maintenance and servicing purposes) by means of a manual stacking truck. It is necessary to proceed very carefully when handling with the lower part of the machine so that no components get damaged.
- It is advisable to use anchoring pads (supplied on request) fixed to the floor underneath the weighing system. They serve the purpose of placing the machine back in its exact position after it has been slid out of the row. Drill 4 holes $\varnothing 16$ mm / 0.63" into the floor for the placement of the anchoring pads. These holes should be 60 mm / 2.36" deep (see Figure 10).

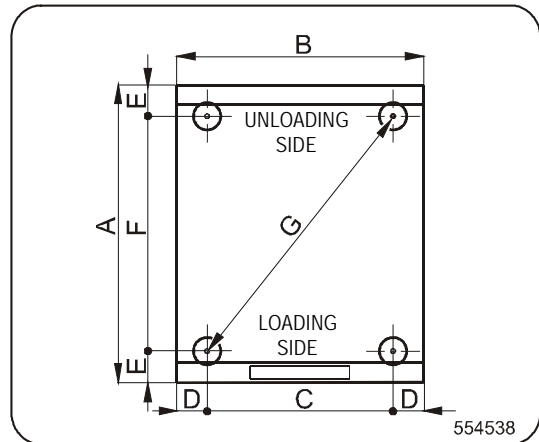


Figure 10

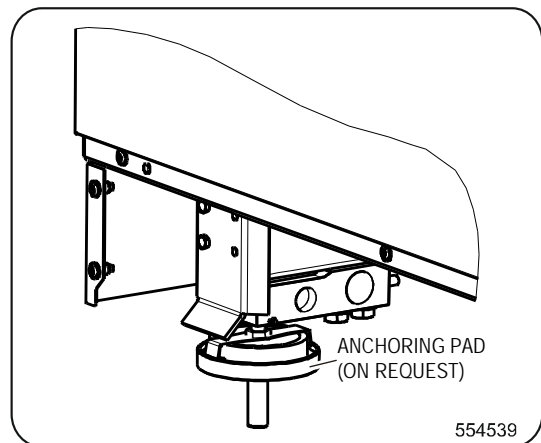


Figure 11

MACHINE	A	B	C	D	E	F	G
18/40	Table 2 dimension	Table 2 dimension	640 25.20	105 4.13	108,5 4.27	808 31.81	1031 40.59
24/55	"K"	"E"	775 30.51	97,5 3.84			1120 44.09

Table 10 – (dimensions stated in mm / inches)

Installation

Mechanical installation – version with weighing system, with drain placed underneath the machine in the central part and with a handling base (on request)

- The machines installed on a handling base may be placed in a row. There must be a minimum clearance of 150 mm / 5.9" between the machines. It is then possible to pull the machine out of the row, perform servicing and push it back into the correct position. The backstops anchored to the floor facilitate the return of the machine into the correct position – see Figure 12.

MACHINE	A	B	C	D	E	F
18/40	Table 2 dimension "K"	Table 2 dimension "E"	200 7.87	42 1.65	913 35.94	Ø 12 0.47
24/55					1033 40.67	

Table 11 – (dimensions stated in mm / inches)

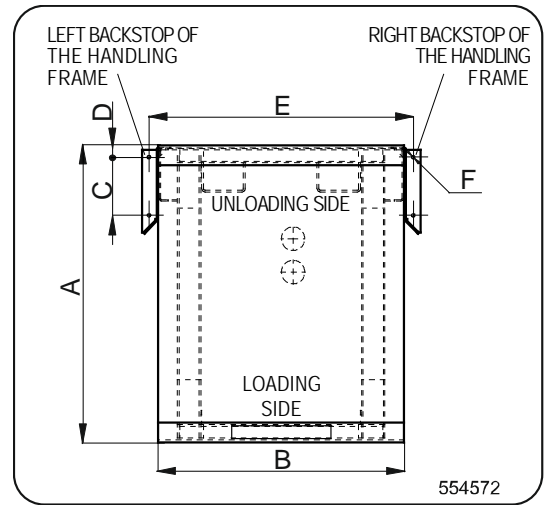


Figure 12

- The width of a pallet truck fork must not exceed 540 mm / 21.26".

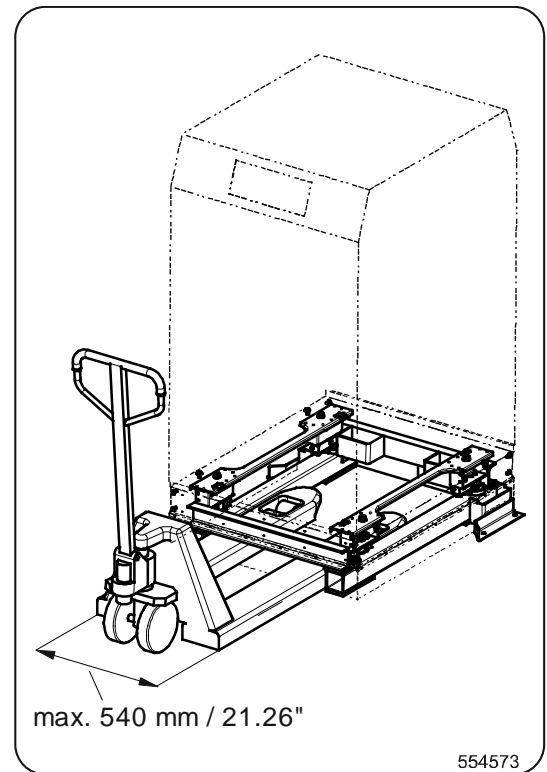


Figure 13

Installation

Water connections

- The appliance has been designed with a build-in “AB” airgap system according EN1717. Nevertheless, when potable water will be connected to the appliance an approved double check valve or some other no less effective device providing backflow prevention protection to at least fluid category three shall be fitted at the point of connections between the water supply and the appliance.
- All intake connections to the machine are to be fitted with manual shut-off valves and filters, to facilitate installation and servicing.
- Water pipes and hoses should be flushed clean before installation. After installation hoses should hang in gentle arcs.
- **All connectors present on the machine must be connected up.** The Table 12 shows the possible connection options, which will depend on the water types to be connected to the machine. Check the machine plates too.
- **All water connectors must be connected up**, otherwise the wash program will not function correctly.
- Hoses are to be of an approved type and grade and comply with IEC 61770.
- Machines shall be connected with new water hoses. To connect cold water, use a hose with plastic elbow. To connect hot water, use a hose with metal elbow. Re-used water hoses must not be used.
- The water pressure data: see - Technical data - Connections

⚠ WARNING!
IF THE WATER PRESSURE IS BELOW THE MIN. VALUE, THE WASH RESULT CAN NOT BE GUARANTEED FOR CERTAIN PROGRAM.

Water type	Water connection		
	1	2	3
cold and hot	cold	-	hot
cold soft and cold hard and hot	cold soft	cold hard	hot

Table 12

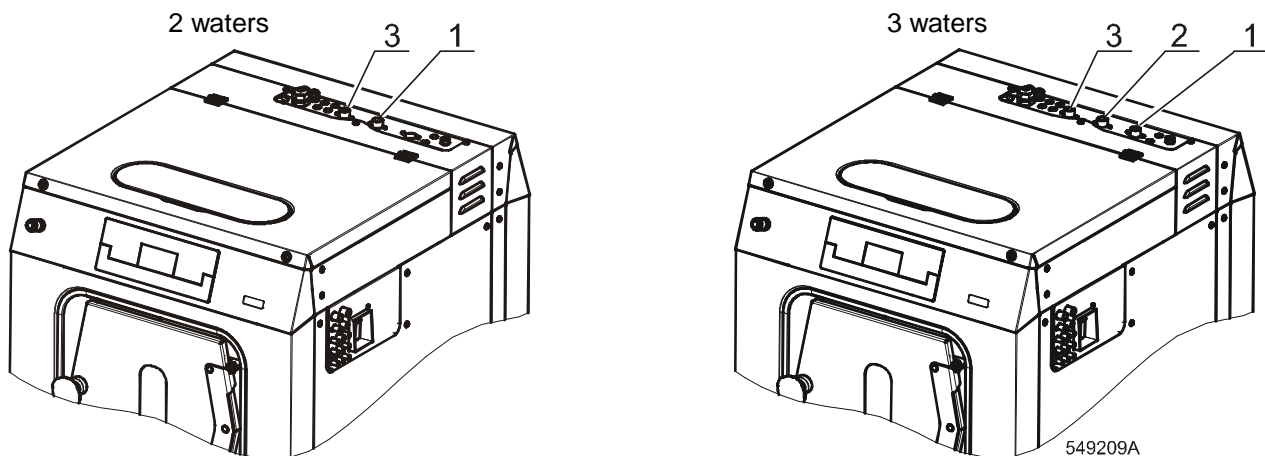


Figure 14

Installation

Recuperated water connection

⚠ WARNING!
DISCONNECT THE MACHINE POWER SUPPLY!
WHEN THE MAIN SWITCH IS TURNED OFF THE INLET TERMINALS OF THE MACHINE MAIN SWITCH ARE STILL UNDER CURRENT!

- Drill out the protective screens of the water inlet from the recycle utilizing a drilling bit of 15mm / 0.59" diameter, see Figure 15. We do not recommend piercing the screens open - it could lead to blockage of the water channel.
- Inlet of water from the recycle into the machine – electrical connection:
 - Connect the control of your recycle valve or recycle pump onto the conductor of inlet valve (I5) or (I7) provided by the manufacturer. By doing so, you disconnect the valve in question from the standard function.
 - The manufacturer waives all responsibility for malfunction of the washing machine in case that a different valve than the specified "I5" or "I7" is used as the water recycle valve.
 - Fit a cable bushing into the opening (see Figure 16) and pull the cable through the bushing.
 - Connect the coil for control of the recuperated water inlet (the coil is not supplied with the machine), operating voltage 208-240V 50/60Hz).
 - Secure the cable in a suitable manner so that it is protected against being pulled out of the machine or inlet valve.
- Temperature range (°C/°F): -10/14 to 90/194.
- Pressure: 8 bar / 116 PSI
- Connection: outside diameter 19mm / 0.75".
- The hose and the connector must be resistant to chemical substances which are used for the washing process. It is also possible to use a hose with enhanced performance such as the rubber EPDM hose.
- The recycling system must be fitted with a filter which must be regularly and thoroughly cleaned (based on the water quality). This cleaning prevents prolongation of filling up times and malfunction of the water valves.
- For programming method please refer to the Programming manual.

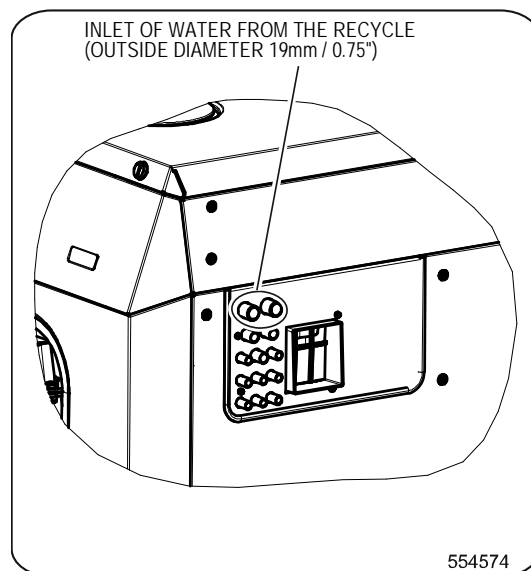


Figure 15

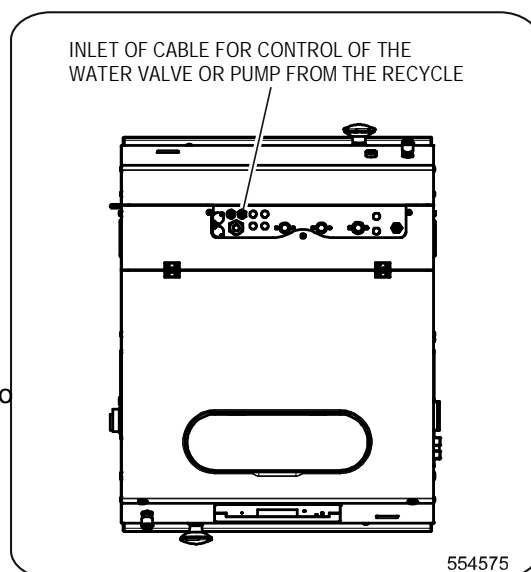


Figure 16

Installation

Treatment of the recuperated water

- The recuperated water must be filtered before entering the recycling tank. A mechanical filter must be installed which filters off small particles (fluff, buttons, paper, etc.) of sizes 0.2 mm or smaller. The denser the mesh, the better. There must also be a filter installed on the pressure side of the pump. It is also possible to install an additional, chemical filter. The manufacturer advises to consult a specialist in filter systems.

Water recycling tank properties

⚠ WARNING!
IT IS PROHIBITED TO HEAT THE WATER IN THE RECYCLING TANK. THIS WOULD DISTURB THE TEMPERATURE BALANCE OF THE WASHER AND MAKE THE REMAINING CHEMICALS IN THE RECUPERATED WATER MORE ACTIVE, WHICH WOULD LEAD TO CORROSION OF THE ENTIRE INSTALLATION.

- The recycling tank must meet the following minimum requirements:
 - The tank must be made according to national standards.
 - Tank capacity: the capacity varies depending on multiple factors, so it must be calculated by an authorized engineer. The factors are:
 1. The number of washing steps per washer, in which the water will be recuperated.
 2. The programmable amount of water that will be recuperated in a washing step (to find this amount, please refer to the Programming manual.
 3. The number of washers that will deliver water to the recycling tank.
 4. The use of recuperated water per washer.
- The tank must have an overflow to the sewer. Water from the sewer must not be able to flow back into the recycling tank.
- The network of pipes and hoses, the water pump and the recycling tank must be of a non-corroding material. It must be resistant to water and chemicals used for washing.
- The tank must be equipped with a system that fills the tank with clean water to a minimum required working level, in case the water level drops below this minimum. If this requirement is not met and an insufficient or no amount of recuperated water is fed into the washer, it will not function properly.
- A pump must transport the recuperated water from the tank to the washer. The requirements for the pump depend on the number and type of washers that are connected to the recycling system. The maximum pump pressure is 8 bar / 116 PSI.

The use of a float in the recycling tank

- This option is not obligatory. However, it is advisable to install a level switch. This level switch must be connected to the microprocessor by means of a potential-free contact, see Figure 17.
- The relay contact K1 has to close when the water level is too low. Terminal B is positioned on the left side, in the lower part of the microprocessor. Terminal A is positioned directly above terminal B. The microprocessor is positioned inside the washer. If the “Check signal recycle” parameter is set to “yes” in the configuration menu, the timer will send a signal in case that the water level of the recycling tank is too low.

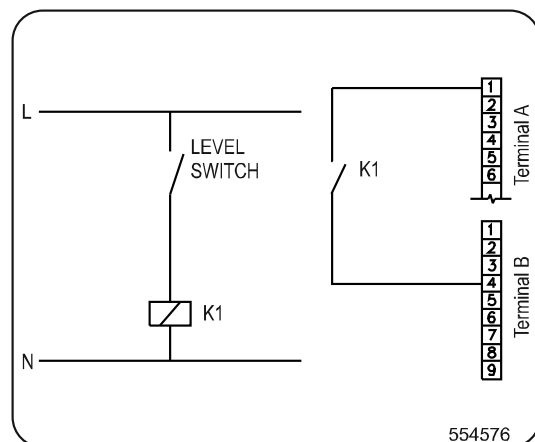


Figure 17

Installation

Drain connection

Drain under the machine (standard)

- Connect a 76 mm (3") pipe or rubber hose to the machine's drain pipe, ensuring a downward flow from the machine. Avoid sharp bends which may prevent proper draining.
- The drainage pipe should be located over a floor drain, drainage channel.

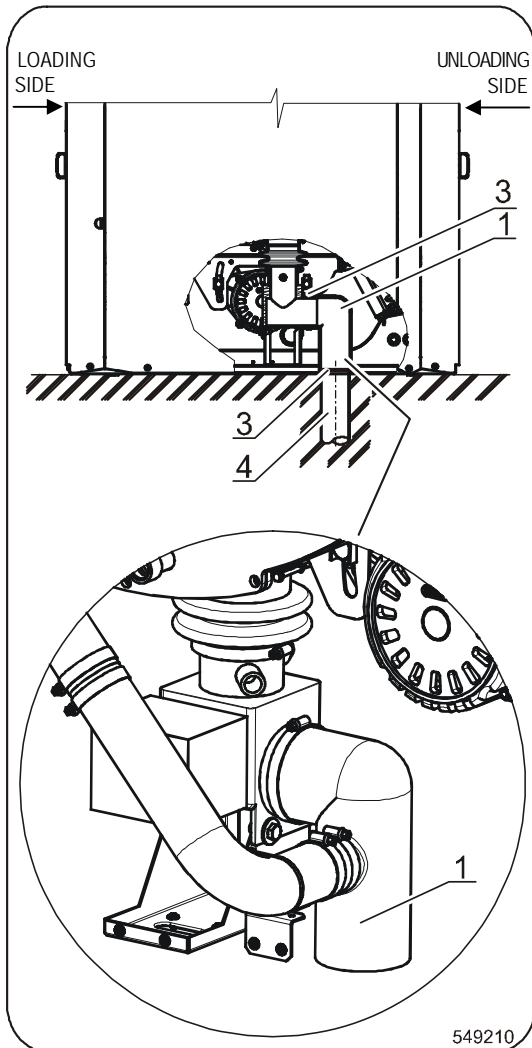


Figure 18 – One drain valve

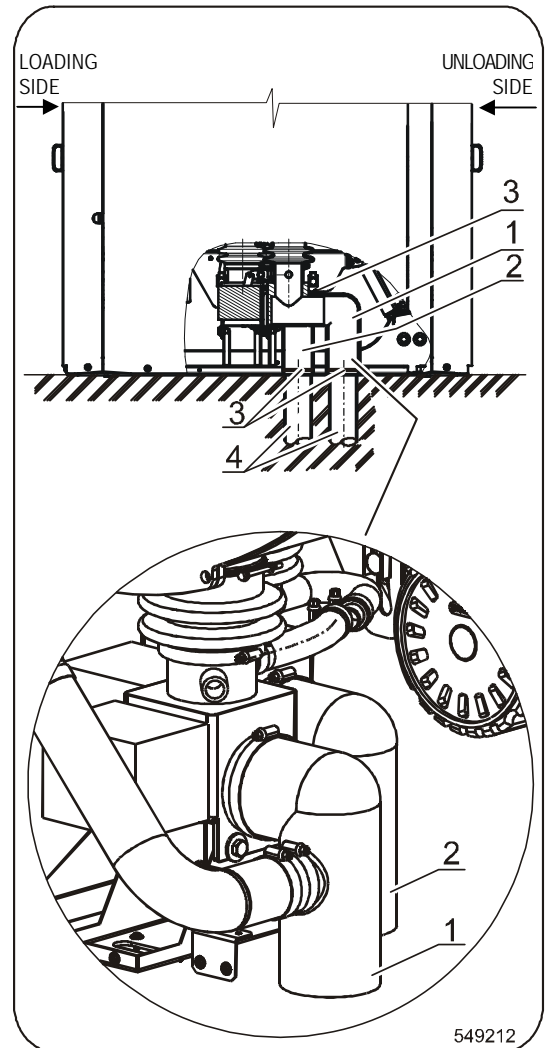


Figure 19 – Two drain valves

1. Drain, (standard $\varnothing 76\text{mm} / 3''$)
2. Drain into the water recycle, $\varnothing 76\text{mm} / 3''$, (on request for water recycle)
3. Clamp
4. Waste pipeline

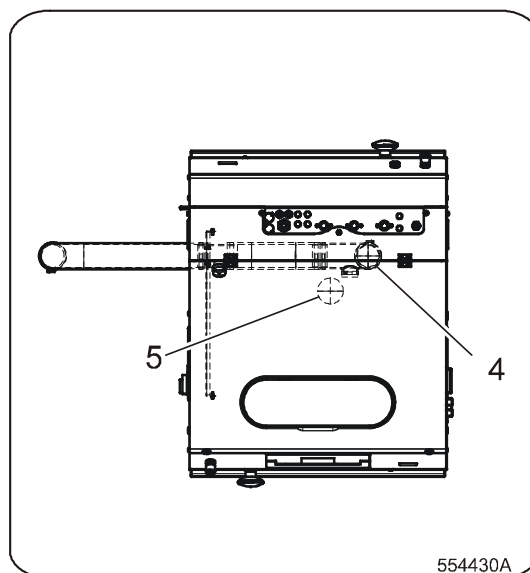
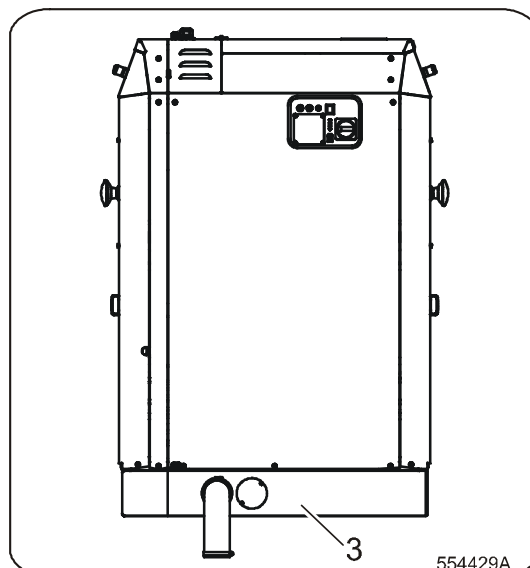
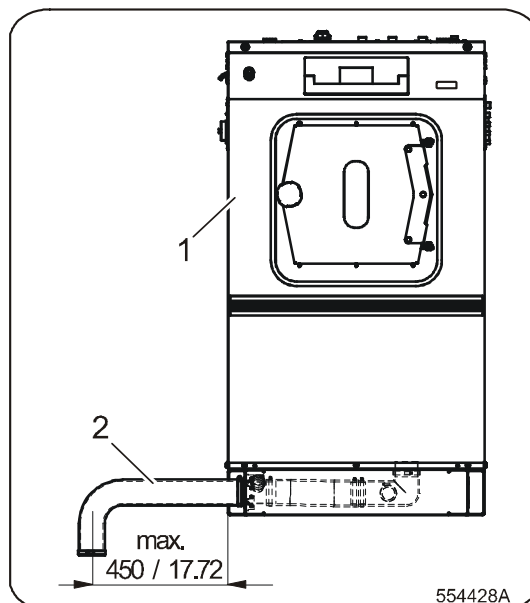
Drain – version with weighing system and drain placed underneath the machine in the central part (on request)

- Position of draining holes – see Figures 2, 3 Tables 3, 4.
- Connection of drain pipe – see chapter Drain under the machine (standard).

Installation

Side drain (on request)

- Side drain can only be used with a steel base (plinth) or with a weighing system.
- The following assembly instructions describe method of draining water from the standard position to the left of the machine. Installation of draining position to the right is more or less the same.

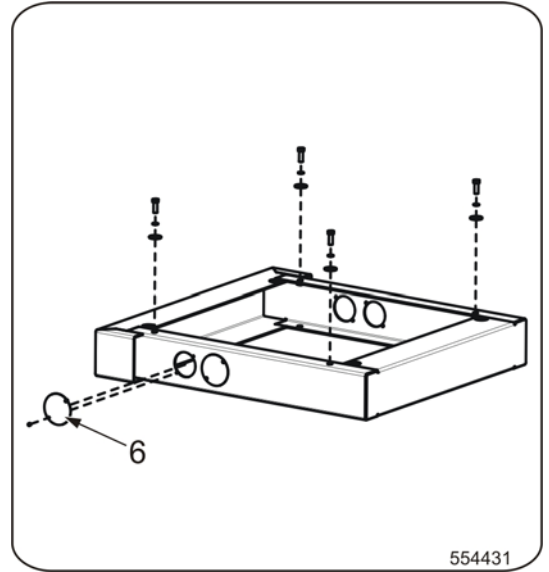


1. Washing machine, loading side
2. Drain to the left
3. Steel base (plinth)
4. First draining position (standard)
5. Second draining position into water recycle, (on request)

Figure 20 – Side drain

Installation

- 1. Install the steel base onto the required place.
- 2. Drill off the rivets and remove the hole cover (6) (on the plinth) corresponding to the desired draining valve and direction of drain.

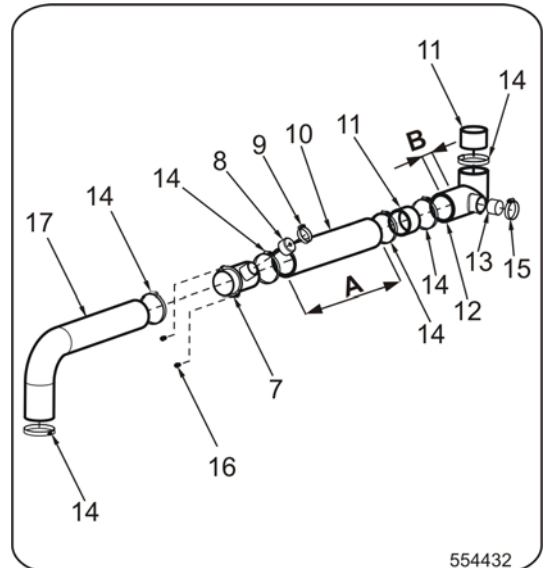


- 3. Cut the hose (10) to length "A".

Drain	Draining position	18 kg / 40 lb	24 kg / 55 lb
		Dimension "A"	
Left	First	305 / 12"	440 / 17.32"
	Second	180 / 7.1"	295 / 11.61"
Right	First	N/A (not used)	N/A (not used)
	Second	95 / 3.74"	115 / 4.53"

Table 13 – (dimensions stated in mm / inches)

- 4. For draining to the **right** and for **the first position** of draining, carry out the following steps: cut the bent piece (12) by 30mm / 1.18" – (dimension "**B**").
- 5. Assemble the parts (7 – 15).



- 6. Place the assembled parts into the plinth and secure by bolts (16).
- 7. Place the machine onto the plinth and secure the machine to the plinth by securing bolts (18).
- 8. Connect the hose to the discharge position (inside the machine) and to the discharge piping (outside the machine).

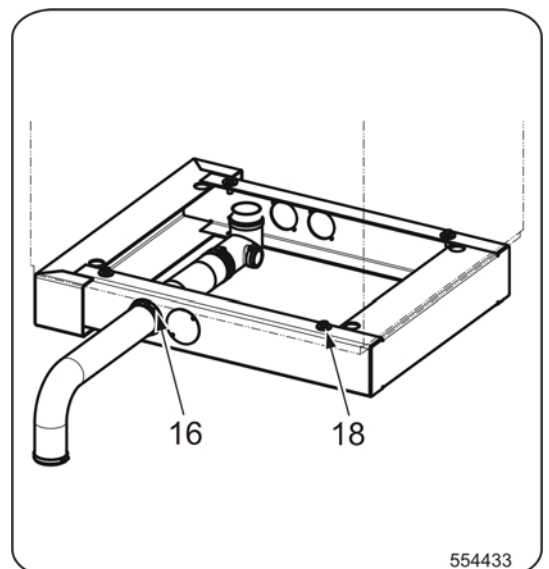


Figure 20 continuation – Side drain

Installation

Main drain channel-pipe

- The main drain channel-pipe must have the capacity to be able to handle the total output of all connected machines. In a drainpipe, a deodorizer must be provided every twenty meter, Figure 21., pos.1 to assure the good working of the drain pipe. If the main drain pipe cannot be sufficiently deodorized, install a deodorizer per machine. Every time a machine is coupled on the drainpipe, the diameter of the tube or the width of the waste channel must be more, see d1, d2, d3.
- The recommended drain pipes diameter:
 - d1 = 75 mm / 3" for one machine
 - d2 = 100 mm / 4" for two machines
 - d3 = 125 mm / 5" for three machines

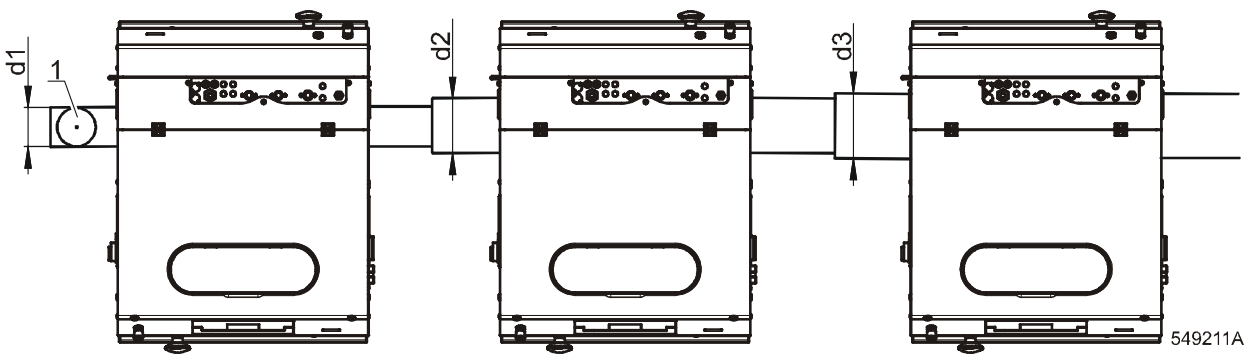


Figure 21 – Recommended drain pipe diameters

Venting

⚠ WARNING
VAPOURS ESCAPE FROM THE MACHINE THROUGH THE AIR VENT OPENING!
SEE (FIGURE 1, POSITION 21). DO NOT COVER!

Steam connection

⚠ WARNING
INSTALL A STEAM SUPPLY DISCONNECTING DEVICE IN THE VICINITY OF EACH WASHER.
DISCONNECT THE STEAM SUPPLY ALWAYS BEFORE ANY SERVICE OR INTERVENTION, GIVING SUFFICIENT TIME TO COOL DOWN THE PARTS TO AVOID INJURES.

⚠ WARNING
IT IS NECESSARY TO INSERT A FILTER WITH PERMEABILITY UP TO 300 MICROMETERS IN FRONT OF THE STEAM VALVE. POSSIBLE DIRT BIGGER THAN 300 MICROMETERS MIGHT DAMAGE THE STEAM VALVE AND CAN CAUSE ITS LEAKAGE.

- For dimensions of steam connection information, see Figure 22 and technical data table.
- Use an inlet steam pressure hoses only, adapted to the steam valve with appropriate seal that is suitable for the applied working pressure. Take care that by the installation and connection of the steam supply the necessary measure are taken that accidental contact is prevented, this for all persons. Due to the high temperature, direct injury will appear.

Installation

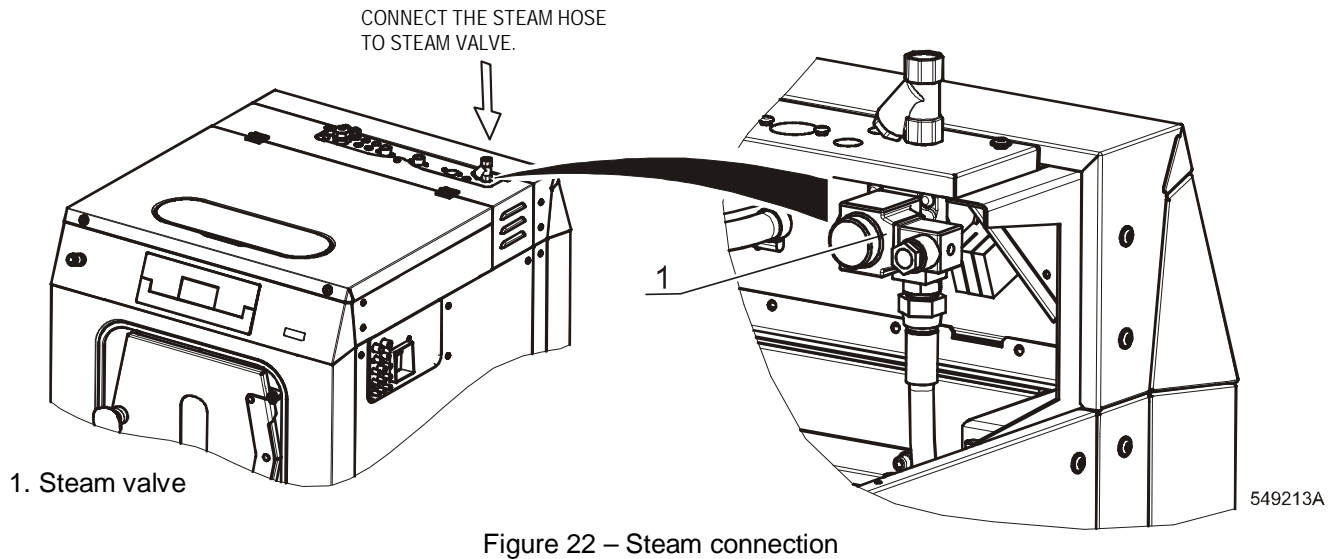


Figure 22 – Steam connection

Liquid soap connection

- General: Always use liquid soap pumps with a flow rate that can bring the requested quantity in less than 30sec.
- **IMPORTANT:** Start pumping immediately after the water valves are open. The incoming water dilutes the liquid soap and brings it into the tub assembly.
- Secure the location of the wiring and hoses in such a way that they can not be pinched, damaged or rubbed. Before you start to use liquid soap, check with your liquid soap supplier whether the liquid soap is harmless and inert to PP and PVC material in order to avoid a problem that manufacturer is not responsible for.
- The washer has provisions for connecting external dosing of liquid soaps. On the side, a plastic hose connection part is present, Figure 23, pos.1., to connect the liquid soap hoses. Depending of the number of liquid soap pumps that will be used, drill holes (max. 8) of $\varnothing 8$ mm / 0.315" in the plastic hose connection part for each pump. We recommend using the left openings for connecting the pumps first and setting the flow rate of the pumps to 60 to 100 l / hour. On the plastic hose connection part is also a 3 nipples of $\varnothing 12$ mm / $\frac{1}{2}$ ". Use this nipple ONLY for entering diluted soap. Drill with $\varnothing 11.5$ mm / 0.45". By default, these nipples are closed. Drill only the ones that will be used. Take care that the drill particles are carefully removed so that they can not clog up the hoses and openings.
- On request, the machine can be fitted with two additional inlets of liquid soap detergents situated on the panel – see Figure 24 pos. 1.

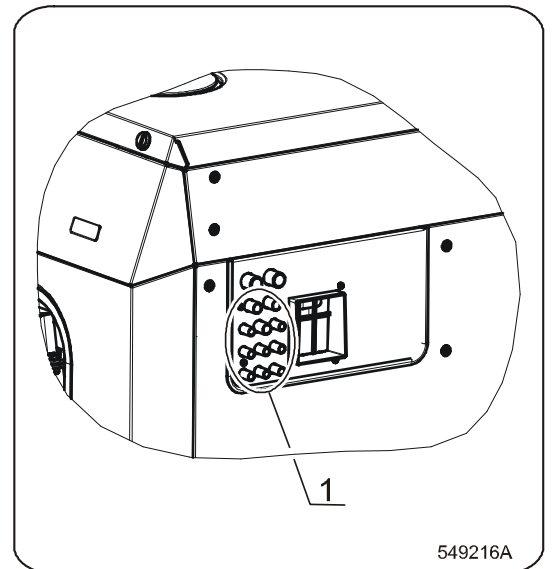


Figure 23

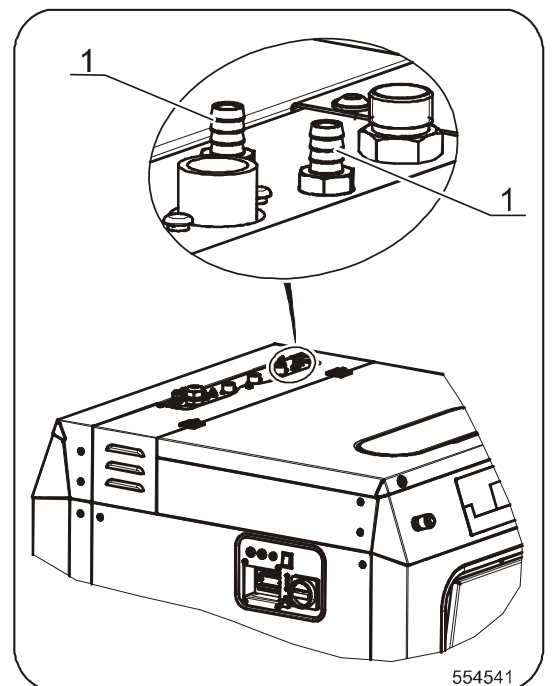


Figure 24

Installation

⚠ WARNING

CHECK THAT THE HOSE CONNECTIONS ARE TIGHT (CHECK THE CLAMPS)! ANY LEAKAGE OF CHEMICALS MAY CAUSE SERIOUS BODY INJURIES AS WELL AS SERIOUS DAMAGE TO THE WASHER. IF ONE OF THE NIPPLES ARE OPEN, CLOSE AND SECURE THE OPENING WITH AN APPROPRIATE COVER.

Electrical connection of the liquid soap supply system

- The power supply of the liquid soap supply system has to be connected to an external electrical source. Only authorized workers with a valid qualification must execute the electrical connection on the machine according to the valid local standards. The correct connection way can be found on the wiring diagram that is located inside the cabinet in a plastic bag. Do not connect the liquid soap pump system in the washer.
- For electric connection of supply control signals is available on the side of the machine the terminal box with LED signalization of activation of the respective pump, (see Figure 25., pos.1). At the terminal box there is a label for electric connection, Figure 25. Detail connection of signals could be also found on the electric scheme of the machine. Signals for supply pumps control are 24V AC. Maximum current for control circuits of pumps must be limited to 10mA. Lead the cable for connection of pumps control signals through the plastic cable bushing, pos.2. After connection of conductors to the respective positions of the connector "P" (screw clamps), fix up the cable by tightening the cable bushing) against disconnection and close the box with the cover. For details about liquid soap supply system programming, see Programming manual.

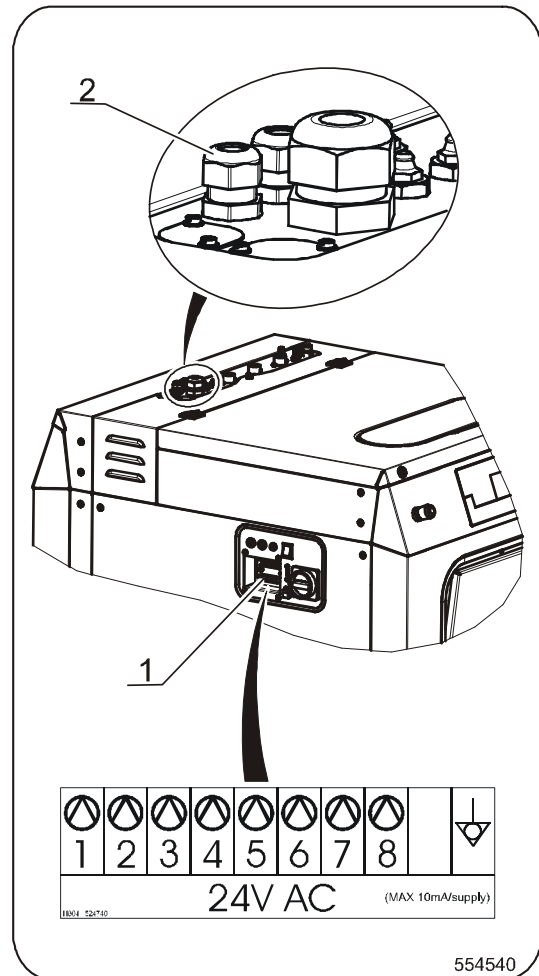


Figure 25

Installation

End of cycle indication (on request)

- The end of cycle indication consist of acoustic and visual signals (so called “traffic lights”).
- The visual indication can be situated on the loading or unloading side of the machine.
- Fix the visual indication on a wall or another suitable structure. Connect the cable end into a respective connector – see Figure 1, pos. 26 or 27.
- Meaning of visual indication colours:
 - Green : the machine is in operation (both sides)
 - Orange : the machine will terminate operation within 4 -5 minutes (both sides)
 - Red : the machine has terminated operation and the linen can be removed now (the “clean side” only) or the linen can be loaded after the previous cycle has been terminated (the “dirty side” only)

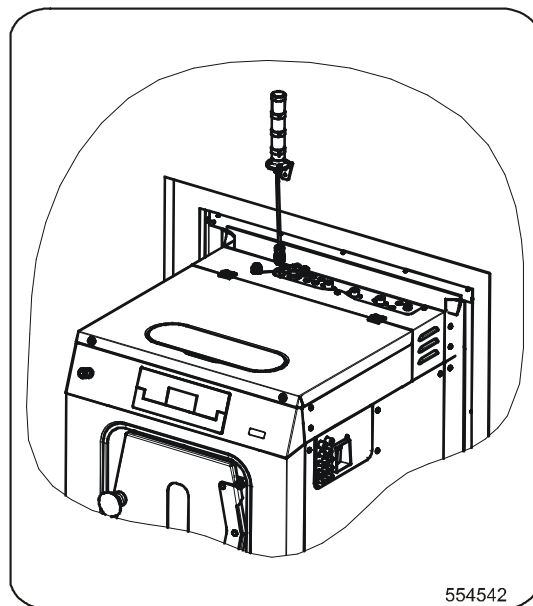


Figure 26

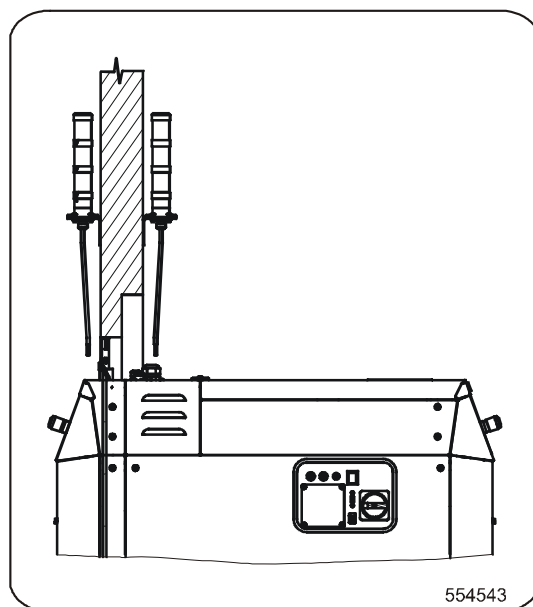


Figure 27

Installation

Electrical installation

General

- The machine has been designed for connecting to the electrical network according the specification of your order. Before connection check the electrical data stated on the data plate, if they correspond to your electrical network. An individual branch circuit needs to be used for each machine. The way of the connection is described in Figure 28. For electrical protection, there must be installed a residual current device (RCD) and a circuit breaker in the electrical installation of the building (laundry switchboard). For correct selection see below.

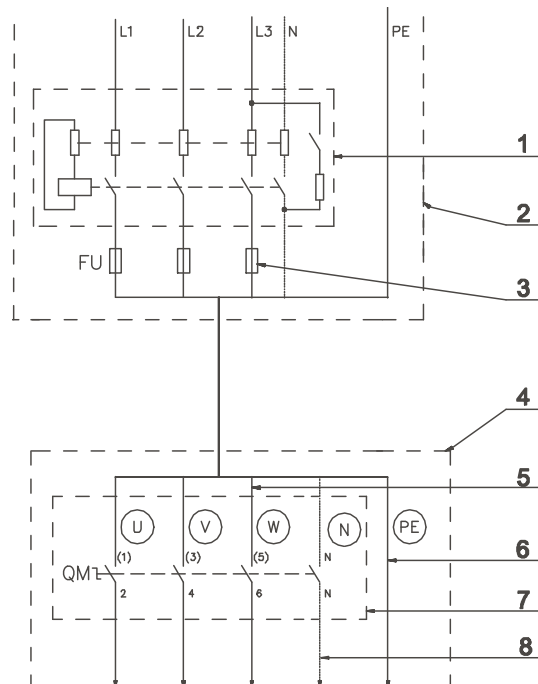
IMPORTANT:

- If the machine is not equipped with a main switch then supply disconnecting devices need to be provided in the installation for all electrical supplies connected to the machine, in accordance with EN 60204-1 standard, point 5.3.
- Make sure the supply voltage is always within the limits specified in the chapter “Technical data” in all circumstances. When you have long distances in the electrical installation, it may be necessary to use bigger cables to reduce the voltage drop.
- When the machine is connected near a large capacity power supply transformer (500kVA or more, wiring length shorter than 10 m) or there is a power capacitor switch-over, a power supply improving reactor must be installed. If you do not install this, the inverter may get damaged. Contact your sales office for more info.

⚠ WARNING!

GROUNDING: IN EVENT OF MALFUNCTION OR BREAKDOWN OR LEAKAGE CURRENT, THE GROUNDING WILL REDUCE THE RISK OF ELECTRICAL SHOCK AND SERVE AS A PROTECTING DEVICE, BY PROVIDING A PATH OF LEAST RESISTANCE OF ELECTRICAL CURRENT. THEREFORE IT IS VERY IMPORTANT AND THE RESPONSIBILITY OF THE INSTALLER TO ASSURE THE WASHER IS ADEQUATELY GROUNDED AT THE POINT OF INSTALLATION TAKING INTO CONSIDERATIONS THE NATIONAL AND LOCAL CONDITIONS AND REQUIREMENTS.

1. Residual current device (RCD)
2. Laundry electrical switchboard
3. Supply protection device
4. Washing machine
5. Phase conductors
6. Protective conductor
7. Main switch inlet terminal switchboard
8. Neutral conductor



505529

Figure 28 – Machine connection to electrical network (with a residual current device)

Installation

Residual current device (RCD)

- In some countries an RCD is known as an “earth leakage trip” or “Ground Fault Circuit Interrupter” (GFCI) or an “Appliance Leakage Current Interrupter” (ALCI) or “earth (ground) leakage current breaker”.
- Specifications:
 - Tripping current: 100mA (if locally not available/allowed use a 30mA trip current, preferably selective type with small time delay set)
 - Install max. 2 machines on each RCD (for 30mA, only 1 machine)
 - Type B. There are components inside the machine which make use of DC voltages and therefore a “type B” RCD is necessary. For information only: Type B is better performance than type A, and type A is better than type AC.
- When locally allowed, there must always be installed an RCD. In some power network earthing systems (IT, TN-C,...), an RCD might not be allowed (see also IEC 60364).
- Some washer control circuits are supplied with a separating transformer. Therefore the RCD may not detect faults in the control circuits (but the fuse(s) of the separating transformer will).

Supply protection device

- A supply protection device basically protects the machine and wiring against overloads and short circuits. As supply protection device, you can use either (glow-wire) fuses or (automatic) circuit breakers.
- See “Technical data” for the rating of the nominal current and other specifications of the supply protection device. In this table there is specified that the protection must be the “slow” type, for circuit breakers this means curve D. Although not recommended, if for some reason you can not use a slow type, select the protection device with 1 step higher nominal current rating to avoid disconnecting during start-up.

Supply cable

- The supply cable is not delivered with the machine.
- Specifications:
 - Conductors with copper cores
 - Stranded conductors are strongly recommended (flexible wiring) to avoid conductor breaking because of vibration
 - **THE CROSS SECTION DEPENDS ON THE USED SUPPLY PROTECTION DEVICE. SEE TABLE 14, FOR THE MINIMAL CROSS SECTION.**
 - As short as possible, directly from the supply protection device to the washer without branching off.
 - No plug or extension cords: The machine is intended to be permanently connected to the electrical network.
- Connection:
 - Insert the cable through the hole, see Figure 1., pos.10, insure a strain relief (turnbuckle) is used so that the supply cable can not move.
 - Strip the conductor ends according Figure 29.
 - The protective conductor must be longer so that when the cable is pulled out accidentally, this conductor is disconnected the last one!
 - With stranded conductors, use “wire end tubes” with an insulated sleeve (6) for L1/U, (L2/V), (L3/W), (N) conductors. Make sure there can not be make accidental contact, since the supply cable stays under voltage even when the main switch is off.
 - Crimp a ring terminal (eyelet) to the protection conductor for good fixation to the PE terminal.
 - Connect the supply cable conductors to the incoming terminals (main switch (1)) marked with L1/U, (L2/V), (L3/W), (N), and the terminal (copper screw) marked with PE, see Figure 30.
 - Provide a sag in the cable, in front of the cable strain relief. This will avoid ingress of condensed water into the machine, see Figure 30.

Installation

Power supply protection device nominal current (US)		Min. phase conductor section in mm ² (AWG)	Min. Protection conductor section in mm ² (AWG)
Automatic circuit breakers	Fuses		
16A (15A)	10A (10A)	1.5 mm ² (AWG 15)	1.5 mm ² (AWG 15)
20A (20A)	16A (15A)	2.5 mm ² (AWG 13)	2.5 mm ² (AWG 13)
25A (-)	20A (20A)	4 mm ² (AWG 11)	4 mm ² (AWG 11)
40A (40A)	32A (30A)	6 mm ² (AWG 9)	6 mm ² (AWG 9)
63A(-)	50A (50A)	10 mm ² (AWG 7)	10 mm ² (AWG 7)
80A	63A	16 mm ²	16 mm ²
100A	80A	25 mm ²	16 mm ²
125A	100A	35 mm ²	25 mm ²

Table 14 – Manufacturer's recommended minimal conductor section

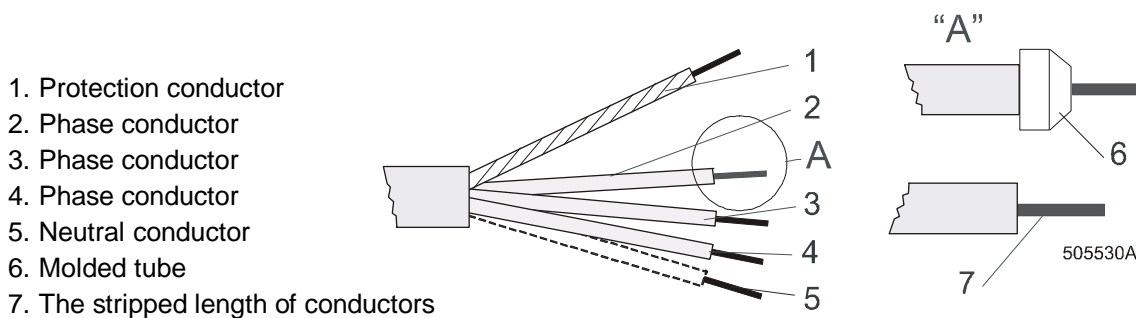


Figure 29 – Adaptation of conductor ends of supply cable

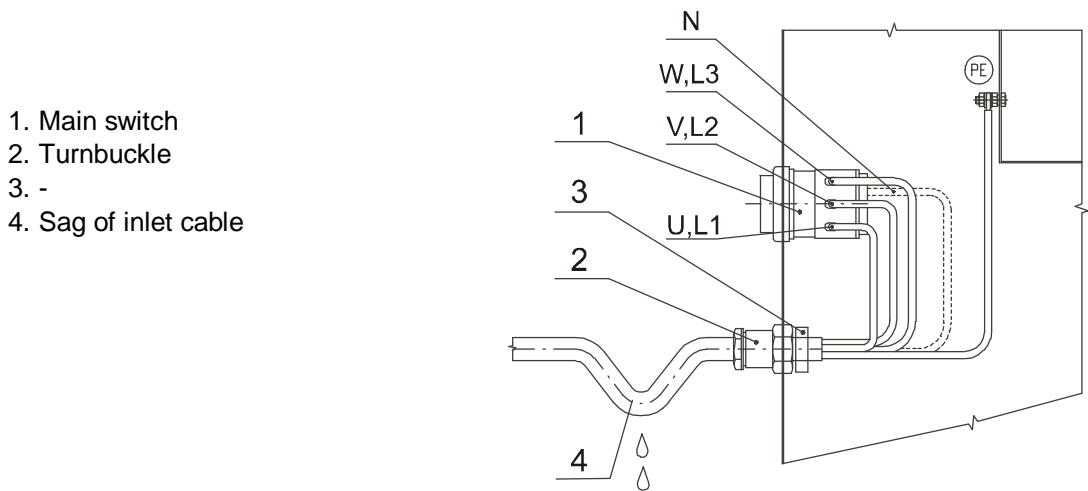


Figure 30 – Connection of main power inlet

Machine protective earth connection and equipotential bonding

Independent of the supply cable, the washer must be connected to the laundry protective earth system with a separate conductor. The protection conductor, enabling this connection, is not included with the washer. If there are other washers/appliances with exposed conductive parts, which can be touched simultaneously, make sure to make equipotential bonding between all these appliances. The external protective terminal for this purpose is located on the side panel of the machine frame, (Figure 31., pos.3). The minimum protection conductor's cross section depends on the supply cable cross section and can be found in Table 14. However, for the protection purposes with the supply cable section of min. 4 mm² we recommend to select a larger conductor section, i.e. 6 mm².

Installation

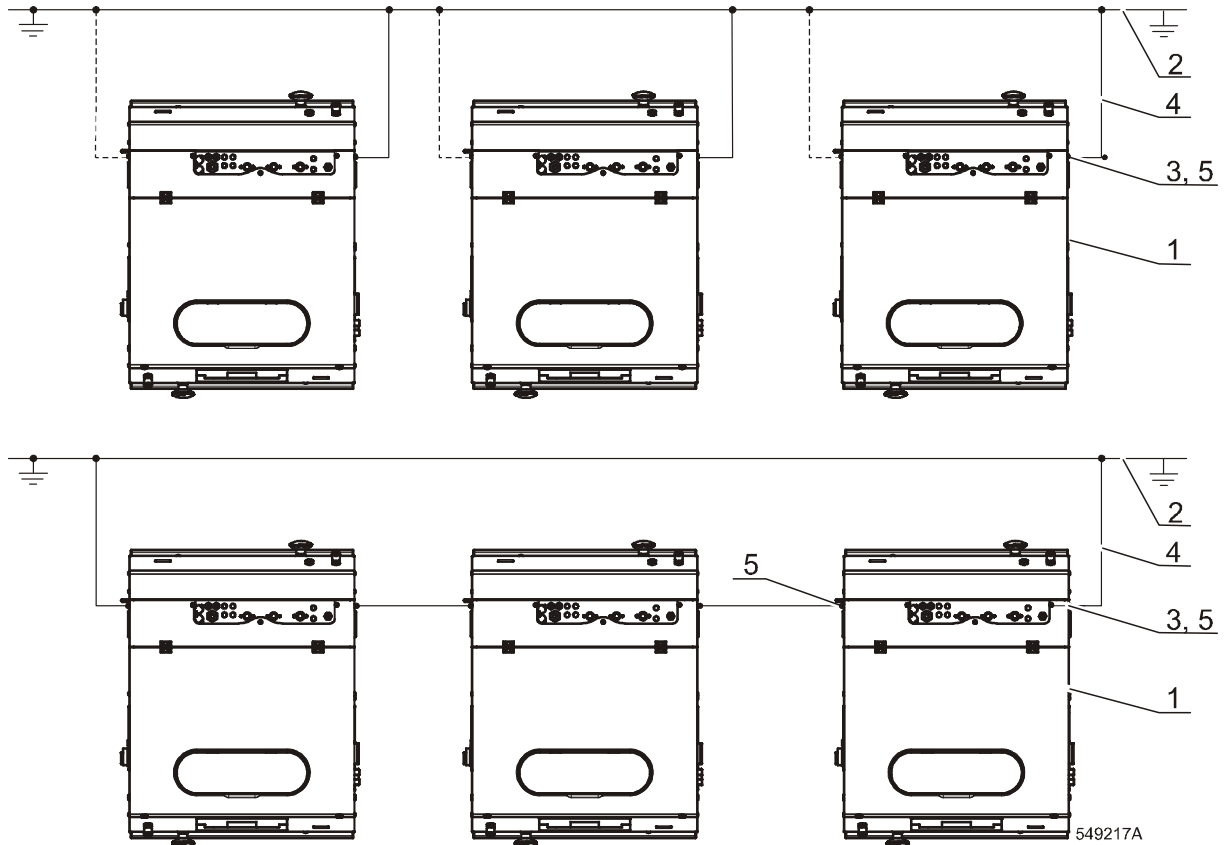


Figure 31

1. Washing machine (side of the machine)
2. Laundry protective earth connection
3. Washing machine external protective terminal
4. Protective conductor - washing machines connection
5. Grounding identification

Multiple machines in line single phase

When multiple single phase machines are connected to the same electrical network, it is necessary to connect the machines according to Figure 32. The phase of the frequency control and motor which is connected to the terminal inside the machine, has to be connected alternatively for the first machine with the first phase L1 of the network, the second machine with the second phase L2, ... The fourth machine must again be connected to the first phase L1. This assures a better load of the electrical network.

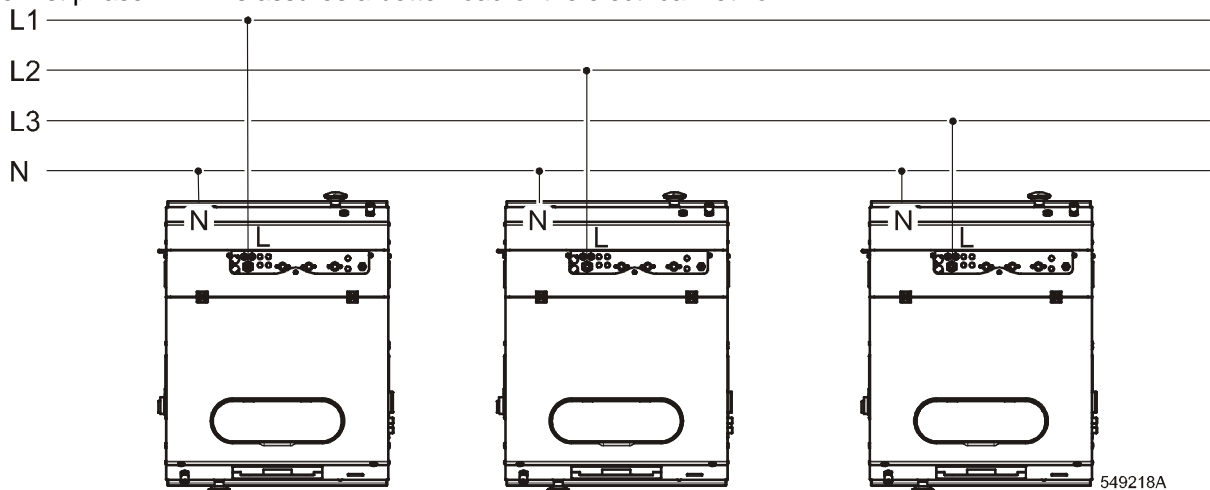


Figure 32 – Multiple machines in line

Maintenance and adjustment

Maintenance and adjustments

⚠ WARNING!

ALWAYS FOLLOW SAFETY INSTRUCTIONS! DO NOT BYPASS ANY SAFETY DEVICES OR THEIR PARTS. ANY INTERFERENCE TO THE MACHINE FUNCTIONS AND CONSTRUCTION ARE PROHIBITED!

USE THE PROPER CHEMICAL AGENTS WHICH AVOID CALCIUM SEDIMENTS ON HEATING ELEMENTS AND OTHER MACHINE PARTS. DISCUSS THIS ISSUE WITH YOUR SUPPLIER OF WASHING PRODUCTS.

THE MANUFACTURER OF THE MACHINE IS NOT RESPONSIBLE FOR THE DAMAGE OF HEATING ELEMENTS AND OTHER MACHINE PARTS DUE TO CALCIUM SEDIMENTS.

DO NOT OPERATE THE MACHINE WITH BROKEN / MISSING PARTS OR OPENED COVERS!

BEFORE MAINTENANCE WORK DISCONNECT THE MACHINE POWER SUPPLY!

WHEN THE MAIN SWITCH IS TURNED OFF THE INLET TERMINALS OF THE MACHINE MAIN SWITCH ARE STILL UNDER CURRENT! THAT IS THE WAY TO AVOID INJURIES.

- When replacing any parts of the machine, exchange them with original parts obtained from your dealer or ordered through the spare parts manual.

Checking and maintenance daily

- Remove the linen or other parts (paperclips, needles, ...) that are left lying in the drum to avoid injuries and damage to the rubber door seal, seals, glass etc.
- Clean the door seal from any remaining detergent and other foreign matter. **Do not use solvents, acids or grease to clean the rubber door gasket!**
- Clean the top and body when water or detergent traces are on the machine. Use a damp cloth, do not use abrasive cleaners. Dry with a soft cloth.
- Hoppers must be cleaned at the end of each working day. Remove sediments inside the reservoir by means of a plastic spatula and splash by water.
- Check water and possible steam inlets for leakage.
- At the end of the working day, open the machine door to allow airing out the machine and to prolong the door gasket life service. We recommend to shut off all electrical power inlets and main water inlets.

Checking and maintenance every three months

- Check the bearing house for leakage.
- Check if the drain valve is not leaking during the wash process. It is also important that the valve opens properly afterwards (drain valve opens when electrical power falls out). Wash out the drain if the water doesn't drain fluent.
- Check for the belt tension or possible damage; therefore remove the machine side cover.
- Check the tightness of the bolts according to chapter "Tightening moments".
- Check visually all hoses and connection inside the machine for leaking.
- Make sure that the control components are protected against moisture and dust during the clean up. Wipe and clean up the machine inside.
- On machines with electric heating check the tightening of the contacts of heating elements terminals and other power terminals (main switch, fuse disconnectors, contactors).

Checking and maintenance every six months

- The filters in the water connection at the valves need to be cleaned. Turn off the tap. Unscrew the inlet hoses from the appliance. Take out the filter at the center with pointed pliers, clean and re-insert. When re-attaching the hoses, make sure that the seals are seated correctly. Check water inlets for leaks. Tighten the connections or replace the seals of the inlet hose if necessary.

Maintenance and adjustment

⚠ WARNING!
BEFORE REMOVING TOP OR BACK PANEL OF THE MACHINE, SWITCH POWER OFF AND WAIT FOR AT LEAST 10 MINUTES. BEFORE STARTING INSPECTION OF FREQUENCY INVERTER, CHECK FOR RESIDUAL VOLTAGE ACROSS MAIN CIRCUIT TERMINALS + AND -. THIS VOLTAGE MUST BE BELOW 30VDC BEFORE YOU CAN ACCESS THE INVERTER FOR INSPECTION.

- Remove dirt and dust, clean, and verify functionality from:
 - the cooling fin of the inverter
 - the motor cooling fins
 - the internal ventilator of the inverter (if present)
 - the external ventilator (if present)
 - the external air relieves of the machine
 - Lubrication – see chapter “Lubrication”.

Adjusting of safety switch

- The safety switch is an important component which must - if correctly adjusted - stop the machine when excessive movement and shaking occur due to an unbalance caused by improper distribution of linen in the washing drum, or when the amount of laundry exceeds the machine capacity.
- Setting the safety switch without laundry inserted in drum:
18-24 kg / 40-55 lb: X = 2 mm / 0,08"

The X dimension represents the distance between the lower edge of the lug and the stick of safety switch, see Figure 33.

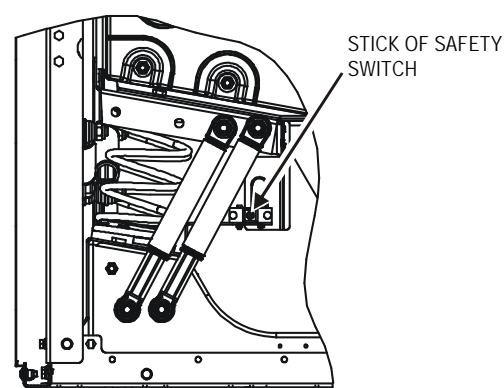


Figure 33 541844

⚠ WARNING!
DO NOT USE THE MACHINE IF THIS FUNCTION DOESN'T WORK PROPERLY! THIS FUNCTIONAL TEST CAN ONLY BE EXECUTED BY A QUALIFIED TECHNICIAN WITH PROPER AUTHORIZATION.

Belt replacement and adjusting tension

⚠ WARNING!
MAKE SURE THE MACHINE IS DISCONNECTED FROM POWER SUPPLY BY USE AND SECURE THE DISCONNECTING DEVICE.

- On a new machine and after a belt replacement, make an inspection of the belt tightness:
 - After first 24 hrs of operation
 - After first 80 hrs of operation
 - Every 6 months or every 1000 operation hours - which ever comes first.
- The belts are accessible from the side of the machine – the side with main switch. If the belts are too tight or too loose, the durability will be shortened. If too loose they can be slipping on the pulley and can cause a noisy operation and generate excessive wear with fast breaking as consequence. In such cases correcting the belts tension is necessary, see the recommended values below.
 - 18 kg / 40 lb : 64-69 Hz
 - 24 kg / 55 lb : 72-75 Hz

⚠ WARNING!
TO CHANGE THE BELTS: NEVER USE A CROWBAR, SCREW DRIVER OR ALIKE TO TAKE OFF THE BELTS OVER THE PULLEY!

Maintenance and adjustment

Lubrication

⚠ WARNING!
CARRY OUT THE LUBRICATION PROCEDURE ONLY WHEN THE MAIN SWITCH IS OFF AND ALL COMPONENTS HAVE BEEN STOPPED! (UNLESS STATED OTHERWISE IN THE FOLLOWING INSTRUCTIONS).

- Use a grease press. Press the lubrication in slowly. High pressure may distort the sealing.
- Use lubricating grease containing extreme-pressure additives of the following characteristics:
 - NLGI consistency no. 2
 - Lithium base
 - EP additives
 - with anti-corrosion properties
 - stable against oxidation
 - water resistant
 - good mechanical and thermal stability
 - recommended lubricants: Gadus S2 V220 2 (SHELL), Alvania EP2 LF (SHELL), Beacon EP2 (ESSO)

- The standard location of lubrication points, see Figure 34 is under the covers on the left and right side of the machine.
 - Bearing lubricator (1)
 - Lubricator of sealing rings (2)

- On request – the lubrication points located on the upper panel – see Figure 35.
 - left bearing lubrication - pos.1
 - right bearing lubrication - pos.2
 - left sealing ring lubrication - pos.3
 - right sealing ring lubrication - pos.4

- Before you start the lubrication procedure, put the machine in the extraction mode of operation for about 10 minutes in order to warm up the old grease in the bearings. Then switch the machine off, slowly pump the lubricant and at the same time turn the drum. Remove the excess pressed out lubrication. After the sealing has been lubricated, it might occur that certain amount of excess lubrication is pressed out into the area of the external drum (tub). In order to remove the excess lubrication, carry out hot wash cycle without any laundry. Thus, the grease is washed away.

- Once every 6 months carry out lubrication of:
 - Bearings - 4g for one bearing, (approx. 4 strokes, based on the grease press type).
 - Sealing rings - 3g for one sealed spot, (approx. 3 strokes, based on the grease press type).

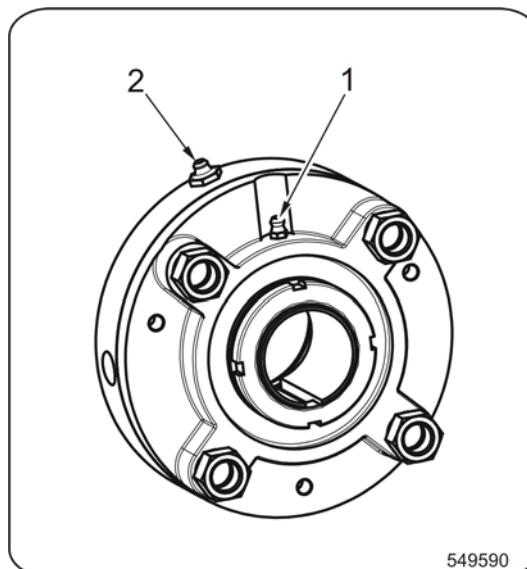


Figure 34 – Lubricator

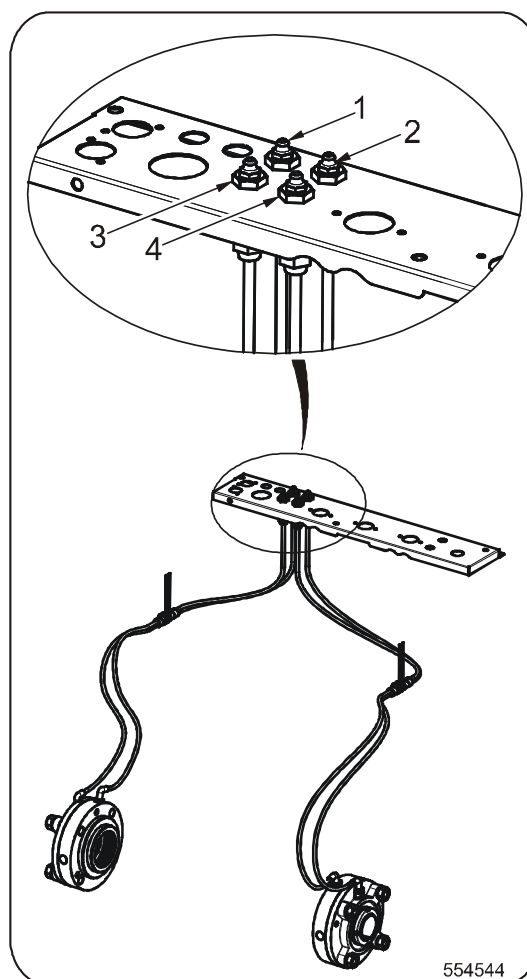


Figure 35 – Lubricator on the upper panel – on request

Maintenance and adjustment

Water filters

- Machines are equipped with filters on water inlets. It is necessary to clean up the filters occasionally to avoid a prolongation of filling the machine with water. Intervals of cleaning depend on the quality of the water, for example foreign particles in the water line.

⚠ WARNING!
BEFORE YOU START CLEANING THE WATER FILTERS, CHECK IF ALL WATER INLET TO THE MACHINE IS CLOSED.

Tightening moments

- Selected recommended torque values:
 - 4 Nm – nut M6 for securing the heating element
 - 2-3 Nm – hose clamp
 - 1-1.3 Nm – wire hose clamp
- For other torque values please contact the service department.

Replacement washer fuses

Fuse values

- The correct values of fuses can be found in the vicinity of the fuse holders and on the electrical scheme and delivered with the machine. When a fuse is blown, you can replace it with the same value but in **NO** case a higher value. If the fuse blows again, do not change it, but find the cause of the failure. Contact your commercial distributor for help if necessary.

Trouble shooting aids

Trouble shooting aids

Unblocking of the door lock in case of emergency

- If the power blackout takes too long, you can make an emergency unblocking of the door lock. The emergency door opening has been described as follows:

⚠ WARNING!

**BEFORE THE EMERGENCY DOOR OPENING TURN OFF THE MACHINE MAIN SWITCH!
NEVER OPEN THE DOOR WHILE DRUM IS STILL RUNNING!
NEVER OPEN THE DOOR IF "TOO HOT" IS INDICATED! RISK OF BURN OR SCALD INJURIES!
NEVER OPEN THE DOOR IF THE MACHINE PARTS FEELS TOO WARM!
NEVER OPEN THE DOOR, UNTIL THERE IS NO WATER IN THE DRUM! IN THE OPPOSITE CASE,
IT WILL FLOW OUT AFTER OPENING THE DOOR.**

- Verify if all condition are present to safely open the door.
- Gently push the washing unit to back.
- Put your fingers over the edge of the front panel on the door lock side.
- Push the emergency door opening button.
- Open the door if all safety conditions are fulfilled.

How to remedy incorrect position of drum

- On the unloading side – after the wash cycle has terminated, open the outer door and close them again within 30 seconds (at the latest). New positioning of the drum will occur.
- On the loading side – close the outer door and press the "arrow down" button on the programmer. New positioning of the drum will occur.

Error indication shown on display

- See chapter "First service at technical problem".
- See Programming manual, chapter "Troubleshooting".

List of recommended spare parts

- drain valve
- 2-way inlet valve
- 3-way inlet valve
- 4-way inlet valve
- steam valve
- door lock
- fuses
- thermostat sensor
- motor contactor
- heating contactor
- heating element
- V-belts
- door seal
 - Find more detailed information and order codes in the spare parts catalogue for individual machines at your dealer.

Putting the machine out of service

Putting the machine out of service

Disconnecting the machine



- Switch off the external electric power inlet to the machine.
- Turn off the main switch on the machine.
- Shut the external water or steam inlet to the machine.
- Make sure that the external electric power and steam inlets are shut off. Disconnect all electric, water or steam inlets.
- Insulate the external electric power inlet conductors.
- Equip the machine with a sign "OUT OF SERVICE".
- Unscrew nuts (bolts) fixing the machine to the floor.
- During transportation follow the instructions stated in chapter "Transportation and unpacking".

- In case the machine will never be used again, secure it so that injury of persons, damage to health, property, and nature is avoided. Make sure enclosing of persons or animals inside the machine cannot occur, injury of persons by moving or sharp parts of the machine, possibly operating fills, (e.g. remove the door, secure the drum against turning, ... and similar.)
- **BE CAREFUL, FALLING DOOR AND GLASS CAN CAUSE INJURIES!**

Machine disposal

 **WARNING!**
TAKE ALL NECESSARY ACTION AND PRECAUTIONS WHEN DOING DISASSEMBLY OF THE WASHER TO AVOID INJURIES BY GLASS OR SHARP METAL EDGES.

Possibility of the machine disposal by the specialized company

- Information concerning the WEEE-directive (Waste Electrical and Electronic Equipment, for European Union member states only):
 - For the production of the machine that you have purchased, natural resources are being reclaimed and used. The machine can contain substances which are dangerous for health and environment.
 - When you dispose of your machine, to avoid spreading of these substances in our environment and to reduce the pressure on our natural resources, we encourage you to use the collection, reuse and recycle system of your region or country. These systems reuse or recycle most of the components.
 - The symbol "crossed out bin on wheels ()" invites you to make use of these systems.
 - If you wish more information concerning the systems for collection, reuse or recycling of disposed machines, you can take contact with the competent administration of your region or country (waste management).
 - You can also take contact with us for more information concerning the environmental performances of our products.
 - Please, consider that the WEEE directive is generally only valid for household machines. In some countries professional machines are added, in others not. Therefore the symbol () may not be present.
 - Info for dealers: Due to the diversity of the national legislations, manufacturer can not take all the measures to be in accordance with all national legislations of each member state. We expect that each dealer who imports our appliances into a member state (and puts it on the market) takes the necessary steps to be in rule with the national legislation (as the directive requires).

Possibility of the machine liquidation by own potential

- It is necessary to sort out the parts for metal, non-metal, glass, plastics etc., and bring them to recycle places. The sorted out materials has to be classified in waste groups. Offer the sorted waste to the company which is competent for further treatment.

IMPORTANT !

MACHINE TYPE:

PROGRAMMER:

Electronic timer

INSTALLATION DATE:

**INSTALLATION
CARRIED OUT BY:**

SERIAL NUMBER:

ELECTRICAL DETAILS:

.....**VOLT**.....**PHASE**.....**HZ**

NOTE:

ANY CONTACTS WITH YOUR DEALER REGARDING MACHINE SAFETY, OR SPARE PARTS, MUST INCLUDE THE ABOVE IDENTIFICATION.

MAKE CERTAIN TO KEEP THIS MANUAL IN A SECURE PLACE FOR FUTURE REFERENCE.

DEALER:

