Industrial washer extractors

Freestanding, high spin machines

7 kg 8 kg 11 kg 14 kg
18 kg 24 kg 28 kg

Rigid-mount machines

8 kg 11 kg 14 kg – medium spin
18 kg 24 kg 28 kg – normal spin
18 kg 24 kg 28 kg – medium spin

Original installation, maintenance and user's manual

549263 D
Publication date: 7 Jul 2014

Contents

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.
- 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.
- Out of the venting at the back of the washer can escape warm vapor or and hot air. 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 then qualified service technicians or if parts other then 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 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
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!
<u>MACHINE WITH WEIGHING SYSTEM:</u>
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

Symbols on the machine

Caution, dangerous electrical tension, electrical devices

Caution, other danger, read and follow written instructions

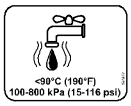
Caution - Increased temperature

Do not close or cover

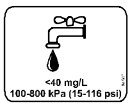
The machine hot air outlet

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

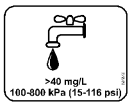
Steam



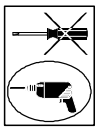
Warm water inlet
(red color of the label)



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



Hard cold water inlet
(dark blue of the label)



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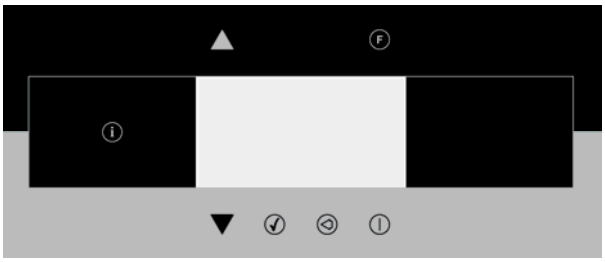
The holes to be drilled not punched

Operation

Version Xcontrol



START
(**ADVANCE** function for the **OPL version**) (1)

CONFIRM THE SELECTION

CANCEL THE SELECTION

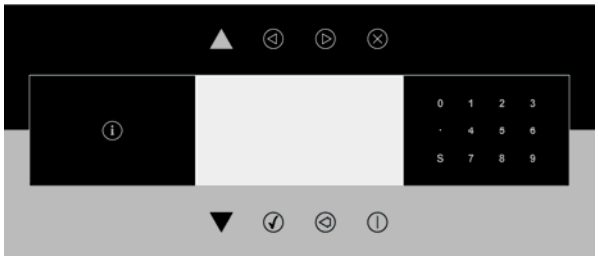
MOVE UP

MOVE DOWN

SELECTION OF ADDITIONAL FUNCTIONS

INFO
OPL version: program information
Coin operated version: User's Manual

Version 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**

(1) **OPL** version - washers are designed for professionally trained attendants.

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.

Opening the drum door

- Open the door by pulling on the door handle.

Placing the laundry into the machine

- Insert the laundry into the drum.

Closing the drum door

- Close the door by applying moderate pressure on the door handle and simultaneous partial turning of the door handle to the left. 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. Before you put the washing machine in operation make sure the door is closed properly.

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.
  - The **Xcontrol** version : choose the wash program by the arrow buttons " ▲ up" and " ▼ down".
  - The **Xcontrol Plus** version : enter the wash program number utilizing the numeric keypad.
  - The selection of the program determines the temperature and the time for washing and rinsing.

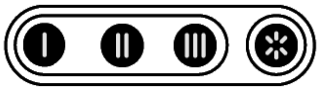
- **NOTE!**
  - For locking a program mode, changing factory settings and possibilities of program changes and setup - see Programming manual.

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
Only Xcontrol Plus: Wash program 16	Sport	60°C	
Only Xcontrol Plus: Wash program 17	Mops	60°C	
Only Xcontrol Plus: Wash program 18	Horse cloths	40°C	
Only Xcontrol Plus: Wash program 19	Jeans	60°C	
Only Xcontrol Plus: Wash program 20	Starching	-	

Add detergents

- Fill the soap dispenser on the top of the washer extractor depending of the chosen program.



- Pre-wash in the soap dispenser
- Main wash in the soap dispenser
- Main wash in the soap dispenser
- Fabric softener or starch in the soap dispenser

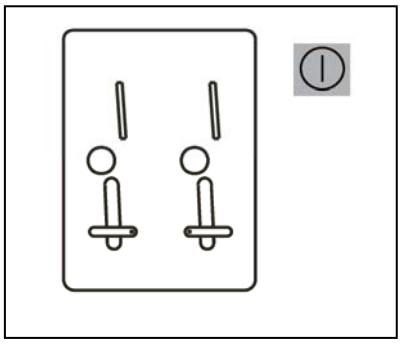
I : detergent for the pre-wash.
II : detergent for the main wash.
III : liquid detergent for the main wash or liquid bleach etc.
✻ : liquid fabric softener or liquid starch for the last rinse.

- **NOTE:**
  - It is advisable to use only detergents with “foam breaker”, which can easily be found in retail shops. Do not use 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

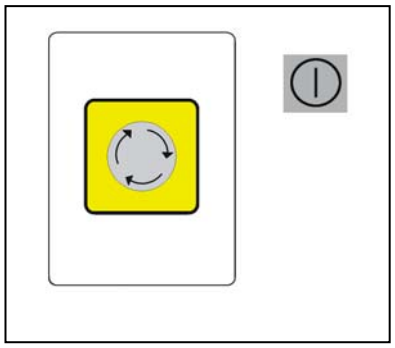
Version Xcontrol

Coin operated models



- Choose the required wash program. Insert the correct amount of coins in the slot - the sum must correspond to the selected program. The display shows the remaining sum to be paid. After the payment is done, the display prompts the user to start the program utilizing the **START** button.
- Push the **START** button to start the washer extractor. If you have by mistake chosen a different wash program, you can change the choice within the first 150 seconds utilizing the arrow buttons " ▲ up" and " ▼ down". When a more expensive washing program was chosen, the value will be shown to add. When you don't add more coins, the chosen program at the start will be executed.
- During the washing cycle you can follow the actual washing sequence and the remaining time on the displays.

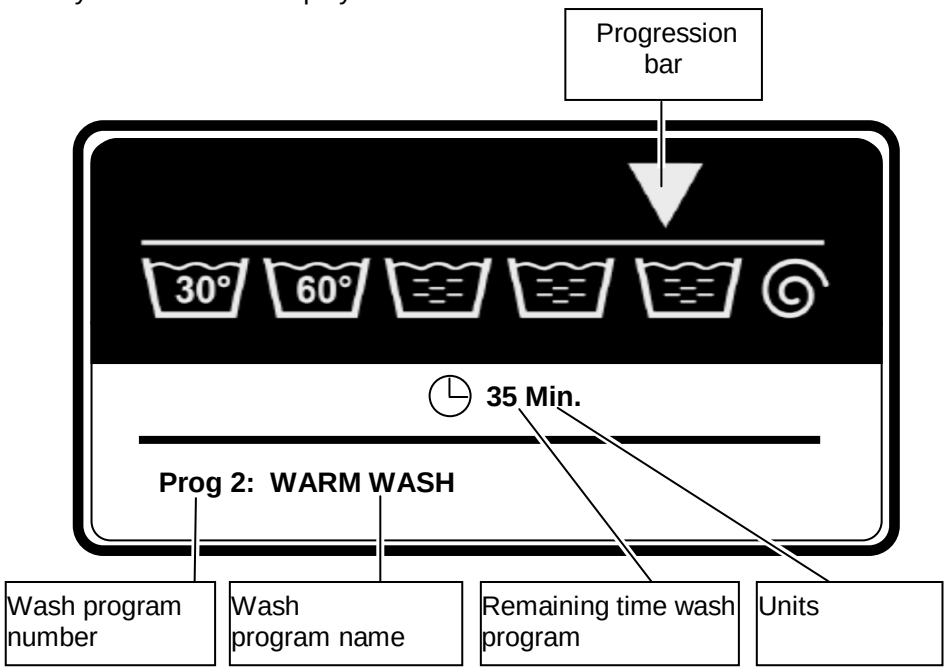
Non-coin operated models



- Choose the required program. Press the **START** button to start the operation of the machine. If you have by mistake chosen a different wash program, you can change the choice within the first step utilizing the arrow buttons " ▲ up" and " ▼ down".
- During the washing cycle you can follow the actual washing sequence and the remaining time on the displays.
- If the machine operator has enabled the **ADVANCE** function, you can move to the next step by pressing the **START** button.

Version Xcontrol Plus

- After you have selected the required wash program, start the wash cycle by pressing the **START** button.
- 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.



End of wash cycle

- The wash cycle time is counted down to zero on the display. After the completion of the wash cycle, the door lock gets deactivated (it unlocks) and the display shows the message "**UNLOAD**"**.** Open the door and remove the laundry from the machine. The message "**UNLOAD**" disappears and the machine is ready to start a new program. The "**SELECT CYCLE**" option is displayed.

⚠ **WARNING!**
IF, AFTER A POWER CUT, THE MACHINE DOOR CANNOT BE OPENED AND THE MACHINE IS FITTED WITH AN AUTOMATIC UNLOCKING CIRCUIT, WAIT UNTIL THE UNLOCKING CIRCUIT UNLOCKS THE DOOR LOCK. BEFORE YOU OPEN THE DOOR, MAKE SURE THAT THE DRUM IS COMPLETELY STILL AND THAT THE WATER HAS DRAINED FROM IT.

Power cut

Version Xcontrol

- 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 and the door remains closed and locked, the wash program will, after the power supply has been restored, automatically continue in the program beginning from the step in which the program was interrupted.
- **Machines fitted with an automatic door-lock unlocking module:** See the chapter: "Automatic door-lock unlocking module". If during the power cut the door lock gets unlocked and the door remains closed, the message "**PRESS START** / **OPEN DOOR**" appears as soon as the power supply is restored. If you open the door, 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.

Version Xcontrol Plus

- 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.

Automatic door-lock unlocking module

- Based on the order, the machine can be fitted with an automatic module for unlocking the door lock in case of a power cut.
- If it is a case of a short term power cut, this module does not effect the operation of the machine.
- If it is a case of a long term power cut, the module unlocks the door lock. It is then possible to open the door and remove the laundry.

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

⚠ **WARNING!**
THE AUTOMATIC DOOR-LOCK UNLOCKING MODULE MUST NOT BE UTILIZED ON MACHINES THAT ARE FITTED WITH A DRAIN PUMP OR REVERSE FUNCTION DRAIN VALVE.

How to open the door by failure

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

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 overfill (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

N°	Failure message	Failure	Action	Fault occurrence
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
E37	No Drain Spr	Drain failure at the Spray Sequence	Full stop + tumble	Spray Sequence
E38	No Recycle	The Tank with recycle 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

N°	Failure message	Failure	Action	Fault occurrence
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

Freestanding, high spin machines (further referred to as "freestanding")

MACHINE	kg / lb	7 / 15	8 / 18	11 / 25	14 / 30	18 / 40	24 / 55	28 / 65
Inner drum								
volume	l	65	75	105	135	180	240	280
diameter	mm / inch	530 / 20.87	530 / 20.87	620 / 24.40	620 / 24.40	750 / 29.53	750 / 29.53	750 / 29.53
Drum speed								
wash		49	49	49	49	42	42	42
extraction	ot/min	1165	1165	1075	1075	980	980	915
Heating								
electricity	kW	6 / 9 (4.6)	6 / 9 (4.6)	6 / 9 / 12	9 / 12	12 / 18	18	21,9
steam	bar	1 - 8	1 - 8	1 - 8	1 - 8	1 - 8	1 - 8	1 - 8
hot water	°C / °F	90 / 194	90 / 194	90 / 194	90 / 194	90 / 194	90 / 194	90 / 194
G-factor		400	400	400	400	400	400	350
Weight, net	kg / lb	170 / 375	185 / 408	210 / 463	255 / 563	380 / 838	430 / 948	495 / 1092
Sound level (1)								
L_{Aeq} wash seq. / extraction seq.	dB	46 / 59	52 / 63	52 / 66	50 / 65	50 / 68	50 / 66	47 / 70
Maximum static load on floor	kN	2.1	2.3	2.6	3.2	4.9	5.3	5.8
Maximum dynamic load on floor	kN	1.8 ± 0,5	1.9 ± 0.5	2.2 ± 0.5	2.7 ± 0,5	4.0 ± 0.7	4.6 ± 1.1	5.0 ± 1.1
Frequency of dynamic load	Hz	19.4	19.4	17.9	17.9	16.3	16.3	15.25

(1) ISO 3744

Table 1 – Freestanding machines

Rigid-mount, medium spin and normal spin machines (further referred to as "rigid-mount")

MACHINE	kg / lb	medium spin						normal spin		
		8 / 18	11 / 25	14 / 30	18 / 40	24 / 55	28 / 65	18 / 40	24 / 55	28 / 65
Inner drum										
volume	l	75	105	135	180	240	280	180	240	280
diameter	mm / inch	530 / 20.87	620 / 24.40	620 / 24.40	750 / 29.53	750 / 29.53	750 / 29.53	750 / 29.53	750 / 29.53	750 / 29.53
Drum speed										
wash		50	46	46	42	42	42	42	42	42
extraction	ot/min	820	760	760	690	690	690	490	490	490
Heating										
electricity	kW	6 / 9 (4,6)	6 / 9 / 12	9 / 12	12 / 18	18	21.9	12 / 18	18	21,9
steam	bar	1 - 8	1 - 8	1 - 8	1 - 8	1 - 8	1 - 8	1 - 8	1 - 8	1 - 8
hot water	°C / °F	90 / 194	90 / 194	90 / 194	90 / 194	90 / 194	90 / 194	90 / 194	90 / 194	90 / 194
G-factor		200	200	200	200	200	200	100	100	100
Weight, net	kg / lb	135 / 298	170 / 375	190 / 419	315 / 695	330 / 728	355 / 783	255 / 563	275 / 607	290 / 640
Sound level (1)										
L_{Aeq} wash seq. / extraction seq.	dB	49 / 53	49 / 53	50 / 65	50 / 65	50 / 65	50 / 65	48 / 55	50 / 65	50 / 65
Maximum static load on floor	kN	1.9	2,2	2.7	4.0	4.5	4.9	3.4	3.9	4.2
Maximum dynamic load on floor	kN	1.6 ± 2.4	1.9 ± 4.0	2.2 ± 5.1	3.4 ± 5.6	3.7 ± 7.5	3.9 ± 8.8	2.7 ± 3.6	3 ± 4.8	3.22 ± 5.6
Frequency of dynamic load	Hz	13.7	12.7	12.7	11.5	11.5	11.5	8.2	8.2	8.2

(1) ISO 3744

Table 2 – Rigid-mount machines

Technical data

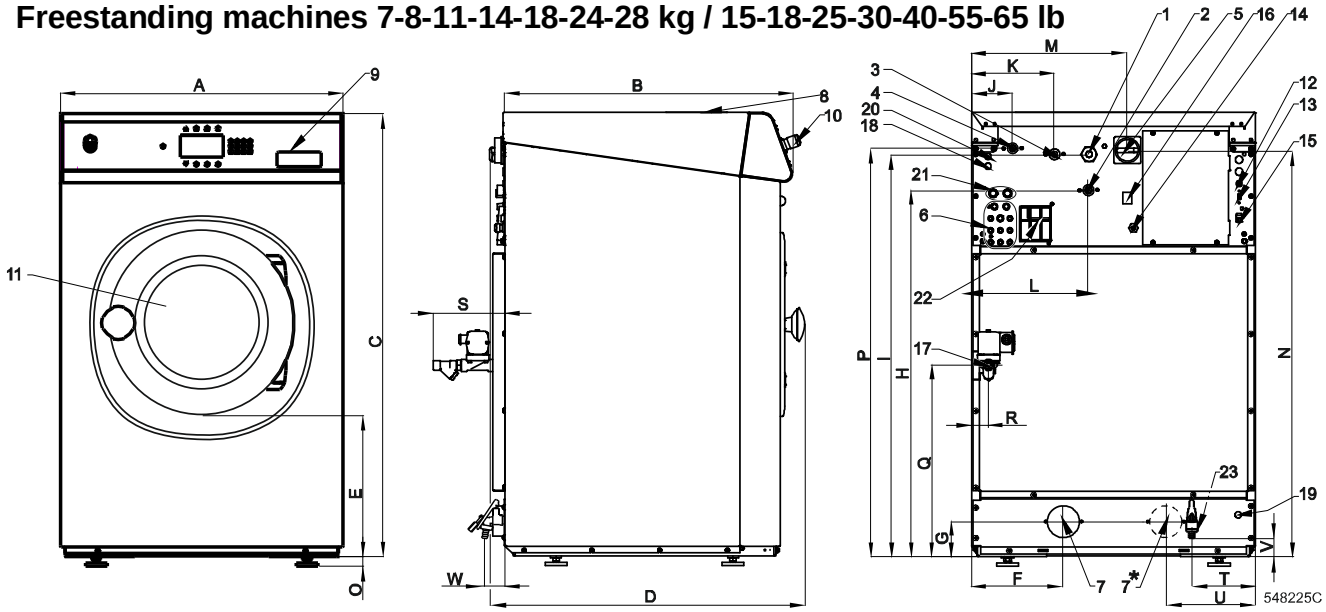
Connections

MACHINE	7 / 15	8 / 18	11 / 25	14 / 30	18 / 40	24 / 55	28 / 65
Water valves connection BSP	DN20 ¾“	DN20 ¾“	DN20 ¾“	DN20 ¾“	DN20 ¾“	DN20 ¾“	DN20 ¾“
Water pressure kPa	100 - 800	100 - 800	100 - 800	100 - 800	100 - 800	100 - 800	100 - 800
Recommended water pressure kPa	300 - 500	300 - 500	300 - 500	300 - 500	300 - 500	300 - 500	300 - 500
Capacity l/min	20	20	20	20	20	20	20
Drain valve outer ø mm / inch	76 / 3	76 / 3	76 / 3	76 / 3	76 / 3	76 / 3	76 / 3
Flow amount with drain valve l/min	210	210	210	210	210	210	210 2 x 210 (1)
Drain pump with a hose internal diameter of hose mm / inch	33.5 / 1.32	33.5 / 1.32	-	-	-	-	-
flow rate of drain pump l/min	36	36	-	-	-	-	-
Steam valve connection	DN15 ½“	DN15 ½“	DN15 ½“	DN15 ½“	DN15 ½“	DN15 ½“	DN15 ½“
Steam pressure kPa	100 - 800	100 - 800	100 - 800	100 - 800	100 - 800	100 - 800	100 - 800
General data							
Ambient temperature °C / °F	5 to 35 / 41 to 95						
Relative humidity	30% to 90% without condensation						
Height above sea level m / ft	up to 1000 / 3280						
Storage temperature °C / °F	1 to 55 / 34 to 131						

Table 3

(1) freestanding machines,(on request)

Freestanding machines 7-8-11-14-18-24-28 kg / 15-18-25-30-40-55-65 lb



Front Left side Rear side

Figure 1 – Freestanding machines

1. Electrical connection
2. Hot water
3. Cold water hard
4. Cold water soft
5. Main switch
6. Connection liquid soap
7. Drain:
   drain valve (pump), (1 x ø76mm / 3"),
   * 28kg / 65lb – drain valve or recycle valve,
   (1 x ø76mm / 3"), (on request)
8. Soap dispenser
9. Control panel
10. Button CENTRALSTOP
11. Door opening: 7-8 kg / 15-18 lb: ø 330,
    11-14kg / 25-30lb: ø 410,
    18-24-28 kg / 40-55-65lb: ø 460
12. Fuses
13. USB port
14. Electrical connection to liquid soap pumps
15. Trace-Tech connection (RS485)
16. Heating change-over switch (electric heating, steam heating)
17. Steam connection (steam version) ½"
18. Steam valve connection (steam version)
19. Inlet of cable for discharge of water into the water recycle
20. Cable inlet - cable for control of the valve or pump of water from the water recycle (see the manual for water recycle)
21. Inlet of water from the recycle (external diameter 19), (see the manual for water recycle)
22. Air relieve
23. Drain valve ½", applicable for wash bath sample, (on request)

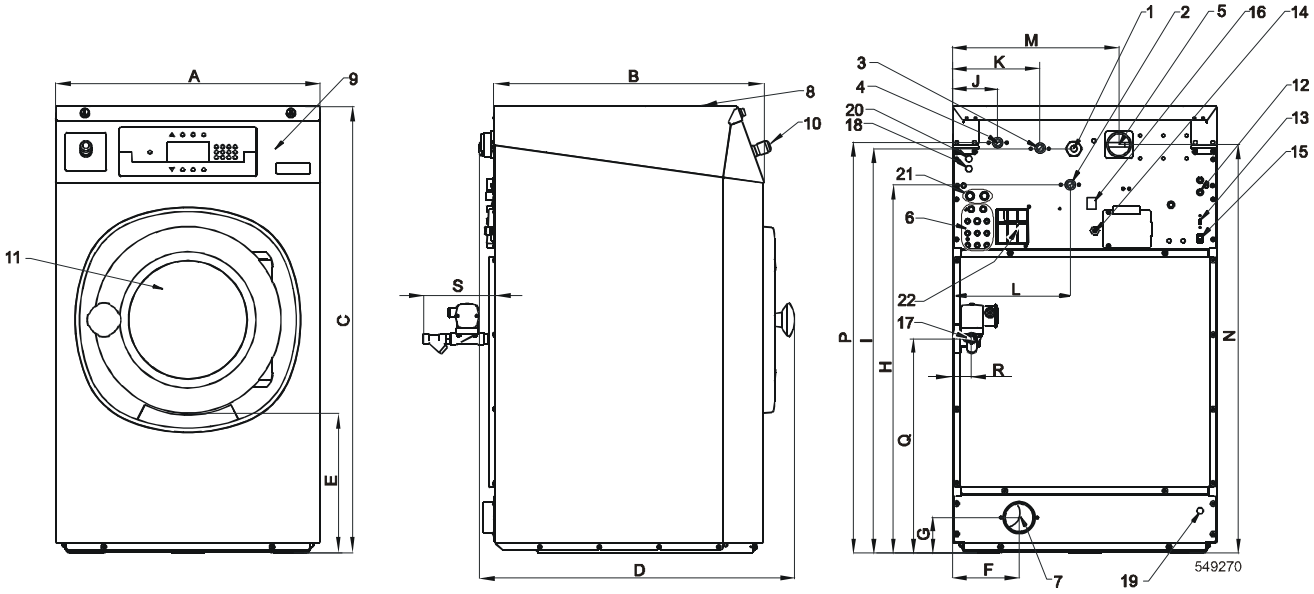
MACHINE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
7 / 15	710 27.95	676 26.61	1115 43.89	740 29.13	349 13.74	230 9.05	82 3.22	914 35.98	1004 39.52	113 4.44	218 8.58	293 11.53	390 15.35	1020 40.15	24 0.94	1019 40.11	480 18.89	42 1.65	180 7.08
8 / 18	710 27.95	726 28.58	1115 43.89	790 31.10	349 13.74	230 9.05	88 3.46	920 36.22	1010 39.76	113 4.44	218 8.58	293 11.53	390 15.35	1020 40.15	24 0.94	1025 40.35	480 18.89	42 1.65	180 7.08
11 / 25	795 31.29	761 29.96	1225 48.22	795 31.29	342 13.46	230 9.05	88 3.46	1030 40.55	1120 44.09	113 4.44	218 8.58	293 11.53	475 18.70	1130 44.48	24 0.94	1135 44.68	506 19.92	42 1.65	180 7.08
14 / 30	795 31.29	911 35.86	1225 48.22	945 37.20	342 13.46	230 9.05	88 3.46	1030 40.55	1120 44.09	113 4.44	218 8.58	293 11.53	475 18.70	1130 44.48	24 0.94	1135 44.68	506 19.92	42 1.65	180 7.08
18 / 40	970 38.18	906 35.66	1410 55.51	970 38.18	477 18.77	270 10.62	108,5 4.27	1215 47.83	1297.5 51.08	113 4.44	218 8.58	293 11.53	610 24.01	1315 51.77	24 0.94	1320 51.96	490 19.29	80 3.14	90 3.54
24 / 55	970 38.18	1041 40.98	1410 55.51	1105 43.50	477 18.77	270 10.62	108,5 4.27	1215 47.83	1297.5 51.08	113 4.44	218 8.58	293 11.53	610 24.01	1315 51.77	24 0.94	1320 51.96	490 19.29	80 3.14	90 3.54
28 / 65	970 38.18	1116 43.94	1410 55.51	1185 46.65	477 18.77	270 10.62	108,5 4.27	1215 47.83	1305 51.37	113 4.44	218 8.58	293 11.53	610 24.01	1315 51.77	24 0.94	1320 51.96	490 19.29	80 3.14	90 3.54

Table 4 – Freestanding machines, layout of machine components (dimensions stated in mm / inches)

MACHINE	T	U	V	W
7 / 15	203 7.99	-	67 2.64	48 1.89
8 / 18	203 7.99	-	67 2.64	48 1.89
11 / 25	203 7.99	-	67 2.64	48 1.89
14 / 30	203 7.99	-	67 2.64	48 1.89
18 / 40	203 7.99	-	67 2.64	48 1.89
24 / 55	203 7.99	-	67 2.64	48 1.89
28 / 65	203 7.99	274 10.79	67 2.64	48 1.89

Table 4 continuation – Freestanding machines, layout of machine components (dimensions stated in mm / inches)

Rigid-mount machines 8-11-14-18-24-28 kg / 18-25-30-40-55-65 lb



Front Left side Rear side

Figure 2 – Rigid-mount machines

1. Electrical connection
2. Hot water
3. Cold water hard
4. Cold water soft
5. Main switch
6. Connection liquid soap
7. Drain (valve / pump)
8. Soap dispenser
9. Control panel
10. Button centralstop
11. Door opening: 8 kg / 18 lb: ø 330, 11-14kg / 25-30lb: ø 410, 18-24-28 kg / 40-55-65lb: ø 460
12. Fuses
13. USB port
14. Electrical connection to liquid soap pumps
15. Trace-tech connection (rs485)
16. Heating change-over switch (electric heating, steam heating)
17. Steam connection (steam version) ½"
18. Steam valve connection (steam version)
19. Inlet of cable for discharge of water into the water recycle
20. Cable inlet - cable for control of the valve or pump of water from the water recycle (see the manual for water recycle)
21. Inlet of water from the recycle (external diameter 19), (see the manual for water recycle)
22. Air relieve

MACHINE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
8 / 18	660 25.98	676 26.61	1115 43.89	785 30.91	349 13.74	166 6,53	88 3.46	920 36.22	1010 39.76	113 4.44	218 8.58	293 11.53	415 16.34	1020 40.15	-	1025 40.35	535 21.06	48 1.89	180 7.08
11 / 25	750 29.53	676 26.61	1225 48.22	785 30.91	342 13.46	225 8,85	98 3.85	1030 40.55	1120 44.09	113 4.44	218 8.58	338 13.31	505 19.88	1130 44.48	-	1135 44.68	480 18.89	42 1.65	192 7.56
14 / 30	750 29.53	788 31.02	1225 48.22	900 35.43	342 13.46	225 8,85	98 3.95	1030 40.55	1120 44.09	113 4.44	218 8.58	338 13.31	505 19.88	1130 44.48	-	1135 44.68	480 18.89	42 1.65	192 7.56
18 / 40	890 35.03	815 32.09	1410 55.51	915 36.02	465 18.31	280 11.02	130 5.12	1212 47.72	1297 51.06	113 4.44	218 8.58	303 11.93	625 24.61	1270 50	-	1317 51.85	528 20.79	54 2.13	120 4.72
24 / 55	890 35.03	960 37.80	1410 55.51	1060 41.73	465 18.31	280 11.02	130 5.12	1212 47.72	1297 51.06	113 4.44	218 8.58	303 11.93	625 24.61	1270 50	-	1317 51.85	528 20.79	54 2.13	120 4.72
28 / 65	890 35.03	1035 40.75	1410 55.51	1135 44.68	465 18.31	280 11.02	130 5.12	1212 47.72	1297 51.06	113 4.44	218 8.58	303 11.93	625 24.61	1270 50	-	1317 51.85	528 20.79	54 2.13	120 4.72

Table 5 – Rigid-mount machines, layout of machine components (dimensions stated in mm / inches)

Freestanding machines 7 kg / 15 lb				not standard	according to the request		
Phase	**Voltage [V]**	**Frequency [Hz]**	**Total power [kW]**	**Fuse [A]**	**Motor output [kW]**	**Heating [kW]**	**Ingress protection IP**
1	200-240	50/60	0.85	10	0.75	0	43
1	200-240	50/60	5.2	32	0.75	4,6	43
1	200-240	50/60	6.7	32	0.75	6	43
1	200-240	50/60	9.7	50	0.75	9	43
3	200-240	50/60	0.85	10	0.75	0	43
3	200-240	50/60	6.7	25	0.75	6	43
3	200-240	50/60	9.7	32	0.75	9	43
3	380-415 + N	50/60	0.85	16	0.75	0	43
3	380-415 + N	50/60	6.7	16	0.75	6	43
3	380-415 + N	50/60	9.7	20	0.75	9	43
3	380-415	50/60	0.85	10	0.75	0	43
3	440-480	50/60	0.85	10	0.75	0	43
3	380-415	50/60	6.7	16	0.75	6	43
3	440-480	50/60	7.7	16	0.75	7	43
3	380-415	50/60	9.7	20	0.75	9	43
3	440-480	50/60	9.7	16	0.75	9	43

Table 6 – Freestanding machines 7 kg / 15 lb

Freestanding machines 8 kg / 18 lb				not standard	according to the request		
Phase	**Voltage [V]**	**Frequency [Hz]**	**Total power [kW]**	**Fuse [A]**	**Motor output [kW]**	**Heating [kW]**	**Ingress protection IP**
1	200-240	50/60	0.85	10	0,75	0	43
1	200-240	50/60	5.2	32	0,75	4,6	43
1	200-240	50/60	6.7	32	0,75	6	43
1	200-240	50/60	9.7	50	0.75	9	43
3	200-240	50/60	0.85	10	0.75	0	43
3	200-240	50/60	6.7	25	0.75	6	43
3	200-240	50/60	9.7	32	0.75	9	43
3	380-415 + N	50/60	0.85	16	0.75	0	43
3	380-415 + N	50/60	6.7	16	0.75	6	43
3	380-415 + N	50/60	9.7	20	0.75	9	43
3	380-415	50/60	0.85	10	0.75	0	43
3	440-480	50/60	0.85	10	0.75	0	43
3	380-415	50/60	6.7	16	0.75	6	43
3	440-480	50/60	7.7	16	0.75	7	43
3	380-415	50/60	9.7	20	0.75	9	43
3	440-480	50/60	9.7	16	0.75	9	43

Table 7 – Freestanding machines 8 kg / 18 lb

Technical data

Freestanding machines 11 kg / 25 lb				not standard	according to the request		
Phase	**Voltage [V]**	**Frequency [Hz]**	**Total power [kW]**	**Fuse [A]**	**Motor output [kW]**	**Heating [kW]**	**Ingress protection IP**
1	200-240	50/60	1.2	16	1.1	0	43
1	200-240	50/60	5.4	32	1.1	4.6	43
1	200-240	50/60	6.8	32	1.1	6	43
1	200-240	50/60	9.8	50	1.1	9	43
3	200-240	50/60	1.2	16	1.1	0	43
3	200-240	50/60	6.8	25	1.1	6	43
3	200-240	50/60	9.8	32	1.1	9	43
3	200-240	50/60	12.8	40	1.1	12	43
3	380-415 + N	50/60	1.2	16	1.1	0	43
3	380-415 + N	50/60	6.8	16	1.1	6	43
3	380-415 + N	50/60	9.8	20	1.1	9	43
3	380-415 + N	50/60	12.8	25	1.1	12	43
3	380-415	50/60	1.2	10	1.1	0	43
3	440-480	50/60	1.2	10	1.1	0	43
3	380-415	50/60	6.8	16	1.1	6	43
3	440-480	50/60	7.8	16	1.1	7	43
3	380-415	50/60	9.8	16	1.1	9	43
3	440-480	50/60	9.8	16	1.1	9	43
3	380-415	50/60	12.8	25	1.1	12	43
3	440-480	50/60	12.8	25	1.1	12	43

Table 8 – Freestanding machines 11 kg / 25 lb

Freestanding machines 14 kg / 30 lb				not standard	according to the request		
Phase	**Voltage [V]**	**Frequency [Hz]**	**Total power [kW]**	**Fuse [A]**	**Motor output [kW]**	**Heating [kW]**	**Ingress protection IP**
1	200-240	50/60	1.6	16	1.5	0	43
1	200-240	50/60	5.7	32	1.5	4.6	43
1	200-240	50/60	7.1	32	1.5	6	43
1	200-240	50/60	10.1	50	1.5	9	43
3	200-240	50/60	1.6	16	1.5	0	43
3	200-240	50/60	7.1	25	1.5	6	43
3	200-240	50/60	10.1	32	1.5	9	43
3	200-240	50/60	13.1	40	1.5	12	43
3	200-240	50/60	14.9	50	1.5	13.8	43
3	380-415 + N	50/60	1.6	16	1.5	0	43
3	380-415 + N	50/60	7.1	16	1.5	6	43
3	380-415 + N	50/60	10.1	20	1.5	9	43
3	380-415 + N	50/60	13.1	25	1.5	12	43
3	380-415 + N	50/60	14.9	32	1.5	13.8	43
3	380-415	50/60	1.6	10	1.5	0	43
3	440-480	50/60	1.6	10	1.5	0	43
3	380-415	50/60	7.1	16	1.5	6	43
3	440-480	50/60	8.1	16	1.5	7	43
3	380-415	50/60	10.1	20	1.5	9	43
3	440-480	50/60	10.1	16	1.5	9	43
3	380-415	50/60	13.1	20	1.5	12	43
3	440-480	50/60	13.1	25	1.5	12	43
3	380-415	50/60	14.9	32	1.5	13.8	43
3	440-480	50/60	14.9	32	1.5	13.8	43

Table 9 – Freestanding machines 14 kg / 30 lb

Freestanding machines 18 kg / 40 lb				not standard			
Phase	**Voltage [V]**	**Frequency [Hz]**	**Total power [kW]**	**Fuse [A]**	**Motor output [kW]**	**Heating [kW]**	**Ingress protection IP**
1	200-240	50/60	2.3	20	2.2	0	43
3	200-240	50/60	2.3	20	2.2	0	43
3	200-240	50/60	13.5	40	2.2	12	43
3	200-240	50/60	19.5	63	2.2	18	43
3	380-415 + N	50/60	2.3	20	2.2	0	43
3	380-415 + N	50/60	13.5	25	2.2	12	43
3	380-415 + N	50/60	19.5	32	2.2	18	43
3	380-415	50/60	2.3	16	2.2	0	43
3	440-480	50/60	2.3	16	2.2	0	43
3	380-415	50/60	13.5	25	2.2	12	43
3	440-480	50/60	13.5	25	2.2	12	43
3	380-415	50/60	19.5	32	2.2	18	43
3	440-480	50/60	19.5	32	2.2	18	43

Table 10 – Freestanding machines 18 kg / 40 lb

Freestanding machines 24 kg / 55 lb				not standard			
Phase	**Voltage [V]**	**Frequency [Hz]**	**Total power [kW]**	**Fuse [A]**	**Motor output [kW]**	**Heating [kW]**	**Ingress protection IP**
1	200-240	50/60	3.1	20	3	0	43
3	200-240	50/60	3.1	20	3	0	43
3	200-240	50/60	20	63	3	18	43
3	380-415 + N	50/60	3.1	20	3	0	43
3	380-415 + N	50/60	20	32	3	18	43
3	380-415	50/60	3.1	16	3	0	43
3	440-480	50/60	3.1	16	3	0	43
3	380-415	50/60	20	32	3	18	43
3	440-480	50/60	20	32	3	18	43

Table 11 – Freestanding machines 24 kg / 55 lb

Freestanding machines 28 kg / 65 lb				not standard			
Phase	**Voltage [V]**	**Frequency [Hz]**	**Total power [kW]**	**Fuse [A]**	**Motor output [kW]**	**Heating [kW]**	**Ingress protection IP**
1	200-240	50/60	3.1	20	3	0	43
3	200-240	50/60	3.1	20	3	0	43
3	200-240	50/60	20	63	3	18	43
3	200-240	50/60	23.9	80	3	21.9	43
3	380-415 + N	50/60	3.1	20	3	0	43
3	380-415 + N	50/60	20	32	3	18	43
3	380-415 + N	50/60	23.9	50	3	21.9	43
3	380-415	50/60	3.1	16	3	0	43
3	440-480	50/60	3.1	16	3	0	43
3	380-415	50/60	20	32	3	18	43
3	440-480	50/60	20	32	3	18	43
3	380-415	50/60	23.9	40	3	21.9	43
3	440-480	50/60	23.9	40	3	21.9	43

Table 12 – Freestanding machines 28 kg / 65 lb

Rigid-mount machines 8 kg / 18 lb				not standard	according to the request		
Phase	**Voltage [V]**	**Frequency [Hz]**	**Total power [kW]**	**Fuse [A]**	**Motor output [kW]**	**Heating [kW]**	**Ingress protection IP**
1	120	60	0.6	10	0,5	0	43
1	200-240	50/60	0.6	10	0.5	0	43
1	200-240	50/60	5	32	0.5	4.6	43
1	200-240	50/60	6.5	32	0.5	6	43
1	200-240	50/60	9.5	50	0.5	9	43
3	200-240	50/60	0.6	10	0.5	0	43
3	200-240	50/60	6.5	25	0.5	6	43
3	200-240	50/60	9.5	32	0.5	9	43
3	380-415 + N	50/60	0.6	10	0.5	0	43
3	380-415 + N	50/60	6.5	16	0.5	6	43
3	380-415 + N	50/60	9.5	20	0.5	9	43
3	380-415	50/60	0.6	10	0.5	0	43
3	440-480	50/60	0.6	10	0.5	0	43
3	380-415	50/60	6.5	16	0.5	6	43
3	440-480	50/60	7.5	16	0.5	7	43
3	380-415	50/60	9.5	20	0.5	9	43
3	440-480	50/60	9.5	16	0.5	9	43

Table 13 – Rigid-mount machines 8 kg / 18 lb

Rigid-mount machines 11 kg / 25 lb				not standard	according to the request		
Phase	**Voltage [V]**	**Frequency [Hz]**	**Total power [kW]**	**Fuse [A]**	**Motor output [kW]**	**Heating [kW]**	**Ingress protection IP**
1	120	60	0.65	16	0.55	0	43
1	200-240	50/60	0.65	10	0.55	0	43
1	200-240	50/60	5.1	32	0.55	4.6	43
1	200-240	50/60	6.6	32	0.55	6	43
1	200-240	50/60	9.6	50	0.55	9	43
3	200-240	50/60	0.65	16	0.55	0	43
3	200-240	50/60	6.6	25	0.55	6	43
3	200-240	50/60	9.6	32	0.55	9	43
3	200-240	50/60	12.6	40	0.55	12	43
3	380-415 + N	50/60	0.65	10	0.55	0	43
3	380-415 + N	50/60	6.6	16	0.55	6	43
3	380-415 + N	50/60	9.6	20	0.55	9	43
3	380-415 + N	50/60	12.6	25	0.55	12	43
3	380-415	50/60	0.65	10	0.55	0	43
3	440-480	50/60	0.65	10	0.55	0	43
3	380-415	50/60	6.6	16	0.55	6	43
3	440-480	50/60	7.6	16	0.55	7	43
3	380-415	50/60	9.6	20	0.55	9	43
3	440-480	50/60	9.6	16	0.55	9	43
3	380-415	50/60	12.6	25	0.55	12	43
3	440-480	50/60	12.6	25	0.55	12	43

Table 14 – Rigid-mount machines 11 kg / 25 lb

Technical data

Rigid-mount machines 14 kg / 30 lb				not standard	according to the request		
Phase	**Voltage [V]**	**Frequency [Hz]**	**Total power [kW]**	**Fuse [A]**	**Motor output [kW]**	**Heating [kW]**	**Ingress protection IP**
1	120	60	0.85	20	0.75	0	43
1	200-240	50/60	0.85	16	0.75	0	43
1	200-240	50/60	5.5	32	0.75	4.6	43
1	200-240	50/60	6.8	32	0.75	6	43
1	200-240	50/60	9.8	50	0.75	9	43
3	200-240	50/60	0.85	16	0.75	0	43
3	200-240	50/60	6.8	25	0.75	6	43
3	200-240	50/60	9.8	32	0.75	9	43
3	200-240	50/60	12.8	40	0.75	12	43
3	200-240	50/60	14.6	50	0.75	13.8	43
3	380-415 + N	50/60	0.85	16	0.75	0	43
3	380-415 + N	50/60	6.8	16	0.75	6	43
3	380-415 + N	50/60	9.8	20	0.75	9	43
3	380-415 + N	50/60	12.8	25	0.75	12	43
3	380-415 + N	50/60	14.6	32	0.75	13.8	43
3	380-415	50/60	0.85	10	0.75	0	43
3	440-480	50/60	0.85	10	0.75	0	43
3	380-415	50/60	6.8	16	0.75	6	43
3	440-480	50/60	7.8	16	0.75	7	43
3	380-415	50/60	9.8	20	0.75	9	43
3	440-480	50/60	9.8	16	0.75	9	43
3	380-415	50/60	12.8	25	0.75	12	43
3	440-480	50/60	12.8	25	0.75	12	43
3	380-415	50/60	14.6	32	0.75	13.8	43
3	440-480	50/60	14.6	32	0.75	13.8	43

Table 15 – Rigid-mount machines 14 kg / 30 lb

Rigid-mount machines 18 kg / 40 lb – normal spin					not standard		
Phase	**Voltage [V]**	**Frequency [Hz]**	**Total power [kW]**	**Fuse [A]**	**Motor output [kW]**	**Heating [kW]**	**Ingress protection IP**
1	200-240	50/60	0.85	10	0.75	0	43
3	200-240	50/60	0.85	10	0.75	0	43
3	200-240	50/60	12.7	40	0.75	12	43
3	200-240	50/60	18.7	63	0.75	18	43
3	380-415 + N	50/60	0.85	10	0.75	0	43
3	380-415 + N	50/60	12.7	25	0.75	12	43
3	380-415 + N	50/60	18.7	32	0.75	18	43
3	380-415	50/60	0.85	10	0.75	0	43
3	440-480	50/60	0.85	10	0.75	0	43
3	380-415	50/60	12.7	25	0.75	12	43
3	440-480	50/60	12.7	25	0.75	12	43
3	380-415	50/60	18.7	32	0.75	18	43
3	440-480	50/60	18.7	32	0.75	18	43

Table 16 – Rigid-mount machines 18 kg / 40 lb – normal spin

Rigid-mount machines 18 kg / 40 lb – medium spin					not standard		
Phase	**Voltage [V]**	**Frequency [Hz]**	**Total power [kW]**	**Fuse [A]**	**Motor output [kW]**	**Heating [kW]**	**Ingress protection IP**
1	200-240	50/60	1.2	16	1.1	0	43
3	200-240	50/60	1.2	16	1.1	0	43
3	200-240	50/60	12.9	40	1.1	12	43
3	200-240	50/60	18.9	63	1.1	18	43
3	380-415 + N	50/60	1.2	10	1.1	0	43
3	380-415 + N	50/60	12.9	25	1.1	12	43
3	380-415 + N	50/60	18.9	32	1.1	18	43
3	380-415	50/60	1.2	10	1.1	0	43
3	440-480	50/60	1.2	10	1.1	0	43
3	380-415	50/60	12.9	25	1.1	12	43
3	440-480	50/60	12.9	25	1.1	12	43
3	380-415	50/60	18.9	32	1.1	18	43
3	440-480	50/60	18.9	32	1.1	18	43

Table 17 – Rigid-mount machines 18 kg / 40 lb – medium spin

Rigid-mount machines 24 kg / 55 lb – normal spin					not standard		
Phase	**Voltage [V]**	**Frequency [Hz]**	**Total power [kW]**	**Fuse [A]**	**Motor output [kW]**	**Heating [kW]**	**Ingress protection IP**
1	200-240	50/60	1.2	16	1.1	0	43
3	200-240	50/60	1.2	16	1.1	0	43
3	200-240	50/60	19	63	1.1	18	43
3	380-415 + N	50/60	1.2	16	1.1	0	43
3	380-415 + N	50/60	19	32	1.1	18	43
3	380-415	50/60	1.2	10	1.1	0	43
3	440-480	50/60	1.2	10	1.1	0	43
3	380-415	50/60	19	32	1.1	18	43
3	440-480	50/60	19	32	1.1	18	43

Table 18 – Rigid-mount machines 24 kg / 55 lb – normal spin

Rigid-mount machines 24 kg / 55 lb – medium spin				not standard			
Phase	**Voltage [V]**	**Frequency [Hz]**	**Total power [kW]**	**Fuse [A]**	**Motor output [kW]**	**Heating [kW]**	**Ingress protection IP**
1	200-240	50/60	1.6	16	1.5	0	43
3	200-240	50/60	1.6	16	1.5	0	43
3	200-240	50/60	19	63	1.5	18	43
3	380-415 + N	50/60	1.5	16	1.5	0	43
3	380-415 + N	50/60	19	32	1.5	18	43
3	380-415	50/60	1.5	10	1.5	0	43
3	440-480	50/60	1.5	10	1.5	0	43
3	380-415	50/60	19	32	1.5	18	43
3	440-480	50/60	19	32	1.5	18	43

Table 19 – Rigid-mount machines 24 kg / 55 lb – medium spin

Rigid-mount machines 28 kg / 65 lb, normal spin, medium spin				not standard			
Phase	**Voltage [V]**	**Frequency [Hz]**	**Total power [kW]**	**Fuse [A]**	**Motor output [kW]**	**Heating [kW]**	**Ingress protection IP**
1	200-240	50/60	1.6	16	1.5	0	43
3	200-240	50/60	1.6	16	1.5	0	43
3	200-240	50/60	19.3	63	1.5	18	43
3	200-240	50/60	23.2	63	1.5	21.9	43
3	380-415 + N	50/60	1.6	16	1.5	0	43
3	380-415 + N	50/60	19.3	32	1.5	18	43
3	380-415 + N	50/60	23.2	40	1.5	21.9	43
3	380-415	50/60	1.6	10	1.5	0	43
3	440-480	50/60	1.6	10	1.5	0	43
3	380-415	50/60	19.3	32	1.5	18	43
3	440-480	50/60	19.3	32	1.5	18	43
3	380-415	50/60	23.2	40	1.5	21.9	43
3	440-480	50/60	23.2	32	1.5	21.9	43

Table 20 – Rigid-mount machines 28 kg / 65 lb – normal spin, medium spin

Installation

Freestanding machines

Transportation and unpacking – freestanding machines

- The machine is delivered bolted onto the transport pallet and packed in a shrink-wrap foil or box.
  - Remove packing from the machine.
  - Remove front and rear panel. Remove the bolts between the machine and pallet.
  - Mount front and rear panel.
  - When the machine is lifted off the pallet: Make sure that the machine does not come down on the floor with either of the rear corners first. The side panel of the machine can be damaged.
  - Mount the feet.
  - Level the machine with the feet of the machine.

⚠ WARNING!
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.

- Two self-adhesive rubber stop-blocks are supplied with the machine. They might be applied as paint protection when opening the door.

- Recheck the setting of the safety switch, see chapter „Maintenance and adjustments“.

- 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 front and rear panel, see figure 3., pos.3, 4.
  - Remove both front metal transport holders, pos. 1.
  - Remove both rear transport holders, pos. 2.

- The machine may not be moved with the transport holders removed. Save the transport securities for future use.

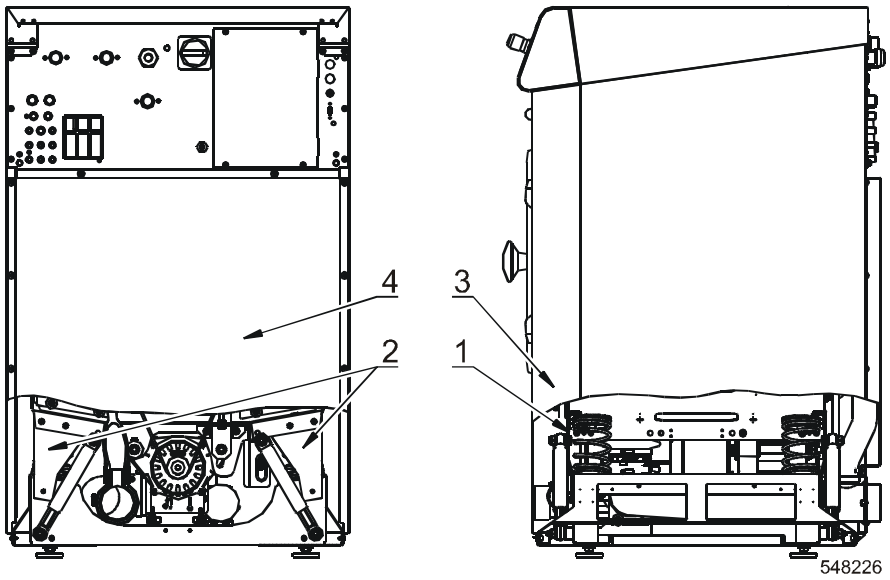


Figure 3 – Freestanding machines

Siting – freestanding machines

- Install the machine close to a floor drain or open drain.
- In order to make installation and servicing the machine easier the following clearances are recommended:
  - At least 500 mm / 20” between the machine and the wall behind
  - And min. 20 mm / 0.79” on both sides of the machine whether installed next to the wall or other machines.

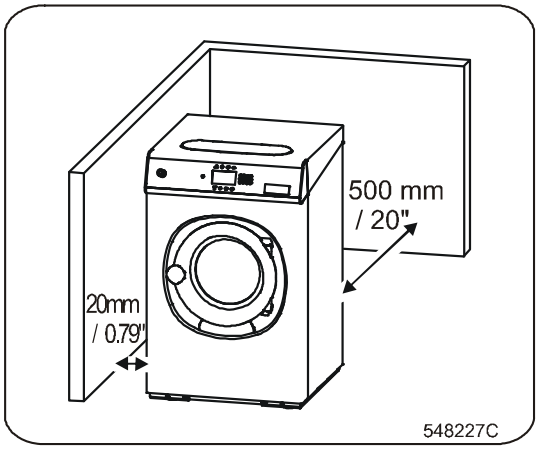


Figure 4 – Freestanding machines

Siting on the floor – freestanding machines

- Freestanding machines don't have to be fixed by means of anchoring bolts. However; if anchoring is necessary, follow these steps:
  - Secure the machine to the floor by two anchoring bolts. The anchoring bolts are not supplied with the machine.
  - Drill 2 holes for anchoring bolts - see figure 5.
- “◎ ” – Position of feet
- “◯ ” – Drilling points for anchoring bolts
- If necessary, place the feet into a narrow U-shaped section, so that the machine does not move during operation.

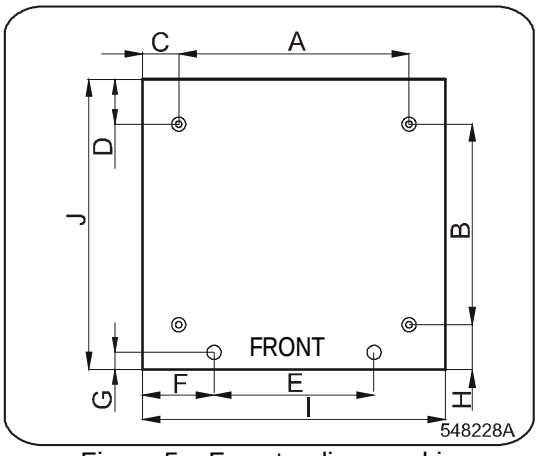


Figure 5 – Freestanding machines

Siting on the floor – freestanding machines										
MACHINE	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
7 kg / 15 lb	530 20.86	394 15.51	90 3.54	129.5 5.09	375 14.76	167.5 6.59	40 1.57	118 4.64	710 27.95	641.5 25.25
8 kg / 18 lb	530 20.86	444 17.48	90 3.54	129.5 5.09	375 14.76	167.5 6.59	40 1.57	118 4.64	710 27.95	691.5 27.22
11 kg / 25 lb	618 24.33	444 17.48	88.5 3.48	129.5 5.09	455 17.91	170 6.69	35 1.37	118 4.64	795 31.29	691.5 27.22
14 kg / 30 lb	618 24.33	564 22.20	88.5 3.48	159.5 6.27	515 20.27	140 5.51	60 2.36	118 4.64	795 31.29	841.5 33.12
18 kg / 40 lb	785 30.90	560 22.04	92.5 3.64	211.5 8.32	595 23.42	187.5 7.38	50 1.96	100 3.94	970 38.18	871.5 34.31
24 kg / 55 lb	785 30.90	695 27.36	92.5 3.64	211.5 8.32	670 26.37	150 5.90	50 1.96	100 3.94	970 38.18	1006.5 39.62
28 kg / 65 lb	785 30.90	770 30.31	92.5 3.64	211.5 8.32	670 26.37	150 5.90	50 1.96	100 3.94	970 38.18	1082 42.60

Table 21 – Freestanding machines, (dimensions stated in mm / inches)

- The bottom frame of the machine shall be used for the purpose of lifting the whole machine.
- Place the machine over the two drilled holes.
- Check that the machine is seated in a perfectly level manner. Adjust with the feet.
- Mount the anchoring bolts in the holes drilled in the floor. Fit the washers and nuts, and tighten well.
- If necessary, prop up the machine frame so that no deformation of the frame may occure during the tightening of the anchor bolts.

Installation on a steel base - freestanding machines

- The steel base structure must be able to withstand the static and dynamic loads of the machine floor, (see machine technical data) and it must allow the machine to be seated in a perfectly level manner - see machine installation.
- Install the machine on a base without adjustable feet.

Freestanding machines 18-24-28 kg / 40-55-65 lb with weighing system – on request

- Lift up the machine. Install two left load sensor supports and two right load sensor supports (pos.1 and 2) to the machine frame as shown in figure 6.
- Install load sensors (3) with their rubber feet (4) onto the supports.
- Check that all the supports 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.
- Fit the sensor cables into the prepared openings with cable fixtures as shown in figure 8, pos. 1.
- 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.
- Install the covers (5), (6), (7).

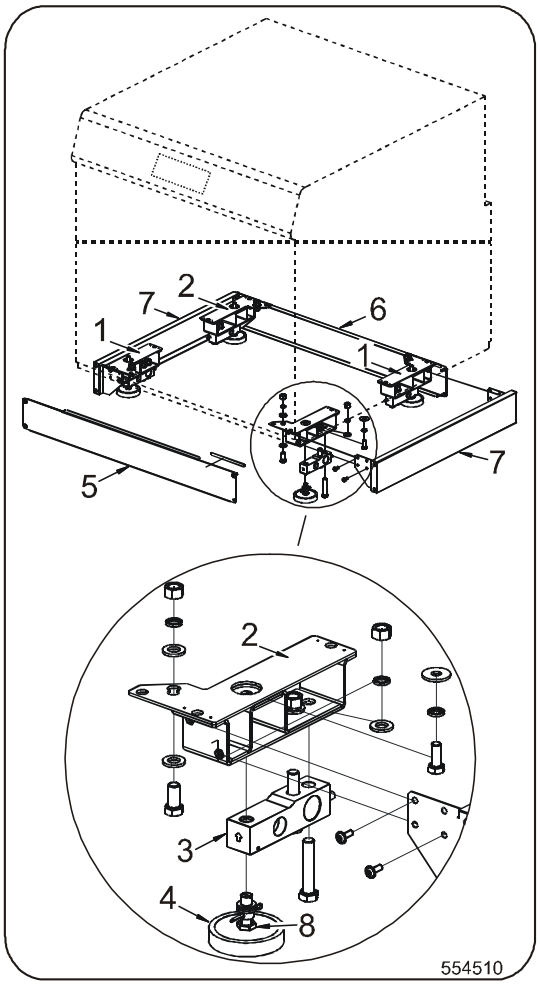


Figure 6

- 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 7.
  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 (4) 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.

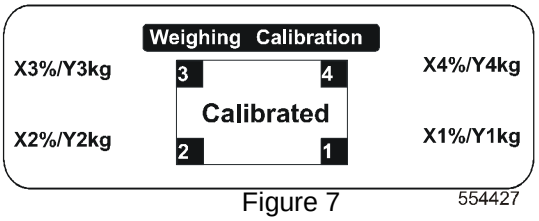


Figure 7

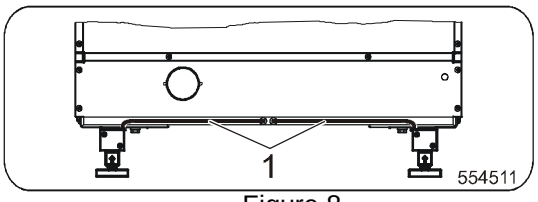


Figure 8

Rigid-mount machines

Transportation and unpacking – rigid-mount machines

⚠ 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!

- The machine is delivered bolted onto the transport pallet and packed in a shrink-wrap foil or box.
  - Remove packing from the machine.
  - Remove front and rear panel. Remove the bolts between the machine and pallet.
  - When the machine is lifted off the pallet: Make sure that the machine does not come down on the floor with either of the rear corners first. The side panel of the machine can be damaged.
- Two self-adhesive rubber stop-blocks are supplied with the machine. They might be applied as paint protection when opening the door.

Siting – rigid-mount machines

- Install the machine close to a floor drain or open drain.
- In order to make installation and servicing the machine easier the following clearances are recommended, see figure 9.
  - At least 500 mm / 20” between the machine and the wall behind.
  - And min. 20 mm / 0.79” on both sides of the machine whether installed next to the wall or other machines.

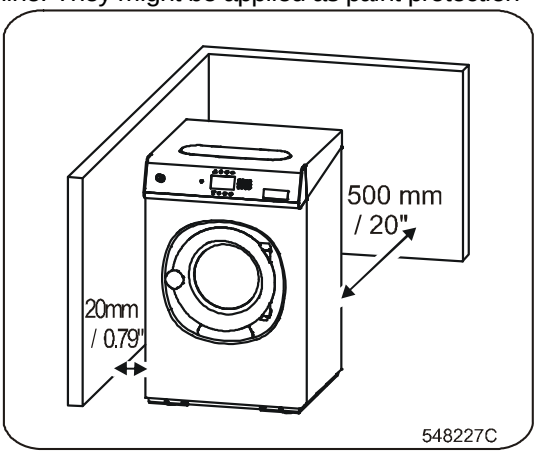


Figure 9 – Rigid-mount machines

Location of anchor bolts – rigid-mount machines

- Use spacing washers in order to install the machine in a level and stable manner in all its corners. See figure 16, 17.
- “ ” – drilling points for anchoring bolts, or chemical anchor bolts, see figure 10, 11.

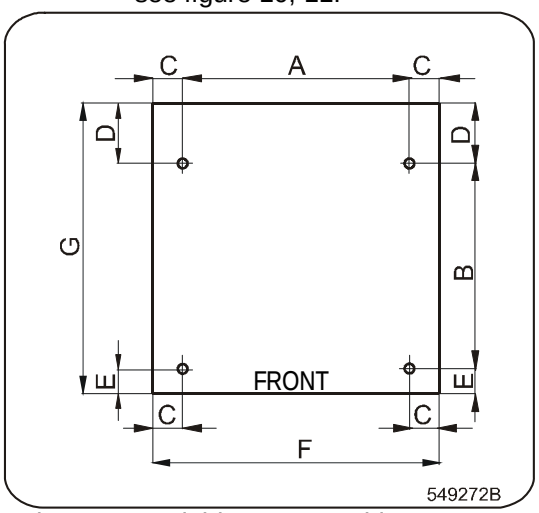


Figure 10 – Rigid-mount machines
8-11-14 kg / 18-25-30 lb,
18-24-28 kg / 40-55-65 lb – normal spin

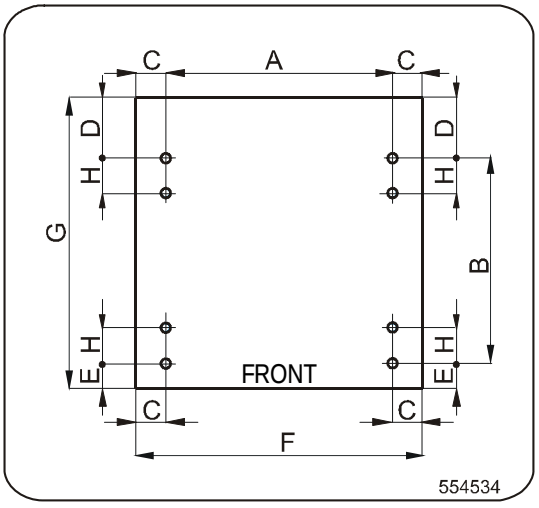


Figure 11 – Rigid-mount machines
18-24-28 kg / 40-55-65 lb – medium spin

Rigid-mount machines								
MACHINE	A	B	C	D	E	F	G	H 18-24-28 kg / 40-55-65 lb MEDIUM SPIN
8 / 18	522 20.55	474 18.66	69 2.71	139 5.47	57.5 2.26	660 25.98	670.5 26.39	-
11 / 25	615 24.21	474 18.66	67.5 2.65	139 5.47	57.5 2.26	750 29.52	670.5 26.39	-
14 / 30	615 24.21	574 22.59	67.5 2.65	154 6.06	57.5 2.26	750 29.52	785.5 30.92	-
18 / 40	751 29.57	569 22.40	69.5 2.74	220,5 8.68	50 1.97	890 35.04	838.5 33.01	82 3.23
24 / 55	751 29.57	714 28.11	69.5 2.74	220,5 8.68	50 1.97	890 35.04	984.5 38.76	82 3.23
28 / 65	751 29.57	789 31.06	69.5 2.74	220.5 8.68	50 1.97	890 35.04	1059.5 41.71	82 3.23

Table 22 – Rigid-mount machines, (dimensions stated in mm / inches)

Providing elevated concrete pad – rigid-mount machines

- This method comes into consideration in case that the existing floor is thinner than 120mm / 4.72”or in case that the machine should be positioned above the existing floor level.
  The height of the elevated pad could be 150-200 mm / 5.9-7.87”, see figure 12.

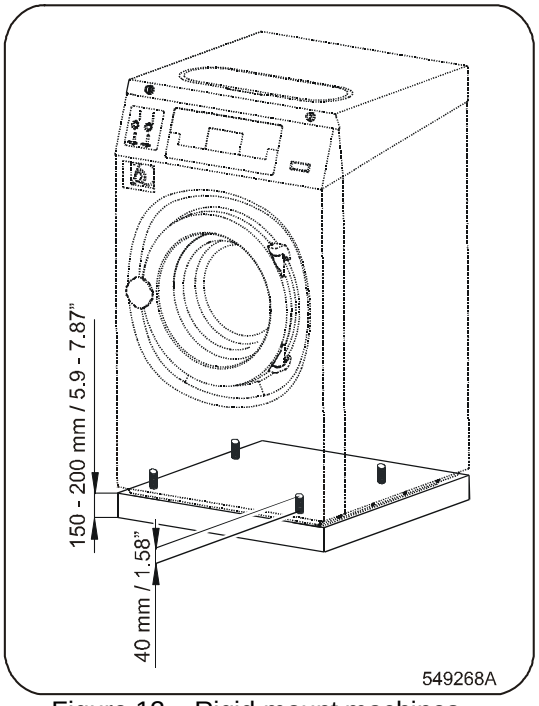


Figure 12 – Rigid-mount machines

Procedure:

- Break and remove the existing floor down to the depth of approx 75mm / 2.95", see figure 13. The longest dimensions of the lower part of the hole must be by 120 mm / 4.72" longer than the dimensions of the upper part of the hole.
  G and F dimensions - see table 22.

- Wet the complete hole and spread over with cement.

- In order to increase the load-bearing capacity and reduce the concrete deformations, we recommend inserting an armature into the base of the pad. In order to achieve adequate connection of the new pad with the existing floor, insert a reinforcing bar or reinforcing bars.
  - **NOTE:** When inserting the reinforcing elements, take into consideration the locations (and space requirements) for drilling holes which will be used for the chemical anchor bolts.

- Pour concrete into the prepared base. Level the surface carefully into a horizontal plane.

- Let the concrete harden for at least one week before installation of the machine.

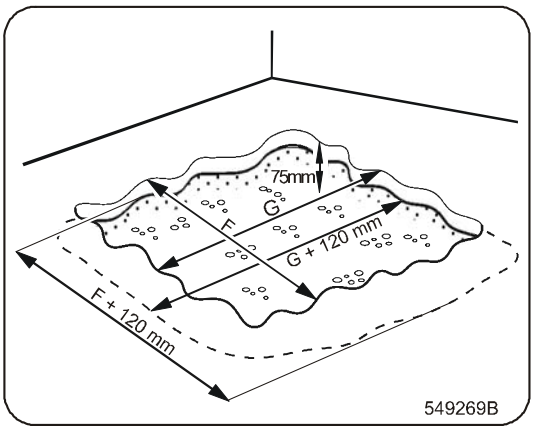


Figure 13 – Rigid-mount machines, G, F – see table 22

Installation on floor or steel base – rigid-mount machines

- The drum of rigid-mount machines is fixed to the frame. The floor and steel base (if used) underneath the machine **MUST** be stable enough to be able to absorb the dynamic loads which are created during the spinning sequence, see the values for each machine specified in table 1, 2.
  Therefore, M16 anchor bolts - pos.4 – see figure 14 and 15 and washers ø60 / ø16.5 x 6mm - pos.2 and M16 self locking nuts - pos.1 must be used so that the machine, the steel base (if used) and floor form one integral unit – see figures 14 and 15.

- The anchor bolts are not supplied with the machine. The washers and nuts are supplied with the machine. The torque is 100Nm.

- The existing concrete floor must be at least 120mm / 4.72" thick. Dimensions for anchoring – see figures 10, 11 and table 22.

- Check that the machine is installed in a level and stable manner in all its corners. If necessary, level it up by means of stainless or galvanised spacing washers, see figures 14, 15, 16, 17, pos.3 (washers are not supplied with the machine) inserted in between the machine frame and the floor – see figures 16, 17. The dimensions of the spacers must be the same as the dimension of the machine frame in the place where the anchor bolts are located – 80x80mm.
- Fit a washer and self locking nut on the anchor bolt and tighten it with a torque wrench to a torque of **100Nm**.
  It is advisable to recheck the torque after a short period of the machine operation.

- The bottom frame of the machine shall be used for the purpose of lifting the whole machine.
- Place the machine over the four drilled holes.
- Check that the machine is seated in a perfectly level manner.
- The anchoring of the machine or the steel base can be carried out by means of mechanical or chemical anchor bolts which must be able to form one integral unit with the floor (they are not supplied with the machine).

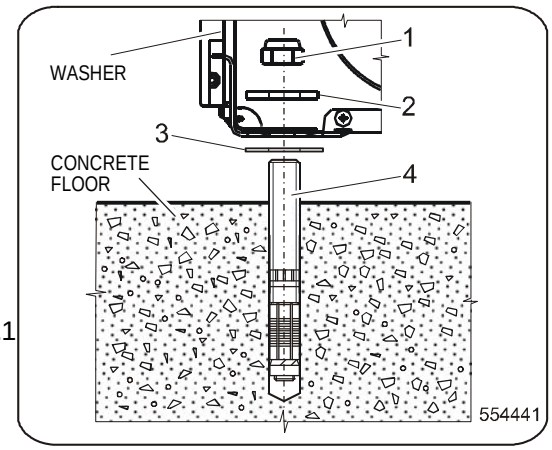


Figure 14 – Rigid-mount machines, Installation on floor

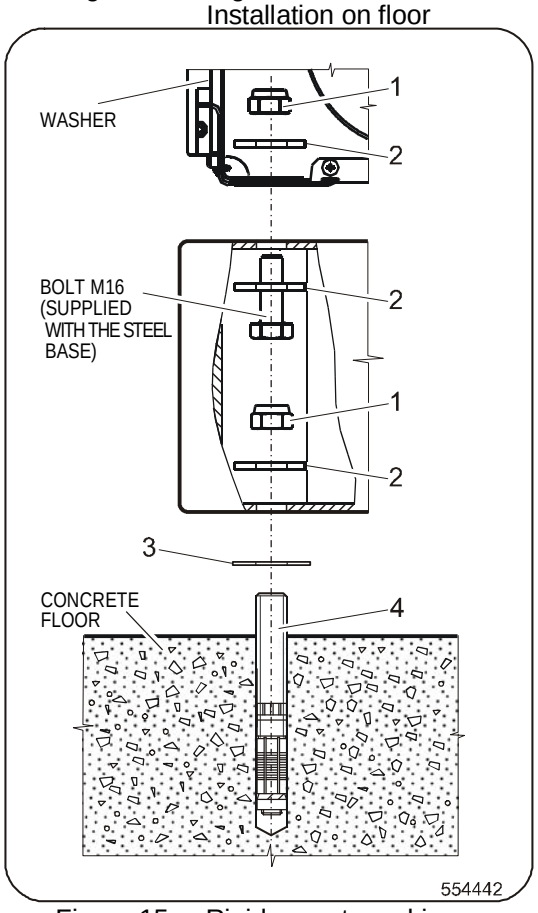


Figure 15 – Rigid-mount machines, Installation on a steel base and floor

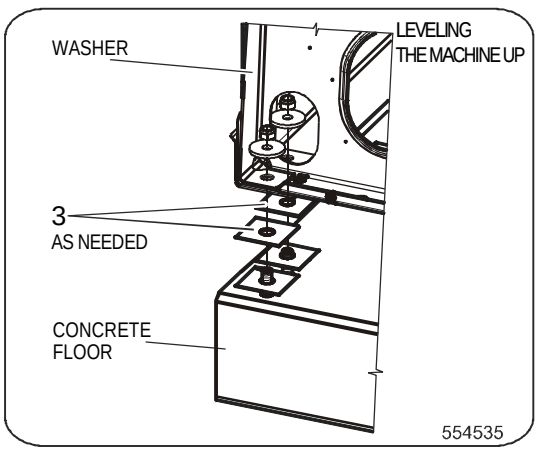


Figure 16 – Rigid-mount machines, 18-24-28 kg / 40-55-65 lb – medium spin

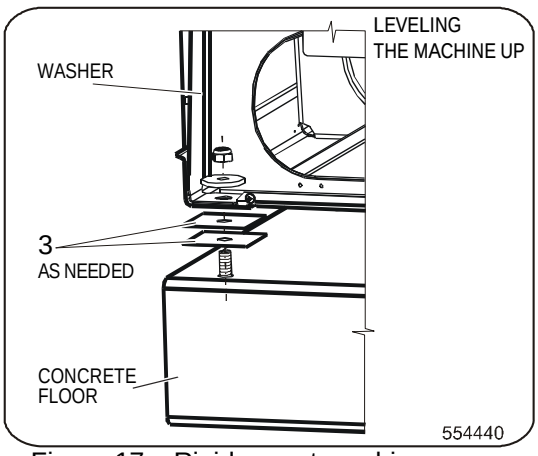


Figure 17 – Rigid-mount machines, 8-11-14 kg / 18-25-30 lb, 18-24-28 kg / 40-55-65 lb – normal spin

Water connections

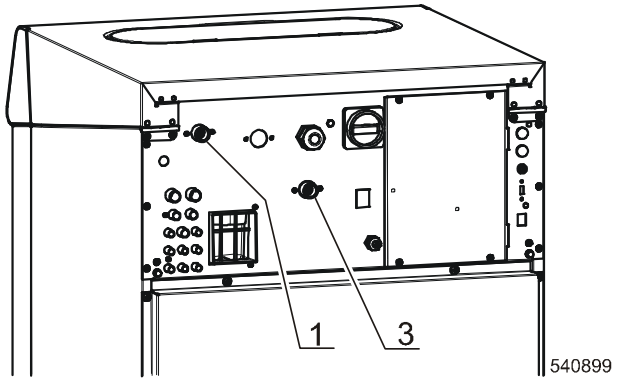
- The appliance has been designed with a build-in “AB” airgap system according EN1717. Nevertheless, when potable water will be connected to the appliance an approved double check valve or some other no less effective device providing backflow prevention protection to at least fluid category three shall 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 23 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. 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 23

2 waters



3 waters

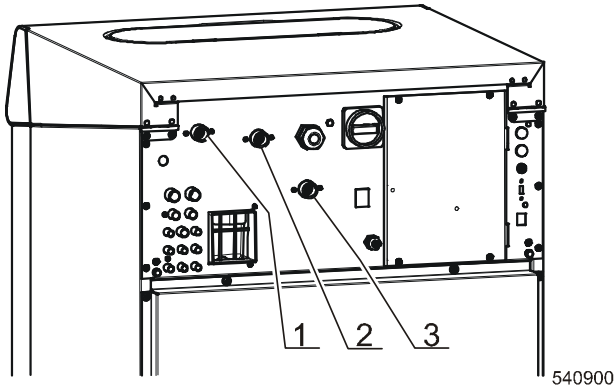


Figure 18

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 Figure19. 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 19) 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.

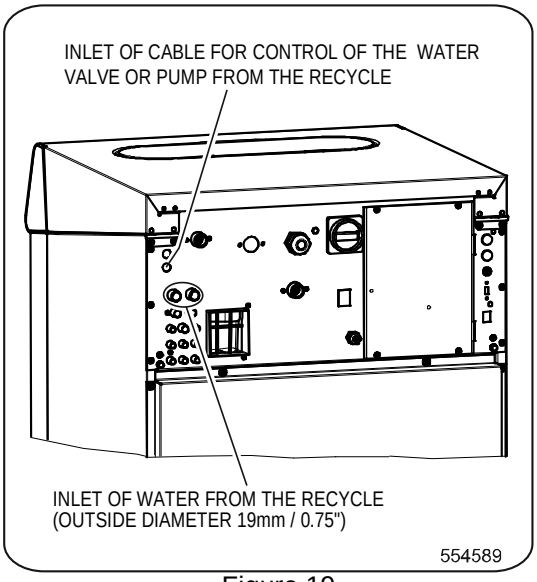


Figure 19

- 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.

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.

Water recycling tank properties

- 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 20.
- 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.

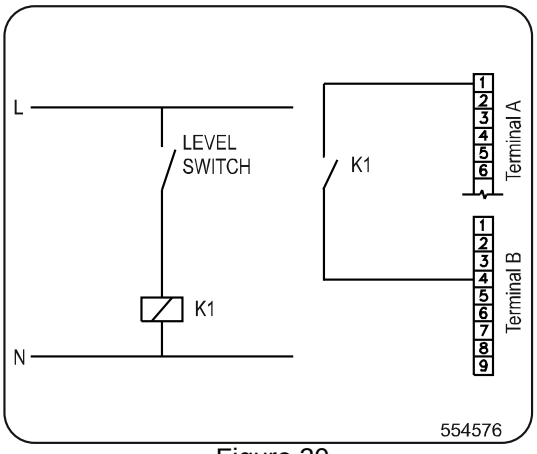


Figure 20

Drain connection

Drain valve

- 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.

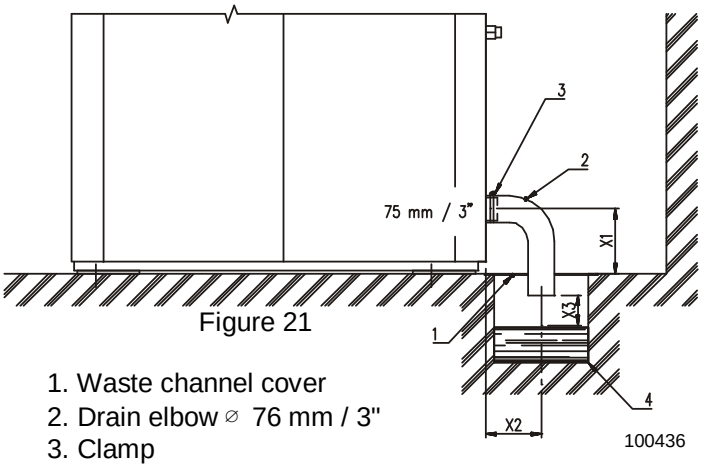


Figure 21

1. Waste channel cover
2. Drain elbow ⌀ 76 mm / 3"
3. Clamp
4. Waste channel

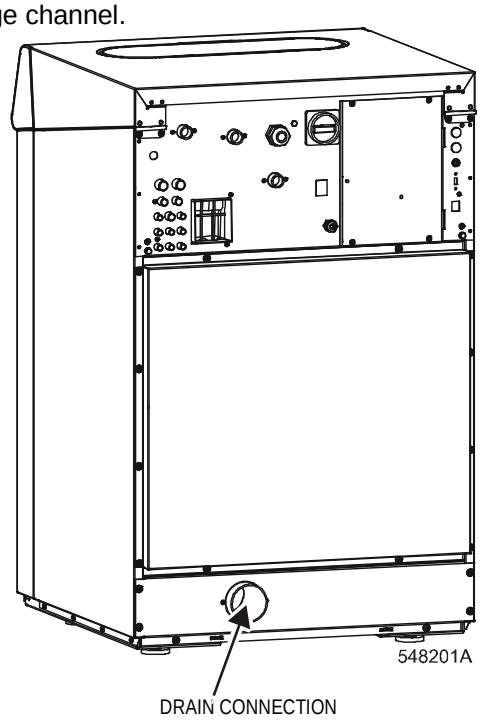


Figure 22

- Recommended distances:
  - x1 = freestanding machines – see figure 1, "G" + "O"
    rigid-mount machines – see figure 2, "G"
  - x2 = >100 mm / 3.94"
  - x3 = >20 mm / 0.79"

- 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 deodorized must be provided every twenty meter, figure 23., 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 figure 23., d1, d2, d3.

- The recommended drain pipes diameter for machines with one drain valve are:
  - d1 = 75 mm / 3" for one machine
  - d2 = 100 mm / 4" for two machines
  - d3 = 125 mm / 5" for three machines

- The diameters of drain pipe for machines with two drain valves must have dimensions suitable for double the value of water flow.

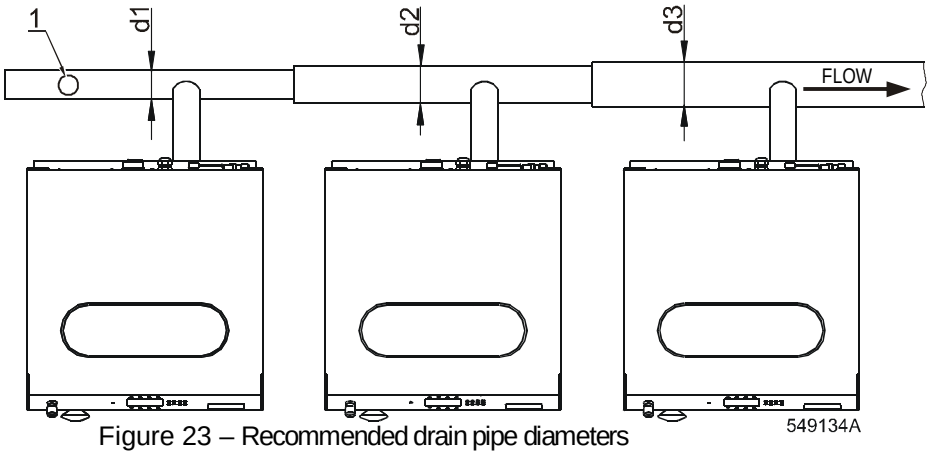


Figure 23 – Recommended drain pipe diameters

Drain pump

Machines 7-8 kg / 15-18 lb

- Connect a flexible hose of a 24 mm / 0.94“ diameter to a drain pipe in manner providing sufficient siphon effect (the hose bend must not be located lower than the water level). In order to achieve good draining, the hose must not bend at a sharp angle.

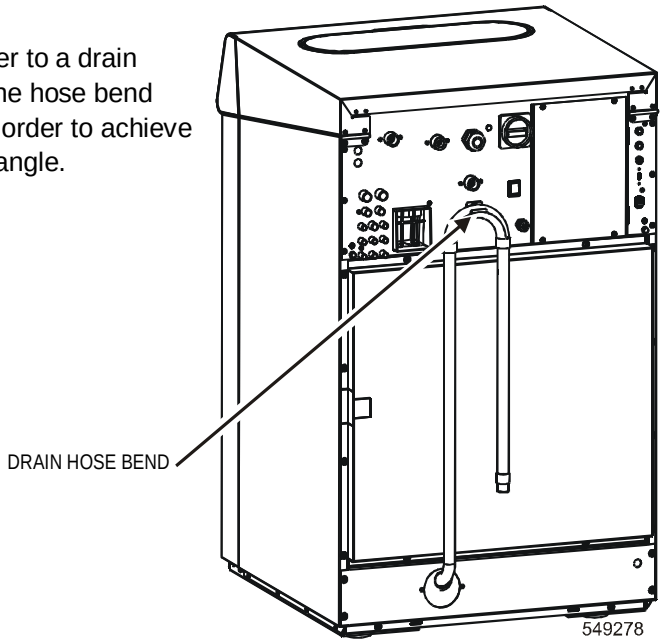


Figure 24

Venting

⚠ **WARNING**
VAPOURS ESCAPE FROM THE MACHINE THROUGH THE AIR VENT OPENING!
SEE FIGURES 1, 2, POSITION 22. 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 INJUIRES.

⚠ **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 figures 1, 2 and technical specification 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.

Machines 7-8-11-14 kg / 15-18-25-30 lb

- 1. Remove the rear cover.
- 2. Fit the holder pos. 1 with the steam valve and filter onto the rear part of the machine.
- 3. Connect the steam hose pos. 2 to steam valve.
- 4. Connect the cable pos. 3 to the coil pos. 4 of the steam valve (see the machine wiring diagram).
- 5. Fit the rear cover back to its original place.

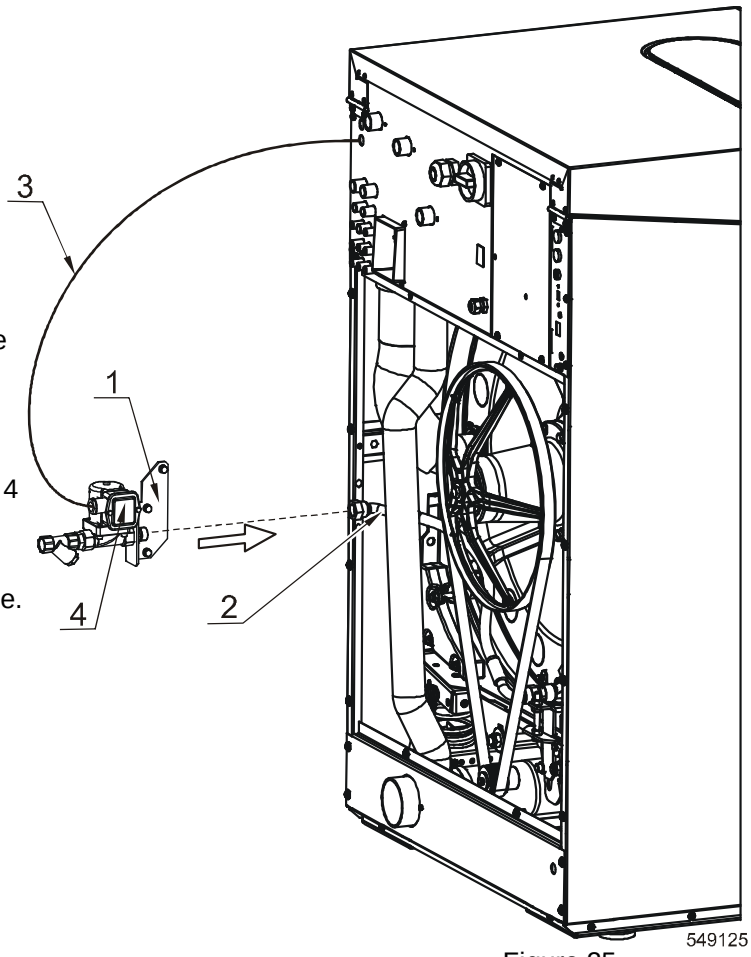


Figure 25

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.
- **CAUTION:** The machines are produces in two versions:
  Without liquid soap (standard version)
  With liquid soap (according to the request)
- 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 back side, a plastic hose connection part is present, figure 26, 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 Ø 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 Ø 12 mm / ½". Use this nipple ONLY for entering diluted soap. Drill with Ø 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.

⚠ **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.

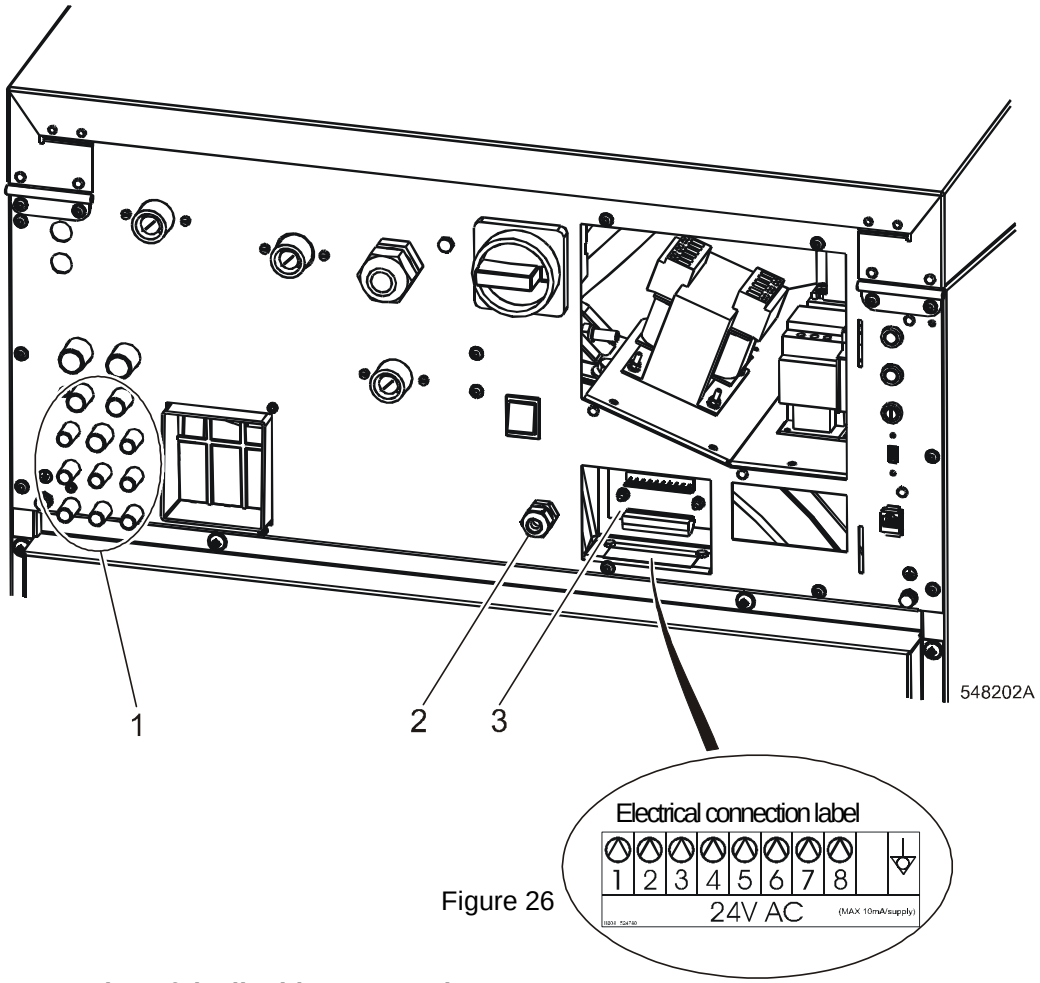


Figure 26

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 back side of the machine the terminal box with LED signalization of activation of the respective pump, see figure 26, pos.3. At the terminal box there is a label for electric connection. 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.

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 27. 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

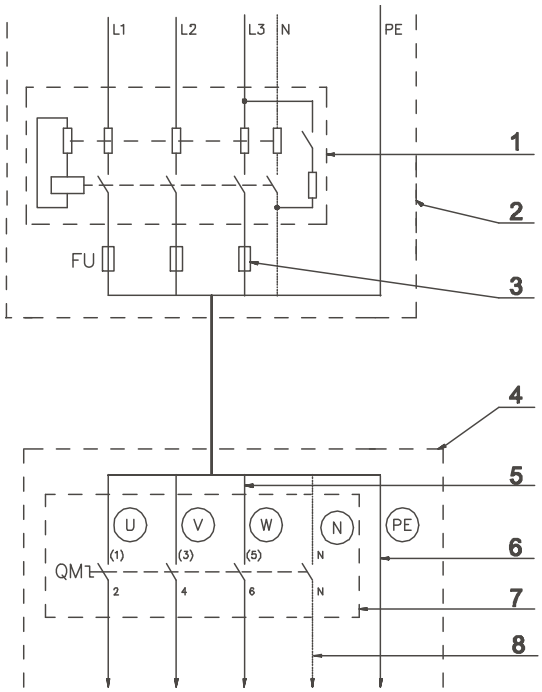


Figure 27 – Machine connection to electrical network (with a residual current device) 505529

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 therefor 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. 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 24, 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 in the on the rear panel, insure a strain relief (turnbuckle) is used so that the supply cable can not move.
  - Strip the conductor ends according figure 28.
  - 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 29.
  - 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 29.

Power supply protection device nominal current (US)		Min. phase conductor section in mm² (AWG)	Min. Protection conductor section in mm² (AWG)
Automatic circuit breakers	Fuses		
16A (15A)	10A (10A)	1,5 mm² (AWG 15)	1,5 mm² (AWG 15)
20A (20A)	16A (15A)	2,5 mm² (AWG 13)	2,5 mm² (AWG 13)
25A (-)	20A (20A)	4 mm² (AWG 11)	4 mm² (AWG 11)
40A (40A)	32A (30A)	6 mm² (AWG 9)	6 mm² (AWG 9)
63A(-)	50A (50A)	10 mm² (AWG 7)	10 mm² (AWG 7)
80A	63A	16 mm²	16 mm²
100A	80A	25 mm²	16 mm²
125A	100A	35 mm²	25 mm²

Table 24 – Manufacturer's recommended minimal conductor section

- 1. Protection conductor
- 2. Phase conductor
- 3. Phase conductor
- 4. Phase conductor
- 5. Neutral conductor
- 6. Molded tube
- 7. The stripped length of conductors

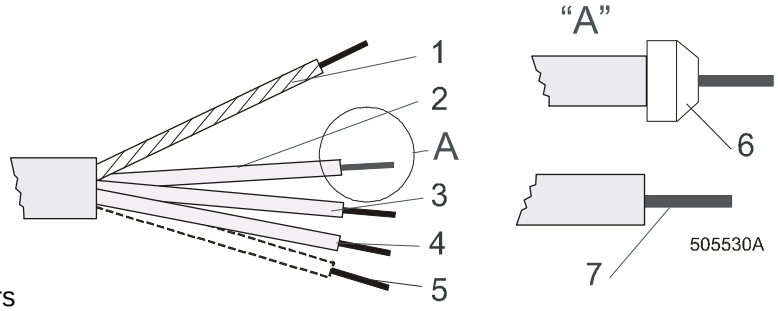


Figure 28 – Adaptation of conductor ends of supply cable

- 1. Main switch
- 2. Turnbuckle
- 3. Sag of inlet cable

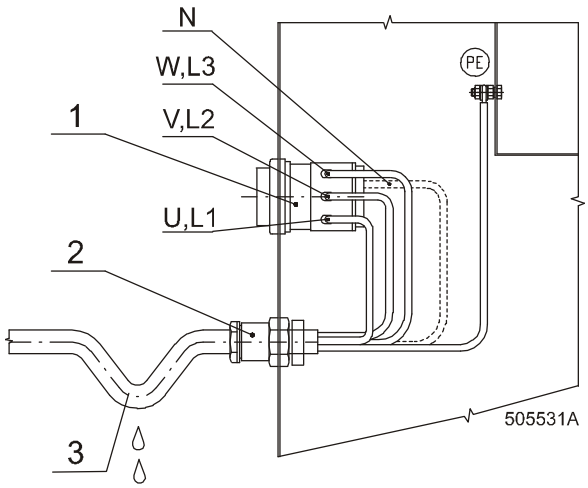


Figure 29 – Connection of main power inlet

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 rear panel of the machine frame, figure 30, pos.3. The minimum protection conductor's cross section depends on the supply cable cross section and can be found in table 24. However, for the protection purposes with the supply cable section of min. 4 mm² we recommend to selecta larger conductor section, i.e. 6 mm².

- 1. Washing machine (rear view)
- 2. Laundry protective earth connection
- 3. Washing machine external protective terminal
- 4. Protective conductor - washing machine connection
- 5. Earth mark

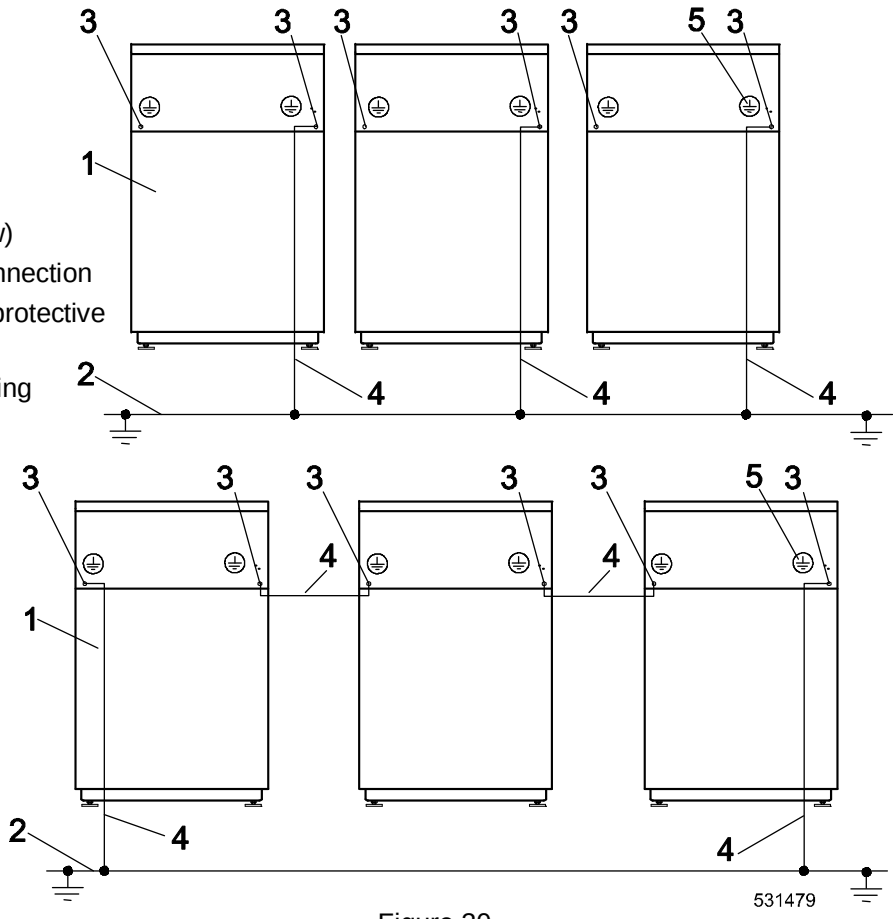


Figure 30

Multiple single-phase machines in line

- When multiple single phase machines are connected to the same electrical network, it is necessary to connect the machines according to figure 31. 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.

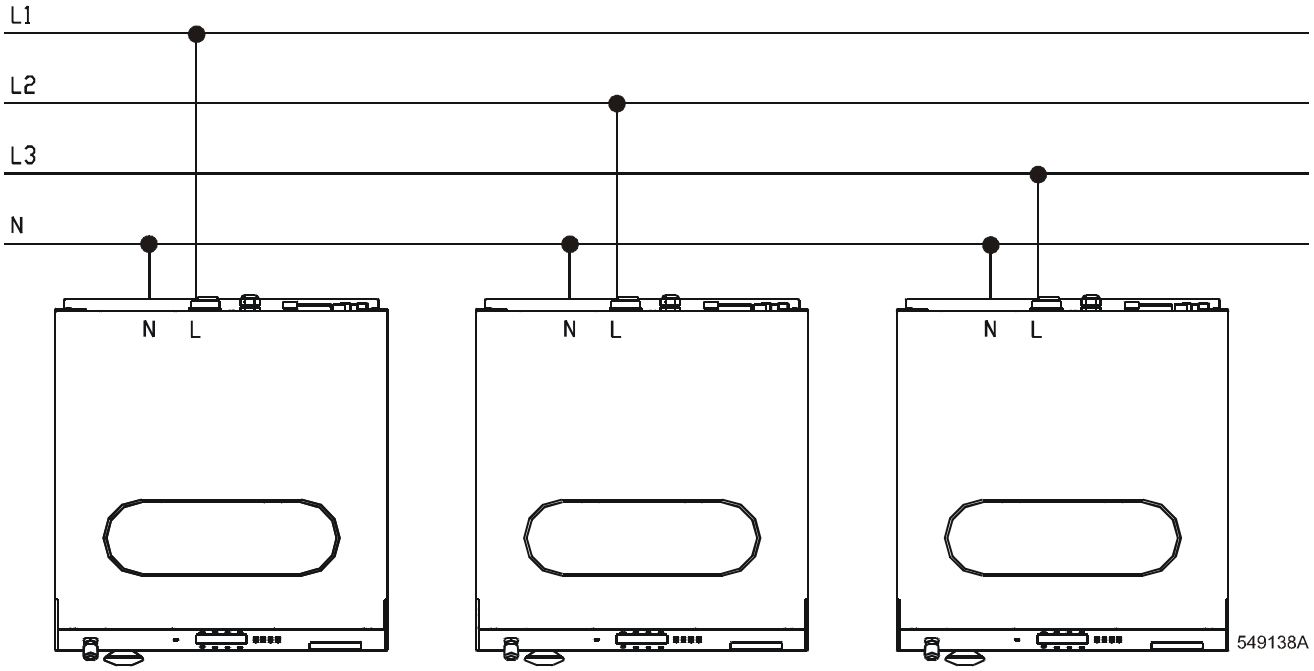


Figure 31 – Multiple machines in line

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 damped 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 tightness or possible damage; therefore remove the machine rear 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).
- In order to increase the service life of the door rubber sealing, treat the sealing surface by applying a glycerine-based impregnating agent.

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 hoses at the back of 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.
- If your machine is fitted with a drain pump, make sure that the pump provides normal flow rate during draining. The drain pump can be cleaned only when it becomes clogged/choked with foreign bodies such as buttons, hairpins etc. Before the cleaning procedure, drain all the water from the machine. Then disconnect the machine from the power supply by removing the plug from the socket. Remove the front panel of the cabinet by unlocking the 2 bolts, figure 32, pos.1. Slightly turn the pump lid, pos. 2 until water starts flowing out. Be careful to catch this water. Then completely unscrew the lid and remove the foreign objects. After the cleaning procedure, screw the pump lid, pos.2 back on, and fit back the front panel of the cabinet.

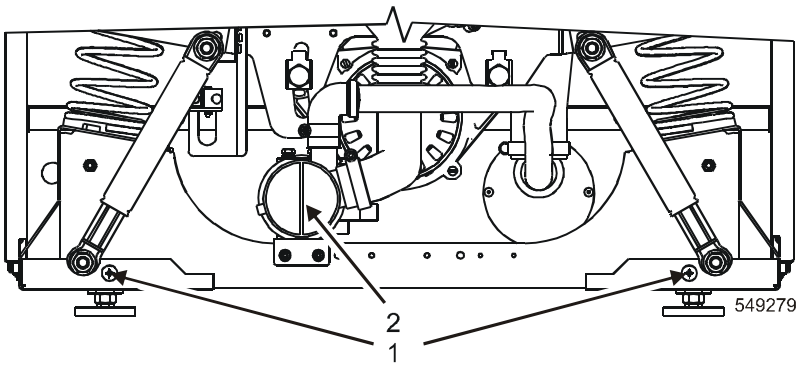


Figure 32

⚠ 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)

Replacement of door rubber

- Open the door. Remove the door glass with rubber from the door frame by pushing it towards the drum. Do it carefully, do not damage the glass.
- Remove the gasket from the glass.
- Place a new rubber gasket with wider groove on the glass with the edge up.
- Place a smooth cord in the groove all around. Tighten up the margin by cord and fit the unit to the door opening. Hold one end of the cord firmly on the door. Pull the other cord end towards the center of the glass so the rubber edge can properly fit into it.
- Apply a small amount of silicone in the place between the door frame and the rubber sealing – in the upper and lower parts of the frame. Make sure the silicone is not pushed over the door sealing outline when the door is closed. Leave the door closed until the silicone cures.

- **Important note:** There is a possibility that after replacing the door seal the door seal pressure on the door lock side and hinge side can be too high. If this situation occurs, run the Wash program 1 without any laundry.

Adjusting of safety switch – freestanding machines

- 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:

    7-8-11-14 kg / 15-18-25-30 lb: X = 5 - 15 mm / 0.2 - 0.59”
    18-24-28 kg / 40-55-65 lb: X= 0 - 10 mm / 0 - 0.39“

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

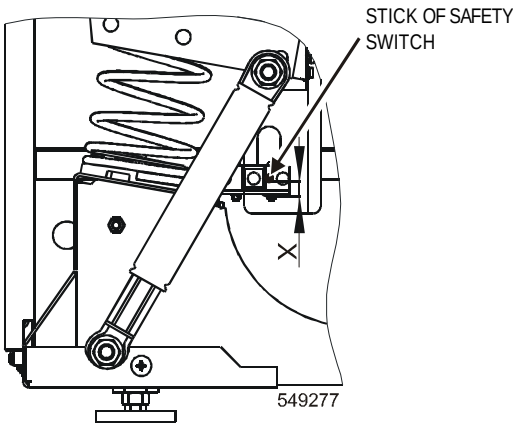


Figure 33

⚠ 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.

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

- 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 rear of the machine. 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.
  Freestanding machines:
  - 7-8 kg / 15-18 lb : 67-70 Hz
  - 11 kg / 25 lb : 65-68 Hz
  - 14 kg / 30 lb : 79-83 Hz
  - 18 kg / 40 lb : 64-69 Hz
  - 24-28 kg / 55-65 lb : 72-75 Hz

  Rigid-mount machines:
  - 8 kg / 18 lb : 88-98 Hz
  - 11 kg / 25 lb : 62-67 Hz
  - 14 kg / 30 lb : 73-78 Hz
  - 18 kg / 40 lb : 56-61 Hz
  - 24 kg / 55 lb : 63-73 Hz
  - 28 kg / 65 lb : 80-86 Hz

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

- Standard torques are used on the machines - with the exception of the torques in the locations specified below:

o Bolts securing the door lock	M5 – 2.5 Nm
o Central bolt of the door handle	M6 – 8.8 Nm
o Turning mechanism of the door handle	3.5 - 3.8 Nm
o Bolts securing the door hinge, front panel	M6 – 8.8 Nm
o Anchoring bolts	M16 – 100 Nm

Freestanding machines

o Spring holder bolts	M8 – 10 Nm
o Bolts of the dampers	M10 – 24 Nm
o Motor holder bolts	M12 – 45 Nm
o Bolts of the weight	M8 – 26 Nm
o Bolts of the tightening flange of the external tub:	M8 – 12 Nm – 7-8-11-14 kg / 15-18-25-30 lb M8 – 26 Nm – 18-24-28 kg / 40-55-65 lb

Rigid-mount machines

o Bolts of the tightening flange of the external tub	M8 – 26 Nm
o Motor holder bolts	M12 – 5 Nm

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

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.
- **Rigid-mount machines:** Remove front panel.
- **Freestanding machines:** Gently push the washing unit to back.
- Put your fingers over the edge of the front panel on the door lock side.
- First push the emergency door opening button, only then turn the door handle right.
- Open the door if all safety conditions are fulfilled.

Error indication shown on display

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

List of recommended spare parts

- Find more detailed information and order codes in the spare parts catalogue for individual machines at your dealer.
  - 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
  - belts
  - door seal

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: