

RIGID MOUNTED INDUSTRIAL WASHER EXTRACTORS

6kg
7kg
10kg
13kg
18kg
22kg
27kg
35kg

INSTALLATION, MAINTENANCE AND USER'S MANUAL

504615 I
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USER'S MANUAL

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2. WARNINGS AND LABELS



TO MINIMIZE THE RISK OF FIRE, INJURY BY ELECTRIC SHOCK OR SERIOUS INJURIES TO PEOPLE OR PROPERTY DAMAGE, PLEASE READ AND FOLLOW THE FOLLOWING INSTRUCTIONS:

- ◆ This English version is original language version. Without this original version, these 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.
- ◆ The washer extractor is designed for fabrics washing only, other objects can damage the machine and can cause damage or injuries.
- ◆ 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.
- ◆ If the machine is used for special applications follow the instructions and warning to avoid person injury.
- ◆ Keep the washer extractor surface and surrounding clean and free of flammable materials.
- ◆ Do not put fabrics in the washer extractor treated with flammable products. Such fabrics must first be washed by hand and air dried.
- ◆ Store laundry aids, dry-cleaning solvents and disinfectants 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.
- ◆ Do not remove warning signs placed on the machine. Observe signs and labels to avoid personal injuries.
- ◆ 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.
- ◆ 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.
- ◆ Do not operate the washer extractor when parts are broken or missing or when covers are open. The machine shall not be operated until the fixed guards are put correctly in place.
- ◆ 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.
- ◆ 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.
- ◆ By danger turn off the main switch or other emergency disconnection devices.
- ◆ Check the functioning of the door lock mechanism on regular base.
- ◆ Turn off the main water supply at the end of each operating day.
- ◆ Only qualified service personnel may open the washing washer extractor to carry out servicing.
- ◆ Follow all valid basic safety rules and laws.
- ◆ It is obvious that it is impossible to mention each possible risk in this manual. It is up to the user to proceed as careful as possible.
- ◆ The manufacturer reserves the right to change the manuals without previous notice.
- ◆ If a problem should arise, contact your dealer for assistance.
- ◆ 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.
- ◆ The washer extractor produces equivalent continuous (A-weighted) sound power level which doesn't exceed 70 dB (A).

⚠ WARNING!

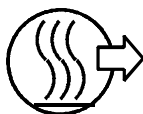
IF THE INSTALLED APPLIANCE OPERATE WITH COIN, TOKEN OR SIMILAR OPERATION FOR USE IN SELF-SERVICE SITUATIONS, THEN THE OWNER-INSTALLER MUST PROVIDE A REMOTE-LOCATED EMERGENCY STOP DEVICE. THIS DEVICE MUST BE PLACED IN SUCH A WAY THAT IT IS EASY AND SAFELY ACCESSIBLE FOR THE USERS. THE EMERGENCY STOP DEVICE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

⚠ WARNING!

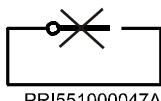
DO NOT TOUCH THE DOORGLASS UNTIL CYCLE HAS BEEN COMPLETED. DO NOT OPEN DOOR UNTIL CYLINDER REMAINS STOPPED AND WATER HAS BEEN DRAINED FROM CYLINDER. DO NOT PUT ARTICLES SOILED WITH EXPLOSIF SOLVENTS AND/OR DANGEROUS CHEMICAL PRODUCTS IN THE MACHINE. THIS MACHINE SHOULD NOT BE USED BY CHILDREN. DO NOT 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!**

Always disconnect the washer from the electrical supply before attempting any service. The washer extractor is out of tension if the main plug is taken out or when the main supply is disconnected. When the main switch is turned off the inlet terminals of the machine main switch are still under current!

**CAUTION!**

Extreme hot conditions can arise in the surroundings of this air. Watch out for vapor that escapes from the washer extractor venting!

**CAUTION!**

Do not cover the washer extractor venting. It serves as a vapor outlet to prevent pressure building in the washer extractor.

PRI551000047A

**WARNING!**

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

**WARNING!**

LOOKING AT THE MACHINE FROM THE FRONT VIEW THE DRUM ROTATION DURING EXTRACTION MUST BE CLOCKWISE.

**WARNING!**

SAFETY LABELS APPEAR AT CRUCIAL LOCATIONS ON THE MACHINE. FAILURE TO MAINTAIN LEGIBLE SAFETY LABELS COULD RESULT IN INJURY TO THE OPERATOR OR SERVICE TECHNICIAN.

2.1. INSTRUCTIONS FOR MAINTENANCE, ADJUSTMENT AND SAFETY OF PEOPLE

Some important information for the usage of the machine are not (or only partly) mentioned in this User's Manual. Missing information is possible to find in Installation and maintenance manual, which is delivered with the machine.

References to „Installation and Maintenance Manual" according to norm EN ISO 10472-1:

- | | |
|---|---------------------|
| 1. Description of the safe work system when maintenance is performed / adjustment / and when eliminating defects. | - chapter 5 / 5 / 6 |
| 2. Description of qualities for ventilation | - chapter 4 |
| 3. Procedures on searching for defects / cleaning / maintenance | - chapter 6 / 5 / 5 |
| 4. Heat risks | - chapter 3 |
| 5. Safety procedure on manipulation, installation and dismantling | - chapter 4 |

References to „Installation and Maintenance Manual" according to norm EN ISO 10472-2:

- | | |
|---|-------------|
| 6. Maintenance of door blocking | - chapter 5 |
| 7. Electric risks | - chapter 2 |
| 8. Heat energy | - chapter 3 |
| 9. Sight holes | - chapter 3 |
| 10. Appropriate processes | - chapter 2 |
| 11. Explosive atmosphere | - chapter 2 |
| 12. Biological or chemical pollution of water | - chapter 2 |
| 13. Maximal possible overspeed | - chapter 3 |

3. SYMBOLS ON THE MACHINE



Caution, dangerous electrical tension, electrical devices



Caution, other danger, read and follow written instructions



Caution - Increased temperature



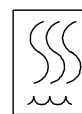
Do not close or cover



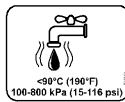
The machine hot air outlet



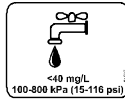
In case of emergency press the emergency button to stop the machine



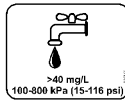
Steam



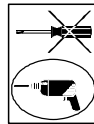
Warm water inlet
(red color of the label)



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



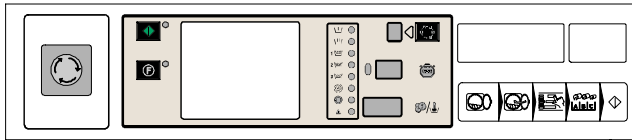
Hard cold water inlet
(dark blue color of the label)



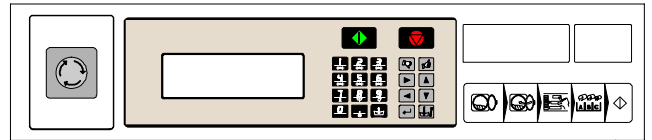
The holes to be drilled not punched

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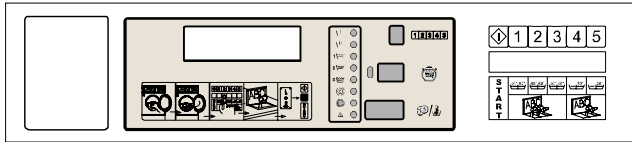
EASY CONTROL MICROPROCESSOR



GRAPHITRONIC MICROPROCESSOR



EASY CONTROL MICROPROCESSOR WITH MECHANICAL BUTTONS



100460E



PROGRAM SELECT



CYCLE TIME



COIN/TEMPERATURE



FUNCTION BUTTON



START



EMERGENCY STOP KNOB
(Only used by not coin washer extractors)

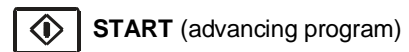


COIN SYSTEM



PROGRAM SELECT

100461D



START (advancing program)



STOP (interrupting program)



YES SELECTION



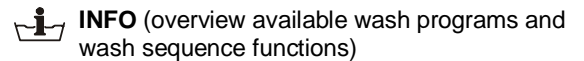
NO SELECTION



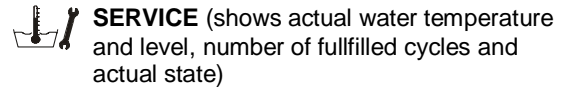
INCREASING SEQUENCE TIME



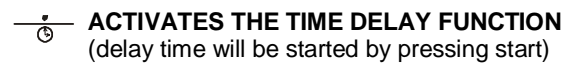
DECREASING SEQUENCE TIME



INFO (overview available wash programs and wash sequence functions)



SERVICE (shows actual water temperature and level, number of fulfilled cycles and actual state)



ACTIVATES THE TIME DELAY FUNCTION
(delay time will be started by pressing start)



OPENING THE INLET VALVES



ACTIVATE HEATING



OPEN DRAIN VALVE



SPEED ADJUST



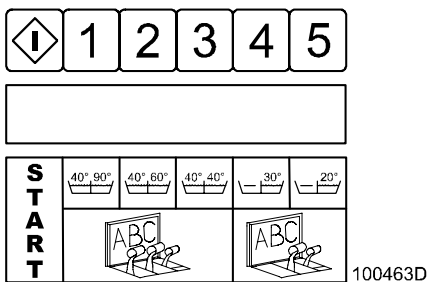
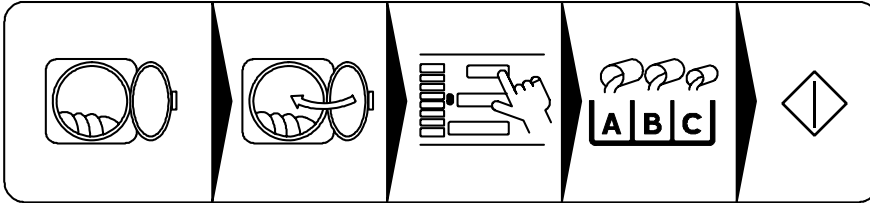
ENTER - SELECTION OR CONFIRMATION

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4. OPERATION INSTRUCTIONS

4.1. 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.



4.2. OPEN THE DOOR

Open the door by pulling on the door handle.

4.3. LOADING THE WASHER

⚠ 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.

4.4. CLOSE THE DOOR

Close the door with the door handle, making sure the door is properly latched before operating the washer.

4.5. 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. Insert the wash program number. The different washing programs are indicated on the operator panel. The selection of the program determines the temperature and the time for washing and rinsing, the wash action and the spin speed and time.

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

4.6. WASH PROGRAMS OVERVIEW

Wash program 1:	Hot wash	90°C	
Wash program 2:	Warm wash	60°C	
Wash program 3:	Coloured wash	40°C	
Wash program 4:	Bright coloured wash	30°C	
Wash program 5:	Woolens	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 coloured wash	30°C	ECONOMY level
EASY CONTROL: Wash program A: GRAPHITRONIC: Wash program 10:	Hot wash	90°C	SUPER ECONOMY level
EASY CONTROL: Wash program B: GRAPHITRONIC: Wash program 11:	Warm wash	60°C	SUPER ECONOMY level
EASY CONTROL: Wash program C: GRAPHITRONIC: Wash program 12:	Coloured wash	40°C	SUPER ECONOMY level
EASY CONTROL: Wash program D: GRAPHITRONIC: Wash program 13:	Bright coloured wash	30°C	SUPER ECONOMY level
EASY CONTROL: Wash program E: GRAPHITRONIC: Wash program 14:	Extraction		low speed
EASY CONTROL: Wash program F: GRAPHITRONIC: Wash program 15:	Extraction		high speed

4.7. ADD DETERGENTS

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



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- ◆ Dispenser **A**: Prewash (add the detergent at the beginning of the wash cycle)
- ◆ Dispenser **B**: Wash (add powder detergent or bleach detergent at the beginning of the cycle, you may add liquid detergent or liquid bleach during the wash cycle. If added at the start of the cycle, it will run in the washer prematurely)
- ◆ Dispenser **C**: Final Rinse (Add fabric softener at the beginning of the cycle or before the final rinse)

Fill the soap dispenser at the front or side of the washer extractor depending of the chosen program.



- ◆ Dispenser **A**: 1 st Wash
- ◆ Dispenser **B**: 2 nd Wash
- ◆ Dispenser **D**: Last Rinse

Add the detergents before the start of the wash cycle.

□ Standard wash programs versus custom made wash programs.

This explanation is only valid for standard wash programs. For custom made programs, it's possible that other dispensers have been selected. (See programming manual)

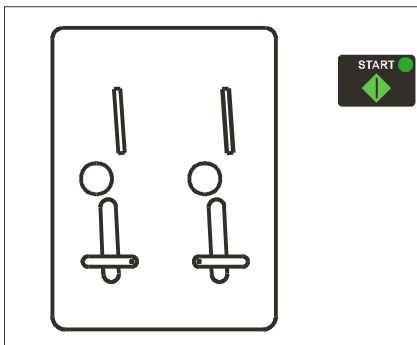
□ Remark:

- It is advisable to use only detergents with „foam breaker“ which can easily be found in retail shops. 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.

4.8. START THE WASHER

4.8.1. EASY CONTROL MICROPROCESSOR WITH KEYPAD AND MECHANICAL BUTTONS

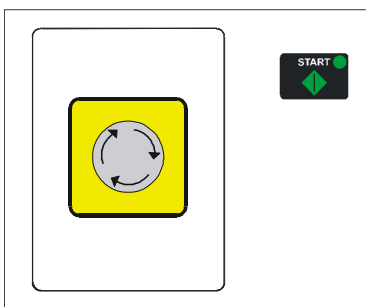
COIN OPERATED MODELS



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- After choosing the program with the PROGRAM SELECT button, throw the right amount of coins in the slot indicated on the lower display. The display shows the remaining amount that has to be thrown in. If the display shows 00, the washer extractor can be started. The little light by the start button will be flashing.
- Push the START button to start the washer extractor. When you have selected a wrong washing program, you can change it during the first 150 seconds of the program by pushing the SELECT button. 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

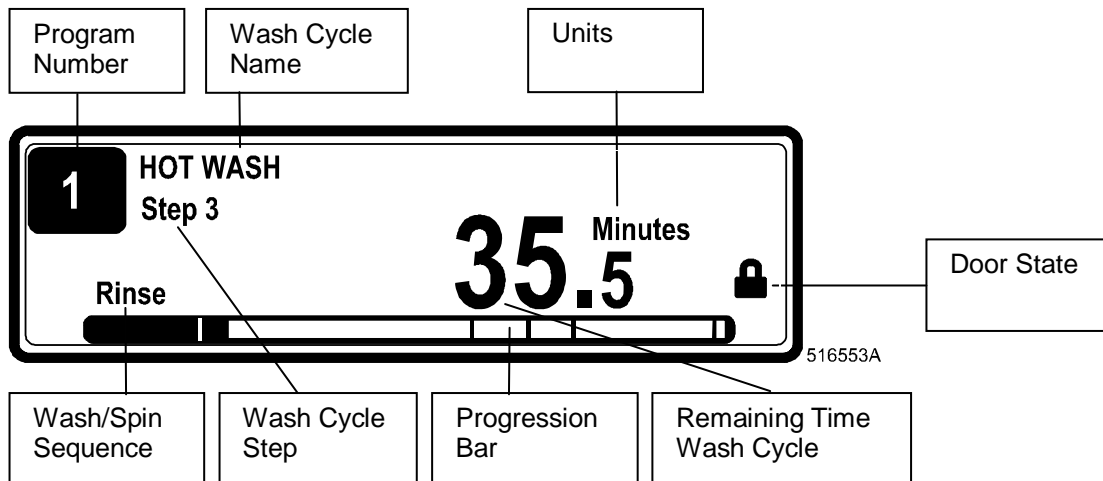


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- After choosing the program with the PROGRAM SELECT button, push the START button to start the washer extractor. When you have selected a wrong washing program, you can change it during the first washing step by pushing the SELECT button.
- During the washing cycle you follow the actual washing sequence, the remaining time and if been set the temperature on the displays.
- If the advance function has been set by the installer, you can go on to the next step by pushing the START button.

4.8.2. GRAPHITRONIC MICROPROCESSOR

After selecting the desired wash program number, by pressing the START button the wash cycle will be started. If there is no washing program available for the selected program number, „INVALID will be displayed“.



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4.9. END OF WASH CYCLE

4.9.1. EASY CONTROL MICROPROCESSOR WITH KEYPAD AND MECHANICAL BUTTONS

You can see clearly the end of the washing cycle on the operator panel when the light next to the door symbol lights up and the time display indicates „0“. Open the door with the door handle and take out the fabrics of the washer extractor.

⚠ WARNING!
IF YOU CAN'T OPEN THE DOOR, FOR EXAMPLE BY A POWER FAILURE, WAIT A CERTAIN TIME UNTIL THE SECURITY SWITCH IS COOLED DOWN. THIS IS A SAFETY! THE DOOR CAN BE OPENED AFTER A COUPLE OF MINUTES. MAKE SURE THAT THE DRUM HAS COMPLETELY STOPPED AND DRAINED BEFORE OPENING THE DOOR.

When a power failure occurs for a short time, the wash program will continue when the power comes back on. When the failure occurs for a longer time and the door is still closed the display and the light next to the start button starts flashing when power is restored. If the door is still locked the timer will continue the program. For machines initialised as coin operated models, the door will be locked immediately. Press the start button to continue the program. If the door was opened, the program will be resetted.

4.9.2. GRAPHITRONIC MICROPROCESSOR



WARNING!

IF YOU CAN'T OPEN THE DOOR, FOR EXAMPLE BY A POWER FAILURE, WAIT A CERTAIN TIME UNTIL THE SECURITY SWITCH IS COOLED DOWN. THIS IS A SAFETY! THE DOOR CAN BE OPENED AFTER A COUPLE OF MINUTES. MAKE SURE THAT THE DRUM HAS COMPLETELY STOPPED AND DRAINED BEFORE OPENING THE DOOR. AT THE END OF THE THE WASH CYCLE, WHEN THE REMAINING PROGRAM TIME REACHES 0, PROGRAM END IS DISPLAYED. WHEN UNLOAD APPEARS ON THE DISPLAY, OPEN THE DOOR BY THE DOOR HANDLE AND TAKE OUT THE GARMENTS OF THE WASHER EXTRACTOR. (ONLY FOR MACHINES WITH „GRAPHITRONIC“)

4.10. HOW TO OPEN THE DOOR BY FAILURE

See Installation and maintenance manual.

5. FIRST SERVICE AT TECHNICAL PROBLEM

N°	Failure message	Failure	Action	Fault occurrence
E1	No Drain Co	Drain failure Cooldown	Full Stop + tumble	Draining sequence Cooldown
E2	No Drain	Drain failure	Full Stop + tumble	Draining sequence
E3	Tilt Fault	Out of balance : Before spin	Full stop + tumble	Start spin
E4	Imbalance	Out of balance : Normal spin	Skip + continue	After 10 x tilt
E5	Tilt High Sp	Out of balance : high spin	Full stop + safety time	>500 or 750 RPM
E6	Door Coil	Door switch failure	Full stop + safety time	Whole cycle
E7	Door Switch	Door solenoid switch failure	Full stop + safety time	Whole cycle
E8	Door Start	Door lock check at start failure	Don't start	At start up
E9	Door Unload	Door lock switch closed failure	Don't start	End cycle
E10	Bimetal/Spring	Bimetal/Spring	Continue	2 min 30 sec after start cycle
E11	No Fill	Fill failure	Full stop + request for Continue	While filling
E12	Overfill	Overfill failure	Full stop + tumble	While filling
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	Overflow failure	Full stop + tumble	Wash step
E22	Flush fault	Flush failure	Full stop + tumble	Flush step
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	Comm fault	Communication fault inverter	Full stop + safety time	Whole cycle
E28	THT time / E.OL	THT Time out / E.OL	Full stop + safety time	At spin sequence
E29	OV3 time / E.OP	OV3 Time out / E.OP	Full stop + safety time	At spin sequence
E31	Load Parr	Initialization fault inverter	Don't start	At initialization
E32	Verify Parr	Verification fault inverter	Don't start	At loading parameters
E33	Stall prev	Stall prevention function active	Continue	At spin sequence
E35	Wrong Softw	Wrong software version	Don't start	New software version
E37	No Drain Sp	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
E40	No Fill Rec	Fill failure due to an empty water recycle Tank	Full stop + Request for Continue Top soap dispenser Mach. 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	Wrong Inverter Model Type	Make correct selection	Configuration menu
E45	No Speed Sensor Signal	No Speed pulses when drum turns.	Continue + Warning	At spin sequence (FS120 only)
E46	Brake Closed	Brake Stays Closed	Full stop + safety time	At spin sequence (FS120 only)
E47	Brake Wear Out	Friction blocks brake are wear-out	Full stop + safety time	Any time (FS120 only)
E48	Brake Open	Brake Stays Open	Continue + Warning	At spin sequence (FS120 only)
E49	UnBalance Switch At Wash	Air suspension without compressed air	Full stop + safety time	Wash action (FS120 only)
E50	No Second Acceleration Ramp	Missing wire bridge inverter / wrong inverter parameters	Continue	At spin sequence (FS120 only)
E51	No Third Acceleration Ramp	Missing wire bridge inverter / wrong inverter parameters	Continue	At spin sequence (FS120 only)
E52	Board Memory	PCB-EEPROM CRC failure	Don't start	At Power Up
E53	Board Data	PCB-EEPROM Data out of range failure	Don't Start	At Power Up
E57	Lock System	Door Lock Switch stays closed when the outer door is open.	Don't Start	At locking sequence (MB70-90-110-140-180 only)
E58	No Free Run	Deceleration end of spin while brake is closed.	Full stop + safety time	At spin sequence (FS120 only)
E59	Run Free Run	Run Status inverter =1 while brake is closed.	Full stop + safety time	At spin sequence (FS120 only)
E60	No reset Drive	No detection motor speed signal at wash	Full stop + safety time	Wash Sequence
E61	Continue spin	Motor doesn't stop spinning anymore	Full stop + safety time	Whole cycle
E62	Extended speed	Motor spins too fast	Full stop + safety time	Whole cycle
E63-E67	Motor Drive	Reset Motor Drive for E60, E61 & E62	Reset Motor Drive	Wash Sequence
E68	No Sign Spin	No detection motor speed signal at spin	Full stop + tumble	Spin Sequence
E69	RS Unbalance	Unbalance input should not be high on R machines	Don't Start Full stop + tumble	Start Spin sequence Whole cycle
E70	RS7 Select	RS7 selected in case of RS10	Don't Start	Start Cycle
E71	RS10 Select	RS10 selected in case of RS7	Don't Start	Start Cycle
E72	KEB ST LOW	No wire bridge terminals 16-20	Don't Start	Start cycle
E73	KEB ST HIGH	No KEB parameters loaded in inverter	Full stop + safety time	Start cycle
E74	CFIStuck	Inverter not switched off at end of cycle.	For Info only	End of cycle
E75	KEB code	Undefined frequency inverter error code	Full stop + tumble	Whole cycle
E78	Lock Active	At standby door lock is locked nevertheless door is open.	Don't Start	At Standby
E79	Lock Start	After pressing Start door lock is locked nevertheless door is open.	Don't Start	At Start Cycle

E80	Time Out Input16	On Hold Signal Failure Soap Dispensing System	Full stop + tumble.	Whole cycle
E81	No Reheat	Heating Failure	Full stop + tumble.	Wash Step (MB only)
E82	No Refill	Refill failure	Full stop + request for Continue	Wash Step (MB only)
E83	Cycle Fail	No successful wash cycle termination	Info that the wash cycle has to be repeated.	Abnormal Cycle Termination (MB only)
E84	No Store PC	Communication failure with PC	For Info only.	End cycle (MB only)
E85	RTC Low Batt	Real Time Clock, No Battery or battery low power	For Info only.	End cycle (MB only)
E86	No RTC Comm	Real Time Clock is not available	For Info only.	End cycle (MB only)
E100	Weigh No Comm	Communication fault weighing system	Full Stop Tumble	Before Start (MB16-MB180) Whole Cycle (MB16-MB66) (MB & FS23-55 only)
E101	Weigh Low	Weight machine is too low	Don't Start	Before Start (MB & FS23-55 only)
E102	Weigh High	Weight machine is too high	Don't Start	Before Start (MB & FS23-55 only)
E103	Weigh Balance	Weight is not balanced over 4 load cell's.	Don't Start	Before Start (MB & FS23-55 only)
E104	Weigh Overload	Weight on individual load cell exceeds max.	Full Stop Tumble	Whole Cycle (MB16-66 & FS23-55 only)
E105	Weigh Airbags	No functional air pressure system	Don't Start	Before Start (MB70-180 only)
E300 - E353	Mits Err	Specific Mitsubishi Inverter Alarm	Full stop + safety time	Whole cycle
E400 - E441	KEB Err	Specific KEB Inverter Alarm	Full stop + safety time	Whole cycle
E500 - E515	Memory Err	Memory Error	Full stop + safety time	Any time
E550	DAQ Version Err	Wrong DAQ Memory version	For Info only	Installation new softw
E551	DAQ Write Err	Problem writing DAQ Memory	For Info only	Traceability function, whole cycle
E552	DAQ Full Err	DAQ Traceability Memory is Full	For Info only	Traceability function, whole cycle
E553	Store DAQ>PC	DAQ Traceability Memory is almost Full	For Info only	Traceability function, whole cycle
E600 - E628	Softw Err	Software Error	Full stop + safety time	Any time

INSTALLATION AND MAINTENANCE MANUAL

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2. IMPORTANT SAFETY INSTRUCTIONS



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.
- ◆ 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 accordance with 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 to 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.
- ◆ 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.
- ◆ 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.
- ◆ 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.
- ◆ Do not use some means on the soap dispenser lid to hold it open by filling or when the machine operates. 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 may 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 than qualified service technicians or if parts other than approved replacement parts are used. Improper assembly or adjustment can create hazardous conditions.
- ◆ There can be a risk of injury or electrical shock while performing services or repairs. Injury or electrical shock can be serious or even fatal. Consequently, extreme caution should be taken while performing voltage checks on individual components or a product. PLEASE NOTE: Except as necessary to perform a particular in servicing a product, the electrical power supply should ALWAYS be disconnected when servicing a product.
- ◆ All industrial (OPL - On Premise Laundry) washers are designed for use in Laundry with professionally trained attendants.
- ◆ Before the appliance is removed from service or discarded, remove the door.
- ◆ Any Water or Steam Leaks Must Be Repaired Immediately. Closed supply immediately.
- ◆ If any problems or failures should arise, immediately contact your dealer, serviceman or manufacturer.
- ◆ The manufacturer reserves the right to change the manuals without previous notice.

⚠ WARNING -- CAUTION

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 -- CAUTION

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 -- CAUTION

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 an upper floor or over a basement without a load support designed by a structural engineer.

⚠ WARNING -- CAUTION

Looking at the machine from the front view the drum rotation during extraction must be clockwise.

⚠ WARNING - Although the appliance may be in the „off“ position, there is still electrical power to the switch supply terminals.

⚠ 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 - Do not open door until cylinder remains stopped and water has been drained completely. If the door safety lock does not work, do not use washer until the door lock mechanism is repaired.

⚠ CAUTION! - 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.

⚠ CAUTION! - 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! - 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.

2.1. SYMBOLS ON THE MACHINE

See - User's manual.

2.2. IMPORTANT INFORMATION BEFORE INSTALLATION

FOR TRANSPORTATION AND STORAGE

IN CASE OF TRANSPORTATION AND STORAGE, WATCH COMPONENTS PROTRUDING FROM THE CONTOUR LINE OF MACHINE (DOOR LOCKS ETC.), TO AVOID INJURIES.

- Never push, pull or exert pressure on components protruding from the machine contour line (controls, door locks etc.).
- Make sure that these components are secured so as to avoid damages during machine manipulation and installation.
- In case of the machine transportation by the customer, follow the manufacturer's instructions for transportation, handling and storage of the product. In case of transportation of machine by the customer the manufacturer is not responsible for possible damage of machine in the course of transportation. In case of storage the machine in a free area it must be protected against mechanical damage and weather condition factors.

FOR INSTALLATION

ALL CONNECTION, AND IN SPECIAL PROTECTING EARTH, MUST BE PERFORMED BY QUALIFIED PERSONNEL WITH A PROPER AUTHORIZATION ACCORDING THE INSTALLATION MANUAL IN COMPLIANCE WITH LOCAL STANDARDS.

- The washer must not be installed or stored in an area where it will be exposed to water and/or weather. Avoid damp conditions where water or moisture could run down the walls and covers of the washer or cover the floor around the washer. Do not install the washer above an open gutter. Close any nearby gutters so that waste water steam cannot collect near/inside the washer.
- Any changes in the machine installations must be approved by dealer or manufacturer. Otherwise the dealer/manufacturer is not responsible for possible injuries or damages. Interference and changes in the machine construction are not allowed and the manufacturer refuses any responsibilities in such cases.
- Define dangerous areas in the laundry room and do not allow people to enter if the machine is in operation.

MACHINE INFORMATION

- This manual comprises information for the whole series of rigid - mount machine series with a load of dry linen 6, 7, 10, 13, 18, 22, 27 and 35 kg (15, 18, 25, 30, 40, 50, 60 and 80 lb). Verify the machine model according to your order and the data plate located on back of washing machine, fig.3.3., pos.6 and find corresponding information in the manual.
- The machines are controlled by electronic programmer. Find the programming instructions in the programming manual.
- Additional heating can be provided by electrical heating elements or by steam from an external steam supply.
- Water inlets can use warm, cold soft and possibly also cold hard water.
- Electrical setup of the machine is indicated on data plate, (see data plate, fig.3.3.,pos.6).

3. TECHNICAL SPECIFICATION

3.1. MACHINES 6 kg / 15 lb, 7 kg / 18 lb, 10 kg / 25 lb, 13 kg / 30 lb CAPACITY

DRY LOAD CAPACITY (1/10)	6 kg / 15 lb	7 kg / 18 lb	10 kg / 25 lb	13 kg / 30 lb
DIMENSIONS				
PACKING DIMENSIONS	carton box	carton box	carton box	carton box
width	700 mm / 27.6"	700 mm / 27.6"	700 mm / 27.6"	810 mm / 31.9"
depth	730 mm / 28.7"	730 mm / 28.7"	880 mm / 34.6"	850 mm / 33.5"
height	1180 mm / 46.5"	1180 mm / 46.5"	1280 mm / 50.4"	1380 mm / 54.3"
transportation capacity	0.6m ³ / 21.2 ft ³	0.6m ³ / 21.2 ft ³	0.79m ³ / 27.9 ft ³	0.95m ³ / 33.6 ft ³
MACHINE DIMENSIONS *				
width	660 mm / 26"	660 mm / 26"	660 mm / 26"	750 mm / 29.5"
depth	710 mm / 28"	710 mm / 28"	865 mm / 34"	820 mm / 32.3"
height	1045 mm / 41.1"	1045 mm / 41.1"	1140 mm / 44.9"	1225 mm / 48.2"
INNER DRUM DIMENSIONS				
diameter	530 mm / 21"	530 mm / 21"	530 mm / 21"	650 mm / 25.6"
depth	270 mm / 10.6"	330 mm / 13"	420 mm / 16.5"	395 mm / 15.6"
drum capacity	60 dm ³ / 15.8 gal	73 dm ³ / 19.3 gal	95 dm ³ / 25 gal	131 dm ³ / 34.6 gal
door opening	290 mm / 11.4"	290 mm / 11.4"	290 mm / 11.4"	410 mm / 16.1"
WEIGHT				
Netto	140 kg / 309 lb	140 kg / 309 lb	185 kg / 408 lb	195 kg / 430 lb
Brutto	145 kg / 320 lb	145 kg / 320 lb	195 kg / 430 lb	205 kg / 452 lb
ELETRICAL DATA				
Permitted deviations of feeding voltage	-6% to +10%V			
Permitted deviations of frequency	±1% Hz			
Electrical system of the machine	1x220-240V 50/60Hz - not applicable for electrical heating 1x208-240V 50/60Hz - not applicable for electrical heating 1x220V 50/60Hz - not applicable for electrical heating 3x220-240V 50/60Hz 3x208-240V 50/60Hz 3x200V 50/60Hz 3x380-415V+N 50/60Hz 3x380-480V 50/60Hz			
Minimal power supply voltage	342V / 180V	342V / 180V	345V / 180V	342V / 190V
NOMINAL OUTPUT OF THE MOTOR AT RPM	0.6 kW	0.6 kW	0.6 kW	0,75 kW
INPUT PROTECTION FOR ONE MACHINE				
Electrical heating	6kW / 3x220-240V / 20A 6kW / 3x400V / 16A 9kW / 3x220-240V / 32A 9kW / 3x400V / 20A 9kW / 3x440V / 16A	6kW / 3x220-240V / 20A 6kW / 3x400V / 16A 9kW / 3x220-240V / 32A 9kW / 3x400V / 20A 9kW / 3x440V / 16A	6kW / 3x220-240V / 20A 6kW / 3x400V/16A 9kW / 3x220-240V / 32A 9kW / 3x400V/20A 9kW / 3x440V/16A 12kW / 3x220-240V / 40A 12kW / 3x400V / 25A 12kW / 3x440V / 25A	6kW/3x220-240V/20A 6kW/3x400V/16A 9kW/3x220-240V/32A 9kW/3x400V/20A 9kW/3x440V/20A 12kW/3x220-240V/40A 12kW/3x400V/25A 12kW/3x440V/25A
Without electrical heating	1x220-240V / 10A 3x220-240V / 10A 3x400V / 10A 3x440V / 10A	1x220-240V / 10A 3x220-240V / 10A 3x400V / 10A 3x440V / 10A	1x220-240V / 10A 3x220-240V / 10A 3x400V / 10A 3x440V / 10A	1x220-240V / 10A 3x220-240V / 10A 3x400V / 10A 3x440V / 10A
Overload protection of the motor	electronic protection by the frequency inverter			

* maximum dimensions including protruding parts

Tab.3.1.

DRY LOAD CAPACITY (1/10)	6 kg / 15 lb	7 kg / 18 lb	10 kg / 25 lb	13 kg / 30 lb
WASHING FUNCTION				
RPM OF THE DRUM: washing extracting	48 rpm 580 rpm			45 rpm 525 rpm
G - factor of spinning	100			
CONNECTIONS				
WATER CONNECTION Water pressure Recommended water pressure Water inlet Maximal water temperature	0.1 - 0.8 MPa / 1 - 8 bar / 14.5 -116 PSI 0.3 - 0.5 MPa / 3 - 5 bar / 43 - 73 PSI BSP 3/4" 90°C / 194°F			
DRAIN CONNECTION Dimension Capacity	Ø 76 mm / 3" 3.5 l / s			
MACHINE VENTING Venting connection of outer drum	Ø 75 mm / 3"			
STEAM CONNECTION Steam connection Steam pressure low Steam pressure high	G1/2" 1 - 3 bar / 14.5 - 44 PSI 3 - 8 bar / 44 - 116 PSI			
Connections to external liquid soap supply	standard 6 pcs, (see electrical scheme)			
Soap hoppers	3			
CONSUMPTION				
STEAM Average steam consumption (depends on selected programme)	6 kg. cycle ⁻¹ / 13.2 lb. cycle ⁻¹	7 kg. cycle ⁻¹ / 15.4 lb. cycle ⁻¹	10 kg. cycle ⁻¹ / 22 lb. cycle ⁻¹	13 kg. cycle ⁻¹ / 28.7 lb. cycle ⁻¹
Maximum steam consumption	0.01 kg.s ⁻¹ / 36 kg.h ⁻¹ 0.02 lb.sec ⁻¹ / 79 lb.h ⁻¹	0.01 kg.s ⁻¹ / 36 kg.h ⁻¹ 0.02 lb.sec ⁻¹ / 79 lb.h ⁻¹	0.011 kg.s ⁻¹ / 40 kg.h ⁻¹ 0.024 lb.sec ⁻¹ / 88 lb.h ⁻¹	0.016kg.s ⁻¹ / 57.6kg.h ⁻¹ 0.031lb.sec ⁻¹ / 111.6lb.h ⁻¹
WORKING CONDITIONS				
Ambient temperature Relative humidity Height above sea level Storage temperature	+ 5°C (41°F) to + 35°C (95°F) 30% to 90% without condensation up 1000 m / 3280 ft 0°C (32°F) to +55°C (131°F)			
ANCHORING				
Bolt	6 pcs M16 x 160			
FLOOR DATA Max. static floor load Max. dynamic floor load Frequency of dynamic load	1.7 kN / 370 lb 3.6 kN / 801 lb 9.67 Hz	1.7 kN / 370 lb 3.6 kN / 801 lb 9.67 Hz	2.1 kN / 474 lb 4.5 kN / 1020 lb 9.67 Hz	2.6 kN / 577 lb 6.5 kN / 1450 lb 8.75 Hz
NOISE				
Sound level Leq (dB(A))	< 70 dB(A)			

Tab.3.1. continuation

3.2. MACHINES 18 kg / 40 lb, 22 kg / 50 lb, 27 kg / 60 lb, 35 kg / 80 lb CAPACITY

DRY LOAD CAPACITY (1/10)	18 kg / 40 lb	22 kg / 50 lb	27 kg / 60 lb	35 kg / 80 lb
DIMENSIONS				
PACKING DIMENSIONS	carton box	carton box	wooden crate	wooden crate
width	935 mm / 36.8"	935 mm / 36.8"	950 mm / 37.4"	1150 mm / 45.3"
depth	955 mm / 37.6"	1050 mm / 41.3"	1220 mm / 48"	1200 mm / 47.2"
height	1530 mm / 60.2"	1530 mm / 60.2"	1570 mm / 61.8"	1630 mm / 64.2"
transportation capacity	1.37 m ³ / 48.4 ft ³	1.5 m ³ / 53 ft ³	1.82 m ³ / 64.3 ft ³	2.25 m ³ / 79.4 ft ³
MACHINE DIMENSIONS *				
width	855 mm / 33.7"	855 mm / 33.7"	870 mm / 34.3"	1100 mm / 43.7"
depth	900 mm / 35.43"	1000 mm / 39.37"	1140 mm / 44.9"	1140 mm / 44.9"
height	1315 mm / 51.8"	1315 mm / 51.8"	1380 mm / 54.3"	1460 mm / 57.5"
INNER DRUM DIMENSIONS				
diameter	700 mm / 27.6"	700 mm / 27.6"	750 mm / 29.5"	914 mm / 36"
depth	470 mm / 18.5"	565 mm / 22.4"	610 mm / 24"	505 mm / 19.9"
drum capacity	181 dm ³ / 47.8 gal	217 dm ³ / 57.3 gal	269 dm ³ / 71 gal	355 dm ³ / 93.7 gal
door opening	410 mm / 16.1"	410 mm / 16.1"	504 mm / 19.8"	504 mm / 19.8"
WEIGHT				
Netto	280 kg / 617 lb	280 kg / 617 lb	410 kg / 904 lb	710 kg / 1565 lb
Brutto	290 kg / 639 lb	300 kg / 661 lb	470 kg / 1036 lb	740 kg / 1631 lb
ELETRICAL DATA				
Permitted deviations of feeding voltage	-6% to +10%V			
Permitted deviations of frequency	±1% Hz			
Electrical system of the machine	1x220-240V 50/60Hz - not applicable for electrical heating 3x220-240V 50/60Hz 3x380-415V+N 50/60Hz 3x380-480V 50/60Hz			
Minimal power supply voltage	342V / 190V	342V / 190V	342V / 190V	342V / 190V
NOMINAL OUTPUT OF THE MOTOR AT RPM	1.5 kW	1.5 kW	2.2 kW	3 kW
INPUT PROTECTION FOR ONE MACHINE				
Electrical heating	12kW / 3x220-240V / 50A 12kW / 3x 400V+N / 32A 12kW / 3x400V / 25A 12kW / 3x440V / 25A 18kW / 3x220-240V / 63A 18kW / 3x 400V+N / 40A 18kW / 3x400V / 32A 18kW / 3x440V / 32A		18kW / 3x220-240V / 63A 18kW / 3x 400V+N / 40A 18kW / 3x400V / 40A 18kW / 3x440V / 32A 24kW / 3x220-240V / 80A 24kW / 3x 400V+N / 50A 24kW / 3x400V / 50A 24kW / 3x440V / 50A	
Without electrical heating	1/3x220-240V / 16A 3x400V+N / 16A 3x400V / 10A 3x440V / 10A		1/3x220-240V / 20A 3x400V+N / 20A 3x400V / 16A 3x440V / 16A	
Overload protection of the motor	electronic protection by the frequency inverter			

* maximum dimensions including protruding parts

Tab.3.2.

DRY LOAD CAPACITY (1/10)	18 kg / 40 lb	22 kg / 50 lb	27 kg / 60 lb	35 kg / 80 lb
WASHING FUNCTION				
RPM OF THE DRUM: washing extracting	44 rpm 505 rpm	44 rpm 480 rpm	42 rpm 490 rpm	38 rpm 510 rpm
G - factor of spinning	100	90	100	133
CONNECTIONS				
WATER CONNECTION Water pressure Recommended water pressure Water inlet Maximal water temperature	0.1 - 0.8 MPa / 1 - 8 bar / 14.5 - 116 PSI 0.3 - 0.5 MPa / 3 - 5 bar / 43 - 73 PSI BSP 3/4" 90°C / 194°F			
DRAIN CONNECTION Dimension Capacity	Ø 76 mm / 3" 3.5 l / s		2 x Ø 76 mm / 2x3" 2 x 3.5 l / s	
MACHINE VENTING Venting connection of outer drum	Ø 75 mm / 3"			
STEAM CONNECTION Steam connection Steam pressure low Steam pressure high	G1/2" 1 - 3 bar / 14.5 - 44 PSI 3 - 8 bar / 44 - 116 PSI		G3/4" 1 - 3 bar / 14.5 - 44 PSI 3 - 8 bar / 44 - 116 PSI	
Connections to external liquid soap supply	standard 6 pcs, (see electrical scheme)			
Soap hoppers	3			
CONSUMPTION				
STEAM Average steam consumption (depends on selected programme)	18 kg. cycle ⁻¹ / 40 lb. cycle ⁻¹	22 kg. cycle ⁻¹ / 49 lb. cycle ⁻¹	27 kg. cycle ⁻¹ / 60 lb. cycle ⁻¹	35 kg. cycle ⁻¹ / 77 lb. cycle ⁻¹
Maximum steam consumption	0.021 kg.s ⁻¹ / 76 kg.h ⁻¹ 0.038 lb.sec ⁻¹ / 137 lb.h ⁻¹	0.025 kg.s ⁻¹ / 90 kg.h ⁻¹ 0.055 lb.sec ⁻¹ / 199 lb.h ⁻¹	0.032 kg.s ⁻¹ / 115 kg.h ⁻¹ 0.071 lb.sec ⁻¹ / 256 lb.h ⁻¹	0.039 kg.s ⁻¹ / 140 kg.h ⁻¹ 0.086 lb.sec ⁻¹ / 309 lb.h ⁻¹
WORKING CONDITIONS				
Ambient temperature Relative humidity Height above sea level Storage temperature	+ 5°C (41°F) to + 35°C (95°F) 30% to 90% without condensation up 1000 m / 3280 ft 0°C (32°F) to +55°C (131°F)			
ANCHORING				
Bolt	6 pcs M16 x 160		6 pcs M20 x 320	
FLOOR DATA Max. static floor load Max. dynamic floor load Frequency of dynamic load	3.1 kN / 675 lb 8.9 kN / 1994 lb 8.42 Hz	3.2 kN / 698 lb 9.6 kN / 2165 lb 8 Hz	4.5 kN / 985 lb 13.3 kN / 2996 lb 8.17 Hz	7.2 kN / 1598 lb 21.6 kN / 4863 lb 8.5 Hz
NOISE				
Sound level Leq (dB(A))	< 70 dB(A)			

Tab.3.2. continuation

3.3. DIMENSIONS AND COMPONENTS OF THE MACHINE

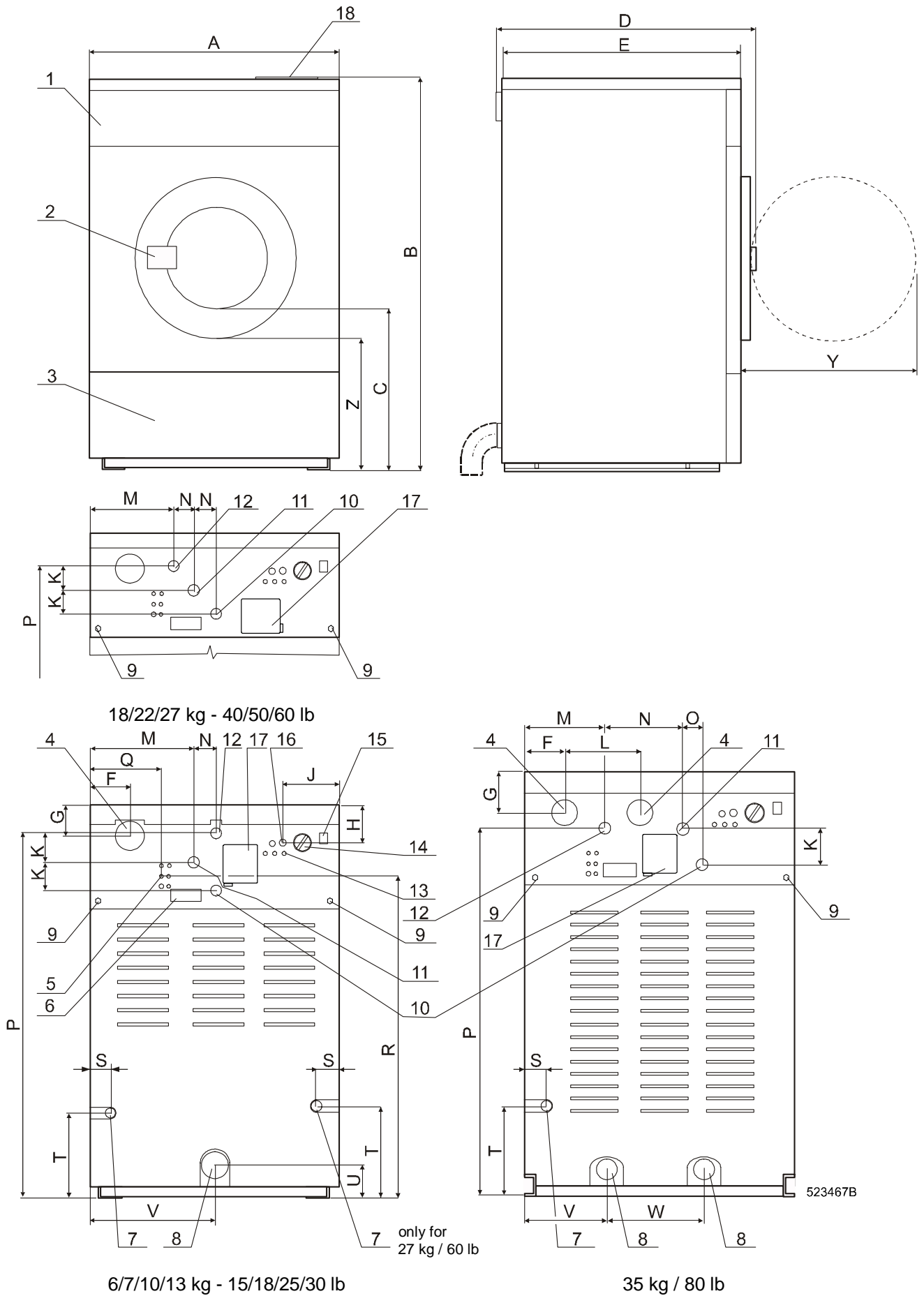


Fig.3.3.

1. Control panel
2. Door handle
3. Service panel
4. Tub ventilation
5. Liquid soap hose connections
6. Name plate
7. Steam connection
8. Drain connection
9. Earthing connection
10. Hot water connection
11. Cold soft water connection
12. Cold hard water connection
13. Fuses
14. Main switch
15. Switch: electrical heating / steam heating
16. Electrical connection of machine
17. Plastic box for electrical connection to liquid soap pumps
18. Soap hoppers

Machine capacity	6 kg 15 lb	7 kg 18 lb	10 kg 25 lb	13 kg 30 lb	18 kg 40 lb	22 kg 50 lb	27 kg 60 lb	35 kg 80 lb
A	660 mm 26"	660 mm 26"	660 mm 26"	750 mm 29.5"	855 mm 33.7"	855 mm 33.7"	870 mm 34.3"	1100 mm 43.3"
B	1045 mm 41.1"	1045 mm 41.1"	1140 mm 44.9"	1225 mm 48.2"	1315 mm 51.8"	1315 mm 51.8"	1380 mm 54.3"	1460 mm 57.5"
C	420 mm 16.5"	420 mm 16.5"	460 mm 18.1"	420 mm 16.5"	515 mm 20.3"	515 mm 20.3"	455 mm 17.9"	510 mm 20.1"
D	710 mm 28"	710 mm 28"	865 mm 34"	820 mm 32.3"	900 mm 35.43"	1000 mm 39.37"	1140 mm 44.9"	1140 mm 44.9"
E	620 mm 24.4"	620 mm 24.4"	780 mm 30.7"	740 mm 29.1"	810 mm 31.9"	905 mm 35.6"	1043 mm 41.1"	1041 mm 41"
F	100 mm 3.9"	100 mm 3.9"	100 mm 3.9"	100 mm 3.9"	125 mm 4.9"	125 mm 4.9"	160 mm 6.3"	125 mm 4.9"
G	86 mm 3.4"	86 mm 3.4"	86 mm 3.4"	86 mm 3.4"	90 mm 3.5"	90 mm 3.5"	85 mm 3.3"	85 mm 3.3"
H	90 mm 3.5"	90 mm 3.5"	90 mm 3.5"	90 mm 3.5"	100 mm 3.9"	100 mm 3.9"	90 mm 3.5"	100 mm 3.9"
J	190 mm 7.5"	190 mm 7.5"	190 mm 7.5"	190 mm 7.5"	190 mm 7.5"	190 mm 7.5"	190 mm 7.5"	195 mm 7.7"
K	75 mm 3"	75 mm 3"	75 mm 3"	75 mm 3"	75 mm 3"	75 mm 3"	70 mm 2.8"	124 mm 4.9"
L	-	-	-	-	-	-	-	360 mm 14.2"
M	270 mm 10.6"	270 mm 10.6"	270 mm 10.6"	270 mm 10.6"	305 mm 12"	305 mm 12"	260 mm 10.2"	305 mm 12"
N	60 mm 2.4"	60 mm 2.4"	60 mm 2.4"	60 mm 2.4"	75 mm 3"	75 mm 3"	170 mm 6.7"	355 mm 14"
O	-	-	-	-	-	-	-	84 mm 3.3"
P	970 mm 38.2"	970 mm 38.2"	1062 mm 41.8"	1145 mm 45.1"	1215 mm 47.8"	1215 mm 47.8"	1245 mm 49"	1320 mm 51.9"
Q	133 mm 5.2"	133 mm 5.2"	133 mm 5.2"	182 mm 7.2"	205 mm 8.1"	205 mm 8.1"	120 mm 4.7"	250 mm 9.8"
R	875 mm 34.4"	875 mm 34.4"	962 mm 37.9"	1025 mm 40.4"	1110 mm 43.7"	1110 mm 43.7"	1135 mm 44.7"	1220 mm 48.3"
S	55 mm 2.2"	55 mm 2.2"	55 mm 2.2"	53 mm 2.1"	100 mm 3.9"	100 mm 3.9"	135 mm 5.3"	100 mm 3.9"
T	395 mm 15.6"	395 mm 15.6"	395 mm 15.6"	333 mm 13.1"	435 mm 17.1"	435 mm 17.1"	470 mm 18.5"	972 mm 38.3"
U	92 mm 3.6"	92 mm 3.6"	92 mm 3.6"	86 mm 3.4"	135 mm 5.3"	135 mm 5.3"	90 mm 3.5"	90 mm 3.5"
V	330 mm 13"	330 mm 13"	330 mm 13"	375 mm 14.8"	427,5 mm 16.8"	427,5 mm 16.8"	435 mm 17.1"	400 mm 15.7"
W	-	-	-	-	-	-	-	300 mm 11.8"
Y	415 mm 16.3"	415 mm 16.3"	415 mm 16.3"	530 mm 20.8"	530 mm 20.8"	530 mm 20.8"	630 mm 24.8"	630 mm 24.8"
Z	350 mm 13,8"	350 mm 13,8"	390 mm 15,4"	355 mm 13,98"	450 mm 17,7"	450 mm 17,7"	380 mm 14,96"	430 mm 16,9"

Tab.3.3.

4. INSTALLATION OF THE MACHINE

4.1. HANDLING, TRANSPORT, STORAGE, UNPACKING

For safety reasons, be sure that the persons that transport, handles and store the machines are informed about the machines specifications and information's. Read and respect also the „IMPORTANT SAFETY INSTRUCTIONS“.

The machines with capacity 6-22 kg / 15-50 lbs is delivered to the customer in a cardboard packing and crating packing. Under the outside packing is the machine additionally protected by polyethylene foil.

Do not store or install the machine where it can be exposed to environmental conditions (rain, wind) or extreme humidity.

The machines are fixed to the wooden palette by four bolts M12x60.

Before moving the machine into its final location, follow the following precautions:

- Check all passages and spaces where the machine has to be transported through, they must have sufficient dimensions to meet the height and width of the machine including the package.
- Lift the machine up by lift truck or hand-operated pallet truck using a transport skid to which the machine has been attached.

Just before you install the machine in its final position, remove the packing, release four bolts of the pallet and lift up the machine and remove the wooden pallet.

It is possible to handle the machine by the fork lift or the manual truck if the forks supporting the sides of the frame. If not, it can damage the components located in its lower part.

After unpacking, check if the machine has not been damaged and if all the accessories are included according to your order. Verify the information of your machine at the name plate located on the machine rear and note corresponding information in the information sheet at the back side of the manual.

The accessories and the manual are placed inside the drum.

When moving the un-packed machine:

- **Never push, pull or press the components protruding from the contour line of machine (front part, filling door, control elements, belt cover, water inlet and outlet pipes etc.).**
- Make sure that the filling door are secured to avoid its opening during the handling.

4.2. FOUNDATION

GENERAL

For safety reasons, be sure that the persons that install are informed about the machines specifications and information's. Read and respect also the „IMPORTANT SAFETY INSTRUCTIONS“.

The washer is a rigid-mount model, it **MUST** be securely fixed mounted to a foundation to work properly and in a safe way.

Note: It is strongly recommended that the 35 kg / 80 lb and 27 kg / 60 lb machines be mounted onto a not elevated concrete base only. We also recommend it for the 18 kg / 40 lb, 22 kg / 50 lb.

CAUTION: - Putting machines on an elevation or riser creates a higher distance to reach the soap dispenser.
- Never put a riser on raised foundation.
- The washer needs to installed always **level or very slightly tipped with front higher, for sure not opposite**. Therefore the foundation surface has to be made with these conditions.

NEVER install the washer on an upper floor or over a basement without a load support designed by a structural engineer. It is required the installation be on a concrete foundation. Metal-reinforced wood floors and all not concrete foundations are **NOT** allowed due to a potential for excessive vibrations and fire.

Improper installation will void the warranty. Manufacturer is not responsible for damage or injury caused by improper installation.

4.3. PREPARING FOUNDATION BASE

Check the thickness of the existing floor and verify the quality of the concrete. The foundation **MUST** be always been engineered to be able to comply with the static and dynamic floor data. If necessary contact your building engineer.

Use 1360 kg / 3000 lb test concrete for the floor and foundation. For max. strength, allow concrete to cure for min. of 72 hours in dry weather.

Layout and mark the area of the entire washer base take into account and respect the distances to sides, ceiling and rear, see tab.4.4. **Add also minimum 10 cm / 4“ on all sides of the entire washer base** for the foundation re-enforcement if it concerns a raised foundation, riser foundation or a floor re-enforcement.

Break up the floor to a depth mentioned in the tab.4.4., accordance the machine model, **including** the min 10 cm / 4" around all sides. If a higher capacity model stands on the right or left hands side, select the depth of the higher capacity model for the concerned model. Undercut the sides of the hole to create an invert „mushroom“ effect.

It is essential to have a real good connection between the new foundation and the existing floor, therefore it is necessary to place rebar that are well (chemical) anchored in the existing floor or other types of reinforcement rods throughout the floor. Wet the hole well and brush the bottom and all sides with cement grout before pouring in the new concrete. This is required for a solid foundation and joint.

If a raised foundation is used for some models, never make it higher than 30,5 cm / 12". The overall dimensions must also be equal with the total washer footprint plus the required 10 cm / 4" on all sides.

4.4. DIMENSIONS FOR FOUNDATION BASE

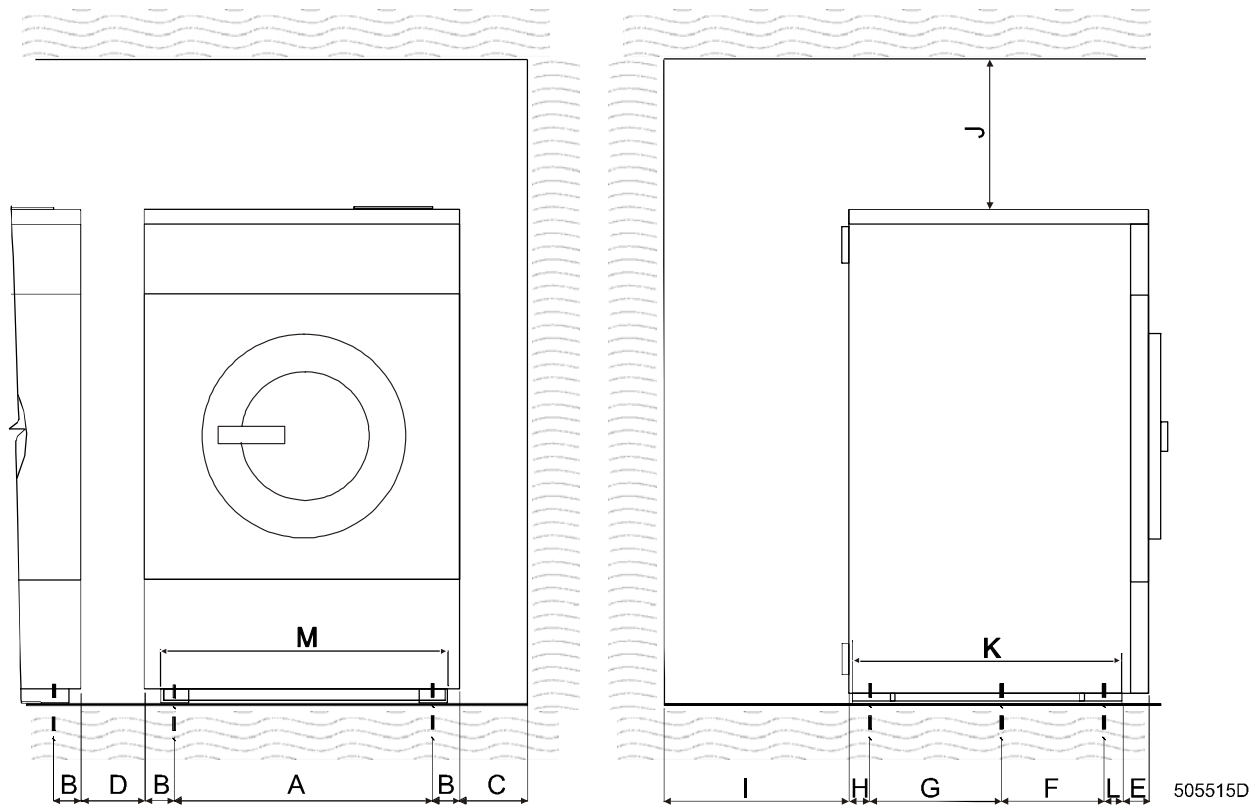


Fig.4.4.

Machine capacity	7 kg 18 lbs	10 kg 25 lbs	13 kg 30 lbs	18 kg 40 lbs	22 kg 50 lbs	27 kg 60 lbs	35 kg 80 lbs
A	530 mm 20.9 "	530 mm 20.9 "	594 mm 23.39"	700 mm 27.6 "	700 mm 27.6 "	636 mm 25.04"	820 mm 32.6 "
B	65 mm 2.6 "	65 mm 2.6 "	78 mm 3.07"	77.5 mm 3.1 "	77.5 mm 3.1 "	117 mm 4.61"	140 mm 5.51 "
C	100 mm 4 "	100 mm 4 "	100 mm 4 "	100 mm 4 "	100 mm 4 "	100 mm 4 "	100 mm 4 "
D	20 mm 0.79 "	20 mm 0.79 "	20 mm 0.79 "	20 mm 0.79 "	20 mm 0.79 "	20 mm 0.79 "	20 mm 0.79 "
E	48 mm 1.9 "	48 mm 1.9 "	43 mm 1.7 "	75 mm 2.95"	75 mm 2.95"	46 mm 1.81"	71 mm 2.8"
F	275 mm 10.83 "	365 mm 14.37 "	400 mm 15.75"	360 mm 14.17 "	500 mm 19.68 "	675 mm 26.57"	295 mm 11.61 "
G	90 mm 3.5 "	295 mm 11.6 "	232 mm 9.13"	295 mm 11.61"	251 mm 9.88"	230 mm 9.06"	565 mm 22.2 "
H	169 mm 6.7 "	34 mm 1.3 "	40 mm 1.6"	90 mm 3.5"	90 mm 3.5"	47 mm 1.9"	52 mm 2.1"
I min.	600 mm 23.6 "	600 mm 23.6 "	600 mm 23.6 "	600 mm 23.6 "	600 mm 23.6 "	600 mm 23.6 "	600 mm 23.6 "
J min.	700 mm 27.6 "	700 mm 27.6 "	700 mm 27.6 "	700 mm 27.6 "	700 mm 27.6 "	1000 mm 39.4 "	1000 mm 39.4 "
K	560 mm 22.1"	725 mm 28.54 "	690 mm 27.2"	725 mm 28.54 "	821 mm 32.3"	995 mm 39.17"	963 mm 37.91"
L	38 mm 1.5"	38 mm 1.5"	25 mm 1.0"	35 mm 1.4"	35 mm 1.4"	45 mm 1.77"	57 mm 2.24"
M	605 mm 23.82 "	605 mm 23.82 "	744 mm 29.3"	804 mm 31.6"	804 mm 31.6"	864 mm 34.02"	1095 mm 43.11"
N	300 mm 11.8"	300 mm 11.8"	400 mm 15.7"	400 mm 15.7"	400 mm 15.7"	500 mm 19.7"	500 mm 19.7"
O	120 mm 4.7"	120 mm 4.7"	120 mm 4.7"	120 mm 4.7"	120 mm 4.7"	240 mm 9.4"	240 mm 9.4"
P	40 mm 1.5"	40 mm 1.5"	40 mm 1.5"	40 mm 1.5"	40 mm 1.5"	80 mm 3.15"	80 mm 3.15"
Q min.	7 mm 0.276"	7 mm 0.276"	7 mm 0.276"	7 mm 0.276"	7 mm 0.276"	7 mm 0.276"	-
R max.	300 mm 11.81"	300 mm 11.81"	240 mm 9.45"	160 mm 6.3"	160 mm 6.3"	80 mm 3.15	0 mm
S min.	M16 5/8"	M16 5/8"	M16 5/8"	M16 5/8"	M16 5/8"	M20 3/4"	M20 3/4"

Tab.4.4. Table matching with fig.4.4., 4.5.A., 4.5.B., 4.6.

4.5. DIMENSIONS AND POSITIONING OF THE ANCHORING

Lay out and mark the total washer footprint and the fixation points of the washers. Bond j-bolts with diameter „S“ x (P+O) (see for dimensions tab.4.4.) into the concrete or drill into the cured concrete and install chemical anchoring bolts with respect to the dimensions indicated in the table, according to the washer model. Expansion bolts can be used but are not preferred. Mounting bolts must be designed to withstand 1134 kg / 2500lbs. Always use the indicated bolt diameter and quality. The indicated depth (O) of the anchoring bolt must be firmly anchored into the concrete, and a min. dimension „P“ must be protruding for proper attachment of the machine. For max. strength, allow concrete to cure for min. of 72 hours in dry weather. After curing check for J-bolt alignment, or install chemical anchoring bolts, or expansion bolts.

1. Foundation bolt
2. Nut
3. Machine Frame
4. Machine grout or shim
5. Foundation base
6. Rebar
7. Floor
8. Washer
9. Fixation Bolt

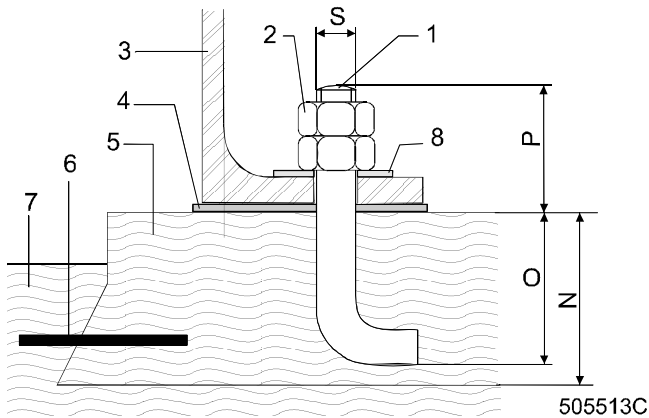


Fig.4.5.A

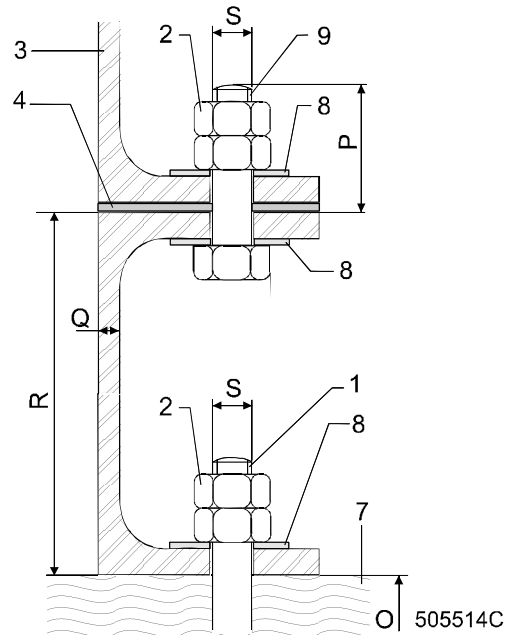


Fig.4.5.B

4.6. DIMENSIONS AND POSITIONING RISERS

When a riser is used, use a U-profile, respecting always the max. height and min. thickness given for each model in the tab.4.4. The width and the depth should be, as a minimum, the same as the washer footprint dimension. It is recommended to add 6 mm / 1/4" to all dimensions. For 18 kg / 40 lb, 22 kg / 50 lb, 27 kg / 60 lb when the highest riser is used, it is highly recommended to add a U-profile reinforcement between left and right U-profile at the distance of the mid hole fixation.

The horizontal member of the U-profile needs to have a width equal with the touching frame profile, at least 10 mm / 0,4" over the fixing hole of the frame profile.

Before fixing the riser, please read again the paragraph „GENERAL“, in chapter 4.2.

The fixation of the riser to the concrete floor needs to be the exact same way and condition of the washer as described above, chapter 4.5. This also means that the riser needs to be fixed to the floor with the same quantity of anchoring bolts as the washer is fixed to the riser and in the same locations. Additional anchoring bolts are allowed on places where it does not reduce the strength of the riser or concrete pad.

CAUTION: Be aware that some floor data given in the tab.4.4., will change when the risers are being used. Contact your structural engineer for floor and foundation conditions and adapted floor data in accordance with the riser being used. Do not use risers higher then indicated in the tab.4.4

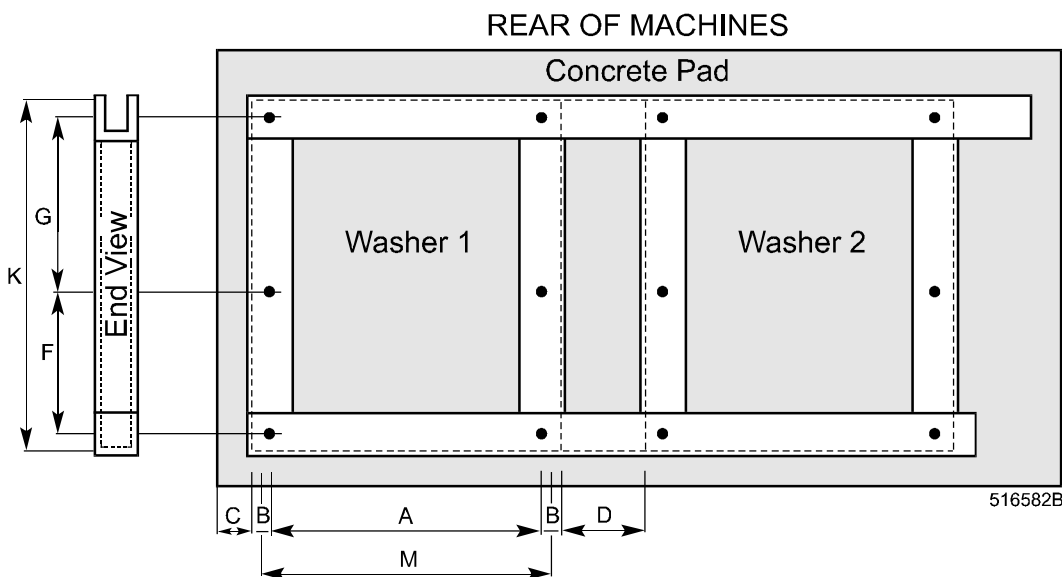


Fig.4.6.

4.7. HOW TO INSTALL A WASHER

First check if the concrete pad and/or riser conforms to the requirements.

4.7.1. WASHERS OR RISER INSTALLATION ON A CONCRETE PAD

The washer or riser is positioned on the pad over the bolts and spaced above the pad approximately 10 mm / 3/8" to 13 mm / 1/2" using wooden wedges. The machine always needs to be installed **level or very slightly tipped, with front higher (not more than 3,5 mm / 1/8" front to back)**, and resting on the wedges. Completely fill the space between the machine base frame or Riser and the pad with machinery grout under all frame surfaces. Most machinery grout will begin to set in about 20 minutes to 1/2 hour. When the grout is hardened to the touch, remove the wedges and fill in the gaps with additional grout. Be sure to leave a gap under the middle frame member and an opening in the perimeter grout for water to drain out in case of a leak. At this point „snug“ the washer, lock-washer and nut on each of the anchoring bolts to make sure the washer or riser is level or very slightly tipped, with front higher, (do not over-tighten the nuts at this time).

Allow at least two hours (over night is preferred) before final tightening of the hold down nuts.

4.7.2. WASHER INSTALLATION ON A STEEL BASE (RISER)

If the base profile is such that the bolt surfaces are tapered, we recommend the use of special tapered washers against the base to avoid bending stress on the hold-down bolts. The steel base should be supported by machinery grout between the base and the floor. (see installation procedure, chapter 4.7.1.)

When the base is installed (level or very slightly tipped with front higher) and the grout is cured, the washer can then be positioned on the base and bolted in place. Use Bolt-Nut accordingly in the tab.4.4., given with quality 8,8 for the bolt and 8 for the nut minimum. With the washer sitting firmly (bolts not tightened) on the base there may still be some slight „rock“ in the washer. Use shims to eliminate any movement **BEFORE** the hold-down bolts are tightened. Simply pulling any rock out of a washer frame using the hold-down bolts will stress the frame and could lead to premature bearing and or frame failures.

4.7.3. SECURELY FASTEN THE WASHER

Securely fasten the washer (and riser) to the mounting base or foundation with washers and double nuts to assure safety. **RETIGHTEN** these nuts **AFTER THE WASHER HAS BEEN OPERATEING** for a few days. Recheck at six month intervals.

DO NOT FORGET to release the counter nut before checking otherwise it is not possible to verify the right tightness of the washer (and riser).

DO NOT FORGET to retighten the counter nut after the check.

4.8. CONNECTIONS

ELECTRICAL CONNECTION

The machine has been designed for connecting to the power network according the specification of your order. Before connection check the voltage values and the frequency stated in the machine label (fig.3.3.,pos.6), if they correspond to your power network. An individual branch circuit needs to be used for each machine. The way of the connection is described in fig.4.8.A. 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.

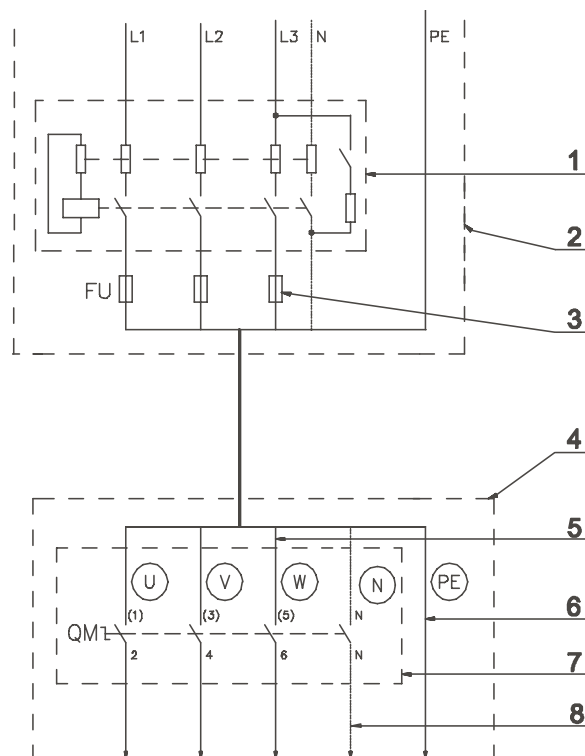
IMPORTANT:

- 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 „3. Technical specification“ table 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 10m) 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. Earth leakage trip
2. Laundry electrical switchboard
3. Power supply protection
4. Washing machine
5. Phase conductors
6. Protective conductor
7. Main switch inlet terminal switchboard
8. Neutral conductor



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Fig.4.8.A Machine connection to electrical network (with a residual current device)

RESIDUAL CURRENT DEVICE (RCD)

In some countries an RCD is known as an „earth leakage trip“ or „Ground Fault Circuit Interrupter“ (GFCI) or an „Appliance Leakage Current Interrupter“ (ALCI) or „earth (ground) leakage current breaker“.

Specifications:

- Tripping current: 100mA (if locally not available/allowed use a 30mA trip current, preferably selective type with small time delay set)
- Install max. 2 machines on each RCD (for 30mA, only 1 machine)
- Type B. There are components inside the machine which make use of DC-voltages and therefore a „type B“ RCD is necessary. For information only: Type B is better performance than type A, and type A is better than type AC.
- When locally allowed, there must always be installed an RCD. In some power network earthing systems (IT, TN-C,...), an RCD might not be allowed (see also IEC 60364).
- The machine control circuits are mostly supplied by 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 the table „Technical specifications“ for the rating of the nominal current and other specifications of the supply protection device. In this table there is specified that the protection must be the „slow“ type, for circuit breakers this means curve D. Although not recommended, if for some reason you can not use a slow type, select the protection device with 1 step higher nominal current rating to avoid disconnecting during start-up.

SUPPLY CABLE

The supply cable is not delivered with the machine.

Specifications:

- Conductors with copper cores.
- Stranded conductors are strongly recommended (flexible wiring) to avoid conductor breaking because of vibration.
- THE CROSS SECTION DEPENDS ON THE USED SUPPLY PROTECTION DEVICE. SEE TABLE 4.8.A, FOR THE MINIMAL CROSS SECTION.
- As short as possible, directly from the supply protection device to the machine 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 fig.4.8.B.
- 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 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 terminals (main switch (1)) marked with L1/U, (L2/V), (L3/W), (N), and the terminal (copper screw) marked with PE, see fig 4.8.C.
- Provide a sag in the cable, in front of the cable strain relief. This will avoid ingress of condensed water into the machine, see fig 4.8.C.

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 mm ² (AWG 15)	1.5 mm ² (AWG 15)
20A (20A)	16A (15A)	2.5 mm ² (AWG 13)	2.5 mm ² (AWG 13)
25A (-)	20A (20A)	4 mm ² (AWG 11)	4 mm ² (AWG 11)
40A (40A)	32A (30A)	6 mm ² (AWG 9)	6 mm ² (AWG 9)
63A(-)	50A (50A)	10 mm ² (AWG 7)	10 mm ² (AWG 7)
80A	63A	16 mm ²	16 mm ²
100A	80A	25 mm ²	16 mm ²
125A	100A	35 mm ²	25 mm ²

Tab.4.8.A Manufacturer’s recommended minimal conductor section

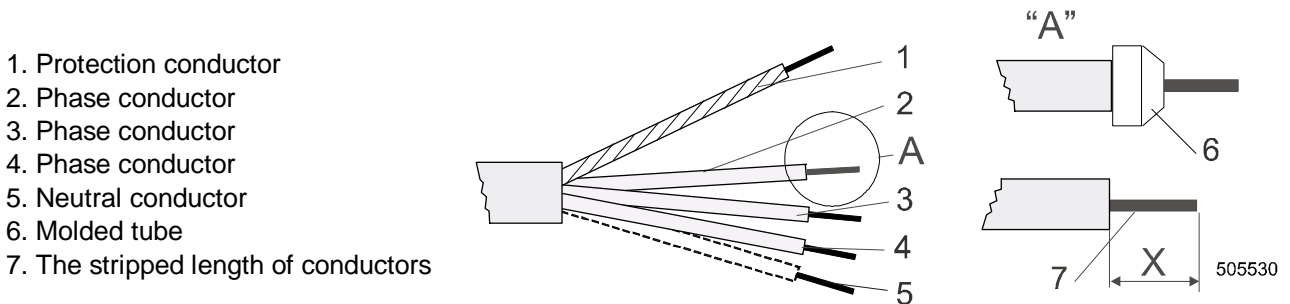
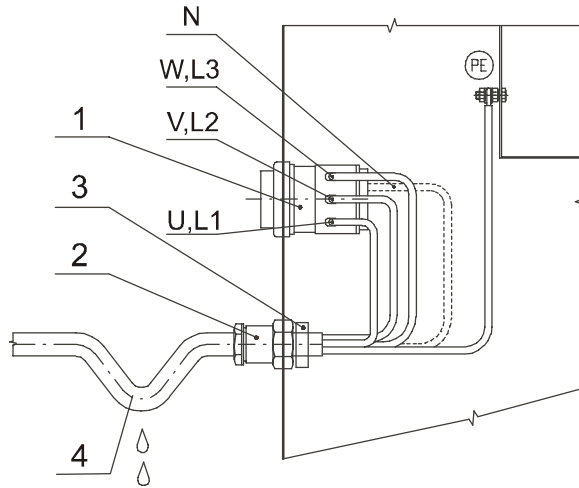


Fig.4.8.B Adaptation of conductor ends of supply cable

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

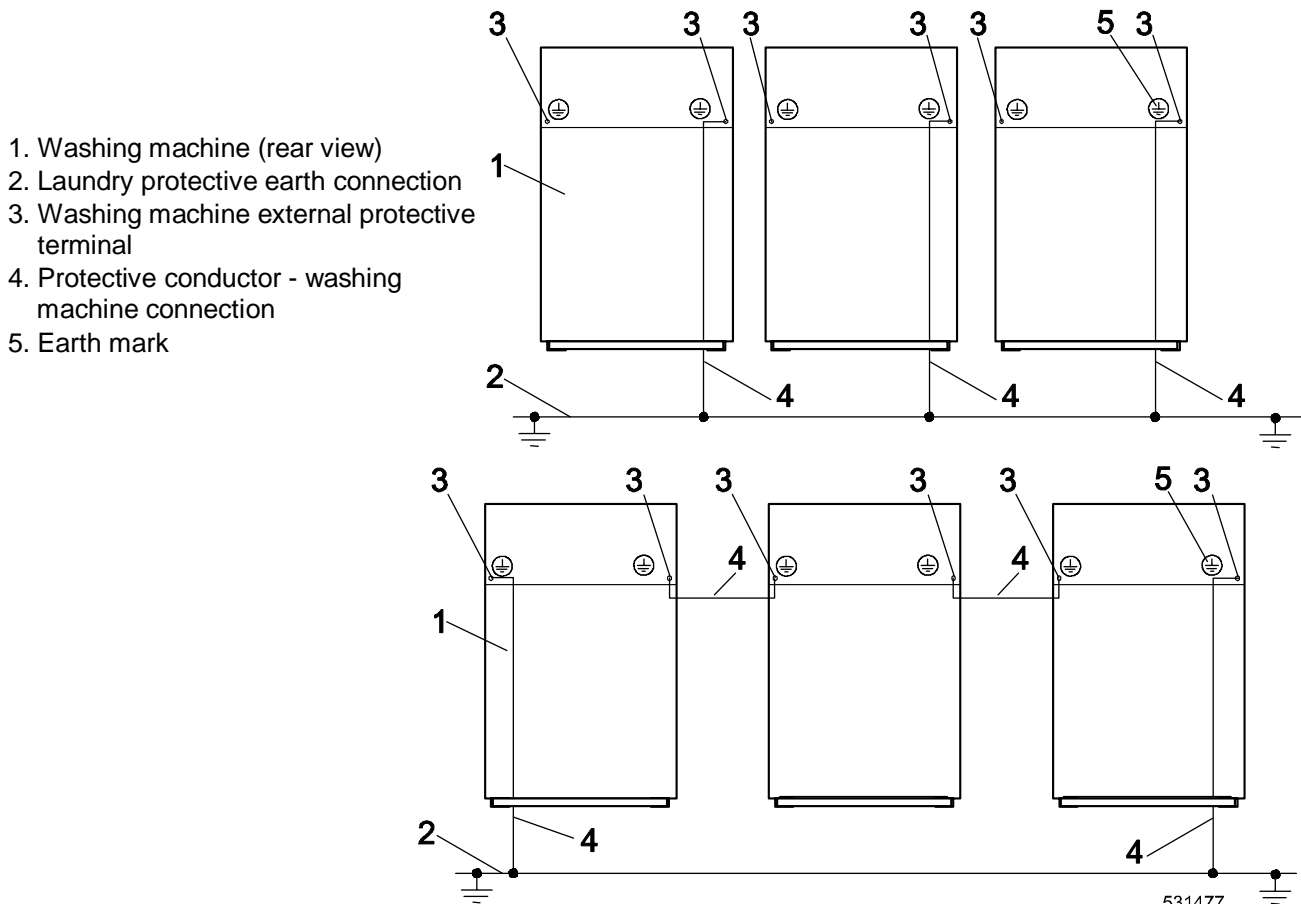


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Fig.4.8.C Connection of main power inlet

WASHER 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, (fig.4.8.D., pos.3). The minimum protection conductor's cross section depends on the supply cable cross section and can be found in table 4.8.A. However, for the protection purposes with the supply cable section of min. 4 mm² we recommend to select a larger conductor section, i.e. 6 mm².



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

Fig.4.8.D

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WATER CONNECTION

The washer is equipped with 3/4" BSP (British Standard Pipe Thread) hot and cold water inlet valves, indicated by a sticker next to the inlet. Use the water inlet hoses that accompany the washer as they are properly adapted to the water valves and appliance. NEVER use a rigid connection to the water supply.

There are 2 kinds of water inlet hoses, water inlet hoses with at both sides BSP threaded nuts or at one side a BSP nut and a NPT nut on the other end. The NPT Nut is marked with groove.

For best operation of the washer, water pressure must be between 43 - 73PSI (pound per square inch) or 0.3 - 0.5 MPa. Water pressure that is below minimum requirements can lengthen the wash cycle or/and not allow proper function of the washer.

It is also necessary to connect ALL available water inlets to a water supply. If a hard water supply is not present, connect it with soft cold water. If no hot water supply is present, contact your dealer for the proper required action.

TO INSTALL

Flush the water system in order to remove any particles that may be in the water system.

Insert a screenscale hose washer into the faucet connection end of the inlet hose and the standard hose seal washer at the opposite end of the inlet hose - applicable for export USA.

When connecting inlet hoses, be sure hose connections are not cross-threaded on the water valves. Tighten securely by hand plus 1/4 turn with pliers. DO NOT over tighten as this will strip threads on the water valve(s). The water hardness can have an influence on the wash results. The soap supplier can help you with making the right decisions concerning hard water, soft water, washing programs, type of soap and other related items to have the best wash results.

HOT WATER

The hot water supply needs to be large enough to provide the required hot water for the installed washers. For good wash results we advise a hot water supply that is set between 140 - 160°F / 70 - 80°C.

WATER CONSUMPTION

The water consumption depends on the programmed values in the controller. These default values can be found in the program manual. For a pre-wash and wash the low water level (LL) is used. The high water level (HL) is used for rinsing. The programmed units correspond to an average amount of water. You can calculate the total water consumption in one washing program by counting up the amount of water by each washing step. Be aware of the fact that these are only indicative values. The values received from this calculation is only an estimation of the real water consumption. The deviation depends on many circumstances. In the wash cycle for example there will be taken a mix of warm water and cold water. The mix of the water depends on the temperature of both. The total amount of water consumed depends also on the loading, type of linen and the drum rotation.

WATER DRAIN CONNECTION

The machine is equipped with a drain valve of O.D. 76 mm (3"), (35 kg / 80 lb type 2 x 76 mm / 2 x 3").

The drain outlet is situated on the rear of the machine. The drain has to be connected to the waste channel. You can use the elbow, which is a part of the delivery. Secure the elbow with a clamp.

THE WASTE CHANNEL MUST BE LOCATED LOWER THAN THE DRAIN PIPES BECAUSE THE WATER DISCHARGES FROM THE MACHINES BY GRAVITY. DO NOT REDUCE THE DIAMETER OF THE MACHINE DRAIN PIPES.

The main drain pipe must have the capacity to be able to handle the total output of all connected machines. There must also be a hole every twenty meter in the drainpipe, fig.4.8.E., pos.1 to assure the good working of the drain. This allows air in the main drain and facilitates drainage of the water flow. 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, fig.4.8.E., D1, D2, D3.

The recommended drain pipes diameter are:

D1 = 75 mm / 3" for one machine

D2 = 100 mm / 4" for two machines

D3 = 125 mm / 5" for three machines

If the main drain cannot be sufficiently deodorized, install a deodorizer per machine.

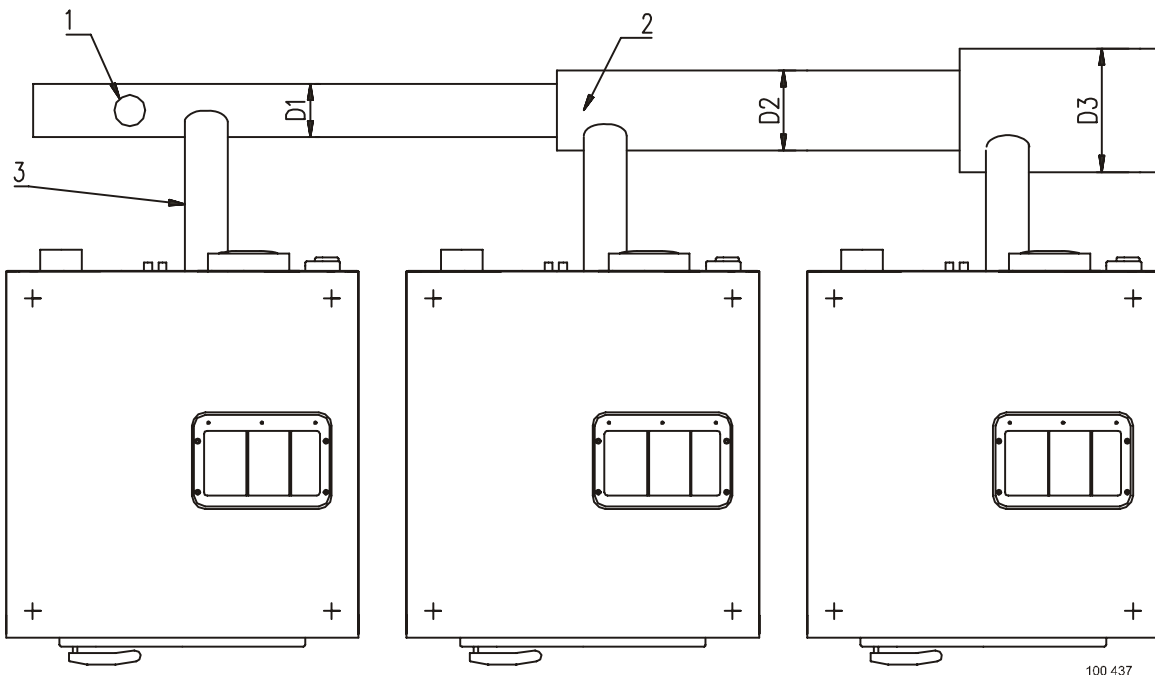


Fig.4.8.E. Recommended drain pipe diameters

STEAM CONNECTION

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

⚠ WARNING!
BEFORE EVERY STEAM VALVE IT IS NECESSARY TO INSERT THE FILTER WITH PERMEABILITY UP TO 300 MICROMETERS. POSSIBLE DIRT BIGGER THAN 300 MICROMETERS MIGHT DAMAGE THE STEAM VALVE AND CAUSE ITS LEAKAGE.

For dimensions of steam connection information, see fig.3.3 and technical information 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.

VENTING

⚠ WARNING!
VAPOURS ESCAPE FROM THE MACHINE THROUGH THE AIR VENT OPENING! (FIGURE 3.3., POSITION 4) DO NOT COVER.

The vent air opening is part of the back flow prevention water system. It also takes care that the tub can not be pressurized by water intake and vapor of the hot water. It allows also proper measuring of the water level. For the safety of everyone make sure that unauthorized persons cannot reach the backside of the machine. Notwithstanding the fact that it is not advised and if measures were taken, you can connect the machine venting pipe to the laundry central duct for exhausting the vapor out of the building. For placing of connection points see fig.3.3. The piping material must withstand a temperature of 80°C / 176°F and generated machine vibrations. The central duct for multiple venting must be dimensioned for the total cross section of venting pipes of all machines. Take care that this installation can not create any injury at anyway.

LIQUID SOAP CONNECTION

⚠ WARNING!
DISCONNECT THE MACHINE POWER INLET BEFORE INSTALLATION.
THE INLET TERMINALS ARE UNDER CURRENT EVEN WHEN THE MAIN SWITCH IS OFF.

⚠ WARNING!
ELECTRICAL CONNECTION AND MACHINE INLETS MUST BE CARRIED OUT BY AUTHORIZED WORKERS ACCORDING TO INSTALLATION MANUAL INSTRUCTIONS AND IN ACCORDANCE WITH VALID LOCAL STANDARDS.

⚠ WARNING!
AFTER THE HOSE IS CONNECTED, PUT ALL MACHINE COVERS BACK TO THEIR PLACES OTHERWISE YOU JEOPARDIZE INJURIES.

- 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 HD-PE and PVC material in order to avoid a problem that manufacturer is not responsible for.
To rebuild the machine from the version „Without liquid soap“ to the version „With liquid soap“ follow the service instruction no. 529621.

The washer has provisions for connecting external dosing of liquid soaps. On the back side, a plastic hose connection part is present, fig.4.8.F to connect the liquid soap hoses. Depending of the number of liquid soap pumps that will be used, drill holes (max. 5) of \varnothing 8 mm / 0.315" in the plastic hose connection part for each pump. On the plastic hose connection part is also a nipple of \varnothing 12 mm / 1/2". Use this nipple **ONLY** for entering diluted soap. Drill with \varnothing 11.5 mm / 0.45". By default, these nipples are closed. Drill only the ones that will be used. **Take care that the drill particles are carefully removed so that they can not clog up the hoses and openings.**

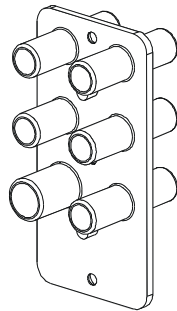


Fig.4.8.F Plastic hose connection part

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

ELECTRICAL CONNECTION

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.

ELECTRONIC CONTROLLER WITH BLUE PCB AND GRAPHICAL DISPLAY

For electric connection of supply control signals a plastic box is available on the back side of the machine (see fig.4.8.G., pos.60) with the terminal box with LED signalization of activation of the respective pump, (pos.54). Under the terminal box there is a label for electric connection, fig.4.8.G. 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, position 45. 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.

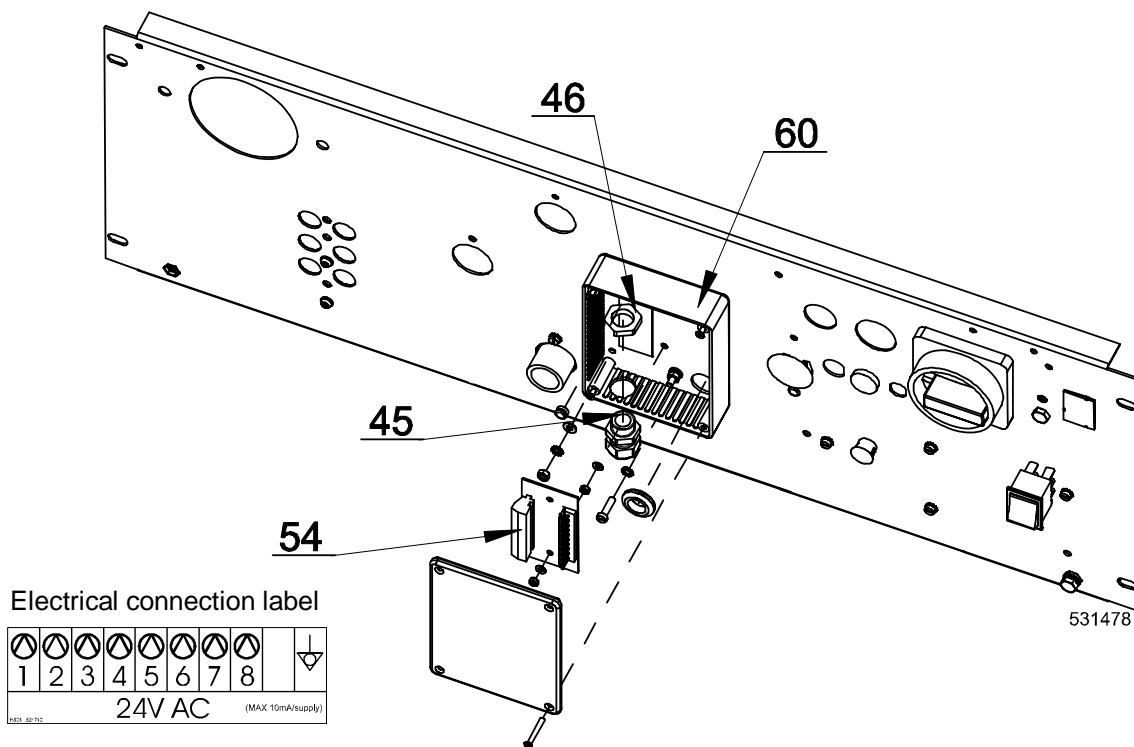


Fig.4.8.G

4.9. PUTTING INTO SERVICE

CHECKING BEFORE PUTTING INTO SERVICE

1. Put out all items from wash drum.
2. Check the machine horizontal position.
3. Check connection and clearance of your drain, channel or central drainage.
4. Check protective connection (earth) and electrical supply connection.
5. Open water valves to machine and check hose and connections for leaks.
6. Read carefully the „User's manual“.
7. Check the emergency function.

5. MAINTENANCE

⚠ 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!

5.1. INTRODUCTION

Preventive maintenance has been reduced to a minimum by the careful design of the machine, and the choice of reliable components and materials.

5.2. DAILY

CHECK:

1. Water (steam) inlets for leaks
2. Check that the drain valve is not leaking during the washing process, and that it opens properly afterwards (valve is open without electrical power).
3. The machine should always be clean.
4. Clean upper side and body regularly in order to remove all soap traces.
5. The soap hopper should be cleaned at the end of each working day. Scrap sediments which may have set inside the soap hopper with a plastic spatula and flush them with warm water.
6. Clean the sediments from the door seal (mainly bottom part).
7. After cleaning the machine, at the end of a working day, open the door of the machine to enable airing the machine.

At the end of the day it is recommended to shut off all main water (steam) and electrical supply. However, we don't mean the individual faucets of the machines that may not be touched once adjusted, but only the main valves.

5.3. EVERY THREE MONTHS

1. Make sure that the machine is switched off by the main switch when maintenance work is being performed and that the other workers are informed about it.
2. Dismantle the rear machine panel and check if the belt of wash motor is not damaged and if it has the correct tension (see chapter 5.8.).
3. Check visually that all tubing, piping and connections inside machine are free from leaks.
4. Wipe and clean the inside of the machine, making sure that the control components are protected from moisture and dust, during the cleaning operation.
5. On machines with electric heating check the tightening of the contacts of heating elements terminals and other power terminals (main switch, fuse disconnectors, contactors).
6. Put on the cover panels and turn on the power supply.

5.4. EVERY SIX MONTHS

1. Regularly clean the filters of the water inlet and the steam pipes.
2. Check the tightness of the bolts according to chapter 5.6.
3. For serious defects, the technical service of your dealer is always available.

⚠ 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.

4. Clean and remove dirt and dust from:
 - the cooling fin of the inverter
 - the motor cooling fins
 - the internal ventilator of the inverter (if present)
 - the external ventilator (if present)
 - the external air relieves of the machine

- check if ventilator in coolfins of inverter (if present) is functional
- check if external ventilator (if present) is functional

5.5. STEAM OR WATER FILTER

CLEANING OF FILTER

Close the main steam (water) supply.

**IF MACHINE STEAM (HOT WATER) SUPPLY LINE IS TOO HOT, DO NOT CONTINUE!
DANGER OF INJURY!**

If machine steam (hot water) supply line is cold and closed, remove the plug (see fig.5.5.,pos.4) and screen (2) from filter. Water filter is accessible after disconnecting the supply hose. Clean up the filter and put it back.

1. Filter body
2. Filter screen
3. Seal
4. Plug

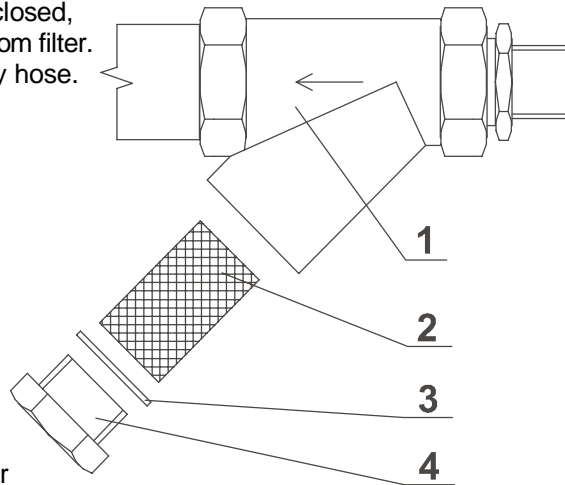


Fig.5.5. Steam filter

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5.6. TIGHTENING OF BOLTS

Check protective connection of the machines and fixation by bolts in terminals.

Disconnect the machine power supply in laundry electrical box! Otherwise the supply terminal box of the machine is still under electricity!

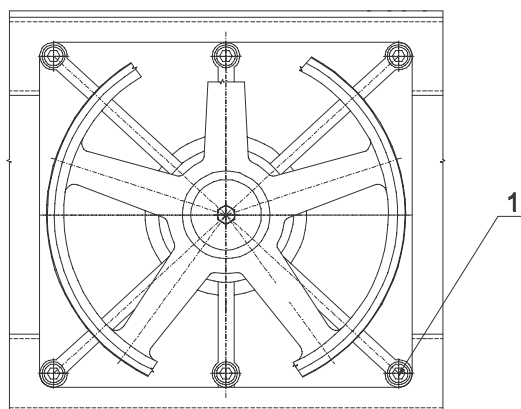
If the machine is not warm, dismantle the rear panel and tighten bolts of terminal electrical wires. Check properly attachments of power electrical conductors in terminals (i.e.main supply terminal or switch, contactors, motor, heating unites). After that install the panel back on the machine.

FOR MACHINE 13 kg / 30 lb

Check the tightness of the bolts M16x80 (DIN 933) which fix the trunnion to the frame. Use a torque wrench to tighten the bolts at the value of 200 Nm.

FOR MACHINE 27 kg / 60 lb, 35 kg / 80 lb VERSION

Check the tightness of the bolts M16x50 DIN 933, applicable for 27 kg / 60 lb, M16x80 DIN 912, applicable for 35 kg / 80 lb, (see fig.5.6.,pos.1) which hold the trunnion. Using a torque wrench to tighten the bolts at the value of 150 Nm, applicable for 27 kg / 60 lb, 320 Nm, applicable for 35 kg / 80 lb 320 Nm.



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Fig.5.6. Bolts of trunnion holding for 27 kg / 60 lb, 35 kg / 80 lb

5.7. DOOR SEAL

ADJUSTMENT OF DOOR GASKET PRESSURE

Marking the parts during the disassembly can simplify the assembly procedure afterwards.

FOR MACHINES WITH CAPACITY 6 to 10kg / 15 to 25 lb

1. Remove the lower service panel which is fixed by 2 bolts.
2. Unscrew 4 bolts which fix the front panel to the machine frame.
3. Unscrew 4 bolts on the front side of the front panel, which fix the front panel to the side panels.
4. Unscrew 2 bolts inside the machine, which fix the front panel to the control panel.
5. Remove the front panel from the machine by pulling over the door frame.
6. Loosen 6 bolts fastening the stainless steel foil and remove the foil from the machine.
7. To remove the door lock, disconnect the lock electrical connection (white terminal).
8. Under the door lock there are shims which can be removed to increase the pressure from the door on the tub.
After removing the shims, the pressure increases.
9. To remove the loading door loosen the bolts which fasten the door to the hinge.
10. There are similar shims under the hinge which can be also used for adjusting the door pressure.
After removing the shims, the pressure increases.
11. Assembly of the front panel, door and door lock is done in the reverse order of the assembly.
The door is centered towards the lock, by means of an alignment pin which is mounted on the door.

FOR MACHINES WITH CAPACITY 13 to 35 kg / 30 to 80 lb

In course of the years or by replacement, is it sometimes necessary to adjust the door seal pressure, in the case that the door seal pressure is too high or too low. Before disassemble, mark the position of the parts, it will simplify the assembly and have the parts back in correct position.

A detailed way to adjust the door pressure can be found in the service procedure „526174 Service procedure door MFR30-40-50-60-70-80“. If not available, please contact your dealer.

Important note: High door seal pressure can be a cause of leaking due to bending the door in the middle.

REPLACEMENT OF DOOR GASKET

FOR MACHINES WITH CAPACITY 6 to 22 kg / 15 to 50 lb

1. Open the door. Pulling the rubber from the stainless door casting towards inside the drum remove the door glass with rubber. Do it carefully not to damage the glass.
2. Remove the gasket from the glass.
3. Place a new rubber gasket with wider groove on the glass with the edge up.
4. Moisten the seal groove for door with soap water. 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 centre of the glass for the rubber edge properly fit in.

FOR MACHINES WITH CAPACITY 27 kg / 60 lb, 35 kg / 80 lb

1. Open the door and dismantle the door seal from the stainless door casting.
2. Put new seal on the stainless door casting and seal with silicone.

5.8. ADJUSTMENT GEAR BELTS

The belt tension does not need to be adjusted, it is a self-adjusting system. Nevertheless, belts are moving parts and are liable to wear. For replacement, see service instructions.

REPLACEMENT OF THE FLAT BELTS FOR THE MACHINE WITH CAPACITY 10 kg / 25 lb

The 10 kg / 25 lb washer has a two belt system that is self adjusting. Due to the different lengths, the wear behaviour of both belts, are different. Therefore, it may be necessary to adjust the belt tension, over the course of time. If the long belt is too loose, loosen the motor (16) fixation point (11), but do not remove the bolt (5/16"x11/4"). This allows spring (7) tension on the long belt. If necessary add spring force by tightening the M8 nut and counter nut (9) to the max of the allowed belt tension ($\pm 230\text{N}$). Then put the necessary belt tension on the short belt by pushing the motor down and fix the motor position by fixing the bolt (5/16"x11/4") (11).

Important note: Tighten the securing bolt (11) carefully so that it would not deform the plastic washers (14, 15). The motor is (and must stay) electrically isolated from the frame.

1. Drum pulley
2. Belt PJ1473
3. Pulley complete
4. Securing ring
5. Bolt M6x6
6. Belt PJ559
7. Spring
8. Bolt with eye M8x50
9. Nut M8
10. Pin
11. Bolt 5/16"x11/4"
12. Spring washer 8
13. Washer 8
14. Plastic washer 8,4x25x2
15. Plastic washer 8,2x12x3
16. Motor

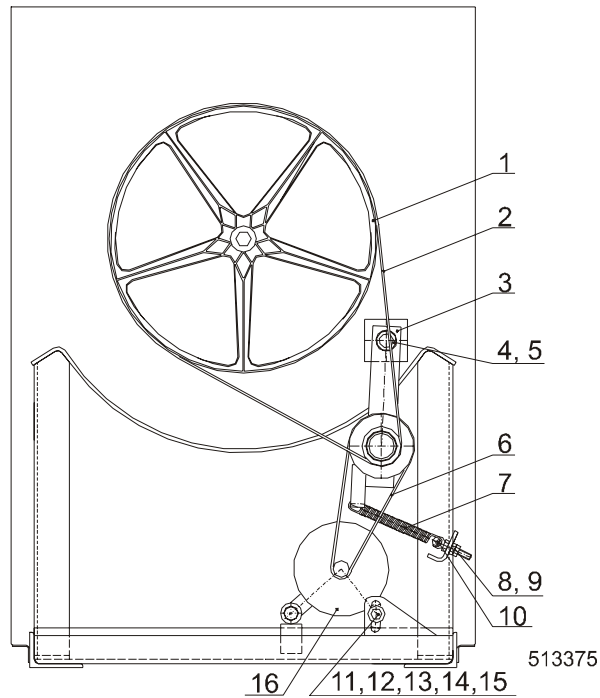


Fig.5.8.A. Flat belt, valid for 10 kg / 25 lb

5.9. 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.

6. TROUBLE SHOOTING AIDS

6.1. 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.

1. Verify if all condition are present to safely open the door.
2. Remove service panel.
3. Find the cord of emergency door opening on the left side. Pull on it gently but firm.
4. If a light click is heard, the lock went to open position.
5. Open the door if all safety conditions are fulfilled.
6. Put the service panel back on his place and secure it again.

6.2. ERROR INDICATION SHOWN ON DISPLAY

See User's manual, chapter 5.

See Programming manual, chapter „Troubleshooting“.

7. LIST OF RECOMMENDED SPARE PARTS

- drain valve
- 2-way inlet valve
- 3-way inlet valve
- steam valve
- door lock microswitch
- door lock coil
- fuses
- thermostat sensor
- motor contactor
- heating contactor
- heating element
- V-belts
- door seal

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

8. PUTTING THE MACHINE OUT OF SERVICE

8.1. DISCONNECTING THE MACHINE

1. Switch off the external electric power inlet to the machine.
2. Turn off the main switch on the machine.
3. Shut the external water or steam inlet to the machine.
4. Make sure that the external electric power and steam inlets are shut off. Disconnect all electric, water or steam inlets.
5. Insulate the external electric power inlet conductors.
6. Equip the machine with a sign „OUT OF SERVICE“.
7. Unscrew nuts (bolts) fixing the machine to the floor.
8. During transportation follow the instructions stated in chapters:
„2.2. IMPORTANT INFORMATION BEFORE INSTALLATION“, paragraph „For transportation and storage“,
„4.1. HANDLING, TRANSPORT, STORAGE, 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!

8.2. MACHINE DISPOSAL

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

8.2.1. 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).

8.2.2. POSSIBILITY OF THE MACHINE DISPOSAL 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. These groups can be found on www.euwas.org

Offer the sorted waste to the company which is competent for further treatment.

REMARKS

Multiple horizontal lines for notes.

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:

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