

High spin industrial washer extractors

33kg

40kg

55kg

80kg

100kg

120kg

Original user's manual

Original installation and maintenance manual

554515 A
Publication date: 1 Feb 2014

USER'S MANUAL

1. TABLE OF CONTENTS

1. TABLE OF CONTENTS	3
2. WARNINGS AND LABELS.....	4
2.1. INSTRUCTIONS FOR MAINTENANCE, ADJUSTMENT AND SAFETY OF PEOPLE.....	5
3. SYMBOLS ON THE MACHINE (DEPENDING ON THE MACHINE MODEL)	6
4. OPERATION INSTRUCTION	8
4.1. BEFORE WASHING.....	8
4.2. OPENING THE DOOR	8
4.3. LOADING THE MACHINE WITH LINEN	8
4.4. CLOSING THE DOOR.....	9
4.5. PROGRAM SELECTION	9
4.6. WASH PROGRAMS OVERVIEW	9
4.7. ADD DETERGENTS.....	9
4.8. START THE WASHER	10
4.9. END OF WASH CYCLE.....	11
4.10. HOW TO OPEN DOOR WHEN FAILURE OCCURS	11
5. FIRST SERVICE AT TECHNICAL PROBLEM.....	12

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 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 treated with flammable products in the washer extractor. 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 follow the safety instructions and the warnings.
- Do not remove warning signs placed on the machine. Follow instructions on signs and labels to avoid personal injuries.
- 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.
- 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 must 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.
- In case of steam escaping anywhere in the machine, shut off the main steam supply valve and call for maintenance.
- 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.
- In case of danger turn off the main switch or other emergency disconnection devices.
- Turn off the main water supply at the end of each operating day.
- Only qualified service personnel can execute service on the washer extractor.
- Follow all valid and 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 drum capacity between 60 and 150 l. Norm EN60204-1 is used for a net usable drum capacity above 150 l.

WARNING!

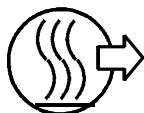
IF THE INSTALLED APPLIANCE OPERATE WITH COIN, TOKEN OR SIMILAR OPERATION FOR USE IN SELF-SERVICE SITUATIONS, THEN THE OWNER-INSTALLER MUST PROVIDE A REMOTE-LOCATED EMERGENCY STOP DEVICE. THIS DEVICE MUST BE PLACED IN SUCH A WAY THAT IT IS EASY AND SAFELY ACCESSIBLE FOR THE USERS. THE EMERGENCY STOP DEVICE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



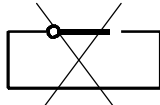
WARNING!

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 vapour that escapes from the washer extractor venting!



CAUTION!

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

PRI 551 000 047 A

⚠ 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!
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“ according to the following references.

1. Manipulation, transportation, storage
2. Putting the machine into service
3. Technical specification
4. Putting the machine out of service
5. Description of the safe work system when maintenance is performed, adjustment, and when eliminating defects
6. Procedures on searching for defects, cleaning, maintenance
7. Heat risks
8. Description of qualities for ventilation
9. Loss of stability
10. Electric risks
11. Minimal water level
12. Sight holes
13. Water supply

3. SYMBOLS ON THE MACHINE (DEPENDING ON THE MACHINE MODEL)

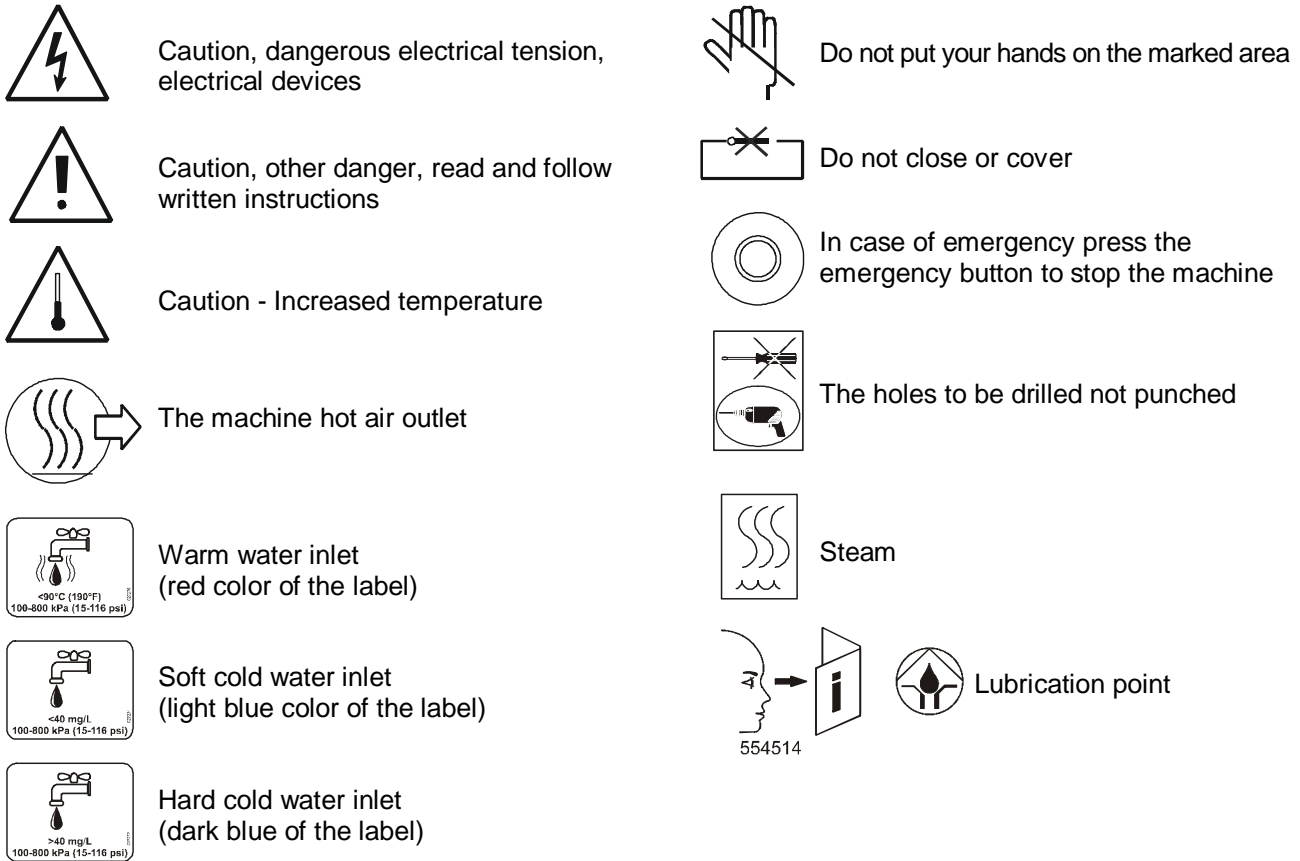


Figure 3.A. Symbols on the machine

HANGING CONTROL – MACHINE WITH TILTING SYSTEM (ON REQUEST), NOT APPLICABLE FOR 33 kg / 80 lb MACHINE

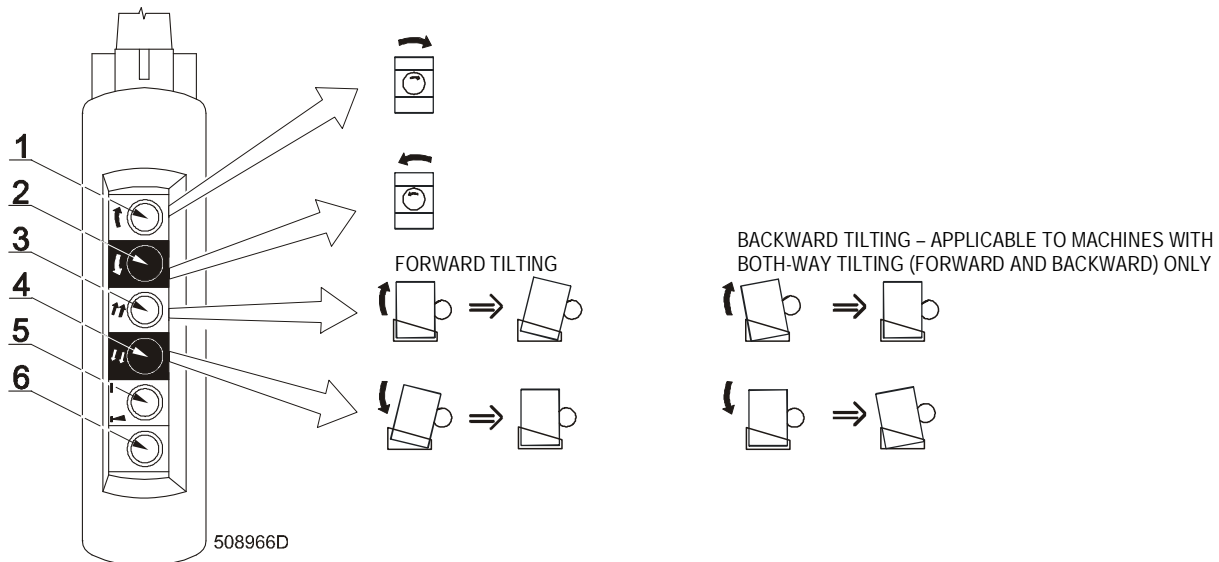
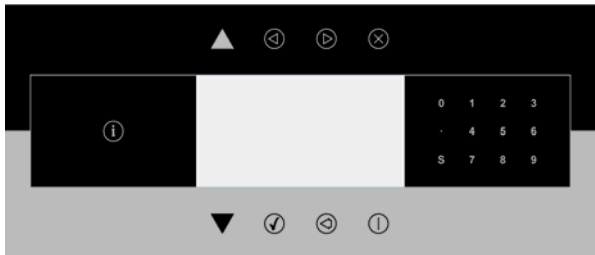


Figure 3.B. – Hanging control

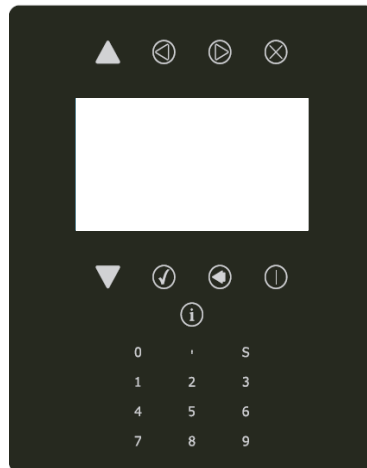
1. Button for drum rotating, direction of rotating is clockwise from the frontal view.
2. Button for drum rotating, direction of rotating is counter clockwise from the frontal view.
3. Button for tilting, direction of tilting is forward.
4. Button for tilting, direction of tilting is backward.
5. Button for permission of washer tilting – two-hand control.
6. Button for permission of drum rotation – two-hand control.

Xcontrol plus

33-40-55 / 80-100-120 kg



80-100-125 / 180-230-275 lb



START
(ADVANCE function)



STOP (program interruption)



CONFIRM THE SELECTION



CANCEL THE SELECTION



**MOVE UP,
DIRECTION OF TILTING IS
FORWARD – not applicable for 33 kg /
80 lb**



**MOVE DOWN,
DIRECTION OF TILTING IS
BACKWARD – not applicable for 33 kg /
80 lb**



**SELECTION NO
DECREASING THE TIME
SEQUENCE**



**SELECTION YES
INCREASING THE TIME
SEQUENCE**



INFO
(overview of available wash
programs and program information)



SERVIS (servicing information)



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

0 to 9

NUMERIC KEYPAD

4. OPERATION INSTRUCTION

4.1. BEFORE WASHING

Sort the linen according to temperature and instructions determined by fabric manufacturer. Check if there aren't any strange objects between the linen like nails, screws, needles, etc. to prevent the washer-extractor or linen damage. Turn sleeves of shirts, blouses, etc. inside out. To get a better washing result mix the bigger and smaller pieces of linen and put them into the washer separately.

4.2. OPENING THE DOOR

Turn the handle down.

Machine with tilting

⚠ WARNING!
WHEN HANDLING THE MACHINE TILTING BY THE TILTING CONTROL, ALWAYS STAND ON THE SIDE OF THE MACHINE. DO NOT STAND IN FRONT OR BEHIND THE MOVING MACHINE!
AVOID ACCESS OF ANY PERSON IN THE FRONT OR BEHIND THE MACHINE DURING ITS TILTING!

Open and secure the door in open position (see the Installation and maintenance manual, figures 3.4., 3.6., and 3.7. – “DOOR SECURING”). Upon opening the door, the tilting system gets automatically activated; now the “up” and “down” buttons or the controller may be operated and the machine tilted as desired. The tilting system is disabled when the door is closed.

4.3. LOADING THE MACHINE WITH LINEN

Machine with weighing system

Tare (set zero weight) every time before loading by pressing the 0-button.

Machine with forward and backward tilting – tilting the machine backward to a position suitable for loading the linen

The machine may be tilted back as desired – up to the extreme backmost position. However, you do not have to reach the extreme position. Just use the position which suits your needs. In order to tilt the machine backwards, press and hold two buttons at the same time; the button for tilting (see figure 3.B., pos. 4) and the button 5. After a certain time delay of up to approx. 10 seconds, the machine starts tilting. Tilting can be interrupted if you release the pressed buttons. When the extreme position is reached, tilting is stopped. Tilting is possible only with open drum door.

Machine with forward and backward tilting – loading the linen

⚠ WARNING!
DURING LOADING WHILE THE DRUM IS ROTATING, NOBODY IS ALLOWED TO STAND BEHIND / AT THE BACK OF THE MACHINE. DO NOT PULL THE LINEN OUT WHILE THE DRUM IS ROTATING.

To make the linen loading easier use drum rotation function. To rotate the drum in tilted position press and hold the button of drum rotating in required direction, figure 3.B., pos.1, or 2 and the button 6 on the controller at the same time. It will make distribution of the linen easier. The linen can be loaded in several steps - tilt the machine to a certain position and load some linen using the function of the drum rotating. Then tilt the machine more and repeat the process again.

Machine with forward and backward tilting – tilting the machine to the basic position

After loading the linen, tilt the machine back to basic position. Press and hold two buttons at the same time; the button for tilting (see figure 3.B., pos. 3) and the button 5. Tilting can be interrupted if you release the pressed buttons. When the basic position is reached, tilting is stopped.

When the power supply is interrupted during tilting, the machine remains secured in its actual position as well as after the power supply restart.

Do not overload the washer extractor. Overloading the machine can lead to a bad wash result. Half washing loads can obstruct a proper function.

4.4. CLOSING THE DOOR

⚠ WARNING!
NEVER PUT FINGERS BETWEEN DOOR SEALING AND DRUM, AVOID POSSIBLE INJURY!

Turn the handle up.

Before start up, make sure the door is properly latched.

Machine with tilting system: Before you start a new cycle, the machine must be in its basic position. If the door is closed before the machine reaches the basic position, a warning is displayed. Then it is necessary to open the door and bring the machine back to the basic position.

4.5. PROGRAM SELECTION

Choose one of the available wash programs, best corresponding to the quality of linen and allowed wash temperature in the wash load. Selection of the program determines temperature and time for washing and rinsing.

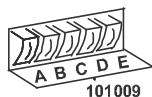
Note: To change factory settings and/ or washing programs and for other settings options - see Programming manual.

4.6. WASH PROGRAMS OVERVIEW

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

4.7. ADD DETERGENTS

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.

❑ **For washing machines connected to liquid soap supply system.**

Check if the liquid soap supply system is in operation and if there is sufficient quantity of liquid soap.

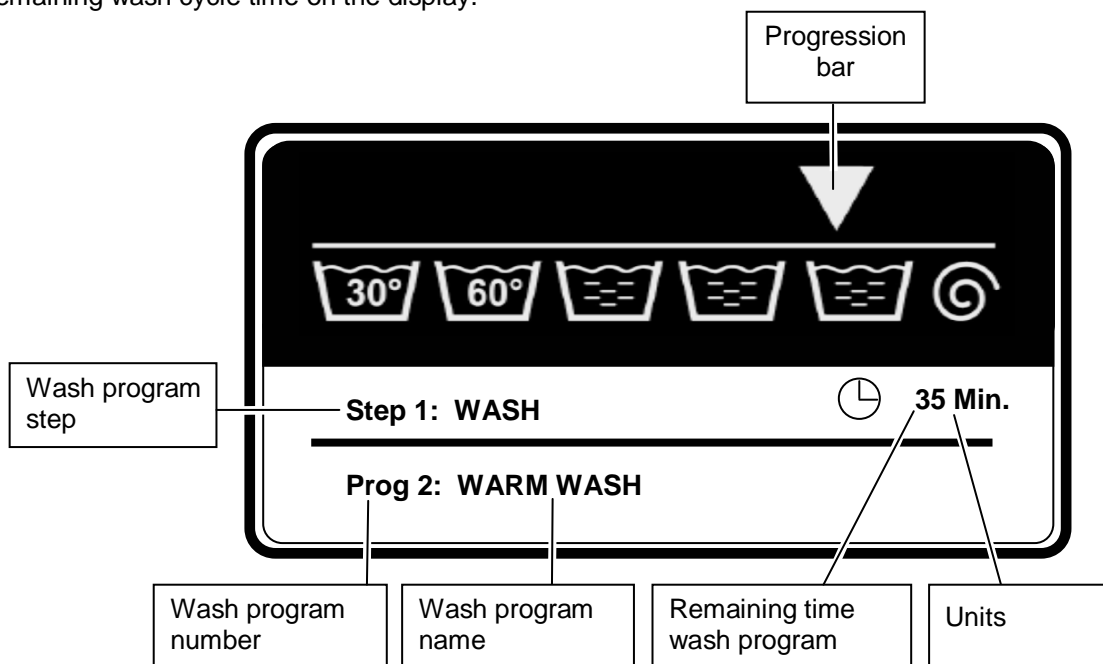
❑ **Standard wash programs versus custom made wash programs.**

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

❑ **Remark:** It is advisable to use only detergents with „reduced foaming“ 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 when the machine starts.

4.8. START THE WASHER

After selecting the desired wash program number, by pressing the **START** button the wash cycle will be started. If you enter a number that does not correspond to any of the available programs, the display shows the message **INVALID**. During the wash cycle the user can follow the progress of the wash sequence and the remaining wash cycle time on the display.



⚠ WARNING!

IF "CLOSE DOOR" IS DISPLAYED, IT IS NOT POSSIBLE TO START WASHING CYCLE.

CHECK WHETHER:

- **THE MACHINE IS IN BASIC POSITION**
- **THE DRUM DOOR IS CLOSED**

4.9. END OF WASH CYCLE

⚠ WARNING!
WHEN THE POWER SUPPLY HAS BEEN CUT, THE DOOR WILL BE AUTOMATICALLY BLOCKED AGAINST OPENING. AFTER COOLING DOWN THE WASHING BATH, THE DOOR CAN BE OPENED ACCORDING TO THE MACHINE MAINTENANCE INSTRUCTIONS.

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

Tilting the machine forwards to a position suitable for unloading the linen

Open and secure the door in open position (see the Installation and maintenance manual, figures 3.4., 3.6., and 3.7. – **“DOOR SECURING”**). The machine may be tilted forward as desired – up to the extreme forward position. However, you do not have to reach the extreme position. Just use the position which suits your needs. In order to tilt the machine forward, press and hold two buttons at the same time; the button for tilting (see figure 3.B., pos. 3) and the button 5. After a certain time delay of up to approx. 10 seconds, the machine starts tilting. Tilting can be interrupted if you release the pressed buttons. When the extreme position is reached, tilting is stopped. Tilting is possible only with open drum door.

Unloading the linen

⚠ WARNING!
DURING UNLOADING WHILE THE DRUM IS ROTATING, NOBODY MUST STAND IN FRONT OF THE MACHINE. THE LINEN COMES OUT OF THE MACHINE BY ITSELF. DO NOT PULL THE LINEN OUT WHILE THE DRUM IS ROTATING.

To make the linen unloading easier use drum rotation function. To make drum rotation in tilted position press and hold the button of drum rotating in required direction, figure 3.B., pos.1, or 2 and the button 6 on the controller at the same time. It will make unloading of the linen easier. It is possible to unload the linen into a few steps, it means tilt the machine to certain position and unload some linen using the function of the drum rotating. Then tilt the machine more and repeat the process again.

Tilting the machine to the basic position

After unloading the linen, tilt the machine back to basic position. Press and hold two buttons of the controller at the same time – the button for tilting pos. 4 and the button pos. 5 (see figure 3.B.) Tilting can be interrupted if you release the pressed buttons. When the basic position is reached, tilting is stopped.

When the power supply is interrupted during tilting, the machine remains secured in its actual position as well as after the power supply restart.

4.10. HOW TO OPEN DOOR WHEN FAILURE OCCURS

See Installation and maintenance manual.

5. FIRST SERVICE AT TECHNICAL PROBLEM

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

N°	Failure message	Failure	Action	Fault occurrence
E32	Verify Par	Verification fault frequency inverter parameters	Don't start	At loading parameters
E35	Wrong Softw	Wrong software version	Don't start	New software version
E36	Imbalance	Unbalance detection system activated.	Reduction of spinning sequence revolutions. For Info only.	Spinning sequence
E37	No Drain Spr	Drain failure at the Spray Sequence	Full stop + tumble	Spray Sequence
E38	No Recycle	The Tank with recycle water is empty	Warning at the End. Front soap dispenser Mach. only	Wash step
E39	Out of Soap	The Soap Supplies are running Out of Soap	For Info only	Wash step
E41	Service Due	Service Due Warning	For Info only Open door = reset	End cycle
E42	Connection	No Network Connection	For Info only	Data Transfer Networking
E43	Voltage Par	Wrong Voltage Range Selection	Make correct selection	Configuration menu
E44	Model Type	Incorrect selection of machine type	Make correct selection	Configuration menu
E80	SoapTimeOut	Incorrect signal for liquid detergent dispensing	Full stop + tumble.	Whole cycle
E81	No Reheat	Heating Failure	Full stop + tumble.	Wash Step (Traceability only)
E82	No Refill	Refill failure	Full stop + request for Continue	Wash Step (Traceability only)
E83	Power Interruption	No successful wash cycle termination	Info that the wash cycle has to be repeated.	Abnormal Cycle Termination (Traceability only)
E85	RTC Reset Bat	Real Time Clock, No Battery or battery low power	For Info only.	End cycle (Traceability only)
E100	Weigh No Comm	Communication fault weighing system	Full Stop Tumble	(machines with weighing system only)
E101	Weigh Low	Weight machine is too low	Don't Start	(machines with weighing system only)
E102	Weigh High	Weight machine is too high	Don't Start	(machines with weighing system only)
E103	Weigh Balance	Weight is not balanced over 4 load cell's.	Don't Start	(machines with weighing system only)
E104	Weigh Overload	Weight on individual load cell exceeds max.	Full Stop Tumble	(machines with weighing system only)
E300 - E353	Mits Err	Specific Mitsubishi Inverter Alarm	Full stop + safety time	Whole cycle
E500 - E525	Memory Err	Memory Error	Full stop + safety time	Any time

N°	Failure message	Failure	Action	Fault occurrence
E550	TRACEYBILIT Y Write	Internal memory Error data for traceability	For Info only	Traceability function, whole cycle
E551	TRACEYBILIT Y Full	Internal Traceability memory is full	For Info only	Traceability function, whole cycle
E560 - E563	USB Errors	Errors in communication with USB flash disk	For Info only	Only in Advanced menu Data Export/Import
E600 - E628	Softw. Err	Software Error	Full stop + safety time	Any time

INSTALLATION AND MAINTENANCE MANUAL

1. CONTENTS

1. CONTENTS	15
2. IMPORTANT SAFETY INSTRUCTIONS	16
2.1. SYMBOLS ON THE MACHINE	19
2.2. IMPORTANT INFORMATION BEFORE INSTALLATION	19
3. TECHNICAL SPECIFICATIONS	20
3.1. WASHERS 33-40-55 kg / 80-100-125 lb	20
3.2. WASHERS 80-100-120 kg / 180-230-275 lb	22
3.3. DIMENSIONS AND COMPONENTS OF THE WASHERS 33-40-55 kg / 80-100-125 lb.....	24
3.4. DIMENSIONS OF THE WASHERS 40-55 kg / 100-125 lb WITH FORWARD TILTING.....	26
3.5. DIMENSIONS AND COMPONENTS OF THE WASHERS 80-100-120 kg / 180-230-275 lb.....	27
3.6. DIMENSIONS OF THE WASHERS 80-100-120 kg / 180-230-275 lb WITH FORWARD TILTING	29
3.7. DIMENSIONS OF THE WASHERS 80-100-120 kg / 180-230-275 lb WITH TWO-WAY TILTING (FORWARD AND BACKWARD)	30
4. INSTALLATION	31
4.1. HANDLING, TRANSPORT AND STORAGE	31
4.2. SPACE REQUIREMENTS	32
4.3. MACHINE POSITIONING	32
4.4. CONNECTIONS	43
4.5. PUTTING THE MACHINE INTO SERVICE	51
5. MAINTENANCE	54
5.1. INTRODUCTION	54
5.2. DAILY	54
5.3. MONTHLY OR AFTER 200 WORKING HOURS	54
5.4. EVERY 3 MONTHS OR AFTER 500 WORKING HOURS	54
5.5. EVERY 6 MONTHS OR AFTER 1000 WORKING HOURS.....	55
5.6. SAFETY VIBRATION SWITCH.....	55
5.7. TIGHTENING MOMENTS.....	58
5.8. LUBRICATION	60
5.9. DRIVING MECHANISM	61
5.10. WATER AND STEAM FILTERS.....	62
5.11. THRUST OF DOOR SEAL.....	63
5.12. SPRING UNIT	64
5.13. REPLACEMENT WASHER FUSES	65
5.14. EARTH LEAKAGE TRIPS.....	65
6. TROUBLE SHOOTING AIDS	66
6.1. DOOR BLOCKING	66
6.2. ERROR INDICATION SHOWN ON DISPLAY	67
7. LIST OF RECOMMENDED SPARE PARTS	68
8. PUTTING THE MACHINE OUT OF SERVICE	69
8.1. DISCONNECTING THE MACHINE.....	69
8.2. MACHINE DISPOSAL	69

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 must not be operated until the fixed guards are put correctly in place.
- ◆ The appliance must not be stored, installed or exposed to the weather, extreme low or high temperature and humidity levels. Do not hose down the washer. NEVER allow the appliance to get wet.
- ◆ Check the functioning of the door lock mechanism on regular base. NEVER bypass the doorlock mechanism.
- ◆ Disconnect the power and close all water and steam supply before cleaning, servicing and at the end of each operating day.
- ◆ Out of the venting at the back of the washer can escape warm vapor or and hot air. Do not cover the vent but protect it sufficiently. It serves air gap and as a vapor outlet to prevent pressure building in the washer.
- ◆ Do not repair or replace any part of the appliance or attempt any servicing unless specifically recommended in the service manual or published user-repair instructions that you understand and have the skills to carry out. Only qualified service personnel may open the appliance to carry out servicing.
- ◆ Information contained in this manual is intended for use by a qualified service technician familiar with proper and safe procedures to be followed when repairing an electrical appliance. All tests and repairs should be performed by a qualified service technician equipped with proper tools and measuring devices. All component replacements should be made by a qualified service technician using only factory approved replacement parts.
- ◆ Improper assembly or adjustment may occur if service or repair is attempted by persons other 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!
THIS APPLIANCE MUST BE CONNECTED TO A GROUNDED METAL, PERMANENT WIRING SYSTEM, AND ADDITIONALLY AN EQUIPMENT-GROUNDING CONDUCTOR MUST BE RUN WITH THE CIRCUIT CONDUCTORS AND CONNECTED TO THE EQUIPMENT-GROUNDING TERMINAL OR LEAD ON THE APPLIANCE.

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

⚠ WARNING!
ALWAYS CONSULT THE STATIC REQUIREMENTS WITH A STATIC ENGINEER IN ORDER TO MEET THE REQUIREMENTS OF PERMISSIBLE LOADS, VIBRATIONS AND NOISE LEVEL IN THE BUILDING! THE 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!
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.

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

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

⚠ 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.

⚠ CAUTION!
MACHINE WITH WEIGHING SYSTEM:
NEVER CARRY LOAD SENSORS BY THEIR CABLES!
AVOID ELECTRIC WELDING NEAR THE LOAD SENSORS!
AN IMPACT MIGHT CAUSE PERMANENT DAMAGE TO THE LOAD SENSORS! AVOID UNEQUAL LOAD DISTRIBUTION BETWEEN THE LOAD SENSORS WHEN PUTTING THE MACHINE DOWN.
WHEN THE POWER OF THE MACHINE IS SWITCHED ON, THE SYSTEM NEEDS A 10-MINUTES WARM-UP TIME. THIS IS IMPORTANT WHEN THE POWER HAS BEEN OFF FOR MORE THAN FIVE MINUTES. IGNORING WARM-UP MIGHT RESULT IN A MAJOR ERROR IN WEIGHING.

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 soft - mount machine series with a dry load of 33-40-55-80-100-120 kg / 80-100-125-180-230-275 lbs. Verify the machine model according to your order and the data plate and find corresponding information in the manual.
- The machines are controlled by electronic controller. 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.
- On request a machine can be equipped with:
 - recycle discharging,
 - dosing pumps for liquid soaps,
 - weighing system (further referred to as “weighing”),
 - tilting system – with forward tilting,
 - with two-way tilting (forward and backward) - 80-100-120 kg / 180-230-275 lbs machines only.
- Electrical setup of the machine is indicated on data plate.

3. TECHNICAL SPECIFICATIONS

3.1. WASHERS 33-40-55 kg / 80-100-125 lb

MACHINE		kg / lb	33 / 80	40 / 100	55 / 125
MACHINE DIMENSIONS (1)					
Width	mm / inch		1195 / 47.04	1195 / 47.04	1195 / 47.04
Depth	mm / inch		1330 / 52.4	1430 / 56.3	1610 / 63.4
Height	mm / inch		1905 / 75	1905 / 75	1905 / 75
MACHINE DIMENSIONS WITH FORWARD TILTING (1)					
see table 3.4.					
PACKING DIMENSIONS					
Width	mm / inch		1430 / 56.3	1430 / 56.3	1430 / 56.3
Depth	mm / inch		1475 / 58.1	1570 / 61.8	1750 / 68.9
Height	mm / inch		2105 / 82.9	2105 / 82.9	2105 / 82.9
Transportation volume	m ³ / ft ³		4.4 / 156	4.7 / 166	5.3 / 187
PACKING DIMENSIONS WITH FORWARD TILTING (1)					
Width	mm / inch		-	1440 / 56.69	
Depth	mm / inch		-	1760 / 69.29	
Height	mm / inch		-	2350 / 92.52	
Transportation volume	m ³ / ft ³		-	5.95 / 211	
DRUM DIMENSIONS					
Diameter	mm / inch		914 / 36	914 / 36	914 / 36
Depth	mm / inch		510 / 20	610 / 24	790 / 31.1
Drum volume	dm ³ / gal		335 / 88	400 / 106	518 / 137
Door opening	mm / inch		540 / 21.3	540 / 21.3	540 / 21.3
WEIGHT					
Net weight	kg / lb		1190 / 2623	1560 / 3439	1630 / 3594
Net weight with forward tilting	kg / lb		-	1735 / 3825	1810 / 3991
Gross weight	kg / lb		1310 / 2888	1700 / 3748	1770 / 3902
Gross weight with forward tilting	kg / lb		-	1875 / 4134	1950 / 4300
ELECTRICAL DATA					
Power supply - deviations			3x380-415V 50/60Hz 3x440-480V 50/60Hz 3x200-240V 50/60Hz -6% to +10% of the voltage supply ± 1 Hz		
Motor output	kW		4	7.5	7.5
INPUT POWER					
Electric heating 24 kW	kW		28.1	-	-
Electric heating 36 kW	kW		-	43.6	-
El. heating 54 kW (380- 480V)	kW		-	-	61.6
Steam or without heating	kW		4.1	7.6	7.6
SUPPLY PROTECTION DEVICE					
Residual current device (RCD)	mA		100, class B		
Steam or without electrical heating					
200 - 240V 3AC	A		30	40	40
380 - 480V 3AC	A		16 (15)	20	20

Table 3.1.

MACHINE		kg / lb	33 / 80	40 / 100	55 / 125
El. heating 24kW (200- 240V)	A		80	-	-
El. heating 24kW (380- 415V)	A		50	-	-
El. heating 24kW (440- 480V)	A		32	-	-
El. heating 36kW (200- 240V)	A		-	120	-
El. heating 36kW (380- 480V)	A		-	80	-
El. heating 54kW (220-240V)	A		-	-	160
El. heating 54kW (380- 480V)	A		-	-	100
WASHING FUNCTIONS					
Washing	RPM		38		
High extracting	RPM		830		
G-factor			350		
CONNECTION DATA					
Water inlet connection	inch		BSP 1"		
Water pressure range	MPa / bar / PSI		0.1- 0.8 / 1 - 8 / 14.5 - 116		
Recommended water pressure	MPa / bar / PSI		0.3 - 0.5 / 3 - 5 / 43 - 73		
Maximal water temperature	°C / °F		90 / 194		
Drain diameter	mm / inch		2 x Ø76 / 3		
Drain flow rate	dm ³ .min ⁻¹ gal.min ⁻¹		300 80		
Steam connection	inch		G 3/4"		
Steam pressure	MPa / bar / PSI		0.3 - 0.8 / 3 - 8 / 44 - 116		
Press air connection (2)	inch		G1/4"		
Air pressure	MPa / bar / PSI		0.3 - 0.5 / 3 - 5 / 43 - 73		
Powder dispenser cups			5	5	5
Liquid soap signals			8	8	8
External liquid soap connections			6	6	6
Hose for press air connection, machine with forward tilting	mm / inch		-	outside diameter 8 / 0.31	
Air pressure – machine with forward tilting	Mpa / bar / PSI		-	0.35 / 3.5 / 51	
GENERAL DATA					
Ambient temperature	°C / °F		5 to 35 / 41 to 95		
Relative humidity			30% to 90% without condensation		
Height above sea level	m / ft		up to 1000 / 3280		
Storage temperature	°C / °F		1 to 55 / 34 to 131		
Max. static load on floor	kN		14.41	18.16	19.57
Max. static load on floor – machine with forward tilting	kN		-	19,4	20,86
Max. dynamic load on floor	kN		12.7 ± 2.74	16.08 ± 2.94	17.06 ± 3.13
Max. dynamic load on floor – machine with forward tilting	kN		-	17,11 ± 2,94	18,13 ± 3,13
Frequency of dynamic load	Hz		14		
SOUND LEVELS ⁽³⁾					
L _{Aeq} wash / extraction seq.	db		55 / 75		55 / 77

Table 3.1. continuation

(1) maximum dimensions including protruding parts

(2) washers with air operated water valves

(3) ISO 3744

3.2. WASHERS 80-100-120 kg / 180-230-275 lb

MACHINE	kg / lb	80 / 180	100 / 230	120 / 275
MACHINE DIMENSIONS (1)				
Width	mm / inch	1495 / 58.86	1790 / 70.47	1855 / 73.03
Depth	mm / inch	1940 / 76.38	2005 / 78.94	2085 / 82.09
Height	mm / inch	2010 / 79.13	2060 / 81.10	2085 / 82.09
MACHINE DIMENSIONS WITH TILTING (1)		see table 3.6., 3.7.		
PACKING DIMENSIONS				
Width	mm / inch	1690 / 66,53	1865 / 73.42	2000 / 78.73
Depth	mm / inch	1950 / 76.77	2125 / 83.66	2170 / 85.43
Height	mm / inch	2200 / 86,61	2345 / 92.33	2340 / 92.12
Transportation volume	m ³ / ft ³	7.25 / 256	9.29 / 328	10.16 / 359
PACKING DIMENSIONS WITH FORWARD TILTING OR WITH TWO-WAY TILTING (FORWARD AND BACKWARD) (1)				
Width	mm / inch	1780 / 70.01	2080 / 81.89	2180 / 85.83
Depth	mm / inch	2150 / 84.65	2350 / 92.52	
Height	mm / inch	2325 / 91.54	2425 / 95.47	
Transportation volume	m ³ / ft ³	8.90 / 314	11.85 / 419	12.42 / 439
DRUM DIMENSIONS				
Diameter	mm / inch	1110 / 43.70	1200 / 47.24	1300 / 51,18
Depth	mm / inch	838 / 33	860 / 33,85	870 / 34.25
Drum volume	dm ³ / gal	807 / 213	1003 / 265	1180 / 312
Door opening	mm / inch	530 / 20.86		650 / 25.59
WEIGHT				
Net weight	kg / lb	2640 / 5820	3170 / 6989	3480 / 7672
Net weight with forward tilting	kg / lb	2990 / 6592	3520 / 7761	3830 / 8444
Gross weight	kg / lb	2830 / 6239	3410 / 7518	3710 / 8179
Gross weight with forward tilting	kg / lb	3190 / 7033	3760 / 8290	4060 / 8951
ELECTRICAL DATA				
Power supply - deviations		3x208-240V 50/60Hz 3x380-480V 50/60Hz -6% to +10% of the voltage supply ±1 Hz		
Motor output	kW	11	15	18.5
INPUT POWER				
Electric heating 67.5kW	kW	75	-	-
Steam or without heating	kW	11.25	15.25	18.75
SUPPLY PROTECTION DEVICE				
Residual current device (RCD)	mA	100, class B		
Steam or without electrical heating				
3x208-240V 50/60Hz	A	63	75	100
3x380-480V 50/60Hz	A	32	50	63
El. heating 67.5kW (3x208-240V)	A	250	-	-
El. heating 67.5kW (3x380-480V)	A	125	-	-
WASHING FUNCTIONS				
Washing	RPM	36	33	32
High extracting	RPM	750	720	695
G-factor		350		

Table 3.2.

MACHINE	kg / lb	80 / 180	100 / 230	120 / 275
CONNECTION DATA				
Water inlet connection	inch	3 x BSP 1 ½"		
Water pressure range	MPa / bar / PSI	0.1- 0.8 / 1 - 8 / 14.5 - 116		
Recommended water pressure	MPa / bar / PSI	0.3 - 0.5 / 3 - 5 / 43 - 73		
Maximal water temperature	°C / °F	90 / 194		
Drain diameter	mm / inch	2 x Ø103 / 4		
Drain flow rate	dm ³ .min ⁻¹ gal.min ⁻¹	540	516	
		142	136	
Steam connection	inch	G 1"		
Steam pressure	MPa / bar / PSI	0.3 - 0.8 / 3 - 8 / 44 - 116		
Press air connection (2)	mm / inch	Ø 8 / 0.3		
Not lubricated air pressure	MPa / bar / PSI	0.6 / 6 / 87		
Powder dispenser cups		5		
Liquid soap signals		8 pumps		
External liquid soap connections		6 tubes 1 x ½"	1 x ½"	
Hose for press air connection, machine with forward tilting	mm / inch	outside diameter 8 / 0.31		
Air pressure – machine with forward tilting	Mpa / bar / PSI	0.35 / 3.5 / 51		
GENERAL DATA				
Ambient temperature	°C / °F	5 to 35 / 41 to 95		
Relative humidity		30% to 90% without condensation		
Height above sea level	m / ft	up to 1000 / 3280		
Storage temperature	°C / °F	1 to 55 / 34 to 131		
Max. static load on floor	kN	30,9	36,9	40,4
Max. static load on floor – machine with forward tilting	kN	34,4	40,4	43,9
Max. dynamic load on floor	kN	27,2 ± 4,5	32,7 ± 5,5	36,0 ± 7,0
Max. dynamic load on floor – machine with forward tilting	kN	30,6 ± 4,5	36,1 ± 5,5	39,5 ± 7,0
Frequency of dynamic load	Hz	12,5	12,1	11,7
SOUND LEVELS (3)				
L _{Aeq} wash / extraction seq.	db	51 / 71	52 / 72	52 / 72

Table 3.2. continuation

(1) maximum dimensions including protruding parts

(2) washers with air operated water valves

(3) ISO 3744

3.3. DIMENSIONS AND COMPONENTS OF THE WASHERS 33-40-55 kg / 80-100-125 lb

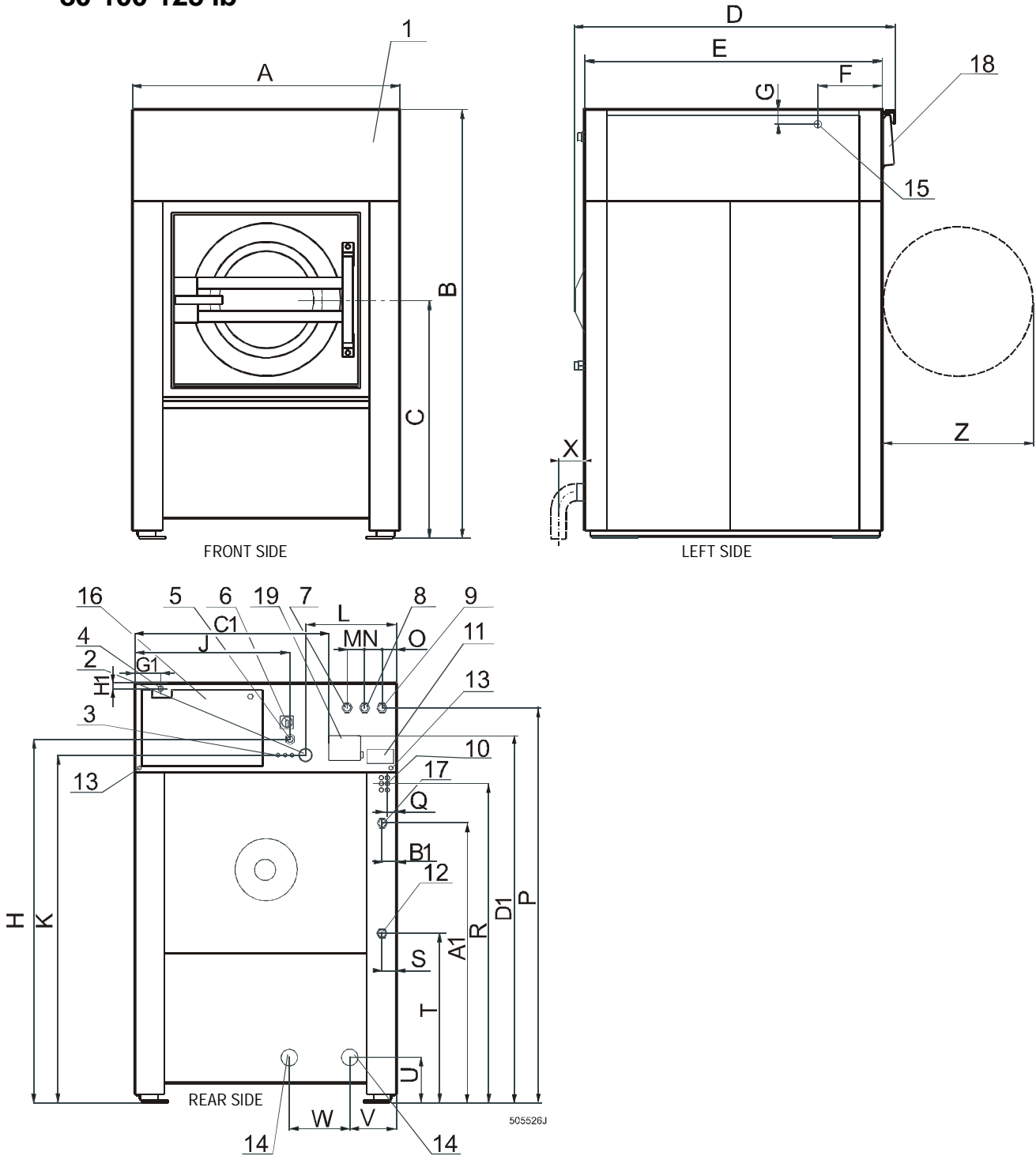


Figure 3.3. – Machines 33-40-55 kg / 80-100-125 lb

- | | |
|---|-------------------------------------|
| 1. Operator panel | 10. Hose connection soap supply |
| 2. Tub ventilation: \varnothing 60mm / 2.4" | 11. Data plate |
| 3. Lubrication points | 12. Steam inlet |
| 4. Entry soap supply cable | 13. Equipotential bounding terminal |
| 5. Entry main power cable | 14. Drain outlet |
| 6. Main switch | 15. Soap dispenser air relieve |
| 7. Hard cold water inlet | 16. Frequency inverter cover |
| 8. Hot water inlet | 17. Compressed air inlet |
| 9. Soft cold water inlet | 18. Soap dispenser |
| | 19. Electrical signals liquid soap |

MACHINE	kg / lb	33 / 80	40 / 100	55 / 125
A	mm / inch	1195 / 47,04	1195 / 47,04	1195 / 47,04
A1 (1, 2)	mm / inch	1361 / 53,58	1361 / 53,58	1361 / 53,58
B (2)	mm / inch	1905 / 75	1905 / 75	1905 / 75
B1 (1)	mm / inch	116 / 4,56	116 / 4,56	116 / 4,56
C (2)	mm / inch	1055 / 41,54	1055 / 41,54	1055 / 41,54
C1	mm / inch	980 / 38,58	980 / 38,58	980 / 38,58
D	mm / inch	1330 / 52,4	1430 / 56,3	1610 / 63,39
D1 (2)	mm / inch	1600 / 62,99	1600 / 62,99	1600 / 62,99
E	mm / inch	1222 / 48,11	1322 / 52,05	1502 / 59,13
F	mm / inch	300 / 11,8	300 / 11,8	300 / 11,8
G	mm / inch	50 / 1,97	50 / 1,97	50 / 1,97
G1	mm / inch	110 / 4,33	110 / 4,33	110 / 4,33
H (2)	mm / inch	1617 / 63,66	1617 / 63,66	1617 / 63,66
H1	mm / inch	25 / 0,98	25 / 0,98	25 / 0,98
J	mm / inch	730 / 28,74	730 / 28,74	730 / 28,74
K (2)	mm / inch	1567 / 61,69	1567 / 61,69	1567 / 61,69
L	mm / inch	422 / 16,61	422 / 16,61	422 / 16,61
M	mm / inch	80 / 3,15	80 / 3,15	80 / 3,15
N	mm / inch	80 / 3,15	80 / 3,15	80 / 3,15
O	mm / inch	70 / 2,75	70 / 2,75	70 / 2,75
P (2)	mm / inch	1782 / 70,16	1782 / 70,16	1782 / 70,16
P (1, 2)	mm / inch	1672 / 65,82	1672 / 65,82	1672 / 65,82
Q	mm / inch	60 / 2,36	60 / 2,36	60 / 2,36
R (2)	mm / inch	1285 / 50,59	1285 / 50,59	1285 / 50,59
S	mm / inch	65 / 2,56	65 / 2,56	65 / 2,56
T (2)	mm / inch	768 / 30,24	768 / 30,24	768 / 30,24
U (2)	mm / inch	205 / 8,07	205 / 8,07	205 / 8,07
V	mm / inch	213 / 8,39	213 / 8,39	213 / 8,39
W	mm / inch	420 / 16,54	275 / 10,83	275 / 10,83
X	mm / inch	175 / 6,89	175 / 6,89	175 / 6,89
Z	mm / inch	700 / 27,56	700 / 27,56	700 / 27,56

Table 3.3. – Machines 33-40-55 kg / 80-100-125 lb

(1) Washers with air operated water valves.

(2) The dimensions of the machine with weighing system (on request) are higher. The height difference is in the range of 59 - 64 mm / 2.32" - 2.52", based on the adjustment of the load sensor.

3.4. DIMENSIONS OF THE WASHERS 40-55 kg / 100-125 lb WITH FORWARD TILTING – ON REQUEST

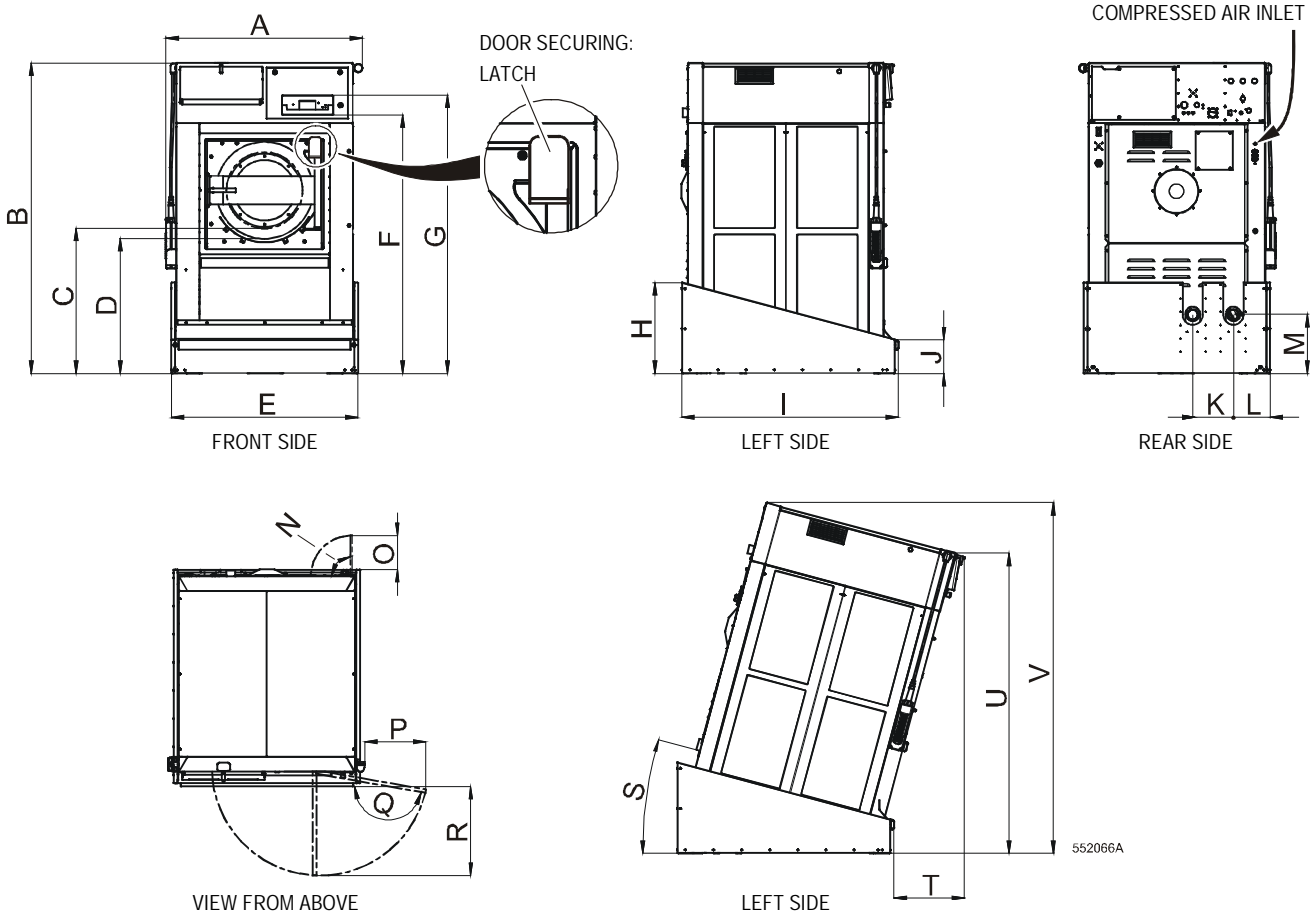


Figure 3.4. – Machines 40-55 kg / 100-125 lb with forward tilting

Machine	kg / lb	40 / 100	55 / 125
A	mm / inch	1328 / 52.28	
B	mm / inch	2096 / 82.52	
C - WITHOUT LOAD	mm / inch	980 / 38.58	
D	mm / inch	910 / 35.83	
E	mm / inch	1260 / 49.61	
F	mm / inch	1747 / 68.78	
G	mm / inch	1878 / 73.94	
H	mm / inch	614 / 24.17	662 / 26.06
I	mm / inch	1463 / 57.60	1643 / 64.68
J	mm / inch	228 / 8.98	
K	mm / inch	275 / 10.83	
L	mm / inch	247 / 9.72	
M	mm / inch	399 / 15.71	
N		90°	
O	mm / inch	232 / 9.13	
P	mm / inch	413 / 16.26	
Q		170°	
R	mm / inch	602 / 23.70	
S		15°	13°
T	mm / inch	478 / 18.82	410 / 16.14
U	mm / inch	2026 / 79.76	2043 / 80.43
V	mm / inch	2368 / 93.23	2381 / 93.74

Table 3.4. – Machines 40-55 kg / 100-125 lb with forward tilting

3.5. DIMENSIONS AND COMPONENTS OF THE WASHERS 80-100-120 kg / 180-230-275 lb

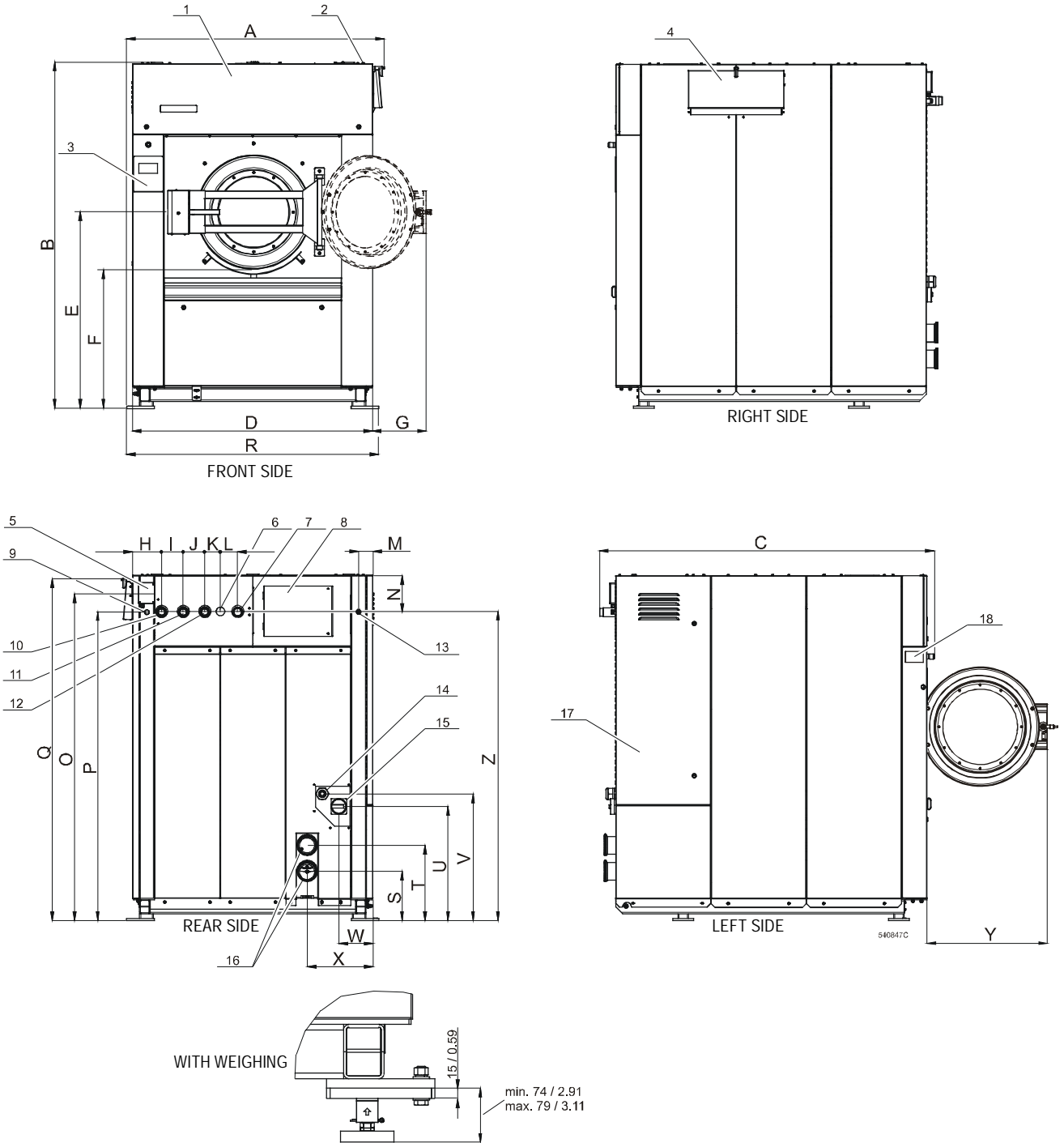


Figure 3.5. – Machines 80-100-120 kg / 180-230-275 lb, (dimensions are stated in mm / inches)

- | | |
|-----------------------------------|--------------------------------|
| 1. Box of electrical components | 10. Hard cold water inlet |
| 2. Soap dispenser ventilation | 11. Soft cold water inlet |
| 3. Control panel | 12. Hot water inlet |
| 4. Soap dispenser | 13. Compressed air inlet |
| 5. Electrical signals liquid soap | 14. Entry main power cable |
| 6. Steam inlet | 15. Main switch |
| 7. Tub ventilation | 16. Drain outlet |
| 8. Cover for pneumatic components | 17. Electric switchboard cover |
| 9. Hose connection soap supply | 18. Serial label |

MACHINE	kg / lb	80 / 180	100 / 230	120 / 275
A	mm / inch	1495 / 58.86	1790 / 70.47	1855 / 73.03
B (1)	mm / inch	2010 / 79.13	2060 / 81.10	2085 / 82.09
C	mm / inch	1940 / 76.38	2005 / 78.94	2085 / 82.09
D	mm / inch	1390 / 54.72	1688 / 66.46	1754 / 69.05
E (1)	mm / inch	1133 / 44.60	1175 / 46.26	1200 / 47.24
F (1)	mm / inch	778 / 30.63	820 / 32.28	775 / 30.51
G	mm / inch	303 / 11.93	232 / 9.13	295 / 11.61
H	mm / inch	168 / 6.61	232 / 9.13	247 / 9.72
I	mm / inch	125 / 4.92	125 / 4.92	125 / 4.92
J	mm / inch	125 / 4.92	125 / 4.92	125 / 4.92
K	mm / inch	90 / 3.54	124 / 4.88	120 / 4.72
L	mm / inch	100 / 3.93	110 / 4.33	148 / 5.83
M	mm / inch	83 / 3.27	83 / 3.27	83 / 3.27
N	mm / inch	210 / 8.26	210 / 8.26	210 / 8.26
O (1)	mm / inch	1900 / 74.80	1518 / 59.76	1548 / 60.94
P (1) – for position 9	mm / inch	1787 / 70.35	1405 / 55.31	1435 / 56.50
Q (1)	mm / inch	1983 / 78.07	1950 / 76.77	1980 / 77.95
R	mm / inch	1460 / 57.48	1754 / 69.05	1820 / 71.65
S (1)	mm / inch	282 / 11.10	268 / 10.55	243 / 9.57
T (1)	mm / inch	437 / 17.20	419 / 16.50	394 / 15.51
U (1)	mm / inch	662 / 26.06	696 / 27.40	722 / 28.43
V (1)	mm / inch	735 / 28.93	768 / 30.24	795 / 31.30
W	mm / inch	197 / 7.76	197 / 7.76	197 / 7.76
X	mm / inch	380 / 14.96	527 / 20.75	562 / 22.13
Y	mm / inch	665 / 26.18	650 / 25.59	757 / 29.80
Z – for position 6, 7, 10, 11, 12	mm / inch	1787 / 70.35	1836 / 72.28	1866 / 73.46

Table 3.5. – Machines 80-100-120 kg / 180-230-275 lb

(1) The dimensions of the machine with weighing system (on request) are higher. The height difference is in the range of 74 - 79 mm / 2.91" - 3.11", based on the adjustment of the load sensor.

3.6. DIMENSIONS OF THE WASHERS 80-100-120 kg / 180-230-275 lb WITH FORWARD TILTING – ON REQUEST

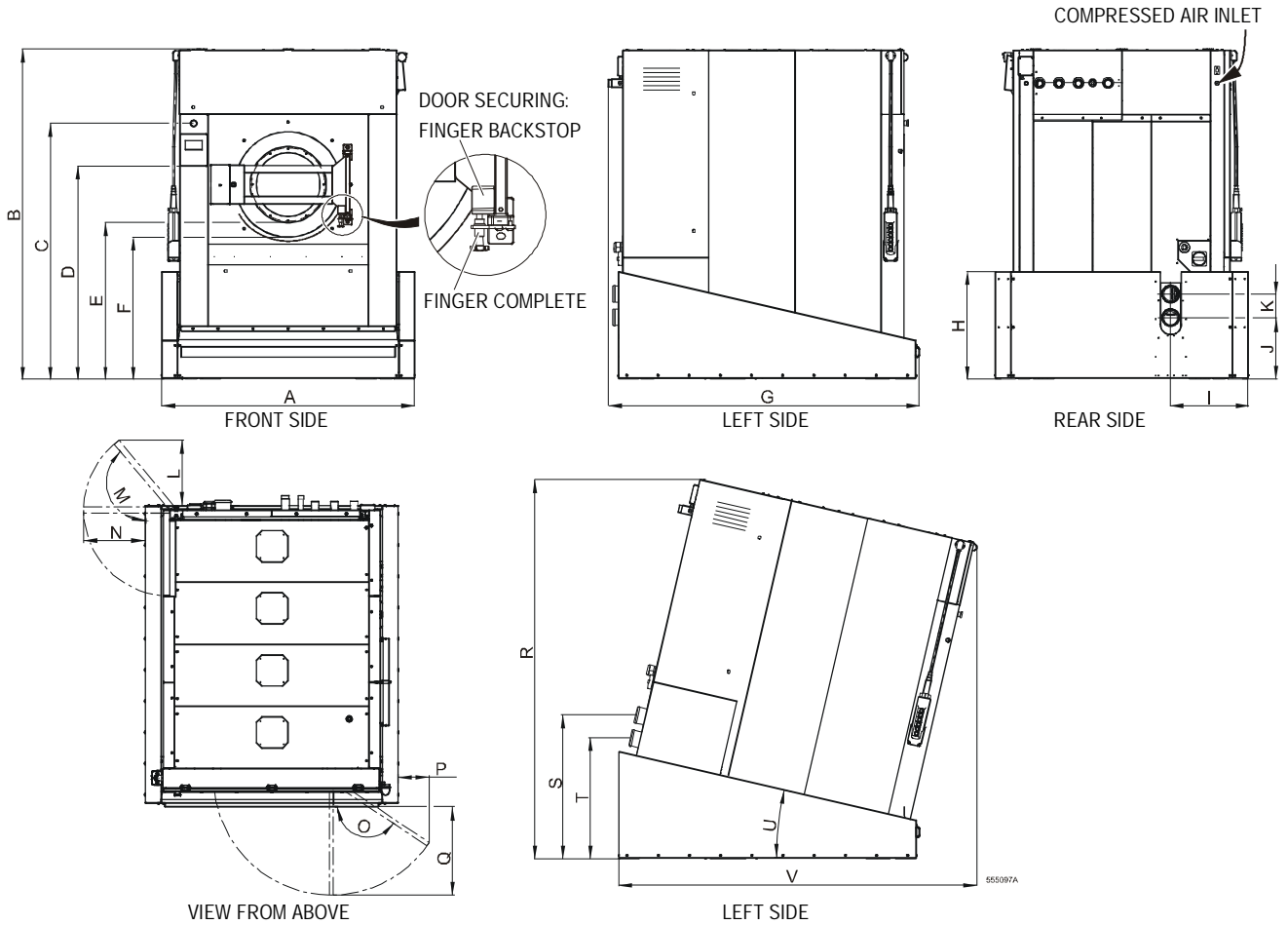


Figure 3.6. – Machines 80-100-120 kg / 180-230-275 lb with forward tilting

Machine	kg / lb	80 / 180	100 / 230	120 / 275
A	mm / inch	1620 / 63.78	1920 / 75.59	2000 / 78.74
B	mm / inch	2118 / 83.39	2192 / 86.30	2225 / 87.60
C	mm / inch	1640 / 64.57	1668 / 65.67	1666 / 65.59
D	mm / inch	1366 / 53.78	1394 / 54.88	1392 / 54.80
E - BOTTOM OF THE DOOR OPENING	mm / inch	1008 / 39.68	1045 / 41.14	995 / 39.17
F	mm / inch	910 / 35.83	977 / 38.46	915 / 36.02
G	mm / inch	1993 / 78.46	2057 / 80.98	2145 / 84.45
H	mm / inch	688 / 27.09	701 / 27.60	726 / 28.58
I	mm / inch	496 / 19.53	644 / 25.35	682 / 26.85
J	mm / inch	391 / 15.39	402 / 15.83	381 / 15
K	mm / inch	155 / 6.10		
L	mm / inch	419 / 16.50	403 / 15.87	421 / 16.57
M		140°		
N	mm / inch	396 / 15.60	412 / 16.22	441 / 17.36
O		146°	150°	
P	mm / inch	200 / 7.87	97 / 3.82	200 / 7.87
Q	mm / inch	568 / 22.36	554 / 21.81	666 / 26.22
R	mm / inch	2434 / 95.83	2518 / 99.13	2564 / 100.94
S	mm / inch	925 / 36.42	952 / 37.48	948 / 37.32
T	mm / inch	778 / 30.63	805 / 31.69	801 / 31.54
U		13°		
V	mm / inch	2292 / 90.24	2365 / 93.11	2479 / 97.60

Table 3.6. – Machines 80-100-120 kg / 180-230-275 lb with forward tilting

3.7. DIMENSIONS OF THE WASHERS 80-100-120 kg / 180-230-275 lb WITH TWO-WAY TILTING (FORWARD AND BACKWARD) – ON REQUEST

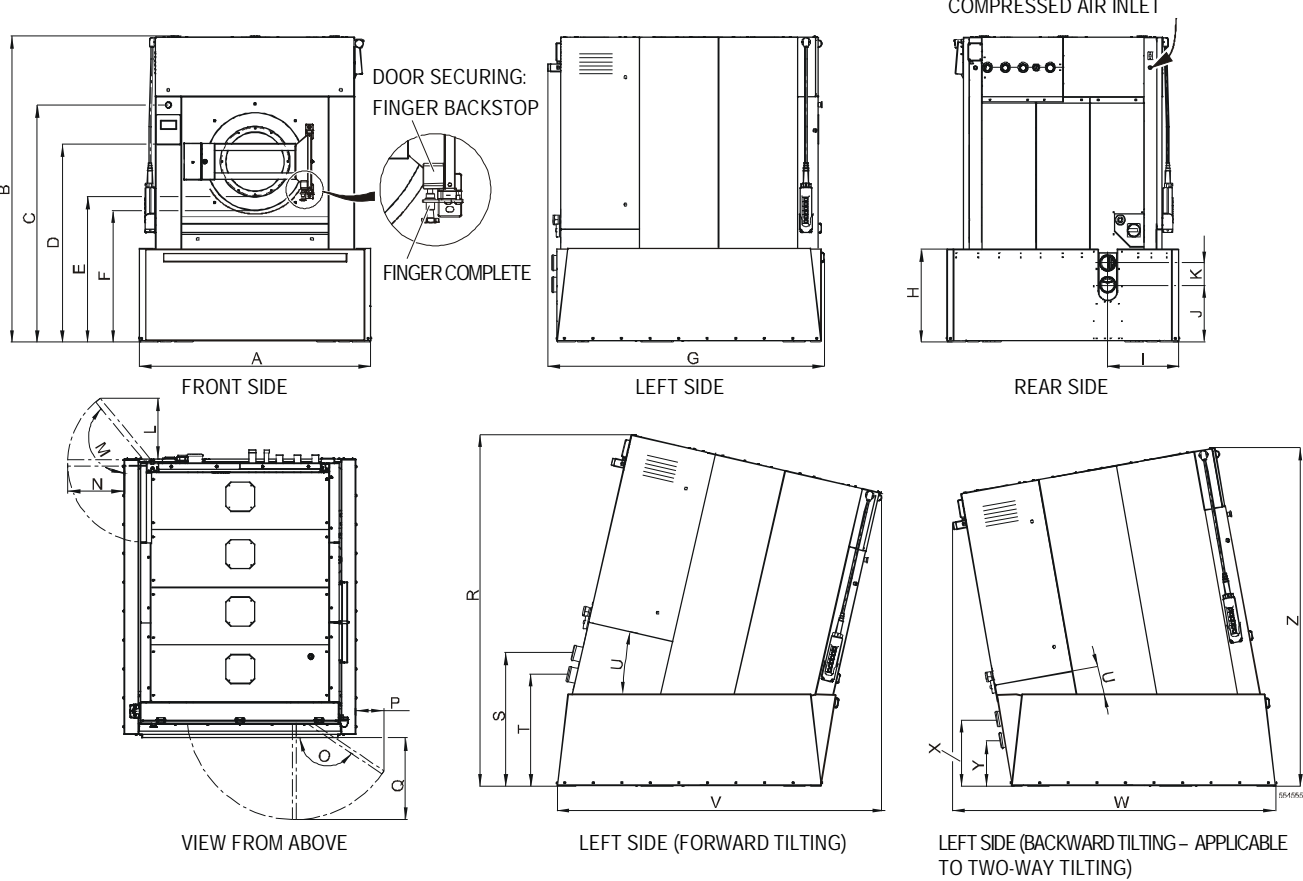


Figure 3.7. – Machines 80-100-120 kg / 180-230-275 lb with two-way tilting (forward and backward)

Machine	kg / lb	80 / 180	100 / 230	120 / 275
A	mm / inch	1620 / 63.78	1920 / 75.59	1985 / 78.15
B	mm / inch	2118 / 83.39	2192 / 86.30	2225 / 87.60
C	mm / inch	1640 / 64.57	1668 / 65.67	1666 / 65.59
D	mm / inch	1366 / 53.78	1394 / 54.88	1392 / 54.80
E - BOTTOM OF THE DOOR OPENING	mm / inch	1008 / 39.68	1045 / 41.14	995 / 39.17
F	mm / inch	910 / 35.83	977 / 38.46	915 / 36.02
G	mm / inch	1952 / 76.85	2016 / 79.37	2096 / 82.52
H	mm / inch	630 / 24.80	660 / 25.98	660 / 25.98
I	mm / inch	496 / 19.53	644 / 25.35	674 / 26.54
J	mm / inch	391 / 15.39	402 / 15.83	381 / 15
K	mm / inch	155 / 6.10		
L	mm / inch	412 / 16.22	424 / 16.69	449 / 17.68
M		140°		
N	mm / inch	396 / 15.60	412 / 16.22	450 / 17.72
O		146°		150°
P	mm / inch	209 / 8.23	85 / 3.35	210 / 8.27
Q	mm / inch	609 / 23.98	596 / 23.46	707 / 27.83
R	mm / inch	2434 / 95.83	2518 / 99.13	2564 / 100.94
S	mm / inch	925 / 36.42	952 / 37.48	948 / 37.32
T	mm / inch	778 / 30.63	805 / 31.69	801 / 31.54
U		13°		
V	mm / inch	2300 / 90.55	2357 / 92.78	2464 / 97
W	mm / inch	2328 / 91.65	2410 / 94.88	2495 / 98.23
X	mm / inch	440 / 17.32	450 / 17.72	409 / 16.10
Y	mm / inch	293 / 11.54	303 / 11.93	262 / 10.31
Z	mm / inch	2385 / 93.90	2476 / 97.48	2510 / 98.82

Table 3.7. – Machines 80-100-120 kg / 180-230-275 lb with two-way tilting (forward and backward)

4. INSTALLATION

4.1. HANDLING, TRANSPORT AND STORAGE

TRANSPORT AND STORAGE

⚠ WARNING!
FORKS OF LIFT TRUCK MUST HAVE SUFFICIENT LENGTH (SEE FIGURE 4.1.).

Use a lift truck or a manual skid cart for handling with the machine in transporting package.

- If possible, leave the machine in the transporting package or at least let it set on the transporting wooden skid until the time of final installation on the foundation according the chapter 4.3. of this manual.

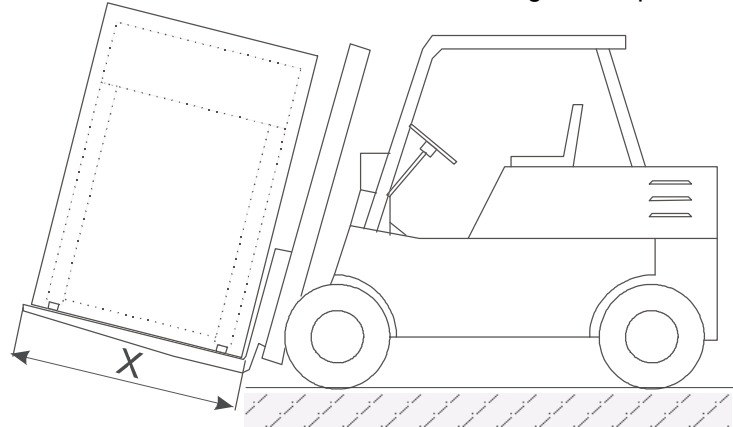


Figure.4.1. Minimum length „X“ of lift truck forks for machine model

HANDLING DURING INSTALLATION

All activities can be done only by a worker, which knows all information about the machine. Machine is delivered to the customer in a wooden packing and protected with polyethylene film. The machine is attached to the skid by means of four bolts M16.

To remove the machine to its final location follow these precautions:

- All passages and spaces the machine has to be transported through at installation should be reasonably dimensioned to meet the height and width of the machine including the package.
- **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 THESE COMPONENTS ARE SECURED SO AS TO AVOID THEIR DAMAGE DURING HANDLING AND INSTALLATION OF THE MACHINE.

- **Make sure that the filling door are secured to avoid its opening during the handling.**
- Lift the machine up by lift truck using a transport skid to which the machine has been attached.

UNPACKING

- After unpacking, check if the machine has not been damaged and if all the accessories are included according to your order. Verify the type of your machine by its serial label and find the corresponding information in the manual. The accessories and the manual is located inside the drum, which can be opened according to chapter 6.1.
- Before locating the machine to its place, remove the packaging, loosen four nuts and lift the machine carefully up - take care not to damage the machine components located in its lower part. The lift truck forks must be at least 10 cm longer than the length of the washing machine frame, see table 4.1.

MACHINE kg / lb	33-40-55 / 80-100-125	80 / 180	100-120 / 230-275
X	1500 mm / 59"	1800 mm / 71"	2000 mm / 78,73"

Table.4.1. – Minimum length „X“ of a lift truck forks for individual machine model

4.2. SPACE REQUIREMENTS

REQUIRED MACHINE WORKING CONDITIONS

See chapter „3. TECHNICAL SPECIFICATION“.

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.

SIZE OF A LAUNDRY ROOM

IGNORING THE REQUIREMENT FOR SPACES BETWEEN MACHINES AND WALLS CAN MAKE SERVICE AND MAINTENANCE WORK DIFFICULT.

Total space requirements for the system installation are usually determinate by a detailed plan of the building. The machine dimensions are stated in the chapter „3. TECHNICAL SPECIFICATIONS“.

Leave at least **1 m / 39.36“** of a space between the machine rear and the wall for the maintenance access. Between the lateral sides of each machine leave a minimum space of **0.7 m / 27.55“**, for machines of 80-100-120 kg / 180-230-275 lb **0.8 m / 31.49“**. Above the machine must be minimum **0.7 m / 27.55“** of free space for the maintenance access. The waste piping or outlet channel must be dimensioned to the discharged water quantity and the number of washing machines.

4.3. MACHINE POSITIONING

CARRYING CAPACITY OF THE FLOOR

⚠ WARNING!
ALWAYS CONSULT THE STATIC REQUIREMENTS WITH A STATIC ENGINEER IN ORDER TO MEET THE REQUIREMENTS OF PERMISSIBLE LOADS, VIBRATIONS AND NOISE LEVEL IN THE BUILDING! THE 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.

MACHINE ANCHORING

MACHINE kg / lb	<u>Without tilting</u> <u>Without weighing</u>	<u>Without tilting</u> <u>With weighing</u>	<u>With forward tilting</u> <u>Without weighing</u>	<u>With forward tilting</u> <u>With weighing</u>	<u>With forward and backward tilting,</u> <u>Without weighing</u>
33/80	anchoring recommended (1) see picture 4.3.A	not to be anchored	-	-	-
40/100	anchoring recommended (1) see picture 4.3.A	not to be anchored	anchoring of the rear side is necessary, anchoring of the front side is recommended (1), see picture 4.3.F	must be anchored see picture 4.3.G	-
55/125	anchoring recommended (1) see picture 4.3.A	not to be anchored	anchoring of the rear side is necessary, anchoring of the front side is recommended (1), see picture 4.3.F	must be anchored see picture 4.3.G	-

Table 4.3.A. – Machine anchoring, (based on various machine versions – on request)

MACHINE kg / lb	<u>Without tilting</u> <u>Without weighing</u>	<u>Without tilting</u> <u>With weighing</u>	<u>With forward tilting</u> <u>Without weighing</u>	<u>With forward tilting</u> <u>With weighing</u>	<u>With forward and backward tilting,</u> <u>Without weighing</u>
80/180	anchoring recommended (1) see picture 4.3.B	not to be anchored	anchoring recommended (1) see picture 4.3.J	anchoring recommended (1) see picture 4.3.K	must be anchored see picture 4.3.M
100/230	anchoring recommended (1) see picture 4.3.B	not to be anchored	anchoring recommended (1) see picture 4.3.J	anchoring recommended (1) see picture 4.3.K	must be anchored see picture 4.3.M
120/275	anchoring recommended (1) see picture 4.3.B	not to be anchored	anchoring recommended (1) see picture 4.3.J	anchoring recommended (1) see picture 4.3.K	must be anchored see picture 4.3.M

Table 4.3.A. continuation – Machine anchoring, (based on various machine versions – on request)

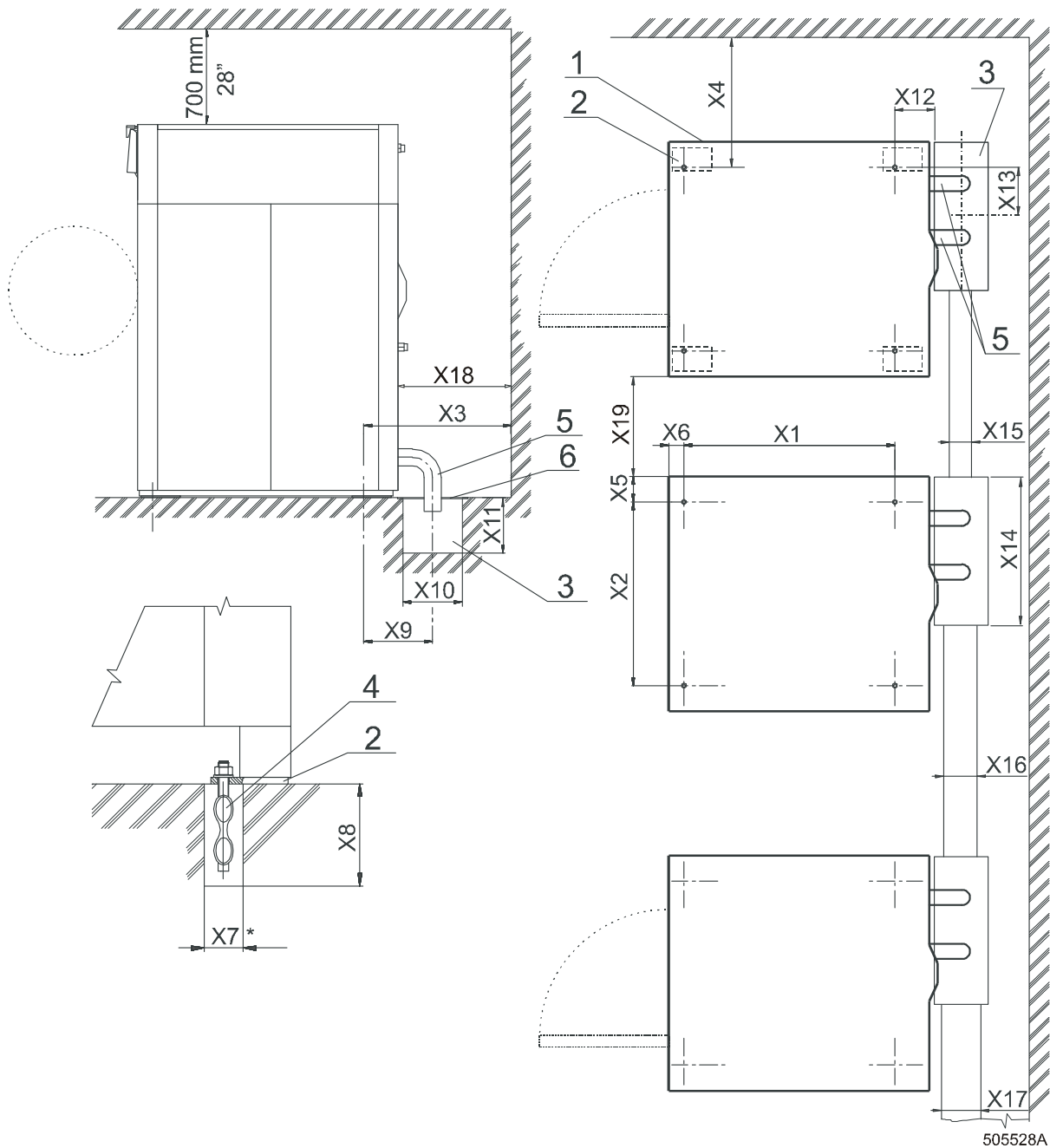
(1) Anchoring necessary in case of uneven or tilted floor, in case of slippery surface and in case of floor with variable surface structure. Anchoring also necessary in any other cases when there is a risk of the machine moving along the floor surface during its operation.

The machine is to be located on a leveled concrete floor to comply with static and dynamic stress of the machine. Check the position of the machine base frame by a water level. The manufacturer is not responsible for consequences caused by a wrong installation.

⚠ WARNING!
THE NUTS OF THE ANCHORING BOLTS HAVE TO BE TIGHTENED BY MEANS OF A TORQUE - LIMITING WRENCH (SEE TABLE. 4.3.B). DO NOT TIGHTEN NUTS OF ANCHORING BOLTS BEFORE THE CONCRETE BASE AROUND THE BOLTS IS COMPLETELY CURED.

MACHINE kg / lb	BOLT	TIGHTENING MOMENT Nm / lbf.ft
30-40-55 / 80-100-125	M16 x 160 see fig. 4.3.A, pos.4	210 / 155
	Anchoring bolt see fig. 4.3.F, 4.3.G	80 / 59
	Threaded rod see fig. 4.3.F	133 / 98
80-100-120 / 180-230-275	M10 x 160 see fig. 4.3.B, pos.4	49 / 36
	Anchoring bolt see fig. 4.3.J, 4.3.K, 4.3.M	80 / 59

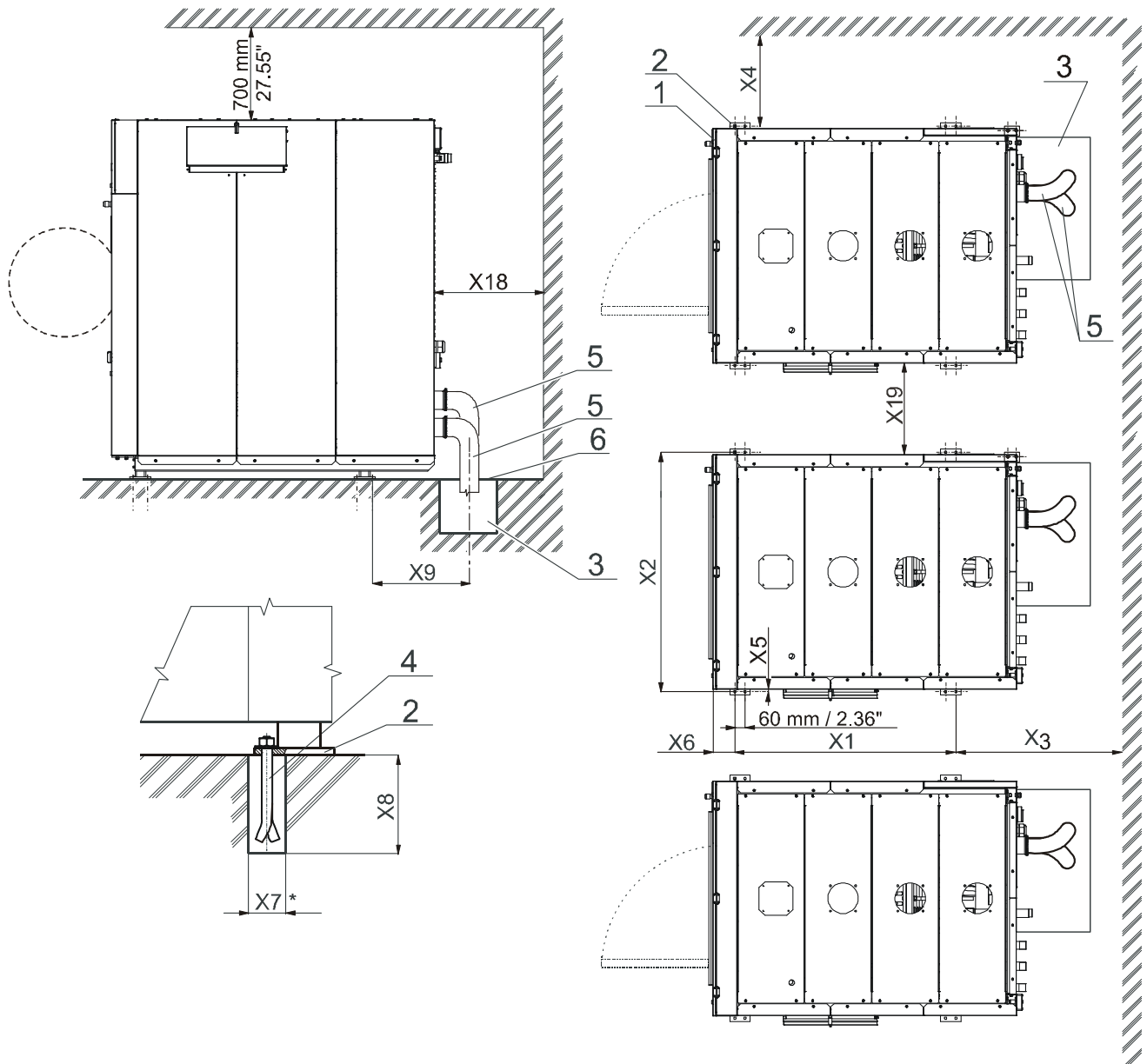
Table.4.3.B. – the torques are valid for anchoring elements supplied by the machine manufacturer



505528A

Figure 4.3.A. – Machines 33-40-55 kg / 80-100-125 lb without weighing system and tilting system

1. Machine line of contour
2. Machine footing
3. Waste sump
4. Anchoring bolt – not supplied with the machine, (on request)
5. Draining elbow
6. Cover of waste sump



531500A

Figure 4.3.B. – Machines 80-100-120 kg / 180-230-275 lb without weighing system and tilting system

1. Machine line of contour
2. Machine footing
3. Waste sump
4. Anchoring bolt – not supplied with the machine, (on request)
5. Draining hose
6. Cover of waste sump

MACHINE kg / lb	33 / 80	40 / 100	55 / 125	80 / 180	100 / 230	120 / 275
X1 mm / inch	970 / 38,18	1070 / 42,13	1250 / 49,21	1310 / 51,57	1388 / 54,64	1400 / 55,11
X2 mm / inch	930 / 36.61			1420 / 55.90	1715 / 67.51	1780 / 70.07
X3 mm / inch	1175 / 46.25			1065 / 41.92	1332 / 52.44	1332 / 52.44
X4 mm / inch	830 / 32.67			780 / 30.70		
X5 mm / inch	130 / 5.12			15 / 0.59	13 / 0.51	15 / 0.59
X6 mm / inch	77 / 3.03			132 / 5.20	132 / 5.20	145 / 5.71
X7 mm / inch	60 / 2.36			40 / 1.57		
X8 mm / inch	160 / 6.29			150 / 5.9		
X9 mm / inch	350 / 13.77			415 / 16.33		
X10 mm / inch	300 / 11.81			-	-	-
X11 mm / inch	250 / 9.84			-	-	-
X12 mm / inch	200 / 7.87			-	-	-
X14 mm / inch	750 / 29.52			750 / 29.52	-	-
X15 mm / inch	150 / 5.9			150 / 5.9	-	-
X16 mm / inch	180 / 7.08			180 / 7.08	-	-
X17 mm / inch	200 / 7.87			200 / 7.87	-	-
X18 mm / inch	1000 / 39.36			1000 / 39.36		
X19 mm / inch	700 / 27.55			700 / 27.55	800 / 31.49	800 / 31.49

Table.4.3.C

* – hole optimized for new floor, drilled hole can be smallish dimension

WEIGHING SYSTEM INSTALLATION – ON REQUEST

1. Lift up the machine.
2. Install load sensors – figures 4.3.C, 4.3.D.
3. Check that all the rubber feet with load sensors are correctly placed on the machine frame and tightened.
4. Place the machine in the required position carefully - so that it is not subjected to any impact or shock.

Note: An impact might cause permanent damage to the load sensors!

5. Check that all the rubber feet of the load sensors are stable.
6. Remove the transport safety devices (transport props).
7. Use a water-level to check that the lower frame of machine is positioned totally level.
8. Attach hoses for water supply to the machine.

NOTE: The machine is not anchored into the floor; it stands on the load sensor feet.

Take into consideration that the entire machine acts as a “measuring gauge”. Therefore, anything that you place onto the machine or anything that is in physical contact with it influences the weighing process.

Make sure that the water connection, as regards the pressure in the hoses, does not interfere with the weighing. The hoses must not “pull” or “push” the machine in any direction or prop it up in any way.

Check and if necessary adjust the height of the load sensor feet so that an even load distribution among all the load sensors is ensured - see figure 4.3.E.

Advanced menu → Weighing → Load cell calibration

X1, X2, X3, X4: **10 - 40%** – load on each load sensor in (%) must be in the specified range.

Y1, Y2, Y3, Y4 – load of each load sensor in (kg).

In case that the load sensors are outside the specified range, it is necessary to adjust the feet of load sensors. Each load sensor foot can be adjusted within the range of 5mm / 0.2”.

Adjustment procedure:

1. Lift up the machine.
2. Loosen the nut and turn the foot in order to achieve the required position.
3. Tighten the nut.
4. Put the machine down and verify that the load applied to each sensor is within the specified range.

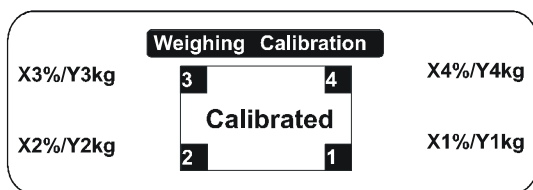
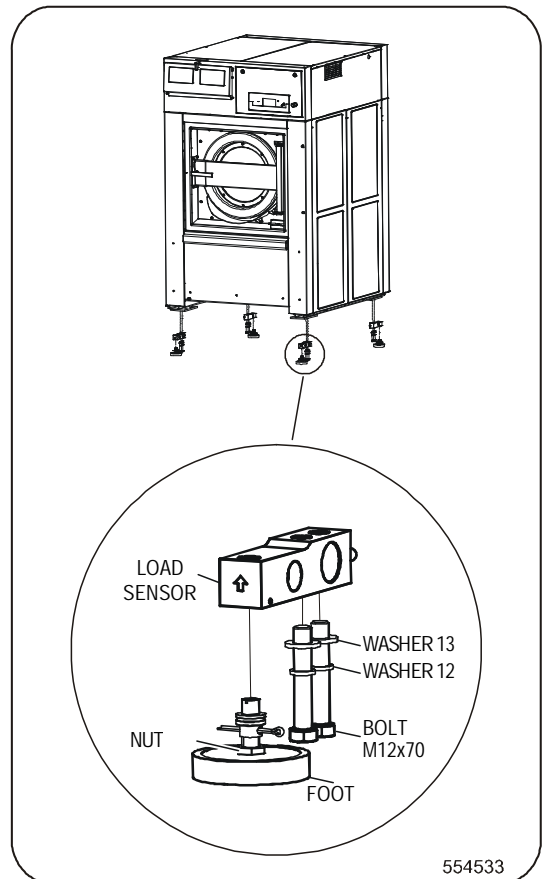


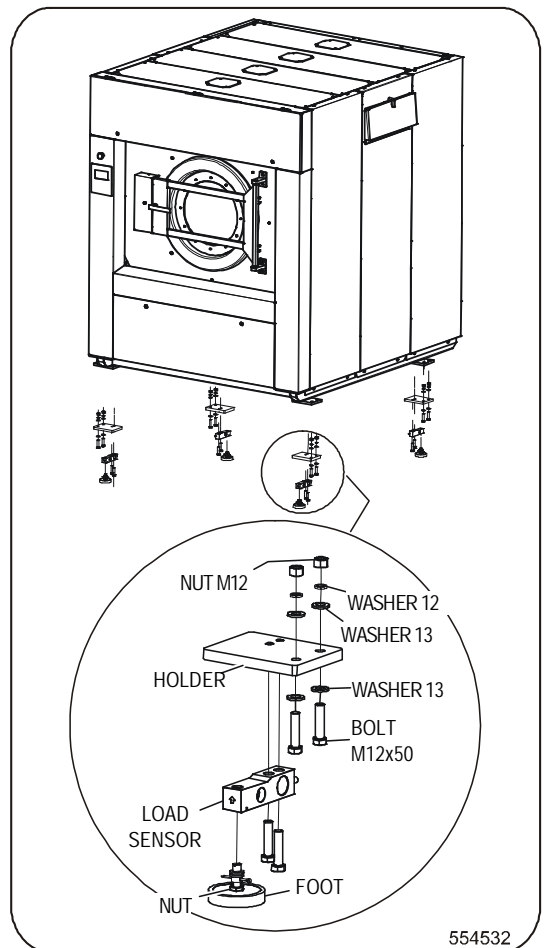
Figure 4.3.E

554427



554533

Figure 4.3.C – Machines 33-40-55 kg / 80-100-125 lb



554532

Figure 4.3.D – Machines 80-100-120 kg / 180-230-275 lb

MACHINE ANCHORING 40-55 kg / 100-125 lb WITH FORWARD TILTING – ON REQUEST

Drill a hole for the anchoring bolt based on the required machine placement – see figures 4.3.F and G. Remove the upper nut and washer from the anchor bolt. Place the anchor bolt into the pre-drilled hole, place the machine in position (the bolt goes through the air spring plate) attach the washer and nut back again and tighten.

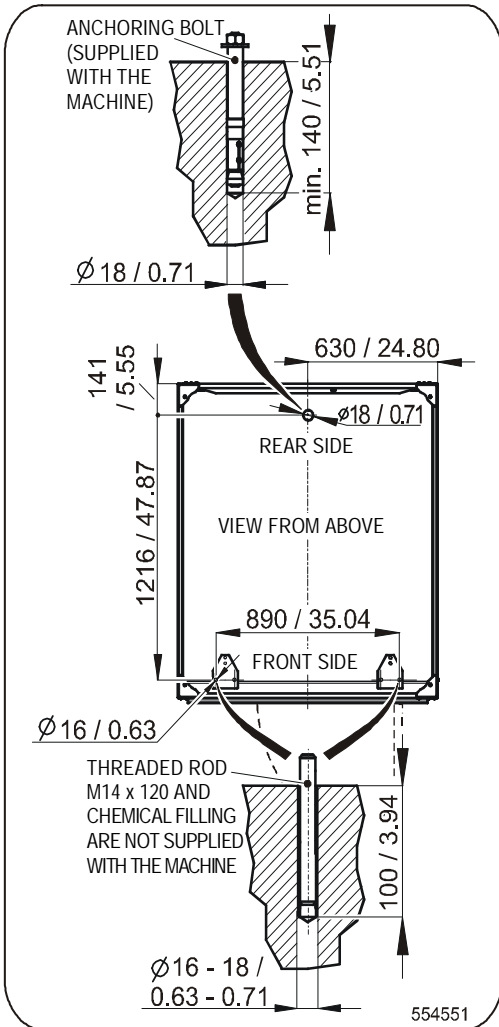


Figure 4.3.F – Machines 40-55 kg / 100-125 lb with forward tilting and without the weighing system – drilling points for anchoring bolts, (machine cabinet dimensions are stated in mm / inches)

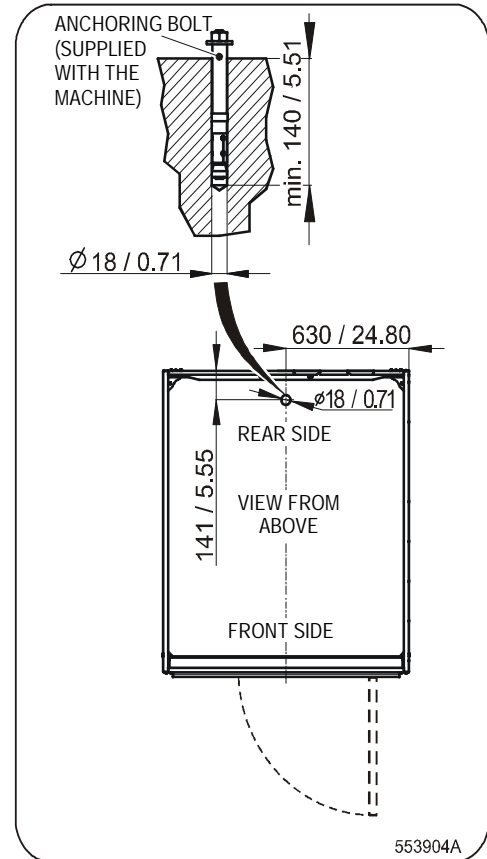


Figure 4.3.G – Machines 40-55 kg / 100-125 lb with forward tilting and with the weighing system – drilling points for anchoring bolts, (machine cabinet dimensions are stated in mm / inches)

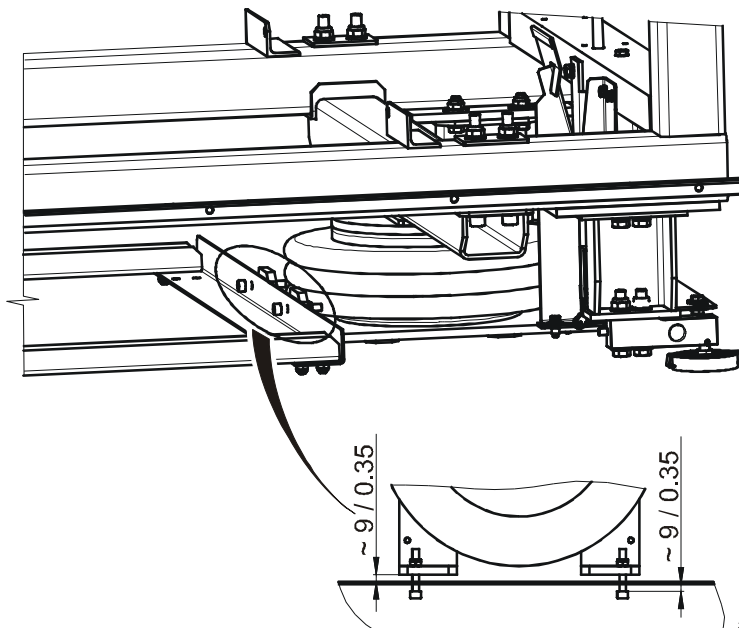


Figure 4.3.H – Machines 40-55 kg / 100-125 lb with forward tilting – make sure the clearance is the same on both sides of the pins.

ADJUSTMENT AND ANCHORING OF MACHINES 80-100-120 kg / 180-230-275 lb WITH FORWARD TILTING – ON REQUEST

1. The lifting system adjustment applies to both the machine sides.
2. For the adjustment of the distance between the air spring plate side, see figure 4.3.I., pos.1 and the machine frame – pos. 2. The distance shall be **113 mm / 4.45"** – see the detail view **F**.
3. The view **B** shows the distance adjustment of the air spring plate - pos.1 from the hinge for tilting system - pos.10 by means of an arm - pos. 5. The bolt – pos. 6 must be in the middle of the slotted hole of the arm - pos. 5 - see the detail view **G**.
4. The detail view **F** shows the adjustment of free play between the plates - pos. 3 and 4 on both sides. The distance shall be **1 mm / 0.04"**.
5. Tighten the bolts - pos.9 attaching the fixed arms - pos.7 and 8 located between the air spring plate and the hinge for tilting system in order to provide free play – see the detail view **G**.

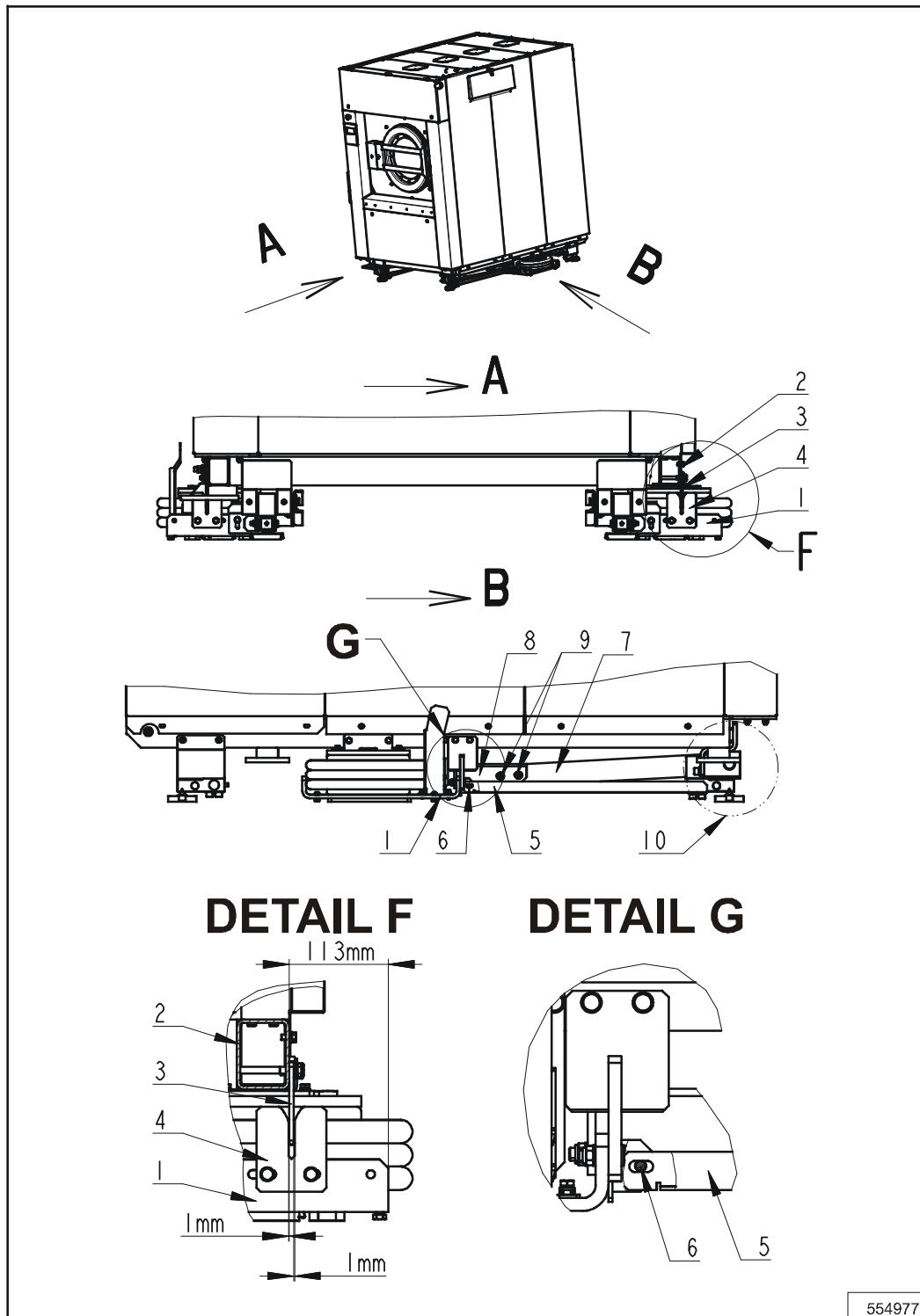


Figure 4.3.I. – Machines 80-100-120 kg / 180-230-275 lb with forward tilting

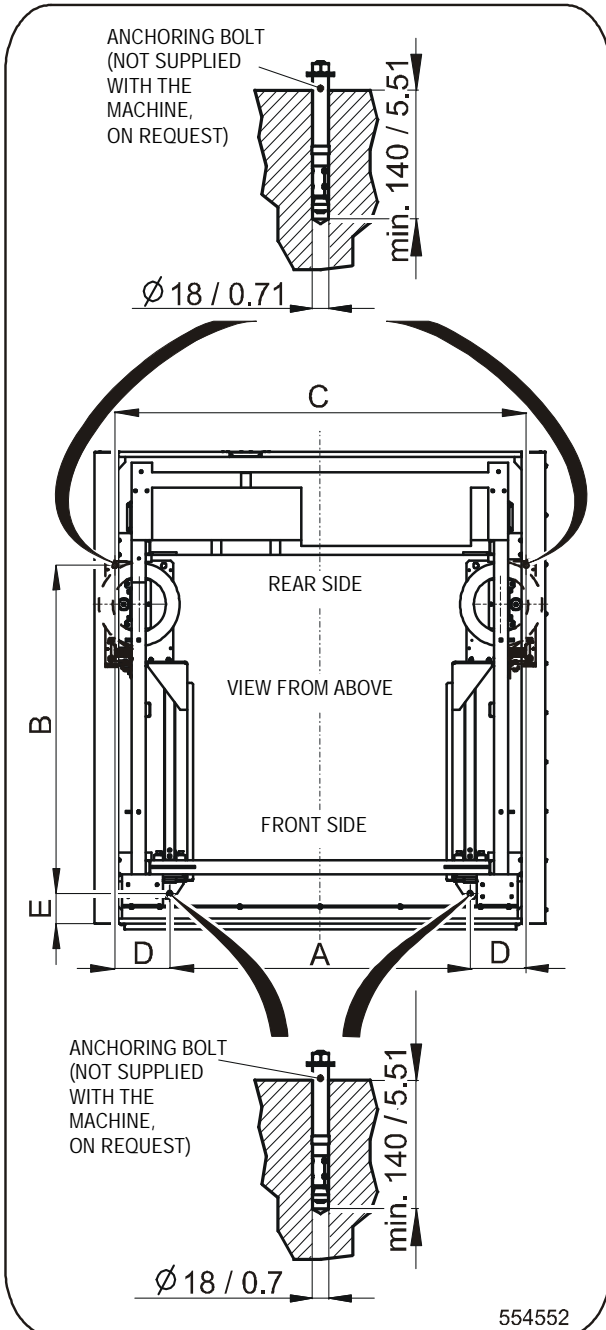


Figure 4.3.J – Machines 80-100-120 kg / 180-230-275 lb with forward tilting and without weighing system – drilling points for anchoring bolts, (dimensions are stated in mm / inches)

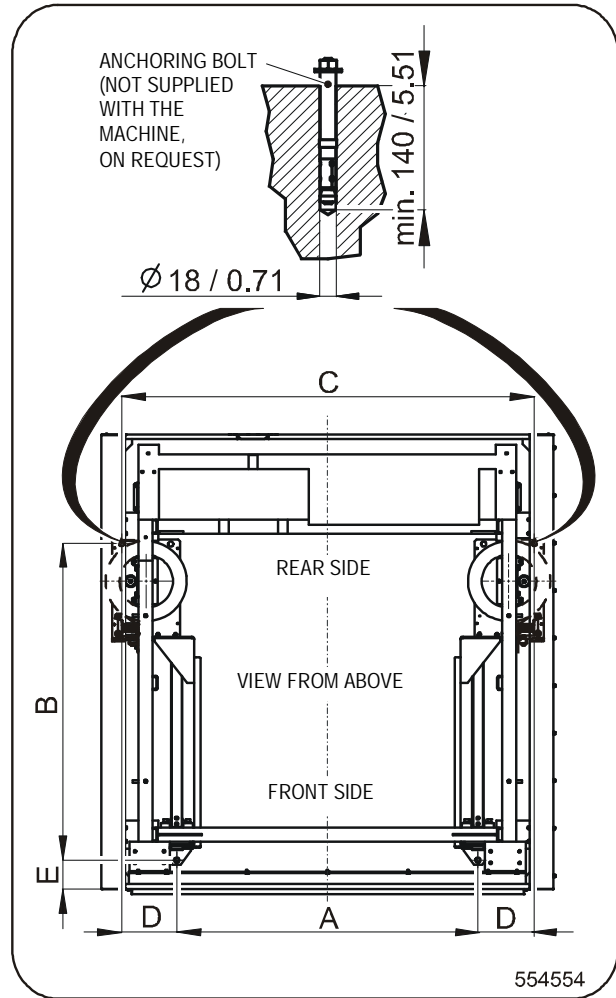


Figure 4.3.K – Machines 80-100-120 kg / 180-230-275 lb with forward tilting and with weighing system – drilling points for anchoring bolts, (dimensions are stated in mm / inches)

MACHINE kg / lb	80 / 180	100 / 230	120 / 275
A	984 / 38.74	1280 / 50.39	1346 / 52.99
B	1241 / 48.86	1363 / 53.66	1373 / 54.05
C	1456 / 57.32	1750 / 69	1816 / 71.50
D	235 / 9.25	235 / 9.25	235 / 9.25
E	127 / 5	125 / 4.92	138 / 5.43

Table 4.3.D. – Machines 80-100-120 kg / 180-230-275 lb (dimensions are stated in mm / inches)

ADJUSTMENT AND ANCHORING OF MACHINES 80-100-120 kg / 180-230-275 lb WITH TWO-WAY TILTING (FORWARD AND BACKWARD) – ON REQUEST

1. The lifting system adjustment applies to both the machine sides.
2. Adjust the distance between the air spring plate side (figure 4.3.L., pos.1) and the machine frame (pos. 2) to **133 mm / 5.24"** – see the detailed view **F**.
3. Set the **X** distance (see detailed view **A**) i.e. the distance between the axis of the air springs on the plate (pos.1) from the machine frame. The **X** dimension is the same for both sides.
4. The detail view **F** shows the adjustment of free play between the plates - pos. 3 and 4 on both sides. The distance shall be **1 mm / 0.04"**.

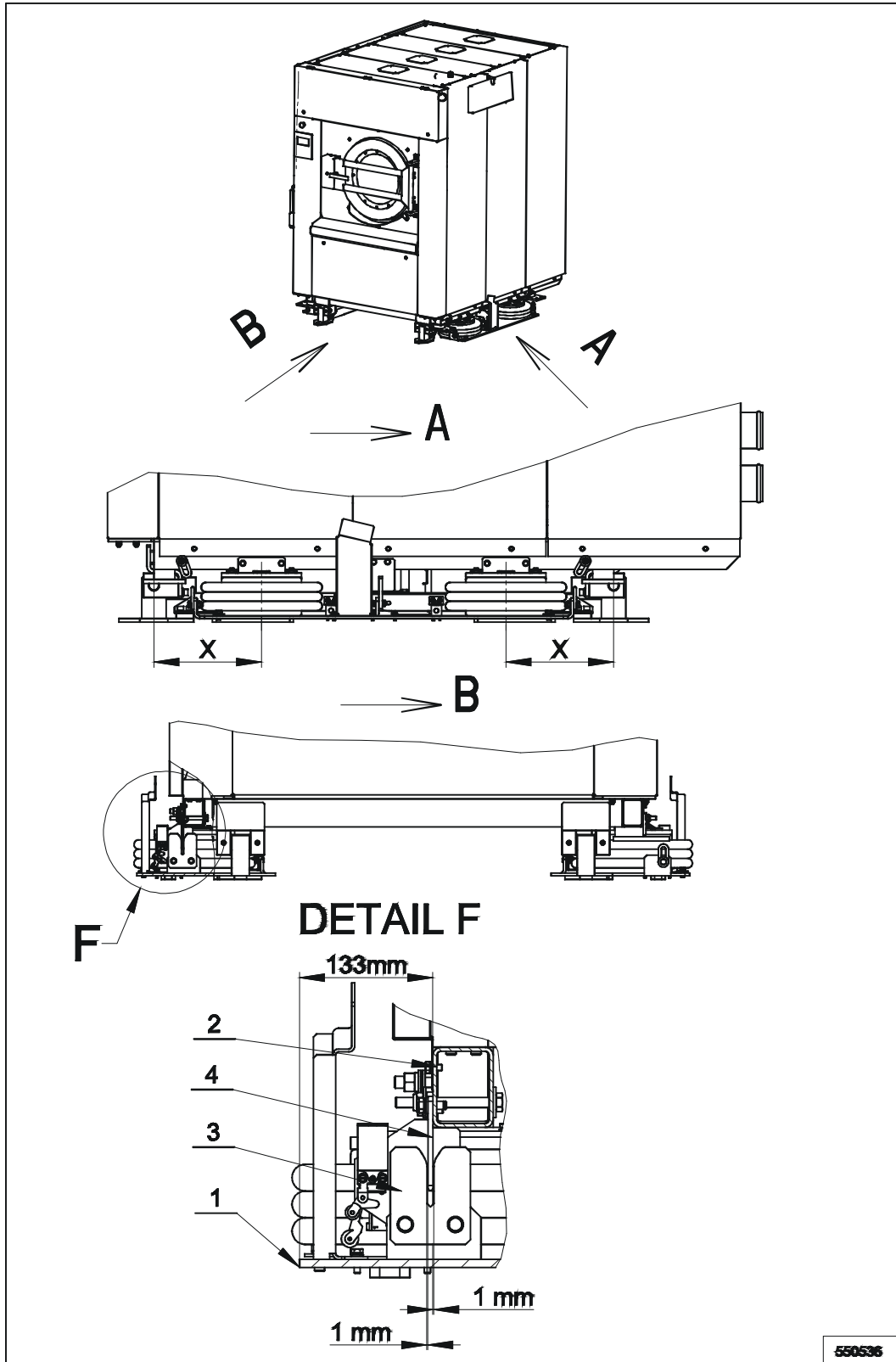


Figure 4.3.L. – Machines 80-100-120 kg / 180-230-275 lb with two-way tilting (forward and backward)

MACHINE kg / lb	80 / 180	100 / 230	120 / 275
A	1486 / 58.50	1780 / 70.08	1846 / 72.68
B	1010 / 39.76	1010 / 39.76	1010 / 39.76
C	62 / 2.44	64 / 2.52	64 / 2.52
D	316 / 12.44	355 / 13.98	374 / 14.72

table 4.3.E. – Machines 80-100-120 kg / 180-230-275 lb
(dimensions are stated in mm / inches)

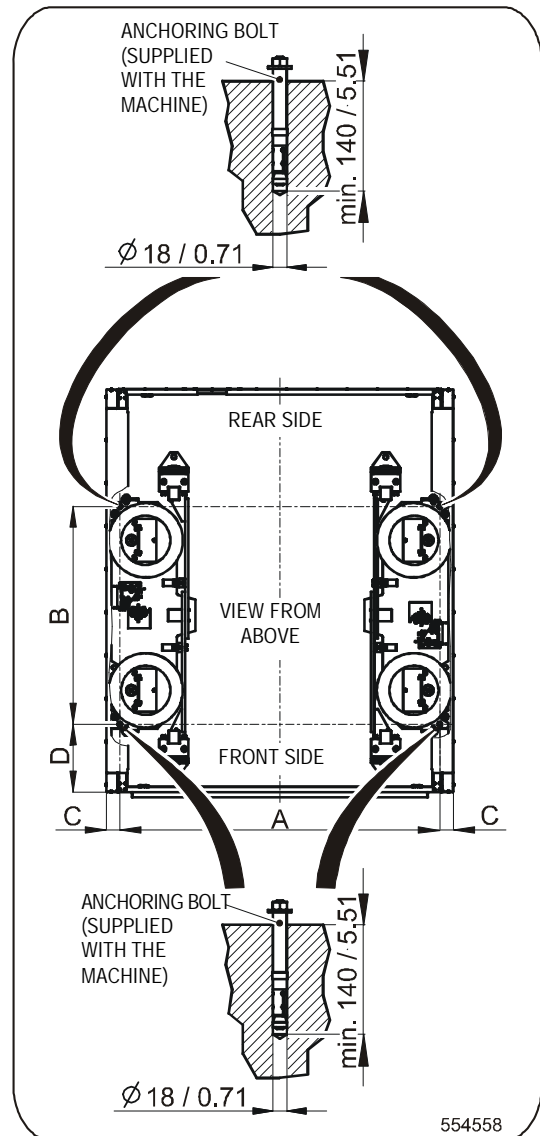


Figure 4.3.M – Machines 80-100-120 kg / 180-230-275 lb with two-way tilting (forward and backward), drilling points for anchoring bolts, (dimensions are stated in mm / inches)

4.4. CONNECTIONS

WATER CONNECTION

The washers are equipped with ¾", 1" or 1½" BSP (British Standard Pipe Thread) hot and cold water inlet valves, indicated by a sticker next to the inlet. For connection dimensions see figures 3.3., 3.5.

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.

If ¾" inlet hoses, 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. If a NPT Nut is present it is marked with a groove.

The 1" or 1½" inlet hoses have on both side BSP thread. To connect them to a NPT installation, an adapter is available. For best operation of the washer, it is necessary to keep the water pressure within the limits stated in the chapter „3. TECHNICAL SPECIFICATIONS“. 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. Install on the washer the filter device, normally delivered with the washer. Connect to this the inlet water hose with appropriated seal washer where necessary.

When connecting inlet hoses, be sure hose connections are not cross-threaded on the connection devices. Tighten the hoses securely. DO NOT over tighten as this will damage threads on the device(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 give the best wash results.

HOT WATER

IMPORTANT – TEMPERATURE IN WASHING 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.

In principle, the manufacturer strives that the real temperature inside the washer is never higher than the programmed temperature so that textile linen will not be damaged because of too high temperature.

If for certain applications a very precise washing bath temperature is necessary, appropriate measures must be taken, see Programming manual.

The manufacturer will refuse any responsibility for all consequences because of inaccurate temperatures inside the washing machine tub.

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 the drum rotation.

WATER DRAIN CONNECTION

By default washers are equipped with two drain outlets with outer diameter of 75 mm (3"). Machines of 80-100-120 kg / 180-230-275 lb have a diameter of 103 mm (4"). The drain outlets are situated on the rear of the machine. The drain has to be connected to the waste channel or pipeline. Seal the connecting point of the drain throat and

flexible hose with silicon cement. Secure the elbow or the hose with a clamp. Cover the waste sump with a proper cover.

The waste channel must be located lower than the drain outlets because the water discharges from the machines by gravity. Do not reduce the diameter of the machine drain pipes.

The main waste channel or pipeline must have such a capacity that it can take away the drained water from all connected machines at the same time. Ask a corresponding expert (construction technician) to design a sufficiently dimensioned waste pipeline for your washing machines. The correctly designed pipeline is fitted with the main ventilating pipeline (air supply), possibly an auxiliary ventilating pipeline. This will prevent deceleration of the flow and creation of a high vacuum or overpressure inside the pipeline, causing a breach of the water level in odour closures.

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 INJURIES.

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

For dimensions of steam connection information, see figure 3.3., 3.5 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., pos.2 and 15, figure 3.5., pos.2 and 7) 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. The external diameter of the ventilating opening for washers 33-40-55 kg / 80-100-125 lb it is 60mm / 2.4", for washers 80-100-120 kg / 180-230-275 lb it is 40 mm / 1.5".

For placing of connection points see figure 3.3., 3.5. 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.

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 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 figure 4.4.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 GROUNDING AT THE POINT OF INSTALLATION TAKING INTO CONSIDERATIONS THE NATIONAL AND LOCAL CONDITIONS AND REQUIREMENTS.

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

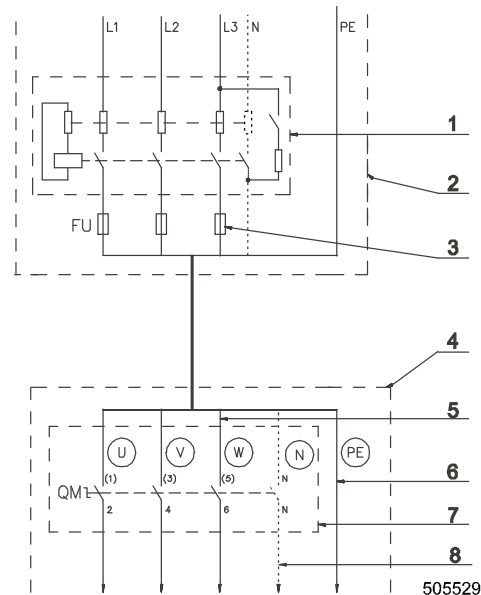


Figure 4.4.A – Machine connection to electrical network (with a residual current device)

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 4.4., 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 figure 4.4.C.
- 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 figure 4.4.D.
- Provide a sag in the cable, in front of the cable strain relief. This will avoid ingress of condensed water into the machine, see figure 4.4.D.

MACHINE WITH TILTING

- The selected power supply cable, figure 4.4.B., pos.1 needs to come from above and vertical directed downwards in line with the supply cable entry.
- The cable needs to be on ± 30 cm backwards away from the backside, pos.2 of the machine, when in tilting base, pos.3 rest position. Just before entry, a sag of min 5 and max 15 cm must be provided.
- From the point of entry, up to 1 m high, no fixation of the supply cable is allowed.

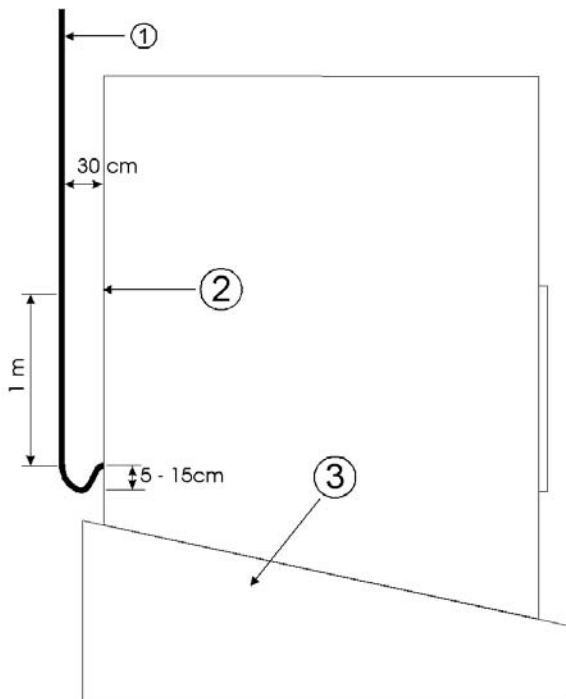
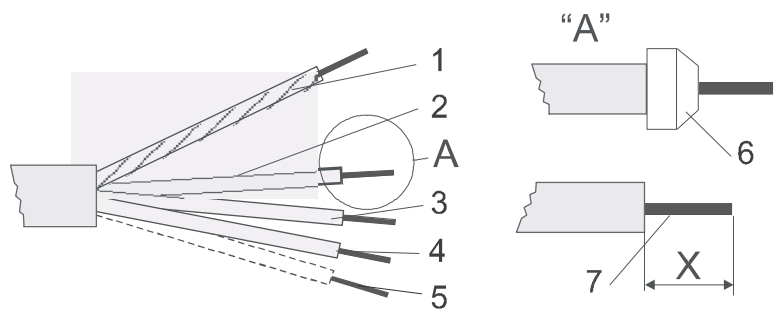


Figure 4.4.B. – Machine with tilting

Power supply protection device nominal current (US)		Min phase conductor section in mm ² (AWG)	Min Protection conductor section in mm ² (AWG)
Automatic circuit breakers A	Fuses A		
16 (15)	10 (10)	1.5 (AWG 15)	1.5 (AWG 15)
20 (20)	16 (15)	2.5 (AWG 13)	2.5 (AWG 13)
25 (-)	20 (20)	4 (AWG 11)	4 (AWG 11)
40 (40)	32 (30)	6 (AWG 9)	6 (AWG 9)
63(-)	50 (50)	10 (AWG 7)	10 (AWG 7)
80	63	16 (AWG 5)	16 (AWG 5)
100	80	25 (AWG 3)	16 (AWG 5)
125	100	35 (AWG 2)	25 (AWG 3)
160	125	50	35 (AWG 2)
200	160	70	50
250	200	95	70
300	250	120	95

Table 4.4. – Manufacturer’s recommended minimal conductor section

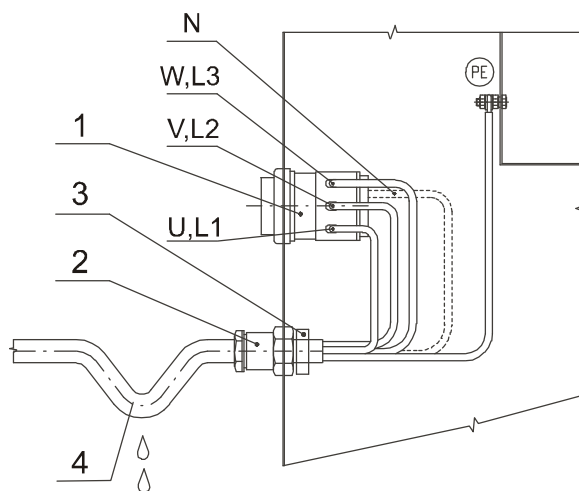
1. Protection conductor
2. Phase conductor
3. Phase conductor
4. Phase conductor
5. Neutral conductor
6. Molded tube
7. The stripped length of conductors



505 530

Figure 4.4.C – Adaptation of conductor ends of supply cable

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



505 531

Figure 4.4.D – 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 (figure 4.4.E., pos.3). The minimum protection conductor's cross section depends on the supply cable cross section and can be found in table 4.4. 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.

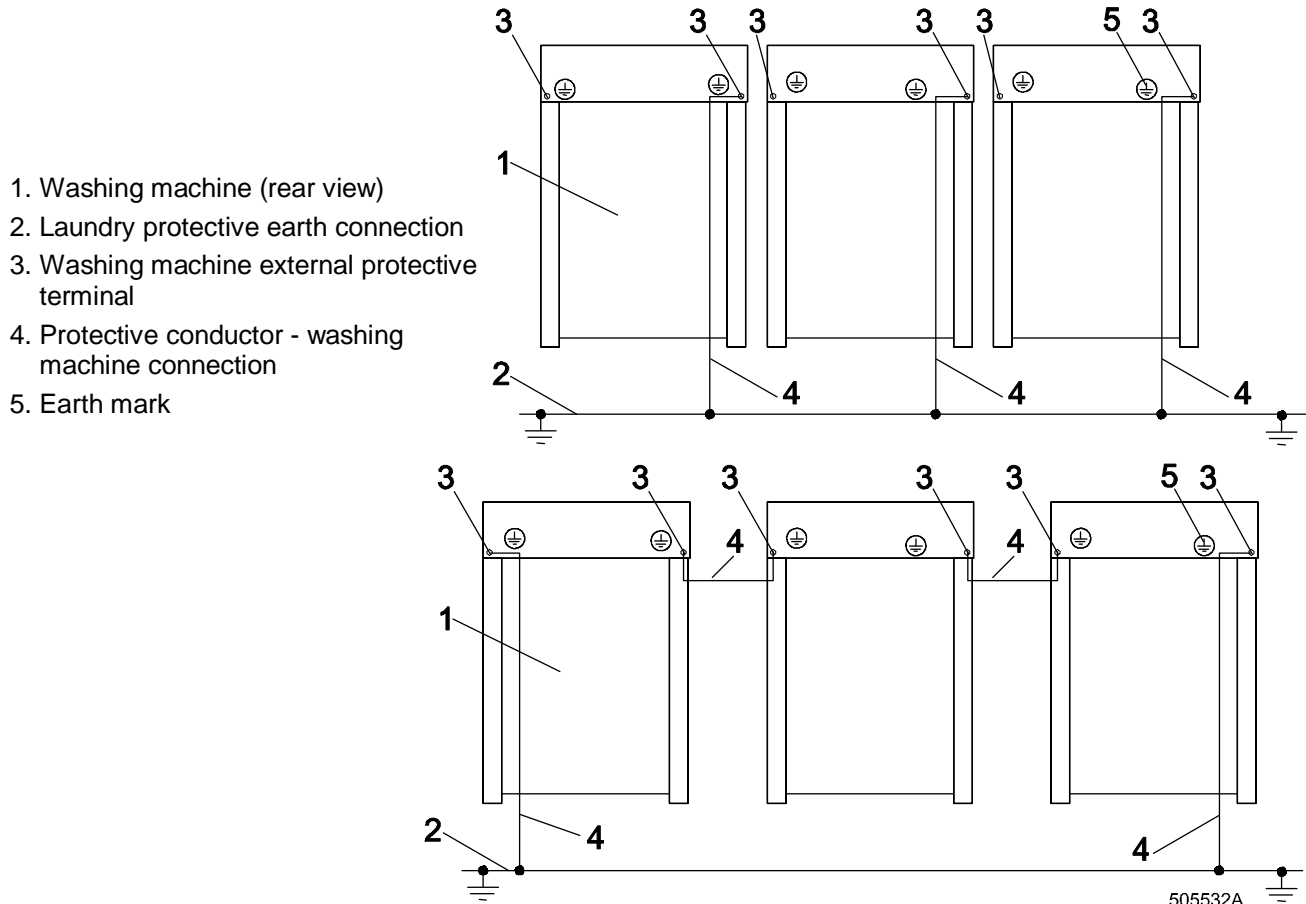


Figure 4.4.E

LIQUID SOAP CONNECTION

MACHINES 80-100-120 kg / 180-230-275 lb

Connection point for soap supply, see figure 3.5., pos.9.

MACHINES 33-40-55 kg / 80-100-125 lb

By default the machines are produces in version: With liquid soap

- General** : Always use liquid soap pumps that have a flow rate high enough to bring the requested quantity into the washer in less than 30 sec.
- 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** : Secure the location of the wiring and hoses in such a way that they can not be pinched, damaged or rubbed. Only authorized workers, with a valid qualification, should do the installation. 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.

MACHINES 33-40-55 kg / 80-100-125 lb

The washer has provisions for connecting external dosing of liquid soaps. On the back side, a plastic hose connection part is present, figure 4.4.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.

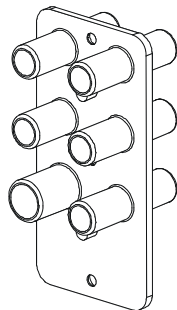


Figure 4.4.F – Machines 33-40-55 kg / 80-100-125 lb
Plastic hose connection part

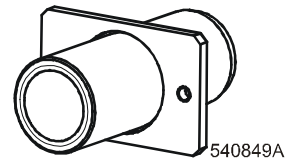


Figure 4.4.G – Machines 80-100-120 kg /
180-230-275 lb, hose connection



WARNING!

CHECK THAT THE HOSE CONNECTIONS ARE TIGHT (CHECK THE CLAMPS)! ANY LEAKAGE OF CHEMICALS MAY CAUSE SERIOUS BODILY 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 pump 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 figure 4.4.H., pos.1) with the terminal box with LED signalization of activation of the respective pump, (pos.2). Under the terminal box there is a label for electric connection. Detail connection of signals could be also found on the electric scheme of the machine. Signals for supply pumps control are 24V AC. Maximum current for control circuits of pumps must be limited to 10mA. Lead the cable for connection of pumps control signals through the plastic cable bushing, position 3. After connection of conductors to the respective positions of the connector „P“ (screw clamps), fix up the cable by tightening the cable bushing) against disconnection and close the box with the cover. For details about liquid soap supply system programming, see Programming manual.

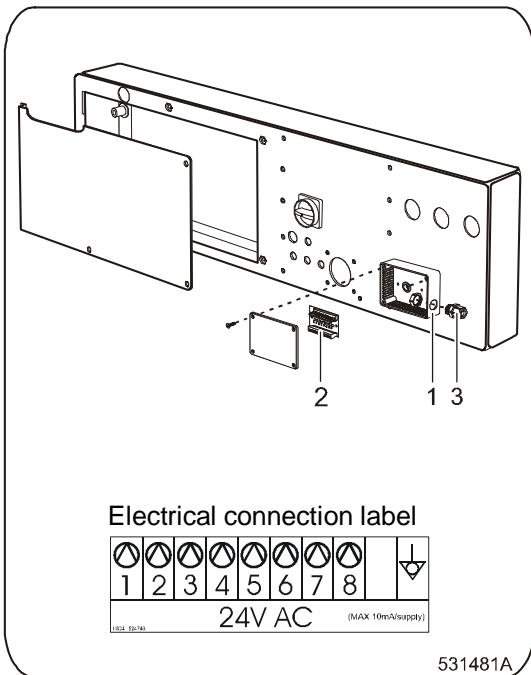


Figure 4.4.H – Machines 33-40-55 kg / 80-100-125 lb

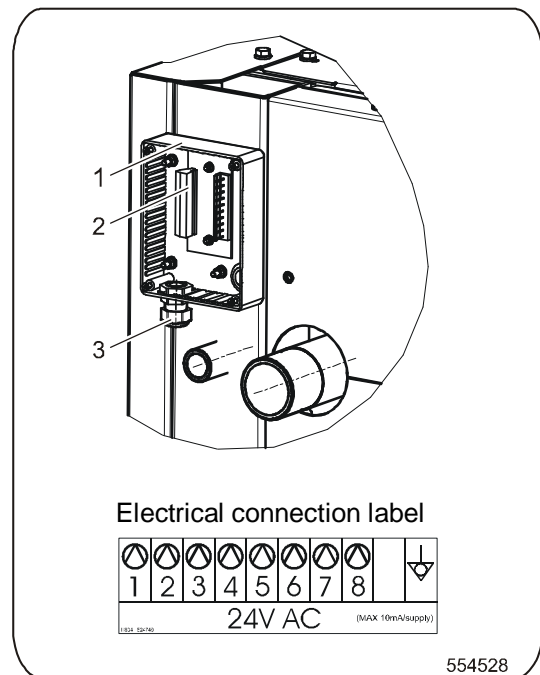


Figure 4.4.I – Machines 80-100-120 / 180-230-275 lb

4.5. PUTTING THE MACHINE INTO SERVICE

⚠ WARNING!
THE TRANSPORT BRACES MUST BE REMOVED PRIOR PUTTING YOUR MACHINE INTO SERVICE. OTHERWISE YOUR WASHING MACHINE CAN BE SERIOUSLY DAMAGED!

MACHINES 33-40-55 kg / 80-100-125 lb, figure 4.5.A

Before you put the machine into operation, remove the three striking color transport braces securing the vibrating machine components during the transport. One brace (figure 4.5.A., pos.1) is located in the front part of the machine, accessible after removal of the front lower cover. The two braces (2) are placed in the rear machine part, accessible after removal of the rear cover. After removal of the braces, mount the covers back to their places.

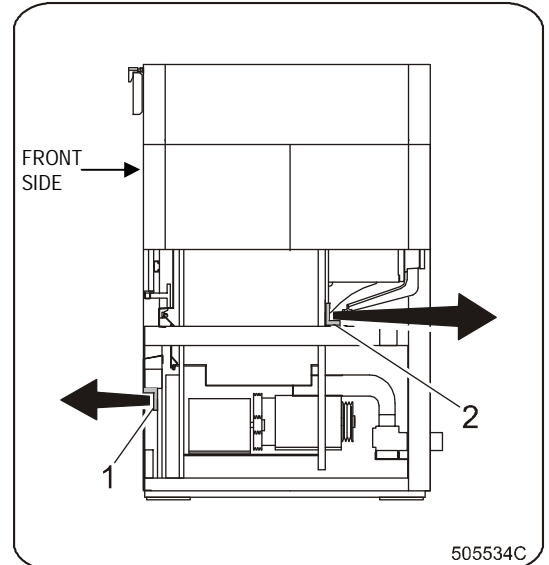


Figure 4.5.A. – Machines 33-40-55 kg / 80-100-125 lb, Transport braces

MACHINES 40-55 kg / 100-125 lb WITH TILTING

Once the transport braces are removed, place two backstops in their places – figure 4.5.B. (supplied with the machine). These backstops secure the machine when it is being tilted. When the braces are removed and backstops attached, put the guards back.

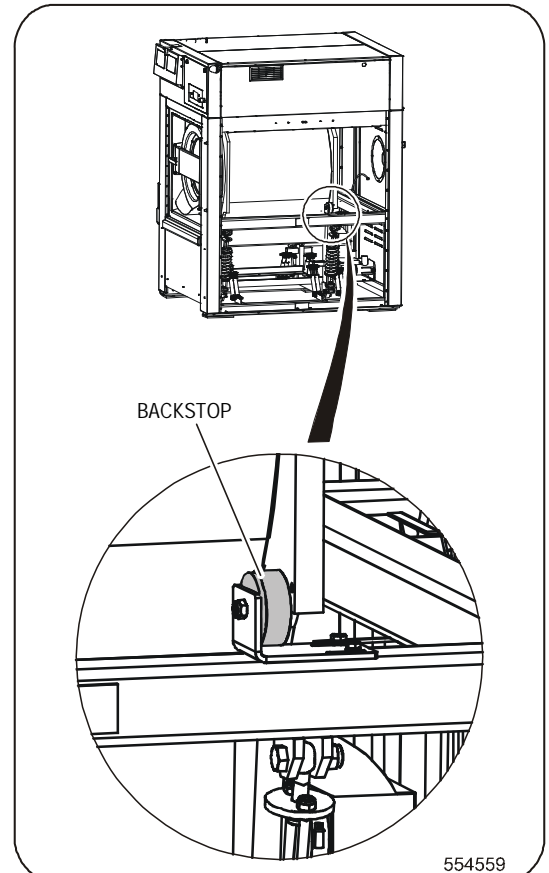


Figure 4.5.B. – Machines 40-55 kg / 100-125 lb with tilting

MACHINES 80-100-120 kg / 180-230-275 lb, figure 4.5.C

Before you put the machine into operation, remove the six striking color transport braces securing the vibrating machine components during the transport. The three braces are placed on the left side of the machine and three braces are placed on the right side of the machine, accessible after removal of the side covers. After removal of the braces, mount the covers back to their places.

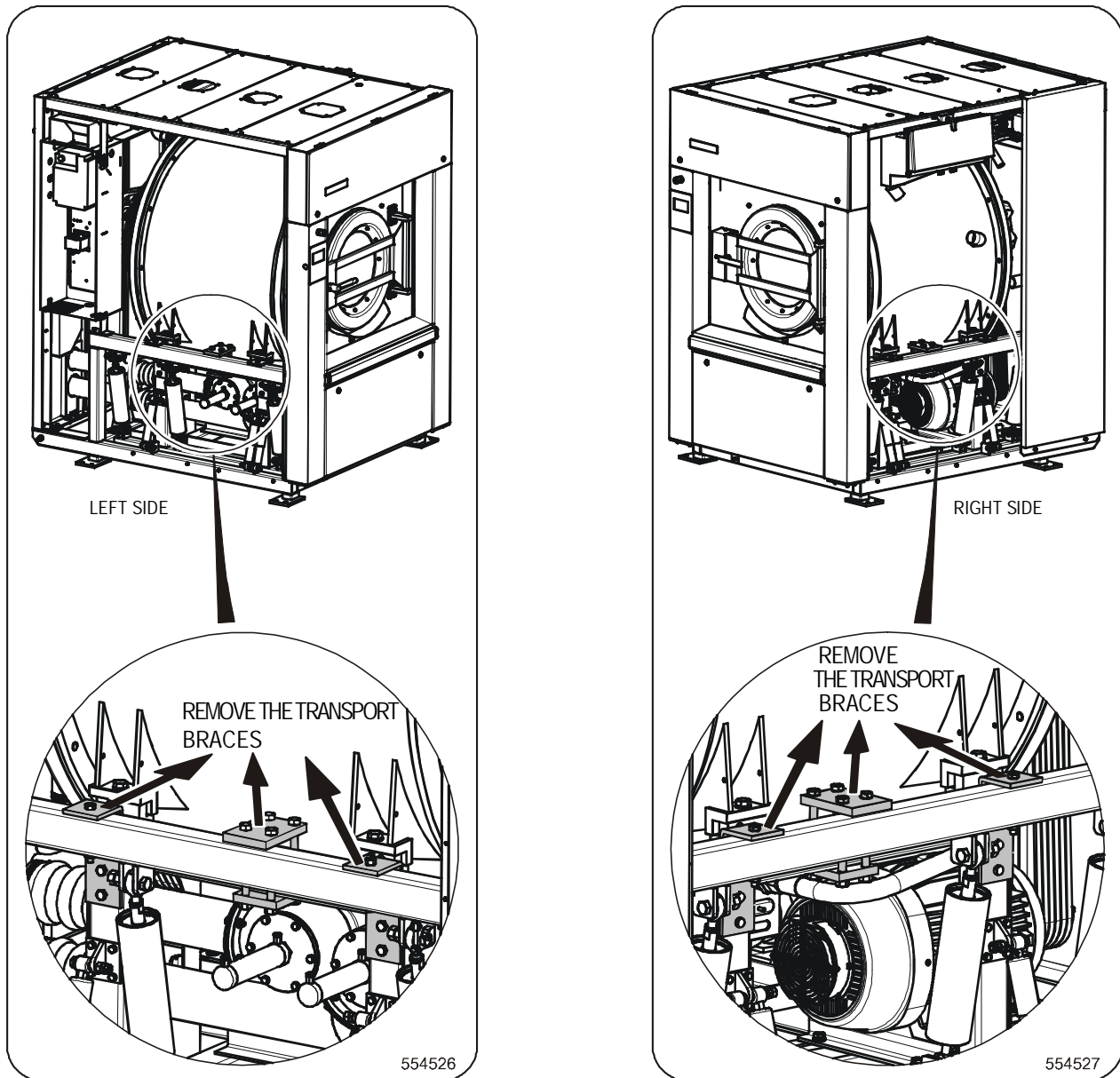


Figure 4.5.C. – Machines 80-100-120 kg / 180-230-275 lb, transport braces

CHECKING BEFORE PUTTING INTO SERVICE

1. A check of the transport braces removal.
2. Removal of the cabinet protective foil.
3. A check if the waste sump is ready for water drainage.
4. A check of the protective connection (earth connection) - „PE“ or „PEN“.
5. A careful reading of the operation manual before the machine start and following the instructions stated.
6. Check of the drum rotation direction during extracting:
MACHINES 33-40-55 kg / 80-100-125 lb
LOOKING AT THE MACHINE FROM THE FRONT VIEW THE DRUM ROTATION DURING EXTRACTION MUST BE COUNTER-CLOCKWISE!

MACHINES 80-100-120 kg / 180-230-275 lb
LOOKING AT THE MACHINE FROM THE FRONT VIEW THE DRUM ROTATION DURING EXTRACTION MUST BE CLOCKWISE!
7. A check of the vibration switch function during extracting and 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

Due to the quality construction and reliable parts and materials of the machine the preventive maintenance has been limited to the minimum.

When the machine is still under warranty, call your dealer's service to perform the interference stated in chapter 5.3. - 5.5. to avoid the warranty cancellation. The technical service of your dealer is ready to eliminate serious failures of your machine.

5.2. DAILY

Check daily:

1. Water and possible steam inlets for leakage.
2. Drain valve for leakage during a washing process and for its proper opening (the valve is in open position without electric current).
3. Clean the machine cabinet to remove any traces of washing soaps.
4. Soap hoppers must be cleaned at the end of each working day.
5. Clean up the door gaskets to remove sediments and dirt.

Do not use solvents or acids to clean the rubber door gasket !

Do not use oil or grease on rubber !

After the machine has been cleaned up leave the door opened to provide the machine venting and to prolong the door gasket life service. We recommend to shut off all main inlets of electric power and steam (the laundry main valves and switches).

5.3. MONTHLY OR AFTER 200 WORKING HOURS

1. Lubrication according to chapter 5.8.
2. Check of leakproof of external liquid soap supply system.
Check if all hose joints, screw joints and all connections of the whole system of external liquid soap are leakproof.

5.4. EVERY 3 MONTHS OR AFTER 500 WORKING HOURS

1. Check the bearing house for leakage.
2. Make sure the machine is disconnected from main power supply by the laundry switch or circuit breaker and that the other workers are well informed about the machine maintenance activity.
3. Check the tightness of the bolts according to chapter 5.7.
4. Check visually the pipes and hoses connections inside of the machine for leakage.
5. Make sure that the control components are protected against moisture and dust during the clean up. Wipe and clean up the machine inside.
6. Lubrication according to chapter 5.8.
7. On machines with electric heating check the tightening of the contacts of heating elements terminals and other power terminals (main switch, fuse disconnectors, contactors).
8. Put the covers back and switch on the power supply by the main laundry switch or circuit breaker.
9. If there is the earth leakage trip installed in the inlet circuit of the laundry electric switch board, test it according to chapter 5.14.

5.5. EVERY 6 MONTHS OR AFTER 1000 WORKING HOURS

1. Clean the filters with water and steam inlets by chapter 5.10.
2. Remove the rear machine cover and check the condition and tightness of the V-belts (chapter 5.9.).

⚠ 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.

3. 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

5.6. SAFETY VIBRATION SWITCH

FUNCTION DESCRIPTION

The vibration switch is an important safety element which must - if correctly adjusted - stop the machine if excessive vibrations and shaking occur due to an unbalance caused by improper distribution of linen in the washing drum. Because this component is very important, it is recommended that at the first installation and then once in a year the vibration switch was verified by a qualified worker.

MACHINES 33-40-55 kg / 80-100-125 lb, FIGURE 5.6.A

The unit contains the vibration switch (figure 5.6.A., pos.5) with a flexible controlling element which is attached to a holder (7) by nuts (6) and this entire assembly is bolted to the bottom of the switchboard (4). The switch controlling element is inserted into the rubber bushing (3) located into the limiter (2) which is bolted to the drum front face (1). The switch attached to the switchboard is a part of the machine skeleton which is attached to the frame and the limiter with the bushing is a part of the assembly that vibrates. The vibration switch sensibility is given by a mutual adjusting of these two components which controls the unbalance level of linen in the drum.

MACHINES 80-100-120 kg / 180-230-275 lb, FIGURE 5.6.B

The unit contains the vibration switch (figure 5.6.B., pos.4) with a flexible controlling element, which is attached to a holder (6) by nuts (5) and this entire assembly is bolted to the rigid machine frame (3). The switch controlling element is inserted into the limiters (2) which is bolted to the front part of moving frame(1). The limiters are a part of the assembly that vibrates. The vibration switch sensibility is given by a mutual adjusting of these two components which controls the unbalance level of linen in the drum.

SENSIBILITY ADJUSTMENT, MACHINES 33-40-55 kg / 80-100-125 lb, FIGURE 5.6.A

1. By moving the limiter (2) up or down (direction A), you will adjust the centre of rubber bushing to the control element axis of vibration switch.
2. By moving the vibration switch on the holder (7) to the left, you will increase the sensibility and to the right you decrease it (direction B). To reach the maximal permitted unbalance value it is necessary to keep the distance of 100 mm / 3.93" between the limiter (2) and the vibration switch (5) - see the side view.
3. Moving the holder (7) with the switch left or right (direction C) you will centre the switch control element in the rubber bushing of the limiter.

SENSIBILITY ADJUSTMENT, MACHINES 80-100-120 kg / 180-230-275 lb, FIGURE 5.6.B

1. Set a distance 12 mm / 0.47" between the limiters (2).
2. By moving the vibration switch (4) on the holder (6) to the left, you will decrease the sensibility and to the right you increase it (direction A). To reach the maximal permitted unbalance value it is necessary to keep the distance of 60 mm / 2.36" between the limiters (2) and the vibration switch (4), see the side view.
3. Moving the holder (6) with the switch left or right (direction B) you will centre the switch control element to the distance axis between the limiters (2).

VERIFYING OF THE FUNCTION

Perform the verifying as follows:

1. Open the control panel cover.
2. Start extraction mode.
3. After reaching of the maximum RPM, carefully switch over the vibration switch by moving the flexible control element manually.

WARNING!

**DO THIS CAREFULLY TO AVOID INJURIES BY VIBRATING AND FIRM PARTS OF THE MACHINE!
AFTER YOU HAVE CHECKED THE FUNCTION, MOUNT ALL PANEL COVERS BACK TO ORIGINAL
PLACE!**

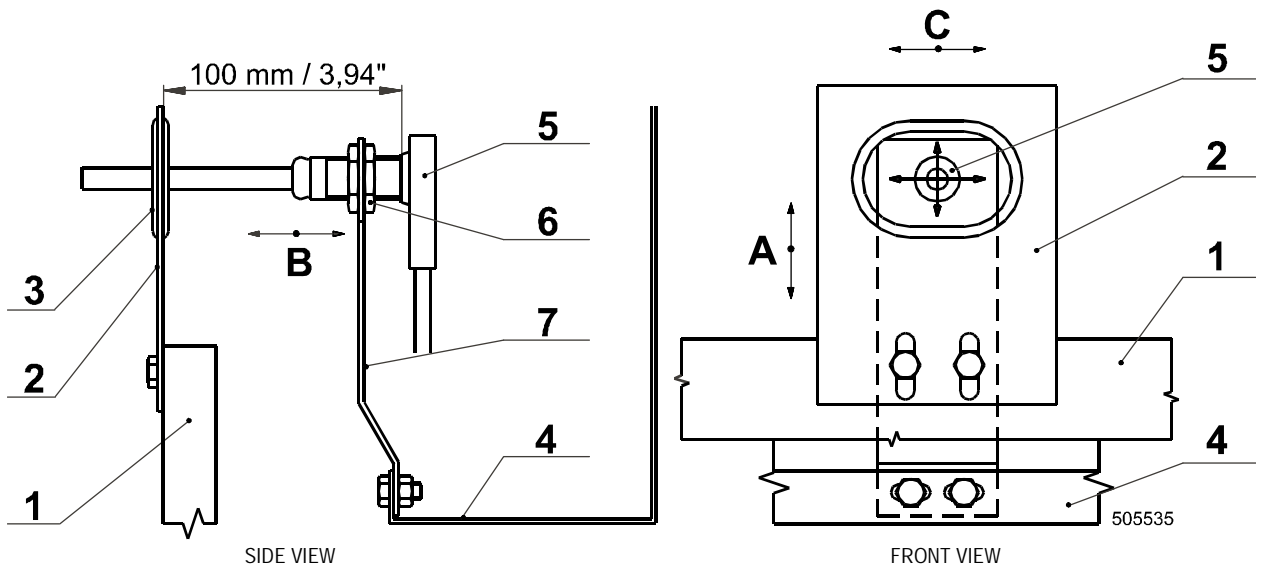


Figure 5.6.A. – Machines 33-40-55 kg / 80-100-125 lb

- | | |
|---------------------------|----------------------------|
| 1. Front face of the drum | 5. Vibration switch |
| 2. Limiter | 6. Adjusting nut |
| 3. Bushing | 7. Vibration switch holder |
| 4. Switchboard bottom | |

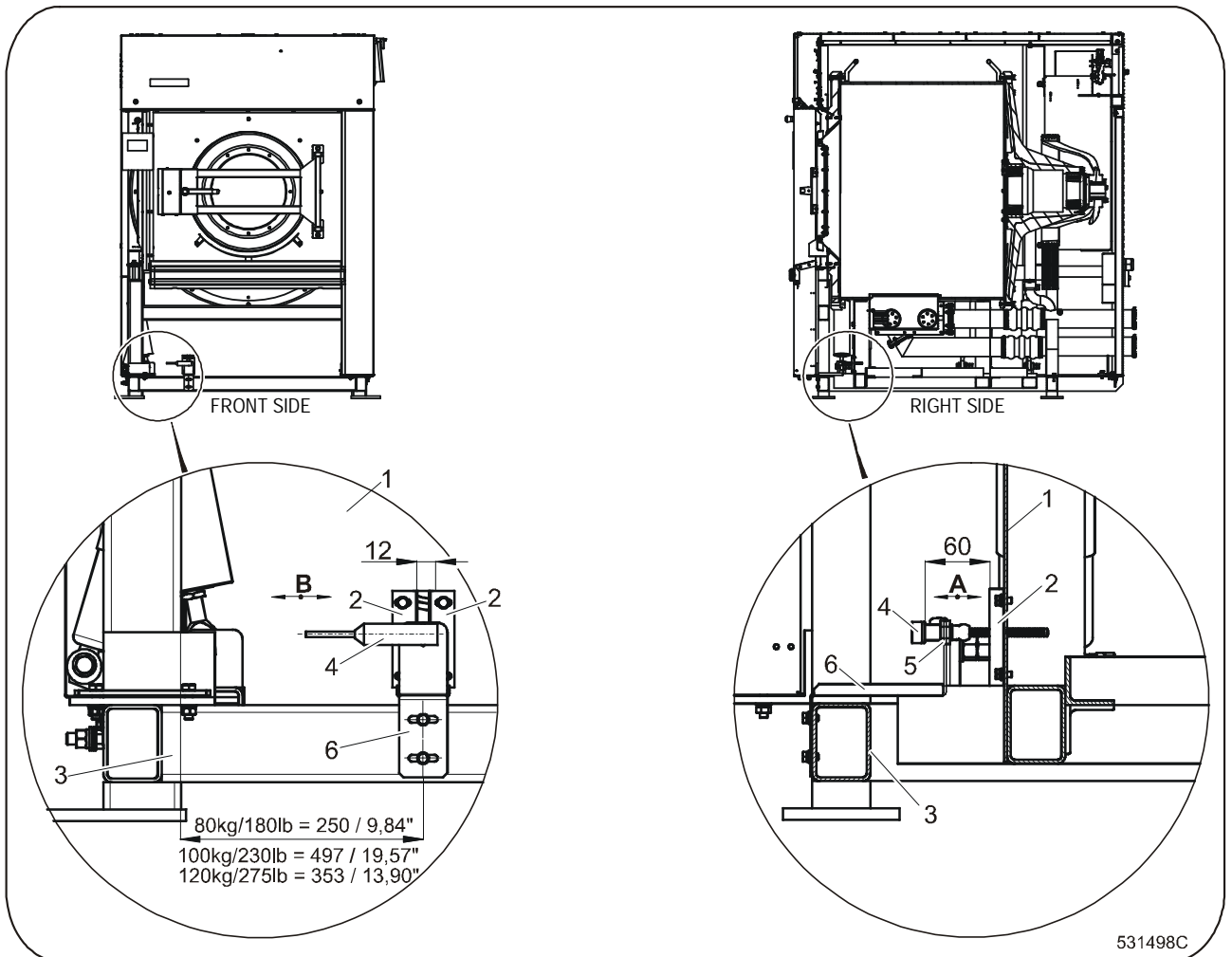


Figure 5.6.B. – Machines 80-100-120 kg / 180-230-275 lb, (dimensions are stated in mm / inches)

- | | |
|-------------------------------|----------------------------|
| 1. Front part of moving frame | 4. Vibration switch |
| 2. Limiters | 5. Adjusting nut |
| 3. Machine frame | 6. Vibration switch holder |

5.7. TIGHTENING MOMENTS

⚠ WARNING!
REGULARLY, ONCE IN THREE MONTHS OR EVERY 500 WORKING HOURS (WHICH EVER COMES FIRST) INSPECT THE TIGHTNESS OF THE BOLTS!

If anyone of the bolts has been damaged, exchange it with the bolt of the same strength value marked on its head. The best way is to order the original part according the „Spare parts manual“.

⚠ WARNING!
REPLACE THE DAMAGED BOLT WITH A ONE OF THE SAME STRENGTH VALUE MARKED ON ITS HEAD! IGNORING OF THE BOLT QUALITY AND MECHANICAL STRENGTH CAN CAUSE SERIOUS BODILY INJURIES!

Tighten the loosened bolts using the torque value stated in the following tables:

MACHINES 33-40-55 kg / 80-100-125 lb

TIGHTENING MOMENTS VALUES OF BOLTS AND NUTS FOR MACHINES 33-40-55 kg / 80-100-125 lb, (figure 5.7.A)

BOLT (NUT)	DIMENSION	NUMBER OF PCS.	TIGHTENING MOMENTS (Nm)	TIGHTENING MOMENTS (lbf.ft)
A	M20 x 65	24 (12)	600	443
B	M12 x 30	8	70	52
B	33 kg / 80 lb: nut KM13	1	450	332
C	M12 x 35	6	70	52
D	M30 x 80	1	800	590
E	M12 x 38	4	25	18.5

Table 5.7.A

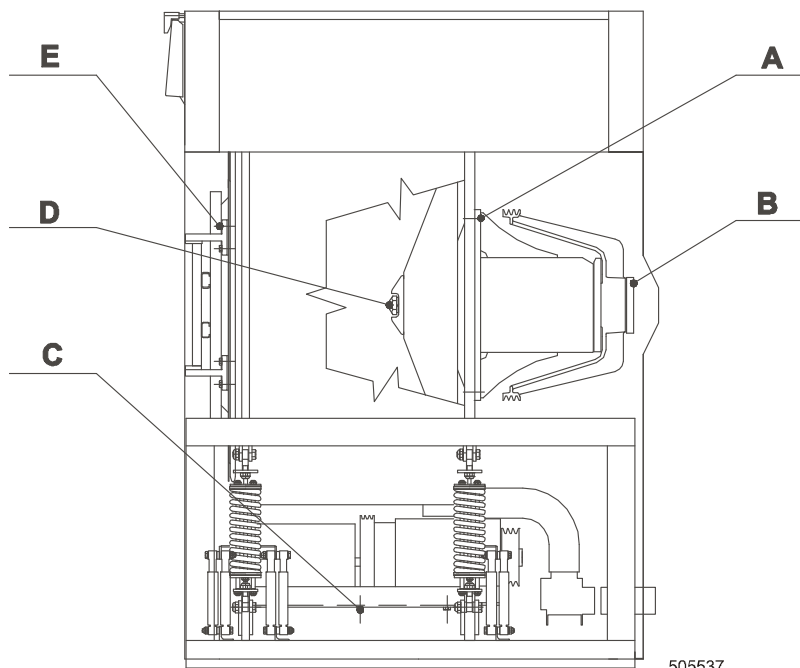


Figure 5.7.A. – Machines 33-40-55 kg / 80-100-125 lb

MARKING OF THE BOLTS

- A – bolts of hub flange
- B – bolts fixing the pulley to the nut of clamping sleeve
- C – bolts fixing the motor plate to the external drum
- D – bolts fixing the inner drum to the shaft
- E – bolts fixing the door brackets

A spanner for the jam nut KM 13 is not a part of the delivery or accessories.

MACHINES 80-100-120 kg / 180-230-275 lb

TIGHTENING MOMENTS VALUES OF BOLTS AND NUTS FOR MACHINES 80-100-120 kg / 180-230-275 lb, figure 5.7.B

BOLT (NUT)	MACHINE	DIMENSION	AMOUNT (pcs)	TIGHTENING MOMENT (Nm)	TIGHTENING MOMENT (lbf.ft)
A	80 kg / 180 lb	M16x70	12	500	369
	100 kg / 230 lb	M20x70	12	600	443
	120 kg / 275 lb		16		
B	80 kg / 180 lb	M10x60	4	60	44
	100-120 kg / 230-275 lb		6		
C	80-100-120 kg / 180-230-275 lb	M16x75	12	500	369
D	80-100 kg / 180-230 lb	M8x25	8	40	30
	120 kg / 275 lb	M8x30			
E	80-100-120 kg / 180-230-275 lb	M12x45	4	30	22

Table 5.7.B

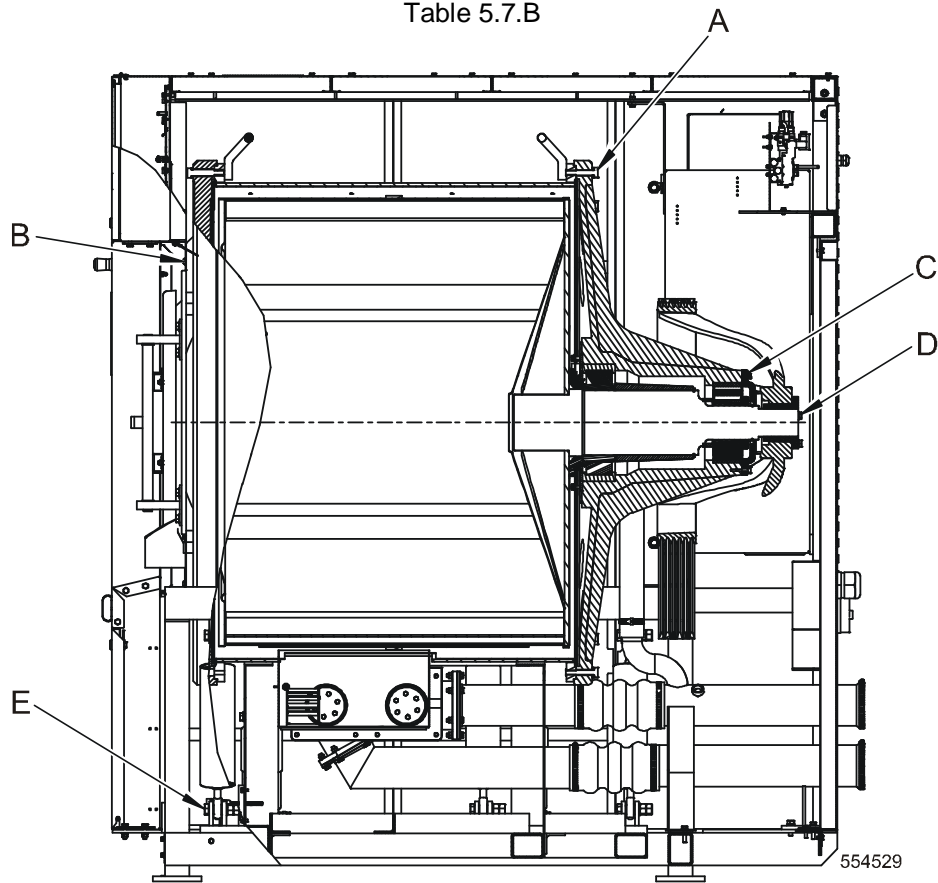


Figure 5.7.B. – Machines 80-100-120 kg / 180-230-275 lb

MARKING OF THE BOLTS

- A – hub flange bolts
- B – bolts fixing the door hinges
- C – bolts fixing the bearing house cover
- D – bolts fixing the pulley to the nut of clamping sleeve
- E – bolts fixing the spring unit

5.8. LUBRICATION

⚠ WARNING!
DO THE LUBRICATION WORK ONLY WHEN THE MAIN SWITCH IS OFF AND ALL COMPONENTS HAVE BEEN STOPPED!
(IF NOT STATED OTHERWISE IN FOLLOWING INSTRUCTION).

Every time you use a grease gun especially for greasing bearings and seals, do it slowly - not faster than 5 strokes in 1 minute. The grease gun can create a high pressure which would cause the seal deformation and consequent leakage. Never operate the grease gun faster even if the grease contain air gaps. Overlubrication can cause the same damage as an insufficient lubrication. Always make sure that your grease gun is in perfect condition.

If you substitute the lubricant by another type make sure that these two kinds are compatible, otherwise there is a risk of a bearing failure. For example lithium lubricants are compatible with calcareous lubricants but not with sodium ones.

NEVER MIX PETROLEUM LUBRICANTS WITH SILICONE LUBRICANTS!

LUBRICATION POINTS, QUANTITY AND LUBRICATION PERIODS

MACHINES 33-40-55 kg / 80-100-125 lb

LUBRICANT

Use a multipurpose lithium lubricant containing high-pressure additives of consistency NLGI 2.

SKF - LGEP 2

ESSO - BEACON EP 2

LUBRICATORS

For main bearings and seals, (figure 5.8.A) lubricators are located on the rear machine cabinet and marked by the symbol „Lubrication point“, (see User's manual, chapter „3. SYMBOLS ON THE MACHINE“). Lubricators can also be marked by text „Lubrication“. Press the lubricant in slowly and let the drum rotate with the same speed as during washing.

QUANTITY OF LUBRICANT

2 cm³ (2 strokes) - once in a month or every 200 working hours, which ever comes first.

1. Rubber seal lubricator
2. Front bearing lubricator
3. Rear bearing lubricator

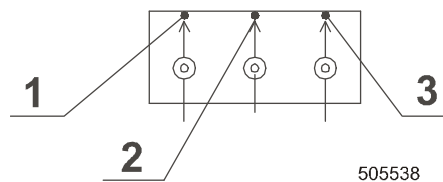


Figure 5.8.A. – Machines 33-40-55 kg / 80-100-125 lb

Once in 6 months or when needed, grease spring suspension eyes (figure 5.12.A., pos.6., figure 5.12.B., pos.4), guiding rods (figure 5.12.A., pos.3., figure 5.12.B., pos.5), the door handle casing (figure 5.11.A., 5.11.B, pos.2) and the casings in the door hinge (figure 5.11.A, 5.11.B., pos.7). The motor bearings are maintenance-free (do not lubricate).

The hubs of machines 80-100-120 kg / 180-230-275 lb are maintenance-free.

PNEUMATIC LUBRICATOR, WASHERS 80-100-120 kg / 180-230-275 lb

Fill the lubricator pot with approximately 23 cm³ of oil.

Recommended type of oil: non-detergent and without aggressive additives, viscosity VG32 (ISO 3448).
e.g.: oil for pneumatic devices or hydraulic oil.

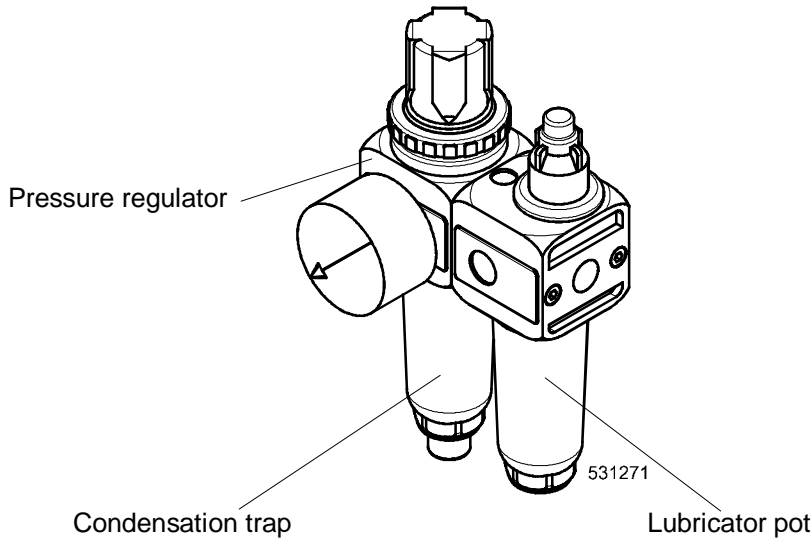


Figure 5.8.B. – Pneumatic lubricator, washers 80-100-120 kg / 180-230-275 lb

5.9. DRIVING MECHANISM

On a new machine and after a belt replacement, make an inspection of the belt tightness:

1. After first 24 hrs of operation
2. After first 80 hrs of operation
3. Every 6 months or every 1000 operation hours - which ever come first.

INSPECTION OF THE BELT TIGHTNESS

⚠ WARNING!
BEFORE YOU START, TURN OFF THE MAIN SWITCH TO AVOID POSSIBLE INJURIES!

The belts are accessible after the rear or side cover dismantling. If the belts are too tight the bearing seatings are under stress and their life service has been shortened.

If the belts are too loose they can be slipping on the pulley and cause a noisy operation.

In the case of need, tighten the belts. Change the belts if worn out or damaged.

Testing force of belt tensioning which can be measured by tension meter is indicated in table 5.9.

Procedure for approximate belt tensioning according to force measured by tension meter:

Apply a load at the middle of the belt:

- Washers 33 kg / 80 lb :belt deflection is 20 mm / 0.78" - force in belt deflection is **53 - 54 N**.
- Washers 40-55 kg / 100-125 lb :belt deflection is 20 mm / 0.78" - force in belt deflection is **68 - 69 N**.
- Washers 80 kg / 180 lb :belt deflection is 12.3 mm / 0.48" - force in belt deflection is **11 - 12 N**.
- Washers 100-120 kg / 230-275 lb :belt deflection is 9 mm / 0.35" - force in belt deflection is **20 - 22 N**.

The data are valid only for belts delivered by the manufacturer.

MACHINE	kg / lb	33 / 80	40-55 / 100-125	80 / 180	100-120 / 230-275
Force F measured by device	N	200	300	-	-
Frequency measured by device	Hz	-	-	36-37	35-37

Table 5.9.

BELT REPLACEMENT

NEVER USE A CROWBAR TO TAKE OFF THE BELTS OVER THE PULLEY GROOVES.

Loosen the bolts of tightening pulley on the drum rear wall and the adjusting screw for taking the belts off. Always change a complete set of the belts. Always the same type of the changed belts in the set is required. If the pulleys are damaged, replace them.

After the belt replacement, check the pulley alignment, the tightness of belts, bolts and nuts.

Keep the belts and pulleys clean and free of oil, lubricants, water etc.

PULLEY ALIGNMENT

A precondition for the reliable operation and long service life of the belts is a proper pulley alignment.

Do the inspection of the alignment by means of a ruler (figure 5.9., pos.4) with placing it on the pulley faces.

If all points (A, B, C, D) are touching the ruler the pulleys are aligned.

1. Main housing with the pulley
2. Drum
3. Drive motor
4. Ruler

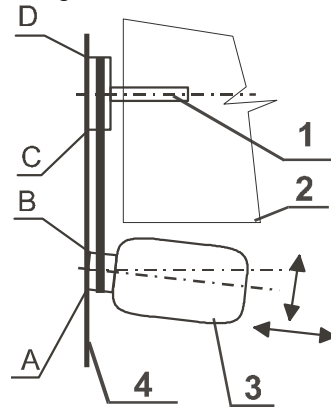


Figure 5.9. 505 539

5.10. WATER AND STEAM FILTERS

Machines are equipped with filters on water and steam inlets (if the machine has steam heating).

The washers 80-100-120 kg / 180-230-275 lb is equipped with a filter for steam only. It is necessary to clean up the filters occasionally to avoid a prolongation of filling the machine with water. Intervals of cleaning depends on the quantity of foreign particles in the water line.

CLEANING THE FILTER

1. Stop the water (steam) inlet to the machine.

⚠ WARNING!
BEFORE YOU START THE FILTER CLEANING CHECK IF THE INLET OF HOT WATER (STEAM) TO THE MACHINE IS CLOSED AND COLD!

2. Unscrew the filter plug (figure 5.10., pos.4) and remove the filter sieve (2).
3. Clean the sieve with running water or with compressed air.
4. Put the sieve (2) and gasket (3) back to the filter body (1) and tighten the plug (4).

1. Filter body
2. Filter sieve
3. Gasket
4. Plug

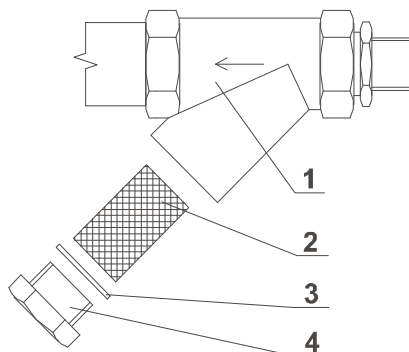


Figure 5.10.

505518

5.11. THRUST OF DOOR SEAL

If there is a water leakage around the door it is necessary to find out if the problem has been caused due to the door shift out of its position or if the door seal thrust should be adjusted. In some cases the door seal has to be replaced.

ADJUSTING ON THE SIDE OF THE DOOR HANDLE

1. Unscrew the bolt (figures 5.11.A., 5.11.B., detail „B“, pos. 1) securing the casing of the door handle (2).
2. Unscrew the casing (2) from the door bearer (3) always by a whole turn that the groove in the casing thread (2) appears below the securing bolt (1).
3. To make the casing turning (2) easier, use the semicircle notches (4) between the casing (2) and the handle pin (5), in which you insert cylindrical object (a bolt etc.). By turning the handle, the casing (2) will also move.
4. After the door thrust has been adjusted, tighten up the securing bolt (1) to the groove in the casing (2) thread.

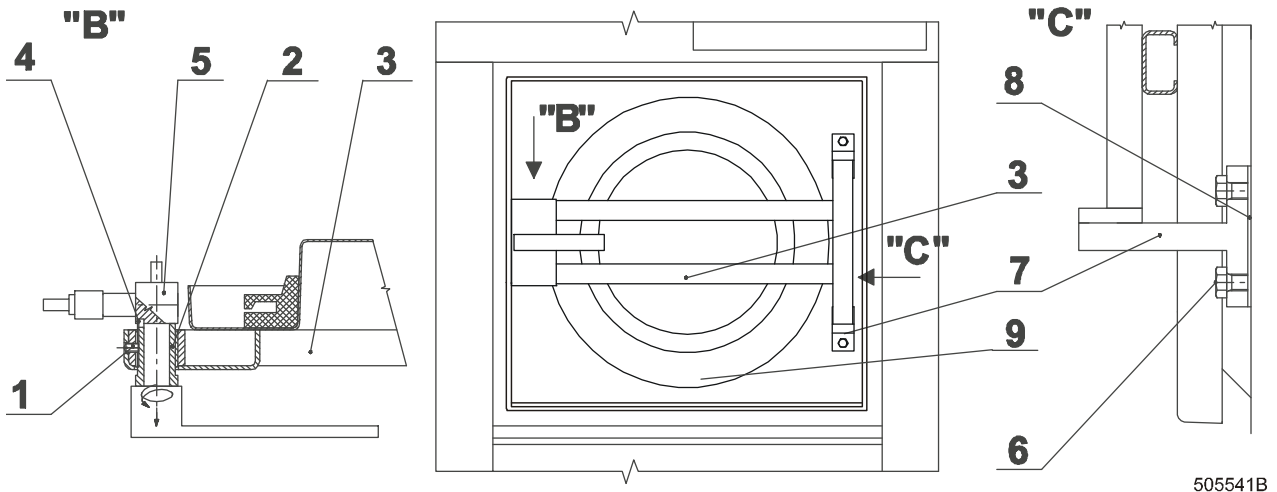


Figure 5.11.A. – Machines 33-40-55 kg / 80-100-125 lb

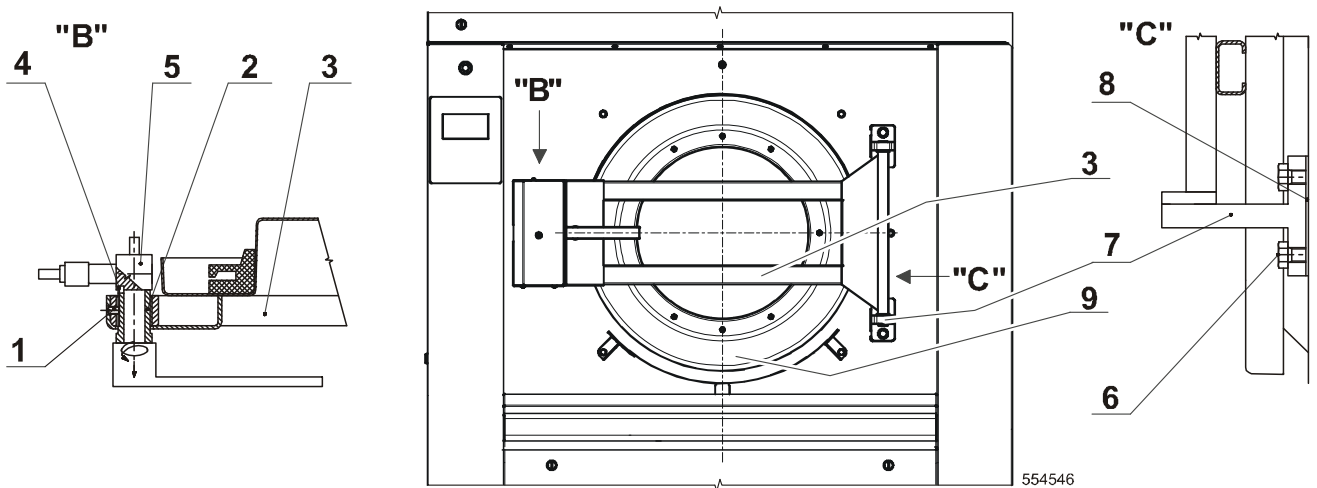


Figure 5.11.B. – Machines 80-100-120 kg / 180-230-275 lb

- | | |
|----------------------|-----------------------|
| 1. Handle bolt | 6. Hinge bolt |
| 2. Handle sleeve | 7. Hinge |
| 3. Door carrier beam | 8. Elimination washer |
| 4. Semicircle cuts | 9. Door |
| 5. Handle pin | |

ADJUSTING ON THE SIDE OF THE DOOR HINGE, FIGURES 5.11.A., 5.11.B

IF THE ADJUSTMENT AT THE DOOR HANDLE SIDE IS INSUFFICIENT, IT IS NECESSARY TO PERFORM ADJUSTMENT AT THE DOOR HINGE SIDE.

1. Loosen two bolts (6) fastening the top door hinge (7).
BE CAREFUL TO AVOID POSSIBLE FALLING OF THE DOOR WITH LOOSENED HINGE TO THE FLOOR. RISK OF INJURIES!
 2. Take off the elimination washer (8).
 3. Tighten the two bolts (6) fastening the top door hinge.
 4. Do the same with the bottom hinge.
 5. Check if the door hinge has not moved, closing and opening of the door must be smooth.
- If the thrust adjusting has not been sufficient, exchange the door seal.

5.12. SPRING UNIT

MACHINES 33-40-55 kg / 80-100-125 lb

Spring units (figures 5.12.A., pos.1) are to be adjusted in the case that you found out the suspended machine part is not in a horizontal position (without linen and water) or after the spring unit has been replaced.

⚠ WARNING!
MAIN SWITCH MUST BE OFF!

The spring unit adjusting is achieved by turning the nuts (2) with the same number of turns always simultaneously on the opposite guiding rods (3) of spring unit.

The adjustment is correct when a same gap in all four corners of the suspended machine part has been achieved, ($X = 55 \text{ mm} / 2.16''$) between the plate edge (4) of the vibrating part and the frame top surface (5).

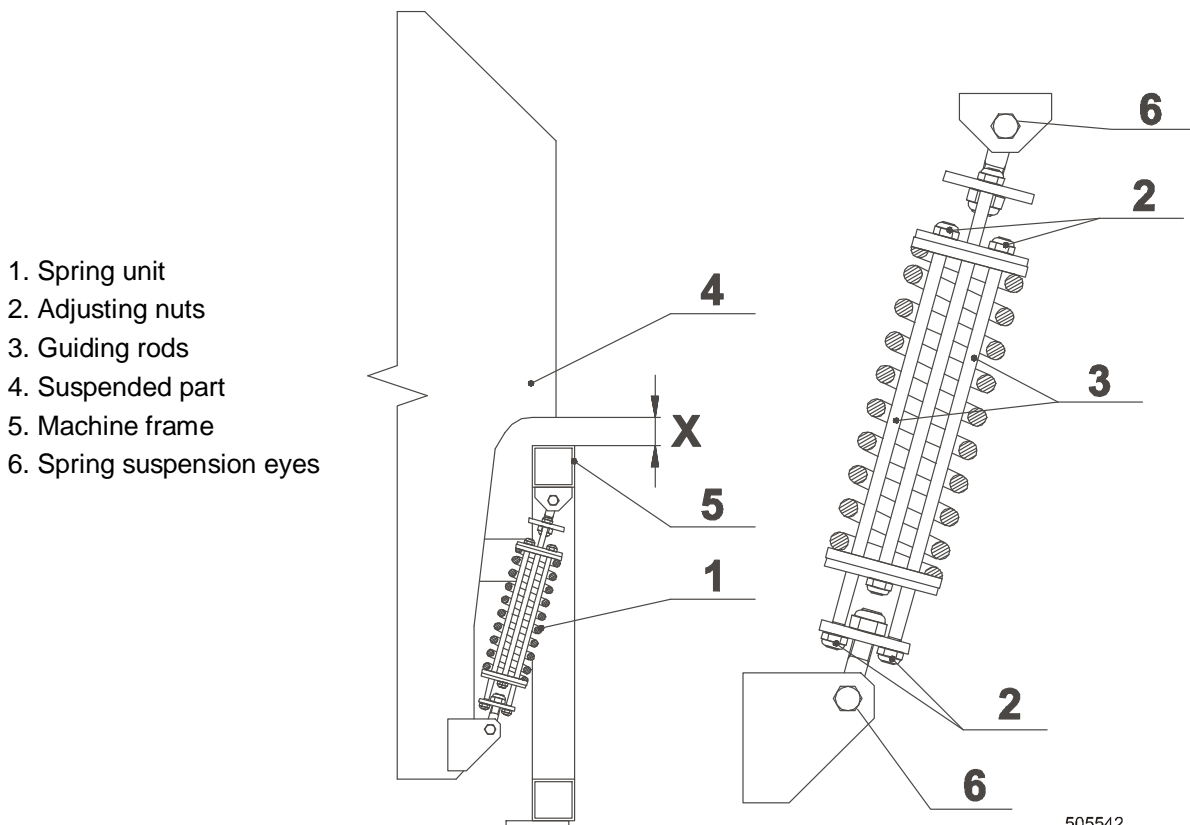


Figure 5.12.A. – Machines 33-40-55 kg / 80-100-125 lb

MACHINES 80-100-120 kg / 180-230-275 lb

Adjusted by manufacturer.

1. Spring unit
2. Machine frame
3. Suspended part
4. Spring suspension eyes
5. Guiding rods

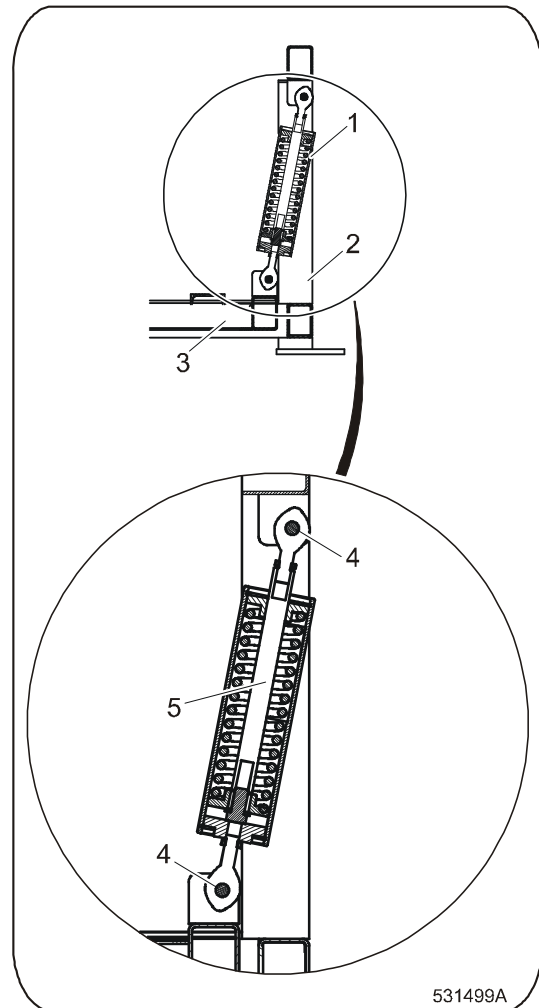


Figure 5.12.B. – Machines 80-100-120 kg / 180-230-275 lb

5.13. 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.

5.14. EARTH LEAKAGE TRIPS

If the laundry is equipped with the earth leakage trip in the inlet circuit of the electric switchboard it is necessary to test it regularly. The earth leakage trip is a very sensitive device and it provides a safety for operators avoiding a risk of an electric shock while the machine is in operation.

⚠ WARNING!

A QUALIFIED WORKER MUST PERFORM A TEST OF THE EARTH LEAKAGE TRIP FUNCTION AT LEAST ONCE IN 3 MONTHS.

THE TEST PROCEDURE:

Press the test push button of the earth leakage trip while it is under tension. **The earth leakage trip must go off!**

6. TROUBLE SHOOTING AIDS

6.1. DOOR BLOCKING

DESCRIPTION OF DOOR LOCK FUNCTION

The door lock has been designed as a compact unit. Its function is to secure the door against opening during the washing cycle. When the cycle is finished unlocking is done automatically by a programmer. The lock has been blocked also during the failure situations e.g. electric network black out, before and after the machine installation and you can unlock it in case of emergency according to the procedure hereafter described.

LOCK WITHOUT TENSION BEFORE THE PROGRAM START

It is possible to open and shut the washing machine door any time. The lock will not be blocked, coils with the latch are not active.

MAIN SWITCH AND EMERGENCY STOP BUTTON ARE SWITCHED ON

DOOR SHUTTING

The lock is secured by a blocking latch after the door is shut and the program has been started. In this moment it is not possible to open the door.

DOOR OPENING

The door can be opened after the lock is unblocked and when the blocking latch moves to the non active position. This situation occurs at the end of a program or when pressing the Stop button.

CURRENT FAILURE DURING OPERATION

When the power supply has been interrupted during a washing cycle the door lock stays in a blocked position and the door cannot be opened.

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:

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

1. Verify if all conditions are present to safely open the door.
2. MACHINES 33-40-55 kg / 80-100-125 lb:
Use a tool e.g. screwdriver, figure 6.1.A., pos.1, a piece of wire etc. which is not a part of delivery with maximum diameter \varnothing 5.5 mm / 0.21". Insert the tool through the finger protection hole into the lock cover, pos.5 and push softly.

MACHINES 80-100-120 kg / 180-230-275 lb:
Unscrew the bolt in the lock cover, figure 6.1.B. Insert a screwdriver to the hole into the lock cover and push softly.
3. By this the latch mechanism is lifted up and the lock is unblocked. The lock stays unblocked even after the tool removal.
4. Open the door if all safety conditions are fulfilled.

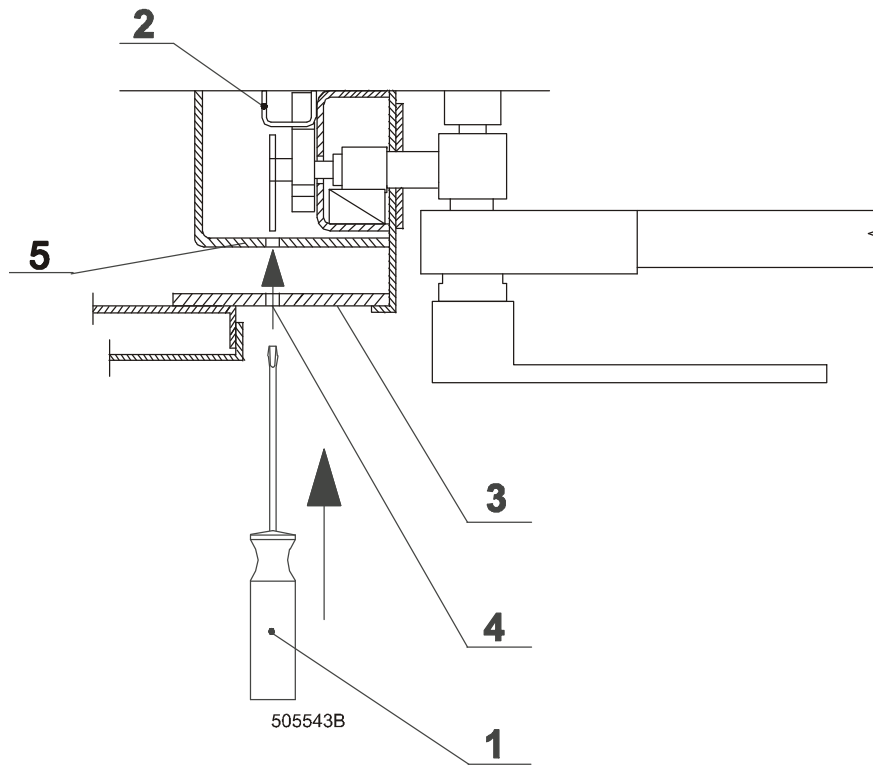


Figure 6.1.A. – Machines 33-40-55 kg / 80-100-125 lb, view from above

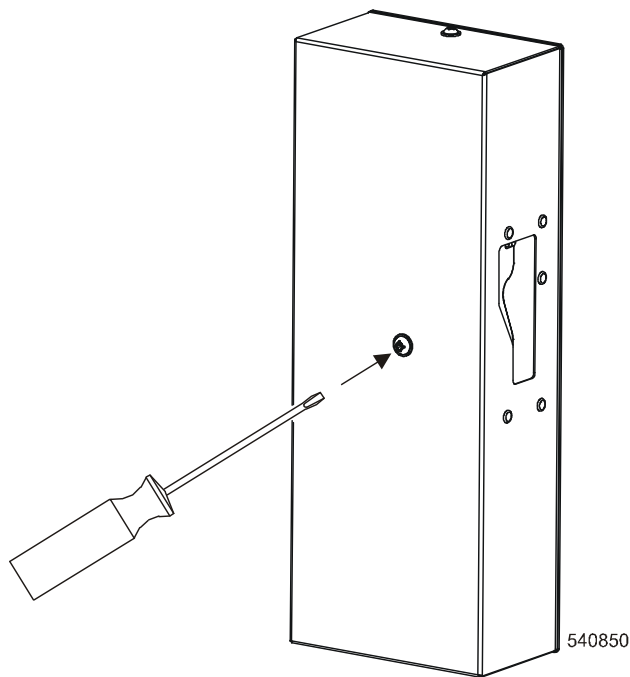


Figure 6.1.B. – Machines 80-100-120 kg / 180-230-275 lb, door lock cover

6.2. ERROR INDICATION SHOWN ON DISPLAY

See User's manual, chapter 5.

See Programming manual, chapter „Troubleshooting“.

7. LIST OF RECOMMENDED SPARE PARTS

List of recommended spare parts:

- drain valve
- 1-way inlet 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

If the machine is out of service, possibly replaced, follow the instructions.

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 rear.
3. Shut the external water or steam inlet to the machine.
4. Make sure that the external electric power 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“, „4.1. Handling, transportation and storage“.

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 LIQUIDATION BY OWN POTENTIAL

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

IMPORTANT !

MACHINE TYPE:

PROGRAMMER:

ELECTRONIC TIMER

INSTALLATION DATE:

**INSTALLATION
CARRIED OUT BY:**

SERIAL NUMBER:

ELECTRICAL DETAILS:

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

NOTE:

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

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

DEALER:

--