Washer-Extractors

Barrier Washer

Refer to Page 11 for Model Identification

Installation/Operation/Maintenance

Original Instructions
Keep These Instructions for Future Reference.
CAUTION: Read the instructions before using the machine.
(If this machine changes ownership, this manual must accompany machine.)

Alliance™ Laundry Systems

www.alliancelaundry.com

Part No. D1615ENR7
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Safety Information

Important Safety Instructions

WARNING

To reduce the risk of fire, electric shock, serious injury or death to persons when using your washer, follow these basic precautions:

W023

- Read all instructions before using the washer.
- Install the washer according the INSTALLATION instructions. Refer to the EARTHING instructions in the INSTALLATION manual for the proper earthing of the washer. All connections for water, drain, electrical power and earthing must comply with local codes and be made by licensed personnel when required. It is recommended that the machine be installed by qualified technicians.
- Do not install or store the washer where it will be exposed to water and/or weather.
- To prevent fire and explosion, keep the area around machine free from flammable and combustible products. Do not add the following substances or textiles containing traces of the following substances to the wash water: gasoline, kerosene, waxes, cooking oils, vegetable oils, machine oils, dry-cleaning solvents, flammable chemicals, thinners, or other flammable or explosive substances. These substances give off vapors that could ignite, explode or cause the fabric to catch fire by itself.
- Under certain conditions, hydrogen gas may be produced in a hot water system that has not been used for two weeks or more. HYDROGEN GAS IS EXPLOSIVE. If the hot water system has not been used for such a period, before using a washing machine or combination washer-dryer, turn on all hot water faucets and let the water flow from each for several minutes. This will release any accumulated hydrogen gas. The gas is flammable, do not smoke or use an open flame during this time.
- To reduce the risk of an electric shock or fire, DO NOT use an extension cord or an adapter to connect the washer to the electrical power source.
- Do not allow children to play on or in the washer. Close supervision of children is necessary when the washer is used near children. This appliance is not intended for use by young children or infirm persons without supervision. Young children should be supervised to ensure that they do not play with the appliance. This is a safety rule for all appliances.
- DO NOT reach and/or climb into the tub or onto the washer, ESPECIALLY if the wash drum is moving. This is an imminently hazardous situation that, if not avoided, will cause severe personal injury or death.
- Never operate the washer with any guards, panels and/or parts removed or broken. DO NOT bypass any safety devices or tamper with the controls.
- Use washer only for its intended purpose, washing textiles. Never wash machine parts or automotive parts in the machine. This could result in serious damage to the basket or tub.
- Use only low-sudsing, no-foaming types of commercial detergent. Be aware that hazardous chemicals may be present. Wear hand and eye protection when adding detergents and chemicals. Always read and follow manufacturer's instructions on packages of laundry and cleaning aids. Heed all warnings or precautions. To reduce the risk of poisoning or chemical burns, keep them out of the reach of children at all times (preferably in a locked cabinet).
- Do not use fabric softeners or products to eliminate static unless recommended by the manufacturer of the fabric softener or product.
- Always follow the fabric care instructions supplied by the textile manufacturer.
- Loading door MUST BE CLOSED any time the washer is to fill, tumble or spin. DO NOT bypass the loading door switch by permitting the washer to operate with the loading door open. Do not attempt to open the door until the washer has drained and all moving parts have stopped.
- Be aware that hot water is used to flush the supply dispenser. Avoid opening the dispenser lid while the machine is running.
- To reduce the risk of burning, do not touch the door glass when the machine is running, especially after the heating phase of the wash cycle.
- Do not attach anything to the supply dispenser's nozzles, if applicable. The air gap must be maintained.
- To avoid machine corrosion and component failure, do not use corrosive chemicals in the washer-extractor. Warranty claims related to damage caused by corrosive chemicals will be denied.
- Do not operate the machine without the water reuse plug or water reuse system in place, if applicable.
- Be sure water connections have a shut-off valve and that fill hose connections are tight. CLOSE the shut-off valves at the end of each wash day.
- Keep washer in good condition. Bumping or dropping the washer can damage safety features. If this occurs, have washer checked by a qualified service person.
- DANGER: Before inspecting or servicing machine, power supply must be turned OFF. The servicer needs to wait for at least 3 minutes after turning the power OFF and needs to check for residual voltage with a voltage meter. The inverter capacitor or EMC filter remains charged with high voltage for some time after powering OFF. This is an imminently hazardous situation that, if not avoided, will cause severe personal injury or death.

- Do not repair or replace any part of the washer, or attempt any servicing unless specifically recommended in the user-maintenance instructions or in published user-repair instructions that the user understands and has the skills to carry out. ALWAYS disconnect the washer from electrical, power and water supplies before attempting any service.
- Disconnect the power cord by grasping the plug, not the cord. Replace worn power cords and/or loose plugs. If the supply cord is damaged, it must be replaced by a special cord or assembly available from the service agent.
- Before the washer is removed from service or discarded, remove the door to the washing compartment.
- Failure to install, maintain, and/or operate this washer according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.
- 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.

NOTE: The WARNINGS and IMPORTANT SAFETY INSTRUCTIONS appearing in this manual are not meant to cover all possible conditions and situations that may occur. Common sense, caution and care must be exercised when installing, maintaining, or operating the washer.

Always contact your dealer, distributor, service agent or the manufacturer on any problems or conditions you do not understand.

NOTE: All appliances are produced according the EMC-directive (Electro-Magnetic-Compatibility). They can be used in restricted surroundings only (comply minimally with class A requirements). For safety reasons there must be kept the necessary precaution distances with sensitive electrical or electronic device(s). These machines are not intended for domestic use by private consumers in the home environment.

Safety Precautions

WARNING

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

C003

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.

C244

- Follow the instruction written in manuals and keep the manuals in a proper place by the machine for later use.
- Safety instructions included in manuals for personnel operating the appliance must be printed and posted on a visible place near the machine in the laundry room.
- The washer extractor is designed for fabrics washing only, other objects can damage the washer and can cause damage or injuries.
- If the machine is used for special applications follow the instructions and warning to avoid person injury.
- The manufacturer is not responsible for the damage to the fabrics that are washed by an inappropriate washing method.
- Always follow the instructions and/or warnings that are stated on the fabrics, washing products or cleaning products mentioned by the manufacturer.
- The washer must be set up in accordance with the instructions. All drain, inlet, electrical connections, ventilation, groundings and other connections must be done in according to the installation manual, in compliance with the local standards done by qualified technicians with proper authorization.
- The valid standards for connecting to the local power network (TT,TN,IT,…) must be followed. In the standard execution, the appliance may not be suitable for connecting to an IT supply system. Contact your commercial distributor for assistance.
- All appliances are produced according the EMC-directive (Electro-Magnetic-Compatibility). They can be used in restricted surroundings only (comply minimally with class A requirements). For safety reasons there must be kept the necessary precaution distances with sensitive electrical or electronic device(s). These machines are not intended for domestic use by private consumers in the home environment.
- Do not change the parameters of the frequency inverter. This can cause serious injury, fire, washer damage, etc.
- During transportation and storage never use excessive forces on the packing because components can be damaged protruding the contour line of the appliance.
- Use copper conductors only. This appliance must be connected to a supply circuit to which no lighting units or general-purpose receptacles are connected.
- Any changes concerning the installation which are not described in this Installation Manual must be approved by the supplier or manufacturer. Otherwise, the supplier and manufacturer are not responsible for potential injuries to operators or for any damages. Interventions in the appliance execution or

functions are not allowed, and the manufacturer refuses any responsibility in such cases.

- The washer extractor must be installed on level. If not, the washer may become unbalanced during extraction and, although fitted with an unbalance safety, the washer may become seriously damaged what may result in bodily injuries.
- Never put the washer in operation when the transporting braces are not removed. The washer should always be tested before use.
- It is possible that there are residues of products used during the production process in the new washer. These residues could cause stains on your laundry. Therefore, you must first run at least 1 hot wash with old rags before using for your normal laundry.
- Keep the appliance top and surface and the area around clean and clear of combustible or flammable products.
- The use of hypochlorite will cause corrosion which may cause component failure under certain circumstances.
- The warranty of the machine cannot be accepted in case corrosion was caused by chlorine and chlorine compounds impact.
- The washer extractor is not designed for work which may create an explosive atmosphere inside the machine and will not be used for this purpose.
- Do not expose the washer extractor to the weather, extreme low or high temperature and humidity.
- Do not store flammable materials around the appliances. Define the dangerous areas in the laundry room and obstruct an admission to them during appliances operating.
- Do not wash articles that have been previously cleaned in, wash in soaked in, or spotted with gasoline, dry-cleaning solvents, or other flammable or explosive substances as they give off vapors that could ignite or explode. Such fabrics must first be washed by hand and air dried.
- Do not add gasoline, dry-cleaning solvents, or other flammable or explosive substances to the wash water. These substances give off vapors that could ignite or explode.
- 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.
- Do not tamper the washer-extractor controls and do not bypass the safety instructions and the warnings.
- By danger turn off the main switch or other emergency disconnection devices.
- In the case of UPS being used, the emergency stop button on the machine must also be pressed when the machine is switched off to prevent battery drain.
- Do not put some part on the soap dispenser lid to held it open by filling or when the machine operates.
- Do not open the soap dispenser lid after the machine is started. The discharge or splashing of hazardous liquid can cause serious scalding and burning.
- Do not operate the appliance when parts are broken or missing or when covers are open. The appliance must not be operated until the fixed guards are put correctly in place.
- The appliance must not be stored, installed or exposed to the weather, extreme low or high temperature and humidity levels. Do not hose down the washer. NEVER allow the appliance to get wet. Avoid damp conditions where water or moisture could run down the walls and covers of the washer or cover the floor around the washer. Do not install the washer above an open gutter. Close any nearby gutters so that waste water steam cannot collect near/inside the washer.
- Check the functioning of the door lock mechanism on regular base. NEVER bypass the doorlock mechanism.
- To avoid premature bearing failure, do not operate the machine while the basket is empty.
- Disconnect the power and close all water and steam supply before cleaning, servicing and at the end of each operating day.
- Vapour or hot air can escape out of the venting. Do not cover the vent but protect it sufficiently. It serves air gap and as a vapor outlet to prevent pressure building in the washer.
- Do not repair or replace any part of the appliance or attempt any servicing unless specifically recommended in the service manual or published user-repair instructions that you understand and have the skills to carry out. Only qualified service personnel may open the appliance to carry out servicing.
- Information contained in this manual is intended for use by a qualified service technician familiar with proper and safe procedures to be followed when repairing an electrical appliance. All tests and repairs should be performed by a qualified service technician equipped with proper tools and measuring devices. All component replacements should be made by a qualified service technician using only factory approved replacement parts.
- Improper assembly or adjustment may occur if service or repair is attempted by persons other then qualified service technicians or if parts other then approved replacement parts are used. Improper assembly or adjustment can create hazardous conditions.
- There can be a risk of injury or electrical shock while performing services or repairs. Injury or electrical shock can be serious or even fatal. Consequently, extreme caution should be taken while performing voltage checks on individual components or a product. PLEASE NOTE: Except as necessary to perform a particular in servicing a product, the electrical power supply should ALWAYS be disconnected when servicing a product.
- All industrial (OPL - On Premise Laundry) washers are designed for use in Laundry with professionally trained attendants.

- Before the appliance is removed from service or discarded, remove the door.
- Any Water or Steam Leaks Must Be Repaired Immediately. Closed supply immediately.
- If any problems or failures should arise, immediately contact your dealer, serviceman or manufacturer.
- The manufacturer reserves the right to change the manuals without previous notice.
- Norm IEC335 is applied for machines with a net usable cage volume between 60 and 150 l. Norm EN60204-1 is used for a net usable cage volume above 150 l.

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.

C004

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 explosive 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.

C005

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.

C007

WARNING

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

C008

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.

C180

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.

C181

WARNING

Although the appliance may be in the "off" position, there is still electrical power to the switch supply terminals.

C186

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.

C187

WARNING

Do not allow children to play on, in or around the appliance at any time. Close supervision of children.

C188

WARNING

If the door safety lock does not work, do not use washer until the door lock mechanism is repaired.

C226

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.

C227

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.

C228

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.

C229

WARNING

The recycling tank must be installed by qualified and authorised technicians only. The installation must be done in accordance with all local standards and regulations.

C230

WARNING

Never interfere with the setting of the door handle. Never try to modify the setting or repair the handle! Any interference with its setting may lead to serious risk for the operator! A damaged or incorrectly functioning door handle must always be immediately replaced with a new original part.

C014

IMPORTANT: Before each wash cycle verify that ALL plastic soap dispenser cups are in the correct position in the Soap Dispenser even if they are not programmed or/and used, independently of the selected wash program. Before each wash cycle, verify if the Soap Dispenser lid is closed rigidly. Do not use the Soap Dispenser Cups for something else than for what they are intended.

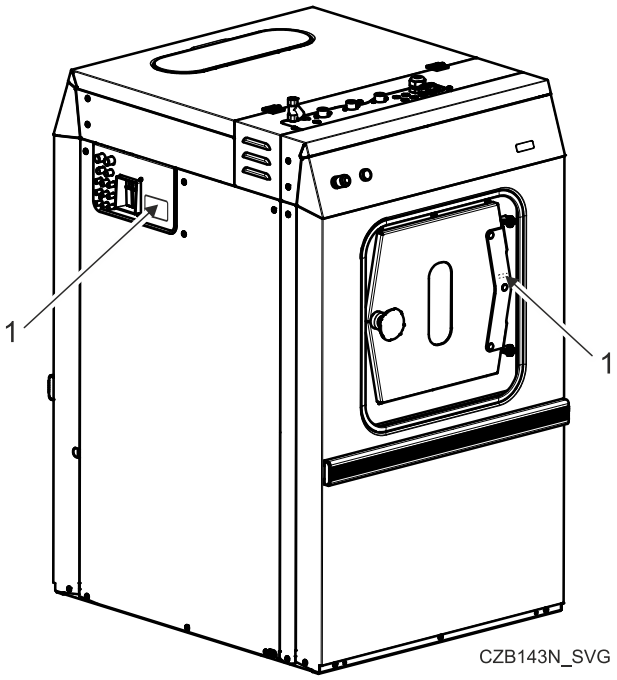
Introduction

Model Identification

Information in this manual is applicable to these models:

Models		
AFB180_X_CONTROL_PLUS	PHC180T	PHU180T
AFB240_X_CONTROL_PLUS	PHC240T	PHU240T
AFB280_X_CONTROL_PLUS	PHC280T	PHU280T
FXB180_X_CONTROL_PLUS	PHG0180T	PHX180T
FXB240_X_CONTROL_PLUS	PHG0240T	PHX240T
FXB280_X_CONTROL_PLUS	PHG0280T	PHX280T
LHC180T	PHH180T	PHY180T
LHC240T	PHH240T	PHY240T
NHC180T	PHH280T	PHY280T
NHC240T	PHU0180T	PHM180T
PHB0180T	PHU0240T	PHM240T
	PHU0280T	PHM280T

Serial Plate Location



1. Serial plate

Figure 1

The serial plate is located on the side of the machine and on the frame inside the machine.

Always provide the machine serial number when ordering parts or when seeking technical assistance.

Manufacturing Date

The manufacturing date for your unit can be found on the serial number. The last two characters indicate first the year and then the month. Refer to *Table 1* and *Table 2* . For example, a unit with serial number 520I000001DK was manufactured in May 2015.

Manufacturing Date - Year	
Year	**Serial Number Character**
2009	P
2010	R
2011	T
2012	V
2013	X
2014	B
2015	D

Table 1 *continues...*

Manufacturing Date - Year	
Year	**Serial Number Character**
2016	F
2017	H
2018	K
2019	M
2020	Q
2021	S
2022	U
2023	W
2024	Y

Table 1

Manufacturing Date - Month	
Month	**Serial Number Character**
January	A or B
February	C or D
March	E or F
April	G or H
May	J or K
June	L or M
July	N or Q
August	P or S
September	R or U
October	T or W
November	V or Y
December	X or Z

Table 2

Delivery Inspection

Upon delivery, visually inspect crate, protective cover, and unit for any visible shipping damage. If signs of possible damage are evident, have the carrier note the condition on the shipping papers before the shipping receipt is signed, or advise the carrier of the condition as soon as it is discovered.

Replacement Parts

If literature or replacement parts are required, contact the source from which the machine was purchased or contact Alliance Laundry Systems at +1(920)748-3950 for the name and address of the nearest authorized parts distributor.

Customer Service

For technical assistance, contact your local distributor or contact:

Alliance Laundry Systems

Shepard Street

P.O. Box 990

Ripon, Wisconsin 54971-0990

U.S.A.

www.alliancelaundry.com

Phone: +1(920)748-3121

Ripon, Wisconsin

Specification and Dimensions

General Specification

Machine kg / lb / L	18 / 40 / 180	24 / 55 / 240	28 / 65 / 280
Inner Drum Dimensions			
Volume, ft3 [L]	6.4 [180]	8.5 [240]	9.9 [280]
Depth, in. [mm]	16.10 [409]	21.42 [544]	25.16 [639]
Diameter, in. [mm]	29.53 [750]	29.53 [750]	29.53 [750]
Drum Speed			
Wash, (RPM)	42	42	42
Extraction, (RPM)	939	939	914
G-Factor	370	370	350
Heating			
Electrical, (kW)	12 / 18	18	21.9
Steam pressure, kPa [bar]	300 - 800 [3 - 8]		
Hot water, °F [°C]	194 [90]		
Weight and Shipping Dimensions			
Net weight, lb [kg]	948 [430]	1015 [460]	1080 [490]
Shipping weight, lb [kg]	1070 [485]	1135 [515]	1213 [550]
Shipping height, in. [mm]	63.39 [1610]	63.39 [1610]	63.39 [1610]
Shipping width, in. [mm]	39.76 [1010]	44.49 [1130]	48.82 [1240]
Shipping depth, in. [mm]	48.62 [1235]	48.62 [1235]	48.62 [1235]
Dimensions (Standard)	Refer to *Machine Dimensions (Standard Version)*.		
Drive Train Information			
Motor size, HP [kW]	2.95 [2.20]	4.02 [3]	4.02 [3]
Connection			
Water valves connection BSP, (in)	3 x ¾		
Water pressure, (kPa)	100 - 800		
Recommended water pressure, (kPa)	300 - 500		
Capacity, (l/min) at 1-8 bar	66-188		
Drain valve outer ø in. [mm]	3 [76]		
Flow amount with drain valve, (l/min)	210		

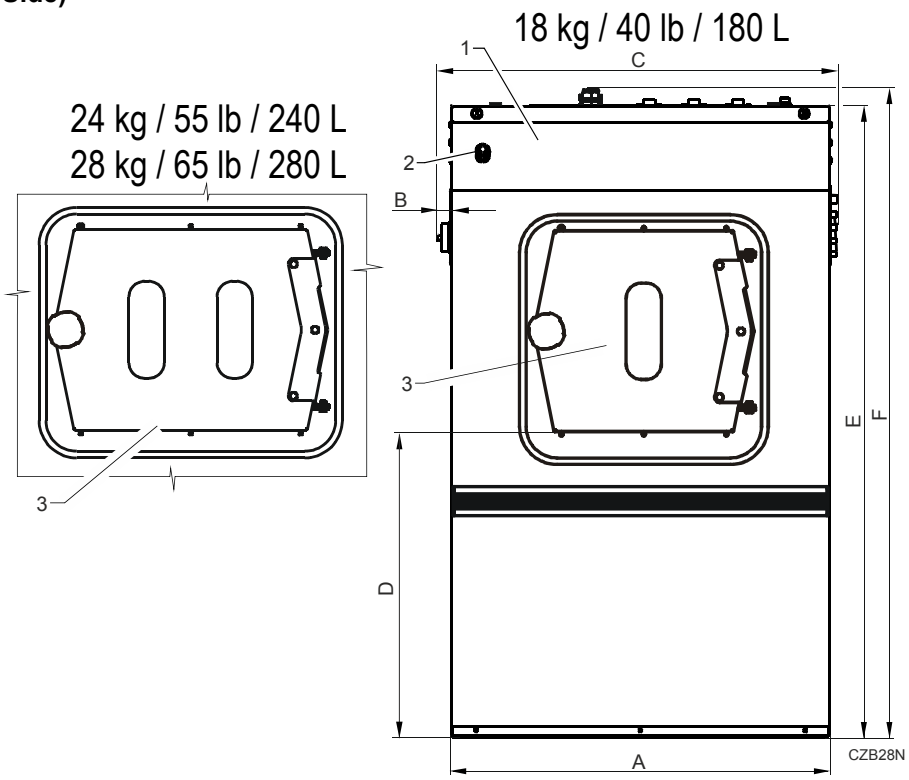
Table 3 *continues...*

Machine kg / lb / L	18 / 40 / 180	24 / 55 / 240	28 / 65 / 280
Steam valve connection BSP, (in)	½		
General Data			
Ambient temperature, °F [°C]	41-95 [5-35]		
Relative humidity	30% to 90% without condensation		
Height above sea level, ft [m]	to 3281 [1000]		
Storage temperature and shipment, °F [°C]	34-131 [1-55]		
Noise Emissions			
Wash sequence, (dB)	45	48	48
Extract sequence, (dB)	67	68	70
Floor Load Data			
Maximum static load on floor without plinth, (kN)	5.32	5.85	6.28
Maximum dynamic load on floor, (kN)	4.5 ± 0.65	4.9 ± 1.0	5.4 ± 1.05
Frequency of dynamic load, (Hz)	15.65	15.65	15.25

Table 3

Machine Dimensions (Standard Version)

Loading Side (Dirty Side)



1. Control panel
2. Emergency stop button “CENTRALSTOP”
3. Loading side door (dirty side). For door opening dimensions refer to *Table 4* .

Figure 2

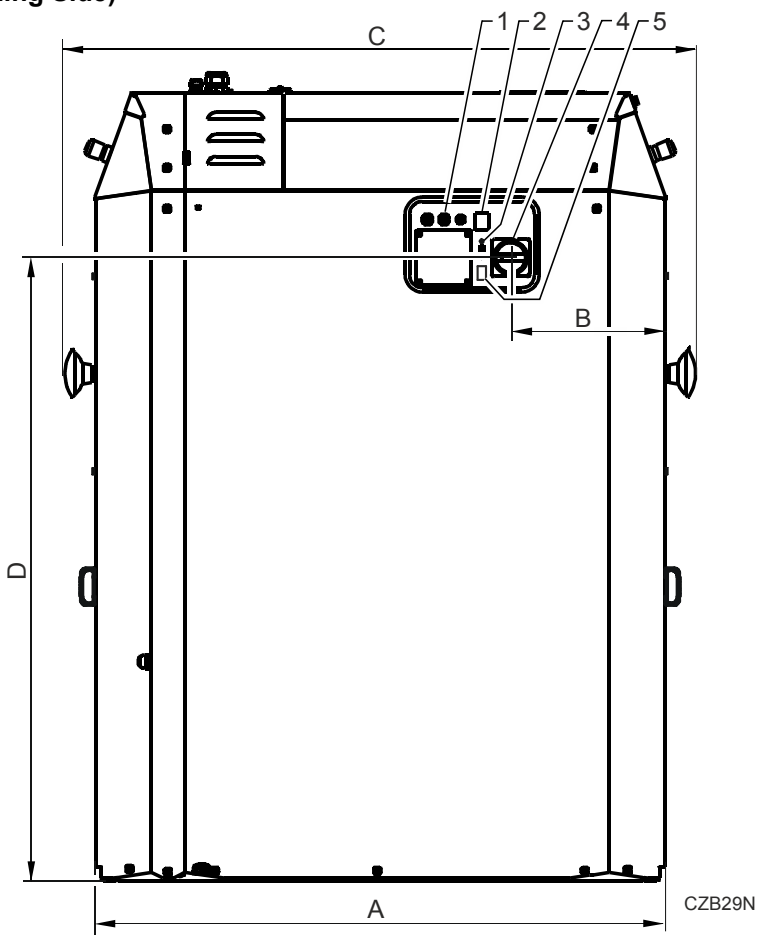
Door Opening Dimensions (Loading Side)			
	Machine kg / lb / L		
Specification	18 / 40 / 180	24 / 55 / 240	28 / 65 / 280
Width, in. [mm]	14.8 [376]	19.52 [496]	19.52 [496]
Height, in. [mm]	12.79 [325]	12.79 [325]	12.79 [325]

Table 4

Machine Dimensions (Loading Side), in. [mm]			
Specification	Machine kg / lb / L		
	18 / 40 / 180	24 / 55 / 240	28 / 65 / 280
A	33.46 [850]	38.18 [970]	42.52 [1080]
B	1.22 [31]	1.22 [31]	1.22 [31]
C	35.43 [900]	40.16 [1020]	44.49 [1130]
D	25.79 [655]	26.58 [675]	26.38 [670]
D - version with weighing system or with a steel base	31.69 [805]	32.48 [825]	32.28 [820]
E	56.02 [1423]	56.02 [1423]	56.02 [1423]
E - version with weighing system or with a steel base	61.93 [1573]	61.93 [1573]	61.93 [1573]
F	57.28 [1455]	57.28 [1455]	57.28 [1455]
F - version with weighing system or with a steel base	63.19 [1605]	63.19 [1605]	63.19 [1605]

Table 5

Left Side (View from Loading Side)



1. Main switch
2. Heating change-over switch (electric heating, steam heating), (on request)
3. USB port, (on request)
4. Fuses
5. PC programming connection (on request)

Figure 3

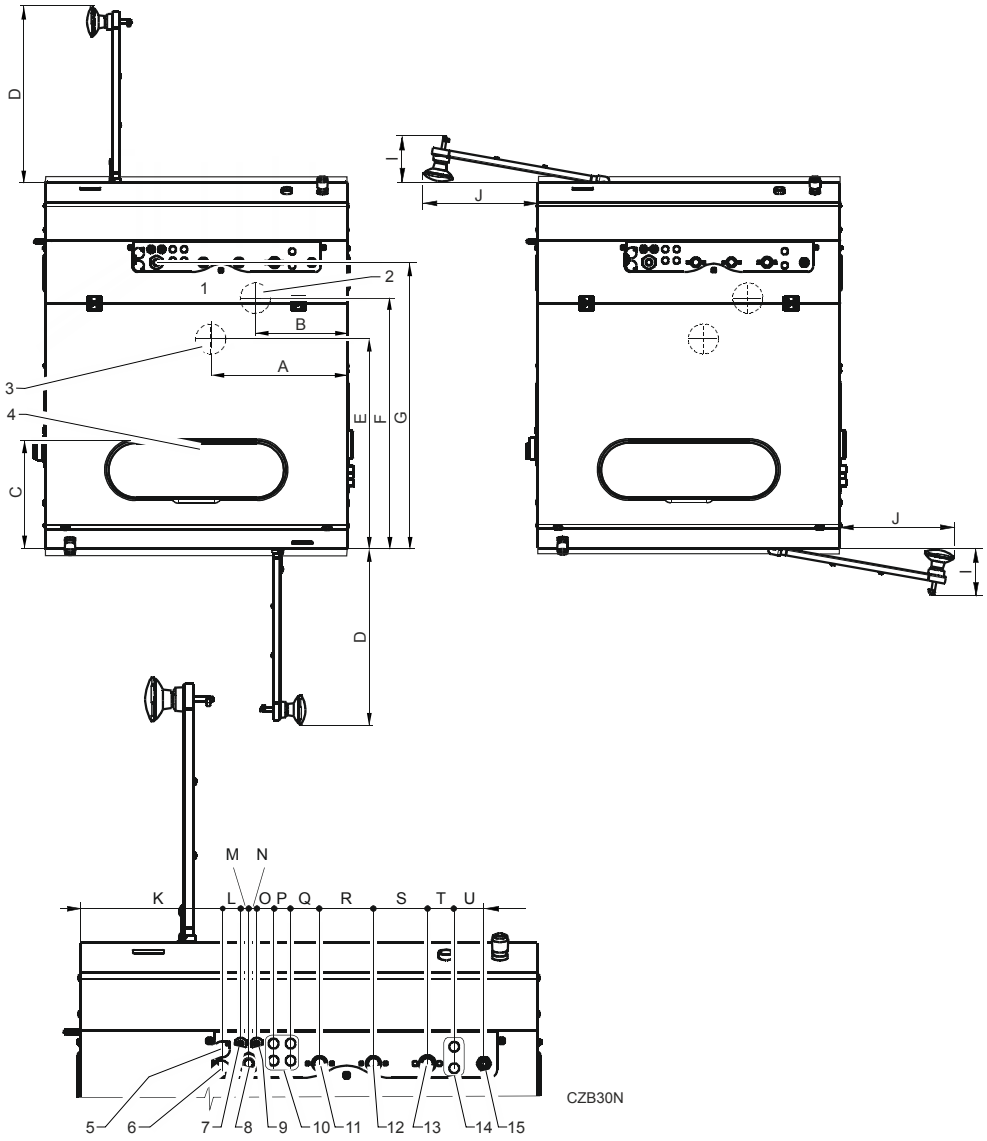
Machine Dimensions (Left Side), in. [mm]			
Specification	Machine kg / lb / L		
	18 / 40 / 180	24 / 55 / 240	28 / 65 / 280
A	40.35 [1025]	40.35 [1025]	40.35 [1025]
B	10.91 [277]	10.91 [277]	10.91 [277]
C	45.08 [1145]	45.08 [1145]	45.08 [1145]
D	44.37 [1127]	44.37 [1127]	44.37 [1127]

Table 6 *continues...*

Machine Dimensions (Left Side), in. [mm]			
Specification	Machine kg / lb / L		
	18 / 40 / 180	24 / 55 / 240	28 / 65 / 280
D - version with weighing system or with a steel base	50.27 [1277]	50.27 [1277]	50.27 [1277]

Table 6

View from Above



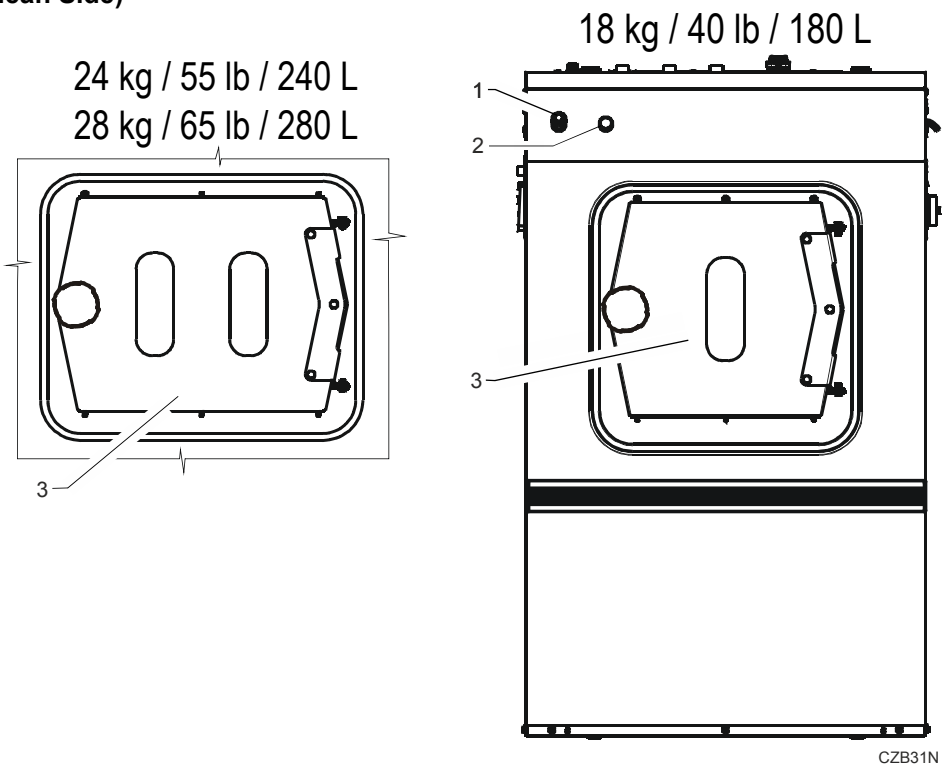
1. Standard
2. Drain, (standard 1 x 3 in.)
3. Drain into the water recycle, (1 x 3 in., on request for water recycle)
4. Soap dispenser
5. Connector for connecting visual end of cycle indication, unloading side (clean side), (on request)
6. Connector for connecting visual end of cycle indication, loading side (dirty side), (on request)
7. Electrical connection to liquid soap pumps
8. Electrical supply connection
9. Cable inlet - cable for control of the valve or pump of water from the water recycle (on request for water recycle)
10. Lubrication system – external placement (on request). Refer to *Lubrication*.
11. Hot water
12. Cold water hard
13. Cold water soft
14. Additional inlets of liquid soap detergents, placed on the panel (on request)
15. Steam connection (steam version) ½ in.

Figure 4

Machine Dimensions (View from Above), in. [mm]			
Specification	Machine kg / lb / L		
	18 / 40 / 180	24 / 55 / 240	28 / 65 / 280
A	15.11 [384]	15.62 [397]	16.30 [414]
B	10.19 [259]	9.92 [252]	10.59 [269]
C	11.81 [300]	11.81 [300]	11.81 [300]
D	19.53 [496]	24.37 [619]	24.37 [619]
E	23.14 [588]	23.14 [588]	23.14 [588]
F	27.67 [703]	27.67 [703]	27.67 [703]
G	31.61 [803]	31.61 [803]	31.61 [803]
I	5.87 [149]	6.69 [170]	6.69 [170]
J	12.64 [321]	17.40 [442]	15.24 [387]
K	10.35 [263]	10.35 [263]	12.32 [313]
L	1.38 [35]	1.38 [35]	1.38 [35]
M	0.59 [15]	0.59 [15]	0.59 [15]
N	0.59 [15]	0.59 [15]	0.59 [15]
O	1.22 [31]	2.99 [76]	2.99 [76]
P	1.26 [32]	1.26 [32]	1.26 [32]
Q	2.13 [54]	3.90 [99]	4.09 [104]
R	3.94 [100]	3.94 [100]	3.94 [100]
S	3.94 [100]	3.94 [100]	3.94 [100]
T	1.97 [50]	3.15 [80]	5.31 [135]
U	2.17 [55]	2.17 [55]	2.17 [55]

Table 7

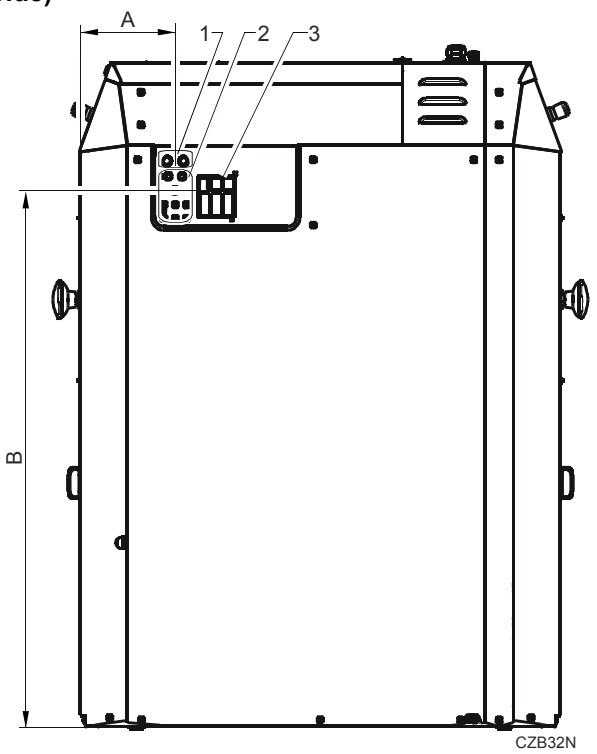
Unloading Side (Clean Side)



1. Emergency stop button “CENTRALSTOP”
2. Signal of machine running
3. Unloading side door (clean side)

Figure 5

Right Side (View from Loading Side)



1. Inlet of water from the recycle (external diameter 0.75 in. [19mm])
2. Connection liquid soap
3. Air relieve

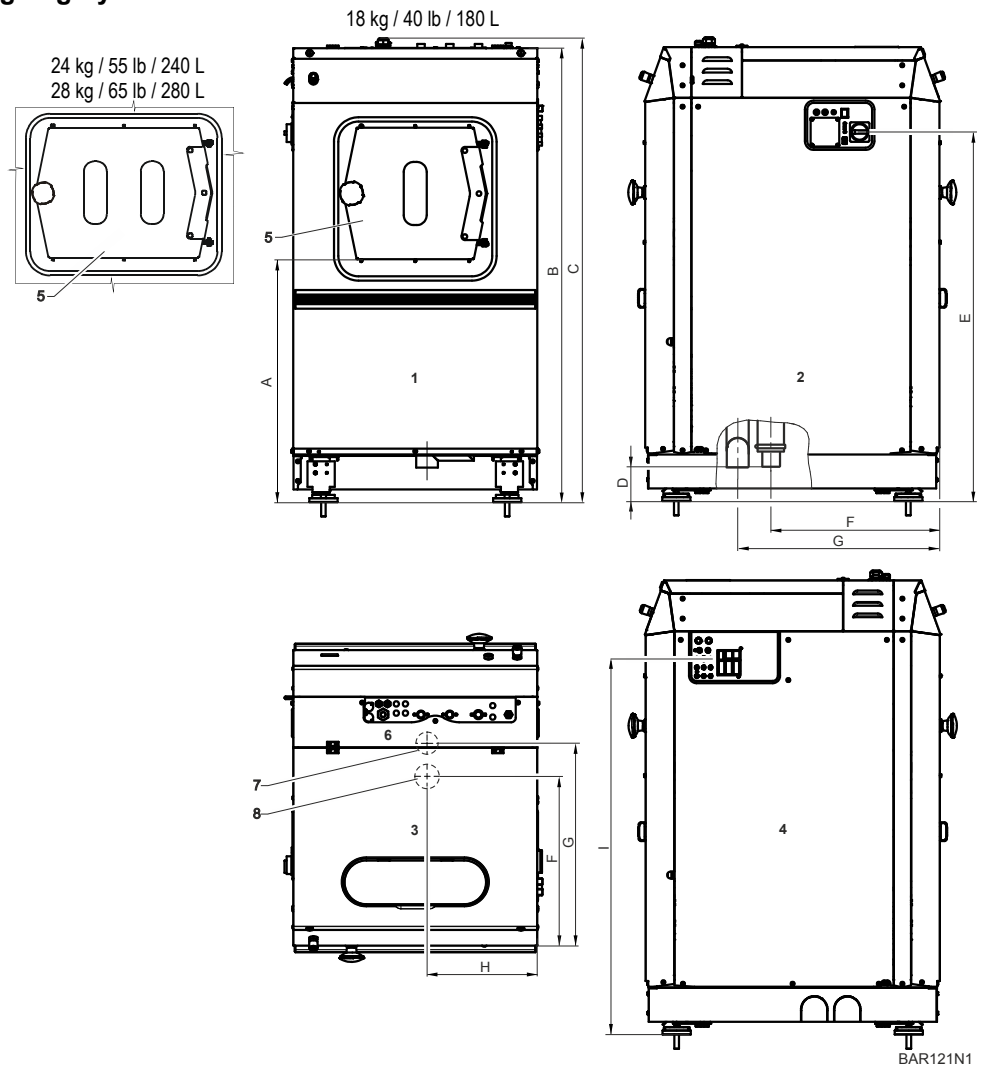
Figure 6

Machine Dimensions (Right Side) , in. [mm]			
Specification	Machine kg / lb / L		
	18 / 40 / 180	24 / 55 / 240	28 / 65 / 280
A	7.95 [202]	7.95 [202]	7.95 [202]
B	45.28 [1150]	42.28 [1150]	42.28 [1150]
B - version with weighing system or with a steel base	51.18 [1300]	51.18 [1300]	51.18 [1300]

Table 8

Machine Dimensions with Weighing System and Drain Placed underneath the Machine in the Central Part (on Request)

Version with Weighing System and Drain Placed underneath the Machine in the Central Part



1. Loading side (dirty side)
2. Left side (view from loading side)
3. View from above
4. Right side (view from loading side)
5. Loading side door (dirty side). For door opening dimensions refer to *Table 4* .
6. Standard
7. Drain, (standard 1 x 3 in.)
8. Drain into the water recycle, (1 x 3 in., on request for water recycle)

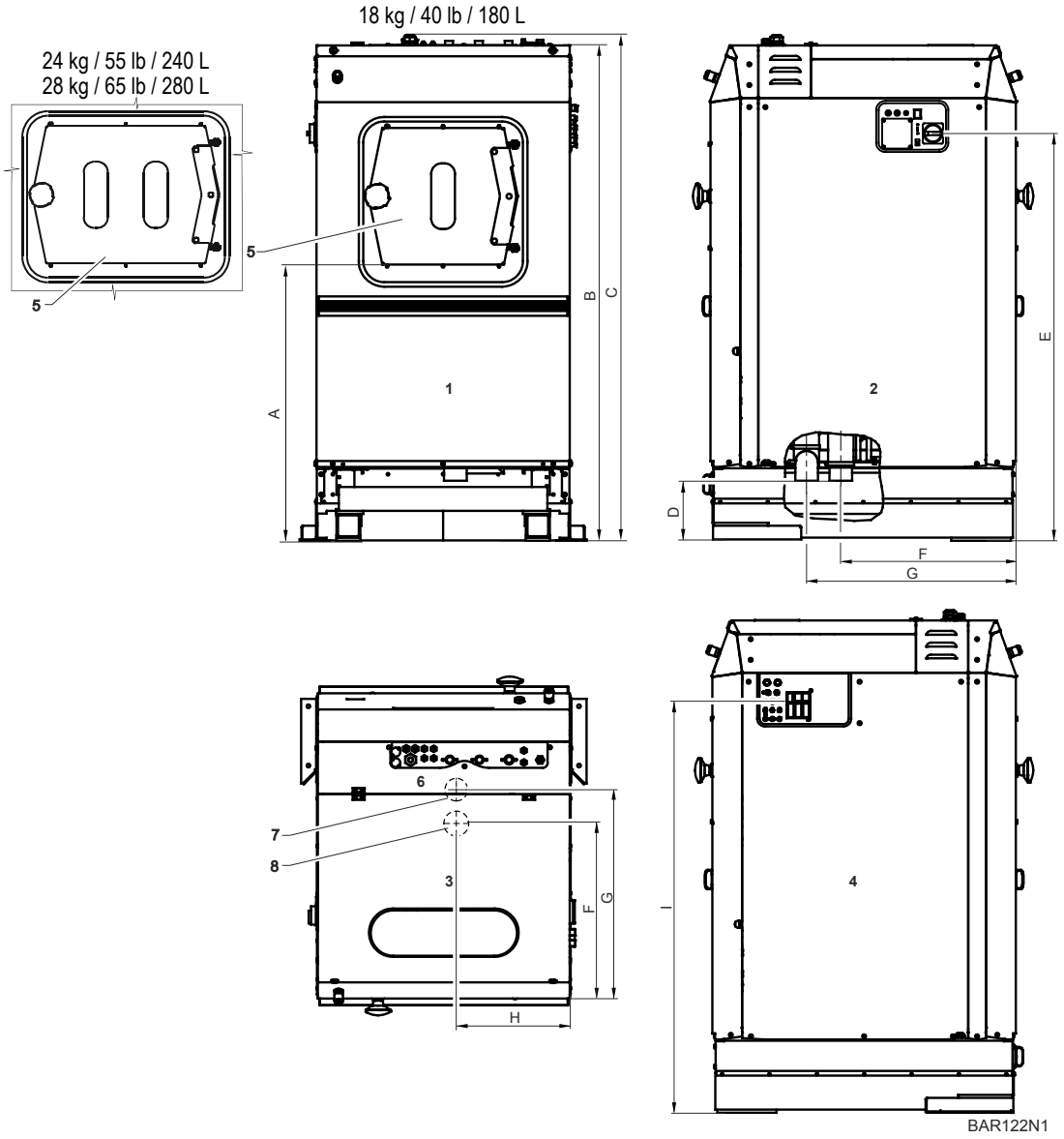
Figure 7

Machine Dimensions with Weighing System and Drain Placed underneath the Machine in the Central Part, in. [mm]			
Specification	**Machine kg / lb / L**		
	18 / 40 / 180	**24 / 55 / 240**	**28 / 65 / 280**
A*	32.28 [820]	33.07 [840]	32.87 [835]
B*	62.28 [1582]	62.28 [1582]	62.28 [1582]
C*	63.54 [1614]	63.54 [1614]	63.54 [1614]
D*	~ 4.72 [120]	~ 4.72 [120]	~ 4.72 [120]
E*	50.63 [1286]	50.63 [1286]	50.63 [1286]
F	23.14 [588]	23.14 [588]	23.14 [588]
G	27.67 [703]	27.67 [703]	27.67 [703]
H	15.12 [384]	17.48 [444]	19.65 [499]
I*	51.54 [1309]	51.54 [1309]	51.54 [1309]
* Dimensions specified with anchoring pads. For dimensions without the anchoring pads, deduct 0.35 in. [9mm] . For other dimensions refer to *Machine Dimensions (Standard Version)*.			

Table 9

Machine Dimensions with Weighing System, with Drain Placed underneath the Machine in the Central Part and with a Handling Base (on Request)

Version with Weighing System, with Drain Placed underneath the Machine in the Central Part and with a Handling Base



1. Loading side (dirty side)
2. Left side (view from loading side)
3. View from above
4. Right side (view from loading side)
5. Loading side door (dirty side). For door opening dimensions refer to *Table 4* .
6. Standard
7. Drain, (standard 1 x 3 in.)
8. Drain into the water recycle, (1 x 3 in., on request for water recycle)

Figure 8

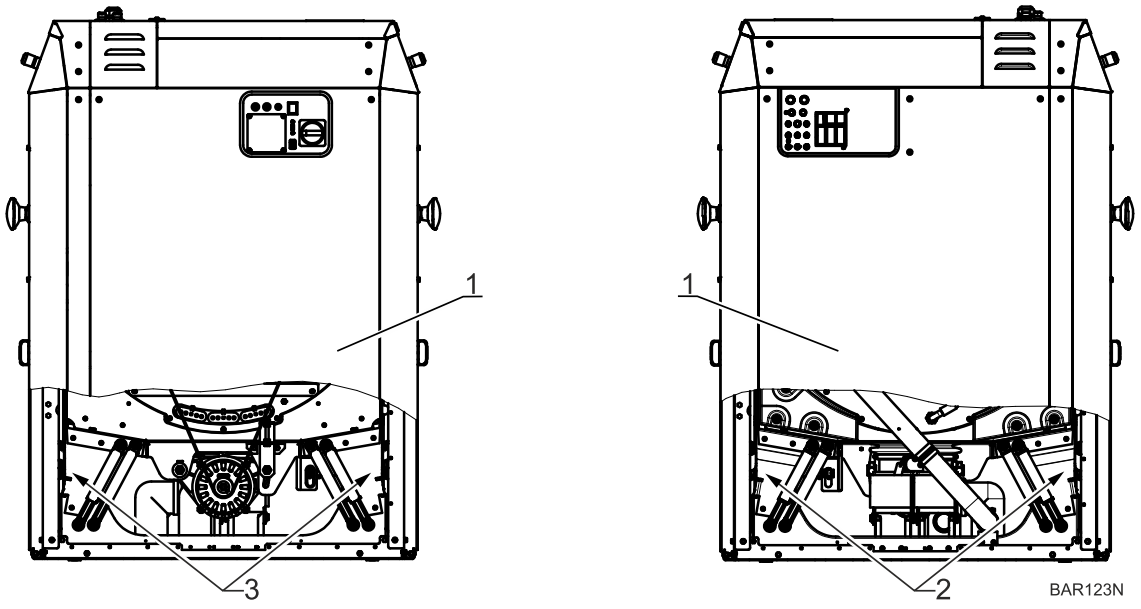
Machine Dimensions with Weighing System, with Drain Placed underneath the Machine in the Central Part and with a Handling Base, in. [mm]			
Specification	**Machine kg / lb / L**		
	18 / 40 / 180	**24 / 55 / 240**	**28 / 65 / 280**
A	35.47 [901]	36.26 [921]	36.06 [916]
B	65.47 [1663]	65.47 [1663]	65.47 [1663]
C	66.73 [1695]	66.73 [1695]	66.73 [1695]
D	~ 7.91 [201]	~ 7.91 [201]	~ 7.91 [201]
E	53.82 [1367]	53.82 [1367]	53.82 [1367]
F	23.14 [588]	23.14 [588]	23.14 [588]
G	27.67 [703]	27.67 [703]	27.67 [703]
H	15.12 [384]	17.48 [444]	19.65 [499]
I	54.72 [1390]	54.72 [1390]	54.72 [1390]
For other dimensions refer to *Machine Dimensions (Standard Version)*.			

Table 10

Installation

Handling Transport and Storage

Removing Side Panels and Transport Holders



1. Side panels
2. Transport holders
3. Transport holders

Figure 9

The machine is delivered bolted onto the transport pallet and packed in a shrink-wrap foil or box.

1. Remove packing from the machine.
2. Remove side panels. Refer to *Figure 9* , pos. 1.
3. Remove the bolts between the machine and pallet.
4. Mount side panels.

   NOTE: When the machine is lifted off the pallet: Make sure that the machine does not come down on the floor with either of the corners first. The panel of the machine can be damaged.
5. Place the machine on its final position. Refer to *Figure 10* and *Figure 11* .

The machine also comes with transport safety devices (four plate angles between the support and the drum). In order to remove the safety devices:

1. Remove side panels. Refer to *Figure 9* , pos. 1.
2. Remove metal transport holders. Refer to *Figure 9* , pos. 2, 3.
3. Mount side panels.

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

Placement into Hygienic Barrier

Placement into Hygienic Barrier

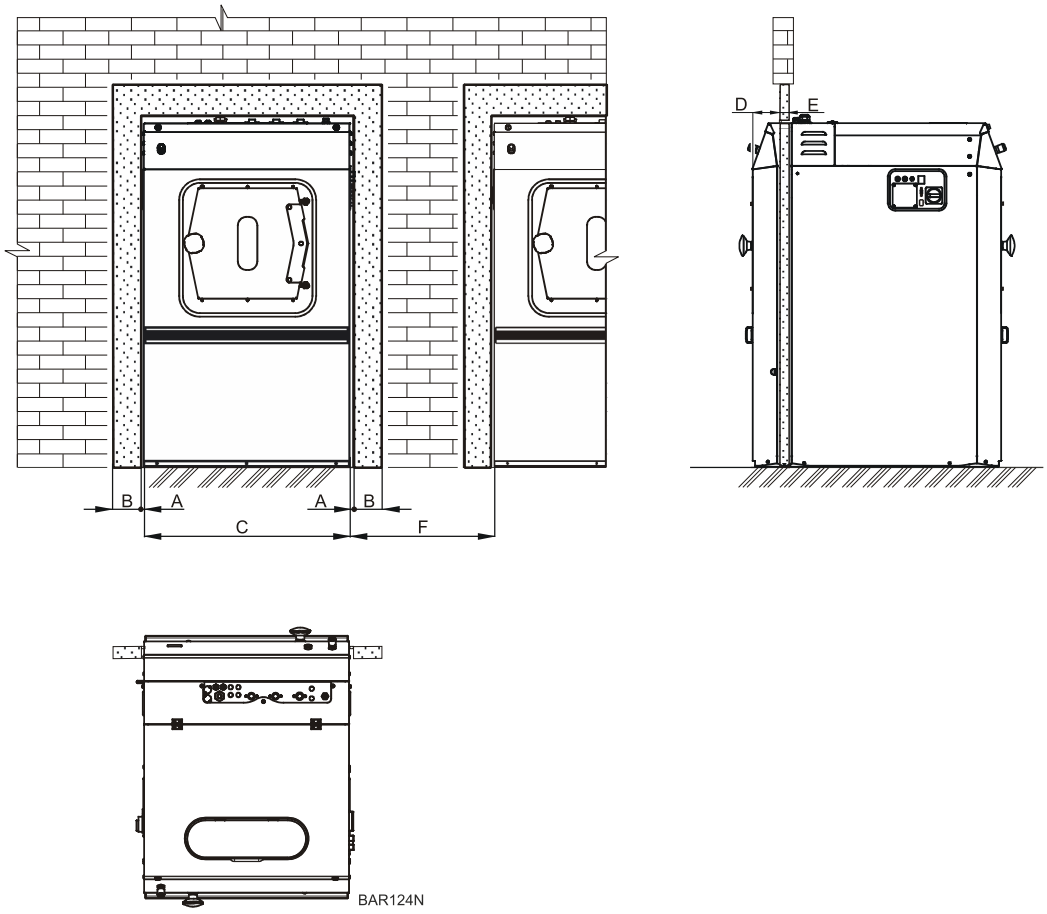


Figure 10

Placement into Hygienic Barrier, dimensions in. [mm]			
Specification	**Machine kg / lb / L**		
	18 / 40 / 180	**24 / 55 / 240**	**28 / 65 / 280**
A	0.98 [25]	0.98 [25]	0.98 [25]
B	6.88 [175]	6.88 [175]	6.88 [175]
C	33.46 [850]	38.18 [970]	42.52 [1080]
D	4.33 [110]	4.33 [110]	4.33 [110]
E	max. 1.97 [50]	max. 1.97 [50]	max. 1.97 [50]

Table 11 *continues...*

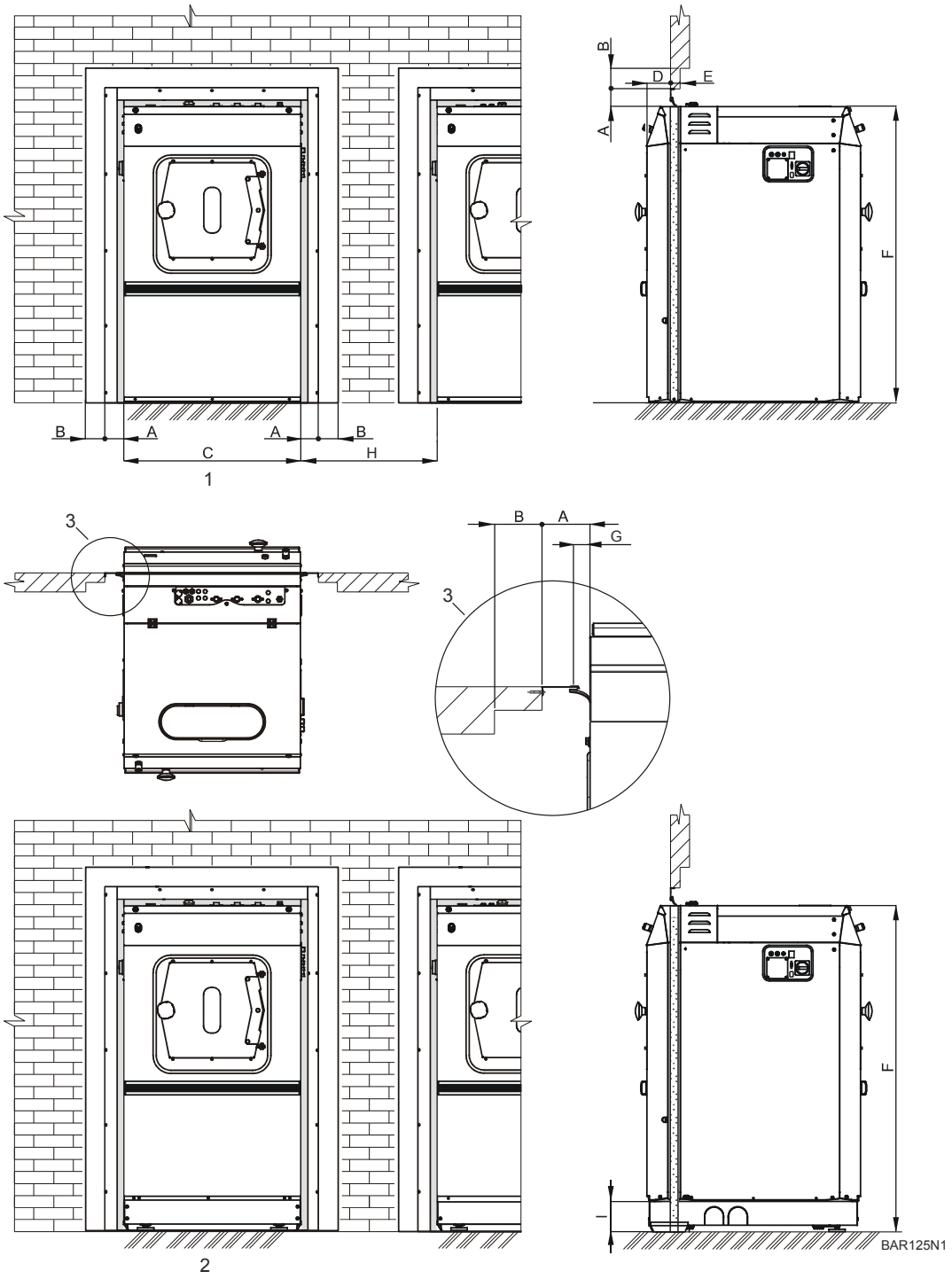
Placement into Hygienic Barrier, dimensions in. [mm]			
Specification	Machine kg / lb / L		
	18 / 40 / 180	24 / 55 / 240	28 / 65 / 280
F	min. 23.62 [600] - Standard Version min. 5.91 [150] - Version with weighing system, with drain placed underneath the machine in the central part and with a handling base (on request)		

Table 11

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

Placement into Hygienic Barrier with Guards (on Request)

Placement into Hygienic Barrier with Guards



1. Version with guards for the hygienic barrier (on request)
2. Version with weighing system or with steel base and guards for the hygienic barrier (on request)
3. Detail of hygienic barrier

Figure 11

Placement into Hygienic Barrier with Guards, dimensions in. [mm]			
Specification	**Machine kg / lb / L**		
	18 / 40 / 180	**24 / 55 / 240**	**28 / 65 / 280**
A	3.94 [100]	3.94 [100]	3.94 [100]
B	3.94 [100]	3.94 [100]	3.94 [100]
C	33.46 [850]	38.18 [970]	42.52 [1080]
D	4.33 [110]	4.33 [110]	4.33 [110]
E	max. 1.97 [50]	max. 1.97 [50]	max. 1.97 [50]
F	56.02 [1423]	56.02 [1423]	56.02 [1423]
F - version with weighing system or with a steel base	61.93 [1573]	61.93 [1573]	61.93 [1573]
F - version with weighing system and drain placed underneath the machine in the central part with anchoring pads	62.28 [1582]	62.28 [1582]	62.28 [1582]
F - version with weighing system, with drain placed underneath the machine in central part and with a handling base	65.47 [1663]	65.47 [1663]	65.47 [1663]
G	0.98 [25]	0.98 [25]	0.98 [25]
H	min. 23.62 [600] - Standard Version min. 5.91 [150] - Version with weighing system, with drain placed underneath the machine in the central part and with a handling base (on request)		
I	5.9 [150]	5.9 [150]	5.9 [150]

Table 12

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

Mechanical Installation

WARNING

Always consult the static requirements with a static engineer in order to meet the requirements of permissible loads, vibrations and noise level in the building! The manufacturer does not recommend installing the washing machine in a room with a cellar underneath or on a floor having rooms underneath. It is of utmost importance that the machine is placed in level, from side to side as well as front to rear. If the machine is not properly leveled, it may result in out-of-balance without a real out of balance in the drum. Never install the machine on surface consisting of vinyl!

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For the version with weighing system or version with weighing system and drain underneath the machine in the central part refer to the following chapters.

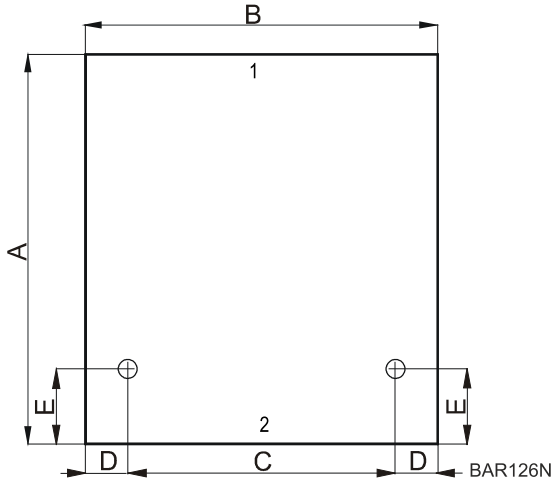
Mechanical Installation without Weighing System and with a Steel Base - Plinth

It is not necessary to anchor the machines by anchoring bolts. The exceptions when the machines must be anchored follow: machine installed on a metal base or elevated base platform, machine installed on uneven or tilted floor, on slippery surface or floor with variable surface structure. Anchoring is also necessary in any other cases when there is a risk of the machine moving along the floor surface during operation.

Anchoring procedure:

1. Secure the machine to the floor by two anchoring bolts. The anchoring bolts are not supplied with the machine.
2. Drill two holes of diameter 0.78 in. [20mm] and depth 3.74 in. [95mm] in the positions shown for the anchoring bolts (on request). Refer to *Figure 12* .
3. Lift the machine in the bottom frame.
4. Place the machine over the two drilled holes.
5. Check that the machine is in level. If not, use appropriate washers to level it up.
6. Mount the anchoring bolts in the holes drilled in the floor.
7. Fit the washers and nuts and tighten well.

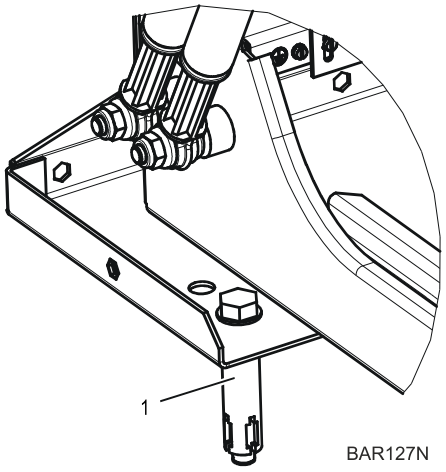
Drilling Points for Anchoring Bolts



1. Unloading side (clean side)
2. Loading side (dirty side)

Figure 12

Anchoring Bolt



1. Anchoring bolt (not part of the machine supply)

Figure 13

Mechanical Installation without Weighing System and with a Steel Base - Plinth, dimensions in. [mm]

Machine kg / lb / L	A	B	C	D	E
18 / 40 / 180	40.35 [1025]	33.46 [850]	25.98 [660]	3.74 [95]	8.46 [215]
24 / 55 / 240	40.35 [1025]	38.18 [970]	31.29 [795]	3.44 [87.5]	8.46 [215]
28 / 65 / 280	40.35 [1025]	42.52 [1080]	34.25 [870]	4.13 [105]	8.46 [215]

Table 13

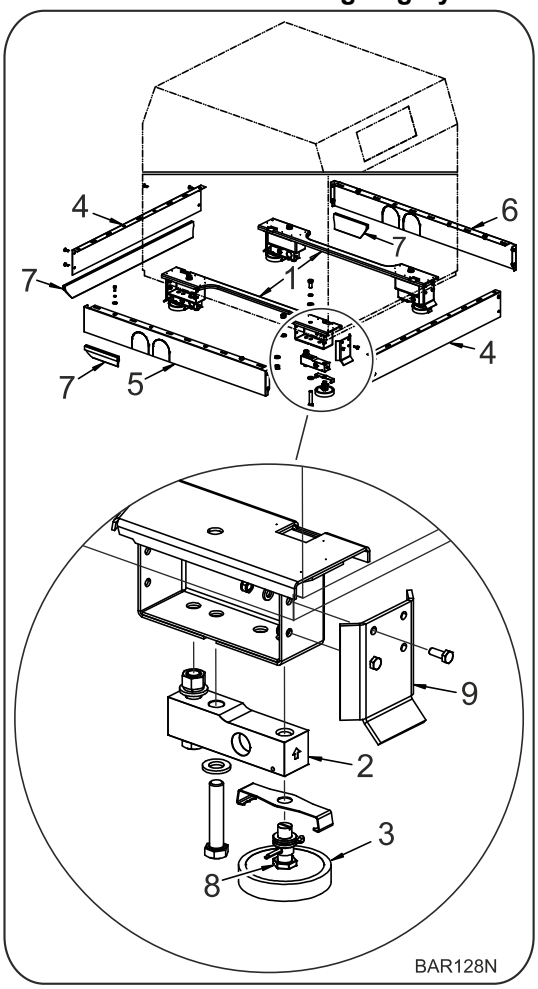
Mechanical Installation with Weighing System (on Request)

Refer to *Figure 14* .

1. Lift up the machine. Install the stands (1) underneath the machine.
2. Install load sensors (2) with their rubber leveling legs (3) and sensor guards (9) – (on request) onto the stands.
3. It is advisable to use anchoring pads (supplied on request) fixed to the floor underneath the weighing system. They serve the purpose of placing the machine back in its exact position after it has been slid out of the row. Drill four holes ø 0.63 in. [16mm] into the floor for the placement of the anchoring pads. These holes should be 2.36 in. [60mm] deep. Refer to *Figure 16* .
4. Check that all the stands and load sensors with rubber leveling legs are correctly placed on the machine frame and tightened.
5. Place the machine in the required position.
6. Check that all the rubber leveling legs of the load sensors are stable.
7. Remove the transport safety devices (transport props).
8. Use a water-level to check that the lower frame of machine is positioned totally level.
9. Attach hoses for water supply to the machine. 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.

   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.
10. Install the covers (4), (5) and (6). In case that the machine is placed in a hygienic barrier, install also the sealing profile (7).
11. 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. Refer to *Figure 15* .

Mechanical Installation with Weighing System



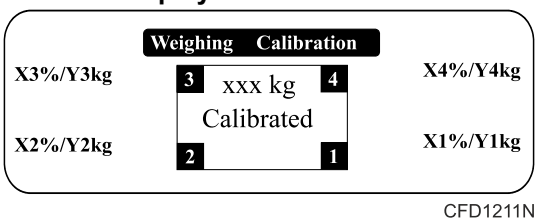
1. Stands
2. Load sensors
3. Leveling leg
4. Front and rear cover
5. Side cover
6. Side cover
7. Sealing profile
8. Nut
9. Sensor guards

Figure 14

Adjustment of Load Sensors

To adjust the load sensors refer to the Advanced Menu - Weighing - Load cell calibration.

Load Sensors Display



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

Y1, Y2, Y3, Y4 – load of each load sensor in kilograms.

Figure 15

In case that the load sensors are outside the specified range, it is necessary to adjust the leveling legs of load sensors. Each load sensor leveling leg can be adjusted within the range of 0.19 in. [5mm] .

Adjustment Procedure

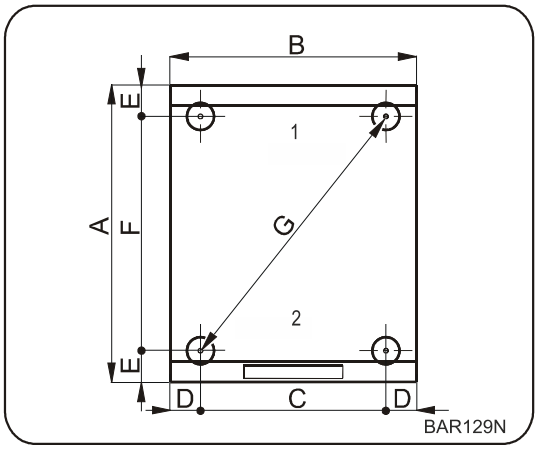
Refer to *Figure 14* .

1. Lift up the machine.
2. Loosen the nut (8) and turn the leveling leg (3) in order to achieve the required position.
3. Tighten the nut (8).
4. Put the machine down and verify that the load applied to each sensor is within the specified range.

Mechanical Installation with Weighing System and Drain Placed underneath the Machine in the Central Part (on Request)

- Placement of drain underneath the machine - approximately in the middle of it - is only possible in combination with the weighing system.
- This solution enables installation of machines in a row next to one another with a minimum clearance of 4.72 in. [120mm] between the machines.
- The machine can be slidden out of the row (for maintenance and servicing purposes) by means of a manual stacking truck. It is necessary to proceed very carefully when handling with the lower part of the machine so that no components get damaged.
- It is advisable to use anchoring pads (supplied on request) fixed to the floor underneath the weighing system. They serve the purpose of placing the machine back in its exact position after it has been slid out of the row. Refer to *Figure 17* . Drill four holes ø 0.63 in. [16mm] into the floor for the placement of the anchoring pads. These holes should be 2.36 in. [60mm] deep. Refer to *Figure 16* .

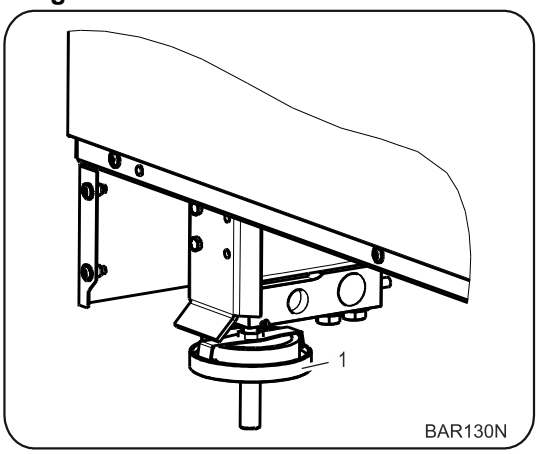
Drilling Points for Anchoring Bolts



1. Unloading side (clean side)
2. Loading side (dirty side)

Figure 16

Anchoring Pad



1. Anchoring pad (on request)

Figure 17

Mechanical Installation with Weighing System and Drain Placed underneath the Machine in the Central Part, dimesions in. [mm]

Machine kg / lb / L	A	B	C	D	E	F	G
18 / 40 / 180	40.35 [1025]	33.46 [850]	25.20 [640]	4.13 [105]	4.27 [108.5]	31.81 [808]	40.59 [1031]
24 / 55 / 240	40.35 [1025]	38.18 [970]	30.51 [775]	3.84 [97.5]	4.27 [108.5]	31.81 [808]	44.09 [1120]

Table 14 *continues...*

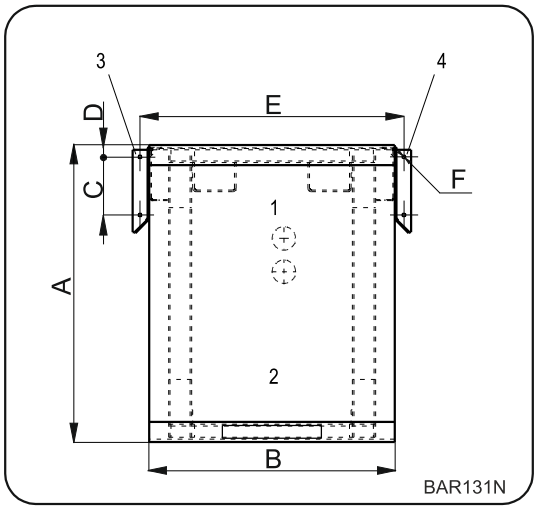
Mechanical Installation with Weighing System and Drain Placed underneath the Machine in the Central Part, dimesions in. [mm]							
Machine kg / lb / L	**A**	**B**	**C**	**D**	**E**	**F**	**G**
28 / 65 / 280	40.35 [1025]	42.52 [1080]	33.46 [850]	4.53 [115]	4.27 [108.5]	31.81 [808]	46.18 [1173]

Table 14

Mechanical Installation with Weighing System, with Drain Placed underneath the Machine in the Central Part and with a Handling Base (on Request)

- The machines installed on a handling base may be placed in a row. There must be a minimum clearance of 5.9 in. [150mm] between the machines. It is then possible to pull the machine out of the row, perform servicing and push it back into the correct position. The backstops anchored to the floor facilitate the return of the machine into the correct position. Refer to *Figure 18* .

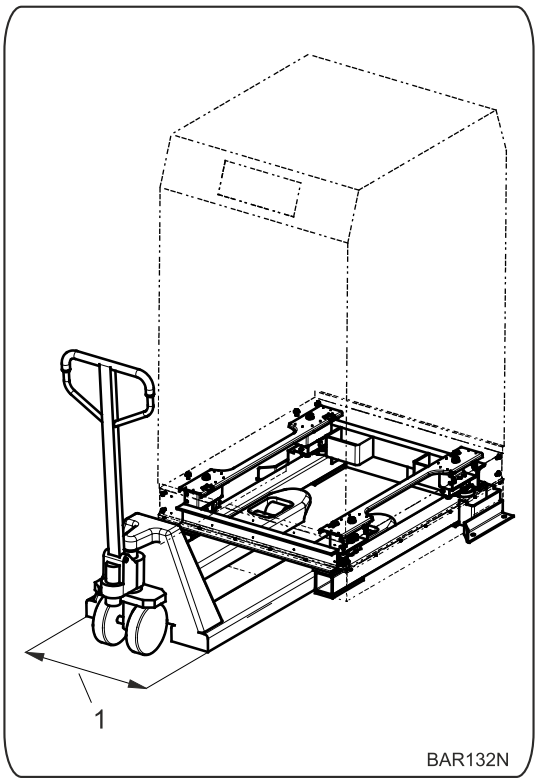
Correct Position of the Backstops



1. Unloading side (clean side)
2. Loading side (dirty side)
3. Left backstop of the handling frame
4. Right backstop of the handling frame

Figure 18

Pallet Truck Fork



1. The width of a pallet truck fork must not exceed 21.26 in. [540mm] .

Mechanical Installation with Weighing System, with Drain Placed underneath the Machine in the Central Part and with a Handling Base, dimensions in. [mm]

Machine kg / lb / L	A	B	C	D	E	F
18 / 40 / 180	40.35 [1025]	33.46 [850]	7.87 [200]	1.65 [42]	35.94 [913]	ø 0.47 [12]
24 / 55 / 240	40.35 [1025]	38.18 [970]	7.87 [200]	1.65 [42]	40.67 [1033]	ø 0.47 [12]
28 / 65 / 280	40.35 [1025]	42.52 [1080]	7.87 [200]	1.65 [42]	45 [1143]	ø 0.47 [12]

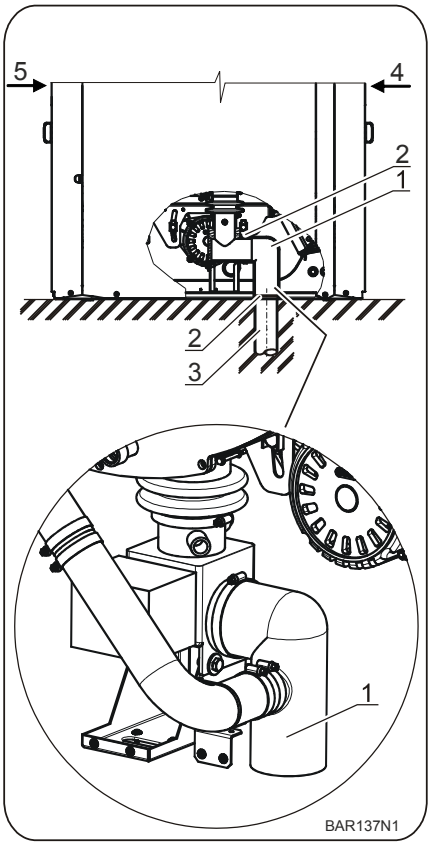
Table 15

Drain Connection

Drain Connection under the Machine (Standard)

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

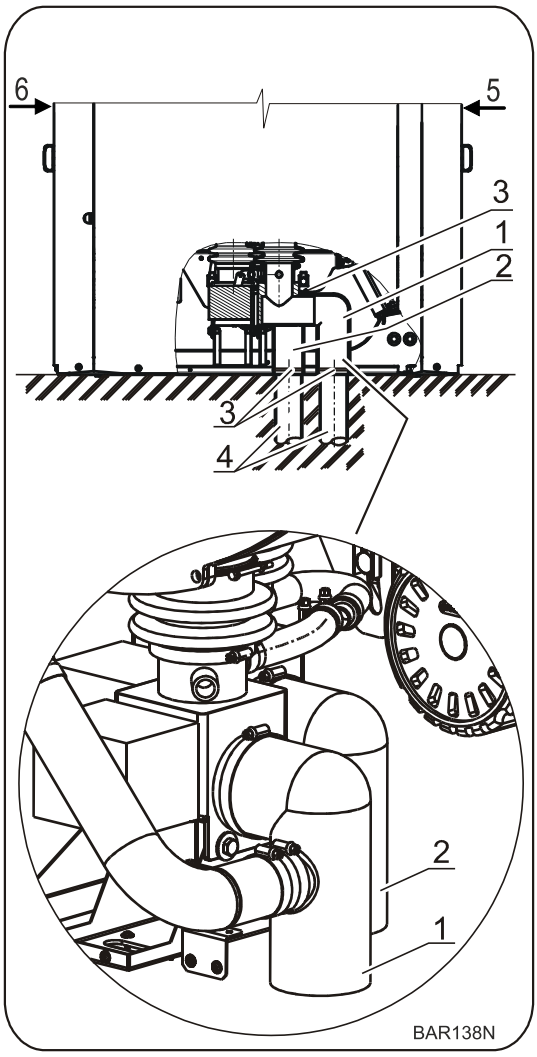
One Drain Valve



1. Drain, (standard ø 3 in. [76mm])
2. Clamp
3. Waste pipeline
4. Unloading side (clean side)
5. Loading side (dirty side)

Figure 19

Two Drain Valves



1. Drain, (standard ø 3 in. [76mm])
2. Drain into the water recycle, ø 3 in. [76mm] , (on request for water recycle)
3. Clamp
4. Waste pipeline
5. Unloading side (clean side)
6. Loading side (dirty side)

Figure 20

Drain Connection with Weighing System and Drain Placed underneath the Machine in the Central Part (on Request)

Connection of Drain Pipe

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

Refer to *Figure 19* .

For connection of draining holes refer to *Mechanical Installation with Weighing System, with Drain Placed underneath the Machine in the Central Part and with a Handling Base (on Request)* and *Mechanical Installation with Weighing System and Drain Placed underneath the Machine in the Central Part (on Request)*.

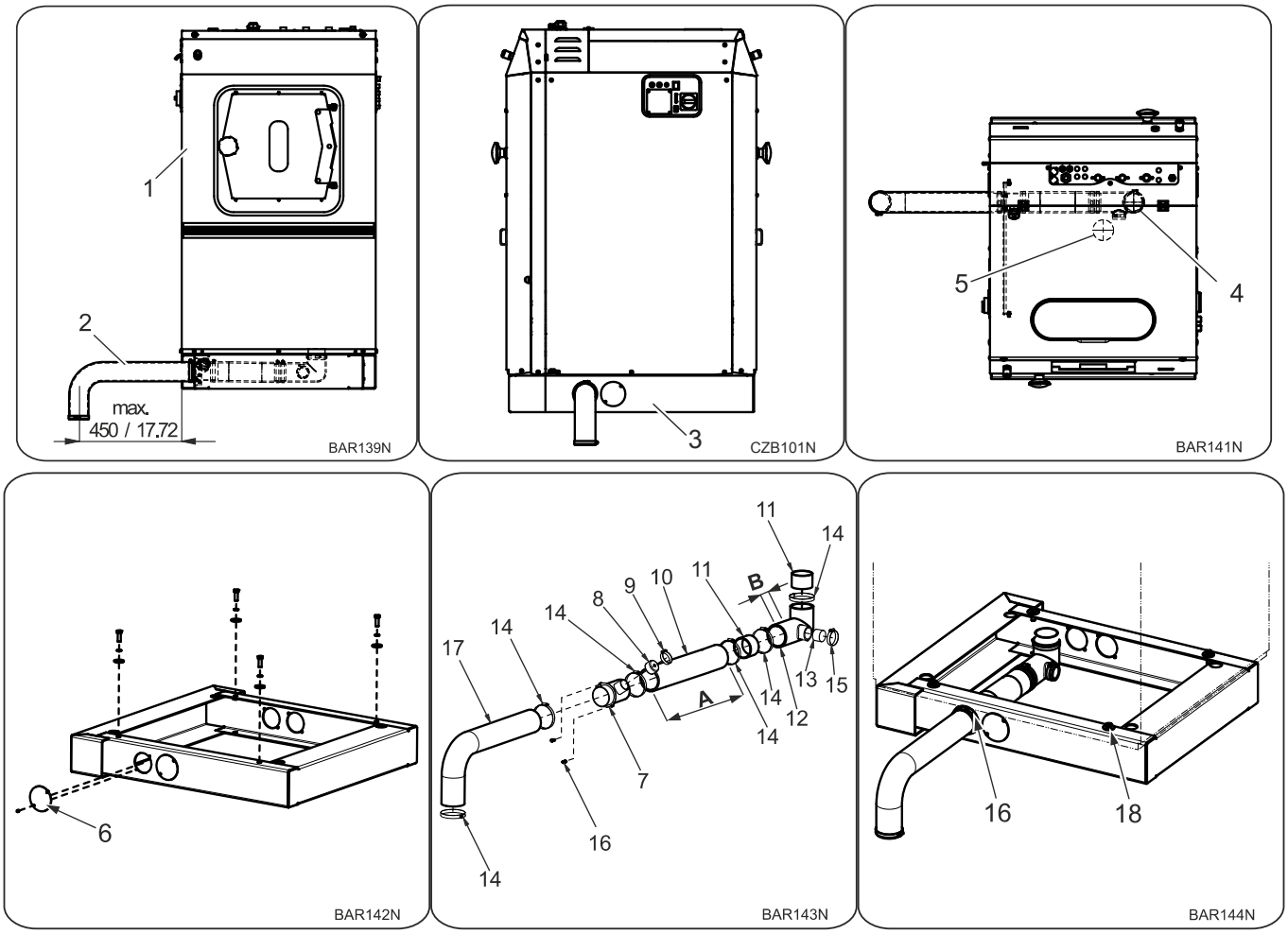
Side Drain Connection (on Request)

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

Assembly Instructions, refer to *Figure 21*

1. Install the steel base onto the required place.
2. Drill off the rivets and remove the hole cover (6) (on the plinth) corresponding to the desired draining valve and direction of drain.
3. Cut the hose (10) to length "A". Refer to *Table 16* .
4. For draining to the right and for the first position of draining, cut the bent piece (12) by 1.18 in. [30mm] , (dimension "B").
5. Assemble the parts (7 – 15).
6. Place the assembled parts into the plinth and secure by bolts (16).
7. Place the machine onto the plinth and secure the machine to the plinth by securing bolts (18).
8. Connect the hose to the discharge position (inside the machine) and to the discharge piping (outside the machine).

Assembly of the Side Drain



1. Washing machine, loading side (dirty side)
2. Drain to the left
3. Steel base (plinth)
4. First draining position (standard)
5. Second draining position into water recycle, (on request)
6. Hole cover
7. Hose clamp
8. Cap
9. Hose clamp
10. Hose
11. Hose
12. Bent piece
13. Cap
14. Hose clamp
15. Hose clamp
16. Securing Bolts
17. Hose
18. Securing bolts

Figure 21

Side Drain Specification, dimensions in. [mm]				
Drain	Drain Position	Machine kg / lb / L		
		18 / 40 / 180	24 / 55 / 240	28 / 65 / 280
		Dimension " A"		
Left	First	12 [305]	17.32 [440]	20.28 [515]
	Second	7.1 [180]	11.61 [295]	14.57 [370]
Right	First	N/A (not used)	N/A (not used)	N/A (not used)
	Second	3.74 [95]	4.53 [115]	4.53 [115]

Table 16

Main Drain Channel-pipe

The main drain channel-pipe must have the capacity to be able to handle the total output of all connected machines. In a drainpipe, a vent must be provided every 65.62 ft [20m] to assure the good working of the drain pipe. Refer to *Figure 22* .

If the main drain pipe cannot be sufficiently vented, install a vent per machine. Every time a machine is coupled on the drainpipe, the diameter of the tube or the width of the waste channel must be more. Refer to *Table 17* .

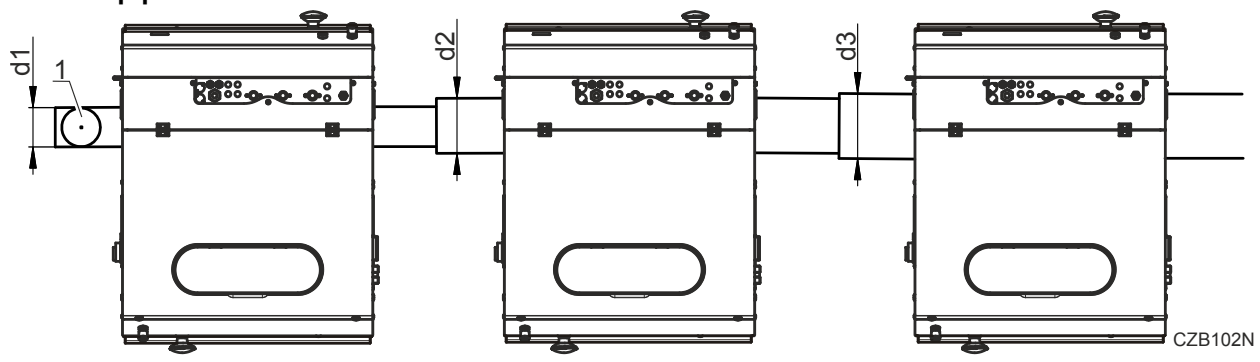
Recommended Drain Pipes Diameter		
Specification		in. [mm]
One Machine	d1	3 [75]

Table 17 *continues...*

Recommended Drain Pipes Diameter		
Specification		in. [mm]
Two Machines	d2	4 [100]
Three Machines	d3	5 [125]

Table 17

Drain Channel-pipe



1. Vent

Figure 22

Water Connections

WARNING

To prevent personal injury, avoid contact with inlet water temperatures higher than 125° Fahrenheit [51° Celsius] and hot surfaces.

W748

- The appliance has been designed with a build-in “AB” airgap system according EN1717. Nevertheless, when potable water will be connected to the appliance an approved double check valve or some other no less effective device providing back-flow prevention protection to at least fluid category three shall be fitted at the point of connections between the water supply and the appliance.
- All intake connections to the machine are to be fitted with manual shut-off valves and filters, to facilitate installation and servicing.
- To comply with the Plumbing Code of Australia regulations

WM-022687
WMTS-101
WaterMark

- Accordance to standard WMTS-101 an approved dual check valve backflow prevention device with the watermark must be fitted at the point of connction between the supply and the fitting. Refer to *Figure 24*.
- Water pipes and hoses should be flushed clean before installation. After installation hoses should hang in gentle arcs.
- **All connectors present on the machine must be connected**. The *Table 18* shows the possible connection options, which will depend on the water types to be connected to the machine. Check the machine plates too.
- **All water connectors must be connected**. Otherwise the wash program will not function correctly.
- Hoses are to be of an approved type and grade and comply with IEC 61770.
- Machines shall be connected with new water hoses. To connect cold water, use a hose with plastic elbow. To connect hot water, use a hose with metal elbow. Re-used water hoses must not be used. Hoses must be replaced every 5 years.
- For the water pressure data refer to *General Specification*.

WARNING

If the water pressure is below the min. value, the wash result can not be guaranteed for certain program.

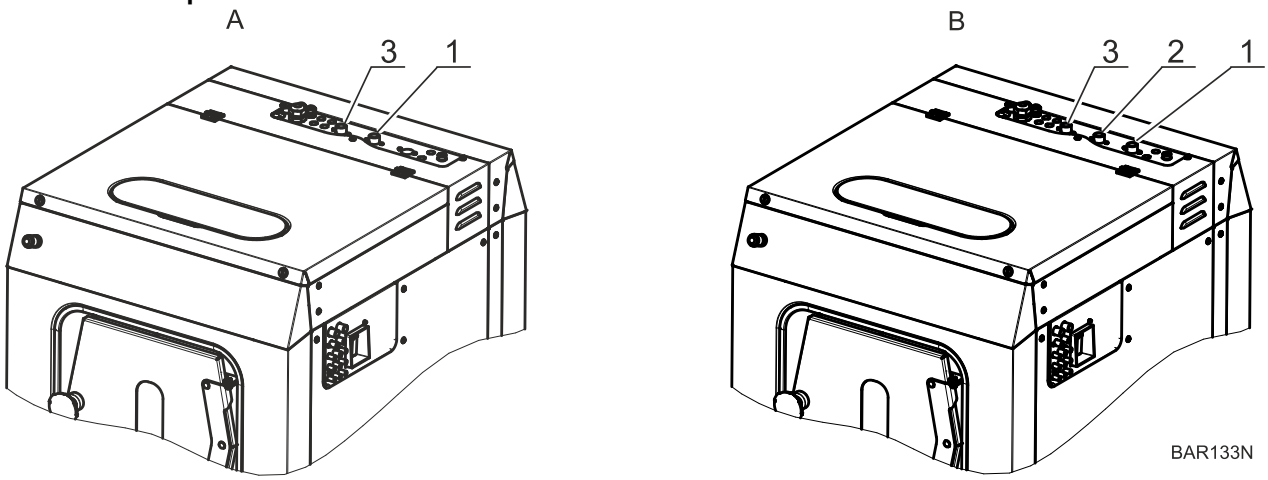
C235

Possible Water Connection Options

Water Type	Water Connection		
	1	2	3
Cold and hot	cold	-	hot
Cold soft and cold hard and hot	cold soft	cold hard	hot

Table 18

Water Connection Options



A - Two waters

B - Three waters

1. Cold and cold soft
2. Cold hard
3. Hot

Figure 23

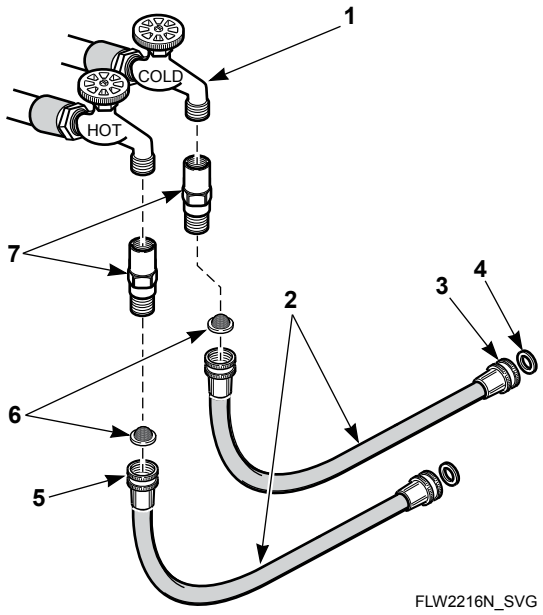
Connecting Hoses

1. Insert rubber washers and filter screens (from accessories bag) in water fill hose couplings (two hoses supplied with washer). The filter screen must be facing outward.

   NOTE: If using hoses with BSPP thread coupling, insert filter screens into the BLACK colored hose couplings and the rubber washers into the brass colored hose couplings.
2. Connect fill hose couplings with filter screens to water supply taps.
3. Connect the other hose couplings to the hot and cold valve connections at the rear of the washer.

   NOTE: If using hoses with BSPP thread coupling, connect the BLACK colored hose coupling end of the fill hoses (with filter screens) to the water supply taps. Then connect end of hoses with the brass colored hose couplings to the hot and cold water mixing valve connections at rear of washer.
4. Thread hose couplings onto valve connections finger tight. Then turn 1/4 turn with pliers.

   IMPORTANT: DO NOT cross thread or overtighten couplings. This will cause them to leak.
5. Turn water on and check for leaks.
6. If leaks are found, retighten the hose couplings.
7. Continue tightening and rechecking until no leaks are found.



1. Tap
2. Fill Hoses
3. Install this end of hose to valve connections at rear of washer
4. Plain Rubber Washer
5. Install this end of hose to water supply tab (Black colored coupling for BSPP thread)
6. Filter Screens
7. Dual Check Valves

Figure 24

Recuperated Water Connection

WARNING

Disconnect the machine power supply! When the main switch is turned off the inlet terminals of the machine main switch are still under current!

C236

1. Drill out the protective screens of the water inlet from the recycle utilizing a drilling bit of 0.59 in. [15mm] diameter. Refer to *Figure 25* . We do not recommend piercing the screens open, it could lead to blockage of the water channel.
2. Inlet of water from the recycle into the machine.

Electrical Connection

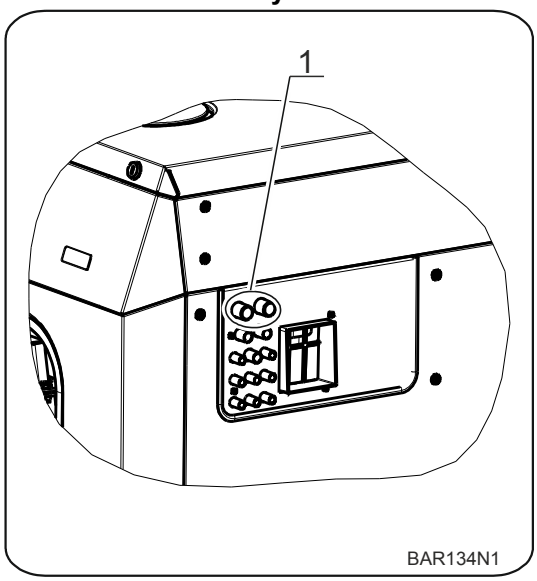
1. Connect the control of your recycle valve or recycle pump onto the conductor of inlet valve (I5) or (I7) provided by the manufacturer. By doing so, you disconnect the valve in question from the standard function.

NOTE: The manufacturer waives all responsibility for malfunction of the washing machine in case that a different valve than the specified “I5” or “I7” is used as the water recycle valve.

2. Fit a cable bushing into the opening and pull the cable through the bushing. Refer to *Figure 26* .
3. Connect the coil for control of the recuperated water inlet. The coil is not supplied with the machine. Operating voltage is 208-240V 50/60Hz.
4. Secure the cable in a suitable manner so that it is protected against being pulled out of the machine or inlet valve.

- Temperature range : 90-194°F [10-14°C] .
- Maximum pressure: 116 PSI [8 bar] .
- Connection: outside diameter 0.75 in. [19mm] .
- The hose and the connector must be resistant to chemical substances which are used for the washing process. It is also possible to use a hose with enhanced performance such as the rubber EPDM hose.
- The recycling system must be fitted with a filter which must be regularly and thoroughly cleaned (based on the water quality). This cleaning prevents prolongation of filling up times and malfunction of the water valves.
- For programming method please refer to the Programming manual.

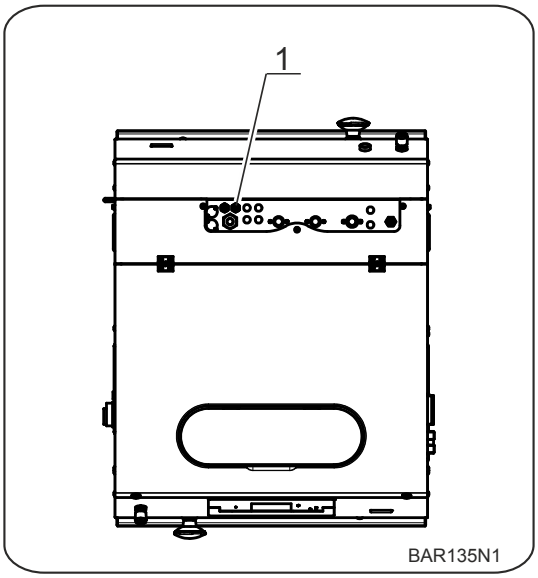
Inlet of Water from the Recycle



1. Water inlets

Figure 25

Inlet of Cable for Control of the Water Valve or Pump from the Recycle



1. Openings of water inlets

Figure 26

Treatment of the Recuperated Water

- The recuperated water must be filtered before entering the recycling tank. A mechanical filter must be installed which filters off small particles (fluff, buttons, paper, etc.) of sizes 0.008 in. [0.2mm] or smaller. The denser the mesh, the better. There must also be a filter installed on the pressure side of the pump. It is also possible to install an additional, chemical filter. The manufacturer advises to consult a specialist in filter systems.

Water Recycling Tank Properties

WARNING

It is prohibited to heat the water in the recycling tank. This would disturb the temperature balance of the washer and make the remaining chemicals in the recuperated water more active, which would lead to corrosion of the entire installation.

C237

The recycling tank must meet the following minimum requirements:

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

A pump must transport the recuperated water from the tank to the washer. The requirements for the pump depend on the number and type of washers that are connected to the recycling system. The maximum pump pressure is 116 PSI [8 bar] .

The Use of a Float in the Recycling Tank

- This option is not obligatory. However, it is advisable to install a level switch. This level switch must be connected to the microprocessor by means of a potential-free contact. Refer to *Figure 27* .
- The relay contact K1 has to close when the water level is too low. Terminal B is positioned on the left side, in the lower part of the microprocessor. Terminal A is positioned directly above terminal B. The microprocessor is positioned inside the washer. If the “Check signal recycle” parameter is set to “yes” in the configuration menu, the timer will send a signal in case that the water level of the recycling tank is too low.

Level Switch Diagram

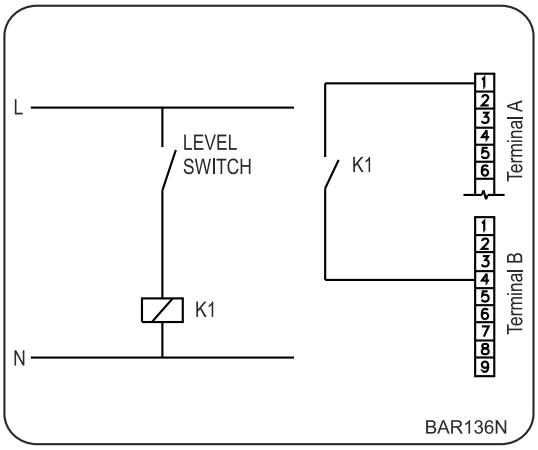


Figure 27

Electrical Installation Requirements

DANGER

Electrical shock hazard will result in death or serious injury. Disconnect electric power and wait ten (10) minutes before servicing.

W911

WARNING

Hazardous Voltage. Can cause shock, burn or death. Verify that a ground wire from a proven earth ground is connected to the lug near the input power block on this machine.

W360

WARNING

Dangerous voltages are present inside the machine. Only qualified personnel should attempt adjustments and troubleshooting. Disconnect power from the machine before removing any cover and guards, and before attempting any service procedures.

W736

IMPORTANT: The machine has been designed for connecting to the electrical network according the specification of your order. Before connection check the electrical data stated on the data plate, if they correspond to your electrical network. An individual branch circuit needs to be used for each machine. The way of the connection is described in *Figure 28* .

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.

IMPORTANT: Make sure the supply voltage is always within the specified limits 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.

NOTE: The machines are not designed for use in IT networks.

IMPORTANT: When the machine is connected near a large capacity power supply transformer (500kVA or more, wiring length shorter than 32.81 ft [10 m]) or there is a power capacitor switch-over, a power supply improving reactor must be installed. If you do not install this, the inverter may get damaged. Contact your sales office for more information.

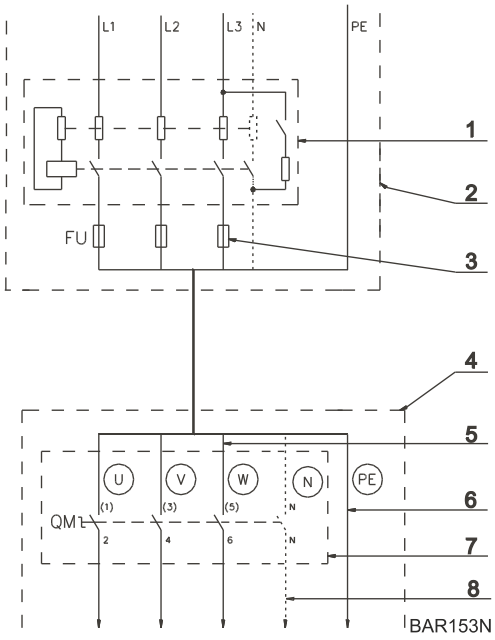
For electrical protection, there must be installed a residual current device (RCD) and a circuit breaker in the electrical installation of the building (laundry switchboard). Refer to *Figure 28* .

WARNING

Grounding: In event of malfunction or breakdown or leakage current, the grounding will reduce the risk of electrical shock and serve as a protecting device, by providing a path of least resistance of electrical current. Therefore it is very important and the responsibility of the installer to assure the washer is adequately grounded at the point of installation taking into considerations the national and local conditions and requirements.

C042

Machine Connection to Eletrical Network



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 28

IMPORTANT: Alliance Laundry Systems warranty does not cover components that fail as a result of improper input voltage.

Residual Current Device - RCD

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

Specifications

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

Supply Protection Device

- A supply protection device basically protects the machine and wiring against overloads and short circuits. As supply protection device, you can use either (glow-wire) fuses or (automatic) circuit breakers.
- Refer to *General Specification* 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

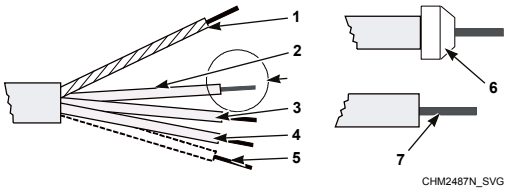
- Conductors with copper cores. Refer to *Electrical Specification* for wire size details.
- Stranded conductors are strongly recommended (flexible wiring) to avoid conductor breaking because of vibration.
- The cross section depends on the used supply protection device. Refer to *Table 19* , for the minimal cross section.
- Route the supply cable short as possible, directly from the supply protection device to the washer without branching off.
- No plug or extension cords: The machine is intended to be permanently connected to the electrical network.

Connection

1. Insert the cable through the hole *Figure 4* , pos.8, insure a strain relief (turnbuckle) is used so that the supply cable can not move.
2. Strip the conductor ends. Refer to *Figure 29* .
3. The protective conductor must be longer so that it is routed to the machine without tension.
4. With stranded conductors, use “wire end tubes” with an insulated sleeve (6) for L1/U, (L2/V), (L3/W), (N) conductors. Make sure there is no accidental contact, since the supply cable stays under voltage even when the main switch is off.
5. Crimp a ring terminal (eyelet) to the protection conductor for good fixation to the PE terminal.
6. Connect the supply cable conductors to the incoming terminals (main switch (1)) marked with L1/U, (L2/V), (L3/W), (N), and the terminal (copper screw) marked with PE. Refer to *Figure 30* .

7. Provide a sag in the cable, in front of the cable strain relief. This will avoid condensed water dripping into the machine. Refer to *Figure 30* .

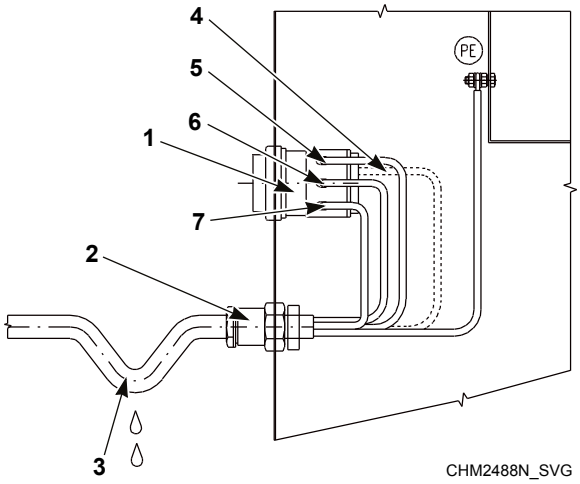
Adaptation of Conductor Ends of Supply Cable



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

Figure 29

Connection of Main Power Inlet



1. Main switch
2. Strain relief
3. Sag of inlet cable
4. N
5. W. L3
6. V, L2
7. U, L1

Figure 30

Determining AWG Sizes

Manufacturer's Recommended Minimal Conductor Section			
Power Supply Protection Device Nominal Current (US)		Minimal Phase Conductor Section	Minimal Protection Conductor Section
Automatic circuit breakers	Fuses		
16A (15A)	10A (10A)	1.5 mm² (AWG 15)	1.5 mm² (AWG 15)
20A (20A)	16A (15A)	2.5 mm² (AWG 13)	2.5 mm² (AWG 13)
25A (-)	20A (20A)	4 mm² (AWG 11)	4 mm² (AWG 11)
40A (40A)	32A (30A)	6 mm² (AWG 9)	6 mm² (AWG 9)
63A(-)	50A (50A)	10 mm² (AWG 7)	10 mm² (AWG 7)
80A	63A	16 mm²	16 mm²
100A	80A	25 mm²	16 mm²
125A	100A	35 mm²	25 mm²

Table 19

Machine Protective Earth Connection and Equipotential Bonding

Independent of the supply cable, the washer must be connected to the laundry protective earth system with a separate conductor.

The protection conductor, enabling this connection, is not included with the washer. If there are other washers/appliances with exposed conductive parts, which can be touched simultaneously, make sure to make equipotential bonding between all these appli-

ances. The external protective terminal for this purpose is located on the side panel of the machine frame.

The minimum protection conductor's cross section depends on the supply cable cross section and can be found in *Table 19* . However, for the protection purposes with the supply cable section of min. 0.006 ft ^{2} [4mm ^{2}] we recommend to select a larger conductor section, i.e. 0.009 ft ^{2} [6mm ^{2}] .

Electrical Specification

18 kg / 40 lb / 180 L

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard			Electric Heat				
				Total power (kW)	Full Load Amps (A)	Fuse (A)	Total Power (kW)	Full Load Amps (A)			Fuse (A)
								12 kW	18 kW	21.9 kW	
200-240	50/60	1	2 (L1, L2, or L1, N)	2.4	14.7	20	N/A	N/A	N/A	N/A	N/A
200-240	50/60	3	3 (L1, L2, L3)	2.4	14.7	20	13.6	38	N/A	N/A	40
							19.6	N/A	53.4	N/A	63
380-415 + N	50/60	3	4 (L1, L2, L3, N)	2.4	14.7	20	13.6	23.2	N/A	N/A	25
							19.6	N/A	31.9	N/A	32
380-415	50/60	3	3 (L1, L2, L3)	2.4	5.5	16	13.6	21	N/A	N/A	25
							19.6	N/A	30.6	N/A	32
440-480	50/60	3	3 (L1, L2, L3)	2.4	5.5	16	13.6	19.8	N/A	N/A	25
							19.6	N/A	27.3	N/A	32

Table 20

24 kg / 55 lb / 240 L

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard			Electric Heat				
				Total power (kW)	Full Load Amps (A)	Fuse (A)	Total Power (kW)	Full Load Amps (A)			Fuse (A)
								12 kW	18 kW	21.9 kW	
200-240	50/60	1	2 (L1, L2, or L1, N)	3.2	15.5	20	N/A	N/A	N/A	N/A	N/A
200-240	50/60	3	3 (L1, L2, L3)	3.2	15.5	20	20.2	N/A	54.4	N/A	63
380-415 +N	50/60	3	4 (L1, L2, L3, N)	3.2	15.5	20	20.2	N/A	31.9	N/A	32
380-415	50/60	3	3 (L1, L2, L3)	3.2	7.4	16	20.2	N/A	31.6	N/A	32
440-480	50/60	3	3 (L1, L2, L3)	3.2	7.4	16	20.2	N/A	28.3	N/A	32

Table 21

28 kg / 65 lb / 280 L

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard			Electric Heat				
				Total power (kW)	Full Load Amps (A)	Fuse (A)	Total Power (kW)	Full Load Amps (A)			Fuse (A)
								12 kW	18 kW	21.9 kW	
200-240	50/60	1	2 (L1, L2, or L1, N)	3.2	16.1	20	N/A	N/A	N/A	N/A	N/A
200-240	50/60	3	3 (L1, L2, L3)	3.2	16.1	20	24	N/A	N/A	64.1	80
380-415 + N	50/60	3	4 (L1, L2, L3, N)	3.2	16.1	20	24	N/A	N/A	40.6	50
380-415	50/60	3	3 (L1, L2, L3)	3.2	7.5	16	24	N/A	N/A	37.1	40
440-480	50/60	3	3 (L1, L2, L3)	3.2	7.5	16	24	N/A	N/A	34.1	40

Table 22

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.

C200

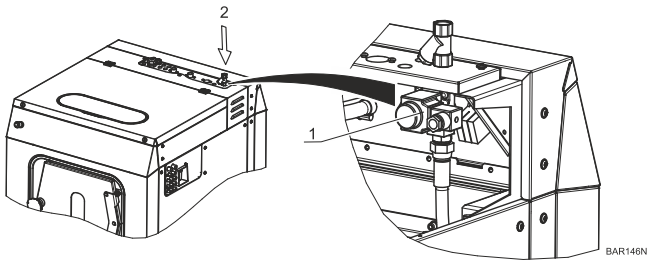
WARNING

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.

C203

1. For dimensions of steam connection information, refer to *Figure 31* and *Table 3* .
2. Use an inlet steam pressure hoses only, adapted to the steam valve with appropriate seal that is suitable for the applied working pressure.
3. Take care that by the installation and connection of the steam supply the necessary measure are taken that accidental contact is prevented. Due to the high temperature, injury will occur.

Steam Connection



1. Steam valve
2. Connection of steam hose to steam valve

Figure 31

Venting

WARNING

Vapours escape from the machine through the air vent opening! Do not cover!

C238

Liquid Soap Connection

Always use liquid soap pumps with a flow rate that can bring the requested quantity in less than 30 seconds.

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 HDPE and PVC material in order to avoid a problem that manufacturer is not responsible for.

W921

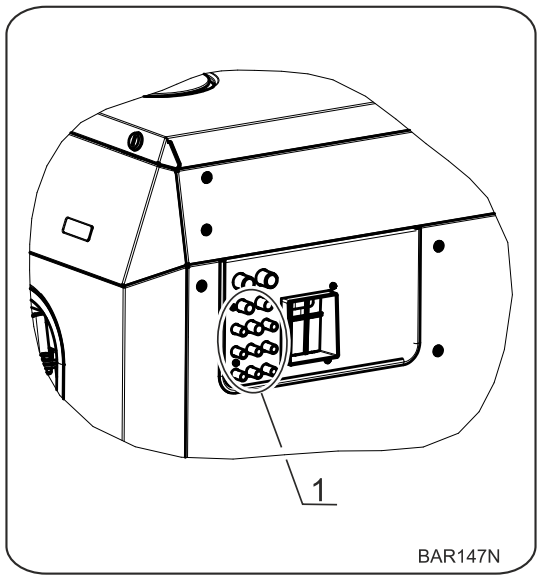
The washer has provisions for connecting external dosing of liquid soaps. On the side, a plastic hose connection part is present to connect the liquid soap hoses. Refer to *Figure 32* , pos.1.

Depending of the number of liquid soap pumps that will be used, drill holes (max. 8) of ø 0.315 in. [8mm] in the plastic hose connection part for each pump. We recommend using the left openings for connecting the pumps first and setting the flow rate of the pumps to 60 to 100 l / hour. On the plastic hose connection part is also a 3 nipples of ø 0.47 in. [12mm] . Use this nipple ONLY for entering diluted soap. Drill with ø 0.45 in. [11.5mm] . By default, these nipples are closed. Drill only the ones that will be used.

Take care that the drill particles are carefully removed so that they can not clog up the hoses and openings.

On request, the machine can be fitted with two additional inlets of liquid soap detergents situated on the panel. Refer to *Figure 33* .

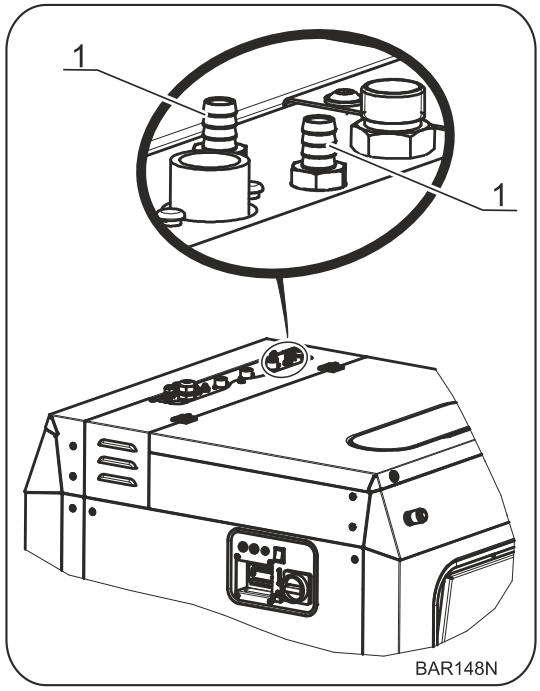
Plastic Hose Connection



1. Connection part

Figure 32

Additional Inlets of Liquid Soap Detergents



1. Additional inlets

Figure 33

WARNING

Check that the hose connections are tight (check the clamps)! Any leakage of chemicals may cause serious body injuries as well as serious damage to the washer. If one of the nipples are open, close and secure the opening with an appropriate cover.

C088

Electrical Connection of the Liquid Soap Supply System

The power supply of the liquid soap supply system has to be connected to an external electrical source. Only authorized workers with a valid qualification must execute the electrical connection on the machine according to the valid local standards. The correct connection way can be found on the wiring diagram that is located inside the cabinet in a plastic bag. Do not connect the liquid soap pump system in the washer.

Functional Diagram of the Connection of Liquid Soap Pumps Control Signal

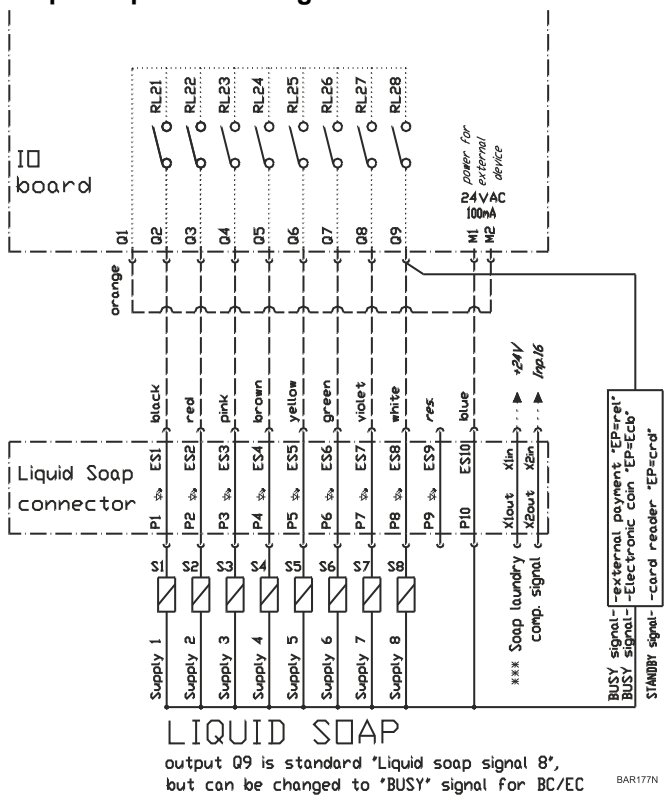


Figure 34

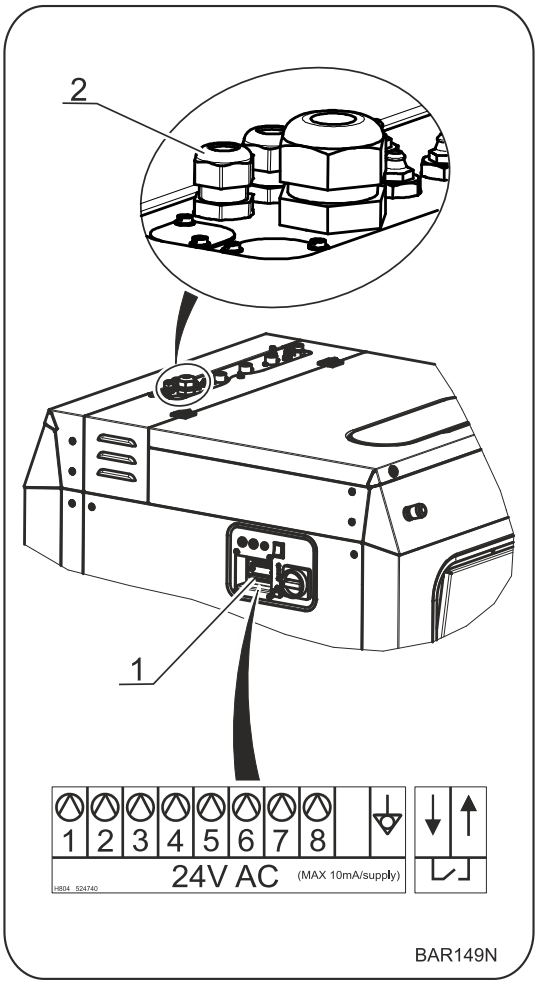
Electronic Controller with Blue PCB and Graphical Display

For electric connection of supply control signals is available on the side of the machine the terminal box with LED signalization of activation of the respective pump, refer to *Figure 35* (1). At the terminal box there is a label for electric connection. Refer to *Figure 35* . 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 100mA. Lead the cable for connection of pumps control signals through the plastic cable bushing. Refer to *Figure 35* (2). After connection of conductors to the respective positions of the connector "P" (screw clamps), fix up the cable by tightening the cable bushing) against disconnection and close the box with the cover. For details about liquid soap supply system programming refer to Programming manual.

External Wait Control

This function can be activated by an external contact which is connected between the pins " ↑ " and " ↓ ", refer to *Figure 35* . Such connection is possible only with machines which had been ordered with the option "Heating delay / waiting for detergent".

Detailed Connection of Signals



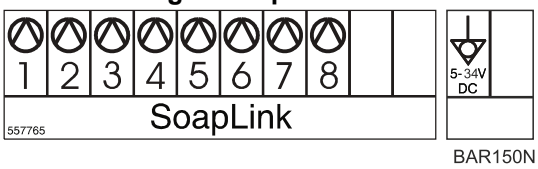
1. Terminal box
2. Plastic cable bushing

Figure 35

SoapLink Connection

There is a terminal box situated on the side of the machine, refer to *Figure 35* . It is to be used for electrical connections of signals for dispensing control carried out by means of the SoapLink communication system. A wiring diagram is provided at the terminal box, refer to *Figure 36* .

Communication Signal Sequence



1. Start signal
2. Step signal
3. Extract signal
4. Drain signal
5. Clock signal
6. Data signal

Figure 36

For a detailed signal connection schematics refer to the wiring diagram of the entire machine. The supply voltage must be in the range of 5 – 24V DC. Lead the communication cable through the plastic bushing, refer to *Figure 35* (2). Once the conductors have been connected to their respective positions on the “P” connector (screw terminals), secure the cable against being torn out by tightening the bushing and close the box with a lid. For detailed information how to activate the “SoapLink” system read the Programming manual.

IO Board Located on Front Panel - SoapLink

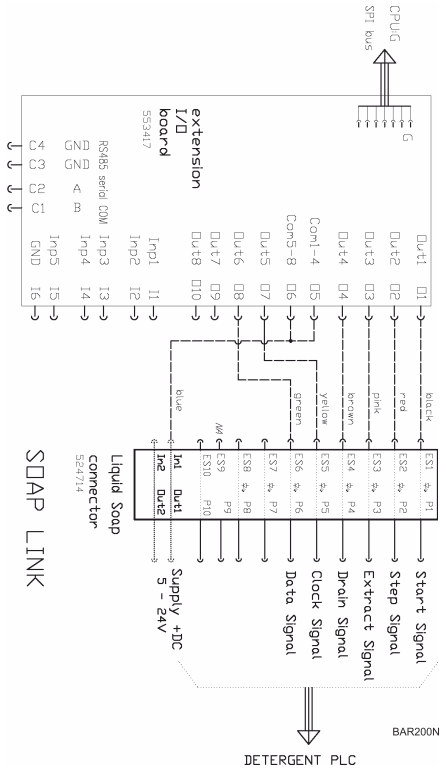


Figure 37

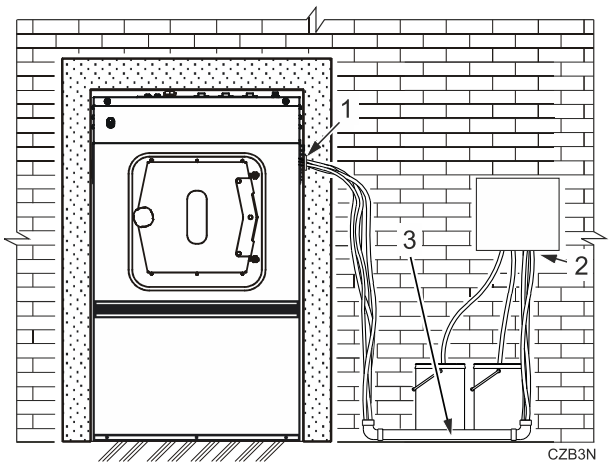
Chemical Injection Supply System

WARNING

Wear eye and hand protection when handling chemicals; always avoid direct contact with raw chemicals. Read the manufacturer’s directions for accidental contact before handling chemicals. Ensure an eye-rinse facility and an emergency shower are within easy reach. Check at regular intervals for chemical leaks.

C365

Undiluted chemical dripping can damage the washer extractor. Therefore, all chemical supply dispenser pumps should be mounted below the washer extractor’s injection point. All dispenser tubing should also run below the injection point. Loops do not prevent drips if these instructions are not followed. Failure to follow these instructions could damage the machine and void the warranty. *Figure 38* shows a typical chemical injection supply system.



1. Injection Point
2. Chemical Dispenser Pump Outlet
3. PVC Pipe

Figure 38

Operation

Symbols on the Machine

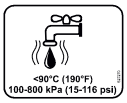
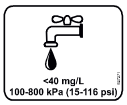
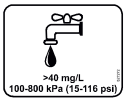
Symbol	Explanation	Symbol	Explanation
 CHM2439N_SVG	Caution, dangerous electrical tension, electrical devices.	 CHM2446N_SVG	Warm water inlet (red color of the label).
 CHM2440N_SVG	Caution, other danger, read and follow written instructions.	 CHM2447N_SVG	Soft cold water inlet (light blue color of the label).
 CHM2441N_SVG	Caution - Increased temperature.	 CHM2448N_SVG	Hard cold water inlet (dark blue of the label).
 CHM2442N_SVG	Do not close or cover.	 CHM2490N_SVG	The holes to be drilled not punched.
 CHM2443N_SVG	The machine hot air outlet.	 BAR112N	Lighting.
 CHM2444N_SVG	In case of emergency press the emergency button to stop the machine.	 BAR113N	Steam heating, Eletrical heating.
 CHM2445N_SVG	Steam.		
 BAR111N	Main switch.		

Table 23

Before Washing

1. Sort the linen according on the temperature and the instructions of the manufacturer of the fabrics.
2. Check if there aren‘t any strange objects between the linen like nails, screws, needles, etc. in order not to damage the washer-extractor or the linen.
3. Turn sleeves of shirts, blouses, etc. inside out. To get a better washing result, you have to unfold the fabrics and mix the bigger and smaller pieces of fabrics.

NOTE: Different fabrics have different densities. Loads must be adjusted accordingly to meet machine loading specifications. The optimal washing load is determined by the loading ratio (kg/lb linen : l/gal drum volume). The proper loading ratio is determined by the type of linen and other factors. Cotton textiles normally require a loading ratio of 1:10-1:13, which is a full drum load. Synthetics and blended fabrics usually require a loading ratio of 1:18-1:20, which is half drum load.

Placing the Laundry into the Machine

CAUTION

To avoid premature bearing failure, do not operate the machine while the basket is empty.

W1059

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

Closed Drum Door (Inner Door)

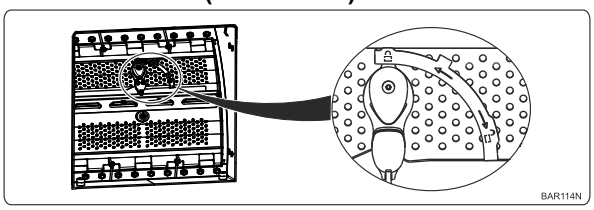


Figure 39

5. Apply pressure on the yellow lever handle in order to overcome the resistance of the locking tab and turn the handle clockwise. There are symbols with instructions shown on the mechanism. When the lever is in the “unlocked” position, the door can be opened.

First Phase of Opening the Door

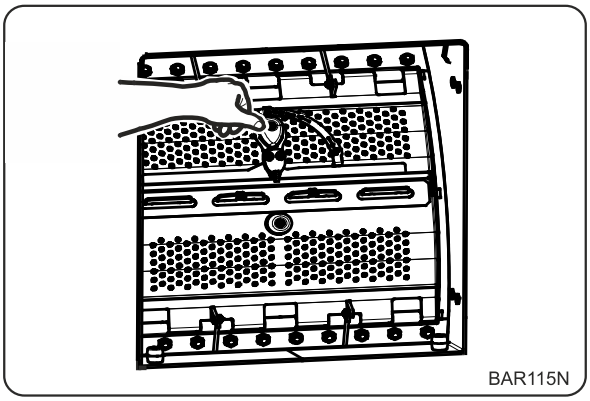


Figure 40

Locked Position

Figure 41

Unlocked Position

Figure 42

6. Using both hands force push both door parts inside until the latches on one door part are released from the openings on the other door part. Do not push beyond this point, to prevent overloading the door springs.

Opening the Door

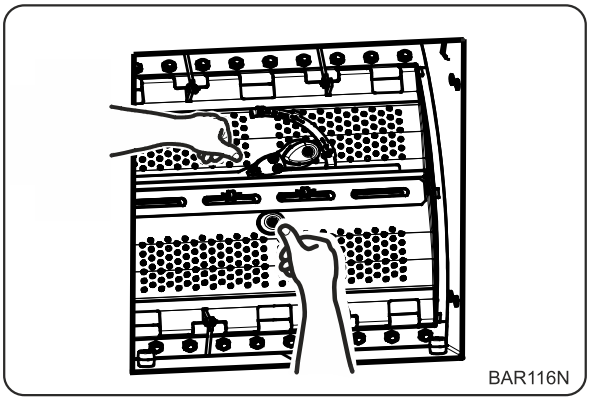


Figure 43

Opening the Door (while Reducing the Hand Pressure on the Door)

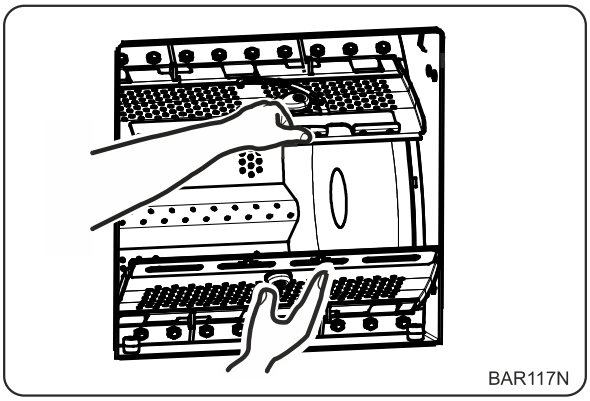


Figure 44

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

Drum Door Opened

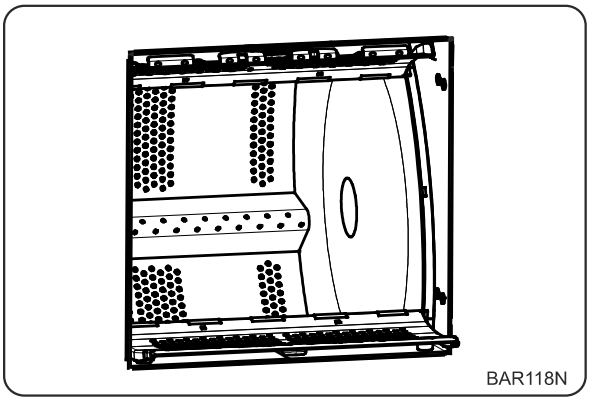


Figure 45

8. Version with weighing system: Before you insert the laundry, always tare (set zero weight) by pressing the 0-button.
9. Insert the laundry into the drum.
10. Close the drum door (inner door) by following the same procedure as for opening the door but in reversed order.
11. The lever must be in the final position “locked”.
12. Verify by making sure that the lever cannot be turned any further in the counter-clockwise direction. The lever is secured against inadvertent unlocking by a locking tab. Correct locking of the washing drum door is electronically secured.

Closed Drum Door (Inner Door)

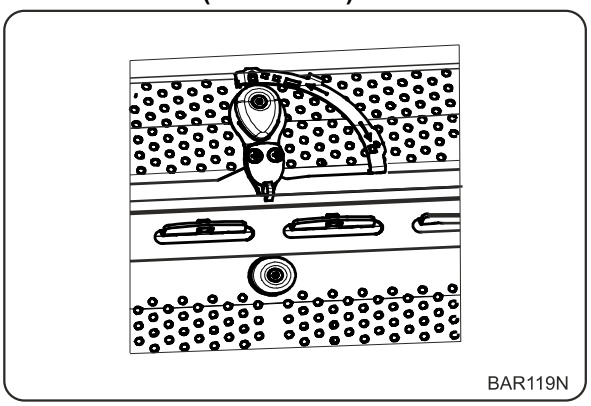


Figure 46

WARNING

Make sure that the drum door is closed properly. I.e. the lever must be in the final position “locked” and it is not possible to reopen the door. Make sure that the door is locked by the locking tab.

C336

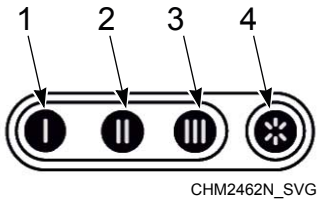
13. Use the door handle and close the door of the loading side (outer door). It is not necessary to turn the handle completely around. Otherwise slipping of the safety system would occur. When the machine is operating, the safety system serves as a protection against violent handling and the possibility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

The lock of the internal door is set up in the factory. If the machine is exposed to a large degree of mechanical shocks and jolts during transport, it might be necessary to calibrate the lock. For the calibration procedure, please refer to the Programming Manual - Failure 60.

Add Detergents

1. Fill the soap dispenser depending of the chosen program.

Soap Dispenser



1. Prewash
2. Main wash
3. Main wash - liquid detergent or liquid bleach
4. Last rinse - liquid fabric softener or liquid starch

Figure 47

Program Selections

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

NOTE: For locking a program mode, changing factory settings and possibilities of program changes and set-up. Refer to Programming manual.

Wash Programs Overview

Wash Programs Overview			
Wash program 1	Hot wash intensive	194°F [90°C]	
Wash program 2	Warm wash intensive	140°F [60°C]	
Wash program 3	Coloured wash intensive	104°F [40°C]	
Wash program 4	Bright wash intensive	86°F [30°C]	
Wash program 5	Woollens	59°F [15°C]	
Wash program 6	Hot wash	194°F [90°C]	ECONOMY level
Wash program 7	Warm wash	140°F [60°C]	ECONOMY level
Wash program 8	Coloured wash	104°F [40°C]	ECONOMY level
Wash program 9	Bright wash	86°F [30°C]	ECONOMY level
Wash program 10	Eco hot wash	194°F [90°C]	ECONOMY level
Wash program 11	Eco warm wash	140°F [60°C]	ECONOMY level
Wash program 12	Eco color wash	104°F [40°C]	ECONOMY level
Wash program 13	Eco bright wash	86°F [30°C]	ECONOMY level
Wash program 14	Extraction		low speed
Wash program 15	Extraction		high speed
Wash program 16	Sport	140°F [60°C]	
Wash program 17	Mops	140°F [60°C]	
Wash program 18	Horse blankets	104°F [40°C]	
Wash program 19	Jeans	140°F [60°C]	
Wash program 20	Starching	-	

Table 24

NOTE:

It is advisable to use only detergents with “softener to break the suds”, which can easily be found in retail shops. We do not recommend using gel detergents. The dosage of soap to use is generally mentioned on the packing. An overdose of detergent can lead to poor wash results and “suds”, overflow which can damage the machine.

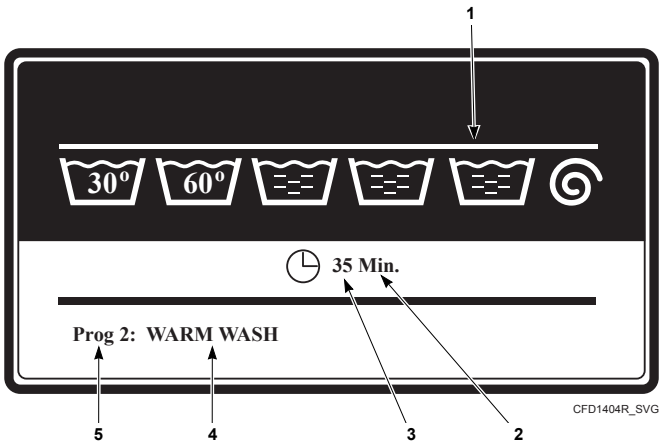
Take care that the lid of the soap dispenser is closed if the machine starts.

Start the Washer

1. Select the required wash program.

2. Push the START button. The following message will appear on the display: “Did you lock the inner door?”. If you are sure the inner door is locked correctly you confirm that by pushing of YES button. The wash cycle starts.
3. In case you are not sure of proper locking, push the NO button. The program will not start.
4. 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.
5. During the wash cycle, the indication light is on (light situated on the side of machine where the door for removing clean laundry is located).

Display



1. Progression bar
2. Units
3. Remaining time wash program
4. Wash program name
5. Wash program number

Figure 48

End of Cycle Indication (on Request)

- The end of cycle indication consist of acoustic and visual signals (so called “traffic lights”).
- The visual indication can be situated on the loading or unloading side of the machine.
- Fix the visual indication on a wall or another suitable structure.
- Connect the cable end into a respective connector. Refer to *Figure 4* pos. 5 or 6.
- Meaning of visual indication colours:
  - Green : the machine is in operation (both sides).
  - Orange : the machine will terminate operation within 4 -5 minutes (both sides).
  - Red : the machine has terminated operation and the linen can be removed now (the “clean side” only) or the linen can be loaded after the previous cycle has been terminated (the “dirty side” only).

Visual Signals (Loading Side)

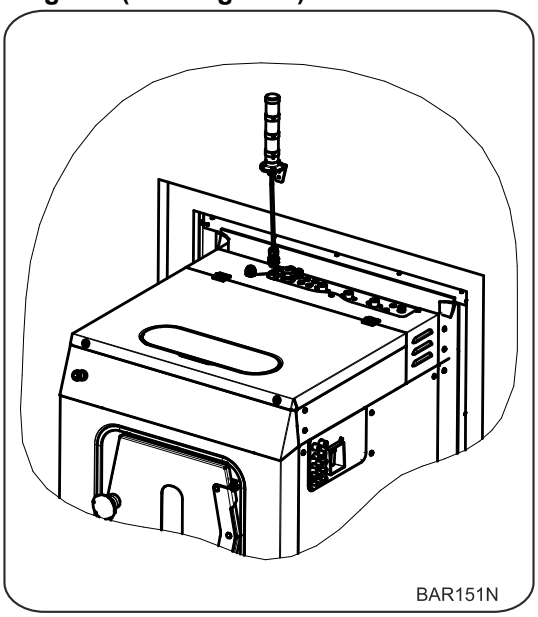


Figure 49

Visual Signals (Loading and Unloading Side)

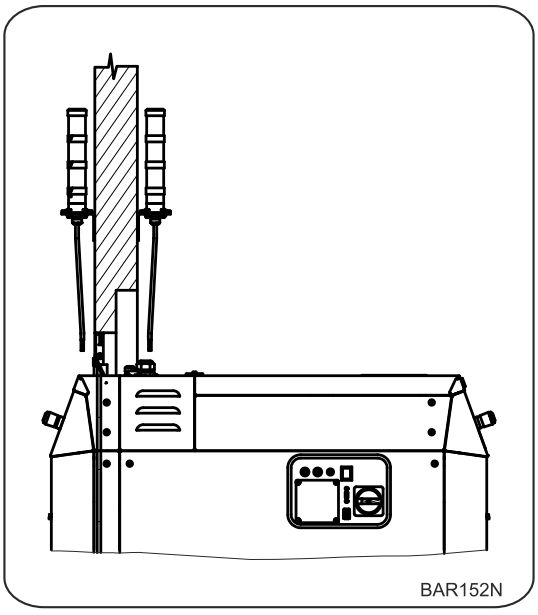


Figure 50

End of Wash Cycle

The wash cycle time is counted down to zero on the display. When the wash cycle finishes, the message "UNLOAD" is displayed on the side of the machine where the door for loading

dirty laundry is located. An indicating light flashes on the side of the machine where the door for removing clean laundry is located. The drum then turns slightly and stops in a position which allows opening of the door (inner door) on the side of the machine where the door for removing clean laundry is located.

1. Use the door handle and open the door of the unloading side (outer door).
2. Remove the laundry.
3. Close the drum door (inner door) and the door of the unloading side (outer door).

Power Failure

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

WARNING

Before you open the door, make sure that the drum is completely still and that the water has drained from it.

C233

Maintenance and Adjustments

General

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's main switch are still under current! That is the way to avoid injuries.

C089

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

Checking and Maintenance Daily

1. Remove the linen or other parts (paperclips, needles, …) that are left lying in the drum to avoid injuries and damage to the rubber door seal, seals, glass etc.
2. Clean the door seal from any remaining detergent and other foreign matter.

   NOTE: Do not use solvents, acids or grease to clean the rubber door gasket!
3. Clean the top and body when water or detergent traces are on the machine. Use a damped cloth, do not use abrasive cleaners. Dry with a soft cloth.
4. Hoppers must be cleaned at the end of each working day. Remove sediments inside the reservoir by means of a plastic spatula and splash by water.
5. Check water and possible steam inlets for leakage.
6. At the end of the working day, open the machine door to allow airing out the machine and to prolong the door gasket life service. We recommend to shut off all electrical power inlets and main water inlets.
7. At the end of the working day, open the machine door and clean both magnets on washing drum from metalic dust. Use an adhesive tape.

IMPORTANT: For proper function keep the magnets clean.

Checking and Maintenance Every Three Months

1. Check the bearing house for leakage.
2. Check if the drain valve is not leaking during the wash process. It is also important that the valve opens properly afterwards (drain valve opens when electrical power falls out). Wash out the drain if the water doesn't drain fluent.
3. Check for the belt tension or possible damage; therefore remove the machine side cover.
4. Check the tightness of the bolts according to chapter *Tightening Moments*.
5. Check visually all hoses and connection inside the machine for leaking.
6. Make sure that the control components are protected against moisture and dust during the clean up. Wipe and clean up the machine inside.
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).

Checking and Maintenance Every Six Months

WARNING

Before removing covers 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.

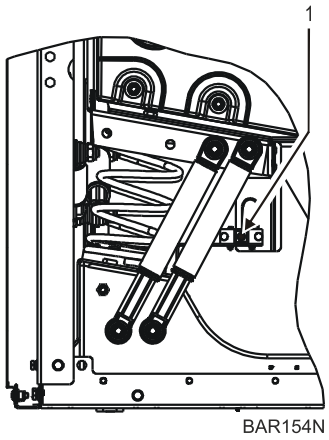
C207

1. Clean the filters in the water connection at the valves.
2. Turn off the tap.
3. Unscrew the inlet hoses from the appliance.
4. Take out the filter at the center with pointed pliers, clean and re-insert. When re-attaching the hoses, make sure that the seals are seated correctly.
5. Check water inlets for leaks.
6. Tighten the connections or replace the seals of the inlet hose if necessary.
7. Remove dirt and dust, clean, and verify functionality from:
   - the cooling fin of the inverter
   - the motor cooling fins
   - the internal ventilator of the inverter (if present)
   - the external ventilator (if present)
   - the external air relieves of the machine

Adjusting of Safety Switch

- The safety switch is an important component which must - if correctly adjusted - stop the machine when excessive movement and shaking occur due to an unbalance caused by improper distribution of linen in the washing drum, or when the amount of laundry exceeds the machine capacity.
  - Setting the safety switch without laundry inserted in drum: 18-24-28 kg / 40-55-65 lb / 180-240-280 L: X = 0.08 in. [2 mm] .
  - The X dimension represents the distance between the lower edge of the lug and the stick of safety switch. Refer to *Figure 51* .

Safety Switch



1. Stick of Safety Switch

Figure 51

WARNING

Do not use the machine if this function doesn't work properly! This functional test can only be executed by a qualified technician with proper authorization.

C239

Belt Replacement and Adjusting Tension

WARNING

Make sure the machine is disconnected from power supply by use and secure the disconnecting device.change the belts: never use a crowbar, screw driver or alike to take off the belts over the pulley!

C240

- On a new machine and after a belt replacement, make an inspection of the belt tightness:
  - After first 24 hours of operation
  - After first 80 hours of operation
  - Every 6 months or every 1000 operation hours - which ever comes first.
- The belts are accessible from the side of the machine – the side with main switch. If the belts are too tight or too loose, the durability will be shortened. If too loose they can be slipping on the pulley and can cause a noisy operation and generate excessive wear with fast breaking as consequence. In such cases correcting the belts tension is necessary, see the recommended values below.
  - 18 kg / 40 lb / 180 L: 64-69 Hz
  - 24-28 kg / 55-65 lb / 240-280L: 72-75 Hz

WARNING

To change the belts: Never use a crowbar, screw driver or alike to take off the belts over the pulley!

C241

Lubrication

WARNING

Carry out the lubrication procedure only when the main switch is off and all components have been stopped! (unless stated otherwise in the following instructions).

C242

- Use a grease press.
- Press the lubrication in slowly. High pressure may distort the sealing.
- Use lubricating grease containing extreme-pressure additives of the following characteristics:
  - NLGI consistency no. 2
  - Lithium base
  - EP additives
  - With anti-corrosion properties
  - Stable against oxidation
  - Water resistant
  - Good mechanical and thermal stability
  - Recommended lubricants: Gadus S2 V220 2 (SHELL), Alvania EP2 LF (SHELL), Beacon EP2 (ESSO)
- The standard location of lubrication points on the upper panel. Refer to *Figure 52* .
- On request - location of lubrication points is under the covers on the left and right side of the machine. Refer to *Figure 53* .

Before You Start the Lubrication Procedure

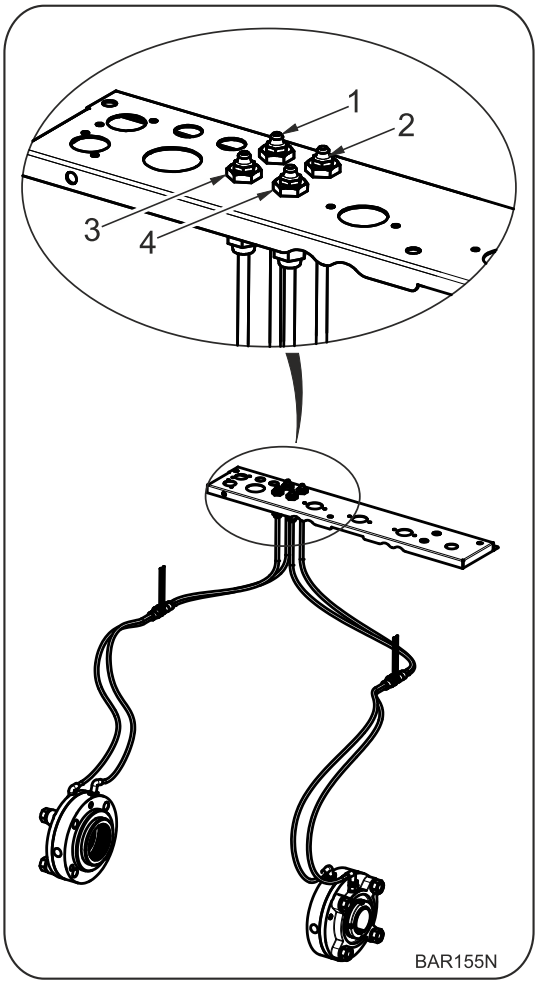
1. Put the machine in the extraction mode of operation for about 10 minutes in order to warm up the old grease in the bearings.

2. Switch the machine off, slowly pump the lubricant and at the same time turn the drum.
3. Remove the excess pressed out lubrication. After the sealing has been lubricated, it might occur that certain amount of excess lubrication is pressed out into the area of the external drum (tub). In order to remove the excess lubrication, carry out hot wash cycle without any laundry. Thus, the grease is washed away.

Once every 6 months carry out lubrication of:

- Bearings - 4 grams for one bearing, (approximately 4 strokes, based on the grease press type).
- Sealing rings - 3 grams for one sealed spot, (approximately 3 strokes, based on the grease press type).

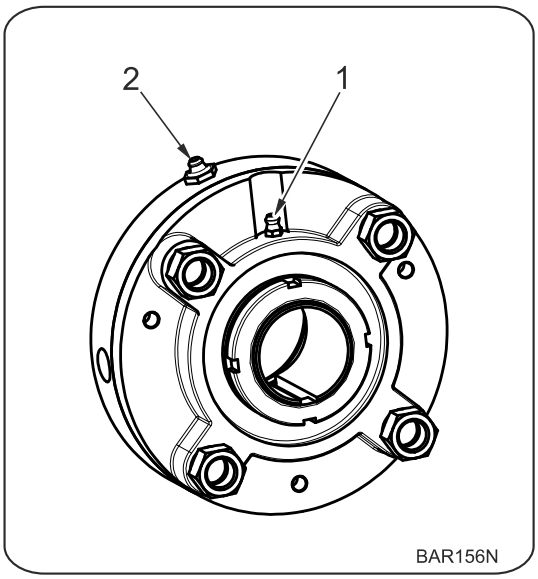
Lubricator on the upper Panel – on Request



1. Left bearing lubrication
2. Right bearing lubrication
3. Left sealing ring lubrication
4. Right sealing ring lubrication

Figure 52

Lubricator



1. Bearing lubricator
2. Lubricator of sealing rings

Figure 53

Water Filters

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

WARNING

Before you start cleaning the water filters, check if all water inlet to the machine is closed.

C243

Tightening Moments

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

Replacement Washer Fuses

Fuse Values

The correct values of fuses can be found in the vicinity of the fuse holders and on the electrical scheme and delivered with the machine. When a fuse is blown, you can replace it with the same value but in NO case a higher value. If the fuse blows again, do

not change it, but find the cause of the failure. Contact your commercial distributor for help if necessary.

Troubleshooting

Unblocking of the Door lock in Case of Emergency

WARNING

Before the emergency door opening turn off the machine main switch! Never open the door while drum is still running! Never open the door if "too hot" is indicated! Risk of burn or scald injuries! Never open the door if the machine parts feels too warm! Never open the door, until there is no water in the drum! In the opposite case, it will flow out after opening the door.

C220

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:

1. Verify if all condition are present to safely open the door.
2. Gently push the washing unit to back.
3. Remove finger protection from front panel where the door-lock is located.
4. Put your fingers over the edge of the front panel on the door lock side.
5. Push the emergency door opening button.
6. Open the door if all safety conditions are fulfilled.

How to Remedy Incorrect Position of Drum

Unloading Side (Clean Side)

1. After the wash cycle has terminated, open the outer door.
2. Close them again within 30 seconds (at the latest).
3. New positioning of the drum will occur.

Loading Side (Dirty side)

1. Close the outer door.
2. Press the "arrow down" button on the programmer.
3. New positioning of the drum will occur.

Error Indication Shown on Display

Refer to Programming Manual.

List of Recommended Spare Parts

- Drain valve
- 2-way inlet valve
- 3-way inlet valve
- 4-way inlet valve
- Steam valve
- Door lock
- Fuses
- Thermostat sensor
- Motor contactor
- Heating contactor
- Heating element
- V-belts
- Door seal

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

Disposal of Unit

Disconnecting the Machine

1. Switch off the external electric power inlet to the machine.
2. Turn off the main switch on the machine.
3. Shut the external water or steam inlet to the machine.
4. Make sure that the external electric power and steam inlets are shut off. Disconnect all electric, water or steam inlets.
5. Insulate the external electric power inlet conductors.
6. Equip the machine with a sign “OUT OF SERVICE”.
7. Unscrew nuts (bolts) fixing the machine to the floor.
8. During transportation follow the instructions stated in chapter Transportation and Unpacking.

In case the machine will never be used again, secure it so that injury of persons, damage to health, property, and nature is avoided. Make sure enclosing of persons or animals inside the machine cannot occur, injury of persons by moving or sharp parts of the machine, possibly operating fills, (e.g. remove the door, secure the drum against turning, … and similar.)

NOTE: Be careful, falling door and glass can cause injuries.

Machine Disposal

WARNING

Take all necessary precautions while disassemling the washer to avoid injuries from glass or sharp metal edges.

C098

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. o 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.
- Information for dealers: Due to the diversity of the national legislations, manufacturer can not take all the measures to be in accordance with all national legislations of each member state. We expect that each dealer who imports our appliances into a member state (and puts it on the market) takes the necessary steps to be in rule with the national legislation (as the directive requires).

Possibility of the Machine Liquidation by Own Potential

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

China Restriction of hazardous substances (RoHS)

The Table of Hazardous Substances/Elements and their Content As required by China's Management Methods for Restricted Use of Hazardous Substances in Electrical and Electronic Products

Hazardous substances						
Part Name	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CR[VI])	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
PCBs	X	O	O	O	O	O
Electromechanical Parts	O	O	O	O	O	O
Cables and Wires	O	O	O	O	O	O
Metal Parts	O	O	O	O	O	O
Plastic Parts	O	O	O	O	O	O
Batteries	O	O	O	O	O	O
Hoses and Tubing	O	O	O	O	O	O
Textile	O	O	O	O	O	O
Timing Belts	O	O	O	O	O	O
Insulation	O	O	O	O	O	O
Glass	O	O	O	O	O	O
Display	O	O	O	O	O	O

This table is prepared in accordance with the provisions of SJ/T-11364.

O: Indicates that the content of said hazardous substance in all of the homogenous materials in the component is within the limits required by GB/T 26572.

X: Indicates that the content of said hazardous substance exceeds the limits required by GB/T 26572 in at least one homogenous material in the component.

All parts named in this table with an "X" are in compliance with the European Union's RoHS Legislation.

NOTE: The referenced Environmental Protection Use Period Marking was determined according to normal operating use conditions of the product such as temperature and humidity.

This product under normal use, durable years of environmental protection is 15 years.