

# Washer-Extractors

Commercial Softmount

Refer to Page 12 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.)



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# Safety Information

## Explanation of Safety Instructions Messages

Precautionary statements (“DANGER,” “WARNING,” and “CAUTION”), followed by specific instructions, are found in this manual and on machine decals. These precautions are intended for the personal safety of the operator, user, servicer, and those maintaining the machine.



	<b>DANGER</b>
Indicates an imminently hazardous situation that, if not avoided, will cause severe personal injury or death.	
	<b>WARNING</b>
Indicates a hazardous situation that, if not avoided, could cause severe personal injury or death.	
	<b>CAUTION</b>
Indicates a hazardous situation that, if not avoided, may cause minor or moderate personal injury or property damage.	

Additional precautionary statements (“IMPORTANT” and “NOTE”) are followed by specific instructions.


**IMPORTANT:** The word “IMPORTANT” is used to inform the reader of specific procedures where minor machine damage will occur if the procedure is not followed.

**NOTE:** The word “NOTE” is used to communicate installation, operation, maintenance or servicing information that is important but not hazard related.


## Important Safety Instructions


	<b>WARNING</b>
	<p>Read all the instructions before using the machine. Save these Instructions for future reference.</p>


### Electrical shock prevention


	<b>DANGER</b>
<p>Electrical shock hazard will result in death or serious injury.</p> <p>Before inspecting, maintenance or servicing machines, power supply must be turned OFF. The servicer needs to wait for at least ten (10) minutes after turning the power OFF.</p> <p>This machine must be connected to a grounded metal, permanent wiring system, and an equipment grounding conductor must be run with the supply conductors and connected to the equipment grounding terminal on the machine.</p> <p>When the main switch is turned off, the inlet terminals of the main switch are still under current.</p> <p>The inverter remains charged with high voltage for some time after powering OFF. Before starting inspection of the inverter, check for residual voltage across main circuit terminals “ + “ and “ - “. This voltage must be below 30 VDC before the servicer can access the inverter for inspection.</p> <p>Do NOT connect inverter manufacturer devices or other devices to the frequency controller to manipulate the behavior. No modification to the settings are allowed.</p> <p>This is an imminently hazardous situation that, if not avoided, will cause severe personal injury or death.</p>	

## Installation – Maintenance prevention


	<b>WARNING</b>
<p>Machine installations must comply with minimum specifications and requirements stated in the applicable Installation Manual, any applicable municipal building codes, water supply regulations, electrical wiring regulations and any other relevant statutory regulations. Due to varied requirements and applicable local codes, this machine must be installed, adjusted, troubleshooting and serviced by qualified maintenance technician which is familiar with the applicable local codes and the construction and operation of this type of machinery. They must also be familiar with the potential hazards involved. Failure to observe this warning may result in personal injury and/or property damage.</p> <p>Always verify the static and dynamic requirements with a building engineer to meet the requirements of the permissible loads, vibrations and noise level of the building.</p> <p>Ensure and install the machine on a level floor of sufficient strength. Ensure that the recommended clearances for inspection and maintenance are provided. Never allow the inspection and maintenance space to be blocked.</p> <p>To reduce the risk of fire, this appliance must be installed and secured to an uncovered not obstructed concrete floor.</p> <p>If a forklift or a pallet truck is used to transport or install the machine, ensure that the carrying capacity and the forks length are sufficient. By given center of gravity, pay the necessary attention to the distribution of the center of gravity by lifting and transport.</p> <p>In case the machine needs to be anchored, do not tighten nuts of the anchoring bolts before the concrete base around the bolts is completely hardened. The bolts must be tightened by means of torque wrench.</p> <p>Do not install the machine over an open water storage or drain system.</p> <p>Adequate ventilation must be provided to avoid the back flow of gases into the room from appliances burning other fuels.</p>	

	<b>WARNING</b>
<p><b>ALWAYS</b> disconnect the machine from Electrical power, Water, Steam and all other connected supplies during installation, before attempting any service, replacing parts and maintenance.</p> <p>If the machine is not equipped with means to isolate them from all energy sources (e.g. water, electricity, steam, compressed air), than such means must be part of the fixed installation external to the machine. Such isolators shall be clearly identified. They shall be capable of being locked if reconnection could endanger persons.</p> <p>After the energy source is disconnected, follow the install procedure to safely, dissipate any remaining or stored energy in the circuits of the machine.</p> <p>Use machine only for its intended purpose, suitable laundry textiles. Never wash/dry/iron something else like polymers, machine parts, automotive parts or other ferro materials in the machine. This could result in serious injury and machine damage.</p> <p>In case the machine is provided with shipping braces, they must be removed prior to putting into service. See Install instruction for safely remove them.</p> <p>Sharp edges can cause personal injury. Wear safety glasses and gloves, use proper tools and provide lighting when handling sheet metal parts.</p>	


	<b>WARNING</b>
<p>Failure to do so may result in conditions which can produce serious injury, death and/or property damage.</p>	

	<b>WARNING</b>
<p>The washer is provided with Air vents wherefrom Vapors can escape! Do not connect or cover them!</p> <p>Automatic door-lock unlocking devices must not be utilized or installed on machines that are fitted with a drain pump or reverse function drain valve.</p> <p>The new hose sets supplied with the appliance are to be used. Old hose sets should not be reused.</p>	


Electrical - Energy Prevention


	<b>WARNING</b>
<p>Machine must be hard-wired. Use copper conductors only.</p> <p>Refer to the Earthing (grounding) instructions in the INSTALLATION manual for the proper grounding of the machine. In event of malfunction, breakdown or leakage current, 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 qualified installer to ensure the machine is adequately grounded at installation, following all the national and local requirements.</p> <p>If there are other washers or appliances with exposed conductive parts, which can touch simultaneously, make sure to make equipotential bonding between all these appliances. The external protective terminal for this purpose is located on the rear side of the machine frame. The minimum protection conductor's cross section depends on the supply cable cross section of the appliance of the highest current rating.</p> <p>An individual branch circuit needs to be used for each machine.</p> <p>If the machine is not equipped with a supply mains disconnecting device, means for disconnection all poles must be incorporated in fixed wiring in accordance with overvoltage category III conditions and the relevant local wiring rules and must be located so that it is easily accessible with the machine in place.</p> <p>If disconnection is foreseen by means of a plug, it must be placed and installed in such a way that an operator can check from any of the points to which he has access, that the plug remains removed. If this is not possible, due to its installation, a disconnection with a locking system in the isolated position shall be provided.</p> <p>Dangerous voltages are present inside the machine. Disconnect power from the machine before removing any cover and guards, and before attempting any maintenance, troubleshooting or service procedures or replacing parts.</p> <p>To reduce the risk of an electric shock or fire, DO NOT use an extension cord or an adapter to connect the machine to the electrical power source.</p> <p>The machine is not designed for use in IT networks. Applicable measures need to be provided.</p>	


Use Limitation

	<b>WARNING</b>
<p>The machine cannot be used by children aged under 8 years.</p> <p>This appliance cannot be used by children aged from 8 and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision and instruction concerning use of the machine in a safe way and understand the hazard involved, by a person responsible for their safety.</p> <p>Children should be supervised to ensure that they do not play on, in or with the machine. Close supervision of children is necessary when the machine is used near children.</p> <p>Cleaning and maintenance shall not be made by children.</p>	

Operation Prevention


	<b>WARNING</b>
<p>Never operate the machine with any guards, panels and/or parts removed or broken. Do NOT bypass any safety devices or tamper with the controls.</p> <p>Safety decals appear at crucial locations on the machine. Failure to maintain legible safety decals could result in injury to the operator or service technician.</p> <p>Use only authorized spare parts in the event of failure. Do not repair or replace any part of the machine 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.</p> <p>If the supply cord is damaged, it must be replaced by a qualified technician to avoid a hazard.</p> <p>Never touch internal or external steam pipes, connections, or components. These surfaces can be extremely hot and will cause severe burns. The steam supply must be turned off and allow the pipe, connections and components to cool before these can be touched.</p> <p>Avoid contact with hot inlet water temperatures higher than 125° Fahrenheit [51°C] or hot surfaces.</p>	


	<b>WARNING</b>
<p>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 by qualified personnel.</p> <p>Loading door must be closed any time the machine is operating.</p> <p>Do NOT attempt to open the door until the machine has drained and all moving parts have stopped. NEVER insert hands or objects into basket until it has completely stopped.</p> <p>Do NOT bypass the door protections that prevent the machine from operating with the loading door open.</p> <p>Operating the washer with severe out-of-balance loads could result in personal injury and serious equipment damage.</p> <p>Before using the emergency door opening function, turn off the machine's main switch. Never open the door while the basket is still running or if the machine parts feel too warm or if "Too hot" is indicated. Always wait to open the door until there is no water in the drum.</p>	


	<b>WARNING</b>
<p>If the washer is fitted with an automatic unlocking device, to unlock the door after a power disconnect, wait until the circuit unlocks the doorlock. Before open the door makes sure that the basket is completely stopped and the water has drained.</p>	



## Injury Prevention

	<b>WARNING</b>
<p>To reduce the risk of fire, electric shock, or in jury to persons when using your machine, follow these precautions, including the following:</p> <ul style="list-style-type: none"> <li>• Do not install or store the washer where it will be exposed to water and/or weather conditions.</li> <li>• 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.</li> <li>• Under certain conditions, hydrogen gas may be produced in a hot water system that has not been used for two weeks or more. <b>HYDROGEN GAS IS EXPLOSIVE.</b> 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.</li> <li>• Use only low-sudsing, no-foaming types of detergents. Be aware that hazardous chemicals may be present. Wear hand and eye protection when handling detergents and chemicals. Always read and follow manufacturer's instructions on packages of laundry and cleaning aids. Read all warnings or precautions. To reduce the risk of poisoning or chemical burns, always keep them out of the reach of children [preferably in a locked cabinet].</li> </ul>	

	<b>WARNING</b>
<ul style="list-style-type: none"> <li>• Do not use fabric softeners or products to eliminate static unless recommended by the manufacturer of the fabric softener product.</li> <li>• Always follow the fabric care instructions supplied by the textile manufacturer.</li> <li>• If the machine is provided with a bath sample tap, be careful by taking the sample to avoid injuries by hot water or chemicals.</li> <li>• Do not climb or stand on the washer, do not reach or climb into the drum.</li> <li>• Do not push, pull or press on the enclosure, its corners or on protruding parts of the contour line of the machine.</li> <li>• Never put fingers between door sealing and drum by manipulating or closing the door.</li> <li>• Be aware that water is used to flush the supply dispenser. Avoid opening the dispenser lid while the machine is running.</li> <li>• Do not attach anything to the supply dispenser's nozzles, if applicable. The air gap and overflows must be maintained.</li> </ul>	

	<b>WARNING</b>
<ul style="list-style-type: none"> <li>• Do not operate the machine without the water reuse plug or water reuse system in place, if applicable.</li> <li>• Be sure that fill hose connections are tight. <b>CLOSE</b> the shut-off valves at the end of each wash day.</li> <li>• Keep the washer in good condition. Bumping or dropping the washer can damage safety features. If this occurs, have the washer checked by a qualified service person.</li> <li>• Before the washer is removed from service or discarded, remove the door from the tub assembly and in case present, the washing compartment. Secure door and glass to prevent breaking and injury of by sharp edges.</li> <li>• To avoid machine corrosion and component failure, do not use corrosive chemicals in the machine. The use of hypochlorite will cause corrosion which may cause component failure under certain circumstances.</li> <li>• Always contact your dealer, distributor, service agent or the manufacturer on any problems or conditions you do not understand.</li> </ul>	

Operation Prevention



## CAUTION

Machines referred to by model in this manual are NOT intended for domestic use by private consumers in the home environment. Machines referred to by model in this manual are intended to be used by the general public in applications such as:

- Staff kitchen areas in shops, offices, kitchens and other working environments
- Farmhouses, bed and breakfast type environments
- By clients in hotels, motels and other residential type environments
- Areas for communal use in blocks of flats or in launderettes
- any other similar applications

**IMPORTANT:** Models outside of North America : All machines are produced in according to the EU 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).

**IMPORTANT:** The **IMPORTANT SAFETY INSTRUCTIONS** appearing in this manual are not meant to cover all possible conditions and situations that may occur. Observe and be aware of other labels and precautions that are located on the machine. They are intended to provide instructions for safe use of the machine. Common sense, caution and care must be exercised when installing, maintaining, or operating the machine.

**NOTE:** 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.

**NOTE:** For technical assistance, contact your local distributor or contact:

Alliance Laundry Systems

Shepard Street

P.O. Box 990

Ripon, WI 54971-0990 U.S.A.

[www.alliancelaundry.com](http://www.alliancelaundry.com)

Phone: +1 (920) 748-3121

# Introduction

## Model Identification

Information in this manual is applicable to following models:

<b>EU - UK Declaration of Conformity</b>						
We, Alliance Laundry CE s.r.o., as manufacturer hereby declares on our own and sole responsibility, that the products to which this document relates, is designed accordance and fulfils all the relevant provisions of the EU Directives and UK Regulations.						
1. Manufacturer: Alliance Laundry CE s.r.o. Mistecká 1116 742 58 Příbor Czech Republic						
2. Apparatus Product: Commercial washer extractors with the following Model Numbers:						
WF065B <sup>(1)</sup>	WF080B <sup>(1)</sup>	WF105B <sup>(1)</sup>	WF135B <sup>(1)</sup>	WF180B <sup>(1)</sup>	WF240B <sup>(1)</sup>	WF280B <sup>(1)</sup>
WR080B <sup>(1)</sup>	WR105B <sup>(1)</sup>	WR135B <sup>(1)</sup>	WR180BN <sup>(1)</sup>	WR180B <sup>(1)</sup>	WR240BN <sup>(1)</sup>	WR240B <sup>(1)</sup>
WR280BN <sup>(1)</sup>	WR280B <sup>(1)</sup>	WR350B-230V <sup>(1)</sup>	WR350B-400V <sup>(2)</sup>	WR520B <sup>(2)</sup>		
Serial Numbers:						
65FX000001ym-65FX999999ym	80FX000001ym-80FX999999ym	105FX000001ym-105FX999999ym				
135FX000001ym-135FX999999ym	180FX000001ym-180FX999999ym	240FX000001ym-240FX999999ym				
280FX000001ym-280FX999999ym	80RX000001ym-80RX999999ym	105RX000001ym-105RX999999ym				
135RX000001ym-135RX999999ym	180RX000001ym-180RX999999ym	240RX000001ym-240RX999999ym				
280RX000001ym-280RX999999ym	350RX000001ym-350RX999999ym	520RX000001ym-520RX999999ym				
ym: Can be any character.						
3. The object of the declaration described above is in conformity with the relevant EU Directives, UK Regulations, EU harmonized and UK Designated standards:						
MD #2006/42/EC - UK SoM (Safety) Regulations 2008						
EN50571: 2013/A1:2018						
IEC60335-2-7:2019						
Fulfil the safety objectives of the LVD 2014/35/EU and UK LV (Safety) Regulations 2016						
EMC Directive #2014/30/EU - UK EMC Regulations 2016						
EN 61000-6-2:2005/AC:2005						
EN 61000-6-3:2007/A1:2011 <sup>(1)</sup>						
EN 61000-6-4:2007/A1:2011 <sup>(2)</sup>						
RED #2014/53/EU - UK RE Regulations 2017						
ETSI EN 300 328 V2.1.1						
ETSI EN 301-489-1 Draft V2.2.1						
ETSI EN 301-489-17 Draft V3.2.0						
RoHS Directive #2011/65/EU - UK RoHS Regulations 2012						
EN IEC63000:2018						
Technical file compiled by and retained at Alliance Laundry CE s.r.o., Mistecká 1116, 742 58, Příbor, Czech Republic and Alliance Laundry Finance LTD, 1 Bartholomew Lane, London, England, EC2N 2AXUK.						
4. Signed for and on behalf of: Alliance Laundry CE s.r.o. Mistecká 1116 742 58 Příbor Czech Republic						
Radim Polednik, Quality Manager, 2023-01-02						CZW271N

Figure 1

Introduction

HY180\_HC-200

HYB180F

HYC180F

SY180\_QED

SY180\_QED-SELECT

SYB180A

SYB180D

SYC180A

SYC180D

UY180\_PROFORM

UYB180I

UYC180I

HY105_HC-200	HYE180F	HYQ105F	SY105_QED	SYC080D	SYG065A
HY135_HC-200	HYE240F	HYQ135F	SY105_QED-SELECT	SYC105A	SYG065D
HY180_HC-200	HYE280F	HYQ180F	SY135_QED	SYC105D	SYG080A
HY20_HC-200	HYG065F	HYQ240F	SY135_QED-SELECT	SYC135A	SYG080D
HY240_HC-200	HYG080F	HYQ280F	SY180_QED	SYC135D	SYG105A
HY25_HC-200	HYG105F	HYU065F	SY180_QED-SELECT	SYC180A	SYG105D
HY280_HC-200	HYG135F	HYU080F	SY20_QED-SELECT	SYC180D	SYG135A
HY30_HC-200	HYG180F	HYU105F	SY240_QED	SYC240A	SYG135D
HY40_HC-200	HYG240F	HYU135F	SY240_QED-SELECT	SYC240D	SYG180A
HY55_HC-200	HYG280F	HYU180F	SY25_QED-SELECT	SYC280A	SYG180D
HY65_HC-200	HYH065F	HYU240F	SY280_QED	SYC280D	SYG240A
HY70_HC-200	HYH080F	HYU280F	SY280_QED-SELECT	SYE065A	SYG240D
HY80_HC-200	HYH105F	HYW065F	SY30_QED-SELECT	SYE065D	SYG280A
HYB180F	HYH135F	HYW080F	SY40_QED-SELECT	SYE080A	SYG280D
HYC065F	HYH180F	HYW105F	SY55_QED-SELECT	SYE080D	SYH065A
HYC080F	HYH240F	HYW135F	SY65_QED	SYE105A	SYH065D
HYC105F	HYH280F	HYW180F	SY65_QED-SELECT	SYE105D	SYH080A
HYC135F	HYN020F	HYW240F	SY70_QED-SELECT	SYE135A	SYH080D
HYC180F	HYN025F	HYX065F	SY80_QED	SYE135D	SYH105A
HYC240F	HYN030F	HYX080F	SY80_QED-SELECT	SYE180A	SYH105D
HYC280F	HYN040F	HYX105F	SYB180A	SYE180D	SYH135A
HYE065F	HYN055F	HYX135F	SYB180D	SYE240A	SYH135D
HYE080F	HYN070F	HYX180F	SYC065A	SYE240D	SYH180A
HYE105F	HYQ065F	HYX240F	SYC065D	SYE280A	SYH180D
HYE135F	HYQ080F	HYX280F	SYC080A	SYE280D	SYH240A

*Table continues...*

SYH240D	SYU105A	SYX105D	UY240_PROFORM	UYG135I	UYU135I
SYH280A	SYU105D	SYX135A	UY25_PROFORM	UYG180I	UYU180I
SYH280D	SYU135A	SYX135D	UY280_PROFORM	UYG240I	UYU240I
SYN020D	SYU135D	SYX180A	UY30_PROFORM	UYG280I	UYU280I
SYN025D	SYU180A	SYX180D	UY40_PROFORM	UYH065I	UYW065I
SYN030D	SYU180D	SYX240A	UY55_PROFORM	UYH080I	UYW080I
SYN040D	SYU240A	SYX240D	UY65_PROFORM	UYH105I	UYW105I
SYN055D	SYU240D	SYX280A	UY70_PROFORM	UYH135I	UYW135I
SYN070D	SYU280A	SYX280D	UY80_PROFORM	UYH180I	UYW180I
SYQ065A	SYU280D	SYY065A	UYB180I	UYH240I	UYW240I
SYQ065D	SYW065A	SYY065D	UYC065I	UYH280I	UYX065I
SYQ080A	SYW065D	SYY080A	UYC080I	UYN020I	UYX080I
SYQ080D	SYW080A	SYY080D	UYC105I	UYN025I	UYX105I
SYQ105A	SYW080D	SYY105A	UYC135I	UYN030I	UYX135I
SYQ105D	SYW105A	SYY105D	UYC180I	UYN040I	UYX180I
SYQ135A	SYW105D	SYY135A	UYC240I	UYN055I	UYX240I
SYQ135D	SYW135A	SYY135D	UYC280I	UYN070I	UYX280I
SYQ180A	SYW135D	SYY180A	UYE065I	UYQ065I	UYX065I
SYQ180D	SYW180A	SYY180D	UYE080I	UYQ080I	UYX080I
SYQ240A	SYW180D	SYY240A	UYE105I	UYQ105I	UYX105I
SYQ240D	SYW240A	SYY240D	UYE135I	UYQ135I	UYX135I
SYQ280A	SYW240D	SYY280A	UYE180I	UYQ180I	UYX180I
SYQ280D	SYX065A	SYY280D	UYE240I	UYQ240I	UYX240I
SYU065A	SYX065D	UY105_PROFORM	UYE280I	UYQ280I	UYX280I
SYU065D	SYX080A	UY135_PROFORM	UYG065I	UYU065I	HYR065F
SYU080A	SYX080D	UY180_PROFORM	UYG080I	UYU080I	HYR080F
SYU080D	SYX105A	UY20_PROFORM	UYG105I	UYU105I	HYR105F
SYR065A	SYR240A	UY240_PROFORM	SYR280D	UYR135I	HYR135F
SYR080A	SYR280A	UYR065I	UYR065I	UYR180I	HYR180F
SYR105A	SYR065D	UYR080I	UYR080I	UYR240I	HYR240F
SYR135A	SYR080D	UYR105I	UYR105I	UYR280I	HYR280F
SYR180A		SYR105D			
		SYR135D			
		SYR180D			
		SYR240D			

## Regulatory Statements

### PRODUCT COMPLIANCE

Users of this product are cautioned not to make modifications or changes that are not approved by Alliance Laundry Systems, LLC. Doing so may void the compliance of this product with applicable laws and regulatory requirements and may result in the loss of the user's authority to operate the equipment.

### UNITED STATES

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions; (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the radio or television receiving antenna.
- Increase the separation between the computer equipment or receiver.
- Connect the equipment into an outlet on a circuit different from that to which the radio or television receiver is connected.
- Consult the dealer or experienced radio television technician for help.

	<b>CAUTION</b>
<p><b>To comply with the limits of the Class B device, pursuant to Part 15 of the FCC Rules, this device is to comply with Class B limits. All peripherals must be shielded and grounded. Operation with non-certified peripherals or non-shielded cables is likely to result in interference and reception of the device.</b></p>	
W1004	

**Radiation Exposure Statement** : This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. The radio installed in this equipment and is intended to operate with minimum distance 20cm between the radiator and your body.

**Limited Channels Fixed For Use In USA** : IEEE 802.11b or 802.11g or 802.11n(HT20) operation of this product in the U.S. is firmware-limited to Channel 1 through 11.

### CANADA - CAN ICES-3(B)/NMB-3(B)

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s) standards. Operation is subject to the following two conditions:

- This device may not cause interference.
- This device must accept any interference, including interference that may cause undesired operation of the device.

**Radiation Exposure Statement:** This equipment complies with Innovation, Science and Economic Development Canada's radiation exposure limits set forth for in RSS-102. The radio installed in this equipment is installed and is intended to operate with minimum distance 20cm between the radiator and your body.

### AUSTRALIA/NEW ZEALAND

The radio in this equipment complies with and is certified to the Australian and New Zealand regulatory requirements.

### BRAZIL ANATEL (Brazilian Portuguese)

This equipment operates in secondary status, that is, it is not entitled to protection against harmful interference, even for type stations, and cannot cause interference to systems operating in primary status.

### CHINA SRRC (Simplified Chinese)

The radio device has received certification of conformance in accordance with the People's Republic of China State Radio Regulation Committee (SRRC) certification scheme. Integrations of this radio into a final product does not require additional radio certification provided installation instructions are followed. No changes are authorized to the radio or the antenna of the approved device.

### JAPAN

This product is equipped with a certified wireless device pursuant to Article 2-1-19 of the Certification Ordinance. No changes are authorized to the radio or the antenna of the approved device.

### MEXICO IFETEL (Mexico Spanish)

“The operation of this equipment is subject to the following two conditions: (1) it is possible that this equipment or device does not cause harmful interference and (2) this equipment or device must accept any interference, including that which may cause its unwanted operation.”

### SOUTH KOREA (KC) (Korean)

The radio device has received certification of conformance in accordance with the Radio Waves Act. Integration of this radio into

Introduction

a final product does not require additional radio certification provided installation instructions are followed. No changes are authorized to the radio or the antenna of the approved device.

**TAIWAN**

The information in this section applies to products bearing the Taiwan National Communications Commission mark:

This telecom equipment has complied with NCC regulations.

According to “Administrative Regulations of Low Power Radio Waves Radiated Devices:

Article 12 The low-power radio-frequency devices must not be altered by changing the frequency, enhancing emission power, adding external antenna, and modification of original design characteristic as well as function.

Article 14 The operation of the low-power radio-frequency devices is subject to the conditions that no harmful interference is

caused. The user must stop operating the device immediately should harmful interference is caused and shall not resume until the condition causing the harmful interference has been corrected.

Moreover, the interference must be accepted that may be caused by the operation of an authorized communications, or ISM equipment. (1) Precautions (marked in the product manual and on outer packaging)

**THAILAND**

The information in this section applies to products approved by the Thailand National Communications Commission:

These telecommunication and device are compliance with the requirements of National Broadcasting and Telecommunication Commission.

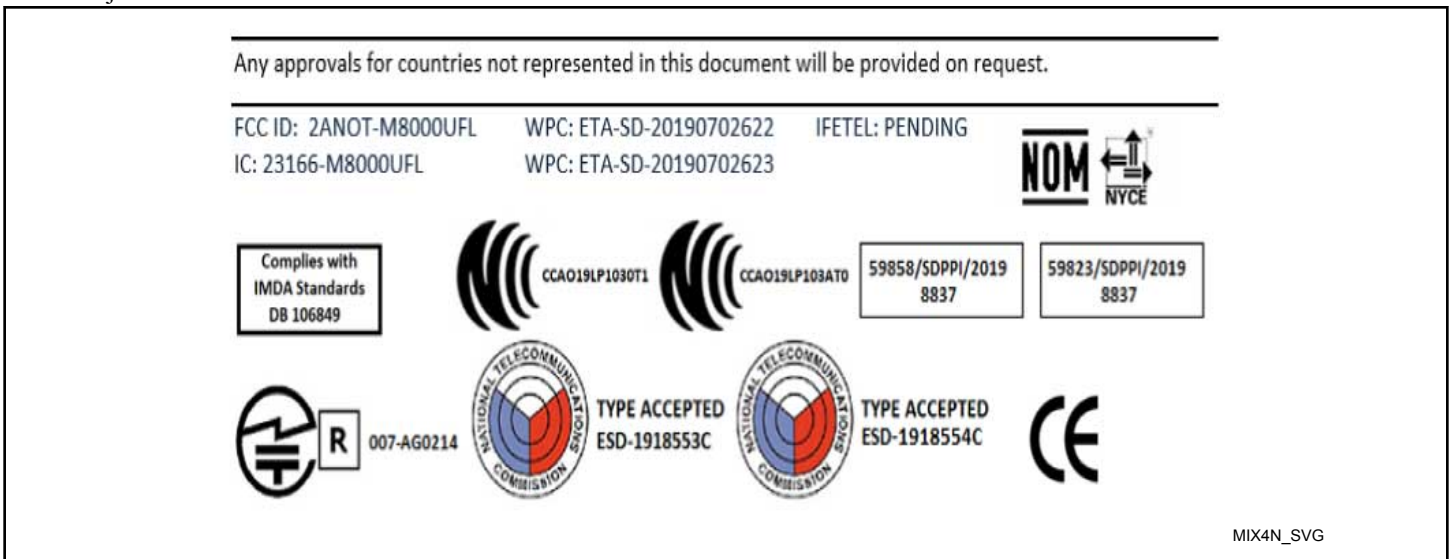


Figure 2



## Serial Plate Location

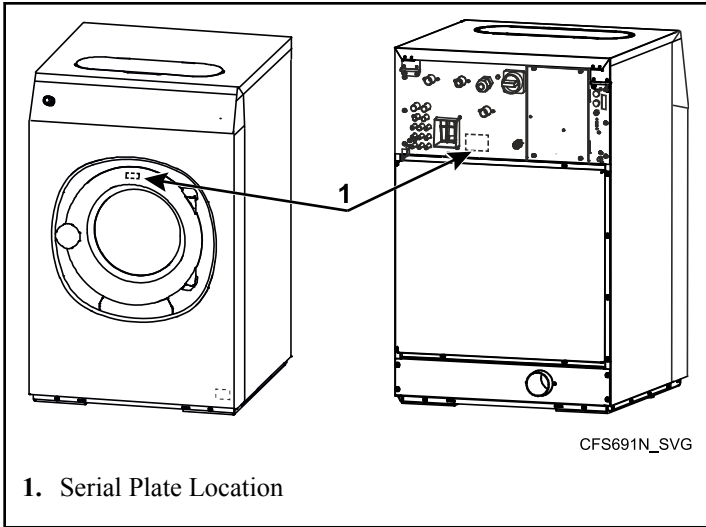


Figure 3

The serial plate is located on the rear panel 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
2016	F
2017	H
2018	K
2019	M

Table 1 *continues...*

Manufacturing Date - Year	
Year	Serial Number Character
2020	Q
2021	S
2022	U
2023	W
2024	Y

Table 1

<b>Manufacturing Date - Month</b>	
<b>Month</b>	<b>Serial Number Character</b>
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.

# Specifications and Dimensions

## General Specifications

<b>Specifi- cations</b>	<b>6.5 kg / 14 lb. / 65 L Models</b>	<b>7.5 kg / 20 lb. / 75 L Models</b>	<b>10.5 kg / 25 lb. / 105 L Models</b>	<b>13.5 kg / 30 lb. / 135 L Models</b>	<b>18 kg / 40 lb. / 180 L Models</b>	<b>24 kg / 55 lb. / 240 L Models</b>	<b>28 kg / 70 lb. / 280 L Models</b>
<b>Capacity</b>							
Drum Ca- pacity, lb. [kg]	14 lb. [6.5 kg]	20 lb. [7.5 kg]	25 lb. [10.5 kg]	30 lb. [13.5 kg]	40 lb. [18 kg]	55 lb. [24 kg]	70 lb. [28 kg]
<b>Overall Dimensions</b>							
Overall width, in. [mm]	27.95 [710]	27.95 [710]	31.29 [795]	31.29 [795]	38.18 [970]	38.18 [970]	38.18 [970]
Overall height, in. [mm]	43.89 [1115]	43.89 [1115]	48.22 [1225]	48.22 [1225]	55.51 [1410]	55.51 [1410]	55.51 [1410]
Overall depth, in. [mm]	29.13 [740]	31.10 [790]	31.29 [795]	37.20 [945]	38.18 [970]	43.50 [1105]	46.65 [1185]
<b>Weight and Shipping Information</b>							
Net weight, lbs. [kg]	375 [170]	408 [185]	463 [210]	563 [255]	838 [380]	948 [430]	1092 [495]
Shipping weight, lbs. [kg]	397 [180]	441 [200]	518 [235]	606 [275]	871 [395]	992 [450]	1135 [515]
<b>Wash Cylinder Information</b>							
Cylinder di- ameter in. [mm]	20.87 [530]	20.87 [530]	24.40 [620]	24.40 [620]	29.53 [750]	29.53 [750]	29.53 [750]
Cylinder depth in. [mm]	12.01 [305]	13.78 [350]	13.78 [350]	17.72 [450]	16.14 [410]	21.46 [545]	24.41 [620]
Cylinder vol- ume ft <sup>3</sup> [l]	2.3 [65]	2.65 [75]	3.71 [105]	4.77 [135]	6.36 [180]	8.48 [240]	9.9 [280]

Table 3 *continues...*

<b>Specifi- cations</b>	<b>6.5 kg / 14 lb. / 65 L Models</b>	<b>7.5 kg / 20 lb. / 75 L Models</b>	<b>10.5 kg / 25 lb. / 105 L Models</b>	<b>13.5 kg / 30 lb. / 135 L Models</b>	<b>18 kg / 40 lb. / 180 L Models</b>	<b>24 kg / 55 lb. / 240 L Models</b>	<b>28 kg / 70 lb. / 280 L Models</b>
<b>Door Opening Information</b>							
Door opening size, in. [mm]	13 [330]	13 [330]	16.14 [410]	16.14 [410]	18.11 [460]	18.11 [460]	18.11 [460]
Height of door bottom above floor, in. [mm]	13.74 [349]	13.74 [349]	13.46 [342]	13.46 [342]	18.77 [477]	18.77 [477]	18.77 [477]
<b>Drive Train Information</b>							
Number of motors in drive train	1	1	1	1	1	1	1
Motor Size, hp [kW]	1 [0.75]	1 [0.75]	1.48 [1.1]	2.01 [1.5]	2.95 [2.20]	4.02 [3.0]	4.02 [3.0]
<b>Cylinder Speeds</b>							
Wash, RPM	49	49	49	49	42	42	42
Extraction, RPM (350G)	N/A	N/A	N/A	N/A	N/A	N/A	915
Extraction, RPM (400G)	1165	1165	1075	1075	980	980	N/A
<b>Heating</b>							
Electric, kW	6 / 9 (4.6)	6 / 9 (4.6)	6 / 9 / 12	9 / 12	12 / 18	18	21.9
Minimum and Maximum Steam pressure, PSI [bar] [kPa]	15-116 [1-8] [100-800]	15-116 [1-8] [100-800]	15-116 [1-8] [100-800]	15-116 [1-8] [100-800]	15-116 [1-8] [100-800]	15-116 [1-8] [100-800]	15-116 [1-8] [100-800]
Minimum and Maximum Water pressure, PSI [bar] [kPa]	15-87 [1-6] [100-600]	15-87 [1-6] [100-600]	15-87 [1-6] [100-600]	15-87 [1-6] [100-600]	15-87 [1-6] [100-600]	15-87 [1-6] [100-600]	15-87 [1-6] [100-600]
Hot water, °F [°C]	185 [85]	185 [85]	185 [85]	185 [85]	185 [85]	185 [85]	185 [85]

Table 3 *continues...*

<b>Specifi- cations</b>	<b>6.5 kg / 14 lb. / 65 L Models</b>	<b>7.5 kg / 20 lb. / 75 L Models</b>	<b>10.5 kg / 25 lb. / 105 L Models</b>	<b>13.5 kg / 30 lb. / 135 L Models</b>	<b>18 kg / 40 lb. / 180 L Models</b>	<b>24 kg / 55 lb. / 240 L Models</b>	<b>28 kg / 70 lb. / 280 L Models</b>
<b>Noise Emissions</b>							
Wash se- quence, dB	46	52	52	50	50	50	47
Extract se- quence, dB	59	63	66	65	68	66	70

Table 3 *continues...*

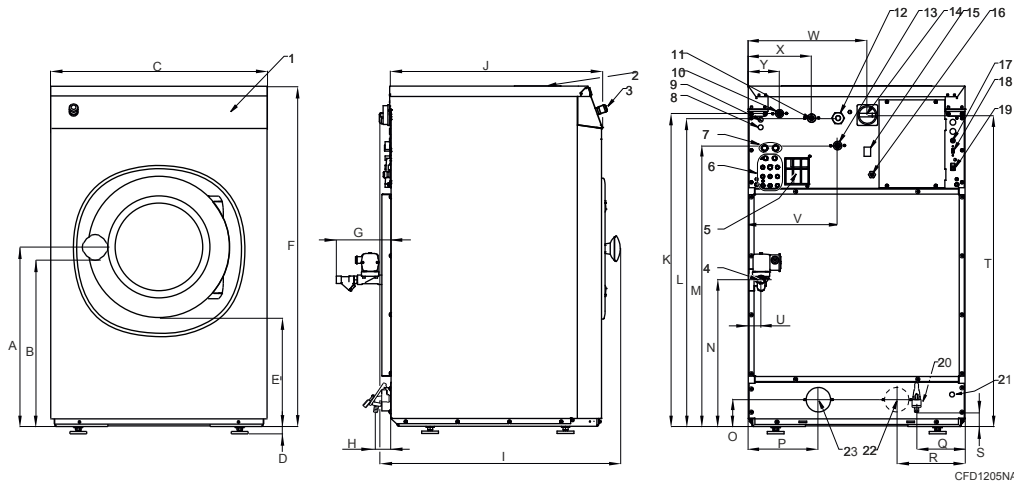
<b>Specifi- cations</b>	<b>6.5 kg / 14 lb. / 65 L Models</b>	<b>7.5 kg / 20 lb. / 75 L Models</b>	<b>10.5 kg / 25 lb. / 105 L Models</b>	<b>13.5 kg / 30 lb. / 135 L Models</b>	<b>18 kg / 40 lb. / 180 L Models</b>	<b>24 kg / 55 lb. / 240 L Models</b>	<b>28 kg / 70 lb. / 280 L Models</b>
<b>Floor Load Data</b>							
Maximum static load on floor, lbs. [kN]	472 [2.1]	517 [2.3]	585 [2.6]	719 [3.2]	1102 [4.9]	1191 [5.3]	1304 [5.8]
Maximum dynamic load on floor, lbs. [kN]	405 ± 112 [1.8 ± 0.5]	428 ± 112 [1.9 ± 0.5]	495 ± 112 [2.2 ± 0.5]	607 ± 112 [2.7 ± 0.5]	899 ± 157 [4.0 ± 0.7]	1034 ± 247 [4.6 ± 1.1]	1124 ± 247 [5.0 ± 1.1]
Frequency of dynamic load, Hz	19.4	19.4	17.9	17.9	16.3	16.3	15.25
Static floor pressure lbs/ft <sup>2</sup> [kN/m <sup>2</sup> ]	96 [4.61]	98 [4.68]	99 [4.73]	100 [4.78]	121 [5.8]	113 [5.43]	116 [5.53]
Dynamic floor pressure lbs/ft <sup>2</sup> [kN/m <sup>2</sup> ]	83 ± 23 [3.95 ± 1.1]	81 ± 21 [3.87 ± 1.02]	84 ± 19 [4.0 ± 0.91]	84 ± 16 [4.04 ± 0.75]	99 ± 17 [4.73 ± 0.83]	98 ± 24 [4.71 ± 1.13]	99 ± 22 [4.76 ± 1.05]
<b>General Data</b>							
Ambient Temperature, °F [°C]	41-95 [5-35]						
Relative Humidity	30%-90% without condensation						
Height above sea level ft. [m]	up to 3280 [up to 1000]						
Storage Temperature, °F [°C]	34-131 [1-55]						

Table 3

## Machine Dimensions

**NOTE: Beginning January, 2018: 65 L and 105 L (25 lb.) models have embossed side panels.**

**NOTE: Beginning February, 2018: 75 L (20 lb.) and 135 L (30 lb.) models have embossed side panels.**



1. Control panel
2. Soap dispenser
3. Centralstop button
4. Steam connection
5. Air relieve
6. Liquid soap connection
7. Recycled water inlet
8. Steam valve connection
9. Recycled water valve cable inlet
10. Cold water inlet, soft
11. Cold water inlet, hard
12. Electrical connection
13. Hot water inlet
14. Main switch
15. Heating change-over switch
16. Liquid soap pump electrical connection
17. Fuses
18. USB port
19. PC programming connection
20. Drain Valve - 1/2", applicable for wash bath sample (on request only), 28 kg / 70 lb. / 280 L Models only
21. Discharge water cable inlet
22. Drain valve or recycle valve - 3 in. [76 mm] , 28 kg / 70 lb. / 280 L Models only
23. Drain valve - 3 in. [76 mm]

Figure 4

<b>Specifi- cations</b>	<b>6.5 kg / 14 lb. / 65 L Models in. [mm]</b>	<b>7.5 kg / 20 lb. / 75 L Models in. [mm]</b>	<b>10.5 kg / 25 lb. / 105 L Models in. [mm]</b>	<b>13.5 kg / 30 lb. / 135 L Models in. [mm]</b>	<b>18 kg / 40 lb. / 180 L Models in. [mm]</b>	<b>24 kg / 55 lb. / 240 L Models in. [mm]</b>	<b>28 kg / 70 lb. / 280 L Models in. [mm]</b>
A	24.09 [612]	24.09 [612]	25.51 [648]	25.51 [648]	31.73 [806]	31.73 [806]	31.73 [806]
B	22.20 [564]	22.20 [564]	23.62 [600]	23.62 [600]	29.84 [758]	29.84 [758]	29.84 [758]
C	27.95 [710]	27.95 [710]	31.29 [795]	31.29 [795]	38.18 [970]	38.18 [970]	38.18 [970]
D	0.94 [24]	0.94 [24]	0.94 [24]	0.94 [24]	0.94 [24]	0.94 [24]	0.94 [24]
E	13.74 [349]	13.74 [349]	13.46 [342]	13.46 [342]	18.77 [477]	18.77 [477]	18.77 [477]
F	43.89 [1115]	43.89 [1115]	48.22 [1225]	48.22 [1225]	55.51 [1410]	55.51 [1410]	55.51 [1410]
G	7.08 [180]	7.08 [180]	7.08 [180]	7.08 [180]	3.54 [90]	3.54 [90]	3.54 [90]
H	1.89 [48]	1.89 [48]	1.89 [48]	1.89 [48]	1.89 [48]	1.89 [48]	1.89 [48]
I	29.13 [740]	31.10 [790]	31.29 [795]	37.20 [945]	38.18 [970]	43.50 [1105]	46.65 [1185]
J	25.43 [646]	27.40 [696]	27.40 [696]	33.31 [846]	34.49 [876]	39.80 [1011]	42.76 [1086]
K	40.35 [1025]	40.35 [1025]	44.68 [1135]	44.68 [1135]	51.96 [1320]	51.96 [1320]	51.96 [1320]
L	39.76 [1010]	39.76 [1010]	44.09 [1120]	44.09 [1120]	51.08 [1297.5]	51.08 [1297.5]	51.37 [1305]
M	36.22 [920]	36.22 [920]	40.55 [1030]	40.55 [1030]	47.83 [1215]	47.83 [1215]	47.83 [1215]
N	18.89 [480]	18.89 [480]	19.92 [506]	19.92 [506]	19.29 [490]	19.29 [490]	19.29 [490]
O	3.46 [88]	3.46 [88]	3.46 [88]	3.46 [88]	4.27 [108.5]	4.27 [108.5]	4.27 [108.5]
P	9.05 [230]	9.05 [230]	9.05 [230]	9.05 [230]	10.62 [270]	10.62 [270]	10.62 [270]
Q	7.99 [203]	7.99 [203]	7.99 [203]	7.99 [203]	7.99 [203]	7.99 [203]	7.99 [203]
R	N/A	N/A	N/A	N/A	N/A	N/A	10.79 [274]
S	2.64 [67]	2.64 [67]	2.64 [67]	2.64 [67]	2.64 [67]	2.64 [67]	2.64 [67]
T	40.15 [1020]	40.15 [1020]	44.48 [1130]	44.48 [1130]	51.77 [1315]	51.77 [1315]	51.77 [1315]
U	1.65 [42]	1.65 [42]	1.65 [42]	1.65 [42]	3.14 [80]	3.14 [80]	3.14 [80]
V	11.53 [293]	11.53 [293]	11.53 [293]	11.53 [293]	11.53 [293]	11.53 [293]	11.53 [293]
W	15.35 [390]	15.35 [390]	18.70 [475]	18.70 [475]	24.01 [610]	24.01 [610]	24.01 [610]
X	8.58 [218]	8.58 [218]	8.58 [218]	8.58 [218]	8.58 [218]	8.58 [218]	8.58 [218]

Table 4 *continues...*



Specifications	6.5 kg / 14 lb. / 65 L Models in. [mm]	7.5 kg / 20 lb. / 75 L Models in. [mm]	10.5 kg / 25 lb. / 105 L Models in. [mm]	13.5 kg / 30 lb. / 135 L Models in. [mm]	18 kg / 40 lb. / 180 L Models in. [mm]	24 kg / 55 lb. / 240 L Models in. [mm]	28 kg / 70 lb. / 280 L Models in. [mm]
Y	4.44 [113]	4.44 [113]	4.44 [113]	4.44 [113]	4.44 [113]	4.44 [113]	4.44 [113]

Table 4

### Machine Dimensions (Models with Filter for Mops)

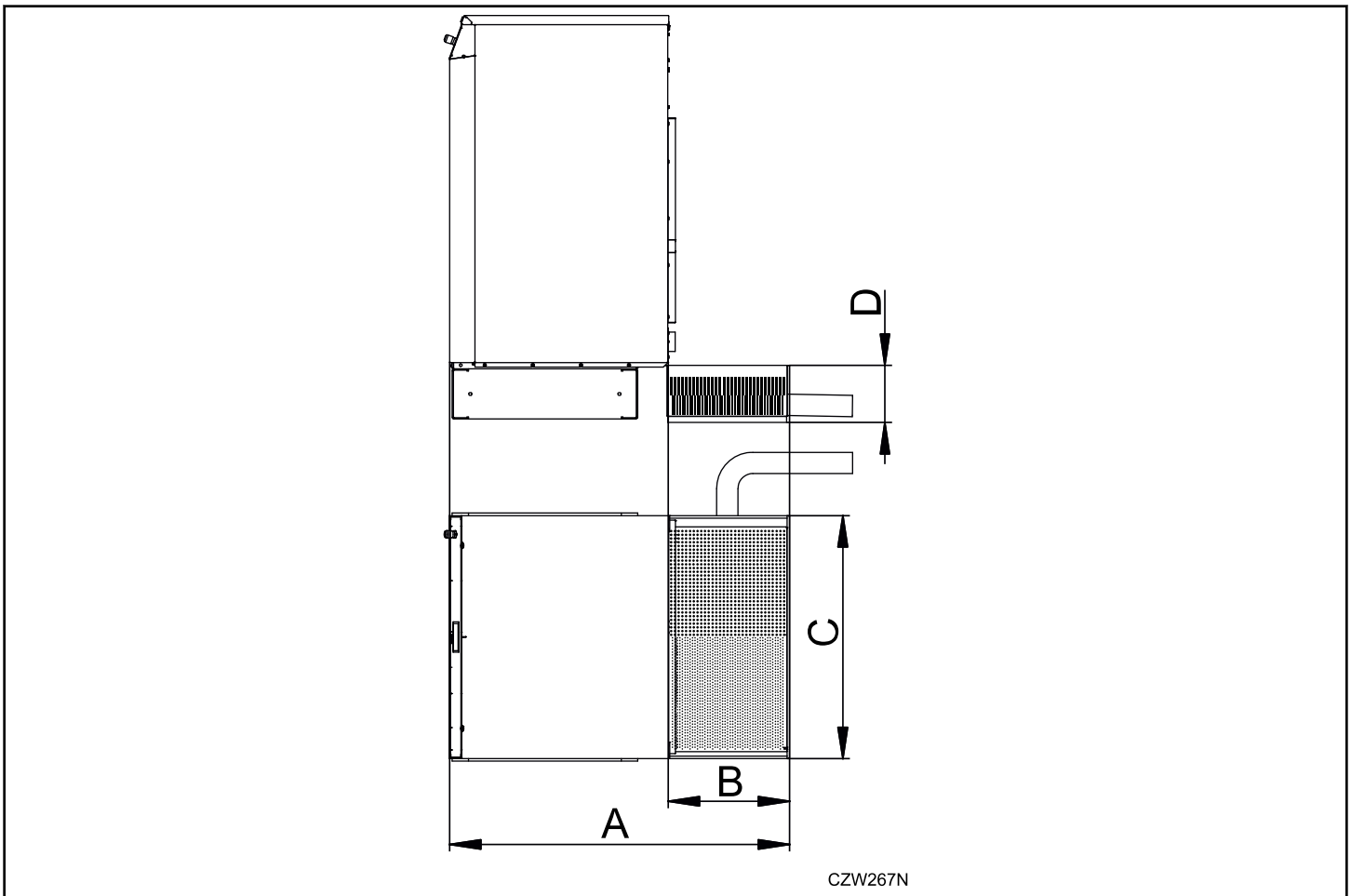
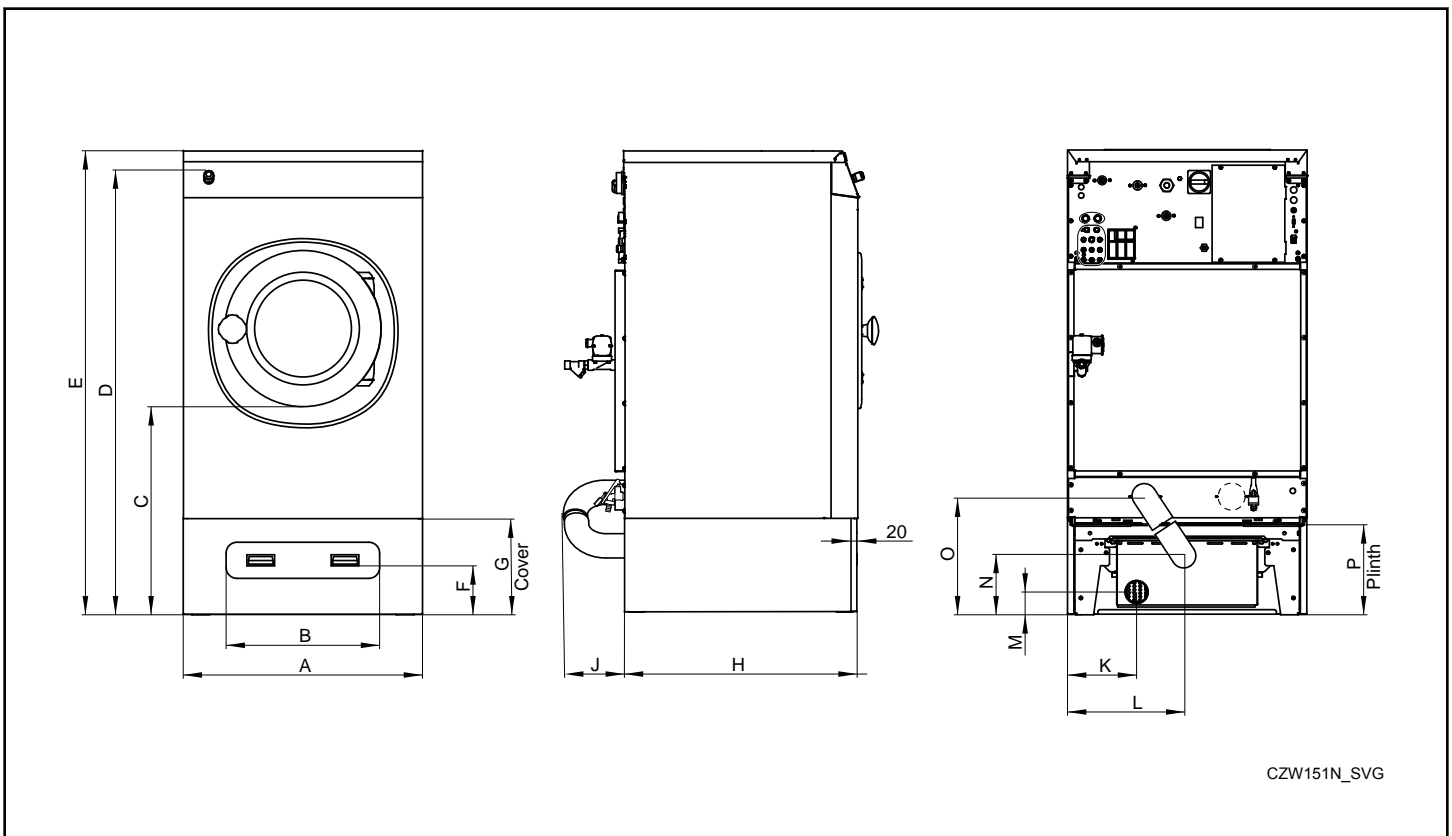


Figure 5

Specification	6.5 kg / 14 lb / 65 L in. [mm]	7.5 kg / 20 lb / 75 L Models in. [mm]	10.5 kg / 25 lb / 105 L Models in. [mm]	13.5 kg / 30 lb / 135 L Models in. [mm]	18 kg / 40 lb / 180 L Models in. [mm]	24 kg / 55 lb / 240 L Models in. [mm]	28 kg / 70 lb / 280 L Models in. [mm]
A	37.40 [950]	39.37 [1000]	45.63 [1159]	51.54 [1309]	53.43 [1357]	58.74 [1492]	61.69 [1567]
B	12.09 [307]	12.09 [307]	18.39 [467]	18.39 [467]	19.09 [485]	19.09 [485]	19.09 [485]
C	27.95 [710]	27.95 [710]	31.30 [795]	31.30 [795]	38.19 [970]	38.19 [970]	38.19 [970]
D	8.43 [214]	8.43 [214]	8.43 [214]	8.43 [214]	8.98 [228]	8.98 [228]	8.98 [228]

Table 5

### Machine Dimensions (Models with Base Frame with Built-in Filter for Mops)



CZW151N\_SVG

Figure 6

Specification	65 L Models in. [mm]	75 L Models in. [mm]	105 L Models in. [mm]	135 L Models in. [mm]	180 L Models in. [mm]	240 L Models in. [mm]	280 L Models in. [mm]
A	27.95 [710]	27.95 [710]	37.40 [795]	31.30 [795]	31.30 [970]	31.30 [970]	31.30 [970]
B	16.38 [416]	16.38 [416]	20.08 [510]	20.08 [510]	21.20 [640]	21.20 [640]	21.20 [640]

Table continues...

<b>Specifica- tion</b>	<b>65 L Models in. [mm]</b>	<b>75 L Models in. [mm]</b>	<b>105 L Models in. [mm]</b>	<b>135 L Models in. [mm]</b>	<b>180 L Models in. [mm]</b>	<b>240 L Models in. [mm]</b>	<b>280 L Models in. [mm]</b>
C	27.56 [700]	27.56 [700]	27.24 [692]	27.24 [692]	30.59 [777]	30.59 [777]	30.59 [777]
D	55.43 [1408]	55.43 [1408]	59.76 [1518]	59.76 [1518]	65.12 [1654]	65.12 [1654]	65.12 [1654]
E	57.64 [1464]	57.64 [1464]	61.97 [1574]	61.97 [1574]	67.32 [1710]	67.32 [1710]	67.32 [1710]
E *	58.43 [1484]	58.43 [1484]	62.76 [1594]	62.76 [1594]	68.11 [1730]	68.11 [1730]	68.11 [1730]
F	8.35 [212]	8.35 [212]	8.35 [212]	8.35 [212]	6.38 [162]	6.38 [162]	6.38 [162]
G	14.69 [373]	14.69 [373]	14.69 [373]	14.69 [373]	12.72 [323]	12.72 [323]	12.72 [323]
H	25.28 [642]	27.24 [692]	27.24 [692]	33.07 [840]	34.21 [869]	39.53 [1004]	42.48 [1079]
J	10.16 [258]	8.23 [209]	11.38 [289]	7.09 [180]	10.83 [275]	7.09 [180]	7.09 [180]
K	9.06 [230]	9.06 [230]	9.06 [230]	9.06 [230]	10.63 [270]	10.63 [270]	10.63 [270]
L	13.98 [355]	13.98 [355]	15.67 [398]	15.67 [398]	19.10 [485]	19.10 [485]	19.10 [485]
M	4.96 [126]	4.96 [126]	4.96 [126]	4.96 [126]	2.99 [76]	2.99 [76]	2.99 [76]
N	9.84 [250]	9.84 [250]	9.84 [250]	9.84 [250]	7.87 [200]	7.87 [200]	7.87 [200]
O	17.24 [438]	17.24 [438]	17.24 [438]	17.24 [438]	16.06 [408]	16.06 [408]	16.06 [408]
P	13.78 [350]	13.78 [350]	13.78 [350]	13.78 [350]	11.81 [300]	11.81 [300]	11.81 [300]
* - Models with "V" in 7th position of model number							

## Mounting Bolt Hole Locations

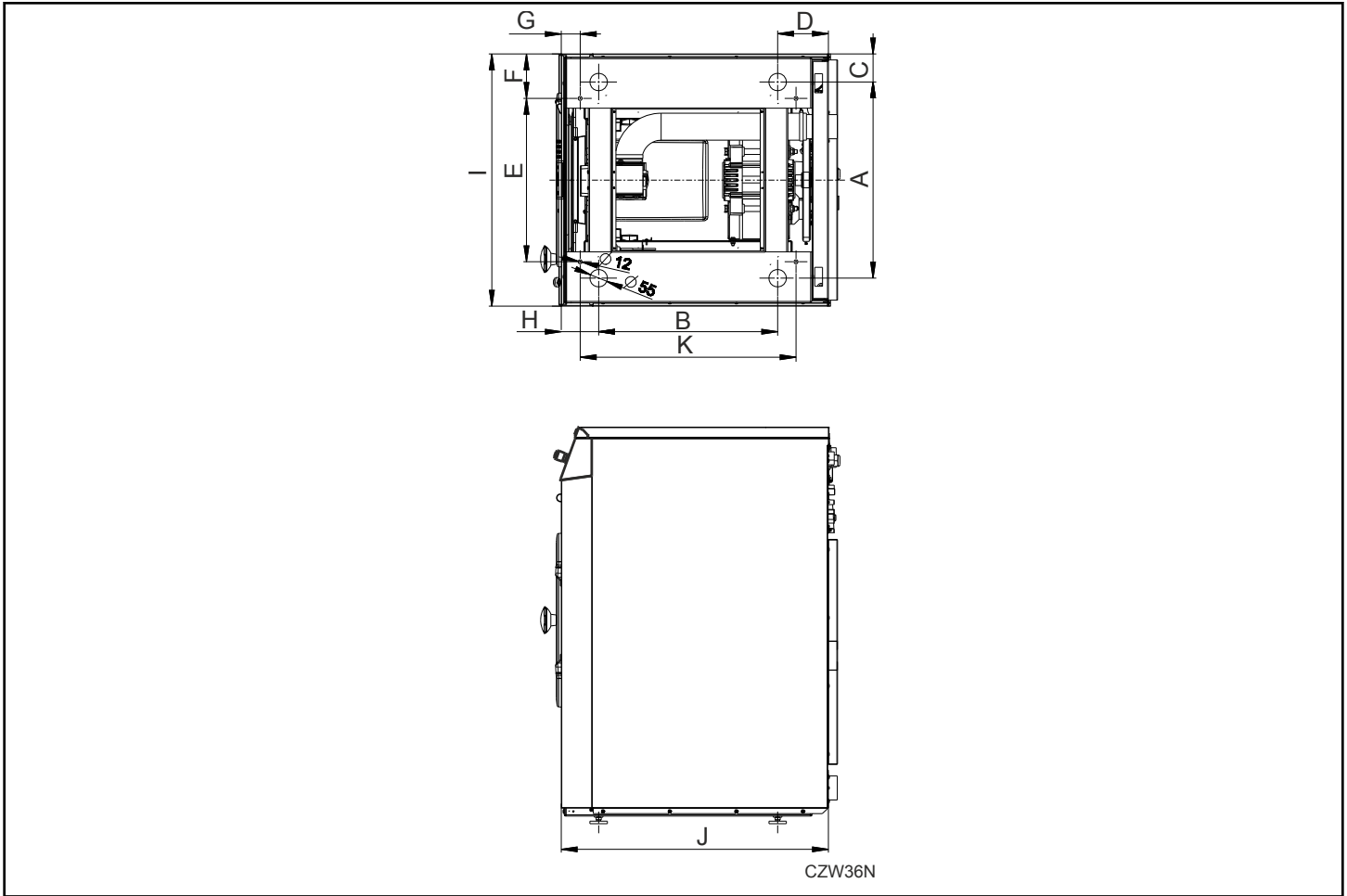


Figure 7

Mounting Bolt Hole Locations, in. [mm]				
Specification	6.5 kg / 14 lb. / 65 L Models	7.5 kg / 20 lb. / 75 L Models	10.5 kg / 25 lb. / 105 L Models	13.5 kg / 30 lb. / 135 L Models
A	20.86 [530]	20.86 [530]	24.33 [618]	24.33 [618]
B	15.51 [394]	17.48 [444]	17.48 [444]	22.20 [564]
C	3.54 [90]	3.54 [90]	3.48 [88.5]	3.48 [88.5]
D	5.09 [129.5]	5.09 [129.5]	5.09 [129.5]	6.27 [159.5]
E	14.76 [375]	14.76 [375]	17.91 [455]	20.27 [515]
F	6.59 [167.5]	6.59 [167.5]	6.69 [170]	5.51 [140]

Table 6 continues...

<b>Mounting Bolt Hole Locations, in. [mm]</b>				
<b>Specification</b>	<b>6.5 kg / 14 lb. / 65 L Models</b>	<b>7.5 kg / 20 lb. / 75 L Models</b>	<b>10.5 kg / 25 lb. / 105 L Models</b>	<b>13.5 kg / 30 lb. / 135 L Models</b>
<b>G</b>	1.57 [40]	1.57 [40]	1.37 [35]	2.36 [60]
<b>H</b>	4.64 [118]	4.64 [118]	4.64 [118]	4.64 [118]
<b>I</b>	27.95 [710]	27.95 [710]	31.29 [795]	31.29 [795]
<b>J</b>	25.25 [641.5]	27.22 [691.5]	27.22 [691.5]	33.12 [841.5]
<b>K</b>	21.65 [550]	23.62 [600]	24.02 [610]	26.77 [680]

Table 6

<b>Mounting Bolt Hole Locations, in. [mm]</b>			
<b>Specification</b>	<b>18 kg / 40 lb. / 180 L Models</b>	<b>24 kg / 55 lb. / 240 L Models</b>	<b>28 kg / 70 lb. / 280 L Models</b>
<b>A</b>	30.90 [785]	30.90 [785]	30.90 [785]
<b>B</b>	22.04 [560]	27.36 [695]	30.31 [770]
<b>C</b>	3.64 [92.5]	3.64 [92.5]	3.64 [92.5]
<b>D</b>	8.32 [211.5]	8.32 [211.5]	8.32 [211.5]
<b>E</b>	26.37 [670]	26.37 [670]	26.37 [670]
<b>F</b>	5.90 [150]	5.90 [150]	5.90 [150]
<b>G</b>	1.96 [50]	1.96 [50]	1.96 [50]
<b>H</b>	3.94 [100]	3.94 [100]	3.94 [100]
<b>I</b>	38.18 [970]	38.18 [970]	38.18 [970]
<b>J</b>	34.31 [871.5]	39.62 [1006.5]	42.60 [1082]
<b>K</b>	25.98 [660]	31.30 [795]	34.25 [870]

Table 7

## Mounting Bolt Hole Locations (Models with Base Frame with Built-in Filter for Mops)

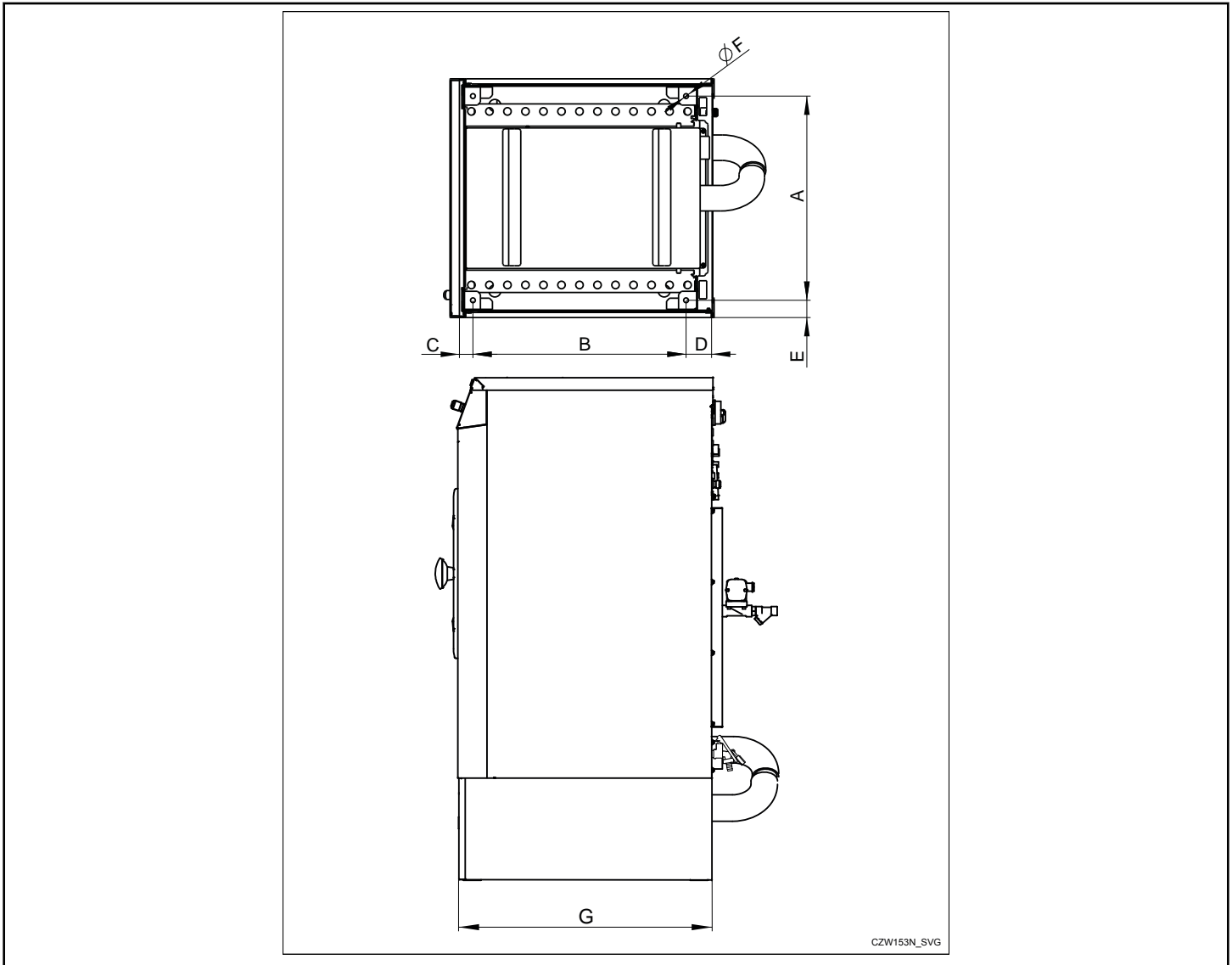


Figure 8

Specifica- tions	6.5 kg / 14 lb / 65 L Models in. [mm]	7.5 kg / 20 lb / 75 L Models in. [mm]	10.5 kg / 25 lb / 105 L Models in. [mm]	13.5 kg / 30 lb / 135 L Models in. [mm]	18 kg / 40 lb / 180 L Models in. [mm]	24 kg / 55 lb / 240 L Models in. [mm]	28 kg / 70 lb / 280 L Models in. [mm]
A	23.31 [592]	23.31 [592]	26.77 [680]	26.77 [680]	33.46 [850]	33.46 [850]	33.46 [850]
B	21.26 [540]	23.23 [590]	23.23 [590]	27.95 [710]	26.30 [668]	31.61 [803]	34.57 [878]
C	1.77 [45]	1.77 [45]	1.77 [45]	1.77 [45]	1.77 [45]	1.77 [45]	1.77 [45]

Table 8 continues...

<b>Specifica- tions</b>	<b>6.5 kg / 14 lb / 65 L Models in. [mm]</b>	<b>7.5 kg / 20 lb / 75 L Models in. [mm]</b>	<b>10.5 kg / 25 lb / 105 L Models in. [mm]</b>	<b>13.5 kg / 30 lb / 135 L Models in. [mm]</b>	<b>18 kg / 40 lb / 180 L Models in. [mm]</b>	<b>24 kg / 55 lb / 240 L Models in. [mm]</b>	<b>28 kg / 70 lb / 280 L Models in. [mm]</b>
D	2.24 [57]	2.24 [57]	2.24 [57]	3.35 [85]	6.10 [155]	6.10 [155]	6.10 [155]
E	2.32 [59]	2.32 [59]	2.24 [57]	2.24 [57]	2.36 [60]	2.36 [60]	2.36 [60]
F	.63 [16]	.63 [16]	.63 [16]	.63 [16]	.63 [16]	.63 [16]	.63 [16]
G	25.28 [642]	27.24 [692]	27.24 [692]	33.07 [840]	34.21 [869]	39.53 [1004]	42.48 [1079]

Table 8

## Floor Mounting Layout

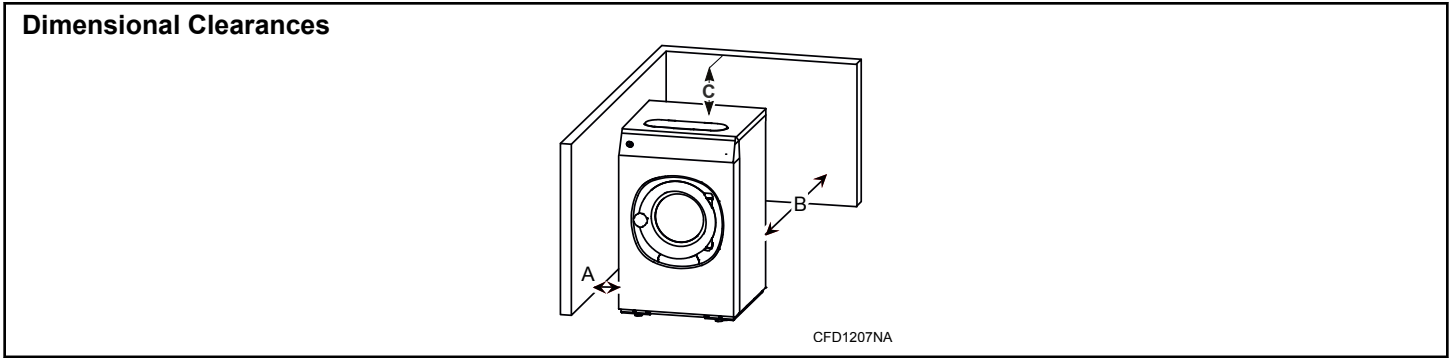


Figure 9

Dimensional Clearances, in. [mm]								
Models		6.5 kg/ 14 lb./ 65 L	7.5 kg/ 20 lb./ 75 L	10.5 kg/ 25 lb./ 105 L	13.5 kg/ 30 lb./ 135 L	18 kg/ 40 lb./ 180 L	24 kg/ 55 lb./ 240 L	28 kg/ 70 lb./ 280 L
A	Distance of machine to side wall or other machine (minimum)	0.79 [20]	0.79 [20]	0.79 [20]	0.79 [20]	0.79 [20]	0.79 [20]	0.79 [20]
B	Distance to wall (minimum)	20 [500]	20 [500]	20 [500]	20 [500]	20 [500]	20 [500]	20 [500]
C	Dimensional clearance above machine (minimum)	35.43 [900]	35.43 [900]	35.43 [900]	35.43 [900]	43.31 [1100]	43.31 [1100]	43.31 [1100]

Table 9



# Installation

## NOTE: Read Important Safety Instructions first.

## Handling and Installation in Place

### NOTE: Read Important Safety Instructions first.

Move the machine from the storage to the install area with a low-level pallet jack. The machine (1) is delivered bolted onto the transport pallet (2) and packed in shrink-wrap foil or box. Below handling should be executed by 2 persons. Needed materials: Refer to *Figure 10*.

- 2 pcs wooden beams (good quality) with section 1.57 in x 3.15 in [40 mm x 80 mm]
  - Length wooden beam = machine width (refer to *General Specifications*) + 2 pcs beams (3) length 6.3 in [160 mm]
  - 4 pcs Wooden blocks (4) - height: 4.92 in [125 mm] ; width: minimal 4.92 in [125 mm] ; Length: minimal 5.91 in [150 mm]
  - 2 pcs crowbar
  - 1pc Toe Jack
1. Place the machine in surrounding where safely can be worked around the machine.
  2. Remove packing from machine.
  3. Remove service and rear panel.
  4. Release the 4 pcs pallet nuts (in each corner of the machine) and remove nuts, bolts and washers.
  5. With the help of the crowbars between machine and pallet, one at left side and the other at right side, lift the machine at front side up to 1.77 in [45 mm] so that wooden beam 1.57 in x 3.15 in [40 mm x 80 mm] can slide between machine and pallet at front. Do not lift the machine up more than necessary and do not push the machine forwards or backwards versus pallet. Take care that the wooden beam sticks out at left and right side  $\pm$  the same dimension  $\pm 6.3$  in [ $\pm 160$ mm] .
  6. Repeat this handling at backside.
  7. Put the Toe jacks at ONE side, in the middle of the machine frame dimension.
    - For capacity 6.5 kg - 13.5 kg / 14 lb - 30 lb / 65 - 135 L, at front under and against the wooden board of the pallet.
    - For capacity 18 kg - 28 kg / 40 lb - 70 lb / 180 L - 280 L, at one machine side under and against the wooden board of the pallet.
  8. Jack the machine up minimal until the 2 wooden blocks can be moved under the sticking out wooden beams.
  9. Lower the machine until the beams rest on the wooden blocks.
  10. Repeat this handling at other machine side.

11. Then remove the pallet with the necessary precarious so wooden beams and blocks don't move.
12. Use a pallet jack to go under the machine, not jeopardized the stability of the wooden beams and blocks. Lift the machine and remove the wooden beams and blocks.
13. Mount the 4 levelling legs. Turn them only 5 turns in.
14. With the pallet jack, move the machines to his final position.
15. Lower the machine until it rests on the levelling legs. In case due to the height of the pallet jack beams the machine doesn't rest on the surface, put first small equal wooden boards under the levelling legs.
16. Remove the pallet jack. And if used, remove the wooden boards with the help of the crowbars.
17. Level machine with the levelling legs, taking care that the levelling legs are turned in max. depth for stability reasons.
18. After levelling is completed, tighten the counter nut (2) securely against machine base. Refer to *Figure 10*.
19. Remove the shipping braces which secure the machine during shipping. Refer to *Shipping Brace Removal*.
20. Recheck the machine level and setting of the out-of balance switch, refer to *Every 6 Months*.

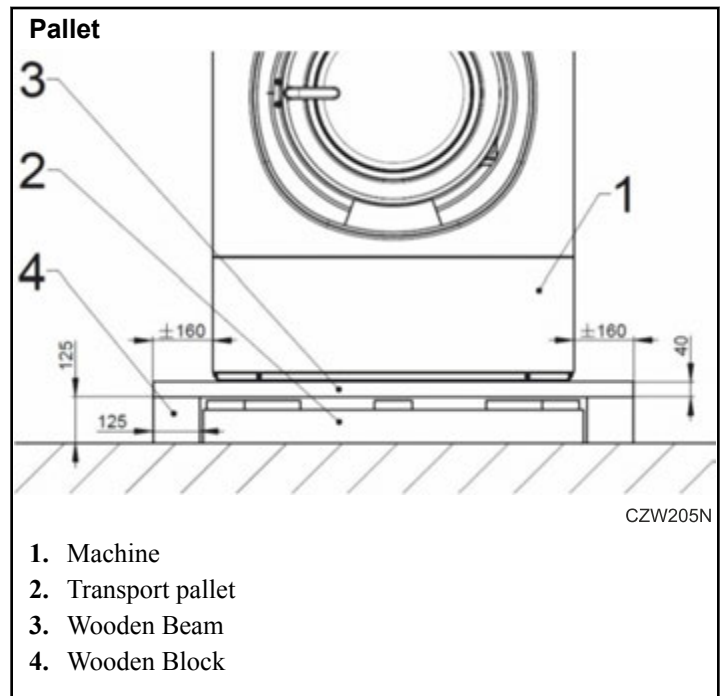


Figure 10

**IMPORTANT: When machine is lifted off pallet, make sure the machine does not come down on the floor with either of the rear corners first. The machine's side panel can be damaged.**

**IMPORTANT:** It is of utmost importance that the machine is placed level, from side to side as well as front to back. If the machine is not properly levelled, it may result in out-of-balance error without a real out of balance in the drum.

**NOTE:** Only put the feet on a solid surface. Do not use shock absorbing mats underneath.

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

## Mounting Bolt Installation

**NOTE:** Machines do not have to be mounted by means of anchoring bolts. If anchoring is necessary, perform the following steps:

1. Drill 2 holes for the anchoring bolts, refer to *Figure 7* . Hole diameter in machine's base is 0.47 in. [12 mm] .
2. Place the machine adjacent to the foundation. Do not attempt to move it by pushing on the sides, always use the bottom of the frame of the washer-extractor to lift and move the whole machine.
3. Place the machine carefully over the two drilled holes.
4. Check that the machine is seated in a perfectly level manner. Adjust leveling legs as needed.

**IMPORTANT:** After leveling is complete, tighten the nut securely against the machine's base. Refer to *Figure 11* .

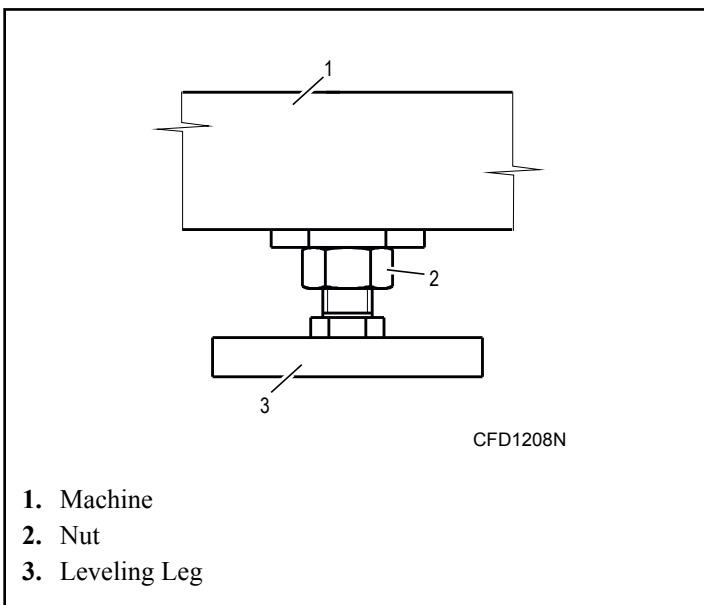


Figure 11

5. Mount the anchoring bolts in the holes drilled in the floor.
6. Position washers and locknuts on machinery anchor bolts and finger-tighten to machine base.

**IMPORTANT:** If necessary, prop up the machine frame so that not deformation occurs during the tightening of the anchoring bolts.

7. Remove the shipping braces which secure the moving components of the machine during shipping. Refer to *Shipping Brace Removal*.

## Shipping Brace Removal

1. Remove front and rear panel, refer to *Figure 12* .
2. Remove front metal transport holder(s).
3. Remove both rear transport holders.

4. Re-establish the front and rear panel.

**IMPORTANT: The machine may not be moved with the shipping braces removed. Save the shipping braces for future use.**

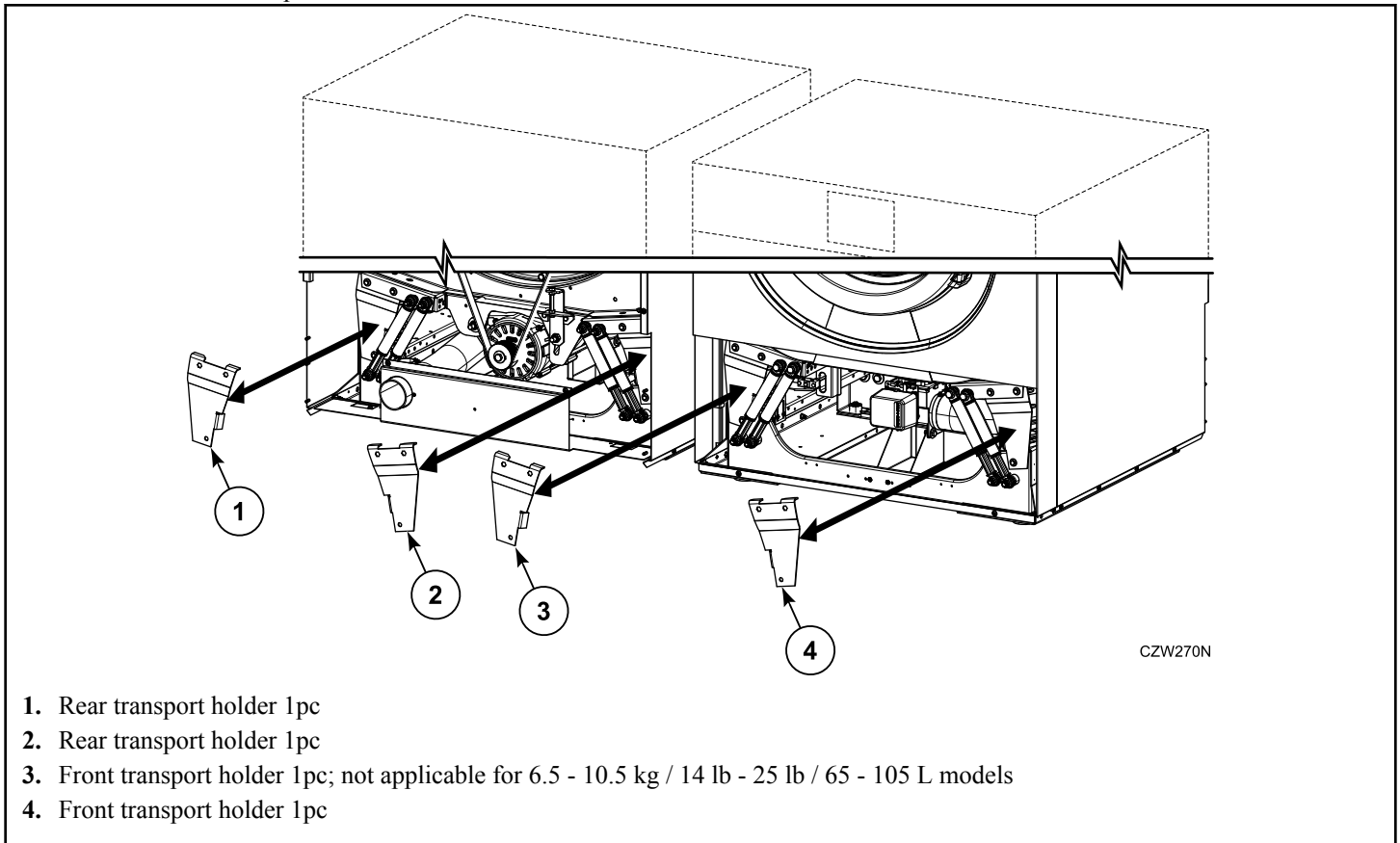


Figure 12

## Machine Installation

Install the machine close to a floor drain or open drain.

### Elevated Base Frame Installation with Existing Floor (Base Frame Supplied by Manufacturer)

The elevated base frame structure must be able to withstand the static and dynamic loads of the machine floor (refer to *General Specifications*), and it must allow the machine to be seated in a perfectly level manner.

**IMPORTANT: Floor or plinth under machine must be level, stable, and straight to prevent the frame from twisting. The manufacturer is not responsible for any deformation of the frame caused by not fulfilling these conditions.**

1. Drill four holes for anchoring bolts (6) into the floor. Refer to *Figure 13*. Refer to dimensions E and K in *Table 6* and *Table 7* for spacing of the holes. The diameter of the openings in the base frame is .49" [12 mm].

2. Install mechanical or chemical anchoring bolts into the holes drilled in the floor.

**NOTE: The anchoring bolts are not included in the machine supply.**

3. Place the base frame on the anchoring bolts so that the four 35 mm openings are upwards and the BACK label is at the back of the machine.

4. Make sure the base frame is level.

5. Place the washers (4) and nuts (5) on the anchoring bolts and tighten to a torque of 80 Nm. Refer to *Figure 13*.

6. Remove the transport packaging from the machine.

7. Remove the front and rear panels from the machine.

8. Remove the bolts fastening the machine to the pallet, but DO NOT mount the adjustable feet from the machine packaging on the bottom frame of the machine.

9. Install the machine on the anchored base frame.

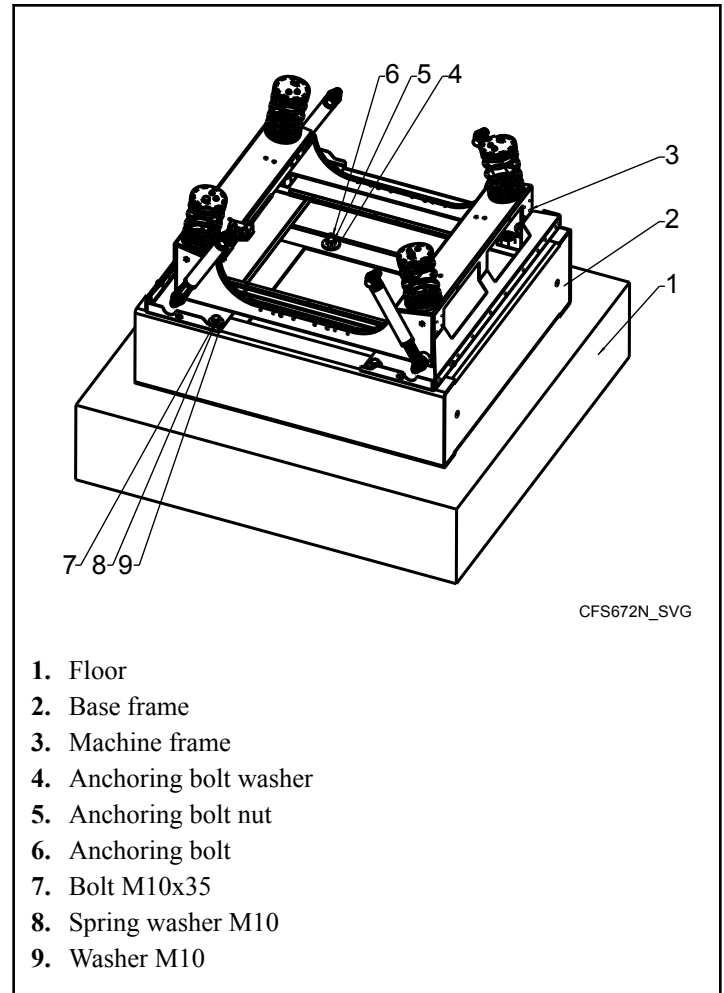
**NOTE: When removing the machine from the pallet, do not put the rear corner of the machine on the floor first. This can cause damage to the side panel of the machine or frame.**

10. Make sure the machine is level.

11. Fasten the machine to the base frame using bolts M10x35 (7), washers M10 (9), and spring washers M10 (8). Refer to *Figure 13*. Tighten to a torque of 50 Nm.

12. Remove the shipping brace. Refer to *Shipping Brace Removal*.

13. Re-install the front and rear panels on the machine.



1. Floor
2. Base frame
3. Machine frame
4. Anchoring bolt washer
5. Anchoring bolt nut
6. Anchoring bolt
7. Bolt M10x35
8. Spring washer M10
9. Washer M10

Figure 13

## Machine Installation with Base Frame with Built-in Filter for Mops

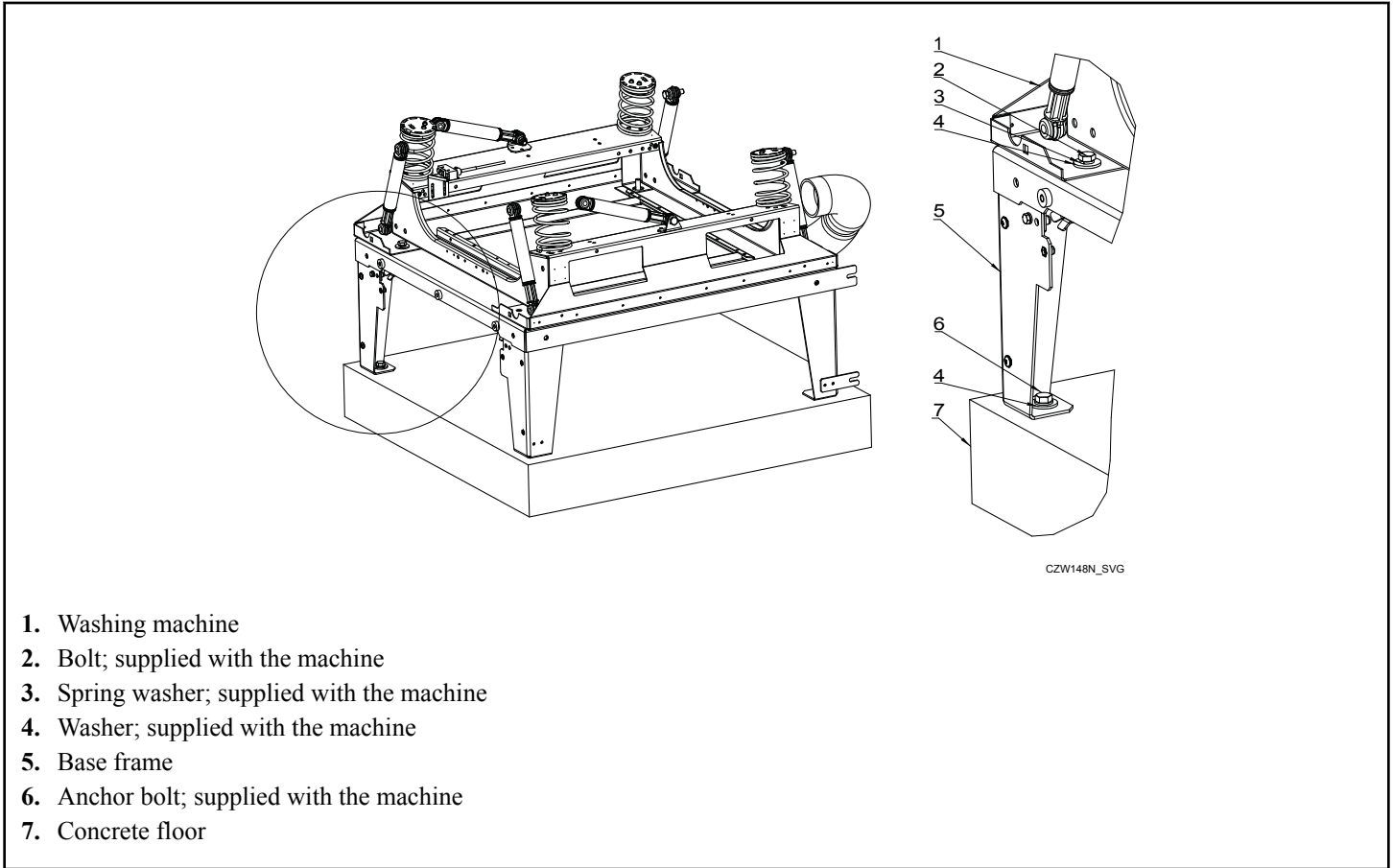
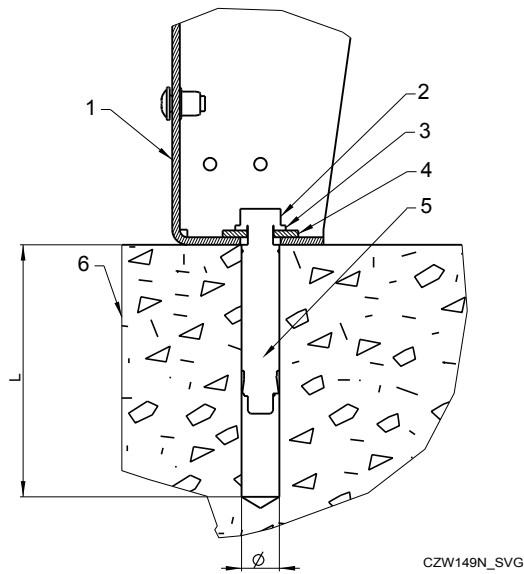


Figure 14



- 1. Plinth
- 2. Anchor bolt
- 3. Anchor washer
- 4. Washer
- 5. Anchor Body
- 6. Floor

Figure 15

Machine	Machine with Plinth Collector	Anchoring Bolt	Tightening Moment (Nm / lbf.ft)	L (Minimum Hole Depth) (in [mm] )	Ø (Hole Diameter) (in [mm] )
6.5 kg / 14 lb / 65 L, 7.5 kg / 20 lb / 75 L, 10.5 kg / 25 lb / 105 L, 13.5 kg / 30 lb / 135 L	Must be anchored	M10x60 (A4-70)	40 / 29	3.15 [80]	0.59 [15]
18 kg / 40 lb / 180 L, 24 kg / 55 lb / 240 L, 28 kg / 70 lb / 280 L	Must be anchored	M12x80 (A4-70)	60 / 44	3.94 [100]	0.71 [18]

Table 10

1. Check the position of the machine base frame with a water level.
2. Drill a hole for the anchoring bolt based on the required machine placement. Refer to *Figure 15* .
3. Remove washer and bolt from the anchoring bolt and install anchoring bolt into the pre-drilled hole.
4. Install the plinth base.
5. Install washer and nut. Tighten nut.

## Weighing System Installation 18 kg - 28 kg / 40 lb. - 70 lb. / 180 L - 280 L Models without "V" in 7th position of model number

1. Lift up the machine.
2. Install two left load sensor supports and two right load sensor supports to the machine frame. Refer to *Figure 16*.

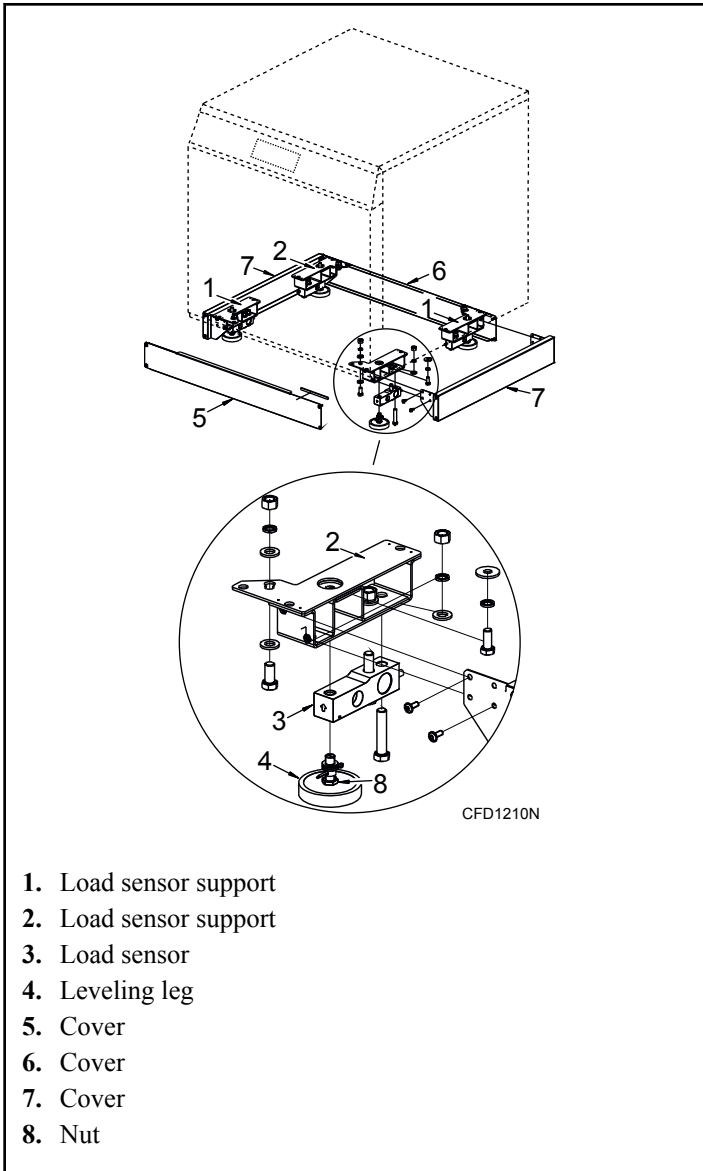


Figure 16

3. Install load sensors with their rubber leveling legs on to the supports.
4. Check that all the supports 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. Fit the sensor cables into the prepared openings with cable fixtures. Refer to *Figure 17*.

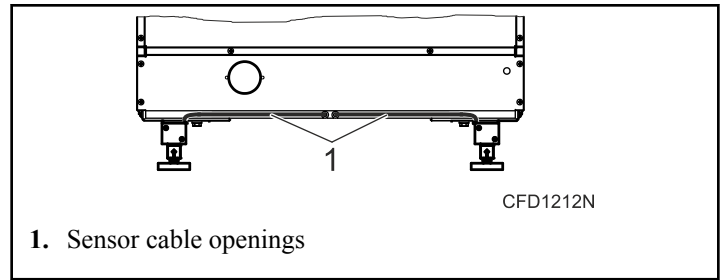


Figure 17

8. Remove the transport safety devices (transport props).
9. Use a water-level to check that the lower frame of machine is positioned totally level.
10. Attach hoses for water supply to the machine.

**NOTE: The machine is not anchored into the floor; it stands on the load sensor feet. Take into consideration that the entire machine acts as a measuring gauge. Therefore, anything that you place on to the machine or anything that is in physical contact with it influences the weighing process. Make sure that the water connection, as regards the pressure in the hoses, does not interfere with the weighing. The hoses must no pull or push the machine in any direction or prop it up in any way.**

11. Install the covers. Refer to *Figure 16*.
12. 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 18*.

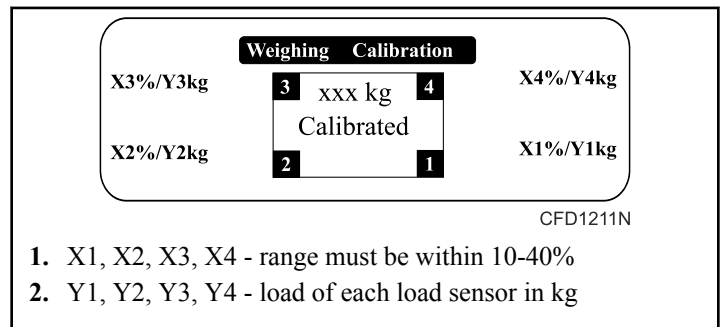


Figure 18

13. If the load sensors are outside of 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 0.2 in. [5 mm].
  - a. Lift up the machine.
  - b. Loosen the nut and turn the level leg in order to achieve the required position.
  - c. Tighten the nut.

## Installation

- d. Put the machine down and verify that the load applied to each sensor is within the specified range.

## Drain Connection

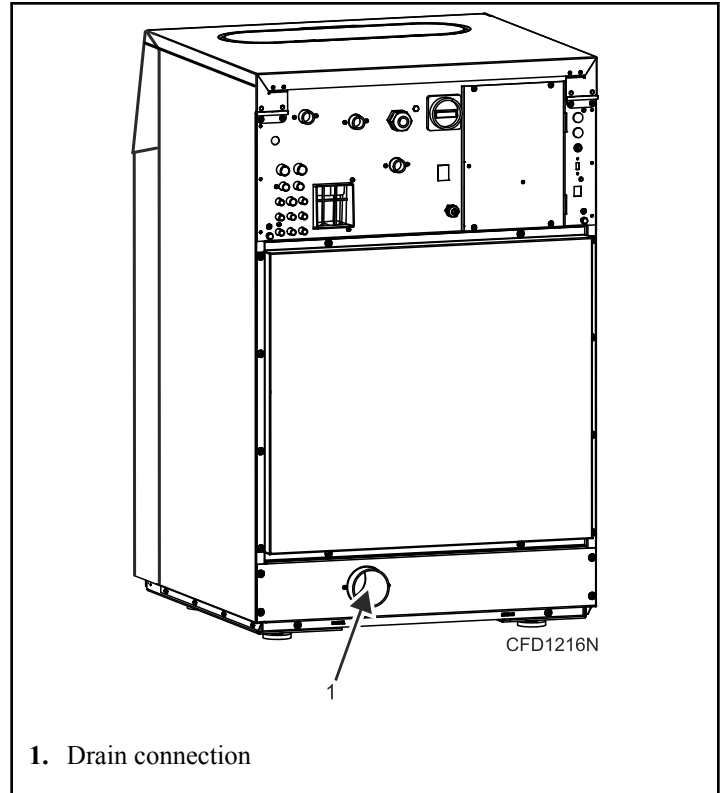


Figure 19

## Drain Valve

All drain systems must be vented to prevent an air lock or siphoning.

Connect a 3 inch [76 mm] pipe or rubber hose to the machine's drain pipe, ensuring a downward flow from the machine. Avoid sharp bends which may prevent proper draining.

The drainage pipe should be located over a floor drain, drainage channel.



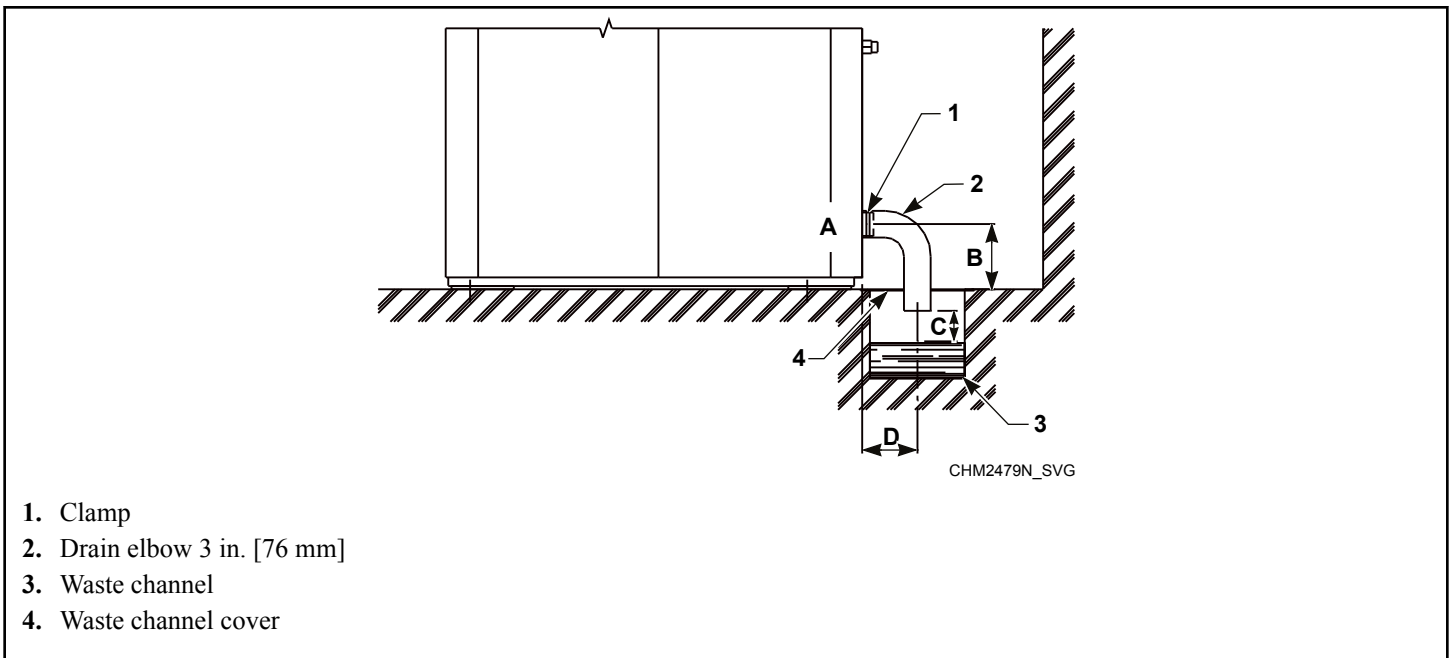


Figure 20

Drainage Pipe Information, in. [mm]							
Specifi- cation	6.5 kg / 14 lb. / 65 L	7.5 kg / 20 lb. / 75 L	10.5 kg / 25 lb. / 105 L	13.5 kg / 30 lb. / 135 L	18 kg / 40 lb. / 180 L	24 kg / 55 lb. / 240 L	28 kg / 70 lb. / 280 L
A	3 [75]	3 [75]	3 [75]	3 [75]	3 [75]	3 [75]	3 [75]
B	4.17 [106]	4.4 [112]	4.4 [112]	4.4 [112]	5.21 [132.5]	5.21 [132.5]	5.21 [132.5]
C minimum	0.79 [20]	0.79 [20]	0.79 [20]	0.79 [20]	0.79 [20]	0.79 [20]	0.79 [20]
D minimum	3.94 [100]	3.94 [100]	3.94 [100]	3.94 [100]	3.94 [100]	3.94 [100]	3.94 [100]

Table 11

Drain Connections		
Specification	Model	Requirement
Drain connection number	All	1
Drain connection size, in. [mm]	All	3 [76]
Average flow rate of draining gal./min. [l/min.]	All	55.48 [210]

Table 12 continues...

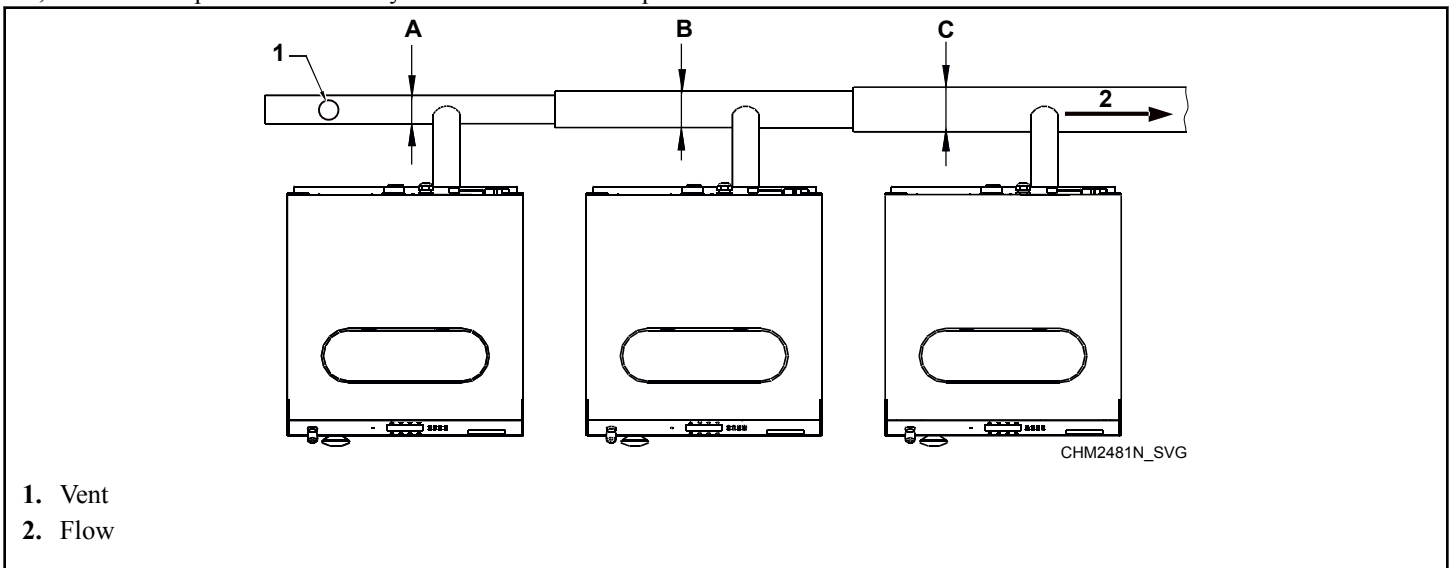
Drain Connections		
Specification	Model	Requirement
Drain pump with hose - internal diameter of hose, in [mm]	6.5 kg - 7.5 kg / 14 lb. - 20 lb. / 65 L - 75 L	0.75 [19]
Flow rate of drain pump, gal/min. [l/min.]	6.5 kg - 7.5 kg / 14 lb. - 20 lb. / 65 L - 75 L	9.51 [36]

Table 12

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. [20 m] to assure the drain pipe will work. 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 increase. Refer to *Figure 21*.

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



- 1. Vent
- 2. Flow

Figure 21

Drain Line Sizing / Minimum Drain ID, in. [mm]		
A - 1 Machine	B - 2 Machines	C - 3 Machines
3 [75]	4 [100]	5 [125]

Table 13

**Drain Pump 6.5 kg / 14 lb. / 65 L and 7.5 kg / 20 lb. / 75 L Models outside of North America**

Connect a flexible hose to a drain pipe so that the hose bend must not be located lower than the water level to provide sufficient siphon effect. In order to achieve good draining, the hose must not bend at a sharp angle. Refer to *Figure 22*.

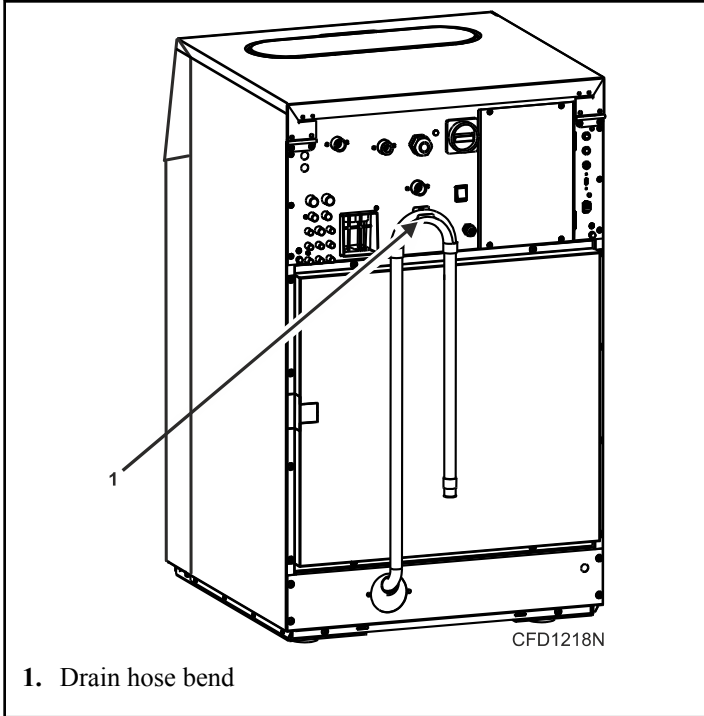


Figure 22

## Water Connection Requirements

**NOTE: Read Important Safety Instructions first.**


All intake connections to the machine are to be fitted with manual shut-off valves and filters, to facilitate installation and servicing.

In case it is necessary to disconnect the hot water hose from the washer, isolate the hot water hose from the hot water supply and wait sufficient time to allow to cooldown the water temperature and connection hose. Then turn the connection nut slowly loose until water starts dripping. Wait until dripping stops, then disconnect further.

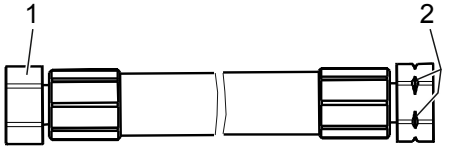
The washer has been designed with a built-in "AB" airgap system according to EN1717. Nevertheless, when potable water will be connected to the washer, a local compliant double check valve or some other no less effective device providing backflow prevention protection to at least fluid category 3 shall be fitted at the point of connections between the water supply and the washer.

To comply with UK water regulations a WRAS or NSF Reg 4 or KiwaUK Reg 4 compliant double check valves must be used. Refer to *Figure 27*

To comply with the Plumbing Code of Australia regulations

 accordance to standard WMTS-101 an approved dual check valve backflow prevention device with the watermark must be fitted at the point of connection between the supply and the fitting. Refer to *Figure 27*

**Models manufactured through April, 2017**

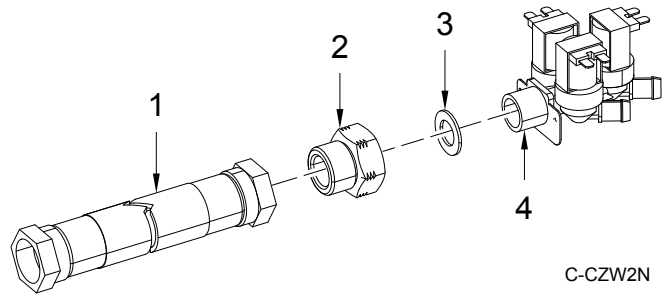


**NOTE: North American Models: Water inlet hose with notches should be connected to the water supply faucet, while the side of the water inlet hose without notches should be connected to the water inlet valves.**

1. Water inlet valve connection (hose connection without notch)
2. Water supply faucet connection (hose connection with notch)

Figure 23

**Models manufactured starting May, 2017**



**NOTE: North American Models: Install threaded reduction pieces together with sealant on all inlet valves. The filling hose end piece with an internal filter must be connected to the water inlet tap. The second end of the hose must be connected to a reduction piece.**

1. Hose
2. Reduction
3. Seal
4. Valve

Figure 24

**NOTE: Models outside of North America: For 6.5 kg / 14 lb. / 65 L, 7.5 kg / 20 lb. / 75 L, 10.5 kg / 25 lb. / 105 L, 13.5 kg / 30 lb. / 135 L, 18 kg / 40 lb. / 180 L and 24 kg / 55 lb. / 240 L Models, to connect cold water, use a hose with plastic elbow. To connect hot water, use a hose with metal elbow.**

Do not re-use water hoses; only use new water hoses.

All water connectors present on the machine must be connected or the wash program will not function correctly. Refer to *Table 14* for possible connection options, which will depend on the water types to be connected to the machine, which can be found by checking the machine plates.

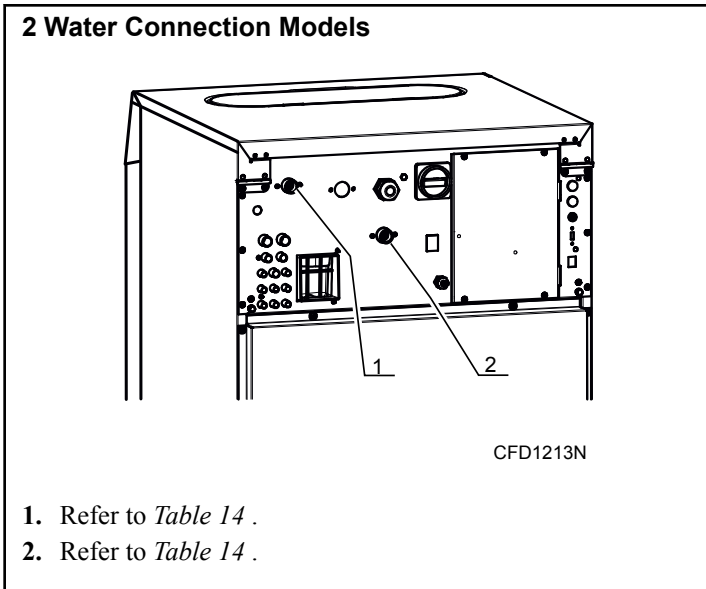


Figure 25

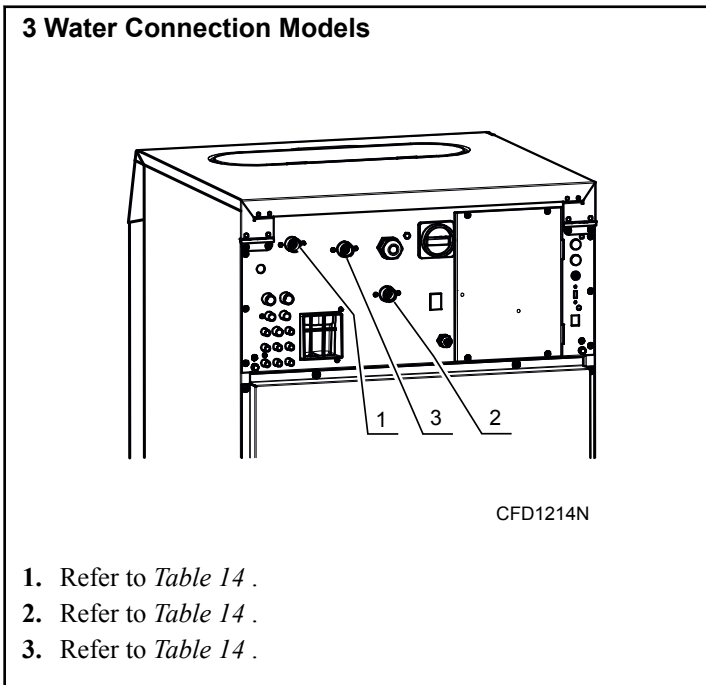


Figure 26

Water type	Water connection		
	Cold	Hot	N/A
Cold and Hot	Cold	Hot	N/A
Cold soft, Cold hard and Hot	Cold soft	Hot	Cold hard

Table 14

**NOTE: If the water pressure is below the minimum value, the wash result can not be guaranteed for a selected program.**

Connections should be supplied by a hot and a cold water line of at least the sizes shown in Water Supply Line Sizing . Installation of additional machines will require proportionately larger water lines.

Connections should be supplied by a hot and a cold water line per national and local codes and in accordance with IEC 61770.

To connect water service to a machine with hoses, use the following procedure:

1. Before installing hoses, flush the building’s water system at the machine connection valves for at least two (2) minutes.
2. Check filters in the machine’s inlet hoses for proper fit and cleanliness before connecting.
3. Hang hoses in a large loop; do not allow them to kink.

If additional hose lengths are needed or using hoses other than those supplied by manufacturer, flexible hoses with screen filters are required.

Water type	Water connection		
	1	2	3

Table 14 *continues...*

Water Connections		
Specification	Model	Requirement
Water inlet connection size, in. BSP	All	3/4
Recommended pressure, PSI [bar]	All	44-73 [3-5]
Inlet flow capacity per inlet, gal/min [l/min.]	6.5 kg - 24 kg / 14 lb. - 55 lb. / 65 L - 240 L	5.28 [20]
Inlet flow capacity per inlet, gal/min at 60 PSI [l/min. at 4 bar]	18 kg - 28 kg / 40 lb. - 70 lb. / 180 L - 280 L *	34.88 [133]
* 18 kg - 24 kg / 40 lb. - 55 lb. / 180 L - 240 L -optional		

Table 15

Suitable air cushions (risers) should be installed in supply lines to prevent “hammering.”

Front loading commercial clothes washing machines have solenoid valves at the inlets. The machines are supplied with approved inlet hoses.

### 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.

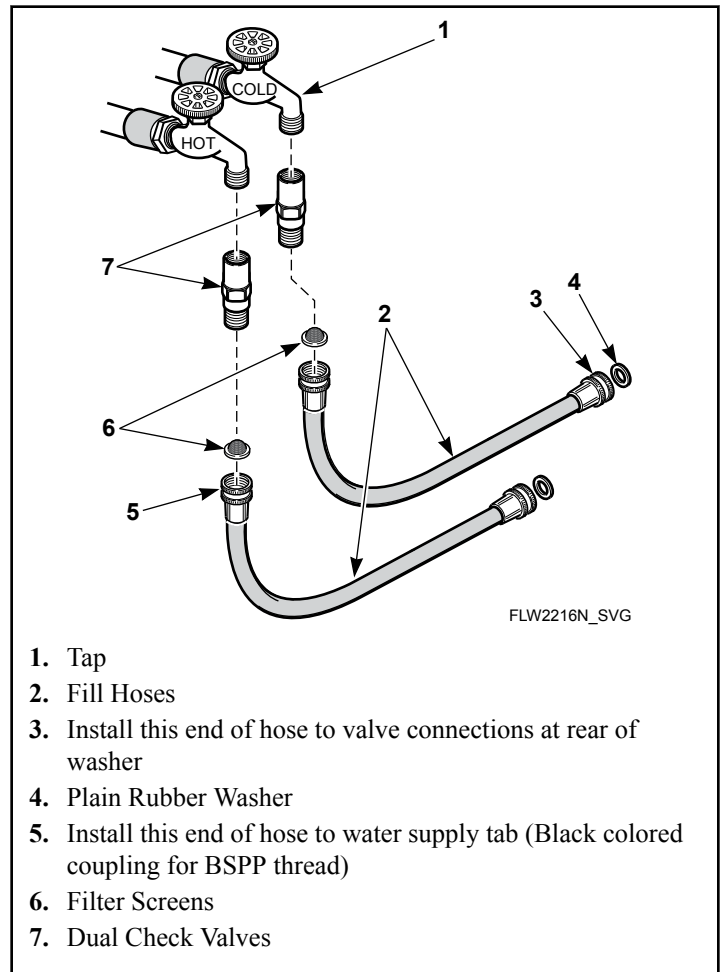


Figure 27

## Water Reuse System

**NOTE:** Read Important Safety Instructions first.

**IMPORTANT:** For installations in Europe. If a water reuse system is connected to the washer, no potable water connection to the washer is allowed, except if a local compliance category 5 (EN1717) prevention protection is provided at the point of connections between the water supply and the washer.

1. Drill out the protective screens of the water reuse inlet using a drill bit of 0.59 in. [15 mm] diameter. Refer to *Figure 28*.

**IMPORTANT:** Do not pierce the screens open. It could lead to blockage of the water channel.

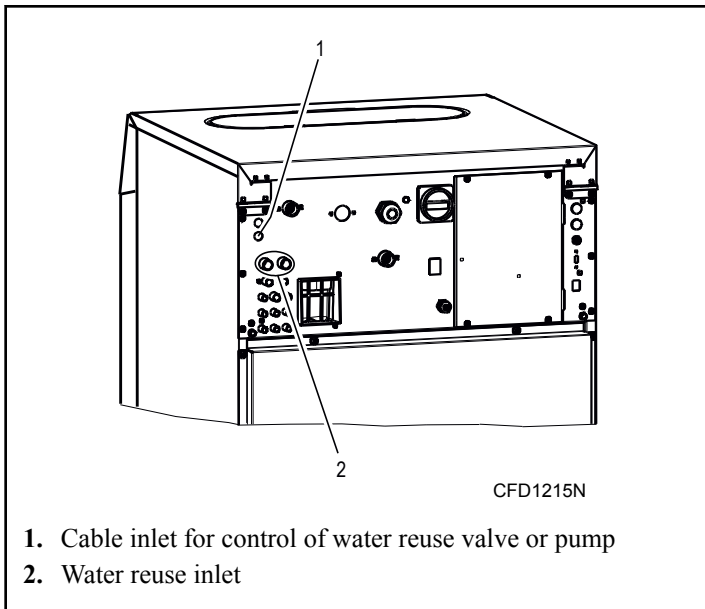


Figure 28

2. Connect the control of your reuse valve or pump onto the conductor of inlet valve I5 or I7 provided by the manufacturer, which will disconnect the valve in question from standard function.

**IMPORTANT:** The manufacturer waives all responsibility for malfunction of the washing machine if a different valve than the specified I5 or I7 is used as the water recycle valve.

3. Fit a cable bushing into the opening, and pull the cable through the bushing. Refer to *Figure 28*.
4. Connect the coil for control of the recuperated water inlet (the coil is not supplied with the machine), operating voltage 208-240V 50/60 Hz.
5. Secure the cable so that it cannot be pulled out of the machine or inlet valve.

Water Reuse Specifications	
Temperature range, °F [°C]	41 to 185 [5 to 85]
Connection - outside diameter, in. [mm]	0.75 [19]

**IMPORTANT:** 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 water reuse system must be fitted with a filter which must be regularly and thoroughly cleaned (based on water quality). This cleaning prevents prolongation of filling up times and malfunction of water valves.

### Reused Water Treatment

The reused water must be filtered before entering the water reuse tank. A mechanical filter must be installed which filters off small particles (fluff, buttons, paper, etc.) of sizes 0.0079 in. [0.2 mm] or smaller. The denser the mesh, the better. There must also be a filter installed on the pressure side of the pump. It is also possible to install an additional, chemical filter. The manufacturer advises to consult a specialist in filter systems.

### Water Reuse Tank Properties

**IMPORTANT:** It is prohibited to heat the water in the reuse 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.

**NOTE:** Find the connection on the wiring diagram.

The reuse tank must meet the following minimum requirements:

- The tank must be made according to national standards.
- Tank capacity varies depending on multiple factors, so it must be calculated by an authorized engineer. The factors are:
  - The number of washing steps per washer, in which the water will be re-used.
  - The programmable amount of water that will be re-used in a washing step (to find this amount, please refer to the Programming Manual).
  - The number of washers that will deliver water to the reuse tank.
  - The use of recuperated water per washer.

The tank must have an overflow to the sewer. Water from the sewer must not be able to flow back into the reuse tank.

The network of pipes and hoses, the water pump and the reuse tank must be of a non-corroding material. It must be resistant to water and chemicals used for washing.

The tank must be equipped with a system that fills the tank with clean water to a minimum required working level, in case the wa-

ter 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 water re-use system. The maximum pump pressure is 116 psi [8 bar].

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 29*.

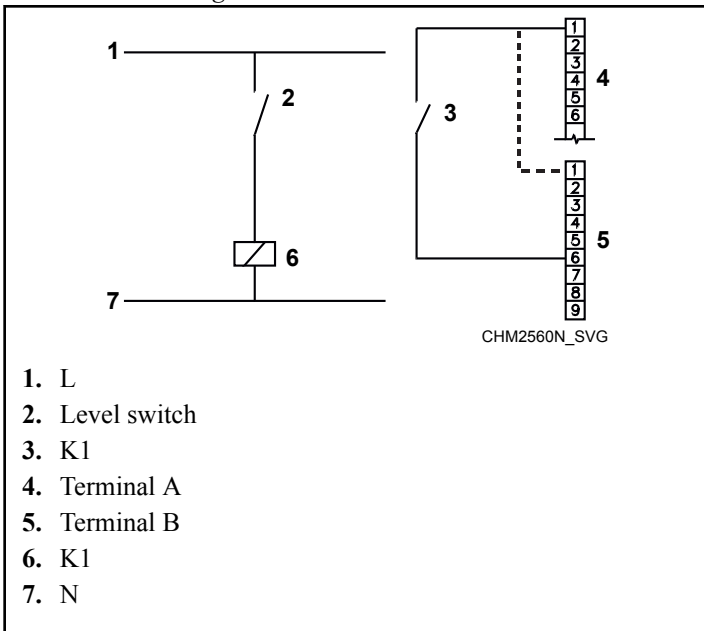


Figure 29

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 if the water level of the reuse tank is too low.

## Electrical Installation Requirements

**NOTE:** Read Important Safety Instructions first.

**IMPORTANT:** The machines are designed and manufactured for a voltage range. Refer to the serial plate for voltage range information specific to your machine. Make sure the supply voltage is always within the limits specified. When you have long distances in the electrical installation, it may be necessary to use bigger cables to reduce the voltage drop.

**IMPORTANT:** The machines are designed and manufactured for 50/60Hz. Refer to the serial plate for frequency information specific to your machine. Make sure the frequency is always within the limits specified.

When a gravity drain is provided (no drain pump execution), the factory setting for the drain valve is 60Hz for North American models and 50Hz for models outside of North America.

If the frequency at installation is different than the default setting, redirect the supplying voltage wire to the appropriate frequency terminal at the drain valve.

North America Models Only:

**IMPORTANT:** This machine is not provided with a Mains Disconnect Means. Suitable Mains Disconnect Means must be provided during installation and by authorized personnel in accordance with the Canadian Electrical Code, Part 1 (CE Code), or (US) National Electrical Code (NEC).

Models outside of North America:

**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 distributor for more information.

Models outside of North America: For electrical protection, if required by local regulations, 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 30*.

Electrical connections are made at the rear of the machine. The machine must be connected to the proper electrical supply shown on the serial plate on the rear of the machine, using copper conductors only.



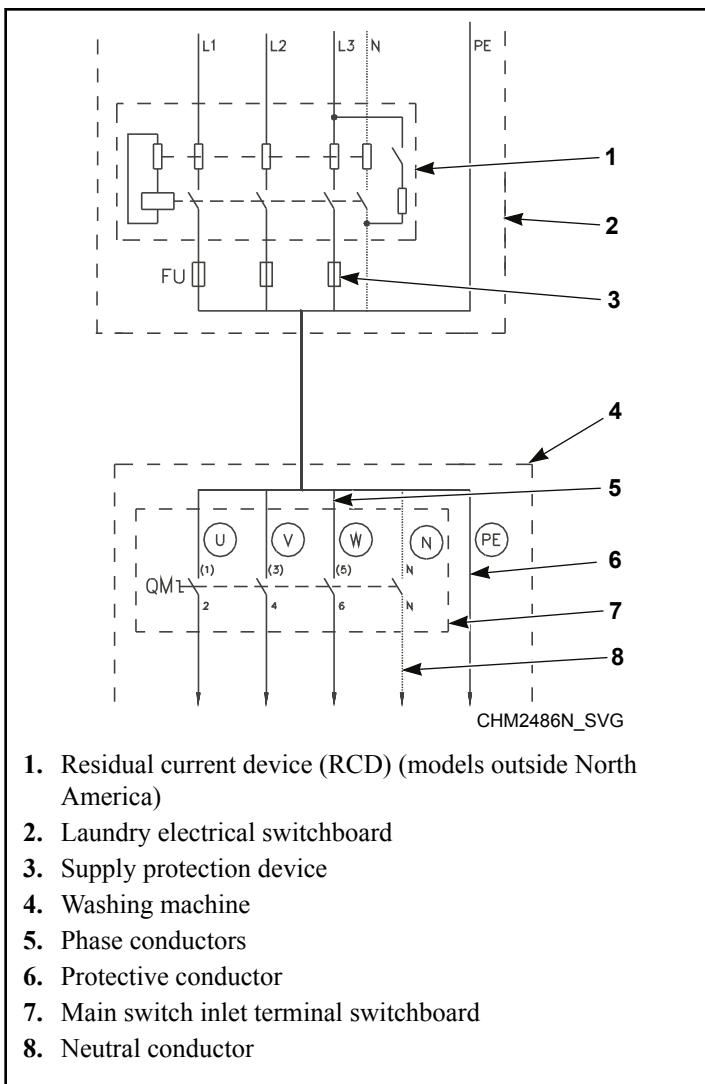


Figure 30

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

### Residual Current Device (RCD) - Models Outside of North America

In some countries, an RCD is known as an Earth Leakage Trip, Ground Fault Circuit Interrupter (GFCI), Appliance Leakage Current Interrupter (ALCI) or Earth (Ground) Leakage Current Breaker.

When locally allowed, an RCD must be installed. In some power network earthing systems, an RCD may not be allowed.

The RCD must have the following specifications:

- Tripping current of 100mA (if not locally available/allowed, use a 30mA trip current, preferably selective type with small time delay set)
- Type B (components inside the machine which make use of DC voltages and require this better performance RCD)

- Maximum of 2 machines installed on each RCD (for 30mA, only 1 machine)

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) on the separating transformer will).

### Supply Protection Device

A supply protection device protects the machine and wiring against short circuits. (Glow-wire) fuses or (automatic) circuit breakers may be used as supply protection devices.

Protection must be the "slow" type, which means curve D for circuit breakers.

### Supply Cable

The supply cable is not delivered with the machine. The supply cable must have the following specifications:

- Conductors with copper cores (For wire size details, refer to *Electrical Specifications* or *Electrical Specifications - North American Models*)

#### Determining AWG Sizes

Power supply protection device nominal current		Min. phase conductor section, AWG [mm <sup>2</sup> ]	Min. protection conductor section, AWG [mm <sup>2</sup> ]
Automatic circuit breakers	Fuses		
16A (15A)	10A (10A)	15 [1.5]	15 [1.5]
20A (20A)	16A (15A)	13 [2.5]	13 [2.5]
25A (-)	20A (20A)	11 [4]	11 [4]
40A (40A)	32A (30A)	9 [6]	9 [6]
63A (-)	50A (50A)	7 [10]	7 [10]
80A	63A	5 [16]	5 [16]
100A	80A	3 [25]	5 [16]
125A	100A	2 [35]	3 [25]

Table 16

To connect the supply cable, the following steps must be performed:

1. Insert cable through opening on rear panel. Insure a strain relief is used so the supply cable can not move.
2. Strip the conductor ends. Refer to *Figure 31*. The protection conductor must be longer so it can be routed to the machine without tension.

- Stranded conductors (flexible wiring) that can withstand vibration from machine
- For crossection size, refer to *Table 16*
- Route the supply cable as short as possible, directly from the supply protection device to the washer without branching off

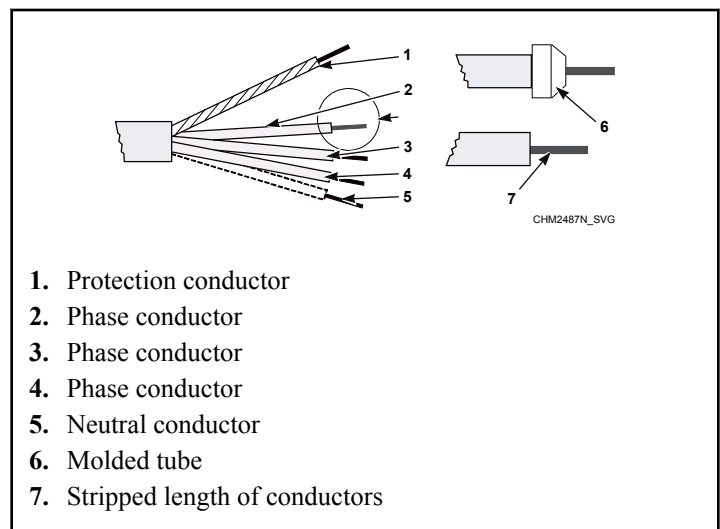


Figure 31

3. 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.

4. Crimp a ring terminal to the protection conductor so it stays fixed to the PE terminal.
5. Connect the supply cable conductors to the incoming terminals (main switch [1]), marked with L1/U, (L2/V), (L3/W), (N) and the terminal marked with PE. Refer to *Figure 32* or *Figure 33*.
6. Provide a sag in the cable, in front of the strain relief. This will prevent condensed water from dripping into the machine. Refer to *Figure 32* or *Figure 33*.

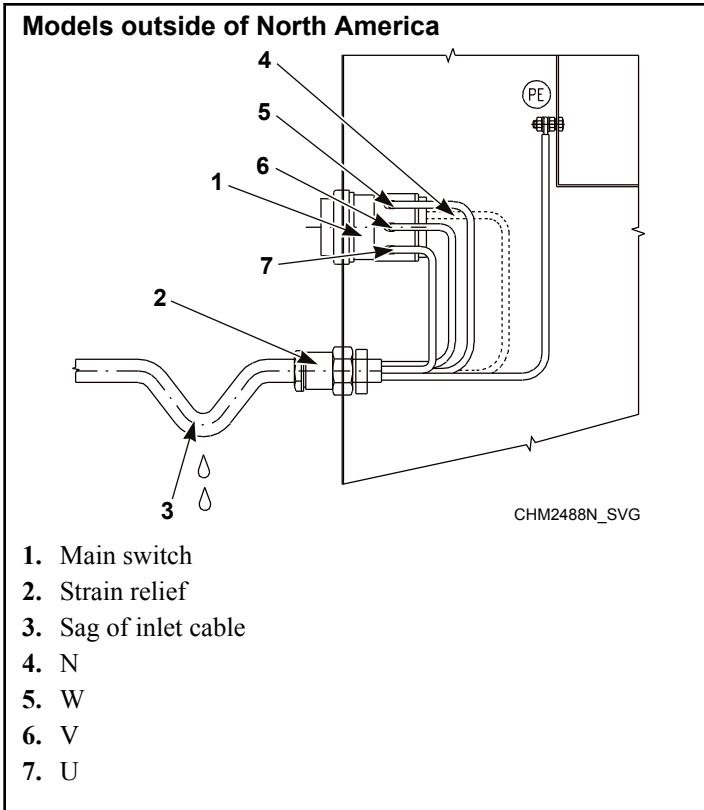


Figure 32

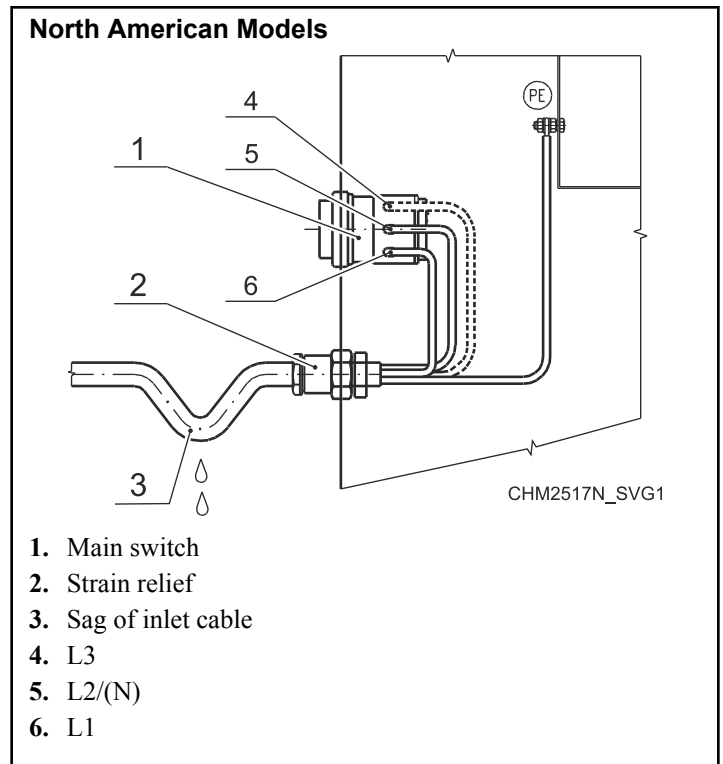


Figure 33

### Machine Protective Earth Connection and Equipotential Bonding

If there are other washers or appliances with exposed conductive parts, which can touch simultaneously, make sure to make equipotential bonding between all these appliances. The external protective terminal for this purpose is located on the rear panel of the machine frame. The minimum protection conductor's cross section depends on the supply cable cross section (refer to *Table 16*). However, for the protection purposes, with the supply cable cross section of a min. 4 mm<sup>2</sup>, select a larger conductor section, i.e., 6 mm<sup>2</sup>.

## Input Power Conditioning

The drive is suitable for direct connection to input power within the rated voltage of the drive. Listed in *Input Power Condition* are certain input power conditions which may cause component damage or reduction in product life. If any of the conditions exist,

install one of the devices listed under the Possible Corrective Action(s).

**IMPORTANT: Only one device per branch circuit is required. It should be mounted closest to the branch and sized to handle the total current of the branch circuit.**

Input Power Condition	Possible Corrective Action(s)
Low Line impedance (less than 1% line reactance)	<ul style="list-style-type: none"> <li>• Install Line Reactor</li> <li>• Isolation Transformer</li> </ul>
Greater than 120 kVA supply transformer	
Line has power factor correction capacitors	<ul style="list-style-type: none"> <li>• Install Line Reactor</li> <li>• Isolation Transformer</li> </ul>
Line has frequent power interruptions	
Line has intermittent noise spikes in excess of 6000V (lightning)	
Phase to ground voltage exceeds 125% of normal line to line voltage	<ul style="list-style-type: none"> <li>• Remove MOV jumper to ground</li> <li>• Install Isolation Transformer with grounded secondary (if necessary)</li> </ul>
Ungrounded distribution system	
240V open delta configuration (stinger leg)*	<ul style="list-style-type: none"> <li>• Install Line Reactor</li> </ul>
<p>* For drives applied on an open delta with a middle phase grounded neutral system, the phase opposite the phase that is tapped in the middle to the neutral or earth is referred to as the "stinger leg," "high leg," "red leg," etc. This leg should be identified throughout the system with red or orange tape on the wire at each connection point. The stinger leg should be connected to the center Phase B on the reactor.</p>	

Table 17


## Input Voltage Requirements

For voltages above or below listed specifications, contact your power company or local electrician.

If machine is intended for four-wire service, a neutral leg must be provided by power company.

If a delta supply system is used on a four-wire model, connect high leg to L3.

**IMPORTANT: Improper connections will result in equipment damage and will void warranty.**

	DANGER
<p><b>Electrical shock hazard will result in death or serious injury. Disconnect electric power and wait five (5) minutes before servicing.</b></p>	
<p>W810</p>	

connecting all legs if one should be lost accidentally. Refer to section for model-specific circuit breaker requirements.

**IMPORTANT: All quick disconnects should comply with the specifications. DO NOT use fuses instead of circuit breakers.**

## Connection Specifications

**IMPORTANT: Connection must be made by a qualified electrician using wiring diagram.**

Connect machine to an individual branch circuit not shared with lighting or other equipment. Shield connection in a liquid-tight or approved flexible conduit. Copper conductors of correct size must be installed in accordance with National Electric Code (NEC) or other applicable codes.

Use wire sizes indicated in the Electrical Specifications chart for runs up to 50 feet [15 m] . Use next larger size for runs of 50 to 100 feet [15 to 30 m] . Use two (2) sizes larger for runs greater than 100 feet [30 m] .

### Single-Phase Connections

#### Single Phase Connection - North American Models

Connect the electrical service's wires to the machine's electrical connection terminal as shown.

## Circuit Breakers and Quick Disconnects

Single-phase machines require a single-phase inverse-time circuit breaker. Three-phase machines require a separate, three-phase inverse-time circuit breaker to prevent damage to the motor by dis-

Electrical Service Wire	Machine's Electrical Connection Terminal
L1	L1
L2	L2
PE	PE (Ground)

Table 18

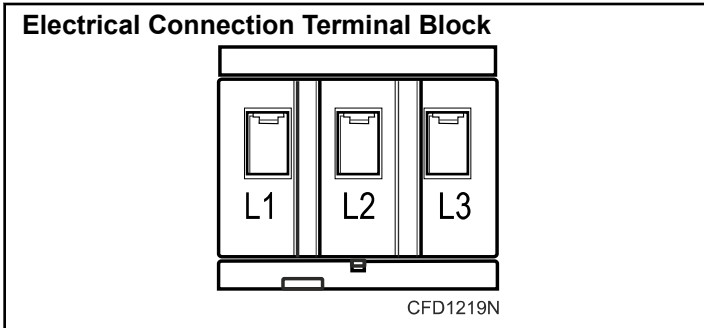


Figure 34

Electrical Service Wire	Machine's Electrical Connection Terminal
Neutral	N
PE	PE (Ground)

Table 19

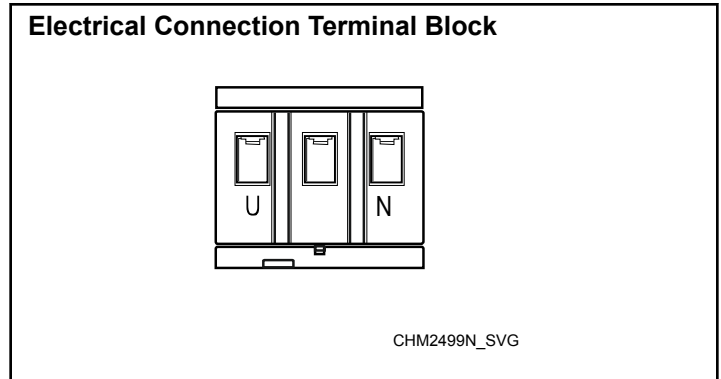


Figure 36

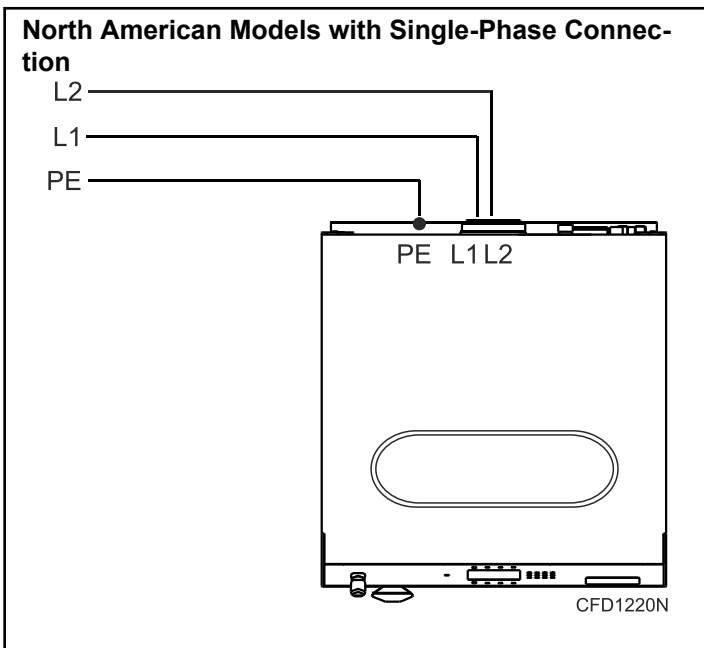


Figure 35

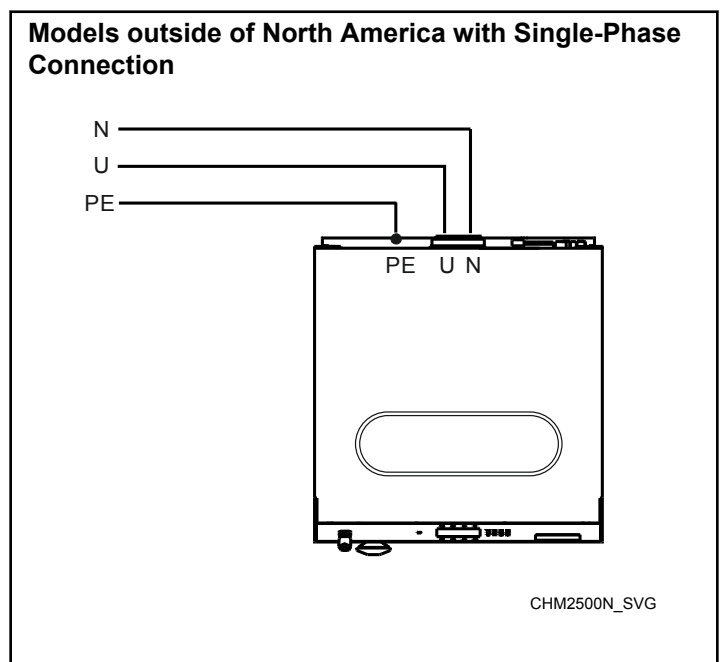


Figure 37

**Single Phase Connection - Models outside of North America**

Connect the electrical service's wires to the machine's electrical connection terminal as shown.

Electrical Service Wire	Machine's Electrical Connection Terminal
U	U

Table 19 continues...

**Three-Phase Connections**

**Three Phase Connection - North American Models**

Connect the electrical service's wires to the machine's electrical connection terminal as shown.

Electrical Service Wire	Machine's Electrical Connection Terminal
L1	L1
L2	L2
L3	L3
PE	PE (Ground)

Table 20

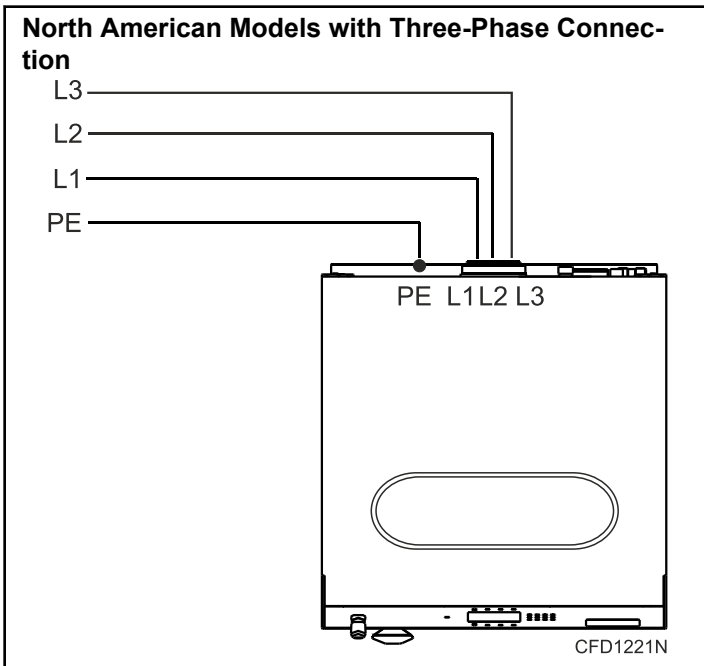


Figure 38

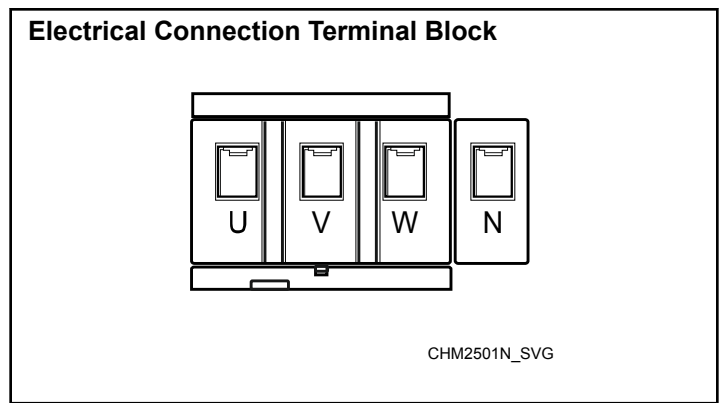


Figure 39

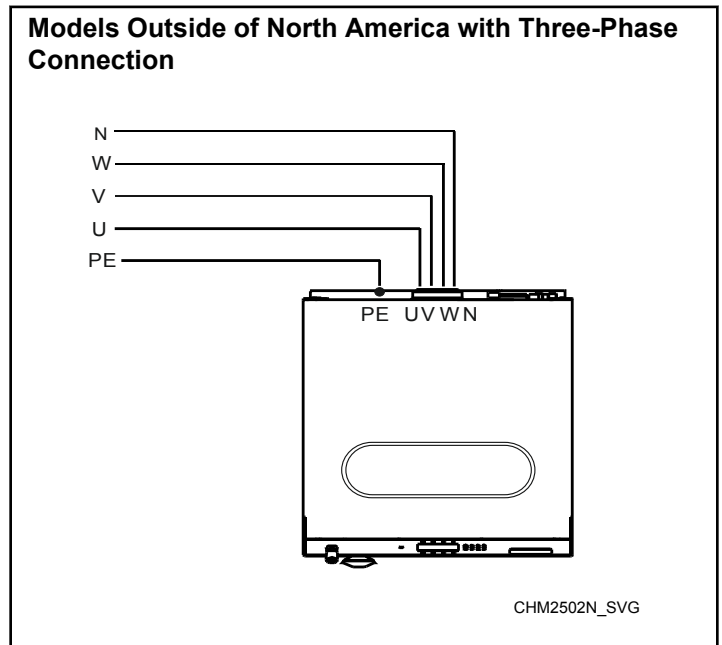


Figure 40

**Three Phase Connection - Models Outside of North America**

Connect the electrical service's wires to the machine's electrical connection terminal as shown.

Electrical Service Wire	Machine's Electrical Connection Terminal
U	U
V	V
W	W
PE	PE (Ground)

Table 21

**Phase Adder**

Machines can be converted for lower voltage operation and/or 50 Hz operation. Refer to conversion label by serial plate for details.

**IMPORTANT: Do not use a phase adder on any machine.**

**Voltage Settings**

When a transformer is provided (control or step down transformer), it is set to the highest voltage of the range at the manufacturing facility. If, at installation, the nominal supply voltage is lower, the appropriate voltage terminal on the transformer must be selected. For example, if the voltage range is 208-240V, the connected terminal transformer will be 240V. If the supply voltage is 208V, redirect the voltage wire to the 208V terminal.

## **Thermal Overload Protector**

For models with inverter drives, the inverter drive provides overload protection for the drive motor.

## Electrical Specifications - Models Outside of North America

### 6.5 kg / 14 lb. / 65 L Models

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard			Electric Heat		
				Total Power (kW)	Full Load Amps (A)	Fuse (A)	Total Power (kW)	Full Load Amps (Electric Heating kW)	Fuse (A)
200-240	50/60	1	2 (L1, L2, or L1, N)	0.85	6.6	10	3.6	17.9 (3)	20
							5.2	24.9 (4.6)	32
200-240	50/60	3	3 (L1, L2, L3)	0.85	6.6	10	6.7	20 (6)	25
							9.7	27.5 (9)	32
380-415 + N	50/60	3	4 (L1, L2, L3, N)	0.85	6.6	10	5.3	10 (4.6)	16
							6.7	13.5 (6)	16
							9.7	18 (9)	20
380-415	50/60	3	3 (L1, L2, L3)	0.85	2.4	10	6.7	9.9 (6)	16
							9.7	15.3 (9)	20
440-480	50/60	3	3 (L1, L2, L3)	0.85	2.4	10	7.7	11.6 (7)	16
							9.7	13.8 (9)	16

Table 22



7.5 kg / 20 lb. / 75 L Models

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard			Electric Heat		
				Total Power (kW)	Full Load Amps (A)	Fuse (A)	Total Power (kW)	Full Load Amps (Electric Heating kW)	Fuse (A)
200-240	50/60	1	2 (L1, L2, or L1, N)	0.85	6.7	10	3.6	18 (3)	20
							5.2	25.1 (4.6)	32
200-240	50/60	3	3 (L1, L2, L3)	0.85	6.7	10	6.7	20.2 (6)	25
							9.7	27.9 (9)	32
380-415 + N	50/60	3	4 (L1, L2, L3, N)	0.85	6.7	10	5.3	10 (4.6)	16
							6.7	13.7 (6)	16
							9.7	18.2 (9)	20
380-415	50/60	3	3 (L1, L2, L3)	0.85	2.5	10	6.7	10 (6)	16
							9.7	15.4 (9)	20
440-480	50/60	3	3 (L1, L2, L3)	0.85	2.5	10	7.7	11.7 (7)	16
							9.7	13.9 (9)	16

Table 23

10.5 kg / 25 lb. / 105 L Models

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard			Electric Heat		
				Total Power (kW)	Full Load Amps (A)	Fuse (A)	Total Power (kW)	Full Load Amps (Electric Heating kW)	Fuse (A)
200-240	50/60	1	2 (L1, L2, or L1, N)	1.2	9.8	16	3.8	18.5 (3)	25
							5.4	25.5 (4.6)	32
200-240	50/60	3	3 (L1, L2, L3)	1.2	9.8	16	6.8	20.5 (6)	25
							9.8	28.1 (9)	32
							12.8	35.6 (12)	40
380-415 + N	50/60	3	4 (L1, L2, L3, N)	1.2	9.8	16	6.8	14.1 (6)	16
							9.8	18.5 (9)	20
							12.8	22.8 (12)	25
380-415	50/60	3	3 (L1, L2, L3)	1.2	3.2	10	6.8	10.1 (6)	16
							9.8	15.5 (9)	16
							12.8	19.9 (12)	25
440-480	50/60	3	3 (L1, L2, L3)	1.2	3.2	10	7.8	12.8 (7)	16
							9.8	14 (9)	16
							12.8	18.2 (12)	25

Table 24

13.5 kg / 30 lb. / 135 L Models

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard			Electric Heat		
				Total Power (kW)	Full Load Amps (A)	Fuse (A)	Total Power (kW)	Full Load Amps (Electric Heating kW)	Fuse (A)
200-240	50/60	1	2 (L1, L2, or L1, N)	1.6	10.1	16	4.1	19 (3)	25
							5.7	27 (4.6)	32
200-240	50/60	3	3 (L1, L2, L3)	1.6	10.1	16	7.1	22 (6)	25
							10.1	29.6 (9)	32
							13.1	37.2 (12)	40
							14.9	41.7 (13.8)	50
380-415 + N	50/60	3	4 (L1, L2, L3, N)	1.6	10.1	16	7.1	13 (6)	16
							10.1	18 (9)	20
							13.1	22.6 (12)	25
							14.9	27 (13.8)	32
380-415	50/60	3	3 (L1, L2, L3)	1.6	3.6	10	7.1	11.6 (6)	16
							10.1	16 (9)	20
							13.1	19.9 (12)	20
							14.9	22.5 (13.8)	32
440-480	50/60	3	3 (L1, L2, L3)	1.6	3.6	10	8.1	13.2 (7)	16
							10.1	14.8 (9)	16
							13.1	18.7 (12)	25

Table 25

**18 kg / 40 lb. / 180 L Models**

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard			Electric Heat		
				Total Power (kW)	Full Load Amps (A)	Fuse (A)	Total Power (kW)	Full Load Amps (Electric Heating kW)	Fuse (A)
200-240	50/60	1	2 (L1, L2, or L1, N)	2.3	14.2	20	N/A	N/A	N/A
200-240	50/60	3	3 (L1, L2, L3)	2.3	14.2	20	13.5	37.9 (12)	40
							19.5	53.3 (18)	63
380-415 + N	50/60	3	4 (L1, L2, L3, N)	2.3	14.2	20	13.5	23.1 (12)	25
							19.5	31.9 (18)	32
380-415	50/60	3	3 (L1, L2, L3)	2.3	5.2	10	13.5	20.9 (12)	25
							19.5	30.5 (18)	32
440-480	50/60	3	3 (L1, L2, L3)	2.3	5.2	10	13.5	19.7 (12)	25
							19.5	27.2 (18)	32

Table 26

24 kg / 55 lb. / 240 L Models

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard			Electric Heat		
				Total Power (kW)	Full Load Amps (A)	Fuse (A)	Total Power (kW)	Full Load Amps (Electric Heating kW)	Fuse (A)
200-240	50/60	1	2 (L1, L2, or L1, N)	3.1	15	20	N/A	N/A	N/A
200-240	50/60	3	3 (L1, L2, L3)	3.1	15	20	20	54.3 (18)	63
380-415 + N	50/60	3	4 (L1, L2, L3, N)	3.1	15	20	20	31.9 (18)	32
380-415	50/60	3	3 (L1, L2, L3)	3.1	7.1	10	20	31.5 (18)	32
440-480	50/60	3	3 (L1, L2, L3)	3.1	7.1	10	20	28.2 (18)	32

Table 27

**28 kg / 70 lb. / 280 L Models**

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard			Electric Heat		
				Total Power (kW)	Full Load Amps (A)	Fuse (A)	Total Power (kW)	Full Load Amps (Electric Heating kW)	Fuse (A)
200-240	50/60	1	2 (L1, L2, or L1, N)	3.1	16	20	N/A	N/A	N/A
200-240	50/60	3	3 (L1, L2, L3)	3.1	16	20	23.9	64 (21.9)	80
380-415 + N	50/60	3	4 (L1, L2, L3, N)	3.1	16	20	23.9	40.5 (21.9)	50
380-415	50/60	3	3 (L1, L2, L3)	3.1	7.2	10	23.9	37 (21.9)	40
440-480	50/60	3	3 (L1, L2, L3)	3.1	7.2	10	23.9	34 (21.9)	40

Table 28

## Electrical Specifications - North American Models

### 7.5 kg / 20 lb. / Models

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker CSA (A)	AWG (mm <sup>2</sup> )
X	200-240	60	1/3	2 (L1, L2 or L1, N)	6.7	10	14 (2.5)
N	440-480	60	3	3 (L1, L2, L3)	2.5	10	14 (2.5)

Table 29

### 10.5 kg / 25 lb. / 105 L Models

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker CSA (A)	AWG (mm <sup>2</sup> )
X	200-240	60	1/3	2 (L1, L2 or L1, N)	9.8	15	14 (2.5)
N	440-480	60	3	3 (L1, L2, L3)	3.2	10	14 (2.5)

Table 30

### 13.5 kg / 30 lb. / 135 L Models

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker CSA (A)	AWG (mm <sup>2</sup> )
X	200-240	60	1/3	2 (L1, L2 or L1, N)	10.1	15	14 (2.5)
N	440-480	60	3	3 (L1, L2, L3)	3.6	10	14 (2.5)

Table 31

### 18 kg / 40 lb. / 180 L Models

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker CSA (A)	AWG (mm <sup>2</sup> )
X	200-240	60	1/3	2 (L1, L2 or L1, N)	14.2	20	12 (4)
N	440-480	60	3	3 (L1, L2, L3)	5.2	10	14 (2.5)

Table 32

**24 kg / 55 lb. / 240 L Models**

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker CSA (A)	AWG (mm <sup>2</sup> )
X	200-240	60	1/3	2 (L1, L2 or L1, N)	15	20	12 (4)
N, 7	440-480	60	3	3 (L1, L2, L3)	7.2	15	14 (2.5)

Table 33

**28 kg / 70 lb. / 280 L Models**

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker CSA (A)	AWG (mm <sup>2</sup> )
X	200-240	60	1/3	2 (L1, L2 or L1, N)	16	20	12 (4)
N, 7	440-480	60	3	3 (L1, L2, L3)	7.2	15	14 (2.5)

Table 34

## Steam Requirements (Steam Heat Option Only)

**NOTE: Read Important Safety Instruction first.**

In case it is necessary to disconnect the steam hose from the washer, isolate the steam hose from the steam supply and wait sufficient time (min 1h) to allow to cooldown the steam system. Then turn the connection nut slowly loose until some pressure escapes. Wait until the escape stops, then disconnect further.

For machines equipped with optional steam heat, install piping in accordance with approved commercial steam practices. Steam requirements are shown in *Table 35*.

Specification	Requirement
Steam inlet connection size, in. BSP	1/2"

Table 35

**IMPORTANT: It is necessary to insert a filter with permeability up to 0.0118 in. [300 µm] in front of the steam valve. Dirt larger than 0.0118 in. [300 µm] may damage the steam valve and cause leaks.**

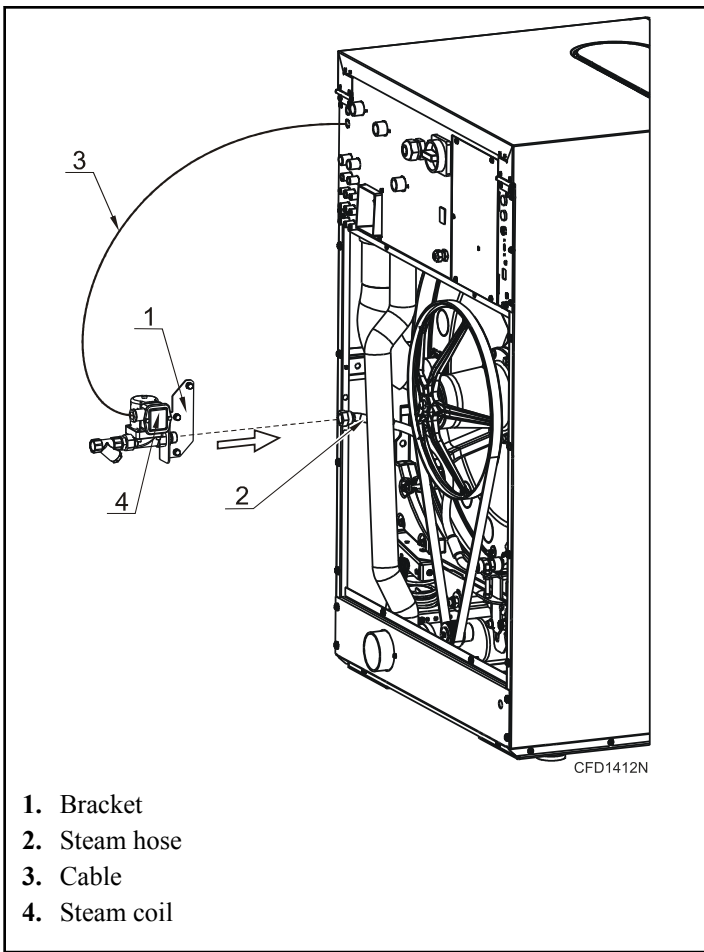
**NOTE: Failure to install the customer supplied steam filter may void the warranty.**

Use an inlet steam pressure hose only adapted to the steam valve with appropriate seal suitable for the applied working pressure.

## Steam Valve Installation

1. Remove the rear cover.
2. Fit the bracket with the steam valve and filter onto the rear part of machine.
3. Connect steam hose to steam valve.
4. Connect the cable to the steam coil.
5. Fit rear cover back to its original place.





- 1. Bracket
- 2. Steam hose
- 3. Cable
- 4. Steam coil

Figure 41

Secure the location of the wiring and hoses so they can not be pinched, damaged or rubbed. Before you start to use liquid soap, check with your liquid soap supplier whether the liquid soap is harmless and inert to PP and PVC material in order to avoid damage to machine.

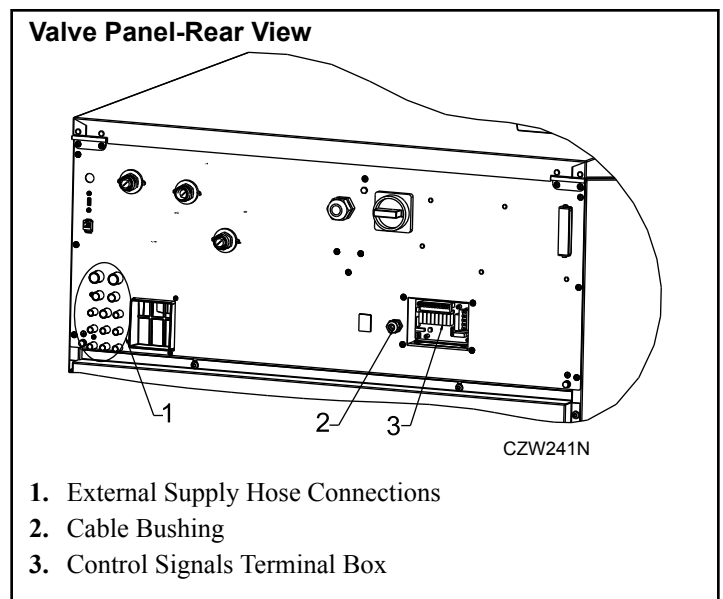
**IMPORTANT:** Failure to follow these instructions could damage the machine and void the warranty.

## Connection of External Liquid Supplies

**NOTE:** Read Important Safety Instruction first.

1. Facing the rear of the machine, locate the eight (8) 5/16 inch [8 mm] supply hose connections found on the left-hand side of the valve panel. Refer to *Figure 42*.

**NOTE:** Recommended setting of the pump's flow rate is 60 to 100 liters per hour.



- 1. External Supply Hose Connections
- 2. Cable Bushing
- 3. Control Signals Terminal Box

Figure 42

## Chemical Injection Supply System

**NOTE:** Read Important Safety Instruction first.

Supply Dispensing	
Number of external liquid supply connections	8
Liquid supply connection size, in. [mm]	5/16 [8]
Number of diluted liquid soap supply connections	3
Diluted liquid soap supply connection size, in. [mm]	1/2 [12]

Table 36

2. Drill through the eight (8) plastic holes on the valve panel for the external supply hoses as needed.

**NOTE:** On the valve panel by the external supply hose connections are three (3) connections of 1/2 in. 12 mm that are to be used only for entering diluted soap. To use, drill a 7/16 inch 11.5 mm hole only in connections that will be used.

3. Remove plastic debris.
4. Attach the external supply hoses to the ports at each of the drilled holes.
5. Secure with proper clamps.

**IMPORTANT:** Check that the hose connections are tight (check the clamps). Any chemical leakage may cause serious damage to the washer. If one of the connections is open, close and secure the opening with an appropriate cover.

**NOTE: Do not attempt to make chemical injection supply pump electrical connections to points other than those provided specifically for that purpose by the factory.**

## Electrical Connection of External Liquid Soap Supply System

**NOTE: Find the connection on the wiring diagram.**

The power supply of the external liquid soap supply system has to be connected to an external electrical source. Only authorized workers with valid qualifications must execute the electrical connection on the machine according to valid local standards.

The electric connection for supply control signals (if used) is available on the rear panel. Refer to *Figure 42*. At the terminal box, there is a label for electric connection.

Maximum current for control circuits of pump must be limited to 100mA. Lead the cable for connection of pump control signals through the plastic cable bushing. After connection of conductors to the respective positions of the connector on the Liquid Soap Extension Board, fix up the cable by tightening the cable bushing against disconnections and close the box with the cover. For details about liquid soap supply system programming, refer to Programming Manual.

## External Wait Control

**NOTE: Find the connection on the wiring diagram.**

This function can be activated by an external contact which is connected between the pins ↑ and ↓. Refer to *Figure 42*. Such connection is possible only with machines which had been ordered with the "Heating Delay / Waiting for Detergent" option.

# Chemical Soap Supply System

**NOTE: Read Important Safety Instruction first.**

Undiluted chemical dripping can damage the washerextractor. Therefore, all chemical supply dispenser pumps should be mounted below the washerextractor'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 43* shows a typical chemical injection supply system.

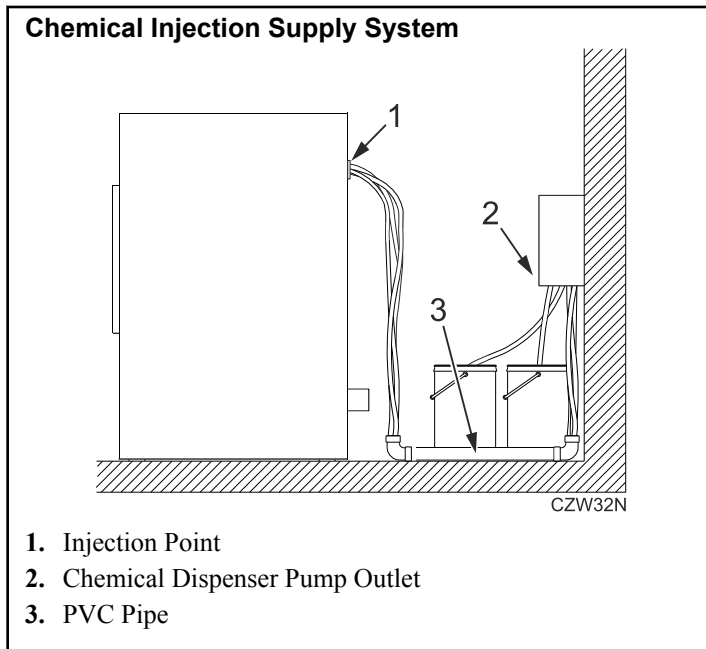


Figure 43

# Operation

## Operator Daily Maintenance Checks

**NOTE: Read Important Safety Instructions first.**

1. Verify that all warning labels are present and legible, replace as necessary.
2. Check door interlock before starting operation of the machine:
  - a. Attempt to start the machine with the door open. The machine should not start.
  - b. Close the door and start the machine. If machine doesn't lock, the machine should not start.
  - c. Attempt to open the door while a cycle is in progress. The door should not open.

If the door lock and interlock are not functioning properly, disconnect power and call a qualified technician.

3. Do not attempt to operate the machine if any of the following conditions are present:
  - a. The door does not remain securely locked during the entire cycle.
  - b. Excessively high water level is evident.
  - c. Machine is not connected to a properly grounded circuit.

Machine	Drum Fulfillment (%)	Pieces of Flat Mops (pc)
6.5 kg / 14 lb / 65 L	84	39
7.5 kg / 20 lb / 75L	84	45
10.5 kg / 25 lb / 105 L	84	63
13.5 kg / 30 lb / 135 L	84	81
18 kg / 40 lb / 180 L	69.5	90
24 kg / 55 lb / 240 L	69.2	118
28 kg / 70 lb / 280 L	64.3	128

Table 37

**NOTE: Table is for orientational purposes only as is applicable for flat mops with length 40 cm and weight 0.140 g.**

## Operating Instructions

1. Turn on main power source (circuit breaker).
2. Pull on the door handle to open the door.
3. **IMPORTANT: To avoid premature bearing failure, do not operate the machine while the basket is empty.**

Load to capacity whenever possible. **DO NOT OVERLOAD.** Refer to *Figure 44*.

**NOTE: Underloading can cause out-of-balance conditions that can shorten machine life.**

**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.**

Refer to *Table 37* for recommended filling for mop wash programs (for machines with optional filter tanks for mops).

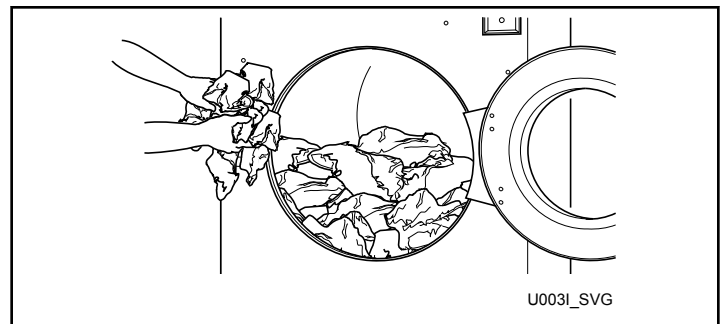


Figure 44

4. Close the door by applying moderate pressure on the door handle and simultaneously turning door handle partially to the left.
5. **NOTE: Make sure the door is closed properly before operating washing machine. Do not turn the handle completely around or the safety system will not engage. The safety system serves as protection against violent handling and damage to the door lock while the machine is operating.**
6. Choose the desired wash program best corresponding to the quality of the garments and allowed wash temperature in the wash load.

7. Add liquid supplies to supply dispenser and close lid.

**NOTE: It is advisable to use only detergents with "softener to break the suds", which can easily be found in retail shops. Do not use gel detergents. The dosage of soap is generally mentioned on the packing. An overdose of detergent can lead to poor wash results and suds or overflow which can damage the machine.**

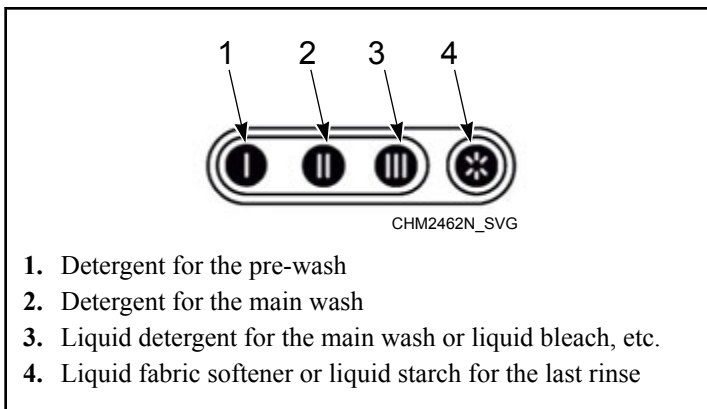


Figure 45

8. For vended models only, insert coin(s) or card as necessary.
  - If the machine is a coin operated unit, add coins. As each coin is added, the vend counts down to the amount remaining.
9. Press the START keypad.
10. During first 150 seconds, the desired wash cycle can be changed. After first 150 seconds have ended, the wash cycle active at that moment remains the chosen wash cycle.
11. The wash cycle time is counted down to zero on the display. After completion, the door lock unlocks and the display shows "UNLOAD".

## 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.
4. Close metallic buttons, e.g. on jeans. Open buttons can get between the drum and tub/door glass and damage it.

**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.**

## Power Cut

If a power cut occurs in an idle condition of the machine and no wash program is running, the machine remains in the idle condition.

### Models without numeric keypad

If a power cut occurs during the wash process and the door remains closed and locked, the wash program will, after the power supply has been restored, automatically continue in the program beginning from the step in which the program was interrupted.

For machines fitted with an automatic door-lock unlocking module, refer to *Automatic Door-lock Unlocking Module* section. If during the power cut, the door lock gets unlocked and the door remains closed, the message "PRESS START / OPEN DOOR" appears as soon as the power supply is restored. If you open the door, the wash program will be cancelled. If you press the START button, the wash program will continue beginning from the step in which the program was interrupted.

### Models with numeric keypad

If a power cut occurs during the wash process, the message "CONTINUE / STOP" appears as soon as the power supply is restored. If you press the STOP button, the wash program will be cancelled. If you press the START button, the wash program will continue beginning from the step in which the program was interrupted.

## Automatic Door-lock Unlocking Module

Some machines are fitted with an automatic module for unlocking the door lock in case of a power cut.

If a short term power cut occurs, this module does not affect the operation of the machine.

If a long term power cut occurs, the module unlocks the door lock. It is then possible to open the door and remove laundry.

# Maintenance

## Maintenance

**NOTE: Read Important Safety Instructions first.**

**IMPORTANT: Use the proper chemical agents which avoid calcium sediments on heating elements and other machine parts. Discuss the 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.**

## Daily

**IMPORTANT: Do not spray the machine with water. Short circuiting and serious damage may result.**

### Beginning of Day

1. Verify that all warning labels are present and legible, replace as necessary.
2. Check door interlock before starting operation:
  - a. Attempt to start the machine with the door open. The machine should not start.
  - b. Close the door without locking it and start the machine. The machine should not start.
  - c. Attempt to open the door while the cycle is in progress. The door should not open.

If the door lock and interlock are not functioning properly, disconnect power and call a service technician.

3. Check the machine for leaks.
4. Inspect water inlet valve hose connections on the back of the machine for leaks.
5. Inspect steam hose connections for leaks (if applicable).
6. On machines equipped with an automatic Chemical Supply System, check all the hoses and hose connections for leaks or visible signs of deterioration. Replace immediately if either are present. Chemical leaks can cause damage to the machine's components.
7. Verify that insulation is intact on all external wires and that all connections are secure. If bare wire is evident, call a service technician.
8. Ensure all panels and guards are properly installed.

### End of Day

1. Inspect and clean the basket and door gasket of residual detergent and all foreign matter.
2. Clean the door glass and between the door gasket and the door with a damp cloth.
3. Clean supply dispenser lid and general area with mild detergent. Flush the dispenser with clean water.

4. Clean the machine's top, front and side panels with all-purpose cleaner. Rinse with clean water and dry.

**IMPORTANT: Use only isopropyl alcohol to clean graphic overlays. Never use ammonia-based, vinegar-based or acetone-based cleaners on graphic overlays.**

**IMPORTANT: Do not use abrasive cleaners.**

**NOTE: Unload the machine promptly after each completed cycle to prevent moisture buildup. Leave loading door open at the end of each completed cycle to allow moisture to evaporate.**

5. Leave the loading door open at the end of each day to allow moisture to evaporate.
6. Shut off water supply.

### *Cleaning the Filter and Tanks (Machines with Optional Filter Tanks for Mops)*

The filter tank is equipped with an easy to remove filter. Refer to *Figure 46*. This filter catches pollutants during the working cycle. Check and clean the filter daily. Failure to check and clean the filter can lead to incorrect function of the equipment, which results in insufficient drainage of waste water into the sewer.

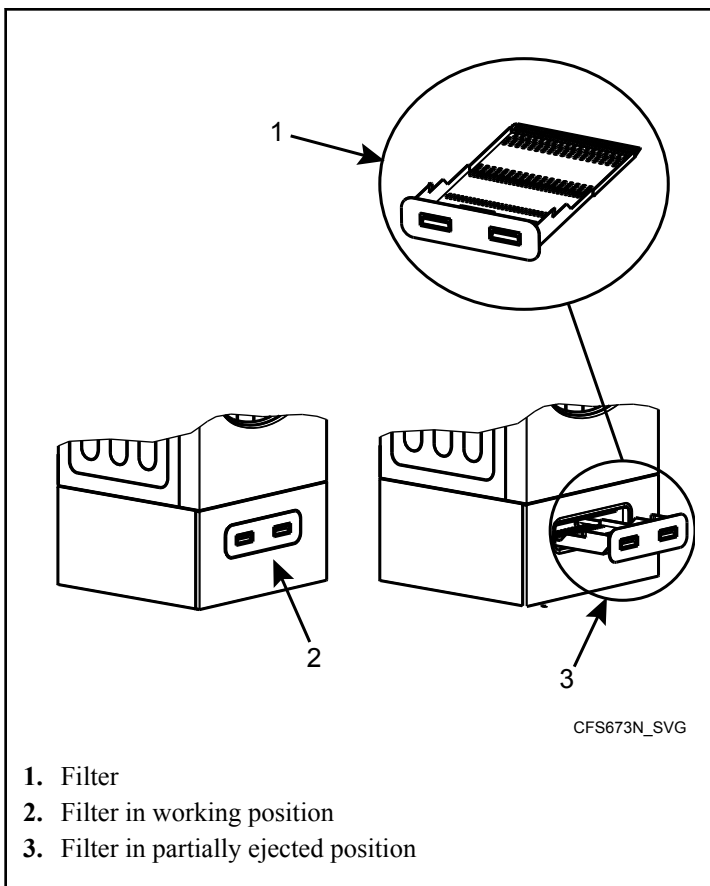


Figure 46

Box dismounting procedure:

1. Remove the filter. Refer to *Figure 47*.

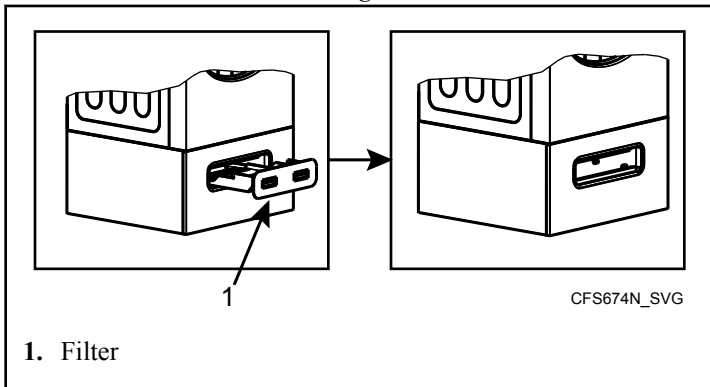


Figure 47

2. Remove the front cover of the filter base frame. Refer to *Figure 48*.

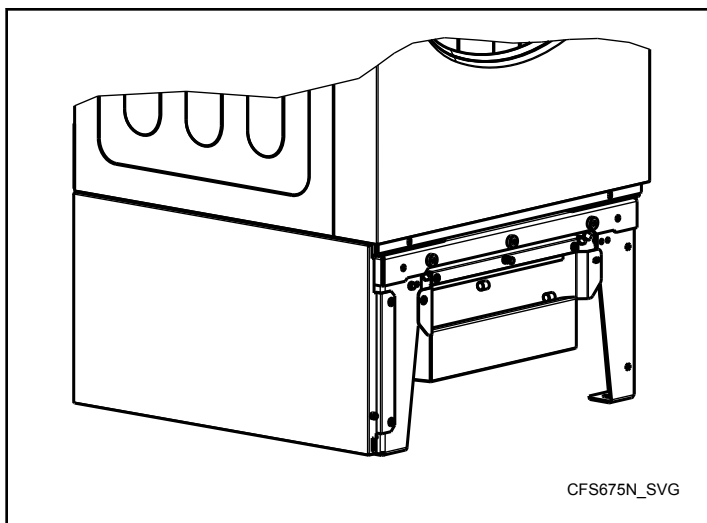


Figure 48

3. Remove the two screws (M6) that attach the filter box. Refer to position 1 of *Figure 49*.

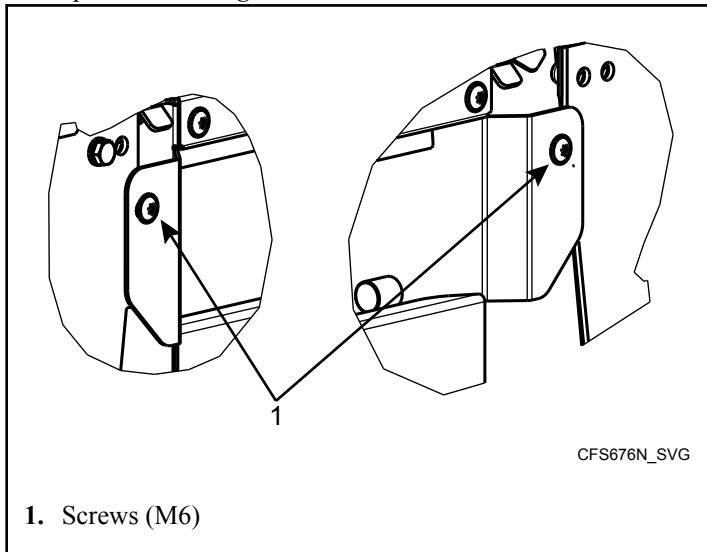
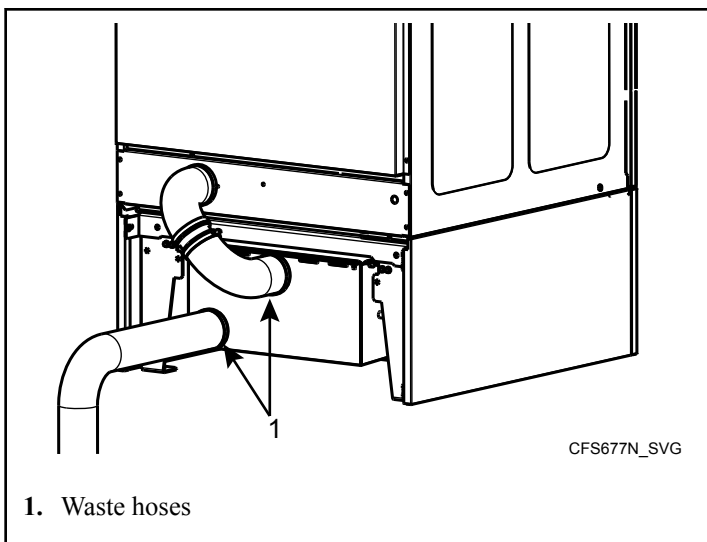


Figure 49

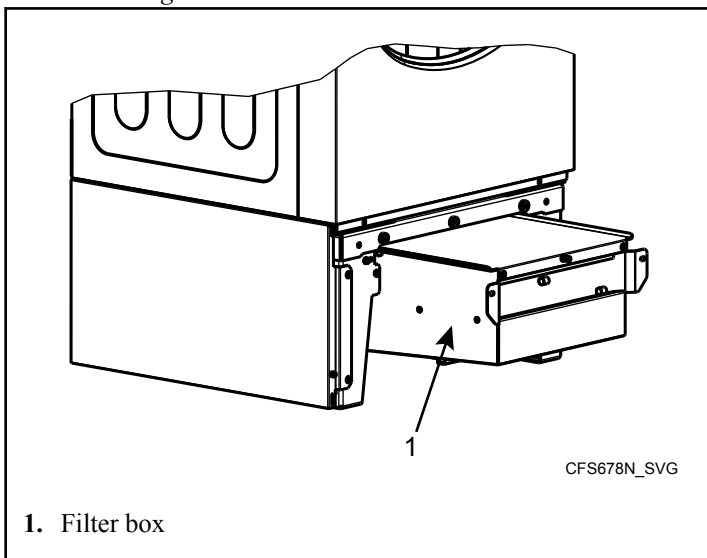
4. Remove the clamps and waste hoses from the filter box at the back of the machine. Refer to *Figure 50*.



1. Waste hoses

Figure 50

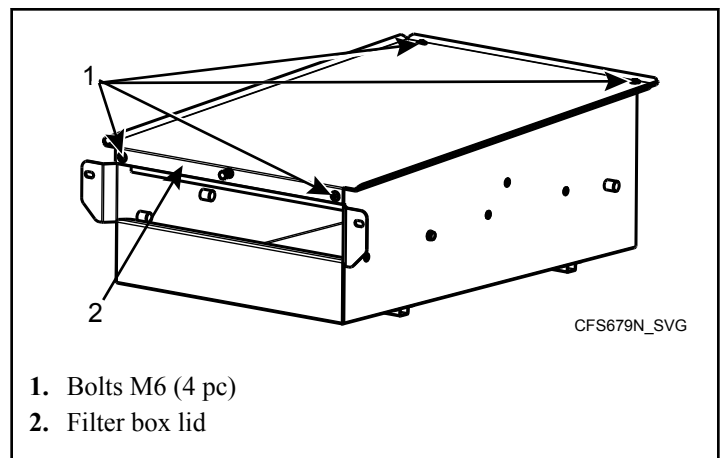
5. Carefully push the box forwards along the line to remove it. Refer to *Figure 51*.



1. Filter box

Figure 51

6. Clean the box. Refer to *Figure 52*. The box lid (2) is also removable using the four M6 bolts (1).



1. Bolts M6 (4 pc)  
2. Filter box lid

Figure 52

7. Reattach the lid and return the box to its original position. Reconnect the clamps and waste hoses. Reinstall the screws that hold the filter box in place. Reinstall the front cover of the filter base frame. Reinsert the filter.

## Quarterly

1. Check the bearing house for leakage.
2. Verify that the drain valve is operating and that the drain system is free from obstruction. If water does not leak out during the first wash segment, the drain valve is closed and functioning properly.
3. Visually check all hoses and connections inside machine for leaks.
4. Make sure that control components are protected against moisture and dust during the clean up. Wipe and clean the machine inside.
5. For models with electric heat, check the tightening of the contacts of heating elements terminals and other power terminals (main switch, fuse disconnectors, contactors).
6. In order to increase the service life of the door gasket, apply a glycerine-based impregnating agent.
7. Open the door approximately 15-20°.
  - a. Try to move the door up and down. If the door is able to be moved, add a .5mm thick washer to the fixed lower hinge pin. The washer was included when the machine was delivered, but can be ordered from manufacturer under part number 571642.
  - b. Try to turn the door in a clockwise or counterclockwise rotation. If the door can be moved clockwise or counterclockwise, replace the door hinges.



## Every 6 Months

1. Clean the water valve filters.
  - a. Turn off the water supply.
  - b. Unscrew the hoses at the back of machine.
  - c. Take out filter at center with pointed pliers.
  - d. Clean the filter and re-insert.
  - e. When reattaching the hoses, make sure the seals are seated correctly.
  - f. Check water inlets for leaks.
  - g. Tighten the connections or replace the seals of inlet hose if necessary.
2. If machine is fitted with a drain pump, make sure the pump provides normal flow rate during draining. The drain pump can be cleaned when it becomes clogged with foreign objects.
  - a. Drain all water from machine.
  - b. Disconnect machine from power supply.
  - c. Remove the front panel of cabinet by unlocking bolts. Refer to *Figure 53*.

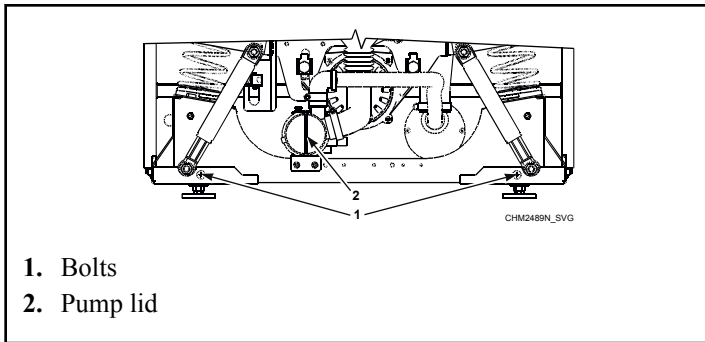


Figure 53

- a. Slightly turn the pump lid until water starts flowing out, making sure to catch the water.
  - e. Unscrew the lid and remove any foreign objects.
  - f. Reattach pump lid and front panel of cabinet.
3. Remove dust or dirt and verify functionality of the following:
  - a. Inverter cooling fin
  - b. Motor cooling fins
  - c. Interior inverter ventilator (if present)
  - d. Exterior inverter ventilator (if present)

**IMPORTANT: All torque joints must remain dry (non-lubricated).**
4. Check for belts for wear and inspect tightness. For recommended values, refer to *Table 38*.

Model	New Belt, Torque, Hz	Run-in belt, Torque, Hz
6.5 kg / 14 lb. / 65 L	67 - 70	64 - 67

Table 38 continues...

Model	New Belt, Torque, Hz	Run-in belt, Torque, Hz
7.5 kg / 20 lb. / 75 L	67 - 70	64 - 67
10.5 kg / 25 lb. / 105 L	65 - 68	62 - 65
13.5 kg / 30 lb. / 135 L	79 - 83	75 - 79
18 kg / 40 lb. / 180 L	64 - 69	62 - 64
24 kg / 55 lb. / 240 L	72 - 75	68 - 72
28 kg / 70 lb. / 280 L	72 - 75	68 - 72

Table 38

5. Check the tightness of bolts. Refer to *Table 39*.

Item	Bolt Type	Torque, lb. ft. [Nm]
Bolts of the dampers	M10	17.70 [24]
Bolts of the weight	M8	19.18 [26]
Door lock bolts	M5	1.84 [2.5]
Door handle central bolt	M6	6.49 [8.8]
Door hinge and front panel bolts	M6	6.49 [8.8]
Anchoring bolts	M16	73.76 [100]
External tub bolts 6.5 kg - 13.5 kg / 14 lb. - 30 lb. / 65 L - 135 L Models	M8	8.85 [12]
External tub bolts 18 kg - 28 kg / 40 lb. - 70 lb. / 180 L - 280 L Models	M8	19.18 [26]
Motor bolts	M12	N/A
Spring holder bolts	M8	7.38 [10]

Table 39

6. Adjust the safety switch.

**NOTE: 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.**

Adjust the safety switch lever distance as follows, refer to *Figure 54* : The safety switch lever must be in the center of the eye (left and right). Adjust the distance between the lower edge of the eye and the safety switch lever, using two screws on the safety switch holder. Refer to *Table 40* . The function of the vibration switch can be checked in the Inputs menu.

7. Check the door pressure and inspect the door seal. Replace it as needed. Refer to instructions 4-18-215 for door pressure adjustment and door seal replacement details.
8. After a cycle has been completed, check the shock absorbers to see if they are warm. If the shock absorbers aren't warm just after a wash cycle has been completed, replace them.

Specifica- tion	Model	Require- ment, in. [mm]
A - distance between lower edge of lug and stick of safety switch	6.5 kg - 13.5 kg / 14 lb. - 30 lb. / 65 L - 135 L	0.20 ± 0.04 [5 ± 1]
	18 kg - 28 kg / 40 lb. - 70 lb. / 180 L - 280 L	0.04 ± 0.04 [1 ± 1]

Table 40

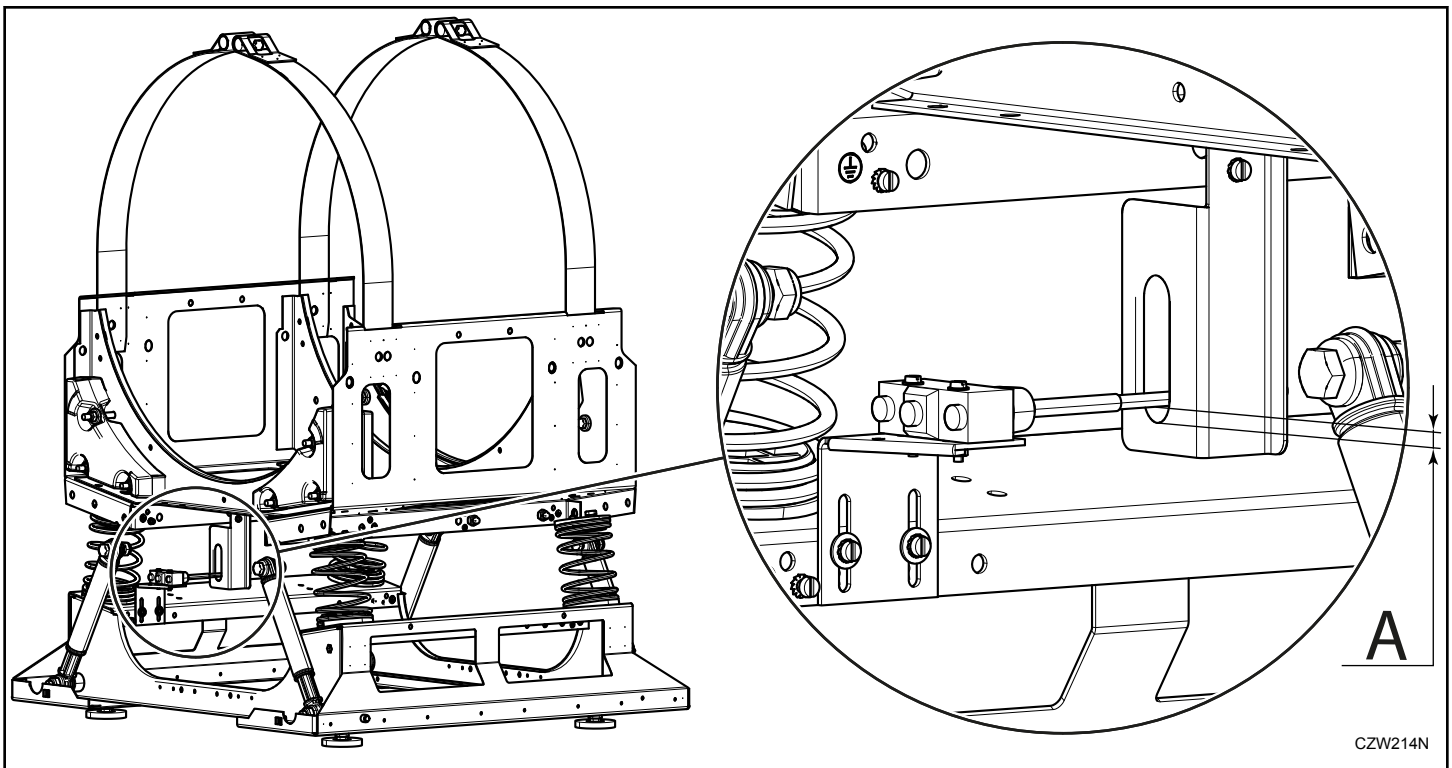


Figure 54

## Emergency Unblocking of Door Lock

**NOTE: Read Important Safety Instructions first.**

1. Verify if all condition are present to safely open the door.
2. Gently push the washing unit to back.
3. Put your fingers over the edge of the front panel on the door lock side.
4. First push the emergency door opening button, only then turn the door handle right.
5. Open the door if all safety conditions are fulfilled.

## Care of Stainless Steel

- Remove dirt and grease with detergent and water. Thoroughly rinse and dry after washing.
  - Avoid contact with dissimilar metals to prevent galvanic corrosion when salty or acidic solutions are present.
  - Do not allow salty or acidic solutions to evaporate and dry on stainless steel. Wipe clean of any residues.
  - Rub in the direction of the polish lines or “grain” of the stainless steel to avoid scratch marks when using abrasive cleaners. Use stainless steel wool or soft, non-metal bristle brushes. Do not use ordinary steel wool or steel brushes.
  - If the stainless steel appears to be rusting, the source of the rust may be an iron or steel part not made of stainless steel, such as a nail or screw.
- Remove discoloration or heat tint from overheating by scouring with a powder or by employing special chemical solutions.
  - Do not leave sterilizing solutions on stainless steel equipment for prolonged periods of time.
  - When an external chemical supply is used, ensure no siphoning of chemicals occurs when the machine is not in use. Highly concentrated chemicals can cause severe damage to stainless steel and other components within the machine. Damage of this kind is not covered by the manufacturer’s warranty. Locate the pump and tubing below the machine’s injection point to prevent siphoning of chemicals into the machine.

# Disposal of Unit

## Disconnecting the Machine

**NOTE: Read Important Safety Instructions first.**

1. Switch off the external electric power inlet to machine.
2. Turn off the main switch on machine.
3. Shut the external water or steam inlets to machine.
4. Make sure 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 an "Out of Service" sign.
7. Unscrew nuts and bolts that fix machine to floor.
8. If the machine will never be used again, secure it so injury to persons and damage to health, property and nature is avoided. Remove the door, secure the drum so it does not turn and remove any sharp parts of machine so enclosure or injury of a person or animal will not occur.

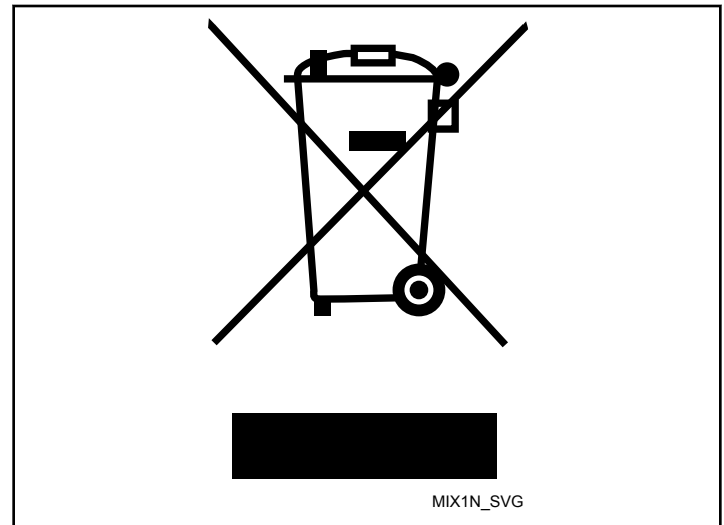


Figure 55

## Disposal of Unit

This appliance is marked according to the European directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Refer to *Figure 55*. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. Ensuring this product is disposed of correctly will help prevent potential negative consequences for the environment and human health which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact the local city office, household waste disposal service, or the source from which the product was purchased.

# 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.