

Washer-Extractors

Commercial Hardmount
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.)



www.alliancelaundry.com

Part No. D1599ENR16
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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.

	DANGER
Indicates an imminently hazardous situation that, if not avoided, will cause severe personal injury or death.	
	WARNING
Indicates a hazardous situation that, if not avoided, could cause severe personal injury or death.	
	CAUTION
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


Installation – Maintenance prevention


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


Electrical shock prevention

	DANGER
<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>	


	WARNING
<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>	

	WARNING
<p>ALWAYS 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>	


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

	WARNING
<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


	WARNING
<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

	WARNING
<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


	WARNING
<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>	


	WARNING
<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>	

	WARNING
<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

	WARNING
<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"> • Do not install or store the washer where it will be exposed to water and/or weather conditions. • To prevent fire and explosion, keep the area around machine free from flammable and combustible products. Do not add the following substances or textiles containing traces of the following substances to the wash water: gasoline, kerosene, waxes, cooking oils, vegetable oils, machine oils, dry-cleaning solvents, flammable chemicals, thinners, or other flammable or explosive substances. These substances give off vapors that could ignite, explode or cause the fabric to catch fire by itself. • Under certain conditions, hydrogen gas may be produced in a hot water system that has not been used for two weeks or more. HYDROGEN GAS IS EXPLOSIVE. If the hot water system has not been used for such a period, before using a washing machine or combination washer-dryer, turn on all hot water faucets and let the water flow from each for several minutes. This will release any accumulated hydrogen gas. The gas is flammable, do not smoke or use an open flame during this time. • 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]. 	

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

	WARNING
<ul style="list-style-type: none"> • Do not operate the machine without the water reuse plug or water reuse system in place, if applicable. • Be sure that fill hose connections are tight. CLOSE the shut-off valves at the end of each wash day. • 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. • 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. • 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. • Always contact your dealer, distributor, service agent or the manufacturer on any problems or conditions you do not understand. 	

Operation Prevention

	CAUTION
<p>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:</p> <ul style="list-style-type: none"> • 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

Phone: +1 (920) 748-3121

Introduction

Model Identification

Information in this manual is applicable to the following models:

EU - UK Declaration of Conformity										
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. Místecká 1116 742 58 Příbor Czech Republic										
2. Apparatus Product: Commercial washer extractors with the following Model Numbers:										
RX80	AR80	IA80	UA80	SA80	NX80	LW9	GH8	A80	GL8	WMA73E
RX105	AR105	IA105	UA105	SA105	NX105	LW12	GH11	A105	GL11	WMA83E
RX135	AR135	IA135	UA135	SA135	NX135	LW15	GH14	A135	GL14	WMA103E
RX180	AR180	IA180	UA180	SA180	NX180	LW20	GH18	A180	GL18	WMA123E
RX240	AR240	IA240	UA240	SA240	NX240	LW27	GH24	A240	GL24	WMA153E
RX280	AR280	IA280	UA280	SA280	NX280	LW32	GH28	A280	GL28	WMA203E
RX350	AR350	IA332	UA332	SA332						WMA253E
RX520	AR520	IA520	UA520	SA520						WMA303E
										WMA403E
Serial Number:										
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										
EN ISO10472-2: 2008										
EN 60204-1:2018										
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										
CSN EN61000-6-4 ed2: 2007										
CSN EN61000-6-2 ed3: 2006										
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., Místecká 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. Místecká 1116 742 58 Příbor Czech Republic										
Radim Polednik, Quality Manager, 2023-01-02										
										CZW272N

Figure 1

AR105M_X_CONTROL	PA20_X_CONTROL	LAC080T	LAU332X
AR105M_X_CONTROL_PLUS	PA20_X_CONTROL_PLUS	LAC080X	LAU520T
AR105N_X_CONTROL	PA25_X_CONTROL	LAC105T	LAU520X
AR105N_X_CONTROL_PLUS	PA25_X_CONTROL_PLUS	LAC105X	LAX080T
AR135M_X_CONTROL	PA30_X_CONTROL	LAC135T	LAX080X

Table continues...

AR135M_X_CONTROL_PLUS	PA30_X_CONTROL_PLUS	LAC135X	LAX105T
AR135N_X_CONTROL	PA40_X_CONTROL	LAC180T	LAX105X
AR135N_X_CONTROL_PLUS	PA40_X_CONTROL_PLUS	LAC180X	LAX135T
AR180M_X_CONTROL	PA55_X_CONTROL	LAC240T	LAX135X
AR180M_X_CONTROL_PLUS	PA55_X_CONTROL_PLUS	LAC240X	LAX180T
AR180N_X_CONTROL	PA70_X_CONTROL	LAC280T	LAX180X
AR180N_X_CONTROL_PLUS	PA70_X_CONTROL_PLUS	LAC280X	LAX240T
AR240M_X_CONTROL	PA80_X_CONTROL	LAC332T	LAX240X
AR240M_X_CONTROL_PLUS	PA80_X_CONTROL_PLUS	LAC332X	LAX280T
AR240N_X_CONTROL	PAN020T	LAC520T	LAX280X
AR240N_X_CONTROL_PLUS	PAN020X	LAC520X	LAX332T
AR280M_X_CONTROL	PAN025T	LAE080T	LAX332X
AR280M_X_CONTROL_PLUS	PAN025X	LAE080X	LAX520T
AR280N_X_CONTROL	PAN030T	LAE105T	LAX520X
AR280N_X_CONTROL_PLUS	PAN030X	LAE105X	LAY080T
AR350_X_CONTROL	PAN040T	LAE135T	LAY080X
AR350_X_CONTROL_PLUS	PAN040X	LAE135X	LAY105T
AR520_X_CONTROL	PAN055T	LAE180T	LAY105X
AR520_X_CONTROL_PLUS	PAN055X	LAE180X	LAY135T
AR80M_X_CONTROL	PAN070T	LAE240T	LAY135X
AR80M_X_CONTROL_PLUS	PAN070X	LAE240X	LAY180T
AR80N_X_CONTROL	PAN080T	LAE280T	LAY180X
AR80N_X_CONTROL_PLUS	PAN080X	LAE280X	LAY240T
LW12_X_CONTROL	PAN120T	LAH080T	LAY240X
LW15_X_CONTROL	RX105M_X_CONTROL	LAH080X	LAY280T
LW20_X_CONTROL	RX105M_X_CONTROL_PLUS	LAH105T	LAY280X
LW27_X_CONTROL	RX105N_X_CONTROL	LAH105X	LAY332T
LW32_X_CONTROL	RX105N_X_CONTROL_PLUS	LAH135T	LAY332X

Table continues...

LW9_X_CONTROL	RX135M_X_CONTROL	LAH135X	LAY520T
MWCX40M_X_CONTROL	RX135M_X_CONTROL_PLUS	LAH180T	LAY520X
MWCX40M_X_CONTROL_PLUS	RX135N_X_CONTROL	LAH180X	PAC080T
MWCX40N_X_CONTROL	RX135N_X_CONTROL_PLUS	LAH240T	PAC080X
MWCX40N_X_CONTROL_PLUS	RX180N_X_CONTROL	LAH240X	PAC105T
MWCX40_X_CONTROL_PLUS	RX240M_X_CONTROL	LAH280T	PAC105X
MWCX40_X_CONTROL	RX240M_X_CONTROL_PLUS	LAH280X	PAC135T
MWCX120_X_CONTROL	RX240N_X_CONTROL	LAH332T	PAC135X
MWCX120_X_CONTROL_PLUS	RX240N_X_CONTROL_PLUS	LAH332X	PAC180X
MWCX20_X_CONTROL	RX280M_X_CONTROL	LAH520T	PAC240T
MWCX20_X_CONTROL_PLUS	RX280M_X_CONTROL_PLUS	LAH520X	PAC240X
MWCX25_X_CONTROL	RX280N_X_CONTROL	LAU080T	PAC280T
MWCX25_X_CONTROL_PLUS	RX280N_X_CONTROL_PLUS	LAU080X	PAC280X
MWCX30_X_CONTROL	RX350_X_CONTROL	LAU105T	PAC332T
MWCX30_X_CONTROL_PLUS	RX350_X_CONTROL_PLUS	LAU105X	PAC332X
MWCX55_X_CONTROL	RX520_X_CONTROL	LAU135T	PAC520T
MWCX55_X_CONTROL_PLUS	RX520_X_CONTROL_PLUS	LAU135X	PAC520X
MWCX65_X_CONTROL	RX80M_X_CONTROL	LAU180T	PAE080T
MWCX65_X_CONTROL_PLUS	RX80M_X_CONTROL_PLUS	LAU180X	PAE080X
MWCX80_X_CONTROL	RX80N_X_CONTROL	LAU240T	PAE105T
MWCX80_X_CONTROL_PLUS	RX80N_X_CONTROL_PLUS	LAU240X	PAE105X
NX105_X_CONTROL	PAX080T	LAU280T	PAE135T
PA120_X_CONTROL_PLUS	PAX080X	LAU280X	PAE135X
SAH080D	PAX105T	LAU332T	PAE180X
SAH105D	PAX105X	PAH080T	PAE240T
SAH135D	PAX135T	PAH080X	PAE240X

Table continues...

SAH240D	PAX135X	PAH105T	PAE280T
SAY080D	PAX180X	PAH105X	PAE280X
SAY105D	PAX240T	PAH135T	SAU080D
RX180M_X_CONTROL	PAX240X	PAH135X	SAU105D
RX180M_X_CONTROL_PLUS	PAX280T	PAH180X	SAC080D
RX180N_X_CONTROL_PLUS	PAX280X	PAH240T	SAC105D
PAC180T	PAX332T	PAH240X	SAC135D
PAE180T	PAX332X	PAH280T	SAC240D
PAH180T	PAX520T	PAH280X	SAX080D
PAX180T	PAX520X	PAH332T	SAX105D
SAE180D	PAY080X	PAH332X	SAX135D
SAH180D	PAY105T	PAH520T	SAX240D
SAX180D	PAY105X	PAH520X	SAY240D
SAY135D	PAY135T	SAE080D	PAY280X
PAY280T	PAY135X	SAE105D	NX180_X_CONTROL
PAY240X	PAY180X	SAE135D	NX180M_X_CONTROL
NX105M_X_CONTROL	PAY240T	SAE240D	NX180M_X_CONTROL_PLUS
NX105M_X_CONTROL_PLUS	PAY332X	PAY520X	NX240_X_CONTROL
NX135_X_CONTROL	NX135M_X_CONTROL	NX135M_X_CONTROL_PLUS	NX240M_X_CONTROL
NX240M_X_CONTROL_PLUS	NX280_X_CONTROL	NX280M_X_CONTROL	NX280M_X_CONTROL_PLUS
NX80_X_CONTROL	NX80M_X_CONTROL	PAY080T	PAY332T
PAY520T	RX105_BUPA_X_CONTROL	RX105_BUPA_X_CONTROL_PLUS	RX135_BUPA_X_CONTROL
RX135_BUPA_X_CONTROL_PLUS	RX180M_X_CONTROL_PLUS	RX180N_X_CONTROL	RX180N_X_CONTROL_PLUS
SA105	SA80	SAC280D	SAC332D
SAC520D	SAH280D	SAH332D	SAH520D
SAX280D	SAX332D	SAX520D	SAY240D
SAY280D	SAY332D	SAY520D	IAM080J
IAM080R	SAM080D	PAM080X	PAM080T
IAM105J	IAM105R	SAM105D	PAM105X

Table continues...

Introduction

PAM105T	IAM135J	IAM135R	SAM135D
PAM135X	PAM135T	IAM180J	IAM180R
SAM180D	PAM180X	PAM180T	IAM240J
IAM240R	SAM240D	PAM240X	PAM240T
IAM280J	IAM280R	SAM280D	PAM280X
PAM280T	IAM332J	IAM332R	SAM332D
PAM332X	PAM332T	IAM520J	IAM520R
SAM520D	PAM520X	PAM520T	UAC080I
UAU080I	UAX080I	UAH080I	UAR080I
UAM080I	UAC105I	UAU105I	UAX105I
UAH105I	UAR105I	UAM105I	UAC135I
UAU135I	UAX135I	UAH135I	UAR135I
UAM135I	UAC180I	UAU180I	UAX180I
UAH180I	UAR180I	UAM180I	UAC240I
UAU240I	UAX240I	UAH240I	UAR240I
UAM240I	UAC280I	UAU280I	UAX280I
UAH280I	UAR280I	UAM280I	UAC332I
UAU332I	UAX332I	UAH332I	UAR332I
UAM332I	UAC520I	UAU520I	UAX520I
UAH520I	UAR520I	UAM520I	

IA*080J ¹	IA*080R ¹	NA*080X ¹	NA*080T ¹
IA*105J ¹	IA*105R ¹	NA*105X ¹	NA*105T ¹
IA*135J ¹	IA*135R ¹	NA*135X ¹	NA*135T ¹
IA*180J ¹	IA*180R ¹	NA*180X ¹	NA*180T ¹
IA*240J ¹	IA*240R ¹	NA*240X ¹	NA*240T ¹
IA*280J ¹	IA*280R ¹	NA*280X ¹	NA*280T ¹
IA*332J ¹	IA*332R ¹	NA*332X ¹	NA*332T ¹
IA*520J ¹	IA*520R ¹	NA*520X ¹	NA*520T ¹
PA*080X ¹	PA*080T ¹	SA*080A ¹	SA*080D ¹
PA*105X ¹	PA*105T ¹	SA*105A ¹	SA*105D ¹
PA*135X ¹	PA*135T ¹	SA*135A ¹	SA*135D ¹
PA*180X ¹	PA*180T ¹	SA*180A ¹	SA*180D ¹
PA*240X ¹	PA*240T ¹	SA*240A ¹	SA*240D ¹
PA*280X ¹	PA*280T ¹	SA*280A ¹	SA*280D ¹
PA*332X ¹	PA*332T ¹	SA*332A ¹	SA*332D ¹
PA*520X ¹	PA*520T ¹	SA*520A ¹	SA*520D ¹
UA*080I ¹	UA*105I ¹	UA*135I ¹	UA*180I ¹
UA*240I ¹	UA*280I ¹	UA*332I ¹	UA*520I ¹
* can be character C - U - E - N - X - H - Y - K - M			
¹ - can followed by 11 digits or characters			

Serial Plate Location

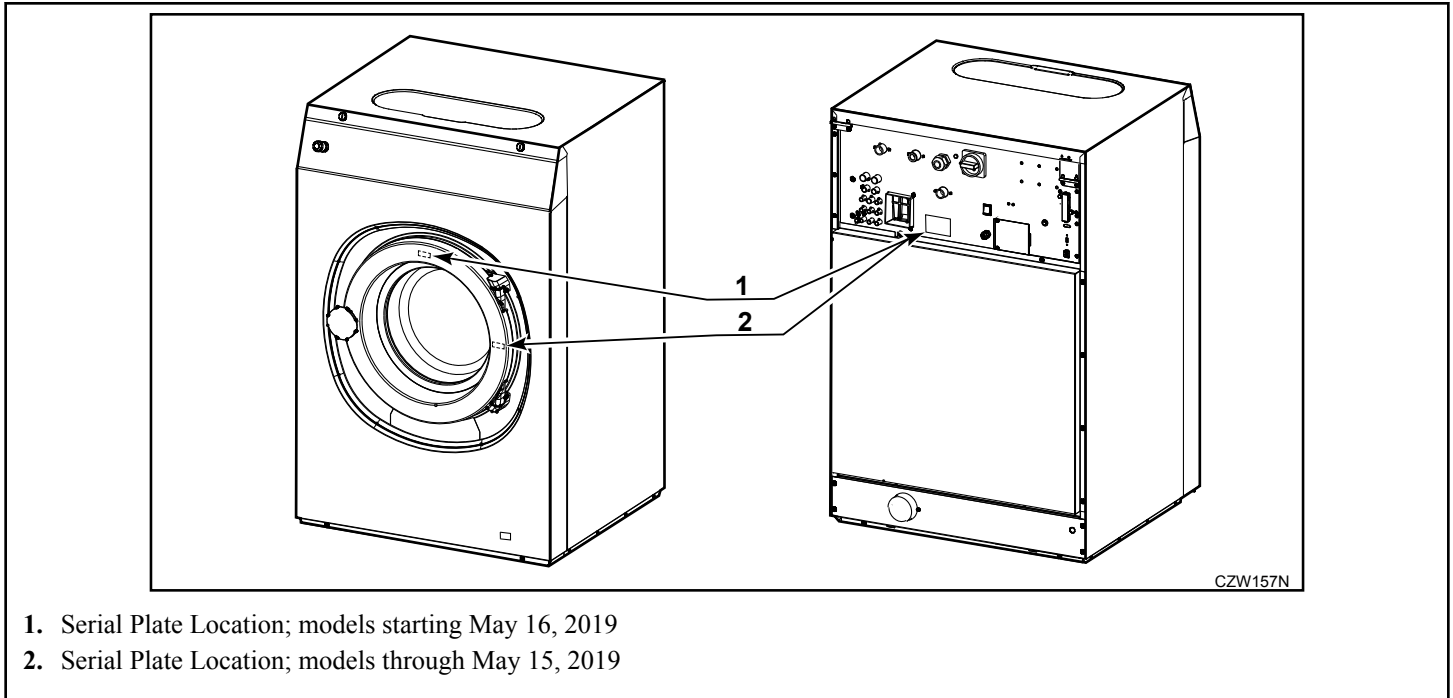


Figure 2

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
2020	Q
2021	S
2022	U
2023	W
2024	Y

Table 1

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

Table 2

Delivery Inspection

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

Specifications and Dimensions

General Specifications

Specifications	7.5 kg / 20 lb. / 75 L Models	10.5 kg / 25 lb. / 105 L Models	13.5 kg / 30 lb. / 135 L Models	18 kg / 40 lb. / 180 L Models	24 kg / 55 lb. / 240 L Models	28 kg / 70 lb. / 280 L Models	35 kg / 80 lb. / 332 L Models	52 kg / 120 lb. / 520 L Models
Drum Capacity								
Drum Capacity, lb [kg]	20 [7.5]	25 [10.5]	30 [13.5]	40 [18]	55 [24]	70 [28]	80 [35]	120 [52]
Overall Dimensions								
Overall width, in. [mm]	25.98 [660]	29.53 [750]	29.53 [750]	35.03 [890]	35.03 [890]	35.03 [890]	41.73 [1060]	41.73 [1060]
Overall height, in. [mm]	43.89 [1115]	48.22 [1225]	48.22 [1225]	55.51 [1410]	55.51 [1410]	55.51 [1410]	59.05 [1500]	59.05 [1500]
Overall depth, in. [mm]	30.91 [785]	30.91 [785]	35.43 [900]	36.02 [915]	41.73 [1060]	44.68 [1135]	40.55 [1030]	51.77 [1315]
Weight and Shipping Information								
Net weight, lbs. [kg] (100G)	298 [135]	375 [170]	419 [190]	563 [255]	606 [275]	639 [290]	904 [410]	1146 [520]
Net weight, lbs. [kg] (150G)	N/A	N/A	N/A	N/A	N/A	N/A	904 [410]	N/A
Net weight, lbs. [kg] (200G)	298 [135]	375 [170]	419 [190]	695 [315]	728 [330]	783 [355]	N/A	N/A
Shipping weight, lbs. [kg] (100G)	320 [145]	408 [185]	441 [200]	595 [270]	639 [290]	672 [305]	992 [450]	1257 [570]

Table continues...

Specifications	7.5 kg / 20 lb. / 75 L Models	10.5 kg / 25 lb. / 105 L Models	13.5 kg / 30 lb. / 135 L Models	18 kg / 40 lb. / 180 L Models	24 kg / 55 lb. / 240 L Models	28 kg / 70 lb. / 280 L Models	35 kg / 80 lb. / 332 L Models	52 kg / 120 lb. / 520 L Models
Shipping weight, lbs. [kg] (150G)	N/A	N/A	N/A	N/A	N/A	N/A	1147 [520]	N/A
Shipping weight, lbs. [kg] (200G)	320 [145]	408 [185]	441 [200]	739 [335]	783 [355]	849 [385]	N/A	N/A
Shipping dimensions (WxDxH), in. [mm]	27.95 x 32.87 x 49.02 [710 x 835 x 1245]	31.50 x 32.87 x 53.35 [800 x 835 x 1355]	31.50 x 37.40 x 53.35 [800 x 950 x 1355]	36.42 x 38.19 x 61.02 [925 x 970 x 1550]	36.42 x 44.49 x 61.02 [925 x 1130 x 1550]	36.42 x 46.85 x 61.02 [925 x 1190 x 1550]	43.31 x 43.31 x 66.93 [1100 x 1100 x 1700]	43.31 x 54.53 x 66.93 [1100 x 1385 x 1700]
Wash Cylinder Information								
Cylinder diameter in. [mm]	20.87 [530]	24.40 [620]	24.40 [620]	29.53 [750]	29.53 [750]	29.53 [750]	35.98 [914]	35.98 [914]
Cylinder depth in. [mm]	13.78 [350]	13.78 [350]	17.72 [450]	16.14 [410]	21.46 [545]	24.41 [620]	19.88 [505]	31.10 [790]
Cylinder volume ft ³ [l]	2.65 [75]	3.71 [105]	4.77 [135]	6.36 [180]	8.48 [240]	9.9 [280]	11.72 [332]	18.36 [520]
Door Opening Information								
Door opening size, in. [mm]	13 [330]	16.14 [410]	16.14 [410]	18.11 [460]	18.11 [460]	18.11 [460]	19.84 [504]	19.84 [504]
Height of door bottom above floor, in. [mm]	13.74 [349]	13.46 [342]	13.46 [342]	18.31 [465]	18.31 [465]	18.31 [465]	18.31 [465]	18.31 [465]
Drive Train Information								
Number of motors in drive train	1	1	1	1	1	1	1	1

Table continues...

Specifications and Dimensions

Specifi- cations	7.5 kg / 20 lb. / 75 L Models	10.5 kg / 25 lb. / 105 L Models	13.5 kg / 30 lb. / 135 L Models	18 kg / 40 lb. / 180 L Models	24 kg / 55 lb. / 240 L Models	28 kg / 70 lb. / 280 L Models	35 kg / 80 lb. / 332 L Models	52 kg / 120 lb. / 520 L Models
Motor Size, hp [kW] (100G)	0.74 [0.55]	0.74 [0.55]	1 [0.75]	1 [0.75]	1.48 [1.1]	1.5 [2.01]	N/A	5.36 [4]
Motor Size, hp [kW] (150G)	N/A	N/A	N/A	N/A	N/A	N/A	2.95 [2.2]	N/A
Motor Size, hp [kW] (200G)	0.74 [0.55]	0.74 [0.55]	1 [0.75]	1.48 [1.1]	2.01 [1.5]	2.01 [1.5]	N/A	N/A
Cylinder Speeds								
Wash, RPM	50	46	46	42	42	42	38	38
Extraction, RPM (100G)	580	540	540	490	490	490	440	440
Extraction, RPM (150G)	N/A	N/A	N/A	N/A	N/A	N/A	540	N/A
Extraction, RPM (200G)	820	760	760	690	690	690	N/A	N/A
Heating								
Electric, kW	6 / 9 (4.6)	6 / 9 / 12	9 / 12	12 / 18	18	21.9	27	40.6
Minimum and Maxi- mum 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]	15-116 [1-8] [100-800]
Minimum and Maxi- mum 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]	15-87 [1-6] [100-600]

Table continues...

Specifi- cations	7.5 kg / 20 lb. / 75 L Models	10.5 kg / 25 lb. / 105 L Models	13.5 kg / 30 lb. / 135 L Models	18 kg / 40 lb. / 180 L Models	24 kg / 55 lb. / 240 L Models	28 kg / 70 lb. / 280 L Models	35 kg / 80 lb. / 332 L Models	52 kg / 120 lb. / 520 L Models
Hot water, °F [°C]	185 [85]	185 [85]	185 [85]	185 [85]	185 [85]	185 [85]	185 [85]	185 [85]
Noise Emissions								
Wash se- quence, dB (100 G)	49	49	50	48	50	50	50	50
Wash se- quence, dB (150 G)	N/A	N/A	N/A	N/A	N/A	N/A	50	N/A
Wash se- quence, dB (200 G)	49	49	50	50	50	50	N/A	N/A
Extract se- quence, dB (100G)	53	53	65	55	65	65	65	65
Extract se- quence, dB (150G)	N/A	N/A	N/A	N/A	N/A	N/A	65	N/A
Extract se- quence, dB (200 G)	53	53	65	65	65	65	N/A	N/A
Floor Load Data								
Maximum static load on floor, lbs. [kN] (100G)	427 [1.9]	495 [2.2]	607 [2.7]	764 [3.4]	877 [3.9]	944 [4.2]	1461 [6.5]	1888 [8.4]
Maximum static load on floor, lbs. [kN] (150G)	N/A	N/A	N/A	N/A	N/A	N/A	1461 [6.5]	N/A
Maximum static load on floor, lbs. [kN] (200G)	427 [1.9]	495 [2.2]	607 [2.7]	899 [4.0]	1012 [4.5]	1101 [4.9]	N/A	N/A

Table continues...

Specifications and Dimensions

Specifi- cations	7.5 kg / 20 lb. / 75 L Models	10.5 kg / 25 lb. / 105 L Models	13.5 kg / 30 lb. / 135 L Models	18 kg / 40 lb. / 180 L Models	24 kg / 55 lb. / 240 L Models	28 kg / 70 lb. / 280 L Models	35 kg / 80 lb. / 332 L Models	52 kg / 120 lb. / 520 L Models
Static floor pressure lbs./ft ² [kN/m ²] (100G)	90 [4.31]	91 [4.36]	96 [4.6]	96 [4.6]	93 [4.45]	93 [4.45]	133 [6.37]	133 [6.37]
Static floor pressure lbs./ft ² [kN/m ²] (150G)	N/A	N/A	N/A	N/A	N/A	N/A	133 [6.37]	N/A
Static floor pressure lbs./ft ² [kN/m ²] (200G)	90 [4.31]	91 [4.36]	96 [4.6]	112 [5.36]	107 [5.12]	108 [5.17]	N/A	N/A
Maximum dynamic load on floor, lbs. [kN] (100G)	360 ± 337 [1.6 ± 1.5]	427 ± 450 [1.9 ± 2.0]	495 ± 562 [2.2 ± 2.5]	607 ± 719 [2.7 ± 3.2]	674 ± 967 [3.0 ± 4.3]	719 ± 1124 [3.2 ± 5.0]	N/A	1506 ± 1843 [6.7 ± 8.2]
Maximum dynamic load on floor, lbs. [kN] (150G)	N/A	N/A	N/A	N/A	N/A	N/A	1191 ± 1866 [5.3 ± 8.3]	N/A
Maximum dynamic load on floor, lbs. [kN] (200G)	360 ± 652 [1.6 ± 2.9]	427 ± 877 [1.9 ± 3.9]	495 ± 1124 [2.2 ± 5]	764 ± 1439 [3.4 ± 6.4]	832 ± 1911 [3.7 ± 8.5]	877 ± 2226 [3.9 ± 9.9]	N/A	N/A
Dynamic floor pressure lbs./ft ² [kN/m ²] (100G)	75 ± 71 [3.60 ± 3.40]	79 ± 83 [3.78 ± 3.98]	78 ± 89 [3.73 ± 4.26]	76 ± 90 [3.64 ± 4.31]	71 ± 102 [3.40 ± 4.9]	71 ± 111 [3.40 ± 5.31]	N/A	106 ± 130 [5.07 ± 6.22]

Table continues...

Specifications	7.5 kg / 20 lb. / 75 L Models	10.5 kg / 25 lb. / 105 L Models	13.5 kg / 30 lb. / 135 L Models	18 kg / 40 lb. / 180 L Models	24 kg / 55 lb. / 240 L Models	28 kg / 70 lb. / 280 L Models	35 kg / 80 lb. / 332 L Models	52 kg / 120 lb. / 520 L Models
Dynamic floor pressure lbs./ft ² [kN/m ²] (150G)	N/A	N/A	N/A	N/A	N/A	N/A	109 ± 170 [5.21 ± 8.14]	N/A
Dynamic floor pressure lbs./ft ² [kN/m ²] (200G)	75 ± 137 [3.62 ± 6.55]	79 ± 162 [3.78 ± 7.76]	78 ± 177 [3.73 ± 8.49]	95 ± 179 [4.56 ± 8.58]	88 ± 203 [4.22 ± 9.70]	86 ± 219 [4.14 ± 10.5]	N/A	N/A
Frequency of dynamic load, Hz (100G)	9.7	8.9	8.9	8.2	8.2	8.2	N/A	7.4
Frequency of dynamic load, Hz (150G)	N/A	N/A	N/A	N/A	N/A	N/A	9	N/A
Frequency of dynamic load, Hz (200G)	13.7	12.7	12.7	11.5	11.5	11.5	N/A	N/A
General Data								
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]							

Machine Dimensions

NOTE: Beginning January, 2018: 75 L (20 lb.), 105 L (25 lb.), and 135 L (30lb.) models have embossed side panels.

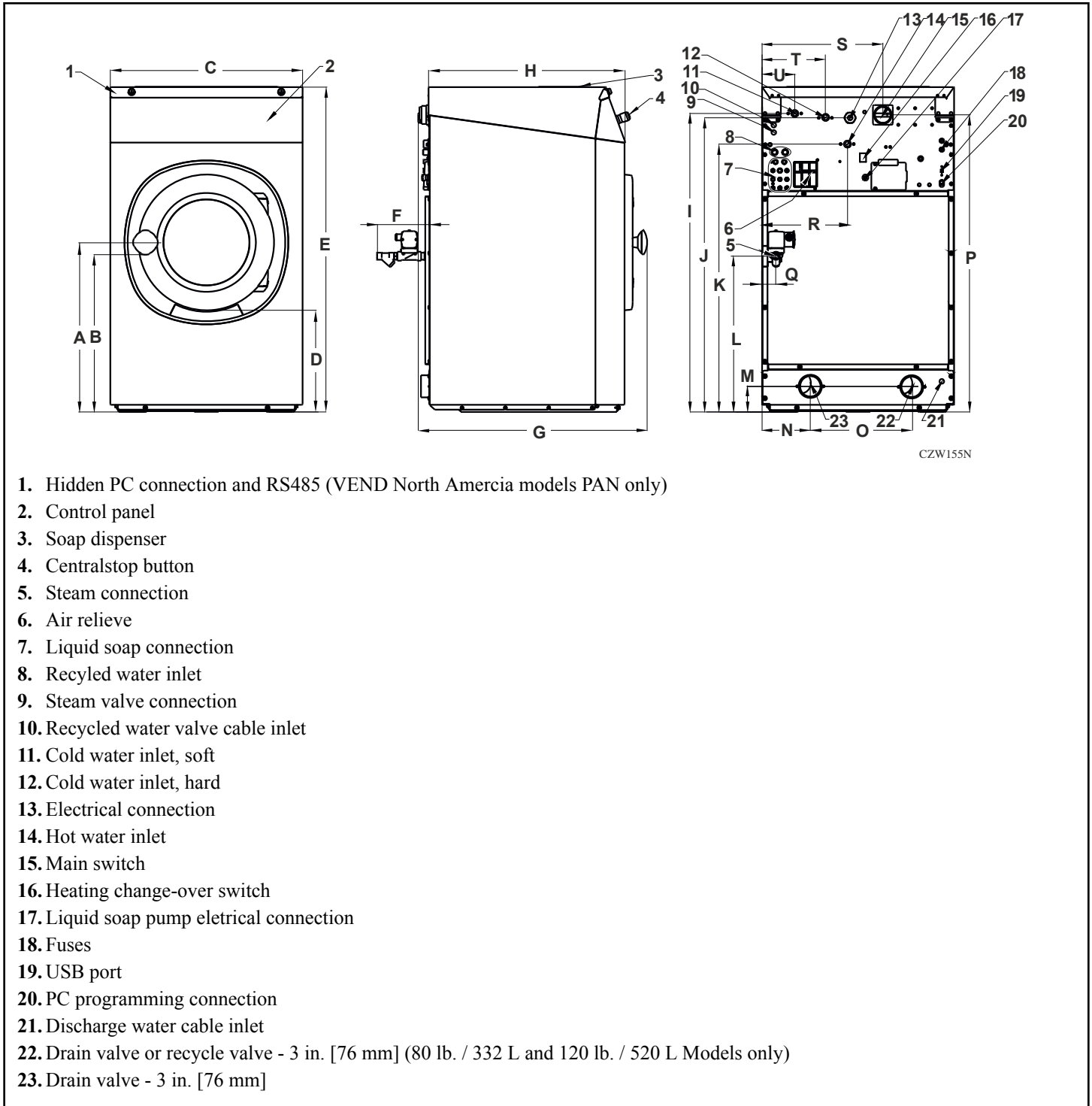


Figure 3

Specifi- cation	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]	35 kg / 80 lb. / 332 L Models, in. [mm]	52 kg / 120 lb. / 520 L Models, in. [mm]
A	23.14 [588]	24.60 [625]	24.60 [625]	30.31 [770]	30.31 [770]	30.31 [770]	31.41 [798]	31.41 [798]
B	21.25 [540]	22.71 [577]	22.71 [577]	28.42 [722]	28.42 [722]	28.42 [722]	29.52 [750]	29.52 [750]
C	25.98 [660]	29.53 [750]	29.53 [750]	35.03 [890]	35.03 [890]	35.03 [890]	41.73 [1060]	41.73 [1060]
D	13.74 [349]	13.46 [342]	13.46 [342]	18.31 [465]	18.31 [465]	18.31 [465]	18.31 [465]	18.31 [465]
E	43.89 [1115]	48.22 [1225]	48.22 [1225]	55.51 [1410]	55.51 [1410]	55.51 [1410]	59.05 [1500]	59.05 [1500]
F	7.08 [180]	7.56 [192]	7.56 [192]	4.72 [120]	4.72 [120]	4.72 [120]	5.71 [145]	5.71 [145]
G	30.91 [785]	30.91 [785]	35.43 [900]	36.02 [915]	41.73 [1060]	44.68 [1135]	40.55 [1030]	51.77 [1315]
H	26.57 [675]	26.57 [675]	31.10 [790]	32.13 [816]	37.83 [961]	40.79 [1036]	36.85 [936]	48.07 [1221]
I	40.35 [1025]	44.68 [1135]	44.68 [1135]	51.85 [1317]	51.85 [1317]	51.85 [1317]	55.63 [1413]	52.44 [1332]
J	39.76 [1010]	44.09 [1120]	44.09 [1120]	51.06 [1297]	51.06 [1297]	51.06 [1297]	53.78 [1366]	54.09 [1374]
K	36.22 [920]	40.55 [1030]	40.55 [1030]	47.72 [1212]	47.72 [1212]	47.72 [1212]	52.21 [1326]	55.67 [1414]
L	21.06 [535]	18.89 [480]	18.89 [480]	20.79 [528]	20.79 [528]	20.79 [528]	20.79 [528]	20.79 [528]
M	3.46 [88]	3.85 [98]	3.95 [98]	5.12 [130]	5.12 [130]	5.12 [130]	4.72 [120]	4.72 [120]
N	6.53 [166]	8.85 [225]	8.85 [225]	11.02 [280]	11.02 [280]	11.02 [280]	12.52 [318]	12.52 [318]
O	N/A	N/A	N/A	N/A	N/A	N/A	18.98 [482]	18.98 [482]
P	40.15 [1020]	44.48 [1130]	44.48 [1130]	50 [1270]	50 [1270]	50 [1270]	53.11 [1349]	53.11 [1349]
Q	1.89 [48]	1.65 [42]	1.65 [42]	2.13 [54]	2.13 [54]	2.13 [54]	2.60 [66]	2.60 [66]
R	11.53 [293]	13.31 [338]	13.31 [338]	11.93 [303]	11.93 [303]	11.93 [303]	15.08 [383]	14.29 [363]
S	16.34 [415]	19.88 [505]	19.88 [505]	24.61 [625]	24.61 [625]	24.61 [625]	26.42 [671]	26.41 [671]

Table 3 *continues...*

Specification	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]	35 kg / 80 lb. / 332 L Models, in. [mm]	52 kg / 120 lb. / 520 L Models, in. [mm]
T	8.58 [218]	8.58 [218]	8.58 [218]	8.58 [218]	8.58 [218]	8.58 [218]	9.76 [248]	8.78 [223]
U	4.44 [113]	4.44 [113]	4.44 [113]	4.44 [113]	4.44 [113]	4.44 [113]	4.45 [113]	3.46 [88]

Table 3

Mounting Bolt Hole Locations

7.5 kg / 20 lb. / 75 L, 10.5 kg / 25 lb. / 105 L and 13.5 kg / 30 lb. / 135 L with 100 G or 200 G Extraction; 18 kg / 40 lb. / 180 L, 24 kg / 55 lb. / 240 L and 28 kg / 70 lb. / 280 L with 100 G Extraction

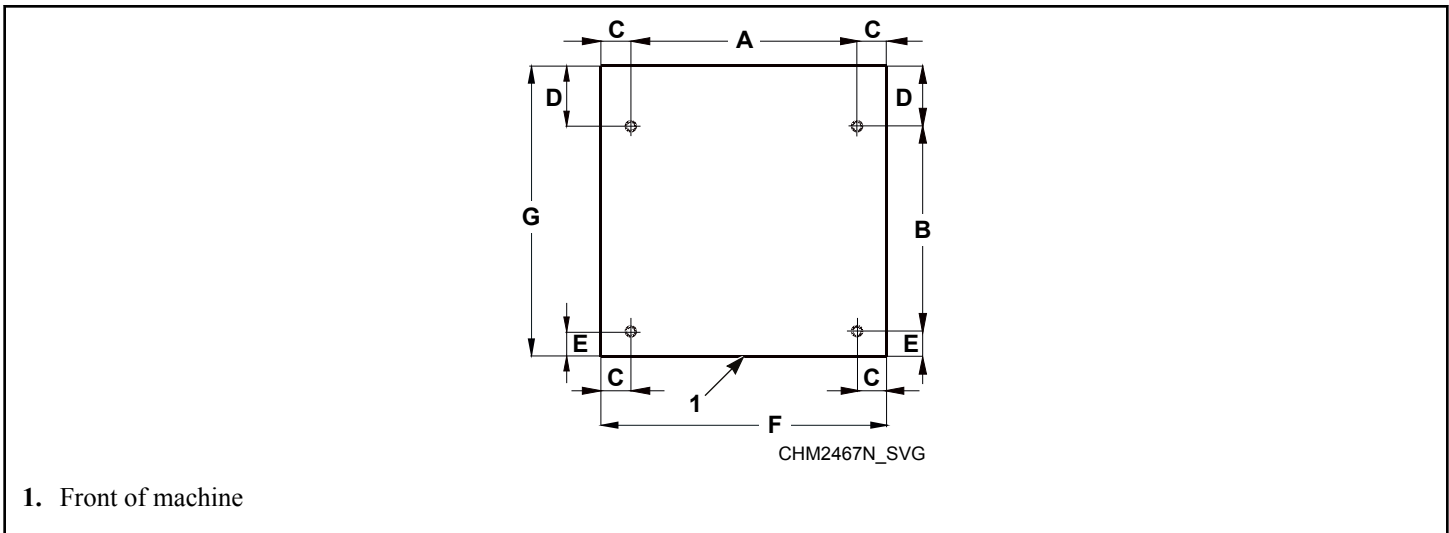


Figure 4

Mounting Bolt Hole Locations, in. [mm]						
Spec ifica- tion	7.5 kg / 20 lb. / 75 L (100G or 200 G)	10.5 kg / 25 lb. / 105 L (100G or 200G)	13.5 kg / 30 lb. / 135 L (100G or 200G)	18 kg / 40 lb. / 180 L (100G)	24 kg / 55 lb. / 240 L (100G)	28 kg / 70 lb. / 280 L (100G)
A	20.55 [522]	24.21 [615]	24.21 [615]	29.57 [751]	29.57 [751]	29.57 [751]
B	18.66 [474]	18.66 [474]	22.59 [574]	22.40 [569]	28.11 [714]	31.06 [789]
C	2.71 [69]	2.85 [67.5]	2.65 [67.5]	2.74 [69.5]	2.74 [69.5]	2.74 [69.5]

Table 4 continues...

Mounting Bolt Hole Locations, in. [mm]						
Spec-ification	7.5 kg / 20 lb. / 75 L (100G or 200 G)	10.5 kg / 25 lb. / 105 L (100G or 200G)	13.5 kg / 30 lb. / 135 L (100G or 200G)	18 kg / 40 lb. / 180 L (100G)	24 kg / 55 lb. / 240 L (100G)	28 kg / 70 lb. / 280 L (100G)
D	5.47 [139]	5.47 [139]	6.06 [154]	8.68 [220.5]	8.68 [220.5]	8.68 [220.5]
E	2.26 [57.5]	2.26 [57.5]	2.26 [57.5]	1.97 [50]	1.97 [50]	1.97 [50]
F	25.98 [660]	29.52 [750]	29.52 [750]	35.04 [890]	35.04 [890]	35.04 [890]
G	26.39 [670.5]	26.39 [670.5]	30.92 [785.5]	33.01 [838.5]	38.76 [984.5]	41.71 [1059.5]

Table 4

18 kg / 40 lb. / 180 L, 24 kg / 55 lb. / 240 L and 28 kg / 70 lb. / 280 L with 200 G Extraction; 35 kg / 80 lb. / 332 L and 52 kg / 120 lb. / 520 L

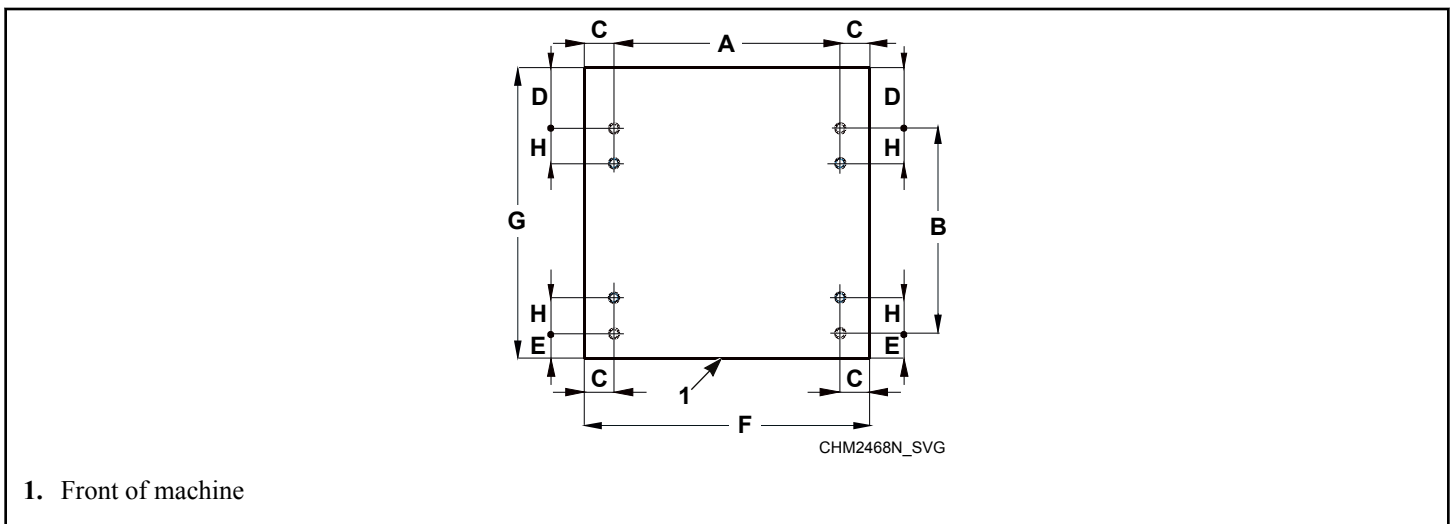


Figure 5

Mounting Bolt Hole Locations, in. [mm]					
Speci-fica-tion	18 kg / 40 lb. / 180 L (200G)	24 kg / 55 lb. / 240 L (200G)	28 kg / 70 lb. / 280 L (200G)	35 kg / 80 lb. / 332 L	52 kg / 120 lb. / 520 L
A	29.57 [751]	29.57 [751]	29.57 [751]	36.22 [920]	36.22 [920]
B	22.40 [569]	28.11 [714]	31.06 [789]	25.16 [639]	36.38 [924]
C	2.74 [69.5]	2.74 [69.5]	2.74 [69.5]	2.76 [70]	2.76 [70]
D	8.68 [220.5]	8.68 [220.5]	8.68 [220.5]	10.69 [271.5]	10.69 [271.5]

Table 5 continues...

Mounting Bolt Hole Locations, in. [mm]					
Speci- fica- tion	18 kg / 40 lb. / 180 L (200G)	24 kg / 55 lb. / 240 L (200G)	28 kg / 70 lb. / 280 L (200G)	35 kg / 80 lb. / 332 L	52 kg / 120 lb. / 520 L
E	1.97 [50]	1.97 [50]	1.97 [50]	1.97 [50]	1.97 [50]
F	35.04 [890]	35.04 [890]	35.04 [890]	41.73 [1060]	41.73 [1060]
G	33.01 [838.5]	38.76 [984.5]	41.71 [1059.5]	37.82 [960.5]	49.04 [1245.5]
H	3.23 [82]	3.23 [82]	3.23 [82]	3.23 [82]	3.23 [82]

Table 5

Floor Mounting Layout

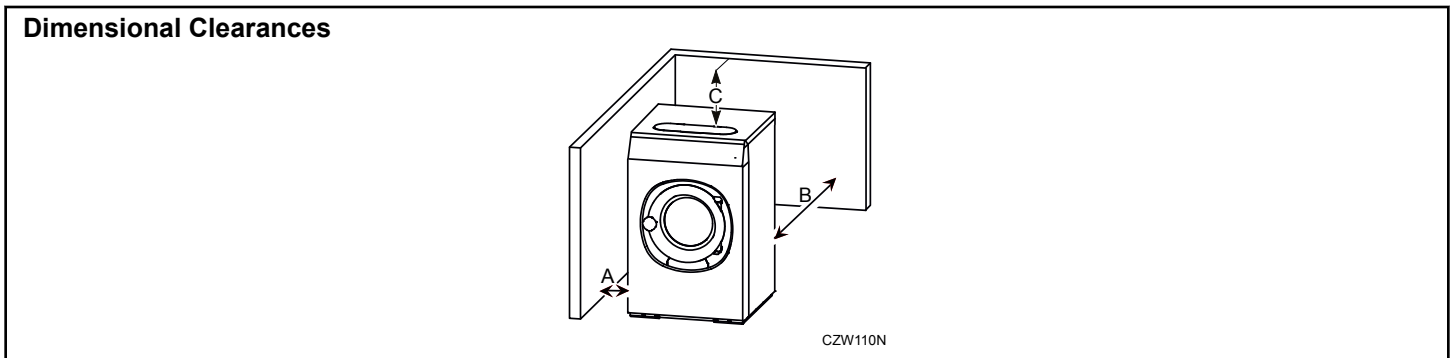


Figure 6

Dimensional Clearances, in. [mm]									
Models		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	35 kg / 80 lb. / 332 L	52 kg / 120 lb. / 520 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]	0.79 [20]
B	Distance to wall (minimum)	20 [500]	20 [500]	20 [500]	20 [500]	20 [500]	20 [500]	20 [500]	20 [500]
C	Distance above machine (minimum)	31.50 [800]	31.50 [800]	31.50 [800]	45.28 [1150]	45.28 [1150]	45.28 [1150]	41.34 [1050]	52.36 [1330]

Table 6

Installation

Pallet Removal

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

1. Remove packing from machine.
2. Remove front and rear panel.
3. Remove bolts between machine and pallet.
4. 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.

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

Machine Installation

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

Machine Foundation and Pad Installation

A concrete pad may be constructed to elevate a machine. Care must be exercised in the design of the pad due to the force exer-

ted by the machine during extract. This concrete pad, recommended not to exceed 7.87 inches [200 mm] above existing floor, must be placed, reinforced with rebar and tied to the existing floor.

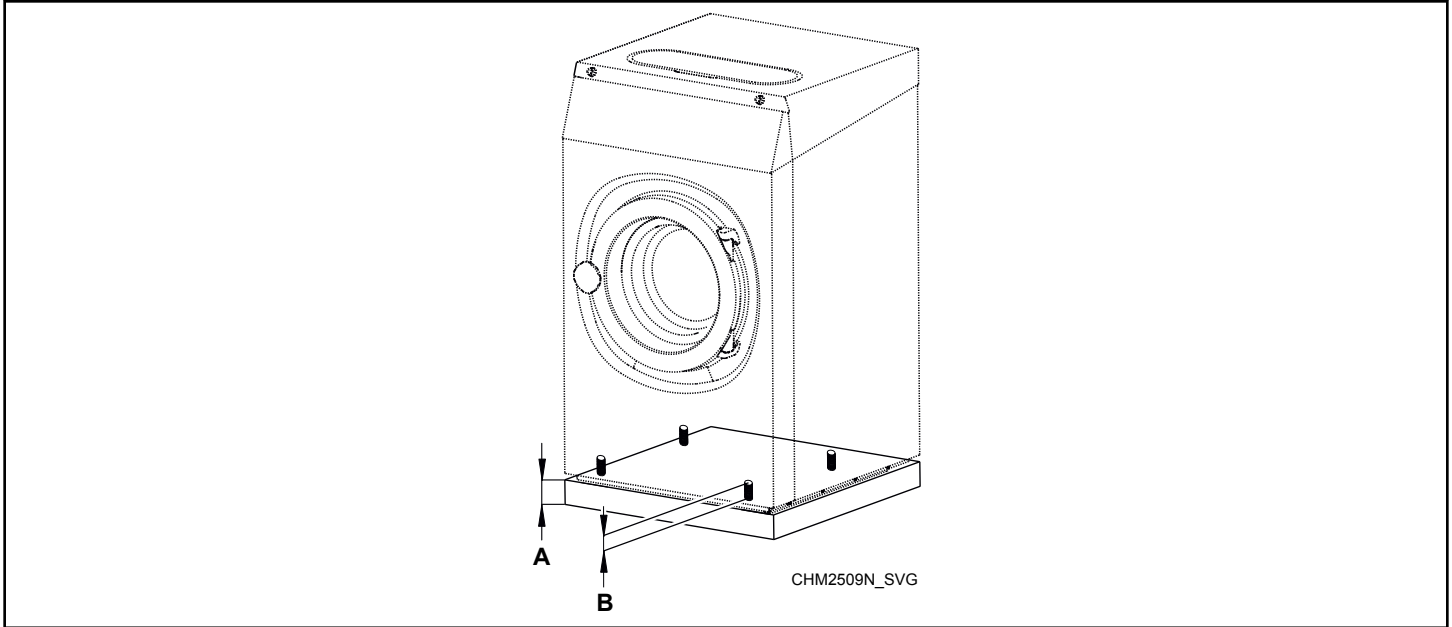


Figure 7

Specification	in. [mm]
A	5.9 - 7.87 [150 - 200]
B	1.58 [40]

Table 7

IMPORTANT: Do NOT install a pad on top of the existing floor. The foundation and pad must be constructed and tied together as one piece.

If the existing floor is not reinforced concrete at least of minimum thickness 4.72 in [120 mm] or an elevated pad is desired, the following steps must be performed:

1. Cut a hole larger than the machine base through the existing floor, refer to *Figure 8*.
2. Excavate to a depth as indicated in *Table 8* from the top of the existing floor.
3. Wet the excavated area and spread over with cement.
4. Drill holes [refer to manufacturer's requirements for drill hole size] for the perimeter reinforcing bar into the existing floor.
5. Clean out debris from each reinforcing bar hole.
6. Fill half the hole depth with acrylic adhesive.
7. Using #4 (60 ksi) reinforcing bar, tie new pad to existing floor making sure to tie reinforcing bars at the intersections and using proper reinforcing bar supports to hold bars at the proper depth in the pad.

NOTE: When inserting the reinforcing bar, note the locations (and space requirements) for drilling holes for chemical anchor bolts.

8. Allow adhesive around reinforcing bar to cure properly, refer to adhesive manufacturer for recommended cure times.
9. Pour concrete into the prepared base.
10. Level the surface carefully into a horizontal plane.
11. Allow concrete to cure for at least one week before installation of the machine.

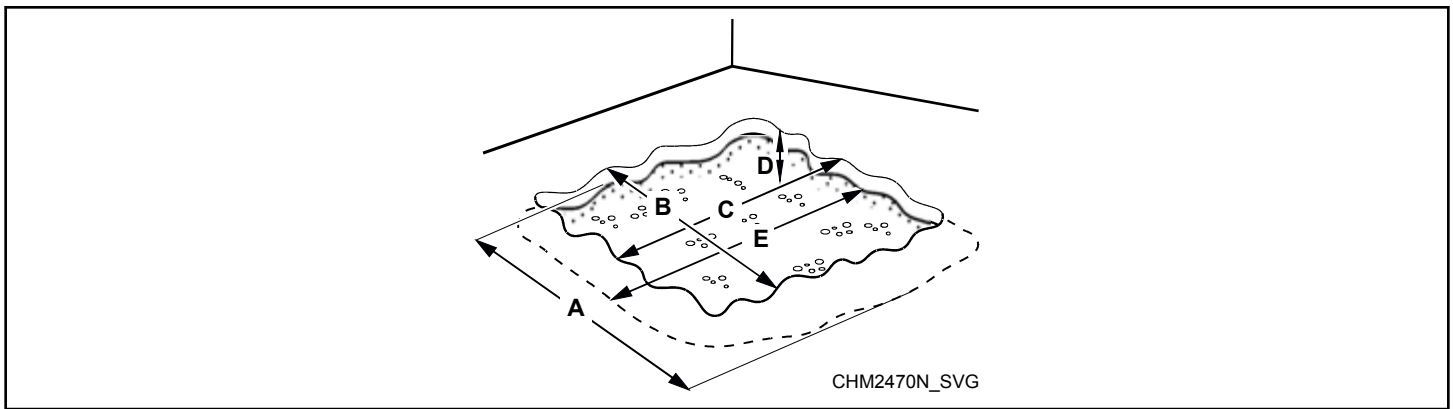


Figure 8

Specification, in. [mm]	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	35 kg / 80 lb. / 332 L	52 kg / 120 lb. / 520 L
A	30.71 [780]	34.25 [870]	34.25 [870]	39.76 [1010]	39.76 [1010]	39.76 [1010]	46.46 [1180]	46.46 [1180]
B	Refer to <i>Table 4</i> or <i>Table 5</i> , Specification F							
C	Refer to <i>Table 4</i> or <i>Table 5</i> , Specification G							
D	2.95 [75]							
E	31.12 [790.5]	31.12 [790.5]	35.65 [905.5]	37.74 [958.5]	43.48 [1104.5]	46.44 [1179.5]	42.54 [1080.5]	53.76 [1365.5]

Table 8

Machine Installation on Floor or Steel Base


The drum of rigid-mount machines is fixed to the frame. The floor and steel base (if used) underneath the machine **MUST** be stable enough to be able to absorb the dynamic loads which are created during the spin sequence. Refer to *General Specifications*. M16 anchor bolts and washers (60mm external diameter, 16.5mm internal diameter, 6mm thickness) and M16 self-locking nuts must be used so the machine, the steel base (if used) and floor form one integral unit. Refer to *Figure 9* and *Figure 10*.


NOTE: Anchor bolts are not supplied with machine. Washers and nuts are supplied with machines. Torque is 100Nm. For anchoring dimensions, refer to *Mounting Bolt Hole Locations*

North American Models: Mounting bolts must meet the following requirements:

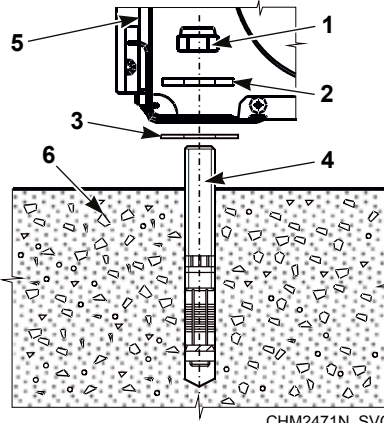
- 5/8 in. diameter x 6 in. length
- 5 SAE grade
- 16 thread
- Torque to 100Nm

NOTE: For installations using SAE thread style mounting bolts, SAE thread style nuts with a minimum grade of 5 must be used.

	CAUTION
<p>To avoid installing the machine in such a way that may lead to the machine becoming damaged during operation, be sure to use the nuts and washers supplied with the machine during installation.</p>	

	CAUTION
<p>To avoid installing the machine in such a way that may lead to the machine becoming damaged during operation, be sure to use the nuts and washers supplied with the machine during installation.</p>	

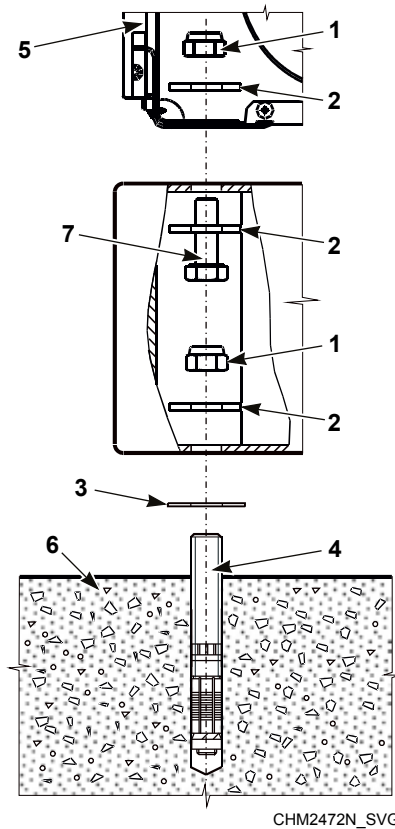
Installation on floor



1. Nuts M16; supplied with the machine
2. Washers; 60mm external diameter, 16.5mm internal diameter, 6mm thickness; supplied with the machine
3. Spacing washer
4. Anchor bolt
5. Washing machine
6. Concrete floor

Figure 9

Installation on a steel base and floor



CHM2472N_SVG

1. Nuts M16; supplied with the machine
2. Washers; 60mm external diameter, 16.5mm internal diameter, 6mm thickness; supplied with the machine
3. Spacing washer
4. Anchor bolt
5. Washing machine
6. Concrete floor
7. Bolt (supplied with steel base)

Figure 10

NOTE: The existing concrete floor must be at least 4.72 in. [120 mm] thick.

NOTE: North American Models: Mounting bolt holes should be made to a depth of 3.5 in.

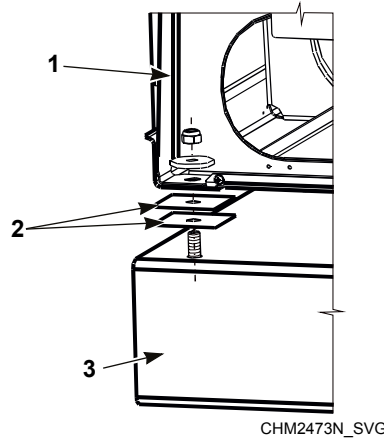
1. Check that the machine is installed in a level and stable manner in all its corners.
2. Models outside of North America: If necessary, level the machine up by means of stainless or galvanized spacing washers inserted between the machine frame and the floor. Refer to *Figure 11* and *Figure 12*. The dimensions of the spacers must be the same as the dimension of the machine frame in the place where the anchor bolts are located (80 x 80 mm).
3. Fit a washer and self-locking nut on the anchor bolt and tighten with a torque wrench to 100Nm.

NOTE: It is advisable to recheck the torque after a short period of machine operation.

4. Using the bottom frame of the machine, lift the whole machine and place over the four drilled holes.
5. Check that the machine is seated in a perfectly level manner.
6. North American Models: grout under the machine to ensure a stable installation. Refer to *Machine Grouting (North American Models Only)*.
7. Using mechanical or chemical anchor bolts, mount the machine to the floor or steel base.

NOTE: Mounting bolts are not included with the machine.

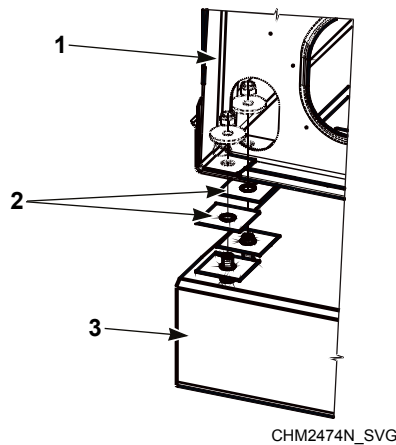
7.5 kg / 20 lb. / 75 L, 10.5 kg / 25 lb. / 105 L and 13.5 kg / 30 lb. / 135 L with 100 G or 200 G Extraction; 18 kg / 40 lb. / 180 L, 24 kg / 55 lb. / 240 L and 28 kg / 70 lb. / 280 L with 100 G Extraction



1. Washing machine
2. Spacing washers, as needed
3. Concrete floor

Figure 11

18 kg / 40 lb. / 180 L, 24 kg / 55 lb. / 240 L and 28 kg / 70 lb. / 280 L with 200 G Extraction; 35 kg / 80 lb. / 332 L and 52 kg / 120 lb. / 520 L



1. Washing machine
2. Spacing washers, as needed
3. Concrete floor

Figure 12

Machine Grouting (North American Models Only)

1. **North American models only:** Raise and level the machine off the floor on three points, using spacers such as nut fasteners.
2. Fill the space between the machine base and the floor with a good quality non-shrinking machinery grout. Grout completely under all frame members.
3. Position washers and nuts on bolts and finger tighten nuts to machine base.
4. Before grout sets completely, make a drain opening in the grouting at the rear center of the machine with a stiff piece of wire. This opening should be approximately 0.5 in. [13 mm] wide to allow any surface water built-up under the base of the machine to drain away. **Do not omit this step.**
IMPORTANT: DO NOT omit this step.
5. Allow machine grout to set, but not cure.
6. Remove the spacers carefully, allowing the machine to settle into the grout.
7. Allow the grout to fully cure. Consult the grout manufacturer for cure time specifications.
8. Tighten the nuts (Nuts M16; supplied with the machine) by even increments - one after the other using the specified torque - until they are tightened evenly and the machine is fastened securely to the floor.

Drain Connection

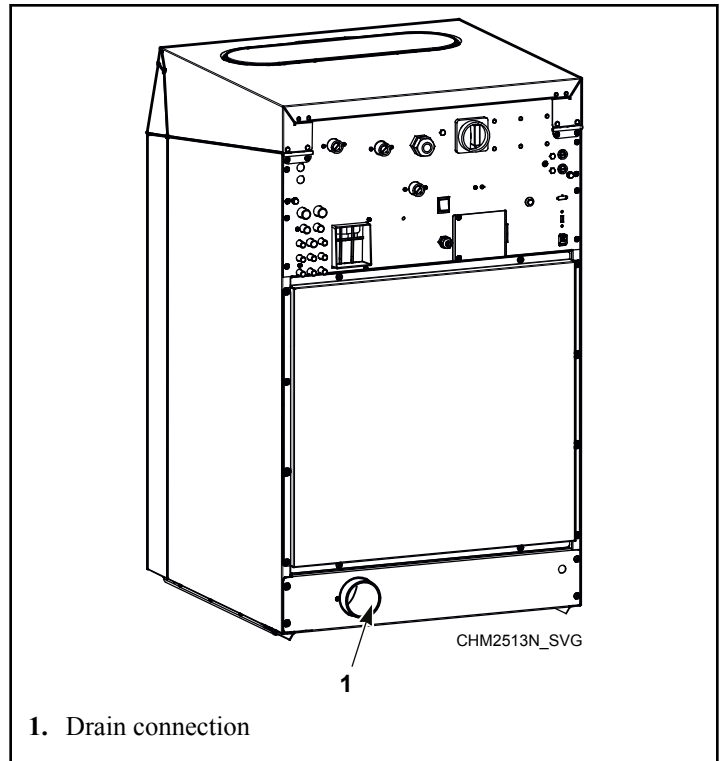


Figure 13

	CAUTION
<p>To avoid installing the machine in such a way that may lead to the machine becoming damaged during operation, be sure to use the washer supplied with the machine along with an equivalent nut and bolt with thread type M16 during installation</p>	
W945	

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.

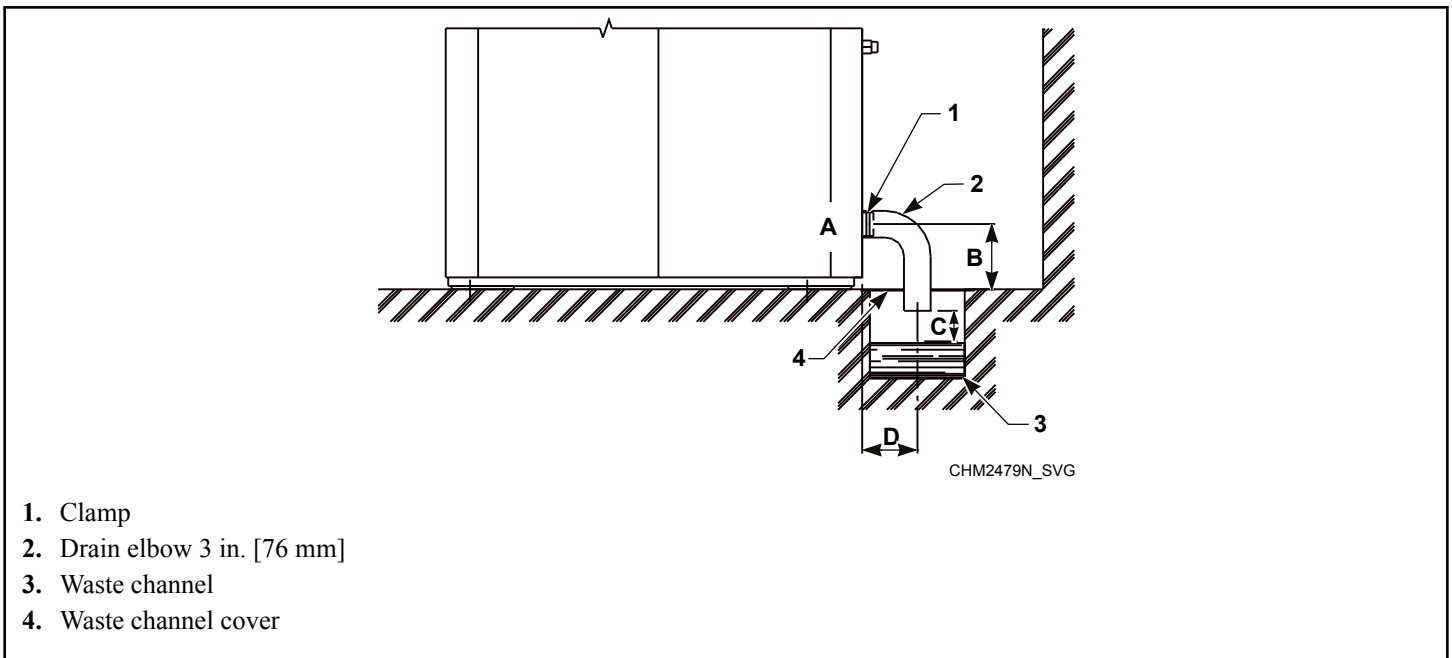


Figure 14

Drainage Pipe Information, in. [mm]								
Specifi- cation	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	35 kg / 80 lb. / 332 L	52 kg / 120 lb. / 520 L
A	3 [75]	3 [75]	3 [75]	3 [75]	3 [75]	3 [75]	3 [75]	3 [75]
B	3.46 [88]	3.85 [98]	3.95 [98]	5.12 [130]	5.12 [130]	5.12 [130]	4.72 [120]	4.72 [120]
C mini- mum	0.79 [20]	0.79 [20]	0.79 [20]	0.79 [20]	0.79 [20]	0.79 [20]	0.79 [20]	0.79 [20]
D mini- mum	3.94 [100]	3.94 [100]	3.94 [100]	3.94 [100]	3.94 [100]	3.94 [100]	3.94 [100]	3.94 [100]

Table 9

Drain Connections		
Specification	Model	Requirement
Drain connection number	7.5 kg - 28 kg / 20 lb. - 70 lb. / 75 L - 280 L	1
	35 kg - 52 kg / 80 lb. - 120 lb. / 332 L - 520 L	2
Drain connection size, in. [mm]	All	3 [76]
Average flow rate of draining gal/min. [l/min.]	7.5 kg - 28 kg / 20 lb. - 70 lb. / 75 L - 280 L	55.48 [210]
	35 kg - 52 kg / 80 lb. - 120 lb. / 332 L - 520 L	110 [420]
Drain pump with hose - internal diameter of hose, in [mm]	7.5 kg / 20 lb. / 75 L	0.75 [19]
Flow rate of drain pump, gal/min. [l/min.]	7.5 kg / 20 lb. / 75 L	9.51 [36]

Table 10

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 15*.

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

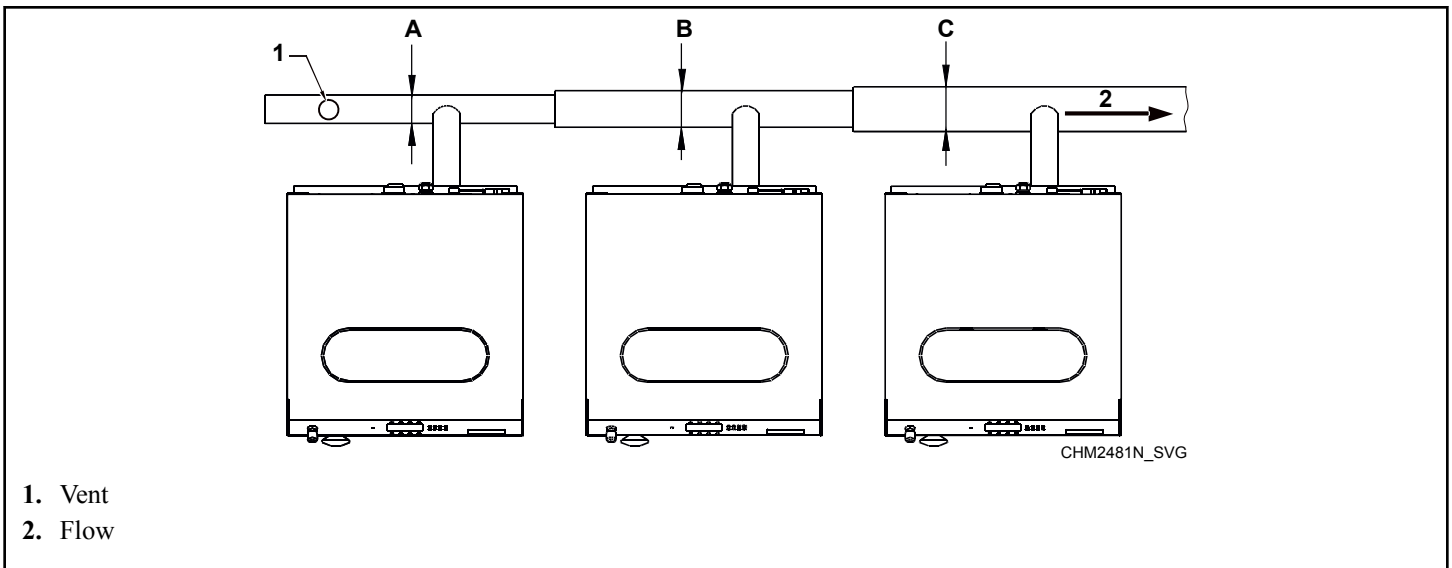


Figure 15

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

Table 11

Drain Pump, 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 16*.

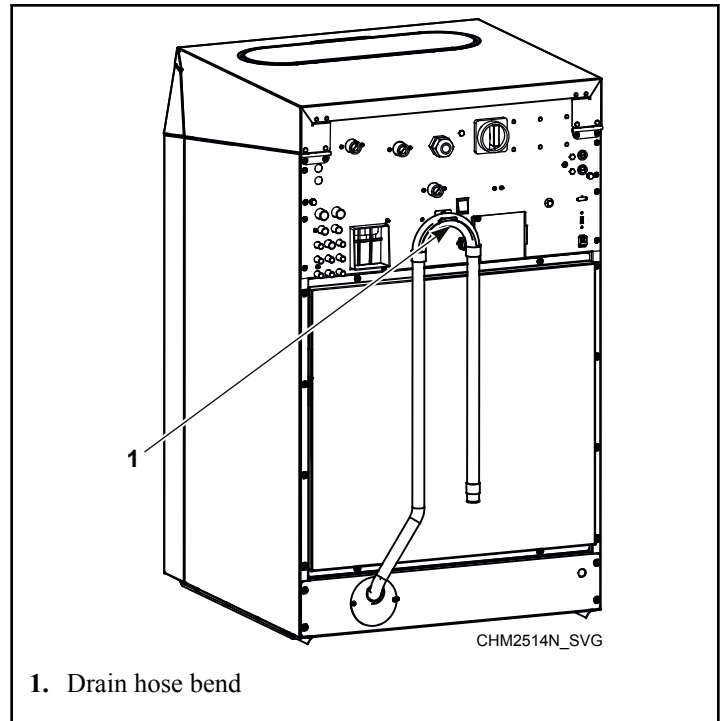
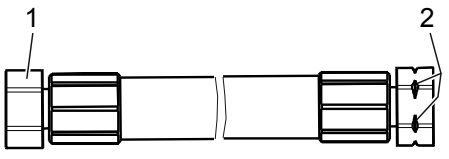


Figure 16

Water Connection Requirements

NOTE: Read Important Safety Instruction first.

Models manufactured through April, 2017

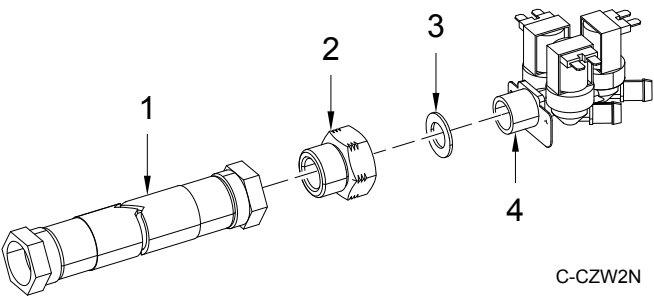


NOTE: North American Models: Water inlet hose with notches should be connected to the water supply faucet, while the side of the water inlet hose without notches should be connected to the water inlet valves.

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

Figure 17

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 18

NOTE: Models outside of North America: For 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.

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

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 21*

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 21*



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

NOTE: 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.

All water connectors present on the machine must be connected or the wash program will not function correctly. Refer to *Table 12* 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.

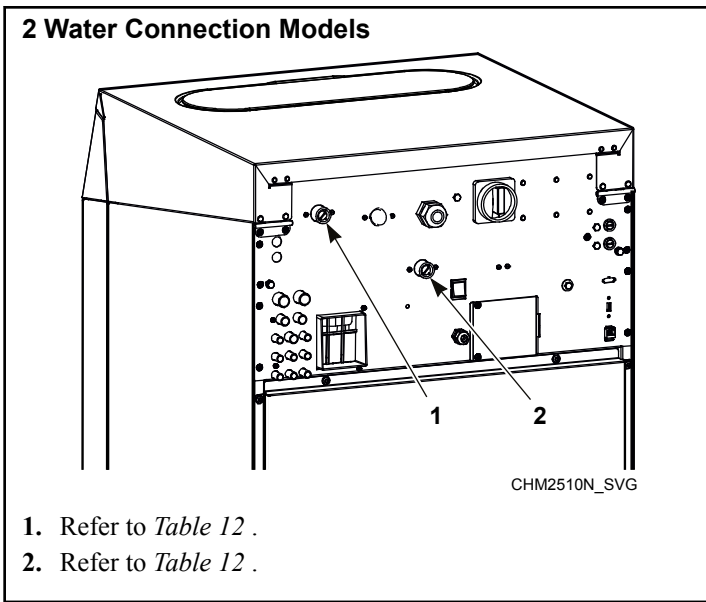


Figure 19

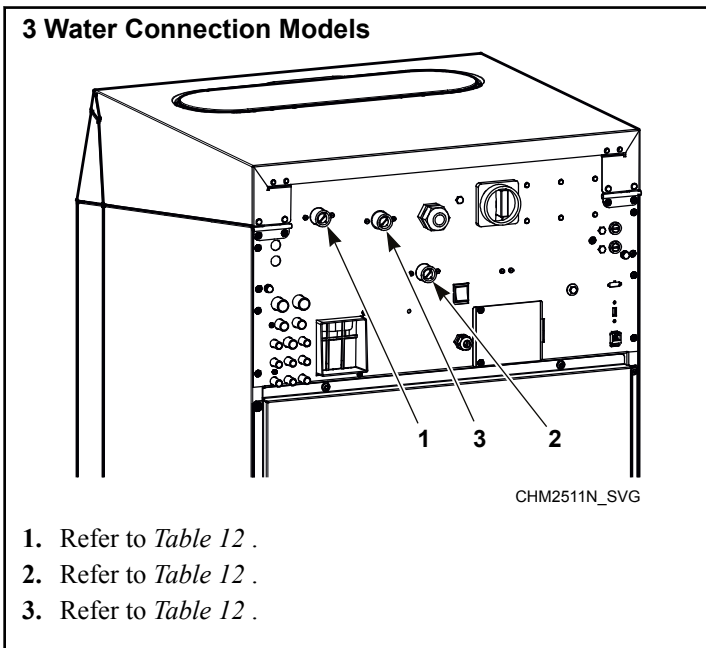


Figure 20

Water type	Water connection		
	Cold and Hot	Cold	Hot
Cold soft, Cold hard and Hot	Cold soft	Hot	Cold hard
*Optional			

Table 12

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

Table 12 continues...

Water Connections		
Specification	Model	Requirement
Water inlet connection size, in. BSP	7.5 kg - 35 kg / 20 lb - 80 lb / 75 L - 332 L	3/4
	52 kg / 120 lb / 520 L /	1
Recommended pressure, PSI [bar]	All	44-73 [3-5]
Inlet flow capacity per inlet (standard pressure), gal/min [l/min.]	7.5 kg - 24 kg / 20 lb - 55 lb / 75 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]
Inlet flow capacity per inlet, gal/min at 60 PSI [l/min. at 4 bar]	35 kg / 80 lb / 332 L	15.59 [59]
Inlet flow capacity per inlet, gal/min at 60 PSI [l/min. at 4 bar]	52 kg / 120 lb / 520 L	96.68 [366]
* 18 kg - 24 kg / 40 lb - 55 lb / 180 L - 240 L -optional		

Table 13

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

Alliance Laundry Systems, LLC ranges of 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.
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.

IMPORTANT: DO NOT cross thread or overtighten couplings. This will cause them to leak.

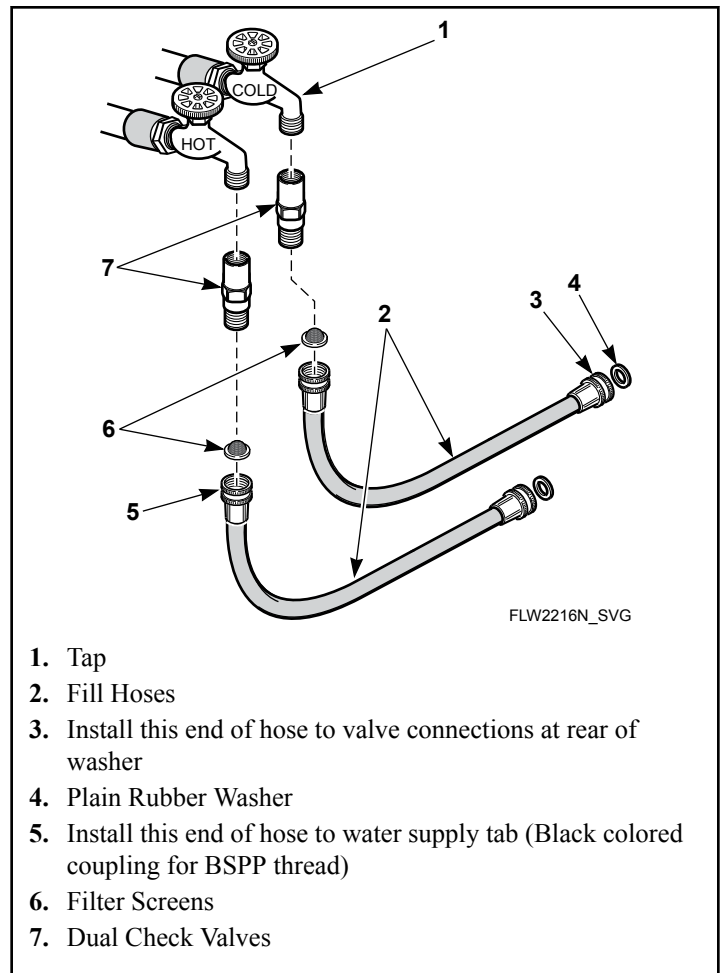


Figure 21

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 22*.

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

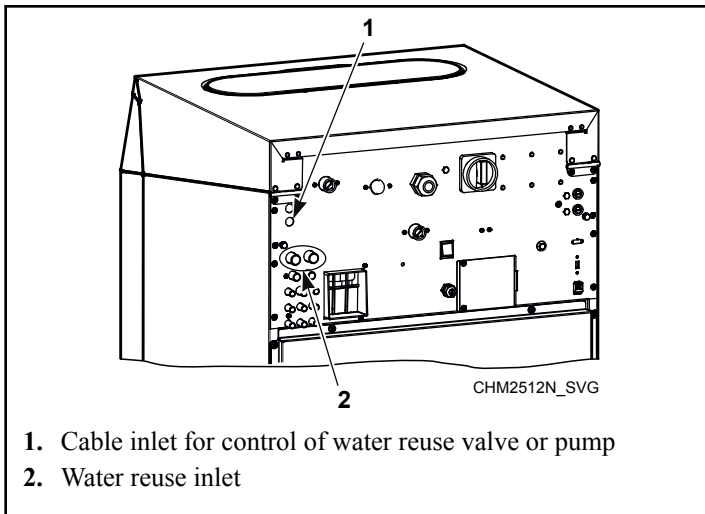


Figure 22

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 22*.
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 water level drops below this minimum. If this requirement is not met and an insufficient or no amount of recuperated water is fed into the washer, it will not function properly.

A pump must transport the recuperated water from the tank to the washer. The requirements for the pump depend on the number

and type of washers that are connected to the 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 23*.

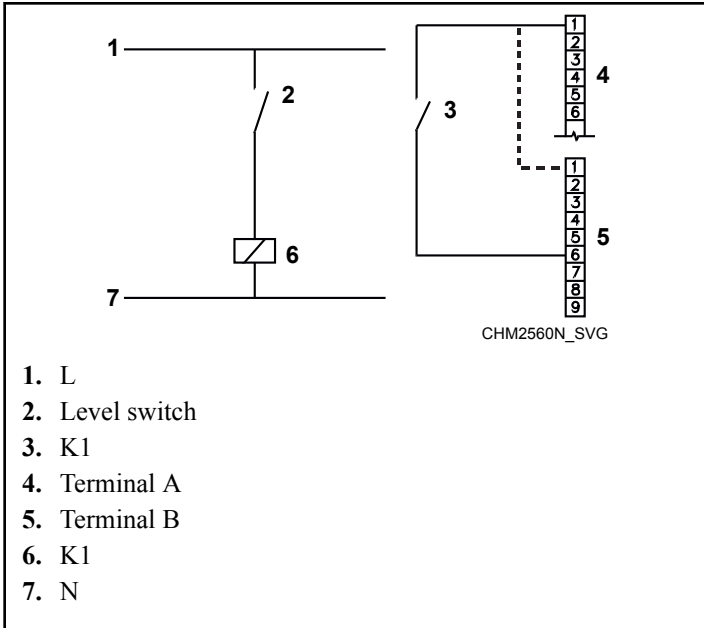


Figure 23

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 24*.

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.

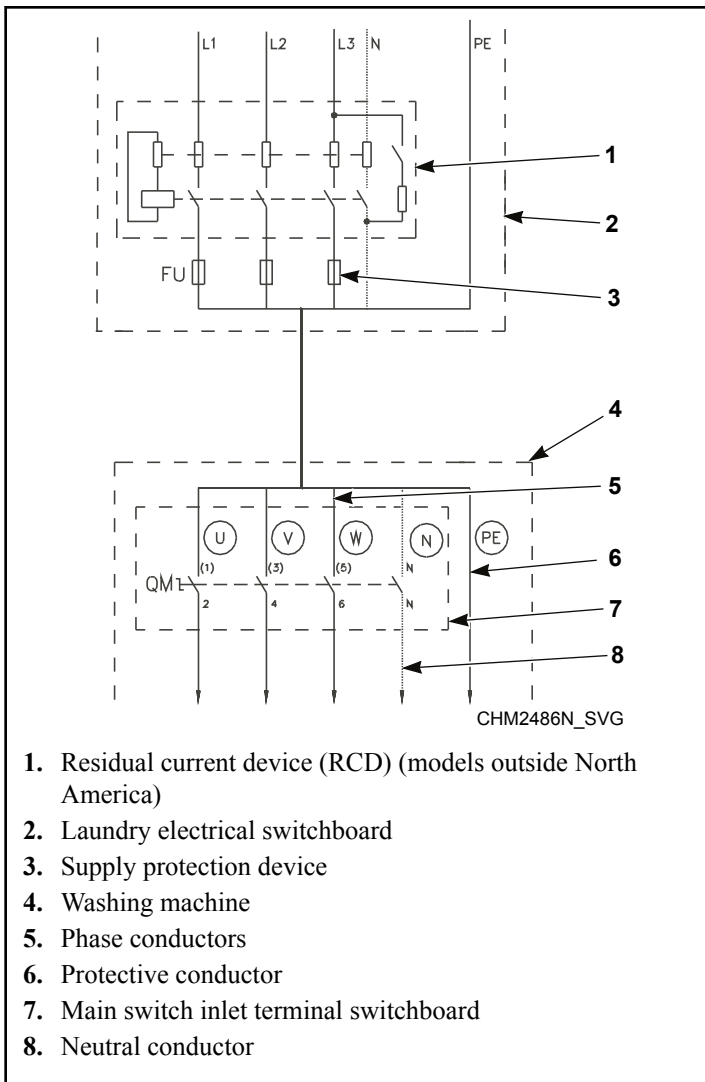


Figure 24

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 (US)		Min. phase conductor section, AWG [mm ²]	Min. protection conductor section, AWG [mm ²]
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 14

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 25*. 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 14*
- Route the supply cable as short as possible, directly from the supply protection device to the washer without branching off

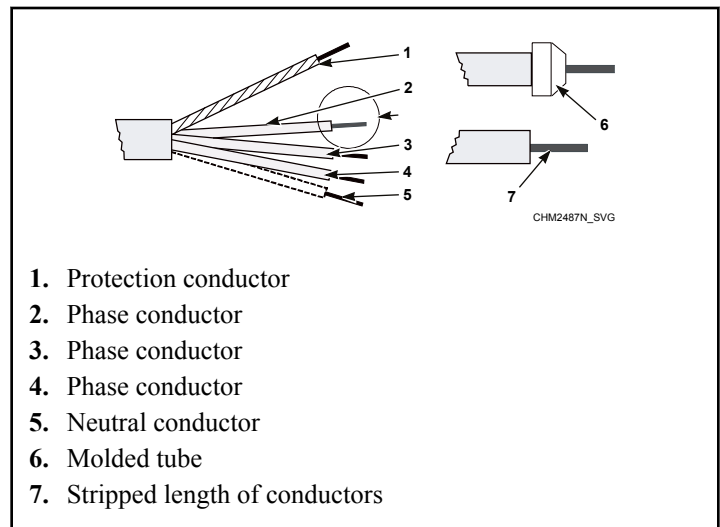


Figure 25

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 26* or *Figure 27*.
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 26* or *Figure 27*.

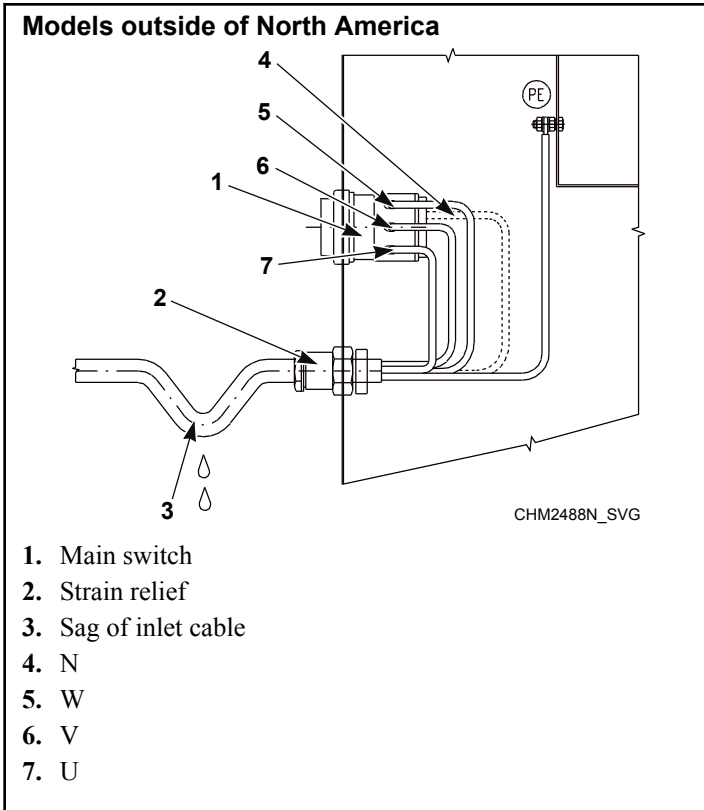


Figure 26

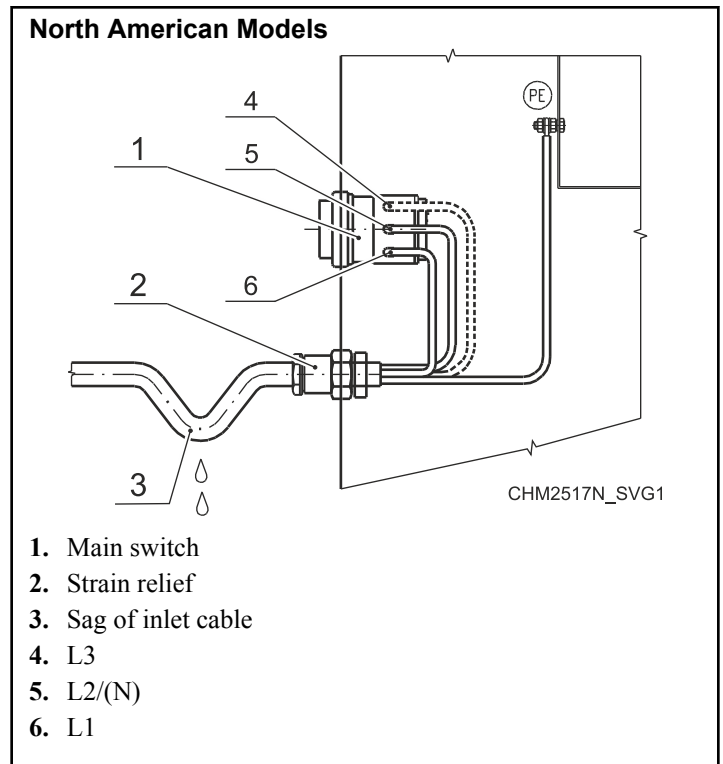


Figure 27

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 14*). However, for the protection purposes, with the supply cable cross section of a min. 4 mm², select a larger conductor section, i.e., 6 mm².

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"> • Install Line Reactor • Isolation Transformer
Greater than 120 kVA supply transformer	
Line has power factor correction capacitors	<ul style="list-style-type: none"> • Install Line Reactor • Isolation Transformer
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"> • Remove MOV jumper to ground • Install Isolation Transformer with grounded secondary (if necessary)
Ungrounded distribution system	
240V open delta configuration (stinger leg)*	<ul style="list-style-type: none"> • Install Line Reactor
<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 15


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

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-

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
Neutral	N
PE	PE (Ground)

Table 17

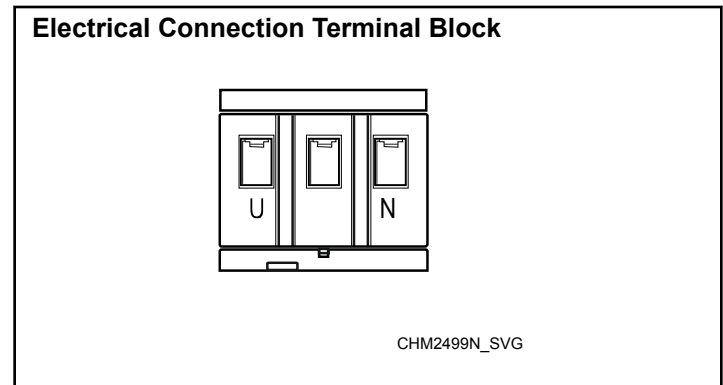


Figure 30

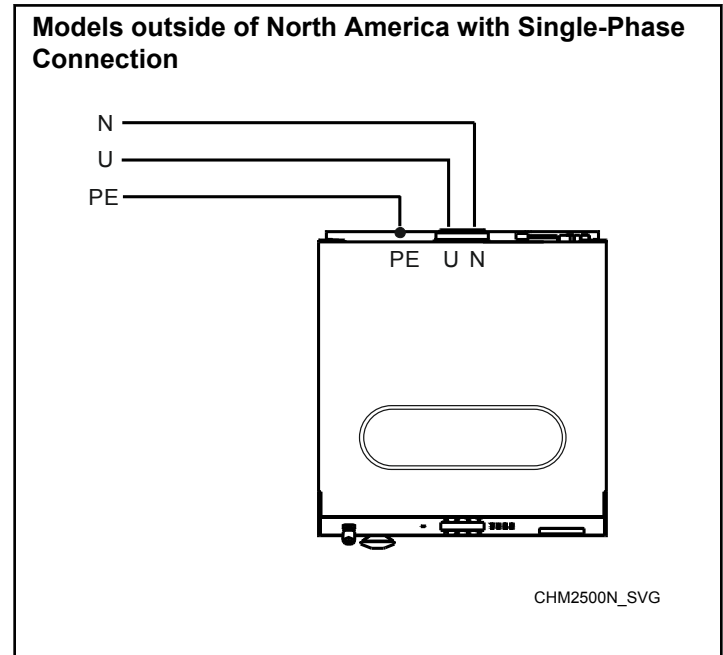


Figure 31

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

Table 16

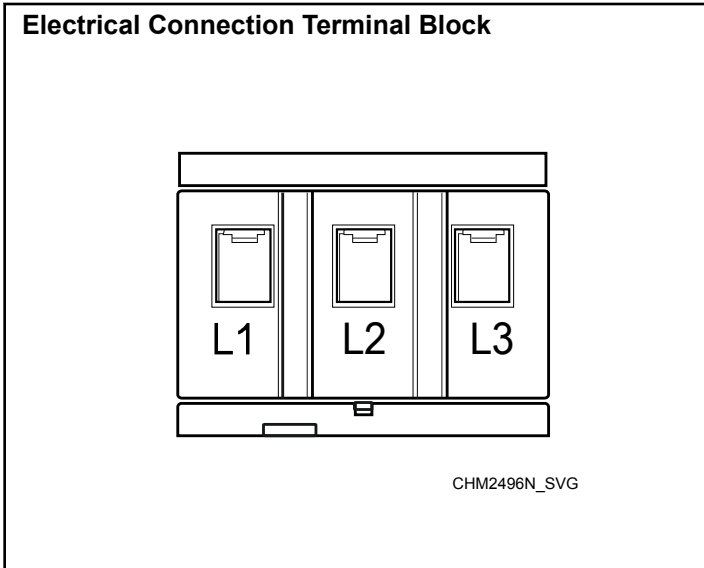


Figure 28

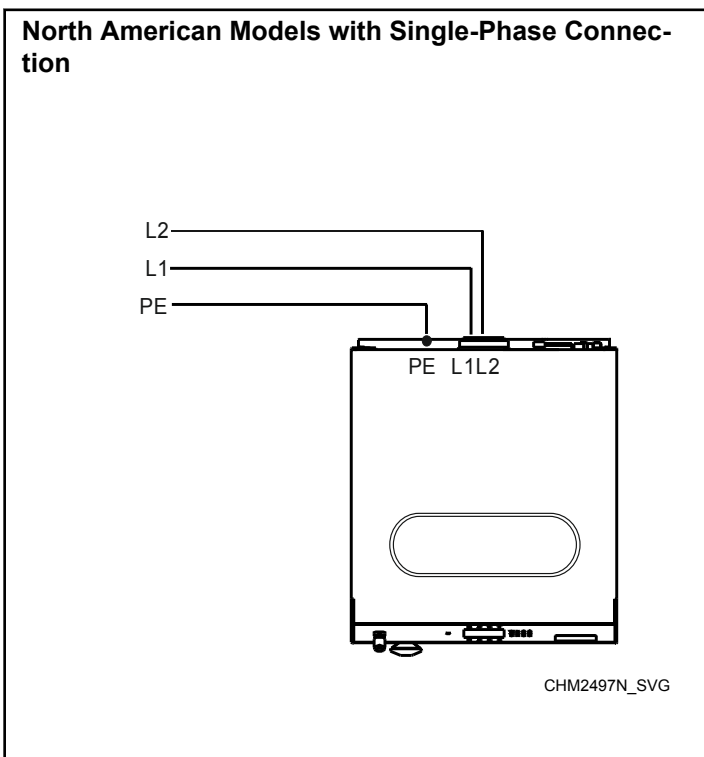


Figure 29

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 18

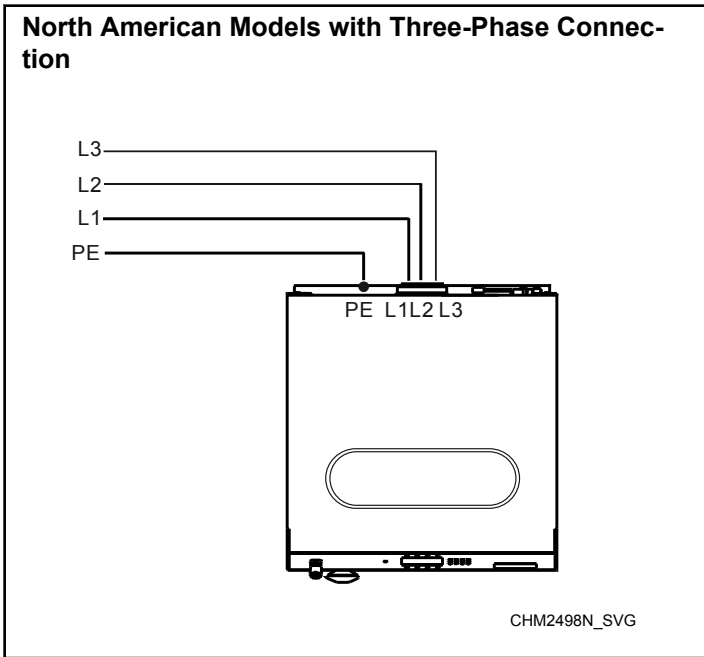


Figure 32

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

Table 19 continues...

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

Table 19

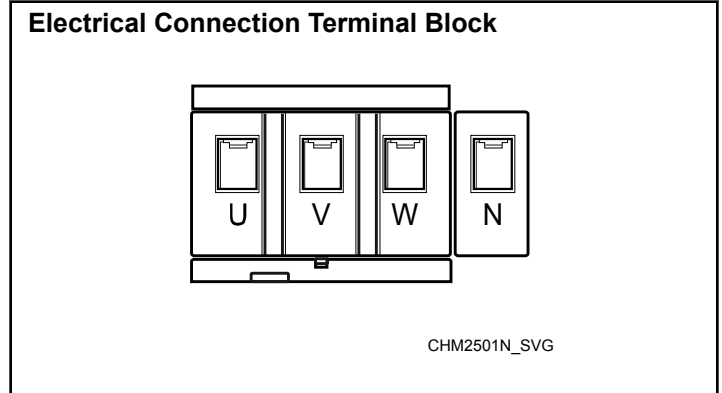


Figure 33

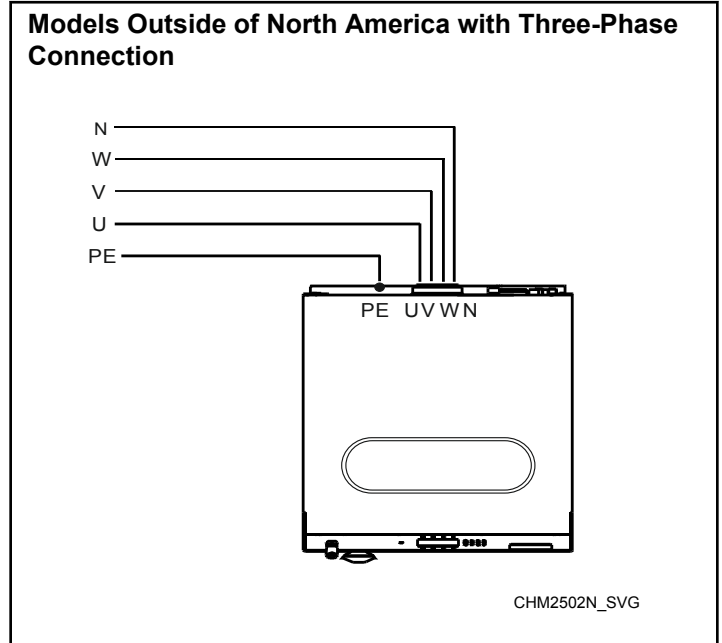


Figure 34

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 se-

lected. 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

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)
120	60	1	2	0.6	8	10	N/A	N/A	N/A
200-240	50/60	1	2 (L1, L2, or L1, N)	0.6	4.4	10	3.4	17 (3)	20
							5	24 (4.6)	32
200-240	50/60	3	3 (L1, L2, L3)	0.6	4.4	10	6.5	19.1 (6)	25
							9.5	26.5 (9)	32
380-415 + N	50/60	3	4 (L1, L2, L3, N)	0.6	4.4	10	5.1	10 (4.6)	16
							6.5	12.6 (6)	16
							9.5	17 (9)	20
380-415	50/60	3	3 (L1, L2, L3)	0.6	2.6	10	6.5	11.7 (6)	16
							9.5	16.2 (9)	20
440-480	50/60	3	3 (L1, L2, L3)	0.6	2.6	10	7.5	13.5 (7)	16
							9.5	15.5 (9)	16

Table 20

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)
120	60	1	2	0.65	11.7	16	N/A	N/A	N/A
200-240	50/60	1	2 (L1, L2, or L1, N)	0.65	6.3	10	3.5	17.5 (3)	20
							5.1	25 (4.6)	32
200-240	50/60	3	3 (L1, L2, L3)	0.65	6.3	10	6.6	20.1 (6)	25
							9.6	27.6 (9)	32
							12.6	35.2 (12)	40
380-415 + N	50/60	3	4 (L1, L2, L3, N)	0.65	6.3	10	6.6	12.5 (6)	16
							9.6	17.5 (9)	20
							12.6	22.4 (12)	25
380-415	50/60	3	3 (L1, L2, L3)	0.65	3.7	10	6.6	12.6 (6)	16
							9.6	17 (9)	20
							12.6	21.3 (12)	25
440-480	50/60	3	3 (L1, L2, L3)	0.65	3.7	10	7.6	12.3 (7)	16
							9.6	15.7 (9)	16
							12.6	20 (12)	25

Table 21

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)
120	60	1	2	0.85	13.3	20	N/A	N/A	N/A
200-240	50/60	1	2 (L1, L2, or L1, N)	0.85	7.2	10	3.9	18.8 (3)	20
							5.5	25.8 (4.6)	32
380-415 + N	50/60	3	3 (L1, L2, L3)	0.85	7.2	10	6.8	19 (6)	25
200-240	50/60	3	3 (L1, L2, L3)	N/A	N/A	N/A	9.8	28.5 (9)	32
							12.8	36 (12)	40
380-415 + N	50/60	3	4 (L1, L2, L3, N)	0.85	7.2	10	6.8	12 (6)	16
							9.8	17.6 (9)	20
							12.8	22.5 (12)	25
380-415	50/60	3	3 (L1, L2, L3)	0.85	4.2	10	6.8	12.9 (6)	16
							9.8	17.2 (9)	20
							12.8	21.5 (12)	25
							14.6	13.8 (22.5)	32
440-480	50/60	3	3 (L1, L2, L3)	0.85	4.2	10	7.8	12.2 (7)	16
							9.8	15.9 (9)	16
							12.8	20 (12)	25

Table 22

18 kg / 40 lb. / 180 L Models (100G)

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	7.4	10	N/A	N/A	N/A
200-240	50/60	3	3 (L1, L2, L3)	0.85	7.4	10	12.7	36 (12)	40
							18.7	51.2 (18)	63
380-415 + N	50/60	3	4 (L1, L2, L3, N)	0.85	7.4	10	12.7	23.3 (12)	25
							18.7	31 (18)	32
380-415	50/60	3	3 (L1, L2, L3)	0.85	3.1	10	12.7	20.5 (12)	25
							18.7	29.5 (18)	32
440-480	50/60	3	3 (L1, L2, L3)	0.85	3.1	10	12.7	19.2 (12)	25
							18.7	27.2 (18)	32

Table 23

18 kg / 40 lb. / 180 L Models (200G)

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	9.1	16	N/A	N/A	N/A
200-240	50/60	3	3 (L1, L2, L3)	1.2	9.1	16	12.9	36.2 (12)	40
							18.9	53 (18)	63

Table 24 continues...

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)
380-415 + N	50/60	3	4 (L1, L2, L3, N)	1.2	9.1	16	12.9	23.5 (12)	25
							18.9	31 (18)	32
380-415	50/60	3	3 (L1, L2, L3)	1.2	3.3	10	12.9	20.7 (12)	25
							18.9	29.7 (18)	32
440-480	50/60	3	3 (L1, L2, L3)	1.2	3.3	10	12.9	19.4 (12)	25
							18.9	27.4 (18)	32

Table 24

24 kg / 55 lb. / 240 L Models (100G)

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	9.1	16	N/A	N/A	N/A
200-240	50/60	3	3 (L1, L2, L3)	1.2	9.1	16	19	53 (18)	63
380-415 + N	50/60	3	4 (L1, L2, L3, N)	1.2	9.1	16	19	31.7 (18)	32
380-415	50/60	3	3 (L1, L2, L3)	1.2	3.3	10	19	30 (18)	32
440-480	50/60	3	3 (L1, L2, L3)	1.2	3.3	10	19	28 (18)	32

Table 25

24 kg / 55 lb. / 240 L Models (200G)

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	9.2	16	N/A	N/A	N/A
200-240	50/60	3	3 (L1, L2, L3)	1.6	9.2	16	19	53 (18)	63
380-415 + N	50/60	3	4 (L1, L2, L3, N)	1.5	9.2	16	19	31.7 (18)	32

Table 26 continues...

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)
380-415	50/60	3	3 (L1, L2, L3)	1.5	3.4	10	19	30 (18)	32
440-480	50/60	3	3 (L1, L2, L3)	1.5	3.4	10	19	28 (18)	32

Table 26

28 kg / 70 lb. / 280 L Models (100G)

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	9.8	16	N/A	N/A	N/A
200-240	50/60	3	3 (L1, L2, L3)	1.6	9.8	16	19.3	51.2 (18)	63
							23.2	61 (21.9)	63
380-415 + N	50/60	3	4 (L1, L2, L3, N)	1.6	9.8	16	19.3	31.9 (18)	32
							23.2	37.6 (21.9)	40
380-415	50/60	3	3 (L1, L2, L3)	1.6	3.6	10	19.3	30 (18)	32
							23.2	38 (21.9)	40
440-480	50/60	3	3 (L1, L2, L3)	1.6	3.6	10	19.3	29 (18)	32
							23.2	35 (21.9)	40

Table 27

28 kg / 70 lb. / 280 L Models (200G)

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	9.9	16	N/A	N/A	N/A
200-240	50/60	3	3 (L1, L2, L3)	1.6	9.9	16	19.3	51.2 (18)	63
							23.2	61 (21.9)	63
380-415 + N	50/60	3	4 (L1, L2, L3, N)	1.6	9.9	16	19.3	31.9 (18)	32
							23.2	37.6 (21.9)	40
380-415	50/60	3	3 (L1, L2, L3)	1.6	3.7	10	19.3	30 (18)	32
							23.2	38 (21.9)	40
440-480	50/60	3	3 (L1, L2, L3)	1.6	3.7	10	19.3	29 (18)	32
							23.2	35 (21.9)	40

Table 28

35 kg / 80 lb. / 332 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	16	20	N/A	N/A	N/A
200-240	50/60	3	3 (L1, L2, L3)	2.3	16	20	28.5	76.8 (27)	80
380-415 + N	50/60	3	4 (L1, L2, L3, N)	2.3	16	20	28.5	48.1 (27)	63
380-415	50/60	3	3 (L1, L2, L3)	2.3	8.2	16	28.5	43.5 (27)	50
440-480	50/60	3	3 (L1, L2, L3)	2.3	8.2	16	28.5	51.9 (27)	63

Table 29

52 kg / 120 lb. / 520 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)	4.1	25	32	N/A	N/A	N/A
200-240	50/60	3	3 (L1, L2, L3)	4.1	16.5	20	43	109 (40.6)	125
380-415	50/60	3	3 (L1, L2, L3)	4.1	9.6	16	43	62.9 (40.6)	80

Table 30 continues...

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)
440-480	50/60	3	3 (L1, L2, L3)	4.1	9.6	16	43	81.5 (40.6)	100

Table 30

Electrical Specifications - North American Models

7.5 kg / 20 lb. / 75 L Models

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker CSA (A)	AWG (mm ²)
B	120	60	1	2 (L1, N)	8	10	14 (2.5)
X and Z	208-240	60	1	2 (L1, L2 or L1, N)	4.4	10	14 (2.5)

Table 31

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 ²)
B	120	60	1	2 (L1, N)	11.7	15	14 (2.5)
X and Z	208-240	60	1	2 (L1, L2 or L1, N)	6.3	10	14 (2.5)

Table 32

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 ²)
B	120	60	1	2 (L1, N)	13.3	20	12 (4.0)
X and Z	208-240	60	1	2 (L1, L2 or L1, N)	7.2	10	14 (2.5)

Table 33

18 kg / 40 lb. / 180 L Models (200G)

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker CSA (A)	AWG (mm ²)
X and Z	208-240	60	1	2 (L1, L2 or L1, N)	9.1	15	14 (2.5)

Table 34

24 kg / 55 lb. / 240 L Models (200G)

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker CSA (A)	AWG (mm ²)
X and Z	208-240	60	1	2 (L1, L2 or L1, N)	9.2	15	14 (2.5)

Table 35

28 kg / 70 lb. / 280 L Models (200G)

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker CSA (A)	AWG (mm ²)
X and Z	208-240	60	1	2 (L1, L2 or L1, N)	9.9	15	14 (2.5)

Table 36

35 kg / 80 lb. / 332 L Models

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker CSA (A)	AWG (mm ²)
X and Z	208-240	60	1	2 (L1, L2 or L1, N)	16	20	14 (2.5)
7	440-480	60	3	3 (L1, L2, L3)	8.2	15	14 (2.5)

Table 37

52 kg / 120 lb. / 520 L Models

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker CSA (A)	AWG (mm ²)
M	208-240	60	3	3 (L1, L2, L3)	16	20	14 (2.5)
7	440-480	60	3	3 (L1, L2, L3)	9.6	15	14 (2.5)

Table 38

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 39*.

Specification	Model	Requirement
Steam inlet connection size, in. BSP	7.5 kg - 28 kg / 20 lb. - 70 lb. / 75 L - 280 L	1/2
	35 kg - 52 kg / 80 lb. - 120 lb. / 332 L - 520 L	3/4

Table 39

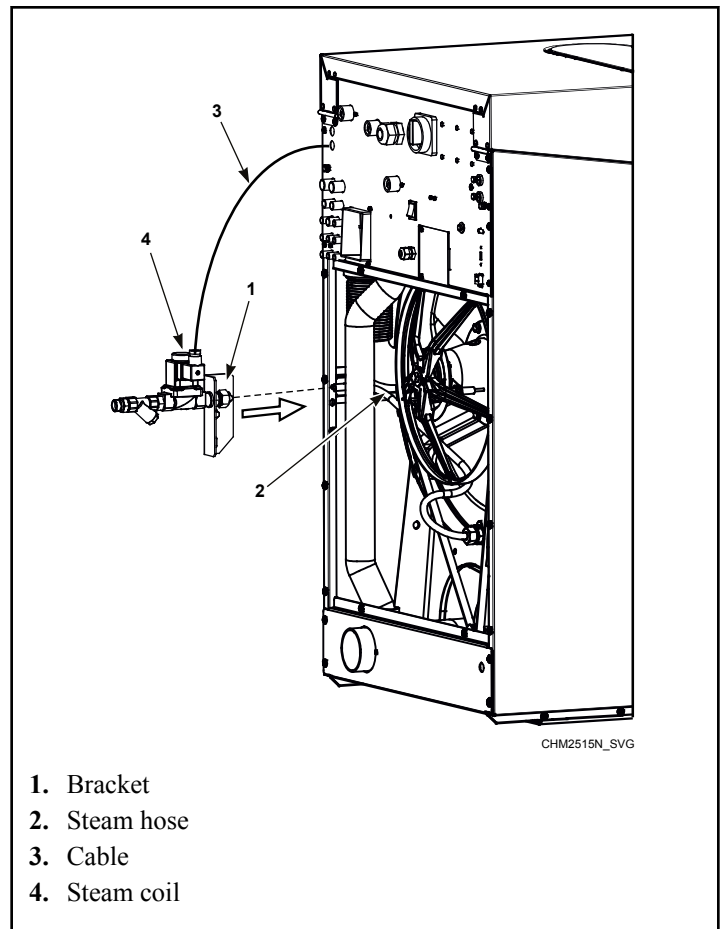
IMPORTANT: It is necessary to insert a filter with permeability up to 0.0118 in. [300 µm] in front of the steam valve. Dirt larger than 0.0118 in. [300 µm] may damage the steam valve and cause leaks.

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 35

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]	7/16 [11.5]

Table 40

NOTE: Always use liquid soap pumps with a flow that bring the requested quantity in less than 30 sec.

IMPORTANT: Start pumping immediately after water valves are open. The incoming water dilutes the liquid soap and brings it into the tub assembly.

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 36*.

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

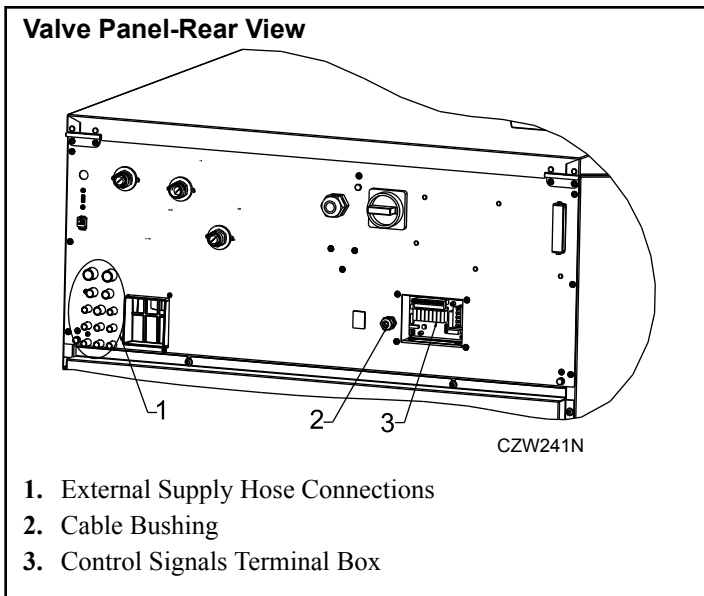


Figure 36

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 36*. 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 \uparrow and \downarrow . Refer to *Figure 36*. 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 37* shows a typical chemical injection supply system.

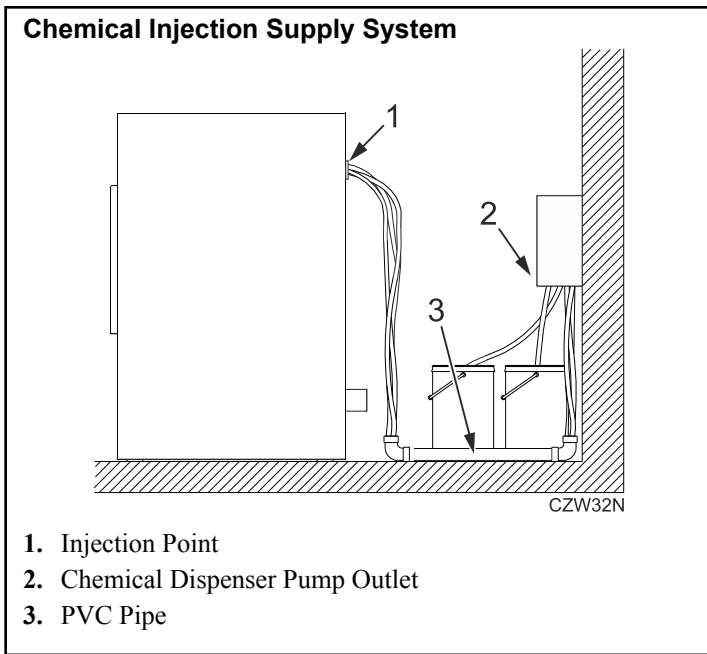


Figure 37

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.

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 38*.

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.

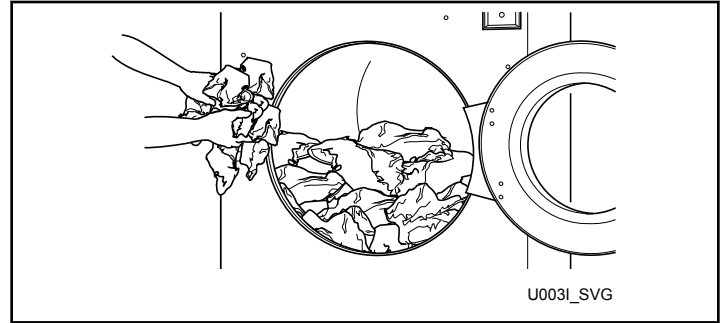


Figure 38

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.

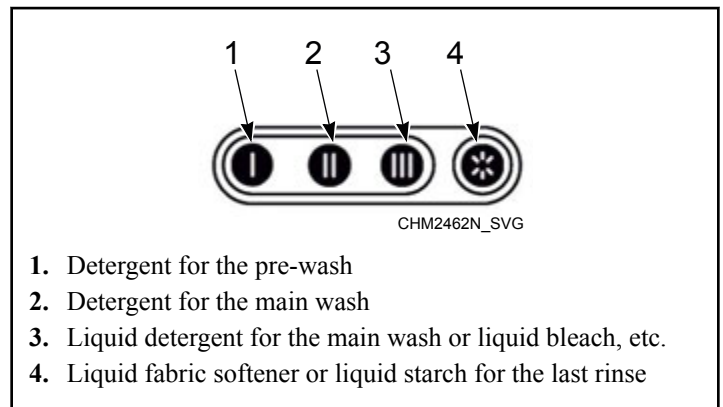


Figure 39

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.

Operation

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.

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 Alliance Laundry Systems 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 40*.

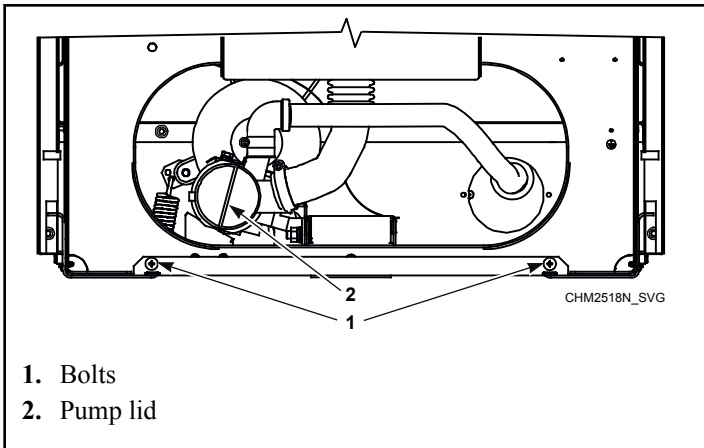


Figure 40

- d. 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 41*.

Model	New belt, Torque, Hz	Run-in belt, Torque, Hz
7.5 kg / 20 lb. / 75 L	88 - 98	88 - 92
10.5 kg / 25 lb. / 105 L	62 - 67	60 - 62
13.5 kg / 30 lb. / 135 L	73 - 78	70 - 73
18 kg / 40 lb. / 180 L	56 - 61	54 - 56
24 kg / 55 lb. / 240 L	63 - 73	66 - 68
28 kg / 70 lb. / 280 L	80 - 86	77 - 80
35 kg / 80 lb. / 332 L	59 - 66	56 - 60
52 kg / 120 lb. / 520 L	68 - 75	65 - 68

Table 41

5. Check the tightness of bolts. Refer to *Table 42*.

Item	Bolt Type	Torque, lb. ft. [Nm]
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	M8	19.18 [26]
Motor bolts	M12	N/A

Table 42

6. 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.
7. 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.

Emergency Unblocking of Door Lock

NOTE: Read Important Safety Instructions first.

1. Verify if all condition are present to safely open the door.
2. Remove front panel.

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.

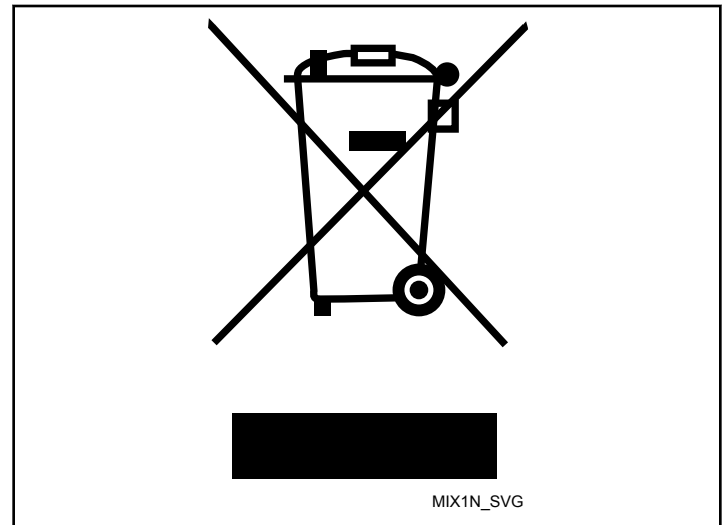


Figure 41

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 41*. 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.