Washer-Extractors

Cabinet Freestanding

Refer to Page 9 for Model Identification

Installation/Operation/Maintenance

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

Alliance™ Laundry Systems

www.alliancelaundry.com

Part No. D1627ENR8
February 2019

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Safety Information

Explanation of Safety 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

WARNING

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

W023

- Read all instructions before using the washer.
- Install the washer according to the INSTALLATION instructions. Refer to the Earthing (grounding) instructions in the INSTALLATION manual for the proper earthing (grounding) of the washer. All connections for water, drain, electrical power and earthing (grounding) must comply with local codes and be made by licensed personnel when required. The machine has to be installed by qualified technicians.
- Do not install or store the washer where it will be exposed to water and/or weather.
- To prevent fire and explosion, keep the area around machine free from flammable and combustible products. Do not add the following substances or textiles containing traces of the following substances to the wash water: gasoline, kerosene, waxes, cooking oils, vegetable oils, machine oils, dry-cleaning solvents, flammable chemicals, thinners, or other flammable or explosive substances. These substances give off vapors that could ignite, explode or cause the fabric to catch fire by itself.
- Under certain conditions, hydrogen gas may be produced in a hot water system that has not been used for two weeks or more. HYDROGEN GAS IS EXPLOSIVE. If the hot water system has not been used for such a period, before using a washing machine or combination washer-dryer, turn on all hot water faucets and let the water flow from each for several minutes. This will release any accumulated hydrogen gas. The gas is flammable, do not smoke or use an open flame during this time.
- To reduce the risk of an electric shock or fire, DO NOT use an extension cord or an adapter to connect the washer to the electrical power source.
- Do not allow children to play on or in the washer. Close supervision of children is necessary when the washer is used near children. This appliance is not intended for use by young children or infirm persons without supervision. Young children should be supervised to ensure that they do not play with the appliance. This is a safety rule for all appliances.
- DO NOT reach and/or climb into the tub or onto the washer, ESPECIALLY if the wash drum is moving. This is an imminently hazardous situation that, if not avoided, will cause severe personal injury or death.
- Never operate the washer with any guards, panels and/or parts removed or broken. DO NOT bypass any safety devices or tamper with the controls.
- Use washer only for its intended purpose, washing textiles. Never wash machine parts or automotive parts in the machine. This could result in serious damage to the basket or tub.
- Use only low-sudsing, no-foaming types of commercial detergent. Be aware that hazardous chemicals may be present. Wear hand and eye protection when adding detergents and chemicals. Always read and follow manufacturer's instructions on packages of laundry and cleaning aids. Heed all warnings or precautions. To reduce the risk of poisoning or

chemical burns, keep them out of the reach of children at all times [preferably in a locked cabinet].

- Do not use fabric softeners or products to eliminate static unless recommended by the manufacturer of the fabric softener or product.
- To avoid machine corrosion and component failure, do not use corrosive chemicals in the machine. Warranty claims related to damage caused by corrosive chemicals will be denied.
- Always follow the fabric care instructions supplied by the textile manufacturer.
- Loading door MUST BE CLOSED any time the washer is to fill, tumble or spin. DO NOT bypass the loading door switch by permitting the washer to operate with the loading door open. Do not attempt to open the door until the washer has drained and all moving parts have stopped.
- Be aware that hot water is used to flush the supply dispenser. Avoid opening the dispenser lid while the machine is running.
- Do not attach anything to the supply dispenser's nozzles, if applicable. The air gap must be maintained.
- Do not operate the machine without the water reuse plug or water reuse system in place, if applicable.
- Be sure water connections have a shut-off valve and that fill hose connections are tight. CLOSE the shut-off valves at the end of each wash day.
- Keep washer in good condition. Bumping or dropping the washer can damage safety features. If this occurs, have washer checked by a qualified service person.
- DANGER: Before inspecting or servicing machine, power supply must be turned OFF. The servicer needs to wait for at least 10 minutes after turning the power OFF and needs to check for residual voltage with a voltage meter. The inverter remains charged with high voltage for some time after powering OFF. This is an imminently hazardous situation that, if not avoided, will cause severe personal injury or death. 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.
- Do not repair or replace any part of the washer, or attempt any servicing unless specifically recommended in the user-maintenance instructions or in published user-repair instructions that the user understands and has the skills to carry out. ALWAYS disconnect the washer from electrical, power and water supplies before attempting any service.
- Disconnect the power by turning off the circuit breaker or by unplugging the machine. Replace worn power cords.
- Before the washer is removed from service or discarded, remove the door to the washing compartment.
- Failure to install, maintain, and/or operate this washer according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.

NOTE: The WARNING and 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 instruction for safe use of the machine. Common sense, caution and care must be exercised when installing, maintaining, or operating the washer.

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

NOTE: For European Union member states only: Electrical safety of the washers described in this manual is in compliance with the requirements of the European standard EN60204-1.

DANGER

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

W911

WARNING

Machine installations must comply with minimum specifications and requirements stated in the applicable Installation Manual, any applicable municipal building codes, water supply requirements, electrical wiring regulations and any other relevant statutory regulations. Due to varied requirements and applicable local codes, this machine must be installed, adjusted, and serviced by qualified maintenance personnel familiar with 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, property damage, and/or equipment damage, and will void the warranty.

W820

WARNING

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

W736

IMPORTANT: Ensure that the machine is installed 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.

WARNING

Never touch internal or external steam pipes, connections, or components. These surfaces can be extremely hot and will cause severe burns. The steam must be turned off and the pipe, connections, and components allowed to cool before the pipe can be touched.

SW014

WARNING

Install the machine on a level floor of sufficient strength. Failure to do so may result in conditions which can produce serious injury, death and/or property damage.

W703

WARNING

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

C014

CAUTION

Models outside of North America - Machine with weighing system: Never carry load sensors by their cables. Avoid electric welding near the load sensors. An impact may cause permanent damage to the load sensor. Avoid unequal load distribution between the load sensors when putting the machine down. When the power of the machine is switched on, the system needs a ten (10) minute warm-up time. This is important when the power has been off for more than five (5) minutes. Ignoring warm-up may result in a major error in weighing.

W941

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

Safety Decals

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.

Use manufacturer-authorized spare parts to avoid safety hazards.

Operator Safety

WARNING

NEVER insert hands or objects into basket until it has completely stopped. Doing so could result in serious injury.

SW012

Machines referred to by model in this manual are intended to be used by the general public in applications such as:

- staff areas in shops, offices, kitchens and other working 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

Installation of these machines must fully conform to the instructions contained in this manual.

The following maintenance checks must be performed daily:

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 without locking it and start the machine. 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 service 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.

Do not bypass any safety devices in the machine.

WARNING

Operating the machine with severe out-of-balance loads could result in personal injury and serious equipment damage.

W728

Introduction

Model Identification

Information in this manual is applicable to these models:

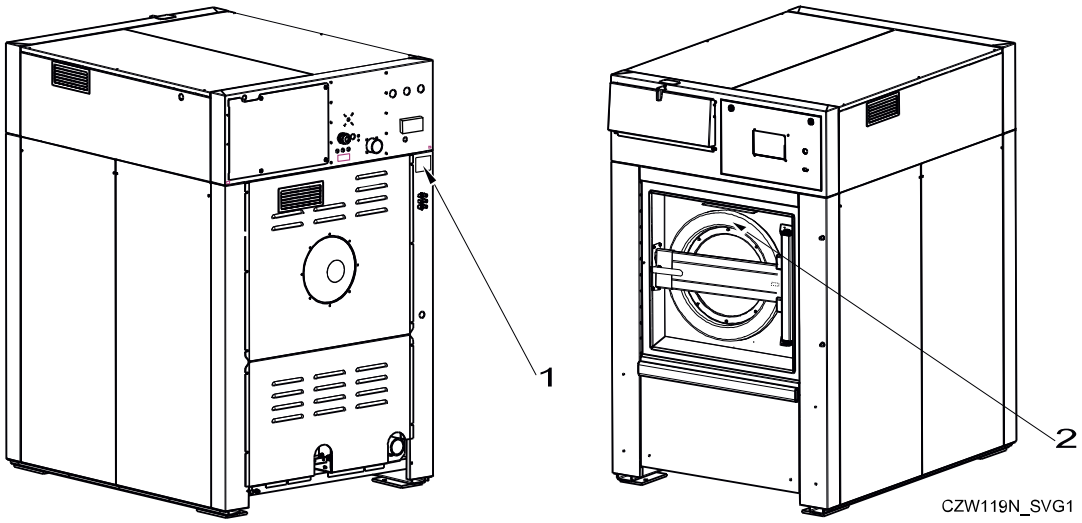
Models			
FS1000_X_CONTROL_PLUS	HYX520F	IYC520R	IYX12XR
FS1200_X_CONTROL_PLUS	IX180_MICRO	IYC800R	IYX335R
FS33_X_CONTROL_PLUS	IX230_MICRO	IYG10XR	IYX400R
FS40_X_CONTROL_PLUS	IX275_MICRO	IYG12XR	IYX520R
FS55_X_CONTROL_PLUS	IXR180W	IYG335R	IYX800R
FS800_X_CONTROL_PLUS	IXR230W	IYG400R	JLA120_ARIES-ELITE
HY125_HC-200	IXR275W	IYG520R	JLA175_ARIES-ELITE
HY125_MICRO	IY1000_ARIES-ELITE	IYG800R	JLA220_ARIES-ELITE
HY335_HC-200	IY1200_ARIES-ELITE	IYH12XR	JLA265_ARIES-ELITE
HY400_HC-200	IY125_ARIES-ELITE	IYH335R	JLA75_ARIES-ELITE
HY520_HC-200	IY125_MICRO	IYH400R	JLA90_ARIES-ELITE
HY90_HC-200	IY180_ARIES-ELITE	IYH520R	LH1000_X_CONTROL_PLUS
HY90_MICRO	IY180_MICRO	IYH800R	LH1250_X_CONTROL_PLUS
HYG335F	IY180_POUNDS_ARIES-ELITE	IYN075R	LH335_X_CONTROL_PLUS
HYG400F	IY230_ARIES-ELITE	IYN090R	LH400_X_CONTROL_PLUS
HYG520F	IY230_MICRO	IYN090W	LH520T
HYH335F	IY275_ARIES-ELITE	IYN125R	LH550_X_CONTROL_PLUS
HYH400F	IY275_MICRO	IYN125W	LH800_X_CONTROL_PLUS
HYH520F	IY335_ARIES-ELITE	IYN180R	LHY335T
HYN090F	IY400_ARIES-ELITE	IYN230R	LYC10XT
HYN090W	IY520_ARIES-ELITE	IYN275R	LYC12XT
HYN125F	IY75_ARIES-ELITE	IYU10XR	LYC335T
HYN125W	IY800_ARIES-ELITE	IYU12XR	LYC400T
HYU335F	IY90_ARIES-ELITE	IYU335R	LYC800T
HYU400F	IY90_MICRO	IYU400R	LYG335T
HYU520F	IYC10XR	IYU520R	LYG400T
HYX335F	IYC12XR	IYU520W	LYH10XT
HYX400F	IYC335R	IYU800R	LYH12XT
	IYC400R	IYX10XR	LYH335T

LYH400T	PYC800T	SY90_MICRO	SYX335D
LYH800T	PYG10XT	SY90_QED-SELECT	SYX400D
LYU10XT	PYG12XT	SYC10XD	SYX520D
LYU12XT	PYG335T	SYC12XD	SYX800D
LYU335T	PYG400T	SYC335D	UX180_MICRO
LYU400T	PYG520T	SYC400D	UX230_MICRO
LYU800T	PYG800T	SYC520D	UX275_MICRO
LYX10XT	PYH10XT	SYC800D	UXR180W
LYX12XT	PYH12XT	SYG10XD	UXR230W
LYX335T	PYH335T	SYG12XD	UXR275W
LYX400T	PYH400T	SYG335D	UY1000_PROFORM
LYX800T	PYH520T	SYG400D	UY1200_PROFORM
MWFS100	PYH800T	SYG520D	UY125_MICRO
MWFS125	PYN090T	SYG800D	UY125_PROFORM
MWFS125_X_CON-TROL_PLUS	PYN125T	SYH10XD	UY180_MICRO
MWFS175	PYN180T	SYH12XD	UY180_POUNDS_PRO-FORM
MWFS225	PYN230T	SYH335D	UY180_PROFORM
MWFS260	PYN275T	SYH400D	UY230_MICRO
MWFS75	PYU10XT	SYH520D	UY230_PROFORM
MWFS75_X_CON-TROL_PLUS	PYU12XT	SYH800D	UY275_MICRO
MWFS80	PYU335T	SYN090D	UY275_PROFORM
MWFS90	PYU400T	SYN090W	UY335_PROFORM
MWFS90_X_CON-TROL_PLUS	PYU520T	SYN125D	UY400_PROFORM
PY125_X_CONTROL_PLUS	PYU800T	SYN125W	UY520_PROFORM
PY180_X_CONTROL_PLUS	PYX10XT	SY1000_QED-SELECT	UY800_PROFORM
PY230_X_CONTROL_PLUS	PYX12XT	SY1200_QED-SELECT	UY90_MICRO
PY275_X_CONTROL_PLUS	PYX335T	SY125_MICRO	UY90_PROFORM
PY90_X_CONTROL_PLUS	PYX400T	SYU10XD	UYC10XI
PYC10XT	PYX520T	SYU12XD	UYC12XI
PYC12XT	PYX800T	SYU335D	UYC335I
PYC335T	SY125_QED-SELECT	SYU400D	UYC400I
PYC400T	SY335_QED-SELECT	SYU520D	UYC520I
PYC520T	SY400_QED-SELECT	SYU800D	UYC800I
	SY520_QED-SELECT	SYX10XD	UYG10XI
	SY800_QED-SELECT	SYX12XD	UYG12XI

UYG335I	UYH800I	UYN275I	UYX10XI
UYG400I	UYN090I	UYN275W	UYX12XI
UYG520I	UYN090W	UYU10XI	UYX335I
UYG800I	UYN125I	UYU12XI	UYX400I
UYH10XI	UYN125W	UYU335I	UYX520I
UYH12XI	UYN180I	UYU400I	UYX800I
UYH335I	UYN180W	UYU400W	
UYH400I	UYN230I	UYU520I	
UYH520I	UYN230W	UYU800I	

Serial Plate Location

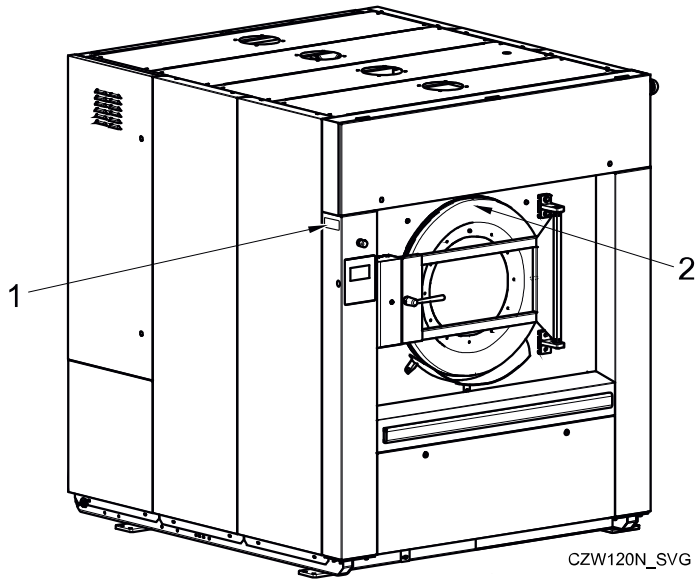
33-55 kg / 75 - 125 lb. / 335 - 520 L Models



1. Serial Plate Location (Back)
2. Serial Plate Location (Inside Door)

Figure 1

80 - 120 kg / 180 - 120 lb. / 800 - 1200 L Models



1. Serial Plate Location (Side)
2. Serial Plate Location (Inside Door)

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

Table 1

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

Table 2

Delivery Inspection

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

Replacement Parts

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

Customer Service

For technical assistance, contact your local distributor or contact:

Alliance Laundry Systems
Shepard Street
P.O. Box 990
Ripon, WI 54971-0990
U.S.A.
www.alliancelaundry.com
Phone: +1 (920) 748-3121 Ripon, Wisconsin

Specifications and Dimensions

General Specifications

Specifications	33 kg / 75 lb. / 335 L Models	40 kg / 90 lb. / 400 L Models	55 kg / 125 lb. / 520 L Models	80 kg / 180 lb. / 800 L Models	100 kg / 230 lb. / 1000 L Models	120 kg / 275 lb. / 1200 L Models
Overall Dimensions						
Overall width, in. [mm]	47.04 [1195]	47.04 [1195]	47.04 [1195]	58.86 [1495]	70.47 [1790]	73.03 [1855]
Overall height, in. [mm]	75 [1905]	75 [1905]	75 [1905]	78.15 [1985]	81.10 [2060]	82.09 [2085]
Overall depth, in. [mm]	52.4 [1330]	56.3 [1430]	63.39 [1610]	76.38 [1940]	78.94 [2005]	82.09 [2085]
Weight and Shipping Information						
Net weight, lbs. [kg]	2623 [1190]	3439 [1560]	3594 [1630]	5820 [2640]	6989 [3170]	7672 [3480]
Net weight with forward tilting, lbs. [kg]	N/A	4079 [1850]	4255 [1930]	6173 [2800]	7408 [3360]	8047 [3650]
Shipping weight, lbs. [kg]	2888 [1310]	3748 [1700]	3902 [1770]	6239 [2830]	7518 [3410]	8179 [3710]
Shipping weight with forward tilting, lbs. [kg]	N/A	4277 [1940]	4476 [2030]	6614 [3000]	7981 [3620]	8598 [3900]
Shipping dimensions (WxDxH), in. [mm]	56.3 x 58.1 x 82.9 [1430 x 1475 x 2105]	56.3 x 61.8 x 82.9 [1430 x 1570 x 2105]	56.3 x 68.9 x 82.9 [1430 x 1750 x 2105]	66.53 x 76.77 x 86.61 [1690 x 1950 x 2200]	78.74 x 85.43 x 92.32 [2000 x 2170 x 2345]	78.74 x 85.43 x 92.32 [2000 x 2170 x 2345]
Shipping dimensions with forward tilting(WxDxH), in. [mm]	N/A	56.69 x 69.29 x 92.52 [1440 x 1760 x 2350]	56.69 x 69.29 x 92.52 [1440 x 1760 x 2350]	70.01 x 84.65 x 91.54 [1780 x 2150 x 2325]	81.89 x 92.52 x 95.47 [2080 x 2350 x 2425]	85.83 x 92.52 x 95.47 [2180 x 2350 x 2425]
Wash Cylinder Information						

Table continues...

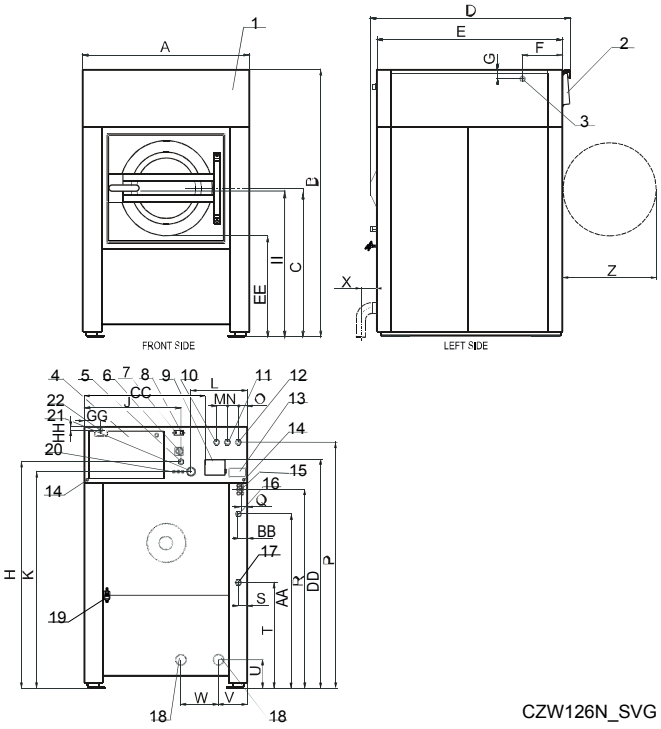
Specifications	33 kg / 75 lb. / 335 L Models	40 kg / 90 lb. / 400 L Models	55 kg / 125 lb. / 520 L Models	80 kg / 180 lb. / 800 L Models	100 kg / 230 lb. / 1000 L Models	120 kg / 275 lb. / 1200 L Models
Cylinder diameter in. [mm]	36 [914]	36 [914]	36 [914]	43.70 [1110]	47.24 [1200]	51.18 [1300]
Cylinder depth in. [mm]	20 [510]	24 [610]	31.1 [790]	33 [838]	33.85 [860]	34.25 [870]
Cylinder volume gal [dm^3]	88 [335]	106 [400]	137 [518]	213 [807]	257 [972]	305 [1154]
Door Opening Information						
Door opening size, in. [mm]	21.3 [540]	21.3 [540]	21.3 [540]	20.86 [530]	20.86 [530]	25.59 [650]
Height of door bottom above floor, in. [mm]	28.74 [730]	28.74 [730]	28.74 [730]	33.15 [842]	33.74 [857]	33.15 [842]
Height of door bottom above floor with forward tilting, in. [mm]	N/A	31.89 [810]	31.89 [810]	38.58 [980]	39.17 [995]	38.58 [980]
Drive Train Information						
Number of motors in drive train	1	1	1	1	1	1
Motor Size, hp [kW]	5.36 [4]	10.06 [7.5]	10.06 [7.5]	14.75 [11]	20.12 [15]	24.81 [18.5]
Cylinder Speeds						
Wash, RPM	38	38	38	36	33	32
Extraction, RPM	830	830	830	750	720	695
Heating						
Hot water, °F [°C]	90 [194]	90 [194]	90 [194]	90 [194]	90 [194]	90 [194]
Noise Emissions						
Wash sequence, dB	55	55	55	51	52	52

Table continues...

Specifications	33 kg / 75 lb. / 335 L Models	40 kg / 90 lb. / 400 L Models	55 kg / 125 lb. / 520 L Models	80 kg / 180 lb. / 800 L Models	100 kg / 230 lb. / 1000 L Models	120 kg / 275 lb. / 1200 L Models
Extract sequence, dB	75	75	77	71	72	72
Floor Load Data						
Maximum static load on floor, lbs. [kN]	3239.50 [14.41]	4082.53 [18.16]	4399.51 [19.57]	6946.60 [30.9]	8295.45 [36.9]	9082.28 [40.4]
Maximum static load on floor with forward tilting, lbs. [kN]	N/A	4361.29 [19.4]	4689.52 [20.86]	7733.43 [34.4]	9082.28 [40.4]	9869.11 [43.9]
Maximum dynamic load on floor, lbs. [kN]	2855.07 ± 615.98 [12.7 ± 2.74]	3614.93 ± 660.94 [16.08 ± 2.94]	3835.24 ± 703.65 [17.06 ± 3.13]	6114.80 ± 1011.64 [27.2 ± 4.5]	7351.25 ± 1236.45 [32.7 ± 5.5]	8093.12 ± 1573.66 [36.0 ± 7.0]
Maximum dynamic load on floor with forward tilting, lbs. [kN]	N/A	3846.48 ± 660.94 [17.11 ± 2.94]	4075.79 ± 703.65 [18.13 ± 3.13]	6879.15 ± 1011.64 [30.6 ± 4.5]	8115.60 ± 1236.45 [36.1 ± 5.5]	8879.95 ± 1573.66 [39.5 ± 7.0]
Frequency of dynamic load, Hz	14	14	14	12.5	12.1	11.7
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

33 - 55 kg / 75 - 125 lb. / 335 - 520 L Models



1. Control panel
2. Soap dispenser
3. Soap dispenser air relieve
4. Frequency inverter cover
5. Entry main power cable
6. Main switch
7. USB port (on request)
8. PC programming connection
9. Electrical signals liquid soap
10. Hard cold water inlet
11. Hot water inlet
12. Soft cold water inlet
13. Serial plate
14. Equipotential bounding terminal
15. Hose connection soap supply
16. Compressed air inlet (if equipped)
17. Steam inlet
18. Drain outlet
19. Drain valve for wash bath sample (on request)
20. Lubrication points
21. Tub ventilation, 2.4 in. [60 mm]
22. Entry soap supply cable

Figure 3

Specification	33 kg / 75 lb. / 335 L Models, in. [mm]	40 kg / 90 lb. / 400 L Models, in. [mm]	55 kg / 125 lb. / 520 L Models, in. [mm]
A	47.04 [1195]	47.04 [1195]	47.04 [1195]
B*	75 [1905]	75 [1905]	75 [1905]
C*	41.54 [1055]	41.54 [1055]	41.54 [1055]
D	52.4 [1330]	56.3 [1430]	63.39 [1610]
E	48.11 [1222]	52.05 [1322]	59.13 [1502]
F	11.8 [300]	11.8 [300]	11.8 [300]
G	1.97 [50]	1.97 [50]	1.97 [50]
H*	63.66 [1617]	63.66 [1617]	63.66 [1617]
J	28.74 [730]	28.74 [730]	28.74 [730]
K*	61.69 [1567]	61.69 [1567]	61.69 [1567]
L	16.61 [422]	16.61 [422]	16.61 [422]
M	3.15 [80]	3.15 [80]	3.15 [80]
N	3.15 [80]	3.15 [80]	3.15 [80]
O	2.75 [70]	2.75 [70]	2.75 [70]
P*	70.16 [1782]	70.16 [1782]	70.16 [1782]
P**	65.82 [1672]	65.82 [1672]	65.82 [1672]
Q	2.36 [60]	2.36 [60]	2.36 [60]
R*	50.59 [1285]	50.59 [1285]	50.59 [1285]
S	2.56 [65]	2.56 [65]	2.56 [65]
T*	30.24 [768]	30.24 [768]	30.24 [768]
U*	8.07 [205]	8.07 [205]	8.07 [205]
V	8.39 [213]	8.39 [213]	8.39 [213]
W	16.54 [420]	10.83 [275]	10.83 [275]
X	6.89 [175]	6.89 [175]	6.89 [175]
Z	27.56 [700]	27.56 [700]	27.56 [700]
AA* **	53.58 [1361]	53.58 [1361]	53.58 [1361]

Table 3 *continues...*

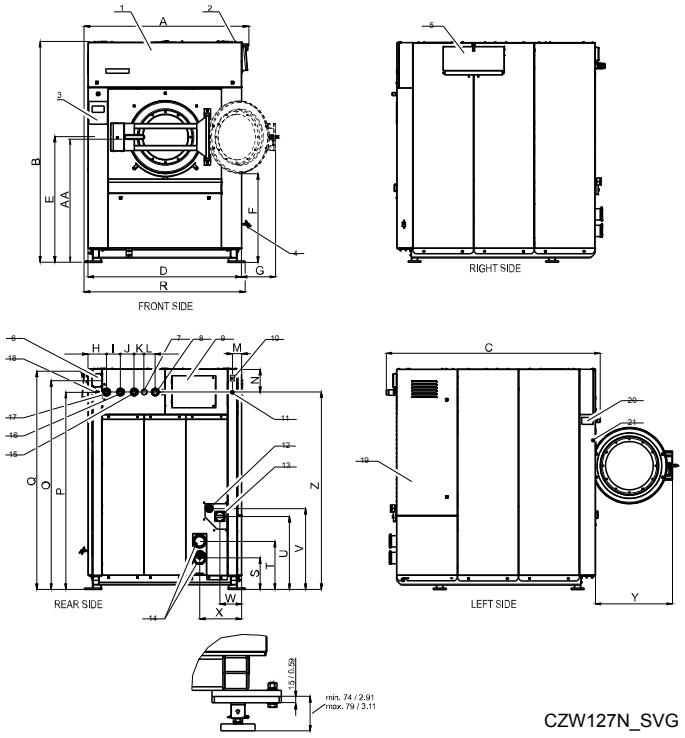
Specification	33 kg / 75 lb. / 335 L Models, in. [mm]	40 kg / 90 lb. / 400 L Models, in. [mm]	55 kg / 125 lb. / 520 L Models, in. [mm]
BB**	4.56 [116]	4.56 [116]	4.56 [116]
CC	38.58 [980]	38.58 [980]	38.58 [980]
DD*	62.99 [1600]	62.99 [1600]	62.99 [1600]
EE	28.74 [730]	28.74 [730]	28.74 [730]
GG	4.33 [110]	4.33 [110]	4.33 [110]
HH	0.98 [25]	0.98 [25]	0.98 [25]
II	40.98 [1041]	40.98 [1041]	40.98 [1041]

* The dimensions of the machine with weighing system (on request; models outside of North America) are higher. The height difference is in the range of 2.32 - 2.52 in. [59 - 64 mm], based on the adjustment of the load sensor.

** Washers with air operated water valves.

Table 3

80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models



1. Box of electrical components
2. Soap dispenser ventilation
3. Control panel
4. Drain valve for wash bath sample (on request)
5. Soap dispenser
6. Electrical signals liquid soap
7. Steam inlet (refer to row Z)
8. Tub ventilation (refer to row Z)
9. Cover for pneumatic components
10. PC programming connection RS485 (on request)
11. Compressed air inlet
12. Entry main power cable
13. Main switch
14. Drain outlet
15. Hot water inlet (refer to row Z)
16. Soft cold water inlet (refer to row Z)
17. Hard cold water inlet (refer to row Z)
18. Hose connection soap supply (refer to row P)
19. Electric switchboard cover
20. Serial plate
21. USB port

Figure 4

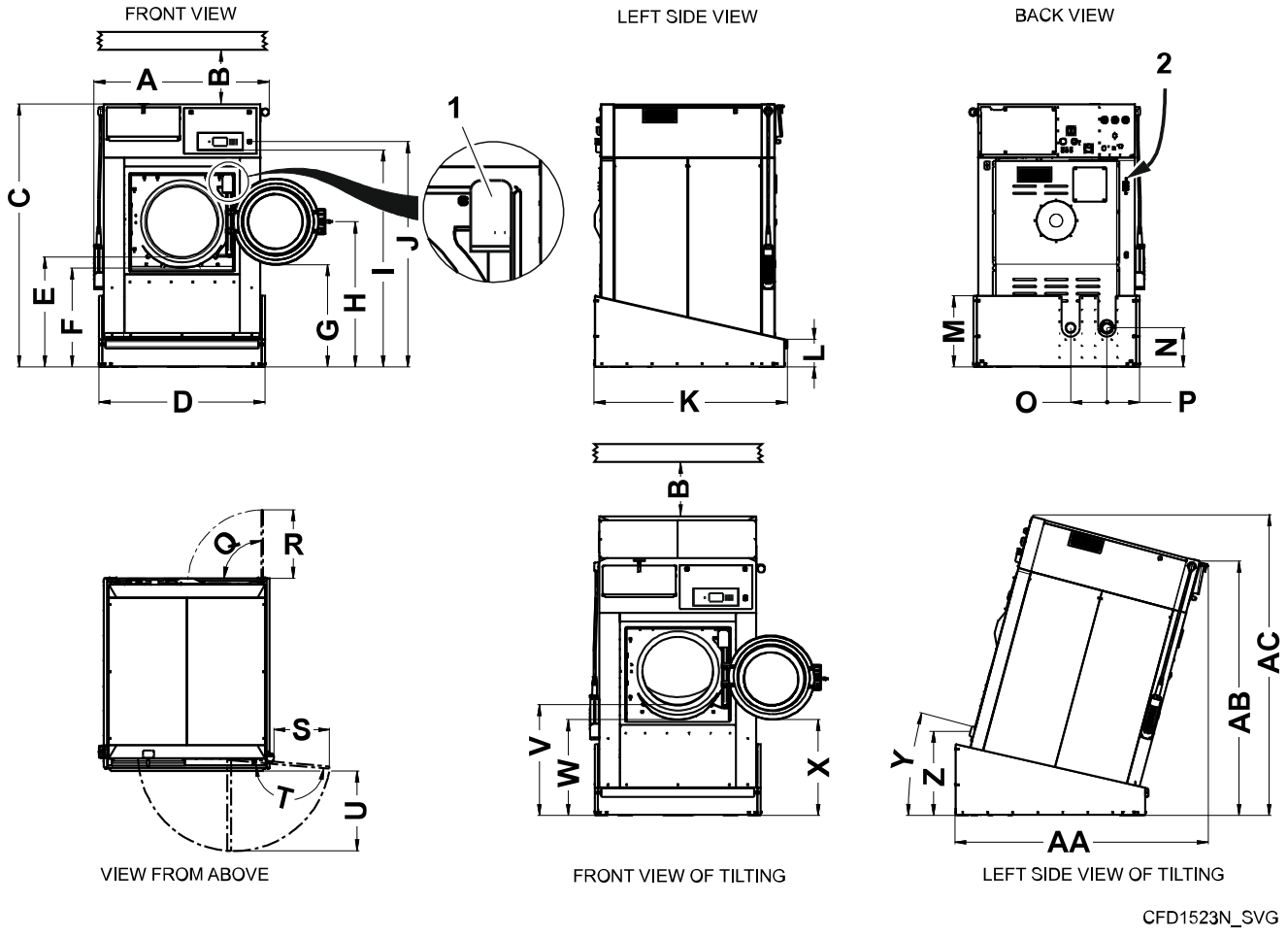
Specification	80 kg / 180 lb. / 800 L Models, in. [mm]	100 kg / 230 lb. / 1000 L Models, in. [mm]	120 kg / 275 lb. / 1200 L Models, in. [mm]
A	58.86 [1495]	70.47 [1790]	73.03 [1855]
B*	78.15 [1985]	81.10 [2060]	82.09 [2085]
C	76.38 [1940]	78.94 [2005]	82.09 [2085]
D	54.72 [1390]	66.46 [1688]	69.05 [1754]
E*	43.50 [1105]	46.26 [1175]	47.24 [1200]
F*	33.15 [842]	33.74 [857]	33.15 [842]
G	11.93 [303]	9.13 [232]	11.61 [295]
H	6.61 [168]	9.13 [232]	9.72 [247]
I	4.92 [125]	4.92 [125]	4.92 [125]
J	4.92 [125]	4.92 [125]	4.92 [125]
K	3.54 [90]	4.88 [124]	4.72 [120]
L	3.93 [100]	4.33 [110]	5.83 [148]
M	3.27 [83]	3.27 [83]	3.27 [83]
N	8.26 [210]	8.26 [210]	8.26 [210]
O*	73.70 [1872]	59.76 [1518]	60.94 [1548]
P*	69.25 [1759]	55.31 [1405]	56.50 [1435]
Q*	76.97 [1955]	76.77 [1950]	77.95 [1980]
R	57.48 [1460]	69.05 [1754]	71.65 [1820]
S*	10 [254]	10.55 [268]	9.57 [243]
T*	16.10 [409]	16.50 [419]	15.51 [394]
U*	24.96 [634]	27.40 [696]	28.43 [722]
V*	27.83 [707]	30.24 [768]	31.30 [795]
W	7.76 [197]	7.76 [197]	7.76 [197]
X	14.96 [380]	20.75 [527]	22.13 [562]
Y	26.18 [665]	25.59 [650]	29.80 [757]
Z	69.25 [1759]	72.28 [1836]	73.46 [1866]

Table 4 *continues...*

Specification	80 kg / 180 lb. / 800 L Models, in. [mm]	100 kg / 230 lb. / 1000 L Models, in. [mm]	120 kg / 275 lb. / 1200 L Models, in. [mm]
AA (PY models)	43.07 [1094]	45.82 [1164]	46.81 [1189]
AA (all other models)	42.87 [1089]	45.63 [1159]	46.61 [1184]
* The dimensions of the machine with weighing system (on request; models outside of North America) are higher. The height difference is in the range of 2.91 - 3.11 in. [74 - 79 mm], based on the adjustment of the load sensor.			

Table 4

40 kg / 90 lb. / 400 L Models with forward tilting (on request)



1. Door securing latch
2. Compressed air inlet

Figure 5

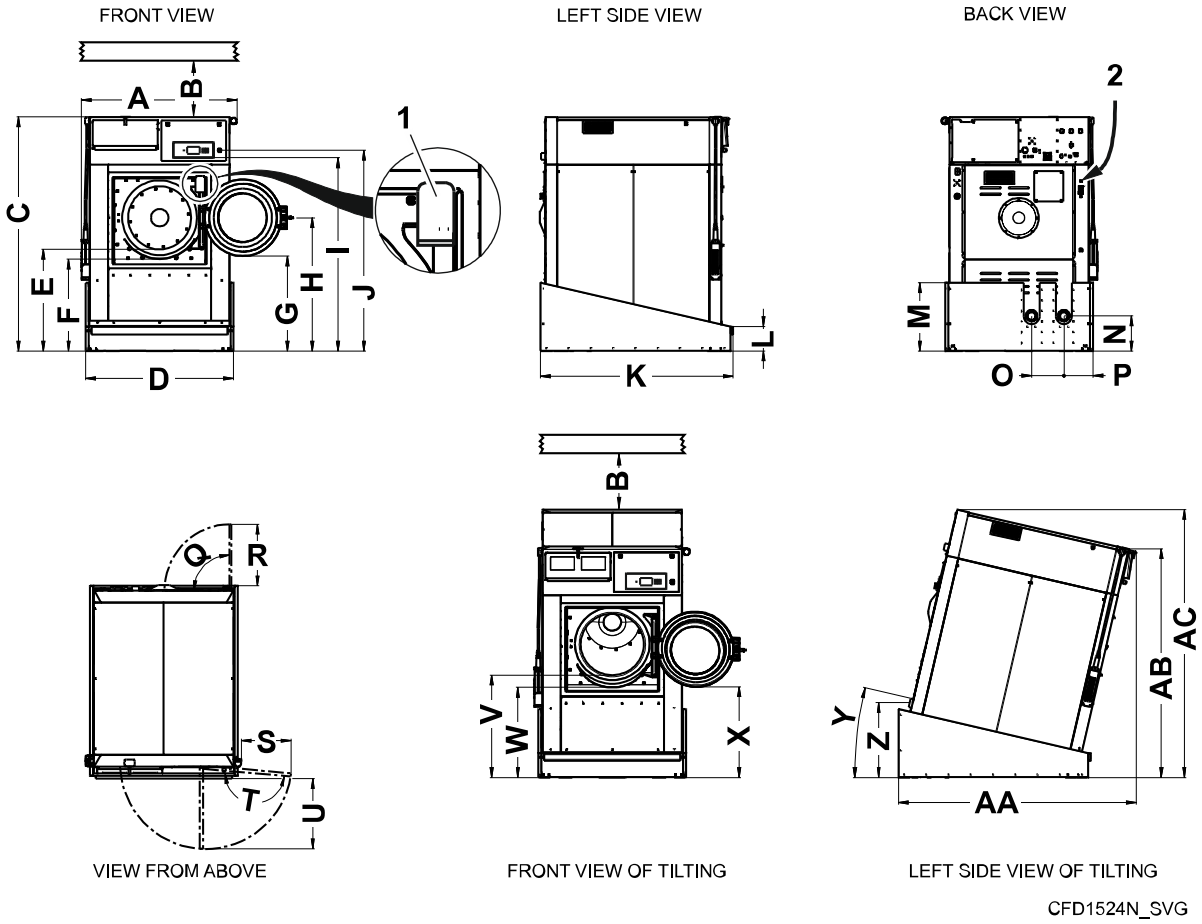
Specification	40 kg / 90 lb. / 400 L Models, in. [mm]
A	52.36 [1330]
B	27.56 [700]
C	78.74 [2000]
D	49.61 [1260]
E - without load	34.17 [868]
F	30.91 [785]
G	31.89 [810]
H	44.13 [1121]
I	64.84 [1647]
J	70.67 [1795]
K	57.87 [1470]
L	8.19 [208]
M	21.30 [541]
N	11.77 [299]
O	10.83 [275]
P	9.76 [248]
Q	90°
R	20.43 [519]
S	16.69 [424]
T	175°
U	23.86 [606]
V	34.45 [875]
W	29.88 [759]
X	30.00 [762]
Y	15°
Z	25.16 [639]
AA	75.67 [1922]
AB	76.02 [1931]

Table 5 *continues...*

Specification	40 kg / 90 lb. / 400 L Models, in. [mm]
AC	89.37 [2270]

Table 5

55 kg / 125 lb. / 520 L Models with forward tilting (on request)



1. Door securing latch
2. Compressed air inlet

Figure 6

Specification	55 kg / 125 lb. / 520 L Models, in. [mm]
A	52.36 [1330]
B	27.56 [700]
C	78.74 [2000]
D	49.61 [1260]

Table 6 *continues...*

Specification	55 kg / 125 lb. / 520 L Models, in. [mm]
E - without load	34.17 [868]
F	30.91 [785]
G	31.89 [810]
H	44.13 [1121]
I	64.84 [1647]
J	70.67 [1795]
K	64.76 [1645]
L	8.19 [208]
M	22.91 [582]
N	11.77 [299]
O	10.83 [275]
P	9.76 [248]
Q	90°
R	20.71 [526]
S	16.69 [424]
T	175°
U	23.54 [598]
V	34.33 [872]
W	30.16 [766]
X	30.39 [772]
Y	13°
Z	25.04 [636]
AA	79.88 [2029]
AB	76.69 [1948]
AC	89.92 [2284]

Table 6

80 kg / 180 lb. / 800 L Models with forward tilting (on request); Outside of North America through October 31, 2012; North America Models through December 31, 2015

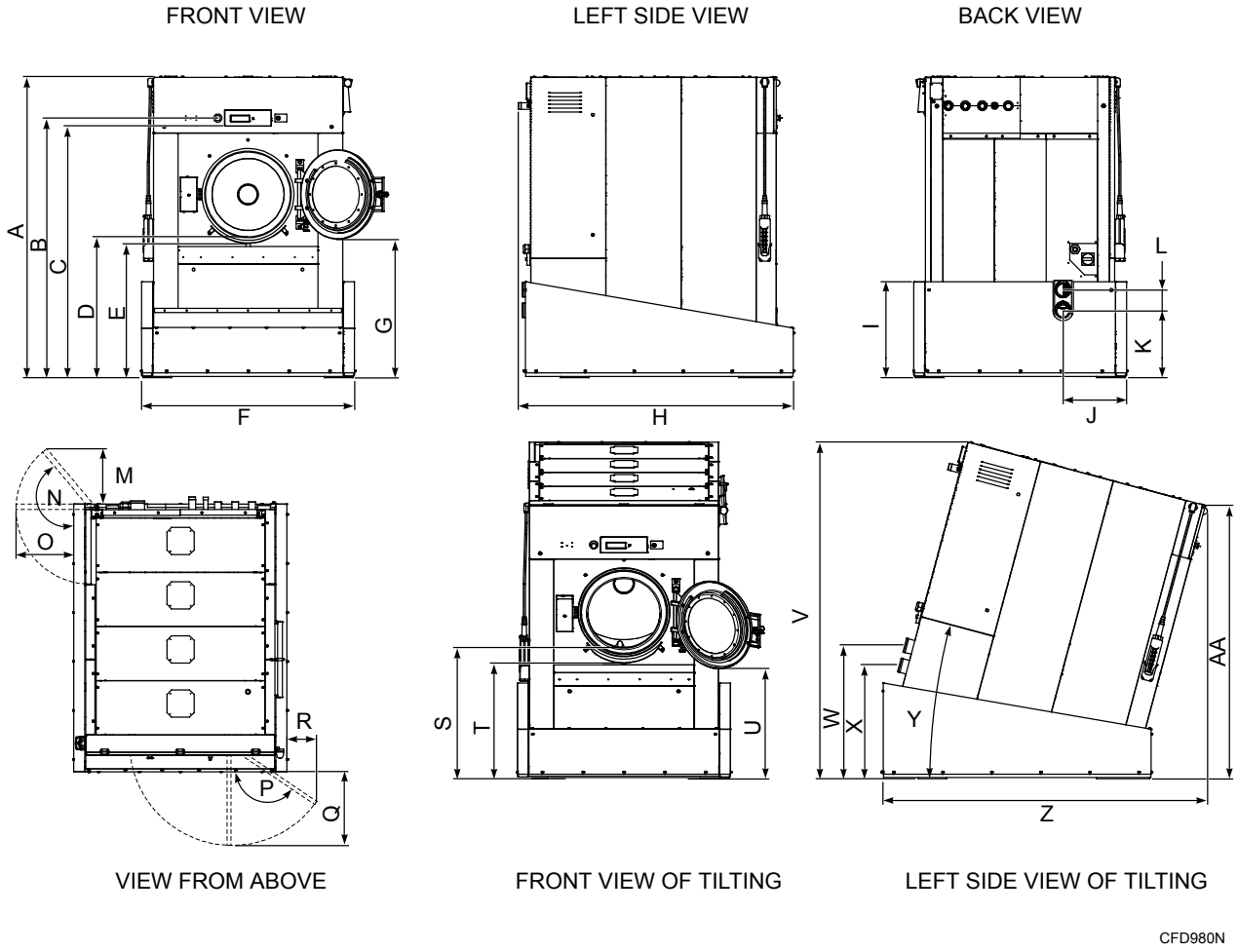


Figure 7

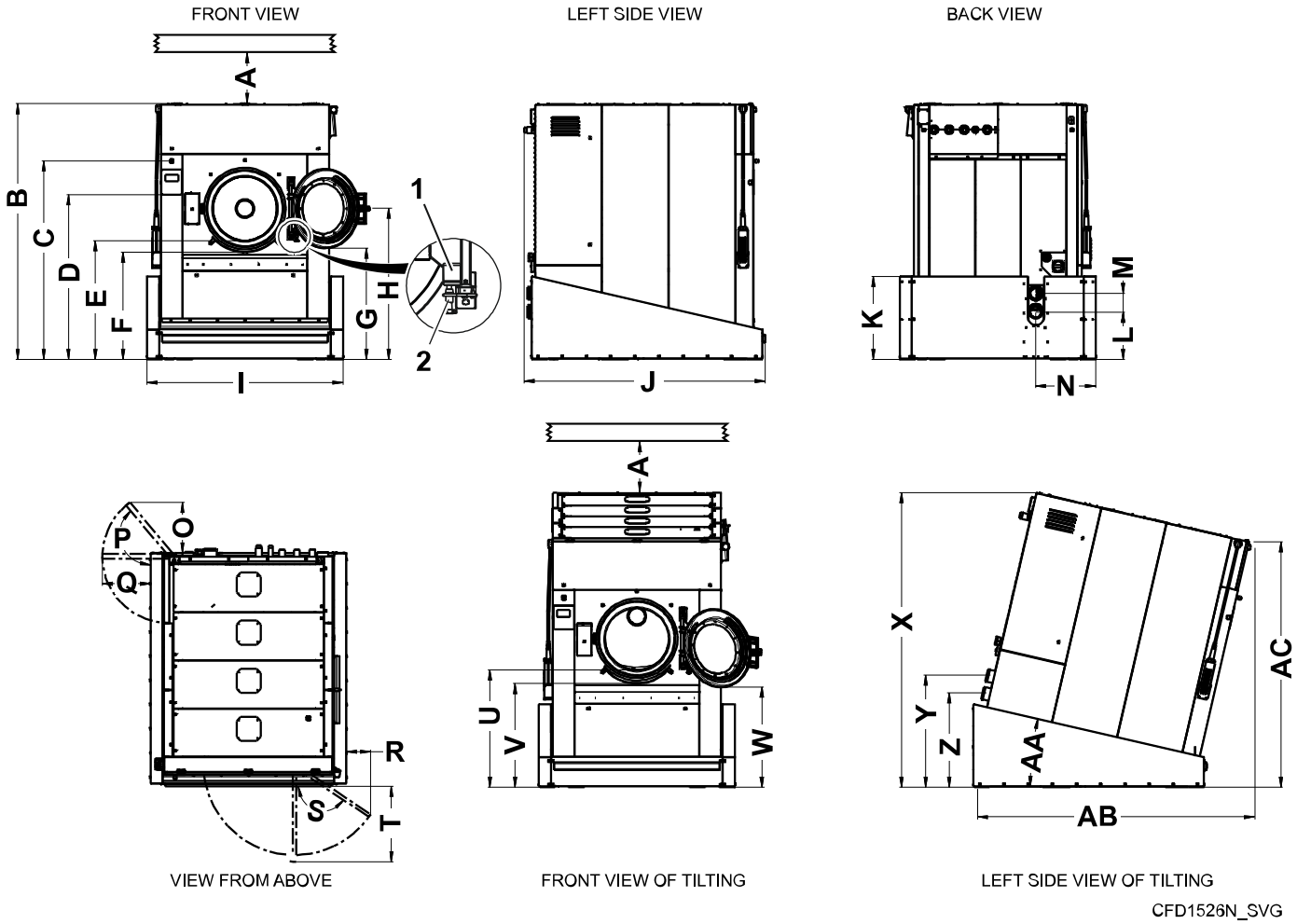
Specification	80 kg / 180 lb. / 800 L Models, in. [mm]
A	87.20 [2215]
B	75.12 [1908]
C	72.83 [1850]
D	40.83 [1037]
E	38.90 [988]
F	61.61 [1565]
G	40.12 [1019]

Table 7 *continues...*

Specification	80 kg / 180 lb. / 800 L Models, in. [mm]
H	79.53 [2020]
I	27.76 [705]
J	18.43 [468]
K	19.33 [491]
L	6.10 [155]
M	16.02 [407]
N	140°
O	16.69 [424]
P	146°
Q	21.30 [541]
R	8.62 [219]
S	38.03 [966]
T	33.50 [851]
U	31.97 [812]
V	97.48 [2476]
W	38.70 [983]
X	32.95 [837]
Y	15°
Z	93.70 [2380]
AA	79.09 [2009]

Table 7

80 kg / 180 lb. / 800 L Models with forward tilting (on request); Outside of North America starting November 1, 2012; North America Models starting January 1, 2016



1. Door securing finger backstop
2. Finger complete

Figure 8

Specification	80 kg / 180 lb. / 800 L Models, in. [mm]
A	27.56 [700]
B	83.46 [2120]
C	64.57 [1640]
D	53.78 [1366]
E - without load	40.55 [1030]
F	36.81 [935]

Table 8 *continues...*

Specification	80 kg / 180 lb. / 800 L Models, in. [mm]
G	38.58 [980]
H	Models starting with F, L, M and P: 48.50 [1232] All other models: 48.31 [1227]
I	63.78 [1620]
J	78.54 [1995]
K	27.09 [688]
L	15.39 [391]
M	6.10 [155]
N	19.53 [496]
O	16.50 [419]
P	140°
Q	15.59 [396]
R	7.87 [200]
S	146°
T	22.36 [568]
U	40.59 [1003]
V	35.04 [890]
W	33.78 [858]
X	95.83 [2434]
Y	36.42 [925]
Z	30.63 [778]
AA	13°
AB	90.24 [2292]
AC	79.88 [2029]

Table 8

100 kg / 230 lb. / 1000 L Models with forward tilting (on request); Outside of North America through November 30, 2012; North America Models through December 31, 2015

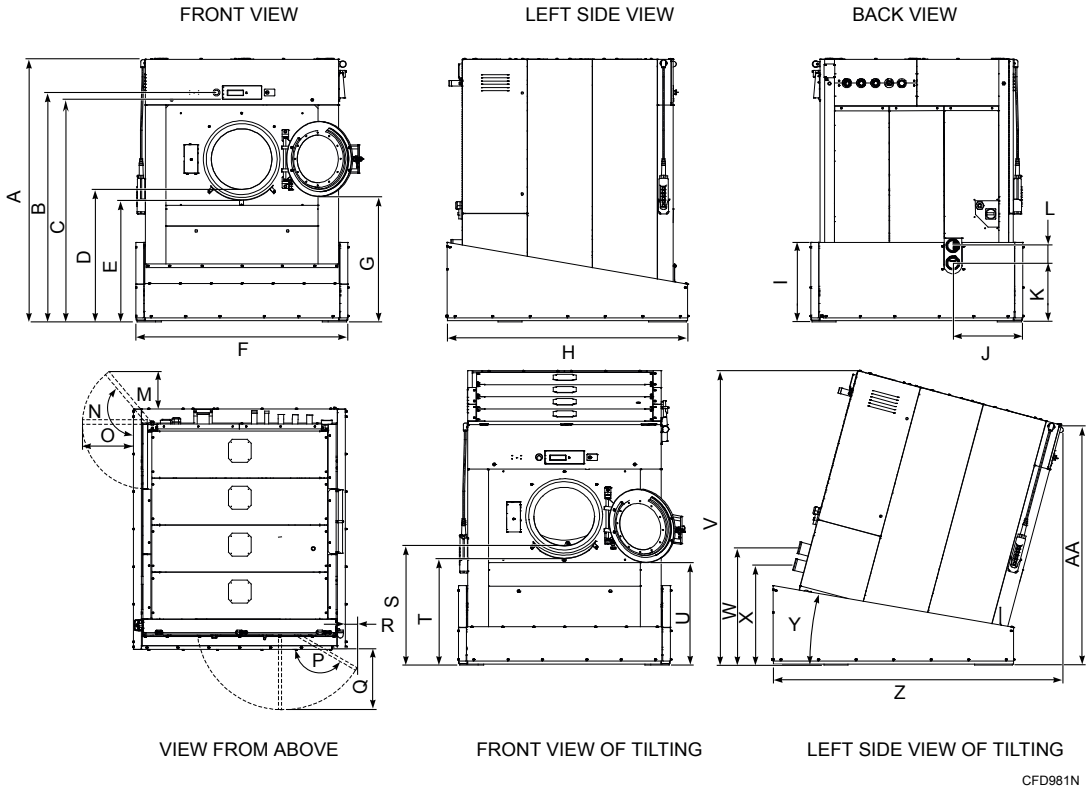


Figure 9

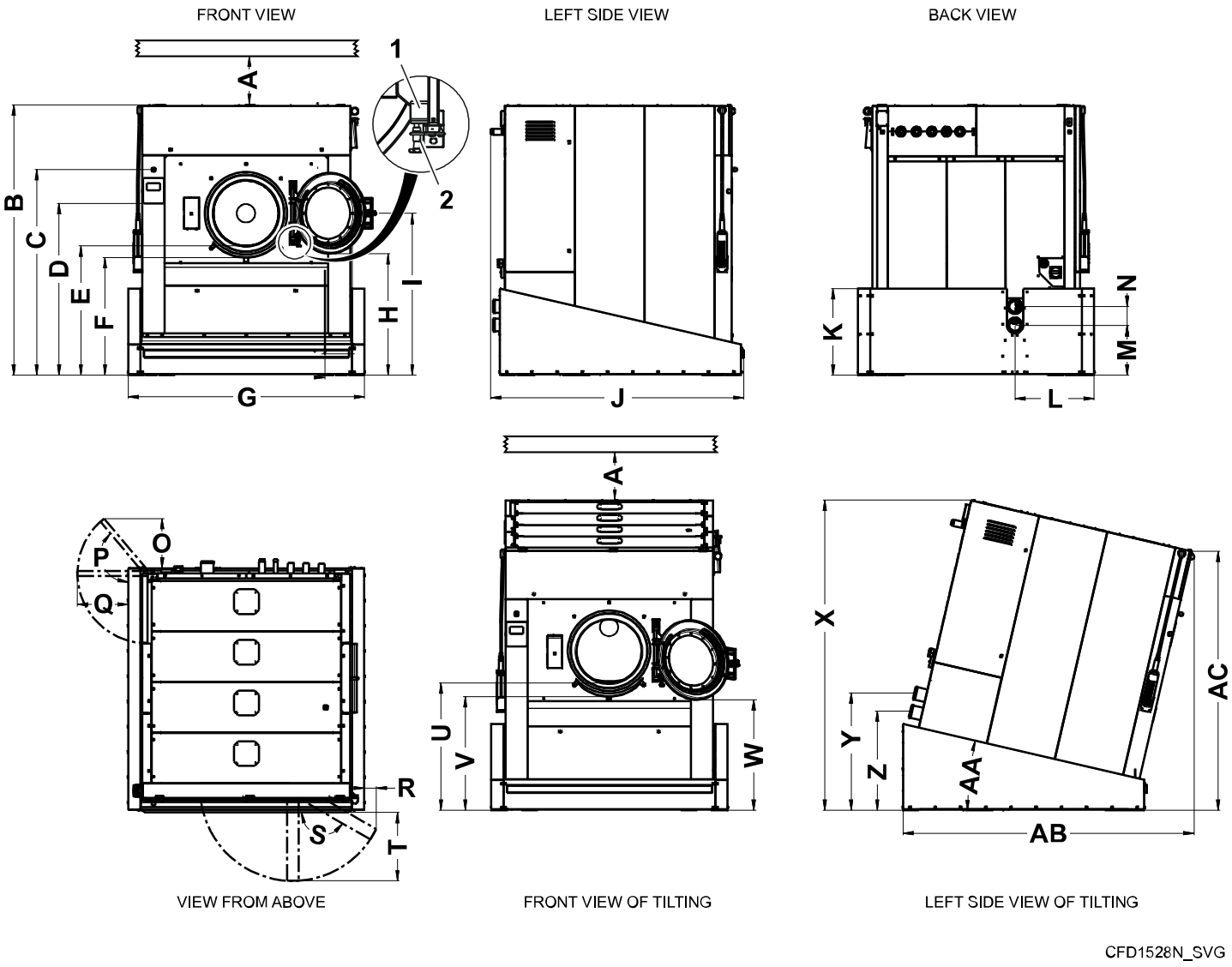
Specification	100 kg / 230 lb. / 1000 L Models, in. [mm]
A	90.55 [2300]
B	78.9 [2004]
C	76.61 [1946]
D	45.59 [1158]
E	41.81 [1062]
F	73.03 [1855]
G	43.11 [1095]
H	82.68 [2100]
I	27.36 [695]
J	24.02 [610]

Table 9 *continues...*

Specification	100 kg / 230 lb. / 1000 L Models, in. [mm]
K	20.12 [511]
L	6.10 [155]
M	12.83 [326]
N	140°
O	17.52 [445]
P	150°
Q	20.75 [527]
R	4.06 [103]
S	41.14 [1045]
T	36.69 [932]
U	35.43 [900]
V	101.38 [2575]
W	40.43 [1027]
X	34.69 [881]
Y	15°
Z	99.76 [2534]
AA	82.60 [2098]

Table 9

100 kg / 230 lb. / 1000 L Models with forward tilting (on request); Outside of North America starting December 1, 2012; North America Models starting January 1, 2016



1. Door securing finger backstop
2. Finger complete

Figure 10

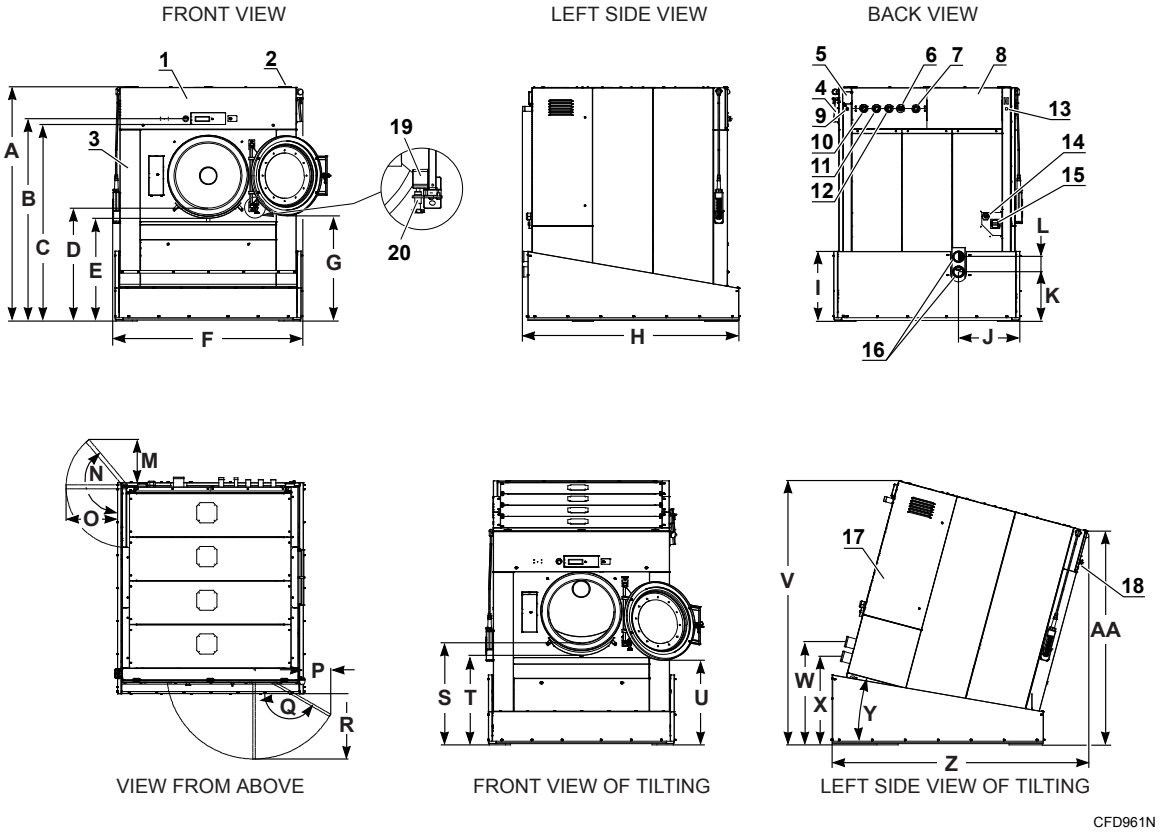
Specification	100 kg / 230 lb. / 1000 L Models, in. [mm]
A	27.56 [700]
B	86.42 [2195]
C	65.67 [1668]
D	54.88 [1394]

Table 10 *continues...*

Specification	100 kg / 230 lb. / 1000 L Models, in. [mm]
E - without load	41.85 [1063]
F	38.15 [969]
G	75.59 [1920]
H	39.17 [997]
I	Models starting with F, L, M, and P: 51.26 [1302] All other models: 51.06 [1297]
J	81.10 [2060]
K	27.60 [701]
L	25.35 [644]
M	15.83 [402]
N	6.10 [155]
O	15.87 [403]
P	140°
Q	16.22 [412]
R	3.82 [97]
S	150°
T	21.81 [554]
U	40.55 [1030]
V	36.61 [930]
W	35.04 [890]
X	99.13 [2518]
Y	37.48 [952]
Z	31.69 [805]
AA	13°
AB	93.11 [2365]
AC	82.76 [2102]

Table 10

120 kg / 275 lb. / 1200 L Models with forward tilting (on request); Outside of North America through November 30, 2012; North America Models through December 31, 2015



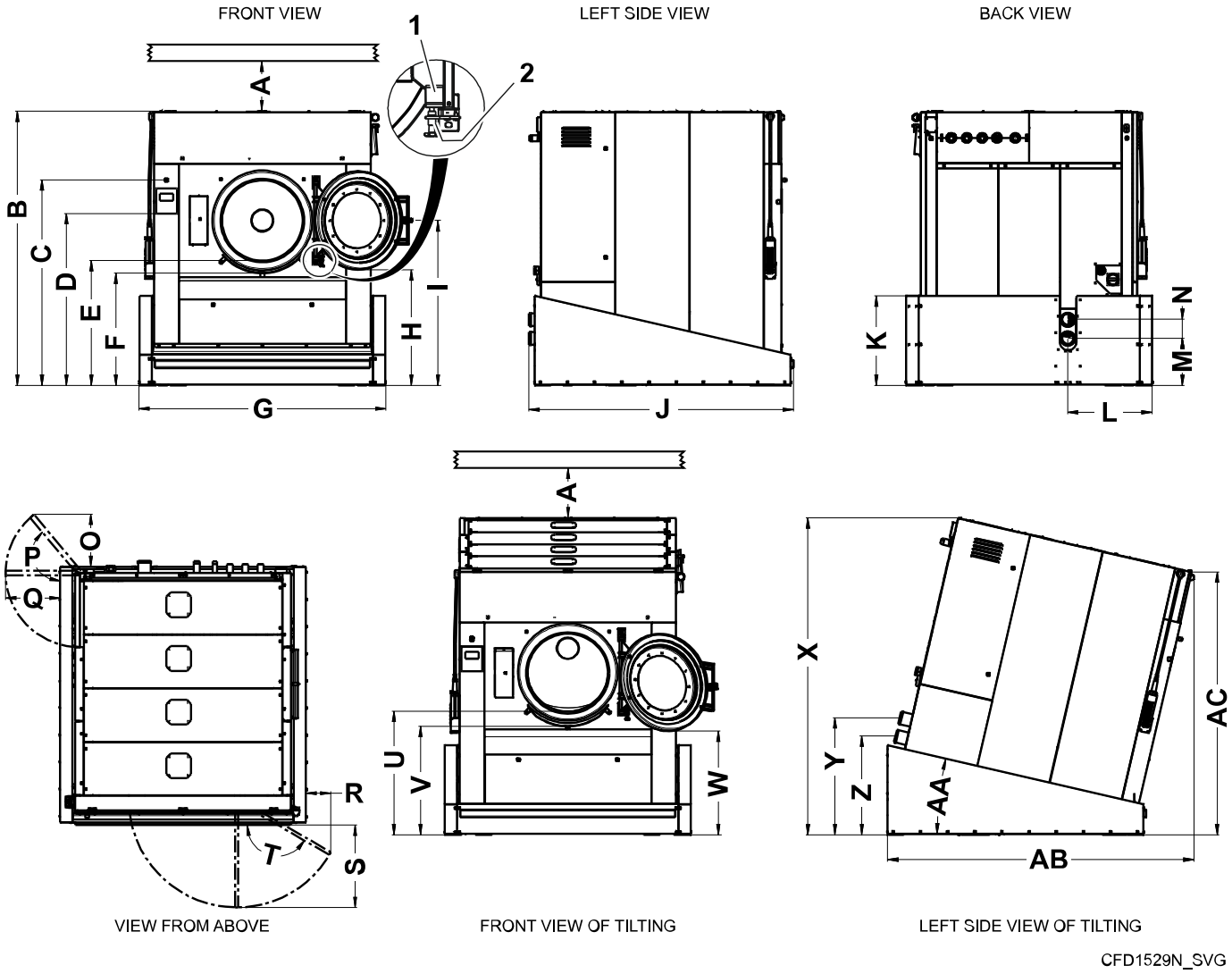
1. Box of electrical components
2. Soap dispenser ventilation
3. Control panel
4. Soap dispenser
5. Electrical signals liquid soap
6. Steam inlet
7. Tub ventilation
8. Cover for pneumatic components
9. Hose connection soap supply
10. Hard cold water inlet
11. Soft cold water inlet
12. Hot water inlet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

Figure 11

Specification	120 kg / 275 lb. / 1200 L Models, in. [mm]
A	91.93 [2335]
B	79.33 [2015]
C	77.05 [1957]
D	45.20 [1149]
E	41.26 [1048]
F	74.61 [1895]
G	42.60 [1082]
H	84.84 [2155]
I	27.36 [695]
J	24.02 [610]
K	19.37 [492]
L	6.10 [155]
M	16.89 [429]
N	140°
O	20.12 [511]
P	10.67 [271]
Q	150°
R	25.63 [651]
S	40.55 [1030]
T	36.06 [916]
U	34.17 [868]
V	103.46 [2628]
W	40.47 [1028]
X	34.72 [882]
Y	15°
Z	100.51 [2553]
AA	83.62 [2124]

Table 11

120 kg / 275 lb. / 1200 L Models with forward tilting (on request); Outside of North America starting December 1, 2012; North America Models starting January 1, 2016



1. Door securing finger backstop
2. Finger complete

Figure 12

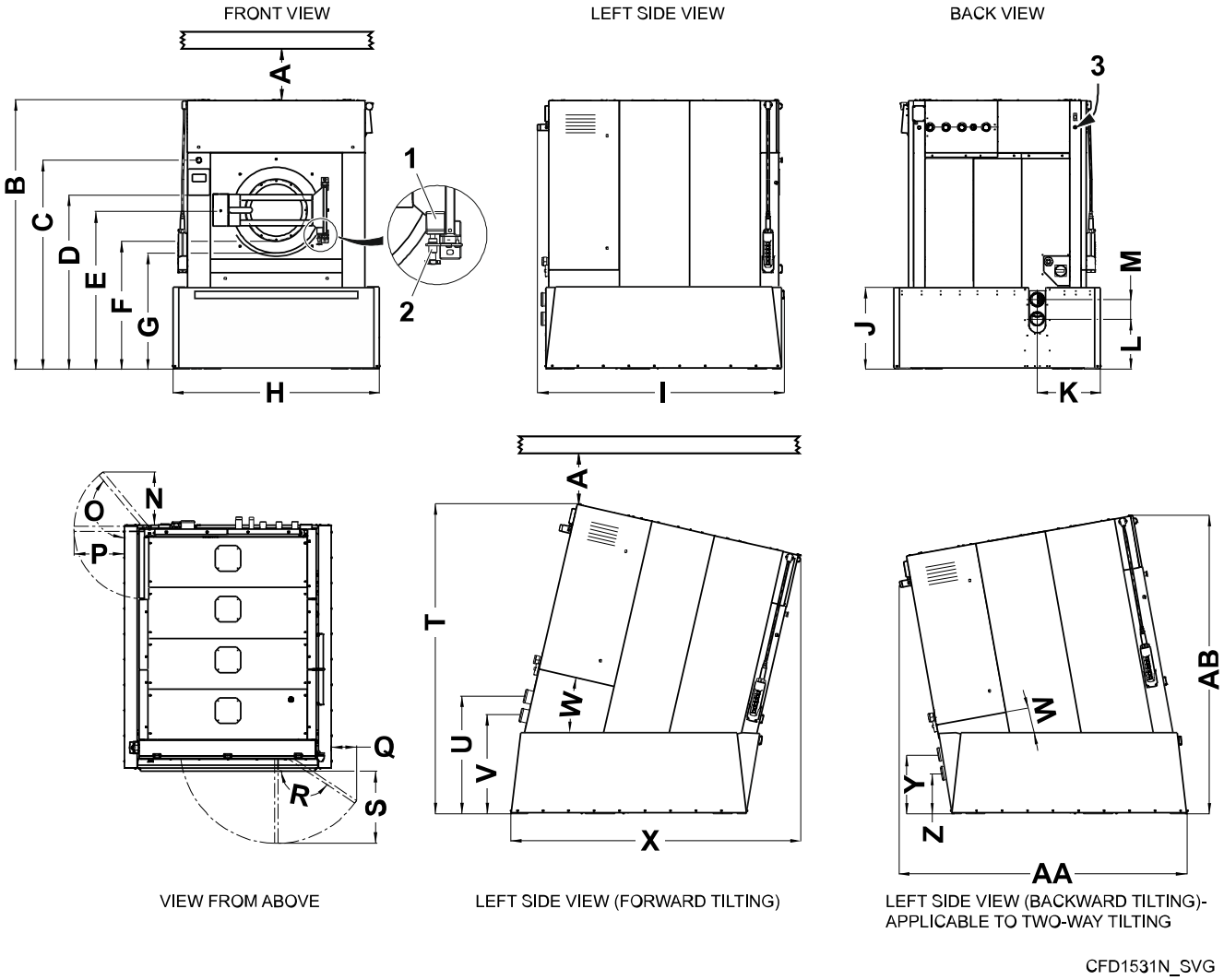
Specification	120 kg / 275 lb. / 1200 L Models, in. [mm]
A	27.56 [700]
B	87.60 [2225]
C	65.51 [1664]
D	57.72 [1390]

Table 12 *continues...*

Specification	120 kg / 275 lb. / 1200 L Models, in. [mm]
E - without load	41.26 [1048]
F	37.13 [943]
G	78.74 [2000]
H	38.58 [980]
I	Models starting with F, L, M, and P: 52.24 [1327] All other models: 52.05 [1322]
J	84.45 [2145]
K	28.58 [726]
L	26.85 [682]
M	15.00 [381]
N	6.10 [155]
O	16.57 [421]
P	140°
Q	17.36 [441]
R	7.95 [202]
S	26.22 [666]
T	150°
U	40.00 [1016]
V	35.83 [910]
W	34.65 [880]
X	101.02 [2566]
Y	37.32 [948]
Z	31.54 [801]
AA	13°
AB	97.60 [2479]
AC	83.78 [2128]

Table 12

80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models with two-way tilting (forward and backward); Outside of North America



1. Door securing: finger backstop
2. Finger complete
3. Compressed air inlet

Figure 13

Specification	80 kg / 180 lb. / 800 L Models, in. [mm]	100 kg / 230 lb. / 1000 L Models, in. [mm]	120 kg / 275 lb. / 1200 L Models, in. [mm]
A	27.56 [700]	27.56 [700]	27.56 [700]
B	83.39 [2118]	86.30 [2192]	87.60 [2225]

Table 13 *continues...*

Specification	80 kg / 180 lb. / 800 L Models, in. [mm]	100 kg / 230 lb. / 1000 L Models, in. [mm]	120 kg / 275 lb. / 1200 L Models, in. [mm]
C	64.57 [1640]	65.67 [1668]	65.59 [1666]
D	53.78 [1366]	54.88 [1394]	54.80 [1392]
E	Models starting with F, L, M, and P: 48.50 [1232] All other models: 48.31 [1227]	Models starting with F, L, M, and P: 51.26 [1302] All other models: 51.06 [1297]	Models starting with F, L, M, and P: 52.24 [1327] All other models: 52.05 [1322]
F - bottom of door opening	40.55 [1030]	41.85 [1063]	41.26 [1048]
G	38.58 [980]	39.17 [995]	38.58 [980]
H	63.78 [1620]	75.59 [1920]	78.15 [1985]
I	76.85 [1952]	79.37 [2016]	82.52 [2096]
J	24.80 [630]	25.98 [660]	25.98 [660]
K	19.53 [496]	25.34 [644]	26.54 [674]
L	15.39 [391]	15.83 [402]	15.00 [381]
M	6.10 [155]	6.10 [155]	6.10 [155]
N	16.22 [412]	16.69 [424]	17.68 [449]
O	140°	140°	140°
P	15.60 [396]	16.22 [412]	17.72 [450]
Q	8.23 [209]	3.35 [85]	8.27 [210]
R	146°	150°	150°
S	23.98 [609]	23.46 [596]	27.83 [707]
T	95.83 [2434]	91.13 [2518]	100.94 [2564]
U	36.42 [925]	37.48 [952]	37.32 [948]
V	30.63 [778]	31.69 [805]	31.54 [801]
W	13°	13°	13°
X	90.55 [2300]	92.78 [2357]	97.00 [2464]
Y	17.32 [440]	17.72 [450]	16.10 [409]
Z	11.54 [293]	11.93 [303]	10.31 [262]

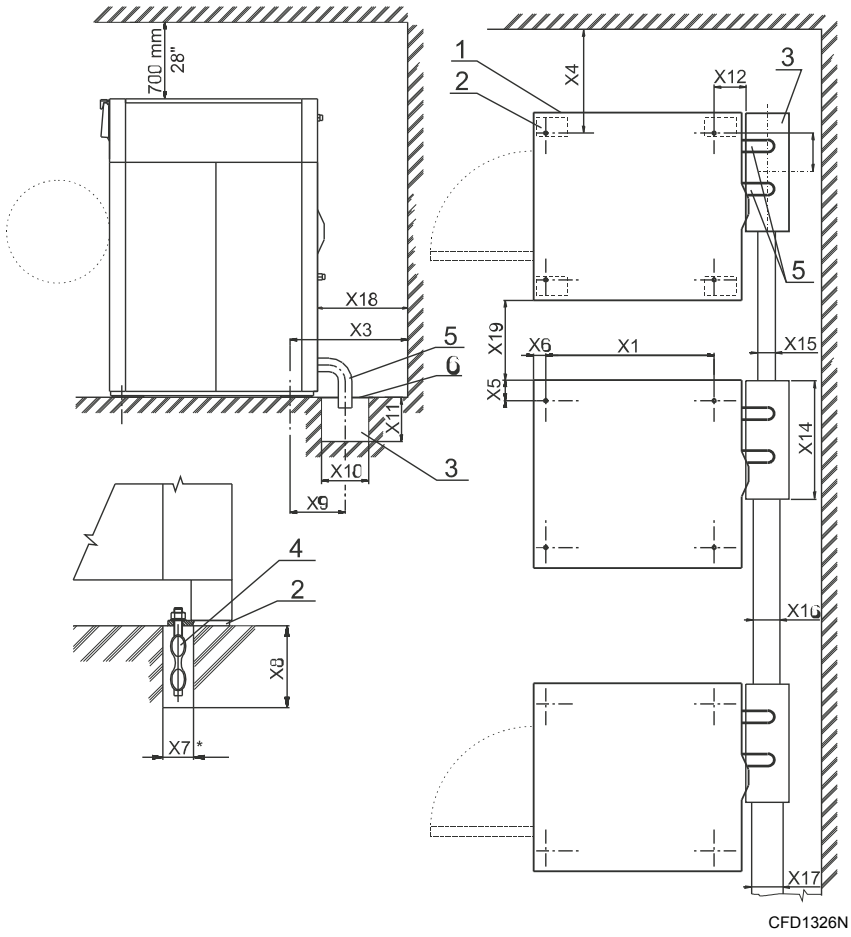
Table 13 *continues...*

Specification	80 kg / 180 lb. / 800 L Models, in. [mm]	100 kg / 230 lb. / 1000 L Models, in. [mm]	120 kg / 275 lb. / 1200 L Models, in. [mm]
AA	91.65 [2328]	94.88 [2410]	98.23 [2495]
AB	93.90 [2385]	97.48 [2476]	98.82 [2510]

Table 13

Mounting Bolt Hole Locations

33 - 55 kg / 75 - 125 lb. / 335 - 520 L Models without weighing system and tilting system



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

Figure 14

.

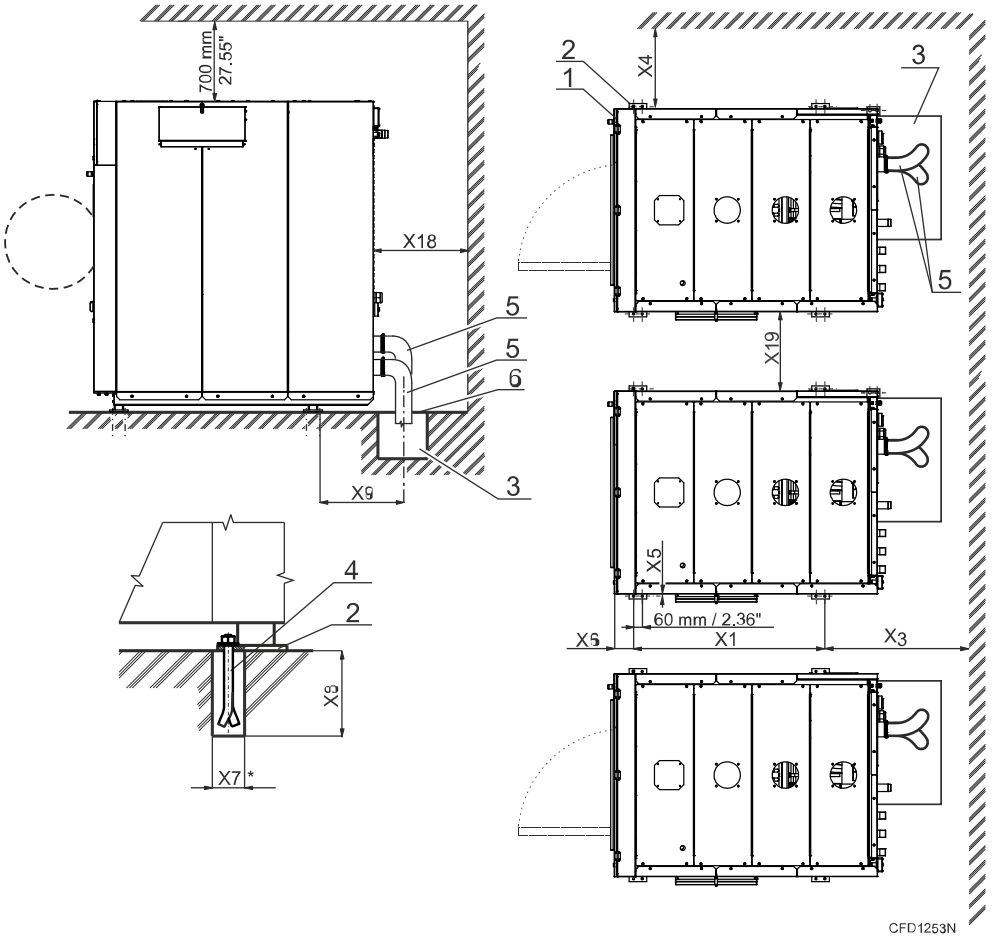
Machine	33 kg / 75 lb. / 335 L, in. [mm]	40 kg / 90 lb. / 400 L, in. [mm]	55 kg / 125 lb. / 520 L, in. [mm]
X1	38.18 [970]	42.13 [1070]	49.21 [1250]

Table 14 *continues...*

Machine	33 kg / 75 lb. / 335 L, in. [mm]	40 kg / 90 lb. / 400 L, in. [mm]	55 kg / 125 lb. / 520 L, in. [mm]
X3	46.25 [1175]		
X4	32.67 [830]		
X5	5.12 [130]		
X6	3.03 [77]		
X7	2.36 [60]		
X8	6.29 [160]		
X9	13.77 [350]		
X10	11.81 [300]		
X11	9.84 [250]		
X12	7.87 [200]		
X14	29.52 [750]		
X15	5.9 [150]		
X16	7.08 [180]		
X17	7.87 [200]		
X18	39.36 [1000]		
X19	27.55 [700]		
* hole optimalized for new floor, drilled hole can be smallish dimension			

Table 14

80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models without weighing system and tilting system



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

Figure 15

Machine	80 kg / 180 lb. / 800 L, in. [mm]	100 kg / 230 lb. / 1000 L, in. [mm]	120 kg / 275 lb. / 1200 L, in. [mm]
X1	51.57 [1310]	54.64 [1388]	55.11 [1400]
X3	41.92 [1065]	52.44 [1332]	52.44 [1332]
X4	30.70 [780]		

Table 15 *continues...*

Machine	80 kg / 180 lb. / 800 L, in. [mm]	100 kg / 230 lb. / 1000 L, in. [mm]	120 kg / 275 lb. / 1200 L, in. [mm]
X5	0.59 [15]	0.51 [13]	0.59 [15]
X6	5.20 [132]	5.20 [132]	5.71 [145]
X7	1.57 [40]		
X8	5.9 [150]		
X9	16.33 [415]		
X18	39.36 [1000]		
X19	27.55 [700]	31.49 [800]	31.49 [800]
* hole optimalized for new floor, drilled hole can be smallish dimension			

Table 15

Floor Mounting Layout

Total space requirements for the system installation are usually determined by a detailed plan of the building.

Leave at least 39.36 in. [1 m] of space between the machine rear and the wall for maintenance access. Between the lateral sides of each machine leave a minimum space of 27.55 in. [0.7 m] , for 80 - 120 kg / 180 - 275 lb. / 800-1200 L Models 31.49 in. [0.8 m]. Above the machine must be a minimum of of free space for the maintenance access. The waste piping or outlet channel must be dimensioned to the discharged water quantity and the number of washing machines.

Installation

Handling, Transport and Storage

Transport and Storage

WARNING

Forks of lift truck must have sufficient length.

W920

Use a lift truck or a manual skid cart for handling with the machine in transporting package. If possible, leave the machine in the transporting package or at least let it set on the transporting wooden skid until the time of final installation on the foundation according to instructions.

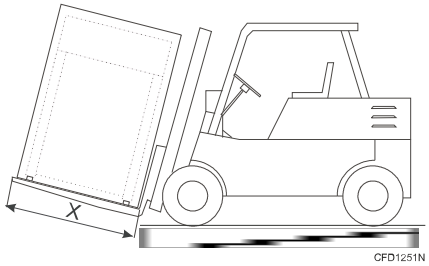


Figure 16

Minimum length of lift truck forks for machine model	33 - 55 kg / 75 - 125 lb. / 335 - 520 L, in. [mm]	80 kg / 180 lb. / 800 L, in. [mm]	100-120 kg / 230-275 lb. / 1000 - 1200 L, in. [mm]
X	59 [1500]	71 [1800]	78.73 [2000]

Table 16

Handling During Installation

All activities can be done only by qualified personnel. Machine is delivered to the customer in wooden packing or a wooden crate, and protected with polyethylene film. The machine is attached to the skid by means of four bolts.

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

1. All passages and spaces the machine has to be transported through at installation should be reasonably dimensioned to meet the height and width of the machine including the package.

CAUTION

Never push, pull or press the components protruding from the contour line of machine (front part of the machine, filling door, control elements, belt cover, water inlet and outlet pipes etc.).

MAKE SURE THAT THESE COMPONENTS ARE SECURED SO AS TO AVOID THEIR DAMAGE DURING HANDLING AND INSTALLATION OF THE MACHINE.

NOTE: Make sure that the filling doors are secured to avoid its opening during the handling.

Lift the machine up by the fork-lift or by pallet trucks using a transport skid to which the machine has been attached.

Unpacking

After unpacking, check if the machine has not been damaged and if all the accessories are included according to your order. Verify the type of your machine by its serial plate and find the corresponding information in the manual.

Before locating the machine to its place, remove the packaging, loosen four nuts and lift the machine carefully up - take care not to damage the machine components located in its lower part. The lift truck forks must be at least 3.94 in. [10 cm] longer than the length of the washing machine frame, refer to *Table 16* .

Machine Anchoring

Machine kg / lb. / L	Without tilting, without weighing	Without tilting, with weighing (Models outside of North America)	With forward tilting, without weighing	With forward tilting, with weighing (Models outside of North America)	With forward and backward tilting, without weighing (Models outside of North America)
33 / 75 / 335	anchoring recommended*	not to be anchored	N/A	N/A	N/A
40 / 90 / 400	anchoring recommended*	not to be anchored	anchoring of the rear side is necessary; anchoring of the front side is recommended*	must be anchored	N/A
55 / 125 / 520	anchoring recommended*	not to be anchored	anchoring of the rear side is necessary; anchoring of the front side is recommended*	Must be anchored	N/A
80 / 180 / 800	anchoring recommended*	not to be anchored	anchoring recommended*	anchoring recommended*	must be anchored
100 / 230 / 1000	anchoring recommended*	not to be anchored	anchoring recommended*	anchoring recommended*	must be anchored
120 / 275 / 1200	anchoring recommended*	not to be anchored	anchoring recommended*	anchoring recommended*	must be anchored
*Anchoring necessary in case of uneven or tilted floor, in case of slippery surface and in case of floor with variable surface structure. Anchoring also necessary in any other cases when there is a risk of the machine moving along the floor surface during its operation.					

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

WARNING

The nuts of the anchoring bolts have to be tightened by means of a torque. Do not tighten nuts of anchoring bolts before the concrete base around the bolts is completely hardened.

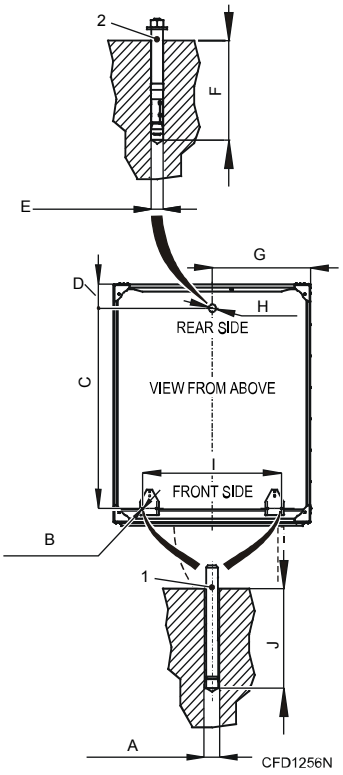
C196

Machine kg / lb. / L	Bolt	Torque, lb. ft [Nm]
33 - 55 / 75 -125 / 335 - 520	M16 x 160, refer to *Figure 14*	155 [210]
	Anchoring bolt, refer to *Figure 17*	59 [80]
	Threaded rod, refer to *Figure 17*	98 [133]
80 - 120 / 180 - 275 / 800 -1200	M10 x 160, refer to *Figure 15*	36 [49]
	Anchoring bolt, refer to *Figure 21*	59 [80]

Machine Anchoring - 40 - 55 kg / 90 - 125 lb. / 400 - 520 L Models with Forward Tilting

1. Drill a hole for the anchoring bolt based on the required machine placement, refer to *Figure 17* or *Figure 18* .

40 - 55 kg / 90 - 125 lb. / 400 - 520 L Models with forward tilting and without weighing system - drilling points for anchoring bolts



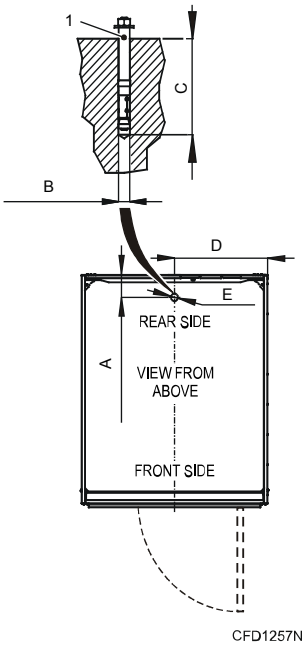
1. Threaded rod M14 x 120 and chemical filling are not supplied with the machine

2. Anchoring bolt (supplied with the machine)

Figure 17

40 -55 kg / 90 - 125 lb. / 400 - 520 L Models with forward tilting and without weighing system	Requirement, in. [mm]
A	0.63 - 0.71 [16 - 18]
B	0.63 [16]
C	47.87 [1216]
D	5.55 [141]
E	0.71 [18]
F	5.51 [140]
G	24.80 [630]
H	0.71 [18]
I	35.04 [890]
J	3.94 [100]

40 - 55 kg / 90- 125 lb. / 400 -520 L Models outside of North America with forward tilting and with weighing system - drilling points for anchoring bolts

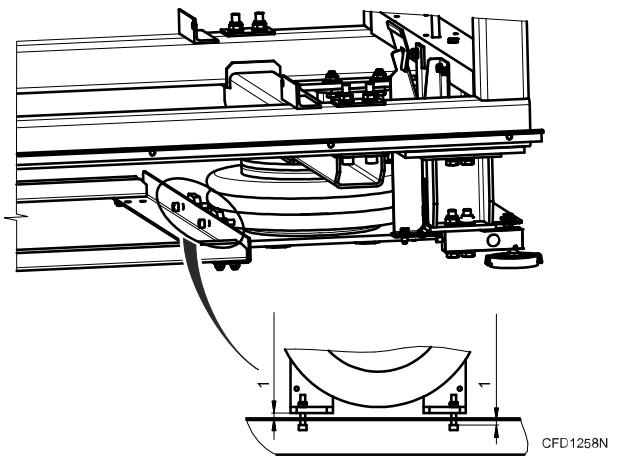


1. Anchoring bolt (supplied with the machine)

Figure 18

40 - 55 kg / 90 - 125 lb. / 400 - 520 L Models with forward tilting and with weighing system	Requirement, in. [mm]
A	5.55 [141]
B	0.71 [18]
C	5.51 [140]
D	24.80 [630]
E	0.71 [18]

2. Remove the upper nut and washer from the anchor bolt.
3. Place the anchor bolt into the pre-drilled hole and place the machine in position (the bolt goes through the air spring plate).
4. Attach the washer and nut back again and tighten.



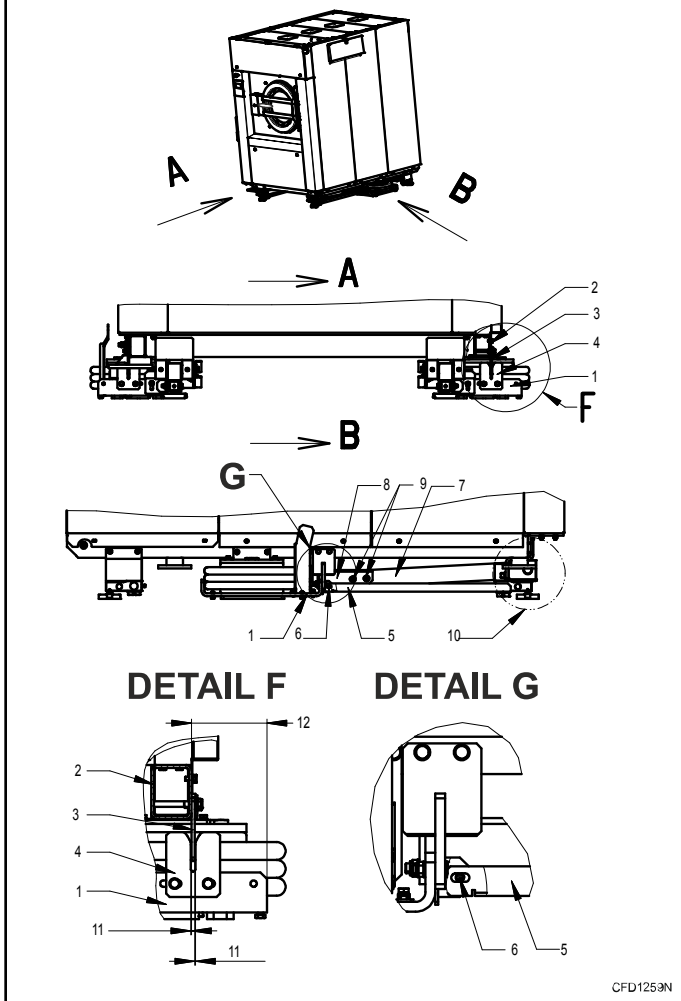
1. 0.35 in. [9 mm]

Figure 19

Machine Adjustment and Anchoring, 80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models with Forward Tilting

The lifting system adjustment applies to both of the machine sides.

For the adjustment of the distance between the air spring plate side and the machine frame, refer to *Figure 20* . The distance shall be 4.45 in. [113 mm] (Detail F).



1. Air spring plate
2. Machine frame
3. Plate
4. Plate
5. Arm
6. Bolt
7. Fixed arm
8. Fixed arm
9. Bolt
10. Tilting system hinge
11. 0.04 in. [1 mm]
12. 4.45 in. [113 mm]

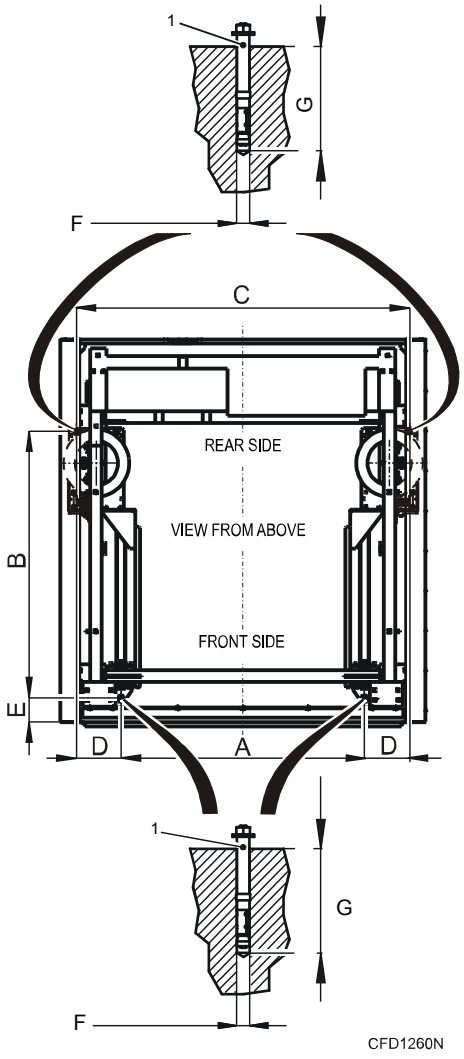
Figure 20

View B shows the distance adjustment of the air spring plate from the hinge for tilting system by means of an arm. The bolt must be in the middle of the slotted hole of the arm (Detail G).

Detail View F shows the adjustment of free play between the plates on both sides. The distance shall be 0.04 in. [1 mm].

Tighten the bolts attaching the fixed arms located between the air spring plate and the hinge for titling system in order to provide free play (Detail G).

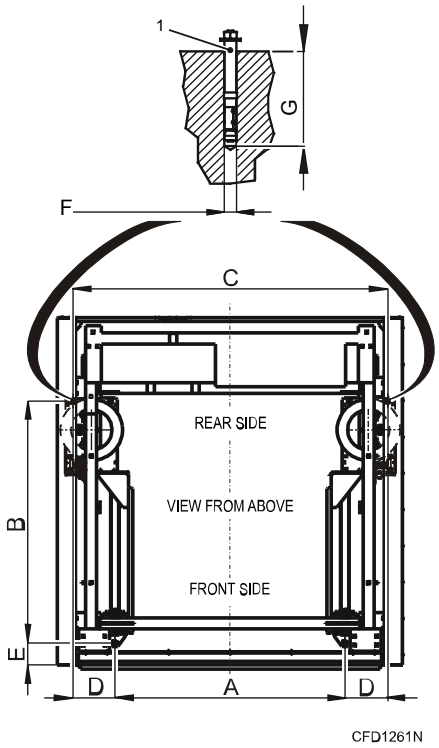
80 - 120 kg / 180 - 275 lb. / 800 - 1200 L with forward tilting and without weighing system - drilling points for anchoring bolts



1. Anchoring bolt (not supplied with the machine, on request)

Figure 21

80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models outside of North America with forward tilting and with weighing system - drilling points for anchoring bolts.



1. Anchoring bolt (not supplied with the machine, on request)

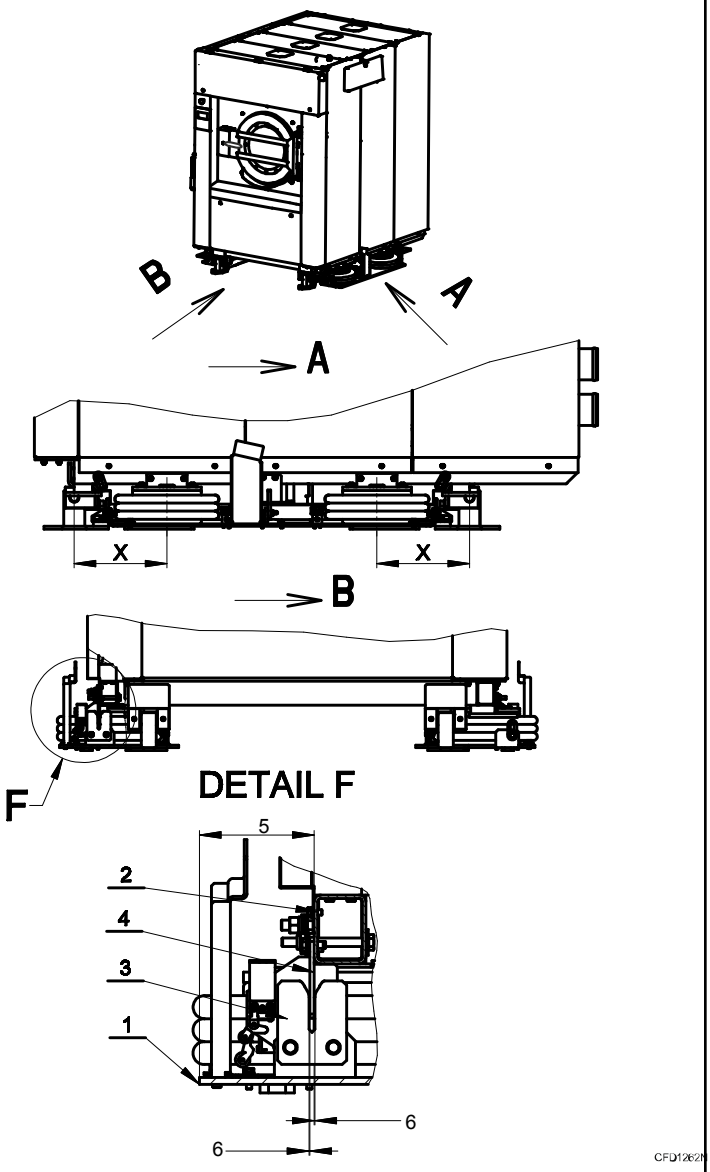
Figure 22

Machine	80 kg / 180 lb. / 800 L, in. [mm]	100 kg / 230 lb. / 1000 L, in. [mm]	120 kg / 275 lb. / 1200 L, in. [mm]
A	38.74 [984]	50.39 [1280]	52.99 [1346]
B	48.86 [1241]	53.66 [1363]	54.05 [1373]
C	57.32 [1456]	69 [1750]	71.50 [1816]
D	9.25 [235]	9.25 [235]	9.25 [235]
E	5 [127]	4.92 [125]	5.43 [138]
F	0.7 [18]		
G	5.51 [140]		

Machine Adjustment and Anchoring, 80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models Outside of North America with Two-Way Tilting (Forward and Backward)

The lifting system adjustment applies to both of the machine sides.

For the adjustment of the distance between the air spring plate side and the machine frame, refer to *Figure 23* . The distance shall be 5.24 in. [133 mm] (Detail F).

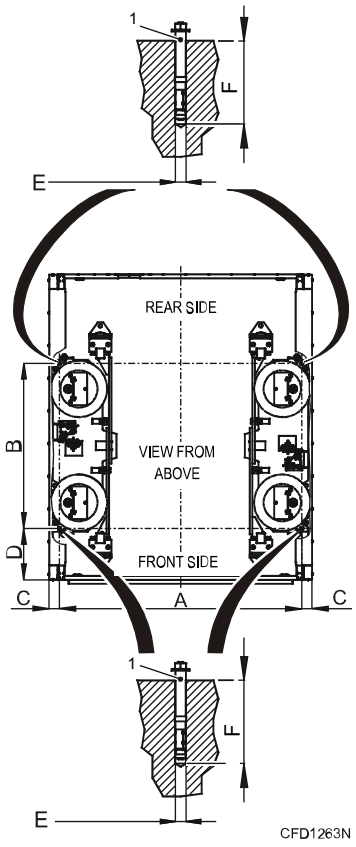


1. Air spring plate
2. Machine frame
3. Plate
4. Plate
5. 5.24 in. [133 mm]
6. 0.04 in. [1 mm]

Figure 23

Set the X distance (refer to Detail View A), i.e., the distance between the axis of the air springs on the plate from the machine frame. The X dimension is the same for both sides.

Detail View F shows the adjustment of free play between the plates on both sides. The distance shall be 0.04 in. [1 mm].



1. Anchoring bolt (supplied with the machine)

Figure 24

Machine	80 kg / 180 lb. / 800 L, in. [mm]	100 kg / 230 lb. / 1000 L, in. [mm]	120 kg / 275 lb. / 1200 L, in. [mm]
A	58.50 [1486]	70.08 [1780]	72.68 [1846]
B	39.76 [1010]	39.76 [1010]	39.76 [1010]
C	2.44 [62]	2.52 [64]	2.52 [64]
D	12.44 [316]	13.98 [355]	14.72 [374]
E	0.71 [18]		
F	5.51 [140]		

Slack Hose Requirements - Models with Forward Tilting

Hose Slack - 40 - 55 kg / 90 - 125 lb. / 400 - 520 L Models

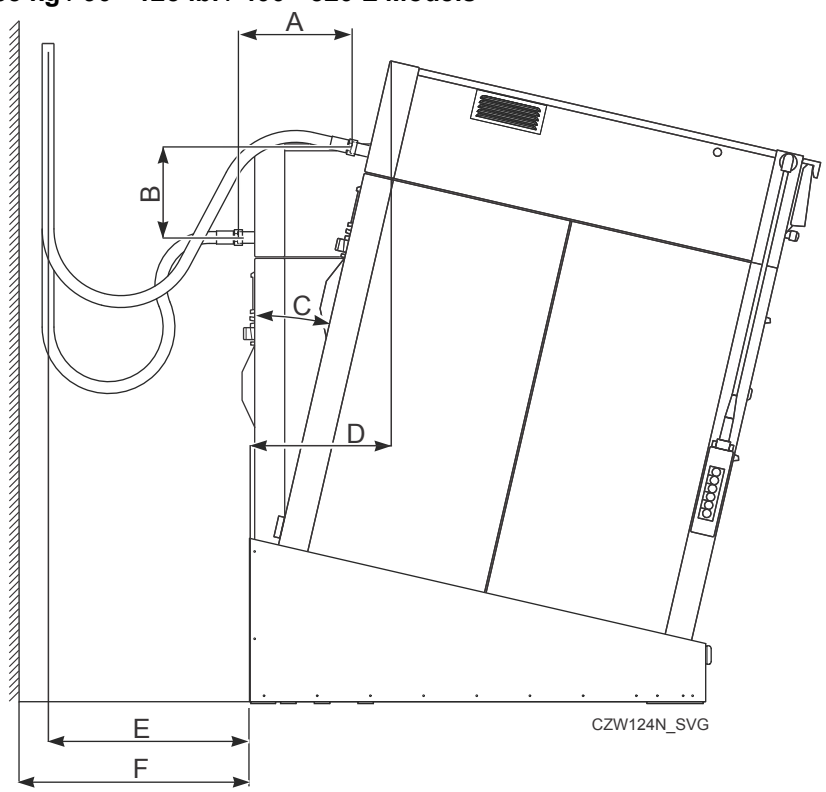


Figure 25

Hose Slack - 80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models

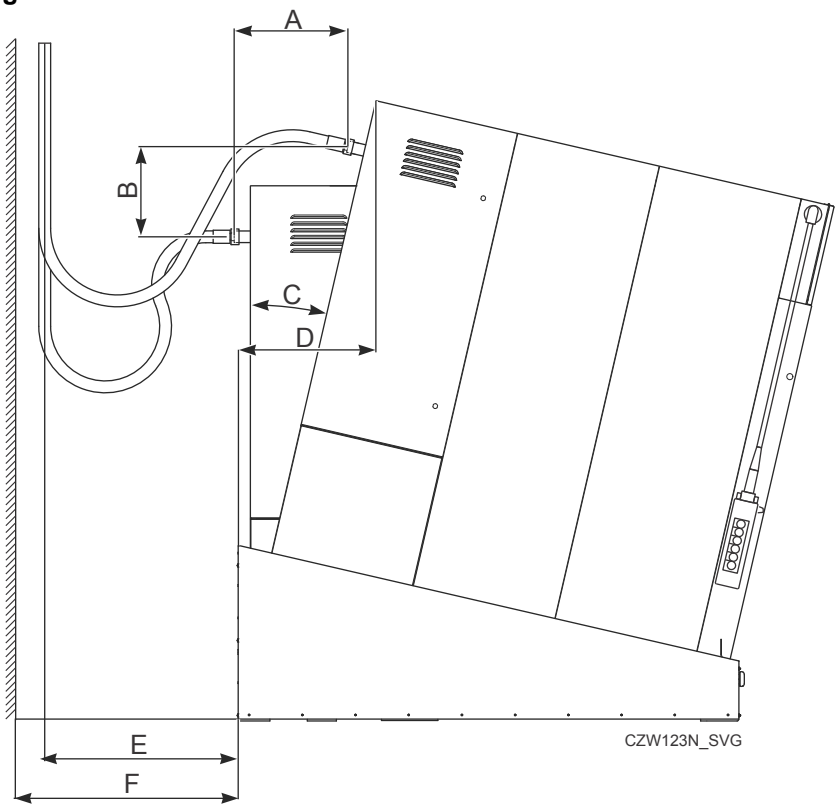


Figure 26

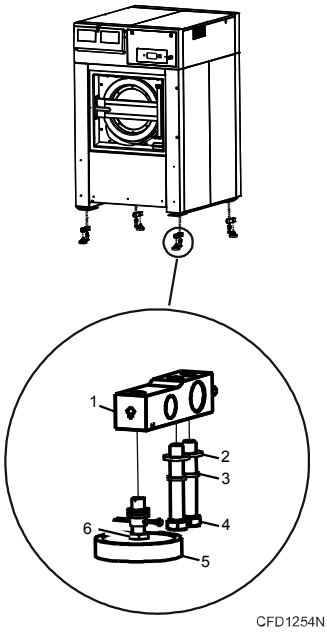
Slack Hose Requirements - Models with Forward Tilting, in. [mm]					
Specification	Machine kg / lb. / L				
	40 / 90 / 400	55 / 125 / 520	80 / 180 / 800	100 / 230 / 1000	120 / 275 / 1200
A	19.80 [503]	20.07 [510]	17.59 [447]	18.38 [467]	18.58 [472]
B	11.02 [280]	12.87 [327]	13.46 [342]	13.93 [354]	14.64 [372]
C	15°	13°	13°	13°	13°
D	22.71 [577]	22.99 [584]	20.47 [520]	21.92 [557]	22.48 [571]
E	31.49 [800]	31.49 [800]	31.49 [800]	31.49 [800]	31.49 [800]
F	39.37 [1000]	39.37 [1000]	39.37 [1000]	39.37 [1000]	9.37 [1000]

Table 17

Weighing System Installation - Models Outside of North America

1. Lift up the machine.
2. Install two load sensors. Refer to *Figure 27* or *Figure 28* .

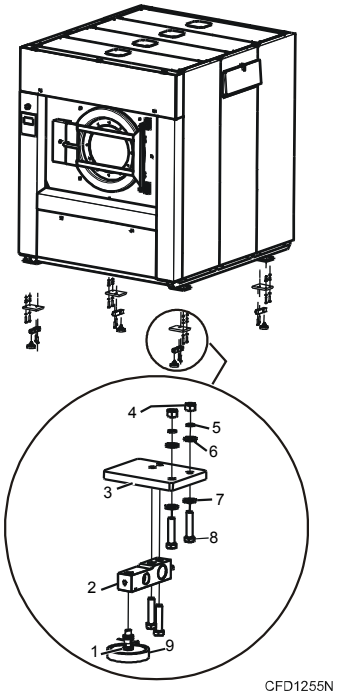
33 - 55 kg / 75 - 125 lb. / 335 - 520 L Models



1. Load sensor
2. Washer
3. Washer
4. Bolt
5. Foot
6. Nut

Figure 27

80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models



1. Nut
2. Load sensor
3. Holder
4. Nut
5. Washer
6. Washer
7. Washer
8. Bolt
9. Foot

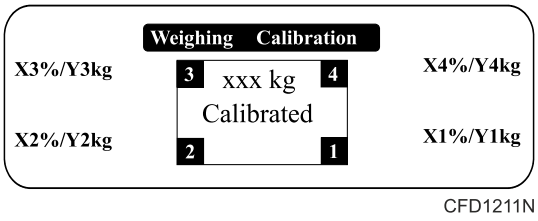
Figure 28

3. Check that all the rubber feet with load sensors are correctly placed on the machine frame and tightened.
4. Place the machine in the required position carefully so that it is not subjected to any impact or shock.

   NOTE: An impact might cause permanent damage to the load sensors.
5. Check that all the rubber leveling legs of the load sensors are stable.
6. Remove the transport safety devices (transport props).
7. Use a water-level to check that the lower frame of machine is positioned totally level.
8. Attach hoses for water supply to the machine.

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

9. Check and, if necessary, adjust the height of the load sensor feet so that an even load distribution among all the load sensors is ensured. Refer to *Figure 29* .



1. X1, X2, X3, X4 - range must be within 10-40%
2. Y1, Y2, Y3, Y4 - load of each load sensor in kg

Figure 29

10. If the load sensors are outside of the specified range, it is necessary to adjust the leveling legs of load sensors. Each load sensor leveling leg can be adjusted within the range of 0.2 in. [5 mm].
    a. Lift up the machine.
    b. Loosen the nut and turn the level leg in order to achieve the required position.
    c. Tighten the nut.
    d. Put the machine down and verify that the load applied to each sensor is within the specified range.

Putting Machine into Service

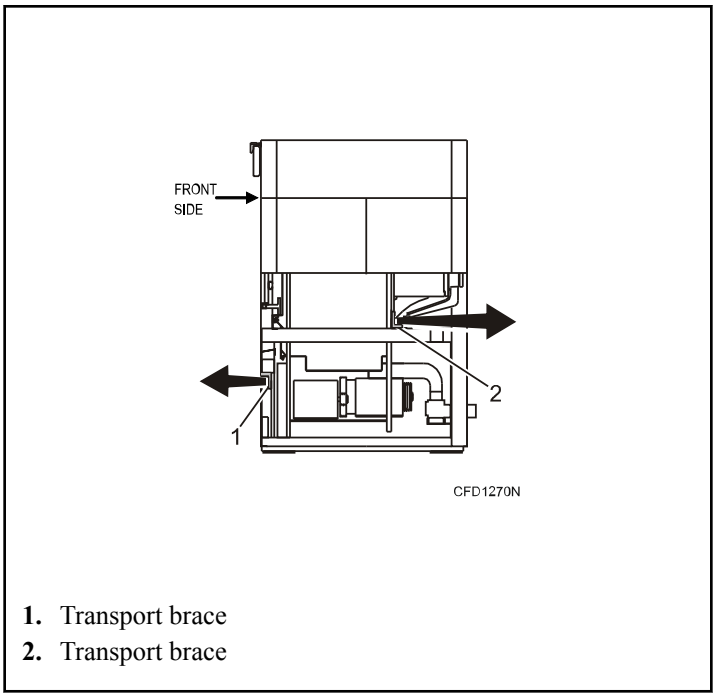
WARNING

The shipping braces must be removed prior to putting the machine into service. Failure to do so can result to machine damage.

C204

33 - 55 kg / 75 - 125 lb. / 335 - 520 L Models

1. Remove the three striking color transport braces securing the vibrating machine components during the transport.
2. One brace is located in the front part of the machine accessible after removal of the front lower cover, refer to *Figure 30* .



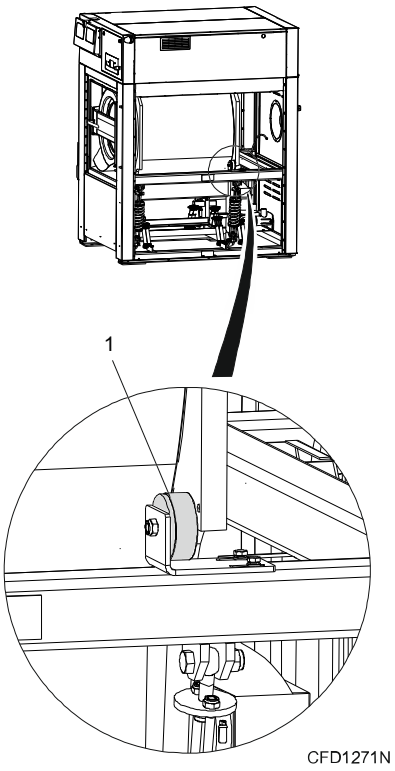
1. Transport brace
2. Transport brace

Figure 30

3. Two braces are at the rear of the machine, accessible after removal of the rear cover.
4. After removing the braces, mount the covers back to their places.

40 - 55 kg / 90 - 175 lb. / 400 - 520 L Models with Tilting

1. Place two backstops (supplied with the machine) in their places, refer to *Figure 31* .



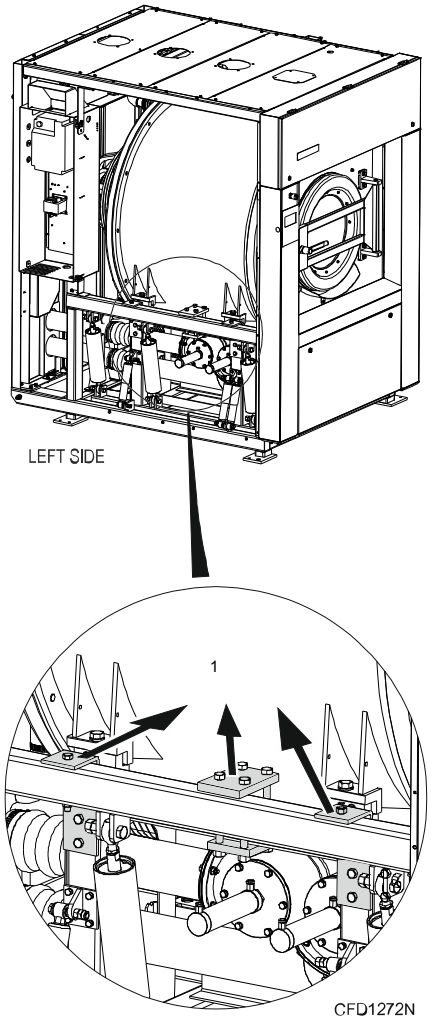
1. Backstop

Figure 31

2. With braces removed and backstops attached, put the guards back.

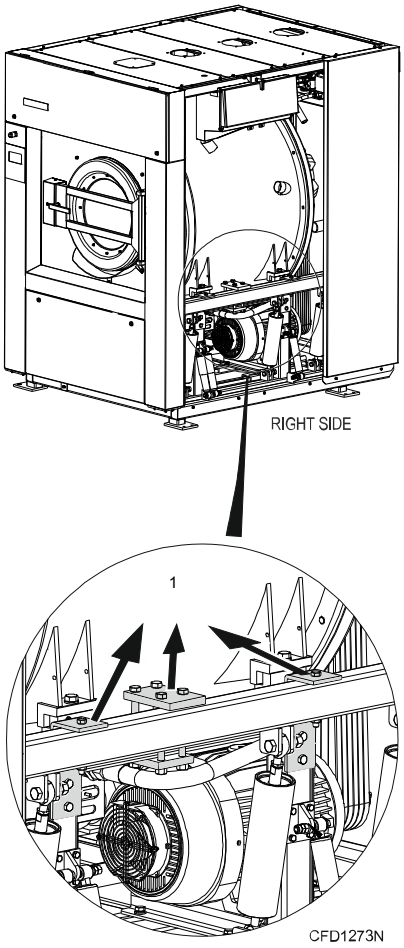
80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models

1. Remove the six striking color transport braces securing the vibrating machine components during the transport. Three braces are on the left side of the machine and three are on the right, accessible after the removal of the side covers.



1. Remove the transport braces

Figure 32



1. Remove the transport braces

Figure 33

2. After removal of the braces, mount the covers back to their places.

Check Before Putting into Service

1. Transport braces have been removed.
2. Cabinet protective foil has been removed.
3. Waste sump is ready for water drainage.
4. Protective connection (earth connecction - "PE" or "PEN") is working properly.
5. Installation, operation and maintenance instructions have been carefully read and followed.
6. Drum rotation direction is correct during extraction. For 33 - 55 kg / 75 - 125 lb. / 335 - 520 L machines, from the front view, drum should rotate counter-clockwise. For 80 - 120 kg / 180 - 275 lb. / 800 - 1200 L machines, from the front view, drum should rotate clockwise.
7. Vibration switch and emergency function are working properly during extraction.

Drain Connection

Specification	Model	Requirement
Drain connection number	All	2
Drain connection size, in. [mm]	33 - 55 kg / 75 - 125 lb. / 335 - 520 L	3 [76]
Drain connection size, in [mm]	80 - 120 kg / 180 - 275 lb. / 800 - 1200 L	4 [103]
Average flow rate of draining gal./ min.$^{-1}$ [dm^3/ min.$^{-1}$]	33 - 55 kg / 75 - 125 lb. / 335 - 520 L	80 [300]
Average flow rate of draining gal/ min.$^{-1}$ [dm^3/ min.$^{-1}$]	80 - 120 kg / 180 - 275 lb. / 800 - 1200 L	295 [1115]

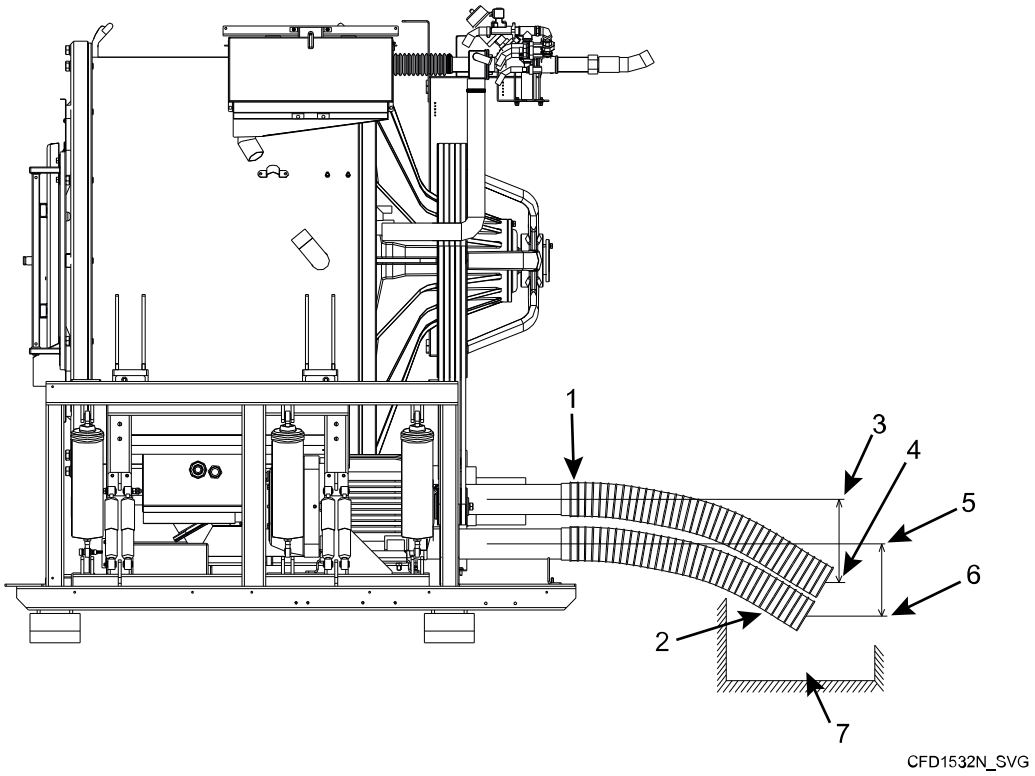
Table 18

The drain has to be connected to the waste channel or pipeline. Seal the connecting point of the drain throat and flexible hose with silicon cement. Secure the elbow or the hose with a clamp. Cover the waste sump with a proper cover.

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

NOTE: If the water level of the outlet for the drainpipe is higher than that of the connection, it can lead to leakage at the connection due to high water pressure.

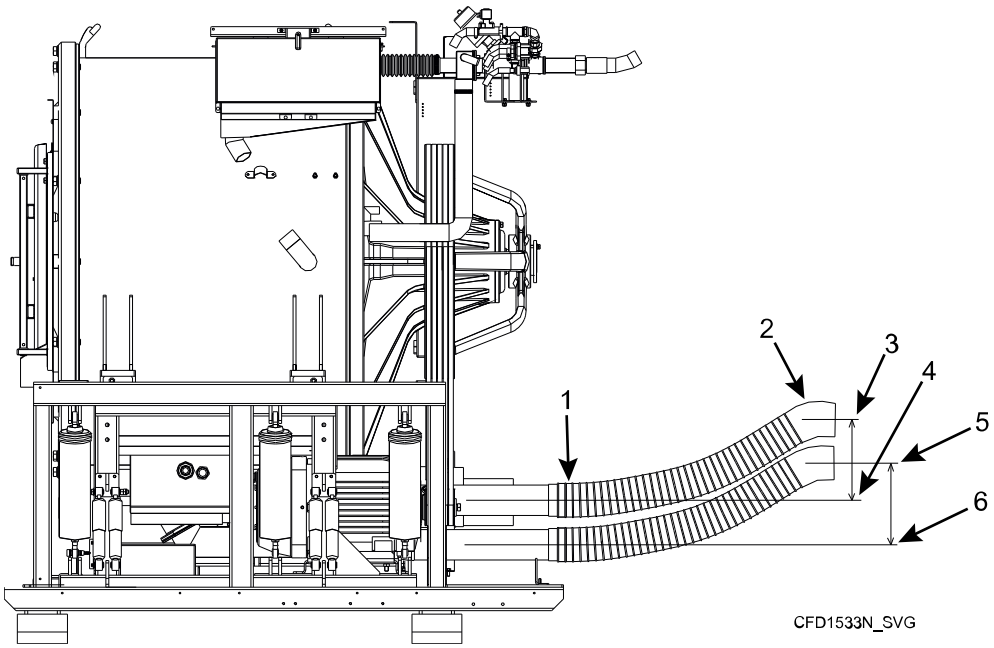
Correct configuration of drainpipe connection



1. Drainpipe connection
2. Outlet
3. Higher water level
4. Lower water level
5. Higher water level
6. Lower water level
7. Drain channel

Figure 34

Incorrect configuration of drainpipe connection



1. Drainpipe connection
2. Outlet
3. Higher water level
4. Lower water level
5. Higher water level
6. Lower water level

Figure 35

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

Water Connection Requirements

WARNING

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

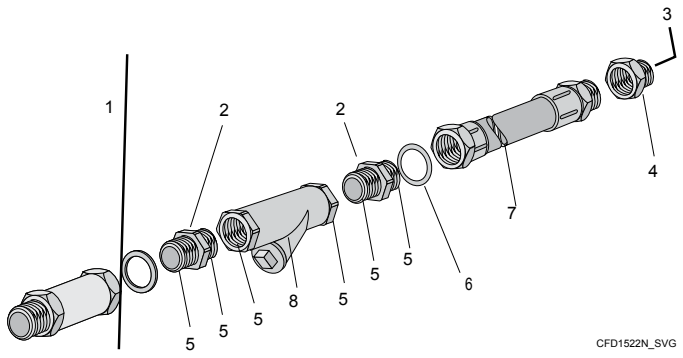
W748

WARNING

Hot water is used to flush the supply dispenser. Do not open the supply dispenser lid while the machine is running. The discharge or splashing of hazardous liquid can cause serious scalding and burning.

C377

33 - 55 kg / 75 - 125 lb. / 335 - 520 L Models

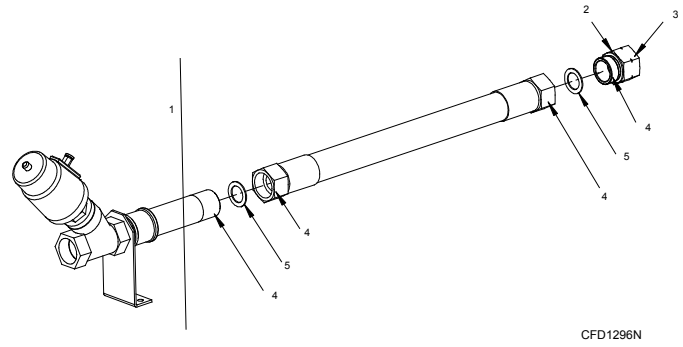


NOTE: For North American models, the adapter (item 4) and seals (item 6) are installed onto the inlet (item 2) at the factory.

1. Rear bridge of machine
2. Fixed thread sealant (Loctite 577 or Loctite 55)
3. To customer connection
4. BSP to NPT adapter (North America Models); Installed at the factory starting May 1, 2017.
5. BSP
6. Rubber washer
7. Hose
8. Water filter (Models outside of North America)

Figure 36

80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models



1. Rear bridge of machine
2. BSP to NPT adapter (North America Models); Installed at the factory starting May 1, 2017.
3. NPT
4. BSP
5. Rubber washer

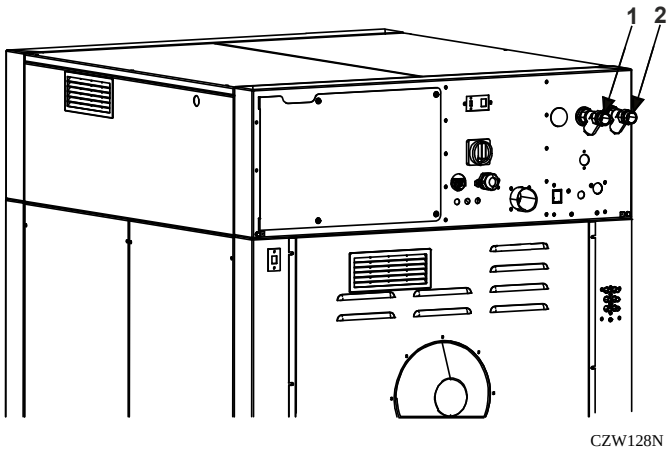
Figure 37

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

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

All water connectors present on the machine must be connected or the wash program will not function correctly. Refer to *Figure 38* , *Figure 39* and *Figure 40* 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.

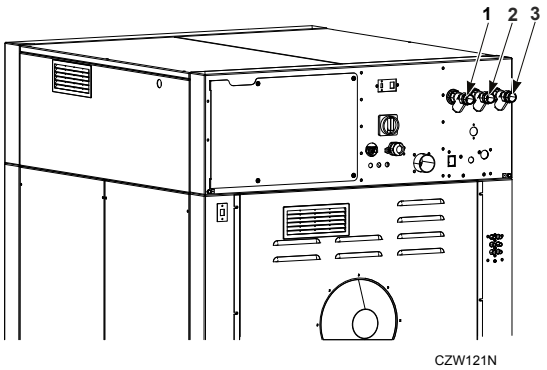
2 Water Connection Models



1. Hot
2. Cold or cold Soft

Figure 38

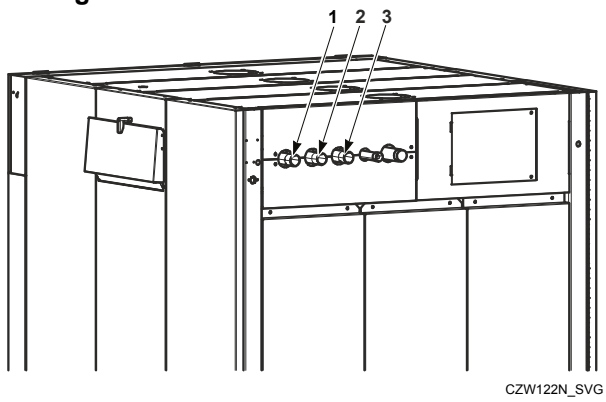
3 Water Connection Models



1. Cold Hard
2. Hot
3. Cold or cold Soft

Figure 39

80-120 kg/180-275 lb./800-1200 L Models



1. Cold soft
2. Cold hard
3. Hot

Figure 40

WARNING

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

W914

The maximum water inlet temperature for vended models is 151°F [66°C]and the maximum water inlet temperature for on-premises models is 194°F [90°C] (models without WRAS approval) or 140°F [60°C] (WRAS approved models).

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.

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 Connection Requirement

Specification	Model	Requirement
Water inlet connection size, in. BSP	33 - 55 kg / 75 - 125 lb. / 335 - 520 L	1
	80 - 120 kg / 180 - 275 lb. / 800 - 1200 L	1 1/2
Recommended pressure, PSI [bar]	All	43-73 [3-5]
Inlet flow capacity per inlet, gal/min at 15 psi [l/min at 1 bar]	33 - 55 kg / 75 - 125 lb. / 335 - 520 L	48.34 [183]
	80 - 120 kg / 180 - 275 lb. / 800 - 1200 L	198.13 [750]
Inlet flow capacity per inlet, gal/min at 116 psi [l/min at 8 bar]	33 - 55 kg / 75 - 125 lb. / 335 - 520 L	136.84 [518]
	80 - 120 kg / 180 - 275 lb. / 800 - 1200 L	560.30 [2121]

Table 19

Electrical Installation Requirements

IMPORTANT: Electrical ratings are subject to change. Refer to serial plate for electrical ratings information specific to your machine.

DANGER

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

W911

WARNING

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

W736

WARNING

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

W360

IMPORTANT: If the machine is not equipped with a main switch, supply disconnecting devices need to be provided in the installation for all electrical supplies connected to the machine, in accordance with EN 60204-1 standard, point 5.3.

IMPORTANT: Make sure the supply voltage is always within the limits specified. When you have long distances in the electrical installation, it may be necessary to use bigger cables to reduce the voltage drop.

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.

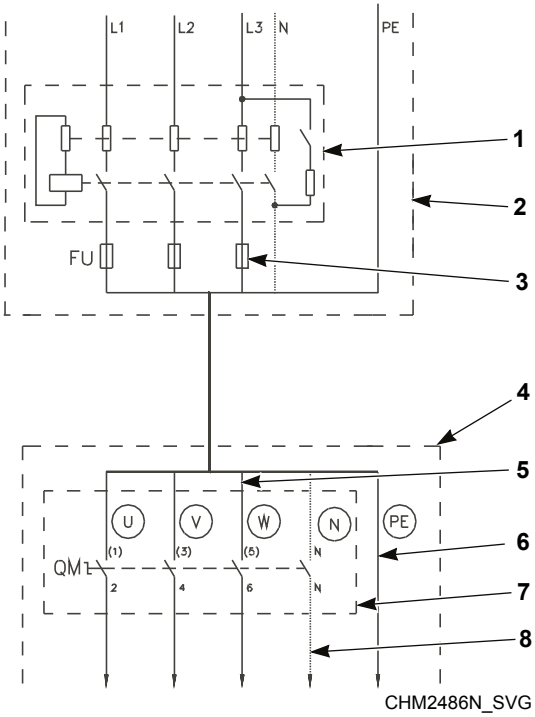
Models outside of North America: For electrical protection, if required by local regulations, there must be installed a residual current device (RCD) and a circuit breaker in the electrical installation of the building (laundry switchboard). Refer to *Figure 41* .

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.

WARNING

Grounding: 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 installer to assure the washer is adequately grounded at installation, following all national and local requirements.

W902



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

Figure 41

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 - Models Outside of North America*, *Electrical Specifications - North American Models*)
- Stranded conductors (flexible wiring) that can withstand vibration from machine
- For crossection size, refer to *Table 20*
- Route the supply cable as short as possible, directly from the supply protection device to the washer without branching off
- Do not use a plug or extension cords (the machine is intended to be permanently connected to the electrical network)

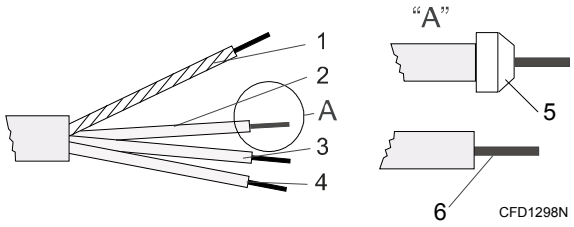
Determining AWG Sizes

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]
160A	125A	- [50]	2 [35]
200A	160A	- [70]	- [50]
250A	200A	- [95]	- [70]
300A	250A	- [120]	- [95]

Table 20

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 42* . The protection conductor must be longer so it can be routed to the machine without tension.

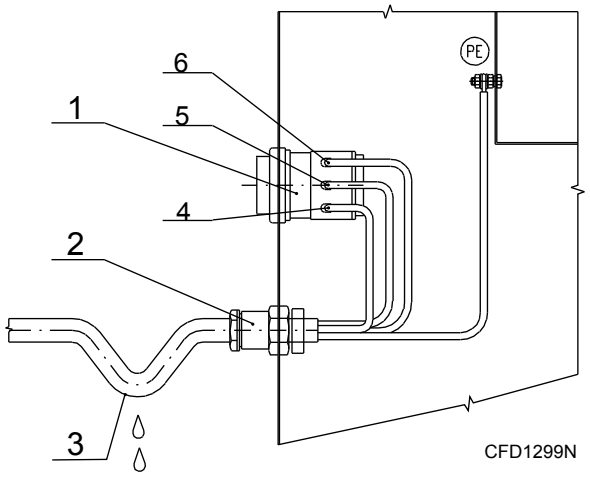


1. Protection conductor
2. Phase conductor
3. Phase conductor
4. Phase conductor
5. Molded tube
6. Stripped length of conductors

Figure 42

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, L2, L3, N and the terminal marked with PE. Refer to .
6. Connect the supply cable conductors to the incoming terminals (main switch [1]), marked with L1/U, (L2/V), (L3/W), (N) and the terminal marked with PE. Refer to *Figure 43* or *Figure 44* .

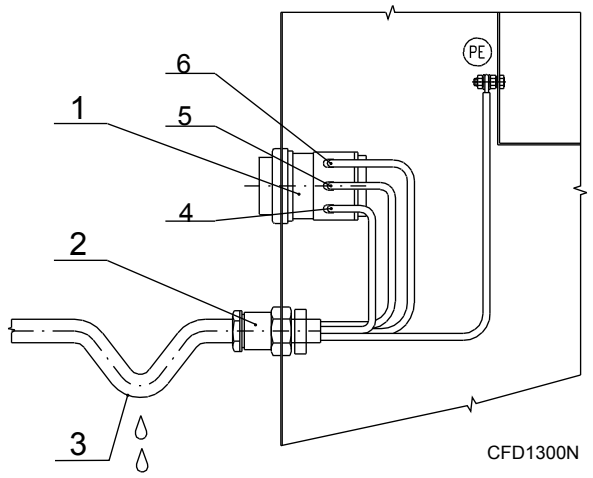
Models Outside of North America



1. Main switch
2. Strain relief
3. Sag of inlet cable
4. U
5. V
6. W

Figure 43

North American Models



1. Main switch
2. Strain relief
3. Sag of inlet cable
4. L1
5. L2
6. L3

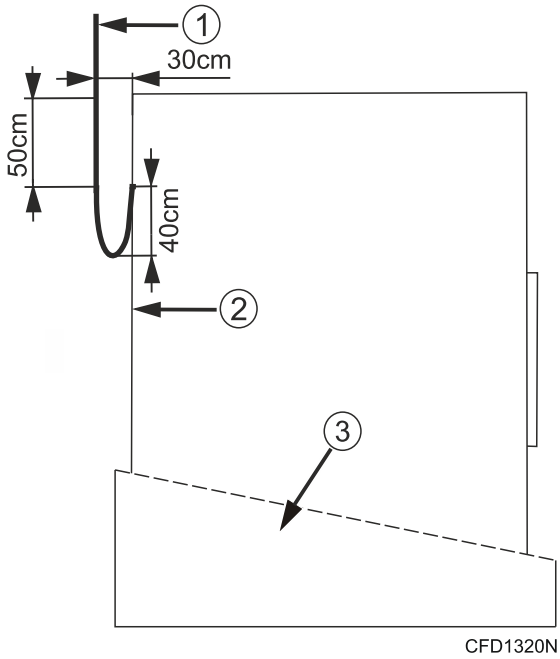
Figure 44

7. 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 43* or *Figure 44* .

Machine with Tilting

The selected power supply cable needs to come from above and vertical directed downwards in line with the supply cable entry, refer to *Figure 45* for 40 - 55 kg / 90 - 125 lb. / 400 - 520 L Models or *Figure 46* for 80 - 120 kg / 180 -275 lb. / 800 - 1200 L Models.

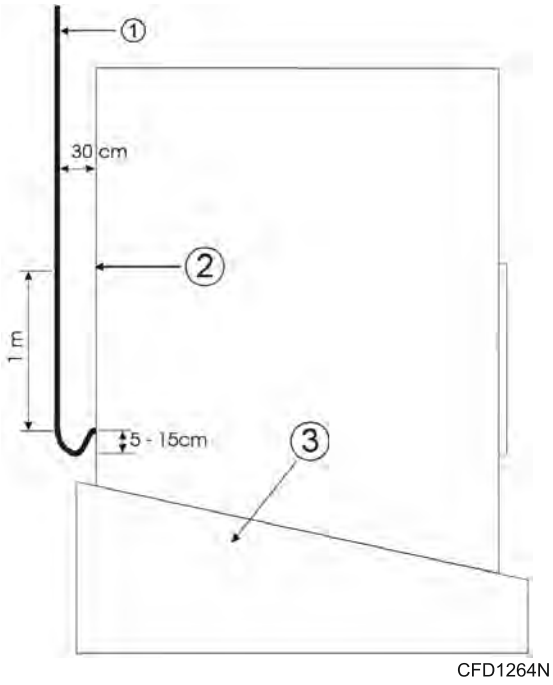
40 - 55 kg / 90 - 125 lb. / 400 - 520 L Models



1. Power supply cable
2. Back of machine
3. Tilting base

Figure 45

80 - 120 kg / 180 -275 lb. / 800 - 1200 L Models



1. Power supply cable
2. Back of machine
3. Tilting base

Figure 46

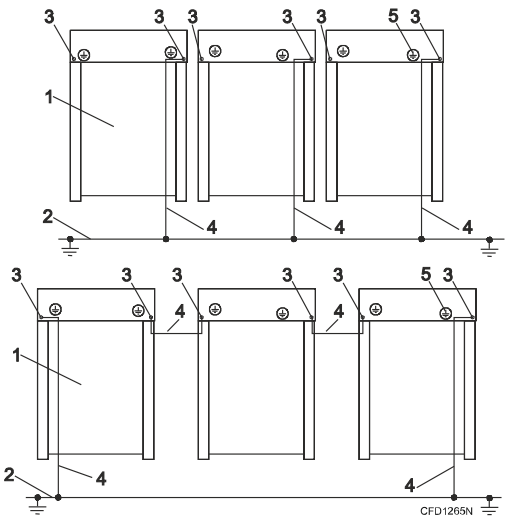
The cable needs to be on ±11.81 in. [30 cm] backwards away from the backside when in tilting base, or rest position. Just before entry, a sag of a minimum of 1.97 in. [5 cm] and maximum of 5.91 in. [15 cm] must be provided.

From the point of entry, up to 39.37 in. [1 m] high, no fixation of the supply cable is allowed.

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, refer to *Figure 47* or *Figure 48* . The minimum protection conductor's cross section depends on the supply cable cross section (refer to *Table 20*). However, for the protection purposes, with the supply cable cross section of a min. 4 mm^2, select a larger conductor section, i.e., 6 mm^2.

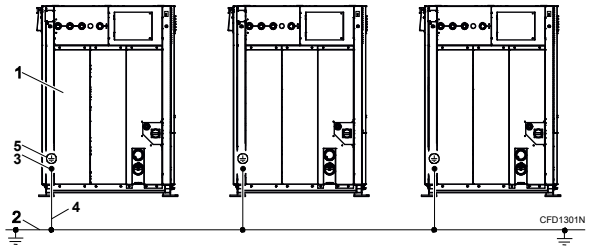
33 - 55 kg / 75 - 125 lb. / 335 - 520 L Models



1. Washing machine
2. Laundry protective earth connection
3. Washing machine external protective terminal
4. Protective conductor - washing machine connection
5. Earth mark

Figure 47

80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models



1. Washing machine
2. Laundry protective earth connection
3. Washing machine external protective terminal
4. Protective conductor - washing machine connection
5. Earth mark

Figure 48

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)	• Install Line Reactor • Isolation Transformer
Greater than 120 kVA supply transformer	
Line has power factor correction capacitors	• 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	• Remove MOV jumper to ground • Install Isolation Transformer with grounded secondary (if necessary)
Ungrounded distribution system	
240V open delta configuration (stinger leg)*	• Install Line Reactor
* 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.	

Table 21

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

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

W810

DANGER

Hazardous Rotation Speed. Will cause serious injury when controlling AC inverter drive with a parameter unit, safety features are bypassed allowing basket to rotate at high speeds with the door open. Place large sign on front of machine to warn people of imminent danger.

W361

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 disconnecting 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 provided with machine, or according to accepted European Union standards.

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].

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 (33 kg / 75 lb. / 335 L, 40 kg / 90 lb. / 400L, 55 kg / 125 lb. /520 L models only)

The machines are designed and manufactured for a voltage range. Refer to the serial plate for votage range information specific to your machine.

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

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

Frequency Settings (33 kg / 75 lb. / 335 L, 40 kg / 90 lb. / 400 L, 55 kg / 125 lb. / 520 L models only)

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

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

33 kg / 75 lb. / 335 L Models

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard		Electric Heat	
				Full Load Amps (A)	Fuse (A)	Full Load Amps (Electric Heating kW)	Fuse (A)
200-240	50-60	3	3 (L1, L2, L3)	18.8	32	70 (24)	80
380-415	50-60	3	3 (L1, L2, L3)	10.8	16	40 (24)	50
440-480	50-60	3	3 (L1, L2, L3)	10.8	16	38 (24)	50

Table 22

40 kg / 90 lb. / 400 L Models

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard		Electric Heat	
				Full Load Amps (A)	Fuse (A)	Full Load Amps (Electric Heating kW)	Fuse (A)
200-240	50-60	3	3 (L1, L2, L3)	25.4	40	105 (36)	120
380-415	50-60	3	3 (L1, L2, L3)	14.6	20	62.5 (36)	80
440-480	50-60	3	3 (L1, L2, L3)	14.6	20	58 (36)	63

Table 23

55 kg / 125 lb. / 520 L Models

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard		Electric Heat	
				Full Load Amps (A)	Fuse (A)	Full Load Amps (Electric Heating kW)	Fuse (A)
200-240	50-60	3	3 (L1, L2, L3)	28	40	147 (54)	160
380-415	50-60	3	3 (L1, L2, L3)	16	20	87 (54)	100
440-480	50-60	3	3 (L1, L2, L3)	16	20	79 (54)	100

Table 24

80 kg / 180 lb. / 800 L Models

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard		Electric Heat	
				Full Load Amps (A)	Fuse (A)	Full Load Amps (Electric Heating kW)	Fuse (A)
200-240	50-60	3	3 (L1, L2, L3)	30.2	40	195 (67.5)	250
380-415	50-60	3	3 (L1, L2, L3)	23.8	32	113 (67.5)	125
440-480	50-60	3	3 (L1, L2, L3)	23.8	32	106 (70)	125

Table 25

100 kg / 230 lb. / 1000 L Models

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard		Electric Heat	
				Full Load Amps (A)	Fuse (A)	Full Load Amps (Electric Heating kW)	Fuse (A)
200-240	50-60	3	3 (L1, L2, L3)	35	50	N/A	N/A
380-415	50-60	3	3 (L1, L2, L3)	25.2	40	N/A	N/A
440-480	50-60	3	3 (L1, L2, L3)	25.2	40	N/A	N/A

Table 26

120 kg / 275 lb. / 1200 L Models

Voltage (V)	Frequency (Hz)	Phase	Wire	Standard		Electric Heat	
				Full Load Amps (A)	Fuse (A)	Full Load Amps (Electric Heating kW)	Fuse (A)
200-240	50-60	3	3 (L1, L2, L3)	37.8	50	N/A	N/A
380-415	50-60	3	3 (L1, L2, L3)	29.4	40	N/A	N/A

Table 27

Electrical Specifications - North America Models

40 kg / 90 lb. / 400 L Models

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker	AWG (mm^2)
Q and M	208-240	60	3	3 (L1, L2, L3)	25.4	40	9 (6)
N and 4	400-480	60	3	3 (L1, L2, L3)	14.6	20	13 (2.5)

Table 28

55 kg / 125 lb. / 520 L Models

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker	AWG (mm^2)
Q and M	208-240	60	3	3 (L1, L2, L3)	28	40	9 (6)
N and 4	400-480	60	3	3 (L1, L2, L3)	16	20	13 (2.5)

Table 29

80 kg / 180 lb. / 800 L Models

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker	AWG (mm^2)
Q and M	208-240	60	3	3 (L1, L2, L3)	30.2	40	9 (6)
N and 4	400-480	60	3	3 (L1, L2, L3)	23.8	30	9 (6)

Table 30

100 kg / 230 lb. / 1000 L Models

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker	AWG (mm^2)
Q and M	208-240	60	3	3 (L1, L2, L3)	35	50	7 (10)
N and 4	400-480	60	3	3 (L1, L2, L3)	25.2	40	9 (6)

Table 31

120 kg / 275 lb. / 1200 L Models

Code	Voltage (V)	Frequency (Hz)	Phase	Wire	Full Load Amps (A)	Circuit Breaker	AWG (mm^2)
Q and M	208-240	60	3	3 (L1, L2, L3)	37.8	50	7 (10)
N and 4	400-480	60	3	3 (L1, L2, L3)	29.4	40	9 (6)

Table 32

Steam Connection

WARNING

Install a steam supply disconnecting device in the vicinity of each washer. Disconnect the steam supply always before any service or intervention, giving sufficient time to cool down the parts to avoid injuries.

C200

WARNING

It is necessary to insert a filter with permeability up to 300 micrometers in front of the steam valve. Dirt bigger than 300 micrometers might damage the steam valve and cause leakage!

C054

Specification	Model	Requirement
Steam inlet connection size, in. BSP	33 - 55 kg / 75 - 125 lb. / 335 - 520 L	3/4
Steam inlet connection size, in. BSP	80 - 120 kg / 180 - 275 lb. / 800 - 1200 L	1
Steam pressure, PSI [bar]	All	44 - 116 [3 - 8]

Table 33

Use an inlet steam pressure hose only, adapted to the steam valve with appropriate seal that is suitable for the applied working pressure. Take care that by the installation and connection of the steam supply the necessary measures are taken that accidental contact is prevented for all persons. Due to the high temperature, direct injury will occur.

Press Air Connection

Specification	Model	Requirement
Press air connection size, in. BSP	33 - 55 kg / 75 - 125 lb. / 335 - 520 L	1/4
Press air connection size, in. [mm]	All other models	0.3 [8]
Air pressure, PSI [bar]	33 - 55 kg / 75 - 125 lb. / 335 - 520 L	43 - 73 [3 - 5]
	All other models	73-102 [5-7]
Air flow, cfm	All models with air operated water and drain valves	<0.1
Minimum compressor reservoir, gal. [L]	All models with air operated water and drain valves	3 [11]
Air output consumption per hour, gal. [L]	40 - 55 kg / 90 - 125 lb. / 400 - 520 L*	3 [12]
	80 - 120 kg / 180 - 275 lb. / 800 - 1200 L (no tilt)	5 [20]
	80 - 120 kg / 180 - 275 lb. / 800 - 1200 L (with tilt)	31 [119]

Table 34 *continues...*

Specification	Model	Requirement
Air compressor size, gal. [L]	40 - 55 kg / 90 - 125 lb. / 400 - 520 L*	26 [100]
	80 - 120 kg / 180 - 275 lb. / 800 - 1200 L (no tilt)	
	80 - 120 kg / 180 - 275 lb. / 800 - 1200 L (with tilt)	35 [133]
*Only required for machines with air-controlled fill valves		

Table 34

Venting

WARNING

Watch out, vapours escape from the machine through the air vent opening! Do not cover or connect to anything!

C062

The vent air opening is part of the back flow prevention water sysem. It also takes care that the tub can not be pressurized by water intake and vapor of the hot water. It allows also proper measuring of the water level. For the safety of everyone, make sure that unauthorized persons cannot reach the backside of the machine.

The external diameter of the ventilating opening for washers 33-55 kg / 75 - 125 lb. / 335 - 520 L is 2.4 in. [60 mm] . For washers 80 - 120 kg / 180 -275 lb. / 800 - 122L it is 1.5 in. [40 mm] .

For placing of connection points, refer to *Machine Dimensions*. The piping material must withstand a temperature of 176° F [80° C] and generated machine vibrations. The central duct for multiple venting must be dimensioned for the total cross section of venting pipes of all machines. Take care that this installation can not create any injury at any point.

Liquid Soap Connection

Always use liquid soap pumps that have a flow rate high enough to bring the requested quantity into the washer in less than 30 seconds.

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

CAUTION

Secure the location of the wiring and hoses in such a way that they can not be pinched, damaged or rubbed. Only authorized workers, with a valid qualification, should do the installation. Before you start to use liquid soap, check with your liquid soap supplier whether the liquid soap is harmless and inert to HDPE and PVC material in order to avoid a problem that manufacturer is not responsible for.

W921

33-55 kg / 75 - 125 lb. / 335 - 520 L

By default the machines are produced with liquid soap connection.

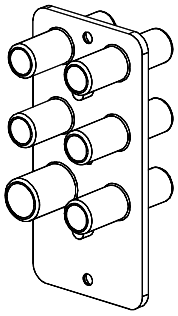
Connection point for soap supply, refer to *Machine Dimensions*.

The washer has provisions for connecting external dosing of liquid soaps. On the back side, a plastic hose connection part is present (refer to *Figure 49*) to connect the liquid soap hoses. Depending on the number of liquid soap pumps that will be used,

drill holes (max. 5) of 0.315 in. [8 mm] in the plastic hose connection part for each pump. On the plastic hose connection part is also a nipple of 1/2 in. [12 mm]. Use this nipple ONLY for entering diluted soap. Drill with 0.45 in. [11.5 mm]. By default, these nipples are closed. Drill only the ones that will be used.

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

33 - 55 kg / 75 - 125 lb. / 335 - 520 L Models - Plastic hose connection part



CFD1266N

Figure 49

WARNING

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

C088

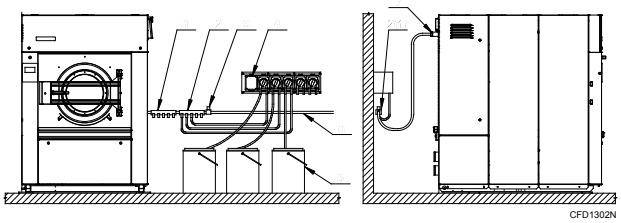
80 - 120 kg / 180 - 275 lb. / 800 - 1200 L

The standard version of these machines are produced with liquid soap connection.

Refer to *Figure 50* .

An external dispenser of liquid soap can be connected to the machine.

1. Connect the liquid soap supply hose to the pump inlet.
2. Connect the outlet to any one of the vertical mixer inlets.
3. Connect the hose of external liquid supply leading from the mixer to the liquid soap inlet located at the rear of the machine. The hose connected onto the inlet pipe must be secured by a hose clamp.
4. Connect the water supply to the inlet of electric water valve which is connected to the mixer inlet. The mixer can be used for up to 5 liquid soap supply hoses. If you need to connect more than 5 liquid soap supply hoses, use one more mixer.
5. Connect the mixers in series.

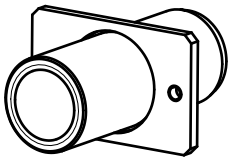


CFD1302N

1. Second mixer
2. Mixer
3. Electrical water valve
4. Liquid soap pumps
5. Liquid soap tanks
6. Water supply
7. Liquid soap inlet in the rear of the machine

Figure 50

80 - 120 kg / 180 -275 lb. / 800 - 120 L Models - Hose connection



CFD1267N

Figure 51

WARNING

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

C088

Electrical Connection of Liquid Soap

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

Functional diagram of connection of liquid soap pumps control signal - excerpt from the machine electrical diagram

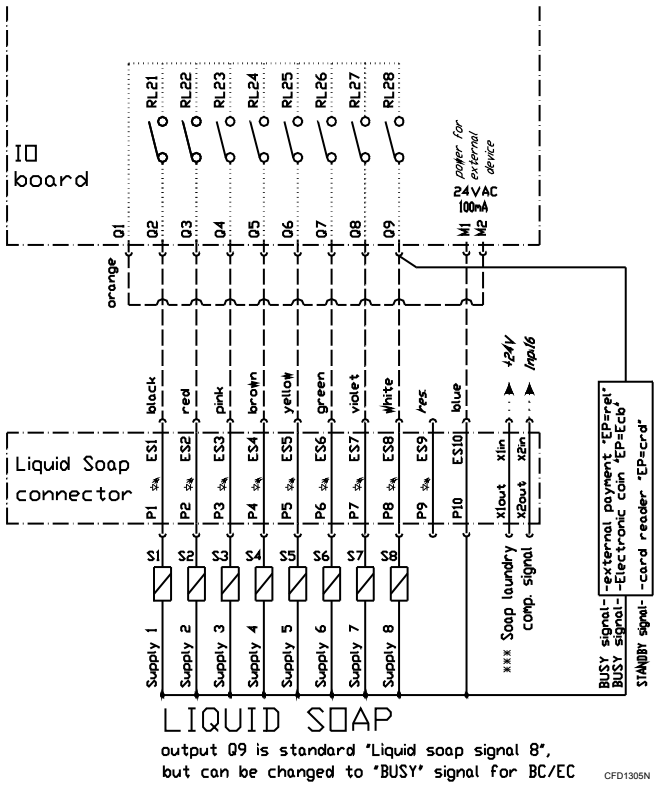
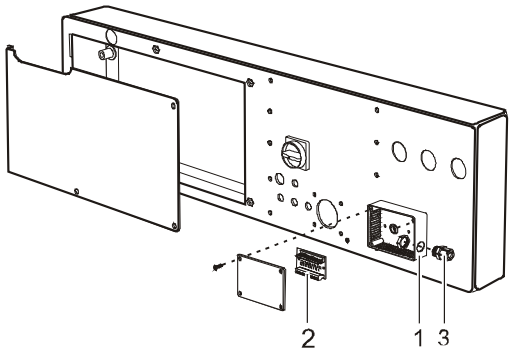
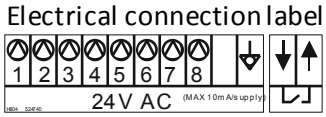


Figure 52

33 - 55 kg / 75 - 125 lb. / 335 - 520 L Models





CFD1303N

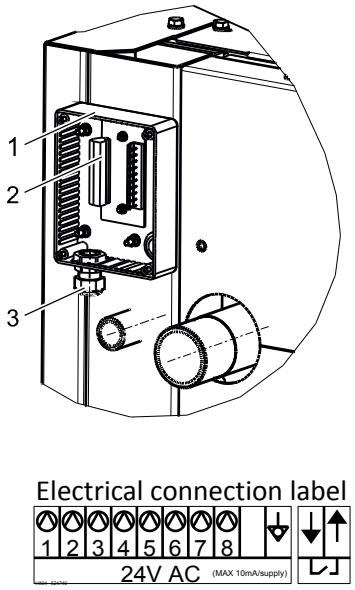
1. Plastic connections box
2. Terminal box
3. Cable bushing

Figure 53

Electronic Controller with Blue PCB and Graphical Display

For electric connection of supply control signals, a plastic box is available on the back side of the machine with the terminal box with LED signalization of activations of the respective pump, refer to *Figure 53* or *Figure 54* . Under the terminal box there is a label for electric connection. Detail connection of signals could be also found on the electric scheme of the machine. Signals for supply pumps control are 24 VAC. Maximum current for control circuits of pumps must be limited to 100mA. Lead the cable for connection of pumps control signals through the plastic cable bushing. After connection of conductors to the respective positions of the connector "P", fix up the cable by tightening the cable bushing against disconnection and close the box with the cover. For details about liquid soap supply system programming, refer to Programming Manual.

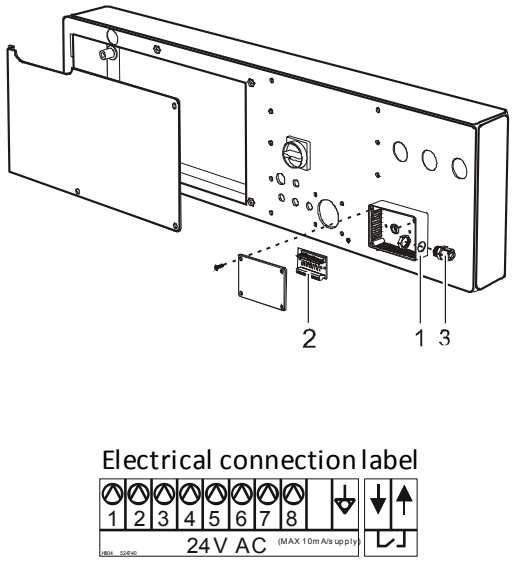
80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models



1. Plastic connections box
2. Terminal box
3. Cable bushing

Figure 54

33 - 55 kg / 75 - 125 lb. / 335 - 520 L Models



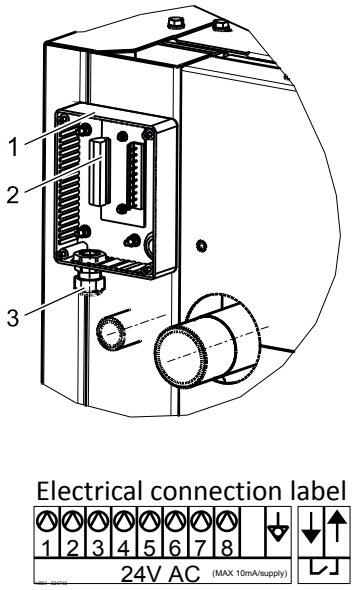
1. Plastic connections box
2. Terminal box
3. Cable bushing

Figure 55

External Wait Control

This function can be activated by an external contact which is connected between the pins ↑ and ↓. Refer to *Figure 55* and *Figure 56* . Such connection is possible only with machines which had been ordered with the "Heating Delay / Waiting for Detergent" option.

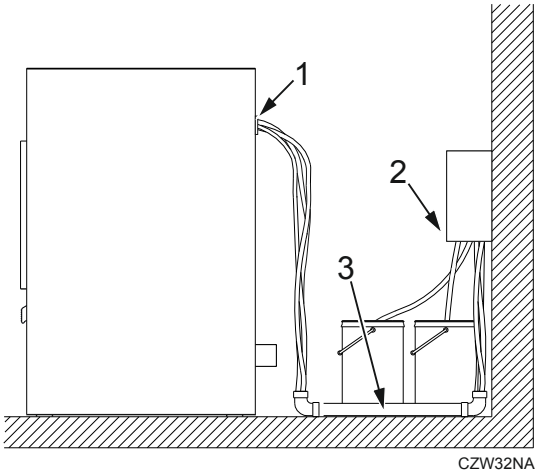
80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models



1. Plastic connections box
2. Terminal box
3. Cable bushing

Figure 56

Chemical Injection Supply System



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

Figure 57

Chemical Injection Supply System

WARNING

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

C365

Undiluted chemical dripping can damage the washer extractor. Therefore, all chemical supply dispenser pumps should be mounted below the washer extractor's injection point. All dispenser tubing should also run below the injection point. Loops do not prevent drips if these instructions are not followed. Failure to follow these instructions could damage the machine and void the warranty. *Figure 57* shows a typical chemical injection supply system.

Operation

Operating Instructions

1. Turn on main power source (circuit breaker).
2. Turn the door handle down to open the door.
3. For machines with tilting, open and secure the door in open position.

> **WARNING**
>
> **When handling the machine tilting by the tilting control, always stand on the side of the machine. Do not stand on the front or behind the moving machine. Avoid access of any person in the front or behind the machine during its tilting.**
>
> W915

4. Models outside of North America - For machines with weighing system:
   a. Tare (set zero weight) every time before loading by pressing the 0 (zero) button.
   b. Load to capacity whenever possible. DO NOT OVERLOAD.

      NOTE: Underloading can cause out-of-balance conditions that can shorten machine life or obstruct a proper function.

      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.
5. For machines with forward and backward tilting
   a. Tilt the machine backward to a position suitable for loading the linen.
   b. Load to capacity whenever possible. DO NOT OVERLOAD.

      NOTE: Underloading can cause out-of-balance conditions that can shorten machine life or obstruct a proper function.

      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.

> **WARNING**
>
> **During loading while the drum is rotating, nobody is allowed to stand behind / at the back of the machine. Do not pull the linen out while the drum is rotating.**
>
> W916

   c. Tilt the machine to the basic position.
6. Turn the handle up to close the door.

> **WARNING**
>
> **Never put fingers between door sealing and drum to avoid possible injury.**
>
> W917

7. For machines with tilting system, before you start a new cycle, the machine must be in its basic position. If the door is closed before the machine reaches the basic position, a warning is displayed. It is necessary to open the door and bring the machine back to the basic position.
8. Choose the desired wash program best corresponding to the quality of the garments and allowed wash temperature in the wash load.
9. Fill the soap dispenser at the front or side of the washer, depending on the chosen program.

   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.

CHM1625R

1. Dispenser A - First Wash
2. Dispenser B - Second Wash
3. Dispenser D - Last Rinse

Figure 58

10. For washing machines connected to liquid soap supply system, check if the liquid soap supply system is in operation and if there is sufficient quantity of liquid soap.
11. Close lid to soap dispenser.
12. Press the START keypad.
13. The wash cycle time is counted down to zero on the display. After completion, the door lock unlocks and the display shows “UNLOAD”.

WARNING

If "Close Door" is displayed, it is not possible to start washing cycle. Check whether:

- **the machine is in basic position**
- **the drum door is closed**

W918

14. For machines with tilting system, tilt the machine forward to a position suitable for unloading the linen.
15. Unload the linen.

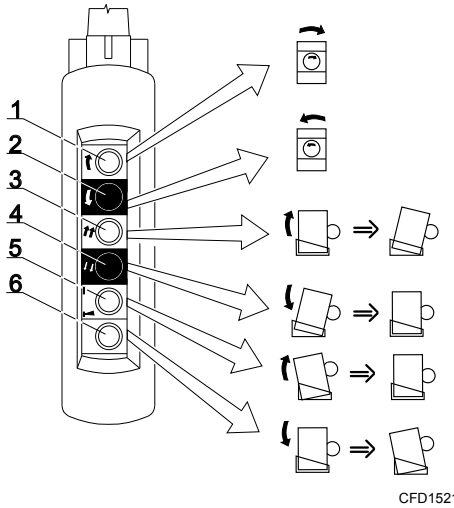
WARNING

During unloading while the drum is rotating, nobody must stand in front of the machine. The linen comes out of the machine by itself. Do not pull the linen out while the drum is rotating.

W919

16. For machines with tilting system, tilt the machine to the basic position.

Hanging Control (Models with Tilting System)



CFD1521N

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

Figure 59

Maintenance

Maintenance

WARNING

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.

W904

WARNING

Sharp edges can cause personal injury. Wear safety glasses and gloves, use proper tools and provide lighting when handling sheet metal parts.

W366R1

IMPORTANT: Replace all panels that are removed to perform service and maintenance procedures. Do not operate the machine with missing guards or with broken or missing parts. Do not bypass any safety devices.

NOTE: Measuring and adjusting the balance switch must be done while the machine is empty.

Daily

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

IMPORTANT: Do not use solvents or acids to clean the rubber door gasket. Do not use oil or grease on rubber.

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

Beginning of Day

1. 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.

2. Check the machine for leaks.
   a. Start an unloaded cycle to fill the machine.
   b. Verify that door and door gasket do not leak.
   c. 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. Inspect water inlet valve hose connections on the back of the machine for leaks.
4. Inspect steam hose connections for leaks (if applicable).
5. 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.

WARNING

To reduce the risk of electrical shock, serious injury or death, disconnect the electrical power to washer-extractor before examining the wiring.

6. Verify that insulation is intact on all external wires and that all connections are secure. If bare wire is evident, call a service technician.
7. 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.

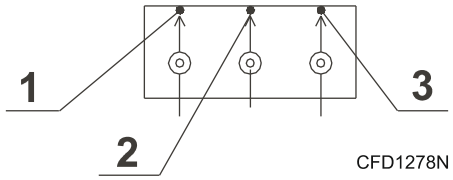
NOTE: Unload the machine promptly after each completed cycle to prevent moisture buildup. Leave loading door and dispenser lid open at the end of each completed cycle to allow moisture to evaporate.

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

Monthly or After 200 Working Hours

1. **33 kg/ 75 lb/335 L, 40 kg/90 lb./400 L and 55 kg/125 lb./520 L models** - Using a multipurpose lithium lubricant containing high pressure consistency addition (NLGI or ES-SO - BEACON EP 2) lubricate seal and bearings with 2 strokes (2 cm^3) while the basket is rotating at wash speed. Refer to *Figure 60* .

   NOTE: The hubs of 80 kg/180 lb./800L, 100 kg/130 lb./1000 L and 120 kg/175 lb./1200 L models are maintenance- free.



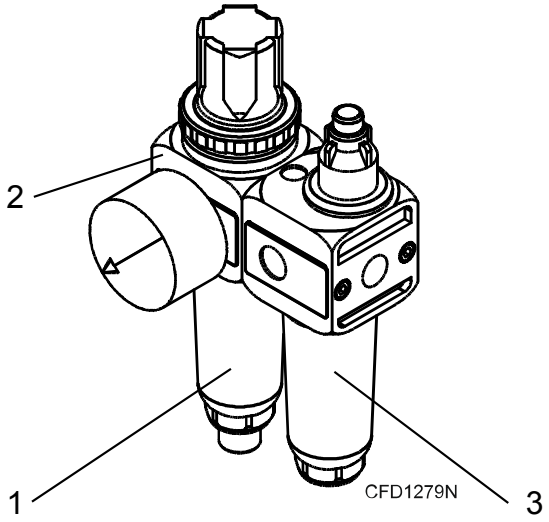
1. Rubber seal lubricator
2. Front bearing lubricator
3. Rear bearing lubricator

Figure 60

2. Check external liquid soap supply system for leaks including:
   a. hose joints
   b. screw joints
   c. connections to the external liquid soap system

Every 3 Months or After 500 Working Hours

1. Check the bearing house for leakage.
2. Make sure the machine is disconnected from main power supply by the laundry switch or circuit breaker and that the other workers are well informed about the machine maintenance activity.
3. Check the tightness of the bolts. If any of the bolts have been damaged, exchange it with a bolt of the same strength value marked on its head. Tighten any loose bolts using the torque value stated in the tables below. Refer to *Table 35* or *Table 36* .
4. Visually check the pipe and hose connections inside of the machine for leaks.
5. Make sure that the control components are protected against moisture and dust during clean up. Wipe and clean inside of machine.
6. For 80 - 120 kg / 180 -275 lb / 800 - 1200 L models, check the amount of oil in pneumatic lubricator. Fill the pot with approximately 23 cm^3 of oil (recommended oil: oil for pneumatic devices or hydraulic oil, non-detergent and without aggressive additives, viscosity VG32 [ISO 3448]).



1. Condensation trap
2. Pressure regulator
3. Lubricator pot

Figure 61

7. On machines with electric heat, check the tightening of the contacts of heating element terminals and other power terminals (main switch, fuse disconnectors and contactors).
8. Put cover back on and switch on power supply by main laundry switch or circuit breaker.
9. If there is an earth leakage trip installed in the inlet circuit of the laundry electric switch board, test it.

WARNING

A qualified technician must test the earth leakage trip (ground) function at least once every 3 months.

C219

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

33 - 55 kg / 75 - 125 lb. / 335 - 520 L

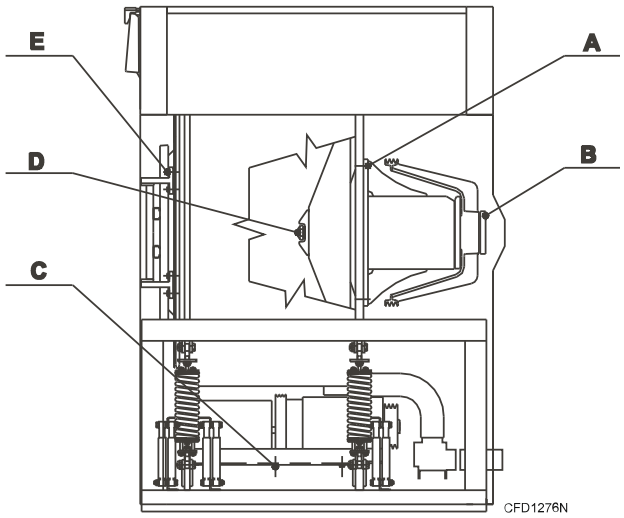


Figure 62

33 - 55 kg / 75 - 125 lb. / 335 - 520 L

Bolt (Nut)	Dimension	Number of Pcs.	Torque, lbf.ft [Nm]
A - hub flange bolts	M20 x 65	24 (12)	443 [600]
B - bolts fixing the pulley to the nut of clamping sleeve	40 - 55 kg / 90 - 125 lb. / 400 - 520 L Models only: M12 x 30	8	52 [70]
B - bolts fixing the pulley to the nut of clamping sleeve	33 kg / 75 lb. / 335 L Models only: nut KM13	1	332 [450]
C - bolts fixing the motor plate to the external drum	M12 x 35	6	52 [70]
D - bolts fixing the inner drum to the shaft	M30 x 80	1	590 [800]
E - bolts fixing the door brackets	M12 x 38	4	18.5 [25]

Table 35

80 - 120 kg / 180 - 275 lb. / 800 - 1200 L

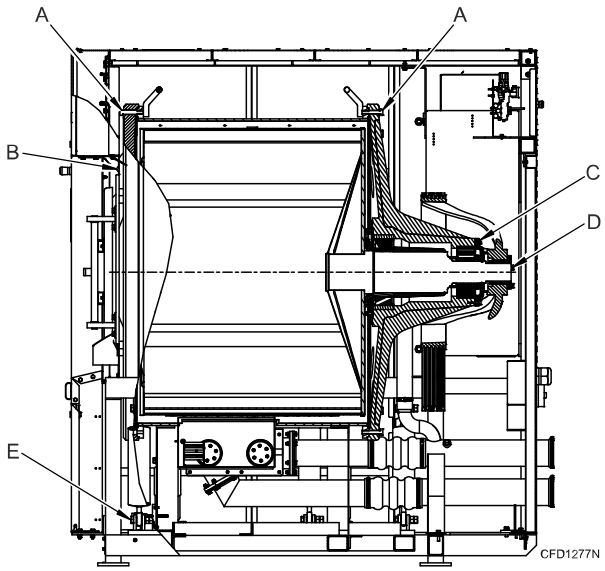


Figure 63

80 - 120 kg / 180 - 275 lb. / 1000 - 1200 L

Bolt (Nut)	Model	Dimension	Number of Pcs.	Torque, lbf.ft [Nm]	Bolt Strength Grade
A - hub flange bolts	80 kg / 180 lb. / 800 L	M16 x 70	24	148 [200]	8.8
	100 kg / 230 lb. / 1000 L	M20 x 70	24	258 [350]	8.8
	120 kg / 275 lb. / 1200 L	M20 x 70	32	258 [350]	8.8
B - bolts fixing the door hinges	All	M12 x 40	4	52 [70]	A2
C - bolts fixing the bearing house cover	80 - 100 kg / 180 - 230 lb. / 800 - 1000 L	M10 x 30	8	15 [20]	4.8
	120 kg / 275 lb. / 1200 L	M12 x 30	8	27 [36]	4.8
D - bolts fixing the pulley to the nut of clamping sleeve	80 kg / 180 lb. / 800 L	M10 x 60	4	32 [44]	8.8
	100 - 120 kg / 230 - 275 lb. / 1000 - 1200 L	M10 x 60	6	32 [44]	8.8

Table 36 *continues...*

Bolt (Nut)	Model	Dimension	Number of Pcs.	Torque, lbf.ft [Nm]	Bolt Strength Grade
E - bolts fixing the spring unit	All	M16 x 75	12	65 [88]	4.8

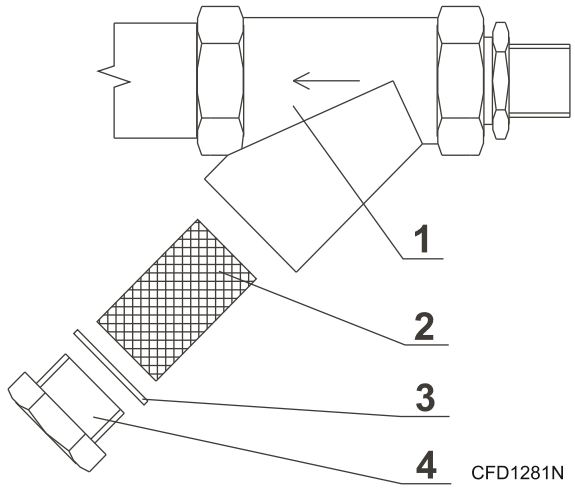
Table 36

Every 6 Months or 1000 Working Hours

1. Clean water and steam filters (if present).
   - Stop the water or steam inlet to the machine.

> **WARNING**
>
> **Before you start the filter cleaning process, make sure the hot water (steam) inlet is closed and cold.**
>
> C217

   - Unscrew the filter plug and remove the filter sieve, refer to *Figure 64* .



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

Figure 64

   - Clean the sieve with running water or compressed air.
   - Put the sieve and gasket back to the filter body and tighten the plug.
2. Remove the rear machine cover and check the condition and tightness of the belts.

> **WARNING**
>
> **Before removing covers of the machine, switch power off and wait for at least 10 minutes. Before starting inspection of frequency inverter, check for residual voltage across main circuit terminals (+) and (-). This voltage must be below 30vdc before you can access the inverter for inspection.**
>
> C207

> **WARNING**
>
> **Before you start, turn off the main switch to avoid possible injuries!**
>
> C216

   - Apply a load at the middle of the belt. Refer to *Table 37* .
   - Testing force of belt tensioning can be found in the below tables. Refer to *Table 38* .
3. Grease spring suspension eyes, guiding rods, the door handle casing and the casings in the door hinge.
4. Clean and remove dirt and dust from:
   - the cooling fin of the inverter
   - the motor cooling fins
   - the internal ventilator of the inverter (if present)
   - the external ventilator (if present)
   - the external air relieves of the machine
5. Check if ventilator in coolfins of inverter (if present) is functional.
6. Check if external ventilator (if present) is functional.

Model	Belt deflection, in. [mm]	Force, N
33 kg / 75 lb. / 335 L	0.78 [20]	53 - 54
40 - 55 kg / 90 - 125 lb. / 400 - 520 L	0.78 [20]	68 - 69

Table 37 *continues...*

Model	Belt deflection, in. [mm]	Force, N
80 kg / 180 lb. / 800 L	0.48 [12.3]	11 - 12
100 - 120 kg / 230 -275 lb. / 1000 - 1200 L	0.35 [9]	20 - 22

Table 37

Requirement	33 kg / 75 lb. / 335 L	40 - 55 kg / 90 -125 lb. / 400 - 520 L	80 kg / 180 lb. / 800 L	100 - 120 kg / 230 -275 lb. / 1000 - 1200 L
Force F measured by device, N	200	300	N/A	N/A
Frequency measured by device, Hz	N/A	N/A	36 - 37	35 - 37

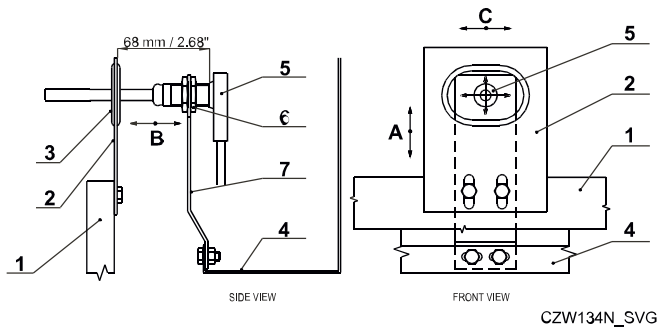
Table 38

Every 12 Months

Have a qualified worker check the safety vibration switch for proper function.

33 - 55 kg / 75 - 125 lb. / 335 - 520 L Models

1. To adjust the rubber bush to the control element axis of vibration switch, move the limiter up or down.



A. Movement of limiter

B. Movement of vibration switch

C. Movement of vibration switch holder

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

Figure 65

2. To increase the sensitivity of the vibration switch, move it to the left on the holder. To decrease the sensitivity, move it to the right. To reach the maximum permitted unbalance value, it is necessary to keep the distance of 2.68 in. [68 mm] between the limiter and the vibration switch.
3. To center the switch control element in the rubber bushing of the limiter, move the holder with the switch left or right.
4. Verify the function is working properly:
   a. Open the control panel cover.
   b. Start extraction mode.
   c. After reaching the maximum RPM, carefully switch over the vibration switch by moving the flexible control element manually.

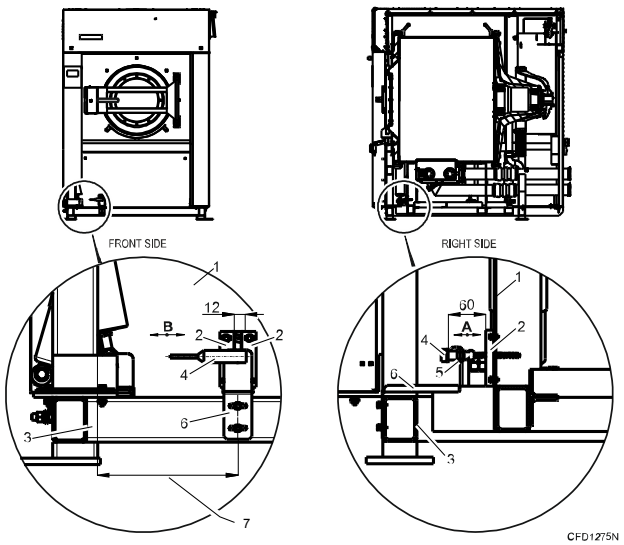
WARNING

Do this carefully to avoid injuries by vibrating and fixed parts of the machine. After you have checked the function, mount all panel covers back to their original places.

C208

80 - 120 kg / 180 - 275 lb. / 1000 - 1200 L Models

1. Set a distance of 0.47 in. [12 mm] between the limiters.



1. Front part of moving frame
2. Limiters
3. Machine frame
4. Vibration switch
5. Adjusting nut
6. Vibration switch holder
7. 80 kg / 180 lb. / 800 L - 9.84 in. [250 mm]; 100 kg / 230 lb. / 1000 L - 19.57 in. [497 mm]; 120 kg / 275 lb. / 1200 L - 13.90 in. [353 mm]

Figure 66

2. To increase the sensitivity of the vibration switch, move it to the left on the holder. To decrease the sensitivity, move it to the right. To reach the maximum permitted unbalance value, it is necessary to keep the distance of 2.36 in. [60 mm] between the limiter and the vibration switch.
3. To center the switch control element to the distance axis between the limiters, move the holder with the switch left or right.
4. Verify the function is working properly:
   a. Open the control panel cover.
   b. Start extraction mode.

c. After reaching the maximum RPM, carefully switch over the vibration switch by moving the flexible control element manually.

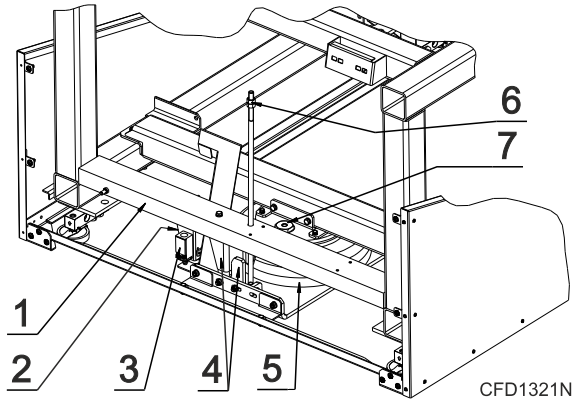
WARNING

Do this carefully to avoid injuries by vibrating and fixed parts of the machine. After you have checked the function, mount all panel covers back to their original places.

C208

Maintenance of Tilting Mechanism

Forward Tilting 40 - 55 kg / 90 - 125 lb. / 400 - 520 L Models



1. Washer Frame
2. Upper Position Switch
3. Lower Position Switch
4. Guiding Plate and Slot
5. Air Spring
6. Mechanical Tilt Timer
7. Screwing of Air Spring

Figure 67

Weekly

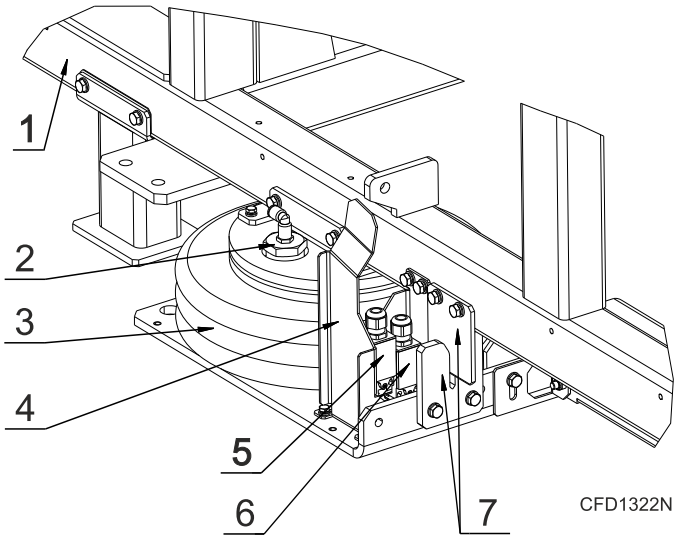
1. During the tilting process, inspect the position of the washing machine to the bearing housing. There should be identical gaps on both sides. Verify the condition of drain hoses, paying special attention to where they bend.
2. Inspect pressure setting on washing machine regulator.

Monthly

1. Inspection of the raid of the lower and upper position switches, adjust if necessary.
2. Inspect the air spring to ensure it is without surface damage. Also inspect the air supply fitting and hose.
3. Inspect screws of the guide plate and lower stop. Verify their position and tightness.
4. Inspect tightness of the two lock-nuts on mechanical pulling rod (safety stop mechanism of tilting function).

NOTE: The parts are accessible upon removal of the rear part of the lower housing. Refer to *Figure 67* .

Forward and Backward Tilting 80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models



1. Lower Frame
2. Screwing of Air Spring
3. Air Spring
4. Slat of Upper Stop Switch
5. Security Upper Stop Switch (Tilt Position)
6. Security Lower Stop Switch (Base Position)
7. Position Limiter

Figure 68

Monthly

1. Inspect surface of the Air Spring for damage. Verify that the fitting has no air leaks.
2. Verify adjustment settings of upper stop switch. Make sure it is secured in the correct operating position.
3. Verify adjustment settings of lower stop switch. Make sure it is secured in the correct operating position.
4. Verify that upper stop switch is in correct position. Tilting must always be stopped when the 13- degree angle of tilting is reached.
5. Forward tilting only: protective rubber exists between the machine and the tilting system in the front section of the machine. Verify that this rubber is intact.
6. Forward and backward tilting only: Verify adjustment settings of the upper stop switches (pneumatically controlled). Secure switches in the correct operating position.
7. Forward and backward tilting only: verify position of the anchor chains and ensure they are without damage.

Belt Replacement

IMPORTANT: Never use a crowbar to take off the belts over the pulley grooves.

Loosen the bolts of tightening pulley on the drum rear wall and the adjusting screw for taking the belts off. Always change a complete set of belts at a time, making sure to use the same type of belts in the set. If the pulleys are damaged, replace them.

After the belt replacement, check the pulley alignment, the tightness of belts, bolts and nuts. Keep the belts and pulleys clean and free from oil, lubricants, water, etc.

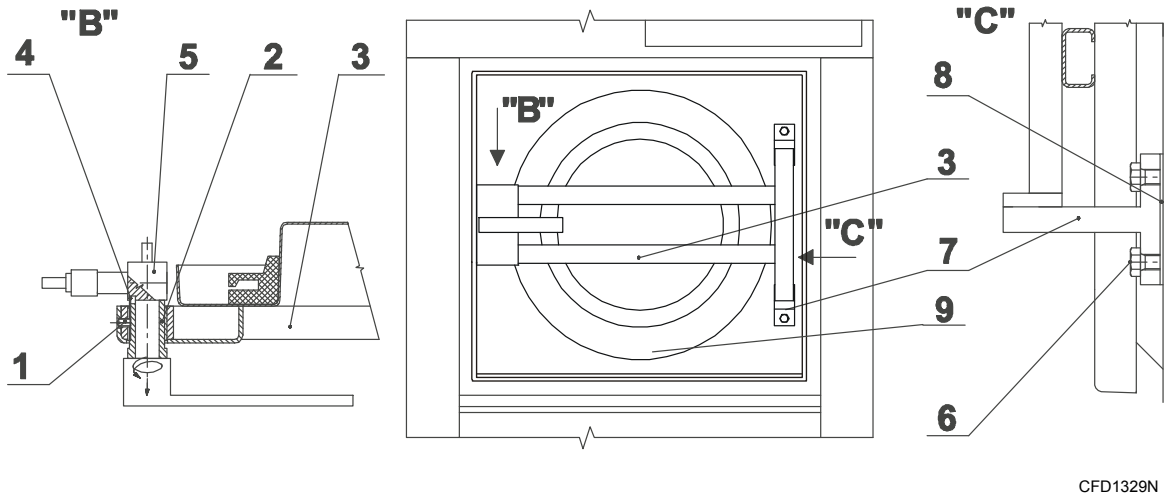
Door Seal Thrust

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

Adjusting on the Side of the Door Handle

1. Unscrew the bolt, refer to *Figure 69* or *Figure 70* (detail view "B"),securing the casing of the door handle.
2. Unscrew the casing from the door bearer always by a whole turn so that the groove in the casing thread appears below the securing bolt.
3. To make the casing turn easier, use the semicircle notches to insert a bolt between the casing and the handle pin. By turning the handle, the casing will also move.
4. After the door thrust has been adjusted, tighten up the securing bolt to the groove in the casing thread.

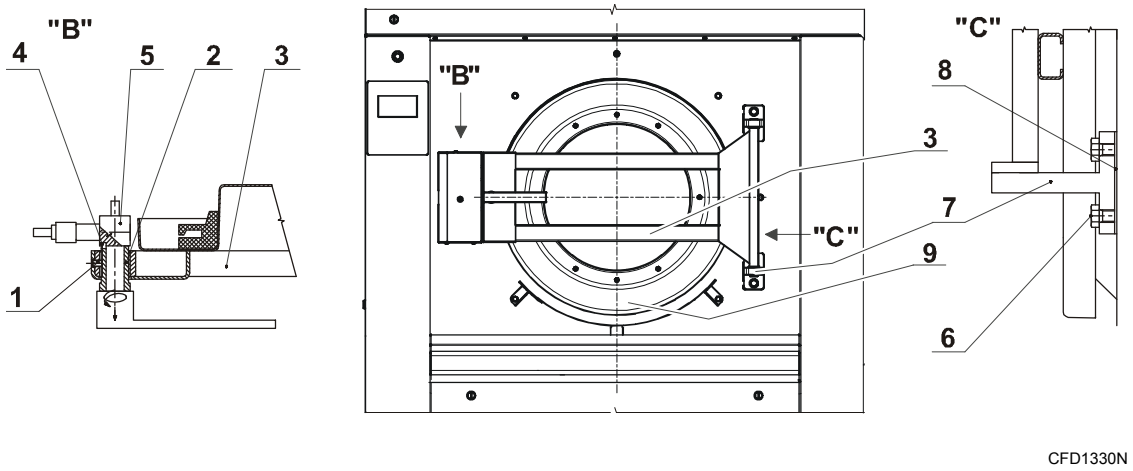
33 - 55 kg / 75 - 125 lb. / 335 - 520 L Models



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

Figure 69

80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models



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

Figure 70

Adjusting on the Side of the Door Hinge

If the adjustment at the door handle side is insufficient, it is necessary to perform adjustment at the door hinge side.

1. Loosen two bolts fastening the top door hinge. Refer to *Figure 69* or *Figure 70* (detail view "C").
2. Take off the elimination washer.
3. Tighten the two bolts fastening the top door hinge.
4. Repeat steps with the bottom door hinge.
5. Check to make sure the door hinge does not move while opening and closing the door.
6. If the thrust adjusting has not been sufficient, replace the door seal.

Spring Unit

33 - 55 kg / 75 - 125 lb. / 335 - 520 L Models

Spring units are to be adjusted if the suspended machine part is not in a horizontal position (without linen and water) or after the spring unit has been replaced.

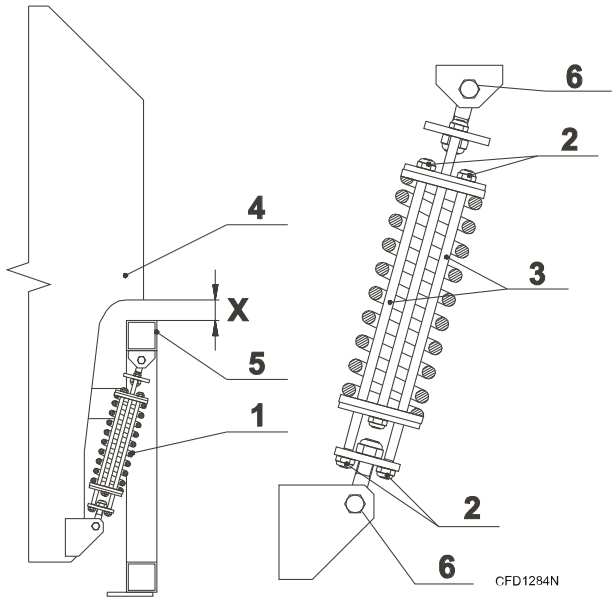
WARNING

Before you start, turn off the main switch to avoid possible injuries!

C216

To adjust the spring unit, turn both nuts with the same number of turns simultaneously on the guiding rods of the spring unit. Refer to *Figure 71* .

33 - 55 kg / 75 - 125 lb. / 335 - 520 L Models



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

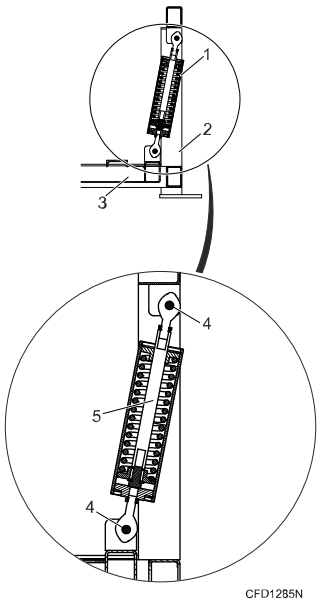
Figure 71

The adjustment is correct when a gap (X = 2.16 in. [55 mm]) appears in all four corners of the suspended machine part, between the plate edge of the vibrating part and the frame top surface.

80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models

The spring unit is adjusted by the manufacturer.

80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models



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

Figure 72

Replacement Washer Fuses

Fuse Values

The correct values of fuses can be found in the vicinity of the fuse holders and on the electrical scheme and delivered with the machine. When a fuse is blown, you can replace it with the same value but in NO case should you replace it with a fuse of higher value. If the fuse blows again, do not change it but find the cause of the failure. Contact your commercial distributor for help if necessary.

Earth Leakage Trips

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

WARNING

A qualified technician must test the earth leakage trip (ground) function at least once every 3 months.

C219

To test the earth leakage trip, press the test push button of the earth leakage trip while it is under tension. The earth leakage trip must go off.

Unblocking the Door Lock In Case of Emergency

If a power blackout takes too long, you can make an emergency unblocking of the door lock.

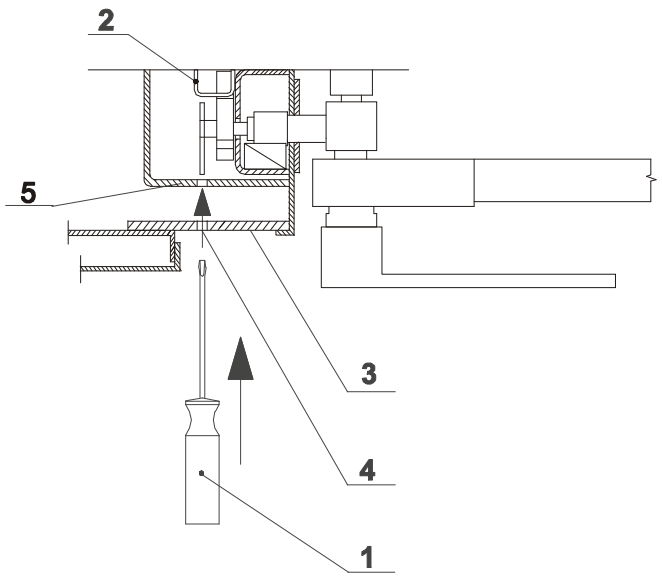
WARNING

Before emergency door opening, turn off the machine's main switch. Never open the door while the drum is still running. Never open the door if "too hot" is indicated. Risk of burn or scald injuries. Never open the door if the machine parts feel too warm. Always wait to open the door until there is no water in the drum. In the opposite case, it will flow out after opening the door. Open the door only at the loading side to prevent contamination of clean side linens.

C223

1. Verify if all conditions are present to safely open the door.
2. For 33 - 55 kg / 75 - 125 lb. / 335- 520 L Models, using a tool (e.g., screwdriver) and a piece of wire with maximum diameter of .21 in. [5.5 mm] , insert the tool through the finger protection hole into the lock cover and push softly. Refer to *Figure 73* .

33 - 55 kg / 75 - 125 lb. / 335 - 520 L Models, view from above



1. Screwdriver or other tool
2. Latch mechanism
3. Finger protection
4. Finger protection hole
5. Lock cover

Figure 73

3. For 80 - 120 kg / 180 - 275 lb. / 800 - 1200 L Models, unscrew the bolt in the lcok cover. Insert a screwdriver into the hole in the lock cover and push softly. Refer to *Figure 74* .

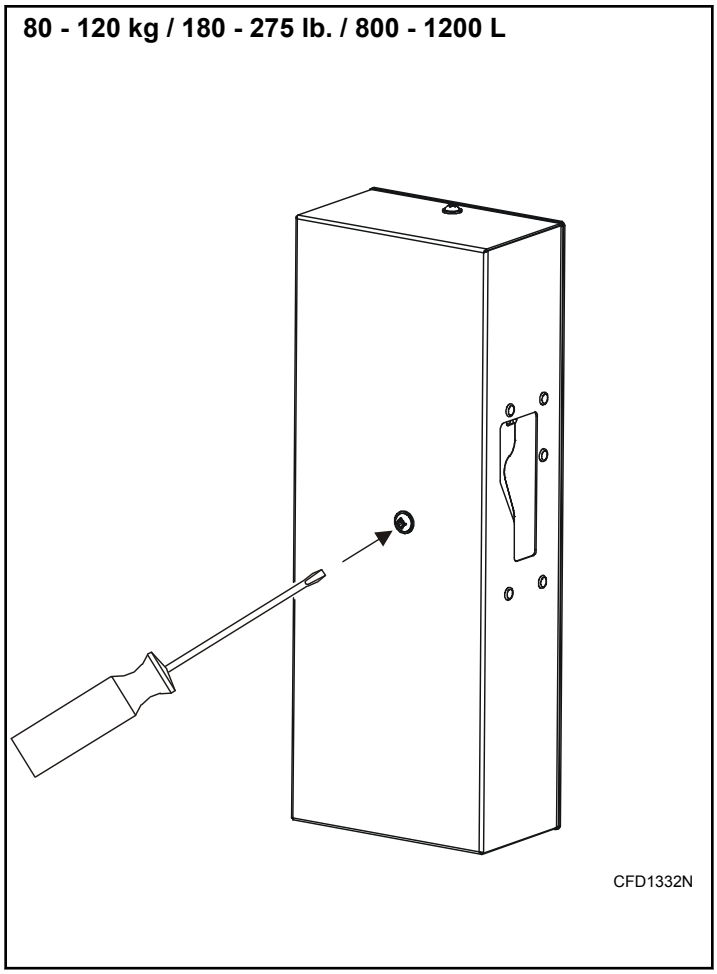


Figure 74

4. The latch mechanism is lifted up and the lock is unblocked. The lock stays unblocked even after the tool removal.
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

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.

CAUTION

Be careful when disconnecting machine from service. Falling door and glass can cause injuries.

W922

WARNING

Take all necessary action and precautions when disassembling the washer to avoid injury from glass or sharp metal edges.

W908

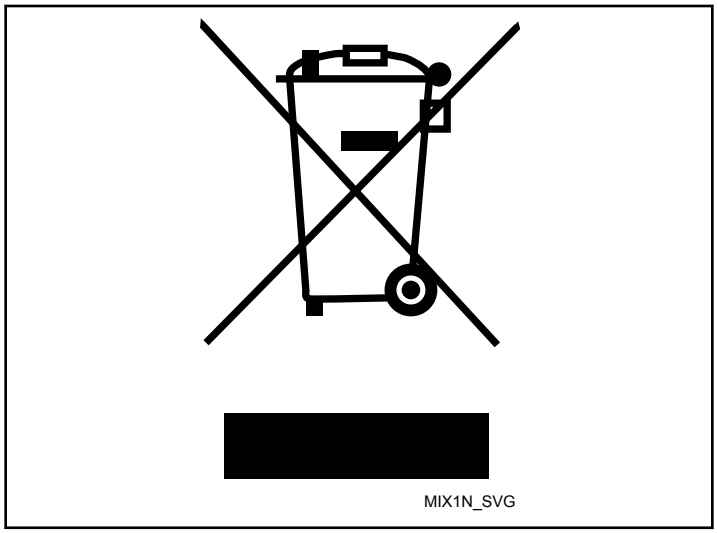


Figure 75

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 75* . 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.