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Installation and Service

MWF63C7, MWF63Y7

MWF77C7, MWF77Y7

Washer Extractors

Read the separate safety manual before installing, operating, or servicing

PELLERIN MILNOR CORPORATION POST OFFICE BOX 400, KENNER, LOUISIANA 70063-0400, U.S.A.

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PELLERIN MILNOR CORPORATION
LIMITED STANDARD WARRANTY

We warrant to the original purchaser that MILNOR machines including electronic hardware/software (hereafter referred to as "equipment"), will be free from defects in material and workmanship for a period of one year from the date of shipment (unless the time period is specifically extended for certain parts pursuant to a specific MILNOR published extended warranty) from our factory with no operating hour limitation. This warranty is contingent upon the equipment being installed, operated and serviced as specified in the operating manual supplied with the equipment, and operated under normal conditions by competent operators.

Providing we receive written notification of a warranted defect within 30 days of its discovery, we will—at our option—repair or replace the defective part or parts, EX Factory (labor and freight specifically NOT included). We retain the right to require inspection of the parts claimed defective in our factory prior to repairing or replacing same. We will not be responsible, or in any way liable, for unauthorized repairs or service to our equipment, and this warranty shall be void if the equipment is tampered with, modified, or abused, used for purposes not intended in the design and construction of the machine, or is repaired or altered in any way without MILNOR's written consent.

Parts damaged by exposure to weather, to aggressive water, or to chemical attack are not covered by this warranty. For parts which require routine replacement due to normal wear—such as gaskets, contact points, brake and clutch linings, belts, hoses, and similar parts—the warranty time period is 90 days.

We reserve the right to make changes in the design and/or construction of our equipment (including purchased components) without obligation to change any equipment previously supplied.

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THE PROVISIONS ON THIS PAGE REPRESENT THE ONLY WARRANTY FROM MILNOR AND NO OTHER WARRANTY OR CONDITIONS, STATUTORY OR OTHERWISE, SHALL BE IMPLIED.

WE NEITHER ASSUME, NOR AUTHORIZE ANY EMPLOYEE OR OTHER PERSON TO ASSUME FOR US, ANY OTHER RESPONSIBILITY AND/OR LIABILITY IN CONNECTION WITH THE SALE OR FURNISHING OF OUR EQUIPMENT TO ANY BUYER.

BMP720097/19036

BIUUUD19 (Published) Book specs- Dates: 20081231 / 20081231 / 20081231 Lang: ENG01 Applic: UUU

How to Get the Necessary Repair Components

This document uses Simplified Technical English.
Learn more at http://www.asd-ste100.org.

You can get components to repair your machine from the approved supplier where you got this machine. Your supplier will usually have the necessary components in stock. You can also get components from the Milnor® factory.

Tell the supplier the machine model and serial number and this data for each necessary component:

- The component number from this manual
- The component name if known
- The necessary quantity
- The necessary transportation requirements
- If the component is an electrical component, give the schematic number if known.
- If the component is a motor or an electrical control, give the nameplate data from the used component.

To write to the Milnor factory:

Pellerin Milnor Corporation
Post Office Box 400
Kenner, LA 70063-0400
UNITED STATES

Telephone: 504-467-2787
Fax: 504-469-9777
Email: parts@milnor.com

— End of BIUUUD19 —

Trademarks

BNUUUU02.R01 0000158093 F.2 E.2 3/3/21 9:47 AM Released

These words are trademarks of Pellerin Milnor® Corporation and other entities:

Table 1. Trademarks

AutoSpot™	GreenFlex™	MilMetrix®	PulseFlow®
CBW®	GearTrace™	MilTouch™	RAM Command™
Drynet™	GreenTurn™	MilTouch-EX™	RecircONE®
E-P Express®	Hydro-cushion™	MILRAIL™	RinSave®
E-P OneTouch®	Mentor®	Miltrac™	SmoothCoil™
E-P Plus®	Mildata®	PBW™	Staph Guard®
Gear Guardian®	Milnor®		

End of document: BNUUUU02

Use the Red Safety Supports for Maintenance — MWF_C_, MWF_Y_

BNWMXH01.C01 0000374594 A.4 8/18/21 3:04 PM Released

1. What Safety Supports are Provided and Why

BNWMXH01.C02 0000374593 A.4 A.3 10/26/21 4:05 PM Released

These machines are provided with two safety stands. It is permissible to use both stands or only one stand. After the housing is tilted forward, the stand(s) are placed on the tilt base cross beam. If only one stand is used, it is placed adjacent to the tilt air bag. The safety stand(s) provide protection against the un-powered descent of the housing during maintenance in the event of a leak in the pneumatic tilt system. Such a condition can cause the housing to fall quickly. Use the safety support(s) whenever the maintenance to be performed requires you to place any part of your body in or near the path of the vertically moving portion of the machine.

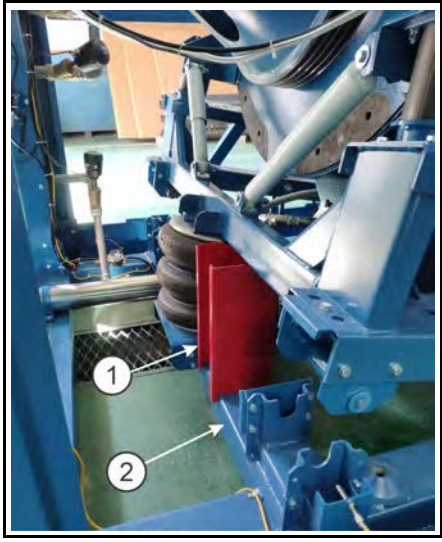
WARNING: **Incorrect use of the safety supports** — can cause the machine to descend and crush you.

- Never work near the path of the vertically moving portion of the machine unless the safety supports are deployed and power is removed from the machine.
- Maintain the safety support(s) in good condition.
- When not in use, stow the safety support(s) in the location(s) provided on the machine or in a convenient, designated location.

2. How To Deploy the Safety Stands

BNWMXH01.T01 0000399959 A.4 A.2 10/27/21 10:48 AM In Work

1. Use the controls to tilt the machine up as in normal operation.
2. See the illustration at right. Put one or both safety stands on the tilt base cross beam so the stands are seated securely. Reach from the rear of the machine with the lower, rear cover removed.
3. Use the controls to carefully lower the housing just until it is resting on the stand(s).
4. Remove electric power from the machine.



Legend

1 . . . Safety stand. Shows placement when only one stand is used.

2 . . . Tilt base cross beam

End of document: BNWMXH01

Safety Stands

MWF63C7/Y7, MWF77C7/Y7, MWF100C7/Y7, MWF125C7/Y7

NOTE: See instruction, BNWMXH01 — Use the Red Safety Stands for Maintenance.

Table 1. Parts List—Safety Stands

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	**Item**	**Part Number**	**Description/Nomenclature**	**Comments**
Components				
all	1	98MW21822F	SAFETY STAND,MWF TILT	

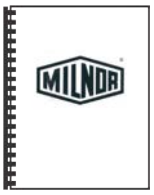
Installation Tag Guidelines

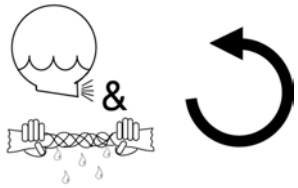
MWF27J8	MWF27Z8	MWF36J8	MWF36Z8
MWF45J8	MWF45Z8	MWF63C7	MWF63J7
MWF63Y7	MWF63Z7	MWF77C7	MWF77J7
MWF77Y7	MWF77Z7	MWF100C7	MWF100J7
MWF100Y7	MWF100Z7	MWF125C7	MWF125J7
MWF125Y7	MWF125Z7		

NOTICE: This information may apply to models in addition to those listed above. It applies to paper tags. It does not apply to the vinyl or metal safety placards, which must remain permanently affixed to the machine and replaced if no longer readable.

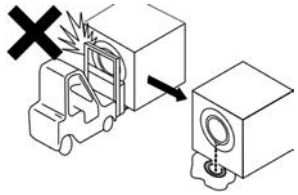
Paper tags on the machine provide installation guidelines and precautions. The tags can be tie-on or adhesive. You can remove tie-on tags and white, adhesive tags after installation. Yellow adhesive tags must remain on the machine.

The following entries explain the installation tags. Each entry includes: 1) the tag illustration, 2) the tag part number at the bottom of the tag, and 3) the meaning of the tag.

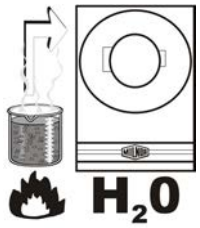
Display or Action	Explanation
	Read the manuals before proceeding. This symbol appears on most tags. The machine ships with safety, operator, and routine maintenance guides for customer use. Milnor dealer manuals for installing, commissioning, and servicing the machine are also available from the Milnor Parts department.
	B2TAG88005: This carefully built product was tested and inspected to meet Milnor performance and quality standards by (identification mark of tester).
	B2TAG94078: Do not forklift here; do not jack here; do not step here—whichever applies.
	B2TAG94081: Motor must rotate in this direction. On single motor washer-extractors and centrifugal extractors, the drive motor must turn in this direction during draining and extraction. This tag is usually wrapped around a motor housing. If the motor turns in the opposite direction when the machine is first tested, the electrical hookup is incorrect and must be reversed as explained in the schematic manual.



B2TAG94097: The cylinder must rotate **counterclockwise** during draining and extraction (spin) when viewed from here (rear of machine). Otherwise, reverse the electric power connections, as explained in the schematic manual.



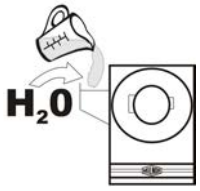
B2TAG94099: Do not strike the shell door when fork-lifting. This can cause the door to leak.



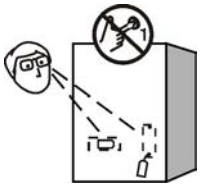
B2T2001013: Hot water connection.

B2T2001014: Cold water connection.

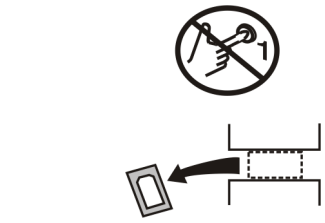
B2T2001015: Reuse (third) water connection. (Optional)



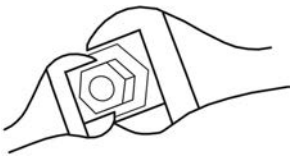
B2T2001016: Flushing water connection. This is the water that goes into the supply compartment or pumped chemical manifold to flush chemicals into the machine.



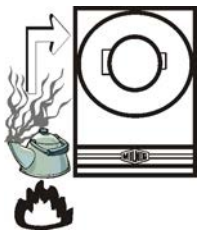
B2T2001028: Look for tags inside the machine. These tags may identify shipping restraints to be removed or components to be installed. Do not start the machine until these actions are completed.



B2T2002013: Do not start the machine until shipping restraints are removed. This tag will appear on the outside of the machine to alert you to the presence of internal shipping restraints. A tag will also appear on the restraint to help identify it. Most, but not all shipping restraints display the color red. Some shipping restraints are also safety stands. Do not discard these.



B2T2003001: Hold the side of the connection stationary with a wrench as you tighten the connection with another wrench. Otherwise, you may twist components, such as valves, damaging them.



B2T2004027: Steam connection. (Optional)

B2T2008007: Do not exceed 160° Fahrenheit (71° Celsius) water temperature. Excessive temperature can damage the water valves in this machine. Eliminate water hammer on the water lines to this machine. Water hammer can rupture the water inlet valves on this machine. Follow applicable codes when installing water hammer arresters. Maintain incoming water pressure between 10 and 75 psi (between 0.7 and 5.1 bar). Pressures outside this range can damage the water valves in this machine.

End of document: BNWMAI01

BIUUUS27 (Published) Book specs- Dates: 20051111 / 20051111 / 20060323 Lang: ENG01 Applic: EOT

Safety—Tilting Washer-Extractors

1. General Safety Requirements—Vital Information for Management Personnel [Document BIUUUS04]

Incorrect installation, neglected preventive maintenance, abuse, and/or improper repairs, or changes to the machine can cause unsafe operation and personal injuries, such as multiple fractures, amputations, or death. The owner or his selected representative (owner/user) is responsible for understanding and ensuring the proper operation and maintenance of the machine. The owner/user must familiarize himself with the contents of all machine instruction manuals. The owner/user should direct any questions about these instructions to a Milnor® dealer or the Milnor® Service department.

Most regulatory authorities (including OSHA in the USA and CE in Europe) hold the owner/user ultimately responsible for maintaining a safe working environment. Therefore, the owner/user must do or ensure the following:

- recognize all foreseeable safety hazards within his facility and take actions to protect his personnel, equipment, and facility;
- work equipment is suitable, properly adapted, can be used without risks to health or safety, and is adequately maintained;
- where specific hazards are likely to be involved, access to the equipment is restricted to those employees given the task of using it;
- only specifically designated workers carry out repairs, modifications, maintenance, or servicing;
- information, instruction, and training is provided;
- workers and/or their representatives are consulted.

Work equipment must comply with the requirements listed below. The owner/user must verify that installation and maintenance of equipment is performed in such a way as to support these requirements:

- control devices must be visible, identifiable, and marked; be located outside dangerous zones; and not give rise to a hazard due to unintentional operation;
- control systems must be safe and breakdown/damage must not result in danger;
- work equipment is to be stabilized;
- protection against rupture or disintegration of work equipment;
- guarding, to prevent access to danger zones or to stop movements of dangerous parts before the danger zones are reached. Guards to be robust; not give rise to any additional hazards; not be easily removed or rendered inoperative; situated at a sufficient distance from the danger zone; not restrict view of operating cycle; allow fitting, replacing, or maintenance by restricting access to relevant area and without removal of guard/protection device;
- suitable lighting for working and maintenance areas;
- maintenance to be possible when work equipment is shut down. If not possible, then protection measures to be carried out outside danger zones;
- work equipment must be appropriate for preventing the risk of fire or overheating; discharges of gas, dust, liquid, vapor, other substances; explosion of the equipment or substances in it.

1.1. **Laundry Facility**—Provide a supporting floor that is strong and rigid enough to support–with a reasonable safety factor and without undue or objectionable deflection–the weight of the fully loaded machine and the forces transmitted by it during operation. Provide sufficient clearance for machine movement. Provide any safety guards, fences, restraints, devices, and verbal and/or posted restrictions necessary to prevent personnel, machines, or other moving machinery from accessing the machine or its path. Provide adequate ventilation to carry away heat and vapors. Ensure service connections to installed machines meet local and national safety standards, especially regarding the electrical disconnect (see the National Electric Code). Prominently post safety information, including signs showing the source of electrical disconnect.

1.2. **Personnel**—Inform personnel about hazard avoidance and the importance of care and common sense. Provide personnel with the safety and operating instructions that apply to them. Verify that personnel use proper safety and operating procedures. Verify that personnel understand and abide by the warnings on the machine and precautions in the instruction manuals.

1.3. **Safety Devices**—Ensure that no one eliminates or disables any safety device on the machine or in the facility. Do not allow machine to be used with any missing guard, cover, panel or door. Service any failing or malfunctioning device before operating the machine.

1.4. **Hazard Information**—Important information on hazards is provided on the machine safety placards, in the Safety Guide, and throughout the other machine manuals. **Placards must be kept clean so that the information is not obscured. They must be replaced immediately if lost or damaged. The Safety Guide and other machine manuals must be available at all times to the appropriate personnel.** See the machine service manual for safety placard part numbers. Contact the Milnor Parts department for replacement placards or manuals.

1.5. **Maintenance**—Ensure the machine is inspected and serviced in accordance with the norms of good practice and with the preventive maintenance schedule. Replace belts, pulleys, brake shoes/disks, clutch plates/tires, rollers, seals, alignment guides, etc. before they are severely worn. Immediately investigate any evidence of impending failure and make needed repairs (e.g., cylinder, shell, or frame cracks; drive components such as motors, gear boxes, bearings, etc., whining, grinding, smoking, or becoming abnormally hot; bending or cracking of cylinder, shell, frame, etc.; leaking seals, hoses, valves, etc.) Do not permit service or maintenance by unqualified personnel.

2. Safety Alert Messages—Internal Electrical and Mechanical Hazards [Document BIUUUS11]

The following are instructions about hazards inside the machine and in electrical enclosures.

WARNING 1: Electrocution and Electrical Burn Hazards—Contact with electric power can kill or seriously injure you. Electric power is present inside the cabinetry unless the main machine power disconnect is off.

- Do not unlock or open electric box doors.
- Do not remove guards, covers, or panels.
- Do not reach into the machine housing or frame.
- Keep yourself and others off of machine.
- Know the location of the main machine disconnect and use it in an emergency to remove all electric power from the machine.

WARNING 2: Entangle and Crush Hazards—Contact with moving components normally isolated by guards, covers, and panels, can entangle and crush your limbs. These components move automatically.

- Do not remove guards, covers, or panels.
- Do not reach into the machine housing or frame.
- Keep yourself and others off of machine.
- Know the location of all emergency stop switches, pull cords, and/or kick plates and use them in an emergency to stop machine motion.

WARNING 3: Crush Hazards—Tilting machines only—The machine housing will crush your body or limbs if it descends or falls while you are under it. Housing can descend with power off or on. Manual operation of tilting valves overrides safety interlocks. Improper operation of manual tilting valves may cause the housing to descend.

- Do not remove guards, covers, or panels.
- Do not reach into the machine housing or frame.

3. Safety Alert Messages—External Mechanical Hazards [Document BIUUUS12]

The following are instructions about hazards around the front, sides, rear or top of the machine.

WARNING 4: Strike and Crush Hazards—Machines with power operated door—The moving door can strike you or crush or pinch your limbs if caught between the door and machine. Some doors move automatically.

- Keep yourself and others clear of movement areas and paths.
- Keep both hands on the controls while operating.
- Do not operate the machine with malfunctioning two-hand manual controls.

WARNING 5: Crush Hazards—Tilting machines only—The machine can crush your body or limbs if you are caught between the tilting housing and a stationary object. Some machines tilt automatically.

- Keep yourself and others clear of movement areas and paths.
- Keep both hands on the controls while operating.
- Do not operate the machine with malfunctioning two-hand manual controls.

WARNING 6: Crush Hazards—Suspended machines only—Spaces between the shell and housing can close and crush or pinch your limbs. The shell moves within the housing during operation.

- Do not reach into the machine housing or frame.
- Keep yourself and others clear of movement areas and paths.

4. Safety Alert Messages—Cylinder and Processing Hazards

[Document BIUUUS13]

The following are instructions about hazards related to the cylinder and laundering process.

DANGER 7: Entangle and Sever Hazards—Contact with goods being processed can cause the goods to wrap around your body or limbs and dismember you. The goods are normally isolated by the locked cylinder door.

- Do not attempt to open the door or reach into the cylinder until the cylinder is stopped.
- Do not touch goods inside or hanging partially outside the turning cylinder.
- Do not operate the machine with a malfunctioning door interlock.
- Open pocket machines only—Do not jog the cylinder and pull the goods at the same time.
- Open pocket machines only—Keep yourself and others clear of cylinder and goods during jogging operation.
- Do not operate the machine with malfunctioning two-hand manual controls.
- Know the location of all emergency stop switches, pull cords, and/or kick plates and use them in an emergency to stop machine motion.
- Know the location of the main machine disconnect and use it in an emergency to remove all electric power from the machine.

WARNING 8: Crush Hazards—Contact with the turning cylinder can crush your limbs. The cylinder will repel any object you try to stop it with, possibly causing the object to strike or stab you. The turning cylinder is normally isolated by the locked cylinder door.

- Do not attempt to open the door or reach into the cylinder until the cylinder is stopped.
- Do not place any object in the turning cylinder.
- Do not operate the machine with a malfunctioning door interlock.
- Open pocket machines only—Keep yourself and others clear of cylinder and goods during jogging operation.
- Do not operate the machine with malfunctioning two-hand manual controls.

WARNING 9: Confined Space Hazards—Confinement in the cylinder can kill or injure you. Hazards include but are not limited to panic, burns, poisoning, suffocation, heat prostration, biological contamination, electrocution, and crushing.

- Do not attempt unauthorized servicing, repairs, or modification.

WARNING 10: Explosion and Fire Hazards—Flammable substances can explode or ignite in the cylinder, drain trough, or sewer. The machine is designed for washing with water, not any other solvent. Processing can cause solvent-containing goods to give off flammable vapors.

- Do not use flammable solvents in processing.
- Do not process goods containing flammable substances. Consult with your local fire department/public safety office and all insurance providers.

5. Safety Alert Messages—Unsafe Conditions [Document BIUUUS14]

5.1. Damage and Malfunction Hazards

5.1.1. Hazards Resulting from Inoperative Safety Devices

DANGER 11: Entangle and Sever Hazards—Cylinder door interlock—Operating the machine with a malfunctioning door interlock can permit opening the door when the cylinder is turning and/or starting the cycle with the door open, exposing the turning cylinder.

- Do not operate the machine with any evidence of damage or malfunction.

WARNING 12: Multiple Hazards—Operating the machine with an inoperative safety device can kill or injure personnel, damage or destroy the machine, damage property, and/or void the warranty.

- Do not tamper with or disable any safety device or operate the machine with a malfunctioning safety device. Request authorized service.

WARNING 13: Electrocution and Electrical Burn Hazards—Electric box doors—Operating the machine with any electric box door unlocked can expose high voltage conductors inside the box.

- Do not unlock or open electric box doors.

WARNING 14: Entangle and Crush Hazards—Guards, covers, and panels—Operating the machine with any guard, cover, or panel removed exposes moving components.

- Do not remove guards, covers, or panels.

WARNING 15: Crush Hazards—Down limit switches (machines with front and rear tilt cylinders)—Failure of both front or both rear limit switches allows the seated tilt wheels on a tilted machine to lift from their cradles. The housing will fall and lunge forward or rearward.

- Do not operate the machine with any evidence of damage or malfunction.

5.1.2. Hazards Resulting from Damaged Mechanical Devices

WARNING 16: Multiple Hazards—Operating a damaged machine can kill or injure personnel, further damage or destroy the machine, damage property, and/or void the warranty.

- Do not operate a damaged or malfunctioning machine. Request authorized service.

WARNING 17: Explosion Hazards—Cylinder—A damaged cylinder can rip apart during extraction, puncturing the shell and discharging metal fragments at high speed.

- Do not operate the machine with any evidence of damage or malfunction.

WARNING 18: Explosion Hazards—Clutch and speed switch (multiple motor machines)—A damaged clutch or speed switch can permit the low speed motor to engage during extract. This will over-speed the motor and pulleys and can cause them to rip apart, discharging metal fragments at high speed.

- Stop the machine immediately if any of these conditions occur: • abnormal whining sound during extract • skidding sound as extract ends • clutches remain engaged or re-engage during extract

5.2. Careless Use Hazards

5.2.1. Careless Operation Hazards—Vital Information for Operator Personnel (see also operator hazards throughout manual)

WARNING 19: Multiple Hazards—Careless operator actions can kill or injure personnel, damage or destroy the machine, damage property, and/or void the warranty.

- Do not tamper with or disable any safety device or operate the machine with a malfunctioning safety device. Request authorized service.
- Do not operate a damaged or malfunctioning machine. Request authorized service.
- Do not attempt unauthorized servicing, repairs, or modification.

- Do not use the machine in any manner contrary to the factory instructions.
- Use the machine only for its customary and intended purpose.
- Understand the consequences of operating manually.

5.2.2. Careless Servicing Hazards—Vital Information for Service Personnel (see also service hazards throughout manuals)

WARNING 20: Electrocution and Electrical Burn Hazards—Contact with electric power can kill or seriously injure you. Electric power is present inside the cabinetry unless the main machine power disconnect is off.

- Do not service the machine unless qualified and authorized. You must clearly understand the hazards and how to avoid them.
- Abide by the current OSHA lockout/tagout standard when lockout/tagout is called for in the service instructions. Outside the USA, abide by the OSHA standard in the absence of any other overriding standard.

WARNING 21: Entangle and Crush Hazards—Contact with moving components normally isolated by guards, covers, and panels, can entangle and crush your limbs. These components move automatically.

- Do not service the machine unless qualified and authorized. You must clearly understand the hazards and how to avoid them.
- Abide by the current OSHA lockout/tagout standard when lockout/tagout is called for in the service instructions. Outside the USA, abide by the OSHA standard in the absence of any other overriding standard.

WARNING 22: Crush Hazards—Tilting machines only—The machine housing will crush your body or limbs if it descends or falls while you are under it. Housing can descend with power off or on. Manual operation of tilting valves overrides safety interlocks. Improper operation of manual tilting valves may cause the housing to descend.

- Secure both red safety supports in accordance with the instructions furnished, then lock out and tag out power at the main machine disconnect before working under the tilted machine.
- Do not operate the manual tilt valves with anyone under the machine.
- Do not operate the tilt controls with anyone under the machine.

WARNING 23: Crush Hazards—Tilting machines with front and rear tilt cylinders—The housing will fall and lunge forward or rearward if the tilt wheels on the non-tilted end lift out of their cradles, even with safety supports in place.

- Understand the consequences of operating manually.

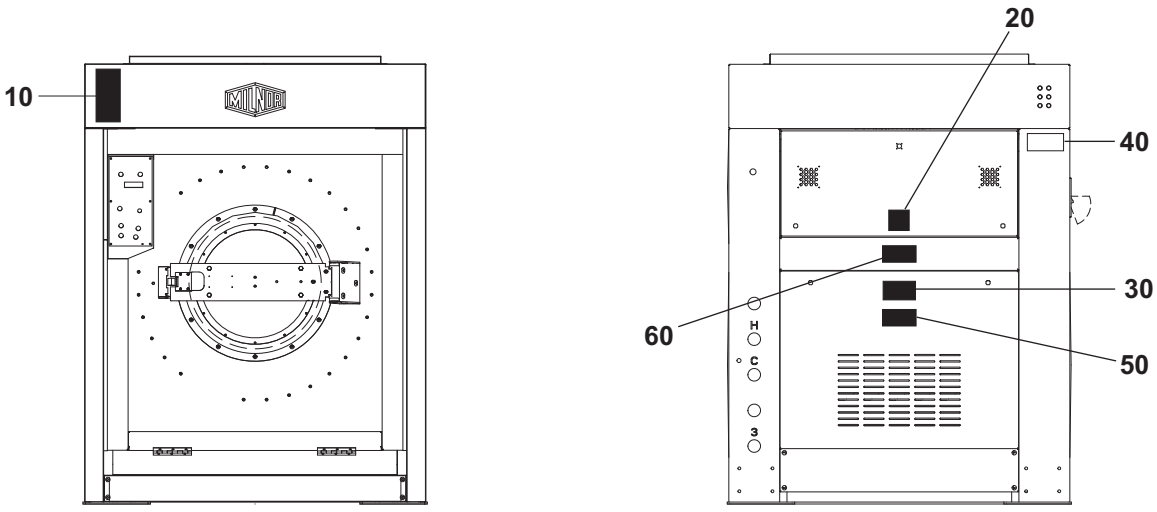
WARNING 24: Confined Space Hazards—Confinement in the cylinder can kill or injure you. Hazards include but are not limited to panic, burns, poisoning, suffocation, heat prostration, biological contamination, electrocution, and crushing.

- Do not enter the cylinder until it has been thoroughly purged, flushed, drained, cooled, and immobilized.

— End of BIUUUS27 —

Safety Placards and Locations

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7



- If the placard is removed or you cannot read it, replace the placard immediately.
- If the placard is aluminum, the mounting holes are on the machine. Use #8 self-tapping screws. If the placard is vinyl, put the placard in the approximate location shown.

Safety Placards and Locations

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

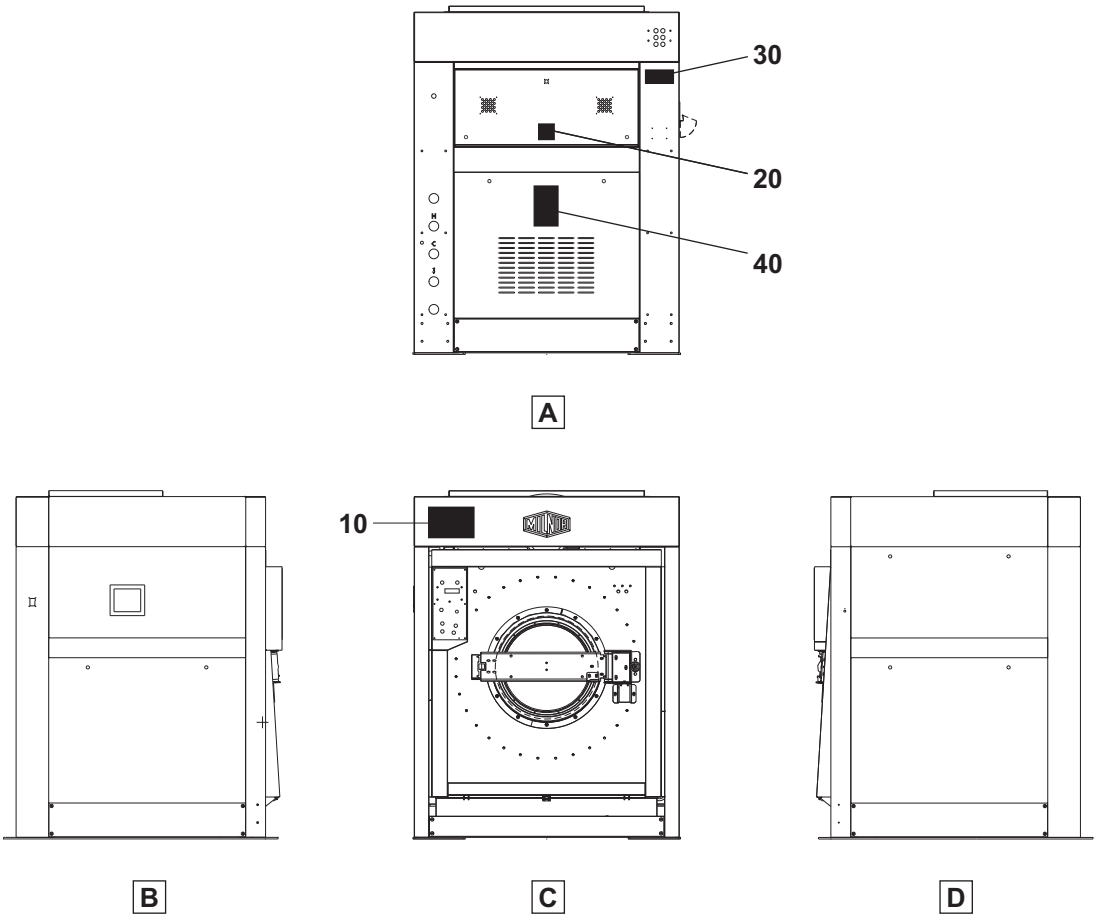
Parts List

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			----------COMPONENTS----------	
all	10	01 10631A	NPLT:SHELL FRT WARN NOTILT-TCA	
all	20	01 10377A	NPLT:ELEC HAZARD LG-TCATA	
all	30	01 10710A	NPLT:CAUTION CHEMICAL SYSTEM	
all	40	01 10699A	NPLT:SERV HZRD-PLYEST-TCATA	
all	50	01 10689A	NPLT:BELT HAZARD SM TCATA	
all	60	01 10630A	NPLT:TILT CRUSH HAZARD-TCATA	

Safety Placards and Locations — ISO

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7



Legend

A. Rear view
B. Left side view
C. Front view
D. Right side view

- This document is for placards that agree with: ISO.
- If the placard is removed or you cannot read it, replace the placard immediately.
- If the placard is aluminum, the mounting holes are on the machine. Use #8 self-tapping screws. If the placard is vinyl, put the placard in the approximate location shown.

Safety Placards and Locations — ISO

MWF125C7, MWF125Y7

Parts List

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			----------COMPONENTS----------	
all	10	01 10629X	NPLT:WE1-TILT WARNINGS FRT	
all	20	01 10377	NPLTE:"WARNING" 4X4	
all	30	01 10710A	NPLT:CAUTION CHEMICAL SYSTEM	
all	40	01 10630X	NPLT:WE1-TILT WARNING SIDE ISO	

Installation 1

BIMUUI01 (Published) Book specs- Dates: 20030213 / 20030213 / 20030213 Lang: ENG01 Applic: MUU

Washer-Extractor Installation

1. Handling

Once the machine is given to the carrier for delivery, it is solely the responsibility of the carrier to ensure that no damage occurs during transit. In addition to readily apparent damage, carriers are liable for concealed damage. Do not hesitate to file a claim with the carrier if the machine is damaged in any way during shipment. Milnor will be glad to assist you in filing your claim, but is not responsible for any shipping damage to the machine once it has been delivered to the carrier in good condition.

Remove the protective coverings (leaving the machine on shipping skids) and examine carefully for possible shipping damage. If the machine is damaged, notify the transportation company immediately.

2. Moving the Machine into Place

1. Use skids for fork lifting. If possible, leave the machine on shipping skids until it is near its final position. Once skids are removed, carefully place forks under base. Do not allow the forks to come in contact with valves, piping, motors, etc., located under the machine. Do not push or hit the shell front when uncrating or installing the machine as it may cause the door to leak.
2. Never push, pull, lift, jack, or exert pressure on any components that protrude from the machine frame (shell front, door, electric boxes, controls, guards, conduits, conveyors, piping, valves, drains, vents, tilt frames, etc.).
3. Do not pull on door conduit to help move the machine as the door switch may require readjustment.

3. Site Requirements

3.1. Space Requirement

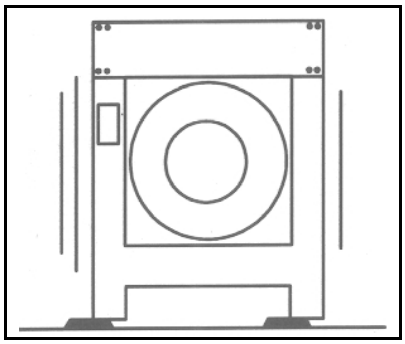
1. All openings and corridors through which equipment must pass during installation must be large enough to accommodate the width and the height of the machine as shown on the dimensional drawings. It is occasionally possible to reduce the overall dimensions by removing piping or other special modifications. Consult Milnor for additional information.
2. Sufficient clearance must be provided for normal operation and maintenance procedures.

3.2. Operational Requirements

1. Allow sufficient ventilation for the heat and vapors of normal operation to dissipate.
2. Provide easy access to controls. Operators must be able to view all status lights and reach all controls associated with the machine (e.g., electrical power connections, water and steam shutoffs, etc.)

3.3. Foundation Requirement—The floor and/or all other support components must have sufficient strength and rigidity with due consideration for the natural or resonant frequency thereof to withstand the fully loaded weight of the machine, including the wet goods and any repeated sinusoidal (rotating) forces generated during its operation. Determining the suitability of floors, foundations, and other supporting structures normally requires analysis by a qualified structural engineer.

Figure 1: Vibration warning



CAUTION 1: Machine Damage Hazards—Improperly installed suspension type machines can "walk" out of position during extract, endangering personnel and damaging equipment.

- Roughen floor. Install anchor bolts and grout under all base pads to prevent "teeter-totter" and sideways movement.
- Remove shipping restraints after machine is in place. Failure to remove all restraints (usually painted red) will cause malfunctions and damage. Restraints may be located behind access covers. These include, but are not limited to:
- Cylinder hold-down bolts, brackets, straps and/or blocking. Replace all fasteners which are part of the machine structure.
- Vibration safety switch restraint

4. Setting Procedures

To protect against lateral creeping of the machine during operation (due to vibration), roughen the area of the floor where the grout will be applied. Anchor bolts are required.

1. With the machine near the final location, unbolt the shipping skids. Observing all precautions, lift the machine off its skids and lower the machine onto blocking. Shim the blocking until the machine is level and approximately l" (25) clearance exists under each base pad. Install anchor bolts as shown on the dimensional drawing, but do not tighten bolts until grout is completely dry.
2. Apply grout between the existing foundation floor and the base pads, observing the following considerations:
   - Use only industrial strength non-shrinking grout. Pack or trowel by hand.
   - If the grout after mixing is too thin (causing it to flow from under the base pads) install temporary cardboard framing around pads to retain the grout until it cures.

CAUTION 2: Vibration and Malfunction Hazard—Voids under the base pads can magnify vibration and cause unsatisfactory operation.

- Grout must displace total clearance between base pads and existing foundation floor.
- Voids must not exist.

3. Tighten anchor bolts evenly using only one-quarter turn on each bolt before moving to the next one. While tightening, frequently skip from front to back and right to left to insure uniform tension. After tightening all bolts, check each bolt at least twice during the first week of operation.

5. Before Running Machine

CAUTION 3: Machine Damage Hazards—Machine can be damaged if shipping restraints are improperly utilized. These include various bolts, brackets, weldments and safety stands (painted red), and the vibration safety switch (tie wrapped).

- DO NOT remove shipping restraints until installation is complete
- DO remove all shipping restraints before operating machine.

Prior to operation,

- Remove the red locking bolts from the front and back of the shell.
- Remove the red shipping bracket stands.
- Remove the tie wrap that secures the vibration safety switch.
- Check the perforated cylinder for smoothness before placing machine in service. Milnor cannot accept cylinder finish damage claims after machine is in service.

— End of BIMUUI01 —

About the Forces Transmitted by Milnor® Washer-extractors

During washing and extracting, all washer-extractors transmit both static and dynamic (cyclic) forces to the floor, foundation, or any other supporting structure. During washing, the impact of the goods as they drop imparts forces which are quite difficult to quantify. Size for size, both rigid and flexibly-mounted machines transmit approximately the same forces during washing. During extracting, rigid machines transmit forces up to 30 times greater than equivalent flexibly-mounted models. The actual magnitude of these forces vary according to several factors:

- machine size,
- final extraction speed,
- amount, condition, and type of goods being processed,
- the liquor level and chemical conditions in the bath preceding extraction, and
- other miscellaneous factors.

Estimates of the maximum force normally encountered are available for each Milnor® model and size upon request. Floor or foundation sizes shown on any Milnor® document are only for on-grade situations based only on previous experience without implying any warranty, obligation, or responsibility on our part.

1. Rigid Machines

Size for size, rigid washer-extractors naturally require a stronger, more rigid floor, foundation, or other supporting structure than flexibly-mounted models. If the supporting soil under the slab is itself strong and rigid enough and has not subsided to leave the floor slab suspended without support, on grade installations can often be made directly to an existing floor slab if it has enough strength and rigidity to safely withstand our published forces without transmitting undue vibration. If the subsoil has subsided, or if the floor slab itself has insufficient strength and rigidity, a deeper foundation, poured as to become monolithic with the floor slab, may be required. Support pilings may even be required if the subsoil itself is “springy” (i.e., if its resonant frequency is near the operating speed of the machine). Above-grade installations of rigid machines also require a sufficiently strong and rigid floor or other supporting structure as described below.

2. Flexibly-mounted Machines

Size for size, flexibly-mounted machines generally do not require as strong a floor, foundation, or other supporting structure as do rigid machines. However, a floor or other supporting structure having sufficient strength and rigidity, as described in Section 3, is nonetheless vitally important for these models as well.

3. How Strong and Rigid?

Many building codes in the U.S.A. specify that laundry floors must have a minimum live load capacity of 150 pounds per square foot (732 kilograms per square meter). However, even compliance with this or any other standard does not necessarily guarantee sufficient rigidity. In any event, it is the sole responsibility of the owner/user to assure that the floor and/or any other supporting structure exceeds not only all applicable building codes, but also that the floor and/or any other supporting structure for each washer-extractor or group of washer-extractors actually has sufficient strength and rigidity, plus a reasonable factor of safety for both, to support the weight of all the fully loaded machine(s) including the weight of the water and goods, and including the published 360º rotating sinusoidal RMS forces that are transmitted by the machine(s). Moreover, the floor, foundation, or other supporting structure must have sufficient

rigidity (i.e., a natural or resonant frequency many times greater than the machine speed with a reasonable factor of safety); otherwise, the mentioned 360º rotating sinusoidal RMS forces can be multiplied and magnified many times. It is especially important to consider all potential vibration problems that might occur due to all possible combinations of forcing frequencies (rotating speeds) of the machine(s) compared to the natural frequencies of the floor and/or any other supporting structure(s). A qualified soil and/or structural engineer must be engaged for this purpose.

Figure 1: How Rotating Forces Act on the Foundation

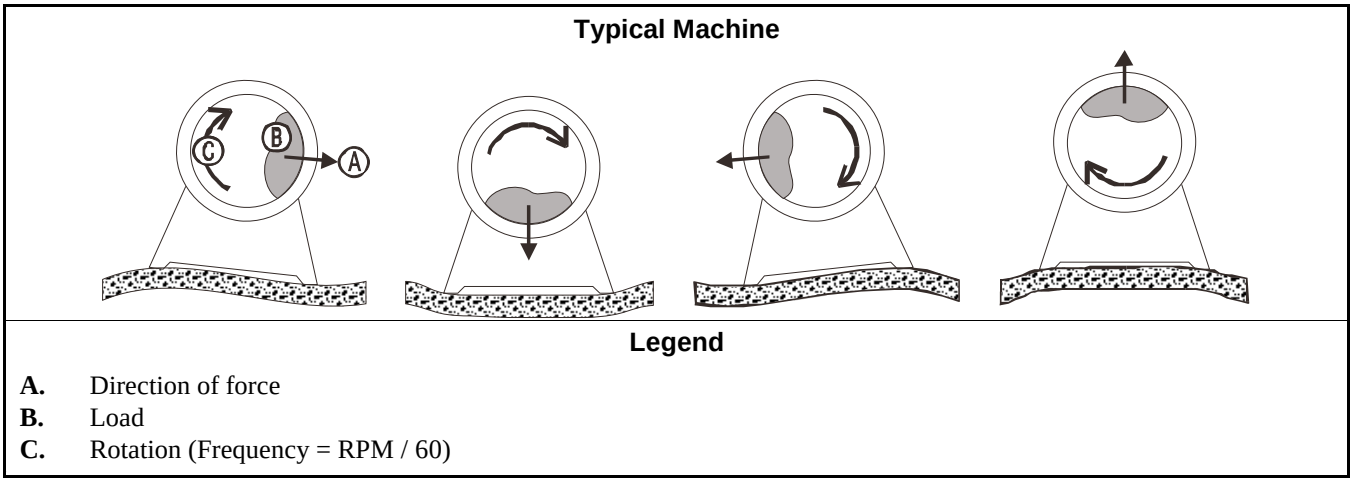


Figure 1 above is intended to depict both on-grade and above-grade installations and is equally applicable to flexibly-mounted washer-extractors, as well as to rigid models installed either directly on a floor slab or on a foundation poured integrally with the slab. Current machine data is available from Milnor® upon request. All data is subject to change without notice and may have changed since last printed. It is the sole responsibility of every potential owner to obtain written confirmation that any data furnished by Milnor® applies for the model(s) and serial number(s) of the specific machines.

— End of BIWUUI02 —

Shipping Brackets

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

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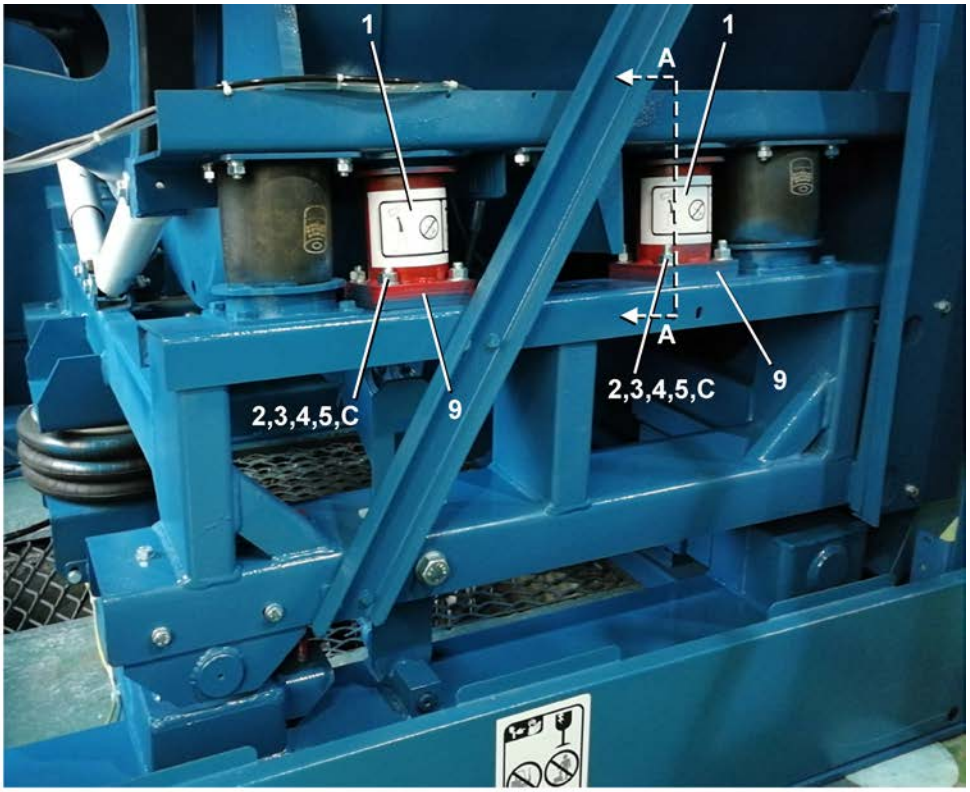
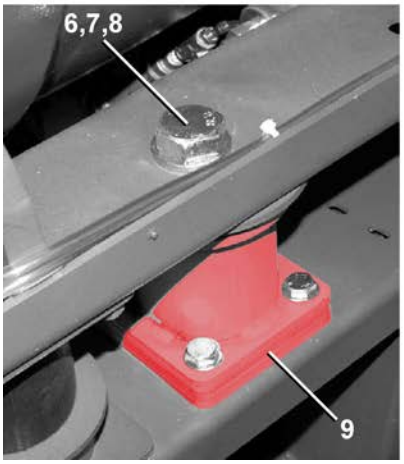
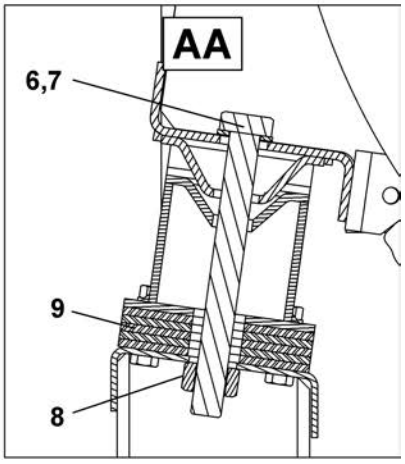
Figure 1. Installed Views







Legend

AA	Section View of Shipping Brackets
C	Typical hardware

Shipping Brackets

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

Table 1 Parts List—

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.

Used In	Item	Part Number	Description/Nomenclature	Comments
			Assemblies	
	A		REFERENCE	MWF63C7, MWF63Y7
	B		REFERENCE	MWF77C7, MWF77Y7
			Components	
all	1	98MW25161A	HOLD DOWN WELDMENT, MWF77	
all	2	15K191HM	HEXCAPSCR M12*90 GR10.9 CS	
all	3	98CX773513	FLATWASHER, D12 ZINC	
all	4	15U283M	LOCKWSHR D12 ZINC	
all	5	98CX773113	HEXNUTM12, ZINC	
all	6	98CX770202	HEXCAPSCR M24X230, ZINC8.8	
all	7	98CX7735175	FLATWASHER, D24 ZINC	
all	8	15U390M	LOCKWSHR D24 ZINC	
all	9	98MW06406C	PLATE=SHIPPING BRACKST, MWF77	

Guards and Covers

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

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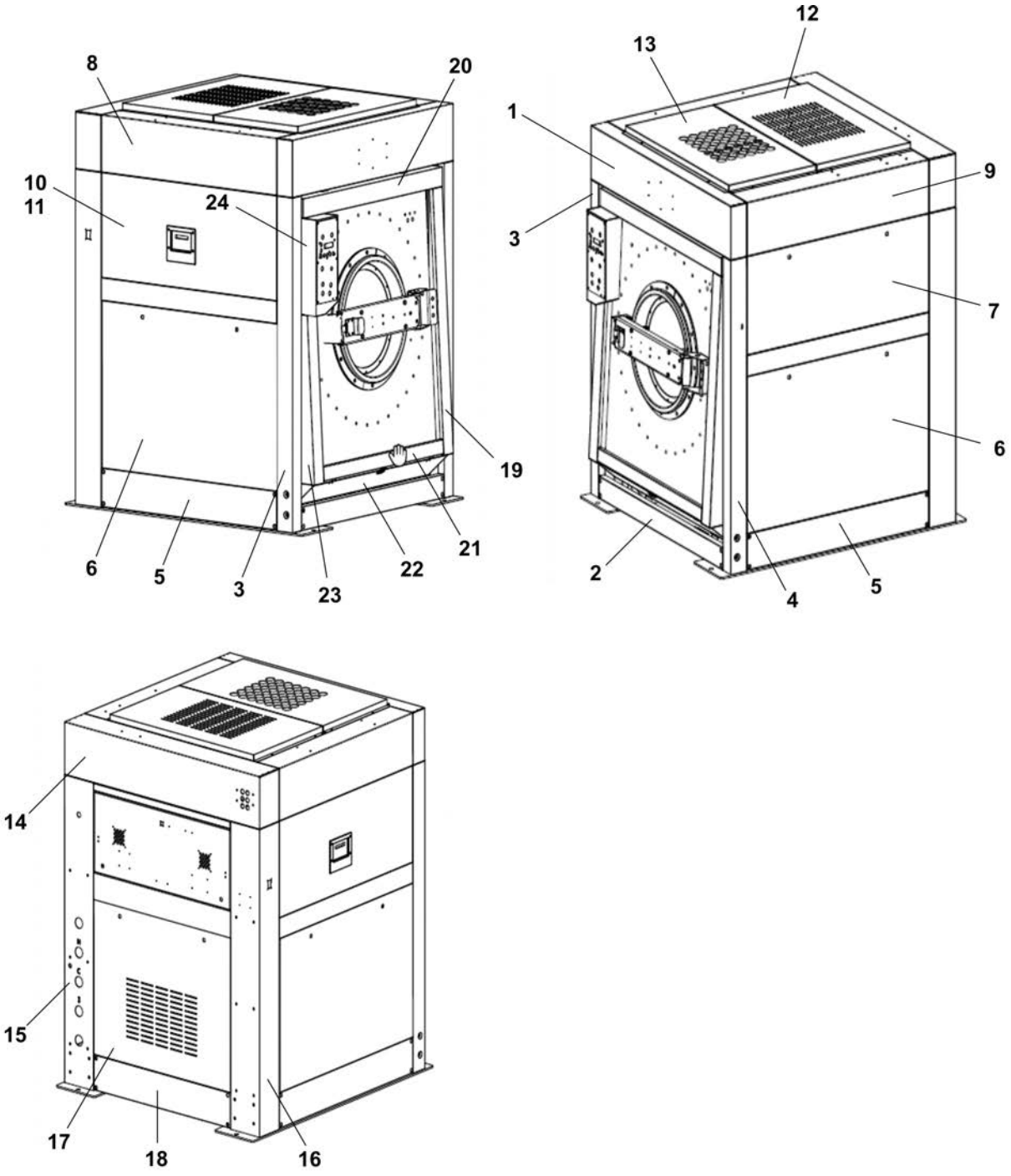

Table 1.

Guards and Covers

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

Parts List—Guards and Covers (cont'd.)

Parts List—Guards and Covers

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.

Used In	Item	Part Number	Description/Nomenclature	Comments
			Assemblies	
	A		REFERENCE	MWF63_
	B		REFERENCE	MWF77_
			none	
			Components	
all	1	98MW23648	UPPER FRONT PANEL, MWF63 TILT	
all	2	98MW23652	LOWER FRONT PANEL, MWF63 TILT	
all	3	98MW23649A	FRONT LEFT POST, MWF63 TILT	
all	4	98MW23649B	FRONT RIGHT POST, MWF63 TILT	
A	5	98MW23689	LOWER SIDE SUPPORT, MWF63 TILT	
A	5	98MW21689	LOWER SIDE SUPPORT, MWF77 TILT	
A	6	98MW23688	LOWER SIDE PANEL, MWF63 TILT	
A	6	98MW21688	LOWER SIDE PANEL, MWF77 TILT	
A	7	98MW23686	UPPER RIGHT SIDE PANEL, MWF63 TILT	
A	7	98MW21686	UPPER RIGHT SIDE PANEL, MWF77 TILT	
A	8	98MW23685A	UPPER LEFT SUPPORT, MWF63 TILT	
A	8	98MW21685A	UPPER LEFT SUPPORT, MWF77 TILT	
A	9	98MW23685B	UPPER RIGHT SUPPORT, MWF63 TILT	
A	9	98MW21685B	UPPER RIGHT SUPPORT, MWF77 TILT	
A	10	98MW23686B	UPPER LEFT PANEL=SOAP CHUTE, MWF63 TILT	
A	10	98MW21686B	UPPER LEFT PANEL=SOAP CHUTE, MWF77 TILT	
A	11	98MW23286C	UPPER LEFT PANEL=DRY SUPPLY, MWF63 TILT	
B	11	98MW21286C	UPPER LEFT PANEL=DRY SUPPLY, MWF77 TILT	
all	12	98MW23684	TOP PANEL, MWF63 TILT	
A	13	98MW23732	TOP FRONT PANEL,MWF63 TILT	
B	13	98MW23731	TOP FRONT PANE,MWF77 TILT	
all	14	98MW23654	UPPER REAR SUPPORT, MWF63 TILT	
all	15	98MW23643	REAR RIGHT POST,MWF63 TILT	
all	16	98MW23644	REAR LEFT POST, MWF63 TILT	
all	17	98MW23639	REAR PANEL, MWF63 TILT	
all	18	98MW23653	REAR LOWER SUPPORT, MWF63 TILT	
all	19	98MW23662	INNER RIGHT POST, MWF63 TILT	
all	20	98MW23663	INNER UPPER FRONT PANEL, MWF63 TILT	
all	21	98MW23665	INNER LOWER FRONT PANEL, MWF63 TILT	
all	22	98MW23667	INNER LOWER FRONT COVER, MWF63 TILT	
all	23	98MW23662A	INNER LEFT POST, MWF63 TILT	
AB	24	98MW23662B	ASSY=CONTROL BOX EP+, MWF63 TILT	E-P Plus®
AB	24	98MW23662D	ASSY=CONTROL BOX MILTOUCH, MWF63 TILT	MilTouch™

Prevent Damage from Chemical Supplies and Chemical Systems

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All Milnor® washer-extractors and CBW® tunnel washers use stainless steel with the ANSI 304 specification. This material gives good performance when chemical supplies are correctly applied. If chemical supplies are incorrectly applied, this material can be damaged. The damage can be very bad and it can occur quickly.

Chemical supply companies usually:

- supply chemical pump systems that put the supplies in the machine,
- connect the chemical pump system to the machine,
- write wash formulas that control the chemical concentrations.

The company that does these procedures must make sure that these procedures do not cause damage. **Pellerin Milnor Corporation accepts no responsibility for chemical damage to the machines it makes or to the goods in a machine.**

1. How Chemical Supplies Can Cause Damage

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Dangerous Chemical Supplies and Wash Formulas — Some examples that can cause damage are:

- a very high concentration of chlorine bleach,
- a mixture of acid sour and hypo chlorite,
- chemical supplies (examples: chlorine bleach, hydrofluosilicic acid) that stay on the stainless steel because they are not quickly flushed with water.

The book “Textile Laundering Technology” by Charles L. Riggs gives data about correct chemical supplies and formulas.

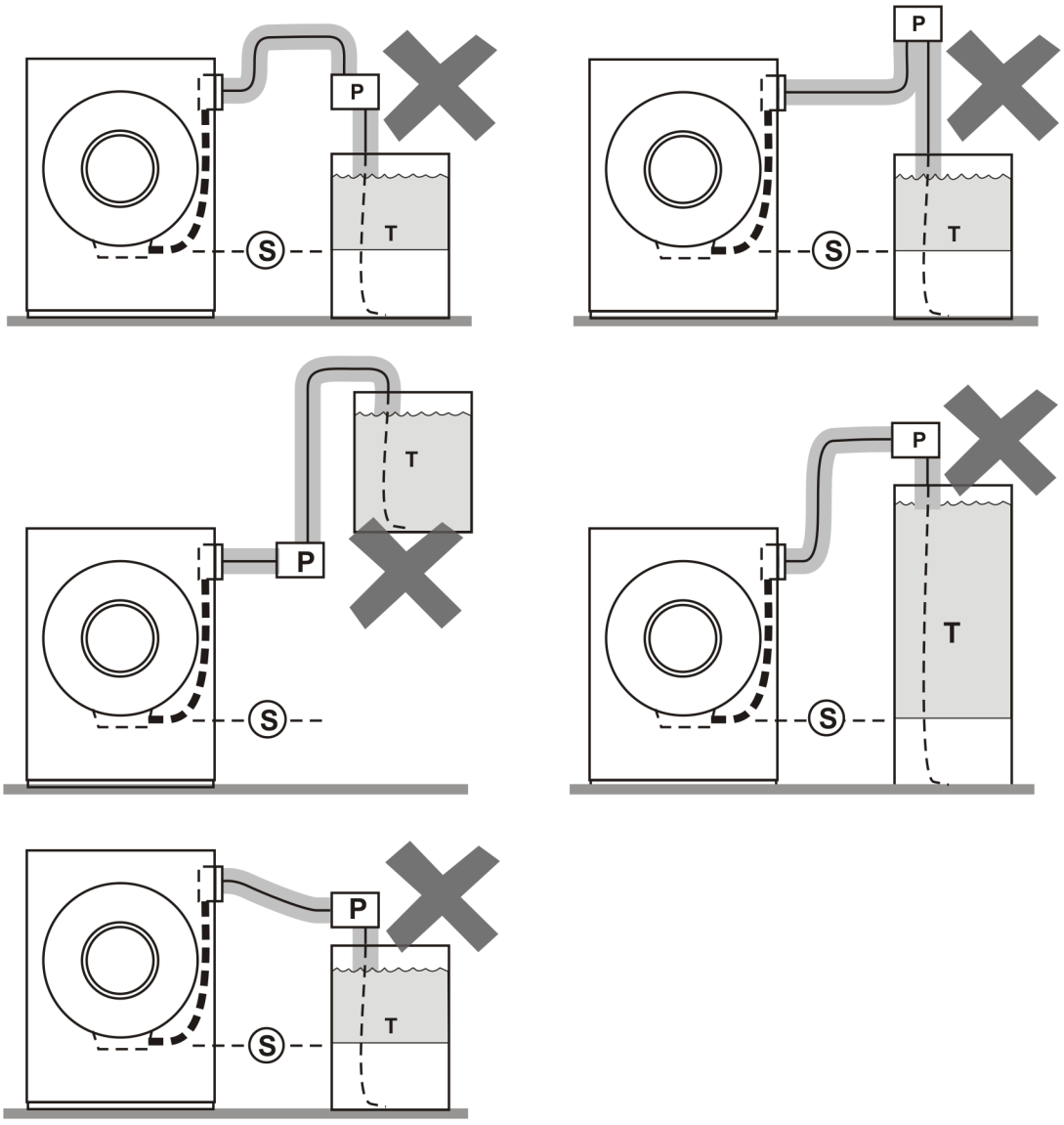
Incorrect Configuration or Connection of Equipment — Many chemical systems:

- do not prevent a vacuum in the chemical tube (for example, with a vacuum breaker) when the pump is off,
- do not prevent flow (for example, with a valve) where the chemical tube goes in the machine.

Damage will occur if a chemical supply can go in the machine when the chemical system is off. Some configurations of components can let the chemical supplies go in the machine by a siphon (Figure 1: Incorrect Configurations That Let the Chemical Supply Go In the Machine by a Siphon, page 2). Some can let chemical supplies go in the machine by gravity (Figure 2: Incorrect Configurations That Let the Chemical Supply Go In the Machine by Gravity, page 3).

Figure 1. Incorrect Configurations That Let the Chemical Supply Go In the Machine by a Siphon

Schematic Views



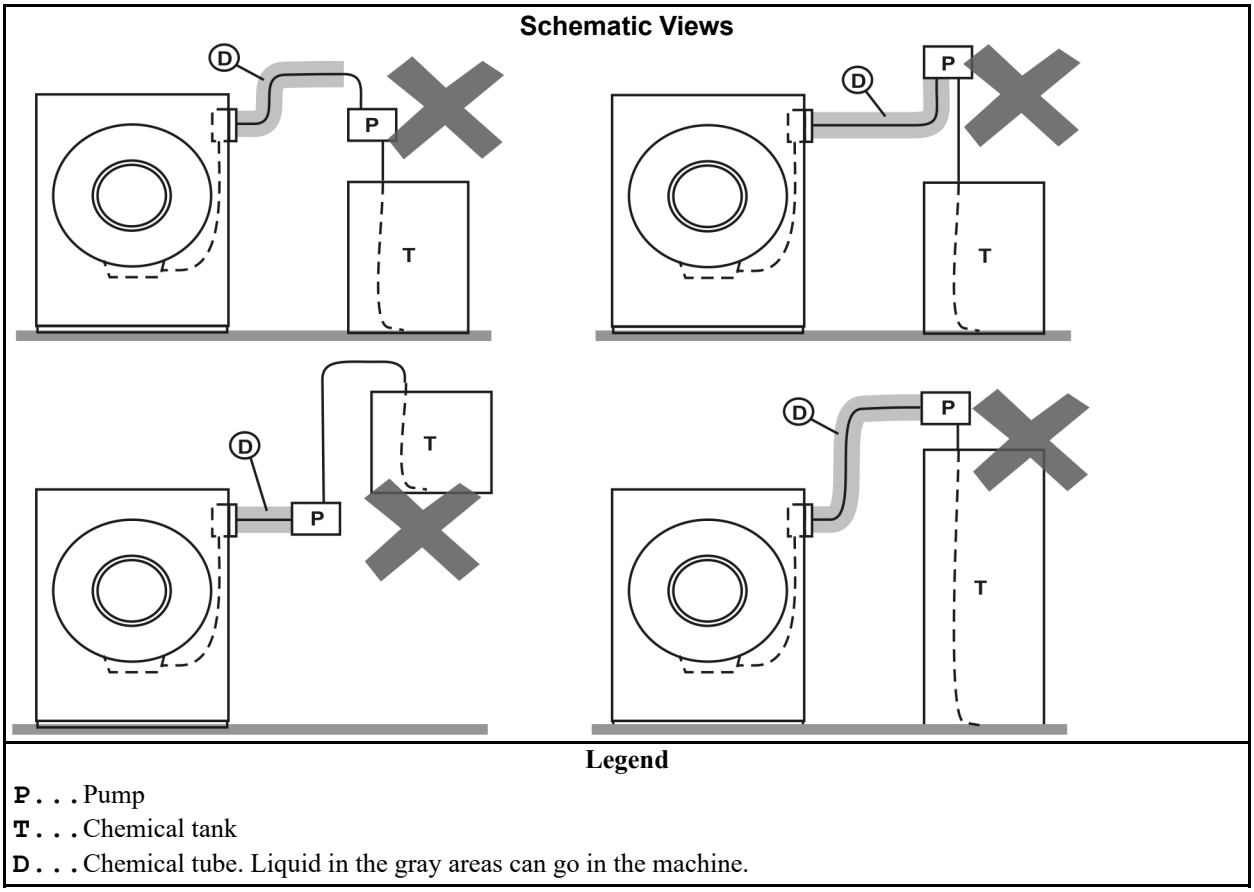
Legend

P . . . Pump

T . . . Chemical tank

S . . . The siphon occurs above here. Liquid in the gray parts of the chemical tube and tank can go in the machine.

Figure 2. Incorrect Configurations That Let the Chemical Supply Go In the Machine by Gravity



Legend

P . . . Pump
T . . . Chemical tank
D . . . Chemical tube. Liquid in the gray areas can go in the machine.

2. Equipment and Procedures That Can Prevent Damage

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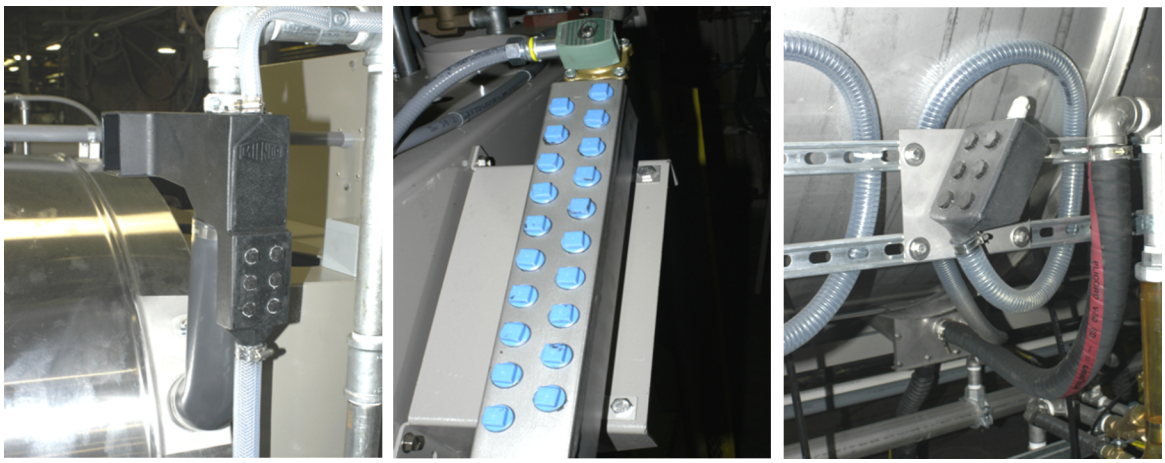
Use the chemical manifold supplied. — There is a manifold on the machine to attach chemical tubes from a chemical pump system. The manifold has a source of water to flush the chemical supplies with water.

Figure 3. Examples of Manifolds for Chemical Tubes. Your equipment can look different.



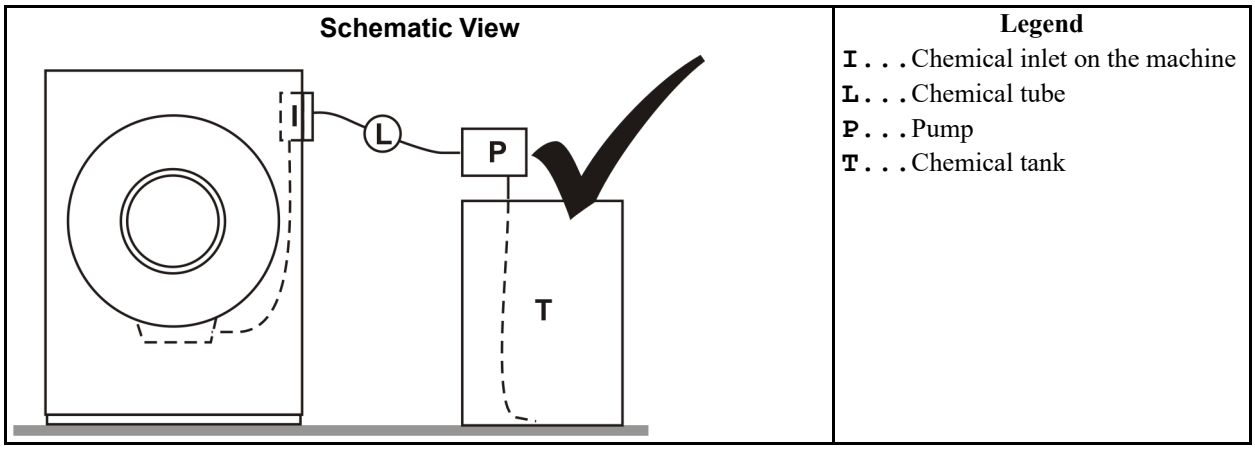
Close the line. — If the pump does not always close the line when it is off, use a shutoff valve to do this.

Do not let a vacuum occur. — Supply a vacuum breaker in the chemical line that is higher than the full level of the tank.

Flush the chemical tube with water. — If the liquid that stays in the tube between the pump and the machine can flow in the machine, flush the tube with water after the pump stops.

Put the chemical tube fully below the inlet. — It is also necessary that there is no pressure in the chemical tube or tank when the system is off.

Figure 4. A Configuration that Prevents Flow in the Machine When the Pump is Off (if the chemical tube and tank have no pressure)



Prevent leaks. — When you do maintenance on the chemical pump system:

- Use the correct components.
- Make sure that all connections are the correct fit.
- Make sure that all connections are tight.

End of document: BNUUUR02

Service and Maintenance 2

Service Connections

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1. General

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Required service connections, (depending on machine model and optional features) are as follows:

1. Piped inlets and outlets (cold water, hot water, flush water, direct steam, liquid supply and drain to sewer). The sizes and locations of piped inlets and outlets are shown on the dimensional drawing for your machine.
2. Electrical power connections.

2. Requirements for Piped Connections

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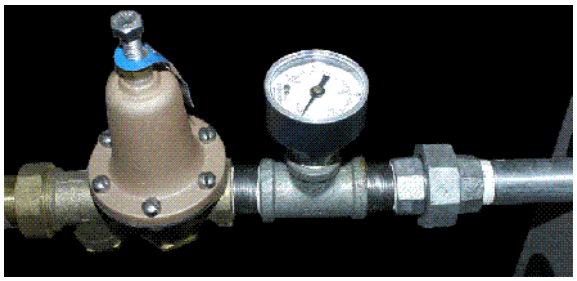
CAUTION: **Machine Damage Hazards —** Valve bodies will be ruined if twisted and distorted.

▶ Hold the connection side of the valve with a wrench when connecting plumbing.

1. Inlet pressures must be within the minimum/maximum range specified. Pressure outside of the specified range may cause the machine to operate inefficiently or malfunction and may damage machine components.
2. A separate flush water valve pressure regulator set for approximately 28 psi (193 kPa) is shipped with the machine (Figure 1: Flush water valve pressure regulator, page 1). Install this regulator on the flush water inlet when installing piping.
3. Thoroughly flush all water lines before making connections.
4. We recommend installing 40 mesh strainers or filters in front of the cold, hot and third water valves.
5. When connecting water and steam inlets, always install unions and shut off valves at the point of connection to permit removal of the machine components for servicing, when necessary.

Figure 1. Flush water valve pressure regulator



CAUTION: **Machine Damage Hazards —** Pumped chemical systems, if not properly installed, can cause corrosion damage.

▶ See the reference manual for precautions and additional information before making any chemical connections.

2.1. Piped Inlet Specifications

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Table 1. Piped Inlets

Connection Description	Source Requirements	Piping Requirements, Comments
Cold water inlet	1-1/4" NPT	Pipe material per plumbing code
Hot water inlet		
Third water inlet (optional)		
Air supply	1/4" NPT	
Hot water for supply	3/4" NPT	
Steam inlet	1/2” NPT @ 30 - 115 psi	
Liquid supply inlet	3/8" or 1/2"	Flexible tubing as supplied by the chemical supplier

2.2. Piped Outlet Specifications

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Table 2. Outlets

Connection Description	Destination Requirements or Description	Piping Specifications
Drain	4 1/2” unrestricted gravity feed to sewer (external back pressure may extend wash times - Do not reduce)	Rubber hose, PVC or other approved material per plumbing code
Vent	3"	

3. Power Connections and Precautions

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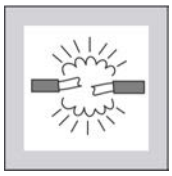
WARNING: **Electrocution and Electrical Burn Hazards —** Contact with electric power can kill or seriously injure you. Electric power is present inside the cabinetry unless the main machine power disconnect is off.

▶ Do not service the machine unless qualified and authorized. You must clearly understand the hazards and how to avoid them.

CAUTION:



Machine Damage Hazards — Voltage fluctuations of more than 10% above or below the specified voltage for your machine can damage electrical components, especially motors.

▶ Any such conditions should be corrected prior to commissioning your machine.

The customer must furnish a remotely mounted disconnect switch with lag type fuses or circuit breakers, and wiring between the electrical service box and the junction box on the machine. The sizes of these fuses and wires, along with the motor fuses supplied with the machine, depend on the machine voltage. See the fuse and wire sizing information in the schematic manual and on the machine nameplate. See dimensional drawings in this manual for electrical connection locations.

1. Electrical connections must be made by a competent electrician.
2. See fuse and wire sizing information in the schematic manual and on the machine nameplate. If the wire runs more than 50 feet, increase by one wire size for each additional 50 feet.
3. Only use Bussman Fusatron FRN (up to 250V), FRS (up to 600V) or similar lag fuses, the nameplate fuse sizes must not be applied to standard fuses.
4. Stinger leg, if any, must be connected to terminal L3, never to terminals L1 or L2.
5. Make power and liquid supply electrical connections within junction boxes on the rear of the machine.
6. Verify motor rotation (Figure 2: **Correct Rotation During Drain and Extract (when viewing front of machine)**, page 3). See the operating and trouble shooting manual for more information. If the cylinder turns in the wrong direction, interchange the wires connected to L1 and L2. Never move L3 under any circumstances. All motors are phased for proper rotation. Never attempt to reconnect motors or the motor control devices.
7. 240/208 volt machines are shipped set for 240 volt operation from the factory (Figure 3: Line Voltage Switch Set for 240 Volt Operation, page 4). Place the line voltage switch in the 208 volt position if the supply voltage is 208 volts.

Figure 2. Correct Rotation During Drain and Extract (when viewing front of machine)

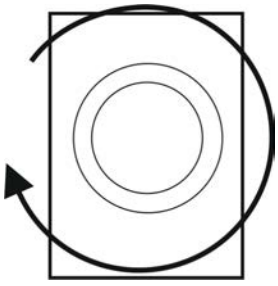
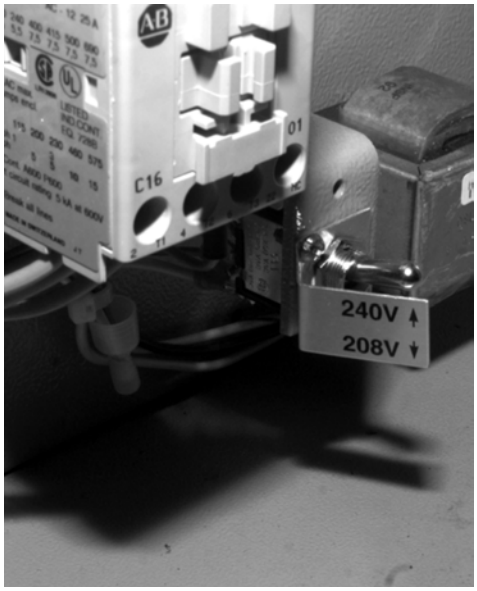


Figure 3. Line Voltage Switch Set for 240 Volt Operation



4. Remove Shipping Restraints

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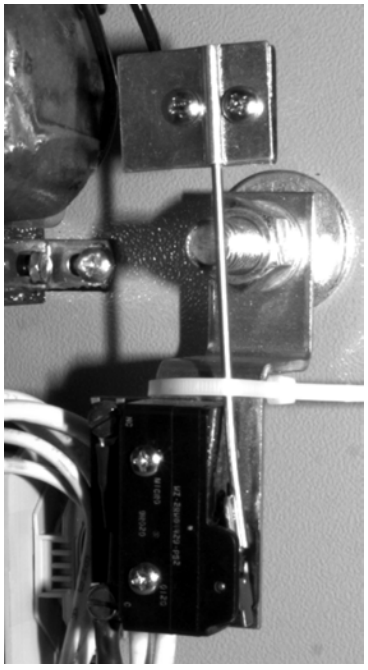
Remove all shipping restraints (usually marked in red). Restraints may be located behind access panels. Restraints may include the vibration switch restraint (Figure 4: Typical Vibration Switch Showing Restraint in Place, page 4).

Figure 4. Typical Vibration Switch Showing Restraint in Place



5. Check Cylinder Surface

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Check the perforated cylinder for smoothness. Milnor® will not accept responsibility for the cylinder finish after the machine is placed in service.

End of document: BNWBUI04

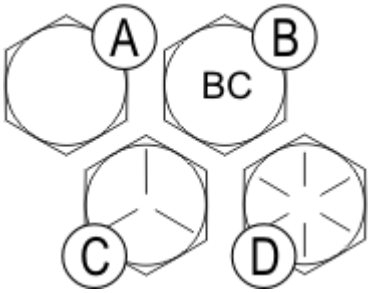
BIUUUM04 (Published) Book specs- Dates: 20180109 / 20180109 / 20180109 Lang: ENG01 Applic: UUU

Torque Requirements for Fasteners

This document uses Simplified Technical English. Learn more at http://www.asd-ste100.org.

The document about the assembly gives the torque requirements for other fasteners. **If fastener torque specifications or threadlocker requirements in an assembly document are different from this document, use the assembly document.**

Figure 1: The Bolts in Milnor® Equipment

The Marks on Bolt Heads	Legend
	**A.** SAE Grades 1 and 2, ASTM A307, and stainless steel **B.** Grade BC, ASTM A354 **C.** SAE Grade 5, ASTM A449 **D.** SAE Grade 8 and ASTM A354 BD

1. Torque Values

These tables give the standard dimension, grade, threadlocker, and torque requirements for fasteners frequently used on Milnor® equipment.

Note 1: Data from the Pellerin Milnor® Corporation "Bolt Torque Specification" (bolt_torque_milnor.xls/2002096).

1.1. Fasteners Made of Carbon Steel

1.1.1. Without a Threadlocker

Table 1: Torque Values for Standard Fasteners with Maximum 5/16-inch Diameters and No Lubricant

	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
Dimension	Pound-Inches	N-m	Pound-Inches	N-m	Pound-Inches	N-m	Pound-Inches	N-m
1/4 x 20	66	7	101	11	143	16	126	14
1/4 x 28	76	9	116	13	163	18	--	--
5/16 x 18	136	15	209	24	295	33	258	29
5/16 x 24	150	17	232	26	325	37	--	--

Table 2: Torque Values for Standard Fasteners Larger Than 5/16-inch Diameters and No Lubricant

	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
Dimension	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m
3/8 x 16	20	27	31	42	44	59	38	52
3/8 x 24	23	31	35	47	50	68	--	--
7/16 x 14	32	43	49	66	70	95	61	83
7/16 x 20	36	49	55	75	78	105	--	--
1/2 x 13	49	66	75	102	107	145	93	126
1/2 x 20	55	75	85	115	120	163	--	--
9/16 x 12	70	95	109	148	154	209	134	182
9/16 x 18	78	106	121	164	171	232	--	--
5/8 x 11	97	131	150	203	212	287	186	252
5/8 x 18	110	149	170	231	240	325	--	--
3/4 x 10	172	233	266	361	376	510	329	446
3/14 x 16	192	261	297	403	420	569	--	--
7/8 x 9	167	226	429	582	606	821	531	719
7/8 x 14	184	249	473	641	668	906	--	--
1 x 8	250	339	644	873	909	1232	796	1079
1 x 12	274	371	704	954	994	1348	--	--
1 x 14	281	381	723	980	1020	1383	--	--
1 1/8 x 7	354	480	794	1077	1287	1745	1126	1527
1 1/8 x 12	397	538	891	1208	1444	1958	--	--
1 1/4 x 7	500	678	1120	1519	1817	2464	1590	2155
1 1/4 x 12	553	750	1241	1682	2012	2728	--	--
1 3/8 x 6	655	888	1469	1992	2382	3230	2085	2827
1 3/8 x 12	746	1011	1672	2267	2712	3677	--	--
1 1/2 x 6	869	1178	1949	2642	3161	4286	2767	3751
1 1/2 x 12	979	1327	2194	2974	3557	4822	--	--

Table 3: Torque Values for Plated Fasteners with Maximum 5/16-inch Diameters and No Lubricant

	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
Dimension	Pound-Inches	N-m	Pound-Inches	N-m	Pound-Inches	N-m	Pound-Inches	N-m
1/4 x 20	49	6	76	9	107	12	95	11
1/4 x 28	56	6	88	10	122	14	--	--
5/16 x 18	102	12	156	18	222	25	193	22
5/16 x 24	113	13	174	20	245	28	--	--

Table 4: Torque Values for Plated Fasteners Larger Than 5/16-inch Diameters and No Lubricant

	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
Dimension	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m
3/8 x 16	15	20	23	31	33	44	29	38
3/8 x 24	17	23	26	35	37	49	--	--
7/16 x 14	24	32	37	50	52	71	46	61
7/16 x 20	27	36	41	55	58	78	--	--
1/2 x 13	37	49	56	76	80	106	70	93
1/2 x 20	41	55	64	85	90	120	--	--
9/16 x 12	53	70	81	110	115	153	101	134
9/16 x 18	59	79	91	122	128	174	--	--
5/8 x 11	73	97	113	150	159	212	139	186
5/8 x 18	83	110	127	172	180	240	--	--
3/4 x 10	129	173	200	266	282	376	246	329
3/14 x 16	144	192	223	297	315	420	--	--
7/8 x 9	125	166	322	430	455	606	398	531
7/8 x 14	138	184	355	474	501	668	--	--
1 x 8	188	250	483	644	682	909	597	796
1 x 12	205	274	528	716	746	995	--	--
1 x 14	210	280	542	735	765	1037	--	--
1 1/8 x 7	266	354	595	807	966	1288	845	1126
1 1/8 x 12	298	404	668	890	1083	1444	--	--
1 1/4 x 7	375	500	840	1120	1363	1817	1192	1590
1 1/4 x 12	415	553	930	1261	1509	2013	--	--
1 3/8 x 6	491	655	1102	1470	1787	2382	1564	2085
1 3/8 x 12	559	758	1254	1672	2034	2712	--	--
1 1/2 x 6	652	870	1462	1982	2371	3161	2075	2767
1 1/2 x 12	733	994	1645	2194	2668	3557	--	--

1.1.2. With a Threadlocker

Table 5: Threadlocker by the Diameter of the Bolt (see Note 2)

	Dimension			
LocTite Product	1/4-inch	1/4- to 5/8-inch	5/8- to 7/8-inch	1-inch +
LocTite 222	OK			
LocTite 242		OK		
LocTite 262			OK	
LocTite 272			High temperature	
LocTite 277				OK

Note 2: The acceptable bolt size ranges for various LocTite® threadlocking products is the LocTite manufacturer's **general** recommendation. Specific applications sometime require that a LocTite product is applied to a bolt size outside the ranges shown here. For example, Milnor specifies LocTite 242 for use on certain 1" bolt applications and has confirmed this usage with the LocTite manufacturer. You may see variances such as this in the documentation for specific machine assemblies.

Table 6: Torque Values if You Apply LocTite 222

Dimension	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
	Pound-inches	N-m	Pound-inches	N-m	Pound-inches	N-m	Pound-inches	N-m
1/4 x 20	60	7	96	11	132	15	108	12
1/4 x 28	72	8	108	12	144	16	--	--

Table 7: Torque Values if You Apply LocTite 242

Dimension	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m
5/16 x 18	11	15	17	23	25	34	22	30
5/16 x 24	13	18	19	26	27	37	27	37
3/8 x 16	20	27	31	42	44	60	38	52
3/8 x 24	23	31	35	47	50	68	--	--
7/16 x 14	32	43	49	66	70	95	61	83
7/16 x 20	36	49	55	75	78	106	--	--
1/2 x 13	49	66	75	102	107	145	93	126
1/2 x 20	55	75	85	115	120	163	--	--
9/16 x 12	70	95	109	148	154	209	134	182
9/16 x 18	78	106	121	164	171	232	--	--
5/8 x 11	97	132	150	203	212	287	186	252
5/8 x 18	110	149	170	230	240	325	--	--

Table 8: Torque Values if You Apply LocTite 262

Dimension	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m
3/4 x 10	155	210	240	325	338	458	296	401
3/4 x 16	173	235	267	362	378	512	--	--
7/8 x 9	150	203	386	523	546	740	477	647
7/8 x 14	165	224	426	578	601	815	--	--

Table 9: Torque Values if You Apply LocTite 272 (High-Temperature)

	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
Dimension	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m
1 x 8	350	475	901	1222	1272	1725	1114	1510
1 x 12	383	519	986	1337	1392	1887	--	--
1 x 14	393	533	1012	1372	1428	1936	--	--
1-1/8 x 7	496	672	1111	1506	1802	2443	1577	2138
1-1/8 x 12	556	754	1247	1691	2022	2741	--	--
1-1/4 x 7	700	949	1568	2126	2544	3449	2226	3018
1-1/4 x 12	774	1049	1737	2355	2816	3818	--	--
1-3/8 x 6	917	1243	2056	2788	3335	4522	2919	3958
1-3/8 x 12	1044	1415	2341	3174	3797	5148	--	--
1-1/2 x 6	1217	1650	2729	3700	4426	6001	3873	5251
1-1/2 x 12	1369	1856	3071	4164	4980	6752	--	--

Table 10: Torque Values if You Apply LocTite 277

	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
Dimension	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m
1 x 8	325	441	837	1135	1181	1601	1034	1402
1 x 12	356	483	916	1242	1293	1753	--	--
1 x 14	365	495	939	1273	1326	1798	--	--
1-1/8 x 7	461	625	1032	1399	1674	2270	1464	1985
1-1/8 x 12	516	700	1158	1570	1877	2545	--	--
1-1/4 x 7	650	881	1456	1974	2362	3202	2067	2802
1-1/4 x 12	719	975	1613	2187	2615	3545	--	--
1-3/8 x 6	851	1154	1909	2588	3097	4199	2710	3674
1-3/8 x 12	970	1315	2174	2948	3526	4781	--	--
1-1/2 x 6	1130	1532	2534	3436	4110	5572	3597	4877
1-1/2 x 12	1271	1723	2852	3867	4624	6269	--	--

1.2. Stainless Steel Fasteners

Table 11: Torque Values for Stainless Steel Fasteners 5/16-inch and Smaller

	316 Stainless		18-8 Stainless		18-8 Stainless with Loctite 767	
Dimension	Pound-Inches	N-m	Pound-Inches	N-m	Pound-Inches	N-m
1/4 x 20	79	9	76	9	45	5
1/4 x 28	100	11	94	11	56	6
5/16 x 18	138	16	132	15	79	9
5/16 x 24	148	17	142	16	85	10

Table 12: Torque Values for Stainless Steel Fasteners Larger Than 5/16-inch

	316 Stainless		18-8 Stainless		18-8 Stainless with Loctite 767	
Dimension	**Pound-feet**	**N-m**	**Pound-feet**	**N-m**	**Pound-feet**	**N-m**
3/8 x 16	21	28	20	27	12	16
3/8 x 24	23	31	22	29	13	18
7/16 x 14	33	44	31	42	19	25
7/16 x 20	35	47	33	45	20	27
1/2 x 13	45	61	43	58	26	35
1/2 x 20	47	64	45	61	27	37
9/16 x 12	59	81	57	77	34	46
9/16 x 18	66	89	63	85	38	51
5/8 x 11	97	131	93	125	56	75
5/8 x 18	108	150	104	141	62	84
3/4 x 10	132	179	128	173	77	104
3/4 x 16	130	176	124	168	75	101
7/8 x 9	203	275	194	263	116	158
7/8 x 14	202	273	193	262	116	157
1 x 8	300	406	287	389	172	233
1 x 14	271	367	259	351	156	211
1-1/8 x 7	432	586	413	560	248	336
1-1/8 x 12	408	553	390	529	234	317
1-1/4 x 7	546	740	523	709	314	425
1-1/4 x 12	504	683	480	651	288	390
1-1/2 x 6	930	1261	888	1204	533	722
1-1/2 x 12	732	992	703	953	422	572

2. Preparation

WARNING 2: Fire Hazard—Some solvents and primers are flammable.

- Use threadlocker and primers with sufficient airflow.
- Do not use flammable material near ignition sources.

1. Clean all threads with a wire brush or a different tool.
2. Remove the grease from the fasteners and the mating threads with solvent. Make the parts dry.

   Note 3: LocTite 7649 Primer™ or standard solvents will remove grease from parts.

3. Apply a spray of LocTite 7649 Primer™ or equal on the fasteners and the mating threads. Let the primer dry for one minute minimum.

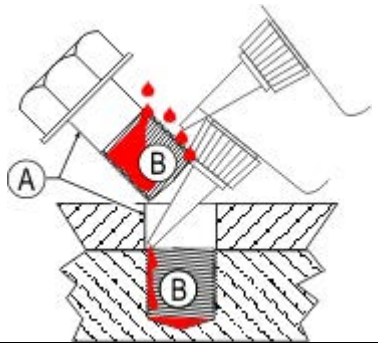
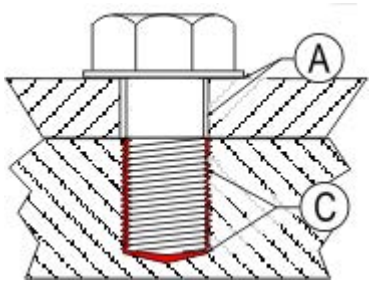
3. How to Apply a Threadlocker

CAUTION 3: Malfunction Hazard—Heat, vibration, or mechanical shocks can let the fasteners loosen if you do not apply the threadlocker correctly. Loose fasteners can cause malfunctions of the equipment.

- Read the threadlocker manufacturer's instructions and warnings. Obey these instructions.

Apply the threadlocker only to the areas where the fastener threads and the mating threads engage.

Figure 2: Blind Hole

Application	Coverage
	

Legend

A. No threadlocker here
B. Apply here
C. Fill all space with threadlocker

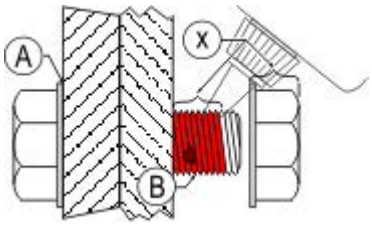
3.1. Blind Holes

1. Apply the threadlocker down the threads to the bottom of the hole.
2. Apply the threadlocker to the bolt.
3. Tighten the bolt to the value shown in the correct table (Table 5 to Table 11).

3.2. Through Holes

1. Put the bolt through the assembly.
2. Apply the threadlocker only to the bolt thread area that will engage the nut.
3. Tighten the bolt to the value shown in the correct table (Table 5 to Table 11).

Figure 3: Through Hole

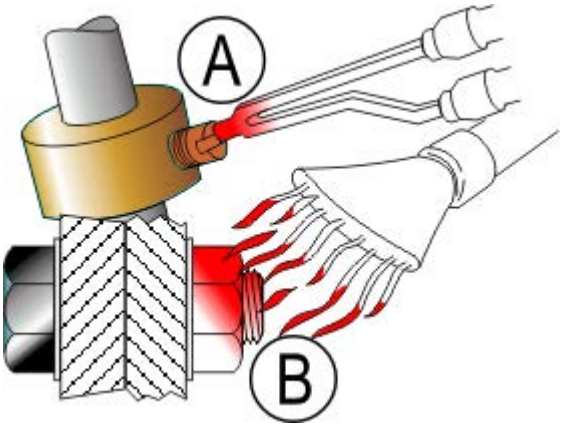
Application	Legend
	**A.** No threadlocker here **B.** Apply the threadlocker to this area **x.** Nut depth

3.3. Disassembly—For high-strength threadlocker, apply heat for five minutes. Disassemble with hand tools while the parts are hot.

For low-strength and moderate-strength threadlocker, disassemble with hand tools.

Figure 4: Disassembly

Apply Heat to a Small Area



Legend

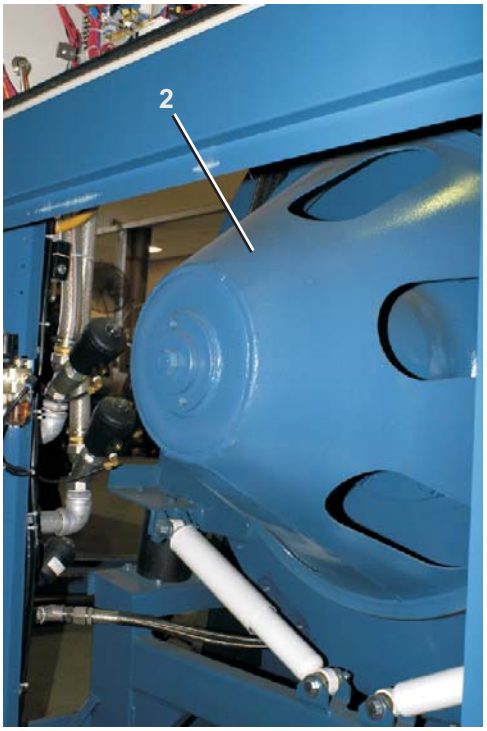
A. How to apply heat to a small fastener
B. How to apply heat to a large fastener

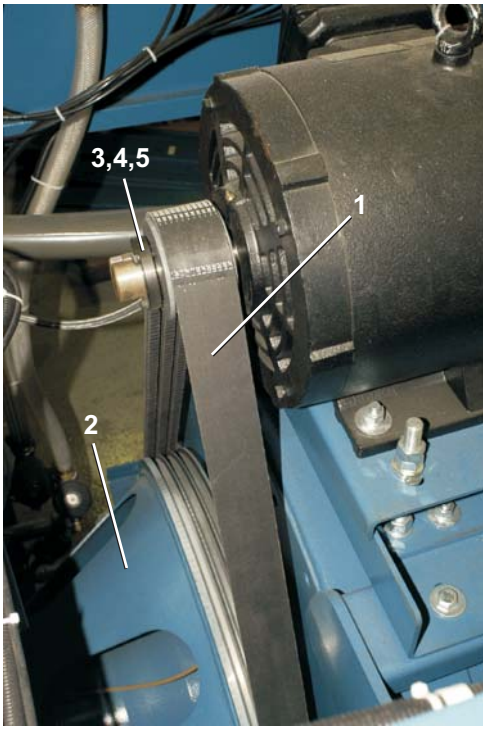
— End of BIUUUM04 —

Drive Assemblies 3

Drive

MWF63J7, MWF63Z7, MWF77J7, MWF77Z7
MWF63C7, MWF63Y7, MWF77C7, MWF77Y7



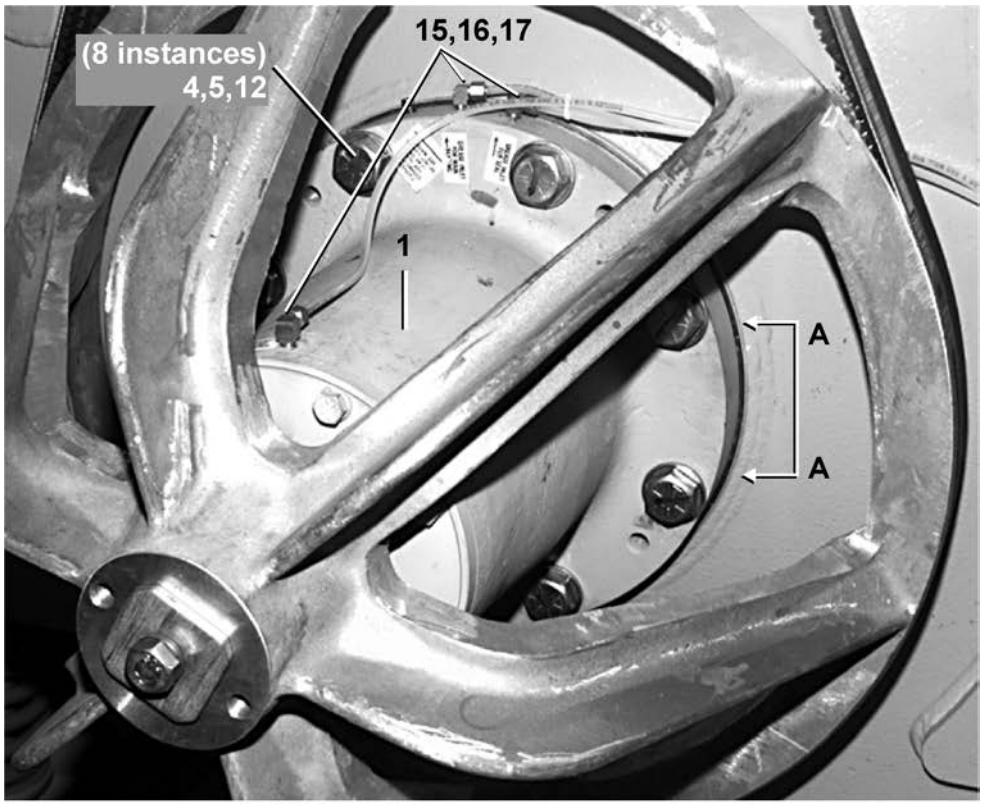


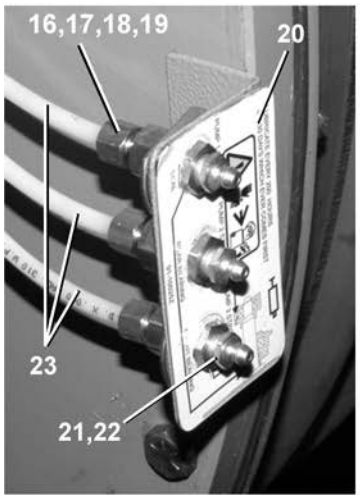
Parts List—Drive

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

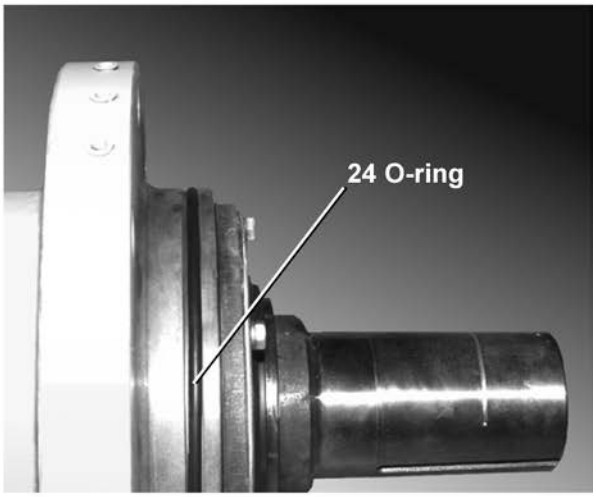
Used In	Item	Part Number	Description	Comments
			----------COMPONENTS----------	
all	1	56VB124XB3	VBAND 3RBX124 EACH=1	
all	2	98CX21931	MACH=PULLEY, FAB, 3626	
all	3	98CX034B3S	VPUL 3B3.4/A3.0 (SH) TYPE QD	
all	4	98CXQ1MSH	BUSH=1+5/8" VPUL QD TYPE SH	
all	5	98CXE230CM	STRMACHKEY 3/8SQX2+1/2	

Bearing Assembly & Installation MWF36, MWF45, MWF63, MWF77



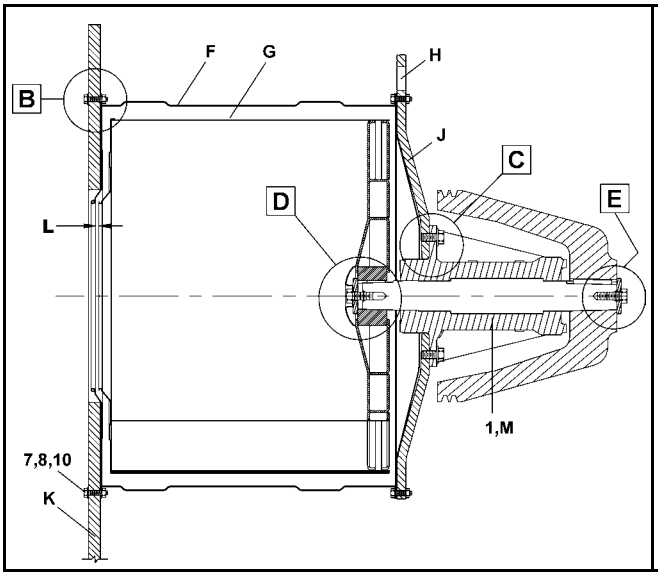


Lubrication site

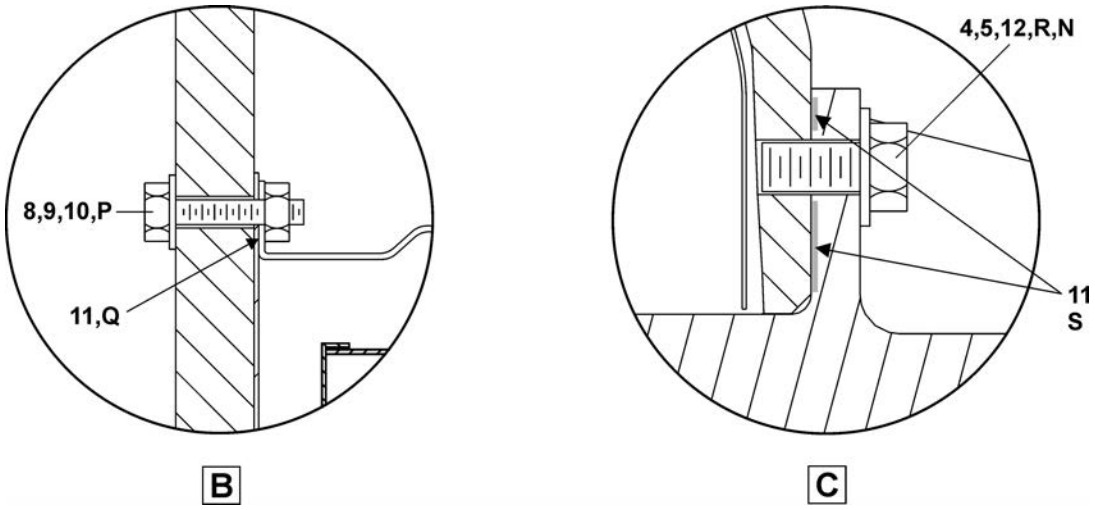


View A-A (shell back not shown)

Bearing Assembly & Installation MWF36, MWF45, MWF63, MWF77

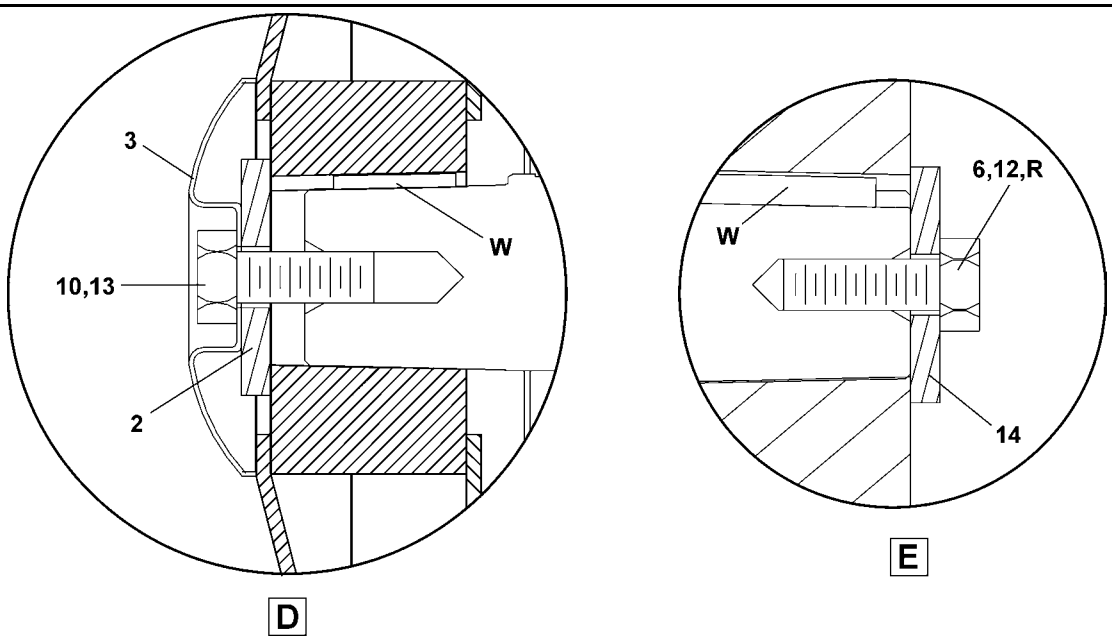


B. Top connection between the shell front and the shell side sheet
C. Connection between the shell rear and the bearing housing
D. Connection between the cylinder rear and the bearing housing
E. Connection between the bearing housing and the pulley
F. Shell
G. Cylinder
H. Holes to lift the machine
J. Shell rear
K. Shell front
L. This dimension must be in this range: .25 inches [6mm] -.625 inches [15mm].



B. Connection between the shellfront and the shell
C. Connection between the shell rear and the bearing housing
N. 8 instances
P. 24 instances
Q. Apply silicone between the inner shell front and the shell, fully around the hole pattern.
R. Apply adhesive to the bolt, torque to 909 FT. LBS.
S. Apply silicone between the bearing housing and the shell rear, fully around the hole pattern.

Bearing Assembly & Installation MWF36, MWF45, MWF63, MWF77



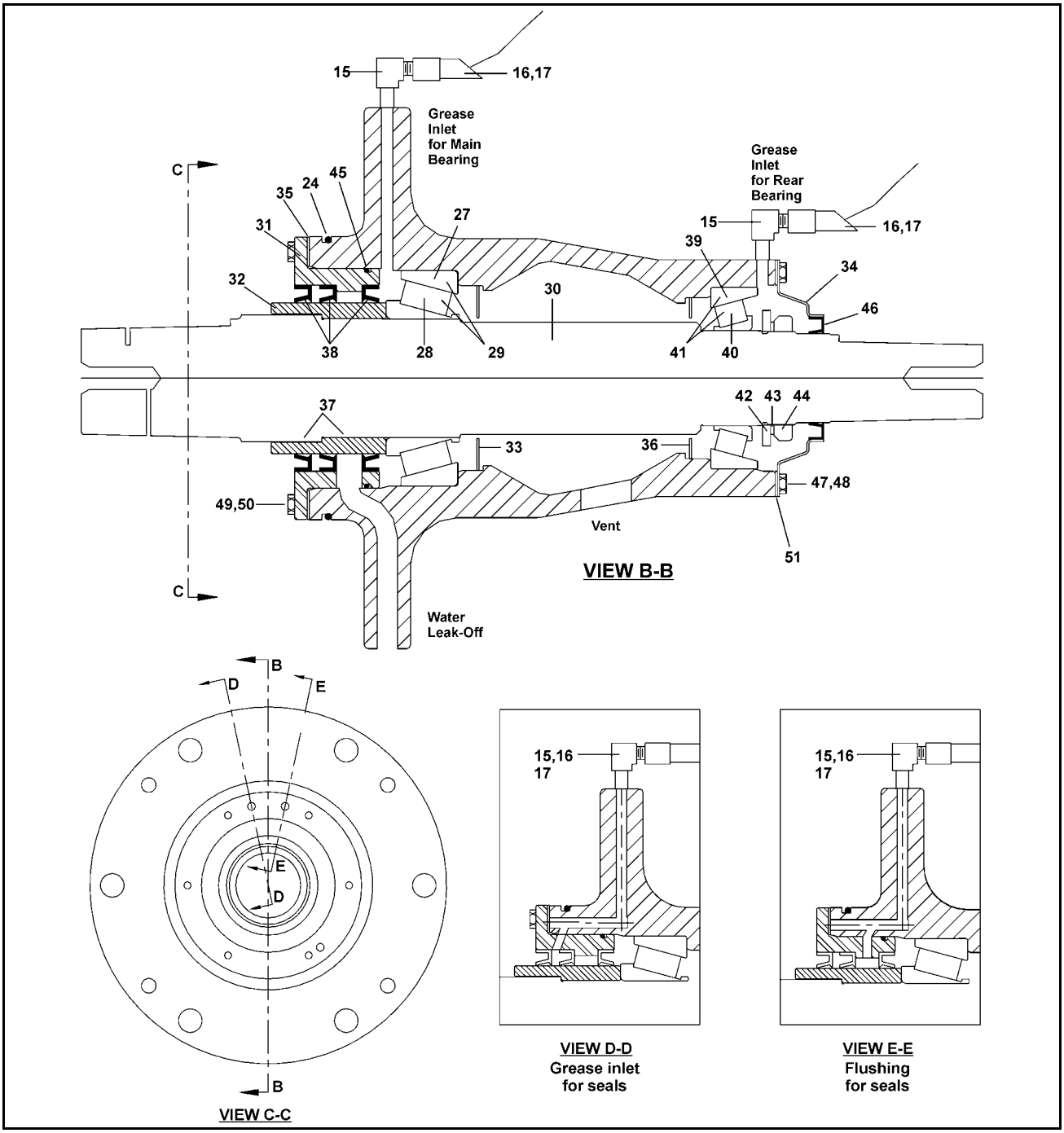
D. Connection between the cylinder rear and the bearing housing

E. Connection between the bearing housing and the pulley

R. Apply adhesive to the bolt, torque to 282 FT. LBS.

W. Key

Bearing Assembly & Installation MWF36, MWF45, MWF63, MWF77



Bearing Assembly & Installation MWF36, MWF45, MWF63, MWF77

Table 1. Bearing Assembly & Installation MWF45, MWF63, MWF77

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "All" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	**Item**	**Part Number**	**Description/Nomenclature**	**Comments**
			Assemblies	
A	1	98MW3601	MAIN BEARING ASSY=MWF45	MWF45, Assembly, contains items 30-55
B	1	98MW4201	MAIN BEARING ASSY=MWF77	MWF63 & MWF77, Assembly, contains items 30-55
			Components	
A	1	98MW3601	MAIN BEARING ASSY=MWF45	Assembly, contains items 30-55
B	1	98MW4201	MAIN BEARING ASSY=MWF77	Assembly, contains items 30-55
A	2	98CMCR0950	SHAFT RETNR SPACER METRIC	
B	2	98CMCR4216	RESISTOR 42X 225W 5% 10 OHM	
all	3	98CMCR0949	COVER SHAFT RETAINER METRIC	
B	4	15K253M	HEXCAPSCR M24-3.0X75CLS10.9 Z	
A	5	15U316M	FLTWASH D16 HARD HV200 D16 Z	
B	5	15U393	FLTWASH 1" HARD ASTM F436	
all	6	15K232M	HEXCAPSCR M20X50 10.9 ZINC	
A	7	15K127M	HEXFLGSCR 3/8-16 X2.5 GR8 ZINC	
B	7	15K191HM	HEXCAPSCR M12*90 GR10.9 CS	
A	8	15G206M	HEX NUT M10 ZINC	
B	8	15G230M	HEXNUT M12 GRADE 10.9 CS	
A	9	15K180M	M10-1.5X50HX HD CAP SCR DIN931	
B	9	15K191CM	HEXCAPSCR M12*65 GR10.9 CS	
A	10	15U266	FLATWASHER 1"0DX7/16"IDX3/16"	
B	10	15U283	12MM WASHER HARD DIN 6916 ZINC	
A	11	20C040B	SUPERFLEX CLR RTV SIL 10.1OZ	
B	12	20C007G	THDLOCKSEAL LCT24231 RMUBL50CC	
all	13	15B201	HEXCAPSCR M20-2.5 X 50M 18-8	
all	14	98CMCR3023	SHAFT RETNR SPACER=3022X CSM	
all	15	98CX932503	PIPE FITTING, 90 DEGREE, .25X1/8 BSP	
all	16	98CX961460A	SLEEVE DELRIN 6MM	
all	17	98CX961460	TUBE INSERT 4MM	
all	18	98CX932801	PIPE FITTING, 6.5X1/4 BSP	
all	19	15U281A	WASHER=CLIPPED 1/2 ID .06THK	
all	20	01 10025Z	NPLT:BEARING&SEAL LUB-42"& 36"	
all	21	98CX931701	HEXBUSH, 1/4X1/8 BRASS BSP	
all	22	98CX961708	GREASE FITTING, 1/8BSP ZINC	
all	23	98CX910823	FLEXIBLE TUBING, 4X6MM OD	

Bearing Assembly & Installation MWF36, MWF45, MWF63, MWF77

Bearing Assembly & Installation MWF45, MWF63, MWF77 (cont'd.)

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "All" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.

Used In	Item	Part Number	Description/Nomenclature	Comments
A	24	60C170	ORING 8"IDX3/16CS BUNA70 #369	
B	24	60C176	ORING 10 IDX1/4"CS BUNA-N#449	
A	27	54A337	CUP 6535 SKF 1/BOX	
A	28	54A336	CONE 6580 S-ROW S-BORE SKF1/BX	
B	29	54AT101190	TIMK HH221449/HH221410=4"BORE	
A	30	98MW3611	MACH=MAIN SHAFT MWF45	
B	30	98MW4211	MACH=MAIN SHAFT MWF77	
A	31	98CMCR3612	MACH=FRONT SEAL HOLDER 36X	
B	31	98CMCR4214	MACH=FRONT SEAL HOLDER 42X	
A	32	98CMCR3613	SEAL SLEEVE=BRG ASSY 36X	
B	32	98CMCR4215	SEAL SLEEVE=BRG ASSY 42X	
A	33	02 21542	FRONT GREASE SHIELD 3630F	
B	33	98MW25007	FRONT GREASE SHIELD MWF77	
A	34	02 21545	REAR SEAL HOLDER 3630F8	
B	34	98MW25005	REAR SEAL HOLDER MWF77	
A	35	02 21547	GASKET=FRNT SEAL HOLDR 3630F	
B	35	02 21048	GASKET=EXCLUDR SEAL 4232F	
A	36	02 21550	REAR GREASE SHIELD 3630F	
B	36	98MW25008	REAR GREASE SHIELD MWF77	
A	37	20C011C	RETAINCMPD PRESSFIT LOC#60941	
B	37	20C012DA	RETAINCMPD ADH LCT#68060 250ML	
A	38	24S114	SEAL 4.5X5.5X.50 JM# 9170 LUP	
B	38	24S135	SEAL5.188X6.5X.5 #05187336LPDN	
B	39	54A337	CUP 6535 SKF 1/BOX	
B	40	54A336	CONE 6580 S-ROW S-BORE SKF1/BX	
A	41	54A335465	TIM H414210/H414249=2.8125"BORE	
A	42	56ATW14	TONGUE WASH TIM K91514 FOR N14	
B	42	56ATW16	TONGUE WASH T#K91516 FOR AN16	
A	43	56AHW114	TW114 BEARING LOCWASHER	
B	43	56AHW116	TW116 BEARING LOCKWASHER	
A	44	56AHN14	N14 BEARING LOCKNUT	
B	44	56AHN16CM	AN16 BEARING LOCKNUT, MWF77	
A	45	60C169	ORING 7+3/4ID1/8 BUNA70 #265	
B	45	60C160J	ORING 6+1/4ID1/8CS BUNA70 #259	

Bearing Assembly & Installation MWF36, MWF45, MWF63, MWF77

Bearing Assembly & Installation MWF45, MWF63, MWF77 (cont'd.)

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "All" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	**Item**	**Part Number**	**Description/Nomenclature**	**Comments**
all	47	15K039M	HXCAPSCR M6X20, 8.8,ZINC	
all	48	15U180	LOCKWASHER MEDIUM 1/4 ZINCPL	
all	49	15K117MS	HXCAPSCR M10X35 SS 18-8	
X	50	15U266MS	FLTWSHR METRIC D10 SS18-8	
A	51	02 21546	EXCLUDER SEAL GASKET	
B	51	02 21047	GASKET=FRNT SEAL HOLDR 4232F	

4 Suspension

Suspension

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

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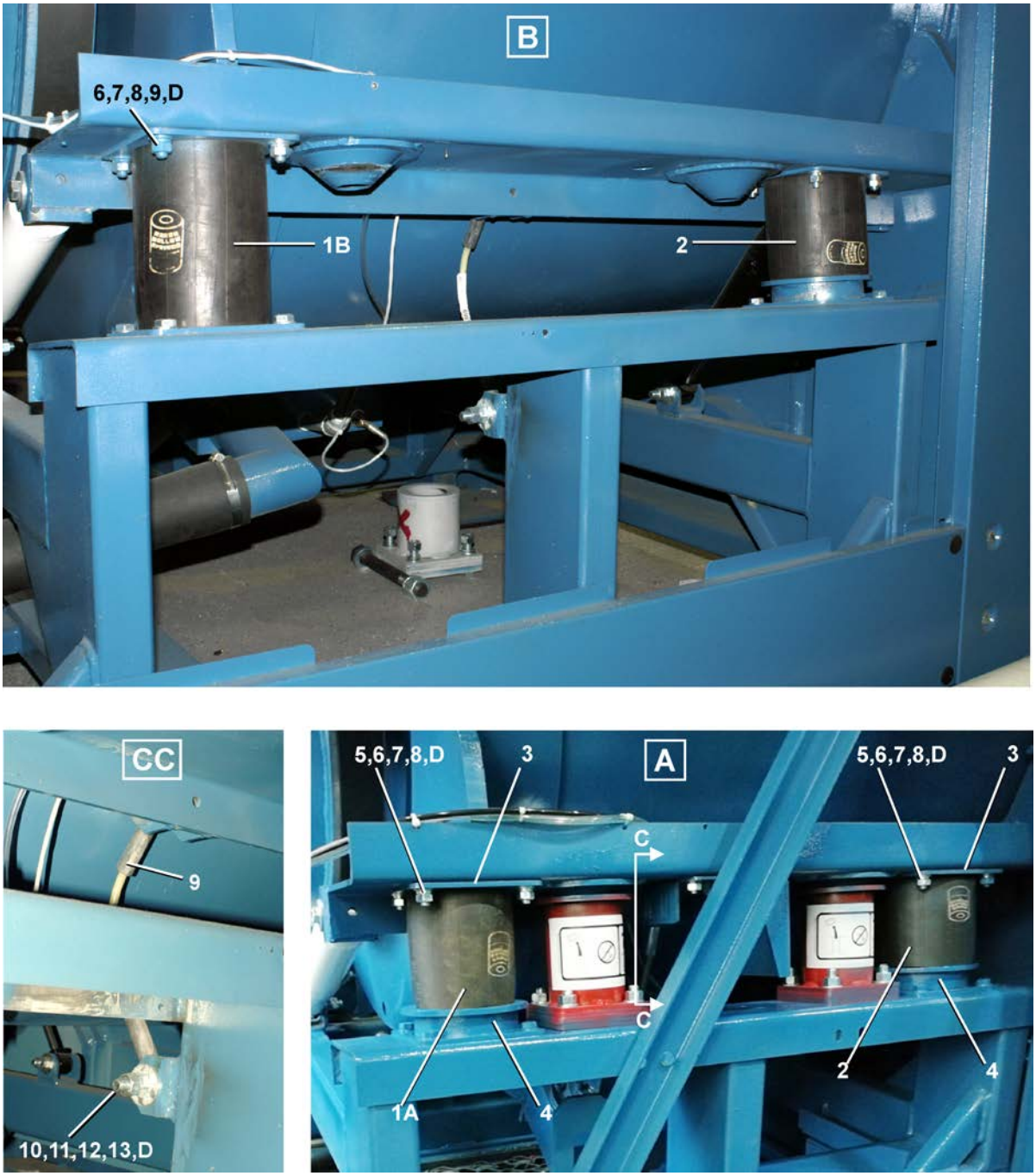
Figure 1. Marshmellow Springs



Legend

A	Left Side View MWF63C7
B	Left Side View MWF77C7
CC	Detailed View, Cable Tie Down, Typical 2 places
D	Typical hardware

Suspension

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

Table 1. Parts List—

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.

Used In	Item	Part Number	Description/Nomenclature	Comments
Assemblies				
	A		REFERENCE	MWF63C7, MWF63Y7
	B		REFERENCE	MWF77C7, MWF77Y7
Components				
A	1	60B127	MM SPRG 4X2X6 F#W223580180	
B	1	60B134	MM SPRG 4.5X1X7 F#W223580091	
B	2	60B134	MM SPRG 4.5X1X7 F#W223580091	
all	3	98MW21170A	SUPPORT=MM SPRG FRONT UPPER	
all	4	98MW21174	SUPPORT=MM SPRG FRONT LOWER	
all	5	15K100M	HXCAPSCREW M10X30 8.8 ZINC	
all	6	15G206M	HEX NUT M10 ZINC	
all	7	15U266M	FLTWSHR D10 ZINC	
all	8	15U275M	LOCKWSHR D10 ZINC	
all	9	27A969	CABLE ASSY SAVA#205801	
all	10	15K191HM	HEXCAPSCR M12*90 GR10.9 CS	
all	11	98CX773113	HEXNUTM12, ZINC	
all	12	98CX773513	FLATWASHER, D12 ZINC	
all	13	15U283M	LOCKWSHR D12 ZINC	

Shocks

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

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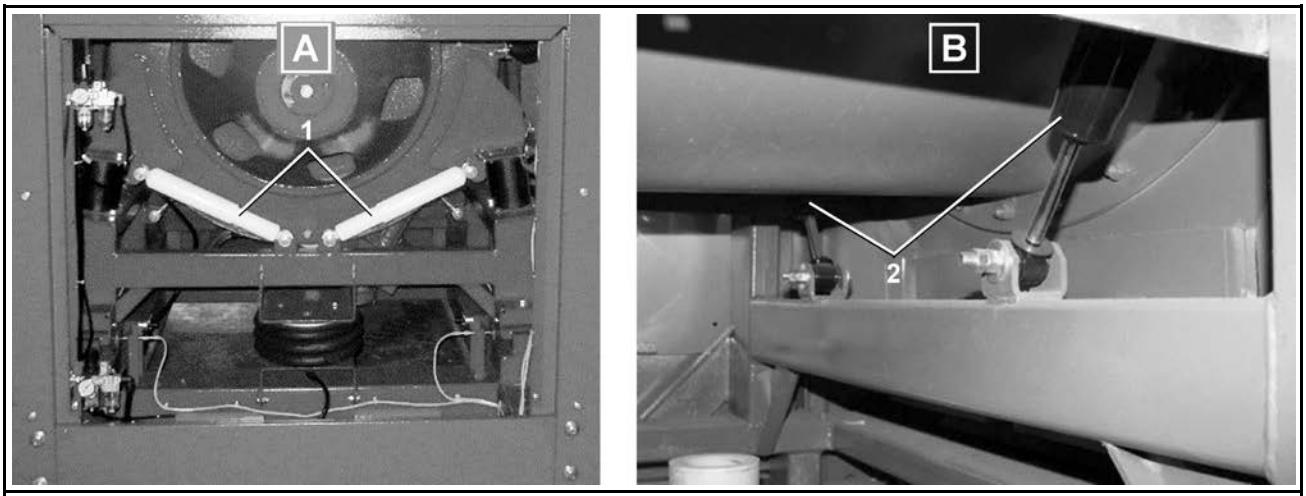
Figure 1. Installed Views



Legend

A Rear Shocks
B Front Shocks

Table 1 Parts List—

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.

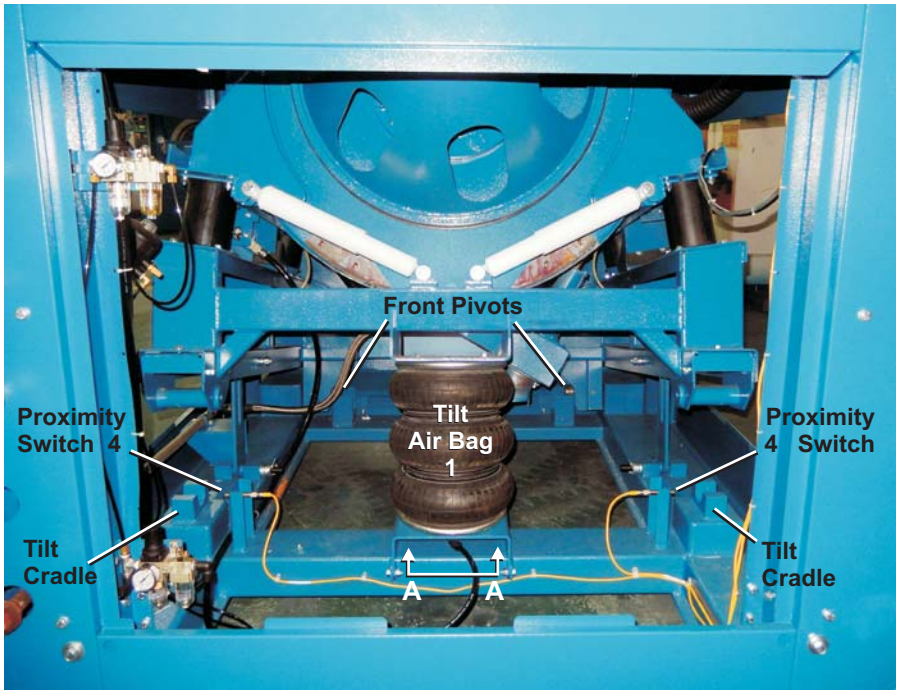
Used In	Item	Part Number	Description/Nomenclature	Comments
Assemblies				
	A		REFERENCE	MWF63C7, MWF63Y7
	B		REFERENCE	MWF77C7, MWF77Y7
Components				
all	1	60BS6832	SHOCK ABSORBR	Rear Shocks
all	2	60BS6838	SHOCK ABSORBER	Front Shocks

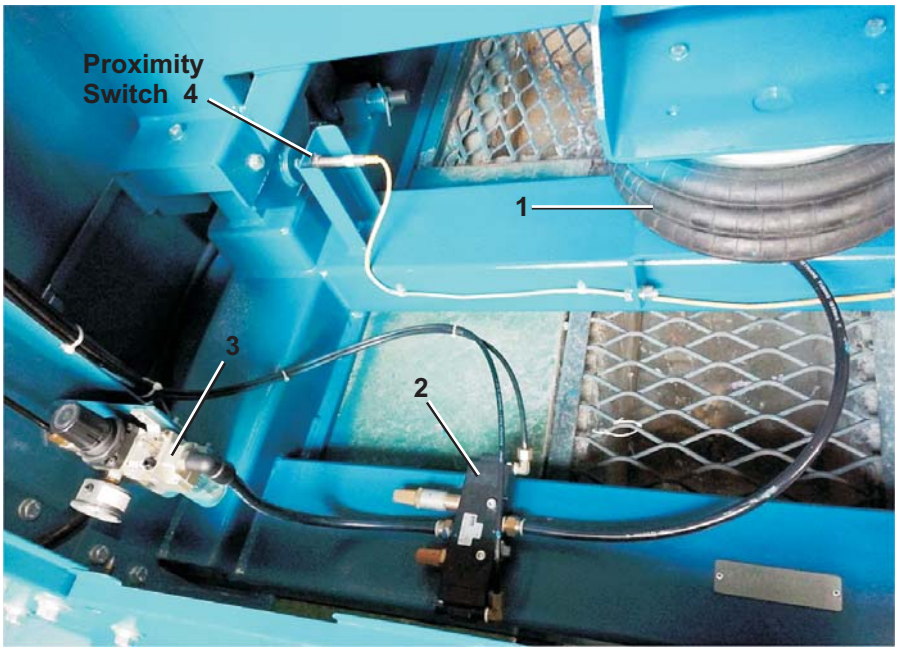
Tilt Components 5

Tilt Components

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

Figure 1: Air Bag, Proximity Switches





Tilt Components

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

Figure 2: Pressure Regulators, Tilt Stops

View A-A

Tilt Stops & Guides (2 Places)

Tilt Components

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

Parts List

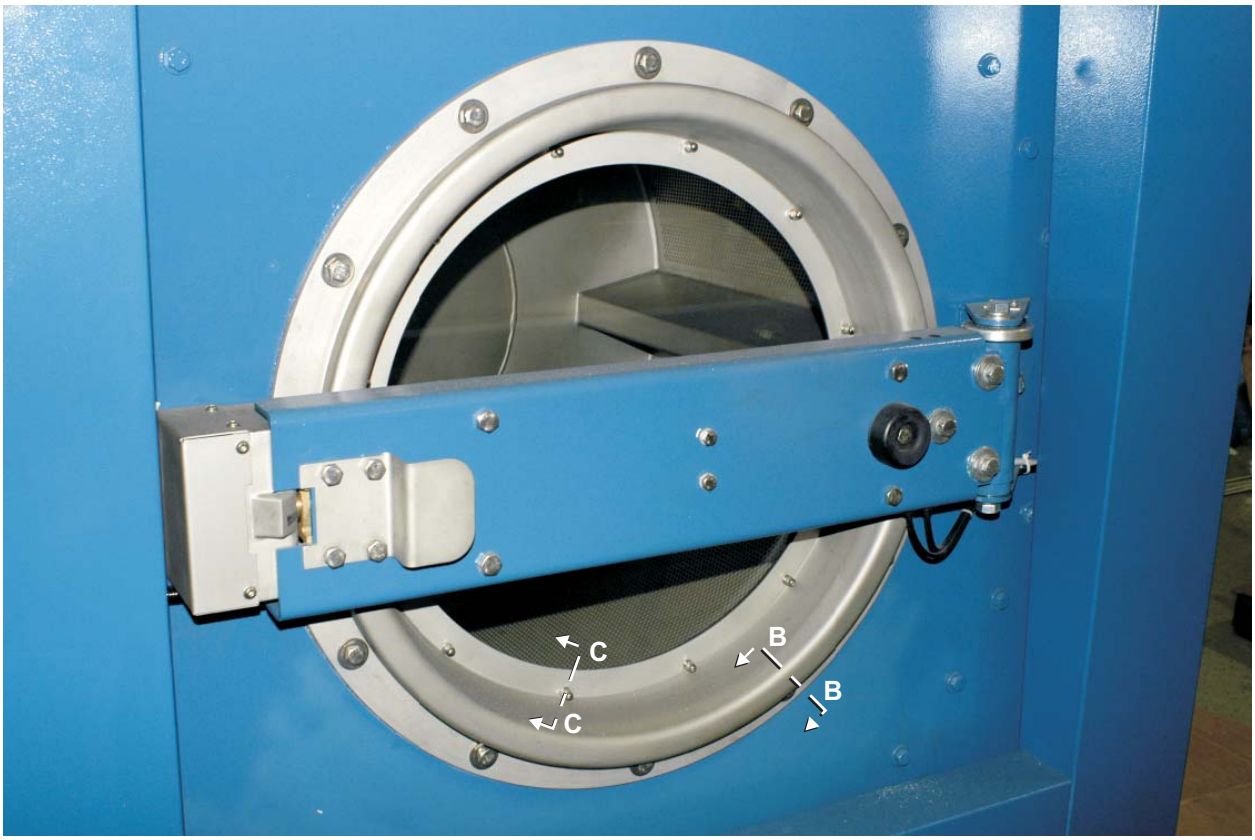
Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

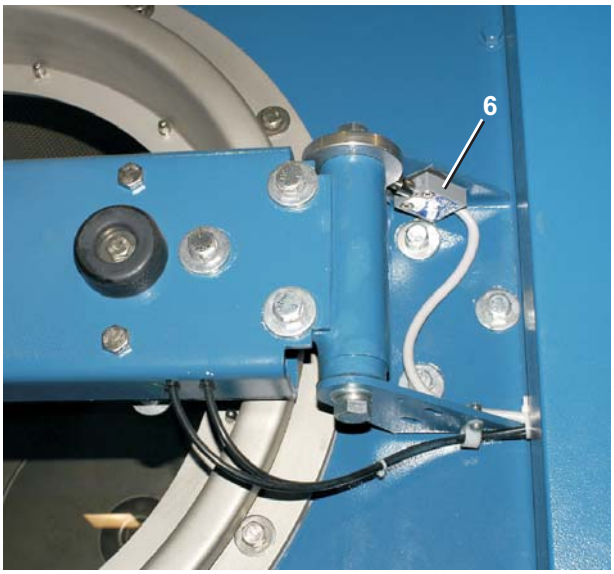
Used In	Item	Part Number	Description	Comments
			----------COMPONENTS----------	
all	1	60B148	AIR MOUNT FIRESTONE W01-358-8047	
all	2	96N0012P	DBL.REM.VLV.3/8"4-WAY=CTR.OFF	
all	3	98CX880511	CSM AIR REGULATOR G1/4 W/O GAGE	
all	4	09RPS12AAS	PROXSW QD CONN 12M NO-AC SHLD MICROFAST	
all	5	98MW64681A	RESTPAR=6X3X1.5,MWF100C7	
all	6	15K113M	HEXCAPSCR M10X45 ZINC 8.8	
all	7	15K207M	LOCKNUT M10 ZINC	
all	8	15U266M	FLTWSHR D10 ZINC	
all	9	X2 22028	MACH=TLT GUIDE STP BLCK,4840F	

Shell and Door Assemblies 6

Door 26”

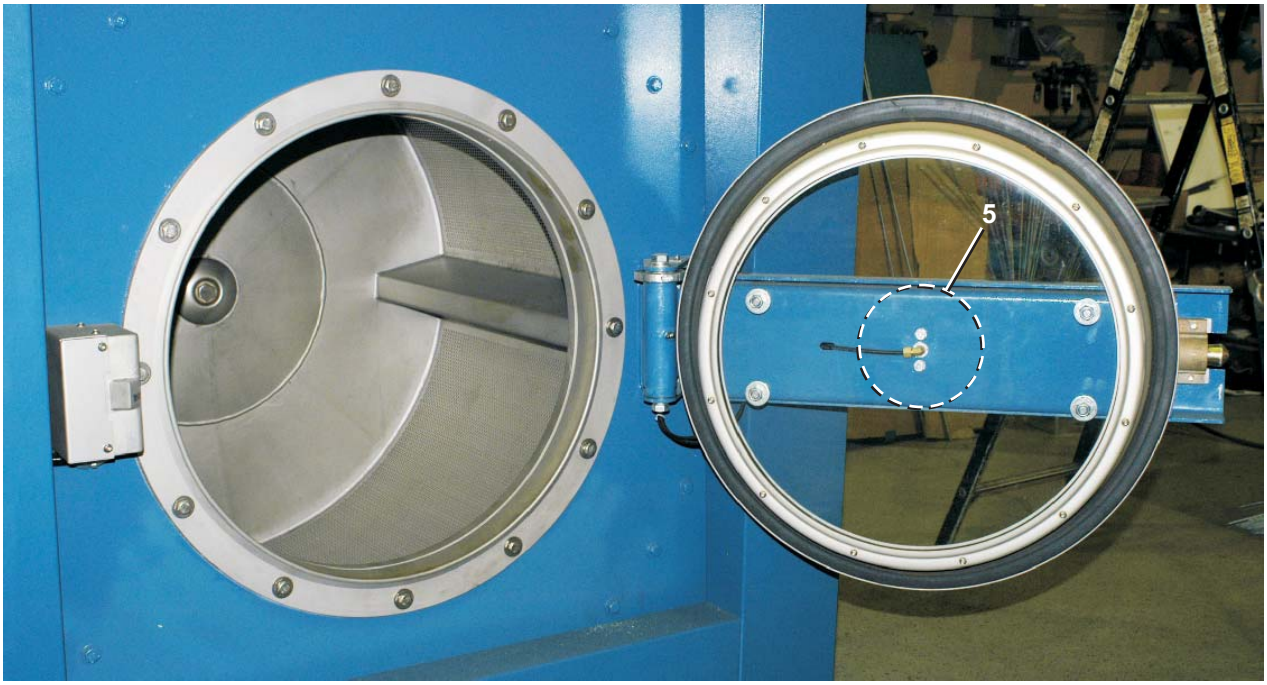
MWF63J7, MWF63Z7, MWF77J7, MWF77Z7
MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

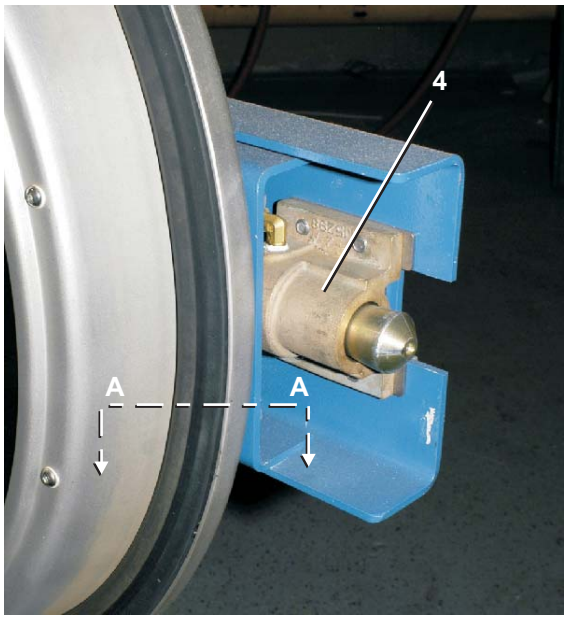




Door 26”

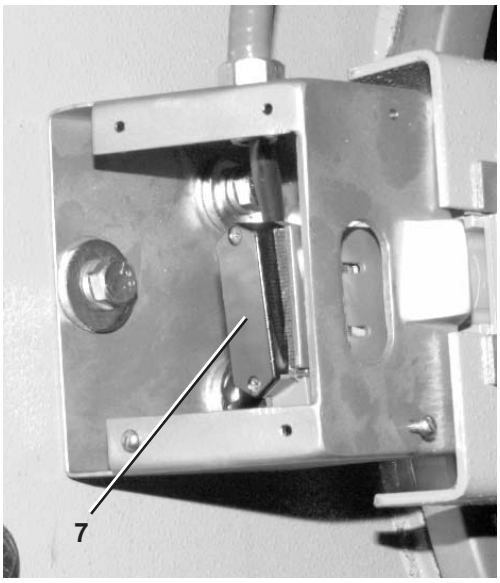
MWF63J7, MWF63Z7, MWF77J7, MWF77Z7
MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

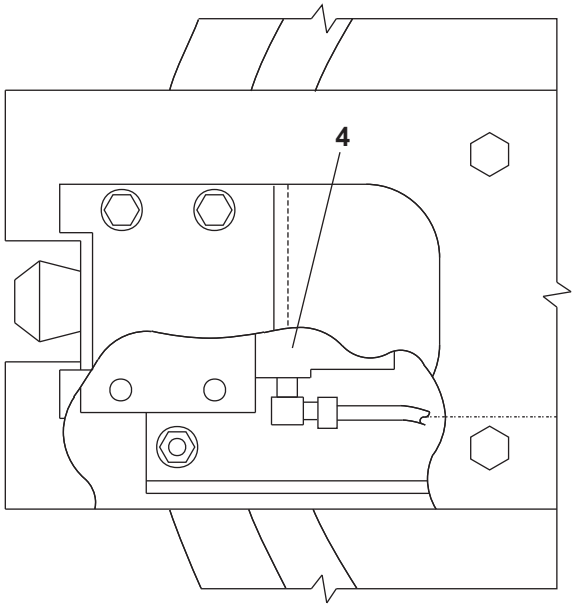


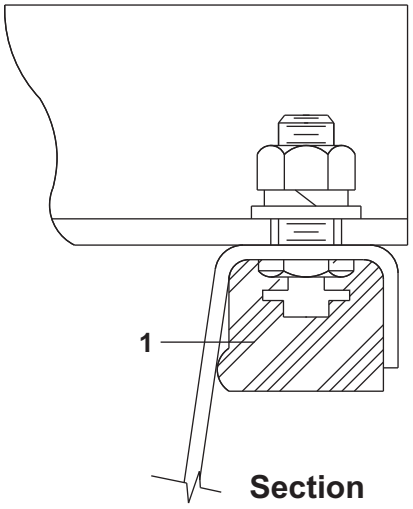


Door 26”

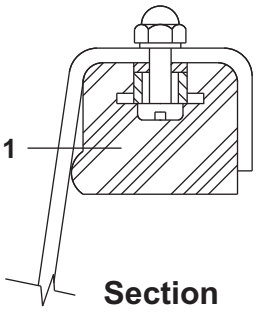
MWF63J7, MWF63Z7, MWF77J7, MWF77Z7
MWF63C7, MWF63Y7, MWF77C7, MWF77Y7



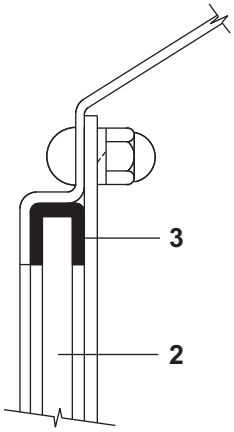




Section A-A



Section B-B



Section C-C

Door 26”

MWF63J7, MWF63Z7, MWF77J7, MWF77Z7
MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

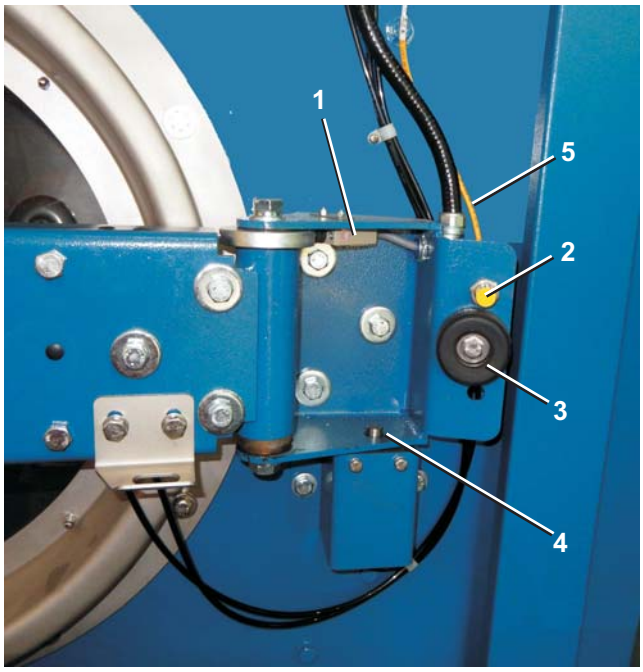
Parts List—Door 26”

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			----------COMPONENTS----------	
all	1	03 48152	DOOR GASKET RING 26" DOOR	
all	2	98CX48050	DOOR GLASS=26" OPENING, X/MWF	
all	3	98CX48052	GASKET=DR GLASS 26" OPENING	
all	4	98CX15028	DOOR LATCH ASSY-DIVCYLS	
all	5	60B090	AIRMT S-131 1CONV.F#W013587731	
all	6	09RM01212S	CAPSW 12' 180DEG ROLLER SILVER	
all	7	98CX965312	TEND TZ-6101	

Installation Door 26”,Tilt Models

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7



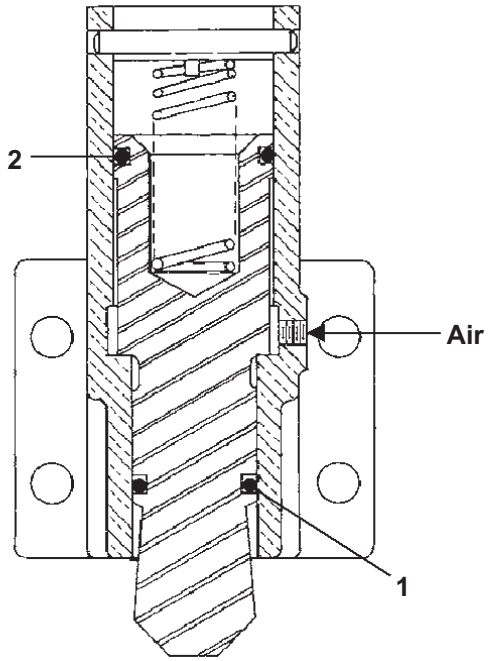
Parts List

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			----------COMPONENTS----------	
all	1	09RM01212S	CAPSW 12' 180DEG ROLLER SILVER	
all	2	98CX773680	BUMPER 2+1/2OD, CSM	
all	3	09RPS18CAS	PRXSW QKCO 18M NO-AC SHLD	
all	4	SA 10 020	* DOORLATCH ASSY-SMALL	
all	5	09RPTAC005	CONN.ST.FEM 3-PIN AC 3A 5M KB3T-5	

Door Latch

MWF45J8, MWF45Z8, MWF63J7, MWF63Z7, MWF77J7, MWF77Z7
MWF63C7, MWF63Y7, MWF77C7, MWF77Y7



Parts List—Door Latch

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
----------	----------	----------	----------COMPONENTS----------	----------
all	1	60C122	ORING 1"IDX1/8CS BUNA70 #214	
all	2	60C128	ORING 1+3/8IDX1/8CS BUNA70#220	

Door Open Lock

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

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Figure 1. Door Open Lock and Secondary Door Switch (Tilt Models)

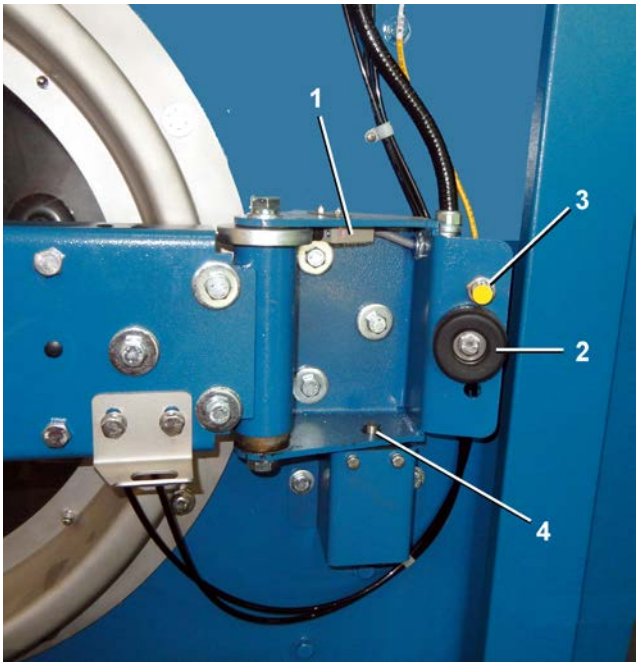


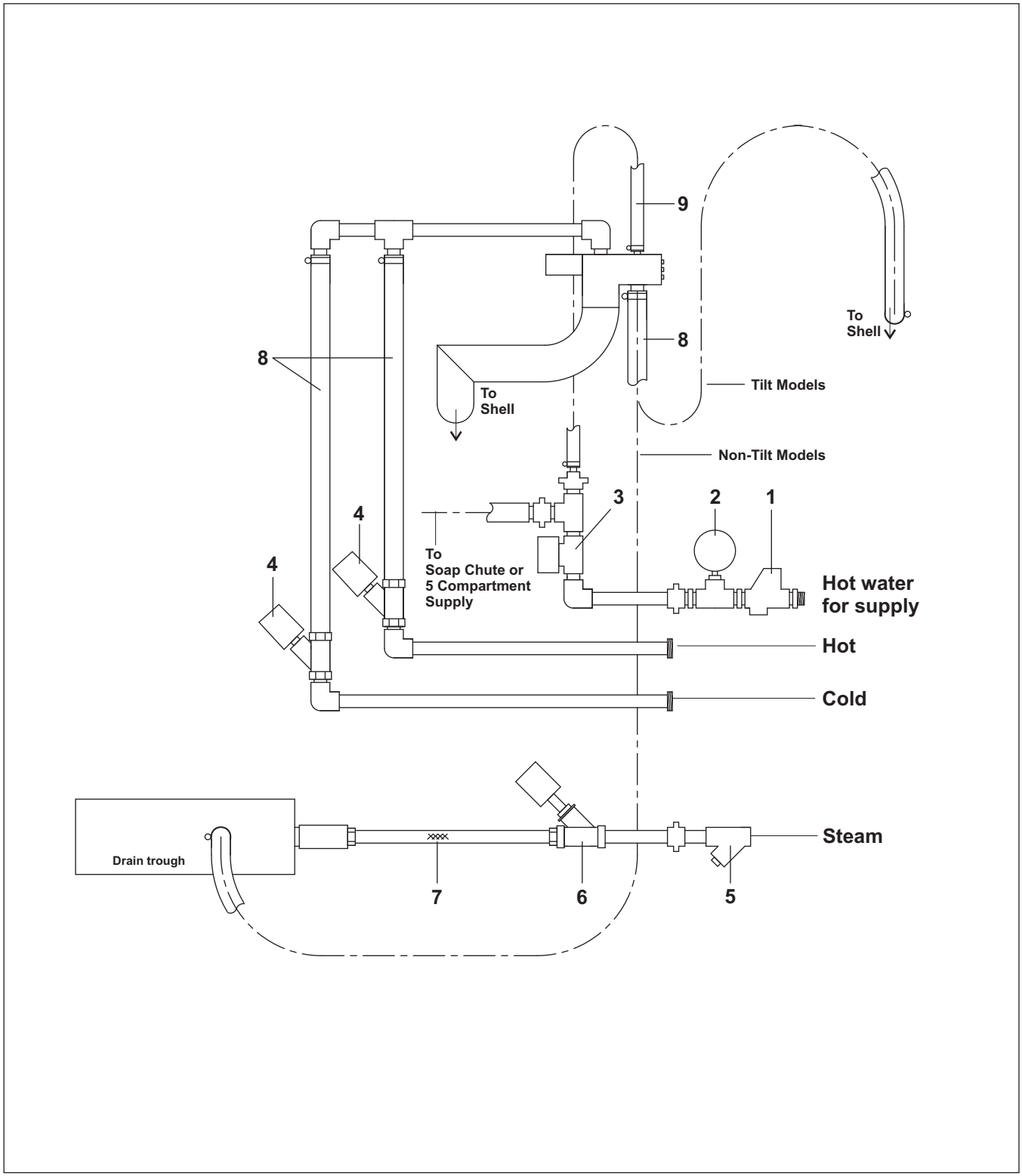
Table 1 Parts List—

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	**Item**	**Part Number**	**Description/Nomenclature**	**Comments**
Assemblies				
	A		REFERENCE	MWF63C7, MWF63Y7
	B		REFERENCE	MWF77C7, MWF77Y7
Components				
all	1	09RM01212S	CAPSW 12' 180DEG ROLLER SILVER	
all	2	98CX773680	BUMPER 2+1/2OD, CSM	
all	3	09RPS18CAS	PRXSW QKCO 18M NO-AC SHLD	
all	4	SA 10 020	* DOORLATCH ASSY-SMALL	
all	5	09RPTAC005	CONN.ST.FEM 3-PIN AC 3A 5M KB3T-5 ?MICROFAST	

7 Water and Steam Piping and Assemblies

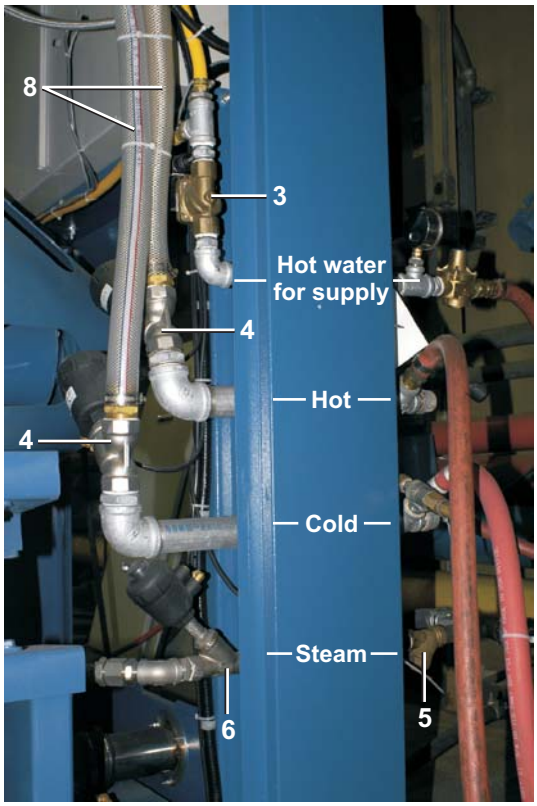
Water and Steam

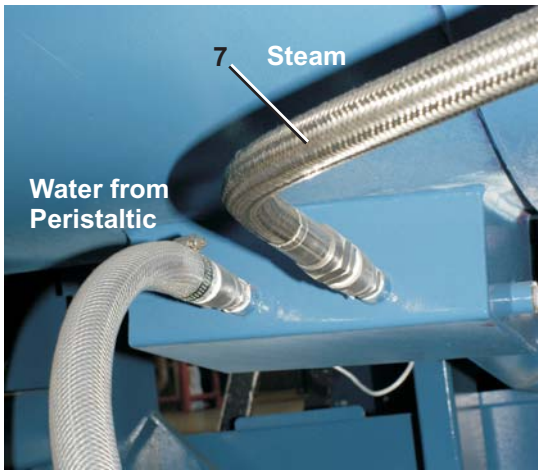
MWF63J8, MWF63Z8, MWF63C7, MWF63Y7, MWF77J8, MWF77Z8, MWF77C7, MWF77Y7



Water and Steam

MWF63J8, MWF63Z8, MWF63C7, MWF63Y7, MWF77J8, MWF77Z8, MWF77C7, MWF77Y7





Water and Steam

MWF63J8, MWF63Z8, MWF63C7, MWF63Y7, MWF77J8, MWF77Z8, MWF77C7, MWF77Y7

Parts List—Water and Steam

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			----------ASSEMBLIES----------	
	A		NON-TILT MODELS	MWF63J8, MWF63Z8 MWF77J8, MWF77Z8
	B		TILT MODELS	MWF63C7, MWF63Y7 MWF77C7, MWF77Y7
			----------COMPONENTS----------	
all	1	98CX820820	PRESSURE REGULATOR, 3/4 28PSI	
all	2	98CX902450	PRESSGAUGE R1/4",0-28PSI	
all	3	96P063B71	3/4"NC 230V 50/60 W/LEADS	
all	4	96D086WE	ANGBODVLV 1.25"NC H20 BRZ	
all	5	98CX820606	Y-STRAINER, 3/4”	
all	6	96D0009E	3/4"NPTBRZ N/C STEAMVAL ANGBOD	
all	7	98MW800406	STEAM HOSE, 3/4X600	
all	8	98CX910816	FLEXIBLE HOSE	
B	9	98MW489317	BRAIDED INLET HOSE	

Drain Valve 4”

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

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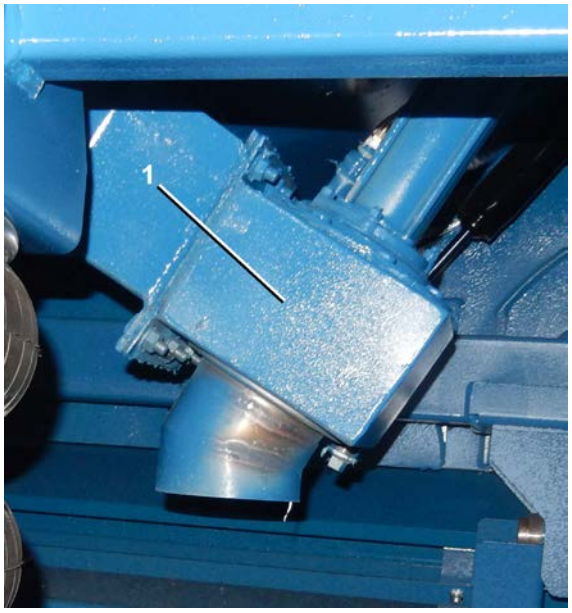


Table 1. Parts List—

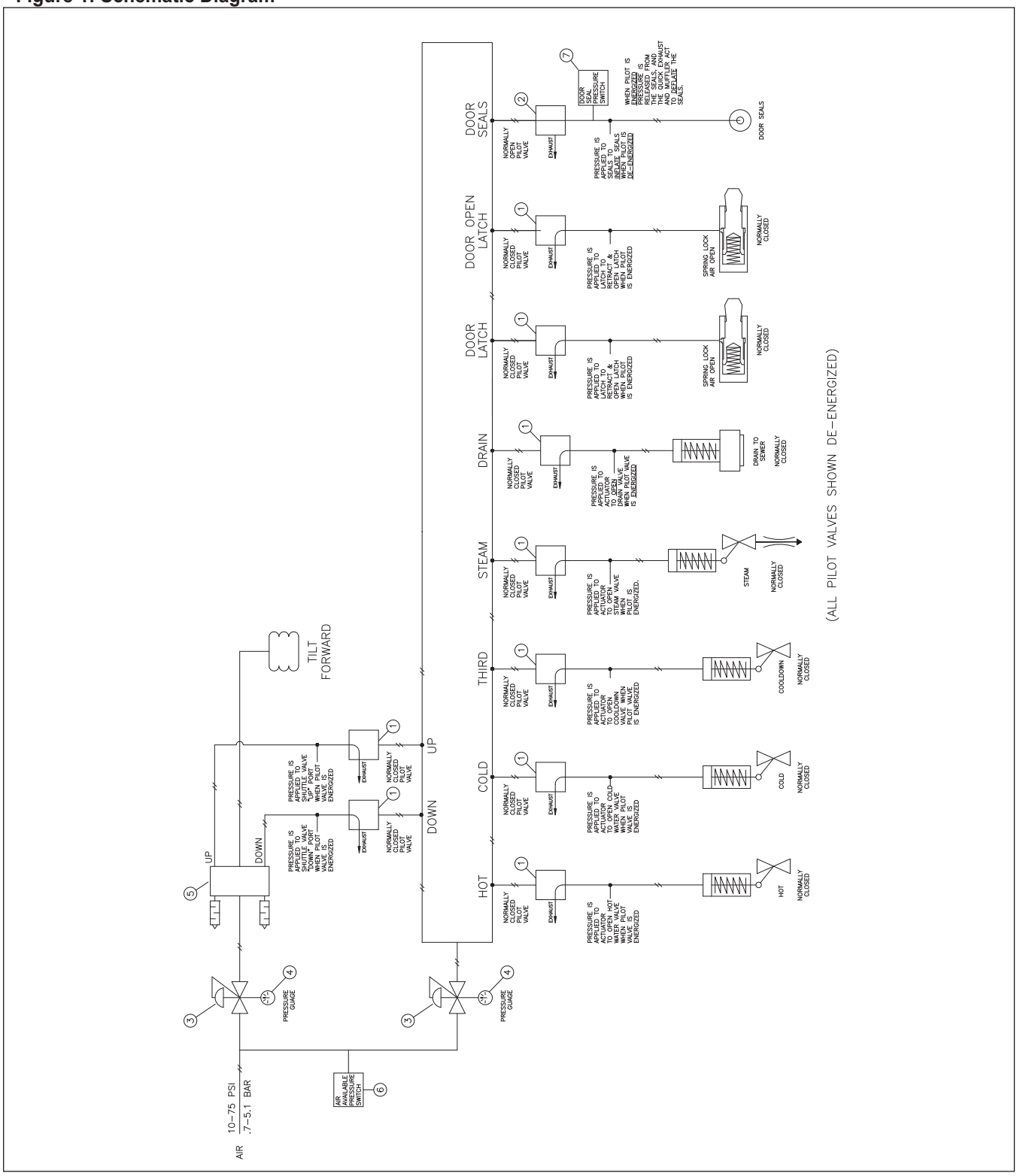
Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	**Item**	**Part Number**	**Description/Nomenclature**	**Comments**
Components				
all	1	A14 06500B	*DUMP VALVE ASSY=4S/S 4226QHE	

Pneumatic Assemblies 8

Pneumatic Schematic

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

Figure 1: Schematic Diagram



Pneumatic Schematic

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

Parts List

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

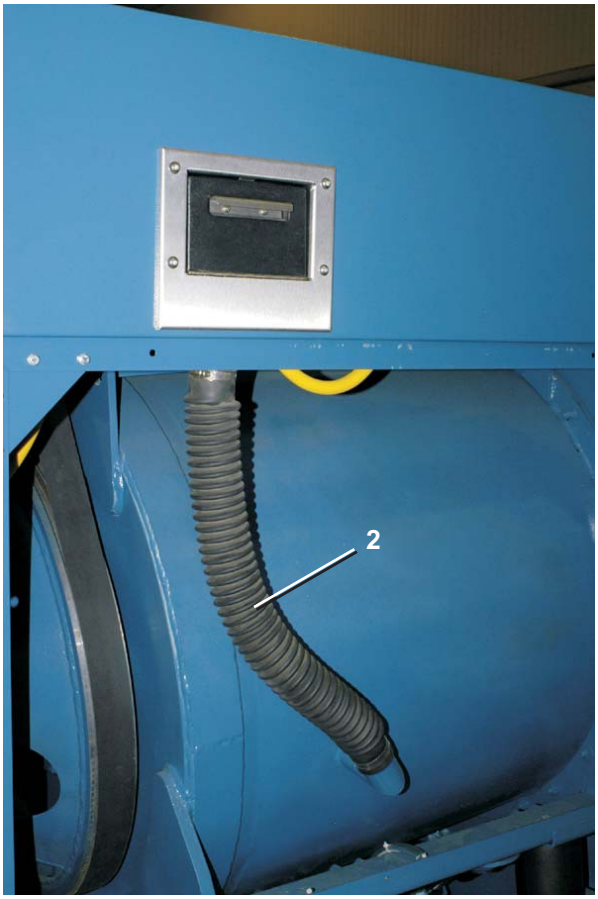
Used In	Item	Part Number	Description	Comments
			----------COMPONENTS----------	
all	1	96R301B71	1/8" AIRPILOT 3W NC 240V50/60	
all	2	96R302B71	1/8" AIRPILOT 3W NO 240V50/60	
all	3	98CX880511	CSM AIR REGULATOR G1/4	
all	4	98CX902450	PRESSGAUGE R1/4",0-28PSI	
all	5	96N0012P	DBL.REM.VLV.3/8"4-WAY=CTR.OFF	
all	6	09N082A	PRESSW NASON CLOSE @ 62 LB.	
all	7	09N082B10	PRESSW NASON CLOSE FALLING AT 9PSI	

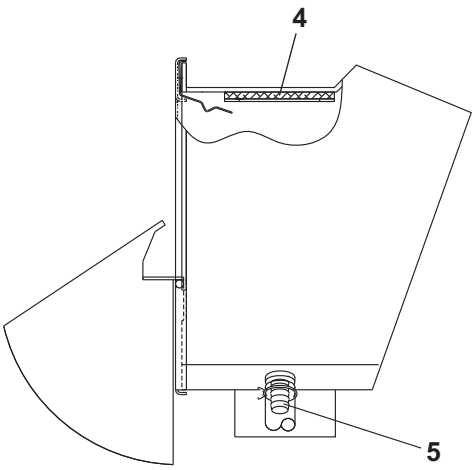
Chemical Supply Devices

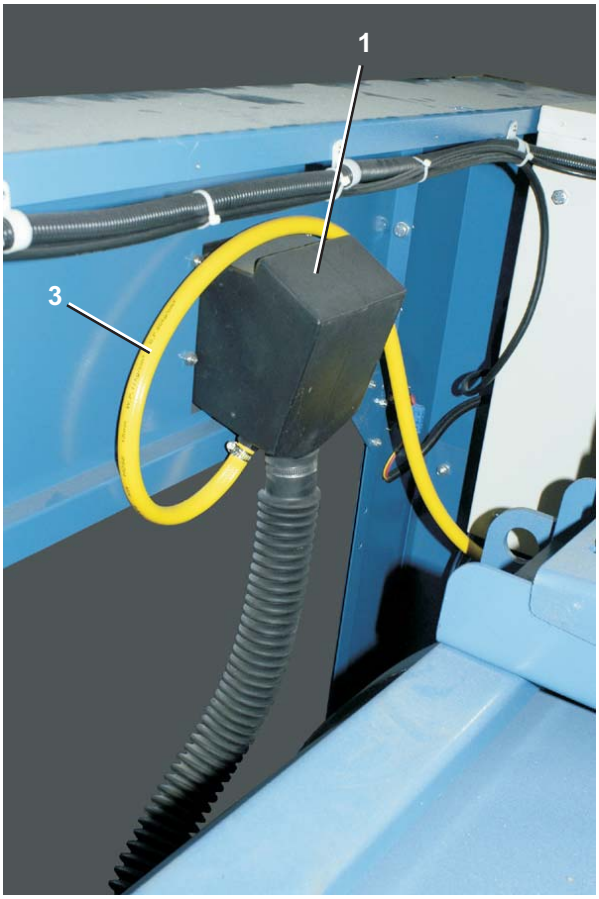
9

Soap Chute

MWF45J8, MWF45Z8, MWF63J7, MWF63Z7, MWF77J7, MWF77Z7
MWF63C7, MWF63Y7, MWF77C7, MWF77Y7







Soap Chute

MWF45J8, MWF45Z8, MWF63J7, MWF63Z7, MWF77J7, MWF77Z7
MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

Parts List—Soap Chute

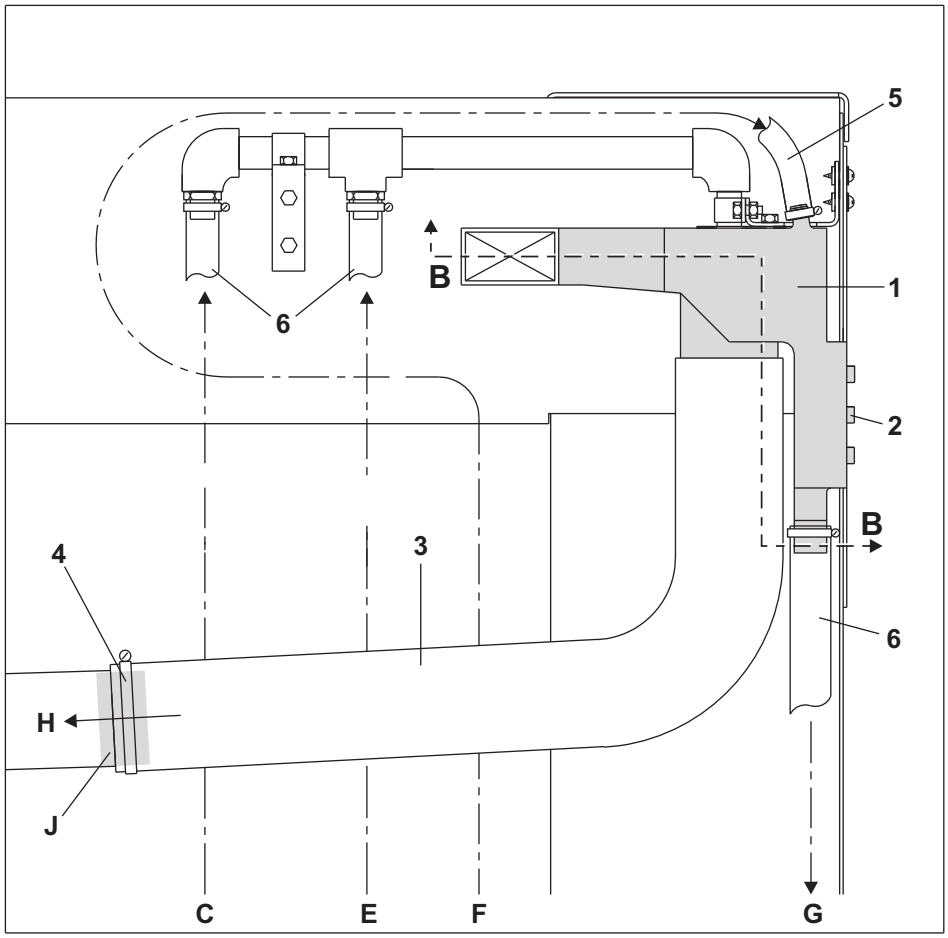
Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			----------COMPONENTS----------	
all	1	AWS30211A	PLASTIC SOAP ASSY	
all	2	02 03870D	FLEXTUBE=2"ID X 14"LG W/CUFFS	
all	3	98CX873160	FLEXIBLE HOSE ID13XOD20X44M	
all	4	98CX972828	PAD	
all	5	51BB0KN00B	BULKHD FITT 1/2"BARBED,POLYPRO	

Peristaltic Supply

MWF45J8, MWF45Z8, MWF63J7, MWF63Z7, MWF77J7, MWF77Z7
MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

Figure 1: Peristaltic Diagram



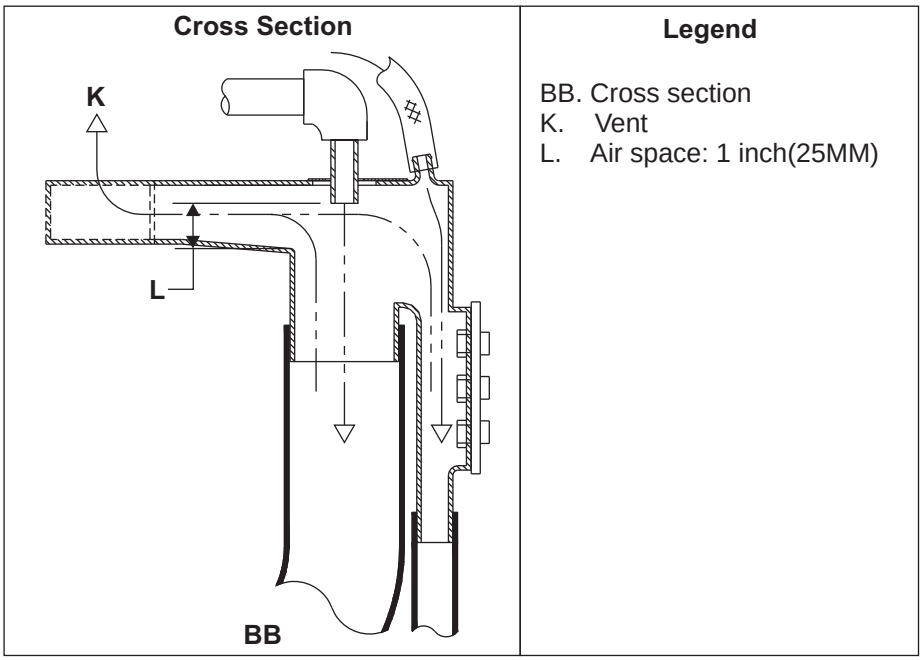
View A-A

AA. Cross section
C. Cold water line
E. Hot water line
F. Hot water to flush the chemical supplies
G. Water and chemical supplies to the shell
H. Hot and cold water to the shell
J. Apply adhesive to the surfaces that connect. Then, tighten the clamp.

Peristaltic Supply

MWF45J8, MWF45Z8, MWF63J7, MWF63Z7, MWF77J7, MWF77Z7
MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

Figure 2: Peristaltic Inlet



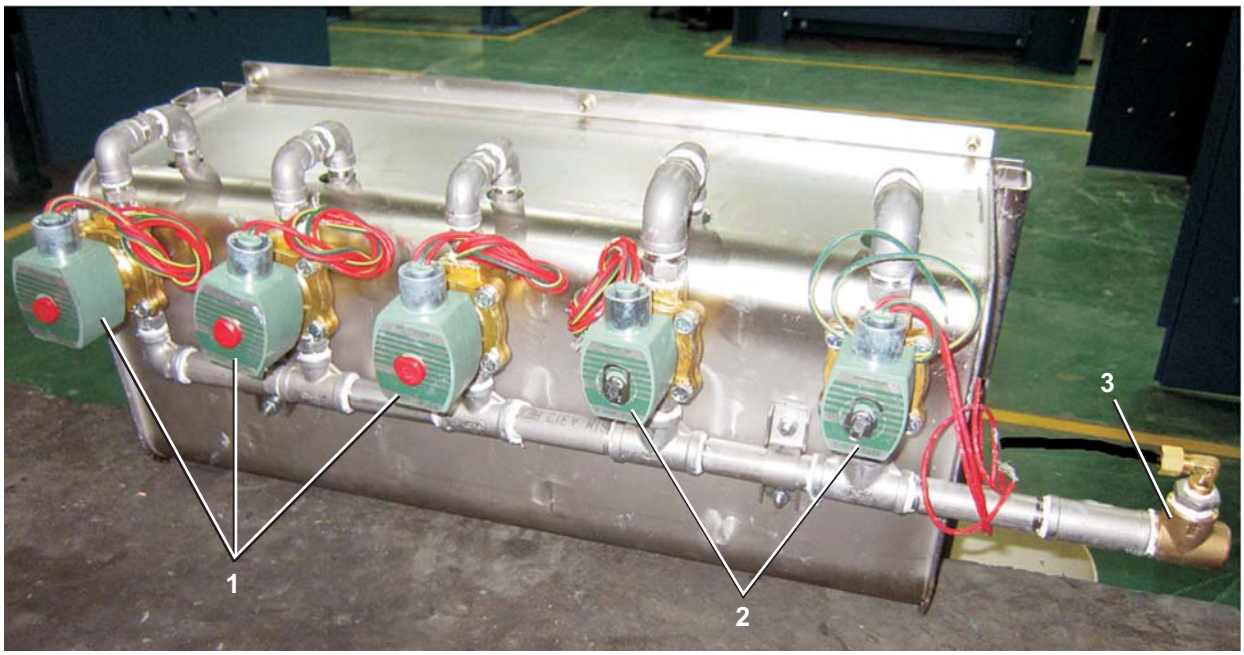
Parts List—Peristaltic Supply

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			----------COMPONENTS----------	
all	1	02 03588M	PERISTALTIC/WATER INLET 3022H	
all	2	98CX489021	NPT PLASTIC PLUG	
all	3	98CX03588X	FLEXIBLE HOSE	
all	4	27A088S	HOSECLAMP 3+1/16-4"SSSCR#HSS56	
all	5	98CX873160	FLEXIBLE HOSE ID13XOD20X44M	
All	6	98CX910816	FLEXIBLE HOSE	

5 Compartment Supply

MWF45J8, MWF45Z8, MWF63J7, MWF63Z7, MWF77J7, MWF77Z7
MWF63C7, MWF63Y7, MWF77C7, MWF77Y7



5 Compartment Supply

MWF45J8, MWF45Z8, MWF63J7, MWF63Z7, MWF77J7, MWF77Z7
MWF63C7, MWF63Y7, MWF77C7, MWF77Y7

Parts List—5 Compartment Supply

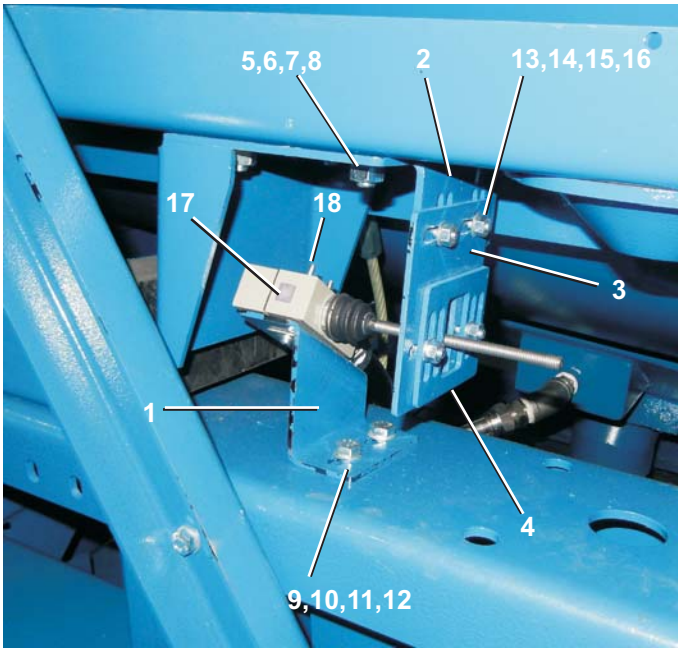
Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			----------COMPONENTS----------	
all	1	96TCC2AA71	3/8" N/C 2WAY 240V50/60C VALVE	
all	2	96TDC2AA71	1/2"N/C2WY240V50/60C VLV	
all	3	96M001	1/2X3/8" RELIEF VALVE SET31#	
all	4	02 03870D	FLEXTUBE=2"ID X 14"LG W/CUFFS	

Control and Sensing 10

Excursion Switch

MWF63C7, MWF63Y7, MWF77C7, MWF77Y7



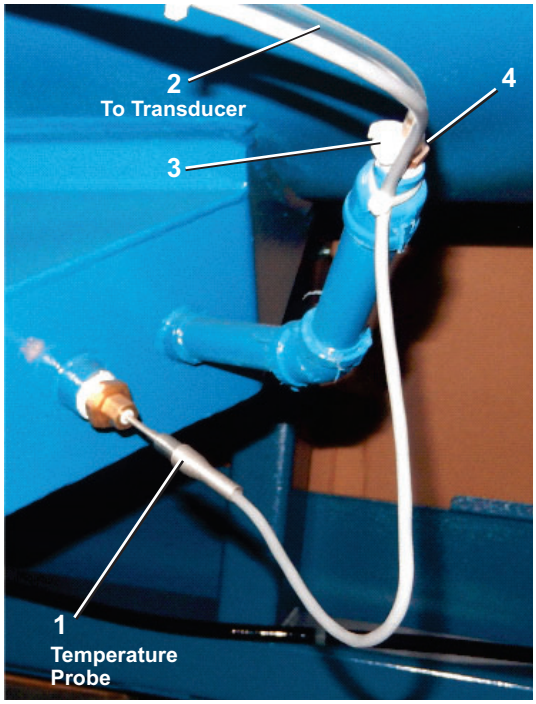
Parts List

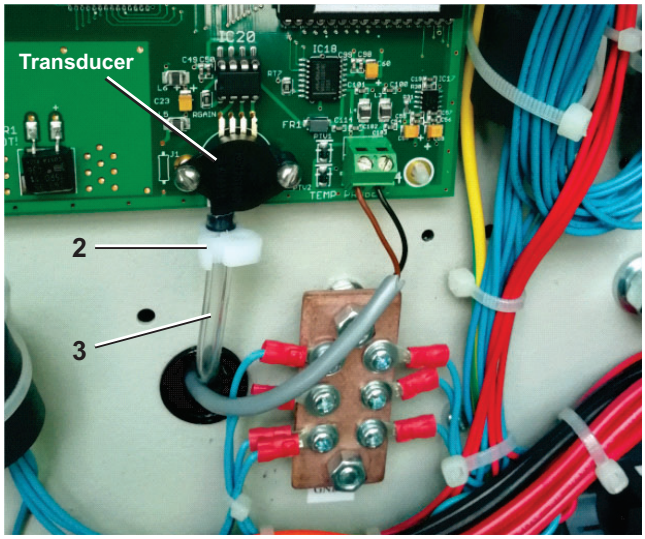
Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			----------ASSEMBLIES----------	
	A	AES42001	INSTL=EXCURSION SW, MWF77	
			----------COMPONENTS----------	
all	1	02 02944A	BRKT=EXCURSION SWITCH, MWF77	
all	2	02 02943B	BRKT=WAND ADJ, MWF27	
all	3	02 02944C	BRKT=WINDOW ADJ, MWF77	
all	4	02 02944D	BRKT=WINDOW, MWF77	
all	5	15K173A	HXCAPSCR 1/2-13UNC2AX1.75 GR5	
all	6	15G230	HXNUT 1/2-13UNC2B SAE ZINC GR2	
all	7	15U280	FL+WASHER(USS STD)1/2 ZNC PL+D	
all	8	15U300	LOKWASHER REGULAR 1/2 ZINC PLT	
all	9	15K065	HEXCAPSCR 5/16-18UNC2AX1 GR5 Z	
all	10	15G185	HXNUT 5/16-18UNC2B SAE ZINC GR	
all	11	15U200	FLATWASHER(USS STD) 5/16"ZNC P	
all	12	15U210	LOKWASHER MEDIUM 5/16 ZINCPL	
all	13	15K039	HXCAPSCR 1/4-20UNC2AX3/4 GR5 Z	
all	14	15G165	HXNUT 1/4-20UNC2BSAE ZC GR2	
all	15	15U185	FLATWASHER(USS STD) 1/4" ZNC P	
all	16	15U180	LOCKWASHER MEDIUM 1/4 ZINCPL	
all	17	98CX965313	EXCURSION SWITCH CSM	
all	18	15N010	PHILPAN MACHSCR M4X30 ZINC	

Water Level & Temperature Sensor

MWF45J8/Z8, MWF63J7/Z7, MWF77J7/Z7, MWF100J7/Z7, MWF125J7/Z7
MWF45C8/Y8, MWF63C7/Y7, MWF77C7/Y7, MWF100C7/Y7, MWF125C7/Y7





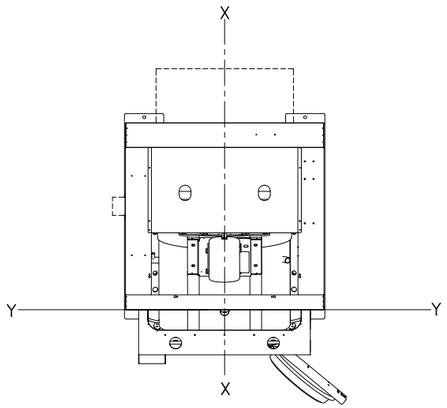
Parts List

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

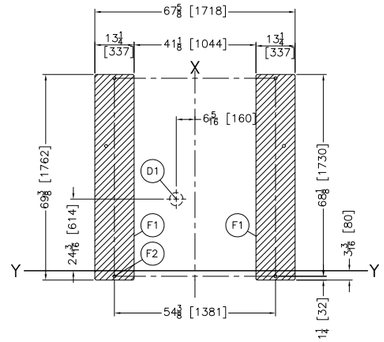
Used In	Item	Part Number	Description	Comments
	A		REFERENCE	E-P Plus® MODELS MWF45J8/C8, MWF63J7/C7, MWF77J7/C7, MWF100J7/C7 MWF125J7/C7
	B		REFERENCE	MilTouch™ MODELS MWF45Z8/Y8, MWF63Z7/Y7, MWF77Z7/Y7, MWF100Z7/Y7 MWF125Z7/Y7
----------	----------	----------	----------COMPONENTS----------	----------
all	1	30R0043PB	TEMPERATURE PROBE ASSY=BRASS	
A	2	60E004NT	TUBING (NYL.)CLR.1/4"ODX1/8"	
B	2	60E004NA	TUBING CLEAR PVC 3/16"IDX5/16"OD	
A	3	27A047	HOSECLMP 1/8HOSEID CLIP#5000-2	
B	3	27A047A	HOSE CLAMP 5/16" NOMINIAL MIN .256", MFG#5700149	
A	4	98CX932420	HOSESTEM BRASS 1/4"BSP X 1/8"HOSE ID	
B	4	98CX932420A	HOSESTEM BRASS 1/4"BSP X 3/16"HOSE ID	

Dimensional Drawings

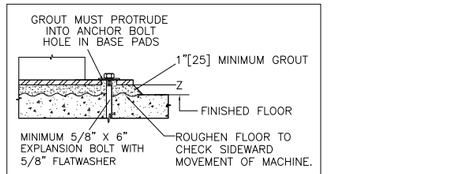
11



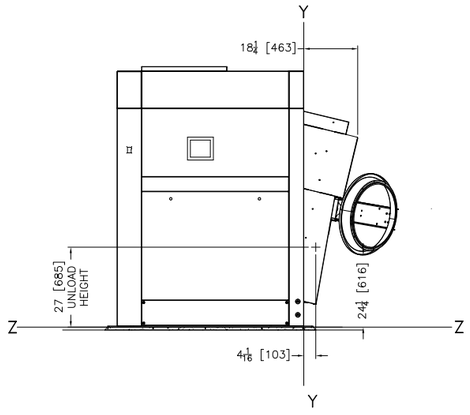
PLAN VIEW
(UNLOAD)



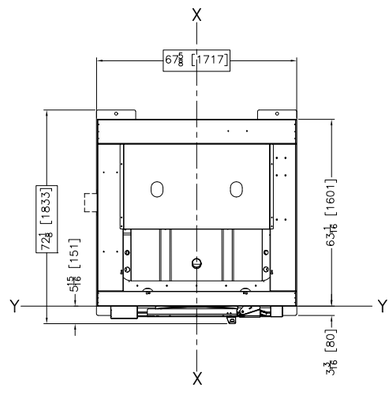
FOUNDATION PLAN



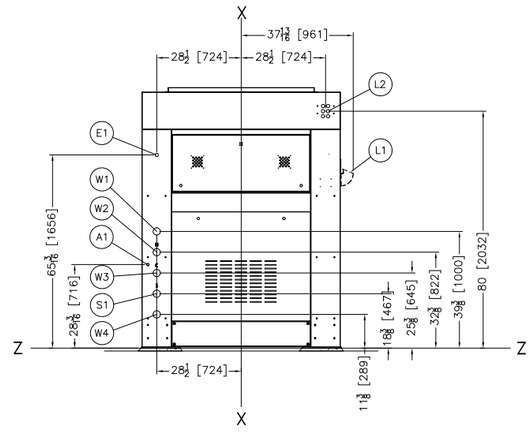
INSTALLATION DETAIL



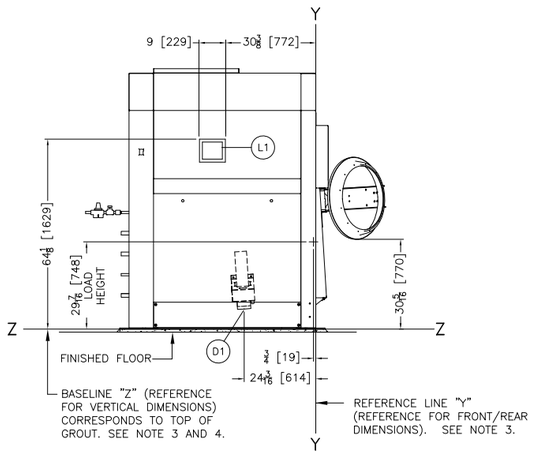
LEFT UNLOAD VIEW



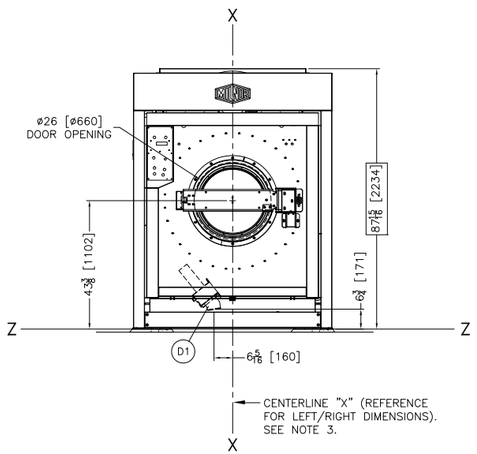
PLAN VIEW



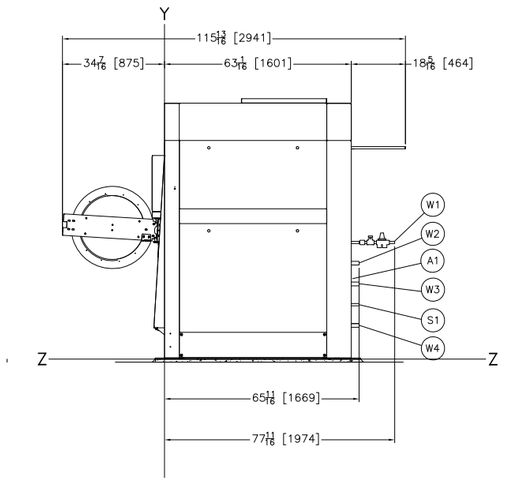
REAR VIEW



LEFT LOAD VIEW



FRONT VIEW
(WASH/LOAD)



RIGHT VIEW

W4	OPTIONAL THIRD (REUSE) WATER INLET, 1–1/4" NPT
	CONNECTION
W3	COLD WATER INLET, 1–1/4" NPT CONNECTION
W2	HOT WATER INLET, 1–1/4" NPT CONNECTION
W1	HOT WATER FOR SUPPLY, 3/4" NPT CONNECTION, PRESSURE
	REGULATOR ASSEMBLY, REMOVED FOR SHIPPING, MUST BE
	ADDED AT INSTALLATION.
S1	OPTIONAL AIR–OPERATED STEAM, 1/2" NPT.
L2	STANDARD LIQUID SUPPLY INLETS, SEE NOTE 10.
L1	STANDARD SOAP CHUTE
F2	(4) 1–1/16" DIAMETER ANCHOR BOLT HOLES, USE
	5/8" X 6" BOLTS MINIMUM.
F1	BASEPADS, 4 PLACES, SEE NOTE 8.
E3	MICROPROCESSOR CONTROL BOX
E2	E–P Plus® Controller on MWF63C7, MilTouch™ Controller
	on MWF63Y7
E1	MAIN ELECTRICAL CONNECTION
D1	DRAIN VALVE, 4–1/2" DIAMETER
A1	MAIN AIR, 1/4" NPT CONNECTION, CUSTOMER MUST SUPPLY
	AIR STRAINER.
ITEM	LEGEND

NOTES

11 12"[305] MINIMUM CLEARANCE IS RECOMMENDED FOR SERVICE TO MACHINE ON SIDES NOT REQUIRING OPERATOR ACCESS. 16"[406] MINIMUM IS RECOMMENDED FOR OPERATOR ACCESS TO SOAP SUPPLY. SEE LOCAL ELECTRIC CODES FOR REQUIRED CLEARANCES.

10 STANDARD LIQUID SUPPLY INLETS COMES WITH THREE SETS OF FIVE FITTINGS. ONE SET OF 3/8" FITTINGS, ONE SET OF 1/2" FITTINGS, AND ONE SET OF PLUGS WHICH ARE SHIPPED ON MACHINE.

9 SHIM TO LEVEL THE MACHINE AND ALLOW FOR 1" [25] MINIMUM GROUT. ANCHOR ALL LABELED ANCHOR BOLT HOLES, USE 5/8" X 6" BOLTS, MINIMUM. SEE INSTALLATION MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS.

8 SHADED AREA DENOTES BASE PADS WHICH MUST BE CONTINUOUSLY SUPPORT.

7 DO NOT PRE–PIPE ANY CLOSER THAN 60 [1524].

6 AS OF THIS WRITING, THE MINIMUM CLEARANCE REQUIRED BY U.S. NATIONAL ELECTRIC CODES, FROM ELECTRIC BOX TO ANY OBJECT IS:
36 [914] IF OBJECT IS AN UNGROUNDED (INSULATED) WALL.
42 [1067] IF OBJECT IS A GROUNDED WALL (ie. BARE CONCRETE, BRICK, ETC.)
48 [1219] IF OBJECT IS ANY LIVE PART.
CHECK LOCAL ELECTRIC CODES FOR FURTHER RESTRICTIONS.

5 CUSTOMER TO SUPPLY CIRCUIT BREAKER OR FUSED BRANCH CIRCUIT DISCONNECT (SAFETY) SWITCHES WITH LAG TYPE FUSES FROM POWER SOURCE TO MACHINE. A SEPARATE GROUND WIRE MUST BE CONNECTED FROM DISCONNECT TO EQUIPMENT.

4 BASELINE "Z" IS THE SAME FOR ALL MILNOR MACHINES AND IS SHOWN ON ALL DIMENSIONAL DRAWINGS. THE DISTANCE BETWEEN BASELINE "Z" AND THE FINISHED FLOOR MAY VARY (WITH CHANGES IN FLOOR HEIGHT) AS REQUIRED TO INSURE THAT BASELINE "Z" IS HORIZONTAL AND ALL COMPONENTS REQUIRING GROUT ARE SET ON A MINIMUM 1" [25] THICK GROUT BED.

3 USE REFERENCE LINES "X", "Y", AND "Z" TO LOCATE ALL SERVICE CONNECTIONS.

2 NUMBERS IN BRACKETS [] DENOTE DIMENSIONS IN MILLIMETERS.

1 ALL DIMENSIONS SHOWN ARE APPROXIMATE, SUBJECT TO NORMAL MANUFACTURING TOLERANCES, AND TO OCCASIONAL CHANGES WITHOUT NOTICE THROUGH REDESIGN AND/OR RELOCATION OF COMPONENTS, ETC. DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED, AND IN NO EVENT PRE–PIPE CLOSER THAN FIVE FEET FROM MACHINE. FACTORY MUST BE CONSULTED FOR DIMENSIONS IF MACHINE IS TO BE MOVED THROUGH NARROW OR LOW CORRIDORS OR OPENINGS.

ATTENTION

MOST REGULATORY AUTHORITIES (INCLUDING OSHA IN THE USA) HOLD THE OWNER/USER ULTIMATELY RESPONSIBLE TO MAINTAIN A SAFE WORKING ENVIRONMENT. ACCORDINGLY, THE OWNER/USER MUST RECOGNIZE ALL FORESEEABLE SAFETY HAZARDS, FURNISH SAFETY INSTRUCTIONS AND GUIDANCE TO ALL PERSONNEL WHO MAY COME IN CONTACT WITH THE INSTALLATION, AND PROVIDE ALL NECESSARY ADDITIONAL SAFETY GUARDS, FENCES, RESTRAINTS, DEVICES, ETC., NOT FURNISHED BY THE EQUIPMENT MANUFACTURER OR VENDOR.

ATTENTION

THE FLOOR AND/OR OTHER SUPPORT COMPONENTS MUST HAVE SUFFICIENT STRENGTH (AND RIGIDITY WITH DUE CONSIDERATION FOR NATURAL OR RESONANT FREQUENCY THEREOF) TO WITHSTAND THE FULLY LOADED WEIGHT OF THE MACHINE INCLUDING THE GOODS, THE WATER, AND ANY REPEATED SINUSOIDAL (ROTATING) FORCES GENERATED DURING ITS OPERATION. WRITE THE FACTORY FOR ADDITIONAL MACHINE DATA FOR USE BY A COMPETENT SOIL AND/OR STRUCTURAL ENGINEER.

MWF63C7, MWF63Y7

DM 0 0.5M
INCHES 0 12 24

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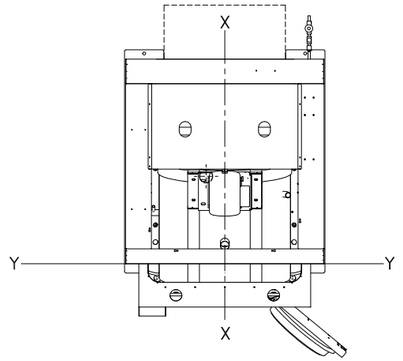
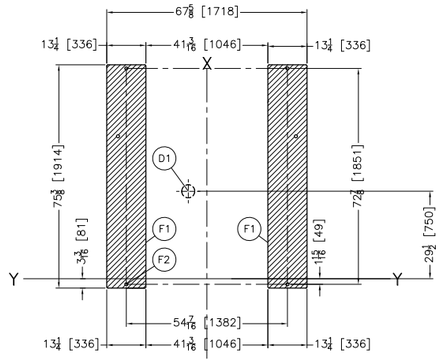
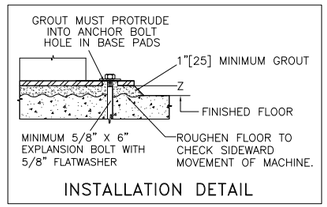


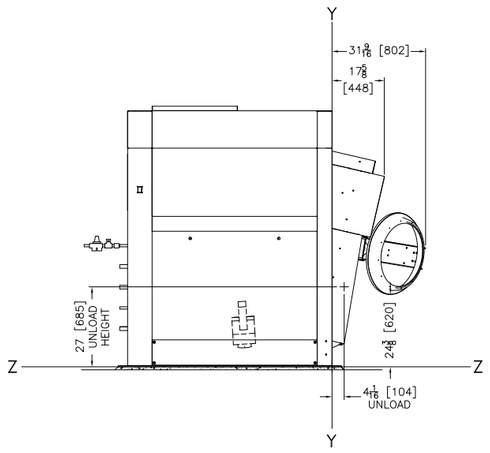
PLAN VIEW
(UNLOAD)



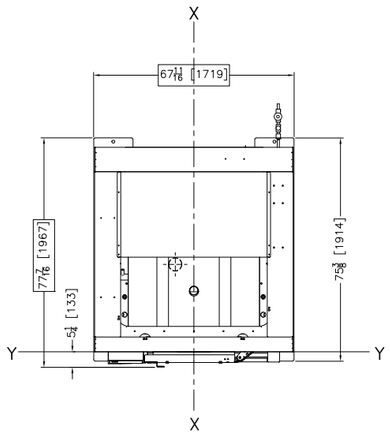
FOUNDATION PLAN



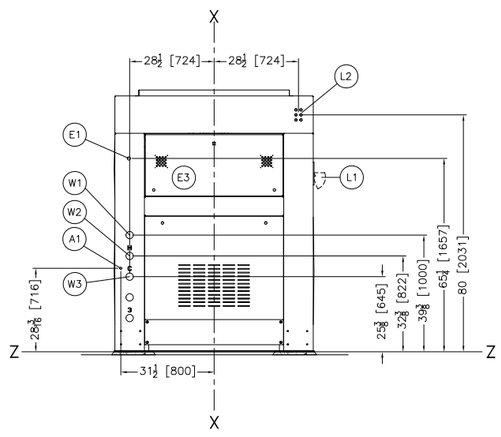
INSTALLATION DETAIL



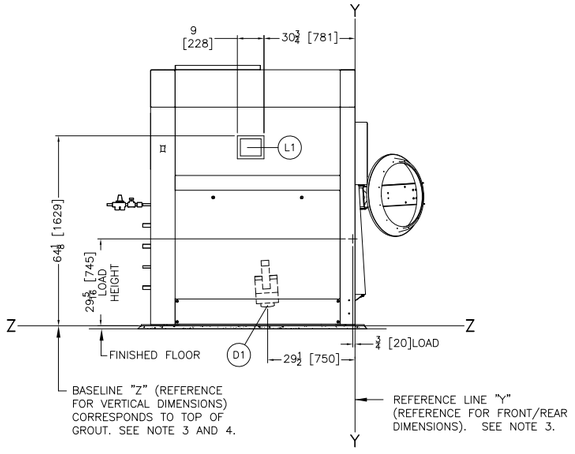
LEFT UNLOAD VIEW



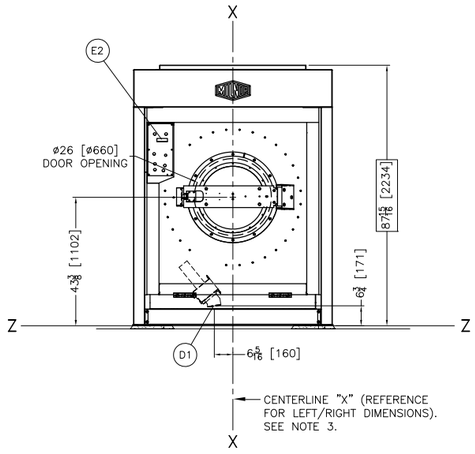
PLAN VIEW
(WASH/LOAD)



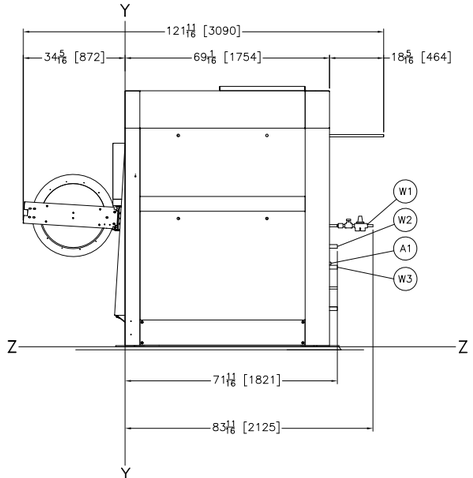
REAR VIEW



LEFT LOAD VIEW



FRONT VIEW
(WASH/LOAD)



RIGHT VIEW

W3	COLD WATER INLET, 1–1/4" NPT CONNECTION
W2	HOT WATER INLET, 1–1/4" NPT CONNECTION
W1	HOT WATER FOR SUPPLY, 3/4" NPT CONNECTION, PRESSURE
	REGULATOR ASSEMBLY, REMOVED FOR SHIPPING, MUST BE
	ADDED AT INSTALLATION.
L2	STANDARD LIQUID SUPPLY INLETS, SEE NOTE 10.
L1	STANDARD SOAP CHUTE
F2	(4) 1–1/16" DIAMETER ANCHOR BOLT HOLES, USE
	5/8" X 6" BOLTS MINIMUM.
F1	BASEPADS, 2 PLACES, SEE NOTE 8.
E3	MICROPROCESSOR CONTROL BOX
E2	E–P Plus® Controller on MWF77C7, MilTouch™ Controller
	on MWF77Y7
E1	MAIN ELECTRICAL CONNECTION
D1	DRAIN VALVE, 4–1/2" DIAMETER
A1	MAIN AIR, 1/4" NPT CONNECTION, CUSTOMER MUST SUPPLY
	AIR STRAINER.
ITEM	LEGEND

NOTES

11 12"[305] MINIMUM CLEARANCE IS RECOMMENDED FOR SERVICE TO MACHINE ON SIDES NOT REQUIRING OPERATOR ACCESS. 16"[406] MINIMUM IS RECOMMENDED FOR OPERATOR ACCESS TO SOAP SUPPLY. SEE LOCAL ELECTRIC CODES FOR REQUIRED CLEARANCES.

10 STANDARD LIQUID SUPPLY INLETS COMES WITH THREE SETS OF FIVE FITTINGS, ONE SET OF 3/8" FITTINGS, ONE SET OF 1/2" FITTINGS, AND ONE SET OF PLUGS WHICH ARE SHIPPED ON MACHINE.

9 SHIM TO LEVEL THE MACHINE AND ALLOW FOR 1" [25] MINIMUM GROUT. ANCHOR ALL LABELED ANCHOR BOLT HOLES, USE 5/8" X 6" BOLTS, MINIMUM. SEE INSTALLATION MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS.

8 SHADED AREA DENOTES BASE PADS WHICH MUST BE CONTINUOUSLY SUPPORT.

7 DO NOT PRE–PIPE ANY CLOSER THAN 60 [1524].

6 AS OF THIS WRITING, THE MINIMUM CLEARANCE REQUIRED BY U.S. NATIONAL ELECTRIC CODES, FROM ELECTRIC BOX TO ANY OBJECT IS:
36 [914] IF OBJECT IS AN UNGROUNDED (INSULATED) WALL.
42 [1067] IF OBJECT IS A GROUNDED WALL (ie. BARE CONCRETE, BRICK, ETC.)
48 [1219] IF OBJECT IS ANY LIVE PART.
CHECK LOCAL ELECTRIC CODES FOR FURTHER RESTRICTIONS.

5 CUSTOMER TO SUPPLY CIRCUIT BREAKER OR FUSED BRANCH CIRCUIT DISCONNECT (SAFETY) SWITCHES WITH LAG TYPE FUSES FROM POWER SOURCE TO MACHINE. A SEPARATE GROUND WIRE MUST BE CONNECTED FROM DISCONNECT TO EQUIPMENT.

4 BASELINE "Z" IS THE SAME FOR ALL MILNOR MACHINES AND IS SHOWN ON ALL DIMENSIONAL DRAWINGS. THE DISTANCE BETWEEN BASELINE "Z" AND THE FINISHED FLOOR MAY VARY (WITH CHANGES IN FLOOR HEIGHT) AS REQUIRED TO INSURE THAT BASELINE "Z" IS HORIZONTAL AND ALL COMPONENTS REQUIRING GROUT ARE SET ON A MINIMUM 1" [25] THICK GROUT BED.

3 USE REFERENCE LINES "X", "Y", AND "Z" TO LOCATE ALL SERVICE CONNECTIONS.

2 NUMBERS IN BRACKETS [] DENOTE DIMENSIONS IN MILLIMETERS.

1 ALL DIMENSIONS SHOWN ARE APPROXIMATE, SUBJECT TO NORMAL MANUFACTURING TOLERANCES, AND TO OCCASIONAL CHANGES WITHOUT NOTICE THROUGH REDESIGN AND/OR RELOCATION OF COMPONENTS, ETC. DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED, AND IN NO EVENT PRE–PIPE CLOSER THAN FIVE FEET FROM MACHINE. FACTORY MUST BE CONSULTED FOR DIMENSIONS IF MACHINE IS TO BE MOVED THROUGH NARROW OR LOW CORRIDORS OR OPENINGS.

ATTENTION

MOST REGULATORY AUTHORITIES (INCLUDING OSHA IN THE USA) HOLD THE OWNER/USER ULTIMATELY RESPONSIBLE TO MAINTAIN A SAFE WORKING ENVIRONMENT. ACCORDINGLY, THE OWNER/USER MUST RECOGNIZE ALL FORESEEABLE SAFETY HAZARDS, FURNISH SAFETY INSTRUCTIONS AND GUIDANCE TO ALL PERSONNEL WHO MAY COME IN CONTACT WITH THE INSTALLATION, AND PROVIDE ALL NECESSARY ADDITIONAL SAFETY GUARDS, FENCES, RESTRAINTS, DEVICES, ETC., NOT FURNISHED BY THE EQUIPMENT MANUFACTURER OR VENDOR.

ATTENTION

THE FLOOR AND/OR OTHER SUPPORT COMPONENTS MUST HAVE SUFFICIENT STRENGTH (AND RIGIDITY WITH DUE CONSIDERATION FOR NATURAL OR RESONANT FREQUENCY THEREOF) TO WITHSTAND THE FULLY LOADED WEIGHT OF THE MACHINE INCLUDING THE GOODS, THE WATER, AND ANY REPEATED SINUSOIDAL (ROTATING) FORCES GENERATED DURING ITS OPERATION. WRITE THE FACTORY FOR ADDITIONAL MACHINE DATA FOR USE BY A COMPETENT SOIL AND/OR STRUCTURAL ENGINEER.

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