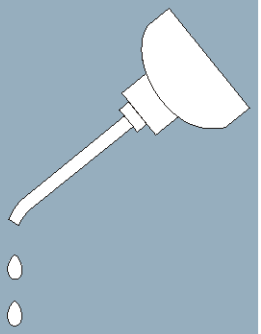
Published Manual Number/ECN: MPI30X8JAE/2015505A

- **Publishing System: TPAS2**
- **Access date: 12/10/2015**
- **Document ECNs: Latest**

Installation and Service

30022X8J,X8W

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.

Table of Contents
MPI30X8JAE/15505A

Table of Contents, continued
MPI30X8JAE/15505A

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, FOB our factory. 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.

ANY SALE OR FURNISHING OF ANY EQUIPMENT BY MILNOR IS MADE ONLY UPON THE EXPRESS UNDERSTANDING THAT MILNOR MAKES NO EXPRESSED OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE OR PURPOSE OR ANY OTHER WARRANTY IMPLIED BY LAW INCLUDING BUT NOT LIMITED TO REDHIBITION. MILNOR WILL NOT BE RESPONSIBLE FOR ANY COSTS OR DAMAGES ACTUALLY INCURRED OR REQUIRED AS A RESULT OF: THE FAILURE OF ANY OTHER PERSON OR ENTITY TO PERFORM ITS RESPONSIBILITIES, FIRE OR OTHER HAZARD, ACCIDENT, IMPROPER STORAGE, MIS-USE, NEGLECT, POWER OR ENVIRONMENTAL CONTROL MALFUNCTIONS, DAMAGE FROM LIQUIDS, OR ANY OTHER CAUSE BEYOND THE NORMAL RANGE OF USE. REGARDLESS OF HOW CAUSED, IN NO EVENT SHALL MILNOR BE LIABLE FOR SPECIAL, INDIRECT, PUNITIVE, LIQUIDATED, OR CONSEQUENTIAL COSTS OR DAMAGES, OR ANY COSTS OR DAMAGES WHATSOEVER WHICH EXCEED THE PRICE PAID TO MILNOR FOR THE EQUIPMENT IT SELLS OR FURNISHES.

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.

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 —

Safety—Suspended, Open Pocket, Non-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.

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 3: 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 4: 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 5: 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 [6]: 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 [7]: 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 [8]: 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 [9]: 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 [10]: 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 [11]: 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.

5.1.2. Hazards Resulting from Damaged Mechanical Devices

WARNING [12]: 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 [13]: 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 14: 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 15: 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 16: 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 17: 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 18: 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 —

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

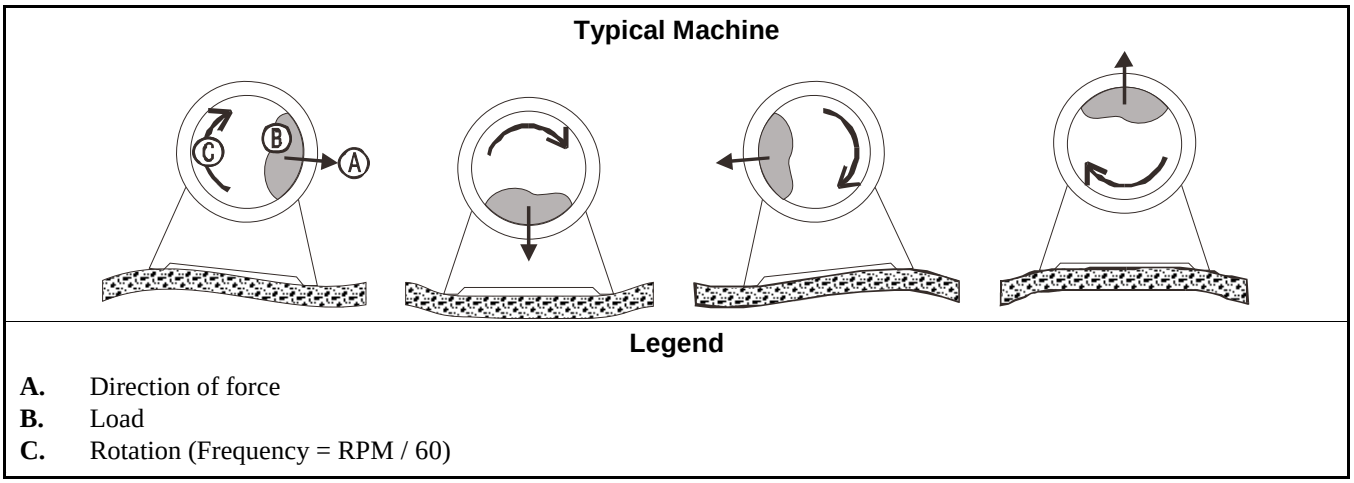


Figure 1 above is intended to depict both on-grade and above-grade installations and is equally applicable to flexibly-mounted washer-extractors, as well as to rigid models installed either directly on a floor slab or on a foundation poured integrally with the slab. Current machine data is available 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 —

HANDLING AND SETTING PROCEDURES FOR 30022H7J AND 30022H8J WASHER-EXTRACTORS

Handling Precautions

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

NOTE: Once the machine is given to the carrier for delivery, it is the sole 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.

2. Consult Milnor® for instructions if crane lifting is required.

3. Use skids with the forklift. **Lift machine from front only**. If possible, leave the machine on the shipping skids until it is about to be placed
in its final position. Once the skids are removed, take care in placing forks under the machine. **Do not allow the forks to come in contact with valves, piping, motors, etc., located under the machine.**

4. Never push, pull, or exert pressure on any components that protrude from the machine frame (shell front, door, supply injector, electric boxes, controls, belt guard, conduits, inlet piping, etc.).

5. Ensure that the shell door is closed and secured.

Site Requirements

Space Requirements

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.

Operational Requirements

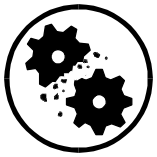
1. Allow sufficient ventilation for heat and vapors of normal operation to dissipate.
2. Provide easy access to controls. Operators must be able to reach and view all status lights, machine controls, and any additional controls associated with the machine (e.g., electrical power connections, water and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

Foundation Requirements—The machine must be anchored in accordance with the installation instructions. 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. See "ABOUT THE FORCES TRANSMITTED BY MILNOR® WASHER-EXTRACTORS" (See Table of Contents) for more information.

Anchoring Requirements

Machines must be securely anchored to an adequate foundation. Anchor bolt locations and foundation specifications are provided on the dimensional drawing (see Table of Contents). **However, never install anchor bolts firmly in the foundation using only the dimensional drawing or a template.** Approximate anchor bolt locations may be determined from a foundation template (standard equipment on some machines, optional on others). Recommended anchor bolt installation (see dimensional drawing) calls for each anchor bolt to be set in a pipe sleeve. The foundation template or dimensional drawing will only locate foundation bolts accurately enough so that the play of the bolt within the pipe sleeve permits the machine to fit anchor bolts. **If another bolt installation procedure is used, do not install the bolts until the machine is on site and bolt locations can be determined.** Consult Milnor® if any obstruction prevents the installation of any anchor bolt. **Anchor bolts cannot be indiscriminately omitted.**

⚠ CAUTION ⚠



STRIKE AND MACHINE DAMAGE HAZARDS—A machine can "rip" away from position on foundation if the machine is not anchored and grouted in strict accordance with the dimensional drawing and setting instructions provided in this manual. Damage resulting from improper installation is not covered by warranty.

- ☞ **Strictly follow setting instructions and dimensional drawing guidelines when anchoring and setting this machine.**
- ☞ **Properly install anchor bolts at ALL anchor bolt holes on the machine.**

Setting Procedures

See FIGURES 1 and 2 during the following procedures:

1. With the machine near the final location, remove the shipping bolts and the front cross brace (FIGURE 1). Observing all precautions, lift the machine off its skids, and move to the installation location. Lower the machine onto temporary blockings as shown in FIGURE 2.
2. Shim the machine under the base plates as necessary to meet minimum requirement clearances between the base plates and floor surface as specified in the dimensional drawing. Add shims as necessary to level the machine from left to right and front to back**.** Use a carpenter's level along the right and left side of the base to determine if the machine is level from front to back. Place a level laterally across the base plates to determine if the machine is level from right to left. Install anchor bolts, taking care to align the bolts with the base plates to avoid bolt thread damage. Do not tighten the anchor bolt fasteners until grout is cured (see warning below).

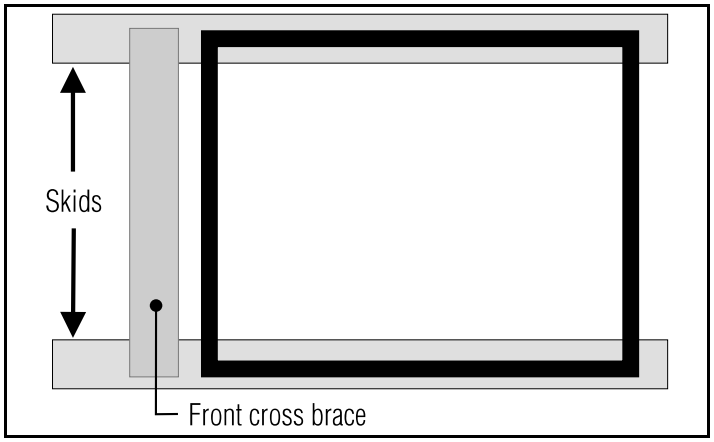


FIGURE 1 (MSIN0703BE)
Identifying Front Cross brace

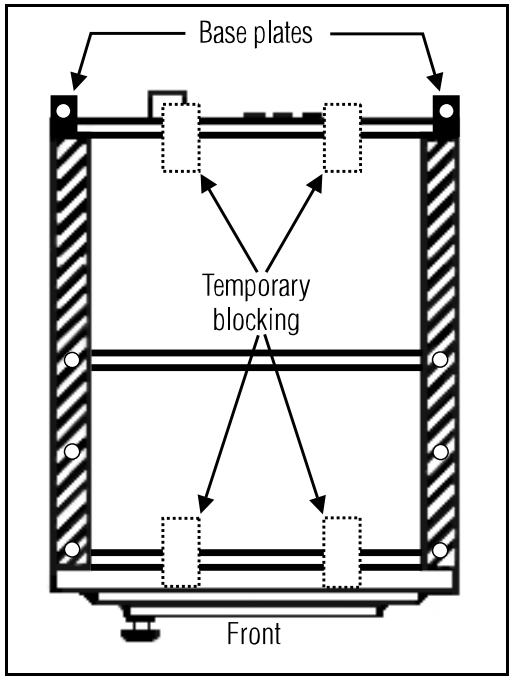


FIGURE 2 (MSIN0703BE)
30022H7J and 30022H8J Temporary Blocking Points

⚠ CAUTION ⚠

MACHINE DAMAGE AND MALFUNCTION HAZARDS—Tightening anchor bolt fasteners onto spacers (without grout or with improperly applied grout) twists the machine frame and causes cylinder misalignment.

- ☞ **Never tighten anchor bolt fasteners before grouting.**
- ☞ **Grout must displace total clearance between base plate and existing foundation floor. *Voids must not exist!***

3. After determining the final position of the machine, apply grout between the existing foundation floor and base plates, while observing the following considerations:

- All machines are designed to be grouted under the full area of all base plates. Grout prevents the anchor bolts from distorting the frame when the fasteners are tightened. Total area under each base plate must be completely filled with grout to a thickness of 3/4" (19). Voids under base plates can magnify vibration, causing unsatisfactory operation. Use only industrial strength non-shrinking grout.
- If the grout (after mixing) is of proper consistency, pack or trowel it by hand.
- If the grout (after mixing) is too thin (causing it to flow from under the base pads) install temporary cardboard framing around the pads to retain the grout until it cures.

4. Tighten all foundation fasteners until they contact the top of the base plates.

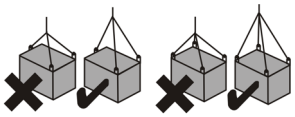
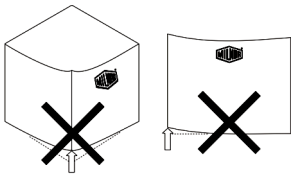
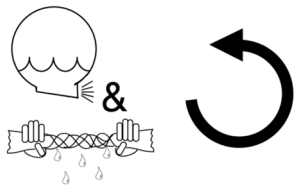
5. Tighten all fasteners evenly, using only one-quarter turn on each fastener before moving to the next one. While tightening, frequently skip from front to back and right to left to insure uniform tension. After tightening all fasteners, check each fastener at least twice.

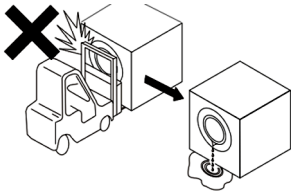
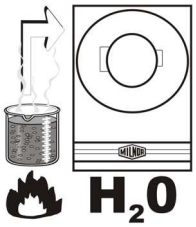
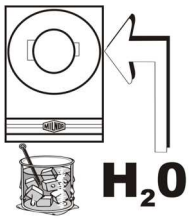
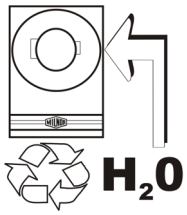
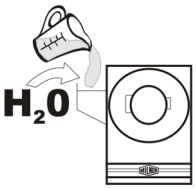
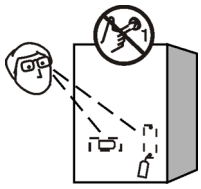
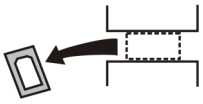
Understanding the Tag Guidelines for the Models Listed Below

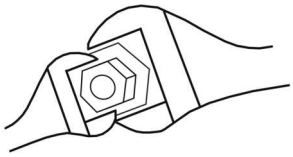
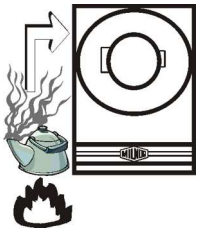
30022X8J 30022X8R 30022X8W 36026X8J 36026X8R 36026X8W 42026X7J 42026X7R 42026X7W 42032X7J 42032X7R 42032X7W

Several installation guidelines and precautions are displayed symbolically, on tags placed at the appropriate locations on the machine. Some are tie-on and others are adhesive tags. Tie-on tags and white, adhesive tags may be removed after installation. Yellow adhesive tags must remain on the machine.

Most tags contain only symbols (no words). A few are worded. The explanations below, start with the tag part number (displayed on the tag). If a tag contains no words, the meaning of the tag is explained below. If the tag contains words, the explanation below simply repeats the wording.

Display or Action	Explanation
	Read the manual before proceeding. This symbol appears on most tags. The machine ships with a complete set of manuals. The safety, installation, and electrical schematic manuals are particularly important to installers.
	B2TAG88005: This carefully built product was tested and inspected to meet Milnor® performance and quality standards by
	B2TAG94078: Do not forklift here; do not jack here; do not step here—whichever applies.
	B2TAG94079: Rig for crane lifting (either 3-point or 4-point, depending on the number of lifting eyes provided) using a steep angle on the chains (closer to vertical than horizontal).
	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.
	B2TAG94084: Do not lift from one corner of the machine, as this can cause the frame to rack, damaging it.
	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.

Display or Action	Explanation
	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 (optional).
	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.

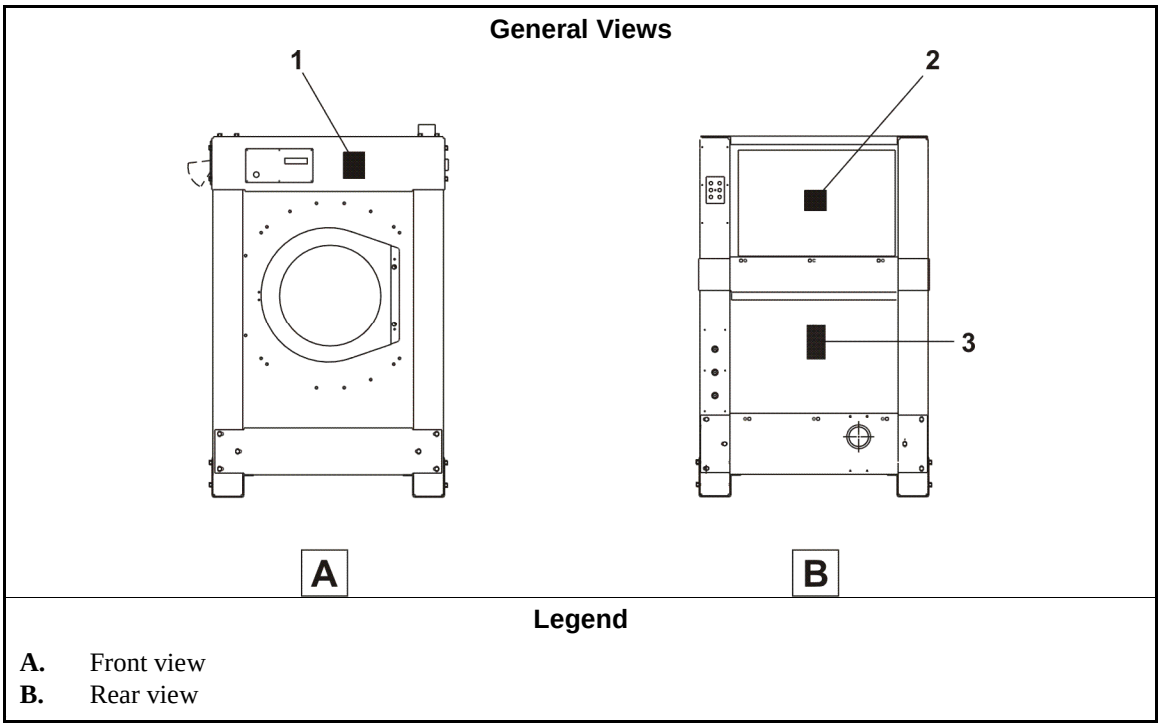
Display or Action	Explanation
	B2T2003001: Hold the side of the connection stationary with a wrench as you tighten the connection with another wrench. Otherwise, you may twist components, such as valves, damaging them.
	B2T2004027: Steam connection (optional)

— End of BIUUUI02 —

Safety Placards and Locations— ISO 30022X8J, 36026X8J, 42026X7J, 42032X7J

- 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.

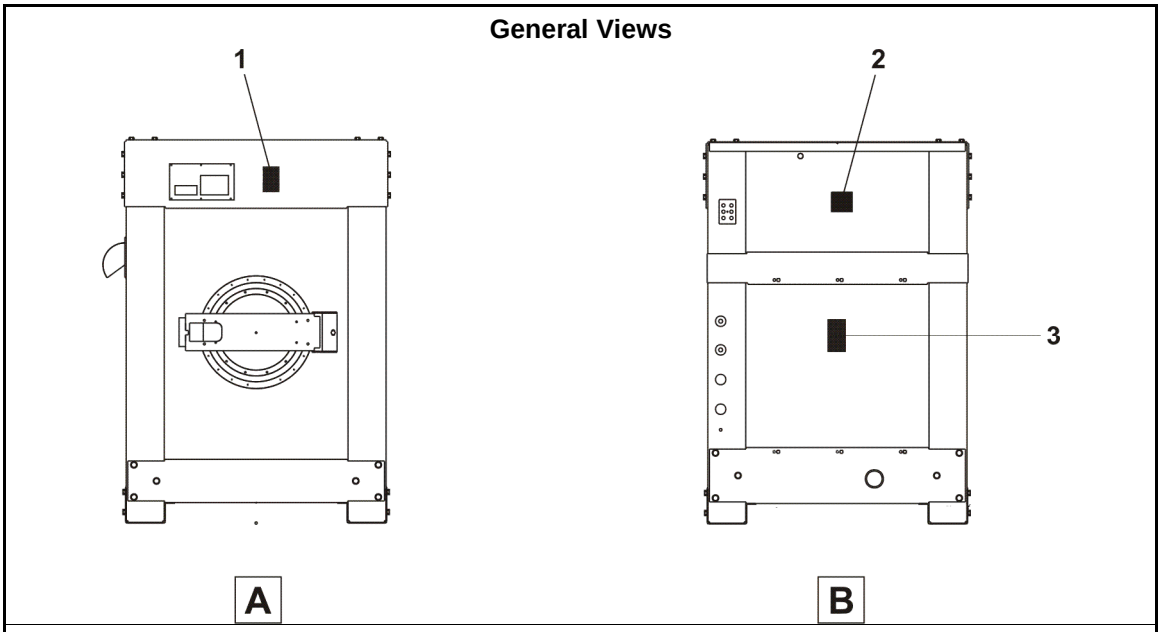
Figure 1: 30022X8J



Legend

A. Front view
B. Rear view

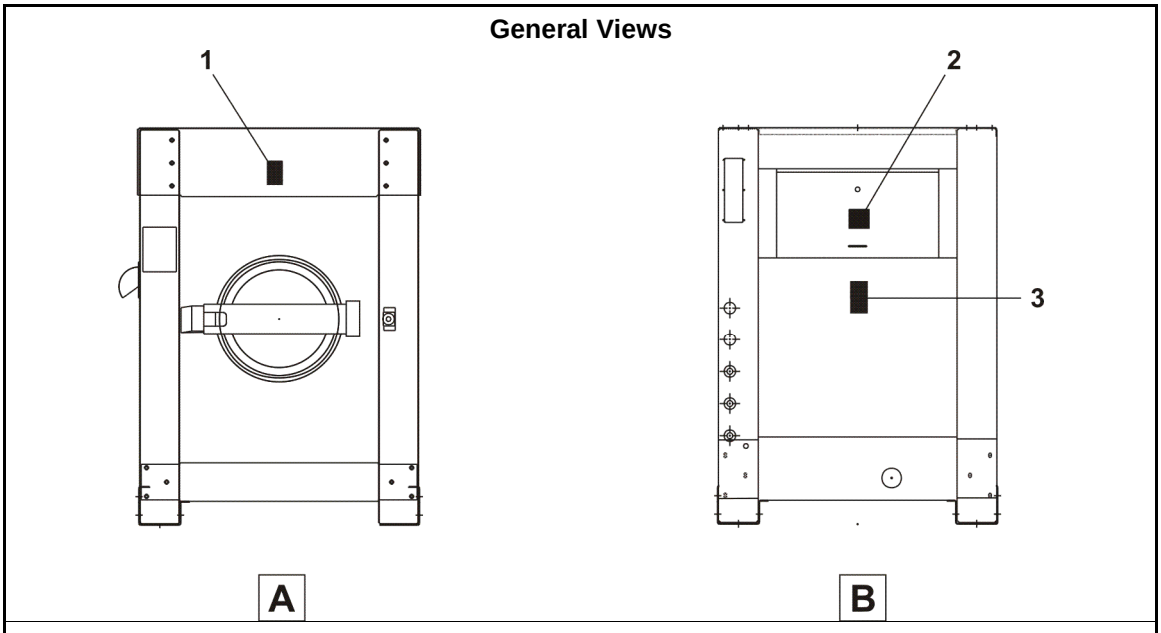
Figure 2: 36026X8J



Legend

A. Front view
B. Rear view

Figure 3: 42026X8J, 42032X8J



Legend

A. Front view
B. Rear view

Table 1: Parts List—Safety Placards and Locations - ISO

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.

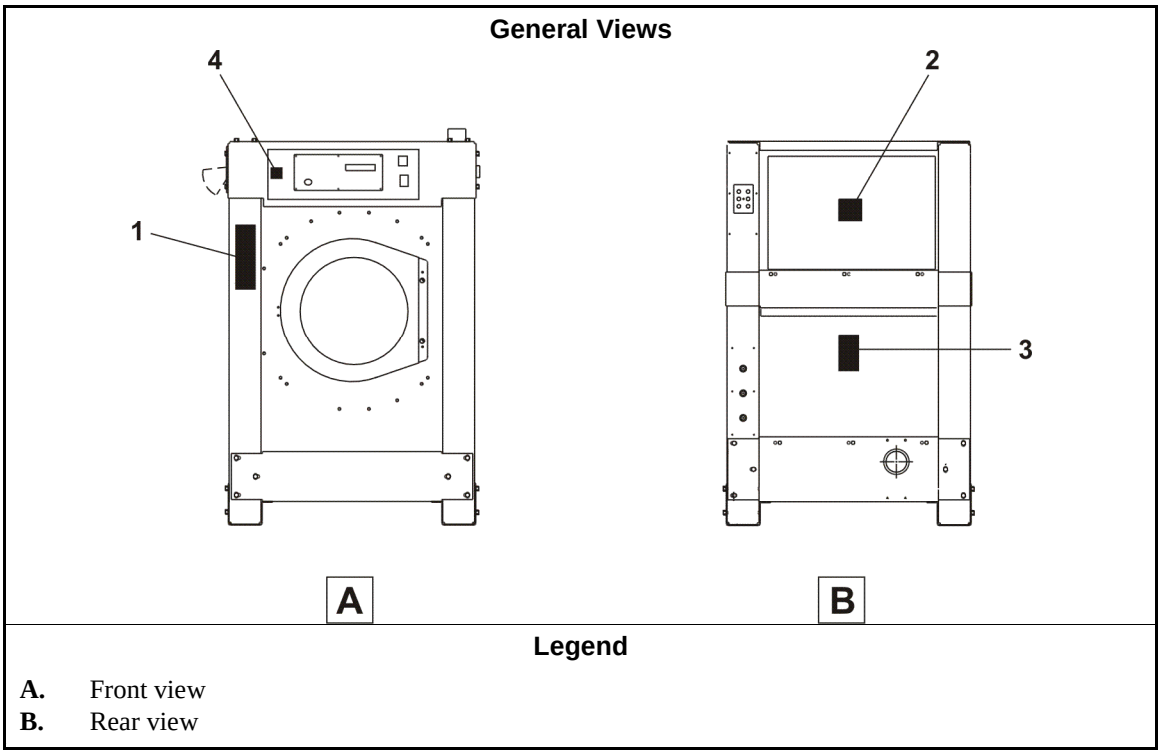
Used In	Item	Part Number	Description/Nomenclature	Comments
Assemblies				
none				
Components				
all	1	01 10631X	Safety placard	
all	2	01 10377	Safety placard	
all	3	01 10628X	Safety placard	

— End of BIIFBM02 —

Safety Placards and Locations—ISO 30022X8W, 36026X8W, 42026X7W, 42032X7W

- 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.

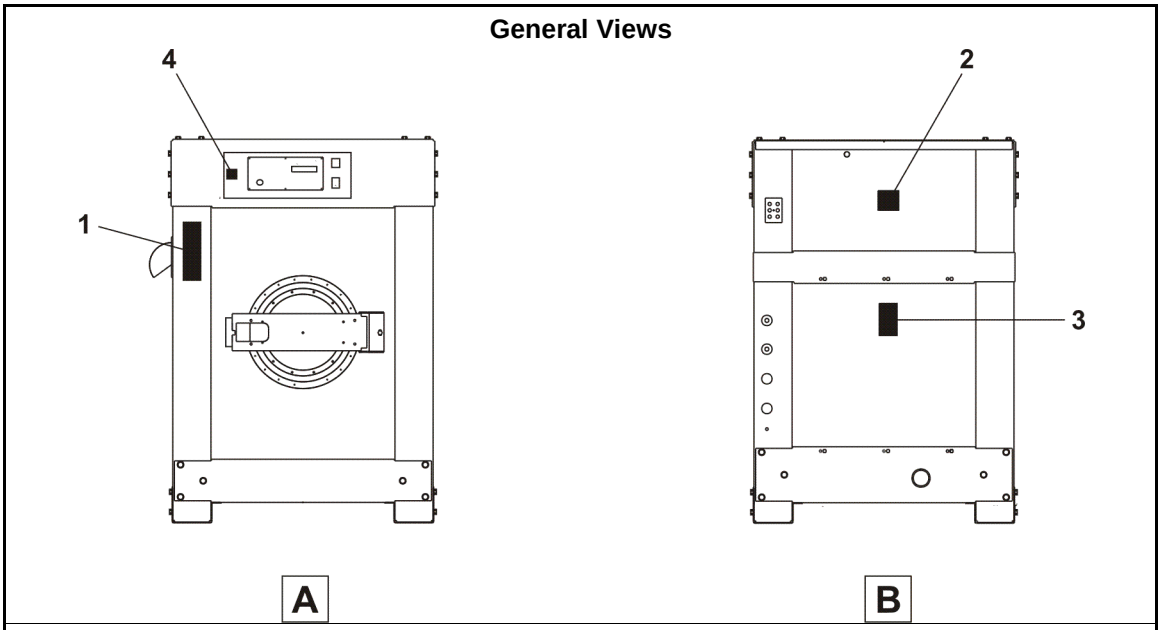
Figure 1: 30022X8W



Legend

A. Front view
B. Rear view

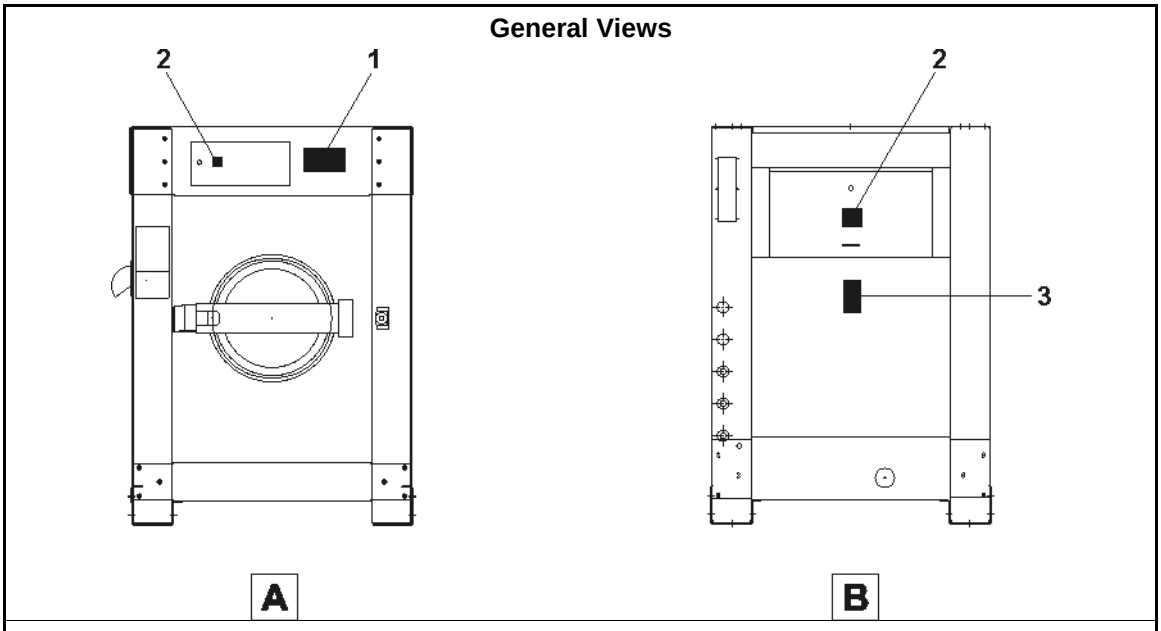
Figure 2: 36026X8W



Legend

A. Front view
B. Rear view

Figure 3: 42026X7W and 42032X7W



Legend

A. Front view
B. Rear view

Table 1: Parts List—Safety Placard Location X8W - ISO

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				
none				
Components				
X8W	1	01 10631X	Safety placard	
X7W	1	01 10631Y	Safety placard	
all	2	01 10377	Safety placard	
all	3	01 10628X	Safety placard	
X8W	4	01 10375	Safety placard	

— End of BIIFBM03 —

Safety Placard Use and Placement

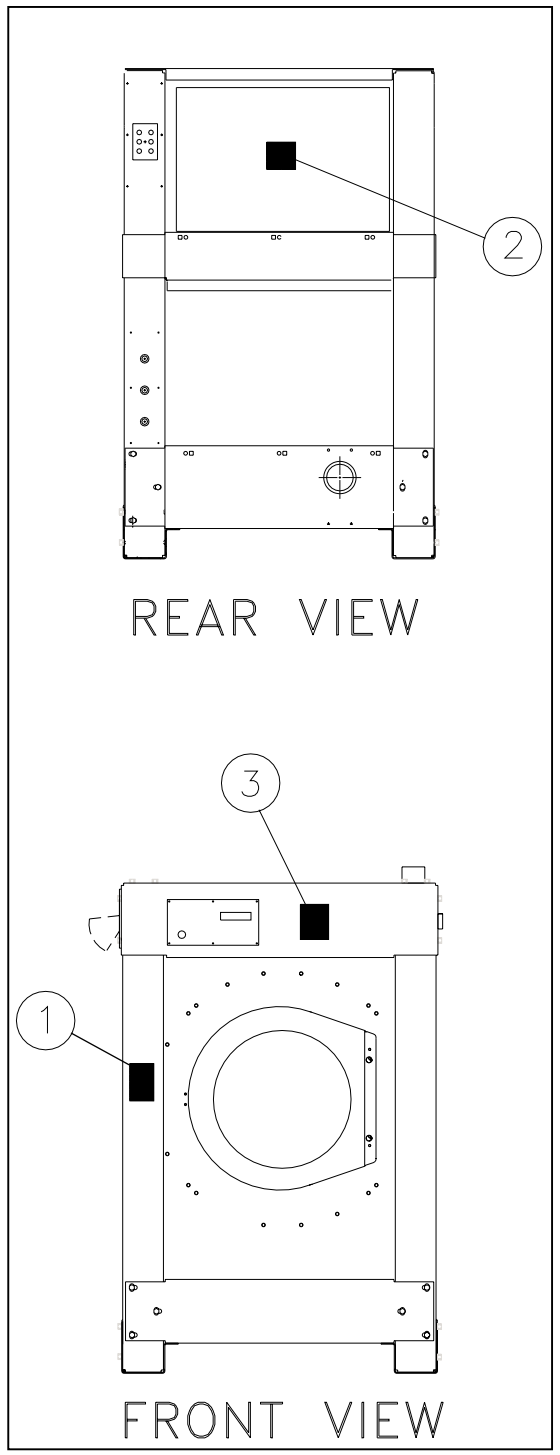
30022, 36026X8J & 42026, 42032X7J

Pellerin Milnor Corporation
P. O. Box 400, Kenner, LA 70063-0400

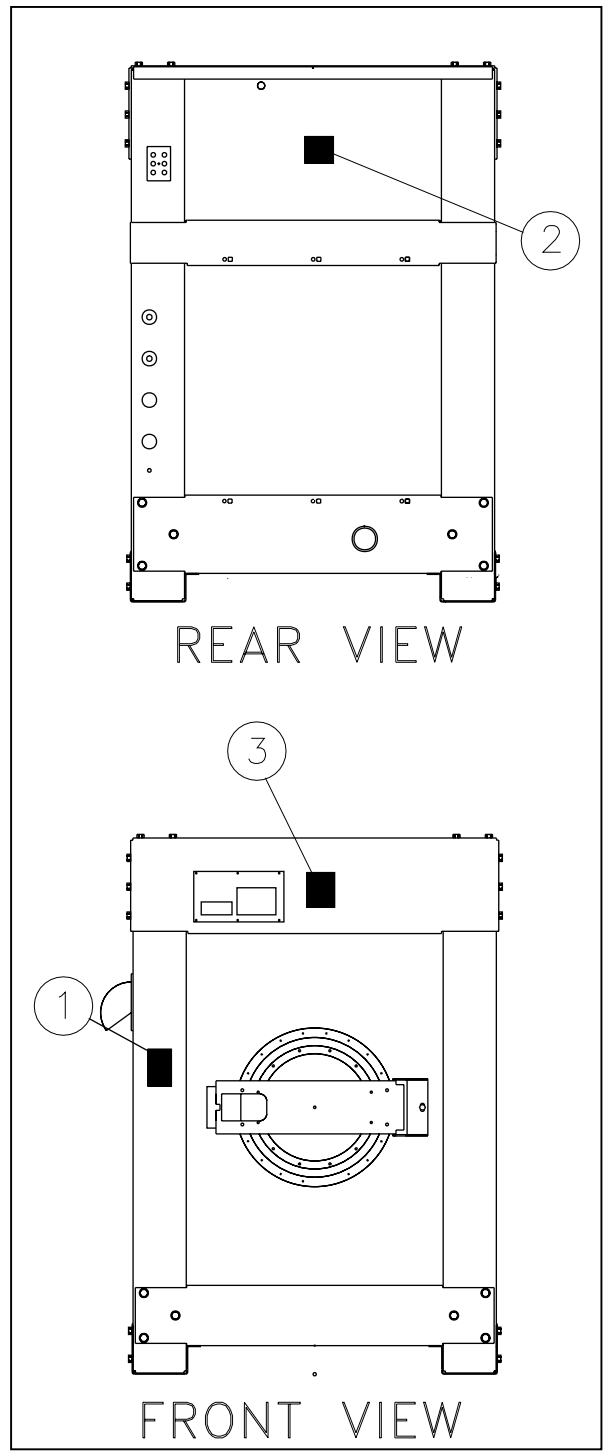
Litho in U.S.A.

Notes:

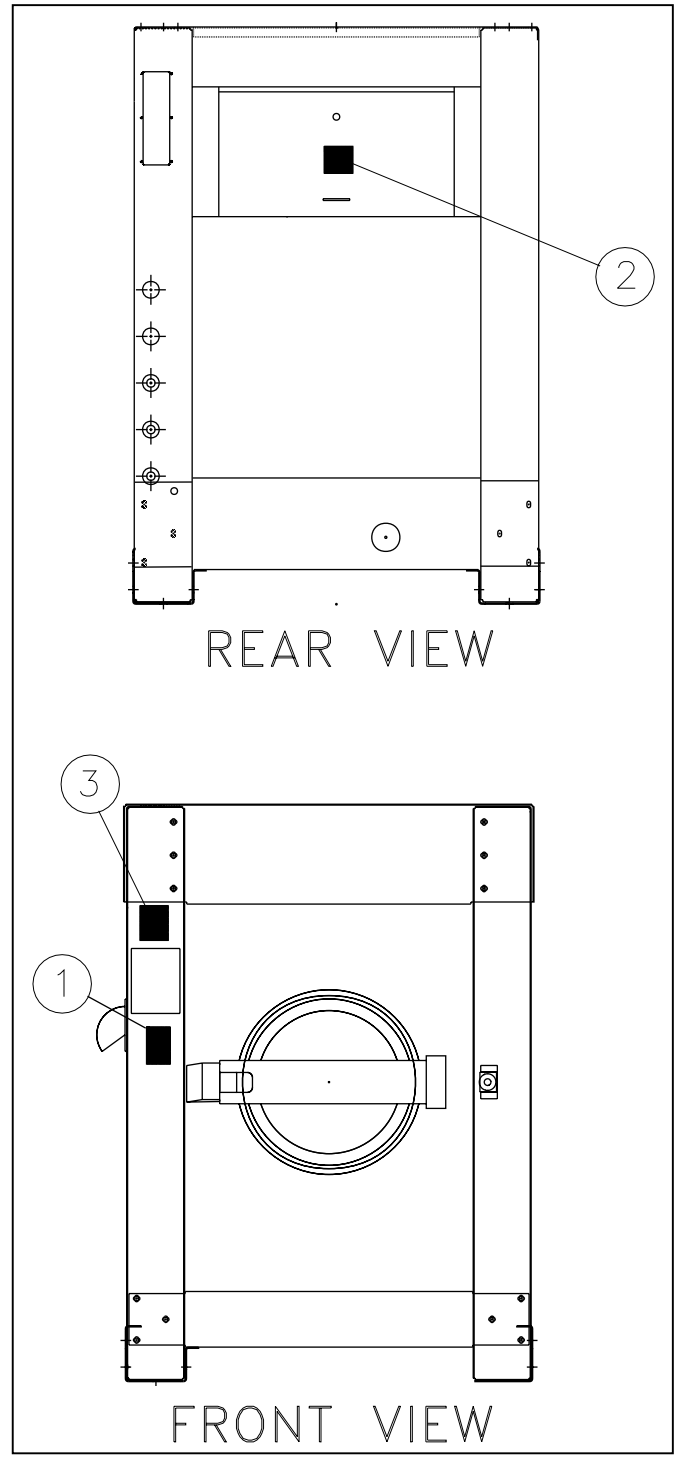
1. **Replace placard immediately, if removed or unreadable.**
2. **Approximate locations of placards are shown. Mounting holes are provided on machine. Use #8 self-tapping screws.**



30022X8J



36026X8J



42026 & 42032X7J

Pellerin Milnor Corporation
P. O. Box 400, Kenner, LA 70063-0400
Litho in U.S.A.

Parts List—Safety Placard Use and Placement

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----------	
			none	
			----------COMPONENTS----------	
all	1	01 10631A	NPLT:SHELL FRT WARN NOTILT-TCA	
all	2	01 10377A	NPLT:ELEC HAZARD LG-TCATA	
all	3	01 10699A	NPLT:SERV HZRD-PLYEST-TCATA	

Safety Placard Use and Placement

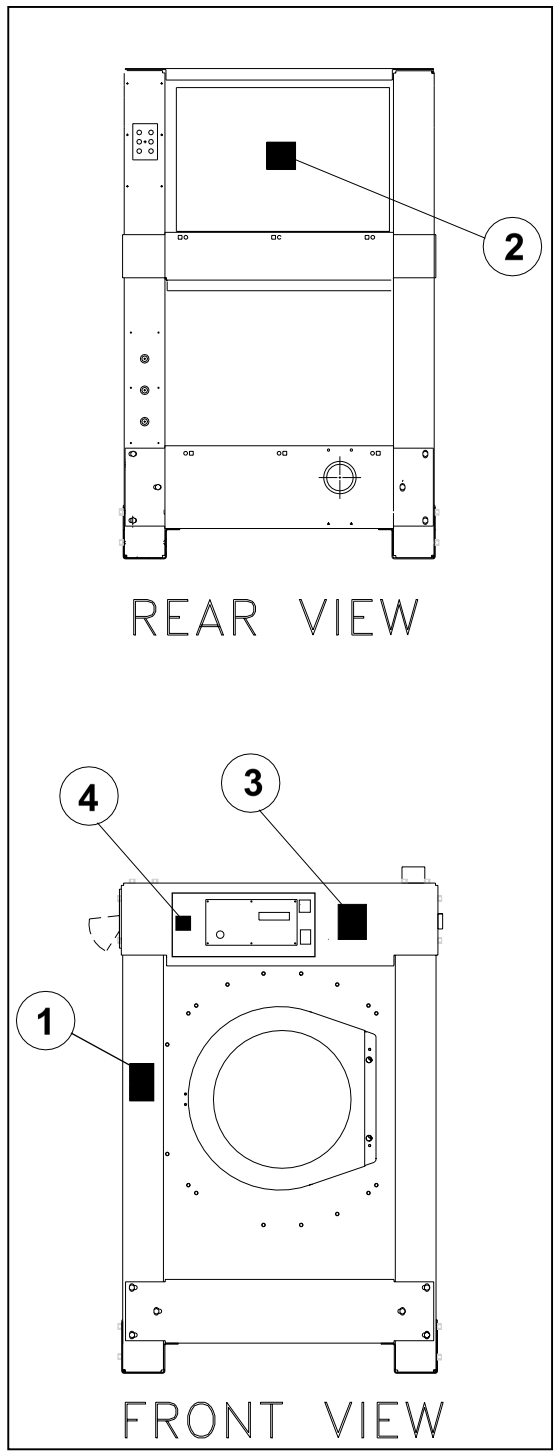
30022, 36026X8W & 42026, 42032X7W

Pellerin Milnor Corporation
P. O. Box 400, Kenner, LA 70063-0400

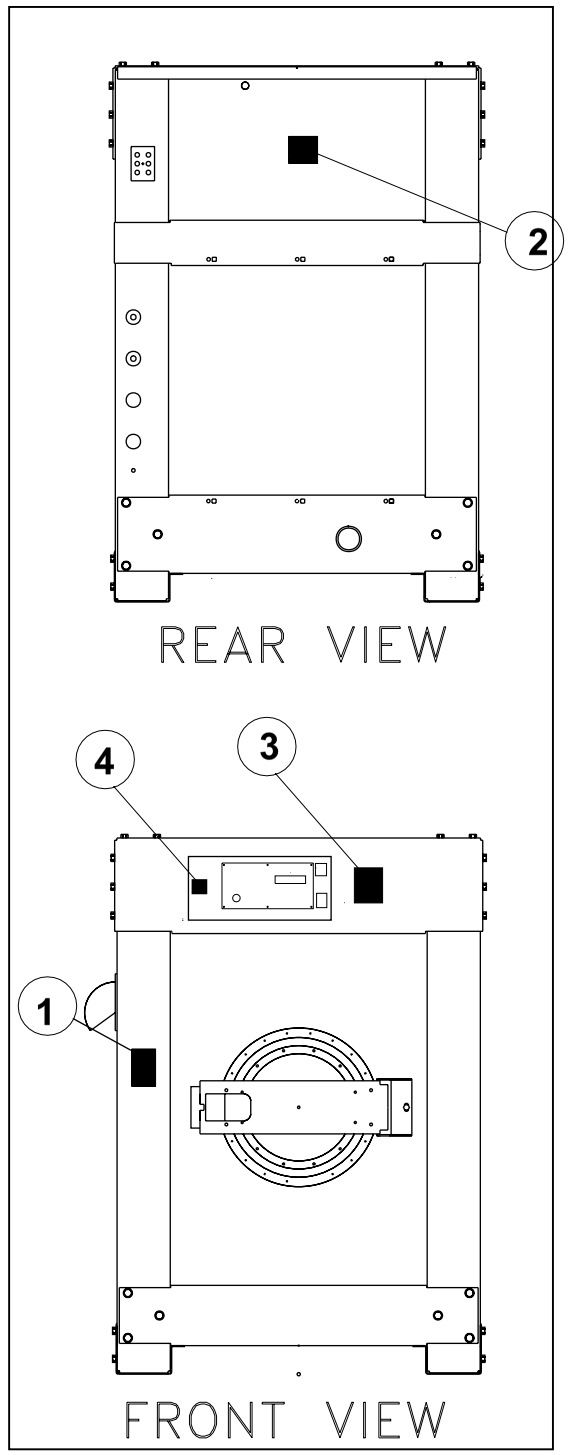
Litho in U.S.A.

Notes:

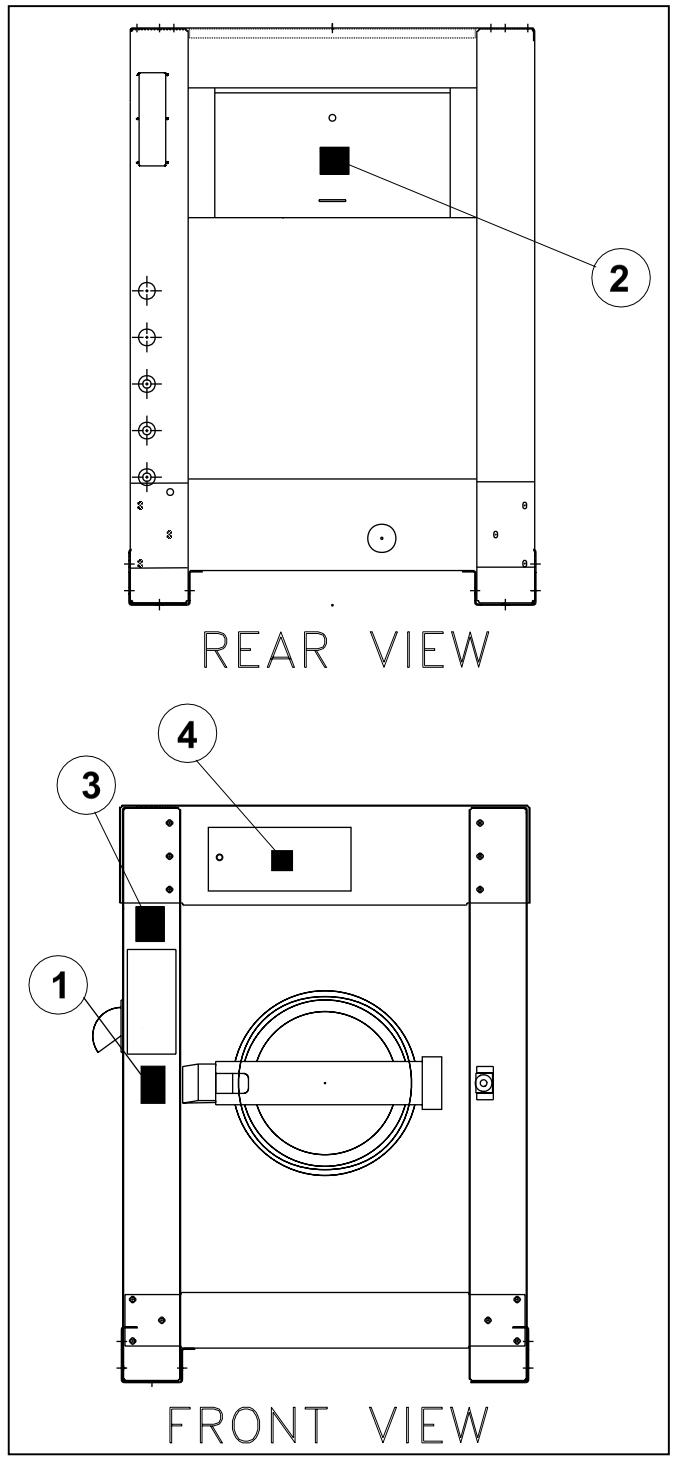
1. **Replace placard immediately, if removed or unreadable.**
2. **Approximate locations of placards are shown. Mounting holes are provided on machine. Use #8 self-tapping screws.**



30022X8W



36026X8W



42026 & 42032X7W

Pellerin Milnor Corporation
P. O. Box 400, Kenner, LA 70063-0400
Litho in U.S.A.

Parts List—Safety Placard Use and Placement

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----------				
			none	
----------COMPONENTS----------				
all	1	01 10631A	NPLT:SHELL FRT WARN NOTILT-TCA	
all	2	01 10377A	NPLT:ELEC HAZARD LG-TCATA	
all	3	01 10699A	NPLT:SERV HZRD-PLYEST-TCATA	
X8W	4	01 10375C	NPLT:E-HAZARD SM VERTCL-TCATA	
X7W	4	01 10377A	NPLT:ELEC HAZARD LG-TCATA	

Avoiding Damage From Allied Remote Chemical Delivery Systems

Milnor® does not manufacture or supply remote chemical delivery systems and this document is meant only to illustrate some of the possible problems that can be minimized during installation of such systems by the chemical supply company. Milnor washer-extractors and CBW® batch washers (tunnels) are available with convenient inlets for such systems (see Figure 1). Most common of the types of systems currently used in commercial laundering operations are pumped chemical systems. Other types, such as constant pressure, re-circulating ring main systems have also been, and may continue to be used with Milnor equipment.

This document warns about some of the possible hazards posed by chemical systems and lists certain requirements needed to minimize those hazards. The procedures for interfacing with allied chemical systems and information pertinent to chemical use in general are provided elsewhere in the product manuals (see Note 1).

Figure 1: Pumped Chemical Inlets on CBW Batch Washer

Note 1: Misuse of laundering chemicals (such as injecting excessive concentrations of chlorine bleach or permitting acid sours to react with hypo chlorite) due to incorrect formulation can also be hazardous. Information pertinent to chemical use is provided elsewhere in the product manuals.

1. How a Chemical System Can Damage the Machine It Serves

Milnor has manufactured washer-extractors and tunnel washers with the same stainless steel specification since its founding. Every batch of steel used is certified and documented by the steel mill. Testing of samples damaged by corrosion have, in every case, proven the steel to be well within the AISI 304 specification.

Chemical products commonly found in the laundry industry, when used in **established** dosages and proper operating parameters, under the auspices of an experienced chemical specialist, should produce satisfactory results, with no consequential detrimental effects. The industry has published standards in Riggs and Sherrill, "Textile Laundering Technology". However, the stainless steel can be damaged and even destroyed by **abnormal** contact with chlorine bleach, hydrofluosilicic acid and other commonly used chemicals, as will occur if chemicals are unintentionally leaked into the machine, particularly when it is no longer in use and especially when machine surfaces are dry.

Some chemical systems have been found to permit chemicals to dribble from the supply lines, or worse, to siphon from the supply tank into the machine, during operation and long after the system is shut down—as after working hours and during weekends. If this occurs, **deterioration (rusting) of the stainless steel and damage to any textiles therein will inevitably result. If this condition goes undetected, machine damage is likely to be catastrophic.** No machine is immune to such damage.

CAUTION 1: Equipment and Textile Damage Hazards—Chemicals leaked into the machine, particularly when it is idle can destroy machine components and textiles left in the machine. **Pellerin Milnor Corporation accepts absolutely no responsibility for damage to its equipment or to textiles therein from abnormal contact with chemicals.**

- Ensure that the chemical system prevents unintentional release of chemicals.
- Inspect regularly for proper operation and evidence of damage.

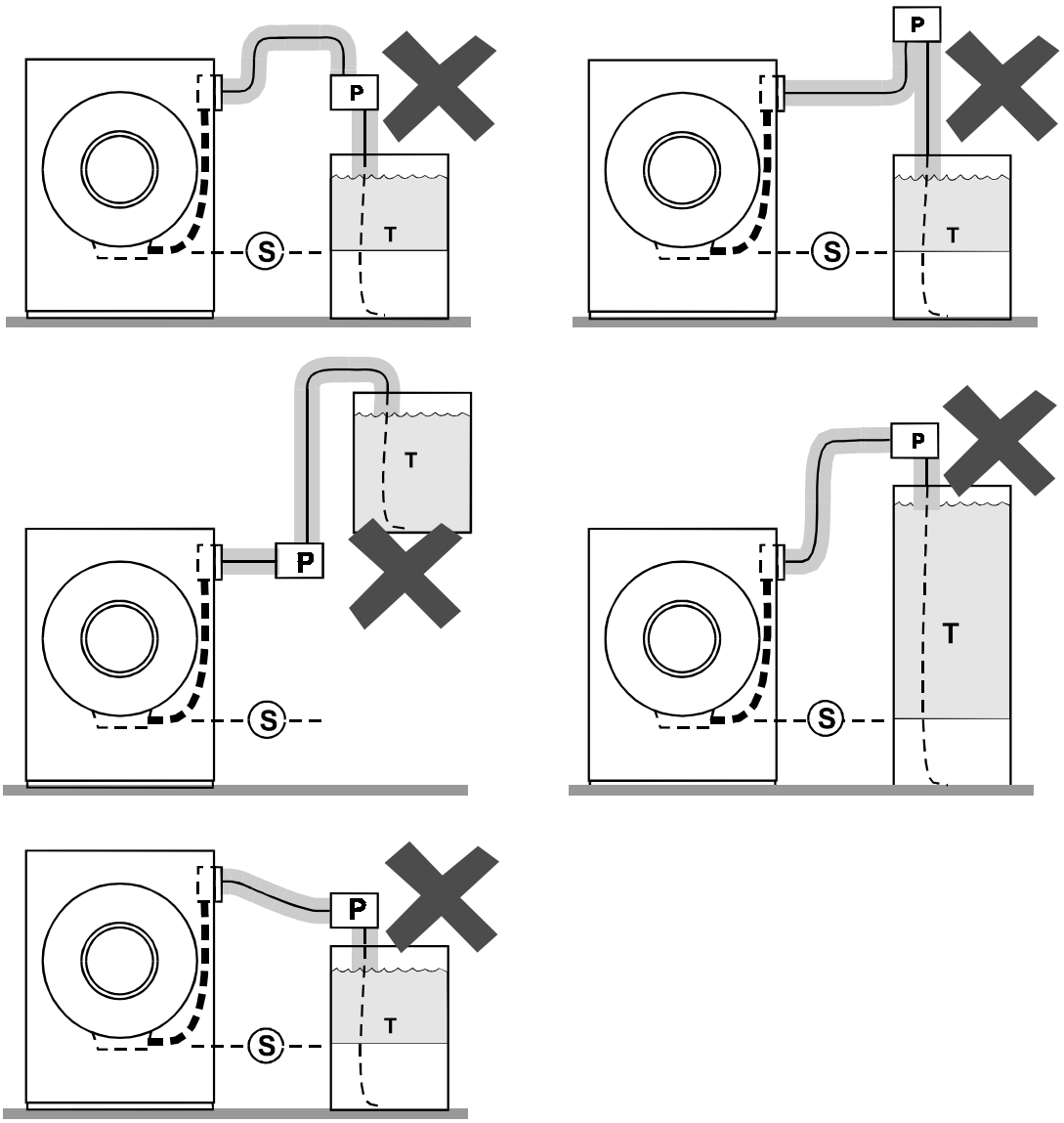
2. Requirements for Chemical Systems Used With Milnor Machines

It is the responsibility of the chemical system manufacturer and supplier to ensure that their system is safe for personnel and equipment. Some important points are described below.

2.1. Ensure the System Cannot Siphon.—The supply system must be designed to counteract any siphoning that could occur as a result of having a sealed supply line between the bottom of the chemical tank and the internal machine connection at the drain trough. As shown in the Figure 2 examples, if the pump (P) and/or the valving does not provide positive closure and there is no vacuum breaker protection, siphoning is likely to occur. In each of the Figure 2 illustrations, the volume of chemical in the tank above the siphon level (S), and indicated by shading, will flow into the machine.

Figure 2: Siphoning From the Chemical Tank into the Machine

Examples

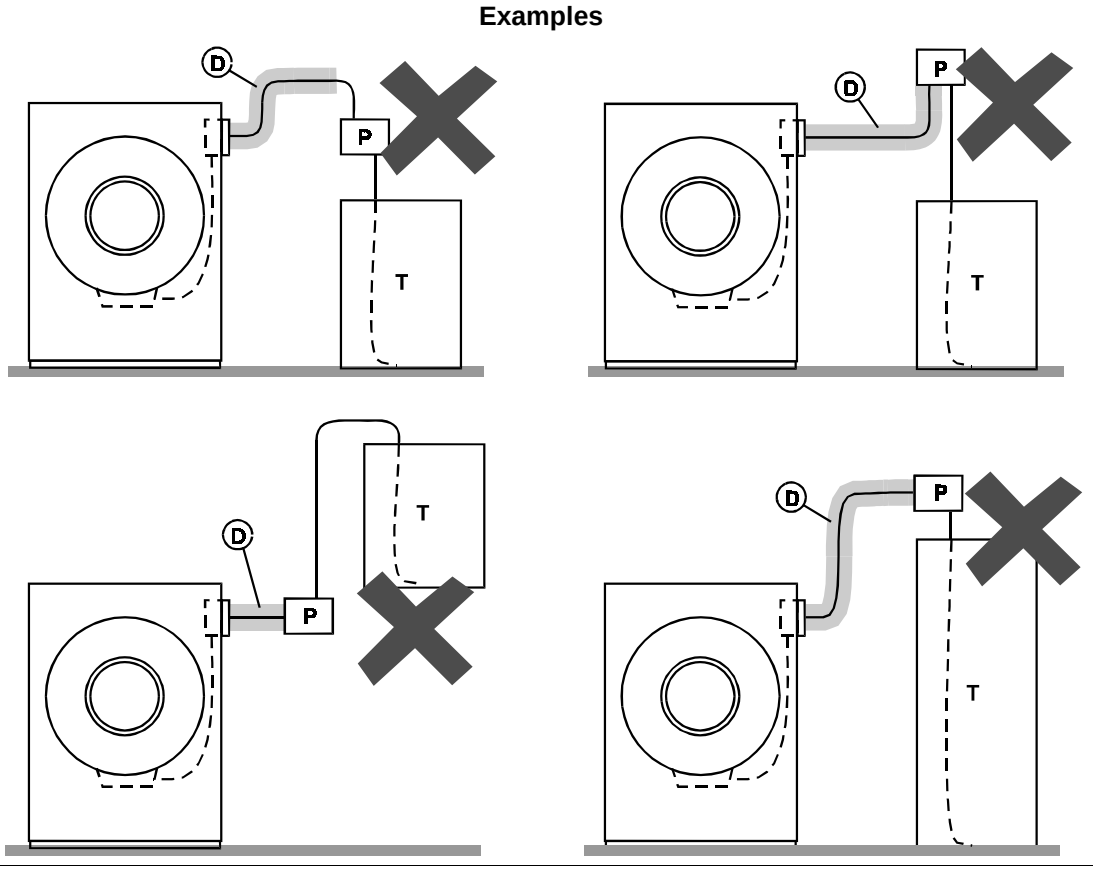


Legend

P. Pump
S. Siphon level. Shading indicates the chemical delivery line and tank content that can siphon into the machine.
T. Chemical tank

2.2. Ensure the Chemical Lines Cannot Dribble—The pumped chemical system may provide a means of positively closing the chemical line at the pump location, but not at the injection site. Hence, any concentrated chemical that remains in the injection line between the pump and the machine is free to flow into the machine. Some examples of this are shown in Figure 3.

Figure 3: Dribbling From Chemical Supply Line Into Machine (assumes positive closure at the pump)



Legend

D. Portion of supply line, the contents of which can dribble into the machine
P. Pump
T. Chemical tank

3. Design and Installation Recommendations

It is the responsibility of the chemical system manufacturer and supplier to use whatever measures are necessary to ensure that their system is safe for personnel and equipment. The following are some of the possible methods the manufacturer or supplier may wish to use, as appropriate.

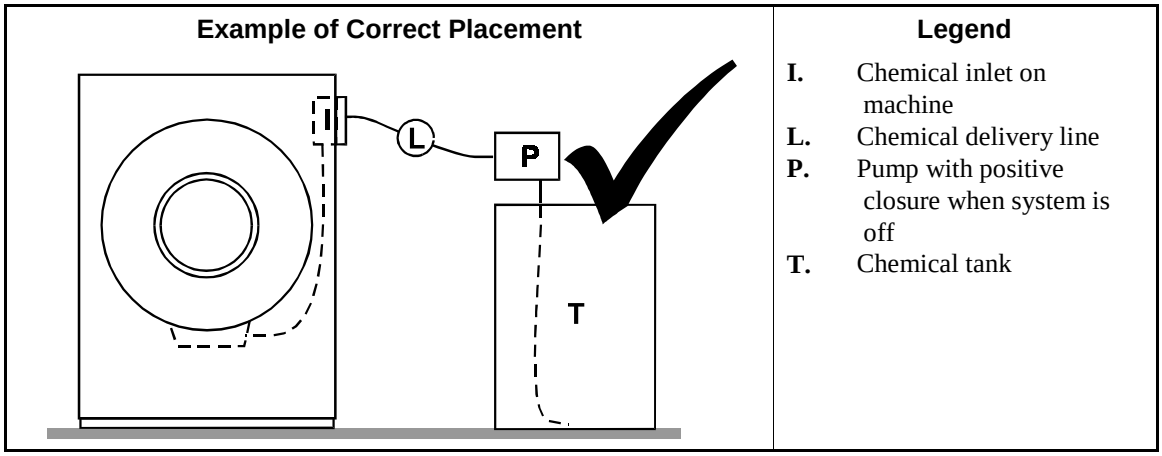
3.1. Siphoning: Positively close the line.—If the pump does not provide positive closure when the system is off, employ a shutoff valve in the line to serve this purpose.

3.2. Siphoning: Break the siphon.—Provide an air gap or vacuum breaker in the chemical delivery line. This must be located above the "full" line of the tank.

3.3. Dribbling: Flush the entire chemical delivery line.—If any concentrated chemical that remains in the injection line between the pump and the machine is free to flow into the machine, employ a system that flushes the entire line between the pump and the injection point with fresh water after each injection.

3.4. Dribbling: Locate the entire chemical line below the machine inlet.—Assuming the chemical system does not retain any line pressure and that the pump provides positive closure when the system is off, locate the entire chemical delivery line below the level of the chemical inlet. An example of this is shown in Figure 4.

Figure 4: Locating a Pumped Chemical System With Positive Closure To Protect Against Machine Damage



4. Guarding Against Leaks

All personnel who may work with the chemical system (e.g., chemical system manufacturer, chemical system supplier, chemical supplier, operator, maintenance personnel) should be vigilant in observing for leaks in the system. When connecting, or reconnecting chemical lines, whether at installation, after taking samples, or when replacing components, at a minimum ensure that:

1. the proper components are used,
2. all connections are the proper fit, and
3. all components are securely connected.

CAUTION 2: Injury and Damage Hazards—Chemicals leaking from a chemical system may be corrosive or toxic. Such chemicals can injure personnel and damage equipment.

- Use care when connecting chemical lines.
- Inspect regularly for leaks.

— End of BIWUUI03 —

Service and Maintenance

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

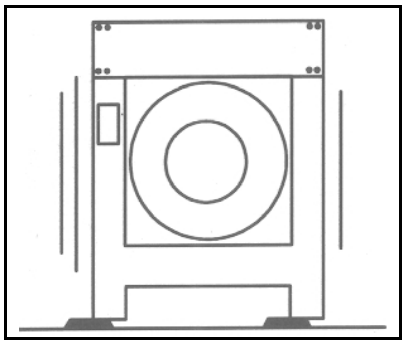
1. All openings and corridors through which equipment must pass during installation must be large enough to accommodate the width and the height of the machine as shown on the dimensional drawings. It is occasionally possible to reduce the overall dimensions by removing piping or other special modifications. 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.

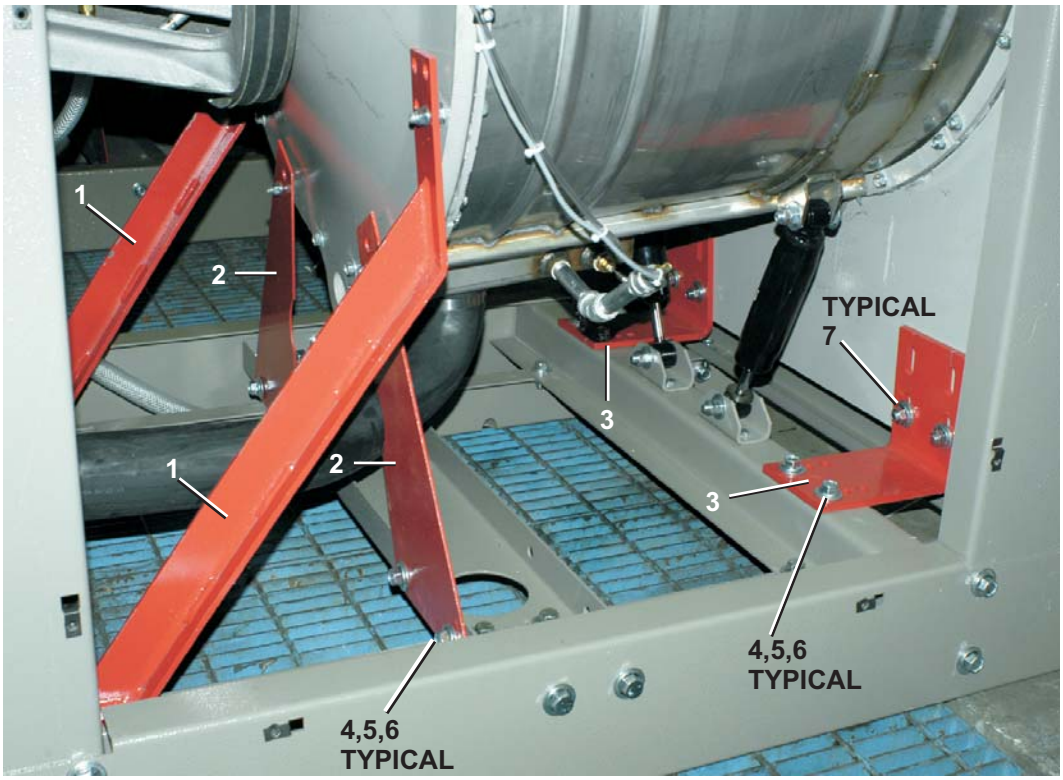
Prior to operation,

- 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 —

Shipping Brackets

30022X8J, 30022X8W, 30022X8R



Shipping Brackets must be used to move the machine. Before Operating the machine, remove all shipping brackets (painted red). For further instructions, see BIMUUI01, Washer Extractor Installation.

Parts List—Shipping Brackets

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	W2 02937	ANGLE SHIPPING WELD	
all	2	02 02936	STRAP SHIPPING SHELL	
All	3	02 23543	BRKT=SHIP LOWER FRNT	
all	4	15K129	HEXFLGSCR 1/2-13X1-1/4ZN. GR 5	
all	5	15G222B	HEXFLGNUT 1/2-13 ZINC	
all	6	15U280	FL+WASHER(USS STD)1/2 ZNC PL+D	
all	7	15K154G	INDHEXFLGSCR ½-13X1+3/4GR5 Z	

BIMUUI02 (Published) Book specs- Dates: 20050117 / 20050117 / 20050117 Lang: ENG01 Applic: MXA

Service Connections

1. General

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.

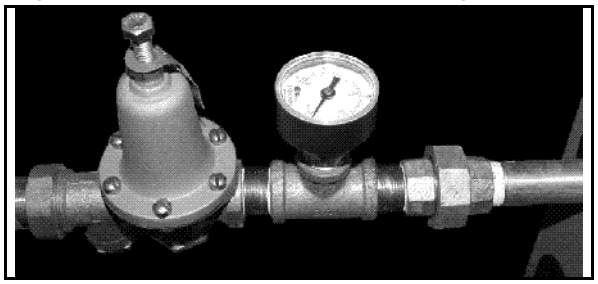
2. Requirements for Piped Connections

Notice 1: 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). Install this regulator on the flush water inlet when installing piping.
3. Throughly 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 2: 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

Table 1: Piped Inlets

Connection Description	Source Requirements	Piping Requirements, Comments
Cold water inlet	3/4" garden hose male thread @ 10 - 75 psi	Pipe material per plumbing code
Hot water inlet		
Flush water inlet		
Liquid supply inlet	3/8" or 1/2"	Flexible tubing as supplied by the chemical supplier

2.2. Piped Outlet Specifications

Table 2: Outlets

Connection Description	Destination Requirements or Description	Piping Specifications
Drain	3" pipe socket joint, 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

WARNING 3: Electrocution and Electrical Burn Hazards—Contact with high voltage will electrocute or burn you. Power switches on the machine and the control box do not eliminate these hazards. High voltage is present at the machine unless the main machine power disconnect is off.

- Do not service machine unless qualified and authorized.

Notice 4: 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). 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). 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)

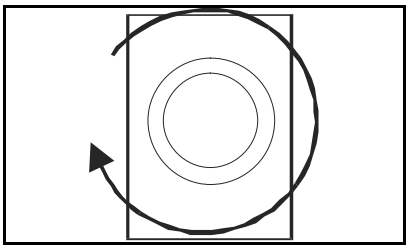
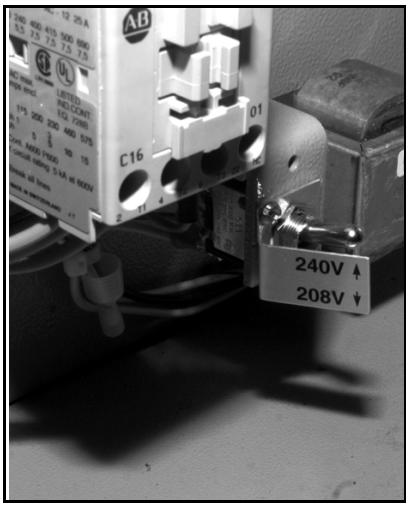


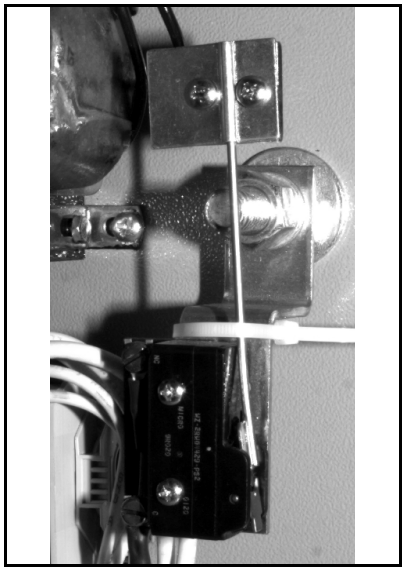
Figure 3: Line Voltage Switch Set for 240 Volt Operation



4. Remove Shipping Restraints

Remove all shipping restraints (usually marked in red). Restraints may be located behind access panels. Restraints may include the vibration switch restraint (Figure 4).

Figure 4: Typical Vibration Switch Showing Restraint in Place



5. Check Cylinder Surface

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

— End of BIMUUI02 —

Servicing the Door to Open it with Power Off or with a Malfunctioning Door Lock

Note 1: This document supersedes document MSSM0288AE and applies to all washer-extractors with four-spoke door handles, including 30022Hxx, MCRxxxxx models. The photographs in this document show the older style bare metal door handles but the instructions apply, as well, to newer machines with black, coated handles.

The door is designed to lock as soon as the machine starts a wash cycle. If electrical power to the machine is interrupted during the washing cycle, or if the door interlock mechanism fails to unlock, the door can be opened by **qualified, service personnel** by removing the door handle and a few related components. These components must be properly reinstalled for safe operation.

WARNING 1: Entangle and crush hazards—Contact with moving components normally isolated by doors, guards, covers and panels can entangle and crush body parts. These components move automatically.

- Service the machine only if qualified and authorized.
- Lockout/tagout power at the wall disconnect before proceeding.

WARNING 2: Amputation hazard—If the door interlock mechanism does not function properly, an operator may be able to open the door and reach into the machine during operation. Goods in the rotating cylinder can wrap around a person's arm and twist it off.

- Verify proper door lock function during machine operation, before returning the machine to normal service.

1. Disassembly

1.1. Removing the Handle and Opening the Door—The handle is held in place on the shaft with a thrust washer and retaining clip in front of the handle and a flange bearing and retaining clip behind the handle. The amount of turning force the handle can exert on the shaft is adjustable with the four set screws, springs and steel balls—one within each spoke of the handle. The steel balls seat into depressions in the shaft. When properly adjusted, the set screws will apply sufficient spring tension so that the handle will reliably operate the latch, but the handle will ratchet if turned counterclockwise or if too much turning force is applied.

Remove the handle from the shaft as follows:

1. Gently pry the black plastic cap from the center of the handle with a small screwdriver.
2. Attempt to ratchet the handle by turning it counterclockwise by hand. If this is not possible, the springs have too much tension applied. Back off on the four set screws just enough for the handle to ratchet. Typically this happens when the set screws are flush with the surface of the handle spoke as is the case in Figure 1.
3. Repeat the following sub-steps four times to remove all set screws, springs, and steel balls:
   a. Remove the set screw from the topmost handle spoke.
   b. Hold a finger over the hole, then, while keeping your finger on the hole, ratchet the handle counterclockwise until the hole is pointing down.
   c. Hold one hand or a cup under the handle to catch the contents, then remove your finger, allowing the spring and ball to fall out, as in Figure 2. Shake the handle if necessary, to work the components free.

Figure 1: Door Handle Spoke Set Screw

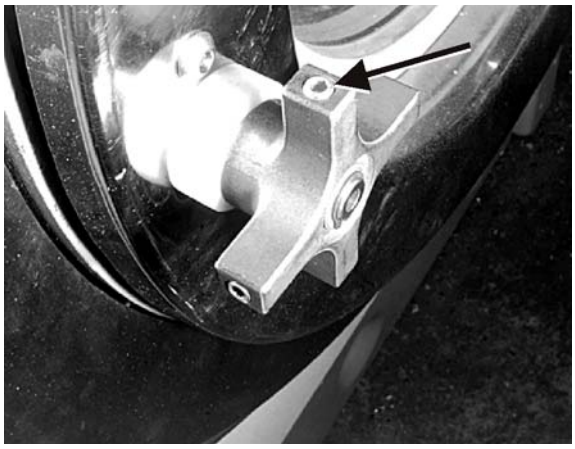


Figure 2: Handle Spoke Spring and Ball

4. Remove the front retaining clip and thrust washer (see Figure 3), then pull the handle off of the shaft.
5. Normally, the flange bearing will come off with the handle, but if not, remove it as shown in Figure 4. Remove the rear retaining clip. Push against the door to release the retaining clip.

Figure 3: Front Retaining Clip and Thrust Washer

Figure 4: Rear Flange Bearing (being removed) and Retaining Clip (arrow)

Notice 3: Risk of component damage—The return spring is located around the shaft, between the door and the shaft cam. The end of the spring is inserted into a small hole in the shaft cam. The spring can stretch and be damaged if it does not separate from the shaft cam.

- Be prepared to work the end of the spring out of the hole in the shaft cam as the door is opened.

6. Slowly open the door. Allow the door latch shaft, which is still captive within the door lock mechanism, to slide out of the door. Watch to be sure the return spring separates from the shaft cam and remains with the door, as shown in Figure 5.

Figure 5: Return Spring After Separation from Shaft Cam

1.2. Removing the Door Latch Shaft from the Door Lock Mechanism

Tip: It is easier and more reliable to remove the shaft from the door lock mechanism then to attempt to reinsert the shaft into the door and replace the handle while the shaft is still captive in the door lock.

1. Remove the cover (not shown) from the door lock mechanism (Figure 6).
2. Using a screwdriver, push down the door lock slider pin (Figure 6) and rotate the shaft (Figure 7) counterclockwise to remove it from the lock mechanism.

Figure 6: Door Lock Slider Pin in the Door Lock Mechanism

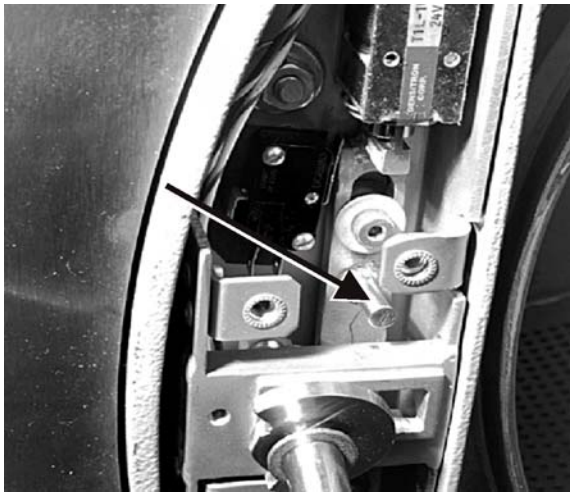
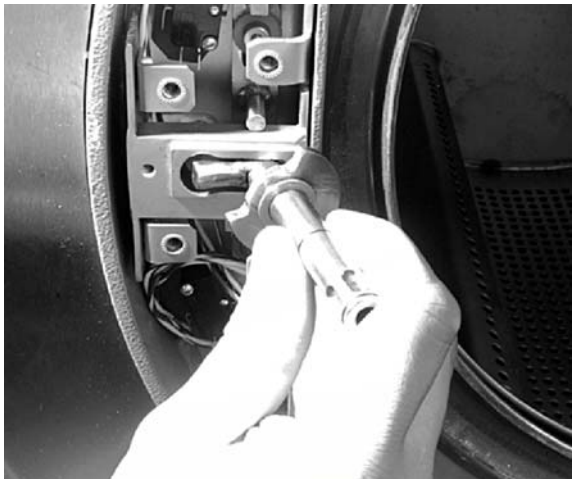


Figure 7: Removing the Shaft from the Lock Mechanism



2. Reinstalling the Shaft and Door Handle

Once the goods have been removed from the machine and any malfunction of the door lock mechanism, such as a burned out coil or mechanical interference, has been identified and repaired, reinstall the components as follows:

1. Install the cover on the door lock mechanism.
2. Insert the shaft into the open door and seat the end of the return spring into retaining hole in door shaft cam (Figure 8 and Figure 9).

Figure 8: Shaft in the 9 o'clock Position Showing Spring Retaining Hole

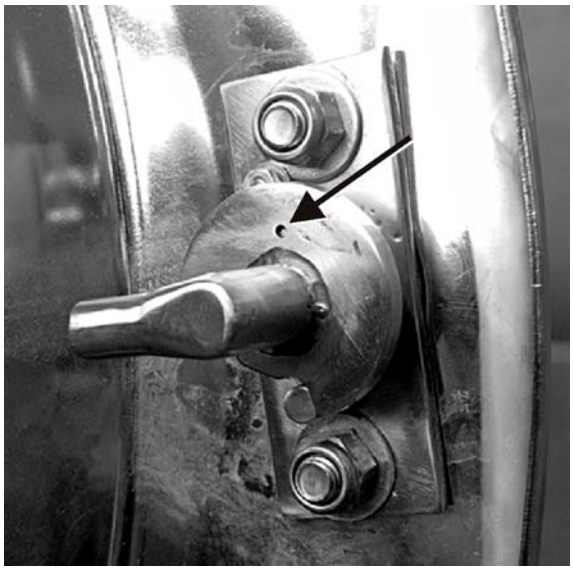
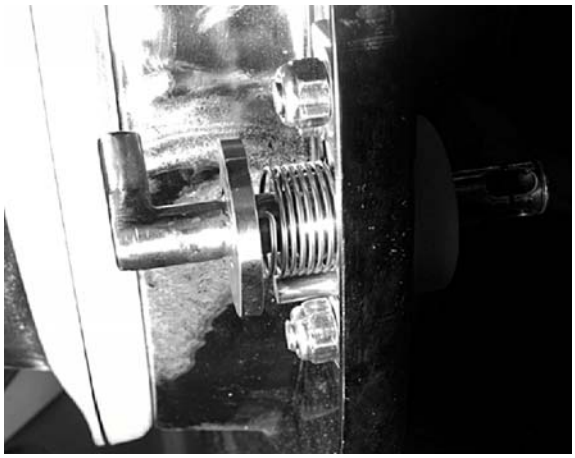


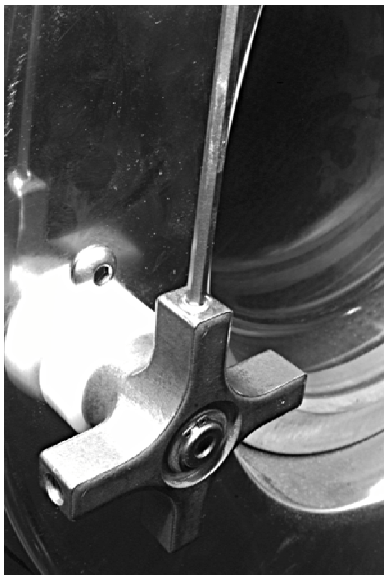
Figure 9: Shaft with Return Spring Installed



3. Looking at the rear of the door, rotate the shaft counterclockwise about 90 degrees, until the shaft fully seats into the door. When properly seated, the shaft finger (the latch) will align with the key way on the door lock mechanism.
4. Install the rear retaining clip on the shaft.
5. Slide the door handle and flange bearing onto the shaft.
6. Install the front thrust bearing and retaining clip on the shaft.
7. Repeat the following sub-steps four times—once for each ball, spring, and set screw: (Figure 10 and Figure 11):
   a. Drop the ball into the hole of door handle top spoke, followed by the spring, as shown in Figure 10.
   b. Install the set screw. As previously stated, the handle should ratchet if more turning force than necessary is applied or if turned counterclockwise. Tighten the set screw until the set screw is flush with the handle. This will provide roughly the correct spring tension.
   c. Rotate door handle counterclockwise 90 degrees to ratchet it to the next position (with the next spoke on top).

Figure 10: Inserting Ball and Spring in Handle Spoke

Figure 11: Adjusting Set Screw



8. When all four set screws are in place, check to be sure the handle will ratchet if turned counterclockwise, or if latched with more force than necessary. Make 1/4 turn adjustments to all four set screws if necessary to achieve the proper tension.
9. Install the black plastic cap over the center of the handle.

— End of BIRH3M02 —

BIRH3M01 (Published) Book specs- Dates: 20030214 / 20030214 / 20030214 Lang: ENG01 Applic: RH3

Setting Door Interlock Switches

1. How The Door Interlock Switches Work

DANGER 1: Amputation Hazard—Turning cylinder can twist off arms.

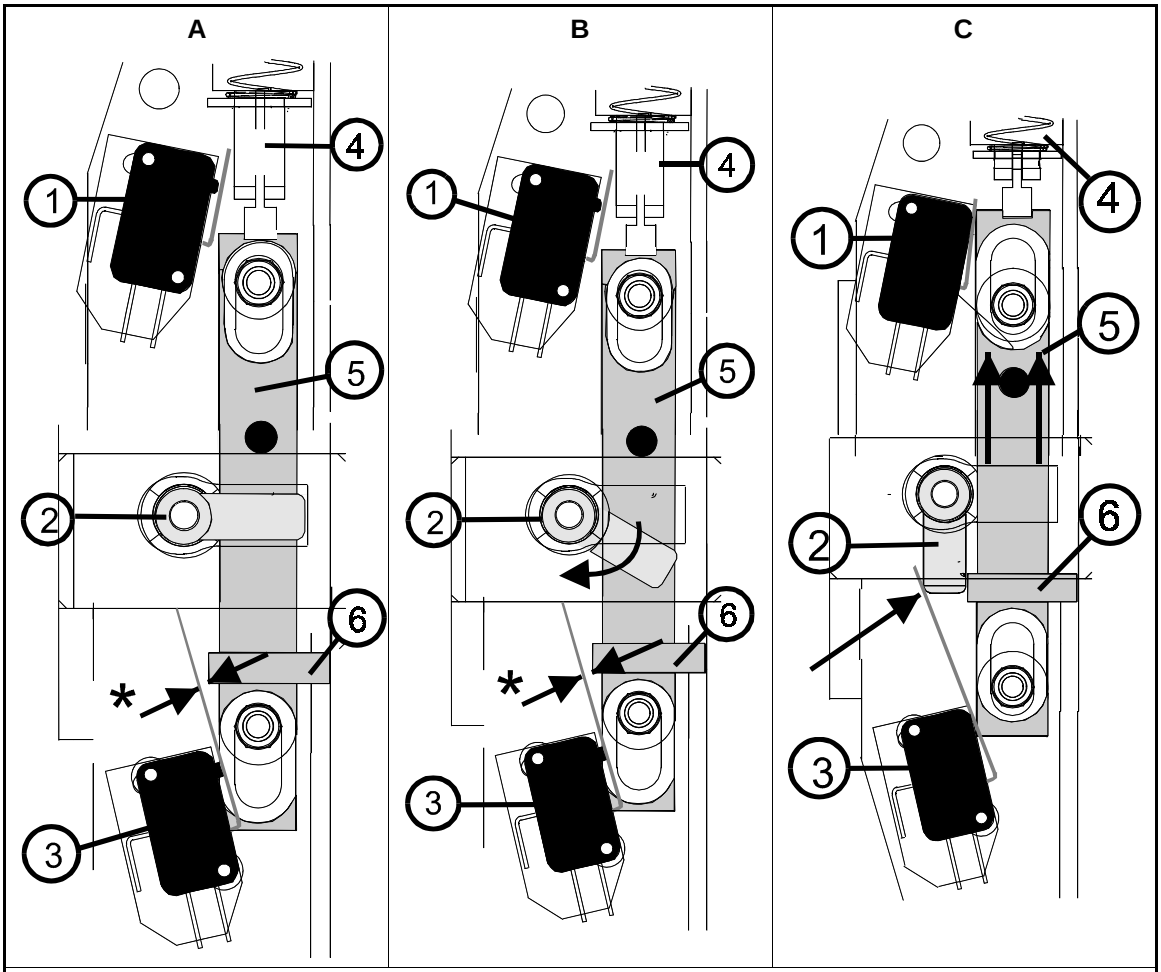
- Do not permit this machine to be operated unless door interlock switch SMD (Figure 1 item 3) is set according to these instructions.
- Do not operate this machine if a visual inspection of the unlocked door shows door lock switch SMD touching the door lock slider, or if the machine operates with the door open.
- Verify that all components of this system are in good working order.

Note 1: Study the illustrations in Figures 1 while reading the following explanation.

After the door is shut, the turning door catch (item 2) physically contacts door interlock switch SMD (item 3). Actuating this switch tells the microprocessor that the door is closed. Note that the door handle is not locked in place and the door can be opened if needed. The machine can be programmed but cannot start the wash program or allow manual actuation of outputs.

Immediately after the start switch 1 is pushed, the microprocessor energizes solenoid EMDL (item 4), pulling up the door lock slider. The raised door lock slider mechanically locks the door handle in place and actuates door interlock switch SME (item 1). Actuating this interlock switch confirms that the door is closed and locked, allowing the machine to start the wash program.

Figure 1: Door locking sequence



Legend

A. Door pushed shut, door handle (item 2) in unlocked position, door lock slider down (item 5), interlock switch SMD (item 3) and SME (item 1) not actuated.
Note the minimum sixteenth of an inch (1.6 mm) gap between the lever on interlock switch SMD and the door lock slider.

B. Door shut, door handle (item 2) being turned to the locked position. The door lock slider (item 5) is down, interlock switch SMD (item 3) and SME (item 1) not actuated.

C. Door shut, door handle (item 2) in the locked position. The door lock slider (item 5) is up, locking in door handle in place, interlock switch SMD (item 3) and SME (item 1) are both actuated.

1. Door interlock switch SME
2. Door catch
3. Door interlock switch SMD
4. Solenoid EMDL
5. Door lock slider
6. Raised section of door lock slider

2. Adjusting the Door Interlock Switches

Periodically inspect the door locking assembly for wear and proper functioning as follows:

1. Remove the cover plate. Manually push the door slider assembly (item 5) down until it stops. Check for a minimum of one sixteenth of an inch clearence (1.6 mm), between the raised portion of the door slider (item 6), and the lever of interlock switch SMD (item 3).
2. Manually push the door slider assembly up until it stops. Check that the rising slider depresses interlock switch SME (item 1), “making” the switch.

— End of BIRH3M01 —

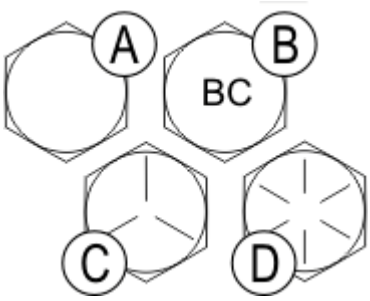
BIUUUM04 (Published) Book specs- Dates: 20080506 / 20080506 / 20080506 Lang: ENG01 Applic: UUU

Fastener Torque Requirements

Torque requirements for other fasteners are specified in the specific document which describes the assembly. **If fastener torque specifications or threadlocking compound requirements in an assembly document vary from the specifications in this document, use the assembly document.**

Figure 1: Common Bolts Used in Milnor Equipment

Bolt Head Identifying Marks



Legend

A. SAE Grades 1 and 2, ASTM A307, and stainless steel
B. ASTM A354 Grade BC
C. SAE Grade 5, ASTM A449
D. SAE Grade 8 and ASTM A354 BD

1. Torque Values

The tables below list the standard size, grade, threadlocking compound, and torque requirements for fasteners commonly used on Milnor® equipment.

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

1.1. Carbon Steel Fasteners

1.1.1. Without Threadlocking Compound

Table 1: Torque Values for Dry Fasteners 5/16-inch and Smaller

	Bolt Grade							
	Grade 2		Grade 5		Grade 8		Grade BC	
Bolt Size	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 Dry Fasteners Larger Than 5/16-inch

	Bolt Grade							
	Grade 2		Grade 5		Grade 8		Grade BC	
Bolt Size	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 5/16-inch and Smaller

	Bolt Grade							
	Grade 2		Grade 5		Grade 8		Grade BC	
Bolt Size	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

	Bolt Grade							
	Grade 2		Grade 5		Grade 8		Grade BC	
Bolt Size	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 Threadlocking Compound

Table 5: Threadlocking Compound Selection by Bolt Size

	Bolt Size			
LocTite Product	1/4"	1/4" – 5/8"	5/8" – 7/8"	1" +
LocTite 222	OK			
LocTite 242		OK		
LocTite 262			OK	
LocTite 272			High temperature	
LocTite 277				OK

Table 6: Torque Values for Applications of LocTite 222

	Bolt Grade							
	Grade 2		Grade 5		Grade 8		Grade BC	
Bolt Size	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 for Applications of LocTite 242

	Bolt Grade							
	Grade 2		Grade 5		Grade 8		Grade BC	
Bolt Size	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 for Applications of LocTite 262

	Bolt Grade							
	Grade 2		Grade 5		Grade 8		Grade BC	
Bolt Size	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 for Applications of LocTite 272 (High Temperature)

	Bolt Grade							
	Grade 2		Grade 5		Grade 8		Grade BC	
Bolt Size	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 for Applications of LocTite 277

	Bolt Grade							
	Grade 2		Grade 5		Grade 8		Grade BC	
Bolt Size	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	
Nominal Bolt Size	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

Bolt Size	316 Stainless		18-8 Stainless		18-8 Stainless with Loctite 767	
	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 1: Fire Hazard—Some solvents and primer products are flammable.

- Use in a well ventilated area.
- Do not use flammable products near ignition sources.

1. Clean all threads with a wire brush, a tap, or a die.
2. Degrease the fasteners and the mating threads with a cleaning solvent. Wipe the parts dry.

   Note 2: LocTite 7649 Primer N™ will remove grease from parts, but it costs more than a standard organic or petroleum solvent.

3. Prime the fasteners and the mating threads with LocTite 7649 Primer N™ or equal. Allow the primer to dry for at least one minute.

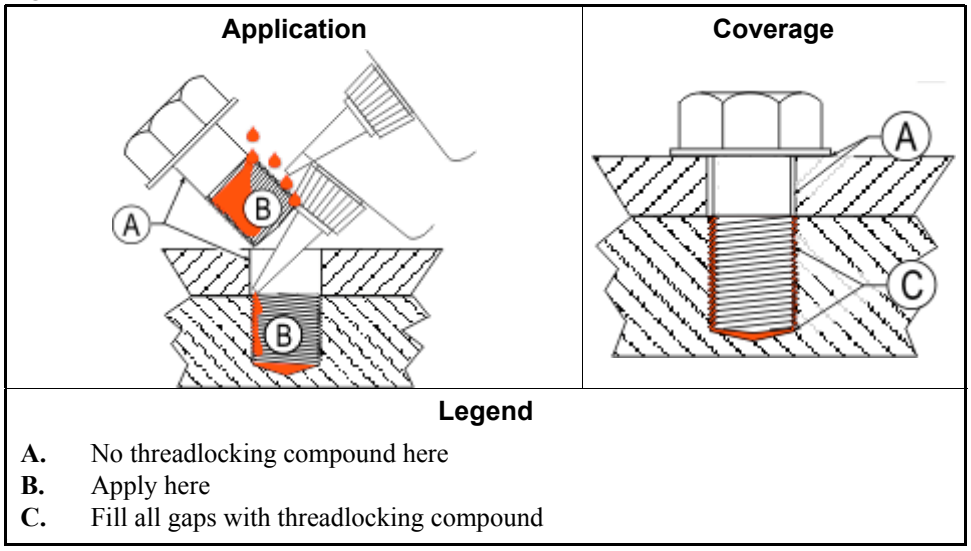
3. Application of Threadlocking Compound

CAUTION 2: Malfunction Hazard—Improper application of threadlocking compounds may result in fasteners becoming loose from impact, heat, or vibration. Loose fasteners can cause the equipment to malfunction.

- Read and follow the threadlocking compound manufacturer's instructions and warnings.

Apply threadlocking compound to the thread engagement areas of fasteners and mating threads only.

Figure 2: Blind Hole



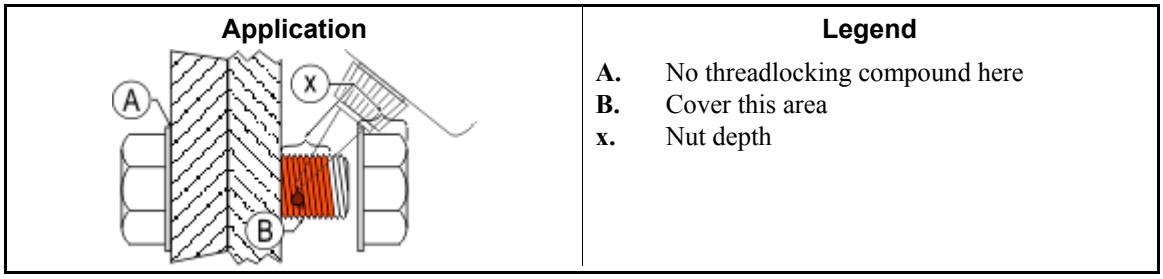
3.1. Blind Holes

1. Apply several drops of threadlocking compound down the female threads to the bottom of the hole.
2. Apply several drops of threadlocking compound to the bolt.
3. Tighten bolt to value shown in the appropriate table (Table 5 through Table 11).

3.2. Through Holes

1. Insert bolt through assembly.
2. Apply several drops of threadlocking compound to the bolt thread area that will engage the nut.
3. Tighten bolt to value shown in the appropriate table (Table 5 through Table 11).

Figure 3: Through Hole

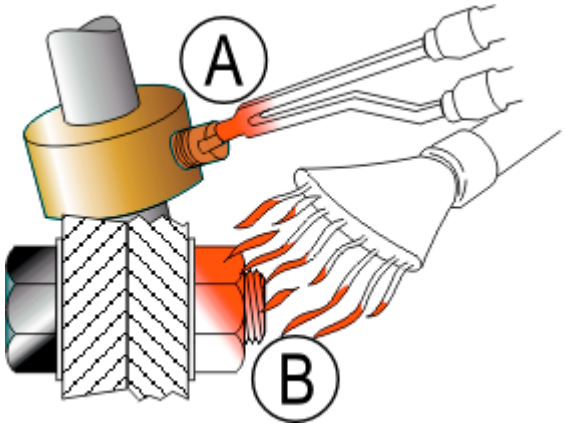


3.3. Disassembly—For low-strength and medium-strength products, disassemble with hand tools.

For high-strength products, apply localized heat for five minutes. Disassemble with hand tools while the parts are still hot.

Figure 4: Disassembly

Use Localized Heat



Legend

A. Soldering gun heating small fastener
B. Torch heating large fastener

— End of BIUUUM04 —

BIIFBM04 (Published) Book specs- Dates: 20090814 / 20090814 / 20100514 Lang: ENG01 Applic: MXA

Panels and Covers

Figure 1: General Views

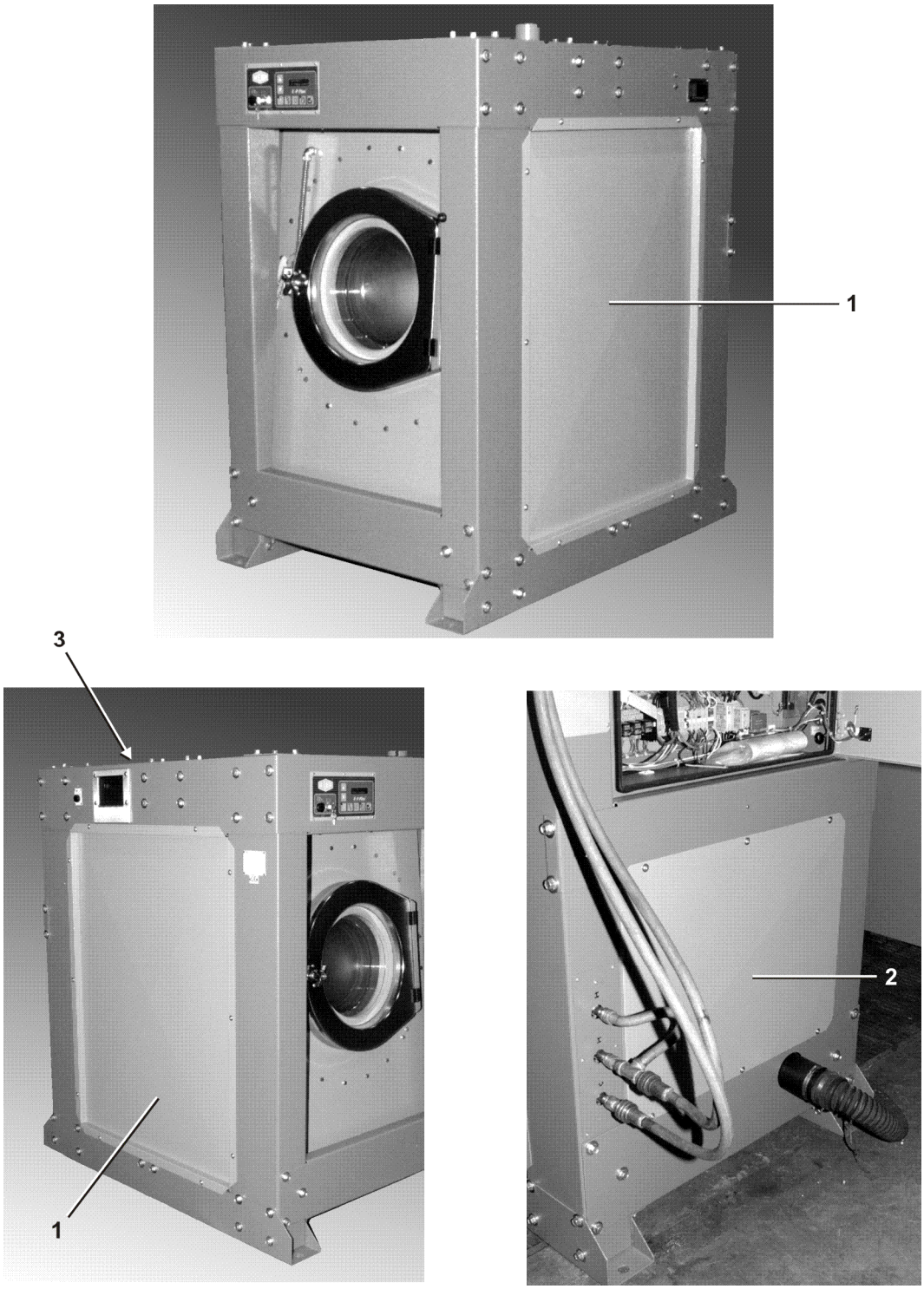


Table 1: Parts List—Panels and Covers

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	GGS3022X8	Installation Group	
Components				
all	1	02 02925	Cover	
all	2	02 02929	Cover	
all	3	02 02931	Cover	

— End of BIIFBM04 —

Drive Assemblies 2

BIIFBM05 (Published) Book specs- Dates: 20090814 / 20090814 / 20100514 Lang: ENG01 Applic: IFB

Drive Components Identification

Figure 1: General View

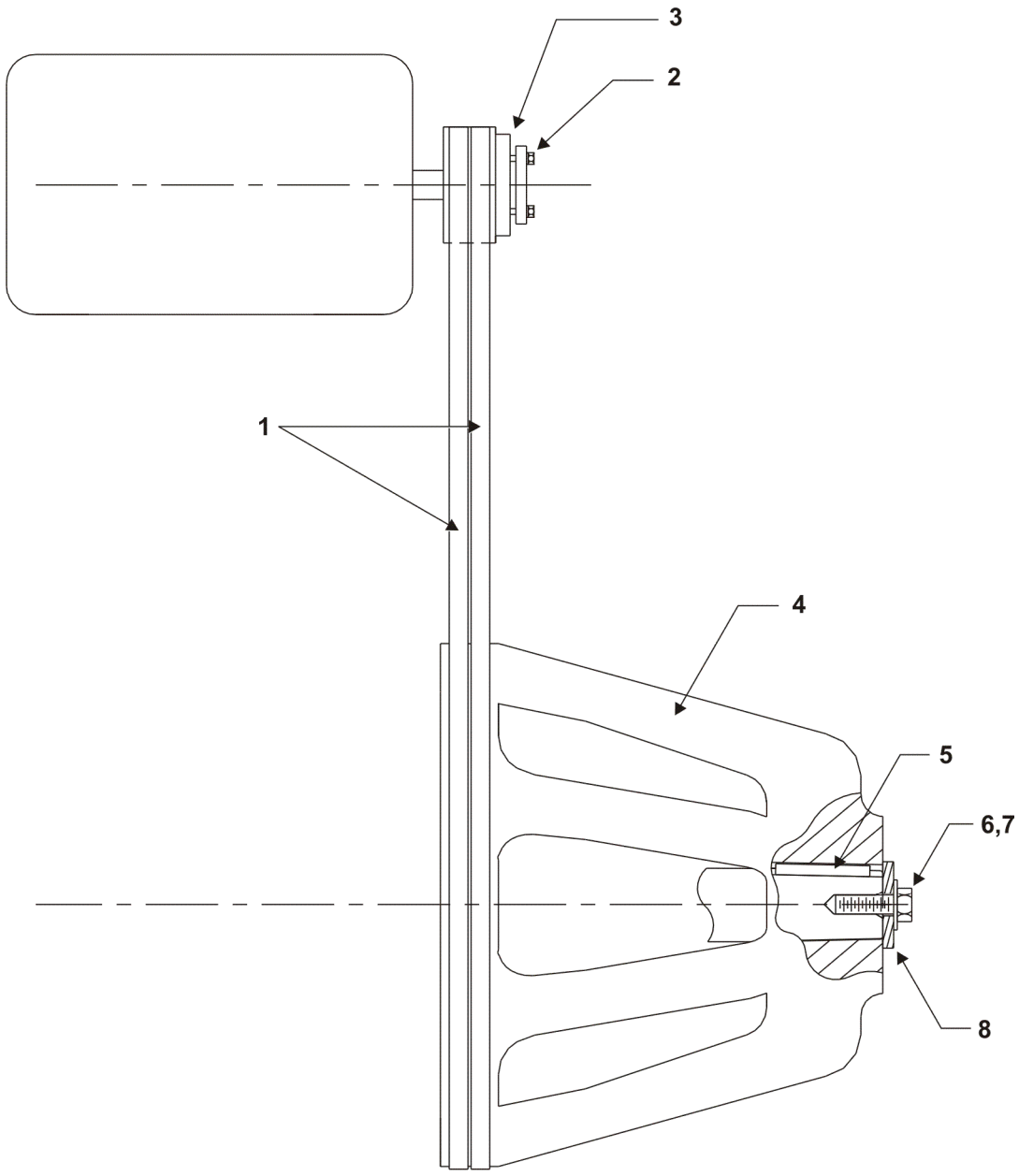


Table 1: Parts List—Drive Component Identification

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	D33 03550	Installation Group	
Components				
all	1	56VB082XM2	V-belt	
all	2	56Q1CH	Bushing	
all	3	56030B2H	V-pulley	
all	4	X2 03830	Pulley	
all	5	15E230	Key	
all	6	15K232A	Bolt	
all	7	15U321H	Washer	
all	8	02 14359A	Pull-up plate	

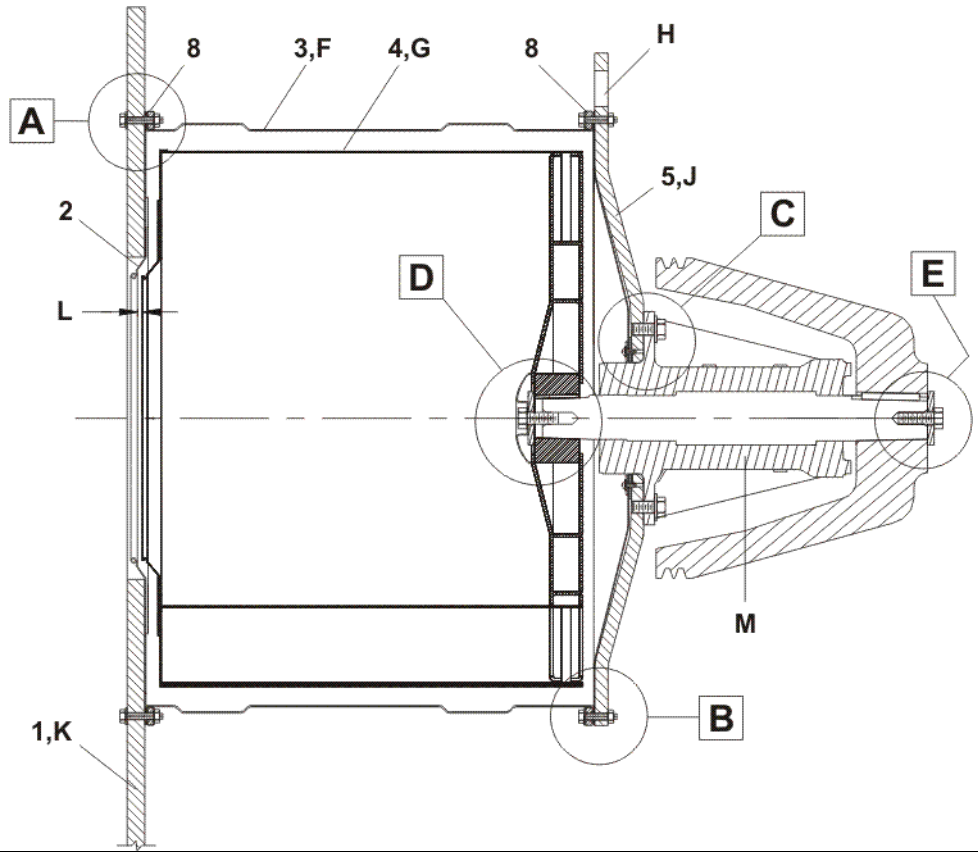
— End of BIIFBM05 —

BIIFBM06 (Published) Book specs- Dates: 20090814 / 20090814 / 20100514 Lang: ENG01 Applic: MXA

Cylinder Installation

Figure 1: Cylinder Installation

Cross Section

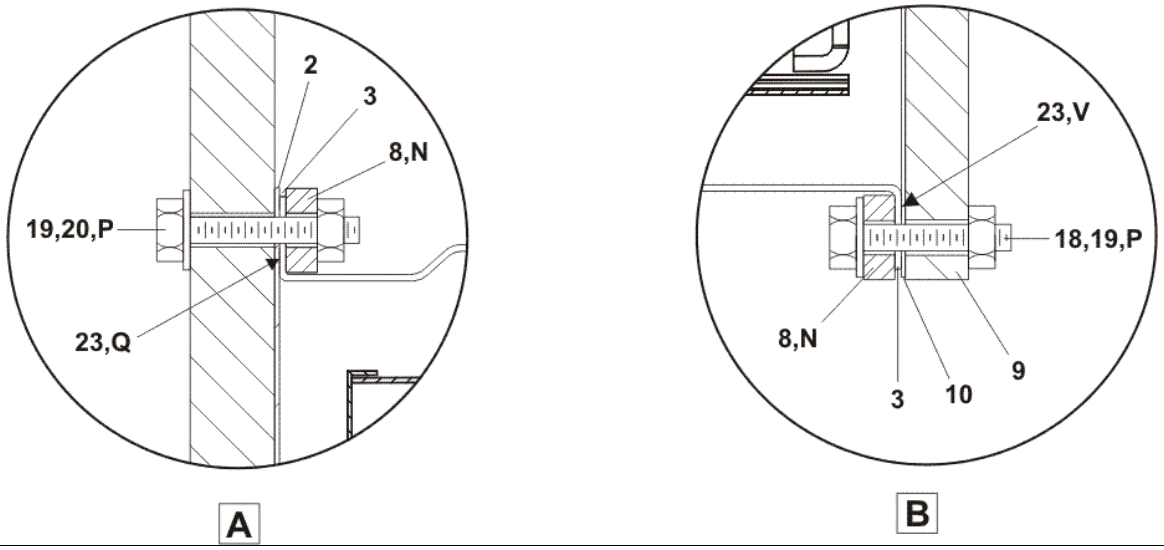


Legend

A. Top connection between the shell front and the shell side sheet
B. Bottom 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].
M. Bearing Housing Components and Installation; Refer to the document BIIFBM07

Figure 2: Cylinder Installation

Detailed views

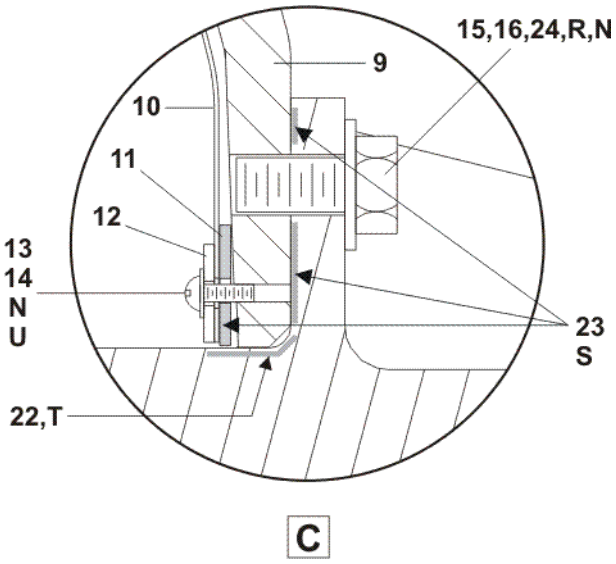


Legend

A. Top connection between the shell front and the shell side sheet
B. Bottom connection between the shell front and the shell side sheet
N. 8 instances
P. 24 instances
Q. Apply silicone between the inner shell front and shell, fully around the hole pattern.
V. Apply silicone between the lining and the shell, fully around the hole pattern.

Figure 3: Cylinder and Bearing Installation

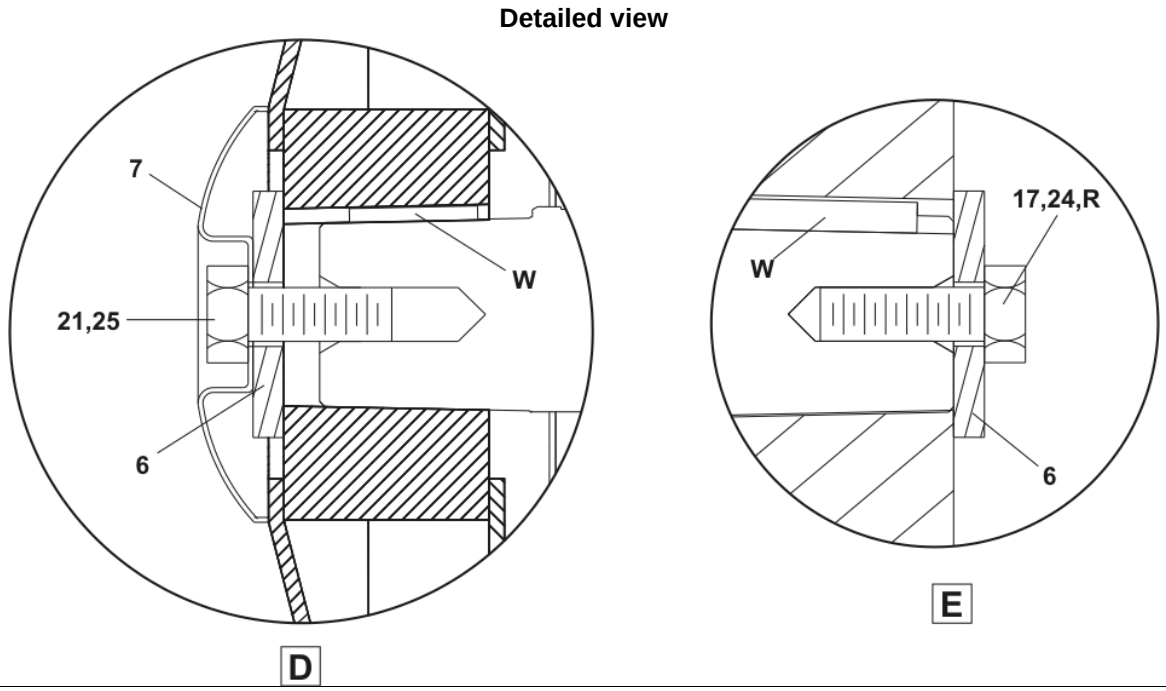
Detailed view



Legend

C. Connection between the shell rear and the bearing housing
N. 8 instances
R. Apply adhesive to the bolt, torque to 200 FT.LBS.
S. Apply silicone between the bearing housing and the shell rear, to two sides of the gasket, fully around the hole pattern.
T. Apply adhesive to the circumference.
U. Torque to 75 IN.LBS.

Figure 4: Cylinder and Bearing Installation



Legend

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 350 FT.LBS.
W. Key; Refer to the document BIIFBM08

Table 1: Parts List—Cylinder Installation 3022X8

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	GSC3022X8	Installation Group	
Components				
all	1	X2 02904	Shell front	
all	2	X2 02903	Inner shell front	
all	3	W2 02901	Shell	
all	4	ACA3022F8	Cylinder	
all	5	A33 03211	Shell rear	
all	6	02 14359A	Pull-up plate	
all	7	02 11196	Cover	
all	8	02 03208	Doubler	
all	9	Y2 03211	Shell rear	
all	10	02 03212	Liner	
all	11	02 03258	Gasket	
all	12	02 03279	Doubler	
all	13	15K040T	Bolt	
all	14	15U188	Washer	
all	15	15K215	Bolt	
all	16	15U316	Washer	
all	17	15K232A	Bolt	
all	18	15K116	Bolt	
all	19	15G198	Nut	
all	20	15K127A	Bolt	
all	21	15B208	Bolt	
all	22	20C005	Adhesive	
all	23	20C040B	Silicone	
all	24	20C007G	Adhesive	
all	25	15U350	Washer	

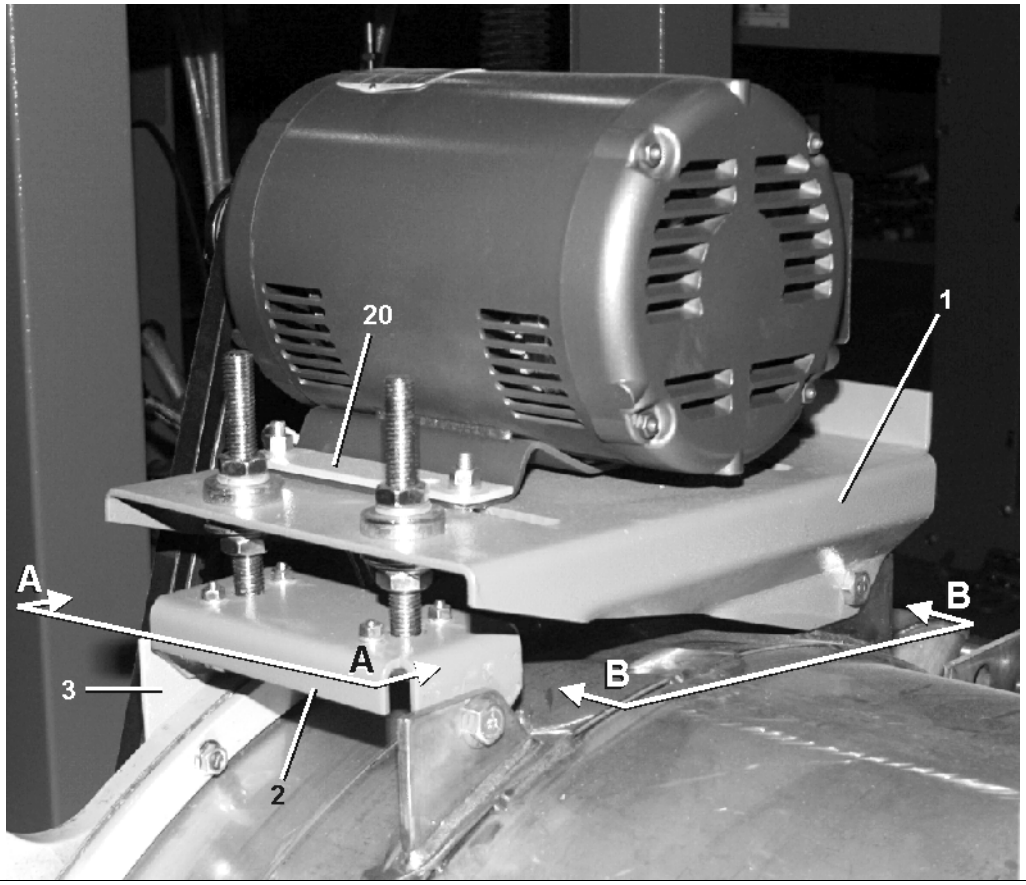
— End of BIIFBM06 —

BIIFBM09 (Published) Book specs- Dates: 20090814 / 20090814 / 20100514 Lang: ENG01 Applic: MXA

Drive Motor Installation

Figure 1: Drive Motor Installation

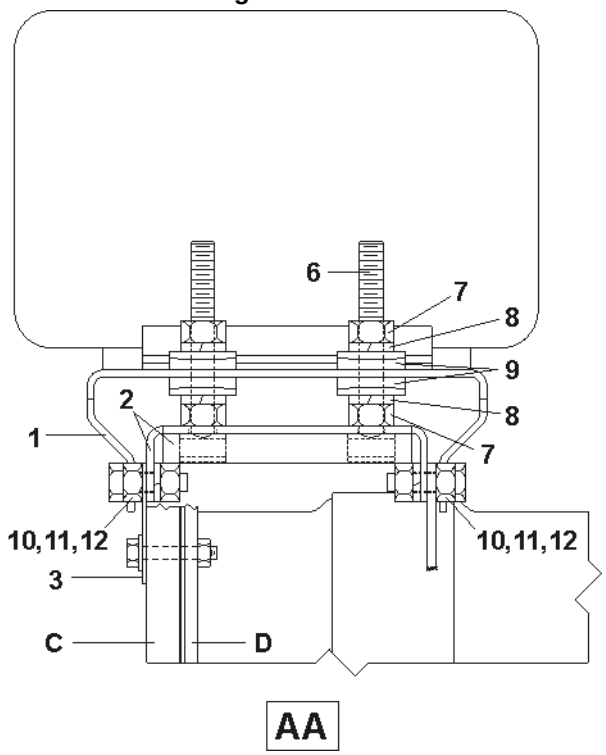
General View



Legend

Figure 2: Detailed view

Right side view

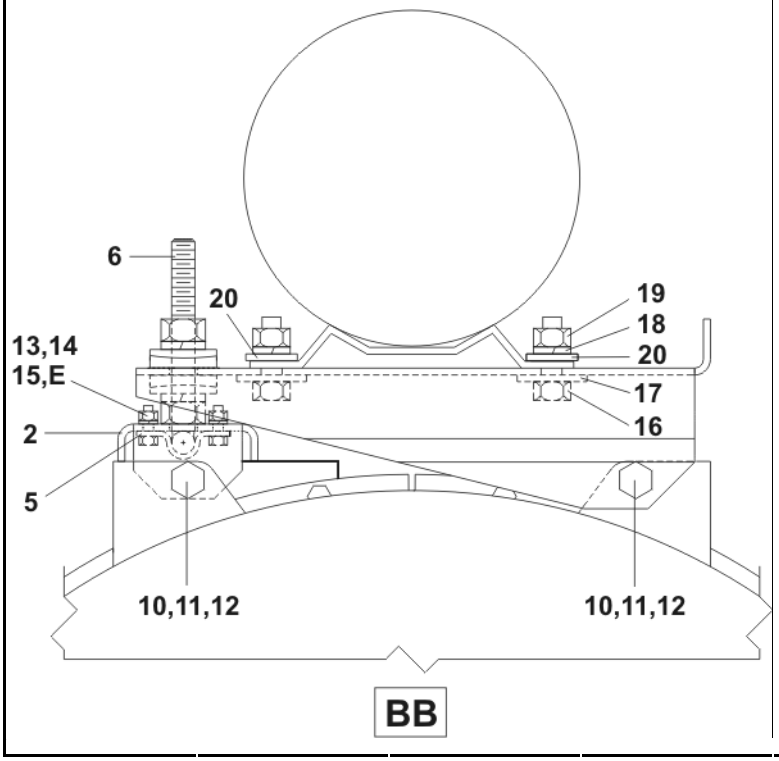


Legend

C. Shell front
D. Doubler

Figure 3: Detailed view

Rear view



Legend

E. instances 4

Table 1: Parts List—Drive Motor Installation

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.

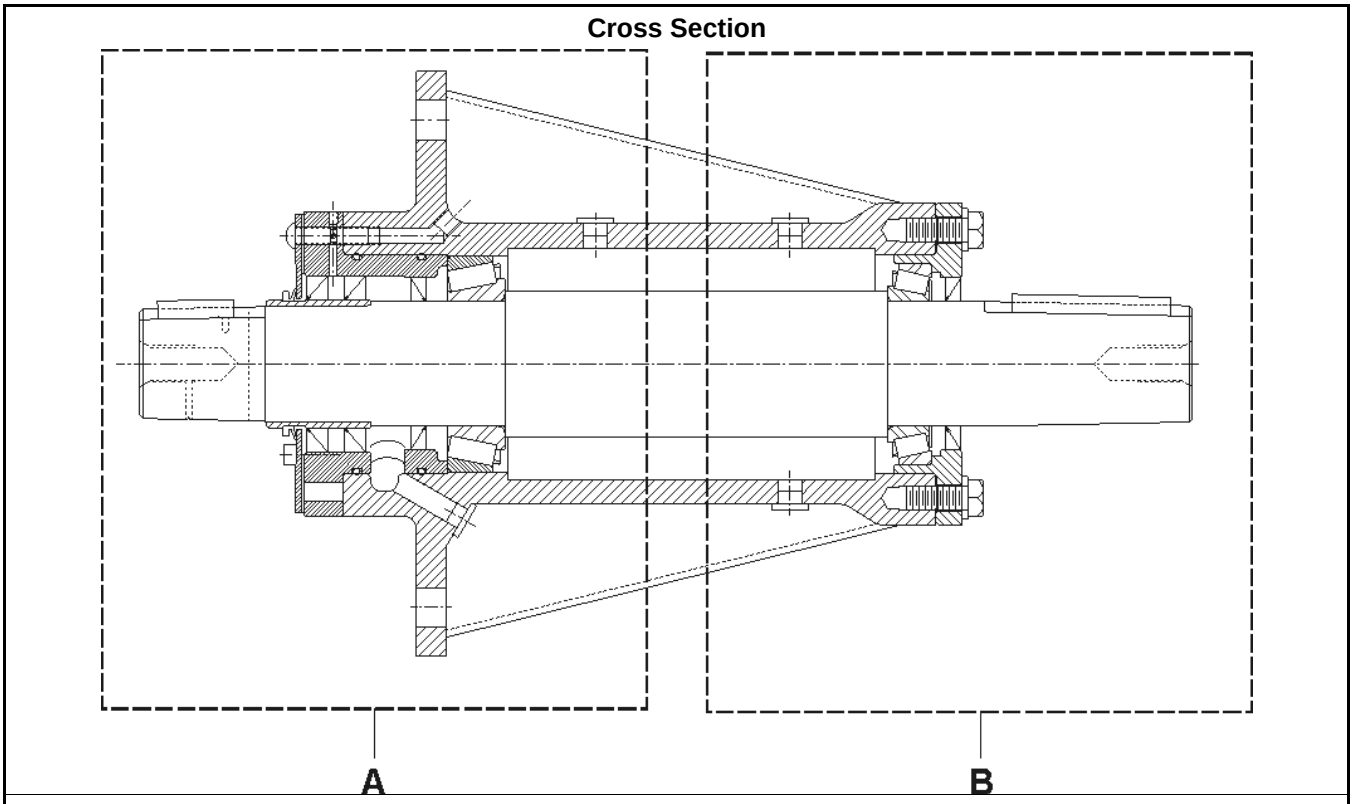
Used In	Item	Part Number	Description/Nomenclature	Comments
Assemblies				
	A	ADB3022X8	Assembly	
Components				
all	1	02 02904D	Piece part	
all	2	02 02905	Piece part	
all	3	02 02904E	Piece part	
all	5	02 03828	Piece part	
all	6	02 03829	Bolt	
all	7	15G236C	Nut	
all	8	15U315	Washer	
all	9	17W030	Washer	
all	10	15K162	Bolt	
all	11	15U300	Washer	
all	12	15G230	Nut	
all	13	15K039	Bolt	
all	14	15U180	Washer	
all	15	15G165	Nut	
all	16	15K110	Bolt	
all	17	15U241SZ	Washer	
all	18	15U255	Washer	
all	19	15G205	Bolt	
all	20	02 03839B	Piece part	

— End of BIIFBM09 —

BIIFBM08 (Published) Book specs- Dates: 20090717 / 20090717 / 20100514 Lang: ENG01 Applic: MXA

Bearing Housing Components

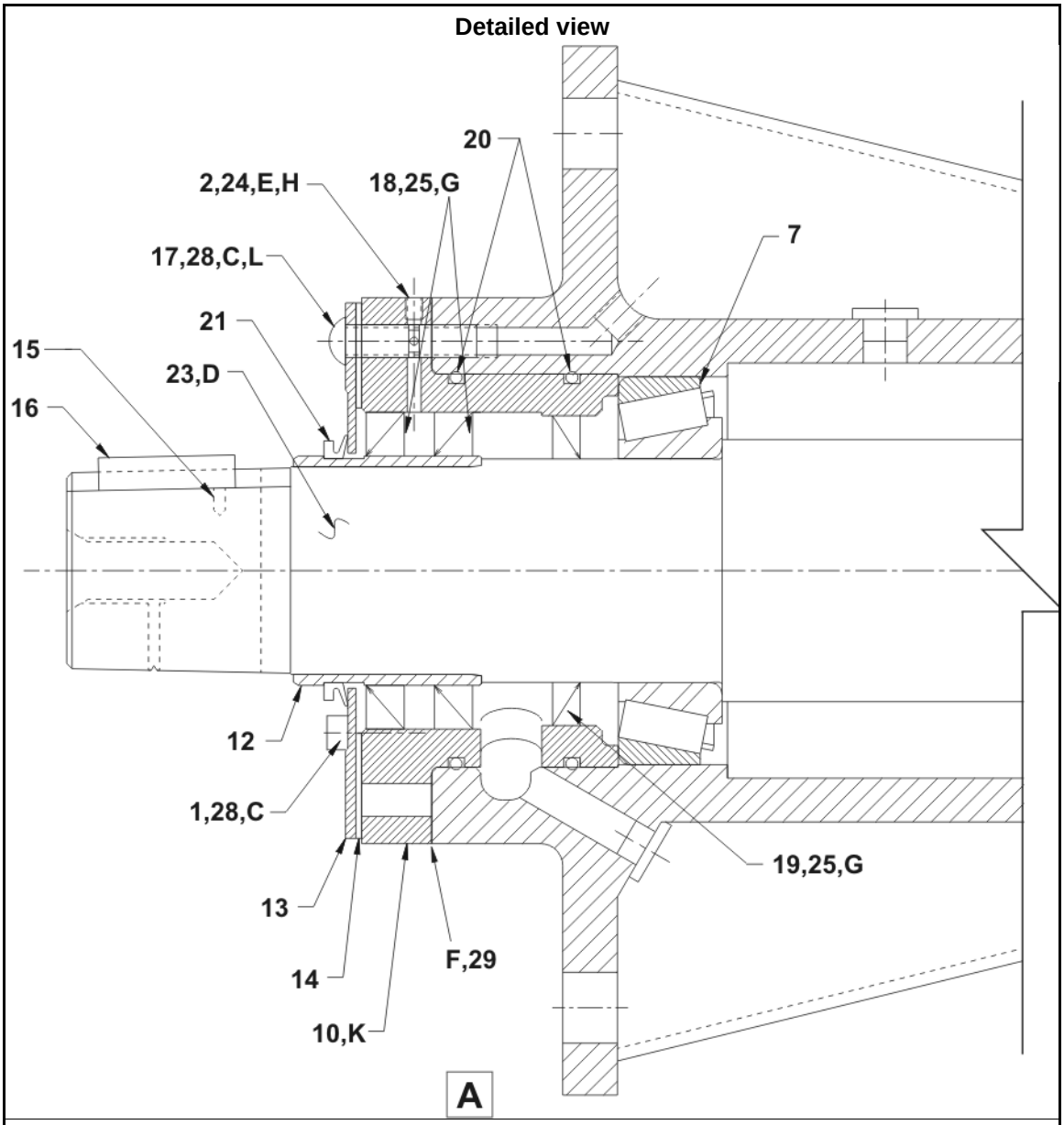
Figure 1: Bearing housing



Legend

A. Detail view of the bearing housing front
B. Detail view of the bearing housing rear

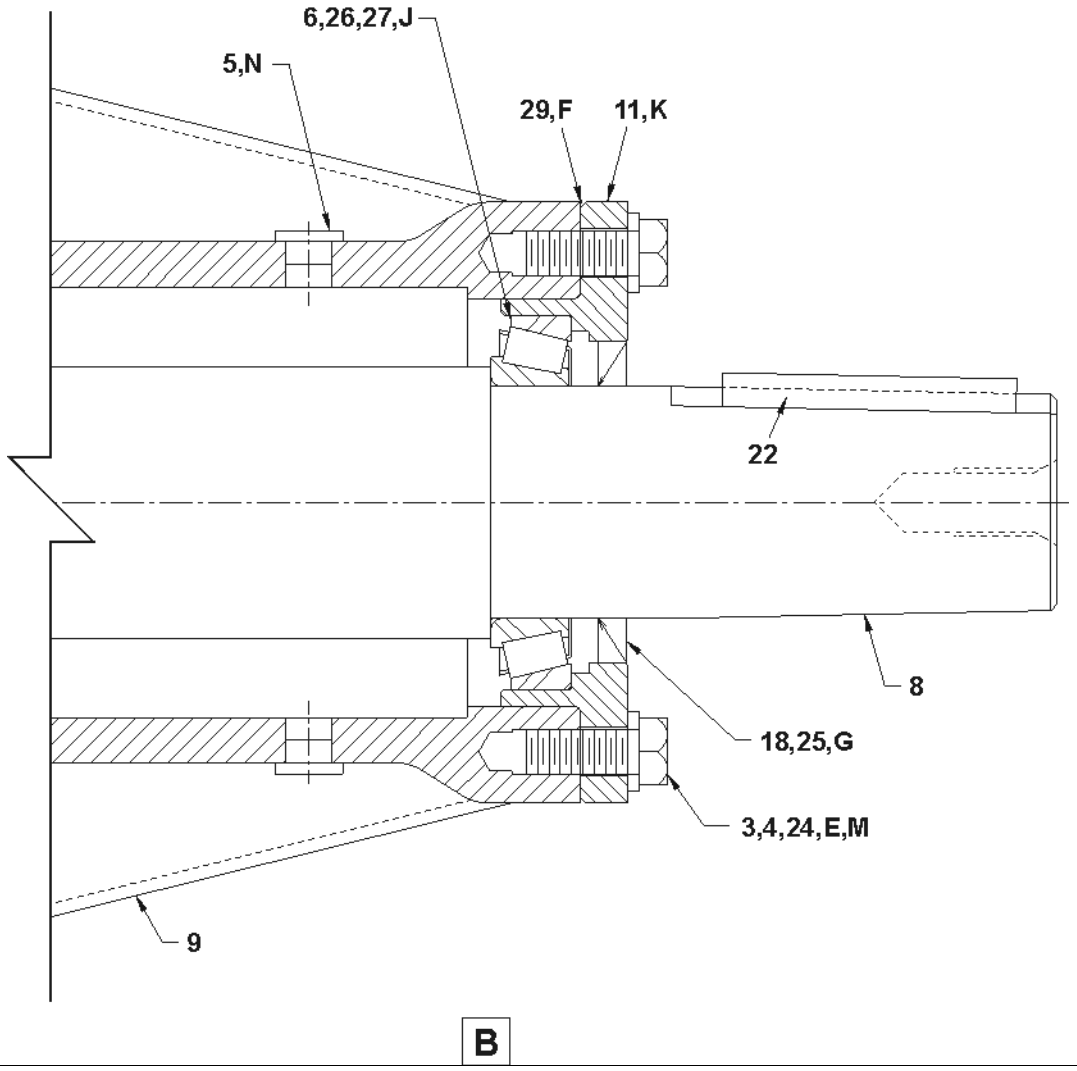
Figure 2: Bearing housing



Legend

A. Detail view of the bearing housing front
C. Apply antiseize compound to the bolt.
D. Clean the shaft and the inner sleeve. Make sure that they are clean and free from oil. Apply adhesive, then the sleeve. Make sure of a bond on a minimum of 75% of the surface.
E. Apply adhesive to the bolt.
F. Add shims to a thickness of .004 inches -.005 inches. The shaft must turn in the housing. For details of the recommended procedure, refer to the document MSSM0261AE.
G. Apply adhesive to the outer circumference of the seals. Let the adhesive dry for 24 hours. Make sure that all applicable surfaces are clean and free from oil before you assemble.
H. Set the setscrew to be flush with the outer edge of the seal holder.
K. The seal holders must be fully down before you tighten the fasteners.
L. When you change the seal holder, torque item 17 to 150 IN.LBS. This bolt has a nylon insert and a hole to let grease to the water seals. Torque all remaining bolts to the standard torque.

Figure 3: Bearing housing



Legend

B. Detail view of the bearing housing rear
E. Apply adhesive to the bolt.
F. Add shims to a thickness of .004 inches -.005 inches. The shaft must turn in the housing. For details of the recommended procedure, refer to the documentMSSM0261AE.
G. Apply adhesive to the outer circumference of the seals. Let the adhesive dry for 24 hours. Make sure that all applicable surfaces are clean and free from oil before you assemble.
J. Apply primer and adhesive to the rear bearing cup and holder housing.
K. The seal holders must be fully down before you tighten the fasteners.
M. instances8
N. instances4

Table 1: Parts List—Bearing Housing Components

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	ABM3022XA	Assembly3022x	
	B	ABM3022XB	AssemblyFluoroelastic polymer (Viton)3022x	
	C	ABM30211A	Assembly3022H	
	D	ABM30211B	AssemblyFluoroelastic polymer (Viton)3022H	
			Components	
all	1	15K143D	Bolt	
all	2	15Q068A	Bolt	
all	3	15K154A	Bolt	
all	4	15U317B	Washer	
all	5	27A253	Plug	
all	6	54A915916	Bearing	
all	7	54A593597	Bearing	
all	8	X2 03833B	Shaft	
all	8	X2 03232A	Shaft	
all	9	X2 03840H	Bearing housing	
all	10	X2 03831	Seal holder	
all	11	X2 03832	Seal holder	
all	12	02 03825	Seal sleeve	
all	13	02 03826	Cover	
all	14	02 03823A	Gasket	
all	15	15H089S	Pin	
all	16	02 02294A	Key	
all	17	15K106FA	Bolt	
A	18	24S053	Seal	
B	18	24S053V	Seal	
A	19	24S052A	Seal	
B	19	24S052V	Seal	
all	20	60C151A	O-ring	
all	21	24S105FN	Seal	
all	22	15E230	Key	
all	23	20C009	Adhesive	
all	24	20C007H	Adhesive	
all	25	20C012D	Adhesive	
all	26	20C011B	Adhesive	
all	27	20C006P	Primer	
all	28	20C020	Adhesive	
all	29A	02 03818J	SHIM .003	
all	29B	02 03818K	SHIM .005	
all	29C	02 03818L	SHIM .0075	
all	29D	02 03818M	SHIM .010	

— End of BIIFBM08 —

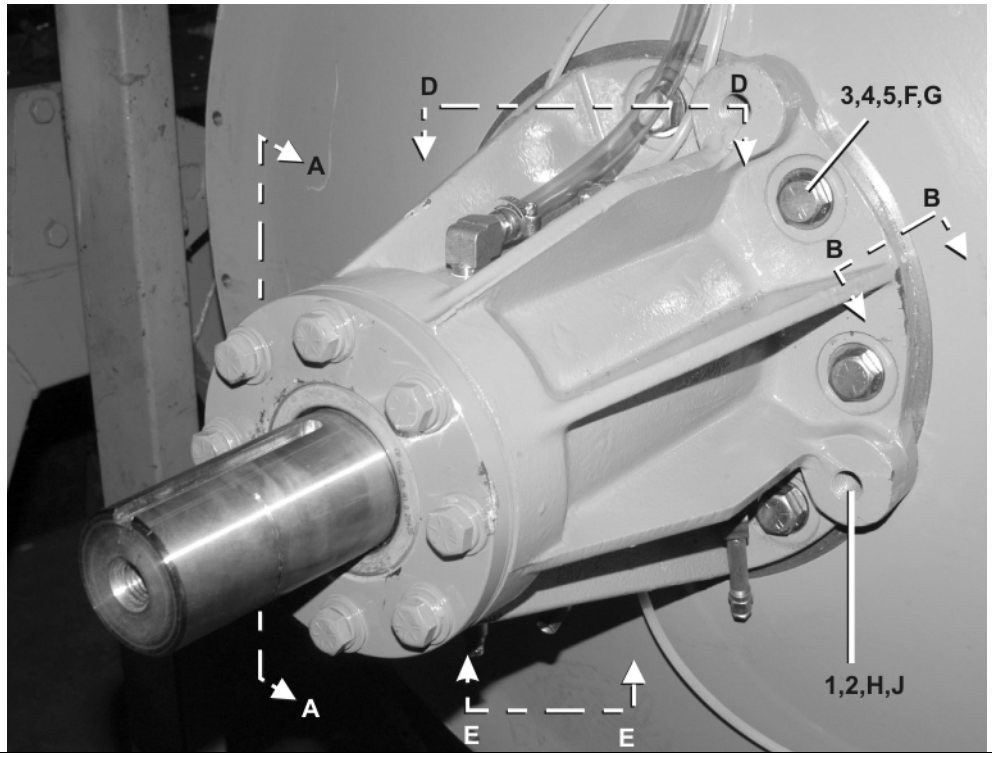
BIIFBM07 (Published) Book specs- Dates: 20090814 / 20090814 / 20100514 Lang: ENG01 Applic: MXA

Bearing Housing Components and Installation

Pulley and related parts are not shown.

Figure 1: Bearing Housing Components and Installation

General View

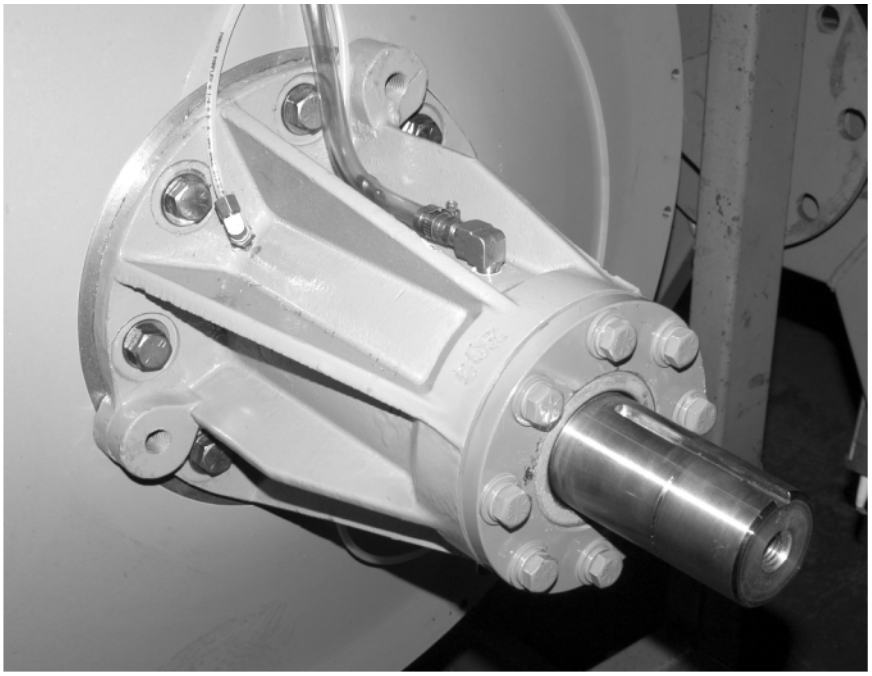


Legend

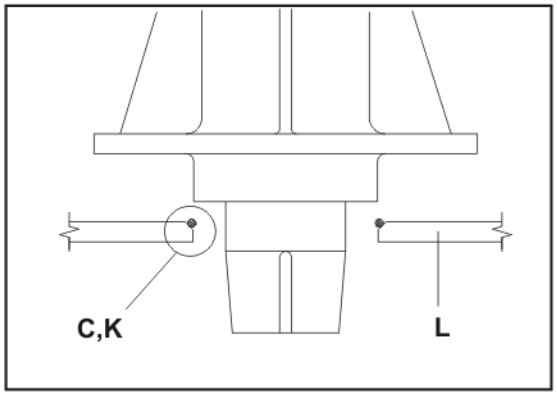
AA. Right side
BB. Connection between the shell rear and the bearing housing
C. Detailed view
DD. Top view
EE. Bottom view
F. 8 instances
G. Apply adhesive to the bolt, torque to 200 FT.LBS.
H. 3 instances
J. Use the bolts to push the bearing housing off the shell rear to disassemble.

Figure 2: Bearing Housing Components and Installation

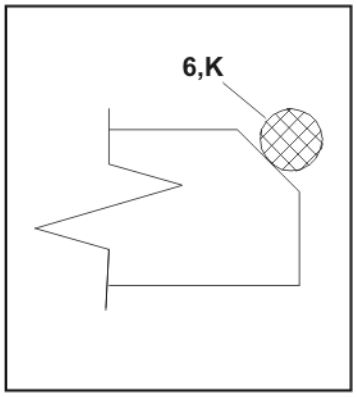
Detailed views



AA



BB



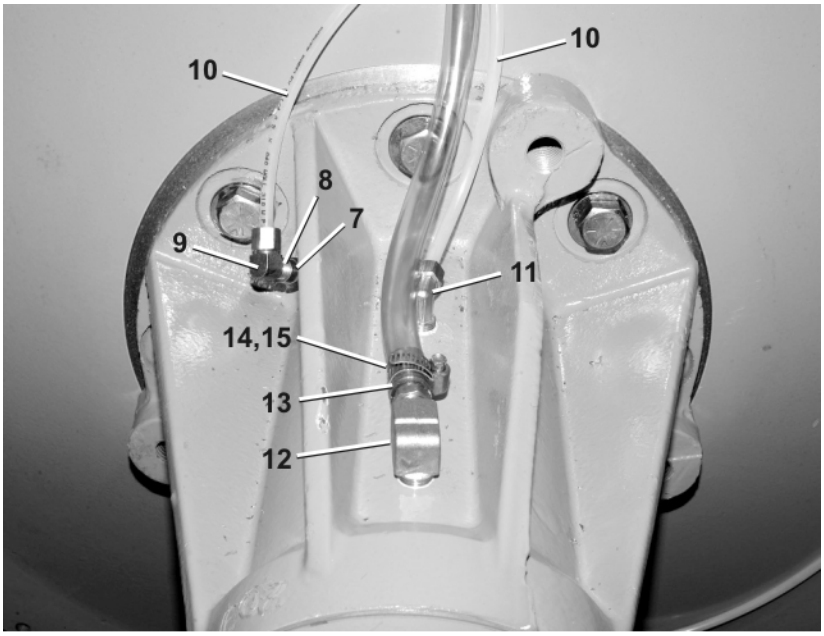
C

Legend

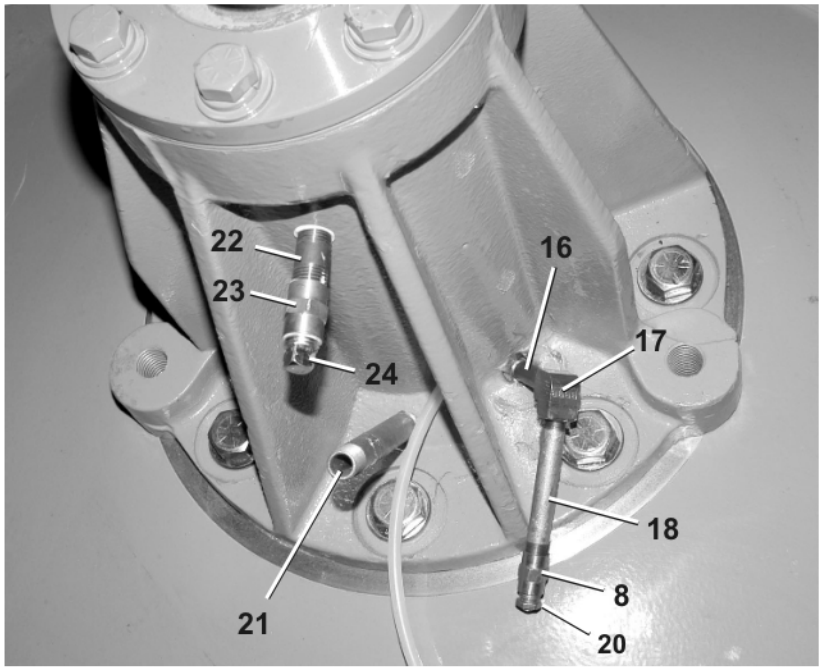
K. To install the bearing housing, first apply a .25"[6mm] bead of silicone to this edge of the shell rear.

L. Shell rear

Figure 3:



DD



EE

Legend

DD. Top view
EE. Bottom view

Table 1: Parts List—Bearing Housing Components and Installation

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	GBM3022X8	Installation Group	
	B	ABM3022XA	Assembly	
Components				
all	1	15K231	Bolt	
all	2	15U340	Washer	
all	3	15K215	Bolt	
all	4	15U316	Washer	
all	5	20C008C	Adhesive	
all	6	20C040B	Silicone	
all	7	5N0CCLSB42	Pipe nipple	
all	8	5SCC0CBE	Coupling	
all	9	53A031B	Elbow	
all	10	60E004TC	Flexible tubing	
all	11	53A031XB	Elbow	
all	12	5SL0EBEC	Elbow	
all	13	51E507	Hose stem	
all	14	60E005P	Flexible tubing	
all	15	27A040	Hose clamp	
all	16	5N0C02ABE2	Pipe nipple	
all	17	5SL0CBEA	Elbow	
all	18	5N0C03AG42	Pipe nipple	
all	20	54M029	Relief plug	
all	21	5N0E05AG42	Pipe nipple	
all	22	5N0E01KBE2	Pipe nipple	
all	23	5SCC0EBE	Coupling	
all	24	5SP0EFFSSM	Plug	

— End of BIIFBM07 —

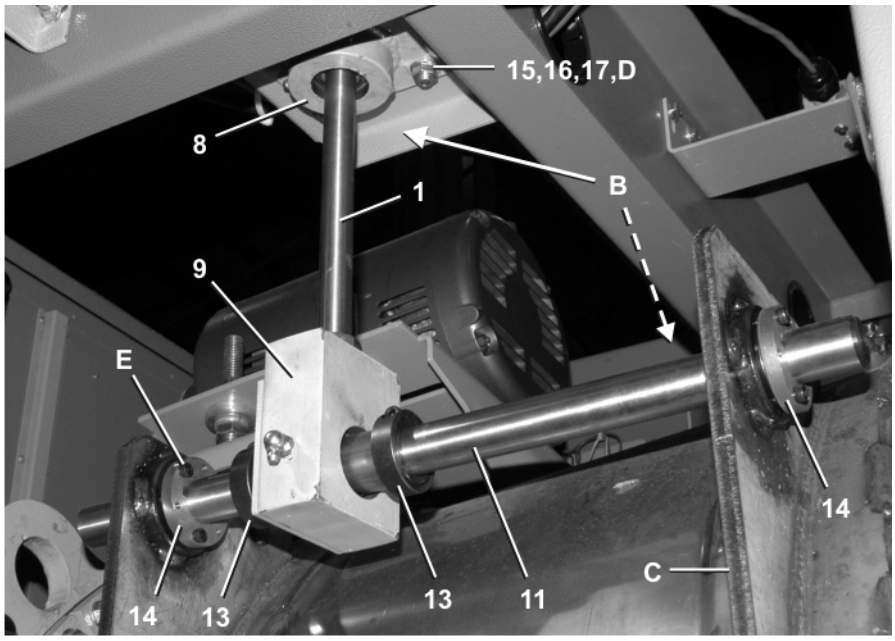
Suspension 3

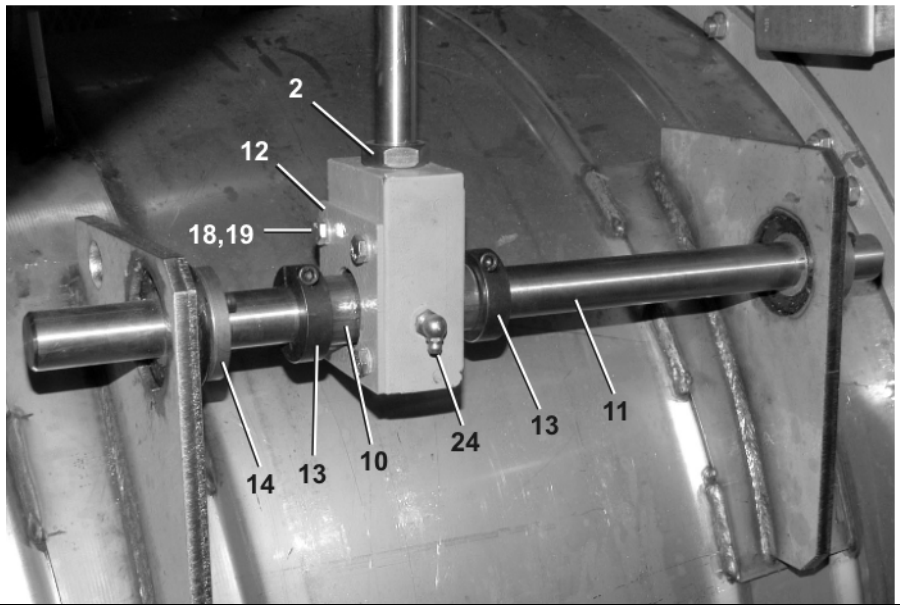
BIIFBM10 (Published) Book specs- Dates: 20130213 / 20130213 / 20130213 Lang: ENG01 Applic: MXA

Suspension Components and Installation

Figure 1: Suspension Components and Installation

General Views



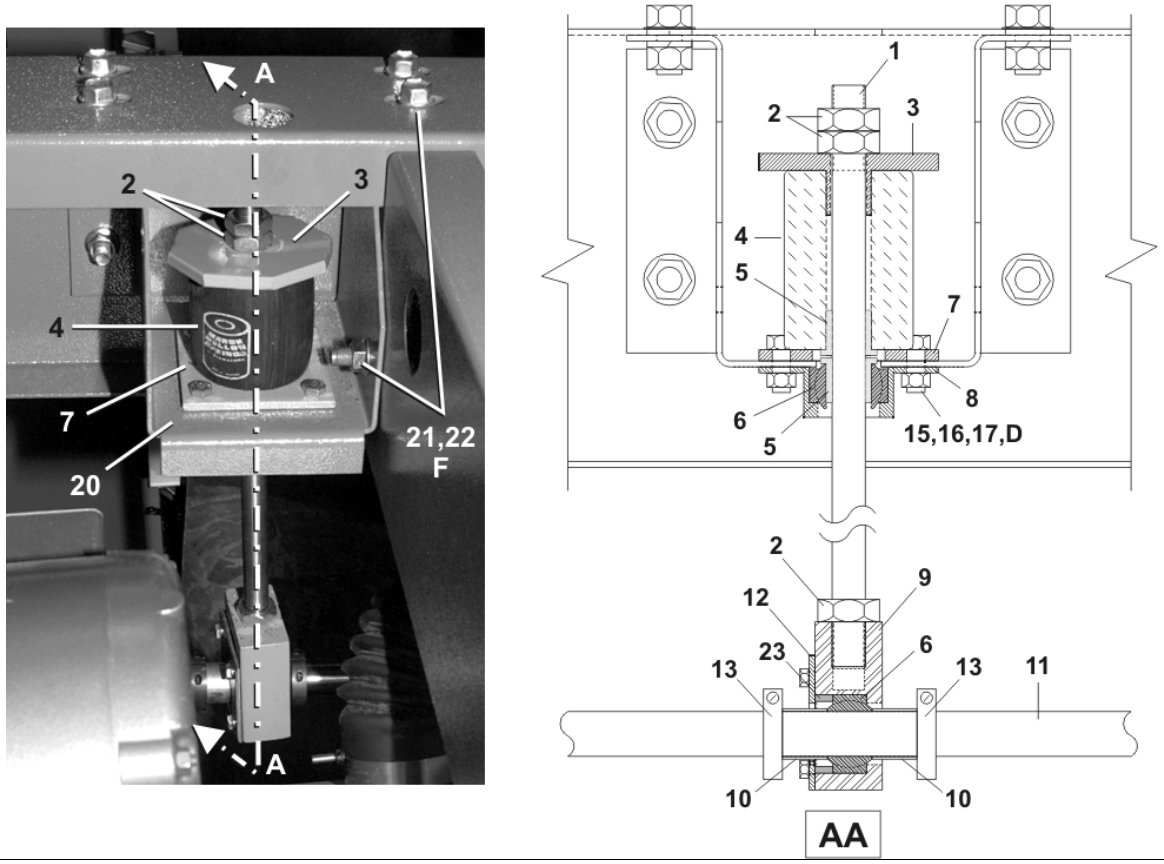


Legend

B. The two sides use the same suspension.
C. Shell
D. instances 4
E. Torque to 60 IN. LBS.

Figure 2: Suspension Components and Installation

Detailed views



Legend

AA. Cross Section
D. instances 4
F. instances 9

Figure 3: Bottom view

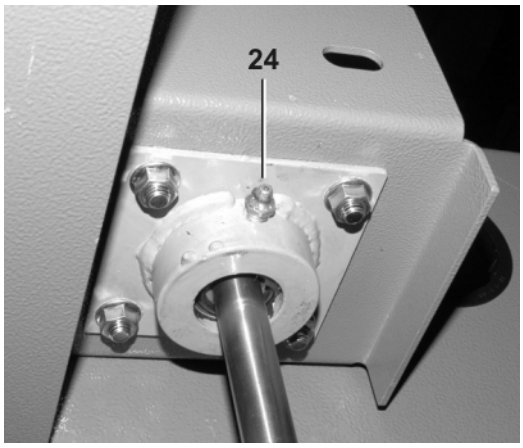


Table 1: Parts List—Suspension Components and Installation

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	GMS3022X8	Installation Group	
Components				
all	1	98CX02921G	Rod	
all	2	15G239S	Nut	
all	3	W2 02924C	Piece part	
all	4	60B135	Rubber spring	
all	5	5.4E+23	Flange bearing	
all	6	54A709	Ball bushing	
all	7	02 02923	Piece part	
all	8	W2 02922	Piece part	
all	9	X2 02921E	Piece part	
all	10	02 02921H	Spacer	
all	11	X2 02921F	Piece part	
all	12	02 02921G	Piece part	
all	13	54JH11000C	Collar	
all	14	56Q1RJA	Bushing	
all	15	15K095	Bolt	
all	16	15U255	Washer	
all	17	15G205	Nut	
all	18	15K039	Bolt	
all	19	15U180	Washer	
all	20	02 02912	Piece part	
all	21	15K153H	Bolt	
all	22	15G222B	Nut	
all	23	02 02921J	Spacer	
all	24	54M015	Grease fitting	

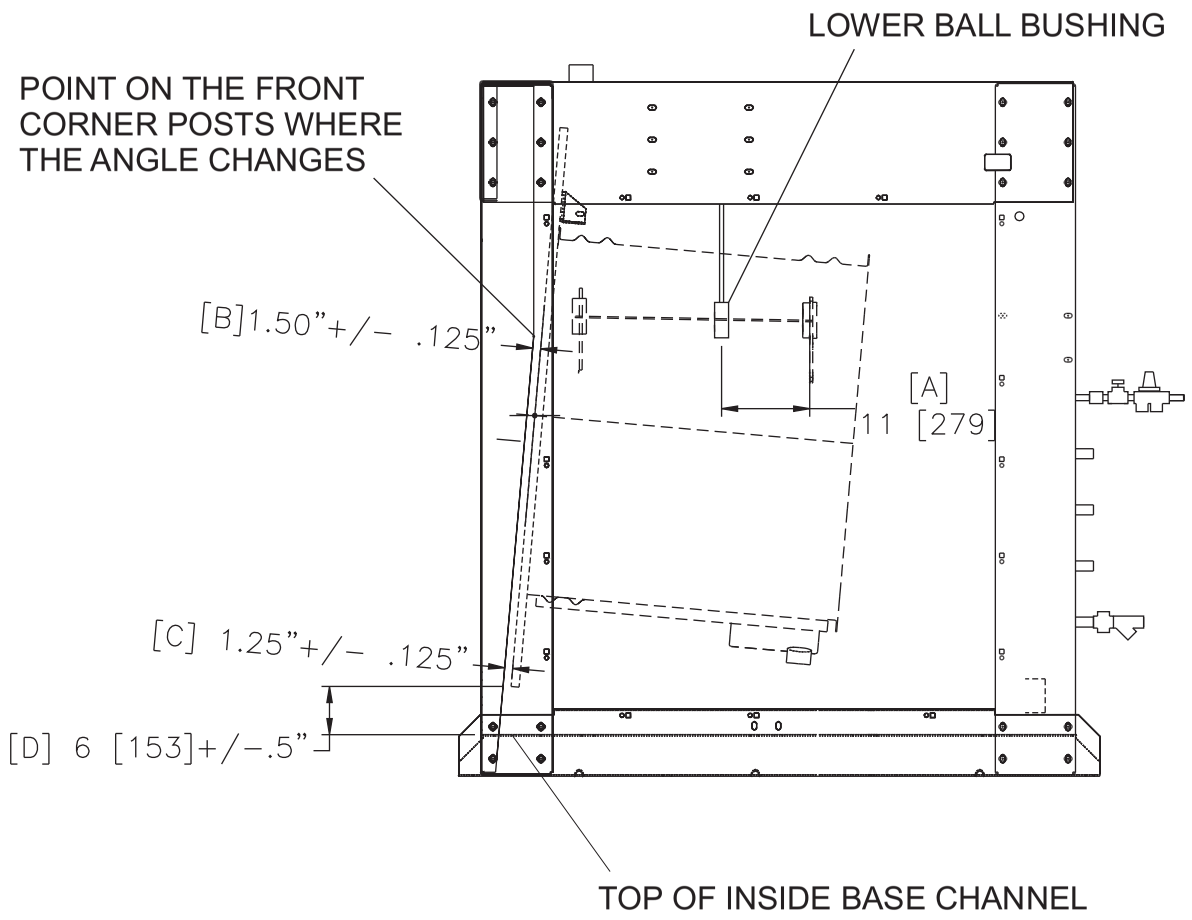
— End of BIIFBM10 —

Suspension Settings

3022X_, 3626X8_, 4226X7_, 4232X7_

Pellerin Milnor Corporation
P. O. Box 400, Kenner, LA 70063-0400

Litho in U.S.A.



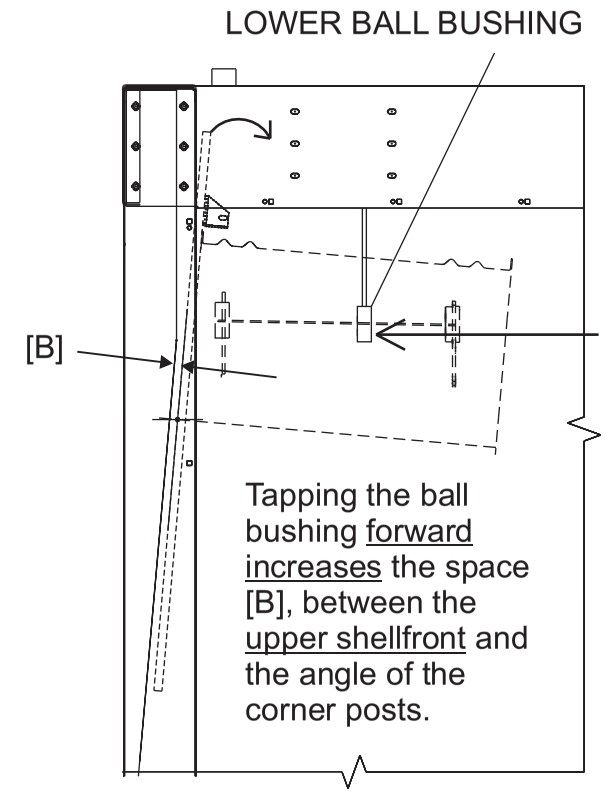
A. Initially set the lower ball bushing [A] from the shell mounting bracket.

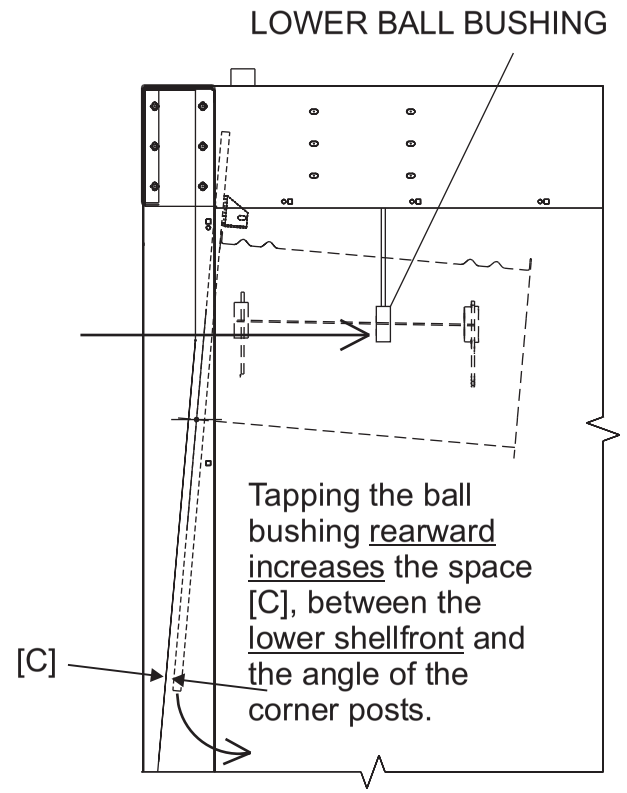
B. The space between the shellfront and the point on the front corner posts where the angle changes should be [B] 1.50" +/- .125".

C. The space between the lower shellfront and the angle on the corner posts should be [C] 1.25" +/- .125".

D. The height from the bottom of the shellfront to the top of the inside base channel should be [D] 6" +/- .5".

ADJUSTING THE SHELLFRONT POSITION:





MODELS:	[A]
3022X_	4-1/2"[114]
3626X_	6-1/2[165]
4226X_	8"[203]
4232X7_	11"[279]

BIIFBM11 (Published) Book specs- Dates: 20090814 / 20090814 / 20100514 Lang: ENG01 Applic: MXA

Shock Absorbers

Figure 1: Shock Absorbers

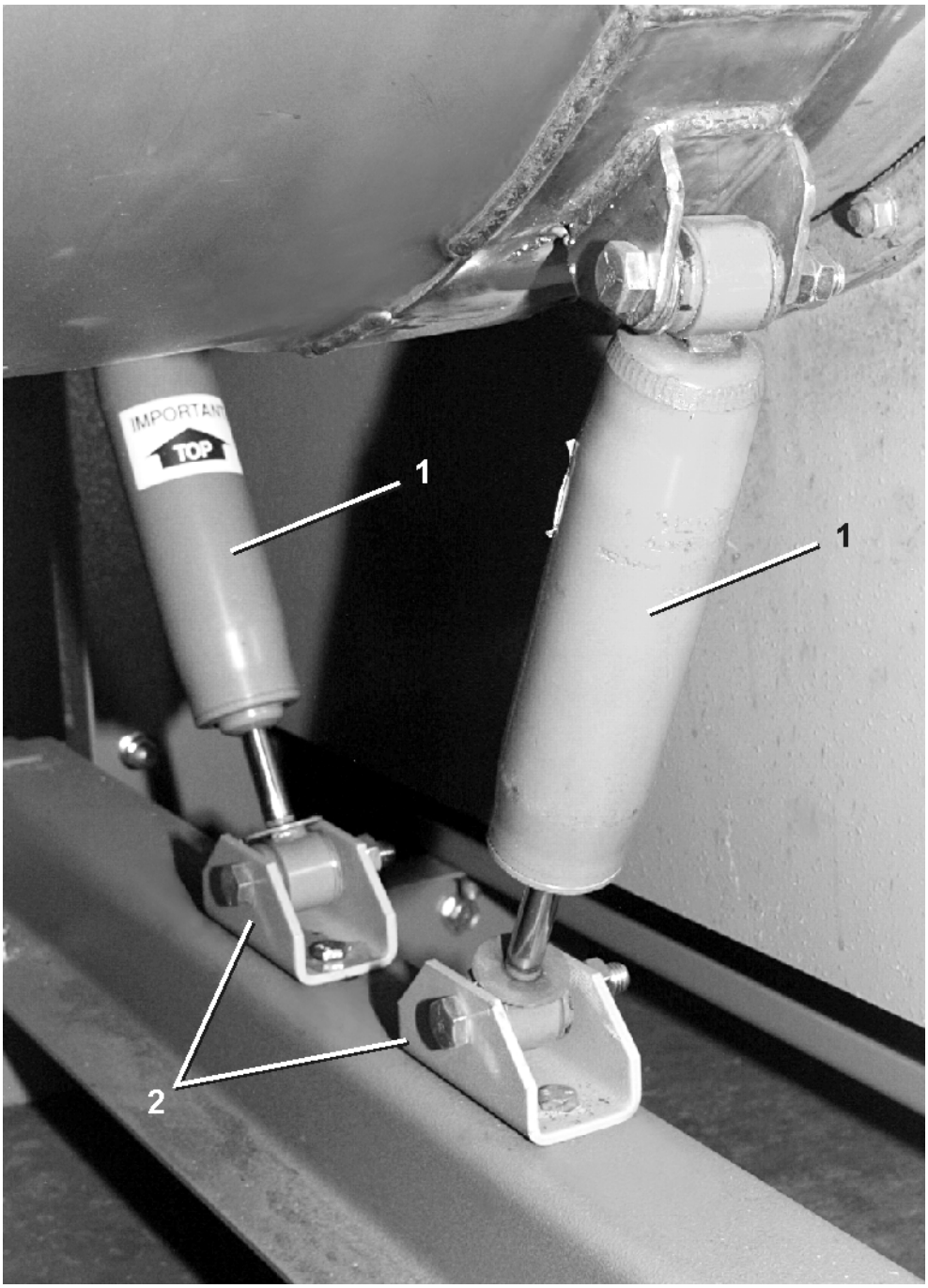
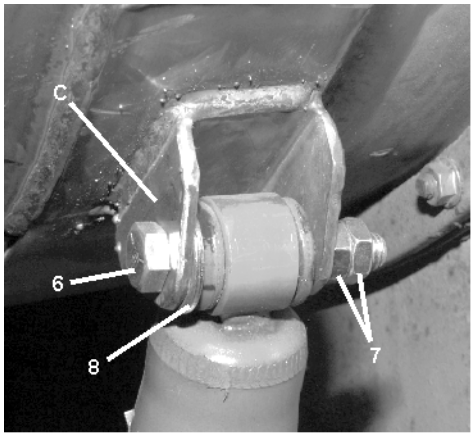
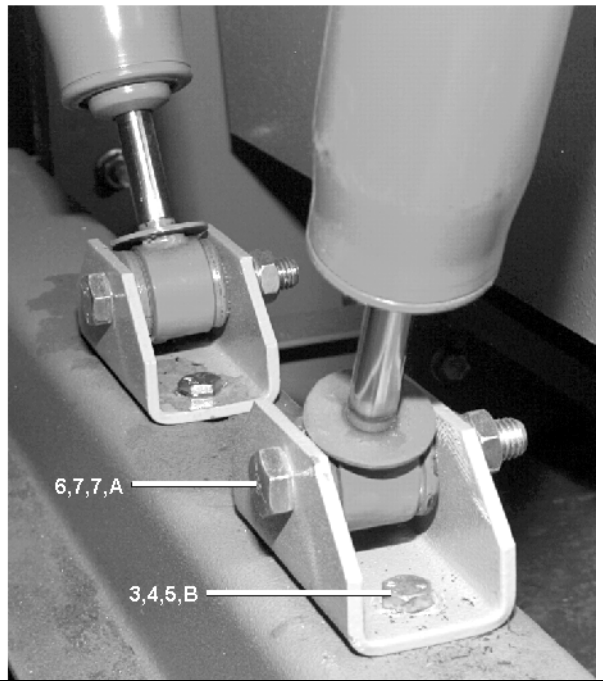


Figure 2: Shock Absorbers

Detailed views





Legend

A. instances 2
B. instances 4
C. The two sides use the same suspension.

Table 1: Parts List—Shock Absorbers

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	GIC3022X8	Installation Group	
Components				
all	1	60BS6838	Shock Absorbers	
all	2	02 02901B	Piece part	
all	3	15K095	Bolt	
all	4	15G205	Nut	
all	5	15U255	Washer	
all	6	15K201A	Bolt	
all	7	15G230	Nut	
all	8	15U280	Washer	

— End of BIIFBM11 —

Shell and Door Assemblies

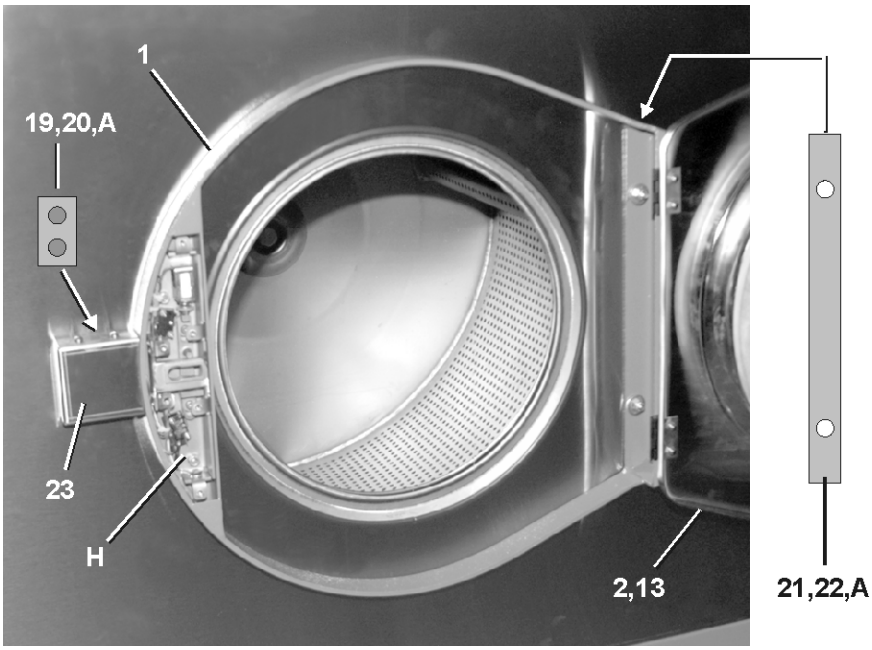
4

BIIFBM12 (Published) Book specs- Dates: 20130405 / 20130405 / 20130405 Lang: ENG01 Applic: MXA

Door Installation

Figure 1: Door Installation

Shims



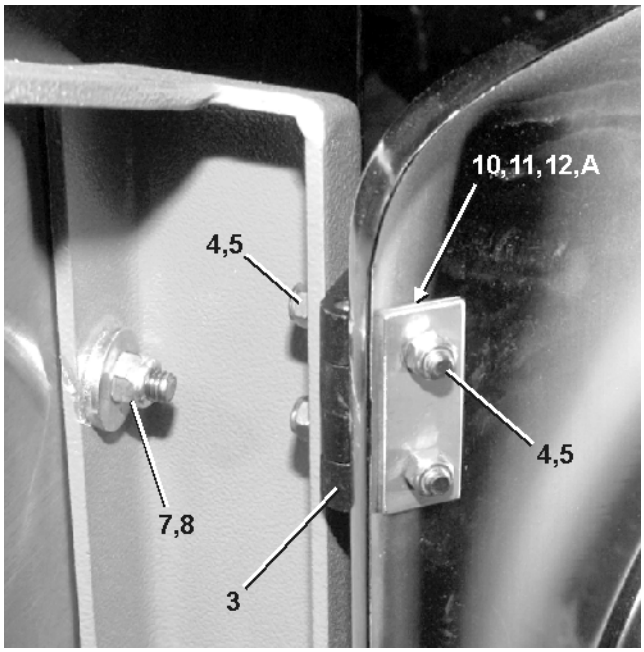
Legend

A. Add or remove shims until the door locks correctly and seals.

H. Door lock mechanism Refer to the document BIIFBM14.

Figure 2: Door Installation

Shims

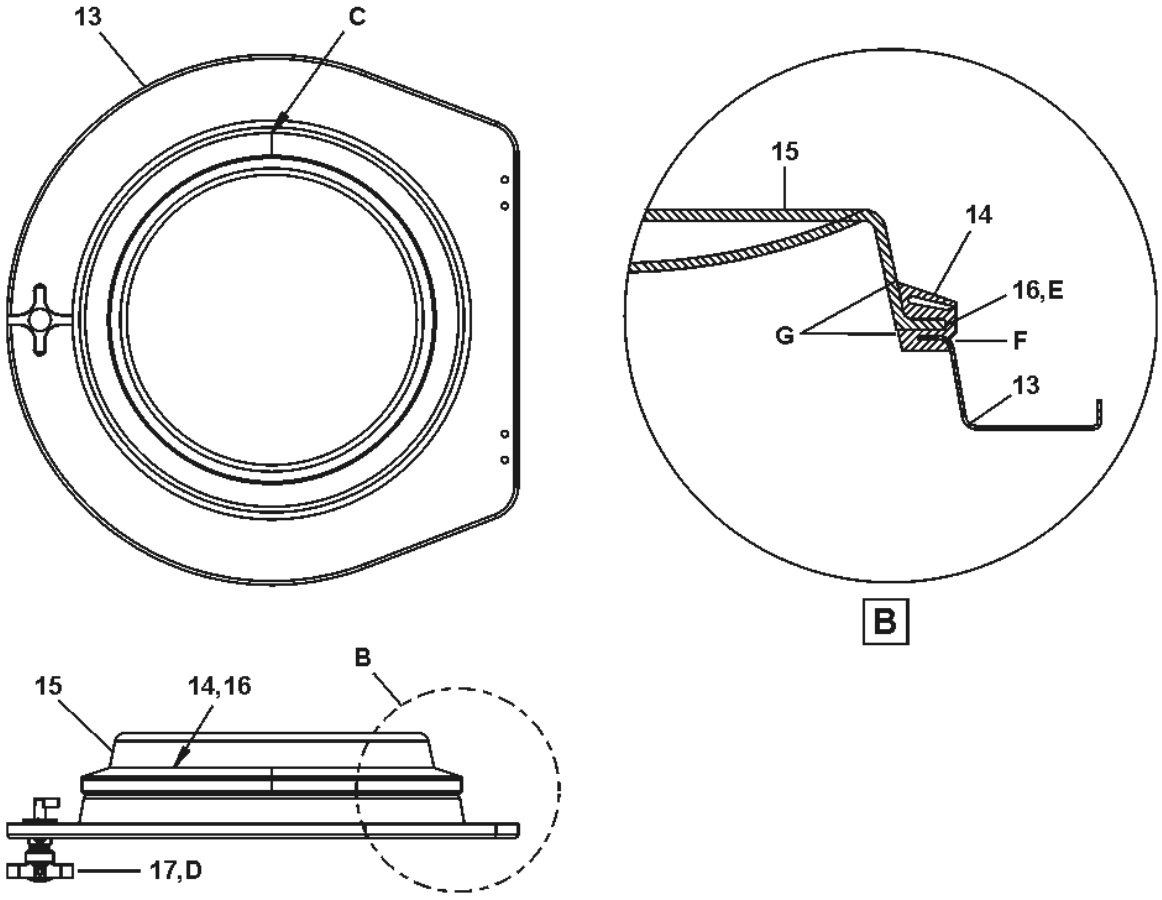


Legend

A. Add or remove shims until the door locks correctly and seals.

Figure 3: Door Installation

Door Glass Installation

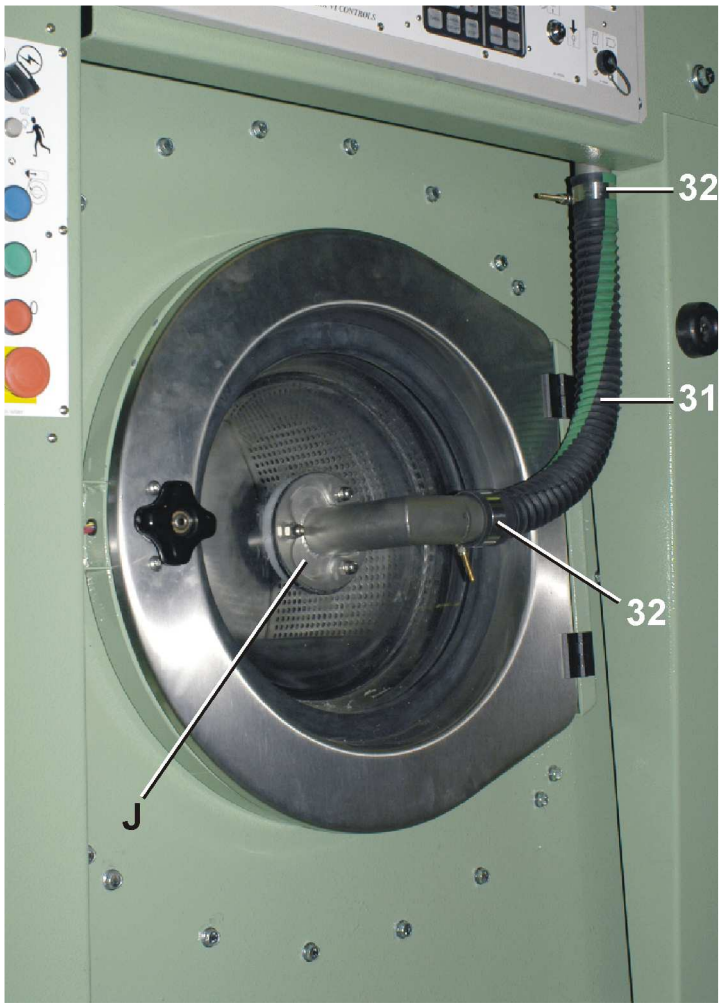


Legend

B. Detailed view
C. Make sure that the gasket joint is at the top center.
D. Door handle and lock actuatorSee the document BIIFBM13.
E. Apply a continuous bead of silicone around the rubber seal, in the area where you will install the glass.
F. Install the gasket into the door before you install the glass. See the location of the gasket joint. Adjust it if necessary.
G. While you install the glass into the rubber seal, make sure that no silicone is on the outer surface.

Figure 4: Recirculation door

General View



Legend

J. Recirculation nozzle

Figure 5: Detailed view

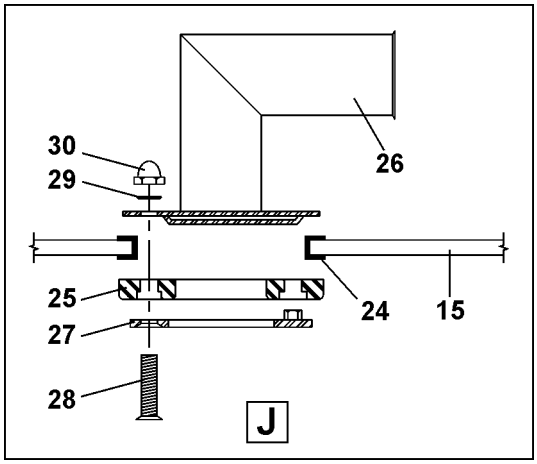


Table 1: Parts List—

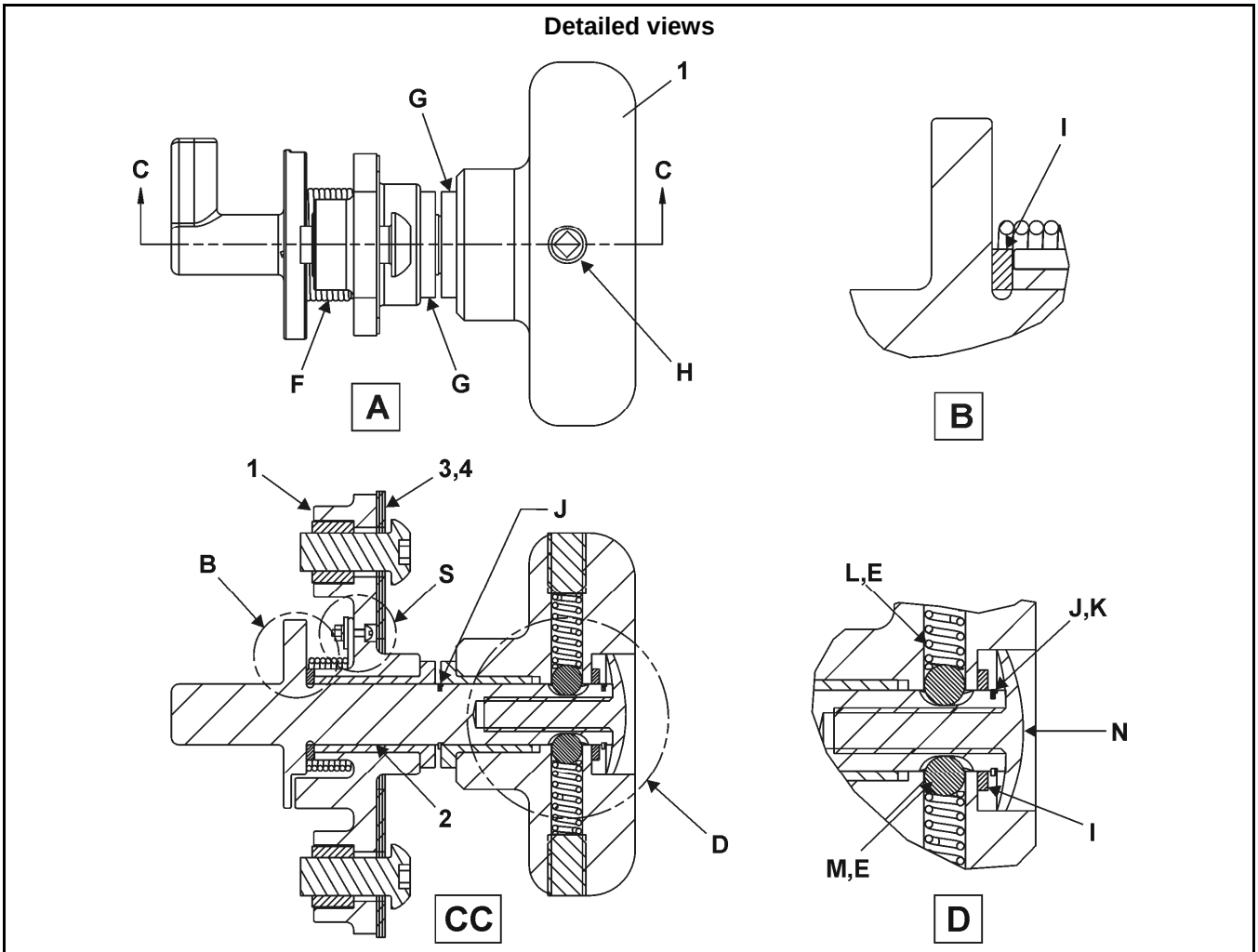
Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	**Item**	**Part Number**	**Description/Nomenclature**	**Comments**
			Assemblies	
	A	GSD3022H8	Shell door, Installation Group	3022X8J, 3022X8W
	B		Recirculation Door Installation	3022X8W
			Components	
all	1	A33 03030	Frame	
A	2	A33 03229	Shell door, Assembly	
B	2	A33 03229A	Recirculation door, Assembly	
all	3	27A108	Hinge	
all	4	15U137	Washer, Stainless steel	
all	5	15G004HA	Nut, Stainless steel	
all	7	15U200	Washer, Stainless steel, 5/16"	
all	8	15G188	Nut, Stainless steel, 5/16"	
all	9	15G192	Nut, Stainless steel, 5/16	
all	10	02 04212A	Shim-14GA	
all	11	02 04212B	Shim-16GA	
all	12	02 04212C	Shim-18GA	
all	13	02 03229	Shell door	
all	14	02 03200	Gasket	
A	15	02 03251	Door glass	
B	15	02 03251R	Door glass, Recirculation	
all	16	20C040B	Silicone	
A	17	98CMCR0925	Door handle and lock actuator	China-made models only
B	17	02 03289A	Door handle and lock actuator	USA-made models only
all	18	15U285	Washer, Stainless steel, 1/2"	
all	19	02 03033B	Shim- 7GA, Switch	
all	20	02 03033D	Shim- 10GA ,Switch	
all	21	02 03033C	Shim- 7GA, Hinge	
all	22	02 03033E	Shim-10GA , Hinge	
all	23	02 03034A	Cover	
B	24	02 10204	Gasket,Recirculation nozzle	
B	25	02 03127	Mounting ring, UHMW	
B	26	W2 10586N	Recirculation nozzle	
B	27	W2 03128	Mounting plate	
B	28	15N223	Bolt, 3/8 "	
B	29	24G030N	Washer, Nylon, .379	
B	30	15G200	Nut, Stainless steel, 3/8"	
B	31	6E+18	Hose 1.75" X 23.5"	
B	32	27A060	Hose clamp, 1.3125"-2.25"	

— End of BIIFBM12 —

BIIFBM13 (Published) Book specs- Dates: 20140327 / 20140327 / 20140327 Lang: ENG01 Applic: IFB

Door Handle and Lock Actuator

Figure 1: Door Handle and Lock Actuator

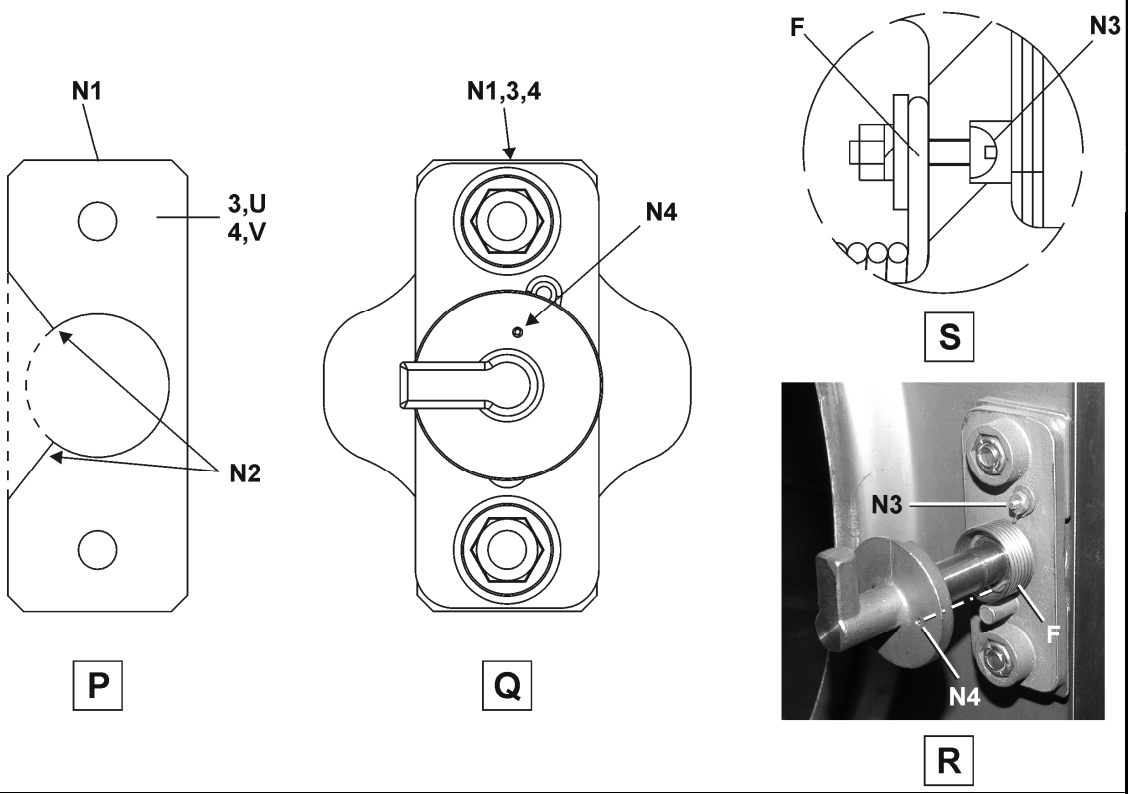


Legend

A. Top
B. Detailed view
CC. Cross Section
D. Detailed view
E. instances 4
F. Torsion spring
G. Flange bearing
H. Bolt
I. Thrust washer
J. Retainer ring
K. Do not open the ring more than necessary to get it on the shaft.
L. Spring
M. Roller ball
N. Retainer

Figure 2: Add or remove shims until the door locks correctly and seals.

Detailed views



Legend

N1. Add shims to make the latch looser. Remove shims to make the latch tighter. To add shims, add a notch to the shims as shown. Then you will not have to remove the handle assembly. When you remove or add shims, always start with the thinnest shim.

N2. Make a notch as shown.

N3. Put in the machine screw. Put the eye of the torsion spring on the screw then put the flat washer, lock washer and nut on the screw to hold the eye. Tighten the nut.

N4. Put the free end of the spring into this hole.

P. The shim with the added notch

Q. Rear view

R. Inside view

S. Detailed view

T. Torsion spring

U. The shim thickness is (.230 inches).

V. The shim thickness is (.015 inches).

Table 1: Parts List—Door Handle and Lock Actuator

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				
	1	98CMCR0925	Assembly	
all	2	20C007	Adhesive	
all	3	02 04192	Shim, .023	
all	4	02 04192A	Shim, .015	

— End of BIIFBM13 —

BIIFBM14 (Published) Book specs- Dates: 20130307 / 20130307 / 20130307 Lang: ENG01 Applic: MXA

Door Lock Mechanism

Figure 1: General Views

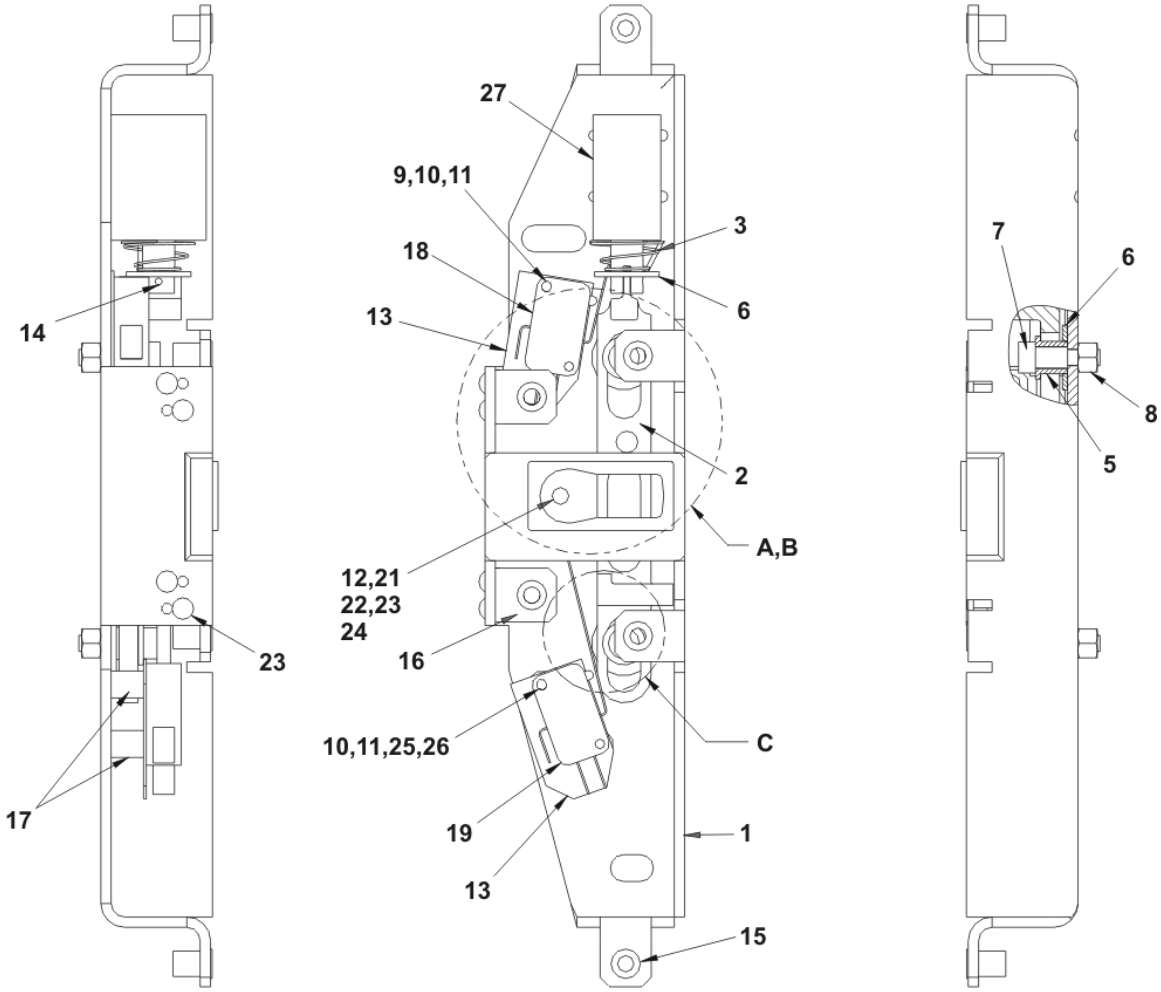
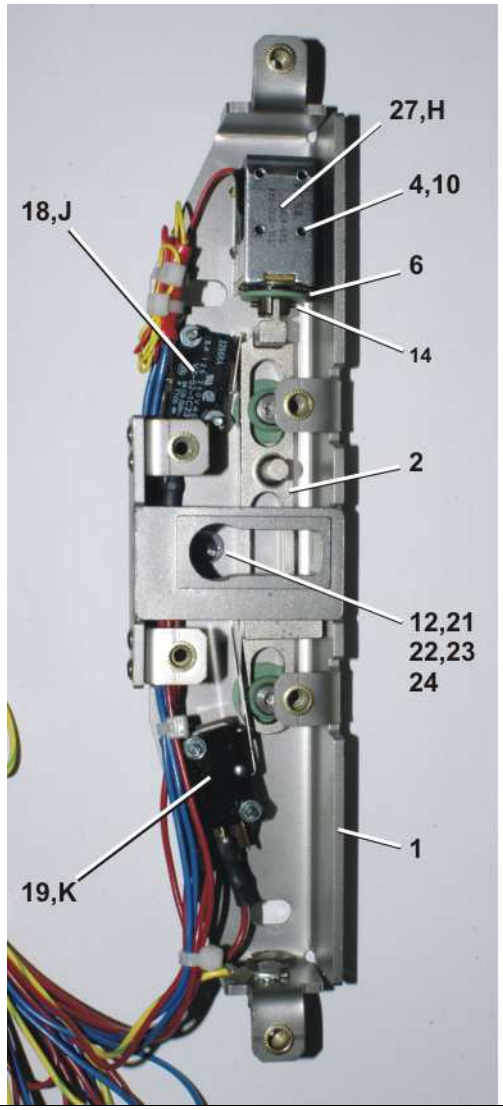
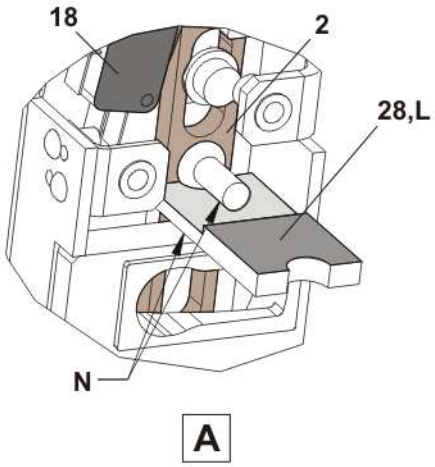
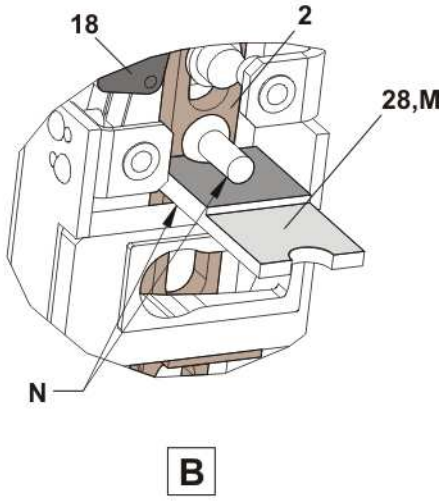


Figure 2: How to set the door switches.

Detailed views







Legend

A. Door lock switch off position
B. Door lock switch on position
H. Door lock solenoid
J. Door lock switch
K. Door closed switch
L. Use the the switch adjustment tool, item 28, as shown in this illustration . Adjust the switch to be off.
M. Use the the switch adjustment tool, item 28, as shown in this illustration . Adjust the switch to be on.
N. Make sure there is no air gap.

Figure 3: How to set the door switches.

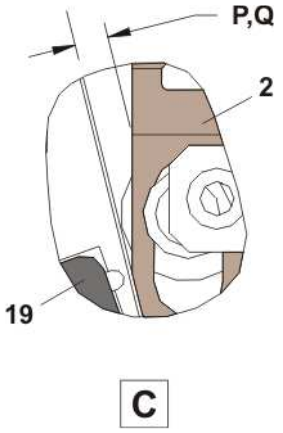
Detailed view	Legend
	**C.** Set the door closed switch. **P.** 3/16 inch minimum clearance **Q.** Measure this while the slider is down.

Figure 4: Additional Views

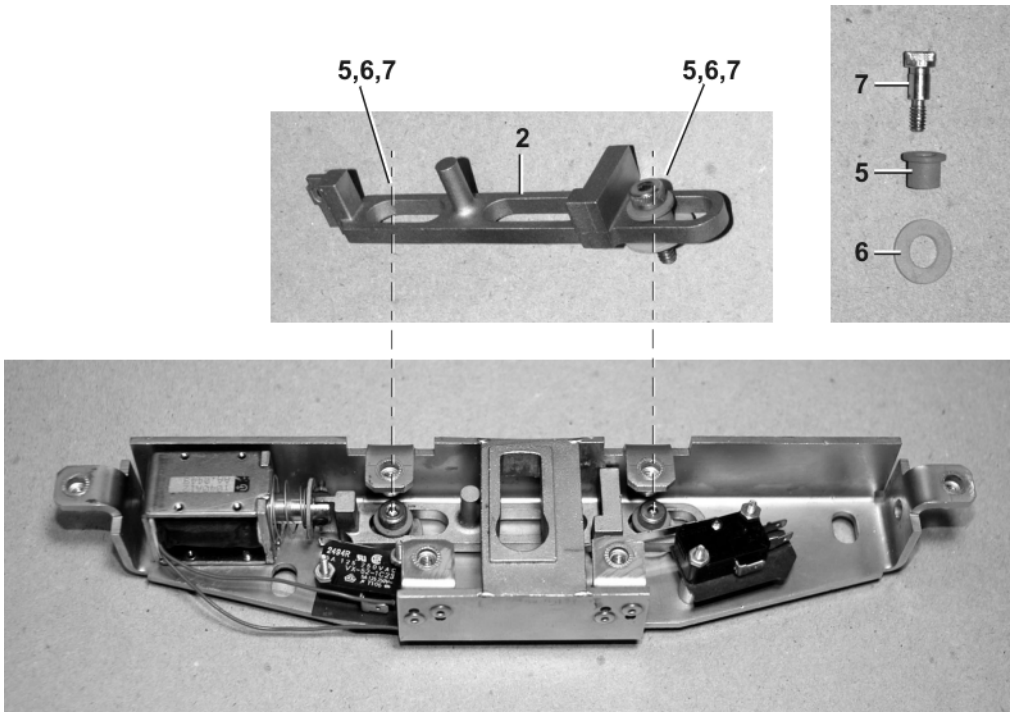


Table 1: Parts List—Door Lock Mechanism

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	A33 03226A	Assembly	USA-made models only Components 1-28
	B	98CMCR0924	Assembly	China-made models only
			Components	
A	1	W2 03226A	Piece part	
A	2	02 03290A	Slider	
A	3	02 03285	Spring	
A	4	15N003	Bolt	
A	5	54E001D	Bushing	
A	6	54E012	Teflon washer	
A	7	15C010	Bolt	
A	8	15G126	Nut	
A	9	15N021	Bolt	
A	10	15U040	Washer	
A	11	15G020	Nut	
A	12	12P014GG	Clip	
A	13	03 01335	Insulator	
A	14	15H090C	Pin	
A	15	17E065	Insert	
A	16	02 03225	Piece part	
A	17	27B213	Spacer	
A	18	02 04177	Switch	
A	19	09R010D	Switch	
A	20	15J052	Rivet	
A	21	15N146	Bolt	
A	22	15G125	Nut	
A	23	15U130	Washer	
A	24	15U150	Washer	
A	25	15N023	Bolt	
A	26	15U060	Washer	
A	27	09K063C24	Solenoid 24V	
A	28	X2 03306A	Switch adjustment tool	

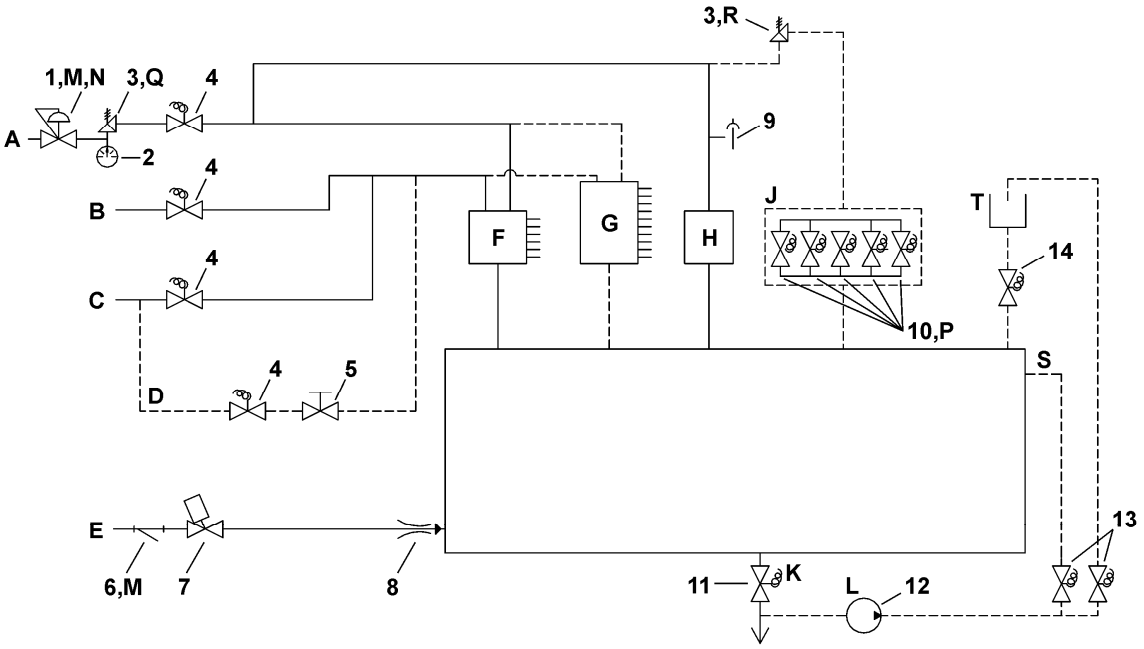
— End of BIIFBM14 —

5 Water and Steam Piping and Assemblies

Water and Steam Schematic and Primary Components 3022X_

Figure 1: Water and Steam Schematic and Primary Components 3022X_

Schematic



Legend

- **A.** Hot water to flush the chemical supplies
- **B.** Hot water inlet
- **C.** Cold water inlet
- **D.** Cooldown water line (optional)
- **E.** Steam inlet (optional)
- **F.** Six inlets for peristaltic liquid chemical systems (standard)
- **G.** 10 inlets for peristaltic liquid chemical systems
- **H.** Soap chute
- **J.** Five compartments to flush in chemical supplies (optional)
- **K.** Drain valve
- **L.** Recirculation pump (optional)
- **M.** Keep this component clean.
- **N.** Keep this component set to the correct pressure. 28 LBS.
- **P.** 5 instances
- **Q.** The standard location of the pressure relief valve.
- **R.** The alternative location of the pressure relief valve for the five compartments to flush in chemical supplies
- **S.** Reuse water through the recirculation pump to the door (optional)
- **T.** Reuse tank (optional)

Table 1: Parts List—Water and Steam Schematics

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.

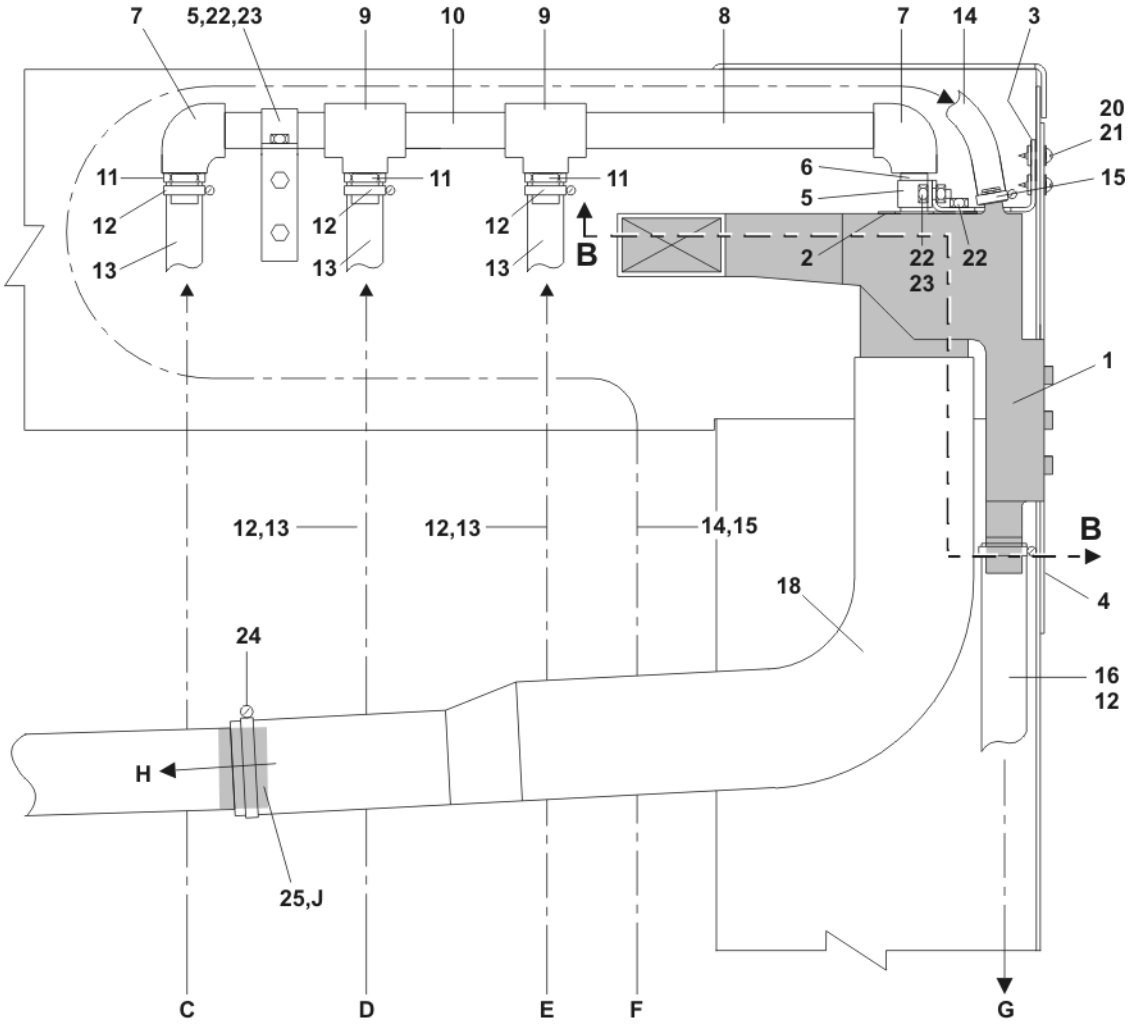
Used In	Item	Part Number	Description/Nomenclature	Comments
Components				
all	1	96J030D	Pressure regulator	
all	2	30N100	Pressure gauge	
all	3	96M001	Pressure relief valve 31#	
all	4	96P057A71	Water valve	
all	5	96D034	Water valve	
all	6	51T025	Y-strainer	
all	7	96TDC2BA71	Steam valve	
AB	8	W2 02555A	Steam nozzle	
all	9	96M021	Vacuum breaker	
all	10	96P013B71	Water valve	
all	11	96D350A71	Drain valve	
B	12	27E955M96	Recirculation pump	
B	13	96D087WE	Water valve	
B	14	96D087FBA	Water valve	

— End of BIIFBM15 —

Inlet for Six Peristaltic Chemical Supplies and Water

Figure 1: Six inlets for peristaltic liquid chemical systems

Cross Section



Legend

AA. Cross Section
C. Cold water line
D. Cooldown water line (optional)
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.

Figure 2: General View

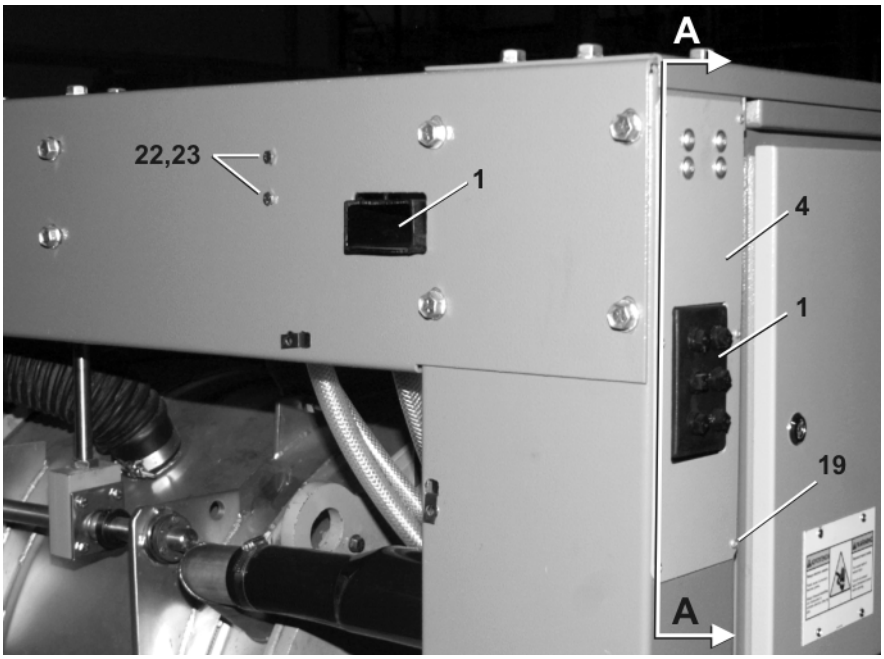


Figure 3: Air space

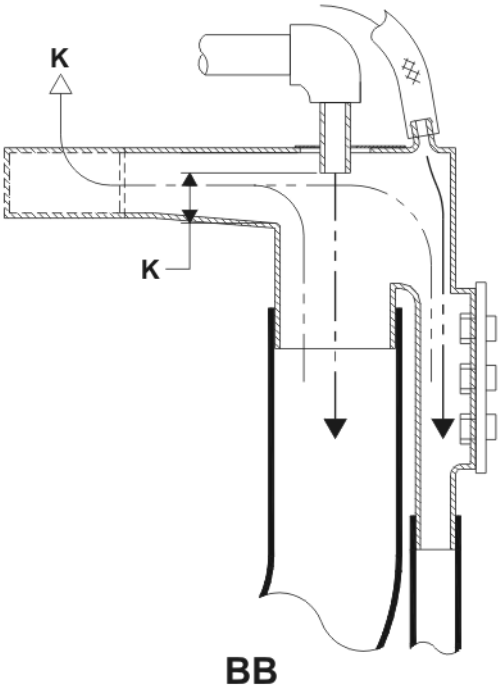
Cross Section	Legend
	**BB.** Cross Section **K.** Vent **L.** Air space : 1 inch(25MM)

Figure 4: Water and chemical supplies to the shell

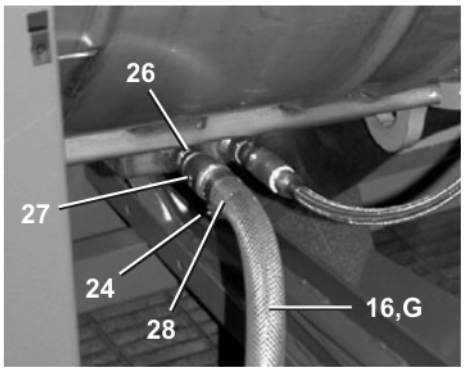
General View	Legend
	**G.** Water and chemical supplies to the shell

Table 1: Parts List—Peristaltic Chemical and Water Inlet

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	GA 33 058X	Installation Group	
	B	SA 33 058X	Assembly	
			Components	
all	1	02 03588M	Inlet manifold	
all	2	02 03588K	Cover	
all	3	02 03195	Mounting bracket	
all	4	02 02930	Piece part	
all	5	12K077	Strap	
all	6	5N0P01PG41	Pipe nipple	
all	7	5SL1ANFA0P	Pipe fitting	
all	8	5N1A08AG42	Pipe nipple	
all	9	5S1ANFA0P1	Pipe fitting	
all	10	5N1A03AG42	Pipe nipple	
all	11	51E511	Hose stem	
all	12	27A090	Hose clamp	
all	13	60E008A	Flexible tubing	
all	14	60E006C	Flexible tubing	
all	15	27A040	Hose clamp	
all	16	600000000000	Flexible tubing	
all	18	02 03588B	Inlet manifold hose	
all	19	15P010	Bolt	
all	20	15N110H	Bolt	
all	21	15G004HB	Nut	
all	22	15K031	Bolt	
all	23	15U181	Washer	
all	24	27A074	Hose clamp	
all	25	20C009CA	Adhesive	
all	26	5N0KCLSS42	Pipe nipple	
all	27	5SR0P0KSF	Pipe fitting	
all	28	03 25429S	Hose stem	

— End of BIIFBM16 —

BIIFBM17 (Published) Book specs- Dates: 20090903 / 20090903 / 20100514 Lang: ENG01 Applic: MXA

Water Inlet Components and Installation 3022X

Figure 1: Water Inlet Components and Installation 3022X

Pressure regulator assembly

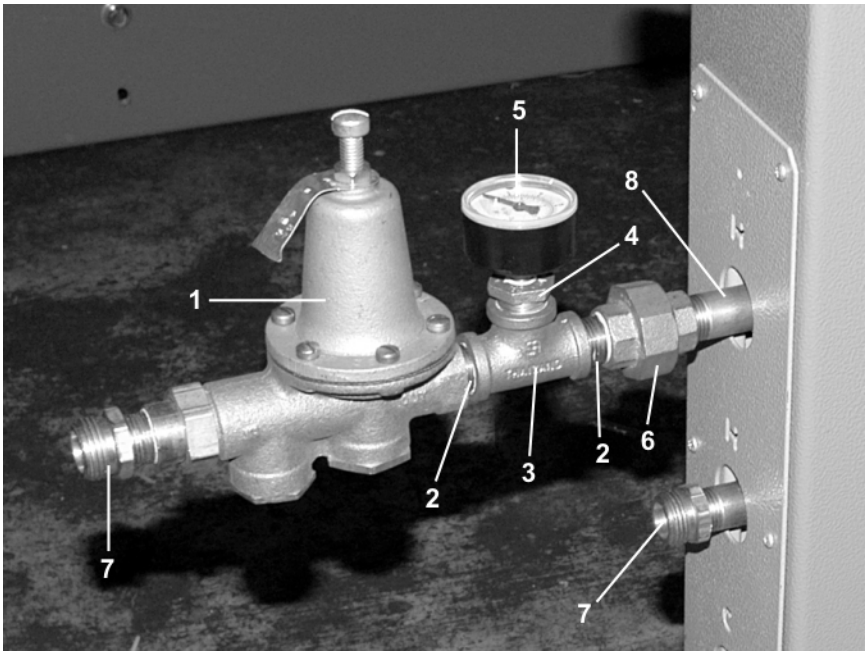
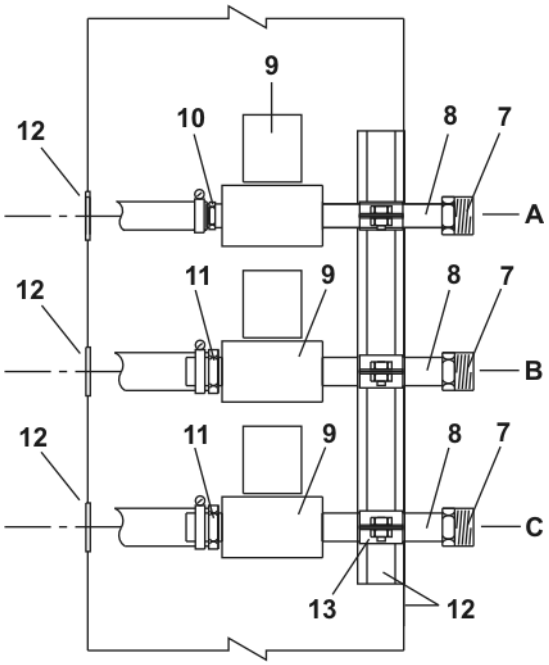


Figure 2: Water Inlet Components and Installation 3022X

Cross Section

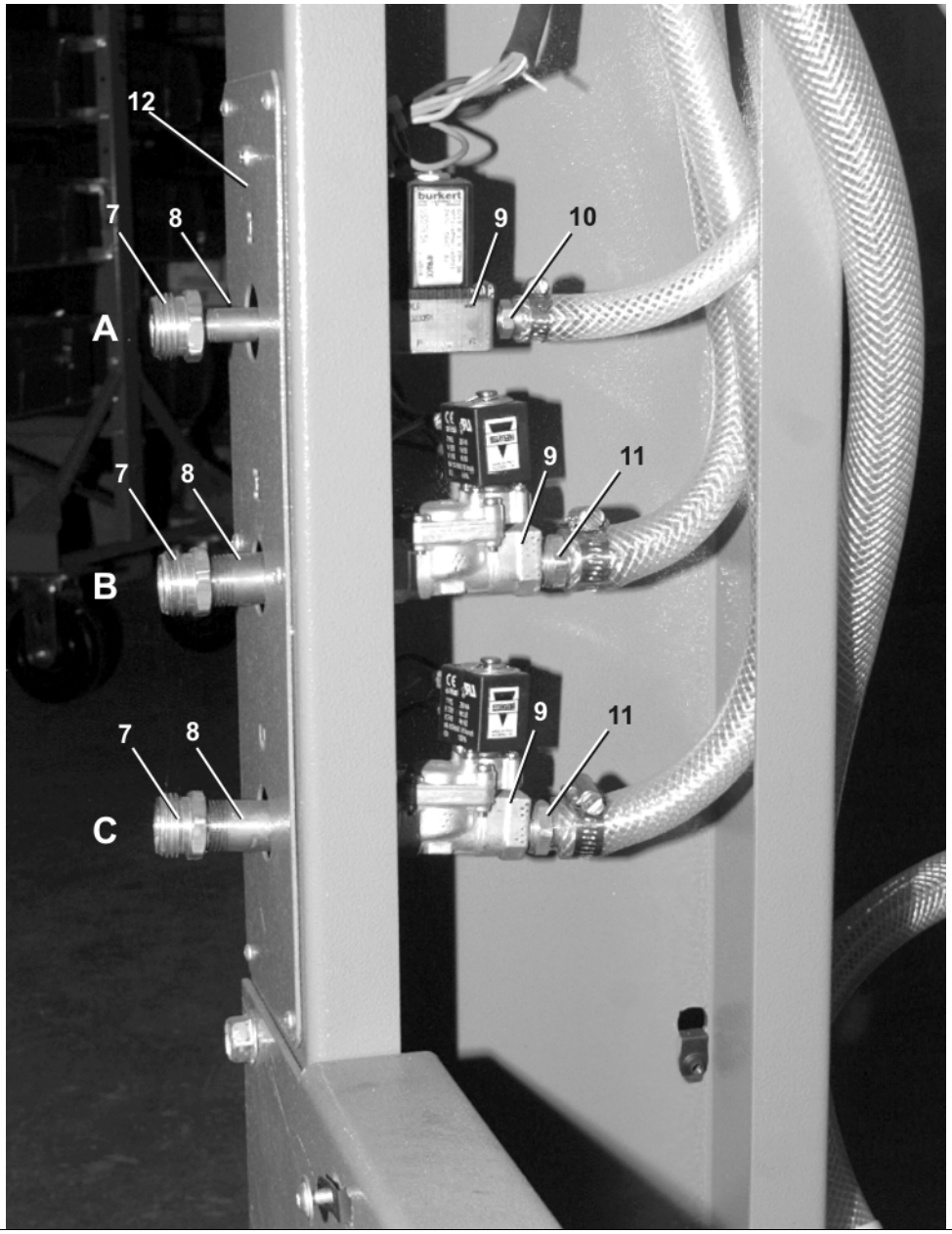


Legend

A. Hot water to flush the chemical supplies
B. Hot water inlet
C. Cold water inlet

Figure 3: Water Inlet Components and Installation 3022X

General View



Legend

A. Hot water to flush the chemical supplies
B. Hot water inlet
C. Cold water inlet

Table 1: Parts List—Water Inlet Components and Installation 3022X_

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	SA 33 058W	Assembly	
Components				
all	1	96J030D	Pressure regulator 28#	
all	2	5N0KCLSBE2	Pipe nipple	
all	3	5S0KBEA	Pipe fitting	
all	4	5SB0K0CBEO	Pipe fitting	
all	5	30N100	Pressure gauge	
all	6	5SU0KBE	Pipe fitting	
all	7	51E513B	Pipe fitting	
all	8	5N0K03KB42	Pipe nipple	
all	9	96P057A71	Water valve	
all	10	51E509	Hose stem	
all	11	51E510	Hose stem	
all	12	W2 03588S	Piece part	
all	13	27A0050	Clip	

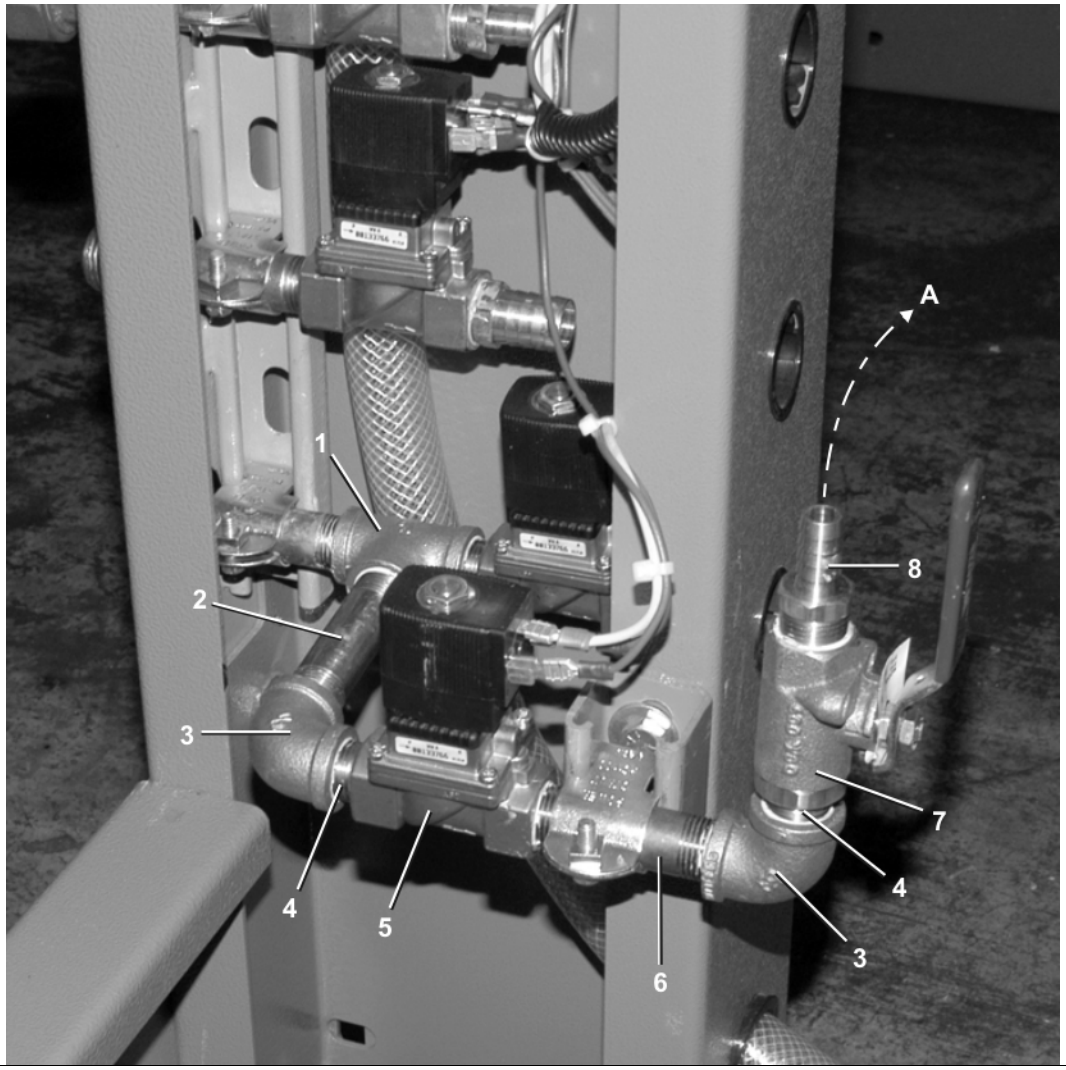
— End of BIIFBM17 —

BIIFBM24 (Published) Book specs- Dates: 20090903 / 20090903 / 20100514 Lang: ENG01 Applic: MXA

Cooldown Components and Installation

Figure 1: Cooldown Components and Installation

Installed view



Legend

A. Cold water to the peristaltic water inlet manifold

Table 1: Parts List—Cooldown Components and Installation

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.

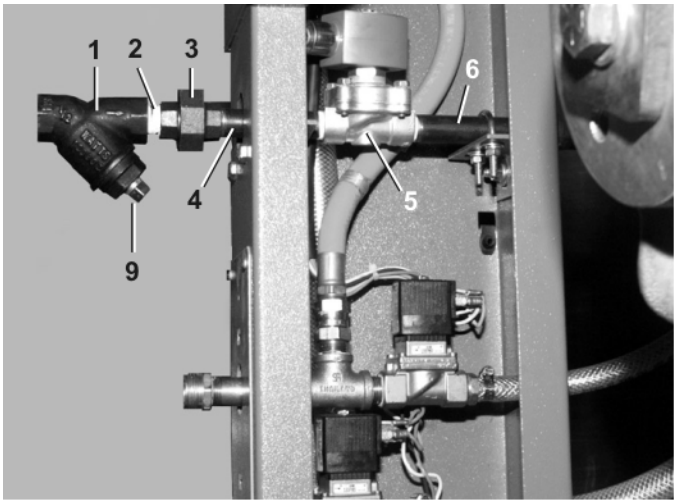
Used In	Item	Part Number	Description/Nomenclature	Comments
Assemblies				
	A	AVC30X001	Assembly	
Components				
all	1	5S0KBEA	Pipe fitting	
all	2	5N0K03KB42	Pipe fitting	
all	3	5SL0KBEA	Pipe fitting	
all	4	5N0KCLSBE2	Pipe nipple	
all	5	96P057A71	Water valve	
all	6	5N0K03ABE2	Pipe nipple	
all	7	96D034	Water valve	
all	8	51E509	Hose stem	

— End of BIIFBM24 —

BIIFBM25 (Published) Book specs- Dates: 20140327 / 20140327 / 20140327 Lang: ENG01 Applic: MXA

Steam Inlet Components and Installation

Figure 1: General Views



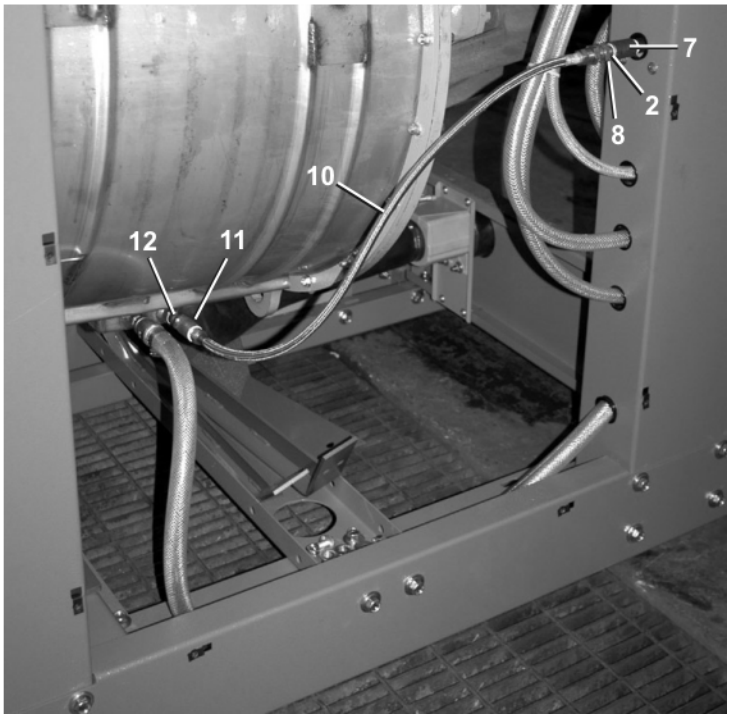


Table 1: Parts List—Steam Inlet Components and Installation

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	GVS3022X	Installation Group	
	B	AVS3022X	Assembly	
Components				
all	1	51T025	Y-strainer	
all	2	5N0KCLSF42	Pipe nipple	
all	3	5SU0KMF	Pipe fitting	
all	4	5N0K04AF42	Pipe nipple	
all	5	96TDC2BA71	Steam valve	
all	6	5N0K05KF42	Pipe nipple	
all	7	5SCC0KMF	Pipe fitting	
all	8	51X017	Pipe fitting	
all	9	5SP0GGFSS	Hole plug	
all	10	60E508E32A	Hose	
all	11	5SCC0KSF1	Pipe fitting	
	12	W2 02555A	Nozzle	USA-made models only

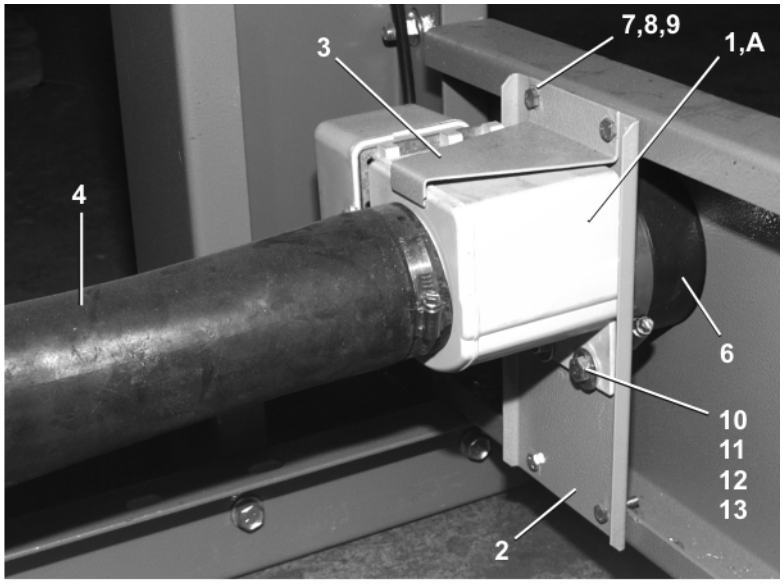
— End of BIIFBM25 —

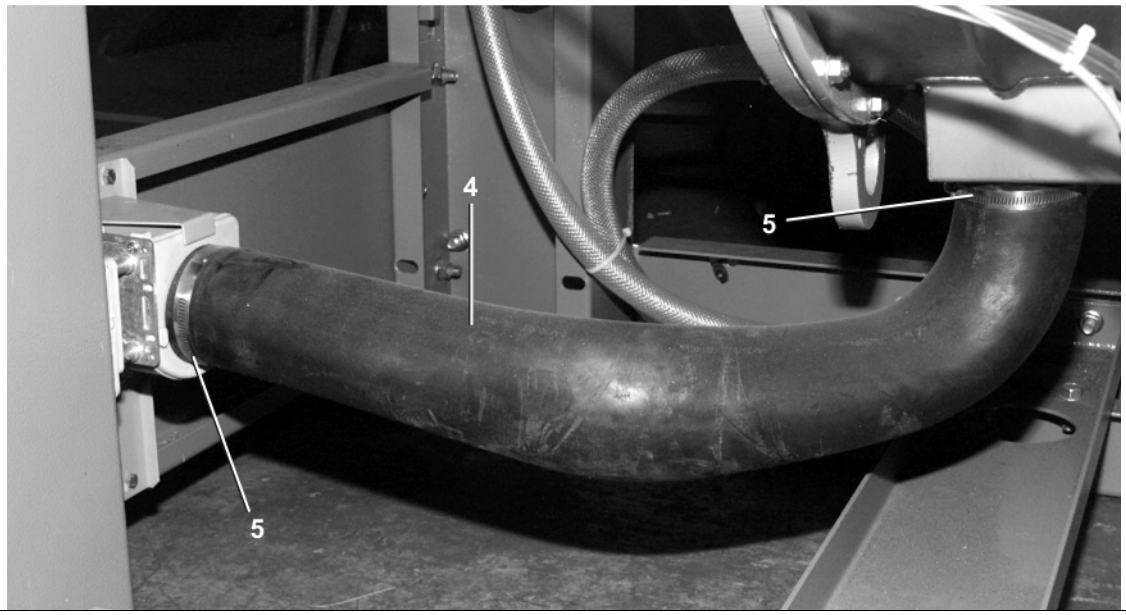
BIIFBM18 (Published) Book specs- Dates: 20090814 / 20090814 / 20100514 Lang: ENG01 Applic: MXA

Drain Valve Installation

Figure 1: Drain Valve Installation

General Views





Legend

A. Refer to the document BIIFBM19.

Table 1: Parts List—Drain Valve Installation

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	GVD3022X8	Installation Group	
Components				
all	1	96D350A71	Drain valve	
all	2	02 02934	Mounting bracket	
all	3	02 02934A	Mounting bracket	
all	4	02 03245	Hose	
all	5	27A088S	Clamp	
all	6	60B075	Hose	
all	7	15K039	Bolt	
all	8	15G165	Nut	
all	9	15U180	Washer	
all	10	15K143B	Bolt	
all	11	15U280	Washer	
all	12	15U278	Washer	
all	13	15G222C	Nut	

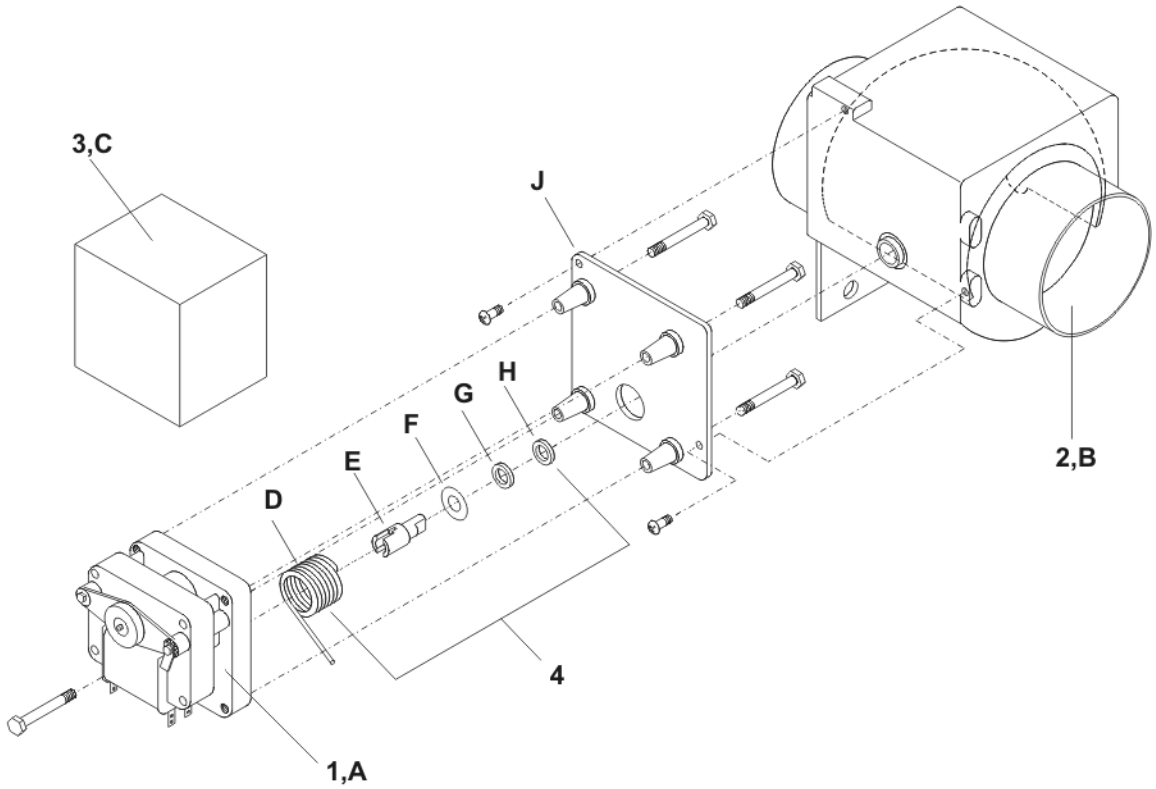
— End of BIIFBM18 —

BIIFBM19 (Published) Book specs- Dates: 20090814 / 20090814 / 20100514 Lang: ENG01 Applic: MXA

3 Inch Electrical Drain Valve

Figure 1: 3 Inch Electrical Drain Valve

Extended View



Legend

A. Motor
B. Valve body
C. Cover
D. Spring
E. Drive Pin
F. Washer
G. Bearing
H. Seal
J. Motor installation plate

Table 1: Parts List—The 3 Inch Electrical Drain Valve

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	96D350A71	Drain valve assembly, normally open 240V 50/60C	
Components				
all	1	96D35MTR71	Motor	
all	2	96D35B0D	Body and ball	
all	3	96D35C0V	Cover	
all	4	96D35PIN	Drive pin kit	

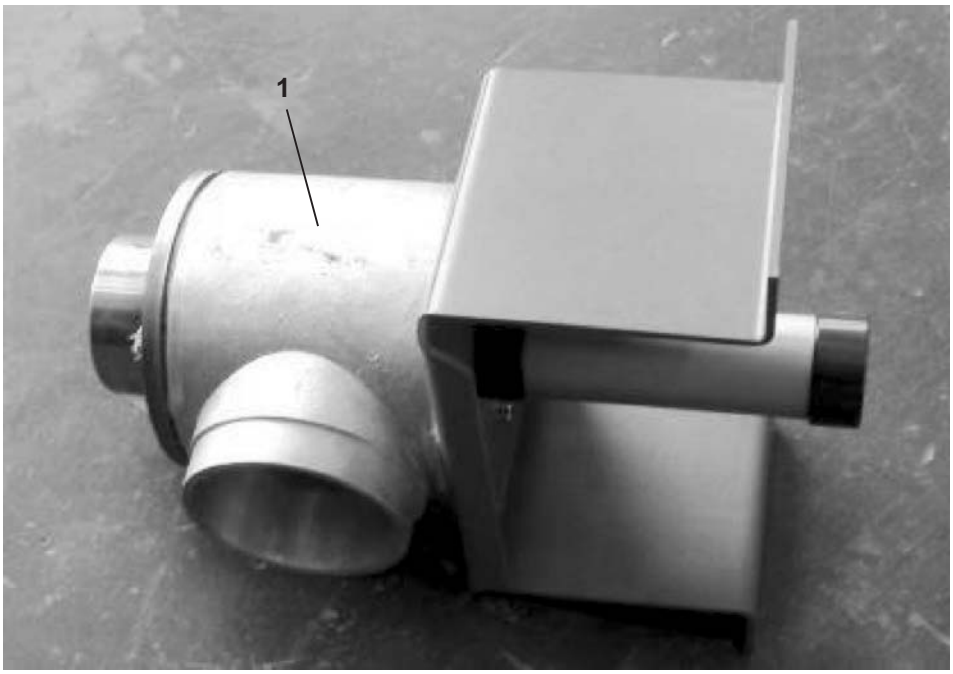
— End of BIIFBM19 —

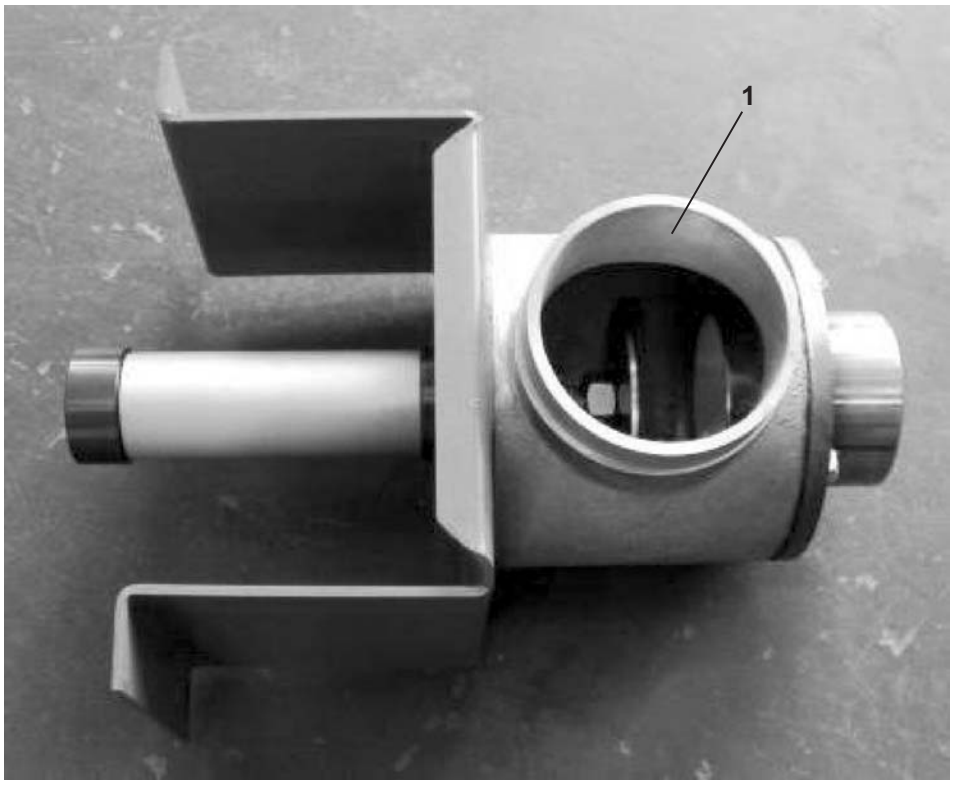
Pneumatic Drain Valve

3022X, 3626X, 4226X, 4232X

Pellerin Milnor Corporation
P. O. Box 400, Kenner, LA 70063-0400

Litho in U.S.A.





Pellerin Milnor Corporation
P. O. Box 400, Kenner, LA 70063-0400

Litho in U.S.A.

Parts List—Pneumatic Drain Valve

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.

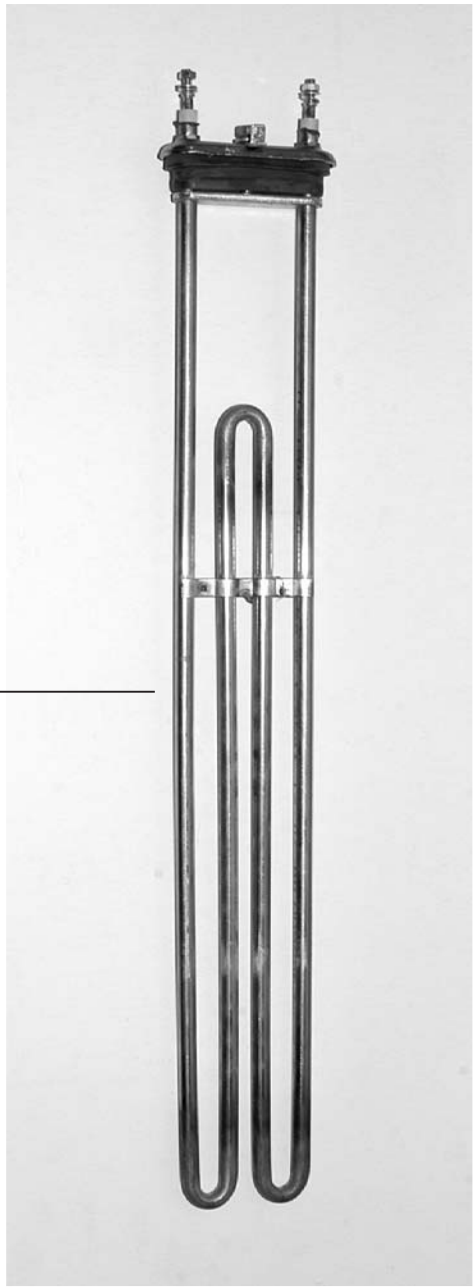
Used In	Item	Part Number	Description	Comments
			----------COMPONENTS----------	
all	1	98CMCR3604	PNEUMATIC DRAIN VALVE	

Electric Heat

3022X, 3626X, 4226X, 4232X

Pellerin Milnor Corporation
P. O. Box 400, Kenner, LA 70063-0400

Litho in U.S.A.



Pellerin Milnor Corporation
P. O. Box 400, Kenner, LA 70063-0400
Litho in U.S.A.

Parts List—Hydraulic Main Pump

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.

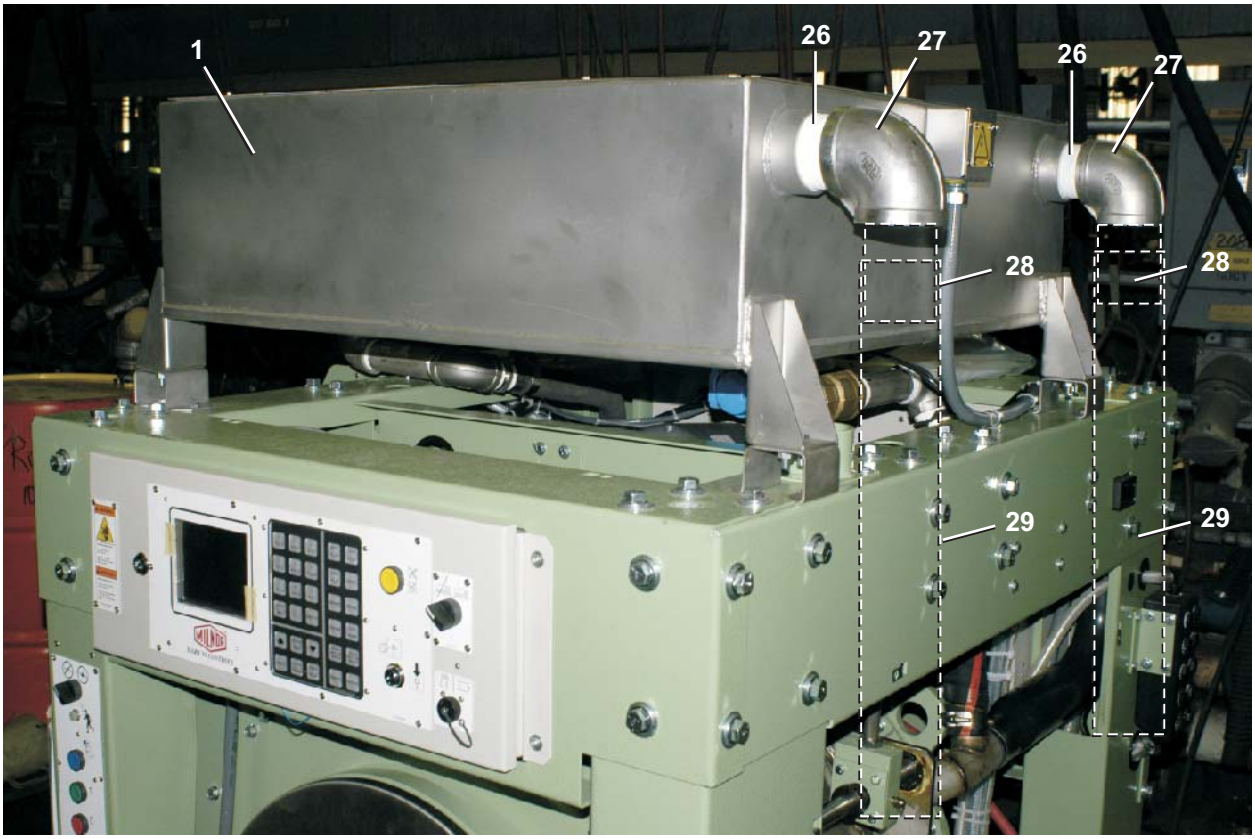
Used In	Item	Part Number	Description	Comments
			----------COMPONENTS----------	
all	1	98CMCR3605	ELECTRIC HEATER PROBE	

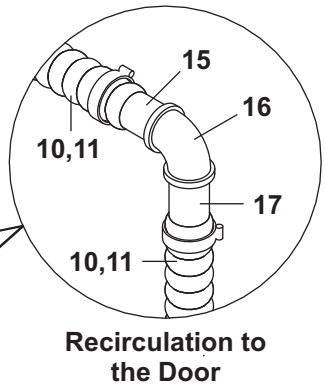
Recirculation 6

Reuse Tank, Recirculation Pump, and Piping

30022X8W, 30022X8R

Figure 1: Tank

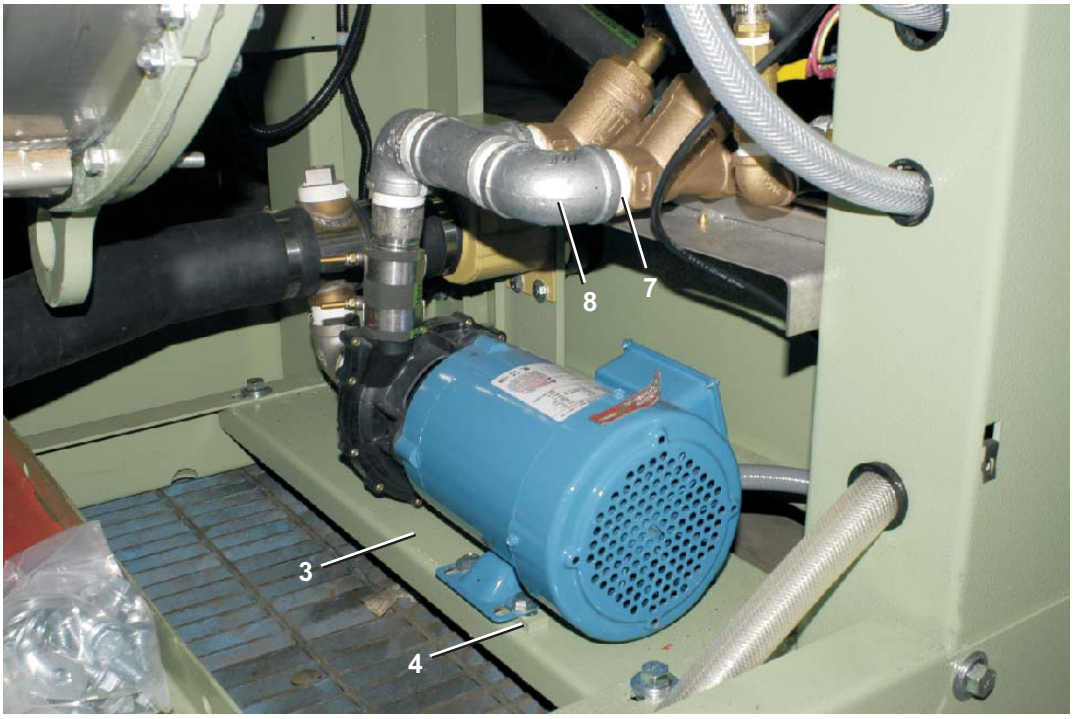


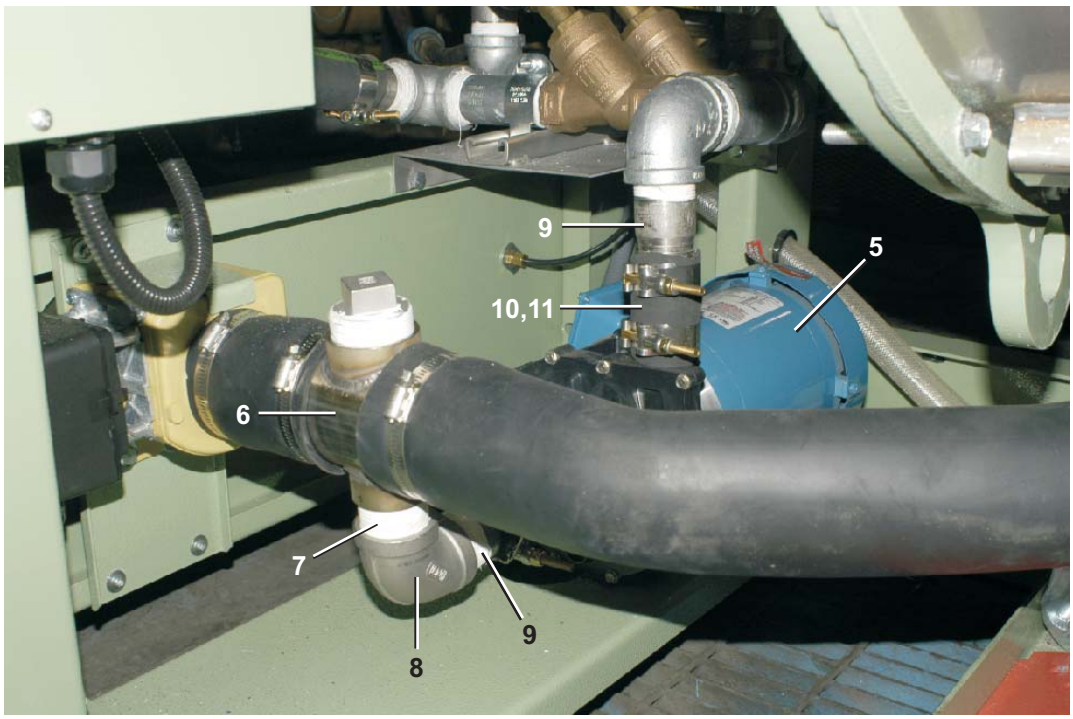


Reuse Tank, Recirculation Pump, and Piping

30022X8W, 30022X8R

Figure 2: Recirculation Pump

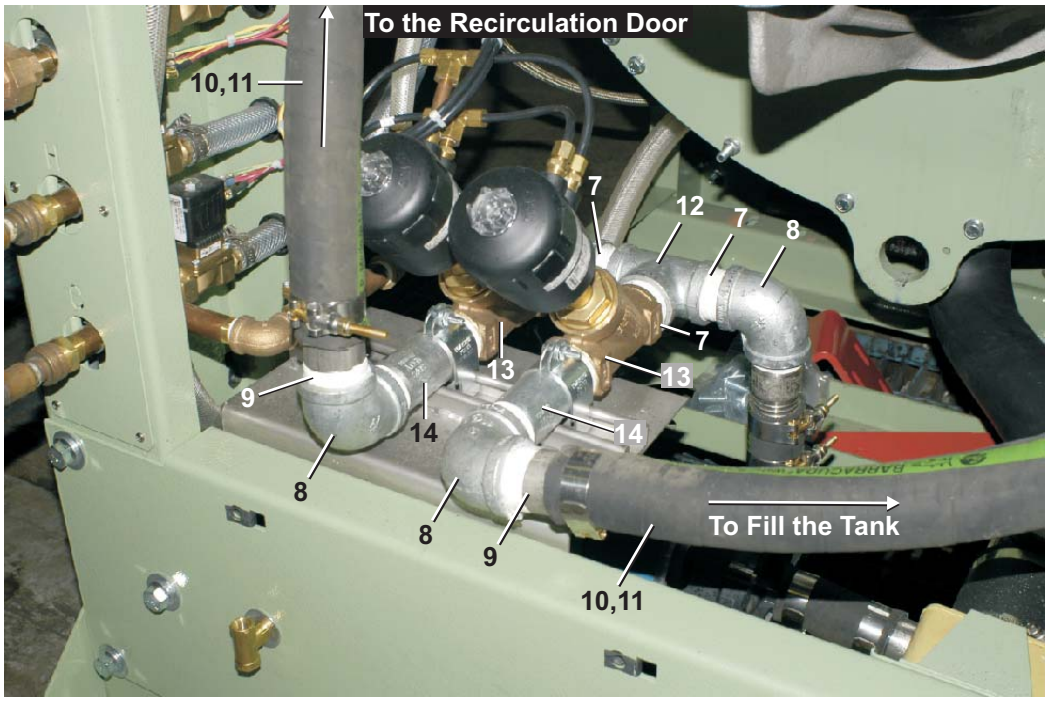


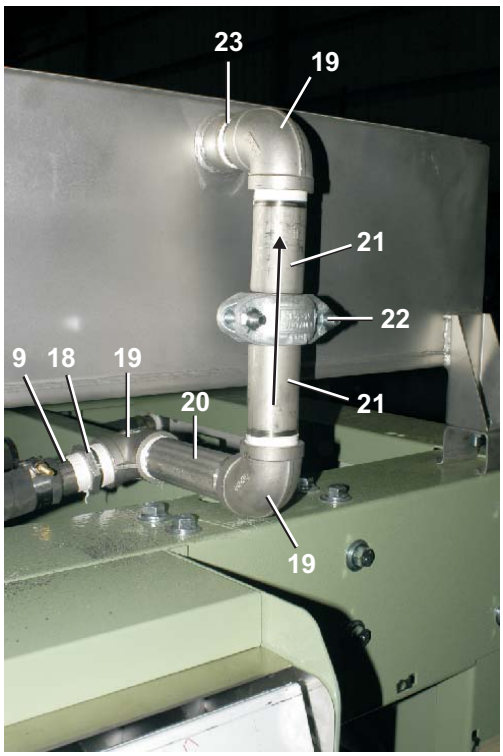


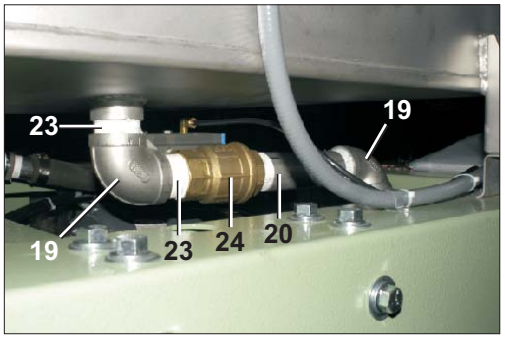
Reuse Tank, Recirculation Pump, and Piping

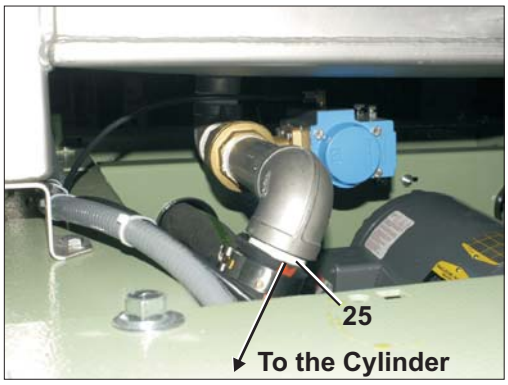
30022X8W, 30022X8R

Figure 3: Recirculation Piping









Reuse Tank, Recirculation Pump, and Piping

30022X8W, 30022X8R

Parts List—Reuse Tank, Pump, Piping

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	W2 03115	WLMT+OUTERWEAR REUSE TANK	
all	2	W2 03120	COVER REUSE TANK 3022X	
all	3	02 02947	3022X RECIRC PUMP MNT	
all	4	06 20730	SPACER = MOTOR TO BRKT	
all	5	27E955M96	3/4HP 3P PMP 240/420/480 5/6C	
all	6	W2 13546B	TUBE WELD RECIRC 3022X	
all	7	5SL1ENFA	NPT ELB 90DEG 1.25 GALMAL 150#	
all	8	5N1ECLSG42	NPT NIP 1.25XCLS TBE GALSTLS40	
all	9	51E098ASS	KINGREDNIP1.5IDX1.25MP#RST2015	
all	10	60E098	HOSE 1.5" WATER SUCTION HOSE	
all	11	27A066A	T-BOLT HOSECLAMP 1.66-1.97"	
all	12	5S1ENFA	NPT TEE 1.25" GALMAL 150#	
all	13	96D087WE	ANGBODVLV 1.5"N/C H2O BURK BRZ	
all	14	5N1E05AG42	NPT NIP 1.25X5 TBE GALSTL SK40	
all	15	5N1E06AS41	NPT NIP 1.25X6 TOE 304SS SK40	
all	16	5SL1ESFA	NPT ELB 90DEG 1.25 304SS 150#	
all	17	5N1E09AS41	NPT NIP 1.25X9 TOE 304SS SK40	
all	18	5SB1K1ESFO	NPTHEXBUSH 1.5X1.25 SS304 150#	
all	19	5SL1KSFA	NPT ELB 90DEG 1.5 304SS 150#	
all	20	5N1K07AS42	NPT NIP 1.5X7 TBE 304SS SK40	
all	21	5N1K06AS42	NPT NIP 1.5X6 TBE 304SS SK40	
all	22	27E971D	VICT COUP 1.5"GALV #75	
all	23	5N1KCLSS42	NPT NIP 1.5XCLS TBE 304SS SK40	
all	24	96D087FBA	1.5"BALVAL+ACT BRS N/C BONOMI	
all	25	5N1K03AS41	NPT NIP 1.5X3 TOE 304SS Sk40	
all	25	5N2KCLSS42	NPT NIP 2.5XCLS TBE 304SS Sk40	
all	27	5SL2KSFA	NPT ELBOW 90DEG 2.5 304SS 150#	
all	28	5N2K04AS41	NPT NIP 2.5X4 TOE 304SS SK40	
all	29	60E303F	HOSE 3"ID LAYFLAT HOSE	

Chemical Supply Devices

7

BIIFBM20 (Published) Book specs- Dates: 20090903 / 20090903 / 20100514 Lang: ENG01 Applic: MXA

Soap Chute Components and Installation 3022X_

Figure 1: Soap chute

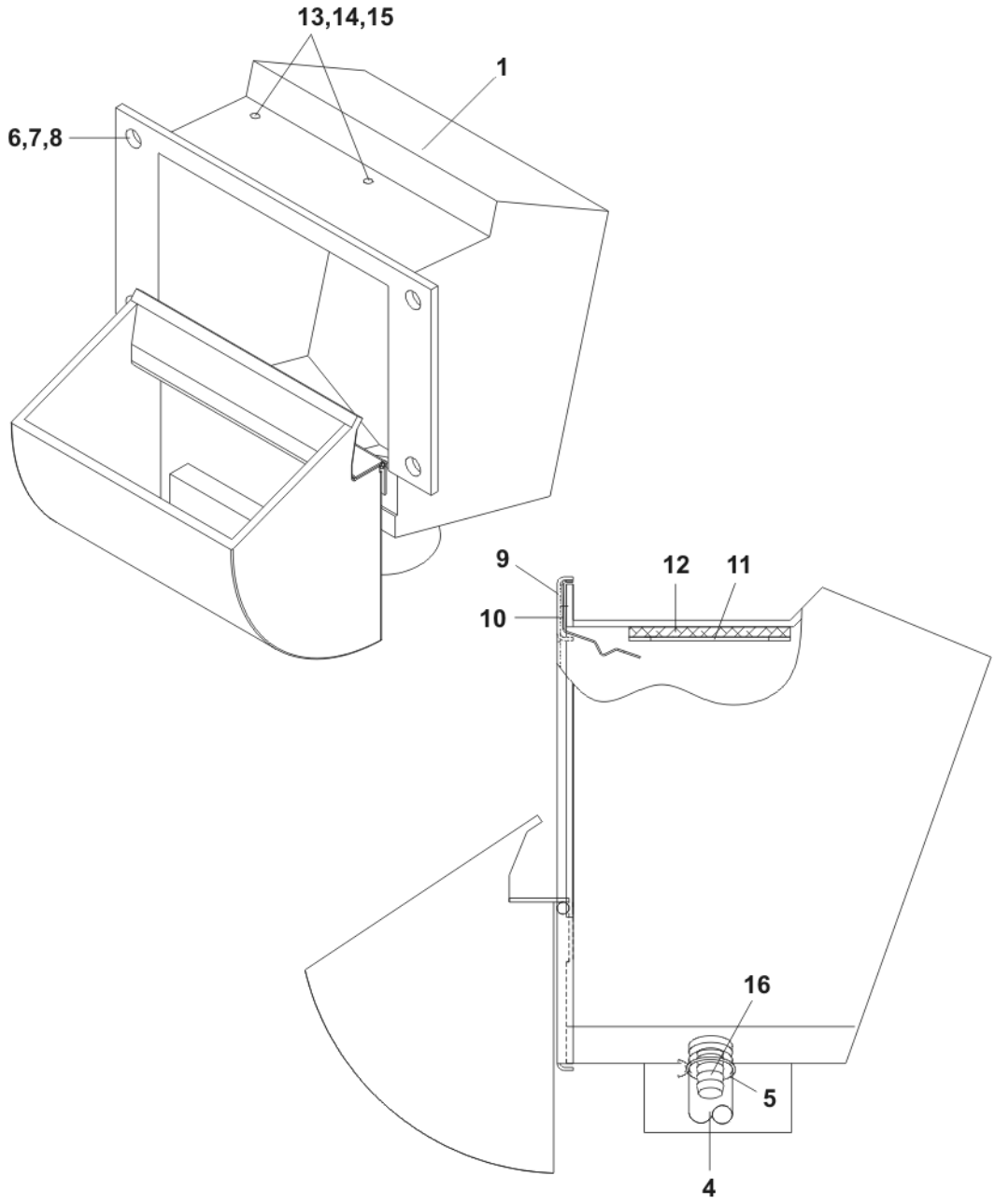


Figure 2: Installed views

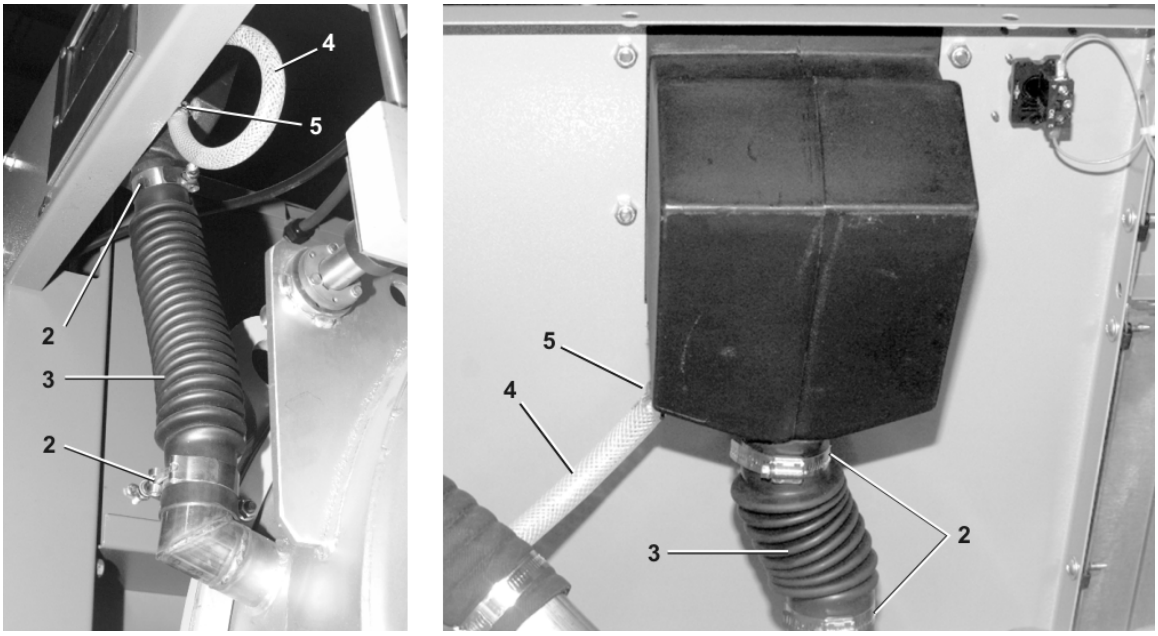


Figure 3: The vacuum breaker and related components

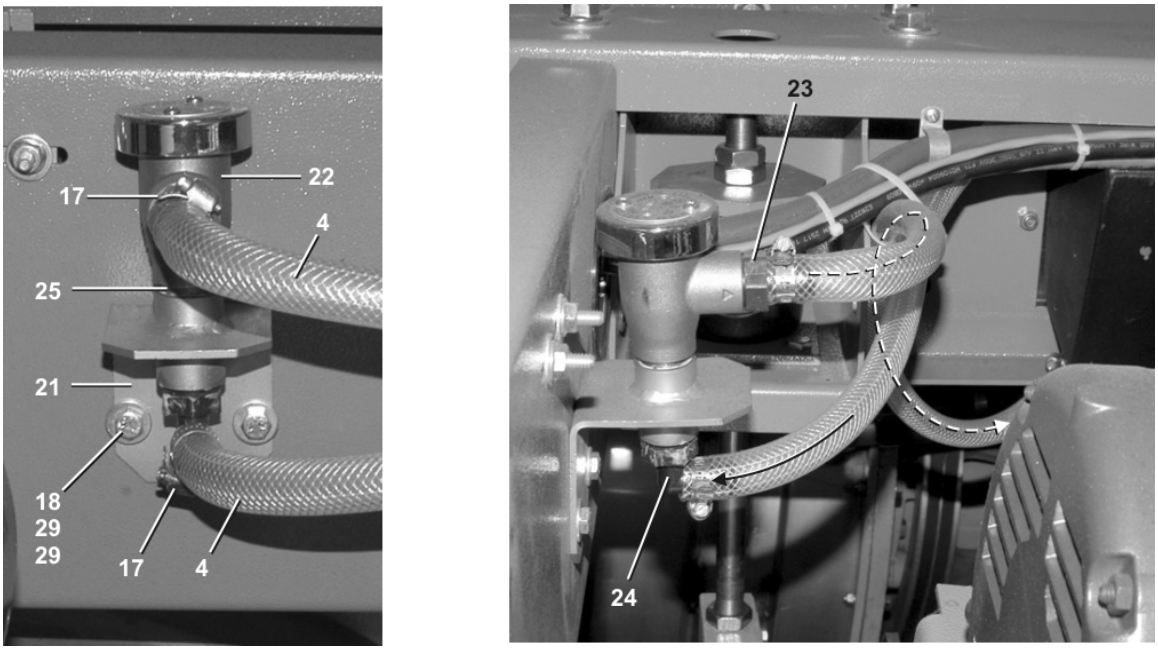


Table 1: Parts List—Soap Chute Components and Installation

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	GWS3022X8	Installation Group, Soap chute	
	B	GVB00001	Installation Group, Vacuum breaker	
	C	AVB00001	Assembly, Vacuum breaker	
Components				
A	1	AWS30211A	Soap chute	
A	2	27A070	Clamp	
A	3	02 03870D	Hose	
A	4	60E006C	Hose	
A	5	27A045	Clamp	
A	6	15K053	Bolt	
A	7	15G188	Nut	
A	8	15G185	Nut	
A	9	02 04215	Bezel	
A	10	02 04217	Latch	
A	11	02 04216	Piece part	
A	12	98A002AT	Pad	
A	13	15G105	Nut	
A	14	15N095	Bolt	
A	15	15U120B	Washer	
A	16	51BB0KN00B	Hose stem	
A	17	27A040	Hose clamp	
B	18	15K037	Bolt	
B	19	15G165	Nut	
B	20	15U180	Washer	
B	21	W2 03199	Piece part	
C	22	96M021	Vacuum breaker	
C	23	51E509PB	Hose stem	
C	24	51E509PBA	Hose stem	
C	25	5N0KCLSG42	Pipe nipple	

— End of BIIFBM20 —

BIIFBM23 (Published) Book specs- Dates: 20140327 / 20140327 / 20140327 Lang: ENG01 Applic: MXA

Inlet for 10 Peristaltic Chemical Supplies

Figure 1: Installed views

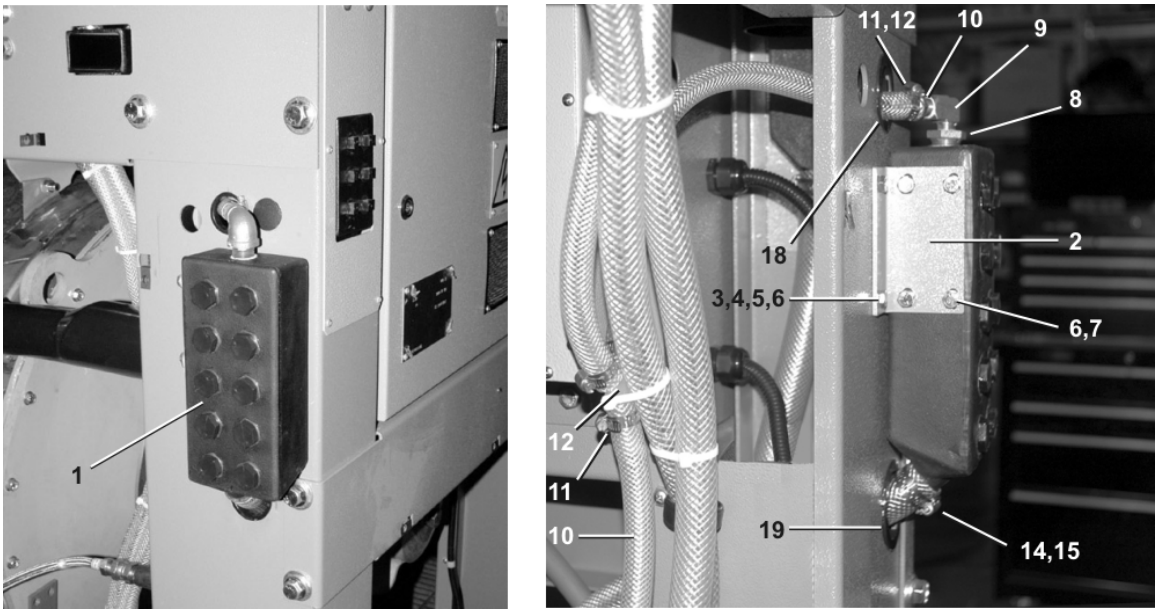
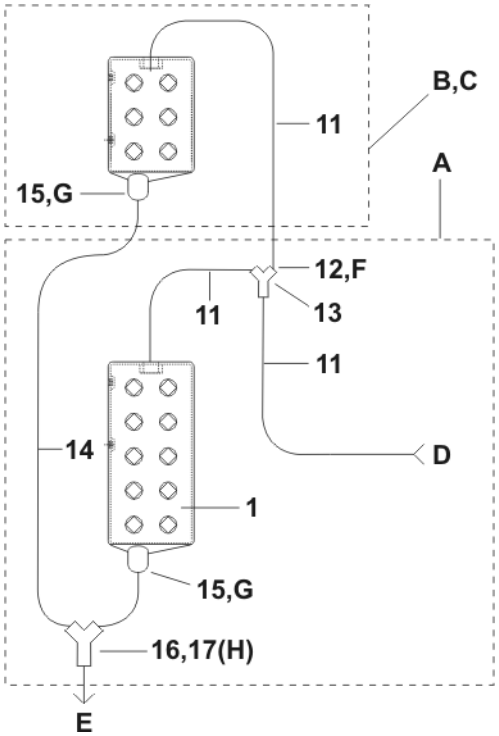


Figure 2: 10 inlets for peristaltic liquid chemical systems

Schematic



Legend

A. 10 inlets for peristaltic liquid chemical systems
B. Six inlets for peristaltic liquid chemical systems
C. Refer to the document BIIFBM16.
D. Hot water to flush the chemical supply manifolds
E. Water and chemical supplies to the shell
F. 5 instances
G. 4 instances
H. 3 instances

Figure 3: Inlet manifold

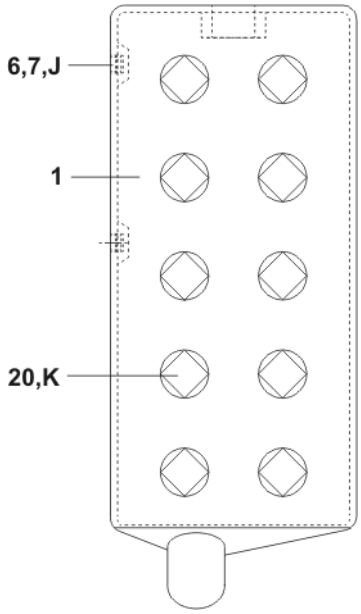
Detailed view	Legend
	**J.** 2 instances **K.** 10 instances

Table 1: Parts List—Inlet for 10 Peristaltic Chemical Supplies

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	GWL3022X	Installation Group	
Components				
all	1	02 03589O	Piece part	
all	2	02 02946	Piece part	
all	3	15K039	Bolt	
all	4	15G165	Nut	
all	5	15U185	Washer	
all	6	15U180	Washer	
all	7	15K030	Bolt	
all	8	5SB0K0GBEO	Pipe fitting#	
all	9	5SL0GBEA	Pipe fitting	
all	10	51E507A	Hose stem	
all	11	60E006C	Hose	
all	12	27A040	Hose clamp	
all	13	51E505Y	Hose stem	
all	14	60E010	Hose	
all	15	27A090	Hose clamp	
all	16	5KY0P4A	Pipe fitting	
all	17	02 02932	Pipe nipple	
all	18	12P12ASB	Bushing	
all	19	12P12KSB	Bushing	
all	20	5SP0KXFHS	Plug	

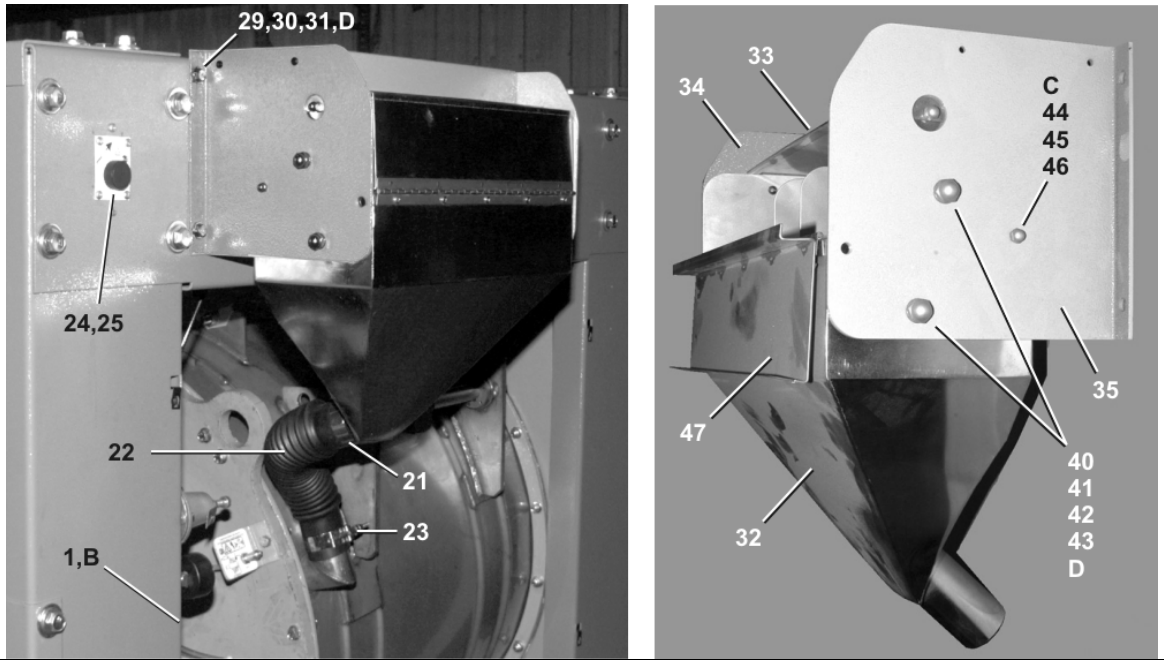
— End of BIIFBM23 —

BIIFBM22 (Published) Book specs- Dates: 20090903 / 20090903 / 20100514 Lang: ENG01 Applic: MXA

Five Compartments for Dry Chemical Supplies

Figure 1: Five compartments for dry chemical supplies

General Views



Legend

B. Cover, not shown
C. 2 instances
D. 4 instances

Figure 2: Cross Sections

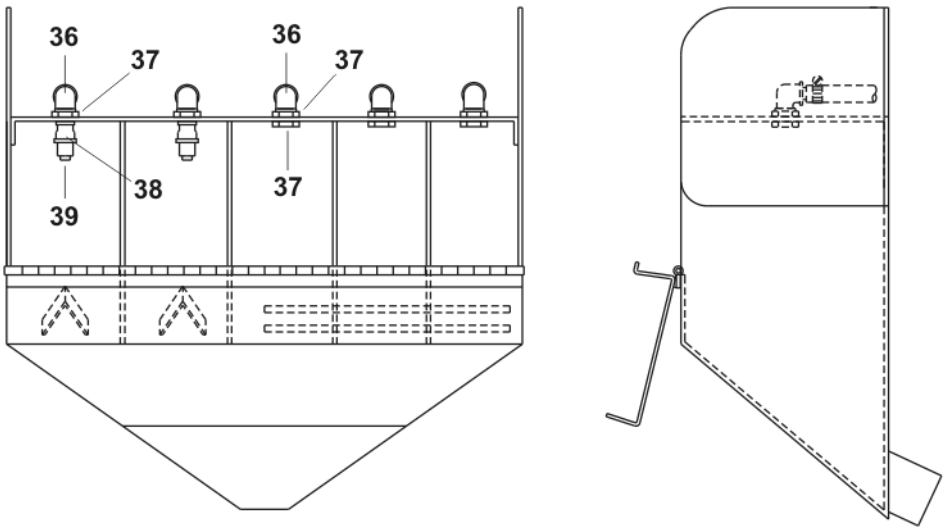
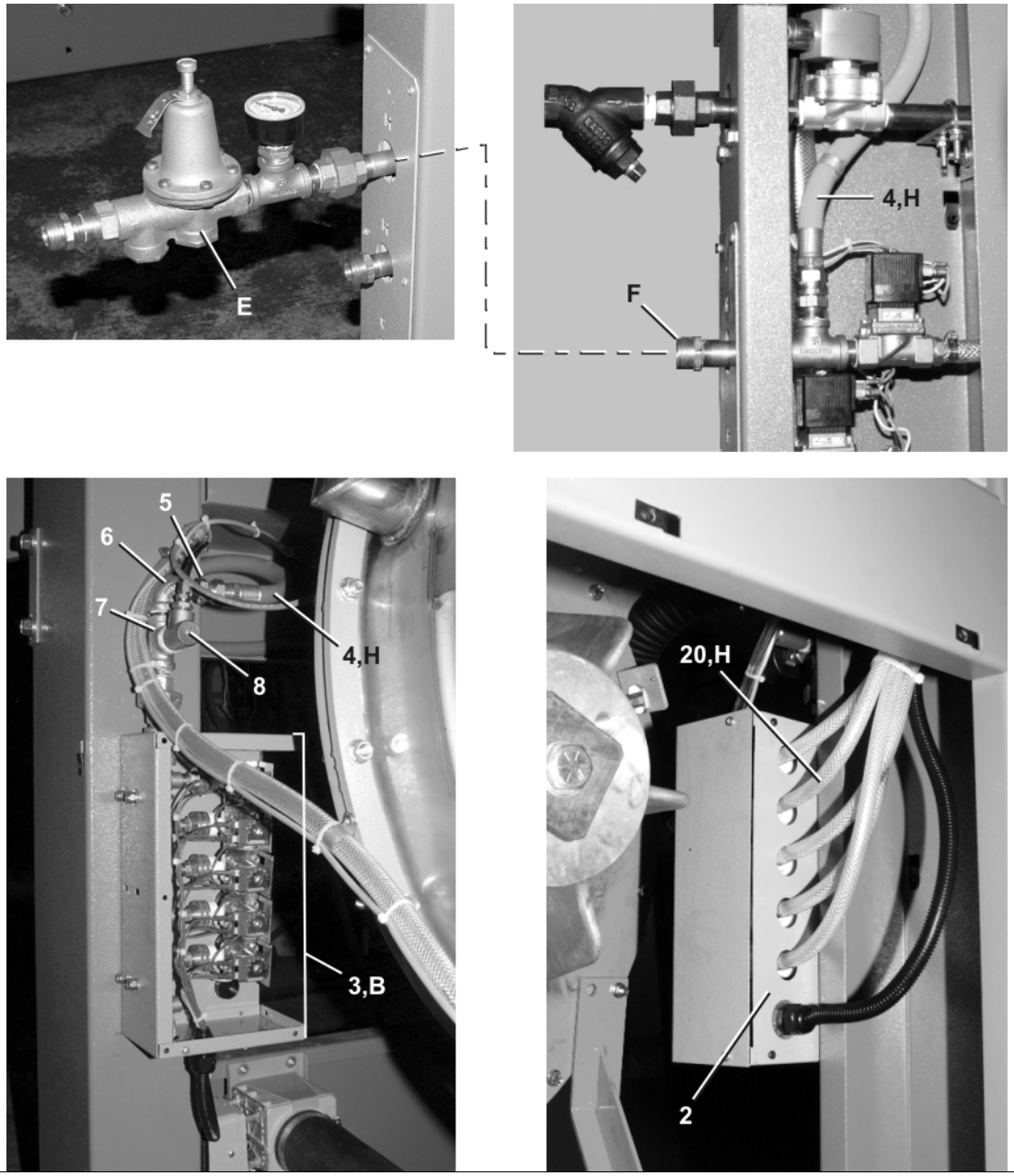


Figure 3: Water to the five compartments for dry chemical supplies

Installed views



Legend

B. Cover, not shown
E. Pressure regulator assembly
F. Hot water to flush the chemical supplies
H. Hot water line for the 5 chemical supply compartments

Figure 4: Valve manifold

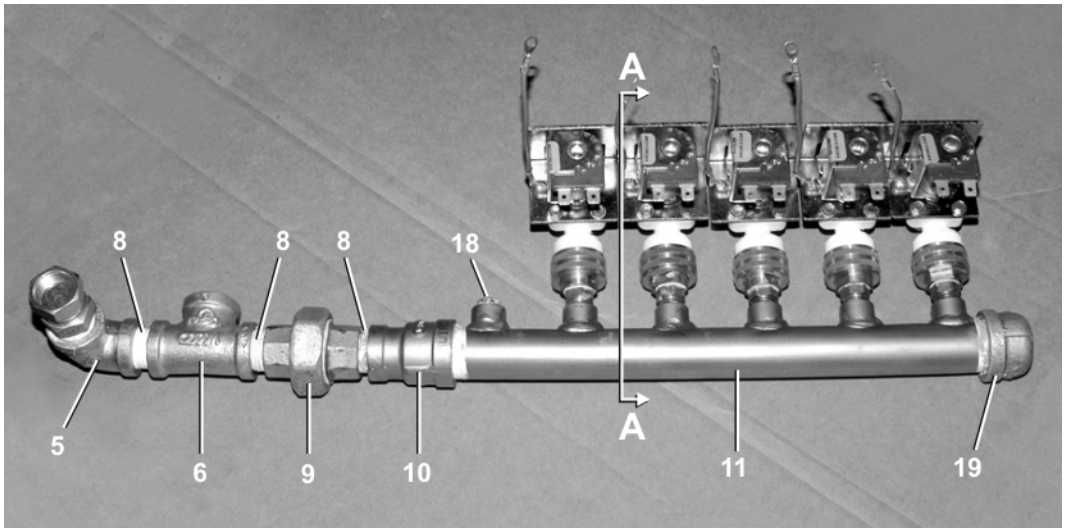


Figure 5: Valve assembly

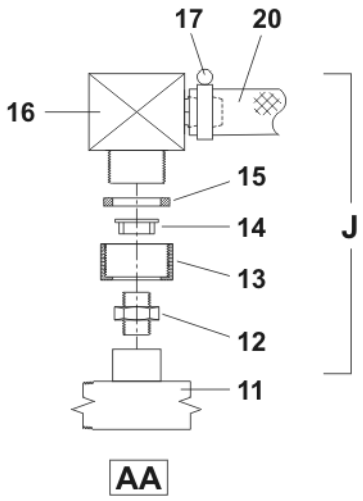
Cross Section	Legend
	**AA.** Cross Section **J.** 5 instances

Table 1: Parts List—Five Compartments for Dry Chemical Supplies

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	GWS3022X	Installation Group	
	B	AWS3022X	Assembly	
	C	AWS30221A	Assembly	
Components				
all	1	02 02925A	Cover	
all	2	02 03991	Cover	
all	3	02 03991B	Cover	
all	4	60E085C54A	Hose	
all	5	5SL0KNFA	Pipe fitting	
all	6	5S0KNFA	Pipe fitting	
all	7	96M001	Pressure relief valve	
all	8	5N0KCLSG42	Pipe nipple	
all	9	51X017	Pipe fitting	
all	10	5SR0P0KNF	Pipe fitting	
all	11	W2 03990A	Weldment	
all	12	53A026A	Pipe nipple	
all	13	53A060H	Pipe fitting	
all	14	02 03732Z	Pipe fitting	
all	15	53A060HA	Washer	
all	16	96P013B71	Valve	
all	17	27A040	Hose clamp	
all	18	51P013	Hole plug	
all	19	5SCA0PBE	Pipe fitting	
all	20	60E006B	Hose	
all	21	27A082	Hose clamp	
all	22	02 03870D	Hose	
all	23	27A070	Hose clamp	
all	24	01 10094X	Label	
all	25	09N405PB10	Switch	
all	29	15K105	Bolt	
all	30	15G205	Nut	
all	31	15U255	Washer	
all	32	W2 03611C	Weldment	
all	33	02 03996	Cover	
all	34	02 03997C	Mounting bracket	
all	35	02 03998C	Mounting bracket	
all	36	51E504EB	Pipe fitting	
all	37	17N200B	Nut	
all	38	5SR0G0EBF	Pipe fitting	
all	39	27A002	Nozzle	
all	40	15K086B	Bolt	

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	41	15U260	Washer	
all	42	24G030N	Washer	
all	43	15G211	Nut	
all	44	15K041S	Bolt	
all	45	15U160	Washer	
all	46	15G140	Nut	
all	47	SA 02 066	Cover	

— End of BIIFBM22 —

Control and Sensing Devices

8

BIIFBM21 (Published) Book specs- Dates: 20090903 / 20090903 / 20100514 Lang: ENG01 Applic: MXA

Air Chamber Components and Installation

Figure 1: Air chamber for the pressure switch

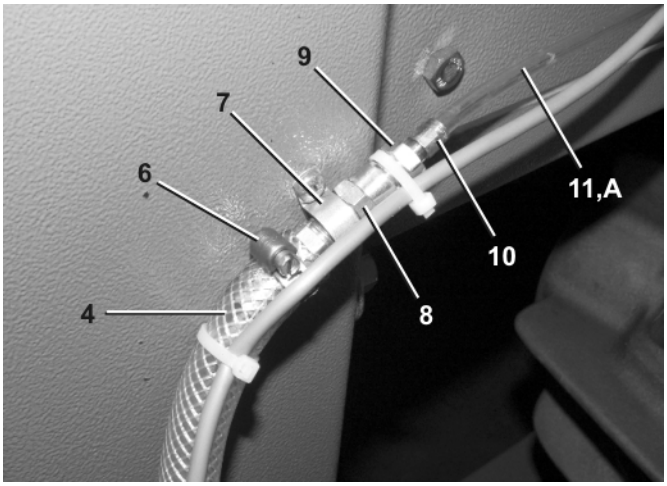
Detailed view	Legend
	**A.** Pressure to the transducer

Figure 2: General View

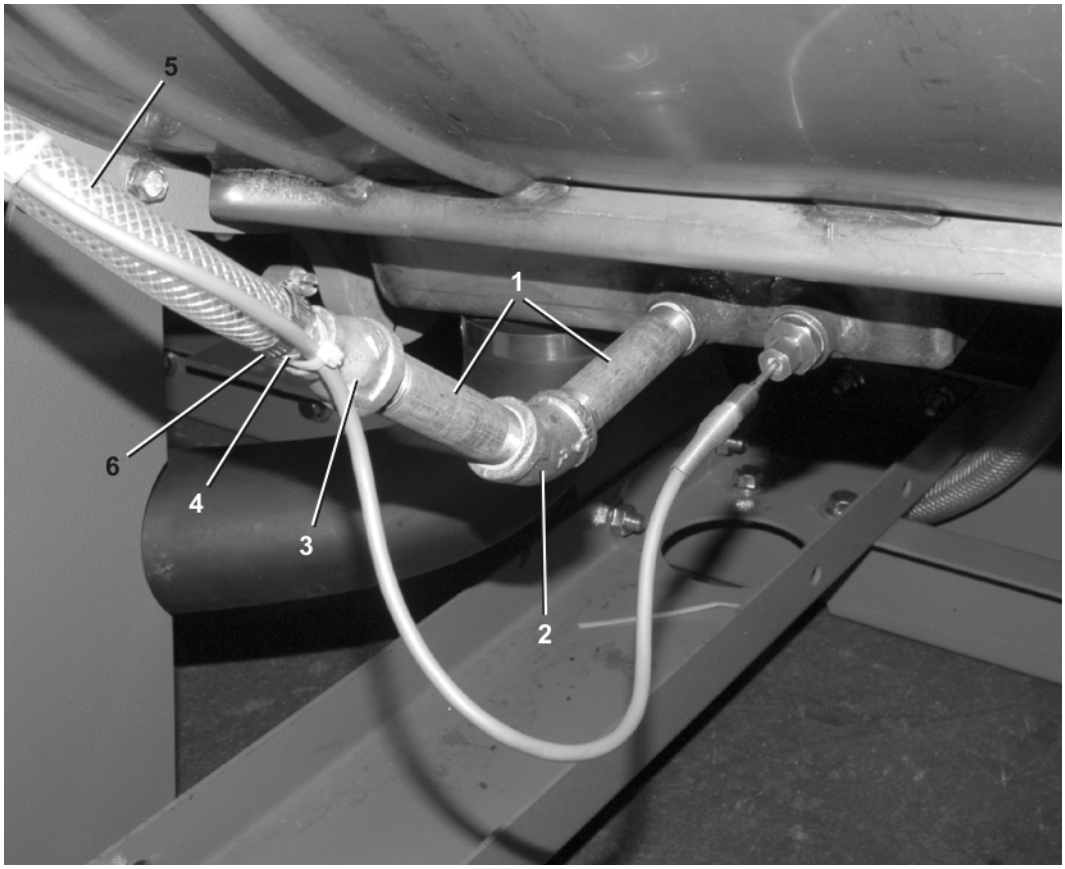


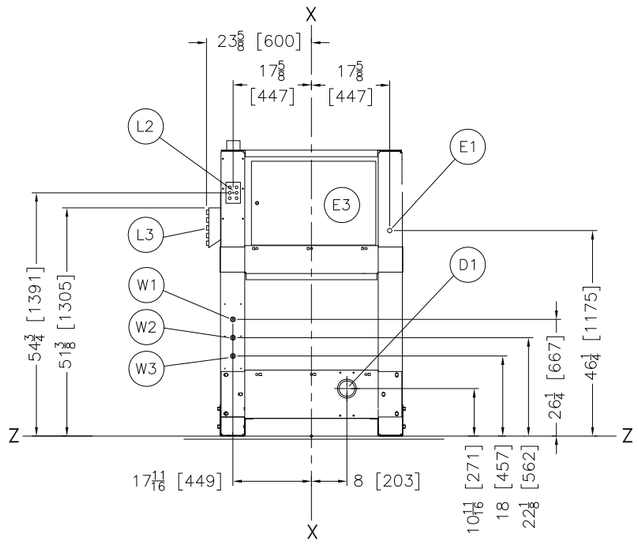
Table 1: Parts List—Air Chamber Componenets and installation

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	ALL30211	Assembly	
Components				
all	1	5N0K04AG42	Pipe nipple	
all	2	5SL0KNFK	Pipe fitting	
all	3	5SR0K0ENF	Pipe fitting	
all	4	51E507	Hose stem	
all	5	60E006C	Hose	
all	6	27A040	Hose clamp	
all	7	12P01410SZ	Hose clamp	
all	8	5SCC0EBE	Pipe fitting	
all	9	51E502B	Hose stem	
all	10	27A047	Hose clamp	
all	11	60E004NT	Hose	

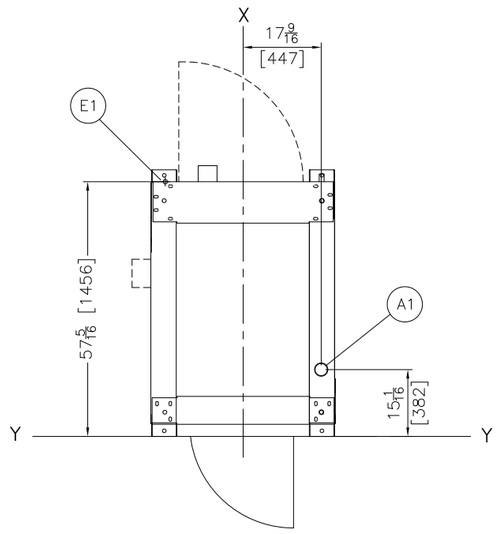
— End of BIIFBM21 —

Dimensional Drawings

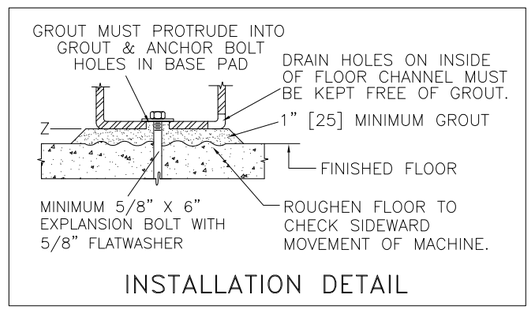
9



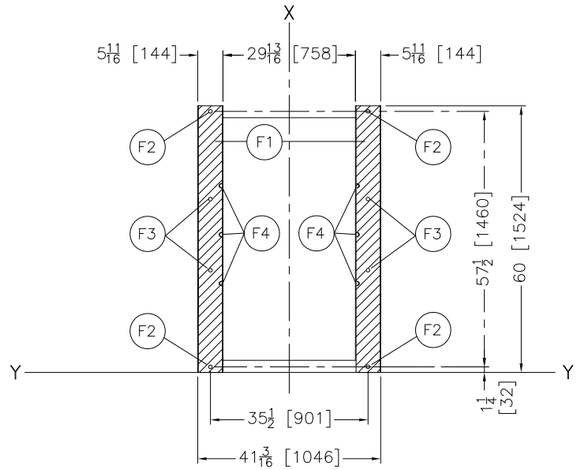
REAR VIEW



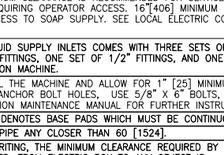
PLAN VIEW



INSTALLATION DETAIL



FOUNDATION PLAN



ITEM	LEGEND
W3	COLD WATER INLET, 3/4" GARDEN HOSE, MALE THREAD.
W2	HOT WATER INLET, 3/4" GARDEN HOSE, MALE THREAD.
W1	HOT WATER FOR SUPPLY, 3/4" NPT CONNECTION, PRESSURE
	REGULATOR ASSEMBLY, REMOVED FOR SHIPPING, MUST BE
	ADDED AT INSTALLATION.
L3	ADDITIONAL LIQUID SUPPLY INLETS FOR 15 PORT PERISTALTIC
	X8W MODELS ONLY.
L2	STANDARD LIQUID SUPPLY INLETS. SEE NOTE 10.
L1	STANDARD SOAP CHUTE
F4	DRAIN HOLES
F3	GROUT HOLES
F2	(4) 1-1/16" DIAMETER ANCHOR BOLT HOLES, USE
	5/8" X 6" BOLTS MINIMUM.
F1	BASEPADS, SEE NOTE 8.
E4	MICROPROCESSOR CONTROL PANEL & BOX, X8W
E3	MICROPROCESSOR CONTROL BOX, X8J
E2	MICROPROCESSOR CONTROL PANEL, X8J
E1	MAIN ELECTRICAL CONNECTION
D1	DRAIN TO REAR, 3" PIPE SOCKET JOINT.
A2	VENT FOR LIQUID SUPPLY
A1	VENT 3"ø

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.

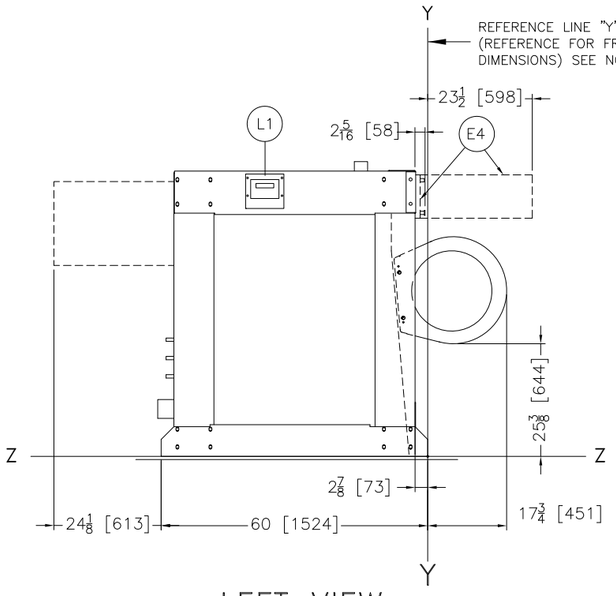
1 ALL DIMENSIONS SHOWN ARE APPROXIMATE, SUBJECT TO NORMAL MANUFACTURING TOLERANCES, AND TO OCCASIONAL CHANGES WITHOUT NOTICE THROUGH REDESIGN AND/OR RELOCATION OF COMPONENTS, ETC. DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED, AND IN NO EVENT PRE-PIPE CLOSER THAN FIVE FEET FROM MACHINE. FACTORY MUST BE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

ATTENTION

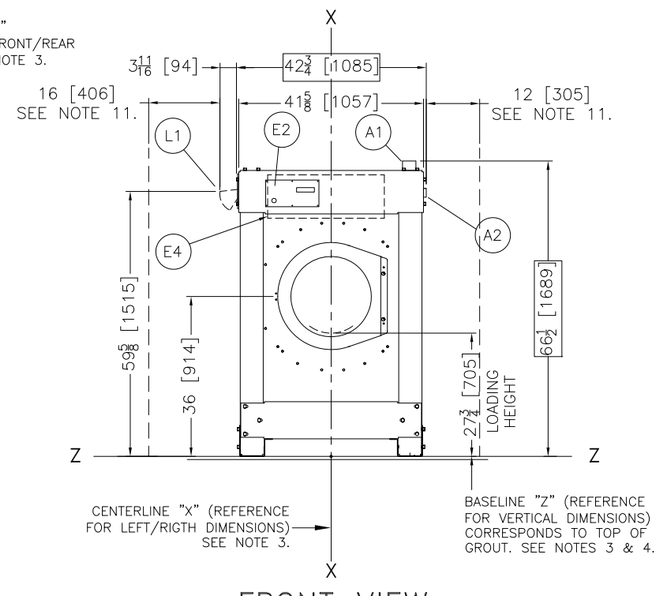
MOST REGULATORY AUTHORITIES (INCLUDING OSHA IN THE USA) HOLD THE OWNER/USER ULTIMATELY RESPONSIBLE TO MAINTAIN A SAFE WORKING ENVIRONMENT. ACCORDINGLY, THE OWNER/USER MUST RECOGNIZE ALL FORESEEABLE SAFETY HAZARDS, FURNISH SAFETY INSTRUCTIONS AND GUIDANCE TO ALL PERSONNEL WHO MAY COME IN CONTACT WITH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

ATTENTION

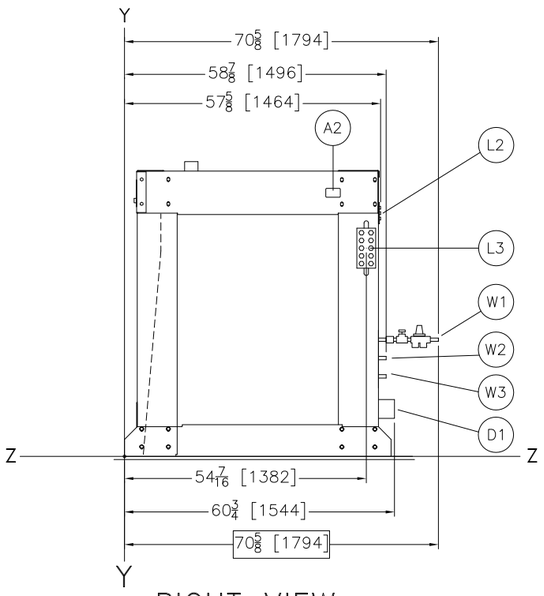
THE FLOOR AND/OR OTHER SUPPORT COMPONENTS MUST HAVE SUFFICIENT STRENGTH (AND RIGIDITY WITH DUE CONSIDERATION FOR NATURAL OR RESONANT FREQUENCY THEREOF) TO WITHSTAND THE FULLY LOADED WEIGHT OF THE MACHINE INCLUDING THE GOODS, THE WATER, AND ANY REPEATED SINUSOIDAL (ROTATING) FORCES GENERATED DURING ITS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



LEFT VIEW



FRONT VIEW

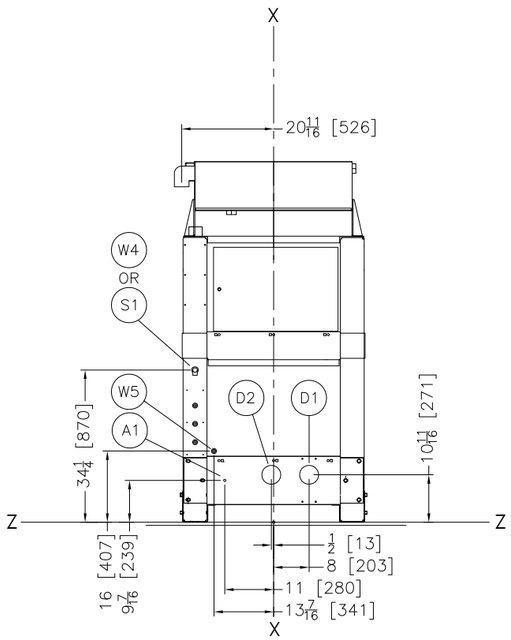


RIGHT VIEW

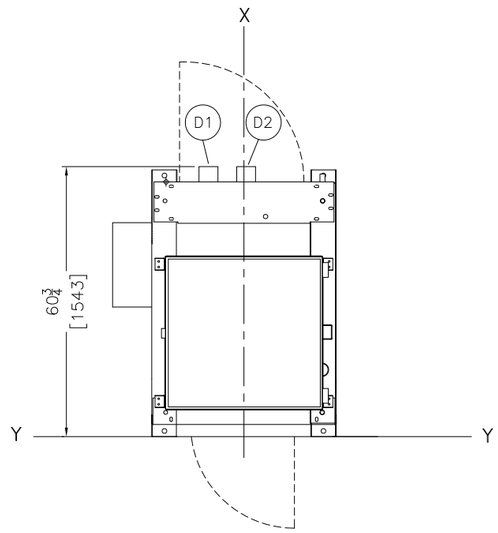
3022X8J,X8W

BD3022X8BE
2012365D

PELLERIN MILNOR CORPORATION
P.O. Box 400 Kenner, LA 70063, USA, Phone 504/467-9591,
FAX 504/469-1849, Email: mktg@milnor.com



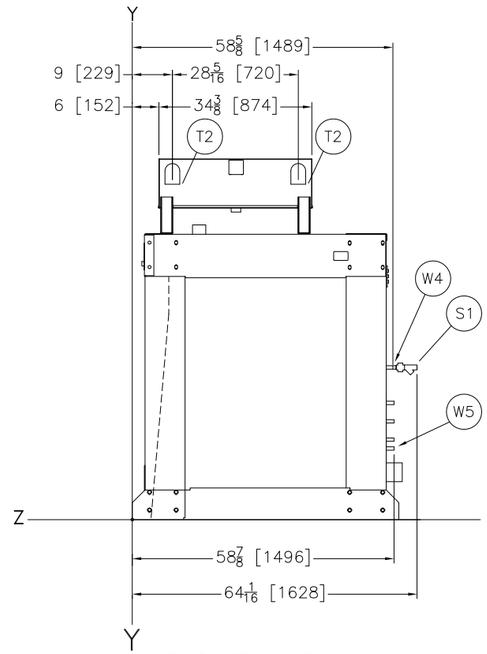
REAR VIEW



PLAN VIEW

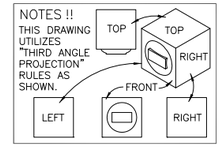
LEFT VIEW

FRONT VIEW



RIGHT VIEW

NOTES !!
THIS DRAWING UTILIZES "THIRD ANGLE PROJECTION" RULES AS SHOWN.



ITEM	LEGEND
W5	OPTIONAL AIROP REUSE (IF STEAM SUPPLIED), 1/2" NPT,
	(PART OF OPTIONAL DUAL DRAIN).
W4	OPTIONAL AIROP REUSE (IF NO STEAM), 1/2" NPT,
	(PART OF OPTIONAL DUAL DRAIN).
T2	OVERFLOW, 3" ID HOSE SUPPLIED
T1	OPTIONAL REUSE TANK, 3022X8W ONLY.
S1	OPTIONAL STEAM, 1/2" NPT
L1	5 COMPARTMENT SUPPLY
D2	DUAL DRAIN (REUSE), 3" PIPE SOCKET JOINT
D1	DRAIN DRAIN (SEWER), 3' PIPE SOCKET JOINT
A1	AIR CONNECTION 1/4" NPT, FOR REUSE WATER INLET(AIROP)
	(PART OF OPTIONAL DUAL DRAIN).

NOTES

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.

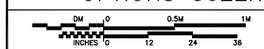
ATTENTION

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

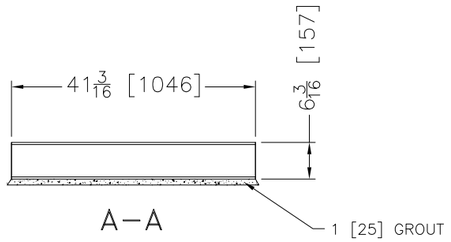
THE FLOOR AND/OR OTHER SUPPORT COMPONENTS MUST HAVE SUFFICIENT STRENGTH (AND RIGIDITY WITH DUE CONSIDERATION FOR NATURAL OR RESONANT FREQUENCY THEREOF) TO WITHSTAND THE FULLY LOADED WEIGHT OF THE MACHINE INCLUDING THE GOODS, THE WATER, AND ANY REPEATED SINUSOIDAL (ROTATING) FORCES GENERATED DURING ITS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

OPTIONS 3022X8J,X8W

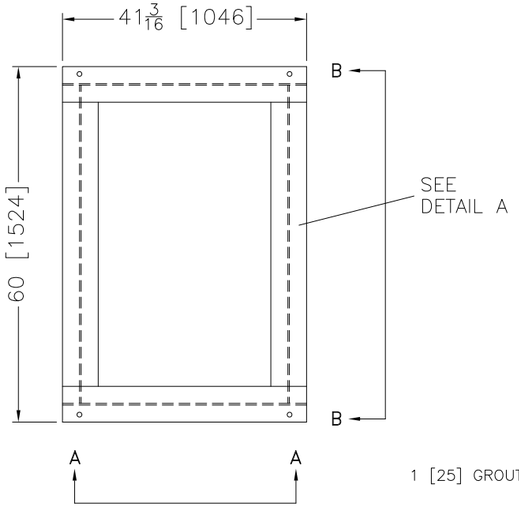


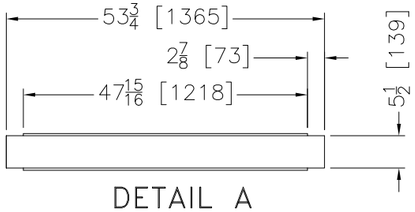
BD3022X8BB
2013146D

PELLERIN MILNOR CORPORATION
P.O. Box 400 Kenner, LA 70063, USA, Phone 504/467-9591,
FAX 504/469-1849, Email: mktg@milnor.com

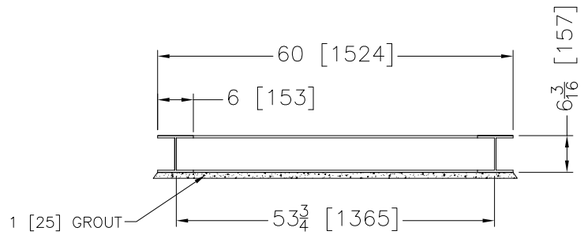


A–A

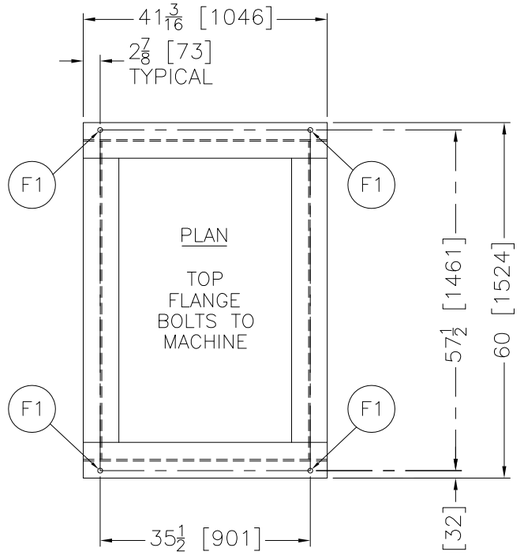




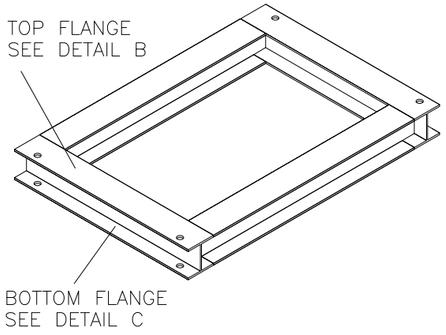
DETAIL A

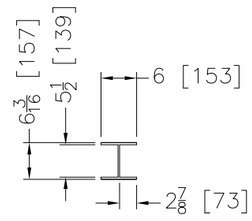


B–B

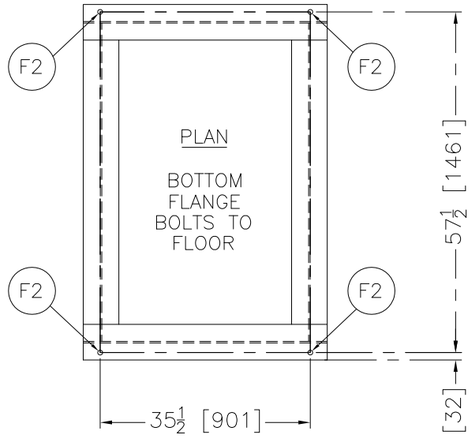


DETAIL B





6 W 20 RECOMMENDED



DETAIL C

ITEM	LEGEND
F2	FOUR, 1–1/4"[32] ANCHOR BOLT HOLES BOLT TO FLOOR
F1	FOUR, 1–1/4"[32] ANCHOR BOLT HOLES BOLT TO MACHINE

NOTES

3 WHEN INSTALLING MACHINE AND PEDESTAL BASE, IT IS RECOMMENDED TO LAY THE PEDESTAL ON A MINIMUM 1 [25] THICK GROUT BED AND BOLT THE MACHINE TO IT. ALTERNATELY, THE MACHINE MAY BE WELDED TO THE BASE, PROVIDED IT IS SHIMMED AS REQUIRED TO INSURE THERE IS NO DISTORTION OF THE MACHINE BASE PLATES OR FRAME.

2 THIS BASE MUST BE FABRICATED LOCALLY AND SHOULD BE MADE SQUARE AND LEVEL. IT IS NOT SUPPLIED BY PELLERIN MILNOR CORP. THIS DRAWING CONVEYS NO EXPRESS OR IMPLIED WARRANTY WITH REGARD TO THE CONSTRUCTION AND/OR SUITABILITY OF THIS ASSEMBLY.

1 NUMBERS IN BRACKETS [] DENOTE DIMENSIONS IN MILLIMETERS.

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.

PEDESTAL BASE 3022X8J

SCALE: 1" = 1' 0"

DWG# BD3022XBASAE 2012365D

PELLERIN MILNOR CORPORATION
P.O. Box 400 Kenner, LA 70063, USA, Phone 504/467–9591,
FAX 504/469–1849, Email: mktg@milnor.com