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Installation and Service

68036F5N & F5P

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

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

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PELLERIN MILNOR CORPORATION
LIMITED STANDARD WARRANTY

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

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

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

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

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

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

BMP720097/19036

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

How to Get the Necessary Repair Components

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

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

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

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

To write to the Milnor factory:

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

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

— End of BIUUUD19 —

Installation 1

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

Safety—Tilting Washer-Extractors

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

4. Safety Alert Messages—Cylinder and Processing Hazards

[Document BIUUUS13]

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

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

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

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

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

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

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

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

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

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

5.1. Damage and Malfunction Hazards

5.1.1. Hazards Resulting from Inoperative Safety Devices

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

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

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

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

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

- Do not unlock or open electric box doors.

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

- Do not remove guards, covers, or panels.

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

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

5.1.2. Hazards Resulting from Damaged Mechanical Devices

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

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

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

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

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

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

5.2. Careless Use Hazards

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

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

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

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

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

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

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

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

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

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

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

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

- Understand the consequences of operating manually.

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

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

— End of BIUUUS27 —

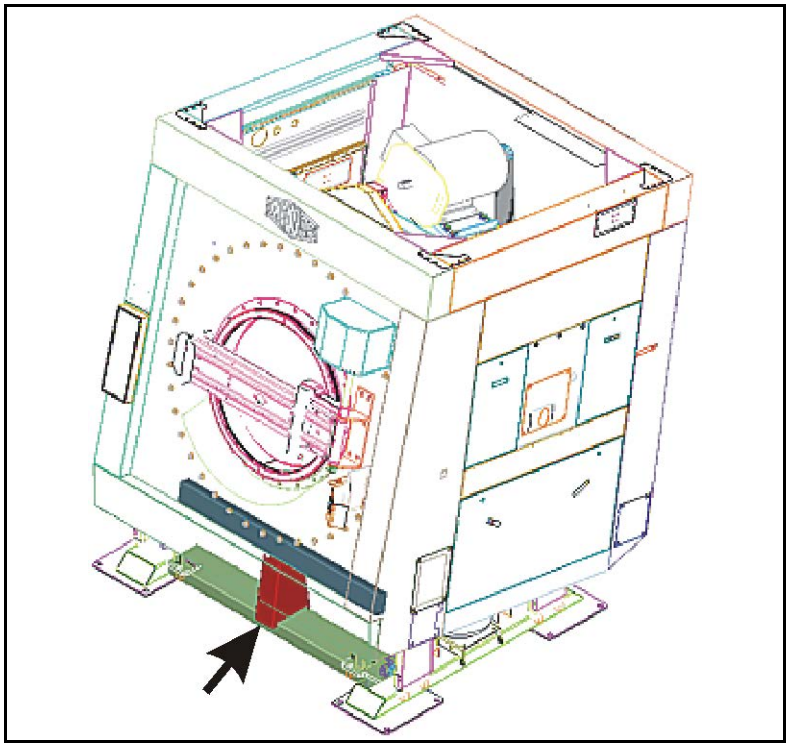
How To Use the Red Safety Support(s) for Maintenance

1. What Safety Supports are Provided and Why

These machines are provided with one safety stand. After the housing is tilted up, the stand is placed under the center of the raised tilt frame (front or rear of frame).

Use the safety support(s) whenever the maintenance to be performed requires you to place any part of your body in or near the path of the vertically moving portion of the machine. When not in use, stow the safety supports as explained herein.

Figure 1: Safety Stand for 68-series, Rubber Spring-resting, Air-tilt Washer-extractor Models (shown before resting machine on stand)



WARNING 1: Crush Hazard—The safety support provides protection against the un-powered descent of the housing during maintenance in the event of a leak in the pneumatic tilt system. Such a condition can cause the housing to fall quickly.

- Never work in or near the path of the vertically moving portion of the machine unless the safety support is deployed and power is locked out/tagged out.
- Maintain the safety support(s) in good condition.
- Designate a convenient, secure area to stow the safety stand when not in use.

2. How to Deploy the Safety Support(s)

2.1. Put the Machine In Position to Accept the Safety Support(s)—At the controls, tilt the machine as in normal operation. Tilt up only as far as needed to insert the stand(s) securely.

2.2. Put the Safety Support(s) in Position—Place the safety stand on the tilt base cross brace, as shown.

2.3. Secure the Safety Support(s) and the Machine—At the controls, carefully lower the housing or shell just until it is resting on the stand.

Lock out/tag out power to the machine.

— End of BIUUUS06 —

BIIFGM01 (Published) Book specs- Dates: 20100610 / 20100610 / 20100806 Lang: ENG01 Applic: IFG

Safety Support 68036F5N Air-tilt Washer-extractor

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

Milnor supplies safety supports with this machine.This document shows the safety support, identifies the safety support component, and tells how to install it.

1. Safety Support Component Identification

Figure 1:

Safety Supports Installed 68036F5N Air-tilt Washer-extractor

Legend

A. Tilt frame
B. Base frame

Table 1: Parts List— Safety Supports: 6836F_

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	GSB6836E	Installation Group	
Components				
all	1	W2 04493	Weldment	

2. How to Use the Safety Support

Safety supports have a red color. **You must keep and use safety supports for maintenance as told in this document.**

CAUTION 2: Crush Hazard—The mechanism can fall if there is a mechanical problem.

- Always install the safety supports and remove power from the machine before you do maintenance in the machine.
- Do not hit the safety supports while you do maintenance.
- Replace damaged safety supports.
- Stow the safety supports properly.

Install the safety supports as follows:

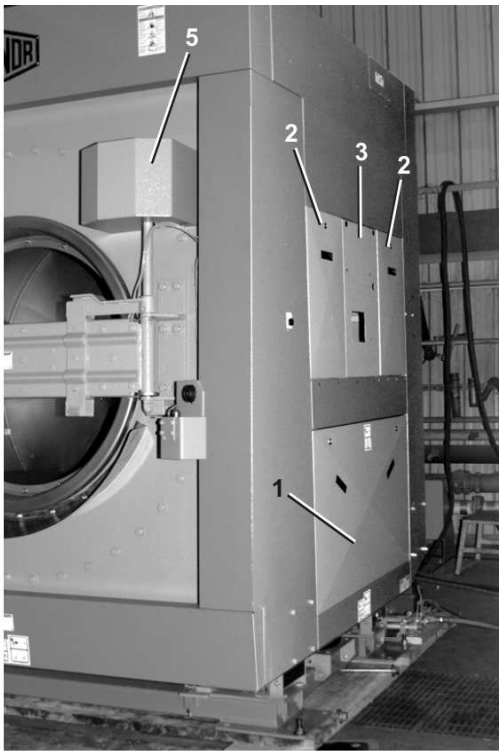
1. Operate the Manual controls to lift the mechanism sufficiently to put the safety support in its position.
2. Put the support in its position from the nearest side of the machine. Do not go across the machine. Install the support as shown in the figure.
3. Carefully operate the Manual controls to lower the mechanism until it touches the safety supports. **Immediately release the controls when the components touch.**
4. Remove electrical power from the machine.

— End of BIIFGM01 —

BIIFGM02 (Published) Book specs- Dates: 20100610 / 20100610 / 20100806 Lang: ENG01 Applic: IFG

Panels and Covers

Figure 1: General Views



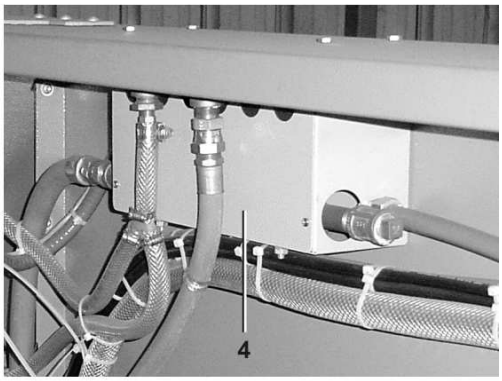


Table 1: Parts List—Panels and Covers

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				
none				
Components				
all	1	A48 22110	Cover	
all	2	A68 22145	Cover	
all	3	02 22141	Cover	
all	4	02 03993	Cover	
all	5	AGS75001L	Cover	

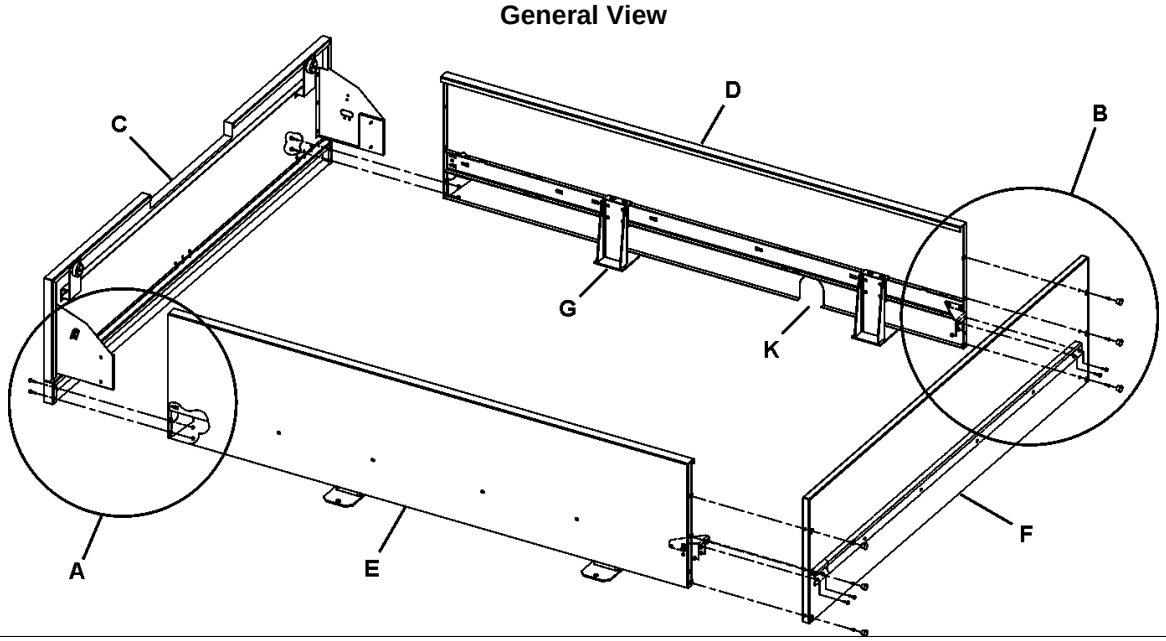
— End of BIIFGM02 —

BIIFGM03 (Published) Book specs- Dates: 20100615 / 20100615 / 20100806 Lang: ENG01 Applic: IFG

Foot Guard Assembly

You will receive the foot guard disassembled into four sides. The sides have the support legs attached to them. The bolts are in the correct locations. Set the sides around the machine. Then, connect with the bolts supplied. See the Detailed views. Move the assembled foot guard to the dimensions shown in Figure 2. Adjust until the foot guard is level. Install grout and foundation bolts to the foot guard's base pads. (This will prevent movement of the foot guard.) See the Installation Manual for the washer-extractor's installation requirements and dimensions.

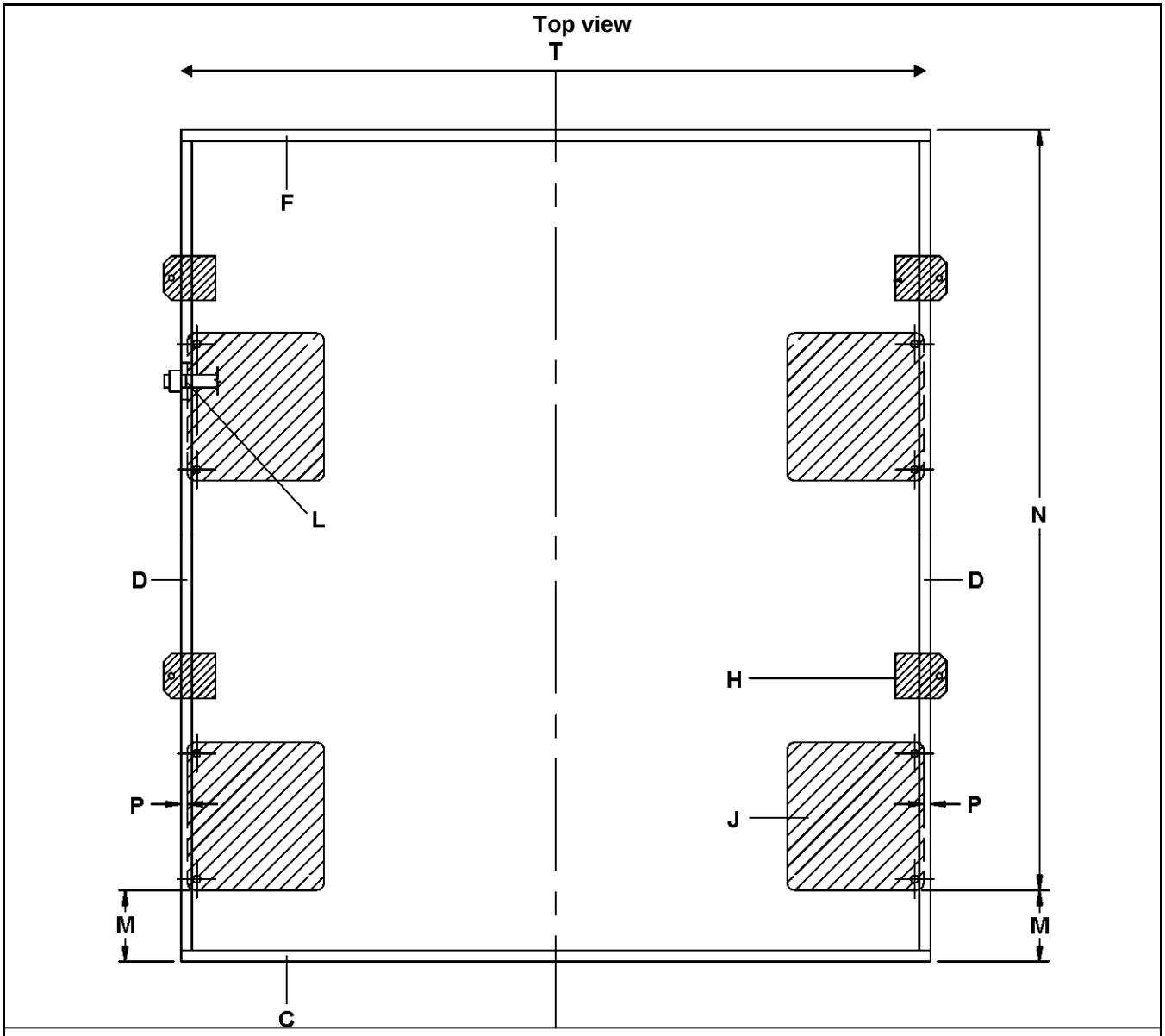
Figure 1: Foot Guard Assembly



Legend

- **A.** Detailed view -Front foot guard to side panels
- **B.** Detailed view -Rear foot guard to side panels
- **C.** Front foot guard
- **D.** Left foot guard
- **E.** Right foot guard
- **F.** Rear foot guard
- **G.** Support legs
- **H.** Base pads of the foot guard
- **K.** Hole for the steam pipe

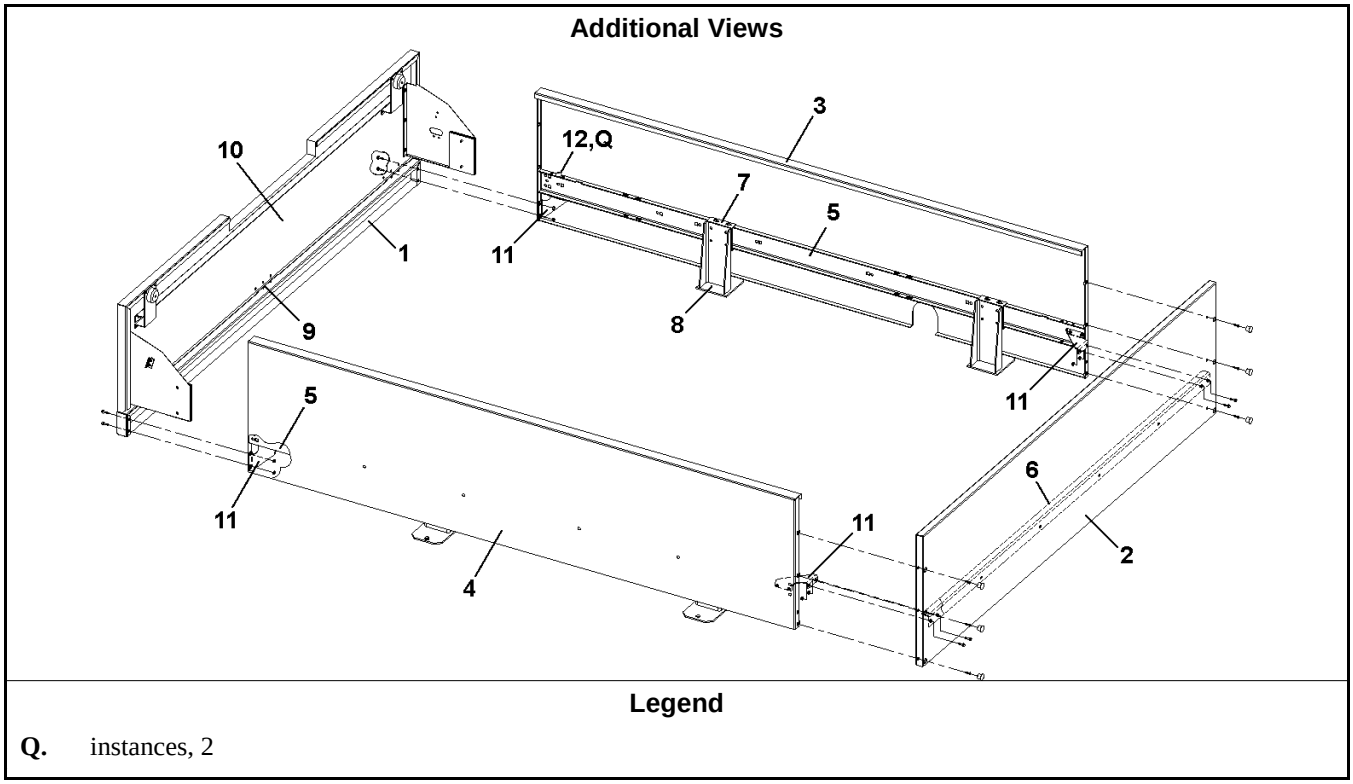
Figure 2: Installed view



Legend

C. Front foot guard
D. Left foot guard
E. Right foot guard
F. Rear foot guard
H. Base pads of the foot guard
J. Base pads: 6836F_
L. Put the steam pipe in the center of the hole.
M. 9-5/8" (244)
N. 103" (2616)
P. 7/8" (22)
T. Align the center of the foot guard with the center of the washer.

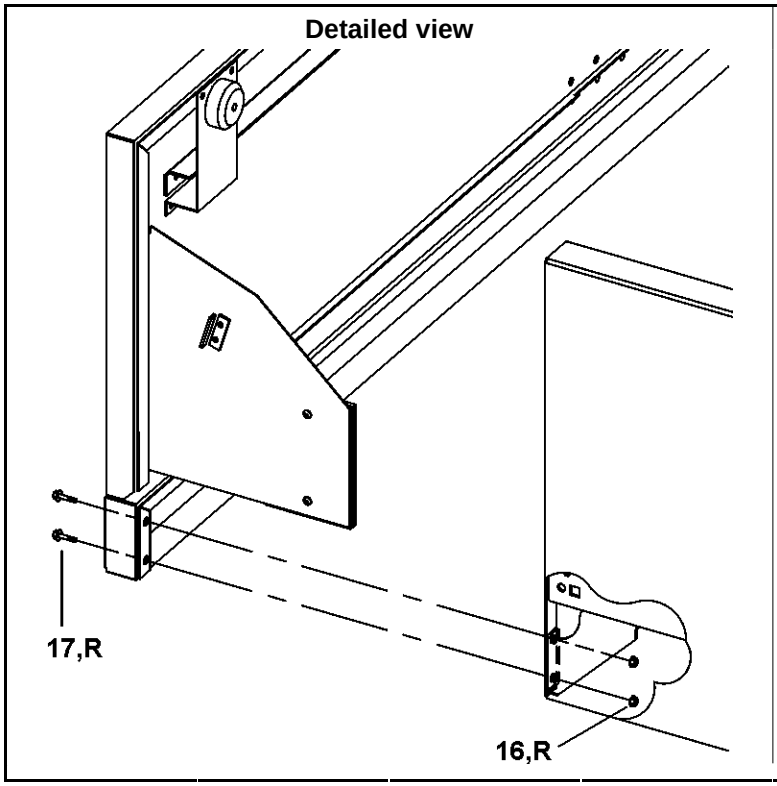
Figure 3: Foot Guard Assembly



Legend

Q. instances, 2

Figure 4: Front foot guard to side panels



Legend

R. instances, 4
S. instances, 6

Figure 5: Rear foot guard to side panels

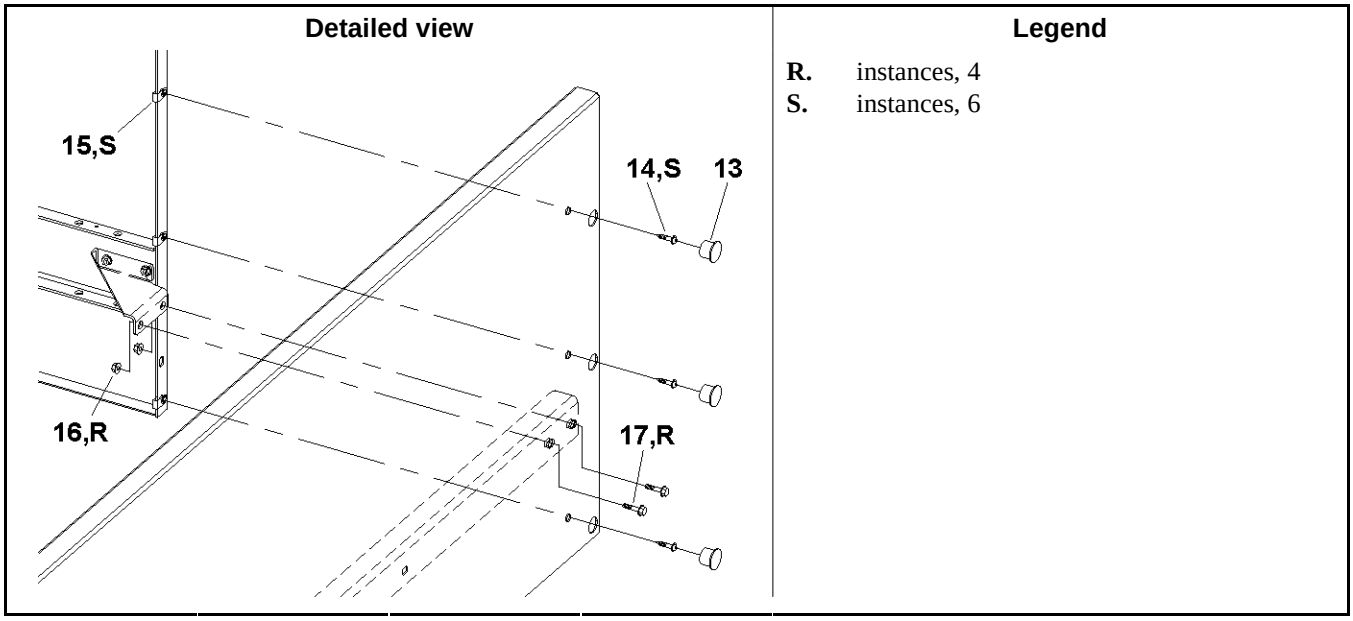


Table 1: Parts List—Foot Guard Assembly

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.

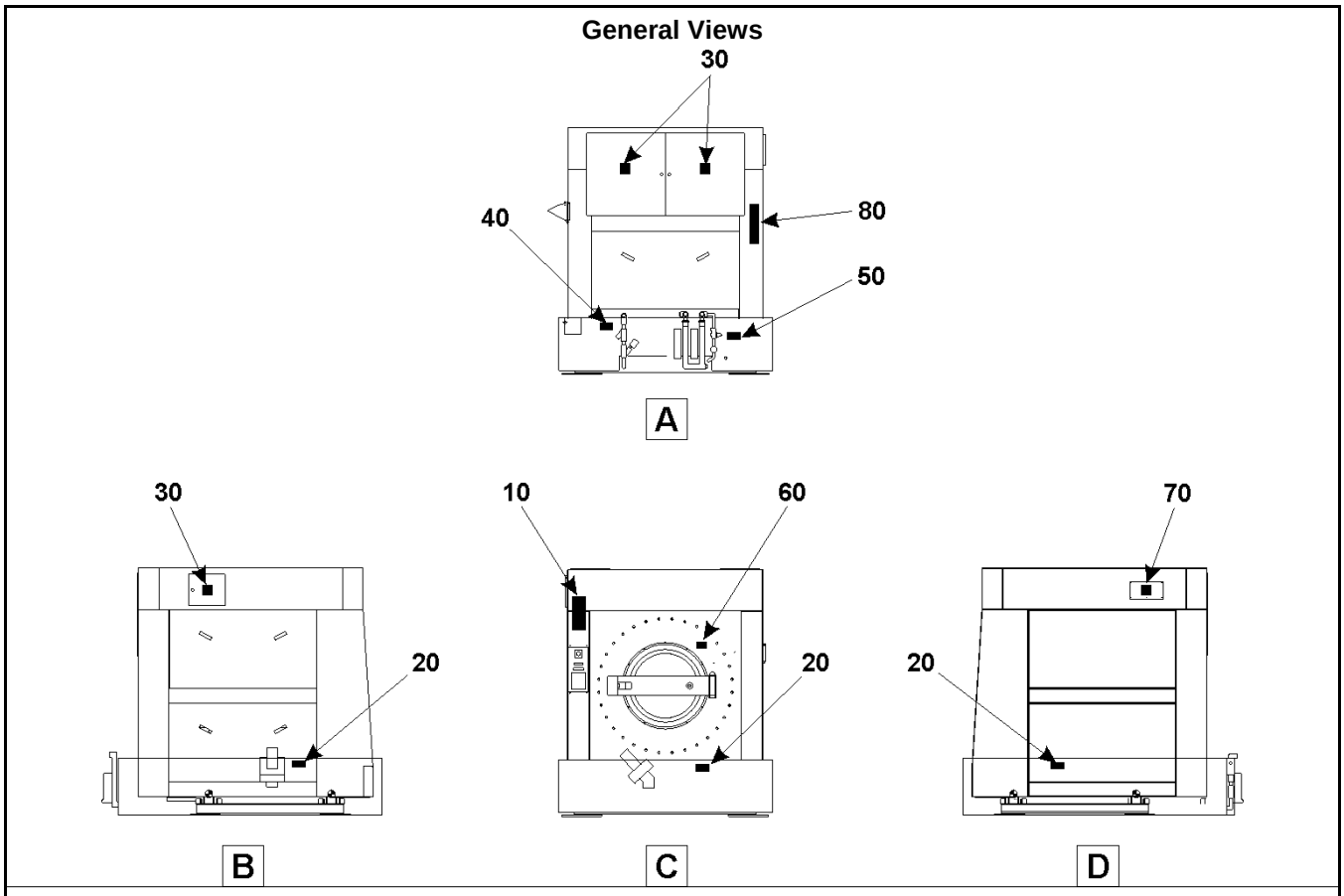
Used In	Item	Part Number	Description/Nomenclature	Comments
			Assemblies	
	A	GHG68002A	Installation Group	
			Components	
all	1	02 22125A	Panel	
all	2	02 22126A	Panel	
all	3	02 22127A	Panel	
all	4	02 22127B	Panel	
all	5	02 22128A	Support	
all	6	02 22129A	Support	
all	7	02 22156	Piece part	
all	8	W2 22156	Weldment	
all	9	W4 30330A	Hinge	
all	10	A68 22124A	Assembly	
all	11	02 22130	Piece part	
all	12	60C001	Rubber bumper	
all	13	12P1ARHP1	Hole plug	
all	14	15N110H	Bolt	
all	15	15G004HB	Nut	
all	16	15G198	Nut	
all	17	15K095	Bolt	

— End of BIIFGM03 —

BIIFGM04 (Published) Book specs- Dates: 20100616 / 20100616 / 20100806 Lang: ENG01 Applic: IFG

Safety Placards and Locations—: 6836F5_

Figure 1: Safety Placards and Locations—: 6836F_



Legend

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

- 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.

Table 1: Parts List—Safety Placards and Locations

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.

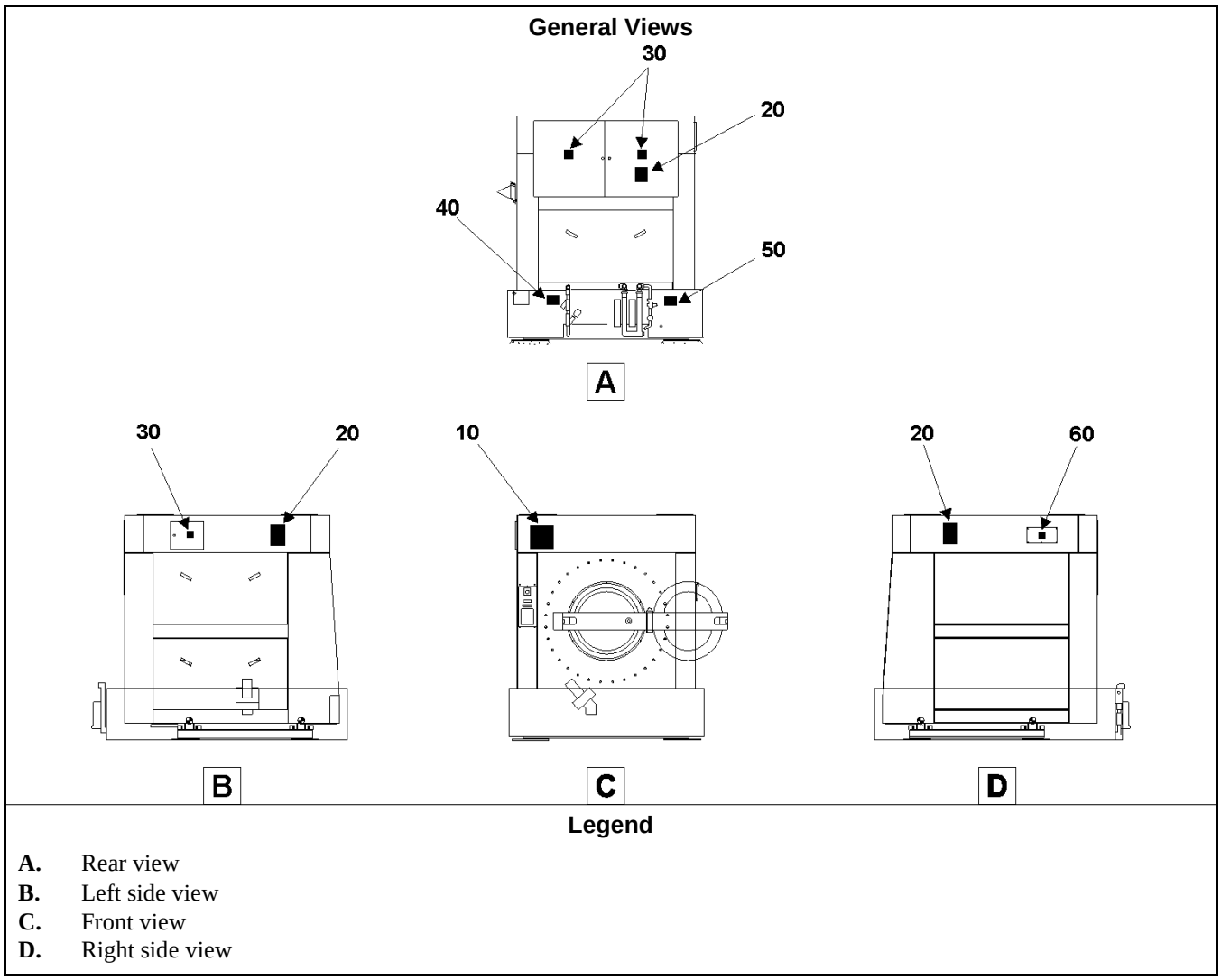
Used In	Item	Part Number	Description/Nomenclature	Comments
Assemblies				
none				
Components				
all	10	01 10583A	Dataplate, Warning	
all	20	01 10630A	Dataplate, Hazard	
all	30	01 10377A	Dataplate, Hazard	
all	40	01 10685A	Dataplate, Hazard	Used on the steam inlet
all	50	01 10648A	Dataplate, Hazard	
all	60	01 10699A	Dataplate, Hazard	
all	70	01 10375B	Dataplate, Hazard	
all	80	01 10684A	Dataplate,Warning	

— End of BIIFGM04 —

BIIFGM05 (Published) Book specs- Dates: 20100616 / 20100616 / 20100806 Lang: ENG01 Applic: IFG

Safety Placards and Locations— ISO: 6836F5_

Figure 1: Safety Placards and Locations— ISO: 6836F5_



- 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.

Table 1: Parts List—Safety Placard Locations ISO 6836F5_

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	10	01 10629X	Dataplate, Warning	
all	20	01 10630X	Dataplate,Warning, ISO	
all	30	01 10377	Dataplate,Warning, ISO	
all	40	01 10649X	Dataplate,Warning ISO	Used on the steam inlet
all	50	01 10648X	Dataplate,Warning, ISO	
all	60	01 10375	Dataplate,Warning	

— End of BIIFGM05 —

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

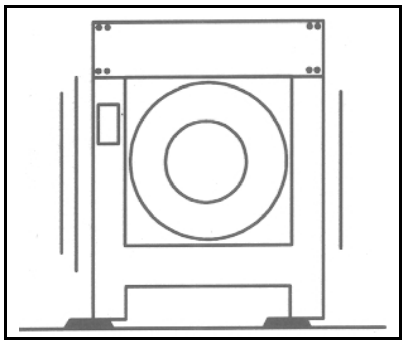
1. All openings and corridors through which equipment must pass during installation must be large enough to accommodate the width and the height of the machine as shown on the dimensional drawings. It is occasionally possible to reduce the overall dimensions by removing piping or other special modifications.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

BIIFUI01 (Published) Book specs- Dates: 20130129 / 20130129 / 20130129 Lang: ENG01 Applic: IFG IFH

Service Connections

Required service connections (depending on the machine model and optional equipment) are as follows:

1. Piped inlets and outlets are as listed in the “Table of Piped Inlets” and “Table of Piped Outlets.” The sizes and locations of piped inlets and outlets are shown on the dimensional drawings for the machine.
2. Electric power connections.

1. Requirements for Piped Connections

1. Inlet pressures must be within the minimum/maximum range specified. Pressures outside of the specified range may cause the machine to operate inefficiently or malfunction, and may damage machine components.

CAUTION 1: Machine Damage—Valve bodies will be ruined if twisted and distorted.

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

2. 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, if necessary.
3. If available, use hot water for the supply injector connection. Hot water supply must be 10 PSI minimum (0.70 kilogram/centimeter) and must not contain steam. After making the connection, set the pressure regulator for a maximum of 28 PSI (1.96 kilograms/centimeter), when there is no water flow.
4. If valve is accidentally piped to the wrong water line, merely interchange the air tube (if valve is air operated). Never interchange any electrical connections.
5. Some of the water inlet and/or steam valves on machines may be of the “ball valve” construction. The flow rate of a ball valve is far greater than that of an equal size globe valve. Do not use globe type shut-off valves in front of ball valves unless the globe valve is selected in accordance with the following table.

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.

Table 1: Valve sizes and their equivalents

Ball valve size	Equivalent globe valve size
1-1/4" normal flow	2-1/2"
1-1/2" normal flow	2-1/2"
2" normal flow	3"

2. Piped Inlet Specification

Piped inlet requirements are as follows (see dimension drawings for sizes and locations of connection points):

Table 2: Table of Piped Inlets

Description of Connections	Source Requirements	Piping Specifications, Comments
Compressed air--hydraulic tilting and non-tilt models	1/4" NPT, 85 - 110 PSI (5.97 - 7.73 kg.sq. cm.)	Pipe material per plumbing code
Cold water inlet	2" NPT 10 - 75 PSI (0.7 -5.27 kgs.sq. cm.)	
Hot water inlet		
Steam inlet	1 - 1/4" NPT 30 - 115 PSI (2.10 - 8.08 kgs. sq. cm.)	
Compressed air--air tilting models	3/4" NPT 85 - 110 PSI (5.97 - 7.73 kg.sq. cm.)	
Compressed air--hydraulic tilting and non-tilting models	1/4" NPT 85 - 110 PSI (5.97 - 7.73 kg.sq. cm.)	

2.1. Piped Outlet Specification—Piped outlet requirements are as follows (see dimensional drawings for sizes and locations of connection points):

Table 3: Table of Piped Outlets

Description of Connections	Destination Requirements or Description	Piping Specifications
Drain	8" OD (not tilted)	Rubber hose, PVC, or other approved material per plumbing code
Vent	4" Diameter	

2.2. Precautions for Electrical Connections

WARNING 3: Electrocution Hazard—Contact with high voltage can kill or seriously injure you.

- All electrical connections must be made by a competent electrician.

1. Connections must be made by a competent electrician.
2. See the fuse and wire sizing information in the schematic manual and on the machine nameplate.
3. “Stinger leg” if any, must be connected to terminal L3, never to terminals L1 or L2.
4. Only use BUSSMAN FUSETRON FRN (up to 250V), FRS (up to 600V), or similar lag fuses. The nameplate fuse sizes must not be applied to standard fuses.
5. See nameplate for fuse and wire size. For wire runs more than 50 feet (15.24 meters), increase by one wire size per each additional 50 feet.
6. Make the power and liquid supply electrical connections within junction box on the rear of the machine.
7. Verify all motor rotation as shown in FIGURE 1 (See the operating and troubleshooting manual for more information). If the cylinder turns in the wrong direction, see note below.

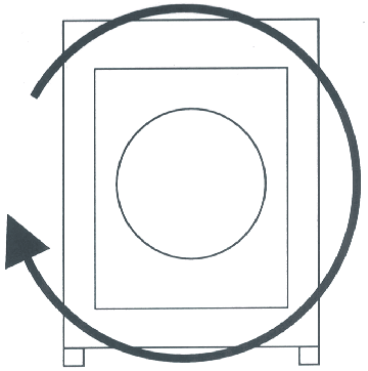
> **Note 1:** Before shipping, all motors are properly phased for correct rotation. It is possible to reverse the direction of rotation in a three-phase machine by interchanging the incoming power leads. Therefore, the rotation of a three-phase machine must be observed and corrected when the machine is first installed. If it is necessary to reverse the rotation, simply swap the incoming power lines to the

machine (never move L3 if L3 is a stinger leg). Never attempt to reconnect motors or the motor control devices.

CAUTION 4: Component Damage—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 machines.

Figure 1: Rotation Direction during Drain and Extract



2.3. Electric Power Connections—The customer must furnish a remotely mounted switch with lag type fuses, 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.

— End of BIIFUI01 —

Prevent Damage from Chemical Supplies and Chemical Systems

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

Chemical supply companies usually:

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

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

1. How Chemical Supplies Can Cause Damage

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Dangerous Chemical Supplies and Wash Formulas

Some examples that can cause damage are:

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

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

Incorrect Configuration or Connection of Equipment

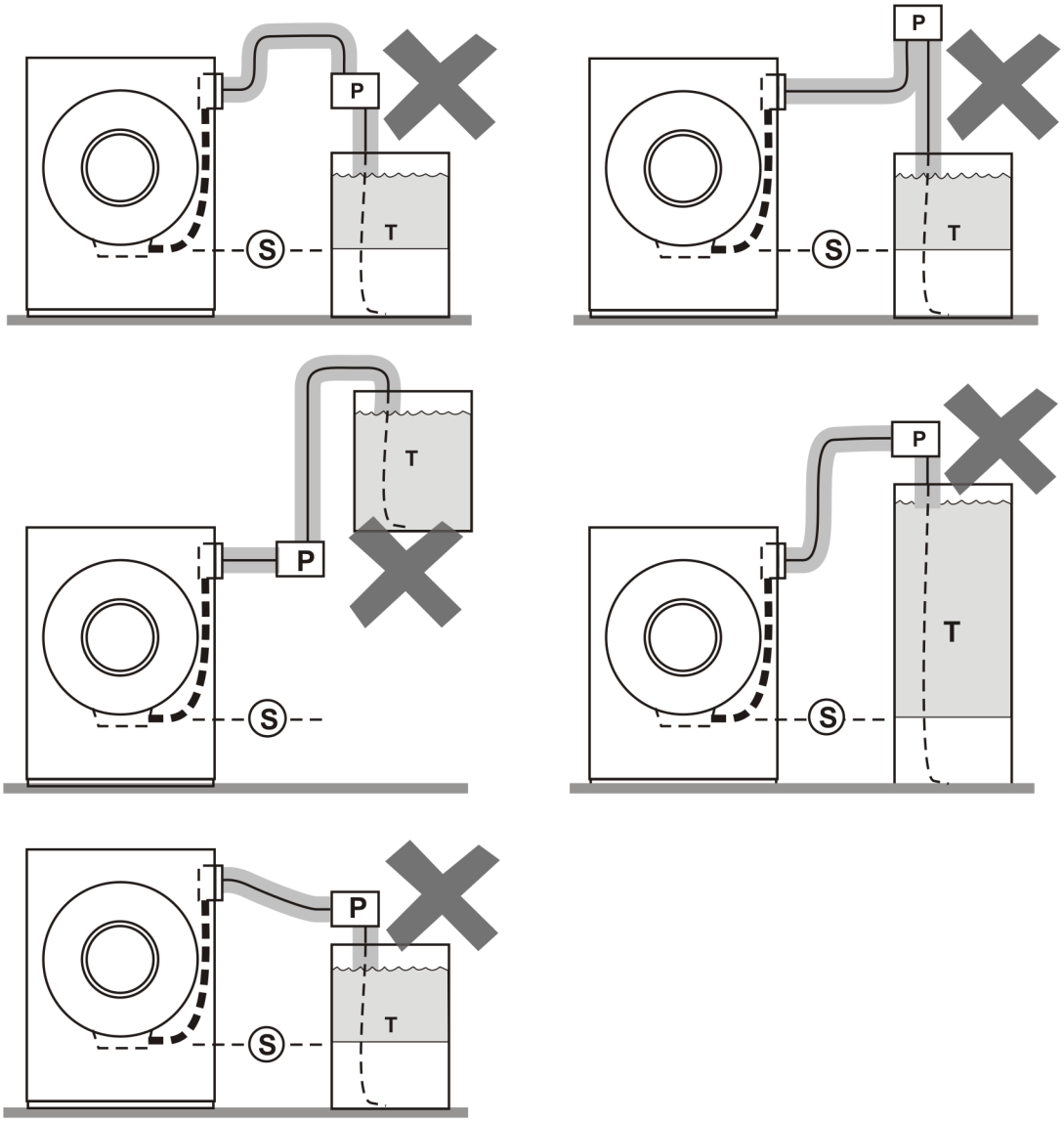
Many chemical systems:

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

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

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

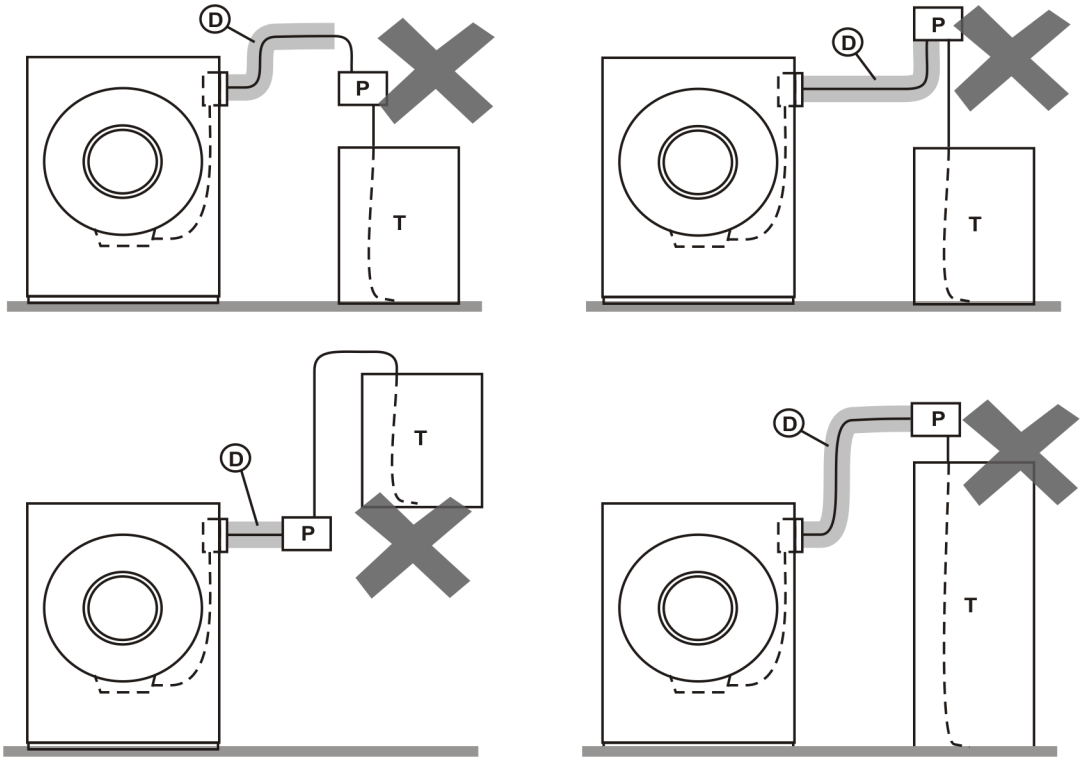
Schematic Views



Legend

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

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



Legend

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

2. Equipment and Procedures That Can Prevent Damage

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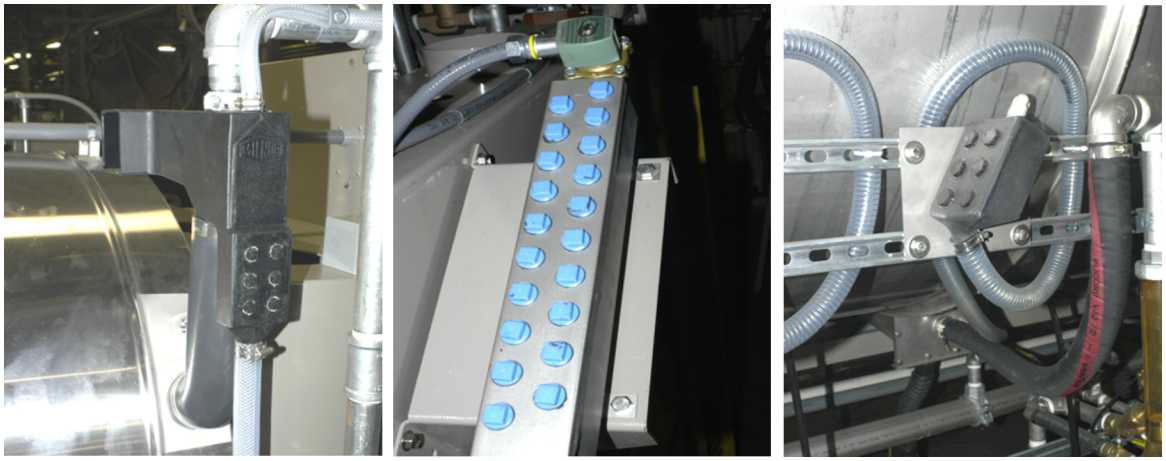
Use the chemical manifold supplied.

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

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



Close the line.

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

Do not let a vacuum occur.

Supply a vacuum breaker in the chemical line that is higher than the full level of the tank.

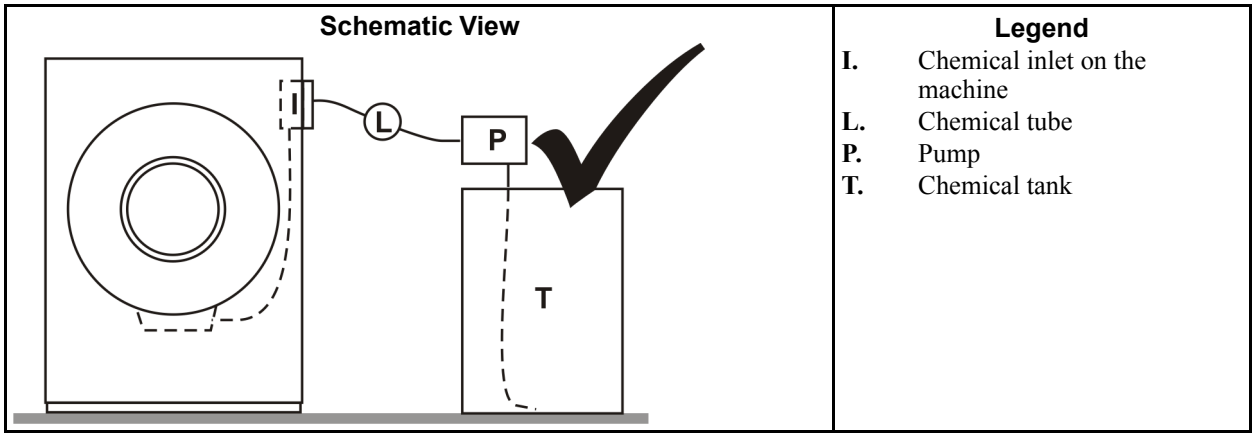
Flush the chemical tube with water.

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

Put the chemical tube fully below the inlet.

It is also necessary that there is no pressure in the chemical tube or tank when the system is off.

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



Prevent leaks.

When you do maintenance on the chemical pump system:

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

End of document: BNUUUR02

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

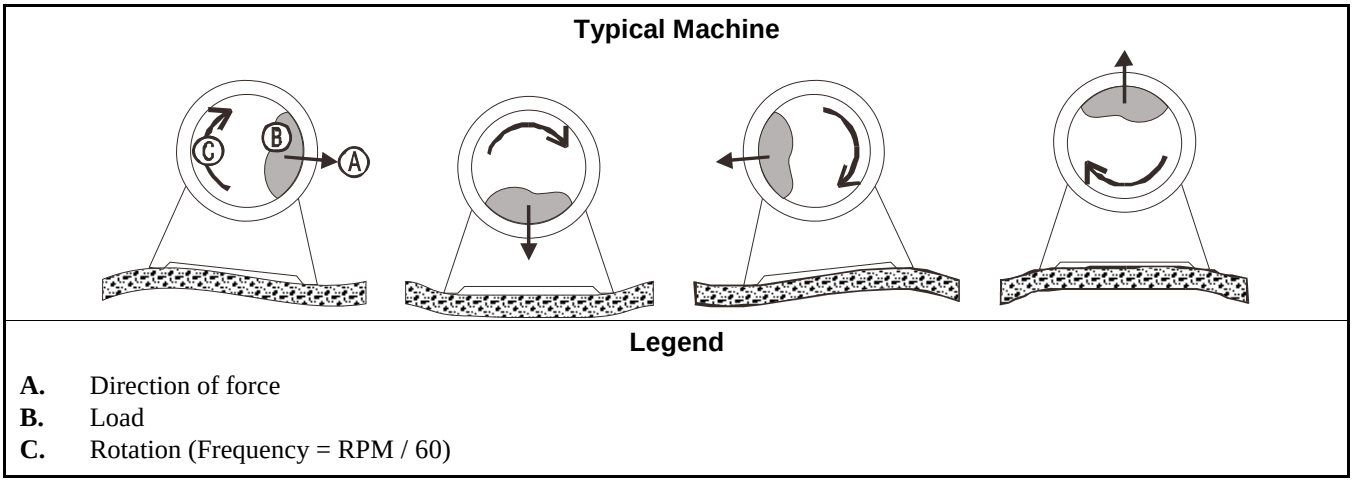


Figure 1 above is intended to depict both on-grade and above-grade installations and is equally applicable to flexibly-mounted washer-extractors, as well as to rigid models installed either directly on a floor slab or on a foundation poured integrally with the slab. Current machine data is available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

Service and Maintenance 2

BIIFUM01 (Published) Book specs- Dates: 20030311 / 20030311 / 20030311 Lang: ENG01 Applic: IFG

Preventive Maintenance

As required by the warranty and to achieve optimum performance and service life from Milnor washer-extractors, the schedules, instructions and precautions herein must be strictly followed.

WARNING 1: Entangle and Crush Hazards—Guards, covers, and panels—Operating the machine with any guard, cover, or panel removed exposes moving components.

- Lock out and tag out power at the main machine disconnect before servicing, or in accordance with factory service procedures.
- Do not service machine unless qualified and authorized.

CAUTION 2: Pinch Hazard—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.

- NEVER place fingers in gap between shell and frame.

1. Lubrication Precautions [Document BIUUUM01]

CAUTION 3: Machine Damage Hazard—Improper lubrication can damage machine components and cause the machine to malfunction.

- Do not mix petroleum and synthetic based lubricants.
- Do not use an unspecified lubricant without consulting the lubricant manufacturer.
- Do not apply grease with a pneumatic grease gun. Use only a hand-operated grease gun.
- Do not over-lubricate.
- Always clean grease fittings before adding grease. Clean off excess grease.
- Ensure that lubricants do not drip onto belts, brake shoes or drums.

WARNING 4: 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.

- Lock out and tag out power at the main machine disconnect before servicing, or in accordance with factory service procedures.
- Do not service machine unless qualified and authorized.

1.1. Pumping Grease—Pump grease slowly, taking 10-12 seconds to complete each stroke. A grease gun can build up extremely high pressure which will force seals out of position and cause them to leak.

1.2. Grease Quantity—Apply the quantity of grease called for in the checklist. Over-lubrication can be as damaging as under-lubrication. Where quantities are stated in strokes, one stroke of the grease gun is assumed to provide .0624 fluid oz. (1.77 grams) (by volume) of grease. Therefore, one fluid ounce (28.3 grams) of grease would be provided by 16 stokes of the grease gun. Determine the flow rate of your grease gun by pumping one ounce into a calibrated container. If fewer than 16 stokes are required, all quantities in strokes in the chart should be reduced accordingly, and if more than 16 strokes are required, the number of strokes should be increased. Before starting lubrication, make sure your grease gun is working and that you get a full charge of grease with every stroke.

1.3. **Lubricant Specifications**—Lubricant specifications are provided in the preventive maintenance checklist. Lubricants should be purchased locally. If a specified lubricant is not available locally, it is permissible to substitute a product that has been specified as equivalent by the lubricant manufacturer. If you cannot obtain either the specified lubricant or a valid equivalent locally, contact the Milnor Service Department for assistance.

2. Main Bearing Housing Preventive Maintenance

WARNING 5: Entangle and Crush Hazards—Guards, covers, and panels—Operating the machine with any guard, cover, or panel removed exposes moving components.

- Power is ON and cylinder is turning during the following procedure. Permit only qualified maintenance personnel to perform this procedure.

3. Preventive Maintenance

Table 1: Preventive Maintenance Checklist

Components		Action	Frequency	Specifications/References/Figures
Main Bearing Housing	Bearings	Slowly grease: 5 strokes - 0.30 ounces (8.85 grams) at two locations	Monthly	Shell Alvania EP (or equivalent). See "68036F5N Bearing Housing Maintenance Points"
	Seals	Slowly grease, 2 strokes - 0.12 ounces (3.54 grams) at one location		
	Air pad gauge	Verify 10 psi (0.7 kg. sq. cm.)		
Drive Train	Drive belt/pulleys	Check belt for tension and wear. Check pulleys for wear.	Weekly	
	Inverter fans and vents	Verify fan operation and vacuum out vents.		See "68036F5N Drive Train"
Suspension	Rubber springs	Check for cracks and deterioration.	Annually	See "68036F5N Rubber Spring and Shock"
	Shocks	Check for leaks.		
Door	Hinges	Slowly grease, one stroke - 0.06 ounces (1.77 grams) at three locations.	Monthly	Shell Alvania EP, See "68036F5N Door Hinge Grease Points"
	Hydraulics	Check oil level and inspect hoses		Shell Tellus 68, See "68036F5N Door Hydraulic System"
Foundation	Bolts	Check for loose bolts and damaged grout. Tighten and/or repair as necessary.	Monthly	Dimensional drawings
Chemical Supply (if so equipped)	Water and chemical supply hoses	Check for leaks, observe operation.	Monthly	
	Water pressure gauge	Verify pressure 25 - 28 psi (1.96 - 1.97 kg. sq. cm.)		
	Water supply injector valve strainers (if so equipped)	Inspect and clean the strainers in supply injector valves		
Steam	Steam strainer	Inspect and clean strainer as required.	Monthly	See "68036F5N Steam and Air Strainers"
Disc Brake	Reservoir	Check reservoir fluid level	Monthly	DOT3 brake fluid, See "Servicing Disc Brakes...BIEUUM01"
	Brake pads	Check for wear	Monthly	
Tilting Machine	Tilt wheels	Slowly grease: one stroke - 0.06 ounces (1.77 grams) at eight locations	Monthly	See "68036F5N Tilt wheels"

4. Service Notes

Note 1: All V-belts are not alike. So-called “Super” or “High Capacity” belts frequently have considerably higher capacities than “Standard” belts. Sometimes a particular manufacturer's V-belts will be more suitable for a certain application and another manufacturer's V-belts may be suitable for a different application. This may occur in spite of the fact that both manufacturer's V-belts are reputedly “interchangeable.” Because of this, it is always best to purchase replacement belts from the original manufacturer of the equipment. If you do not wish to do this, we suggest that when you replace the belts, you purchase the exact style and type belts with which the machine was originally equipped. This is the best way to achieve belt life on your replacement belts equal to the life of the original set. If you are not satisfied with the life of the original set, you should ask our factory if a better belt has been developed for the specific application.

Note 2: Dry bleaches may cause the inside of the supply injector to show evidence of mild rusting. If this occurs, carefully clean away rusting at least once a week. Always inject dry bleach from the cup or scoop. Never allow dry bleach to come into direct contact with the stainless steel components of the supply injector.

5. Service Points

Figure 1: 68036F5N Bearing House Maintenance Points

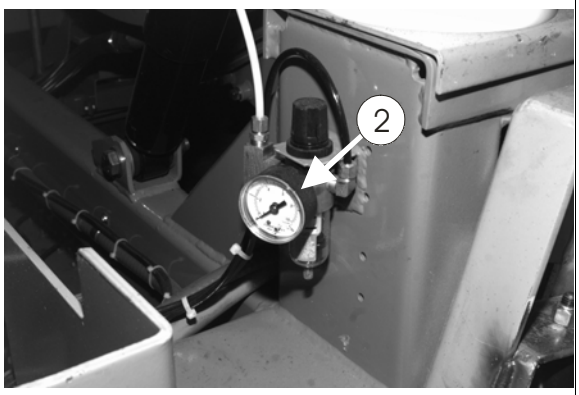
Bearing and water seal grease points	Main bearing air pad gauge	Legend
		**1.** Grease fittings plate **2.** Air pad gauge 10 psi (.07 kg. per sq. cm.)

Figure 2: 68036F5N Door Hinge Grease Points

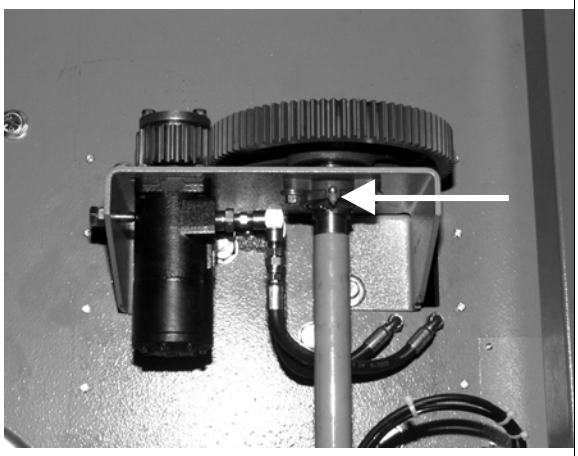
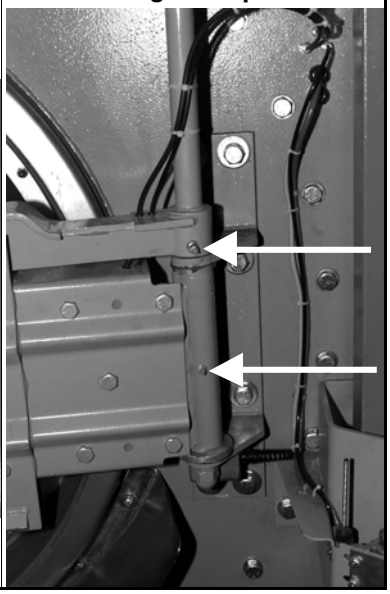
Upper grease point	Lower grease points
	

Figure 3: 68036F5N Drive Train

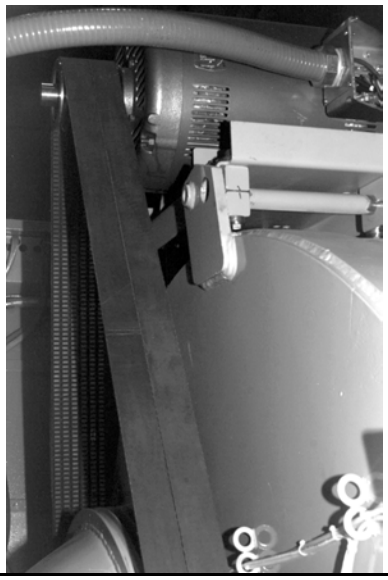
Drive belt	Inverter fans and vents
	

Figure 4: 68036F5N Rubber Spring and Shock (4 locations)

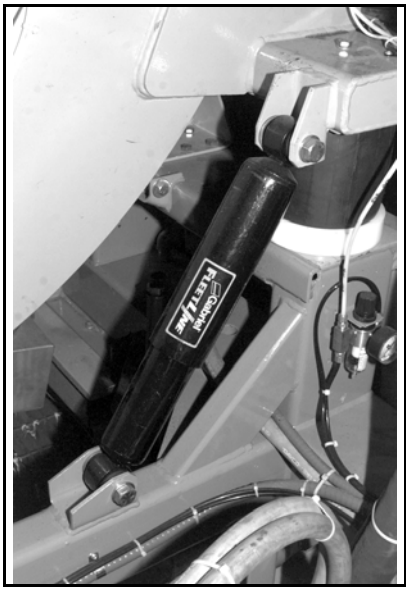


Figure 5: 68036F5N Steam and Air Strainers

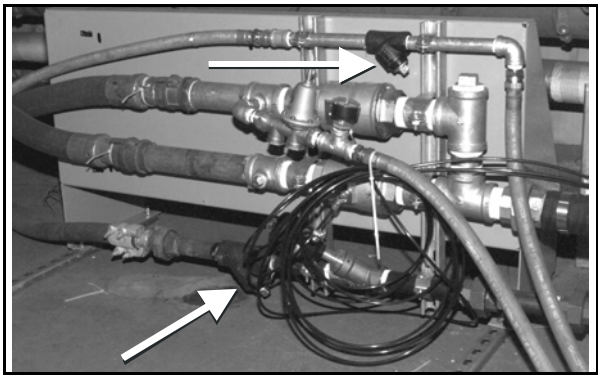


Figure 6: 68036F5N Disc Brake

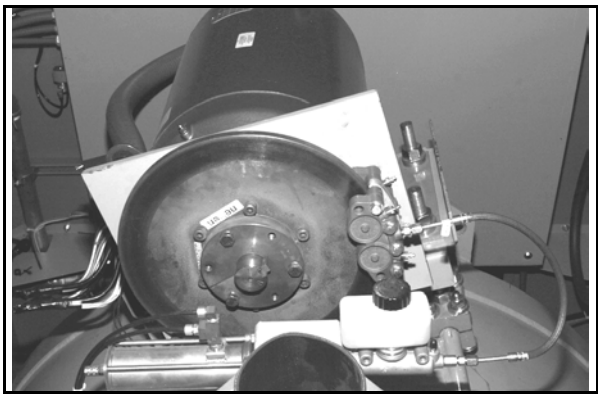


Figure 7: 68036F5N Door Hydraulic System

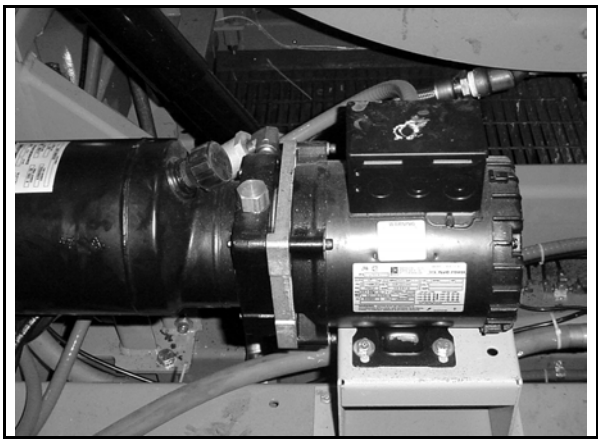
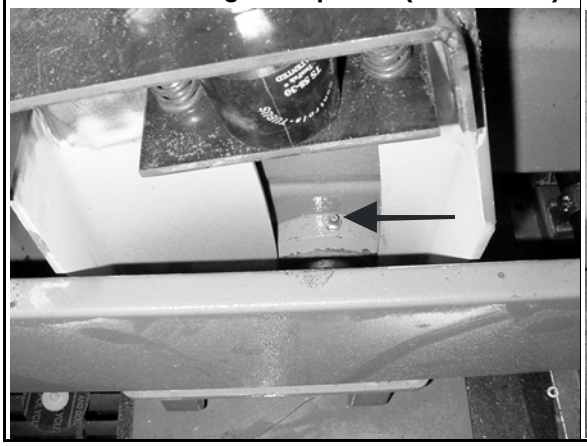
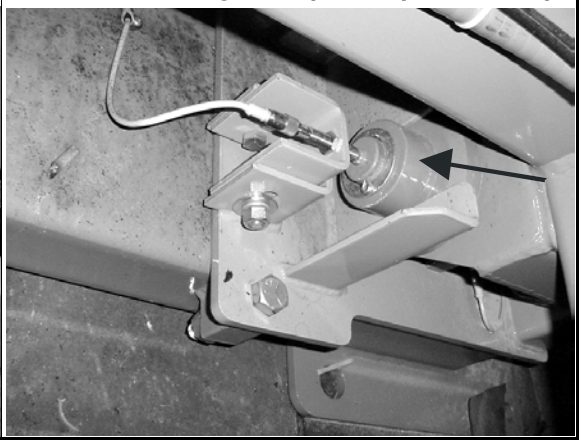


Figure 8: 68036F5N Tilt wheels

Outer tilt wheel grease points (4 locations)	Inner tilt wheel grease points (4 locations)
	

— End of BIIFUM01 —

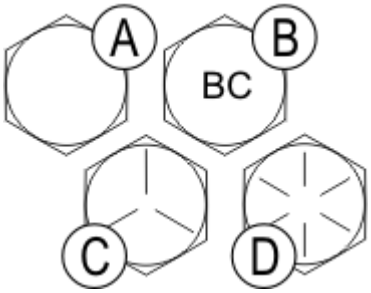
BIUUUM04 (Published) Book specs- Dates: 20180109 / 20180109 / 20180109 Lang: ENG01 Applic: UUU

Torque Requirements for Fasteners

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

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

Figure 1: The Bolts in Milnor® Equipment

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

1. Torque Values

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

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

1.1. Fasteners Made of Carbon Steel

1.1.1. Without a Threadlocker

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

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

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

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

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

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

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

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

1.1.2. With a Threadlocker

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

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

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

Table 6: Torque Values if You Apply LocTite 222

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

Table 7: Torque Values if You Apply LocTite 242

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

Table 8: Torque Values if You Apply LocTite 262

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

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

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

Table 10: Torque Values if You Apply LocTite 277

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

1.2. Stainless Steel Fasteners

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

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

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

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

2. Preparation

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

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

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

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

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

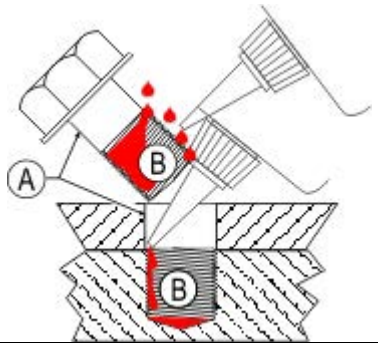
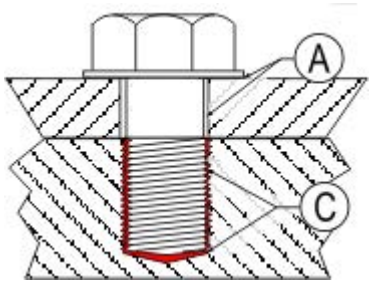
3. How to Apply a Threadlocker

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

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

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

Figure 2: Blind Hole

Application	Coverage
	

Legend

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

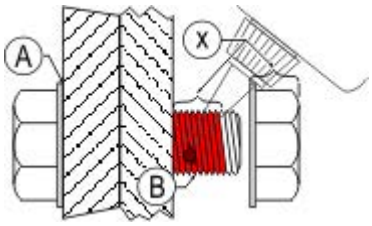
3.1. Blind Holes

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

3.2. Through Holes

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

Figure 3: Through Hole

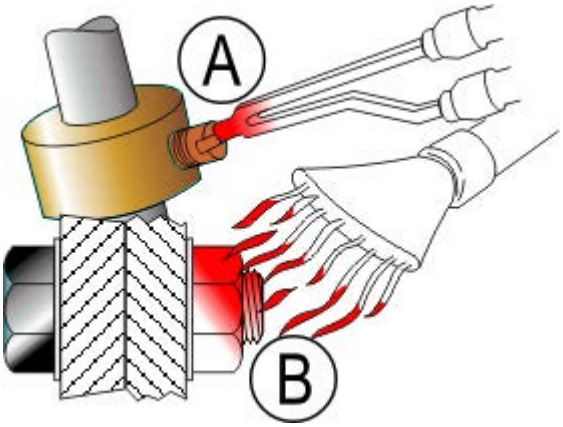
Application	Legend
	**A.** No threadlocker here **B.** Apply the threadlocker to this area **x.** Nut depth

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

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

Figure 4: Disassembly

Apply Heat to a Small Area



Legend

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

— End of BIUUUM04 —

BIEUUM01 (Published) Book specs- Dates: 20120629 / 20120629 / 20120629 Lang: ENG01 Applic: HDU IFL IFG IFS IHU IEU PVU MXC MXD

Disk Brake Maintenance

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

NOTICE P1: "Remove power from the machine" means use the necessary safety procedure for your location. In the USA, this is the OSHA lockout/tagout (LOTO) procedure. More local requirements can also apply.

You can do these types of maintenance on the disk brake:

- do an inspection of the brake as specified in the maintenance schedule,
- replace the friction pads,
- do an overhaul on the calipers,
- replace the hydraulic fluid,
- adjust the connection between the brake cylinder and the air cylinder.

For the first four types of maintenance, you must remove air from (bleed) the hydraulic circuit.

Section 6 tells how to operate the disk brakes. You can use it in some of the types of maintenance in this procedure.

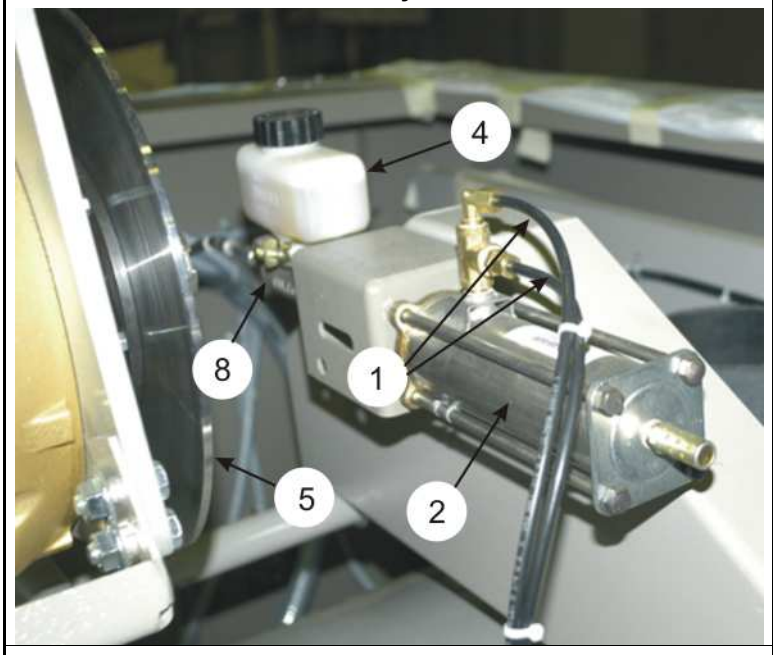
WARNING 2: Risk of injury or death —A machine in operation without safety guards is dangerous.

- You must be an approved maintenance technician.
- Use special caution when this instruction tells you to do work with electrical power on. Remove power from the machine for all other maintenance. Obey safety codes.
- Replace all guards and covers.

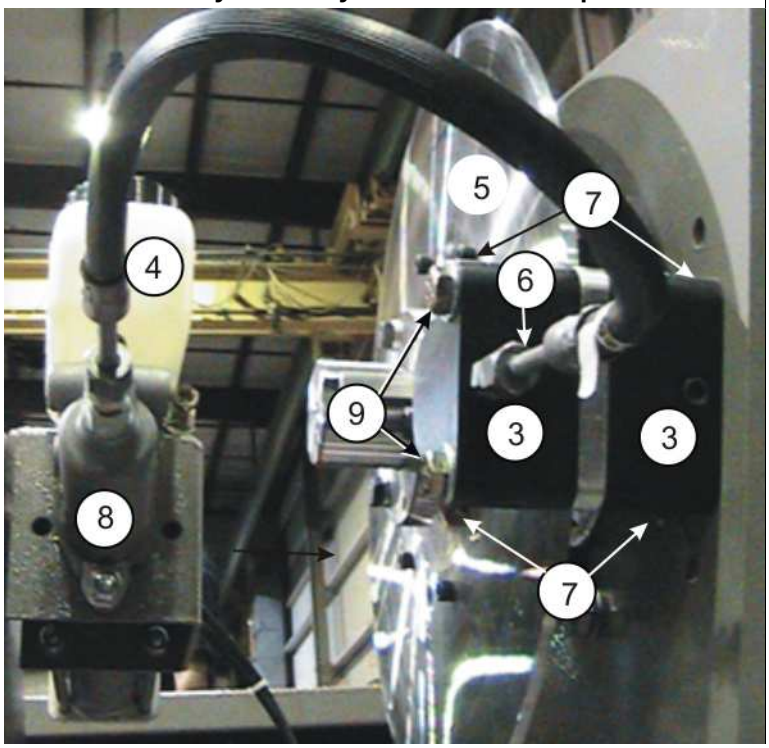
Tip: During parts of this procedure when you open up the calipers or hydraulic lines, put a cloth under the calipers to catch hydraulic fluid and parts that will fall. For safety, fully remove spilled hydraulic fluid after brake maintenance. This will help you easily identify leaks.

Figure 1: A typical hydraulic brake system

The air cylinder



The hydraulic cylinder and the caliper



Legend

1. Tubing for air
2. Air cylinder
3. Caliper body halves (Figure 2, item 2)
4. Hydraulic reservoir
5. Rotor disk
6. Hydraulic inlet
7. Valves to drain fluid and bleed the brake
8. Hydraulic cylinder
9. Bolts to attach the caliper (Figure 2, item 1)

1. The Inspection of the Brake

Note 1: The brakes shown in this document can look different from your equipment.

Note 2: Do this inspection when the maintenance schedule tells it is necessary. Do this inspection after you replace friction pads or do a caliper overhaul.

1.1. Examine the fluid in the reservoir. —Change the hydraulic fluid if it smells, has contamination, or has an unusual color. See Section 4.

> **Note 3:** Brake fluid can become defective from heat in the brake system. Brake fluid absorbs water from air. Water in the brake system causes corrosion.

If necessary, add new DOT 3 fluid to 0.25 inch (6.35 millimeters) from the top of the reservoir. Follow the precautions on the container.

1.2. Examine the rotor disk surface (Figure 1, item 5). —Replace the disk if it is worn or if it is not flat.

1.3. Examine the brake pads (Figure 2, item 4). —To do this, you will remove/replace the calipers and bleed the hydraulic system. See Section 3 and Section 4.

1. **Remove power from the machine (see Notice P1).**
2. Remove the bolts (Figure 1, item 9) that attach the caliper halves (Figure 1, item 7).
3. Remove the caliper halves.
4. Replace the pads as told in Section 2 if
   - the pads make an unusual noise when you apply the brake
   - if the rotor is worn or damaged
   - if the pad thickness is less than 1/16 inches (2 mm) (Figure 2, item 14) above the mounting screw (Figure 2, item 3). Always replace the two brake pads at the same time.
5. Put the caliper halves in their positions on the brake assembly. Tighten the mounting bolts to 30 foot-pounds (41 Newton-meters).
6. Bleed the hydraulic systems as told in Section 4.4.
7. Supply electrical power to the machine.

1.4. Examine the condition of all of the brake system.

1. Make sure that brake mounting components are tightly installed.
2. Make sure that fittings are tight. Make sure that there are no leaks.

2. How to Do a Friction Pad Replacement

You must have the necessary replacement friction pads for your machine. Refer to the brake parts document in your machine manual. You will find part numbers for components or overhaul/repair kits. The overhaul/repair kit contains O-rings, pads, and other components.

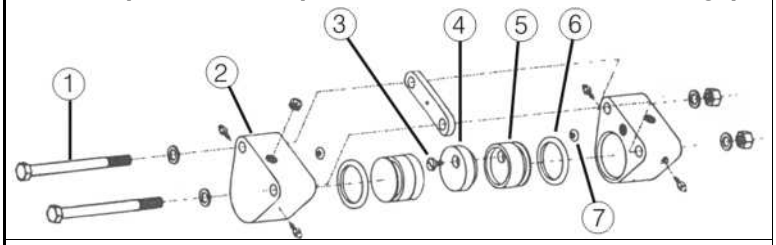
1. **Remove power from the machine (see Notice P1).**
2. Remove the used fluid. See Section 4.3.
3. Remove the two bolts that attach the caliper (Figure 1, item 9) and the two caliper halves (Figure 1, item 3) to get access to the friction pads. Do not disconnect the hydraulic line (Figure 1, item 6).
4. If there are leaks, see Section 3 "How to Do a Caliper Overhaul " before you continue.
5. Replace each friction pad:
   a. Remove the brass screw (Figure 2, item 3) that attaches the pad to the piston.
   b. Attach the new pad to the piston. Tighten the screw.
   c. Make sure that the screw head is fully in the recess in the pad.
6. Make sure that the connection o-rings are clean and in their positions (Figure 2, item 7).

7. Put the caliper halves in their positions on the brake assembly. Tighten the mounting bolts to 30 foot-pounds (41 Newton-meters).
8. Bleed the brake. See Section 4 "How to Change Hydraulic Fluid and Remove (Bleed) Air from the Brake Circuit ".
9. Supply electrical power to the machine.

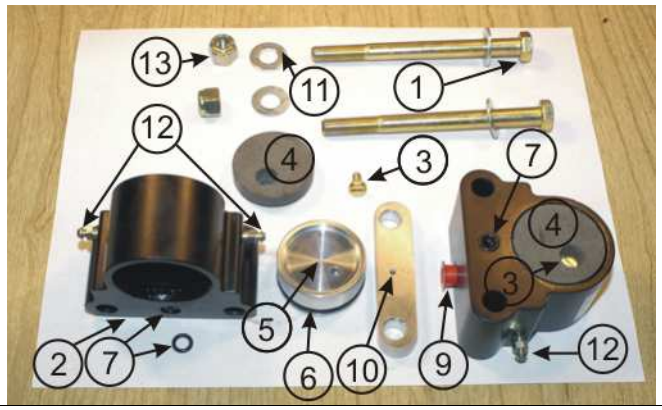
3. How to Do a Caliper Overhaul

Figure 2: The Caliper Components

The Expanded View (Shows the Piston and the O-rings)



The Caliper and the Pad



Legend

1. The bolts to attach the caliper (Figure 1, item 9)
2. Caliper body halves (Figure 1, item 3)
3. Brass screw
4. Friction pad
5. Piston
6. The Piston O-ring
7. The connection O-ring and its position
8. Plug for the hydraulic inlet
9. A hydraulic inlet (connected on one caliper, a plug (item 8) on the other)
10. The hole in the spacer
11. Washer
12. One of the four valves to bleed the fluid
13. Nut
14. The pad thickness must be more than than 1/16 inches (2 mm) above item 3

Fittings for the Hydraulic Inlet

Look at the pad thickness above the top of the screw

Tip: Hydraulic fluid flows from one caliper to the other caliper. Fluid flows through the connection O-rings (Figure 2, item 7) and the hole in the spacer (Figure 2, item 10). When you disconnect the calipers, hydraulic fluid can flow from the hole at the connection O-rings. Air can get in the line. After you connect the calipers, you must bleed the system.

You must have the necessary kit for the overhaul of your machine. Refer to the brake parts document in your machine's manual.

1. **Remove power from the machine (see Notice P1).**
2. Get access to the caliper halves (see Section 2).
3. Do an overhaul on each caliper:
   a. Remove and discard the connection O-rings (Figure 2, item 7) on the caliper bodies.
   b. Apply compressed air to the fitting for the hydraulic inlets (see Figure 2, item 8) to push the pistons out.
   c. Replace the piston O-rings (Figure 2, item 6).
   d. Put the pistons in the caliper body. Carefully tap the pistons with a wood or rubber hammer to install it.
   e. Replace the connection O-rings. (Figure 2, item 7)
   f. Replace the friction pads (see Section 2).
4. Replace the caliper halves as specified in Section 2.
5. Bleed the brake circuit (see Section 4).
6. Supply electrical power to the machine.

4. How to Change Hydraulic Fluid and Remove (Bleed) Air from the Brake Circuit

4.1. Risks and Precautions

WARNING 3: Risk of injury —Machine power must be on for these procedures.

- Stay away from operating mechanisms.

CAUTION 4: Risk of injury and damage —This procedure releases pressurized brake fluid.

- Keep brake fluid out of your eyes and mouth. Wear eye protection.
- Follow procedures carefully to prevent damage to the face of the disk or the pistons.

CAUTION 5: Risk of malfunction . —Air in hydraulic fluid will compress. Compressed air in the brake line will cause brake malfunctions.

- Remove (bleed) air from the brake circuit before you operate the machine.

4.2. Requirements —These personnel and items are necessary for this procedure:

- two technicians
- an 8-ounce container of new brake fluid
- Alternative procedures to remove air and used brake fluid:
  - » a suction pump (faster procedure) (see Figure 3)
  - » with pressure in the hydraulic cylinder and gravity (see Figure 4)

Tip: The Vacula suction pump can do the work more quickly than by gravity and pressure in the hydraulic cylinder. It is also cleaner because all of the hydraulic fluid goes into the container supplied. It helps you not spill the hydraulic fluid.

- If you use a suction pump as shown in Figure 3, follow the manufacturer's instructions.
- If you use the tools as shown in Figure 4, follow the instructions in Section 4.3 and Section 4.4.

Figure 3: Pumps Used to Remove Hydraulic Fluid Quickly

Alternative Pumps for Suction of Hydraulic Fluid

Legend

1. A manual suction pump
2. The Vacula suction pump uses compressed air and holds used hydraulic fluid.

Figure 4: Typical Tools to Remove Air (Bleed) Brakes and Used Hydraulic Fluid

These tools use gravity and pressure in the hydraulic cylinder	Legend
	**1.** a clean 12 ounce container **2.** a flexible hose to attach from the bleed valves to a container **3.** a wrench for the bleed valves (Figure 2, item 12) **4.** a suction device to remove brake fluid from the reservoir

4.3. Use the tools in Figure 4 to remove the used hydraulic fluid and clean the line. —Do these steps:

1. Use a suction tool (Figure 4, item 4) to remove the used fluid from the reservoir. Clean the contamination.
2. Connect the tubing (Figure 4, item 2) and container (Figure 4, item 1) to the valve on the caliper (Figure 1, item 7).
3. Open the valve.
4. Add new fluid to flush out the lines.
5. Apply/release the brake (See Section 6) approximately 5 to 15 times. This will flush the used fluid out of the lines.
6. Close the valve.

Note 4: These steps will cause air to go into the line.

4.4. Add new hydraulic fluid and remove (bleed) air from the brake circuit.

Note 5: This procedure uses pressure in the hydraulic cylinder and the tools in Figure 4.

1. Fill the reservoir with new DOT 3 brake fluid. When you do the remaining steps, continue to add new fluid to the reservoir. Do not let the reservoir become more than half empty. You must make sure that the reservoir has fluid to prevent air flow into the system from the reservoir.
2. Apply electrical power to the machine. Release the brake.
3. See the part of the machine reference manual that tells how to operate the outputs manually.

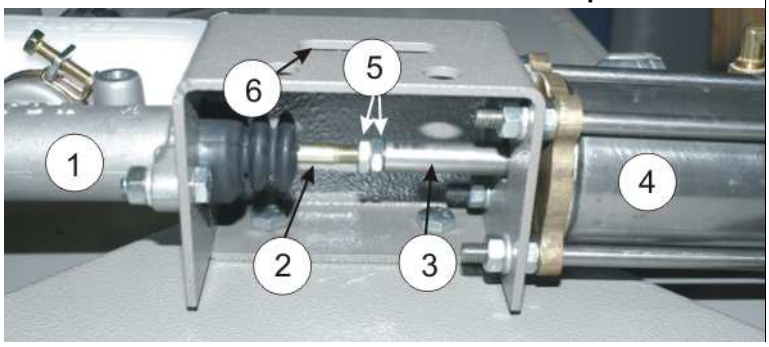
4. Put a small quantity of new brake fluid (approximately inches (50 mm)) in the 12 ounce container (Figure 4, item 1).
5. Do these steps for each bleed valve (Figure 1, item 1) . Two technicians are necessary. This will move the fluid in one direction and push air out of the line:
   a. Attach a clean tube to the valve. Put the other end in the container (Figure 4, item 1) below the fluid.
   b. Make sure that the reservoir is full of fluid.
   c. Apply the brake (See section 6).
   d. Open the bleed valve. (Figure 2, item 12)
   e. Look for air bubbles in the container when you push the air and fluid out through the tube.
   f. Close the valve.
   g. Release the brake.
   h. Continue the steps b through g until no more air comes out of the line.
6. Add fluid to the top of the reservoir. Replace the cap.
7. Operate the brake many times. Make sure that it operates correctly.

5. How to Adjust the Connection between the Brake Cylinder and the Air Cylinder

If you removed the brake cylinder or the air cylinder, you must adjust this connection.

Figure 5: The Connection between the Brake Cylinder and the Air Cylinder

A view of the brake rod and related components

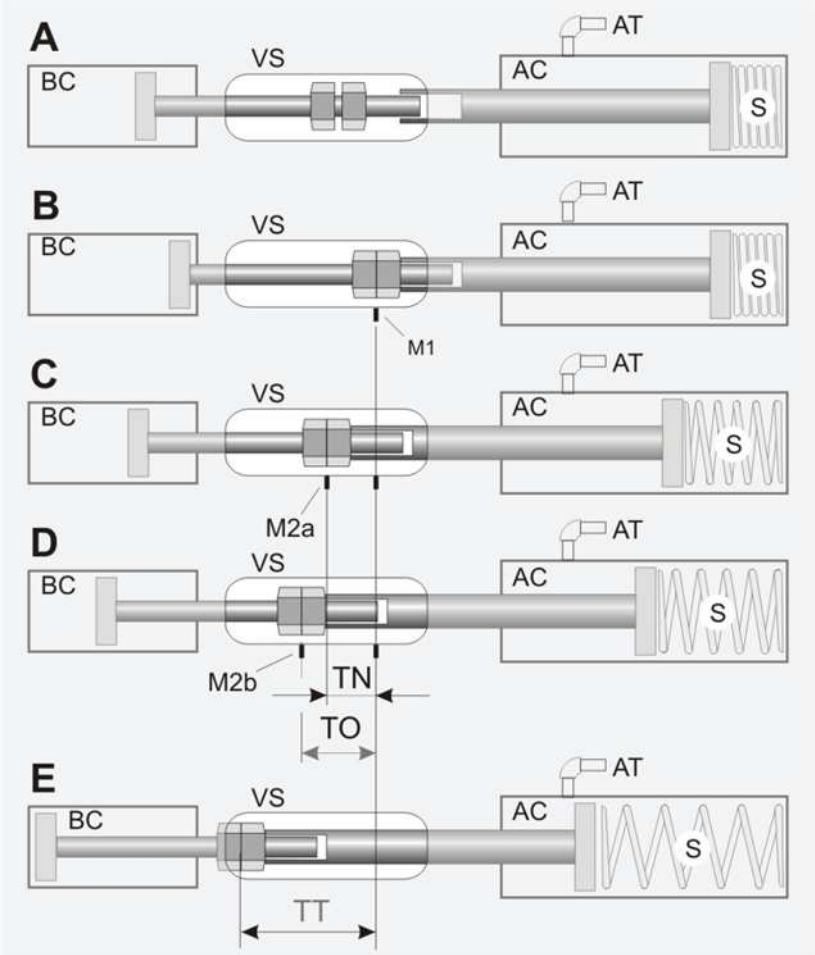


Legend

1. The brake cylinder
2. The rod for the brake cylinder
3. The rod for the air cylinder
4. The air cylinder
5. Two nuts to lock the rods together
6. The slot to see the nuts

Figure 6: The Adjustment between the Brake Rod and the Air Cylinder

Schematic Views of Different Conditions



Legend

AC. Air cylinder (Figure 5, item 4)
BC. Brake cylinder (Figure 5, item 1)
VS. Slot to see the nuts (Figure 5, item 6)
A. Before travel adjustment -- Rods not locked by nuts (Figure 5, item 5)
B. After travel adjustment -- the brake released (See Section 6.2)
C. Brake applied--NEW pads (See Section 6.1)
D. Brake applied--OLD pads
E. This will occur if you apply the brake with the hydraulic line removed
TN. Rod travel, new pads
TO. Rod travel, very worn pads
TT. Full travel with the hydraulic line removed
M1 First mark at the view slot -- the brake released
M2a. Second mark--one possible position -- the brake applied
M2b. Second mark-- a different position -- the brake applied
AT. Air tubing (See Figure 1,1). Air releases the brake.
S. Spring applies the brake

5.1. Adjust for maximum rod travel.

1. Operate the master switch to energize control power.
2. Make sure that the air pressure that releases the brake (Figure 7, item 1) is 85 -100 PSI (5.95 - 07.0 kg/cm-cm).
3. Make sure that the nuts that lock the rods together (Figure 5, item 5) are loose.
4. Release the brake (see Section 6). Let the air cylinder rod fully retract into the air cylinder as shown in Figure 6, A.
5. Turn the brake rod into the air cylinder rod until the brake rod comes out of the brake cylinder fully. See Figure 6, B.
6. Lock the brake rod (Figure 5, item 2) to the air cylinder rod (Figure 5, item 3) with two nuts (Figure 5, item 5).

5.2. Make sure that the brake will continue to operate while the pads wear.

1. Release the brake. On the view slot, put a mark at the position of the lock nuts. (Figure 6, item M1).
2. Apply the brake. See Section 6.
3. Put a mark at the position of the lock nuts when the brake is applied. This can be at position M2a, M2b, or between M2a and M2b. When the pads wear this position will move.
4. Make sure that the distance the rod moves when you apply the brake is 0.75 to 1.0 inches (19-25 mm). If the travel is more than this, the brake piston can hit the mechanical stop before the brake engages fully. This condition is shown in Figure 6 , E (dimension TT).

6. Operation of Brake Systems

Look at the electrical schematics of your machine to find how your brake is controlled. Some machines release the brake when you close the door. Some machines have a control relay to release or apply the brake.

6.1. How to Apply the Brake for Machines with a "Break Release" Output

1. Turn the "brake release" control output off to de-energize the air valve to remove air pressure to the air cylinder (Figure 1, item 1).
2. With no air pressure, a spring in the air cylinder will apply force to the hydraulic cylinder (Figure 1, item 8). This will apply pressure to the brake pads (Figure 2, item 4) against the rotor disk (Figure 1, item 5). (Figure 6, item C,D)

Note 6: If electrical power or compressed air is missing, hydraulic pressure will apply the brake.

6.2. How to Release the Brake for Machines with a "Brake Release" Output

1. Turn the control output called "brake release" on to energize the air cylinder valve.
2. Air pressure compresses the spring and releases the brake. (Figure 6, item B)

6.3. How to Apply and then Release the Brake Quickly —There are two air tubes at (Figure 1, item 1). One supplies compressed air from an air valve. The other sends this compressed air to a pressure switch. If you remove one of the two tubes when compressed air is there, you will apply the brake.

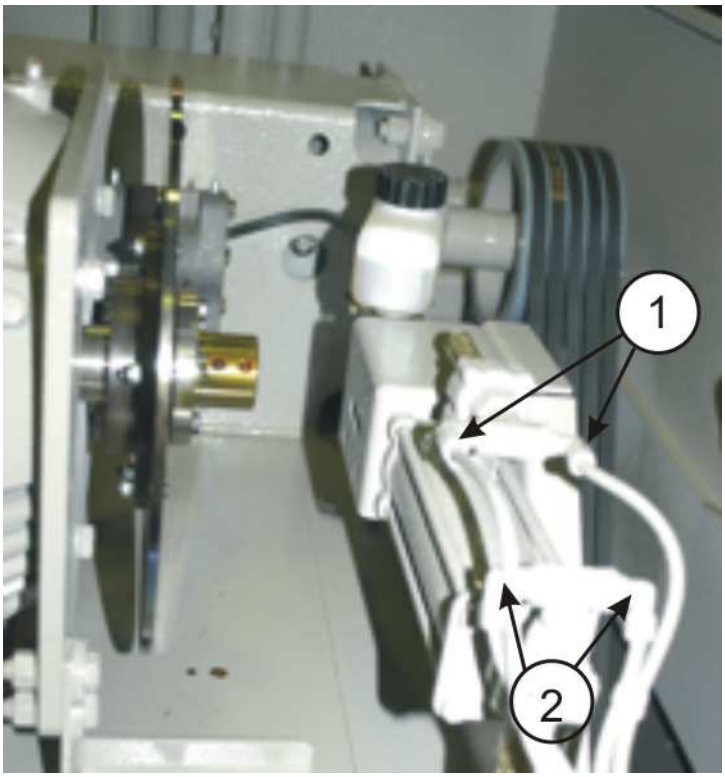
1. Disconnect the air tubing (Figure 1, item 1).

2. Turn the "brake release" output on. The air valve will supply compressed air to one of the tubes. (Figure 1, item 1).
3. Quickly move one of the compressed air tubes (Figure 1, item 1) on and off the air cylinder.
4. After you complete this procedure, connect the air tubing.

6.4. How the Brake Operates on Divided Cylinder Machines

Figure 7: A Typical First and Second Brake on a Divided Cylinder Machine

Two pairs of air tubing connect to different ends of the air cylinder.



Legend

1. Tubing for air that releases the first brake (85 -100 PSI) (5.95 - 07.0 kg/cm-cm)

2. Tubing for air that applies the second brake (10 – 12 PSI) (0.7-0.84 kg/cm-cm)

- On divided cylinder machines, two pair of air tubes connect to different ends of the air cylinder.
- When the cylinder turns, air pressure at Figure 7, item 1 compresses the spring and releases the brake.
- When you operate the stop control, air pressure at 1 is removed. Then the spring in the air cylinder applies the brake.
- If you open the door, the 2nd brake is applied. Then the air pressure at Figure 7, item 2 and the spring apply the brake.

6.5. The Second Brake —If your machine has a second brake which uses air pressure and spring pressure, it will have a pressure regulator. Make sure that you adjust the air pressure of the second brake (Figure 7, item 2) to 10 – 12 PSI (0.7-0.84 kg/cm-cm).

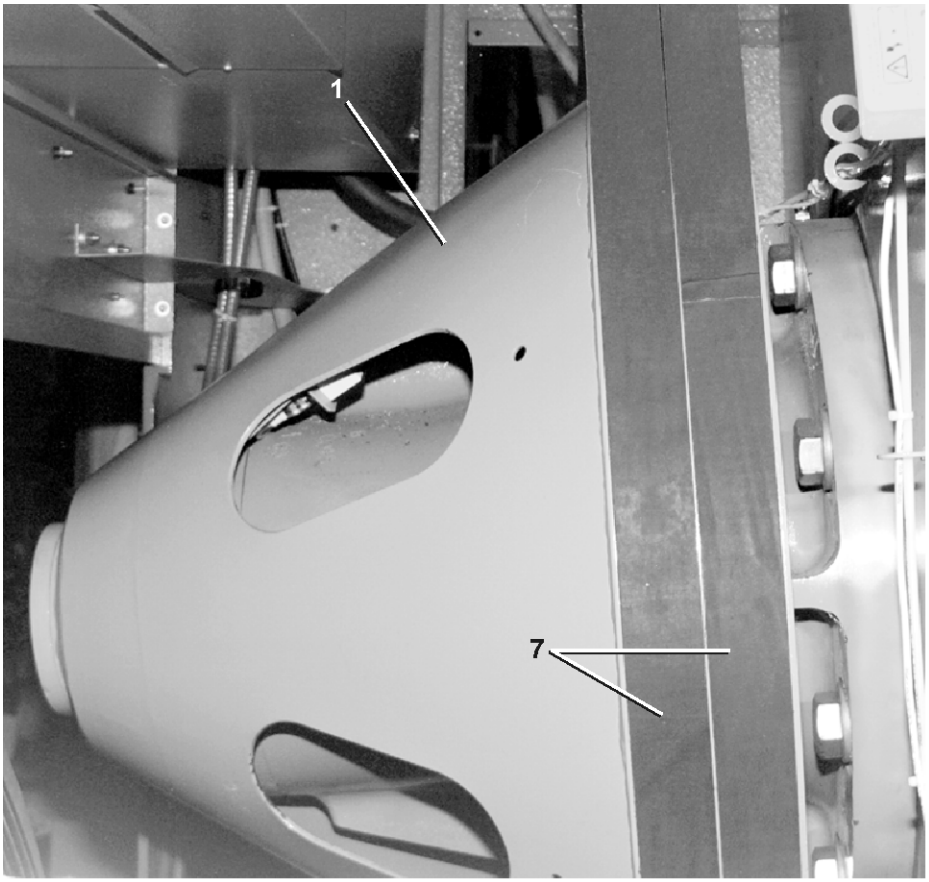
— End of BIEUUM01 —

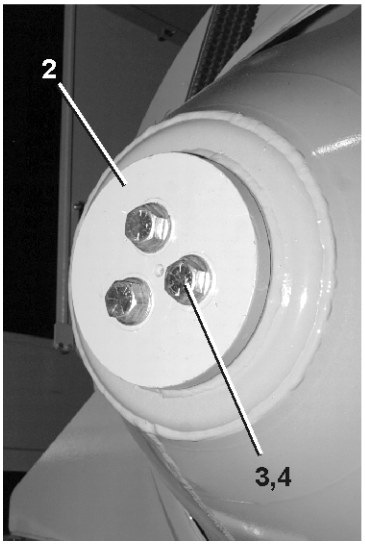
2 Drive Assemblies

2.1

Drive Components Identification: 68036F5N, 68036H5N, 68036H5K

Figure 1: General Views





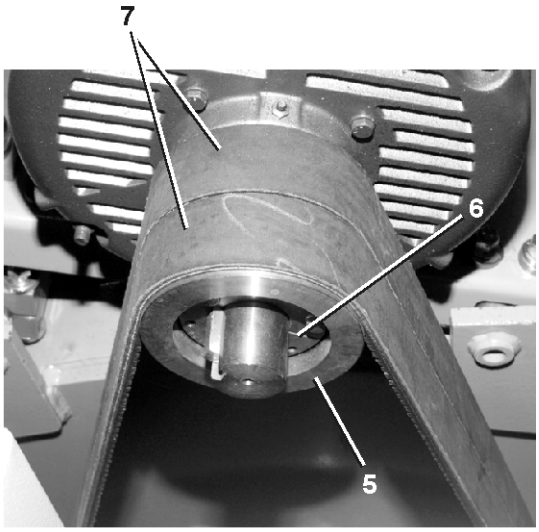


Table 1: Parts List—Drive Components Identification

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	D68 00250	Drive chart: 6836F5_	
Components				
all	1	X2 04428A	Pulley	
all	2	X2 21923	Pull-up plate	
all	3	15K232A	Bolt	
all	4	15U321H	Washer	
all	5	56050B8SK	V-pulley, SK	
all	6	56Q1RSK	Bushing, SK	
all	7	56VB171XB4	V-belt	

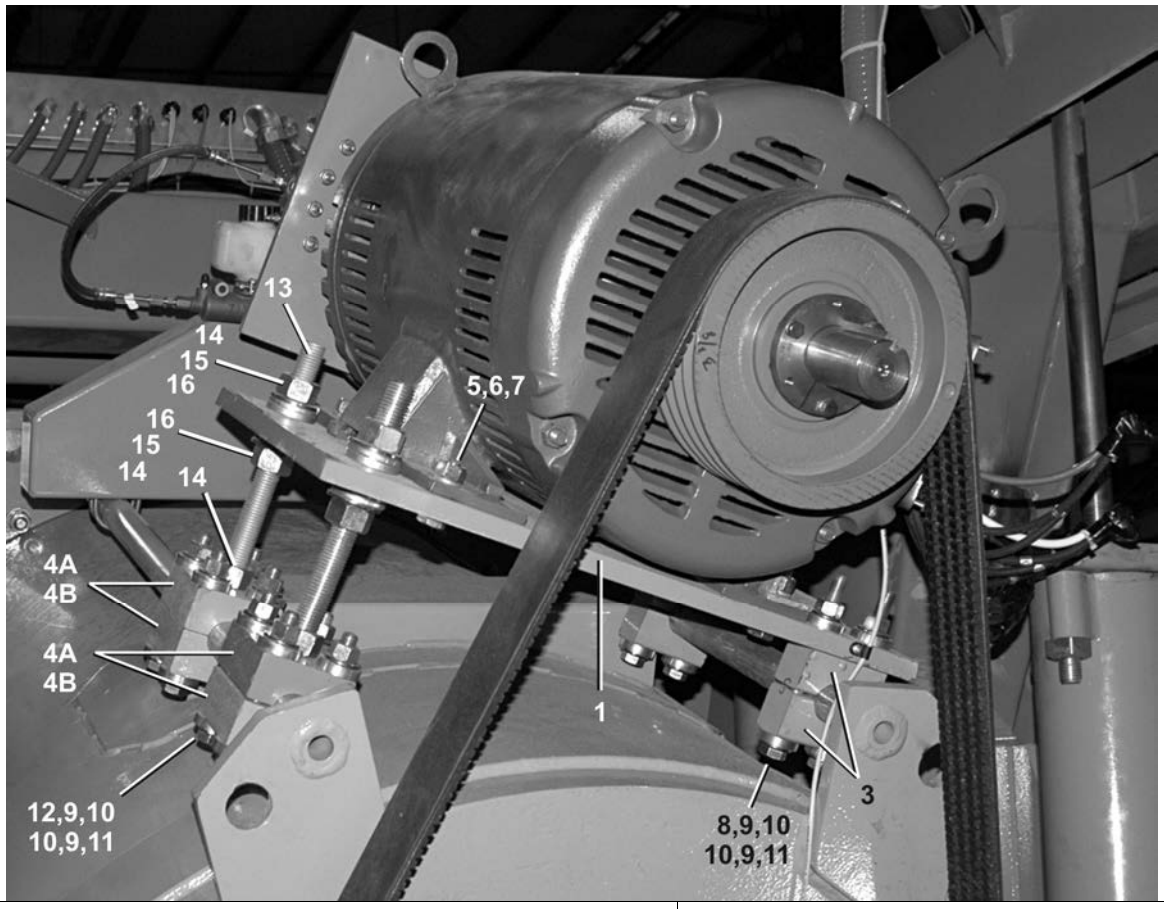
— End of BIIFGM06 —

BIIFLM06 (Published) Book specs- Dates: 20140320 / 20140320 / 20140320 Lang: ENG01 Applic: IFL IFG IFT IH4

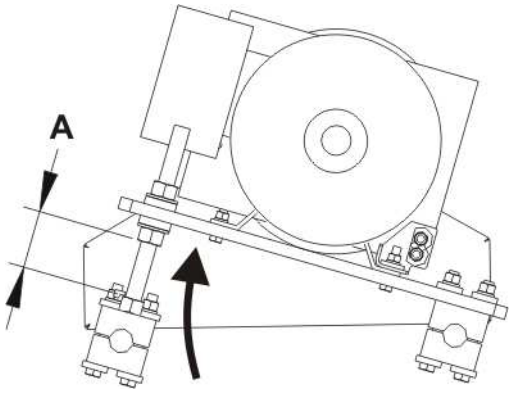
Drive Motor Installation

Figure 1: Drive Motor Installation: 48040F7_, 48040H7_, M7V48036_, M7V48040_, M9V4840_,6836F5_, 6836H5_

General View



Adjust the bolts to put the necessary tension on the belts.



Legend

A. The necessary dimension for a new belt.
A. (M9V4840_) = 3" (76)
A. (48040F7_,H7_) = 3 1/2" (89)
A. (68036F5N, 68036H5N) = 2 3/4" (70)

Figure 2: Drive Motor Installation: 48040H7N (shown)

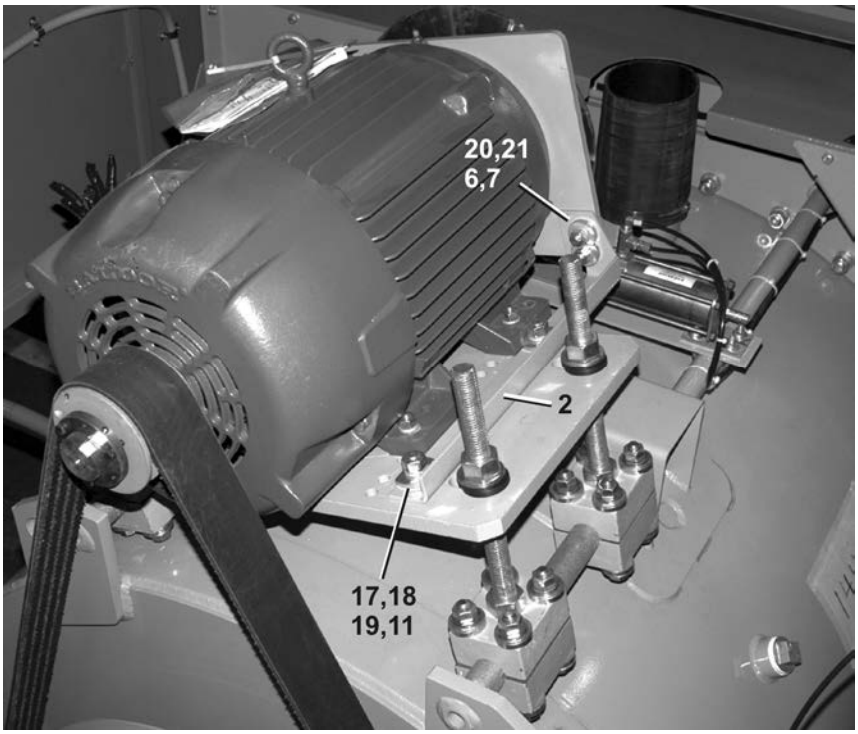


Figure 3: Drive Motor Installation: 68036F5N

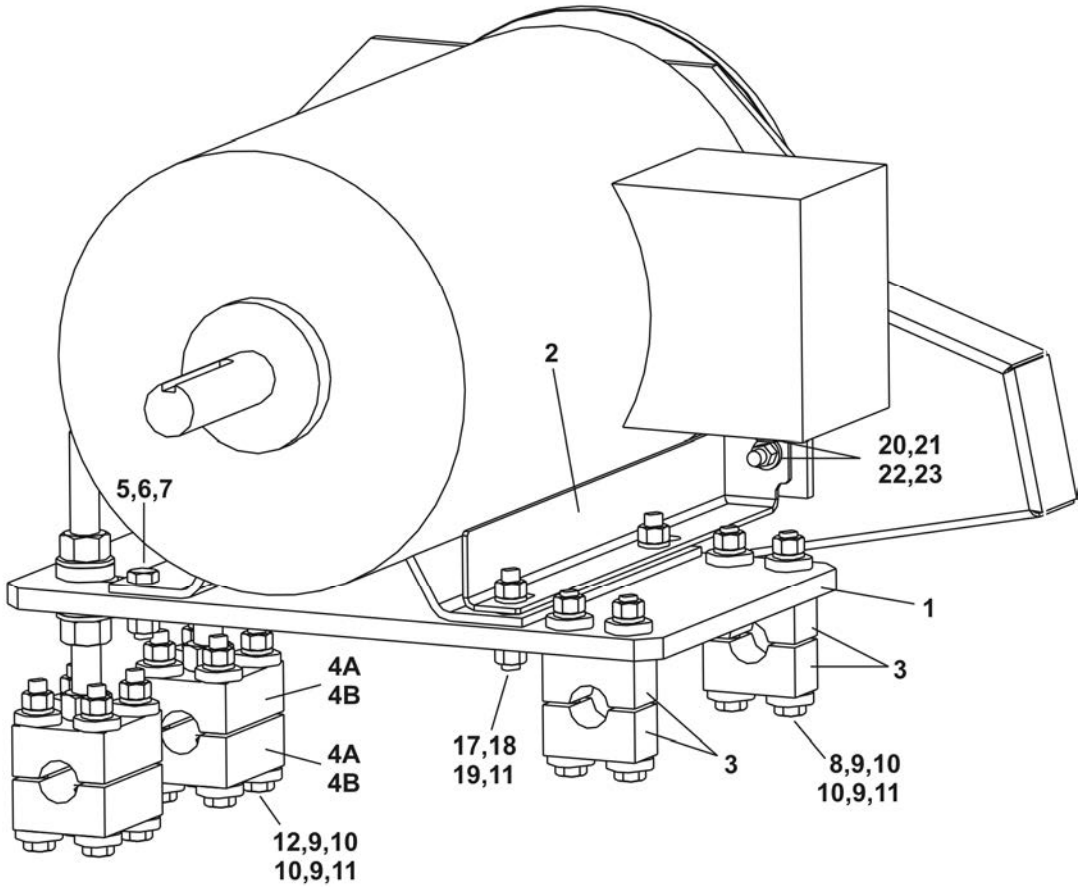


Table 1: Parts List—Drive Motor Installation

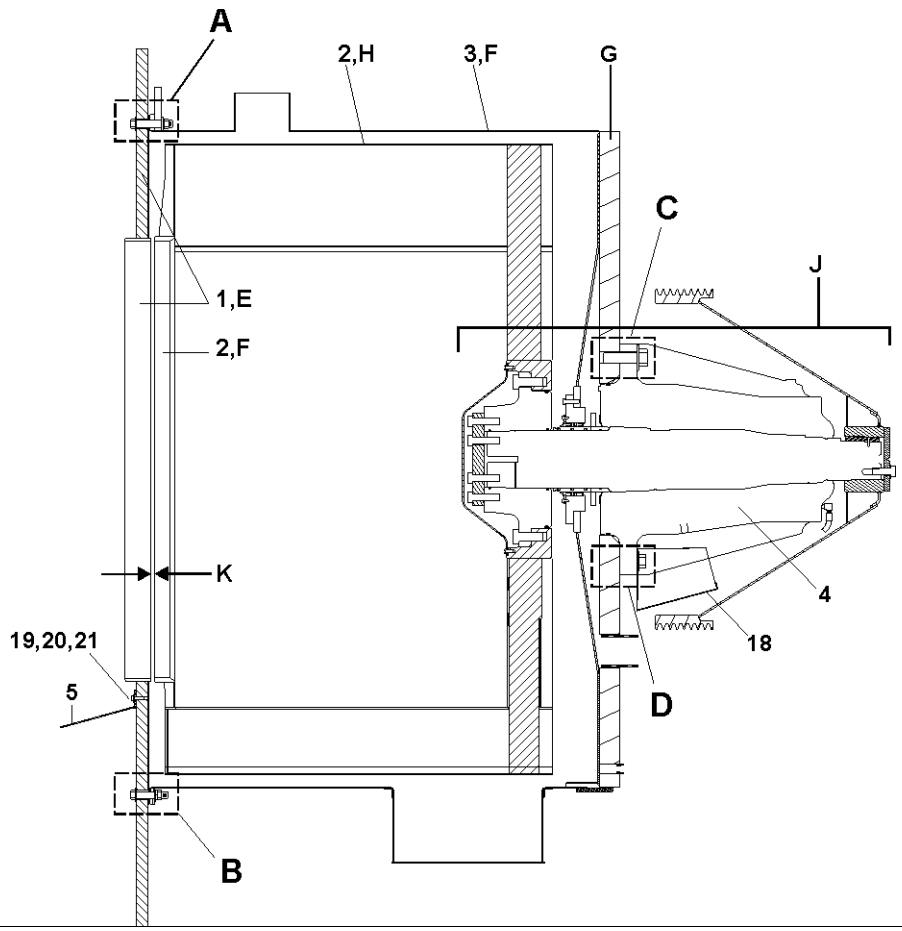
Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	**Item**	**Part Number**	**Description/Nomenclature**	**Comments**
Assemblies				
	A	GBD4840M	Installation Group; Drive motor support	M7V4836_, M7V4840_, M9V4840_
	B	ADB4840F2	Installation Group; Drive motor support	4840H7_
	C	GDB6836E	Installation Group; Drive motor support,	6836F_, 6836H5_
Components				
all	1	03 17130	Motor plate	
B	2	02 21859C	Torque arm	
A	2	W3 17131	Torque arm	
C	2	W3 17131B	Torque arm	
all	3	02 11311B	Pivot clamp	
all	4A	X2 11311P	Jack bolt clamp	
all	4B	C2 11311C	Jack bolt clamp	
all	5	15K191A	Bolt; Hex head; 1/2-13X2.5	
all	6	15U300	Washer; Lock; 1/2	
all	7	15G230	Nut; Hex; 1/2-13	
all	8	15K227D	Bolt; Hex head; 5/8-11X6	
all	9	15U316	Washer; Flat; 5/8	
all	10	17W030	Washer; Spherical; 5/8	
all	11	15G238	Nut; Hex; 5/8-11	
all	12	15K227B	Bolt; Hex head; 5/8-11X5.5	
all	13	17R031A13A	Threaded rod; 1-8 X 13"	
all	14	15G250	Nut; Hex; 1-8	
all	15	15U393	Washer; Flat; 1"	
all	16	17W060	Washer; Spherical; 1"	
all	17	15K226L	Bolt; Hex head; 5/8-11X3.5	
all	18	02 11603A	Washer; Clipped; 5/8	
all	19	15U315	Washer; Lock; 5/8	
all	20	15K171B	Bolt; Hex head; 1/2-13X1+3/4	
all	21	02 11603C	Washer; Clipped; 1/2	

— End of BIIFLM06 —

Cylinder Installation 68036F5N, 68036H5N, 68036H5K, 68036M5K, 72046M5K

Figure 1: Cylinder Installation

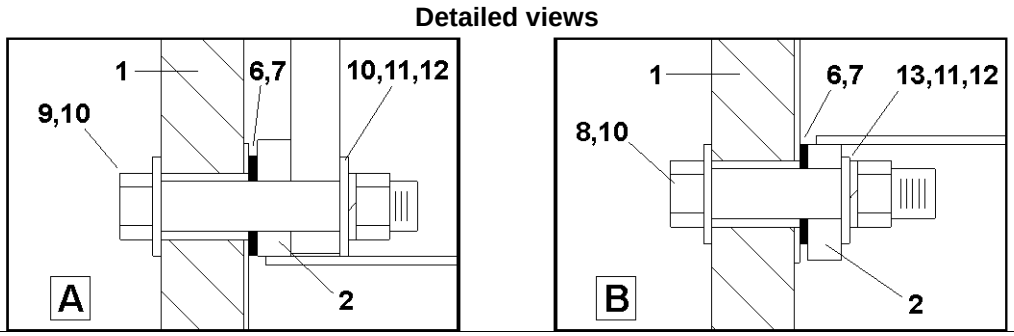
Cross Section



Legend

- **A.** Detailed view, Top connection between the shell front and the shell side sheet
- **B.** Detailed view, Bottom connection between the shell front and the shell side sheet
- **C.** Detailed view, Connection between the shell rear and the bearing housing, Top
- **D.** Detailed view, Connection between the shell rear and the bearing housing, Bottom
- **E.** Shell front
- **F.** Cylinder
- **G.** Shell rear
- **H.** Shell
- **J.** Cylinder and Bearing Installation, See the document BIIFGM07.
- **K.** This dimension must be in this range: 0.3125 inches [8mm] - 0.375 inches [10mm].

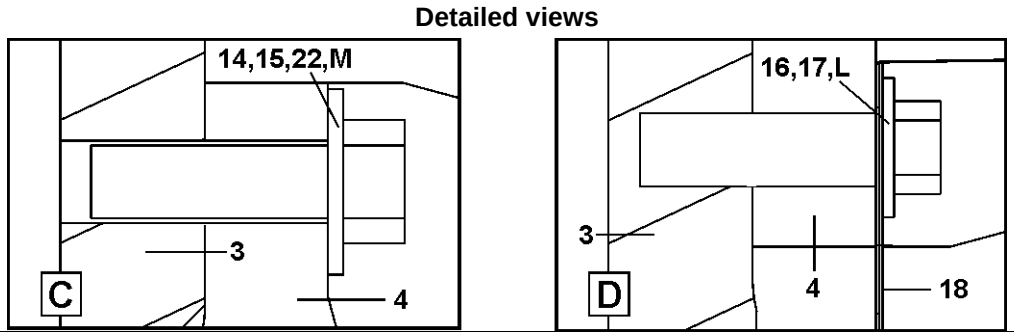
Figure 2: Shell front, Shell, Cylinder



Legend

A. Detailed view, Top connection between the shell front and the shell side sheet
B. Detailed view, Bottom connection between the shell front and the shell side sheet

Figure 3: Shell rear, Bearing housing

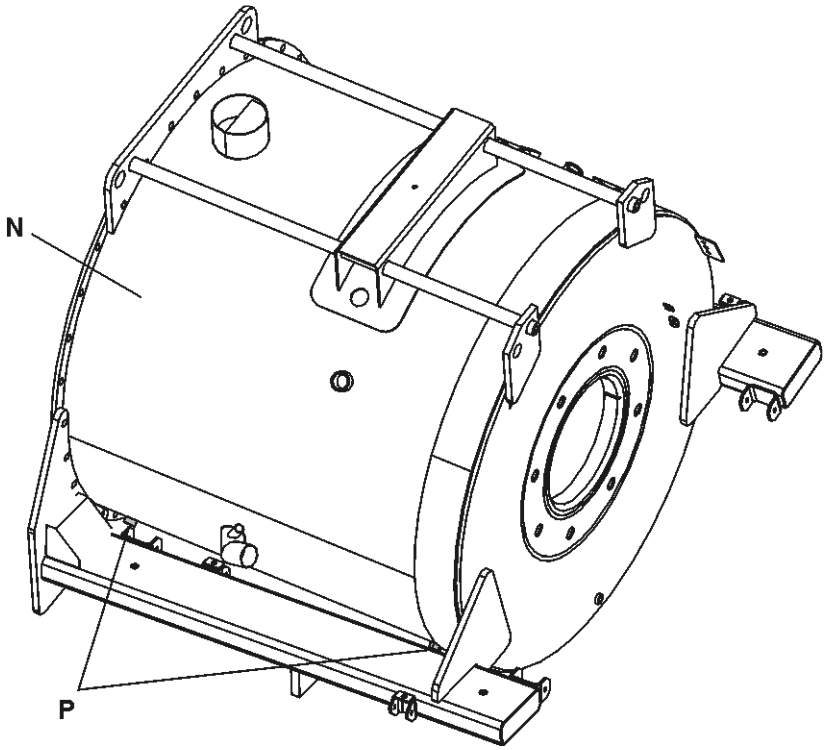


Legend

C. Detailed view, Connection between the shell rear and the bearing housing, Top
D. Detailed view, Connection between the shell rear and the bearing housing, Bottom
L. 2 instances
M. 8 instances

Figure 4: Shell

Top view



Legend

N. Shell

P. There are four plugs in the shell. There are two on each side of the shell. For maintenance, replace the plugs with the bolts that hold the cylinder.

Cylinder Installation 68036F5N, 68036H5K, 68036H5K, 68036M5K, 72046M5K

Table 1: Parts List—Cylinder Installation

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

Used In	Item	Part Number	Description	Comments
			----------ASSEMBLIES----------	
	A	GSF68002	INST=SHELLFRNT W/48DOOR, 6836	68036F5N/H5K/M5K
	B	GSF72001	7246M5K SHELLFRONT INSTALL	72046M5K
			----------COMPONENTS----------	
A	1	W2 04445A	WLMT=SHELL FRNT 48-DR, 6836	
B	1	W2 25045	7246M5K SHELLFRONT WLMT	
A	2	ACA6836LDS	ASSY=CYL NO-BAL 48"DR, 6836F	
B	2	ACA7246M5K	7246M5K CYLINDER ASSEMBLY	
A	3	W2 04430A	WLMT=SHELL NO-BAL, 6836F	
B	3	W2 25020A	7246M5K JACK SHELL WELDMENT	
A,B	4	GBM6836E	INST=MAIN BRG HSE, 6836E	
all	5	W3 65338A	*WLMT=LOAD/UNLOAD SCOOP W/TUB	
A	6	02 04449A	GSKT=73+1/2BC 6836 1/16 THK	
B	6	02 25049A	7246M5K SHELLFRONT GASKET=1/16" THK	
Al	7	02 04449B	GSKT=73+1/2BC 6836 1/8 THK	
B	7	02 25049	7246M5K SHELLFRONT GASKET=1/8" THK	
all	8	15B211	HXCAPSCR 3/4-10X3+1/2 GRD.8 ZN	24 PLACES
all	9A	15K235CA	HXCAPSCR 3/4-10X4 GR8 ZINC	15 PLACES
all	9B	15K235G	HEXCAPSCR 3/4-10UNC2AX5" GR8	1 PLACE
all	10	15U492	FLTWSH1+15/32ODX13/16IDX.125ZC	
all	11	15U340	LOCKWASH MEDIUM 3/4 ZINCPL	
all	12	15G240	HXNUT 3/4-10UNC2B SAE ZINC GR2	
all	13	15U494	3/4SAE CLPFW.812IDX1.5ODX.135T	
all	14	15K309	HEXCAPSCR 1.25-7UNC X 4.0 ZINC	
all	15	15U600	FLTWASH 1+1/4 HARD ASTM F436	
all	16	15U393	FLTWASH 1" HARD ASTM F436	
all	17	15K255ZN	HXCPSCR1"-8UNCX1.5"L GR5 ZNPLT	
all	18	02 04398	SHIELD=BEARING DRIP, 6836E	
all	19	15U241	FLATWASHER 13/32IDX1+3/4ODX14G	
all	20	15U255	LOCKWASHER MEDIUM 3/8 ZINCPL	
all	21	15K105	HXCAPSCR 3/8-16UNC2A1.25 GR5 P	
all	22	20C007G	THDLOCKSEAL LCT24231 RMUBL50CC	

REPLACING JxN & FxN WATER SEALS

MSSM0275AE/2009443A

Background—JxN models manufactured after June 11, 1997 (97241), & all 68036F5N models are fitted with a new type of bearing housing featuring an easily removable water seal holder and a replaceable shaft sleeve. Two technicians (working with ordinary hand tools from the inside of the machine) can change the water seals and the shaft sleeve. Previously, the entire bearing housing had to be removed.

Buna-N water seals are standard on textile machines due to their superior abrasion resistance qualities. Viton water seals are optional. Viton seals have a somewhat greater resistance to industrial chemicals and are recommended for applications where either the wash liquors or the chemicals contain a small percentage of solvents due to the nature of the goods being processed (e.g., industrial garments).

Preparations—Have the following items on hand before replacing water seals: seal removal kit KFBBSL72J2, and either Buna-N seal kit KFBBSH72J2 or Viton seal kit KFBBSV72J2. This procedure only covers replacing water seals; see MSSMA430AE for bearing removal information. Before beginning, study FIGURE 1 and read through this procedure in order to become familiar with the main bearing components and the seal replacement process.

⚠ DANGER: Entangle and Sever 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 machine unless qualified and authorized.**
- ☞ **Lock off and tag out power at the main machine disconnect before servicing, or in accordance with factory service procedures.**

⚠ DANGER: 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 throughly purged, flushed, drained, cooled, and immobilized.**

⚠ DANGER: 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

- ☞ **Viton seals do not render the machine explosion proof or make it suitable for any type of solvent cleaning process.**
- ☞ **Do not use flammable solvents in processing.**
- ☞ **Laundry-type machines must not be used to process goods containing any significant quantity of flammable solvent that might burn or explode.**
- ☞ **Thoroughly flush all flammable-soiled goods with multiple cold baths before any hot bath. Consult with your local fire department/public safety office and all insurance providers.**

Approximate Component Weights

Component	Pounds	Kilograms
Hub	225	103
Shaft cap fixture	33	15
Seal holder	33	15

Supporting the Cylinder

1. Rotate cylinder by hand so that *rib 1* (rib number stamped on front of rib) is top dead center. Drive wedges between the cylinder and shell front at eight places then clamp the cylinder to the shell front (shown in FIGURE 2).
2. Remove the short bolts that plug the cylinder support weldments and replace with the long bolts included in the kit (FIGURE 3). Tighten each bolt until it contacts the cylinder then tighten an additional quarter turn.
3. Remove cover plate in the center of the cylinder (FIGURE 1).

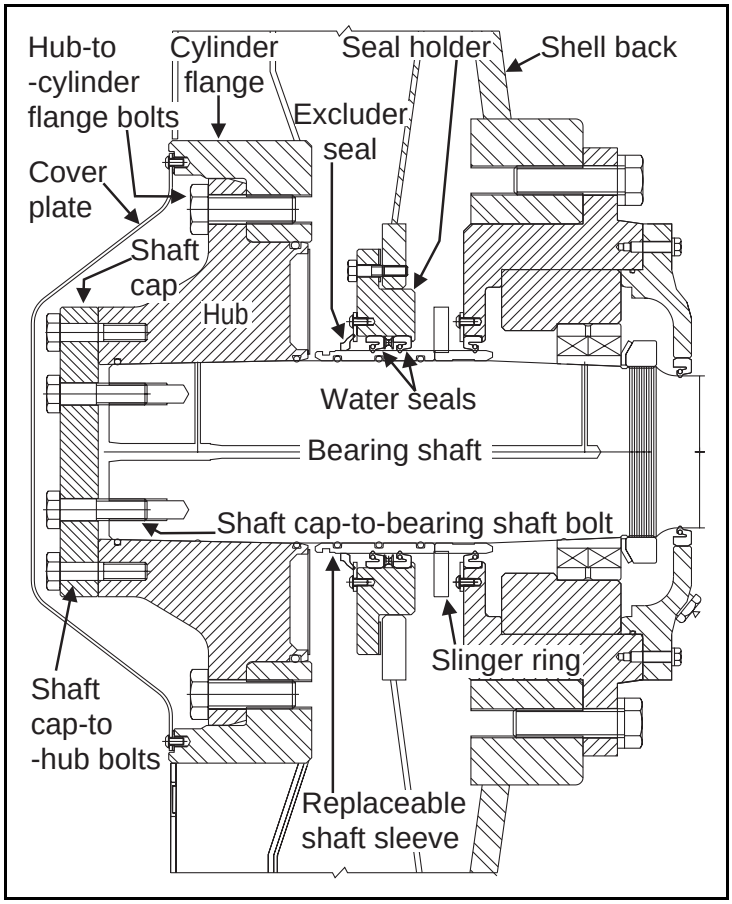


FIGURE 1 (MSSM0275AE)
Overview of Main Bearing Showing Water Seal Components

FIGURE 2 (MSSM0275AE)
Clamping the Cylinder to the Shell Front

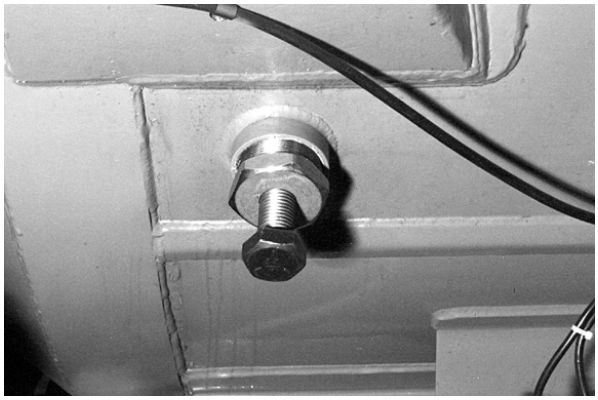


FIGURE 3 (MSSM0275AE)
Cylinder Support Weldment and Long Bolt

WARNING:Crush Hazard

ENTANGLE AND CRUSH HAZARD—Hub weighs approximately 225 pounds (103 kg.), and if allowed to fall, will crush body parts under it.

- ☞ **Follow procedure carefully.**
- ☞ **Hub removal requires two people.**

Removing the Hub

1. Remove three of the *hub-to-cylinder flange bolts (*FIGURE 4) and replace them with *guide pins* (supplied in kit) as shown in FIGURE 6. These *guide pins* support the hub during the seal holder and shaft sleeve replacement procedure. Remove the rest of the *hub-to-cylinder flange* bolts after the *guide pins* are in place.

2. Install two *hub push-off* bolts (FIGURES 4 and 6).

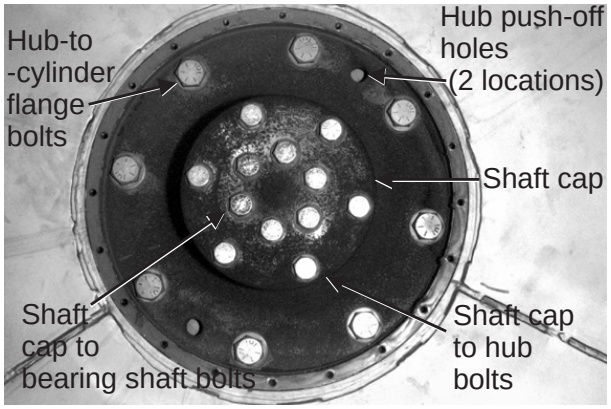


FIGURE 4 (MSSM0275AE)
Identifying Bolts and Shaft Cap

FIGURE 5 (MSSM0275AE)
Shaft Cap Fixture Showing Raised Surface

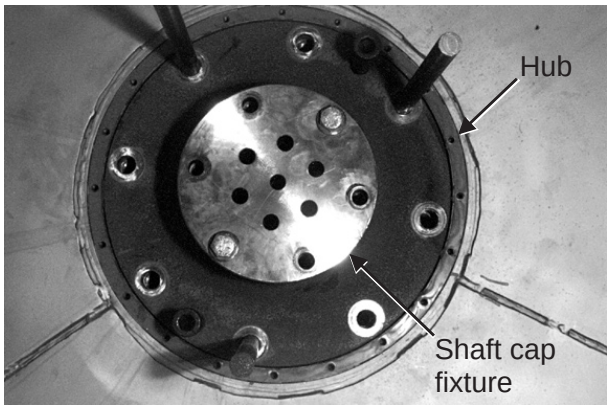


FIGURE 6 (MSSM0275AE)
Guide Pins and Push-off Bolts in Place on Hub

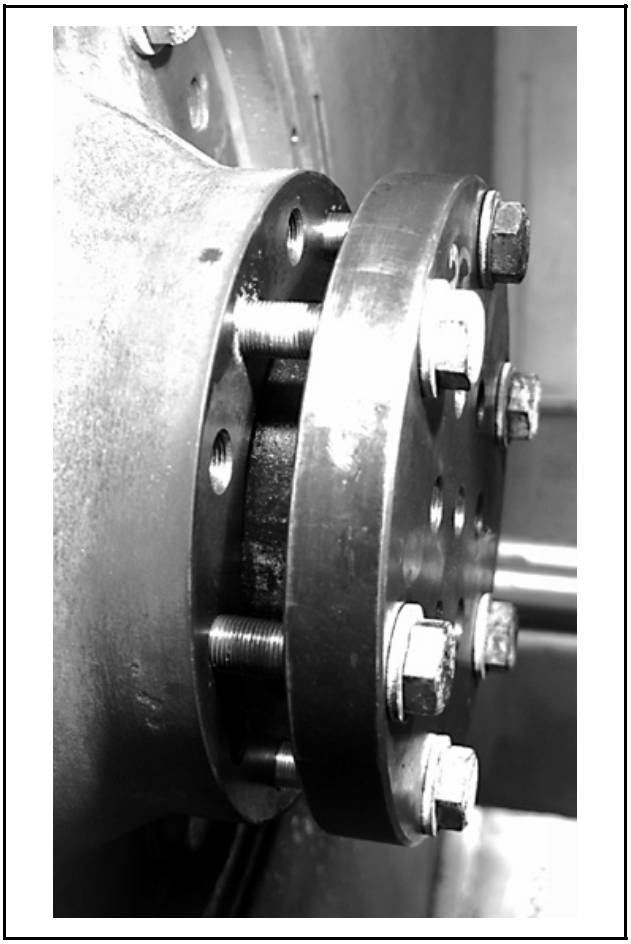


FIGURE 7 (MSSM0275AE)
Shaft Cap Fixture With Push-off Bolts on Hub

3. Remove the *shaft cap* (FIGURE 4) and replace with the *shaft cap fixture* (FIGURE 5) with the raised surface turned inward.
4. Install six *shaft cap fixture* push-off bolts (supplied in the kit), as shown in FIGURE 7. Alternately tighten the *hub push-off bolts* (FIGURE 6) and the *shaft cap fixture push-off bolts* to simultaneously force the hub off both the bearing shaft and the cylinder flange.
5. Carefully and slowly slide hub about 5 inches (127 cm.) out from the *bearing shaft* and *cylinder flange*.

Removing the Seal Holder and Shaft Sleeve

1. With the hub supported in place by the *guide pins*, remove and discard the *excluder seal* (FIGURES 9 and 10).
2. Unbolt and remove *seal holder* (FIGURE 11).

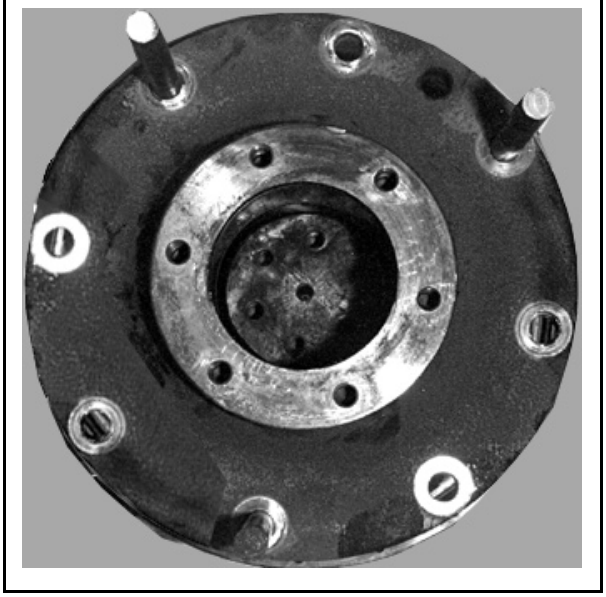


FIGURE 8 (MSSM0275AE)
Shaft Cap Fixture Showing Raised Surface

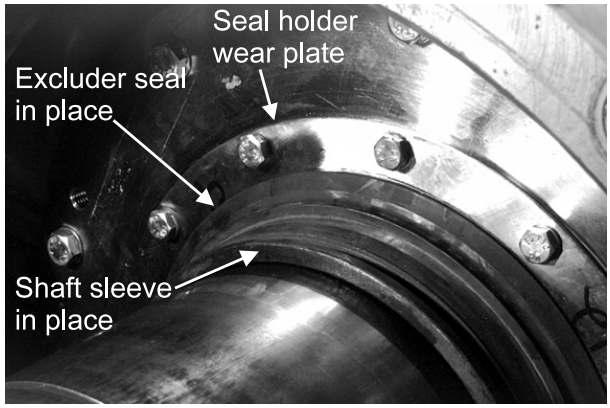


FIGURE 9 (MSSM0275AE)
Excluder Seal in Place

FIGURE 10 (MSSM0275AE)
Excluder Seal

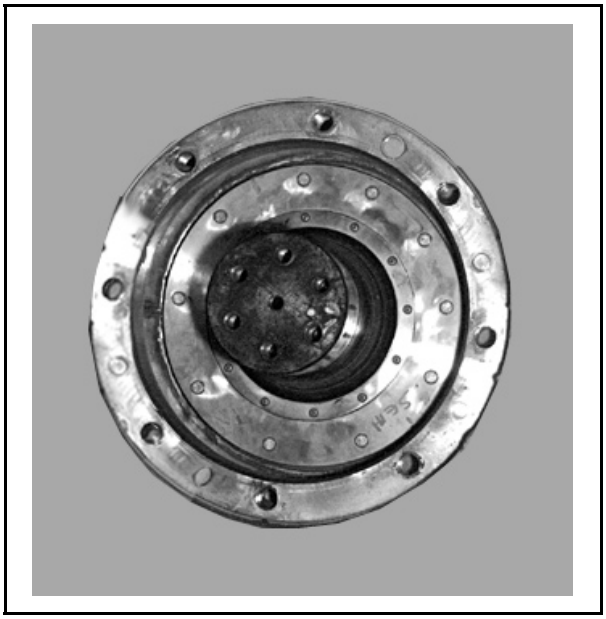


FIGURE 11 (MSSM0275AE)
Identifing the Seal holder

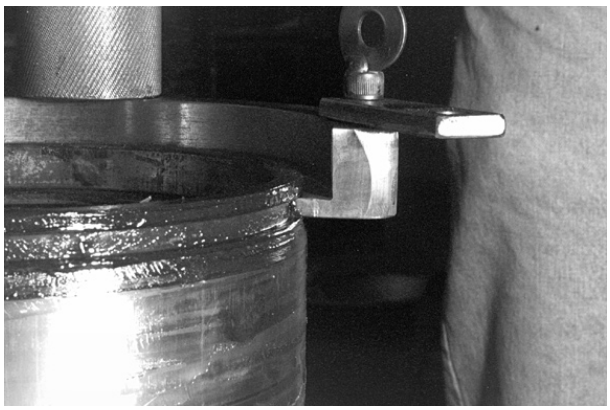


FIGURE 12 (MSSM0275AE)
Shaft Sleeve Tool Details

3. Hook the *shaft sleeve tool* (FIGURES 12 and 13) to the milled groove in the *shaft sleeve*. Using the tool's slide hammers, free the *shaft sleeve* from the shaft and discard.

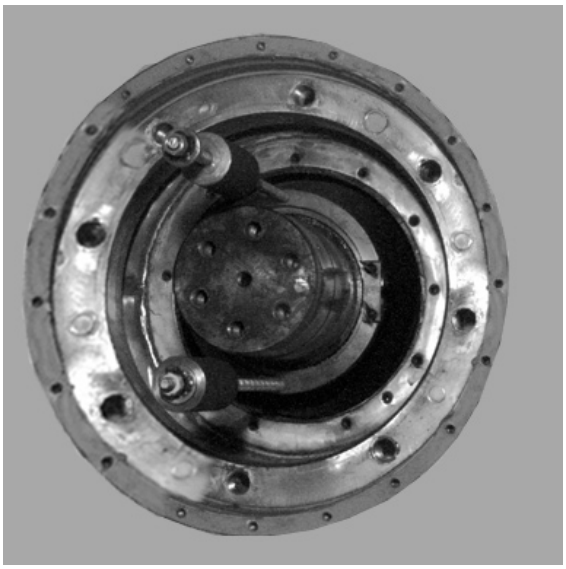


FIGURE 13 (MSSM0275AE)
Shaft Sleeve Tool in Place

Installing the Shaft Sleeve and Seal Holder

1. Clean the bearing shaft. Install the *o-rings* (FIGURE 14) in the new *shaft sleeve*, and the new *water seals* in the *seal holder* (FIGURE 1). If installing a new seal holder wear plate (FIGURE 9), completely coat the underside of the new wear plate liberally with silicon or a similar type gasket material, to ensure that air from the injection system does not leak from the back of the wear plate. Coat the *o-rings* and *water seals* with grease.
2. Add spacers to each *shaft sleeve tool* slide hammer as shown in FIGURE 15. Use slide hammers to gently tap *shaft sleeve* into place.
3. Tape *shim stock* over the groove of the *shaft sleeve* (FIGURE 16) to ensure that the new *water seals* in the *seal holder* stay in position as the *seal holder* is slipped into place.
4. Apply a new gasket to the *seal holder*. Carefully slip the *seal holder* over the *shim stock* and into position. The *seal holder* is drilled in a special pattern and can only be installed one way.

FIGURE 14 (MSSM0275AE)
Shaft Sleeve O-Rings

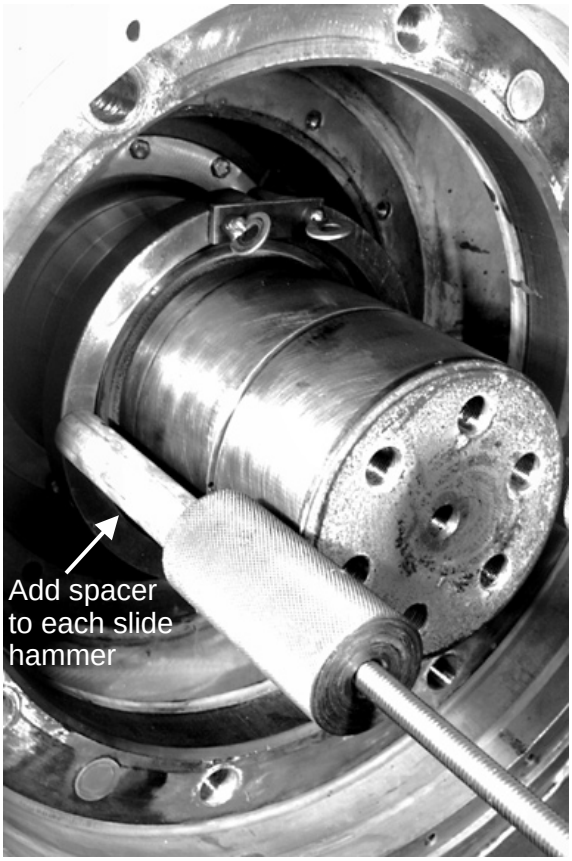


FIGURE 15 (MSSM0275AE)
Using Shaft Sleeve Tool to Install Sleeve

FIGURE 16 (MSSM0275AE)
Shim Stock Covering Edge of Shaft Sleeve
(Slinger ring removed for clarity)

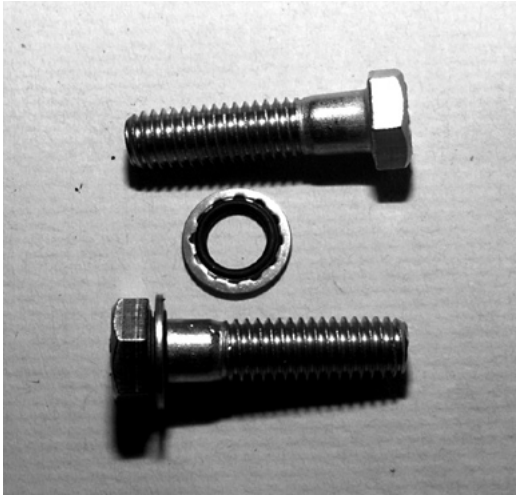


FIGURE 17 (MSSM0275AE)
Seal Holder Bolts and O-ring Washer

5. Place an *o-ring equipped washer* under each bolt (FIGURE 17), apply Loctite 242 to each *seal holder* bolt, then install and torque to specifications. See "MSSM0101CE...FASTENER TORQUE REQUIREMENTS."

Installing the Excluder Seal and Hub

1. Remove clamps and wedges clamping cylinder to shell front. **Do not remove the long bolts supporting the cylinder (FIGURE 3) at this time.**

NOTICE: MACHINE DAMAGE

Cylinder can be bent if components are reinstalled with the clamps and wedges in place.

2. Install the new *excluder seal* flush against the *seal holder* as shown in FIGURE 9. Using Loctite® 404 (or a similar cyanoacrylate based adhesive), tack the base of the *excluder seal* to the *shaft sleeve* in four places.
3. Slowly push the hub into contact with the *bearing shaft* and *cylinder flange*.
4. Install the *shaft cap*. Use several equally spaced bolts to draw the hub onto the *cylinder flange* and *bearing shaft* as shown in FIGURE 18. Remove bolts after the hub is drawn up onto the *bearing shaft*.
5. Apply Loctite 242 to each bolt, then install and torque bolts to specifications in the following order:

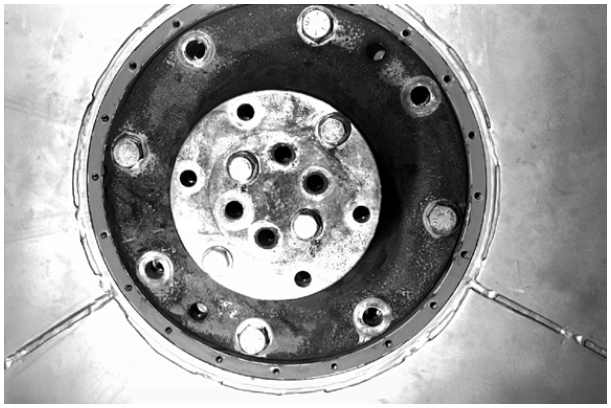


FIGURE 18 (MSSM0275AE)
Drawing Hub into Place

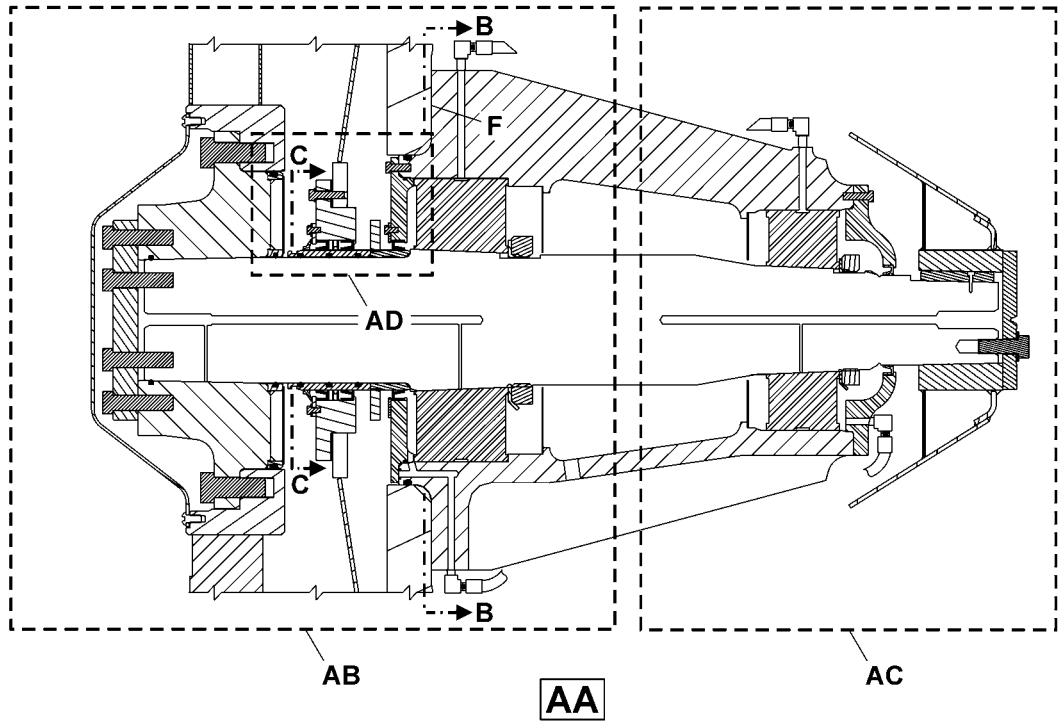
   a. The eight *hub-to-cylinder flange bolts*.
   b. The six *shaft cap-to-hub bolts*.
   c. The six *shaft cap-to-bearing shaft bolts*.

6. Replace the cover plate.
7. Remove the long bolts supporting the cylinder and replace with short bolts.

Bearing Housing

BPWH6B01.R01 0000171094 C.2 D.2 1/22/19 4:11 PM Released

Figure 1. Overview Cylinder, Shell, Bearing and Pulley

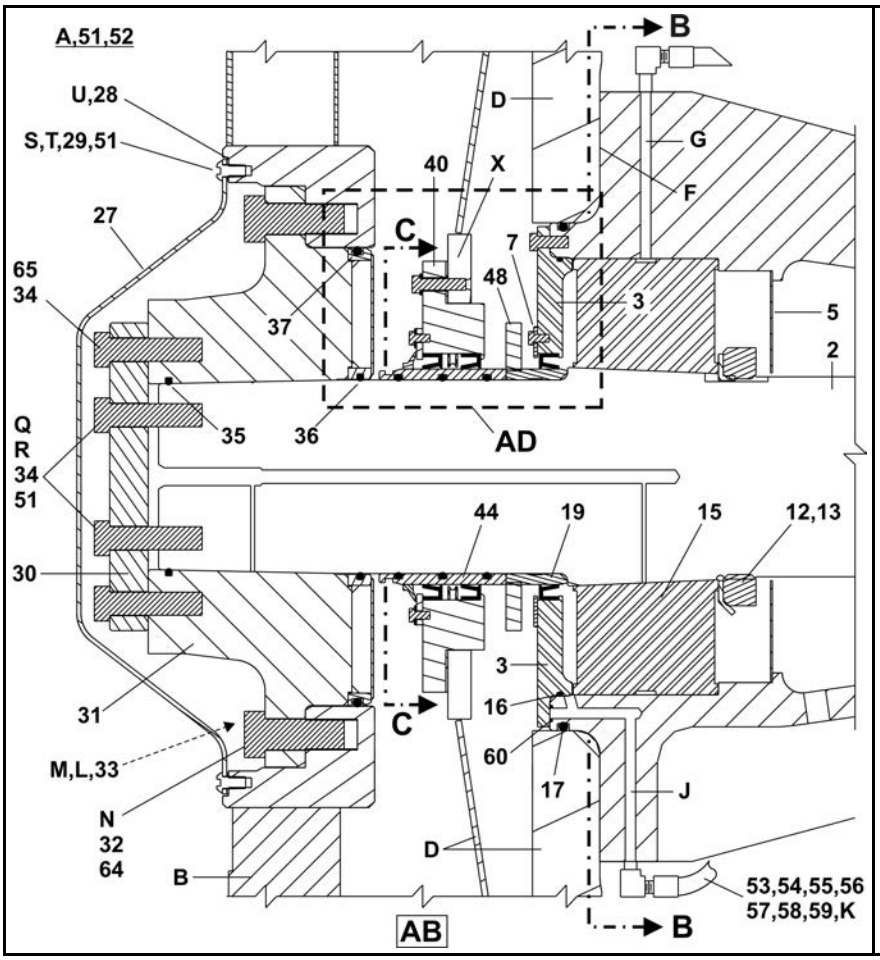


Legend

AA. Cross Section, Cylinder, Shell, Bearing and Pulley
AB. Cross Section, Detail view of the bearing housing front
AC. Cross Section, Detail view of the bearing housing rear
AD. Detailed view, Seal sleeve
F. Refer to the document, BPWH6B02

Bearing Housing

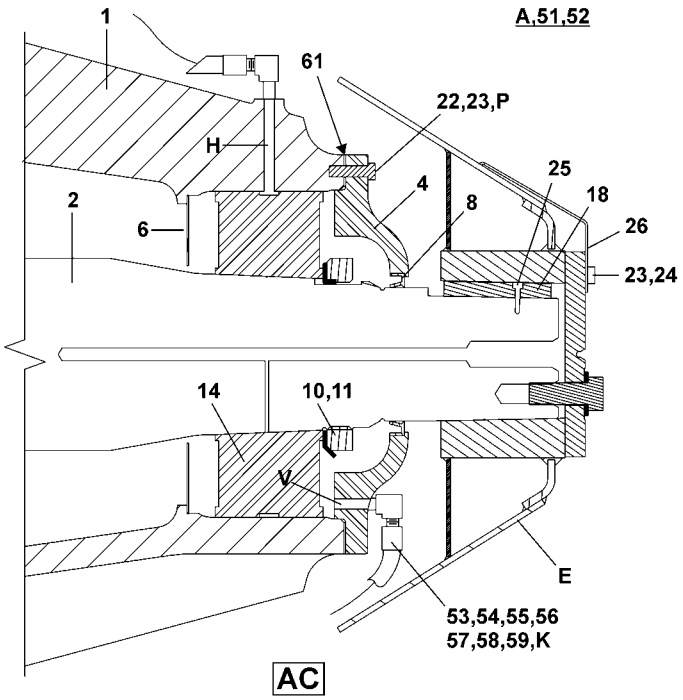
Figure 2. Detail View of the Bearing Housing Front



Legend

A.	Apply primer and adhesive to all bolts.
AB.	Cross section, Detail view of the bearing housing front
AD.	Detailed view, Seal sleeve.
B.	Cylinder
D	Shell rear
G.	Grease inlet for the front bearing
J.	Grease outlet for the front bearing
K.	5 instances
L.	not shown
M.	4 instances
N.	8 instances
Q.	12 instances
R.	Torque to 375+/- 10 Ft. Lbs.
S.	20 instances
T.	Torque to 8 +/- .5 Ft. Lbs or 96 +/- 5 In. Lbs.
U.	Apply silicone to the hub side of the gasket.
X.	Static ring of the shell rear

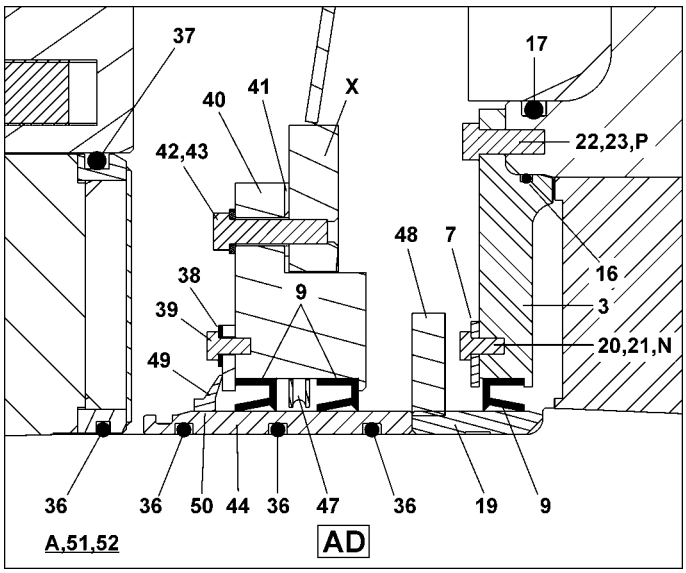
Figure 3. Detail View of the Bearing Housing Rear



Legend

A.	Apply primer and adhesive to all bolts.
AC.	Detailed view, Bearing housing rear
E.	Pulley
H.	Grease inlet for the rear bearing
J.	Grease outlet for the rear bearing
K.	instances 5
L.	not shown
M.	instances 4
P.	instances 10
V.	Grease outlet for the rear bearing

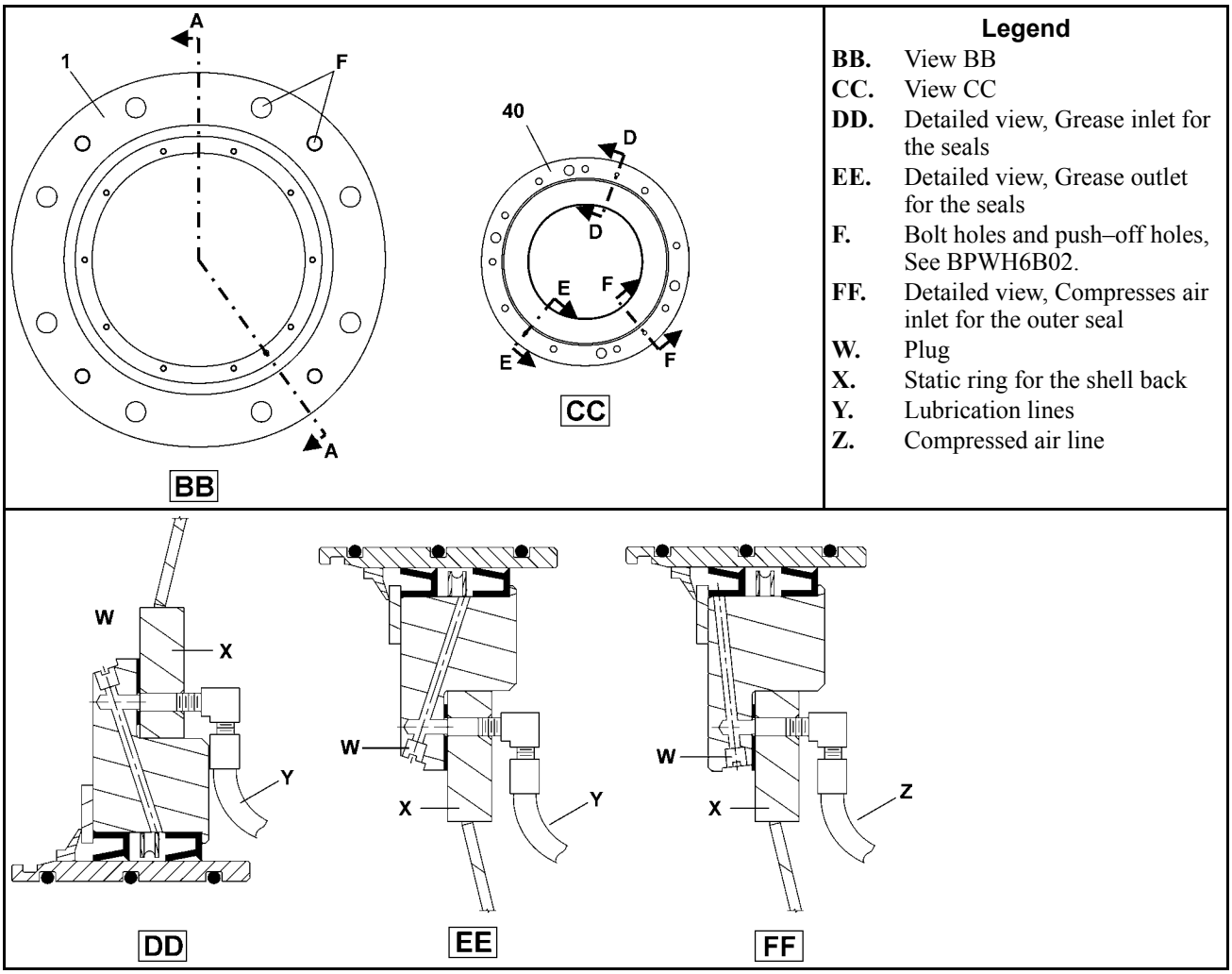
Figure 4. Seal Sleeve



Legend

A.	Apply primer and adhesive to all bolts.
AD.	Detail view, Seal sleeve
N.	instances 8
P.	instances 10
X.	Static ring of the shell rear

Figure 5. Bearing Housing Lubrication and Air Ports



Legend

- **BB.** View BB
- **CC.** View CC
- **DD.** Detailed view, Grease inlet for the seals
- **EE.** Detailed view, Grease outlet for the seals
- **F.** Bolt holes and push–off holes, See BPWH6B02.
- **FF.** Detailed view, Compresses air inlet for the outer seal
- **W.** Plug
- **X.** Static ring for the shell back
- **Y.** Lubrication lines
- **Z.** Compressed air line

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	GBM6836E	INST=MAIN BRG HSE, 6836E	All Models
	B	ABM6836E	ASSY=BRN HOUSE, STD, 6836E	All Models
	C	ABM60010HS	PRTS=STNRD CYL/SHAFT MNT HUB	All Models
	D	ABM60010SS	PRTS=STANDARD FRONT SEALS	All Models
	E	ABM6836EV	ASSY=BRN HOUSE,VITON,6836E	Viton, All Models
	F	ABM60010HV	PRTS=VITON CYL/SHAFT MNT HUB	Viton, All Models
	G	ABM60010SV	PRTS=VITON FRONT SEALS	Viton, All Models
Components				
all	1	X2 04390	MACH=BEARING HOUSING, 6836E	
all	2	X2 04391	MACH=MAIN SHAFT, 6836E	
all	3	X2 04392	MACH=FRONT SEAL HOLDER,6836E	

Bearing Housing

Parts List— (cont'd.)

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

Used In	Item	Part Number	Description/Nomenclature	Comments
all	4	X2 04395	MACH=REAR SEAL HOLDER, 6836E	
all	5	02 04393	FRONT GREASE SHIELD, 6836E	
all	6	02 04394	REAR GREASE SHIELD, 6836E	
all	7	02 04396	SEAL RETAINER, HOUSING,6836E	
all	8	24S114	SEAL 4.5X5.5X.50 JM# 9170 LUP	
all	8	24S114V	SEAL 4.5X5.5X.50 JM#9170LUP-V	
B	9	24S130	SEAL 7.0X8.0X.625 JM#6862 NITR	
E	9	24S130V	SEAL 7.0X8.0X.625JM#19636LUPVI	
all	10	56AHN26	AN26 BEARING LOCKNUT	
all	11	56AHW26	W26 BEARING LOCKWASHER	
all	12	56AHN34	AN34 BEARING LOCKNUT	
all	13	56AHW34	W34 BEARING LOCKWASHER	
all	14	56S22326C3	SPHROLGRG SKF #22326 CCK/C3W33	
all	15	56S22334C4	SPHROLGRG SKF#22334 CCK/C4W33	
B	16	60C280	ORING 14.0ID 1/8CS BN70-280	
E	16	60C280V	ORING 14.0ID 1/8CS VITON-280	
all	17	60C461	ORING 16.0ID 1/4CS BN70-461	
all	18	X2 21816	MACH=PULLEY KEY, 4840F	
all	19	X3 60084	SLEEVE=GREASE SEAL PRESSFIT	
all	20	15U181	LOCKWASHER MEDIUM 1/4 SS18-8	
all	21	15N158	HEXCAPSCR 1/4-20NCX1/2SS18-8	
all	22	15K095B	HEXCAPSCR 3/8-16X1" GRADE8 ZIN	
all	23	15U240L9	FLTWASH 3/8 HARD ASTM F436	
all	24	15K095C	HXCAPSCR 3/8-16X1.25 GR.8 ZN.	
all	25	15N091	PANHDMACHSCR 8/32UNC2X1/2 S/S	
all	26	02 04456	PULLEY PHOTOEYE BRKT, 6836E	
all	27	X3 60085	COVER CYL/SHAFT MNT HUB	
all	28	03 60085A	GASKT=CVR CYL/SHT HUB	
all	29	15K086E	BUTSOKCAPSCR 3/8-16X3/4SS NYPT	
all	30	X3 60089	MACH=WASHER CYL/SHAFT MNT HUB	
all	31	Y3 60082R	MACH=CYL/SHFT MNT HUB-REMAN	
all	32	15K235K	HEXCAPSCR 1-14X3 GR 8 ZINC	
all	33	15Q125A	GRUB SCREW NYLON 1-8X5/8	
all	34	15K233A	HEXCAPSCR 3/4-16X2.5 GR8 ZINC	
B	35	60C159W	ORING 6.0ID 3/16CS BUNA70#361	
E	35	60C159X	ORING 6.0IDX3/16 VITON70 -361	
B	36	60C160DB	ORING 6.25ID3/16CS BUNA70 -362	
E	36	60C160DV	ORING 6.25ID3/16CS VITON70#362	
B	37	60C190	ORING 14.0ID 1/4CS BUNA70-457	
E	37	60C190D	ORING 14.0ID 1/4CS VITON -457	
all	38	X3 60088	MACH=EXCLUDER WEAR PLT	
all	39	15K031A	BUTSOKLOKCAPSCR 1/4-20X1/2 188	
all	40	X3 60087	MACH=FRONT SEAL HOLDER	
all	41	03 60087A	GSKT=FRNT SEAL HOLDER	
all	42	15U250	SEALWASHER 3/8" S/S PARKER #60	
all	43	15U260	LOCKWASHER MEDIUM 3/8 SS18-8	

Bearing Housing

Parts List— (cont'd.)

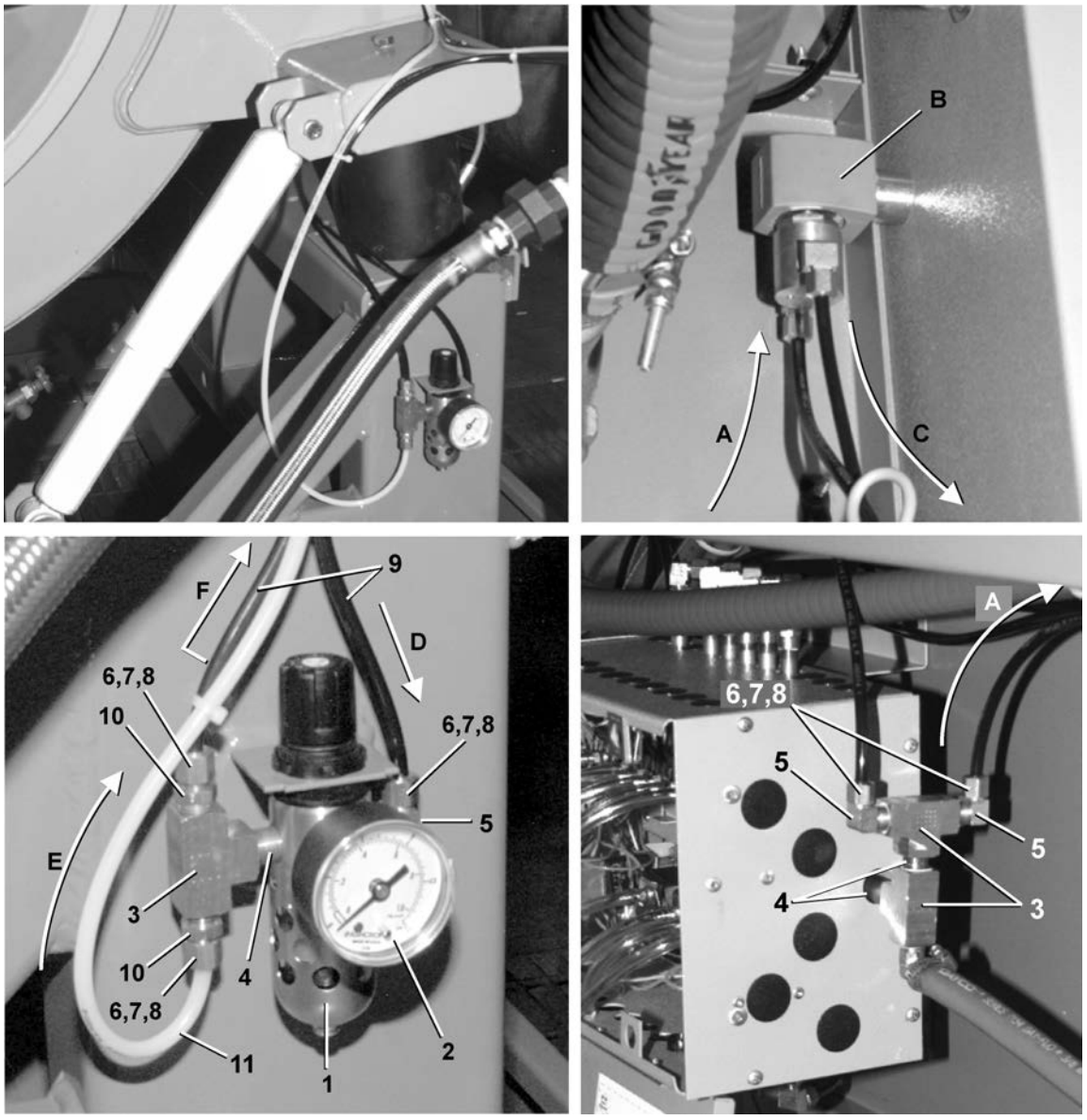
Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.

Used In	Item	Part Number	Description/Nomenclature	Comments
all	44	X3 60084A	SLEEVE=H2O SEAL O-RING	
all	47	24S130LR	LANTERN RING=7X8X.313	
all	48	03 60106	SLINGER=BRG FRNT SEALS	
B	49	24S146	SEAL 7.0X8.0X.437 TYPE SSW NIT	
E	49	24S146V	SEAL 7.0X8.0X.437 TYPE SSW VIT	
all	50	20C003A	ADHESIVE BLK MAX 1OZ LOC#38050	
all	51	20C007G	THDLOCKSEAL LCT24231 RMUBL50CC	
all	52	20C006N	PRIMER LOCQUIC-N 60Z #76456	
all	53	5SB0E0CBEO	NPTHEXBUSH 1/4X1/8 BRASS 125#	
all	54	53A501	TUBE INSERT .163"OD #63PT-4-40	
all	55	53A500	SLEEVE DELRIN 1/4"OD#60PT-4	
all	56	53A059A	NUT 1/4"BR.HOLYOKE AND #61A-4	
all	57	53A031B	BODY-EL90MALE.25X1/8 #269C-42B	
all	58	53A007B	BODYFEMCON.25X.25COMP#B66A-4B	
all	59	60E004TC	TUBING NYL(NAT)1/4"ODX.17ID	
all	60	60C107	ORING 3/8ID 1/16CS BUNA70#012	
all	61	03 17190	GASKET=REAR SEAL, 4840M7	
all	62	60E004TE	1/4"OD X.170"ID NYL(BLK)TUBING	
all	63	5SP0CBEHS	NPT PLUG 1/8 HXCTRSNK BRASS	
all	64	15U393	FLTWASH 1" HARD ASTM F436	
all	65	15U321H	FLTWASH 3/4 HARD ASTM F436	

Air Injection Components

BPWH6B02.R01 0000176009 A.2 2/7/18 9:33 AM Released

Figure 1. Air Flow Components

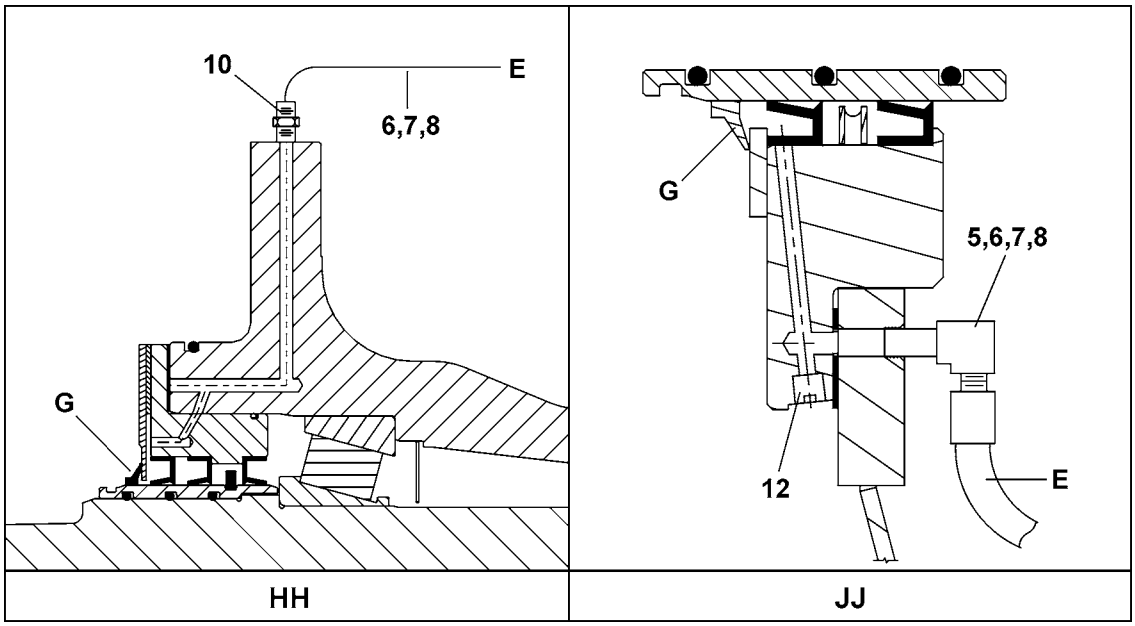


Legend

A. Compressed air to the bearing seal coil
B. Bearing seal coil
C. Compressed air to the pressure regulator
D. Compressed air from the bearing seal coil
E. Compressed air to the bearing
F. Compressed air to the bearing pressure switch

Air Injection Components

Figure 2. Air Flow in the Bearing Housing



Legend

E. Compressed air to the outer seal.
G. Outer seal
HH. Cross section view of the bearing's air port (Models: 48040F7N, F7B, F7W, F7N)
JJ. Cross section view of the bearing's air port (Models: 68036F5N, H5N, H5K, M5K & 72046M5K)

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	AIR58003	AIR58003 AIR INJECT ASSY=BNG HOUSE	
			Components	
all	1	96J019G	96J019G 1/4"FILTERREG 0-60PSI	
all	2	30N095	30N095 PRESSGAUGE 1/8"BACKCN.0-15PSI	
all	3	51V015	51V015 TEE 1/4 FGDBRASS 101T7-444	
all	4	5N0ECLSBE2	5N0ECLSBE2 NPT NIP 1/4XCLS TBE BRASS 125#	
all	5	53A031B	53A031B BODY-EL90MALE.25X1/8 #269C-42B	
all	6	53A059A	53A059A NUT 1/4"BR.HOLYOKE AND #61A-4	
all	7	53A500	53A500 SLEEVE DELRIN 1/4"OD#60PT-4	
all	8	53A501	53A501 TUBE INSERT .163"OD #63PT-4-40	
all	9	60E004TE	60E004TE 1/4"OD X.170"ID NYL(BLK)TUBING	
all	10	53A005B	53A005B BODYMALCON1/4X1/8COMP #B68A-4A	
all	11	60E004TC	60E004TC TUBING NYL(NAT)1/4"ODX.17ID	

Brake Components and Installation: 4840F7_, 6836F5_

Figure 1: Brake Components

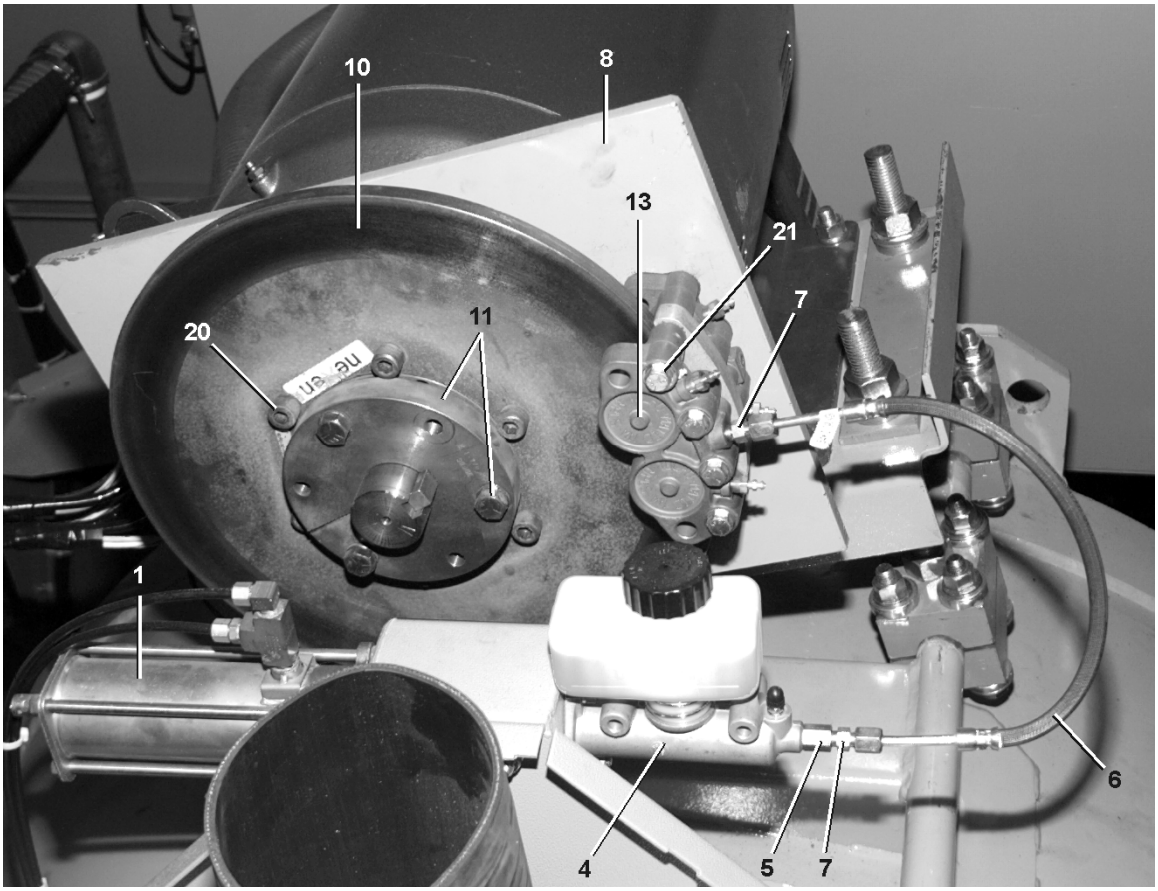
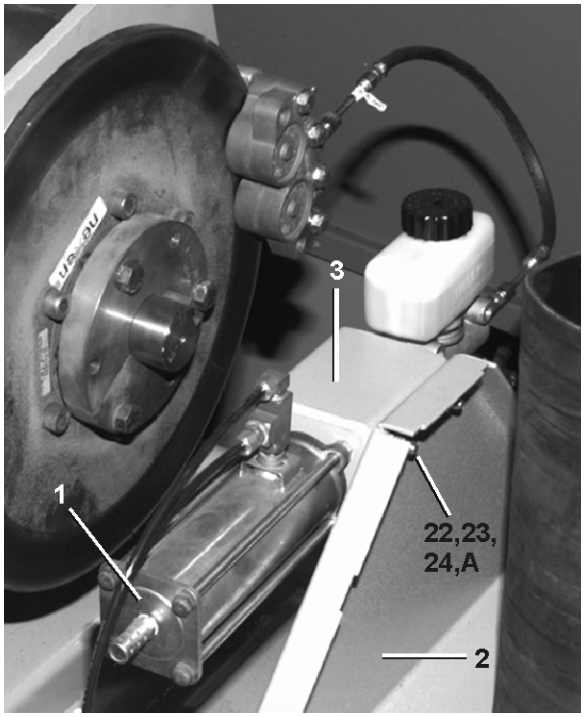


Figure 2: Brake Components

Air cylinder

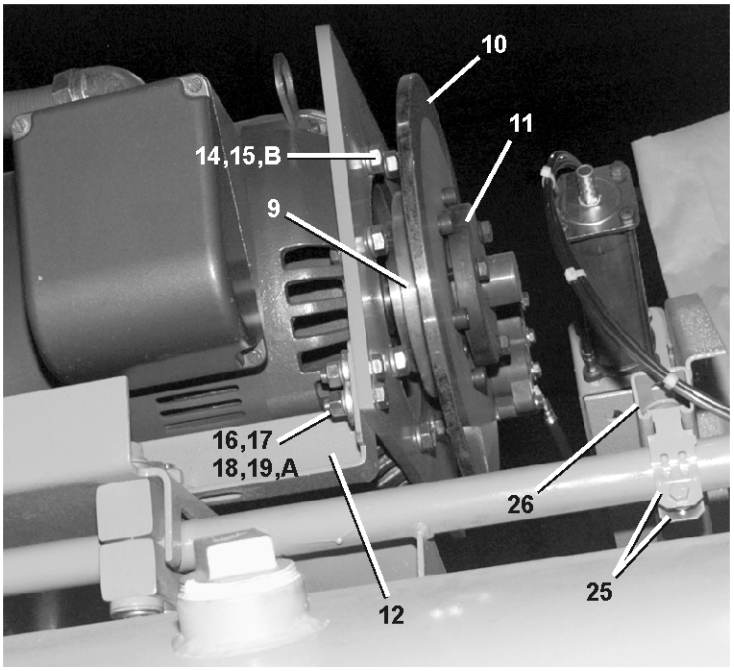


Legend

A. 2 instances

Figure 3: Brake Components

Disk brake



Legend

A. 2 instances
B. 8 instances

Figure 4: Mounting bracket

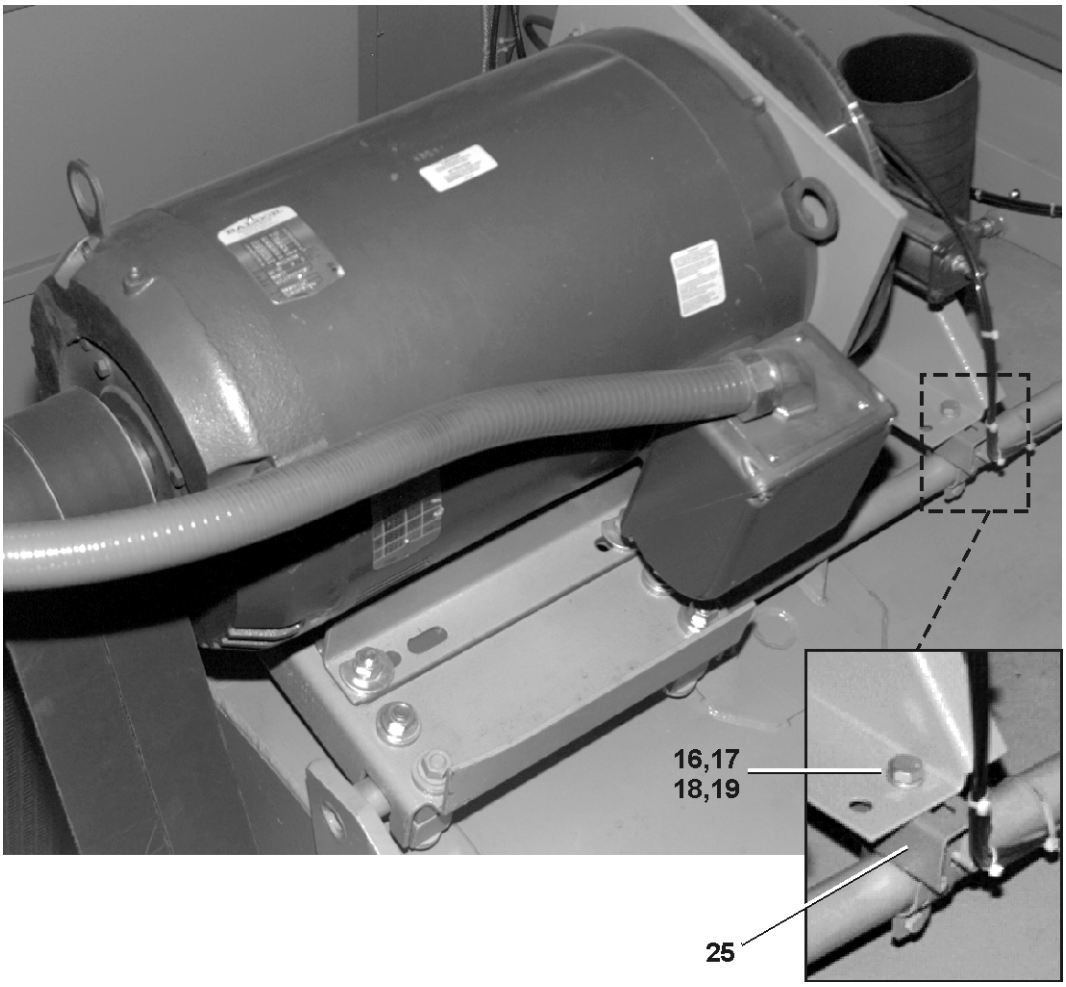


Table 1: Parts List—Brake Components and Installation

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	GBR6836E	Installation Group	
Components				
all	1	AAC4840F	Assembly, Air cylinder	
all	2	W3 17125	Piece part	
all	3	W3 65238	Piece part	
all	4	54KMC1125U	Master cylinder	
all	5	52XY0ER004	Hydraulic fitting, 3/16MJX1/8FP	
all	6	54KC7961BG	Hose	
all	7	52AY0ER003	Hydraulic fitting, 1/4MJICX1/8MP	
all	8	X2 04454	Piece part	
all	9	X2 04458	Hub	
all	10	X2 04459	Disk	
all	11	56Q1RE	Bushing, 1+7/8"	
all	12	02 04455	Torque arm	
all	13	54KC7975	Caliper	
all	14	15K214E	Bolt , 5/8-11X1.5	
all	15	15U315	Washer, 5/8	
all	16	15K151	Bolt, 1/2-13X1.25	
all	17	15U490	Washer, 1+1/2X17/32X1/4	
all	18	15U300	Washer, 1/2	
all	19	15G230	Nut, 1/2-13	
all	20	15K155A	Bolt, 1/2-13X1.5	
all	21	15K086G	Bolt, 3/8-24X5"	
all	22	15K095	Bolt, 3/8-16X1	
all	23	15U255	Washer, 3/8	
all	24	15G205	Nut, 3/8-16	
all	25	27A0075	Piece part	

— End of BIIFGM09 —

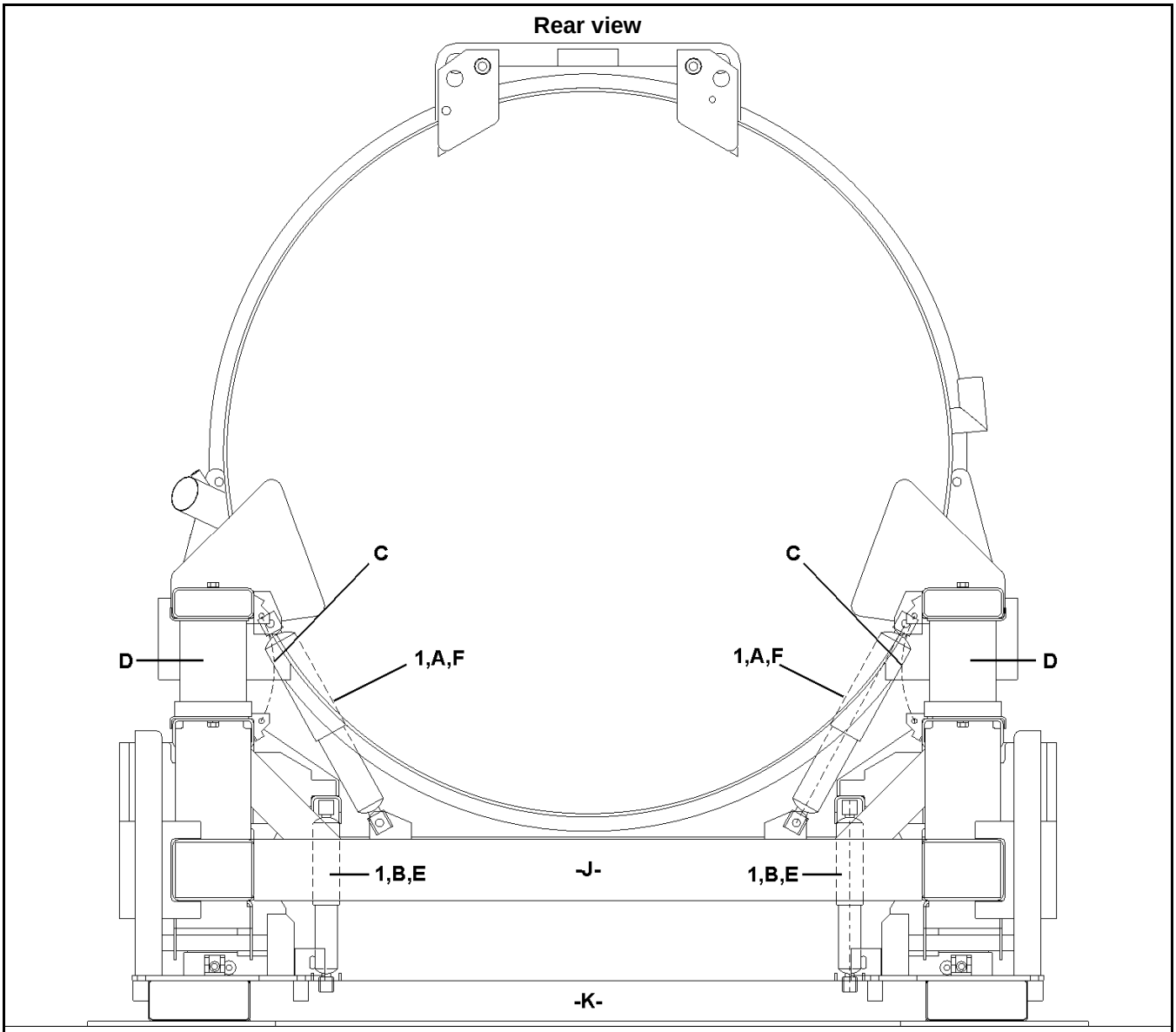
2

Suspension 2.2

BIIFGM11 (Published) Book specs- Dates: 20100623 / 20100623 / 20100806 Lang: ENG01 Applic: IFG

Suspension Components and Installation: 6836F5_

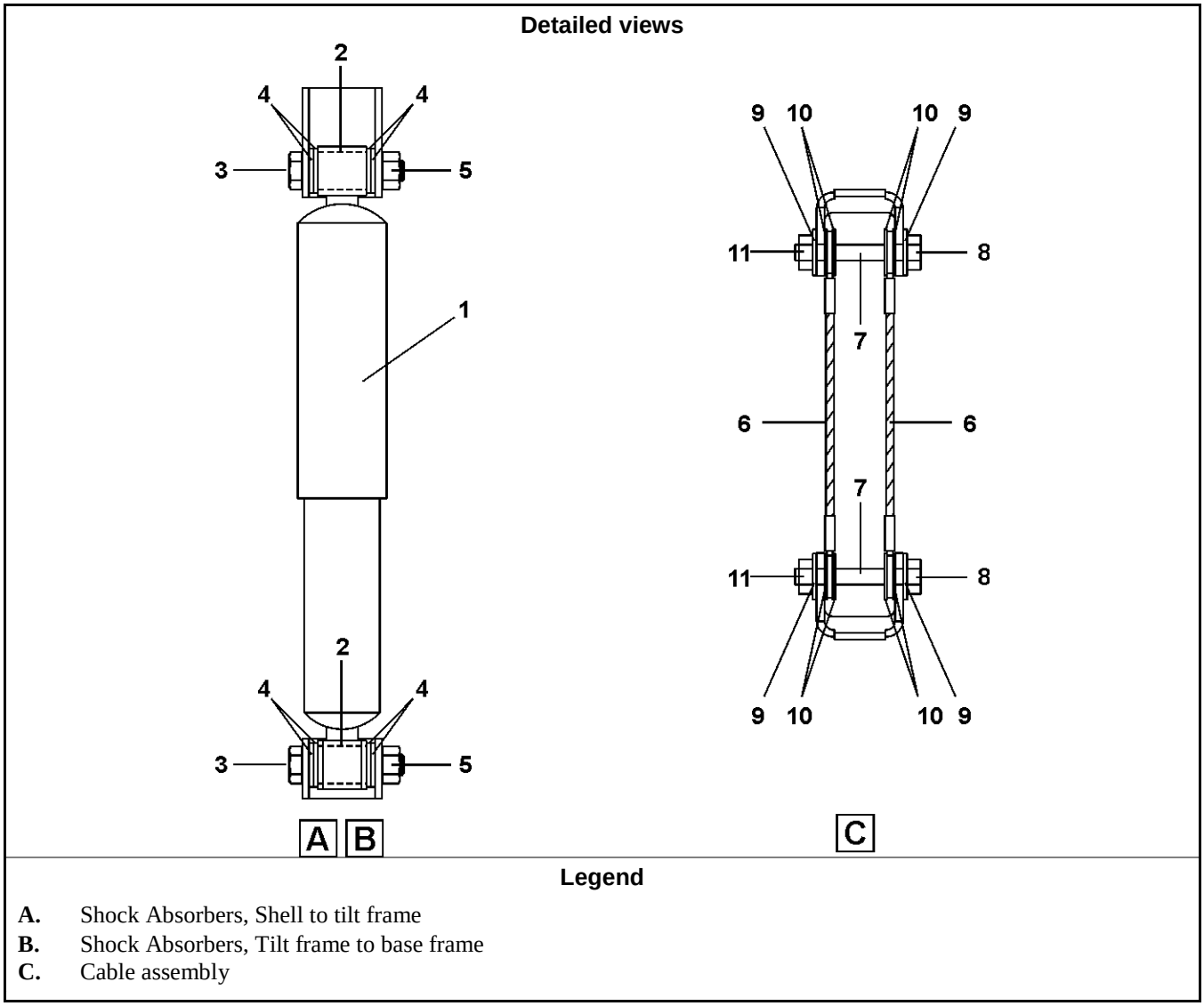
Figure 1: Suspension Components and Installation



Legend

- **A.** Shock absorber, Shell to tilt frame
- **B.** Shock absorber, Tilt frame to base frame
- **C.** Cable assembly
- **D.** Rubber spring
- **E.** 2 instances
- **F.** 4 instances
- **J.** Tilt frame
- **K.** Base frame

Figure 2: Shock Absorbers, Cable assembly



Legend

A. Shock Absorbers, Shell to tilt frame
B. Shock Absorbers, Tilt frame to base frame
C. Cable assembly

Figure 3: Rubber Springs, Holddown Rings, and Cables

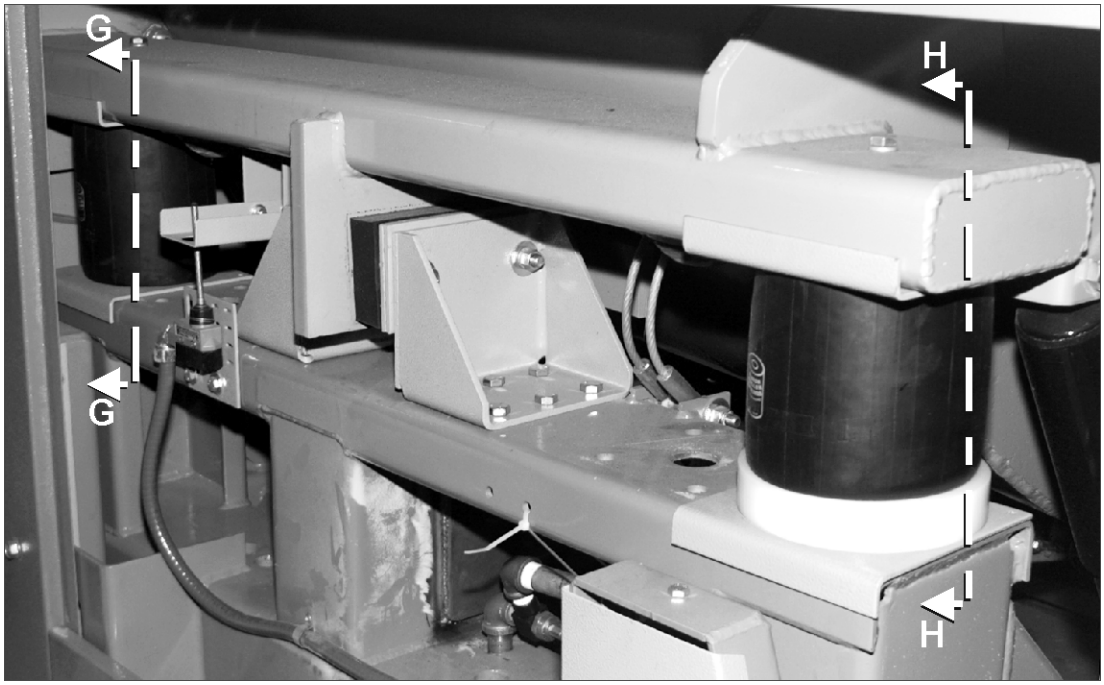


Figure 4: Rubber Springs, Holddown Rings, and Cables

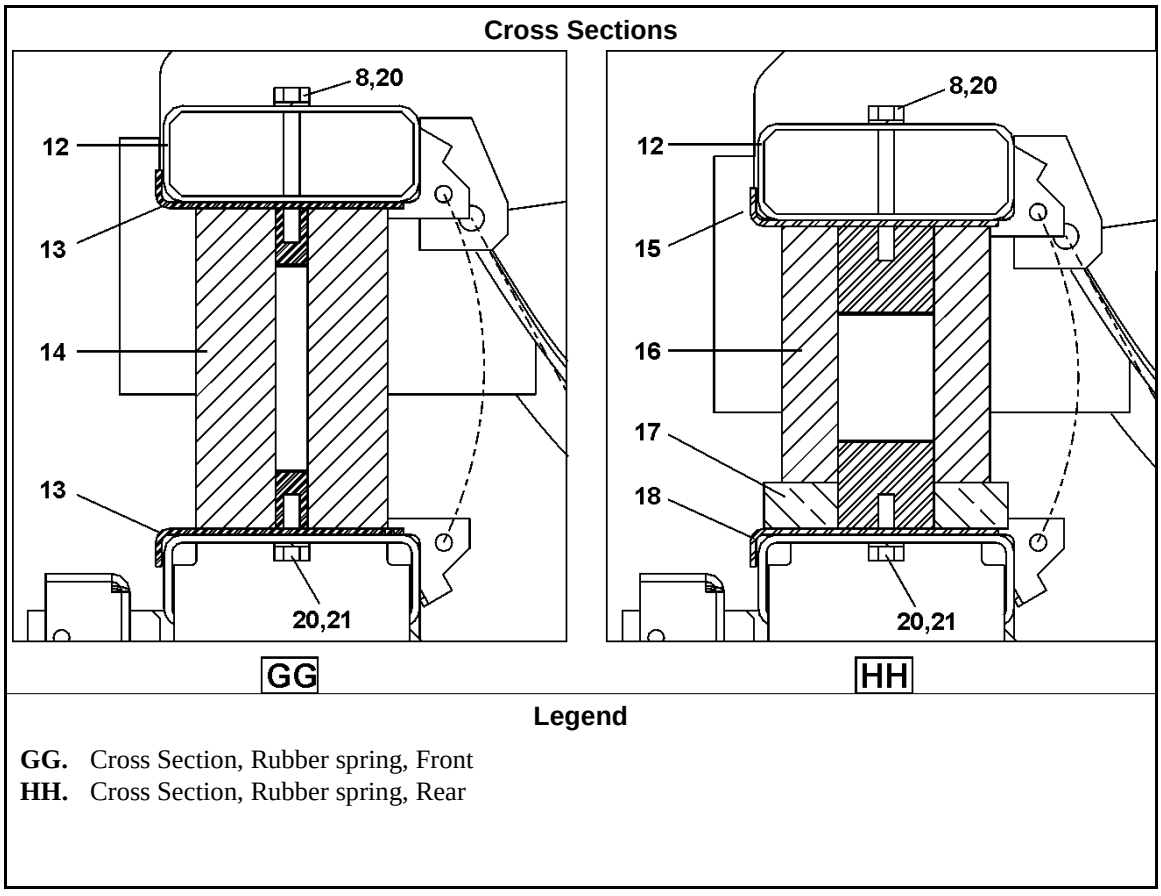


Table 1: Parts List—Suspension Components and Installation

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	GSS6836F	Installation Group	
Components				
all	1	60BS6839	Shock absorber	
all	2	X2 04425	Spacer	
all	3	15K235CA	Bolt, 3/4-10X4	
all	4	15U321H	Washer, Flat, 3/4	
all	5	15G240A	Nut, 3/4	
all	6	27A969	Cable assembly	
all	7	27B250	Spacer, 0.5X1.5X.062	
all	8	15K201A	Bolt, 1/2"-13X4"	
all	9	15U282	Washer, Flat, 1/2	
all	10	15U348A	Washer, Flat, 1+1/4"X1/2"	
all	11	15G234N	Nut, 1/2	
all	12	W2 04430A	Piece part	
all	13	W2 21941	Piece part	
all	14	60B139	Rubber spring,6X1X10	
all	15	W2 04423	Piece part	
all	16	60B140	Rubber spring, 6.5X3/8	
all	17	X2 04422	Spacer	
all	18	W2 04423A	Piece part	
all	20	15U300	Washer, Lock, 1/2	
all	21	15K154A	Bolt, 1/2-13X1.5	

— End of BIIFGM11 —

Excursion Switch (Unwanted Movement Switch) Components and Installation

Figure 1: Excursion Switch (Unwanted Movement Switch) Components and Installation

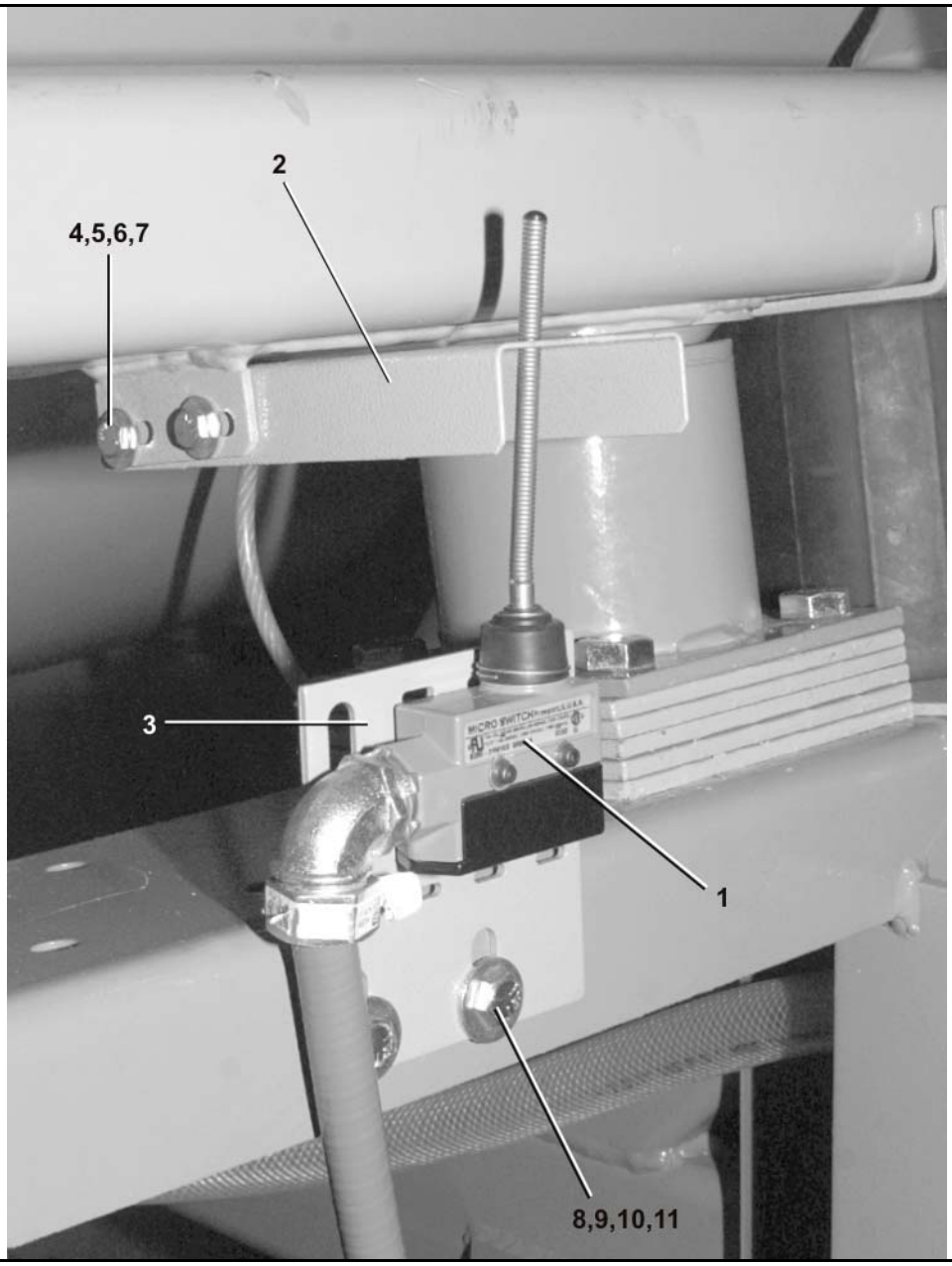


Table 1: Parts List—Excursion Switch (Unwanted Movement Switch) Components and Installation

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	GES48001	Installation Group; Excursion switch; 48040F_	
			Components	
all	1	09R008ASTD	Excursion switch and Mounting components	
all	2	02 15783A	Mounting plate; Excursion switch	
all	3	02 21869	Target plate; Excursion switch; 48040F_	
all	4	15K030	Bolt; Hex head; 1/4-20	
all	5	15U185	Washer; Flat; 1/4"	
all	6	15G177	Nut; Hex; 1/4-28	
all	7	15U180	Washer; Lock; 1/4	
all	8	15K085	Bolt; Hex head; 3/8-16	
all	9	15G205	Nut; Hex; 3/8-16	
all	10	15U240	Washer; Flat; 3/8"	
all	11	15U255	Washer; Lock; 3/8	

— End of BIIFLM13 —

2

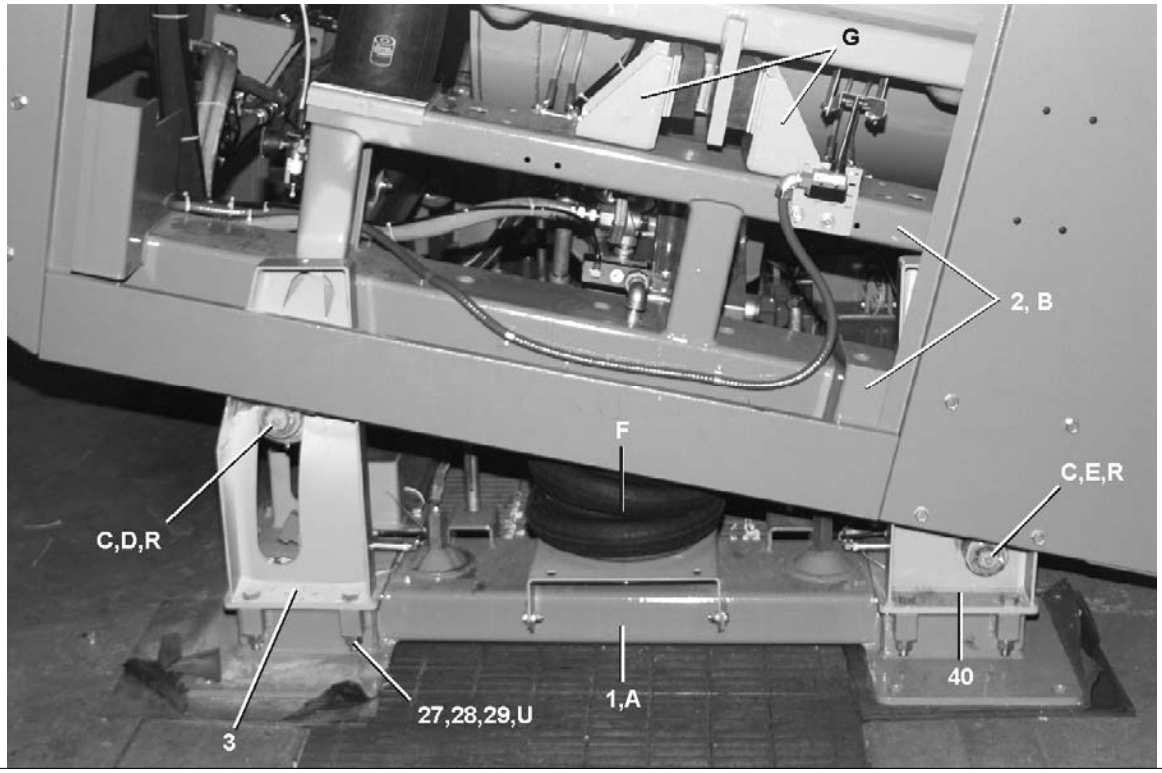
Tilt Assemblies 2.3

BIIFGM12 (Published) Book specs- Dates: 20100629 / 20100629 / 20100806 Lang: ENG01 Applic: IFG

Frame and Pivot Assemblies

Figure 1: Frame and pivot assemblies

General View

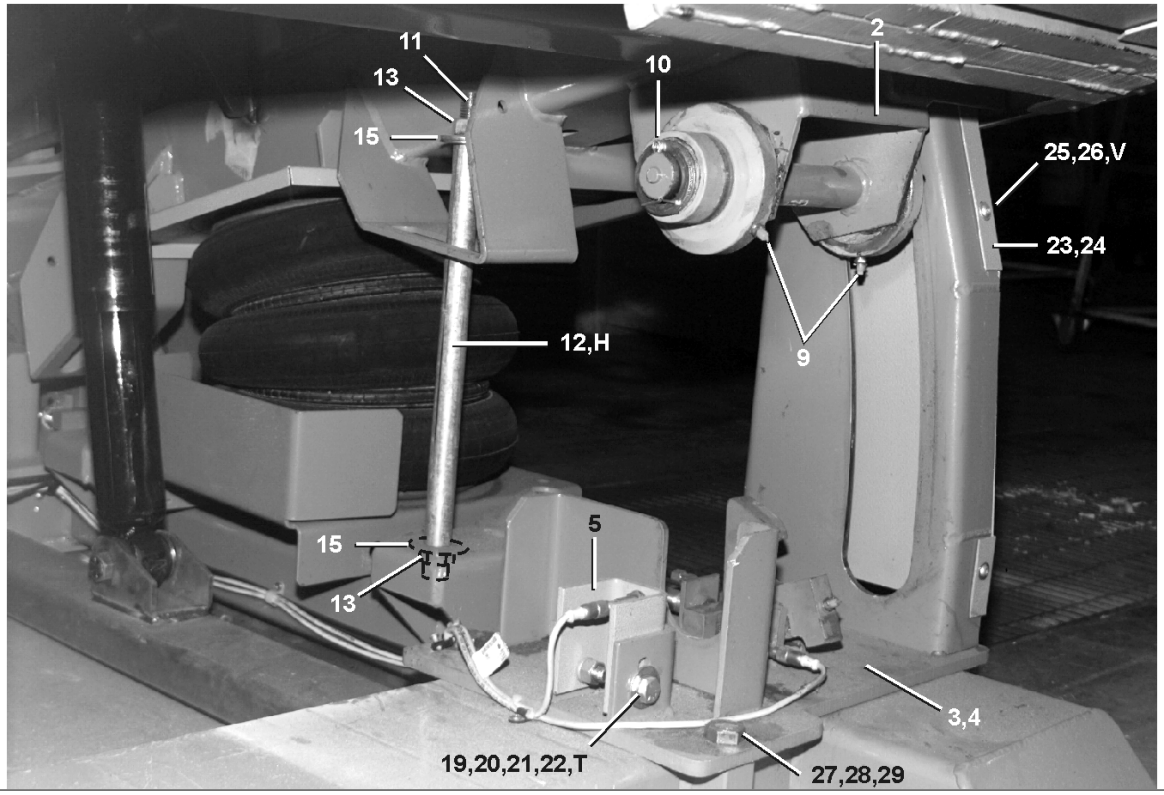


Legend

- **A.** Base frame
- **B.** Tilt frame
- **C.** Pivot
- **D.** Rear
- **E.** Front
- **F.** Pneumatic bags, See the document BIIFGM14.
- **G.** Shell stop
- **R.** 2 instances
- **U.** 16 instances

Figure 2: Tilt wheel, Tilt stop

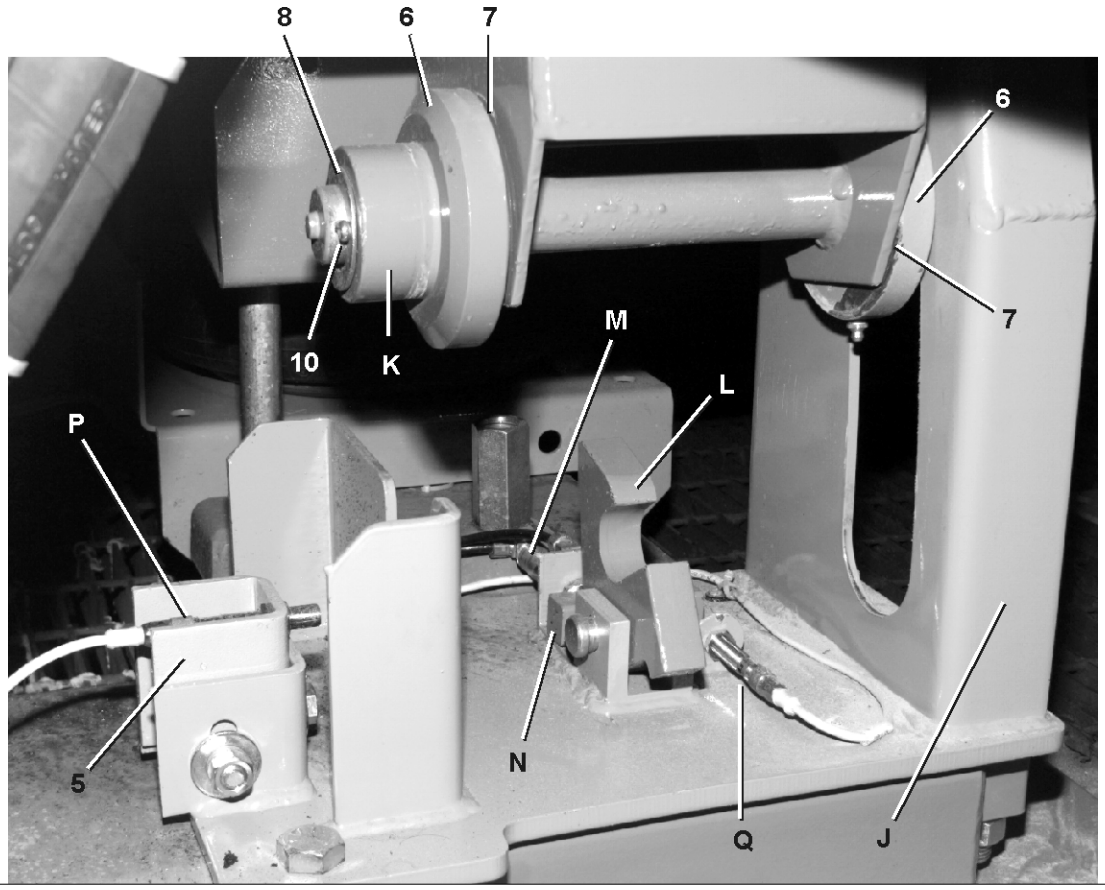
Detailed view



Legend

H. Tilt stop
S. 4 instances
T. 8 instances
V. 6 instances

Figure 3: Tilt track, Tilt wheel, Tilt lock



Legend

J. Tilt track
K. Tilt wheel
L. Tilt latch
M. Tilt lock cylinder
N. Tilt lock rod
P. The proximity switch sees that the machine is down.
Q. The proximity switch sees that the tilt lock is locked.
S. 4 instances

Figure 4: Shell stops

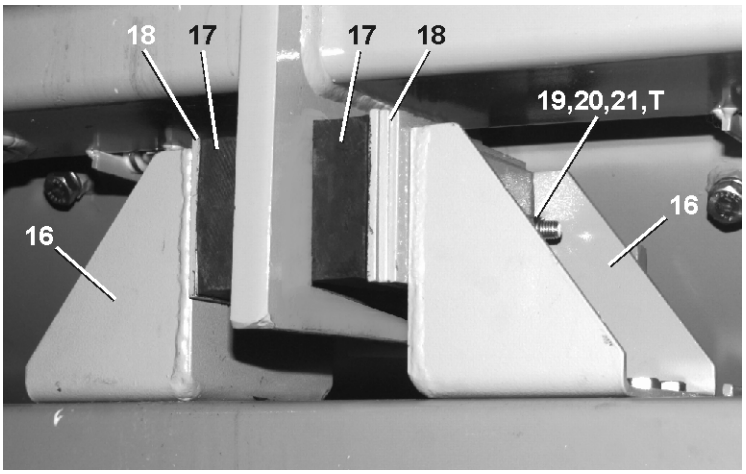
Detailed view	Legend
	**T.** 8 instances

Table 1: Parts List—Frame and Pivot Assemblies

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	GHF68001	Installation Group	
			Components	
all	1	W2 04470	Base frame	
all	2	W2 04480	Tilt frame	
all	3	W2 04469L	Tilt track, Left side	
all	4	W2 04469R	Tilt track, Right side	
all	5	02 21943	Bracket	
all	6	X3 64513	Tilt wheel	
all	7	03 64519	Shim	
all	8	15U520	Washer, Flat, 2+3/8X1+41/64X12GA	
all	9	54M021	Grease fitting	
all	10	15H060	Pin	
all	11	17R027A18A	Threaded rod, 3/4-10x18.0	
all	12	X2 04485	Pipe	
all	13	15G240	Nut, 3/4	
all	15	15U321	Washer, Flat, 2"X.812X.10	
all	16	02 04489	Bracket	
all	17	03 64681	Rubber stop pad	
all	18	03 64681A	Spacer	
all	19	15K154A	Bolt, 1/2-13X1.5	
all	20	15U282	Washer, Flat, 1/2	
all	21	15G230	Nut, 1/2	
all	22	15U300	Washer, Lock, 1/2	
all	23	02 04453	Cover	
all	24	02 04453A	Cover	
all	25	15N110H	Bolt	
all	26	15G004HC	Nut	
all	27	15K250	Bolt, 3/4-10X4	

— End of BIIFGM12 —

BIIFGM14 (Published) Book specs- Dates: 20100701 / 20100701 / 20100806 Lang: ENG01 Applic: IFG

Pneumatic Tilt Components

Figure 1: Pneumatic bags, Check valve

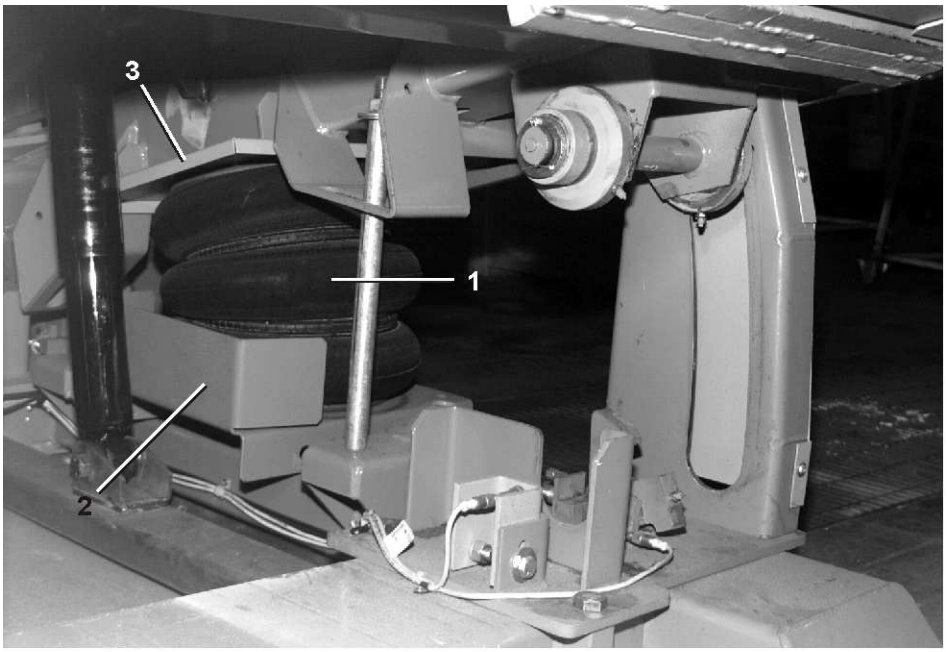


Figure 2: Pressure regulator, Shuttle valve (Pneumatic bags up, Pneumatic bags down)

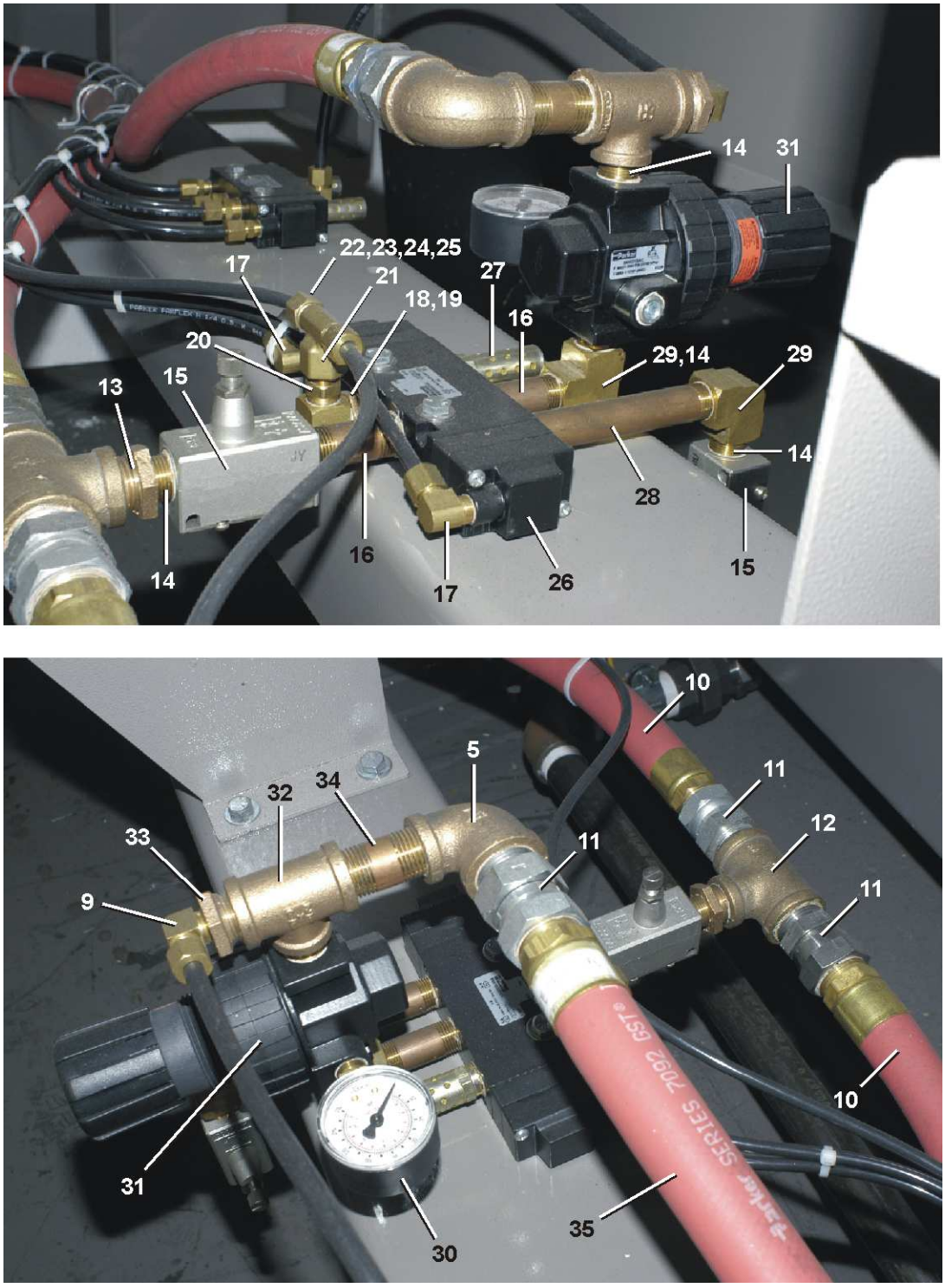


Figure 3: Shuttle valve (Tilt forward, Tilt rear)

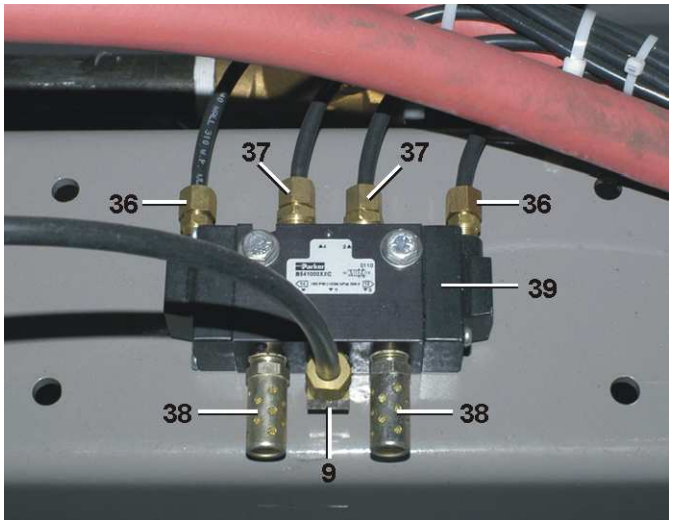
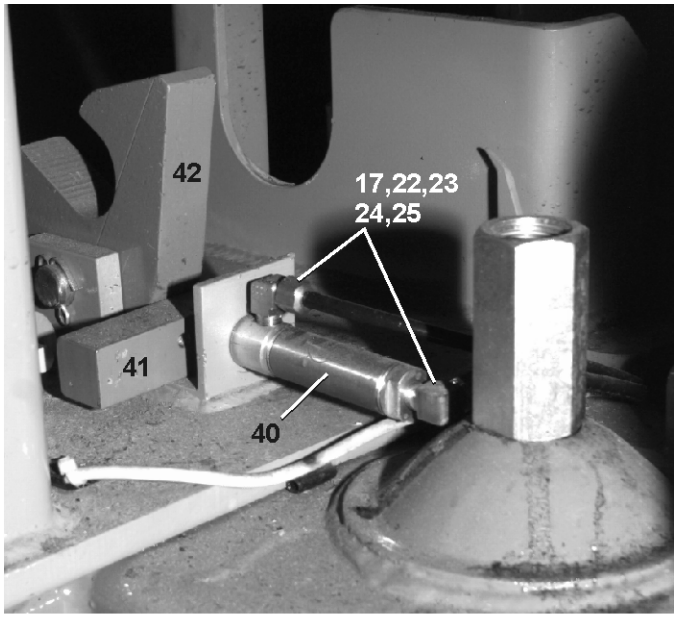
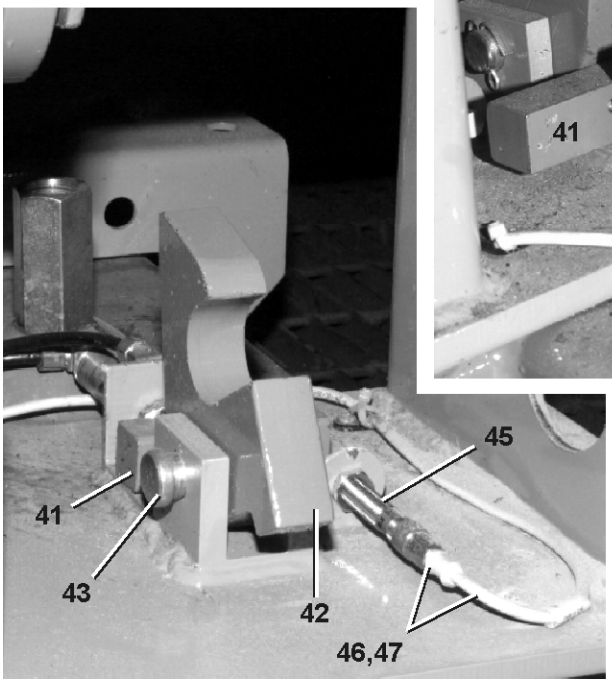


Figure 4: Tilt lock, Tilt lock cylinder





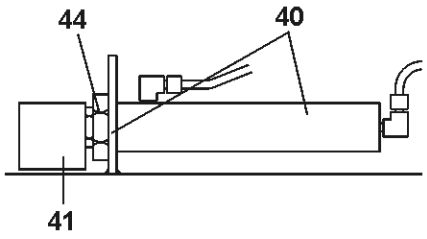


Table 1: Parts List—Pneumatic Tilt Components

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	GAT6836E	INST=AIR TILT 2-WAY, 6836E	
			Components	
all	1	60B132	Pneumatic bag	
all	2	W2 04496	Piece part	
all	3	02 21964	Grease shield	
all	4	5N0P08ABE2	Pipe nipple, 3/4X8	
all	5	5SL0PBEA0K	Elbow, 3/4X1/2	
all	6	52LY0KR001	Hexbush, 1/2XCLS	
all	7	51X017	Union, 1/2"	
all	8	96DG050	Check valve, 1/2	
all	9	53A031XB	Elbow, .25X25	
all	10	60E086C66K	Hose, 3/4"X66"	
all	11	51X019	Union, 3/4"	
all	12	5S0PBEA0K	Tee, 3/4X3/4X1/2	
all	13	5SB0K0GBEO	Hexbush, 1/2X3/8	
all	14	5N0GCLSBE2	Pipe nipple, 3/8XCLS	
all	15	96J026	Flow regulator, 3/8"	
all	16	5N0G02ABE2	Pipe nipple, 3/8X2	
all	17	53A031B	Elbow, .25X1/8	
all	18	5SB0G0EBEO	Hexbush, 3/8X1/4	
all	19	5SL0EBEC	Elbow, 1/4	
all	20	5N0ECLSBE2	Pipe nipple, 1/4XCLS	
all	21	53A044A	Tee, 1/4X1/8	
all	22	53A059A	Flexible tubing,Adapter	
all	23	53A500	Flexible tubing,Adapter	
all	24	53A501	Flexible tubing,Adapter	
all	25	60E004TE	Flexible tubing, 1/4"	
all	26	96N0014H	Shuttle valve, 3/8"	
all	27	27A005	Muffler, 3/8"	
all	28	5N0G04KBE2	Pipe nipple, 3/8X4.5	
all	29	5SL0GBEA	Elbow, 3/8	
all	30	30N102	Pressure gage, 1/4", .0-150PSI	
all	31	30N218	Pressure regulator, 3/8"	
all	32	5S0KBEA0G	Tee, 1/2X1/2X3/8	
all	33	5SB0K0EBEO	Hexbush, 1/2X1/4	
all	34	5N0K01KBE2	Pipe nipple, 1/2X1.5	
all	35	60E086C148	Hose, 3/4"X148"	
all	36	53A005B	Flexible tubing,Adapter, 1/4X1/8	
all	37	53A008A	Flexible tubing,Adapter, 1/4X10-32	
all	38	27A005A	Muffler, 1/4"	
all	39	96N0010H	Shuttle valve, 1/4"	

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.

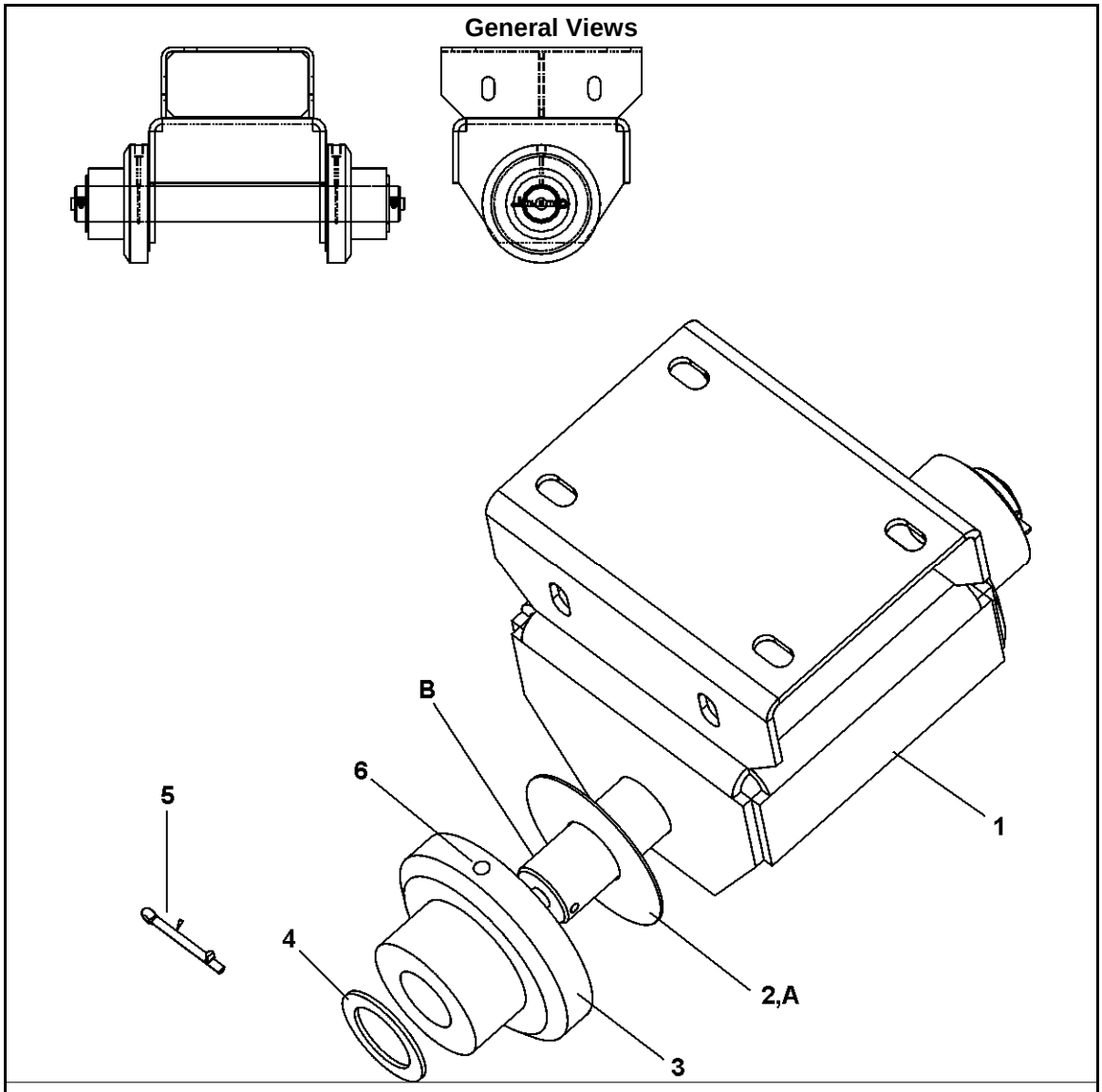
Used In	Item	Part Number	Description/Nomenclature	Comments
all	40	27C207	Air cylinder	
all	41	X2 04498	Tilt lock rod	
all	42	X2 04499	Tilt latch	
all	43	17A042B	Pin	
all	44	15G164	Nut	
all	45	09RPS12AAS	Proximity switch	
all	46	09RPTAC005	Cable assembly, Front	
all	47	09RPTAC002	Cable assembly, Rear	

— End of BIIFGM14 —

BIIFGM13 (Published) Book specs- Dates: 20100701 / 20100701 / 20100806 Lang: ENG01 Applic: IFG

Tilt Wheel Assembly

Figure 1: Tilt wheel assembly



Legend

A. Use the number necessary.
B. Before you install the wheel, apply grease to the shaft.

Table 1: Parts List—Tilt Wheel Assembly

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	A48 21944	Tilt wheel assembly	
Components				
all	1	W2 21944	Bracket	
all	2	03 64519	Shim	
all	3	X3 64513	Tilt wheel	
all	4	15U520	Washer, Flat, 2+3/8X1+41/64X12GA	
all	5	15H060	Pin	
all	6	54M021	Grease fitting	

— End of BIIFGM13 —

2

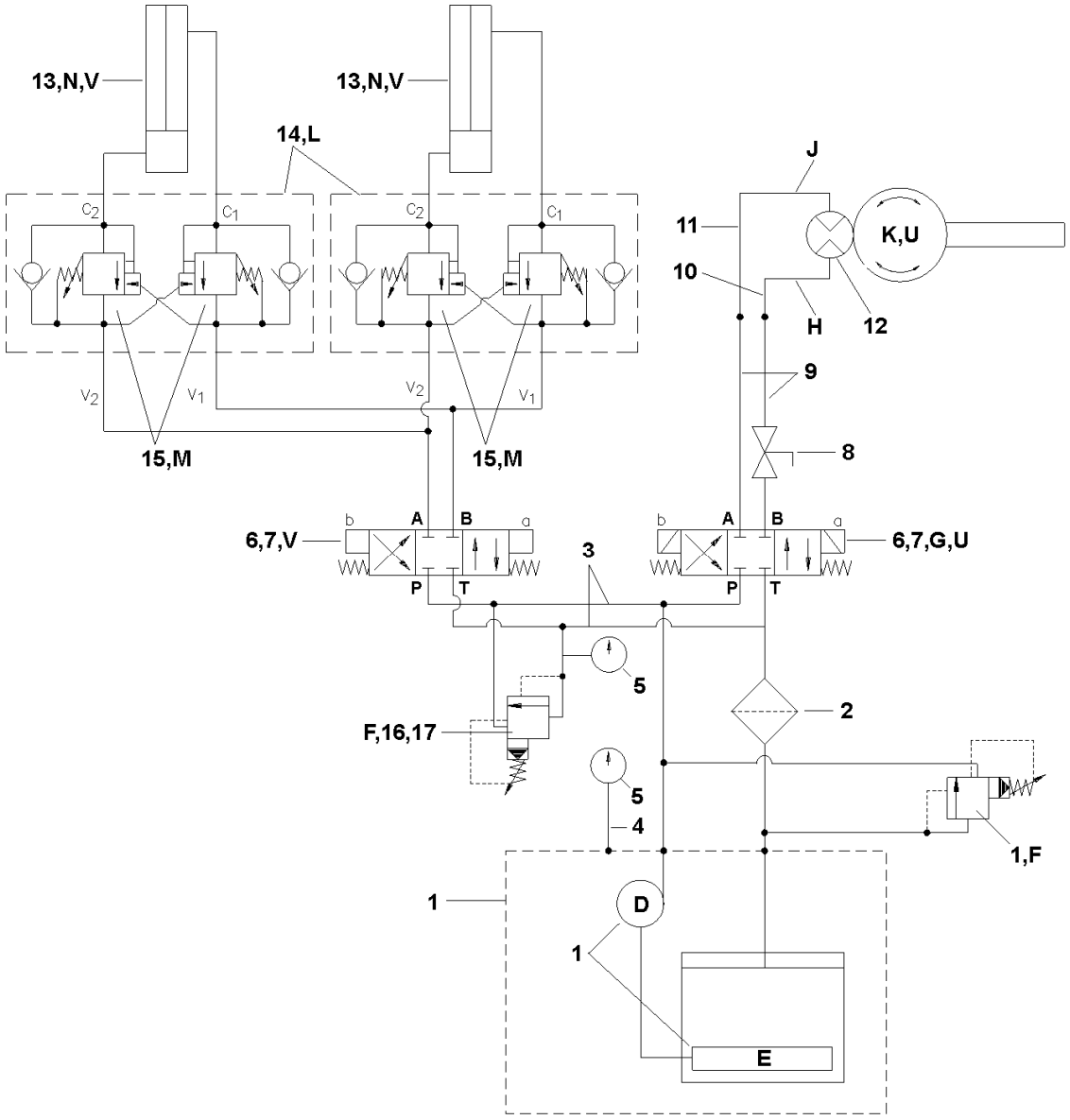
Door Assemblies 2.4

BIIFGM16 (Published) Book specs- Dates: 20100708 / 20100708 / 20100806 Lang: ENG01 Applic: IFG

Hydraulic Schematic 6836F5_

Figure 1: Hydraulic Door (Optional), Hydraulic Tilt (6836F5P with Dryell Only)

Schematic



Legend

A. Up or Door close
B. Down or Door open
D. Pump
E. Strainer
F. Relief
G. Directional valve
H. To open the door
J. To close the door
K. Spur gear
L. Counterbalance valve
M. Cartridge
N. Hydraulic cylinder
P. From the pump
T. To the tank
U. Hydraulic door
V. Hydraulic tilt

Table 1: Parts List—Hydraulic Schematic

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.

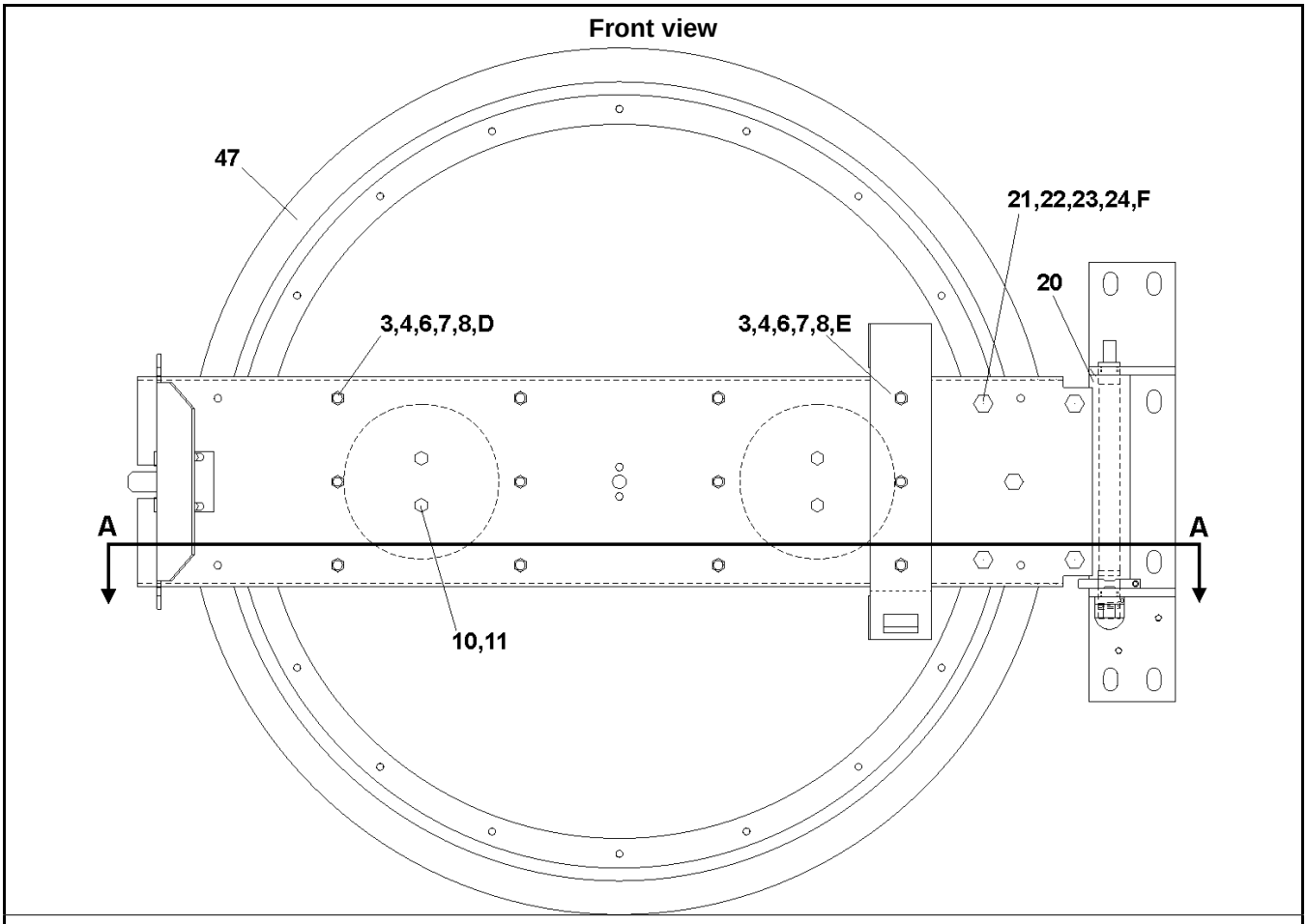
Used In	Item	Part Number	Description/Nomenclature	Comments
Assemblies				
none				
Components				
all	1	27E5400A74	Hydraulic power unit	
all	2	27E7110	Filter	
all	3	60EH15C18A	Hose, 18"	
all	4	60EH15C48A	Hose, 48"	
all	5	30N125G	Pressure gage, 0-2000PSI	
all	6	96RH706A01	Sub plate	
all	7	96RH706E71	Shuttle valve, Four-way valve, 3 position	
all	8	96JH200	Needle valve, 1/4"	
all	9	60EH15C187	Hose, 187"	
all	10	60EH21C08S	Hose, 8"	
all	11	60EH21C10L	Hose, 10"	
all	12	27E320025	Torque motor	
all	13	27E162A19A	Hydraulic cylinder	
all	14	96DH471	Counterbalance valve	
all	15	96DH471A	Cartridge, Counterbalance valve	
all	16	96DH430B	Body	
all	17	96DH430C	Cartridge	

— End of BIIFGM16 —

BIIFGM18 (Published) Book specs- Dates: 20100708 / 20100708 / 20100806 Lang: ENG01 Applic: IFG

Components, Manual Door, 48" : 6836F5_

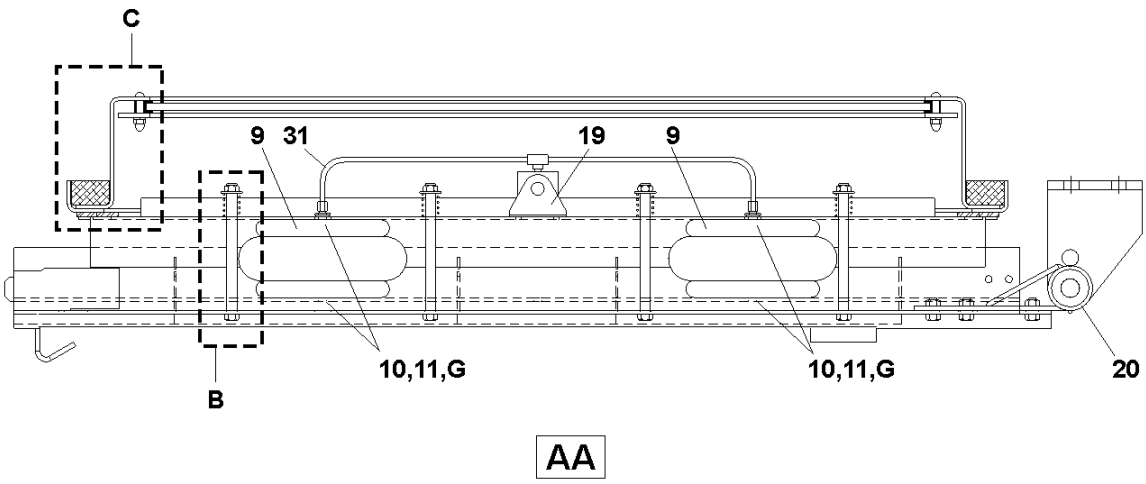
Figure 1: Components, Manual Door, 48" : 6836F5_



Legend

D. 9 instances
E. 3 instances
F. 5 instances

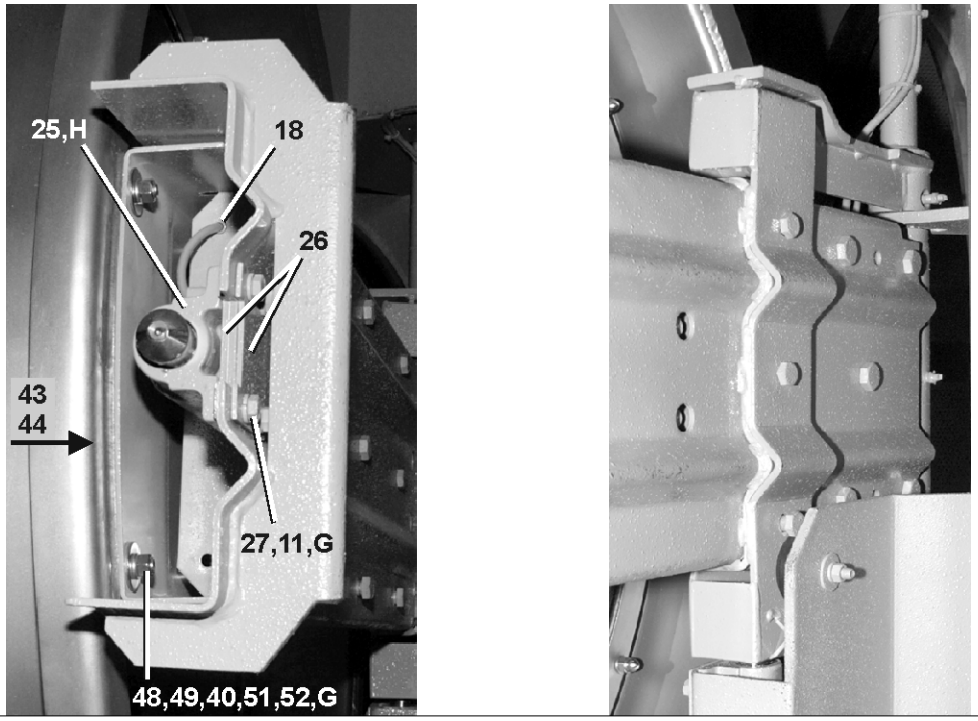
Figure 2: Components, Manual Door



Legend

G. 4 instances

Figure 3: Components, Manual Door



Legend

G. 4 instances
H. See the documentBIIFGM19.

Figure 4: Detailed views

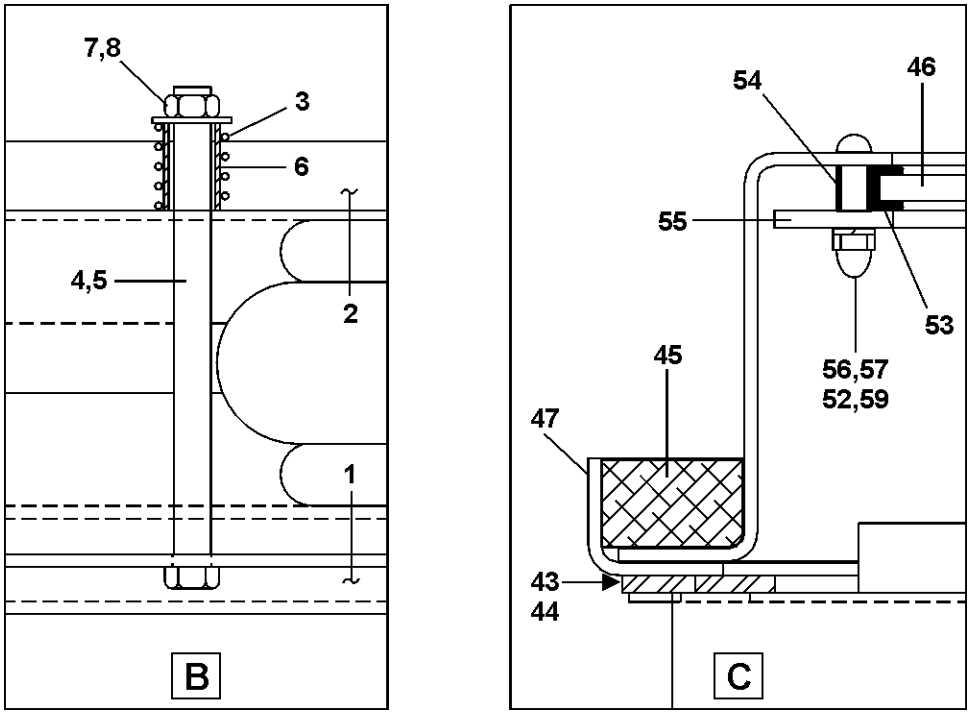
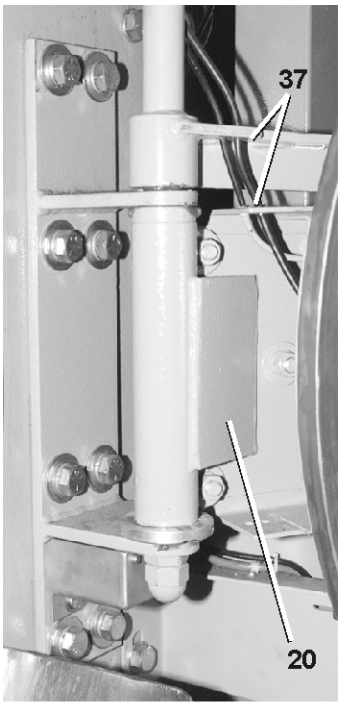
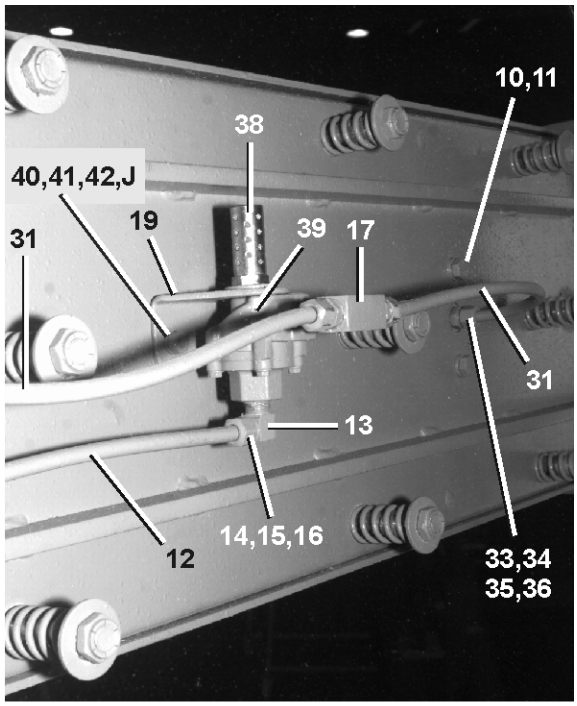


Figure 5: Components, Manual Door

Additional Views





Legend

J. 2 instances

Table 1: Parts List—Standard 48" Door 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	ADC60002	Assembly, Door channel	
	B	ADG60002	Assembly, Door glass	
			Components	
all	1	W3 60865	Door channel, Inside	
all	2	W3 60866	Door channel, Outside	
all	3	02 18187S	Spring	
all	4	15K203T	Bolt, 1/2-13X6	
all	5	15K203TA	Bolt, 1/2-13X6.5	
all	6	27B2750L0T	Spacer	
all	7	15U280	Washer, Flat, 1/2	
all	8	15G234	Nut, Lock, 1/2-13	
all	9	60B100	Pneumatic bag, Door seal	
all	10	15K095	Bolt, 3/8-16X1	
all	11	15U255	Washer, Lock, 3/8	
all	12	60E004TE	Flexible tubing, 1/4"	
all	13	53A031B	Elbow, .25X1/8	
all	14	53A059A	Flexible tubing, Adapter	
all	15	53A500	Flexible tubing, Adapter	
all	16	53A501	Flexible tubing, Adapter	
all	17	51V015	Tee, 1/4	
all	18	12P1AGSB	Bushing	
all	19	03 60886	Bracket	
all	20	ADH60001	Assembly, Door hinge	
all	21	15K214E	Bolt, 5/8-11X1.5	
all	22	15U314	Washer, Flat, 5/8"	
all	23	15U315	Washer, Lock, 5/8	
all	24	15G238	Nut, 5/8-11	
all	25	SA 15 028	Assembly, Door latch	
all	26	02 15633	Adjustment plate	
all	27	15K110	Bolt, 3/8-16X1.5	
all	31	60E005	Flexible tubing, 5/16	
all	32	53A040B	Elbow, 5/16X.25	
all	33	53A020B	Flexible tubing, Adapter, 5/16X.25	
all	34	53A060A	Flexible tubing, Adapter, 5/16	
all	35	53A508	Flexible tubing, Adapter, 5/16	
all	36	53A509	Flexible tubing, Adapter, 5/16	
all	37	12P1AHSB	Bushing	
all	38	27A005	Muffler, 3/8"	
all	39	96M055	Quick exhaust valve, 1/4"	
all	40	15K041	Bolt, 1/4-20X1	
all	41	15U180	Washer, Lock,1/4	

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	42	15G165	Nut, 1/4-20	
all	43	03 60869	Shim, 1/8"	
all	44	03 60869A	Shim, 1/4"	
all	45	03 60851	Gasket	
all	46	03 60855	Door glass	
all	47	X3 60850	Frame	
all	48	15G206	Nut, 3/8-16	
all	49	15N223A	Bolt, 3/8-16X1+1/2	
all	50	15U245	Washer, Flat, 3/8	
all	51	15U245B	Washer, Flat,Clipped, .391X1"	
all	52	15U260	Washer, Lock, 3/8	
all	53	03 60856	Gasket	
all	54	27B2400K0L	Spacer	
all	56	15G200	Nut, 3/8-16	
all	57	15K106B	Bolt, 3/8-16X1+3/8	
all	59	24G030N	Washer, Nylon	

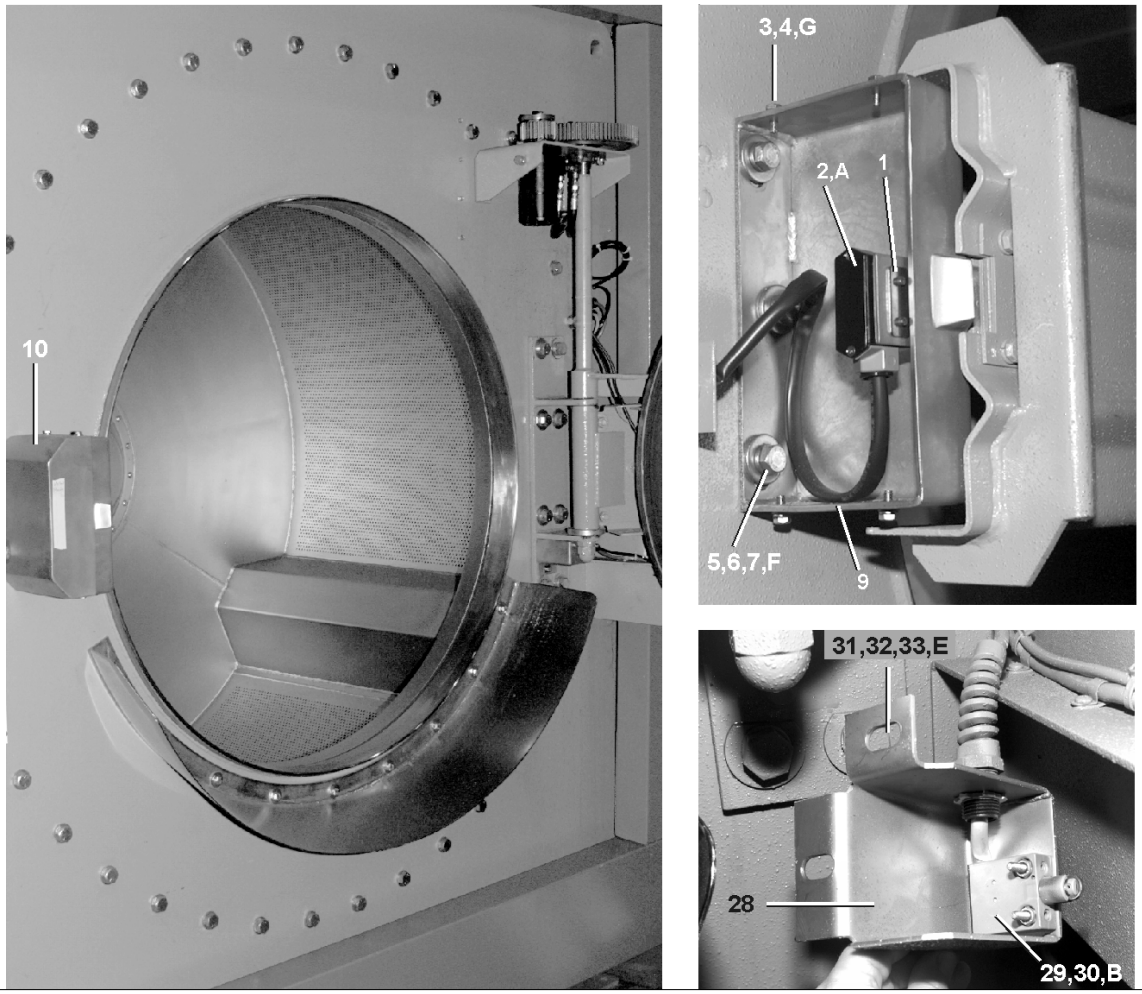
— End of BIIFGM18 —

BIIFGM20 (Published) Book specs- Dates: 20100709 / 20100709 / 20100806 Lang: ENG01 Applic: IFG

Installation, Manual Door

Figure 1: Interlock switch, Second door switch

General View, Detailed views

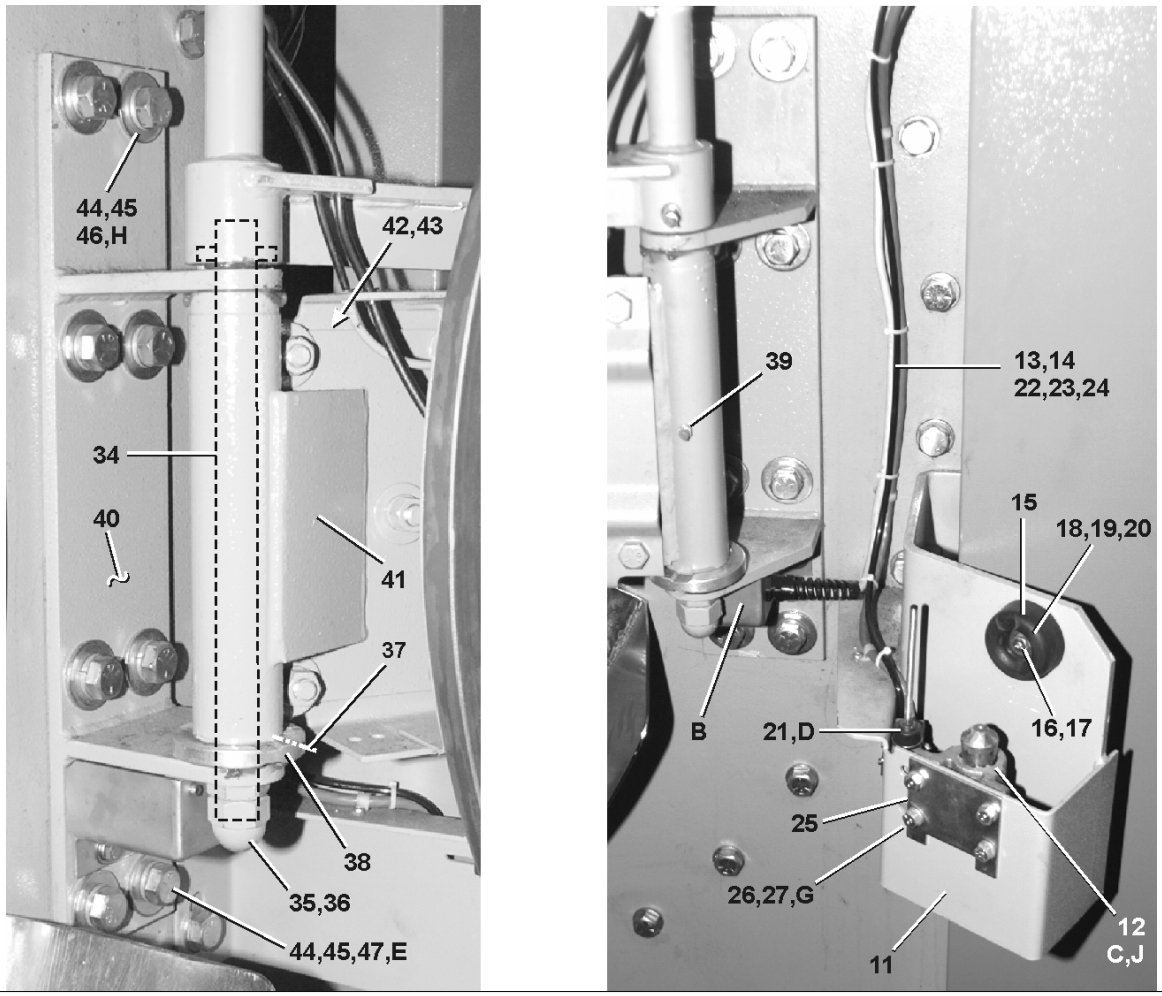


Legend

A. Door locked switch (Interlock switch)
B. Second door switch
E. 2 instances
F. 3 instances
G. 4 instances

Figure 2: Door hinge, Second door switch, Door open latch

Detailed views



Legend

B. Second door switch
C. Door open latch
D. Door full open switch
E. 2 instances
G. 4 instances
H. 6 instances
J. See the document, BIIFGM19.

Table 1: Parts List—Installation, Manual Door

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	ADL60001	Installation Group, Door closed latch	
	B	ADL68010	Installation Group, Door open latch	
	C	ADS60001	Installation Group, Second door switch	
	D	ADH60001	Installation Group, Door hinge	
	E	ADB60001	Assembly, Door hinge	
			Components	
all	1	02 10391	Cover	
all	2	E25 00100A	Door locked switch, Door interlock	
all	3	15K031	Bolt, 1/4-20X1/2	
all	4	15U181	Washer,Lock, 1/4	
all	5	15K173A	Bolt, 1/2-13X1.75	
all	6	15U300	Washer, Lock, 1/2	
all	7	15U490	Washer, Flat, 1+1/2X17/32X1/4	
all	9	W3 60775	Piece part	
all	10	W3 60778	Cover	
all	11	W3 60776	Bracket	
all	12	SA 15 028	Door latch	
all	13	60E004TE	Flexible tubing, 1/4"	
all	14	53A031B	Elbow, .25X1/8	
all	15	60C075	Rubber bumper	
all	16	15K110	Bolt, 3/8-16X1.5	
all	17	15U240	Washer, Flat, 3/8"	
all	18	15U245A	Washer, Flat, 25/64X1.25X3/32	
all	19	15U255	Washer, Lock, 3/8	
all	20	15G205	Nut, 3/8-16	
all	21	09R008BSTD	Door full open switch	
all	22	53A059A	Flexible tubing, Adapter, 1/4"	
all	23	53A500	Flexible tubing, Adapter, 1/4"	
all	24	53A501	Flexible tubing, Adapter	
all	25	02 15633	Adjustment plate	
all	26	15K105	Bolt, 3/8-16X1.25	
all	28	03 60782A	Bracket	
all	29	09RM02212S	Switch	
all	31	15K084S	Bolt, 3/8-16X5/8	
all	32	15U245	Washer, Flat,3/8	
all	33	15U260	Washer, Lock, 3/8	
all	34	05 20140A	Pin	
all	35	15G248	Nut, 1-14	
all	36	15G249	Nut, 1-14	
all	37	15K041E	Bolt, 1/4-20X1+1/4"	
all	38	54JH13562B	Split collar	

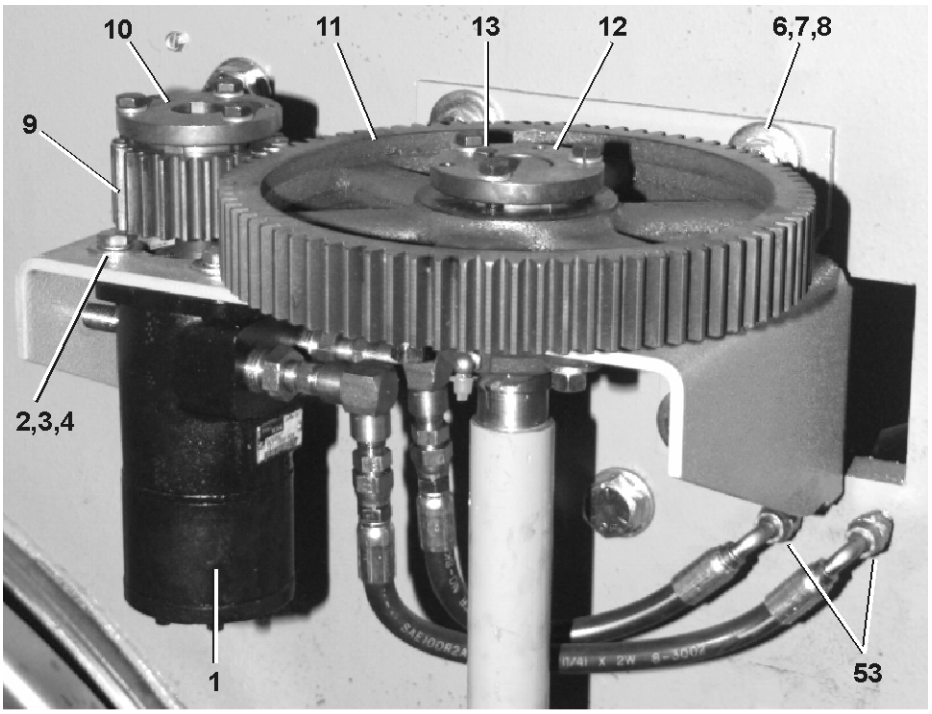
Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.

Used In	Item	Part Number	Description/Nomenclature	Comments
all	39	54M015	Grease fitting	
all	40	W3 60780A	Piece part	
all	41	W5 20017	Piece part	
all	42	05 20017E	Shim, 11 GA	
all	43	05 20017F	Shim, 16 GA	
all	44	15K151	Bolt, 1/2-13X1.25	
all	47	02 11603C	Washer, Clipped, .531X1.5	

— End of BIIFGM20 —

Hydraulic Components for the 48" Hydraulic Door: 6836F5_

Figure 1: Torque motor



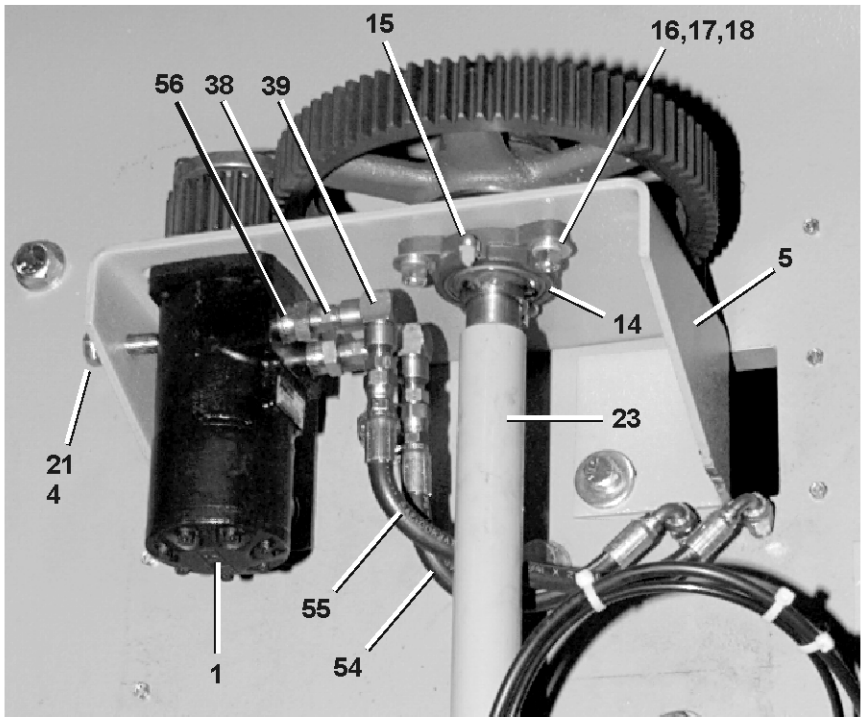


Figure 2: Hydraulic power unit

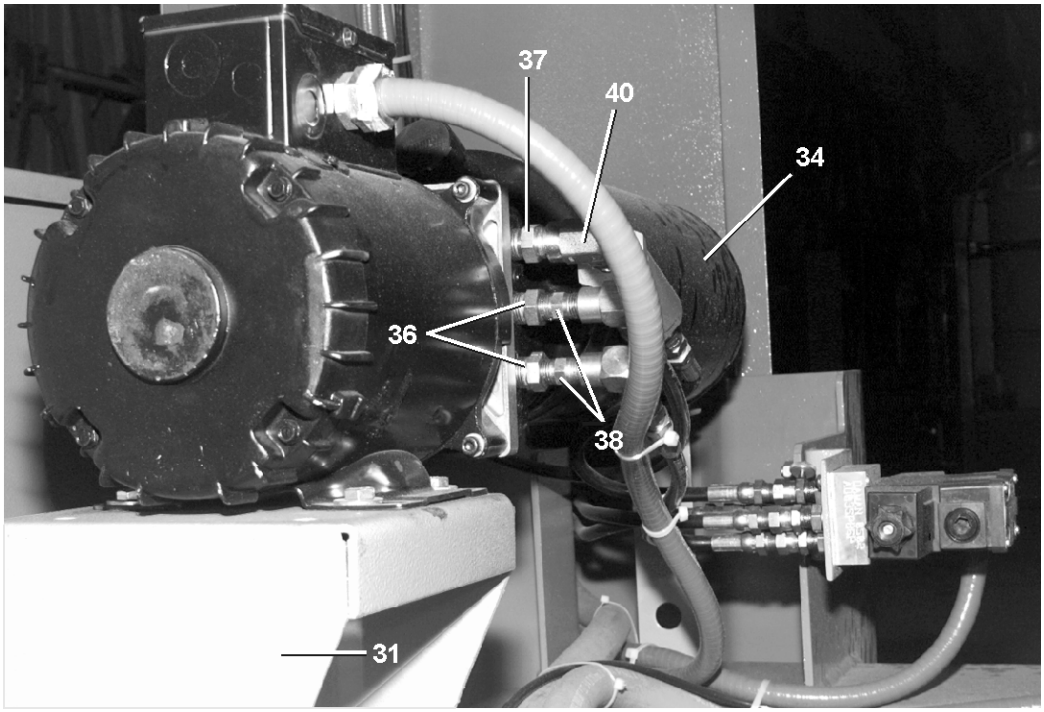


Figure 3: Hydraulic lines, Filter

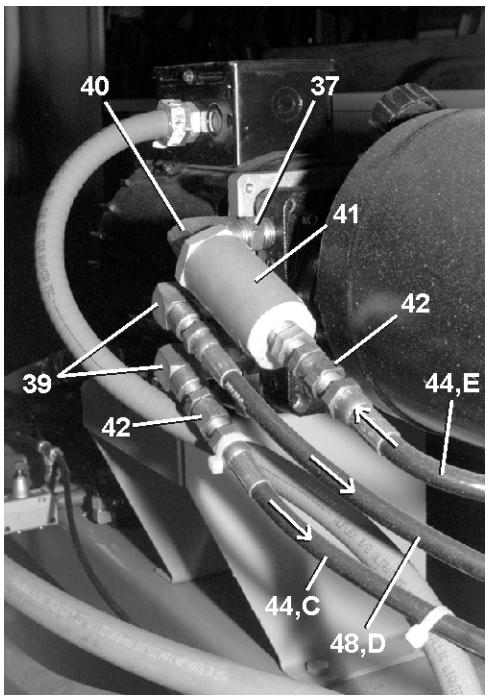
Detailed view	Legend
	**C.** To the valve **D.** To the gage **E.** From the valve

Figure 4: Shuttle valve

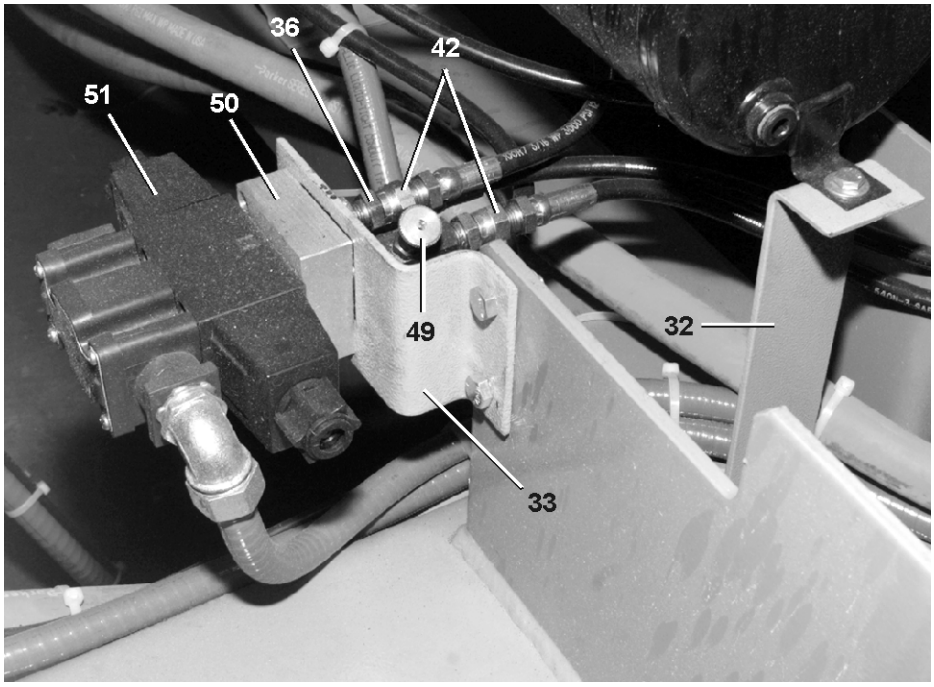
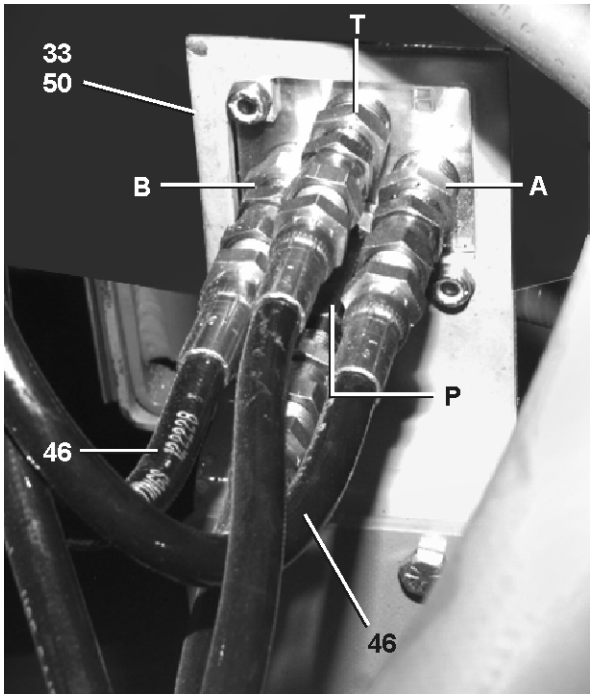


Figure 5: Hydraulic lines

Detailed view

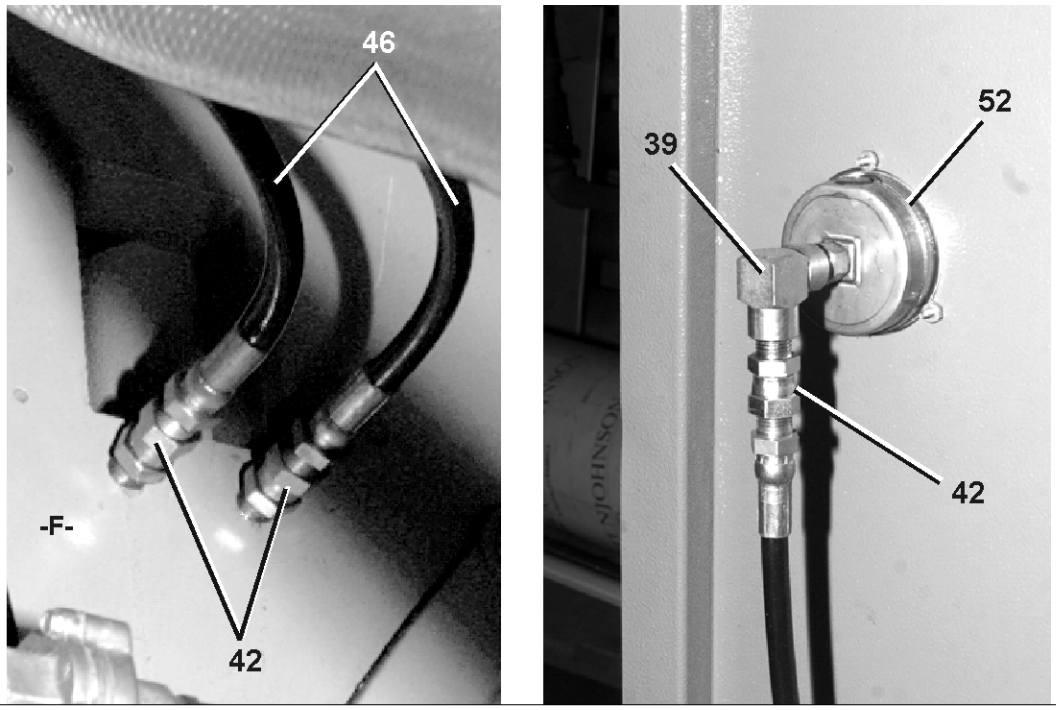


Legend

A. To close the door
B. To open the door
P. From the pump
T. To the tank

Figure 6: Hydraulic lines

Detailed views

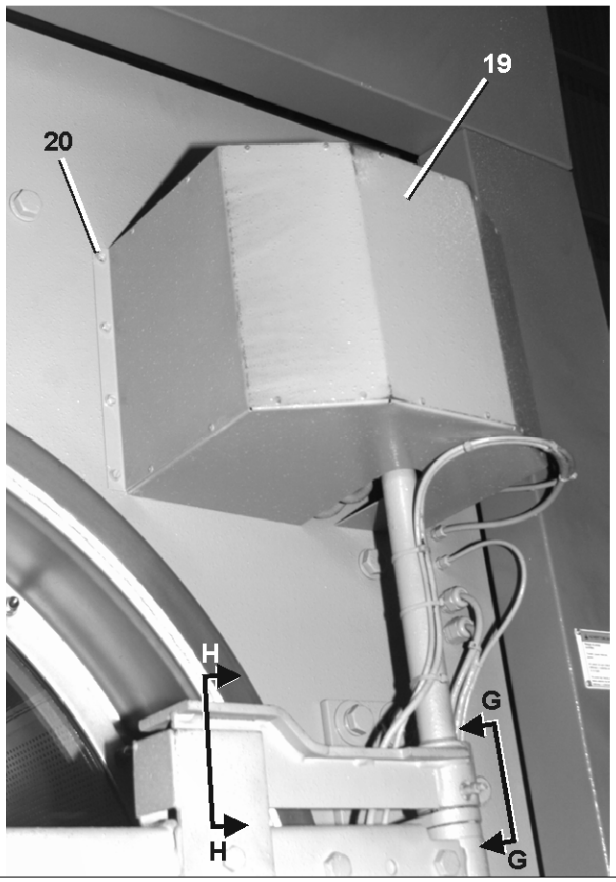


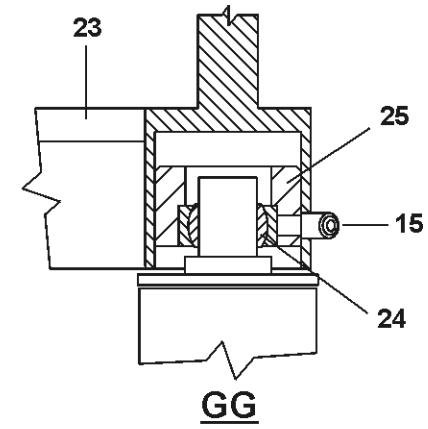
Legend

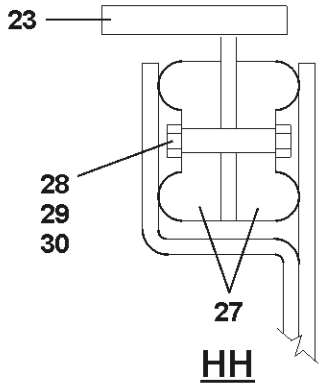
F. Inner shell front

Figure 7: Cover, Ball bushing, Rubber bumper

Detailed view, Cross Sections







Legend

GG. Cross Section, Ball bushing
HH. Cross Section, Rubber bumper

Table 1: Parts List—Hydraulic Components for the 48" Hydraulic Door

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	GHT68001	Installation Group	
Components				
all	1	27E320025	Torque motor	
all	2	15K151	Bolt, 1/2-13X1.25	
all	3	15U180	Washer, Lock, 1/4	
all	4	15U300	Washer, Lock, 1/2	
all	5	03 60789	Bracket	
all	6	15K173A	Bolt, 1/2-13X1.75	
all	7	15U490	Washer, Flat, 1+1/2X17/32X1/4	
all	9	54N090	Spur gear	
all	10	56Q1AP1	Bushing, 1.0"	
all	11	54N095	Spur gear	
all	12	56Q1EP1	Bushing, 1+1/4"	
all	13	15E210	Key, 1/4X2	
all	14	54A718	Flange bearing	
all	15	54M021	Grease fitting	
all	16	15K088	Bolt, 3/8-16X7/8	
all	17	15U255	Washer, Lock, 3/8	
all	18	15G205	Nut, 3/8-16	
all	19	AGS75001L	Cover	
all	20	15P185	Bolt, 1/4-20X3/4	
all	21	15K162	Bolt, 1/2-13X1.5	
all	23	W3 25328	Torque arm	
all	24	54AA00PBB	Ball bushing	
all	25	03 25604	Adapter	
all	27	60C075	Bumper	
all	28	15K120	Bolt, 3/8-16X2	
all	29	15U240	Washer, Flat, 3/8"	
all	30	15G218	Nut, 3/8-16	
all	31	02 21966	Bracket	
all	32	03 48186	Bracket	
all	33	07 10279	Bracket	
all	34	27E5400A74	Hydraulic power unit	
all	36	52AY0GR004	Hexbush, 3/8X1/4	
all	37	52LY0GR002	Hexbush, Pipe nipple, 3/8X3/8	
all	38	52LY0ER001	Hexbush, Pipe nipple,1/4X1/4	
all	39	52JY0ER003	Elbow, 1/4"	
all	40	52JY0GR005	Elbow, 3/8	
all	41	27E7110	Filter	
all	42	52XY0ER008	Hydraulic fitting, 1/4"	
all	44	60EH15C18A	Hydraulic hose, 18"	

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	46	60EH15C187	Hydraulic hose, 187"	
all	48	60EH15C48A	Hydraulic hose, 48"	
all	49	96JH200	Needle valve, 1/4"	
all	50	96RH706A01	Sub plate	
all	51	96RH706E71	Shuttle valve, Four-way valve, 3 position	
all	52	30N125G	Pressure gauge, 0-2000PSI	
all	53	52ZC0ES001	Hydraulic fitting, 1/4"	
all	54	60EH21C08S	Hydraulic hose, 1/4"X8"	
all	55	60EH21C10L	Hydraulic hose, 1/4"X10"	
all	56	52AY0KR004	Hexbush, 1/2X1/4	

— End of BIIFGM17 —

BIIFGM19 (Published) Book specs- Dates: 20100708 / 20100708 / 20120629 Lang: ENG01 Applic: EUU

Door Latch

Figure 1: Door Latch

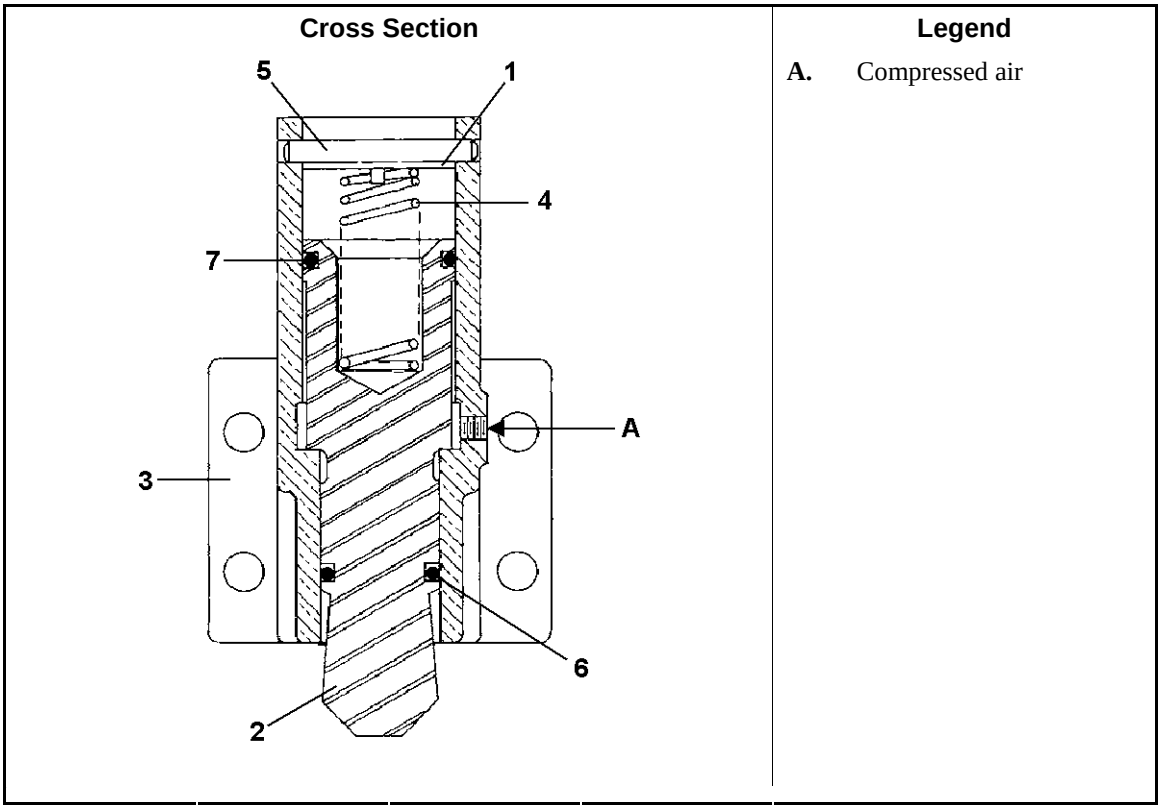


Table 1: Parts List—Door Latch

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 15 028	Assembly, Door latch	
Components				
all	1	02 15105	Retainer ring	
all	2	02 15297	Striker	
all	3	02 15298	Cylinder	
all	4	02 15836	Spring	
all	5	15H090	Pin	
all	6	60C122	O-ring, 1"X1/8	
all	7	60C128	O-ring, 1+3/8X1/8	

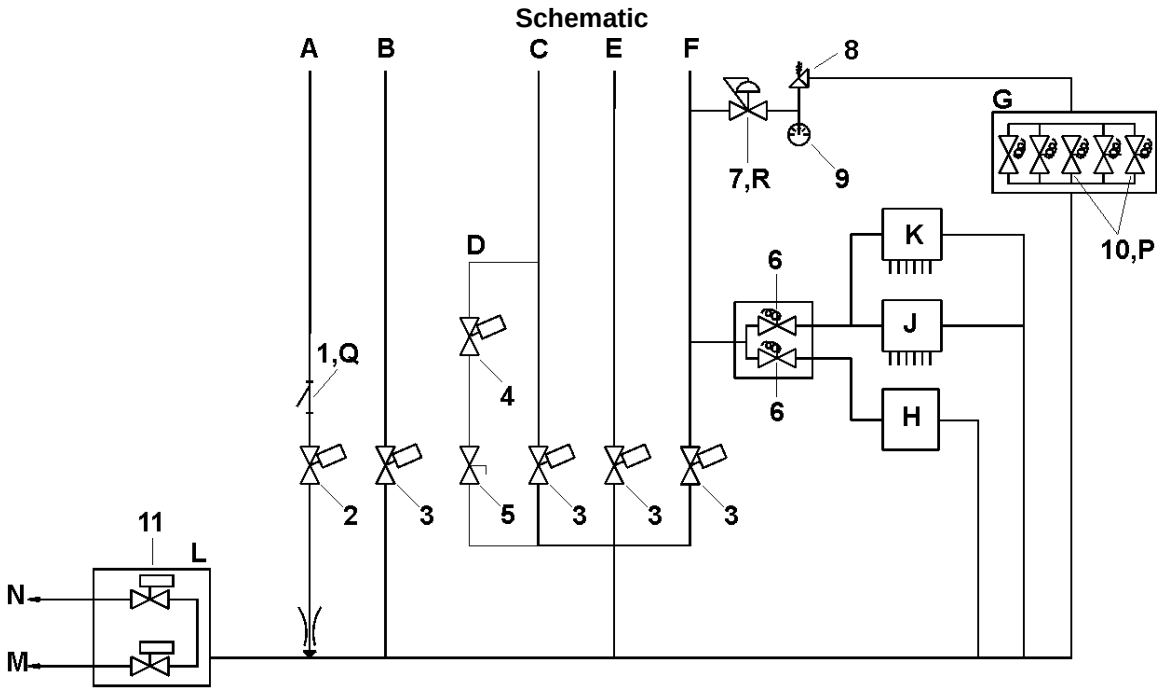
— End of BIIFGM19 —

2

Water, Steam & Drain 2.5

Water and Steam Schematic and Primary Components: 6836F

Figure 1: Water and Steam Schematic and Primary Components



Legend

- **A.** Steam inlet
- **B.** Reuse water inlet (optional)
- **C.** Cold water inlet
- **D.** Cooldown water line (optional)
- **E.** Third water inlet
- **F.** Hot water inlet
- **G.** Five compartments to flush in chemical supplies (optional)
- **H.** Soap chute
- **J.** 10 inlets for peristaltic liquid chemical systems
- **K.** Six inlets for peristaltic liquid chemical systems
- **L.** Drain valve body with one valve (standard). Drain valve body with two valves (optional).
- **M.** Dirty water outlet to the sewer
- **N.** Reuse water outlet
- **P.** instances, 5
- **Q.** Keep this component clean. Refer to "Preventive Maintenance" , BIIFUM01.
- **R.** Keep this component set to the correct pressure. Refer to "Preventive Maintenance" , BIIFUM01.

Table 1: Parts List—Water and Steam Schematic and Primary 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				
none				
Components				
all	1	51T060	Y-strainer, 1+1/4"	
all	2	96D0011E	Steam valve, air operated, 1.25"	
all	3	96D088BCSL	Water valve, air operated, 2.00"	
all	4	96D0009E	Water valve, air operated, 3/4"	
all	5	96D050A	Water valve, 3/4"	
all	6	96TDC2AA71	Water valve, electric operated, 1/2"	
all	7	96J030D	Pressure regulator, 1/2", 28#	
all	8	96M001	Relief valve, 1/2X3/8", 31#	
all	9	30N100	Pressure gage, 1/8", .0-30PSI	
all	10	96TCC2AA71	Water valve, usually closed, Two-way valveelectric operated, 3/8"	
all	11	AVD68001	Drain valve body with one valve	
all	11	AVD65003	Drain valve body with two valves	

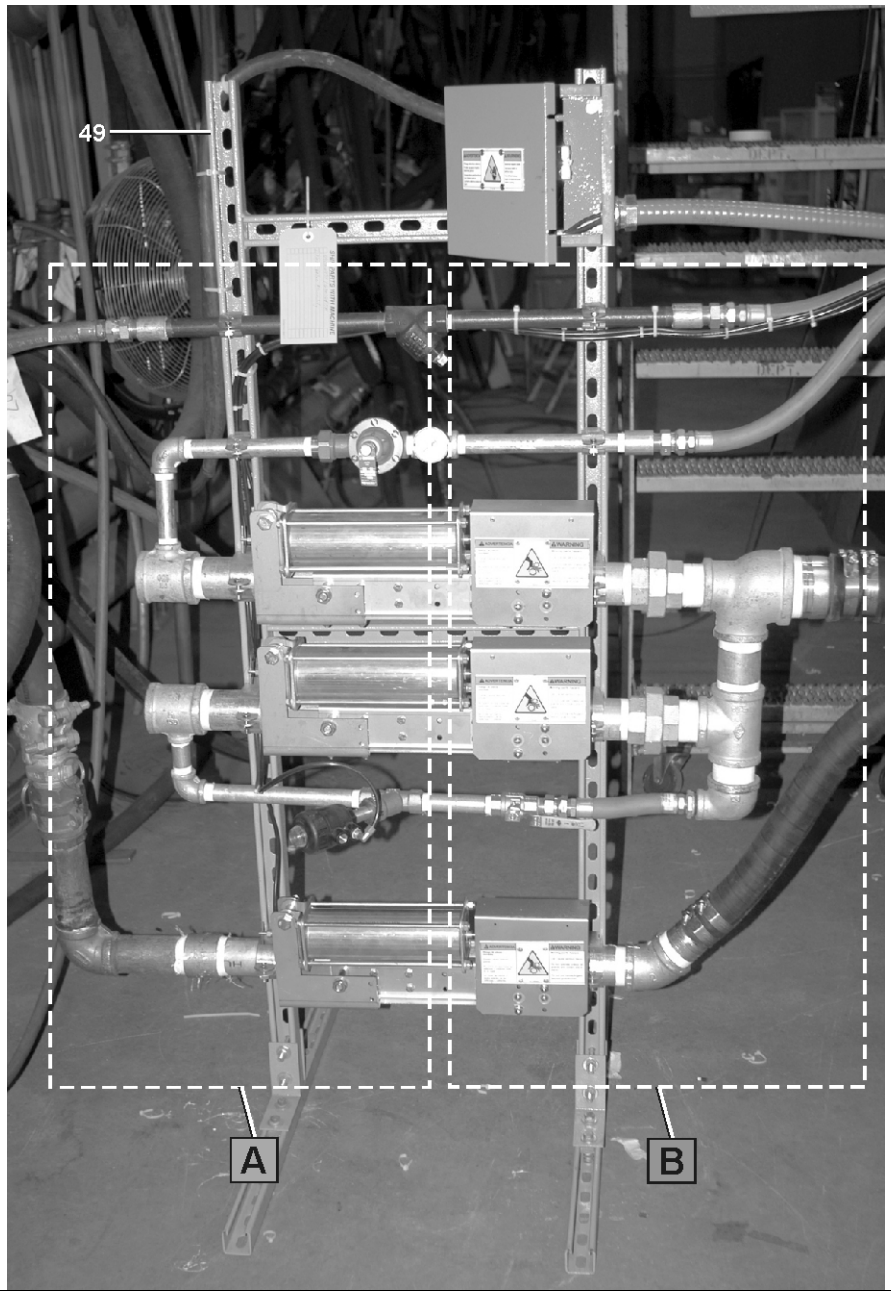
— End of BIIFGM21 —

BIIFGM24 (Published) Book specs- Dates: 20140925 / 20140925 / 20140925 Lang: ENG01 Applic: IFG

Water and Air Components and Installation

Figure 1: Water and Air Components and Installation

General View

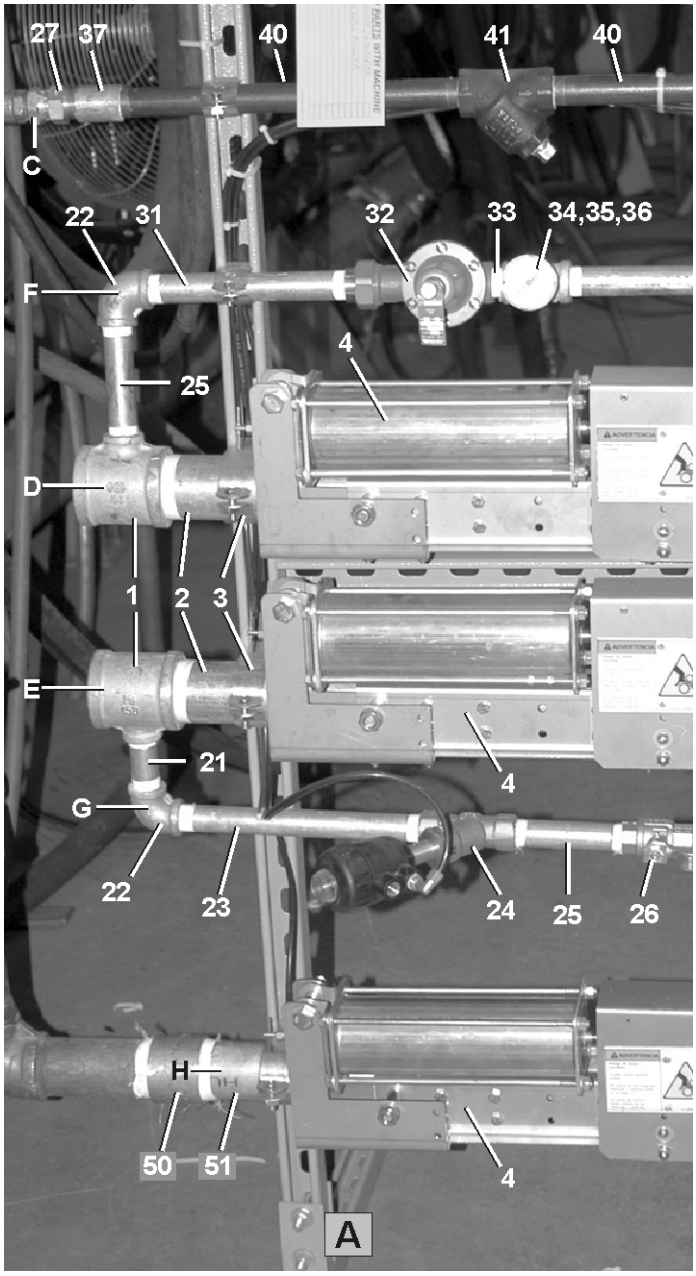


Legend

A. Detailed view, Inlet and valve stand
B. Detailed view, Inlet and valve stand

Figure 2: Inlet and valve stand

Detailed view



Legend

- **C.** Compressed air line, 3/4" NPT
- **D.** Hot water line, 2" NPT
- **E.** Cold water line, 2" NPT
- **F.** Hot water to flush the chemical supplies, 3/4" NPT
- **G.** Cooldown water line (optional), 3/4" NPT
- **H.** Reuse water inlet (optional), 2" NPT

Figure 3: Inlet and valve stand, Detailed view

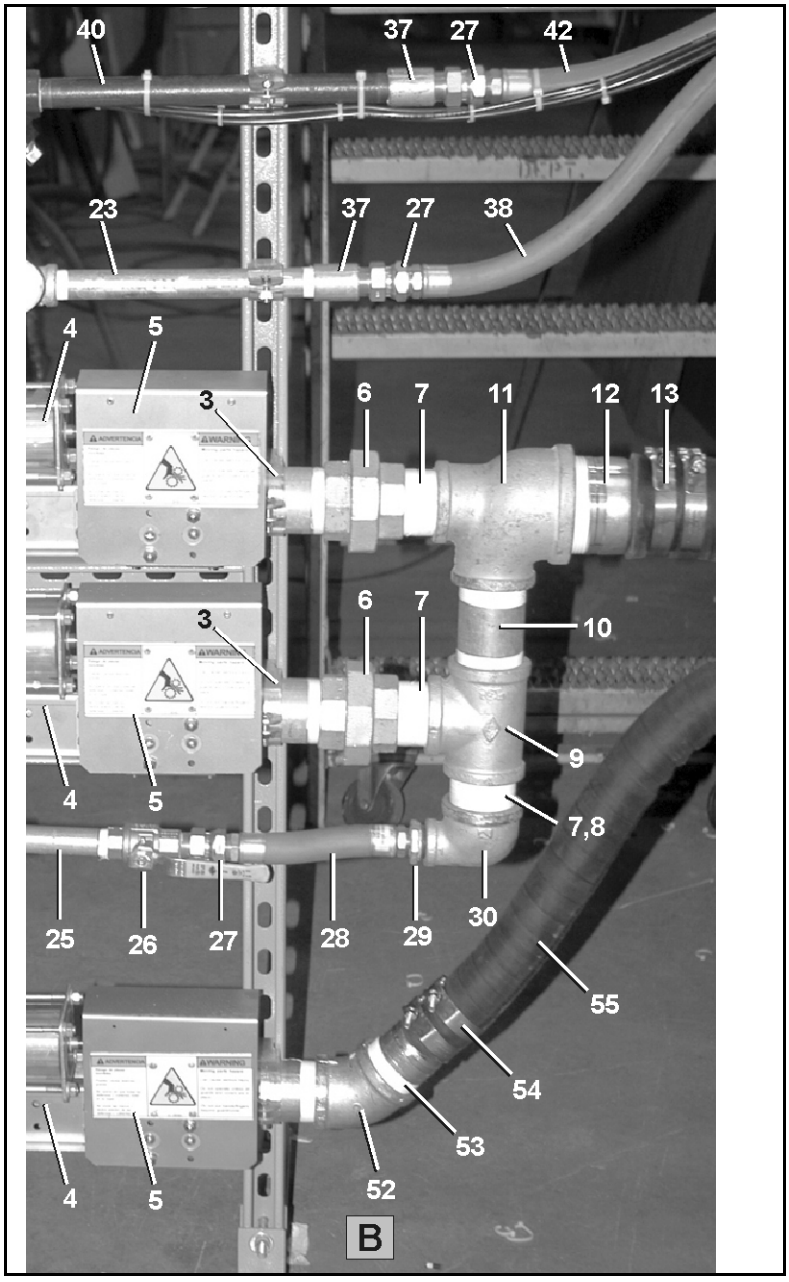
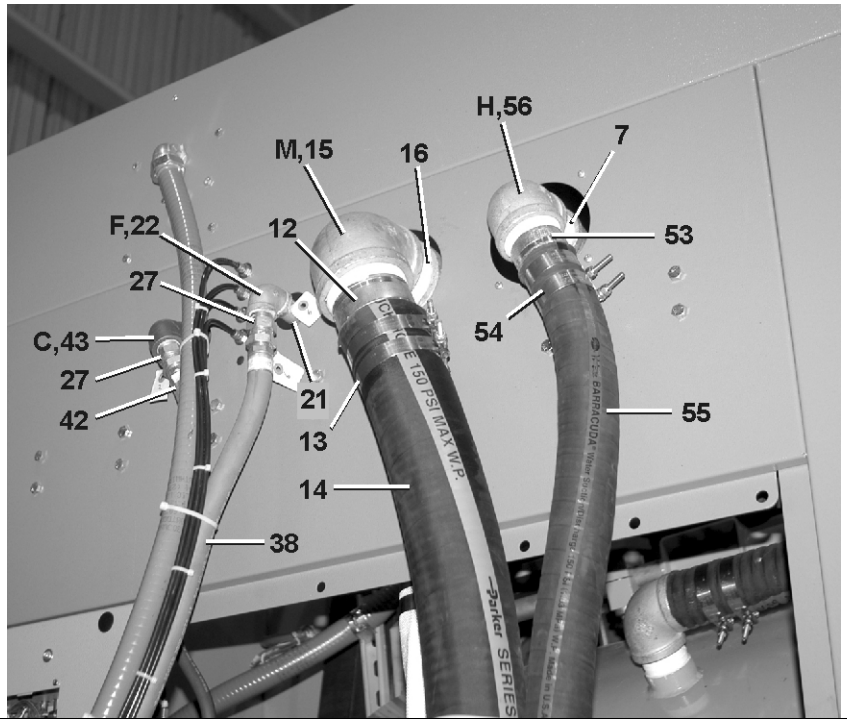


Figure 4: Hoses on the outer hose

Detailed view

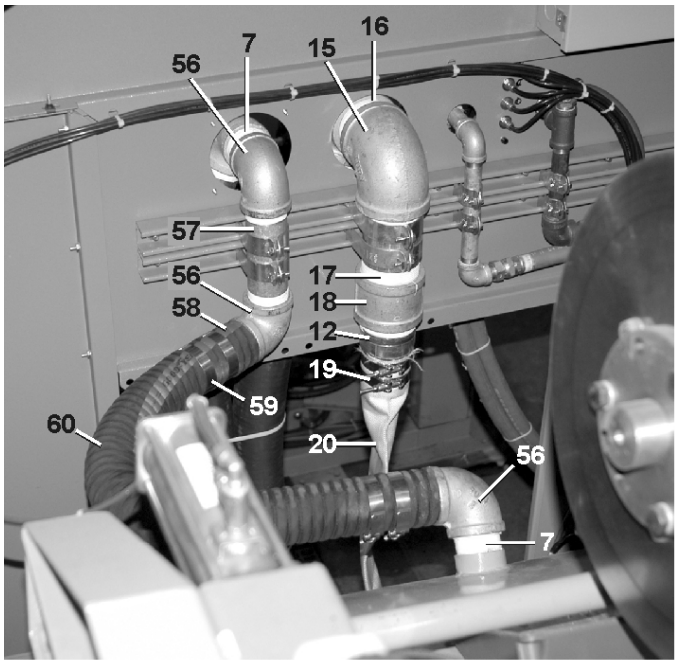


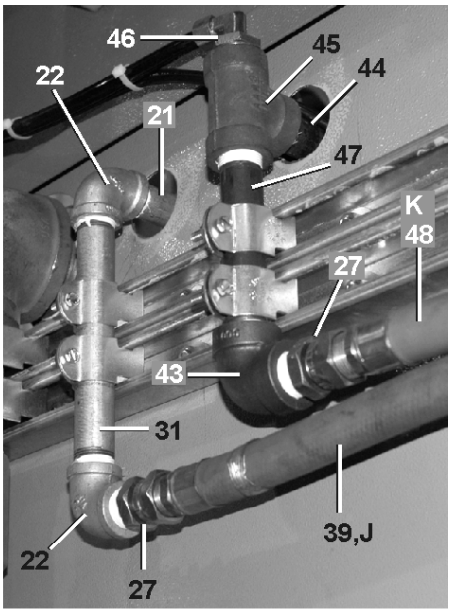
Legend

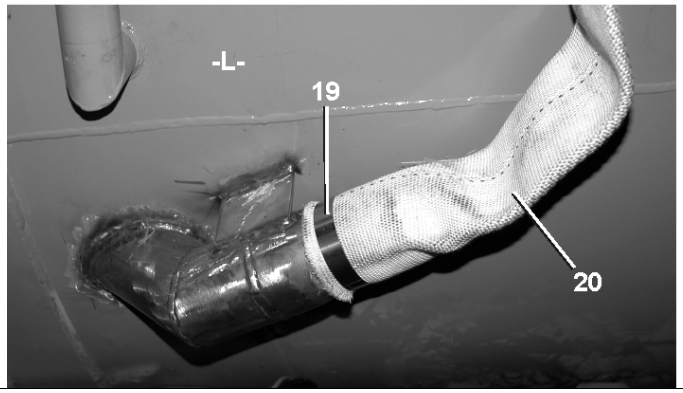
C. Compressed air line
F. Hot water to flush the chemical supplies
H. Reuse water inlet (optional)
M. Hot and cold water to the shell

Figure 5: Water and air inlets

Hoses on the inner house







Legend

J. To the chemical supply manifold
K. To the pneumatic tilt components
L. Shell

Table 1: Parts List—Water and Air 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	GVW68001	Installation Group: Hot water line, Cold water inlet	
	B	GVW68004	Installation Group: Reuse water inlet	
			Components	
all	1	5S2ANFA0P1	Tee, 2X2X3/4"	
all	2	5N2A18AG42	Pipe nipple, 2X18	
all	3	27A0200	Clip	
all	4	96D088BCSL	Water valve, air operated, 2"	
all	5	02 04341	Cover	
all	6	5SU2ANF	Union, 2"	
all	7	5N2ACLSG42	Pipe nipple, 2XCLS	
all	8	51P060	Plug, 2"	
all	9	5S2ANFA	Tee, 2"	
all	10	5N2A04AG42	Pipe nipple, 2X4	
all	11	5S3ANFA2A	Tee, 3X2X2"	
all	12	51E098D	Hose stem, 3"	
all	13	27A077A	Hoseclamp, T-bolt, 3.37-3.68"SS	
all	14	60E303C	Hose, 3"	
all	15	5SL3ANFA	Elbow, 3"	
all	16	5N3ACLSG42	Pipe nipple, 3XCLS	
all	17	5N3A06AG42	Pipe nipple, 3X6	
all	18	5SCC3ANF	Coupling, 3"	
all	19	27A075	Hoseclamp, T-bolt, 2.78-3.09"	
all	20	60E303F	Hose, 3"	
all	21	5N0P03AG42	Pipe nipple, 3/4X3	
all	22	5SL0PNFA	Elbow, 3/4	
all	23	5N0P10AG42	Pipe nipple, 3/4X10	
all	24	96D0009E	Valve, 3/4"	
all	25	5N0P05AG42	Pipe nipple, 3/4X5	
all	26	96D050A	Water valve, 3/4"	
all	27	51X019	Union, 3/4"	
all	28	60E086C08A	*Hose, 3/4X8"	
all	29	5SB1A0PNFO	Hexbush, 1X3/4	
all	30	5SL2ANFA1A	Elbow, 2X1"	
all	31	5N0P08AG42	Pipe nipple, 3/4X8	
all	32	96J031D	Pressure regulator, 3/4"	
all	33	5N0PCLSG42	Pipe nipple, 3/4XCLS	
all	34	5S0PNFA0K	Tee, 3/4X3/4X1/2	
all	35	5SB0K0CDEO	Hexbush, 1/2X1/8	
all	36	30N101	Pressure gage, 1/8", .0-60PSI	
all	37	5SCC0PNF	Coupling, 3/4	

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	38	60E086C113	Hose, 3/4"X113"	
all	39	60E086E179	Hose, 3/4"X179"	
all	40	5N0P13AF42	Pipe nipple, Black steel, 3/4X13	
all	41	51T030	Y-strainer, 3/4"	
all	42	60E086C106	Hose, 3/4"X106"	
all	43	5SL0PMFA	Elbow, Black steel, 3/4	
all	44	5N0P03AF42	Pipe nipple, Black steel, 3/4X3	
all	45	5S0PMFA	Tee, Black steel, 3/4"	
all	46	5SB0P0EBEO	Hexbush, 3/4X1/4	
all	47	5N0P06AF42	Pipe nipple, Black steel, 3/4X6	
all	48	60E086C148	Hose, 3/4"X148"	
all	49	A68 04339	Assembly, Support	
all	50	5SCC2ANF	Coupling, 2"	
all	52	5SL2ANFK	Elbow, 45 degree, 2"	
all	53	51E098M	Hose stem, 2"	
all	54	27A072	Hoseclamp, T-bolt, 2.16-2.47	
all	55	60E201	Hose, 2"	
all	56	5SL2ANFA	Elbow, 2"	
all	57	5N2A06AG42	Pipe nipple, 2X6	
all	58	51E098AB	Hose stem, 2"	
all	59	27A072	Hoseclamp, T-bolt, 2.16-2.47	
all	60	60E255A42A	Hose, 2.5"X42"	

— End of BIIFGM24 —

BIIFGM25 (Published) Book specs- Dates: 20100720 / 20100720 / 20100806 Lang: ENG01 Applic: IFG

Steam Inlet Components and Installation: 6836F5_

Figure 1: Steam Inlet Components and Installation

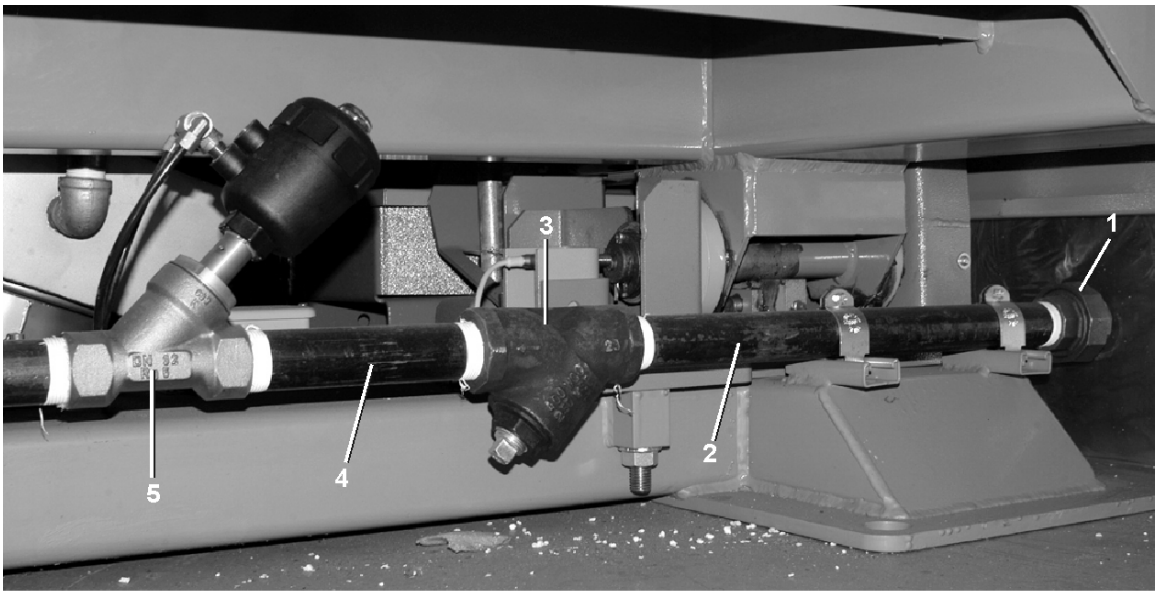


Figure 2: Additional Views

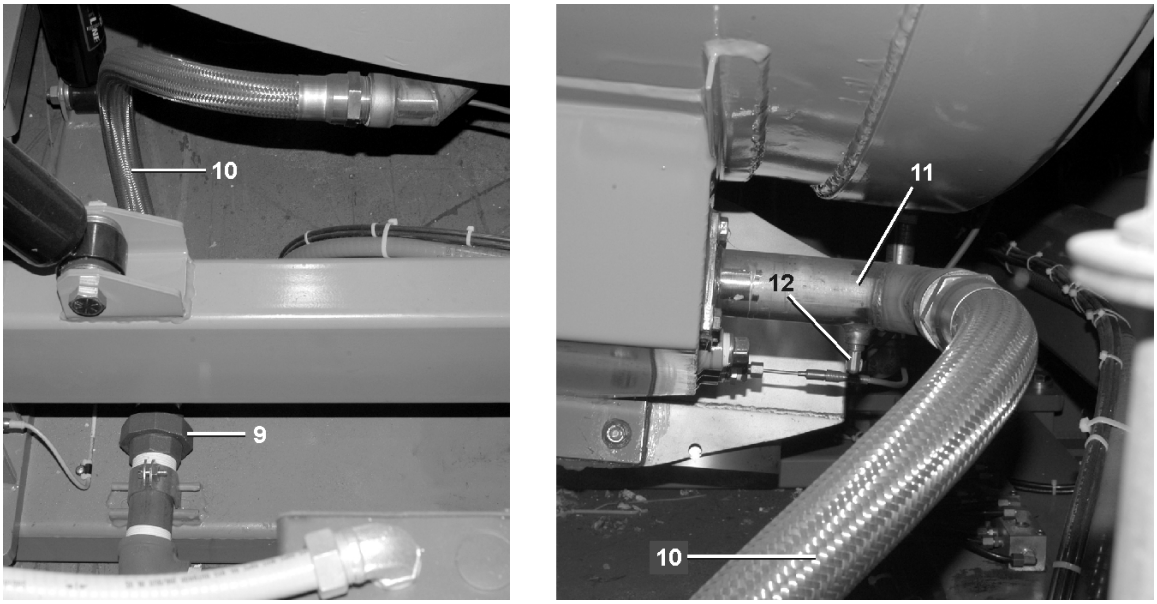


Table 1: Parts List—Steam Inlet Components and Installation

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	GVS68001	Installation Group, Steam inlet	
Components				
all	1	5SU1EMH	Union, Black steel, 1.25"	
all	2	5N1E20AF42	Pipe nipple, Black steel, 1.25X20	
all	3	51T060	Y-strainer, 1+1/4"	
all	4	5N1E08AF42	Pipe nipple, Black steel, 1.25X8	
all	5	96D0011E	Steam valve, 1.25"	
all	6	5N1E29KF42	Pipe nipple, Black steel, 1.25X29.5	
all	7	5SL1KMIA1E	Elbow, Black steel, 1.5X1.25	
all	8	5N1K05AF42	Pipe nipple, Black steel, 1.5X5	
all	9	5SU1KMF	Union, Black steel, 1.5"	
all	10	60E524C40A	Hose, Steam, 1.50"	
all	11	W3 60132	Steam pipe and nozzle	
all	12	53A031XB	Elbow, .25X25	

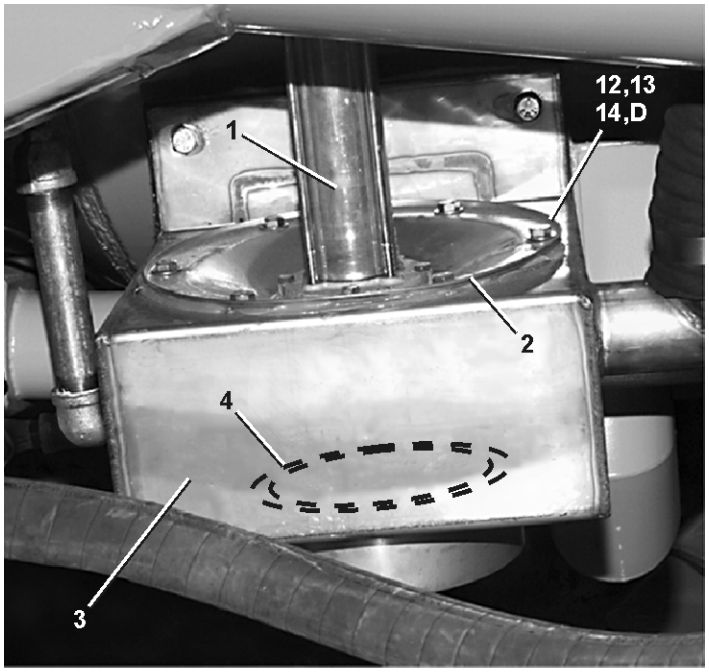
— End of BIIFGM25 —

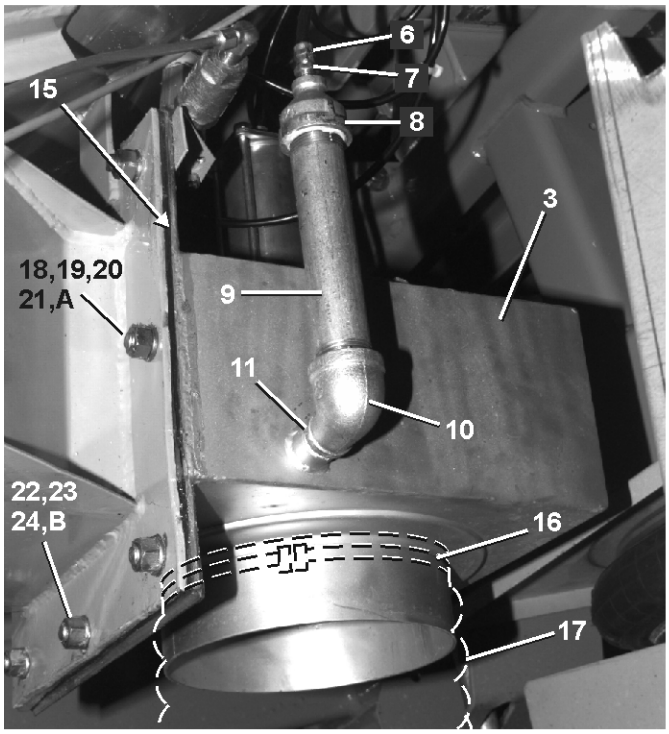
BIIFGM26 (Published) Book specs- Dates: 20100721 / 20100721 / 20100806 Lang: ENG01 Applic: IFG

Drain Valve Body with One Valve

Figure 1: Drain valve body with one valve

Installed views



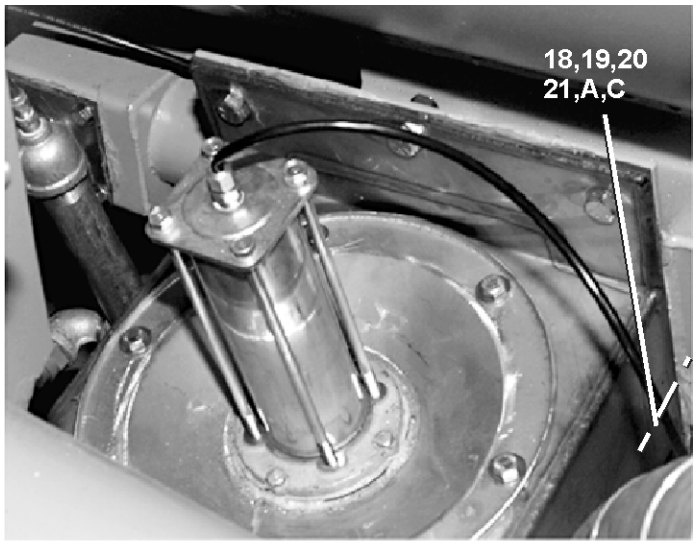


Legend

A. 2 instances
B. 6 instances

Figure 2: Drain valve

Additional Views



Legend

A. 2 instances
C. Inside

Table 1: Parts List—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	GVD68001	Installation Group,Drain valve body with one valve	
	B	AVD68001	Assembly, Drain valve body with one valve	
	C	AD 15 090K	Assembly, Pressure switch	
			Components	
all	1	SA 28 158	Bonnet	
all	2	02 18104	Gasket, 8"	
all	3	W2 18931	Weldment	
all	4	02 18068	Seal	
all	5	5SP0KGFSS	Plug, 1/2	
all	6	53A047H	Flexible tubing, Adapter, 5/16X1/8	
all	7	5SB0E0CBEO	Hexbush, 1/4X1/8	
all	8	5SR1A0ENF	Reducer, 1X1/4	
all	9	5N1A05AG42	Pipe nipple, 1X5	
all	10	5SL1KNFACK	Elbow, 1X1/2	
all	11	5N0KCLSG42	Pipe nipple, 1/2XCLS	
all	12	24G030N	Washer, Nylon, .379	
all	13	15K086	Bolt,Stainless Steel, 3/8-16X3/4	
all	14	15U200	Washer, Flat, 5/16"	
all	15	02 18107	Gasket	
all	16	60E328A18A	Hose, 8"X18"	
all	17	27A092	Hoseclamp, 7+1/8-10"	
all	18	15K153	Bolt, Stainless Steel, 1/2-13X1+1/4	
all	19	24G032N	Washer, Nylon, .5	
all	20	15U310	Washer, Lock, Stainless Steel, 1/2	
all	21	15G225	Nut, Stainless Steel, 1/2-13	
all	22	15K151	Bolt, 1/2-13X1.25	
all	23	15G230	Nut, 1/2-13	

— End of BIIFGM26 —

BIIFGM27 (Published) Book specs- Dates: 20100721 / 20100721 / 20100806 Lang: ENG01 Applic: IFG

Drain Valve Body with Two Valves

Figure 1: Installed views

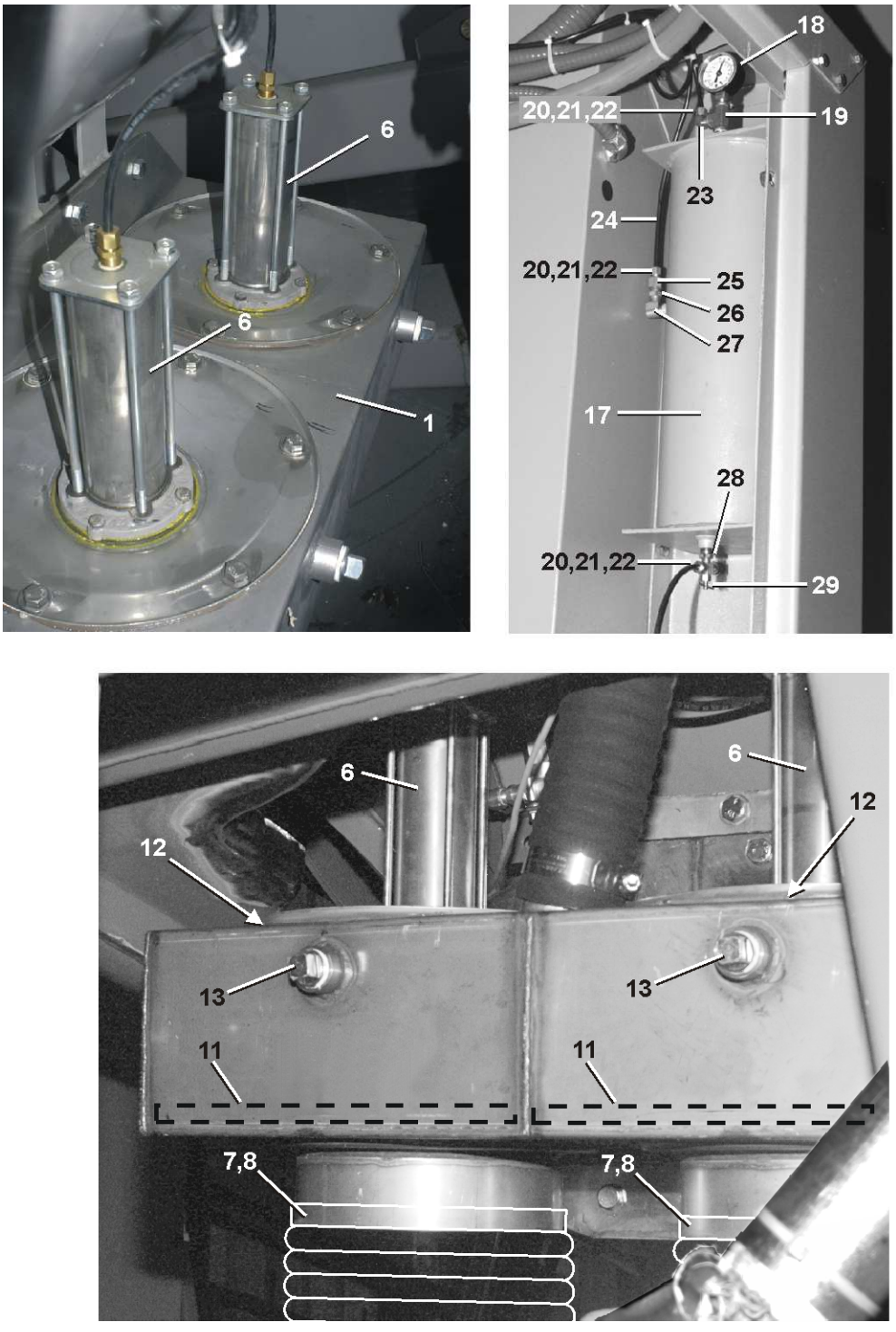
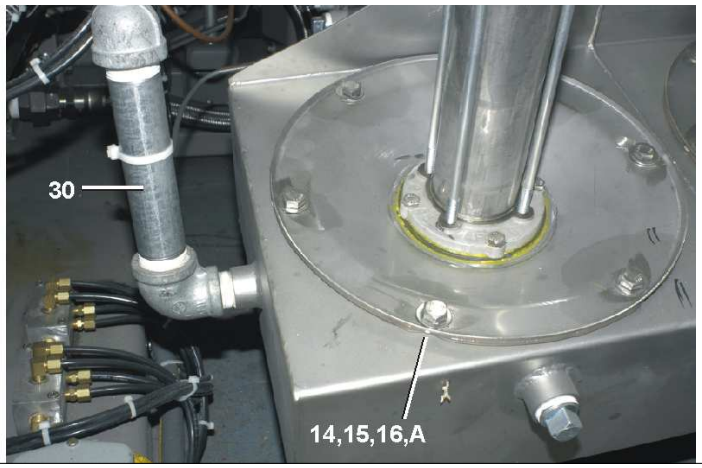


Figure 2: Drain valve body with two valves

Additional Views



Legend

Table 1: Parts List—Dual drain valves

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.

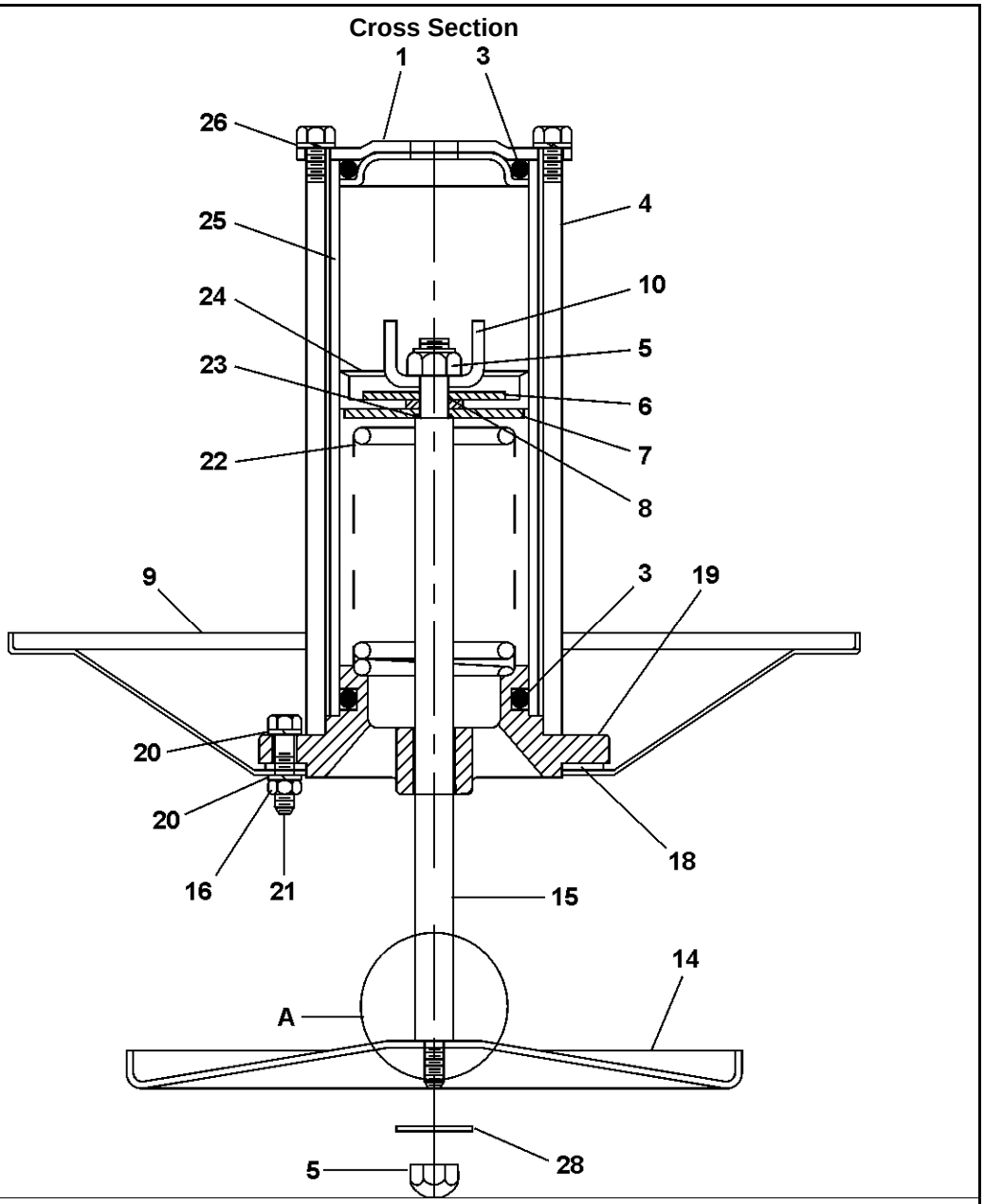
Used In	Item	Part Number	Description/Nomenclature	Comments
			Assemblies	
	A	GVD68002	Installation Group, Drain valve body with two valves	
	B	AVD65003	Assembly, Drain valve body with two valves	
			Components	
all	1	W2 18932E	Weldment	
all	2	02 18107	Gasket	
all	3	15K151	Bolt, 1/2-13X1.25	
all	4	15U300	Washer, Lock, 1/2	
all	5	15G230	Nut, 1/2-13	
all	6	SA 28 158	Bonnet	
all	7	27A092	Hoseclamp, 7+1/8-10"	
all	8	60E328A18A	Hose, 8"X18"	
all	11	02 18068	Seal	
all	12	02 18104	Gasket, 8"	
all	13	5SP0PBESC	Plug, 3/4"	
all	14	15K086	Bolt, 3/8-16X3/4	
all	15	24G030N	Washer, Nylon, .379	
all	16	15U200	Washer, Flat, 5/16"	
all	17	W3 25307D	Tank	
all	18	30N102	Pressure gage, 1/4", .0-150PSI	
all	19	51V015	Tee, 1/4"	
all	20	53A501	Flexible tubing, Adapter, 1/4"	
all	21	53A500	Flexible tubing, Adapter, 1/4"	
all	22	53A059A	Flexible tubing, Adapter, 1/4"	
all	23	53A007B	Flexible tubing, Adapter, Female thread.25X.25	
all	24	60E004TE	Flexible tubing, 1/4"	
all	25	53A008B	Flexible tubing, Adapter, Male thread, .25X.25	
all	26	96D047AAK	Check valve, 1/4"	
all	27	5SL0EBEC	Elbow, 1/4	
all	28	5SB0E0CBEO	Hexbush, 1/4X1/8	
all	29	96H018	Needle valve, 1/4" X 1/8	
all	30	AD 15 090A	Pressure switch	
all	31	15K153	Bolt, Stainless Steel, 1/2-13X1+1/4	
all	32	24G032N	Washer, Nylon, .5	
all	33	15U310	Washer, Lock, Stainless Steel, 1/2"	
all	34	15G225	Nut, Stainless Steel, 1/2-13	

— End of BIIFGM27 —

BIIFGM28 (Published) Book specs- Dates: 20100722 / 20100722 / 20100806 Lang: ENG01 Applic: IFG

Bonnet Assembly

Figure 1: Bonnet and air cylinder



Legend

A. Detailed views: Bumper, O-ring, Washer

Figure 2: Detailed views: Bumper, O-ring, Washer

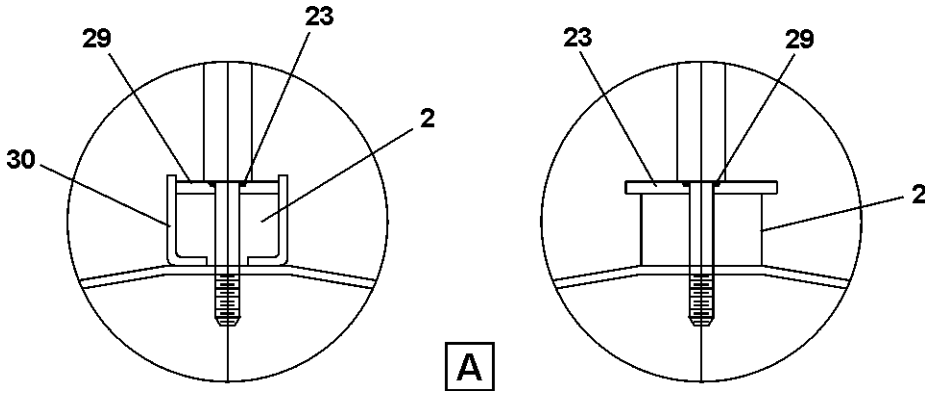


Table 1: Parts List—Bonnet Assembly

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 28 158	Assembly, Bonnet and air cylinder	
			Components	
all	1	02 02101	Cylinder head	
all	2	02 16021C	Bumper	
all	3	60C132	O-ring, 2X3/16	
all	4	02 10585D	Bolt, 5/16-18X7.875	
all	5	15G220	Nut, 3/8-24	
all	6	02 02085	Washer, Upper, .381X2"	
all	7	02 02105B	Washer, Piston cup, .378X2.38"	
all	8	02 02185	Washer, Compression limit, .39X3/4"	
all	9	02 18931E	Casting, Bonnet	
all	10	03 01313	Stop	
all	14	02 18796	Disk	
all	15	02 16021I	Stem	
all	16	15G168	Nut, 1/4-20	
all	18	02 18931F	Gasket	
all	19	X2 02743	Bonnet	
all	20	24G020N	Washer, Nylon, 1/4	
all	21	15K041S	Bolt, 1/4-20X1	
all	22	03 06429	Spring	
all	23	60C106	O-ring, 5/16X1/16	
all	24	02 02194	Piston cup, 2+3/8"	
all	25	02 02068	Air cylinder	
all	26	15U210	Washer, Lock, 5/16	
all	28	15U245	Washer, Flat, 3/8"	
all	29	02 16021E	Washer, 3/8X1.25	
all	30	02 16021D	Retainer	

— End of BIIFGM28 —

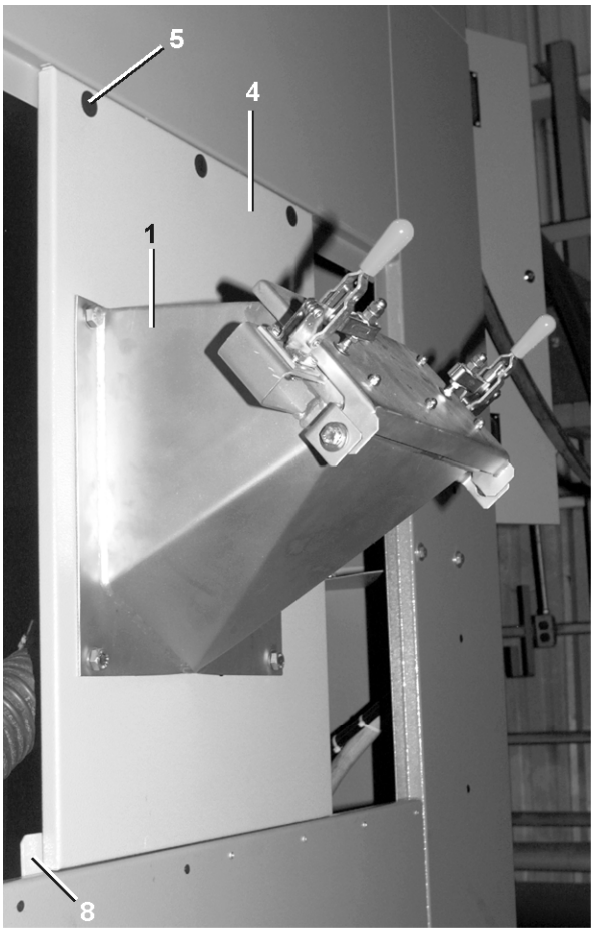
2

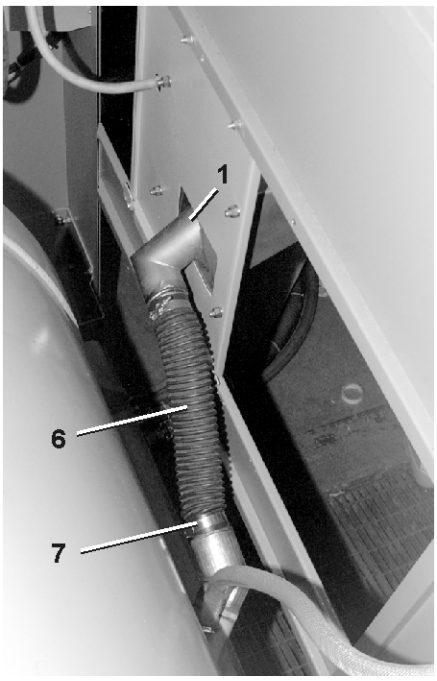
Chemical Supply Assemblies 2.6

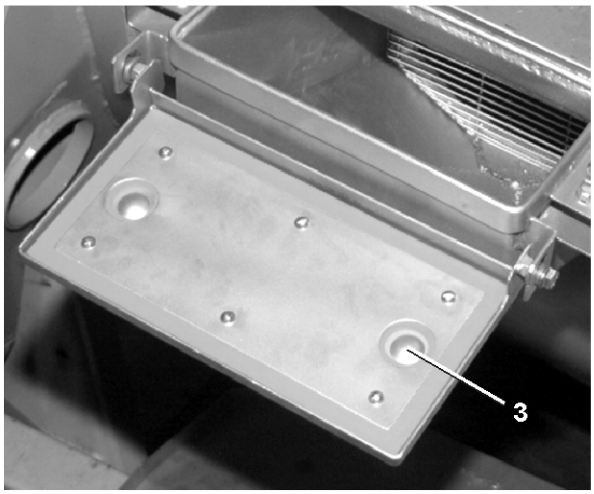
BIIFGM22 (Published) Book specs- Dates: 20100714 / 20100714 / 20100806 Lang: ENG01 Applic: IFG

Soap Chute Components and Installation: 6836F_

Figure 1: General Views







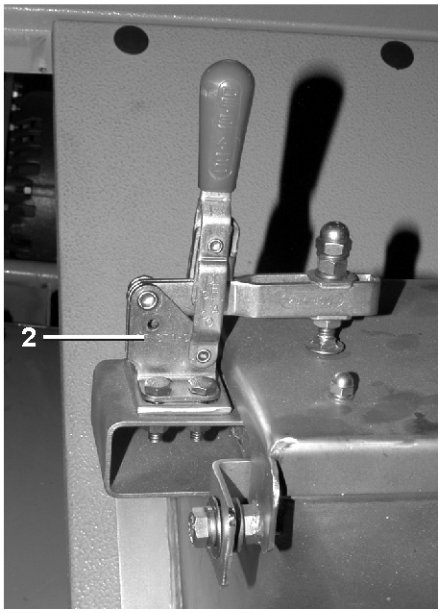


Table 1: Parts List—Soap Chute Components and Installation

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				
none				
Components				
all	1	W3 65403A	Weldment	
all	2	AWS65012	Latch	
all	3	AWS65011	Assembly, Cover	
all	4	02 22141	Cover	
all	5	12P1ARHP1	Plug	
all	6	02 03846DG	Flexible tubing, 3.5"X18"	
all	7	27A084TSS	Hoseclamp, T-bolt, 3.66-3.97"	
all	8	02 22116	Piece part	

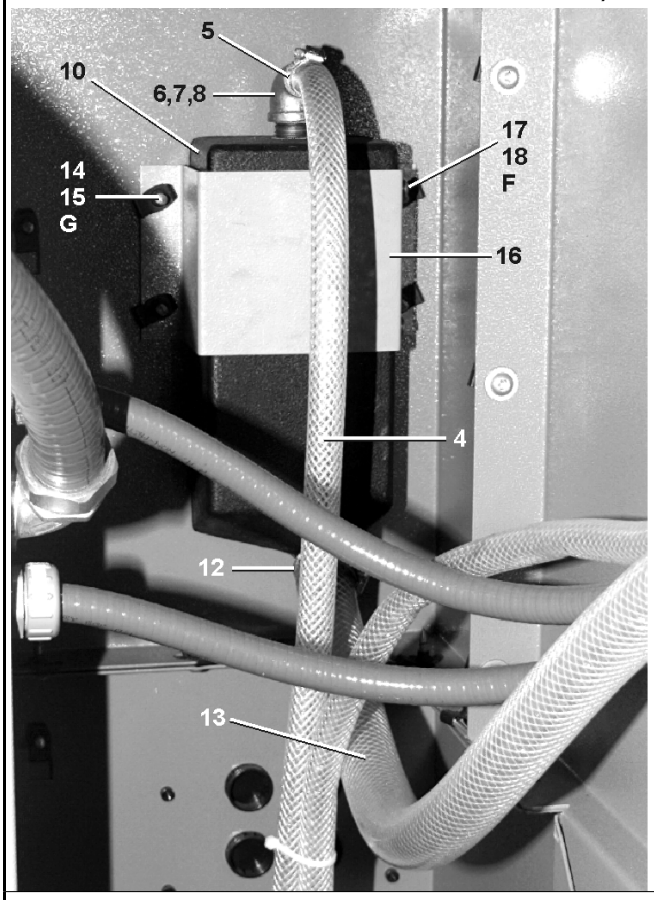
— End of BIIFGM22 —

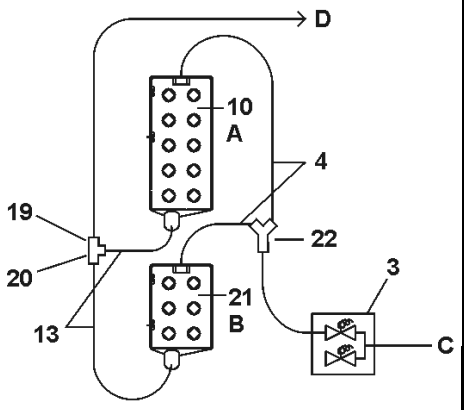
BIIFGM23 (Published) Book specs- Dates: 20100714 / 20100714 / 20100806 Lang: ENG01 Applic: IFG

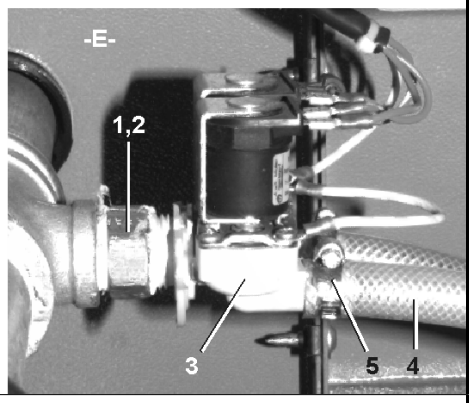
Chemical Supply Inlets : 6836F5_

Figure 1: Chemical supply inlets

Installed views, Schematic







Legend

A. Inlet for 10 Peristaltic Chemical Supplies,
B. Inlet for Six Peristaltic Chemical Supplies and Water, (optional)
C. Hot water to flush the chemical supply manifolds, 3/4" NPT
D. Water and chemical supplies to the shell
E. 4840F7 shown
F. instances, 2
G. instances, 4

Figure 2: Installed view: 6836F5_

Figure 3: Inlet manifold

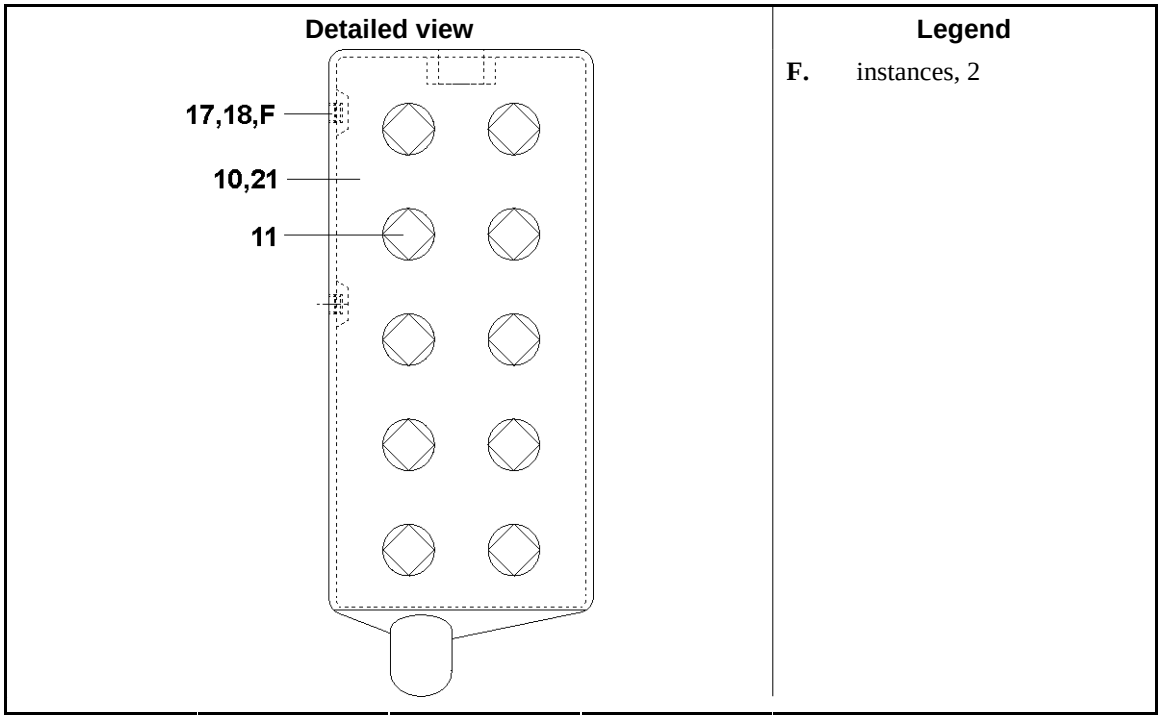


Table 1: Parts List—Chemical supply inlets

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	GWL4840F	Installation Group, Inlet manifold, 10-port	
	B	GWS48010A	Installation Group, Soap chute	
	C	GWL4840W	Installation Group, Inlet manifold, 6-port	
			Components	
all	1	51E513FG	Pipe Fitting, Hose adapter, 3/4"	
all	2	53A060HA	Washer, Hose, 3/4"	
all	3	96P053D71	Water valve, Inlet 3/4", Two outlets 1/2"	
all	4	60E006C	Flexible tubing, .5	
all	5	27A040	Hoseclamp, 7/16-25/32	
all	6	5N0KCLSF42	Pipe nipple, 1/2XCLS	
all	7	5SL0KBEA0E	Elbow, 1/2X1/4	
all	8	51E504EB	Hose stem, 3/8X1/4	
all	10	02 03589O	Inlet manifold, 10-port	
all	11	5SP0KXFHS	Plug, 1/2"	
all	12	27A090	Hoseclamp, 13/16-1.5"	
all	13	60E010	Flexible tubing, 1"	
all	14	15N110H	Bolt, 1"	
all	15	15G004HB	Nut, 1"	
all	16	02 03276	Bracket	
all	17	15K032	Bolt, 1/4-20X3/8	
all	18	15U181	Washer, Lock, 1/4	
all	19	51ET1AE01	Hose adapter, 1"X 1"	
all	20	5S1AP8A	Tee, 1"	
all	21	02 03589L	Inlet manifold, 6-port	
all	22	51E509Y	Pipe Fitting, Y-Branch, 1/2"	

— End of BIIFGM23 —

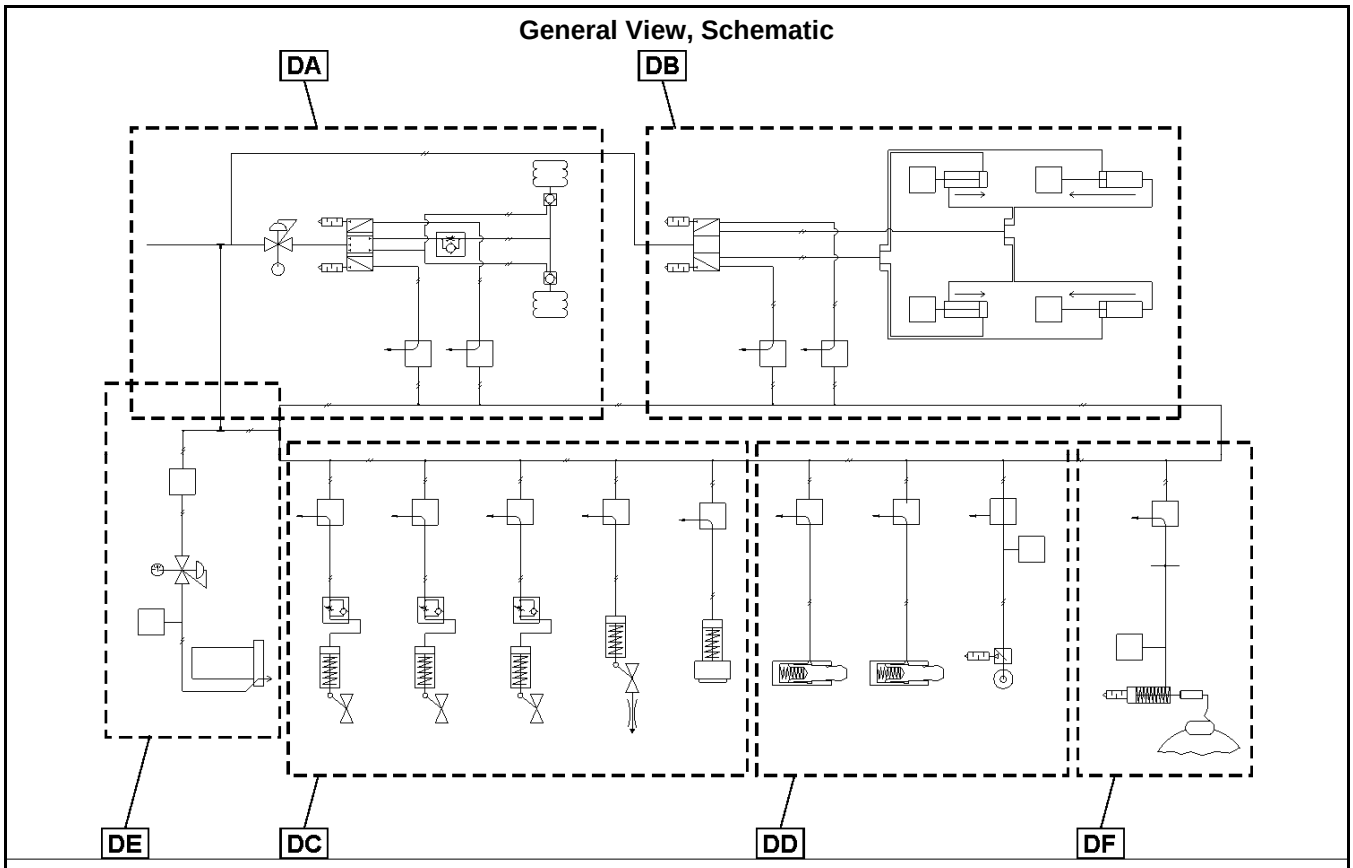
2

Pneumatic Assemblies 2.7

BIIFGM15 (Published) Book specs- Dates: 20100701 / 20100701 / 20100806 Lang: ENG01 Applic: IFG

Pneumatic Schematic

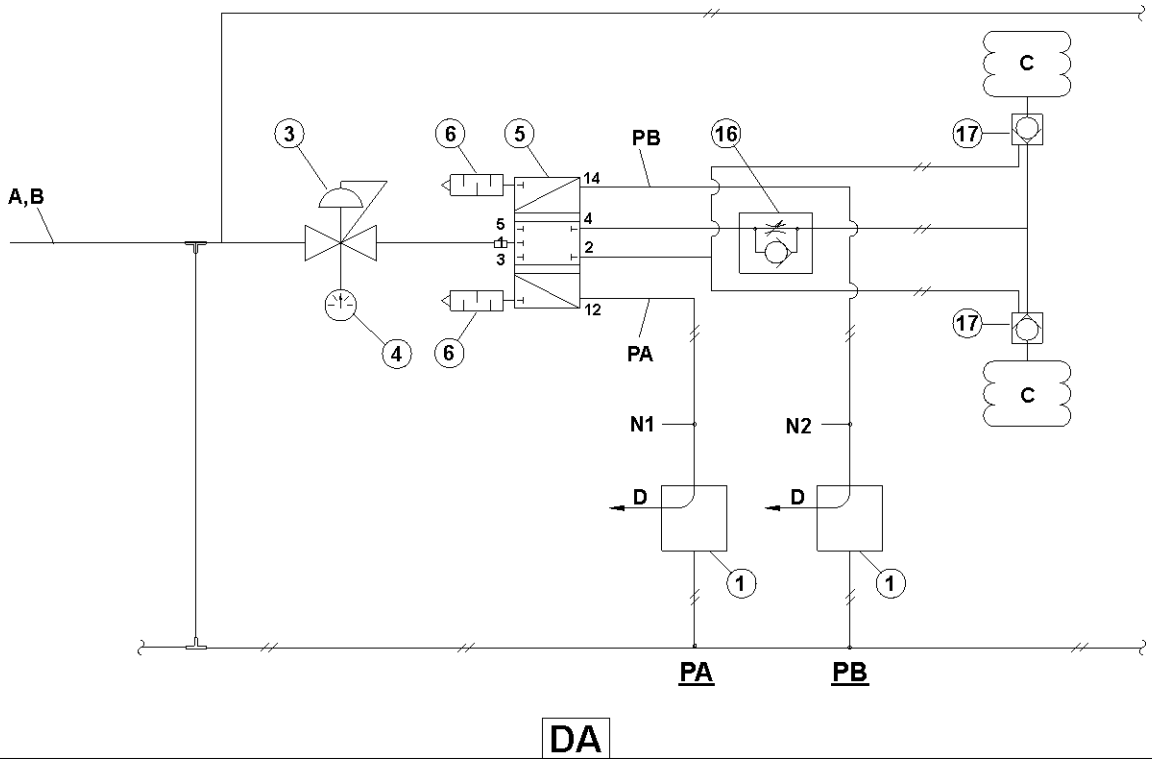
Figure 1: Pneumatic Schematic



Legend

DA. Detailed view: Pneumatic bags down, Pneumatic bags up
DB. Detailed view: Tilt forward, Tilt rear
DC. Detailed view: Hot water line, Cold water line, Cooldown water line, Steam line, Drain valve
DD. Detailed view: Door latch, Door open latch, Door seal
DE. Detailed view: Air injection, Brake

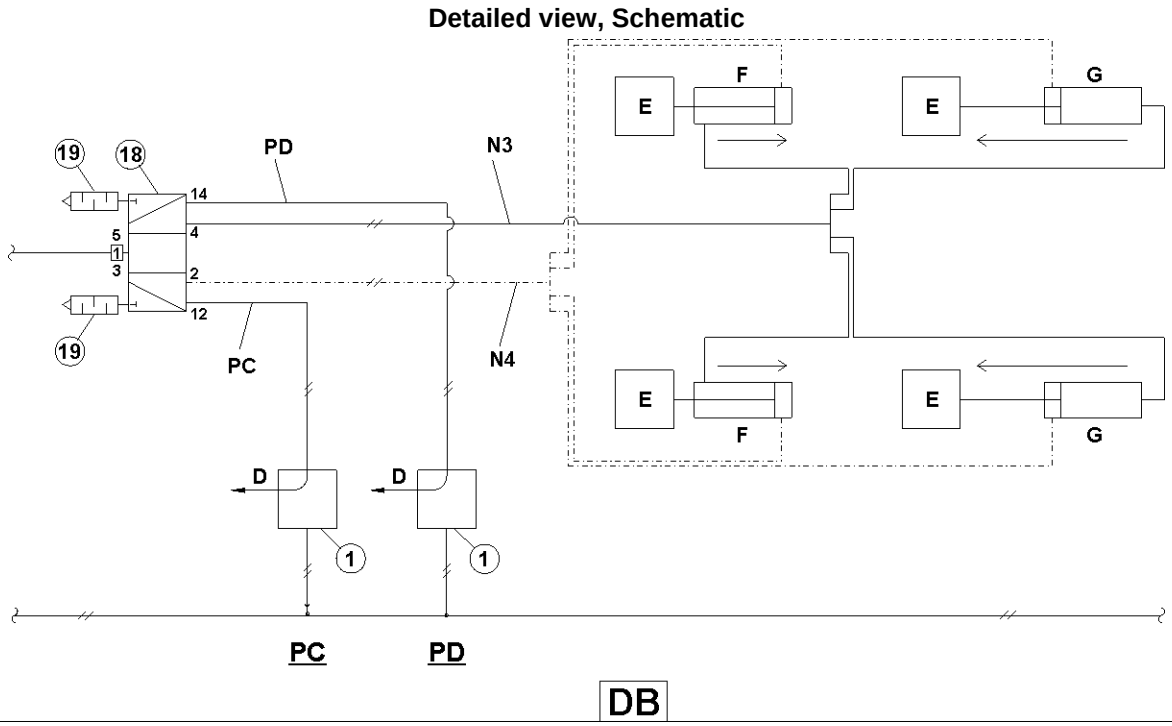
Figure 2: Pneumatic bags down, Pneumatic bags up



Legend

PA. Pneumatic bags down
PB. Pneumatic bags up
A. Compressed air
B. 85-110 PSI [5.8-7.5 ATU]
C. Pneumatic bags
D. Exhaust
Z. All pilot valves are shown as de-energized.
N1. The pneumatic bags deflate when the pilot valve is energized.
N2. The pneumatic bags inflate when the pilot valve is energized.

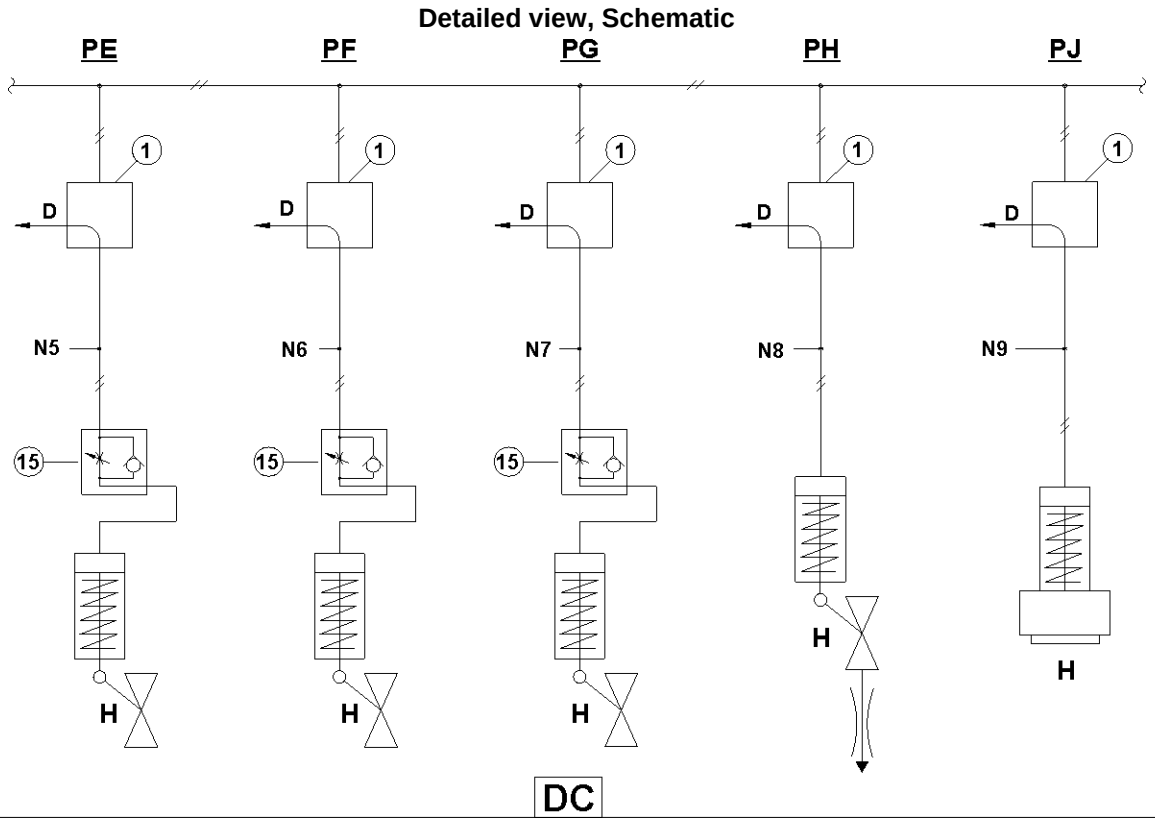
Figure 3: Tilt forward, Tilt rear



Legend

PC. Tilt forward
PD. Tilt rear
D. Exhaust
E. Tilt lock rod
F. Tilt lock cylinder, Rear
G. Tilt lock cylinder, Front
Z. All pilot valves are shown as de-energized.
N3. To tilt forward, the front tilt wheel is locked down when the pneumatic bags are inflated. The front tilt lock cylinders are extended and the rear tilt lock cylinders are retracted.
N4. To tilt to the rear, the rear tilt wheel is locked down when the pneumatic bags are inflated. The rear tilt lock cylinders are extended and the front tilt lock cylinders are retracted.

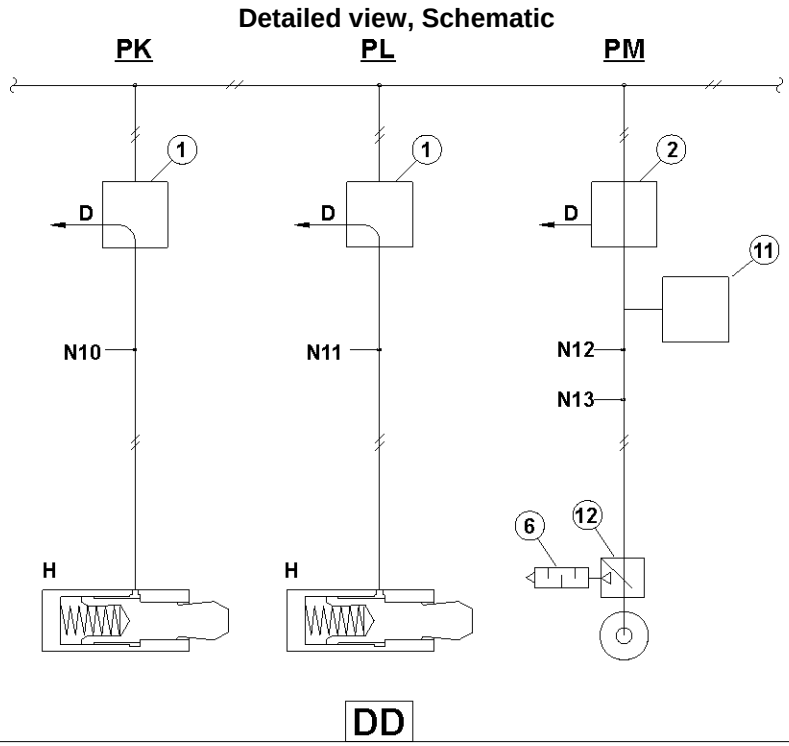
Figure 4: Hot water line, Cold water line, Cooldown water line, Steam line, Drain valve



Legend

PE. Hot water line
PF. Cold water line
PG. Cooldown water line
PH. Steam line
PJ. Drain valve
D. Exhaust
H. Usually closed
Z. All pilot valves are shown as de-energized.
N5. The hot water valve is opened when the pilot valve is energized.
N6. The cold water valve is opened when the pilot valve is energized.
N7. The cooldown water valve is opened when the pilot valve is energized.
N8. The steam valve is opened when the pilot valve is energized.
N9. The drain valve is opened when the pilot valve is energized.

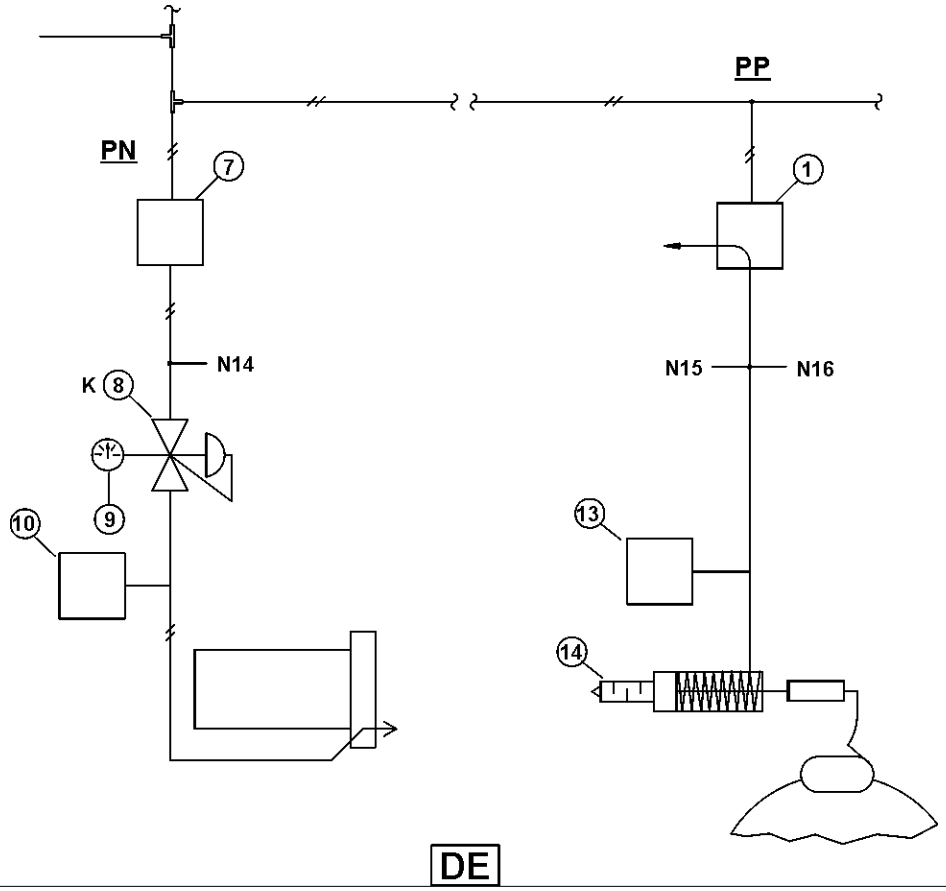
Figure 5: Door latch, Door open-Latch, Door seal



Legend

PK . Door latch
PL. Door open latch
PM. Door seal
D. Exhaust
H. Usually closed
Z. All pilot valves are shown as de-energized.
N10. The spring locks the door latch. The door latch is opened when the pilot valve is energized.
N11. The spring locks the door open latch. The door open latch is opened when the pilot valve is energized.
N12. The door seals are inflated when the pilot valve is de-energized.
N13. The door seals are deflated when the pilot valve is energized.

Figure 6: Air injection, Brake



Legend

PN. Air injection
PP. Brake
K. Pressure regulator, Set it to 10 PSI [0.68 ATU].
N14. Air pressure is applied to the bearing when the pilot valve is energized.
N15. The spring extends to retract the cylinder to engage the brake when the pilot valve is de-energized.
N16. Air retracts the cylinder to release the brake when the pilot valve is energized.

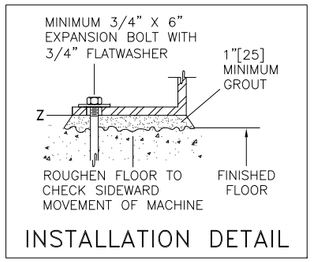
Table 1: Parts List—Pneumatic Schematic

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.

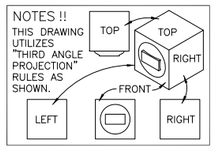
Used In	Item	Part Number	Description/Nomenclature	Comments
Assemblies				
none				
Components				
all	1	96R301B71	Pilot valve, 1/8", Usually closed	
all	2	96R302B71	Pilot valve, 1/8", Usually open	
all	3	30N218	Pressure regulator, 3/8"	
all	4	30N101	Pressure gage, 1/8", .0-60PSI	
all	5	96N0014H	Shuttle valve, 3/8"	
all	6	27A005	Muffler, 3/8"	
all	7	96TBC2BA37	Two-way valve, 1/4"	
all	8	96J019G	Filter regulator, 1/4", 0-60PSI	
all	9	30N095	Pressure gage, 1/8", .0-15PSI	
all	10	09N082B05	Pressure switch, Close at 5 lbs.	
all	11	09N082B10	Pressure switch, Close at 10 lbs.	
all	12	96M055	Quick exhaust valve, 1/4"	
all	13	09N082A	Pressure switch, Close at 62 lbs.	
all	14	27A005A	Muffler, 1/4"	
all	15	96JH100	Needle valve, 1/8"	
all	16	96J026	Flow regulator, 3/8"	
all	17	96DG050	Check valve, 1/2	
all	18	96N0010H	Shuttle valve, 1/4"	

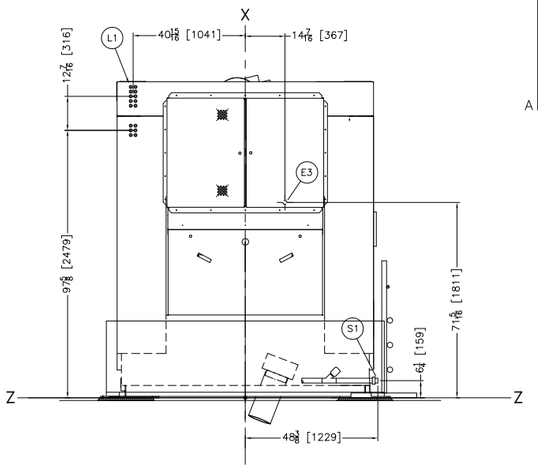
— End of BIIFGM15 —

Dimensional Drawings 3

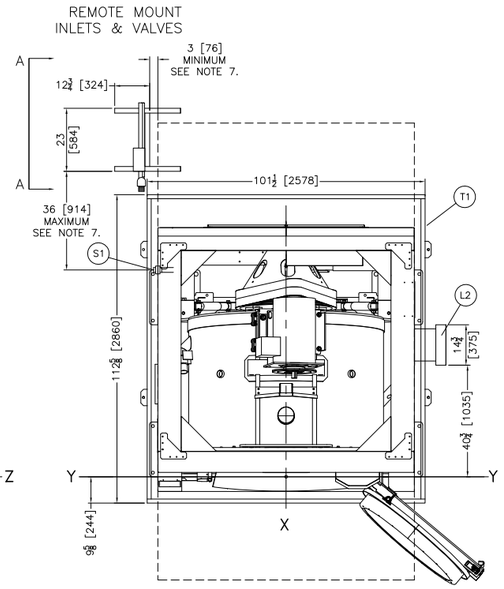


INSTALLATION DETAIL

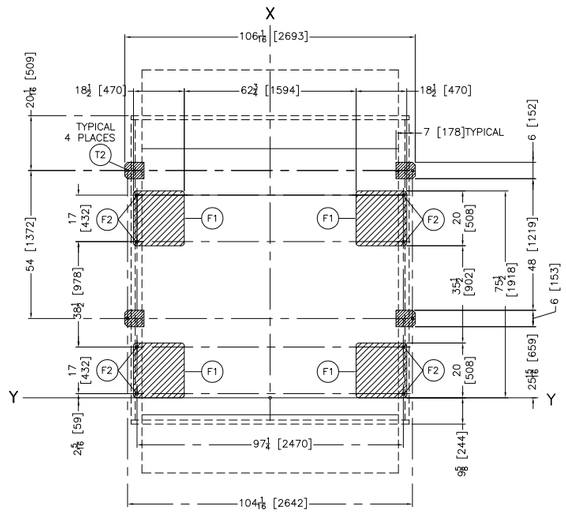




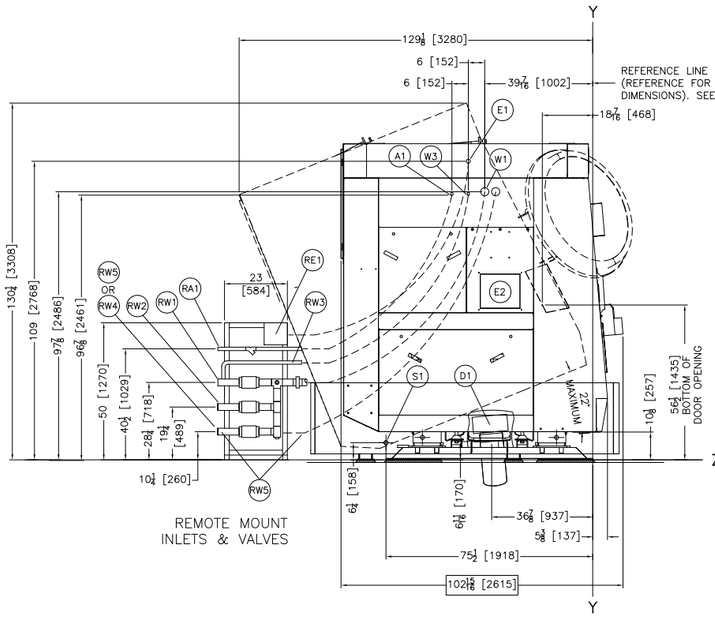
REAR VIEW



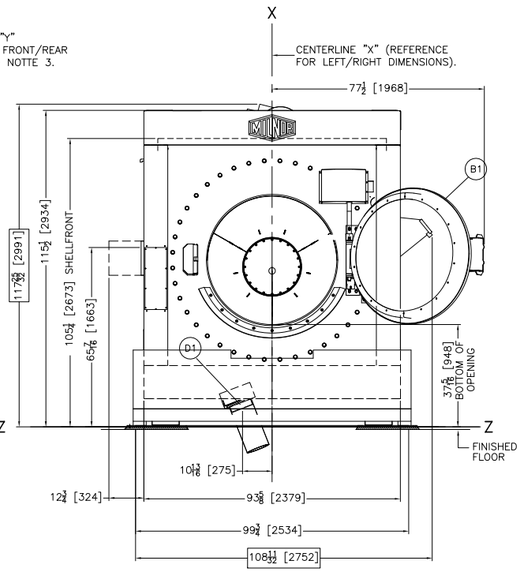
PLAN VIEW



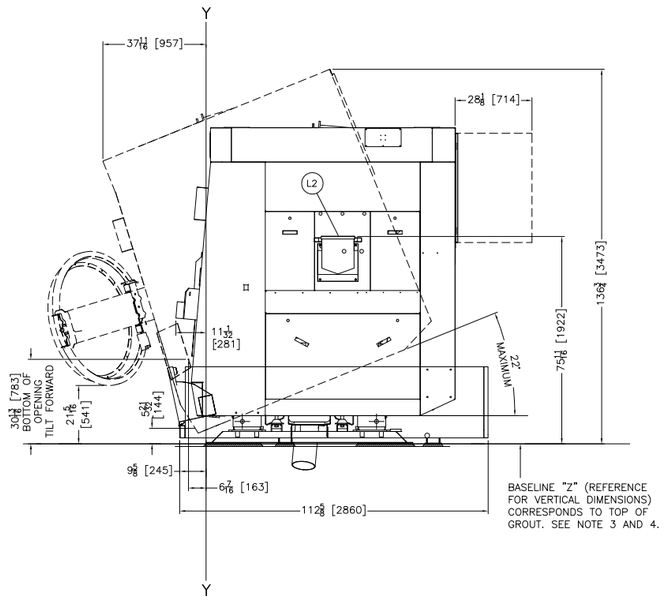
FOUNDATION PLAN



LEFT VIEW



FRONT VIEW



RIGHT VIEW

ITEM	LEGEND
T2	TILTGUARD FOOTPADS WITH 3/4"[19]DIAMETER ANCHOR BOLT
	HOLES TYPICAL 4 PLACES, USE 5/8" X 6" BOLTS MINIMUM
	HOLES TYPICAL 4 PLACES
T1	TILT GUARD ASSEMBLY
S1	STEAM HOSE CONNECTION 1-1/4" NPT
W3	HOT WATER FOR SUPPLY 3/4" NPT, HOSED FROM RW3
W1	MAIN WATER IN, 3" NPT, HOSED FROM RW1 & RW2
RW5	OPTIONAL AIR OPERATED REUSE WATER INLET, 2" NPT
RW4	OPTIONAL THIRD WATER INLET, 2" NPT
RW3	REMOTE HOT WATER FOR SUPPLY, HOSE PROVIDED
RW2	REMOTE COLD WATER INLET, 2" NPT
RW1	REMOTE HOT WATER INLET, 2" NPT
RE1	REMOTE MAIN ELECTRICAL CONNECTION
RA1	REMOTE MAIN AIR CONNECTION, 3/4" NPT
L2	DRY SUPPLY
L1	PERISTALTIC INLETS, 16 PORTS
F2	(8) 1-1/16" DIAMETER ANCHOR BOLT HOLES, USE
	3/4" X 6" BOLTS MINIMUM. (1) BOLT PER PAD MINIMUM.
F1	BASEPADS, SEE NOTE 8.
E3	CHEMICAL SIGNAL CONNECTION, INTO LOW VOLTAGE
	CONTROL BOX
E2	MICROPROCESSOR CONTROL BOX
E1	MAIN ELECTRICAL CONNECTION INTO JUNCTION BOX
D1	DRAIN VALVE, 8" DIAMETER
B1	48" DOOR, STANDARD
A1	MAIN AIR HOSE

NOTES

10 SHIM TO LEVEL THE MACHINE AND ALLOW FOR 1" [25] MINIMUM GROUT. ANCHOR WITH ONE ANCHOR BOLT PER BASEPAD (F1), MINIMUM. USE 3/4" X 6" BOLTS, MINIMUM. ANCHOR TILTGUARD FOOTPADS (T2), USING 5/8" X 6" BOLTS, MINIMUM. SEE INSTALLATION MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS.

9 THIS DRAWING SHOWS THE MACHINE AT 16° TILT, SEE THE CHART FOR DIMENSIONS OF BOTH STANDARD 16° DEGREE AND OPTIONAL 22° DEGREE TILT.

8 SHADED AREAS ARE BASE PLATES WHICH MUST BE CONTINUOUSLY SUPPORTED ON 1"[25] THICK GROUT.

7 THE AIR & WATER INLETS ARE REMOTE MOUNTED TO A STAND. THE PLACEMENT OF THE STAND IS FLEXIBLE. PLACE THE STAND CLOSE TO THE MACHINE, BUT NOT INTERFERING WITH THE MACHINE WHEN TILTED. THE STAND CANNOT BE PLACED FURTHER BACK THAN 36", DUE TO THE LENGTHS OF THE HOSES PROVIDED.

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.

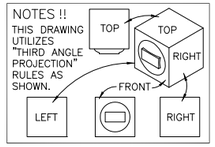
6836F5N

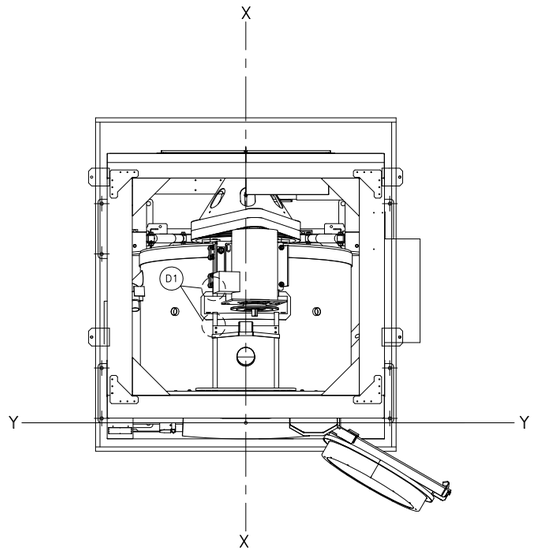
DM 0 0.5M 1M
INCHES 0 12 24 36

DWG# BD6836F5CE 2010393D

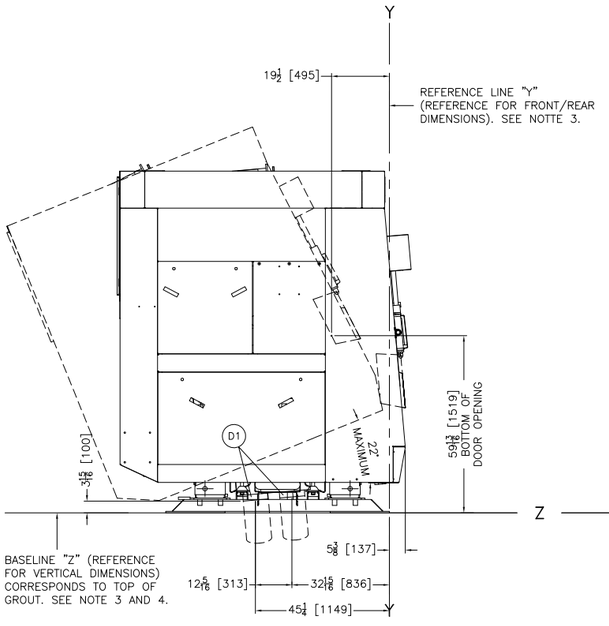
PELLERIN MILNOR CORPORATION
P.O. Box 400 Kenner, LA 70063, USA, Phone 504/467-9591,
FAX 504/469-1849, Email: milnorinfo@milnor.com

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

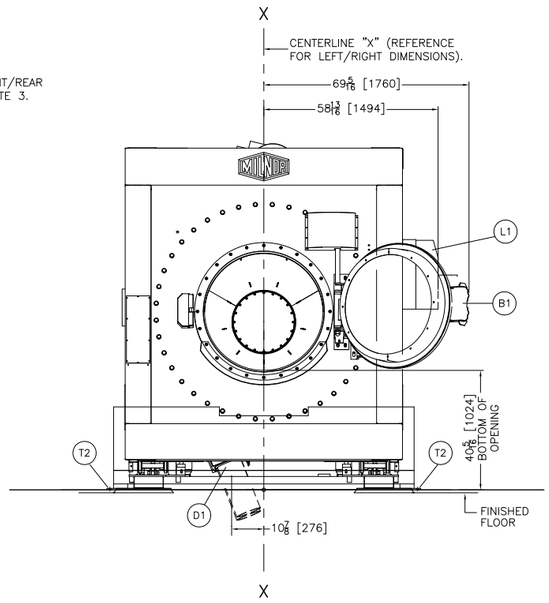




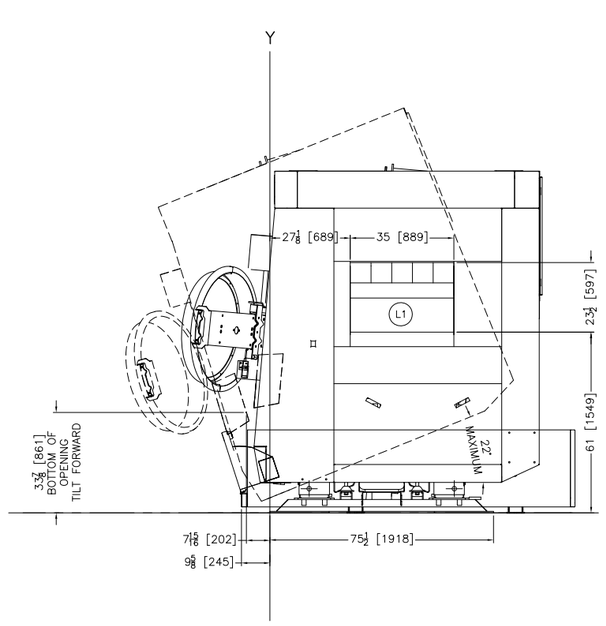
PLAN VIEW



LEFT VIEW



FRONT VIEW



RIGHT VIEW

L1	OPTIONAL 5 COMPARTMENT SUPPLY
D1	OPTIONAL DUAL DRAINS, 8" DIAMETER, 2– 18" LONG HOSES
	SUPPLIED, REQUIRES AIR OPERATED REUSE WATER INLET,
	SHOWN ON BD6836F5CE.
B1	40" DOOR, OPTIONAL
ITEM	LEGEND

NOTES

9 THIS DRAWING SHOWS THE MACHINE AT 16° TILT, SEE THE CHART FOR DIMENSIONS OF 40 INCH DOOR AT BOTH STANDARD 16° DEGREE AND MAXIMUM 22° DEGREE TILT.

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.

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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.

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ATTENTION

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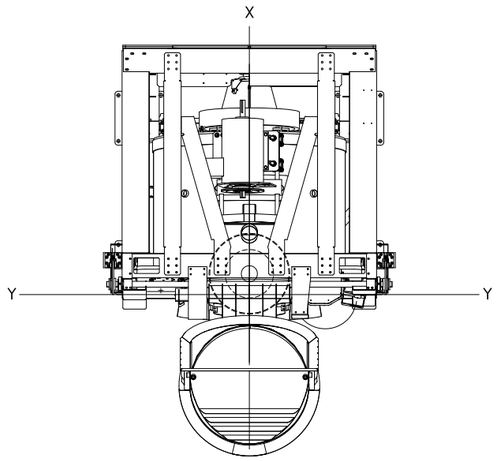
OPTIONS 6836F5N

DM 0 0.5M 1M
INCHES 0 12 24 36

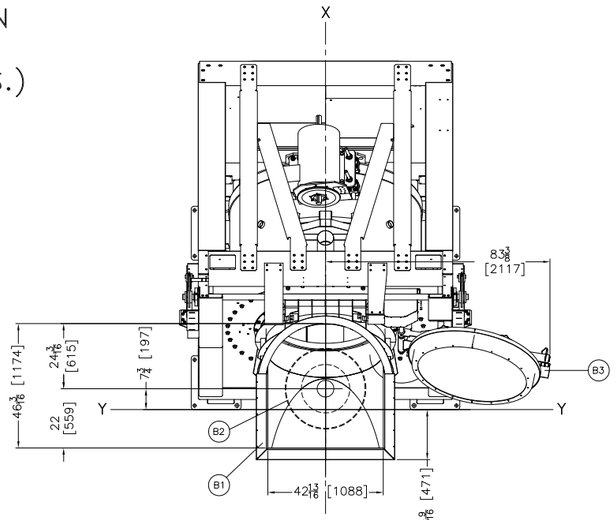
DWG# BD6836F5CB
2010393D

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

(SEE BD6836F5CE FOR 6836F5N DIMENSIONS & CONNECTIONS. SEE BD6836F5CB FOR OPTIONS.)

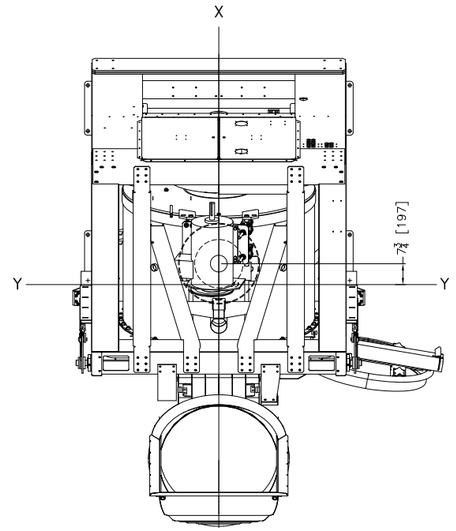


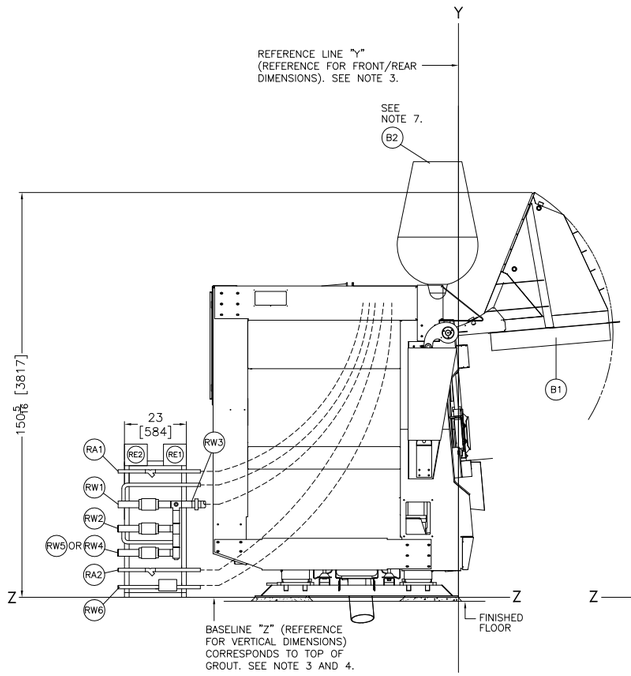
PLAN VIEW (WASHING)



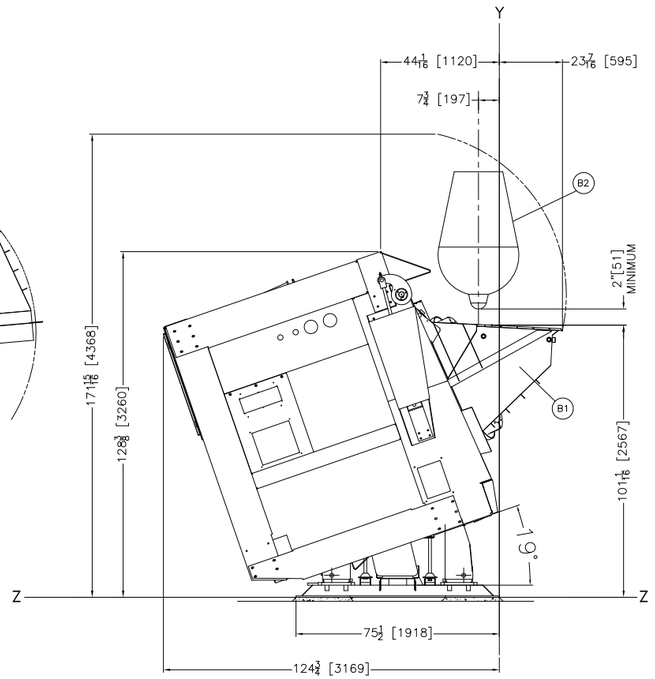
PLAN VIEW (DRYELL LOADING)

PLAN VIEW (UNLOADING)

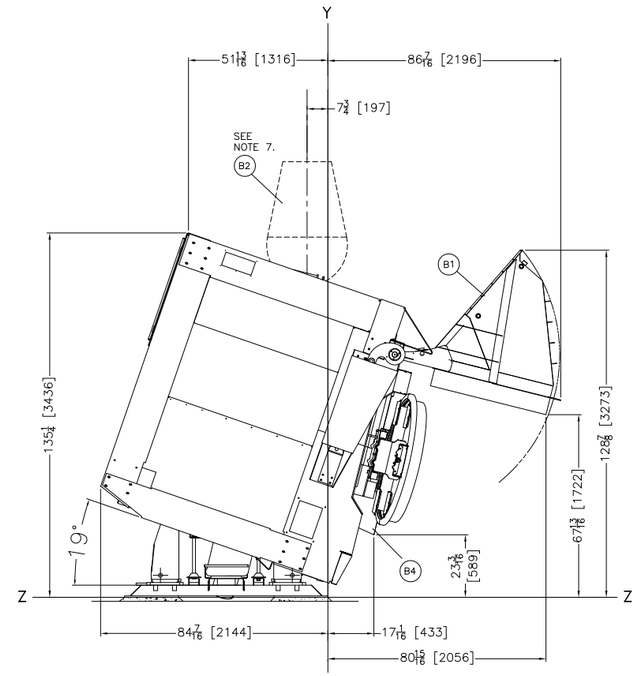




LEFT VIEW (WASHING)



LEFT VIEW (DRYELL LOADING)



LEFT VIEW (UNLOADING)

ITEM	LEGEND
RW6	WATER TO FLUSH DRYELL, ____ NPT
RW5	OPTIONAL AIR OPERATED REUSE WATER INLET, 2" NPT
RW4	OPTIONAL THIRD WATER INLET, 2" NPT
RW3	REMOTE HOT WATER FOR SUPPLY, HOSE PROVIDED
RW2	REMOTE COLD WATER INLET, 2" NPT
RW1	REMOTE HOT WATER INLET, 2" NPT
RE2	SERIAL LINK JUNCTION BOX, F5P ONLY
RE1	REMOTE MAIN ELECTRICAL CONNECTION
RA2	AIR CONNECTION, 3/4" NPT, TO BLOW OUT DRYELL WATER LINE
RA1	REMOTE MAIN AIR CONNECTION, 3/4" NPT
B4	UNLOAD CHUTE
B3	DRYELL 48" DOOR IN FULL OPEN POSITION
B2	SLING (BAG) LOADING BY OTHERS
B1	DRYELL LOADING CHUTE

NOTES

7 THE SLING (BAG) CANNOT BE DIRECTLY ABOVE THE MACHINE WHEN THE MACHINE IS WASHING OR WHEN THE WASHER IS UNLOADING. THE SLING (BAG) IS SHOWN IN THE WASHING AND UNLOADING VIEWS TO EMPHASIZE THIS FACT.

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.

6836F5P WITH DRYELL

DM 0 0.5M 1M
INCHES 0 12 24 36

DWG# BD6836F5CD
2009285D

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