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# Installation, Parts, and Service

## 36026X8R





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# 1 General Service and Safety-related Components

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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.

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

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

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

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## 1.1 How to Get the Necessary Repair Components

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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: 504-712-7775

Fax: 504-469-9777

Email: parts@milnor.com

## 1.2 Trademarks

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

**Table 1. Trademarks**

AutoSpot™	GreenFlex™	MilMetrix®	PulseFlow®
CBW®	GearTrace™	MilTouch™	RAM Command™
Drynet™	GreenTurn™	MilTouch-EX™	RecircONE®
E-P Express®	Hydro-cushion™	MilRAIL®	RinSave®
E-P OneTouch®	Mentor®	Miltrac™	SmoothCoil™

**Table 1 Trademarks (cont'd.)**

E-P Plus®	Mildata®	MilVision™	Staph Guard®
Gear Guardian®	Milnor®	PBW™	

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## 1.3 Safety — Suspended Washer Extractors

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### 1.3.1 Safety Alert Messages—Internal Electrical and Mechanical Hazards

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



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

- ▶ Do not 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: 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.

### 1.3.2 Safety Alert Messages—Cylinder and Processing Hazards

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



**! DANGER: 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: 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: 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: 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.

### 1.3.3 Safety Alert Messages—Unsafe Conditions

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#### 1.3.3.1 Damage and Malfunction Hazards

BNWSUS04.C02 0000235001 A.2 A.3 C.2 12/10/20, 4:36 PM Released

##### 1.3.3.1.1 Hazards Resulting from Inoperative Safety Devices

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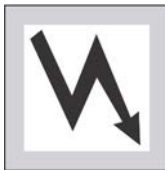
**DANGER: Entangle and Sever Hazards** — Cylinder door interlock— Operating the machine with a malfunctioning door interlock can permit opening the door when the cylinder is turning and/or starting the cycle with the door open, exposing the turning cylinder.

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



**WARNING: 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: 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: 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.

##### 1.3.3.1.2 Hazards Resulting from Damaged Mechanical Devices

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**WARNING: 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: 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: 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

### 1.3.3.2 Careless Use Hazards

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

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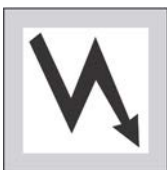


**WARNING: Multiple Hazards** — Careless operator actions can kill or injure personnel, damage or destroy the machine, damage property, and/or void the warranty.

- ▶ 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.

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

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

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

- ▶ 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: 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: 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.

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## 1.4 Installation Tag Guidelines

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30022X8R  
42026X7R

36026X8R  
42032X7R



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

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

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

Symbol



Explanation

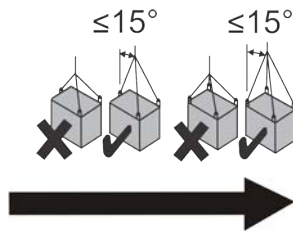
Read the manuals before proceeding. This symbol appears on most tags. The machine ships with safety, operator, and routine maintenance guides for customer use. Milnor dealer manuals for installing, commissioning, and servicing the machine are also available from the Milnor Parts department.



B2TAG88005: This carefully built product was tested and inspected to meet Milnor performance and quality standards by (identification mark of tester).

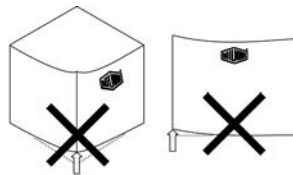


B2TAG94078: Do not forklift here; do not jack here; do not step here—whichever applies.



B2TAG94079: Rig for crane lifting (either 3-point or 4-point, depending on the number of lifting eyes provided) using a steep angle on the chains (closer to vertical than horizontal).

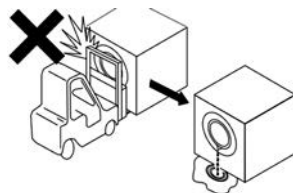
B2TAG94081: Motor must rotate in this direction. On single motor washer-extractors and centrifugal extractors, the drive motor must turn in this direction during draining and extraction. This tag is usually wrapped around a motor housing. If the motor turns in the opposite direction when the machine is first tested, the electrical hookup is incorrect and must be reversed as explained in the schematic manual.



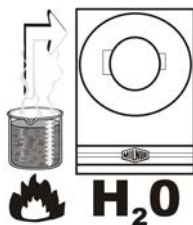
B2TAG94084: Do not lift from one corner of the machine, as this can cause the frame to rack, damaging it.



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



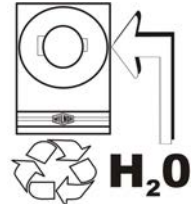
B2TAG94099: Do not strike the shell door when fork-lifting. This can cause the door to leak.



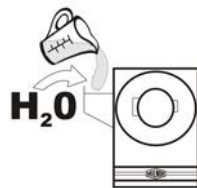
B2T2001013: Hot water connection.



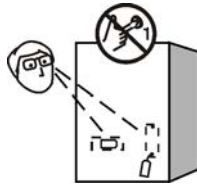
B2T2001014: Cold water connection.



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



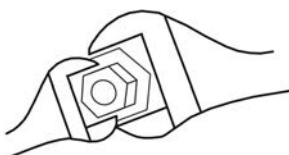
B2T2001016: Flushing water connection. This is the water that goes into the supply compartment or pumped chemical manifold to flush chemicals into the machine.



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



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



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



B2T2004027: Steam connection. (Optional)

## Safety Placards and Locations

2 Sheets

30022X8R, 36026X8R, 42026X7R, 42032X7R



**NOTE:** Replace placard immediately, if removed or unreadable. Approximate locations of placards are shown. If aluminum placard, mounting holes are provided on machine. Use #8 self-tapping screws.

Figure 1. 30022X8R

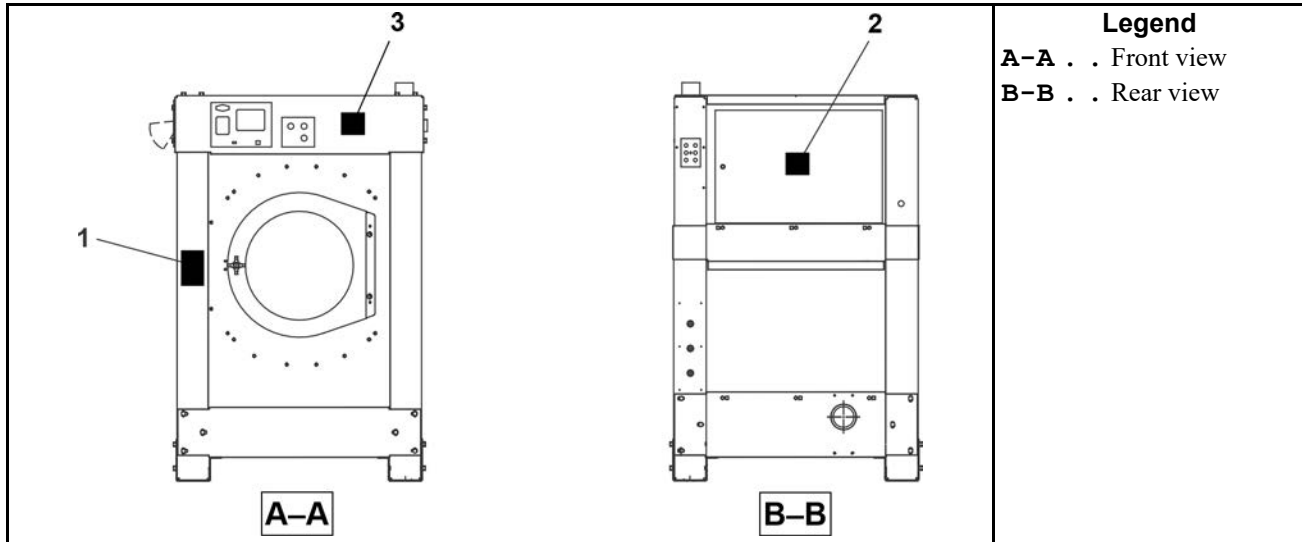
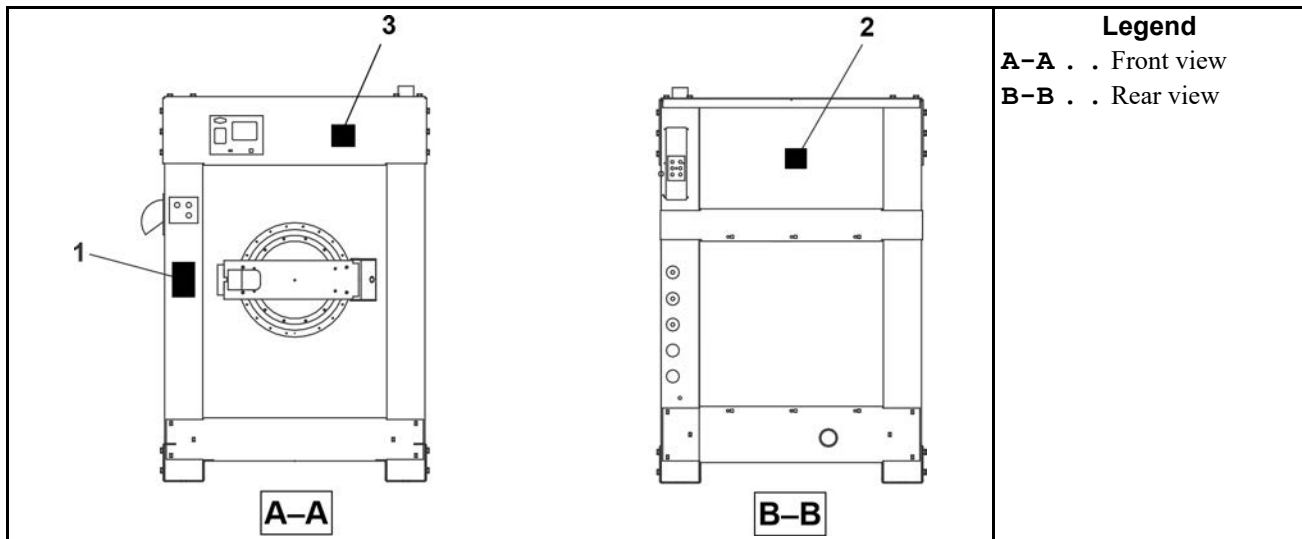


Figure 2. 36026X8R



## Safety Placards and Locations

2 Sheets

30022X8R, 36026X8R, 42026X7R, 42032X7R

Figure 3. 42024X7R and 42032X7R

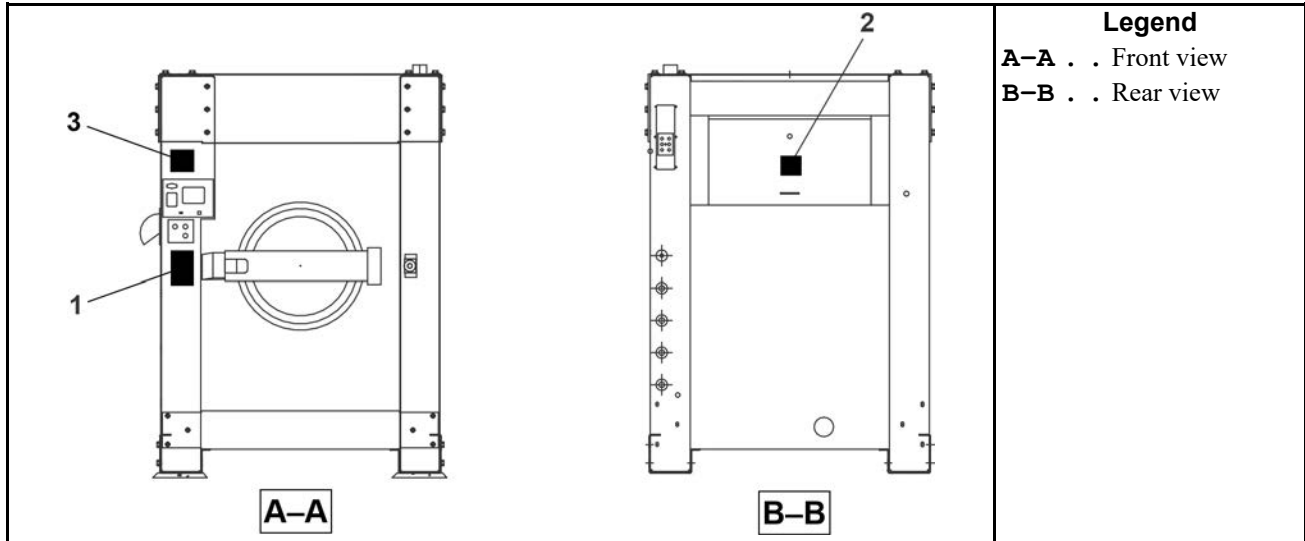


Table 2. Parts List—Safety Placards and Locations

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
Components				
all	1	01 10631A	NPLT:SHELL FRT WARN NOTILT-TCA	
all	2	01 10377A	NPLT:ELEC HAZARD LG-TCATA	
all	3	01 10699A	NPLT:SERV HZRD-PLYEST-TCATA	

Safety Placards and Locations – ISO

30022X8R, 36026X8R, 42026X7R, 42032X7R



**NOTE:** This document is for placards that agree with ISO. Replace placard immediately, if removed or unreadable. Approximate locations of placards are shown. If aluminum placard, mounting holes are provided on the machine. Use #8 self-tapping screws.

Figure 4. 30022X8R

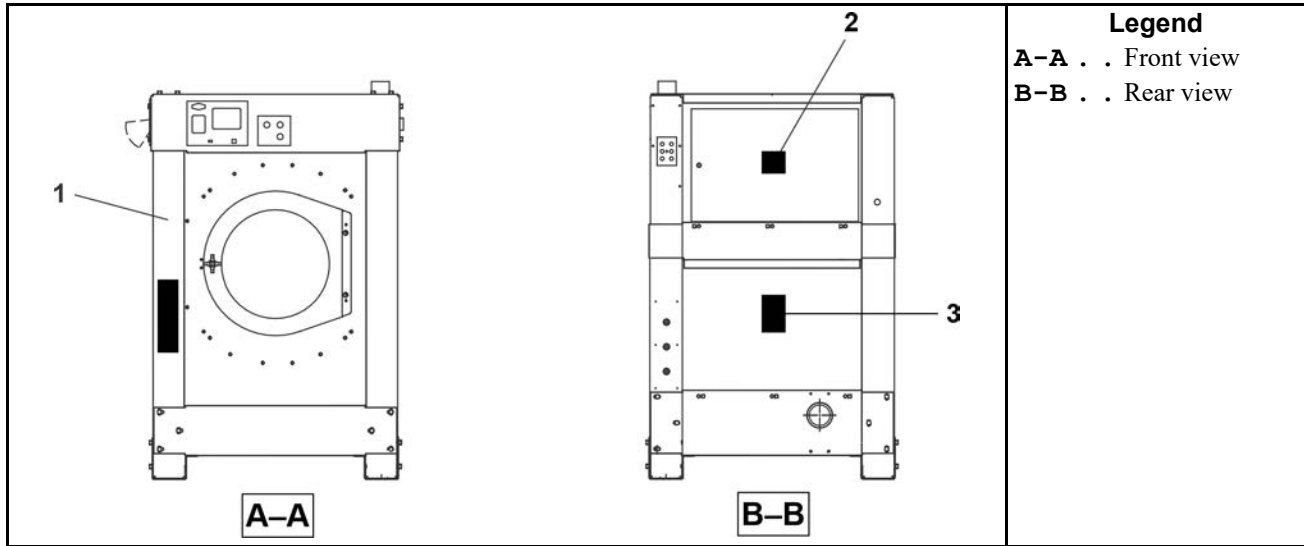
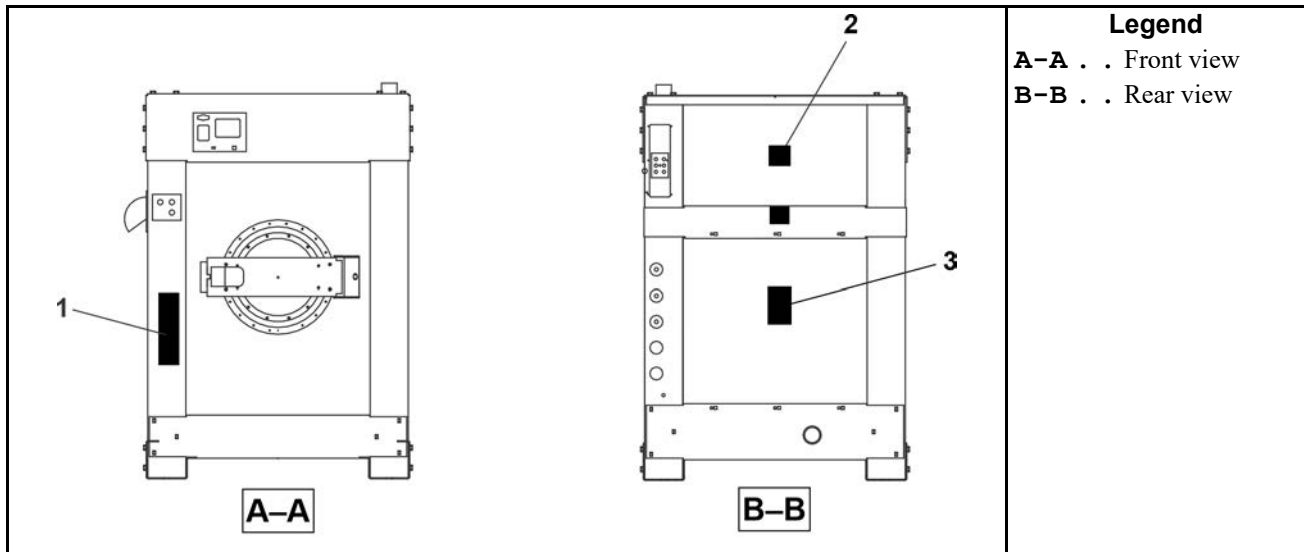


Figure 5. 36026X8R





## Safety Placards and Locations – ISO

2 Sheets

30022X8R, 36026X8R, 42026X7R, 42032X7R

Figure 6. 42024X7R and 42032X7R

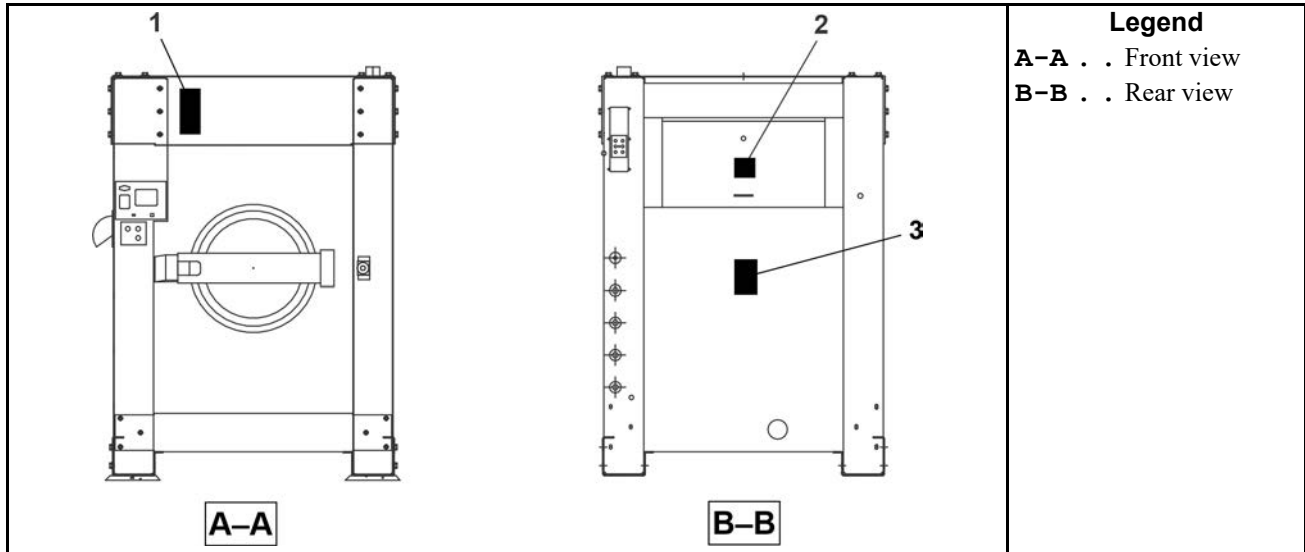


Table 3. Parts List—Safety Placards and Locations – ISO

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
none				
Components				
A	1	01 10631X	NPLT:WE1-NONTILT WARNINGS FRT	3022X8R,3626X8R
B	1	01 10631Y	NPLT:SHELL FRT WARN NOTILT-ISO	4226X7R,4232X7R
all	2	01 10377	NPLTE:"WARNING" 4X4	
all	3	01 10628X	NPLT:NONTILT W/E WARNING SIDE	

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**Panels & Covers**

2 sheets

36026X8R, 42026X7R, 42032X7R



**Legend**

A. . . 2 panels used on 42026X7R & 42032X7R

**Panels & Covers**

2 sheets

36026X8R, 42026X7R, 42032X7R

**Table 4. Parts List—Panels & 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
Reference Assemblies				
	A	GG3626XA	3626X COVER ASSY W/MILTOUCH	36026X8R
	B	GG34226XA	4226X COVER ASSY W/MILTOUCH	42026X7R
	C	GG34232XA	4232X COVER ASSY W/MILTOUCH	42032X7R
Components				
A	1	AGC36001	ASSY=RIGHT SIDE DOOR 3626X	
B	1	AGC42004	ASSY=RIGHT SIDE DOOR 4226X	
C	1	AGC42001	ASSY=RIGHT SIDE DOOR 4232X	
A	2	AGC36002	ASSY=LEFT SIDE DOOR 3626X	
B	2	AGC42005	ASSY=LEFT SIDE DOOR 4226X	
C	2	AGC42002	ASSY=LEFT SIDE DOOR 4232X	
A	3	AGC36003	ASSY=REAR DOOR 36X	
B,C	3	AGC42003	ASSY=REAR DOOR 42X	
A	4	02 13532	COSM TOP COVER 3626X	
B	4	02 23532	COSM=TOP COVER 4226X	
C	4	02 24532	COSM TOP COVER 4232X	

BPWXBK01 / 2021153

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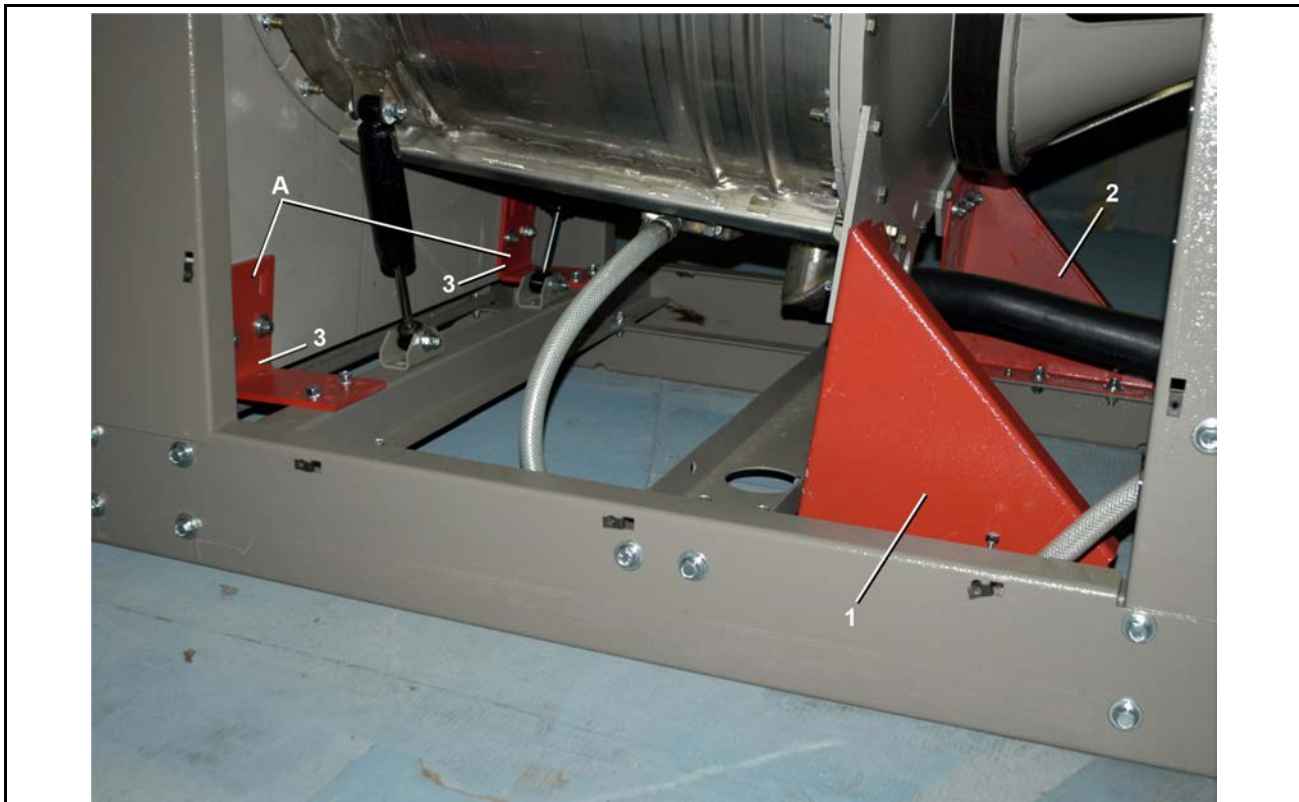
## Shipping Brackets

3 sheets

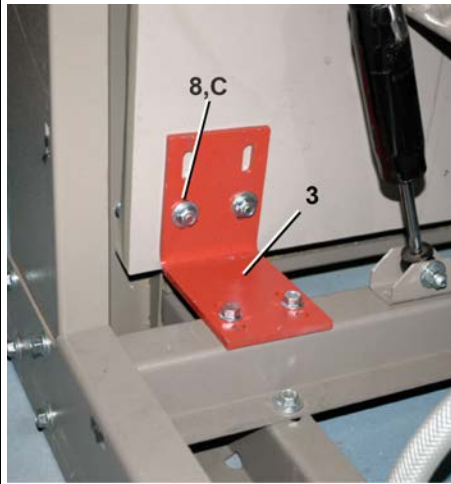
3626X8J,X8W,X8R 4226X7J,X7W,X7R 4232X7J,X7W,X7R



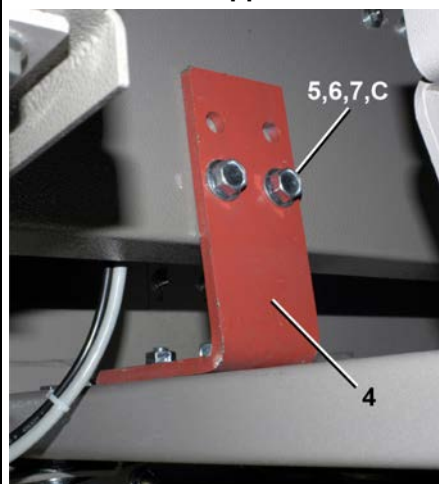
**NOTE:** The shipping brackets must be used to move the machine. Before operating the machine, remove all shipping brackets (painted red). For further instructions, see BNWUUI03.



Detail A: Lower Front



Detail B: Upper Front



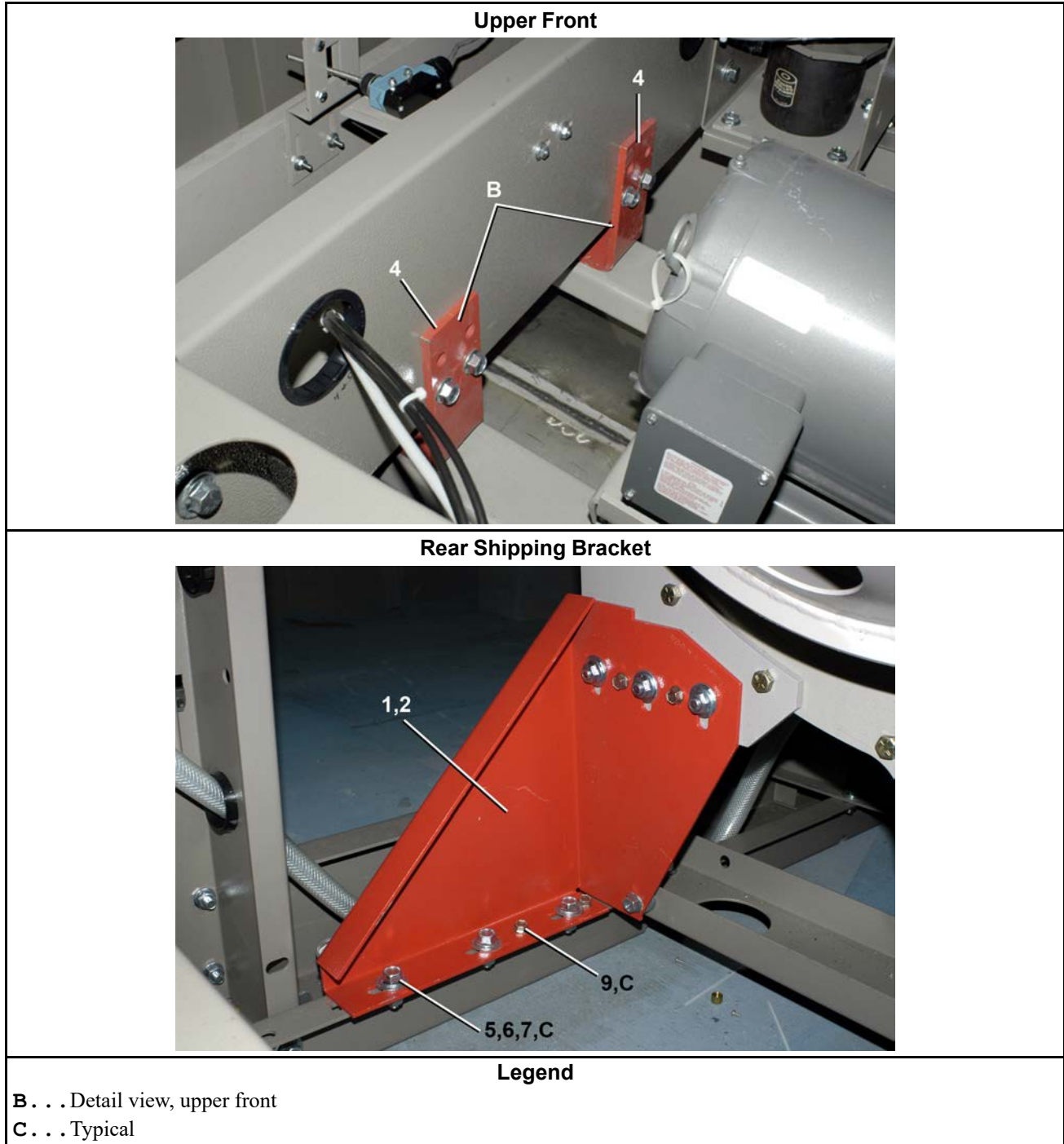
### Legend

- A . . . Detail view, lower front
- B . . . Detail view, upper front
- C . . . Typical

## Shipping Brackets

3 sheets

3626X8J,X8W,X8R 4226X7J,X7W,X7R 4232X7J,X7W,X7R



## Shipping Brackets

3 sheets

3626X8J,X8W,X8R 4226X7J,X7W,X7R 4232X7J,X7W,X7R

**Table 5. Parts List—Shipping Brackets**

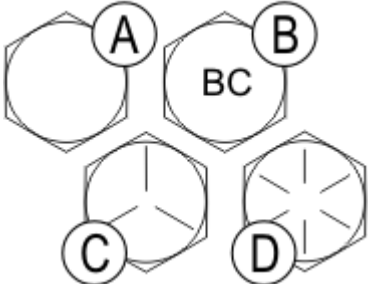
Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
Reference Assemblies				
	A	REFERENCE		36026X8J,X8W,X8R
	B	REFERENCE		42026X7J,X7W,X7R 42032X7J,X7W,X7R
Components				
A	1	02 13595	BRKT=SHIP REAR RT 36X	
B	1	02 23596	BRKT=SHIP REAR RT 42X	
A	2	02 13595A	BRKT=SHIP REAR LEFT 36X	
B	2	02 23596A	BRKT=SHIP REAR LFT 42X	
all	3	02 23543	BRKT=SHIP LOWER FRNT	
all	4	02 23544	BRKT=SHIP 42/36X UPPER FRNT	
all	5	15K129	HEXFLGSCR 1/2-13X1-1/4ZN. GR 5	
all	6	15G222B	HEXFLGNUT 1/2-13 ZINC	
all	7	15U280	FL+WASHER(USS STD)1/2 ZNC PL+D	
all	8	15K154G	INDHEXFLGSCR 1/2-13X1+3/4GR5 Z	
all	9	15P200	TRDCUT-F HXWASHD 3/8-16X3/4NIK	

## 1.5 Torque Requirements for Fasteners

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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 7. The Bolts in Milnor® Equipment**

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

### 1.5.1 Torque Values

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



**NOTE:** Data from the Pellerin Milnor® Corporation “Bolt Torque Specification” (bolt\_torque\_milnor.xls/2002096).

#### 1.5.1.1 Fasteners Made of Carbon Steel

BNUUUN02.C03 0000222448 A.3 C.2 B.3 1/2/20, 2:14 PM Released

##### 1.5.1.1.1 Without a Threadlocker

BNUUUN02.C04 0000222447 A.3 C.2 B.3 1/2/20, 2:14 PM Released

**Table 6. Torque Values for Standard Fasteners with Maximum 5/16-inch Diameters and No Lubricant**

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	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 7. Torque Values for Standard Fasteners Larger Than 5/16-inch Diameters and No Lubricant**

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
3/8 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 8. Torque Values for Plated Fasteners with Maximum 5/16-inch Diameters and No Lubricant**

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	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 9. Torque Values for Plated Fasteners Larger Than 5/16-inch Diameters and No Lubricant**

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
3/8 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
3/4 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	–	–

**1.5.1.1.2 With a Threadlocker**

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**Table 10. Threadlocker by the Diameter of the Bolt (see below Note )**

LocTite Product	Dimension			
	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:** 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 11. 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 12. 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 13. 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 14. Torque Values if You Apply LocTite 272 (High-Temperature)**

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
1 x 8	350	475	901	1222	1272	1725	1114	1510
1 x 12	383	519	986	1337	1392	1887	–	–

**Table 14 Torque Values if You Apply LocTite 272 (High-Temperature) (cont'd.)**

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
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 15. Torque Values if You Apply LocTite 277**

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
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	–	–

### 1.5.1.2 Stainless Steel Fasteners

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**Table 16. Torque Values for Stainless Steel Fasteners 5/16-inch and Smaller**

Dimension	316 Stainless		18-8 Stainless		18-8 Stainless with Loctite 767	
	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 17. Torque Values for Stainless Steel Fasteners Larger Than 5/16-inch**

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

## 1.5.2 Preparation

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**WARNING: 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:** 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.

### 1.5.3 How to Apply a Threadlocker

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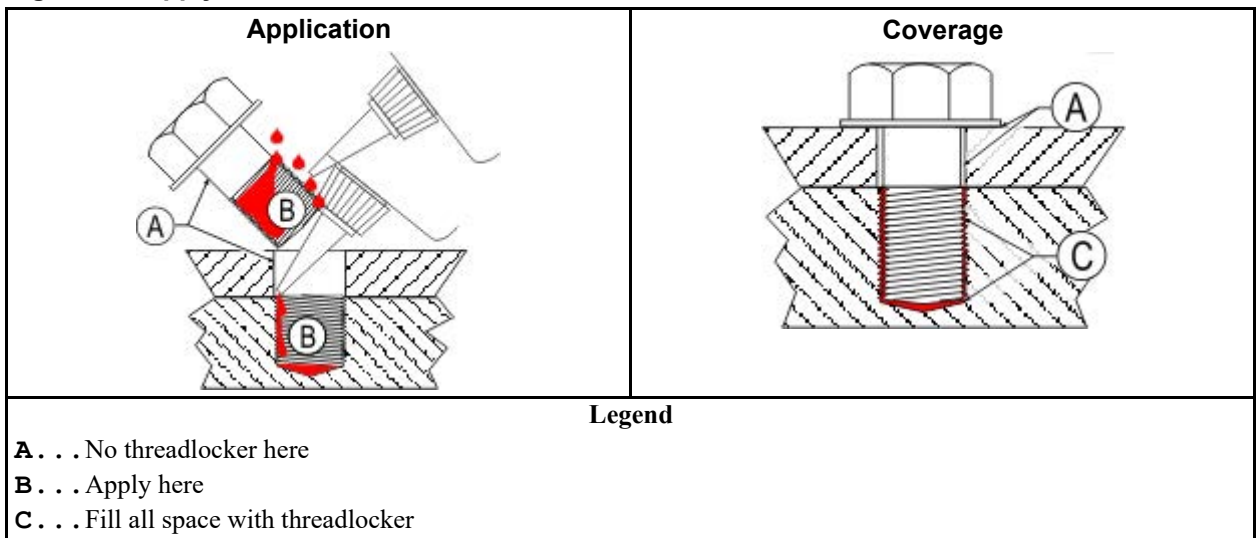


**CAUTION: Malfunction Hazard** — Heat, vibration, or mechanical shocks can let the fasteners loosen if you do not apply the threadlocker correctly. Loose fasteners can cause malfunctions of the equipment.

- ▶ 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 8. Apply Threadlocker in a Blind Hole**



#### 1.5.3.1 Blind Holes

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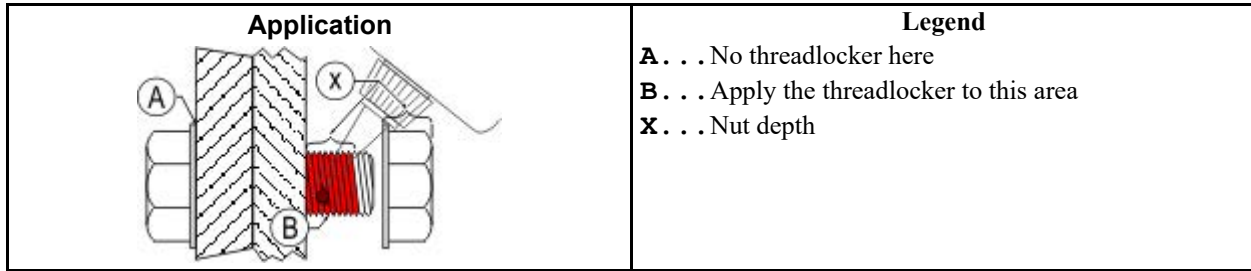
1. Apply the threadlocker down the threads to the bottom of the hole.
2. Apply the threadlocker to the bolt.
3. Tighten the bolt to the value shown in the correct table ([Table 10: Threadlocker by the Diameter of the Bolt \(see below Note \), page 27](#) to [Table 16: Torque Values for Stainless Steel Fasteners 5/16-inch and Smaller, page 29](#) ).

#### 1.5.3.2 Through Holes

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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 10: Threadlocker by the Diameter of the Bolt \(see below Note \), page 27](#) to [Table 16: Torque Values for Stainless Steel Fasteners 5/16-inch and Smaller, page 29](#) ).

**Figure 9. Apply Threadlocker in a Through Hole**



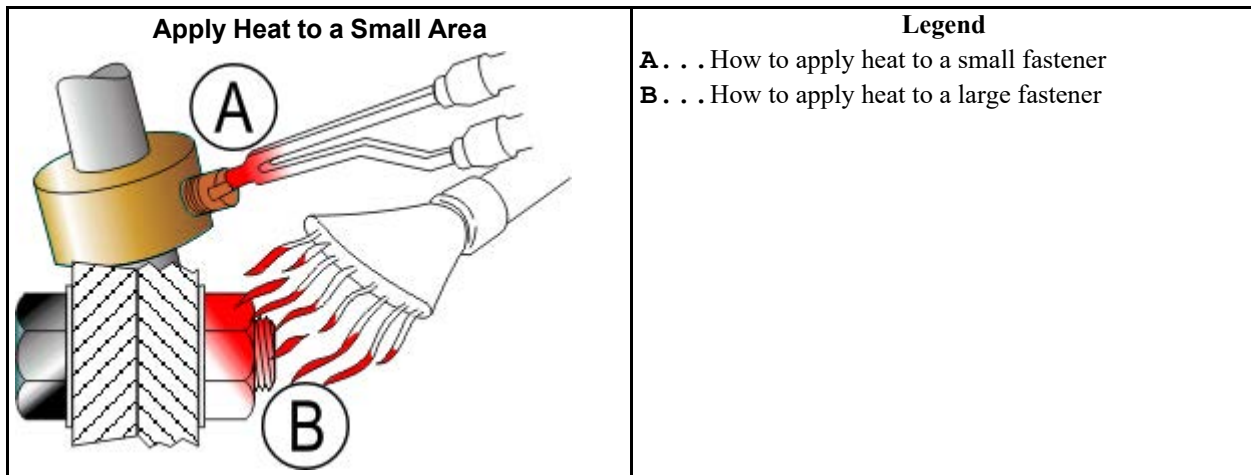
### 1.5.3.3 Disassembly

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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 10. Use heat for disassembly of fasteners with threadlocker.**



# 2 Important Installation Precautions

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## 2.1 External Fuse/Breaker, Wiring, and Disconnect Requirements

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An external fuse **or** circuit breaker and a disconnect switch must be provided in the facility for (and dedicated to) the machine. These may be in the same or separate, **permanently mounted** electric boxes. Electric power and ground connections will be made between the incoming power junction box on the machine and this external box (or one of the boxes).

### 2.1.1 Fuse or Circuit Breaker Size

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Refer to the “External Fuse and Wire Sizes...” document for your machine model. This document will be found in the machine's installation manual, available from the parts department. Choose the fuse or circuit breaker from the appropriate column of the table provided, as follows:

**If a fuse is used** — Match the fuse listed in the “Fuse” column for your machine's voltage. The specified fuse sizes are consistent with the USA National Electric Code (NEC), section 430-52, exception No. 2, Part B, which states: “The rating of a time-delay (dual-element) fuse shall be permitted to be increased, but shall in no case exceed 225 percent of the full-load current.”

**If a standard circuit breaker is used** — Match the amperage rating listed in the “Breaker” column for your machine's voltage.

**If an inverse time circuit breaker is used** — Match the characteristics (amperage rating) of the fuse listed in the “Fuse” column for your machine's voltage. When applied to an inverse time circuit breaker, the specified fuse sizes are consistent with the USA National Electric Code (NEC), section 430-52, exception No. 2, Part C, which states: “The rating of an inverse time circuit breaker shall be permitted to be increased, but shall in no case exceed 400 percent for full-load currents of 100 amperes or less.”

### 2.1.2 Wire Size

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Use wiring no smaller than that listed for your machine's voltage in the “Wire size...” column in the “External Fuse and Wire Sizes...” document. The table value applies to runs up to 50 feet (15 meters). Use the next larger size for runs 50 to 100 feet (15 to 30 meters). Use wire two sizes larger for runs greater than 100 feet (30 meters). If an inverse time circuit breaker is used and local codes require a larger wire size than that specified by Milnor, abide by the local code.



**NOTICE:** The specified wire size may appear too small for the fuse or circuit breaker shown. However, it is consistent with both the load imposed and with the USA National Electric Code.

### 2.1.3 Ground

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The ground wire and connections must ensure a reliable earth ground (zero potential). Use wiring of at least as large a gauge as that required for incoming power. Do not rely on conduit, machine anchorage, etc. Use the ground lug provided in the incoming power junction box on the machine.

### 2.1.4 Disconnect Switch for Lockout/Tagout

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The disconnect switch must permit personnel to disconnect and lockout/tagout electric power from the machine. In the USA, refer to OSHA standard 1910.147 “The control of hazardous energy (lockout/tagout)”. Refer to the USA National Electric Code for requirements on locating the switch. In other locales, abide by these standards if no other local codes apply.

### 2.1.5 Using GFCI (Ground Fault Circuit Interrupter) Device

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The AC Drive will most likely cause the GFCI protection device to trip. The reason the AC Drive will cause this tripping of the GFCI is the Common Mode Current or Common Mode Noise (CM Noise) that the VFD is producing.

Use a GFCI with a higher trip level.



**NOTE:** Choose a GFCI designed specifically for an AC drive. The operation time should be at least 0.1 s with sensitivity amperage of at least 200 mA per drive. The output waveform of the drive may cause an increase in leakage current. This may in turn cause the leakage breaker to malfunction. Increase the sensitivity amperage or lower the carrier frequency to correct the problem.

Use a type B GFCI according to IEC/EN 60755.

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## 2.2 Vital Information About the Forces Imparted to Supporting Structures by Laundering Machines

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This document replaces Milnor® document BIWUUI02.

All laundering machines impart static and dynamic forces to the supporting structures (foundation and soil, floor, and building). Static forces include the machine weight plus the weight of the goods and water. Dynamic forces are those imparted by various machine movements as explained in [Section 2.2.2 : Major Design Considerations, page 35](#). The dynamic forces imparted to supporting structures can cause vibration and noise outside of the laundry room if supporting structures are inadequate.



## 2.2.1 Disclaimer of Responsibility

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Pellerin Milnor Corporation accepts no responsibility for damage or loss as a result of:

- inadequate supporting structures
- interference with the use of the facility caused by machine operation

The facility owner/operator is solely responsible to ensure that:

- supporting structures are strong enough, with a reasonable safety factor, to safely support the operating machine or group of machines
- supporting structures are rigid enough to isolate vibrations and noise to the laundry room

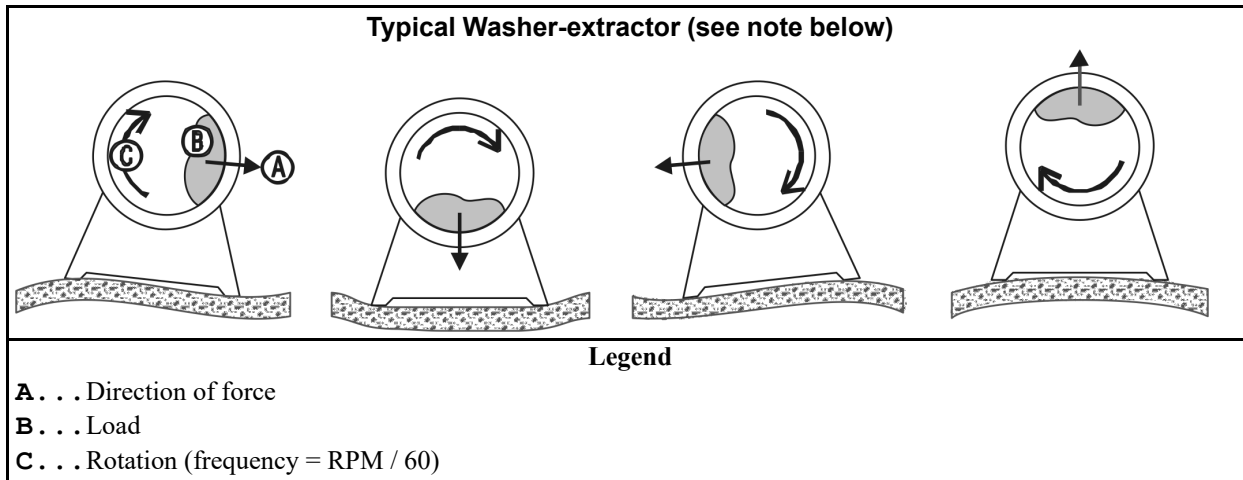
If the owner/operator does not possess the necessary expertise to ensure that the facility can safely and functionally accommodate the equipment, it will be necessary to consult the appropriate expert(s), such as a structural engineer, soils engineer, and/or architect.

## 2.2.2 Major Design Considerations

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- Vibration and/or noise can be felt or heard outside of the laundry room as a result of the following, if supporting structures are not sufficiently rigid:
  - Extraction (the spinning cylinder) in washer-extractors and centrifugal extractors, imparts sinusoidal forces to supporting structures as shown in [Figure 11: How Rotating Forces Act On the Foundation, page 36](#) . In rigid washer-extractors, these forces are up to 30 times that of suspended washer-extractors of the same capacity.
  - Extraction forces can be magnified many times if the rotation frequency matches the resonant frequency of supporting structures. To avoid this, supporting structures must have a natural resonant frequency many times greater than any possible rotation speed of the machine or combination of rotation speeds of all machines.
  - Each time goods fall in the rotating cylinder of a washer, washer-extractor, centrifugal extractor, or dryer, this can impart a force to the supporting structures.
  - The intermittent start and stop actions of large components inside the machine, particularly in a tilting washer-extractor, press-extractor, or centrifugal extractor, can impart intermittent forces to the supporting structures.
- The possibility of adverse consequences is significantly greater for upper floor installations than for installations at grade. Always consult a structural engineer for such an installation.
- The possibility of adverse consequences is significantly greater for installations at grade if subsidence causes a void between the foundation and the soil or if the soil itself does not provide adequate strength and rigidity. Some possible remedies are the addition of pilings or a deeper foundation, installed as to be monolithic with the existing foundation.
- Machine forces can cause damage to the machine or the floor without the correct anchorage.
- Applicable building codes, even when met, do not guarantee sufficient structural support and isolation of machine forces to the laundry room.

**Figure 11. How Rotating Forces Act On the Foundation**



**NOTE:** This figure applies to both rigid and suspended washer-extractors and to both at-grade and upper floor installations.

### 2.2.3 Primary Information Sources

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Milnor® provides, or can provide the following information of use to engineers and architects, for the given machine model:

- The machine dimensional drawing, found in the installation manual, specifies the machine’s required anchorage.
- The Milnor® Service Department can provide static and dynamic load values and frequency (extract speed) values on request.



**NOTICE:** All data is subject to change without notice and may have changed since last printed. It is the responsibility of the potential owner/operator to obtain written confirmation that any data furnished by Milnor® applies for the model number(s) and serial number(s) of the purchased machine(s).

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## 2.3 Prevent Damage from Chemical Supplies and Chemical Systems

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

Chemical supply companies usually:

- supply chemical pump systems that put the supplies in the machine,

- connect the chemical pump system to the machine,
- write wash formulas that control the chemical concentrations.

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

### 2.3.1 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.

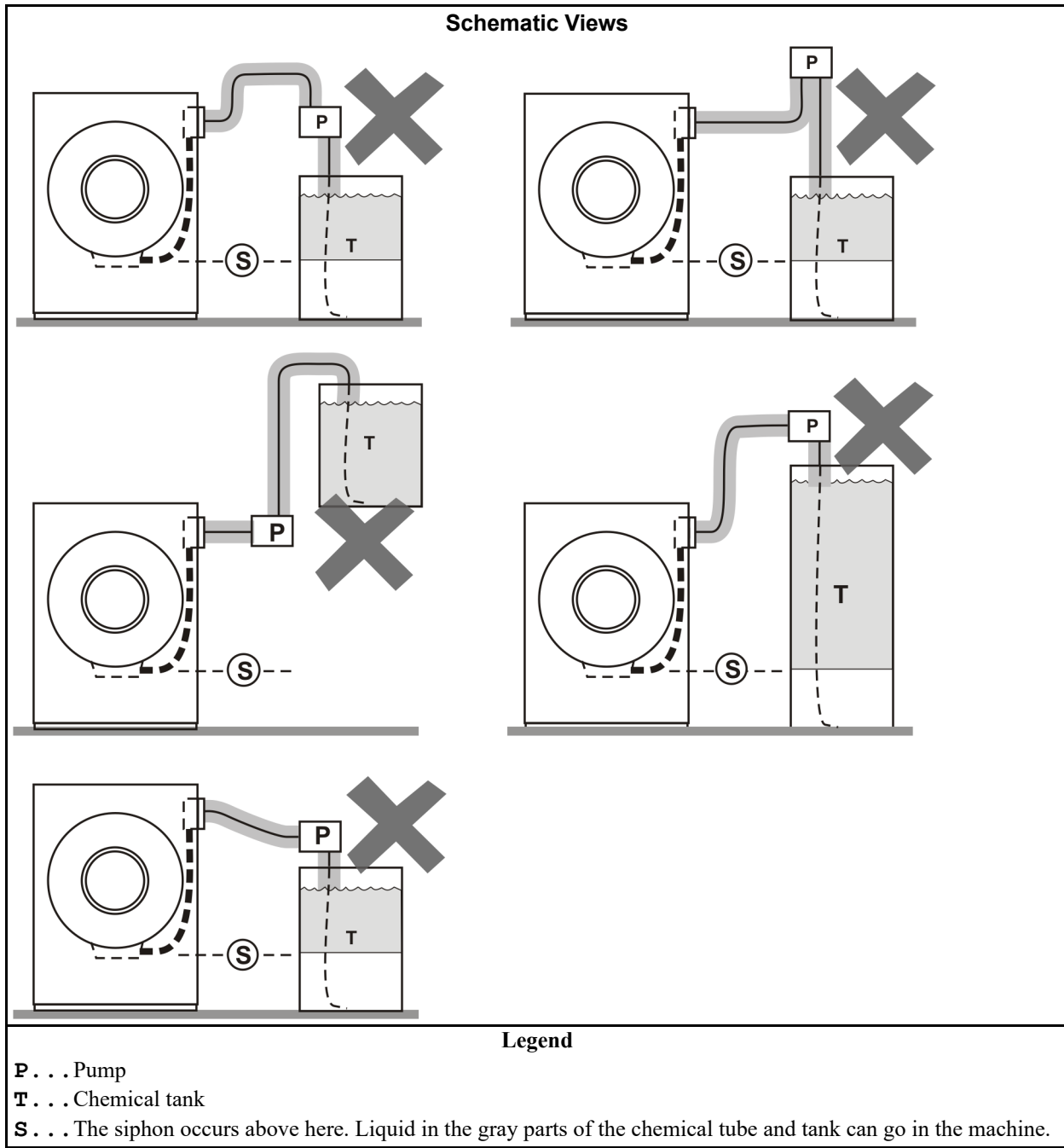
The book “Textile Laundering Technology” by Charles L. Riggs gives data about correct chemical supplies and formulas.

**Incorrect Configuration or Connection of Equipment** — Many chemical systems:

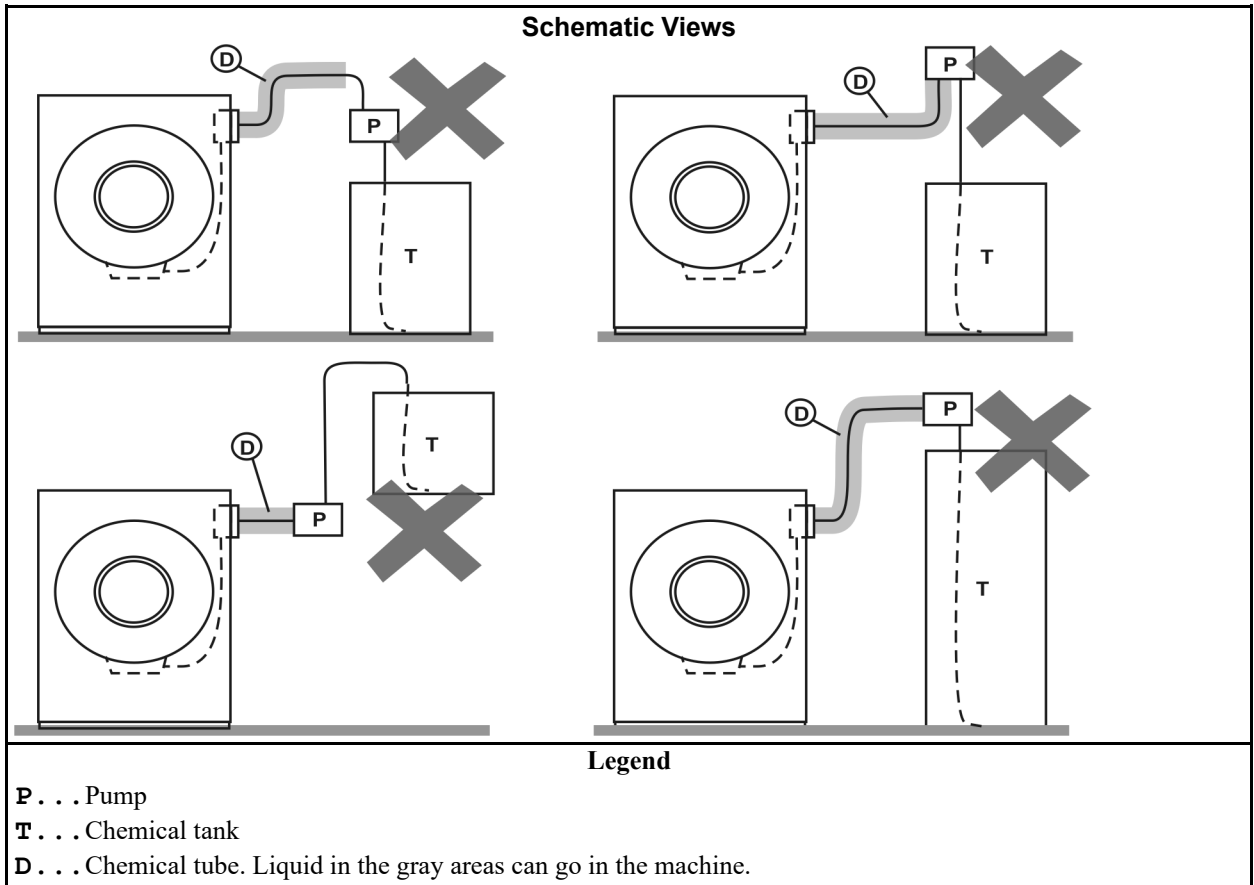
- do not prevent a vacuum in the chemical tube (for example, with a vacuum breaker) when the pump is off,
- do not prevent flow (for example, with a valve) where the chemical tube goes in the machine.

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 12, page 38](#)). Some can let chemical supplies go in the machine by gravity ([Figure 13, page 39](#)).

Figure 12. Incorrect Configurations That Let the Chemical Supply Go In the Machine by a Siphon



**Figure 13. Incorrect Configurations That Let the Chemical Supply Go In the Machine by Gravity**

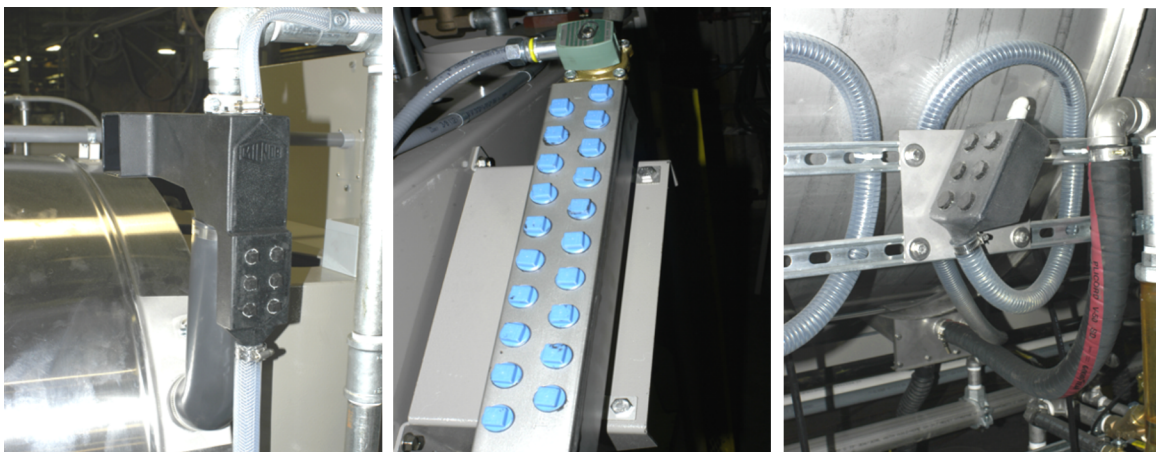


### 2.3.2 Equipment and Procedures That Can Prevent Damage

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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 14. Examples of Manifolds for Chemical Tubes. Your equipment can look different.**



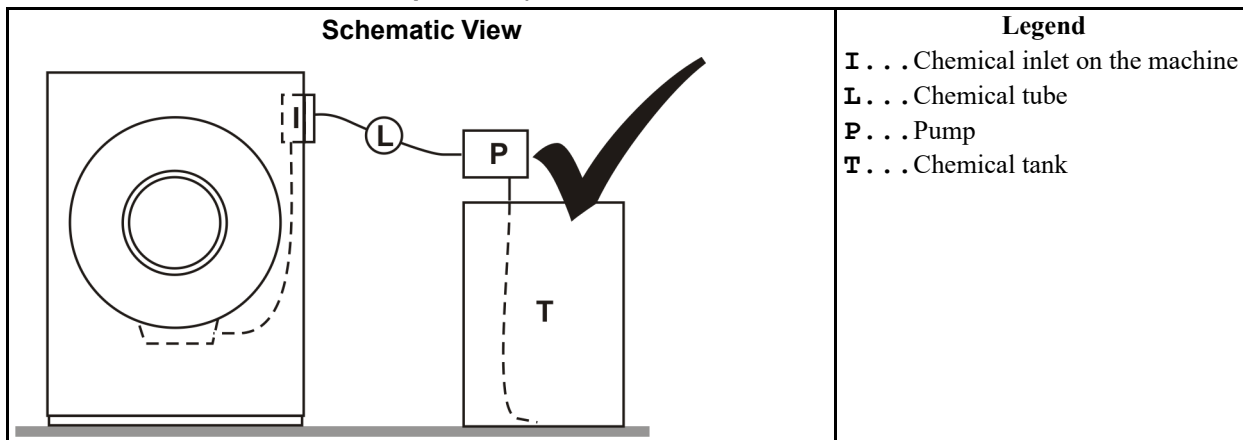
**Close the line.** — If the pump does not always close the line when it is off, use a shutoff valve to do this.

**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 15. 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.

# 3 Installation Procedures

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## 3.1 Handling a Washer-extractor from Delivery to Final Location

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This document supersedes documents BIIFLI01, BIRUUI01, MSIN0206AE, and MSIN0301AE as of October 1, 2019. It applies to all Milnor® washer-extractor models in production as of October 1, 2019.

**owner/management** the purchaser of the machine or their representative. Usually the consignee.

**transportation company** the person(s) or contractor(s) who transports the machine to the facility where it will be installed. The carrier.

**rigger** the person(s) or contractor(s) responsible to off-load the machine from the delivery vehicle, move it to its final location, and anchor it to the foundation. This can be the dealer but is often another company hired by the dealer.

**technician** a person trained in servicing Milnor® products and responsible to remove shipping restraints. This is usually a dealer employee.

### 3.1.1 Notices

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**Qualified Personnel Only** — Do not attempt to move, anchor, or remove restraints from the machine unless you are a rigger or technician, as defined above.

**Disclaimer** — Pellerin Milnor Corporation is not responsible for damage to the machine after it leaves the factory. Pellerin Milnor Corporation strongly recommends that the consignee (usually the owner/management) carefully inspect the machine in its protective wrapping before off-loading and inspect the uncovered machine after off-loading. If damage occurred in transit, ensure that the transportation company acknowledges the damage in writing. Submit a damage claim as soon as possible.

**Other Tasks** — This document addresses common tasks that the rigger and technician will perform. Other tasks, not explained here, can be needed. Information about other tasks is usually provided by the dealer, the Milnor® Applications Engineering department, or the Milnor® Service department. Examples are:

- Placement of the machine on a platform, such as for laundry cart clearance or to accommodate unusual drain conditions.
- Partial disassembly and reassembly, possible on some models, for movement through small spaces.

### 3.1.2 Facility Prerequisites

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Required Condition	Supporting Information
structural support	See document BNUUUI01 “Vital Information About the Forces Imparted to Supporting Structures by Laundering Machines” which can be found in the installation manual and also at <a href="https://milnor.sharefile.com/d-s8408ba617d244d98">https://milnor.sharefile.com/d-s8408ba617d244d98</a> .
protected storage	If the machine must be stored temporarily, it must be protected from dampness and excessive temperatures.
access to the final location	See the machine dimensional drawing, which can be found at the end of the installation manual, for overall dimensions. Partial disassembly is sometimes possible. Contact the Milnor® Service department.
clearances for machine movement and maintenance	See the dimensional drawing.
operational clearances	Adequate clearance around controls and for movement of laundry equipment such as carts. See the dimensional drawing.
available utilities	See the dimensional drawing and the external fuse and wire document.
available drain(s)	See the dimensional drawing. The drain valve(s) must have unrestricted access to a drain trough of sufficient capacity in the foundation.
laundry room ventilation	The machine will contribute heat and vapors to the laundry room, which must provide adequate ventilation.

### 3.1.3 Rigger Precautions

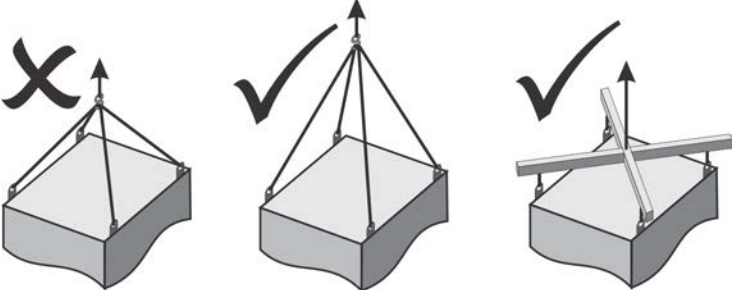
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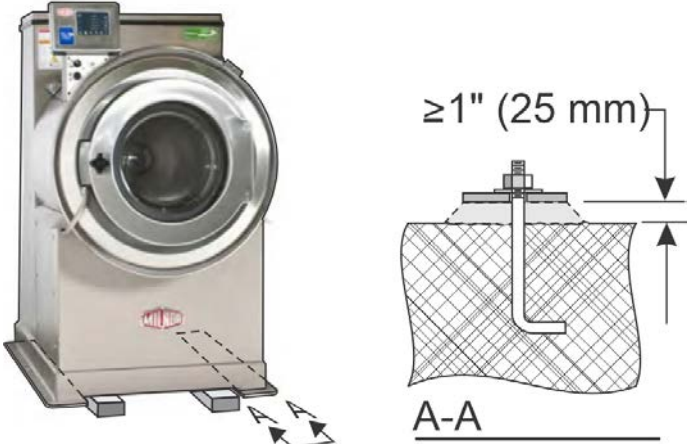


**CAUTION: Incorrect rigging** — can cause mishaps and costly machine damage.

- ▶ Know and accommodate the machine shipping weight.
- ▶ Use only lifting eyes for crane lifting.
- ▶ Use long cables or a spreader bar for crane lifting.
- ▶ Leave the machine skidded as long as possible.
- ▶ Protect fragile or sensitive machine components.
- ▶ Prepare the foundation and install anchor bolts correctly.
- ▶ Set the machine at the correct height and level.
- ▶ Apply machinery grout evenly so that support is distributed.
- ▶ Tighten anchors alternately so that the hold-down force is distributed.



Precaution	Explanation
Know and accommodate the machine shipping weight.	Use lifting and moving equipment appropriate for the machine shipping weight, as shown on the Bill of Lading. To obtain the shipping weight in advance, contact the Milnor® Transportation department.
Use only lifting eyes for crane lifting.	Machines designed for crane lifting are provided with lifting eyes either on the structural frame or on the shell, hidden behind cosmetic panels.
Use long cables or a spreader bar for crane lifting.	
Leave the machine skidded as long as possible.	If the machine is skidded, leave the machine on the skids until the machine is as close as possible to its final location. Use care to avoid contact between the fork lift forks and fragile machine components on the un-skidded machine.
Protect fragile or sensitive machine components.	After the machine is uncovered, carefully find and read all tags on the outside of the machine. White and manila paper tags are installation precautions. See the Installation Tag Guidelines in the installation manual for additional information.
Prepare the foundation and install anchor bolts correctly.	Anchor bolt sizes and locations are shown on the dimensional drawing in the back of the installation manual. However, Milnor® recommends to use the actual machine as a template to accurately locate where the anchor bolts are to be installed in the foundation. See the anchor bolt detail on the dimensional drawing. It is not permissible to omit anchor bolts.

Precaution	Explanation
<p>Set the machine at the correct height and level.</p>	<p>Use blocking to get the machine base level and the base pads a minimum of 1" (25 mm) above the floor. Example:</p> 
<p>Apply machinery grout evenly so that support is distributed.</p>	<p>Fill all voids between the foundation and each base pad with industrial strength, non-shrinking grout. Allow the grout to fully cure per the grout instructions.</p>
<p>Tighten anchors alternately so that the hold-down force is distributed.</p>	<p>Raise the machine slightly and remove the wood blocking. Install a flat washer and nut on each anchor bolt and tighten incrementally in an alternating pattern. After tightening, check each anchor at least twice.</p>

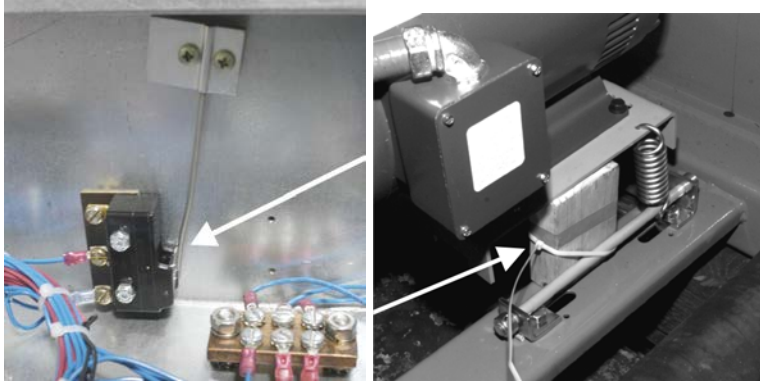
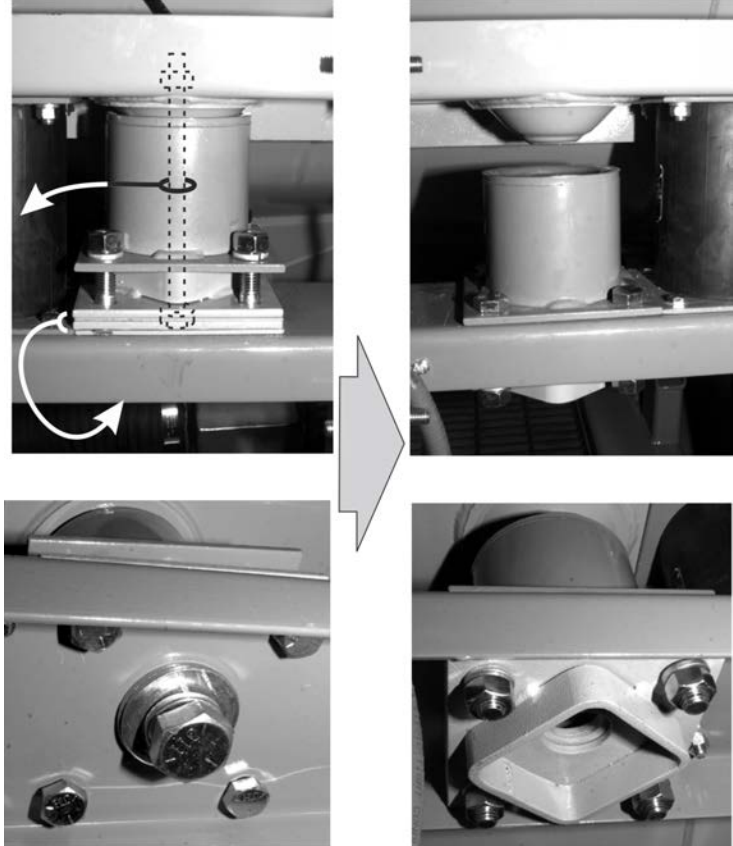
### 3.1.4 Technician Precautions

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**CAUTION: Overlooked or mishandled shipping restraints** — can cause costly machine damage.

- ▶ Leave all internal shipping restraints in place until the machine is anchored.
- ▶ Check for and remove shipping tie wraps.
- ▶ Check for and remove suspension hold-down hardware, if applicable.
- ▶ Check for and remove red shipping brackets, if applicable.
- ▶ See the “Cylinder inspection” warning and inspect the cylinder for smoothness.

Precaution	Explanation
<p>Leave all internal shipping restraints in place until the machine is anchored.</p>	<p>The machine can have one or more internal shipping restraints to help protect components from damage until the machine is anchored. These are located inside the housing or inside electric cabinets.</p>
<p>Check for and remove shipping tie wraps.</p>	<p>Examples (varies with machine model):</p> 
<p>Check for and remove suspension hold-down hardware, if applicable.</p>	<p>See also the service manual. Example:</p> 
<p>Check for and remove red shipping brackets, if applicable.</p>	<p>Shipping brackets are painted red. See the shipping brackets parts document in the service manual.</p>

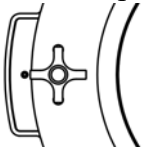

Precaution	Explanation
See the “Cylinder inspection” warning and inspect the cylinder for smoothness.	Inspect the cylinder and perforations for smoothness. <b>Pellerin Milnor Corporation cannot accept cylinder finish damage claims after the machine has been placed in service.</b> Machines are shipped with the shell door(s) closed. See the section below for information on how to open the shell door(s).



**WARNING: Cylinder inspection** — can trap you in the cylinder or seriously injure you.

- ▶ Never enter, or place body parts in the cylinder when power is supplied to the machine.
- ▶ If the machine is connected to power, lockout/tag-out power at the external disconnect switch.
- ▶ mechanically restrain the cylinder from turning.
- ▶ Have an assistant present in case of emergency.

**Can the Door(s) Be Opened Before Utilities are Connected?** — The shell doors on all Milnor® washer-extractors in current production, except for the side-loading, barrier models, have one of two types of door latch: electric-operated or air operated.

Door Type	How To Open
Electric-operated: 	The machine leaves the factory with the door latched closed but not locked. Turn the door knob to open the door even when the machine does not have power. If the door will not open, the door lock mechanism moved to the locked position due to shaking in transit. In this event, wait until the machine is connected to electric power and use the controls to open the door.
Air-operated: 	The machine leaves the factory with the door(s) closed and locked (with the door plunger extended). It is possible to temporarily replace the air line that retracts the door plunger with a source of compressed air to open the door when no other utilities are connected. Otherwise, wait until utilities are connected to the machine and use the controls to open the door.

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### 3.2 Connection Precautions for Washer-extractors

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This document supersedes documents BNWBUI01, BNWBUI02, BNWBUI03, BNWBUI04, BIRQVI01, BIMUUI02, and BIIFUI01. It applies to all Milnor® washer-extractor models in production as of October 1, 2019.

**plumber** the person(s) or contractor licensed or otherwise accepted by the local jurisdiction to perform the plumbing work described herein, and qualified to do so.

**electrician** the person(s) or contractor licensed or otherwise accepted by the local jurisdiction to perform the electrical work described herein, and qualified to do so.

**chemical supplier** the person(s) or contractor with detailed knowledge of 1) the machine controller configuration and operation, and 2) the pumped chemical delivery system, if such a system is to be used.

### 3.2.1 Notices

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**Qualified Personnel Only** — Do not attempt to connect utilities to the machine unless you are a plumber, electrician, or chemical supplier, as defined above.

**Machine Must Be Anchored** — Utility connections are to be made only after the machine has been anchored. See BNWUUI03 “Handling a Washer-extractor from Delivery to Final Location.”

**Other Tasks** — This document and the documents it references address common tasks that the plumber, electrician, and chemical supplier will perform. Other tasks, not explained here, can be needed. Information about these tasks is usually provided by the dealer, the Milnor® Applications Engineering department, or the Milnor® Service department. An example is electrical interfacing with a remote Mildata® data collection system.

### 3.2.2 Utility Requirements and Related Information

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Type of Information	Value or Where to Find
equipment list showing model and options purchased	For the dealer, see the order acknowledgement.
plumbing connection fitting types, sizes, and locations	See the standard and options dimensional drawings for your model located at the back of the installation manual.
water pressure range	10 – 75 psi (69 – 531 kPa) required
Cv value	See the specification sheet for your model available online at: <a href="https://www.milnor.com/specification-sheets/">https://www.milnor.com/specification-sheets/</a> . The Cv value assists the piping designer in determining flow rates and pressures.
steam pressure range	30 – 115 psi (207 – 793 kPa) required, if applicable
compressed air pressure range	85 – 110 psi (586 – 758 kPa) required, if applicable
specified voltage	See the machine nameplate or the order acknowledgement.

Type of Information	Value or Where to Find
available voltages for this model	See the specification sheet for your model available online at: <a href="https://www.milnor.com/specification-sheets/">https://www.milnor.com/specification-sheets/</a> .
multi-machine conditions that can interrupt utility service to a given machine	See dealer publication B22SL94011 “Sizing and Planning a Laundry” found online at: <a href="https://www.milnor.com/wp-content/uploads/2016/01/Sizing-and-Planning-a-Laundry_18323.pdf">https://www.milnor.com/wp-content/uploads/2016/01/Sizing-and-Planning-a-Laundry_18323.pdf</a>
approved plumbing materials	Plumbing materials must comply with applicable codes. The Milnor® factory makes no recommendations for inlet connection materials due to the many variables such as water conditions, materials cost and availability, and ongoing advances in materials technology. When drains must be piped, as apposed to a simple air drop to a sump, rubber hose and PVC are often used.

### 3.2.3 Plumber Precautions

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**CAUTION: Machine damage and code violations** — can occur as a result of incorrect plumbing.

- ▶ Confirm the reliability of the piped utilities.
- ▶ Maintain connection point diameter.
- ▶ Flush fluid lines.
- ▶ Do not twist valve bodies.
- ▶ Never interchange water valve electrical connections.
- ▶ Install any vacuum breaker(s) provided or required.
- ▶ Install any water strainer(s) provided or required.
- ▶ Install a union and a shutoff valve at each hard piped connection.
- ▶ Connect a dry supply injector flush inlet to hot water and regulate it.

Precaution	Explanation
Confirm the reliability of the piped utilities.	Water and any other piped fluids (steam, compressed air) needed by the machine must be within the specified pressure range and not prone to frequent interruptions when the machine operates. See <a href="#">Section 3.2.2 : Utility Requirements and Related Information, page 47</a> .
Maintain connection point diameter.	The piping between the utility tap and the fitting on the machine must be as large or larger than the fitting. Drain piping or tubing, if any, must provide an unrestricted flow to the sump.
Flush fluid lines.	Foreign material such as debris in air lines, trapped air in water lines, and condensate in steam lines can damage machine components.
Do not twist valve bodies.	Hold a wrench on the valve side of a pipe connection to prevent the valve from twisting when you tighten the connection.

Precaution	Explanation
Never interchange water valve electrical connections.	On machines with air-operated water valves, it is permissible to exchange the pneumatic control lines, if the cold and hot connections were accidentally plumbed in reverse.
Install any vacuum breaker(s) provided or required.	If vacuum (siphon) breaker(s) are provided for fresh water connection (s), but not already installed, install them as shown on the options dimensional drawing. If vacuum breakers are required by code, but not provided, obtain and install the required hardware.
Install any water strainers provided or required.	If water strainer(s) are provided for fresh water connections, install them between the machine and incoming water. For machines with garden hose type water inlets, use 40-mesh strainers.
Install a union and a shutoff valve at each hard-piped connection.	Obtain and install the necessary hardware to permit hard-piped connections to be shut off and disconnected at the machine for maintenance. For the valve, use a ball valve, not, for example, a globe valve.
Connect a dry supply injector flush inlet to hot water and regulate it.	If the machine has a dry supply injector with an external flush water connection and hot water is available, provide hot water to this inlet. The machine will be supplied with a pressure regulator. Install this hardware at the flush water connection and confirm that the regulator is set to 28 psi (193 kPa). Steam in the hot water line will cause the supply injector to malfunction.

### 3.2.4 Electrician Precautions

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**CAUTION: Machine damage, machine malfunctions, and code violations** — can occur as a result of incorrect electrical connections.

- ▶ Know the machine electrical specifications.
- ▶ Comply with the published external fuse and wire requirements.
- ▶ Confirm the reliability of the electric service.
- ▶ Confirm the machine is phased in correctly.
- ▶ Confirm the correct line voltage setting on a selectable 240/208 volt machine.
- ▶ Attach the stinger leg, if any, only to L3.



Precaution	Explanation
Know the machine electrical specifications.	Refer to the nameplate affixed to the machine.
Comply with the published external fuse and wire requirements.	These requirements are given in document BGUUUF01 “External Fuse/Breaker, Wiring, and Disconnect Requirements” and the external fuse and wire document for your machine. These documents are found at the back of the installation manual. BGUUUF01 is also available at: <a href="https://milnor.sharefile.com/d-s5e1bad2885a447e8">https://milnor.sharefile.com/d-s5e1bad2885a447e8</a>
Confirm the reliability of the electric service.	Voltage fluctuations of more than 10% above or below the specified voltage can damage electrical components, especially motors. The Milnor® factory strongly recommends that unreliable electric service is improved before the machine is put in use.
Confirm the machine is phased in correctly.	An installation tag on the machine shows the correct cylinder rotation at distribution (drain) or extract speed. If the cylinder turns in the wrong direction, reverse the wires connected to L1 and L2. Never move L3. Individual motors were phased in at the factory. Never reconnect individual motors or motor control devices.
Confirm the correct line voltage setting on a selectable 240/208 volt machine.	This precaution applies only if the nameplate voltage says 208/240V. It does not, for example, apply if the nameplate says 208V <b>or</b> 240V. The switch is near the incoming power transformer and must be in the position that matches the service voltage: 240 VAC or 208 VAC.
Attach the stinger leg, if any, only to terminal L3.	Never attach a stinger leg to terminal L1 or terminal L2.

### 3.2.5 Chemical Supplier Precautions

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**Injury and severe machine damage** can occur as a result of incorrect chemical system installation.

- ▶ Understand and comply with the published connection precautions.
- ▶ Understand the machine controller.

Precaution	Explanation
Understand and comply with the published connection precautions.	The connection precautions are given in document BIWUUI03 “Prevent Damage from Chemical Supplies and Chemical Systems” in the installation manual. BIWUUI03 is also available at: <a href="https://milnor.sharefile.com/d-s79f12e8f11f42a9b">https://milnor.sharefile.com/d-s79f12e8f11f42a9b</a>
Understand the machine controller.	The machine controller is explained in detail in the reference manual for your machine, which is available from the Milnor® Parts department.



# 4 Drive Assemblies

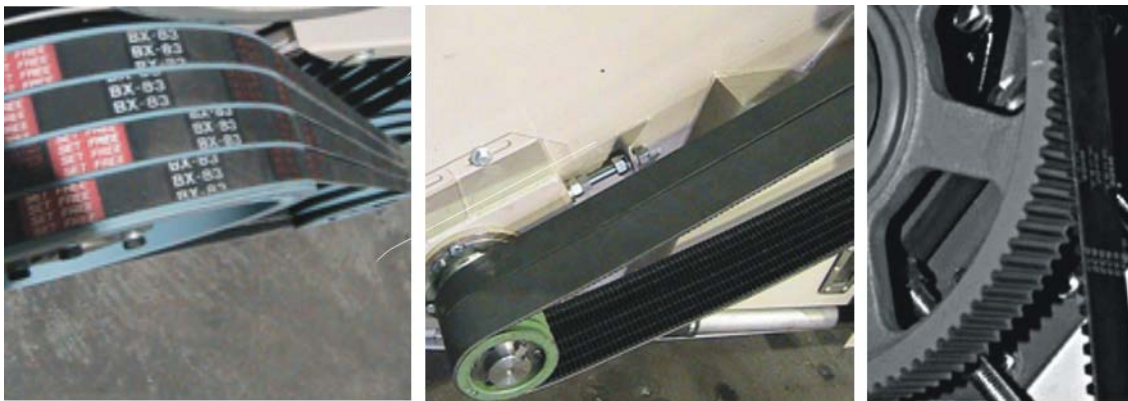
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## 4.1 Drive Pulley and Belt Maintenance

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Figure 16. Examples of drives this instruction applies to: one or more V-belts, attached V-belts and tooth belts



**NOTICE:** "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.



**WARNING: Risk of Injury or death** — A machine in operation without safety guards is dangerous. Drive belts can pull in your body or clothing.

- ▶ Remove power from the machine when you do work on the mechanisms.
- ▶ Stay out of the machine frame when you do a test on the machine.
- ▶ Replace all covers before you put the machine into operation.



**TIP:** Read these documents from the Gates Corporation ([www.gates.com](http://www.gates.com)) to know more about pulley and belt maintenance: "Belt Drive Preventive Maintenance & Safety Manual" and "Preserve your investment - Check Engine Belts Often."

### 4.1.1 Pulley Requirements

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- Keep pulleys free of dirt, oil and other contamination.
- Replace pulleys with groove damage.
- Align pulleys and shafts.

- Keep run-out in tolerance.

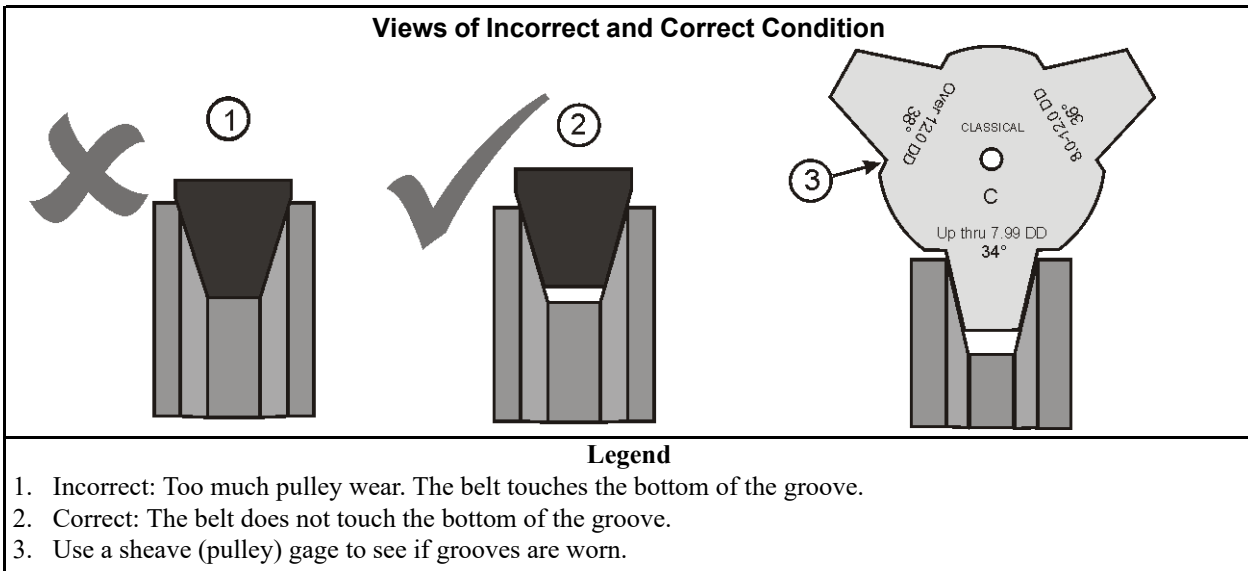
### 4.1.1.1 Condition of Grooves on Pulleys

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Replace a pulley if:

- the grooves have burrs, cracks, or worn areas that can cause damage to the belts.
- the belts touch the bottom of the groove at any point (Figure 17, page 52).

**Figure 17. Pulley Groove Condition**



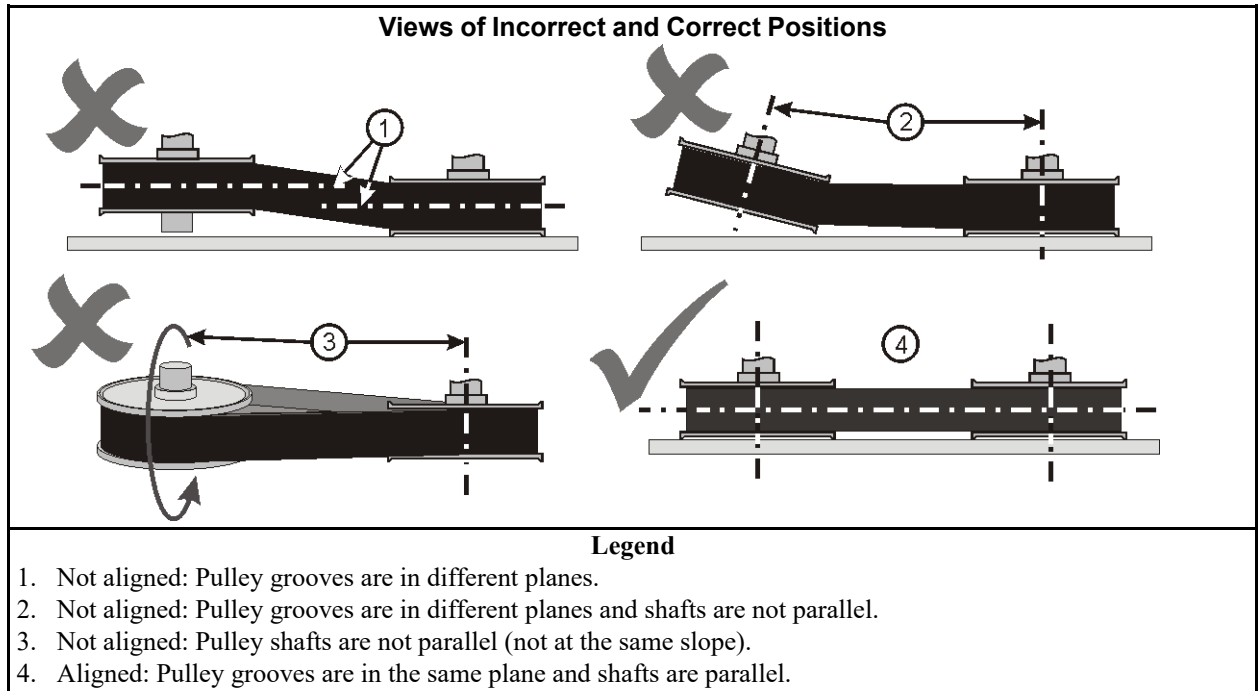
### 4.1.1.2 Pulley and Shaft Position

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**Align** To adjust parts until they are in a correct position to other parts.

- Always align components when you replace a motor, bearing housing, pulley, or belt.
- The belts must not twist or make unusual noises or show vibration.

Figure 18. Pulley and Shaft Position



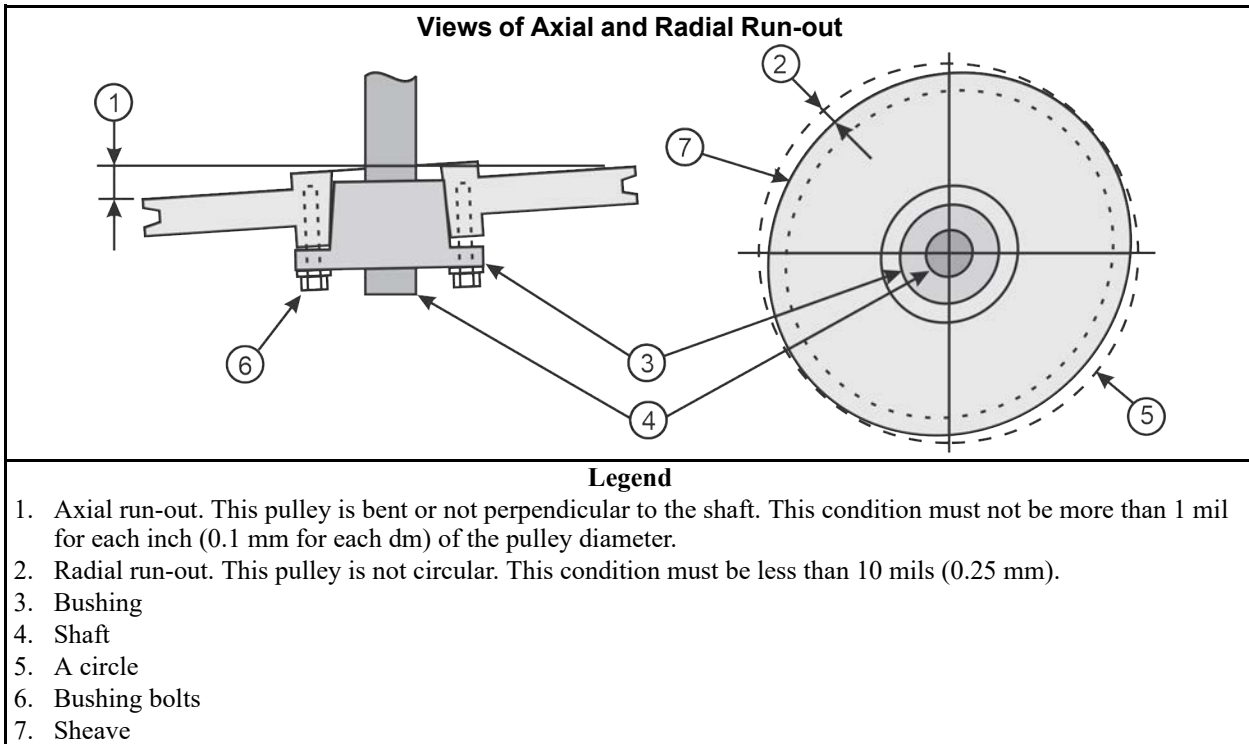
#### 4.1.1.3 Keep Run-Out in Tolerance

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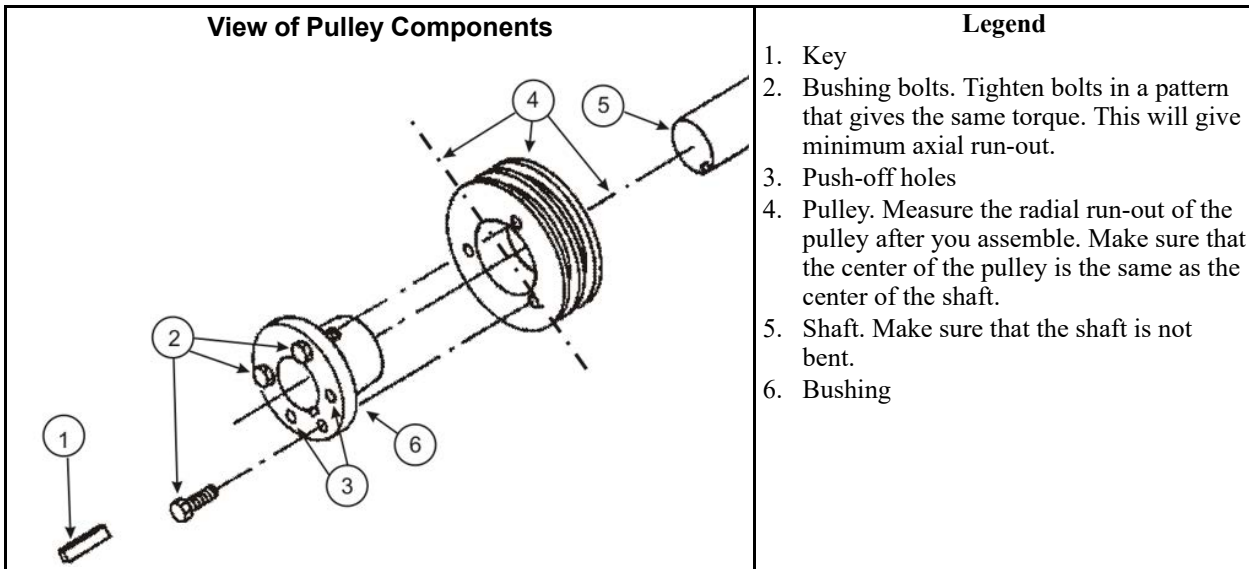
**Axial run-out** The difference between the minimum and maximum distance between the face of a pulley and a plane perpendicular to the pulley shaft (Figure 19, page 54, item 1). Incorrect installation or damage can cause a pulley to be not at a 90 degree angle to the shaft.

**Radial run-out** The difference between the minimum and maximum diameter in one turn (Figure 19, page 54, item 2). If a force causes damage to a pulley, it can bend. It will not have a circular shape.

**Figure 19. Run-out**



**Figure 20. Typical Pulley Assembly**



### 4.1.2 Belt Requirements

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- Replace damaged belts.
- The pulleys must stay aligned when you adjust the belt tension.
- Do not use belts made from cut belts.

- For a drive with more than one belt:
  - Replace all of the belts together.
  - Do not mix new and used belts.
  - Do not mix belts from more than one manufacturer.



**CAUTION: Risk of damage** — A screwdriver or metal tool can cause damage to the belt.

- ▶ Do not push the belt on with a tool.

### 4.1.2.1 Condition of Belts

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**Slippage** when the pulley turns more quickly than the belt can move

Slippage occurs if belts are not aligned (see [Section 4.1.1.2](#), page 52) or by incorrect tension explained in [Section 4.1.1.2](#), page 52. Slippage can cause belts to become too hot. Belts must not have a temperature more than than 140F (60° C).

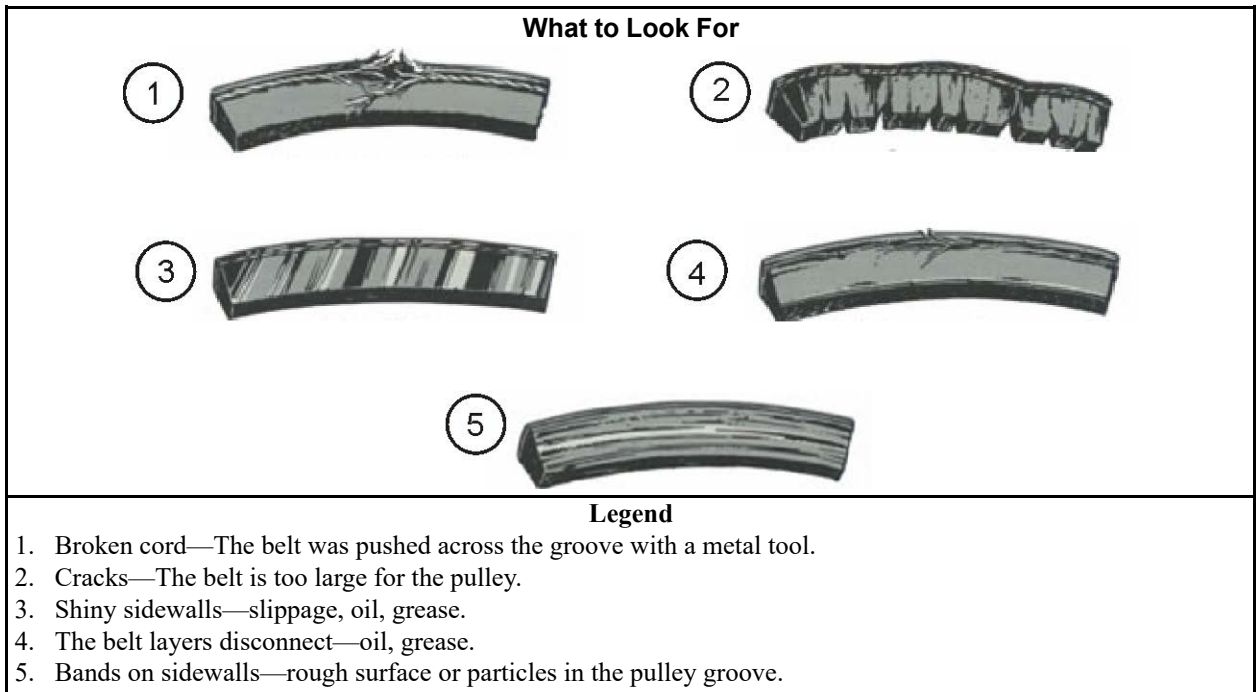


**TIP:** The belt storage area must be cool and dry with no sun light.



**TIP:** New and used belts can look the same. These belts will have different strength properties and a small difference in length.

**Figure 21. Types of Belt Damage**



### 4.1.2.2 Tension of Belts

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This data does not apply to belts where a spring holds the correct belt tension. Manual tension adjustment is not necessary for this type of drive.

**The correct belt tension is the lowest tension that prevents belt slippage with a full load condition.** If the belt is too tight, this can cause damage to the belt, the pulleys, bearings, and other drive components. If the belt is too loose, this can cause belt slippage. Incorrect belt tension or belt slippage can cause components to make an unusual noise.

When you install a new belt, use these rules to get the correct belt tension:

- Set the tension of the belt when you replace a motor, bearing housing, pulley, or belt.
- Replace all belts on a pair of pulleys when you replace one of them.
- After adjustment, operate the machine in all of its standard conditions to make sure that the belt operates correctly. For example, operate a washer-extractor in its full speed range with a full load of wet goods.
- Adjust the tension when you first install a belt. Do the adjustment again after 24 and 48 hours of operation. All belts will become longer after a short time. A V-belt will move down in the grooves of the pulleys. These conditions will cause the tension to decrease.

When you do scheduled maintenance, examine the belts for correct tension. With operation, belts become longer.

### 4.1.3 The pulleys must stay aligned when you adjust the belt tension

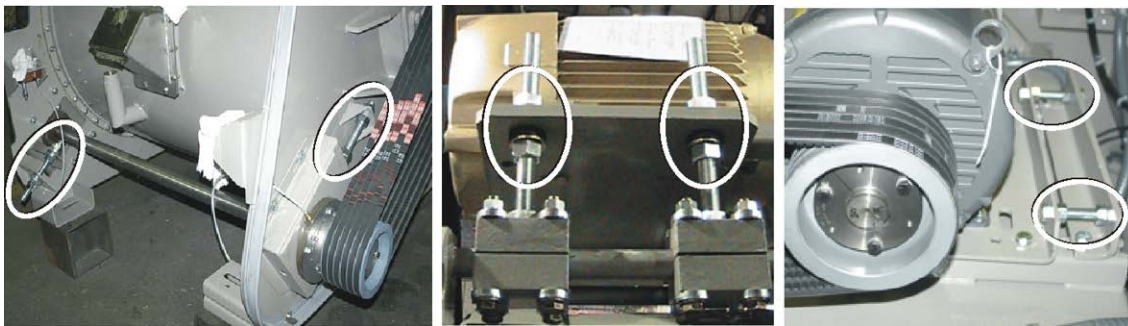
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Some tension mechanisms do not have an effect on pulley and shaft requirements. Pulleys will stay aligned when you adjust them. [Figure 22, page 57](#) is an example of these. Where tension mechanisms are a pair of threaded rods, you must adjust the nut, on each rod carefully. If not, the pulleys will not stay aligned. Examples of this type are shown in [Figure 23, page 57](#).

**Figure 22. A Tension Mechanism that will not Change the Angle of the Pulleys**



**Figure 23. Some Pairs of Tension Mechanisms that Can Change the Angle of the Pulleys**



## 4.1.4 How to Do Maintenance on Pulleys and Belts

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**Table 18. Typical Tools for Pulley and Belt Maintenance**

Tool	Function	Related Data
Torque wrench	Make the bushing bolts the same torque to get the minimum axial run-out.	Figure 20, page 54, item 2
Laser, straight edge, or string	Align pulleys	Tools are listed in order of preference. Section 4.1.1.2 , page 52 and Figure 24, page 59
Bubble level	Align shafts	Section 4.1.1.2 , page 52 and Figure 25, page 60
Dial indicator	Measure run-out	Section 4.1.1.3 , page 53 and Figure 26, page 60



**Table 18 Typical Tools for Pulley and Belt Maintenance (cont'd.)**

Tool	Function	Related Data
Sheave (pulley) gage	Examine pulley wear	<a href="#">Figure 17, page 52.</a>
Infrared thermometer	Examine belt temperature	<a href="#">Section 4.1.2.1 , page 55.</a>

#### 4.1.4.1 Typical Steps to Replace Pulleys and Belts

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**Preparation** Remove power from the machine.

**Belt removal** Use the belt tension mechanism to decrease the distance between the pulleys until you have sufficient clearance. [Figure 22, page 57](#) and [Figure 23, page 57](#) show typical belt tension mechanisms.

**Pulley removal** On the typical type of pulley and bushing shown in [Figure 20, page 54](#), use the push-off holes to remove the pulley easily. On special types of pulleys (example: large drive pulley and cone), look at the parts document in the maintenance manual for more data. Some pulleys are too heavy for only one person to hold.

**Pulley installation** [Figure 20, page 54](#) shows the typical pulley and bushing components. Make sure that you keep run-out tolerances when you assemble and tighten the components.

**Belt installation** Decrease the distance between the pulleys to put the belt on easily. Assemble the components carefully. Make sure that the components are aligned. Adjust the belt tension so the belt is tight.

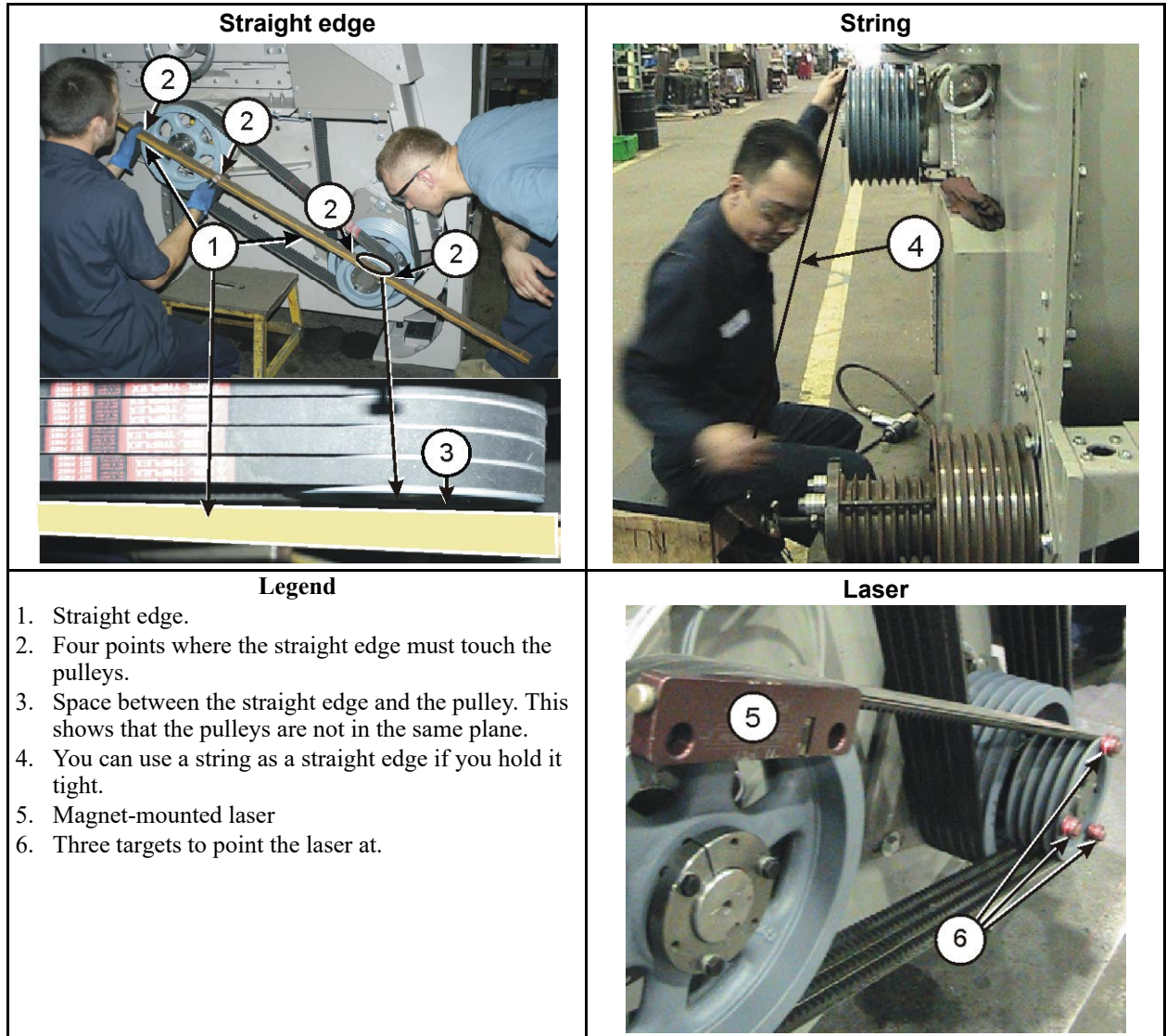
**Test** Before you connect power again, make sure that you remove all tools. Operate the machine with a full load. If the belts slip, increase belt tension with the machine shut down and power removed. Then test again. Make sure that the machine is safe before you put it into regular operation.



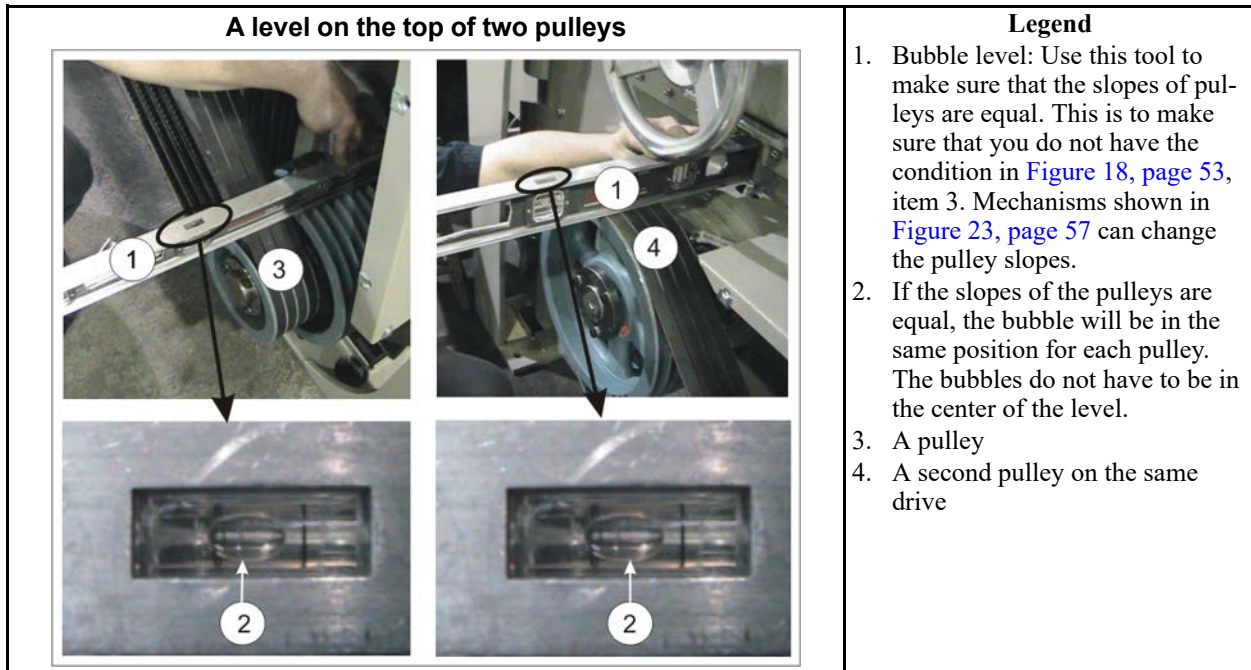
### 4.1.4.2 Examples of Procedures Used at the Milnor® Factory to Align Pulleys

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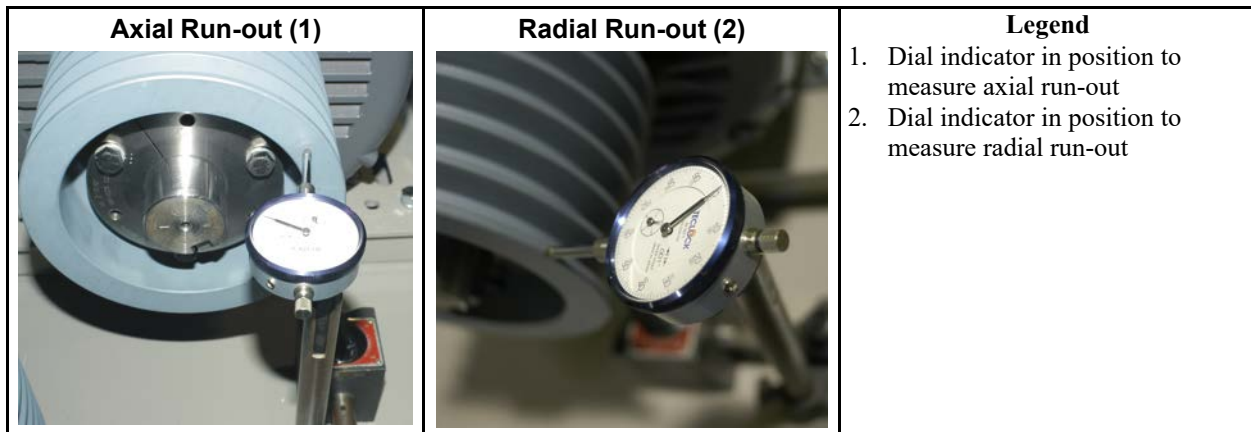
**Figure 24.** Use a straight edge, a string, or a laser to make sure that all pulleys are in the same plane.



**Figure 25. Use a level to make sure that the pulleys are at the same slope.**



**Figure 26. Dial indicator used to find the axial and radial run-out of a pulley.**



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# Drive Components Identification

2 Sheets

Figure 27. General View





# Drive Components Identification

2 Sheets

Figure 28. Detailed Views

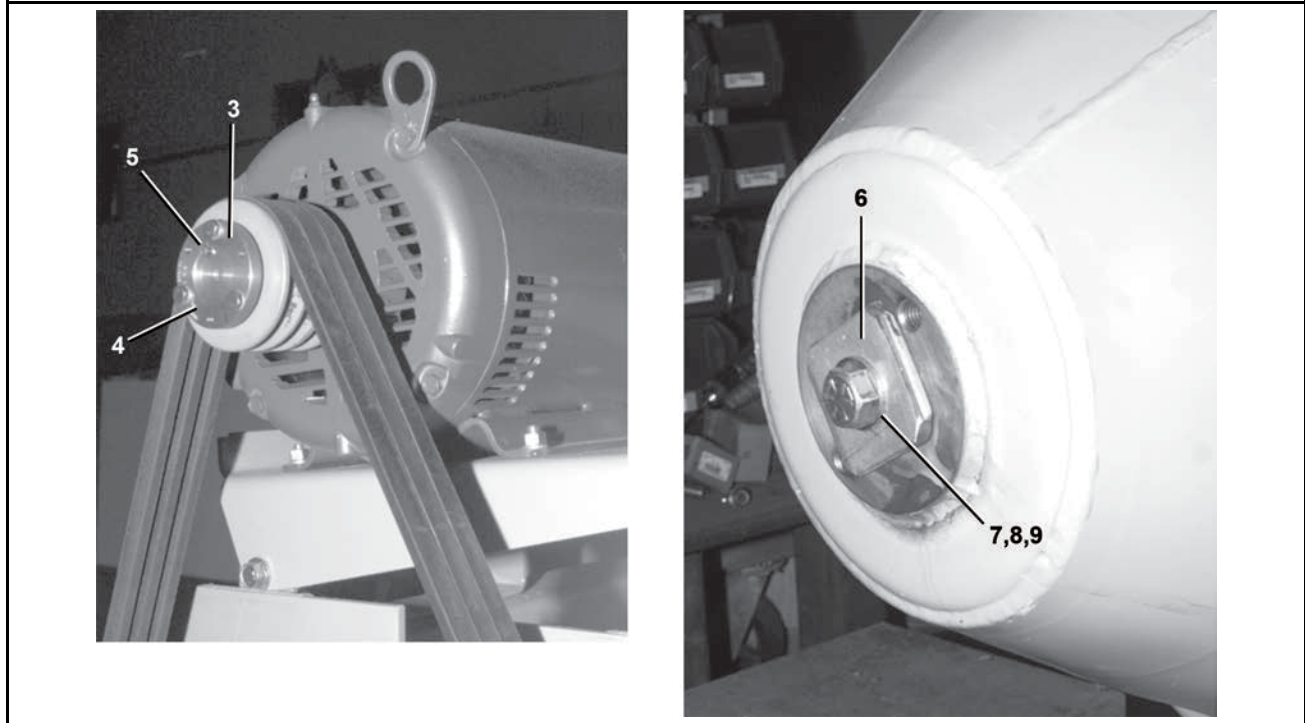


Table 19. Parts List—Drive Components Identification

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
Reference Assemblies				
	A	D17 00550	DRIVECHART 3626X 50/60CYL	36026X8J,X8R
	B	D17 00650	DRIVECHART 4226/32X 50/60CYC	42026X7J,X7W,X7R 42032X7J,X7W,X7R
Components				
A	1	56VB122XM3	3/BX122 VBELT MATSET=3;EA=1SET	
B	1	56VB131XB3	GOLD RIBBON COG3STRANDBX131	
all	2	X2 21931	MACH=PULLEY, FAB, 3630F	
all	3	56034B3SH	VPUL 3B3.4/A3.0 (SH) TYPE QD	
A	4	56Q1GSH	1+3/8" BUSH VPUL QD TYPE SH	
B	4	56Q1MSH	1+5/8" BUSH VPUL QD TYPE SH	
all	5	15E230	STRMACHKEY 3/8SQX2+1/2 TOL.+0	
all	6	02 14359A	SHAFT RETNR SPACER 2+3/4" SQ	
all	7	15U321H	FLTWASH 3/4 HARD ASTM F436	

## Drive Components Identification

2 Sheets

**Table 19 Parts List—Drive Components Identification (cont'd.)**

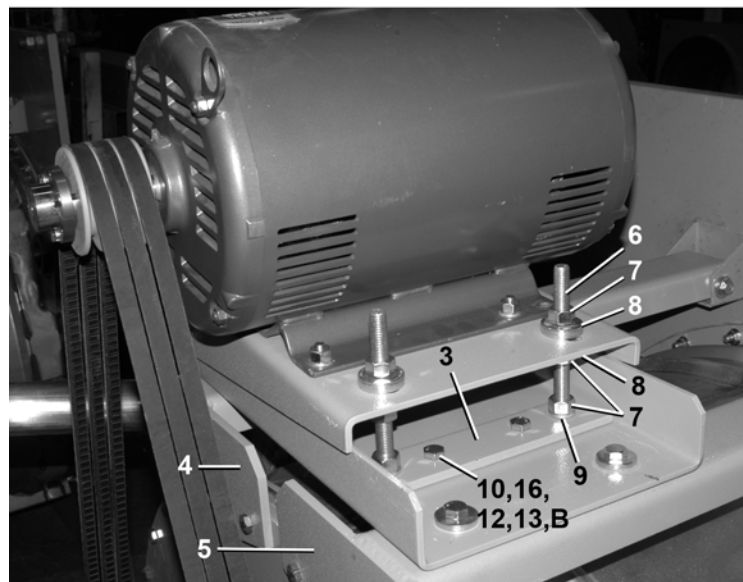
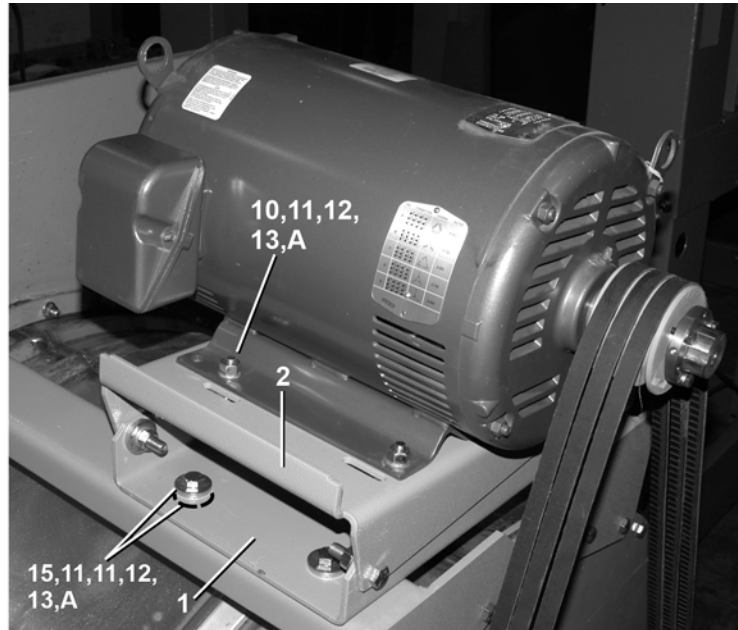
Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
all	8	15K232A	HEXCAPSCR 3/4-10X2 GR8 ZINC	
all	9	20C008C	THDLKSEAL LCT24241 RMUBL250CC	

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Drive Motor Installation

3 Sheets

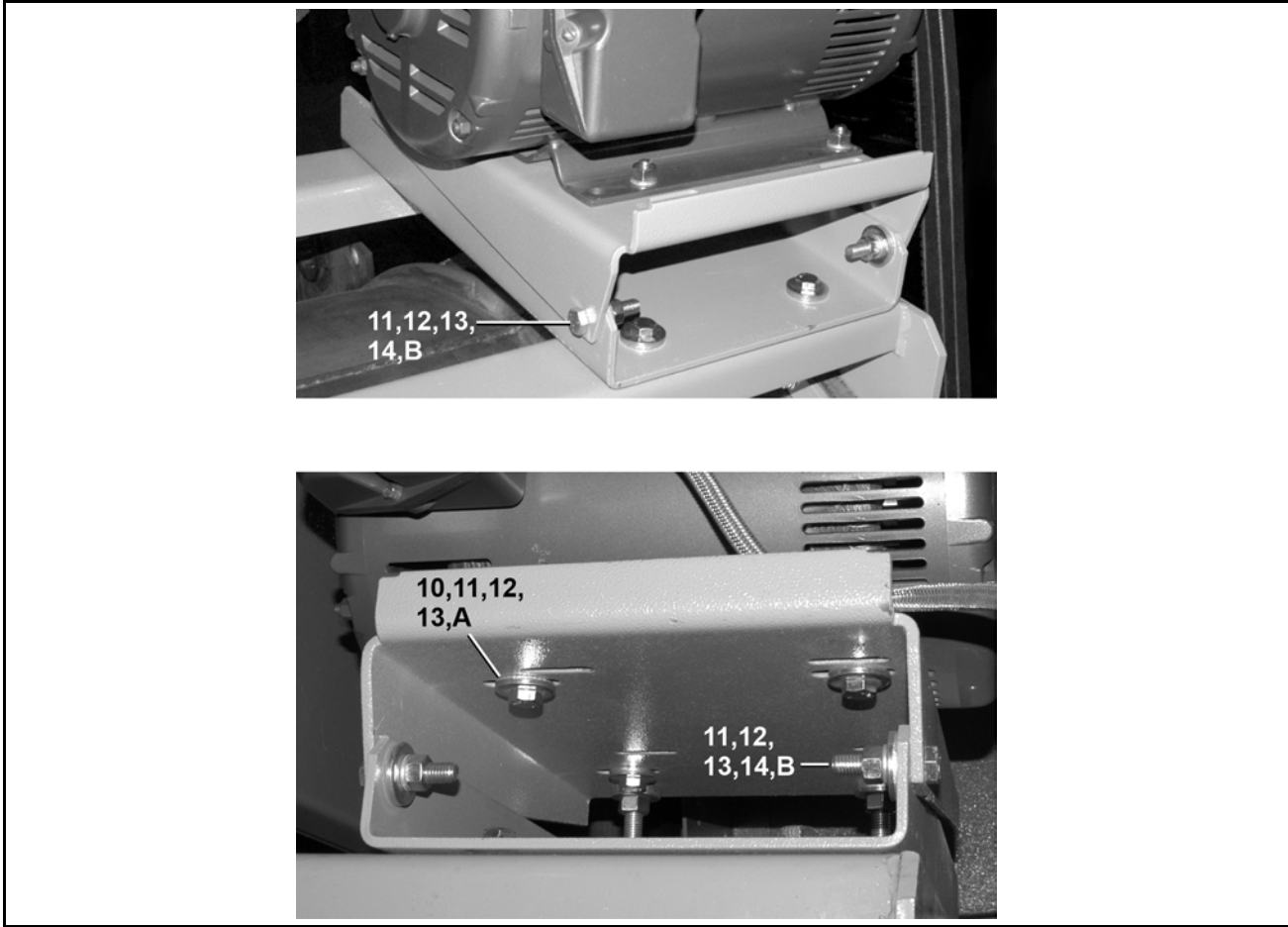


Legend

- A. . . 4 instances
- B. . . 2 instances

**Drive Motor Installation**

3 Sheets



**Legend**

**A** . . . 4 instances

**B** . . . 2 instances

**Table 20. 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
Reference Assemblies				
	A	ADB3626X7	ASSY=DRIVEBASE 3626X7	3626X8J,X8W,X8R
	B	ADB4226X	ASSY=DRIVEBASE 4226X, 4232X	4226X7J,X7W,X7R 4232X7J,X7W,X7R
Components				
all	1	02 21061B	BRKT=MOTOR MOUNT 4226/32	
all	2	02 21061	BASE=4232F MOTOR MOUNT PLATE	
all	3	02 21062	MOTOR MNT ADJ BOLT BAR,4232F	



## Drive Motor Installation

3 Sheets

Table 20 Parts List—Drive Motor Installation (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	W2 13504	MOTOR RAIL MOUNT WELD RT (CS)	
all	4	W2 23504	MOTOR MT WELDMENT BKT 4226X (CS)	
A	5	W2 13504A	MOTOR RAIL MOUNT LF (CS)	
B	5	W2 23504A	MOTOR MT WELDMENT LF 4226X (CS)	
all	6	15B186	HEXTAPBLT FLT 5/8-11UNCX7	
all	7	15G238	HXNUT 5/8-11UNC2B SAE ZINC GR2	
all	8	17W030	SPHERICAL WASHER SET 5/8 M/F	
all	9	15U315	LOKWASHER MEDIUM 5/8 ZINCPL	
all	10	15K162	HXCAPSCR 1/2-13UNC2AX1.5 GR5 P	
all	11	15U490	FLTWASH 1+1/2X17/32X1/4 ZINC	
all	12	15U300	LOKWASHER REGULAR 1/2 ZINC PLT	
all	13	15G230	HXNUT 1/2-13UNC2B SAE ZINC GR2	
all	14	15K180	HXCAPSCR 1/2-13UNCAX2 GR5 ZINC	
all	15	15K173A	HXCAPSCR 1/2-13UNC2AX1.75 GR5	
all	16	15U280	FL+WASHER(USS STD)1/2 ZNC PL+D	

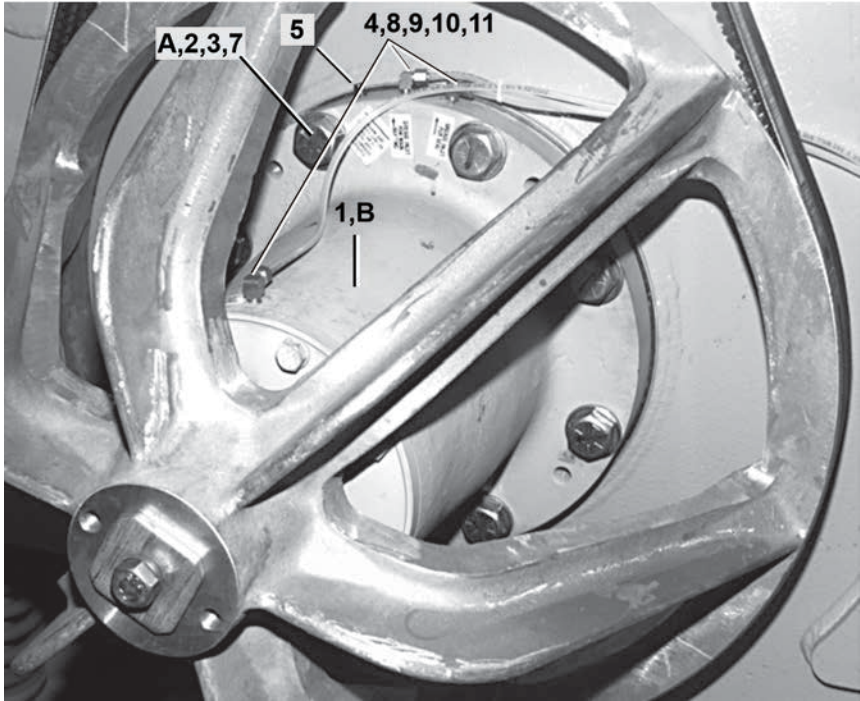
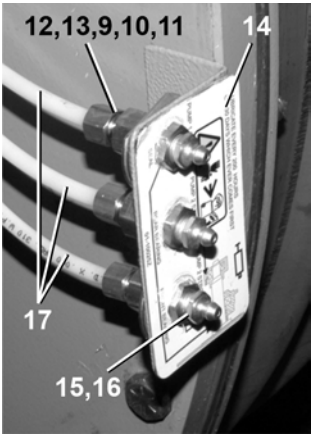
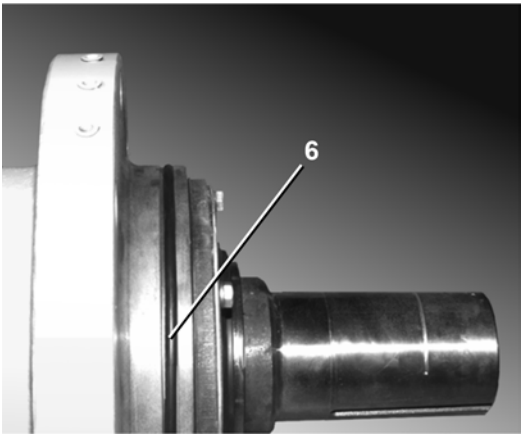
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# Main Bearing Installation

2 Sheets

36026X8R, 42026X7R, 42032X7R

<b>Bearing Housing Installation</b>	
	
<b>Lubricant</b>	<b>O-ring</b>
	
<b>Legend</b>	
A . . . 8 instances	
B . . . 42032F7J shown	

# Main Bearing Installation

2 Sheets

36026X8R, 42026X7R, 42032X7R

**Table 21. Parts List—Main Bearing 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
Reference Assemblies				
	A	GBM4226X7	INSTALL-MAIN BEARING 42X	42026X7R, 42032X7R
	B	GBM3626X7	INSTALL=MAIN BEARING 3626X7	36026X8R
Components				
A	1	ABM42001	MAIN BEARING ASSY=4232F7	
B	1	ABM35001	MAIN BEARING ASSY=3630F8	
all	2	15K235K	HEXCAPSCR 1-14X3 GR 8 ZINC	
all	3	15U393	FLTWASH 1" HARD ASTM F436	
all	4	54M021	GRSFIT 1/8PIPE X 1/4STR 1607-B	
all	5	5SP0CFESSV	NPTPLUG1/8SQSLDBLKSTL LVENT125	
A	6	60C176	ORING 10 IDX1/4"CS BUNA-N#449	
B	6	60C170	ORING 8"IDX3/16CS BUNA70 #369	
all	7	20C007G	THDLOCKSEAL LCT24231 RMUBL50CC	
all	8	53A031B	BODY-EL90MALE.25X1/8 #269C-42B	
all	9	53A059A	NUT 1/4"BR.HOLYOKE AND #61A-4	
all	10	53A500	SLEEVE DELRIN 1/4"OD#60PT-4	
all	11	53A501	TUBE INSERT .163"OD #63PT-4-40	
all	12	53A007B	BODYFEMCON.25X.25COMP#B66A-4B	
all	13	15U281A	WASHER=CLIPPED 1/2 ID .06THK	
all	14	01 10025Z	NPLT:BEARING&SEAL LUB-42"& 36"	
all	15	5SB0E0CBEO	NPTHEXBUSH 1/4X1/8 BRASS 125#	
all	16	54M015	GREASEFIT 60X36/60X44 1610BL	
all	17	60E004TC	TUBING NYL(NAT)1/4"ODX.17ID	

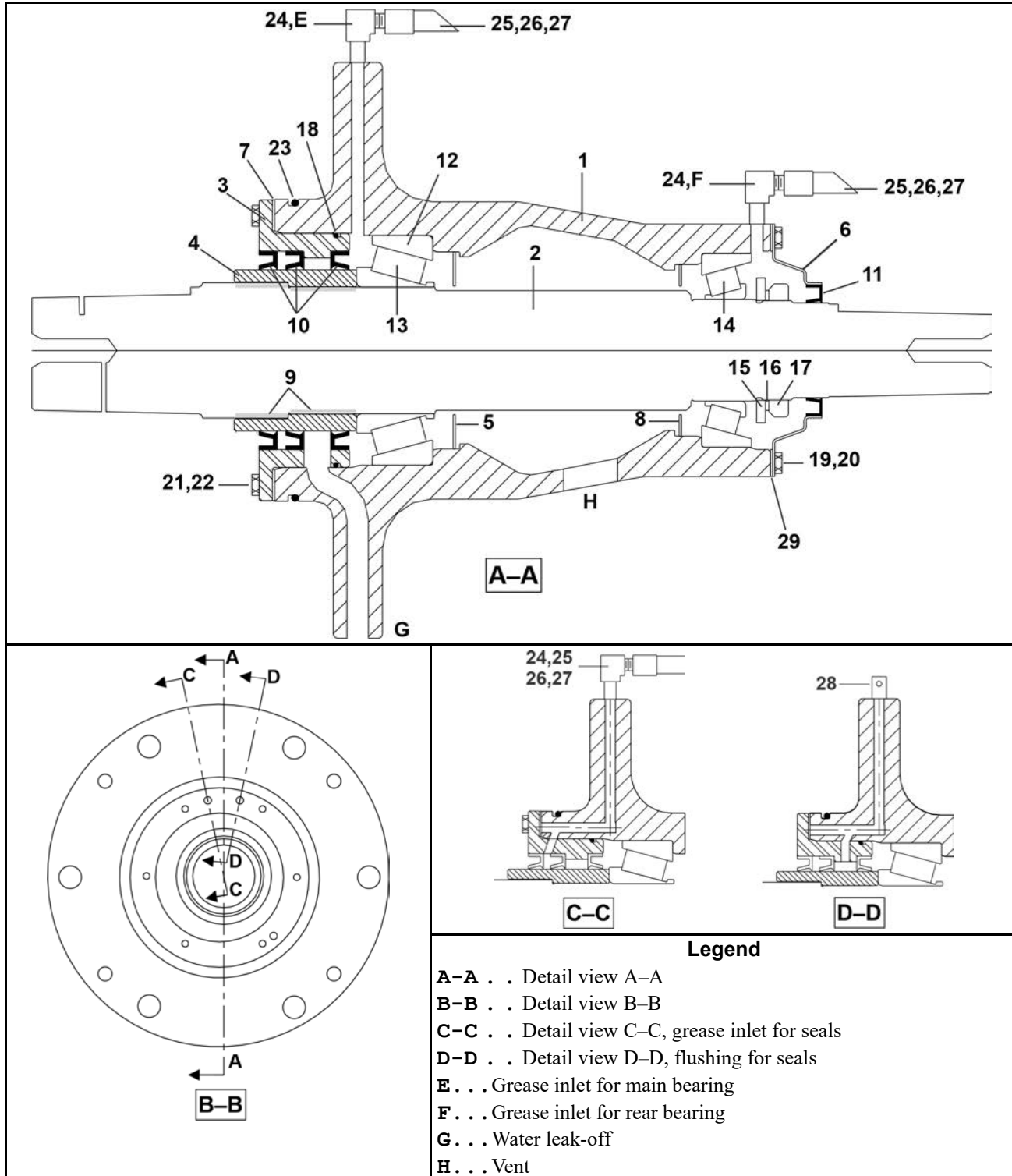
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**Bearing Assembly**

2 Sheets

36026X8R



**Legend**

**A-A** . . Detail view A-A  
**B-B** . . Detail view B-B  
**C-C** . . Detail view C-C, grease inlet for seals  
**D-D** . . Detail view D-D, flushing for seals  
**E** . . Grease inlet for main bearing  
**F** . . Grease inlet for rear bearing  
**G** . . Water leak-off  
**H** . . Vent

## Bearing Assembly

2 Sheets

36026X8R

Table 22. Parts List—Bearing 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
Reference Assemblies				
	A	ABN3626X7	ASSY=FRNTBNG 3626X7	36026X8R
	B	ABM35001	MAIN BEARING ASSY=3630F8	36026X8R
Components				
A	1	X2 21540	MACH=MAIN BEARING HOUSE 3630	
A	2	X2 21543A	MACH=MAIN SHAFT 3626X7	
all	3	X2 21541	MACH=FRONT SEAL HOLDER 3630F	
all	4	X2 21544	SEAL SLEEVE=3630 BRG ASSY	
all	5	02 21542	FRONT GREASE SHIELD 3630F	
all	6	02 21545	REAR SEAL HOLDER 3630F8	
all	7	02 21547	GASKET=FRNT SEAL HOLDR 3630F	
all	8	02 21550	REAR GREASE SHIELD 3630F	
all	9	20C011C	RETAINCMPD PRESSFIT LOC#60941	
all	10	24S114	SEAL 4.5X5.5X.50 JM# 9170 LUP	
all	11	24S053	SEAL 2.625X3.625X.437#10051L5	
all	12	54A337	CUP 6535 SKF 1/BOX	
all	13	54A336	CONE 6580 S-ROW S-BORE SKF1/BX	
all	14	54A335465	TIM H414210/H414249=2.8125"BORE	
all	15	56ATW14	TONGUE WASH TIM K91514 FOR N14	
all	16	56AHW114	TW114 BEARING LOCWASHER	
all	17	56AHN14	N14 BEARING LOCKNUT	
all	18	60C160J	ORING 6+1/4ID1/8CS BUNA70 #259	
all	19	15K039	HXCAPSCR 1/4-20UNC2AX3/4 GR5 Z	
all	20	15U180	LOCKWASHER MEDIUM 1/4 ZINCPL	
all	21	15K112	HXCAPSCR 3/8-16X1+1/2 SS18-8	
all	22	15U260	LOCKWASHER MEDIUM 3/8 SS18-8	
all	23	60C170	ORING 8"IDX3/16CS BUNA70 #369	
all	24	5N0C01KG42	NPT NIP 1/8X1.5 TBE GALSTL S40	
all	25	53A500	SLEEVE DELRIN 1/4"OD#60PT-4	
all	26	53A501	TUBE INSERT .163"OD #63PT-4-40	
all	27	53A059A	NUT 1/4"BR.HOLYOKE AND #61A-4	
all	28	5SP0CFESSV	NPTPLUG1/8SQSLDBLKSTL LVENT125	
all	29	02 21546	EXCLUDER SEAL GASKET	

# 5 Door Assemblies

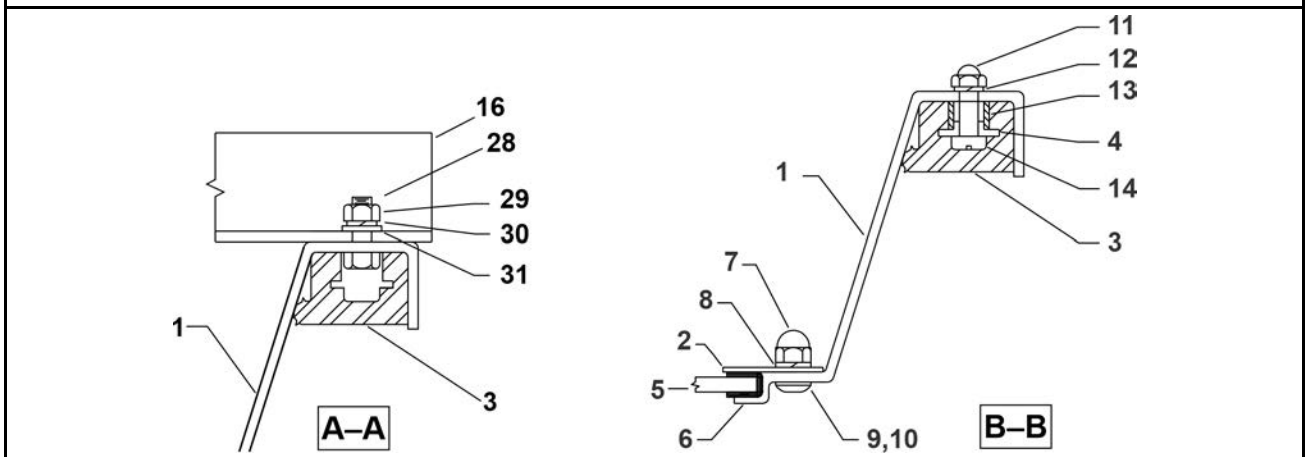
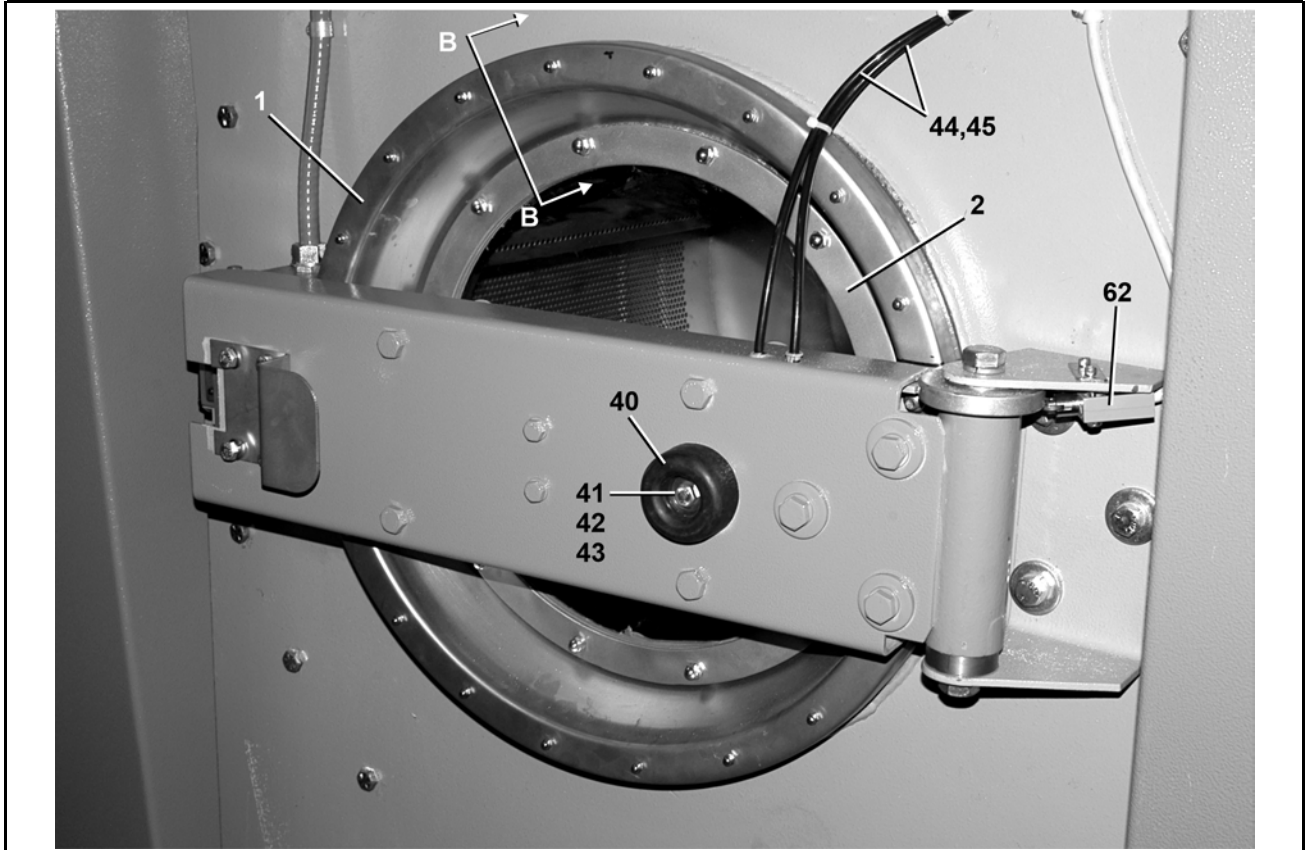
BPWXBD01 / 2021193

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# Door Assembly

5 Sheets

36026X8R



Legend

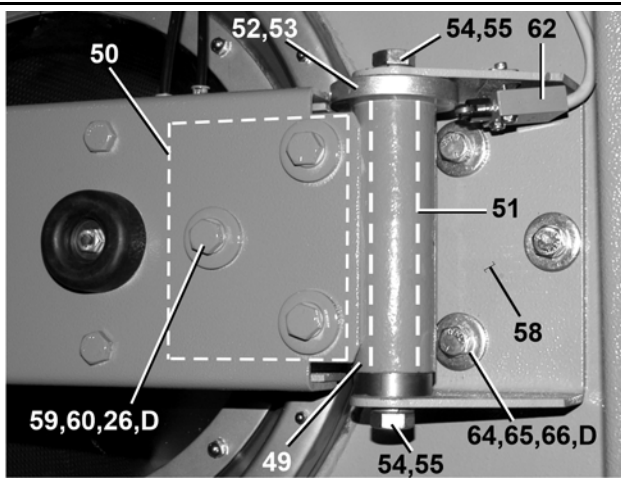
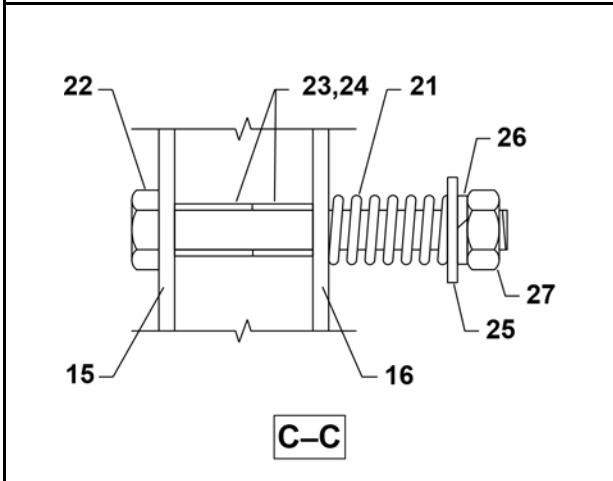
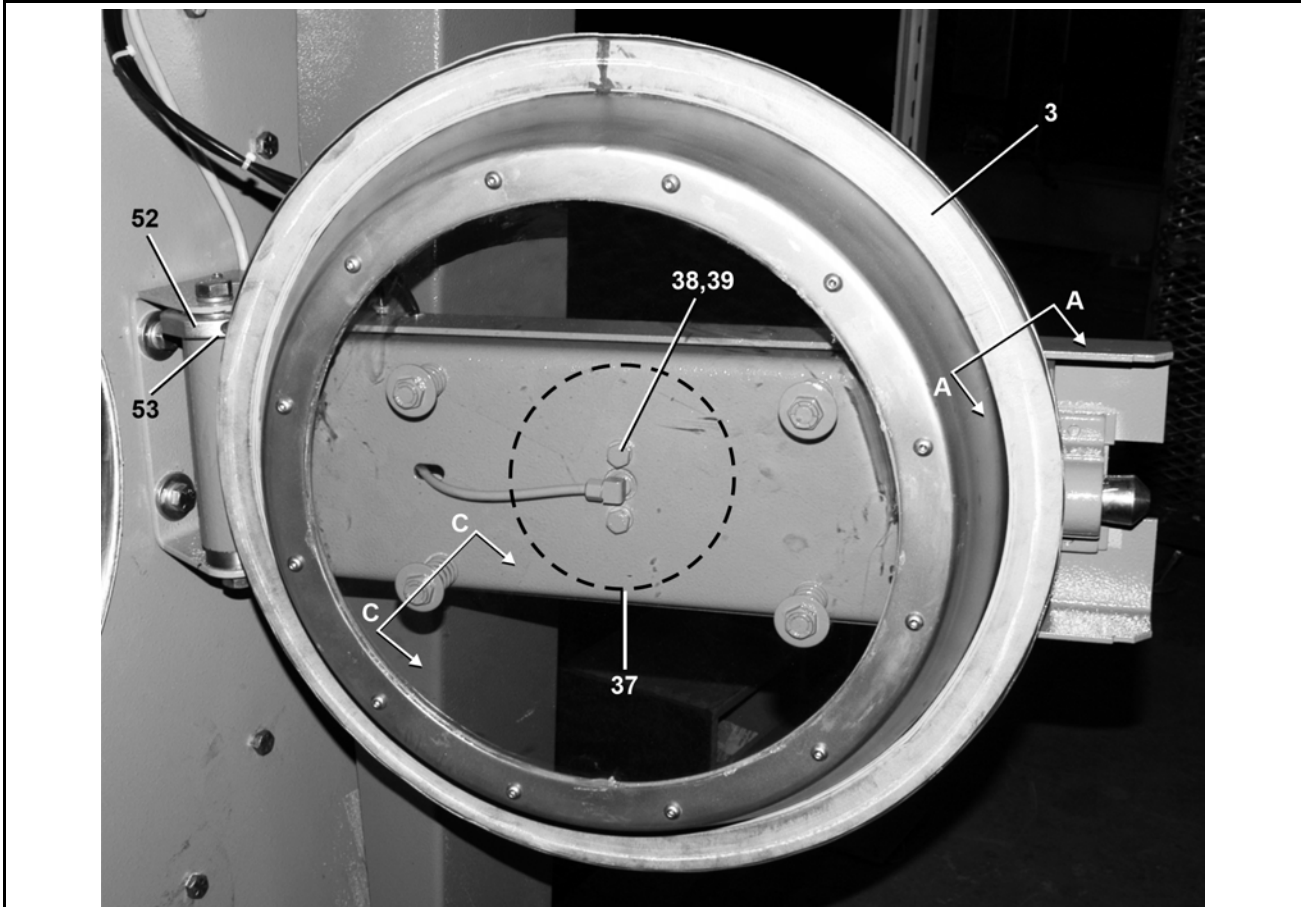
A-A . . . Detail view A-A

B-B . . . Detail view B-B

Door Assembly

5 Sheets

36026X8R



Legend

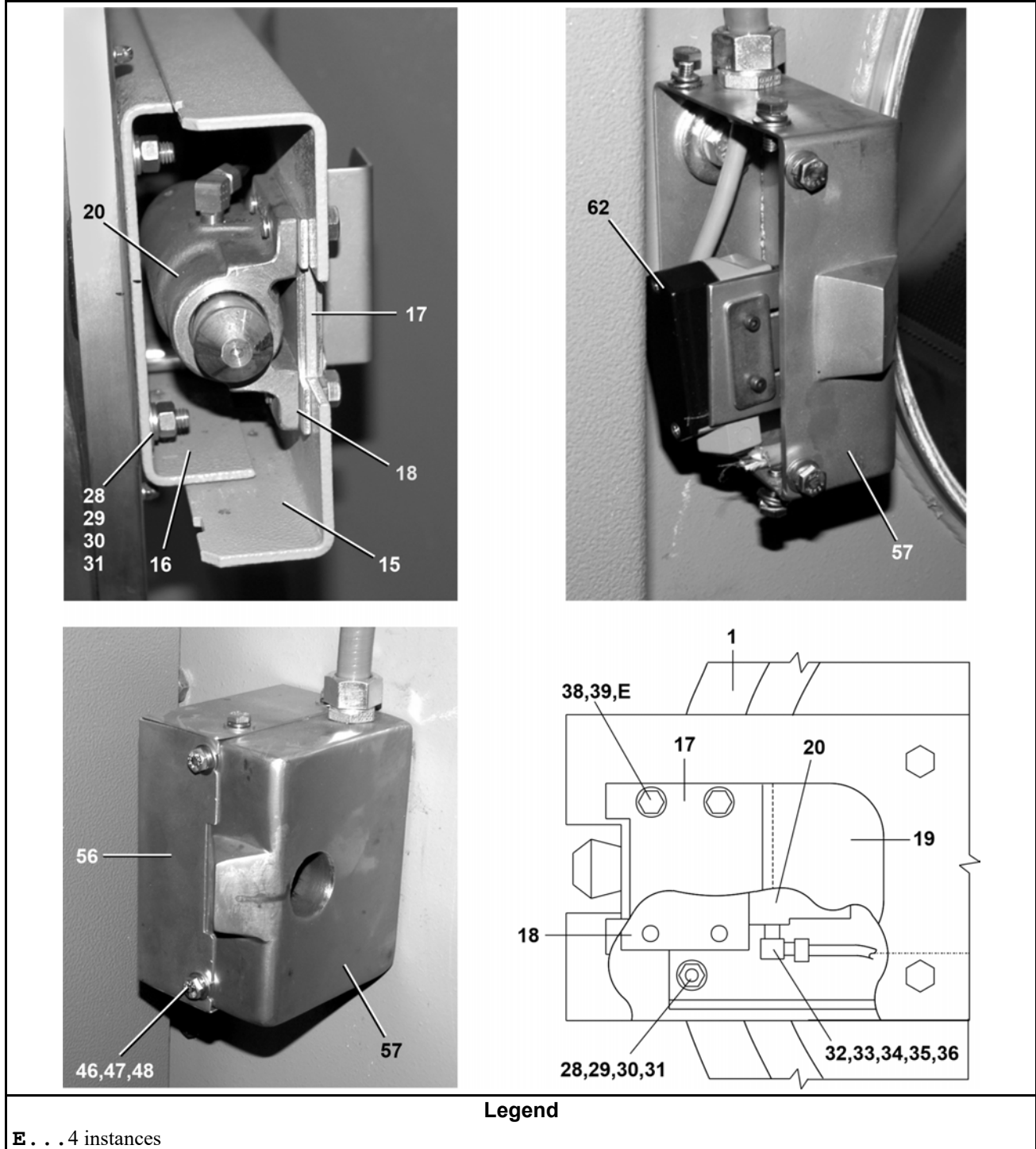
C-C . . . Detail view C-C  
 D . . . 3 instances



**Door Assembly**

5 Sheets

36026X8R



**Door Assembly**

5 Sheets

36026X8R

**Table 23. Parts List—Door 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
Reference Assemblies				
	A	GSD3626X01	INSTALL=SHELL DOOR 3626X	
	B	ASD3626X01	ASSY=DOOR 3626X AIROP	
	C	ASD3626X02	ASSY=20"DOOR CHNL 3626X	
Components				
all	1	02 11790H	DOOR=20" 304 SS 42F	
all	2	02 11790N	GLASS CLAMPING PLATE 20"DOOR	
all	3	02 11792D	DOOR GASKET=GREY EPDM	
all	4	02 11793	RETAINER=DOOR GASKET RING	
all	5	02 12008B	GLASS=20"DOOR 15.5"DIA 42F	
all	6	02 12054G	GASKET=20"DOOR 16.5DIA GLASS	
all	7	15G140	HXCAPNT 1/4-20 #C250=20 NKLPLT	
all	8	15U181	LOCKWASHER MEDIUM 1/4 SS18-8	
all	9	15K039A	BUTSOKCPSCR 1/4-20X7/8 SS 18-8	
all	10	24G020N	ROLLED WASH.252ID NYLTITE 25W	
all	11	15G095	HXCPNUT 8-32 UNC2 BRASS NKL PL	
all	12	15U120B	LOCKWASHER MEDIUM #8 SS18-8	
all	13	27B260156S	SPCRSLD.26ID.375OD.156L 316SS	
all	14	15N091A	PANHDMACHSCR 8/32UNC2X5/8 S/S	
all	15	02 11169A	CHANNEL DOOR=OUTER 4226QWE	
all	16	02 11170A	CHANNEL DOOR=INNER 4226QWE	
all	17	02 15633S	ADJPLATE=DOORLATCH SS	
all	18	02 15633B	ADJPLATE=DOORLATCH 16GA	
all	19	02 15633A	DOOR LATCH HANDLE 42Q	
all	20	SA 15 028	* DOOR LATCH ASSY-DIVCYLS	
all	21	02 18187	SPRING=OUTER DOOR 60 WEHU	
all	22	15K202T	HEXCAPSCR 1/2-13 X 4.75 SS	
all	23	27B2400K1P	SPCRROLL.5ID1.75L.062T STLZNC	
all	24	27B2400K0N	SPCRROLL.5ID.687L.062T STLZNC	
all	25	15U280	FL+WASHER(USS STD)1/2 ZNC PL+D	
all	26	15U300	LOKWASHER REGULAR 1/2 ZINC PLT	
all	27	15G234	LOKNUT 1/2-13NC CAD FLXLOC#21F	
all	28	15K096A	HXCPSR.3/8-16X1SS18-8.123HD.H	
all	29	15U260	LOCKWASHER MEDIUM 3/8 SS18-8	

## Door Assembly

5 Sheets

36026X8R

Table 23 Parts List—Door Assembly (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	30	15G206	HEXNUT 3/8-16 UNC2 SS 18-8	
all	31	15U245	FLTWASH 3/8 STD COMM 18-8 SS	
all	32	53A031B	BODY-EL90MALE.25X1/8 #269C-42B	
all	33	53A059A	NUT 1/4"BR.HOLYOKE AND #61A-4	
all	34	53A500	SLEEVE DELRIN 1/4"OD#60PT-4	
all	35	53A501	TUBE INSERT .163"OD #63PT-4-40	
all	36	5SB0E0CBEO	NPTHEXBUSH 1/4X1/8 BRASS 125#	
all	37	60B090	AIRMT S-131 1CONV.F#W013587731	
all	38	15K095	HXCPSCR 3/8-16UNC2AX1 GR5 ZINC	
all	39	15U255	LOCKWASHER MEDIUM 3/8 ZINCPL	
all	40	60C075	TRUCK BUMPER 2+1/2ODW3/8HO.613	
all	41	15K100	HEXCAPSCR 3/8-16X1+1/4 SS18-8	
all	42	15U240	FLATWASHER(USS STD) 3/8" ZNC P	
all	43	15G205	HXNUT 3/8-16UNC2B ZINC GR2	
all	44	60E004TE	1/4"OD X.170"ID NYL(BLK)TUBING	
all	45	12P1AGSB	SNAPBUSH 3/8"MH X 1/4" T=1/8	
all	46	15U135S	FLATWASH#10 .5620DX.203IDX.04+	
all	47	15N117	RDMACSCR 10-24UNC2X3/8SS18-8	
all	48	15U160	LOCKWASHER MEDIUM #10 SS18-8	
all	49	X2 15016A	DOOR HINGE MACHINED 7.499 LG	
all	50	X2 15016	DOOR HINGE MACHINED 6.218 LG	
all	51	02 11162B	HINGE PIN=20" DOOR-INTNLTHDS	
all	52	54JH13125C	DOOR HINGE COL SPLIT3.12ALUM	
all	53	15K041E	SKCPSCR 1/4-20X1+1/4"BLK	
all	54	15K221	HEXCAPSCR 5/8-11 UNC2X2GR5 ZIN	
all	55	15U315	LOKWASHER MEDIUM 5/8 ZINCPL	
all	56	02 13507E	COVER STRICKER BOX 3626X	
all	57	W2 13507C	WELD=DOOR STRICKER 3626X	
all	58	02 13507B	BRACKET=DOOR HINGE	
all	59	15K151	HXCAPSCR 1/2-13UNC2AX1.25 GR5	
all	60	15U490	FLTWASH 1+1/2X17/32X1/4 ZINC	
all	62	09RM01212S	CAPSW 12' 180DEG ROLLER SILVER	
all	64	15K145	HXCAPSCR 1/2-13UNC2AX3/4 GR5 P	

## Door Assembly

5 Sheets

36026X8R

**Table 23 Parts List—Door Assembly (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	65	15U310	LOKWASHER REGULAR 1/2 SS18-8	
all	66	15U285	FLATWASHER 1/2 STD COMM SS18-8	

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Door Latch

1 Sheet

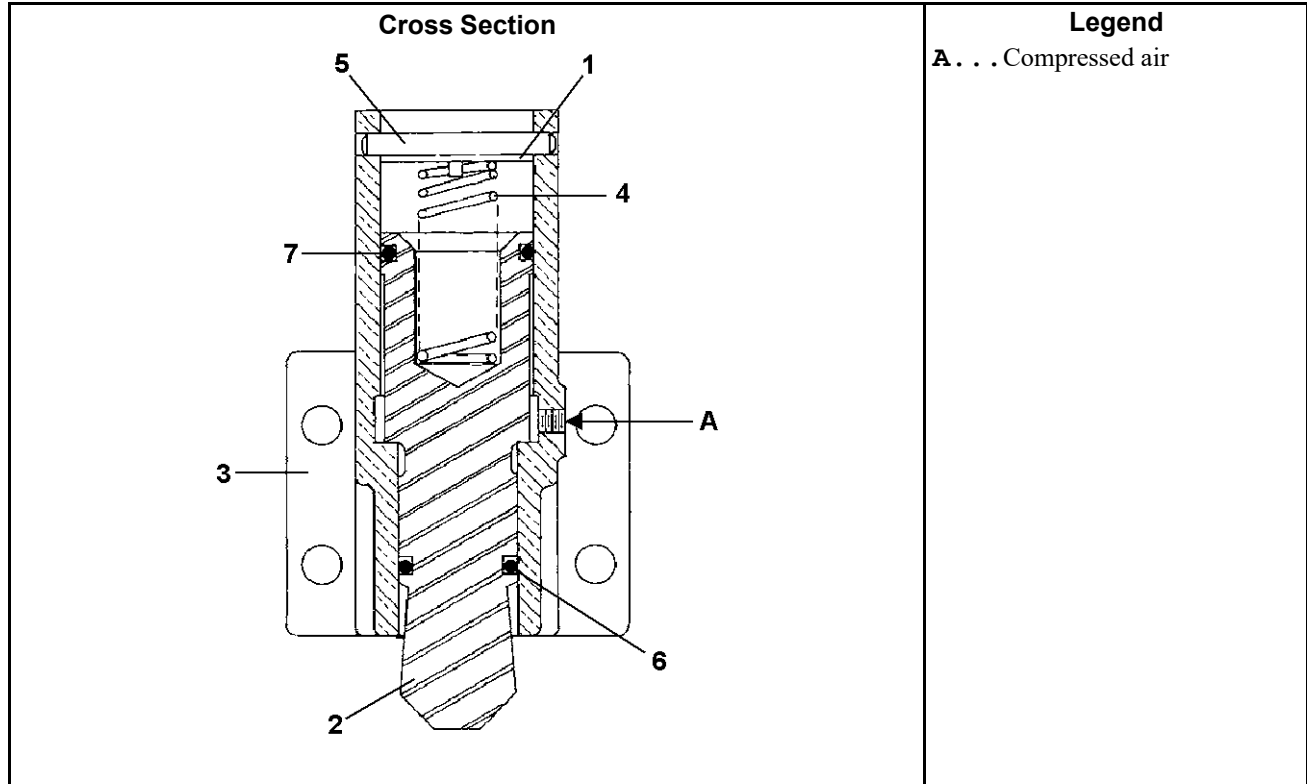


Table 24. Parts List—Door Latch

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.

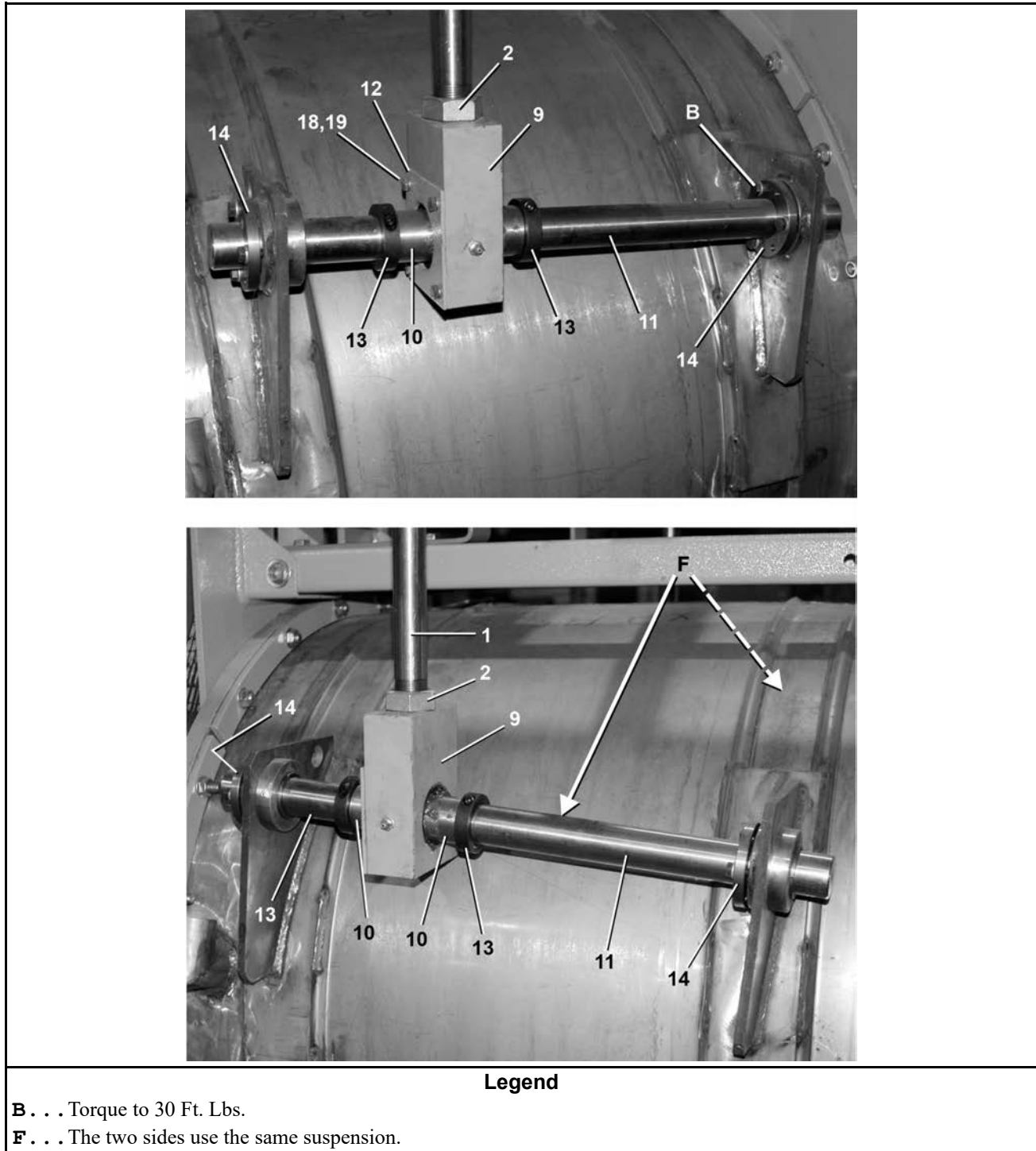
Used In	Item	Part Number	Description/Nomenclature	Comments
Reference Assemblies				
	A	SA 15 028	Assembly, Door latch	
Components				
all	1	02 15105	RETAINER RING	
all	2	02 15297	STRIKER	
all	3	02 15298	CYLINDER	
all	4	02 15836	SPRING	
all	5	15H090	PIN	
all	6	60C122	O-RING, 1"X1/8	
all	7	60C128	O-RING, 1+3/8X1/8	

# 6 Suspension

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Suspension Components and Installation

Figure 29. General Views

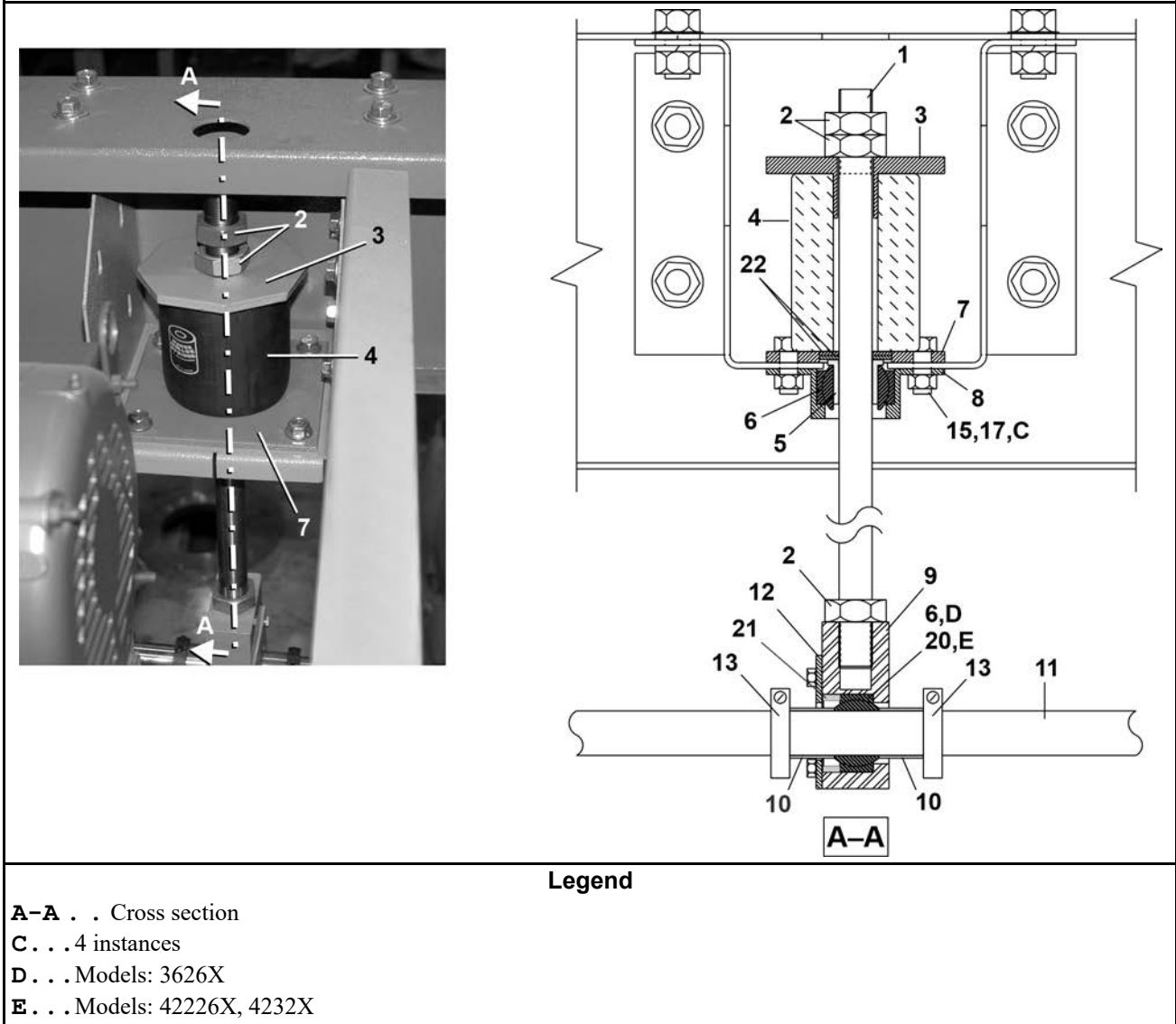




# Suspension Components and Installation

4 Sheets

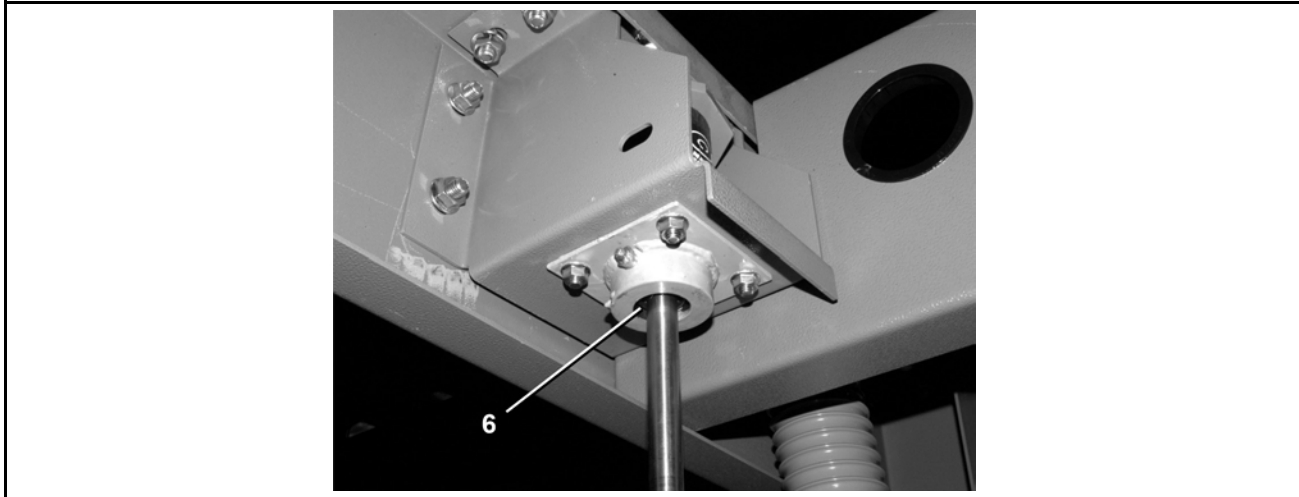
Figure 30. Detailed Views



## Suspension Components and Installation

4 Sheets

**Figure 31. Bottom View**



**Table 25. 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
Reference Assemblies				
	A	GMS3626X7	INSTAL SUSPENSION	3626X8J,X8W,X8R
	B	GMS4226X	INSTALL SUSPENSION 4226X	4226X7J,X7W,X7R
	C	GMS4232X	INSTALL SUSPENSION 4232X	4232X7J,X7W,X7R
Components				
A	1	02 13521	ROD=SUSPENSION 3626X	
BC	1	02 23521	ROD=SUSPENSION 4226/32X	
all	2	15G264A	HEXJAMNUT 1+1/4-12UNF 2B ZINC	
A	3	W2 13524	WASHER SUSPENSION MT TOP 3626X (CS)	
BC	3	W2 23524	WASHER=SUSPENSION MT 42X (CS)	
A	4	60B136	MM SPRG 4.5X2X6 F#W223580178	
BC	4	60B141	MM SPRG 6.5X2X8 F#W223580190	
all	5	54E024DRF	FLGBRG 1.25X1.5X2.0 BJ4F202416	
all	6	54A724	BALL BEAR 1.5" AURORA HCOM-24	
A	7	02 13523	PLATE=SUSPENSION MT 3626X	
BC	7	02 23523	PLATE=SUSPENSION MT 42X	
A	8	W2 13522	WELDMENT=BALLBUSH MT 3626X (CS)	
BC	8	W2 23522	WELD=BALLBUSH MT 4226/32X (CS)	
A	9	X2 13521E	LOWER BALL BUSH MT 3626X	
BC	9	X2 23521E	LOWER BALL BUSH MT 4226/32X	

## Suspension Components and Installation

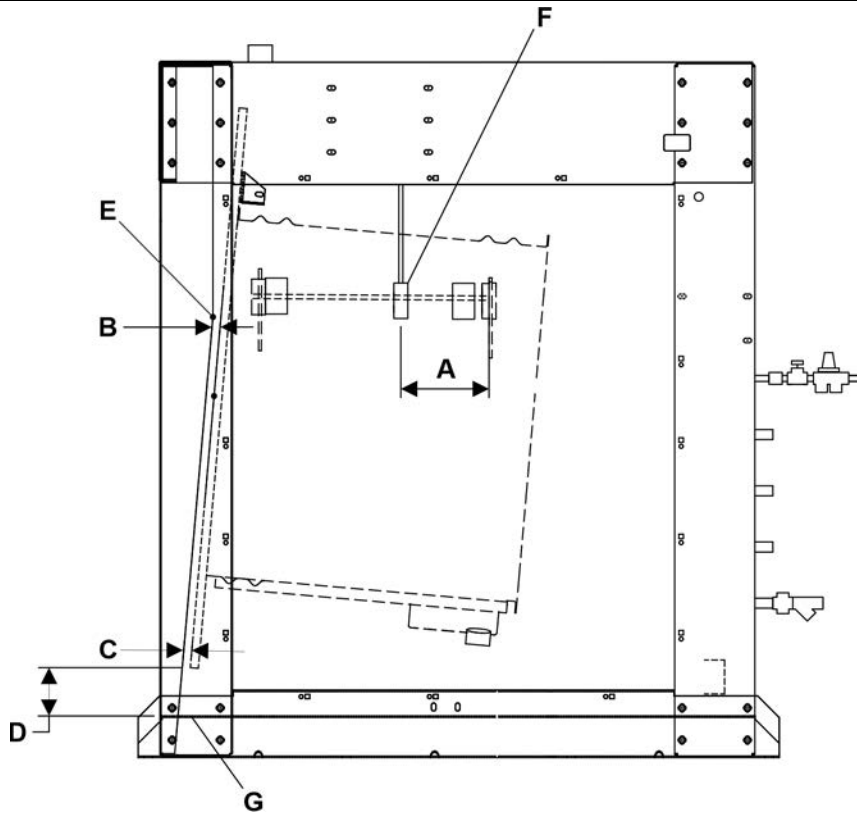
4 Sheets

Table 25 Parts List—Suspension Components and Installation (cont'd.)

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
A	10	02 13524D	SPACER BALL BUSHING 3626X	
BC	10	02 23524D	SPACE BALL BUSHING 4226/32X	
A	11	02 13521F	ROD=SHELL SUPEN MT 3626X	
B	11	02 23521F	ROD=SHELL SUPEN MT 4226X	
C	11	02 24521F	ROD=SHELL SUPEN 4232X	
A	12	02 13521E	PLATE=SUPEN MT 3626X	
BC	12	02 23521E	PLATE=SUPEN MT 4226/32X	
A	13	54JH11500A	SHAFTCOLLAR 1.5" CPL CFG#24S	
BC	13	54JH22000C	SHFTCOLL 2"ID DBLSPLT CARSTL	
A	14	56Q1KP1	1+1/2" BUSH VPUL BROWNING P1	
BC	14	56Q2AQ1S	2.0 SPLIT BUSH BROWNING #Q1	
A	15	15K129	HEXFLGSCR 1/2-13X1-1/4ZN. GR 5	
BC	15	15K154G	INDHEXFLGSCR 1/2-13X1+3/4GR5 Z	
all	17	15G222B	HEXFLGNUT 1/2-13 ZINC SERRATED	
all	18	15K041	HXCAPSCR 1/4-2OUNC2AX1 GR 5 ZI	
all	19	15U180	LOCKWASHER MEDIUM 1/4 ZINCPL	
BC	20	54A732	BALLBUSH 2" AURORA # HCOM 32	
A	21	02 13521J	SPACER=BALL BUSH	
BC	21	02 23521J	SPACER=BALL BUSH	
all	22	15U349A	1.275X 2.275X.120 F/W NYLON	

Suspension Settings

3022X\_, 3626X8\_, 4226X7\_, 4232X7\_



**Legend**

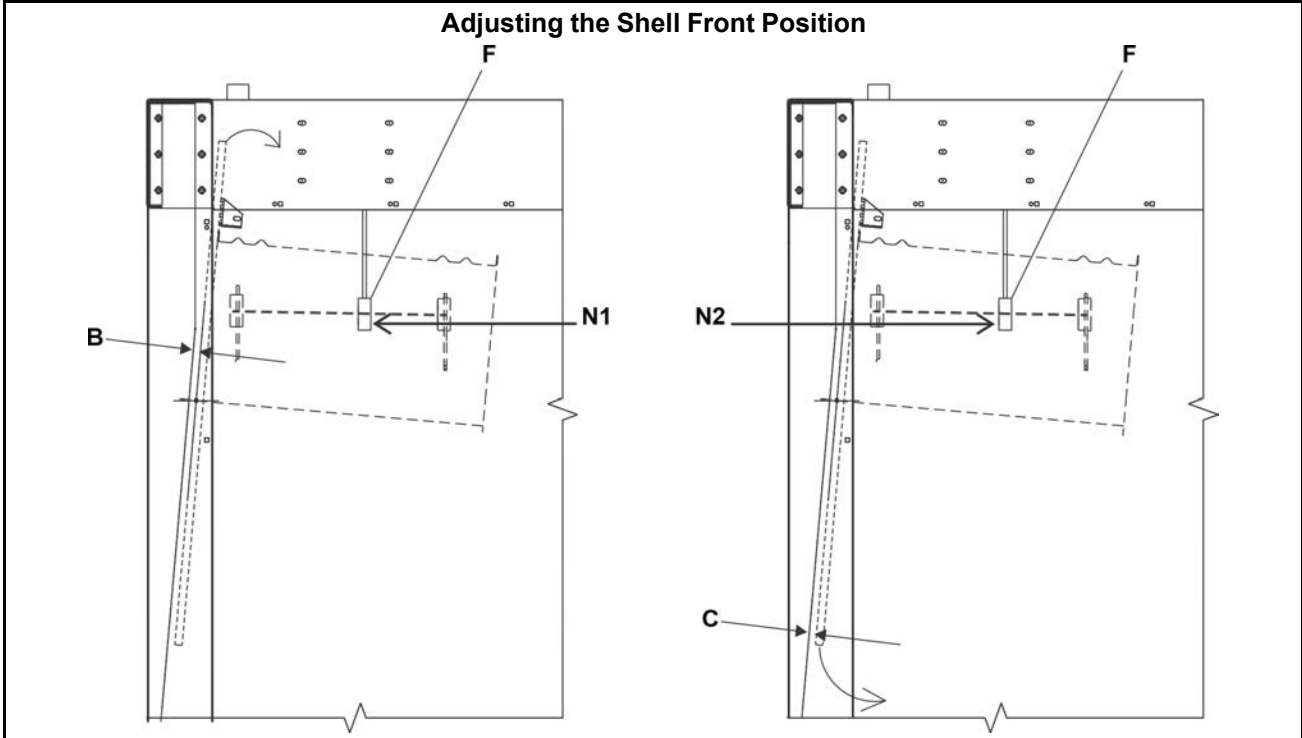
- A . . . Initially set the lower ball bushing [A] 11" [279] from the shell mounting bracket.
- B . . . The space between the shell front and the point on the front corner posts where the angle changes should be [B] 1.50" +/- .125".
- C . . . The space between the lower shell front and the angle on the corner posts should be [C] 1.25" +/- .125".
- D . . . The height from the bottom of the shell front to the top of the inside base channel should be [D] 6" +/- .5"
- E . . . The point on the front corner posts where the angle changes
- F . . . Lower ball bushing
- G . . . The top of the inside base channel

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

# Suspension Settings

2 Sheets

3022X\_, 3626X8\_, 4226X7\_, 4232X7\_



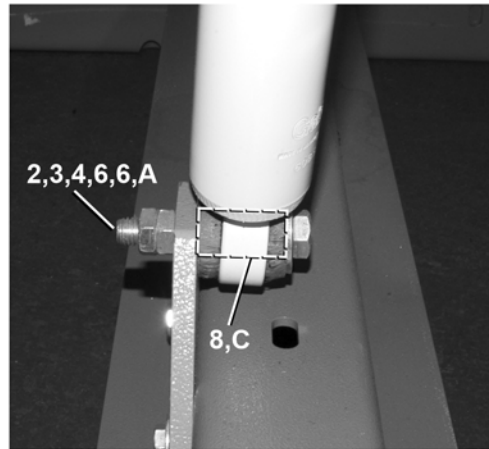
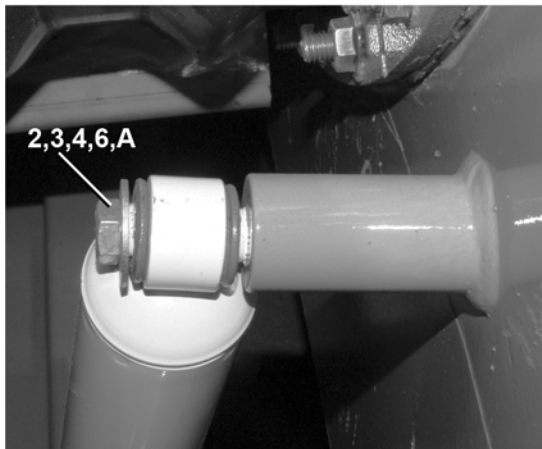
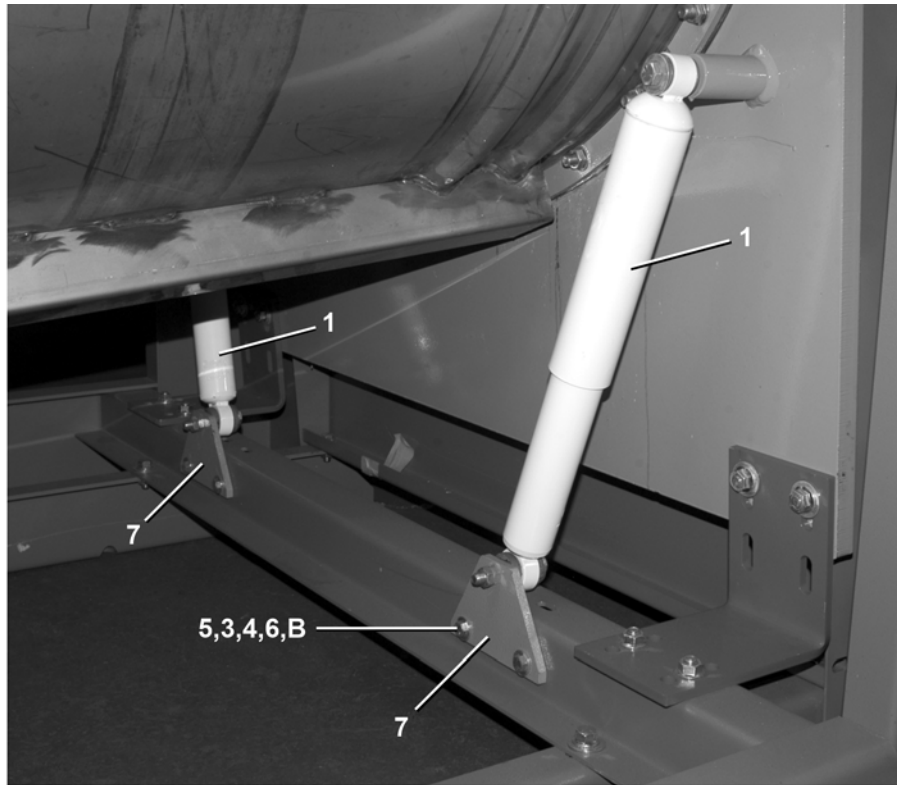
### Legend

- B** . . . The space between the shell front and the point on the front corner posts where the angle changes should be [B] 1.50" +/- .125".
- C** . . . The space between the lower shell front and the angle on the corner posts should be [C] 1.25" +/- .125".
- F** . . . Lower ball bushing
- N1** . . Tapping the ball bushing forward increases the space [B], between the upper shell front and the angle of the corner posts.
- N2** . . Tapping the ball bushing rearward increases the space [C], between the lower shell front and the angle of the corner posts.

# Shock Absorbers

2 Sheets

Installed Views



Legend

- A . . . 2 instances
- B . . . 4 instances
- C . . . Models: 4226X7J,X7W,X7R; 4232X7J,X7W,X7R

## Shock Absorbers

2 Sheets

Table 26. Parts List—Shock Absorbers

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
Reference Assemblies				
	A	GIC3626X7	INSTALL SHOCK ABSORBER 3626X7	3626X8J,X8W,X8R
	B	GIC4226X	INSTALL SHOCK ABSORBER 4226/32	4226X7J,X7W,X7R 4232X7J,X7W,X7R
Components				
A	1	60BS6838	SHOCK ABSORBER = ARVIN #65907340E	
B	1	60BS6832	SHOCK ABSORBR GABRIEL #65488440X	
all	2	15K198	HEXCAPSCR 1/2-13UNC2AX3 GR5 ZI	
all	3	15U300	LOKWASHER REGULAR 1/2 ZINC PLT	
all	4	15U280	FL+WASHER(USS STD)1/2 ZNC PL+D	
all	5	15K173A	HXCAPSCR 1/2-13UNC2AX1.75 GR5	
all	6	15G230	HXNUT 1/2-13UNC2B SAE ZINC GR2	
all	7	02 23501C	LOWER SHOCK MT BKT	
B	8	05 20187B	MOUNT STUD=SHOCK INSTALL	

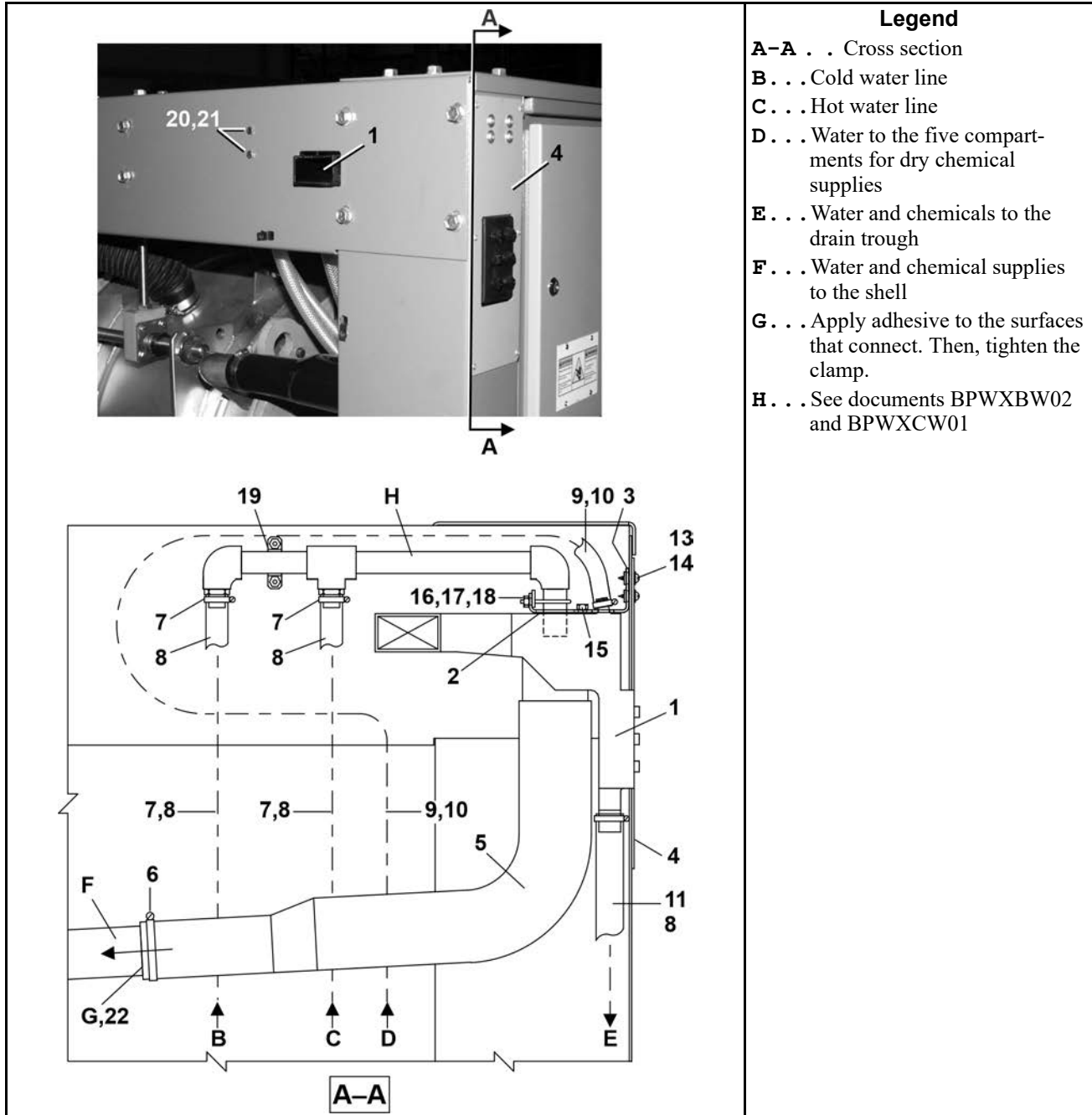
# 7 Chemical Supply Devices



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**Inlet for Peristaltic Chemical Supplies and Water**

2 Sheets



**Inlet for Peristaltic Chemical Supplies and Water**

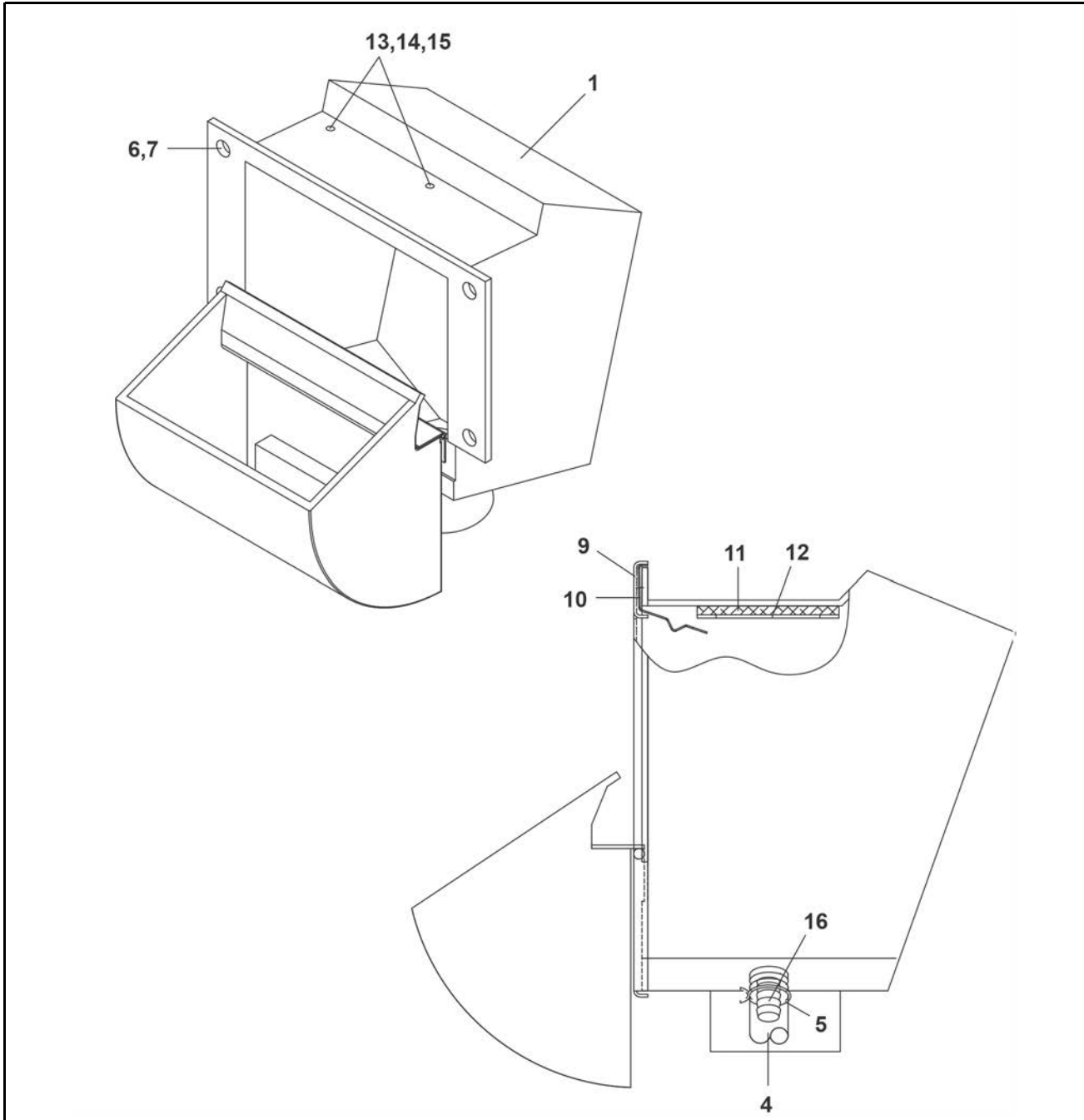
2 Sheets

**Table 27. Parts List—Inlet for Peristaltic Chemical Supplies and Water**

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
Reference Assemblies				
	A			36026X8J,X8W,X8R
	B			42026X7J,X7W,X7R
Components				
all	1	02 03588M	PERISTALTIC/WATER INLET 3022H	
all	2	02 03588K	36V PERISTALTIC BOX TOP COVER	
all	3	02 03195A	PERISTL BOX MOUNT 4226/32X	
all	4	02 02930	PLATE MT PARESTALTIC	
all	5	02 03588X	WATER INLET/PERISTALTIC HOSE	
all	6	27A074	HOSECLAMP 2+1/16-3"CADSC#62040	
A	7	60E008A	TUBINGNYLREINF.75"IDX1.025"OD	
B	7	60E014R	TUBING NYLOBRAID 1.25X1.75	
all	8	27A090	HOSECLAMP 13/16-1.5"CADSC#HS16	
all	9	60E006C	PVC TUBING NYL.REINF.5IDX.75OD	
all	10	27A040	HOSECLAMP 7/16-25/32SS W/SCREW	
all	11	60E010	TUBINGPOLYBRAID 1"X1.312	
all	13	15N110H	RDWASHHD TORXBOLT M6-1X25MM ZN	
all	14	15G004HB	EXTRUNUT M6-1 GRIP 0.8-4MM	
all	15	15K031	BUTSOKCAPSCR 1/4-20X1/2 SS18-8	
all	16	27A031C	UBOLT 1.25PIPE 5/16-18 ZINC	
all	17	15G196	HXFLGNUT 5/16-18 ZINC	
all	18	02 10539	SPACER FOR PIPE ZINC PLATED	
all	19	12K108	1+1/4"STRAP CONDUIT 2-HOLE	
all	20	15K041	HXCAPSCR 1/4-20UNC2AX1 GR 5 ZI	
all	21	15G178	1/4"-20 HEXFLANGE NUT ZINC	
all	22	20C009CA	LOCTITE 3032 ADHESIVE	

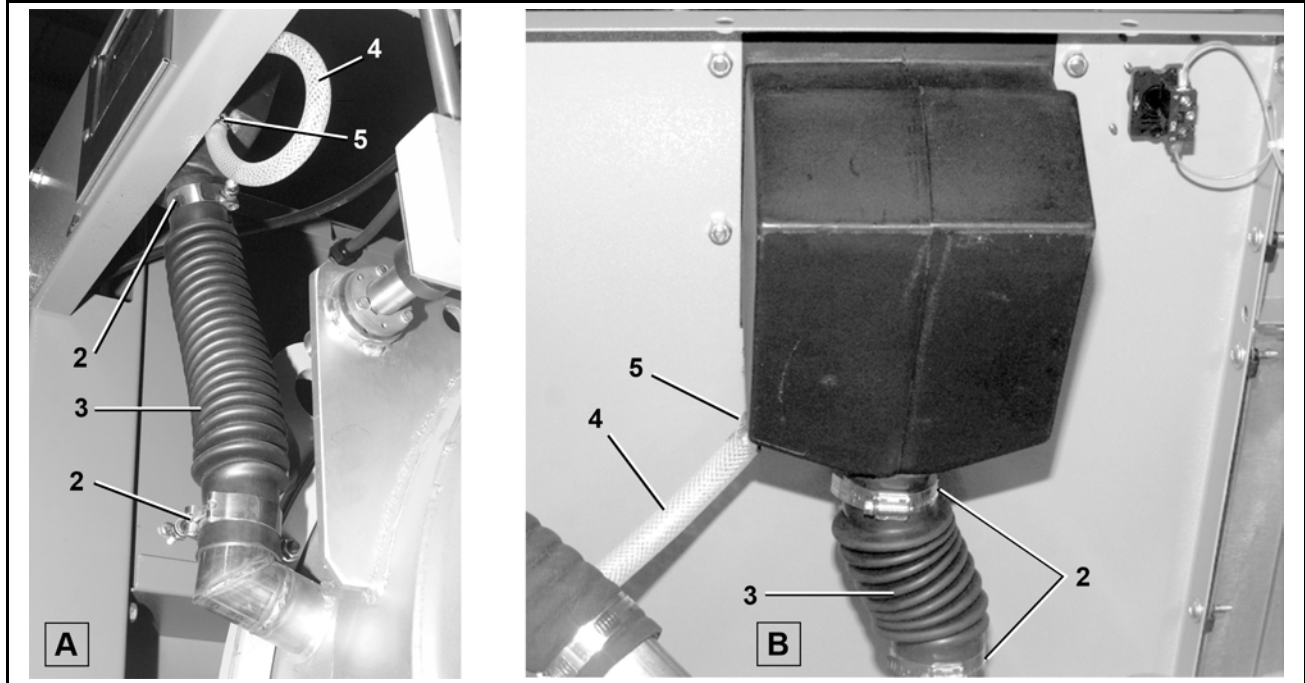
# Soap Chute Components and Installation

3 Sheets



Soap Chute Components and Installation

3 Sheets



Legend

A. . . Shown 3022X8J

B. . . Shown 3022H8J

Table 28. 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
Reference Assemblies				
	A	GWS3022X8	INST=SOAP CHUTE ASSY 3022X8J	3022X8J
	B	GWS3022H8	INSTL=SOAP CHUTE LC, 3022H8	3022H8J
	C	GWS3626X7	INST=SOAP CHUTE ASSY 3626X	36026X8J,X8W,X8R
	D	GWS4226X	INST=SOAP CHUTE ASSY 4226X	4206X7J,X7W,X7R
	E	GWS4232X	INST=SOAP CHUTE ASSY 4232X	42032X7J,X7W,X7R
	F	GWS35001C	INST=PLS SOAPCHUTE 3630SG RT	3630F8R,F8S
	G	GWS42001C	INST=PLASTIC SOAP CHUTE RT LD	4232F7R,F7S
Components				
all	1	AWS30211A	PLASTIC SOAP ASSY	
all	2	27A070	T-BOLT HOSECLAMP 1.94"-2.25"	
ACF	3	02 03870D	FLEXTUBE=2"ID X 14"LG W/CUFFS	
B	3	02 03870C	FLEXTUBE=2"ID X 8"LG.W/CUFFS	
DEG	3	02 03870	FLEXTUBE=SOAPCHUTE 2"IDX24LG	

## Soap Chute Components and Installation

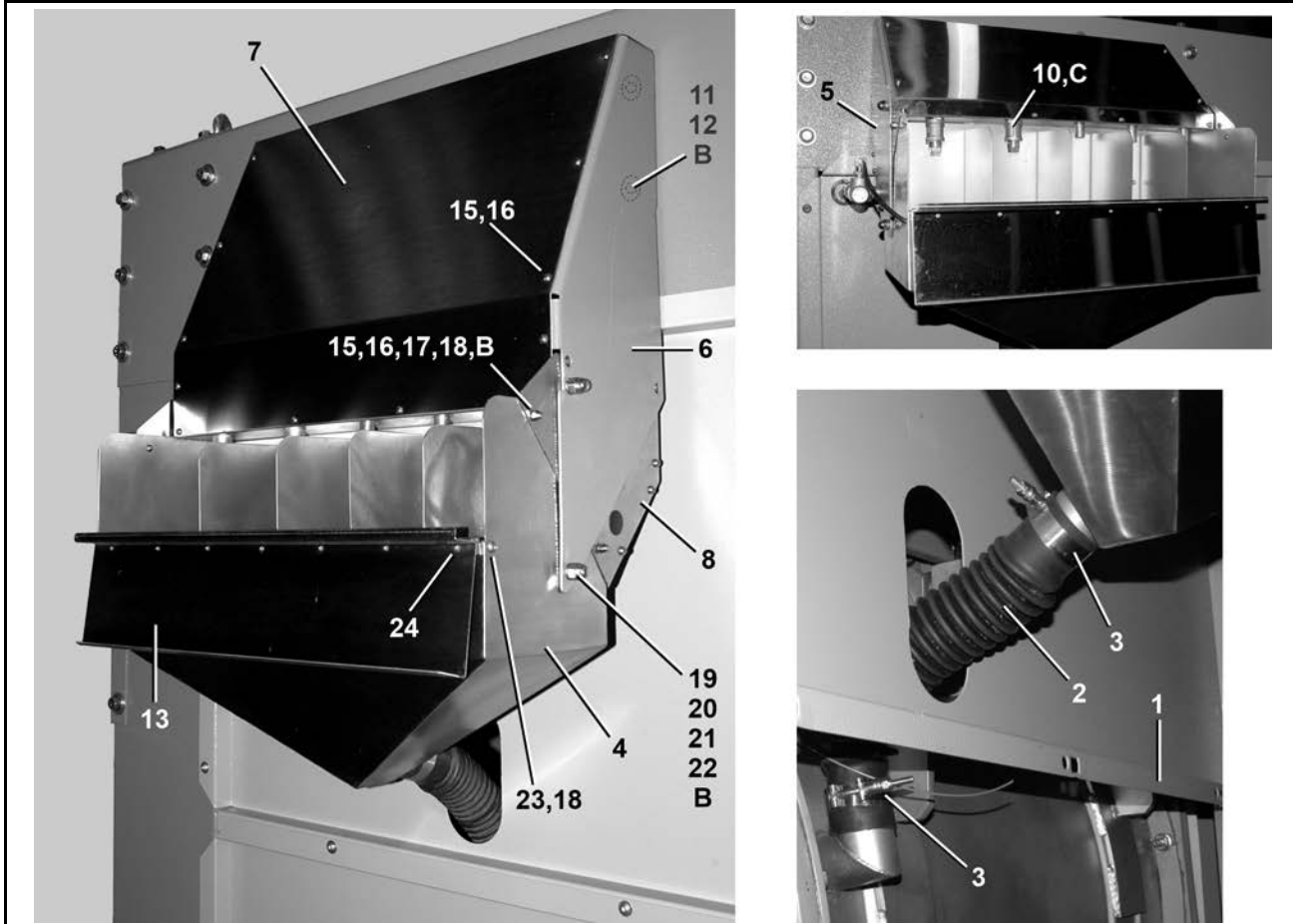
3 Sheets

**Table 28 Parts List—Soap Chute Components and Installation (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	60E006C	PVC TUBING NYL.REINF.5IDX.75OD	
all	5	27A045	HOSECLAMP .750"DIA SPRINGTYPE	
all	6	15K053	BUTSOKCAPSCR 5/16-18X3/4 SS18-	
all	7	15G188	HEXLOKNUT 5/16-18 BRASS	
all	9	02 04215	PLASTIC SOAP CHUTE BEZEL	
all	10	02 04217	PLASTIC SOAP CHUTE LATCH	
all	11	02 04216	SOAP CHUTE SPLASH GUARD	
all	12	98A002AT	PAD 6"X9"REG.DUTY,TURCO#A90551	
all	13	15G105	HEXMACSCRNUT 8-32UNC2 SS18-8	
all	14	15N095	RDMACSCR 8-32UNC2X3/4 SS18-8	
all	15	15U120B	LOCKWASHER MEDIUM #8 SS18-8	
all	16	51BB0KN00B	BULKHD FITT 1/2"BARBED,POLYPRO	

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# Five Compartment for Dry Chemical Supplies



### Legend

B . . . 4 instances

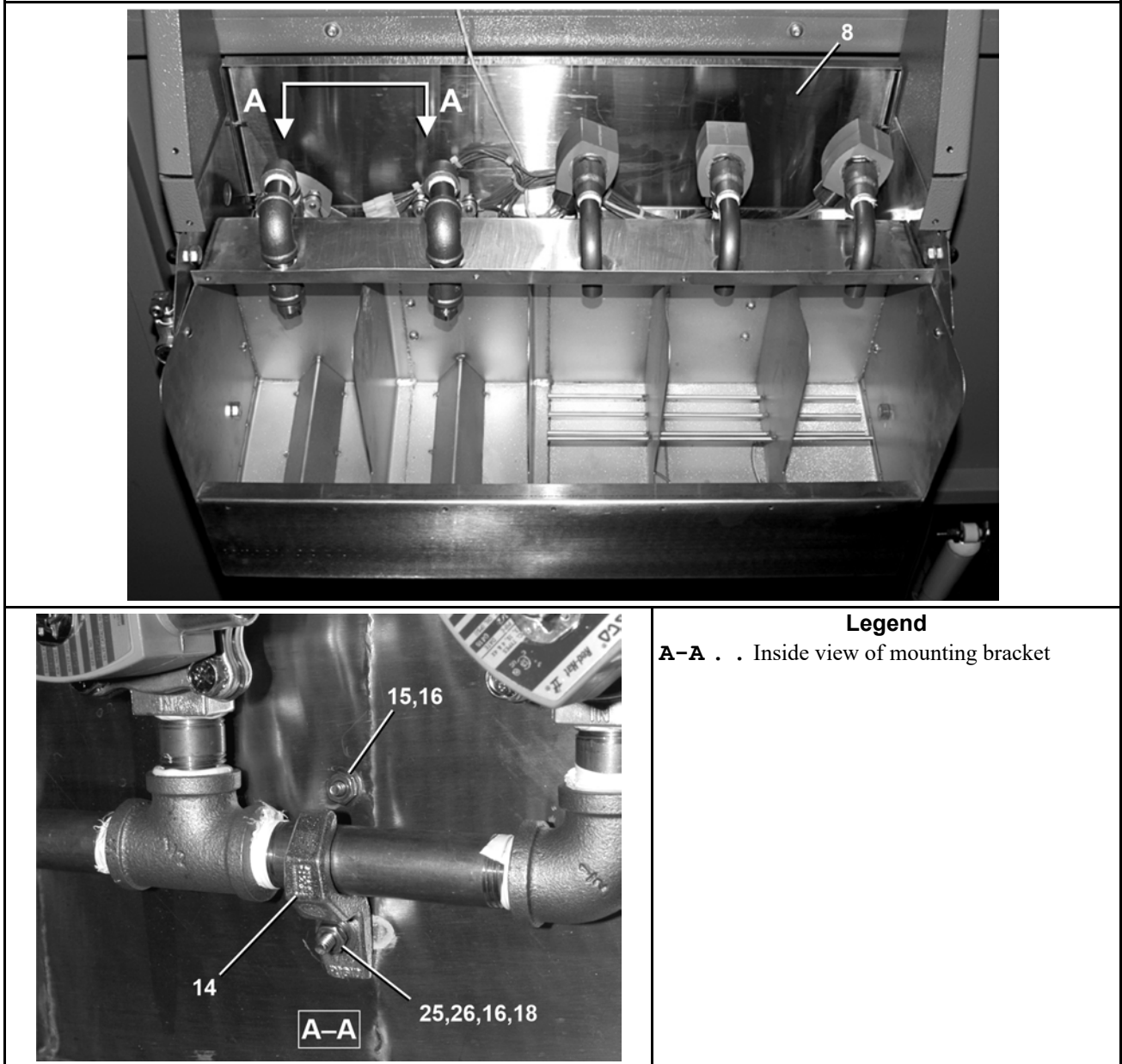
C . . . Valve manifold, see document BPWXBC04.



# Five Compartment for Dry Chemical Supplies

4 Sheets

Figure 32. Chemical Flushing, Valve Manifolds



Five Compartment for Dry Chemical Supplies

4 Sheets

Figure 33. Hot Water to Flush the Chemical Supplies

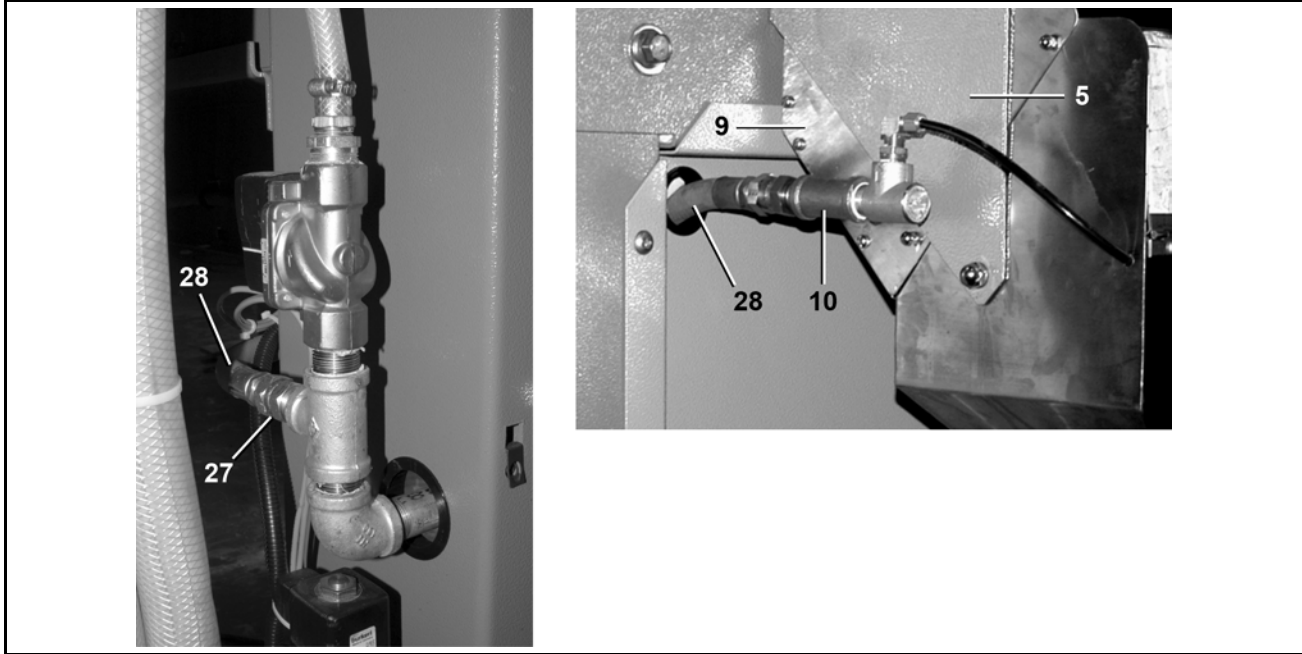


Table 29. Parts List—Five Compartment for Dry Chemical Supplies

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

Used In	Item	Part Number	Description/Nomenclature	Comments
Reference Assemblies				
	A	GWS3626X5	INST=5-COMP 3626X	36026X8J,X8W,X8R
	B	GWS4226X5	INST=5 COMP SUPPLY 4226X	42026X7J,X7W,X7R
	C	GWS4232X5	INST=5 COMP SUPPLY 42X	42032X7J,X7W,X7R
	D	AWS3626X5	ASSY=5-COMP 3626X	36026X8J,X8W,X8R
	E	AWS4226X5	ASSY=5 COMP SUPPLY 42X	42026X7J,X7W,X7R 42032X7J,X7W,X7R
Components				
A	1	02 13585B	COVER=5-COMP SUPPLY	
B	1	02 23585B	COVER=5COMP SUPPLY MNT	
C	1	02 24525C	COVER=5 COMP SUPPLY 4232X	
all	2	02 03870D	FLEXTUBE=2"ID X 14"LG W/CUFFS	
all	2	02 03870	FLEXTUBE=SOAPCHUTE 2"IDX24LG	
all	3	27A070	T-BOLT HOSECLAMP 1.94"-2.25"	
all	4	W2 21162B	WLMT=SUPPLY 36/42X (SS)	
A	5	02 13590	BRKT=5-COMP SUPPLY FRNT-36X	
BC	5	02 23590	BRKT=5-COMP SUPPLY FRNT-42X	

## Five Compartment for Dry Chemical Supplies

4 Sheets

Table 29 Parts List—Five Compartment for Dry Chemical Supplies (cont'd.)

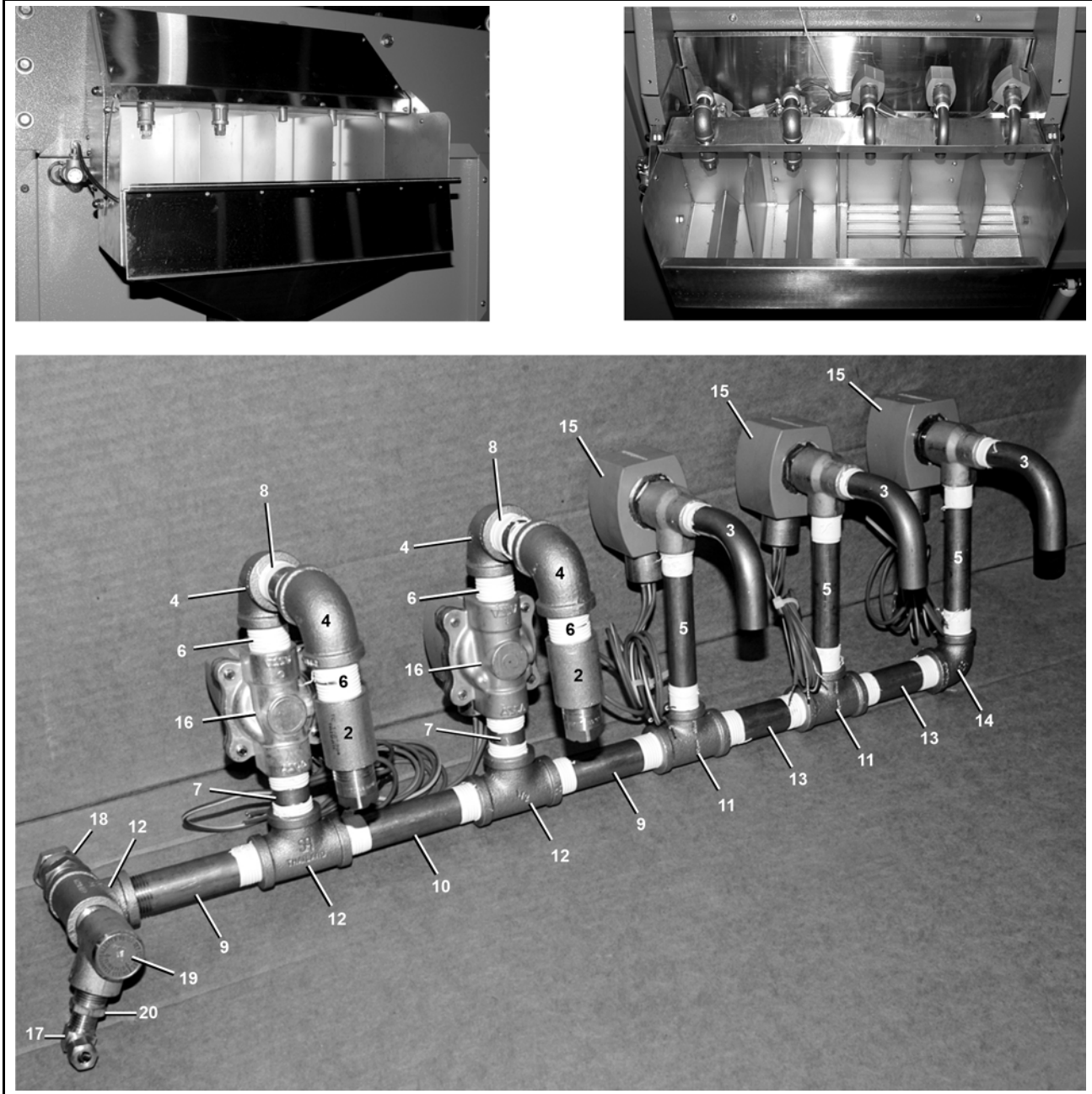
Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
A	6	02 13590A	BRKT=5-COMP SUPPLY REAR-36X	
BC	6	02 23590A	BRKT=5-COMP SUPPLY REAR42X	
A	7	02 13591	COVER=5 COMP FRONT/36X	
BC	7	02 23591	COVER=5-COMP FRNT-42X	
A	8	02 13592	COVER=SUPPLY REAR 36X	
BC	8	02 23592	COVER=5-COMP REAR 42X	
all	9	02 09100	FRT VALVE ENCLOSURE	
all	10	SA 16 034C	VALVASSY 5 FLUSH=42/32X	
all	11	15K095	HXCPSCR 3/8-16UNC2AX1 GR5 ZINC	
all	12	15G198	HXFLGNUT 3/8-16 ZINC	
all	13	SA 09 047	COVER=SUPPLY INJECTOR	
all	14	27A017	PIPESTRAP 1/2" 1-HOLE RIG COND	
all	15	15N117	RDMACSCR 10-24UNC2X3/8SS18-8	
all	16	15U160	LOCKWASHER MEDIUM #10 SS18-8	
all	17	24G018N	ROLLED WASH.194ID NYLTITE 10W	
all	18	15G130	HEXMACHSCRNUT 10-24UNC2 SS18-8	
all	19	15K086	HXCAPSCR 3/8-16NCX3/4 SS18-8	
all	20	15U260	LOCKWASHER MEDIUM 3/8 SS18-8	
all	21	24G030N	ROLLED WASH.379ID NYLTITE 37W	
all	22	15G200SS	HEXCAPNUT HIGH-CR 3/8-16 SS 1	
all	23	15K017	BUTSOKCAPSCR 10-24X1/2 SS	
all	24	15P100	#8 X 3/8 PHILPANHD TYPE B SMS	
all	25	15N146	RDMACHSCR 10-24UNC2X1 SS18-8	
all	26	15U135	FLATWASH#10 .4370DX.203IDX.04T	
all	27	51X017	UNIONSTRADT 1/2"#1404-8-8	
all	28	60E085C75A	HOSE ASSY=1/2"X75"LG+ENDS	

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# Valve Manifold for Five Compartments for Dry Chemical Supplies

2 Sheets



## Valve Manifold for Five Compartments for Dry Chemical Supplies

2 Sheets

**Table 30. Parts List—Valve Manifold for Five Compartments for Dry Chemical Supplies**

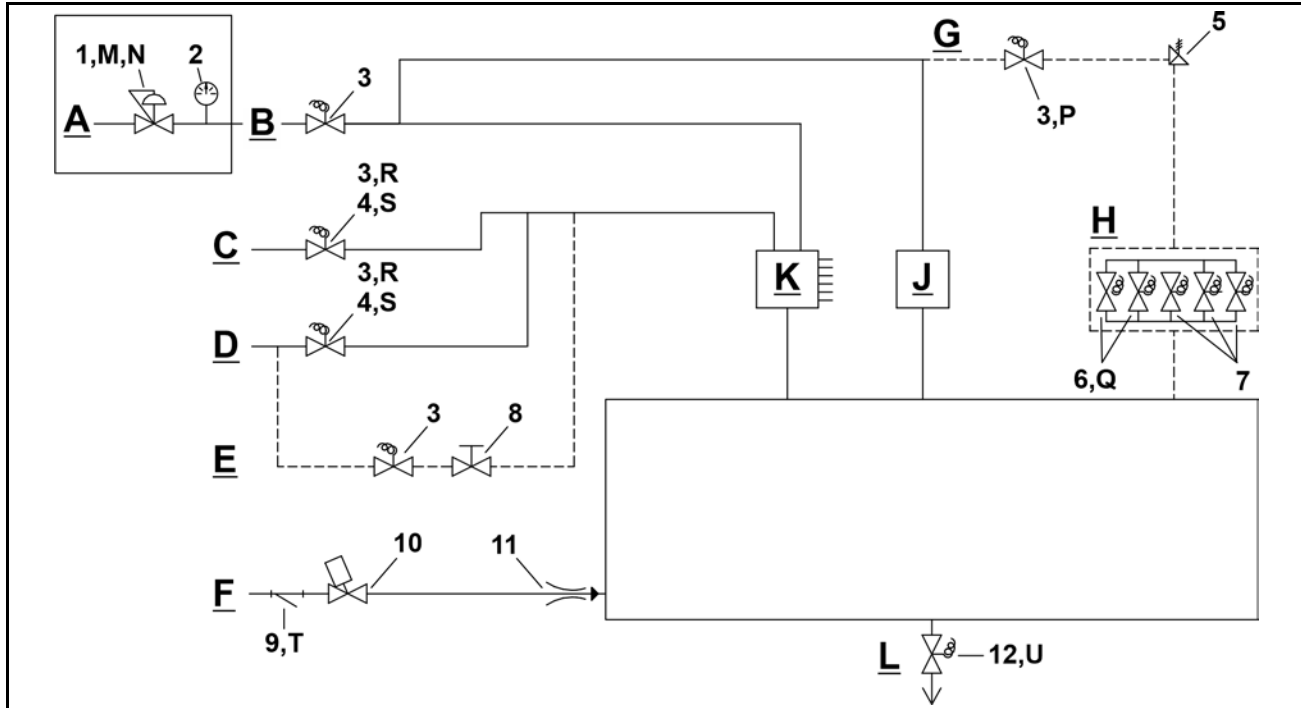
Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
Reference Assemblies				
	A	SA 16 034C	VALVASSY 5 FLUSH=42/32X	
Components				
all	1	27A001	NOZZLE BRASS 1/2" SPRAYSYSTEMS	
all	2	5SCC0KSF1	NPTCOUP 1/2"SS304 150#BARSTOCK	
all	3	02 09237	PIPE FORMED 90DEG BRS SUPINJ	
all	4	5SL0KBEA	NPTLNB 90DEG 1/2 BRASS 125#	
all	5	5N0G04KBE2	NPT NIP 3/8X4.5 TBE BRASS STD	
all	6	5N0KCLSBE2	NPT NIP 1/2XCLS TBE BRASS STD	
all	7	5N0K01KBE2	NPT NIP 1/2X1.5TBE BRASS STD	
all	8	5N0K02ABE2	NPT NIP 1/2X2 TBE BRASS STD	
all	9	5N0K03KB42	NPT NIP 1/2X3.5 TBE BRASS STD	
all	10	5N0K04ABE2	NPT NIP 1/2X4 TBE BRASS STD	
all	11	5S0KBEA0G	NPT TEE 1/2X1/2X3/8 BRASS 125#	
all	12	5S0KBEA	NPT TEE 1/2" BRASS 125#	
all	13	5N0K03ABE2	NPT NIP 1/2X3 TBE BRASS STD	
all	14	5SL0KBEA0G	NPTLNB 90DEG 1/2X3/8 BRASS 125	
all	15	96TCC2AA71	3/8" N/C 2WAY 240V50/60C VALVE	
all	16	96TDC2AA71	1/2"N/C2WY240V50/60C VLV(DRYVC) ASCO X8210G002 15461	
all	17	53A031XB	BODY-EL90MALE.25X25 #269C-4-4B	
all	18	51X017	UNIONSTRADT 1/2"#1404-8-8	
all	19	96M001	1/2X3/8" RELIEF VALVE SET31#	
all	20	5SB0G0EDEO	NPTHEXBUSH 3/8X1/4 GALCI 125#	

# 8 Water and Steam

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Water and Steam Schematic

36026X8R, 42026X7R, 42032X7R



Legend

- A . . . Pressure regulator assembly
- B . . . Hot water to flush the chemical supplies
- C . . . Hot water line
- D . . . Cold water line
- E . . . Cooldown water line (optional)
- F . . . Steam line (optional)
- G . . . Water to the five compartments for dry chemical supplies
- H . . . Five compartments for dry chemical supplies (optional)
- J . . . Soap chute
- K . . . Six inlets for peristaltic liquid chemical systems (optional)
- L . . . Drain valve
- M . . . Pressure regulator
- N . . . Keep this component set to the correct pressure, 28 PSI (1.9 ATU)
- P . . . Secondary location
- Q . . . See document, BPWXBC04
- R . . . Model: 36026X8R
- S . . . Models: 42026X7R, 42032X7R
- T . . . Keep this component clean
- U . . . See document, BPWXBW05



**Water and Steam Schematic**

2 Sheets

36026X8R, 42026X7R, 42032X7R

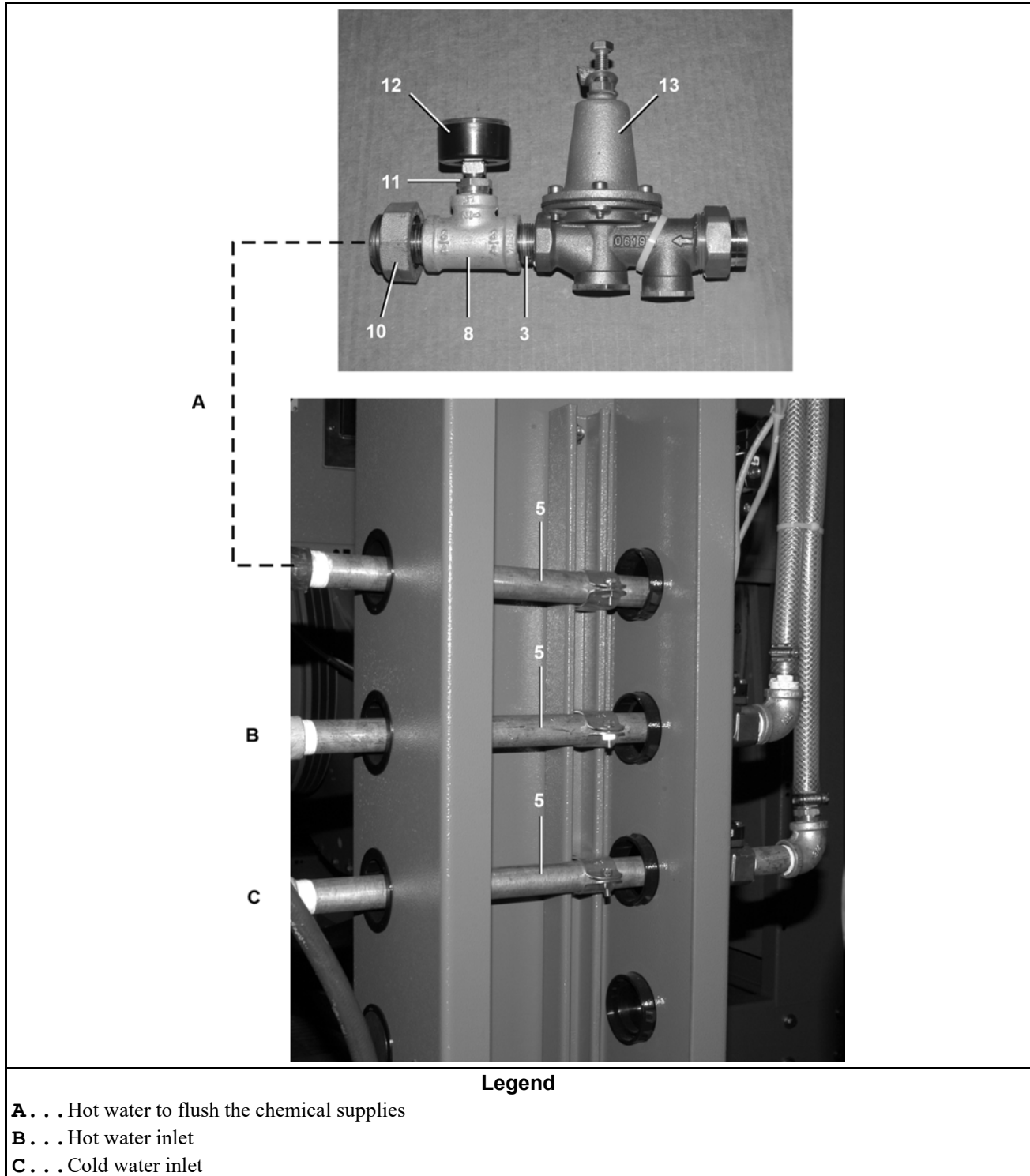
**Table 31. Parts List—Water and Steam Schematic**

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
Components				
all	1	96J031D	3/4"PRESSREG SET 28# FEMXUN=WATTS#LF25AUB-ZB	
all	2	30N100	PRESSGAUGE 1/8"BACKCN.0-30PSI	
all	3	96P056B71	3/4"NC 230V50/60 W/LEADS BURKERT	
all	4	96P152A71	1+1/4"NC 240V W/LEADS BURKERT	
all	5	96M001	1/2X3/8" RELIEF VALVE SET31#	
all	6	96TDC2AA71	1/2"N/C2WY240V50/60C VLV	
all	7	96TCC2AA71	3/8" N/C 2WAY 240V50/60C VALVE	
all	8	96D050A	3/4"BALLVALVE BRZ BONOMI 171N	
all	9	51T030	Y-STRAINER 3/4" CAST IRON	
all	10	96P040A71	3/4"STEAMVAL240V50/60C 150PSI	
all	11	W2 02555A	WELD X-MACH PIPE NOZZLE 3/8D	
all	12	96D250A71	DRINVAL 2"N/O MTRDR240V 50/60C	

# Water Inlets and Components

4 Sheets

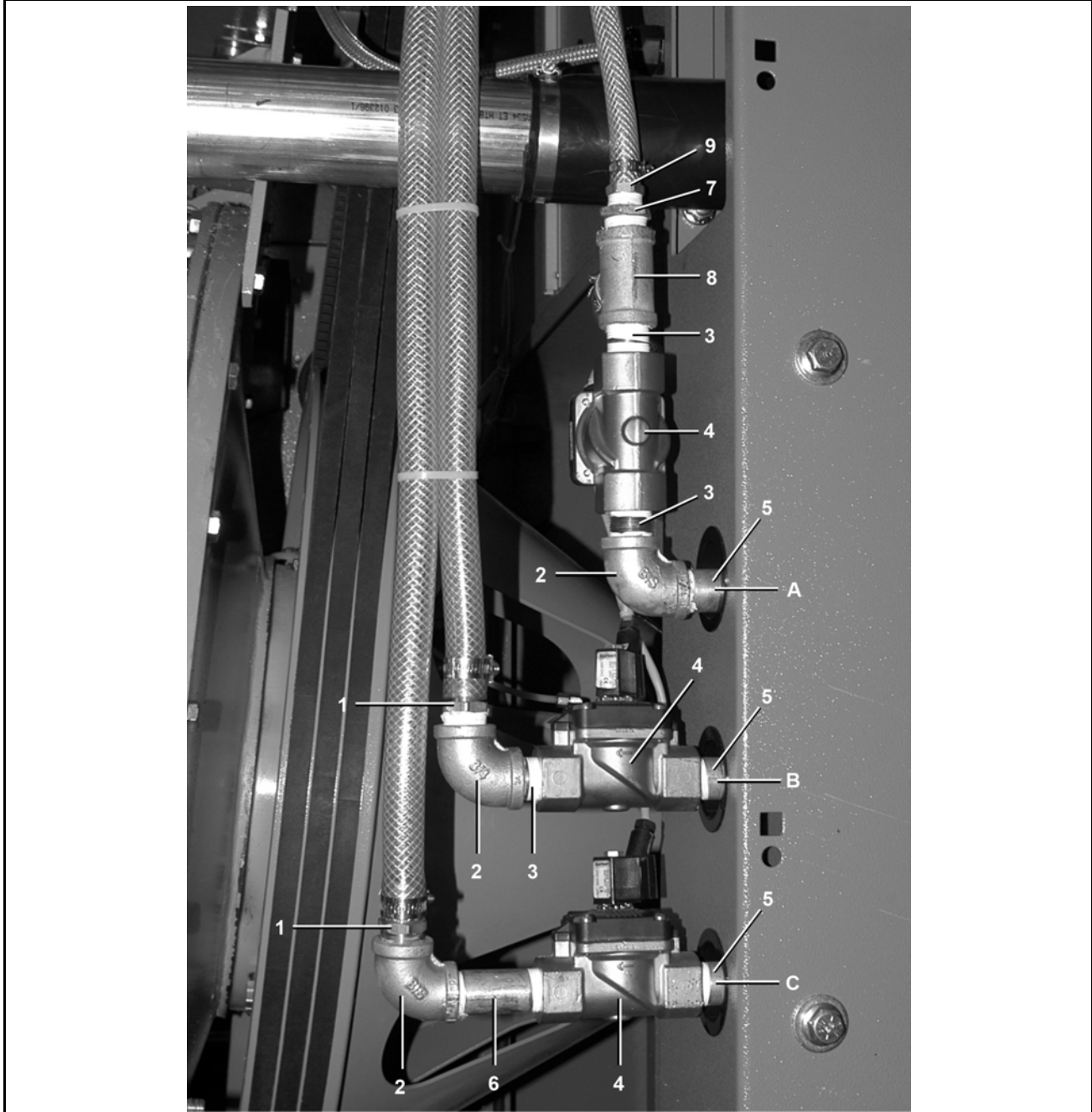
36026X8R



# Water Inlets and Components

4 Sheets

36026X8R



### Legend

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

# Water Inlets and Components

4 Sheets

36026X8R

<p><b>Hot Water to Flush the Chemical Supplies</b></p>	<p><b>Inlet for Peristaltic Chemical Supplies (See BPWXBC01)</b></p>
<p><b>Inlet Manifold</b></p>	
<p><b>Legend</b></p> <p><b>D</b> . . . To peristaltic supply inlet</p> <p><b>E</b> . . . To soap chute or five compartment supply</p> <p><b>F</b> . . . *The electric valve and the tee are reversed when there is no five compartment supply.</p>	

# Water Inlets and Components

4 Sheets

36026X8R

**Table 32. Parts List—Water Inlets and Components**

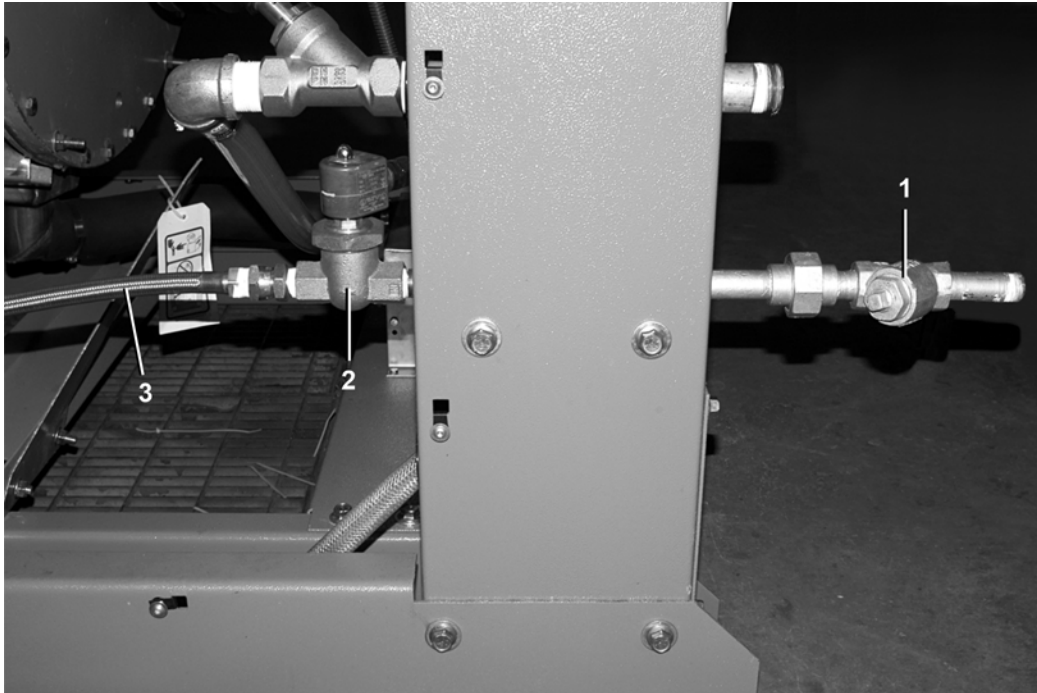
Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
Reference Assemblies				
	A	AVW03010	H2O INLET VALVE HOT	
	B	AVW03011	H2O INLET VALVE COLD	
	C	AVW42006	FLUSH VALVE INLET 42X	
	D	AVW03013	3626X H2O MANIFOLD	
Components				
all	1	51E511	HOSESTEM BRASS 3/4MP X HOSEID	
all	2	5SL0PNFA	NPTLNB 90DEG 3/4 GALMAL 150#	
all	3	5N0PCLSG42	NPT NIP 3/4XCLS TBE GALSTL S40	
all	4	96P056B71	3/4"NC 230V50/60 W/LEADS BURKERT	
all	4	96V415	COIL 240V 50/60 FOR BURK 5281 #647360	
all	4	96V607	3/4"OPERATRWEAR KIT-FOR BURKERT#5281 #645562	
all	4	96V608	3/4"MAIN DIAPHRAMKIT-FOR BURKERT#5281#624016	
all	4	96P042VA37	DIN CONNECTOR=BURKERT # 314807 W/ 9.84FT MOLDED CABLE	
all	5	5N0P14AG42	NPT NIPPLE 3/4X14 TBE GALSTL	
all	6	5N0P03AG42	NPT NIP 3/4X3 TBE GALSTL SK40	
all	7	5SB0P0KBEO	NPTHEXBUSH 3/4X1/2 BRASS 125#	
all	8	5S0PNFA0K	NPT TEE 3/4X3/4X1/2 GALMAL 150#	
all	9	51E509	HOSESTEM BRASS 1/2MPX1/2HOSEID	
all	10	5SU0PNF	NPT UNION 3/4" GALMAL 150#	
all	11	5SB0K0CDEO	NPTHEXBUSH 1/2X1/8 GALCI 125#	
all	12	30N100	PRESSGAUGE 1/8"BACKCN.0-30PSI	
all	13	96J031D	3/4"PRESSREG SET 28# FEMXUN=WATTS#LF25AUB-ZB	
all	14	5N0P01PG41	NPT NIP 3/4X1.75 TOE GAL. S40	
all	15	5SL1ANFA0P	NPTLNB 90DEG 1X3/4 GALMAL 150#	
all	16	5N1A07AG42	NPT NIP 1X7 TBE GALSTL SK40	
all	17	5S1ANFA0P1	NPT TEE 1X1X3/4" GALMAL 150#	
all	18	5N1A03AG42	NPT NIP 1X3 TBE GALSTL SK40	

### Steam Inlet

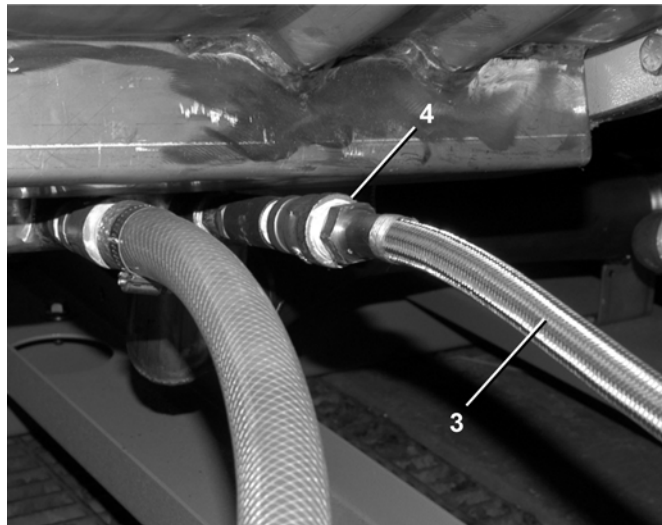
2 Sheets

36026X8R, 42026X7R, 42032X7R

Steam Line



Steam Nozzle



**Steam Inlet**

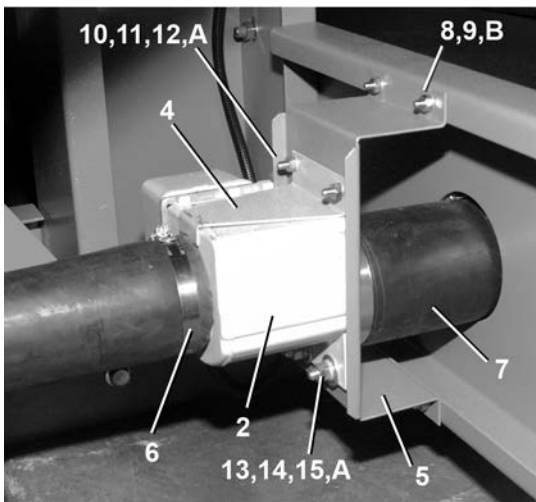
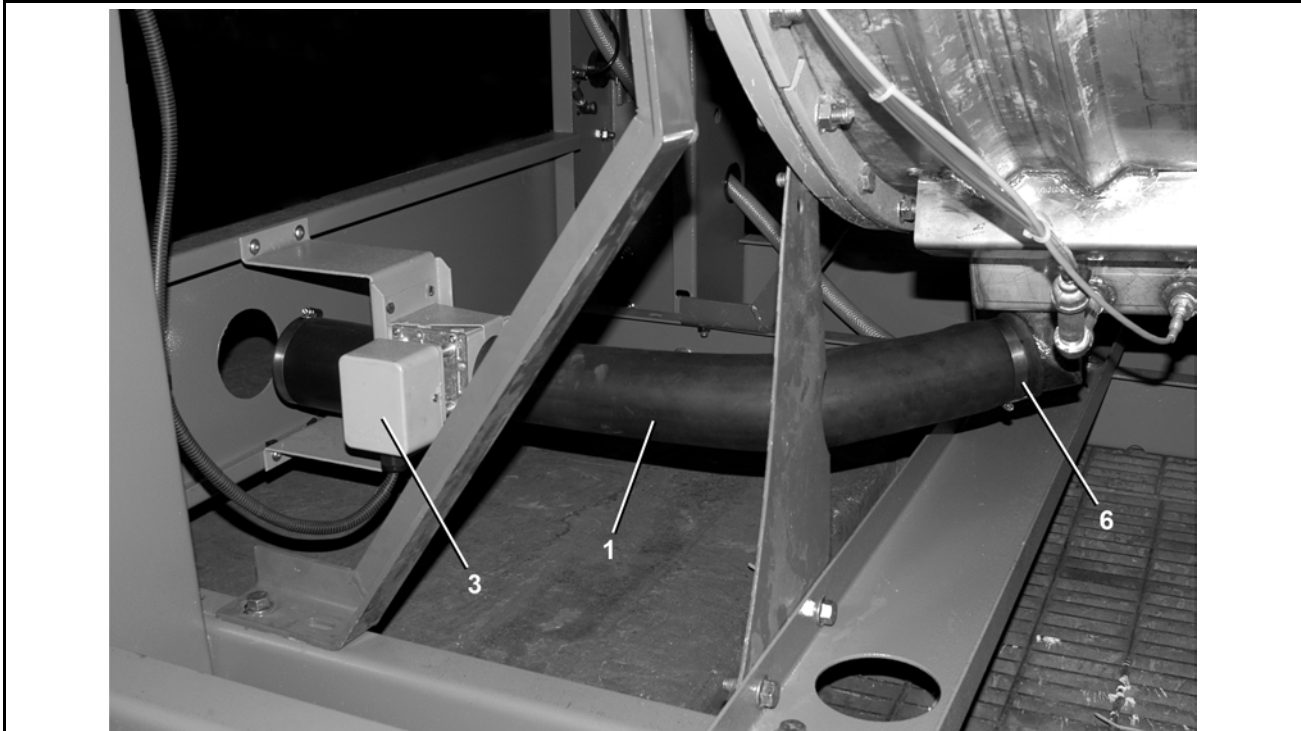
2 Sheets

36026X8R, 42026X7R, 42032X7R

**Table 33. Parts List—Steam Inlet**

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
Reference Assemblies				
	A	AVS3626001	STEAM ASSY 3626X8J	
Components				
all	1	51T040	Y STRAINER 1" CAST IRON 20 MESH	
all	2	96P040A71	3/4"STEAMVAL240V50/60C 150PSI	
all	3	60E512C28	STEAMHOSE S/S BRAID 3/4+2ENDS	
all	4	W2 02555A	WELD X-MACH PIPE NOZZLE 3/8D	

Drain Valve Installation



Legend

- A . . . 2 instances
- B . . . 4 instances

Table 34. Parts List—Drain Valve Installation

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

Used In	Item	Part Number	Description/Nomenclature	Comments
Reference Assemblies				
	A	GVD3626X7	INST=DRAINVAL ASSY 3626X	36026X8J,X8W,X8R



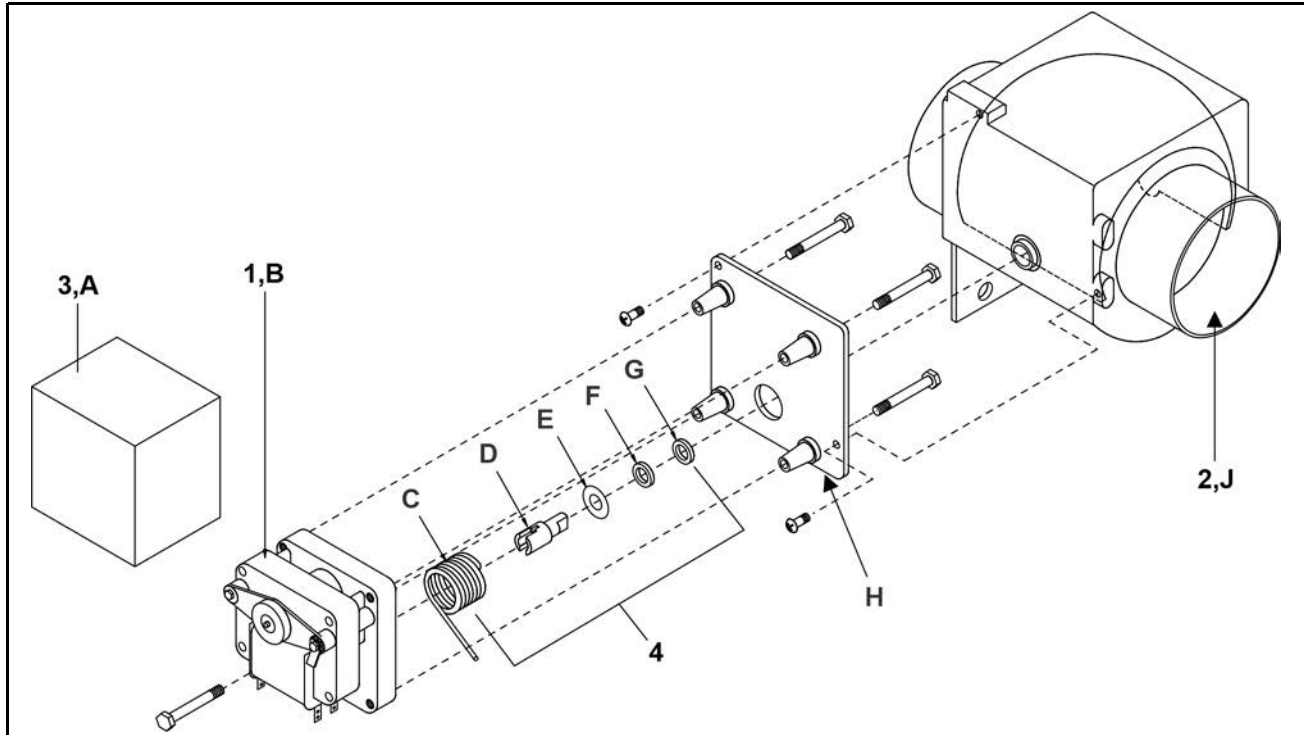
## Drain Valve Installation

2 Sheets

Table 34 Parts List—Drain Valve Installation (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
	B	GVD4226X	INST=DRAINVAL 4226X	42026X7J,X7W,X7R,42032X7J, X7W,X7R
Components				
all	1	02 03245	MOLDED DRAIN HOSE, 3022H	
all	2	96D350A71	DRINVAL 3"N/O MTRDR240V 50/60C W/COVER DEPENDO	
all	3	96D35C0V	MTRCOVER 2-PCFOR 3"DRAINVAL-DEPENDO #90016105	
all	4	02 02934A	DUMPVAL BKT TOP	
A	5	02 13534	BKT=DUMPVAL MT 3626X	
B	5	02 23534	BKT=DUNPVAL MT 4226/32	
all	6	27A088S	HOSECLAMP 3+1/16-4"SSSCR#HSS56	
all	7	60B075	DFW56-33PMSP RUBB CONN.	
all	8	15N110H	RDWASHHD TORXBOLT M6-1X25MM ZN	
all	9	15G004HC	EXTRUNUT M6-1 GRIP 3.5-6.5MM	
all	10	15K039	HXCAPSCR 1/4-20UNC2AX3/4 GR5 Z	
all	11	15U185	FLATWASHER(USS STD) 1/4" ZNC P	
all	12	15G178	1/4"-20 HEXFLANGE NUT ZINC	
all	13	15K095	HXCPCSCR 3/8-16UNC2AX1 GR5 ZINC	
all	14	15U240	FLATWASHER(USS STD) 3/8" ZNC P	
all	15	15G198	HXFLGNUT 3/8-16 ZINC	

**3 Inch Electrical Drain Valve**



**Legend**

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

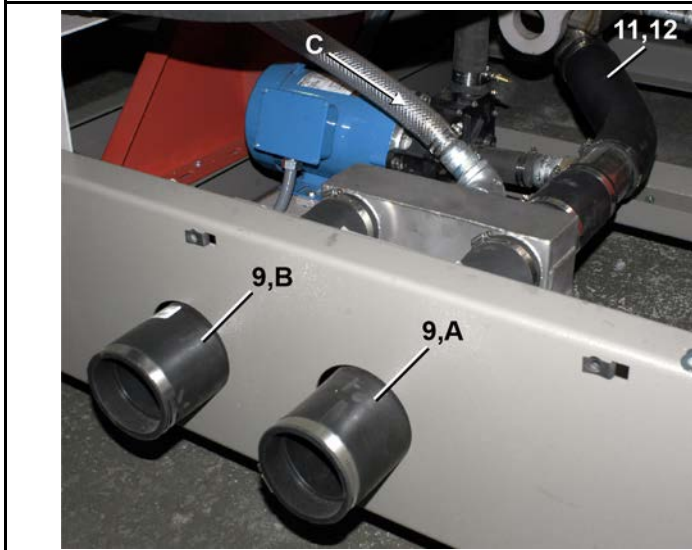
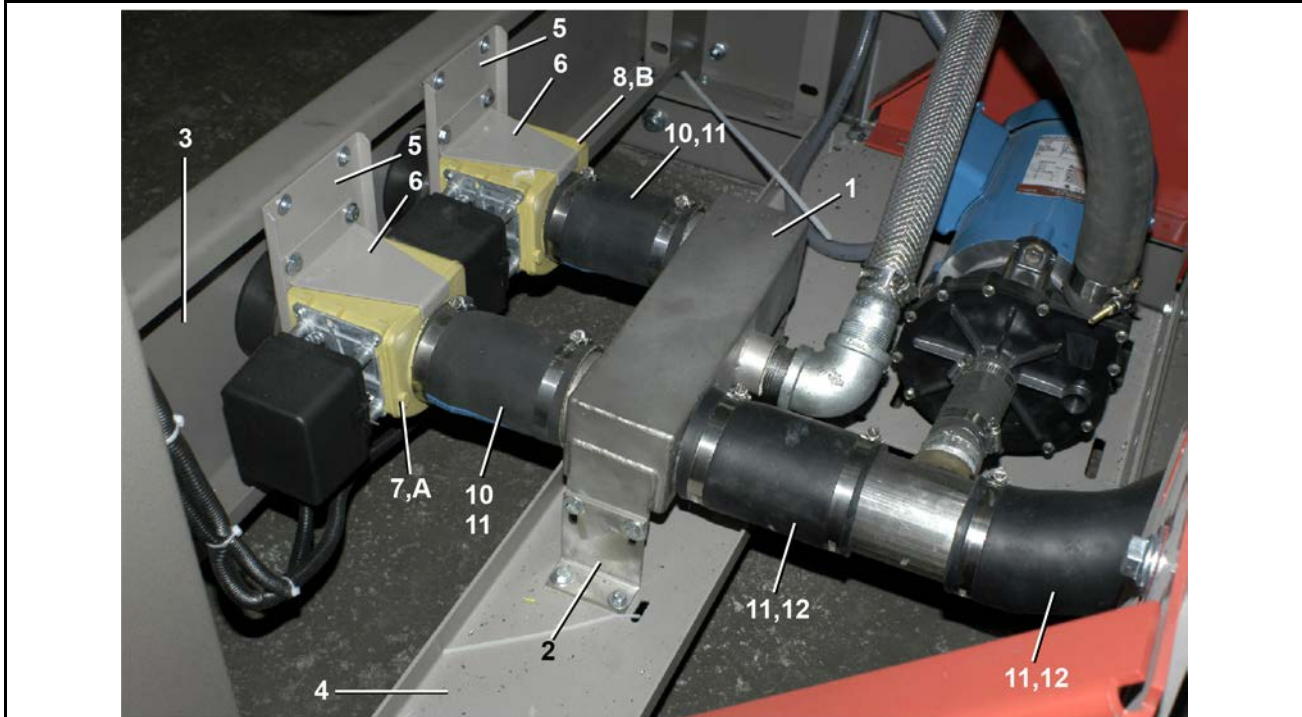
## 3 Inch Electrical Drain Valve

2 Sheets

**Table 35. Parts List—3 Inch Electrical Drain Valve**

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
Reference Assemblies				
	A	96D350A37C	DRNVAL 3"N/O 120V50/60C W/COVER (WT=4LBS)	
	B	96D350A37	DRINVAL 3"N/O MTRDR120V 50/60C NO COV/DEPENDO	
	C	96D350A71	DRINVAL 3"N/O MTRDR240V 50/60C W/COVER DEPENDO	
	D	96D350B71	DRINVAL 3"N/C MTRDR240V 50/60 W/COVER	
Components				
AB	1	96D35MTR37	120V 50/60CMTR FOR 3"DRAINVAL	
CD	1	96D35MTR71	240V 50/60CMTR FOR 3"DRAINVAL	
B	2	96D35B0D	BODY & BALL FOR 3" DRAIN VALVE (VLV HOUSING ONLY)	
all	3	96D35C0V	MTRCOVER 2-PCFOR 3"DRAINVAL-DEPENDO #90016105	
all	4	96D35PIN	DRIVE PIN KIT FOR 3" DRAIN VAL	

Dual Drains to the Sewer and Reuse Water



**Legend**

- A . . . Drain valve to the sewer, usually open
- B . . . Drain valve to reuse water, usually closed
- C . . . Reuse water inlet

## Dual Drains to the Sewer and Reuse Water

2 Sheets

**Table 36. Parts List—Dual Drains to the Sewer and Reuse Water**

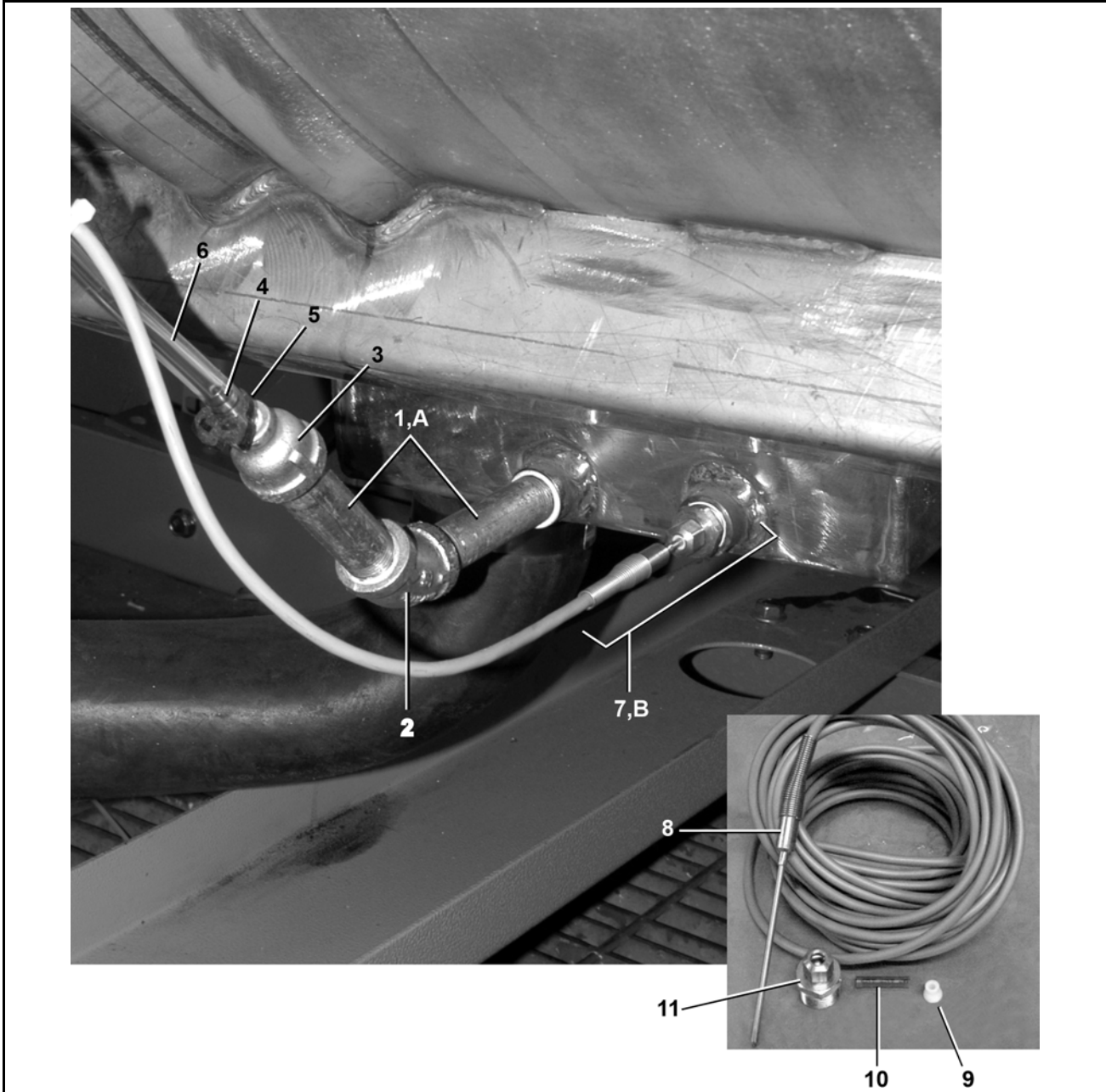
Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
Reference Assemblies				
	A	GVD3626X7A	INST=DUAL DRAIN 3626X	36026X8J,X8W,X8R
	B	GVD4226XA	INST=4226/32 DUAL DRAIN	42026X7J,X7W,X7R 42032X7J,X7W,X7R
Components				
all	1	W2 03412A	WLMT=DIVERTER BOX DUAL DRAIN	
all	2	02 03412Q	BRKT=DIVERTER BOX MNT 3626X	
A	3	02 13513A	X-BRACE DUAL DRAIN 3626X	
B	3	02 23513A	X-BRACE DUAL DRAIN 4226/32X	
A	4	02 02934D	DIVERTER MNT 3626X DUAL DRN	
B	4	02 03412P	DIVERTER MNT DUAL DRN 4226/36X	
all	5	02 02934B	DRAIN VAL MNT 3626X	
all	6	02 02934A	DUMPVAL BKT TOP	
all	7	96D350A71	DRINVAL 3"N/O MTRDR240V 50/60C W/COVER DEPENDO	
all	8	96D350B71	DRINVAL 3"N/C MTRDR240V 50/60 W/COVER	
all	9	60B075	DFW56-33PMSP RUBB CONN.	
all	10	60E303A05A	HOSE=3"ID X 5"LG	
all	11	27A082S	HOSECLAMP 2+9/16-3.5SS305SCR	
all	12	02 03245	MOLDED DRAIN HOSE, 3022H	
all	13	W2 13546	TUBE WELD RECIRC 36X8W	

# 9 Control and Sensing

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# Water Level Switch and Temperature Sensor

2 Sheets



### Legend

- A . . . Air chamber for the pressure switch
- B . . . Temperature sensor



## Water Level Switch and Temperature Sensor

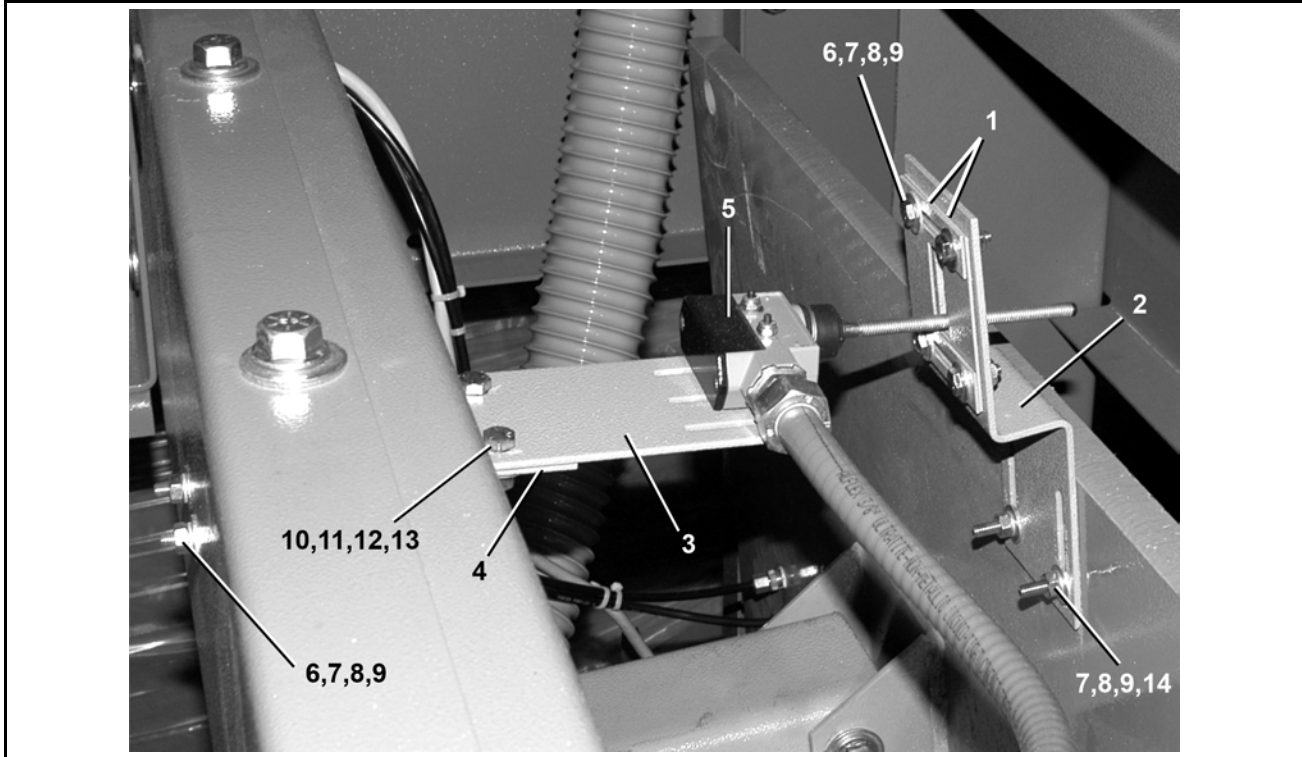
2 Sheets

Table 37. Parts List—Water Level Switch and Temperature Sensor

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
Reference Assemblies				
	A	ALL30211	ASSY=3022H7J AIR CHAMBER	
Components				
all	1	5N0K04AG42	NPT NIP 1/2X4 TBE GALSTL SK40	
all	2	5SL0KNFK	NPTELB 45DEG 1/2 GALMAL 150#	
all	3	5SR0K0ENF	NPT RED 1/2X1/4 GALMAL 150#	
all	4	51E502A	HOSESTEM BRASS 1/8MPT X3/16	
all	5	27A047	HOSECLMP 1/8HOSEID CLIP#5000-2	
all	6	60E004NT	TUBING (NYL.)CLR.1/4"ODX1/8"	
all	7	30R0043PB	TEMPERATURE PROBE ASSY=BRASS	
all	8	30R0043P	TEMP PROBE:THERMISTOR 30K OHMS	
all	9	30R0043PF	FERRULE=TEMP PROB.25COMPFIT	
all	10	09B067	BUTTSPLICE(INS) RED 16-22GA.	
all	11	51A026E	FLUID CONNECTOR 1/4TUBEX1/2MPT	

# Excursion Switch (Unwanted Movement Switch) Components and Installation

2 Sheets



**Table 38. 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
Reference Assemblies				
	A	GES36261	INST-EXCURSION SW 3626X	36026X8J,X8W,X8R
	B	GES4226X	INSTALL=EXCURSION SW 4226/32 X	42026X7J,X7W,X7R 42032X7J,X7W,X7R
Components				
all	1	02 02938B	BKT EXCURSION ADJ	
all	2	02 02938	BRKT EXCURSION SWITCH SHELL	
all	3	02 13539B	BKT=EXCURSION SWT ADJ PLATE	
all	4	02 13539A	BRKT=EXCURSION SWT MNT 3626	
all	5	09R008ASTD	* 09R008A+MOUNTING HDWRE+INST	
all	6	15K039	HXCAPSCR 1/4-20UNC2AX3/4 GR5 Z	
all	7	15U185	FLATWASHER(USS STD) 1/4" ZNC P	
all	8	15G177	HXNUT 1/4-28UNF2B SAE ZINC GR2	
all	9	15U180	LOCKWASHER MEDIUM 1/4 ZINCPL	
all	10	15G205	HXNUT 3/8-16UNC2B ZINC GR2	

## Excursion Switch (Unwanted Movement Switch) Components and Installation

2 Sheets

**Table 38 Parts List—Excursion Switch (Unwanted Movement Switch) Components and Installation (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	11	15U255	LOCKWASHER MEDIUM 3/8 ZINCPL	
all	12	15U240	FLATWASHER(USS STD) 3/8" ZNC P	
all	13	15K085	HEXCAPSCR 3/8-16UNC2AX3/4 GR5	
all	14	15K046	HXCAPSCR 1/4-20 UNC2A X 2"GR5	

# 10 Pneumatics

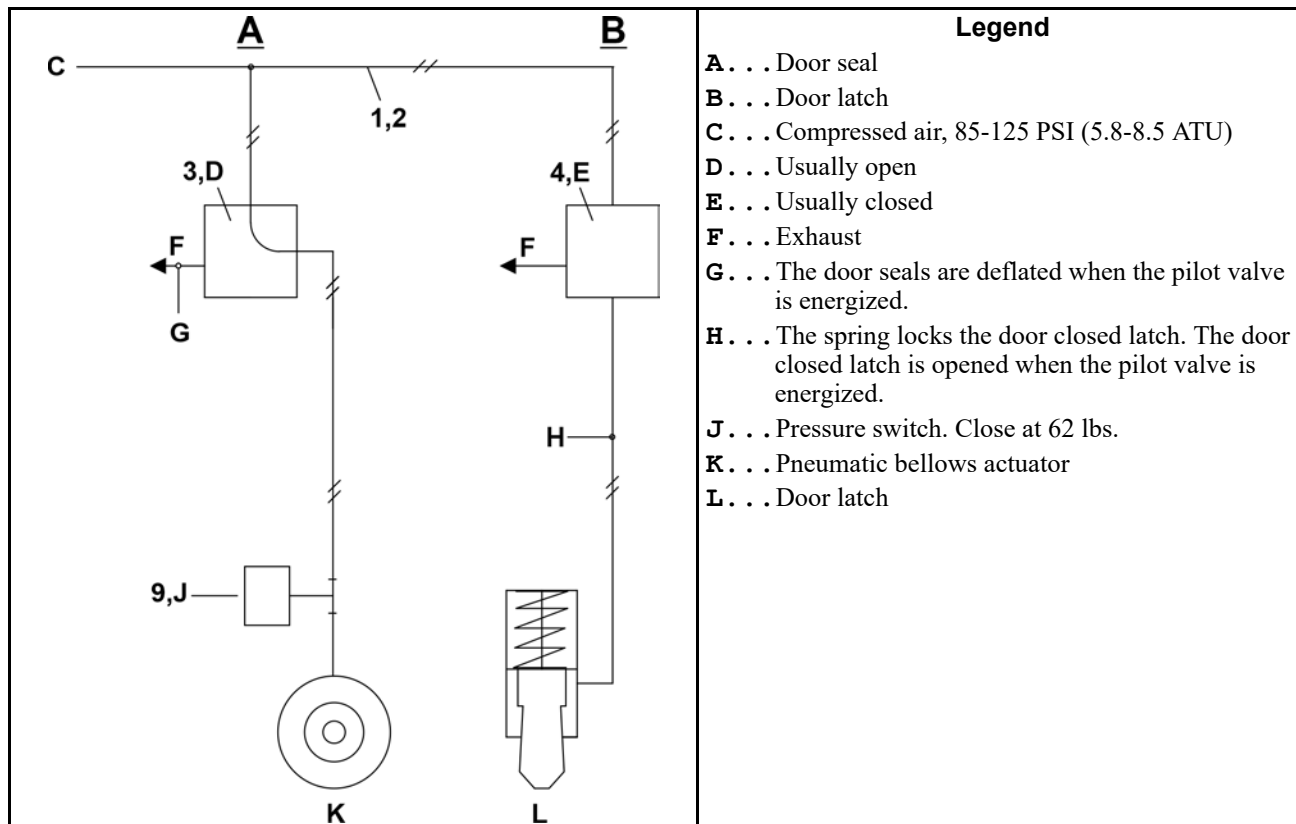
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### Pneumatic Schematic

1 Sheet

36026X8R, 42026X7R, 42032X7R

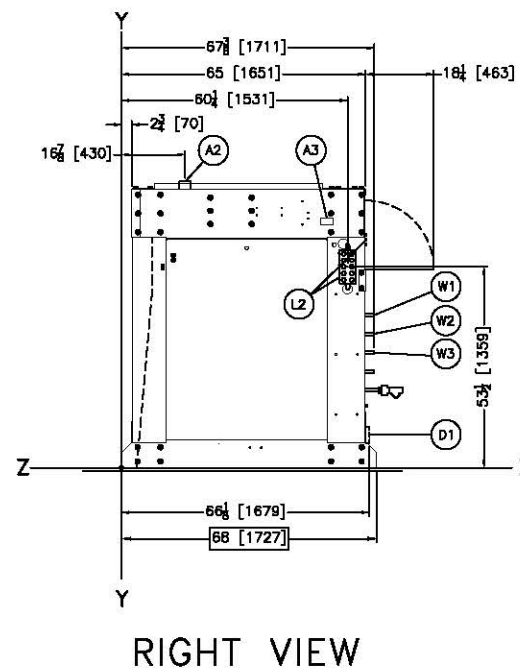
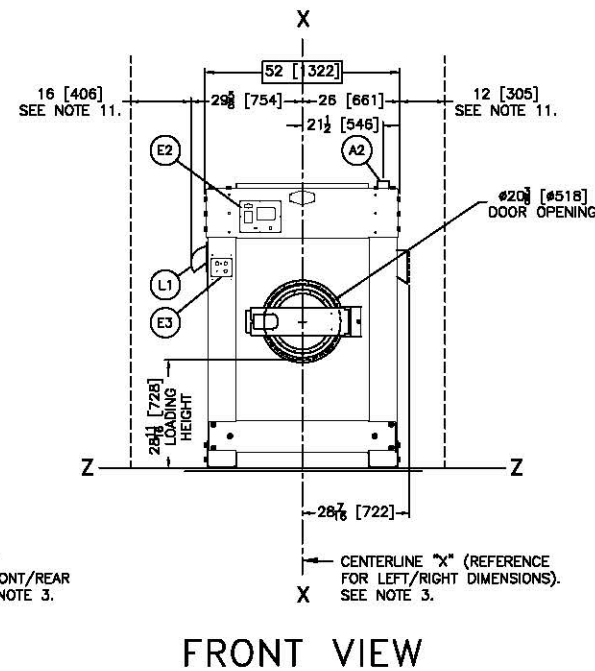
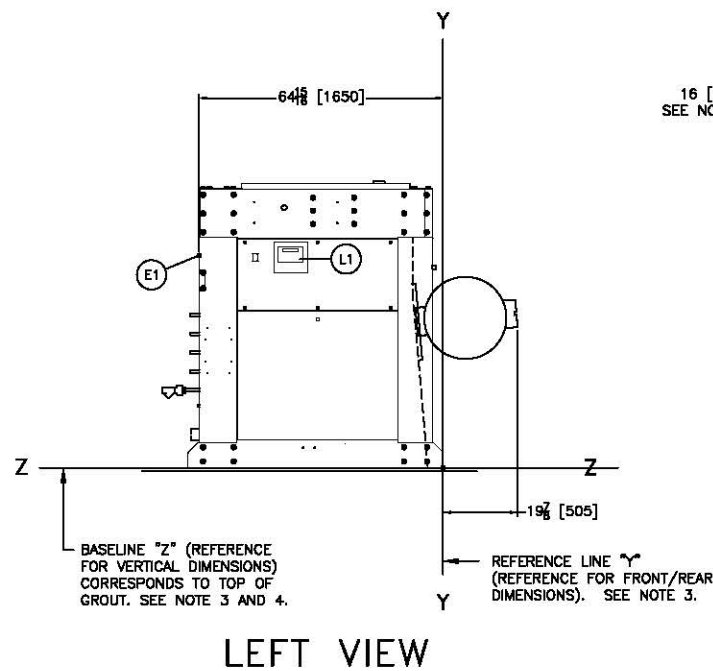
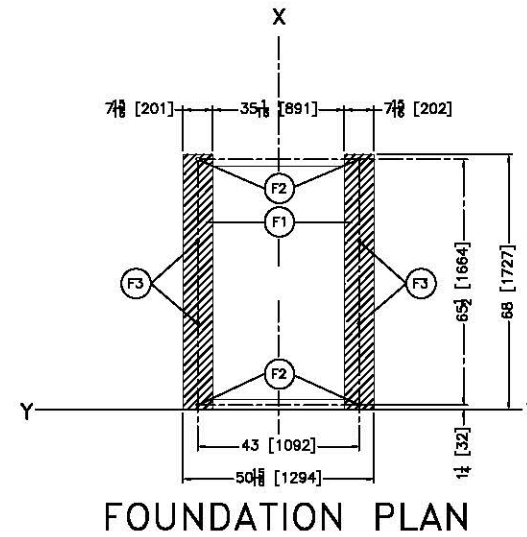
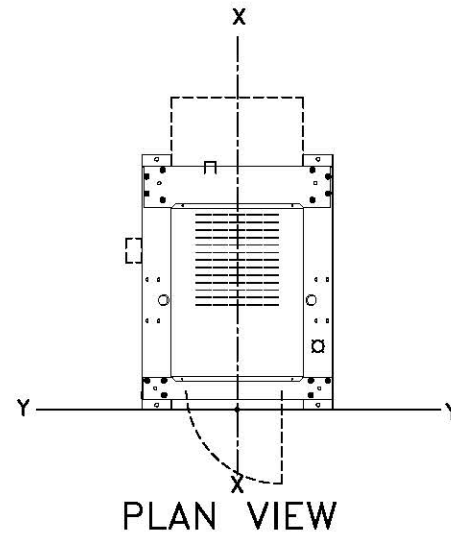
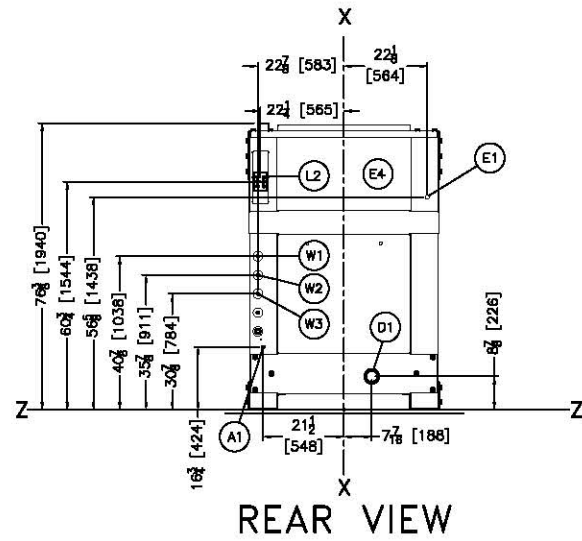
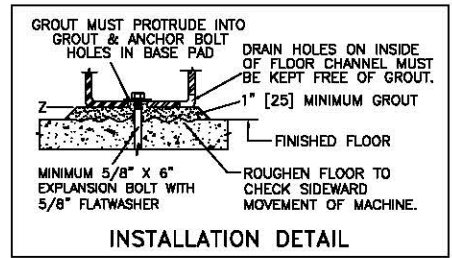


- Legend**
- A . . . Door seal
  - B . . . Door latch
  - C . . . Compressed air, 85-125 PSI (5.8-8.5 ATU)
  - D . . . Usually open
  - E . . . Usually closed
  - F . . . Exhaust
  - G . . . The door seals are deflated when the pilot valve is energized.
  - H . . . The spring locks the door closed latch. The door closed latch is opened when the pilot valve is energized.
  - J . . . Pressure switch. Close at 62 lbs.
  - K . . . Pneumatic bellows actuator
  - L . . . Door latch

**Table 39. 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
Reference Assemblies				
	A	AVA75X7J	3/4" VALVE SET X7/8J	
Components				
all	1	X3 01507D	MANIFOLD BLOCK MACH 6 PORTS	
all	2	03 LF1X5K	LOCK BAR=VALVE SET 10 STAT	
all	3	96R302B71	1/8" AIRPILOT 3W NO 240V50/60	
all	4	96R301B71	1/8" AIRPILOT 3W NC 240V50/60	
all	5	09N082A	PRESSW NASON CLOSE @ 62 LB.	

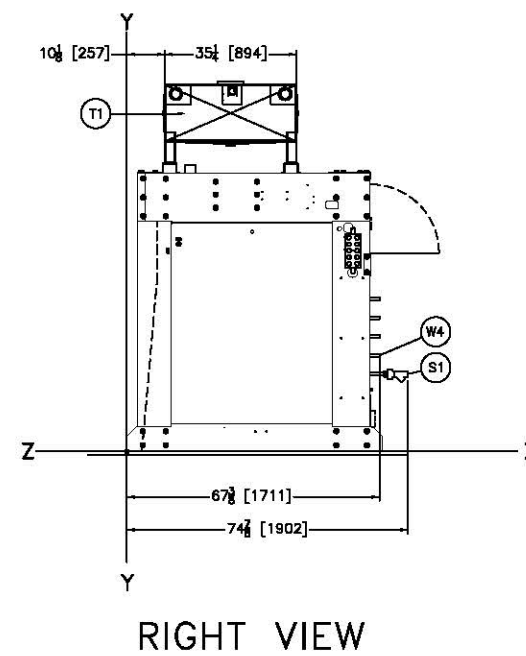
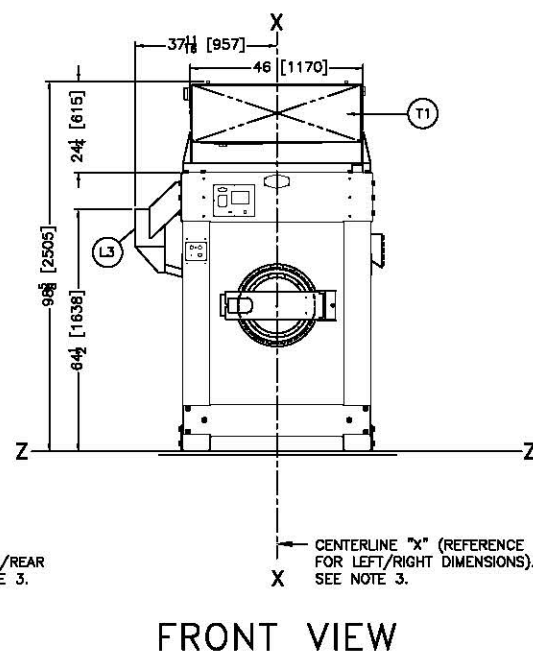
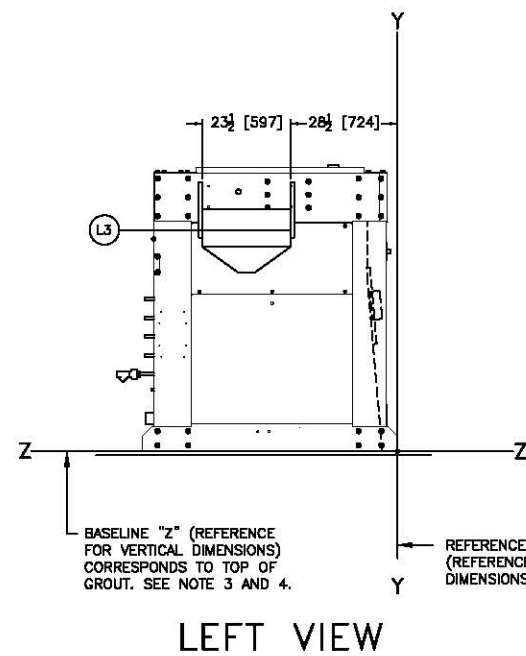
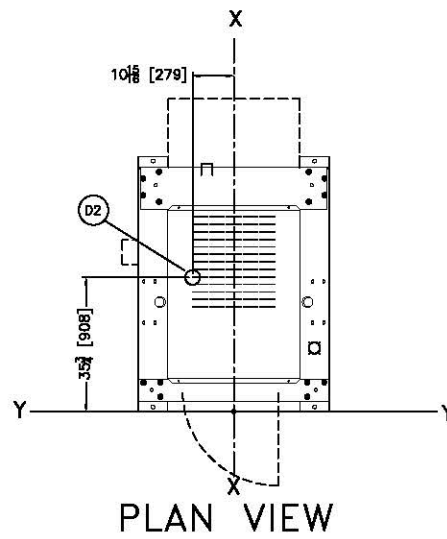
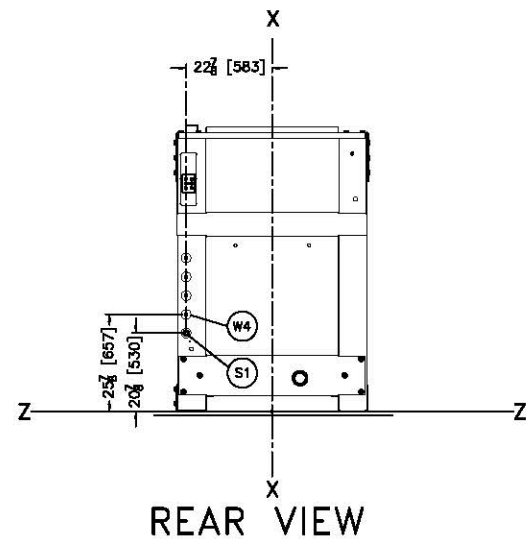
# 11 Dimensional Drawings



ITEM	LEGEND
W3	COLD WATER INLET, ELECTRIC, 3/4" NPT
W2	HOT WATER INLET, ELECTRIC, 3/4" NPT
W1	HOT WATER FOR FLUSHING, 3/4" NPT CONNECTION, ELECTRICALLY OPERATED. PRESSURE REGULATOR ASSEMBLY REMOVED FOR SHIPMENT, MUST BE ADDED AT INSTALLATION.
L2	STANDARD LIQUID SUPPLY WITH 15 LIQUID CHEMICAL SIGNALS. USES 6 PORT & 10 PORT MANIFOLDS. SEE NOTE 10.
L1	STANDARD SOAP CHUTE
F3	GROUT HOLES
F2	(4) 1-1/16" DIAMETER ANCHOR BOLT HOLES, USE 5/8" X 6" BOLTS MINIMUM.
F1	BASEPADS, SEE NOTE 8.
E4	MAIN ELECTRICAL CONTROL BOX
E3	HIGH VOLTAGE CONTROL PANEL
E2	MitTouch-EX™ TOUCH SCREEN CONTROLLER
E1	MAIN ELECTRICAL CONNECTION
D1	ELECTRIC DRAIN TO REAR, 3" PIPE SOCKET JOINT
A3	VENT FOR PERISTALTIC SUPPLY
A2	VENT, 3" O.D. DIAMETER
A1	MAIN AIR, 1/4" NPT CONNECTION

- NOTES**
- 12 [305] MINIMUM CLEARANCE IS RECOMMENDED FOR SERVICE TO MACHINE ON SIDES NOT REQUIRING OPERATOR ACCESS. 18 [406] MINIMUM IS RECOMMENDED FOR OPERATOR ACCESS TO SOAP SUPPLY. SEE LOCAL ELECTRIC CODES FOR REQUIRED CLEARANCES.
  - 10 LIQUID SUPPLY MANIFOLDS COME WITH THREE SETS FITTINGS: ONE SET OF 3/8" FITTINGS, ONE SET OF 1/2" FITTINGS, AND ONE SET OF PLUGS WHICH ARE SHIPPED ON MACHINE.
  - 9 SHIM TO LEVEL THE MACHINE AND ALLOW FOR 1" [25] MINIMUM GROUT. ANCHOR ALL LABELED ANCHOR BOLT HOLES. USE 5/8" X 6" BOLTS, MINIMUM. SEE INSTALLATION MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS.
  - 8 SHADED AREA DENOTES BASE PADS WHICH MUST BE CONTINUOUSLY SUPPORT.
  - 7 DO NOT PRE-PIPE ANY CLOSER THAN 60 [1524].
  - 6 AS OF THIS WRITING, THE MINIMUM CLEARANCE REQUIRED BY U.S. NATIONAL ELECTRIC CODES, FROM ELECTRIC BOX TO ANY OBJECT IS:  
36 [914] IF OBJECT IS AN UNGROUNDED (INSULATED) WALL.  
42 [1067] IF OBJECT IS A GROUNDED WALL (i.e. 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.

36026X8R



W4	THIRD (OR REUSE) WATER INLET, ELECTRICALLY OPERATED, 3/4" NPT CONNECTION
S1	OPTIONAL AIR-OPERATED STEAM INLET, Y-STRAINER REMOVED FOR SHIPPING MUST BE ADDED AT INSTALLATION, 1" NPT CONNECTION
T1	OPTIONAL TANK (PIPING NOT SHOWN)
L3	5 COMPARTMENT SUPPLY
D2	OPTIONAL SINGLE DRAIN DOWN, 3" PIPE SOCKET JOINT CONNECTION
ITEM	LEGEND

- NOTES**
- 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 (i.e. BARE CONCRETE, BRICK, ETC.)  
48 [1219] IF OBJECT IS ANY LIVE PART.  
CHECK LOCAL ELECTRIC CODES FOR FURTHER RESTRICTIONS.
  - 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.
  - 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.
  - USE REFERENCE LINES "X", "Y", AND "Z" TO LOCATE ALL SERVICE CONNECTIONS.
  - NUMBERS IN BRACKETS [ ] DENOTE DIMENSIONS IN MILLIMETERS.
  - 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.

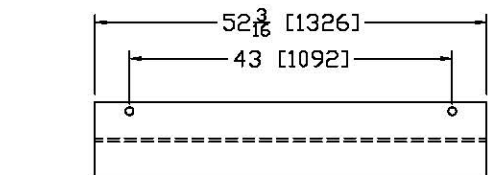
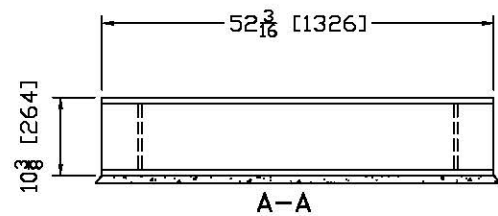
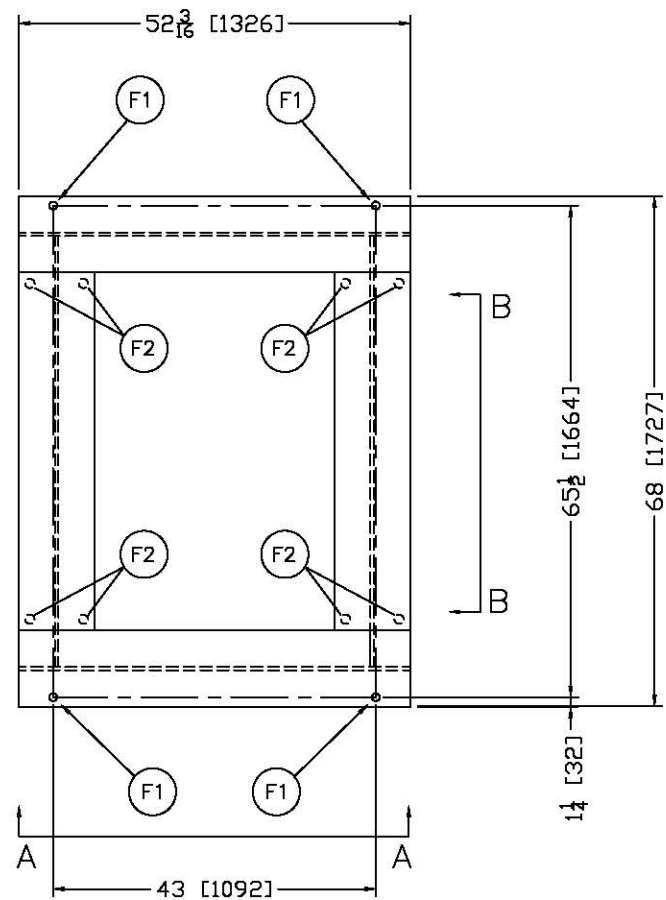
36026X8R OPTIONS

DWG# BD3626X8CB  
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**MILNOR PELLERIN MILNOR CORPORATION**  
 P.O. Box 400 Kenner, LA 70063, USA, Phone 504/467-8591,  
 FAX 504/468-3094, Email: milnorinfo@milnor.com



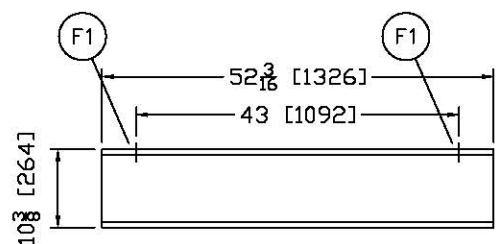
# 12 Dimensional Drawings: Pedestals

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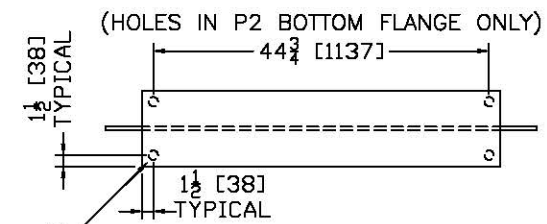


(FOR HOLES IN P1, SEE ASSEMBLED PLAN)

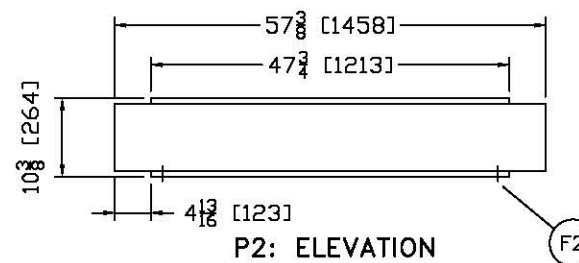
P1: PLAN VIEW



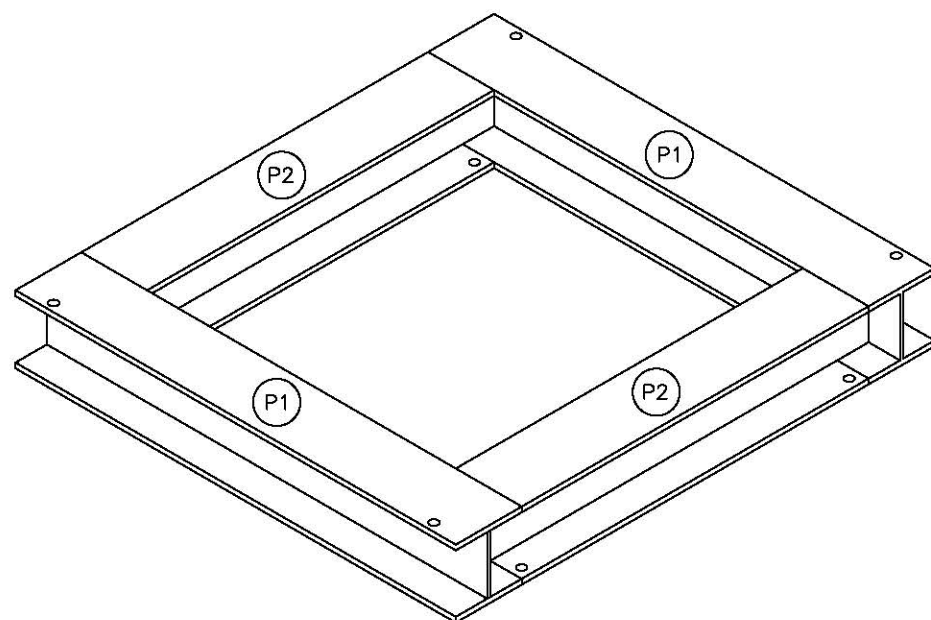
P1: ELEVATION



P2: PLAN VIEW



P2: ELEVATION



W10x68  
RECOMMENDED

F2	1 1/4" [32] GROUT HOLES, PEDESTAL BOTTOM FLANGE TO TOP OF GROUT
F1	1 1/4" [32] ANCHOR BOLT HOLES, PEDESTAL TOP FLANGE TO MACHINE
ITEM	LEGEND

- NOTES**
- THIS DRAWING SHOWS THE PEDESTAL DESIGN FOR MILNOR 36026X8R MACHINES. THIS BASE MAY BE USED WHENEVER LOCAL CONDITIONS ARE SUCH THAT MACHINE OPERATION WOULD BE ENHANCED BY RAISING THE MACHINE SETTING TO 3/8" [25.4] INCHES.
  - IF MACHINE IS TO BE BOLTED TO PEDESTAL BASE, BOLT HOLES IN PEDESTAL TOP FLANGE SHOULD BE LOCATED AND DRILLED ONLY AFTER MACHINE IS ON SITE AND CAN BE USED AS A TEMPLATE FOR BOLT HOLE LOCATIONS. IF BASE IS TO BE BOLTED TO FOUNDATION, CUSTOMER MUST DETERMINE LOCATION OF BOLT HOLES IN BOTTOM FRAME.
  - WHEN INSTALLING MACHINE AND PEDESTAL BASE, IT IS RECOMMENDED TO LAY THE PEDESTAL ON A MINIMUM 1 [25] THICK GROUT BED AND BOLT THE MACHINE TO IT. ALTERNATELY, THE MACHINE MAY BE WELDED TO THE BASE, PROVIDED IT IS SHIMMED AS REQUIRED TO INSURE THERE IS NO DISTORTION OF THE MACHINE BASE PLATES OR FRAME.
  - THIS BASE MUST BE FABRICATED LOCALLY AND SHOULD BE MADE SQUARE AND LEVEL. IT IS NOT SUPPLIED BY PELLERIN MILNOR CORP. THIS DRAWING CONVEYS NO EXPRESS OR IMPLIED WARRANTY WITH REGARD TO THE CONSTRUCTION AND/OR SUITABILITY OF THIS ASSEMBLY.
  - NUMBERS IN BRACKETS [ ] DENOTE DIMENSIONS IN MILLIMETERS.
- ATTENTION**
- MOST REGULATORY AUTHORITIES (INCLUDING OSHA IN THE USA) HOLD THE OWNER/USER ULTIMATELY RESPONSIBLE TO MAINTAIN A SAFE WORKING ENVIRONMENT. ACCORDINGLY, THE OWNER/USER MUST RECOGNIZE ALL FORESEEABLE SAFETY HAZARDS, FURNISH SAFETY INSTRUCTIONS AND GUIDANCE TO ALL PERSONNEL WHO MAY COME IN CONTACT WITH THE INSTALLATION, AND PROVIDE ALL NECESSARY ADDITIONAL SAFETY GUARDS, FENCES, RESTRAINTS, DEVICES, ETC., NOT FURNISHED BY THE EQUIPMENT MANUFACTURER OR VENDOR.
- ATTENTION**
- THE FLOOR AND/OR OTHER SUPPORT COMPONENTS MUST HAVE SUFFICIENT STRENGTH (AND RIGIDITY WITH DUE CONSIDERATION FOR NATURAL OR RESONANT FREQUENCY THEREOF) TO WITHSTAND THE FULLY LOADED WEIGHT OF THE MACHINE INCLUDING THE GOODS, THE WATER, AND ANY REPEATED SINUSOIDAL (ROTATING) FORCES GENERATED DURING ITS OPERATION. WRITE THE FACTORY FOR ADDITIONAL MACHINE DATA FOR USE BY A COMPETENT SOIL AND/OR STRUCTURAL ENGINEER.

PEDESTAL BASE 36026X8R

SCALE: 1" = 1'-0"

DWG# BD3626XBASBE  
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