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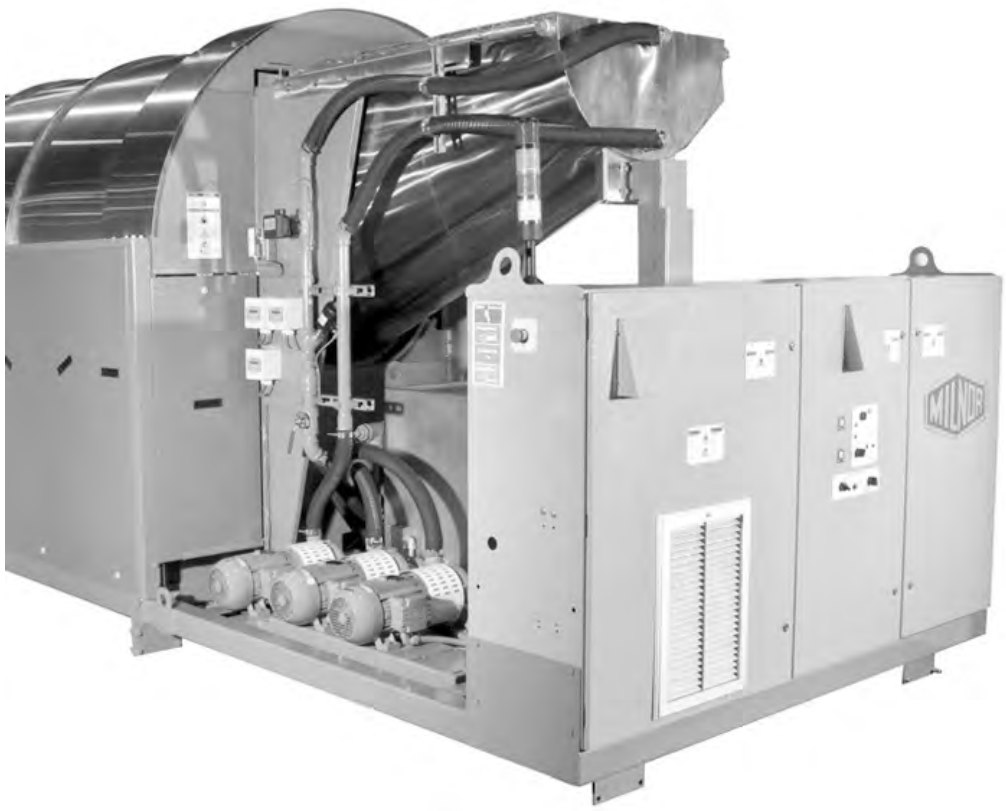
Installation and Service

92048 G4 Continuous Batch Washers



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

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

Table of Contents
MPQ92G4TBE/19416A

Page	Description	Document
1	Limited Standard Warranty	BMP720097/2019036
2	How to Get the Necessary Repair Components	BIUUUD19/20081231
3	Trademarks	BNUUUU02/2017285A
5	**1. Safety and Maintenance**	
6	Safety—Continuous Batch Washer	BIUUUS27PC/20051111
11	Safety Requirements for CBW® Tunnel Washer Entry	BIPCUS01/20140121
17	Proximity Safeguarding for Automatic Shuttle Conveyors	BISUUI01/20171205
21	Safety Placard Use and Placement 76028,76039G3 CBW & 9248G4 CBW	BMP040038/2004313V
23	Safety Placard Use and Placement ISO 76028,76039 G3 CBW & 9248 G4 CBW	BMP040039/2004313V
25	Safety Placard Use and Placement Mentor Controller for CBW	BMP040040/2004313V
27	Safety Placard Use and Placement ISO Mentor Controller for CBW	BMP040041/2004313V
29	Safety Placard Use and Placement Inverter Box for CBW	BMP040042/2004313V
31	Safety Placard Use and Placement ISO Inverter Box for CBW	BMP040043/2004313V
33	Safety Placard Use and Placement Typical All CBW Auxiliary Tanks	BMP040046/2004313V
35	Safety Placard Use and Placement ISO Typical All CBW Auxiliary Tanks	BMP040047/2004313V
37	Tag Guidelines	BIUUUI02P9/20170824
41	Connecting Ancillary Equipment and Services	BIPCUI02/20160113
45	Prevent Damage from Chemical Supplies and Chemical Systems	BIWUUI03/2019296A
50	Routine Maintenance—CBW® Tunnel Washer	BIUUUM09PCU/20110830
70	Torque Requirements for Fasteners	BIUUUM04/20180109
79	**2. Parts and Assemblies**	
80	Parts Identification 9248G4 Tunnel	MGQ92G4TAE/2004262V
106	Parts List 9248 Tunnel	MLQ92G4TAE/2011476B
120	Gear Reducer with Chain Coupling - 76028 & 76039 G3 Tunnels	BMP000033/2010052B
122	Pneumatic Shuttle Valve	BMP080032/2008462B
123	Magmeter	BMP110014/2011085B
124	Drain Stops - 76028 & 76039G3; 92048G4 Tunnel	BMP100024/2011494B
125	Drain Stop Bonnet, 4” Double Acting - 76028G3, 76039G3, & 9248G4	BMP100025/2010203B
126	Peristaltic Chemical Inlets 76028G3, 76039G3, 92048G4 Tunnels	BMP180016/2019416A

Table of Contents, continued
MPQ92G4TBE/19416A

Page	Description	Document
129	**3. Dimensional Drawings**	
130	Attention Installers! Press, Tunnel Installation	B2T2010023/2019193A
131	Dimensional Drawing - 9248G4 Tunnel	BDST92G4MXCE/2018315D
132	Dimensional Drawing - 92048G4 Tunnel Options	BDST92G4OPCE/2012215D
133	Dimensional Drawing - Foundation 92048G4	BDST92G4FBCE/2011466D
134	Dimensional Drawing - Drain Trough 92048G4 Tunnel	BDST92G4DTAE/2011466D
135	Dimensional Drawing - 92048G4 & MP1A56CL	BDST92G4INDE/2011466D
136	Dimensional Drawing - 92048G4 Interface M7T4840, M9T4840	BDST92G4INDB/2017044D

PELLERIN MILNOR CORPORATION
LIMITED STANDARD WARRANTY

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

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

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

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

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

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

BMP720097/19036

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

How to Get the Necessary Repair Components

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

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

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

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

To write to the Milnor factory:

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

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

— End of BIUUUD19 —

Trademarks

BNUUUU02.R01 0000158093 A.2 7/13/17 1:11 PM Released

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

Table 1 Trademarks

AutoSpot™	GreenTurn™	Milnor®	PulseFlow®
CBW®	GreenFlex™	MilMetrix®	PurePulse®
Drynet™	Hydro-cushion™	MilTouch™	Ram Command™
E-P Express®	Linear Costa Master™	MilTouch-EX™	RecircONE®
E-P OneTouch®	Linear Costo™	Miltrac™	RinSave®
E-P Plus®	Mentor®	MultiTrac™	SmoothCoil™
Gear Guardian®	Mildata®	PBW™	Staph Guard®

End of document: BNUUUU02

Safety and Maintenance

1

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

Safety—Continuous Batch Washer

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- Do not remove guards, covers, or panels.
- Do not reach into the machine housing or frame.
- Keep yourself and others off of machine.
- Know the location of all emergency stop switches, pull cords, and/or kick plates and use them in an emergency to stop machine motion. These may not stop certain devices such as pumps on some machines.

CAUTION 3: Burn Hazards—Contact with hot goods or machine components can burn you.

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

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

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

4. Safety Alert Messages—Cylinder and Processing Hazards

[Document BIUUUS13]

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

WARNING 4: 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 5: Explosion and Fire Hazards—Flammable substances can explode or ignite in the cylinder, drain trough, or sewer. The machine is designed for washing with water, not any other solvent. Processing can cause solvent-containing goods to give off flammable vapors.

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

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

5.1. Damage and Malfunction Hazards

5.1.1. Hazards Resulting from Inoperative Safety Devices

WARNING 6: 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 7: 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 8: Entangle and Crush Hazards—Guards, covers, and panels—Operating the machine with any guard, cover, or panel removed exposes moving components.

- Do not remove guards, covers, or panels.

5.1.2. Hazards Resulting from Damaged Mechanical Devices

WARNING 9: 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.

CAUTION 10: Machine Damage Hazards—Drive shaft and drive motors—Although the tunnel may operate with drive shafts disconnected between modules or units, or with a motor not functioning, the added stress on drive components will quickly damage the machine.

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

5.2. Careless Use Hazards

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

WARNING 11: 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.

CAUTION 12: Goods Damage and Wasted Resources—Entering incorrect cake data causes improper processing, routing, and accounting of batches.

- Understand the consequences of entering cake data.

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

WARNING 13: 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 14: 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 15: 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.
- Abide by the confined space entry procedures in the reference manual.

— End of BIUUUS27 —

BIPCUS01 (Published) Book specs- Dates: 20140121 / 20140121 / 20140121 Lang: ENG01 Applic: PCU

Safety Requirements for CBW® Tunnel Washer Entry

A tunnel jam is a compressed buildup of goods which occurs if goods in one module fail to transfer. If this condition occurs, workers must enter the tunnel washer and remove the goods after safety precautions are implemented. See Section 5 "How to Make Sure a Tunnel Jam Does Not Occur" for a better understanding of tunnel jams and how to prevent them.

1. Entry Hazards - Vital Information for Facility Management

It is solely the responsibiity of management to make sure that the following hazards are eliminated before workers enter the tunnel washer and associated machines to remove a jam. Management must also recognize and prevent any additional hazards specific to the laundry system installation. Milnor® believes that the OSHA "Permit-required confined spaces" standard is applicable in the USA. Similar requirements may exist in other locales.

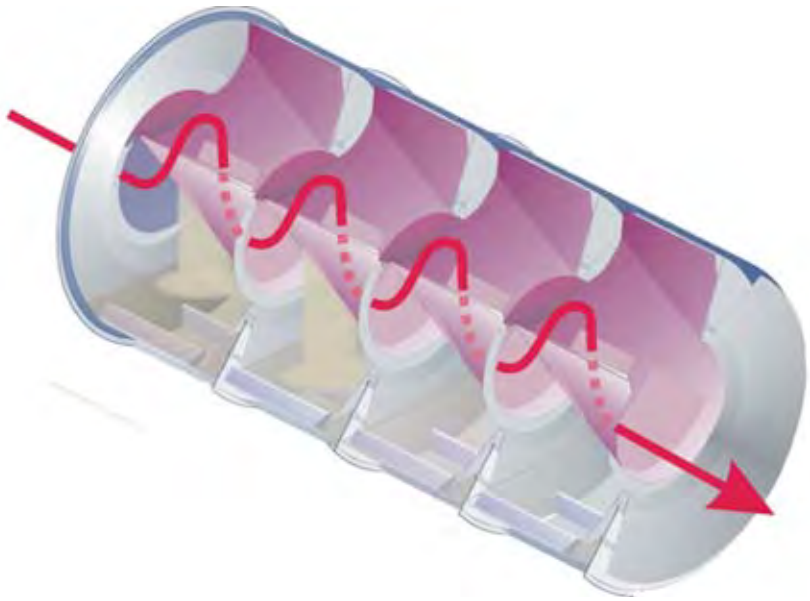
WARNING 1: Crush Hazard—Movable machine components such as the tunnel cylinders or the press ram can move by gravity and crush workers who are in the machine.

- Isolate the machine from electric power.
- Restrain movable components.
- Make sure workers wear safety helmets.

WARNING 2: Electrocution Hazard—

- Remove standing water from all modules.
- Use only air or battery powered tools and lights in jam removal.

Figure 1: Navigation Through the Tunnel Cylinders



WARNING 3: Panic and Extrication Hazards—See Figure 1.

- Remove the conditions that can cause panic such as humidity, heat, odor, and darkness.
- Put the cylinders in a position that is easy to climb through.
- Make sure a supervisor is present near the machine and frequently speaks to each worker.
- Permit only small, agile, completely healthy, non-claustrophobic workers to enter.

WARNING 4: Chemical Burn Hazard—

- Isolate the machine from the chemical supply.
- Thoroughly flush the modules with clean water.
- Make sure workers wear eye protection and protective clothing.

WARNING 5: Poison and Suffocation Hazards—

- Do a check for and completely remove harmful gases.
- Isolate the machine from sources of sewer gas.
- Provide a continuous flow of cool, fresh air through the machine.

WARNING 6: Burn and Heat Prostration Hazards—

- Isolate the machine from sources of water and steam.
- Permit surfaces and goods to become cool.

WARNING 7: Biological Hazards—Goods may contain germs.

- Do not permit workers with open wounds to enter the machine.
- Make sure workers watch for sharp objects in the goods.

2. Preparations for Safe Entry

The following are more detailed explanations about how to avoid the hazards given in Section 1.

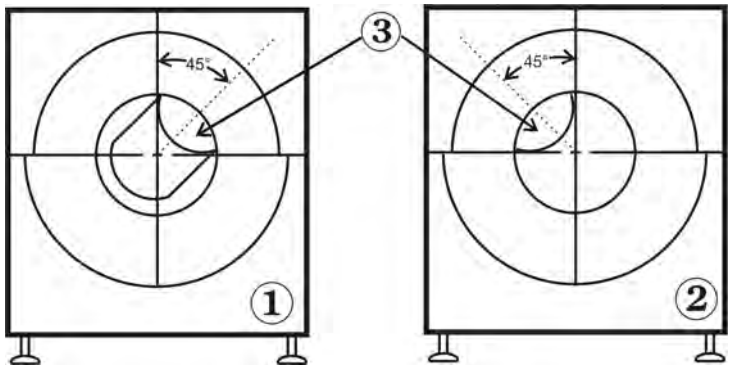
2.1. Remove bath liquor, flush with cold water, agitate, and remove all water.

1. If the tunnel washer has overhead tanks, remove all water from the tanks and isolate the tunnel washer from these water sources.
2. For modules that have only one or no drain valves, remove the bottom pipe plug from both sides of the drain sump. If no water comes out, the pipe plug drains may be blocked with sediment. Use a screwdriver or other rod to remove the blockage.
3. Reinstall the pipe plugs hand-tight.
4. Close the module drain valves.
5. Flush the tunnel thoroughly with cold water. If necessary, put water in the weir boxes with water hoses. See the maintenance guide for more information.
6. Put the Tunnel Run-Hold switch on the controller at Hold (TUNNEL HOLD) to prevent transfer.
7. Start the machine. If the cylinders turn with reversals, but they do not transfer, the jam will not get worse.
8. Continue the water flow and reversals until the water that comes out of the tunnel washer is cool and free of laundry chemicals.
9. When the water is cool and clean, stop the water flow, open the drain valves, remove the drain plugs, but continue reversals.
10. Stop the machine (stop reversals) when water no longer comes out of the machine.**Do not permit anyone to enter the tunnel washer with standing water in any module.**

2.2. Put the cylinders in the position that is easiest to climb through.

Figure 2: Position Easiest To Climb Through

End Views of Tunnel Washer



Legend

1. View from the loading end
2. View from the discharge end
3. Closed end of the transfer scoop

2.3. Reliably disable tunnel washer power and utilities.

Electric power—Remove electric power at the external disconnect device for the tunnel washer. Comply with the OSHA lockout/tagout procedure or the governing safety code.

Steam—Shut off the steam supply at the steam header. Put a tag on the valve to help prevent reconnection by others.

Fresh water—Shut off the incoming fresh water supply. Put a tag on the valve to help prevent reconnection by others.

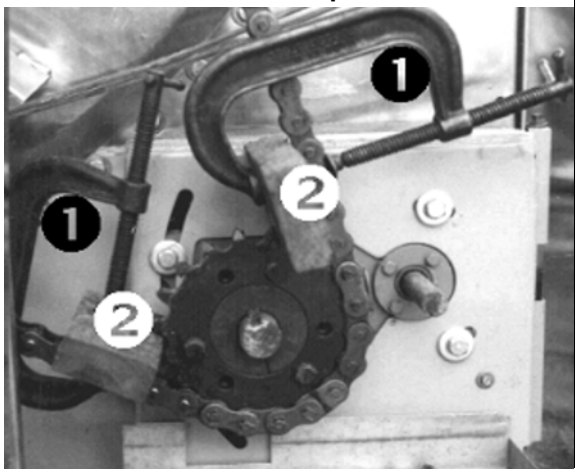
Chemicals—Disable the chemical supply system. Put a tag on the device to help prevent reconnection by others.

Sewer—Normally the drain valves are not physically connected to the sewer. If there are any enclosed pipe connections to the sewer with no P-trap, disconnect the piping and put a plug on the sewer side to keep sewer gases out of the tunnel washer.

2.4. Restrain the tunnel washer chain drives.—An offset load can cause the cylinders to turn with electric power removed. The load can become offset as workers remove goods. Restrain the chain drives to prevent cylinder rotation caused by an offset load.

Figure 3: How To Restrain the Chain Drives

Placement of C-Clamps and Blocks



Legend

1. Hold wood blocks tightly against the chain with C-clamps.
2. Put wood blocks tightly between the sprocket and the chain to prevent rotation in either direction.

2.5. Reliably disable the adjacent load and discharge machines.—It may be necessary to enter the tunnel washer from the load end, the discharge end, or both. If a disabled worker must be extricated, it may be necessary to remove him from the end opposite where he entered. Disable adjacent machines as follows.

2.5.1. Milnor® Load Conveyor—The Milnor® load conveyor is designed to receive electric power from the CBW® tunnel washer. When you remove tunnel power at the external disconnect device for the tunnel, this should also remove power from the Milnor® load conveyor. In the unlikely event that the conveyor has a separate source of electric power, Remove electric power at the external disconnect device and comply with the OSHA lockout/tagout procedure or governing safety code.

2.5.2. Allied Load Device (example: conveyor, rail system), or Discharge Device—See the manufacturer's instructions for any necessary procedures specific to the machine. Remove electric power at the external disconnect device for the allied machine. Comply with the OSHA lockout/tagout procedure or governing safety code.

2.5.3. Milnor® 1-station Press

1. Put the press ram and container (the can) in the full up position.
2. **Install the factory-supplied safety stands and safety bars as explained in the maintenance guide.**
3. Remove electric power at the external disconnect device. Comply with the OSHA lockout/tagout procedure or the governing safety code.

2.5.4. Milnor® 2-station Press

1. Put the bell and the pre-press tamper in the full down position.
2. Turn the air off and disconnect the air line to the machine. This makes sure that the tamper cannot rise if the air shutoff valve leaks.
3. Remove electric power at the external disconnect device. Comply with the OSHA lockout/tagout procedure or the governing safety code.

2.5.5. Milnor® Centrifugal Extractor

1. Tilt the shell to the full up position.
2. Install the factory-supplied safety stands as described in the maintenance guide or the service manual.
3. Remove electric power at the external disconnect device. Comply with the OSHA lockout/tagout procedure or the governing safety code.

2.5.6. Milnor® Wet Goods Conveyor (example: COBUC_)

1. Move the conveyor well away from the tunnel washer.
2. Remove electric power at the external disconnect device. Comply with the OSHA lockout/tagout procedure or the governing safety code.

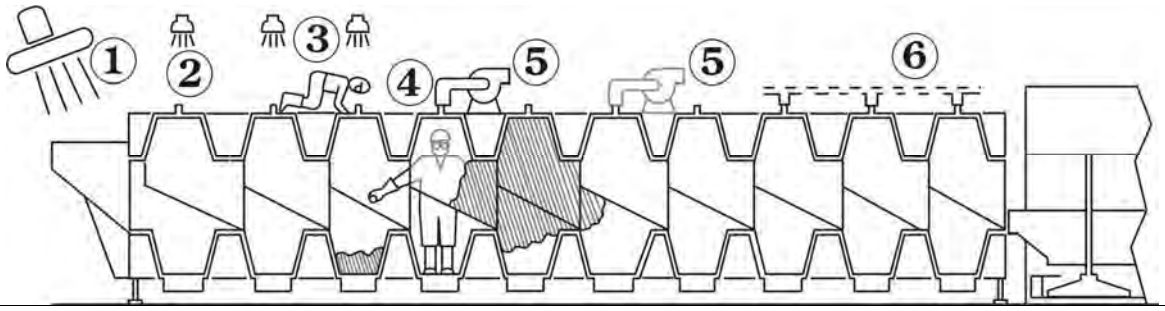
2.6. Provide light, ventilation, and sound passage to the tunnel modules. See Figure 4.

- Remove all vent covers and field-installed vent pipes.
- Open all weir box covers.

- Provide additional light and ventilation as shown in Figure 4.

Figure 4: Example of a Tunnel Washer Prepared for Safe Entry

Schematic Side View of Tunnel Washer with Safety Components and Workers



Legend

1. Use a powerful fan with guards to put a strong flow of air in the end(s) of the tunnel washer that workers will enter.
2. Use powerful lights to illuminate the interior of the tunnel washer through unobstructed vent holes.
3. Frequently communicate with workers through unobstructed vent holes.
4. Workers carry in flashlights for additional illumination.
5. If necessary, install blower(s) with the inlet side connected to vents to induce a draft. Use one blower on each side of the tunnel jam.
6. Remove field-installed vent pipes.

2.7. Provide continuous supervision.

- Establish a distress signal for any worker in distress. Example: Hit the cylinder wall 5 times.
- Use the vent on top of each module to communicate with each worker inside the machine.
- Monitor the operation at all times and speak with each worker frequently.

3. Tips for Removal of a Tunnel Jam

- The compressed goods are usually looser on the load end of the jam. It is usually better to pull small groups of loosened goods toward the load end. However, it may be necessary to clear the jam from both sides.
- It may save time to cut away some of the compressed goods—but weigh the cost of the damaged goods against the benefit of returning the tunnel washer to service faster. If cutting is necessary, use retractable utility knives. **Warn workers to use extreme care to avoid injury.**
- If you decide to distribute the loosened goods among the cylinders rather than remove them completely, make the batches smaller than normal to prevent another jam. Batches of goods removed from a jam are more compact than dry goods.
- If you decide to remove the goods completely, put workers in the other tunnel modules to quickly pass the goods out of the tunnel washer.

4. Guidelines for Electric Welding In the Tunnel Washer

1. The cylinders must be absolutely empty of all goods and water. The welder must not stand in water or on wet goods.
2. The forced ventilation described in Section 2.6 must be sufficient to make sure smoke and fumes do not collect during welding. If this is not possible, do the following to prepare for welding:

a. If the tunnel washer is modular in design, separate the modules.

b. If the tunnel washer is unitized (multiple modules welded together), remove the top half of the shell.

3. The cylinder to be welded must be **securely grounded to the grounding point on the welding machine**.
4. The welder must wear dry, non-conducting protective clothing and shoes.

5. How to Make Sure a Tunnel Jam Does Not Occur

A tunnel jam will not occur if:

- all tunnel modules have the correct water levels,
- batches are the correct size (the correct soil weight),
- goods are saturated in the first module,
- the cylinder rotation angle is correct.

5.1. Correct Water Levels—The Mentor® controller uses signals from the level float switches to make sure that the water levels are high enough for transfer. To prevent incorrect signals:

- Examine and remove lint from the level float mechanisms as explained in the maintenance guide.
- Do not operate the machine if a level float mechanism has a faulty component.
- Do not make careless adjustments to a level float mechanism.
- Do not touch components of the level float mechanism when the machine operates.

5.2. Correct Batch Sizes—A machine's rated capacity is the approximately correct weight for a batch of soiled goods. The technician who developes the wash formulas for the tunnel washer will use field tests and/or experience to specify an exact batch weight for each goods type. Make sure that the operator uses an electronic scale or another effective procedure to build batches of the correct weight.

5.3. Full Wetdown—The primary method of wetdown is the rapid flow of water that goes from the flush tank to the load chute by pump when the batch enters the load chute. On PulseFlow® models, the RecircONE® system that causes a continuous flow of bath liquor from the first module to the load chute also helps the wetdown process. Do not operate the machine if these components do not operate correctly.

5.4. Correct Cylinder Rotation—The Mentor® controller uses signals from the rotation proximity switches to monitor rotation. The controller will immediately stop the machine if it detects a rotation error that could otherwise cause a jam. To prevent incorrect signals:

- Make sure that all rotation switches operate correctly and the switch brackets are not damaged.
- Do not tamper with the rotation switch positions.

— End of BIPCUS01 —

Proximity Safeguarding for Automatic Shuttle Conveyors

Proximity safeguarding—a means of preventing personnel from entering the path of a machine, such as an industrial robot, that moves within a large area.

1. Applicability

This document—

applies to Milnor® automated laundering systems with shuttle conveyors that move without operator intervention (automatic operation),

does *not* apply to shuttles that require operator input continually, such as directing all shuttle movements (manual operation).

2. References for Proximity Safeguarding

ANSI Z8.1-2016 “American National Standard for Commercial Laundry and Drycleaning Equipment and Operations - Safety Requirements”

OSHA Standard 29 CFR § 1910.212 “General Requirements for All Machines”

OSHA Directive STD 01-12-002 - Pub 8-1.3 “Guidelines for Robotic Safety”

ANSI/RIA R15.06-2012 “American National Standard for Industrial Robots and Robot Systems- Safety Requirements”

ANSI/ASME B15.1-2000 “Safety Standard for Mechanical Power Transmission Apparatus”

OSHA Publication 3067 “Concepts and Techniques of Machine Safeguarding”

ISO 10472-1 “Safety Requirements for Industrial Laundry Machinery”

3. Hazards To Personnel in Proximity to Shuttle Conveyors

Milnor automated laundering systems use automatic shuttle conveyors to transport goods among the processing machines in the system. Depending on model, an automatic shuttle conveyor may move in any of the following ways, in addition to running its conveyor belt(s):

- It may travel along (traverse) a line of machines (typically dryers).
- Its conveyor bed(s) may ascend and descend (elevate) within the machine frame.
- Its conveyor bed(s) may extend and retract within the machine frame.
- The conveyor bed and frame may pivot.
- Wet goods shuttles have a bucket that elevates and tilts.

These motions pose strike, crush, sever, and entrapment hazards to personnel in proximity to the shuttle. **For the safety of personnel, owner/users must provide proximity safeguarding that protects personnel from the moving shuttle.**

A common method of proximity safeguarding is safety fencing with interlocked gates that disable the shuttle when a gate is opened. When a shuttle is disabled, this will eventually cause other machines in the system to hold (wait for action from another machine), but it will not necessarily cause them to immediately stop moving. In the case of a tunnel system, the press or centrifugal extractor can pose additional hazards to personnel in proximity to the equipment. **Hence, the safeguards must also disable any presses or extractors.** Tunnels and dryers do not pose a significant hazard to personnel merely because they are in proximity to the equipment, and need not be automatically disabled.

WARNING 1: Multiple Hazards—Proximity safeguarding provides only partial protection and only against injury resulting from entering the shuttle path. It is not a substitute for proper

lockout/tagout procedures and good safety practices.

- Always lockout/tagout any individual machine (or follow the published maintenance procedures) when performing maintenance or clearing a fault on that machine.
- Ensure that all personnel understand the safeguards and do not attempt to defeat them.
- Inspect safeguards weekly to ensure that they are not mechanically or electrically circumvented.

4. How Milnor Accommodates Proximity Safeguarding

Milnor provides connection points on shuttles, presses and centrifugal extractors for interfacing with devices such as gate interlock switches. These connection points are tagged for easy identification. When Milnor provides equipment layout drawings for an automated laundering system, it indicates on the drawing, the perimeter of the shuttle movement area that must be guarded. The following hazard statement is displayed on connection point tags as well as equipment layout drawings prepared by Milnor:

WARNING 2: Strike, Crush, Sever, and Entrapment Hazards—Serious bodily injury or death can result to personnel in proximity to machinery/systems that traverse, elevate, extend, pivot, and/or tilt. The following mandatory minimum safety requirements must be installed with the machinery system (local codes may require additional precautions):

- Safety fence enclosing machine movement areas,
- Lockable electrical interlocks on all gates, properly interfaced as shown on machine schematics, to disable machine movement when any gate is opened,
- Signs to alert personnel to these hazards, placed prominently around the fenced area.

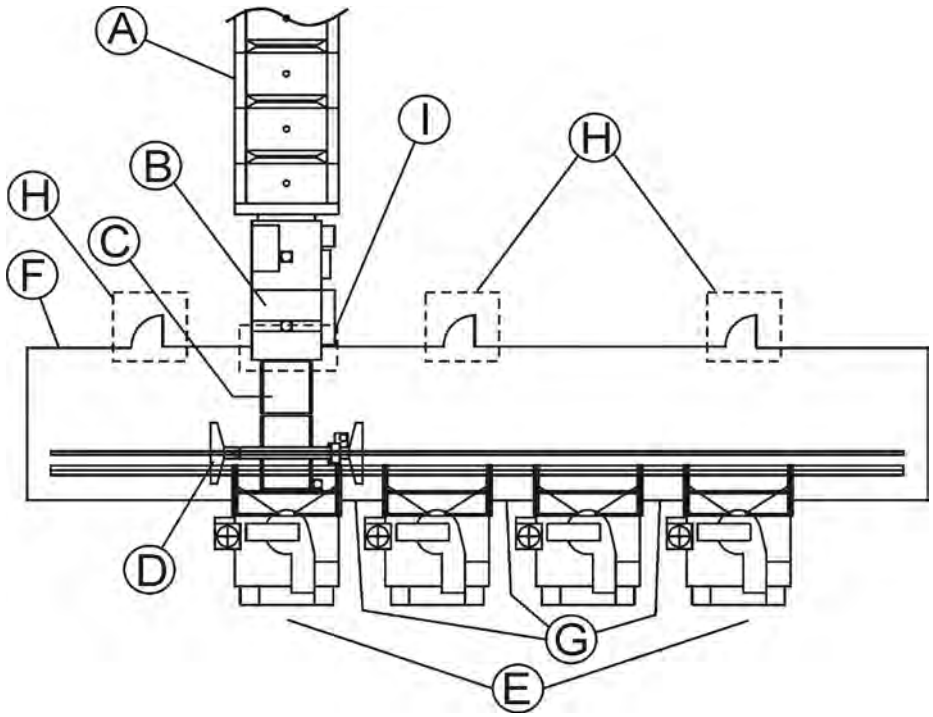
Although the objectives of proximity safeguarding are the same anywhere, design requirements vary with local codes (which occasionally change) and with the plant layout. For this reason, Milnor does not provide detailed designs or materials for proximity safeguarding. If the necessary expertise does not exist within the owner/user's organization, consult appropriate sources such as local engineers or architects specializing in industrial facility design.

5. Examples of Safety Fencing With Interlocked Gates

Fencing with interlocked gates like that depicted in Figure 1 and Figure 2, may be used to meet the proximity safeguarding requirement. Should the owner/user choose this method, the following information may be useful. However, **this information may not satisfy current or local code requirements. The owner/user must determine its suitability for his particular facility.**

Figure 1: Example Fence Layout for Automated Laundering System Where One Tunnel Serves a Bank of Dryers

Plan View of Laundering System

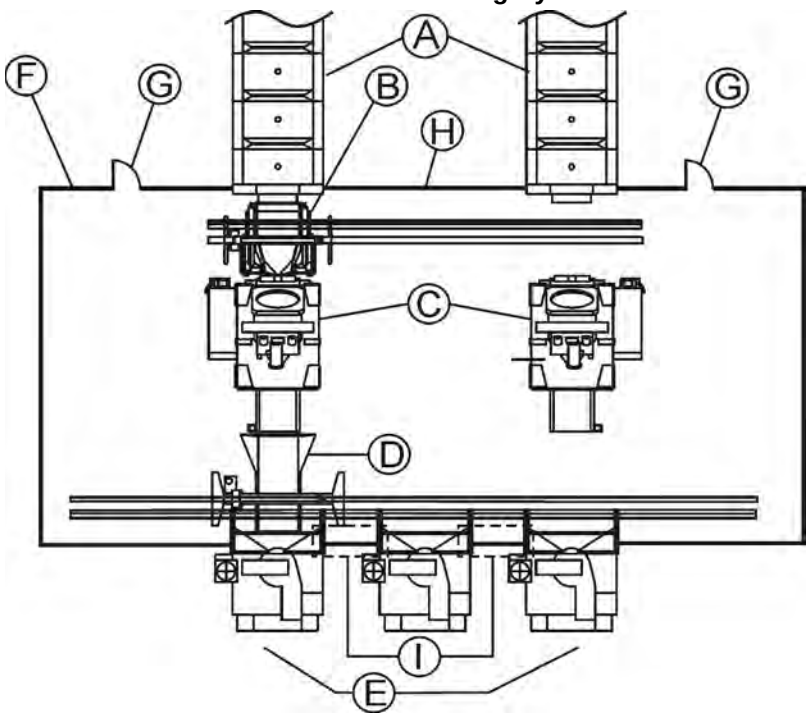


Legend

- **A.** Continuous Batch Washer (tunnel)
- **B.** Press extractor
- **C.** COINC inclined conveyor
- **D.** Traversing and elevating shuttle conveyor for pressed cakes
- **E.** Bank of dryers
- **F.** Fence enclosing path of shuttle
- **G.** Fence segments between dryers
- **H.** Electrically interlocked gates. Gates swing outward at least 90 degrees and swing area is marked on floor. Provide multiple gates for long fence runs.
- **I.** Fence restricts access to unload end of press, but does not obstruct access to press controls.

Figure 2: Example Fence Layout for Automated Laundering System Where Two Tunnels Serve a Bank of Dryers

Plan View of Laundering System



Legend

- **A.** Continuous Batch Washers (tunnels)
- **B.** Traversing and elevating shuttle conveyor for wet goods
- **C.** Centrifugal extractors
- **D.** Traversing and elevating shuttle conveyor for loose goods
- **E.** Bank of dryers
- **F.** Fence enclosing paths of both shuttles and both centrifugal extractors
- **G.** Gates interlocked with both shuttles and both centrifugal extractors.
- **H.** Fence segment between tunnels.
- **I.** Fence segments between dryers.

5.1. Fence Dimensions—The fence must discourage climbing over and prevent crawling under.

5.2. Fence Materials and Setback—The fence must be constructed of materials and located so as to prevent personnel from reaching through gaps in the fence and contacting the enclosed machinery.

5.3. Gates—Personnel gates must be held firmly closed but permit personnel to easily pass through when necessary. Gates must be equipped with a positive latching arrangement to prevent accidental opening. Adequate floor space must be provided to allow the gate to swing at least 90 degrees when fully open. Gates must open outward; that is, away from the fenced perimeter. The floor must be permanently marked to show the gate's swing area, to discourage obstructing its movement.

5.4. Control Circuitry—All gates must be electrically interlocked with any shuttle conveyors within the fenced area and with any presses or centrifugal extractors that the fence either encloses or intersects. Opening any gate must have the following effects:

1. Shuttle(s), press(es), and/or centrifugal extractor(s) stop moving immediately.
2. An audible alarm sounds.
3. Shuttle(s), press(es), and/or centrifugal extractor(s) cannot be restarted merely by closing the gate(s), but must be restarted at the machine control panel once the gate(s) are closed.

Milnor shuttles, presses and centrifugal extractors provide such functionality when properly interfaced with gate interlock switches.

5.5. System Emergency Stop Switches—The laundry must establish rules and procedures that prohibit personnel from remaining within the fenced area with machine(s) enabled, except in accordance with published maintenance procedures. System emergency stop switches (panic buttons) should be provided inside and outside the fenced perimeter. Emergency stop switches should be located so that personnel anywhere inside the fenced perimeter are only a short distance from a switch, and they should be clearly marked as to their locations and function. Connect switches in series with the gate interlocks so that pressing an emergency stop switch performs the same control function as opening a gate.

5.6. Isolating Individual Machine Controls—The interlock circuitry for each machine must be electrically isolated from that of the other machines. Hence, each gate interlock switch must provide as many pairs of dry contacts as there are machines to interface to. A pair of switch contacts must never be shared by two or more machines.

5.7. Recommended Signage—Safety placards should be posted along the fence and at each gate, alerting personnel to the hazards within. At minimum, the size of lettering and distance between placards should be such that anyone contemplating entering the fenced area will likely see and read the placard first. Wording should be provided in each native language spoken by laundry personnel.

— End of BISUUI01 —

Safety Placard Use and Placement

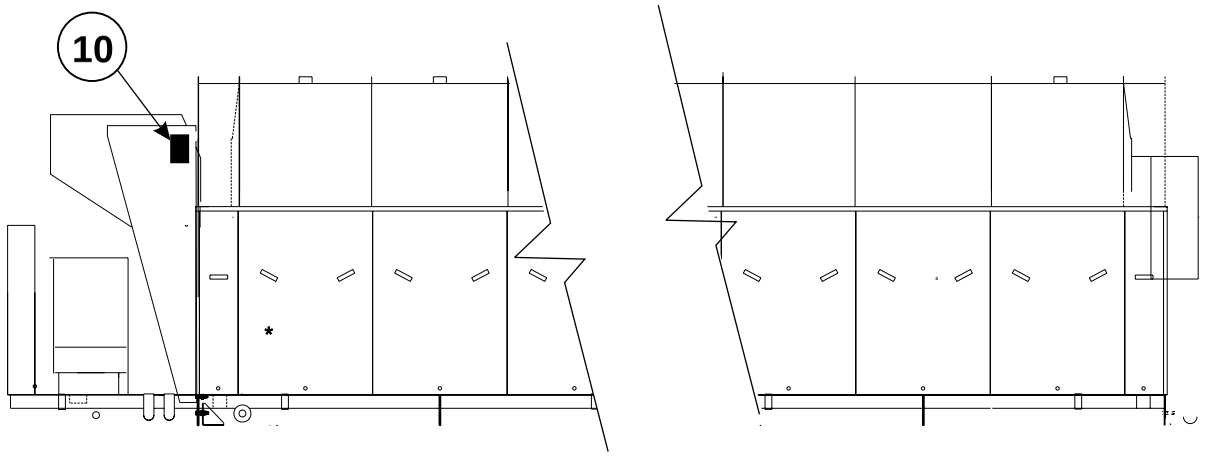
76028,76039 G3 CBW & 92048 G4 CBW

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

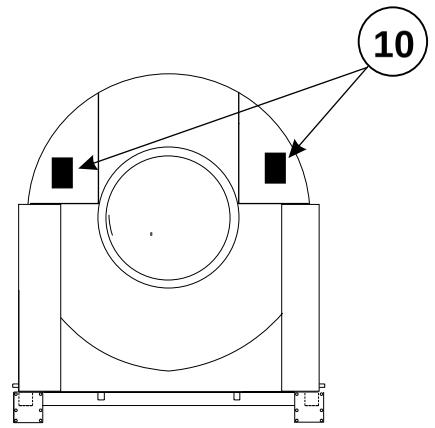
Litho in U.S.A.

Notes:

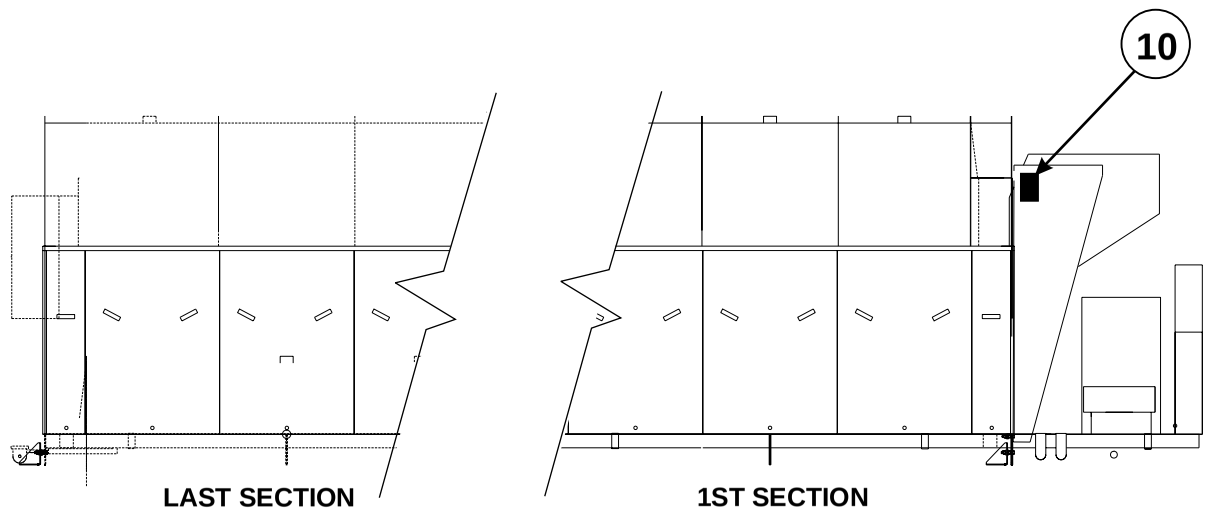
1. **Replace placard immediately, if removed or unreadable.**
2. **Approximate locations of placards are shown. Mounting holes are provided on machine. If aluminum placard use #8 self-tapping screws.**



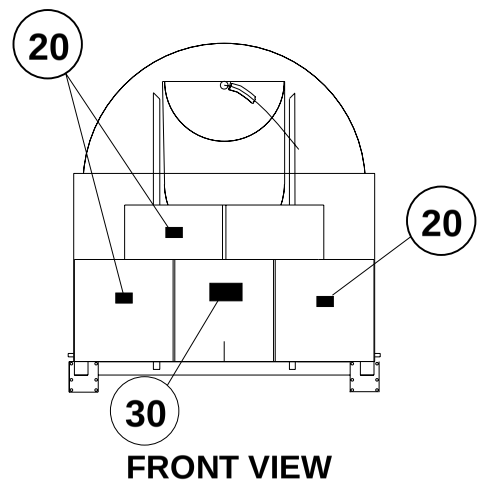
RIGHT VIEW



REAR VIEW
DISCHARGE END



LEFT VIEW



FRONT VIEW
LOAD END

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

Parts List—Safety Placard Placement

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

Used In	Item	Part Number	Description	Comments
			----------ASSEMBLIES----------	
			none	
			----------COMPONENTS----------	
all	10	01 10511A	NPLT:CBW END HAZARD-TCATA	
all	20	01 10377A	NPLT:ELEC HAZARD LG-TCATA	
all	30	01 10699B	NPLT:SERV HZRD-ALUM-TCATA	

Safety Placard Use and Placement ISO

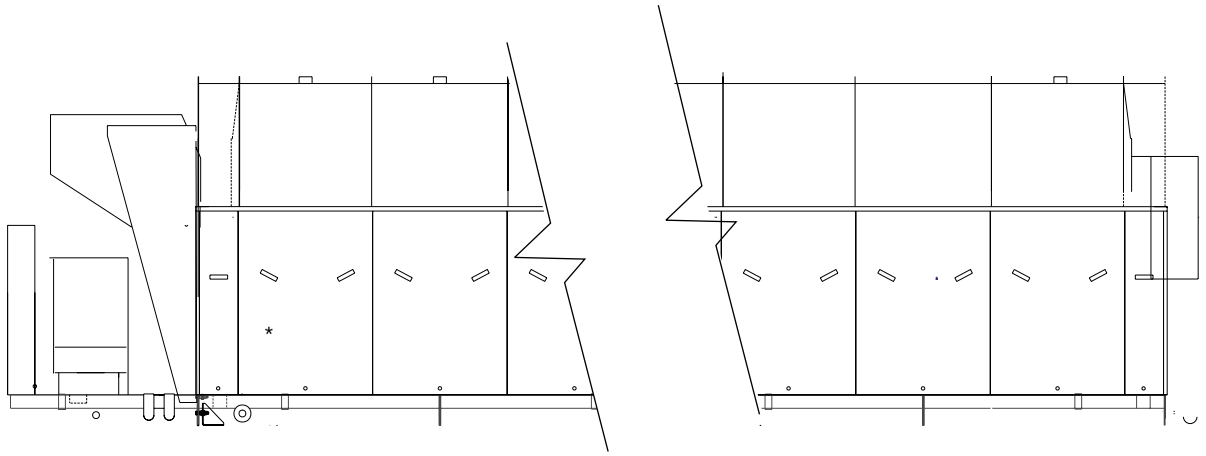
76028,76039 G3 CBW & 92048 G4 CBW

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

Litho in U.S.A.

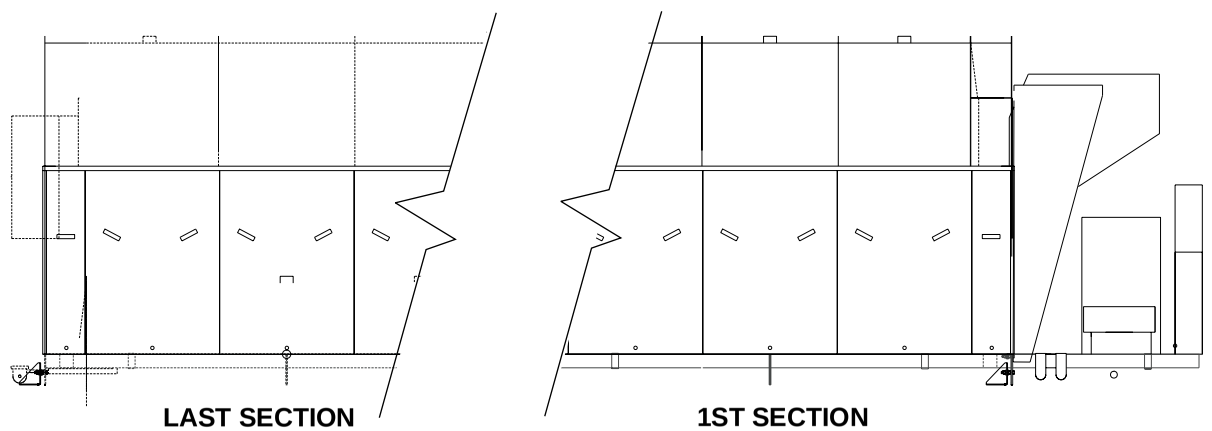
ISO Placards shown on this page

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



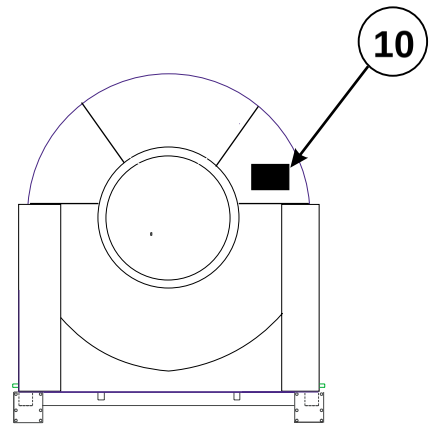
1ST SECTION LAST SECTION

RIGHT VIEW

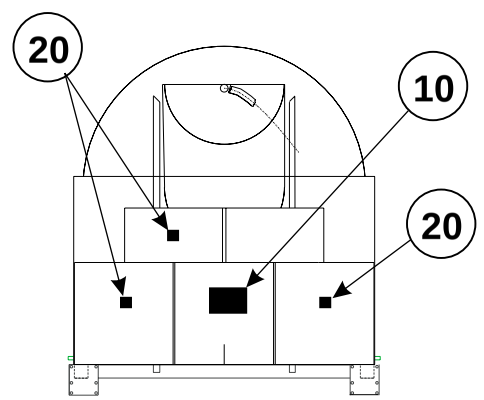


LAST SECTION 1ST SECTION

LEFT VIEW



REAR VIEW
DISCHARGE END



FRONT VIEW
LOAD END

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

Parts List—Safety Placard Placement

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Used In	Item	Part Number	Description	Comments
----------	----------	----------	----------ASSEMBLIES----------	----------
			none	
----------	----------	----------	----------COMPONENTS----------	----------
all	10	01 10511X	NPLT:CBW WARNINGS	
all	20	01 10377	NPLTE:"WARNING" 4X4	

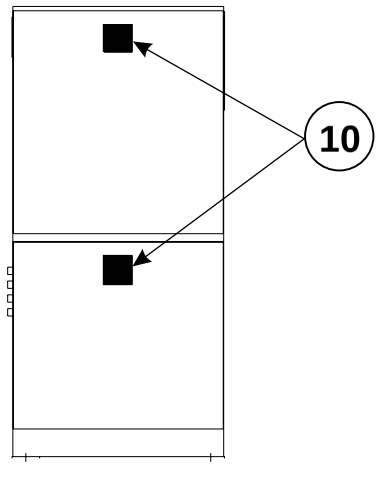
Safety Placard Use and Placement

Mentor Controller for CBW

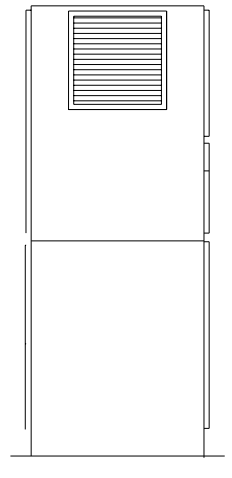
Pellerin Milnor Corporation
P. O. Box 400, Kenner, LA 70063-0400

Litho in U.S.A.

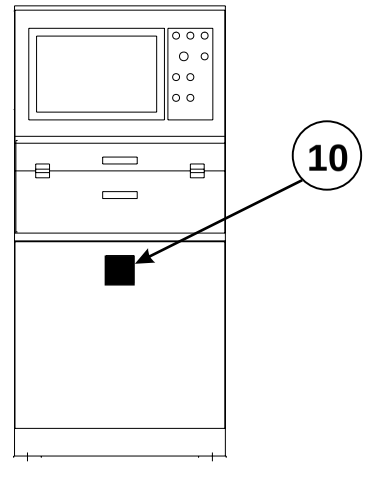
Notes:
1. **Replace placard immediately, if removed or unreadable.**
2. **Approximate locations of placards are shown. Mounting holes are provided on machine. If aluminum placard use #8 self-tapping screws.**



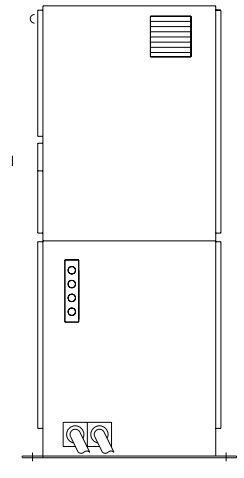
REAR VIEW



LEFT VIEW



FRONT VIEW



RIGHT VIEW

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

Parts List—Safety Placard Placement

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

Used In	Item	Part Number	Description	Comments
----------	----------	----------	----------ASSEMBLIES----------	----------
			none	
----------	----------	----------	----------COMPONENTS----------	----------
all	10	01 10377A	NPLT:ELEC HAZARD LG-TCATA	

Safety Placard Use and Placement ISO

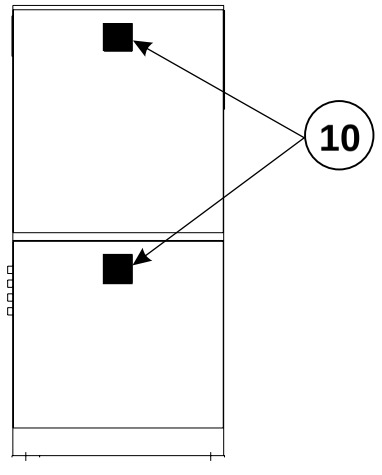
Mentor Controller for CBW

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

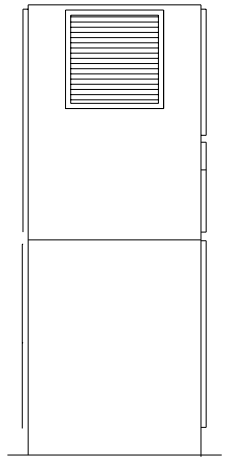
Litho in U.S.A.

ISO Placards
shown on this page

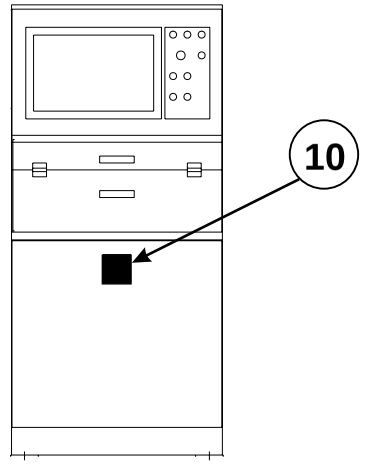
Notes:
1. **Replace placard immediately, if removed or unreadable.**
2. **Approximate locations of placards are shown. Mounting holes are provided on machine. If aluminum placard use #8 self-tapping screws.**



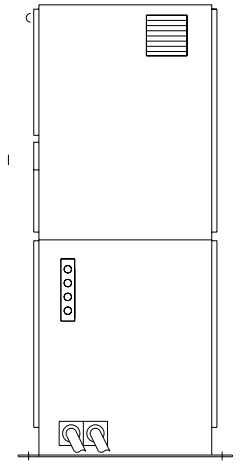
REAR VIEW



LEFT VIEW



FRONT VIEW



RIGHT VIEW

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

Parts List—Safety Placard Placement

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

Used In	Item	Part Number	Description	Comments
----------	----------	----------	----------ASSEMBLIES----------	----------
			none	
----------	----------	----------	----------COMPONENTS----------	----------
all	10	01 10377	NPLTE:"WARNING" 4X4	

Safety Placard Use and Placement

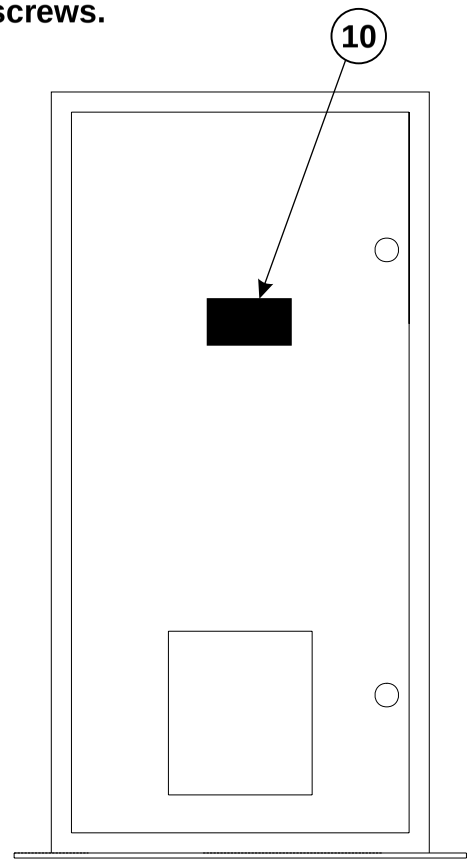
Inverter Box for CBW

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

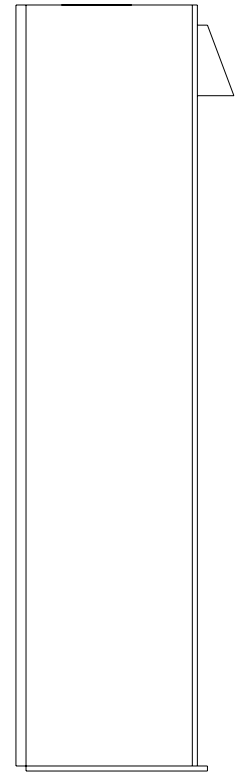
Litho in U.S.A.

Notes:

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



FRONT VIEW



RIGHT VIEW

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

Parts List—Safety Placard Placement

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

Used In	Item	Part Number	Description	Comments
----------	----------	----------	----------ASSEMBLIES----------	----------
			none	
----------	----------	----------	----------COMPONENTS----------	----------
all	10	01 10377A	NPLT:ELEC HAZARD LG-TCATA	

Safety Placard Use and Placement - ISO

Inverter Box for CBW

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

Litho in U.S.A.

ISO Placards
shown on this page

Notes:
1. **Replace placard immediately, if removed or unreadable.**
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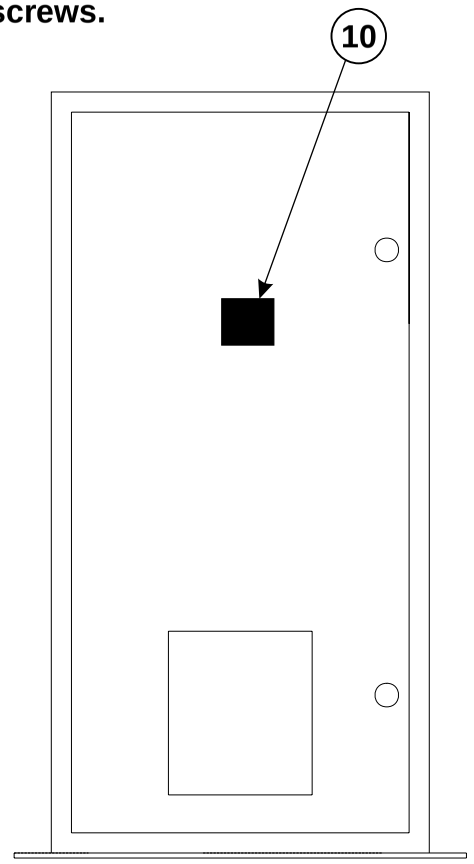
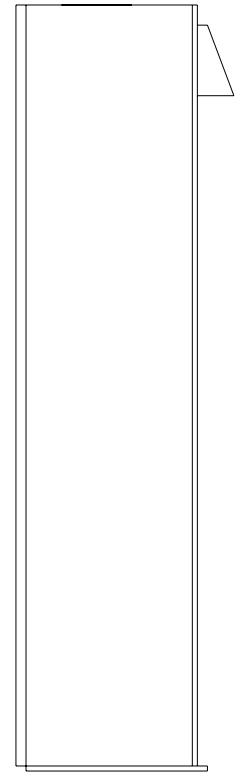


FRONT VIEW



RIGHT VIEW

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

Parts List—Safety Placard Placement

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

Used In	Item	Part Number	Description	Comments
----------	----------	----------	----------ASSEMBLIES----------	----------
			none	
----------	----------	----------	----------COMPONENTS----------	----------
all	10	01 10377	NPLTE:"WARNING" 4X4	

Safety Placard Use and Placement

TYPICAL ALL CBW AUXILIARY TANKS

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

Litho in U.S.A.

Notes:
1. **Replace placard immediately, if removed or unreadable.**
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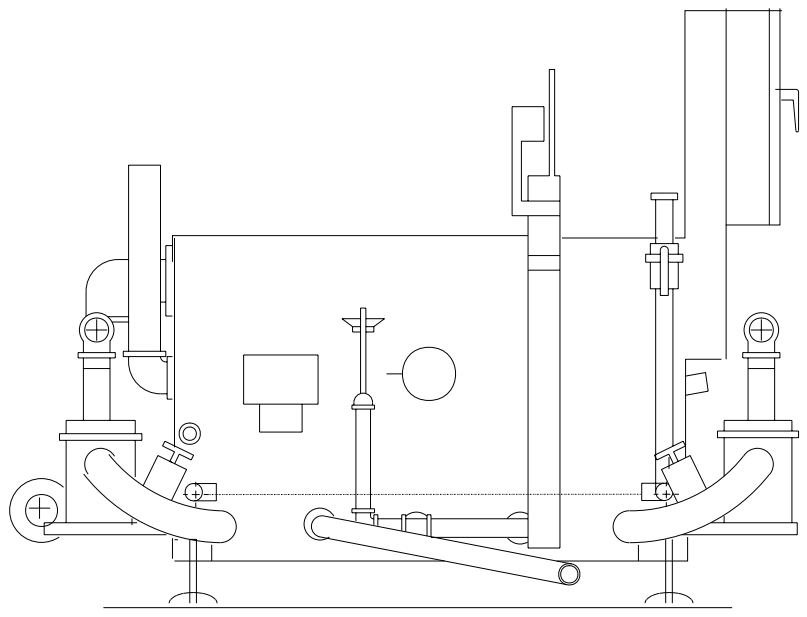
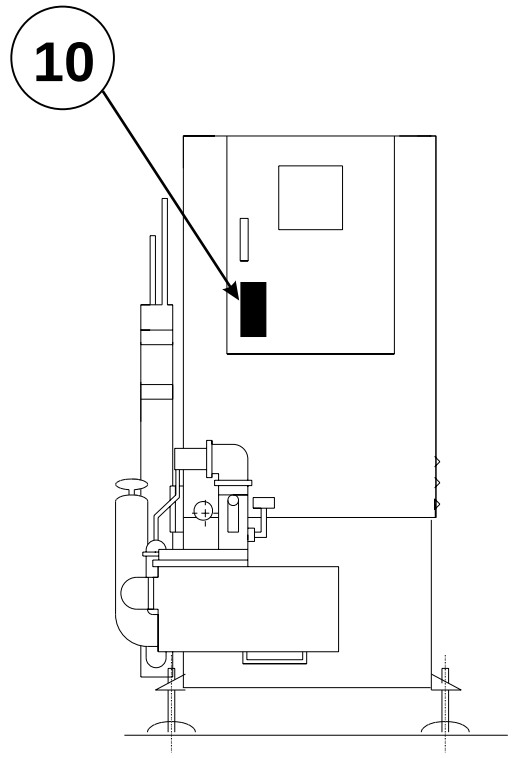


Note:
Pumps and piping will vary dependent on function.

FRONT VIEW



RIGHT VIEW

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

Parts List—Safety Placard Placement

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

Used In	Item	Part Number	Description	Comments
----------	----------	----------	----------ASSEMBLIES----------	----------
			none	
----------	----------	----------	----------COMPONENTS----------	----------
all	20	01 10375C	NPLT:E-HAZARD SM VERTCL-TCATA	

Safety Placard Use and Placement ISO

Typical All CBW Auxiliary Tanks

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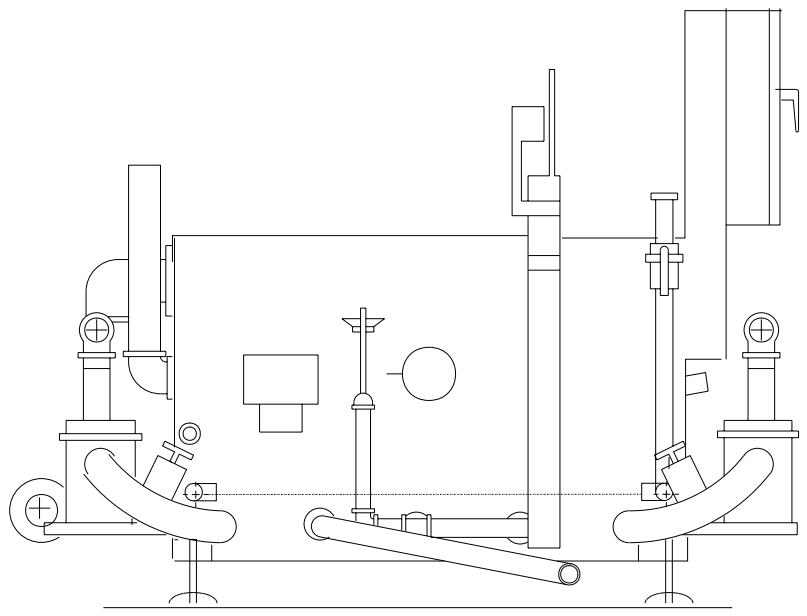
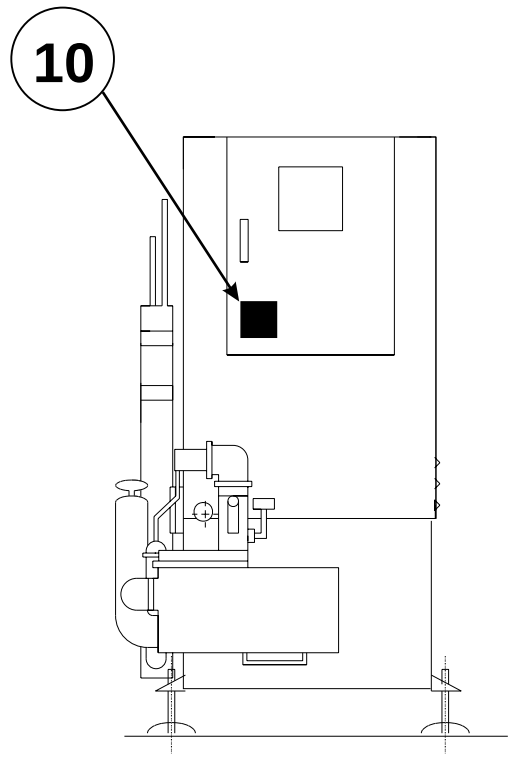
ISO Placards shown on this page

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



Note:
Pumps and piping will vary dependent on function.

FRONT VIEW



RIGHT VIEW

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

Parts List—Safety Placard Placement

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

Used In	Item	Part Number	Description	Comments
----------	----------	----------	----------ASSEMBLIES----------	----------
			none	
----------	----------	----------	----------COMPONENTS----------	----------
all	20	01 10375	NPLTE:"WARNING" 2X2	

BIUUUI02P9 (Published) Book specs- Dates: 20170824 / 20170824 / 20170824 Lang: ENG01 Applic: PC9

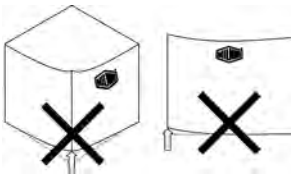
Tag Guidelines for the Models Listed Below

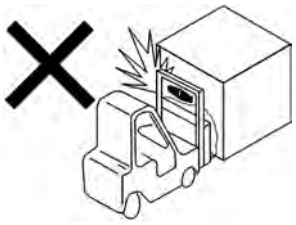
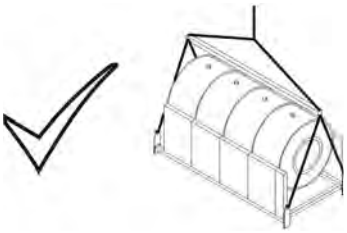
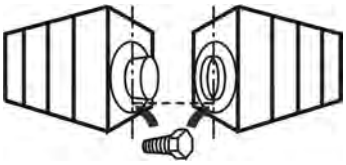
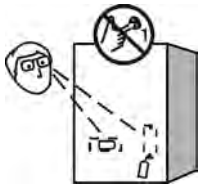
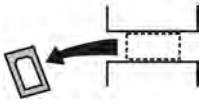
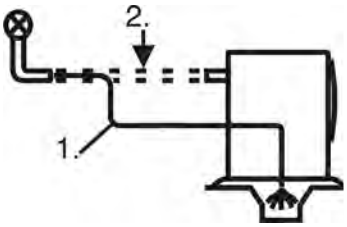
92048C1F 92048C2F 92048C3F 92048H1F 92048H2F 92048H3F

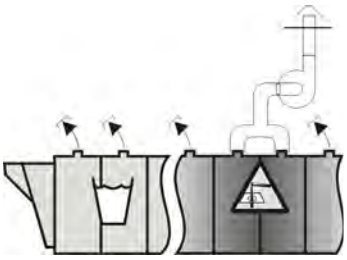
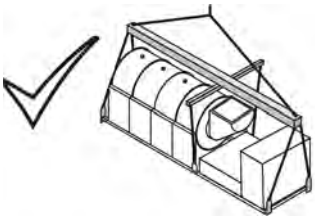
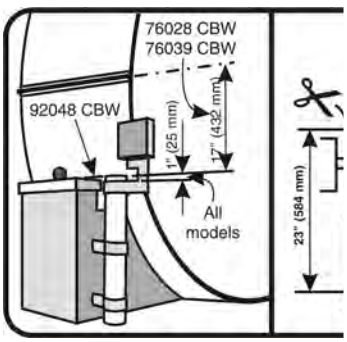
Notice 1: This information may apply to models in addition to those listed above. It applies to paper tags. It does not apply to the vinyl or metal safety placards, which must remain permanently affixed to the machine and replaced if no longer readable.

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 displayed st the bottom of the tag, and 3) the meaning of the tag.

Display or Action	Explanation
	Read the manuals before proceeding. This symbol appears on most tags. The machine ships with safety, operator, and routine maintenance guides for customer use. Milnor dealer manuals for installing, servicing, and commissioning this machine are also available from the Milnor Parts department.
	B2TAG88005: This carefully built product was tested and inspected to meet Milnor® performance and quality standards by (identification mark of tester).
	B2TAG94078: Do not forklift here; do not jack here; do not step here—whichever applies.
	B2TAG94081: Motor must rotate in this direction. On single motor washer-extractors and centrifugal extractors, the drive motor must turn in this direction during draining and extraction. This tag is usually wrapped around a motor housing. If the motor turns in the opposite direction when the machine is first tested, the electrical hookup is incorrect and must be reversed as explained in the schematic manual.
	B2TAG94084: Do not lift from one corner of the machine, as this can cause the frame to rack, damaging it.
	B2TAG94102 shown—others similar: Match up the components with this number. These tags are used to pair up electrical or hose connections between major components of a machine shipped dis-assembled.

Display or Action	Explanation
	B2TAG94118: Do not strike shipping container during fork-lifting. Fragile components inside.
	B2TAG94144: Lift tunnel units as shown, using the lifting eyes and spreader bar.
	B2TAG94146: Fill with oil to this level.
	B2TAG98006: Aligh top dead center bolts when mating CBW tunnel washer units.
	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.
	B2T2002032: Flush incoming water lines before making connections.

Display or Action	Explanation
	B2T2003014: Make sure that you use the specified hydraulic oil.
	B2T2004027: Steam connection (optional)
	B2T2008001: Read the installation instructions. Remove temporary vent covers. Install a powered vent unit on the oxidation zone modules and a separate powered vent unit on the finish zone module and adjacent press, if there is one.
	B2T2010018: Lift from all lifting points and use spreader bars as shown. (Used on PulseFlow machines only.)
	B2T2010023: Set the press frame in accordance with this instruction and the installation manual.
	B2T2011014: Set clips on level float rods as shown.

— End of BIUUUI02 —

BIPCUI02 (Published) Book specs- Dates: 20160113 / 20160113 / 20160113 Lang: ENG01 Applic: PCU

Connecting Ancillary Equipment and Services

1. Placement of Ancillary Components

Ancillary components not mounted to the tunnel must be installed close to the tunnel washer. The locations for your system should be shown on the system layout drawings. Recommended locations are also shown on the standard dimensional drawings for the tunnel and related equipment.

Set the Mentor console on a flat surface. Bolt the console to the floor if desired. The following ancillary components apply to conventional tunnels only, not PulseFlow tunnels: Install the reuse, flow-splitter, and flow lifter tanks on grout so that they are level, cannot move, and sealed against dirt and grime where the tank meets the floor. The top edge of the dam for the wire filter must be level so that water is evenly distributed over the surface of the wire filter. Additionally the flow-splitter and flow-lifter tanks must be low enough that the tank inlet is at or below the level of the weir box outlet. Set all pumps flat on the slab so that they are as low as possible.

2. Plumbing Connections

The sizes and locations of utility connections vary with machine configuration. Those for your system should be shown on the system layout drawings. The following general instructions apply to all systems.

2.1. Fresh Water—Incoming fresh water connects to the fresh water header which connects to each fresh water inlet. The following applies to 76032_ (G1) tunnels only: Although the ball valve actuators are fitted with needle valves to adjust the rate at which the valves close, there is some possibility that water hammer will be experienced if the incoming water pressure is above 50 PSI (345 Kpa) - especially if the water piping is small and/or not fastened securely. For severe conditions it may be necessary to install pressure regulators and/or shock absorbers on the water lines.

2.2. Reuse Water—On-site connections are necessary for some reuse water (example: water returned to the reuse or pulse flow tank from the extraction system). This piping is shown on the layout drawings for your system.

2.3. Steam—Connect main steam (at the steam strainer) to the tunnel washer steam header. Install a manual steam shutoff valve so the steam valves can be repaired. Discharge condensate into the tunnel drain trough. Do not return condensate to the boiler.

2.4. Compressed Air—Estimated compressed air consumption is approximately 5 SCFM per minute at a minimum of 85 PSI.

2.5. Drains for Discharged Water—Consult local codes for equipment that can be necessary (example: traps) when you connect to a sanitary sewer. In addition to the module outlets to the sewer, the machine also has drain-off connections for water that drips between modules or units.

2.6. Vents for Discharged Vapors—Vapors generated in the oxidation zone and the finish zone of the tunnel can mix together, produce noxious gasses, and corrode equipment. Without adequate ventilation, these vapors will exit the tunnel discharge ring or concentrate in the discharge end of the tunnel and adjacent press enclosure. The severity varies with chemical composition and usage, but corrosion can be rapid and severe.

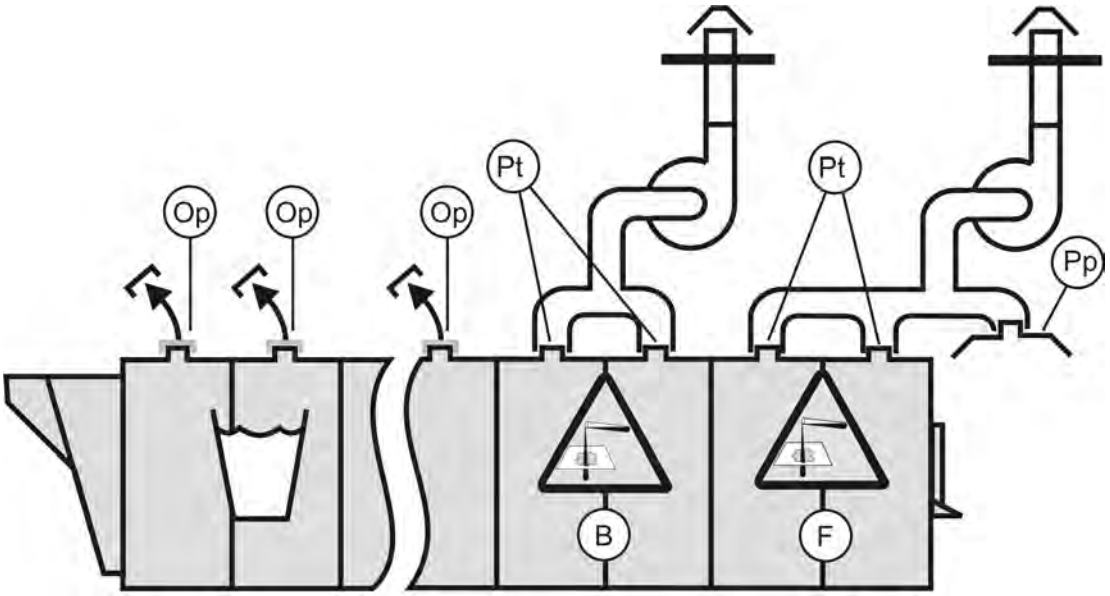
Each tunnel module is provided with a vent at the top of the shell. These vents are capped at the factory for shipping. **Uncap all vents at installation.** The best practice is to provide two separate, powered ventilation units that meet the following conditions:

- The two units are isolated from each other to avoid harmful chemical reactions.
- Ventilation fans have sufficient power to draw vapors away from the equipment. Milnor recommends 600 to 750 SCFM for the oxidation zone (300 to 375 per connection point, if two modules) and 600 to 750 SCFM for the finish zone plus the press enclosure (200 to 250 SCFM per connection point, if two modules plus the press). The SCFM values are based on an ambient air temperature of 68°F (20°C) and a minimal relative humidity.
- Fan motors are equipped with an alarm (example: indicator light) to alert personnel if a motor fails.

Figure 1 shows the recommended configuration for a tunnel with more than seven modules. Smaller tunnels are similar, but consult the Milnor factory.

Figure 1: Recommended Vent System for the CBW® Tunnel Washer and an Adjacent Press

Side View (cut lines indicate a tunnel larger than 7 modules)



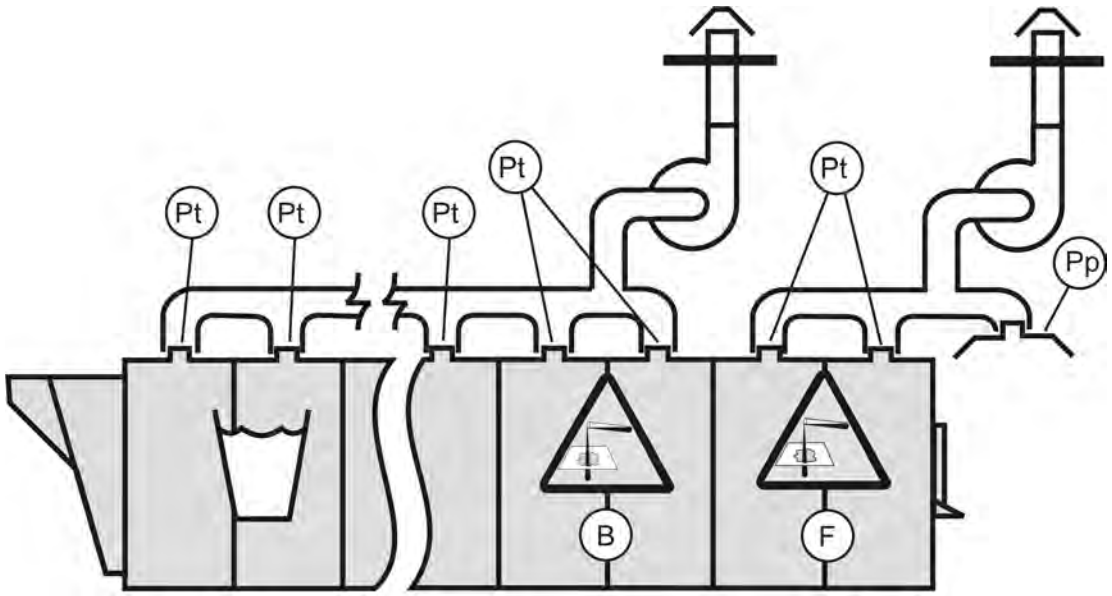
Legend

Op.	Open vent (not piped)
Pt.	Powered vent on module
B.	Oxidation zone per chemical supplier
F.	Finish zone
Pp.	Powered vent on press equipped to vent vapors

It is not recommended to connect modules ahead of the oxidation zone to a powered vent system. However, if conditions warrent this, Milnor recommends the configuration shown in Figure 2. If this configuration is needed, add 200 to 250 SCFM of powered ventilation per additional module vented.

Figure 2: Alternate Vent System for the CBW® Tunnel Washer and an Adjacent Press

Side View (cut lines indicate a tunnel larger than 7 modules)



Legend

Pt. Powered vent on module
B. Oxidation zone per chemical supplier
F. Finish zone
Pp. Powered vent on press equipped to vent vapors

2.7. Connections For Chemical Injection—Make sure that the piping or tubing used to deliver the chemicals to chemical injection points has correct characteristics (working pressure, burst pressure, temperature resistance, chemical resistance, etc.) for the purpose intended. Remember that momentary pressures two or three times the normal chemical pressure can occur as a chemical valve closes.

Be sure the chemical lines are routed such that they are not subject to damage from external heat sources, or abrasion, or any other source of mechanical damage. Inspect all chemical delivery piping daily for leaks, loose connections, frayed or abraded areas, soft or weak places.

CAUTION 1: Machine Damage Hazards—Pumped chemical systems, if not properly installed, can cause corrosion damage.

- See the installation manual for precautions and additional information before making any chemical connections.

3. Power Connections

A junction box is available at either end of the tunnel washer to supply power to the entire tunnel washer, each of the pumps (up to 5 pumps), the motor for the Conlo (or Conwa) and the power for the Mentor.

A single terminal in the inverter enclosure supplies power to the entire tunnel washer, each of the pumps (up to 5 pumps), the motor for the Conlo (or Conwa) and the power for the Mentor.

The Mentor power cable connects to terminals within the standard output box on the first module. Connect one side of the ground wire (in the Mentor power cable) to the ground terminal inside

the standard output box. Connect the other side of the ground wire to the ground terminal inside the mentor enclosure.

4. Ground (earth) Connections

A very reliable, secure, and substantial ground (earth) connection is necessary for the proper functioning of any solid state controller. If practical, the ground connection should be via means of a metal rod driven securely at least 3 feet into the earth, and connected to the MENTOR by a copper wire no less than No. 10 AWG (.05 square Millimeter cross section area). The run of copper should not be longer than 10 feet (3 meters).

When it is impossible to provide such a ground connection, the next best is a firm connection to a metal water pipe which is known to be continuous and known to go into the earth a substantial distance.

— End of BIPCUI02 —

Prevent Damage from Chemical Supplies and Chemical Systems

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

Chemical supply companies usually:

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

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

1. How Chemical Supplies Can Cause Damage

BNUUUR02.R01 0000160548 D.2 B.3 11/27/18 2:24 PM Released

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

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

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

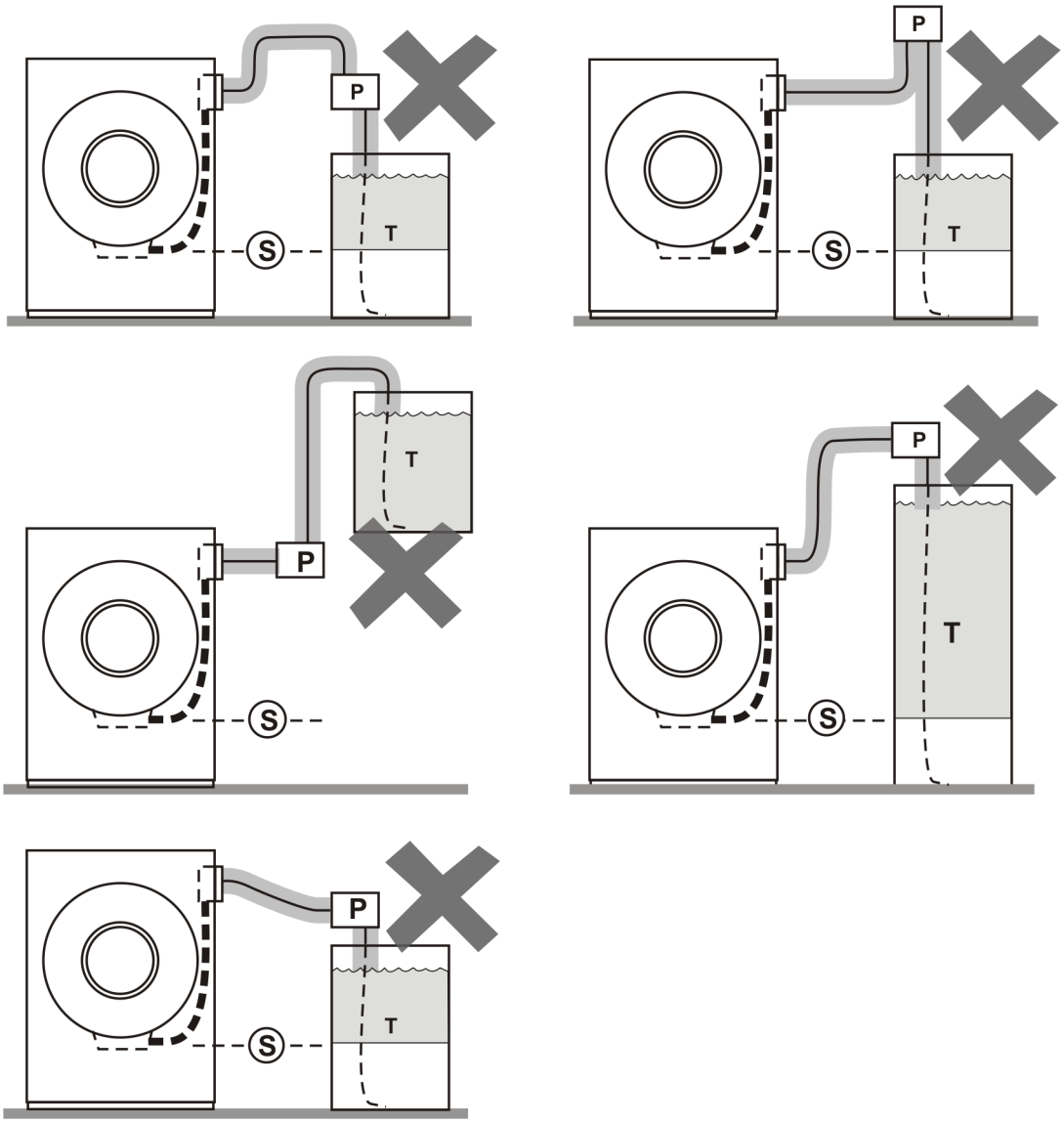
Incorrect Configuration or Connection of Equipment — Many chemical systems:

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

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

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

Schematic Views

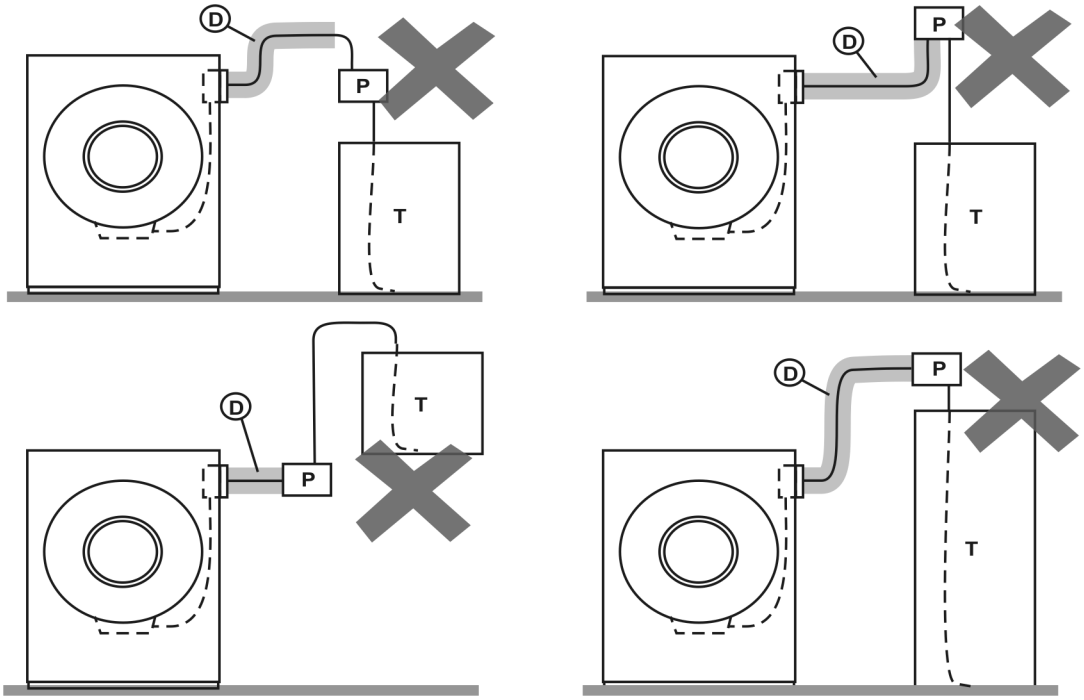


Legend

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

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

Schematic Views



Legend

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

2. Equipment and Procedures That Can Prevent Damage

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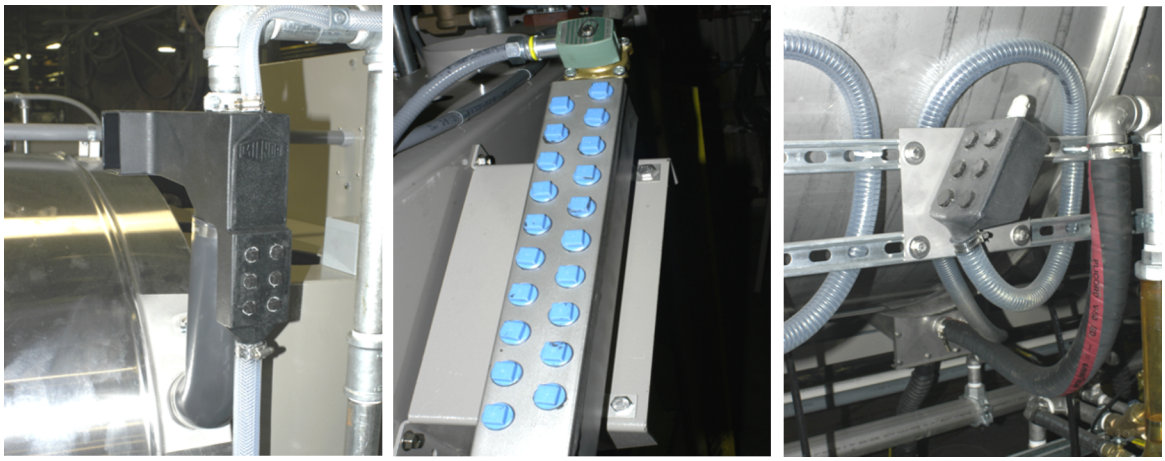
Use the chemical manifold supplied. — There is a manifold on the machine to attach chemical tubes from a chemical pump system. The manifold has a source of water to flush the chemical supplies with water.

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



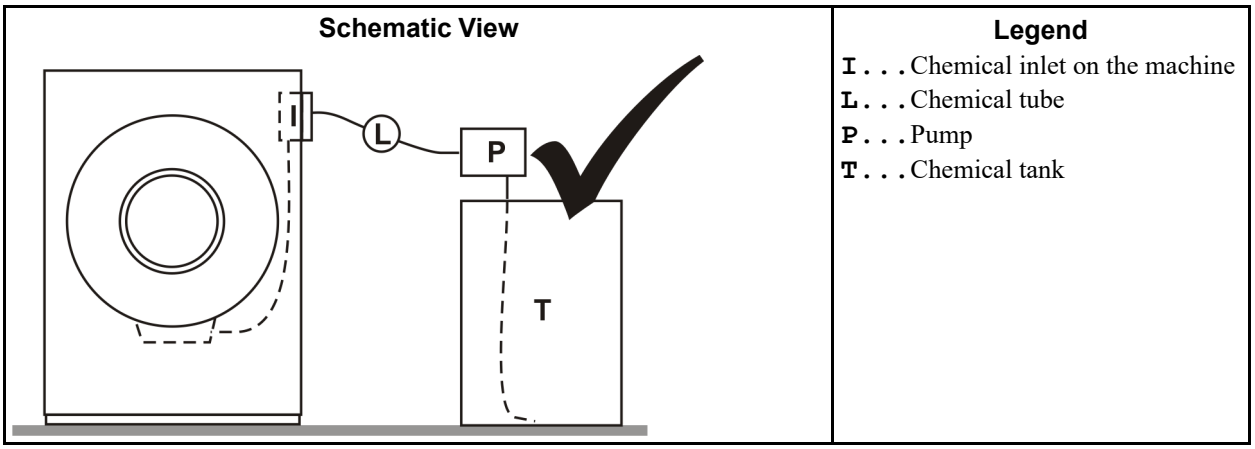
Close the line. — If the pump does not always close the line when it is off, use a shutoff valve to do this.

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

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

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

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



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

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

End of document: BNUUUR02

BIUUM09PCU (Published) Book specs- Dates: 20110830 / 20110830 / 20110905 Lang: ENG01 Applic: PCU

Routine Maintenance—CBW® Tunnel Washer

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

Do the maintenance in Section 2 "Maintenance Summary" to make sure that the machine is safe, keeps the warranty, and operates correctly. This will also decrease repair work and unwanted shutdowns. Speak to your dealer or Milnor if repairs are necessary.

WARNING 2: Risk of severe injury—Mechanisms can pull in and mutilate your body.

- You must be approved by your employer for this work.
- Use extreme care when you must examine components in operation. Remove power from the machine for all other work. Obey safety codes. In the USA, this is the OSHA lockout/tagout (LOTO) procedure. More local requirements can also apply.
- Replace guards and covers that you remove for maintenance.

1. How To Show the Maintenance On a Calendar

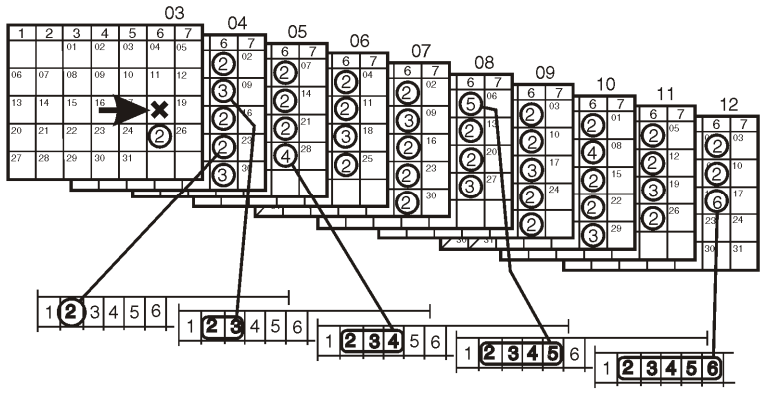
If a contractor keeps the maintenance schedule for your plant or you use software for this function, add the items in Section 2 to that schedule. If not, you can put marks on a calendar that work with the tables in Section 2. The marks are the numbers 2, 3, 4, 5, and 6. 2 = items you do each week, 3 = each 200 hours of operation, 4 = 600 hours, 5 = 1200 hours, and 6 = 2400 hours.

Look at Figure 1. This example is a machine that operates 60 hours each week. The top part of the figure shows 10 months: March (month 03) through December (month 12). This machine started operation in week 3 of March, where the arrow points. This laundry does the maintenance with intervals of one week and longer on Friday (day 6). The figure legend tells where to put the marks. Do the procedure again for subsequent months.

The bottom of Figure 1 shows the headings of the small columns in the Section 2 tables. Do the items with an x in the "1" column (the "day" items) as told in Section 2. On each calendar date with a "2", do the items with an x in the "2" column. On each date with a "3", do the items with an x in the "3" or the "2" column. On each date with a "4", do the items with an x in the "4", "3", or "2" column. Continue this pattern.

Figure 1: How to Mark the Calendar. This machine operates 60 hours each week.

Example Maintenance Calendar



Legend

6. 2400 hours / 60 hours each week = 40 weeks. Count 40 weeks from the start date and put a "6".

5. 1200 hours. Put a "5" midway between the start date and the "6".

4. 600 hours. Put a "4" midway between the dates with marks thus far.

3. 200 hours. Put two "3" marks between each of the dates with marks.

2. Put "2" at the other weeks.

2. Maintenance Summary

If the machine operates more than 12 hours each day, do the "day" items two times each day. If it operates more than 60 hours each week, do the "week" items two times each week. Do the other items at the given hours. Section 1 tells how the six small columns work with a calendar.

Table 1: Guards and Related Components

Examine. If a component is damaged, missing, or not set, correct this immediately to prevent injury.								
See Section 1						Do this each	Component	More Data
1	2	3	4	5	6			
x						day	guards, covers	Speak to your dealer or Milnor for replacement components.
x						day	safety placards	
		x				200 hours	fasteners	Fasteners must be tight.

Table 2: Filters, Screens, and Sensitive Components

Remove contamination from these components to prevent damage and unsatisfactory performance.								
See Section 1						Do this each	Component	More Data. See also Section 3 "How to Remove Contamination"
1	2	3	4	5	6			
	x					week	inverter fans, vents, filters	See Figure 4. Keep good air flow.
			x			600 hours	motors	Keep good air flow.
					x	2400 hours	entire machine	Remove excessive dust and dirt.
x						day	chemical inlet areas	See Figure 5
					x	2400 hours	strainer in water regulator.	See Figure 7
		x				200 hours	strainer(s) for air inlet	See Figure 9
		x				200 hours	strainer for steam inlet	See Figure 8
x						day	photoeyes	See Figure 11
					x	2400 hours	proximity switches	See Figure 12
x						day	level float tube	See Figure 6. Lint can prevent float movement.
			x			600 hours	level float connecting hose	See Figure 6
x						day	bowl on self-purging air filter for chain mist oiler	See Figure 16. Make sure water does not collect in the bowl.
			x			600 hours	inlet screen and filter in air filter bowl for chain mist oiler	See Figure 16
x						day	weir boxes and weir plates	Lint can collect and prevent full flow.
x						day	steam trap	See Figure 22. Open the valve momentarily to release contamination.
		x				200 hours	strainer in steam trap	See Figure 22
					x	2400 hours	sumps with no drain valve	See Figure 21
x						day	wedge wire filter and lint basket in tank(s)	See Figure 18 (conventional), Figure 19 (PulseFlow)
	x					week	level tank (conventional)	Examine tank interior for contamination.
	x					week	recirculation pump, inter-module pump(s) (PulseFlow)	See Figure 20

Table 3: Fluid Containers

Examine. Add fluid if necessary and keep components clean to prevent damage.								
See Section 1						Do this each	Component	More Data. See also Section 4 "Lubricant Identification and Procedures"
1	2	3	4	5	6			
x						day	reservoir for chain mist oiler	Add oil #5 (Table 8) if necessary. Figure 16
					x	2400 hours		Drain, remove contamination from reservoir and suction tube. Replace oil (#5 Table 8)
		x				200 hours	speed reducers (gear reducers)	Add oil #4 (Table 8) if necessary. Figure 15.
					x	2400 hours		Replace oil with oil #4 (Table 8).

Table 4: Components that Become Worn

Examine. Tighten or replace if necessary, to prevent shutdowns and unsatisfactory performance.								
See Section 1						Do this each	Component	More Data
1	2	3	4	5	6			
		x				200 hours	drive belts and pulleys	See Supplement 1, Figure 3
		x				200 hours	tubes and hoses	Examine hoses and connections for leaks.
				x		1200 hours	drive couplings	See Figure 13
		x				200 hours	support wheels, tracking wheels (guide wheels)	See Figure 14
		x				200 hours	drive chains, chain tension mechanisms, sprockets	See Figure 17
		x				200 hours	water seals	Look for leaks at the load chute and between modules or units. It is necessary to repair a large leak. Speak to your dealer or Milnor. This is not routine maintenance.

Table 5: Bearings and Bushings

Apply grease to these components to prevent damage.								
See Section 1						Do this each	Component	More Data. See also Section 4 "Lubricant Identification and Procedures"
1	2	3	4	5	6			
				x		1200 hours	motors with grease fittings	See Table 10 "Motor Grease Schedule"
			x			600 hours	support wheels	Add 0.12 oz (3.54 mL) of grease #2 (Table 8).
			x			600 hours	tracking wheels (guide wheels)	Add 0.12 oz (3.54 mL) of grease #2 (Table 8).
			x			600 hours	drive coupling chain	Put a light coat of grease #3. Figure 13

Table 6: Mechanisms and Settings

Make sure mechanisms are serviceable and settings are correct to prevent unsatisfactory performance.								
See Section 1						Do this each	Component	More Data
1	2	3	4	5	6			
					x	2400 hours	controller circuitry	Examine wiring and connections in electrical boxes. Look for corrosion, loose connections.
		x				200 hours	water pressure regulator for chemical flush	See Figure 7. Value: 28 PSI (193 kPa).
		x				200 hours	compressed air mechanisms	See Supplement 2, Figure 10
	x					week	chain mist oiler system	See Figure 16. Examine chains for oil. Make sure that each nozzle gives a spray each time that the tunnel does a transfer. If not, remove contamination and make sure that the air pressure gauge shows the correct pressure for the number of chains. Values are given in pounds per square inch and (kilopascals): 1 chain = 20 (138) 2 chains = 35 (241), 4 chains = 40 (276), 6 chains = 45 (310), 8 chains = 50 (345), 10 or more chains = 60 (414).

3. How to Remove Contamination

Table 7: Contamination Types, Cleaning Agents, and Procedures

Material or Component	Usual Contamination	Example	Cleaning Agent	More Data
machine housing	dust, dirt	--	compressed air or shop vacuum	Air—no more than 30 psi (207 kpa). Do not push dust in mechanisms.
vains and vents on electrical components	dust	motors, inverters, braking resistors	shop vacuum, soft bristle brush, canned air for electrical components	Do not push dust in mechanisms.
electric box interior	dust	all electric boxes		
electrical connections	corrosion, varnish	spade connector, molex connector, plug-in relay	spray solvent for electrical components	Disconnect then connect it again. Use solvent if the bad connection continues.
electronic sensors	dust	photoeye lens, reflector, laser, proximity switch, temperature probe	none	Use a clean, soft, dry cloth.
	dirt		warm water with soap, then water flush	Use clean, soft cloths.
stainless steel	chemical spill	shell, supply injector	water	Use a hose to flush the chemical supply from the surface fully. Do not get water on electrical components or mechanisms.
300 series stainless steel	chemical corrosive attack	shell interior, cylinder	pickling and passivation	Speak to your dealer or Milnor. This is not routine maintenance.
painted metal, unpainted aluminum	dust, dirt, grease	frame members	warm water with soap, then water to flush	Use clean cloths. Do not get water in electrical components.
rubber	dirt, oil, grease	drive belts, hoses	warm water with soap, then water to flush	Use clean cloths. Flush fully. Oil or soap must not stay on drive belts. Make sure that drive belts are serviceable.
clear plastic, acrylic	discoloration (yellowing)	compressed air filter bowl, visual flow meter	warm water with soap, then water to flush, then acrylic cleaner. Do not use ammonia.	Use only the necessary cleaning agents. Wash and rinse with clean, soft cloths. Follow instructions on acrylic cleaner.
glass	discoloration (yellowing)	door glass, site glass	ammonia and water solution and water rinse then acetone	Use clean, soft cloths. Use only the necessary cleaning agents. If necessary, soak in cleaner.
soft air filters	dust	on inverter electric box door, in air line filter bowl	shop vacuum	Replace the used with a new filter when the vacuum cannot remove contamination.
rigid strainers, screens for water, steam	mineral particles	in water line, y-strainer	water	Use a rigid bristle brush. Flush with a flow of water.
rigid strainers, screens for oil	metal shavings	in hydraulic line	carburetor cleaner or equivalent solvent	Soak. Use a rigid bristle brush.

4. Lubricant Identification and Procedures

In the maintenance summary, Table 3 or the data it refers to gives the oil maintenance interval, quantity, and lubricant code for each oil container on your machine. Table 5 gives the grease maintenance interval, quantity, and code for each grease point on your machine other than

motors. The data for motors are given in Table 9. Table 8 identifies the lubricant for each lubricant code. Get these or equivalent lubricants from from your local lubricant supplier.

When you add grease, always use the procedures given in Section 4.1. When you add grease to motors, also use the procedures given in Section 4.2.

CAUTION 3: Risk of damage—Bad lubricant will decrease the life of components.

- Make sure that all equipment and fittings used to apply lubricants are clean.
- Use only the given lubricants or equivalent lubricants that have the same specifications.

Table 8: Lubricant Identification

Code	Type	Trademark Name	Applicatiion
#1	grease	Mobil Polyrex EM or as given on the motor nameplate	motor bearings
#2	grease	Shell Alvania EP2	drive shaft bearings and bushings
#3	grease	Shell Alvania Grease CG or equivalent AGMA CG-1 or CG-2	drive couplings
#4	oil	Shell Morlina 220	gear reducers
#5	oil	Milnor chain lubricant (Milnor part number 20H000A).	mist oiler for tunnel drive chain

4.1. Grease Gun Procedures

CAUTION 4: Risk of damage—Hydraulic pressure can push out seals and push grease into unwanted areas (example: motor windings).

- Use a hand grease gun. A power grease gun gives too much pressure.
- Know the quantity of grease your grease gun gives each cycle (each stroke).
- Operate the grease gun slowly (10 to 12 seconds for one cycle).
- Add only the specified quantity. Stop if new grease come out of a drain port or other opening.
- Remove spilled grease from belts and pulleys.

The tables give grease quantities in fluid ounces (fl oz) and milliliters (mL). You can also use grease gun cycles (strokes). A cycle is each time that you pull the trigger. One cycle is usually approximately 0.06 fl oz (1.8 mL). Your grease gun can give more or less than this. Measure the output of your grease gun as follows:

1. Make sure that the grease gun operates correctly.
2. Operate the grease gun to put grease into a small container with fluid ounce or milliliter increments. Pull the trigger fully and slowly.
3. Add a sufficient quantity of grease to measure accurately. Count the number of cycles of the grease gun (the number of times that you pull the trigger).
4. Calculate the quantity for each cycle of the grease gun.

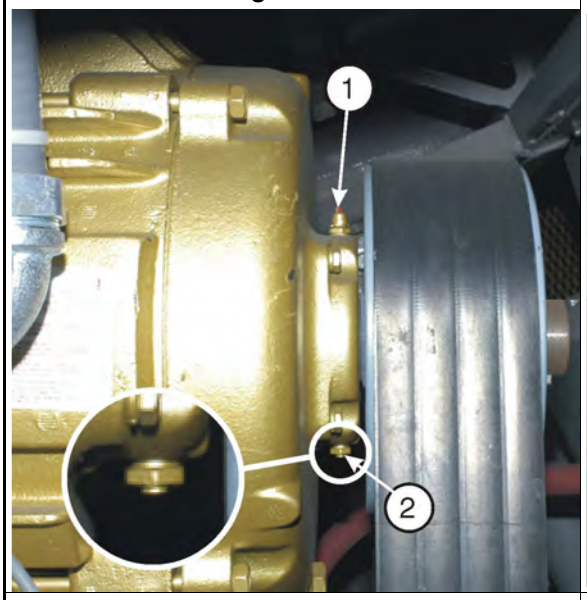
Example: 2 fl oz / 64 cycles = 0.031 fl oz for each cycle

Example: 59 mL / 64 cycles = 0.92 mL for each cycle

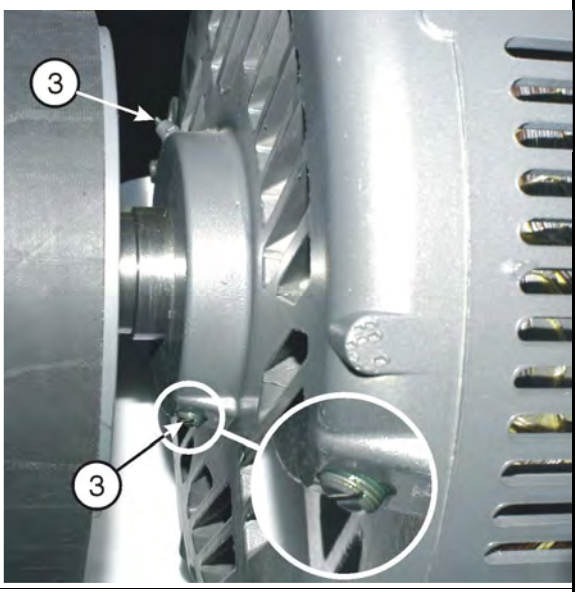
4.2. Grease Procedures for Motors—If a motor on your machine does not have grease fittings, no grease maintenance is necessary. If a motor on your machine has grease fittings, it is necessary to add grease. But the interval is usually longer than for other maintenance. Table 9 gives motor grease intervals and quantities for motors with specified frame sizes and speeds. You get this data from the motor nameplate. Use Table 10 to record the data for the motors on your machine.

Figure 2: Motor Grease Maintenance Conditions

Grease Fitting and Grease Relief

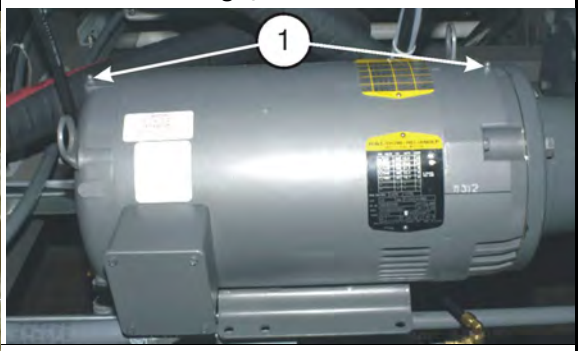


Grease Fitting and Grease Drain



Motor Nameplate

Grease Fittings, No Reliefs or Drains



Legend

1. Grease fitting
2. Grease relief. Do not remove.
3. Grease drain plug. Remove first.
4. RPM (motor speed). This example is 1465 RPM at 50 Hz and 1765 RPM at 60 Hz.
5. NEMA (IEC) frame size. Example: 256T

CAUTION 5: Risk of damage—You can push grease into the windings and burn out the motor if you fail to remove the grease drain plugs.

- If the motor has grease drain plugs, remove them before you add grease. If the motor has grease relief fittings, it is not necessary to remove them.

Apply grease as follows:

1. Operate the machine or use manual functions to operate the motor until it is warm.
2. Remove power from the machine.
3. If the motor has grease drain plugs, remove them. See caution statement **5** .
4. Add the specified grease with the motor stopped. If the motor with the nameplate in Figure 2 operates at 60 Hz, the specified grease quantity for each grease fitting is 0.65 fl oz (18.4 mL).
5. If the motor has a grease drain plugs, operate the machine or use manual functions to operate the motor for two hours. Replace the drain plug.

Table 9: Motor Grease Intervals and Quantities. Use grease #1 (Table 8)

On Motor Nameplate (see Figure 2)		Interval		Quantity	
NEMA (IEC) Frame Size	**RPM Less Than or Equal To**	**Years**	**Hours**	**Fluid Ounces**	**mL**
Up to 210 (132)	900	5.5	11000	0.34	9.5
	1200	4.5	9000		
	1800	3	6000		
	3600	1.5	3000		
>210 to 280 (132 to 180)	900	4.5	9000	0.65	18.4
	1200	3.5	7000		
	1800	2.5	5000		
	3600	1	2000		
>280 to 360 (180 to 200)	900	3.5	7000	0.87	24.6
	1200	3	6000		
	1800	2	4000		
	3600	0.5	1000		
>360 to 5000 (200 to 300)	900	2.5	5000	2.23	63.2
	1200	2	4000		
	1800	1	2000		
	3600	0.5	1000		

Table 10: Motor Grease Schedule

Motor Identification (example: main drive)	Interval		Quantity		Dates When Grease is Added				
	Years	Hours	fl oz	mL					
									.

5. Basic Components [Document BIUUUM10]

Supplement 1

How to Examine Belts and Pulleys

Examine belts and pulleys when power is removed and look at them when the machine is in operation as explained below. If belts are damaged or pulleys are worn, speak to your dealer or Milnor.

With power removed:

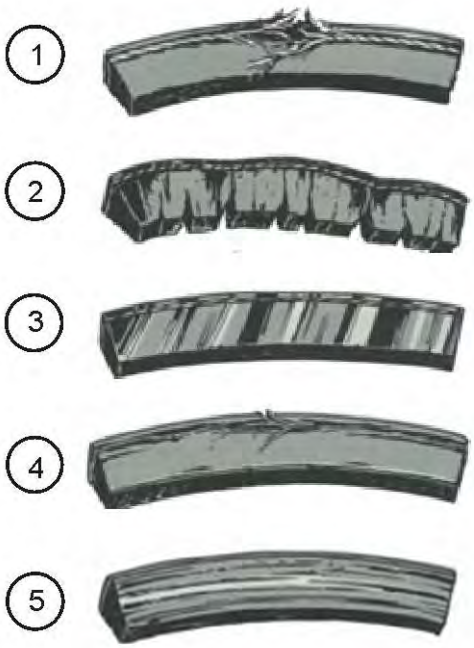
- Look for dirt, dust, oil, and grease. Remove contamination.
- Look for belt damage as shown in Figure 3.
- Look for worn pulleys as shown in Figure 3.

With the machine in operation—Do not touch the machine. Look at the components and listen to them:

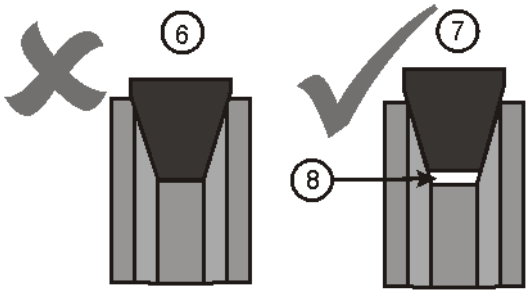
- A belt can have some vibration and not cause damage. It is necessary to correct this condition only if the vibration is large.
- A belt must have sufficient tension that there is no slippage on the pulley during operation. If slippage occurs, you can usually tell from the noise.

Figure 3: Belt and Pulley Conditions To Look For. See Supplement 1.

Types of Belt Damage



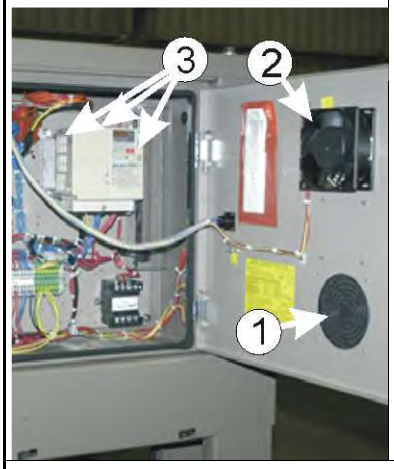
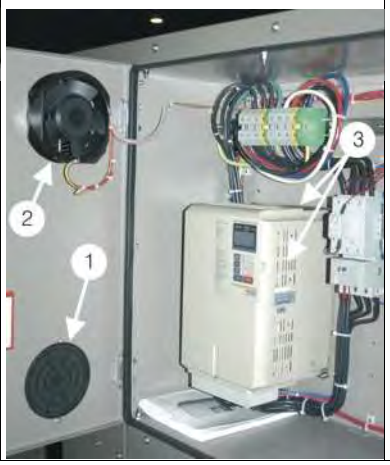
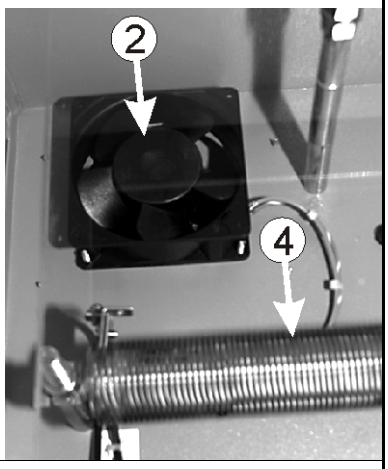
How to Find a Worn Pulley



Legend

1. Broken cord—damage from a sharp object.
2. Cracks—The belt is too large for the pulley.
3. Shiny side walls—oil or grease on belt.
4. The belt layers disconnect—Oil or grease.
5. Bands on side walls—dirt, particles.
6. Incorrect: The pulley is too worn.
7. Correct: The belt only touches the side walls. You can put a thin strip of paper into the space between the belt and the pulley.
8. Space

Figure 4: Electric Box and Inverter. These are examples. Your machine can look different.

30022X_ Washer-extractor	48040F_ Washer-extractor	76039 CBW Tunnel Washer
		

Legend

1. Air filter
2. Fan on elecrtric box door. Tip: Put streamers in front of the fan to make sure the fan operates.
3. Inverter cooling vanes and vents. See caution statement 6 .
4. Braking resistor, if applicable

CAUTION 6: Risk of damage—The inverter will burn out without sufficient airflow.

- Keep fans, filter, vents, and braking resistors clean.

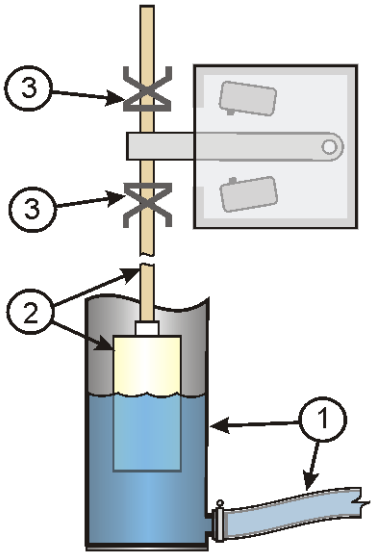
Figure 5: Chemical Injection Areas. See caution statement 7 . These are examples. Your machine can look different.

Supply Injector	Chemical Inlet—76039CBW	Chemical Inlet—36026V7J
		
Soap Chute		
		

CAUTION 7: Risk of corrosion damage to the machine and the goods—

- Remove chemical supplies from machine surfaces.
- Stop leaks. Do not let chemical supplies flow into the machine after operation.
- Speak to your dealer or Milnor if you see corrosion damage.

Figure 6: Level Float Assembly. These are examples. Your machine can look different.

Typical Level Float Assembly	76039 CBW Module Level Float	Legend
		**1.** Float tube and connecting hose. Remove lint that can prevent correct operation. See caution statement **8** . **2.** Float and rod. The float must be free to move as the water level changes.. **3.** Clips. If it is necessary to move the clips to remove the float and rod, put marks on the rod so you can replace the clips accurately.

CAUTION 8: Risk of malfunction—The level sensor must give correct data.

- Keep the connecting tube or hose free of blockages and leaks.
- Make sure that the connections are tight.

Figure 7: Water Pressure Regulator for Chemical Flush. These are examples. Your machine can look different.

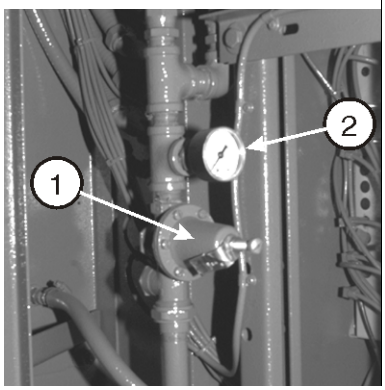
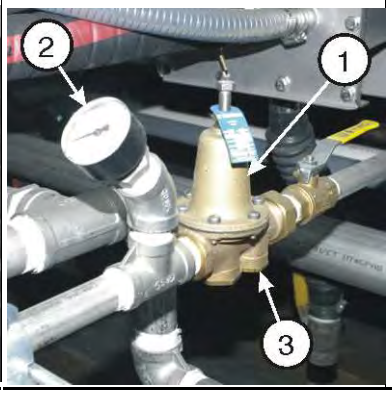
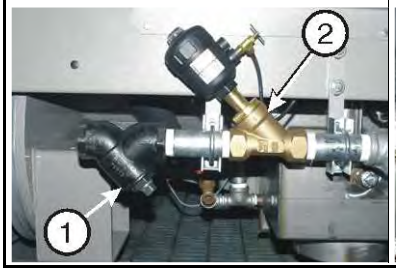
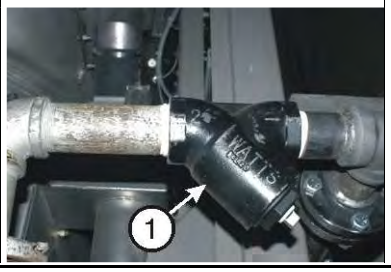
64050E6N Washer-extractor	76039CBW Tunnel Washer	Legend
		**1.** Water pressure regulator **2.** Water pressure gauge **3.** See caution statement **10** . Remove plug to remove strainer.

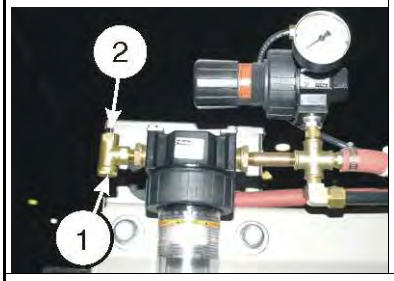
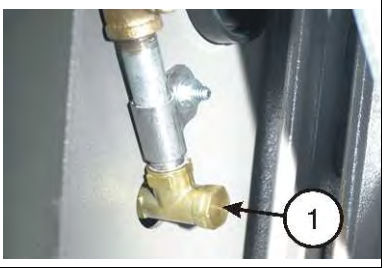
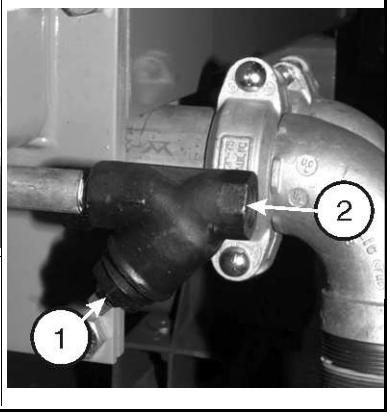
Figure 8: Steam Inlet Strainer. These are examples. Your machine can look different.

42044SP2 Washer-extractor	76039CBW Tunnel Washer	Legend
		**1.** Steam strainer. Remove steam pressure before you remove the plug. See warning statement 9 **2.** Steam valve

WARNING 9: Risk of severe injury—You can accidentally release pressurized steam.

- Close the external shutoff valve and release remaining pressure before you do maintenance.

Figure 9: Compressed Air Inlet Strainers. These are examples. Your machine can look different.

T-Strainer. Outside machine frame on some models.	T-Strainer. Inside machine frame on some models.	Y-strainer. Used on some models
		

Legend

1. See caution statement 10. Remove plug to remove strainer.

2. Compressed air in.

CAUTION 10: Risks of injury and damage—

- Close the external shutoff valve and release remaining pressure before you do maintenance.

Supplement 2

How to Examine Compressed Air Mechanisms

Your machine has one or more mechanisms that use compressed air for movement. Figure 10 shows some examples. To examine a compressed air mechanism, look at the mechanism and listen to it in operation. **Do not touch the mechanism or put your hand in the machine.** Usually you can see movement directly or on a position indicator. Frequently, you can hear a valve open and close. When a signal from the controller to operate the mechanism occurs, the air pressure must increase sufficiently before movement occurs. When the signal stops, the system must release the compressed air. You can usually hear the sound of the exhaust air for a short time.

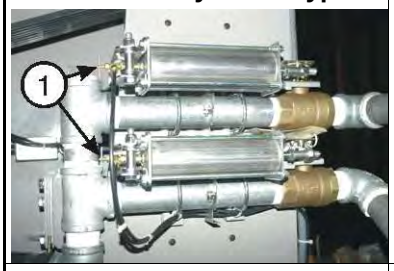
When a compressed air mechanism operates correctly, its time of movement is usually less than two seconds. The movement is smooth. It does not shake, change speed, or stop in the middle of travel. A mechanism that does not operate correctly will cause unsatisfactory performance. If the mechanism does not operate correctly and you cannot repair the problem, speak to your

dealer or Milnor. Possible causes are as follows:

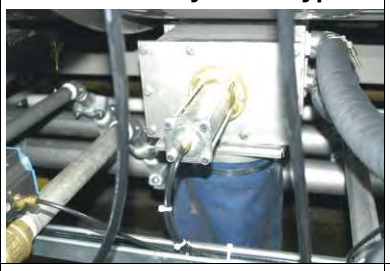
- a blockage or a leak in the air tube,
- a worn pilot air valve,
- worn components in the mechanism,
- air pressure supplied to the machine is not sufficient,
- a component used to remove contamination from the air line is clogged,
- a quick exhaust valve is clogged.

Figure 10: Compressed Air Mechanisms. These are examples. Your machine can look different.

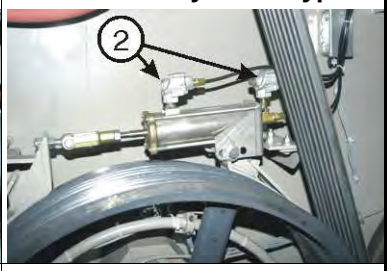
Air Operated Water Valves - Milnor Air Cylinder Type



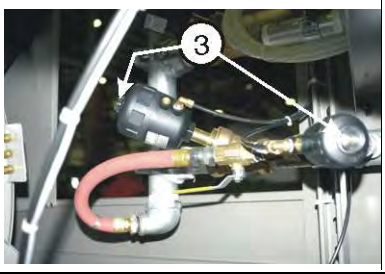
Air Operated Drain Valve - Milnor Air Cylinder Type



Air Operated Band Brake - Milnor Air Cylinder Type



Air Operated Water and Steam Valves - Angle Type



Air Operated Water Valve - Ball Valve Type

Legend

1. Factory-set needle valves to cause two air cylinders to move together. Do not adjust.
2. Quick exhaust valves
3. Position indicator. Yellow when valve is open.
4. Arrow position indicator

Figure 11: Photoeyes. These are examples. Your machine can look different.

Photoeye protected by a site glass, each side of the CBW load chute

Photoeye and reflector on extractor discharge conveyor

Legend

→. Exposed surfaces that must be clean. Remove contamination with a soft cloth. If the surface is hard to touch, use a cloth on the end of a wood dowel or metal rod. If necessary, use a safe cleaning agent.

Figure 12: Proximity Switches These are examples. Your machine can look different.

1 Station Press	Centrifugal Extractor	Shuttle Conveyor
		
Typical Proximity Switch 	**Legend** →. Area that must be clean. Remove contamination with a soft cloth. If the area is hard to touch, use a cloth on the end of a wood dowel or metal rod. If necessary, use a safe cleaning agent.	

6. Special Components—Continuous Batch Washer [Document BIPCUM06]

Figure 13: Drive Coupling Components. These are examples. Your machine can look different.

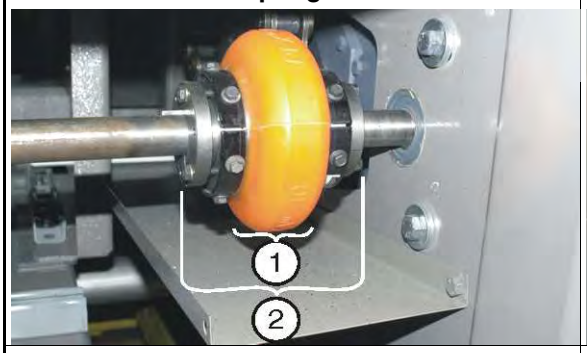
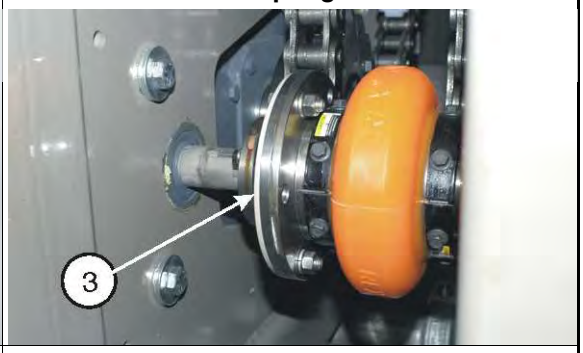
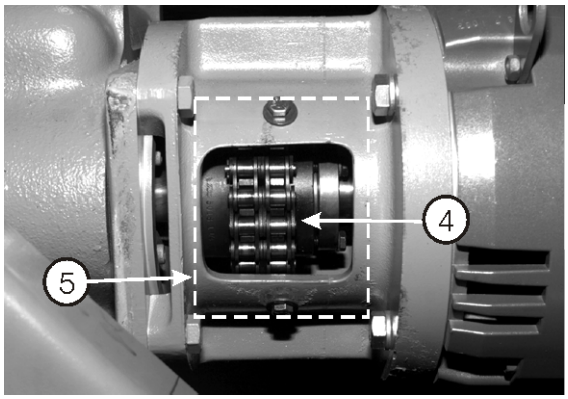
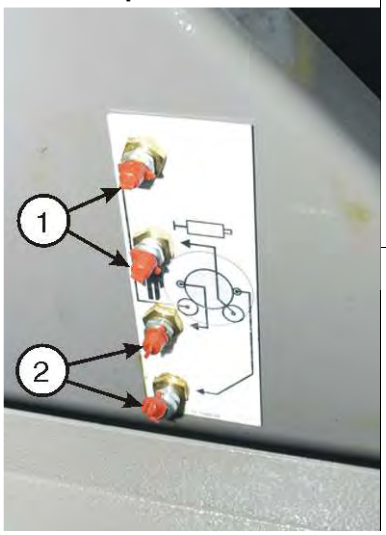
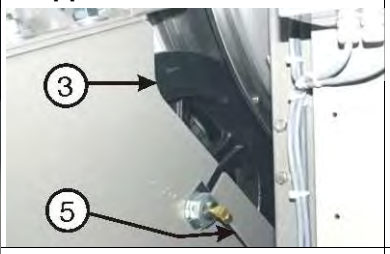
Flexible Coupling—76039CBW	Drive Shaft Coupling—76039 CBW
	
Coupling Chain—92048 CBW 	**Legend** **1.** Flexible coupling (orange plastic)—This component can become worn. Usually, you can replace the plastic component only. **2.** Flexible coupling and metal components—Usually, the metal components do not not become worn. **3.** Drive coupling—Examine the coupling for loose components. **4.** Coupling chain—With power removed, remove the safety placard. Make sure that the chain is not loose. Apply grease. **5.** View with safety placard removed. Replace the placard.

Figure 14: Grease Points. These are examples. Your machine can look different.

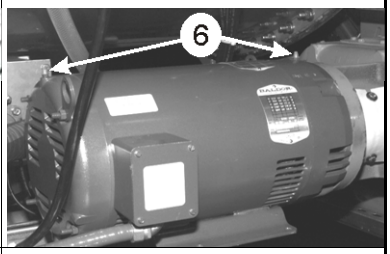
Grease plate—76039CBW



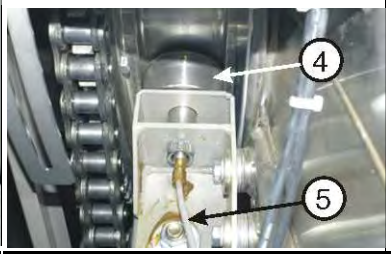
Support wheel—76039CBW



Drive motor—92048CBW



Tracking wheel—76039CBW

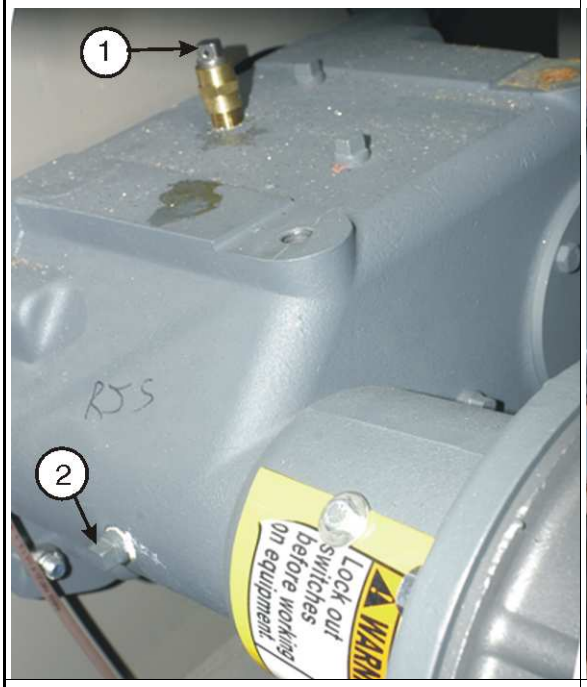


Legend

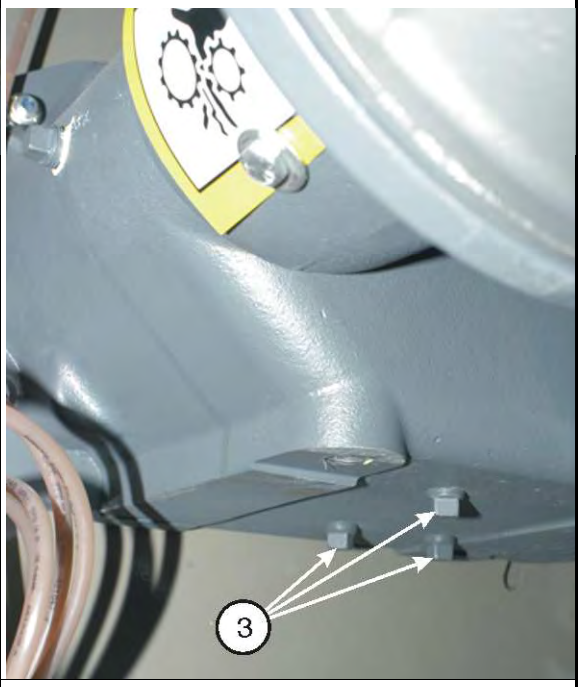
1. Support wheel fittings
2. Tracking wheel fittings
3. Support wheel
4. Tracking wheel
5. Tube to grease plate
6. Motor grease fittings (all drive and pump motors)

Figure 15: Speed Reducer (gear reducer). These are examples. Your machine can look different.

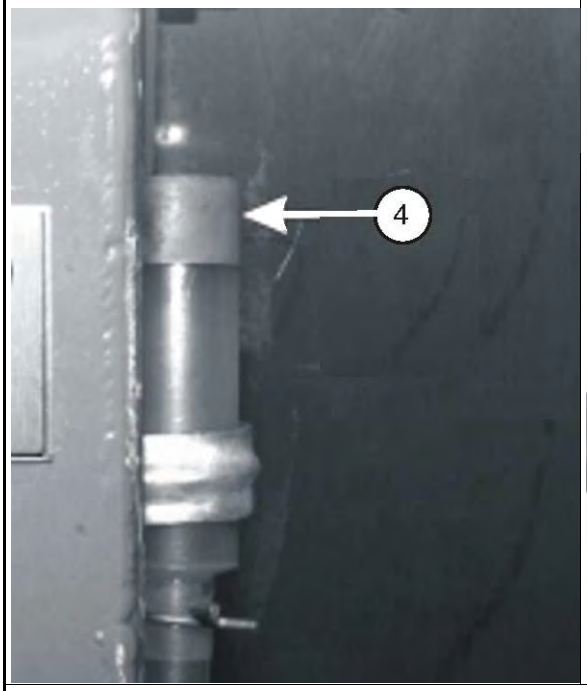
Where to Add Oil—G3 or G4 CBW



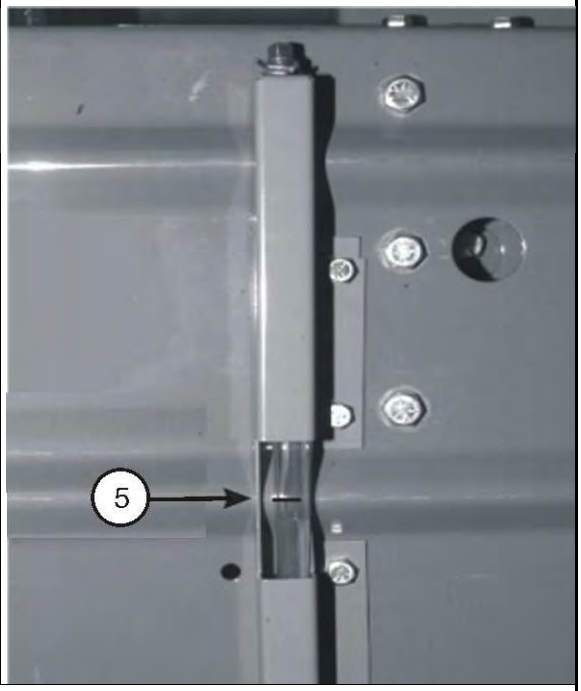
Where to Remove Oil—G3 or G4 CBW



Where to Add Oil—76032CBW



Where to Remove Oil—76032CBW

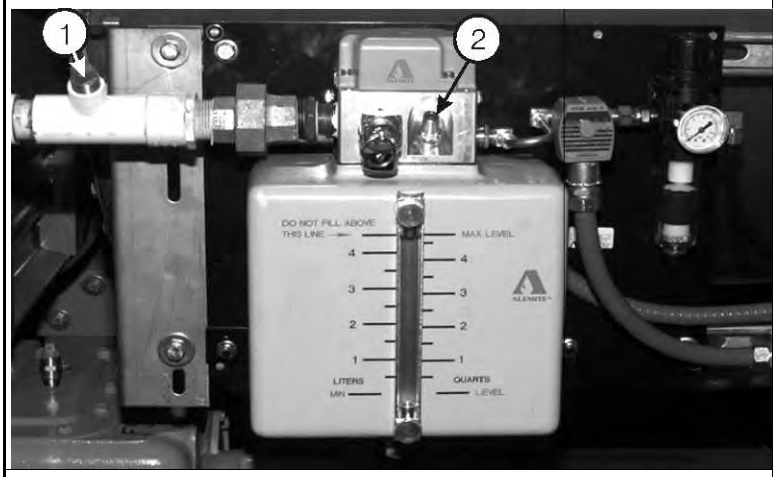


Legend

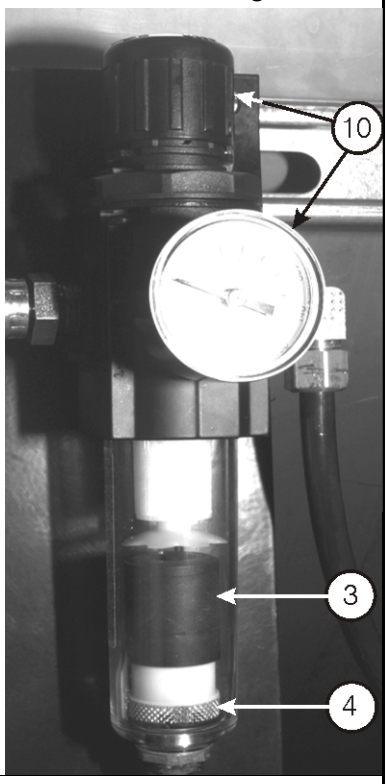
1. Remove plug with vent hole and add oil.
2. Remove this plug when you add oil. Fill until the oil starts to come out here.
3. Remove one of the plugs to remove oil.
4. Remove the stopper and add oil.
5. Fill until the oil level is here. Remove the tube through the bottom of the bracket to remove oil.

Figure 16: Oil Mist System for Drive Chain

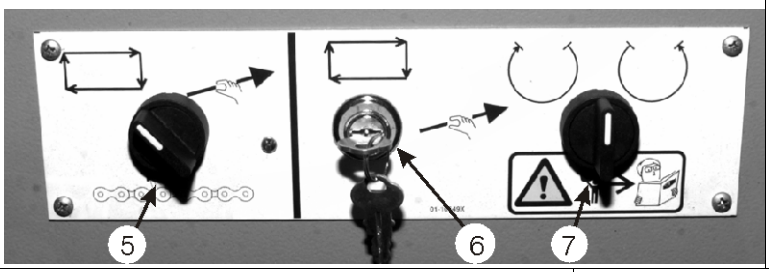
Oil Reservoir



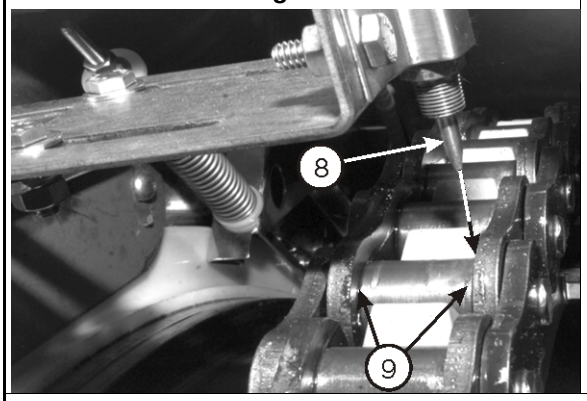
Air Filter and Regulator



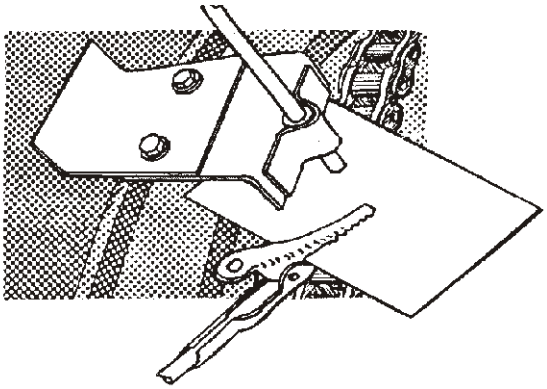
Manual Controls for Maintenance



How to Align the Nozzle



How to Examine the Spray Safely

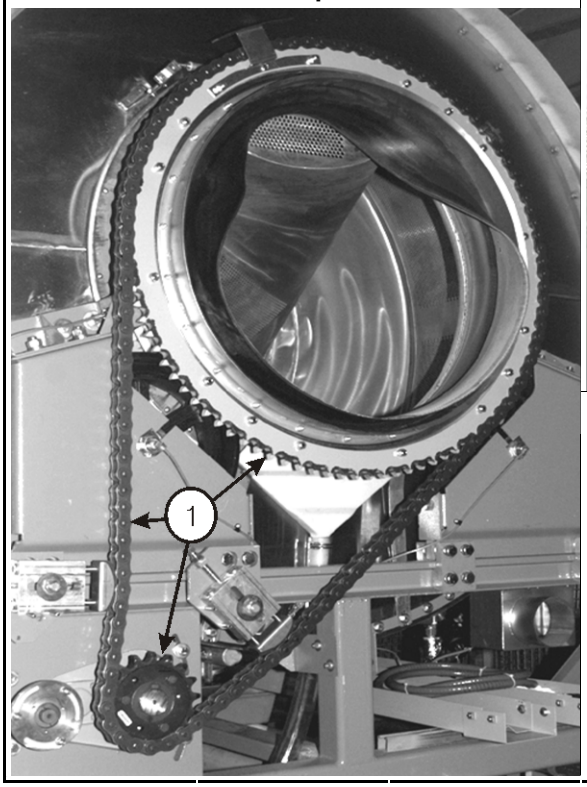


Legend

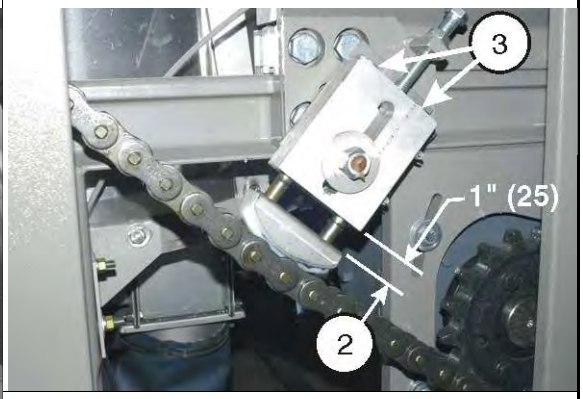
1. Primary location to add oil
2. Alternative location to add oil
3. Filter
4. Screen
5. Hold this switch clockwise to put oil on the chains manually.
6. Key switch to let the cylinder controls operate manually.
7. Hold this switch in either direction to turn the cylinders manually in the direction shown.
8. Nozzle. The automatic oil spray must occur at each transfer.
9. Where to point the oil spray. One point for each nozzle.
10. Air pressure adjustment knob and gauge.

Figure 17: Drive Chain. These are examples. Your machine can look different.

Chain and Sprockets



Chain Tension Mechanism

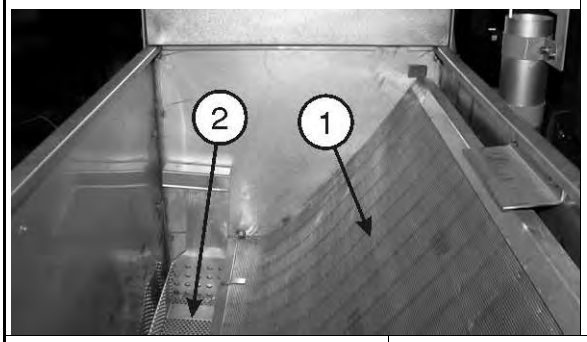


Legend

1. Chain and sprockets. These components are serviceable when the chain has the correct tension (see Item 2) and the cylinders change direction smoothly.
2. The dimension when the chain has the correct tension.
3. Screws (not shown) to replace two springs. Remove the tensioner from the machine before you change the springs.

Figure 18: Tanks That Collect Lint—Conventional CBW Tunnel Washers

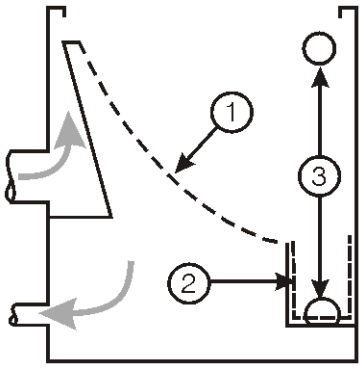
Areas Where Lint Collects



Legend

1. Lint filter—Use a rigid bristle brush to remove contamination from between grooves.
2. Lint basket—Remove the basket to remove collected lint.
3. Overflow and drain outlets—Keep free of blockages

Cross Section of a Tank



Flow Splitter or Flow Lifter

Press Water to Reuse Tank

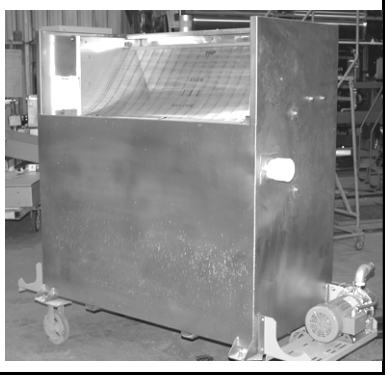
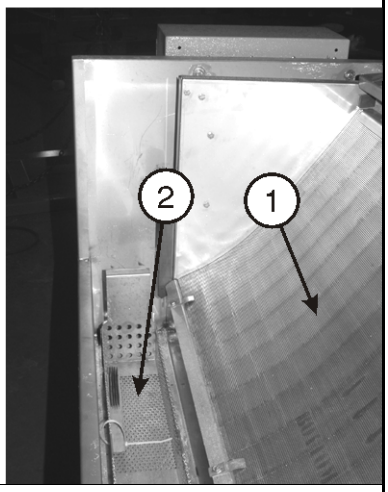


Figure 19: PulseFlow® Tank—PulseFlow® CBW Tunnel Washers

Lint Filter Side

Areas That Collect Lint

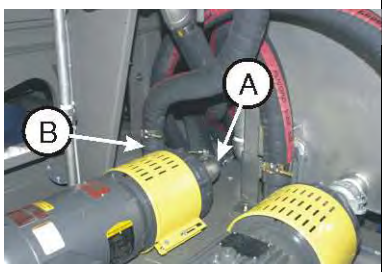


Legend

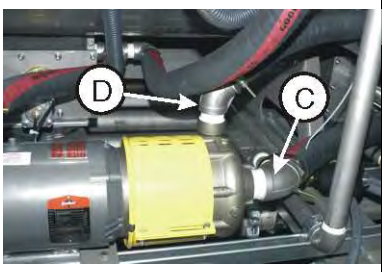
1. Lint filter—Use a rigid bristle brush to remove contamination from between grooves.
2. Lint basket—Remove the basket to remove collected lint.

Figure 20: Pumps that Move Water and Solids—PulseFlow® CBW Tunnel Washers. See warning statement **2** .

Re-circulation Pump



Pump Between Modules



Legend

- **A.** From Module 1
- **B.** To the load chute
- **C.** From upstream module
- **D.** To downstream module

1. With power removed, remove the safety guard. Replace when completed.
2. Remove eight bolts.
3. Remove the housing. Use a rubber hammer.

Impeller Housing Removal. Do this on the installed pump.

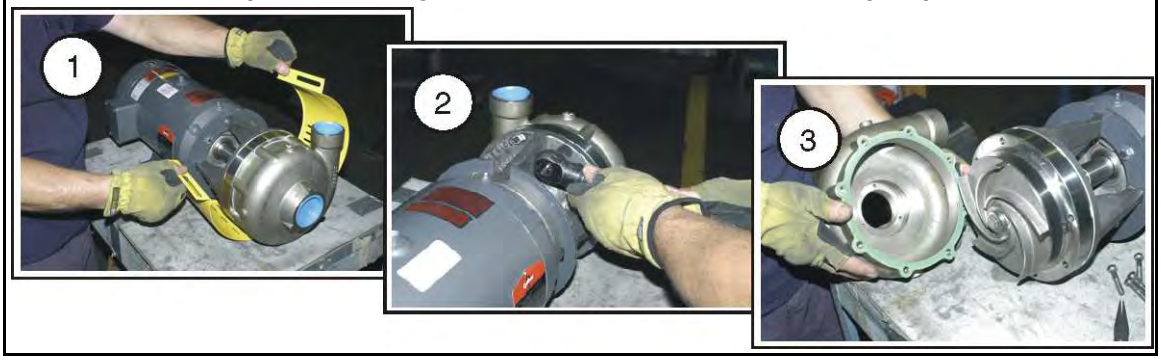


Figure 21: Module Sump Drain and Weir Box. These are examples. Your machine can look different.

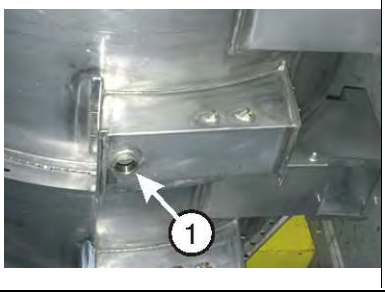
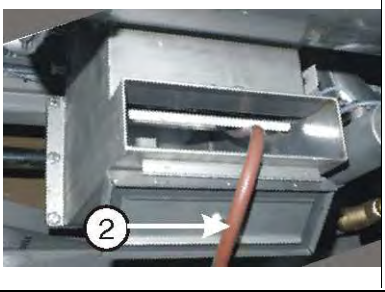
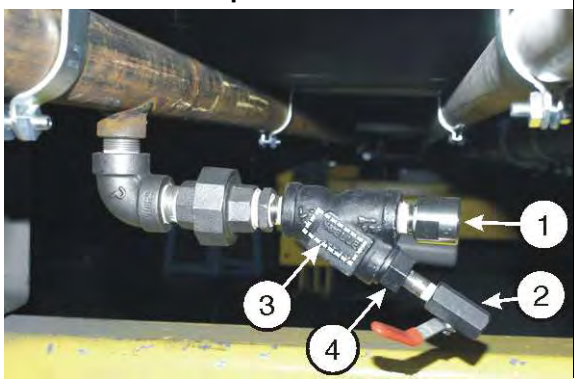
View From Below Sump	View from Above Weir Box	Legend
		**1.** Module sump drain. Remove the plug to let the drain sump empty. Add water with a hose or a water valve to flush the sump. **2.** Water hose—Put the hose on the module side of the weir plate.

Figure 22: Steam Trap

Steam Trap on Steam Header	Legend
	**1.** Condensation to the boiler **2.** Valve to remove collected particles. Materials will come out with steam pressure. Open this valve momentarily. **3.** Steam strainer. Remove steam pressure before you remove item 4. See warning statement **9** in Section 5. **4.** Remove this component to remove strainer.

— End of BIUUUM09 —

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

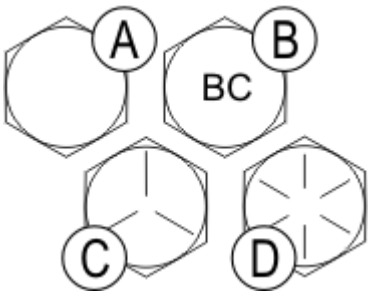
Torque Requirements for Fasteners

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

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

Figure 1: The Bolts in Milnor® Equipment

The Marks on Bolt Heads



Legend

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

1. Torque Values

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

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

1.1. Fasteners Made of Carbon Steel

1.1.1. Without a Threadlocker

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

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

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

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

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

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

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

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

1.1.2. With a Threadlocker

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

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

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

Table 6: Torque Values if You Apply LocTite 222

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

Table 7: Torque Values if You Apply LocTite 242

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

Table 8: Torque Values if You Apply LocTite 262

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

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

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

Table 10: Torque Values if You Apply LocTite 277

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

1.2. Stainless Steel Fasteners

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

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

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

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

2. Preparation

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

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

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

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

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

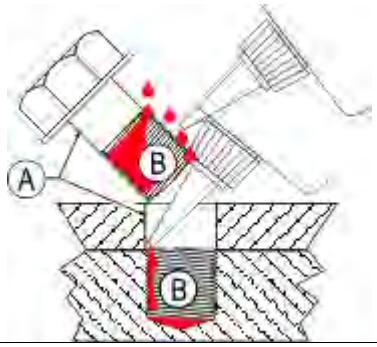
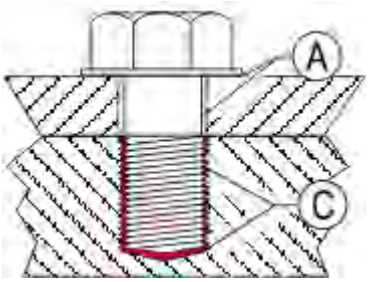
3. How to Apply a Threadlocker

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

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

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

Figure 2: Blind Hole

Application	Coverage
	

Legend

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

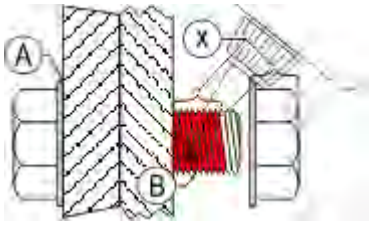
3.1. Blind Holes

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

3.2. Through Holes

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

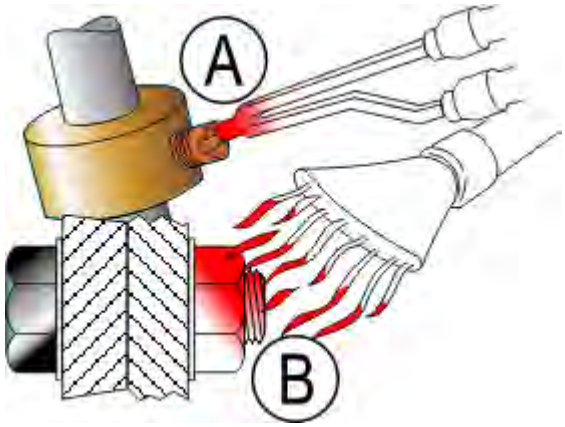
Figure 3: Through Hole

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

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

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

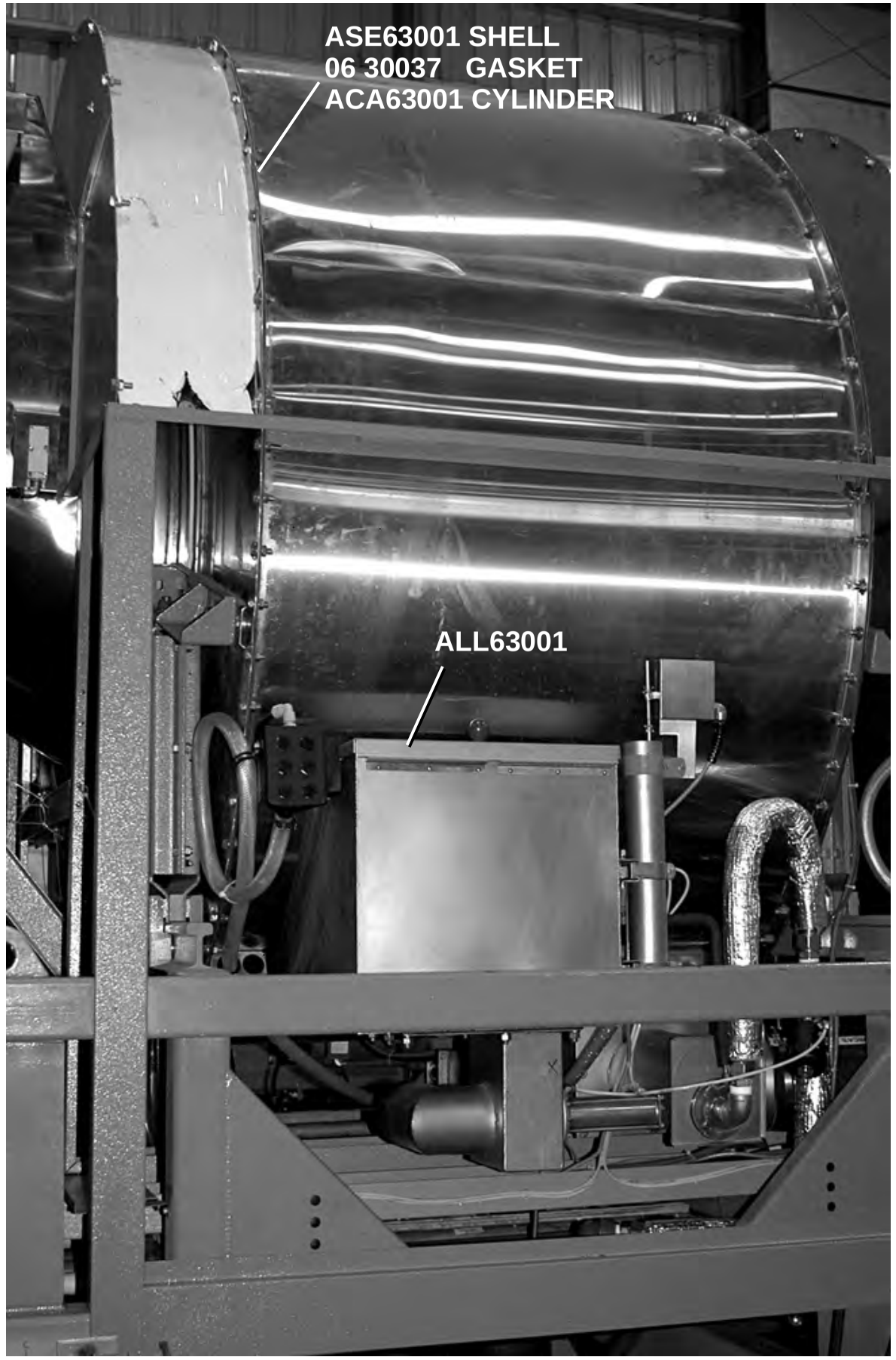
Figure 4: Disassembly

Apply Heat to a Small Area	Legend
	**A.** How to apply heat to a small fastener **B.** How to apply heat to a large fastener

— End of BIUUUM04 —

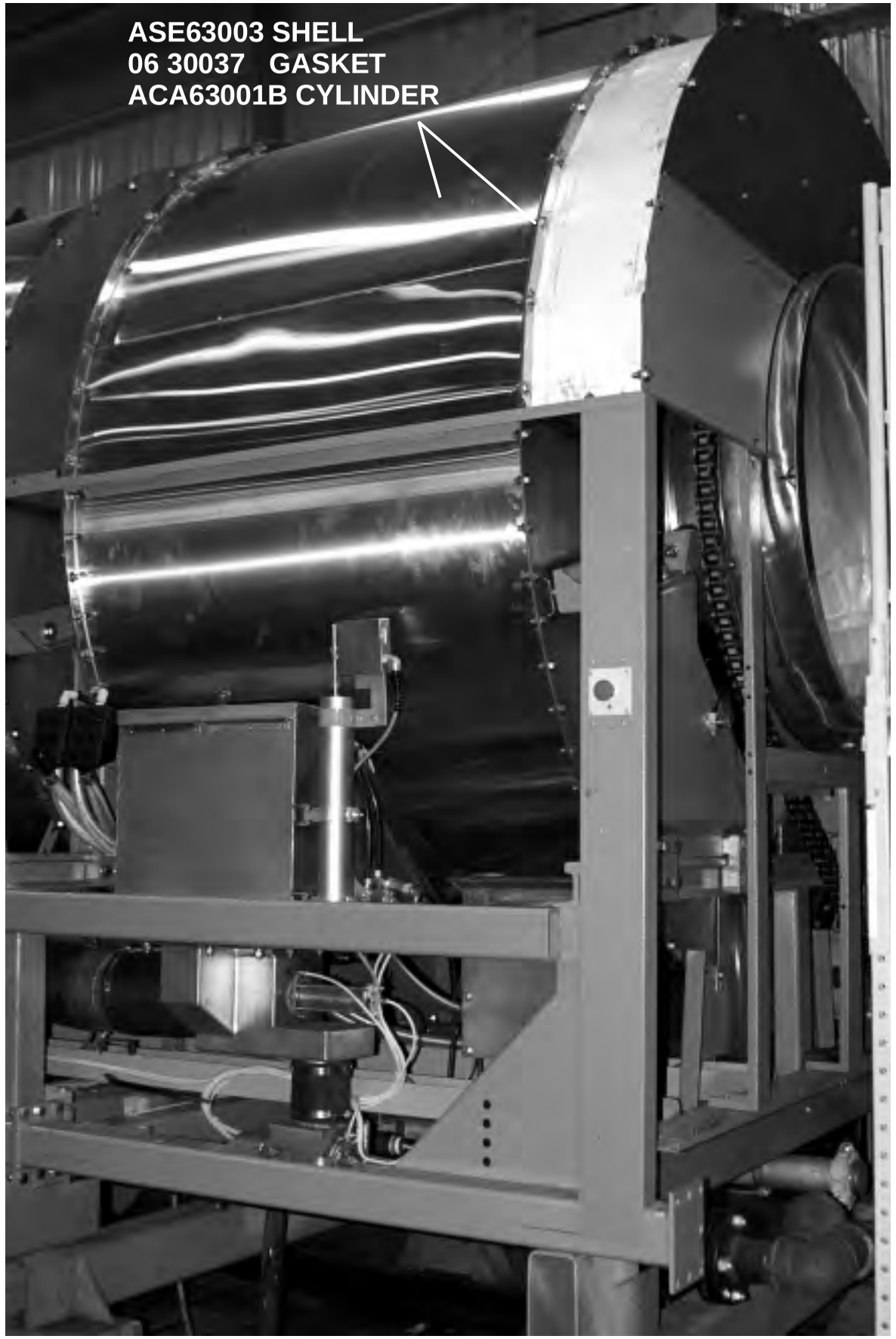
Parts and Assemblies 2

LOAD CHUTE

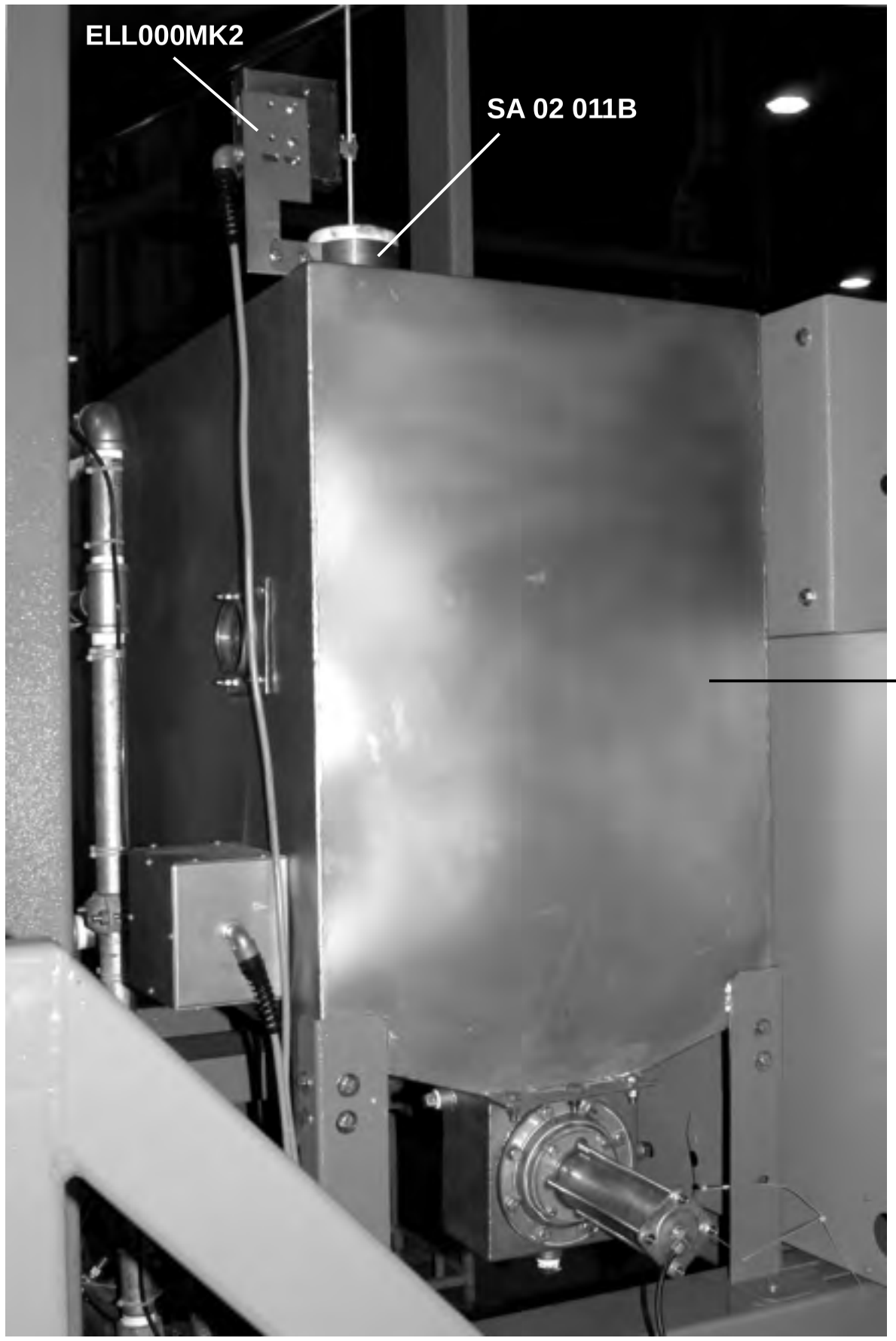


FIRST MODULE

MIDDLE MODULE



END MODULE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SA 02 011B
ARF62001F
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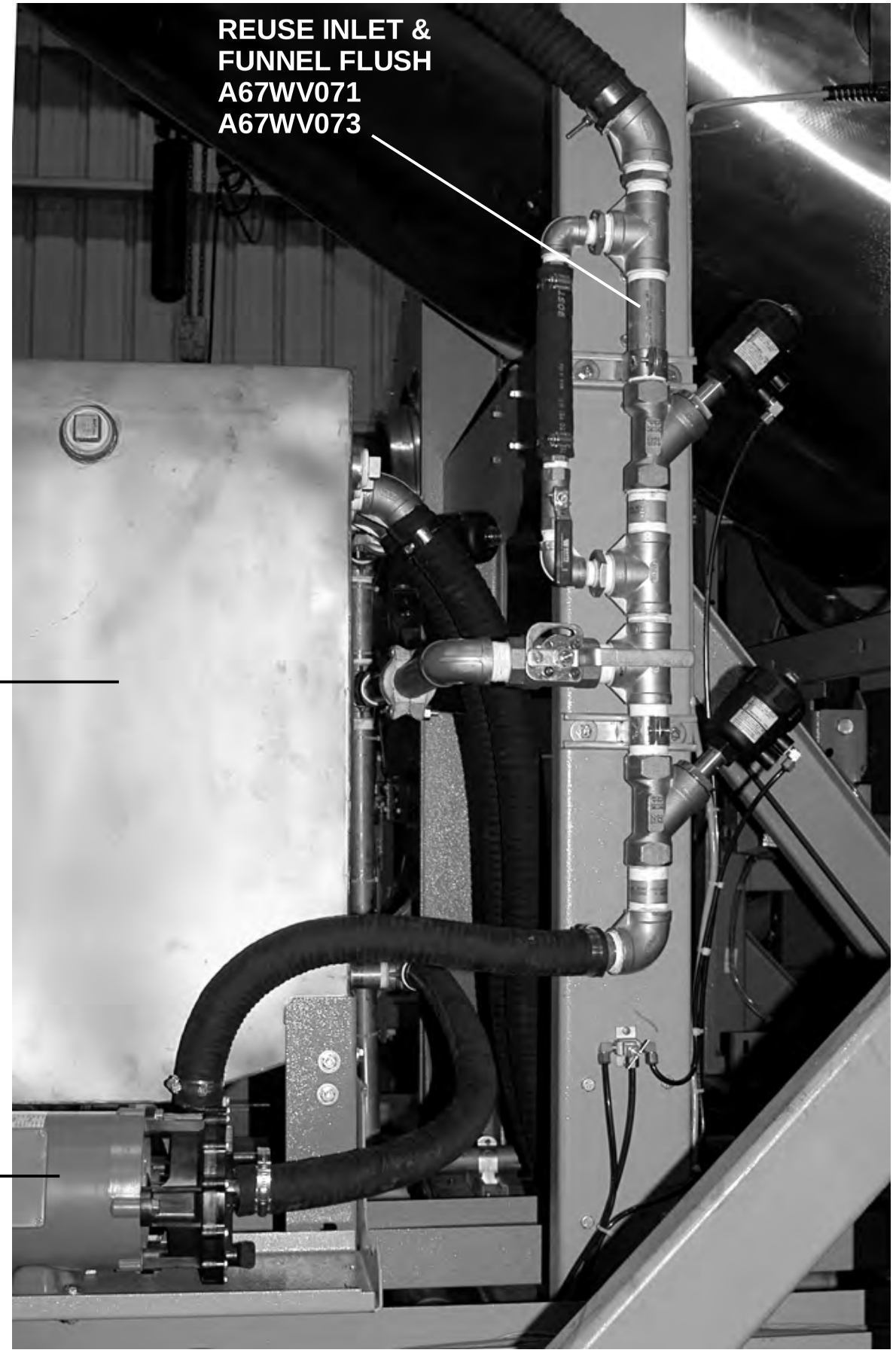
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FUNNEL FLUSH
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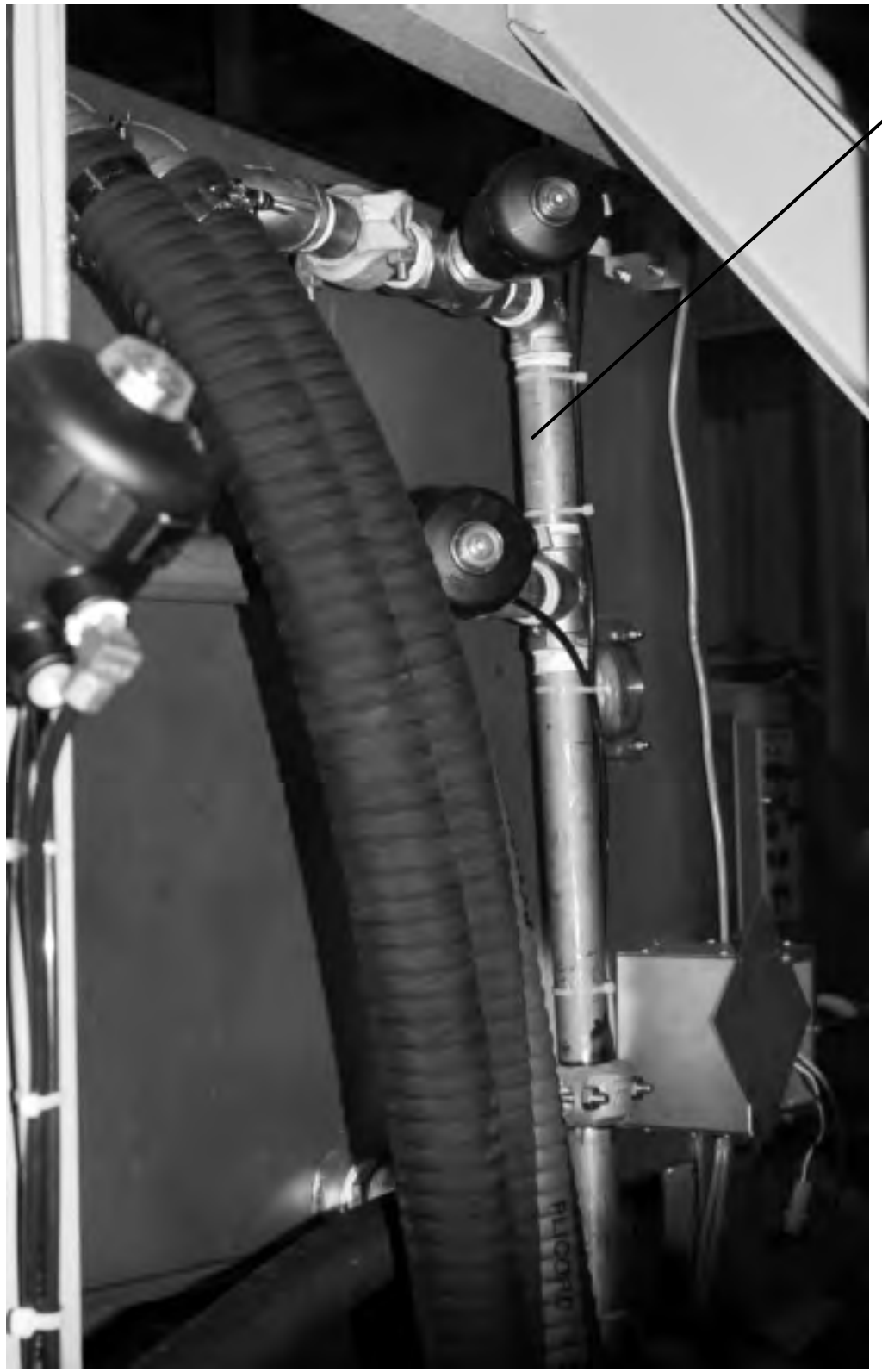

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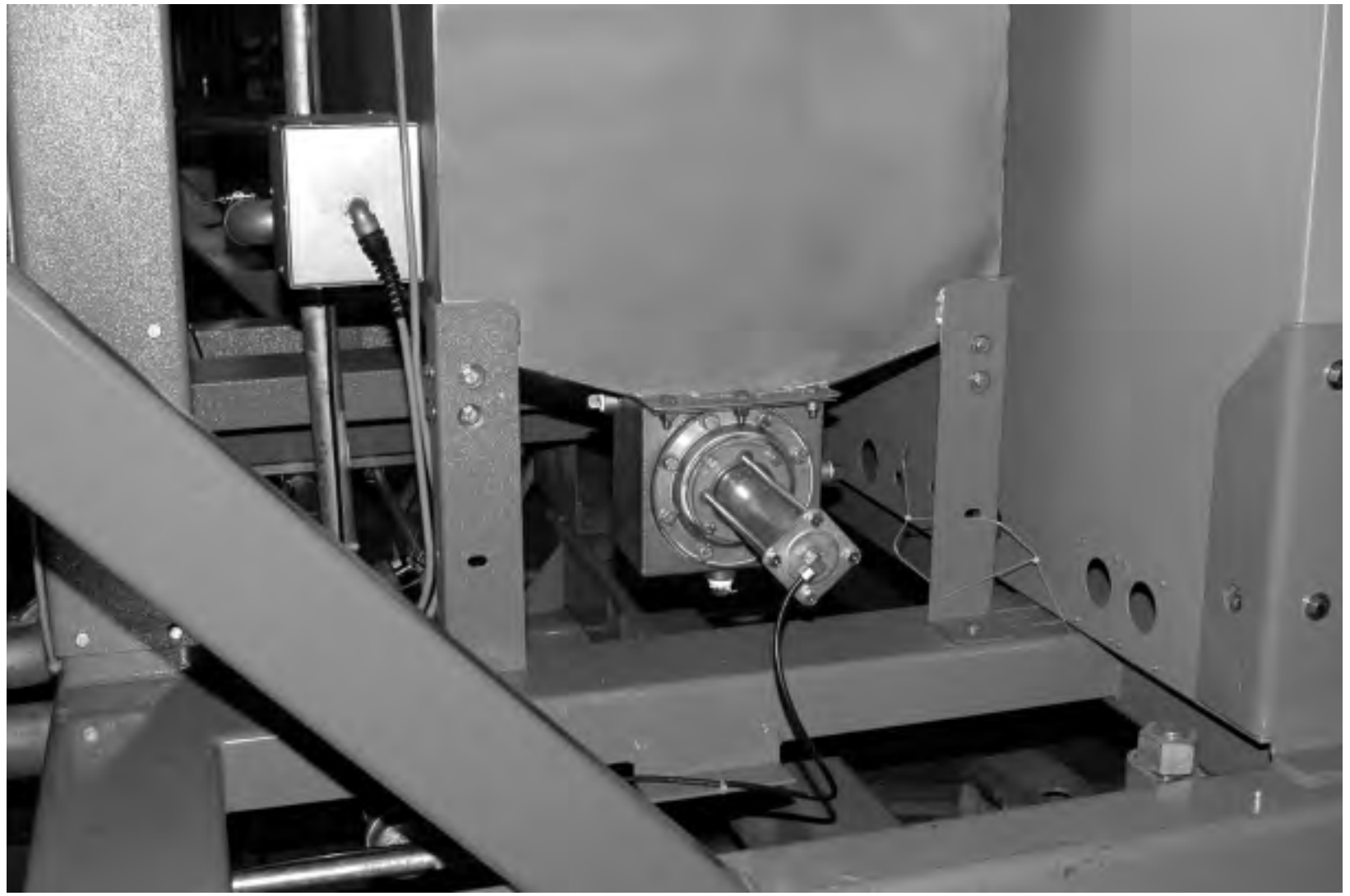
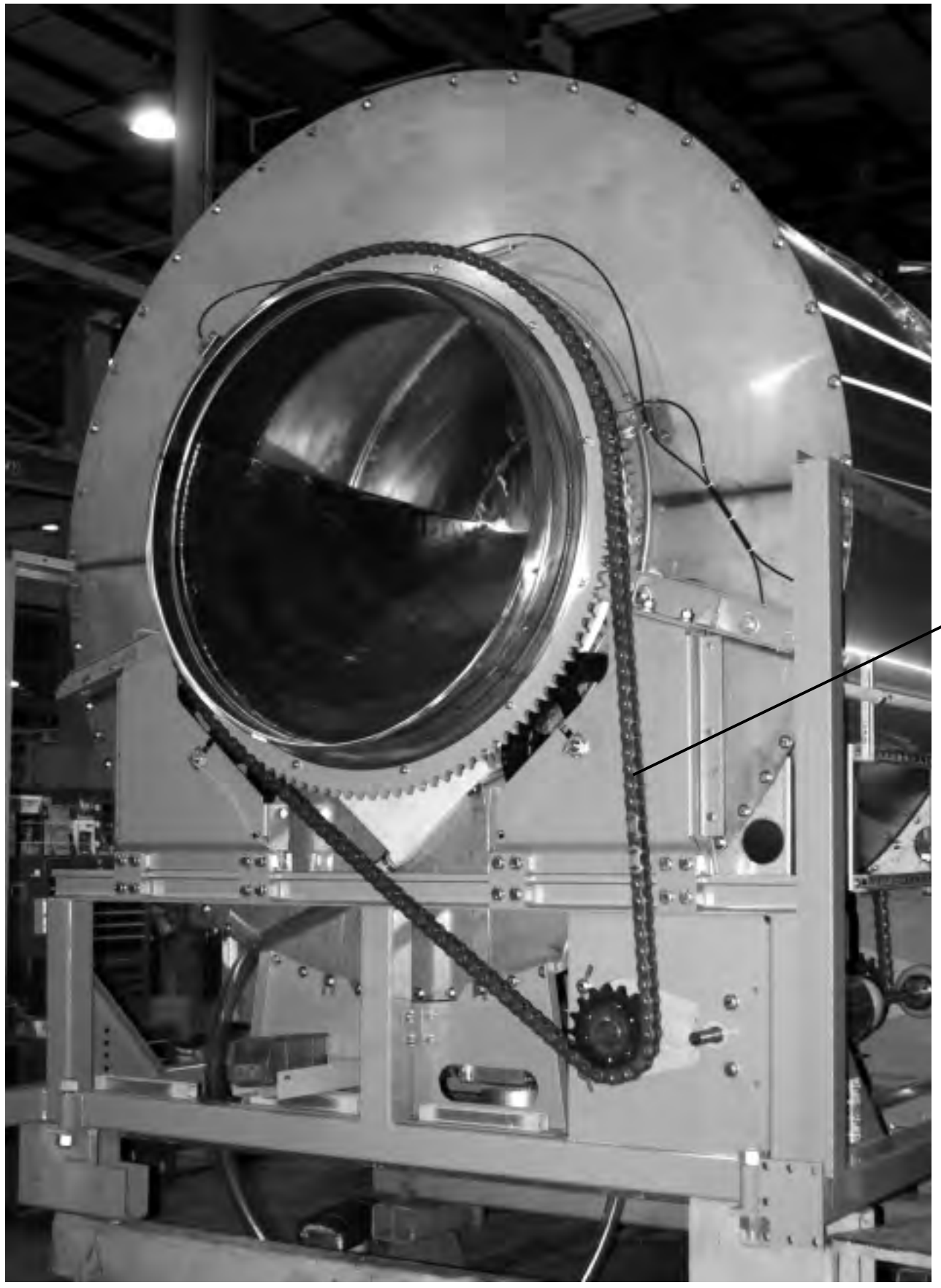
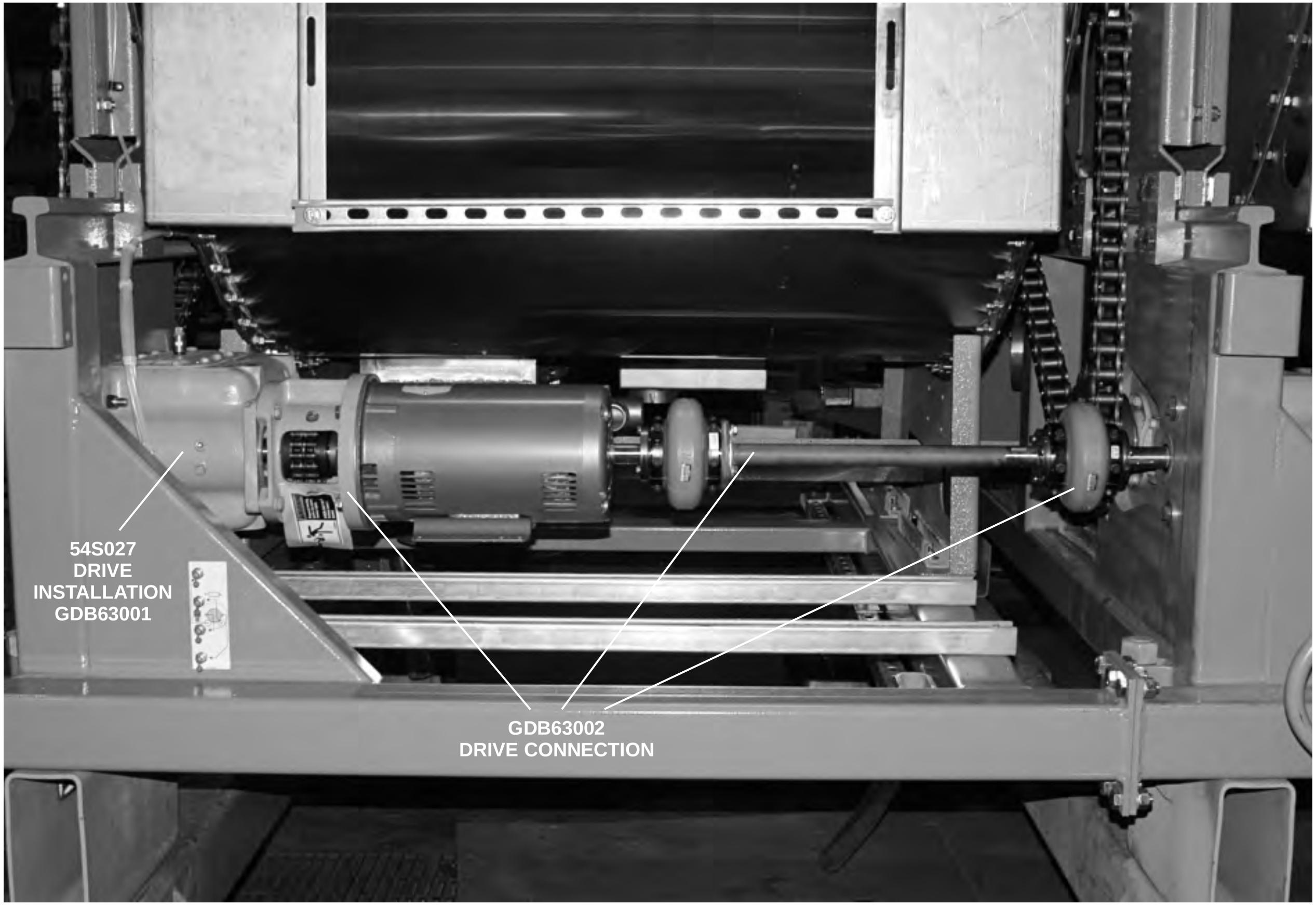
A67WV072
REUSE MAKE-UP





DRIVE
INSTALLATION
GDB63001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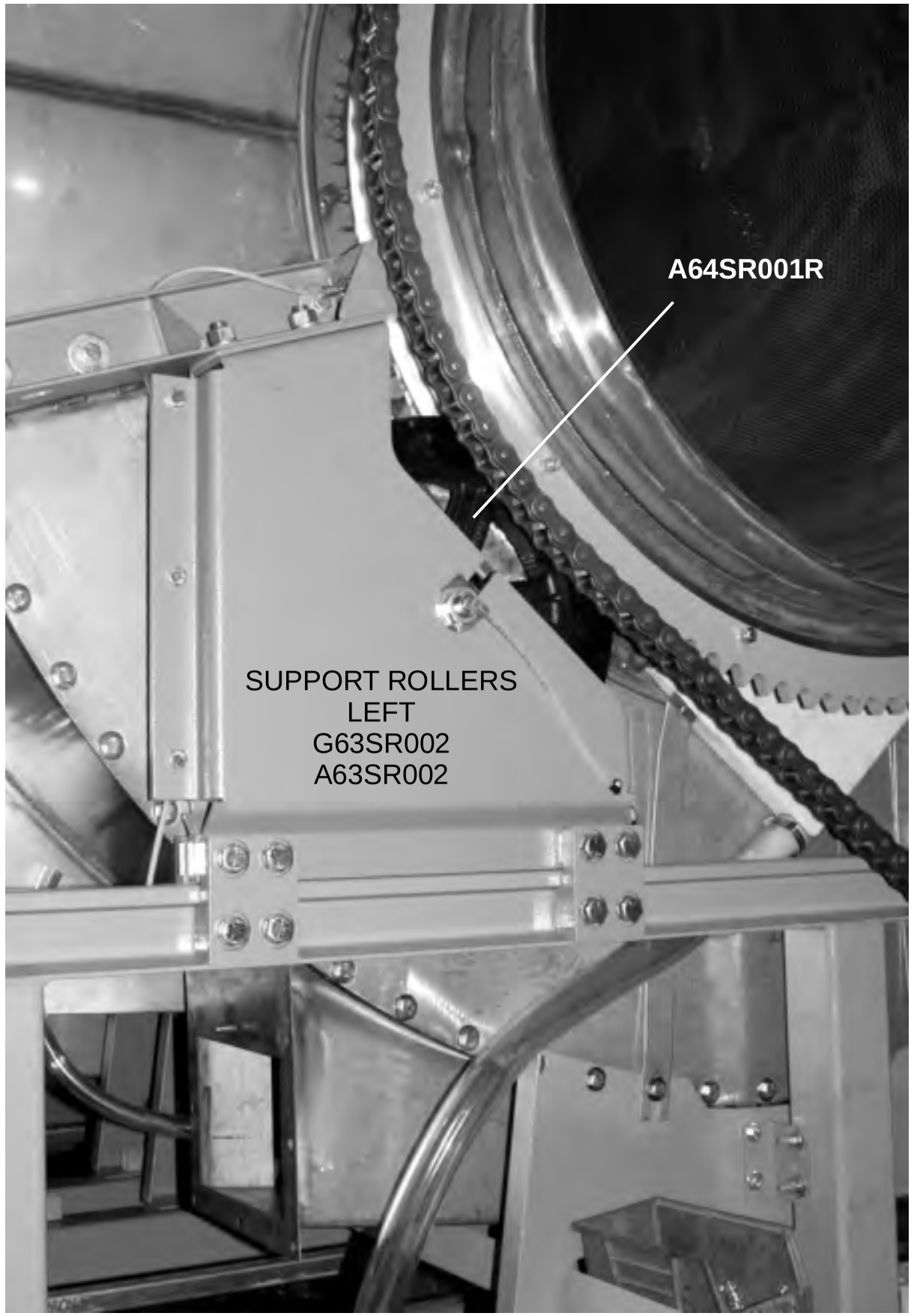
GDB63002
DRIVE CONNECTION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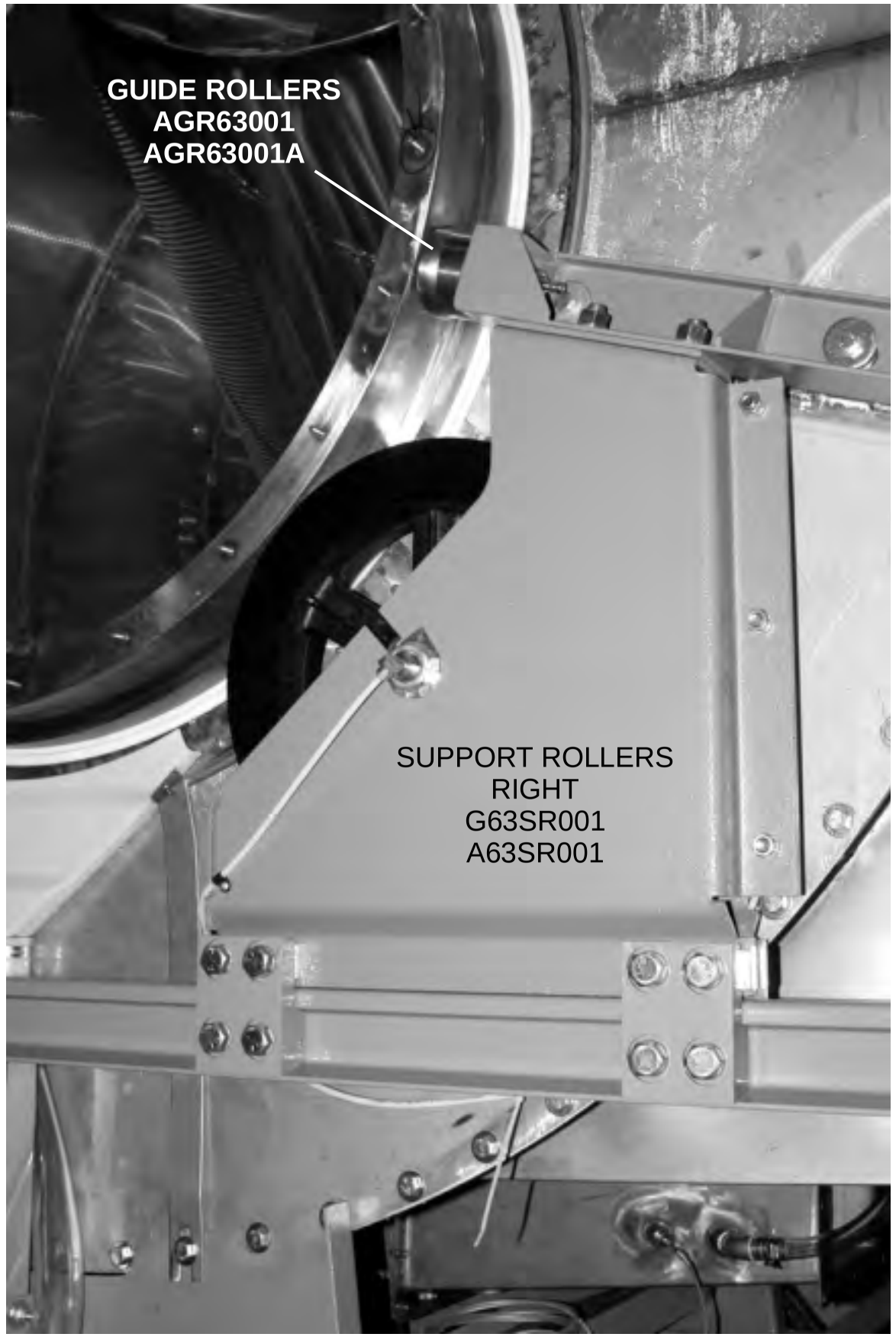
LEFT
G63SR002
A63SR002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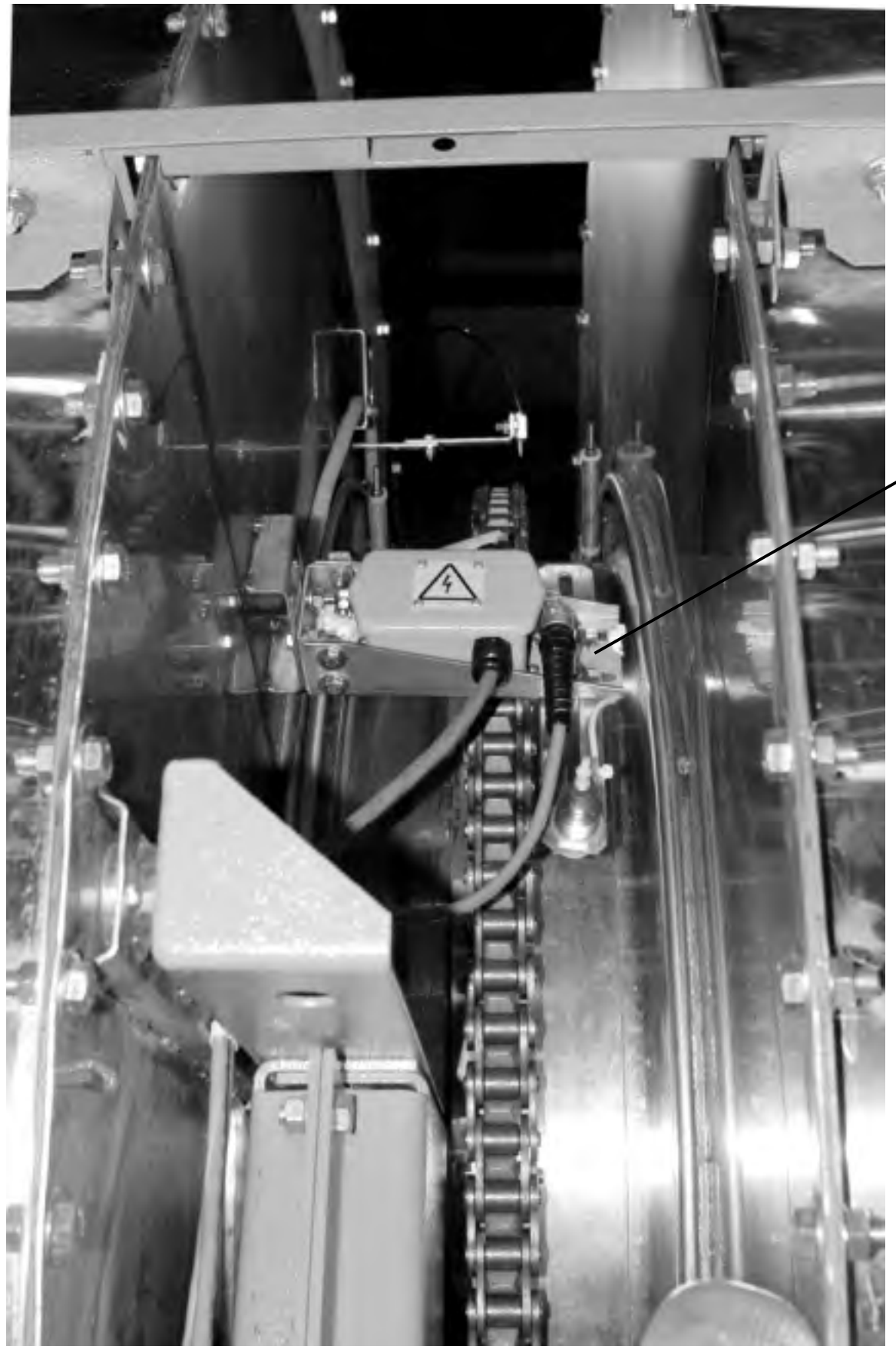
AGR63001
AGR63001A
SUPPORT ROLLERS
RIGHT
G63SR001
A63SR001

87



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INSTALLATION
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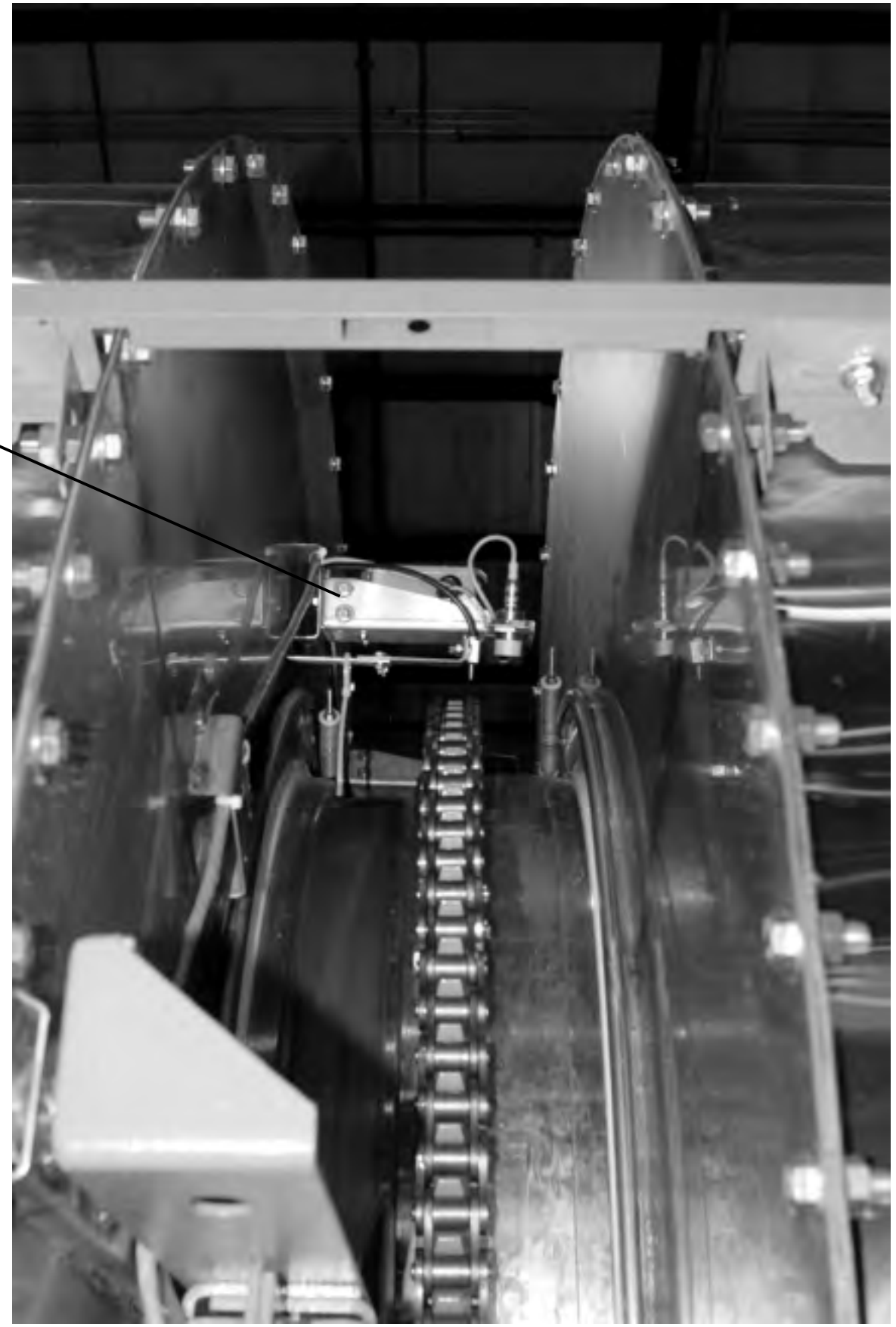

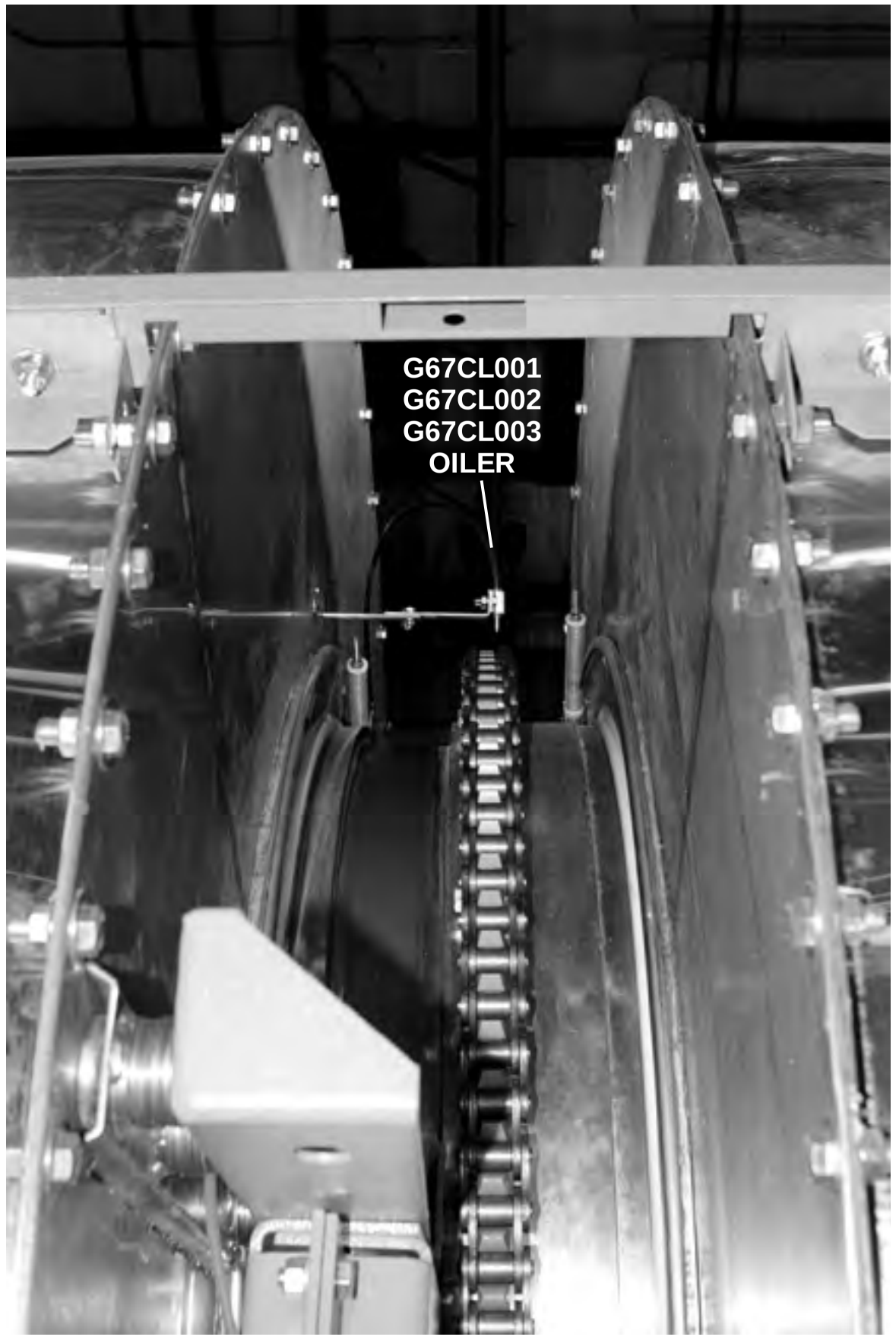
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G67CL002
G67CL003
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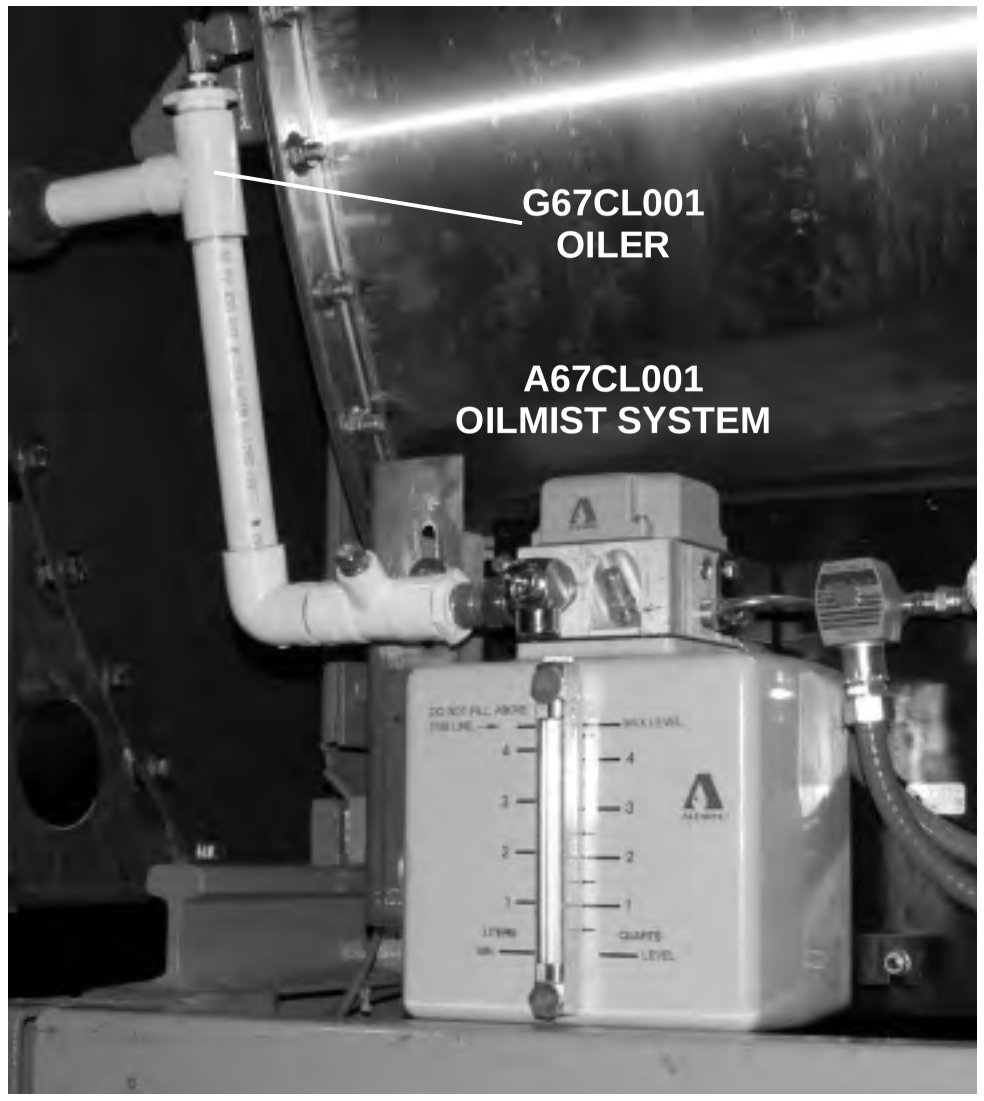
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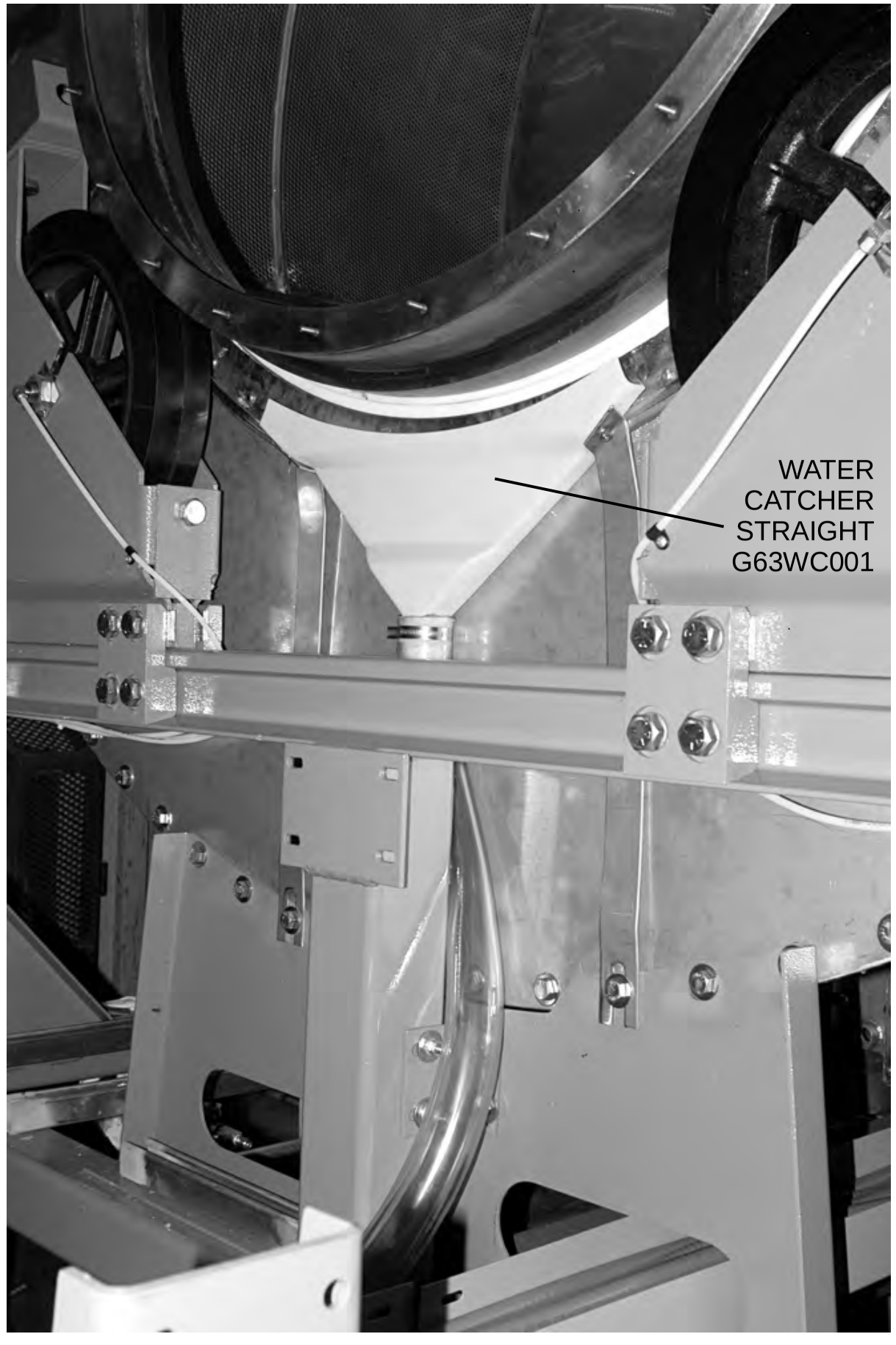
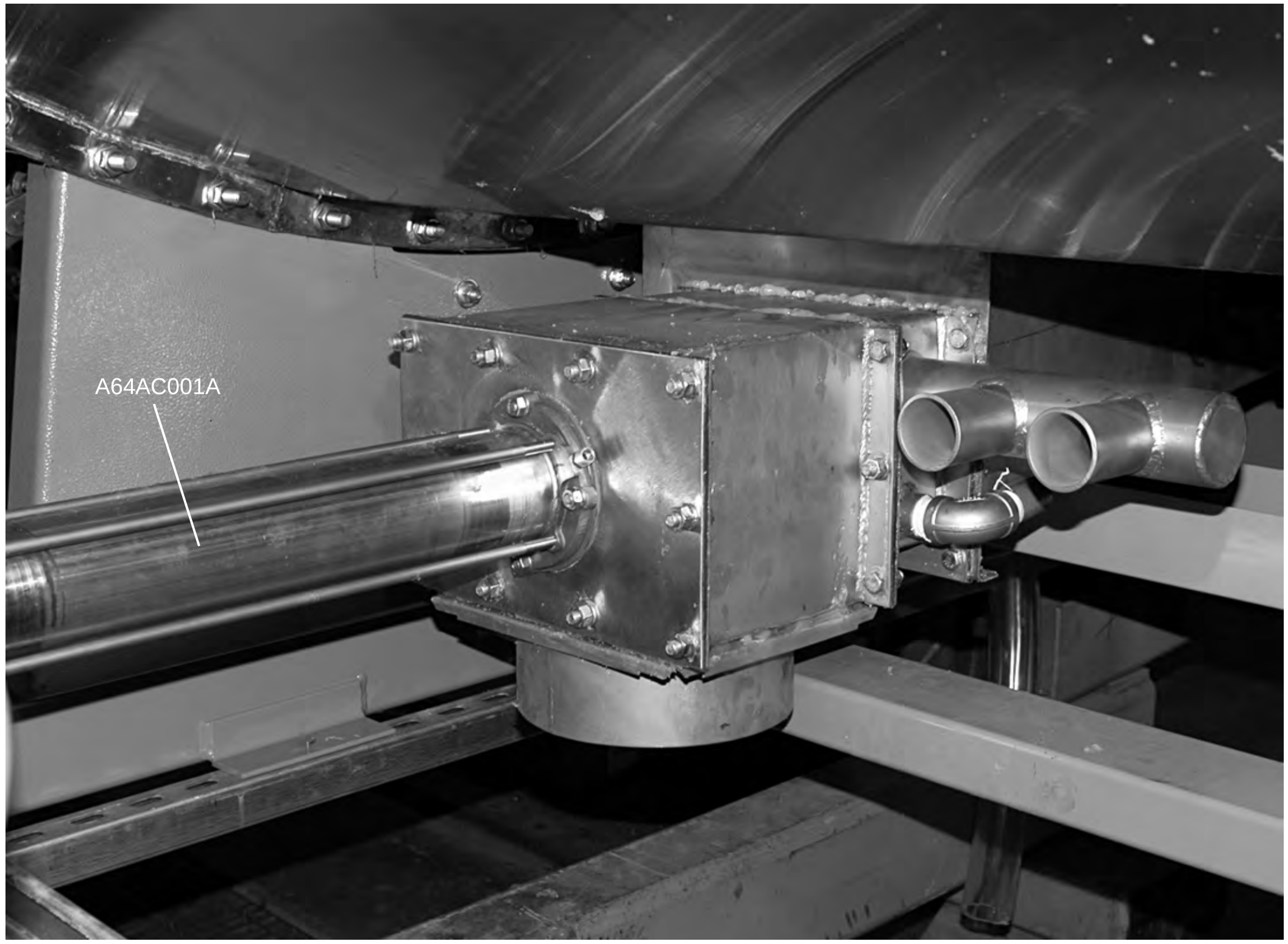
OILER
A67CL001
OILMIST SYSTEM


WATER
CATCHER
STRAIGHT
G63WC001


WATER
CATCHER
ANGLE OUT
G63WC002
G63WC002A



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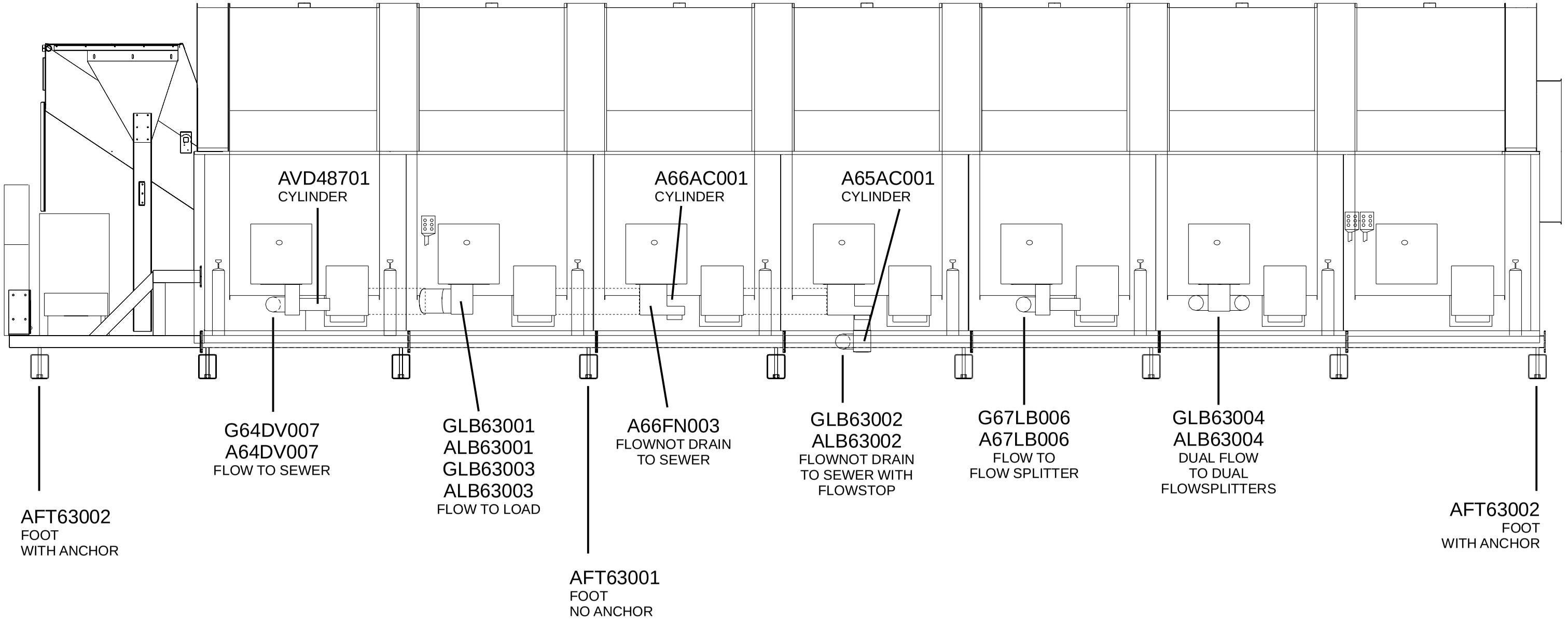
LEVEL BOX DRAIN OPTIONS:



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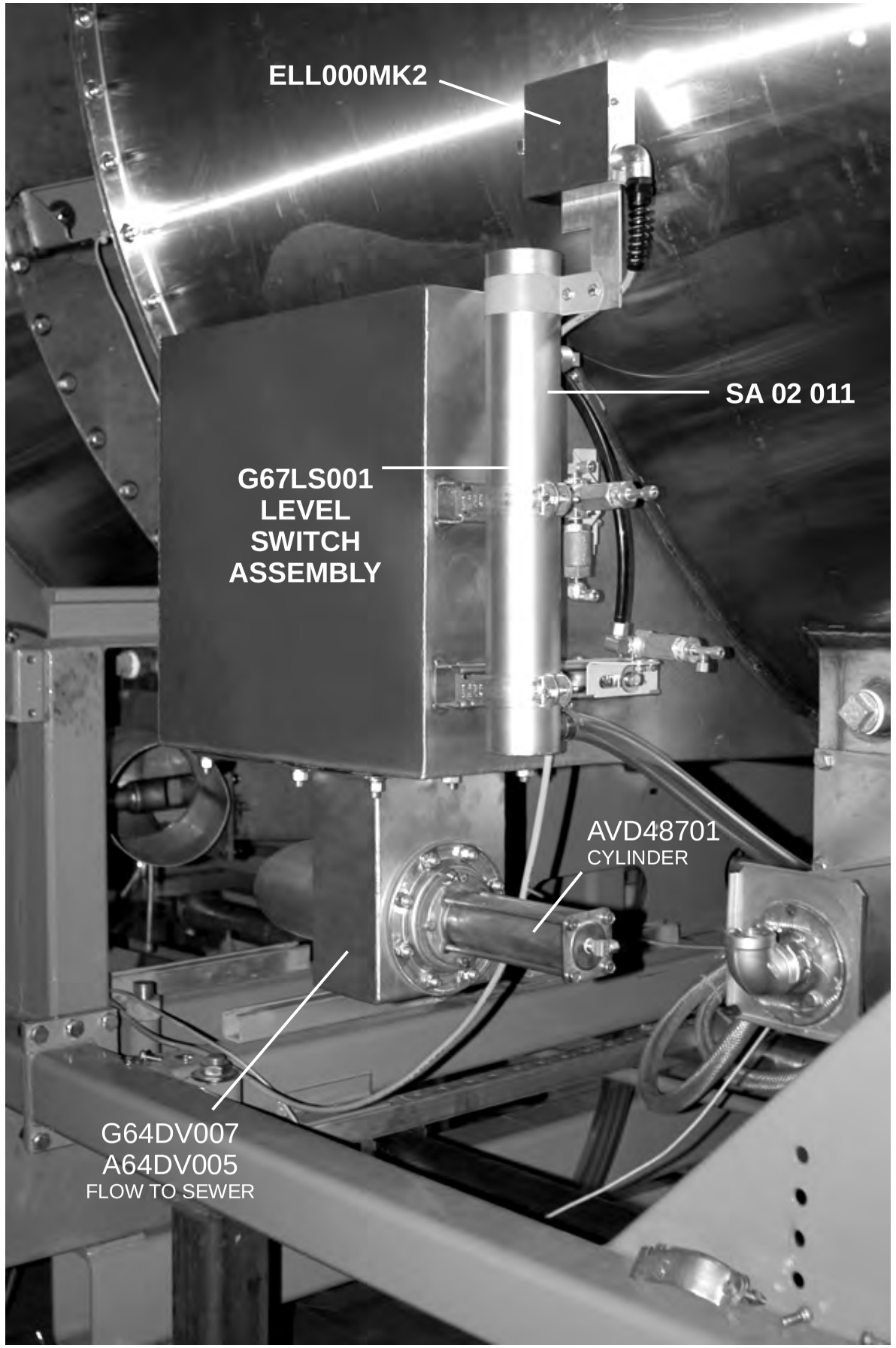
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ASSEMBLY
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CYLINDER
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A64DV005
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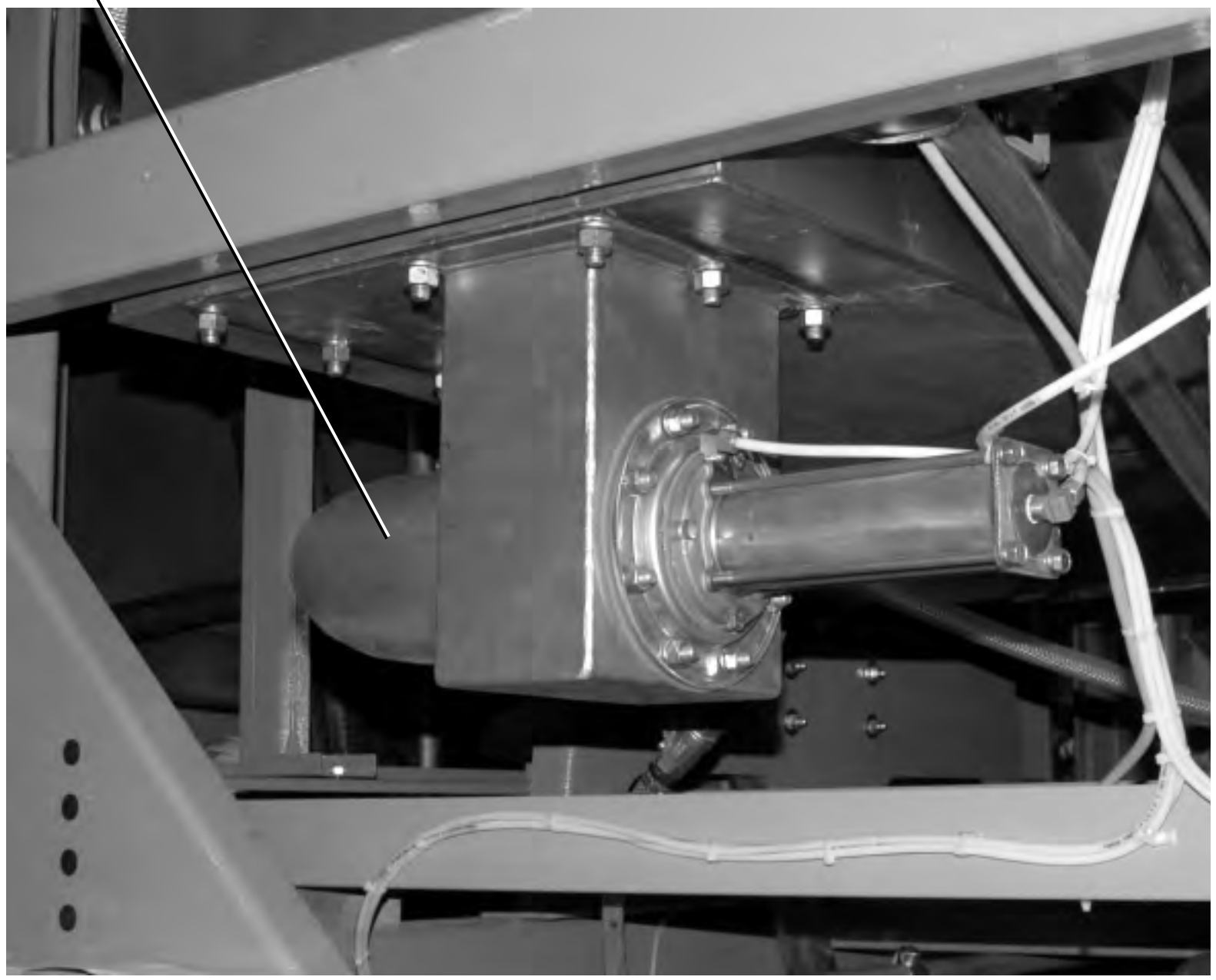
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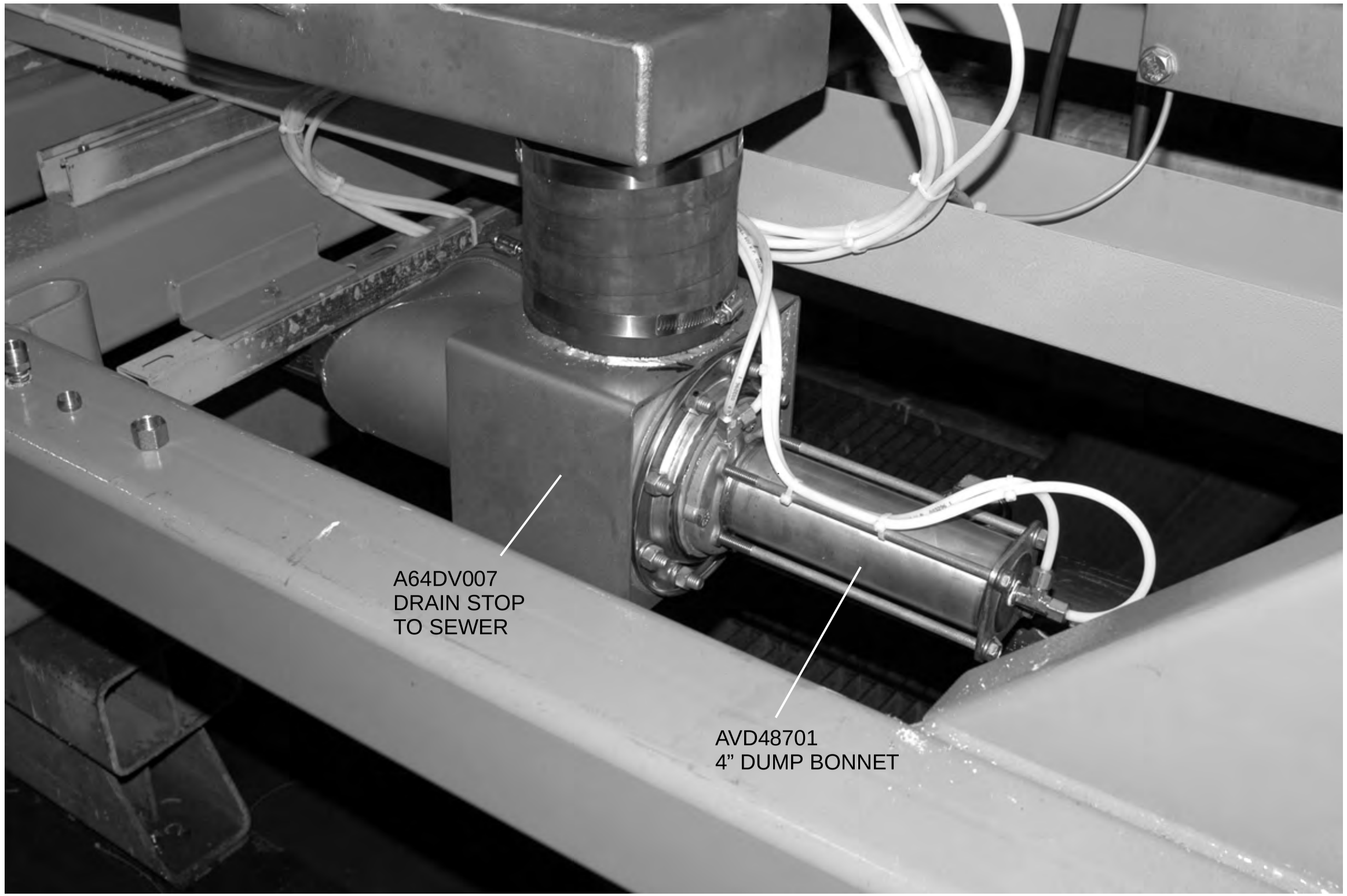
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TO SEWER
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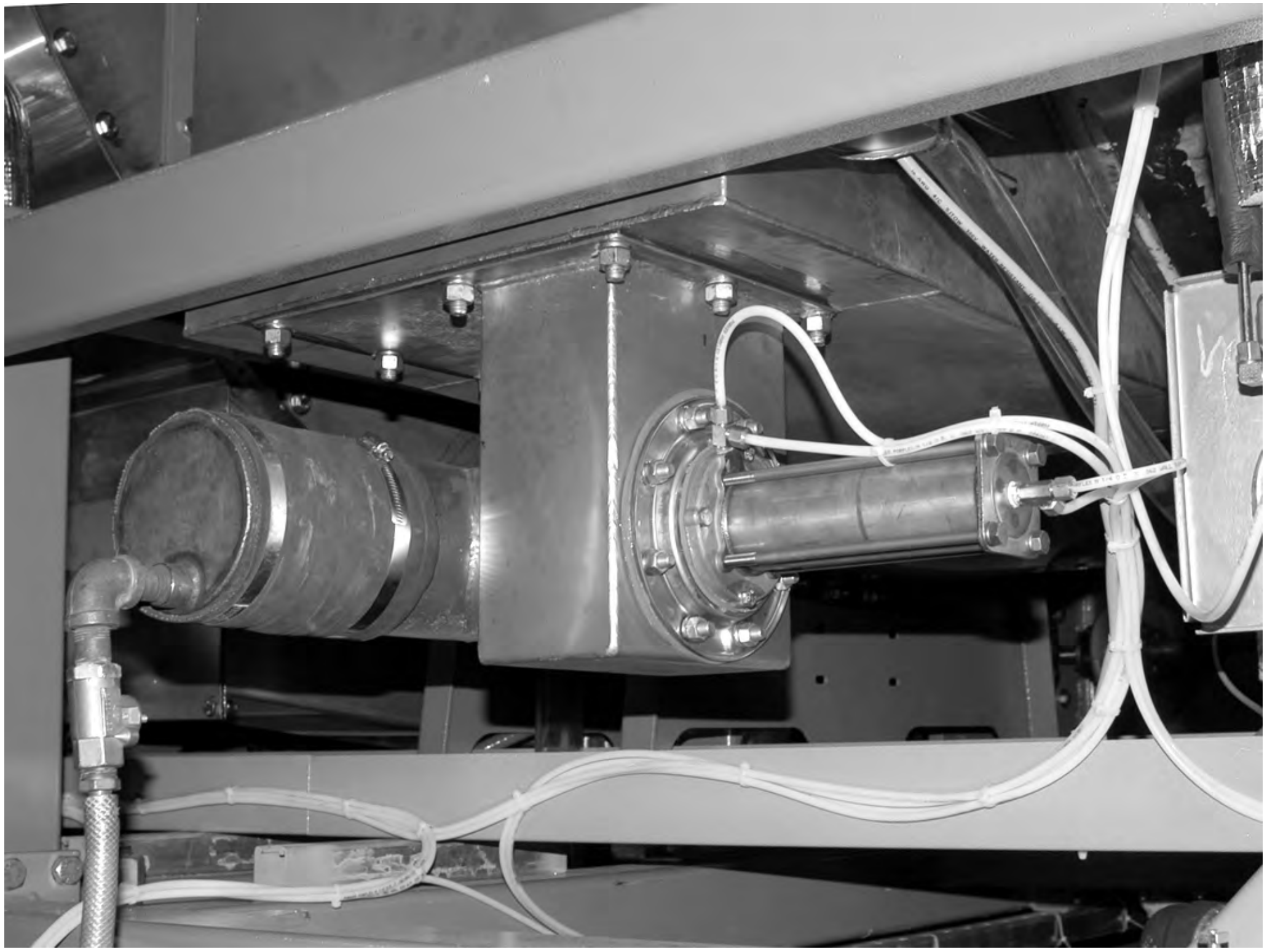
4” DUMP BONNET



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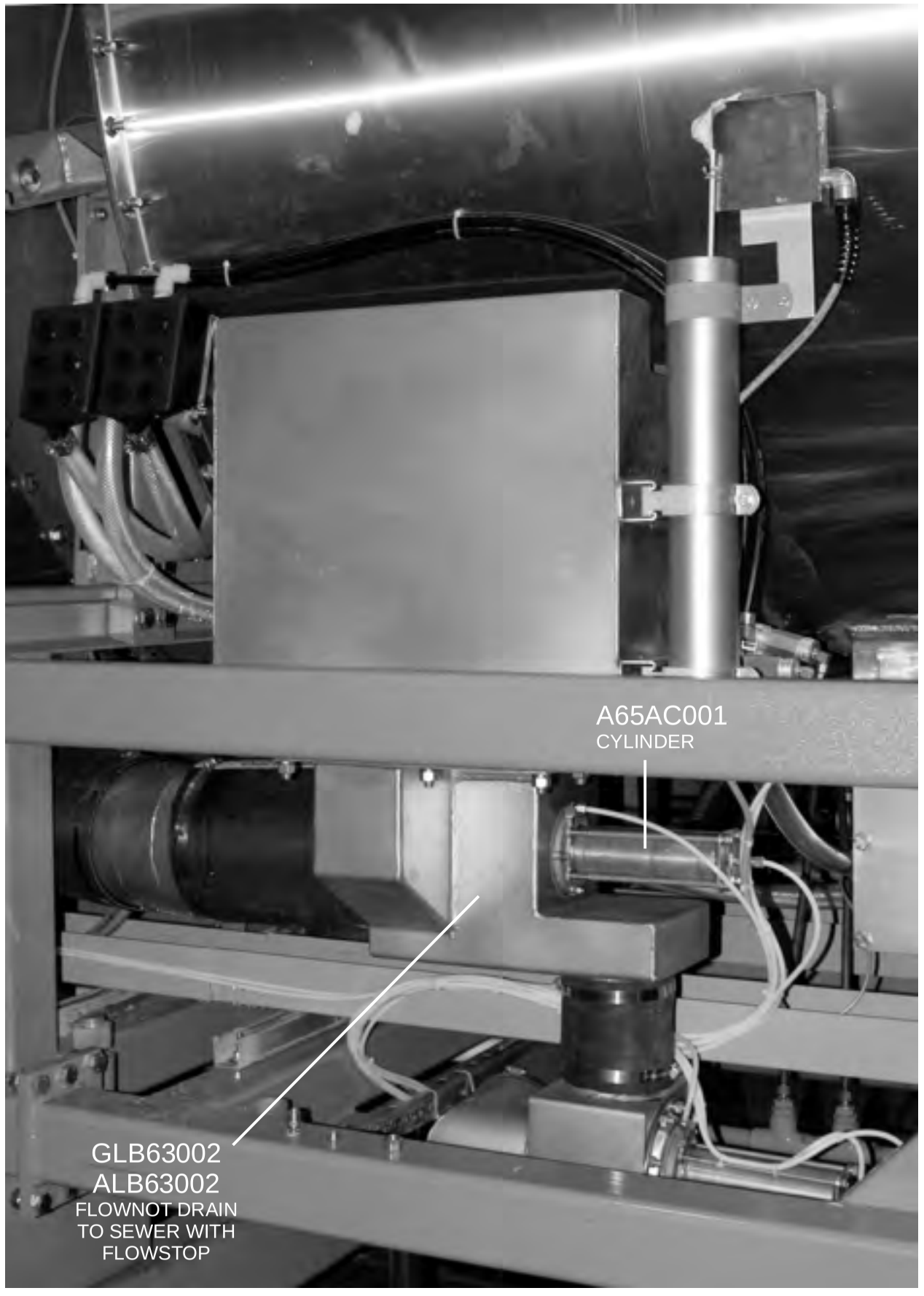
FLOW TO FLOW SPLITTER

96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ALB63002
FLOWNOT DRAIN
TO SEWER WITH
FLOWSTOP


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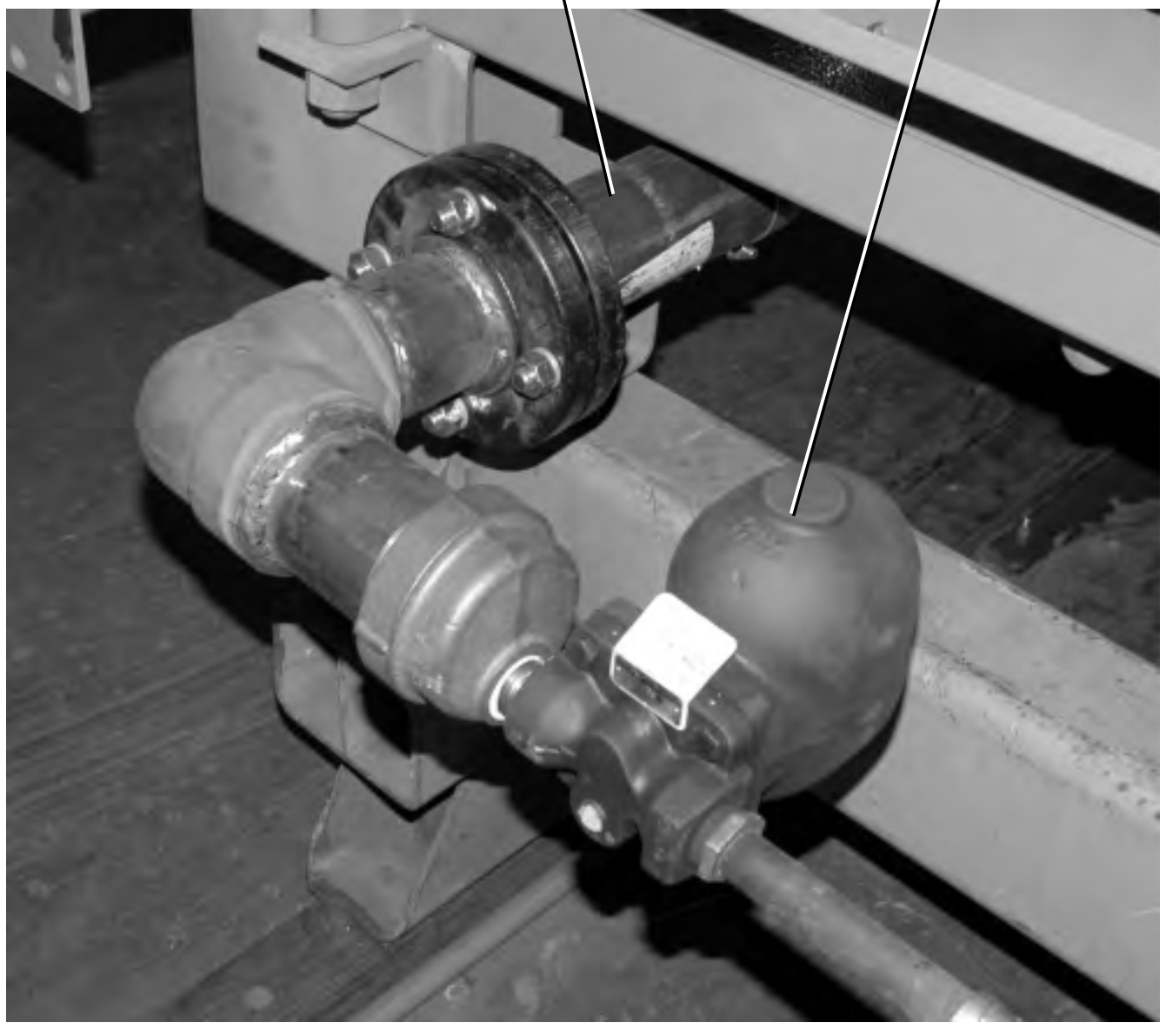
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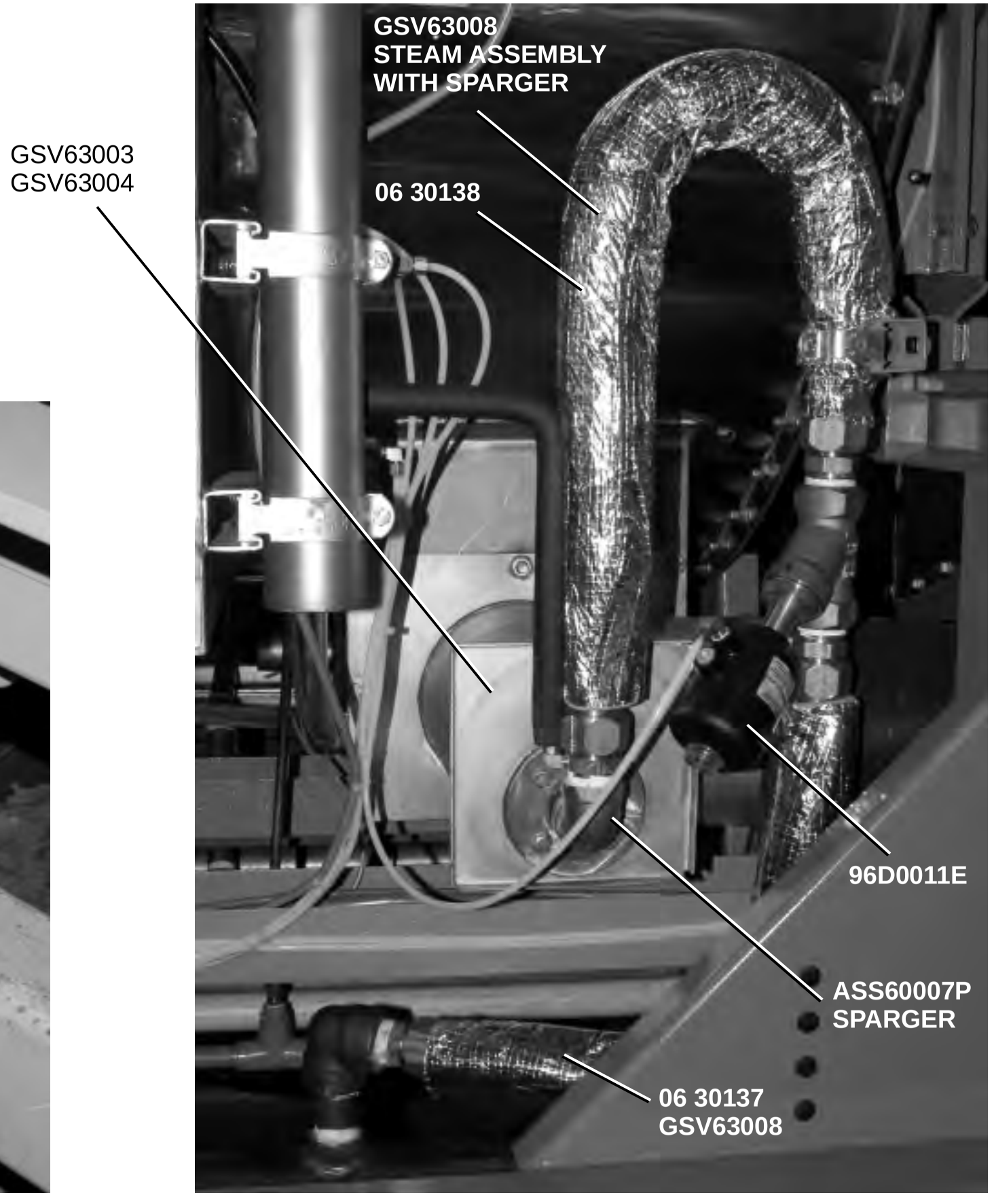
GSV63006
STEAM TRAP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GSV63004
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WITH SPARGER
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ASS60007P
SPARGER
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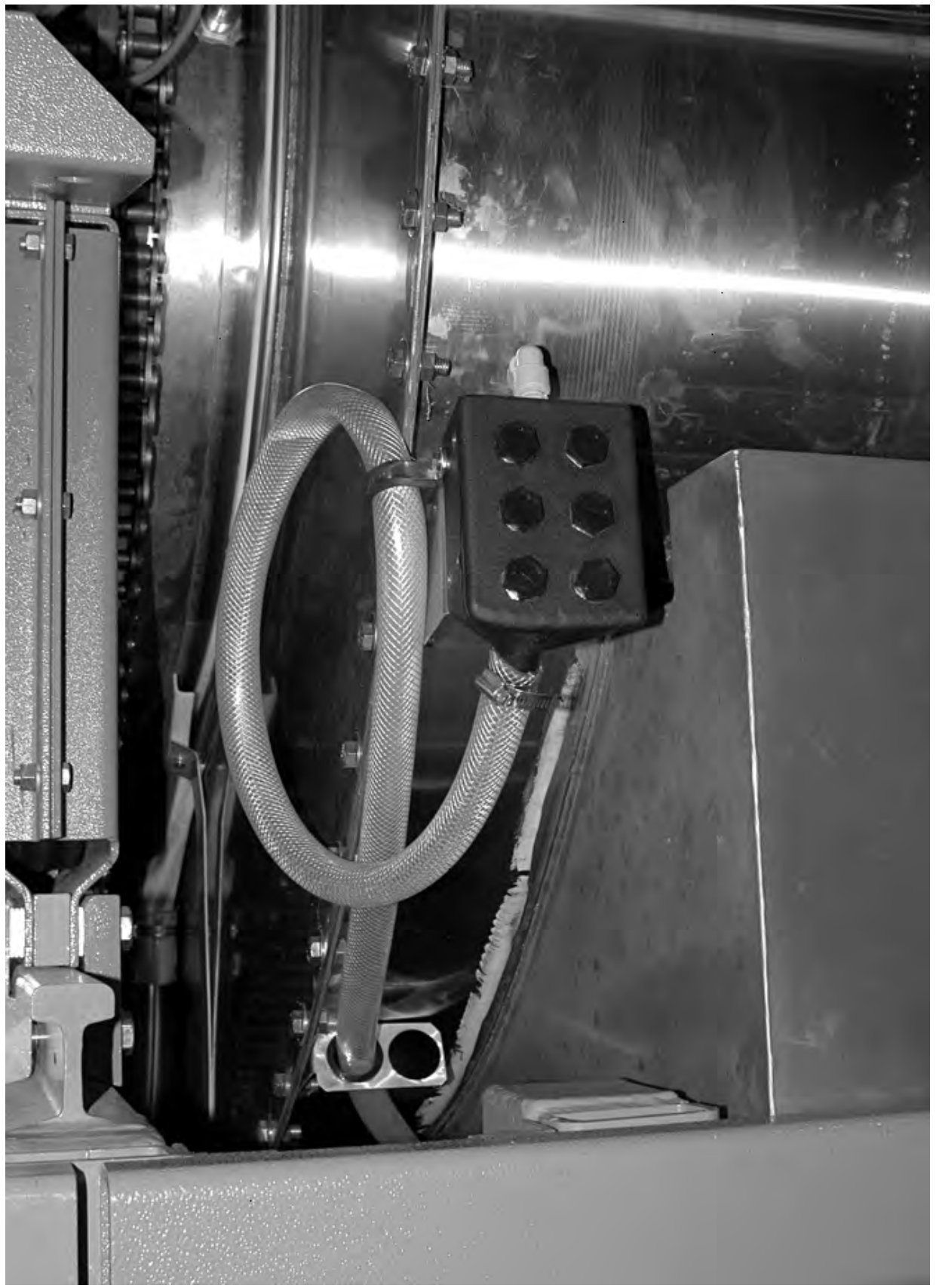
GSV63008



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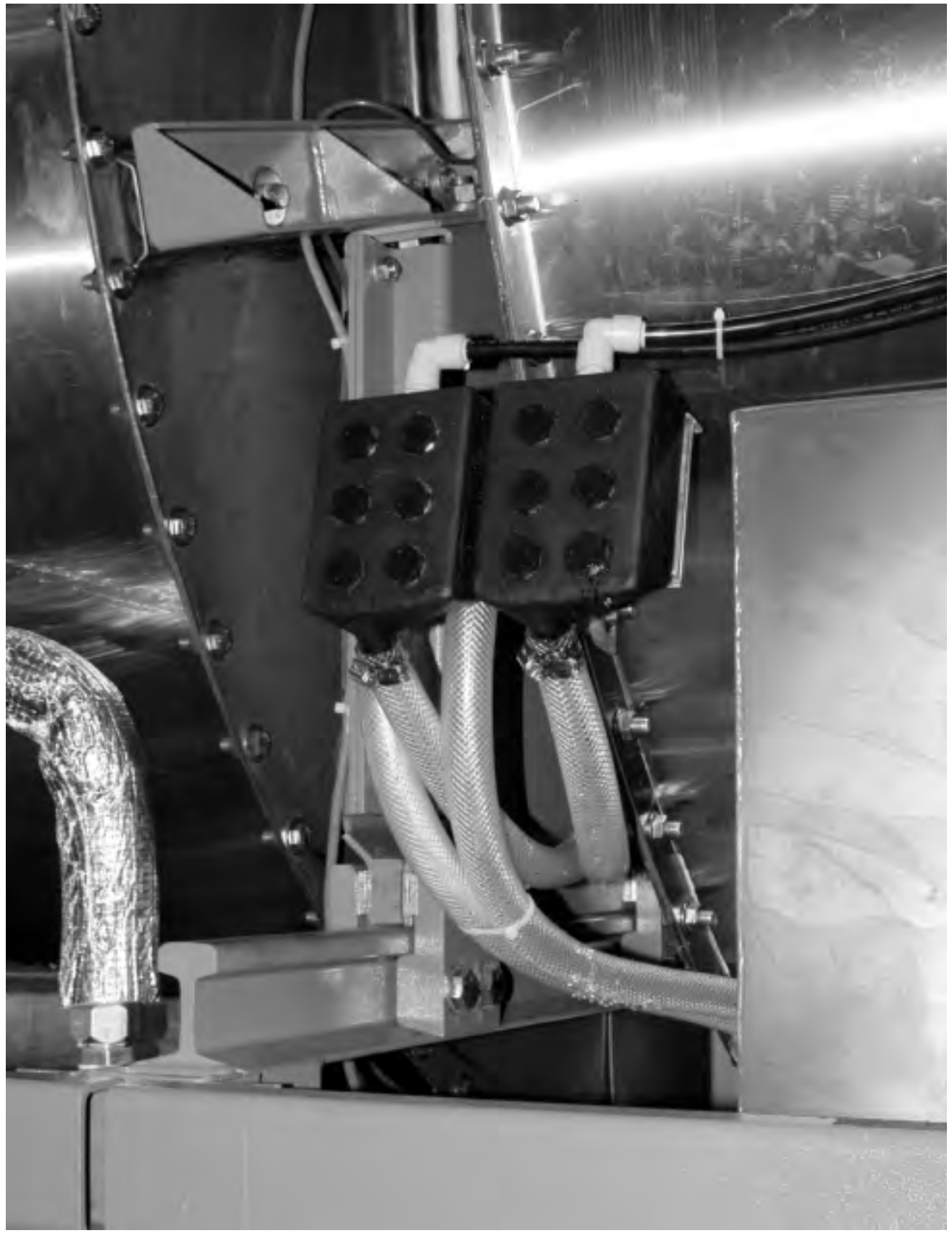
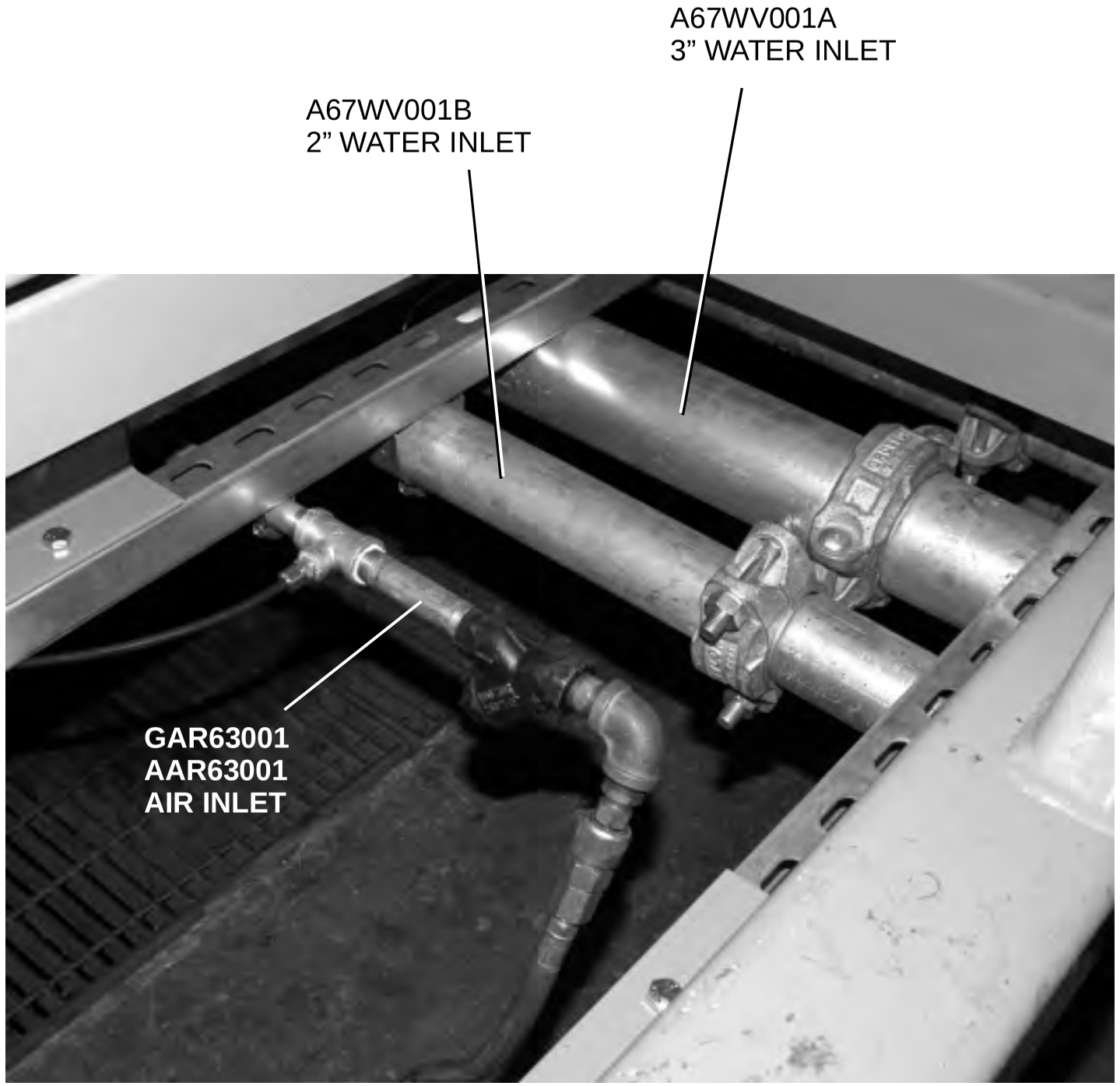


GWV63003
DOUBLE PERISTALTIC BOX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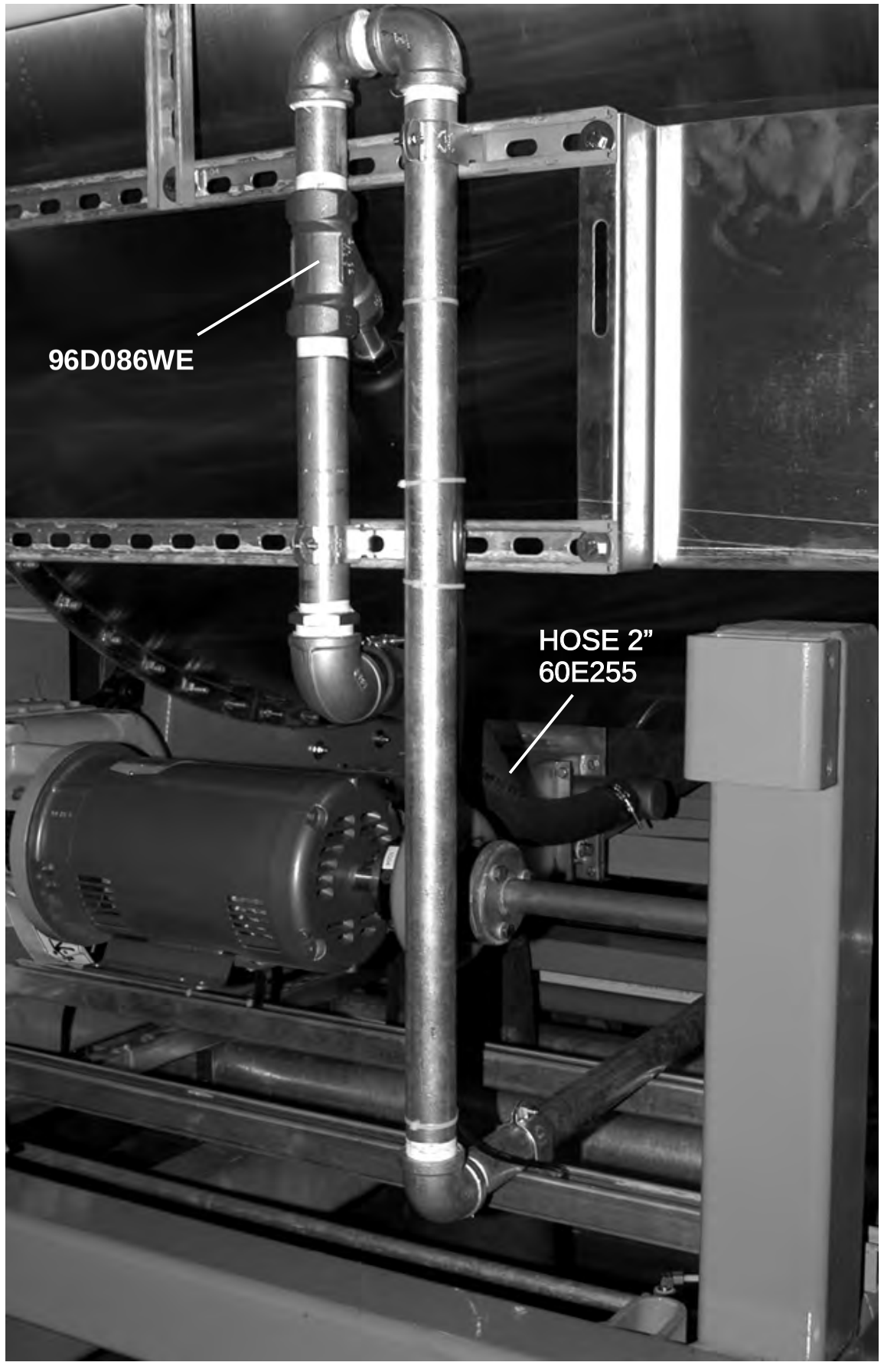
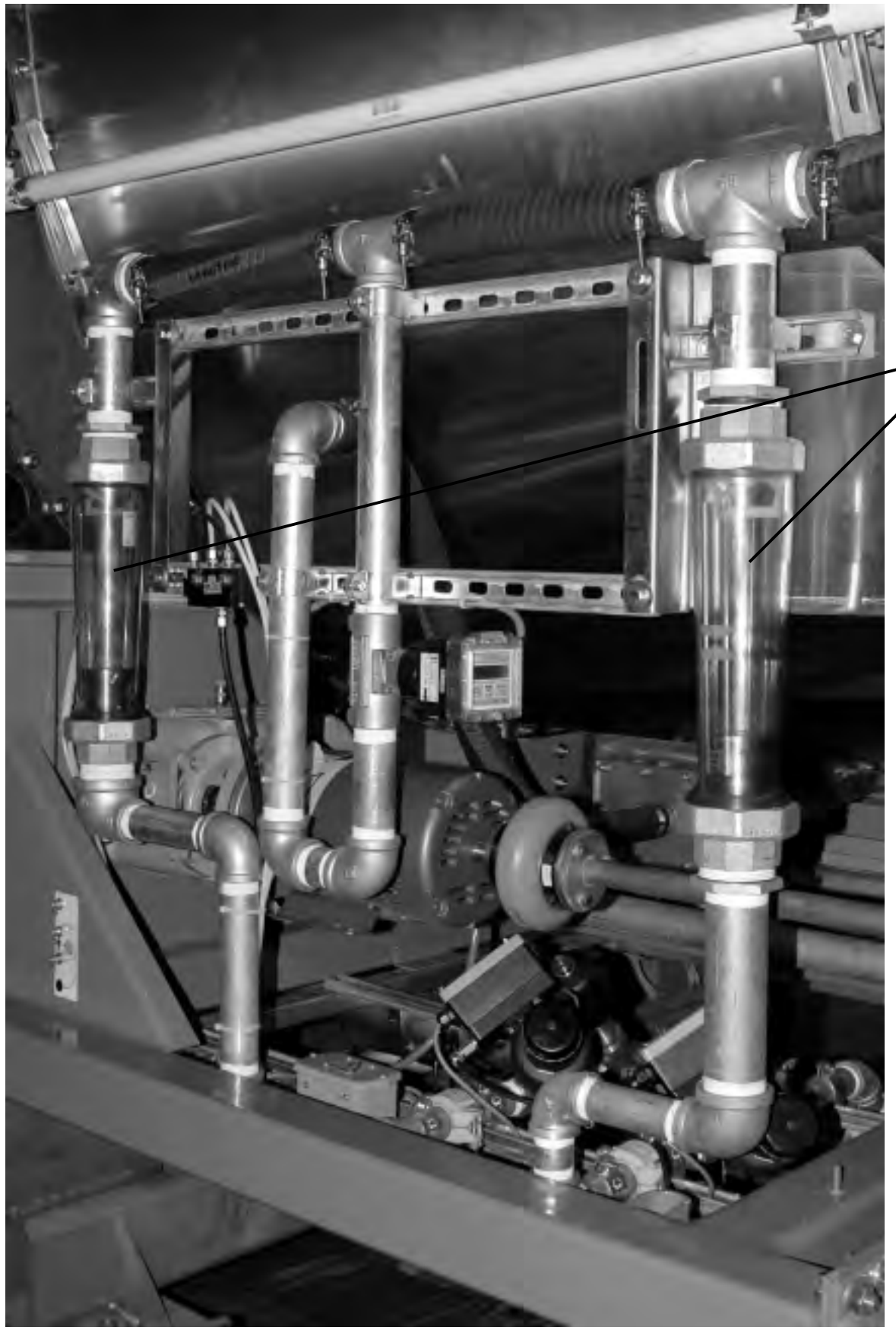
3” WATER INLET
A67WV001B
2” WATER INLET
GAR63001
AAR63001
AIR INLET

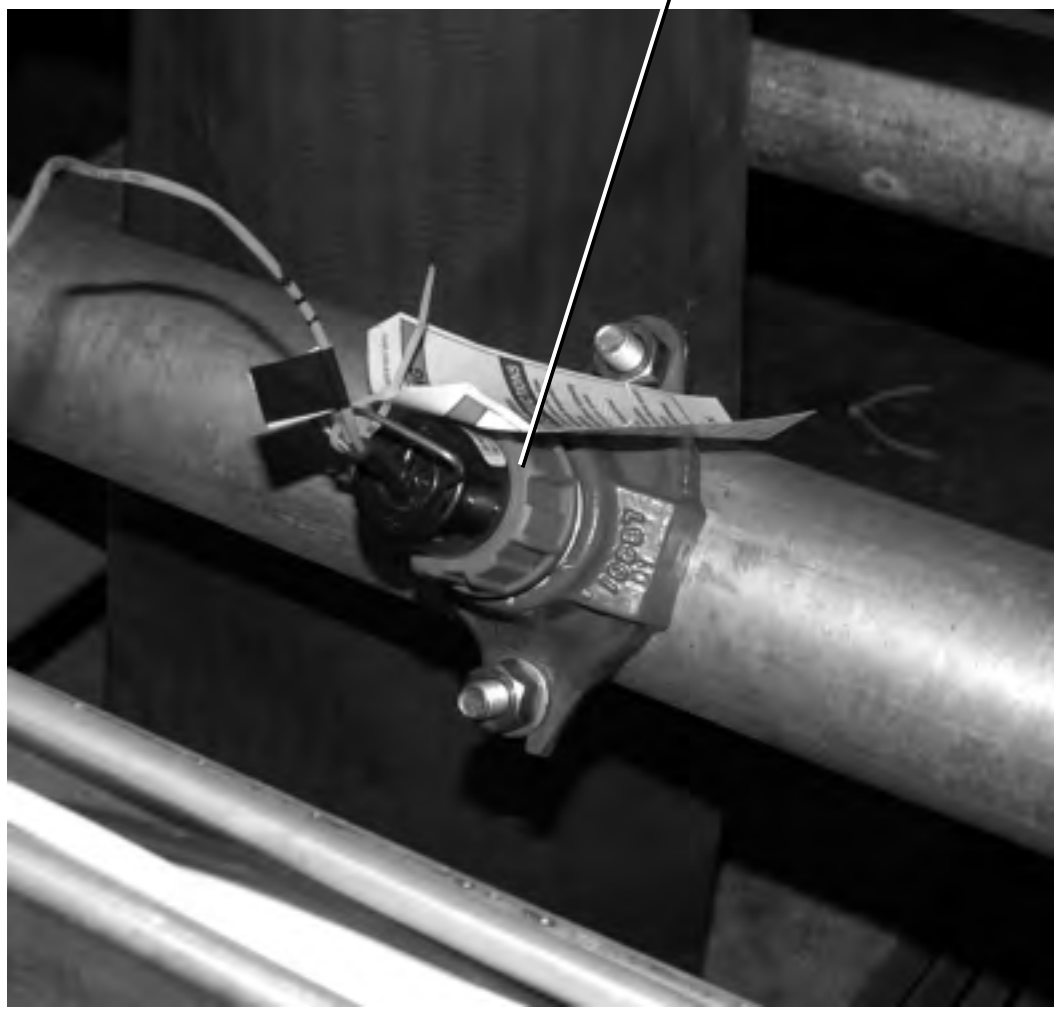

96D086WE
HOSE 2”
60E255

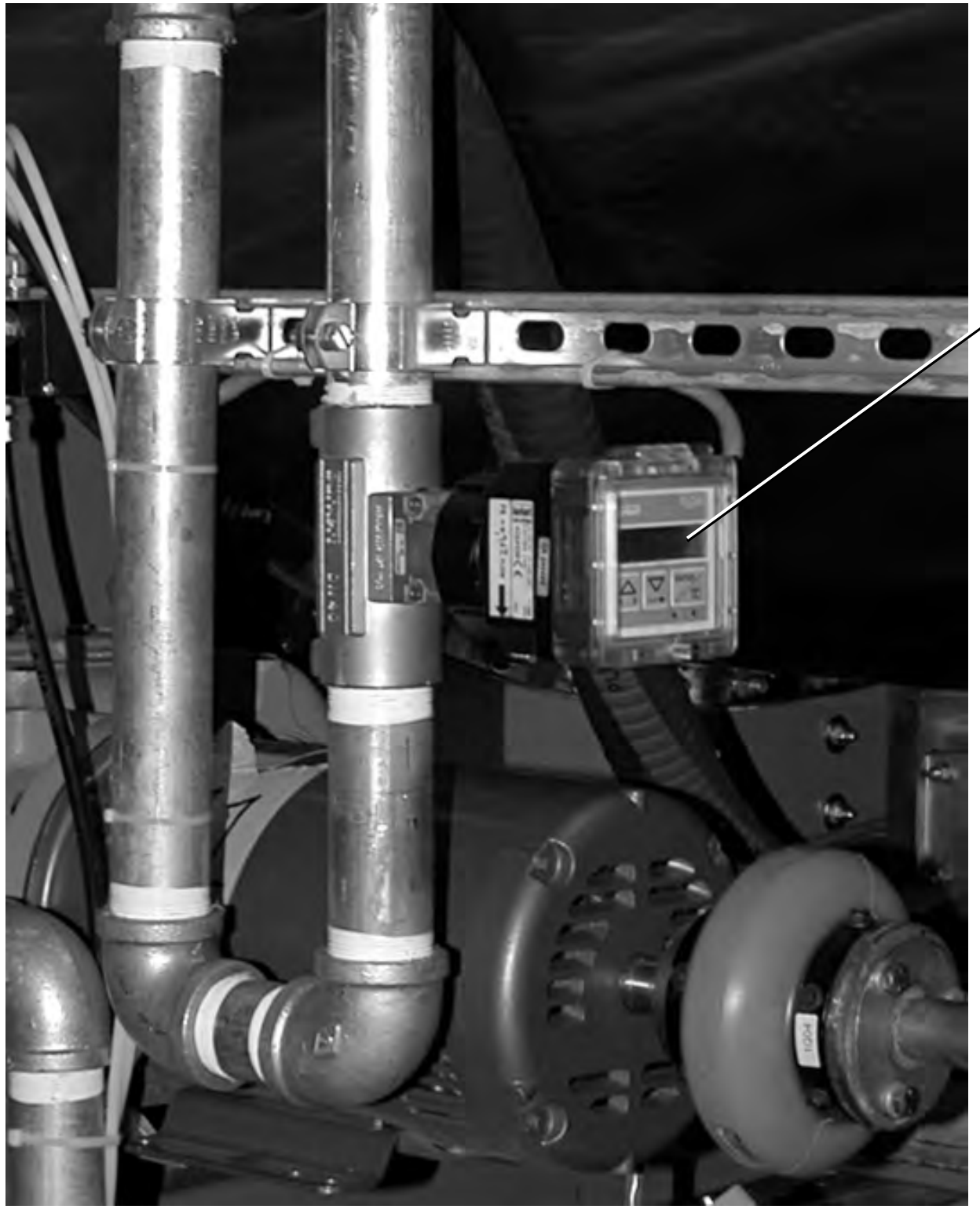

96D086WE
96D086WEXA



30F201 FLOWMETER 2”FNPT
30F250 FLOWMETER 2.5”FNPT

5R3A1EC1 1.25”SADDLE
30F519A 2”SADDLE FITTING
30F516 3” SADDLE FITTING
30F515 FLOW SENSOR





MAGMETER
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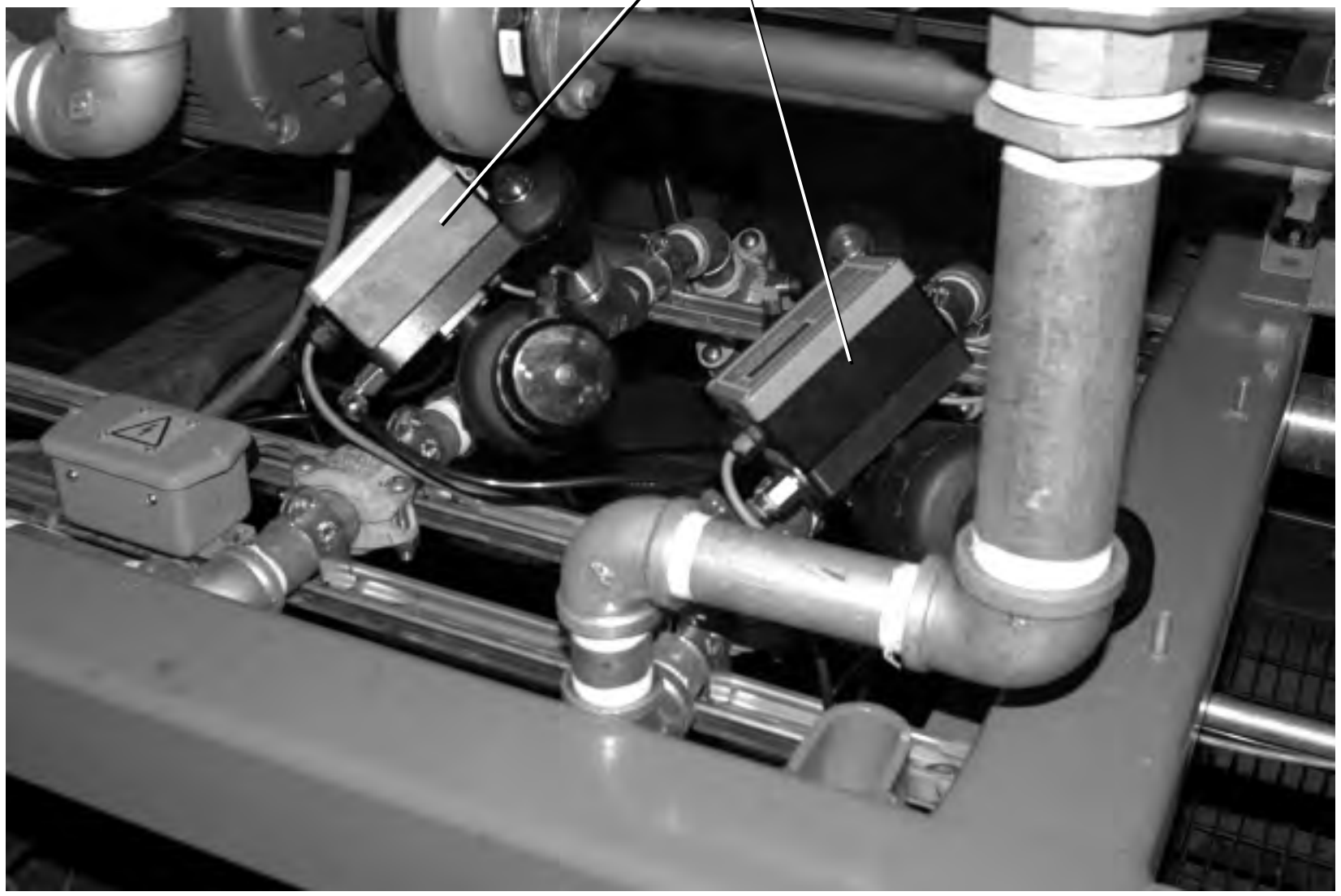
30F567 FITTING

MODULATING VALVES
96D086MESS



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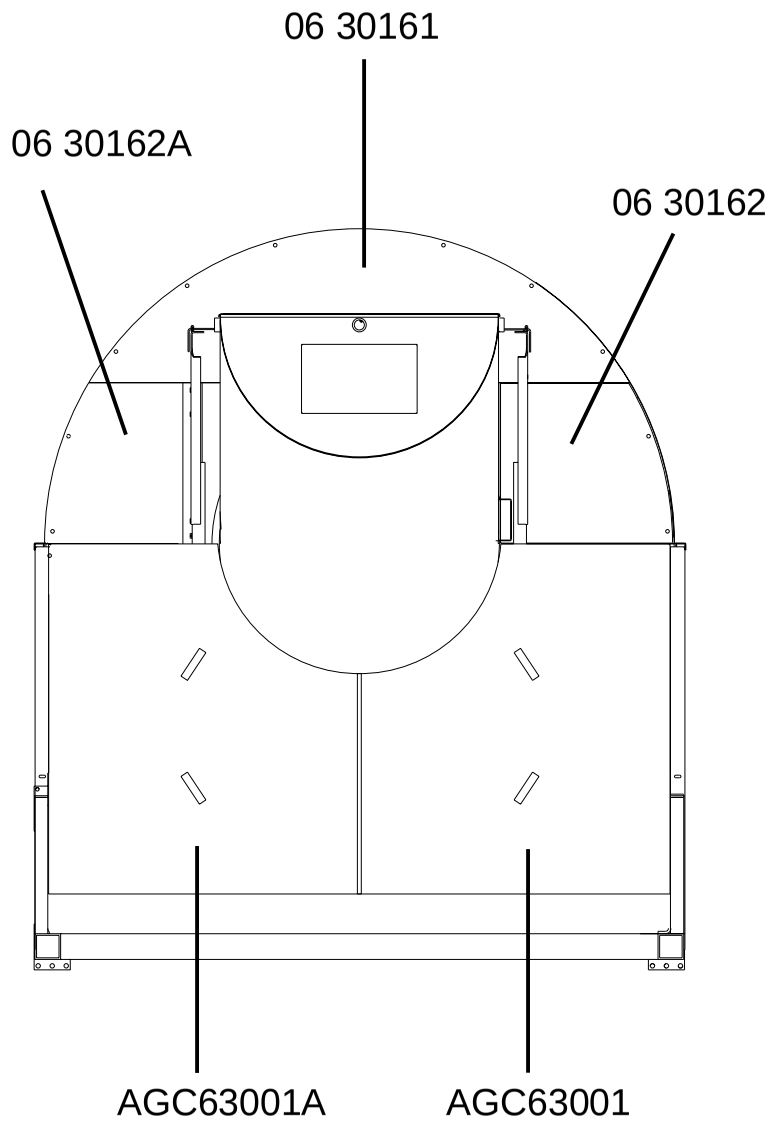
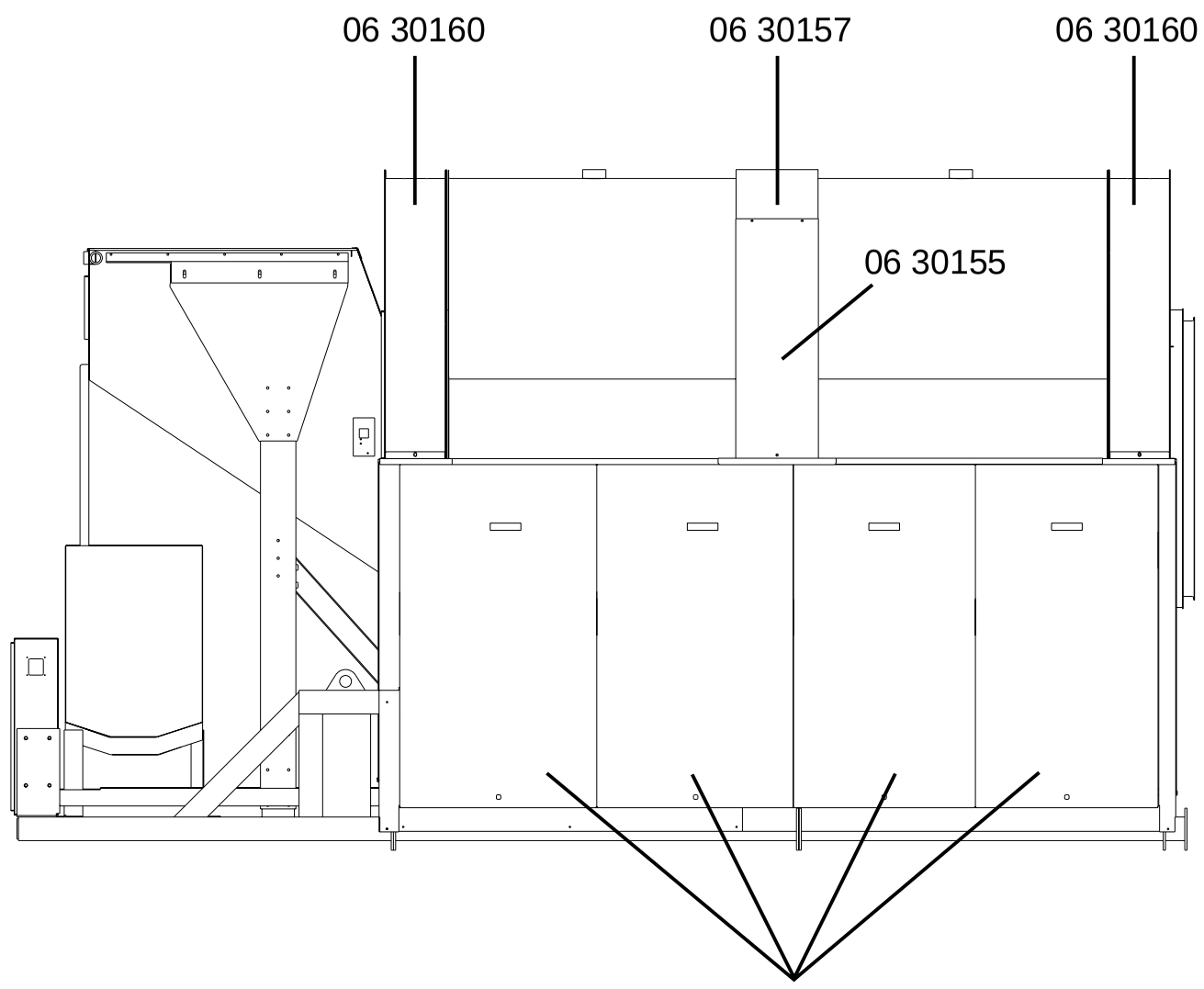
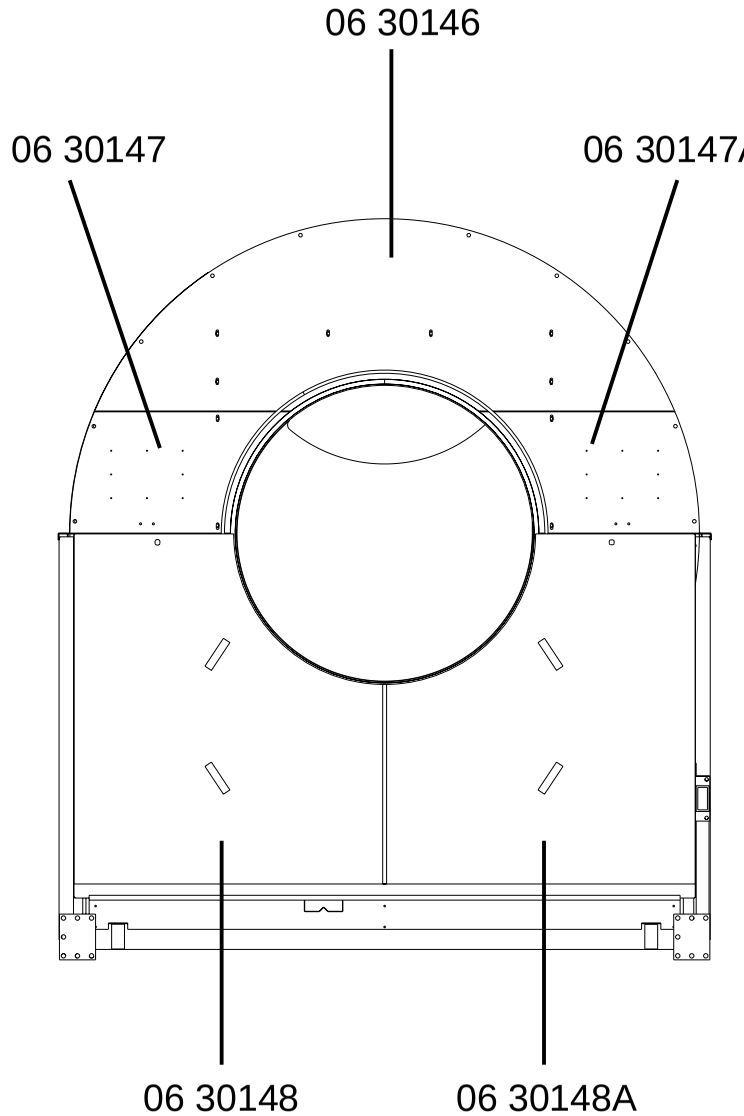
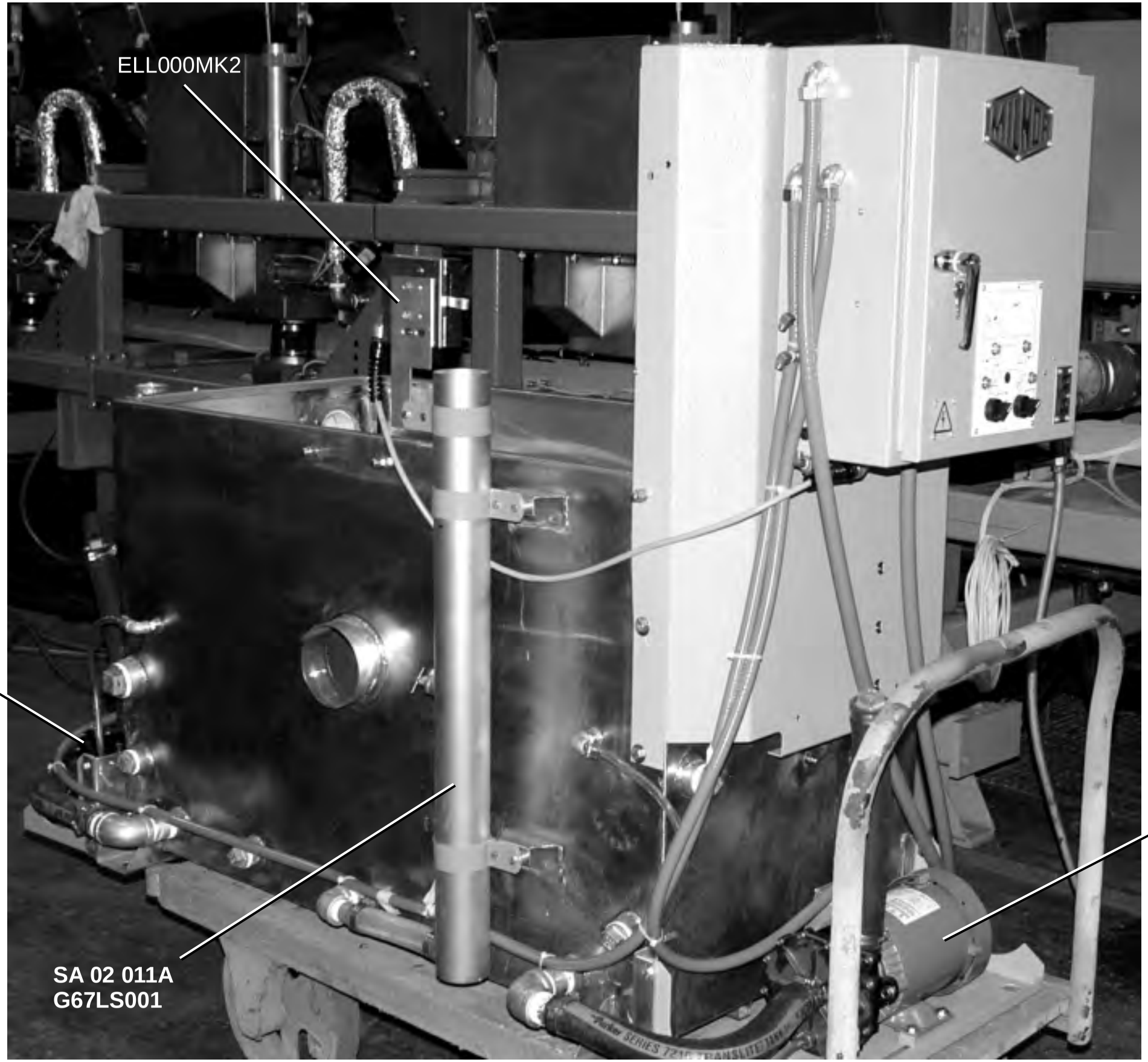


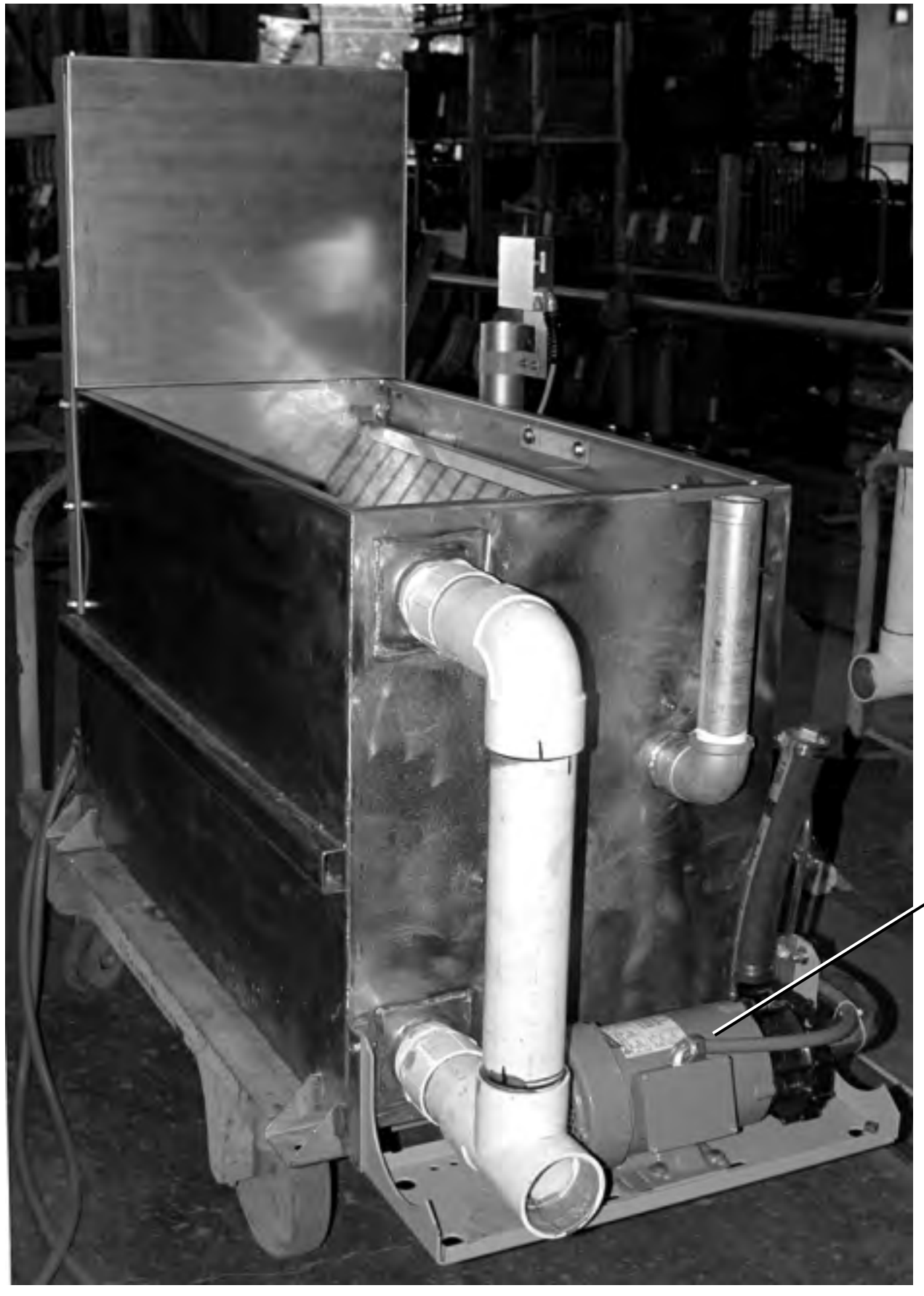


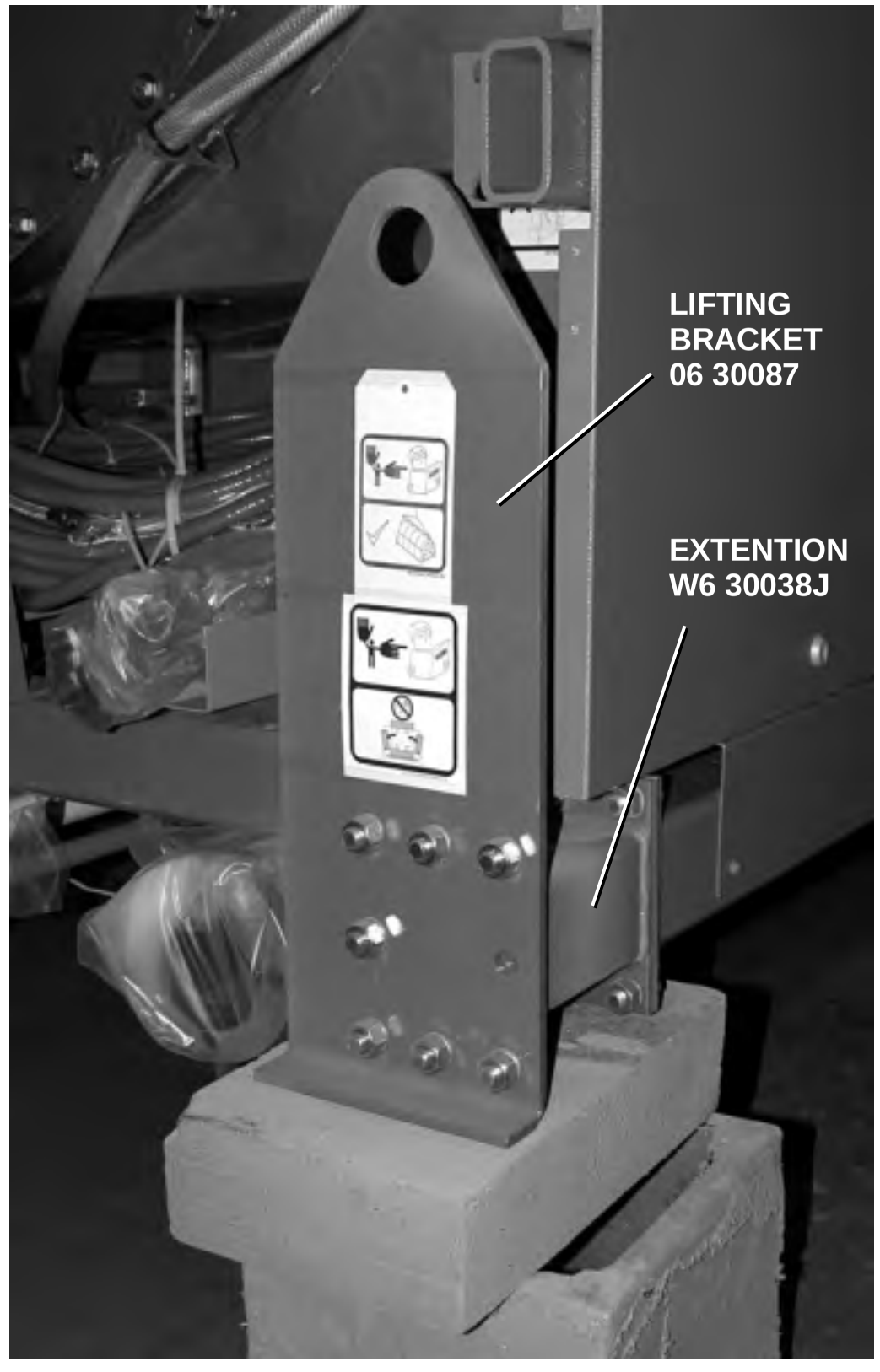
TYPICAL SIDE COVER





A62 03900N FLOW SPLITTER WITH CONTROLS
A62 03900P FLOW SPLITTER WITHOUT CONTROLS





LIFTING BRACKETS

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

Litho in U.S.A.

Parts List

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

Assembly	Item	Part Number	Description
A62-02900G	91000N		LEVEL BOX DRAIN TO SEWER PVC
	1	60E312A75	02Z HOSE 5"IDX7.5"LG GATES75W4175
	2	27A077D	T-BOLT HOSECLAMP 5.25-5.5625S
	3	5KL4AP4A	SOK ELBOW 90DEG 4" PVC SCH40
	4	45A126A36A	4"PIPE SCH40 PVC 36L X SQ END
	5	5KC4AP41	2002192N 4"SOK.COUPX2"LONG
A62-03900N	2004000Z		9248 FLOWSPLITTER W/CONTROLS
	5	98L115T	BRUSH SCRATCHSHOEHDLE S/S WIRE
	10	60E312A18A	5"I.D. X 18"LONG GATES 75W 41
	20	27A086	HOSECLAMP 3+1/8-6"CADSCR#HS-88
	30	51AB3AN3AM	ADAPTER MALE 3" SXM PVC SCH40
	40	5KC3AP4	SOK COUP 3" PVC SK40
	50	51LB3AN36A	NIPPLE PIPE 3"X36" NO THD PVC
	60	20C052	CEMENT PVC 1/2 PINT CANS
	70	W6 70101A	20040Z 9248 WELDED LINT TANK W/CONTLS
	110	06 20404L	86427B 48"LINT TANK FILTER HOLDER
	120	06 20403V	91192B RETAINER CLIP LINT TANK
	130	06 20403H	89411B ROD=DBL WIDTH LINT TANK SUPT
	140	W6 20452A	20024C *WLNT=DOUBLE WIDTH LINT TRAY
	150	06 20403X	87262B SPACER WEDGE WIRE LINT TANK
	160	06 20404B	90337C SCREEN=48" LINT WEDGE WIRE
	170	24G020N	ROLLED WASH.252ID NYLTITE 25W
	180	15G170	HEXNUT 1/4-20UNC2 SS18-8
	190	W2 14432A	93206C * FLOAT-TUBE L=33.25"
	200	02 15642A	91182C CLAMP-3"FLOAT CHAMBERED
	201	06 20501	20022B WW WATER LEVEL TUBE-MTG BRKT
	210	15N174	HXCAPSCR 1/4-20UNC2X5/8SS18-8
	220	15U181	LOCKWASHER MEDIUM 1/4 SS18-8
	230	15N176	FLATMACSCR 1/4-20NCX3/4SS18-8
	240	15N185	RDMACSCR 1/4-20UNC2X3/4SS18-8
	250	15K041S	HEXCAPSCR 1/4-20UNC2AX1 SS18-8
	280	06 20468	96422B HOSE ADAPTER 1+1/4"H X 1"NPT
	281	51E098AS	KINGREDNIP1.5IDX1.25MP#STC2015
	290	60E014R	03Z TUBING NYLOBRAID 1.25X1.75
	300	27A060S	HOSECLAMP1+5/16-2.25SSSC#HSS28
	340	51P055	NPTPLUG 1.5 SQCORED GALCI 125#
	350	20C040B	SILSEAL RTV CLR10.2 OZ #59575
	360	5N2A12AG41	NPT NIP 2X12 TOE GALSTL SK40
	370	5SL2ANFA	NPT ELBOW 90DEG 2" GALMAL 150#
	380	5N2ACLSG42	NPT NIP 2XCLS TBE GALSTL SK40
	390	ELL000MK2	83436S *WATER LEV SW ASSY: 1 UP+ 1LO
	400	SA 02 011A	90013# *FLOAT ASSY L=44"
	450	60E013	04Z TYGON TUBING 1"IDX1.25"OD
	460	15G140	03Z HXCAPNT 1/4-20 #C250=20 NKLPLT
	470	W6 20414	84206B *WLDMT=DEFLECTOR WW LF HAND

Parts List, cont.

Assembly	Item	Part Number	Description	Comments
	480	60E013	84206B *WLDMT=DEFLECTOR WW RT HAND	
	510	15K086	HXCAPSCR 3/8-16NCX3/4 SS18-8	
	530	15U260	LOCKWASHER MEDIUM 3/8 SS18-8	
	540	15G206	HEXNUT 3/8-16 UNC2 SS 18-8	
	550	06 20404M	87332C BUBBLE BREAKER LINT TANK	
	560	15U188	01Z FLTWASH 1/4 STD COMM SS18-8	
	570	06 20503	20022D 48"WEDGE WIRE SUPORT GUSSET	
	580	06 20402E	20032D +LINT TANK ELEC BOX MNTNG BRT	
	590	06 20402G	91526D LINT TNK ELEC BOX BRKT COVER	
	610	96H018	ANGLE NEEDLE VLV 1/4"T X 1/8MP	
	620	5SB0K0EBEO	NPTHEXBUSH 1/2X1/4 BRASS 125#	
	630	53A059A	NUT 1/4"BR.HOLYOKE AND #61A-4	
	640	53A501	TUBE INSERT .163"OD #63PT-4-40	
	650	53A500	SLEEVE DELRIN 1/4"OD#60PT-4	
	660	5P3AP4EN	3" SCH 40 PVC PIPE BE *	
	670	5KL3AP4A	SOK ELBOW 90DEG 3" PVC SCH40	
	680	5K3AP4A	SOKTEE 3" PVC SCH40	
	690	60E306	99057A HOSE 3.5"WATER CORRUGATED(V50)	
	700	27A084S	HOSECLAMP 3+9/16-4.5" SS SCR H	
	720	06 20446	97102C CBW FLOWSPLITER RIDGE COVER	
	730	06 20565	97000Z WEDGEWIRE UPPER GUIDE	
	740	5SL1ENFA	NPT ELB 90DEG 1.25 GALMAL 150#	
A62 03900P			9248 FLOWSPLITTER NO CONTROLS	
	5	98L115T	BRUSH SCRATCHSHOEHDLE S/S WIRE	
	10	60E312A18A	5"I.D. X 18"LONG GATES 75W 41	
	20	27A086	HOSECLAMP 3+1/8-6"CADSCR#HS-88	
	30	51AB3AN3AM	ADAPTER MALE 3" SXM PVC SCH40	
	40	5KC3AP4	SOK COUP 3" PVC SK40	
	50	51LB3AN36A	NIPPLE PIPE 3"X36" NO THD PVC	
	60	20C052	CEMENT PVC 1/2 PINT CANS	
	70	W6 70101B	20040Z 9248 48" LINT TANK NO CONTROLS	
	110	06 20404L	86427B 48"LINT TANK FILTER HOLDER	
	120	06 20403V	91192B RETAINER CLIP LINT TANK	
	130	06 20403H	89411B ROD=DBL WIDTH LINT TANK SUPT	
	140	W6 20452A	20024C *WLNT=DOUBLE WIDTH LINT TRAY	
	15	0 06 20403X	87262B SPACER WEDGE WIRE LINT TANK	
	16	0 06 20404B	90337C SCREEN=48" LINT WEDGE WIRE	
	17	0 24G020N	ROLLED WASH.252ID NYLTITE 25W	
	18	0 15G170	HEXNUT 1/4-20UNC2 SS18-8	
	21	0 15N174	HXCAPSCR 1/4-20UNC2X5/8SS18-8	
	22	0 15U181	LOCKWASHER MEDIUM 1/4 SS18-8	
	23	0 15N176	FLATMACSCR 1/4-20NCX3/4SS18-8	
	24	0 15N185	RDMACSCR 1/4-20UNC2X3/4SS18-8	
	25	0 15K041S	HEXCAPSCR 1/4-20UNC2AX1 SS18-8	
	28	0 06 20468	96422B HOSE ADAPTER 1+1/4"H X 1"NPT	
	28	1 51E098AS	KINGREDNIP1.5IDX1.25MP#STC2015	
	29	0 60E014R	03Z TUBING NYLOBRAID 1.25X1.75	
	300	27A060S	HOSECLAMP1+5/16-2.25SSSC#HSS28	
	340	51P055	NPTPLUG 1.5 SQCORED GALCI 125#	

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Assembly	Item	Part Number	Description
	350	20C040B	SILSEAL RTV CLR10.2 OZ #59575
	360	5N2A12AG41	NPT NIP 2X12 TOE GALSTL SK40
	370	5SL2ANFA	NPT ELBOW 90DEG 2" GALMAL 150#
	380	5N2ACLSG42	NPT NIP 2XCLS TBE GALSTL SK40
	460	15G140	03Z HXCAPNT 1/4-20 #C250=20 NKLPLT
	470	W6 20414	84206B *WLDMT=DEFLECTOR WW LF HAND
	480	W6 20415	84206B *WLDMT=DEFLECTOR WW RT HAND
	510	15K086	HXCAPSCR 3/8-16NCX3/4 SS18-8
	520	24G030N	ROLLED WASH.379ID NYLTITE 37W
	530	15U260	LOCKWASHER MEDIUM 3/8 SS18-8
	540	15G206	HEXNUT 3/8-16 UNC2 SS 18-8
	550	06 20404M	87332C BUBBLE BREAKER LINT TANK
	560	15U188	01Z FLTWASH 1/4 STD COMM SS18-8
	570	06 20503	20022D 48"WEDGE WIRE SUPORT GUSSET
	600	60E004TE	04Z 1/4"OD X.170"ID NYL(BLK)TUBING
	610	96H018	ANGLE NEEDLE VLV 1/4"T X 1/8MP
	620	5SB0K0EBEO	NPTHEXBUSH 1/2X1/4 BRASS 125#
	630	53A059A	NUT 1/4"BR.HOLYOKE AND #61A-4
	640	53A501	TUBE INSERT .163"OD #63PT-4-40
	650	53A500	SLEEVE DELRIN 1/4"OD#60PT-4
	660	5P3AP4EN	3" SCH 40 PVC PIPE BE *
	670	5KL3AP4A	SOK ELBOW 90DEG 3" PVC SCH40
	680	5K3AP4A	SOKTEE 3" PVC SCH40
	690	60E306	99057A HOSE 3.5"WATER CORRUGATED(V50)
	700	27A084S	HOSECLAMP 3+9/16-4.5" SS SCR H
	720	06 20446	97102C CBW FLOWSPLITER RIDGE COVER
	730	06 20565	98313Z WEDGEWIRE UPPER GUIDE
	740	5SL1ENFA	NPT ELB 90DEG 1.25 GALMAL 150#
A63SR001	2002000Z 8648 SPPT RLLR ASSY RT		
	10	A64SR001R	92737N 7622/7639CBW SUP ROLLER REP
	20	06 70030F	20020B SHIM = SUPPORT ROLLER MOUNT
	80	06 30054	20040C 9248 SPPT RLLR BRKT OUT RT
	90	06 30055	20040C 9248 SPPT RLLR BRKT INNER RT
	120	15G230	HXNUT 1/2-13UNC2B SAE ZINC GR2
	130	15K151	HXCAPSCR 1/2-13UNC24X1.25 GR5
	140	15U300	LOKWASHER REGULAR 1/2 ZINC PLT
	150	06 70013H	99211B SPACER=SUPPORT ROLLER
	160	06 70030	99236D CLAMP SUPPORT ROLLER OUTER
	170	06 70030A	98347D CLAMP SUPPORT ROLLER INNER
	180	15K235D	HXCAPSCR 3/4-104NC2A X 4+1/2 G
	190	15U340	LOCKWASH MEDIUM 3/4 ZINCPL
	200	15K228B	HEXCAPSCR 3/4-10 X 1+1/2 GR 5/
	210	15U340	LOCKWASH MEDIUM 3/4 ZINCPL
	220	15G239	HXNUT 3/4-16UNF2B SAE ZINC GR2

Parts List, cont.

Assembly	Item	Part Number	Description	Comments
A63SR002	2002000Z 8648 SPPT RLLR ASSY LF			
	10	64SR001R	92737N 7622/7639CBW SUP ROLLER REP	
	20	06 70030F	20020B SHIM = SUPPORT ROLLER MOUNT	
	80	06 30054A	20040# 9248 SPPT RLLR BRKT OUT LF..	
	90	06 30055A	20040# 9248 SPPT RLLR BRKT INNER LF..	
	120	15G230	HXNUT 1/2-13UNC2B SAE ZINC GR2	
	130	15K151	HXCAPSCR 1/2-13UNC24X1.25 GR5	
	140	15U300	LOKWASHER REGULAR 1/2 ZINC PLT	
	150	06 70013H	99211B SPACER=SUPPORT ROLLER	
	160	06 70030	99236D CLAMP SUPPORT ROLLER OUTER	
	170	06 70030A	98347D CLAMP SUPPORT ROLLER INNER	
	180	15K235D	HXCAPSCR 3/4-104NC2A X 4+1/2 G	
	190	15U340	LOCKWASH MEDIUM 3/4 ZINCPL	
	200	15K228B	HEXCAPSCR 3/4-10 X 1+1/2 GR 5/	
	210	15U340	LOCKWASH MEDIUM 3/4 ZINCPL	
	220	15G239	HXNUT 3/4-16UNF2B SAE ZINC Gr2	
A64AC001A	N/C DUMP VAL AIR CYL 4+1/2X8			
	10	60C106	ORING 5/16ID 1/16CS BUNA70#011	
	20	02 16021D	92632B DUMP VALVE BUMPER RETAINER	
	30	02 16021C	92051B BUMPER=DUMP VALVE BONNET	
	40	02 16021E	94323B WASHER 3/8IDX1.250D DUMPVAL	
	50	15G220	02Z NUTLOK THINHX 3/8-24 SS/NYL	
	60	06 40064	87037B DUMP VALVE GASKET RETAINER	
	70	15G164	01Z HX THIN LOCKNUT NYL1/4-20 SS	
	80	15U181	LOCKWASHER MEDIUM 1/4 SS18-8	
	90	15N196S	RDMACHSCR 1/4-2OUNC2 X 1-1/2 S	
	100	24G020N	ROLLED WASH.252ID NYLTITE 25W	
	110	27B260156S	SPCRSLD.26ID.375OD.156L 316SS	
	120	06 40065	92371B DUMP VALVE CUP GASKET	
	130	06 40066	94271B DUMP VALVE CUP	
	140	06 40067	96372B CUP ALIGNMENT STRIP	
	150	15K062	HEXCAPSCR 5/16-18X1 18-8SS	
	160	15G186	HEXNUT 5/16-18UNC2 SS18-8	
	170	15U205	LOCKWASHER MEDIUM 5/16" 18-8SS	
	180	24G027N	ROLLED WASH.312ID NYLTITE 31W	
	190	60C108	ORING 1/2IDX3/16CS BUNA70 #310	
	200	06 40069G	91441B N/C DBL ACT DYE DMP VLV GSKT	
	210	60C134	ORING 2.5ID3/16CS BUNA70 #333	
	220	06 40063A	91142B N/C DUMP VALVE COVER PLATE	
	230	X6 20708B	90516# N-C DBLE ACTING VALVE BONNET	
	240	06 20537	91183B 2+7/8 AIR CYL SPRING DIVIDER	
	250	06 20529S	96471# NC DRAIN VALVE-INNER SPRINGSS	
	260	06 20528S	96471# NC DRAIN VALVE-OUTER SPRINGSS	
	270	03 01621A	94266# TUBE 2+7/8 AIR CYL 16.63"	
	280	53A008B	BODYMALECON.25X.25COMP#B68A-4B	
	290	02 10585I	91142# TIE BOLT=5/16-18X17.188 S/S	
	300	15U205	LOCKWASHER MEDIUM 5/16" 18-8SS	
	310	03 01618	91522B PISTON CUP WASHER 3"AIRCYL	
	320	03 01622A	88531# CYLHEAD TAPHOLE-3"ARCYL S/S	

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Assembly	Item	Part Number	Description
	330	02 18651	73171A WASHER=2 WAY BRAKE CYL
	340	03 01630	87506B 3"AIRCYL PSTN CUP COMPLMTWSH
	350	X3 01619A	92066# MACH=3"ACYL BRASS PISCUP WSH
	360	02 19302	97327B PISTON CUP 2+7/81D CYLINDER
	370	06 40068A	96426B N/C DBL ACT DUMP VALVE STEM
	380	27B240SS	SPACERROLL .51ID .813L.062T SS
A64CP004	1.5HP BURKS/LOW VOLT PIPE ASSY		
	10	27E956M96	1.5HP 3P PMP 240/420/480 5/6C
	20	06 20730	94317B SPACER = MOTOR TO BRKT
	30	06 20395	20031A 1/4 HOSBARB X 1/4 TURN FITTING
	40	51E506S	HOSESTEM 316SS 1/4"HBXMP #RN22
	50	60E005D	TUBING 1/4"IDX7/16"OD EXCELLON
	60	27A042	HOSE CLAMP 7/32-5/8SS+305 SCR.
	70	60C121A	ORING 1/2 ID X 1/8CS BUNA #206
A64DV005	ASSY=DRAIN/STOP WEIR TO SEWER		
	0010	W6 70021A	20033# WLMT=DRAIN/WEIR TO SEWER
	0020	AVD48701	924412 4"DUMP BONNET&AIRCYL DBL-ACT
	0030	15G206B	HEXNUT 3/8-16UNC2 BRASS
	0040	15U260	LOCKWASHER MEDIUM 3/8 SS18-8
	0050	02 14447B	20034# GASKET=BON 4"S/S DPVAL RED
A64DV005	ASSY=DRAIN/STOP WEIR TO SEWER		
	10	W6 70021A	20033# WLMT=DRAIN/WEIR TO SEWER
	20	AVD48701	924412 4"DUMP BONNET&AIRCYL DBL-ACT
	30	15G206B	HEXNUT 3/8-16UNC2 BRASS
	40	15U260	LOCKWASHER MEDIUM 3/8 SS18-8
	50	02 14447B	20034# GASKET=BON 4"S/S DPVAL RED
A64DV006	ASSY=DRAIN/STOP WEIR TO FLOWSP		
	10	W6 70021	20033D WLMT=DRAIN/WEIR TO SPLITTER
	20	AVD48701	924412 4"DUMP BONNET&AIRCYL DBL-ACT
	30	15G206B	HEXNUT 3/8-16UNC2 BRASS
	40	15U260	LOCKWASHER MEDIUM 3/8 SS18-8
	50	02 14447B	20034# GASKET=BON 4"S/S DPVAL RED
A64DV007	2003312N ASSY=DRAIN/STOP F/N TO SEWER		
	10	W6 70020	20042C WLMT=DRAIN STOP F/N TO SEWER
	20	AVD48701	924412 4"DUMP BONNET&AIRCYL DBL-ACT
A64SR001R	7622/7639CBW SUP ROLLER REP		
	10	53A031B	BODY-EL90MALE.25X1/8 #269C-42B
	20	54AV41201	05Z BRG TM#LM501349 ASSY 90286 1BX
	30	06 40042	92021B COLLAR=18X3 ROLLER

Parts List, cont.

Assembly	Item	Part Number	Description	Comments
	40	15G251	HEXJAMNUT 1+1/8-7UNC2 ZNC GR2	
	50	53A501	TUBE INSERT .163"OD #63PT-4-40	
	60	06 40043	92021B LOCKING WASHER 18X3 ROLLER	
	70	53A059A	NUT 1/4"BR.HOLYOKE AND #61A-4	
	80	60C128	ORING 1+3/8IDX1/8CS BUNA70#220	
	90	06 40040B	94503D ROLLER 18X3 - 2" URETHANE	
	100	24S055	02Z SEAL 2.09X3.189X3/8 SS BUNA	
	110	X6 40041	92571# MACH=SHAFT 18 X 3 ROLLER	
	120	53A500	SLEEVE DELRIN 1/4"OD#60PT-4	
A65AC001	93093C	7639=AIR-CYL FLOWNOT VLV ASY		
	10	15G186	HEXNUT 5/16-18UNC2 SS18-8	
	20	W6 50081	93093B *7639=AIR CYL ROD WLMT	
	30	15U205	LOCKWASHER MEDIUM 5/16" 1	
	40	06 20702E	91227B FLOW NOT ACTUATOR CYL HEA	
	50	60C132	ORING 2"IDX3/16CS BUNA70	
	60	W6 50080A	93083B *7639=CYLINDER-AIR	
	70	02 02101S	88531B CYLINDER HEAD TAP.HOLE (S	
	80	53A031XB	BODY-EL90MALE.25X25 #269C	
	90	53A500	SLEEVE DELRIN 1/4"OD#60PT	
	100	03 01313S	85506B +STOP=AIRCYL W/2+11/16STR	
	110	02 02194	93217B PISTONCUP=DUMPVALVE 2+3/8	
	120	02 02085	94092B UP WASHER=2"OD=PISTON CUP	
	130	02 02105B	92253B 2.38"ACYL BRASS PISCUP WASHR	
	140	02 02185	79237A WASHER=PISTON CUP COMP LIMIT	
	150	60C106	ORING 5/16ID 1/16CS BUNA70#011	
	160	27B34010SS	SPACERROLL .51ID.625L.062T SS	
	170	15U243S	FLAWASHER 7/8ODX33/64IDX16GA 1	
	180	15G220	02Z NUTLOK THINHX 3/8-24 SS/NYL	
	190	60C110	ORING 1/2IDX3/32CS BUNA70 #112	
	200	06 50082	20012B 7639=FLOW NOT VALVE STEM	
	210	02 16021E	94323B WASHER 3/8IDX1.250D DUMPVAL	
	220	02 16021D	92632B DUMP VALVE BUMPER RETAINER	
	230	02 16021C	92051B BUMPER=DUMP VALVE BONNET	
	240	06 50083A	93093B 7639=FLOW NOT VLV GSKT RET	
	250	06 50084	93093B 7639=FLOW NOT VALVE GSKT CUP	
	260	06 50083	93093B 7639=FLOW NOT VALVE GASKET	
	270	27B260156S	SPCRSLD.26ID.375OD.156L 316SS	
	280	24G020N	ROLLED WASH.252ID NYLTITE 25W	
	290	15N196	PHILRDMACSCR 1/4-20UNC2X1+1/4S	
	300	15U181	LOCKWASHER MEDIUM 1/4 SS18-8	
	310	15G164	01Z HX THIN LOCKNUT NYL1/4-20 SS	
	320	24G027N	ROLLED WASH.312ID NYLTITE 31W	
A66AC001	7639 FLONOT AIRCYL UNIT/UNIT			
	10	02 02068	94266A AIRCYL-STAINLESS=DUMPVALVE	
	20	02 02085	94092B UP WASHER=2"OD=PISTON CUP	
	30	02 02101S	88531B CYLINDER HEAD TAP.HOLE (SS)	
	40	02 02105B	92253B 2.38"ACYL BRASS PISCUP WASHR	
	50	02 02185	79237A WASHER=PISTON CUP COMP LIMIT	
	60	02 02194	93217B PISTONCUP=DUMPVALVE 2+3/8"	

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Assembly	Item	Part Number	Description
	70	02 10585	91142B TIE BOLT=5/16-18X7.875LG SS
	80	06 50082A	20012B 7639G3 FLONOT VAL STEM
	90	03 01313	70219A STOP=AIR CYL W/2+11/16STROKE
	100	15G220	02Z NUTLOK THINHX 3/8-24 SS/NYL
	110	15K041S	HEXCAPSCR 1/4-20UNC2AX1 SS18-8
	120	15U181	LOCKWASHER MEDIUM 1/4 SS18-8
	130	15U205	LOCKWASHER MEDIUM 5/16" 18-8SS
	140	53A031B	BODY-EL90MALE.25X1/8 #269C-42B
	150	60C108	ORING 1/2IDX3/16CS BUNA70 #310
	160	60C132	ORING 2"IDX3/16CS BUNA70 #329
	170	X6 20708A	89527D DOUBLE ACTING VALVE BONNET
	180	15G168	SQNUT 1/4-20UNC2 SS18-8
	190	15K042	BUTSOKCAPSCR 1/4-20NCX1 SS18-8
	200	24G020N	ROLLED WASH.252ID NYLTITE 25W
	210	02 16021C	92051B BUMPER=DUMP VALVE BONNET
	220	02 16021D	92632B DUMP VALVE BUMPER RETAINER
	230	02 16021E	94323B WASHER 3/8IDX1.250D DUMPVAL
	240	06 50083	93093B 7639=FLOW NOT VALVE GASKET
	250	06 50083A	93093B 7639=FLOW NOT VLV GSKT RET
	260	06 50084	93093B 7639=FLOW NOT VALVE GSKT CUP
	270	15G164	01Z HX THIN LOCKNUT NYL1/4-20 SS
	280	15G220	02Z NUTLOK THINHX 3/8-24 SS/NYL
	290	15N196	PHILRDMACSCR 1/4-20UNC2X1+1/4S
	300	15U181	LOCKWASHER MEDIUM 1/4 SS18-8
	310	24G020N	ROLLED WASH.252ID NYLTITE 25W
	320	02 18931F	93362B GASKET=DUMPVALVE-1/60+72WEHU
A66FN003	ASSY 7639G3 FLONOT@LOAD UN/UN		
	10	W6 50039B	20040D 7639G3 FLONOT UNIT/UNIT
	20	A66AC001	99000Z 7639 FLONOT AIRCYL UNIT/UNIT
	30	02 18660A	93362B DUMP VALVE AIR CYL GASKET
A67CL001	99000Z ASSY OILERRESV G3		
	10	27E790E	ALEMITE OILMIST SYSTEM#3943BC
A67LB005	7639=LEVBX FLOWTOSEW LD ASY G3		
	30	15K146	HEX CAP SCR 1/2-13 UNC2 X 1 SS
	40	15U310	LOKWASHER REGULAR 1/2 SS18-8
	50	15G234B	HEXNUT 1/2-13UNC2B BRASS
	60	24G032N	ROLLED WASH.50ID NYLTITE 50W
	70	15K225	05Z HXCPSCR 5/8-11X2+1/2
	1001	W6 70022	99053C WELD=DRAIN TO SEWER
	1002	06 50092	93083C 7639=FLOWNOT VLV. LEVBX GSKT
A67LB006	7639=LEVBX FLWTOSPLT LD AS G3		
	30	15N130	RDMACHSCR 10-24UNC2A X 1/2 SS1
	40	15G126	01Z HXLOCKNUT NYLON 10-24 UNC SS N

Parts List, cont.

Assembly	Item	Part Number	Description	Comments
	50	06 70008E	20003D BAFFEL LEVEL BOX EURO CBW	
	60	15K031	BUTSOKCAPSCR 1/4-20X1/2 SS18-8	
	70	15U181	LOCKWASHER MEDIUM 1/4 SS18-8	
	80	15G170	HEXNUT 1/4-20UNC2 SS18-8	
	100	15K146	HEX CAP SCR 1/2-13 UNC2 X 1 SS	
	110	15U310	LOKWASHER REGULAR 1/2 SS18-8	
	120	15G234B	HEXNUT 1/2-13UNC2B BRASS	
	130	24G032N	ROLLED WASH.50ID NYLTITE 50W	
	1001	W6 70026	99201D 7639=FLOW TO FLOSPLITTER	
	1002	06 50092	93083C 7639=FLOWNOT VLV. LEVBX GSKT	
A67WV001A	7639G3 STD H2O INLET JUNCTION			
	10	5P3AG4WT	3" SCH 40 GALV PIPE PE *	
	20	27E972A	VICT COUP 3"GALV#75 W/"E"GSKT	
	30	5P3AG4WT	3" SCH 40 GALV PIPE PE *	
	40	51J145D	ELB 90DEG 3"GROOVED VICT#10GLV	
	60	27A0300	CLP-RGDSTL PS#1100-3	
A67WV001B	7639G3 STD H2O JCT 2"			
	10	5P2AG4WN	2" SCH 40 GALV PIPE TE *	
	20	27E971C	VICT COUP 2"GALV #75W/E GASKET	
	30	5P2AG4WN	2" SCH 40 GALV PIPE TE *	
	40	51J120T	ELBPIPE 90DEG 2"VICT#10 GALV	
	50	51J120ST	ELB PIPE 90DEG 2"VICT #18 GALV	
A67WV070	1.25 REUSE MAKE-UP G3			
	10	51V351	MECH-T 3X1.25#920N FEM GALV	
	20	5N1E05AG42	NPT NIP 1.25X5 TBE GALSTL SK40	
	30	5SL1ENFA	NPT ELB 90DEG 1.25 GALMAL 150#	
	40	5N1E06AG42	NPT NIP 1.25X6 TBE GALSTL SK40	
	50	5SL1ENFA	NPT ELB 90DEG 1.25 GALMAL 150#	
	60	5N1E17AG42	NPT NIP 1.25X17 TBE GALSTL SK4	
	70	96D086WE	ANGBODVLV 1.25"NC H20 BURK BRZ	
	80	5N1E17AG42	NPT NIP 1.25X17 TBE GALSTL SK4	
	90	5SL1ENFA	NPT ELB 90DEG 1.25 GALMAL 150#	
	100	5N1E20AG42	NPT NIP 1.25X20 TBE GALSTL SK4	
	110	27E971	01Z VICTAULIC CLAMP 1+1/4#77GALV.	
	120	5SL1KNFA1E	NPTELB 90D 1.5X1.25GALMAL 150#	
	130	5N1KCLSG42	NPT NIP 1.5XCLS TBE GALSTLSK40	
A67WV071	REUSE INT & FUNNEL FLUSH G3			
	10	5SB1K1EDEO	NPTHXBUSH 1.5X1.25GALMAL 150	
	20	5N1E06AG42	NPT NIP 1.25X6 TBE GALSTL SK40	
	30	5S1ENFA0P1	NPTTEE 1.25X1.25X3/4 GALMA150#	
	40	5N1E03AG42	NPT NIP 1.25X3 TBE GALSTL SK40	
	50	96D086WE	ANGBODVLV 1.25"NC H20 BURK BRZ	
	55	96H018	ANGLE NEEDLE VLV 1/4"T X 1/8MP	
	60	5N1E06AG42	NPT NIP 1.25X6 TBE GALSTL SK40	
	70	5S1ENFA0P1	NPTTEE 1.25X1.25X3/4 GALMA150#	
	80	5SB1K1EDEO	NPTHXBUSH 1.5X1.25GALMAL 150	

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Parts List

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Assembly	Item	Part Number	Description
	90	5SL1KNFK	NPT ELB 45DEG 1.5 GALMAL 150#
	100	51LQ1KE03A	91163B *NIPPLE=1.5X3-TOE FLARED 30D
	101	51E098AS	KINGREDNIP1.5IDX1.25MP#STC2015
	110	5N0PCLSG42	NPT NIP 3/4XCLS TBE GALSTL S40
	120	5SL0PNFA	NPTELB 90DEG 3/4 GALMAL 150#
	130	51X019	UNIONSTRADT 3/4"#0107-12-12
	140	60E086C08A	82511N *WATERHOSE 3/4X8"LG+ENDS
	150	96D050A	01Z 3/4"BALLVALVE BRZ WATTS#B6100
A67WV072	REUSE=1.5 MAKEUP ALT H20 G3		
	10	5N1K03AG42	NPT NIP 1.5X3 TBE GALSTL SK40
	20	5SL1KNFA1E	NPTELB 90D 1.5X1.25GALMAL 150#
	30	96D086WE	ANGBODVLV 1.25"NC H20 BURK BRZ
	35	96D086WEA	ANGBODVLV 1.25"NO H2O BURK BRZ
	39	96H018	ANGLE NEEDLE VLV 1/4"T X 1/8MP
	40	5SL1ENFA	NPT ELB 90DEG 1.25 GALMAL 150#
	50	5N1E07AG42	NPT NIP 1.25X7 TBE GALSTL SK40
	60	5N1E04AG42	NPT NIP 1.25X4 TBE GALSTL SK40
	70	27E971	01ZVICTAULIC CLAMP 1+1/4#77GALV.
A67WV073	REUSE+FUNNEL FLUSH ALT H20 G3		
	10	51LQ1KE03A	91163B *NIPPLE=1.5X3-TOE FLARED 30D
	11	51E098AS	KINGREDNIP1.5IDX1.25MP#STC2015
	20	5SL1KNFK	NPT ELB 45DEG 1.5 GALMAL 150#
	30	5SB1K1EDEO	NPTHXBUSH 1.5X1.25GALMAL 150
	40	5N1ECLSG42	NPT NIP 1.25XCLS TBE GALSTLS40
	50	5S1KMGA0P	TEE 1.5X1.5X3/4 150# GALV
	60	96D086WE	ANGBODVLV 1.25"NC H20 BURK BRZ
	65	96D086WEA	ANGBODVLV 1.25"NO H2O BURK BRZ
	69	96H018	ANGLE NEEDLE VLV 1/4"T X 1/8MP
	70	5N1E03AG42	NPT NIP 1.25X3 TBE GALSTL SK40
	80	5S1ENFA	NPT TEE 1.25" GALMAL 150#
	90	5N1E04AG42	NPT NIP 1.25X4 TBE GALSTL SK40
	100	5N0PCLSG42	NPT NIP 3/4XCLS TBE GALSTL S40
	110	5SL0PNFA	NPTELB 90DEG 3/4 GALMAL 150#
	120	51X019	UNIONSTRADT 3/4"#0107-12-12
	130	60E086C08A	82511N *WATERHOSE 3/4X8"LG+ENDS
	140	96D050A	01Z 3/4"BALLVALVE BRZ WATTS#B6100
AAR63001	AIR INLET LEFT ASSEMBLY		
	10	51T025A	STRAINER 1/2" C.I. 80 MESH
	20	5N0K03KG42	NPT NIP 1/2X3.5 TBE GALSTL S40
	30	5S0KNFA	NPT TEE 1/2" GALMAL 150#
	40	5SP0KGFSS	NPT PLUG 1/2 SOSOLID GALSTL
	50	5N0K27AG42	NPT NIP 1/2X27 TBE GALSTL SK40

Parts List, cont.

Assembly	Item	Part Number	Description	Comments
AAR63003	2004000Z 1ST MOD AIR HEADER ASSEMBLY			
	10	5N0K45AG42	NIP 1/2X45 TBE GALSTL SK40	
	20	5S0KNFA	TEE 1/2" GALMAL 150#	
	30	5SU0KNF	UNION 1/2" GALMAL 150#	
AAR63004	2004000Z SINGLE MID MOD AIR HEADER ASSY			
	10	5N0K14AG42	NIP 1/2X14 TBE GALSTL	
	20	5N0K45AG42	NIP 1/2X45 TBE GALSTL	
	30	5S0KNFA	TEE 1/2" GALMAL 150#	
	40	5SU0KNF	UNION 1/2" GALMAL 150#	
ACA63001	9248 FIRST MOD CYL WELDMENT			
	10	X6 30001	20041D 9248 CYLINDER EXIT RING	
	11	Y6 30001A	20033# MACH 9248 ENTRY RING 1ST MOD	
	20	W6 30008	20023D 8648 CYLINDER FRONT WELD	
	30	X6 30005	20023C 8648 CYL SDSHT W/O RIBS FORM	
	40	X6 30006	20023C 8648 CYL SDSHT W/RIBS FORMED	
	50	X6 30007	20030# 9248 CYL SCOOP FORMED	
	60	06 30011	20021B 8648 CYLINDER FISH	
	70	W6 30012	20021C 8648 TRANSITION SLEEVE WELD	
	80	W6 30013	20021# 8648 CYL RING REINF WELD	
	90	06 30014	20021C 8648 TRANSITION RING	
	100	06 30015	20021C 8648 REINF CHANN EXIT SIDE	
	110	06 30016	20021C 8648 END SPLASH SEAL	
	120	06 30017	20021C 8648 END SPLASH SEAL INNER	
	130	06 30022	20030C 9248 CYL RIB 4.5	
	140	06 30023	20021C 8648 CYL MOON RIGHT	
	150	06 30024	20021C 8648 CYL MOON LEFT	
	160	06 20238	80471C SCOOP FILLET 1/MOD *	
	170	06 30058	20023C 8648 CYLINDER RIB EXTENSION	
	180	06 20182	83536B KEY=POSITIVE POSITION CYL	
	190	X6 30005A	20023C 8648 CYL SDSHT SHRT FORM	
ACA63001A	9248 MID MOD CYLINDER WLMT			
	10	X6 30001	20041D 9248 CYLINDER EXIT RING	
	11	X6 30002	20024C ENTY RING MID/LAST MOD	
	20	W6 30008	20023D 8648 CYLINDER FRONT WELD	
	30	X6 30005	20023C 8648 CYL SDSHT W/O RIBS FORM	
	40	X6 30006	20023C 8648 CYL SDSHT W/RIBS FORMED	
	50	X6 30007	20030# 9248 CYL SCOOP FORMED	
	60	06 30011	20021B 8648 CYLINDER FISH	
	70	W6 30012	20021C 8648 TRANSITION SLEEVE WELD	
	80	W6 30013	20021# 8648 CYL RING REINF WELD	
	90	06 30014	20021C 8648 TRANSITION RING	
	100	06 30015	20021C 8648 REINF CHANN EXIT SIDE	
	110	06 30016	20021C 8648 END SPLASH SEAL	
	120	06 30017	20021C 8648 END SPLASH SEAL INNER	
	130	06 30022	20030C 9248 CYL RIB 4.5	
	140	06 30023	20021C 8648 CYL MOON RIGHT	

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Assembly	Item	Part Number	Description
	150	06 30024	20021C 8648 CYL MOON LEFT
	160	06 20238	80471C SCOOP FILLET 1/MOD *
	170	06 30058	20023C 8648 CYLINDER RIB EXTENSION
	180	06 20182	83536B KEY=POSITIVE POSITION CYL
	190	X6 30005A	20023C 8648 CYL SDSHT SHRT FORM
ACA63001B	9248 LAST MOD CYLINDER WLMT		
	10	X6 30001B	20041# 9248 LAST MOD EXIT RING
	11	X6 30002	20024C ENTY RING MID/LAST MOD
	20	W6 30008	20023D 8648 CYLINDER FRONT WELD
	30	X6 30005	20023C 8648 CYL SDSHT W/O RIBS FORM
	40	X6 30006	20023C 8648 CYL SDSHT W/RIBS FORMED
	50	X6 30007	20030# 9248 CYL SCOOP FORMED
	60	06 30011	20021B 8648 CYLINDER FISH
	70	W6 30012	20021C 8648 TRANSITION SLEEVE WELD
	80	W6 30013	20021# 8648 CYL RING REINF WELD
	90	06 30014	20021C 8648 TRANSITION RING
	100	06 30015	20021C 8648 REINF CHANN EXIT SIDE
	130	06 30022	20030C 9248 CYL RIB 4.5
	140	06 30023	20021C 8648 CYL MOON RIGHT
	150	06 30024	20021C 8648 CYL MOON LEFT
	160	06 20238	80471C SCOOP FILLET 1/MOD *
	170	06 30058	20023C 8648 CYLINDER RIB EXTENSION
	180	06 20182	83536B KEY=POSITIVE POSITION CYL
	190	X6 30005A	20023C 8648 CYL SDSHT SHRT FORM
	200	W6 30021	20024# RING EXTENSION TO PRESS WLMT
AFT63001	2004000Z 9238 FOOT NO ANCHOR ASSY		
	20	W6 30056	20041C FOOT MOUNT BRKT SHORT WLMT
	30	17R125A26K	STUD 1.25-8UNX26.5 ALLTHRD. ZN
	40	15G261	HVHXNUT 1+1/4-8UNC2B ZINC GR2H
	50	15U440	FLATWASH(USS STD) 1+1/8" STLHD
	60	15U425	LOCKWASHER MEDIUM 1+1/4"ZINC P
AFT63002	9238 FOOT WITH ANCHOR ASSY		
	20	W6 30056A	20041# FOOT MNT BRKT W/ANCHOR WLMT
	30	17R125A26K	STUD 1.25-8UNX26.5 ALLTHRD. ZN
	40	15G261	HVHXNUT 1+1/4-8UNC2B ZINC GR2H
	50	15U440	FLATWASH(USS STD) 1+1/8" STLHD
	60	15U425	LOCKWASHER MEDIUM 1+1/4"ZINC P
AGC63001	2004000Z 9248 1ST MOD END COVER RT ASSY		
	10	06 30175	20041D 9248 COVER END COSM LOWER RT
	20	98P050	INSULATION BRD 4X8X1+1/16E
	30	27A118	POCKET PULL FLUSH HDLE #P2-52
	40	27A102M	VISE-ACT.DBBIT.LATCH#E3-12-27

Parts List, cont.

Assembly	Item	Part Number	Description	Comments
AGC63001A	2004000Z 9248 1ST MOD END COVER LF ASSY			
	10	06 30175A	20041# 9248 COVER END COSM LOWER LF	
	20	98P050	INSULATION BRD 4X8X1+1/16E	
	30	27A118	POCKET PULL FLUSH HDLE #P2-52	
	40	27A102M	VISE-ACT.DBBIT.LATCH#E3-12-27	
AGC63002	2004000Z 9248 COSMETIC SIDE COVER ASSY			
	10	06 30176	20042D 9248 COSMETIC SIDE COVER TOP	
	20	98P050	INSULATION BRD 4X8X1+1/16E=	
	30	27A118	POCKET PULL FLUSH HDLE #P2-52	
	40	27A102M	VISE-ACT.DBBIT.LATCH#E3-12-27	
	50	06 30181	20042C 9248 SIDE COVER STIFF BRKT	
	60	15J050AL	01Z POPRIVET 1/8DIA X.328LONG ALUM	
AGC63003	2004000Z COSM SIDE COVER 1ST MOD ASSY			
	10	06 30176A	20042C 9248 COSM SIDE COVER 1ST MOD	
	20	98P050	INSULATION BRD 4X8X1+1/16E=	
	30	27A118	POCKET PULL FLUSH HDLE #P2-52	
	40	27A102M	VISE-ACT.DBBIT.LATCH#E3-12-27	
	50	06 30181	20042C 9248 SIDE COVER STIFF BRKT	
	60	15J050AL	01Z POPRIVET 1/8DIA X.328LONG ALUM	
AGR63001	9248 GUIDER ROLLER RIGHT ASSY			
	10	15G245	HXFINJAMNUT 3/4-10UNC2 SS18-8	
	20	54AV25401	01Z BRG TIMK#L44643 ASSY 902A8 1BX	
	30	24S033A	01Z SEAL 1.25X2.125X.375 JM# 19653	
	40	06 40046	94273C ROLLER=GUIDE 3.78 WIDE TRACK	
	50	06 20020B	92517B SHAFT=7622 CBW GUIDE ROLLER	
	60	06 20068A	92517B COLLAR=7622 CBW WHEEL SUPT	
	70	W6 30119	20040C GUIDE RLLR SPPT BRKT RT WLMT	
	80	06 20070	80433B LOCKING WASHER ROLLER SHAFT	
	90	53A031B	BODY-EL90MALE.25X1/8 #269C-42B	
	100	53A059A	NUT 1/4"BR.HOLYOKE AND #61A-4	
	110	53A500	SLEEVE DELRIN 1/4"OD#60PT-4	
	120	53A501	TUBE INSERT .163"OD #63PT-4-40	
	130	60C120	ORING 7/8IDX1/16CS BUNA70 #020	
	140	20H011G	ALVANIA LF-71124 EP1-PAIL	
	170	15K211	HXCAPSCR 5/8-11UNC2AX1 GR5 ZIN	
	180	15U315	LOKWASHER MEDIUM 5/8 ZINCPL	
	190	15G238	HXNUT 5/8-11UNC2B SAE ZINC GR2	
	200	15K225	05Z HXCPSCR 5/8-11X2+1/2	
	210	15U340	LOCKWASH MEDIUM 3/4 ZINCPL	
AGR63001A	2004000Z 9248 GUIDER ROLLER LEFT ASSY			
	10	15G245	HXFINJAMNUT 3/4-10UNC2 SS18-8	
	20	54AV25401	01Z BRG TIMK#L44643 ASSY 902A8 1BX	
	30	24S033A	01Z SEAL 1.25X2.125X.375 JM# 19653	
	40	06 40046	94273C ROLLER=GUIDE 3.78 WIDE TRACK	
	50	06 20020B	92517B SHAFT=7622 CBW GUIDE ROLLER	

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

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112

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Assembly	Item	Part Number	Description
	60	06 20068A	92517B COLLAR=7622 CBW WHEEL SUPT
	70	W6 30119A	20040# GUIDE RLLR SPPT BRKT LF WLMT
	80	06 20070	80433B LOCKING WASHER ROLLER SHAFT
	90	53A031B	BODY-EL90MALE.25X1/8 #269C-42B
	100	53A059A	NUT 1/4"BR.HOLYOKE AND #61A-4
	110	53A500	SLEEVE DELRIN 1/4"OD#60PT-4
	120	53A501	TUBE INSERT .163"OD #63PT-4-40
	130	60C120	ORING 7/8IDX1/16CS BUNA70 #020
	140	20H011G	ALVANIA LF-71124 EP1-PAIL
	170	15K211	HXCAPSCR 5/8-11UNC2AX1 GR5 ZIN
	180	15U315	LOKWASHER MEDIUM 5/8 ZINCPL
	190	15G238	HXNUT 5/8-11UNC2B SAE ZINC GR2
	200	15K225	05Z HXCPSCR 5/8-11X2+1/2
	210	15U340	LOCKWASH MEDIUM 3/4 ZINCPL
ALB63001	2004000Z 9248 LEVELBOX FLO NEXT MOD ASY		
	10	06 50092	93083C 7639=FLOWNOT VLV. LEVBX GSKT
	20	W6 30124	20040C 9248 FLO NEXT MOD BOX WLMT
	30	15G234B	HEXNUT 1/2-13UNC2B BRASS
	40	15U310	LOKWASHER REGULAR 1/2 SS18-8
	50	24G032N	ROLLED WASH.50ID NYLTITE 50W
ALB63002	2004000Z ASSY=9248 FLOWNOT @ LOAD		
	10	W6 50039D	20040# 9248 FLOWNOT AT BREAK WELD
	20	A66AC001	99000Z 7639 FLONOT AIRCYL UNIT/UNIT
	30	02 18660A	93362B DUMP VALVE AIR CYL GASKET
ALB63003	2004000Z FLOW TO LOAD AT UNIT CONNECT		
	10	06 50092	93083C 7639=FLOWNOT VLV. LEVBX GSKT
	20	W6 30131	20040C 9248 FLO NEXT MOD WLMT OFFSET
	30	15G234B	HEXNUT 1/2-13UNC2B BRASS
	40	15U310	LOKWASHER REGULAR 1/2 SS18-8
	50	24G032N	ROLLED WASH.50ID NYLTITE 50W
ALB63004	2004000Z 9248 FLOW TO SPLITTER LD RT		
	10	06 30130	20040D BAFFEL LEVEL BOX 9248 CBW
	20	15K031	BUTSOKCAPSCR 1/4-20X1/2 SS18-8
	30	15U181	LOCKWASHER MEDIUM 1/4 SS18-8
	40	15G170	HEXNUT 1/4-20UNC2 SS18-8
	50	15U310	LOKWASHER REGULAR 1/2 SS18-8
	60	15G234B	HEXNUT 1/2-13UNC2B BRASS
	70	24G032N	ROLLED WASH.50ID NYLTITE 50W
	80	W6 30140	20042C 9248 FLO TO SPLITTER BOX WLMT
	90	06 50092	93083C 7639=FLOWNOT VLV. LEVBX GSKT
ARF62001F	S/S REUSE TANK W/ SLANT BOT		

Parts List, cont.

Assembly	Item	Part Number	Description	Comments
	10	15N087	RDMACSCR 8-32UNC2X3/8 SS18-8	
	20	15U120B	LOCKWASHER MEDIUM #8 SS18-8	
	30	15P175	04Z TRDCUT-F HXHD 1/4-20UNC2AX1/2	
	40	15K039	HXCAPSCR 1/4-20UNC2AX3/4 GR5 Z	
	50	15G165	HXNUT 1/4-20UNC2BSAE ZC GR2	
	60	15U180	LOCKWASHER MEDIUM 1/4 ZINCPL	
	70	15K042L	HXCAPSCR 1/4-20X1+1/4 SS	
	80	15U181	LOCKWASHER MEDIUM 1/4 SS18-8	
	90	15G170	HEXNUT 1/4-20UNC2 SS18-8	
	100	15K112	HXCAPSCR 3/8-16X1+1/2 SS18-8	
	110	15U245	01Z FLTWASH 3/8 STD COMM 18-8 SS	
	120	15U260	LOCKWASHER MEDIUM 3/8 SS18-8	
	130	15G206	HEXNUT 3/8-16 UNC2 SS 18-8	
	140	24G030N	ROLLED WASH.379ID NYLTITE 37W	
	150	15U240	FLATWASHER(USS STD) 3/8" ZNC P	
	160	15U255	LOCKWASHER MEDIUM 3/8 ZINCPL	
	170	15G205	HXNUT 3/8-16UNC2B ZINC GR2	
	180	15K088	HEXCAPSCR 3/8-16NCX7/8 GR 5 ZI	
	190	15P175	04Z TRDCUT-F HXHD 1/4-20UNC2AX1/2	
	200	27A010	DRWPULL W/O SCRS #P62000-CHR-A	
	210	5N1KCLSG42	NPT NIP 1.5XCLS TBE GALSTLSK40	
	220	5SL1KNFA	NPT ELBOW 90DEG 1.5" GALMAL 15	
	230	51LQ1KE03A	91163B *NIPPLE=1.5X3-TOE FLARED 30D	
	231	51E098AS	KINGREDNIP1.5IDX1.25MP#STC2015	
	250	51P055	NPTPLUG 1.5 SQCORED GALCI 125#	
	260	SA 02 011B	90013# *FLOAT ASSY L=66" 42DA+52DYA	
	270	02 15642C	78032B CLAMP=4"FLOAT CHAMBER	
	280	ELL000MK2	83436S *WATER LEV SW ASSY: 1 UP+ 1LO	
	290	02 15097C	88036B BRACKET LEVCONT PER PRINT	
	300	51AB3AN3AM	ADAPTER MALE 3" SXM PVC SCH40	
	310	08 01121	80071B COVER:FLOAT CHAMBER LIQSUP	
	320	08 01068	93276B NUT=FLOAT CHAMB ADAPTER	
	330	06 20420	84497B TUBE = REUSE TANK	
	340	02 10354A	89351B FLANGE-DRAWN 3"NPT BOLT ON	
	350	06 20452C	91453B GASKET 3 DRAWN W.W.LINT TANK	
	360	5P3AP4EN	3" SCH 40 PVC PIPE BE *	
	370	5KL3AP4A	SOK ELBOW 90DEG 3" PVC SCH40	
	380	5P3AP4EN	3" SCH 40 PVC PIPE BE *	
	390	W6 20727	20032E *S/S REUSE TANK W/ SLANT WELD	
	400	06 20536A	94247D REUSE TANK STAND RT MTR-MT	
	410	06 20558	94161D S/S REUSE TANK REMOVE-TOP	
	420	06 20553A	20030B S/S REUSE TK W/SL LEG LEFT	
	430	06 20553B	20030# S/S REUSE TK W/SL LEG RT	
	440	06 20553	20030B S/S REUSE TK W/SL LEG LONG	
	450	06 20542	93243D REUSE TNK ELEC BOX BRKT COVR	
	460	06 20538	92173D +CONTROL BOX MOUNTING BRKT	
	470	51LB3AN36A	NIPPLE PIPE 3"X36" NO THD PVC	
ASE63001	2002000N 9248 CYLSHLL END MOD 1 ASSY			
	10	ACA63001	20030E 9248 FIRST MOD CYL WELDMENT	

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Assembly	Item	Part Number	Description
	30	W6 30025	20041E 9248 SHELL AND DRAIN WELDMENT
	40	W6 30031	20040# WLMT=SHELL FRT ENTRY W/RLLER
	50	W6 30032	20040D WLMT=SHELL FRONT EXIT
	60	06 30037	20023C GASKET SEGMENT 8648 CBW
ASE63002	2002000Z 9248 CYLSHLL END MID MOD ASSY		
	10	ACA63001A	20030# 9248 MID MOD CYLINDER WLMT
	30	W6 30025	20041E 9248 SHELL AND DRAIN WELDMENT
	40	W6 30031A	20040# WLT=SHLL FRT ENTRY W/0 RLLER
	50	W6 30032	20040D WLMT=SHELL FRONT EXIT
	60	06 30037	20023C GASKET SEGMENT 8648 CBW
ASE63003	9248 CYLSHLL END LAST MOD ASSY		
	10	ACA63001B	20020Z 9248 LAST MOD CYLINDER WLMT
	30	W6 30025	20041E 9248 SHELL AND DRAIN WELDMENT
	40	W6 30031A	20040# WLT=SHLL FRT ENTRY W/0 RLLER
	50	W6 30032	20040D WLMT=SHELL FRONT EXIT
	60	06 30037	20023C GASKET SEGMENT 8648 CBW
ASS60007B	*ASSY=STM MIXER 1" ORF-22 LON		
	10	X6 40198A	20041B 9248 STM SPARGER INLET TUBE
	20	X7 20959R	92612B JET NOZZLE CLR=2.12OD X .75L
	30	X7 20959S	95496# JET NOZZLE TIP=1.00 ORIFICE
	40	X3 64521B	92712C STEAM SPARGER TUBE 11"
	60	06 20298H	20041# FLANGE=4+7/8" OD X 1+11/16" ID
	70	X7 20959N	92612B JET NOZZLE COLLAR-.75" LONG
AVD48701	92441D	4"DUMP BONNET&AIRCYL DBL-ACT	
	10	02 02068	94266A AIRCYL-STAINLESS=DUMPVALVE
	20	02 02085	94092B UP WASHER=2"OD=PISTON CUP
	30	02 02101S	88531B CYLINDER HEAD TAP.HOLE (SS)
	40	02 02105B	92253B 2.38"ACYL BRASS PISCUP WASHR
	50	02 16021H	92051# BUMPER=DMPVAL BON'T RED SILC
	60	02 02185	79237A WASHER=PISTON CUP COMP LIMIT
	70	02 02194	93217B PISTONCUP=DUMPVALVE 2+3/8"
	80	02 10585	91142B TIE BOLT=5/16-18X7.875LG SS
	90	X6 20708A	89527D DOUBLE ACTING VALVE BONNET
	100	02 14447	92037B BONNET=4"S/S DUMP VALVE
	110	02 14446	87503B DISC-4"S/S DUMP VALVE
	120	02 16021I	96462B DUMPVAL STEM-4"+8"316SS
	130	02 18932B	93362# GASKET=DUMPVAL 1/8"RED SILIC
	140	03 01313S	85506B +STOP=AIRCYL W/2+11/16STR.SS
	150	15G168	SQNUT 1/4-20UNC2 SS18-8
	160	15G220	02Z NUTLOK THINHX 3/8-24 SS/NYL
	170	15G219A	LOKNUT 3/8-24 NF2 18-8 SS
	180	15K041S	HEXCAPSCR 1/4-20UNC2AX1 SS18-8

Parts List, cont.

Assembly	Item	Part Number	Description	Comments
	190	15U181	LOCKWASHER MEDIUM 1/4 SS18-8	
	200	15U205	LOCKWASHER MEDIUM 5/16" 18-8SS	
	210	24G020N	ROLLED WASH.252ID NYLTITE 25W	
	220	60C106V	ORING 5/16IDX1/16CSVITON 11011	
	230	60C132V	ORING 2"ID3/16CS VITON75 #329	
	240	15U245	01Z FLTWASH 3/8 STD COMM 18-8 SS	
	250	02 16021E	94323B WASHER 3/8IDX1.250D DUMPVAL	
	260	60C108V	ORING 1/2IDX3/16CS VITON #310	
	270	53A031B	BODY-EL90MALE.25X1/8 #269C-42B	
	280	02 11740D	92051# SEAT=4"S/S VENT=RED SILICONE	
	290	02 14446B	94186B DISC=4"S/S DV=VENT	
	300	02 16021D	92632B DUMP VALVE BUMPER RETAINER	
ELL000MK2	83436S	*WATER LEV SW ASSY: 1 UP+ 1LO		
	10	ELL0000002	83436C UNIV.DWG=WATER LEV.SW ASSY<>	
	20	09R014A	05Z MINI-SW SPDT STAKON #V15G1C26K	
	30	09R014A	05Z MINI-SW SPDT STAKON #V15G1C26K	
	40	02 02150M	92806B SW MOUNTPLATE=LEVCONT ZINCPL	
	50	01 10227	82077B LABEL=WATER LEVEL SWITCH ASMB	
	60	02 02152	76571A BUSHING=FLOAT LEVER	
	70	02 02164	87226A INSULATION=V3-1 MICROSWITCH	
	80	02 02190	92131B FLOATLEVER=LEVEL SW	
	90	02 02553	92131C BASE=LEVEL CONTROL	
	100	02 02554	90431A COVER=LEVEL CONTROL-PLTD	
	110	15N019	RDMACSCR 4-40UNC2AX5/8 ZINC GR	
	120	15U021	LOKWASH EXTOOTH #4 (US STD) ZI	
	130	15N055	RDMACHSCR 6-32UNC2AX5/8 ZINC G	
	140	15G070	HXMACHSCRNUT 6-32UNC2B ZINC GR	
	150	15U060	01Z FLAT WASHER#6 ANSI TYPEB BRASS	
	160	15U100	LOKWASHER MEDIUM #6 ZINCPL	
	170	15P105	05Z TRDCUT-F PANHD 8-32X5/8 NIKSTL	
	180	15P100	20020A #8 X 3/8 PHILPANHD TYPE B SMS	
G63SR001	2002175N 9248 SPPT ROLLER INST MOD1			
	10	A63SR001	20020Z 8648 SPPT RLLR ASSY RT	
	20	A63SR002	20020Z 8648 SPPT RLLR ASSY LF	
	40	60E004TE	04Z 1/4"OD X.170"ID NYL(BLK)TUBING	
	50	53A059A	NUT 1/4"BR.HOLYOKE AND #61A-4	
	60	53A500	SLEEVE DELRIN 1/4"OD#60PT-4	
	70	53A501	TUBE INSERT .163"OD #63PT-4-40	
G63SR002	2002413N 9248 SPPT ROLLER INST MID MOD			
	10	A63SR001	20020Z 8648 SPPT RLLR ASSY RT	
	20	A63SR002	20020Z 8648 SPPT RLLR ASSY LF	
	40	60E004TE	04Z 1/4"OD X.170"ID NYL(BLK)TUBING	
	50	53A059A	NUT 1/4"BR.HOLYOKE AND #61A-4	
	60	53A500	SLEEVE DELRIN 1/4"OD#60PT-4	
	70	53A501	TUBE INSERT .163"OD #63PT-4-40	
G63WC001	2004114N WATER CATCHER STRAT OUT INST			

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Assembly	Item	Part Number	Description
	10	06 20629D	90246D ENTRY&EXIT H20 COLLECT-TARG
	20	06 20232C	20041B SCUPPER BRKT RIGHT 9248
	30	06 20232D	20041# SCUPPER BRKT LEFT 9248
	40	15K033	BUTSOKCAPSCR 1/4-20X5/8 SS18-8
	50	15G170	HEXNUT 1/4-20UNC2 SS18-8
	60	15U181	LOCKWASHER MEDIUM 1/4 SS18-8
	70	15U188	01Z FLTWASH 1/4 STD COMM SS18-8
	80	60E016B	TYGON TUBING 1.75"ID X 2.25"OD
	90	27A065S	HOSECLAMP 1.56"-2.5"SSSCR#32
G63WC002	2004000Z	WATER CATCHER ANGLE OUT INST	
	10	06 20629B	87431D EXIT SIDE-WATER COLL NO-TARG
	20	06 20232C	20041B SCUPPER BRKT RIGHT 9248
	30	06 20232D	20041# SCUPPER BRKT LEFT 9248
	40	15K033	BUTSOKCAPSCR 1/4-20X5/8 SS18-8
	50	15G170	HEXNUT 1/4-20UNC2 SS18-8
	60	15U181	LOCKWASHER MEDIUM 1/4 SS18-8
	70	15U188	01Z FLTWASH 1/4 STD COMM SS18-8
	80	60E016B	TYGON TUBING 1.75"ID X 2.25"OD
	90	27A065S	HOSECLAMP 1.56"-2.5"SSSCR#32
G63WC002A	2004000Z	WATER CATCHER ANGLE OUT RT INS	
	10	06 20629C	87431D INLET WATER COLLECT NO-TARG
	20	06 20232C	20041B SCUPPER BRKT RIGHT 9248
	30	06 20232D	20041# SCUPPER BRKT LEFT 9248
	40	15K033	BUTSOKCAPSCR 1/4-20X5/8 SS18-8
	50	15G170	HEXNUT 1/4-20UNC2 SS18-8
	60	15U181	LOCKWASHER MEDIUM 1/4 SS18-8
	70	15U188	01Z FLTWASH 1/4 STD COMM SS18-8
	80	60E016B	TYGON TUBING 1.75"ID X 2.25"OD
	90	27A065S	HOSECLAMP 1.56"-2.5"SSSCR#32
G63WC003	9248	LOAD CHUTE H20 CATCH INST	
	10	W6 30145	20041D LOAD CHUTE H20 CATCHER WLMT
	20	60E014R	03Z TUBING NYLOBRAID 1.25X1.75
	30	27A060	HOSECLAMP1+5/16-2.25CADSC#HS28
	40	60C010	RUBGROM-1-1/2" #2875
G64DV001A	N/C	4+1/2X8 DUMP VALVE ASSY	
	10	A64AC001A	91183U N/C DUMP VAL AIR CYL 4+1/2X8
	20	W6 40055	88417D *DUMP VALVE BODY WLDT 4+1/2X8
	30	06 40069E	91441B 4-1/2X8 DYE DUMPVALVE GASKET
	40	15K096	HEXCAPSCR 3/8-16UNC2X1SS18-8
	50	15U260	LOCKWASHER MEDIUM 3/8 SS18-8
	60	15G206	HEXNUT 3/8-16 UNC2 SS 18-8
	70	W6 40076	89392C *STRAIGHT DUMP V.ADAPT WLMT

Parts List, cont.

Assembly	Item	Part Number	Description	Comments
	80	06 40069F	91441C DYE DUMPVALVE GASKET=ACTUATR	
	90	15K086D	HXCAPSCR 3/8-16 UNC2A X 7/8" 1	
G64DV007	2003312N	INST=DRAIN/STOP F/N TO SEWER		
	10	A64DV007	20033N ASSY=DRAIN/STOP F/N TO SEWER	
	20	60E312A55	HOSE=5"ID X 5.5"LG GATES 75W;4	
	30	27A086	HOSECLAMP 3+1/8-6"CADSCR#HS-88	
	40	53A043S	TEE=TUBEXMPXTUBE 1/4"#B71A-4B	
	50	53A043R	TEE=1/4TX1/8MPX1/4T#B71A-4A	
	60	53A059A	NUT 1/4"BR.HOLYOKE AND #61A-4	
	70	53A500	SLEEVE DELRIN 1/4"OD#60PT-4	
	80	53A501	TUBE INSERT .163"OD #63PT-4-40	
G67CL001	99000Z	GEN ASSY OILER RESV G3		
	10	A67CL001	99000Z ASSY OILERRESV G3	
	20	27A0625NUT	CLAMPNUT 1/4-20 W/SHORT SPRING	
	30	12H050	20034A HANDYBOX 4X2+1/8X2+1/8	
	40	12H095	HANDY BOX COVER 4+2+1/8	
	50	12K025	3/4"X1/2" BUSH COND. REDUCER	
	60	20H000A	MILNOR CHAIN LUBRICANT	
G67LS001	99000Z	ADD LEVEL SW ASSY		
	10	ELL000MK2	83436S *WATER LEV SW ASSY: 1 UP+ 1LO	
	20	12M036L	1/2" 90-DEG SHORT ELLS	
	30	12M043A	FLX STRAIN PIGTAIL .197-.348	
	40	09V290A	CABLE #18/4 SJTO 7/16"OD 250'	
	50	W2 14432X	99226C WELD=FLOAT TUBE 20"SS	
	60	02 15642A	91182C CLAMP-3"FLOAT CHAMBERED	
	70	15K039	HXCAPSCR 1/4-20UNC2AX3/4 GR5 Z	
	80	15U180	LOCKWASHER MEDIUM 1/4 ZINCPL	
	90	15G165	HXNUT 1/4-20UNC2BSAE ZC GR2	
	100	02 15097C	88036B BRACKET LEVCONT PER PRINT	
	110	15P175	04Z TRDCUT-F HXHD 1/4-20UNC2AX1/2	
	120	02 14170B	99223B PIPE CLAMP BRACKET	CBW
	130	24G020N	ROLLED WASH.252ID NYLTITE 25W	
	140	15K032	BUTSOKCAPSCR 1/4-20X3/8 SS18-8	
	150	15G170	HEXNUT 1/4-20UNC2 SS18-8	
	160	15U181	LOCKWASHER MEDIUM 1/4 SS18-8	
	170	5SP0KBESS	NPT PLUG 1/2 SQSOLID BRASS	
	190	5N0P02GS41	NPT NIP 3/4X2.375TOE 304SS SK4	
	200	5SL0PSFK	NPTELB 45DEG 3/4 304SS 150#	
	210	5N0PCLSS42	NPT NIP 3/4XCLS TBE 304SS SK40	
	220	6.00E+14	04Z TYGON TUBING 1"IDX1.25"OD	
	230	27A090S	HOSECLAMP 13/16-1.5"SS#64016B	
	240	SA 02 011	90013C *FLOAT ASSY L=25"-STD LEVEL	
GAR63003	2004185N	1ST MOD AIR HEADER INSTALL		
	10	AAR63003	20040Z 1ST MOD AIR HEADER ASSEMBLY	
GAR63004	2004185N	SINGLE MID MOD AIR HEADER INST		

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Assembly	Item	Part Number	Description
	10	AAR63004	20040Z SINGLE MID MOD AIR HEADER ASSY
GDB63001	2002392N 9248 DRIVE INSTALL		
	10	54S027	20031A RED 10HP 24.59:1 3325CF-CBW18
	20	X6 30004	20020# 8648 SPROCKET MACH 120A117
	30	54N120E17H	SPRKT 120E17H QD HARDENEDTEETH
	40	56Q2KE	2+1/2" BUSH VPUL QD TYPE E
	50	54G120HKC	CONNLINK CL120HKC
	60	{15E241}	91000Z SQMACHKEY 5/8X2+1/2
	70	54G120HR	ROLLCHAIN RC120HKR 148 PITCH
	80	27E5511A	QD-FLEX.COUP.=5018SH 1+3/8MAX.
	90	27E5511B	FLEX.COUP.=5018 1+1/4"BORE
	100	27E5511C	FLEX.COUP.-CHAIN=5018CHN
	110	{15E197}	1/4X1/4X1SQMACHKEY N0 TAPR/HD
	120	56Q1CSH	1+1/8" BUSH VPUL QD TYPE SH
GDB63002	2002442N 9248 DRIVE CONNECTION INSTALL		
	10	X6 30093	20033# 9248 DRIVE CNNCT SHAFT MACH
	20	06 20092D	82134B WASHER DOUBLER ADJ. COUPLING
	30	54J227	01Z FLEXCPLG REX#E10 (EA=2 HALVES)
	40	54J227A	85374B HUB,FLEX COUPLING TUN +TILTS
	50	54J227B	84172B HUB ADJ.COUPLING CBW
	60	56Q1ESDS	1+1/4" BUSH VPUL QD TYPE SDS
	70	56Q1CSDS	1+1/8" BUSH VPUL QD TYPE SDS
	80	{15E210}	SQMACHKEY 1/4X2 NOTAPER-NOHEAD
	90	15G206	HEXNUT 3/8-16 UNC2 SS 18-8
	100	15K100	HEXCAPSCR 3/8-16X1+1/4 SS18-8
	110	15U260	LOCKWASHER MEDIUM 3/8 SS18-8
GGC63001	2004000Z 9248 FIRST MOD COSMETIC INSTALL		
	10	AGC63001	20040Z 9248 1ST MOD END COVER RT ASSY
	20	AGC63001A	20040Z 9248 1ST MOD END COVER LF ASSY
	30	AGC63003	20040Z COSM SIDE COVER 1ST MOD ASSY
	40	AGC63002	20040Z 9248 COSMETIC SIDE COVER ASSY
	50	06 30154	20041C 9248 COSM VERT SIDE SPPT RT
	60	06 30154A	20041# 9248 COSM VERT SIDE SPPT LF
	70	06 30160	20041C 9248 END COSMETIC WRAPPER
	80	06 30161	20041C 9248 END COSMETIC UPPER
	90	06 30162	20041C 9248 END COSMETIC UPPER RT
	100	06 30162A	20041# 9248 END COSMETIC UPPER LF
.	110	06 30164	20041C 9248 END COSM LOWER SPPT
	120	06 30166	20041C 9248 END COSM MID VERT SPPT
	130	06 30167	20041C 9248 END COSMETIC HORZ SPPT
	140	06 30165	20041C 9248 END COSM VERT SIDE SPPT
	150	06 30168A	20041C 9248 FIRST MOD UPPER RAIL RT
	160	06 30168B	20041# 9248 FIST MOD UPPER RAIL LF

Parts List, cont.

Assembly	Item	Part Number	Description	Comments
	170	06 70150M	20034C LATCH STRICKER G3 CBW	
	180	06 30152	20041C 9248 COSMETIC BOTTOM RAIL	
	190	06 30152B	20041# COSM 1ST MOD BTTM RAIL CONNECT	
GGC63002	2004000Z 9248 MID MOD COSMETIC INSTAL			
	10	AGC63002	20040Z 9248 COSMETIC SIDE COVER ASSY	
	20	06 30155	20041C MID MOD LOWER CONNECT WRAP	
	30	06 30156	20041B MID MOD CONNECT WRAPPER BRKT	
	40	06 30157	20041C MID MOD CONNECT WRAP TOP	
	50	06 30168	20041C 9248 MID MOD UPPER RAIL	
	60	06 30172	20041C 9248 COSM UPPER RAIL CONNECT	
	70	06 30152	20041C 9248 COSMETIC BOTTOM RAIL	
	80	06 30152A	20041# COSM MID MOD BTTM RAIL CONNECT	
GGC63003	3MOD/LAST COSMETIC INSTALL			
	10	AGC63004	20040Z 9248 LAST MOD END COVER RT AS	
	20	AGC63004A	20040Z 9248 LAST MOD END COVER LF AS	
	30	AGC63002	20040Z 9248 COSMETIC SIDE COVER ASSY	
	40	06 30154B	20041C COSM VERT SIDE SPPT EXIT LF	
	50	06 30154C	20041# COSM VERT SIDE SPPT EXIT RT	
	70	06 30146	20041C 9248 END COSMETIC EXIT UPPER	
	80	06 30147	20041C 9248 END COSM EXIT UPPER LF	
	90	06 30147A	20041# 9248 END COSM EXIT UPPER LF	
	100	06 30149	20041C 9248 END COSM EXIT LOWER SPPT	
	110	06 30165	20041C 9248 END COSM VERT SIDE SPPT	
	120	06 30166	20041C 9248 END COSM MID VERT SPPT	
	130	06 30167	20041C 9248 END COSMETIC HORZ SPPT	
	140	06 30168A	20041C 9248 FIRST MOD UPPER RAIL RT	
	150	06 30168B	20041# 9248 FIST MOD UPPER RAIL LF	
	160	06 70150M	20034C LATCH STRICKER G3 CBW	
	170	06 30152C	20042C COSM BTTM RAIL MID/LAST MOD	
	180	06 30155	20042C MID MOD LOWER CONNECT WRAP	
	190	06 30156	20041B MID MOD CONNECT WRAPPER BRKT	
	200	06 30157	20042C MID MOD CONNECT WRAP TOP	
	210	06 30168	20041C 9248 MID MOD UPPER RAIL	
	220	06 30172	20041C 9248 COSM UPPER RAIL CONNECT	
GGR63001	9248 GUIDE ROLLER RIGHT INST			
	10	AGR63001	20040Z 9248 GUIDER ROLLER RIGHT ASSY	
GGR63001A	R Z 66.73154 2004105N 9248 GUIDE ROLLER LEFT INSTALL			
	10	AGR63001A	2004000Z 9248 GUIDER ROLLER LEFT ASSY	
GLB63001	R Z 89.48238 2004052N 9248 LEVELBOX FLO NEXT MOD INS			
	10	ALB63001	20040Z 9248 LEVELBOX FLO NEXT MOD ASY	
	20	06 30130	20040D BAFFEL LEVEL BOX 9248 CBW	
	30	15G170	HEXNUT 1/4-20UNC2 SS18-8	
	40	15K031	BUTSOKCAPSCR 1/4-20X1/2 SS18-8	
	50	15U181	LOCKWASHER MEDIUM 1/4 SS18-8	

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Assembly	Item	Part Number	Description
	60	27A092	HOSECLAMP S.S.SCR 7+1/8-10"
	70	60E328A32A	01Z HOSE+8"IDX32"LONG TITAN ES115E
GLB63002	2004000Z INST=9248 FLOWNOT @ LOAD		
	10	ALB63002	20040Z ASSY=9248 FLOWNOT @ LOAD
	20	06 50092	93083C 7639=FLOWNOT VLV. LEVBX GSKT
	30	W6 30126	20040B 8" FLO TO NEXT MOD OFFSET PIPE
	40	24G032N	ROLLED WASH.50ID NYLTITE 50W
	50	15G234B	HEXNUT 1/2-13UNC2B BRASS
	70	60E328A32A	01Z HOSE+8"IDX32"LONG TITAN ES115E
	80	27A092	HOSECLAMP S.S.SCR 7+1/8-10"
	90	5SP1EDESC	NPT PLUG 1.25 SQCORED GALV CI
	100	60E004TE	04Z 1/4"OD X.170"ID NYL(BLK)TUBING
	110	53A059A	NUT 1/4"BR.HOLYOKE AND #61A-4
GLB63003	2004000N FLOW TO LOAD AT UNIT CONNECT		
	10	ALB63003	20040Z FLOW TO LOAD AT UNIT CONNECT
	20	06 30130	20040D BAFFEL LEVEL BOX 9248 CBW
	30	W6 30126	20040B 8" FLO TO NEXT MOD OFFSET PIPE
	40	15G170	HEXNUT 1/4-20UNC2 SS18-8
	50	15K031	BUTSOKCAPSCR 1/4-20X1/2 SS18-8
	60	15U181	LOCKWASHER MEDIUM 1/4 SS18-8
	70	27A092	HOSECLAMP S.S.SCR 7+1/8-10"
	80	60E328A32A	01Z HOSE+8"IDX32"LONG TITAN ES115E
GLB63004	2004083N 9248 FLOW TO SPLITTER LD RT		
	10	ALB63004	20040Z 9248 FLOW TO SPLITTER LD RT
GLC63001	2002392N 9248 LOAD CHUTE INSTALL		
	10	5SP1EDESC	NPT PLUG 1.25 SQCORED GALV CI
	20	15K055	SOKCAPSCR 5/16-18X3/4 SS18-8
	30	15U205	LOCKWASHER MEDIUM 5/16" 18-8SS
	40	15K162	HXCAPSCR 1/2-13UNC2AX1.5 GR5 P
	50	15G225	HEXNUT 1/2-13UNC2 SS18-8
	60	15K084S	HXCAPSCR 3/8-16NCX5/8 SS18-8
	70	15U245	FLTWASH 3/8 STD COMM 18-8 SS
	80	15U260	LOCKWASHER MEDIUM 3/8 SS18-8
	90	15P200	TRDCUT-F HXWASHD 3/8-16X3/4NIK
	100	15P010	PHILPAN TRDCUTSCRTYP10-24X1/2S
	120	15K086	HXCAPSCR 3/8-16NCX3/4 SS18-8
	130	15G221	HEXCASTLENUT 3/8-16UNC2 SS18-8
	140	15U250	SEALWASHER 3/8" S/S PARKER #60
	150	60E014R	TUBING NYLOBRAID 1.25X1.75
	160	27A060	HOSECLAMP1+5/16-2.25CADSC#HS28
	170	60C010	RUBGROM-1-1/2" #2875
	180	5N1ECLSG42	NPT NIP 1.25XCLS TBE GALSTLS40

Parts List, cont.

Assembly	Item	Part Number	Description	Comments
	190	5SL1KNFA1E	NPTELB 90D 1.5X1.25GALMAL 150#	
	200	W6 30071A	2004482E 9248 LOAD CHUTE WLMT	
	210	06 30088	LOAD CHUTE SEAL	
	220	06 30089	LOAD CHUTE SPPT TAP BAR	
	230	01 10034A	NAMEPLATE,LARGE "MILNOR" LOGO	
	240	06 20739	EXTRUSION GLASS PROXSW	
	250	06 20739A	GLASS=3.06 DIA PROXSW	
	260	03 BC6X66	BRKT: CBW PHOTOEYE-LOAD SCP	
	270	06 30079	LOAD CHUTE VERTICAL MOUNT	
	280	06 30081	LD CHUTE HORZ BRACE	
	290	06 30090	LD CHUTE TOP MOUNT BRKT LF	
	300	06 30090A	LD CHUTE TOP MNT BRKT RT	
	310	06 30064	LOAD CHUTE OUTRIGGER BRKT	
	320	W6 30112	9248 LD CHTE FLARE RING WLMT	
	330	06 30169	LOAD CHUTE ANGLE SPPT BRKT	
GLL63001	2004043N 9248 LEVEL BOX LID INSTALL			
	10	ALL63001	20040Z 9248 LEVEL BOX LID ASSY	
GPS63001	2002000Z 9248 CW/CCW PROX SWITCH INSTAL			
	10	15K173A	HXCAPSCR 1/2-13UNC2AX1.75 GR5	
	20	15U300	LOKWASHER REGULAR 1/2 ZINC PLT	
	30	15G230	HXNUT 1/2-13UNC2B SAE ZINC GR2	
	40	15K095	HXCPSCR 3/8-16UNC2AX1 GR5 ZINC	
	50	15U255	LOCKWASHER MEDIUM 3/8 ZINCPL	
	60	15G205	HXNUT 3/8-16UNC2B ZINC GR2	
	70	15U245	FLTWASH 3/8 STD COMM 18-8 SS	
	80	12H071	ENCL=6X6X4 HINGED COVER GALV	
	90	12M040	3/8" X 90-DEG SEALTITE CONN.	
	100	12P006	CONN. STRAIN RELIEF .3-.6	
	110	15K086	HXCAPSCR 3/8-16NCX3/4 SS18-8	
	120	15U245	FLTWASH 3/8 STD COMM 18-8 SS	
	130	15U260	LOCKWASHER MEDIUM 3/8 SS18-8	
	140	15G206	HEXNUT 3/8-16 UNC2 SS 18-8	
	150	15P010	PHILPAN TRDCUTSCRTYP10-24X1/2S	
	160	02 02558	CONNECTPLATE=SOLVALVE	
	170	12C0375FN	3/8" FLX NON-METAL CONDUIT	
	180	09BC06GRDM	PLUG(FEMALE) 6X CONNECTOR	
	190	09BC06KRDM	RECEPT(MALE) 6X CONNECTOR	
	200	09BC04GRDM	PLUG(FEMALE) 4X CONNECTOR	
	210	09BC04NRDM	RECEPT(MALE) 4X CONNECTOR	
	220	09BC01DRDM	PLUG(FEMALE) 1X MOLEX 03-09-20	
	230	09BC01ERDM	RECEPT(MALE) 1X MOLEX 03-09-10	
	240	09BT22NDLN	TERM(MALE) .093 LOOSE PCS.	
	250	09BT23NDLN	.093D FEMALE, LOOSE, TINPL	
	260	01 10375	NPLTE:"WARNING" 2X2	
	270	06 30092	9248 PROX SWITCH TARGET	
	280	06 20644	PROX SW MTG RING-EXIT END	
	290	06 20645	PROX SWITCH LATERAL ADJUSTER	
	300	W6 30091	CW/CCW PROX SWTCH BRKT WLMT	

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

Assembly	Item	Part Number	Description
	310	09RPS30ADU	PRXSW.QK CONN.30M NO-DC UNSHLD
	320	09RPSDC003	CONN.STR FEMALE DC 3A 300V 3M
	330	09RPSDC003	CONN.STR FEMALE DC 3A 300V 3M
	340	W6 30091A	SAFETY/TDC PROX BRKT WLMT
GPS63002	9248 SAFTY/TDC PROX SWTCH INST		
	10	15K173A	HXCAPSCR 1/2-13UNC2AX1.75 GR5
	20	15U300	LOKWASHER REGULAR 1/2 ZINC PLT
	30	15G230	HXNUT 1/2-13UNC2B SAE ZINC GR2
	40	15K095	HXCPSCR 3/8-16UNC2AX1 GR5 ZINC
	50	15U255	LOCKWASHER MEDIUM 3/8 ZINCPL
	60	15G205	HXNUT 3/8-16UNC2B ZINC GR2
	70	15U245	01Z FLTWASH 3/8 STD COMM 18-8 SS
	80	12H071	92043C ENCL=6X6X4 HINGED COVER GALV
	90	12M040	3/8" X 90-DEG SEALTITE CONN.
	100	12P006	CONN. STRAIN RELIEF .3-.6
	110	15K086	HXCAPSCR 3/8-16NCX3/4 SS18-8
	120	15U245	01Z FLTWASH 3/8 STD COMM 18-8 SS
	130	15U260	LOCKWASHER MEDIUM 3/8 SS18-8
	140	15G206	HEXNUT 3/8-16 UNC2 SS 18-8
	150	15P010	12Z PHILPAN TRDCUTSCRTYP10-24X1/2S
	160	02 02558	76571A CONNECTPLATE=SOLVALVE
	170	12C0375FN	06Z 3/8" FLX NON-METAL CONDUIT
	180	09BC06GRDM	PLUG(FEMALE) 6X CONNECTOR
	190	09BC06KRDM	RECEPT(MALE) 6X CONNECTOR
	200	09BC04GRDM	PLUG(FEMALE) 4X CONNECTOR
	210	09BC04NRDM	RECEPT(MALE) 4X CONNECTOR
	220	09BC01DRDM	PLUG(FEMALE) 1X MOLEX 03-09-20
	230	09BC01ERDM	RECEPT(MALE) 1X MOLEX 03-09-10
	240	09BT22NDLN	02Z TERM(MALE) .093 LOOSE PCS.
	250	09BT23NDLN	04Z .093D FEMALE, LOOSE, TINPL
	260	01 10375	88441B NPLTE:"WARNING" 2X2
	270	06 30092	20024C 9248 PROX SWITCH TARGET
	280	06 20644	92662C PROX SW MTG RING-EXIT END
	290	06 20645	84327B PROX SWITCH LATERAL ADJUSTER
	300	W6 30091A	20024# SAFETY/TDC PROX BRKT WLMT
	310	09RPS30ADU	20014A PRXSW.QK CONN.30M NO-DC UNSHLD
	320	09RPSDC003	03Z CONN.STR FEMALE DC 3A 300V 3M
	330	09RPSDC003	03Z CONN.STR FEMALE DC 3A 300V 3M
	340	W6 30091	20024D CW/CCW PROX SWTCH BRKT WLMT
GSE63001	9248 CYLINDER SHELL ENDS INST		
	10	ASE63001	20020N 9248 CYLSHLL END MOD 1 ASSY
	20	06 30050	20041D 9248 SHELL SPPT BRKT
	50	06 30063	20032B 9248 SHELL SUPPORT BRKT
	60	06 30067	20033B 9248 SHELL HEIGHT ADJ BRKT

Parts List, cont.

Assembly	Item	Part Number	Description	Comments
	70	GLL63001	20040N 9248 LEVEL BOX LID INSTALL	
GSS63001	SPLIT -LSEAL INSTALL			
	10	X6 30038	20021# SEAL OPEN,CUT&DRILL-8648CBW	
	20	W6 20637	93322B *PLT=REINF-SPLT-SL-LG-RT-WLMT	
	30	W6 20638	93316B *PLT=REINF-SPLT-SL-LG-LF-WLMT	
	40	06 20416A	20031B BRKT YOKE CONN.SPLIT SEAL	
	50	15G164	01Z HX THIN LOCKNUT NYL1/4-20 SS	
	60	17A004A	CLEVISPIN 1/4"X3/4"DRILLED SS1	
	70	15G176	HEXNUT 1/4-28 UNF SS 18-8	
	80	17A004	ADJ YOKE END 1/4-28 XYLAN COA+	
	90	06 20416C	93101B ROD=SPRING TENSION SPLITSEAL	
	100	W6 20639	88171C *L-SEAL CVR IN-LIP EXIT WLMT	
	110	15N158	HEXCAPSCR 1/4-20NCX1/2SS18-8	
	120	15U188	01Z FLTWASH 1/4 STD COMM SS18-8	
	130	15G170	HEXNUT 1/4-20UNC2 SS18-8	
	140	06 20416D	82447B BUSHING=SPRING ALIGNMENT	
	150	06 20162B	20021B SPRING COMP.SPLIT SEAL TENS	
	160	15H019	STDCOTTERPIN 1/16X1/2 SS18-8	
	170	15U342	FLTWASH .255/.260IDX.750DX.125	
	180	27B17006HN	01Z SPACER.281IDX.613ODX.5L	
	190	15U181	LOCKWASHER MEDIUM 1/4 SS18-8	
GSV63001	STM INLET+MOD1 HEADER RIGHT			
	10	27A0200	CLP-RGDSTL PS#1100-2 10/BAG	
	20	W6 30100	20041D WELD STMMFLD 1ST MOD RIGHT	
	30	51KE3ANGAK	3 X 5 STEAM FLANGE GASKET	
GSV63002	9248 3 MID/LAST MOD STM HEADER PLT			
	10	27A0200	CLP-RGDSTL PS#1100-2 10/BAG	
	20	W6 30101A	20041# WELD STMMFLD 3 MID MODS	
	30	51KE3ANGAK	3 X 5 STEAM FLANGE GASKET	
GSV63003	9248 6" STEAM STRAIGHT TUBE			
	10	W6 30095	20041# WLMT=SPARGER TUBE STRAIGHT	
	20	15U310	LOKWASHER REGULAR 1/2 SS18-8	
	30	15G234B	HEXNUT 1/2-13UNC2B BRASS	
	40	24G032N	ROLLED WASH.50ID NYLTITE 50W	
	50	06 30096	20024B GASKET=STEAM SPARGER FLANGE	
	60	15G225	HEXNUT 1/2-13UNC2 SS18-8	
	70	15K153	07Z HXCAPSCR 1/2 -13 X 1 +1/4 SS	
GSV63004	9248 STEAM Y-BRANCH INSTALL			
	10	W6 30095A	20041C 8" Y-BRANCH SPARGER TUBE WLMT	
	20	06 30096	20024B GASKET=STEAM SPARGER FLANGE	
	30	15K153	07Z HXCAPSCR 1/2 -13 X 1 +1/4 SS	
	40	15G234B	HEXNUT 1/2-13UNC2B BRASS	
	50	15G225	HEXNUT 1/2-13UNC2 SS18-8	
	60	15U310	LOKWASHER REGULAR 1/2 SS18-8	
	70	24G032N	ROLLED WASH.50ID NYLTITE 50W	

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Assembly	Item	Part Number	Description
	80	06 20297B	91447B GASKET=DYE CBW STEAM FLANGE
	90	06 20298A	80522B PLATE FLANGE NO STEAM
	100	15K095A	HEXCAPSCR 3/8-16X1" BRASS
	110	24G030N	ROLLED WASH.379ID NYLTITE 37W
GSV63005	9248 3" STEAM INLET ASSY		
	20	W6 20740C	20040Z ADPT=Y-STRAINER 3"
	30	51T066	Y-STRAINER 3" NPT CAST IRON
	40	5SP1EDESC	NPT PLUG 1.25 SQCORED GALV CI
	50	51KE2ANGAK	93502B 2X6 STEAM FLANGE GASKET
	60	15K225	05Z HXCPSCR 5/8-11X2+1/2
	70	15U315	LOKWASHER MEDIUM 5/8 ZINCPL
	80	15G238	HXNUT 5/8-11UNC2B SAE ZINC GR2
GSV63006	9248 STEAM TRAP ASSY		
	10	51T60B00QH	1"STMTRAP-SARCO 1"#FT14-14
	20	W6 20740D	20040Z ADAPTER=STEAM TRAP WLMT
	30	5N1A02AF42	NPT NIPPLE 1X2 TBE BLKSTL S
	50	51R106E	RED ECC 3X1" BLK. CI 125#
	60	51KE3ANGAK	3 X 5 STEAM FLANGE GASKET
	70	15K225	05Z HXCPSCR 5/8-11X2+1/2
	80	15U315	LOKWASHER MEDIUM 5/8 ZINCPL
	90	15G238	HXNUT 5/8-11UNC2B SAE ZINC Gr2
GSV63008	9248 STEAM INLET		
	10	ASS60007B	20041C *ASSY=STM MIXER 1" ORF-22 LONG
	20	5SL0PSFA	NPTELB 90DEG 3/4 304SS 150#
	30	5N0PCLSS42	NPT NIP 3/4XCLS TBE 304SS SK40
	40	96D0011E	98437A 1.25"NPTBRZ N/C STEAMVALANGBD
	50	96TBC2AA00	00Z 1/4" N/C 2WAY AIR-OP VALVE
	60	06 40438	95492B BRK=STEAM AIRVAL=ASPIRATOR
	70	15N162A	TRUSMACSCR 1/4-20UNC2AX1/2 ZIN
	80	15G165	HXNUT 1/4-20UNC2BSAE ZC GR2
	90	15U180	LOCKWASHER MEDIUM 1/4 ZINCPL
	100	87Z00EX035	01Z TUBE=1/4"ODX.035WL 316LSS*20RM
	110	98P505A	INSUL.1/4"IDX3/8"WALLX721TUBE
	120	53A005B	BODYMALCON1/4X1/8COMP #B68A-4A
	130	53A031XB	BODY-EL90MALE.25X25 #269C-4-4B
	140	96DG030	CHECKVLV,1/4"WATTS-SERIES 600
	150	53A016A	96026C AIR RESTRICTER=STEAM CBW
	160	53A031B	BODY-EL90MALE.25X1/8 #269C-42B
	170	98P450	INSUL.STEAM/PEL#TA301/7/8"VBD
	180	53A043S	TEE=TUBEXMPXTUBE 1/4"#B71A-4B
	190	53A059A	NUT 1/4"BR.HOLYOKE AND #61A-4
	200	53A500	SLEEVE DELRIN 1/4"OD#60PT-4
	210	53A501	TUBE INSERT .163"OD #63PT-4-40

Parts List, cont.

Assembly	Item	Part Number	Description	Comments
	220	98P498	INSUL.STEAM 1+1/4 OD X3"T-VBD	
	230	52ZX00S005	TUBEFITMALCN1.25#20-FTX-B	
	240	52ZX00S009	20041B TBEFTMALCN1.25#20-FTX-B 1/8NPT	
	250	06 30137	20041C 9248 STEAM TUBE 90 DEGREES	
	260	06 30138	20041C 1 1/4 STEAM TUBE 180 DEGREES	
GWV63001	9248 WATER VALVE MNT RAIL INS			
	10	06 30060	20041C WATER VALVE MNT BRKT LF	
	20	06 30060A	20041# WATER VALVE MNT BRKT RT	
	30	27A0626CHL	CHANEL 13/16"HT #PS520EH10 GAL	
	40	27A0626CHL	CHANEL 13/16"HT #PS520EH10 GAL	
GWV63002	SINGLE PERISTALTIC BOX INSTAL			
	10	02 03276C	20033B PERISTALTIC BOX MOUNT BRKT	
	20	02 03589L	20040D MOLDED PERISTALTIC SOAPCHUTE	
	30	06 30185	20042B PERISTALTIC BOX HOSE MNT BRKT	
	40	12P11PSB	SNAPBUSH 1-3/4X1.375HEYCO#2300	
GWV63003	ONE ADD PERISTALTIC BOX INST			
	10	02 03276E	20042B TWO PERISTALTIC BOX MOUNT BRKT	
	20	02 03589L	20040D MOLDED PERISTALTIC SOAPCHUTE	
	30	12P11PSB	SNAPBUSH 1-3/4X1.375HEYCO#2300	
G67LB006	7639=LEVBX FOWTOSPLT LD IN G3			
	0010	A67LB006	99000Z 7639=LEVBX FLWTOSPLT LD AS G3	
SA 02 011	*FLOAT ASSY L=25"-STD LEVEL			
	10	20K040	TEN SET EPOXY&FILLER #660 E=1	
	20	17N050	10-24 SPEDNUT #C10733-1024-373	
	30	02 02146	20034A LEVEL CONTROL FLOAT ROD=25"L	
	40	X2 02239	92683# FLOAT=PLAST LVL CONT(SANDED)	
SA 02 011A	*FLOAT ASSY L=44"			
	1	HA 02 011A	99503A INSTRUCTIONS FOR SA 02 011A	
	10	20K040	TEN SET EPOXY&FILLER #660 E=1	
	20	17N050	10-24 SPEDNUT #C10733-1024-373	
	30	02 02146D	20034# LEVEL CONTROL FLOAT ROD=44"L	
	40	X2 02239	92683# FLOAT=PLAST LVL CONT(SANDED)	
SA 02 011B	*FLOAT ASSY L=66" 42DA+52DYA			
	10	20K040	TEN SET EPOXY&FILLER #660 E=1	
	20	17N050	10-24 SPEDNUT #C10733-1024-373	
	30	02 02146E	20034# LEVEL CONTROL FLOAT ROD=66"L	
	40	X2 02239	92683# FLOAT=PLAST LVL CONT(SANDED)	
W6 30038J	9248 LIFTING BRKT EXTENSION			
06 30087	REUSE BASE LIFTING BRKT			
06 30146	9248 END COSMETIC EXIT UPPER			
06 30147	9248 END COSM EXIT UPPER LF			
06 30147A	9248 END COSM EXIT UPPER LF			

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Assembly	Item	Part Number	Description
06 30148			COVER END COSM EXIT LOWER RT
06 30148A			COVER END COSM EXIT LOWER LF
06 30155			MID MOD LOWER CONNECT WRAP
06 30157			MID MOD CONNECT WRAP TOP
06 30160			9248 END COSMETIC WRAPPER
06 30161			9248 END COSMETIC UPPER
06 30162			9248 END COSMETIC UPPER RT
06 30162A			9248 END COSMETIC UPPER LF
27E932A96			1.5"PUMP W/2HP3P 230/460
30F201			FLOWMETER 2"FNPT 45GPM
30F250			FLOWMETER MULLER 2.5FNPT 90GPM
30F515			FLOW SENSOR SIGNET #P51530-PO
30F516			ADFOR 2.5" + 3" SADDLE SIGNET
30F519A			2" SADDLE FITTING #IR8S020
30F566			MAGMETER INSERT TRANS TYPE8045
30F567			MAGMETER FITTING 316SS 1 1/4”
5R3A1ECI			NPT SADDLE 3X1.25 CI 300# SB
60E255			HOSE 2" WATER CORRUGATED(V50)
96D0011E			1.25"NPTBRZ N/C STEAMVALANGBD
96D086MESS			MODULAT ANGBOD 1.25"N/C H2O SS
96D086WE			ANGBODVLV 1.25"NC H20 BURK BRZ
96D086WEXA			BALVAL 1.25"WATTS W/THROTTLE L

Parts List, cont.

Assembly	Item	Part Number	Description	Comments

Gear Reducer with Chain Coupling

76028 & 76039 G3 **, 9248 G4** Tunnels

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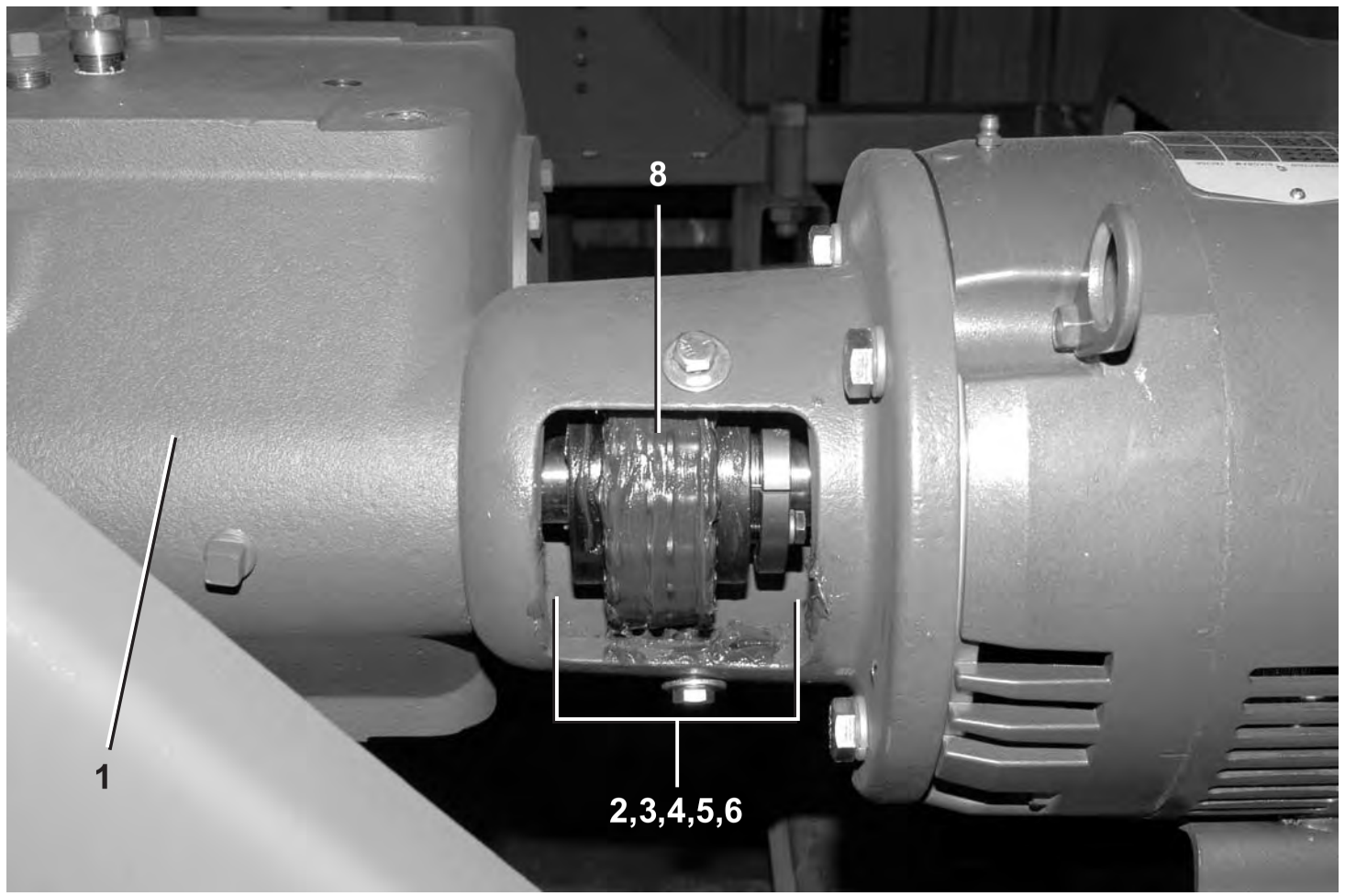

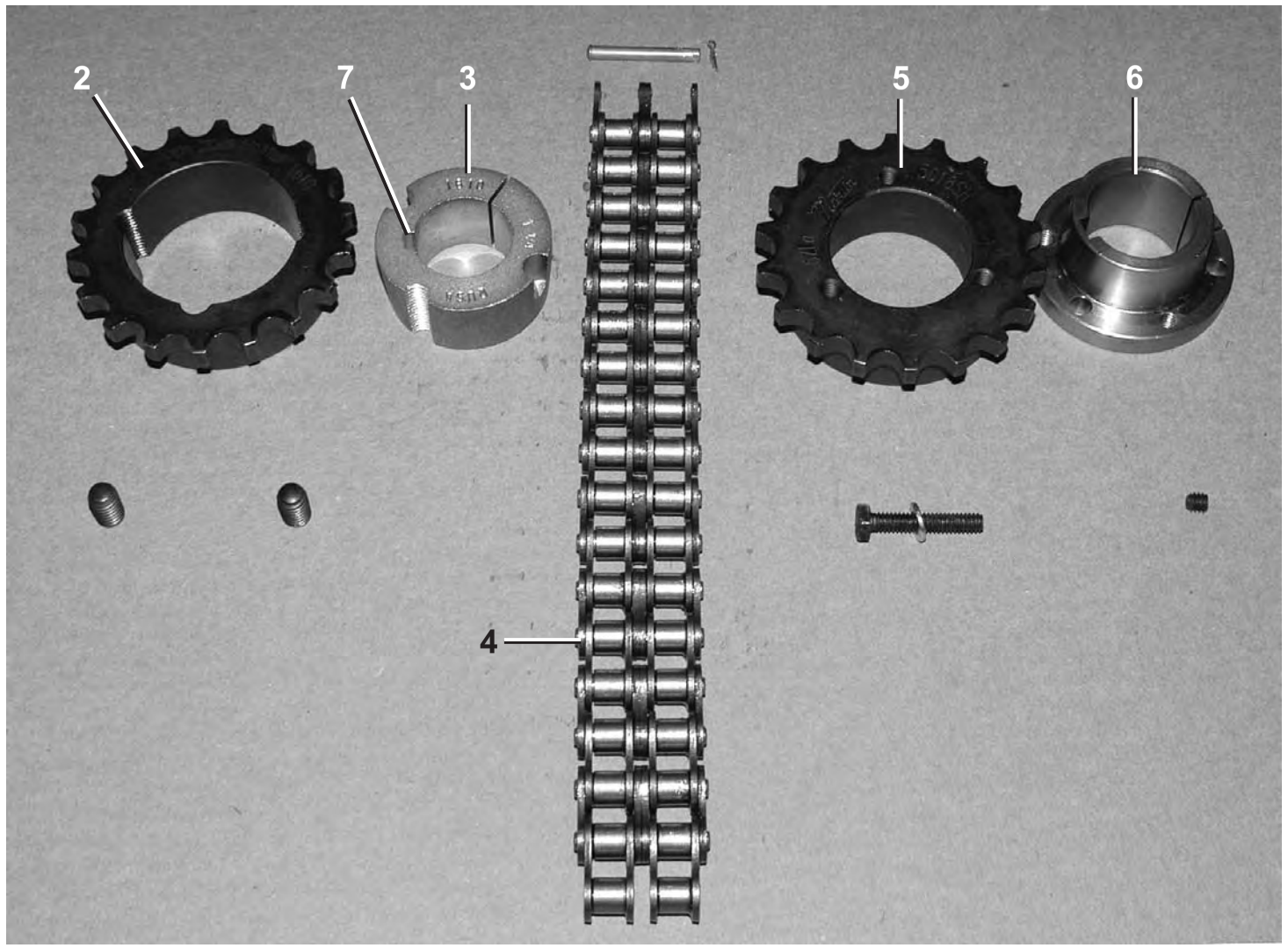

For detailed instructions of replacing the drive chain coupling, see document BIPCLM01, found within this manual.

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Parts List—Gear Reducer with Chain Coupling

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Used In	Item	Part Number	Description	Comments
			ASSEMBLIES	
	A	A67DB001	20HP REDUCER/10HP MOTOR ASSY	FIRST & LAST MODULES
	B	A67DB002	10HP REDUCER/05HP MOTOR ASSY	MIDDLE MODULES
	C	A67DB003	10HP REDUCER/06HP MOTOR ASSY	9248
			COMPONENTS	
A	1	54S029	MILNOR, 24.59:1 210TC 23HP	
BC	1	54S027	MILNOR, 24.59:1 180TC,12.5HP	
all	2	27E5511D	FLEX.COUP.=5018TBF COUPLING	
all	3	27E5511E	1610 1 1/4" BORE BUSHING	
all	4	27E5511C	FLEX.COUP.-CHAIN=5018CHN	
all	5	27E5511A	QD-FLEX.COUP.=5018SH 1+3/8MAX.	
A	6	56Q1GSH	1+3/8" BUSH VPUL QD TYPE SH	
BC	6	56Q1CSH	1+1/8" BUSH VPUL QD TYPE SH	
all	7	15E197	1/4X1/4X1SQMACHKEY N0 TAPR/HD	
all	8	20H011CG	ALVANIA CG1 GREASE EA=1 TUBE	

Pneumatic Shuttle Valve

76028, 76039 G3 Tunnels & 9248 G4 Tunnels

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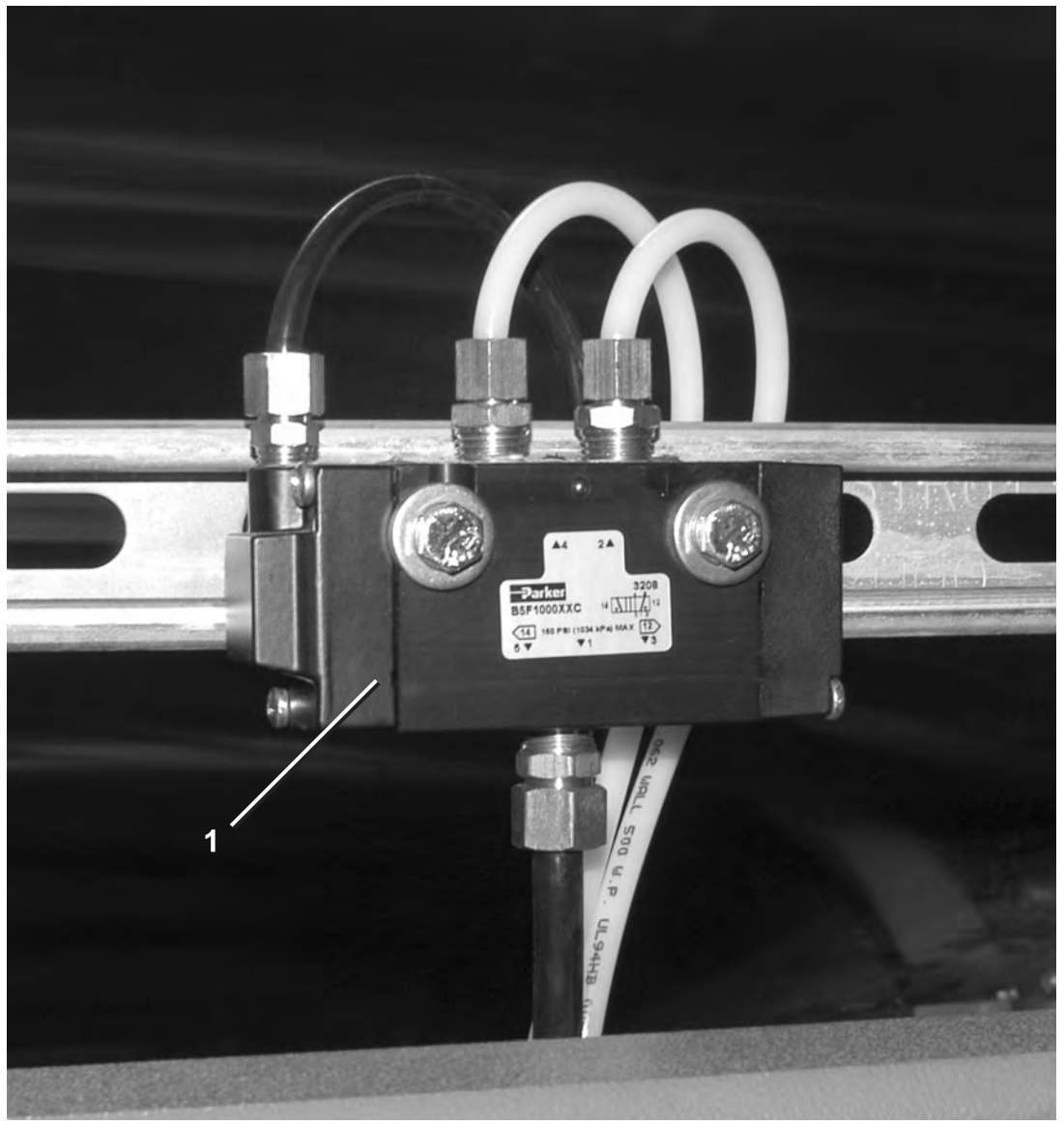

5 Port, 4 Way, 2 Position, Spring Return Valve

Parts List—Pneumatic Shuttle Valve

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Used In	Item	Part Number	Description	Comments
			----------COMPONENTS----------	
all	1	96N0011H	SHUTLVLV 1/4" 4WAY MECHSPRING	

Magmeter

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Parts List—Magmeter

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

Used In	Item	Part Number	Description	Comments
			----------ASSEMBLIES----------	
			----------COMPONENTS----------	
all	1	30F580	8041 BLIND UNIT MAG SENSOR	
all	2	30F580A	8025 LOWFLOW WALL-MNT TRANSMIT	
all	3	30F568	MAGMETER FITTING 316SS 1.5" S.S.TEE	

Drain Stops

76028 & 76039 G3 Tunnels, 92048 G4 Tunnels

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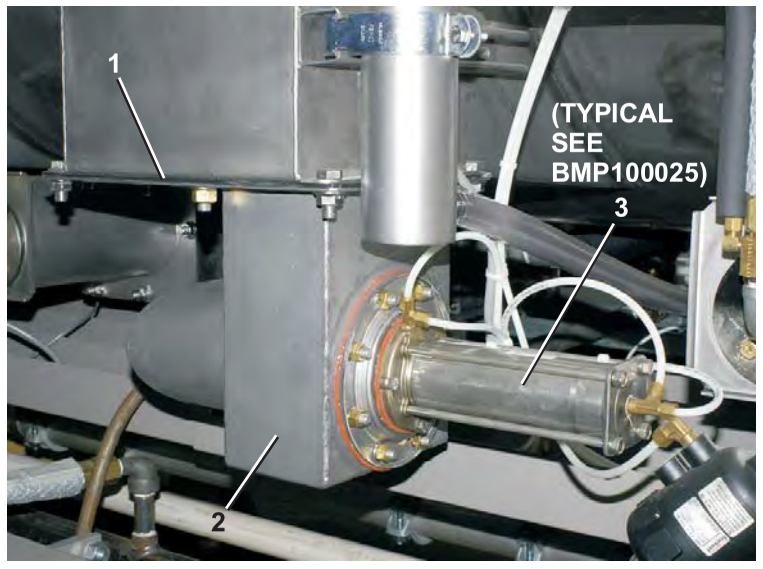
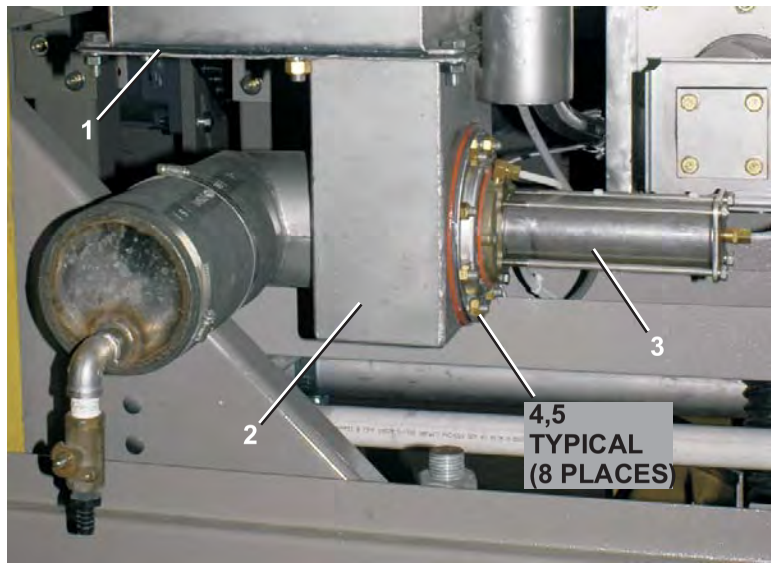
Litho in U.S.A.



(A) Drain Stop: Flow to Sewer



(B) Drain Stop: Flow to Flow Splitter

(C) Drain Stop: Flow Not to Sewer

Parts List—Drain Stops

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

Used In	Item	Part Number	Description	Comments
			----------ASSEMBLIES----------	
	A	G64DV005	INST=DRAIN/STOP WEIR TO SEWER	
	AA	A64DV005	ASSY=DRAIN/STOP WEIR TO SEWER	
	B	G64DV006	INST=DRAIN/STOP WEIR TO FLOWSP	
	BB	A64DV006	ASSY=DRAIN/STOP WEIR TO FLOWSP	
	C	G64DV007	INST=DRAIN/STOP F/N TO SEWER	
	CC	A64DV007	ASSY=DRAIN/STOP F/N TO SEWER	
			----------COMPONENTS----------	
all	1	06 50092	7639=FLOWNOT VLV. LEVBX GSKT	
AA	2	W6 70021A	WLMT=DRAIN/WEIR TO SEWER	
BB	2	W6 70021	WLMT=DRAIN/WEIR TO SPLITTER	
CC	2	W6 70020	WLMT=DRAIN STOP F/N TO SEWER	
all	3	AVD48701	4"DUMP BONNET&AIRCYL DBL-ACT	
all	4	15G206B	HEXNUT 3/8-16UNC2 BRASS	
all	5	15U260	LOCKWASHER MEDIUM 3/8 SS18-8	
all	6	60E312A75	HOSE 5"IDX7.5"LG GATES75W4175E	
all	7	27A077D	T-BOLT HOSECLAMP 5.31-5.62"SS	

Drain Stop Bonnet, 4” Double Acting

76028G3, 76039G3, 9248G4

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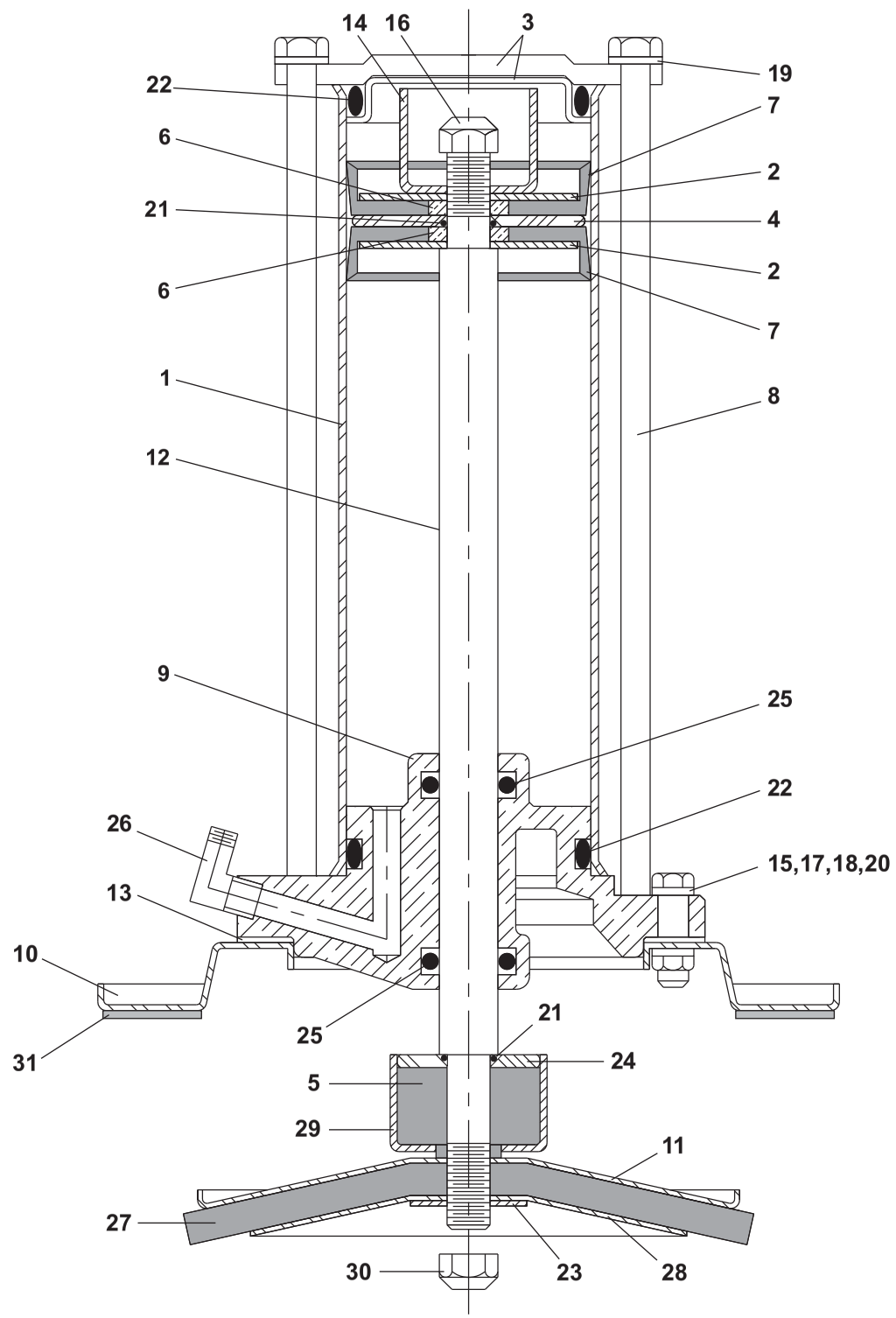


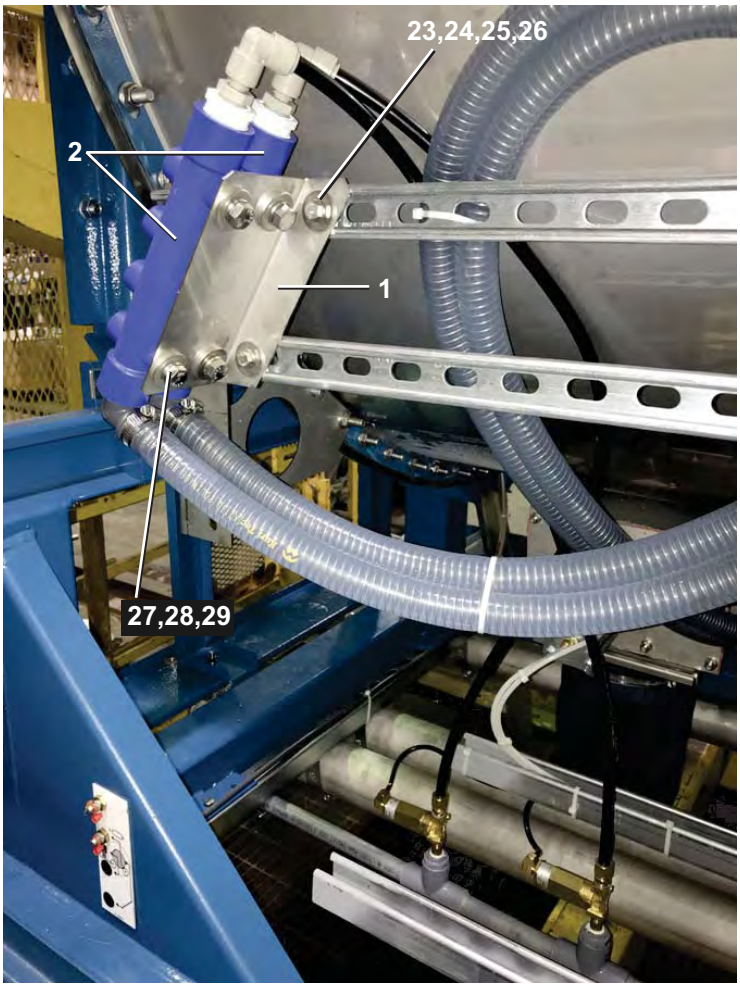
Parts List—Drain Stop Bonnet, 4” Double Acting

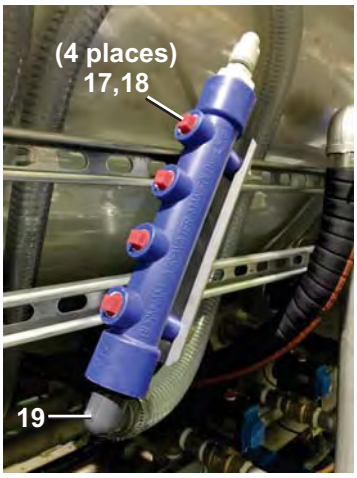
Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

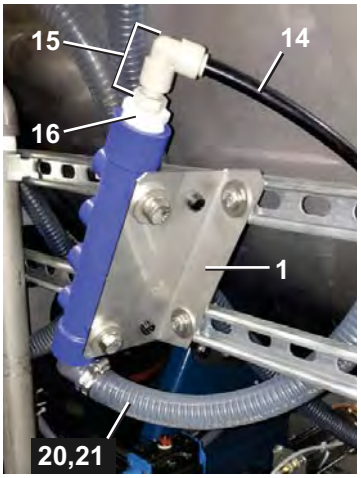
Used In	Item	Part Number	Description	Comments
			----------ASSEMBLIES----------	
	A	AVD48701	4"DUMP BONNET&AIRCYL DBL-ACT	
			----------COMPONENTS----------	
All	1	02 02068	AIRCYL-STAINLESS=DUMP VALVE	
all	2	02 02085	UP WASHER=2"OD=PISTON CUP	
all	3	02 02101S	CYLINDER HEAD TAP.HOLE (SS)	
all	4	02 02105B	2.38"ACYL BRASS PISTONCUP WSHR	
all	5	02 16021H	BUMPER=DMPVAL BON'T RED SILC	
all	6	02 02185	WASHER=PISTON CUP COMP LIMIT	
all	7	02 02194	PISTON CUP=DUMPVALVE 2+3/8"	
all	8	02 10585	TIE BOLT=5/16-18X7.875LG SS	
all	9	X6 20708A	DOUBLE ACTING VALVE BONNET	
all	10	02 14447	BONNET=4"S/S DUMP VALVE	
all	11	02 14446	DISC-4"S/S DUMP VALVE	
all	12	02 16021I	DUMPVAL STEM-4"+8"316SS	
all	13	02 18932B	GASKET=DUMPVAL 1/8"RED SILIC	
all	15	15G168	SQNUT 1/4-20UNC2 SS18-8	
all	16	15G220	NUTLOK THINHX 3/8-24 SS/NYL	
all	17	15K041S	HEXCAPSCR 1/4-20UNC2AX1 SS18-8	
all	18	15U181	LOCKWASHER MEDIUM 1/4 SS18-8	
all	19	15U205	LOCKWASHER MEDIUM 5/16" 18-8SS	
all	20	24G020N	ROLLED WASH.252ID NYLTITE 25W	
all	21	60C106V	ORING 5/16IDX1/16CSVITON#011	
all	22	60C132V	ORING 2"ID3/16CS VITON75 #329	
all	23	15U245	FLTWASH 3/8 STD COMM 18-8 SS	
all	24	02 16021E	WASHER 3/8IDX1.250D DUMPVAL	
all	25	60C108V	ORING 1/2IDX3/16CS VITON #310	
all	26	53A031B	BODY-EL90MALE.25X1/8 #269C-42B	
all	27	02 11740D	SEAT=4"S/S VENT=RED SILICONE	
all	28	02 14446B	DISC=4"S/S DV=VENT	
all	29	02 16021D	DUMP VALVE BUMPER RETAINER	
all	30	15G219A	LOKNUT 3/8-24 NF2 18-8 SS	
all	31	02 14447B	GASKET=BON 4"S/S DPVAL RED	

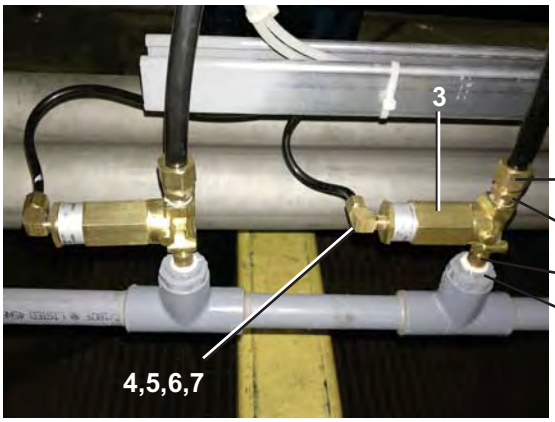
Peristaltic Chemical Inlets

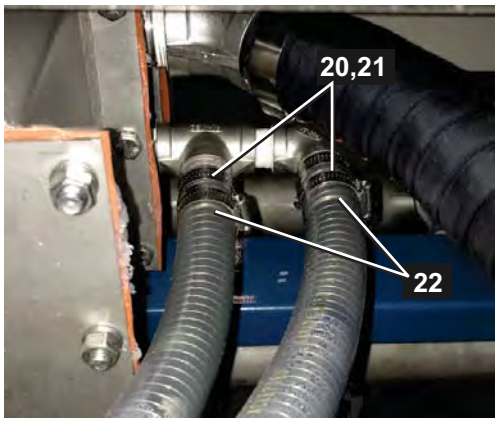
76028G3, 76039G3, 92048G4 Tunnels











Peristaltic Chemical Inlets

76028G3, 76039G3, 92048G4 Tunnels

Parts List

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

Used In	Item	Part Number	Description	Comments
			----------COMPONENTS----------	
all	1	06 70196	PERISTALTIC TUBE MNT	
all	2	02 03590C	CHEM INJ MANIFOLD 4-PORT MOLDED	
all	3	96TBC2AA01	1/4" N/C 1WAY AIR-OP VALVE POLYPRO (NO COIL)	
all	4	60E004TE	1/4"OD X.170"ID NYL(BLK)TUBING	
all	5	53A059A	NUT 1/4"BR.HOLYOKE AND #61A-4	
all	6	53A500	SLEEVE DELRIN 1/4"OD#60PT-4	
all	7	53A501	TUBE INSERT .163"OD #63PT-4-40	
all	8	5KB0K0EP82	BUSHING 1/2"SOKX1/4FPT CPVCS80	
all	9	5N0ECLSBE2	NPT NIP 1/4XCLS TBE BRASS 125#	
all	10	53ACM0KEB	ASSY MALECON.5TX.25MP BRASS 68	
all	11	53A3000KB	SLEEVE 1/2"OD TUBE #60AP-8	
all	12	53A4000KB	TUBE INSERT 1/2"OD #60AE-8	
all	13	53A10SSKB	.5T COMPNUT 11/16-20 AND#61A-8	
all	14	60E005F	TUBING NYL.BLK.1/2"ODX.375ID	
all	15	53AEM9KKBC	MAL90ELSW1/2"TXM PARK#A8MES8MG	
all	16	5SB1A0KP4O	NPTHEXBUSH 1X1/2 PVC SK40	
all	17	51PB0GNA	3/8" PVDF THRD PLUG	
all	18	20C005EA	LOCTITE TREAD SEALANT #1537780	
all	19	51ET1AE02	HOSEADAPT PVC 1"X1" INSERT 90 DEG	
all	20	60E010B	TUBING,POLYWIRECLR 1"IDX1.375"	
all	21	27A090S	HOSECLAMP 13/16-1.5"SS#64016B	
all	22	5N0P02GS41	NPT NIP 3/4X2.375TOE 304SS SK4	
all	23	27A0626NUT	CLAMP NUT 3/8-16 W/SPRING	
all	24	15K096	HEXCAPSCR 3/8-16UNC2X1SS18-8	
all	25	15U260	LOCKWASHER MEDIUM 3/8 SS18-8	
all	26	15U245A	FLTWASH 25/64IDX1.25ODX3/32 S/	
all	27	15K145D	HXCAPSCR 1/2-13UNC2AX3/4 SS18-	
all	28	15U310S	FLATWASH-SS .53 X 1.37 .187T	
all	29	15U310	LOKWASHER REGULAR 1/2 SS18-8	

Dimensional Drawings 3

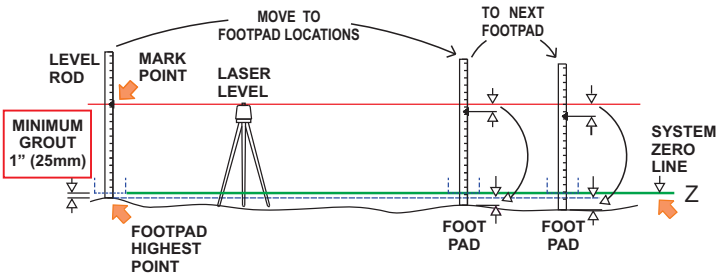
ATTENTION INSTALLERS!

PRESS MUST BE HIGH ENOUGH

If you set the press at a low area of the floor, you may not have sufficient clearance for the tunnel. It will be necessary to reinstall the press higher

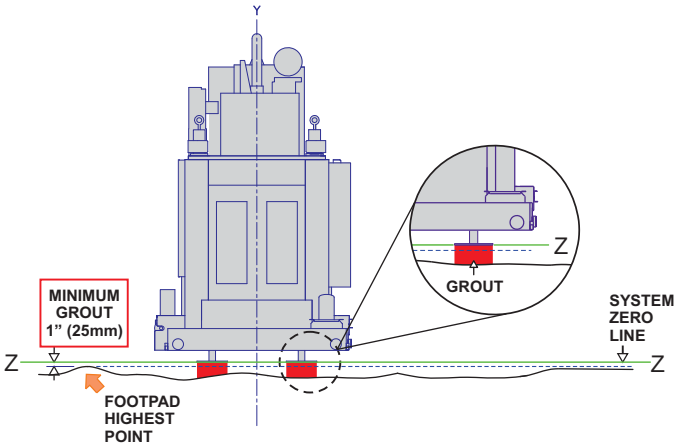
- Establish the System Zero Line or Z.
- Refer to the dimensional drawings of the various machines for required heights.

FLOOR IS UNEVEN



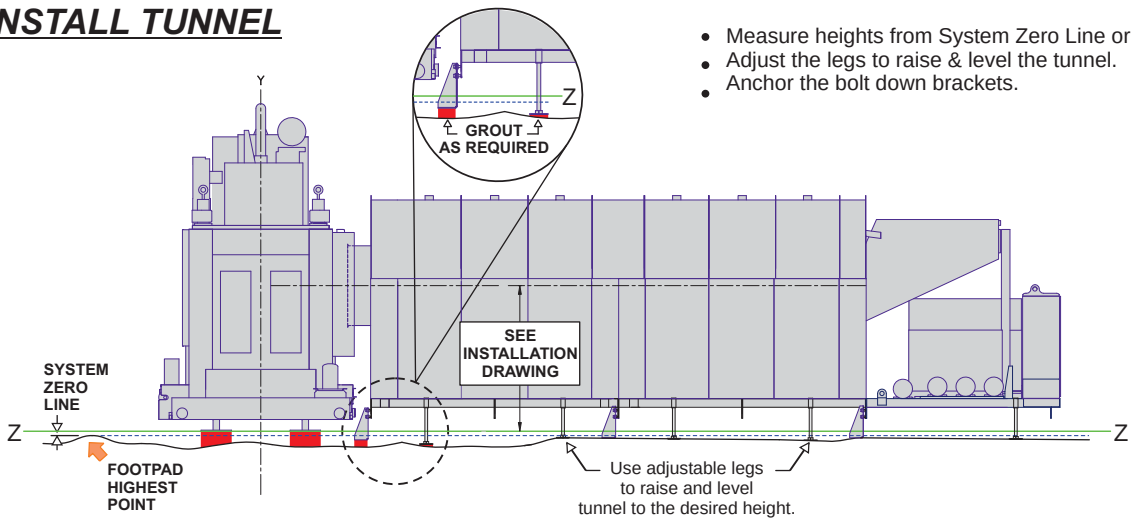
- Establish System Zero Line or Z.
- Find highest point in factory floor where footpads will be located.
- System Zero Line or Z is 1" above highest point.

INSTALL PRESS FIRST



- Shim & level to System Zero Line or Z.
- Grout & anchor all footpads.

INSTALL TUNNEL



- Measure heights from System Zero Line or Z.
- Adjust the legs to raise & level the tunnel.
- Anchor the bolt down brackets.

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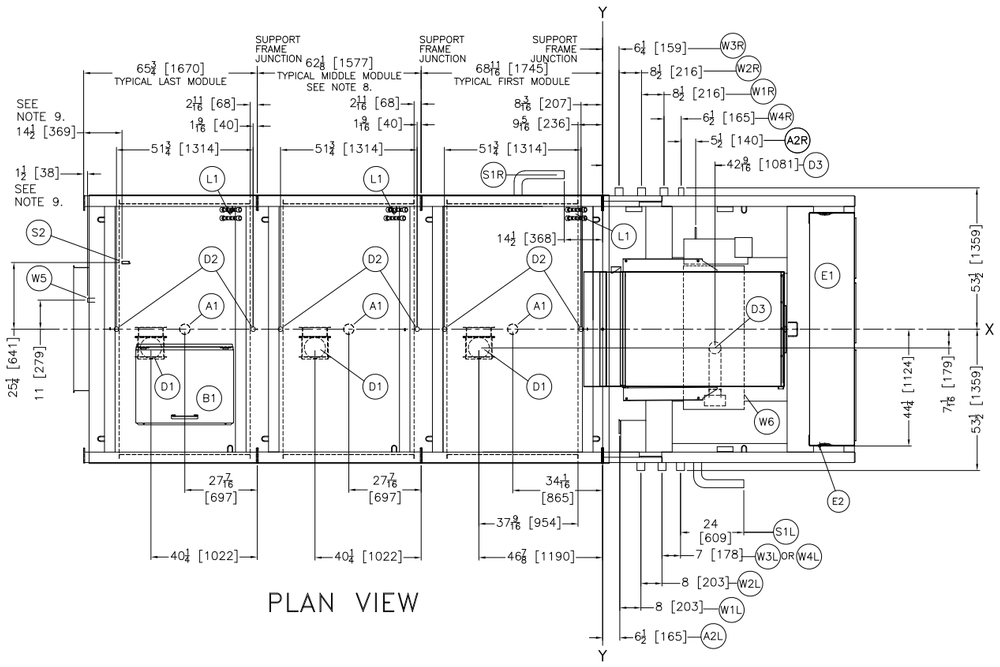
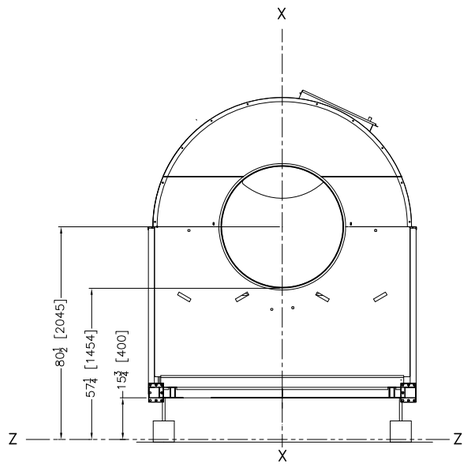
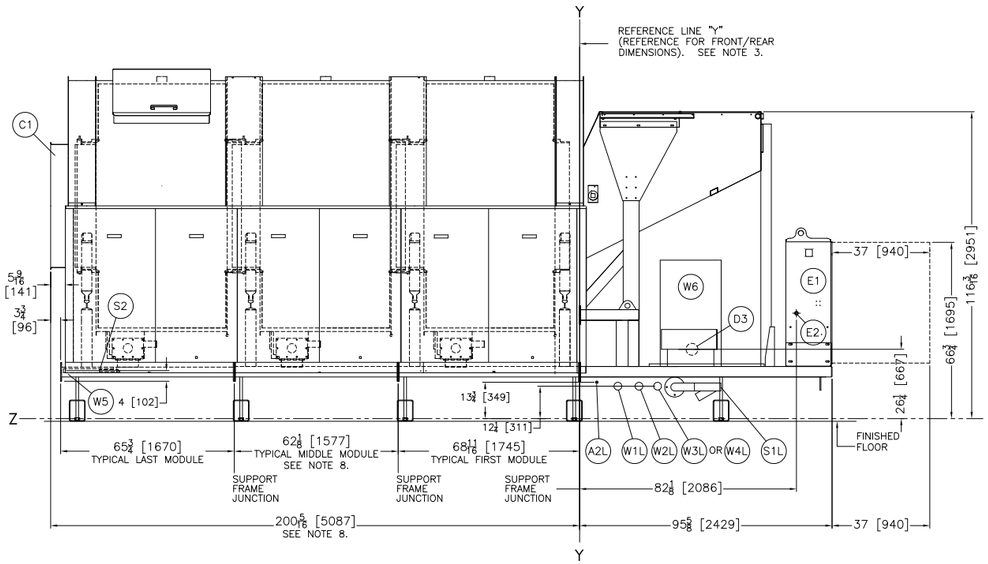


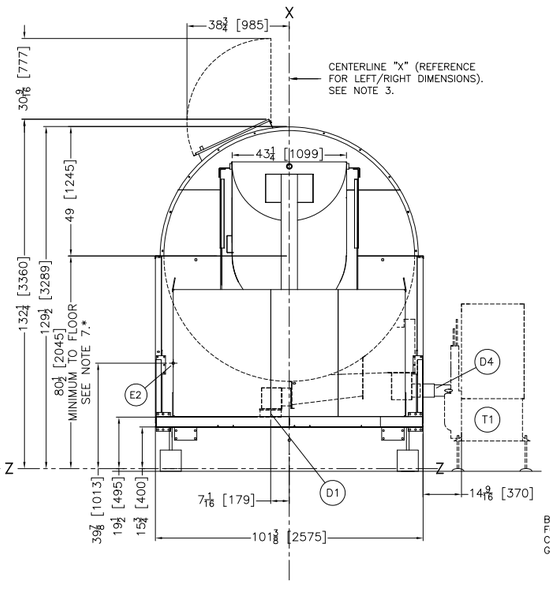
PLAN VIEW



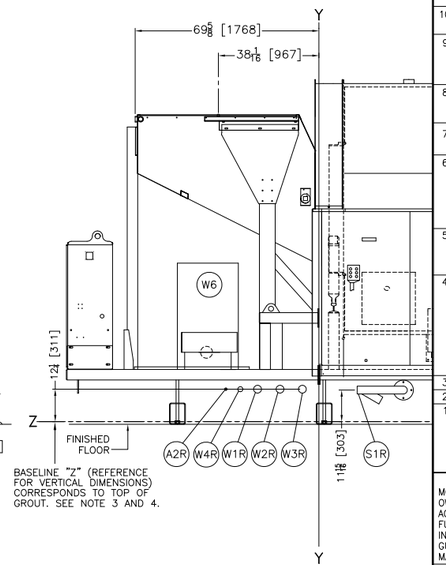
REAR VIEW



LEFT VIEW



FRONT VIEW



RIGHT VIEW

ITEM	LEGEND
W6	REUSE TANK
W5	PRESS WATER TO REUSE TANK 1–1/2" TOE
W4R	RIGHT WATER HEADER #4 (REUSE) 2" NPT; OPTIONAL
W3R	RIGHT WATER HEADER #3, 3" NPT, OPTIONAL
W2R	RIGHT WATER HEADER #2, 3" NPT, OPTIONAL
W1R	RIGHT WATER HEADER #1, 3"NPT
W4L	LEFT WATER HEADER #4 (REUSE) 2" NPT, OPTIONAL
W3L	LEFT WATER HEADER #3, 3" NPT, OPTIONAL
W2L	LEFT WATER HEADER #2, 3" NPT, OPTIONAL
W1L	LEFT WATER HEADER #1, 3"NPT
T1	FLOWSPLITTER
S2	STEAM TRAP, STEAM CONDENSATE OUTLET, 1/2" NPT
S1R	RIGHT STEAM INLET (STANDARD) 3"NPT CONNECTION
S1L	LEFT STEAM INLET (OPTIONAL) 3" NPT CONNECTION
L1	LIQUID SUPPLY INLETS, SEE NOTE 14.
E5	INTERPRET RELAY BOX
E4	FLUSH PUMP INTERFACE BOX
E3	CONNECTION FROM MENTOR CONTROLLER
E2	MAIN ELECTRICAL CONNECTION
E1	ELECTRICAL CONTROL BOX
D4	5" FLOW TO FLOW SPLITTER, 5"X18" HOSE SUPPLIED, SEE BD94G40PAE, FOR OTHER LEVEL BOX OPTIONS
D3	REUSE TANK DRAIN, 4–1/2" HOSE CONNECTION, 3"X18"PVC AND ELBOW TO SEWER, SUPPLIED
D2	DRIP DRAINS, 2 PER MODULE, 1–3/4"ID TUBING TO SEWER SUPPLIED
D1	8" DIAMETER DRAIN VALVE, ON SPECIFIED MODULES
C1	DISCHARGE RING FOR M7V4840 & MP1A03CL LOADING
B1	HATCHES ON MODULES 3,5
A2R	MAIN AIR (RIGHT STANDARD), 1/2" NPT.
A2L	MAIN AIR (LEFT OPTIONAL), 1/2"NPT.
A1	TYPICAL EXHAUST VENT, 4"[100] DIAMETER.

NOTES

14 LIQUID SUPPLY INLETS COME WITH THREE SETS OF SIX FITTINGS. ONE SET OF 3/8" FITTINGS, ONE SET OF 1/2" FITTINGS, AND ONE SET OF PLUGS WHICH ARE SHIPPED ON MACHINE.

13 DIRECT STEAM CONDENSATE TO THE DRAIN TROUGH. DO NOT RETURN CONDENSATE TO THE BOILER BECAUSE OF POSSIBLE CONTAMINATION FROM CHEMICALS IN THE WASH WATER.

12 BACK FLOW PREVENTERS MUST BE INSTALLAED IF LOCAL PLUMBING CODES REQUIRE. RECOMMENDED MODELS ARE WATTS SERIES 009. THEY CAN BE PURCHASED LOCALLY OR THROUGH MILNOR. CONTACT MILNOR FACTORY.

11 LEAK OFF FROM DRIP DRAINS MUST BE ROUTED TO DRAIN SUMP. THESE CONNECTIONS ARE SUPPLIED WITH TUBING, MAKING THIS A FLEXIBLE CONNECTION POINT.

10 FOR SIZE AND LOCATION OF ADJUSTABLE FEET AND BOLT DOWN BRACKETS, SEE BDST92G4FBCE.

9 AIR, WATER AND STEAM INLETS ARE STANDARD ON THE (RIGHT) AND OPTIONAL ON THE (LEFT). THE INLETS SHOULD BE SPECIFIED FOR THE SIDE OPPOSITE THE LOAD CONVEYOR. STEAM CONDENSATE OUTLET AND PRESS WATER TO REUSE TANK ARE MEASURED OFF THE LAST MODULE SUPPORT FRAME.

8 LENGTH DIMENSIONS ON THIS DRAWING ARE SHOWN FOR A 3 MODULE TUNNEL. ADDITIONAL MIDDLE MODULES ARE ADDED TO CREATE THE DESIRED NUMBER OF MODULES, SEE BDST92G4CFCE, FOR OVERALL LENGTHS OF COMMON TUNNEL SIZES.

7 HEIGHT DIMENSIONS ON THIS DRAWING REPRESENT THE 9248 TUNNEL SET TO AN 80 1/2"[2045] CENTERLINE TO PROPERLY INTERFACE WITH ADJACENT MACHINES.

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

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

4 BASELINE "Z" IS THE REFERENCE FOR ALL VERTICAL DIMENSIONS. ON MACHINES WITH WITH FIXED BASE PADS, BASELINE "Z" CORRESPONDS TO THE BOTTOM OF THE BASE PAD. ON MACHINES WITH ADJUSTABLE FEET, BASELINE "Z" CORRESPONDS TO THE BOTTOM OF THE FEET WHEN ADJUSTED SO THAT THE MACHINE IS AT ITS MINIMUM ACCEPTABLE HEIGHT. ON TRAVERSING SHUTTLES, BASELINE "Z" CORRESPONDS TO THE BOTTOM OF THE BOTTOM RAIL. THE DISTANCE BETWEEN BASELINE "Z" AND THE FINISHED FLOOR WILL VARY AS REQUIRED TO ENSURE BASELINE "Z" IS HORIZONTAL AND ANY INTERFACING MACHINES 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.

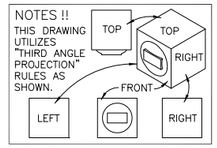
9248G4 TUNNEL

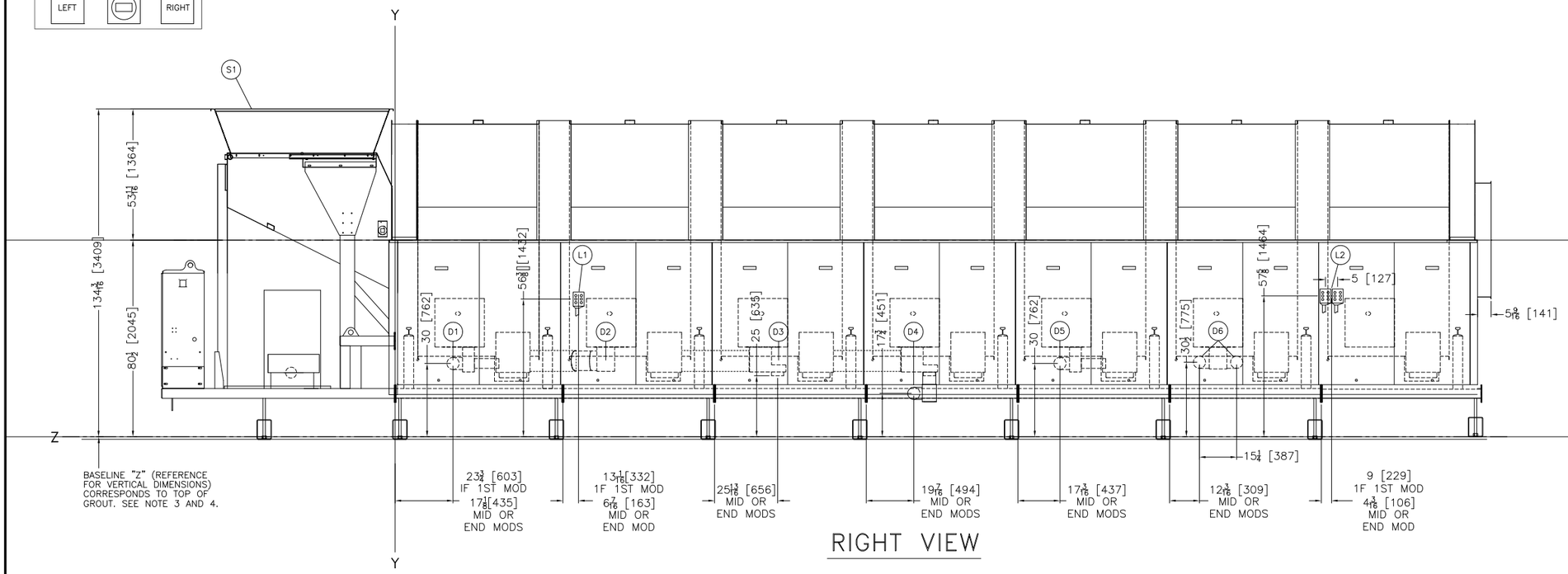
DM 0 0.5M
INCHES 0 12 24

DWG# BDST92G4MXCE 2018315D

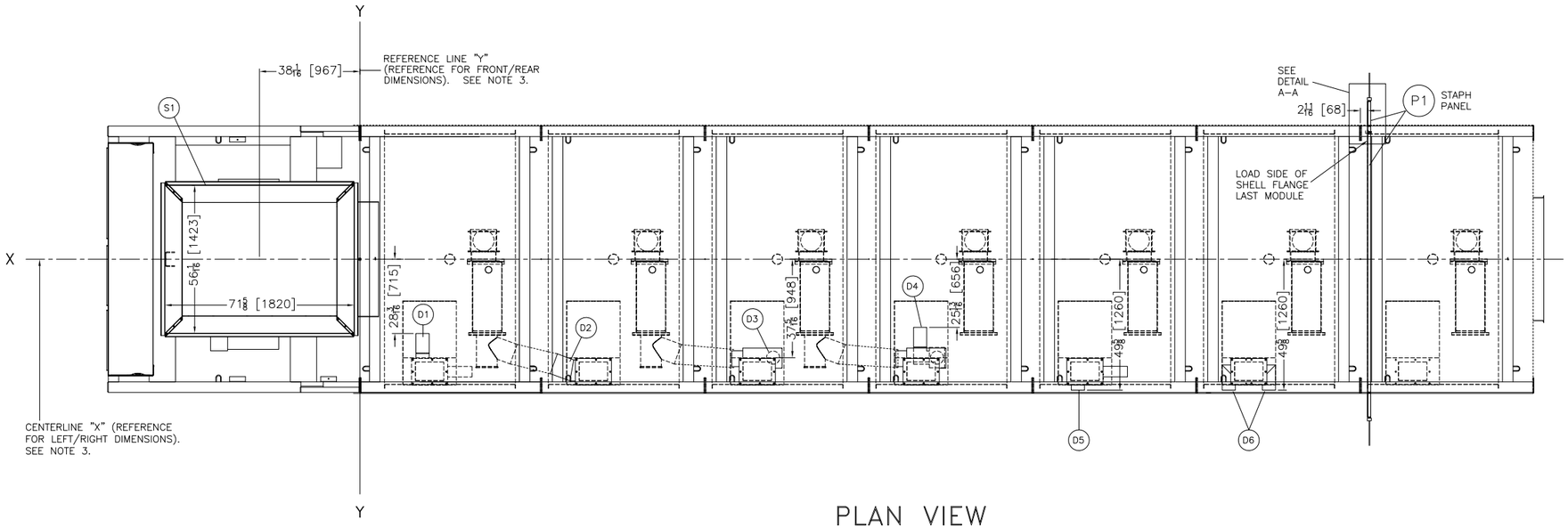
PELLERIN MILNOR CORPORATION
P.O. Box 400 Kenner, LA 70063, USA, Phone 504/467-9591,
FAX 504/468-3094, Email: milnorinfo@milnor.com

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





RIGHT VIEW



PLAN VIEW

ITEM	LEGEND
S1	OPTIONAL SLING LOADING CHUTE
P2	STORE FRONT MOLDINGS BY OTHERS, SEE DETAIL.
P1	OPTIONAL STAPH GUARD PANEL
L2	(2) 6 PORT PERISTALTIC CONNECTIONS, ON SPECIFED MODULES
L1	6 PORT PERISTALTIC CONNECTION, ON SPECIFED MODULES
D6	DUAL FLOW TO DUAL FLOWSPLITTERS, FOR TUNNELS OVER 90 G.P.M., 5" NPT (NOT USED PF)
D5	FLOW TO FLOW SPLITTER, 5" NPT HOSE CONNECTION 5"X18" HOSE TO FLOWSPLITTER, (NOT USED PF)
D4	FLOWNOT, DRAIN TO SEWER, WITH FLOW STOP, 5" HOSE CONNECTION, 4"x36" PIPE & ELBOW TO SEWER SUPPLIED
D3	FLOWNOT, DRAIN TO SEWER, 5" HOSE CONNECTION, 4"x36" PIPE & ELBOW TO SEWER SUPPLIED
D2	FLOW TO LOAD, AT UNIT CONNECT, NO CONNECTION
D1	FLOW TO SEWER, (FLOW STOP SHOWN) 5" HOSE CONNECTION, 4"x36" PIPE TO SEWER SUPPLIED

NOTES

7 LIQUID SUPPLY INLETS COME WITH THREE SETS OF SIX FITTINGS. ONE SET OF 3/8" FITTINGS, ONE SET OF 1/2" FITTINGS, AND ONE SET OF PLUGS WHICH ARE SHIPPED ON MACHINE.

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48 [1219] IF OBJECT IS ANY LIVE PART.
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9248G4 TUNNEL OPTIONS

DM 0 0.5M 1M
INCHES 0 12 24 36

DWG# BDST92G4OPCE 2012215D

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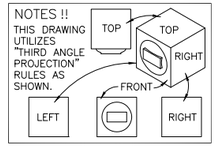
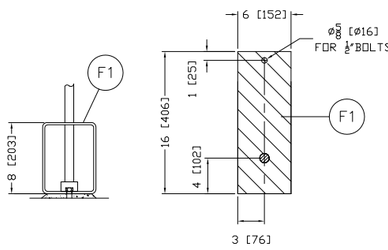
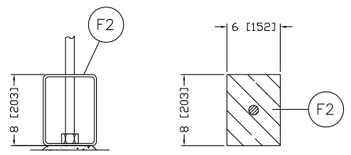
FAX 504/469-1849, Email: mktg@milnor.com

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

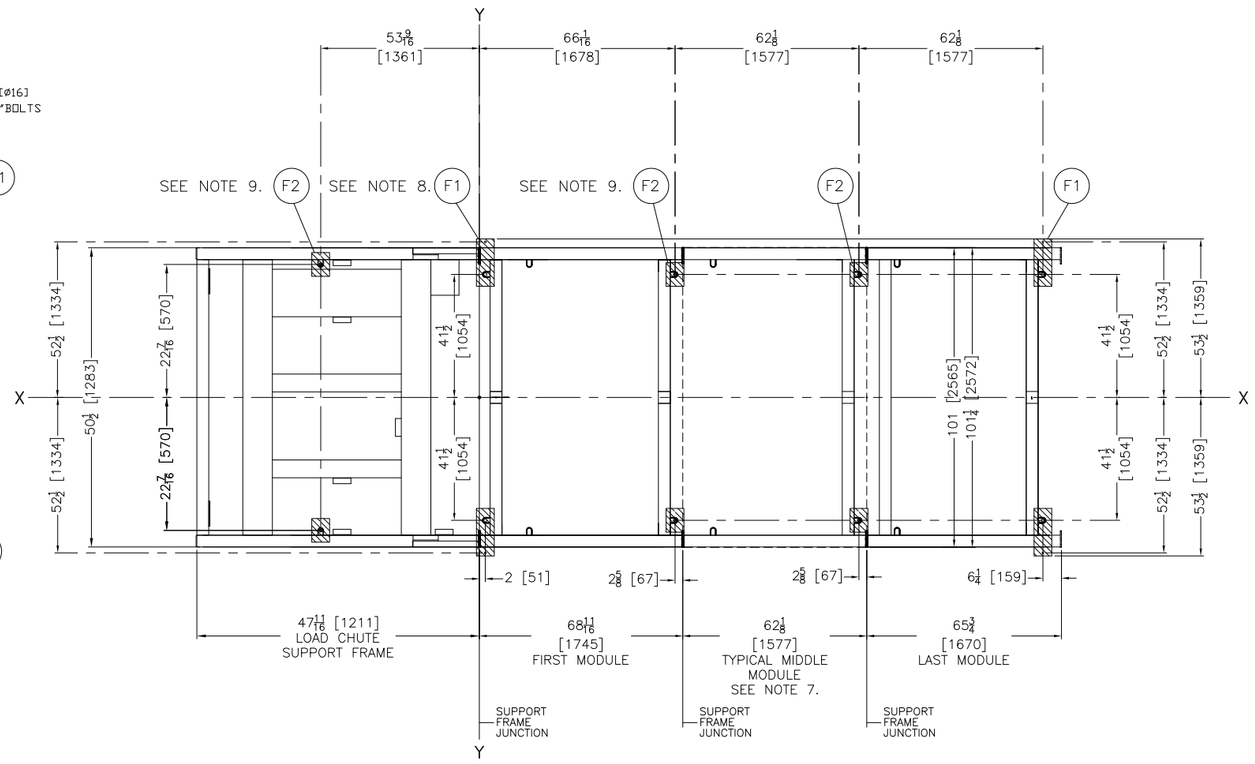




ADJUSTABLE BOLT DOWN FOOT



ADJUSTABLE FOOT



FOUNDATION PLAN VIEW

ITEM	LEGEND
F2	ADJUSTABLE FOOT, SEE NOTE 9.
F1	ADJUSTABLE BOLT DOWN FOOT,ANCHOR BOLT HOLE 5/8"[16] FOR 1/2 BOLTS, SEE NOTE 8.

NOTES

9 THE ADJUSTABLE FEET ARE USED TO SUPPORT THE MACHINE. ADJUSTABLE FEET ARE USED IN EACH MODULE AS SHOWN IN THE FOUNDATION PLAN VIEW. GROUT AS REQUIRED.

8 THE ADJUSTABLE BOLT DOWN FEET ARE USED TO PREVENT THE TUNNEL FROM "WALKING" AND MUST BE INSTALLED IN ADDITION TO THE ADJUSTABLE FEET WHICH SUPPORT THE MACHINE. A PAIR OF BOLT DOWN FEET MUST BE INSTALLED AT THE FRONT OF THE FIRST MODULE AND ON THE END OF THE LAST MODULE. AS SHOWN IN THE FOUNDATION PLAN VIEW. GROUT AS REQUIRED.

7 9248 TUNNELS CAN BE ORDERED IN VARIOUS MODULE LENGTHS. THIS DRAWING SHOWS A BASIC 3 MODULE TUNNEL (FIRST, MIDDLE & LAST). TO LAYOUT THE FOUNDATION PLAN FOR LONGER TUNNELS, DUPLICATE THE MIDDLE MODULE TO ACHIEVE THE TOTAL NUMBER OF MODULES IN THE TUNNEL.

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9248G4 FOUNDATION PLAN

DM 0 0.5M 1M
INCHES 0 12 24 36

DWG# BDST92G4FBCE
2011466D

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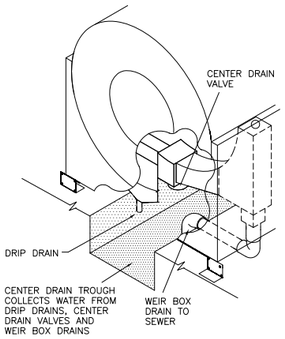


FIGURE 1: CENTER DRAIN TROUGH TUNNELS WITH DRAIN VALVES
SEE NOTES 7 & 8.

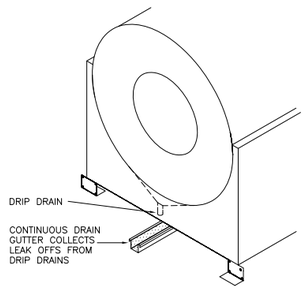


FIGURE 2: CENTER DRAIN TROUGH TUNNELS WITH NO DRAIN VALVES
SEE NOTE 6.

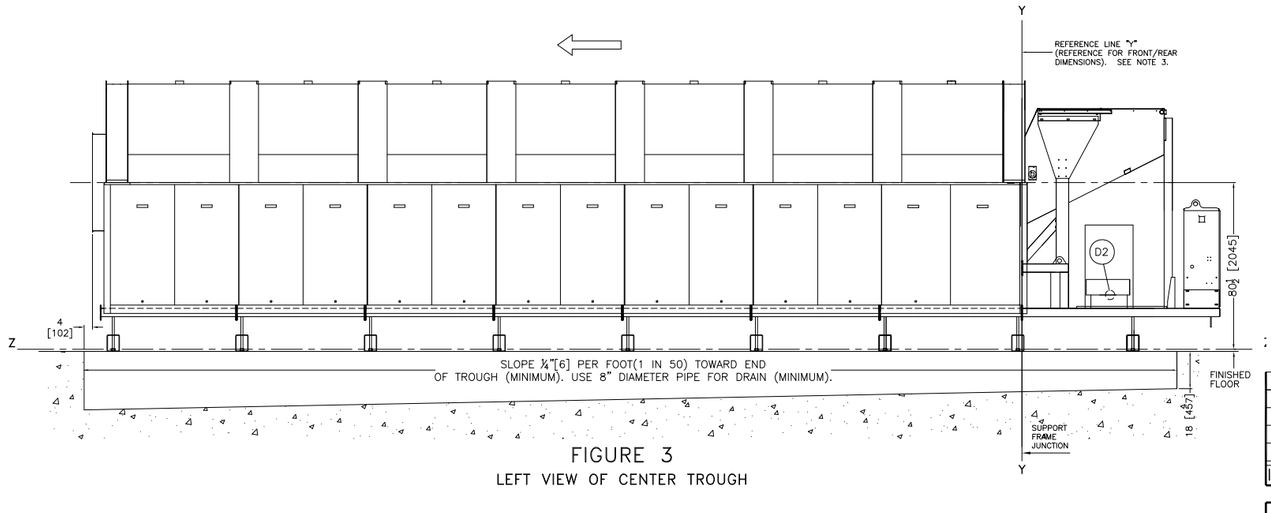


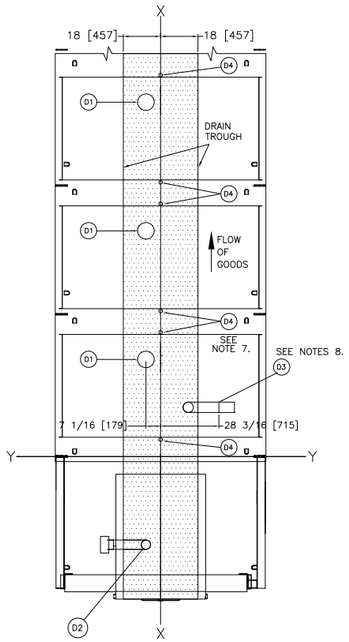
FIGURE 3
LEFT VIEW OF CENTER TROUGH

* SLOPE 1/4 [6] PER FOOT (1 IN 50) TOWARD END OF TROUGH (MINIMUM). USE 8" DIAMETER PIPE FOR DRAIN (MINIMUM).

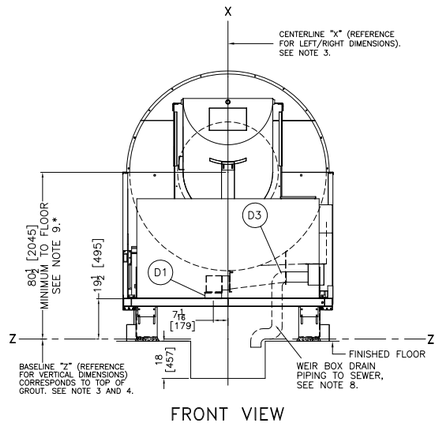
TUNNEL DRAINS WHICH MUST BE ACCOMMODATED:

- DRIP DRAINS –
  (TWO PER MODULE UNIT, 1–3/4 TUBING)
- CENTER DRAIN VALVES –
  (OPTIONAL 1–2 DRAIN VALVES PER MODULE)
- WEIR BOX DRAINS TO SEWER –
  (OPTIONAL)
- REUSE TANK DRAIN
  (5" HOSE CONNECTION)

ITEM	LEGEND
D4	DRIP DRAINS, 1–3/4" ID TUBING SUPPLIED
D3	WEIR BOX DRAIN OPTIONS, FLOW TO SEWER, 5" NPT PIPING
	TO SEWER SUPPLIED BY PMC
D2	REUSE TANK DRAIN, 5" HOSE CONNECTION
D1	CENTER DRAIN VALVES, 8"DIAMETER, ON SPECIFIED MODULES

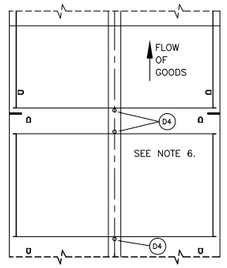


PLAN VIEW

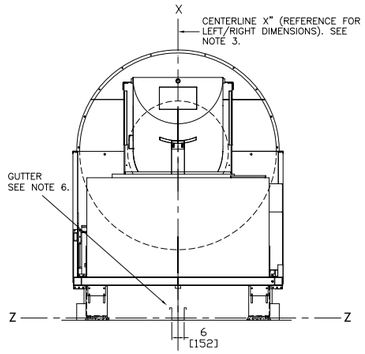


FRONT VIEW

CENTER DRAIN TROUGH
(SEE NOTES 7 & 8. SEE FIGURE 1.)



PLAN VIEW



FRONT VIEW

GUTTER FOR DRIP DRAINS
(SEE NOTE 6. SEE FIGURE 2.)

NOTES

7 HEIGHT DIMENSIONS ON THIS DRAWING REPRESENT THE 9248 TUNNEL SET TO AN 80 1/2"[2045] CENTERLINE TO PROPERLY INTERFACE WITH ADJACENT MACHINES. FOR THE 9248 TUNNEL'S MINIMUM CENTERLINE, SEE BD92G4MXCE. CONSULT MILNOR FACTORY.

9 WEIR BOX DRAIN PIPING TO SEWER SUPPLIED BY PMC.

8 A CENTER DRAIN TROUGH OR ITS EQUIVALENT IS NECESSARY TO COLLECT THE LEAK OFFS FROM THE DRIP DRAINS AND THE WATER FROM UNITS WITH A CENTER DRAIN VALVE.

7 WHEN THERE ARE NO CENTER DRAIN VALVES OR WEIR BOX DRAINS, A CONTINUOUS OPEN DRAIN GUTTER FABRICATED OF STAINLESS STEEL, COPPER OR PLASTIC IS REQUIRED TO COLLECT THE LEAK OFFS FROM THE DRIP DRAINS. THESE DRIP DRAINS ABSOLUTELY MUST NOT BE PIPED WITH CLOSED PIPING WHICH WILL COLLECT LINT AND BLOCK.

6 NOTE THIS DRAWING SHOWS THE RECOMMENDED DRAIN TROUGH DESIGN FOR THE 9248 (G4) TUNNELS. DRAIN TROUGH CONSTRUCTION IS THE RESPONCIBILITY OF OTHERS. THIS DRAWING CONVEYS NO EXPRESS OR IMPLIED WARRANTY WITH REGARD TO THE CONSTRUCTION AND/OR SUITABILITY OF THESE DESIGNS FOR YOUR SPECIFIC INSTALLATION.

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DRAIN TROUGH 9248G4 TUNNEL

DM 0 0.5M 1M
INCHES 0 12 24 36

DWG# BDST92G4DTAE
2011466D

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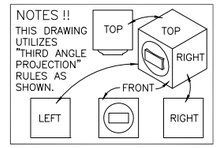
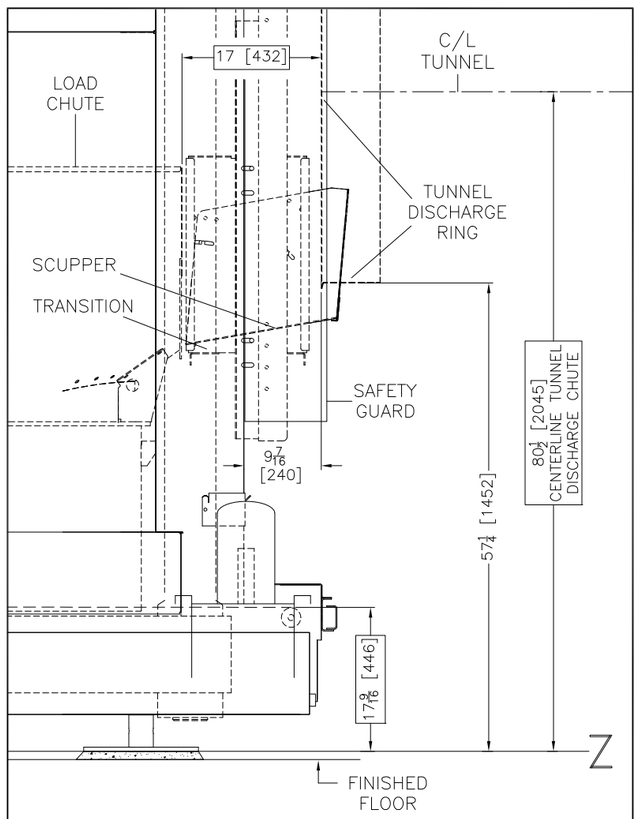
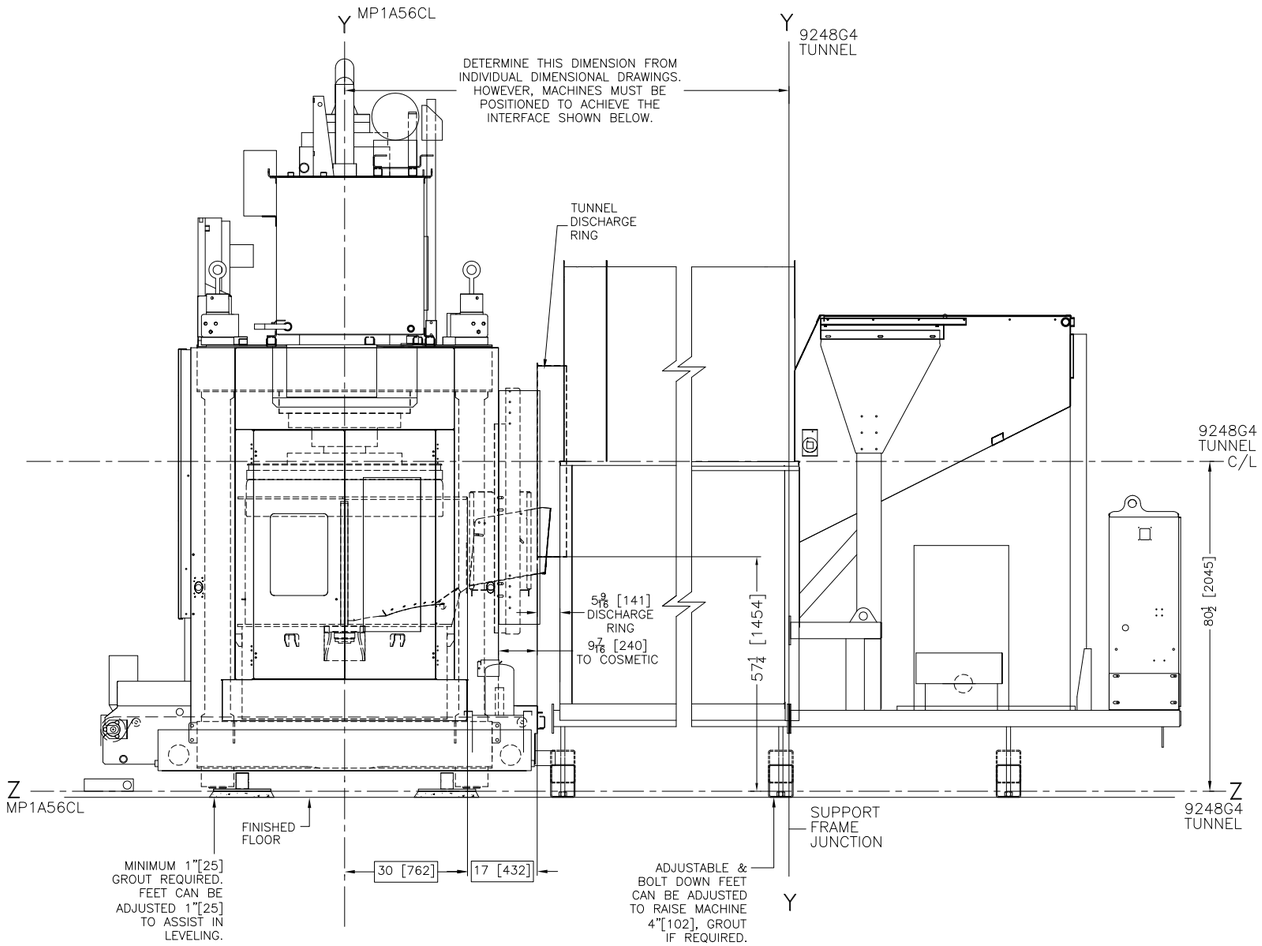




INSTALLATION DETAIL



MP1A56CL SINGLE STAGE PRESS/9248G4 TUNNEL

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9248G4 INTERFACE/MP1A56CL

DM 0 0.5M 1M
INCHES 0 12 24 36

DWG# BDST92G4INDE 2011466D

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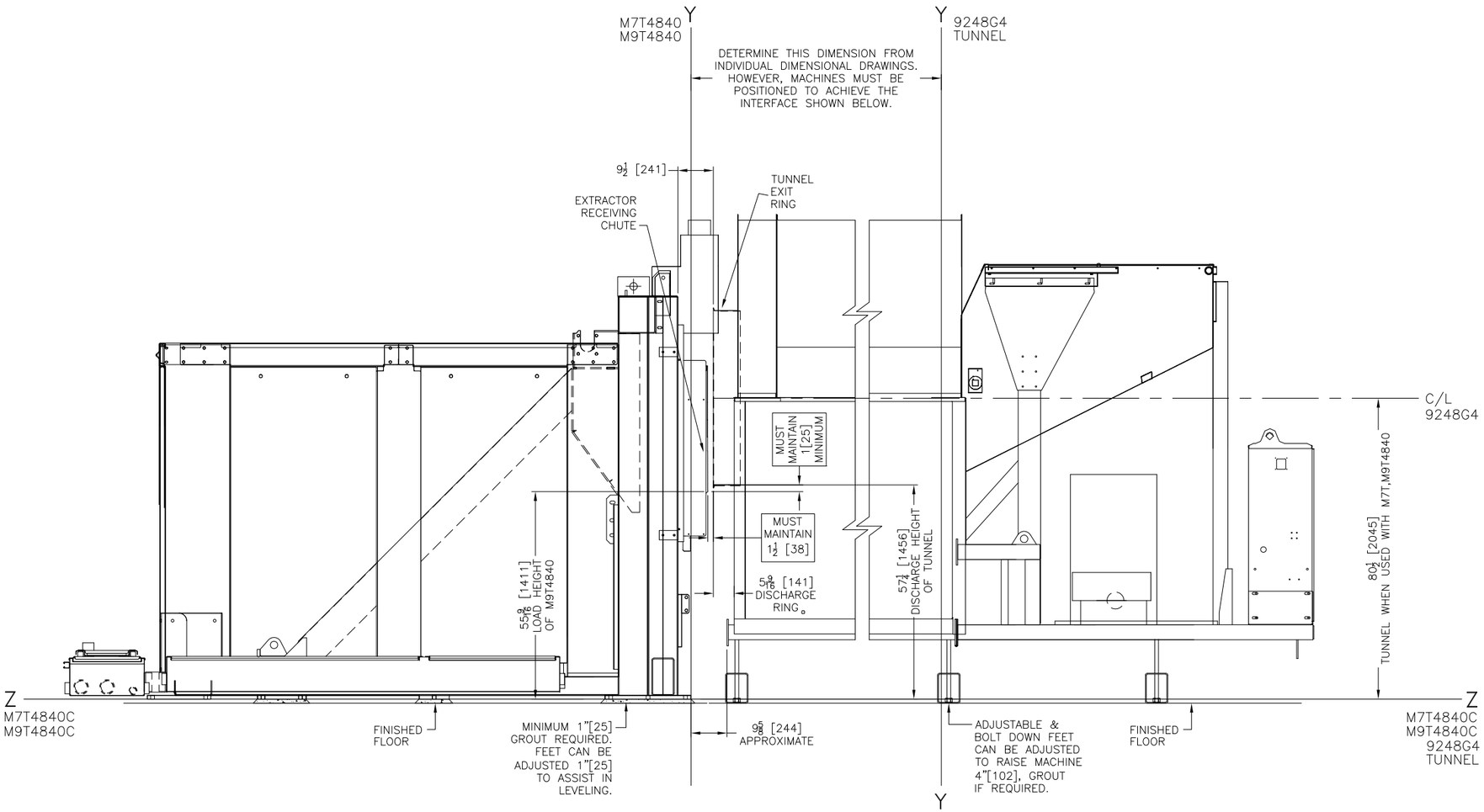

M7T,M9T4840 EXTRACTOR/9248G4 TUNNEL

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

ATTENTION

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

ATTENTION

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

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