

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

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# Installation

## 5050

### TS1L/R; TT1L/R; SA1L/R



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



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# **PELLERIN MILNOR CORPORATION**

## **LIMITED STANDARD WARRANTY**

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

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

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

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

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

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

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

BMP720097/19036

## 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](mailto:parts@milnor.com)

— End of BIUUUD19 —

# Trademarks

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

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

**Table 1. Trademarks**

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

End of document: BNUUUU02





Safety

1

## Safety—Dryers, Conditioners, and Shakers

### 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.



**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.



**DANGER 4: Entangle and Sever Hazards**—Contact with goods being processed can cause the goods to wrap around your body or limbs and dismember you.

- Do not attempt to open the door or reach into the cylinder until the cylinder is stopped.
- Do not touch goods inside or hanging partially outside the turning cylinder.
- Know the location of all emergency stop switches, pull cords, and/or kick plates and use them in an emergency to stop machine motion.
- Know the location of the main machine disconnect and use it in an emergency to remove all electric power from the machine.



**WARNING 5: Crush Hazards**—Contact with the turning cylinder can crush your limbs. The cylinder will repel any object you try to stop it with, possibly causing the object to strike or stab you.

- Do not attempt to open the door or reach into the cylinder until the cylinder is stopped.
- Do not place any object in the turning cylinder.



**WARNING 6: Confined Space Hazards**—Confinement in the cylinder can kill or injure you. Hazards include but are not limited to panic, burns, poisoning, suffocation, heat prostration, biological contamination, electrocution, and crushing.

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



**WARNING 7: Explosion and Fire Hazards**—Petroleum and latex materials are flammable. They can produce explosive fumes when heated.

- Do not use flammable solvents in processing.
- Do not load machine with goods containing dry cleaning materials.
- Do not use the machine in the presence of solvent fumes.



**WARNING [8]: Poison and Corrosion Hazards**—Synthetic solvents such as perchloroethylene are toxic. They can produce poisonous phosgene gas (mustard gas) and/or corrosive hydrochloric acid when heated.

- Do not load machine with goods containing dry cleaning materials.
- Do not use the machine in the presence of solvent fumes.



**WARNING [9]: Fire Hazards**—Overheated goods can catch fire spontaneously in the machine or after discharge.

- Verify the overheat control system and plant fire extinguishers are functioning before operating the machine. Be sure to turn water supply on after testing.
- In the event of a fire, thoroughly wet all goods.
- Test or inspect the system after every automatic actuation, or monthly.



**CAUTION [10]: 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.
- Use care when handling recently-processed goods.

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

### 5.1. Damage and Malfunction Hazards

#### 5.1.1. Hazards Resulting from Inoperative Safety Devices



**WARNING [11]: 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 [12]: 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 [13]: Entangle and Crush Hazards**—Guards, covers, and panels—Operating the machine with any guard, cover, or panel removed exposes moving components.

- Do not remove guards, covers, or panels.



**WARNING [14]: Fire Hazards**—Sprinkler and overheat control—Failure to supply water to the sprinkler or to open the manual valve, or failure of the overheat control, eliminates the machine's internal fire protection. Normally the machine stops and water is sprayed into the cylinder if outlet temperature reaches 240 degrees Fahrenheit (116 degrees Celsius).

- Verify the overheat control system and plant fire extinguishers are functioning before operating the machine. Be sure to turn water supply on after testing.
- Keep the manual shut-off test valve open except when testing.
- Test or inspect the system after every automatic actuation, or monthly.



**WARNING [15]: Explosion and Fire Hazards**—Gas train—Operating the machine with damaged or malfunctioning gas valves, safeties, controls, or piping can permit gas to escape into the fire box, cylinder, or laundry room. The enclosure will explode if gas comes in contact with any spark or flame.

- Do not operate the machine with any evidence of damage or malfunction.
- Stop the machine immediately and alert authorities if you smell gas.

#### 5.1.2. Hazards Resulting from Damaged Mechanical Devices



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

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

### 5.2. Careless Use Hazards

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



**WARNING [17]: 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 [18]: 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 [19]: 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 [20]: 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 [21]: Confined Space Hazards**—Confinement in the cylinder can kill or injure you. Hazards include but are not limited to panic, burns, poisoning, suffocation, heat prostration, biological contamination, electrocution, and crushing.

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

— End of BIUUUS27 —

BIUUUI02 (Published) Book specs- Dates: 20180426 / 20180426 / 20180426 Lang: ENG01 Applic: PDH PDO PDS

## Tag Guidelines for the Models Listed Below

5050SA1L 5850SA1R 6458TT1L 6458TT1R 5050TS1L 5050TS1R 6458TS1L  
 6458TS1R 6464TS1L 6464TS1R 7676TS1L 7676TS1R 8282TS1L 8282TS1R  
 MT140S1L MT140S1R

**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 at the bottom of the tag, and 3) the meaning of the tag.

**Display or Action**



**Explanation**

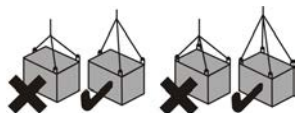
Read the manuals before proceeding. This symbol appears on most tags. The machine ships with safety, operator, and routine maintenance guides for customer use. Milnor dealer manuals for installing, servicing, and commissioning this machine are also available from the Milnor Parts department.



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



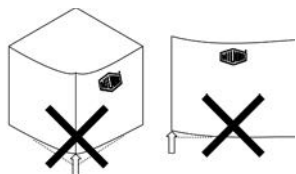
B2TAG94078: Do not forklift here; do not jack here; do not step here—whichever applies.



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



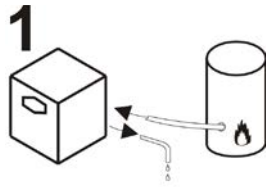
B2TAG94081: Motor must rotate in this direction. On single motor washer-extractors and centrifugal extractors, the drive motor must turn in this direction during draining and extraction. This tag is usually wrapped around a motor housing. If the motor turns in the opposite direction when the machine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



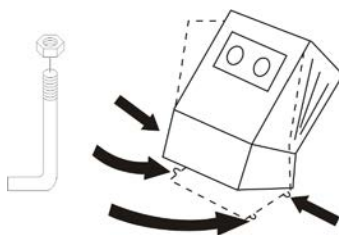
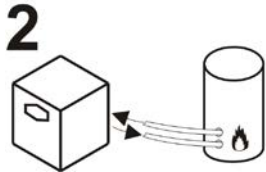
B2TAG94084: Do not lift from one corner of the machine, as this can cause the frame to rack, damaging it.

**Display or Action**

**Explanation**



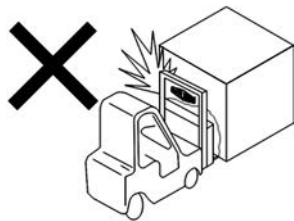
B2TAG94091: Drain the condensate to the sewer during first one hour after commissioning a new machine or replacing the steam coil. This flushes out any residual anti-freeze that might be in the steam coil. After one hour, condensate can be returned to the boiler.



B2TAG94101: The dryer has a rearward center of gravity and must be firmly anchored to the floor at all four corners.



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.



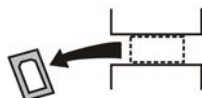
B2TAG94118: Do not strike shipping container during fork-lifting. Fragile components inside.



B2T2001017: Foam seal must be installed here before dryers are bolted together.



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.



## Tag Guidelines for the Models Listed Below

### Display or Action



This Control Box is mounted here:  
for shipping purposes only

### Explanation

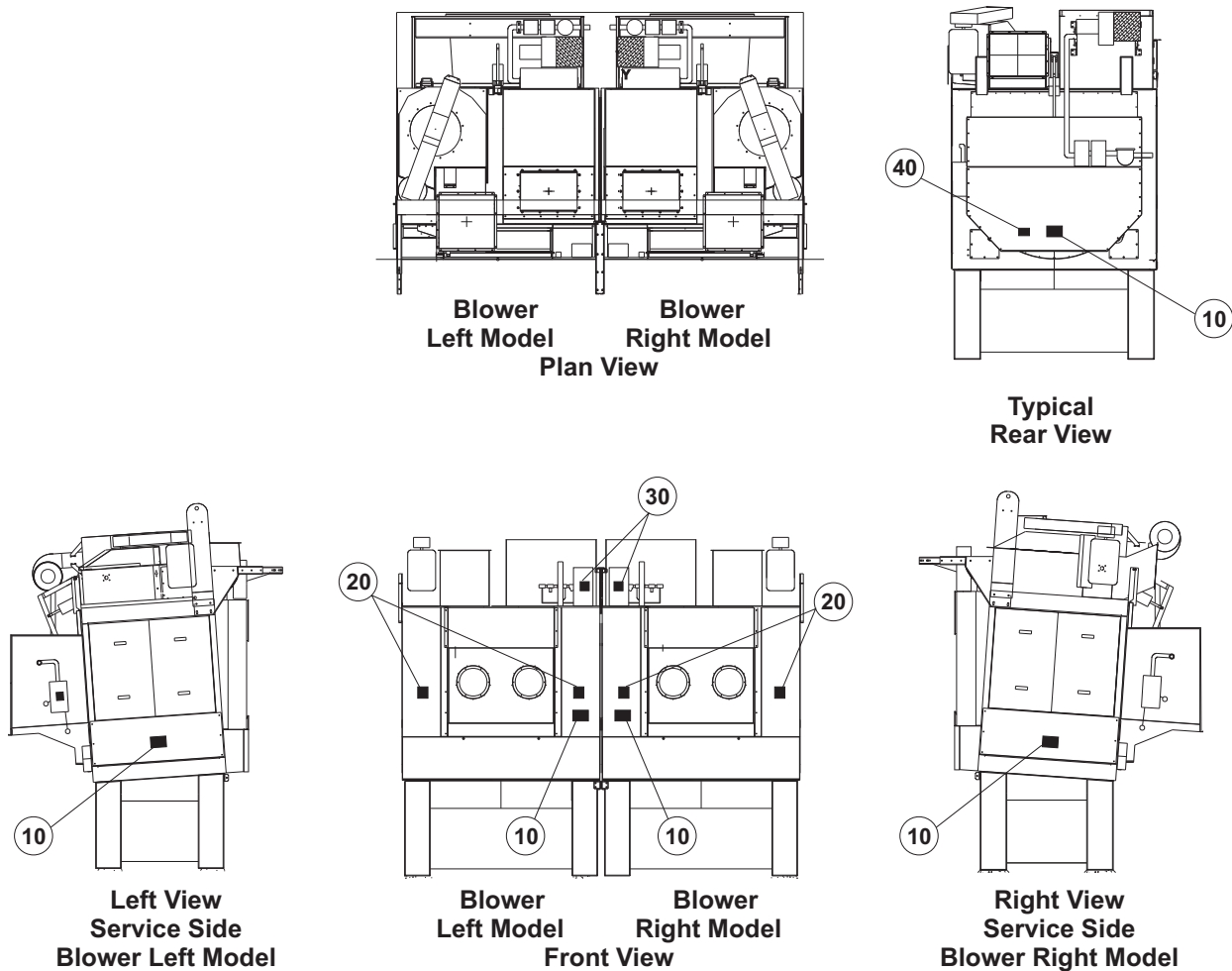
B2T2007003: Install the shuttle rail in accordance with this instruction and the installation manual.

B2T2014022: This control box is mounted here for shipping purposes only. (Only used on 64" and 76" gas and steam dryers with a blower inverter.)

— End of BIUUUI02 —

## Safety Placard Use and Placement

5040, 5050, 6450, 6458, 6464, 7272, 7676 and 8282 Dryers



### Notes:

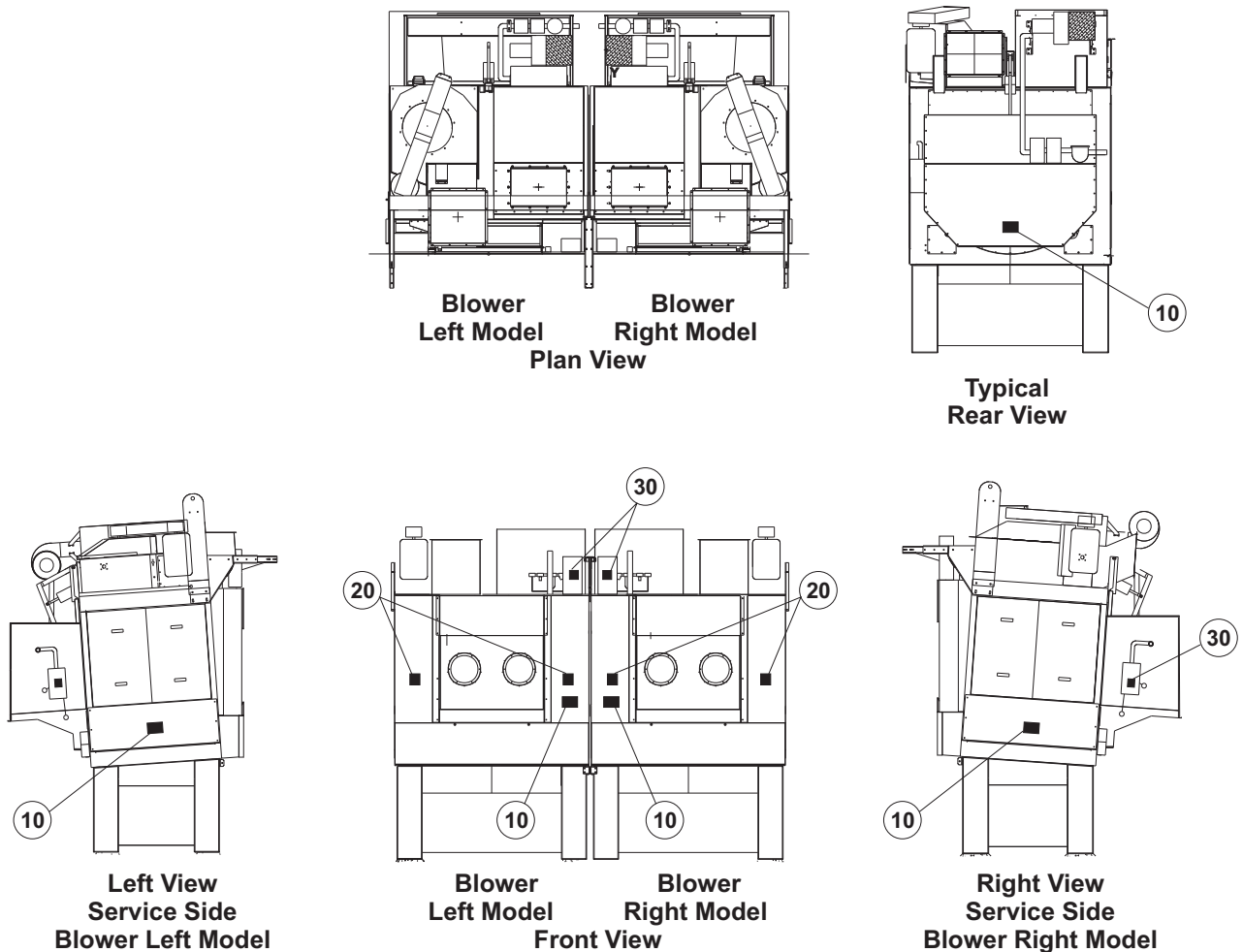
1. Replace placard immediately, if removed or unreadable.
2. Approximate locations of placards are shown. Mounting holes are provided on machine. If aluminum placard use #8 self-tapping screws.

## 5040, 5050, 6450, 6458, 6464, 7272, 7676, and 8282 Dryers

PELLERIN MILNOR CORPORATION

## Safety Placard Use and Placement - ISO

5040, 5050, 6450, 6458, 6464, 7272, 7676, and 8282 Dryers



## 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.

## 5040, 5050, 6450, 6458, 6464, 7272, 7676, and 8282 Dryers

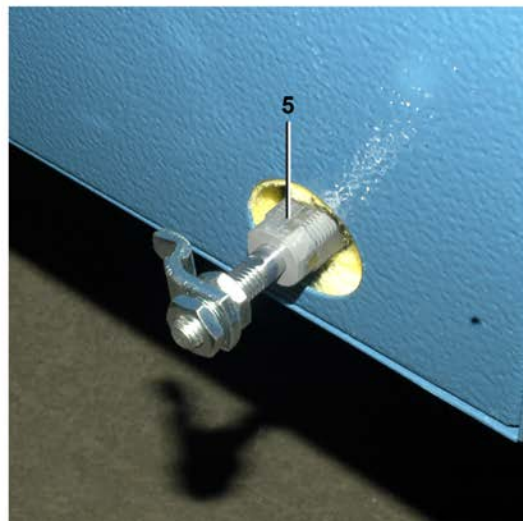
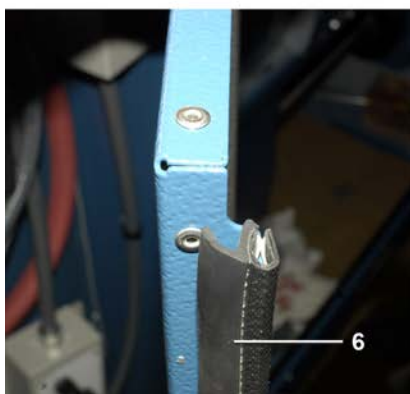
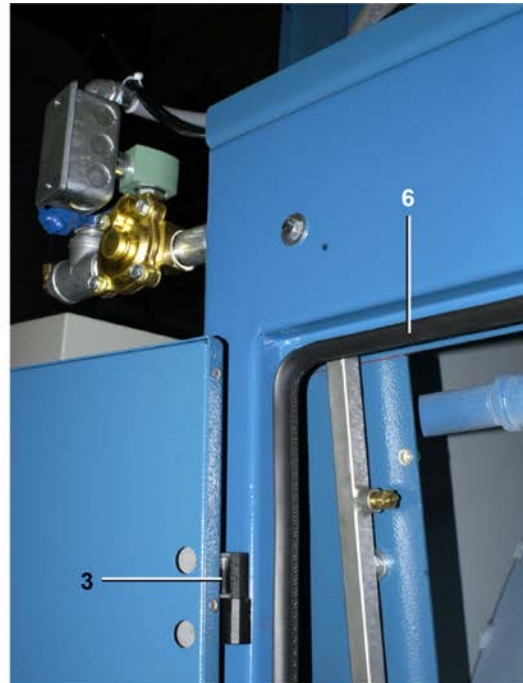
Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
-			-----COMPONENTS-----	
All	10	01 10451X	NPLT:DRYER WARNINGS -ISO	
all	20	01 10377	NPLTE:"WARNING" 4X4	
all	30	01 10375	NPLTE:"WARNING" 2X2	

## Side Doors

1 of 2

5050, 6450, 6458, 6464, 7676, 8282 Dryers

**Side Doors used on Dryers since 2014**



## Side Doors

2 of 2

5050, 6450, 6458, 6464, 7676, 8282 Dryers

**Table 1. Parts List—Side Doors**

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
Reference Assemblies				
	A	REFERENCE	5050 DRYERS	
	B	REFERENCE	6450 DRYERS	
	C	REFERENCE	6458 DRYERS	
	D	REFERENCE	6464 DRYERS	
	E	REFERENCE	7676 DRYERS	
	F	REFERENCE	8282 DRYERS	
Components				
A	1	A74SD018A	5050 DOOR ASSY W/O LOCK	
B	1	A77SD030A	6450 SIDE DOOR ASSY W/O LOCK	
C	1	A77SD017A	6458 HINGED SIDE DOOR ASSY W/O LOCK	
D	1	A77SD023A	6464 HINGED SIDE-DOOR ASSY W/O LOCK	
E	1	A79SD022	7676 HINGED SIDE-DOOR W/O LOCK ASSY 2 HINGE	
F	1	A82SD001A	8282 SIDE DOOR W/O LOCK	
A	2	A74SD018	5050 DOOR ASSEMBLY W/LOCK	
B	2	A77SD030	6450 SIDE DOOR ASSY W/LOCK	
C	2	A77SD017	6458 HINGED SIDE DOOR ASSY W/LOCK	
D	2	A77SD023	6464 HINGED SIDE-DOOR ASSY W/LOCK	
E	2	A79SD023	7676 HINGED SIDE-DOOR W/LOCK ASSY 2 HINGE	
F	2	A82SD001	8282 SIDE DOOR W/LOCK	
all	3	27A108A	HINGE LIFTOFF LH EMKA#1056-U62 BLACK	
all	4	27A108B	HINGE LIFTOFF RH EMKA#1056-U63 BLACK	
all	5	27A102M	WISE-ACT.DBBIT.LATCH#E3-12-27	
all	6	60A114	SELF-GRIP GASKET EMKA 1011-17	



# Installation

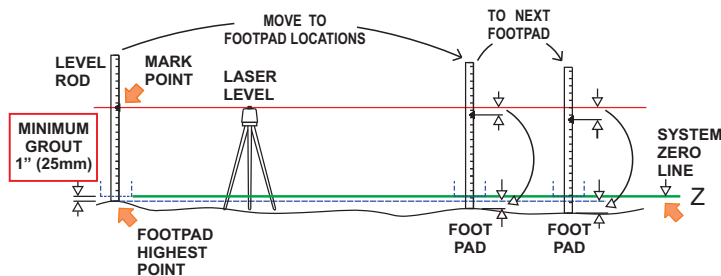
2

# ATTENTION INSTALLERS!



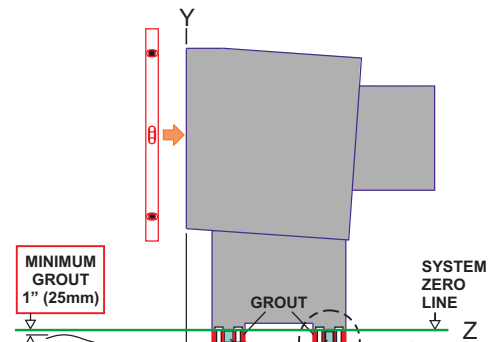
## FLOOR IS UNEVEN

- 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.



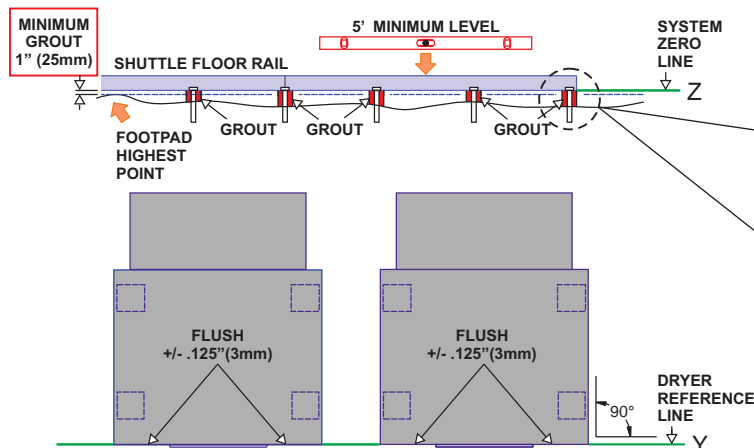
## DRYER FEET MUST BE GROUTED

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

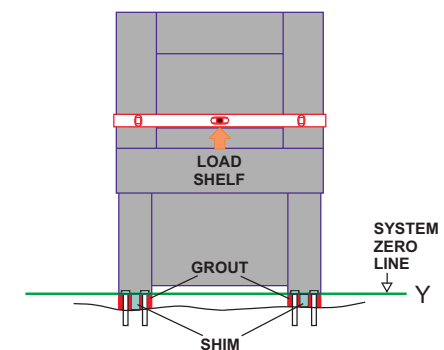
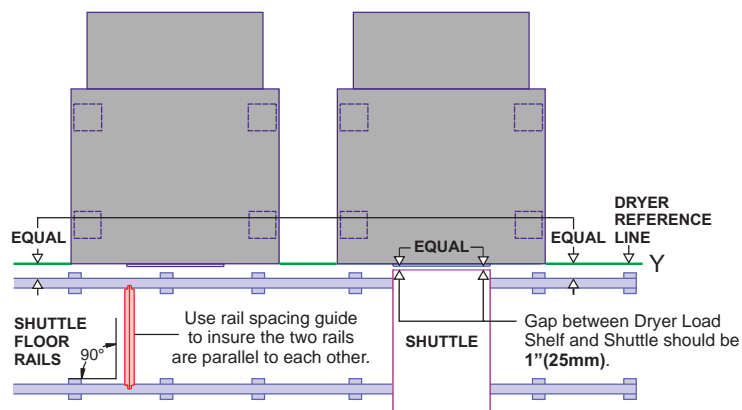


## SHUTTLE RAIL BRACKETS MUST BE GROUTED TO Z

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



## DRYER FACES MUST BE FLUSH



## DRYER MUST BE LEVEL

## SHUTTLE RAILS MUST BE PERFECTLY PARALLEL TO DRYER FACES

- Floor rails must be parallel, level, and square along entire length of rail.

## Dryer Assembly and Setting

This document gives general instructions for shippers and installers. Several other documents in the installation manual provide more detailed instructions on specific tasks related to installation. Review all of the installation-related documents before proceeding.

### 1. Handling Precautions

The machine is disassembled at the Milnor factory in two or more assemblies: the main dryer housing, the pedestal base, and if necessary, one or more other assemblies. The machine is shipped from the Milnor factory in three or more containers. Major assemblies are palletized or skidded and there are one or more boxes containing loose parts such as connecting brackets.

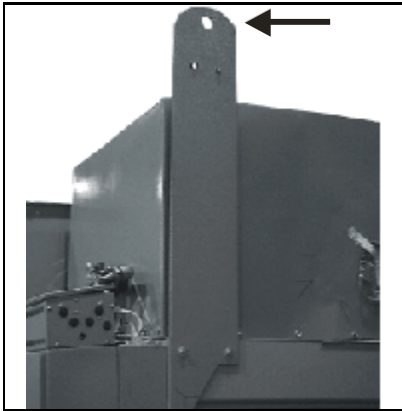
1. Remove the protective coverings (leaving the machine on its shipping skids) and examine the components carefully for possible shipping damage. If the machine is damaged, notify the transportation company immediately.

**Note 1:** Once the machine is given to the carrier for delivery, it is the sole responsibility of the **carrier** to ensure that no damage occurs during transit. In addition to readily apparent damage, carriers are liable for concealed damage. **Do not hesitate to file a claim with the carrier if the machine has been damaged in any way during shipment.** Milnor® will be glad to assist you in filing your claim, but is not responsible for shipping damage to the machine once it has been delivered to the carrier in good condition.

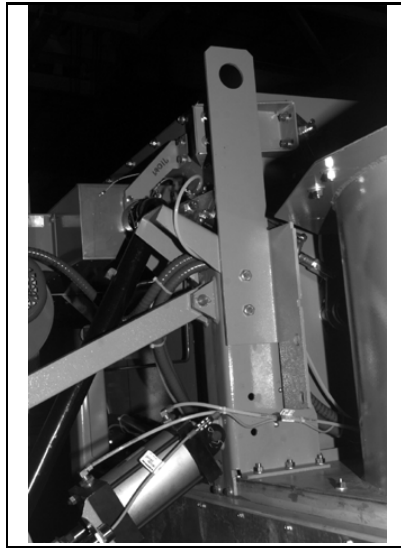
2. Lifting brackets are provided on the top of the house and are tagged as such. Spreader bars are mounted between the lifting brackets. The lifting brackets must be used if lifting by crane.
3. Use the skids for fork lifting and, if possible, leave the machine on its shipping skids until it is about to be assembled and placed in its final position. Once the skids are removed, take care in placing forks under the machine. **Do not allow the forks to come in contact with valves, piping, etc., located on the machine.**
4. Never push, pull, or exert pressure on any components that protrude from the machine frame.
5. Consult the Milnor factory if components such as the blower housing must be removed to fit machine through openings.

Some dryers are paired for installation immediately adjacent to each other. When installing these machines, the spreader bar mounting bolts ([Figure 3](#)) are inaccessible once the machines are mounted side by side. Remove the spreader bar immediately after installing the legs, before setting or anchoring dryer. Do not remove the lift plates as they are used to tie machines together.

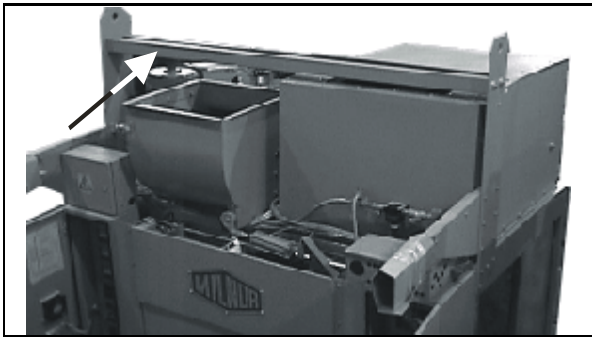
**Figure 1: Front Lifting Bracket**



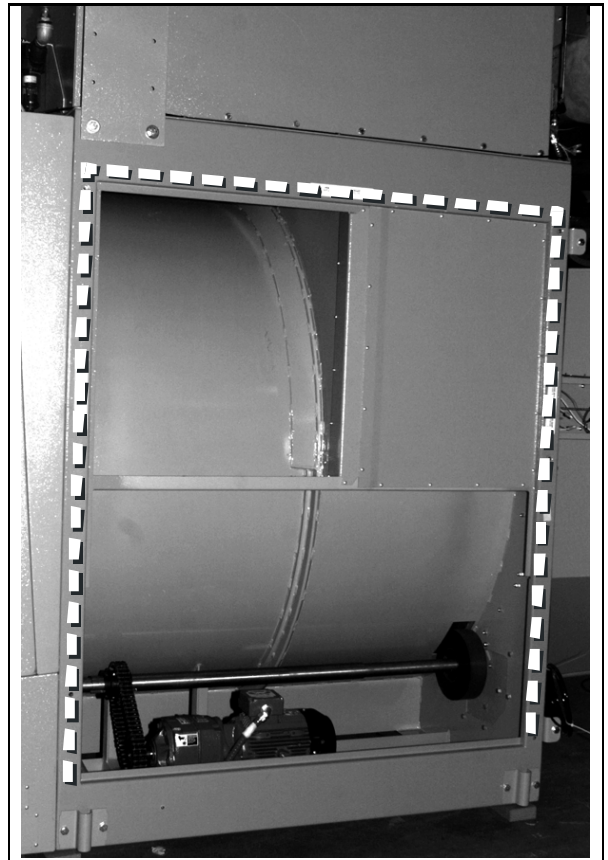
**Figure 2: Rear Lifting Bracket**



**Figure 3: Spreader Bar Between Front Lifting Plates**



**Figure 4: Apply sealing foam to left house before setting into position**



## 2. Site Requirements

**2.1. Dryer Environment**—The dryer must not be installed or stored in an area where it will be exposed to water and/or weather.

**2.2. Clearances**—Observe the following:

- Sufficient clearances must exist to move the machine into the laundry. All openings and corridors through which equipment must pass must be of sufficient size to accommodate the sizes of the skidded assemblies (see the dimensional drawing). It is occasionally possible to reduce the overall dimensions by removing piping and by other special modifications. Consult the Milnor factory for more information.
- Provide sufficient clearance around machine for normal operation and maintenance procedures.
- Ensure sufficient clearance between hot surfaces, such as the dryer exhaust vent, and any combustible building materials.
- Ensure sufficient ventilation exists for the heat and vapors of normal operation to dissipate.
- Provide adequate airflow for optimum machine performance. Normally, this means connecting the machine to an outside air source.

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

## 3. Assembly

**3.1. Installing the Legs on the House**—It is usually easiest to install the legs on the house then use a fork lift to set the machine in place.

1. Read all related tags prior to assembly.
2. Verify that the doors are closed and secured.
3. Unfasten house from the shipping skid. Once skids are removed, take care in placing forks under the machine. **Do not allow forks to come in contact with valves, piping, motors, etc., located under the machine.**
4. Install the provided foam seal along the path indicated by decals on the machine. This seal is only installed on the left side machine of a left and right pair (Figure 4).
5. Raise the house using the three designated lifting plates located on the top of the machine.
6. Install the legs and filler plates on the house.
7. Remove the spreader bar (Figure 3).
8. Carefully move the machine into place.
9. Repeat the assembly process as required for the adjacent machine (if paired).

### 3.2. Anchoring



**WARNING 1:** **Crush and Machine Damage Hazards**—This machine has a rearward center of mass.

- Install anchor bolts as soon as machine is in position and before making service connections. Install anchor bolts in accordance with the dimensional drawing.
- Keep bystanders clear of machine during installation.

Machines must be securely anchored to an adequate foundation. Anchor bolt locations and foundation specifications are provided on the dimensional drawing. However, do not install anchor bolts until the machine is on site so that the machine itself may be used to determine precise anchor bolt locations. Consult Milnor if any obstruction prevents the installation of any anchor bolts. **Anchor bolts cannot be indiscriminately omitted.**

### 3.3. Leveling Procedures

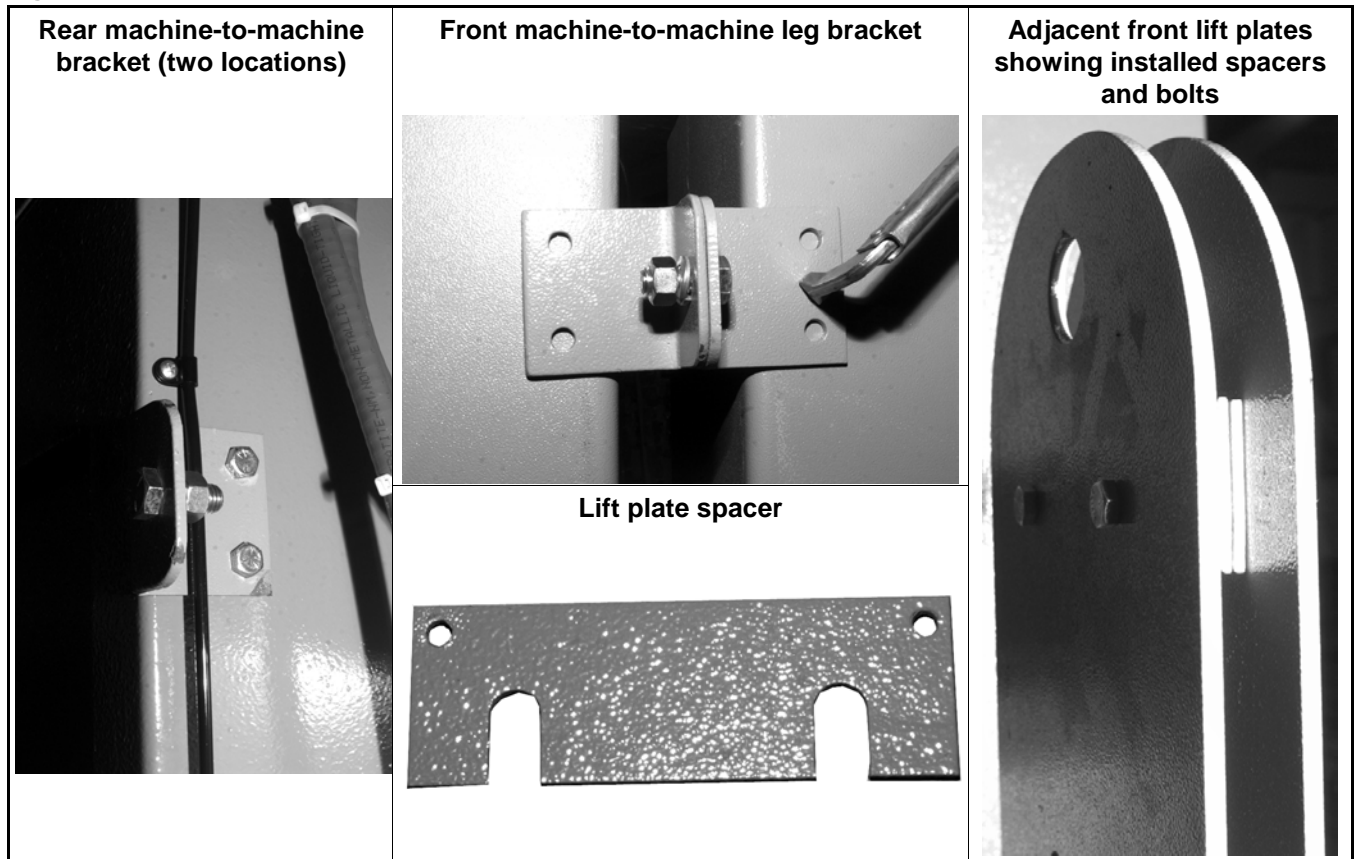
1. Establish System Zero Line or Z. Find the highest point in the factory floor where footpads will be located. The system Zero Line or Z is 1"(25MM) above the highest point.
2. Install the anchor bolts.
3. Level with leveling bolts until the bottom of the pedestal feet are on System Zero Line or Z. Level **both left to right and front to back**.
4. Use a carpenter's level to verify that the machine is level.
5. Dryer feet must be grouted. Grout all footpads.
6. Tighten all foundation bolts until they contact the top of the base plates.
7. Tighten all the bolts evenly, **one-quarter of a turn each time on every bolt** until all bolts are uniformly tight. After tightening, check each fastener separately at least twice.

**3.4. Machine-to-Machine Brackets**—Machine to machine brackets hold paired dryers in place after each machine is anchored and leveled. Install these brackets as follows:

- Install the rear brackets (Figure 5).
- Assemble front machine-to-machine leg bracket. Mark and drill mounting holes and install the leg bracket (Figure 5).
- Install bolts between the front lift plates of adjacent machine pairs. Do not tighten bolts at this time.
- Slide the lift plate spacers in between the front lift plates (Figure 5). Tighten bolts when done.



**Figure 5: Machine-to-Machine Brackets and Spacers**



**3.5. Check Cylinder Interior**—Check the interior of the perforated cylinder for smoothness before placing the machine in service. Milnor cannot accept claims for damage to the cylinder's smooth finish after the machine has been placed in service.

— End of BIPD6I02 —

## Lifting Brackets

5040TG2L/R, TS2L/R, 5050TG1L/R, TS1L/R, 6450TG1L/R

6458TG1L/R, TS1L/R, 6464TG1L/R, TS1L/R, 7272TG1L/R, TS1L/R, 7676TG1L/R 8282TG1L/R

Figure 1: 5040, 5050, 6450, 6458, 6464, 7272, 7676, and 8282 Dryers (7676 Shown)

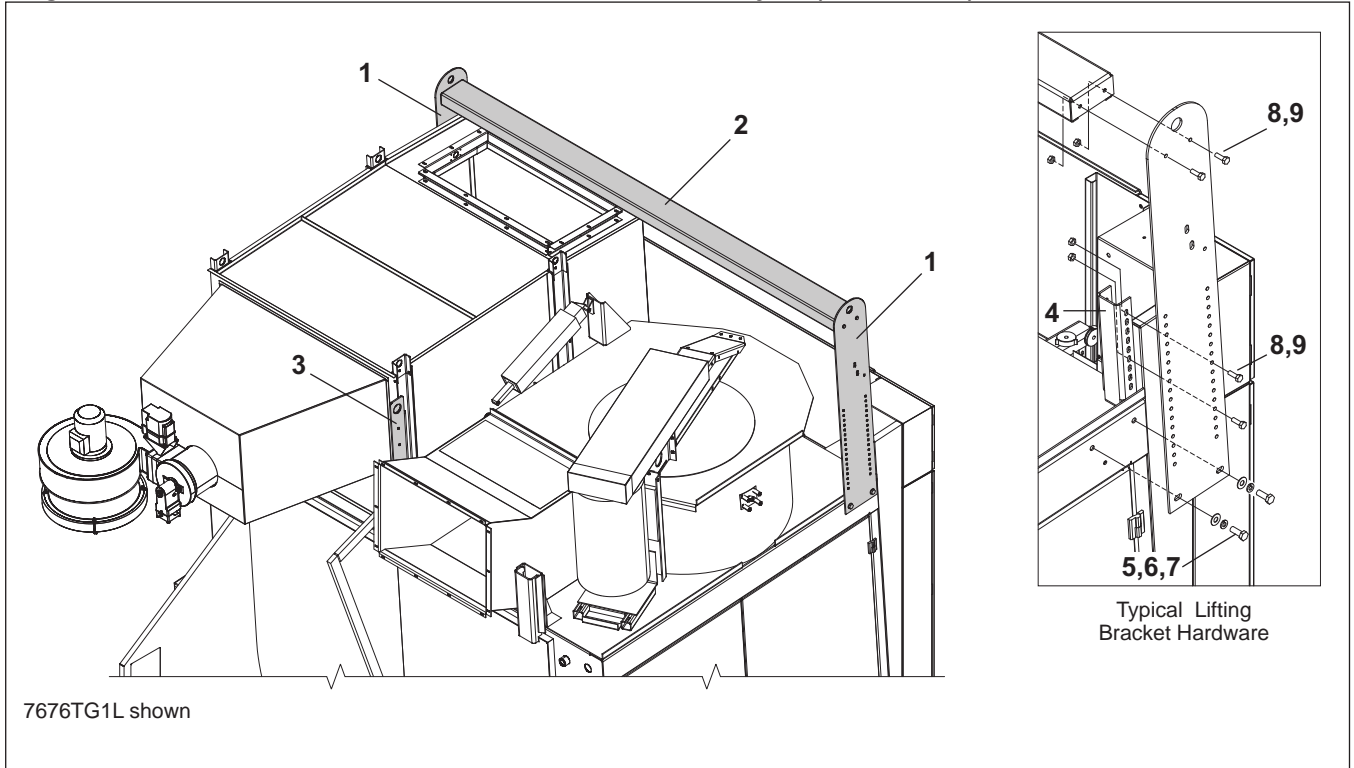
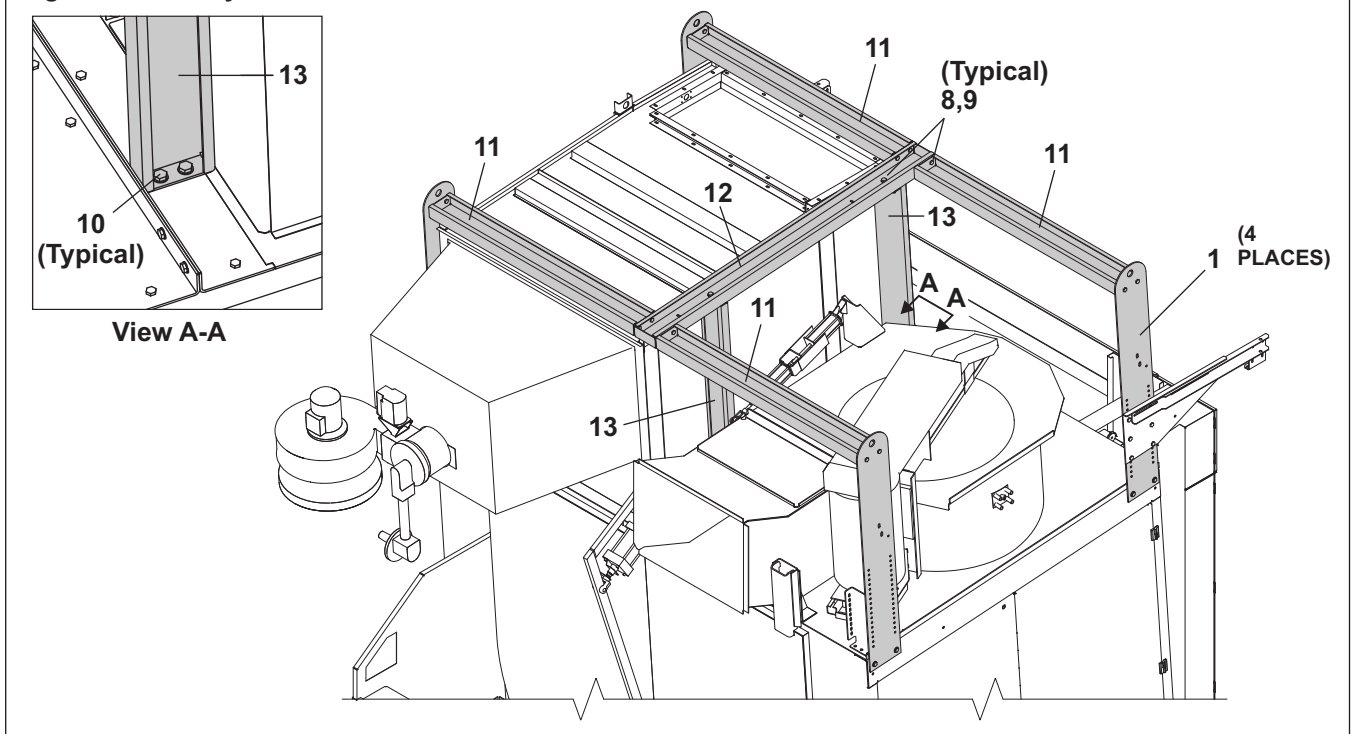


Figure 2: 8282 Dryers



## Lifting Brackets

5040TG2L/R,TS2L/R, 5050TG1L/R,TS1L/R, 6450TG1L/R

6458TG1L/R,TS1L/R, 6464TG1L/R,TS1L/R, 7272TG1L/R,TS1L/R, 7676TG1L/R 8282TG1L/R

### Parts List—Lifting Brackets

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

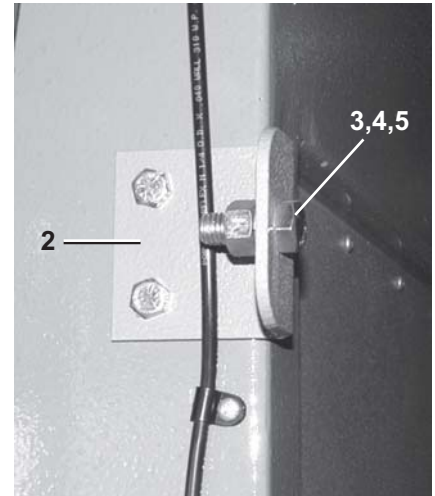
Used In	Item	Part Number	Description	Comments
-----REFERENCE ASSEMBLIES-----				
A			5040 DRYERS	
B			5050 DRYERS	
C			6450 DRYERS	
D			6458 DRYERS	
E			6464 DRYERS	
F			7272 DRYERS	
G			7676 DRYERS	
H			8282 DRYERS	
-----COMPONENTS-----				
ABDE	1	07 71315	DRYER LIFT BRKT STANDARD=41.50	
C	1	07 71315B	6450 DRYER LIFT BRKT=44.50	
FG	1	07 85315A	DRYER LIFT BRKT TALL=51.50	
H	1	07 88092	8282 DRYER LIFT BRKT	
AB	2	07 44075	5040 LIFT BRKT LONG SPREADER	
C	2	07 71316	6458 LIFT BRKT LONG SPREADER	
DE	2	07 81316	7272 LIFT BRKT LONG SPREADER	
H	2	07 88093	8282 SPREADER BAR CENTER STIFF	
AB	3	07 44076	5040 REAR LIFTING BRACKET	
CDEF	3	07 71183A	6458A REAR LIFTING BRACKET	
FG	3	07 71183B	DRYER REAR CHANNEL LIFTING BRACKET	
H	3	07 88096	8282 VT LIFTING BRKT	
A-F	4	07 71439	6458 RAILSUPP CORNER BRKT	
all	5	15K173A	HXCAPSCR 1/2-13UNC2AX1.75 GR5	
all	6	15U280	FL+WASHER(USS STD)1/2 ZNC PL+D	
all	7	15U300	LOKWASHER REGULAR 1/2 ZINC PLT	
all	8	15K105	HXCAPSCR 3/8-16UNC2A1.25 GR5 P	
all	9	15G198	HXFLGNUT 3/8-16 ZINC	

## Dryer to Dryer Mounting Parts

5040, 5050, 6450, 6458, 6464, 7272, 7676, 8282 Dryers



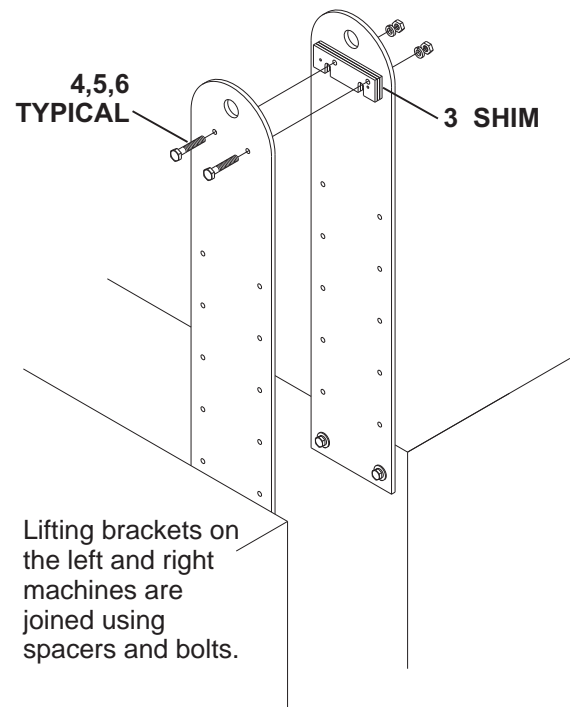
Sealing foam is applied to the right side of the left machine of the pair only. The dashed line shows where to apply the foam. ("right machine" shown in photo)



Mounting brackets are used to join left and right machines on the rear of the house and to join the pedestal legs.



Covers for nameplate and emergency stop replacement.



Lifting brackets on the left and right machines are joined using spacers and bolts.

See Instruction, "Dryer Installation" BIPD6I02.

## Dryer to Dryer Mounting Parts

5040, 5050, 6450, 6458, 6464, 7272, 7676, 8282 Dryers

### Parts List—Dryer to Dryer Mounting Parts

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.

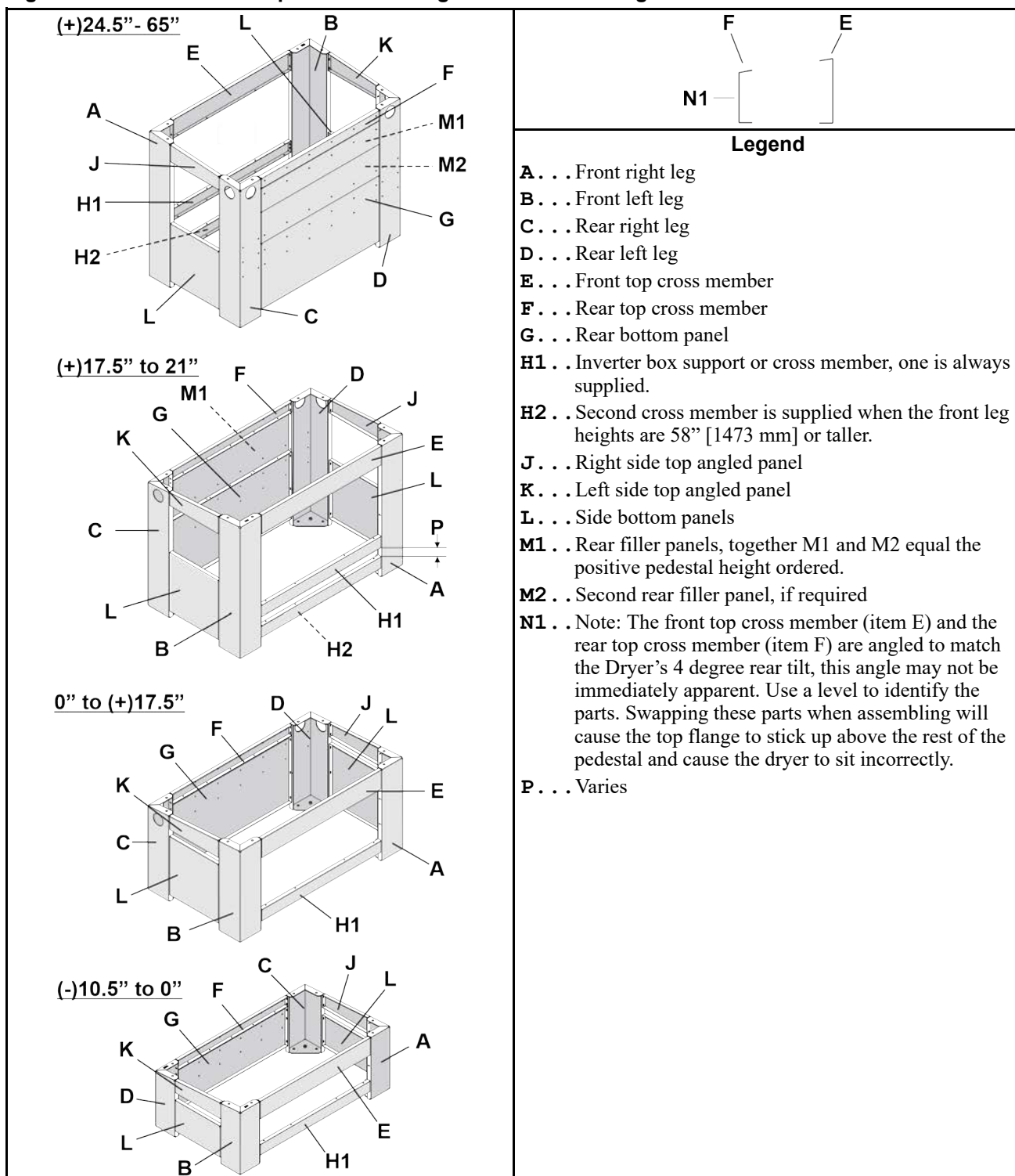
Used In	Item	Part Number	Description	Comments
.			-----COMPONENTS-----	
All	1	60A008A	1" X 1" NEO SPONGE/ADH.	
all	2	07 71309	6458 DRYER TO DRYER MNT BKT	
all	3	15K105	HXCAPSCR 3/8-16UNC2A1.25 GR5 P	
all	4	15U255	LOCKWASHER MEDIUM 3/8 ZINCPL	
all	5	15G205	HXNUT 3/8-16UNC2B ZINC GR2	
all	6	15K125	HEXCAPSCR 3/8-16UNC2AX2.5 GR5-	
all	7	07 71310	6458 DRYER TO DRYER MNT SHIM	
all	8	03 CC2X2	COVER PLT:DRYER NPLT REPLCMNT	
all	9	03 CC3X4	COVER PLT:DRYER E-STOP RPLCMNT	

## Pedestal Base Installation

1 of 4

5050, 6450, 6458, 6464, 7676, &amp; 8282 Dryers

Figure 1. Placement of Components with Regard to Pedestal Height

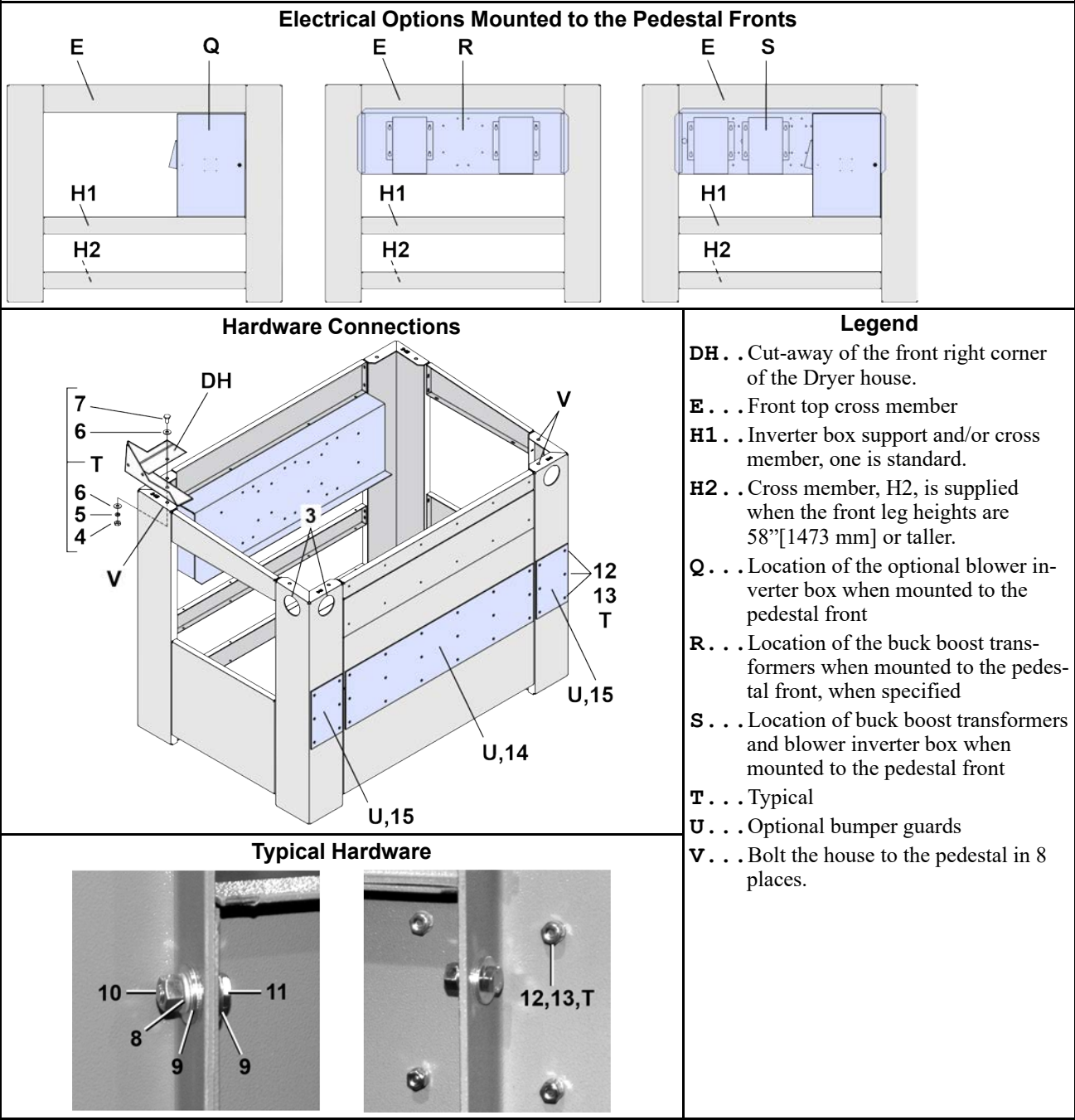


# Pedestal Base Installation

5050, 6450, 6458, 6464, 7676, & 8282 Dryers

2 of 4

Figure 2. Pedestal Options and Hardware Connections





## Pedestal Base Installation

5050, 6450, 6458, 6464, 7676, & 8282 Dryers

3 of 4

Figure 3. Anchoring

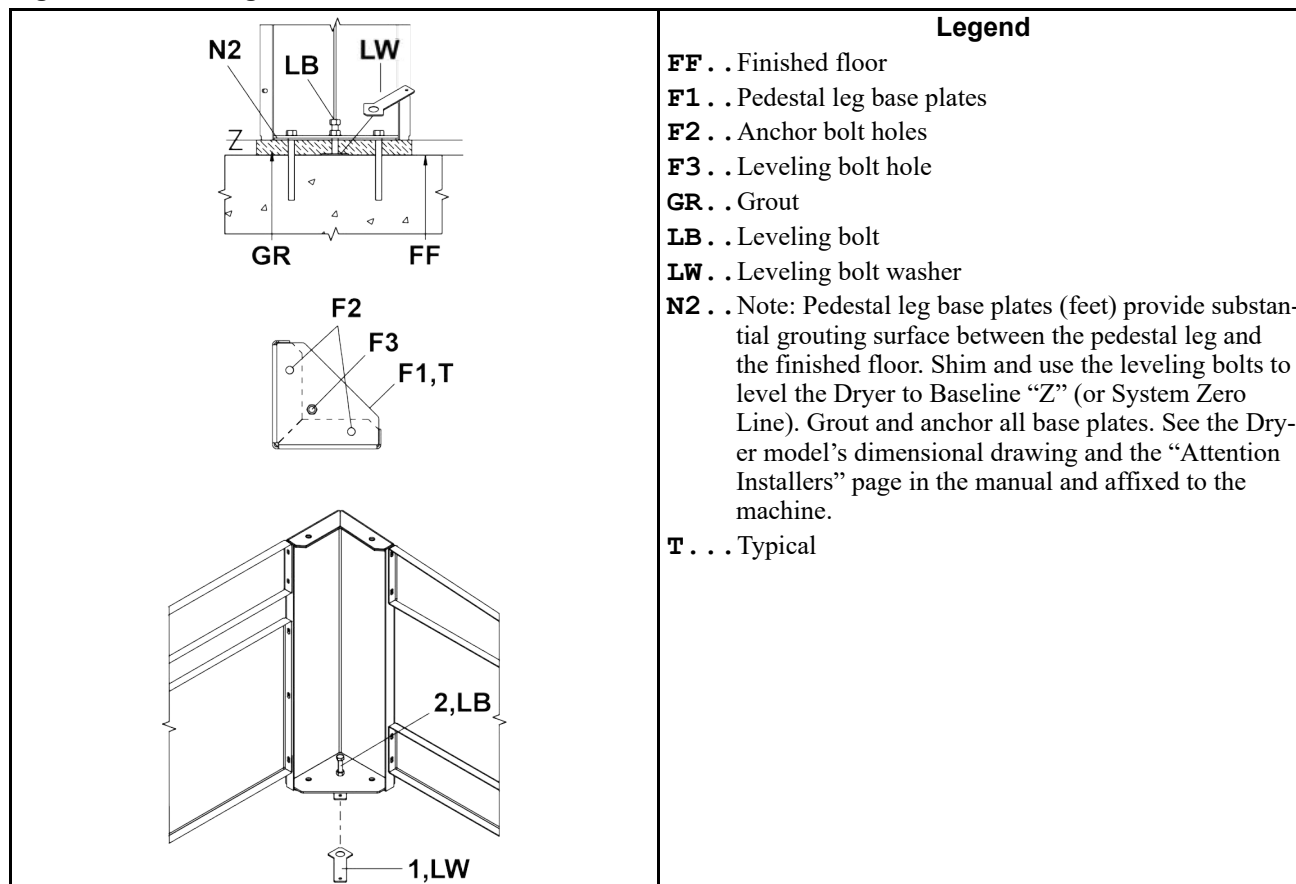


Table 1. Parts List—Pedestal Base Installation

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
Reference Assemblies				
	A	G77PD030	DRYER PEDESTAL STANDARD HARDWARE	
Components				
all	1	07 71579	DRYER JACKING BOLT WASHER	
all	2	15K226	HXTAPSCR 5/8-11UNC2AX3 GR5 ZIN	
all	3	12P14KSB	SNAPBUSH 5.0" X 4.75" X .75	
all	4	15G230	HXNUT 1/2-13UNC2B SAE ZINC GR2	
all	5	15U300	LOKWASHER REGULAR 1/2 ZINC PLT	
all	6	15U490	FLTWASH 1+1/2X17/32X1/4 ZINC	
all	7	15K191	HXCAPSCR 1/2-13UNC2AX2.5 GR5 Z	
all	8	15U255	LOCKWASHER MEDIUM 3/8 ZINCPL	



## Pedestal Base Installation

4 of 4

5050, 6450, 6458, 6464, 7676, & 8282 Dryers

### Parts List—Pedestal Base Installation (cont'd.)

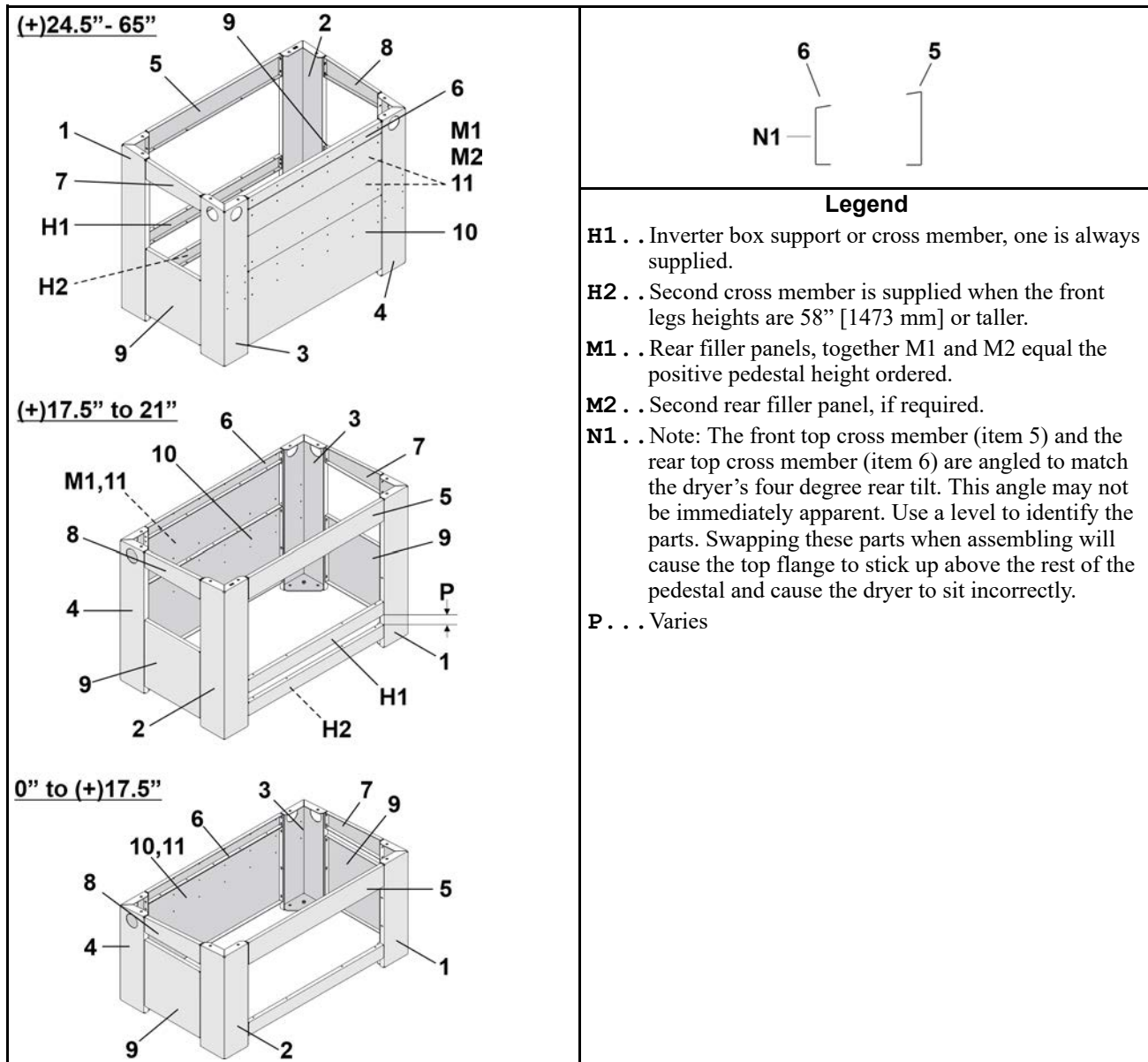
Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
all	9	15U240	FLATWASHER(USS STD) 3/8" ZNC P	
all	10	15G205	HXNUT 3/8-16UNC2B ZINC GR2	
all	11	15K095	HXCPSCR 3/8-16UNC2AX1 GR5 ZINC	
all	12	15N176	FLATMACSCR 1/4-20NCX3/4SS18-8	
all	13	15G164NE	HEXLOKNUT NYL 1/4-20 UNC2A SS.	
	14	07 71403	6458 BUMPER PAD-16"WX60"LG	5050, 6450, 6458, 6464 Dryers
	14	07 81403	7272 BUMPER PAD	7676 Dryers
all	15	07 71404	6458 BUMPER PAD-16"WX10"LG	

# Pedestal Base Components

1 of 4

5050 Dryers

Figure 1. Components with Regard to Pedestal Height



# Pedestal Base Components

2 of 4

5050 Dryers

Figure 2. Pedestal to House Connection, Typical Hardware, and Leveling Bolts

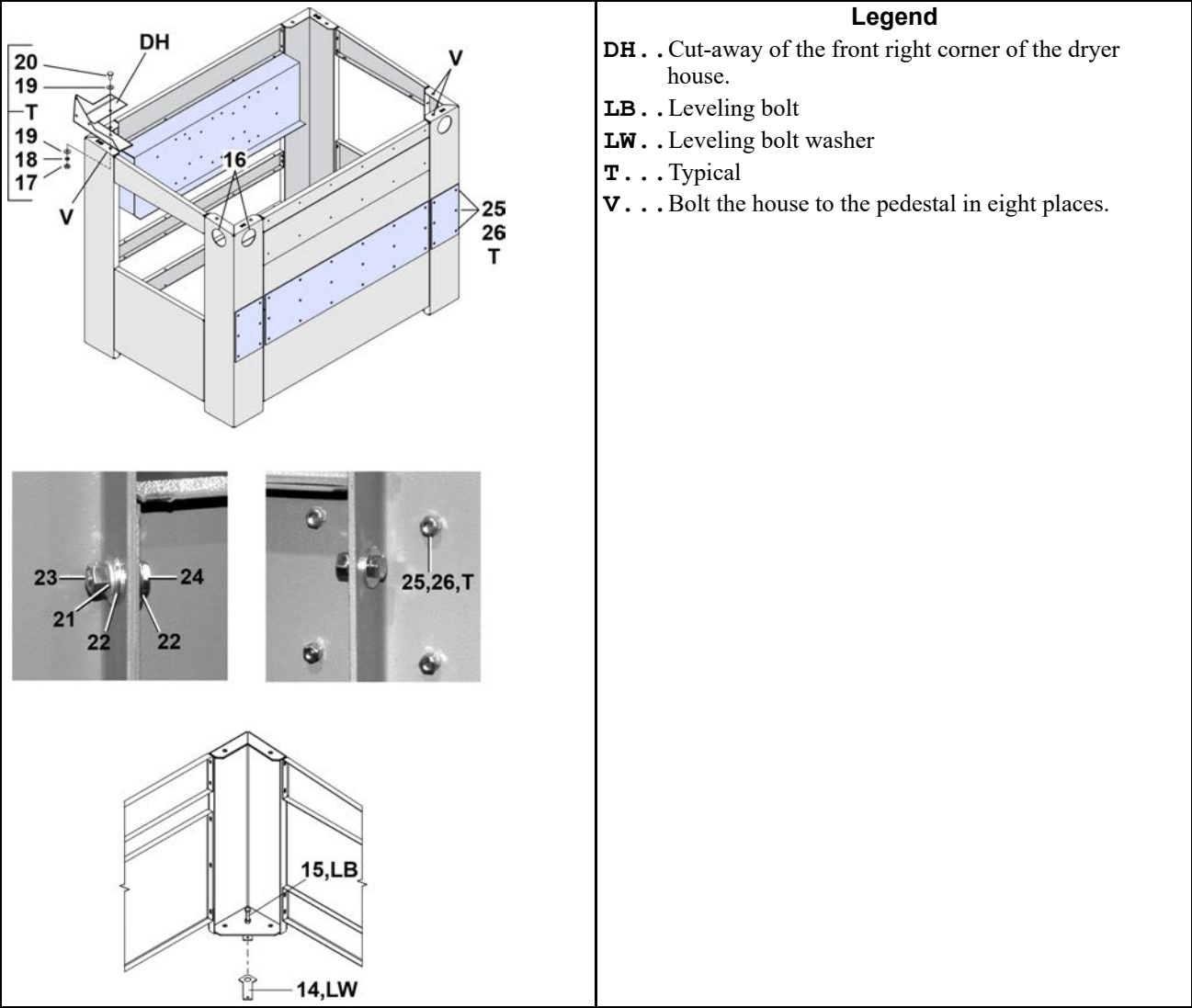


Table 1. Parts List—Pedestal Base Components

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
Reference Assemblies				
none				
	A		PEDESTAL ORDER HEIGHT 0.0"	REFERENCE
	B		PEDESTAL ORDER HEIGHT 10.5"	REFERENCE
	C		PEDESTAL ORDER HEIGHT 14"	REFERENCE

## Pedestal Base Components

3 of 4

5050 Dryers

### Parts List—Pedestal Base Components (cont'd.)

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
	D		PEDESTAL ORDER HEIGHT 17.5"	REFERENCE
	E		PEDESTAL ORDER HEIGHT 21"	REFERENCE
	F		PEDESTAL ORDER HEIGHT 24.5"	REFERENCE
	G		PEDESTAL ORDER HEIGHT 28"	REFERENCE
	H		PEDESTAL ORDER HEIGHT 31.5"	REFERENCE
Components				
A	1	W7 44101B	WLMT=5050 FRONT RIGHT STD PED JACKBOLT	
B	1	W7 44110B	WLMT=5050 FRONT RIGHT 10.50 PED JACKBOLT	
C	1	W7 44108B	WLMT=5050 FRONT RIGHT 14.00 PED JACKSHAFT	
D	1	W7 44112B	WLMT=5050 FRONT RIGHT 17.50 PED JACKBOLT	
E	1	W7 44114B	WLMT = 5050 FRONT RIGHT 21.00" PED JACKBOLT	
F	1	W7 44116B	WLMT=5050 FRONT RIGHT 24.5 PED JACKBOLT	
G	1	W7 44118B	WLMT=5050 FRONT RIGHT 28.00 PED JACKBOLT	
H	1	W7 44100B	WLMT=5050 FRONT RIGHT 31.50 PED JACKBOLT	
A	2	W7 44101C	WLMT=5050 FRONT LEFT STD PED JACKSHAFT	
B	2	W7 44110C	WLMT=5050 FRONT LEFT 10.50 PED JACKBOLT	
C	2	W7 44108C	WLMT=5050 FORNT LEFT 14.00 PED JACKSHAFT	
D	2	W7 44112C	WLMT=5050 FRONT LEFT 17.50 PED JACKBOLT	
E	2	W7 44114C	WLMT = 5050 FRONT LEFT 21.00" PED JACKBOLT	
F	2	W7 44116C	WLMT=5050 FRONT LEFT 24.5 PED JACKBOLT	
G	2	W7 44118C	WLMT=5050 FRONT LEFT 28.00 PED JACKSHAFT	
H	2	W7 44100C	WLMT=5050 FRONT LEFT 31.50 PED JACKBOLT	
A,C	3	W7 44148	WLMT=50" DRYER REAR RIGHT STD PED JACKBOLT	
B	3	W7 44111	WLMT=50" DRYER REAR RIGHT 10.50 PED JACKBOLT	
D	3	W7 44135	WLMT=50" DRYER REAR RIGHT 17.50 PED JACKBOLT	
E	3	W7 44137	WLMT=50" DRYER REAR RIGHT 21.00 PED JACKBOLT	
F	3	W7 44139	WLMT=50" DRYER REAR RIGHT 24.5 PED JACKBOLT	
G	3	W7 44141	WLMT=50" DYRER REAR RIGHT 28.00 PED JACKBOLT	
H	3	W7 44147	WLMT=50" DRYER REAR RIGHT 31.50 PED JACKBOLT	
A,C	4	W7 44148A	WLMT=50" DRYER REAR LEFT STD PED JACKBOLT	
B	4	W7 44111A	WLMT=50" DRYER REAR LEFT 10.50 PED JACKBOLT	
D	4	W7 44135A	WLMT=50" DRYER REAR LEFT 17.50 PED JACKBOLT	
E	4	W7 44137A	WLMT=50" DRYER REAR LEFT 21.00 PED JACKBOLT	
F	4	W7 44139A	WLMT=50" DRYER REAR LEFT 24.5 PED JACKBOLT	

## Pedestal Base Components

4 of 4

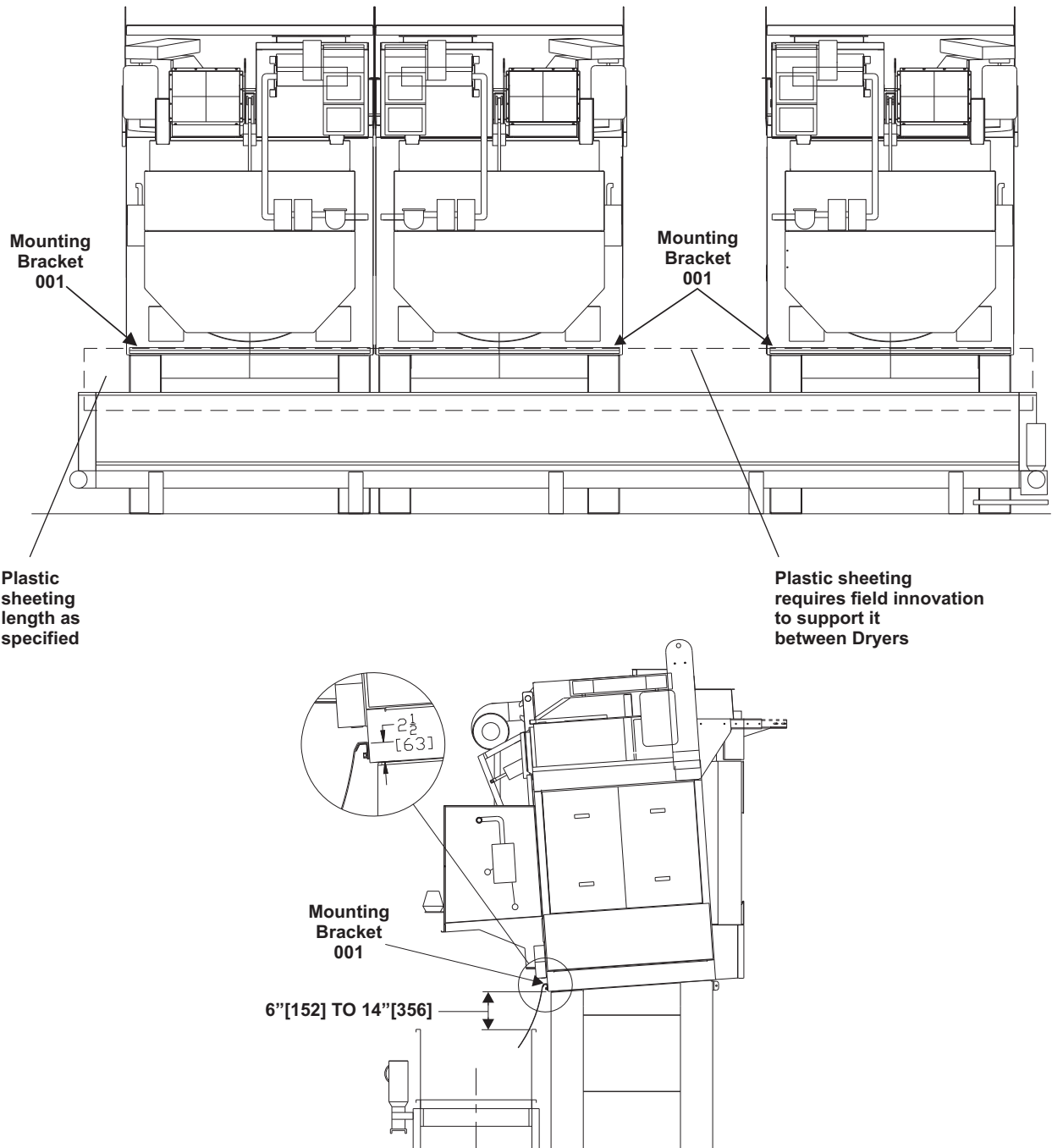
5050 Dryers

### Parts List—Pedestal Base Components (cont'd.)

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	Item	Part Number	Description/Nomenclature	Comments
G	4	W7 44141A	WLMT=50" DRYER REAR LEFT 28.00 PED JACKBOLT	
H	4	W7 44147A	WLMT=50" DRYER REAR LEFT 31.50 PED JACKBOLT	
all	5	07 44153	5040 DRYER BASE FILLER TOP FT	
all	6	07 44154	5040 DRYER BASE FILLER FNT+RR	
all	7	07 44155C	5050 DRYER BASE FILL DRV RIGHT	
all	8	07 44155D	5050 DRYER BASE FILL DRV LEFT	
all	9	07 44156A	5050 DRYER BASE FILL DVR LOW	
A-D	10	07 44158	5040=REAR PANEL STD PED	
E,G,H	10	07 44158A	5040=REAR PANEL 21.00 PED	
F	10	07 44158B	5050=REAR PANEL 24.5 PED	
B,C,F	11	07 44217	5040 DRYER BASE FILLER TOP RR	
all	14	07 71579	DRYER JACKING BOLT WASHER	
all	15	15K226	HXTAPSCR 5/8-11UNC2AX3 GR5 ZIN	
all	16	12P14KSB	SNAPBUSH 5.0" X 4.75" X .75	
all	17	15G230	HXNUT 1/2-13UNC2B SAE ZINC GR2	
all	18	15U300	LOKWASHER REGULAR 1/2 ZINC PLT	
all	19	15U490	FLTWASH 1+1/2X17/32X1/4 ZINC	
all	20	15K191	HXCAPSCR 1/2-13UNC2AX2.5 GR5 Z	
all	21	15U255	LOCKWASHER MEDIUM 3/8 ZINCPL	
all	22	15U240	FLATWASHER(USS STD) 3/8" ZNC P	
all	23	15G205	HXNUT 3/8-16UNC2B ZINC GR2	
all	24	15K095	HXCPSCR 3/8-16UNC2AX1 GR5 ZINC	
all	25	15N176	FLATMACSCR 1/4-20NCX3/4SS18-8	
all	26	15G164NE	HEXLOKNUT NYL 1/4-20 UNC2A SS.	

## Unload Bridge Installation

5040, 5050, 6450, 6458, 6464, 7272, 7676, & 8282 Dryers



## Unload Bridge Installation

5040, 5050, 6450, 6458, 6464, 7272, 7676, & 8282 Dryers

<b>Parts List—Unload Bridge Installation</b> 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
-----REFERENCE-----				
	A			5040 DRYERS
	B			5050 DRYERS
	C			6450, 6458 DRYERS
	D			6464 DRYERS
	E			7272 DRYERS
	F			7676 DRYERS
	G			8282 DRYERS
-----COMPONENTS-----				
AB	1	07 44230	5040 UNLOAD BRIDGE TO CONV	
CD	1	07 71568	6458 UNLOAD BRIDGE TO CONV	
EF	1	07 71569	7272 UNLOAD BRIDGE TO CONV	
G	1	07 88094	8282 UNLOAD BRIDGE TO CONV	

# Air and Duct Requirements for Milnor® Pass-through Dryers

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**NOTICE:** This document, along with the document BNDDUI01 “Utility Requirements for Gas, Steam, and Thermal Oil Dryers” gives air and duct requirements for Milnor® pass-through dryers. It also provides limited guidance for the layout of ducts. Pellerin Milnor Corporation accepts no responsibility for duct design or liability for damage or injury caused by ducts.

## 1. Air Requirements

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**CAUTION:** Insufficient air will cause dryers to malfunction and/or greatly reduce drying efficiency. Excessive back-pressure will cause dryers to malfunction.

### 1.1. Air Flow

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All Milnor pass-through dryers move air, called main air, through the goods. The quantity of main air specified in document BNDDUI01 “Utility Requirements for Gas, Steam, and Thermal Oil Dryers” (in standard cubic feet per minute or scfm) must be available at the dryer main air inlet.

In addition, gas dryers use laundry room air for combustion. The quantity of combustion air specified in document BNDDUI01 “Utility Requirements for Gas, Steam, and Thermal Oil Dryers” (in standard cubic feet per minute or scfm) must be available at the dryer combustion air inlet.

### 1.2. Back Pressure

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The total pressure drop imposed by all external components that the main air must pass through (examples: ducts, lint filters, rooftop ventilators) must be between 0 (zero) and 0.5 inch water column (125 Pascals).

For gas dryers, it is necessary to supply a sufficient quantity of air to the room where the dryers are located to replenish the combustion air taken in by the dryers and to prevent a low pressure condition in the room.



**NOTE:** The internal pressure drop between the dryer main air inlet and exhaust outlet fluctuates during operation and can greatly exceed the allowable external pressure drop.

## 2. Duct Requirements

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You can connect a duct between the dryer main air inlet and outside air. You must connect a duct between the dryer air exhaust outlet and the exterior of the building.



## 2.1. Is an Inlet Duct Necessary?

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Use an inlet duct to avoid negative air or if hazardous or corrosive fumes are present that could be drawn in to the dryers. Otherwise, consider the facility layout, operational procedures, and climatic conditions. It may be possible to take main air from the room in which the dryers are located, especially if this room is dedicated to the dryers and physically separated from other laundry activities. If conditions permit this arrangement, the facility can use barometric dampers to admit the quantity of outside air necessary to replenish the air taken in by the dryers. The air in the dryer room must be sufficient to meet the air requirements explained in [Section 1.1 , page 1](#) at all times that the dryers operate.



**CAUTION:** **Negative air pressure** — will draw heat from a dryer into the room it is in. Nearby objects such as roof beams can become very hot.



- ▶ Provide an inlet duct when negative air would otherwise occur.

If main air cannot be supplied from inside the room the dryers are in, use inlet ducts to connect the dryers to outside air. For gas dryers, use powered ventilation in the facility to replenish the combustion air taken in by the dryers.

## 2.2. Duct Durability

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**CAUTION:** **Fluctuations in main air pressure** — will cause thin-gauge steel ducts to quickly fail from metal fatigue. Ducts with a rectangular cross-section can be damaged by these forces even when heavy gauge material is used. A rectangular duct on the exhaust side of the dryer is likely to fail.



- ▶ Consult a duct design professional before you use rectangular duct.

The ducts must be able to withstand the large flexing forces imposed on it by the internal air pressure changes that occur during dryer operation. At minimum, straight sections fabricated from galvanized sheet steel must have the following material thickness:

- Round duct - 20 gauge
- Rectangular duct - 16 gauge

It can be necessary to increase material thickness and use stiffeners for long duct lengths, large duct sizes, transitions, and elbows. Duct material must be able to withstand any corrosive forces imposed by the laundry environment. Galvanized sheet steel is usually sufficient, but special conditions can occur.

## 2.3. Duct Functionality

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**WARNING:** **Incorrect duct design** — can promote the buildup of flammable lint or cause flammable materials near a hot duct to ignite. It can also cause dryers to malfunction and greatly reduce productivity.



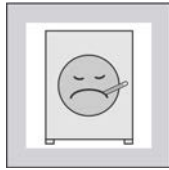
- ▶ Do not use any internal components in ducts (example: turning vanes).
- ▶ Obey codes that govern the clearances between hot ducts and flammable construction materials (example: roof sheathing).
- ▶ Do not connect ducts from different dryers together if you can avoid it. See [Section 2.3.1 : Multiple Dryers and Lint Collection, page 3](#).
- ▶ Do not use abrupt transitions or elbows with less than three segments. See [Section 2.3.2 : Transitions and Elbows, page 3](#)
- ▶ Provide inspection covers as necessary to keep all ducts clean.

### 2.3.1. Multiple Dryers and Lint Collection

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**CAUTION:** **Common (shared) ducts** — can cause dryers to malfunction due to the fluctuation in pressure drop felt by each dryer as a result of the other dryers. This can occur even if the common duct is large enough to accommodate the combined output of all connected dryers.



- ▶ Consult a duct design professional if you must use a common duct.

If space limitations or other factors make the use of common ducts unavoidable, it will be necessary to provide a system to maintain back pressure within the range specified in [Section 1.2 : Back Pressure, page 1](#) automatically. A system of this type could include pressure-sensing devices, a variable-speed booster fan, and a controller.

Today, facility designers generally prefer internal lint screens (a Milnor® option) or close-coupled lint collection systems installed on each dryer. However, if the facility uses a common, powered lint collection system, you can connect the air exhaust from two or more dryers to this system if you run separate ducts from each dryer. The system must be designed to:

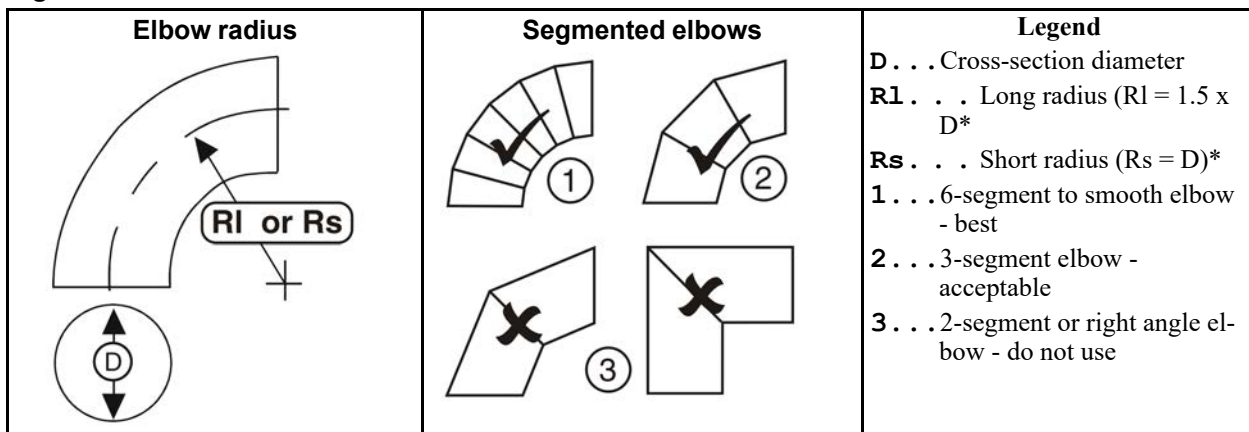
- accommodate the maximum combined flow from all dryers connected to it.
- maintain a constant back pressure in the range given in [Section 1.2 : Back Pressure, page 1](#).

### 2.3.2. Transitions and Elbows

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Use smooth, gradual transitions. For calculations, consider any transition with a taper less than 7.5 degrees as straight duct. Consider a gradual transition that connects the main air inlet or exhaust outlet on the dryer to a larger size duct as the larger duct size.

See the figure below. For round duct, prefer elbows with radius  $R_1$ . Do not use a smaller radius than  $R_s$ . Prefer elbows with six or more segments. Do not use elbows with less than three segments.

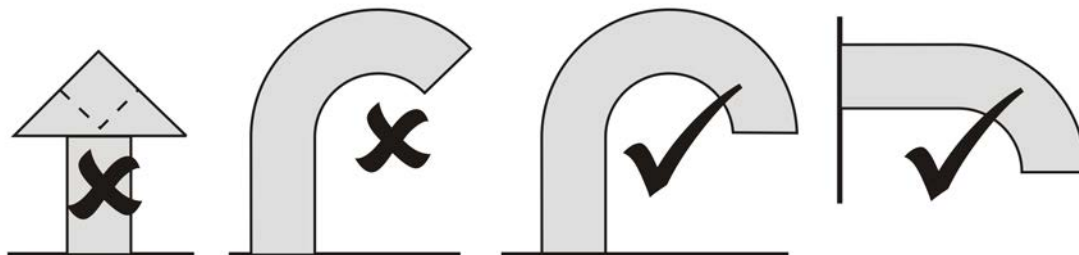
**Figure 1. Round duct elbow fabrication**

### 2.3.3. Vents

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Wind loads can contribute significantly to variations in the external pressure drop felt by dryers. Only the vent designs identified with a check mark in the figure below adequately counteract the effect of wind load.

Do not use a screen in the vent for the main air inlet.

**Figure 2. Vent Designs**

## 3. Duct Layout and Pressure Drop Calculations

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### 3.1. Units of Measure Used in the Calculations

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**Table 1. Units of Measure**

Type of Measurement	English Unit		Metric Unit	
	Abbreviated	Term	Abbreviated	Term
Short length	in	inches	(mm)	millimeters
Long length	ft	feet	(M)	meters
Air flow	scfm	standard cubic feet per minute	(nlpm)	normal liters per minute

**Units of Measure (cont'd.)**

<b>Air velocity</b>	fpm	feet per minute	(npm)	meters per minute
<b>Pressure drop</b>	iwc	inches water column	(Pa)	Pascals

**3.2. Duct Components and Their Pressure Drops**

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The table that follows, gives selected round and rectangular duct sizes for each dryer model, in straight lengths and 90 degree elbows. If it is necessary to use components not given in the table (examples: other duct cross-sections, elbows with other than 90 degree angles), it will be necessary to refer to other texts or consult a duct design professional.

**Table 2. Duct Sizes and Pressure Drops for Dryer Models**

Air Specifications			Duct components, sizes, and pressure drops									
Dryer Model Prefix	Air flow - scfm (nlpm)	Velocity* for given cross-section - fpm (mpm)	Equivalent** cross-sections			Pressure drop - iwc (Pa)						
			Round	Rectangular***		Straight	90 Degree Elbows					
			Diame-ter-in (mm)	Height-in (mm)	Width-in (mm)	iwc per 100 feet (or Pa per 100 meters)	Smooth round		3-segment round		Rectangular	
							Rs Short radius	RI Long radius	Rs Short radius	RI Long radius	Radius -in (mm)	iwc (Pa)
50040 5040 5050 58040	3600 (101941)	2034 (620)	18 (457)	14 (356)	20 (508)	0.31 (253)	0.1 (25)	0.07 (17)	0.13 (32)	0.11 (27)	15 (381)	0.09 (22)
				15 (381)	19 (483)						14.25 (362)	
				16 (406)	17 (432)						12.75 (324)	
				17 (432)	16 (406)						12 (305)	
				19 (483)	15 (381)						11.25 (286)	
				20 (508)	14 (356)						10.5 (267)	
58058	5200 (147248)	2384 (727)	20 (508)	16 (406)	22 (559)	0.37 (302)	0.13 (32)	0.09 (22)	0.17 (42)	0.14 (35)	16.5 (419)	0.12 (30)
				17 (432)	20 (508)						15 (381)	
				18 (457)	19 (483)						14.25 (362)	
				19 (483)	18 (457)						13.5 (343)	
				20 (508)	17 (432)						12.75 (324)	
				22 (559)	16 (406)						12 (305)	
58080	Contact factory											
6450	6000 (169901)	2400 (732)	22 (559)	20 (508)	19 (483)	0.30 (245)	0.09 (22)	0.06 (15)	0.18 (45)	0.14 (35)	14.25 (362)	0.12 (30)
6458 6464	8500 (240693)	2400 (732)	26 (660)	24 (610)	23 (584)	0.30 (245)	0.09 (22)	0.06 (15)	0.18 (45)	0.14 (35)	23 (584)	0.08 (20)

**Duct Sizes and Pressure Drops for Dryer Models (cont'd.)**

Air Specifications			Duct components, sizes, and pressure drops									
Dryer Model Prefix	Air flow - scfm (nlpm)	Velocity* for given cross-section - fpm (mpm)	Equivalent** cross-sections			Pressure drop - iwc (Pa)						
			Round	Rectangular***		Straight	90 Degree Elbows					
			Diame-ter-in (mm)	Height-in (mm)	Width-in (mm)	iwc per 100 feet (or Pa per 100 meters)	Smooth round		3-segment round		Rectangular	
							Rs Short radius	RI Long radius	Rs Short radius	RI Long radius	Radius -in (mm)	iwc (Pa)
72072 (with tower)	10000 (283168)	2100 (640)	30 (762)	23 (584)	33 (838)	0.15 (123)	0.21 (52)	0.17 (42)	0.28 (70)	0.24 (60)	31 (787)	0.14 (35)
				24 (610)	31 (787)						30 (762)	
				25 (635)	30 (762)						28.75 (730)	
				26 (660)	28 (711)						28 (711)	
				27 (686)	27 (686)						27.25 (692)	
				28 (711)	26 (660)						26.75 (679)	
				30 (762)	25 (635)						24.5 (622)	
				31 (787)	24 (610)						23.75 (603)	
				33 (838)	23 (584)						22.75 (578)	
7272 7676 8282	14000 (396436)	2600 (792)	32 (813)	27 (686)	29 (737)	0.28 (229)	0.11 (27)	0.08 (20)	0.21 (52)	0.13 (32)	27 (686)	0.13 (32)
* A velocity of at least 2000 fpm (610 mpm) helps keep lint particles in suspension. ** Equivalent means that the rectangular cross sections have the same pressure drop as the round cross-section. *** Field data determines the number of rectangular cross-sections shown for each dryer model.												

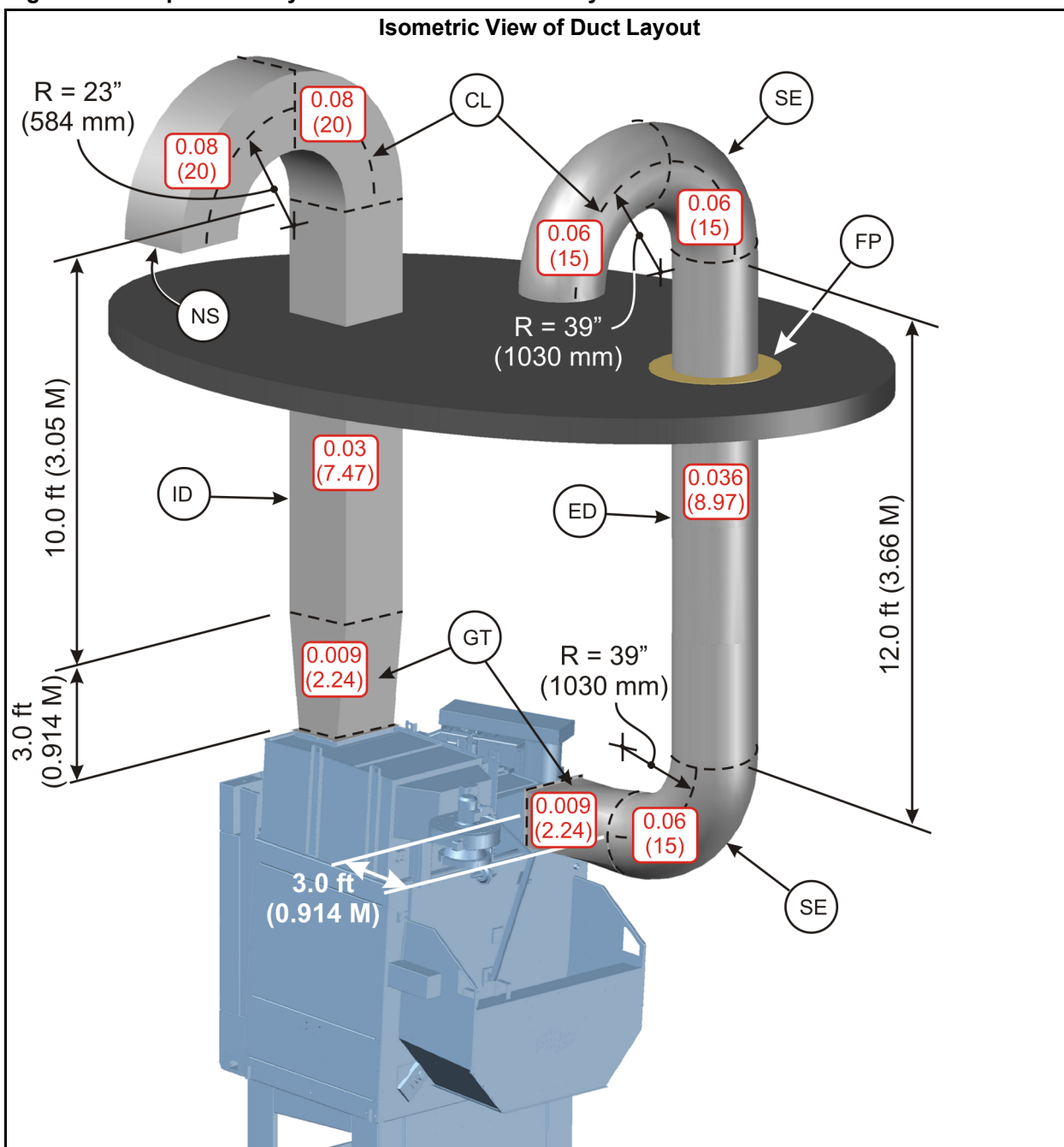
**3.3. Example Layout**

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To provide a more comprehensive example, the figure below shows both rectangular and round duct. However, avoid using rectangular duct if possible, especially for the exhaust duct.

The figure below shows the pressure drop values taken from [Section 3.2 : Duct Components and Their Pressure Drops, page 5](#) and used in the example equations in [Section 3.4 : Pressure Drop Equations and Examples, page 8](#) superimposed on each piece of duct.

**Figure 3. Example Duct Layout for Model 6464TG1L Dryer**



**Legend**

- CL** . . . Center line.
- ED** . . . Exhaust duct. This example uses 26 inch (660 mm) diameter round duct.
- FP** . . . Fire protection per construction codes.
- GT** . . . Gradual transitions. Treat as straight duct of the same size as their larger end.
- ID** . . . Inlet duct. This example uses 24 inch (610 mm) high by 23 inch (584 mm) wide rectangular duct.
- NS** . . . No screen on inlet duct fresh air intake.
- SE** . . . Smooth elbows (six or more segments). This example uses large radius elbows.

### 3.4. Pressure Drop Equations and Examples

Calculate the pressure drop for each straight length of duct as follows:

$$PD_s = PD_{100} \times L / 100$$

Where:

$PD_s$  = Pressure drop for a straight length

$PD_{100}$  = Pressure drop per 100 feet (or 100 meters) as given in table

$L$  = Length of straight section in feet (or meters)

The following examples calculate the pressure drop for the 10 ft (3.05 M) length of rectangular duct in Figure 3.

English example:

$$0.3 \times 10 / 100 = 0.03 \text{ iwc}$$

Metric example:

$$243 \times 3.05 / 100 = 7.47 \text{ Pa}$$

Calculate the total pressure drop as follows:

$$PD_T = PD_1 + PD_2 + PD_3 + \dots + PD_n + PD_F$$

Where:

$PD_T$  = Total external pressure drop

$PD_1$  = Pressure drop for the most upstream (inlet-end) component

$PD_2, PD_3, \dots$  = Pressure drop for each next duct component in sequence

$PD_n$  = Pressure drop for the most downstream (exhaust-end) component

$PD_F$  = Pressure drop contributed by the external lint collection system, if any.

The following examples calculate the total pressure drop for the layout shown in [Figure 3, page 7](#) after the pressure drops for all straight sections have been calculated. The dryer in the example layout uses internal lint screens. The installation does not have a separate, external lint collection system.

English example:

$$0.08 + 0.08 + 0.03 + 0.009 + 0.009 + 0.06 + 0.036 + 0.06 + 0.06 = 0.424 \text{ iwc}$$

Metric example:

$$20 + 20 + 7.47 + 2.24 + 2.24 + 15 + 8.97 + 15 + 15 = 105.92 \text{ Pa}$$

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# Utility Requirements For Gas, Steam and Thermal Oil Dryers

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This document applies to all Milnor® pass-through dryer models. It specifies heating fuel and air intake requirements and gives general information on all utility connections. Additional information about utility connections is located in the following documents:

**dimensional drawing for your machine** gives pipe sizes, connection types, and connection locations

**laundry layout drawings for your system** gives the control connections, which are system-dependent

**document BNDGUI01 “Air and Ductwork Requirements for Milnor® Pass-through Dryers”** gives design criteria for customer-supplied inlet and outlet ductwork

**external fuse and wire document for your machine** gives customer-supplied fuse, circuit breaker, and wire sizes for the available machine voltages

**machine nameplate** gives the voltage for your machine

The connections which may be required depending on machine model and options are:

1. Piped inlets and outlets: heating fuel (natural gas, propane, steam, or thermal oil), sprinkler (cold) water, compressed air, gas line vent, gas test tap, steam condensate return, vacuum breaker drain.
2. Ducted inlets and outlets: main air intake, main air exhaust
3. Electric power connections and removal of related shipping restraint
4. Control connections
5. Bumper guard attachment

## 1. Plumbing and Other Mechanical Connections

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### 1.1. Hazards and Precautions

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#### 1.1.1. All Models

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**WARNING: Fire Hazards** — Sprinkler and overheat control—Failure to supply water to the sprinkler or to open the manual valve, or failure of the overheat control, eliminates the machine's internal fire protection. Normally the machine stops and water is sprayed into the cylinder if outlet temperature reaches 240 degrees Fahrenheit (116 degrees Celsius).







**CAUTION:** **Machine Damage Hazards** — Valve bodies have fragile components.



- ▶ Do not distort valve bodies. Hold tension against these valves with a wrench on the side of the valve onto which the pipe is being connected to prevent twist distorting the valve.
- ▶ Always install unions and shut off valves at the water and steam connection points to permit removal of the machine components for servicing.

### 1.1.2. Gas and Propane Models

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**WARNING:** **Explosion and Fire Hazards** — Improperly installed gas-fired devices can release gas.



- ▶ Conform with local codes or, in their absence, with the **National Fuel Gas Code, ANSI Z223.1/NFPA 54** or the **Natural Gas and Propane Installation Code, CSA B149.1** or a superseding directive.
- ▶ Electrically ground the machine in accordance with local codes or, in their absence, with the **National Electric Code, ANSI/NFPA 70** or the **Canadian Electrical Code, CSA C22.1** or a superseding directive.
- ▶ Install a minimum 1/2 inch NPT plugged tap, accessible for test gauge connection, immediately upstream of the gas supply connections to the dryer.
- ▶ Install vent lines on any regulator vents and vent this gas to the outdoors.



**WARNING:** **Explosion, Fire, and Machine Damage Hazards** — Excessive gas pressure can damage gas train components, possibly resulting in the release of gas.



- ▶ Make sure that the pressure of gas entering the dryer is regulated to the maximum specified in this document.
- ▶ Isolate the dryer from the gas supply for any pressure testing of the incoming gas supply line.

### 1.1.3. Steam and Thermal Oil Models

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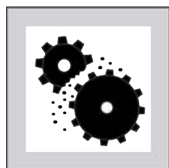
**CAUTION:** **Machine Malfunction Hazard** — Steam traps rated at 85 to 180 psi (586 to 1241 kPa) will not operate properly below 60 psi (414 kPa). Steam traps rated at 160 to 225 psi (1103 to 1551 kPa) will not operate properly below 115 psi (793 kPa).



- ▶ Conform to the rated pressure of the steam coil as stated on the machine nameplate.
- ▶ Choose a steam trap with a pressure rating corresponding to the actual pressure supplied.



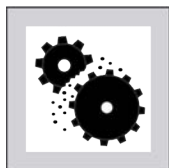
**CAUTION: Machine Damage Hazards** — Allow steam coil to preheat and purge condensate before operating dryer or conditioner.



- Verify that the facility boiler has operated at least 15 minutes before the dryer receives the first load each day.



**CAUTION: Machine Damage Hazards** — Steam coil antifreeze is drained at the factory but some residue may remain.



- Route the steam condensate return line to the sewer for the first hour of operation to prevent residual antifreeze from entering the boiler system.

## 1.2. Heating Fuel and Air Intake Requirements

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These requirements are given in the following two tables. The first table covers models in production on or after January 1, 2016. The second table covers models that were no longer in production as of January 1, 2016.

The nameplate designations for certain newer dryer models (the first table) changed from a 5-digit numeric prefix to a 4-digit numeric prefix, but the specifications remain the same. If you have one of these models, your nameplate may show 5050\_ or 50050\_, 6450\_ or 64050\_, 6458\_ or 64058\_, 6464\_ or 64064\_.

Newer gas dryer models (the first table) include the 5050\_ (or 50050\_) models which are only available with the air heat burner design, the 6450\_ (or 64050\_), 7676\_, and 8282\_ models, which are only available with the ratio air burner design, and the 6458\_ (or 64058\_) and 6464\_ (or 64064\_) models, which are available with either burner design. Older dryer models (the second table) were only available with air heat or older burner design.

**Table 1. Gas, Steam, and Air Intake - Newer Dryer Models**

Model number prefix	5050_ 50050_	6450_ 64050_	6458_ 64058_	6464_ 64064_	7676_	8282_
Capacity basis - lb (kg)	150 (68)	220 (100)	250 (113)	300 (136)	500 (227)	630 (2860)
<b>Gas inlet with air heat burner (natural gas and propane models)</b>						
<b>Maximum Btu/hr (kcal/hr) at x" (mm) water column</b>	950,000 (240,000) @ 13.5" (343)	1,500,000 (378,246) @ 13.5" (343)	1,800,000 (453,000) @ 13.5" (343)	1,800,000 (453,000) @ 13.5" (343)	n.a.	n.a.
<b>Average Btu/hr (kcal/hr) at x" (mm) water column</b>	495,000 (124,738) @ 13.5" (343)	725,000 (182,819) @ 13.5" (343)	825,000 (207,900) @ 13.5" (343)	990,000 (249,480) @ 13.5" (343)	n.a.	n.a.
<b>Gas inlet with ratio air burner (natural gas and propane models)</b>						
<b>Maximum Btu/hr (kcal/hr) at x" (mm) water column</b>	n.a.	1,300,000 (327,800)	1,800,000 (453,000)	1,800,000 (453,000)	3,000,000 (756,000)	pending

**Gas, Steam, and Air Intake - Newer Dryer Models (cont'd.)**

Model number prefix	5050_50050_	6450_64050_	6458_64058_	6464_64064_	7676_	8282_
		@ 25" (635)	@ 25" (635)	@ 25" (635)	@ 40" (1016)	
Average Btu/hr (kcal/hr) at x" (mm) water column	n.a.	726,000 (182,952) @ 25" (635)	825,000 (207,900) @ 25" (635)	990,000 (249,480) @ 25" (635)	1,650,000 (415,793) @ 40" (1016)	2,079,000 (523,899) @ 40" (1016)
Steam inlet (steam models)						
Maximum Lb/Hr (kg/hr)	820 (372)	pending	1,990 (903)	1,990 (903)	3,223 (1462)	pending
Average Lb/Hr (kg/hr)	382 (173)	561 (254)	638 (289)	765 (347)	1,275 (578)	1,606 (728)
Maximum boiler horse-power (kw)	23.8 (10.8)	pending	57.7 (26.2)	57.7 (26.2)	93.4 (42.4)	pending
Average boiler horse-power (kw)	11.1 (8.3)	16.3 (12.1)	18.5 (13.8)	22.2 (16.5)	37.0 (27.6)	46.6 (34.7)
Thermal oil inlet (thermal oil models) - Consult Milnor® factory						
Main air intake						
Maximum scfm (cu m/min)	3,600 (102)	6,000 (170)	8,500 (241)	8,500 (241)	14,000 (396)	14,000 (396)
Maximum allowable back pressure	0.5" water column					
Combustion (non-ducted, ambient) air intake with air heat burner (natural gas and propane models)						
Maximum scfm (cu m/min) to blower	250 (7)	715 (20)	715 (20)	715 (20)	n.a.	n.a.
Maximum scfm (cu m/min) to fire box	400 (11)	500 (14)	500 (14)	500 (14)	n.a.	n.a.
Total	650 (18)	1,215 (34)	1215 (34)	1215 (34)	n.a.	n.a.
Combustion (non-ducted, ambient) air intake with ratio air burner (natural gas and propane models)						
Maximum scfm (cu m/min) to blower	n.a.	400 (11)	400 (11)	400 (11)	600 (17)	pending

**Table 2. Gas, Steam, and Air Intake - Older Dryer Models**

Model number prefix	5040_ 50040_	58040_	58058_	58080_	72072_ with tower	72072_ no tower
Capacity basis - lb (kg)	110 (50)	150 (68)	220 (100)	300 (136)	425 (193)	425 (193)
<b>Gas inlet (natural gas and propane models)</b>						
Maximum Btu/hr (kcal/hr) at x" (mm) water column	950,000 (240,000) @ 13.5" (343)	950,000 (240,000) @ 13.5" (343)	1,400,000 (350,000) @ 13.5" (343)	1,800,000 (453,000) @ 13.5" (343)	2,700,000 (680,000) @ 18" (457)	2,700,000 (680,000) @ 18" (457)
Average Btu/hr (kcal/hr) at x" (mm) water column	363,000 (91,476) @ 13.5" (343)	495,000 (124,738)	726,000 (182,952)	990,000 (249,480)	1,402,500 (353,430)	1,402,500 (353,430)

**Gas, Steam, and Air Intake - Older Dryer Models (cont'd.)**

Model number prefix	5040_ 50040_	58040_	58058_	58080_	72072_ with tower	72072_ no tower
		@ 13.5" (343)	@ 13.5" (343)	@ 13.5" (343)	@ 18" (457)	@ 18" (457)
Steam inlet (steam models)						
Maximum lb/hr (kg/hr)	600 (272)	600 (272)	950 (431)	1300 (590)	n.a.	n.a.
Average lb/hr (kg/hr)	127 (280)	173 (382)	561 (254)	765 (347)	n.a.	n.a.
Maximum boiler horse- power (kw)	17.4 (7.9)	17.4 (7.9)	27.5 (12.5)	37.7 (17.1)	n.a.	n.a.
Average boiler horse- power (kw)	8.1 (3.7)	11.1 (5.0)	16.3 (7.4)	22.2 (10.1)	n.a.	n.a.
Thermal oil inlet (thermal oil models) - Consult Milnor® factory						
Main air intake						
Maximum scfm (cu m/ min)	3,600 (102)	3,600 (102)	5,000 (142)	6,800 (193)	10,000 (283)	14,000 (396)
Maximum allowable back pressure	0.5" (water column)					
Combustion (non-ducted, ambient) air intake (natural gas and propane models)						
Maximum scfm (cu m/ min) to blower	250 (7)	250 (7)	400 (11)	500 (14)	715 (20)	715 (20)
Maximum scfm (cu m/ min) to fire box	400 (11)	n.a.	n.a.	n.a.	900 (25)	900 (25)

**1.3. Other Mechanical Requirements**

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**Main air intake and exhaust ducting** Per document BNDGUI01 “Air and Ductwork Requirements for Milnor® Pass-through Dryers.”

**Sprinkler water inlet** Minimum 35 PSI (2.4 ATU). Must reliably provide 60 USg (227 liters) per minute for fire safety.

**Compressed air inlet** Clean and dry 85 PSI (5.8 ATU) to 110 PSI (7.5 ATU)

**Compressed air inlet for optional internal lint filter** 85 PSI (5.8 ATU) to 110 PSI (7.5 ATU). Air usage estimate: 110 scf (3.1 cubic meter) in 15 seconds when activated.

**Customer-supplied connector between the gas inlet and the gas supply piping** a listed connector in compliance with ANSI Z21.24 CSA 6.10 “Standard for Connectors for Gas Appliances”

**Customer-supplied tap (gas/propane models)** 1/2" NPT plugged tap, accessible for test gauge connection. Install immediately upstream of the gas supply connections to the dryer.

**Gas line vent (gas/propane models)** 1/4" stainless steel. Must be vented from the regulator vent to the exterior of the building.

**Steam condensate outlet (steam models)** Per plumbing code. Return condensate to boiler through a steam trap of the correct size. Two steam traps are available from Milnor®: One for 85 - 180 PSI (6 - 12 ATU) and one for 160 - 225 PSI (11 - 15 ATU).

**Vacuum breaker (steam models)** Vent the tube to the sewer.

## 2. Electrical Connections

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### 2.1. Hazards and Precautions

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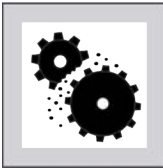


**WARNING: Severe injury and machine damage hazards** — Electric power can shock or electrocute you. Incorrect electrical connections can damage machine components.

- ▶ Do not attempt electric power connections unless qualified and authorized.
- ▶ Prior to making power connections, read the instructions on all related tags.
- ▶ Connect the “stinger leg” if any, only to terminal L3, never to terminals L1 or L2.
- ▶ Verify all motor rotation. If the cylinder turns in the wrong direction, interchange the wires connected to L1 and L2. Never move L3.



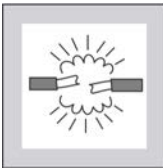
**CAUTION: Machine Damage Hazards** — The blower motor or other drive components can be destroyed if the blower bearing shipping restraint is incorrectly handled.



- ▶ Perform the steps given in [2.2: Remove Blower Shipping Bracket and Reconnect Motor Contactor Coil, page 6](#).



**CAUTION: Risk of malfunction and damage** — Wiring errors can cause damage and incorrect operation.



- ▶ Label all wires if you must disconnect them to service the control.

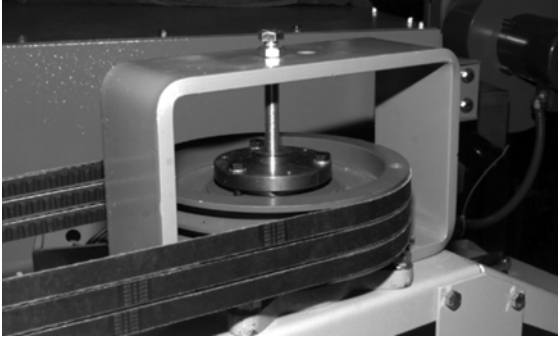
### 2.2. Remove Blower Shipping Bracket and Reconnect Motor Contactor Coil

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The machine was shipped with a blower shipping restraint ([Figure 1: Blower Shipping Restraint, page 7](#)). This bracket immobilizes the blower bearing, preventing bearing damage during shipping. Connections to one side of the blower motor contactor coil ([Figure 2: Reconnect Blower Contactor Coil Wires, page 7](#)), are removed after testing, to prevent blower operation with bracket in place. When the machine is in its final position, remove the restraint and reconnect the contactor coil as follows:

1. Unbolt and remove red restraint.
2. Install the belt guard.
3. Locate the blower contactor inside the high voltage electric box.
4. Match the tagged coil wire with the tagged contactor coil terminal and reconnect.

**Figure 1. Blower Shipping Restraint**



**Figure 2. Reconnect Blower Contactor Coil Wires**



## 2.3. Electric Power Connection Capacities

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The customer must furnish a remotely mounted disconnect switch with lag type fuses or circuit breakers, and wiring between this box and the fuse box on the machine. Refer to the machine nameplate and the external fuse and wire document for your machine to determine the sizes of these fuses or circuit breakers, and wires.

## 2.4. Control Connections

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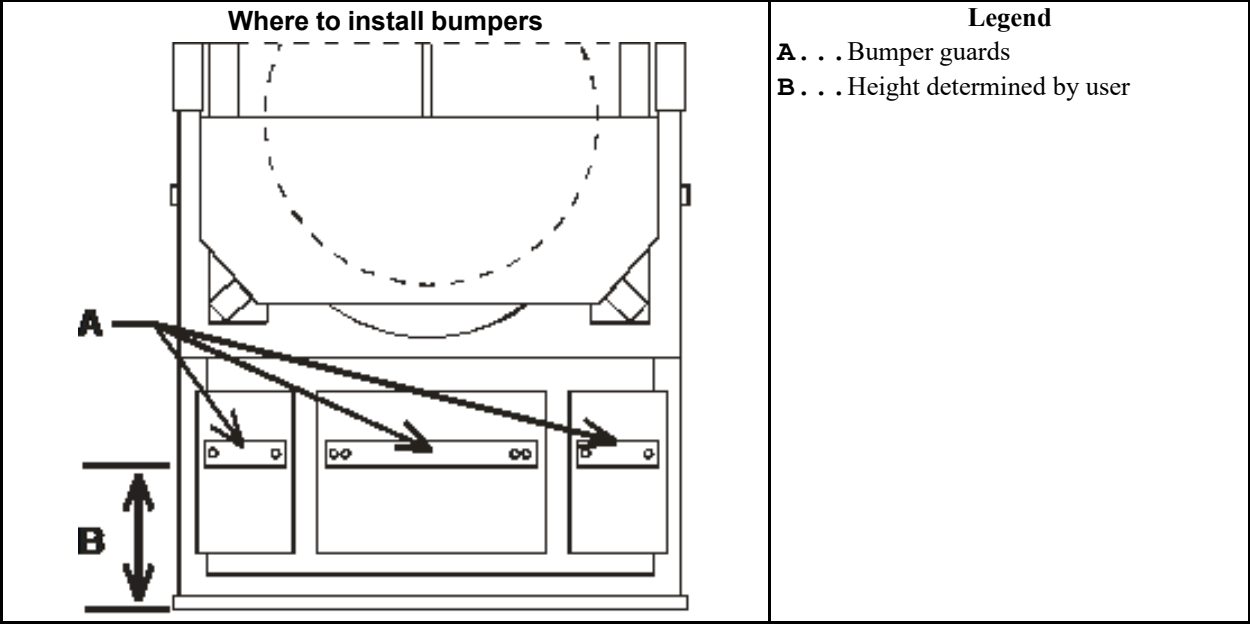
Refer to the layout drawings for your laundering system.

## 3. Bumper Guard Installation

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The machine is supplied with bumper guards which must be installed on the rear of the machine when the machine is on site. The guards protect the machine from the constant impact of laundry carts placed under the discharge door. Hence the height at which the guards are installed must match the height of the carts used. See [Figure 3](#).

Figure 3. Bumper Guard Installation



End of document: BNDUUI01

## ABOUT THE STEAM AND HOT OIL CONTROL SYSTEMS FOR MILNOR DRYERS

MILNOR steam dryers are available with an optional Y-type ON/OFF steam valve. MILNOR hot oil dryers use a modulating oil inlet/bypass valve.

### How To Protect Steam Coils From Water Hammer Damage

Steam coils can be damaged when steam pressure is suddenly applied to a water (condensate) filled coil, or when the steam is “wet” with a high water content. The damage occurs because the condensate is forced through the coils with great speed causing a water hammer condition which can be likened to many jack hammers inside the coil. The result will be damaged coils, especially at the ends where the water must turn quickly.

#### **▲ CAUTION ▲**

**Steam coils that have been damaged by water hammer are not warrantied. Any steam coil making a popping sound or cracking sound is in grave danger of serious water hammer damage.**

1. Maintain the bypass piping (machines with optional ON/OFF valve, FIGURE 1) in good working order, to prevent cracking and popping sounds when steam is turned on. Do not operate Dryer unless bypass piping is in good working order.
2. If a steam trap must be replaced, be sure the pressure rating of the replacement trap is suitable for the steam pressure in your plant and that the replacement trap's capacity is equivalent to the original equipment.

#### **▲ CAUTION ▲**

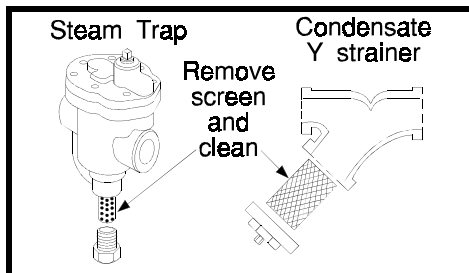
**DRYERS WITH STEAM TRAPS RATED 85-180 PSI (6-12 ATU) WILL NOT OPERATE PROPERLY BELOW 60 PSI (4 ATU). STEAM TRAPS RATED 160-225 PSI (11-15 ATU) WILL NOT OPERATE PROPERLY BELOW 115 PSI (8 ATU). These pressure ranges refer only to the range of pressures through which the trap may be reasonably expected to operate properly. They are not necessarily an indication of the safe operating pressure for the steam coil. Always refer to the nameplate for the specific dryer to determine the maximum permissible pressures.**

### About the Standard Steam Control System

1. Each Dryer has a strainer and steam trap (FIGURE 1), to handle steam that condenses in the coil as it heats the passing air which dries the goods.



## **⚠ CAUTION ⚠**



Clean and “blow down” steam trap and strainer screens after 40 hours of operation and periodically thereafter. Clogged strainer screens will cause longer drying times.

### **About the Optional On-Off Steam Control System with Y-type, Air Operated Valve**

In addition to the steam trap and strainer, dryers equipped with the optional Main Steam Inlet ON/OFF valve are fitted with:

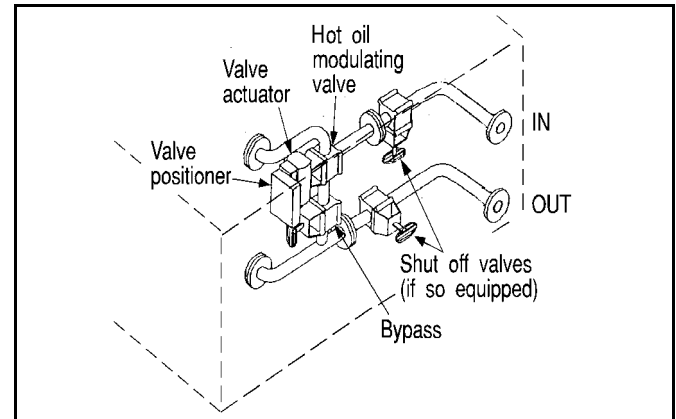
- a. A steam inlet valve which is open whenever the Dryer is drying (whenever the Cooldown Bypass Damper is closed). This normally closed (air-to-open) valve shuts off the flow of steam to the Dryer during Cooldown, if the Dryer Master Switch is OFF, and whenever the Dryer is not being used.
- b. Bypass piping to keep coils warm and condensate minimized while the Main Steam Inlet valve is OFF, but machine is in standby, with steam provided to the machine.



**FIGURE 1** (MSSM0102BE)  
**Standard Steam Piping**

## About the Modulating Hot Oil Valve

**How Modulated Hot Oil Works**—Hot air inlet and outlet temperatures are monitored by the dryer control. When the dryer control detects actual temperatures that are either under or over the desired value it signals the hot oil positioner and valve to change the percent of pressurized hot oil sent to the dryer heating coil, verses the percent that bypasses the heating coil. All oil is returned to the oil heater.



**FIGURE 2** (MSSM0102BE)  
**Hot Oil Piping**

**How to Manually Command a Modulating Valve Position**—This procedure applies to hot oil machines.

1. Shut off oil to dryer.
2. Turn dryer on.

After the power-up sequences, the display shows

WAITING FOR LOAD  
\*\*\*\*\*



Accesses Manual Load menu

SELECT DRYCODE  
00 REDRY

### For Quick Return to Automatic from Manual Load menu

**CANCEL**  
**ESCAPE**, **CANCEL**  
**ESCAPE**, etc.

returns to automatic

WAITING FOR LOAD  
\*



Accepts the default drycode 00 and prompts for load size.

ENTER LOAD SIZE  
0 FULL LOAD



Accepts the default load size (full load) and prompts the operator to load dryer. Ignore this prompt.

LOAD DRYER WITH  
REDRY



**Starts the cycle.** When loading sequence ends, display appears as shown below.

LOADING

00F TIF TOF 000 VP  
XXX XXXAXXX XXX XXX

Alternates with

00F TIF TOF 0021 AIR  
XXX XXXDXXX XXX XXX



**Stops the timer and accesses the manual control panel** for temperature, damper, and basket rotation.

TIFHTOF LDA MVP BSPD  
XXX+XXX XXX XXX XXXX

hold **MOD VALVE POSITION** +

Closes modulating valve position. Hold keys until MVP=000.

TIFHTOF LDA MVP BSPD  
XXX+XXX XXX 000 XXXX

Dryer will continue at minimum valve position until commanded to return to automatic.

**CANCEL  
ESCAPE**

Returns to automatic.

Follow the step-by-step procedure to set the system components.

**When Recalibration is Required**—The hot oil positioner and valve are calibrated prior to shipping, replacing either component necessitates re-calibration. To recalibrate:

### **⚠ DANGER ⚠**



**SHOCK HAZARD**—Electrical power can cause death or severe injury. Lock OFF and tag out power to the Dryer main bus at the wall disconnect before servicing.

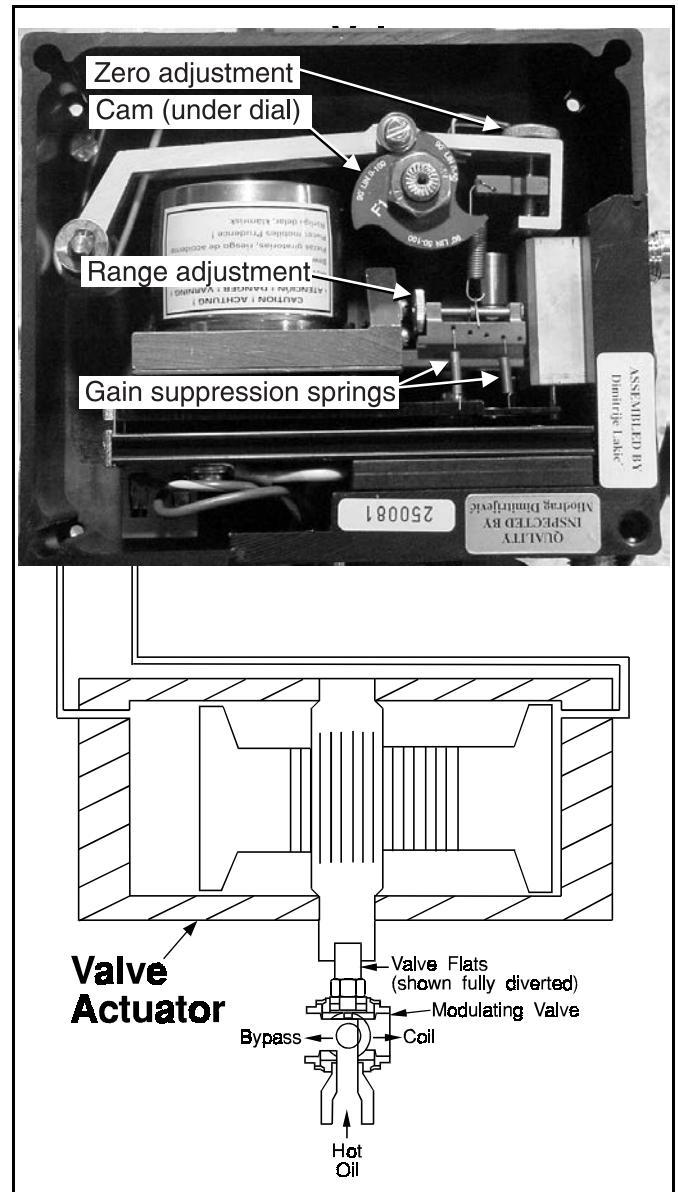
1. Turn machine off, lock OFF and tag out.

### **⚠ WARNING ⚠**



**BURN HAZARD**—Hot surfaces will cause severe burns. Shut off and tag out hot oil flow to dryer at external shut-off valve and allow piping to cool before servicing.

2. Shut off the hot oil to the dryer, tag out external valve.
3. Remove the valve positioner covers and the position indicator dial.
4. Verify that the lower arm bearing rests on the portion of the cam labeled 0-100%. See FIGURE 4.
5. Check that two gain suppression springs are mounted in positions 1 and 4 (as shown in FIGURE 3).



**FIGURE 3** (MSSM0102BE)  
**Hot Oil Modulating Valve and Positioner**

## Calibrating the Hot Oil Positioner/Valve

The positioner cam must be adjusted so that the valve travels from fully diverted to fully open as the modulating valve position varies from 000 to 255. Refer to “How to Manually Command a Modulating Valve Position” elsewhere in this section then follow the step by step procedures below.

### ⚠ WARNING ⚠



**ELECTRIC SHOCK HAZARD**—Machine power is on and positioner covers removed for the following procedures. Exposed terminals are energized at 120VAC or higher. You can be killed or severely injured by contact with these terminals. Do not touch any wire terminals when calibrating or verifying settings.

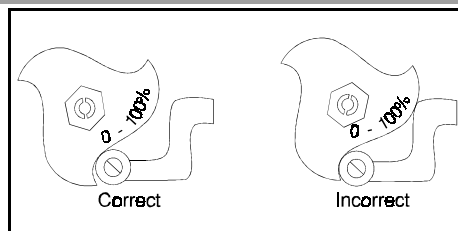
### Calibrating the Positioner/Valve for Minimum Temperature

hold +

Closes modulating valve.  
Hold keys until MVP=000.

TIFHTOF LDA MVP BSPD  
XXX+XXX XXX 000 XXXX

1. Check that the lower arm ball bearing rests near the deepest part of the cam curve as shown on FIGURE 4. If not, move the zero adjustment thumbwheel (FIGURE 3) until the ball bearing is in this position. If this can not be achieved, loosen the cam retaining nut, move the cam, then use the zero adjustment thumbwheel for adjustment (the cam may rotate slightly with the nut as it is tightened, be sure to allow for this).
2. After setting, check that the modulating valve flats are aligned at a 90 degree angle to the modulating valve (FIGURE 3 and 6). This ensures no hot oil reaches the dryer heating coil. All of the hot oil is returned to the heater.



**FIGURE 4** (MSSM0102BE)  
**Cam Setting at Modulating Valve Position 000**

hold +

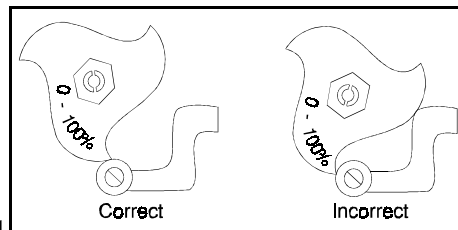
Opens modulating valve.  
Hold keys until MVP=255.

TIFHTOF LDA MVP BSPD  
XXX+XXX XXX 255 XXXX

**NOTE:** Due to mechanical considerations, settings past 200 have a very minor effect on the valve.

### Calibrating the Positioner/Valve for Maximum Temperature

1. Check that the lower arm ball bearing rests on the highest part of the cam curve (FIGURE 5). If the ball bearing is not at the tip, turn the range adjustment (FIGURE 3).
2. After setting, check that the diverter valve flats are aligned exactly parallel to the diverter valve, permitting full flow to the dryer heating coil.



**FIGURE 5** (MSSM0102BE)  
**Cam Setting at Modulating Valve Position 255**

## Verifying Positioner/Valve Settings

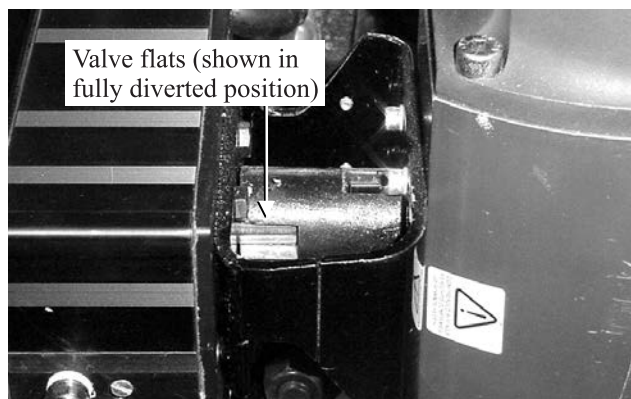
hold  + 

Closes modulating valve. Hold until MVP=200, verify settings then repeat for 150, 100, 050, and 000.

TIFHTOF	LDA	MVP	BSPD
XXX+XXX	XXX	200	XXX

Since the zero and range adjustments affect each other, verify that for each of the five MVP's commanded, the valve moves approximately 1/5 of the way from fully open to fully diverted, and:

- The ball bearing follows the cam slope evenly.
- The cam zero and range settings are correct for fully open and fully diverted positions.



**FIGURE 6** (MSSM0102BE)  
**Modulating Valve Flats**

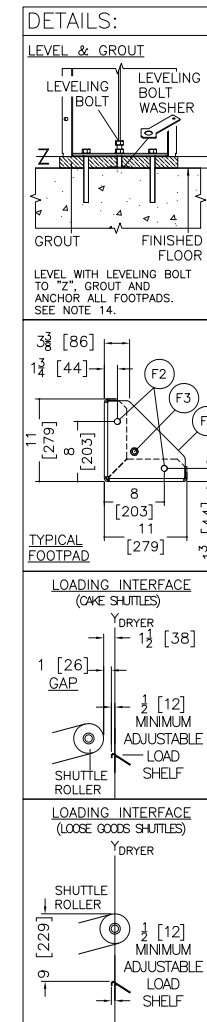
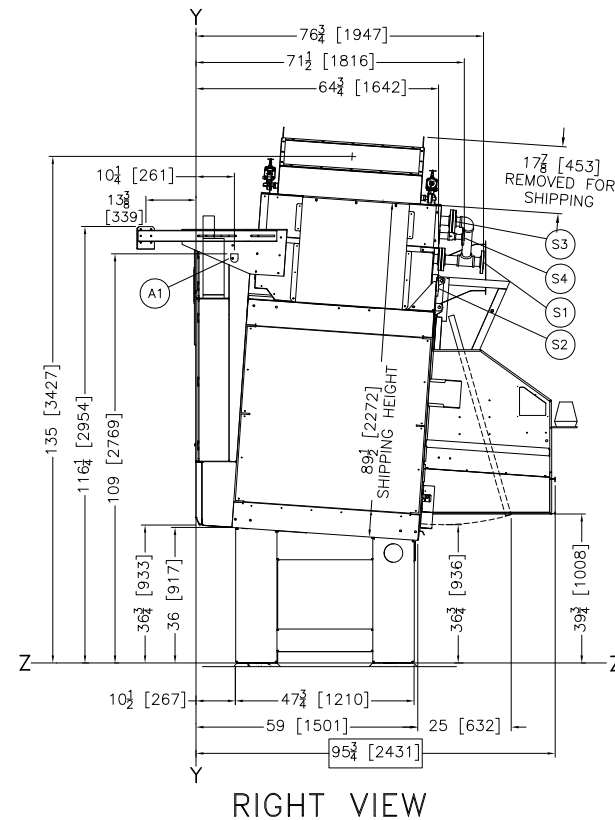
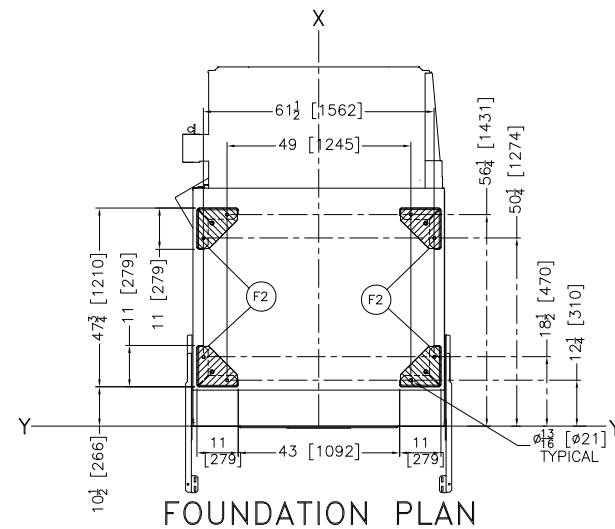
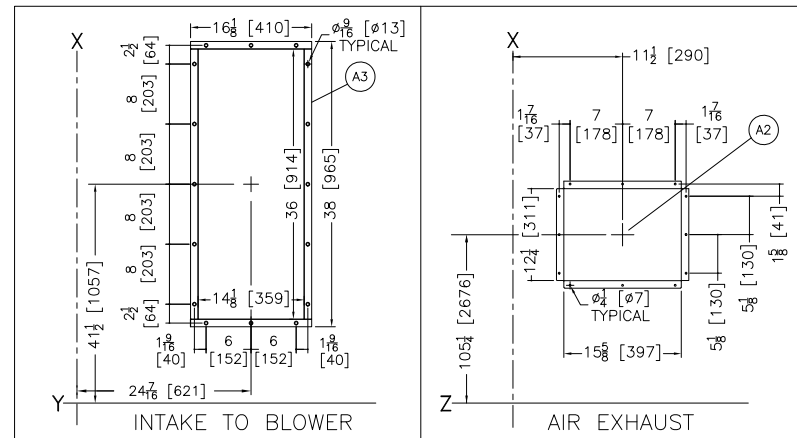
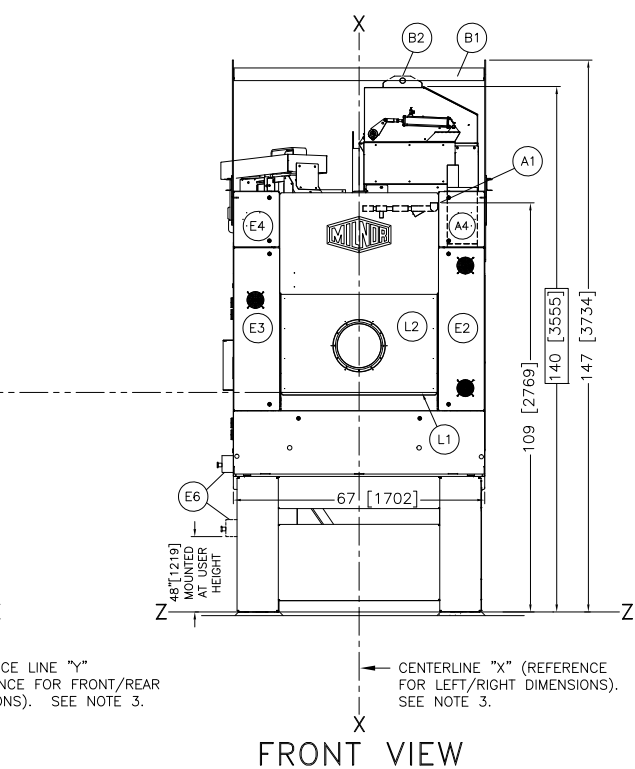
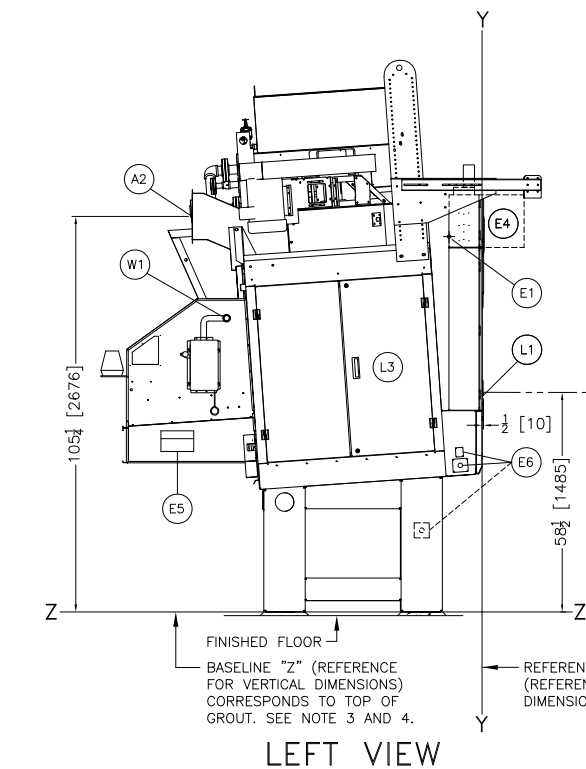
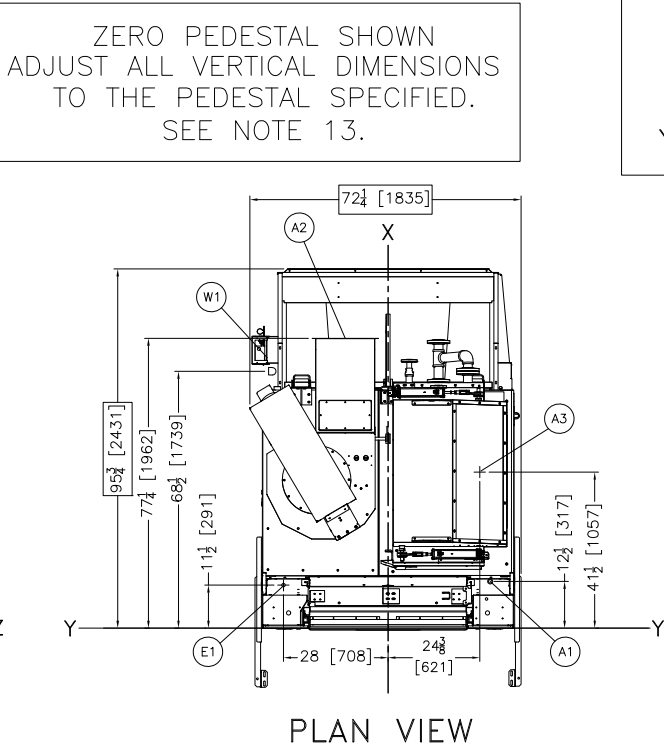
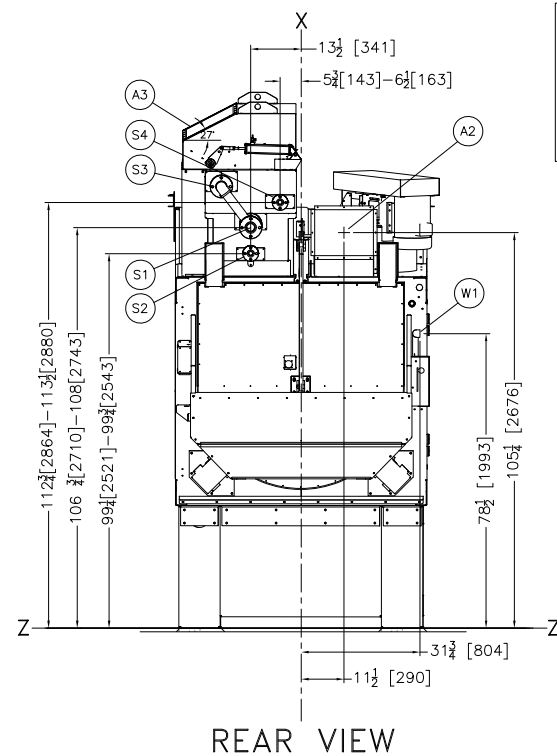


# Dimensional Drawings

3

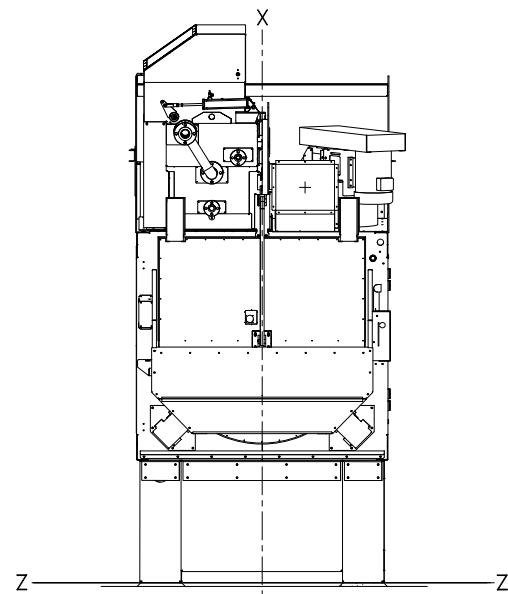




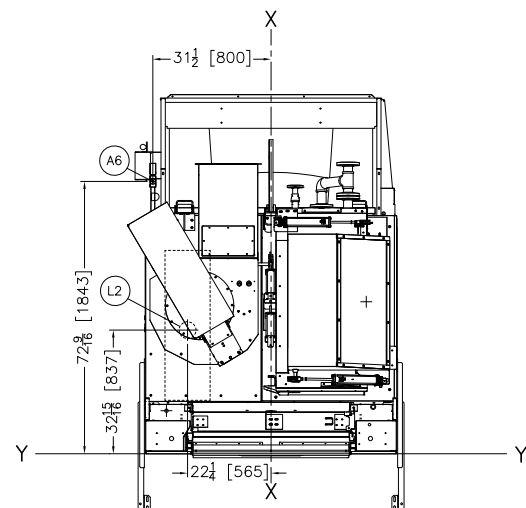


W1	SPRINKLER WATER CONNECTION, 1-1/4" NPT
T1	OPTIONAL BEACON
S4	STEAM BOOSTER CONDENSATE RETURN, 1" FLANGED CONNECTION
S3	STEAM BOOSTER INLET, 2" FLANGED CONNECTION
S2	STEAM CONDENSATE RETURN, 1" FLANGED CONNECTION
S1	STEAM INLET, 2" FLANGED CONNECTION
L3	ACCESS DOORS TO OPTIONAL INTERNAL LINT FILTER
L2	LOAD DOOR OPENING SIZE: 42"(1067) WIDE BY 28"(711) HIGH FOR STANDARD DOOR.
L1	LOADING HEIGHT, LOAD SHELF
F3	LEVELING BOLT (5/8"-11 X 3") SUPPLIED.
F2	BASE PLATES, 4 PLACES
F1	ANCHOR BOLT HOLES, 13/16" DIAMETER, 8 PLACES
E6	EMERGENCY STOP & MANUAL DOOR CONTROLS
E5	MANUAL CONTROLS
E4	MICROPROCESSOR BOX
E1	MAIN ELECTRICAL CONNECTION
B1	STEAMBOX LIFTING BRACKETS, REMOVABLE
B1	LIFTING BRACKETS, REMOVABLE
A4	AIR VALVE BOX
A3	MAIN AIR INTAKE WITH SCREEN, SEE NOTE 15.
A2	AIR EXHAUST
A1	COMPRESSED AIR INLET, 1" NPT CONNECTION
ITEM	LEGEND

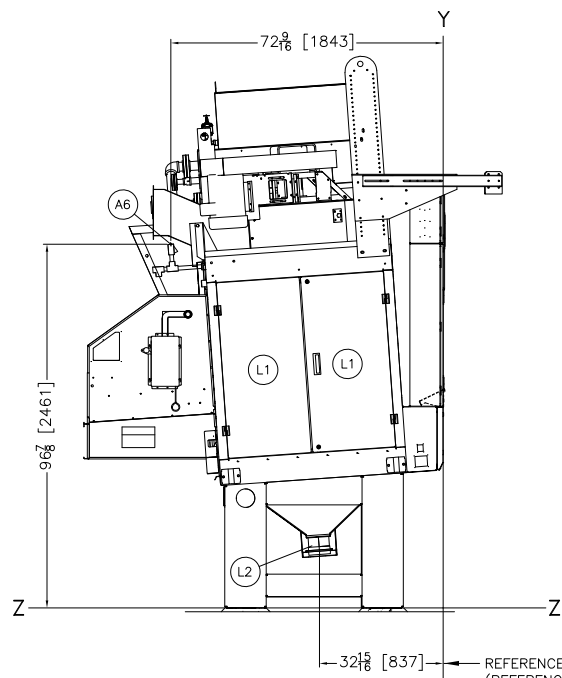
<b>NOTES</b>	
16	FOR UTILITY REQUIREMENTS FOR GAS, STEAM, THERMAL AIR, AIR INTAKE, AND WATER SUPPLY, SEE DOCUMENT BIP001/20160505 OR LATER.
15	THE MAIN AIR INTAKE ON THE STEAM BOX HAS A SCREEN ON THE ENTRY. CONTACT PMC ENGINEERING FOR OUTSIDE DUCTING.
14	DRYER FOOT SUPPORT PLATES ARE WELDED TO THE BOTTOM OF PEDESTAL LEGS TO ALLOW A GREATER GROUTING SURFACE BETWEEN PEDESTAL AND FINISHED FLOOR. USE LEVELING BOLTS TO LEVEL THE DRYER TO BASELINE "Z" (COINCIDES WITH BOTTOM OF LEGS.) DRYER FEET MUST BE GROUTED & ANCHORED TO FLOOR.
13	THIS DRAWING SHOWS THE DRYER WITH A 36-13/16" [935] DISCHARGE HEIGHT. WE CALL THE PEDESTAL BASE TO DO THIS A "ZERO PEDESTAL". DRYERS MAY BE ORDERED WITH A PEDESTAL TO INCREASE THE MACHINE HEIGHT IN (+)1.75" [44] INCREMENTS. ALL VERTICAL DIMENSIONS MUST BE ADJUSTED FOR THE SPECIFIED PEDESTAL.
12	THIS DRYER REQUIRES SIGNIFICANT SCFM OF AMBIENT AIR (EXCLUSIVE OF THE INLET DUCT) TO OPERATE CORRECTLY. THIS IS USED BY THE COMBUSTION AIR BLOWER FOR PROPER COMBUSTION BY THE BURNER. APPROPRIATE DUCTING OR VENTILATION DAMPERS SHOULD BE INSTALLED IN THE FACILITY TO ENSURE NO VACUUM EXISTS TO STARVE THE DRYERS OF THIS AIR REQUIREMENT.
11	DO NOT PRE-PIPE ANY CLOSER THAN 60" [1524].
10	DO NOT USE ANY TYPE OF TURNING VANES IN THE DRYER EXHAUST DUCTING AS THESE WILL IMMEDIATELY PLUG WITH LINT.
9	MINIMUM CLEARANCE FOR MAINTENANCE = 24" [610]. SOME JURISDICTIONS REQUIRE UP TO 30" (762) CLEARANCE. CONSULT LOCAL CODES. IN COSHA INSTALLATIONS MINIMUM DISTANCES FROM DRYER TO WALL IS DETERMINED BY COSHA REQUIREMENT. SEE DRAWING BOSHCLRBE FOR MINIMUM DIMENSION OF COSHA AT LAST STOPPING PLACE (MAY BE DRYER) TO WALL.
8	DRYER IS DISASSEMBLED INTO TWO MAJOR COMPONENTS, THE BASE AND THE FRAME. FOR SHIPPING, CONSULT MILNOR FACTORY IF COMPONENTS SUCH AS BLOWER HOUSING MUST BE REMOVED TO FIT MACHINE THROUGH OPENING.
7	DO NOT RUN PIPING OR CONDUIT OVER BLOWER HOUSING SO BLOWER MAY BE REMOVED FOR SERVICING IF NEEDED.
6	AS OF THIS WRITING, THE MINIMUM CLEARANCE REQUIRED BY U.S. NATIONAL ELECTRIC CODES, FROM ELECTRIC BOX TO ANY OBJECT IS: 36" [914] IF OBJECT IS AN UNGROUNDED (INSULATED) WALL. 42" [1067] IF OBJECT IS A GROUNDED WALL (i.e. BARE CONCRETE, BRICK, ETC.). 48" [1219] IF OBJECT IS ANY LIVE PART. CHECK LOCAL ELECTRIC CODES FOR FURTHER RESTRICTIONS.
5	CUSTOMER TO SUPPLY CIRCUIT BREAKER OR FUSED BRANCH CIRCUIT DISCONNECT (SAFETY) SWITCHES WITH LAG TYPE FUSES FROM POWER SOURCE TO MACHINE. A SEPARATE GROUND WIRE MUST BE CONNECTED FROM DISCONNECT TO EQUIPMENT.
4	BASELINE "Z" IS THE REFERENCE FOR ALL VERTICAL DIMENSIONS. ON MACHINES 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 TRAVELING 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.
<b>ATTENTION</b>	
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.	
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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.	



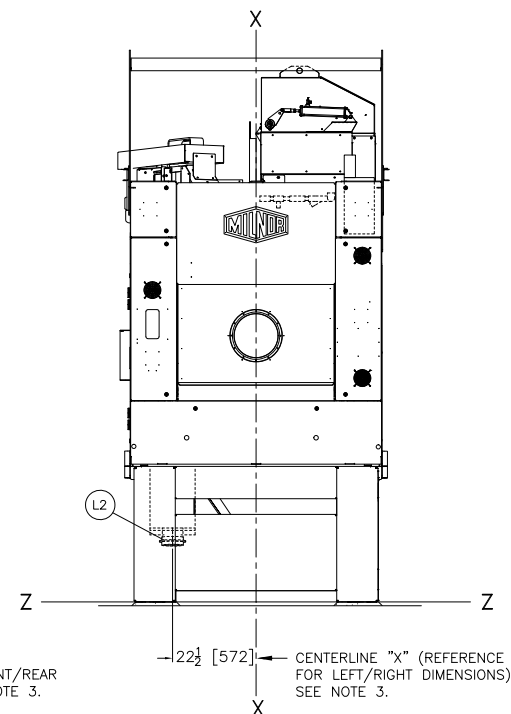
REAR VIEW



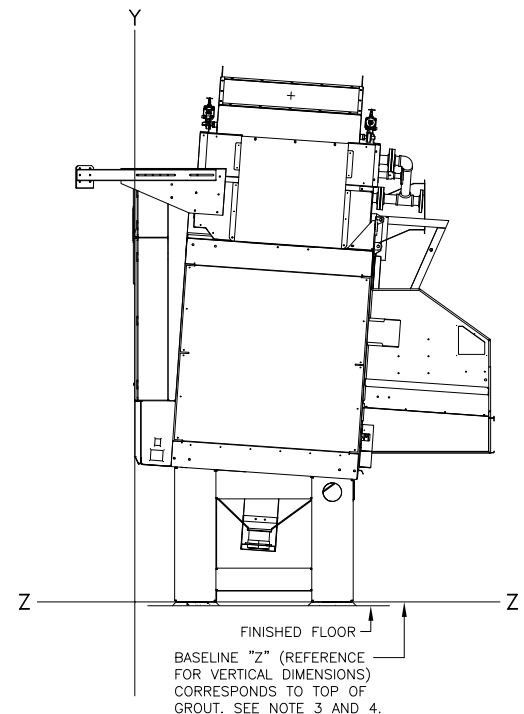
PLAN VIEW



LEFT VIEW



FRONT VIEW



RIGHT VIEW

L2	LINT OUTLET (4" PVC PIPE CONNECTION) FOR OPTIONAL INTERNAL LINT SCREEN. PIPES TO DRYVAC OR LINT COLLECTOR BY OTHERS. SEE NOTES AND DRAWING BD6458DLCPE FOR RECOMMENDED PIPING.
L1	OPTIONAL INTERNAL LINT SCREENS, BEHIND PANELS
A6	1" NPT AIR CONNECTION/OPTIONAL INTERNAL LINT SCREENS
ITEM	LEGEND

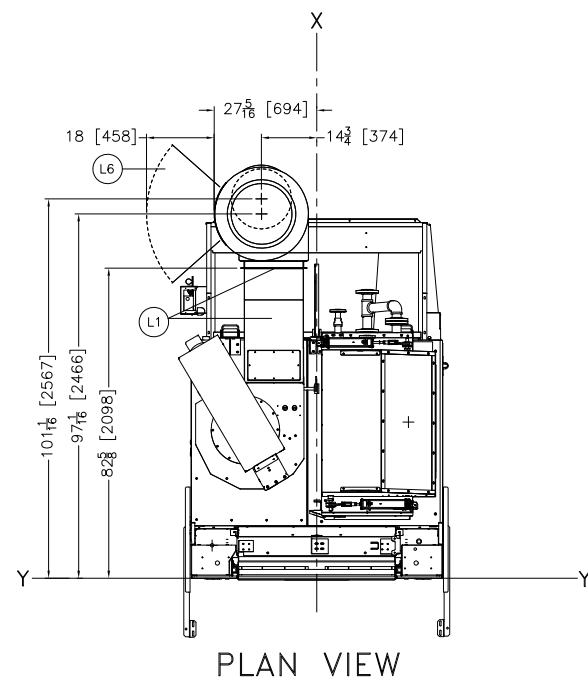
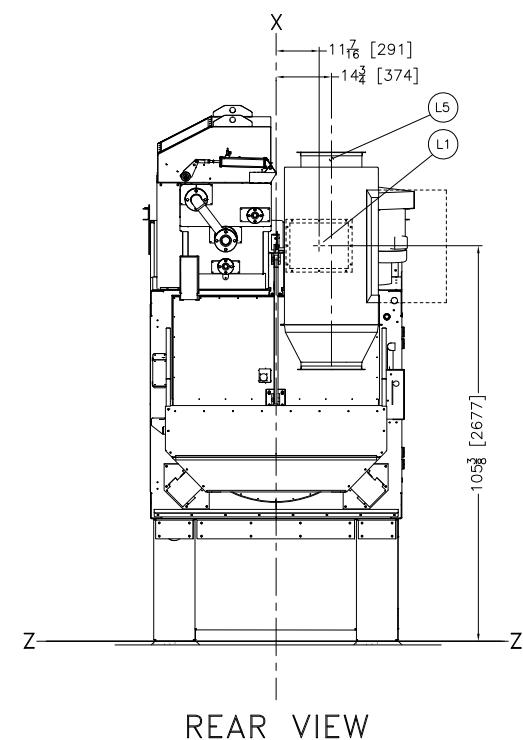
NOTES	
16	FOR UTILITY REQUIREMENTS FOR GAS, STEAM, THERMAL OIL, AIR INTAKE, AND WATER SUPPLY. SEE DOCUMENT BIPDU101/20160505 OR LATER.
10	A WATER SEPARATOR (NOT SUPPLIED BY PMC) IS REQUIRED FOR THE INCOMING AIR TO THE INTERNAL LINT SYSTEM.
9	OPTIONAL INTERNAL LINT SCREENS IS AVAILABLE FOR DRYERS WITH 41" [1041] AND TALLER PEDESTALS ONLY.
8	FOR OPTIONAL INTERNAL LINT FILTERS, IT IS RECOMMENDED TO HAVE A 60 GALLON COMPRESSED AIR BOOSTER TANK FOR EVERY 5 DRYERS.
7	THIS DRAWING SHOWS THE DRYER WITH A 36-13/16" [935] DISCHARGE HEIGHT. WE CALL THE PEDESTAL BASE TO DO THIS A "ZERO PEDESTAL". DRYERS MAY BE ORDERED WITH A PEDESTAL TO INCREASE THE MACHINE HEIGHT IN (+)1.75" [44] INCREMENTS. ALL VERTICAL DIMENSIONS MUST BE ADJUSTED FOR THE SPECIFIED PEDESTAL.
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 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 TRAVELING 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.
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2	NUMBERS IN BRACKETS [ ] DENOTE DIMENSIONS IN MILLIMETERS.
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5050TS1L WITH BOOSTER COIL OPTIONS

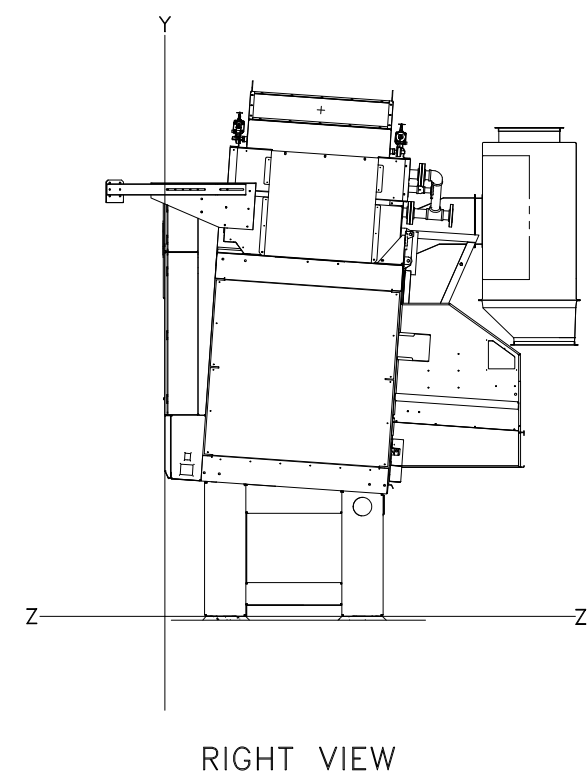
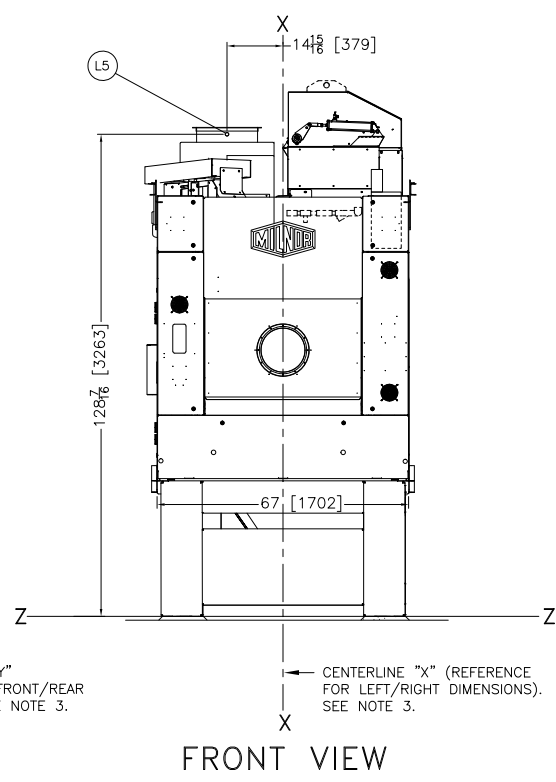
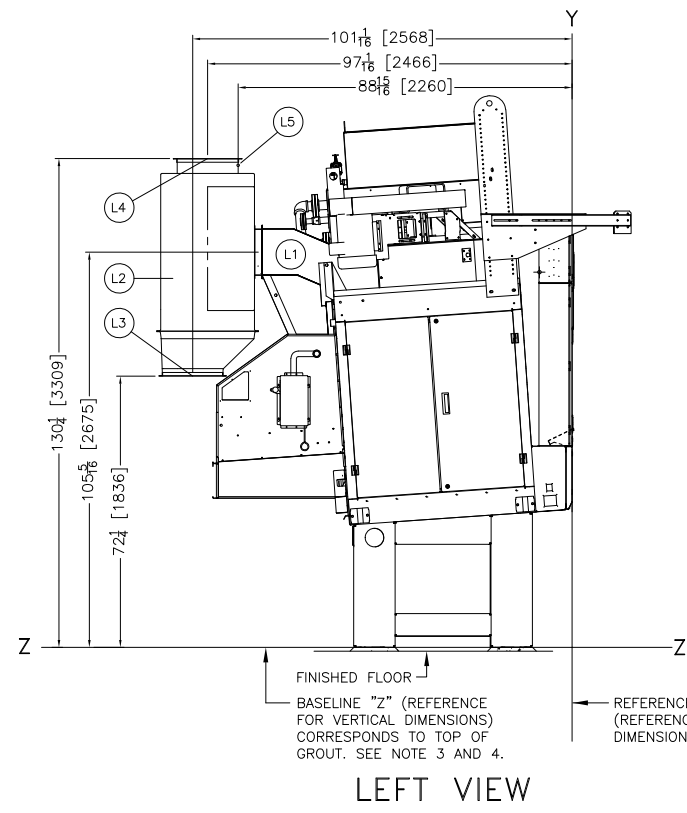
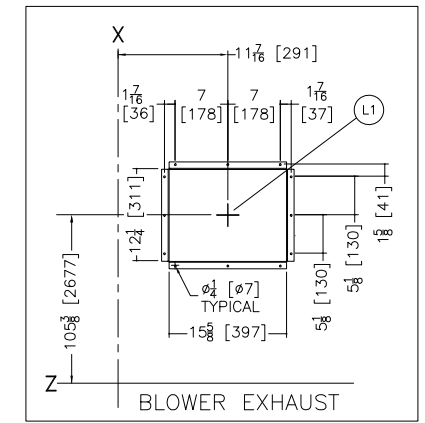
P.O. Box 400 Kenner, LA 70063, USA, Phone 504/467-9591, FAX 504/468-3094, Email: milnorinfo@milnor.com

DWG# BD5050TSILDB 2019453D

PELLERIN MILNOR CORPORATION



ZERO PEDESTAL SHOWN  
ADJUST ALL VERTICAL DIMENSIONS  
TO THE PEDESTAL SPECIFIED.  
SEE NOTE 13.



ITEM	LEGEND
L6	HINGED ACCESS DOOR
L5	AIR INLET, 3/4" NPT
L4	EXHAUST DUCT, 16-3/4"[425] ID FLANGED OUTLET
L3	CONE, LINT COLLECTION OUTLET TO BAG, DISCHARGE
L2	16"[406] ID FLANGED OUTLET
L1	MLF1004 LINT FILTER (LINT FILTER SUPPORTED BY OTHERS)
L1	OPTIONAL EXHAUST DUCT TO ONBOARD LINT

**NOTES**

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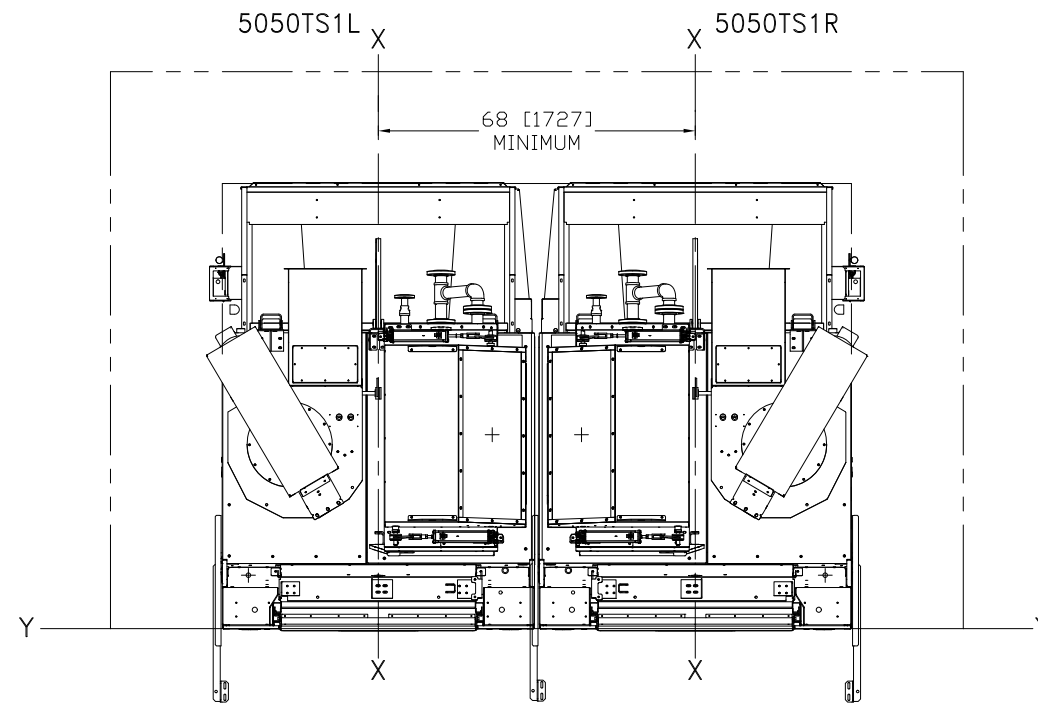
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**ATTENTION**

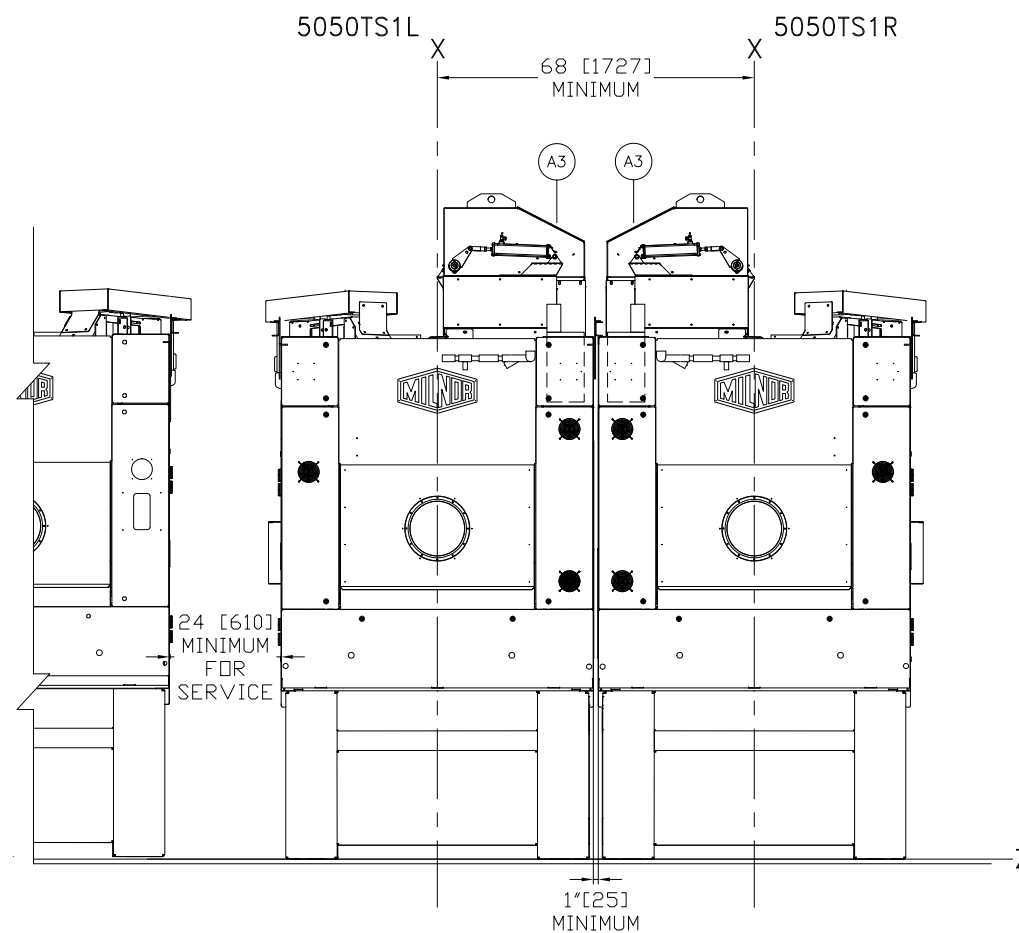
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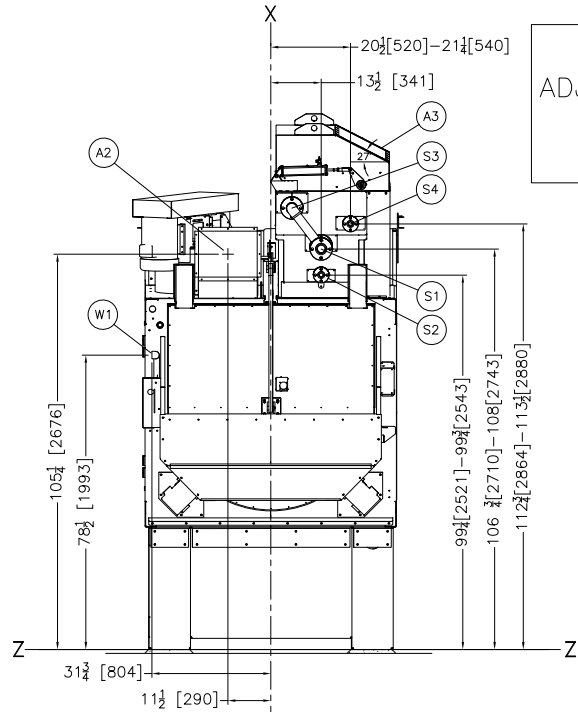
PLAN VIEW



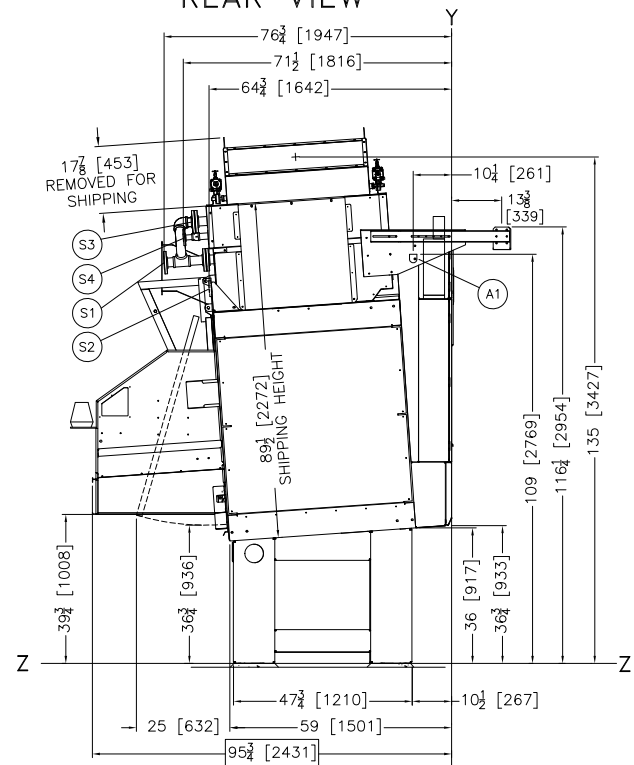
FRONT VIEW  
MIRRORED INSTALLATION

A3	MAIN AIR INTAKE WITH SCREEN, SEE NOTE 7.
ITEM	LEGEND
<p><b>NOTES</b></p> <p>7 THE MAIN AIR INTAKE ON THE STEAM BOX HAS A SCREEN ON THE ENTRY. CONTACT PMC ENGINEERING FOR OUTSIDE DUCTING.</p> <p>6 AS OF THIS WRITING, THE MINIMUM CLEARANCE REQUIRED BY U.S. NATIONAL ELECTRIC CODES, FROM ELECTRIC BOX TO ANY OBJECT IS:</p> <p>36 [914] IF OBJECT IS AN UNGROUNDED (INSULATED) WALL.</p> <p>42 [1067] IF OBJECT IS A GROUNDED WALL (ie. BARE CONCRETE, BRICK, ETC.).</p> <p>48 [1219] IF OBJECT IS ANY LIVE PART.</p> <p>CHECK LOCAL ELECTRIC CODES FOR FURTHER RESTRICTIONS.</p> <p>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.</p> <p>4 BASELINE "Z" IS THE SAME FOR ALL MILNOR MACHINES AND IS SHOWN ON ALL DIMENSIONAL DRAWINGS. THE DISTANCE BETWEEN BASELINE "Z" AND THE FINISHED FLOOR MAY VARY (WITH CHANGES IN FLOOR HEIGHT) AS REQUIRED TO INSURE THAT BASELINE "Z" IS HORIZONTAL AND ALL COMPONENTS REQUIRING GROUT ARE SET ON A MINIMUM 1" [25] THICK GROUT BED.</p> <p>3 USE REFERENCE LINES "X", "Y", AND "Z" TO LOCATE ALL SERVICE CONNECTIONS.</p> <p>2 NUMBERS IN BRACKETS [ ] DENOTE DIMENSIONS IN MILLIMETERS.</p> <p>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.</p> <p><b>ATTENTION</b></p> <p>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.</p> <p><b>ATTENTION</b></p> <p>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.</p>	
<p><b>5050TS1L &amp; 5050TS1R PAIRED</b></p>	
	<p>DWG# BD5050TS1PDE 2022086D</p>
<p><b>MILNOR</b> PELLERIN MILNOR CORPORATION</p> <p>P.O. Box 400 Kenner, LA 70063, USA, Phone 504/467-9591, FAX 504/468-3094, Email: milnorinfo@milnor.com</p>	

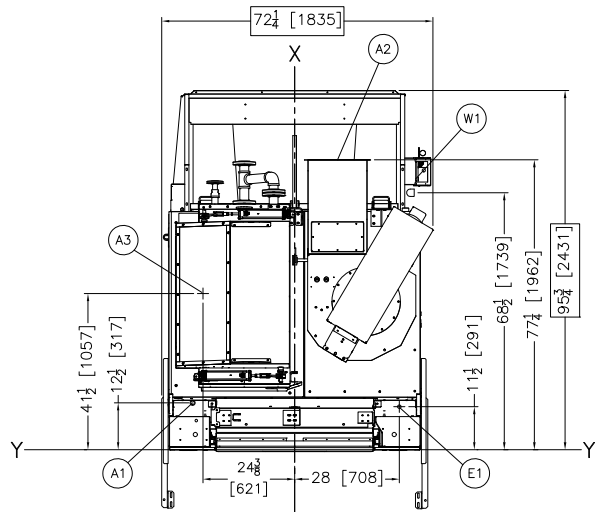
WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER 58080TG1/TS1		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER 58058TG2/TS1		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER 58040TG2/TS1		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER 5050TG2L/TS1		USE THIS COSHA SIDE RAIL EXTENDERS		A 5050TG1L DRYERS	
INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
-	-	-	-	0	0	0	0	0	0	58 1/8	1476
-	-	-	-	3 1/2	89	3 1/2	89	3 1/2	89	61 5/8	1565
-	-	-	-	10 1/2	267	10 1/2	267	10 1/2	267	68 5/8	1743
-	-	0	0	14	356	14	356	14	356	72 1/8	1832
-	-	3 1/2	89	17 1/2	445	17 1/2	445	17 1/2	445	75 5/8	1921
0	0	7	178	21	533	21	533	21	533	79 1/8	2010
3 1/2	89	10 1/2	267	24 1/2	622	24 1/2	622	24 1/2	622	82 5/8	2099
10 1/2	267	17 1/2	445	31 1/2	800	31 1/2	800	31 1/2	800	89 5/8	2276
17 1/2	445	24 1/2	622	38 1/2	978	38 1/2	978	38 1/2	978	96 5/8	2454
24 1/2	622	31 1/2	800	45 1/2	1156	45 1/2	1156	45 1/2	1156	105 5/8	2683
31 1/2	800	38 1/2	978	52 1/2	1334	52 1/2	1334	52 1/2	1334	110 5/8	2810
38 1/2	1156	45 1/2	1156	59 1/2	1511	59 1/2	1511	59 1/2	1511	117 5/8	2988
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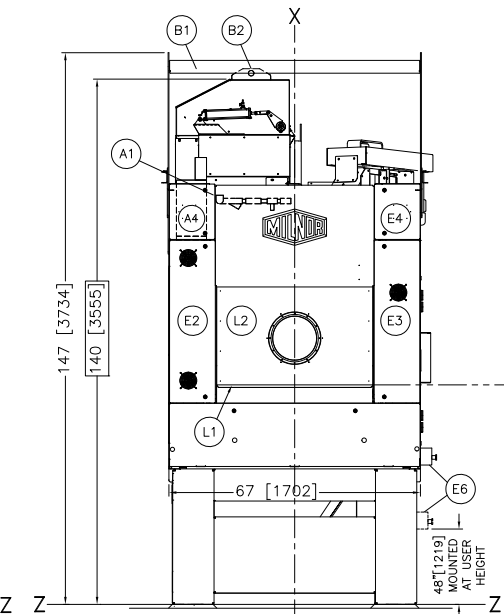
REAR VIEW



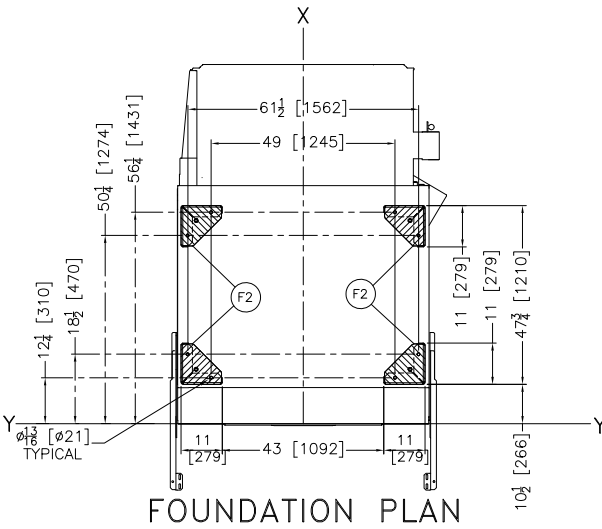
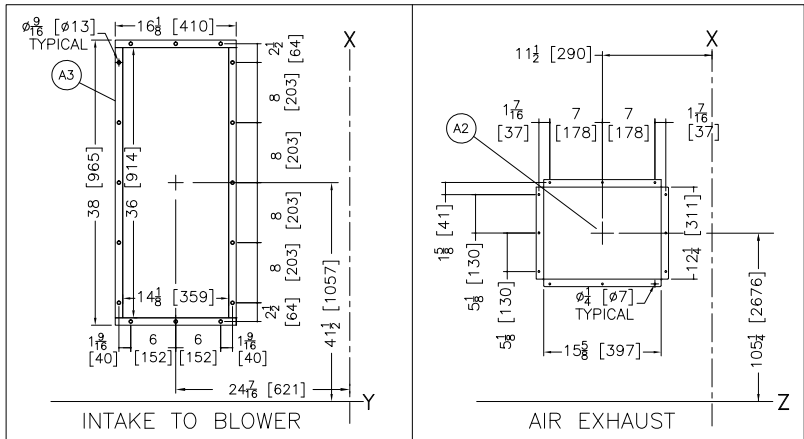
LEFT VIEW



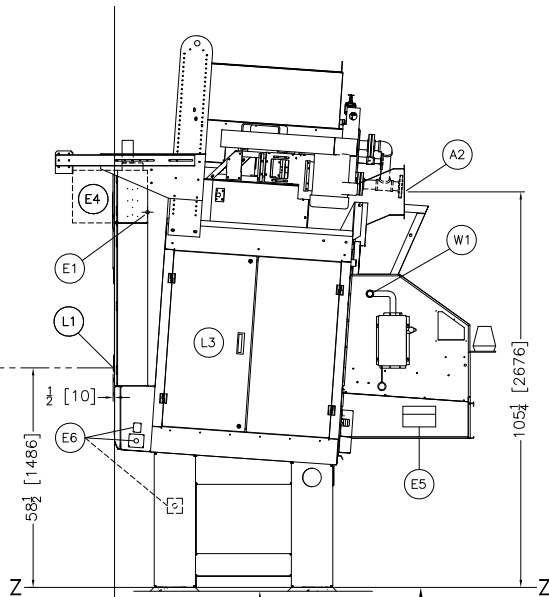
PLAN VIEW



FRONT VIEW

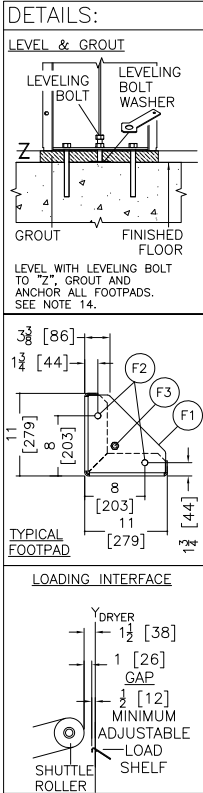


FOUNDATION PLAN



RIGHT VIEW

ZERO PEDESTAL SHOWN  
ADJUST ALL VERTICAL DIMENSIONS  
TO THE PEDESTAL SPECIFIED.  
SEE NOTE 13.



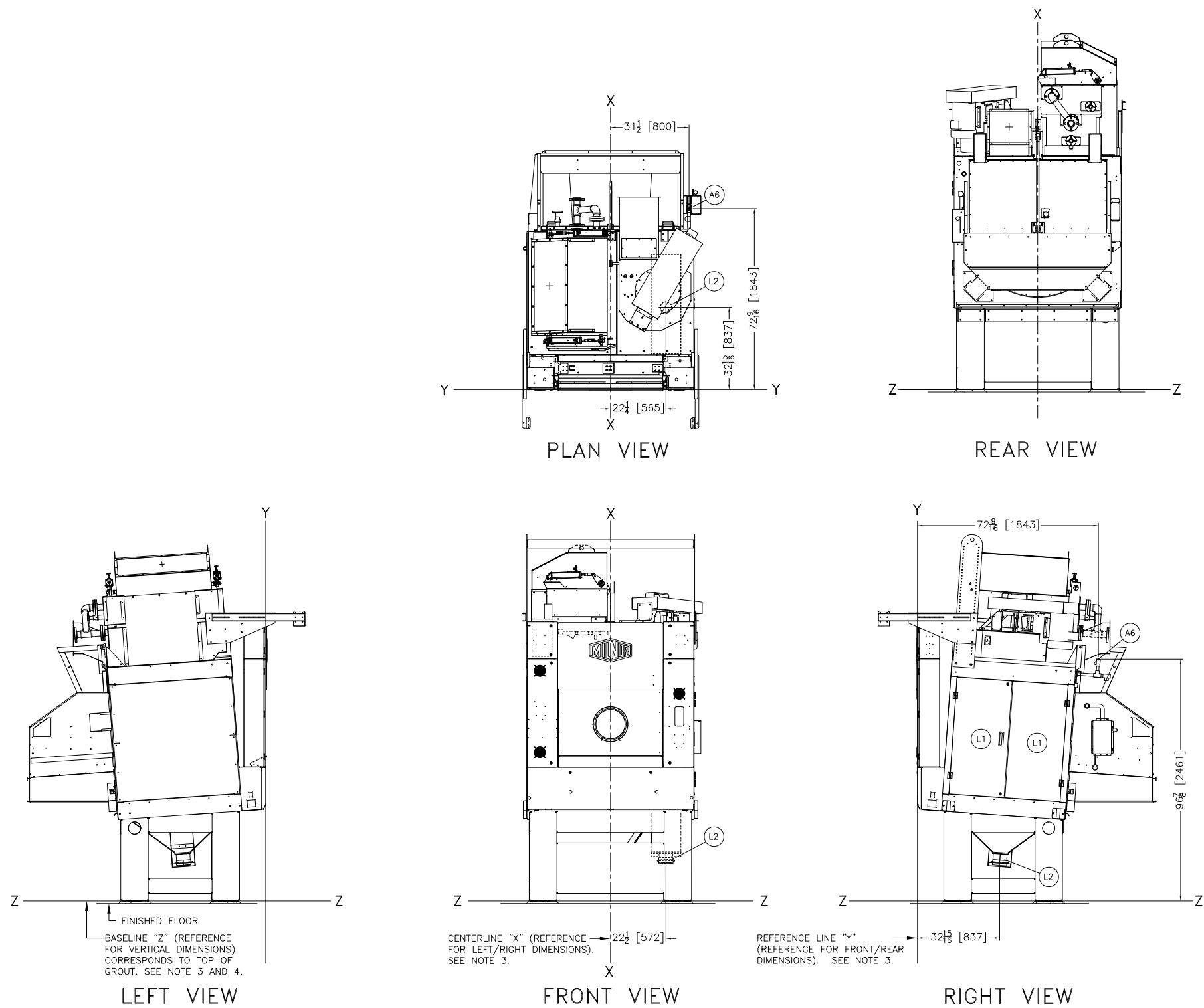
W1	SPRINKLER WATER CONNECTION, 1-1/4" NPT
T1	OPTIONAL BEACON
S4	STEAM BOOSTER CONDENSATE RETURN, 1" FLANGED CONNECTION
S3	STEAM BOOSTER INLET, 2" FLANGED CONNECTION
S2	STEAM CONDENSATE RETURN, 1" FLANGED CONNECTION
S1	STEAM INLET, 2" FLANGED CONNECTION
L3	ACCESS DOORS TO OPTIONAL INTERNAL LINT FILTER
L2	LOAD DOOR OPENING SIZE: 42"(1067) WIDE BY 28"(711) HIGH FOR STANDARD DOOR.
L1	LOADING HEIGHT, LOAD SHELF
F3	LEVELING BOLT (5/8"-11 X 3") SUPPLIED.
F2	BASE PLATES, 4 PLACES
F1	ANCHOR BOLT HOLES, 13/16" DIAMETER, 8 PLACES
E6	EMERGENCY STOP & MANUAL DOOR CONTROLS
E5	MANUAL CONTROLS
E4	MICROPROCESSOR BOX
E1	MAIN ELECTRICAL CONNECTION
B1	STEAMBOX LIFTING BRACKETS, REMOVABLE
B1	LIFTING BRACKETS, REMOVABLE
A4	AIR VALVE BOX
A3	MAIN AIR INTAKE WITH SCREEN, SEE NOTE 15.
A2	AIR EXHAUST
A1	COMPRESSED AIR INLET, 1" NPT CONNECTION
ITEM	LEGEND

NOTES	
16	FOR UTILITY REQUIREMENTS FOR GAS, STEAM, THERMAL OIL, AIR INTAKE, AND WATER SUPPLY, SEE DOCUMENT BIP0U01/20160505 OR LATER.
15	THE MAIN AIR INTAKE ON THE STEAM BOX HAS A SCREEN ON THE ENTRY. CONTACT PMC ENGINEERING FOR OUTSIDE DUCTING.
14	DRYER FOOT SUPPORT PLATES ARE WELDED TO THE BOTTOM OF PEDESTAL LEGS TO ALLOW A GREATER GROUTING SURFACE BETWEEN PEDESTAL LEGS AND FINISHED FLOOR. USE LEVELING BOLTS TO LEVEL THE DRYER TO BASELINE "Z" (COINCIDES WITH BOTTOM OF LEGS.) DRYER FEET MUST BE GROUTED & ANCHORED TO FLOOR.
13	THIS DRAWING SHOWS THE DRYER WITH A 36-13/16"[935] DISCHARGE HEIGHT. WE CALL THE PEDESTAL BASE TO DO THIS A "ZERO PEDESTAL". DRYERS MAY BE ORDERED WITH A PEDESTAL TO INCREASE THE MACHINE HEIGHT IN (+)1.75"[44] INCREMENTS. ALL VERTICAL DIMENSIONS MUST BE ADJUSTED FOR THE SPECIFIED PEDESTAL.
12	THIS DRYER REQUIRES SIGNIFICANT SCFM OF AMBIENT AIR (EXCLUSIVE OF THE INLET DUCT) TO OPERATE CORRECTLY. THIS IS USED BY THE COMBUSTION AIR BLOWER FOR PROPER COMBUSTION BY THE BURNER. APPROPRIATE DUCTING OR VENTILATION DAMPERS SHOULD BE INSTALLED IN THE FACILITY TO ENSURE NO VACUUM EXISTS TO STARVE THE DRYERS OF THIS AIR REQUIREMENT.
11	DO NOT PRE-PIPE ANY CLOSER THAN 60 [1524].
10	DO NOT USE ANY TYPE OF TURNING VANES IN THE DRYER EXHAUST DUCTING AS THESE WILL IMMEDIATELY PLUG WITH LINT.
9	MINIMUM CLEARANCE FOR MAINTENANCE = 24"[610]. SOME JURISDICTIONS REQUIRE UP TO 30"(762) CLEARANCE. CONSULT LOCAL CODES. IN COSHA INSTALLATIONS MINIMUM DISTANCES FROM DRYER TO WALL IS DETERMINED BY COSHA REQUIREMENT. SEE DRAWING BOSH0CLRBE FOR MINIMUM DIMENSION OF COSHA AT LAST STOPPING PLACE (MAY BE DRYER) TO WALL.
8	DRYER IS DISASSEMBLED INTO TWO MAJOR COMPONENTS, THE BASE AND THE FRAME. FOR SHIPMENT, CONSULT MILNOR FACTORY IF COMPONENTS SUCH AS BLOWER HOUSING MUST BE REMOVED TO FIT MACHINE THROUGH OPENING.
7	DO NOT RUN PIPING OR CONDUIT OVER BLOWER HOUSING SO BLOWER MAY BE REMOVED FOR SERVICING IF NEEDED.
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5050TS1R WITH STEAM BOOSTER

DWG# BD5050TS1RDE 2022086D

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L2	LINT OUTLET (4" PVC PIPE CONNECTION) FOR OPTIONAL INTERNAL LINT SCREEN. PIPES TO DRYVAC OR LINT COLLECTOR BY OTHERS. SEE NOTES AND DRAWING BD6458DLCPBE FOR RECOMMENDED PIPING.
L1	OPTIONAL INTERNAL LINT SCREENS, BEHIND PANELS
A6	1" NPT AIR CONNECTION/OPTIONAL INTERNAL LINT SCREENS
ITEM	LEGEND

NOTES	
11	FOR UTILITY REQUIREMENTS FOR GAS, STEAM, THERMAL OIL, AIR INTAKE, AND WATER SUPPLY. SEE DOCUMENT BIPDU01/20160505 OR LATER.
10	A WATER SEPARATOR (NOT SUPPLIED BY PMC) IS REQUIRED FOR THE INCOMING AIR TO THE INTERNAL LINT SYSTEM.
9	OPTIONAL INTERNAL LINT SCREENS IS AVAILABLE FOR DRYERS WITH 41"[1041] AND TALLER PEDESTALS ONLY.
8	FOR OPTIONAL INTERNAL LINT FILTERS, IT IS RECOMMENDED TO HAVE A 60 GALLON COMPRESSED AIR BOOSTER TANK FOR EVERY 5 DRYERS.
7	THIS DRAWING SHOWS THE DRYER WITH A 36-13/16"[935] DISCHARGE HEIGHT. WE CALL THE PEDESTAL BASE TO DO THIS A "ZERO PEDESTAL". DRYERS MAY BE ORDERED WITH A PEDESTAL TO INCREASE THE MACHINE HEIGHT IN (+)1.75"[44] INCREMENTS. ALL VERTICAL DIMENSIONS MUST BE ADJUSTED FOR THE SPECIFIED PEDESTAL.
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.
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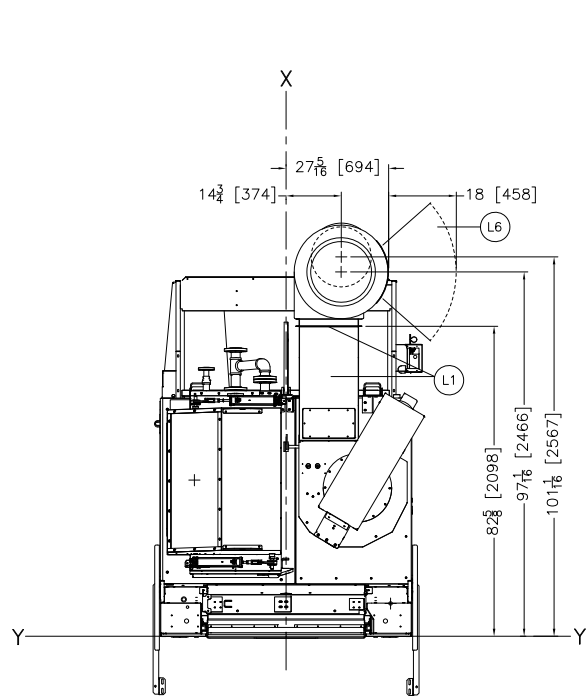
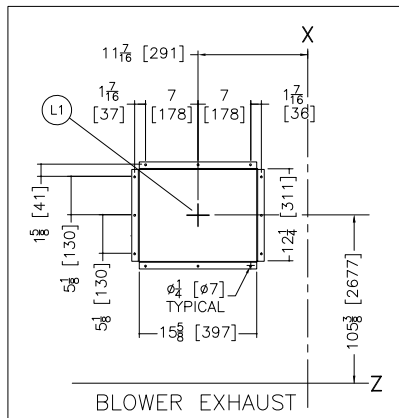
5050TS1R WITH BOOSTER COIL OPTIONS

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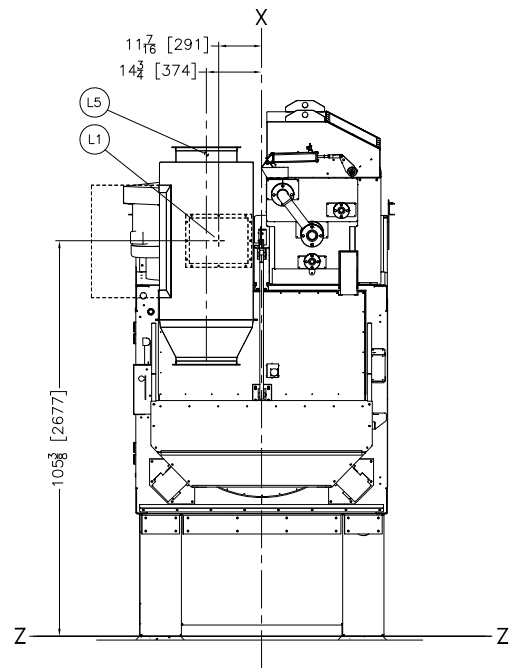
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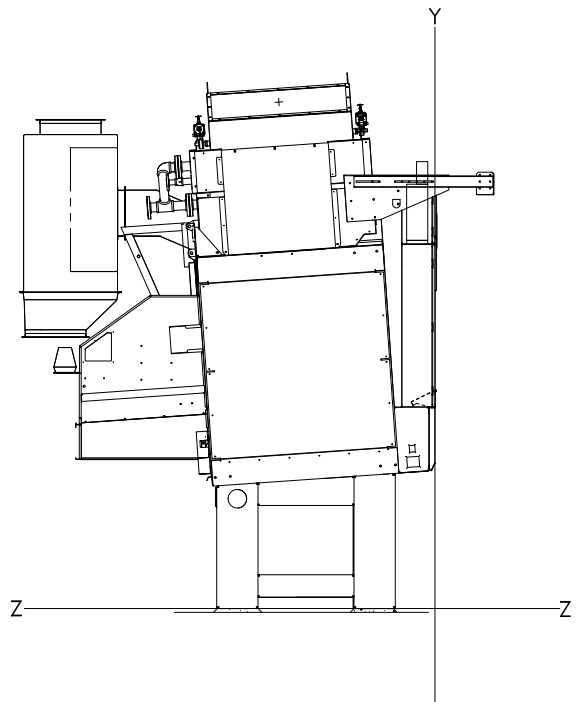
ZERO PEDESTAL SHOWN  
ADJUST ALL VERTICAL DIMENSIONS  
TO THE PEDESTAL SPECIFIED.  
SEE NOTE 13.



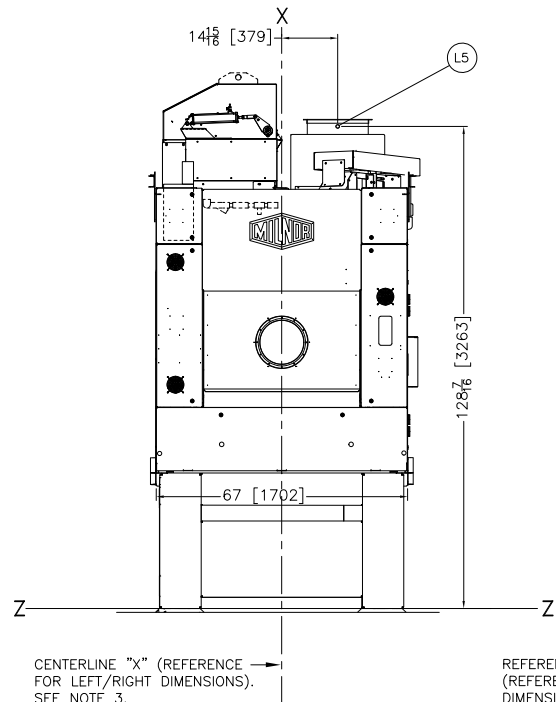
PLAN VIEW



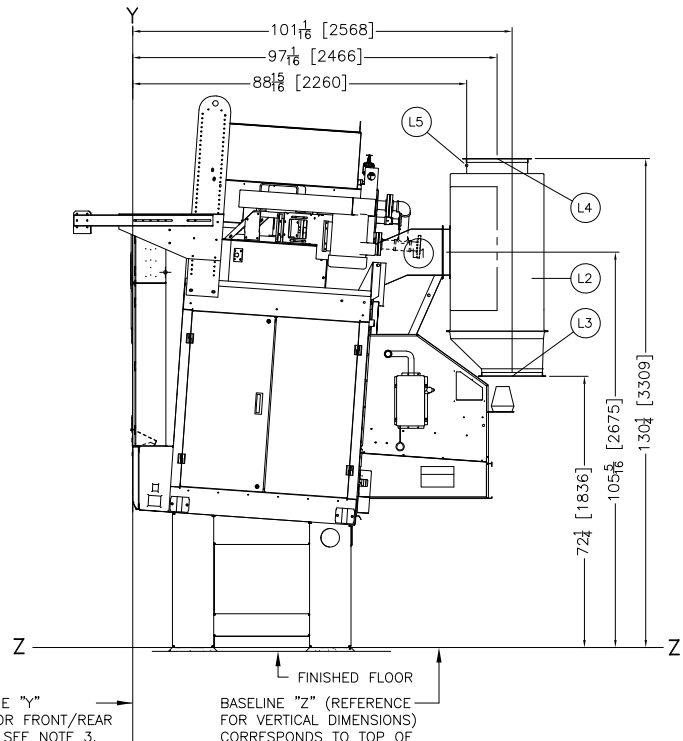
REAR VIEW



LEFT VIEW



FRONT VIEW



RIGHT VIEW

CENTERLINE "X" (REFERENCE  
FOR LEFT/RIGHT DIMENSIONS).  
SEE NOTE 3.

REFERENCE LINE "Y"  
(REFERENCE FOR FRONT/REAR  
DIMENSIONS). SEE NOTE 3.

BASELINE "Z" (REFERENCE  
FOR VERTICAL DIMENSIONS)  
CORRESPONDS TO TOP OF  
GROUT. SEE NOTE 3 AND 4.

L6	HINGED ACCESS DOOR
L5	AIR INLET, 3/4" NPT
L4	EXHAUST DUCT, 16-3/4"[425] ID FLANGED OUTLET
L3	CONE, LINT COLLECTION OUTLET TO BAG, DISCHARGE
L2	16"[406] ID FLANGED OUTLET
L1	MLF1004 LINT FILTER (LINT FILTER SUPPORTED BY OTHERS)
L1	OPTIONAL EXHAUST DUCT TO ONBOARD LINT
ITEM	LEGEND

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5050TS1R BOOSTER COIL & MLF1004

DWG# BD5050TS1RDC  
2019453D

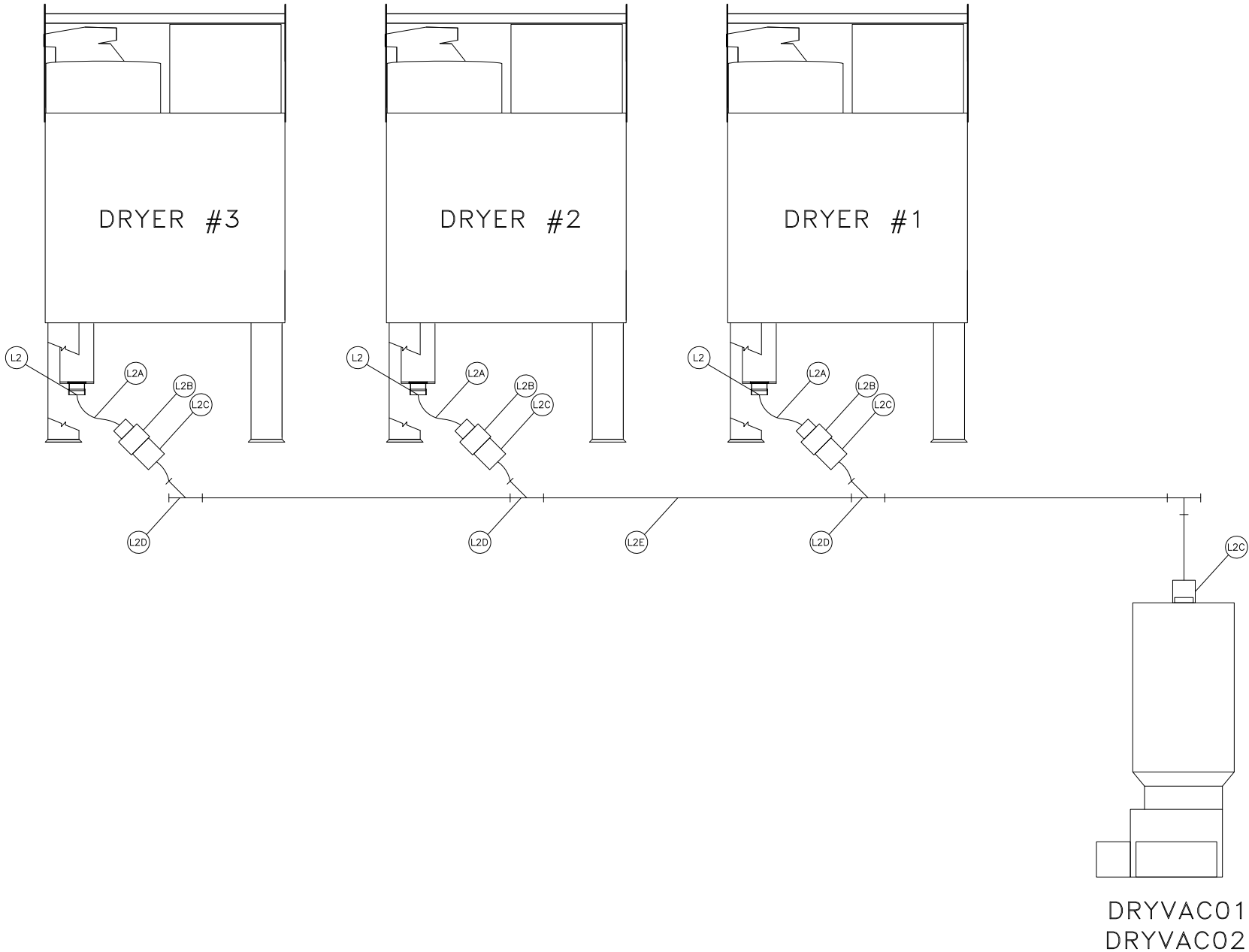
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ADDITIONAL AIR REQUIREMENTS  
FOR (L1)– OPTIONAL  
INTERNAL LINT FILTERS  
(SEE NOTE 7.)

AIR PRESSURE REQUIREMENTS: 85–110 PSI  
CONNECTION (A2): 1”NPT  
AIR USAGE (ESTIMATED):  
110 SCF IN 15 SECONDS WHEN ACTIVATED



L2E	6" SHC40 PVC (NOT SUPPLIED PMC.)
L2D	6" Y – PVC (NOT SUPPLIED PMC.)
L2C	6" NO HUB CONNECTOR (NOT SUPPLIED PMC.)
L2B	REDUCER 6" X 6", (PART W7-71865, SUPPLIED PMC)
L2A	6" FLEX HOSE (NOT SUPPLIED PMC.)
L2	LINT OUTLET (6" FLEX HOSE CONNECTION) FOR OPTIONAL INTERNAL LINT SCREEN. PIPES TO DRYVAC01, DRYVAC02 OR LINT COLLECTOR BY OTHERS.
ITEM	LEGEND

- NOTES**
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RECOMMENDED LINT COLLECTOR PIPING

DM

0

0.5M

1M

INCHES 0 12 24 36

DWG#  
BD6458DLCPE  
2014453D

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