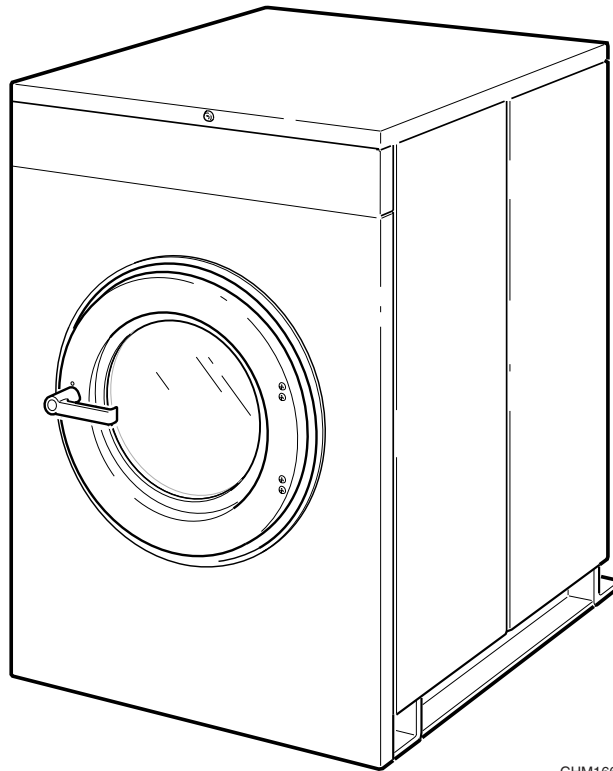


Washer-Extractors

Cabinet Hardmount

Refer to Page 6 for Model Identification

Installation



CHM166C

Para bajar una copia de estas instrucciones en español, visite www.comlaundry.com.

Keep These Instructions for Future Reference.

(If this machine changes ownership, this manual must accompany machine.)


Alliance
Laundry Systems

www.comlaundry.com

Part No. F232135R11
January 2008

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Safety Information

Explanation of Safety Messages

Precautionary statements (“DANGER,” “WARNING,” and “CAUTION”), followed by specific instructions, are found in this manual and on machine decals. These precautions are intended for the personal safety of the operator, user, servicer, and those maintaining the machine.

	DANGER
DANGER indicates the presence of a hazard that will cause severe personal injury, death, or substantial property damage if the danger is ignored.	

	WARNING
WARNING indicates the presence of a hazard that can cause severe personal injury, death, or substantial property damage if the warning is ignored.	


	CAUTION
CAUTION indicates the presence of a hazard that will or can cause minor personal injury or property damage if the caution is ignored.	

Additional precautionary statements (“IMPORTANT” and “NOTE”) are followed by specific instructions.

IMPORTANT: The word “IMPORTANT” is used to inform the reader of specific procedures where minor machine damage will occur if the procedure is not followed.

NOTE: The word “NOTE” is used to communicate installation, operation, maintenance or servicing information that is important but not hazard related.

Important Safety Instructions


	WARNING
To reduce the risk of fire, electric shock, serious injury or death to persons when using your washer, follow these basic precautions:	
W023	

1. Read all instructions before using the washer.
2. Refer to the **GROUNDING INSTRUCTIONS** in the **INSTALLATION** manual for the proper grounding of the washer.
3. Do not wash textiles that have been previously cleaned in, washed in, soaked in, or spotted with gasoline, kerosene, waxes, cooking oils, dry-cleaning solvents, or other flammable or explosive substances as they give off vapors that could ignite or explode.
4. Do not add gasoline, dry-cleaning solvents, or other flammable or explosive substances to the wash water. These substances give off vapors that could ignite or explode.
5. Under certain conditions, hydrogen gas may be produced in a hot water system that has not been used for two weeks or more. **HYDROGEN GAS IS EXPLOSIVE.** If the hot water system has not been used for such a period, before using a washing machine or combination washer-dryer, turn on all hot water faucets and let the water flow from each for several minutes. This will release any accumulated hydrogen gas. The gas is flammable, do not smoke or use an open flame during this time.
6. Do not allow children to play on or in the washer. Close supervision of children is necessary when the washer is used near children. This is a safety rule for all appliances.
7. Before the washer is removed from service or discarded, remove the door to the washing compartment.
8. Do not reach into the washer if the wash drum is moving.


9. Do not install or store the washer where it will be exposed to water and/or weather.
10. Do not tamper with the controls.
11. Do not repair or replace any part of the washer, or attempt any servicing unless specifically recommended in the user-maintenance instructions or in published user-repair instructions that the user understands and has the skills to carry out.
12. To reduce the risk of an electric shock or fire, DO NOT use an extension cord or an adapter to connect the washer to the electrical power source.
13. Use washer only for its intended purpose, washing textiles.
14. Never wash machine parts or automotive parts in the machine. This could result in serious damage to the basket.
15. ALWAYS disconnect the washer from electrical supply before attempting any service. Disconnect the power cord by grasping the plug, not the cord.
16. Install the washer according to the INSTALLATION INSTRUCTIONS. All connections for water, drain, electrical power and grounding must comply with local codes and be made by licensed personnel when required.
17. To reduce the risk of fire, textiles which have traces of any flammable substances such as vegetable oil, cooking oil, machine oil, flammable chemicals, thinner, etc., or anything containing wax or chemicals such as in mops and cleaning cloths, must not be put into the washer. These flammable substances may cause the fabric to catch on fire by itself.
18. Do not use fabric softeners or products to eliminate static unless recommended by the manufacturer of the fabric softener or product.
19. Keep washer in good condition. Bumping or dropping the washer can damage safety features. If this occurs, have washer checked by a qualified service person.
20. If the supply cord is damaged, it must be replaced by a special cord or assembly available from the service agent.
21. Be sure water connections have a shut-off valve and that fill hose connections are tight. CLOSE the shut-off valves at the end of each wash day.
22. Loading door MUST BE CLOSED any time the washer is to fill, tumble or spin. DO NOT bypass the loading door switch by permitting the washer to operate with the loading door open.
23. Always read and follow manufacturer's instructions on packages of laundry and cleaning aids. Heed all warnings or precautions. To reduce the risk of poisoning or chemical burns, keep them out of the reach of children at all times (preferably in a locked cabinet).
24. Always follow the fabric care instructions supplied by the textile manufacturer.
25. Never operate the washer with any guards and/or panels removed.
26. DO NOT operate the washer with missing or broken parts.
27. DO NOT bypass any safety devices.
28. Failure to install, maintain, and/or operate this washer according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.


NOTE: The WARNINGS and IMPORTANT SAFETY INSTRUCTIONS appearing in this manual are not meant to cover all possible conditions and situations that may occur. Common sense, caution and care must be exercised when installing, maintaining, or operating the washer.


Any problems or conditions not understood should be reported to the dealer, distributor, service agent or the manufacturer.

	WARNING
<p>This machine must be installed, adjusted, and serviced by qualified electrical maintenance personnel familiar with the construction and operation of this type of machinery. They must also be familiar with the potential hazards involved. Failure to observe this warning may result in personal injury and/or equipment damage, and may void the warranty.</p>	
<small>SW004</small>	

IMPORTANT: Ensure that the recommended clearances for inspection and maintenance are provided. Never allow the inspection and maintenance space to be blocked.

	WARNING
<p>Install the machine on a level floor of sufficient strength. Failure to do so may result in conditions which can produce serious injury, death and/or property damage.</p>	
<small>W703</small>	

	CAUTION
<p>Be careful around the open door, particularly when loading from a level below the door. Impact with door edges can cause personal injury.</p>	
<small>SW025</small>	

	WARNING
<p>Never touch internal or external steam pipes, connections, or components. These surfaces can be extremely hot and will cause severe burns. The steam must be turned off and the pipe, connections, and components allowed to cool before the pipe can be touched.</p>	
<small>SW014</small>	

Safety Decals

Safety decals appear at crucial locations on the machine. Failure to maintain legible safety decals could result in injury to the operator or service technician.

To provide personal safety and keep the machine in proper working order, follow all maintenance and safety procedures presented in this manual. If questions regarding safety arise, contact the manufacturer immediately.

Use manufacturer-authorized spare parts to avoid safety hazards.

Operator Safety


	WARNING
<p>NEVER insert hands or objects into basket until it has completely stopped. Doing so could result in serious injury.</p>	
<small>SW012</small>	

To ensure the safety of machine operators, the following maintenance checks must be performed daily:

1. Prior to operating the machine, verify that all warning signs are present and legible. Missing or illegible signs must be replaced immediately. Make certain that spares are available.
2. Check door interlock before starting operation of the machine:
 - a. Attempt to start the machine with the door open. The machine should not start with the door open.
 - b. Close the door without locking it and attempt to start the machine. The machine should not start with the door unlocked.
 - c. Close and lock the door and start a cycle. Attempt to open the door while the cycle is in progress. The door should not open.

If the door lock and interlock are not functioning properly, call a service technician.
3. Do not attempt to operate the machine if any of the following conditions are present:
 - a. The door does not remain securely locked during the entire cycle.
 - b. Excessively high water level is evident.
 - c. Machine is not connected to a properly grounded circuit.

Do not bypass any safety devices in the machine.

	WARNING
<p>Never operate the machine with a bypassed or disconnected balance system. Operating the machine with severe out-of-balance loads could result in personal injury and serious equipment damage.</p>	
<small>SW039</small>	

Introduction

Model Identification

Information in this manual is applicable to these models:

18		HC18EC2	HC18PC2	NC18MD2	SC18EC2	SC18MV3	UC18MC2	UC18MX2	
		HC18MC2	HC18SN2	NC18MDX	SC18EP2	SC18MX2	UC18MC3	UC18PC2	
		HC18MD2	HC18VC2	NC18MX2	SC18MC2	SC18NC2	UC18MD2	UC18PC3	
		HC18MDX	HC18VX2	NC18NC2	SC18MC3	SC18NP2	UC18MD3	UC18PN2	
		HC18MH2		NC18ND2	SC18MD2	SC18NR2	UC18MH2	UC18PN3	
		HC18MN2		NC18NP2	SC18MD3	SC18NX2	UC18MH3	UC18VN2	
		HC18MX2		NC18NR2	SC18MH2	SC18PC3	UC18MN2	UC18VNV	
		HC18NC2		NC18NX2	SC18MH3	SC18SN2	UC18MN3		
		HC18NP2		NC18VC2	SC18MN2	SC18SN3	UC18MV2		
		HC18NR2		NC18VX2	SC18MN3	SC18VN2	UC18MV3		
		HC18NX2			SC18MV2	SC18VNV			
	20	DC20NC2	HC20AC2	HC20MD2		SC20AC2	SC20BY2	UC20AN2	
			HC20ACV	HC20ML2		SC20ACV	SC20MD2	UC20BN2	
		HC20AL2	HC20MN2		SC20AL2	SC20ML2	UC20MD2		
		HC20AX2	HC20MX2		SC20AN2	SC20MN2	UC20ML2		
		HC20AY2	HC20MY2		SC20AX2	SC20MX2	UC20MN2		
		HC20AYV	HC20NC2		SC20AY2	SC20MY2	UC20MX2		
		HC20BC2	HC20SN2		SC20AYV	SC20NC2	UC20PN2		
		HC20BL2	HC20VC2		SC20BC2	SC20NR2	UC20VN2		
		HC20BN2	HC20VX2		SC20BL2	SC20NX2			
		HC20BX2			SC20BN2	SC20VN2			
		HC20BY2			SC20BX2				
25	DC25NC2	HC25AC2	HC25ML2	NC25MD2	SC25AC2	SC25ML2	UC25MC2		
		HC25AL2	HC25MN2	NC25MDX	SC25AL2	SC25MN2	UC25MD2		
		HC25AX2	HC25MV2	NC25MX2	SC25AX2	SC25MV2	UC25MH2		
		HC25AY2	HC25MX2	NC25NC2	SC25AY2	SC25MX2	UC25MN2		
		HC25BC2	HC25MY2	NC25NP2	SC25BC2	SC25MY2	UC25MV2		
		HC25BL2	HC25NC2	NC25NR2	SC25BL2	SC25NC2	UC25MX2		
		HC25BX2	HC25NP2	NC25NX2	SC25BX2	SC25NP2	UC25PC2		
		HC25BY2	HC25NR2	NC25VC2	SC25BY2	SC25NR2	UC25PN2		
		HC25EC2	HC25NX2	NC25VX2	SC25EC2	SC25NX2			
		HC25MC2	HC25PC2		SC25EP2	SC25SN2			
		HC25MD2	HC25SN2		SC25MC2				
		HC25MDX	HC25VC2		SC25MD2				
		HC25MH2	HC25VX2		SC25MH2				
	27		HC27EC2	HC27NP2	NC27MD2	SC27EC2	SC27NP2	UC27MC2	
			HC27MC2	HC27NR2	NC27MDX	SC27EP2	SC27NR2	UC27MD2	
		HC27MD2	HC27NX2	NC27MX2	SC27MC2	SC27NX2	UC27MN2		
		HC27MDX	HC27SN2	NC27NC2	SC27MD2	SC27SN2	UC27MX2		
		HC27MH2	HC27VC2	NC27NP2	SC27MH2	SC27VN2	UC27PN2		
		HC27MN2	HC27VX2	NC27NR2	SC27MN2	SC27VNV	UC27VN2		
		HC27MX2		NC27NX2	SC27MV2		UC27VNV		
		HC27MV2		NC27VC2	SC27MX2				
		HC27NC2		NC27VX2	SC27NC2				

(continued)

(continued)

30	DC30AC2 DC30NC2	HC30AC2 HC30ACV HC30AL2 HC30AX2 HC30AY2 HC30AYV HC30BC2 HC30BL2 HC30BN2 HC30BX2 HC30BY2	HC30MD2 HC30ML2 HC30MN2 HC30MX2 HC30MY2 HC30NC2 HC30SN2 HC30VC2 HC30VX2		SC30AC2 SC30ACV SC30AL2 SC30AN2 SC30AX2 SC30AY2 SC30AYV SC30BC2 SC30BL2 SC30BN2 SC30BX2	SC30BY2 SC30MD2 SC30ML2 SC30MN2 SC30MX2 SC30MY2 SC30NC2 SC30NR2 SC30NX2 SC30VN2	UC30AN2 UC30BN2 UC30ML2 UC30MN2 UC30MX2 UC30PN2 UC30VN2				
	35		HC35EC2 HC35MC2 HC35MD2 HC35MDX HC35MH2 HC35MN2 HC35MV2 HC35MX2 HC35NC2 HC35NP2 HC35NR2	HC35NX2 HC35PC2 HC35SN2 HC35VC2 HC35VNV HC35VX2	NC35MD2 NC35MDX NC35MX2 NC35NC2 NC35NP2 NC35NR2 NC35NX2 NC35VC2 NC35VX2	SC35EC2 SC35EP2 SC35MC2 SC35MC3 SC35MD2 SC35MD3 SC35MH2 SC35MH3 SC35MN2 SC35MN3 SC35MN3 SC35MN3 SC35MV2	SC35MV3 SC35MX2 SC35NC2 SC35NP2 SC35NR2 SC35NR2 SC35NX2 SC35PC3 SC35SN2 SC35SN3 SC35VN2 SC35VNV	UC35MC2 UC35MC3 UC35MD2 UC35MD3 UC35MH2 UC35MH3 UC35MN2 UC35MN3 UC35MV2 UC35MV3 UC35MX2	UC35PC2 UC35PC3 UC35PN2 UC35VN2 UC35VNV		
		40	DC40AC2 DC40NC2	HC40AC2 HC40ACV HC40AL2 HC40AX2 HC40AY2 HC40AYV HC40BC2 HC40BL2 HC40BN2 HC40BX2 HC40BY2 HC40MD2	HC40ML2 HC40MN2 HC40MX2 HC40MY2 HC40NC2 HC40NR2 HC40NX2 HC40SN2 HC40VC2 HC40VX2	NC40NC2 NC40NR2 NC40NX2	SC40AC2 SC40ACV SC40AL2 SC40ANV SC40AN2 SC40AX2 SC40AY2 SC40AYV SC40BC2 SC40BL2 SC40BN2 SC40BX2	SC40BY2 SC40MD2 SC40ML2 SC40MN2 SC40MX2 SC40MY2 SC40NC2 SC40NR2 SC40NX2 SC40VN2 SC40VNV	UC40ANV UC40AN2 UC40BN2 UC40MN2 UC40PN2 UC40VN2 UC40VNV		
			50		HC50BC2 HC50BL2 HC50BN2 HC50BX2 HC50BY2 HC50EC2 HC50MC2 HC50MD2 HC50MH2 HC50ML2 HC50MN2 HC50MV2 HC50MX2 HC50MY2 HC50NC2	HC50NP2 HC50NR2 HC50NX2 HC50PC2 HC50SN2 HC50VC2 HC50VNV HC50VX2	NC50MD2 NC50MDX NC50MX2 NC50NC2 NC50NP2 NC50NR2 NC50NX2	SC50BC2 SC50BL2 SC50BN2 SC50BX2 SC50BY2 SC50EC2 SC50EP2 SC50MC2 SC50MC3 SC50MD2 SC50MD3 SC50MH2 SC50MH3 SC50ML2 SC50MN2	SC50MN3 SC50MV2 SC50MV3 SC50MX2 SC50MY2 SC50NC2 SC50NP2 SC50NR2 SC50NX2 SC50PC3 SC50SN2 SC50SN3 SC50VN2 SC50VNV	UC50BN2 UC50MC2 UC50MC3 UC50MD2 UC50MD3 UC50MH2 UC50MH3 UC50MN2 UC50MN3 UC50MV2 UC50MV3 UC50MX2 UC50PC2 UC50PC3 UC50PN2	UC50PN3 UC50VN2 UC50VNV

(continued)

Introduction

(continued)

60	DC60AC2 DC60NC2	HC60AC2	HC60MD2		SC60AC2	SC60BXF	UC60AN2		
		HC60ACF	HC60ML2		SC60ACF	SC60BY2	UC60ANF		
		HC60ACV	HC60MN2		SC60ACV	SC60BYF	UC60ANV		
		HC60AL2	HC60MX2		SC60AL2	SC60MD2	UC60BC2		
		HC60ALF	HC60MY2		SC60ALF	SC60ML2	UC60BCF		
		HC60AX2	HC60NC2		SC60AN2	SC60MN2	UC60BL2		
		HC60AXF	HC60NCF		SC60ANF	SC60MX2	UC60BN2		
		HC60AY2	HC60NR2		SC60ANV	SC60MY2	UC60BNF		
		HC60AYF	HC60NX2		SC60AX2	SC60NC2	UC60BY2		
		HC60AYV	HC60SN2		SC60AXF	SC60NCF	UC60BYF		
		HC60BC2	HC60VC2		SC60AY2	SC60NR2	UC60BX2		
		HC60BCF	HC60VN2		SC60AYF	SC60NRF	UC60BXF		
		HC60BL2	HC60VNF		SC60AYV	SC60NYF	UC60MN2		
		HC60BLF	HC60VX2		SC60BC2	SC60NX2	UC60PN2		
		HC60BN2			SC60BCF	SC60NXF	UC60SN2		
		HC60BNF			SC60BL2	SC60PN2	UC60VN2		
		HC60BX2			SC60BLF	SC60SN2	UC60VNF		
		HC60BXF			SC60BN2	SC60VN2	UC60VNV		
		HC60BY2			SC60BNF	SC60VNF			
		HC60BYF			SC60BX2	SC60VNV			
80	DC80NCV	HC80ACV	HC80MD3	NC80NCV	SC80ACV	SC80MC3	UC80ANV		
		HC80ALV	HC80MH3	NC80NPV	SC80ALV	SC80MD3	UC80BNV		
		HC80ANV	HC80MN3	NC80NRV	SC80ANV	SC80MH3	UC80MC3		
		HC80AXV	HC80MV3	NC80NXV	SC80AXV	SC80MN3	UC80MD3		
		HC80AYV	HC80NCV	NC80VCV	SC80AYV	SC80MV3	UC80MH3		
		HC80BCV	HC80NRV	NC80VXV	SC80BCV	SC80NCV	UC80MN3		
		HC80BLV	HC80NXV		SC80BLV	SC80NPV	UC80MV3		
		HC80BNV	HC80PC3		SC80BNV	SC80NRV	UC80PC2		
		HC80BXV	HC80SN3		SC80BXV	SC80NXV	UC80PC3		
		HC80BYV	HC80VCV		SC80BYV	SC80NYV	UC80PN3		
		HC80MC3	HC80VNV		SC80ECV	SC80SN3	UC80VNV		
		HC80MD2	HC80VXV		SC80EPV	SC80VNV			
		125		HC125BCV			SC125ANV	SC125BYV	UC125ANV
				HC125BYV			SC125BCV	SC125VNV	UC125VNV

This manual is designed as a guide to the installation of the Cabinet Hardmount Washer-Extractor.

NOTE: All information, illustrations, and specifications contained in this manual are based on the latest product information available at the time of printing. We reserve the right to make changes at any time without notice.

Delivery Inspection

Upon delivery, visually inspect crate, protective cover, and unit for any visible shipping damage. If the crate, protective cover, or unit is damaged or signs of possible damage are evident, have the carrier note the condition on the shipping papers before the shipping receipt is signed, or advise the carrier of the condition as soon as it is discovered.

Remove the crate and protective cover as soon after delivery as possible. If any damage is discovered upon removal of the crate and/or protective cover, advise the carrier and file a written claim immediately.

Nameplate Location

The nameplate is located at the rear of the machine and inside door. Always provide the machine's serial number and model number when ordering parts or when seeking technical assistance. Refer to *Figure 1*.

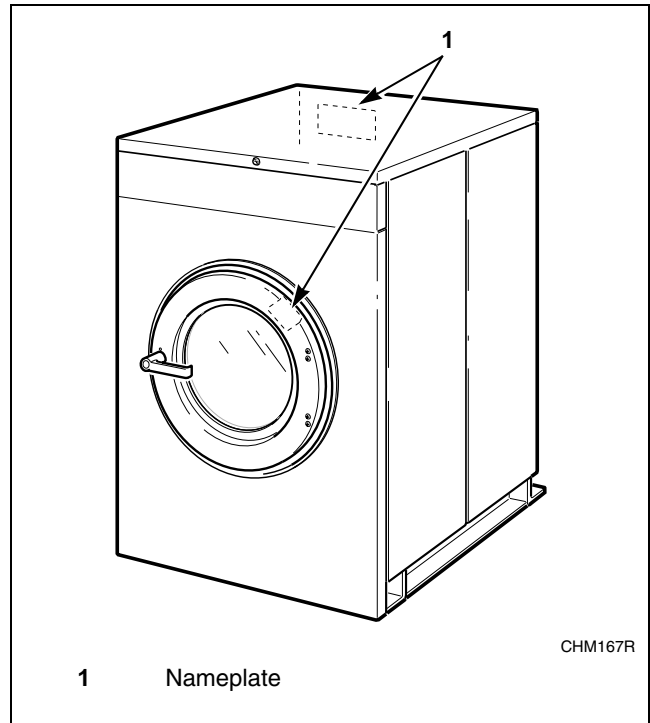


Figure 1

Introduction

Model Number Familiarization Guide	
Sample Model Number: *C40AC2OU60001	
*C	Model Number Prefix
40	Washer-Extractor Capacity (pounds dry weight of laundry)
A	Type of Electrical Control
C	Actuation (C = Coin drop)
2	Washer-Extractor Speed Capability (2 = 2 speed)
O	Electrical Characteristics
U6	Design Series
0001	Option Identification (varies from machine to machine)

* Denotes Brand

Model No. ***C40AC2OU60001**

Serial No. **00000000000**

Voltage **208 – 240** Amps **7**


Required Circuit Breaker Amps **15**

Hz **60** Wire **3** Phase **3**

Max. Load **40** LB **18.2** KG Max. Speed **470** RPM

Elec. Heating **N/A** KW Steam Press. **N/A** PSI **0** BAR

Drawing:



ETL LISTED
CONFORMS TO
ANSI/UL STD. 1555
ANSI/UL STD. 1206

ETL TESTING LABORATORIES, INC.
CORTLAND, NEW YORK 13045

EXAMPLE OF NAMEPLATE

CHM2079N

Figure 2

Replacement Parts

If literature or replacement parts are required, contact the source from which the machine was purchased or contact Alliance Laundry Systems at (920) 748-3950 for the name and address of the nearest authorized parts distributor.

Customer Service

For technical assistance, call (920) 748-3121, Ripon, Wisconsin U.S.A.

Remove After Shipment (OPL Models Only)

A yellow retainer has been inserted in the door locks of all cabinet hardmount on-premise laundry washer-extractors to prevent the door from locking during shipment. Remove the yellow retainer during installation by pulling it off.

NOTE: Once retainer is removed, machine must be powered to unlock door.

A tag has been attached to the washer-extractor's door handle as a reminder that the retainer must be removed before operation. Refer to *Figure 3*.

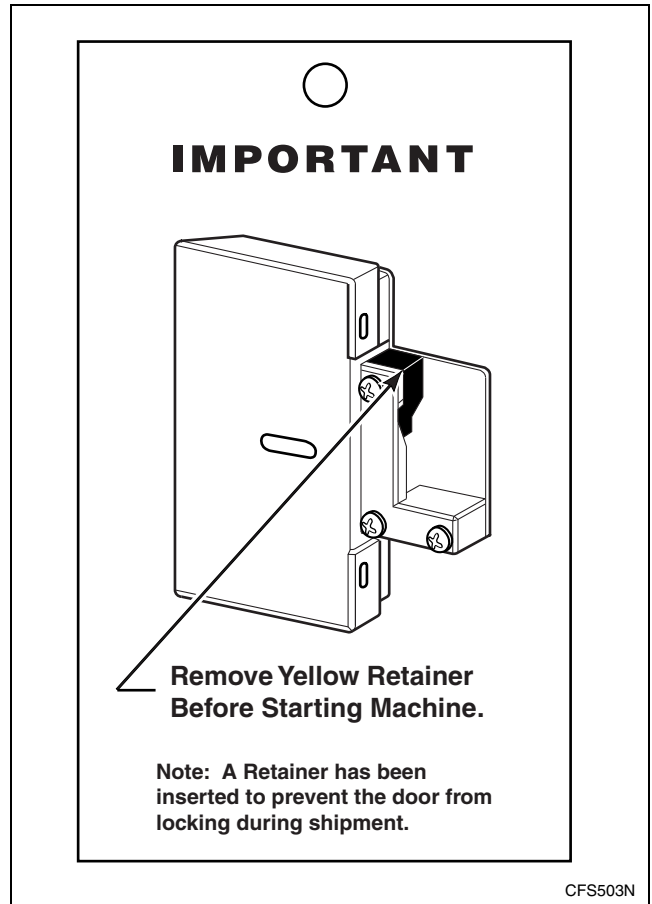


Figure 3

Specifications and Dimensions

2 Speed Models							
Specification	18, 20	25	27, 30	35	40	50	60
Weight and Shipping Information							
Net weight, lbs. (kg)	353 (160)	427 (193)	496 (225)	650 (295)	686 (311)	820 (372)	811 (368)
Domestic shipping weight, lbs. (kg)	373 (169)	448 (203)	519 (235)	680 (309)	710 (322)	875 (398)	838 (380)
Domestic shipping volume, ft ³ (m ³)	27 (.76)	31.3 (.89)	34.4 (.98)	39 (1.09)	43.6 (1.24)	49.8 (1.41)	52.2 (1.48)
Export shipping weight lbs. (kg)	461 (209)	536 (243)	600 (272)	760 (345)	810 (367)	1020 (464)	947 (430)
Export shipping volume, ft ³ (m ³)	36.7 (1.04)	47.7 (1.3)	49.5 (1.40)	47.1 (1.32)	65.6 (1.86)	68.6 (1.94)	74.7 (2.12)
Wash Cylinder Information							
Cylinder diameter, in. (mm)	21 (533)	21 (533)	24 (610)	26.25 (667)	26.25 (667)	30 (762)	30 (762)
Cylinder depth, in. (mm)	13.75 (349)	18.75 (476)	16 (406)	18.38 (467)	20.25 (514)	20 (508)	22 (559)
Cylinder volume, ft ³ (l)	2.76 (78.1)	3.76 (106.5)	4.19 (118.6)	5.76 (163.1)	6.34 (180)	8.18 (232)	9.00 (255)
Perforation size, in. (mm)	0.188 (4.76)	0.188 (4.76)	0.188 (4.76)	0.188 (4.76)	0.188 (4.76)	0.188 (4.76)	0.188 (4.76)
Perforation open area, %	17	17	18	17	17.5	18	18

2 Speed Models (Continued)								
Specification	18, 20	25	27, 30	35	40	50	60	
Door Opening Information								
Door opening diameter, in. (mm)	11.63 (295)	11.63 (295)	14.34 (364)	13.94 (354)	16.24 (413)	16.25 (413)	16.25 (413)	
Height of door bottom above floor, in. (mm)	14.38 (365)	14.38 (365)	14 (356)	16 (406)	14.5 (368)	18.25 (464)	15 (381)	
Height of door opening above floor, in. (mm)	17.19 (437)	17.19 (437)	17 (431)	19 (483)	19 (483)	18.5 (470)	18.5 (470)	
Power Consumption								
Average power used per cycle, kW-hr	No load	.06	.116	.13	.30	.196	.42	.25
	Sheets	.10	.116	.14	N/A	.195	N/A	.26
	Towels	.11	.127	.16	N/A	.213	N/A	.33
Average BTu/hr, (Kcal./hr)	425 (107)	400 (101)	463 (117)	510 (129)	510 (129)	700 (176)	700 (176)	
Drive Train Information								
Number of motors in drive train	1	1	1	1	1	1	1	
Wash/reverse power, HP (kW)	0.15 (0.11)	0.25 (0.19)	0.24 (0.18)	0.40 (0.30)	0.40 (0.30)	0.55 (0.41)	0.55 (0.41)	
High extract power, HP (kW)	0.74 (0.55)	1.4 (1.04)	1.34 (1.00)	1.8 (1.3)	1.8 (1.3)	2.7 (2.01)	2.7 (2.01)	
Cylinder Speeds								
Wash/reverse speed, RPM	57	57	49	47	51	44	44	
High extract speed, RPM	528	529	464	470	491	450	469	
Centrifugal Force Data								
Wash/reverse centrifugal force, Gs	0.93	0.97	0.82	0.82	0.97	0.83	0.83	
High extract centrifugal force, Gs	83.1	83.5	73.3	82.3	89.8	86.3	93.8	

Specifications and Dimensions

2 Speed Models (Continued)								
Specification	18, 20	25	27, 30	35	40	50	60	
Balance Detection								
Vibration switch installed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Direct Steam Heating (Optional)								
Steam inlet connection size, in. (mm)	.50 (13)	.50 (13)	.50 (13)	.50 (13)	.50 (13)	.50 (13)	.50 (13)	
Number of steam inlets	1	1	1	1	1	1	1	
Steam required to raise bath water temperature 10°F (10°C), lbs. (kg)	LOW	.74 (.335)	.94 (0.43)	1.11 (0.50)	1.42 (0.643)	1.85 (0.84)	1.71 (0.776)	1.98 (0.895)
	MED	1.07 (0.487)	1.28 (0.58)	1.49 (0.68)	N/A	2.54 (1.15)	2.53 (1.147)	3.01 (1.384)
	HIGH	1.44 (0.653)	1.74 (0.79)	1.83 (0.83)	2.58 (1.167)	3.28 (1.48)	3.41 (1.545)	4.23 (1.916)
Average steam use per cycle, bhp (kg)	0.338 (5.32)	0.41 (6.45)	0.44 (6.9)	0.61 (9.55)	0.78 (12.2)	0.80 (12.51)	0.98 (15.4)	
Electrical Heating (Optional)								
Total electrical heating capacity, kW	Input Voltage							
	200V	5.4	5.4	5.4	10.8	10.8	16.3	16.3
	240V	7.8	7.8	7.8	15.6	15.6	23.4	23.4
	380V	6.5*	6.5	6.5*	13.0	13.0	19.6	19.6
	415V	7.8*	7.8	7.8*	15.5	15.5	23.3	23.3
	480V	10.4*	10.4	10.4*	20.8	20.8	31.2	31.2
Electrical heating elements	3	3	3	6	3	9	9	
Electrical heat element size, kW	2.6	2.6	2.6	2.6	5.2	2.6	2.6	
* Applicable to fixed-speed inverter drive models.								

3-Speed Models				
Specification	18	35	50	80
Overall Dimensions				
Overall width, in. (mm)	26 (660)	30.13 (765)	34.06 (865)	41.5 (1054)
Overall height, in. (mm)	42 (1067)	47.25 (1200)	49.75 (1265)	56 (1422)
Overall depth, in. (mm)	29.69 (754)	38.5 (978)	42 (1067)	51.63 (1311)
Weight and Shipping Information				
Net weight, lb. (kg)	400 (182)	675 (307)	950 (432)	1600 (727)
Domestic shipping weight, lb. (kg)	430 (195)	780 (355)	990 (450)	1650 (743)
Domestic shipping volume, ft ³ (m ³)	23.9 (0.669)	39.0 (1.09)	49.8 (1.39)	78.1 (2.19)
Export shipping weight, lb. (kg)	490 (223)	785 (357)	1150 (523)	1700 (765)
Export shipping volume, ft ³ (m ³)	47.1 (1.32)	47.1 (1.32)	68.6 (1.92)	N/A
Wash Cylinder Information				
Cylinder diameter, in. (mm)	21 (533)	26.25 (667)	30 (762)	36 (914)
Cylinder depth, in. (mm)	13.75 (349)	18.38 (467)	20 (508)	22 (559)
Cylinder volume, ft ³ (l)	2.76 (78.1)	5.76 (163.1)	8.18 (232)	12.4 (354)
Perforation size, in. (mm)	0.188 (4.76)	0.188 (4.76)	0.188 (4.76)	0.188 (4.76)
Perforation open area, %	17	17	18	N/A
Door Opening Information				
Door opening size, in. (mm)	12 (305)	13.94 (354)	16.25 (413)	18.5 (470)
Ht. door bottom above floor, in. (mm)	17.25 (438)	19 (480)	18.25 (465)	21.5 (546)
Power Consumption				
Avg. power used per cycle, kW/hr	0.18 est	0.28 est	0.38 est	0.55 est.
Nominal sound emission, dBA	61	65	67	60 / 69
Background noise level, dBA	48	49	49	47
Average HVAC load, Btu/hr.	440	525	725	900

Specifications and Dimensions

3-Speed Models (Continued)					
Specification	18	35	50	80	
Drive Train Information					
Number of motors in drive train	1	2	2	2	
Wash/reverse power, hp (kW)	0.18 (0.13)	0.40 (0.30)	0.90 (0.67)	1.0 (0.75)	
Medium extract power, hp (kW)	1.2 (0.895)	0.45 (0.34)	1.0 (0.75)	1.2 (0.89)	
High extract power, hp (kW)	1.5 (1.12)	3.0 (2.2)	3.5 (2.6)	4.5 (3.36)	
Cylinder Speeds					
Wash/reverse speed, RPM	46	47	44	40	
Medium extract speed, RPM	330	75	60	64	
High extract speed, RPM	661	591	561	530	
Centrifugal Force Data					
Wash/reverse centrifugal force, Gs	0.65	0.82	0.825	0.82	
Medium extract centrifugal force, Gs	32.5	2.10	1.53	2.1	
High extract centrifugal force, Gs	130	130	134	143	
Balance Detection					
Vibration safety switch installed	N/A	Standard	Standard	Standard	
Direct Steam Heating (Optional)					
Steam inlet connection size, in. (mm)	.5 (13)	.5 (13)	.5 (13)	.5 (13)	
Number of steam inlets	1	1	1	1	
Steam req. to raise bath temperature 10°F, lbs. (10°C, kg)	LOW	1.1 (0.5)	2.1 (0.95)	2.16 (.982)	2.64 (1.2)
	HIGH	1.2 (0.54)	2.8 (1.3)	2.77 (1.26)	3.67 (1.67)
Average steam use per cycle, bhp (kg)	0.66 (10.35 kg)	1.4 (21.95 kg)	1.4 (21.95 kg)	1.5 (23.52 kg)	
Electrical Heating (Optional)					
Total electrical heating capacity, kW	7.8	15.6	23.4	28.8	
Electrical heating elements	3	6	9	12	
Electrical heat element size, kW	2.6	2.6	2.6	2.6	

Variable-Speed and Fixed-Speed Models								
Specification	18, 20	27, 30	35	40	50	60	80	125
Weight and Shipping Information								
Net weight, lbs. (kg)	386 (175)	498 (226)	621 (282)	706 (321)	767 (348)	773 (350)	1346 (610)	2301 (1044)
Domestic shipping weight, lbs. (kg)	424 (191)	545 (245)	670 (301)	744 (338)	818 (371)	824 (373)	1420 (644)	2384 (1081)
Domestic shipping volume, ft ³ (m ³)	27 (0.76)	34.4 (.98)	39 (1.09)	43.6 (1.24)	49.8 (1.41)	52.2 (1.48)	98.6 (2.79)	163 (4.3)
Export shipping weight, lbs. (kg)	476 (215)	588 (267)	731 (332)	846 (385)	967 (439)	1020 (463)	1545 (701)	2493 (1131)
Export shipping volume, ft ³ (m ³)	36.7 (1.04)	49.5 (1.40)	47.1 (1.33)	65.6 (1.86)	68.6 (1.94)	74.7 (2.12)	110.3 (3.12)	173 (4.8)
Wash Cylinder Information								
Cylinder diameter, in. (mm)	21 (533)	24 (610)	26.25 (667)	26.25 (667)	30 (762)	30 (762)	36 (914)	42 (1067)
Cylinder depth, in. (mm)	13.75 (349)	16 (406)	18.38 (467)	20.25 (514)	20 (508)	22 (559)	22 (559)	24 (610)
Cylinder volume, ft ³ (l)	2.76 (78.1)	4.19 (118)	5.76 (163)	6.34 (180)	8.18 (232)	9.00 (255)	12.4 (354)	19.2 (544)
Perforation size, in. (mm)	0.188 (4.76)	0.188 (4.76)	0.188 (4.76)	0.188 (4.76)	0.188 (4.76)	0.188 (4.76)	0.188 (4.76)	0.188 (4.76)
Perforation open area, %	17	18	17	17.5	18	18	18	24
Door Opening Information								
Door opening size, in. (mm)	11.63 (295)	14.34 (364)	14.34 (364)	16.25 (413)	16.25 (413)	16.25 (413)	18.5 (470)	20 (508)
Height of door bottom above floor, in. (mm)	14.38 (365)	14 (356)	16 (406)	14.5 (368)	15 (381)	18.25 (445)	17.75 (451)	29 (737)
Height of door opening bottom, in. (mm)	17.19 (437)	17 (431)	19 (483)	18 (457)	18.5 (470)	N/A	21.63 (549)	30.25 (768)
Average Power Consumption								
HVAC load, Btu/hr.	400	450	510	510	750	750	950	1200

Specifications and Dimensions

Variable-Speed and Fixed-Speed Models (Continued)									
Specification	18, 20	27, 30	35	40	50	60	80	125	
Drive Train Information									
Number of motors in drive train	1	1	1	1	1	1	1	1	
Drive motor power, hp (kW)	1 (.75)	1 (.75)	2 (1.5)	2 (1.7)	2 (1.5)	3 (2.2)	5 (3.7)	7.5 (5.6)	
Cylinder Speeds									
Gentle wash/reverse speed, RPM	29	27	26	26	24	26	22	26	
Wash/reverse speed, RPM	52	52	46	46	43	43	40	37	
Distribution speed, RPM	92	92	73	82	68	77	70	65	
Low extract speed, RPM	366	366	328	328	307	307	280	260	
Medium extract speed, RPM (Not available on Electronic Control models.)	534	534	478	478	447	447	408	378	
High extract speed, RPM	686	686	613	613	573	574	524	485	
Centrifugal Force Data									
Gentle wash centrifugal force, Gs	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.43	
Wash/reverse centrifugal force, Gs	0.8	0.8	0.8	0.8	0.8	0.8	0.87	0.8	
Distribution centrifugal force, Gs	2.5	2.5	2	2.5	2	2.5	2.5	2.5	
Low extract centrifugal force, Gs	40	40	40	40	40	40	40	40	
Medium extract centrifugal force, Gs	85	85	85	85	85	85	85	85	
High extract centrifugal force, Gs	140	140	142	140	142	140	140	140	
Balance Detection									
Vibration switch installed*	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	
Direct Steam Heating (Optional)									
Steam inlet connection size, in. (mm)	.5 (13)	.5 (13)	.5 (13)	.5 (13)	.5 (13)	.5 (13)	.5 (13)	.75 (19)	
Number of steam inlets	1	1	1	1	1	1	1	1	
Steam required to raise bath water temperature 10°F (10°C), lbs. (kg)	LOW	.74 (.331)	1.11 (0.50)	1.42 (0.64)	1.85 (0.84)	1.71 (0.77)	2.0 (0.91)	2.58 (1.17)	3.64 (1.6)
	MED	1.07 (0.48)	1.49 (0.68)	N/A	2.54 (1.15)	2.53 (1.15)	3.1 (1.41)	4.65 (2.11)	5.17 (2.3)
	HIGH	1.43 (0.651)	1.83 (0.83)	2.58 (1.16)	3.28 (1.48)	3.4 (1.54)	4.2 (1.91)	5.79 (2.63)	7.78 (3.5)
Average steam use per cycle, bhp (kg)**	.34 (5.33)	0.44 (6.86)	1.4 (21.9)	0.78 (12.2)	0.8 (12.3)	0.98 (15.4)	1.34 (20.9)	2.01 (31.45)	
* Refer to <i>Gap Setting for Vibration Switch (Variable-Speed Models)</i> section for specifications.									
** All motels, except 35 and 50, are based on normal 95°C international cycle in BN2 control.									

Variable-Speed and Fixed-Speed Models (Continued)									
Specification	18, 20	27, 30	35	40	50	60	80	125	
Electrical Heating (Optional)									
Total electrical heating capacity, kW	Input Voltage								
	200V	5.4	5.4	10.8	10.8	16.3	16.3	21.7	N/A
	240V	7.8	7.8	15.6	15.6	23.4	23.4	31.2	N/A
	380V	6.5*	6.5*	13.0	13.0	19.5	19.6	19.6	N/A
	415V	7.8*	7.8*	15.5	15.5	23.3	23.3	23.3	N/A
	480V	10.4*	10.4*	20.8	20.8	31.2	31.2	31.2	N/A
Electrical heating elements		3	3	6	3	9	9	12	N/A
Electrical heat element size, kW		2.6	2.6	2.6	5.2	2.6	2.6	2.6	N/A
* Refer to <i>Gap Setting for Vibration Switch (Variable-Speed Models)</i> section for specifications.									

Specifications and Dimensions

NOTE: The dimensions shown are for planning purposes only. They are approximate and subject to normal manufacturing tolerances. If exact dimensions are required for construction purposes, contact the distributor or manufacturer. We reserve the right to make changes at any time without notice.

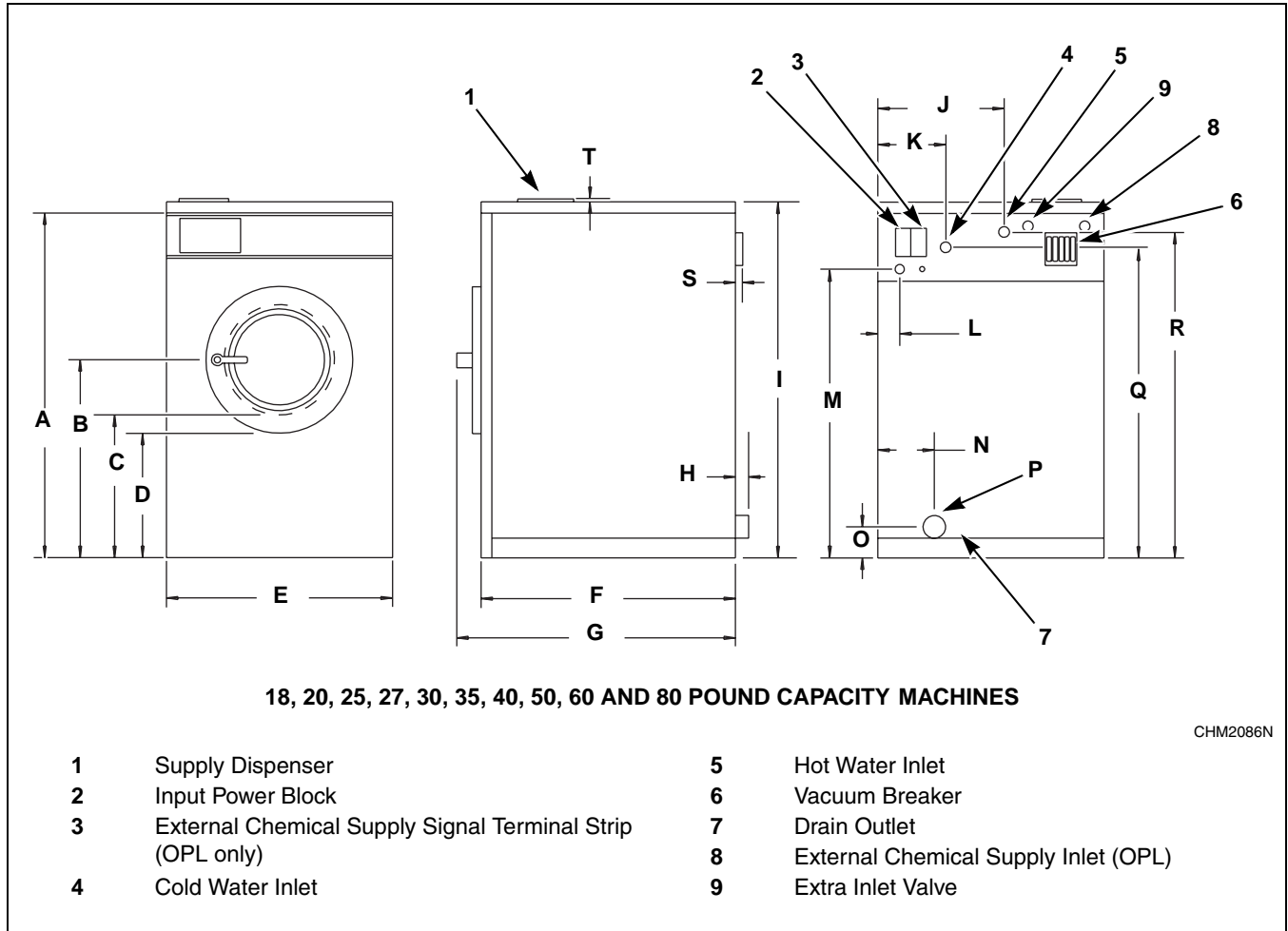
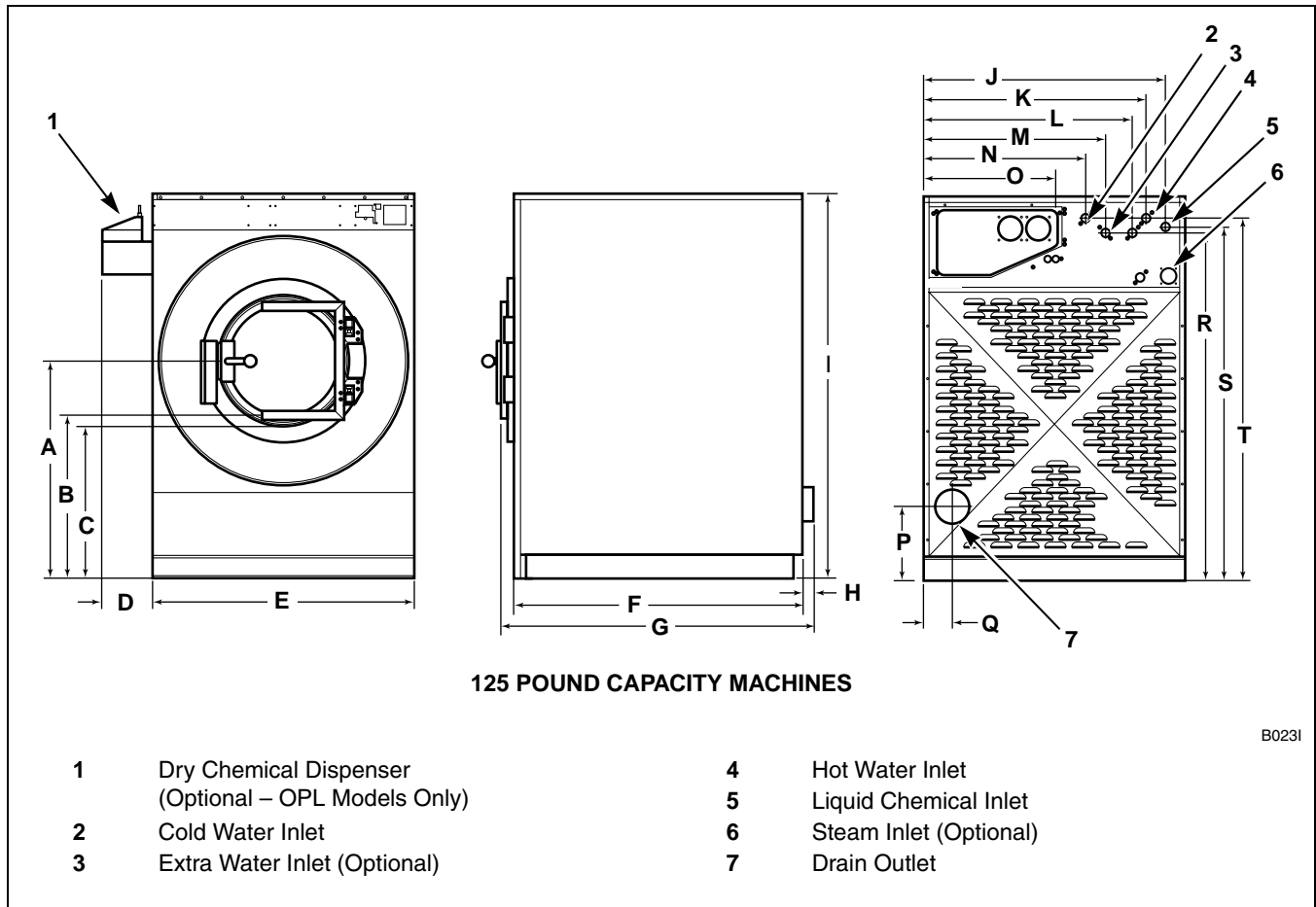


Figure 4

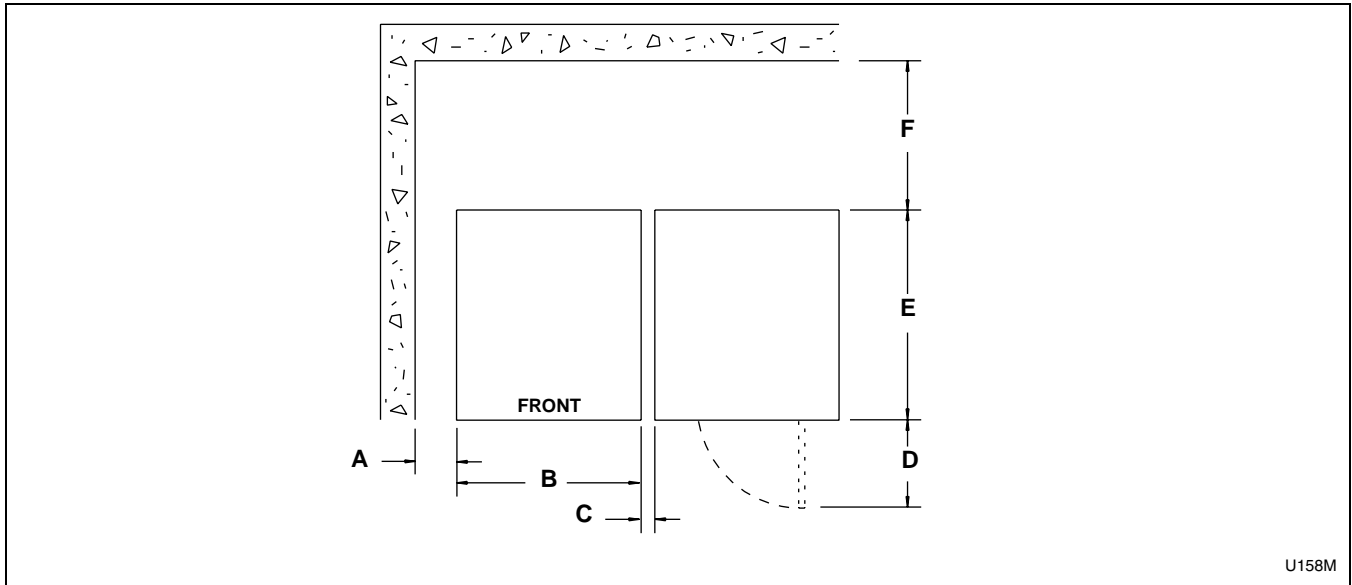
Machine Capacity Dimensions								
Dimensions	18, 20	25	27, 30	35	40	50	60	80
A	40.75 in. (1035 mm)	42.75 in. (1086 mm)	43.75 in. (1111 mm)	45.75 in. (1162 mm)	45.75 in. (1162 mm)	48.75 in. (1238 mm)	48.75 in. (1238 mm)	54.75 in. (1391 mm)
B	23 in. (584 mm)	23 in. (584 mm)	24 in. (610 mm)	26 in. (660 mm)	26 in. (660 mm)	26.25 in. (667 mm)	26.25 in. (667 mm)	30.75 in. (781 mm)
C	17.19 in. (437 mm)	17.19 in. (437 mm)	17 in. (432 mm)	19 in. (483 mm)	18 in. (457 mm)	18.5 in. (470 mm)	18.5 in. (464 mm)	21.63 in. (549 mm)
D	14.38 in. (365 mm)	14.38 in. (365 mm)	14 in. (356 mm)	16 in. (406 mm)	14.5 in. (368 mm)	15 in. (381 mm)	15 in. (381 mm)	17.75 in. (451 mm)
E	26 in. (660 mm)	26 in. (660 mm)	29 in. (737 mm)	30.13 in. (765 mm)	30.63 in. (778 mm)	34.06 in. (865 mm)	34.06 in. (865 mm)	41.5 in. (1054 mm)
F	25.63 in. (650 mm)	29.63 in. (752 mm)	30.63 in. (775 mm)	34 in. (864 mm)	36 in. (914 mm)	37.75 in. (959 mm)	38.75 in. (984 mm)	47.5 in. (1207 mm)
G	29.81 in. (756 mm)	38.81 in. (858 mm)	33.63 in. (854 mm)	37 in. (941 mm)	39 in. (990 mm)	41.81 in. (1062 mm)	41.75 in. (1060 mm)	50.5 in. (1283 mm)
H	0 in. (0 mm)	0 in. (0 mm)	0 in. (0 mm)	1.13 in. (29 mm)	0.5 in. (13 mm)	0.5 in. (13 mm)	0.5 in. (13 mm)	0.5 in. (13 mm)
I	42 in. (1067 mm)	44 in. (1118 mm)	45 in. (1143 mm)	47 in. (1194 mm)	47 in. (1194 mm)	49.94 in. (1268 mm)	49.94 in. (1268 mm)	56 in. (1422 mm)
J	12.5 in. (318 mm)	12.5 in. (318 mm)	15.25 in. (387 mm)	14.25 in. (362 mm)	15.44 in. (392 mm)	20.75 in. (527 mm)	20.75 in. (527 mm)	22.25 in. (572 mm)
K	11.5 in. (292 mm)	11.5 in. (292 mm)	14.75 in. (375 mm)	10.81 in. (275 mm)	14.44 in. (367 mm)	19.75 in. (502 mm)	19.75 in. (501 mm)	15 in. (381 mm)
L	3.5 in. (89 mm)	3.5 in. (89 mm)	3.75 in. (95 mm)	2.75 in. (70 mm)	3.81 in. (97 mm)	3.5 in. (89 mm)	3.5 in. (89 mm)	3.44 in. (87 mm)
M	34.5 in. (876 mm)	36.5 in. (927 mm)	37.69 in. (957 mm)	40.13 in. (1019 mm)	39 in. (991 mm)	41.5 in. (1054 mm)	41.5 in. (1054 mm)	48 in. (1219 mm)
N	5.75 in. (146 mm)	5.75 in. (146 mm)	5.88 in. (149 mm)	7.31 in. (186 mm)	5.5 in. (140 mm)	6.44 in. (163 mm)	6.44 in. (163 mm)	6.38 in. (162 mm)
O	4.5 in. (114 mm)	4.5 in. (114 mm)	4 in. (102 mm)	4.75 in. (121 mm)	4.75 in. (121 mm)	5 in. (127 mm)	5 in. (127 mm)	5.75 in. (146 mm)
P	2 in. (51 mm)	2 in. (51 mm)	2 in. (51 mm)	2 in. (51 mm)	3 in. (76 mm)	3 in. (76 mm)	3 in. (76 mm)	3 in. (76 mm)
Q	35.5 in. (902 mm)	37.5 in. (953 mm)	38 in. (965 mm)	41.94 in. (1064 mm)	42.13 in. (1070 mm)	40.25 in. (1022 mm)	42.5 in. (1080 mm)	50.38 in. (1280 mm)
R	38.5 in. (978 mm)	40.5 in. (1029 mm)	41 in. (1041 mm)	41.94 in. (1064 mm)	43.19 in. (1097 mm)	43.25 in. (1099 mm)	45.5 in. (1156 mm)	53.38 in. (1356 mm)
S	1.19 in. (30 mm)	1.19 in. (30 mm)	1.19 in. (30 mm)	1.19 in. (30 mm)	1.19 in. (30 mm)	1.19 in. (30 mm)	1.19 in. (30 mm)	1.5 in. (38 mm)
T	.88 in. (22 mm)	.88 in. (22 mm)	.88 in. (22 mm)	.25 in. (6 mm)	.88 in. (22 mm)	.88 in. (22 mm)	.88 in. (22 mm)	.88 in. (22 mm)

Specifications and Dimensions



Machine Capacity Dimensions for 125 Pound Models			
A	40 in. (1016 mm)	K	41 in. (1041 mm)
B	30.25 in. (768 mm)	L	38.5 in. (978 mm)
C	29 in. (737 mm)	M	33.5 in. (851 mm)
D	8 in. (203 mm)	N	29.75 in. (756 mm)
E	48 in. (1219 mm)	O	24 in. (610 mm)
F	50.5 in. (1283 mm)	P	13 in. (330 mm)
G	56.75 in. (1441 mm)	Q	4.75 in. (124 mm)
H	1 in. (25 mm)	R	63.88 in. (1622 mm)
I	70.5 in. (1791 mm)	S	64.88 in. (1648 mm)
J	44.5 in. (1130 mm)	T	66.63 in. (1692 mm)

Dimensional Clearances



U158M

Machine Capacity Dimensional Clearances

Dimensions	18, 20	25	27, 30	35	40	50	60	80	125
A	2 in. (51 mm)	2 in. (51 mm)	2 in. (51 mm)	2 in. (51 mm)	2 in. (51 mm)	2 in. (51 mm)	2 in. (51 mm)	6 in. (152 mm)	24 in. (600 mm)
B	26 in. (660 mm)	26 in. (660 mm)	29 in. (737 mm)	30.13 in. (765 mm)	30.63 in. (778 mm)	34.06 in. (865 mm)	34.06 in. (865 mm)	41.5 in. (1054 mm)	48 in. (1219 mm)
C	1 in.* (25 mm)	1 in.* (25 mm)	1 in.* (25 mm)	1 in.* (25 mm)	1 in.* (25 mm)	1 in.* (25 mm)	1 in.* (25 mm)	1 in.** (152.5 mm)	12 in. (300 mm)
D	16.38 in. (416 mm)	16.38 in. (416 mm)	19.25 in. (489 mm)	19.25 in. (489 mm)	22 in. (559 mm)	22 in. (559 mm)	22 in. (559 mm)	25 in. (635 mm)	26.25 in. (667 mm)
E	25.63 in. (650 mm)	29.63 in. (752 mm)	30.63 in. (778 mm)	34 in. (864 mm)	36 in. (914 mm)	37.5 in. (953 mm)	38.75 in. (984 mm)	47.5 in. (1207 mm)	56.75 in. (1441 mm)
F (Recommended)	24 in. (610 mm)	24 in. (610 mm)	24 in. (610 mm)	24 in. (610 mm)	24 in. (610 mm)	24 in. (610 mm)	24 in. (610 mm)	24 in. (610 mm)	36 in. (914 mm)
F (Minimum)	12 in. (305 mm)	12 in. (305 mm)	12 in. (305 mm)	18 in. (457 mm)	12 in. (305 mm)	12 in. (305 mm)	12 in. (305 mm)	18 in. (457 mm)	24 in. (610 mm)

*Minimum spacing is .5 in. (12.5 mm); 1 in. (25 mm) is the recommended space. When not installed on a base frame.

**For 80 pound models intended for standard mounting, clearance should be 6 in. (152.5 mm).

Installation

Machine Foundation

NOTE: Do not mount on wooden floors, tile floors, above ground level, or over basements or crawl spaces because of the high extract speed and the G-forces exerted.

Thoroughness of detail must be stressed with all foundation work to ensure a stable unit installation, eliminating possibilities of excessive vibration during the extract cycle.

The floor must be 3500 psi minimum reinforced concrete set firmly in clean, compacted fill dirt.

The machine must be anchored to a smooth, level surface so that the entire base of the machine is supported and rests on the mounting surface. **(Do not support the machine on only four points.)** Grouting is suggested.

An elevated foundation must not exceed 8 inches (203 mm).

Refer to *Table 1* for foundation and anchoring requirements.

Machine Foundation Requirements						
Models		Foundation Thickness	Floor Thickness	Installation Foundation Method(s)	Anchoring Method(s) Requirement	Anchoring Bolt Diameter Size (minimum)
2 Speed and Fixed-Speed (20-60 Models)		4 in. (102 mm)	4 in. (102 mm)	Direct-to-finished-floor, elevated base frame, or concrete foundation	Expansion bolt, J-bolt, or Epoxy bolt	.63 in.
Variable-Speed (20-60 Models)		6 in. (152 mm)	6 in. (152 mm)	Direct-to-finished-floor, elevated base frame (A-control only), or concrete foundation	J-bolt, mounting bolt, or Epoxy bolt	.63 in.
Variable-Speed	80 Models	9 in. (229 mm)	6 in. (152 mm)	Direct-to-finished-floor or concrete foundation	J-bolt, mounting bolt, Epoxy bolt, or rebar frame	.75 in.
	125 Models	12 in. (304 mm)	6 in. (152 mm)			

Table 1

Refer to *Table 2* and *Table 3* for static and dynamic loads on the floor or foundation.

Floor Load Data, 2 Speed Models							
Specification	18, 20	25	27, 30	35	40	50	60
Static floor load, lbs. (kN)	449 (1.99)	546 (2.43)	622 (2.76)	804 (3.58)	903 (4.0)	1041 (4.63)	1099 (4.9)
Static pressure, lbs-ft ² (kN-m ²)	97.8 (4.68)	102.7 (4.92)	101.4 (4.85)	113 (5.41)	118 (5.65)	117 (5.62)	119.9 (5.74)
Dynamic load, lbs. (kN)	374 (1.66)	520 (2.31)	495 (2.2)	581 (2.58)	898 (3.99)	860 (3.83)	1404 (6.3)
Dynamic pressure, lbs-ft ² (kN-m ²)	165.3 (7.91)	186.8 (8.94)	169.3 (8.09)	82 (3.91)	216 (10.3)	97 (4.64)	253.3 (12.13)
Dynamic load frequency, Hz	8.80	8.81	7.73	7.83	8.18	7.50	7.82
Maximum moment about machine base, lbs-ft (kN-m)	714 (0.97)	994 (1.35)	989 (1.34)	1261 (1.71)	1926 (2.61)	1892 (2.57)	3086 (4.2)
Maximum vertical load, lbs. (kN)	759 (3.37)	993 (4.42)	1038 (4.62)	1434 (6.38)	1653 (7.4)	1944 (8.87)	2322 (10.3)

Table 2

Floor Load Data, Variable-Speed Models								
Specification	18, 20	27, 30	35	40	50	60	80	125
Static floor load, lbs. (kN)	482 (2.14)	624 (2.78)	865 (3.84)	923 (4.11)	1136 (5.0)	1061 (4.22)	1738 (7.73)	2839 (12.6)
Static pressure, lbs-ft ² (kN-m ²)	105 (5.02)	102 (4.87)	122 (5.82)	121 (5.78)	128 (5.69)	116 (5.54)	126.9 (6.07)	177.5 (8.5)
Dynamic load, lbs. (kN)	532 (2.37)	767 (3.41)	979 (4.35)	1049 (4.67)	1407 (6.25)	1514 (6.73)	3310 (14.72)	4364 (19.4)
Dynamic pressure, lbs-ft ² (kN-m ²)	207 (9.98)	214 (10.22)	138 (6.60)	238 (11.37)	159 (7.6)	261 (12.47)	350.5 (16.78)	431.5 (20.6)
Dynamic load frequency, Hz	11.5	10.7	10.2	10.2	9.58	9.6	8.7	8.1
Maximum moment about machine base, lbs-ft (kN-m)	1016 (1.38)	1535 (2.08)	2122 (2.88)	2252 (3.05)	3095 (4.19)	3328 (4.51)	8482 (11.5)	14547 (19.7)
Maximum vertical load, lbs. (kN)	950 (4.23)	1313 (5.84)	1635 (7.28)	1824 (8.11)	2610 (11.61)	2394 (10.65)	4799 (21.35)	6904 (30.7)

Table 3

Installation

Concrete Foundation Installation

A concrete foundation pad may be constructed to elevate the machines. The concrete foundation pad must be poured, reinforced with rebar and tied to the existing floor with reinforcing bars. Refer to *Figure 5*, *Figure 6* or *Figure 7* for a typical concrete foundation pad installation.

NOTE: Expansion bolts should not be used in single-machine concrete foundation installations.

1. Verify that the floor meets the requirements given in the *Machine Foundation* section.
2. Excavate the floor to a depth of approximately 9 inches (230 mm) below the floor surface, making certain that the sides of the hole slope outwards from top to bottom. The bottom of the hole should be 6 inches (152 mm) larger all around than the top.
3. Wet the hole well and brush the bottom and sides with cement grout.

NOTE: When installation is complete, the surface of the foundation should extend a minimum of 4 inches (102 mm) out from the machine on all sides.

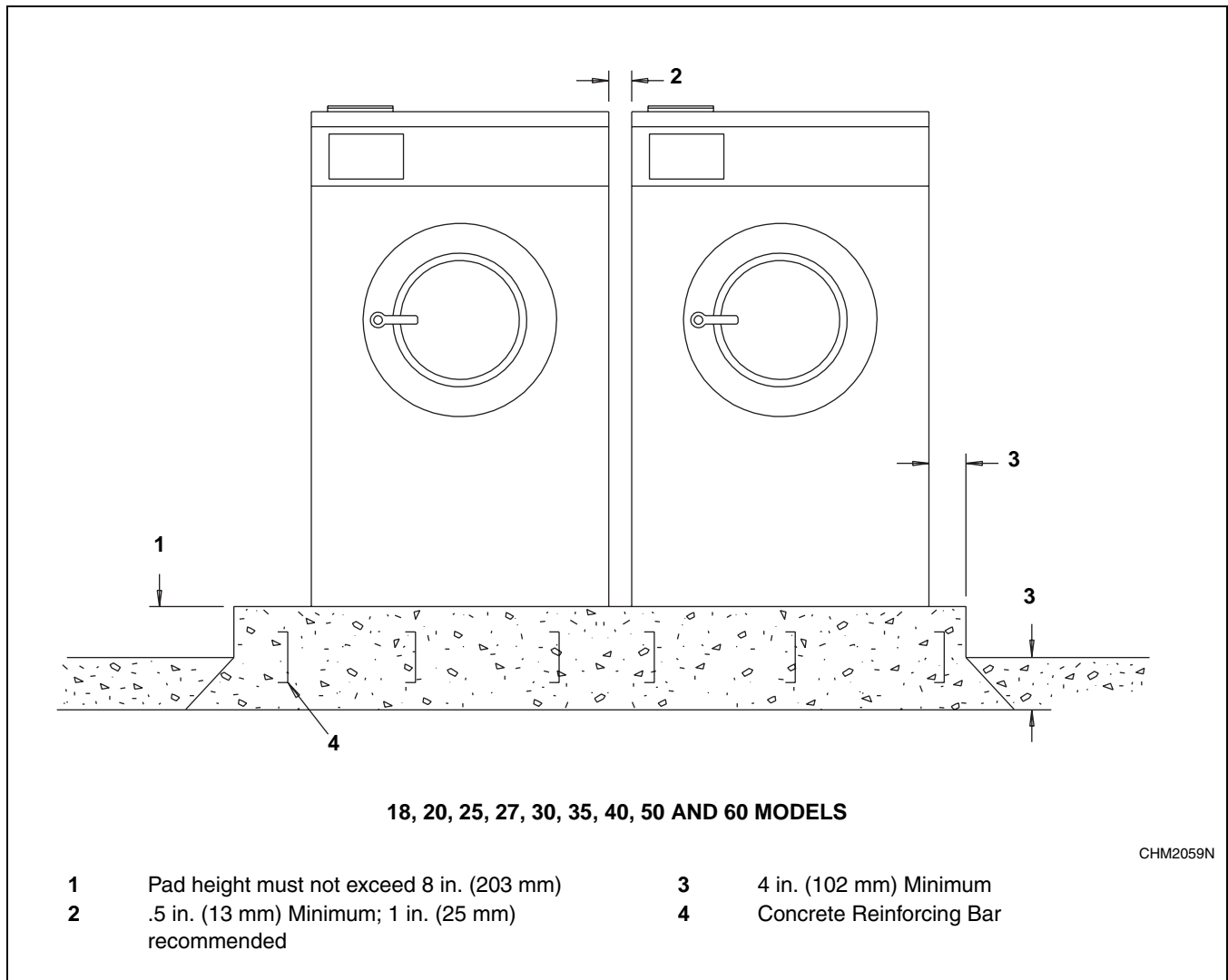


Figure 5

4. Use rebar or other appropriate material to ensure that the concrete foundation will be sufficiently connected to the existing floor.
5. If desired, prepare a form for the above-ground portion of the foundation and fill form and excavation with concrete to join the foundation. Verify that top of foundation is level. The height of the foundation must not exceed 8 inches (203 mm).
6. Use the mounting bolt layout to properly position the mounting bolts in the wet concrete. When using J-bolts, allow 1.5 inches (38 mm) to extend above the surface of the concrete. Refer to the ***Machine Anchoring*** section.
7. Allow concrete to dry.

Installation

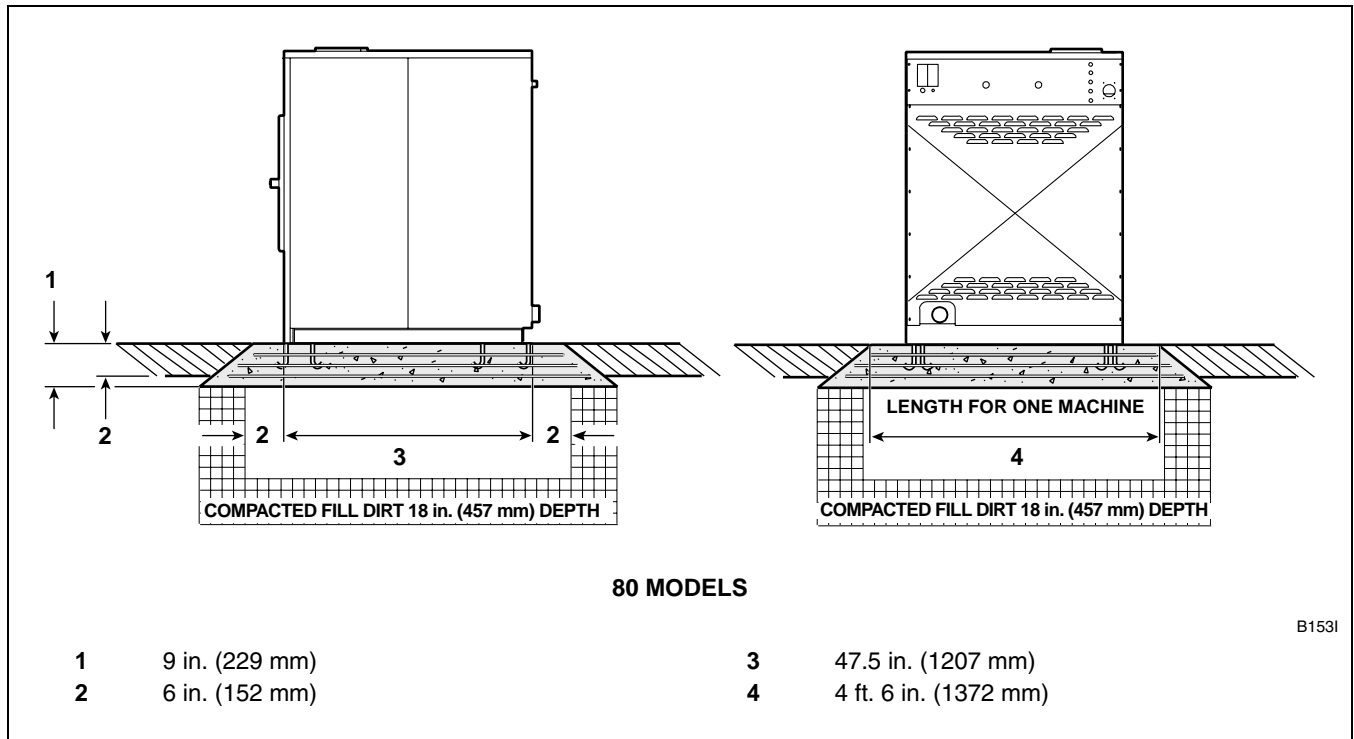


Figure 6

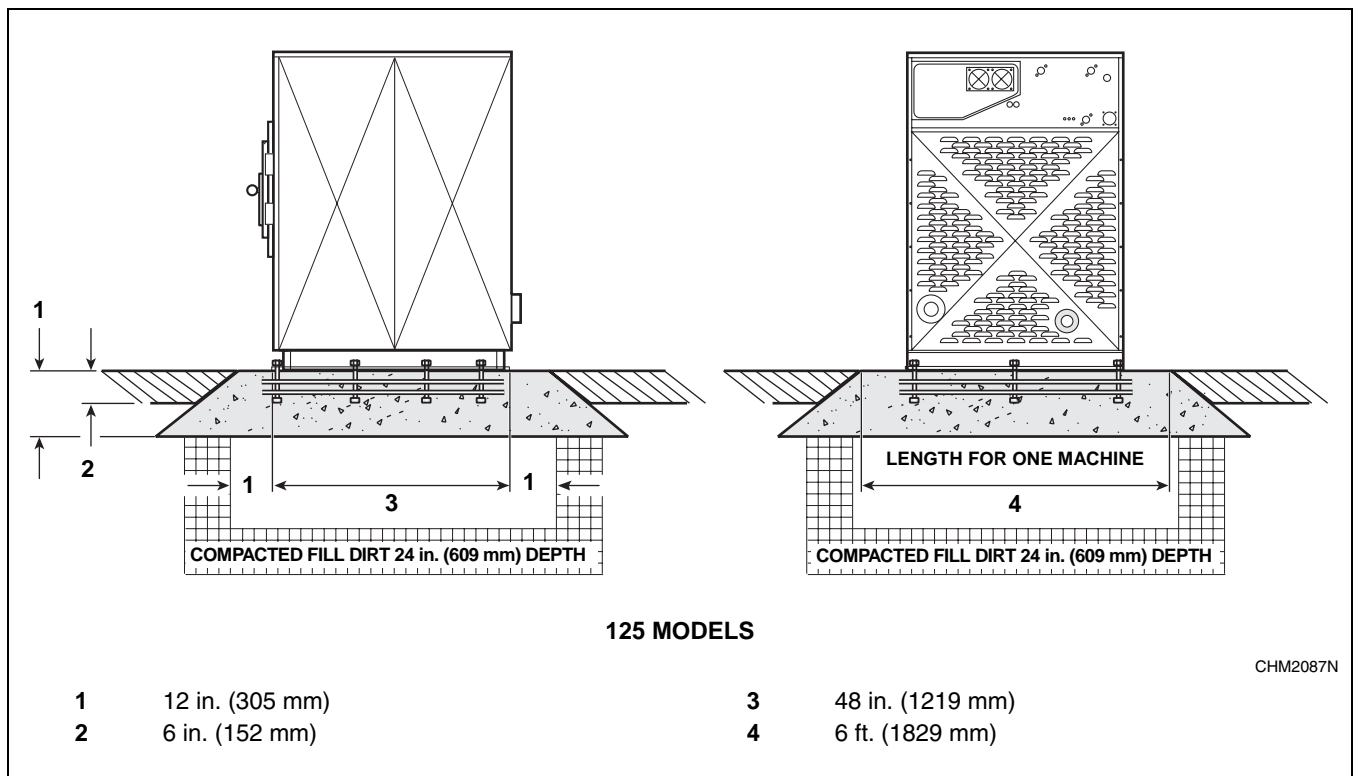


Figure 7

Machine Anchoring

Before anchoring the machine, refer to *Table 1* to determine the appropriate method of anchoring for the machine.

NOTE: Improper installation may void the warranty. Consult the manufacturer or distributor before varying from a procedure.

Direct-to-Finished-Floor Installation

Installing With Expansion Bolts (2 Speed, Fixed-Speed and A-Control Variable-Speed Models)

NOTE: Expansion bolts are not suitable for VNV machine installations.

1. Verify the floor meets the requirements given in the **Machine Foundation** section.
2. Mounting surface should be level and machine must be properly grouted.

NOTE: If replacing a 35 pound machine with a 40 pound machine, note differences in cabinet size. Refer to *Specifications and Dimensions* section and *Mounting Bolt Hole Locations*.

NOTE: If replacing a 50 pound machine with a 60 pound machine, note differences in cabinet size. Refer to *Specifications and Dimensions* section and *Mounting Bolt Hole Locations*.

3. Use the base of the machine as a template by positioning the machine in the desired location and marking the pre-drilled mounting holes on the floor. Mounting Bolt templates are available through Alliance Laundry Systems. Refer to the **Parts Manual** for part numbers.
4. Set the drill depth gauge to 2.56 inches (65 mm).
5. Drill the holes to the set depth. Refer to *Figure 8*.
6. Use compressed air or a squeeze bulb to clean out debris from each hole.
7. Install the machine anchors.
8. Secure the machine to the floor, using the bolts furnished with the anchors. Tighten the locknuts by even increments – one after the other – until all are tightened evenly and the machine is fastened securely to the floor. Refer to *Figure 9*.

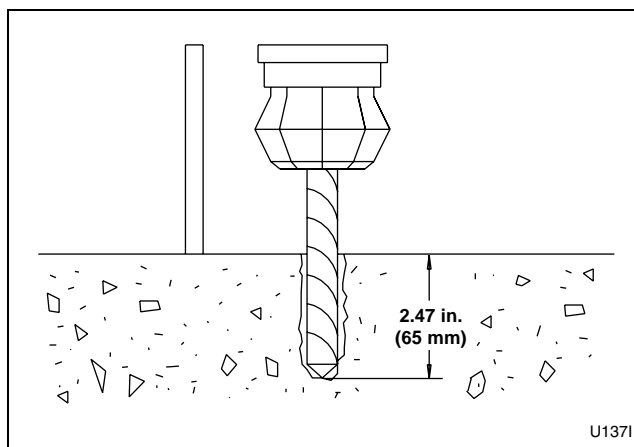


Figure 8

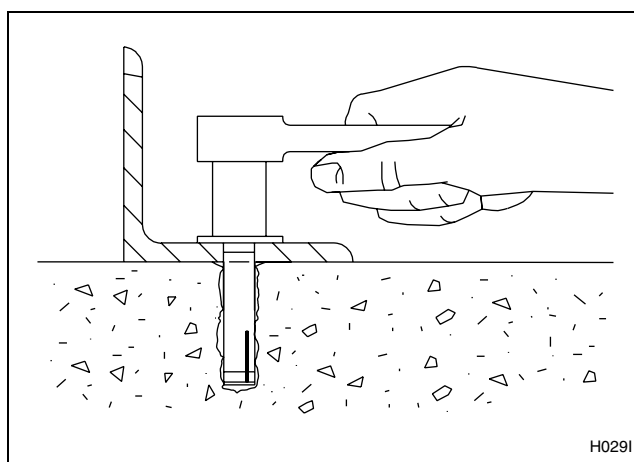


Figure 9

The completed expansion bolt installation is shown in *Figure 10*.

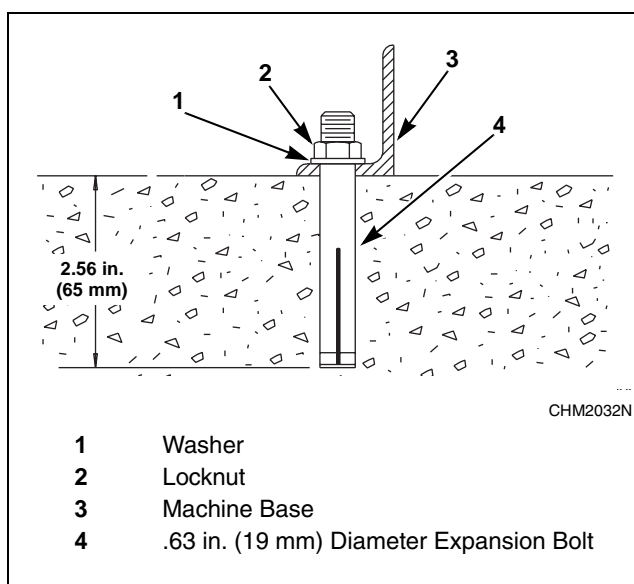


Figure 10

Installation

NOTE: For 80 and 125 pound models, a bolt-locator fixture or rebar frame is available as an option. This is designed to be embedded in concrete. Refer to *Figure 11*.

IMPORTANT: Do not install any variable-speed machine on an elevated base frame. * C60 (and smaller capacity models), A-control variable-speed machines can be installed on an elevated base frame. Refer to *Elevated Base Frame Installation* section.

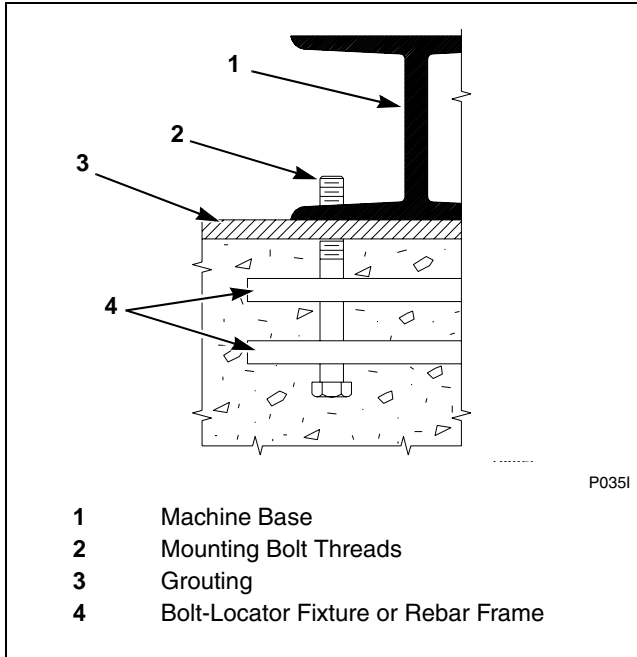


Figure 11

Installing With J-Bolts

1. Verify the floor meets the requirements given in the *Machine Foundation* section.
2. Install J-bolts in concrete as shown in the mounting bolt layouts (*Figure 16* through *Figure 31*) following these instructions.

NOTE: If replacing a 35 pound machine with a 40 pound machine, note differences in cabinet size. Refer to *Specifications and Dimensions* section and *Mounting Bolt Hole Locations*.

NOTE: If replacing a 50 pound machine with a 60 pound machine, note differences in cabinet size. Refer to *Specifications and Dimensions* section and *Mounting Bolt Hole Locations*.

NOTE: There are two different mounting bolt layouts which may be used for the 80 pound capacity machine. Refer to *Figure 23*. The bolt holes marked “A” are to be used for close mounting – machines installed with a 1 inch (25.4 mm) clearance between machines. The bolt holes marked “B” are to be used for standard mounting – machines installed with a minimum clearance of 8 inches (203 mm) between machines.

3. Adjust the drill depth gauge to match the length of the J-bolt, minus 1.5 inches (38 mm).
4. Drill and chisel out a conical hole large enough to accept the J-bolt. Refer to *Figure 12*.

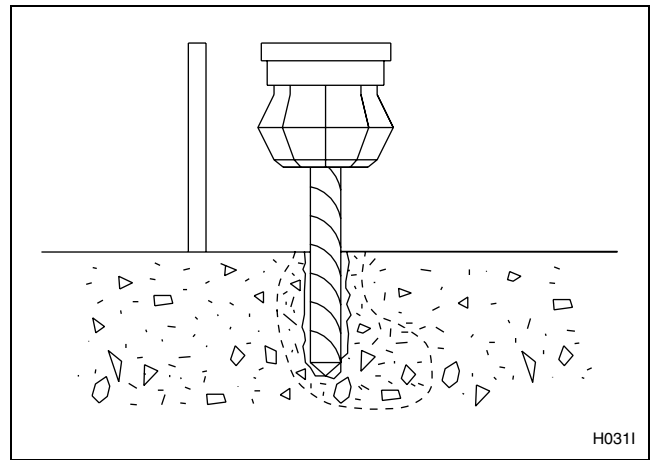


Figure 12

5. Use compressed air or a squeeze bulb to remove debris from each hole.
6. Verify that the J-bolts are in the correct locations and that 1.5 inches (38 mm) of each J-bolt protrude from the floor. Refer to *Figure 13*.
7. Anchor J-bolt in place, using an industry-accepted anchoring compound.

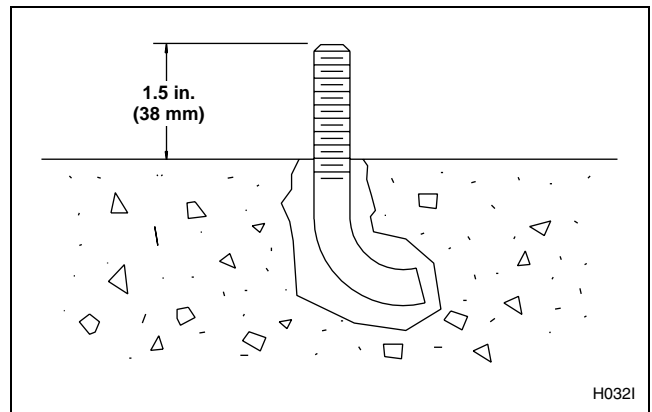


Figure 13

8. Place the machine carefully over the J-bolts. Never attempt to lift the machine by the door handle or by pushing on the cover panels.
9. If grouting is not desired, position washers and locknuts on J-bolts and tighten the locknuts by even increments – one after the other – until all are tightened evenly and the machine is fastened securely to the floor. Refer to *Figure 14*. Proceed to step 18.
10. If grouting is desired (or required by the condition of the mounting surface), proceed to step 12.
11. If the machine is a **variable-speed** model, the machine **MUST** be grouted. Proceed to step 12.
12. Raise and level the machine .5 inch (13 mm) off the floor on three points, using spacers such as nut fasteners.
13. Fill the space between the machine base and the floor with a good quality non-shrinking machinery grout to ensure a stable installation. Grout completely under all frame members.
14. Remove the spacers carefully, allowing the machine to settle into the wet grout.
15. Before grout sets completely, make a drain opening in the grouting at the rear of the machine with a stiff piece of wire. This opening should be approximately .5 inch (13 mm) wide to allow any surface water build-up under the base of the machine to drain away. **Do not omit this step.**
16. Position washers and locknuts on J-bolts and finger tighten nuts to machine base.
17. After the grout is completely dry, tighten the locknuts by even increments – one after the other – until all are tightened evenly and the machine is fastened securely to the floor.

NOTE: Check and retighten the locknuts after five to ten days of operation and every three months thereafter.

18. **Balance Switch Adjustment:** After mounting, reset balance switch to the correct gap switch setting. Refer to the *Gap Setting for Vibration Switch* section.

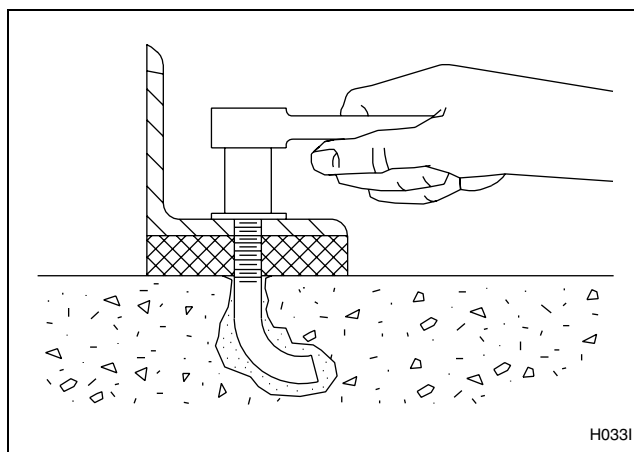


Figure 14

Figure 15 shows the completed J-bolt installation with grout.

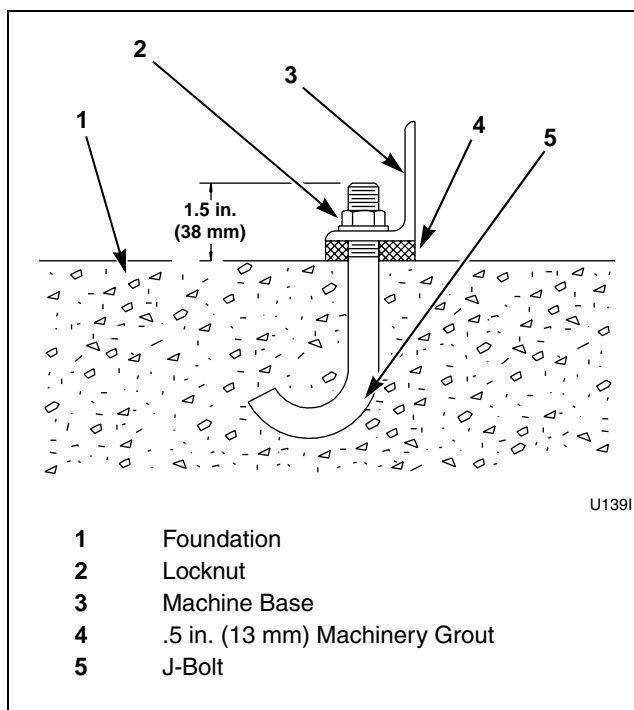


Figure 15

Mounting Bolt Hole Locations (Without Elevated Base Frames)

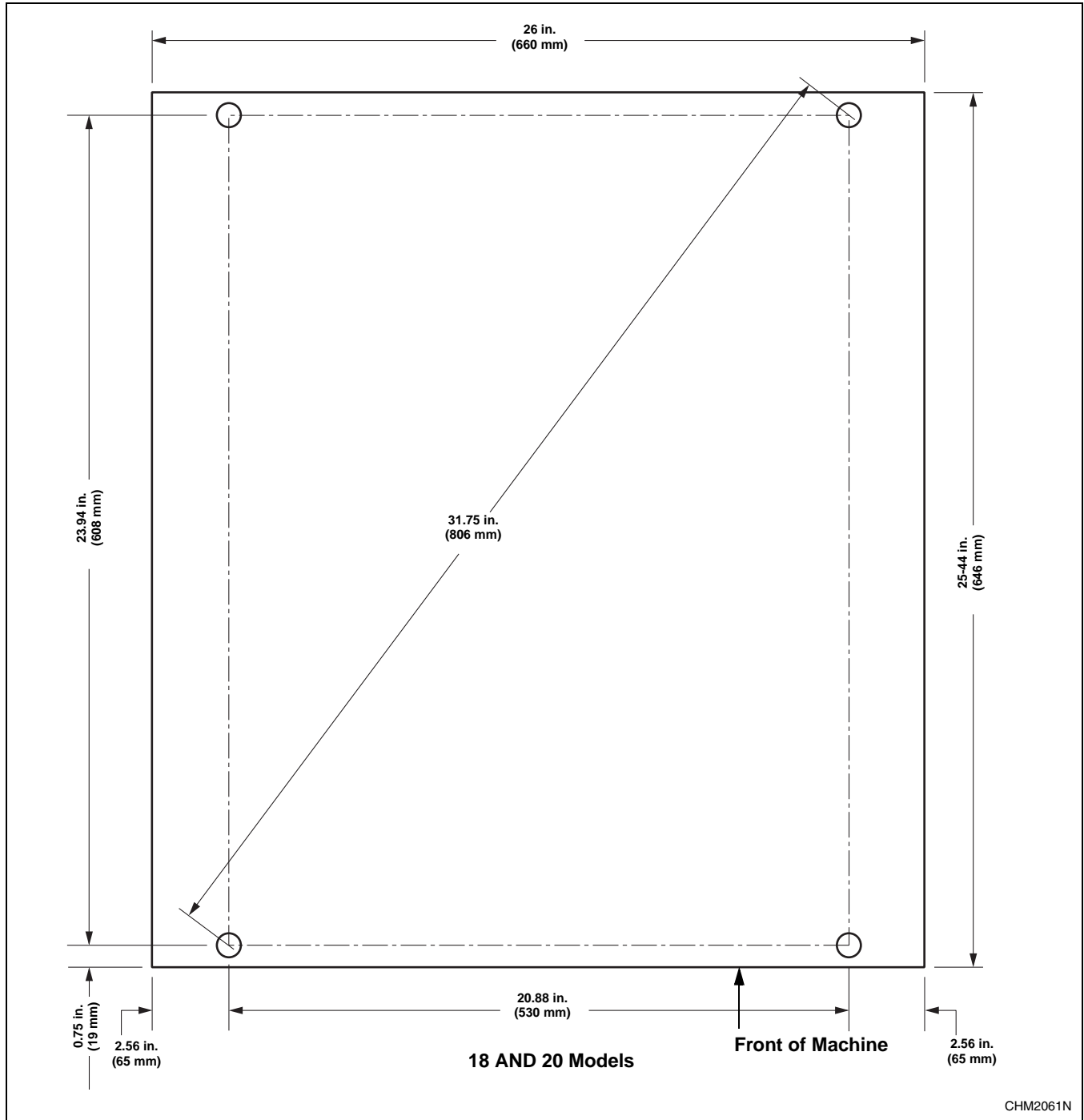


Figure 16

IMPORTANT: Drawing is not to scale.

Mounting Bolt Hole Locations (Without Elevated Base Frames)

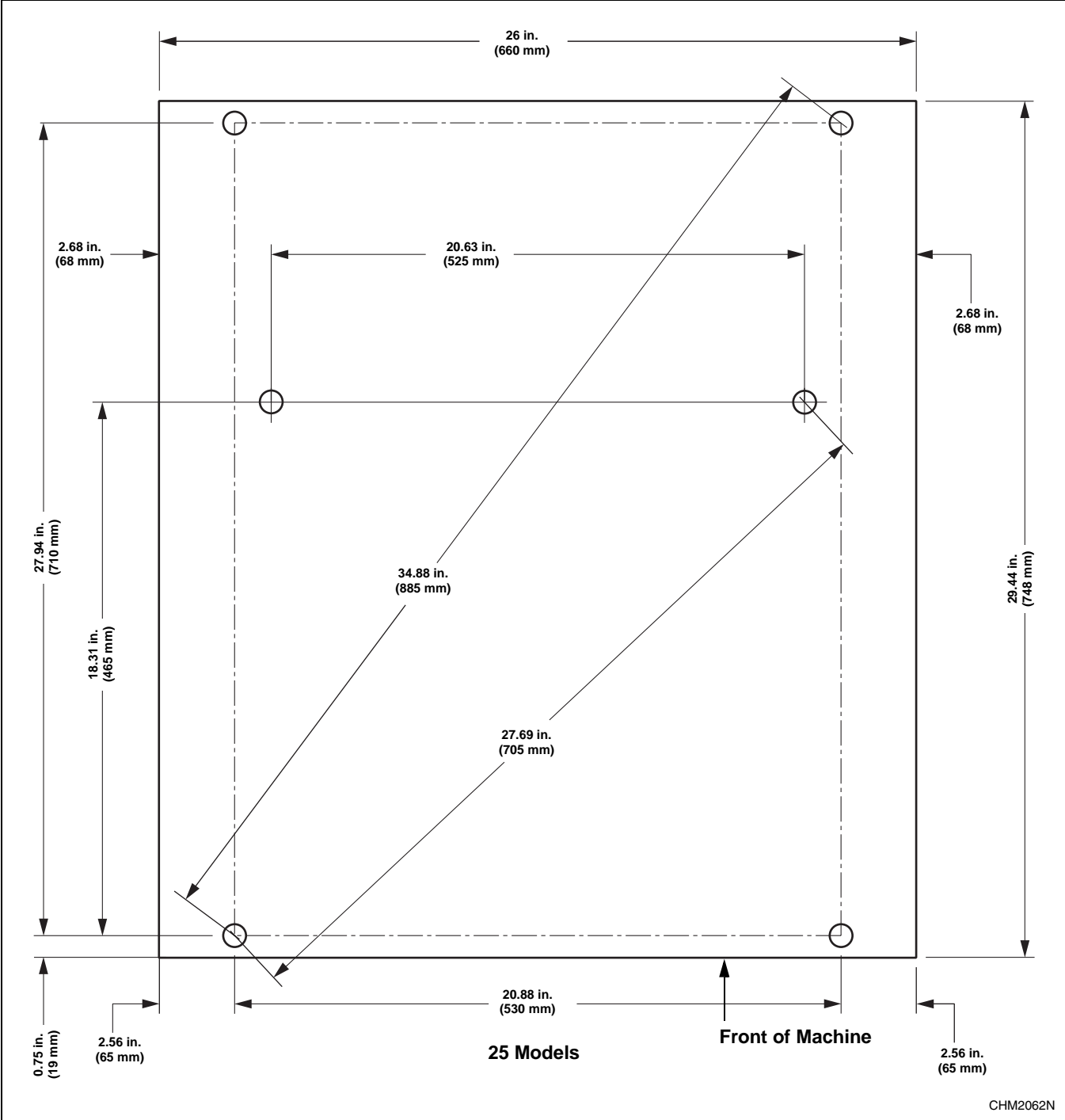


Figure 17

IMPORTANT: Drawing is not to scale.

Mounting Bolt Hole Locations (Without Elevated Base Frames)

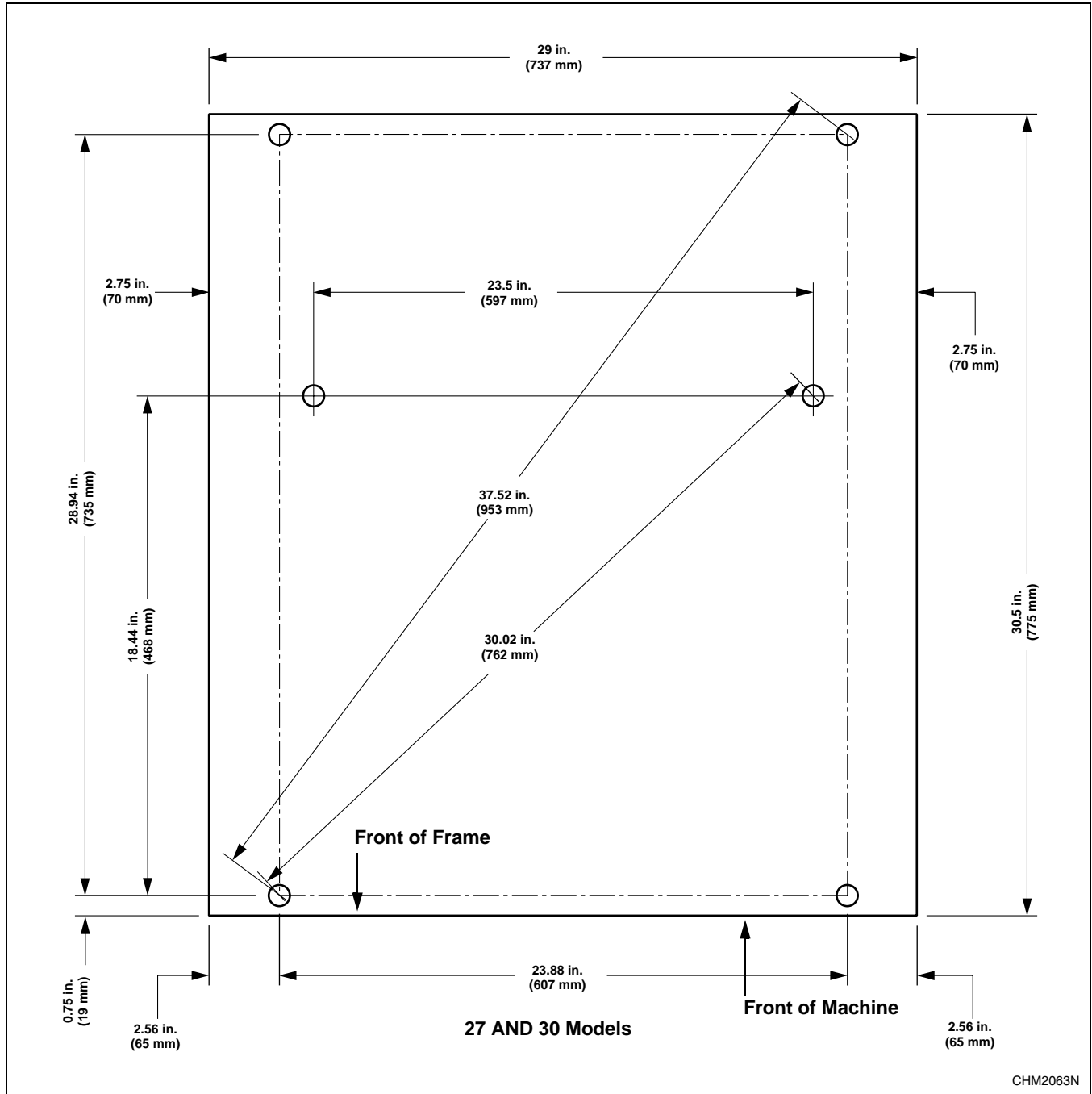


Figure 18

IMPORTANT: Drawing is not to scale.

Mounting Bolt Hole Locations (Without Elevated Base Frames)

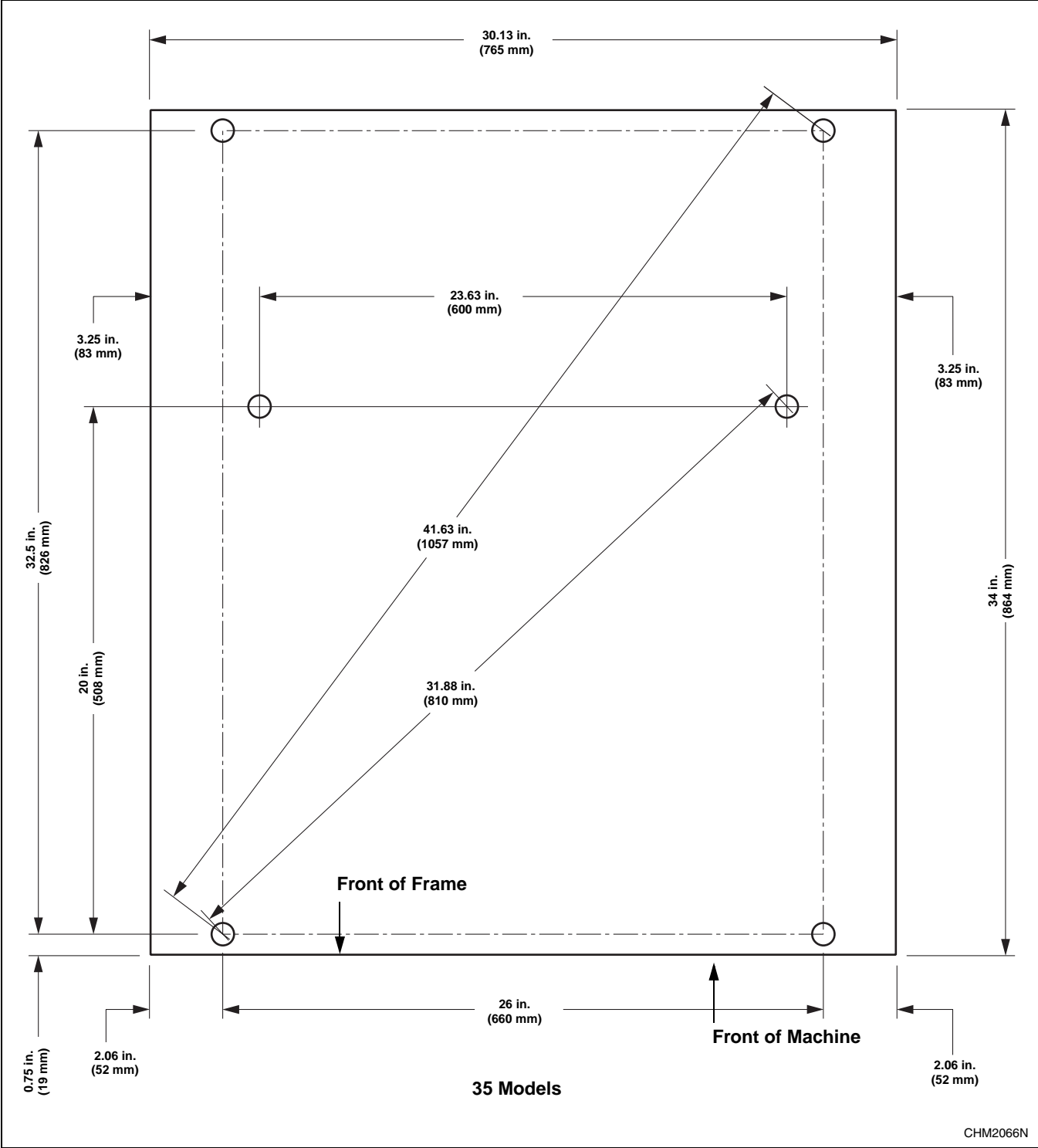


Figure 19

IMPORTANT: Drawing is not to scale.

Mounting Bolt Hole Locations (Without Elevated Base Frames)

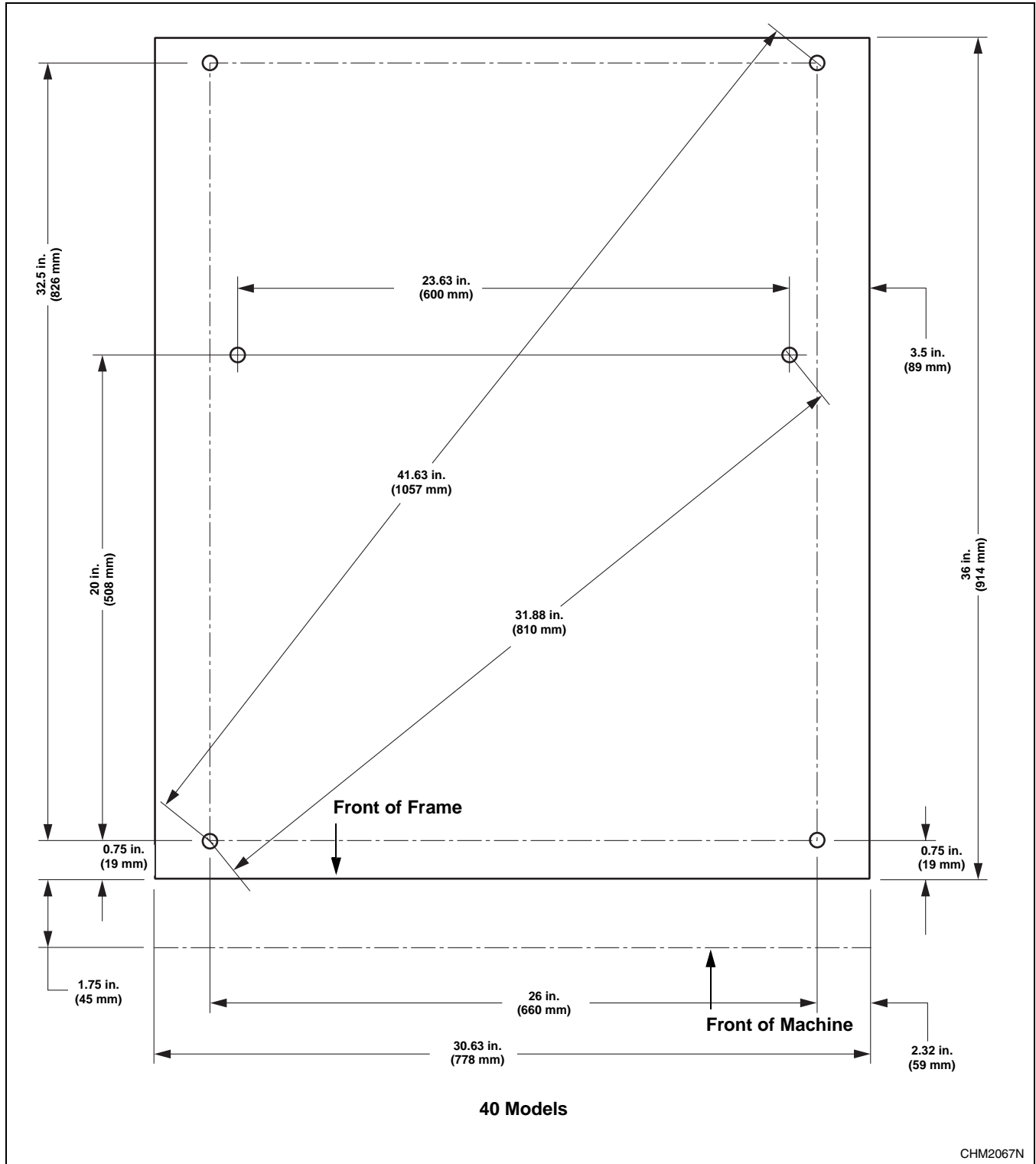


Figure 20

IMPORTANT: Drawing is not to scale.

Mounting Bolt Hole Locations (Without Elevated Base Frames)

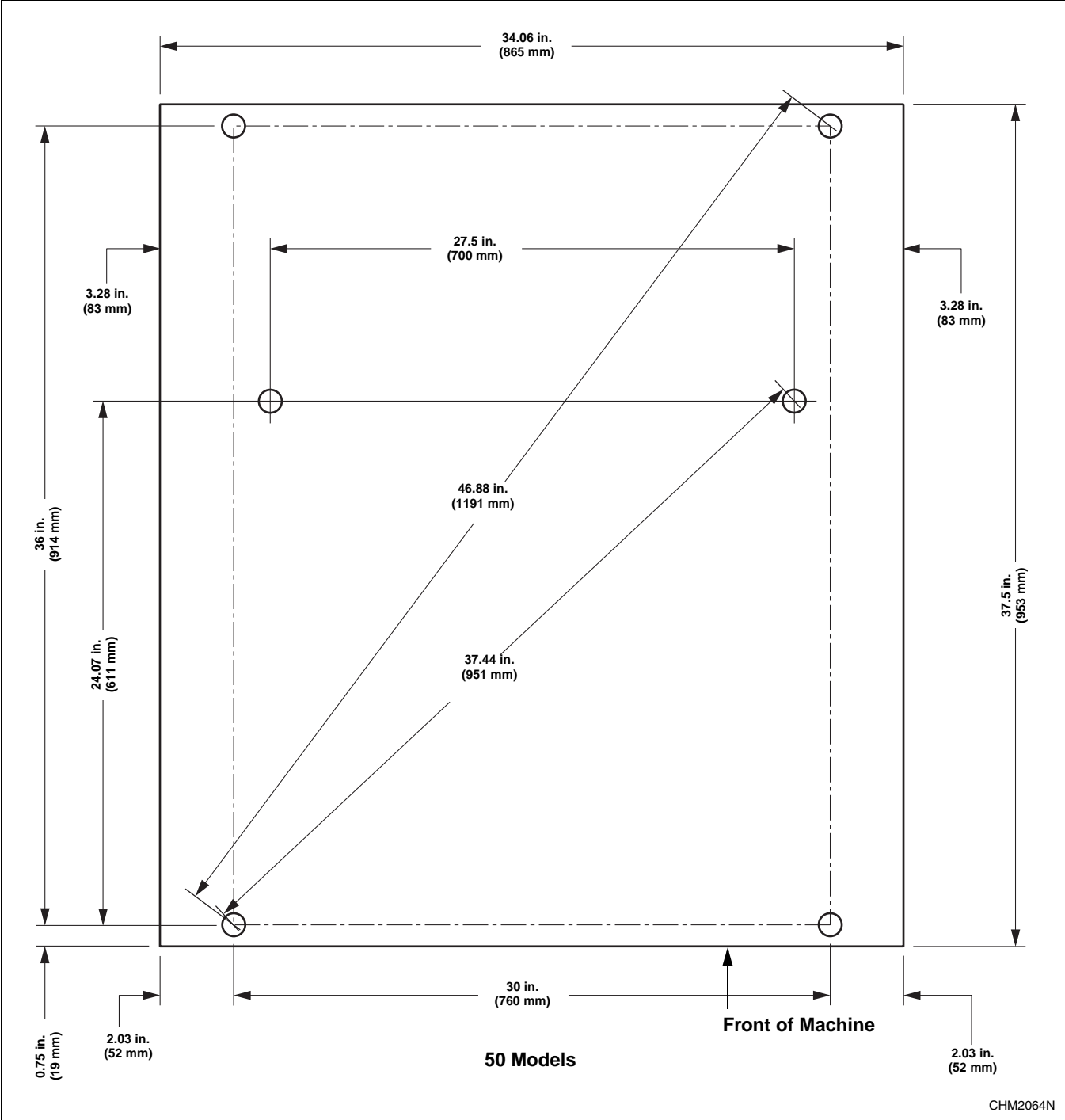


Figure 21

IMPORTANT: Drawing is not to scale.

Mounting Bolt Hole Locations (Without Elevated Base Frames)

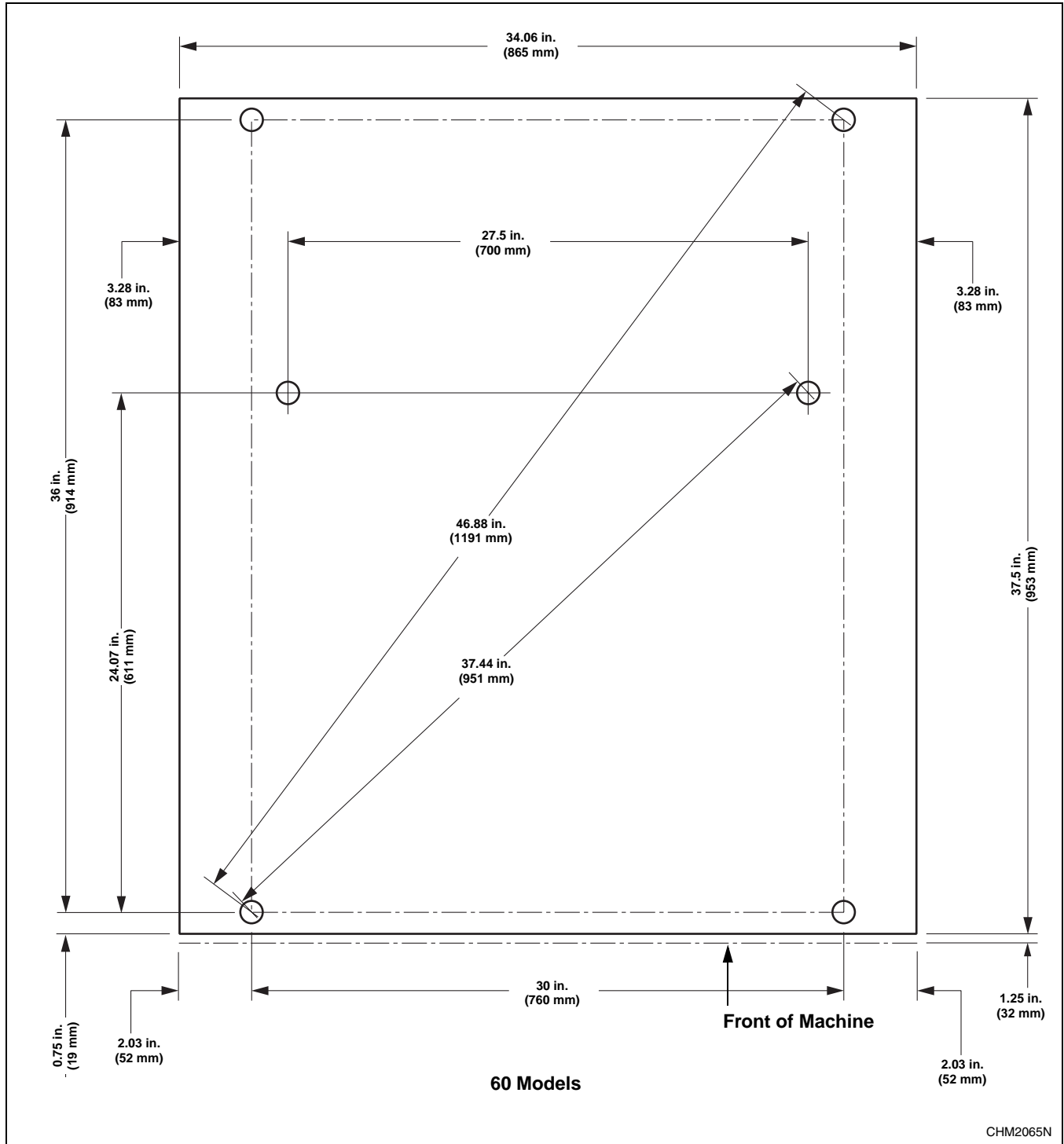


Figure 22

IMPORTANT: Drawing is not to scale.

Mounting Bolt Hole Locations (Without Elevated Base Frames)

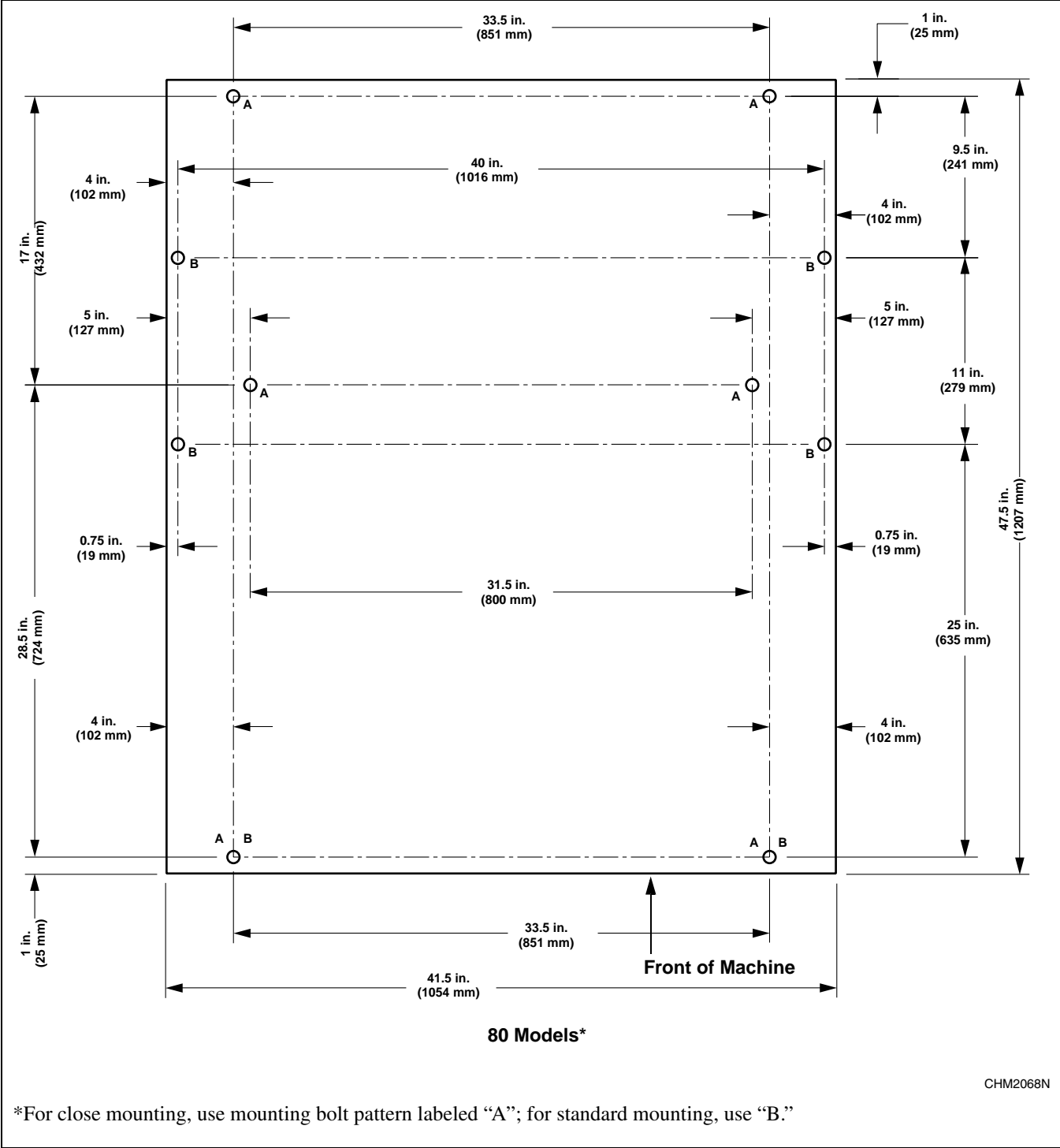


Figure 23

IMPORTANT: Drawing is not to scale.

Mounting Bolt Hole Locations (Without Elevated Base Frames)

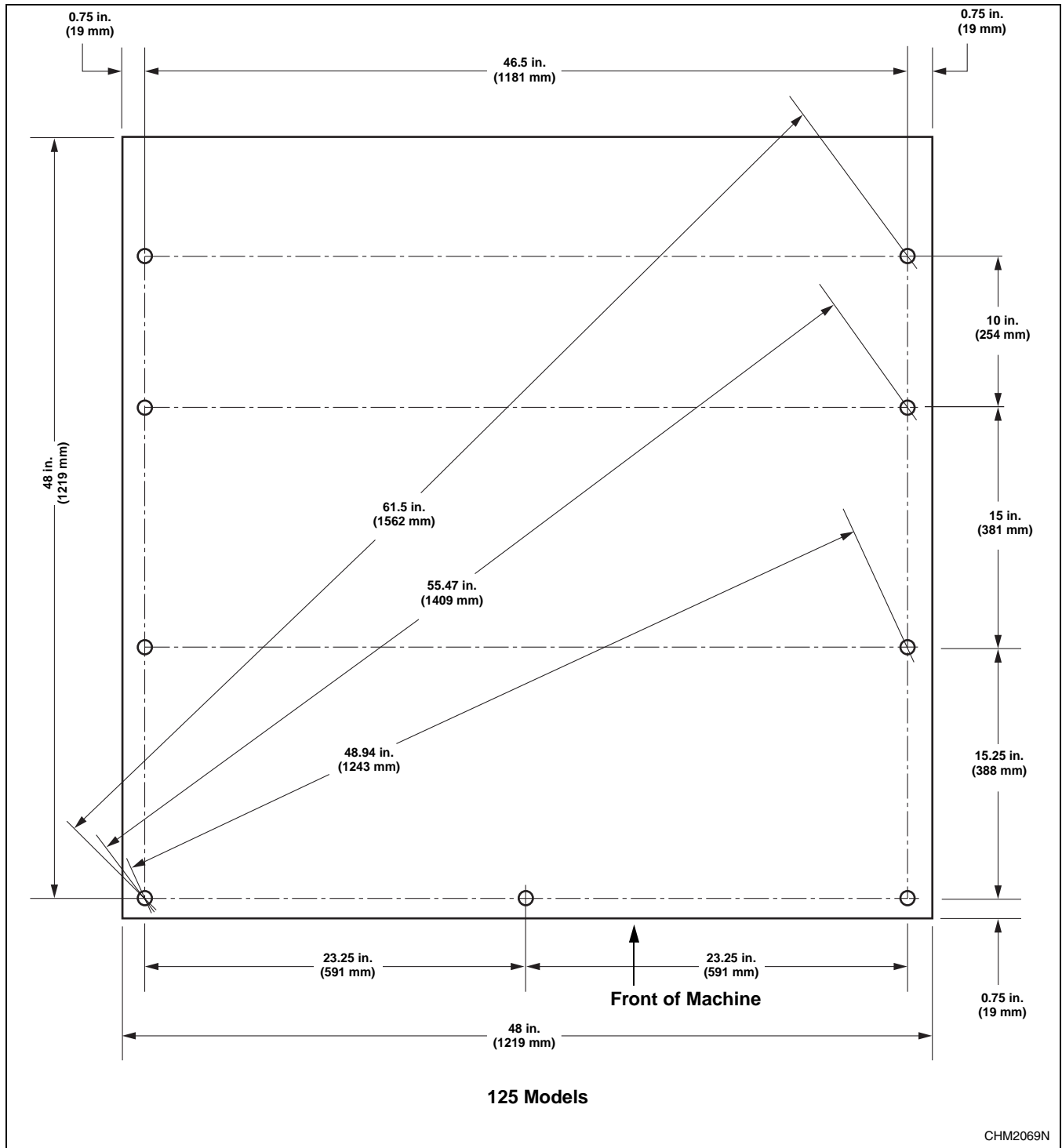


Figure 24

IMPORTANT: Drawing is not to scale.

Mounting Bolt Hole Locations (With Elevated Base Frames)

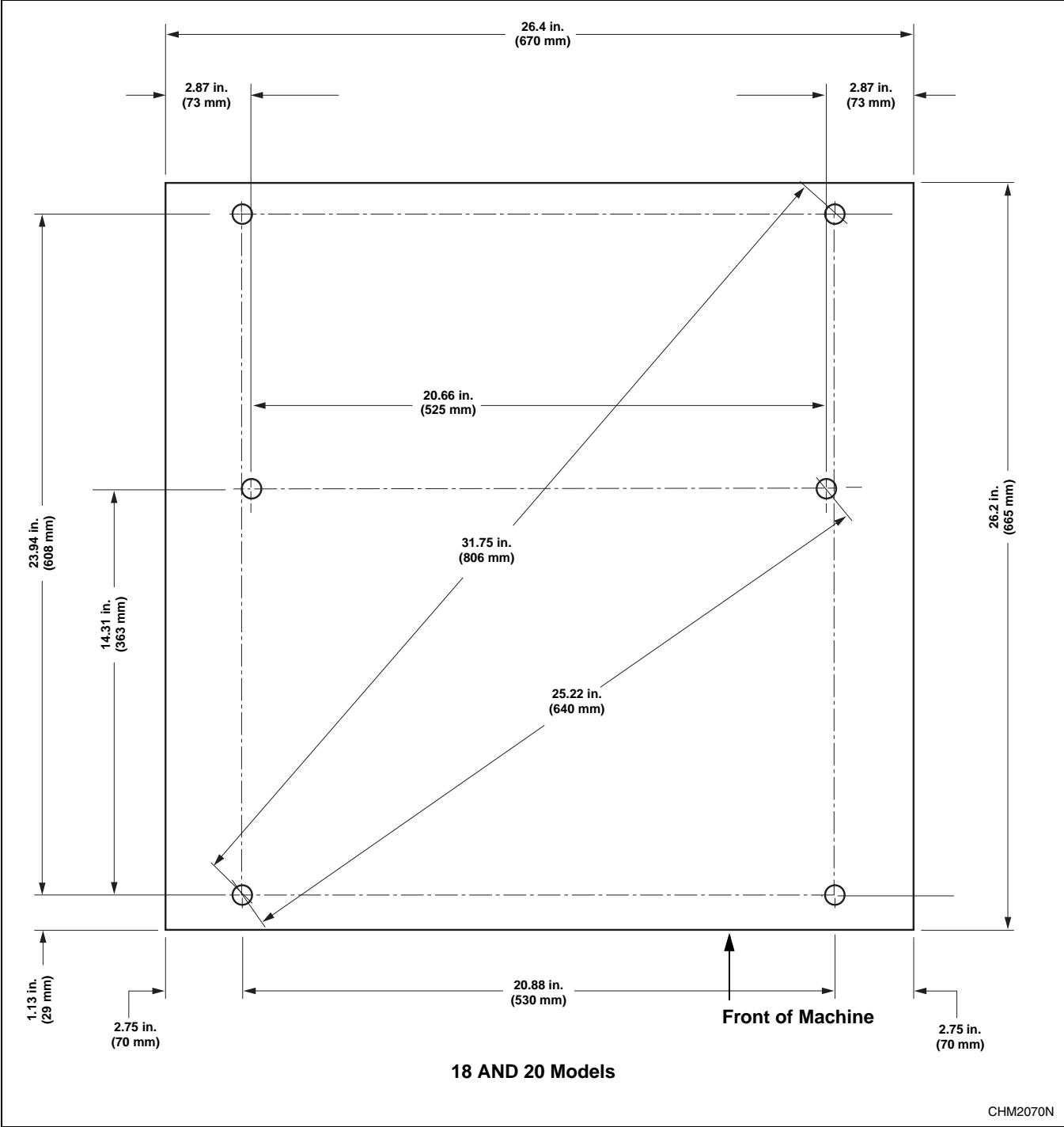


Figure 25

IMPORTANT: Drawing is not to scale.

Mounting Bolt Hole Locations (With Elevated Base Frames)

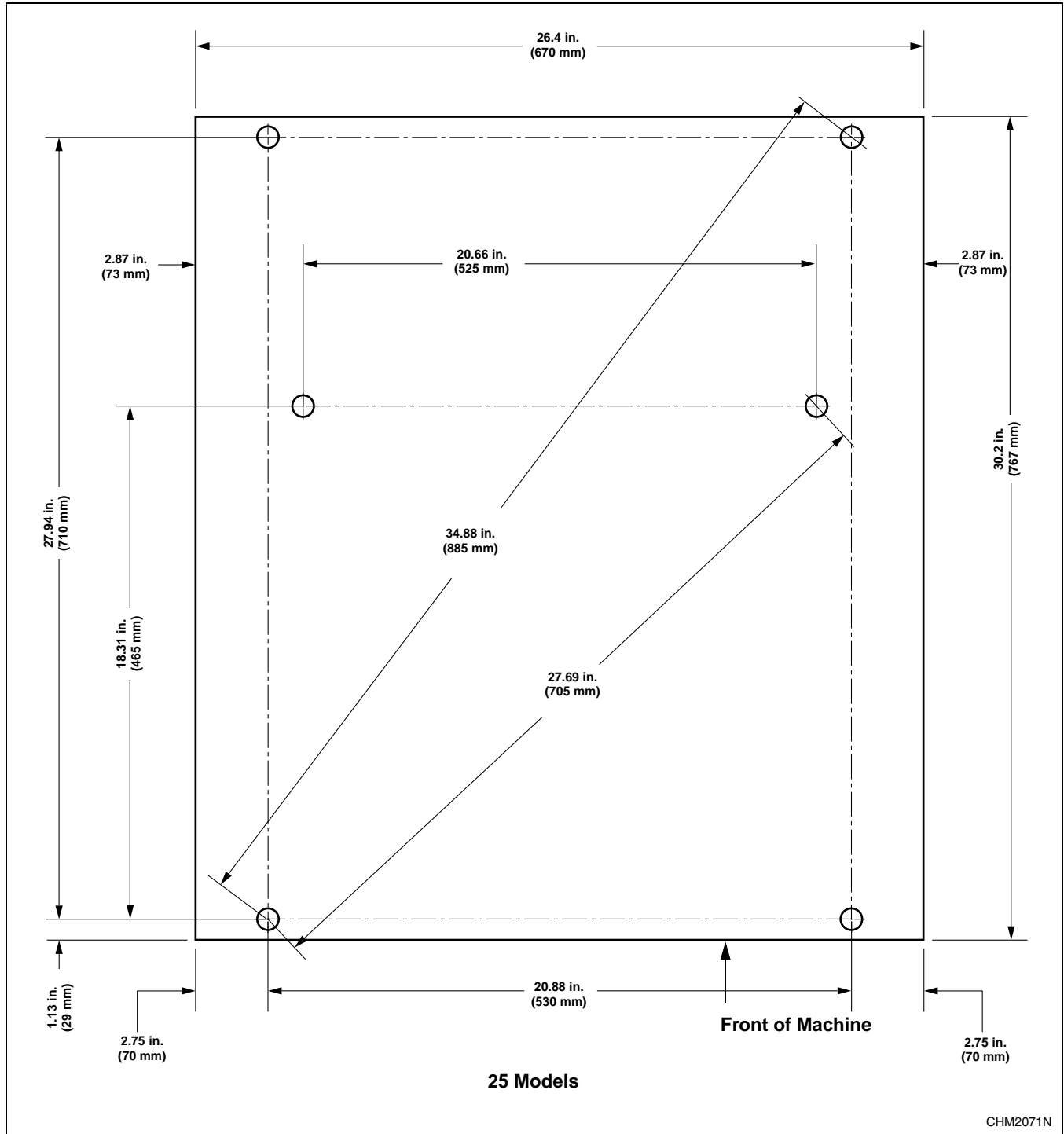


Figure 26

IMPORTANT: Drawing is not to scale.

Mounting Bolt Hole Locations (With Elevated Base Frames)

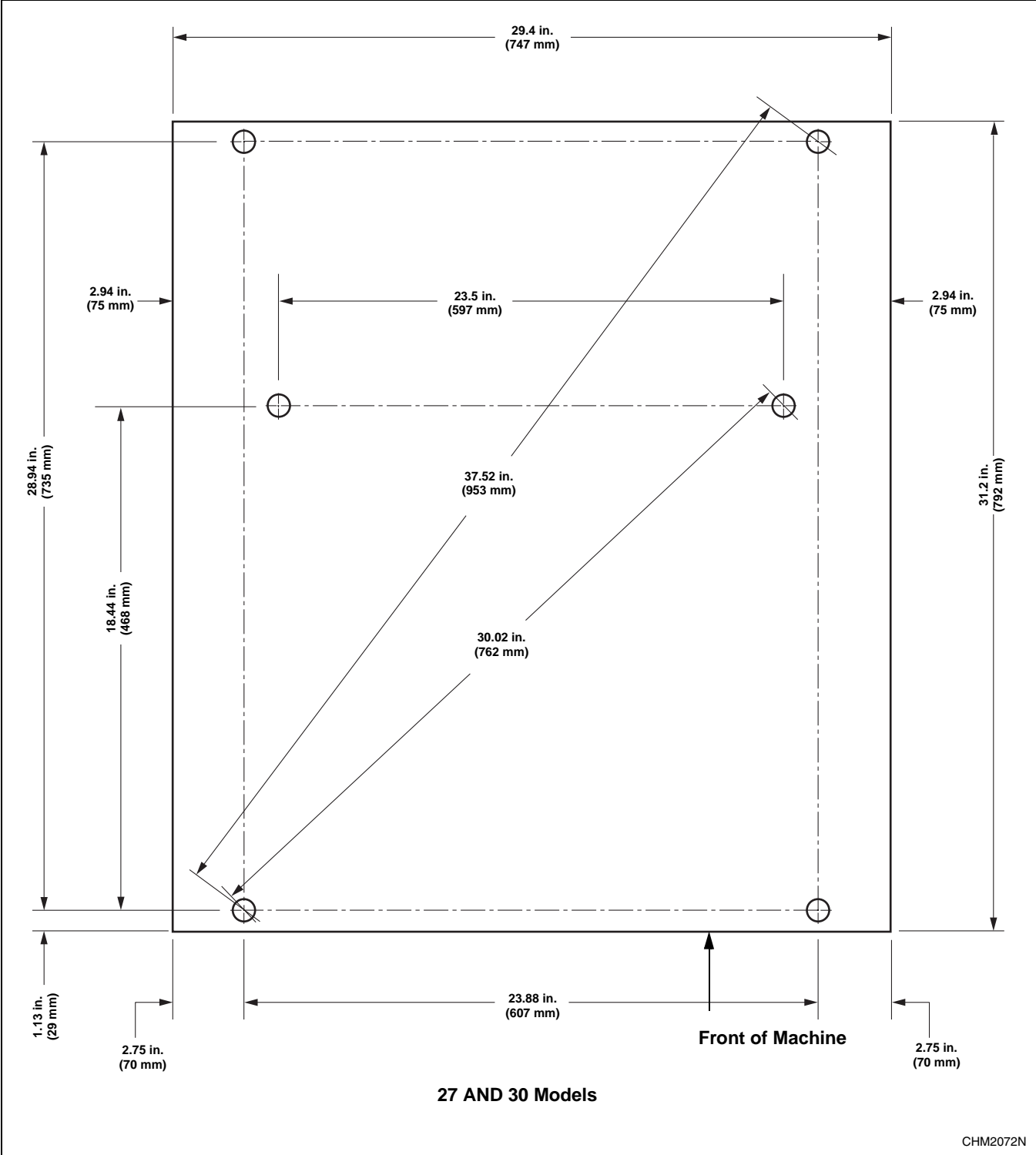


Figure 27

IMPORTANT: Drawing is not to scale.

Mounting Bolt Hole Locations (With Elevated Base Frames)

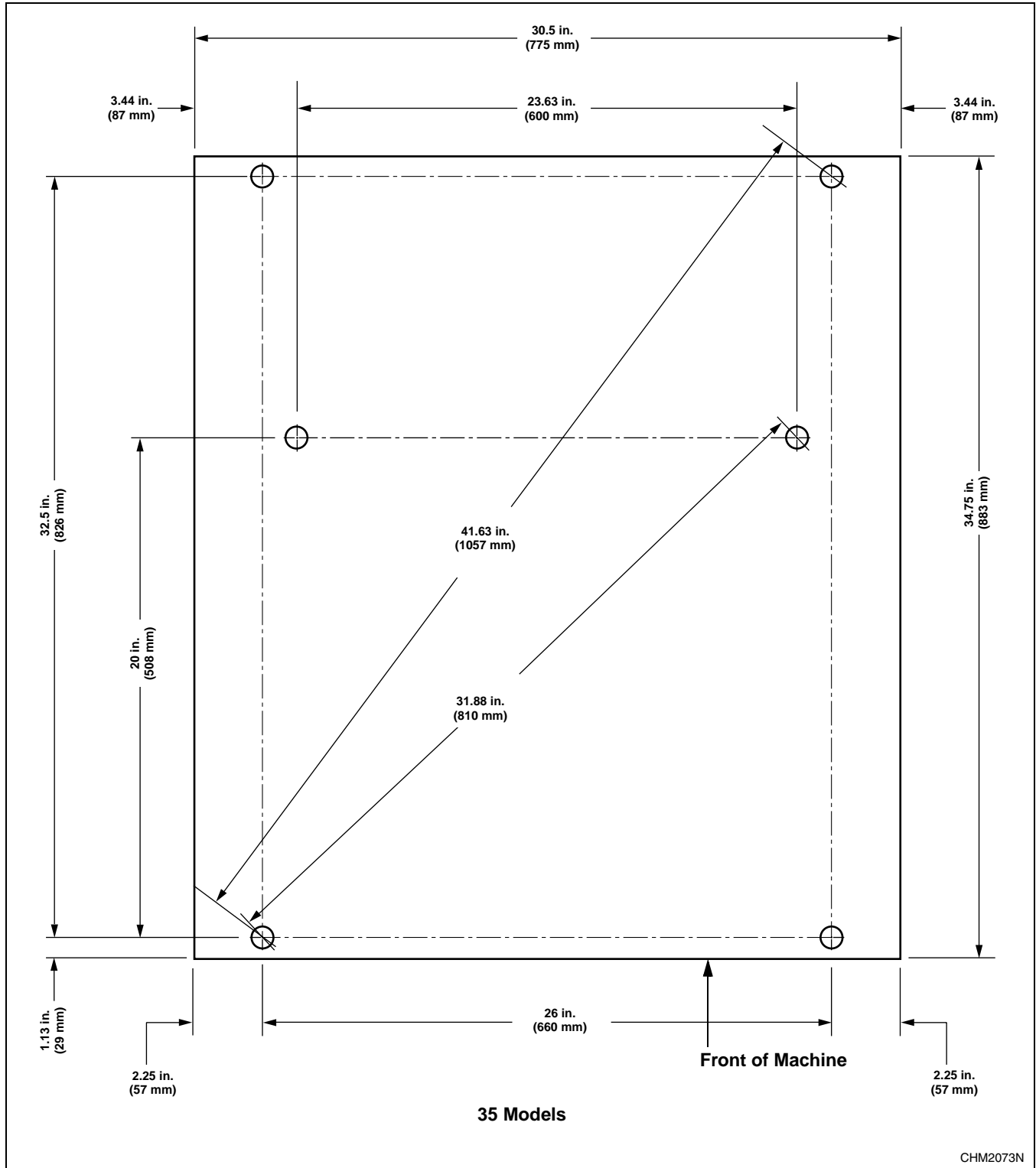


Figure 28

IMPORTANT: Drawing is not to scale.

Mounting Bolt Hole Locations (With Elevated Base Frames)

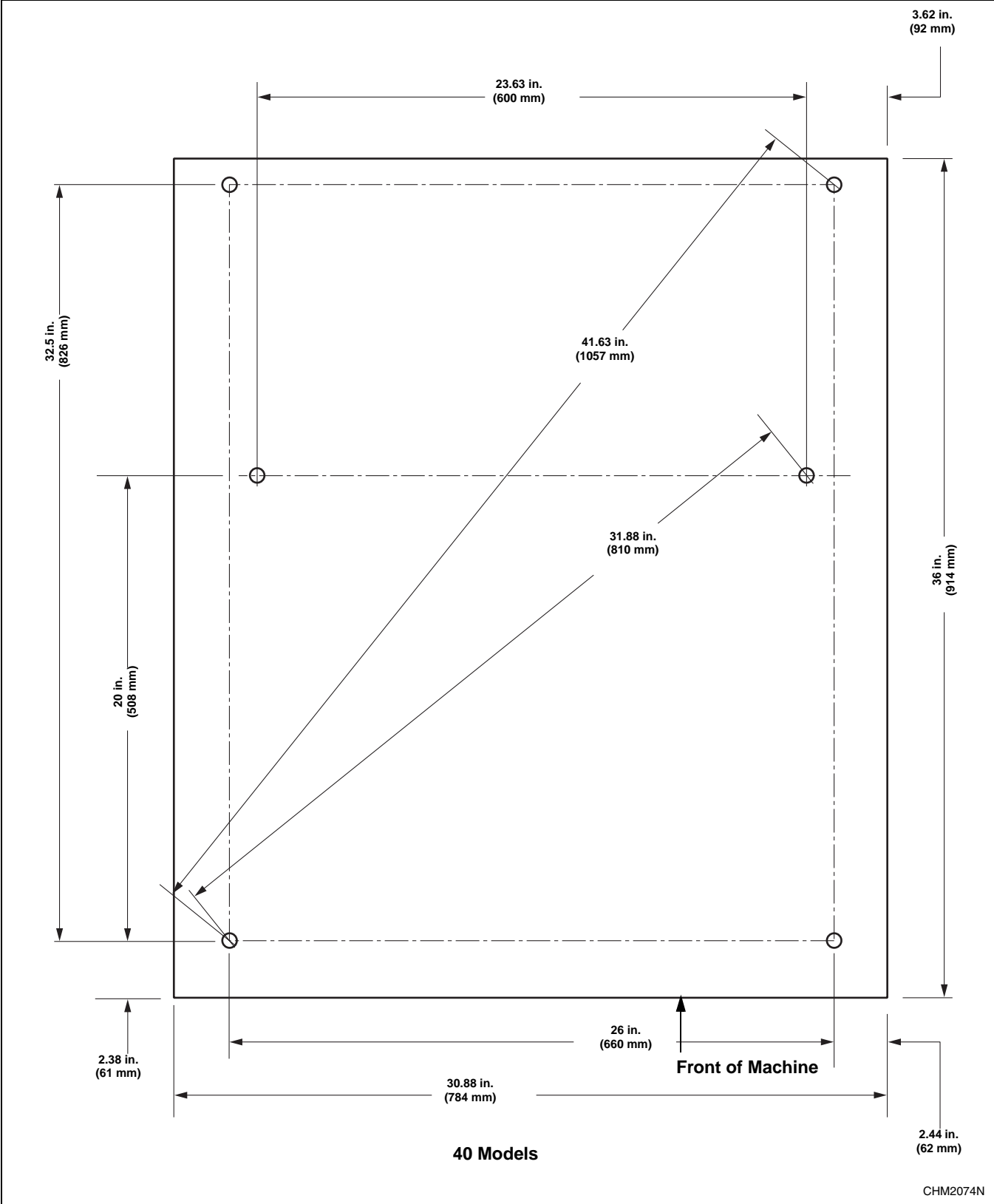


Figure 29

IMPORTANT: Drawing is not to scale.

Mounting Bolt Hole Locations (With Elevated Base Frames)

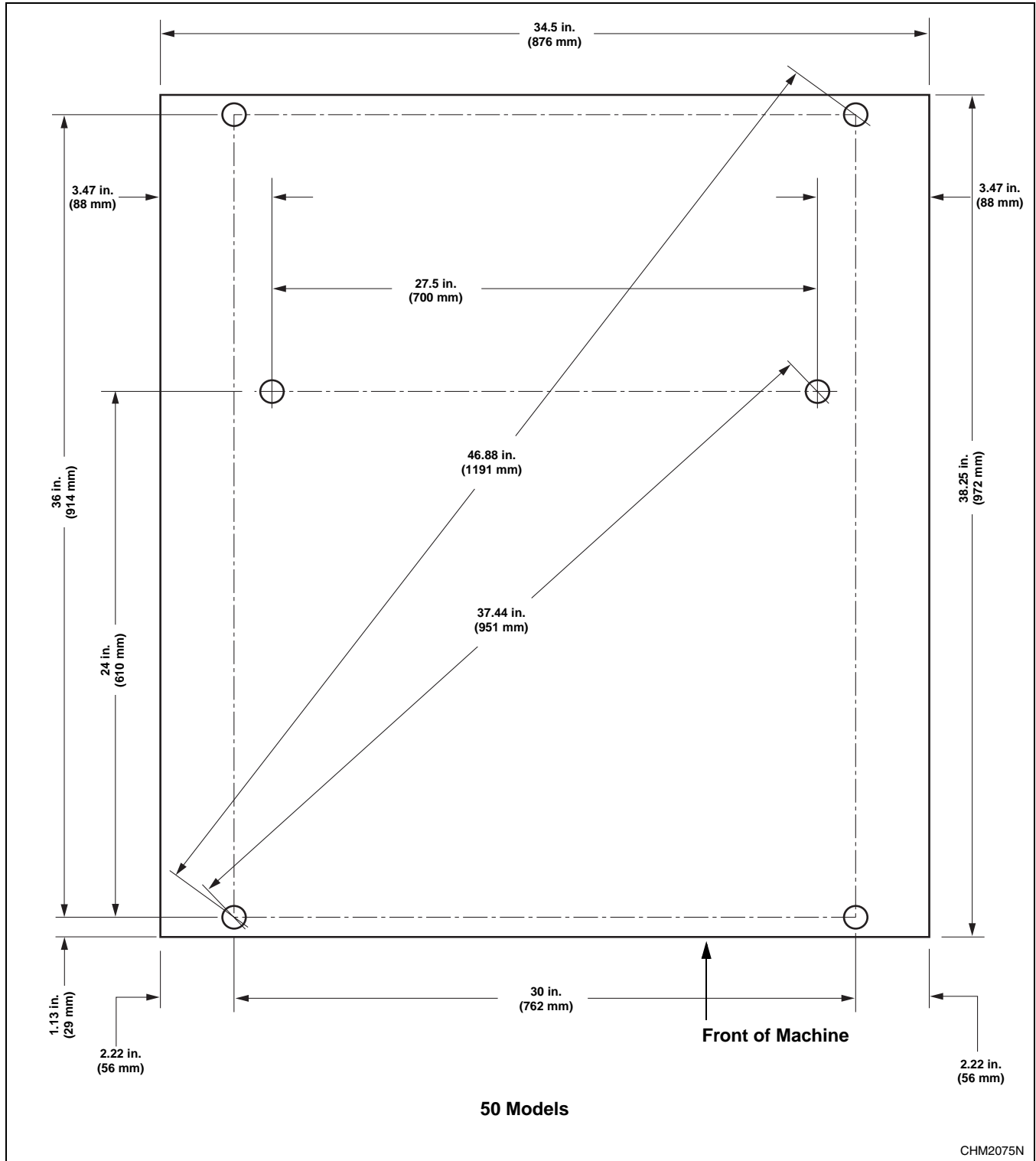


Figure 30

IMPORTANT: Drawing is not to scale.

Mounting Bolt Hole Locations (With Elevated Base Frames)

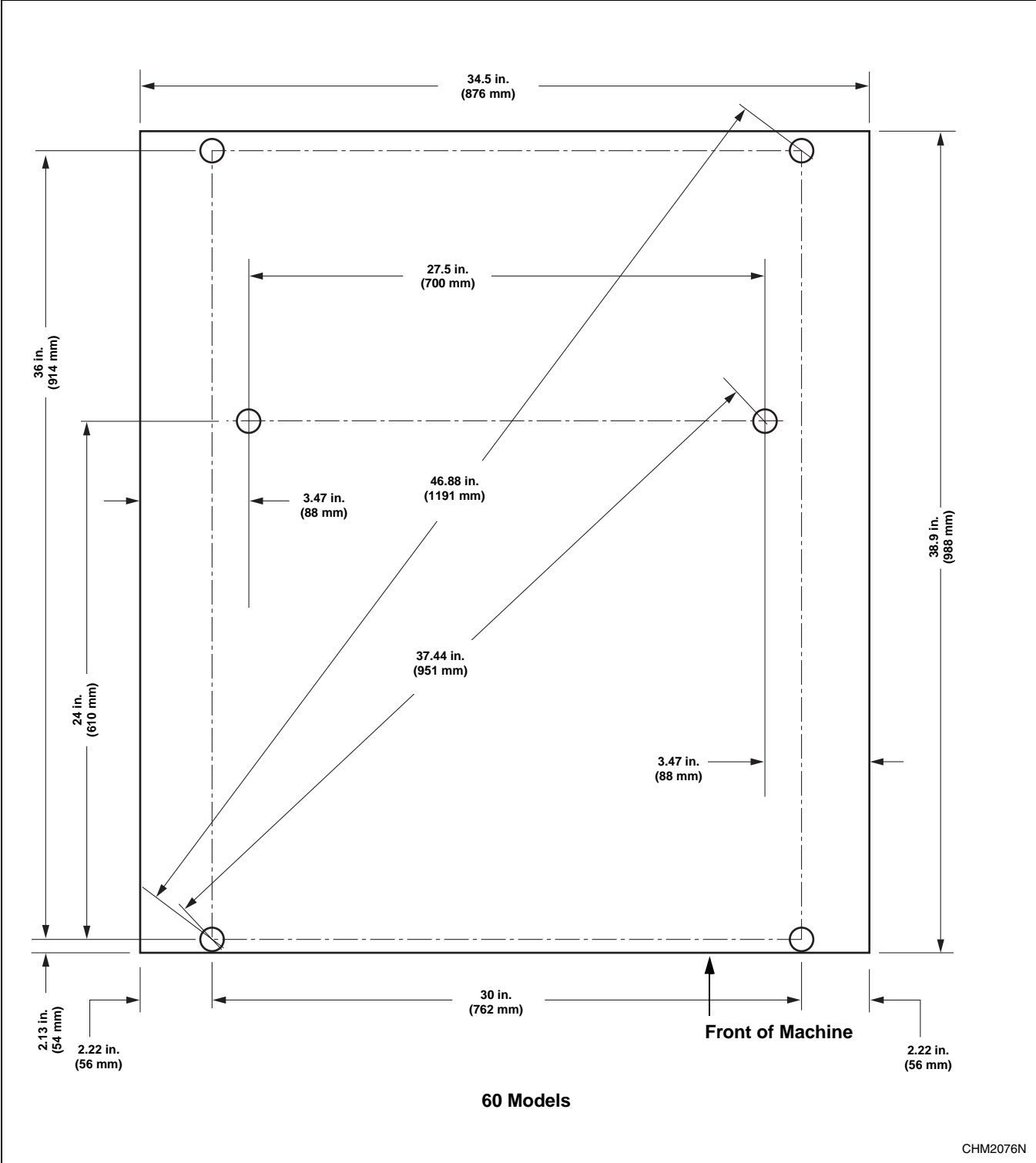


Figure 31

IMPORTANT: Drawing is not to scale.

Installation

Elevated Base Frame Installation

Factory-built elevated steel base frames are designed to meet the specifications of the 20-60 2 speed, F-speed and A-control variable-speed model washer-extractors only. Refer to *Figure 32*. The spacing between two machines provided by an elevated base is .38 inch (9.5 mm) in 20, 25, 30 and 60 pound models and .25 inch (6.3 mm) in 40 pound models.

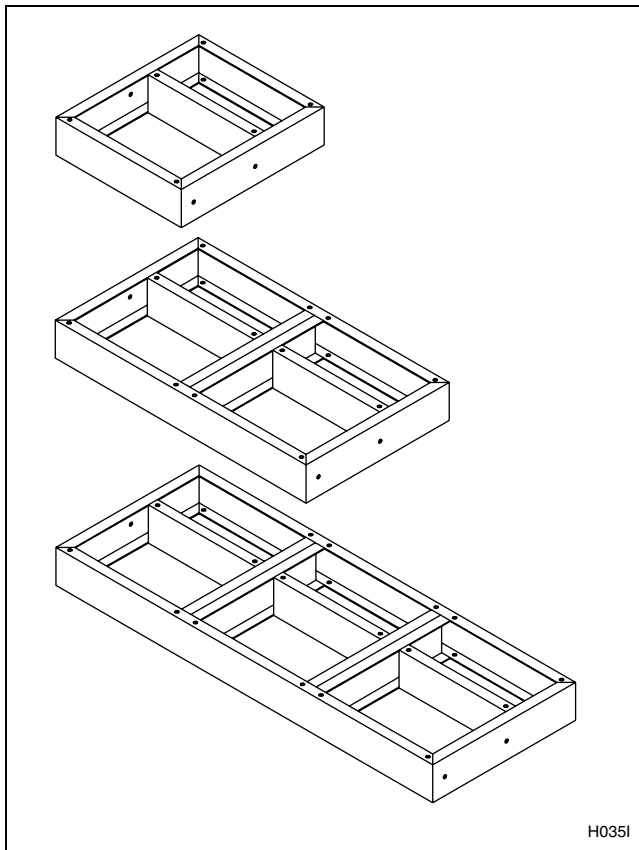


Figure 32

Installing With Elevated Base Frame

1. Verify the floor meets the requirements given in the ***Machine Foundation*** section.
2. Use the elevated base frame as a template by positioning the frame in the desired location and marking the pre-drilled mounting holes on the floor.

3. Adjust the drill depth gauge to match the length of the J-bolt, minus 1.5 inches (38 mm).
4. Drill and chisel out a conical hole large enough to accept the J-bolt. Refer to *Figure 33*.

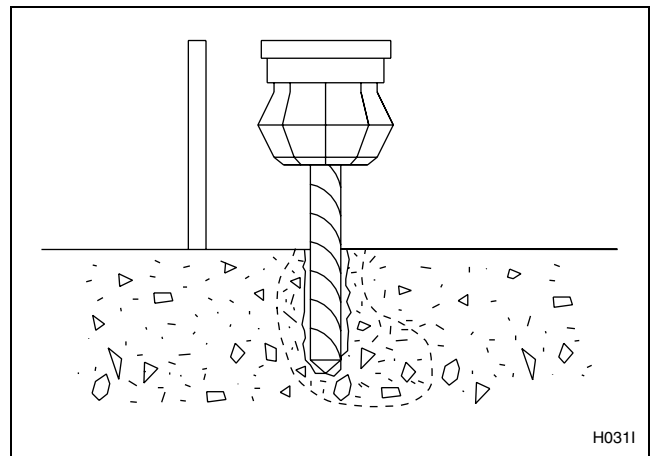


Figure 33

5. Use compressed air or a squeeze bulb to remove debris from each hole.
6. Verify that the J-bolts are in the correct locations and that 1.5 inches (38 mm) of each J-bolt protrude from the floor. Refer to *Figure 34*.
7. Anchor J-bolt in place, using an industry-accepted anchoring compound.

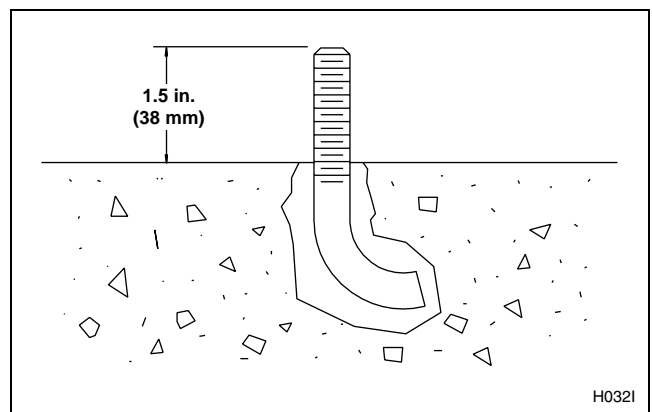


Figure 34

8. Raise and level the base frame .5 inch (13 mm) off the floor on three points, using spacers such as nut fasteners.
9. Fill the space between the frame base and the floor with a good quality non-shrinking machinery grout to ensure a stable installation. Grout completely under all frame members.
10. Remove the spacers carefully, allowing the base frame to settle into the wet grout.
11. Before grout sets completely, make a drain opening in the grouting at the rear of the base frame with a stiff piece of wire. This opening should be approximately .5 inch (13 mm) wide to allow any surface water build-up under the base of the machine to drain away. **Do not omit this step.**
12. Position washers and locknuts on J-bolts and fingertighten nuts to base frame.
13. After the grout is completely dry, tighten locknuts by even increments – one after the other – until all are tightened evenly and the base frame is fastened securely to the floor. Refer to *Figure 14*.
14. Position the machine over the base frame, aligning the mounting holes on the machine with the corresponding holes on the frame.
15. Install a bolt, lockwasher, and nut in each mounting hole. Use .63 inch – 18 x 2 grade 5 mounting bolts with .63 inch – 18 grade B nuts and .63 inch lockwashers.
16. Handtighten each nut.
17. Tighten the two rear nuts two turns.
18. Tighten the two front nuts two turns.
19. On 25, 27, 30, 35, 40, 50 and 60 models, tighten the two middle nuts firmly.
20. Tighten the two front nuts firmly; tighten the two rear nuts firmly.

NOTE: Check and retighten the locknuts after five to ten days of operation and every three months thereafter.

Installation

Gap Setting for Vibration Switch (Variable-Speed and Fixed-Speed Models)

		18, 20	27, 30	35	40	50	60	80	125
Switch gap setting*, in. (mm)	Trip	0.015 (0.38)	0.025 (0.64)	0.030 (0.76)	0.020 (0.51)	0.025 (0.64)	0.013 (0.20)	0.009 (0.23)	0.006 (0.15)
Switch gap setting*, in. (mm)	No Trip	0.025 (0.64)	0.035 (0.89)	0.040 (1.02)	0.030 (0.64)	0.035 (0.89)	0.015 (0.25)	0.011 (0.28)	0.008 (0.20)
* Gap setting should be made with "GO-NO-GO" type feeler gauge. Lower value must not trip switch. Upper value must trip switch.									

Table 4

After the machine has been properly installed, the vibration switch gap must be measured before conducting the Control Function Test. Locate the gap found between the vibration switch and the machine structure. Refer to *Figure 35* through *Figure 39*. To check the gap setting of the switch, proceed as follows:

1. Remove the front panel on 18-50 models.
Remove the rear panel on 60-80 models. Remove the top cover on the 125 model. The switch can be seen inside the bottom right corner of the A-frame, mounted on a bracket. Refer to *Figure 35* through *Figure 39*.
2. Measure the gap distance when the switch is in both the open and closed positions. The specifications should be at the minimum switch gap setting when the switch is open and at the maximum switch gap setting when the switch is closed. Refer to *Table 4*. If these distances are not correct, adjust the balance switch to these specifications.

NOTE: The standard position of the switch is open, or non-tripped.

3. Tighten nuts on switch extension after adjusting the gap. Measure the gap distance to verify accurate setting.
4. Re-install any panels removed.

For 18, 20, 25, 27, 30 and 35 Pound Capacity Machines

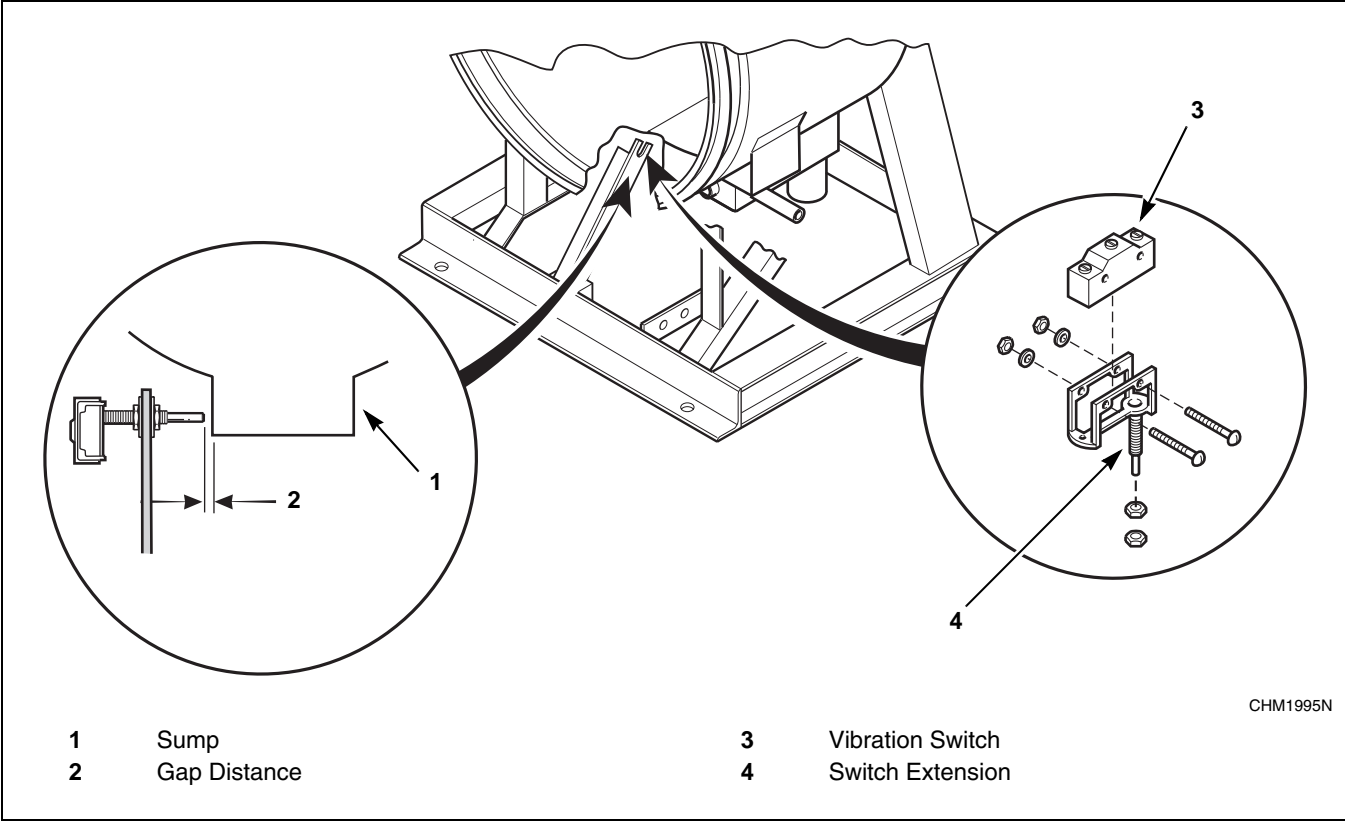


Figure 35

Installation

*For 40 and 50 Pound Capacity Variable-Speed
and Fixed-Speed Machines*

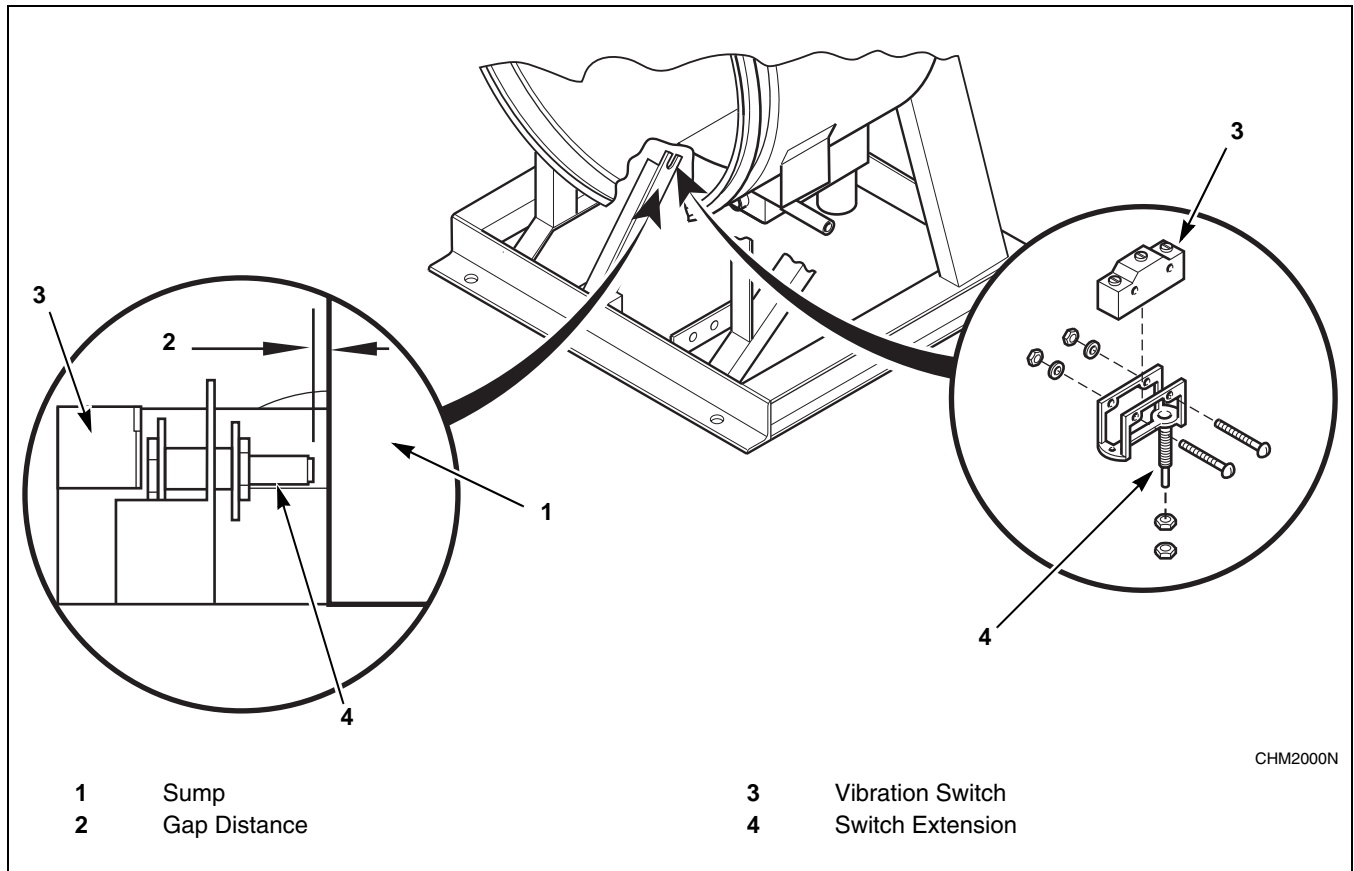


Figure 36

For 60 Pound Capacity Variable-Speed and Fixed-Speed Machines

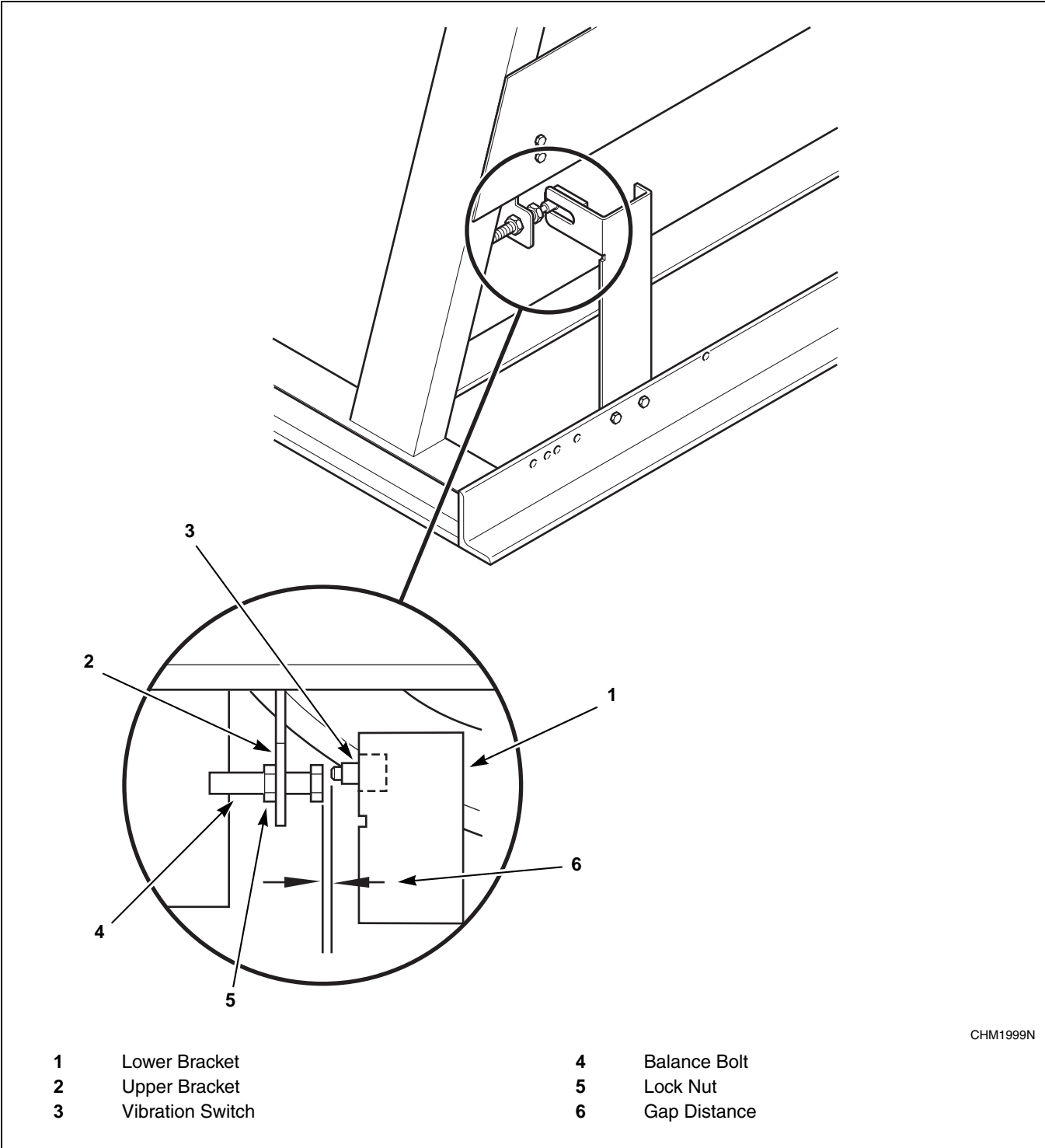


Figure 37

Installation

For 80 Pound Capacity Machines

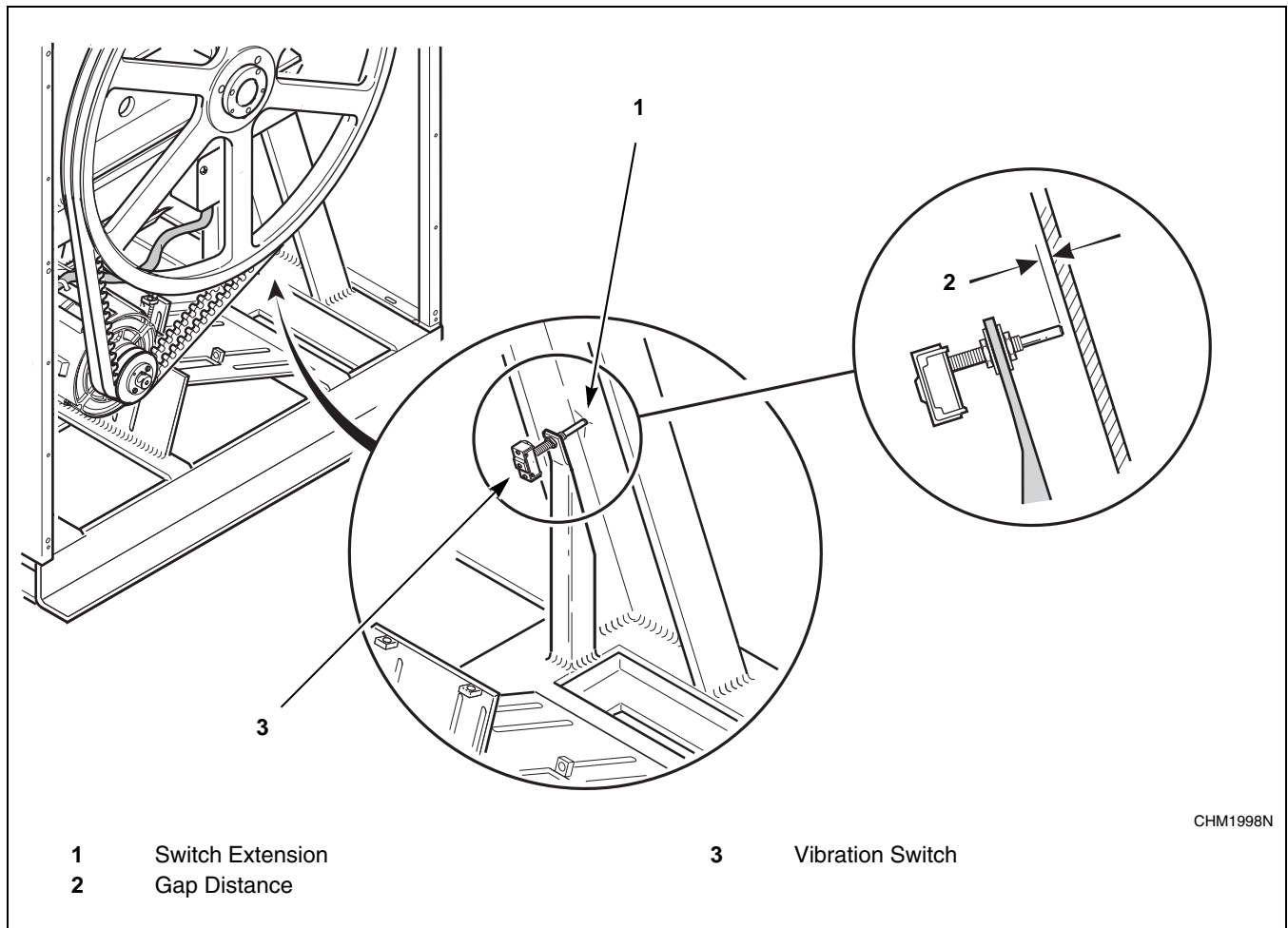


Figure 38

For 125 Pound Capacity Machines

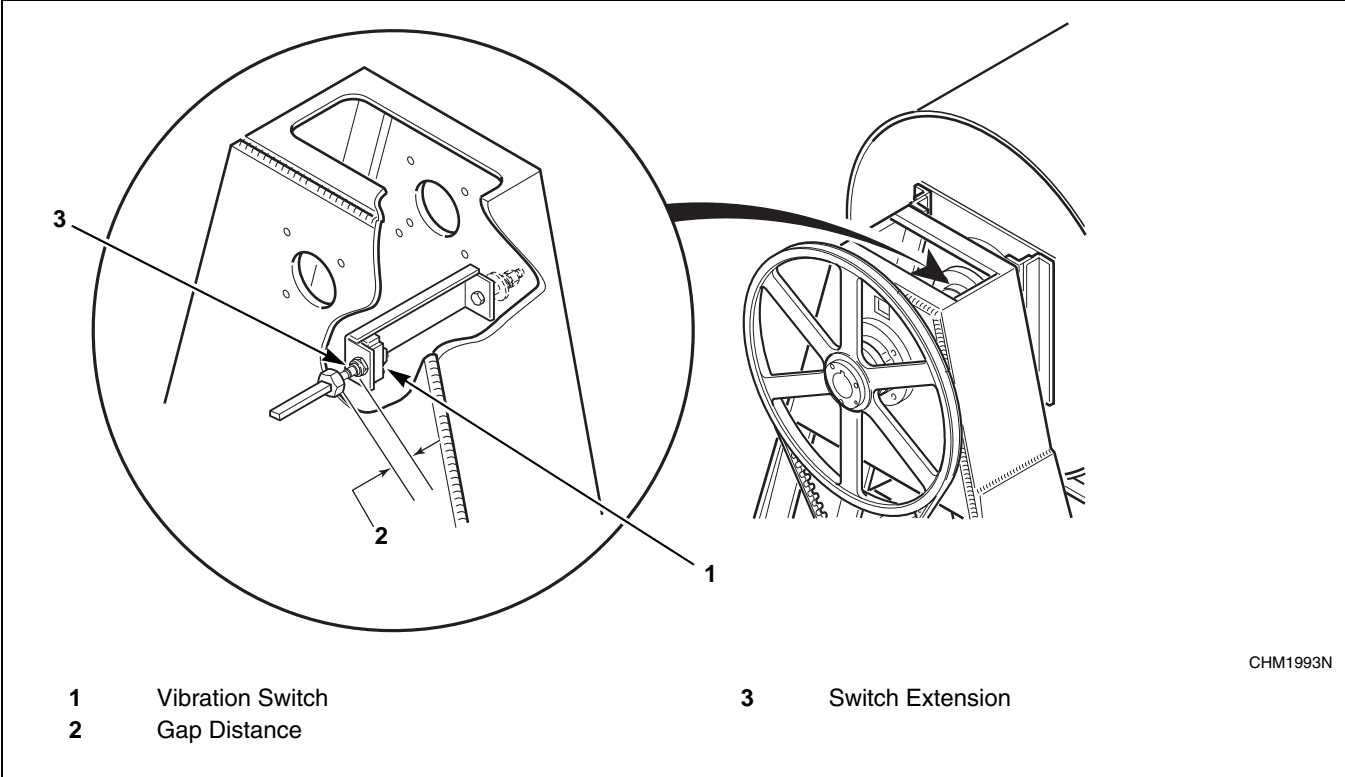


Figure 39

Installation

Drain Connection

Figure 40 and Figure 41 show typical drain trough and drain line installations.

Connect the drain outlet to a vented drain system using only a flexible connection. The drain system must be vented to prevent an air lock or siphoning.

Use the supplied black rubber adapter and clamps to transition from the machine drain outlet to the 2 inches schedule 40 PVC plumbing (20, 25 and 30 models) and the 3 inches schedule PVC plumbing (40, 60 and 80 models).

If proper drain size is not available or practical, a surge tank is required. A surge tank along with a sump pump should be used when gravity drainage is not possible, such as in below-ground-level installations.

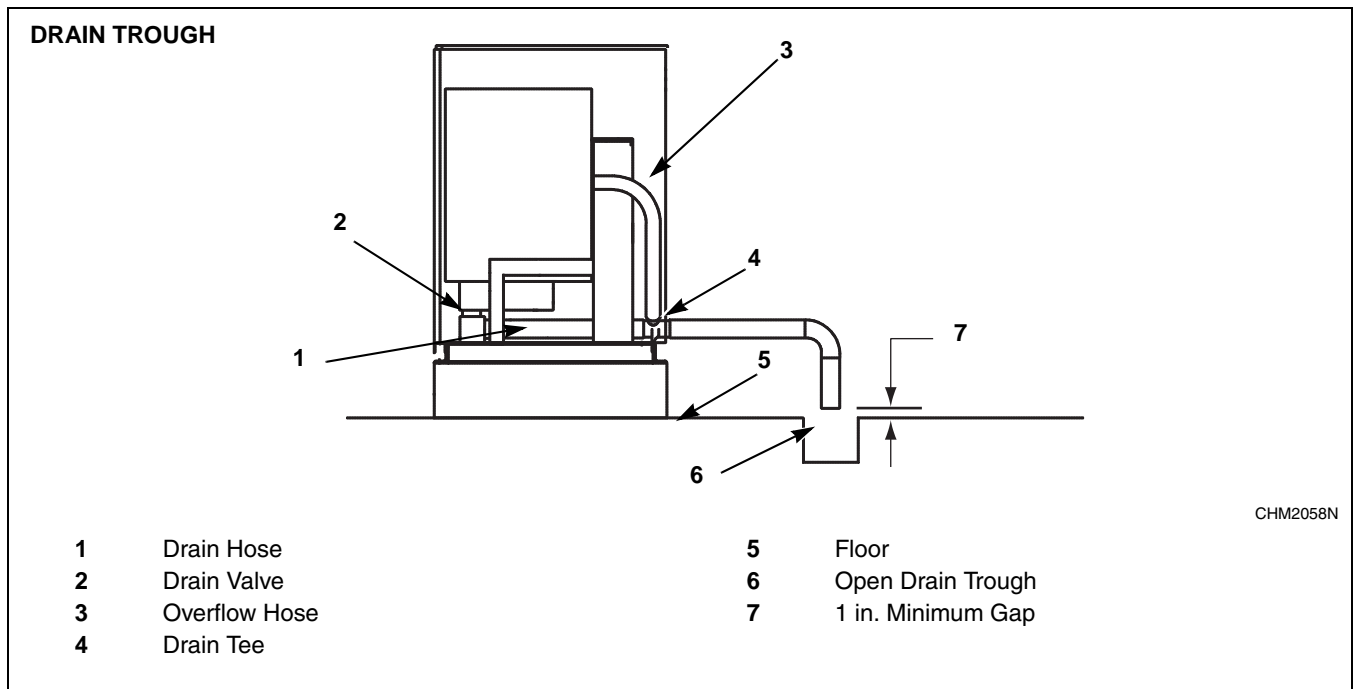


Figure 40

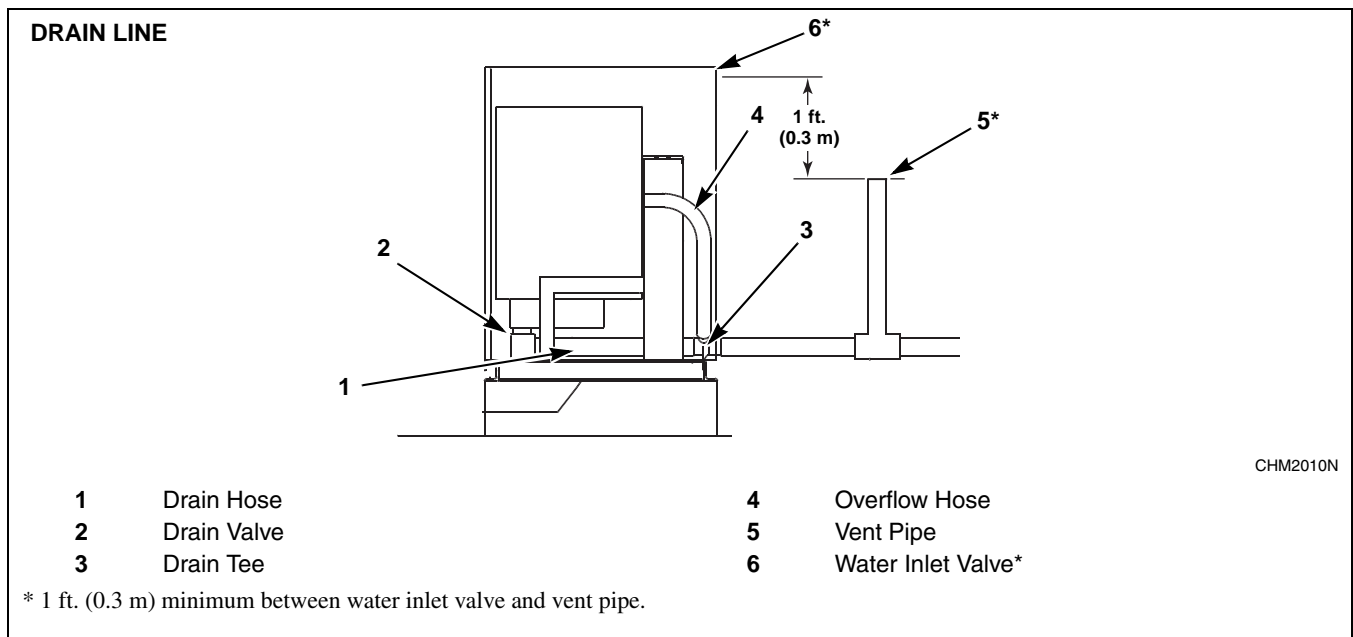


Figure 41

Drain Connection

NOTE: This is for models with a pump drain option only.

The standpipe or drain receptacle must be capable of handling a minimum of 1.5 inches (3.8 cm) outside diameter drain hose. Refer to *Figure 42*. The drain hose should fit loose within the standpipe (it should not be a snug fit). Never install the drain hose into a “sealed” drain system as air cannot escape and will restrict the water from being drained from the washer. A sealed drain system may also allow water to be siphoned back into the washer. Both of these conditions may result in flooding of the washer.

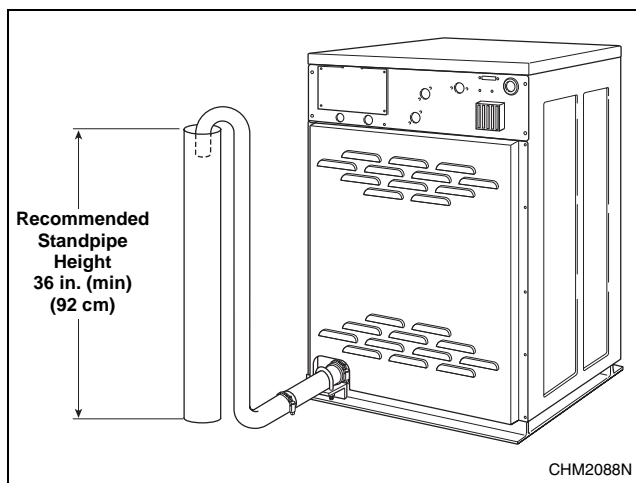


Figure 42

Installation

Before any deviation from specified installation procedures is attempted, the customer or installer should contact the distributor.

IMPORTANT: Increasing the drain hose length, installing elbows, or causing bends will decrease drain flow rates and increase drain times, impairing machine performance.

Refer to *Table 5* for capacity-specific drain information.

NOTE: Installation of additional machines will require larger drain connections. Refer to *Table 6*.

Drain Information									
	18, 20	25	27, 30	35	40	50	60	80	125
Drain connection size, OD	2 in. (51 mm)	2 in. (51 mm)	2 in. (51 mm)	2 in. (51 mm)	3.5 in.* (89 mm)	3.5 in.* (89 mm)	3.5 in.* (89 mm)	3.5 in.* (89 mm)	3.5 in.* (89 mm)
Number of drain outlets	1	1	1	1	1	1	1	1	1
Drain flow capacity	20 gal/min (76 l/min)	25 gal/min (95 l/min)	25 gal/min (95 l/min)	35 gal/min (132 l/min)	45 gal/min (170 l/min)	50 gal/min (189 l/min)	55 gal/min (151 l/min)	50 gal/min (189 l/min)	70 gal/min (265 l/min)
Recommended drain pit size	1.80 ft ³ (51 l)	2.36 ft ³ (66.8 l)	2.50 ft ³ (70.3 l)	3.14 ft ³ (88.9 l)	4.14 ft ³ (117 l)	4.52 ft ³ (128 l)	5.35 ft ³ (151 l)	5.90 ft ³ (169 l)	13 ft ³ (368 l)

* Also works with 3 in. OD PVC pipe if connected to inside of drain tee connector.

Table 5

Drain Line Sizing Minimum Drain ID					
Model	Number of Machines				
	1	2	3	4	5
18, 20	2 in. (51 mm)	3 in. (76 mm)	3 in. (76 mm)	4 in. (102 mm)	4 in. (102 mm)
25	2 in. (51 mm)	3 in. (76 mm)	3 in. (76 mm)	4 in. (102 mm)	4 in. (102 mm)
27, 30	2 in. (51 mm)	3 in. (76 mm)	3 in. (76 mm)	4 in. (102 mm)	4 in. (102 mm)
35	3 in. (76 mm)	3 in. (76 mm)	3.5 in. (89 mm)	4 in. (102 mm)	4 in. (102 mm)
40	3 in. (76 mm)	4 in. (102 mm)	4 in. (102 mm)	4 in. (102 mm)	6 in. (152 mm)
50	3 in. (76 mm)	4 in. (102 mm)	4 in. (102 mm)	4 in. (102 mm)	6 in. (152 mm)
60	3 in. (76 mm)	4 in. (102 mm)	4 in. (102 mm)	4 in. (102 mm)	6 in. (152 mm)
80, 125	4 in. (102 mm)	6 in. (152 mm)	6 in. (152 mm)	8 in. (203 mm)	8 in. (203 mm)

Table 6

Water Connection Requirements

Connections should be supplied by a hot and a cold water line of at least the sizes shown in *Table 8*. Installation of additional machines will require proportionately larger water lines.

To connect water service to a machine with rubber hoses, use the following procedure:

1. Before installing hoses, flush the water system for at least 2 minutes.
2. Check filters in the machine’s inlet hoses for proper fit and cleanliness before connecting.
3. Hang hoses in a large loop; do not allow them to kink.

If additional hose lengths are needed, use flexible hoses with screen filters.

Cabinet Hardmount Water Supply Information	
Water Inlet Connection size, in. (mm)	.75 (19)
Number of water inlets	2
Recommended pressure, psi (bar)	30 - 85 (2 - 5.7)
Inlet flow capacity, gal-min/l-min (80 psi)	12 (45)

Table 7

Water Supply Line Sizing			
Model	Number of Machines	Supply Line Size	
		Main	Hot/Cold
18 - 60	1	.75 in. (19 mm)	.75 in. (19 mm)
	2	1 in. (25 mm)	.75 in. (19 mm)
	3	1.25 in. (32 mm)	1 in. (25 mm)
	4	1.5 in. (38 mm)	1 in. (25 mm)
80	1	1 in. (25 mm)	.75 in. (19 mm)
	2	1.5 in. (38 mm)	1 in. (25 mm)
	3	2 in. (50 mm)	1.25 in. (32 mm)
	4	2 in. (50 mm)	1.5 in. (38 mm)
125	1	1.5 in. (38 mm)	1 in. (25 mm)
	2	2 in. (50 mm)	1.5 in. (38 mm)
	3	2 in. (50 mm)	2 in. (50 mm)
	4	2.5 in. (70 mm)	2 in. (50 mm)

Table 8

Suitable air cushions should be installed in supply lines to prevent “hammering.” Refer to *Figure 43*.

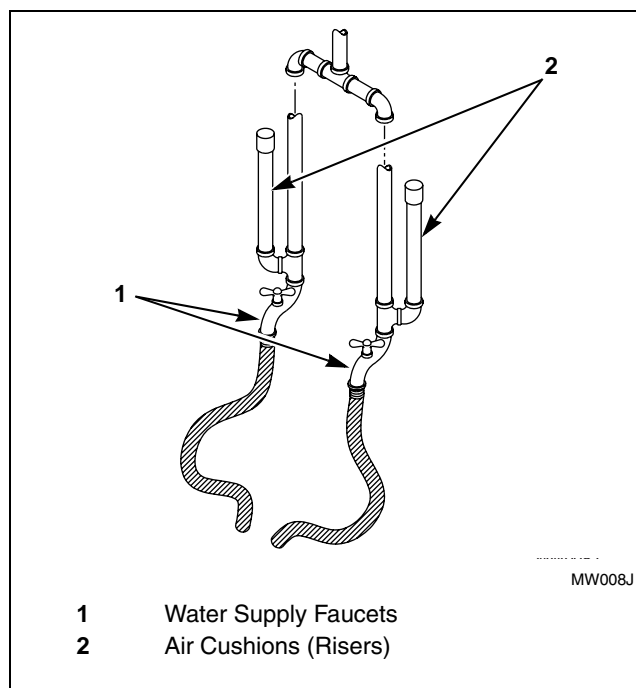




Figure 43


	WARNING
<p>To avoid personal injury, recommended inlet water temperature should be no higher than 125° Fahrenheit (51° Celsius).</p>	
W709	

Electrical Installation Requirements

IMPORTANT: Electrical ratings are subject to change. Refer to serial decal for electrical ratings information specific to your machine.

	WARNING
<p>Hazardous Voltage. Can cause shock, burn or cause death. Allow machine power to remain off for two minutes prior to working in and around AC inverter drive.</p>	
<small>W359</small>	

	WARNING
<p>Dangerous voltages are present in the electrical control box(es) and at the motor terminals. Only qualified personnel familiar with electrical test procedures, test equipment, and safety precautions should attempt adjustments and troubleshooting. Disconnect power from the machine before removing the control box cover, and before attempting any service procedures.</p>	
<small>SW005</small>	

	WARNING
<p>Hazardous Voltage. Can cause shock, burn or death. Verify that a ground wire from a proven earth ground is connected to the lug near the input power block on this machine.</p>	
<small>W360</small>	

Machines equipped with an AC inverter drive require a clean power supply, free from voltage spikes and surges. Use voltage monitor to check incoming power. The customer’s local power company may provide such a monitor.

Input Voltage Requirements

If input voltage measures above rated maximum voltage, ask the power company to lower voltage. For voltages above or below listed specifications, contact Customer Service or a distributor for buck/boost transformer recommendation. Refer to *Electrical Specification* section.


If machine is intended for four-wire service, a neutral leg must be provided by power company.


If a delta supply system is used on a four-wire model, connect high leg to L3.

IMPORTANT: Alliance Laundry Systems warranty does not cover components that fail as a result of improper input voltage.

IMPORTANT: Improper connections will result in equipment damage and will void warranty.

IMPORTANT: For machines with X voltage: If input power is single-phase, connect L1 to R of terminal block and L2 to S of terminal block. Leave T unconnected on the input terminal block. If input power is three-phase, connect L1, L2 and L3 to R, S and T of the terminal block.

	WARNING
<p>Never touch terminals or components of the AC inverter drive unless power is disconnected and the “CHARGE” indicator LED is off. The AC inverter drive retains potentially deadly voltage for some time after the power is disconnected. There are no user-serviceable parts inside the AC inverter drive. Tampering with the drive will void the warranty.</p>	
<small>SW009</small>	

	DANGER
<p>Hazardous Rotation Speed. Will cause serious injury when controlling AC inverter drive with a parameter unit, safety features are bypassed allowing basket to rotate at high speeds with the door open. Place large sign on front of machine to warn people of imminent danger.</p>	
<small>W361</small>	

Circuit Breakers

Single-phase machines require a single-phase inverse-time circuit breaker. Three-phase machines and variable-speed machines require a separate, three-phase inverse-time circuit breaker to prevent damage to the motor by disconnecting all legs if one should be lost accidentally. Check the nameplate decal on the back of the machine. Refer to *Table 9* through *Table 18* in this section for model-specific circuit breaker requirements.

Connection Specifications

IMPORTANT: Connection must be made by a qualified electrician using wiring diagram provided with machine, or according to accepted European standards for CE-approved equipment.

Connect machine to an individual branch circuit not shared with lighting or other equipment. Shield connection in a liquid-tight or approved flexible conduit. Copper conductors of correct size must be installed in accordance with National Electric Code (NEC) or other applicable codes.

Use wire sizes indicated in the Electrical Specifications chart for runs up to 50 feet (15 m). Use next larger size for runs of 50 to 100 feet (15 to 30 m). Use two sizes larger for runs greater than 100 feet (30 m).

Grounding

For personal safety and proper operation, the machine must be grounded in accordance with state and local codes. If such codes are not available, grounding must conform to the National Electric Code, article 250 (current edition). The ground connection must be made to a proven earth ground, not to conduit or water pipes.

Do not connect ground to neutral (N-white wire) leg at terminal strip.

Phase Adder

If three-phase service is unavailable for a 2 speed model and a Roto-Phase or other phase adder is used, connect artificial leg to L3 in input power junction box.

IMPORTANT: Do not use a phase adder on any variable-speed machine.

Thermal Overload Protector

Two speed machines have thermal overload protectors in drive motor windings and a separate fuse for control circuit.

For variable-speed machines, the AC drive provides overload protection for the drive motor.

Installation

Electrical Specifications 18 and 20 Pound Capacity Models												
Voltage Designation					Standard				Electric Heat			
Code	Voltage	Cycle	Phase	Wire	Full Load Amps	Circuit Breaker	AWG	mm ²	Full Load Amps	Circuit Breaker	AWG	mm ²
2 Speed Models												
B	120	60	1	2	16	20	12	4.0	N/A			
C	380 – 415	50	3	4	4	15	14	2.5	14	15	14	2.5
D	220 – 240	50	3	3	4	15	14	2.5	24	30	10	6
E	220 – 240	50	1	2	10	20	12	4.0	40	50	6	16
F	440 – 480	60	3	3	4	15	14	2.5	16	20	12	4
J	200	50	3	3	3	15	14	2.5	20	30	10	6
O	208 – 240	60	3	3	5	15	14	2.5	24	30	10	6
Y	208 – 240	60	1	2	10	15	14	2.5	42	50	6	16
Variable-Speed Models												
Q	200 – 240	50/60	3	3	4	15	14	3x2.5	23	25	10	3x6

NOTE: Wire sizes shown are for copper, THHN, 90° conductor per NEC article 310.

Table 9

Electrical Specifications 25 Pound Capacity Models												
Voltage Designation					Standard				Electric Heat			
Code	Voltage	Cycle	Phase	Wire	Full Load Amps	Circuit Breaker	AWG	mm ²	Full Load Amps	Circuit Breaker	AWG	mm ²
2 Speed Models												
C	380 – 415	50	3	4	4	15	14	2.5	15	20	12	4.0
D	220 – 240	50	3	3	6	15	14	2.5	24	30	10	6.0
E	220 – 240	50	1	2	10	20	12	4.0	42	50	6	16.0
F	440 – 480	60	3	3	4	15	14	2.5	16	20	12	4.0
J	200	50	3	3	5	15	14	2.5	21	30	10	6.0
O	208 – 240	60	3	3	6	15	14	2.5	24	30	10	6.0
Y	208 – 240	60	1	2	10	20	12	4.0	42	50	6	16.0

NOTE: Wire sizes shown are for copper, THHN, 90° conductor per NEC article 310.

Table 10

Electrical Specifications 27 Pound Capacity Models												
Voltage Designation					Standard				Electric Heat			
Code	Voltage	Cycle	Phase	Wire	Full Load Amps	Circuit Breaker	AWG	mm ²	Full Load Amps	Circuit Breaker	AWG	mm ²
2 Speed Models												
C	380-415	50	3	4	4	15	14	2.50	15	15	14	2.50
D	220-240	50	3	3	6	15	14	2.50	24	25	10	6.00
E	220-240	50	1	2	10	20	12	4.00	42	45	6	16.0
F	440-480	60	3	3	4	15	14	2.50	16	20	12	4.00
O	208-240	60	3	3	7	15	14	2.50	25	25	10	6.00
U	380	50	3	4	4	15	14	2.50	15	15	14	2.50
	240	50	3	3	6	15	14	2.50	24	25	10	6.00
Y	208-240	60	1	2	10.5	20	12	4.00	N/A			
Variable-Speed Models												
O	208-240	60	3	3	4.8	15	14	2.50	N/A			
Y	208-240	60	1	2	4.8	15	14	2.50	N/A			
NOTE: Wire sizes shown are for copper, THHN, 90° conductor per NEC article 310.												

Table 11

Installation

Electrical Specifications 30 Pound Capacity Models												
Voltage Designation					Standard				Electric Heat			
Code	Voltage	Cycle	Phase	Wire	Full Load Amps	Circuit Breaker	AWG	mm ²	Full Load Amps	Circuit Breaker	AWG	mm ²
2 Speed Models												
C	380 – 415	50	3	4	4	15	14	2.5	15	20	12	4.0
D	220 – 240	50	3	3	6	15	14	2.5	25	30	10	6.0
E	220 – 240	50	1	2	10	20	12	4.0	40	50	6	16.0
F	440 – 480	60	3	3	4	15	14	2.5	16	20	12	4.0
J	200	50	3	3	5	15	14	2.5	21	25	10	6.0
O	208 – 240	60	3	3	7	15	14	2.5	25	30	10	6.0
Y	208 – 240	60	1	2	10	20	12	4.0	43	50	6	16.0
Variable-Speed Models												
Q	200 – 240	50/60	3	3	5	15	14	3x2.5	23	25	10	3x6.0

NOTE: Wire sizes shown are for copper, THHN, 90° conductor per NEC article 310.

Table 12

Electrical Specifications 35 Pound Capacity Models												
Voltage Designation					Standard				Electric Heat			
Code	Voltage	Cycle	Phase	Wire	Full Load Amps	Circuit Breaker	AWG	mm ²	Full Load Amps	Circuit Breaker	AWG	mm ²
2 Speed Models												
C	380 – 415	50	3	4	5	15	14	2.5	26	30	10	6
D	220 – 240	50	3	3	7	20	12	4	43	50	6	16
F	440 – 480	60	3	3	5	15	14	2.5	26	30	10	6
O	208 – 240	60	3	3	7	20	12	4	43	50	6	16
Y	208 – 240	60	1	2	12	25	10	6	N/A			
Variable-Speed Models												
N	440 – 480	50/60	3	3	2.3	15	14	3x2.5	27.3	30	10	3x6
P	380 – 415	50/60	3	3	2.3	15	14	3x2.5	24	25	10	3x6
Q	208 – 240	50/60	3	3	5.9	15	14	3x2.5	43.4	45	6	3x16
T	208 – 240	50/60	1	2	5.9	15	14	2x2.5	N/A			
X	200 – 240	50/60	1 or 3	2 or 3	5.9/5.9	15	14	2x2.5 3x2.5	N/A			

NOTE: Wire sizes shown are for copper, THHN, 90° conductor per NEC article 310.

Table 13

Electrical Specifications 40 Pound Capacity Models												
Voltage Designation					Standard				Electric Heat			
Code	Voltage	Cycle	Phase	Wire	Full Load Amps	Circuit Breaker	AWG	mm ²	Full Load Amps	Circuit Breaker	AWG	mm ²
2 Speed Models												
C	380 – 415	50	3	4	5	15	14	2.5	26	30	10	6.0
D	220 – 240	50	3	3	8	15	14	2.5	46	50	6	16.0
F	440 – 480	60	3	3	5	15	14	2.5	29	30	10	6.0
J	200	50	3	3	8	20	12	4.0	39	50	6	16.0
O	208 – 240	60	3	3	7	20	12	4.0	44	50	6	16.0
Y	208 – 240	60	1	2	14	30	10	6.0	N/A			
Variable-Speed Models												
N	440 – 480	50/60	3	3	3	15	14	2.5	28	30	10	6.0
P	380 – 415	50/60	3	3	3	15	14	2.5	25	30	10	6.0
Q	200 – 240	50/60	3	3	4	15	14	2.5	42	50	6	16.0
X	200 – 240	50/60	1 or 3	2 or 3	11	15	14	2.5	N/A			
NOTE: Wire sizes shown are for copper, THHN, 90° conductor per NEC article 310.												

Table 14

Installation

Electrical Specifications 50 Pound Capacity Models												
Voltage Designation					Standard				Electric Heat			
Code	Voltage	Cycle	Phase	Wire	Full Load Amps	Circuit Breaker	AWG	mm ²	Full Load Amps	Circuit Breaker	AWG	mm ²
2 Speed Models												
C	380 – 415	50	3	4	6	15	14	4x2.5	39	50	6	16
D	220 – 240	50	3	3	10	20	12	3x4	64	70	4	25
E	220 – 240	50	1	2	15	30	10	2x6	N/A			
F	440 – 480	60	3	3	6	15	14	3x2.5	39	50	6	16
J	200	50	3	3	10	20	12	3x4	39	50	6	16
O	208 – 240	60	3	3	10	20	12	3x4	64	70	4	25
Y*	208 – 240	60	1	2	15	30	10	2x6	N/A			
Variable-Speed Models												
N	440 – 480	50/60	3	3	4	15	14	3x2.5	41.6	45	8	3x10
P	380 – 415	50/60	3	3	4	15	14	3x2.5	36.5	40	8	3x10
Q	200 – 240	50/60	3	3	6.3	15	14	3x2.5	62.6	70	4	3x25
T	200 – 240	50/60	1	2	6.3	15	14	2x2.5	N/A			
X	200 – 240	50/60	1 or 3	2 or 3	6.3/6.3	15	14	2x2.5 3x2.5	N/A			
NOTE: Wire sizes shown are for copper, THHN, 90° conductor per NEC article 310. *Coin models only.												

Table 15

Electrical Specifications 60 Pound Capacity Models												
Voltage Designation					Standard				Electric Heat			
Code	Voltage	Cycle	Phase	Wire	Full Load Amps	Circuit Breaker	AWG	mm ²	Full Load Amps	Circuit Breaker	AWG	mm ²
2 Speed and Fixed-Speed Models												
C	380-415	50	3	4	4	15	14	2.5	37	40	8	10.0
D	220-240	50	3	3	7	20	12	4.0	63	70	4	25.0
F	440-480	60	3	3	4	15	14	2.5	41	50	6	16.0
J	200	50	3	3	8	20	12	4.0	55	60	4	25.0
O	208-240	60	3	3	10	20	12	4.0	66	70	4	25.0
Variable-Speed Models												
N	440-480	50/60	3	3	4	15	14	2.5	42	50	8	10.0
P	380-415	50/60	3	3	5	15	14	2.5	37	40	8	10.0
Q	200-240	50/60	3	3	5	15	14	2.5	61	70	4	25.0
X	200-240	50/60	1/3	2/3	9	15	14	2.5	N/A	N/A	N/A	N/A
NOTE: Wire sizes shown are for copper, THHN, 90° conductor per NEC article 310.												

Table 16

Installation

Electrical Specifications 80 Pound Capacity Models												
Voltage Designation					Standard				Electric Heat			
Code	Voltage	Cycle	Phase	Wire	Full Load Amps	Circuit Breaker	AWG	mm ²	Full Load Amps	Circuit Breaker	AWG	mm ²
Variable-Speed Models												
N	440 – 480	50/60	3	3	4	15	14	2.5	42	50	6	16.0
P	380 – 415	50/60	3	3	4	15	14	2.5	37	40	8	10.0
Q	200 – 240	50/60	3	3	7	15	14	2.5	82	90	2	35.0

NOTE: Wire sizes shown are for copper, THHN, 90° conductor per NEC article 310.

Table 17

Electrical Specifications 125 Pound Capacity Models												
Voltage Designation					Standard				Electric Heat			
Code	Voltage	Cycle	Phase	Wire	Full Load Amps	Circuit Breaker	AWG	mm ²	Full Load Amps	Circuit Breaker	AWG	mm ²
Variable-Speed Models												
N	440 – 480	50/60	3	3	9	15	14	2.5	N/A			
P	380 – 415	50/60	3	3	9	15	14	2.5	N/A			
Q	200 – 240	50/60	3	3	16	20	12	4.0	N/A			

NOTE: Wire sizes shown are for copper, THHN, 90° conductor per NEC article 310.

Table 18


Troubleshooting

If machine fails to operate after power is connected, proceed as follows:

1. Disconnect power.
2. Unlock and raise top cover.
3. Check circuit fuse.
 - *For mechanical timer, P-computer and S-computer models*, control circuit fuse is located on center brace.
 - *For EDC and V-computer models*, dual control circuit fuses (one primary, one secondary) are in control module. A decal identifies fuse(s) and provides fuse-rating appropriate to that specific model.
 - *For NetMaster models*, circuit fuses are located on side of control box.
 - *For A-control and B-control models*, circuit fuses are located on the output board.
4. If control circuit fuse has blown, replace with fuse of appropriate rating as identified by decal.

IMPORTANT: Call a qualified electrician if replacement fuse blows.

Steam Requirements (Steam Heat Option Only)

	WARNING
Hot Surfaces. Will cause severe burns. Turn steam off and allow steam pipes, connections and components to cool before touching.	
W505	


For machines equipped with optional steam heat, install piping in accordance with approved commercial steam practices. Steam requirements are shown in *Table 19*.

Steam Supply Information		
Steam inlet connection size	18 – 80 pound	.5 in. (13 mm)
	125 pound	.75 in. (19 mm)
Number of steam inlets		1
Recommended pressure		30 – 80 psi (2.0 – 5.4 bar)
Maximum pressure		80 psi (5.4 bar)

Table 19

IMPORTANT: Failure to install the customer supplied steam filter may void the warranty.

Supply Dispensing (OPL Machines Only)

	WARNING
<p>Dangerous Chemicals. May damage eyes and skin. Wear eye and hand protection when handling chemicals; always avoid direct contact with raw chemicals. Read the manufacturer's directions for accidental contact before handling chemicals. Ensure an eye-rinse facility and an emergency shower are within easy reach. Check at regular intervals for chemical leaks.</p>	
W363	

Supply Dispensing			
Capacities	18, 20, 30, 40, 60, 80	25, 27, 35, 50	125
Number of dry supply compartments	3	3	0 or 5 (optional)
Number of liquid supply connections (OPL only)	4	5	5
Liquid supply connection size	.31 in. (8 mm)	.31 in. (8 mm)	.63 in. (15.9 mm)

IMPORTANT: Undiluted chemical dripping can damage the machine. All chemical injection supply dispenser pumps and dispenser tubing should be mounted below the washer's injection point. Loops do not prevent drips if these instructions are not followed. Refer to Figure 44.

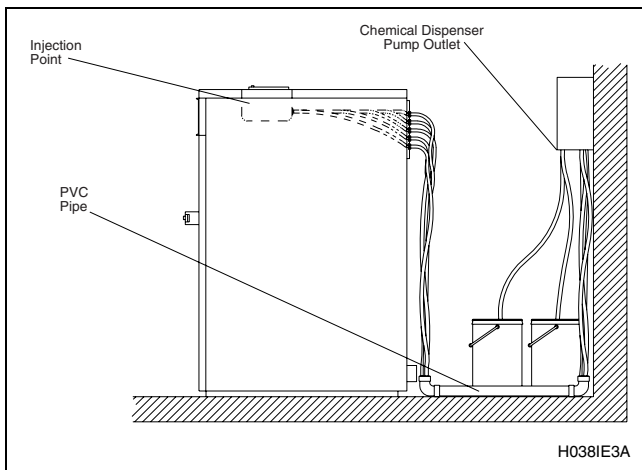


Figure 44

IMPORTANT: Failure to follow these instructions could damage the machine and void the warranty.

Connection of External Liquid Supplies

18 – 80 Pound OPL Models

1. Facing the rear of the machine, locate the 1.5 inches (38 mm) opening found at the upper right-hand side of the valve panel. Refer to Figure 45.

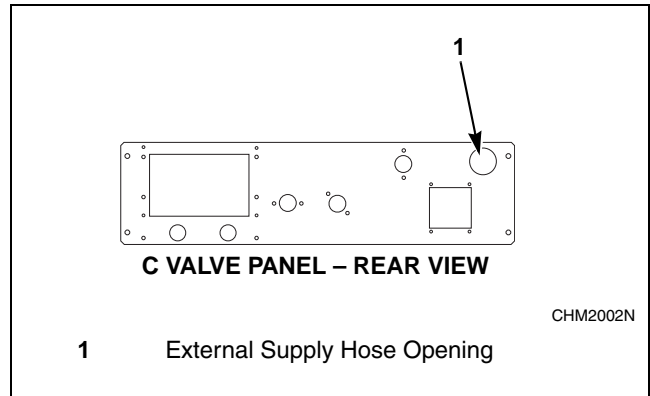


Figure 45

2. Gather external supply hoses and pull through opening.
3. Locate the 4 capped nozzles on the rear of the liquid supply dispenser and remove caps. Refer to Figure 46.

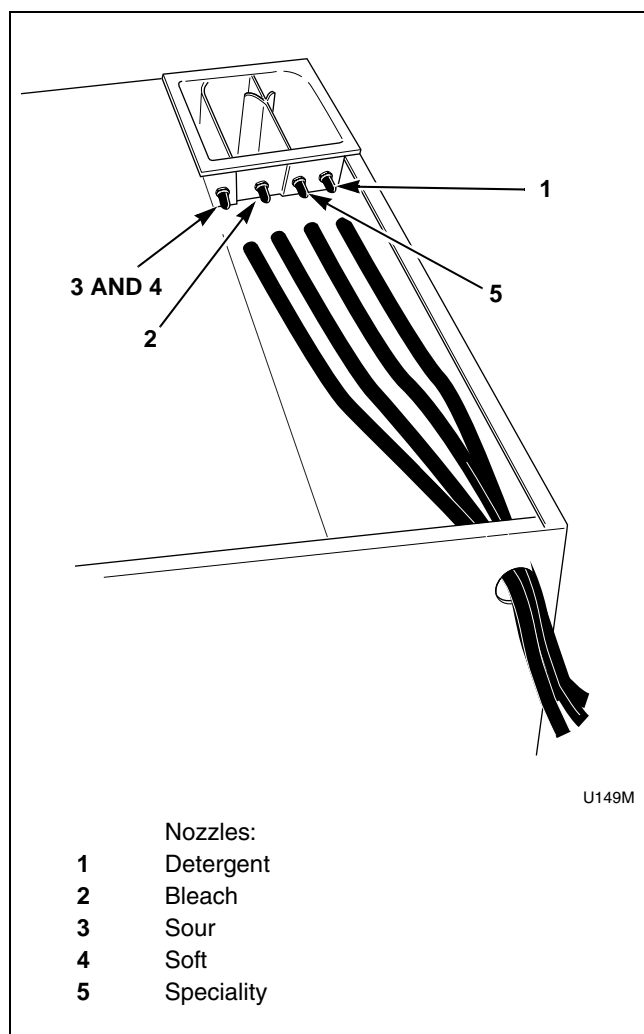


Figure 46

4. Connect hoses to nozzles by pushing each hose over nozzle lip. Hoses should fit snugly onto nozzles.
5. Secure with proper clamps.

NOTE: Do not attempt to make chemical injection supply pump electrical connections to points other than those provided specifically for that purpose by the factory.

Machines connected to 200VAC provide L1 and L2 fused outputs rated at 3 amps which may be used to power 208 – 240VAC supply pumps.

Machines connected to 400VAC do not provide L1 and L2 outputs. An external power source must be provided to power the chemical supply pump.

Do not use L1 or L2 with the common line to deliver 120VAC to chemical injection supply pumps if the machine is equipped with a control transformer. Refer to *Figure 47* through *Figure 53*.



CAUTION

Dangerous Voltages. Will cause damage to the machine and microprocessor. Do not attempt to obtain 110VAC by using L1 or L2 with the common. Do not use a 240VAC power wire in the washer-extractor and an earth ground to obtain 110VAC.

W365

Consult the supply vendor instructions for operational details about supply injections.

*125 Pound OPL Models
(With Optional Dispenser)*

Refer to *Figure 54* and *Figure 55*.

1. Remove plugs from base. Plugs are assembled inside tubing ring.
2. Install strain reliefs included in seal nut.
3. Insert tubes through base. Do not remove dry supply cups. Tube should extend into plastic cup, with exception of softener tube, which should be routed to outside of cup.
4. Tighten seal nut to prevent tubing from escaping assembly.

Installation

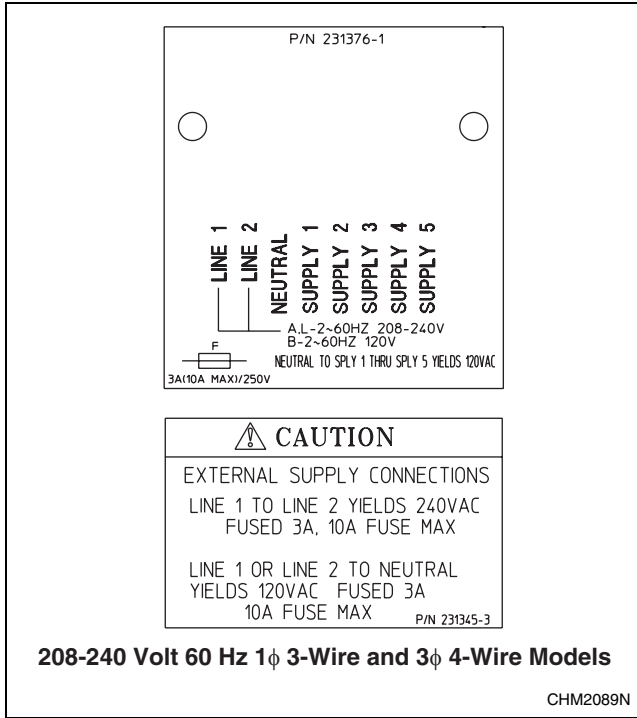


Figure 47

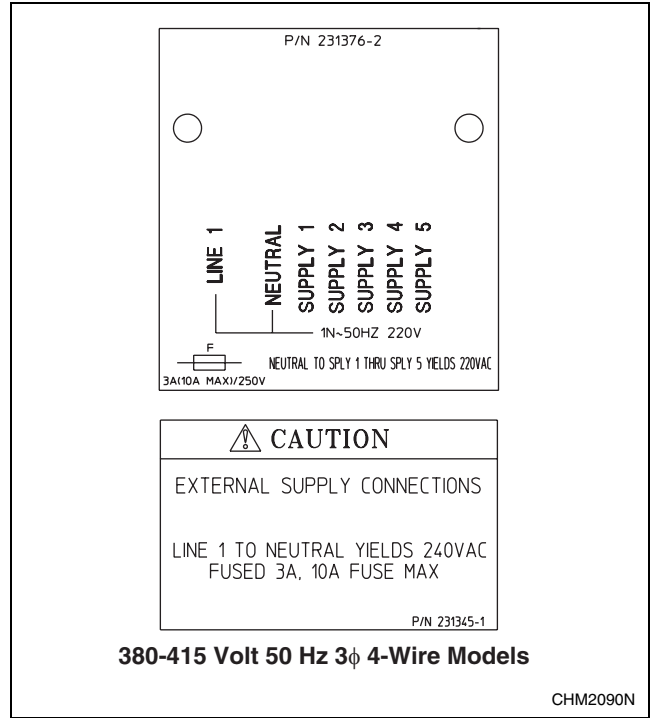


Figure 49

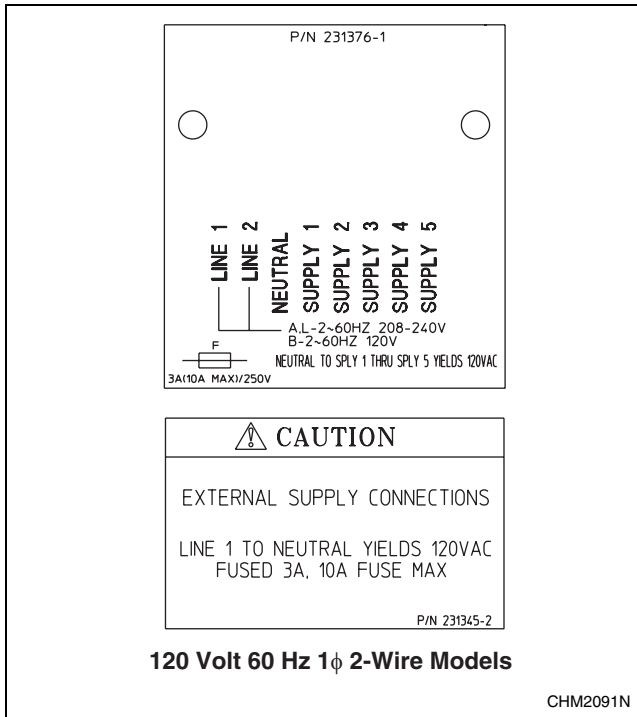


Figure 48

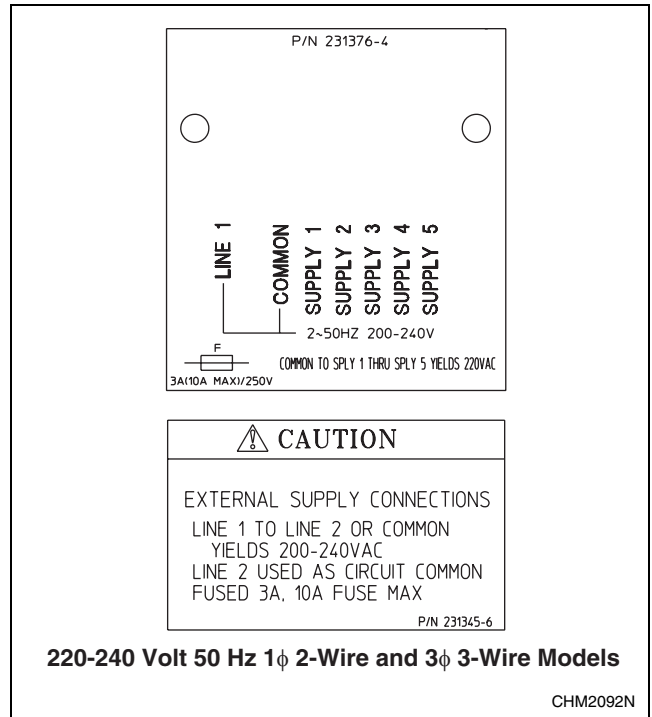


Figure 50

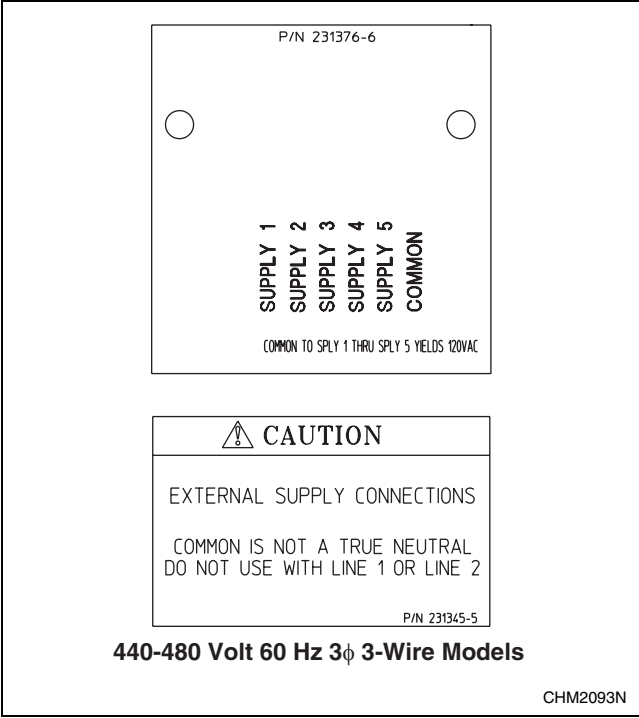


Figure 51

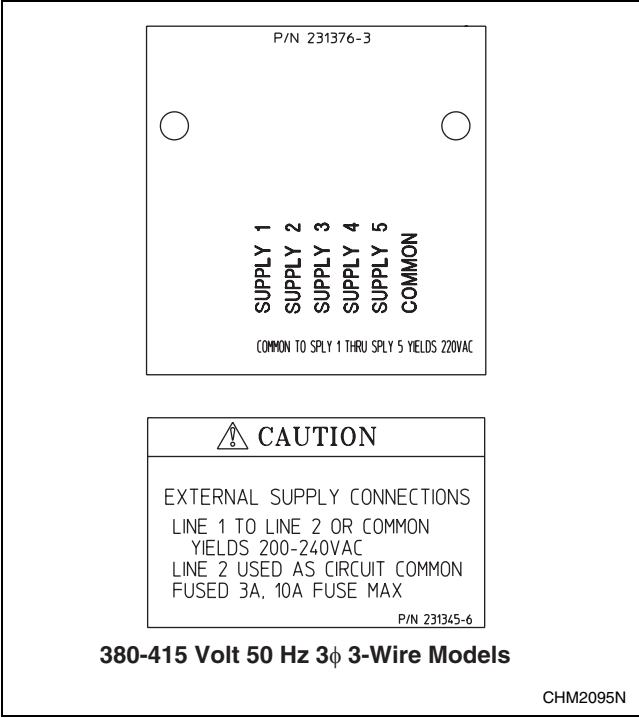


Figure 53

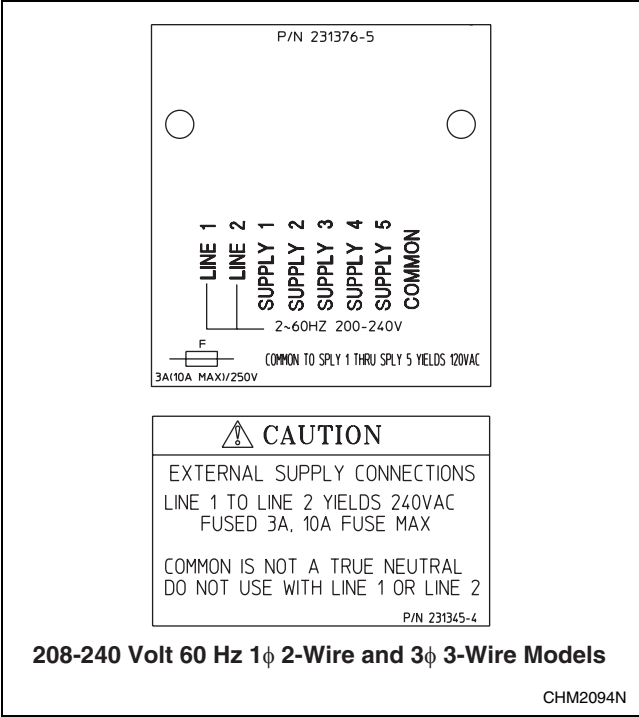


Figure 52

Installation

Terminal SUPPLY 1 through SUPPLY 5 provides 120VAC or 240VAC fused at 500mA. Refer to decal at external supply terminal strip to determine whether washer-extractor provides 120VAC or 240VAC. These terminals may be used to provide signals to chemical injection supply system but must not be used to provide power to actual pump.

IMPORTANT: Increasing fuse rating may cause damage to washer-extractor's circuitry.

IMPORTANT: Any injection system pump that requires 110VAC must be powered by a separate external power source.

Consult chemical injection supply system instructions for operational details.

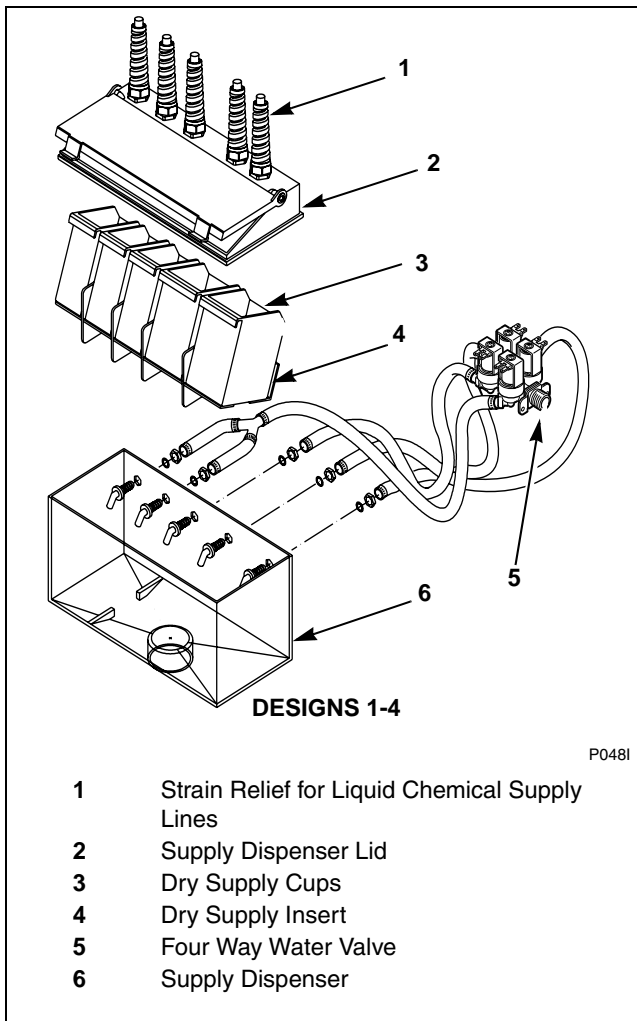


Figure 54

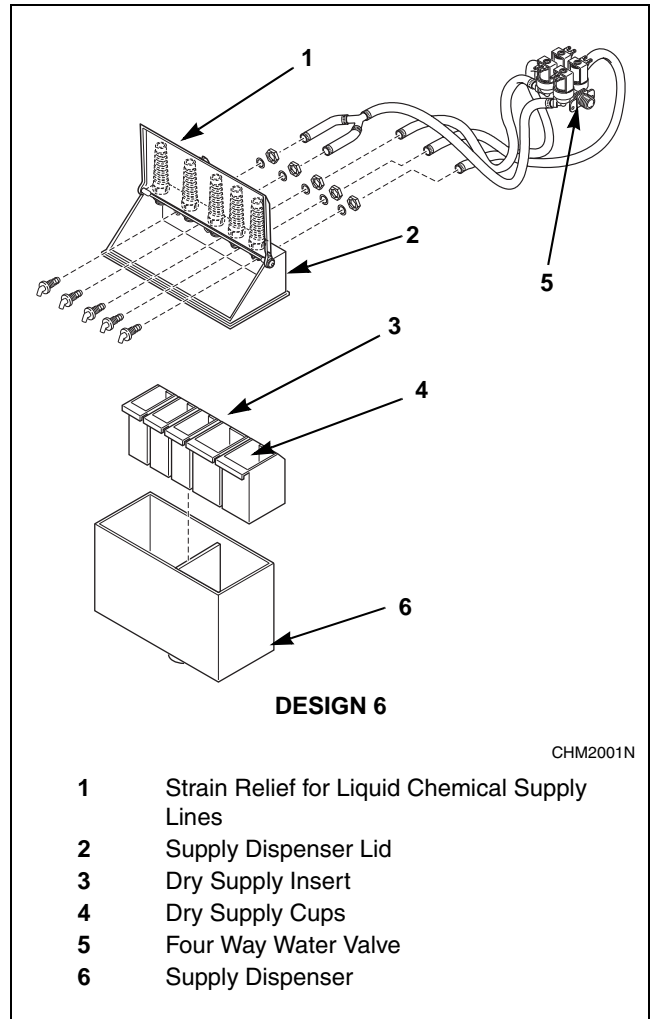


Figure 55

Door Handle Adjustment

After the machine has been properly installed, the door handle position must be verified.

1. Remove outer front panels.
2. Remove door lock cover.
3. With the handle in the latched position, the door handle latch arm blocks the movement of the locking pin.
4. Reposition the handle to allow the locking pin to move properly. Begin by loosening the door hinge nuts with the door closed and the door handle latched. Refer to *Figure 56*.

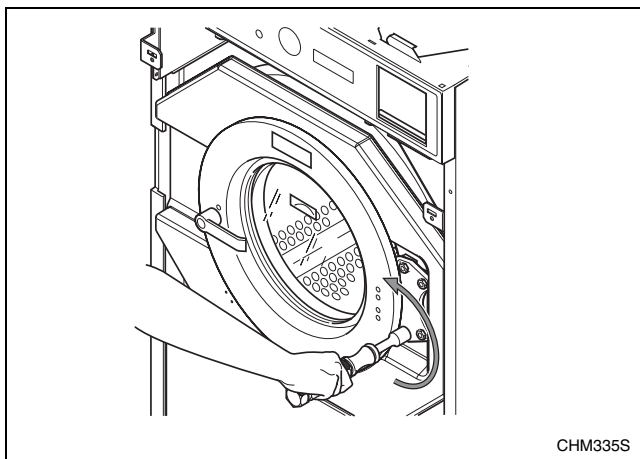


Figure 56

5. While pushing the door handle down against the L-catch, retighten the door hinge nuts. Refer to *Figure 57*.

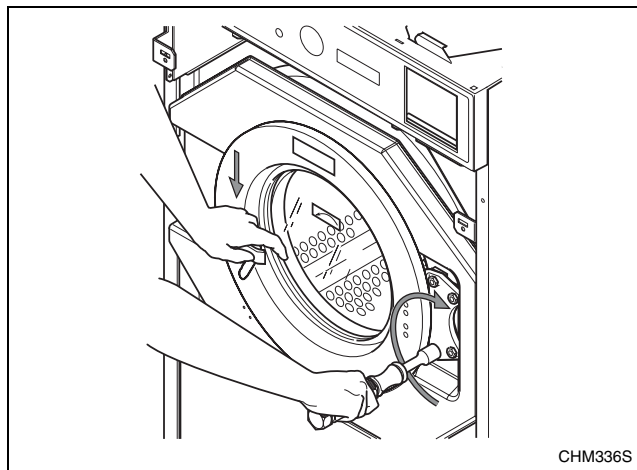


Figure 57

6. Verify that when the handle is in the latched position, the door handle latch arm does not block the movement of the locking pin.
7. Reinstall the door lock cover.
8. Reinstall the outer front panel.

IMPORTANT: If the door lock and interlock are not functioning properly after adjustment, call a service technician.

Installation

Control Function Test

The machine should be cleaned after the installation is complete. A function test should then be executed on the unloaded machine.

1. Check the power supply for correct voltage, phase, and cycles to be certain they are correct for the machine.
2. Open manual shut-off valves to the machine.
3. Turn on electric power.
4. Check the door interlock before starting operation:

- a. Open the loading door.

For coin-operated machines, press the round button on the door handle and turn the door handle downward.

For machines intended for use in on-premises laundries, press and hold the door-unlock button on the left side of the control panel. Press the round button on the door handle and turn the door handle downward.

- b. Attempt to start the machine with the door open. The machine should not start with the door open.

- c. Close the door without locking it and attempt to start the machine. The machine should not start with the door unlocked.
- d. Close and lock the door and start a cycle. Attempt to open the door while the cycle is in progress. The door should not open.

If the door lock and interlock are not functioning properly, call a service technician.

5. Run a complete cycle, checking operation of water inlet valves, drain, and extract functions.
6. Check that basket rotation is counterclockwise in the extract step.
 - a. If rotation is not counterclockwise in the extract step, disconnect power.
 - b. For variable-speed models, have a qualified electrician reverse any two motor leads at the AC drive terminal block (terminals U, V, and W).
 - c. For 2 speed models, have a qualified electrician use the wiring diagram included with the machine to determine which input power leads should be switched.