



Machine Specifications

This Section Contains:

- Suggested Parts Order
- Model Specifications
- Stainless Steel Austenitic

Section II

Machine Specifications

American Dish Service Suggested Parts Order

AF-3D or AFC-3D

Part #	Qty	Description
83-6707	1	Cover, Chemical Pump
83-1804	2	Door Strips
83-6601	1	Drain Ball
91-2001	1	Drain Solenoid
84-6203	2	End Plug
91-4135	1	Fitting, Chemical Discharge
89-6303	1	Gasket, Pump
99-5102	1	Kit, Chlorine Test Strips
92-5047	1	Kit, Vacuum Breaker
92-5016	1	Kit, Water Solenoid
91-3022	1	Switch, Timer
98-1583	2	Thumb Screws
87-6700	3	Tube, Squeeze

Total Price \$76.48

ADC-44

Part #	Qty	Description
281-6201	1	Bearing, Cam Follower
291-3001	1	Contact
291-9101	2	Fuse, Primary
291-9102	2	Fuse, Secondary
291-3003	1	Overload, Conveyor/Rinse
291-3002	1	Overload, Wash Pump
284-6145	4	Spray Arm Jets, Polymer
298-3001	1	Spring, Clutch
291-3014	2	Switch, Float
291-3011	1	Switch, Reed, Rack Sequence
92-5047	1	Kit, Vacuum Breaker
92-5016	1	Kit, Water Solenoid
289-6611	1	O-ring, Wash Filter

Total Price \$277.94

HT-25

Part #	Qty	Description
384-6116	1	Bushing, Final Rinse, Large
384-6117	1	Bushing, Final Rinse, Small
291-3001	1	Contact
391-9102	2	Fuse
386-6023	1	Handle, Final Rinse
384-6121	2	Jets, Final Rinse
92-5047	1	Kit, Vacuum Breaker
92-5016	1	Kit, Water Solenoid
391-7101	2	Light Bulbs
289-6611	1	O-ring, Wash Filter
291-3002	1	Overload
98-4008	2	Snap Ring, Final Rinse
384-6120	2	Spray Arm End Plugs, Rinse
291-3014	1	Switch, Float
91-3022	1	Switch, Timer

Total Price \$170.81

ET-AF

Part #	Qty	Description
83-6702	1	Cover, Chemical Pump
83-6601	1	Drain Ball
91-2001	1	Drain Solenoid
84-6203	2	End Plugs
89-6303	1	Gasket, Pump
98-9018	3	Grommet, Split
99-5102	1	Kit, Chlorine Test Strips
92-5047	1	Kit, Vacuum Breaker
92-5018	1	Kit, Water Solenoid
98-2308	1	Nut, Wing
98-9014	1	O-ring
98-3012	2	Spring, Door
91-3022	1	Switch, Timer
98-1583	2	Thumb Screws
87-6700	3	Tube, Squeeze

Total Price \$77.66

5AG

Part #	Qty	Description
83-6707	1	Cover, Chemical Pump
83-6104	2	Door Strips
83-6601	1	Drain Ball
91-2001	1	Drain Solenoid
84-6203	2	End Plugs
91-4135	1	Fitting, Chemical Discharge
89-6303	1	Gasket, Pump
99-5102	1	Kit, Chlorine Test Strips
92-5047	1	Kit, Vacuum Breaker
92-5018	1	Kit, Water Solenoid
91-3008	1	Switch, Master
91-3022	1	Switch, Timer
98-1583	2	Thumb Screws
87-6700	3	Tube, Squeeze

Total Price \$82.14

AD-25

		MODEL AD-25
NSF RATED CAPACITY (RACKS/HOUR)		37
WASH TIME (IN SECONDS)		50
RINSE TIME (IN SECONDS)		30
DWELL (IN SECONDS)		10
GALLONS PER HOUR		71
TOTAL CYCLE TIME (IN SECONDS)		90
WATER TEMPERATURE OF SUPPLY WATER (NSF)		<u>120° F Minimum</u> or 49° Celsius
WATER CONSUMPTION (NSF RATED)		<u>1.93 Gals. Per Cycle</u> or liters/cycle
MOTOR RATING		(1.125 KW) 1.5 HP
ELECTRICAL RATING (NEC)	115 Vac, 20 amp breaker, 50/60 Hz, 1 phase	
RACK SIZE		<u>Standard 19.75" X 19.75"</u> or 50.2 x 50.2 cm
DOOR CLEARANCE		<u>17.75" Tall X 20.75" Wide</u> or 45.1 x 52.7 cm
WATER INLET		[1/2"] F.P.T.
DRAIN SIZE		[1-1/2"] F.P.T.
HEIGHT	ADJUSTER FEET WILL GIVE	<u>Mn. 67.5" Max. 68.48"</u> or 171.5 to 173.9 cm
WIDTH (OVERALL)		<u>29"</u> or 73.6 cm
WIDTH, TABLE TO TABLE (INLINE MODEL)		<u>25"</u> or 63.5 cm
DEPTH (OVERALL)		<u>28"</u> or 71.1 cm
SHIPPING WEIGHT		<u>225 Pounds</u> or kg
SHIPPING VOLUME (CRATED)		<u>56.7 Cubic Feet</u> or 1.58 cu meters

AF-3D

FAMILY MODELS			
	AF-3D AFC-3D	A-3D AC-3D	AH-3D AHC-3D
NSF RATED CAPACITY (RACKS/HOUR)	37	28	23
WASH TIME (IN SECONDS)	45	60	75
RINSE TIME (IN SECONDS)	30	45	60
DWELL (IN SECONDS)	15	15	15
TOTAL CYCLE TIME (IN SECONDS)	90	120	150
WATER TEMPERATURE OF SUPPLY WATER (NSF)	120° F Minimum or 49° Celsius		
WATER CONSUMPTION (NSF RATED)	2.2 Gals. Per Cycle or 8.3 liters/cycle		
MOTOR RATING	(1.125 KW) 1.5 HP		
ELECTRICAL RATING (NEC)	115 Vac, 20 amp breaker, 50/60 Hz, 1 phase		
RACK SIZE	Standard 19.75" X 19.75" or 50.2 x 50.2 cm		
DOOR CLEARANCE	17.5" Tall X 20.5" Wide or 44.4 x 52.1 cm		
WATER INLET	[1/2"] F.P.T.		
DRAIN SIZE	[1-1/2"] F.P.T.		
HEIGHT	ADJUSTER FEET WILL GIVE	Min. 67.5" Max. 68.48" or 171.5 to 173.9 cm	
WIDTH (OVERALL)	33.5" or 85.1 cm		
WIDTH, TABLE TO TABLE (INLINE MODEL)	25" or 63.5 cm		
DEPTH (OVERALL)	34.25" or 86.9 cm		
SHIPPING WEIGHT	307 Pounds or 139.2 kg		
SHIPPING VOLUME (CRATED)	56.7 Cubic Feet or 1.58 cu meters		

5AG

FAMILY MODELS			
	5AG	5	5AH
NSF RATED CAPACITY (RACKS/HOUR)	74	56	46
WASH TIME (IN SECONDS)	45	60	75
RINSE TIME (IN SECONDS)	30	45	60
DWELL (IN SECONDS)	15	15	15
TOTAL CYCLE TIME (IN SECONDS)	90	120	150
WATER TEMPERATURE OF SUPPLY WATER (NSF)	<u>120° F Minimum</u> or 49° Celsius		
WATER CONSUMPTION (NSF RATED)	<u>3.4 Gals. Per Cycle</u> or 12.9 liters/cycle		
MOTOR RATING (two)	(1.125 KW) 1.5 HP		
ELECTRICAL RATING (NEC)	115 Vac, 20 amp breaker, 50/60 Hz, 1 phase		
Options: Two supply sources, 20 amps each (10 ga. Wire) One supply source, 40 amp (8 ga. Wire)			
RACK SIZE	<u>Standard 19.75" X 19.75"</u> or 50.2 x 50.2 cm		
DOOR CLEARANCE	<u>17.5" Tall X 20.5" Wide</u> or 44.4 x 52.1 cm		
WATER INLET (two)	<u>[1/2"] F.P.T.</u>		
DRAIN SIZE	<u>[2"] F.P.T.</u>		
HEIGHT (top mount)	ADJUSTER FEET WILL GIVE	<u>Min. 67.5" Max. 68.48"</u> or 171.5 to 173.9 cm	
WIDTH (OVERALL)	<u>33.5"</u> or 85.1 cm		
WIDTH, TABLE TO TABLE	<u>44"</u> or 63.5 cm		
DEPTH (OVERALL)	<u>34.25"</u> or 86.9 cm		
SHIPPING WEIGHT	<u>360 Pounds</u> or 164 kg		
SHIPPING VOLUME (CRATED)	<u>64.18 Cubic Feet</u> or 1.82 cu meters		

ET-AF

	FAMILY MODELS		
	ET-AF	ETA	ET-AH
NSF RATED CAPACITY (RACKS/HOUR)	30	24	20
WASH TIME (IN SECONDS)	45	60	75
RINSE TIME (IN SECONDS)	30	45	60
DWELL (IN SECONDS)	15	15	15
TOTAL CYCLE TIME (IN SECONDS)	90	120	150
WATER TEMPERATURE OF SUPPLY WATER (NSF)	<u>120° F Minimum</u> or 49° Celsius		
WATER CONSUMPTION (NSF RATED)	<u>1.7 Gals. Per cycle</u> or 6.4 liters/cycle		
MOTOR RATING	(1.125 KW) 1.5 HP		
ELECTRICAL RATING (NEC)	115 Vac, 20 amp breaker, 50/60 Hz, 1 phase		
RACK SIZE	<u>Standard 19.75" X 19.75"</u> or 50.2 x 50.2 cm		
DOOR CLEARANCE *	<u>11" Tall X 22.25" Wide</u> or 27.9 X 56.5 cm		
WATER INLET	[1/2"] F.P.T.		
DRAIN SIZE	[1-1/2"] F.P.T.		
HEIGHT OF STANDARD ET ADJUSTER FEET WILL GIVE	<u>Min. 33.3" Max. 34.8"</u> or 84.6 to 88.4 cm		
HEIGHT ET-AF-3	<u>Min. 36.3" Max. 37.8"</u> or 92.2 to 96.04 cm		
WIDTH (OVERALL)	<u>24.8"</u> or 85.1 cm		
DEPTH (OVERALL)	<u>29"</u> or 73.6 cm		
SHIPPING WEIGHT	<u>201 Pounds</u> or 91.2 kg		
SHIPPING VOLUME (CRATED)	<u>38 Cubic Feet</u> or 1.1 cu meters		

* Also available in a 3" *Taller Version* with 14" x 22.25" (35.8 x 57 cm) door clearance
Model ET-AF-3

AFB

		FAMILY MODELS		
		AFB	AB	AHB
NSF RATED CAPACITY (RACKS/HOUR)		37	28	23
WASH TIME (IN SECONDS)		45	60	75
RINSE TIME (IN SECONDS)		30	45	60
DWELL (IN SECONDS)		15	15	15
TOTAL CYCLE TIME (IN SECONDS)		90	120	150
WATER TEMPERATURE OF SUPPLY WATER (NSF)		<u>130° F Minimum</u> or 54.4° Celsius		
WATER CONSUMPTION (NSF RATED)		<u>2.5 Gals. Per Cycle</u> or 9.46 liters/cycle		
MOTOR RATING		(1.125 KW) 1.5 HP		
ELECTRICAL RATING (NEC)		115 Vac, 20 amp breaker, 50/60 Hz, 1 phase		
RACK SIZE		<u>Standard 19.75" X 19.75"</u> or 50.2 x 50.2 cm		
DOOR CLEARANCE		<u>27.5" Tall X 20.5" Wide</u> or 69.8 X 52.1 cm		
WATER INLET		<u>[1/2"] F.P.T.</u>		
DRAIN SIZE		<u>[1-1/2"] F.P.T.</u>		
HEIGHT	ADJUSTER FEET WILL GIVE	<u>Min. 65.5" Max. 66.6"</u> or 166.3 to 169.1 cm		
HEIGHT (W/DOORS OPEN)		<u>Min. 94" Max. 95.125"</u> or 238.7 to 241.6 cm		
WIDTH (OVERALL)		<u>30"</u> or 76.2 cm		
WIDTH, TABLE TO TABLE (INLINE MODEL)		<u>25"</u> or 63.5 cm		
DEPTH (OVERALL)		<u>35.5"</u> or 90.1 cm		
SHIPPING WEIGHT		<u>294 Pounds</u> or 133.3 kg		
SHIPPING VOLUME (CRATED)		<u>56.7 Cubic Feet</u> or 1.58 cu meters		

L3DW

		FAMILY MODELS		
		L60-3DW	L72-3DW	L90-3DW
		L60-3DWC	L72-3DWC	L-90-3DWC
NSF RATED CAPACITY (RACKS/HOUR)		55	46	37
WASH TIME (IN SECONDS)		36	43	50
RINSE TIME (IN SECONDS)		15	19	30
DWELL (IN SECONDS)		9	10	10
GALLONS PER HOUR		66	55	44
TOTAL CYCLE TIME (IN SECONDS)		60	72	90
WATER TEMPERATURE OF SUPPLY WATER (NSF)		<u>120° F Minimum</u> or 49° Celsius		
WATER CONSUMPTION (NSF RATED)		<u>1.2 Gals. Per Cycle</u> or 4.5 liters/cycle		
MOTOR RATING		(1.125 KW) 1.5 HP		
ELECTRICAL RATING (NEC)		115 Vac, 20 amp breaker, 50/60 Hz, 1 phase		
RACK SIZE		<u>Standard 19.75" X 19.75"</u> or 50.2 x 50.2 cm		
DOOR CLEARANCE		<u>17.75" Tall X 20.75" Wide</u> or 45.1 x 52.7 cm		
WATER INLET		<u>[1/2"] F.P.T.</u>		
DRAIN SIZE		<u>[1-1/2"] F.P.T.</u>		
HEIGHT	ADJUSTER FEET WILL GIVE	<u>Min. 67.5" Max. 68.48"</u> or 171.5 to 173.9 cm		
WIDTH (OVERALL)		<u>29"</u> or 73.6 cm		
WIDTH, TABLE TO TABLE (INLINE MODEL)		<u>25"</u> or 63.5 cm		
DEPTH (OVERALL)		<u>28"</u> or 71.1 cm		
SHIPPING WEIGHT		<u>307 Pounds</u> or 139.2 kg		
SHIPPING VOLUME (CRATED)		<u>56.7 Cubic Feet</u> or 1.58 cu meters		

HT-25

	FAMILY MODELS	
	HT-25 HOT TEMP	HT-25 CHEMICAL
NSF RATED CAPACITY (RACKS/HOUR)	72	72
WASH TIME (IN SECONDS)	45	45
WATER CONSUMPTION	.85 gal/rack or 3.2 liter	.85 gal/rack or 3.2 liter
TOTAL GALLONS PER HOUR	58.6 gph or 221 liters	58.6 gph or 221 liters
FINAL RINSE TEMP (20 psi)	180° F/48.8° C	120° F/48.8°C
SANITIZER	180° Water	50ppm Chlorine
ELECTRICAL POWER SUPPLY (requires clean circuit and neutral wire)		208/240v, 3 ph, 40 amp, 60 Hz 1 ph, 30/60 amp, 60 Hz (1 ph requires dual power circuits)
MOTOR RATING		3HP Wash Motor
HEATER RATING		8 KW Wash Heater
RACK SIZE		Standard 19.75" X 19.75" or 50.2 x 50.2 cm
ACCESS DOOR CLEARANCE		18" x 24.5" or 45.7 x 62.2 cm
RACK CLEARANCE THROUGH MACHINE		18" x 20.75" or 45.7 x 52.7 cm
WATER INLET		[1/2"] F.P.T.
DRAIN SIZE		[2"] F.P.T.
HEIGHT (84.25" or 213.9 cm with control box cover open) (77" with doors open)		73.25" or 186 cm
WIDTH (OVERALL)		29.5" or 74.9 cm
WIDTH, TABLE TO TABLE		25" or 94.6 cm
DEPTH		29" or 73.7 cm
SHIPPING WEIGHT		485 Pounds or 218.8 kg
SHIPPING VOLUME		79.9 Cubic Feet or 2.2 cu meters

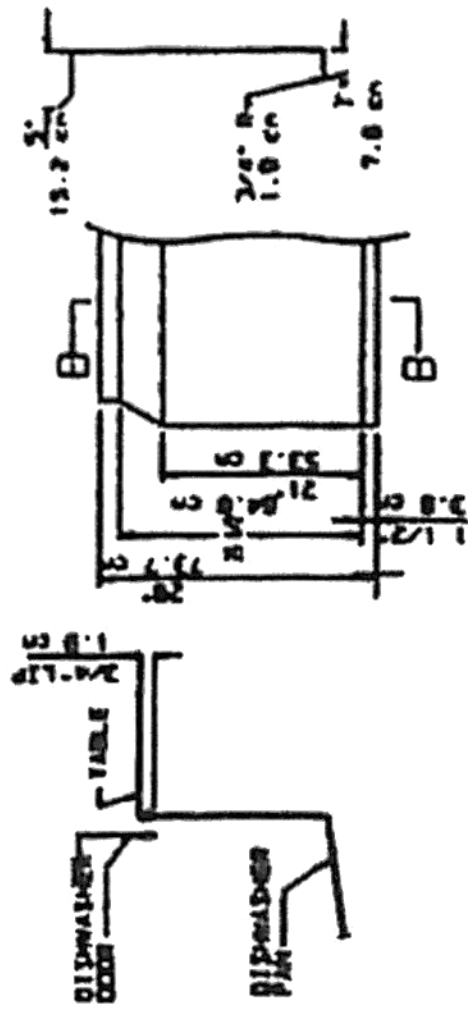
ADC-44

	FAMILY MODELS (left or right feed)	
	ADC-44 HOT TEMP	ADC-44 CHEMICAL
NSF RATED CAPACITY (RACKS/HOUR)	244	244
CONVEYOR SPEED	6.8 ft/min or 2.07 m	6.8 ft/min or 2.07 m
WATER CONSUMPTION	.49 gal/rack or 1.8 liters	.49 gal/rack or 1.8 liters
TOTAL GALLONS PER HOUR	120 gph or 454.2 liters	120 gph or 454.2 liters
FINAL RINSE TEMP (20 psi)	180° F/48.8° C	120° F/48.8° C
SANITIZER	180° Water	50ppm Chlorine
ELECTRICAL POWER SUPPLY (requires clean circuit)		208/240v, 3 ph, 60 amp, 60 Hz 1 ph, 60/60 amp, 60 Hz (1 ph requires dual power circuits)
MOTOR RATING		3HP Wash Motor 1/3HP Rinse Motor 1/3HP Conveyor Motor
HEATER RATING		12 KW Wash Heater 2.25 KW Rinse Heater
RACK SIZE		Standard 19.75" X 19.75" or 50.2 x 50.2 cm
ACCESS DOOR CLEARANCE		15" x 24.5" or 38.1 x 62.2 cm
RACK CLEARANCE THROUGH MACHINE		19.25" x 20.75" or 48.9 x 52.7 cm
WATER INLET		[3/4"] F.P.T.
DRAIN SIZE		[2"] F.P.T.
HEIGHT (with door open) (84.25" or 213.9 cm with control box cover open)		73.25" or 186 cm
WIDTH (OVERALL)		64" or 162.5 cm
WIDTH, TABLE TO TABLE		44" or 111.7 cm
DEPTH		29" or 73.7 cm
SHIPPING WEIGHT		760 Pounds or 344.7 kg
SHIPPING VOLUME		121.6 cubic feet or 3.4 cu meters

ADC-66

	FAMILY MODELS (left or right feed)	
	ADC-66 HOT TEMP	ADC-66 CHEMICAL
NSF RATED CAPACITY (RACKS/HOUR)	244	244
CONVEYOR SPEED	6.8 ft/min or 2.07 m	6.8 ft/min or 2.07 m
WATER CONSUMPTION	.49 gal/rack or 1.8 liters	.49 gal/rack or 1.8 liters
TOTAL GALLONS PER HOUR	120 gph or 454.2 liters	120 gph or 454.2 liters
FINAL RINSE TEMP (20 psi)	180° F/48.8° C	120° F/48.8°C
SANITIZER	180° Water	50ppm Chlorine
ELECTRICAL POWER SUPPLY (requires clean circuit, 3AWG w/neutral wire)		208/240v, 3 ph, 900 amp, 60 Hz 1 ph, 90/90 amp, 60 Hz (1 ph requires dual power circuits)
MOTOR RATING		3HP Wash Motor 1/3HP Rinse Motor 1/3HP Conveyor Motor 1.5HP Scrap Motor
HEATER RATING		8 or 12 KW Wash Heater 2.25 KW Rinse Heater
RACK SIZE		Standard 19.75" X 19.75" or 50.2 x 50.2 cm
ACCESS DOOR CLEARANCE		15" x 24.5" or 38.1 x 62.2 cm
RACK CLEARANCE THROUGH MACHINE		19.25" x 20.75" or 48.9 x 52.7 cm
WATER INLET		[3/4"] F.P.T.
DRAIN SIZE		[2"] F.P.T.
HEIGHT (with door open) (84.25" or 213.9 cm with control box cover open)		73.25" or 186 cm
WIDTH (OVERALL)		85" or 215.9 cm
WIDTH, TABLE TO TABLE		66" or 167.64 cm
DEPTH		29" or 73.7 cm
SHIPPING WEIGHT		960 Pounds or 344.7 kg
SHIPPING VOLUME		161.6 cubic feet or 4.56 cu meters

TYPICAL TABLE DETAILS

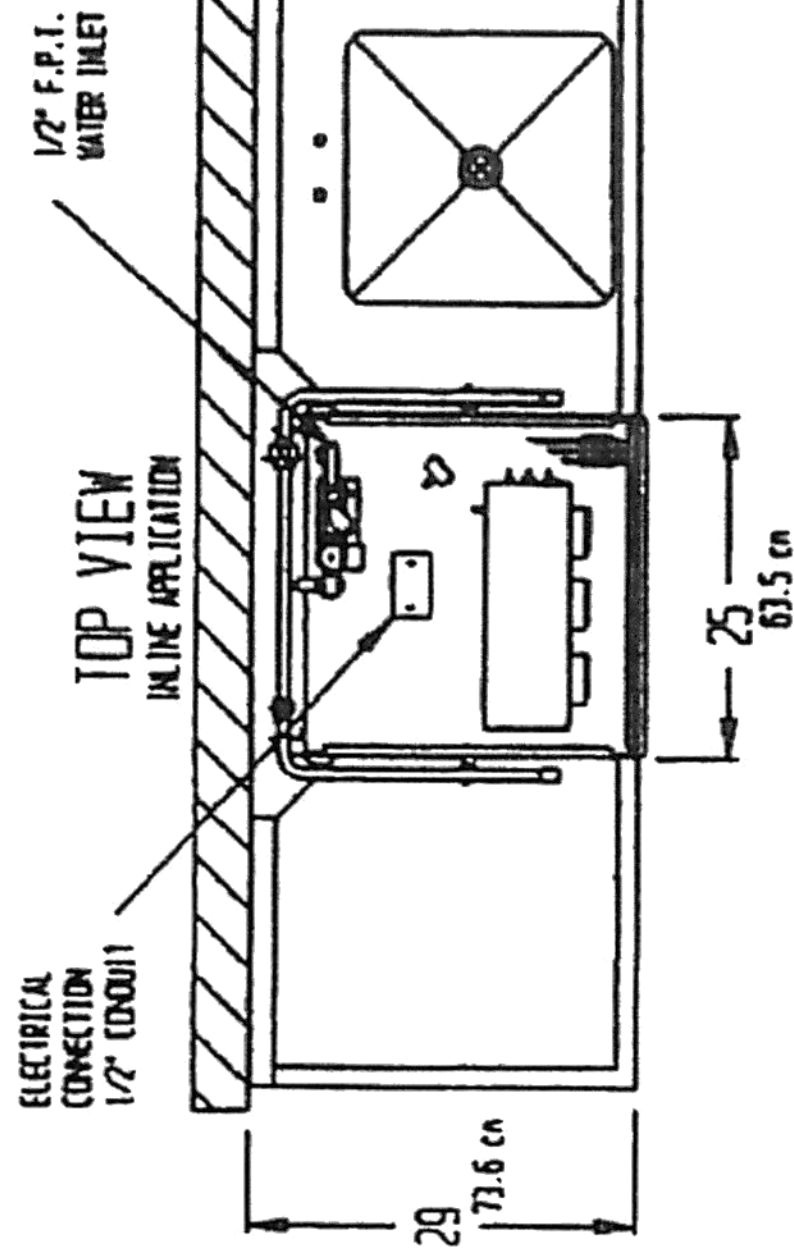


For reserves the right to modify these dimensions in compliance with regulatory agencies factoring expediency

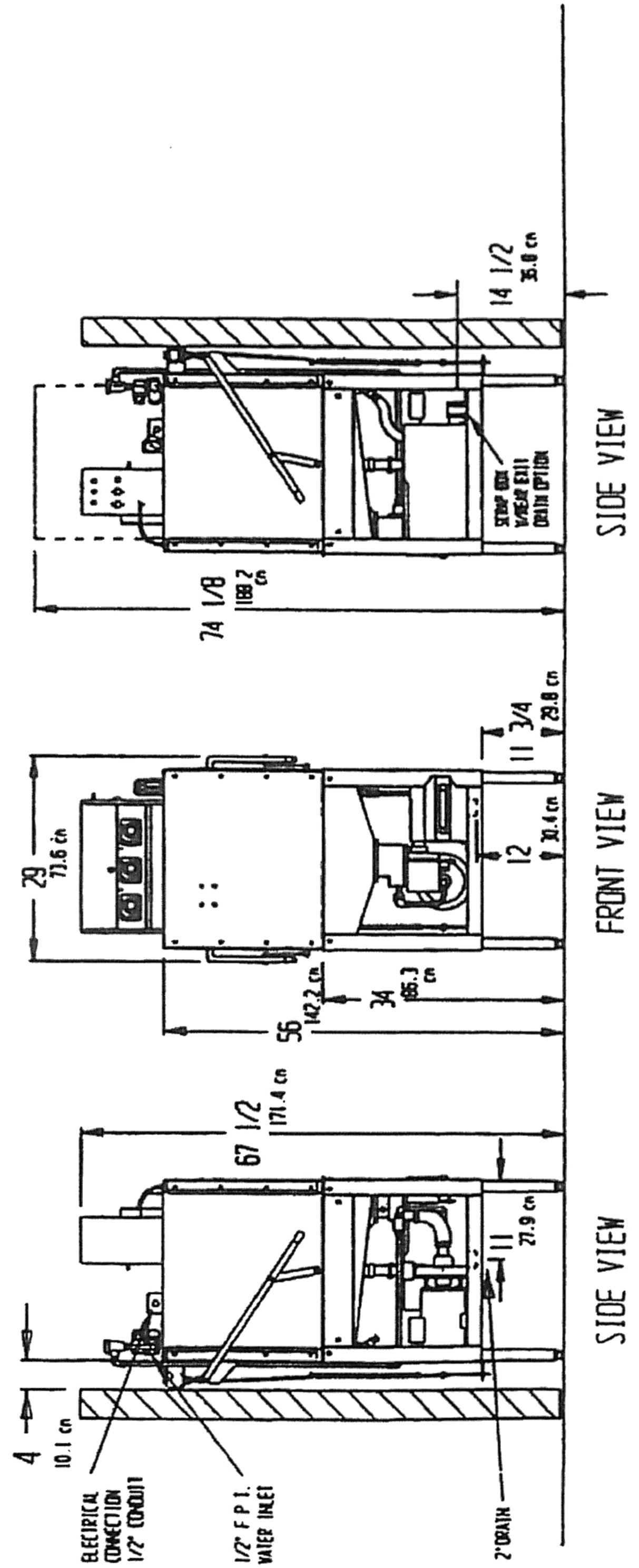
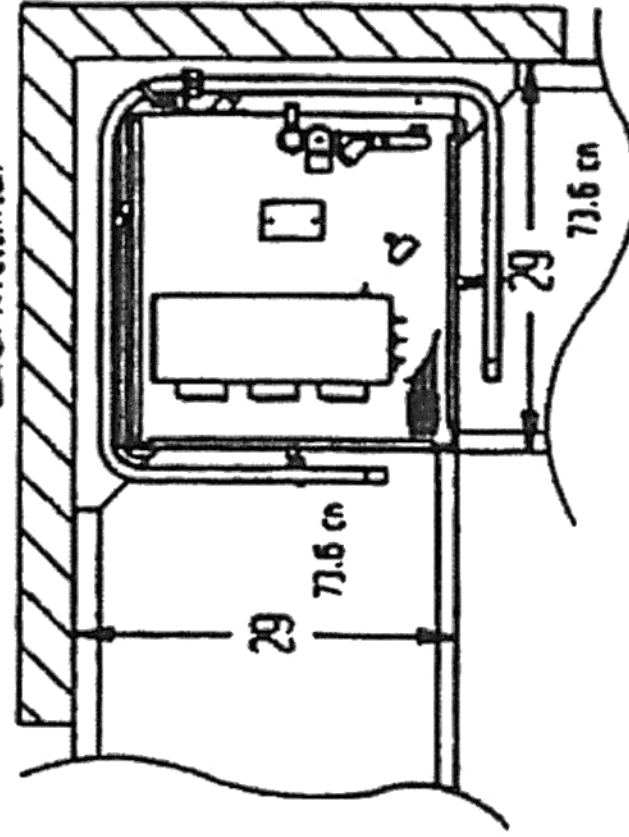
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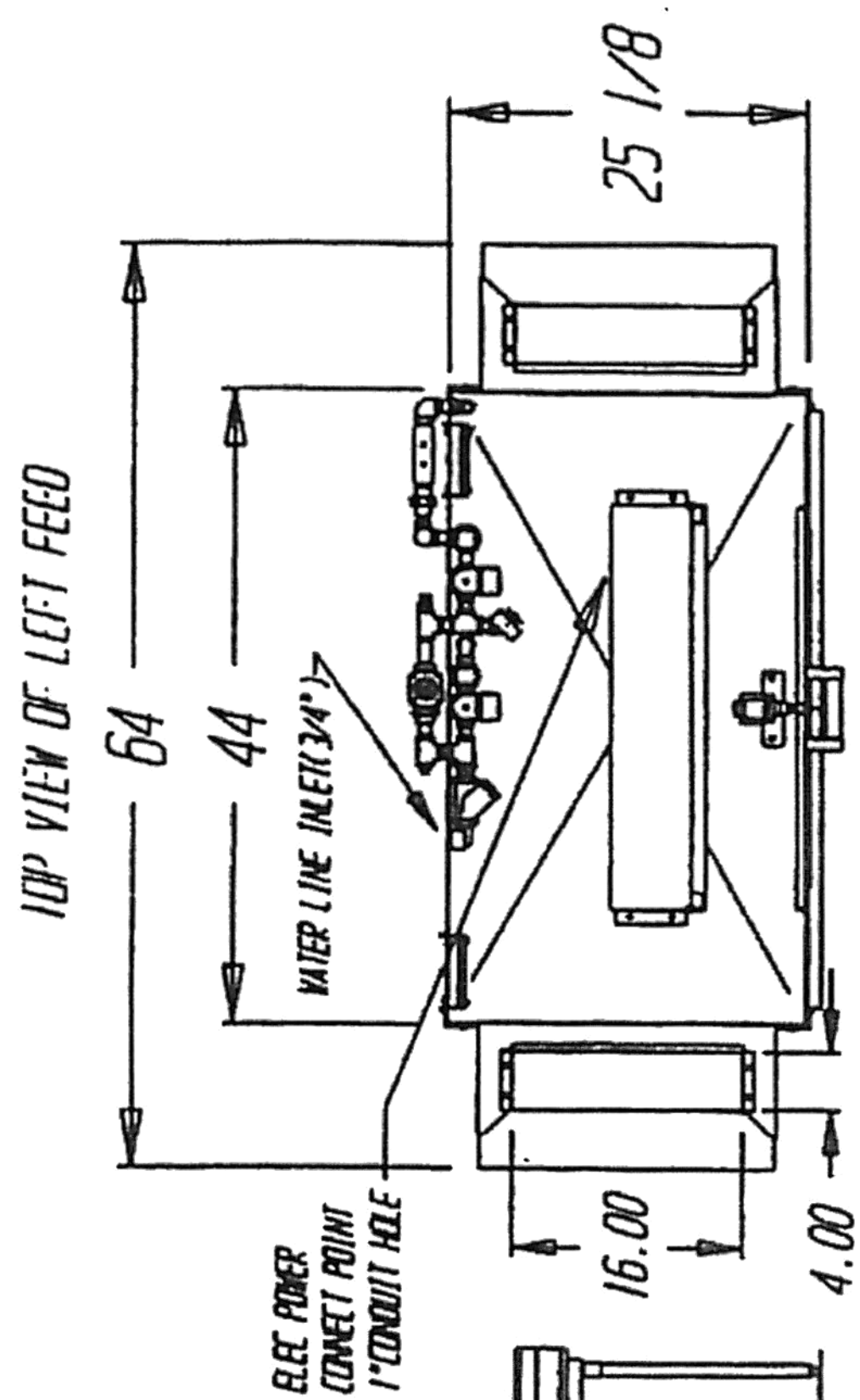
Electrical and plumbing connections should be made by a qualified service person who will comply with all applicable federal, state, and local health, electrical, plumbing, and safety codes.

Connect to Supply Source using 10-12 AWG wires, using non-time delay fuse of 20 amp rating or 20 amp circuit breaker.

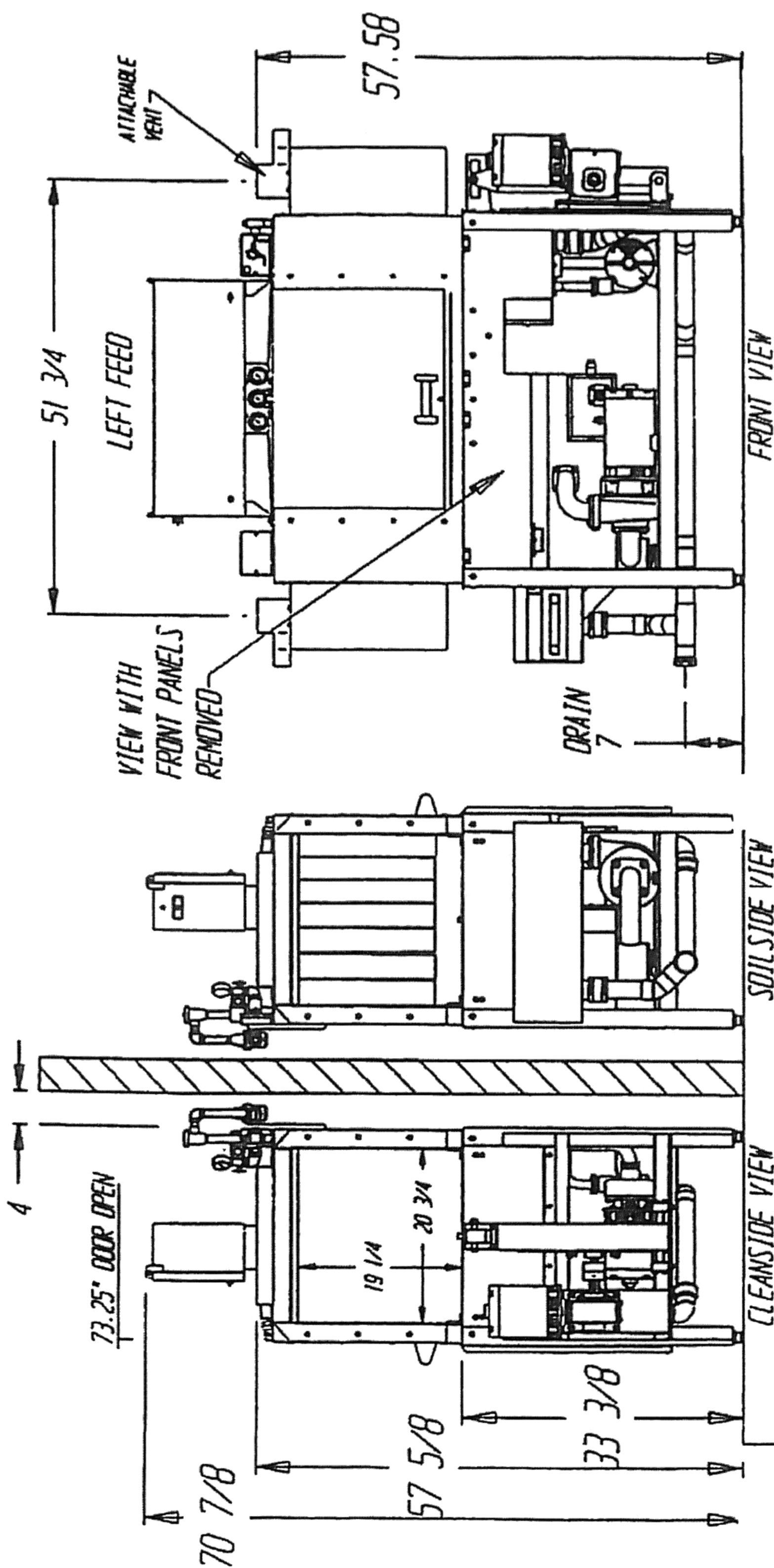
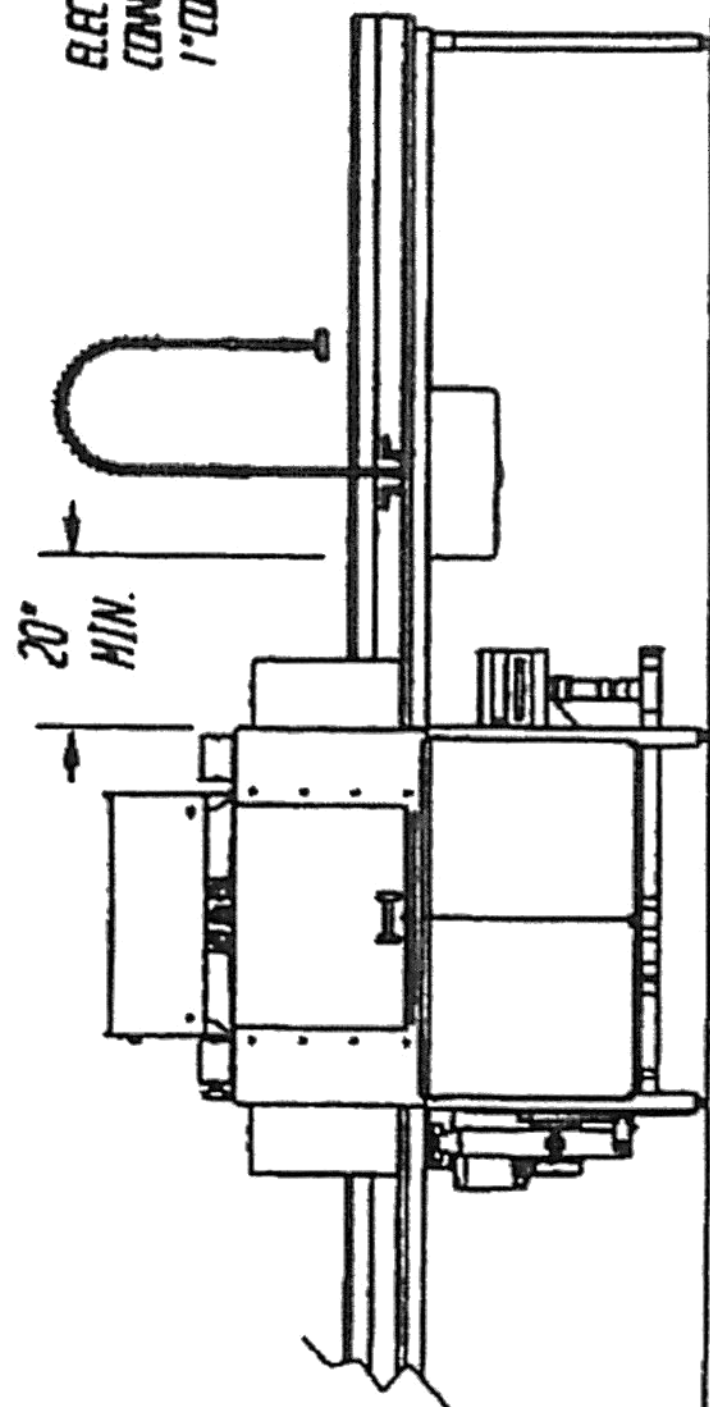


TOP VIEW CORNER APPLICATION





RIGHT FEED
(W/O VENT OPTION)



TECHNICAL SUPPORT MATERIAL

STAINLESS STEEL

"Austenitic"

Austenitic stainless steels are low-carbon, iron-chromium-nickel alloys containing more than 16% chromium, with sufficient nickel to provide an austenitic structure at normal temperatures. It has greater ductility than other steels and accounts for two-thirds of all stainless usage. (It cannot be hardened by heat treatment but can be hardened by cold working.) Other types of stainless steels are **Ferritic**, **Precipitation Hardening**, and **Martensitic**. There are over 57 related stainless alloys.

WHY IS STAINLESS "STAINLESS"?

The corrosion-resistant alloys known as stainless steel have a built-in mechanism to combat natural and man-made elements which attack other metals. The corrosion resistance feature is actually due to a thin, transparent, tightly adhering, self-producing chromium oxide film that forms on the metal's surface. If this surface is scratched or penetrated, it rapidly reforms the film as long as oxygen is present.

CONTAMINANTS

1. Contaminants such as dirt, soil or food substances, which, if allowed to remain for any length of time, can result in localized pitting and discoloration.
2. Stainless steel *performs best when clean and exposed to the atmosphere*. Protective coatings, surface finishes, metal debris, and soils should be removed promptly to avoid surface discoloration and possible localized surface pitting.
3. Muriatic acid for cleaning masonry, Hydrochloric acid cleaners, Sulfuric Acid (most common in industry), or Phosphoric acids must be immediately neutralized and scrubbed off with clean water.
4. A smooth, clean surface facilitates the forming of the protective chromium oxide film. A rough, pitted undressed welds, reduces the protective film and invites corrosive deterioration. Flux from soldering is also a contaminant. Chlorides, if present, will cause etching and white spotting.
5. *Pitting corrosion* is the most common type of failure caused by foreign contaminants. Corrosion resulting from faulty alloys (chemistry) will appear as a *uniform discoloration of the entire sheet* (Washington).

"PASSIVATE" or PASSIVITY

Some metals have tendencies to oxidize, others have little tendency to oxidize. Such corrosion-resisting metals are known as the *noble* metals (gold, platinum). Metals like sodium and potassium are called *active* metals and are readily oxidized. When an active metal, which is combined in an alloy, begins corroding at a very low rate, it becomes *passive* and behaves like a noble metal. Not all metals exhibit passivity, but the ones that do are among the most widely used for stainless steels. Nickel, chromium, titanium, and zirconium spontaneously passivate in air. The usual explanation of passivity is that a protective film (metal oxide or chemisorbed oxygen) forms on the surface of the metal (Huntington 4). Passivating by electro-polishing methods actually removes metal of a uniform thickness. It is an excellent cleaning process. After water rinsing and drying, electro-polished stainless surfaces will passivate themselves in normal air. Passivation of stainless is essentially a surface cleaning operation. Typically, it is done with a fresh 30% solution of nitric acid and water, at room temperature (or up to 140° F), for periods of 30 to 60 minutes. This is sometimes called "pickling". The surface must be thoroughly washed with clean hot water after the nitric acid bath. Nitric acid removes sources of possible rusting by dissolving particles of iron which come from machining, blasting, or environment (ASTM 275).

Austenitic (AISI 300 series) Types

AMERICAN IRON AND STEEL INSTITUTE

Type 302 (UN-S30200) Cr = 17%, Ni = 8%, Carbon .15%

Original general-purpose, austenitic Cr-Ni stainless. Excellent deep-drawing and cold forming qualities.

Tensile strength, annealed: 87 ksi (kip/in²), yield strength: 40 ksi, Rockwell: b-84

Applications: sinks and tables, dairy and bakery equipment

Type 304 (UN-S30400) Cr = 18%, Ni = 8%, Carbon .08%

Most versatile and widely used, austenitic Cr-Ni stainless. Excellent for severe deep-drawing and cold forming qualities. Tensile strength, annealed: 86 ksi, yield strength: 38 ksi, Rockwell: b-82

Applications: food processing, chemical equipment

Type 304 ELC (or 304L) (UN-S30403) "extra low carbon" Cr = 18%, Ni = 8%, Carbon .03%

Most versatile and widely used austenitic Cr-Ni stainless. Excellent for deep-drawing and cold forming qualities. Same as type 304, yet more resistance to intergranular corrosion following welding or stress relieving. This is a welding alloy. Tensile strength, annealed: 85 ksi, yield strength: 38 ksi Rockwell: b-82

Applications: food processing, chemical equipment

Type 316 (UN-S31600) Cr = 16%, Ni = 10%, Carbon 0.08%, Molybdenum 2%

Superior corrosion resistance, such as chemical or brine solutions, austenitic Cr-Ni stainless. Tensile strength, annealed: 85 ksi, yield strength 40 ksi, Rockwell: b-82

Applications: food processing, chemical equipment, fertilizer equipment, paper mill, photographic equipment

Type 316 ELC (or 316L) (UN-S31603) "extra low carbon" Cr = 16%, Ni = 10%, Carbon 0.03%,

Molybdenum 2%. Superior corrosion resistance, such as chemical or brine solutions, austenitic Cr-Ni stainless. Has superior resistance to intergranular corrosion following welding. Tensile strength, annealed: 83 ksi, yield strength: 38 ksi, Rockwell: b-80

Applications: food processing, chemical equipment, fertilizer equipment, paper mill, photographic equipment

Types 304, 316, 321 are specified in nuclear fast-reactor technology (Marshall 412).

DEFINITIONS

Corrosion: chemical or electrochemical deterioration.

Galvanic corrosion: associated with the presence of two dissimilar metals in a solution (electrolyte).

Pitting corrosion: non-uniform corrosion usually forming small cavities in the metal surface.

Creep strength: the constant nominal stress that will cause a specified quantity of creep in a given time at a constant temperature. It is a measure of a material's ability to withstand prolonged stress or load without significant continuous deformation. Important only at elevated temperatures.

Coefficient of Thermal Expansion: a physical property value representing the change in length per unit length, the change in area per unit area or the change in volume per unit volume *per one degree increase in temperature*.

Camber: the amount of curvature or deviation from exact straightness over a specified length of 8 feet in sheet or strip stainless.

Martensitic stainless: AISI 400 series contain lower percents of chromium (12%) and are highly magnetic. It can be heat treated.

Ferritic stainless: AISI 400 series is around 17% chromium and is less ductile than austenitic. It is more difficult to weld and is less corrosion resistant.

Precipitation hardening stainless: AISI 500 series is an alloy that can be hardened by solution heat treating.

BACTERIA CLEANABILITY COMPARISON

Percentage of bacteria removed from (unworn) eating surfaces @ 60° F using .25% Detergent

Glass	99+%
China	98.6%
Plastic	77.7%
Aluminum	82.0%
Stainless Steel	97.0%

ASTM A666

Standard specification for austenitic types 201, 202, 301, 304, and 316

Four Strength Grades:

- Grade A with 30,000 psi min. yield strength
- Grade B with 45,000 psi min. yield strength
- Grade C with 75,000 psi min. yield strength
- Grade D with 100,000 psi min yield strength

FINISHES

Finishes come from three basic methods: Rolled between polished or textured rolls, polished or buffed, controlled atmosphere annealing.

Rolled: #1, #2D, and #2B are unpolished, nondirectional finishes.

Polished: #3, #4 are produced by successive grinding and polishing. This imparts a grit line of a directional character. Dishmachines generally are #2D or #2B for support members, #3 for hoods and doors.

THICKNESS TOLERANCES

U.S. Gauge	Average Thickness
10	.140"
11	.125"
12	.109"
13	.094"
14	.078"
15	.070"
16	.062"
17	.056"
18	.050"
19	.044"
20	.037"

RESOURCE MATERIAL

ASTM. "Standard Recommended Practice for Cleaning and Descaling Stainless Steel Parts, Equipment, and Systems". American National Standard A 380 – 78. 1978

Huntington Alloy. "Resistance to Corrosion". The International Nickel Company. Huntington, WV 1970

Marshall, P. Austenitic Stainless Steels, Microstructure and Mechanical Properties. Elsevier Publishers. London. 1984

Packer Engineering. "Stainless Steel Equipment Care and Cleaning. NAFEM. Chicago

Washington Steel Corporation. Stainless Steel Flat Rolled Products Handbook. Blount Specialty Steel. Washington, PA 1986