OWNER'S MANUAL

30 Lb. Laundry Dryer

Refer to Addendum A for Updated Information

MODELS

GAS	STEAM	ELECTRIC
L28US30G L28UR30G	L28UR30S	L28UR30E

CISSELL MANUFACTURING COMPANY
HEADQUARTERS
831 SOUTH FIRST ST.
P.O. BOX 32270
LOUISVILLE, KY 40232-2270

PHONE: (502) 587-1292
SALES FAX: (502) 585-3625
SERVICE/PARTS FAX: (502) 681-1275

THIS MANUAL MUST BE GIVEN TO THE EQUIPMENT OWNER.

MAN2030 (ECN5752) 8/99 IH

D0007R1
2/07

Addendum A

L28UR30, L28US30 Models

PART NO.	DESCRIPTION	COMMENTS	PAGE NO.
TU3240H	Thermostat	2 required; Hi & Safety; 185 degrees	
TU5150H	Thermostat	Medium; 150 degrees	
TU7244H	Thermostat	Low; 135 degrees	
TU2045H	Thermostat	Cool down; 155 degrees	
TU1979H	Door Switch	Includes hardware	
TU13412	Coin Board		
TU12932	Timer	60 minute; 24 Volt	
CM7360	Coin Meter	24 Volt; 25 cents; No cam	
TU3395	Belt	Upper	
TU7021	Belt	Lower; 60 Hertz	
TU3395	Belt	Lower; 50 Hertz	
TU7016H	Sheave	Basket	
TU5217	Sheave	Idler	
TU6559	Sheave	Motor; 60 Hertz	
TU7603	Sheave	Motor; 50 Hertz	
TU12803	Idler Bracket Assembly	Single motor only	
TU10002	Flange Bearing		
TU10676	Pillow Block Bearing		
TU15670	Fan		
TU8206	Air Switch Kit		
TU14482	Switch		
TU14178	Gas Valve	Natural Gas; 24 Volt	
TU13513	Gas Valve	L.P. Gas; 24 Volt; Baso	
GA-00764-0	Electrode	Spark Ignitor	
K590	Spark Ignitor Replacement Kit		
GA-00803-0	Suppression Lead	Spark cable	
TU2405	Steam Coil	9 section; 7¾ x 1 5/8 x 26	
TU13517	Steam Solenoid Valve	24 Volt	
TU15107	Door Glass		
TU15966	Door Glass Gasket		
TU2090	Door Gasket		
TU2874	Door Handle		
TU10763	Front Panel	Add color	
TU9511	Lint Door	Add color	
TU2083K	Basket		
TU7188K	Basket and Spider	Single motor	
K20	Spider	Single motor	
TU10362	Lint Screen		

Obsolete Parts – No Longer Available

PART NO.	DESCRIPTION	COMMENTS	PAGE NO.
TU7171	Loading Door and Hinge		
TU11510	Switch	Temperature selector	

IMPORTANT NOTICES—PLEASE READ

For optimum efficiency and safety, we recommend that you read the manual before operating the equipment. Store this manual in a file or binder and keep for future reference.

WARNING: Purchaser must post the following notice in a prominent location:

WARNING: **For your safety, the information in this manual must be followed to minimize the risk of fire or explosion or to prevent property damage, personal injury or death.**

- Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

- WHAT TO DO IF YOU SMELL GAS

- **Do not try to light any appliance.**
- **Do not touch any electrical switch; do not use any phone in your building.**
- **Clear the room, building or area of all occupants.**
- **Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.**
- **If you cannot reach your gas supplier, call the fire department.**

Installation and service must be performed by a qualified installer, service agency or the gas supplier.

WARNING: In the event the user smells gas odor, instructions on what to do must be posted in a prominent location. This information can be obtained from the local gas supplier.

WARNING: Purchaser must post the following notice in a prominent location:

FOR YOUR SAFETY
Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

WARNING: A clothes dryer produces combustible lint and should be exhausted outside the building. The dryer and the area around the dryer should be kept free of lint.

WARNING: Be safe, before servicing machine, the main power should be shut off.

WARNING: Wear safety shoes to prevent injuries.

ATTENTION: L'ACHETEUR DOIT PLACER L'AVERTISSEMENT SUIVANT DANS UN ENDROIT CLAIR ET VISIBLE:

AVERTISSEMENT. Assurez-vous de bien suivre les instructions donnees dans cette notice pour reduire au minimum le risque d'incendie ou d'explosion ou pour eviter tuot dommage materiel, toute blessure ou la mort.

__ Ne pas entreposer ni utiliser d'essence ni d'autres vapeurs ou liquides inflammables dans le voisinage de cet appareil ou de tout autre apparell.

__ **QUE FAIRE SI VOUS SENTEZ UNE ODEUR DE GAZ:**

- Ne pas tenter d'allumer d'apparell.
- Ne touchez a aucun interrupteur. Ne pas vous servir des telephones se trouvant dans le batiment ou vous vous trouvez.
- Evacuez la piece, le batiment ou la zone.
- Appelez immediatement votre fournisseur de gaz depuis un voisin. Suivez les instructions du fournisseur.
- Si vous ne pouvez rejoindre le fournisseur de gaz, appelez le service des incendies.

__ l'installation et l'entretien doivent etre assures par un installateur ou un service d'entretien qualifie ou par le fournisseur de gaz.

ATTENTION: L'ACHETEUR DOIT PLACER L'AVERTISSEMENT SUIVANT DANS UN ENDROIT CLAIR ET VISIBLE:

POUR VOTRE SECURITE

Ne pas entreposer ni utiliser d' essence ni d'autres vapeurs ou liquides inflammables dans le voisinage de cet appareil ou de tout autre appareil.

WARNING: To avoid fire hazard, do not dry articles containing foam rubber or similar texture materials. Do not put into this dryer flammable items such as baby bed mattresses, throw rugs,undergarments (brassieres, etc.) and other items which use rubber as padding or backing. Rubber easily oxidizes causing excessive heat and possible fire. These items should be air dried.

WARNING: Synthetic solvent fumes from drycleaning machines create acids when drawn through the dryer. These fumes cause rusting of painted parts, pitting of bright or plated parts, and completely removes the zinc from galvanized parts, such as the tumbler basket. If drycleaning machines are in the same area as the tumbler, the tumbler's make-up air must come from a source free of solvent fumes.

WARNING: Do not operate without guards in place.

WARNING: Check the lint trap often and clean as needed but at least a minimum of once per day.

WARNING: Alterations to equipment may not be carried out without consulting with the factory and only by a qualified engineer or technician. Only **Manufacturers** parts may be used.

WARNING: Remove clothes from dryer as soon as it stops. This keeps wrinkles from setting in and reduces the possibility of spontaneous combustion.

WARNING: Be safe - shut main electrical power and gas supply off externally before attempting service.

WARNING: Never use drycleaning solvents, gasoline, kerosene, or other flammable liquids in the dryer. ***FIRE AND EXPLOSION WILL OCCUR. NEVER PUT FABRICS TREATED WITH THESE LIQUIDS INTO THE DRYER. NEVER USE THESE LIQUIDS NEAR THE DRYER..***

WARNING: Do not place items exposed to cooking oils in your dryer. Items contaminated with cooking oils may contribute to a chemical reaction that could cause a load to catch fire.

WARNING: Never let children play near or operate the dryer. Serious injury could occur if a child should crawl inside and the dryer is turned on.

WARNING: Never tumble fiberglass materials in the dryer unless the labels say they are machine dryable. Glass fibers break and can remain in the dryer. These fibers cause skin irritation if they become mixed with other fabrics.

WARNING: Before operating gas ignition system - purge air from natural gas or propane gas lines per manufacturer’s instructions.

WARNING: To reduce the risk of electric shock, disconnect this appliance from the power supply before attempting any user maintenance other than cleaning the lint trap. Turning the controls to the OFF position does not disconnect this appliance from the power supply.

CISSELL DRYER WARRANTY

The Cissell Manufacturing Company (Cissell) warrants all new equipment (and the original parts thereof) to be free from defects in material or workmanship for a period of two (2) years from the date of sale thereof to an original purchaser for use, except as hereinafter provided. With respect to non-durable parts normally requiring replacement in less than two (2) years due to normal wear and tear, and with respect to all new repair or replacement parts for Cissell equipment for which the two (2) year warranty period has expired, or for all new repair or replacement parts for equipment other than Cissell equipment, the warranty period is limited to ninety (90) days from date of sale. The warranty period on each new replacement part furnished by Cissell in fulfillment of the warranty on new equipment or parts shall be for the unexpired portion of the original warranty period on the part replaced.

With respect to electric motors, coin meters and other accessories furnished with the new equipment, but not manufactured by Cissell, the warranty is limited to that provided by the respective manufacturer.

Cissell's total liability arising out of the manufacture and sale of new equipment and parts, whether under the warranty or caused by Cissell's negligence or otherwise, shall be limited to Cissell repairing or replacing, at its option, any defective equipment or part returned f.o.b. Cissell's factory, transportation prepaid, within the applicable warranty period and found by Cissell to have been defective, and in no event shall Cissell be liable for damages of any kind, whether for any injury to persons or property or for any special or consequential damages. The liability of Cissell does not include furnishing (or paying for) any labor such as that required to service, remove or install; to diagnose troubles; to adjust, remove or replace defective equipment or a part; nor does it include any responsibility for transportation expense which is involved therein.

The warranty of Cissell is contingent upon installation and use of its equipment under normal operating conditions. The warranty is void on equipment or parts; that have been subjected to misuse, accident, or negligent damage; operated under loads, pressures, speeds, electrical connections, plumbing, or conditions other than those specified by Cissell; operated or repaired with other than genuine Cissell replacement parts; damaged by fire, flood, vandalism, or such other causes beyond the control of Cissell; altered or repaired in any way that effects the reliability or detracts from its performance, or; which have had the identification plate, or serial number, altered, defaced, or removed.

No defective equipment or part may be returned to Cissell for repair or replacement without prior written authorization from Cissell. Charges for unauthorized repairs will not be accepted or paid by Cissell

CISSELL MAKES NO OTHER EXPRESSED OR IMPLIED WARRANTY, STATUTORY OR OTHERWISE, CONCERNING THE EQUIPMENT OR PARTS INCLUDING, WITHOUT LIMITATION, A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, OR A WARRANTY OF MERCHANTABILITY. THE WARRANTIES GIVEN ABOVE ARE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. CISSELL NEITHER ASSUMES, NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT, ANY OTHER WARRANTY OR LIABILITY IN CONNECTION WITH THE MANUFACTURE, USE OR SALE OF ITS EQUIPMENT OR PARTS.

For warranty service, contact the distributor from whom the Cissell equipment or part was purchased. If the distributor cannot be reached, contact Cissell.

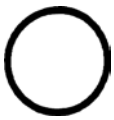
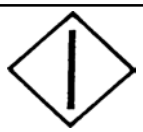
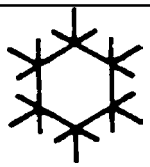
IDENTIFICATION NAMEPLATE

The identification nameplate is located on the rear wall of the dryer. It contains the dryer serial number, product number, model number, electrical specifications and other important data that may be needed when servicing and ordering parts, wiring diagrams, etc. Do not remove this nameplate.

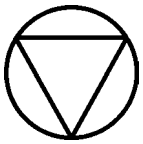
TABLE OF CONTENTS
30 LB. LAUNDRY DRYER

SYMBOLS

The following symbols are used in this manual and/or on the machine:

Symbol	Description
	**NOTE!**
	**Hot! Do Not Touch** **Heiß! Nicht Beruhren** **Haute temperature! Ne pas toucher** **Caliente! no tocar**
	**dangerous voltage** **tension dangereuse** **Gefährliche elektrische Spannung** **tension peligrosa**
	**on** **marche** **Ein** **conectado**
	**off** **arrêt** **Aus** **desconectado**
	**start** **demarrage** **Start** **arranque de un movimiento**
	**emission of heat in general** **êmission de chaleur en general** **Warmeabgabe allgemein** **emisión de calor**
	**cooling** **refroidissement** **Kühlen** **enfriamiento**

SYMBOLS

Symbol	Description
	rotation in two directions rotation dans les deux sens Drehbewigung in zwei Richtungen movimiento rotativo en los dos sentidos
	direction of rotation sens de mouvement continu de rotation Drehbewegung in Pfeilrichtung movimiento giratorio o rotatorio en el sentido de la flecha
	End of Cycle
	caution attention Achtung atencion; precaucion

UNPACKING

Upon arrival of the equipment, any damage in shipment should be reported to the carrier immediately.

Upon locating permanent location of a unit, care should be taken in movement and placement of equipment.

See outline clearance diagrams for correct dimensions.

Remove all packing material such as: tape, manuals, skid, etc.

Leveling: Use spirit level on top of dryer. Adjust leveling bolts on dryer (see adjustable leveling bolts in maintenance section).

Check voltage and amperes on rating plate before installing the dryer.

The construction of the dryers permits installation side-by-side to save space or to provide a wall arrangement. Position dryer for the least amount of exhaust piping and elbows, and allow free access to the rear of dryer for future servicing of belts, pulleys and motors. Installation clearance from all combustable material is 0" ceiling clearance, 0" rear clearance, and 0" side clearance.

GENERAL INSTALLATION (ALL DRYERS)

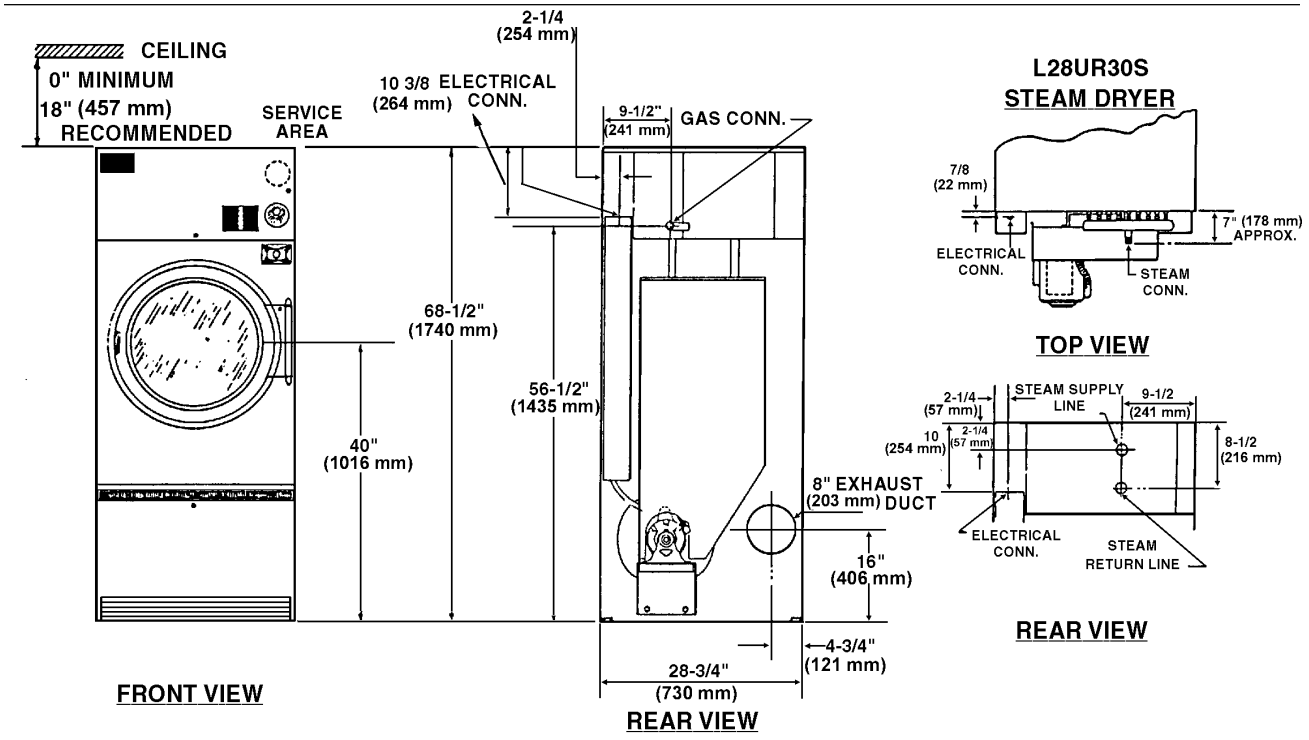
Before operating dryer, open basket door and remove blocking between front panel and basket. Read the instruction tags, owner's manual, warnings, etc.

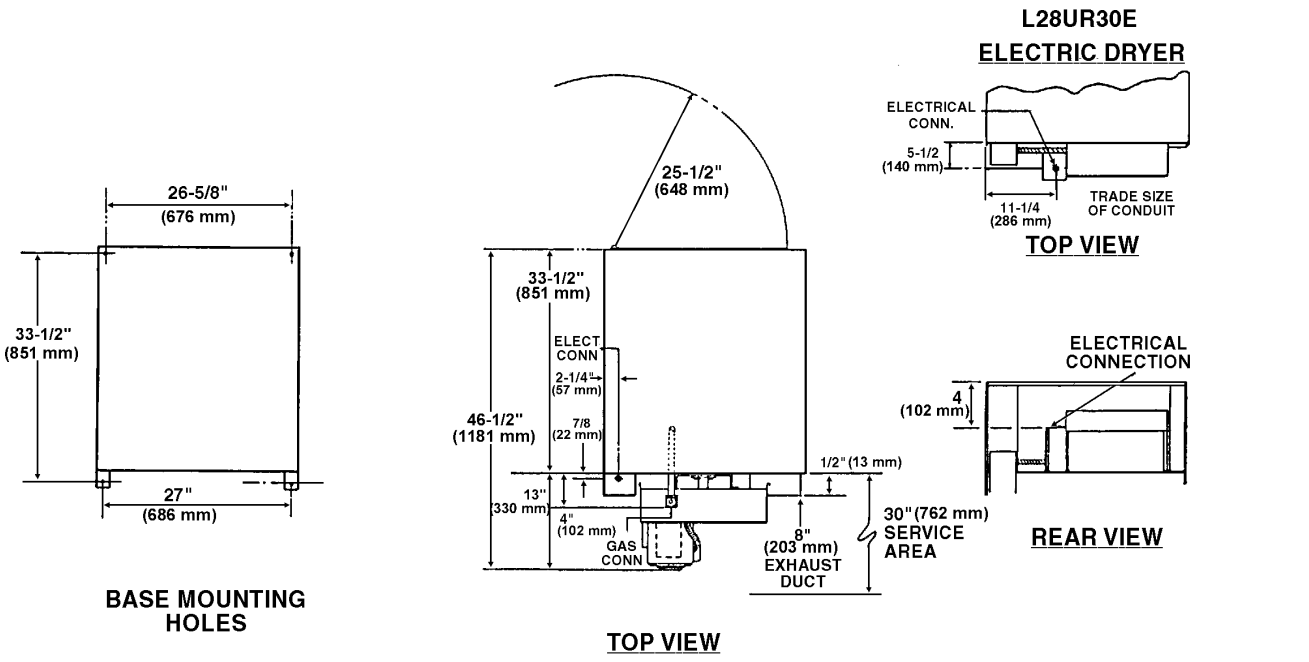
IMPORTANT
Opening the clothes loading door deactivates the door switch to shut off the motors, fan, gas, steam, or electric element. To restart the dryer, close the door and press in the push to start button and hold briefly.

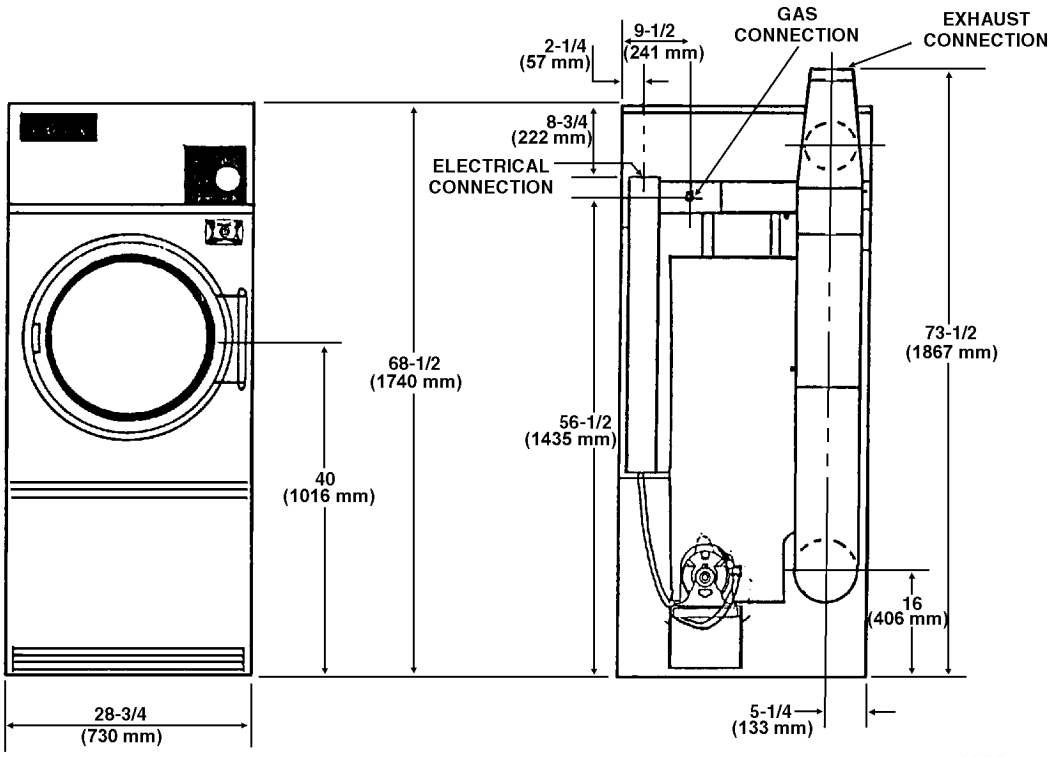
IMPORTANT
This dryer is designed for a capacity maximum load. Overloading it will result in long drying times and damp spots on some clothes.

IMPORTANT
Maximum operating efficiency is dependent upon proper air circulation. The lint screen must be kept cleaned daily to insure proper air circulation throughout the dryer.

IMPORTANT
Provide adequate clearance for air opening into the combustion chamber.

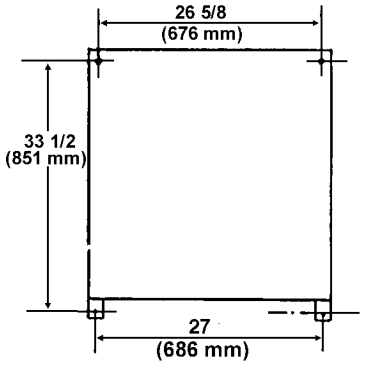

CEILING
0" MINIMUM
18" (457 mm)
RECOMMENDED
SERVICE AREA
2-1/4
(254 mm)
10 3/8 ELECTRICAL
(264 mm) CONN.
9-1/2"
(241 mm)
GAS CONN.
68-1/2"
(1740 mm)
56-1/2"
(1435 mm)
40"
(1016 mm)
8" EXHAUST
(203 mm) DUCT
16"
(406 mm)
4-3/4"
(121 mm)
28-3/4"
(730 mm)
FRONT VIEW
REAR VIEW
L28UR30S
STEAM DRYER
7/8
(22 mm)
7" (178 mm)
APPROX.
ELECTRICAL
CONN.
STEAM
CONN.
TOP VIEW
2-1/4
(57 mm)
STEAM SUPPLY
LINE
9-1/2
(241 mm)
10
(254 mm)
2-1/4
(57 mm)
8-1/2
(216 mm)
ELECTRICAL
CONN.
STEAM
RETURN LINE
REAR VIEW


L28UR30E
ELECTRIC DRYER
ELECTRICAL
CONN.
5-1/2
(140 mm)
11-1/4
(286 mm)
TRADE SIZE
OF CONDUIT
TOP VIEW
26-5/8"
(676 mm)
33-1/2"
(851 mm)
27"
(686 mm)
BASE MOUNTING
HOLES
25-1/2"
(648 mm)
33-1/2"
(851 mm)
ELECT
CONN
2-1/4"
(57 mm)
46-1/2"
(1181 mm)
7/8
(22 mm)
1/2" (13 mm)
13"
(330 mm)
4"
(102 mm)
GAS
CONN
8"
(203 mm)
EXHAUST
DUCT
30" (762 mm)
SERVICE
AREA
TOP VIEW
ELECTRICAL
CONNECTION
4
(102 mm)
REAR VIEW



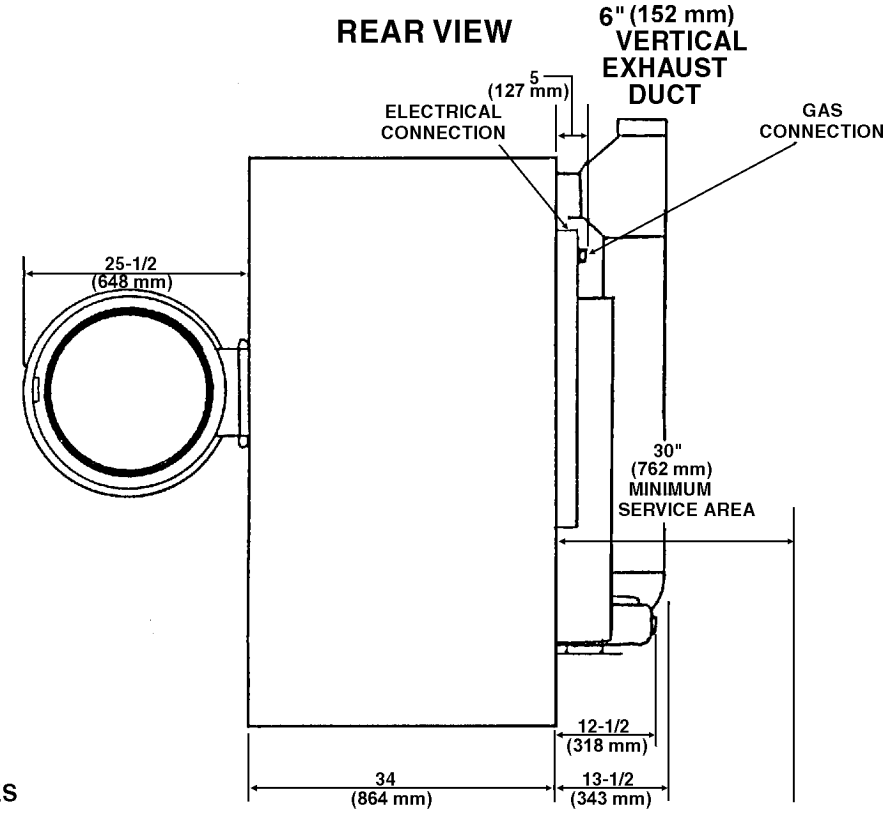
FRONT VIEW

REAR VIEW



BASE MOUNTING HOLES

DIMENSIONS GIVEN IN ± 1/4 INCHES
(6 mm)



VERTICAL EXHAUST FACTORY STANDARD

SIDE VIEW

GENERAL SPECIFICATIONS FOR 30 lb. LAUNDRY DRYERS

Basket Load Capacity	30 lb (13.6 kg) Dryweight
Basket Size	27 1/4" (720 mm) Diameter x 30 1/4" (760 mm) Deep
Total Amps, Voltage, Cycle	Refer to rating plate on dryer
Floor Space	UR models: 68 1/2" H (1740 mm) x 28 3/4" W (730 mm) x 47 1/2" Deep (1207 mm) US models: 68" H (1727 mm) x 28 3/4" W (730 mm) x 47 1/2" Deep (1207 mm)
Exhaust Air Duct Size	UR: 8" Diameter (203 mm) US: 6" Diameter (152 mm)
Pressure Maximum	3" Static Pressure

30 lb. GAS ENERGY-SAVER SPECIFICATIONS

Maximum Air Displacement	350 cfm (595 m³/h)
*Btu Input	80,000 Btu per hour (natural and LP gases)
Dryer Gas Burners	Natural gas—3.5" (8.7 mbar) WC regulated pressure. LP gas—11" (27 mbar) WC gas pressure.
Gas Supply	1/2" (DN15) pipe connection
Net Weight	495 lb (225 kg) approx.
Domestic Shipping Weight (1 carton)	526 lb (239 kg) approx.
Export Shipping Weight (1 box)	664 lb (301 kg) approx.

30 lb. GAS (STANDARD) SPECIFICATIONS

Maximum Air Displacement	700 cfm (1190 m³/h)
Recommended Operating Range	530-630 cfm (900-1070 m³/h)
Gas Supply	1/2" (DN15) pipe connection
*Btu Input	100,000 Btu per hour (natural and LP gases)
Electronic Ignition	Direct spark ignition system
Net Weight	437 lb (198 kg) approx.
Domestic Shipping Weight (1 carton)	472 lb (214 kg) approx.
Export Shipping Weight (1 box)	476 lb (216 kg) approx.
Export Shipping Dimensions	74" L (1880 mm) x 31" W (787 mm) x 52" H (1321 mm)

* Input ratings as shown are for elevations up to 2000 ft. (610 m). For elevations above 2000 ft., ratings should be reduced 4% for each 1000 ft. (305 m) above sea level.

30 lb. STEAM MODEL SPECIFICATIONS

Maximum Air Displacement	700 cfm (1190 m³/h)
Recommended Operating Range	530-630 cfm (900-1070 m³h)
Steam Supply Connection	3/4" (DN20)
Steam Return Connection	3/4" (DN20)
Operating Steam Pressure	7-15 lb (3.18-6.9 kg) low pressure 100 lb (56.7 kg) high pressure
Steam Consumption	3.4 BHP - 117.3 lb (53.21 kg/h. with normal load - high pressure 2.6 BHP - 89.7 lb (40.69 kg/h. with normal load - low pressure
Net Weight	478 lb (217kg)
Domestic Shipping Weight (approx. 1 carton)	522 lb (237kg)
Export Shipping Weight (approx. 1 box)	526 lb (239 kg)
Export Shipping Dimensions	74" L (1880 mm) x 35" W (889 mm) x 55" H (1397 mm)

30 LB. ELECTRIC MODEL SPECIFICATIONS

Maximum Air Displacement	700 cfm (1190 m³h)
Recommended Operating Range	530-630 cfm (900-1070 m³/h)
Heater Input	21 kW/h (18,061 kcal/h)
Total Heater Current	See chart on separate page
Net Weight (approx.)	463 lb (210 kg)
Domestic Shipping Weight (approx. 1 carton)	498 lb (226kg)
Export Shipping Weight (approx. 1 box)	513 lb (233kg)
Export Shipping Dimensions	74" L (1880 mm) x 31" W (787mm) x 52" H (1321 mm)

NOTE:
See electric heating unit section for further specifications.

Motor No.	Voltage	Hz.	Phase	HP	kW	Amps	RPM
MTR300	115/200-240	60	1	1/2	.37	6.2/3.1	1725
MTR300	200-240	50	1	1/2	.37	3.7	1425
MTR214	208-230/460	60	3	1/2	.37	2.5/1.1	1725
MTR302	200-240/346-415	50	3	1/2	.37	2.0/1.0	1425
MTR302	220/380	60	3	1/2	.37	1.8/0.9	1725

Note: All motors have built-in thermal overload protection.

GENERAL INFORMATION

The dryer is so designed that when an operator opens the dryer door, the basket and exhaust fan stops. You can expect fast drying from a laundry dryer. Hot, dry air is properly and effectively moved through the basket and exhausted through a lint trap to the atmosphere. The dryer comes equipped with an inclined, self-cleaning lint screen. In this system, lint accumulates on the underside of the screen until a blanket approximately 1/4" (6 mm) thick is formed. This blanket of lint will fall from the screen to the bottom of the dryer cabinet and should be removed daily, or as required, to prevent an over accumulation.

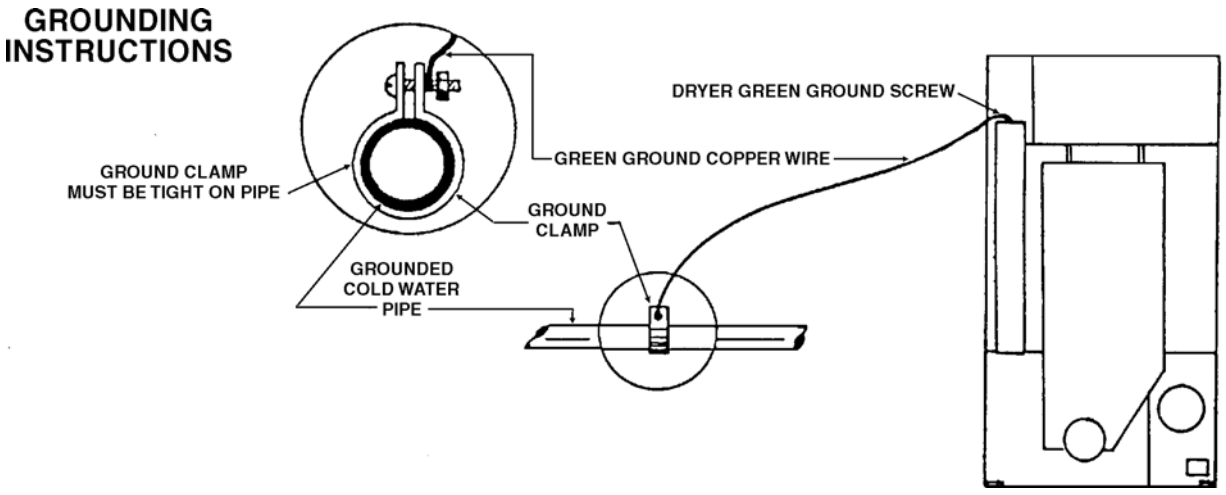
Permanent press, durable press and other modern day fabrics require the care that your laundry dryers now provide.

DRYER COOL-DOWN

At the end of the drying cycle, a timed "cool-down" control automatically takes over and continues the rotation of the fan and basket without heat until the garment load reaches a safe cool temperature. This function is performed at the end of each drying cycle and continues for two minutes.

Dryers must be electrically grounded by a separate #14 or larger green wire from the grounding terminal within the service connection box to a cold water pipe, or through the fourth green wire properly grounded and connected to the grounding terminal. In all cases, the

Grounding Instructions (Illustration)



ELECTRICAL CONNECTIONS

grounding method must comply with local electrical code requirements; or in the absence of local codes, with the ***National Electrical Code, ANSI/NFPA 70 or the Canadian Electrical Code, CA C22.1.***

See wiring diagram furnished with dryer. Your dryer is completely wired at the factory and it is only necessary for the electrician to connect the power leads to the wire connectors within the service connection box on the rear of the dryer. Do not change wiring without consulting factory as you may void the factory warranty. Do not connect the dryer to any voltage or current other than that specified on the dryer rating plate. (Wiring diagram is located on rear wall of dryer.)

ELECTRICAL CONTROLS SERVICING

Caution: Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.

Verify proper operation after servicing.

Attention. Lors des operations d'entretien des commandes, etiqueter tous les fils avant de les deconnecter. Toute erreur de cablage peut etre une source de danger et de panne.

PIPING RECOMMENDATIONS

1. Trap each dryer individually. Always keep the trap clean and in good working condition.

2. When dryer is on the end of a line of equipment, extend header at least 4 feet (1.22 m) beyond dryer. Install globe valve, union, check valve and by-pass trap at end of line. If gravity return to boiler, omit trap.

3. Insulate steam supply and return line for safety of operator and safety while servicing dryer.

4. Keep dryer in good working condition. Repair or replace any worn or defective parts.

STEAM HEATING UNITS

1. Keep steam coils clean.

2. Check periodically and clean as often as required.

3. Remove lint and dirt accumulation from coil fins periodically as dirty lint-laden coil fins decrease the efficiency of steam-heated dryers.

GAS PIPING INSTALLATION

1. The installation must conform with local codes, or in the absence of local codes with the ***National Fuel Gas Code, ANSI Z223.1 or the CAN/CGA-B149, Installation Codes.***

2. Check identification nameplate for type of gas for dryer.

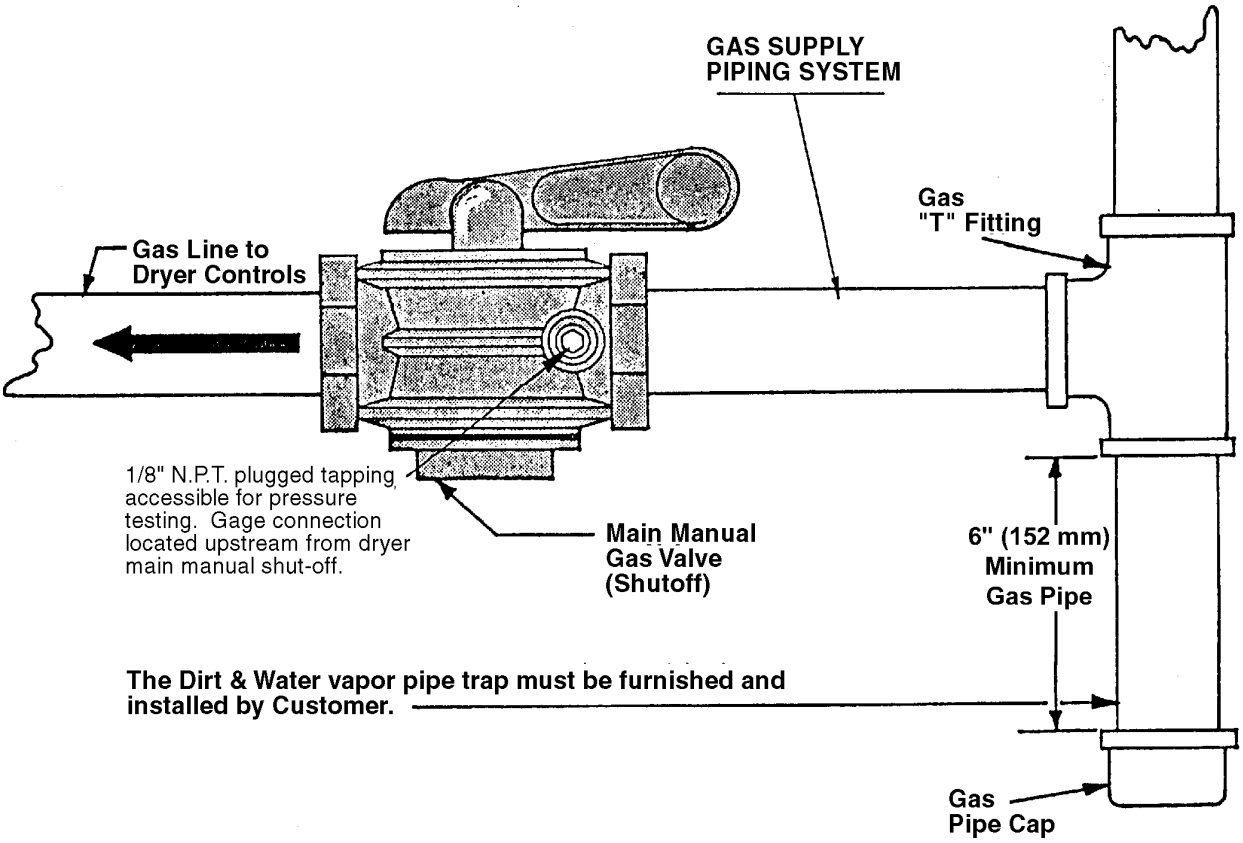
3. Check the altitude of dryer.

4. Check with utilities company for proper gas pressure and gas supply line.

5. Natural gas only—check the gas pressure inlet supply to dryer, 11 inches (27 mbar) water column maximum. Manifold pressure—3.5 inches (8.7 mbar) water column pressure.

6. L.P. gas only—manifold pressure—13 inches (32 mbar) water column maximum.

CAUTION: Low gas pressure and intermittent gas will cause gas ignition problems and inadequate drying of laundry.



The dryer and it's individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psi (3.5 kPa).

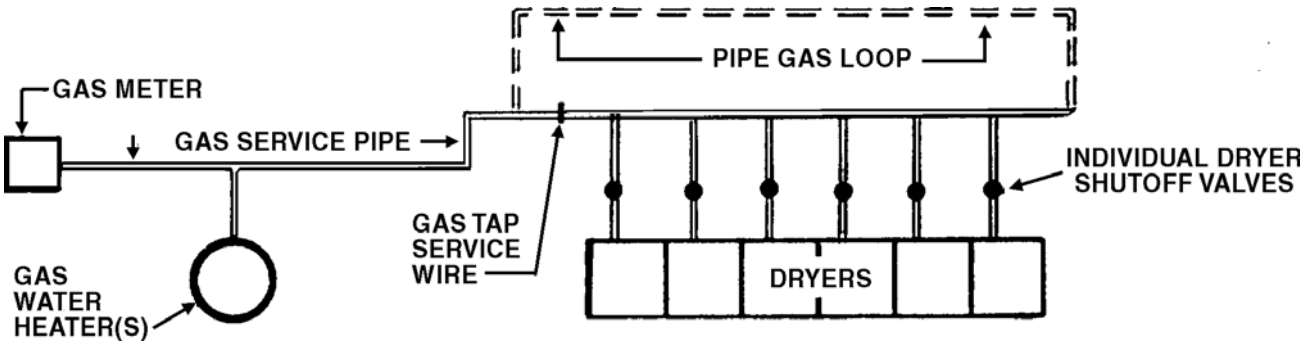
The dryer must be isolated from the gas supply piping system by closing it's individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psi (3.5 kPa).

GAS SERVICE INSTALLATION INSTRUCTIONS

The size of the gas service pipe is dependant upon many variables, such as tees, lengths, etc. Specific pipe size should be obtained from the gas supplier. Refer to the "Gas Pipe Size" chart in this manual for general gas pipe size information.

CAUTION: Gas loop piping must be installed as illustrated to maintain equal gas pressure for all dryers connected to a single gas service

Other gas-using appliances should be connected upstream from the loop.



WARNING:
LIQUIFIED PETROLEUM GASES ONLY !

GAS PRESSURE REGULATOR FOR LIQUIFIED PETROLEUM GASES

A gas pressure regulator for liquified petroleum gases is not furnished on gas heated clothes dryers. This regulator is normally furnished by the installer. In accordance with American Gas Association (AGA) standards, a gas pressure regulator, when installed indoors, must be equipped with a vent limiter or a vent line must be installed from the gas pressure regulator vent to the outdoors.

Gas Pipe Size Chart

TOTAL BTU/HR (for LP Gas correct total BTU/HR below by multiplying by .6)	TOTAL KCAL	GAS PIPE SIZE FOR 1000 BTU (250 KCAL) NATURAL GAS AT 7" (17.8 CM) W.C. PRESSURE In figuring total length of pipe, make allowance for tees and elbows.					
	HOUR	(25 ft.) 7,62 m	(50 ft.) 15,24 m	(75 ft.) 22,86 m	(100 ft.) 30,48 m	(125 ft.) 38,1 m	(150 ft.) 45,72 m
60,000	15000	3/4	3/4	3/4	3/4	3/4	3/4
80,000	20000	3/4	3/4	3/4	1	1	1
100,000	25200	3/4	3/4	1	1	1	1
120,000	30200	3/4	1	1	1	1	1
140,000	35200	3/4	1	1	1	1	1 1/4
160,000	40300	3/4	1	1	1 1/4	1 1/4	1 1/4
180,000	45300	1	1	1	1 1/4	1 1/4	1 1/4
200,000	50400	1	1	1 1/4	1 1/4	1 1/4	1 1/2
300,000	75600	1	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2
400,000	100800	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2	2
500,000	126000	1 1/4	1 1/2	1 1/2	2	2	2
600,000	151200	1 1/2	1 1/2	2	2	2	2
700,000	176400	1 1/2	2	2	2	2	2 1/2
800,000	202000	1 1/2	2	2	2	2 1/2	2 1/2
900,000	230000	2	2	2	2 1/2	2 1/2	2 1/2
1,000,000	250000	2	2	2	2 1/2	2 1/2	2 1/2
1,100,000	270000	2	2	2 1/2	2 1/2	2 1/2	2 1/2
1,200,000	300000	2	2	2 1/2	2 1/2	2 1/2	2 1/2
1,300,000	330000	2	2 1/2	2 1/2	2 1/2	2 1/2	3
1,400,000	350000	2	2 1/2	2 1/2	2 1/2	3	3
1,500,000	380000	2	2 1/2	2 1/2	2 1/2	3	3
1,600,000	400000	2	2 1/2	2 1/2	3	3	3
1,700,000	430000	2	2 1/2	2 1/2	3	3	3
1,800,000	450000	2 1/2	2 1/2	3	3	3	3
1,900,000	480000	2 1/2	2 1/2	3	3	3	3
2,000,000	504000	2 1/2	2 1/2	3	3	3	3 1/2
2,200,000	550000	2 1/2	3	3	3	3 1/2	3 1/2
2,400,000	605000	2 1/2	3	3	3	3 1/2	3 1/2
2,600,000	650000	2 1/2	3	3	3 1/2	3 1/2	3 1/2
2,800,000	705000	2 1/2	3	3	3 1/2	3 1/2	3 1/2
3,000,000	750000	2 1/2	3	3 1/2	3 1/2	3 1/2	4
3,200,000	806000	3	3	3 1/2	3 1/2	3 1/2	4
3,400,000	850000	3	3 1/2	3 1/2	3 1/2	4	4
3,600,000	907000	3	3 1/2	3 1/2	3 1/2	4	4
3,800,000	960000	3	3 1/2	3 1/2	4	4	4
4,000,000	1000000	3	3 1/2	3 1/2	4	4	4

STEAM PIPING INSTALLATION INSTRUCTIONS

1. Set and anchor dryer in position. Machine should be level to assure proper steam circulation.

2. To prevent condensate draining from headers to dryer, piping should have a minimum 12" (305 mm) above respective header. Do not make steam connection to header with a horizontal or downwardly facing tee or elbow.

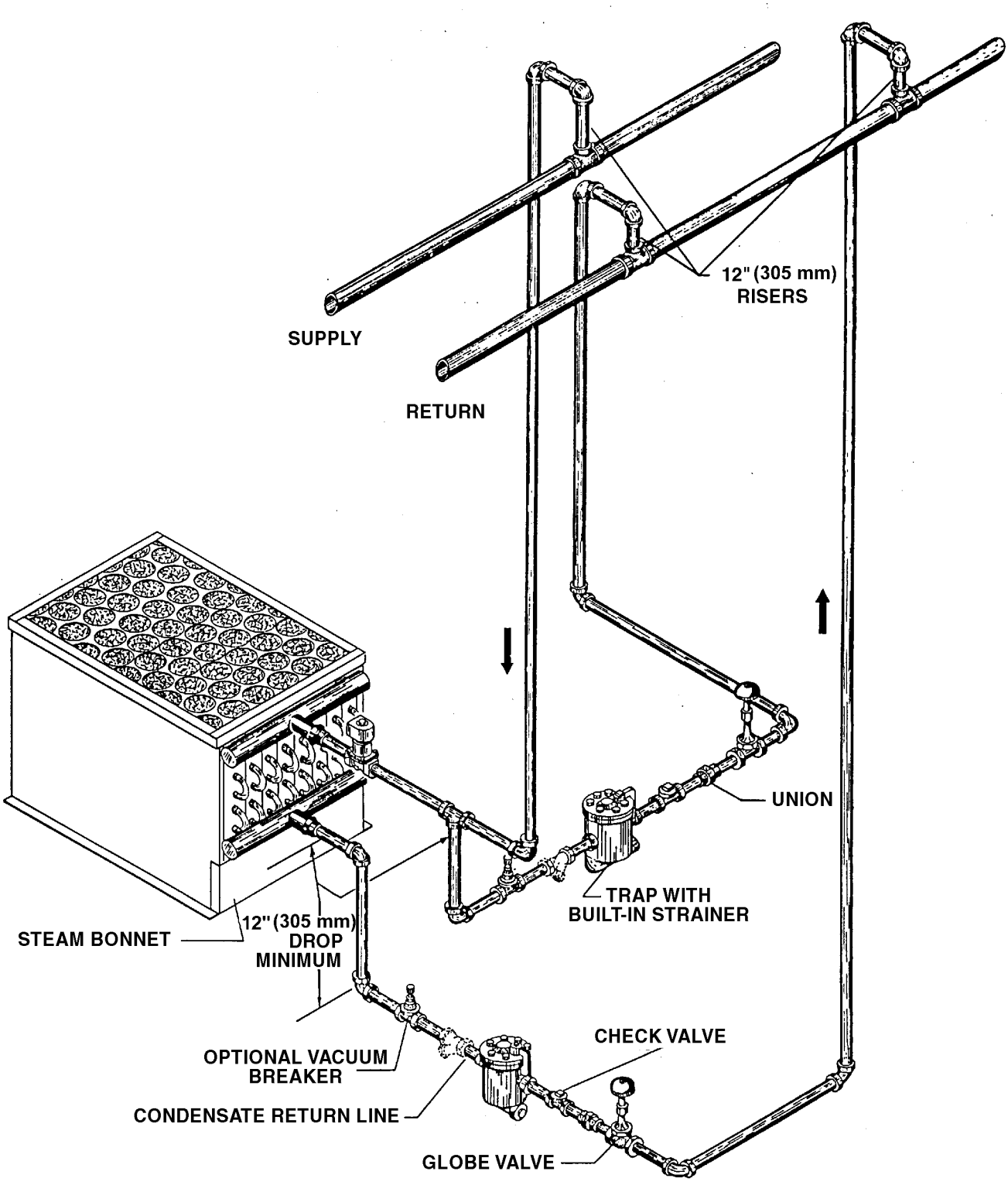
3. Whenever possible, horizontal runs of steam lines must drain, by gravity, to respective steam header. Water pockets, or an imporperly drained steam header will provide wet steam, causing improper operation of dryer. If pockets or improper drainage cannot be eliminated, install a by-pass trap to drain condensate from the low point in the steam supply header to the return.

4. In both steam supply and steam retyrn line, it is recommended that each have a 3/4" (DN 20) union and 3/4" (DN 20) globe valve. This will enable you to disconnect the steam connections and service the dryer while your plant is in operation.

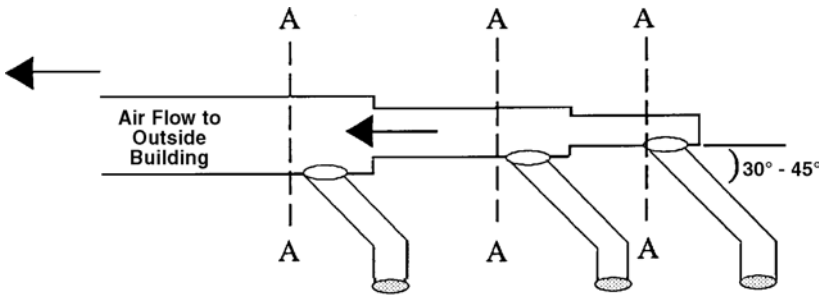
5. Before connecting trap and check valve to dryer, open globe valve in steam supply line and allow steam to flow through dryer to flush out any dirt and scale from dryer. This will assure proper operation of trap when connected.

6. After flushing system, install bucket trap (with built-in strainer) and check valve. For successful operation of dryer, install trap 18" (457 mm) below coil and as near to the dryer as possible. Inspect trap carefully for inlet and outlet markings and install according to trap manufacturer's instructions. If steam is gravity returned to boiler, omit trap but install check valve in return line near dryer.

7. Install union and globe valve in return line and make final pipe connections to return header.


12" (305 mm)
RISERS
SUPPLY
RETURN
UNION
TRAP WITH
BUILT-IN STRAINER
STEAM BONNET
12" (305 mm)
DROP
MINIMUM
CHECK VALVE
OPTIONAL VACUUM
BREAKER
CONDENSATE RETURN LINE
GLOBE VALVE

For Exhaust Duct less than 14 feet (4.3 m) and 2 elbows equivalent and less than 0.3 inches (7.6 mm) water column static pressure.



DRYER EXHAUSTS

Area of section "A-A" must be equal to the sum of dryer exhaust pipes entering multiple exhaust pipe. (*See chart below.*)

MODELS: L28FD30, L28US30, L36FD30, L36US30, L36US36, L44FD42

No. of dryers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Duct diameter (in inches)	6	9	11	12	14	15	16	17	18	19	20	21	22	23	23	24	25	26	26	27	28	28	29	30
(in cm)	15	23	27	30	35	38	41	43	46	48	51	53	56	58	58	61	63	66	66	68	71	71	73	76

MODELS: L28CD30, L28UR30, L36CD30, L36UR30, L36UR36, L36AR36, L44FD42

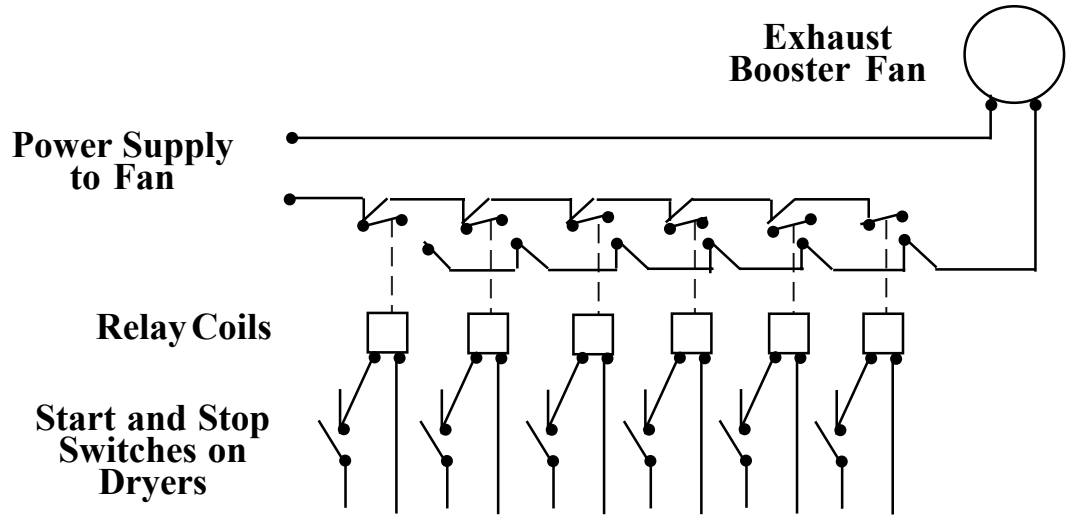
No. of dryers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Duct diameter (in inches)	8	12	14	16	18	20	22	23	24	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
(in cm)	20	30	25	41	46	51	56	58	61	66	68	71	73	76	78	81	84	86	89	91	94	97	99	100

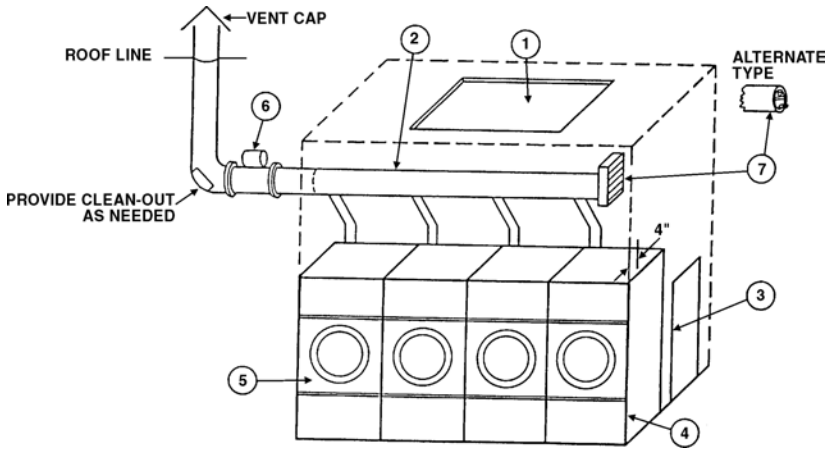
MODELS: L44CD42, L50CD42

No. of dryers	1	2	3	4	5	6	7	8	9	10	11	12
Duct diameter (in inches)	12	17	21	24	27	30	32	34	36	38	40	42
(in cm)	30	43	53	61	68	76	81	86	91	97	100	106

AUTOMATIC ELECTRICAL CONTROL FOR EXHAUST FAN

For one or more dryers to start fan.





DRYER INSTALLATION WITH MULTIPLE EXHAUST

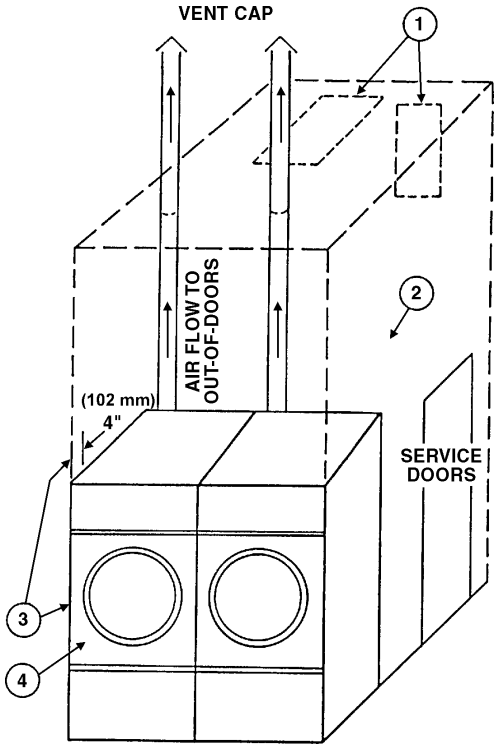
For Exhaust Duct more than 14 feet (5 m) and 2 elbows equivalent and more than 0.3 inches (8 mm) water column static pressure.
(See illustration on next page.)

1. Make-up air from outside building may enter enclosure from top or side walls. *(See Dryer Make-up Air Requirements Chart)*
2. Use constant diameter duct with area equal to the sum of dryer duct areas.
   EXAMPLE: 6-8 inches (203 mm) diameter duct = 1-19.6 inches (498 mm) diameter duct in area. Use 20 inches (508 mm) diameter duct or diameter to match tube-axial fan.
3. Enclosure (plenum) with service door. This separates the dryer air from room comfort air. If dryers use room air instead of outside air, the heat loss can be another 25 Btu/h (6.3 kcal/h) for each cubic foot per minute (cfm) used.
4. Zero inches clearance to combustible material allowed on sides and at points within 4 inches (100 mm) of front on top.
5. Heat loss into laundry room from dryer fronts *only* is about 60 Btu/h per square foot (15 kcal/h per 0.1m²).
6. Flange mounted, belt driven tube-axial fan. Fan must run when one or more dryers are running. *See suggested Automatic Electrical Control Wiring Diagram on previous page.* Must meet local electrical codes. Fan air flow (cfm) (m³/h.) is equal to sum of dryer air flows, but static pressure (SP) is dependent on length of pipe and number of elbows.
7. Barometric bypass damper—Adjust to *closed flutter position* with all dryers and exhaust fan running. Must be located within enclosure.

CAUTION: *Never* install hot water heaters or other gas appliances in the same room as dryers. *Never* install cooling exhaust fans in the same room as dryers.

CAUTION: *Never* exhaust dryers with other types of equipment.

Dryer Installation With Separate Exhaust (Preferred)



DRYER INSTALLATION WITH SEPARATE EXHAUST (PREFERRED)

For ductwork less than 14 feet (5 m) and 2 elbows equivalent and less than 0.3 inches (8 mm) water column static pressure:

NEVER exhaust the dryer into a chimney.

NEVER install wire mesh screen over the exhaust or make-up air area.

NEVER exhaust into a wall, ceiling, or concealed space.

1. Make-up air opening from outside the building may enter the enclosure from the top or side walls. (*See Dryer Make-up Air Requirements Chart)*
2. Enclosure (plenum) with service door. This separates the dryer air from the room comfort air. If dryers use room air instead of outside air, additional heat loss can be another 25 Btu/h (6.3 kcal/h) for each cubic foot per minute (cfm) (1.8 m^3/h) used.
3. Zero inches (mm) clearance to combustible material allowed on sides and at points within 4 inches (100 mm) of front on top.
4. Heat loss into laundry room from dryer front panels is about 60 Btu/h per square foot (15 kcal/h per $0.1m^2$).

Suggested Minimum Dryer Make-up Air Requirements

Dryer Model	Dryer Pocket Capacity		Maximum Air Flow Rate per Pocket		Duct Size For Service Connection		Required Make-up Air Area per Pocket	
	lb	kg	cfm	m3/h	inch	mm	sq. inch	cm2
C 30	30	13.6	700	1190	8	203	135	871
C 30 E/S	30	13.6	400	680	6	153	77	497
C 30 ST	30	13.6	450	765	6	153	87	561
C 50	50	22.7	800	1360	8	203	154	994
C 50 E/S	50	22.7	450	765	6	153	87	561
C 75	75	34	1000	1700	8	203	192	1239
C 75 E/S	75	34	536	911	6	153	103	665
C 75 ST	75	34	1000	1700	12	305	192	1239
HD80	80	36.3	1465	2490	10	254	282	1819
C 110	110	50	2200	3740	12	305	422	2723
C 110 E/S	110	50	850	1445	8	203	163	1052
C 125	125	56.7	2000	3400	12	305	384	2477
C 150	150	68	2250	3825	12	305	432	2787
HD175	175	79.4	2780	4726	12	305	534	3445
HD190	190	86.2	3000	5100	12	305	576	3716
WMC/HD20	20	9.1	450	765	6	153	87	561
WMC/HD30	30	13.6	625	1063	8	203	120	774
WMC/HD50	50	22.7	700	1190	8	203	135	871
WMC/HD75	75	34	750	1275	8	203	144	929

Notes:

1) The Model C 30 ST has 2 pockets per dryer, each pocket has the above listed characteristics; each pocket is exhausted separately with a 6" (152 mm) duct.
2) The Model C 75 ST has 2 pockets per dryer, each pocket has the above listed characteristics; both pockets have one 8" (203 mm) exhaust manifolded into one 12" (305 mm) exhaust duct for connection.
3) For the C 30 ST and the C 75 ST Models, the Required Make-up Air Area shown in the table should be doubled since it is shown per pocket, only.
4) E/S indicates an Energy Saving Model.

DRYER AIR FLOW INSTALLATION

Nothing is more important than air flow for the proper operation of a clothes dryer. A dryer is a pump which draws make-up air from the out-of-doors, through the heater, through the clothes and then forces the air through the exhaust duct back to the out-of-doors. Just as in a fluid water pump, there must be a fluid air flow to the inlet of the dryer, if there is to be the proper fluid air flow out of the exhaust duct.

In summary, there must be the proper size out-of-doors inlet air opening 4-6 times the combined areas of the air outlet) and an exhaust duct, size and length of which allows flow through the dryer with no more than 0.3 inches (7.6 mm) water column static pressure in the exhaust duct.

In some instances, special fans are required to supply make-up air, and/or boost exhaust fans are required for both regular and energy saving models.

EXHAUST DUCT

FOR BEST DRYING:

1. Exhaust duct maximum length 14 feet (4.3 m) of straight duct and maximum of two 90° bends.
2. Use 45° and 30° elbows wherever possible.
3. Exhaust each dryer separately**.**
4. Use 2 feet (0.6 m) of straight duct on dryer before installing an elbow on Energy-Saver models only.
5. **Do not** install wire mesh or other restrictions in the exhaust duct.
6. Use clean-outs in the exhaust duct and clean periodically when needed.
7. **Never** exceed 0.3 inches (7.6 mm) water column static pressure in the exhaust duct.
8. Inside surface of the duct must be smooth.
9. Recommend pop rivets for duct assembly.

MAKE-UP AIR

FOR BEST DRYING:

1. Provide opening to the out-of-doors in accordance with the following:
   For each dryer—
   6 inches (152 mm) diameter exhaust requires a 1 square feet (0.1 m^2) opening for make-up air.
   8 inches (203 mm) diameter exhaust requires a 2 square feet (0.2 m^2) opening for make-up air.
   12 inches (305 mm) diameter exhaust requires a 4 square feet (0.4 m^2) opening for make-up air.
2. Use barometric shutters in the inlet air opening to control air when dryers are not running.

OTHER RECOMMENDATIONS

Other Recommendations

To assure compliance, consult local building code requirements.

TROUBLESHOOTING

Troubleshooting

Hot dryer surfaces, scorched clothes, slow drying, lint accumulations, or air switch malfunction are indicators of exhaust duct and/or make-up air problems.

RULES FOR SAFE OPERATION OF DRYER

1. Be sure your dryer is installed properly in accordance with the recommended instructions.
2. **CAUTION**
   Be safe—shut main electrical power supply and gas supply off externally before attempting service.
3. **CAUTION**
   Never use drycleaning solvents: gasoline, kerosene, or other flammable liquids in the dryer. ***Fire and explosion will occur.***
   Never put fabrics treated with these liquids into the dryer.
   Never use these liquids near the dryer.
   Always keep the lint screen clean.
   Never use heat to dry items that contain plastic, foam or sponge rubber, or rags coated with oils, waxes or paints. The heat may damage the material or create a fire hazard. Rubber easily oxidizes, causing excessive heat and possible fire.
   Never dry the above items in the dryer.
4. **Never** let children play near or operate the dryer. Serious injury will occur if a child should crawl inside and the dryer is turned on.
5. **Never** use dryer door opening and top as a step stool.
6. Read and follow manufacturer's instructions on packages of laundry and cleaning aids. Heed any warnings or precautions.
7. **Never** tumble fiberglass materials in the dryer unless the labels say they are machine dryable. Glass fibers break and can remain in the dryer and could cause skin irritation if they become mixed into other fabrics.
8. Reference: Lighting and shut-down instructions and wiring diagrams are located on the rear wall of the dryer cabinet.
9. The dryer must not be installed or stored in an area where it will be exposed to water and/or weather.

ENERGY-SAVING TIPS

1. Install dryer so that you can use short, straight venting. Turned elbows and long vent tubing tend to increase drying time. Longer drying time means the use of more energy and higher operating costs.
2. Operate dryer using full-size loads. Very large loads use extra energy. Very small loads waste energy.
3. Dry light-weight fabrics separately from heavy fabrics. You will use less energy and get more even drying results by drying fabrics of similar weight together.
4. Clean the lint screen area daily. A clean lint screen helps give faster, more economical drying.
5. **Do not** open the dryer door while drying. You let warm air escape from the dryer into the room.
6. Unload the dryer as soon as it stops. This saves having to re-start your dryer to remove wrinkles.

OPERATING INSTRUCTIONS—COIN METER MODELS

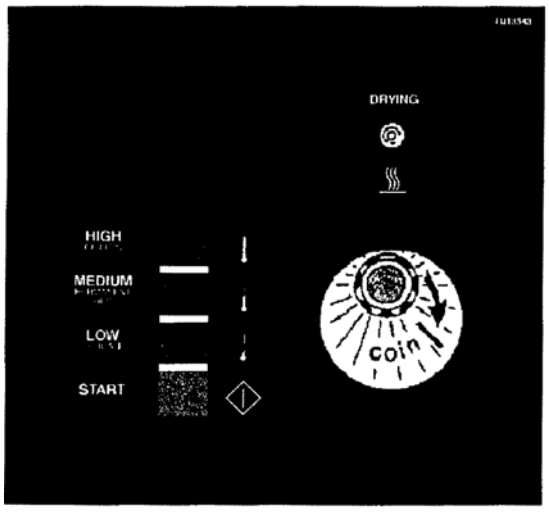
OPERATING INSTRUCTIONS—COIN METER MODELS

1. After loading the dryer with water washed clothes, close the loading door.

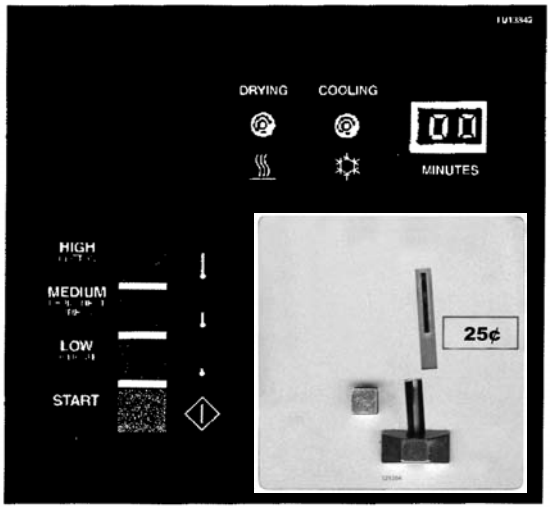
2. **ELECTRO-MECHANICAL COIN METER:** Insert proper coin(s) in slot and turn knob until it stops.
   COMPUTERIZED COIN METER: Insert coin. Amount of drying time will appear on the digital display. Maximum time is 99 minutes. Additional coins may be vended any time during the cycle.

3. Select temperature setting using proper push button.
   HIGH—185° F (85° C) exhaust temperature, *heavy fabrics and hard to dry, (cottons and linens).*
   MEDIUM—150° F (66° C) exhaust temperature, *permanent press, synthetic blends.*
   LOW—135° F (57° C) exhaust temperature, *delicate, sheer fabrics*.

4. Press the **"Start"** button to start the drying and cooling cycles.



ELECTRO-MECHANICAL COIN METER



COMPUTERIZED COIN METER

WHAT IS HAPPENING AFTER STEP 4:

1. Digital Display will count down time remaining in cycle (Computerized Coin Meter).

2. The fan motor and basket will revolve.

3. The heat source will be energized.

4. The heated air will mix with the wet clothes and evaporate the moisture.

5. The thermostats will operate at a safe temperature.

6. The heat will shut off and the cooling cycle will begin.

IMPORTANT

IMPORTANT

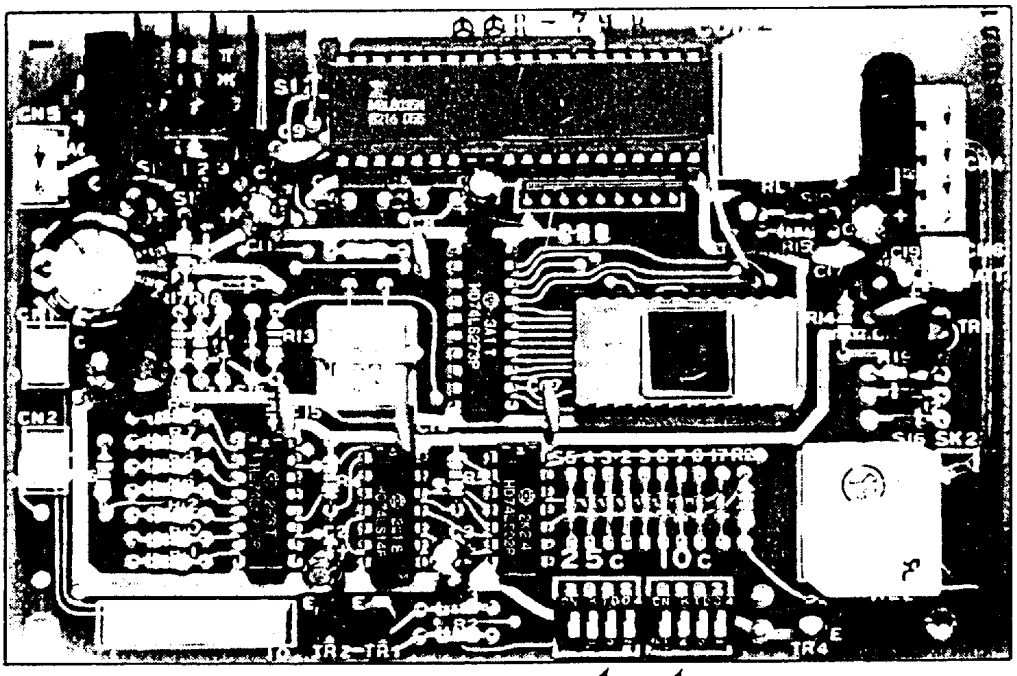
If the tumbler door is opened during the drying cycle, the fan and heat will shut off. Press **"START"** button to resume the cycle.

This dryer is designed for a capacity maximum load. Overloading it will result in longer drying time and damp spots on some of the load.

Maximum operating efficiency depends on proper air flow. The lint screen must be kept clean daily to insure proper circulation of air throughout the dryer.

This commercial dryer has keys for the lint door and access door to burners and controls. This is for the safety of the user.

COMPUTERIZED COIN METER

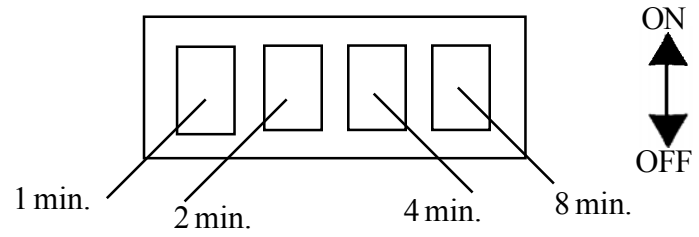


DIP Switch Banks are located here

INSTRUCTIONS FOR SETTING TIME ON COMPUTERIZED COIN METER

1. This control is equipped with two banks of four DIP switches.

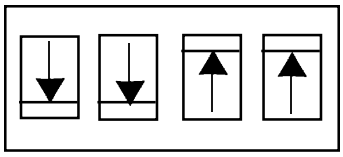
2. Each DIP switch bank consists of 4 small switches each with a specified amount of time (minutes), as shown:



3. To set the time on the DIP bank simply set the appropriate switch to the **ON** (up) position to total the desired amount of time.

NOTE
OFF (down) position equals 0 minute.

EXAMPLE: 25¢ for 12 minutes



MINUTES: 0 + 0 + 4 + 8 = 12 min.

TROUBLESHOOTING

To help you troubleshoot the dryer, we list below the most common reasons for service calls and some answers to the problems. Before you call service, please review the following items:

DRYER WON'T START

DRYER WON'T START

1. Is the door completely closed?
2. Are the controls set to the **"on"** position?
3. Did you push the **"start"** control?
4. Has a fuse blown or a circuit breaker tripped?
5. Are the fuses tight?
6. Check for low voltage.
7. Has the bonnet thermostat (gas only) tripped? If so, push to reset.

DRYER WON'T HEAT

DRYER WON'T HEAT

1. Is the dryer set for **"cooling time"** rather than **"drying time"**?
2. Are the gas valve in the dryer and the valve on the main gas line turned on?
3. Check for low or intermittant gas pressure.
4. Check spark ignition module diagnostic light.

CLOTHES ARE NOT SATISFACTORILY DRY

CLOTHES ARE NOT SATISFACTORILY DRY

1. *Timed cycle*—Did you allow enough heating time before the cool-down part of the cycle?
2. Is the lint screen blocked?
3. Is the exhaust duct to the outside clean and not blocked? *(A blocked exhaust will cause slow drying and other problems.)*

GAS DRYER IGNITION

GAS DRYER IGNITION

Refer to the page on *"Instructions for the Direct Ignition System Operation"*. Check to see if the manual gas valve is open. Then reset the dryer controls. All panels, covers, and doors must be in place and closed before starting the dryer.

VERY IMPORTANT

VERY IMPORTANT
When calling the factory for service, always refer to the model number and serial number.

Troubleshooting Chart

TROUBLE	CAUSE	REMEDY
Motor will not start.	No power.	Check fuses on circuit breakers. Make sure main control switch is “on”. Check bonnet thermostat (gas only).
	Incorrect power.	Check power source; voltage, phase and frequency must be the same as specified on electrical rating plate.
	Time off.	Check timer for proper setting or check coin meter for properly vending.
	Loose wiring connections.	Check wire connections in electrical box on rear of dryer.
	Loading door open.	Close door.
	Door switch out of adjustment.	Adjust switch by removing front panel and bend actuator lever to clear switch button 3/8" with front panel in place.
	Defective door switch.	Replace switch.
	Defective basket motor contactor.	Replace contractor.
	Tripped/defective safety thermostat on gas bonnet.	Reset/replace thermostat.
Motor tripping on thermal.	Low voltage.	Check voltage at motor terminals. Voltage must be within + 10% of voltage shown on motor rating plate. If not, check with local power company for recommended corrective measures.
	Inadequate wiring.	Check with local power company to insure that wiring is adequately sized for load.
	Loose connections.	Check all electrical connections and tighten any loose connections.
	Inadequate air.	Check installation sheet for recommended make-up air openings.
	Poor housekeeping.	Clean lint accumulation on and around motors.
Dryer does not stop at end of time period.	Defective timer.	Replace timer.
Motor runs but basket will not revolve.	V-belt broken.	Replace V-belt.
	V-belt loose.	Adjust belt tension.
	Motor pulley loose.	Tighten set screw.
	Basket overloaded.	Remove load.

Troubleshooting Chart

TROUBLE	CAUSE	REMEDY
Dryer noisy or vibrating.	Not leveled.	Check manual for proper leveling procedures.
	Fan out of balance.	Accidental damage to the fan blade can change the dynamic balance. Damaged fans should be replaced.
	Basket rubbing.	Adjust basket clearance.
	V-belt sheaves.	Tighten set screws. Make sure sheaves are in proper alignment.
	Belt.	Adjust belt tension.
	Foreign objects.	Occasionally screws, nails, etc, will hang in the basket perforations and drag against the sweep sheets surrounding the basket. Such foreign objects should be removed immediately.
Dryer runs, but no heat.	Incorrect voltage.	Check for correct control voltage - 120V.
	No voltage.	Check power supply, check secondary voltage on transformer and check wiring and wiring diagram.
	Direct spark ignition module defective.	Replace direct spark ignition module.
	Defective gas valve.	Replace coil assembly.
	Gas turned off.	Turn manual gas valve on.
	Defective door switch.	Replace door switch.
	Air switch not operating.	Clean out lint compartment daily. Check back draft damper for foreign objects, lint accumulation or other causes that may prevent damper from opening. Check duct work for lint build-up. Check installation sheet to insure that duct work and make-up air openings are adequately sized. Check exhaust outlet. If a screen has been improperly installed on the outlet, it may be clogged with lint or frozen over in winter. NEVER install a screen on the exhaust outlet. Vacuum within dryer drops to .09 inches of water column, or less, for normal operation of dryer. Vacuum reading (in inches of water) should range between .15 and .3 inches. Vacuum reading can be made with a vacuum U-gauge by removing a sheet metal screw in the front panel of dryer and inserting the rubber tube of the vacuum gauge into screw opening.

Troubleshooting Chart

TROUBLE	CAUSE	REMEDY
Dryer runs, but no heat. (continued)	Air switch out of adjustment.	See air switch adjustment sheet.
	Air switch defective.	Replace air switch.
	Gas pressure too low.	Check manifold pressure and adjust to pressure specified on rating plate. If this pressure cannot be obtained, have gas supplier check main pressure.
	Improper orifice.	Orifices have been sized for type of gas specified on rating plate. Check with gas supplier to determine specifications for gas being used. If different from rating plate, contact factory and obtain proper orifices.
	Electric power to heating unit turned off.	Turn power on.
	Line fuse or heater circuit fuse blown to unit.	Replace fuse.
	Defective relay.	Replace relay.
	Defective electric elements.	Replace elements.
	Defective thermostat.	Replace thermostat.
	Defective safety overload thermo-stat.	Replace thermostat.
	Lint compartment door open.	Close door.
Main burners burning improperly.	Burner air shutters closed.	Open for blue flame.
	Dirt in burner.	Blow out.
	High gas pressure.	Adjust gas pressure per rating plate.
	Orifice too large.	Send to factory for correct orifices.
	Restricted or blocked exhaust.	Clean exhaust.
Main burner cycles on and off.	Direct spark ignition defective.	Replace direct spark igniter.
Low or high gas flame.	Incorrect main burner orifices.	Replace orifices. Check factory for correct size.

Troubleshooting Chart

TROUBLE	CAUSE	REMEDY
Dryer too hot.	Incorrect main burner orifice.	Replace orifices. Check factory for correct size.
	Inadequate make-up air.	Make-up air must be 4 to 6 times the exhaust area of the dryer.
	Lint accumulated.	Remove lint.
	Exhaust duct dampers.	Must be full open or replace.
	High gas pressure.	Adjust gas pressure per rating plate.
	Partially restricted or inadequately sized exhaust system.	Check service section for recommended sizes. Remove obstructions or lint build up from duct work. NEVER use smaller size exhaust duct. ALWAYS use larger size.
	Defective thermostat.	Replace thermostat.
Dryer runs no steam to coils.	Valve closed.	Check all valves in steam supply and return. Make sure they are open.
	Steam trap blocked.	Remove and clean. Replace if defective.
	Solenoid valve.	On dryers using solenoid temperature control, check operation of solenoid valve by advancing thermostat.
	Thermostat.	On dryers using solenoid temperature control, thermostat controls operation of solenoid valve. If defective, replace thermostat.
	Check valve installed incorrectly.	Check for inlet and outlet marking on check valve and invert if necessary.
	Strainer clogged.	Remove plug and blow down strainer or remove and clean thoroughly if heavily clogged.
Water in steam line.	Steam piping installed incorrectly.	Check piping per steam installation instructions.
	Trap not functioning.	Check trap for size and capacity. If dirty and sluggish, clean thoroughly or replace. Check return line for high back pressure, or another trap charging against the trap functioning improperly.

DIRECT SPARK IGNITION OPERATION

NOTE: Some models are equipped with a dual ignition system. The dual ignition system contains two direct spark ignition modules in parallel. Each module has its own flame sense circuit and acts independently of the other. If either bonnet limit thermostat opens because of high heat or flame impingement, the entire ignition system will shut down.

1. When a call for heat is received from the control supplying 24VAC to the ignition control module, the pre-purge delay timer begins. This delay time allows any air/sediment to be ejected prior to burner ignition. Following the pre-purge delay period, the gas valve is energized and the spark ignitor sparks for the trial ignition period.

2. When a flame is detected during the trial for ignition period, the spark ignitor shuts off and the gas valve remains energized.

3. If no flame is detected by the flame sense circuit, the ignition control module will go into safety lockout. The valve will be turned off immediately. If the module has multiple retries and no flame is detected, the gas valve is de-energized and the module goes into an interpurge delay. After this delay, the module will attempt another trial for the ignition period. This will continue until the number of retries has been used up. At the time, the module will go into safety lockout.

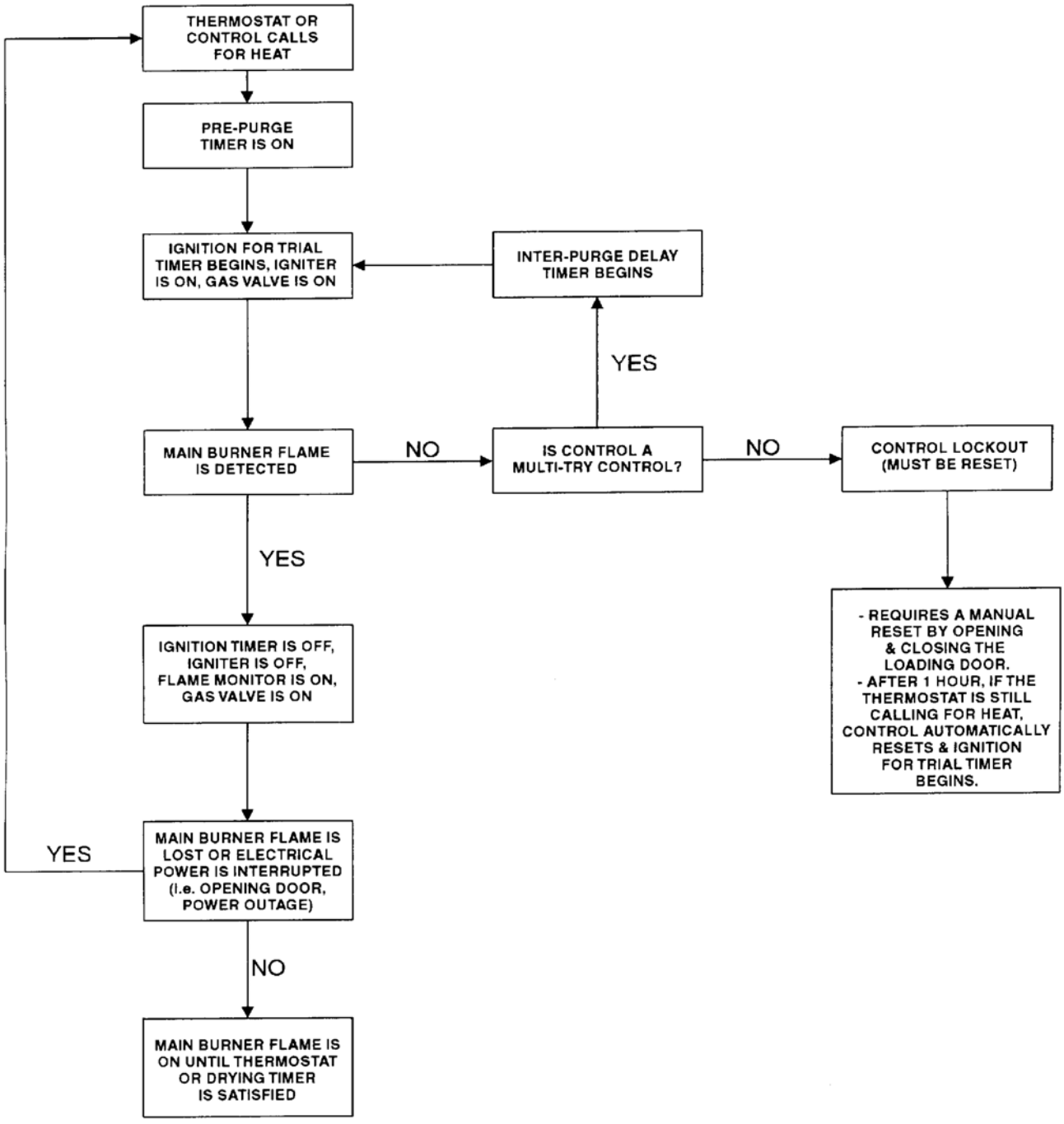
4. Recovery from safety lockout requires one of the following:
   a. A manual reset by opening and closing the loading door.
   b. After one hour if the control thermostat is still calling for heat, the module will automatically reset and the trial for ignition period will start over.

5. Opening the loading door will cause the flame to extinguish. Closing the door and starting the dryer will restart the trial for ignition period.

6. Once the control thermostat has been satisfied and/or the drying timer has been timed out, the ignition control module(s) will be de-energized, the gas valve(s) will be de-energized and the flames will extinguish.

7. The machine will continue to run in a cooldown mode without heat. This process will cool the load to the touch and help to eliminate wrinkling.

DIRECT SPARK
IGNITION OPERATION
FLOW CHART



GENERAL MAINTENANCE

1. **Clean lint trap daily.** Remove lint before or after each day of operation. A clean lint trap will increase the efficiency of the dryer and the moisture-laden air will be exhausted outside more quickly.

2. **Keep basket and sweep sheets clean.** Clean as often as needed. The basket and sweep sheets are accessible by removing the front panel of the dryer.

3. **Gas burners, steam coils, electric coils.** Check and clean often.

4. **Pulleys and belts.** Keep clean as oil and dirt will shorten the life of a belt. Check periodically for alignment. Pulley shafts must be parallel and the grooves must be aligned. Check belt tension periodically. Adjust tension by movement of idler bracket. Lubricate idler pulley once every two months using six grams of high temperature grease. Do not over-grease.

5. **Electric motor.** Keep motor clean and dry. Motors are packed with sufficient grease for 10 years normal service. After that, bearings and housing should be cleaned and repacked one third full with Chevron grease No. SR1-2. See label on motor for further information.

   If motor overheats, check voltage and wiring. Low voltage, inadequate wiring and loose connections are the main cause of motor failures.

6. **Adjustable leveling bolts.** One at each corner permits accurate alignment of dryer.
   To adjust: Block one corner of dryer up off the floor, loosen hex nut. With wrench, turn bolt clockwise to raise dryer, opposite to lower. Rear bolts are outside of dryer and front bolts are inside lint trap compartment.

GENERAL MAINTENANCE

7. Periodically clean and examine exhaust system.

8. Keep dryer area clean and free of gasoline, combustible materials and other flammable liquids or vapors.

9. Do not obstruct the flow of combustion (make-up) air and ventilating air.

10. Check gas pressure periodically.

11. Gas burners air inlet shutters can be adjusted for proper flame by following instructions outlined on separate page of this manual.

12. **Main Basket Bearings.** Lubricate once every six months using six grams of high temperature grease. Do not over-grease.

13. **Steam Heating Units.** Keep steam coils clean. Check periodically and clean as often as required. Remove lint and dirt accumulation from coil fins to avoid decreasing their efficiency.

14. **Clean Out Panel (Energy Saver Gas Models Only).** Remove this panel located on the energy saver heating unit and clean the inside area of lint and dirt on a regular basis.

BURNER AIR INLET SHUTTER ADJUSTMENT

Burner air inlet shutters are correctly adjusted when the flame is primarily blue.

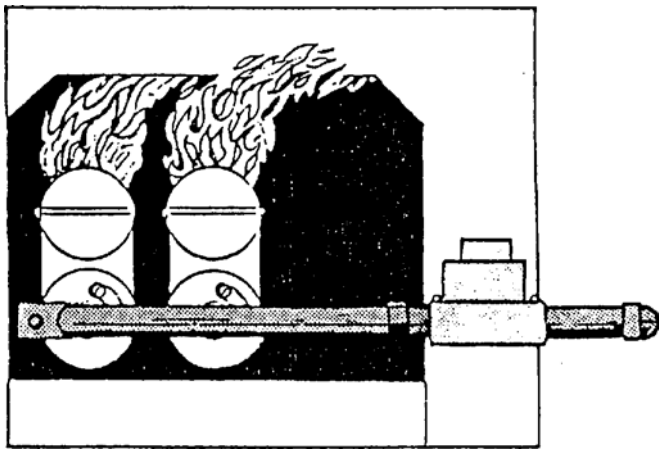
TYPE OF GAS	BURNER AIR INLET SHUTTER ADJUSTMENT
Natural gas	1/2 Open
Liquid petroleum	1/4 Open
Manufactured gas	1/16 Open

AIR SHUTTER ADJUSTMENT

AIR SHUTTER ADJUSTMENT:

Proper Method

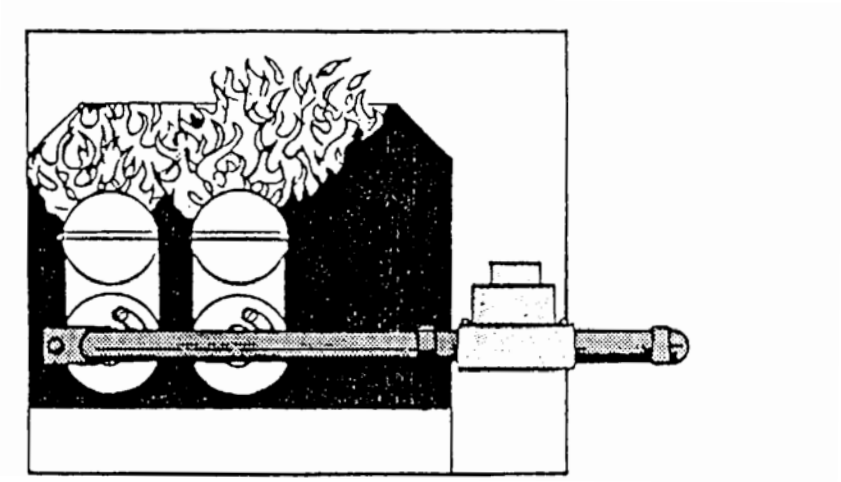
Close air shutters to *yellow tip*, then open air shutters to *blue flame tip*. *Orange tips* are impurities in the air such as lint, dust, etc.



CORRECT

BURNER AIR INLET SHUTTER ADJUSTMENT

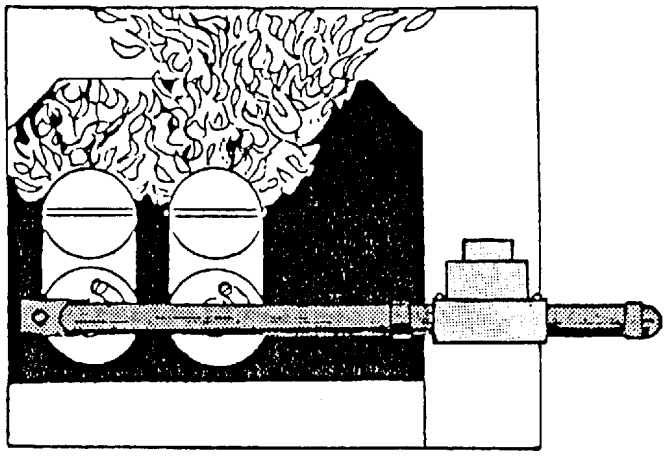
Burner air inlet shutters are adjusted closed. Insufficient air is admitted through the burner. Flame pattern is straight up and flame is yellow.



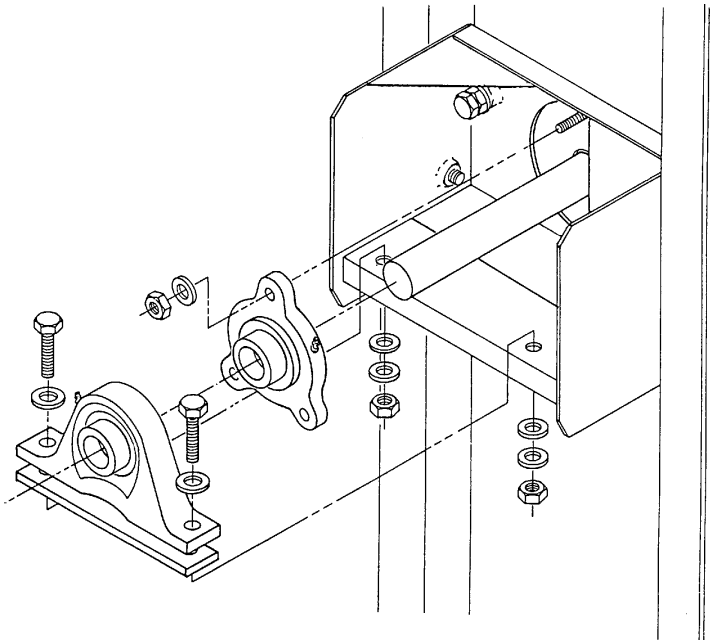
WRONG—NEED TO ADJUST SHUTTER

BURNER AIR INLET SHUTTER ADJUSTMENT

This flame pattern indicates the burner air inlet shutters are correctly adjusted, but air through the dryer is insufficient. This condition indicates excessive lint in the lint compartment, lack of make-up air in the room, restricted exhaust duct, or a vacuum in the room caused by an exhaust fan.



WRONG—NEED TO PROVIDE CORRECT AIRFLOW THROUGH THE DRYER



BEARING REPLACEMENT INSTRUCTIONS

Step 1 Remove belt guard, V-belt, spacer and basket sheave.

Step 2 Loosen set screws on the flange bearing and on the pillow block bearing.

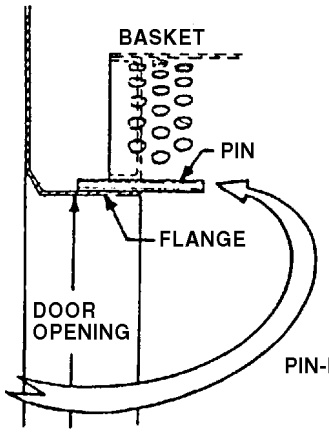
Step 3 Remove the bolts holding the pillow block bearing and take it off the shaft.

Step 4 Remove the nuts and washers holding the flange basket bearing and take it off the dryer.

Step 5 Inspect the bearings for damage and replace as necessary, in reverse order of removing them. Before tightening securely, align basket per instructions on separate instruction sheet.

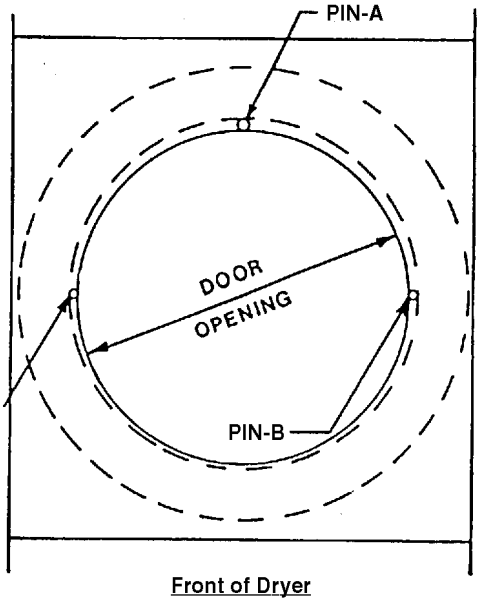
Step 6 Lubrication guide---Bearings never need lubrication. They have been permanently lubricated by the supplier with a high temperature grease.

FIG. 1



Right Side of Dryer

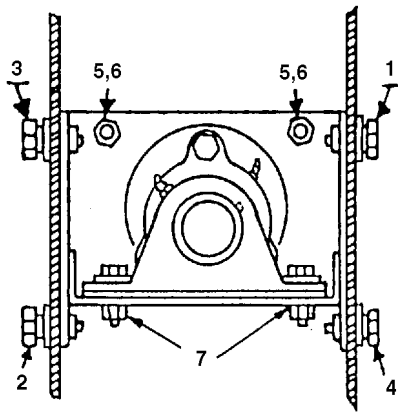
FIG. 2



Front of Dryer

PIN-A - 1/2 (13 mm) DIA.
PIN-B - 5/16 (8 mm) DIA.

FIG. 3



BASKET ALIGNMENT INSTRUCTIONS

Step 1 Loosen the set screws on the flange and pillow block bearings.

Step 2 Loosen the 4 side bolts, "1, 2, 3, 4" on the basket bearing bracket. (see figure 3) Loosen the two adjusting bolts and locknuts "5, 6" inside the bracket. Loosen the bolts "7" on the pillow block bearing.

Step 3 Place one "A" and two "B" diameter pins inside the drying compartment between the rim of the basket opening and the rim of the door opening in the positions shown in figures 1 and 2. Check the two "B" pins for equal clearance.

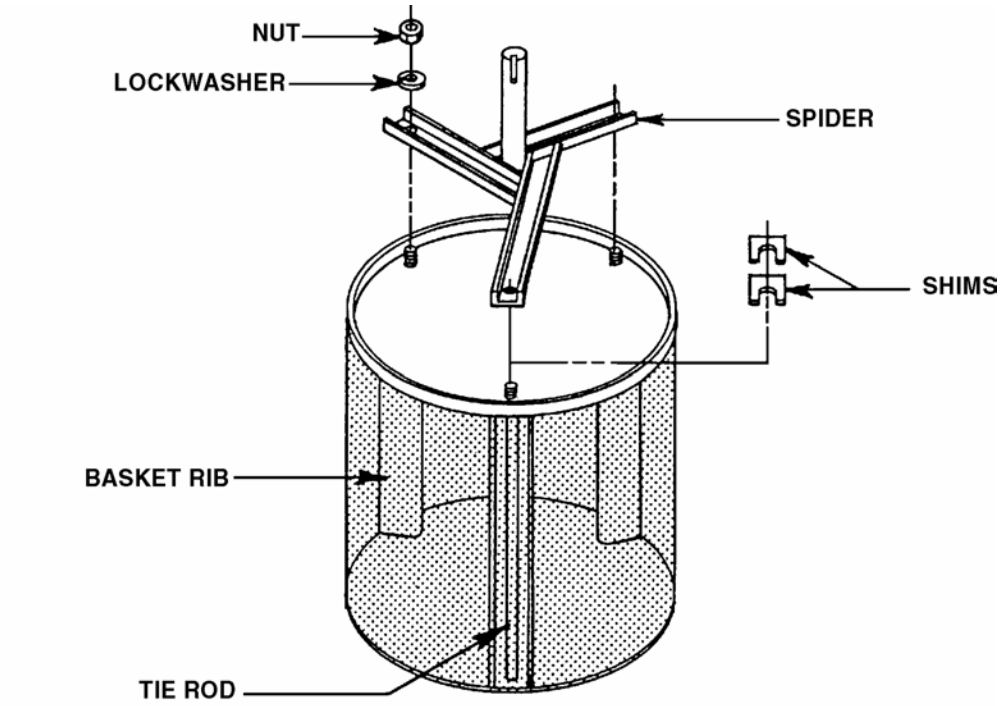
NOTE
Push the basket toward the rear

Step 4 With the pins in position, tighten the set screws on the bearing races.

Step 5 Tighten the side bolts "1, 2, 3, 4" in numerical order. Tighten the bolts "7" on the pillow block bearing. And tighten the bolts "5" and locknuts "6."

Step 6 Remove the aligning pins.

CAUTION
Check to see that the set screws are wrench tight on the bearings.



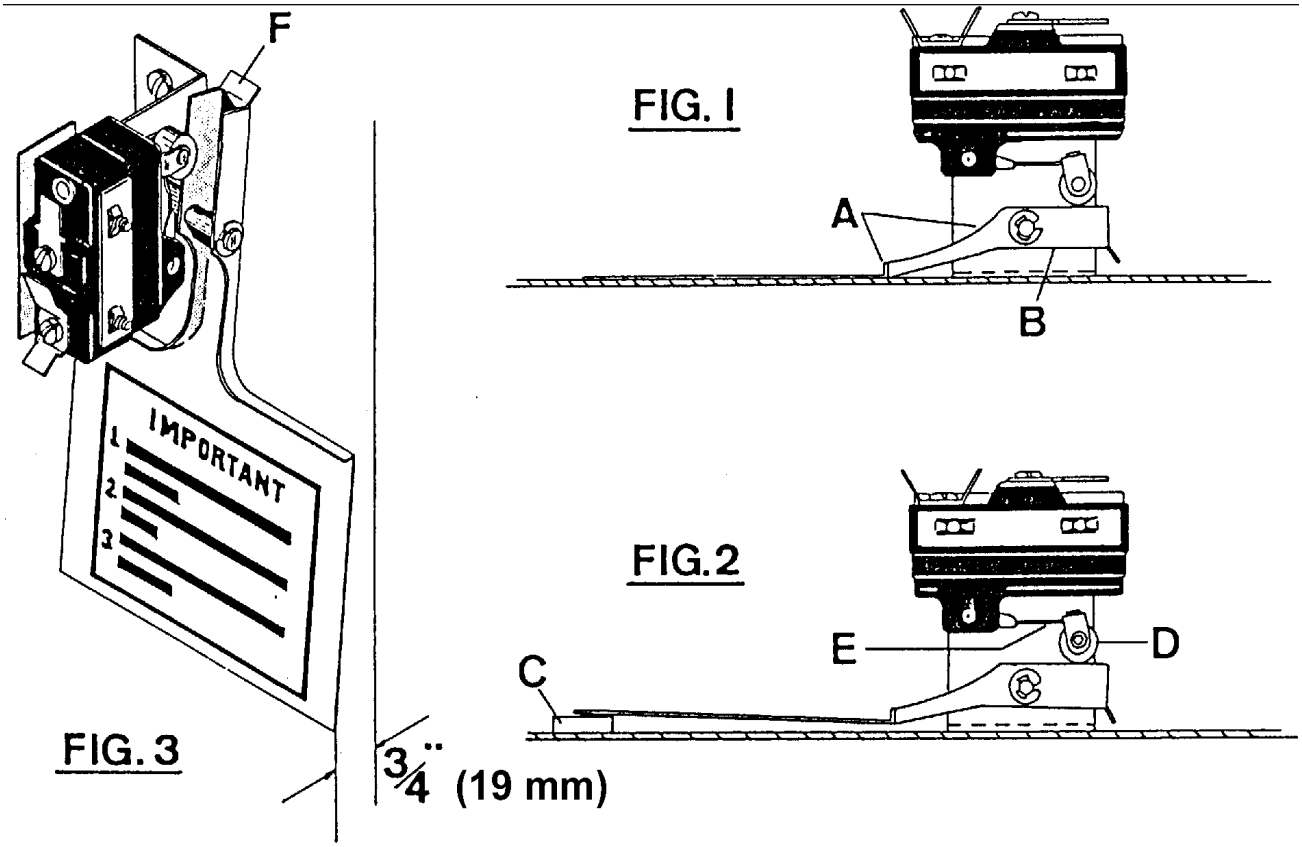
BASKET SHIMMING INSTRUCTIONS

This procedure is normally necessary when replacing either the basket or the spider assembly on any dryer. Proper shimming is crucial to obtain a true running basket.

- **A.** Align the basket as per instructions in the manual.
- **B.** Rotate the basket to determine where the most out-of-round point is (where the basket scrapes or comes closest to scraping the sweep sheet).
- **C.** Mark this position and the nearest rib to this position.
- **D.** Remove the basket (do not loosen the alignment bolts).
- **E.** With the basket on the floor (spider up), place one or two shims between the spider leg and the back of the basket at the marked rib position. (See drawing.)
- **F.** Re-insert spider and basket assembly and re-check cylinder.
- **G.** If at this point, basket is still out-of-round, procedure must be repeated starting with *Step "B"*.
- **H.** Upon completion of shimming process, realignment of basket is necessary.

NOTE
If the point mentioned in *Step "B"* is between two ribs, both ribs might have to be shimmed.

Air Switch Adjustment (Illustration)



AIR SWITCH ADJUSTMENT

1. Shut off current; disconnect leads and remove air switch.

2. Lay air switch assembly on flat surface. Adjust air blade at "A" (FIGURE 1) so that air blade lays flat and surface "B" is parallel to the flat surface.

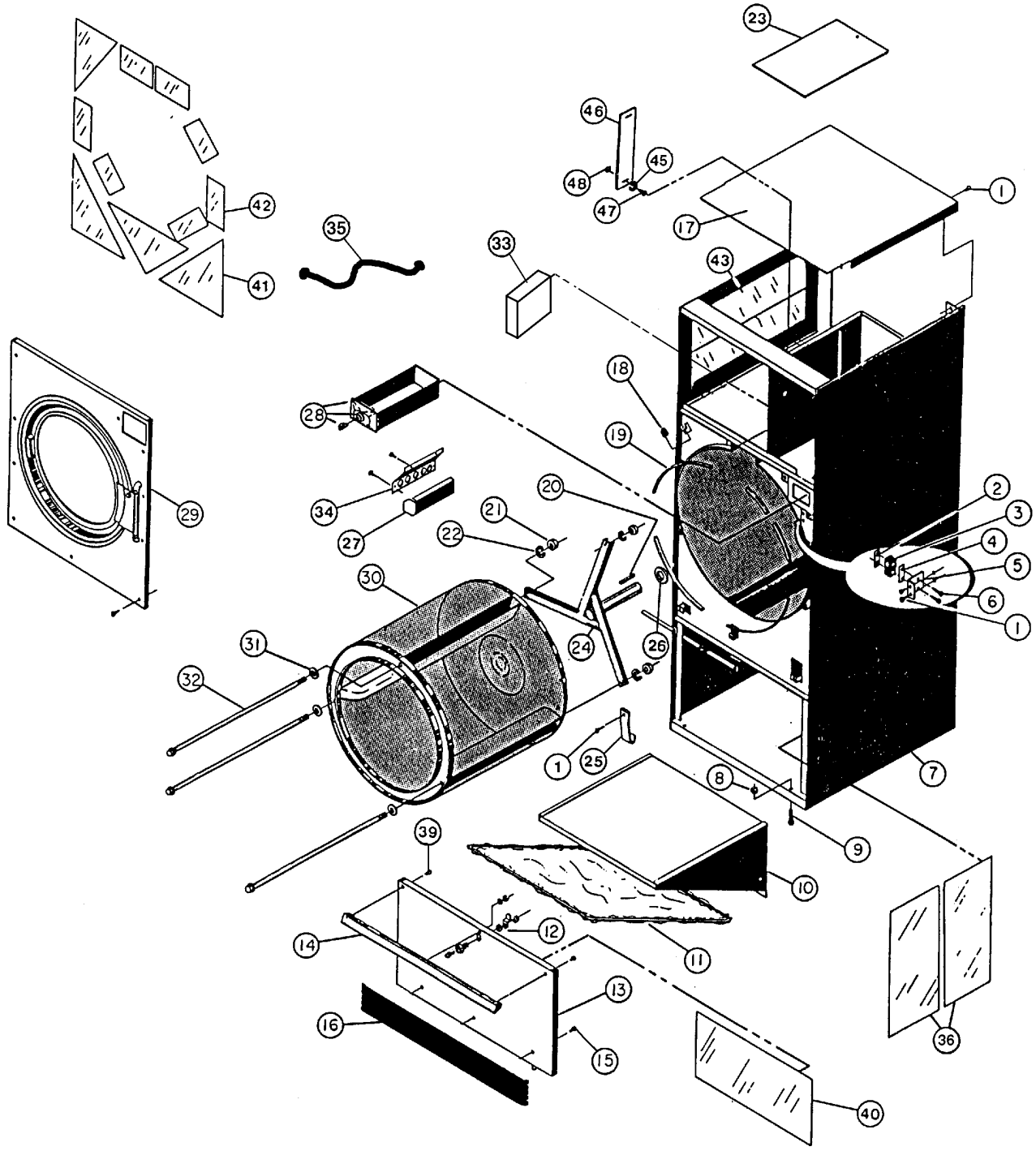
3. Place 3/8" (10 mm) x 5/8" (16 mm) spacer bar or equivalent "C" (FIGURE 2) under air blade in position shown; hold switch mounting bracket firmly and adjust switch actuator "D" with needle nose pliers at "E" by twisting actuator right or left whichever is needed so that switch closes when end of air blade engages bar "C".

4. Maximum opening of air switch must be no greater than 3/4" (FIGURE 3). Bend tab "F" in or out to maintain this dimension.

5. Re-install air switch assembly on rear of dryer.

6. Re-check operation of air blade. Switch must close before air blade engages face of opening and re-open before stop "F" engages.

30 lb. Dryer—Front View (Illustration)

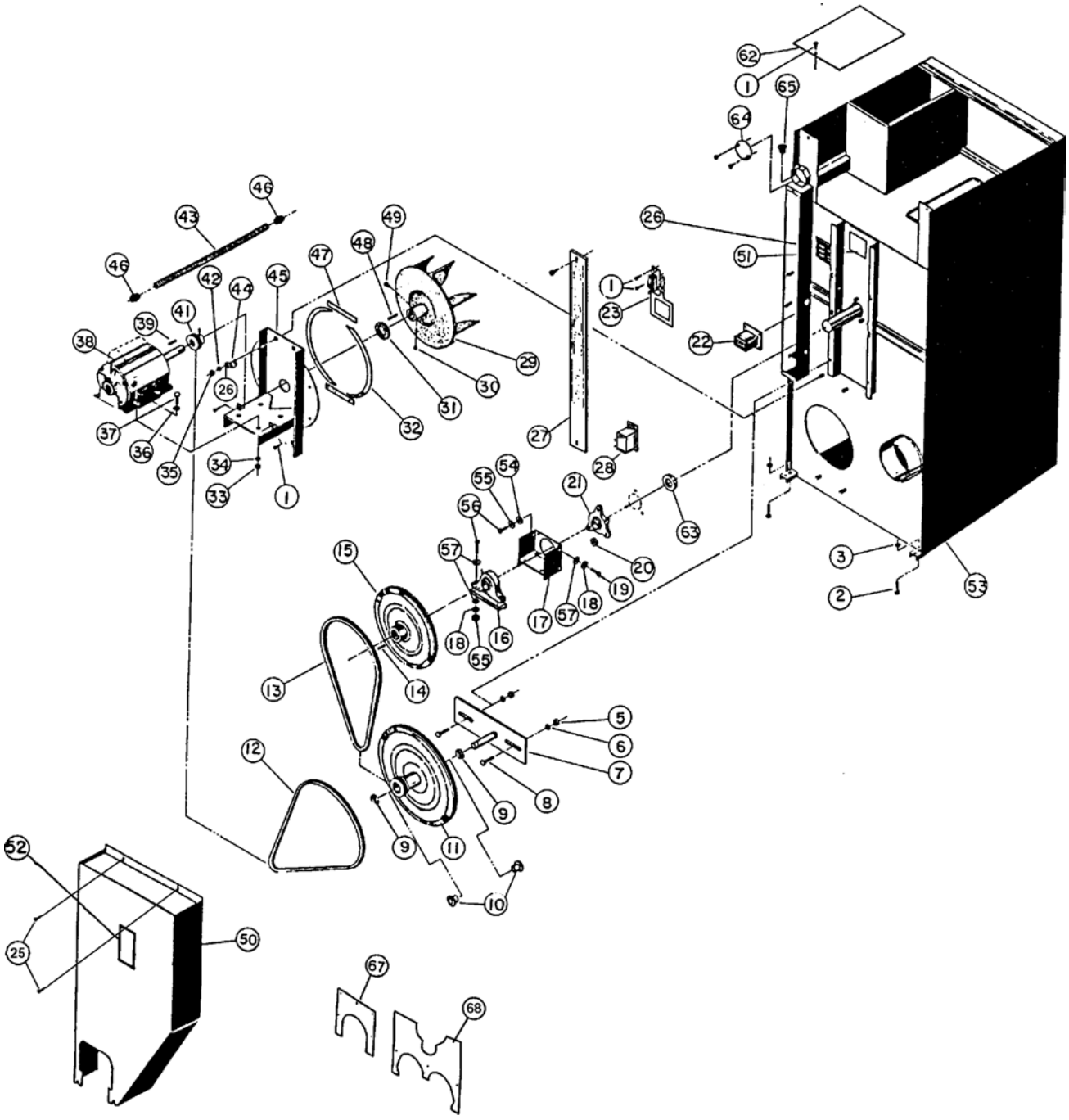


1	TU7733	#8X1/2" Self Drill Screw
2	TU1771	#6 Twin Nut
3	TU1979	Door Switch
4	TU1770	Insulator
5	TU2373	Switch Bracket
6	TU3219	#6 x 1" S.M.S.
7	TU10010	Jacket Welded Assembly
8	TU4937	3/8"-16 Jam Nut
9	TU3211	3/8"-16 x 2 1/2" Leveling Bolt
10	TU10290	Lint Screen Housing
11	TU10362	Lint Screen Only
	TU5225	Frame Only
12	TU9035	Lock JWC2
	TU2844	Key JWC2
	TUB1867	Lock & Key JWC2
	TU8928	Cam
13	TU14559WHT	Lint Door (Specify Color)
14	TU14555	Lint Door Handle
15	SB-00949-0	Fastener, Plastic
16	TU14557	Kickplate
17	TU2620	Solid Top (Gas Model)
	TU6129	Solid Top (Electric Model)
18	TU2877	#10 Speed Nut
19	TU2483	Sweep Sheet Gaskets
20	TU5887	Key
21	TU2882	1/2"-20 Hex Nut
22	TU2831	1/2" Split Lockwasher
23	TU10651	Cover Plate (Steam)
24	K20	Spider Replacement Kit
25	TU10284	Lint Trap Front Support
26	TU10177	Spacer
27	TU8457	Thermostat Cover
28	TU9225	Coin Vault, Lock and Key
29	TU14602	Front Panel and Door Assembly (Specify Color)
30	TU2083	Basket Welded Assembly
	TU7188	Basket/Spider Assembly
31	TU2883	1/2" Cut Washer
32	TU2313	Tie Rod
33	GA-00765-0	Direct Spark Igniter
	TU14176	"CE" Direct Spark Igniter
	TU14675	Australian Direct Spark Igniter
34	*TU9111	Thermostat Assembly (Coin Meter Model Only)
35	GA-00803-0	Cable, Hi-Voltage DSI
36	TU7690	Insulation
39	SB-00836-0	Screw, Phillips, Pancake Head
40	TU8152	Insulation—US Model Only
41	TU7735	Insulation—US Model Only
42	TU8108	Insulation—US Model Only
43	TU7736	Insulation—US Model Only
45	P104	1/4" Washer (Pkg of 6)
46	TU9384	Adjustment Strip
47	TU3479	#10-32 x 7/16" Truss Head Screw
48	TU2842	Hex Nut
50	TU2878	#10 x 5/8" Screw
51	CA-00841-0	Label - Clean Lint Trap
52	CA-00655-0	Trim - Rubber Insert
53	TU2853	Gasket - Lint Door

* See separate page for exploded view.

(51- 53 Not Shown)

30 lb. Dryer—Rear View (Illustration)



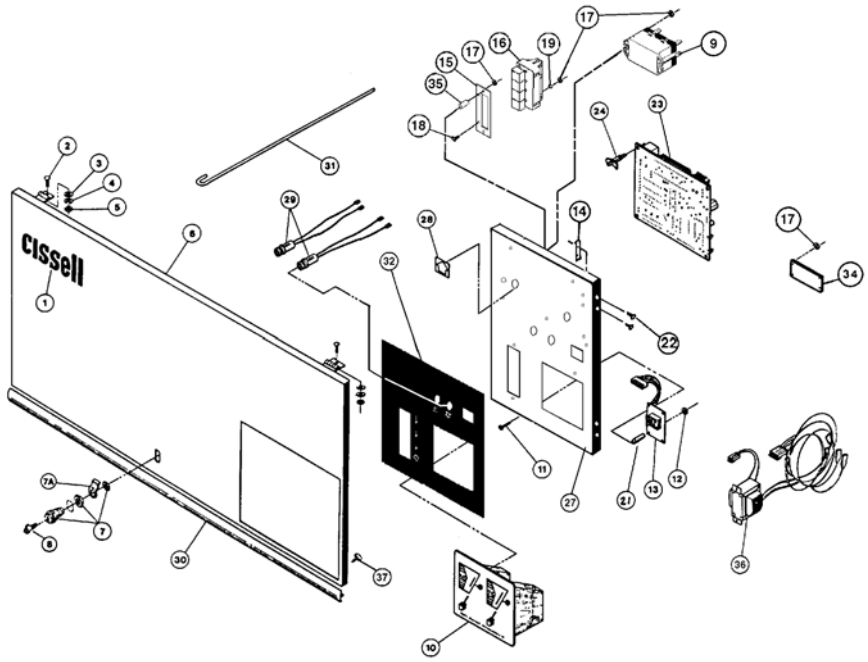
Parts—30 lb. Dryer (Rear of Dryer)

1	TU7733	#8 x 1/2" Self Drill Screw
2	TU3211	3/8-16 x 2-1/2" Leveling Bolts
3	TU4937	3/8-16 Jam Nut
5	TU4787	3/8-16 Hex Nut
6	VSB134	3/8" Split Lockwasher
7	TU12803	Idler Bracket
8	TU12576	3/8-16 x 1" Carriage Bolt
9	TU3247	Retaining Ring
10	TU7184	Sleeve Bearings (2 required)
11	TU5217	14" Idler Sheave (50/60 Cy.)
12	TU3395	V-Belt (4L580) 50 Hz.
	TU7021	V-Belt (4L570) 60 Hz.
13	TU3395	V-Belt (4L580) 50/60 Hz.
14	TU5887	Key
15	TU7016	15" Basket Sheave (50/60 Cy.)
16	TU10676	Pillow Block Bearing**
17	TU13147	Bearing Support Bracket
18	TU2831	1/2" Split Lockwasher
19	RC347	1/2"-13 x 1-1/2" Cap Screw
20	TU13372	3/8"-16 Jam Nut w/Nylon Insert
21	TU10002	Flange Basket Bearing**
22	TU13480	Transformer - 240V/24V
	TU13515	Transformer - 120V/24V
	TU13514	Transformer - 460V/24V
	TU13642	Transformer - 575V/24V
	TU13643	Transformer - 380-415V/24V
23	TU8206*	Air Switch Assembly
25	TU6263	Hex Hd. Screw
26	IB140	3/8" Washer
27	TU5890	Control Box Cover
28	TU13463	Relay - 9A, 3 Pole w/Aux.
	TU13516	Relay - 12A, 3 Pole w/Aux.
29	TU8746	Fan, 60 Hz. W/Set Screws
	TU5874	Fan, 50 Hz. W/Set Screws
30	TU9272	5/16" Nylon Patch Set Screw
31	TU2476	Felt Seal
32	TU2473	Side Gasket (2 Required)
33	C249	5/16"-18 Hex Nut
34	TU2814	5/16" Split Lockwasher
35	TU4787	3/8"-16 Hex Nut
36	VSB130	5/16" Cut Washer
37	TU5439	5/16"-18 x 3/4" Hex Head Screw
38- -	Motor (Specify Motor No., Voltage, Cycle and Horsepower)	
39	TU4684	Key
41	TU6559	Motor Sheave—60 Hz.
	TU7603	Motor Sheave—50 Hz.
42	VSB134	3/8" Lockwasher
43	CFB3000	Cable—1/2" x 30" Lg.
44	PT196	Cable Strap
45	TU5850	Motor Mount—50/60 Hz.
46	TU4790	Straight Connector (2 Req'd)
47	TU2474	Gasket (2 Required)
48	TU4684	Key
49	TU13408	5/16"-18 x 1/2" Set Screw Nylok
50	TU11708	Rear Guard—"UR" Models
	TU10134	Rear Guard—"US" Models
	TU10131	Right Rear Cover—"US" Models
51	TU10433	Locking Collar Label
52	TU10418	Lubrication Label
53	TU10010	Jacket Welded Assembly
54	OP251	1/2" Int. Tooth Lockwasher
55	OP233	1/2" Hex Nut
56	TU2195	1/2"-13 x 1-3/4" Cap Screw
57	TU2883	1/2" Flat Washer
62	TU10651	Mechanism Box Cover (Steam Dryer Only)
63	TU10177	Spacer (Mounted Inside Jacket)
64	SB170	Junction Box Cover
65	TU2372	Snap Bushing
67	TU10359	Motor Adapter—3 Ph. Only
68	TU13044	Motor Adapter—1 Ph. Only

* See separate page for exploded view.

** Eccentric Locking Collar W/Set Screws Included

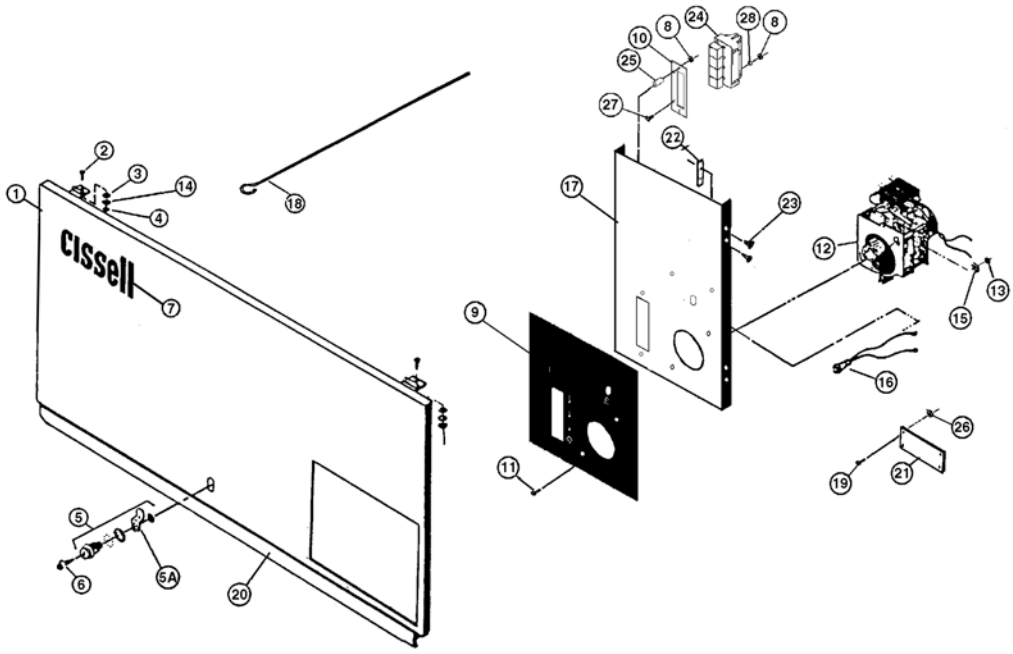
Access Door Assembly
Ref. Nos. 1, 6-8, 30-31, 37-38
TU14567



Control Panel Assembly
TU13724 - 24V 50/60 Hz. Gas

1	TU14662	Logo Decal
2	TU3479	#10-32 x 7/16" Truss Head Screw
3	P104	1/4" Cut Washer
4	FB187	#10 Lockwasher
5	TU2842	#10-32 Hex Nut
6	TU14568WHT	Access Door W/A (Specify Color)
7	TU9386	Lock JWC3
7A	TU8995	Cam
8	TU9387	Key JWC3
9	F1300	Motor Relay
10	- - -	Coin Rejector (Specify Coin Number and Denomination)
	TU9006	Rejector Single Chute (25 cents)
	TU9008	Rejector Dual Chute (25/10 cents)
	TU9897	10 cents Coin Switch Replacement
	TU9898	25 cents Coin Switch Replacement
11	TU9426	4-40 x 5/8" Machine Screw
12	TU9427	4-40 Hex Nut
13	TU13469	Digital Display Assembly
14	TU1771	Twin Clip (Pkg. 12)
15	TUT191A	Push Button Switch Plate
16	TU11510	Push Button Switch
17	TU3400	Nut
18	SV136	#6-32 x 15/16" Truss Head Screw
19	M271	#8 - Int. Tooth Lockwasher
21	TU11668	Standoff
22	TU9524	#6 x 5/16" Screw
23	TU13412	C/M Control (24V) F/1-Slot
	TU9329	C/M Control (12V) F/2-Slot
24	TU9347	P.C. Board Support
27	TU13857	Control Panel Plate Asm.
28	TU9514	Reset Label
29	TUT316	Indicator Lamps 24V
30	TU14553	Trim Access Door
31	TU5739	Door Support Arm
32	TU13842	Control Panel Nameplate
34	TU8629	Terminal Board
35	TU13942	Spacer
36	TU9898	Transformer 24V/12V (Used with TU9329 C/M Control)
37	SB-00951-0	Screw #8 x 7/16 Phillips
38	CA-13098-0	Gasket Access Door *(Not Shown)*

Access Door Assembly
Ref. Nos. 1, 5-7, 18, 20, 29-30
TU14567

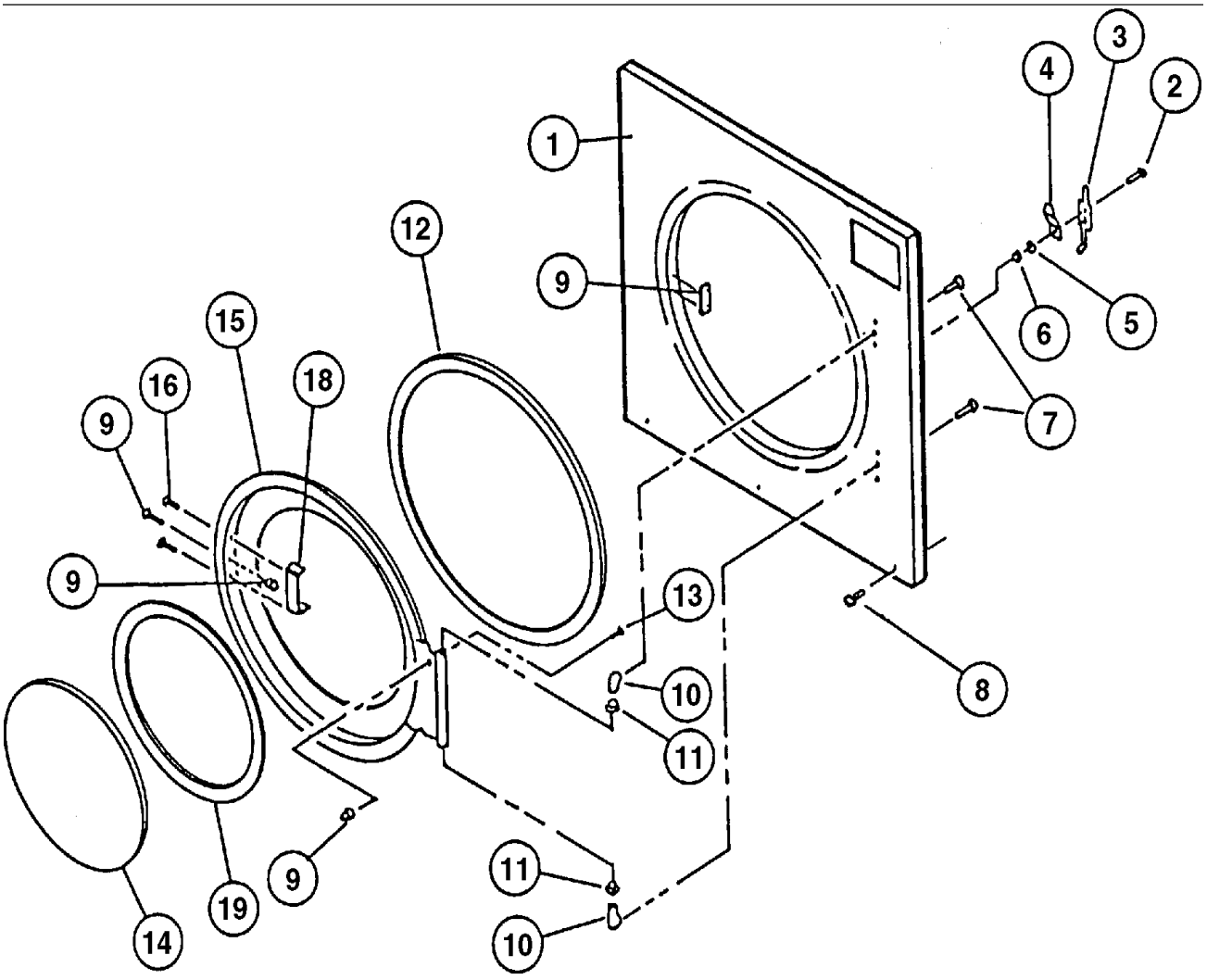


Control Panel Assembly
TU13721 - 24V 50/60 Hz. Gas
TU13847 - 24V 50/60 Hz. S/E

1	TU14568WHT	Access Door Weldment (Specify Color)
2	TU3479	#10-32 x 7/16" Truss Head Screw
3	P104	1/4" Cut Washer
4	TU2842	#10-32 Hex Nut
5	TU9386	Lock-JWC3
5A	TU8995	Cam
6	TU9387	Key - JWC3
7	TU14662	Logo Decal
8	TU3400	Nut
9	TU13843	Control Panel Nameplate
10	TUT191A	Push Button Switch Plate
11	TU4958	#8-32 x 3/8" Machine Screw
*12	CM7364	25¢/15 Min. - 24V
	CM7365	25¢/12 Min. - 24V
	CM7366	25¢/10 Min. - 24V
	CM7368	25¢/7-1/2 Min. - 24V
	CM7370	25¢/6 Min. - 24V
	CM7372	25¢/5 Min. - 24V
13	TU3266	#8-32 x 11/32" Hex Nut
14	FB187	#10 Lockwasher
15	P104	1/4" Cut Washer
16	TUT316	Indicator Lamp—24V
17	TU13858	Control Panel Plate Asm.
18	TU5739	Support Rod
19	M262	Screw
20	TU14553	Trim Access Door
21	TU8629	Terminal Board
22	TU1771	Twin Clip
23	TU9524	#6 x 5/16" Screw
24	TU11510	Push Button Switch
25	TU14701	Spacer
26	TU3266	Nut
27	SV136	#6-32 x 15/16" Truss Head Scr.
28	M271	#8 Int. Tooth Lockwasher
29	SB-00951-0	Screw #8 x 7/16 Phillips
30	CA-13098-0	Gasket Access Door *(Not Shown)*

* Call factory for Coin Meter part number for 50 Cy.

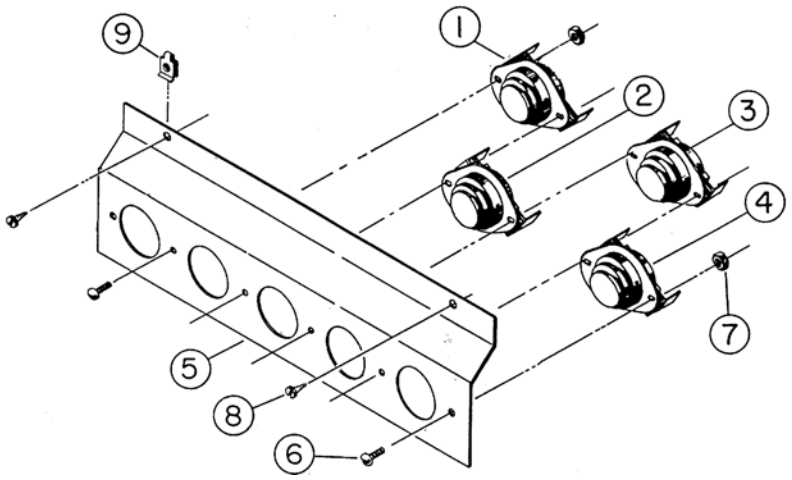
TU14602 - Front Panel and Door Assembly (Illustration)



1	TU14601	Front Panel W/Door Catch - c/m
2	M262	#8-32 x 3/8" Truss Head Screw
3	TU2194	Door Switch Actuator
4	TU2105	Door Switch Spring
5	FB187	#8 Split Lockwasher
6	TU3266	#8-32 Hex Nut
7	TU2836	5/16" - 18 x 1/2" Hex Head Screw
8	TU2878	#10 x 5/8" Sheet Metal Screw
9	TU5158	Door Catch Assembly
10	TU2236	Hinge Post
11	PIF172	Delrin Bearing (Pkg. 2)
12	TU2090	Basket Door Seal
13	TU4839	#10-32 x 3/8" Machine Screw
14	TU7862	Door GLass (Plain)
	TU7862C	Door Glass (w/Logo)
15	TU7171	Basket Door (Specify Color)
16	TU3215	#10-32 x 3/8" Taptite Screw
18	TU2874	Basket Door Handle
19	TU7169	Rubber Gasket

NOTE: TU4827---Actuator Assembly Consists of Ref. No. 2, 3, 4, 5, and 6
TU9040 ---Door Assembly Consists of Ref. No. 11-19 (Specify Color)

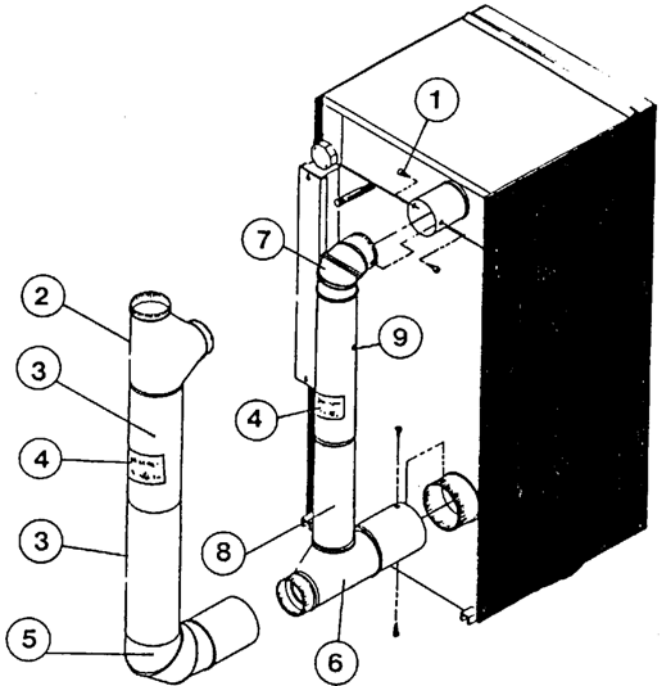
1	TU3240	Safety High Limit Thermostat
2	TU3240	185° F (85° C) Thermostat
3	TU5150	150° F (66° C) Thermostat
4	TU7244	135° F (57° C) Thermostat
5	TU5143	Mounting Bracket
6	TU3624	#6-32 x 1/4" Round Head Screw (6 each)
7	TU3400	#6-32 Hex Nut
8	TU7733	#8 x 1/2" Self Drill Screw
9	TU6067	#8 Speed Clip (2 each)



Parts—Exhaust Duct Assembly (Energy-Saver Model Only) (w/Illustration)

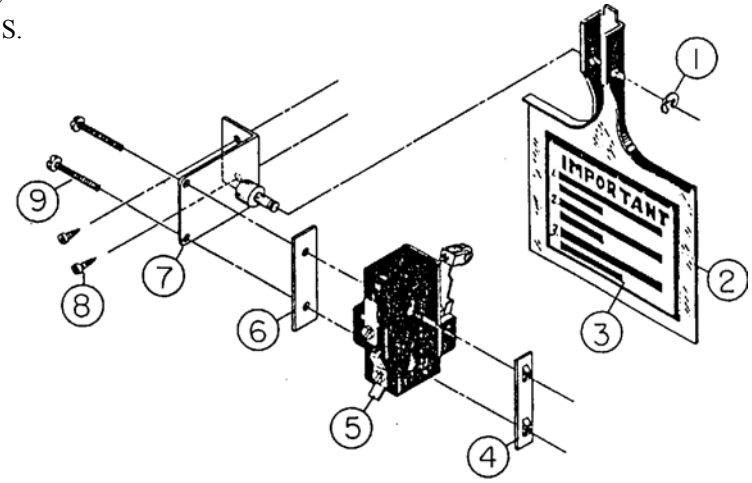
TU10269—Vertical Assembly Complete
TU10336—Horizontal Assembly Complete

1	TU7733	#8 x 1/2" Self Drill Screw
2	TU8052	Tee - 8" x 6" x 6"
3	TU8176	Pipe - 8" x 17 1/2"
4	TU9161	Installation Label
5	TU10268	Elbow - 8"
6	TU10335	Tee—8" x 6" x 6"
7	TU8053	Elbow—6"
8	TU8054	Pipe—6" x 15 1/2"
9	TU8055	Pipe—6" x 23 1/2"

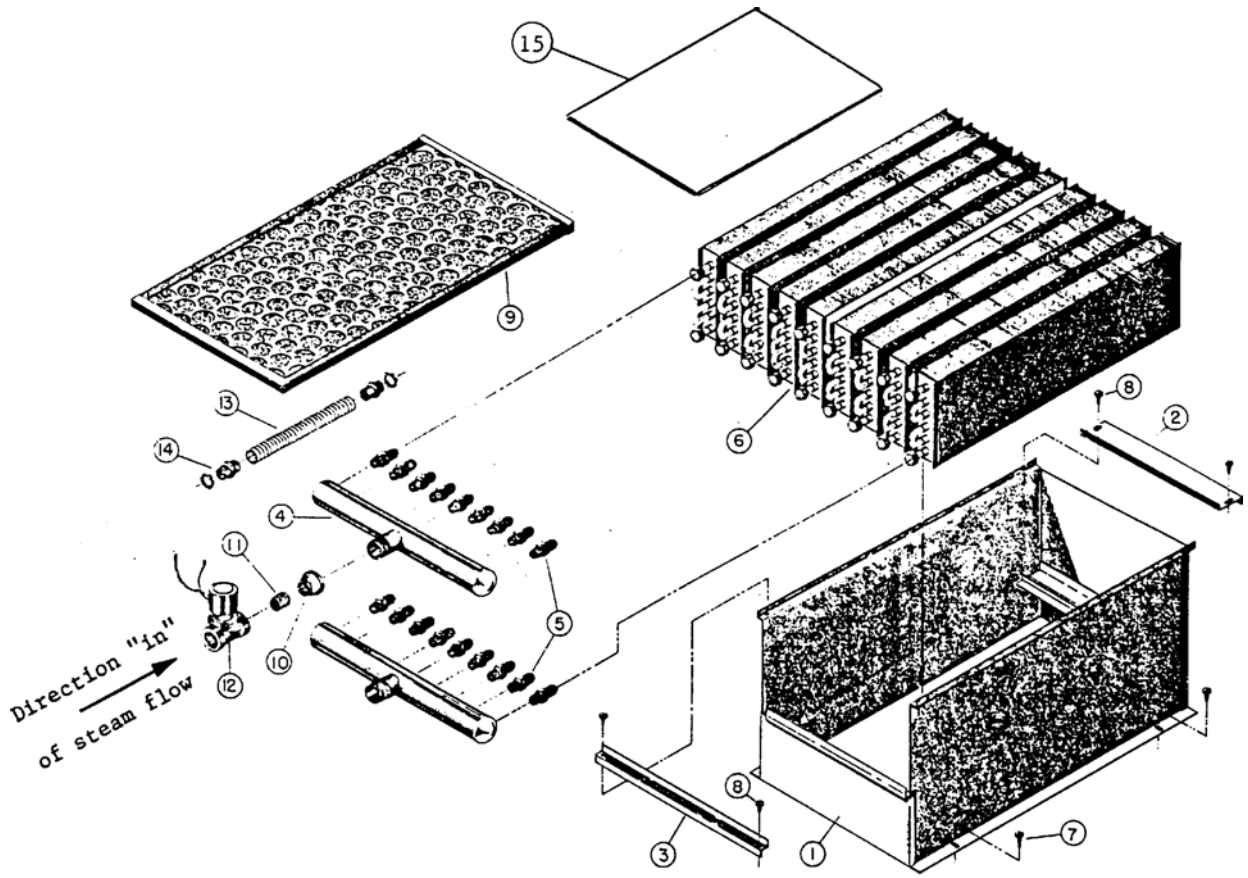


Parts—Air Switch Assembly TU8206 (w/Illustration)

1	F888	"E" Ring
2	TU2463	Actuator Arm
3	TU3476	Air Switch Decal
4	TU1771	6" Tinnerman Nut
5	TU8155	Air Switch
6	TU1770	Insulator
7	TU8171	Air Switch Bracket
8	TU7733	#8 - 18 1/2" Self Drilling Screw
9	TU3219	#6 x 1" Round Head S.M.S.

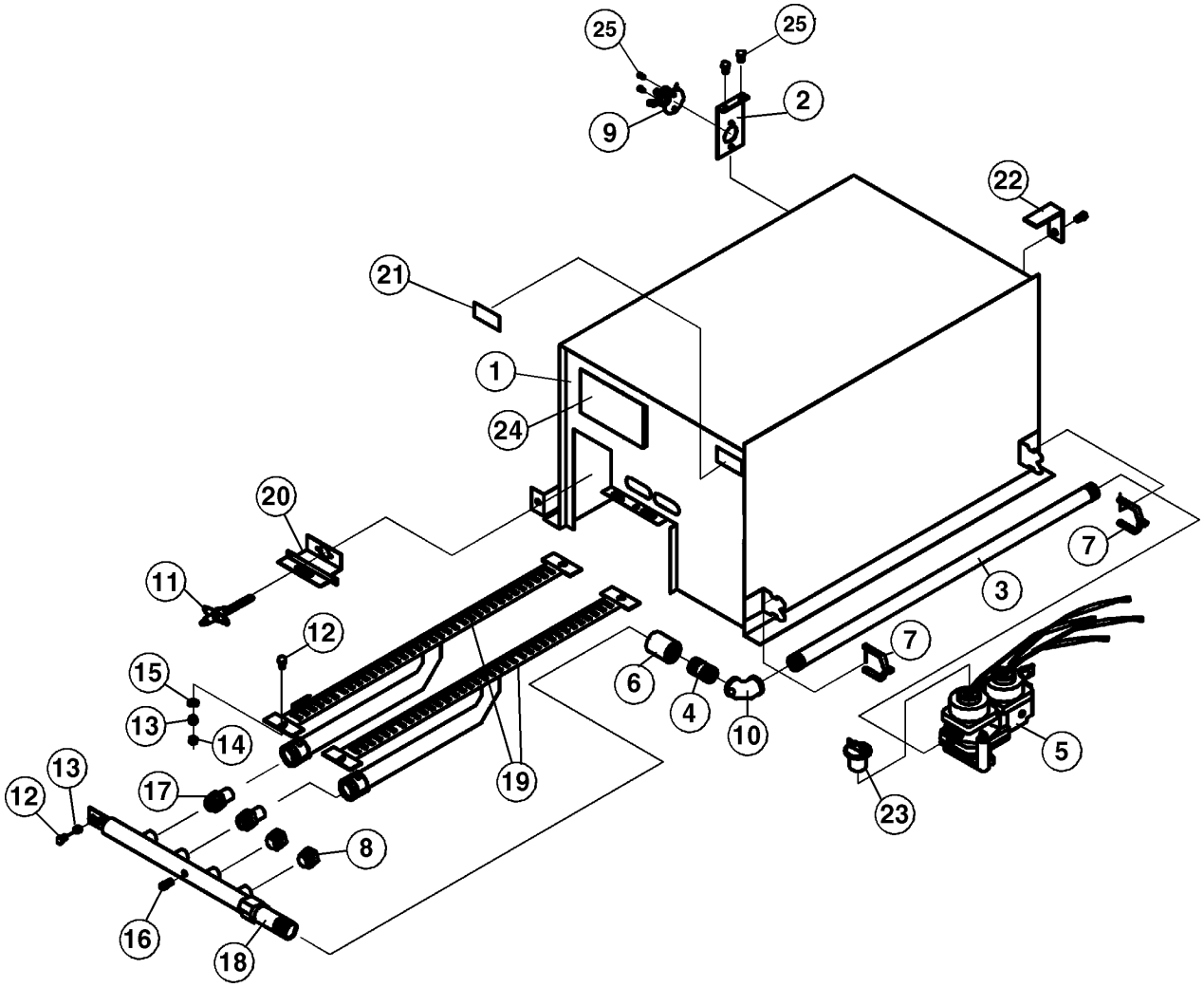


TU13689—9 Section Steam Bonnet Assembly w/Solenoid Valve 24V



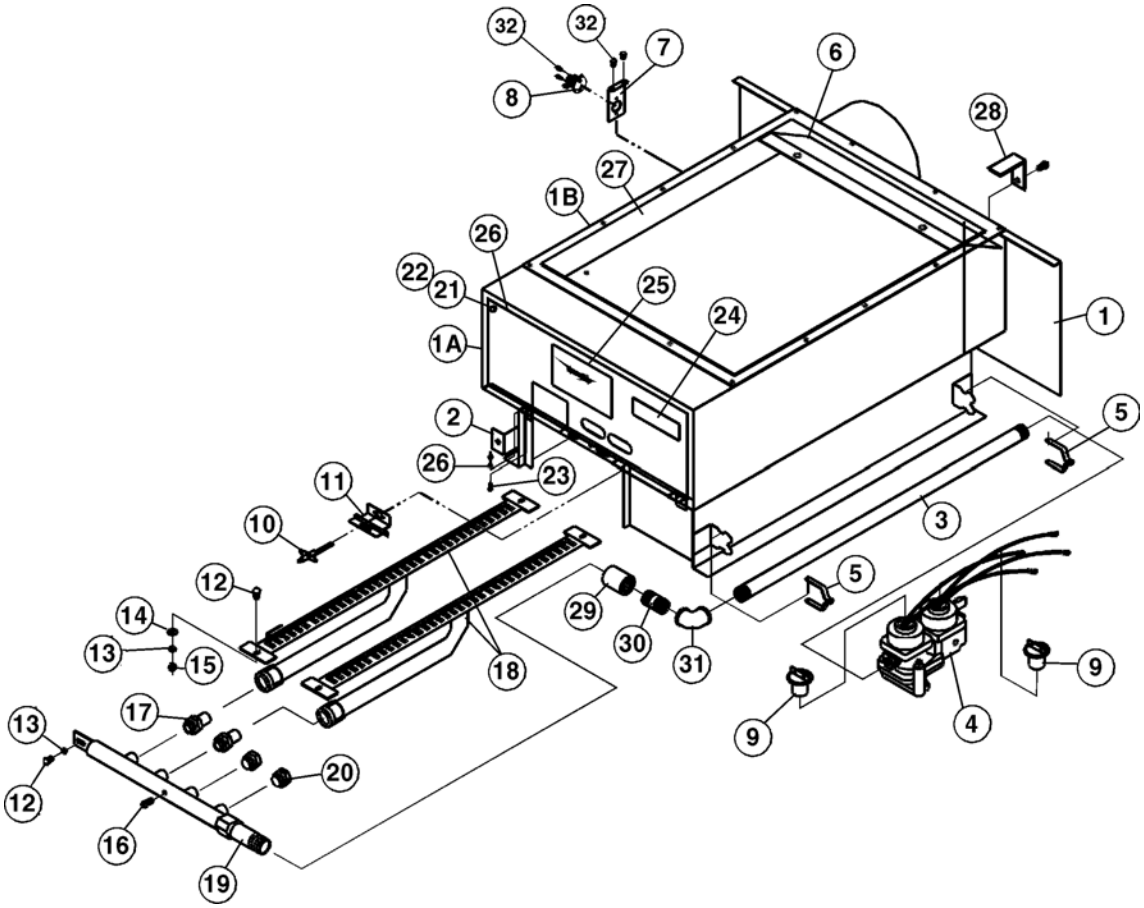
2	TU2547	Front Coil Retainer
3	TU2548	Rear Coil Retainer
4	TU2413	Steam Coil Manifold
5	TU2414	3/4" - 16 x 3/8" Straight Connector
6	TU2405	Steam Coil (9 required) 7 3/4" W x 1 5/8" H x 26" L
7	CB36	#1/4" - 20 x 1/2" Hex Head Screw (Pkg. of 6)
8	TU7733	#8 x 1/2" S.M.S. (Pkg. of 6)
9	TU2598	Air Filter 16" x 25" x 1"
10	TU2735	1" x 3/4" Reducer
11	TU4608	3/4" x 2" Pipe Nipple
12	TU13517	Solenoid Valve 24V - 50/60 Hz.
13	CFB2100	Greenfield Cable, 1/2" (Specify 21" Long)
14	TU4790	1/2" Straight Conn. (2 required)
15	TU10651	Mechanism Box Cover

TU13673—(Natural Gas)
TU13715—(LP Gas)



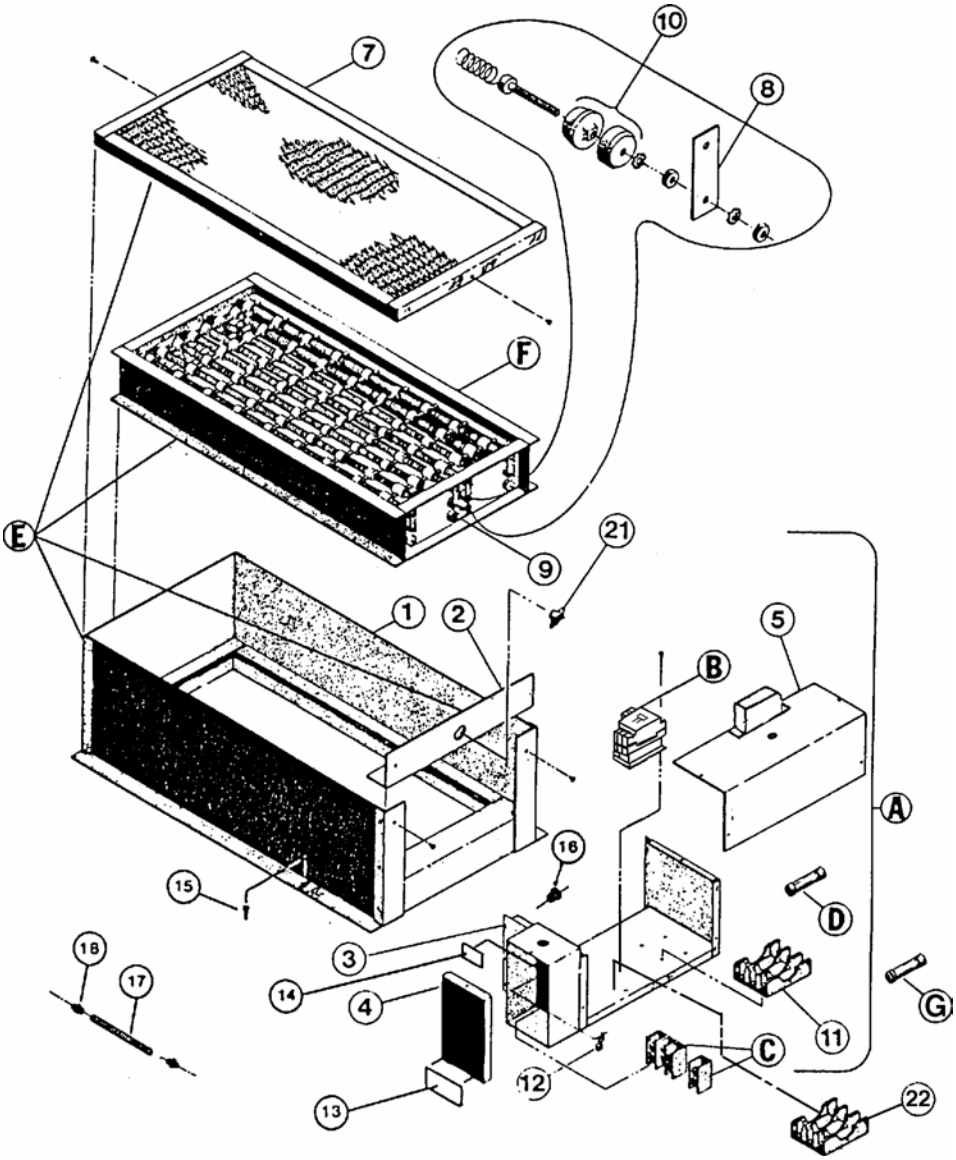
1	TU8631	Bonnet	13	TU2846	1/4" Split Lockwasher
2	TU13695	Bonnet Thermostat Bracket	14	TU4934	1/4"—20 Hex Nut
3	TU13212	1/2" Pipe Nipple—24"	15	TU2847	1/4"—Flat Washer
4	390401021	1/2" Pipe Nipple—2 1/2"	16	TU2224	1/8" Pipe Plug
5	TU13523	1/2" Valve Combination (Natural Gas)	17	TU3539	Gas Burner Orifice (specify size)
	TU13513	1/2" Valve Combination (LP Gas)	18	TU8288	Manifold Assembly
6	SC505	Coupling	19	TU7840	Burner
7	TU2226	Mounting Bracket	20	TU13826	Electrode Spark Mounting Bracket
8	TU10946	Manifold Plug	21	TU8645	Caution Label
9	TU13678	Thermostat, Man. Reset 300º	22	TU11181	Burner Locator Angle
10	390501053	1/2" Elbow	23	C1365	Connector T&B
11	GA-00764-0	Electrode Spark Igniter	24	TU13914	DSI Instruction
12	CB36	1/4"—20 x 1/2 Hex Hd. Scr.	25	TU7733	#8 Self Drill Scr. (Pkg. of 6)

TU13786—(Natural Gas)
TU13785—(LP Gas)



1	TU9048	Bonnet
1A	TU8651	Door and Hinge
1B	TU7775	Top Panel (for TU8640 order separately)
2	TU2842	#10 - 32 Hex Nut
3	TU13212	1/2" Pipe Nipple—24"
4	TU13523	1/2" Valve Combination (Natural Gas)
	TU13513	1/2" Valve Combination (LP Gas)
5	TU2226	Mounting Bracket
6	TU7294	Upper Rear Air Deflector
7	TU13695	Bonnet Thermostat Bracket
8	TU13678	Thermostat, Man. Reset 300º
9	C1365	Connector T&B
10	GA-00764-0	Electrode Spark Igniter
11	TU13826	Electrode Spark Mounting Plate
12	CB36	1/4"—20 x 1/2" Hex Head Screw
13	TU2846	1/4" Split Lockwasher
14	TU2847	1/4" Flat Washer
15	TU4934	1/4"—20 Hex Nut
16	TU2224	1/8" Pipe Plug
17	TU3539	Gas Burner Orifice (specify size)
18	TU7840	Burner
19	TU8288	Manifold Assembly
20	TU10946	Manifold Plug
21	TU2877	#10 Tinnerman Nut
22	TU2878	#10 x 5/8" S.M.S.
23	TU3479	#10—32 x 7/16" Truss Head Screw
24	TU8645	Caution Label
25	TU13914	DSI Instruction
26	P104	1/4" Cut Washer
27	TU2853	Gasket Material
28	TU11181	Burner Locator Angle
29	SC505	Coupling
30	390401021	1/2" Pipe nipple 2 1/2"
31	390501053	1/2" Elbow
32	TU7733	#8 Self Drill Scr. (Pkg. of 6)

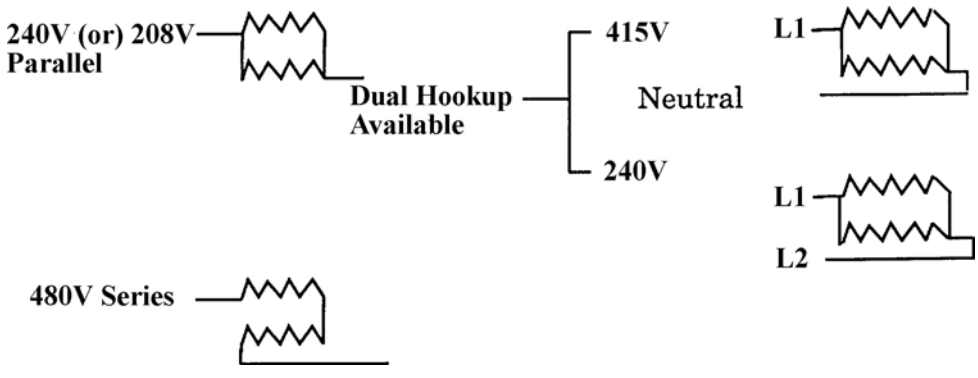
Electric Heating Unit (Illustration)



1	TU3103	Bonnet Weldment	16	TU5958	Bushing (2 required)
2	TU3102	Hold Down Plate	17	CFB0700	Cable—1/2" x 7" Lg.
3	TU9205	Control Box Weldment	18	TU4790	Straight Connector (2 required)
4	TU9207	Terminal Box Cover			
5	TU12454	Top Cover	21	TU7244	Thermostat—135°F
7	TU3104	Air Inlet Cover	22	TU13588	Motor Fuse Holder
8	TU3767	Contact Strap (4 required)			
9	TU3768	Contact Strap (1 required)			
10	TU3253	Insulators	A	see next page	Control Box Less Wiring
11	TU13866	Fuse Holder	B	"	Contactor
12	TU7738	Grounding Lug	C	"	Terminal Block
13	TU9254	High Voltage Label for 415V Only	D	"	Fuse
			E	"	Bonnet with Elements
14	TU9258	Ground Label	F	"	Heater Elements
15	CB36	1/4"-20 x 1/2" Hex Screw (Pkg. of 6)	G	"	Motor Fuse

A	B	C	D	E	F	G	H	I
Control Box Less Wiring	**Contactor (24V Coil)**	**Terminal Block**	**Heater Fuse Block**	**Heater Fuses**	**Bonnet with Elements**	**Heater Element**	**Motor Fuse Block**	**Motor Fuses**
TU13781 208V 1PH	TU13520 30/45 AMP	TU9142 (2 required)	TU11096	TU7224 40 AMPS 3 required	TU7590- 22.5KW 208V, 1 PH	HE11080,240V, 30KW Used for 208V, 22.5KW	TU8201	TU819710 10 AMPS 2 required
TU13782 240V 1PH	TU13520 30/45 AMP	TU9142 (2 required)	TU11096	TU7224 40 AMPS 3 required	TU7588- 21KW 240V, 1 PH	HE11540,240V, 21KW	TU8201	TU819710 10 AMPS 2 required
TU13783 208V 3PH	TU13520 30/45 AMP	TU9143	TU11096	TU7224 40 AMPS 3 required	TU7590- 22.5KW 208V, 3 PH	HE11080,240V, 30KW Used for 208V, 22.5KW	TU8201	TU819710 10 AMPS 3 required
TU13980 240V 3PH	TU13520 30/45 AMP	TU9143	TU11096	TU7224 40 AMPS 3 required	TU7588- 21KW 240V, 3 PH	HE11540,240V, 21KW	TU8201	TU819710 10 AMPS 3 required
TU13784 480V 3PH	TU13520 30/45 AMP	TU9143	TU9141	TU7072 40 AMPS 3 required	TU7588- 21KW 480V, 3 PH	HE11540,240V, 21KW Used for 480V, 21KW	TU8200	TU819908 8 AMPS 3 required
TU13794 240/415V 3PH	TU13520 30/45 AMP	TU9143* TU9142**	TU11096	TU7224 40 AMPS 3 required	TU7588- 21KW 240 or 415V, 3 PH	HE11540,240V, 21KW	TU8200	TU819908 8 AMPS 3 required
TU13884 208V 3PH w/1 PH motor	TU13520 30/45 AMP	TU9143	TU11096	TU7224 40 AMPS 3 required	TU7590- 22.5KW 208V, 3 PH	HE11080,240V, 30KW Used for 208V, 22.5KW	TU8201	TU819710 10 AMPS 2 required
TU13884 240V 3PH w/1 PH motor	TU13520 30/45 AMP	TU9143	TU11096	TU7224 40 AMPS 3 required	TU7588- 21KW 240V, 3 PH	HE11540,240V, 21KW	TU8201	TU819710 10 AMPS 2 required
TU13885 240/415V 3PH w/1 PH motor	TU13520 30/45 AMP	TU9143* TU9142**	TU11096	TU7224 40 AMPS 3 required	TU7588- 21KW 240 or 415V, 3 PH	HE11540,240V, 21KW	TU8200	TU819908 8 AMPS 2 required

*** 3 Pole**
**** 1 Pole (Neutral)**



Rated Heater Input	Heater Amperes, Motor Amperes, Control Amperes, Total Amperes at Rated Voltage	Hz.	Minimum Size Supply Wire Based On 60C (140°F) Insulated Copper Conductor	Circuit Minimum Conduit Trade Size	Branch Circuit Maximum Fuse Size
21KW@208V/1PH	109 AMPS	60	1AWG	1-1/2	110
21KW@208V/3PH*	66 AMPS	60	4AWG	1-1/4	70
21KW@208V/3PH	62 AMPS	60	4AWG	1-1/4	70
21KW@240V/1PH	95 AMPS	60	1AWG	1-1/2	100
21KW@240V/3PH*	59 AMPS	60	4AWG	1-1/4	60
21KW@240V/3PH	55 AMPS	60	4AWG	1-1/4	60
21KW@480V/3PH	28 AMPS	60	10AWG	3/4	30
21KW@240/414/3PH	55 AMPS	50	4AWG	1-1/4	60
21KW@550V/3PH	25 AMPS	60	10AWG	3/4	25

CAUTION: This machine has one power supply connection point. Disconnect power supply before servicing machine.

*** Single Phase Motors**