



# INSTALLATION/OPERATION MANUAL

## 75 Lb. Laundry Dryer



### MODELS

#### GAS

L36USS36G L36URD36G  
L36USD36G L36URS36G

#### STEAM

L36URS36S  
L36URD36S

#### ELECTRIC

L36URS36E  
L36URD36E

**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.**

MAN354

9/98

D0561

## ***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:** 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 loss of life.

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

- **WHAT TO DO IF YOU SMELL GAS**

- Do not try to light any appliances.
- 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 the 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:** Wear Safety Shoes to prevent injuries.



**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:** 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 **Cissell** 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:** 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..

## **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 EXPRESS 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, EXPRESS 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**  
**75 LB. LAUNDRY DRYER**





	<b>PAGE</b>
Model Numbers & Company Address .....	1
Important Notices .....	2-3
Dryer Warranty .....	4
Table of Contents .....	5
Warnings, Cautionary Notes and Symbols .....	6-7
Unpacking and General Insulation .....	8
Dryer Outline Dimension (Illustration) .....	9-10
Specifications .....	11-12
Motor List .....	13
General Information .....	14
Grounding Instructions .....	14-15
Piping Recommendations .....	16
Gas Piping and Gas Loop Piping Installation .....	17-19
Gas Pipe Size Chart .....	20
Steam Piping Installation .....	21-22
Exhaust Installation - Multiple Manifold Duct .....	23-24
Exhaust Installation with Separate Exhaust .....	25
Exhaust and Venting .....	26
Rules for Safe Operation .....	27
Operating Instructions - Two Timer Models .....	28-29
Automatic Computerized Drying Control .....	30-37

## SYMBOLS

The following symbols are used in this manual and/or on the machine. The numbers between () refer to the numbers on the machine surveys.

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

## SYMBOLS

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

*Unpacking/General Installation (All Dryers)*

**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 Cissell 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**

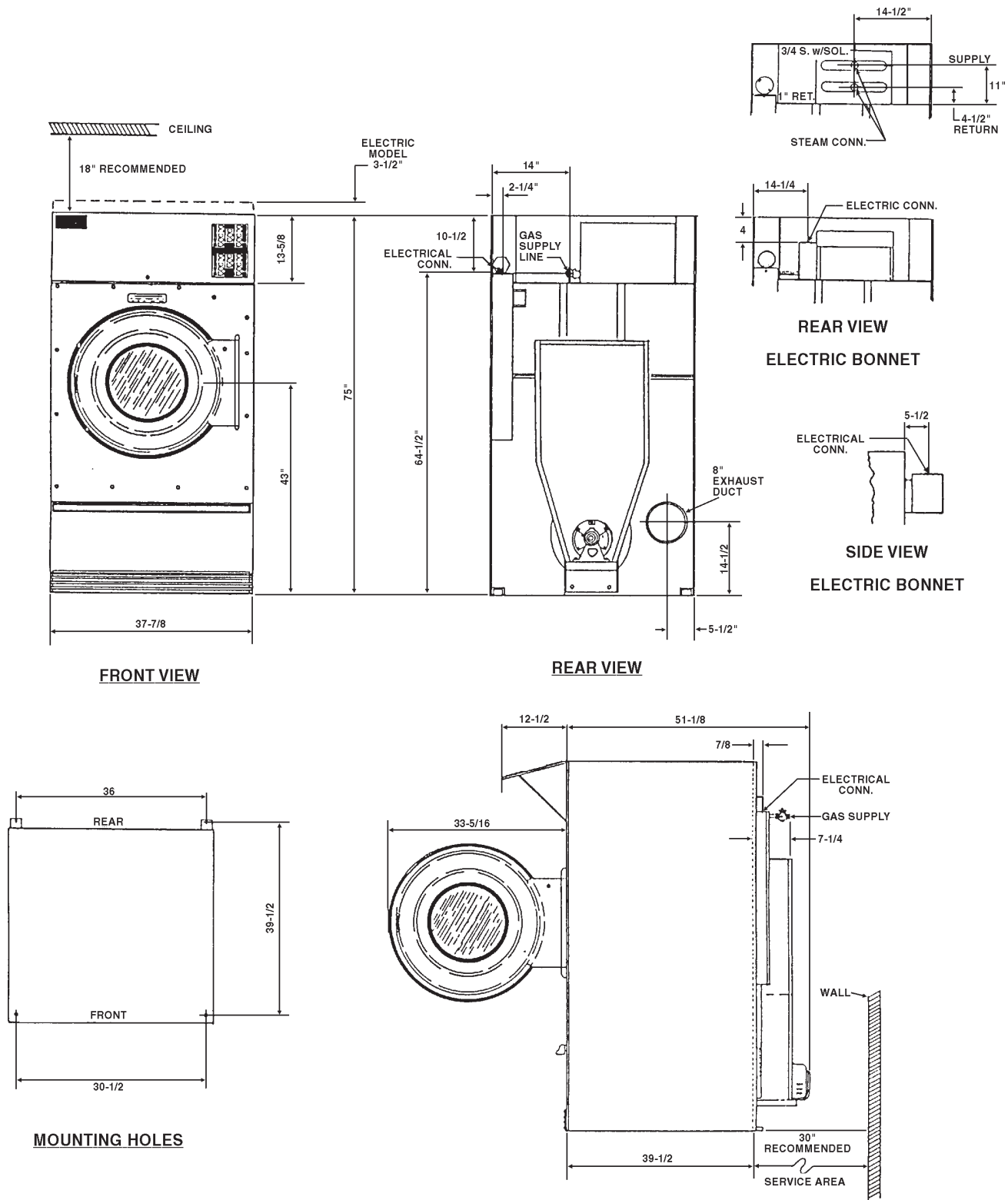
**Maximum operating efficiency is dependent upon proper air circulation. The lint screen must be kept cleaned daily to insure proper air circulation throughout the dryer.**

**IMPORTANT**

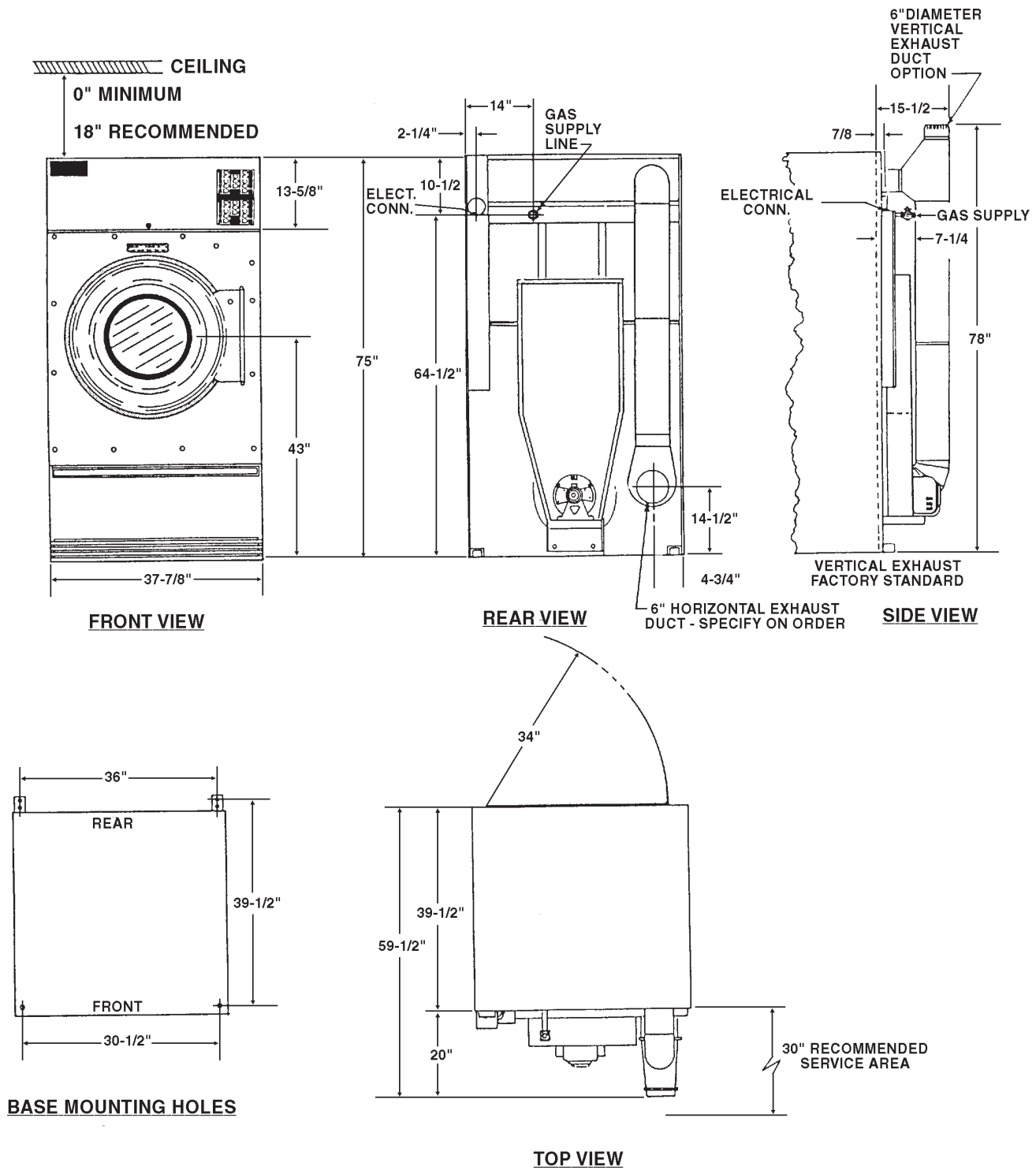
**Provide adequate clearance for air opening into the combustion chamber.**



75 lb. "UR" Dryer Outline Dimensions (Illustration)



75 lb. "US" Dryer Outline Dimensions (Illustration)



All dimensions given in inches  $\pm 1/4"$

## *Specifications*

### GENERAL

### SPECIFICATIONS NON-ENERGY SAVER MODELS

Basket Load Capacity .....	75 lbs. (34.0 kg) dryweight
Floor Space .....	75" (191 cm) H x 38" (96 cm) W x 51" (130 cm) Deep
Basket Size .....	36" (91 cm) diameter x 36" Deep - 21 cu. ft. (0.63 M <sup>3</sup> )
Exhaust Duct .....	8" diameter (20.3 cm)
Motor Sizes .....	Fan - 1/3 HP; Basket—1 HP Single Motor Dryer—1 HP
Maximum Air Displacement .....	1000 CFM (28.31 M <sup>3</sup> /Min.)
Recommended Operating Range .....	788-913 CFM (22.31 - 25.85 M <sup>3</sup> /Min.)
Net Weight (approximate) .....	600 lbs. (293 kg)
Domestic Shipping Weight (carton) .....	670 lbs. (308 kg)
Export Shipping Weight (box) .....	1140 lbs. (522 kg)
Export Shipping Dimensions .....	83" (211 cm) H x 45" (114 cm) W x 61" (155 cm) L
Export Crating .....	131.8 cu. ft. (3.73 M <sup>3</sup> )
Basket RPM .....	Reversing 40-32 reversals per minute. Non-reversing - 40.
Gas Supply .....	3/4" pipe connection (1.91 cm)
Gas Pressure Regulator (natural gas) .....	Set at 3.5" water column (89 cm)
*BTU Input (4 burners) .....	180,000 BTU/HR (natural gas) 180,000 BTU/HR (LP gases)
Electronic Ignition .....	Silicon Carbide Gas Ignition System
Drying Time (approximate) .....	75 lbs. dryweight (Indian Head cloth) 70% moisture retention— 38 minutes

### GAS FIRED MODEL

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

### ELECTRIC HEATED MODEL

Heater Input .....	40 Kilowatts/Hour
Drying Time (approximate) .....	75 lbs. dryweight (Indian Head cloth) 70% moisture retention— 47 minutes

## *Specifications*

<b>STEAMHEATED MODEL</b>	Operating Steam Pressure .....	15 PSIG (low pressure) 100 PSIG (high pressure)
	Supply Connection to Solenoid .....	3/4" (1.91 cm)
	Return Connection .....	1" (2.54 cm)
	Steam Consumption .....	214, 265 BTU/HR - 6.4 BHP - 221 lbs. of condensate
	Drying Time (approximate) .....	75 lbs. dryweight - 70% water retention - 32 minutes
	Heat Capacity .....	6 Coils
<b>ENERGY SAVER GAS MODEL</b>	Basket Load Capacity .....	75 lbs. (34.0 kg) dryweight
	Floor Space .....	78" (195 cm) H x 59 1/2" (149 cm) Deep x 38" (96 cm) W
	Basket Size .....	36" (92 cm) diameter x 36" Deep - 21 cu. ft. (0.63 M <sup>3</sup> )
	Exhaust Duct .....	6" diameter (15 cm)
	Motor Sizes .....	Fan - 1/3 HP; Basket - 1 HP Single Motor Dryer - 1 HP
	* BTU Input (3 burners) .....	144,000 BTU/HR natural and LP gases
	Maximum Air Displacement .....	536 CFM (15.18 M <sup>3</sup> /Min.)
	Recommended Operating Range .....	436-536 CFM (12.35 - 15.18 M <sup>3</sup> /Min.)
	Gas Supply .....	3/4" pipe connection (1.91 cm)
	Gas Pressure Regulator .....	Set at 35" (89 cm) water column (natural gas)
	Manifold Pressure (LP Gas) .....	11" (28 cm) water column
	Drying Time (approximate) .....	75 lbs. dryweight (Indian Head), 70% moisture retention — 38 minutes
	Net Weight (approximate) .....	675 lbs. (306 kg)
	Domestic Shipping Weight .....	725 lbs. (329 kg) 1 carton (approximate)
	Export Shipping Weight .....	1215 lbs. (551 kg) 1 box (approximate)
	Export Shipping Dimensions .....	83" (208 cm) L x 45" (113 cm) W x 61" (153 cm) H
	Export Crating .....	131.8 cu. ft. (3.73 M <sup>3</sup> )
	Basket RPM .....	Reversing 40-32 reversals per minute. Non-reversing - 40.
	* <b>Input ratings as shown are for elevations up to 2000 ft. (610 M). For higher elevations, ratings should be reduced 4% for each 1000 feet (305M) above sea level.</b>	

## *Motor List*

---

### **DOUBLE MOTOR MODELS**

<b>Motor No.</b>	<b>Voltage</b>	<b>Hz.</b>	<b>Phase</b>	<b>Basket/Fan</b>	<b>HP</b>	<b>Amps</b>	<b>RPM</b>
MTR203	115/200/230	60	1	B	1	10.4/5.2	1725
MTR212	200/230/460	60	3	B	1	3.8/1.9	1725
MTR206	110/220	50	1	B	1	12/6	1425
MTR104	240/415	50	3	B	1	3.1/1.8	1425
MTR104	220/380	50	3	B	3/4	2.6/1.5	1425
MTR104	220/380	60	3	B	3/4	2.4/1.4	1725
MTR104	200/346	50	3	B	3/4	2.6/1.5	1425
MTR101	575	60	3	B/F	1	1.7	1725
MTR209	115/208-230	60	1	F	1/3	5.2/2.6	1725
MTR218	208/230/460	60	3	F	1/3	1.6/.80	1725
MTR184	240/415	50	3	F	1/3	1.6/.90	1425
MTR187	220/380	50	3	F	1/3	1.6/.91	1425
MTR187	220/380	60	3	F	1/3	1.5/.80	1725
MTR187	200/346	50	3	F	1/3	1.5/.80	1425

### **SINGLE MOTOR MODELS**

<b>Motor No.</b>	<b>Voltage</b>	<b>Hz.</b>	<b>Phase</b>	<b>HP</b>	<b>Amps</b>	<b>RPM</b>
MTR246	115/208-230	60	1	1	11.3/5.65	1725
MTR247	208-230/460	60	3	1	3.8-4.2/2.1	1725
MTR248	575	60	3	1	1.8	1725
MTR249	240/415	50	3	1	3.8/2.2	1425
MTR250	240	50	1	1	7.3	1425
MTR266	220/380	50	3	1	3.5/2.0	1425
MTR266	220/380	60	3	1	3.2/1.8	1725
MTR266	200/346	50	3	1	3.2/1.8	1425

## General Information & Grounding Instructions

### GENERAL INFORMATION

The Cissell 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 Cissell Laundry Dryer. Hot, dry air is properly and effectively moved through the basket and exhausted through a lint trap to the atmosphere. The Cissell 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" 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 Cissell Laundry Dryers now provide.

### CISSELL COOL-DOWN

At the end of the drying cycle, determined by the time and temperature; single timer, a thermostatic 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 because it's controlled by the heat retained in the garments after the normal drying period, its time can extend from one minute, up to five minutes. The *thermo-cool cycle* is never too long or too short. Always the exact minimum time required to reduce the temperature of the garment load to a safe and cool handling temperature.

### ELECTRICAL CONNECTIONS

**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 method must comply with local electrical code requirements; or in the absence of local codes, with the National Electrical Code as ANSI/NFPA 70 (Latest Edition).**

*See wiring diagram furnished with dryer.* Your Cissell 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.)



*Piping Recommendations*

**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 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.

**STEAMHEATING  
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**

**Check gas rating plate for type of gas to equip the dryer.**

**Check for altitude elevation of the dryer.**

**Check utility for proper installation of gas supply line and gas pressure.**

**NATURAL GAS ONLY**

Check the gas pressure inlet supply to dryer, 11" W.C. Pressure maximum. Check the manifold pressure 3.5" W.C. Pressure (Natural Gas).

**LP GAS ONLY**

11" W.C. Pressure

**CAUTION**

**Low gas pressure and intermittent gas will cause gas ignition problems. This will cause inadequate drying of the clothes load.**

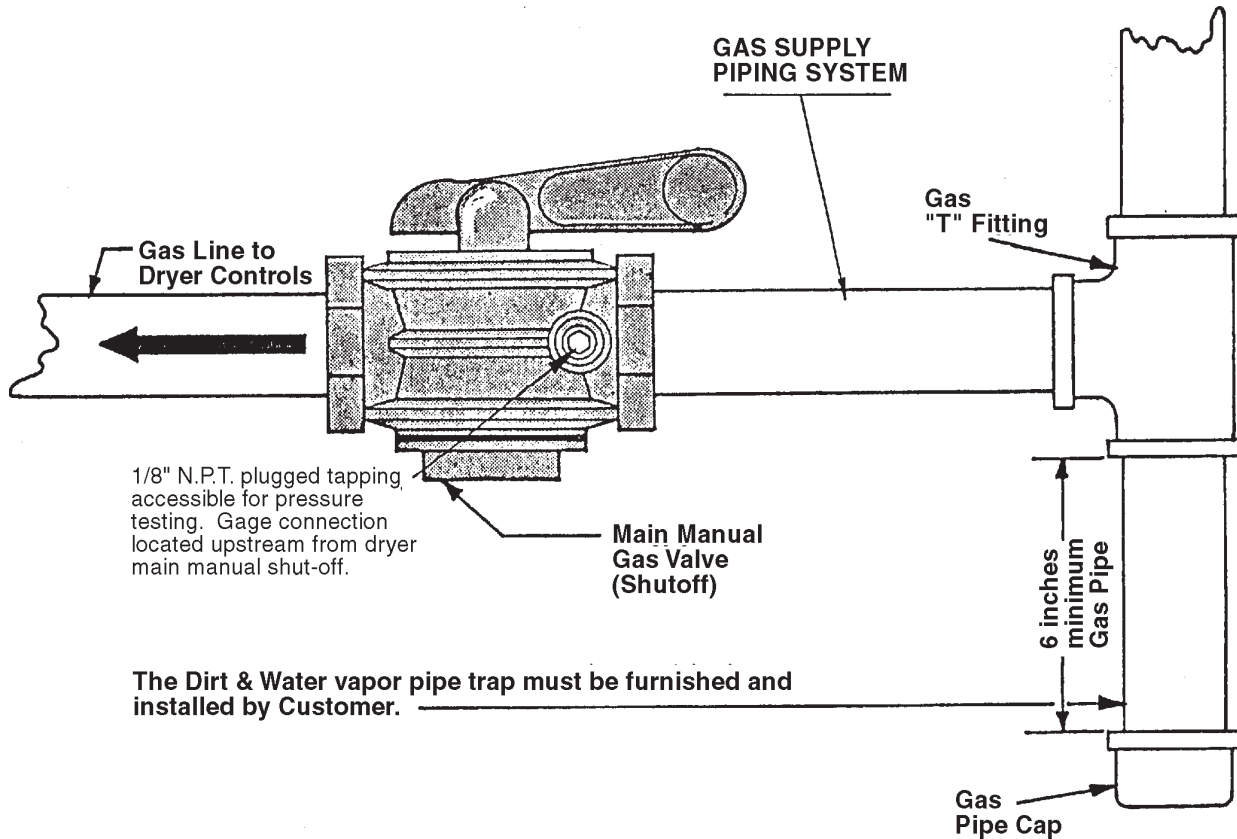
**IMPORTANT**

**The dryer and its 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 PSIG.**

**IMPORTANT**

**The dryer must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 PSIG.**

## Gas Piping Installation (Illustration)



The dryer and its 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 PSIG.

The dryer must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 PSIG.

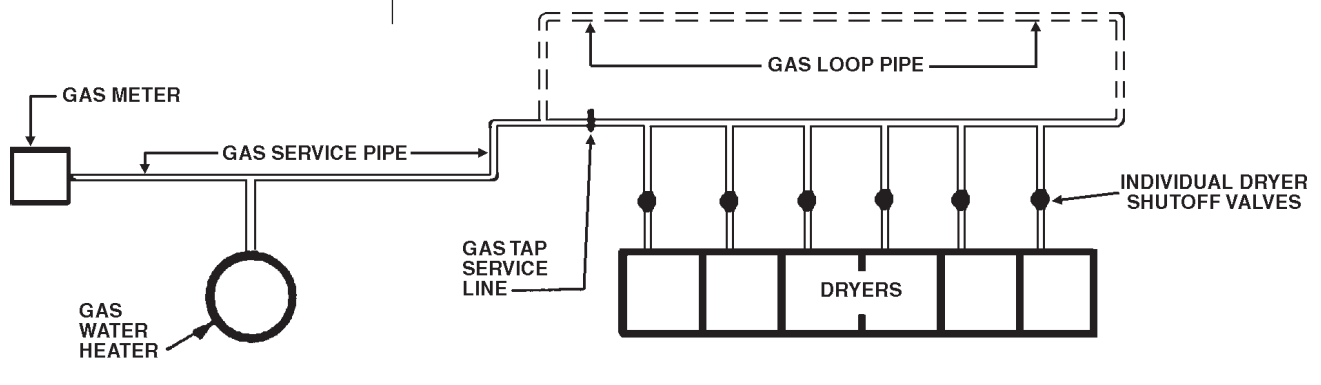
## Gas Service Installation Instructions

### 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 Cissell 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.					
		(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

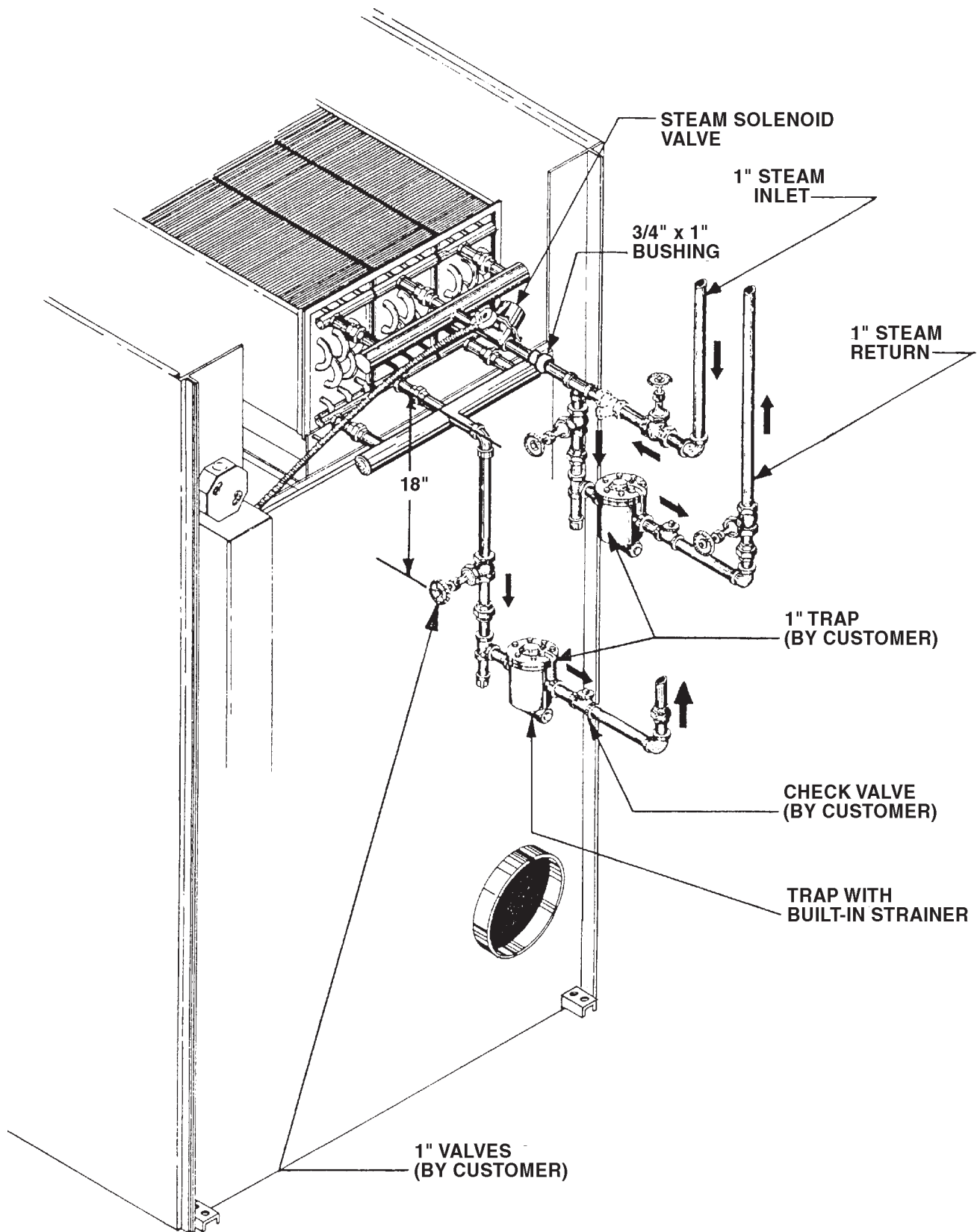
## *Steam Piping Installation Instructions*

---

### **STEAMPIPING INSTALLATION INSTRUCTIONS**

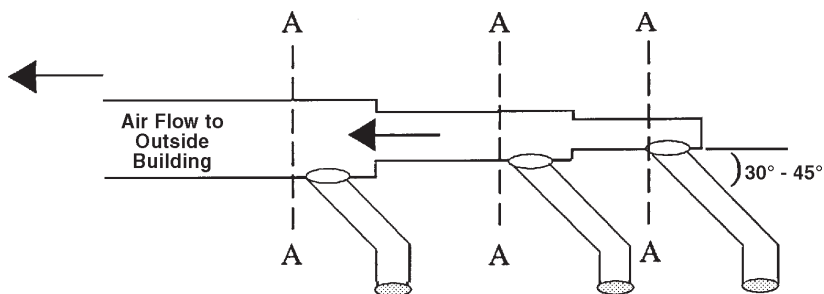
1. Set and anchor dryer in position. **Machine should be level to assure proper steam circulation.**
2. To prevent condensate draining from headers to dryer, piping should have a minimum 12" above respective header. **Do not make steam connection to header with a horizontal or downwardly facing tee or elbow.**
3. Whenever possible, horizontal runs of steam lines must drain, by gravity, to respective steam header. Water pockets, or an improperly 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 return line, it is recommended that each have a 1" union and 1" 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" 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.

*Steam Piping Installation (Illustration)*



## Dryer Installation With Multiple Exhaust

**For Exhaust Duct less than 14 feet and 2 elbows equivalent and less than 0.3 inches static pressure.**



**DRYER EXHAUSTS  
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, L36UR30, L36CD36, L44FD42**

No. of Dryers  
Duct Diameter  
(in inches)  
(in CM)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
6	9	11	12	14	15	16	17	18	19	20	21	22	23	23	24	25	26	26	27	28	28	29	30
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, L36CD36, L44FD42**

No. of Dryers  
Duct Diameter  
(in inches)  
(in CM)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
8	12	14	16	18	20	22	23	24	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
20	30	35	41	46	51	56	58	61	66	68	71	73	76	78	81	84	86	89	91	94	97	99	100

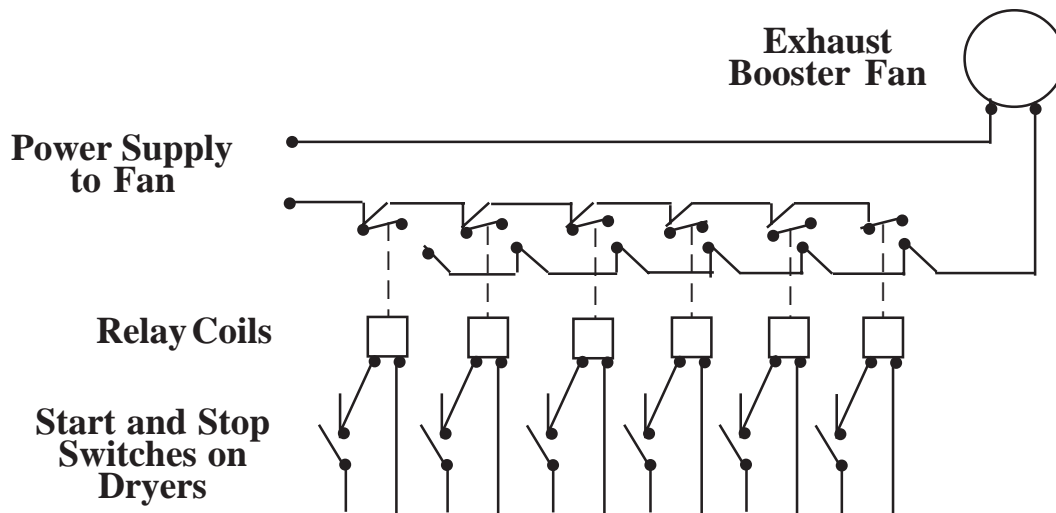
**MODELS: L44CD42, L50CD42**

No. of Dryers  
Duct Diameter  
(in inches)  
(in CM)

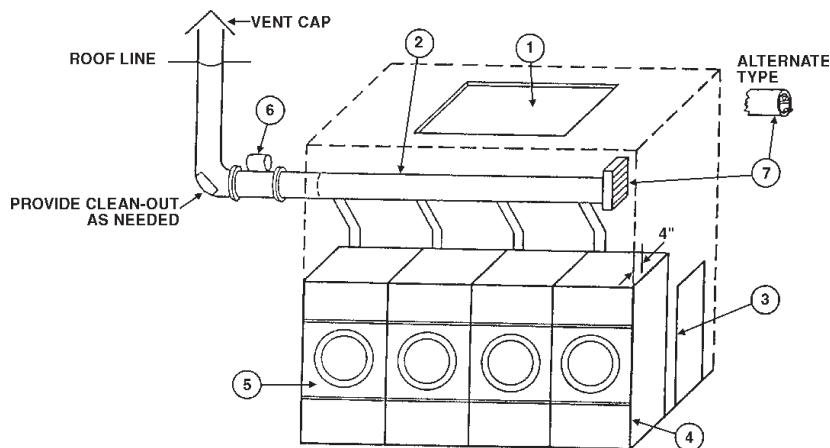
1	2	3	4	5	6	7	8	9	10	11	12
12	17	21	24	27	30	32	34	36	38	40	42
30	43	53	61	68	76	81	86	91	97	100	106

### AUTOMATIC ELECTRICAL CONTROL FOR EXHAUST FAN

For one or more dryers to start fan.



## Dryer Installation with Multiple Exhaust



### DRYER INSTALLATION WITH MULTIPLE EXHAUST

**For Exhaust Duct more than 14 feet and 2 elbows equivalent and more than 0.3 inches static pressure.**

**(See illustration on next page.)**

1. Make-up air from outside building may enter enclosure from top or side walls. Area of opening should be equal to 4 to 6 times the sum of dryer duct areas. Provide 1 square foot (.1m<sup>2</sup>) for each 6 inches (15.24 cm) diameter; 2 square feet (.2m<sup>2</sup>) for each 8 inches (20.3 cm) diameter; and 4 square feet (.4m<sup>2</sup>) for each 12 inches (30.5 cm) diameter.
2. Use constant diameter duct with area equal to the sum of dryer duct areas.  
**EXAMPLE:** 6-8 inches (20 cm) diameter duct = 1-19.6 inches (49.8 cm) diameter duct in area. Use 20 inches (50 cm) 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/HR (6.3 kcal/hr) 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/HR per square foot (15 kcal/hr per 0.1m<sup>2</sup>).
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) (M<sup>3</sup>/min.) 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.**

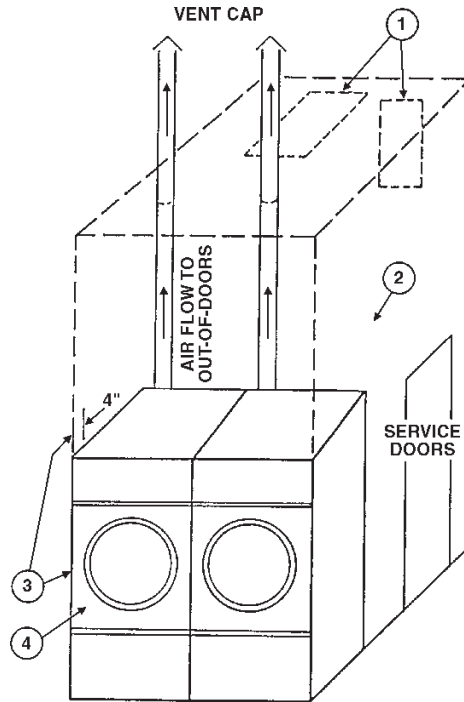


**CAUTION:** *Never install hot water heaters or other gas appliances in the same room as dryers. Never install cooling exhaust fans in the same room as dryers.*

**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 and 2 elbows equivalent and less than 0.3 inches 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. The area of the opening should be equal to 4 to 6 times the sum of the dryer duct areas. Provide 1 square foot (.1m<sup>2</sup>) for each 6 inches (15.24 cm) diameter; 2 square feet (.2m<sup>2</sup>) for each 8 inches (20.3 cm) diameter; and 4 square feet (.4m<sup>2</sup>) for each 12 inches (30.5 cm) diameter.
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/HR (6.3 kcal/hr) for each cubic foot per minute (CFM) (.03m<sup>3</sup>/min.) 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/HR per square foot (15 kcal/hr per 0.1m<sup>2</sup>).

## *Exhaust and Venting*

### **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 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.

### **EXHAUSTING 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 (15 cm) diameter exhaust requires a 1 square feet (0.1 m<sup>2</sup>) opening for make-up air.  
8 inches (20 cm) diameter exhaust requires a 2 square feet (0.2 m<sup>2</sup>) opening for make-up air.  
12 inches (30 cm) diameter exhaust requires a 4 square feet (0.4 m<sup>2</sup>) 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

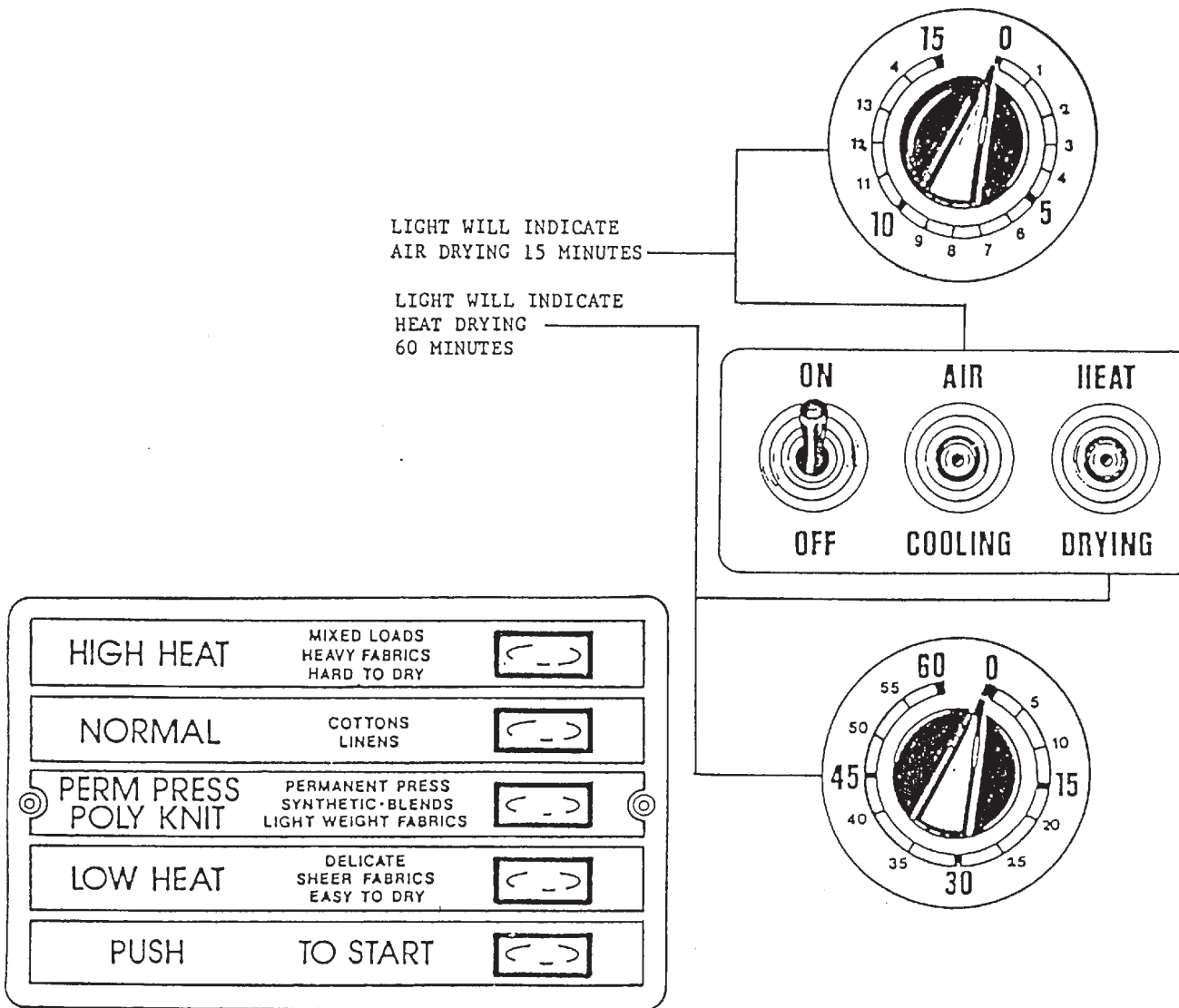
### RULES FOR SAFE OPERATION OF DRYER

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 - Two Timer Model (Illustration)*



## Operating Instructions - Two Timer Model

### OPERATING INSTRUCTIONS - TWO TIMER MODEL

### TEMPERATURE

### OPERATING INSTRUCTIONS - TWO TIMER MODEL

- Step 1. After loading the dryer with water washed clothes, close the loading door.
- Step 2. Turn the 60 minute drying (heat) timer to the desired time. The drying cycle light will be on.
- Step 3. Turn the 15 minute cooling (air) to the desired time. The cooling light will come on after the drying finishes.
- Step 4. Select the temperature desired:  
  
**High Heat**  
185°F exhaust temperature, heavy fabrics and hard to dry.  
  
**Normal**  
185°F exhaust temperature, cottons and linens.  
  
**Permanent Press**  
150°F exhaust temperature, synthetic blends.  
  
**Low Heat**  
135°F exhaust temperature, delicate, sheer fabrics.
- Step 5. Turn “on/off” toggle switch to “on” and press the “push to start” button to start the drying and cooling cycles.
- Step 6. To shut the dryer off at any time during the cycles, switch the “on/off” switch to “off”.

## Automatic Computerized Drying Control

### DESCRIPTION

### DESCRIPTION

The Automatic Computer Drying Control is used to manage the drying and cooling cycles of one clothes dryer. The operator has the flexibility to select either automatic or timed drying and either automatic or timed cooling. When automatic is selected, the drying cycle will be terminated when the clothes are dry. A dryness sensor "feels" the clothes and signals the control when they are dry. In the timed mode, the operator sets the time and temperature for the load.

### FEATURES

### FEATURES:

- Automatic/Timed drying selection.
- Automatic/Timed cooling selection.
- Fabric selection (in automatic mode only).
- LED display of cycle time.
- Drying temperature range of 100° F - 195° F (Timed mode only).
- Drying time range of 0-60 minutes (Timed mode only).
- Cooling time range of 0-60 minutes (Timed mode only).
- Repeat Last Cycle feature.
- Safety tumble cycle.
- Reversing/Non-reversing selection (option).
- Power off after 30 minutes of non-use.

### DRYNESS SENSOR

### DRYNESS SENSOR

When in the *auto drying* mode, the length of the cycle is controlled by a "dryness sensor". The sensor works on a "capacitor charge time" principle. The electronic circuit looks at the charge on the capacitor in the dryness circuit. When the capacitor is fully charged, the circuit ends the drying cycle. One side of the capacitor is connected to a dryness probe located in the center of the basket. Wet clothes hitting the probe will "discharge" the capacitor or prevent it from reaching full charge. As the clothes dry, they have less effect on discharging until finally it is fully charged, ending the drying cycle. The time to charge the capacitor with no clothes load is listed:

#### FABRIC SELECTION

Heavy  
Cotton  
Permanent Press  
Delicate

#### CHARGE TIME

11.5 Minutes  
5.5 Minutes  
5.5 Minutes  
5.5 Minutes

**LEDDISPLAY  
MESSAGES**

**LED DISPLAY MESSAGES**

<u>Display</u>	<u>Condition</u>
“_0”	Normal display between loads. Dryer is waiting for the next load.
“012”	Normal display during drying/cooling cycle. Display shows “time used” when in automatic and “time remaining” when in timed mode.
“012” (Flashing)	The door has been opened. Close the door and press START to continue the cycle.
“-S-” (Flashing)	The dryer is in the Safety Tumble mode. The cycle has ended and the dryer can be unloaded.
“_PF” (Flashing)	There has been a power failure. To restart the dryer, press ON and START. To terminate the cycle press OFF/STOP.
“FFF” (Flashing)	The temperature sensor has failed. The dryer cannot be run until it is repaired.
“-A-”	Indicates the automatic mode has been selected. (DRYING TIME and COOLING TIME only).

**OPERATION OF CONTROL PANEL**  
(See drawing on page 33)

**ON**

- 1. ON**  
Turn the control on. If dryer is not used for 30 minutes, the power will turn off. Press “**on**” for power.

**OFF/STOP**

- 2. OFF/STOP**  
Turns the control off or stops the dryer during a cycle.

**START**

- 3. START**  
Starts the cycle or re-starts it off.

**COOLING TIME**

- 4. COOLING TIME**  
In *timed* mode, with this button held down, the set cooling time in minutes will be shown in the display. To change the time, use the “**up**” and “**down**” buttons while *cooling time* button is down. The cooling time cannot be changed when *automatic cooling* is selected, “**-A-**” will show in the display when this button is held down.)

**DRYING TIME**

- 5. DRYING TIME**  
In *timed* mode, with this button held down, the set drying time in minutes will be shown in the display. To change the time, use the “**up**” and “**down**” buttons while holding “**drying time**” down. The drying time cannot be changed when *automatic drying* is selected, “**-A-**” will show in the display when this button is held down.)

**DRYING TEMPERATURE**

- 6. DRYING TEMPERATURE**  
With this button held down, the drying temperature in degrees F will be shown in the display. To change the temperature, use the “**up**” and “**down**” buttons. The drying temperature cannot be changed when *automatic drying* is selected, the temperature associated with the fabric selected will show in the display when this button is held down.

**FABRIC SELECTOR**

- 7. FABRIC SELECTOR**  
Used to select the type of fabric to be dried when Automatic Drying is selected. The fabric selection automatically sets the temperature:

**HEAVY** ..... 195°F  
**COTTON** ..... 195°F  
**PERMANENT PRESS** ..... 175°F  
**DELICATE** ..... 160°F



**OPERATION OF CONTROL PANEL (continued)**  
**(See drawing on page 33)**

**DRYING**

8. **DRYING**  
Pressing this button changes the selection of *automatic* or *timed drying*, indicated by a light.

**COOLING**

9. **COOLING**  
Pressing this button changes the selection of *automatic* or *timed cooling*, indicated by a light. In *auto cooling* mode, the cycle will end when the temperature falls below 135°F.

**REPEATLAST CYCLE**

10. **REPEATLAST CYCLE**  
Pressing this button before the start of a cycle will reset all of the selections, temperatures, and times to what they were at the beginning of the last cycle. Press

**NON-REVERSING/  
REVERSING**

11. **NON-REVERSING/REVERSING**  
Pressing this button changes the selection of Non-reversing and Reversing.

**LEDDISPLAY**

12. **LEDDISPLAY**  
Shows cycle time or temperature. In *automatic* mode, it shows the time used. In *timed* mode, it shows the time remaining. When the **DRYING TEMPERATURE** button is pressed and held down, the drying temperature will be displayed. When the **DRYING TIME** button is pressed and held down, either the total drying time or “-A-” will be displayed depending on whether *auto* or *timed* drying has been selected. When the **COOLING TIME** button is pressed and held down, either the total cooling time or “-A-” will be displayed depending on whether *auto* or *timed* cooling has been selected.

**DRYING**

13. **DRYING**  
Illuminated when in the drying cycle.

**COOLING**

14. **COOLING**  
Illuminated when in the cooling cycle.

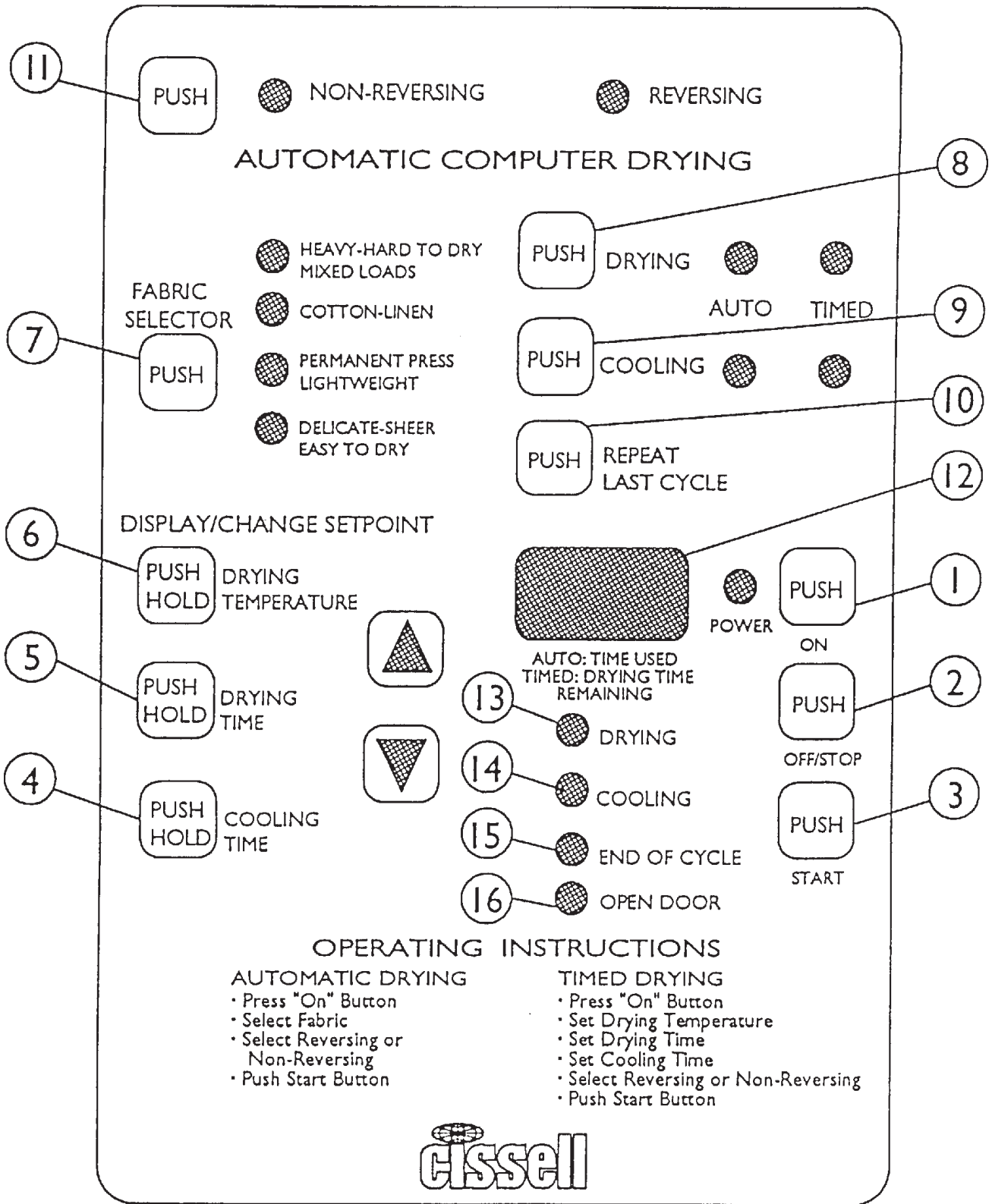
**END OF CYCLE**

15. **END OF CYCLE**  
Illuminated at the end of the cycle.

**OPEN DOOR**

16. **OPEN DOOR**  
Illuminated when the door is open. **START** must be pressed to restart the cycle after closing the door.

Automatic Computerized Drying Control Panel (Illustration)



## Automatic Computerized Drying Control

### DETAILS OF CONTROL BOARD AND OPTIONS

### OPTIONS SWITCH SET #1

<u>Switch</u>	<u>ON</u>	<u>OFF</u>
#8 F/C	Deg F	Deg C
#7 SFTY-EN	Enabled	Disabled
#6 6-Add	+ 6 Min.	0
#5 Repeat S/E	Start	End
#4 2 Deg.	+ 2 Deg.	0
#3 5 Deg.	+ 5 Deg.	0
#2 10 Deg.	+ 10 Deg.	0
#1 20 Deg.	+ 20 Deg.	0

- #8 F/C** Selection of Deg F or Deg C for temperature display.
- #7 SFTY-EN** The switch enables the “safety tumble” feature. To disable, position this switch in the OFF position.
- #6 6-Add** Used in conjunction with the HEAVY Fabric Selection to add 6 minutes to drying time (*auto* mode) for hard to dry” loads.
- #5 Repeat S/E** This switch works in conjunction with the REPEAT LAST CYCLE button. The cycle settings will be stored either at the START or the END of the cycle, based on this switch setting. The stored settings will be used when REPEAT LAST CYCLE is pressed.
- #4 2 DEG.** Adds 2 degrees to the differential temperature.
- #3 5 DEG.** Adds 5 Degrees to the differential temperature.
- #2 10 DEG.** Adds 10 Degrees to the differential temperature.
- #1 10 DEG.** Adds 10 Degrees to the differential temperature.

#### NOTE

The differential temperature is part of the heating logic. The heat turns off when the temperature in the dryer reaches the temperature set for the drying cycle. The temperature has to drop a set number of degrees below the drying temperature before the heat will turn on. The difference between the cycle temperature and the temperature to turn the heat on is called the differential temperature. This control allows the differential to be set between 5 and 25 degrees. The control “sums” the values set on the switches but will not go lower than 5 nor greater than 25. If the sum is less than 5 the control will default to 5. If the sum is greater than 25, the control will default to 25.

**DETAILS OF  
CONTROL BOARD AND  
OPTIONS**

**OPTION SWITCH SET #2**

These switches have no function.

**THERMISTOR CALIBRATION**

To verify the calibration of the thermistor circuit, proceed as follows:

1. Disconnect the thermistor leads going to the circuit board.
2. Short the terminals at JP5 (thermistor calibration pins).
3. Press the “up arrow” and the “down arrow” keys to display the temperature. The temperature should read 158° F.
4. If not 158° F, adjust the Thermistor Calibration Potentiometer until the display reads 158° F.
5. Remove the jumper from the thermistor calibration pins and connect the thermistor leads to the circuit board.

**REVERSING DWELL**

**REVERSING DWELL TIME**

This potentiometer is used to set the dwell time when the dryer has the reversing option. The dwell is the time from when the motor turns off to when it turns on again in the opposite direction. Turning the knob counter-clockwise increases the dwell time and turning it clockwise decreases the dwell time.

**COMPUTER RESET**

**COMPUTER RESET**

Push this button if the control “locks up”. Pushing this button will reset the control.

**120/230V. SWITCH**

**120/230V. SWITCH**

This switch must be switched to the correct input voltage for the control to work. Applying 230V when switched to the 120 V position will blow fuses on the circuit board.

*Automatic Computerized Drying Control Board (Illustration)*

