Member of:

OWNER'S MANUAL

190 Lb. Laundry Dryer

MODELS

GAS	STEAM
HD190G	HD190S
L52CD48G	L52CD48S

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.

MAN2190 REV 1 7/00 **D0014**

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 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: 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.

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 **Manufacturer's** 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 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.

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190 LB. LAUNDRY DRYER

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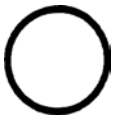
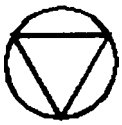
SYMBOLS

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!**	
	**Hot! Do Not Touch** **Heib! Nicht Beruhren** **Haute temperature! Ne pas toucher** **Caliente! no tocar** **Heet! Niet Aanraken**	
	**dangerous voltage** **tension dangereuse** **Gafahrliche 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** **Kuhlen** **enfriamiento**	

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
	**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

This dryer is packed in a large (heavy-duty) protective wooden crate.

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

Upon determining permanent location of a unit, care should be taken in movement and placement of equipment. To move dryer through doorways, you may need to remove the top of the machine. Follow instructions for disassembling.

See outline clearance diagrams for correct dimensions.

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

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

GENERAL INSTALLATION (ALL DRYERS)

Leveling: Use spirit level on top of dryer. The use of shims are acceptable for this procedure.

IMPORTANT
Before installing or operating this dryer, thoroughly read the owner's manual for correct instructions concerning electric connections, exhaust ducting, gas piping, steam connections, make-up air, etc.

IMPORTANT
Read the warnings in this manual.

IMPORTANT
Do not install this dryer in an area where it will be exposed to water and/or weather.

IMPORTANT
Failure to follow these instructions and warnings may create a safety hazard and may affect the warranty.

IMPORTANT
Follow all local codes.

IMPORTANT
If you have any installation questions, consult the factory Service Department.

GENERAL INSTALLATION (ALL DRYERS)

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 for gas dryers is 18" (458 mm) ceiling clearance, 24" (610 mm) rear clearance, and 24" (610 mm) side clearance. Installation clearance from all combustable material for steam dryers is 14" (356 mm) ceiling clearance, 24" (610 mm) rear clearance, and 18" (458 mm)side clearance.

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

GENERAL

The dryer is so designed that when an operator opens the dryer door, the basket and exhaust fan stop. You can expect fast drying from the laundry dryer. Hot, dry air is properly and effectively moved through the basket and exhausted through a lint trap to the venting and eventually to the atmosphere. The lint accumulates in the drawer and should be removed as needed, minimum once daily.

-

IMPORTANT

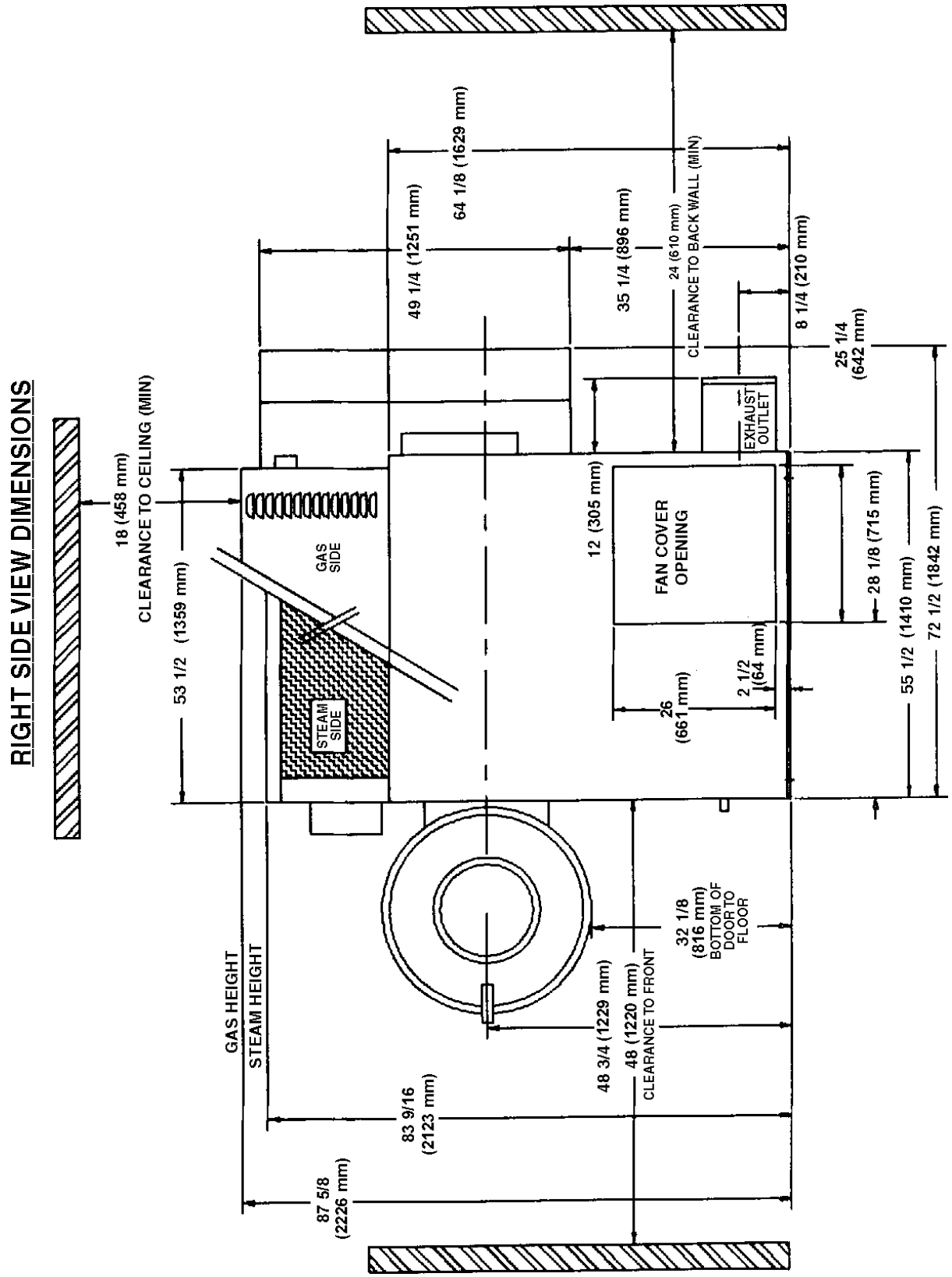
IMPORTANT
Provide adequate clearance for air openings into the combustion chamber.

REPLACEMENT PARTS

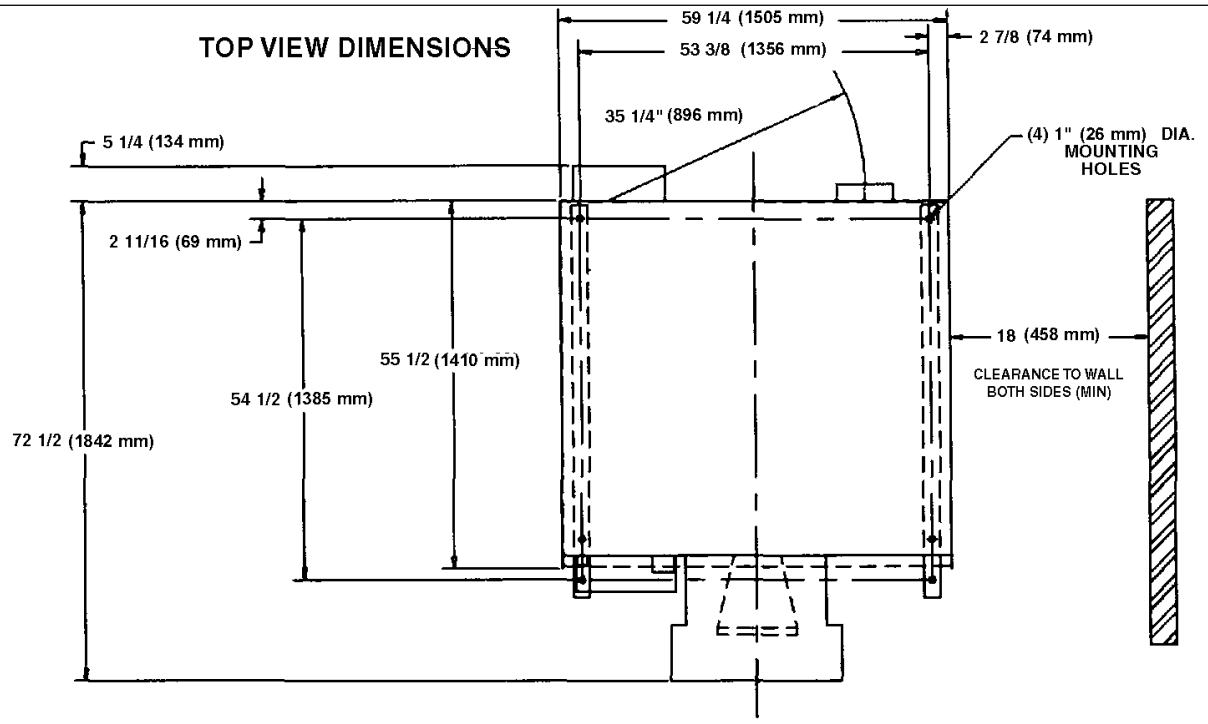
Replacement parts for this dryer are available from your distributor or by contacting the factory at the address or phone number printed on the cover of this manual.

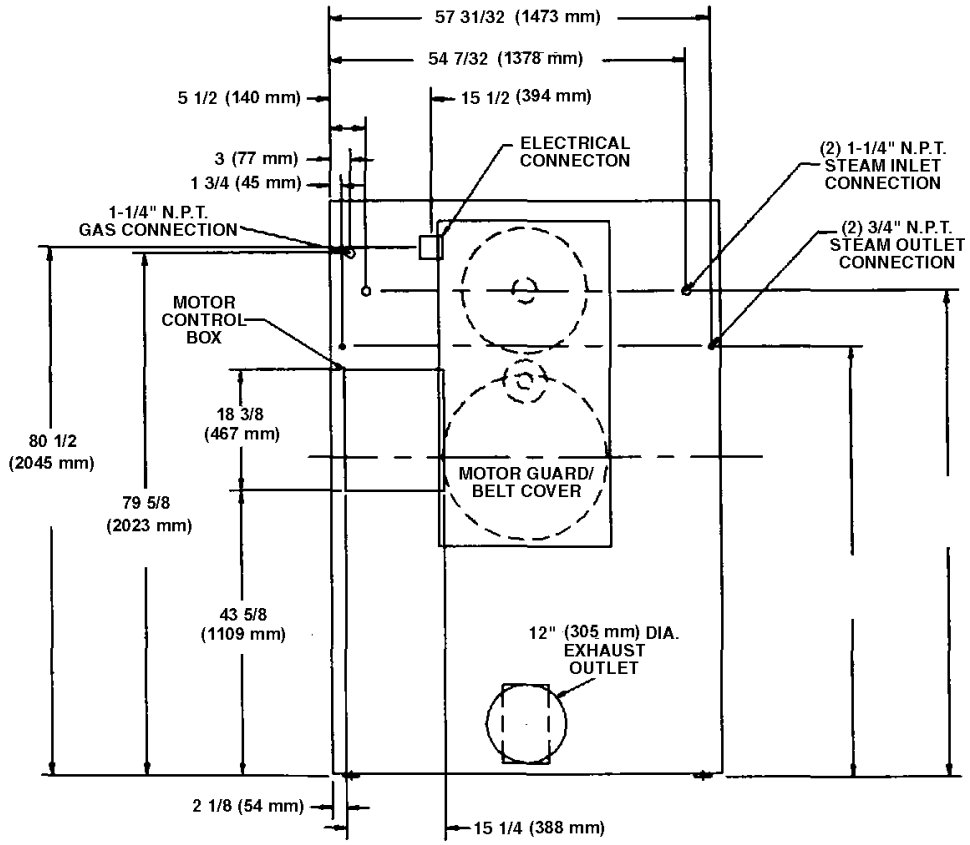
WARNING Unit is heavy!

NOTE
The gas installation must conform with local codes or, in the absence of local codes, with the National Fuel Gas Code, ANSI Z223.1 - "Latest Edition".



ALL DIMENSIONS ARE +/- 1/4" (7 MM) AND ARE SUBJECT TO CHANGE WITHOUT NOTICE.





BACK VIEW DIMENSIONS

ALL DIMENSIONS ARE +/- 1/4" (7 MM) AND ARE SUBJECT TO CHANGE WITHOUT NOTICE.

GENERAL SPECIFICATIONS FOR 190 lb. GAS HEATED DRYERS

Basket Capacity	190 lbs. (86.18 kg) Dryweight
Electrical Specifications	208-240/60/3, 480/60/3, 220-380/50/3
Motor Size: Basket	2 hp (1.50 kW)
Motor Size: Fan	5 hp (3.73 kW)
Floor Space	87-5/8" (2226 mm)) H x 72-1/4" (1836 mm) D x 59-1/4" (1505 mm) W
Door Opening	31-1/4" (794 mm)
Basket	52" (1321 mm) dia. x 48" (1220 mm) deep (59 ft^3, 1.67 m^3)
Basket RPM: Reversing	25 rpm (3.2 reversals per minute)
Non-Reversing	30 rpm
Exhaust Duct	12" (305 mm) dia.
Maximum Air Displacement	2,950 cfm (5015 m^3/h) 1392 liters/sec.)
Recomm. Oper. Range	2,700 - 3,000 cfm (4590 - 5100 m^3/h)
Net Weight	2,168 lbs. (983 kg.)
Shipping Weight	2,663 lbs. (1,208 kg.)
Shipping Dimensions	85" H (2160 mm) x 89" D (2261 mm) x 63" W (1601 mm)
Crating Volume	288.20 ft^3 (8.16 m^3)
Gas Supply	1-1/4" (32 mm) pipe connection (1-1/4" NPT)
Gas Manifold Pressure	LP = 11" w. c. (27.4 mbar) NG = 3.5" w. c. (8.8 mbar)
Minimum Gas Supply Pressure	LP = 12" w. c. (29.9 mbar) NG = 5" w. c. (12.5 mbar)
Input Rating	525,000 Btu/hr 132,000 kcal/h
Recommended Make-up Air	4.0 sq. ft. (576 sq. in., 3,744 sq. cm)

GENERAL SPECIFICATIONS FOR 190 lb. STEAM HEATED DRYERS

Basket Capacity	190 lbs. (86.18 kg)
Electrical Specifications	208-240/60/3, 480/60/3, 220-380/50/3
Motor Size: Fan	5 hp (3.37 kW)
Floor Space	83-1/2" (2121 mm) H x 72-1/4" (1836 mm) D x 59-1/4" (1505 mm) W
Door Opening	31-1/4" (794 mm)
Basket	52" (1321 mm) dia. x 48" (1220 mm) deep (59 cu. ft., 1.67 m^3)
Basket RPM: Reversing	25 rpm (3.2 reversals per minute)
Non-Reversing	30 rpm
Exhaust Duct	12" (305 mm) dia.
Maximum Air Displacement	3,000 cfm (5100 m^3/min, 1416 liters/sec.)
Recomm. Oper. Range	2,700 - 3,000 cfm (4590 - 5100 m^3/min.)
Gas/Elec. Net Weight	2,500 lbs. (1,134 kg.)
Steam Net Weight	2,630 lbs. (1,193 kg.)
Gas/Elec. Shipping Weight	2,650 lbs. (1,202 kg.)
Steam Shipping Weight	2,780 lbs. (1,261 kg.)
Shipping Dimensions	93" H (2363 mm) x 85" D (2159 mm) x 63" W (1601 mm)
Crating Volume	275.81 ft^3 (7.81 m^3)
Input Rating	15.7 BHP (245.7 kg - steam/hr) 525,000 Btu/h 132,000 kcal/h
Pressure	100 psi (6.9 bar) Max
Steam Coils	(2) 49" (1245 mm) L x 18" (458 mm) H x 6-1/2" (166 mm) W
Steam Supply Connection	1-1/4" (32 mm)
Steam Return Connection	3/4" (20 mm)
Trap Connection	3/4" (1.91cm)

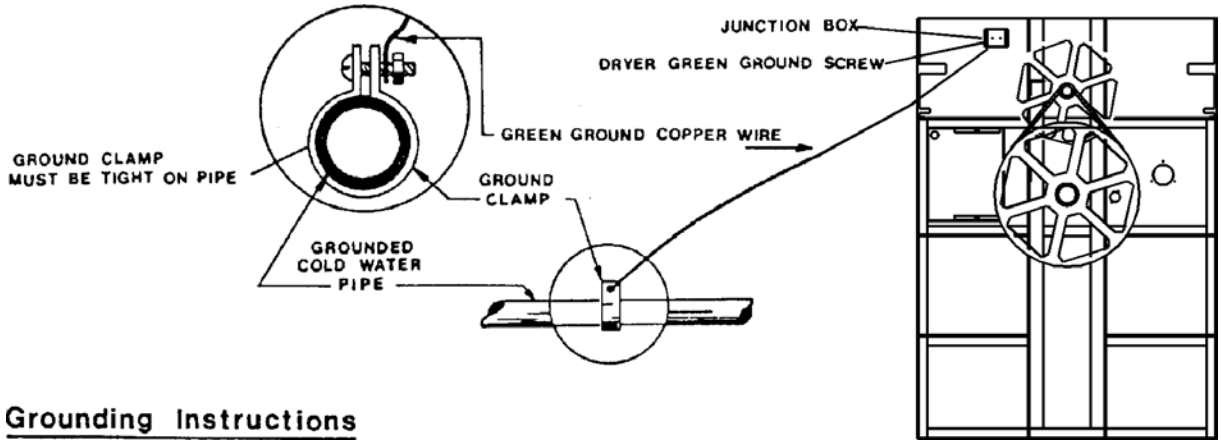
ELECTRICAL CONNECTIONS (ALL DRYERS)

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. 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, ANSI/NFPA No. 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 with the Service Connection Box on the rear of the dryer. 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.)

All panels must be in position before operation of dryer.

(ILLUSTRATION) GROUNDING INSTRUCTIONS



Grounding Instructions

«Attention. Lors des opérations d'entretien des commandes, ètiqueter tous les fils avant de les dèconnecter. Toute erreur de câblage peut être une source de danger et de panne»

Motor No.	Voltage	Hz.	Phase	HP	kW	Amps	RPM	B/F
MTR290	208/240	60	3	2	1.50	6.2 - 6.0	1725	Basket
MTR290	480	60	3	2	1.50	3.0	1725	Basket
MTR296	380	60	3	2	1.50	4.2 - 4.6	1725	Basket
MTR292	220/380	50	3	2	1.50	6.4/3.7	1425	Basket
MTR292	240/415	50	3	2	1.50	6.4/3.7	1425	Basket
MTR291	208/240	60	3	5	3.73	14.2	1725	Fan
MTR291	480	60	3	5	3.73	7.1	1725	Fan
MTR298	240	50	3	5	3.73	8.4	1425	Fan
MTR298	380	60	3	5	3.73	17.2 - 16.8	1725	Fan
MTR293	220/380	50	3	5	3.73	6.05/12.1	1425	Fan
MTR293	240/415	50	3	5	3.73	6.05/12.1	1425	Fan

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" W.C. (17.5 MBAR) 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
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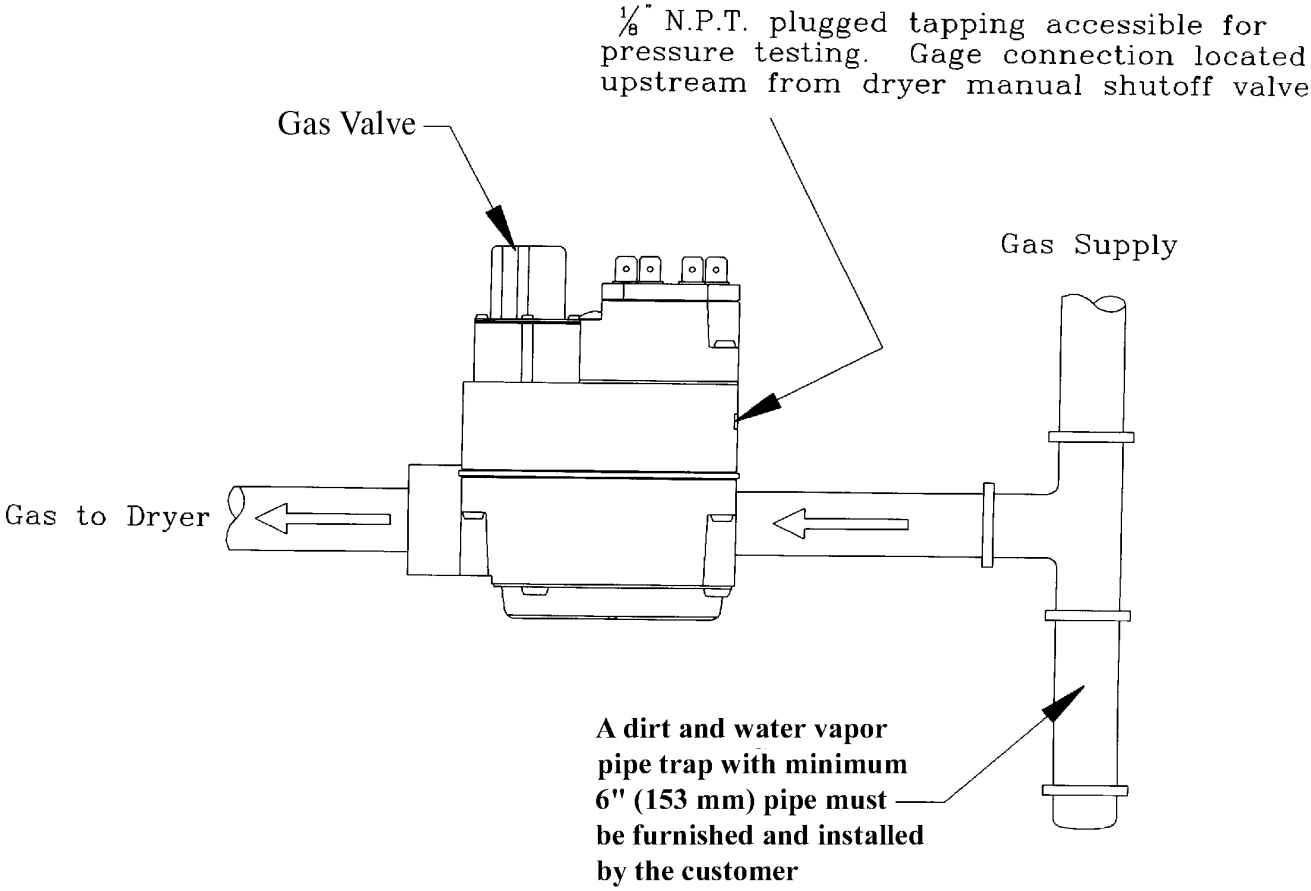
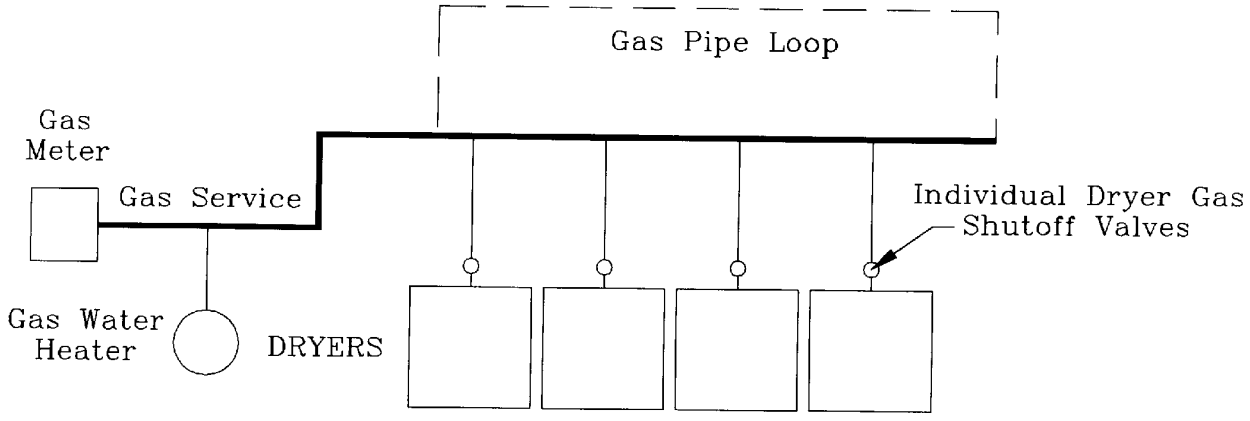
4,000,000	1000000	3	3 1/2	3 1/2	4	4	4


⅛" N.P.T. plugged tapping accessible for pressure testing. Gage connection located upstream from dryer manual shutoff valve
Gas Valve
Gas Supply
Gas to Dryer
A dirt and water vapor pipe trap with minimum 6" (153 mm) pipe must be furnished and installed by the customer


Gas Pipe Loop
Gas Meter
Gas Service
Individual Dryer Gas Shutoff Valves
Gas Water Heater
DRYERS

GAS PIPING INSTALLATION

1. Gas service 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 Rating Plate located on rear wall of dryer, for type of gas to equip the dryer and the altitude (elevation).

3. Check with the gas supplier for the gas pressure and the proper gas supply line installation.

NOTE: 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 (3.5 kPa).

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 greater than 1/2 psig (3.5 kPa).

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

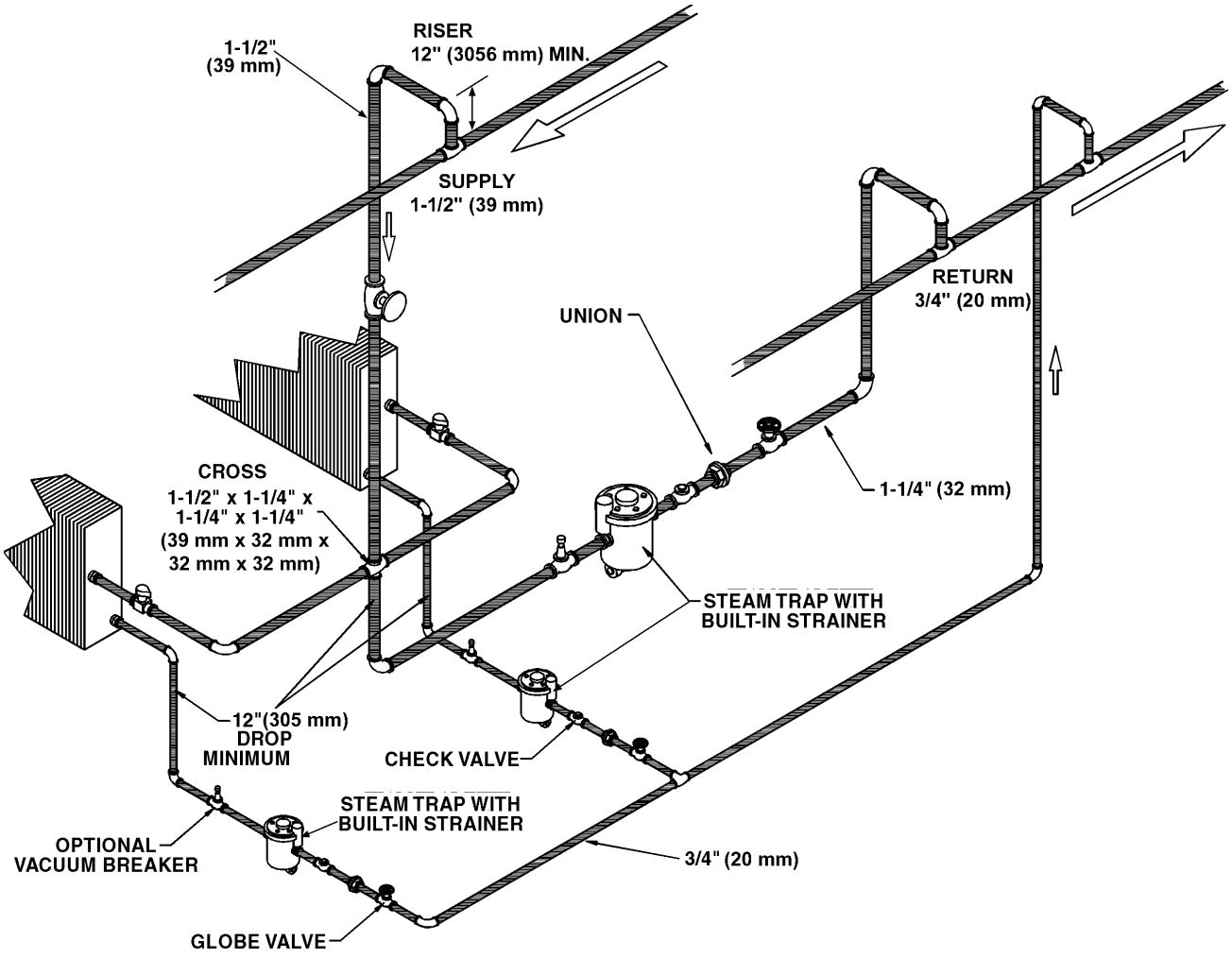
NATURAL GAS ONLY

NATURAL GAS ONLY: Check the gas pressure inlet supply to the dryer, 11" w.c. (27.4 mbar) pressure maximum. Check the manifold pressure, 3.5" w.c. (8.8 mbar) pressure inside the dryer.

CAUTION: Gas loop piping must be installed as shown on the previous page, to maintain equal pressure for all dryers connected to a single gas service. Install other gas appliances upstream from the loop.

Specific gas pipe size should be obtained from your supplier or refer to the Gas Pipe Size Chart in this manual.

Steam Piping Installation (Illustration)



INDIVIDUALLY TRAPPED COILS ARE RECOMMENDED RATHER THAN MANFOLDING RETURN INTO ONE TRAP.

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 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 union and a globe valve. This will enable you to disconnect the steam connections and service the dryer whole 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.

PIPING RECOMMENDATIONS

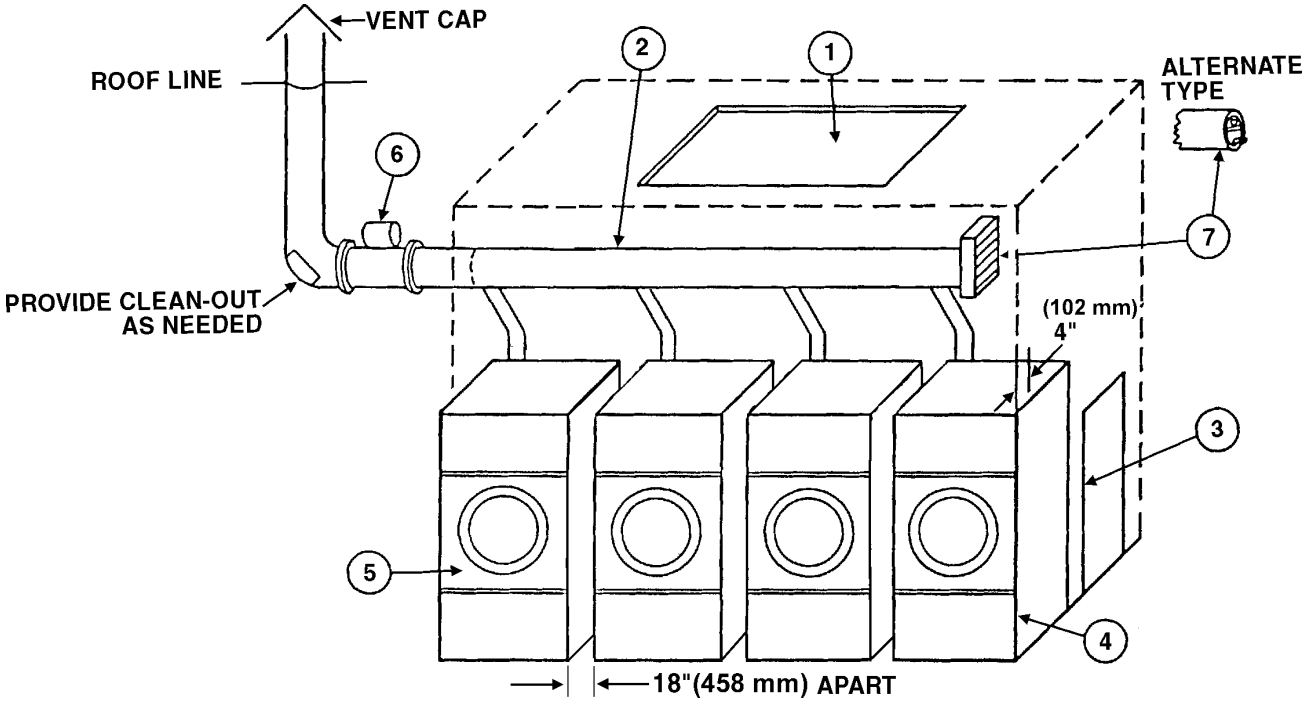
1. Trap each dryer individually. Always keep the trap clean and in good working condition.

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.

Dryer Installation with Multiple Exhaust (Illustration)



DRYER INSTALLATION WITH MULTIPLE EXHAUST

For Exhaust Duct more than 14 feet (5 m) and 2 elbows equivalent and more than 0.6 inches (16 mm) static pressure. (See illustration on previous 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 (153-204 mm) diameter duct = 1-19.6 inches (26-498 mm)diameter duct in area. Use 20 inches (508 mm)diameter duct or diameter to match tube-axial fan.

EXAMPLE

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.

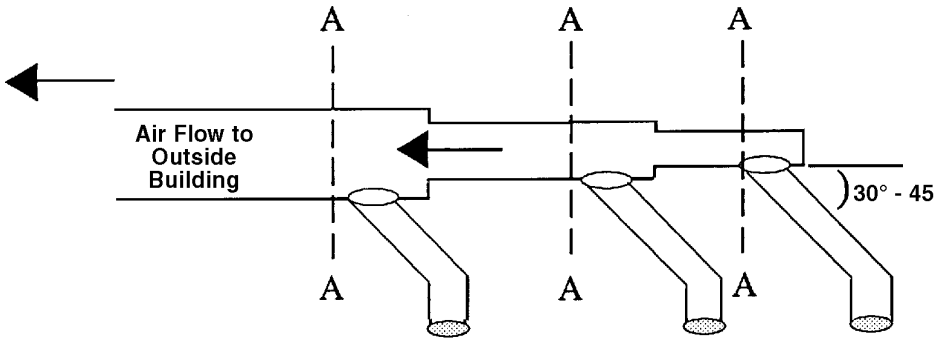
4. Heat loss into laundry room from dryer fronts *only* is about 60 Btu/h (16 kcal/h) per square foot.

5. Flange mounted, belt driven tube-axial fan. **Fan must be run when one or more dryers are running.** *See suggested Automatic Electrical Control Wiring Diagram on next page.* Must meet local electrical codes. Fan air flow (cfm) is equal to sum of dryer air flows, but static pressure (SP) is dependent on length of pipe and number of elbows.

6. **Barometric Bypass Damper** - Adjust to *closed flutter position* with all dryers and exhaust fan running. **Must be located with 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.**

For Exhaust Duct less than 14 feet and 2 elbows equivalent and less than 0.6 inches static pressure.



DRYER EXHAUSTS

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

MODELS: L28FD30, L28US30, L36FD30, L36UR30, L36CD36, 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, L36CD36, L44FD42

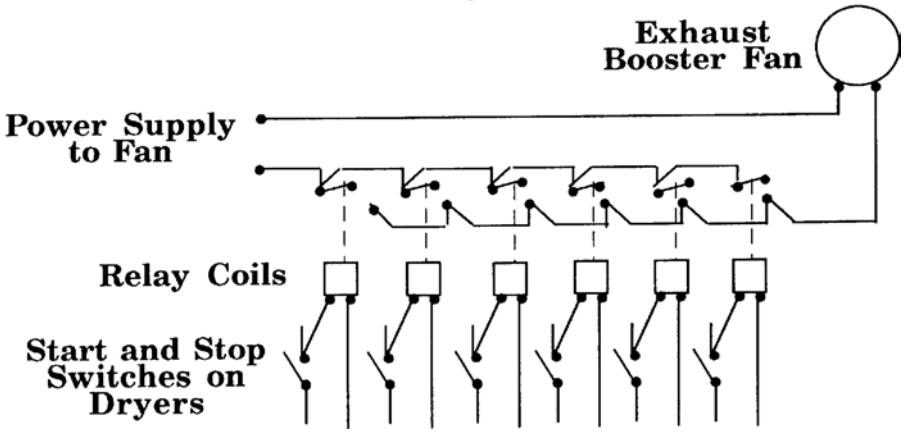
No. of Dryers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Duct Diameter (in inches)	8	12	14	16	18	20	22	23	24	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
(in cm)	20	30	25	41	46	51	56	58	61	66	68	71	73	76	78	81	84	86	89	91	94	97	99	100

MODELS: L44CD42, L50CD42, L52CD48

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.

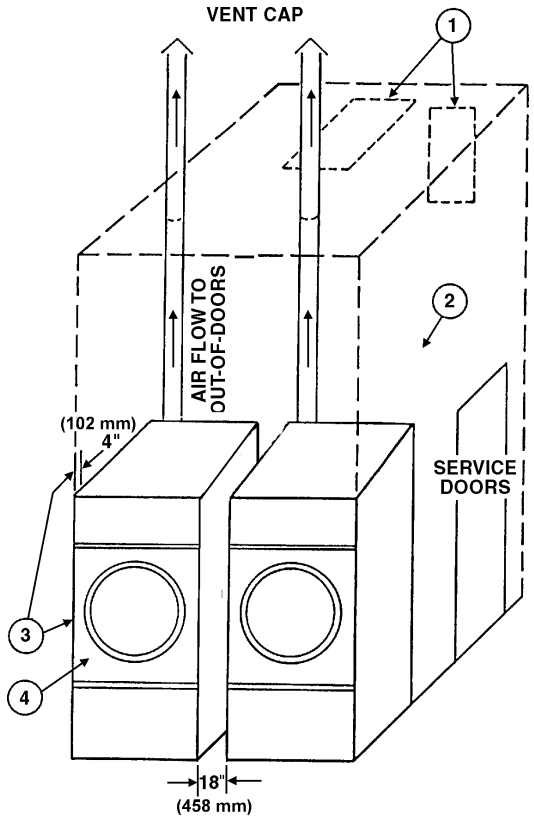


Suggested Minimum Dryer Make-up Air Requirements

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 ST	30	13.6	450	765	6	153	87	561
C 75 ST	75	34	1000	1700	12	305	192	1240
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
HD20.1	20	9.1	450	765	6	153	87	561
HD30SL	30	13.6	600	1020	8	203	116	748
HD30.1	30	13.6	625	1063	8	203	120	774
HD50.1	50	22.7	850	1445	8	203	164	1058
HD75.1	75	34	1000	1700	8	203	192	1240
HD80.1	80	36.3	1000	1700	10	254	192	1240

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" (153mm) duct.
2) The Model C 75 ST has 2 pockets per dryer, each pocket has the above listed characteristics; both pockets have one 8" (203mm) exhaust manifolded into one 12" (305mm) exhaust duct for exhaust 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.



DRYER INSTALLATION WITH SEPARATE EXHAUST (PREFERRED)

For ductwork less than 14 feet (5 m) and 2 elbows equivalent and less than 0.6 inches (16 mm)static pressure.

NEVER exhaust the dryer into a chimney.

NEVER install wire mesh screen over the exhaust or makeup 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 Dyer 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) used.

3. Heat loss into laundry room from dryer front panels is about 60 Btu/h (16 kcal/h) per square foot.

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 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 0.6" water column (1.5 mbar) static pressure in the exhaust duct.

FOR BEST DRYING

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

FOR BEST DRYING

FOR BEST DRYING:

1. Exhaust duct maximum length 14 feet (5 m) of straight duct and maximum to two 90º bends.
2. Use 45º and 30º elbows wherever possible.
3. **Exhaust each dryer separately.**
4. **Do not** install wire mesh or other restrictions in the exhaust duct.
5. Use clean-outs in the exhaust duct and clean periodically when needed.
6. **Never** exceed 0.6"water column (1.5 mbar) static pressure in the exhaust duct.
7. Inside surface of the duct **must be smooth.**
8. Recommend pop rivets for duct assembly.

FOR BEST DRYING

FOR BEST DRYING:

1. Provide opening to the out-of-doors in accordance with the following:

   For each dryer -

   8 inches (204 mm) diameter exhaust requires 2 ft² (.19 m²) make-up air.

   12 inches (305 mm) diameter exhaust requires 4 ft² (.38 m²) make-up air.

2. Use barometric shutters in the inlet air opening to control air when dryers are not running.

OTHER RECOMMENDATIONS

OTHER RECOMMENDATIONS

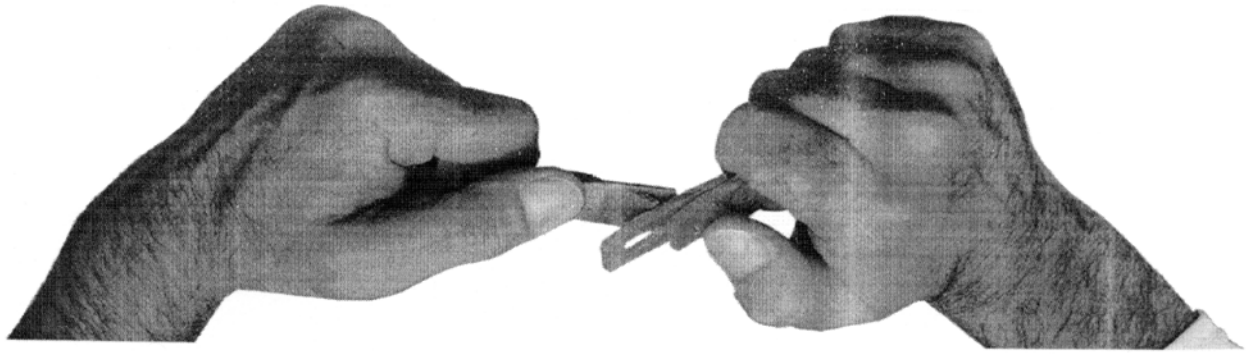
To assure compliance, consult local building code requirements.

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.

The Fan Assembly is rated at 0.6” w.c. (1.5 mbar) back pressure.



- Link Belts are adjustable for belt length.

* Please take links out to tighten fan belt. This may need to be done after dryer has been running for several days.

* If fan seems to be vibrating excessively, this may be an indication that the fan belt needs to be tightened.

RULES FOR SAFE OPERATION OF YOUR DRYER

RULES

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**
   a. **Never use dry cleaning solvents**: gasoline, kerosene, or other flammible liquids in the dryer. **FIRE AND EXPLOSION WILL OCCUR!**

   b. **Never put fabrics treated with these liquids into the dryer.**

   c. **Never use these liquids near the dryer.**

   d. **Always keep the lint screen clean**; a full lint screen may be a fire hazard.

   e. **Never use heat to dry items that contain plastic, foam, or sponge rubber, or rags coated with wax or paint**. 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 the dryer door opening and top (or the lint drawer) 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 irriatation if they become mixed into other fabrics.

8. **Reference** - Lighting and shutdown instructions and wiring diagrams are located on the rear wall of the dryer cabinet.

NOTE:
It is best to run a properly sized load of rags and/or old towels through one or two cycles prior to drying in service. This process will remove any films or residual coatings left by the manufacturing processes.

CAUTION

Synthetic solvent *fumes* from dry cleaning machines create acids when drawn through the dryer. These acid fumes cause rusting of painted parts, pitting of bright plated parts and completely removes the zinc from galvanized metal parts, such as the tumbler basket.

If the dry cleaning machines are in the same area as the tumbler, then the tumbler *make-up air* must come from a source free of solvent fumes.

ENERGY SAVING TIPS

ENERGY SAVING TIPS

1. Install dryer so that you can use short, straight venting. Turns, elbows and long vent tubing tend to increase drying time. Longer dry 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 lightweight fabrics separately from heavy fabrics. You'll use less energy and get more even drying results by drying fabrics of similar weight together.

4. Clean the lint screen after each load. A clean lint screen helps give faster, more economical drying.

5. Don't open the dryer door while drying. You let warm air escape from the dryer into the room.

6. Unload your dryer as soon as it stops. This saves having to re-start your dryer to remove wrinkles.

ABOVE 2,000 FEET (610 M)

ELEVATIONS ABOVE 2,000 FEET

Input ratings shown on the rating plate (serial tag) are for elevations up to 2,000 feet (610 m). For elevations above 2,000 feet (610 m), rating should be reduced at a rate of 4% for each 1,000 feet (305 m) above sea level.

OPERATING INSTRUCTIONS - TWO TIMER MODELS

1. After loading the dryer tumbler with water washed clothes load, proceed to close the loading door. For better drying, do not load dryer with combination of garments that twist.

2. Turn the 60-minute drying timer to the desired drying time. The drying cycle light will be on and indicate the drying. The light shuts off when drying time is complete. (See page 27.)

3. Turn the 15-minute cooling cycle timer to the desired cool down time. After the drying cycle is completed, then the cooling cycle time will automatically operate. The cooling light will be on and indicate the cooling of the clothes load. The light shuts off when cooling time is completed. (See page 27.)

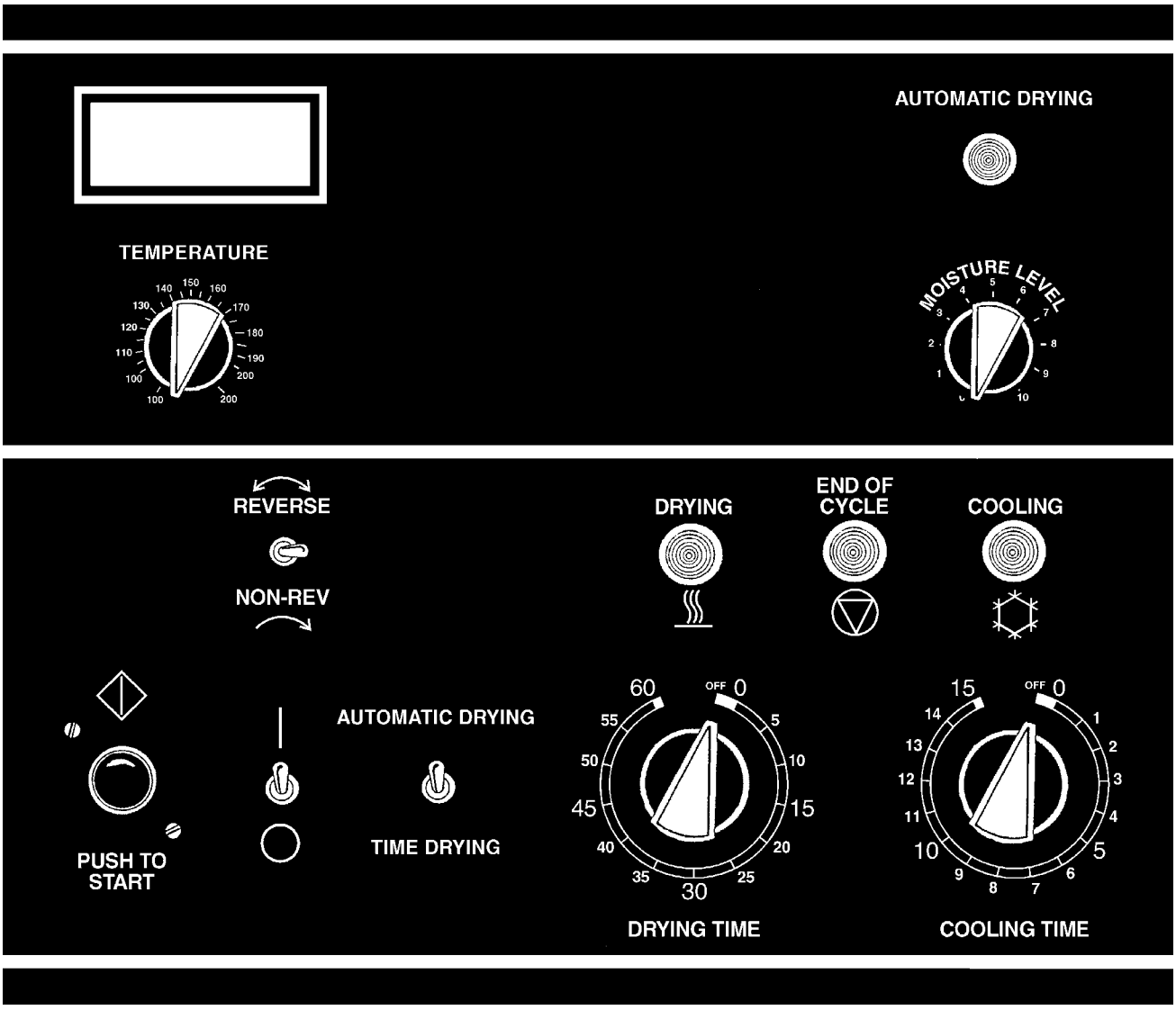
4. **Temperature Selector** - Select temperature per type of load being dried in the dryer. (See page 27.)
   High Heat - Mixed and heavy fabrics, set dial to 195º F (91° C).
   Normal - Cottons and linens, set dial to 170º F (77° C).
   Permanent Press Heat - Poly knit synthetics, blends, lightweight fabrics, set dial to 150º F (66° C).
   Low Heat - Delicate, sheer fabrics, easy-to-dry, set dial to 135º F (58° C).

5. **Digital Temperature Read Out** - Use this with your temperature selection. Note what temperature is too hot or too cold. (See page 27.)

6. Turn switch to “ON” or “I” position. (See page 27.)

7. Close the dryer door. The basket **will not rotate** until the **PUSH-TO-START BUTTON** is pressed. Press the **PUSH-TO-START BUTTON** until the dryer starts running (approximately 2 seconds) and then release button. (See page 27.)

Moisture Control (Illustration)



OPERATING INSTRUCTIONS - MOISTURE CONTROL MODELS (OPTIONAL)

NOTE:
Machines with Moisture Control option can be used like regular two-timer models. To dry with Two Timer method, flip switch on Control Panel to "Time Drying". To dry with the Moisture Control method, flip the switch to "Automatic Drying". The indicator light will be on while the machine is in operation.

1. After loading the dryer tumbler with water washed clothes load, close the loading door. For better drying, do not load dryer with combination of garments that twist.

2. Select desired Moisture level to remain in the load from the selector switch on the Control Panel (see page 26). The numbers are relative with "10" being the most wet and "0" being the most dry. After a number of loads have been run and desired moisture level has been determined, record and reuse the same setting on similar loads.

3. Turn the 15-minute cooling cycle timer to the desired cool down time. After the drying cycle is completed, then the cooling cycle time will automatically operate. The cooling light will be on and indicate the cooling of the load. The light shuts off when cooling time is completed. (See page 26.)

4. **Temperature Selector** - Select temperature per type of load being dried in the dryer. (See page 26.)
   High Heat - Mixed and heavy fabrics, set dial to 195º F (91° C).
   Normal - Cottons and linens, set dial to 170º F (77° C).
   Permanent Press Heat - Poly knit synthetics, blends, lightweight fabrics, set dial to 150º F (66° C).
   Low Heat - Delicate, sheer fabrics, easy-to-dry, set dial to 135º F (58° C).

5. **Digital Temperature Read Out** - Use this with your temperature selection. Note what temperature is too hot or too cold. (See figure 1 on page 26.)

6. Turn switch to "ON" or "I" position. (See page 26.)

7. Close the dryer door. The basket **will not rotate** until the **PUSH-TO-START BUTTON** is pressed. Press the **PUSH-TO-START BUTTON** until the dryer starts running (approximately 2 seconds) and then release button. (See figure 1 on page 26.)

8. The machine cycle will stop drying and switch to cool-down when the desired set moisture level has been reached. The machine will run for the amount of time set on the cool-down timer.

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. Is there time on both timers?
4. Did you push the and hold **"push to start"** button?
5. Has a fuse blown or a circuit breaker tripped?
6. Are the fuses tight?
7. Check for low voltage.

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 gas shut off valve on the main gas line turned on?
3. Check for low or intermittant **gas pressure**.

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.)*
4. *(For Moisture Control models)* Was the Moisture Level setting incorrect? *(Too high?)*

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. The ignition module ground wire must be securely grounded to the machine (both sides on gas unit).**

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

TROUBLE	CAUSE	REMEDY
Basket 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.
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. NOTE: This dryer has two ignition systems, valves, etc. Be sure to check both systems.	Incorrect voltage.	Check for correct control voltage - 24V.
	No voltage.	Check power supply, check secondary voltage on transformer and check wiring and wiring diagram.
	Spark igniter not sparking.	May be broken or defective high voltage lead. Module not receiving correct input to ignite. See pages 35-36 for Direct Spark Ignition process. Make sure ignition module ground wire is securely grounded to the machine (both sides).
	Defective gas valve.	Check continuity across unplugged valve. If defective, replace coil assembly.
	Gas turned off.	Turn manual gas valve “ON”.

TROUBLE	CAUSE	REMEDY
Dryer runs, but no heat (continued).	Line fuse or heater circuit fuse blown to unit.	Replace fuse.
	Defective door switch.	Check continuity across contacts, opened & closed. If defective, 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”(.23 mbar)of water column, or less, for normal operation of dryer, vacuum reading (in inches of water column) should range between .15”(4 mm) and .3”(8 mm). Vacuum reading can be made with a vacuum U-gauge by removing a sheet metal screw in the back panel or right panel at front bottom corner and inserting the rubber tube of the vacuum gauge into screw opening.
	Air switch out of adjustment.	See air switch adjustment sheet in service section of manual.
	Air switch defective.	Check continuity across contacts, opened and closed. If defective, replace switch with power off.
	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.	Dryer is orificed 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 to obtain proper orifices.
	Electric power to heating unit turned off.	Turn power on.

TROUBLE	CAUSE	REMEDY
Dryer runs, but no heat (continued).	Defective thermostat.	Check continuity across thermostat. Limiting or safety thermostats are normally closed. If open, replace thermostat.
	Defective safety overload thermostat.	See above.
	Lint compartment drawer open.	Close drawer.
Main burners burning improperly.	Dirt in burner.	Blow dirt out.
	Gas pressure too high.	Check rating plate for correct gas pressure.
	Orifice too large.	Send to factory for correct orifices.
	Restricted or blocked exhaust.	Clean exhaust.
	Incorrect or poor gas mixture.	Check with gas supplier for correct specifications of gas used; must match rating plate.
Low gas flame or high gas flame.	Incorrect main burner orifices.	Replace orifices -- check factory for correct size.
Dryer too hot.	Incorrect main burner orifices.	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 when dryer is in operation or replace.
	Gas pressure too high.	Adjust gas pressure as specified on rating plate.
	Partially restricted or inadequately sized exhaust system.	Check installation sheet in service section of manual for recommended sizes. Check for and remove obstructions or lint build-up from duct work. Never use smaller size exhaust duct. Always use larger size exhaust duct.
	Defective thermostat.	When flame or heat is passed over, thermostat circuit should open. Audible click will usually be heard. If continuity remains, thermostat is defective. Replace thermostat.

TROUBLE	CAUSE	REMEDY
Motor will not start.	No power.	Check fuses on circuit breakers. Make sure main control switch is ON.
	Incorrect power.	Check power source: voltage, phase, and frequency must be the same as specified on electrical rating plate.
	Time off.	Turn timer clockwise to desired time setting.
	Loose wiring connections.	Check wire connections in electrical box on rear of dryer.
	Defective starting relay.	Check coils and contacts.
Motor tripping on thermal overload.	Low voltage.	Check voltage at motor teminals. Voltage must be within (plus or minus) 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 in service section of this manual for recommended make-up air openings.
	Poor housekeeping.	Clean lint accumulation on and around motors. Motors should not be covered with or filled with lint.
Basket motor will not run.	Loading door open.	Close door.
	Door switch out of adjustment.	Adjust switch by removing cover and bend actuator lever to clear switch button 3/8" (10 mm)with cover in place.
	Defective door switch	Check continuity across switch with power off, in closed and open switch. If no continuity, replace switch.
	Defective basket motor contactor.	Push in contactor trip button. If motor starts, check voltage going to pull-in solenoid. If present, replace contactor. If not, problem is before motor contactor.
Basket will not reverse.	Reversing timer.	Adjust timer (see Maintenance Section).
		Check timer to see if it is working.

TROUBLE	CAUSE	REMEDY
Dryer does not stop at end of time period (6).	Defective timer.	Replace timer.
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.
No heat to drum	Dampers not operating correctly.	Check voltage to damper motors.
		Adjust dampers to close when calling for heat.

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 for 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 ignition period. This will continue until the number of retries has been used up. At that 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. The Push-to-Start button must be pushed to start the process going again.

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.

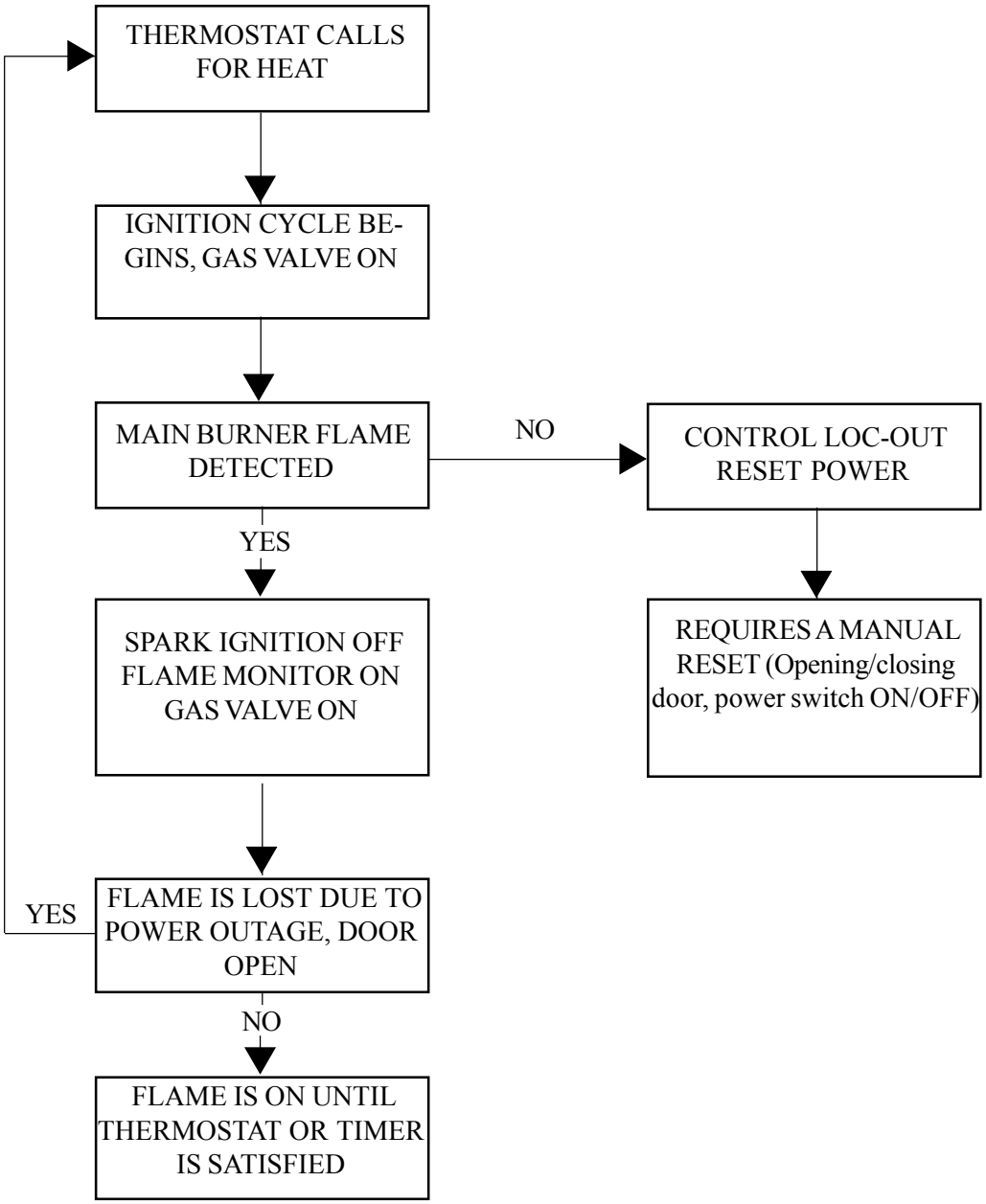
6. Once the Control Thermostat has been satisfied and/or the Drying Timer has been timed out, the Ignition Control Module(s) will be de-energized, the gas valve(s) will be de-energized and the flames will extinguish.

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

The DSI module is powered by a 24 volts AC suppled by a step-down transformer in series with eight safety interlocks:

A. Timer switching device (1)
B. Main door and lint door switches (2)
C. Sail switch (1)
D. Under basket and burner housing thermal safety switches (2)
E. Variable thermostat (1)
F. Push to start switch (1)



MAINTENANCE

MAINTENANCE

1. **CLEAN LINT DRAWER DAILY.** Remove lint before starting day's operation. A clean lint drawer will increase the efficiency of the dryer, as the moisture-laden air will be exhausted more quickly.

2. **CLEAN BASKET AND SWEEP SHEETS.** Clean periodically and/or as often as required. The basket and sweep sheets are easily accessible by removing the front panel of the dryer.

3. **PULLEYS AND BELTS.** Keep belts clean. Oil and dirt will shorten the useful life of the belt. Never allow a belt to run against the belt guard. Check periodically for alignment. Pulley shafts must be parallel and the grooves must be aligned. Check and re-tighten pulley set screws periodically. Check belt tension periodically. Lower motor to increase tension by adjusting the nuts fastening the motor plate to the rod connected to the motor mounting bracket on the back at the dryer. The fan belt is adjusted by removing links in the belt.

4. **ELECTRIC MOTORS.** Keep motors clean and dry. Motors having ball bearings are packed with sufficient grease for approximately five years of normal operation. After five years, the bearings and housing should be cleaned thoroughly. Repack each bearing and the cavity in back of the bearing on-third full with Chevron Grease No. SR1-2.

   Motors having wool packed sleeve bearings are oiled at the factory for one year of normal operation. After one year, add annually one-half teaspoon of electric motor oil or S.A.E.#10 to each bearing. For 24 hour per day operation, add one teaspoon of oil annually.

   If motors overheat, check voltage and wiring. Low voltage, inadequate wiring, and loose connections are the main cause of motor failure.

5. **STEAM HEATED UNITS.** Keep steam coils clean. Check periodically and clean often, or as required. Remove lint and dirt build-up from fins. Dirty fins decrease the efficiency of steam heated units.

MAINTENANCE

MAINTENANCE (continued)

6. **GAS BURNERS.** Keep burners clean. Check and clean often.

7. **GAS PRESSURE.** Gas pressure should be checked periodically per specifications on separate page. (See Page 13)

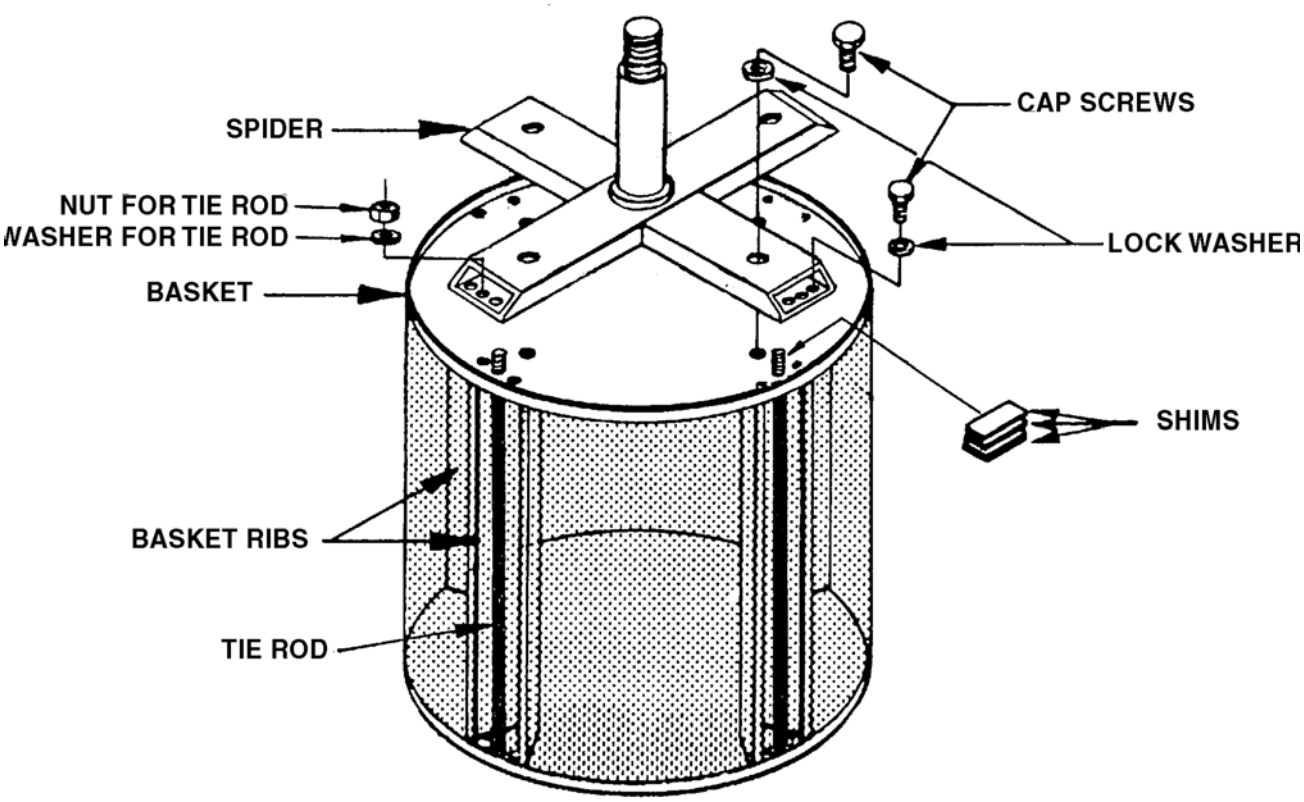
8. **EXHAUST SYSTEM.** Periodically check and clean.

9. **VOLTAGE.** Voltage should be checked periodically per rating plate located on rear wall of dryer.

10. **COMBUSTION (MAKE-UP) AND VENTILATING AIR.** The flow should not be obstructed.

11. **DRYER AREA.** Keep dryer area clean of lint and free from combustible materials, gasoline, and other flammable liquids/vapors.

Shimming the Basket and Spider Assembly (Illustration)



INSTRUCTIONS FOR SHIMMING THE BASKET AND SPIDER ASSEMBLY

This procedure is normally necessary when replacing either the basket or the spider assembly on any Cissell dryer. The alignment of these two parts is crucial in assuring a true running basket.

A. Align the basket as per instructions on the previous page.

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. If it is between two ribs, both ribs may need to be shimmed.

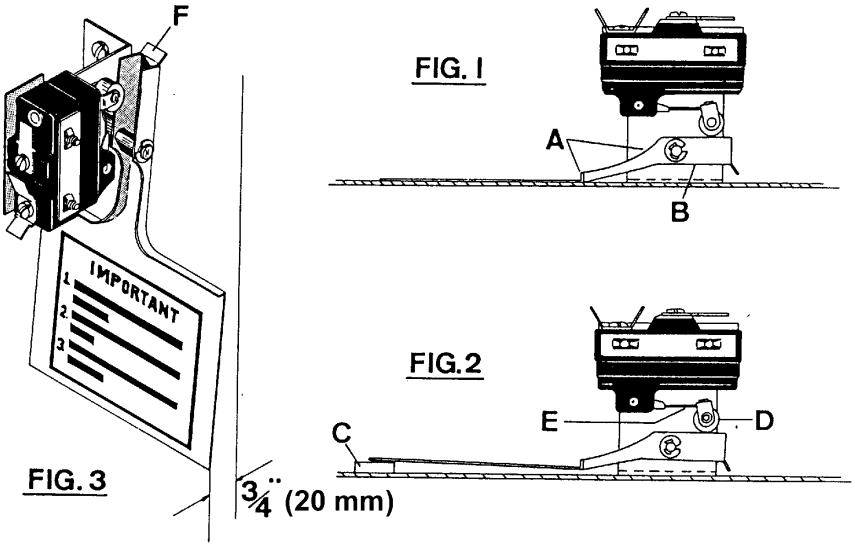
D. Remove the basket from the dryer (do not loosen the alignment bolts).

E. With the basket on the floor (spider up), loosen the cap screws and tie rod nuts enough to insert one or two shims between the spider leg and the basket at the marked position. With shims in place, tighten the screws and nuts.

F. Install spider and basket assembly and check again.

G. If basket is still out-of-round, start at *Step B* and repeat procedure.

H. When shimming is completed, re-align basket.



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" (20 mm) (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.

INSTRUCTIONS FOR DRYERS WITH REVERSING CONTROL TIMER

Instructions

In operation, coasting of basket increases, making it necessary to readjust reversing timer.

> **CAUTION**
> **Failure to do this will cause the thermal overload units for the basket to cut-out unnecessarily and probably damage the gear reducer.**

Adjustment of Reversing Timer Dwell Time

> **CAUTION**
> **Dryer power supply must be shut off before adjusting timer.**

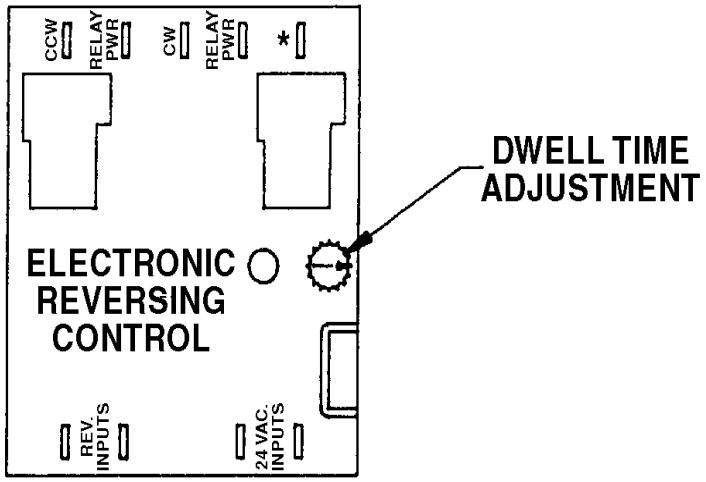
The dwell time is the time from when the motor turns "off", to when it turns "on" again in the opposite direction.

Turning the dwell adjustment knob counter-clockwise increases the dwell time and turning it clockwise decreases the dwell time *(see figure on page 48)*.

Recommended dwell time for the basket to stop completely is 5 to 7 seconds. Minimum basket stopping time is 4 seconds.

> **NOTE**
> **Select non-reversing or reversing before starting dryer.**

> **NOTE**
> **Fan rotates counter-clockwise as viewed from back end of motor. See arrow on motor support. to change rotation, reverse power leads L1 and L2.**



INSTRUCTIONS FOR DRYERS WITHOUT REVERSING CONTROL FAN AND BASKET ROTATION

Instructions

NOTE
Fan rotates counter-clockwise as viewed from back end of motor. See arrow on motor support.

Basket rotates counter-clockwise as viewed from back end of motor. See arrow on motor support.

Basket rotates clockwise as viewed from front of tumbler.

To change rotation of both fan and basket, reverse power leads L1 and L2.

To change rotation of fan only, reverse motor leads F1 and F2.

To change rotation of basket only, reverse motor leads B1 and B2.

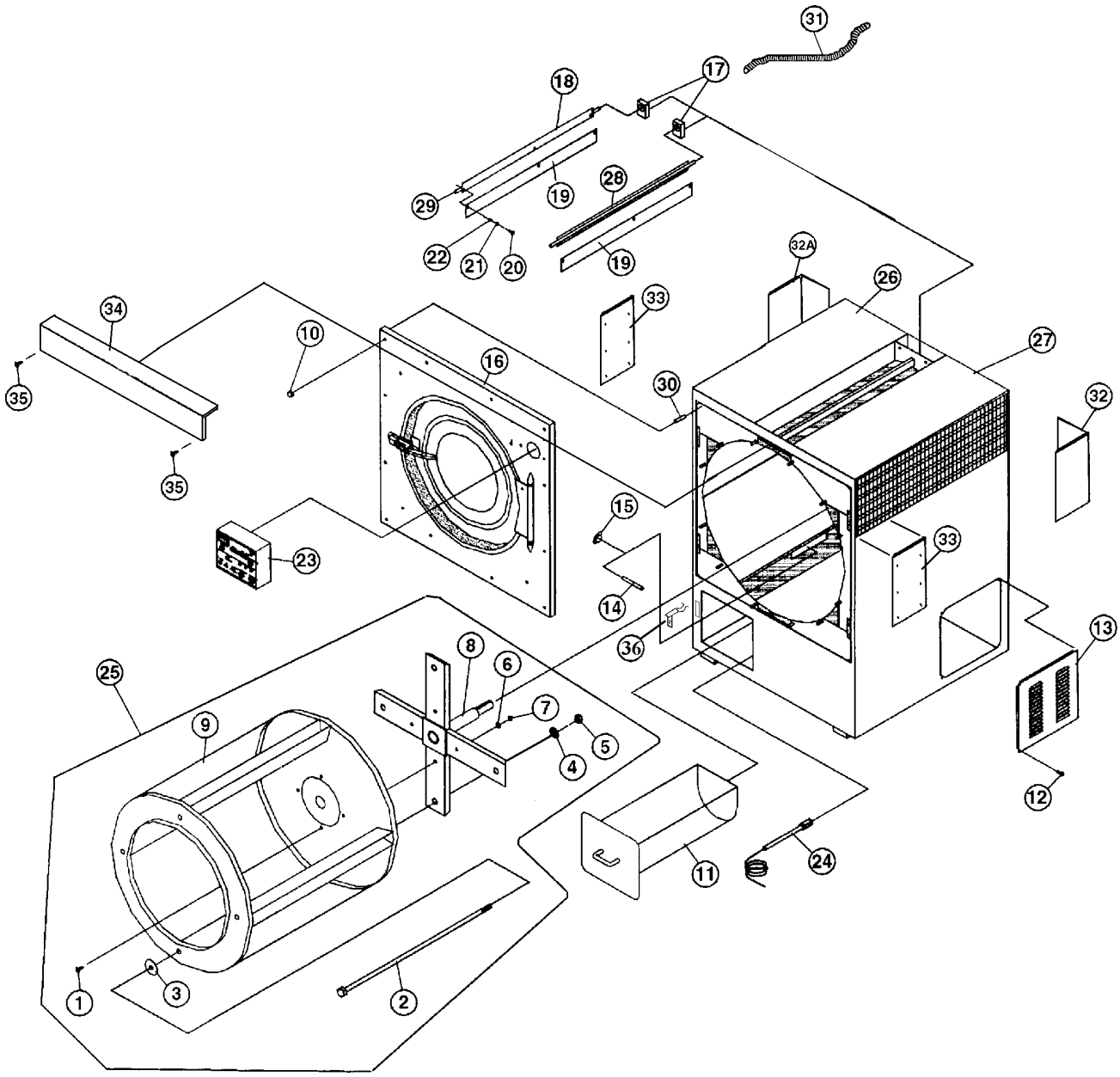
DRIVE PULLEYS AND BELTS

DRIVE PULLEYS AND BELTS

Before placing the dryer into operation, insure that the drive belts and pulleys are in good condition and in sufficient belt tension.

Check belt tension after dryer is in operation 2-3 weeks. Tighten as necessary.

Check belt tensions and belt & pulley condition every 3-6 months.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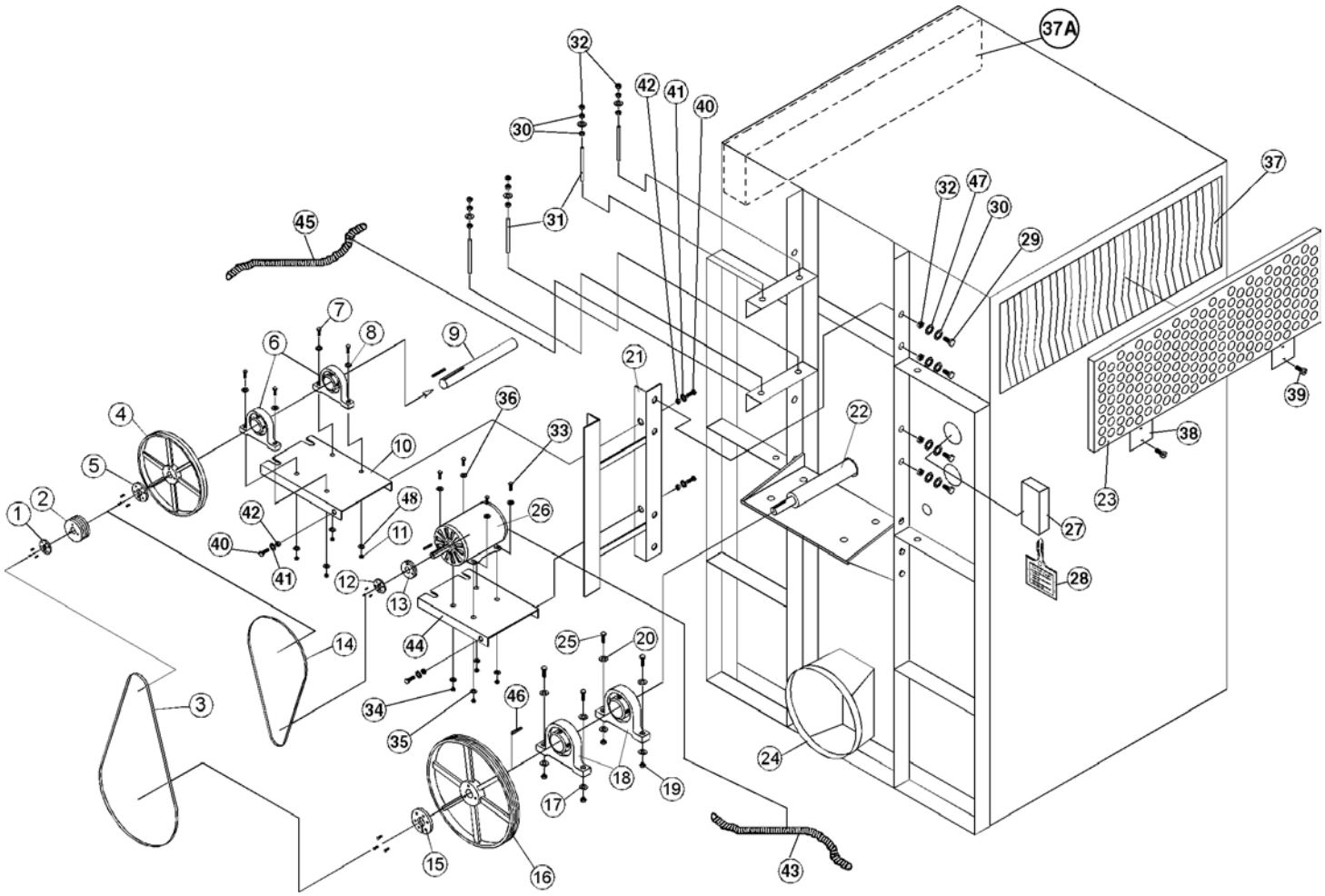
1	TUX285	Button Head Screw (4)
2	TUX259	Threaded Rod, 3/4" - 10 (4)
3	TUX261	Washer, 4" x 7/8" I.D. x 1/16" (4)
4	TUX426	Washer, 3/4"
5	TUX260	Nut, 3/4" - 10 (4)
6	TUX2831	1/2" Lock Washer (4)
7	TU3827	1/2"-13 H.H. Nut (4)
8	TUX109	Spider Assembly
9	TUX103	Basket Assembly
10	TUX140	Acorn Nut 3/8" - 16
11	TUX183	Lint Drawer Assembly*
12	P219	Pan Head Screw 1/4" - 20 x 1/2"
13	TUX422	Side Exhaust/Fan Access Panel*
14	TUX142	Sensor, RTD
15	TU2477	Thermostat #AR594
16	TUX114	Front Panel (specify color)*
17	TUX148	Damper Motor (2) (Steam only)
18	TUX117	L.H. Damper Rod Assembly (Steam only)*
19	TUX127	Damper Flap (2) (Steam only)*
20	P274	Truss Head PH Screw, 1/4" - 20 x 3/4"
21	TU2846	1/4" Lock Washer
22	TU2847	1/4" Washer
23	TUX230	Timer Control Box Complete* (w/Moisture Control)
	TUX339	Timer Control Box Complete* (w/o Moisture Control)
24	TU13978	Moisture Probe Assembly (Moisture Control Models only)
25	TUX104	Basket and Spider Assembly Complete
26	TUX293	L.H. Top Cover Plate (Steam only)*
27	TUX294	R.H. Top Cover Plate (Steam only)*
28	TUX116	R.H. Damper Rod Assembly (Steam only)*
29	PIF172	Bearing, Delrin 3/8"
30	TUX449	Spacer
31	CFB3300	Greenfield Cable Dampers
32	TUX298	Cover, Back Left (Steam Only)*
	TUX383	Cover, Back Right (Gas Only)*
32A	TUX297	Cover, Back Right (Steam Only)*
	TUX384	Cover, Back Left (Gas Only)*
33	TUX299	Cover, Front Corner (Steam Only)*
34	TUX385	Panel, Trim Top Front (Gas Only)*
35	TU7733	#8 - 18 - 1/2" Self-Drill Screw (Pkg. 6)
36	EA-00650-0	Switch, Lint Door

* Painted part to match color of Jacket Assembly

190 Lb. Dryer - Motor Mount Assembly

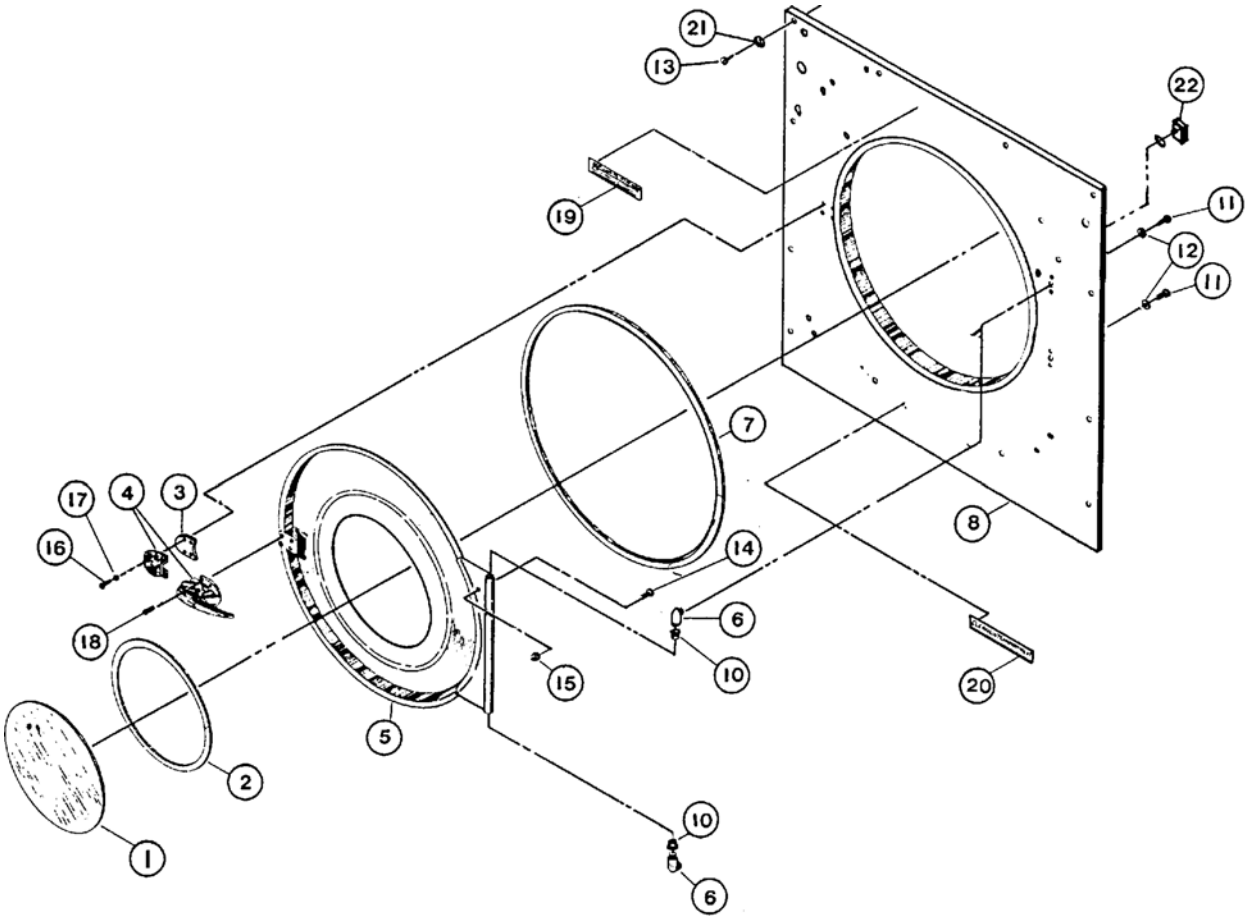


190 Lb. Dryer - Motor Mount Assembly

Model - L52CD48S - Steam
Model - L52CD48G - Gas

1	TUX460	Bushing (SH X 1-7/16") & Key
2	TUX214	Sheave Idler/SML
3	TUX216	Belt Idler/Spider
4	TUX212	Sheave 19" Dia.
5	TUX461	Bushing, Idler (SK x 1-7/16") & Key
6	TUX217	Bearing, Pillow Block 1-7/16"
7	TUX503	Bolt, Hex Hd. 1/2-13 x 2 1/2"
8	TU1851	Washer, Flat 1/2"
9	TUX462	Shaft, Idler 190 lb.
10	TUX308	Plate, Idler W/A
11	TUX504	Nut, Hex 1/2-13
12	TUX248	Bushing JA x 7/8"
13	TUX211	Sheave 2.35" Dia. (60 Hz.)
	TUX343	Sheave 2.8" Dia. (50 Hz.)
14	TUX213	Belt Mtr/Idler
15	TUX250	Bushing SF x 2"
16	TUX344	Sheave, 25" Dia.
17	TUX326	Washer, Lock 7/8"
18	TUX218	Bearing, Pillow Block 2-15/16"
19	TUX324	Nut, Hex 7/8" - 9
20	TUX325	Washer, Flat 7/8"
21	TUX274	Basket Mtr. Support W/A
22	TUX104	Spider & Basket Ass'y. 190 lb.
23	TUX219	Filter, Air 18 x 42 x 1
24	TUX448	Exhaust Duct Assembly
25	TUX323	Bolt, Hex Hd. 7/8" - 9 x 3-1/2" Lg.
26	Motor	See page 16
*27	TUX415	Cover
*28	TU8206	Air Switch Assembly
29	TUX327	5/8" Hex Hd. Bolt
30	TUX329	5/8" Flat Washer
31	TUX439	Belt Tensioning Rod
32	TUX328	5/8" Hex Nut
33	FB124	5/16" - 18 x 1" Hex Hd. Scr.
34	C249	5/16" - 18 Hex Nut
35	VSB130	5/16" Cut Washer
36	TU2814	5/16" Lockwasher
37	TUX134	Steam Coil (Left)
37A	TUX135	Steam Coil (Right)
38	TUX468	Plate, Filter Support
39	TU7733	#8-32 x 1/2" Self-Drill SMS
40	TU3246	3/8" - 16 - 1" Bolt
41	IB140	3/8" Cut Washer
42	VSB134	3/8" - 16 Hex Nut
43	CFB900	Greenfield Cable (9")
44	TUX310	Motor Plate W/A
45	CFB1800	Greenfield Cable (18")
46	TUX454	Key
47	TU3418	5/8" Lockwasher
48	TU2831	1/2" Lockwasher

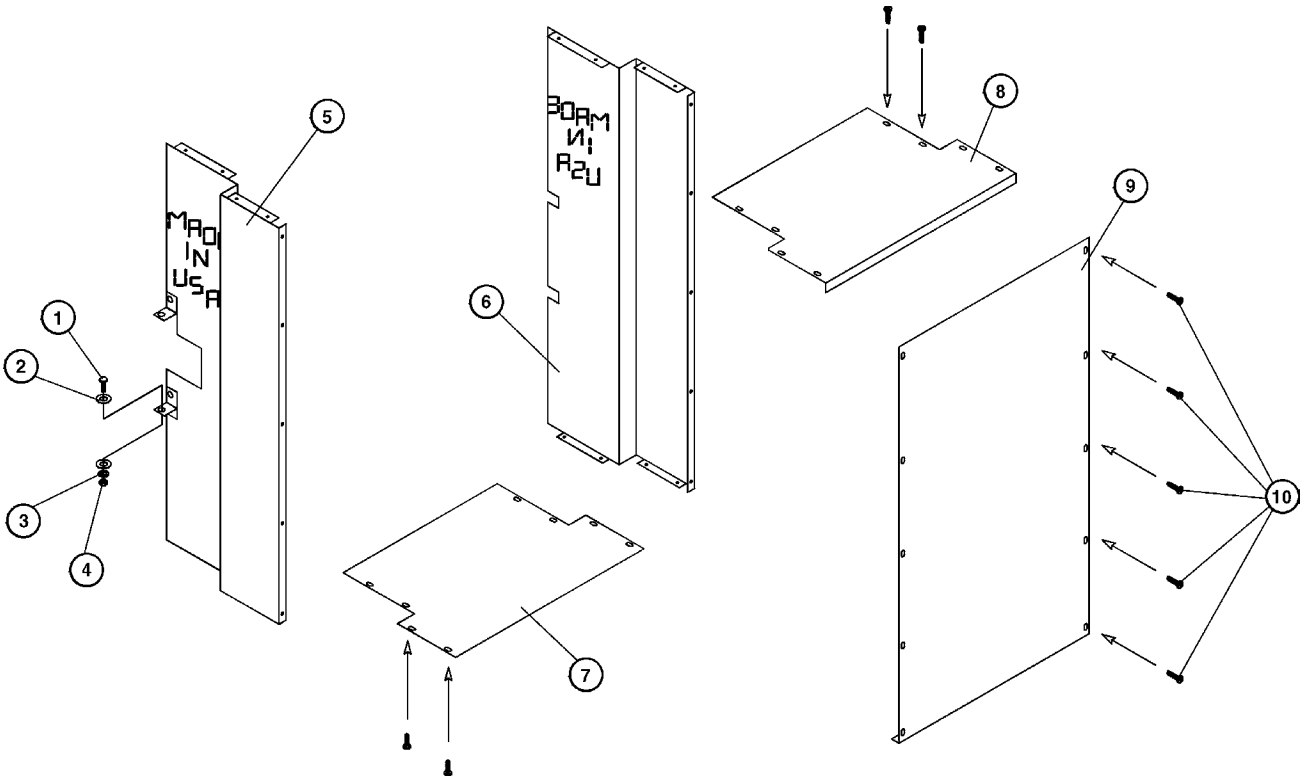
* Used on Gas Heated ONLY



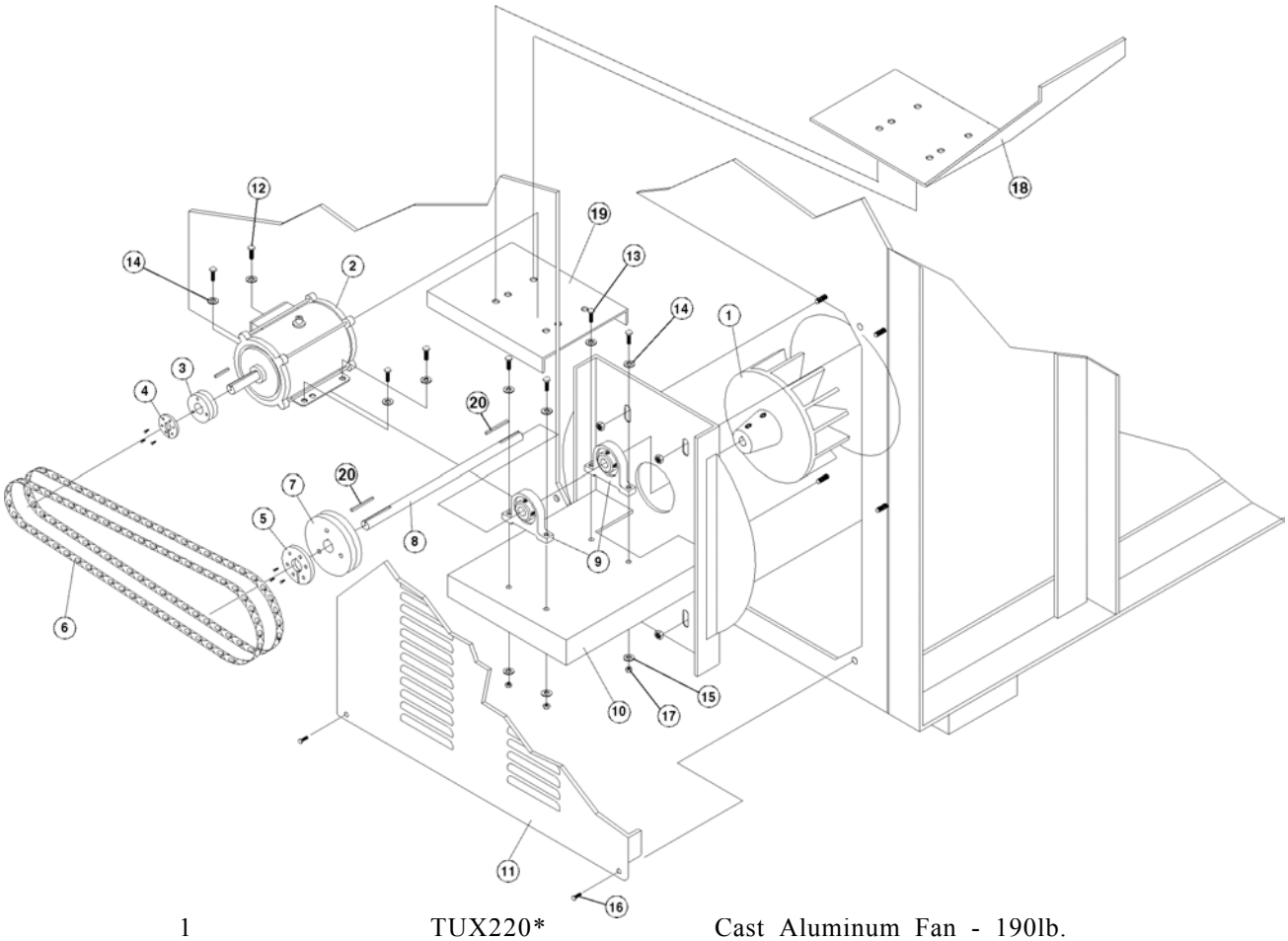
*TUX474 Front Panel Assembly w/Door

1	TU7862	Door Glass 20 1/4”
2	TU1692	Gasket
3	TU5503	Door Latch Spacer (3)
4	TUA2319H	Door Latch with Keeper
5	TU14483	Door W/A (specify color)
6	TU2236	Hinge Post
7	TU5288	Door Seal
8	TUX473	Front Panel (specify color)
10	PIF172	Hinge Post Bearing (2)
11	TU2836	5/16” - 32 x 3/8” Hex Screw
12	TU3212	5/16” I.T. Lockwasher
14	TU4839	#10 - 32 x 3/8” Screw
15	TU4840	#10 - 32 Crown Nut
16	TU2687	#8 - 1/2” Ph. Head Screw
17	TU3785	#8 Cup Ex. T. Lockwasher
18	TU2686	#8 - 32 x 3/8” Ph. Head Screw
19	TU7855	Instruction Label
22	FG140	Door Switch
	*TU7856	Door w/Plain Glass Assy. (Parts 1-5)
	*TU9318	Door w/Solid Panel Assy. (Parts 3-5)

*** Specify Color**



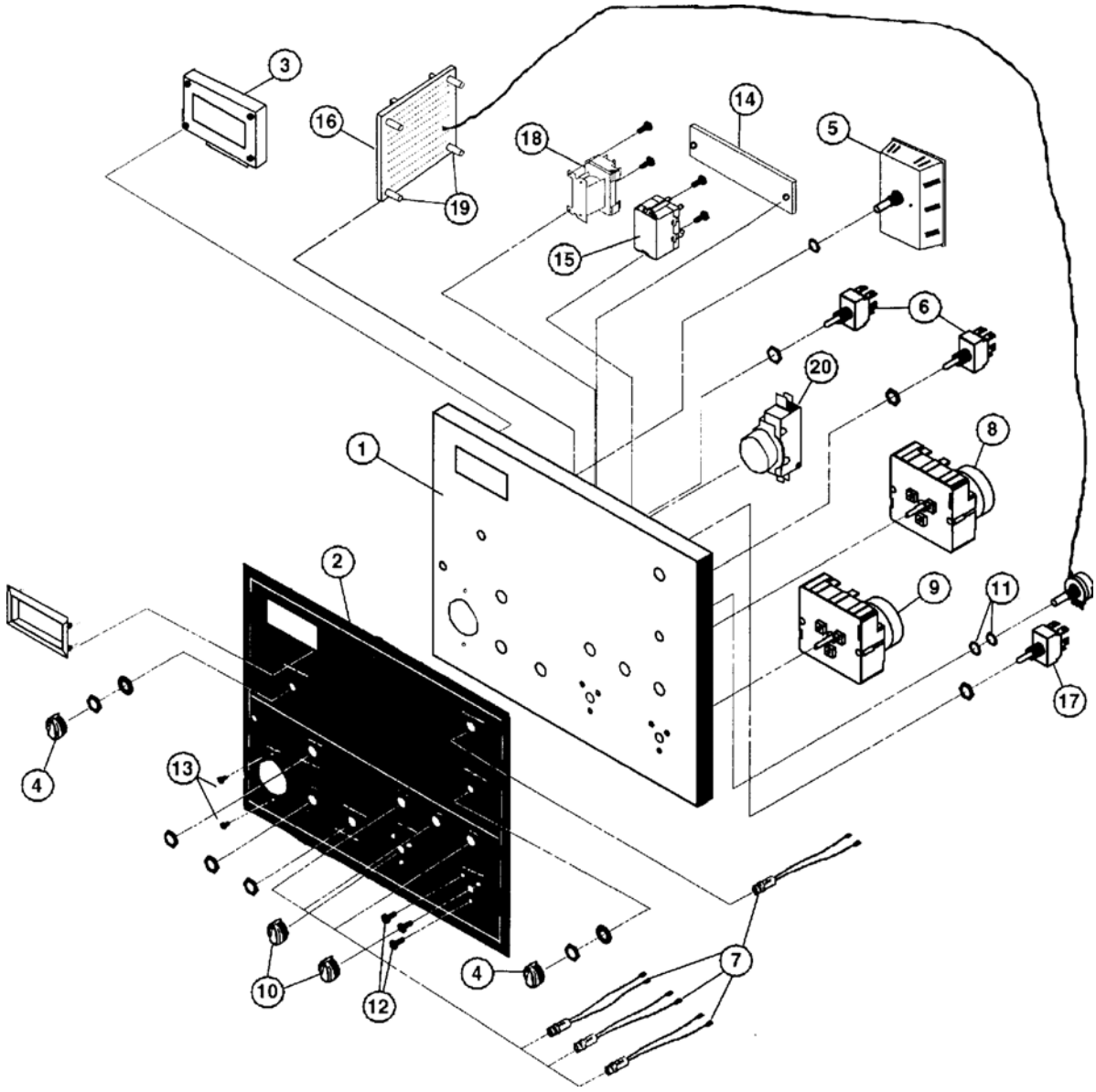
1	IB139	3/8” Bolt
2	IB140	Washer
3	VSB134	Lockwasher
4	TU4787	3/8” Nut
5	TUX318	Left Side W/A
6	TUX348	Right Side W/A
7	TUX317	Bottom
8	TUX451	Top
9	TUX316	Back Cover
10	CB36	Machine Screws (26)



1	TUX220*	Cast Aluminum Fan - 190lb.
2	Motor	See page 15
3	TUX221	Sheave, Motor 3.0 Pitch
4	TU6723	Bushing, Lock H 1-1/8”
5	TU2007	Bushing, Sheave H 7/8”
6	TUX459	Belt, Motor Ass’y
7	TUX222	Sheave, 5” Dia. (60 Hz.)
	TUX342	Sheave, 3.6” Dia. (50 Hz.)
8	TUX428*	Jack Shaft - 190 lb.
9	TUX429*	Bearing, Pillow Block
10	TUX354*	Fan Mount Ass’y
11	TUX422	Side Exhaust
12	TU3246	3/8” - 16 x 1” Hex Hd. Scr.
13	OP380*	3/8 - 16 x 1-1/2” Hex Hd. Scr.
14	IB140*	3/8” Cut Washer
15	VSB134*	3/8” Split Lockwasher
16	P219	1/4” - 20 x 1/2” Phillips Hd. Scr.
17	C249	5/16” - 18 Hex Nut
18	TUX430*	Motor - Idler Bracket
19	TUX466*	Shaft Key 4”

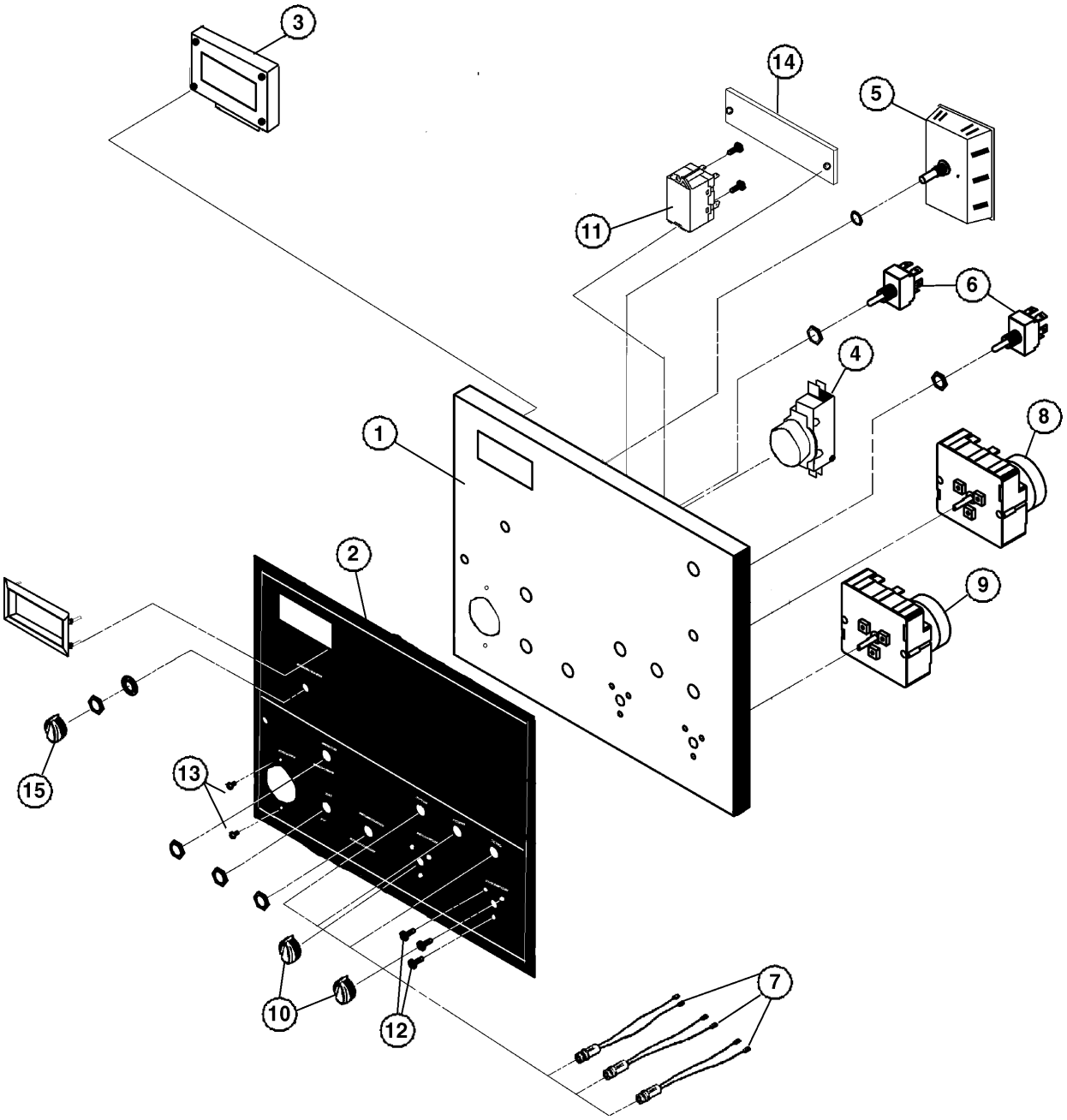
* Fan Mount Assembly
TUX360 (items 1, 8-10, 13-15,18-19)

TUX234



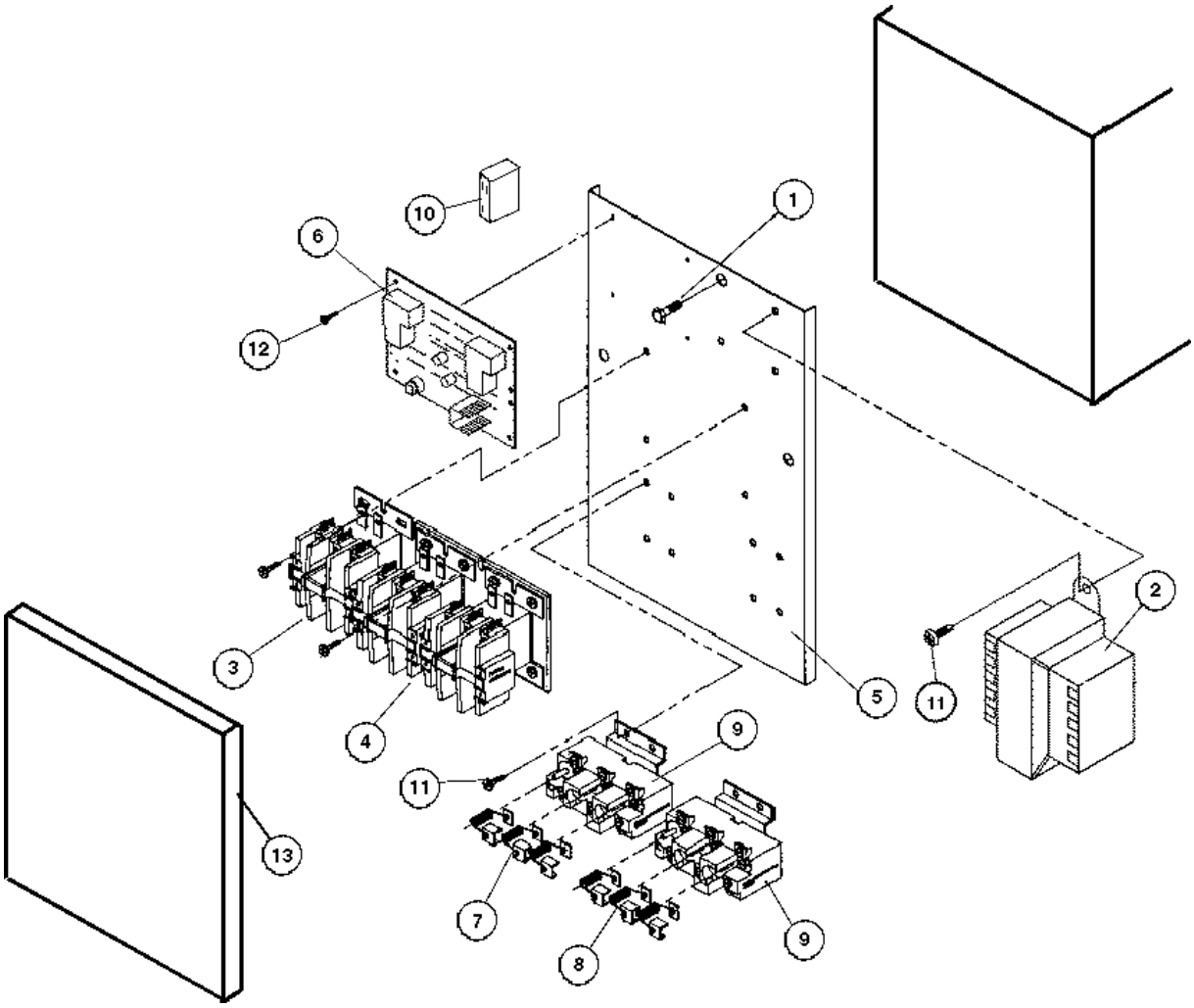
1	TUX235	Control Panel Weldment
2	TUX291	Nameplate
3	TUX141	LCD Display
4	TUX143	Thermostat Knob
5	TUX144	Electronic Thermostat
6	FG147	Toggle Switch
7	TUT316	Red LED Light (24V)
8	TU12932	Timer, 60 Min. (24V)
9	TU12933	Timer, 15 Min. (24V)
10	TU2555	Knob
11	TU3805	Lock Ring
12	TU7733	#8-32 x 1/2” Self-Drill SMS
13	ET208	#6-32 x 1/4” Pan Hd. Scr.
14	TU8629	Terminal Board, 4 Pole
15	F1300	Relay
16	TU13229	Controller
17	TU13345	Toggle Switch DPDT
18	TU13646	Relay DPDT (24V)
19	TU9347	P.C. Board Support (4)
20	TU9028	Push Button Switch

TUX340

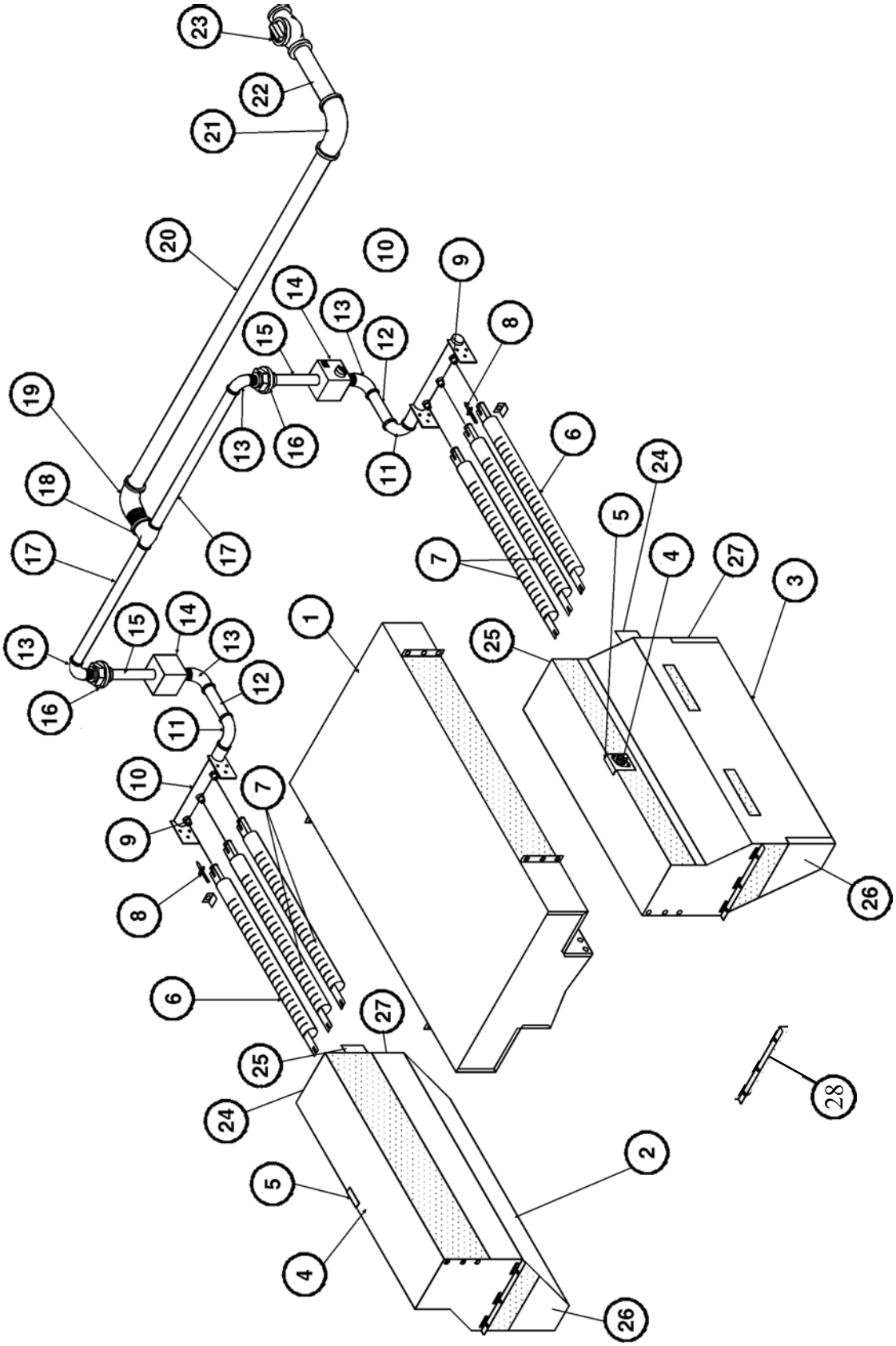


1	TUX235	Control Panel Weldment	9	TU12933	Timer, 15 Min. (24V)
2	TUX334	Nameplate	10	TU2555	Knob
3	TUX141	LCD Display	11	F1300	Relay
4	TU9028	Push Button Switch	12	TU7733	#8-32 x 1/2” Self-Drill SMS
5	TUX144	Electronic Thermostat	13	ET208	#6-32 x 1/4” Pan Hd. Scr.
6	FG147	Toggle Switch	14	TU8629	Terminal Board, 4 Pole
7	TUT316	Red LED Light (24V)	15	TUX143	Thermostat Knob
8	TU12932	Timer, 60 Min. (24V)			

Reversing Control Panel Assembly (Illustration)



	TUX198	Reversing Control Panel 200-240V Steam
	TUX421	Reversing Control Panel 200-240V Gas
	TUX434	Reversing Control Panel 480V Gas
1	CB36	1/4 - 20 Hex Head Screw
2	TU13480	Transformer (200-240/24V)
	TU13514	Transformer (460/24V)
3	TUX145	Contactor (24V)
4	TUX146	Contactor Reversing (24V)
5	TUX197	Motor Control Mounting Plate
6	TU12874	Reversing Timer PC Board
7	TU267900	Heater, Furnas Ovld (See Chart, page 60) Specify Size
8	TU267900	Heater, Furnas Ovld (See Chart, page 60) Specify Size
9	TU6774	Relay, Overload
10	TUX147	Relay, (Steam Only) (24 V)
11	TU7733	Self-Tapping Screw
12	F540	#6 x 5/8” Sheet Metal Screw (2)
13	TUX196	Cover, Control Box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Gas Bonnet Assy LP Gas - TUX437
Gas Bonnet Assy Nat. Gas - TUX425

1	TUX361	Heater Duct Assembly
2	TUX374	Left Complete Bonnet Assy.
3	TUX375	Right Complete Bonnet Assy.
4	TU13678	Bonnet Limit Thermostat
5	TU13695	Bonnet Limit Bracket
6	TUX416	Burner Weld Assy. w/Igniter
7	TUX387	Burner Weld Assy. w/o Igniter
8	GA-00764-0	Spark Igniter Assy.
9	TU3539	Orifice (Specify Size)
10	TUX379	Gas Manifold Assy.
11	TU4605	3/4” 90° Elbow
12	TU4620	3/4” Nipple x 4-1/2” Long
13	TU4602	3/4” 90° Street Elbow
14	TUX352	24V. NG Gas Valve Assy.
	TUX435	24V. LP Gas Valve Assy.
15	TU4608	3/4” Nipple x 2” Long
16	TU4600	3/4” Union
17	P261	3/4” Nipple x 13” Long
18	390604123	3/4” x 3/4” x 1-1/4” Reducing Tee
19	TUX394	1-1/4” 90° Street Elbow
20	TUX392	1-1/4” Nipple x 24-3/8” Long
21	TUX393	1-1/4” 90° Elbow
22	TUX391	1-1/4” Nipple x 3” Long
23	TUX395	1-1/4” Gas Shut Off Valve
24	TUX372	Right Manifold Support (2 each; both sides)
25	TUX373	Left Manifold Support (2 each; both sides)
26	TUX419	Cover Plate - Right Front Bonnet
27	TUX420	Cover Plate - Right Rear Bonnet
28	TUX475	Burner Hold Down - 190 Gas
29	GA-00803-0	Hi Voltage Lead
30	GA-00765-0	Ignition Module
	K590	Includes item 29 & 30

(All screws are TU7733, unless otherwise noted)

NOTE:

For conversion from Natural Gas to Propane Gas.

1. Order:
   6 each—TU3539 Orifice with No. 34 drill size.
   2 each—K555 Natural Gas to LP Gas Conversion Kit and follow directions.

Specifications (Propane)

Propane—1.53 Specific Gravity

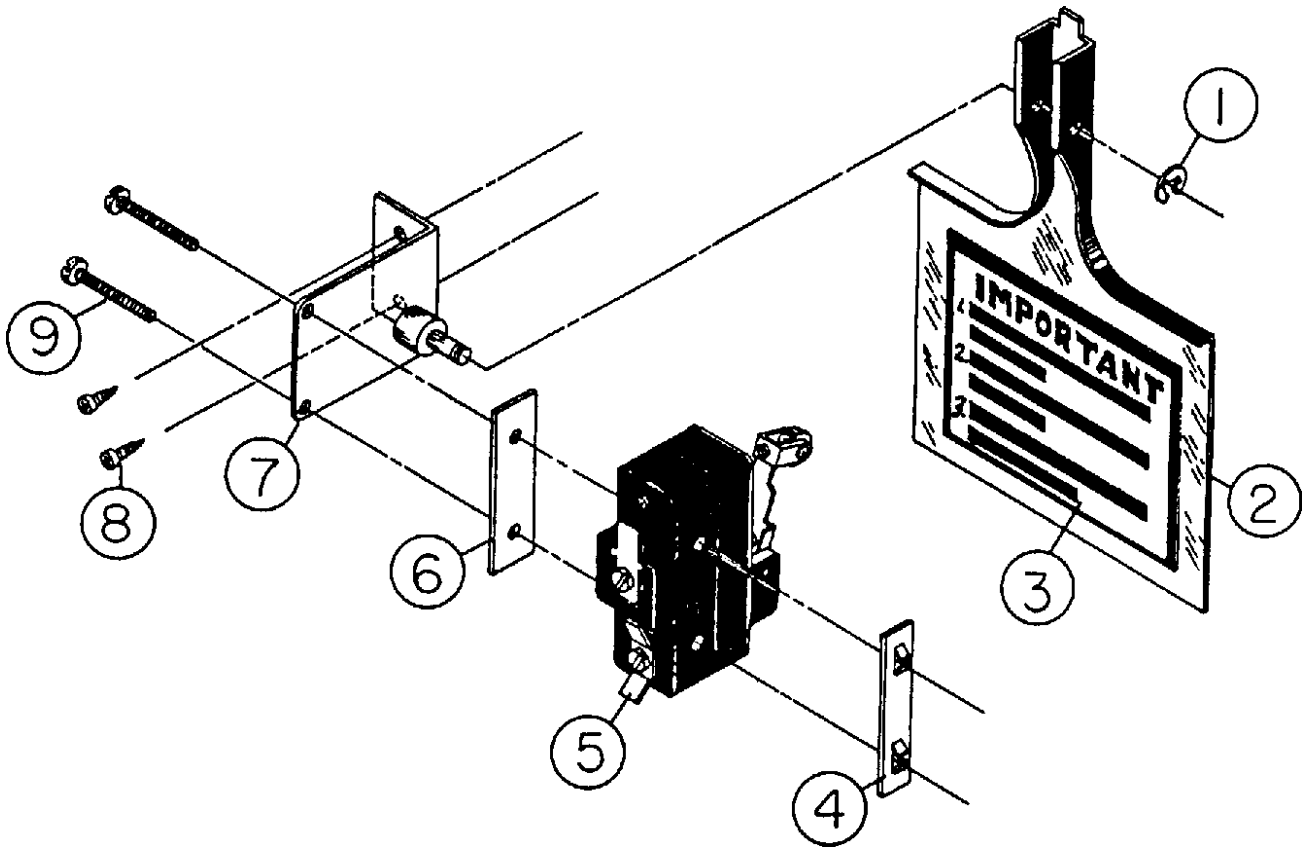
Calorific Value—2,500 BTU/cu. ft.

Gas Input—87,500 BTU/Hour per Burner Total

MODEL	ORIFICE SIZE - NORMAL (SEA LEVEL)		ORIFICE SIZE - HIGH (3,000 FT.)	
	NATURAL	PROPANE	NATURAL	PROPANE
L52CD48G	No. 16	No. 34	No. 18	No. 35

In altitudes above 2000 feet, consult with factory.

AIR SWITCH ASSEMBLY



1	F888	"E" Ring
2	TU2463	Actuator Arm
3	TU3476	Air Switch Decal
4	TU1771	#6 Tinnerman Nut
5	TU14482	Air Switch
6	TU1770	Insulator
7	TU8171	Air Switch Bracket
8	TU7733	#8 - 18 x 1/2" Self Drilling Screw
9	TU3219	#6 x 1" Round Head S.M.S.

OVERLOAD HEATER TABLE
Motor Full Load Amps (FLA)

Heater Size	SF = 1.00		SF = 1.15 OR GREATER	
	40 Deg. C Amb.	60 Deg. C Amb. or more	40 Deg. C Amb.	60 Deg. C Amb. or more
H-6	.69 - .74	.56 - .61	.62 - .68	.51 - .55
H-7	.75 - .83	.62 - .68	.69 - .74	.56 - .61
H-8	.84 - .93	.69 - .74	.75 - .83	.62 - .68
H-9	.94 - 1.02	.75 - .83	.84 - .93	.69 - .74
H-10	1.03 - 1.16	.84 - .93	.94 - 1.02	.75 - .83
H-11	1.17 - 1.31	.94 - 1.02	1.03 - 1.16	.84 - .93
H-12	1.32 - 1.45	1.03 - 1.16	1.17 - 1.31	.94 - 1.02
H-13	1.46 - 1.63	1.17 - 1.31	1.32 - 1.45	1.03 - 1.16
H-14	1.64 - 1.80	1.32 - 1.45	1.46 - 1.63	1.17 - 1.31
H-15	1.81 - 1.96	1.46 - 1.63	1.64 - 1.80	1.32 - 1.45
H-16	1.97 - 2.22	1.64 - 1.80	1.81 - 1.96	1.46 - 1.63
H-17	2.23 - 2.43	1.81 - 1.96	1.97 - 2.22	1.64 - 1.80
H-18	2.44 - 2.55	1.97 - 2.22	2.23 - 2.43	1.81 - 1.96
H-19	2.56 - 2.81	2.23 - 2.43	2.44 - 2.55	1.97 - 2.22
H-20	2.82 - 2.99	2.44 - 2.55	2.56 - 2.81	2.23 - 2.43
H-21	3.00 - 3.43	2.56 - 2.81	2.82 - 2.99	2.44 - 2.55
H-22	3.44 - 3.90	2.82 - 2.99	3.00 - 3.43	2.56 - 2.81
H-23	3.91 - 4.28	3.00 - 3.43	3.44 - 3.90	2.82 - 2.99
H-24	4.29 - 4.86	3.44 - 3.90	3.91 - 4.28	3.00 - 3.43
H-25	4.87 - 5.45	3.91 - 4.28	4.29 - 4.86	3.44 - 3.90
H-26	5.46 - 6.13	4.29 - 4.86	4.87 - 5.45	3.91 - 4.28
H-27	6.14 - 6.79	4.87 - 5.45	5.46 - 6.13	4.29 - 4.86
H-28	6.80 - 7.72	5.46 - 6.13	6.14 - 6.79	4.87 - 5.45
H-29	7.73 - 8.48	6.14 - 6.79	6.80 - 7.72	5.46 - 6.13
H-30	8.49 - 9.65	6.80 - 7.72	7.73 - 8.48	6.14 - 6.79
H-31	9.66 - 10.70	7.73 - 8.48	8.49 - 9.65	6.80 - 7.72
H-32	10.80 - 12.30	8.49 - 9.65	9.66 - 10.70	7.73 - 8.48
H-33	12.40 - 13.00	9.66 - 10.70	10.80 - 12.30	8.49 - 9.65
H-34	13.10 - 14.00	10.80 - 12.30	12.40 - 13.00	9.66 - 10.70

ORDERING OVERLOAD HEATERS FOR OVERLOAD RELAYS

Properly sized Overload Heaters provide motor protection for the dryer. Improper heater size may allow the motor to be damaged, or could cause nuisance tripping.

Heater sizes are listed on the Overload Heater Table on page 63. To use the table, refer to the Motor Rating Plate and locate the Full Load Amps (FLA), the Service Factor (SF), and the Ambient Temperature (Amb.).

Example

Motor Rating Plate show FLA = 3.8, SF = 1.15, and 60 Deg. C Amb.

From the table, heater size is H-25. Order TU267900—H25.

CAUTION

Overload Relays do not provide protection from short circuits. Short circuit protection is provided by a device such as a breaker or wall disconnect.