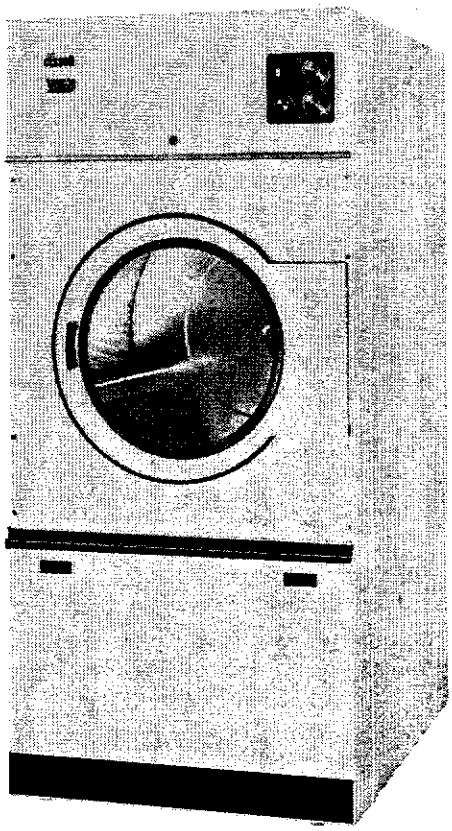
cissell

MANUFACTURING COMPANY

OWNER'S MANUAL

30 lb. WMC LAUNDRY DRYER

Shown with manual double timer control system



Technical specifications

Installation instructions

Operating instructions

Maintenance

WMC-30

Cissell Manufacturing Co.
831 So. First St. - P.O.B. 32270 - Louisville, Ky. - 40232-2270
Tel: (502) 587-1292 - Fax: (502) 585-2333 -
Sales Fax: (502) 585-3625 - Service/Parts Fax: (502) 681-1275

THIS MANUAL MUST BE GIVEN TO THE EQUIPMENT OWNER

MAN WMC2030 (ECN5652) 1/99

D0650

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 death.

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

- WHAT TO DO IF YOU SMELL GAS

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

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

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

WARNING: 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 EXPRESSED OR IMPLIED WARRANTY, STATUTORY OR OTHERWISE, CONCERNING THE EQUIPMENT OR PARTS INCLUDING, WITHOUT LIMITATION, A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, OR A WARRANTY OF MERCHANTABILITY. THE WARRANTIES GIVEN ABOVE ARE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. CISSELL NEITHER ASSUMES, NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT, ANY OTHER WARRANTY OR LIABILITY IN CONNECTION WITH THE MANUFACTURE, USE OR SALE OF ITS EQUIPMENT OR PARTS.

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

IDENTIFICATION NAMEPLATE

The Identification Nameplate is located on the side wall of the control box behind the uppermost control door. 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.

Contents

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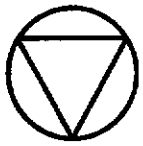
SYMBOLS

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

Symbol	Description	Symbol
	**NOTE!**	
	**Hot! Do Not Touch** **Heiß! Nicht Beruhren** **Haute temperature! Ne pas toucher** **Caliente! no tocar**	
	**dangerous voltage** **tension dangereuse** **Gefährliche elektrische Spannung** **tension peligrosa**	
	**On** **Marche** **Ein** **Conectado**	
	**Off** **Arrêt** **Aus** **Desconectado**	
	**Start** **Demarrage** **Start** **Arranque de un movimiento**	
	**Emission of heat in general** **Emission de chaleur en general** **Warmeabgabe allgemein** **Emisión de calor**	
	**Cooling** **Refroidissement** **Kühlen** **Enfriamiento**	
	Rotation in two directions **Rotation dans les deux sens** **Drehbewigung in zwei Richtungen** **Movimiento rotativo en los dos sentidos**	
	Direction of rotation **Sens de mouvement continu** **De rotation Drehbewegung in Pfeilrichtung movimiento** **Giratorio o rotatorio en el sentido de la flecha**	
	End of Cycle	
	Caution **Attention** **Achtung** **Atencion; precaucion**	

UNPACKING

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

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

See outline clearance diagrams for correct dimensions.

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

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

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

GENERAL INSTALLATION (ALL DRYERS)

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. The installation clearance from all combustable material is 0" ceiling clearance for the first 4" from the front of the dryer. After the first 4", the ceiling clearance required is 6". The rear clearance required is 0", and the side clearance is 1".

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.

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 clean daily to ensure proper air circulation throughout the dryer.

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

GENERAL INFORMATION

The Cissell Dryer is so designed that when an operator opens the dryer door, the basket and exhaust fan stop. 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 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.

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

CISSELL "COOL-DOWN" CYCLE

Permanent press, durable press and other modern day fabrics require the care that your Cissell Laundry Dryers now provide. At the end of the drying cycle, a timed "Cool-Down" control automatically takes over and continues the rotation of the fan and basket without heat until the garment load reaches a safe cool temperature. This function is performed at the end of each drying cycle.

REPLACEMENT PARTS

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

ONLY CISSELL PARTS SHOULD BE USED.

30 lb. Dryer Dimensions - Standard Gas, Steam and Electric Heated

Specifications	U.S. Measure	Metric Measure	
Capacity (Dry Linen)	30 lb	13.6kg	
Basket			
Diameter	30 inch	762mm	
Depth	29 inch	737mm	
Volume	11.9 cu ft	336 liter	
Cabinet			
Height	72 1/4 inch	1835mm	
Width	33 inch	838mm	
Depth	42 1/4 inch	1073mm	
Door Opening			
Diameter	22 5/8 inch	575mm	
Loading height	32 1/4 inch	820mm	
Temperature			
Minimum	100F	38C	
Maximum	185F	85C	
Motor			
Non-reversing	1/2 Hp	0.37kW	
Reversing - Drum	1/2 Hp	0.37kW	
Fan	1/3 Hp	0.25kW	
Exhaust			
Flow Rate	700cfm	1190m3/h	
Diameter	8 inch	195-200mm	
Electric Conn. - Electric Dryers		Non-Reversing	Reversing
208 V	60-3PH	67 A	68 A
220/240 V	50/60-3PH	55/60 A	55/60 A
380/415 V	50-3PH	34/37 A	33/36 A
480 V	60-3PH	30 A	31 A
Electric Conn. - Steam, Gas Dryers		Non-Reversing	Reversing
115/208-240 V	50/60-1PH	9.4 A	4.8 A
380/415 V	50/60-3PH	1.2 A	1.1 A
480 V	50/60-3PH	0.9 A	0.9 A
Power			
Electric	22.5 KW	22.5kW	
Gas	110,000 Btu/h	27,720 kcal/h	
Steam	4.5 BHP	38,000 kcal/h	
Steam connection			
Inlet	3/4 inch	DN20	
Outlet	1/2 inch	DN15	
Gas connection			
Gas connection	1/2 inch	DN15	
Gas pressure	5" - 12" WC	12 - 30 mb	
Shipping Dimensions (H x W x D)	78 x 36 x 48 inch	1981 x 914 x 1219mm	
Weight			
Net	510 lb	232 kg	
Gross	575 lb	261 kg	

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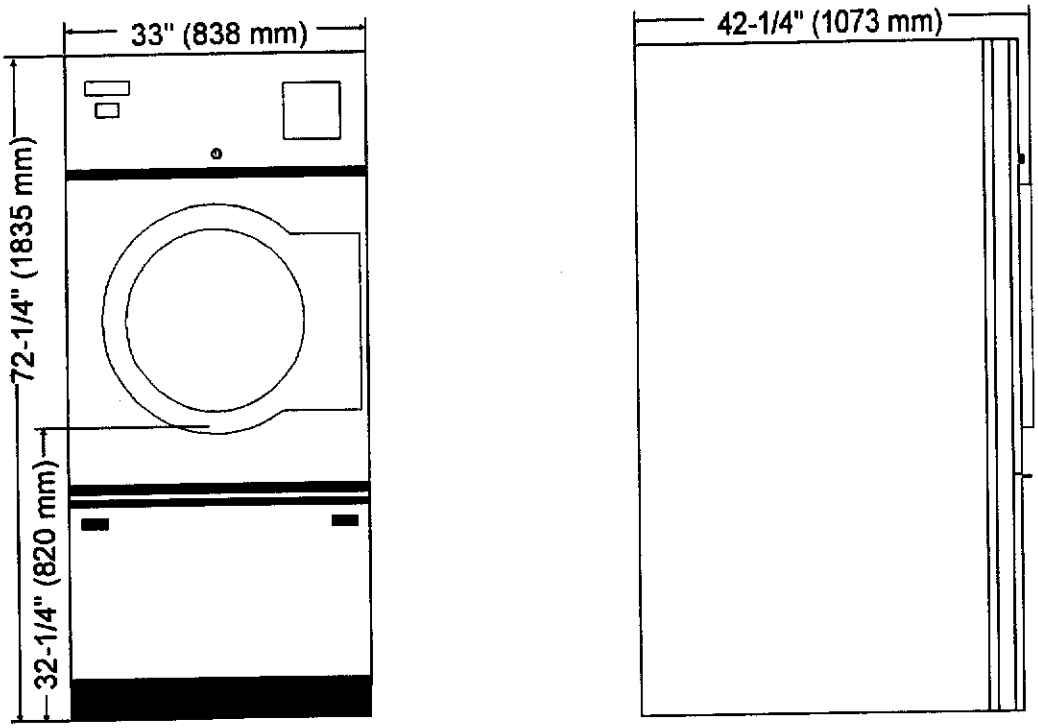
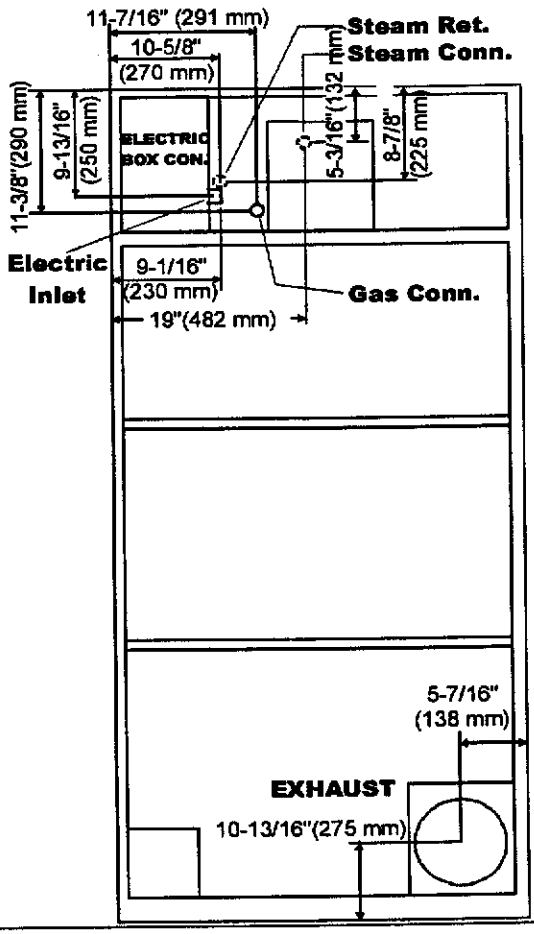
WMC30 Dryer Dimensions - Gas
(Illustration)





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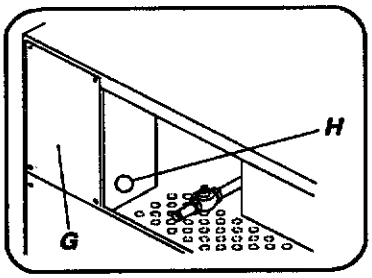
Electric connection

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 as ANSI/NFPA No. 70—Latest Edition.**

See wiring diagram furnished with dryer. **Do not change wiring without consulting the 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.)

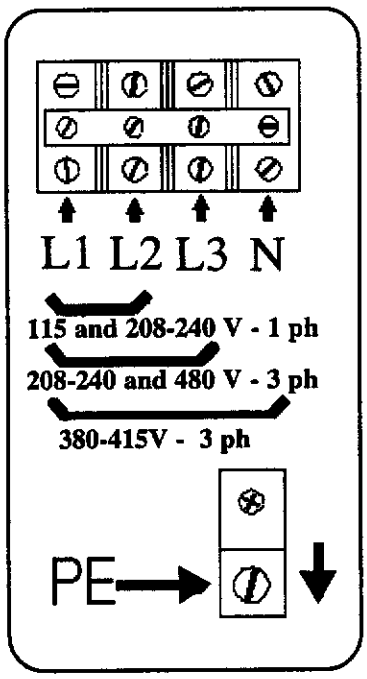
All panels must be in position before operation of dryer.



The connection needs to be made in the wiring box at the back. Remove the coverplate (G) in order to reach the connection clamps.

The connection cable needs to be brought in through the opening (H) in the ***side of the wiring box.***

It is necessary to ***ground*** the dryer for your personal safety and to ensure a good operation.



115 and 208-240 V - 1 ph

The mains wires ***(L1)*** and ***(L2)*** should be connected to the 2 left clamps and the ***yellow/green grounding wire (PE)*** should be connected to the grounding clamp.

208-240 and 480 V - 3 ph

The ***3 mains wires (L1), (L2) and (L3)*** should be connected to the 3 left clamps and the ***yellow/green grounding wire (PE)*** should be connected to the grounding clamp.

380-415V - 3 ph

The ***3 mains wires (L1), (L2) and (L3)*** should be connected to the 3 left clamps, the ***blue neutral (N)*** should be connected to the right clamp and the ***yellow/green grounding wire (PE)*** should be connected to the grounding clamp.

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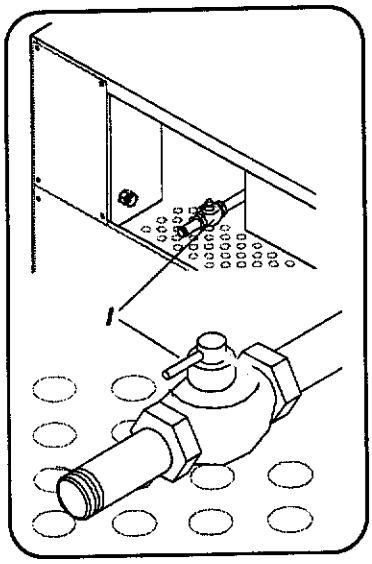
Gas connection



The gas supply pipe should be connected ***to the gas tap (I), which is on the right next to the wiring box on the back.***

It is important to have the connections done by a qualified technician, in order to ensure that the installation is in accordance with the prevailing standards and instructions.

The dryer should be connected to the type of gas indicated on the serial plate.

The use ***of too small gas pipes*** can result in insufficient gas supply, which can lead to slow heat-up and poor drying quality.

When the dryer is used in combination with a weighing platform, the gas supply pipe has to be made of flexible material to allow the weighing system to keep moving freely.

Test all connections for possible leaks by means of a soap solution, but ***never with a flame.***

It is important to work with the right gas pressure (see technical remarks) in order to obtain a good ignition, heating and consequently a good operation in general.

After the gas supply has been connected, the gas tap in the dryer should be turned on (clockwise).

Electrical Controls Service

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

Verify proper operation after servicing.

GAS PIPING INSTALLATION

1. The installation must conform with local codes, or in the absence of local codes with the National Fuel Gas Code as: ANSI Z223.1—(Latest Edition).

2. Check Identification Nameplate for type of gas for dryer.

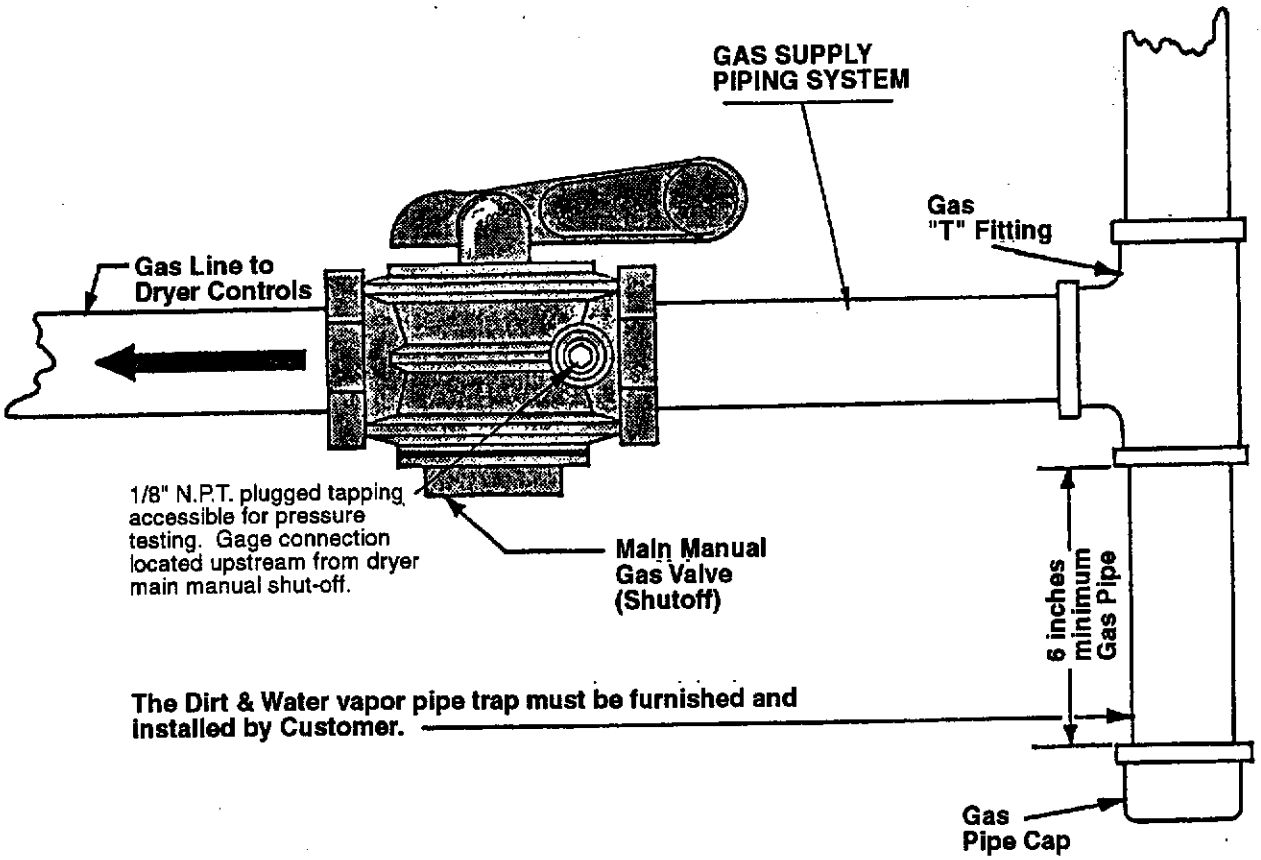
3. Check the altitude of dryer.

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

5. Natural Gas Only—Check the gas pressure inlet supply to dryer, 11 inches Water Column maximum. Manifold Pressure—3.5 inches Water Column pressure.

6. L.P. Gas Only—Manifold pressure—13 inches Water Column maximum.

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



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 psi (3.5 kPa).

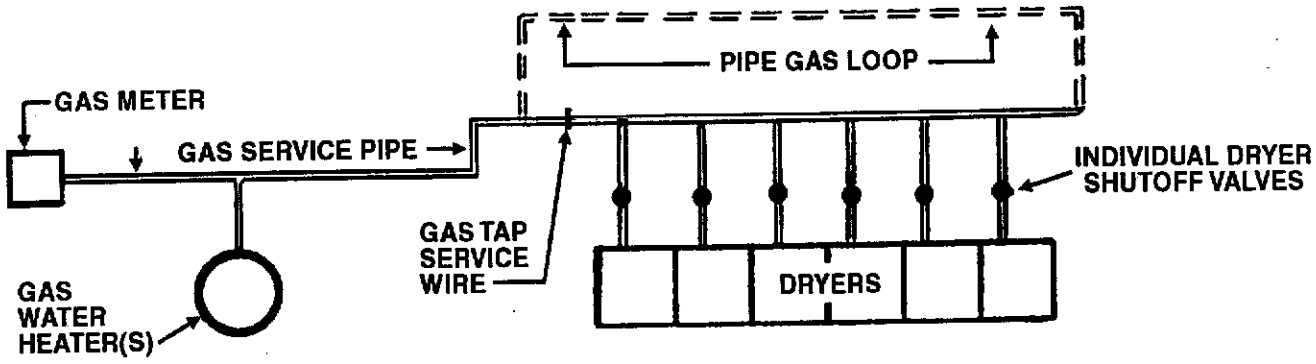
The dryer must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psi (3.5 kPa).

GAS SERVICE INSTALLATION INSTRUCTIONS

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

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

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



WARNING:
LIQUIFIED PETROLEUM GASES ONLY !

GAS PRESSURE REGULATOR FOR LIQUIFIED PETROLEUM GASES

A gas pressure regulator for liquified petroleum gases is not furnished on 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 HOUR	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

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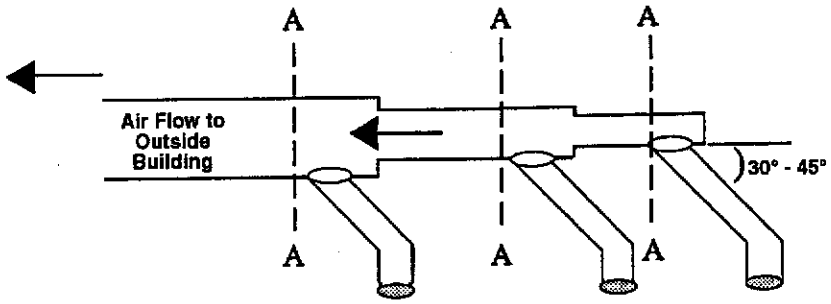
For exhaust duct less than 14 feet and 2 elbows equivalent and less than 0.3 inches static pressure.

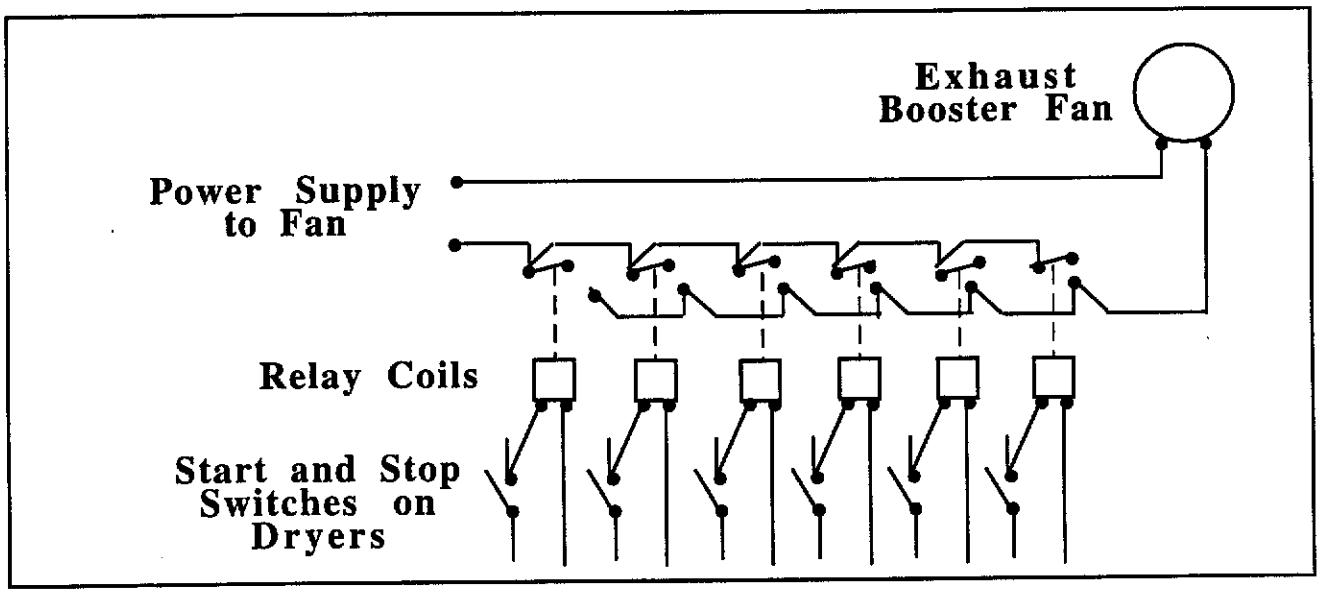


DRYER EXHAUSTS

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

WMC30

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



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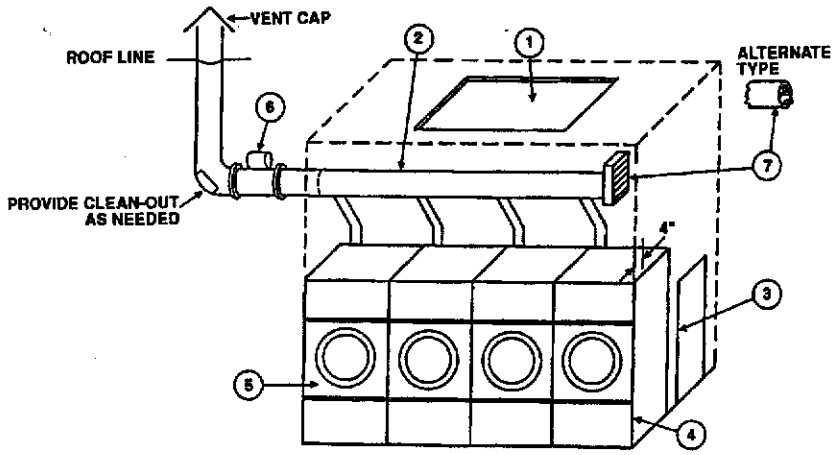

DRYER INSTALLATION WITH MULTIPLE EXHAUST

For exhaust duct more than 14 feet and 2 elbows equivalent and more than 0.3 inches static pressure.

1. Make-up air from outside the building may enter enclosure from top or side walls. The area of the opening must be a minimum of 210 square inches (1355 cm^2) for each dryer. This will deliver the proper amount of make-up air at an air velocity of approximately 500 fpm (152 m/min) through the opening..
2. Use constant diameter duct with area equal to the sum of dryer duct areas. EXAMPLE: Six 8 inch (203 mm) diameter ducts = one 19.6 inch (498 mm) diameter duct in area. Use 20 inch (508 mm) diameter duct or diameter to match tube-axial fan.
3. Enclosure (plenum) with service door. This separates the dryer air from room comfort air. If dryers use room air instead of outside air, the heat loss can be another 25 BTU/HR (6.3 kcal/hr) for each cubic foot per minute (cfm) used.
4. The installation clearance from all combustible material is 0" ceiling clearance for the first 4" from the front of the dryer. After the first 4", the ceiling clearance required is 6". the rear clearance required is 0", and the side clearance is 1".
5. Heat loss into laundry room from dryer fronts *only* is about 60 BTU/HR per square foot (15 kcal/hr per 0.1m^2).
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 or m^3/min.) is equal to the 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.

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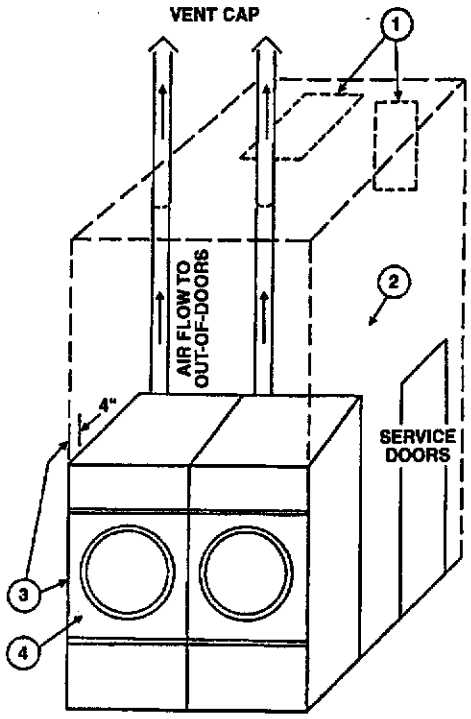

DRYER INSTALLATION WITH SEPARATE EXHAUST (PREFERRED)

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 from outside the building may enter the enclosure from the top or side walls. The area of the opening must be a minimum of 210 square inches (1355 cm^2) for each dryer. this will deliver the proper amount of make-up air at an air velocity of approximately 500 fpm (152 m/min) through the opening.
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^3/min.) used.
3. The installation clearance from all combustible material is 0" ceiling clearance for the first 4" from the front of the dryer. After the first 4", the ceiling clearance required is 6". The rear clearance required is 0", and the side clearance is 1".
4. Heat loss into laundry room from dryer front panels is about 60 BTU/ HR per square foot (15 kcal/hr per 0.1m^2).

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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 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 booster exhaust fans are required.

EXHAUST DUCT

FOR BEST DRYING:

1. Exhaust duct maximum length 14 feet (4.3 m) of straight duct and maximum of two 90° bends.
2. Use 45° and 30° elbows wherever possible.
3. Exhaust each dryer separately.
4. **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 0.3 inches (7.6 mm) water column static pressure in the exhaust duct.
7. Inside surface of the duct must be smooth.
8. Recommend pop rivets for duct assembly.

MAKE-UP AIR

FOR BEST DRYING:

1. Make-up air from outside the building may enter the enclosure from the top or side walls. The area of the opening must be a minimum of 210 square inches (1355 cm^2) for each dryer. This will deliver the proper amount of make-up air at an air velocity of approximately 500 fpm (152 m/min) through the opening.
2. Use barometric shutters in the inlet air opening to control air when dryers are not running.

OTHER RECOMMENDATIONS

OTHER RECOMMENDATIONS

To assure compliance, consult local building code requirements.

TROUBLESHOOTING

TROUBLESHOOTING

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

RULES FOR SAFE OPERATION OF DRYER

1. Be sure your dryer is installed properly in accordance with the recommended instructions.
2. **CAUTION**
   Be safe—shut main electrical power supply and gas supply off externally before attempting service.
3. **CAUTION**
   Never use drycleaning solvents: gasoline, kerosene, or other flammable liquids in the dryer. ***Fire and explosion will occur.***
   Never put fabrics treated with these liquids into the dryer.
   Never use these liquids near the dryer.
   Always keep the lint screen clean.
   Never use heat to dry items that contain plastic, foam or sponge rubber, or rags coated with oils, waxes or paints. The heat may damage the material or create a fire hazard. Rubber easily oxidizes, causing excessive heat and possible fire.
   Never dry the above items in the dryer.
4. **Never** let children play near or operate the dryer. Serious injury will occur if a child should crawl inside and the dryer is turned on.
5. **Never** use dryer door opening and top as a step stool.
6. Read and follow manufacturer's instructions on packages of laundry and cleaning aids. Heed any warnings or precautions.
7. **Never** tumble fiberglass materials in the dryer unless the labels say they are machine dryable. Glass fibers break and can remain in the dryer and could cause skin irritation if they become mixed into other fabrics.
8. Reference
   Wiring diagrams are located on the rear cover 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.

DIRECT SPARK IGNITION OPERATION

NOTE: All dryers manufactured by Cissell Mfg. Co. are equipped with the DSI (Direct Spark Ignition) modules. These are designed to increase dryer efficiency and to reduce dryer operating costs. The main burner is directly ignited from a spark electrode. A burning flame provides an electrical path for a small amount of sensing current to allow gas valve operation. If the main burner flame extinguishes for any reason (aside from the thermostatic control) sensing current will shut down the gas valve and the spark ignition circuit.

1. Once flame is established, the spark shuts off, and the main burner flame is then electronically monitored by means of a sensing spark probe which is located over the burner. The gas valve remains energized (open).

2. If no flame is detected within the first 11 seconds the DSI will go into a safety "lock-out". The gas valve is de-energized.

3. Recovery from a safety lockout requires one of the following:

   A. Opening the main door thus interrupting power to the DSI module and allowing dryer diagnostic trouble shooting.

   B. Disconnecting the entire dryer from a power source using a circuit breaker as a switch.

4. By closing the main door the ignition circuit will be restored for another trial of the ignition circuit.

5. Once the thermostatic control has been satisfied by reaching a pre-set temperature or the drying timer has been timed out, the ignition circuit will be de-energized thus extinguishing the flames.

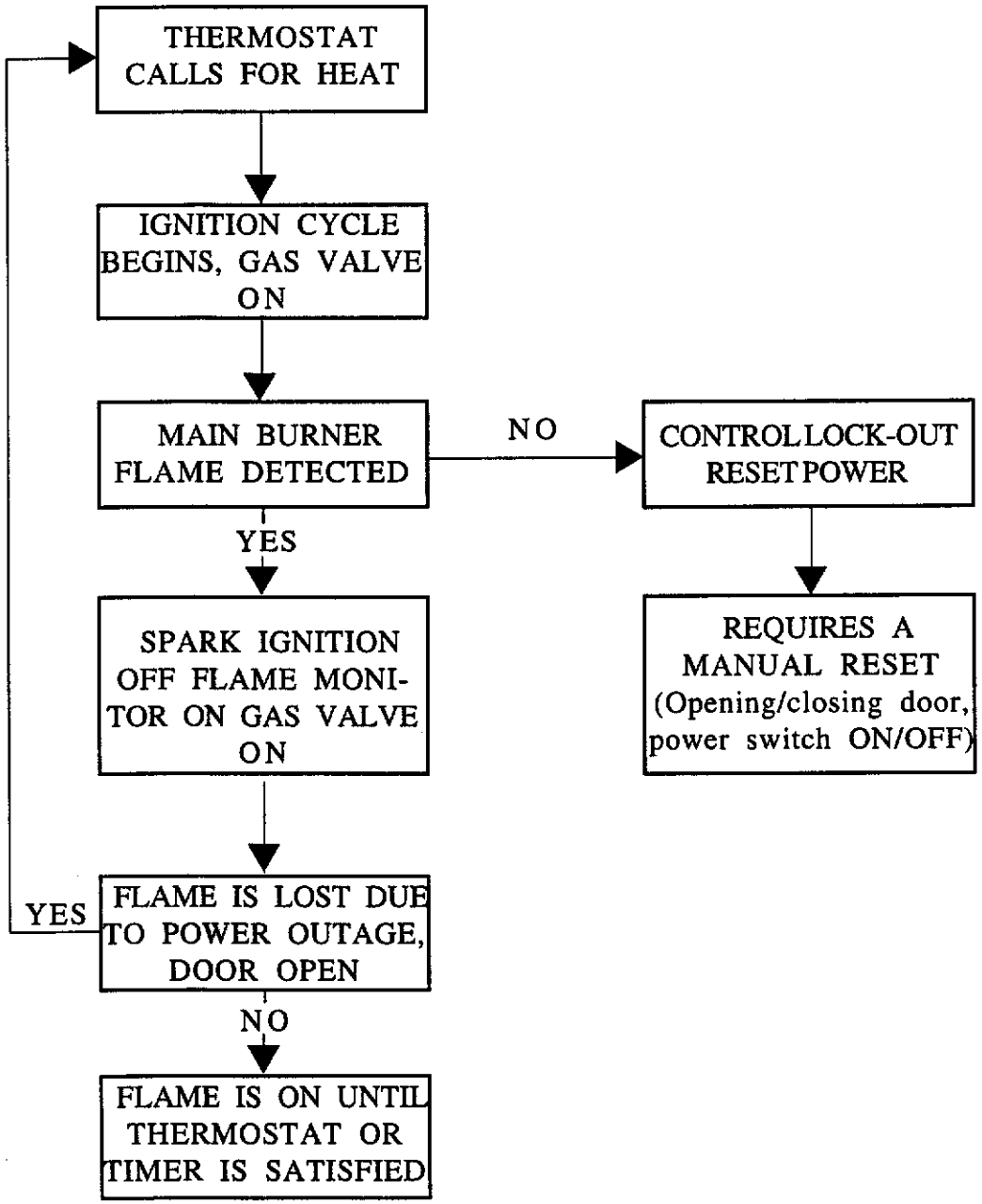
6. The dryer will continue to run in a cool-down mode without heat. This process will cool the load to the touch and help to eliminate wrinkling.

7. The cool - down time is pre-set on some models and manually set on other dryer models. The cool-down cycle prevents fabric wrinkles by allowing clothes to reach room ambient temperature while still in a continuous levitation state until clothes are ready to be folded or pressed.

DIRECT SPARK IGNITION OPERATION FLOW CHART

The DSI module is powered by a 24 volt AC supplied 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)



GENERAL MAINTENANCE

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

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

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

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

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

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

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

GENERAL MAINTENANCE (continued)

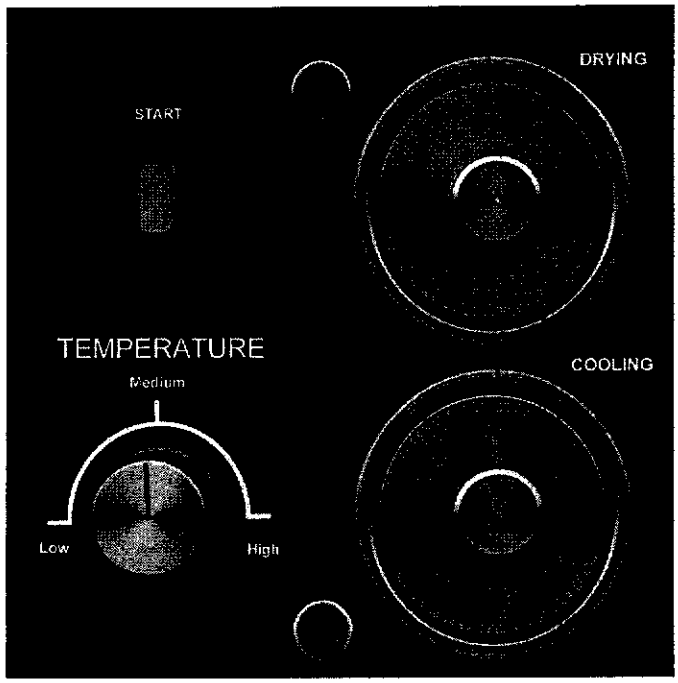
7. Periodically clean and examine exhaust system.

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

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

10. Check gas pressure periodically.

OPERATING INSTRUCTIONS - DOUBLE TIMER MODELS



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

2. Turn the 60 minute drying (heat) timer to the desired time.

3. Turn the 60 minute cooling (air) to the desired time.

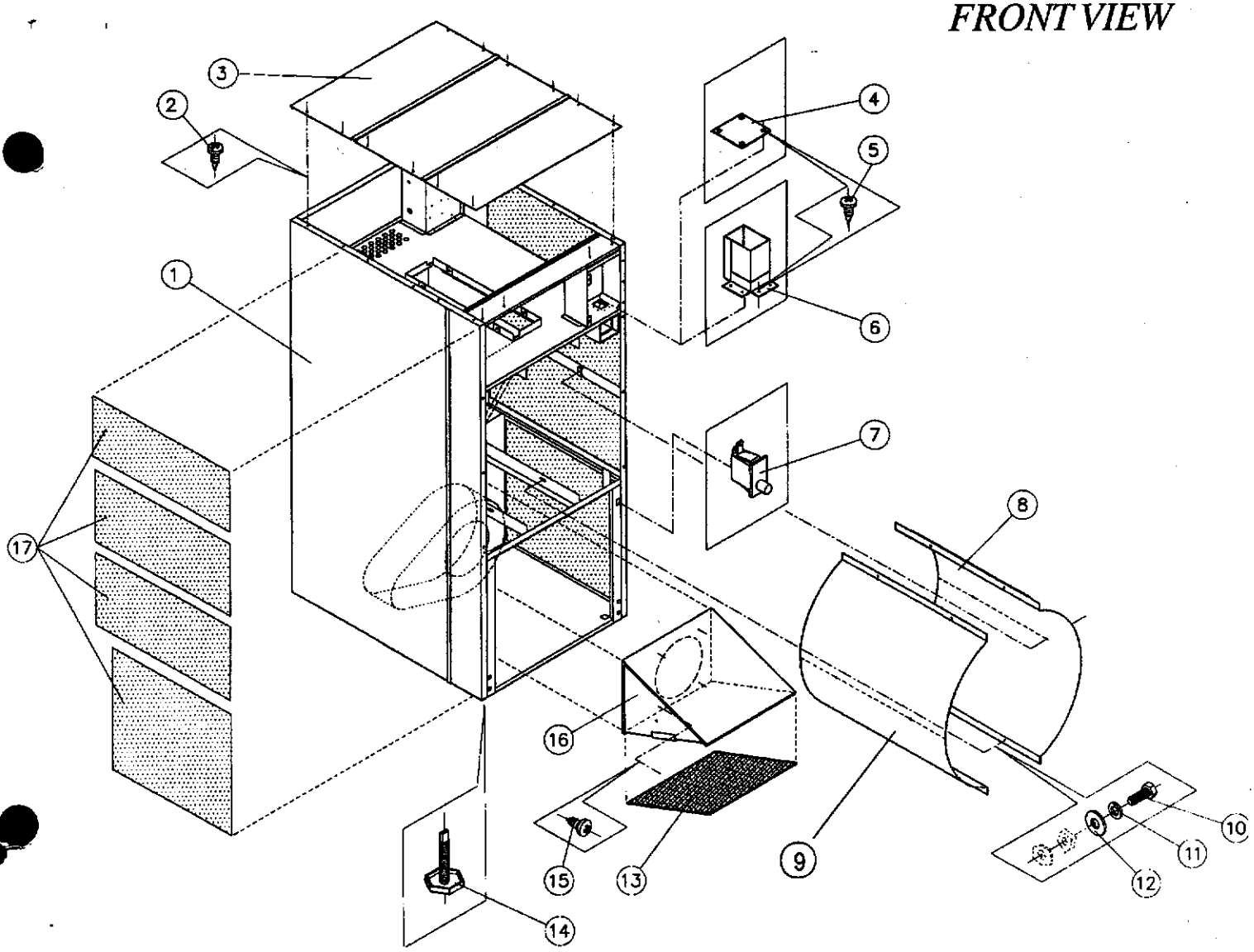
4. Select the temperature desired: Low, Medium, or High.
   HIGH HEAT
   175^0 F exhaust temperature, heavy fabrics and hard to dry, such as cottons, towels, denim, etc..
   PERMANENT PRESS **(medium)**
   155^0 F exhaust temperature, synthetic blends, including a mixed wash load.
   LOW HEAT
   135^{0}F exhaust temperature, delicate, sheer fabrics.

5. Press the "push to start" button to start the drying cycle. The heat or drying light will stay on until the drying cycle is completed

6. At the end of the drying cycle, the cool down cycle will automatically count down until all time runs out. The cool down light will stay on until the end of the cycle.

7. Drying cycle will not start unless a few minutes of the cool-down cycle are set on the cool-down timer.

8. Open the door to shut the dryer off at any time during the cycles.



Ref. No.	Part No.	Description
1	CSA50036WH	Jacket gas/electric (white)
1	CSA-50051WH	Jacket steam (white)
2	TU7733	Screw self drilling 8-18 X 1/2"
3	CA-11987-0	Top panel
4	CA-11546-0	Cover plate (non-coin models)
5	TU7733	Screw self drilling 8-18 X 1/2"
6	CSA-01435-0	Coin chute w/a
7	EA-00650-0	Microswitch door
8	CA-11991-0	Right sweepsheet
9	CA-11991-0	Left sweepsheet (gas & elec)
9	CA-13087-0	Left sweepsheet (steam)

Ref. No.	Part No.	Description
10	CB36	Screw -hex 1/4-20 X 1/2"
11	TU2846	Lockwasher 1/4" medium
12	TU2847	Washer 1/4"
13	CA-10567-0	Lint frame
13	CA-13033-0	LintScreen
14	TU3211	Leveling bolt
15	TU7733	Screw self drilling 8-18 X 1/2"
16	CSA-01528-0	Support filter
17	CSA-01388-0	Insulation side WMC complete -used on gas models only-
18	CA-13094-0	Insulation cover-steam-left side-not shown

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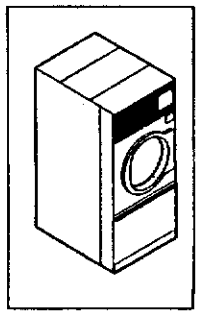
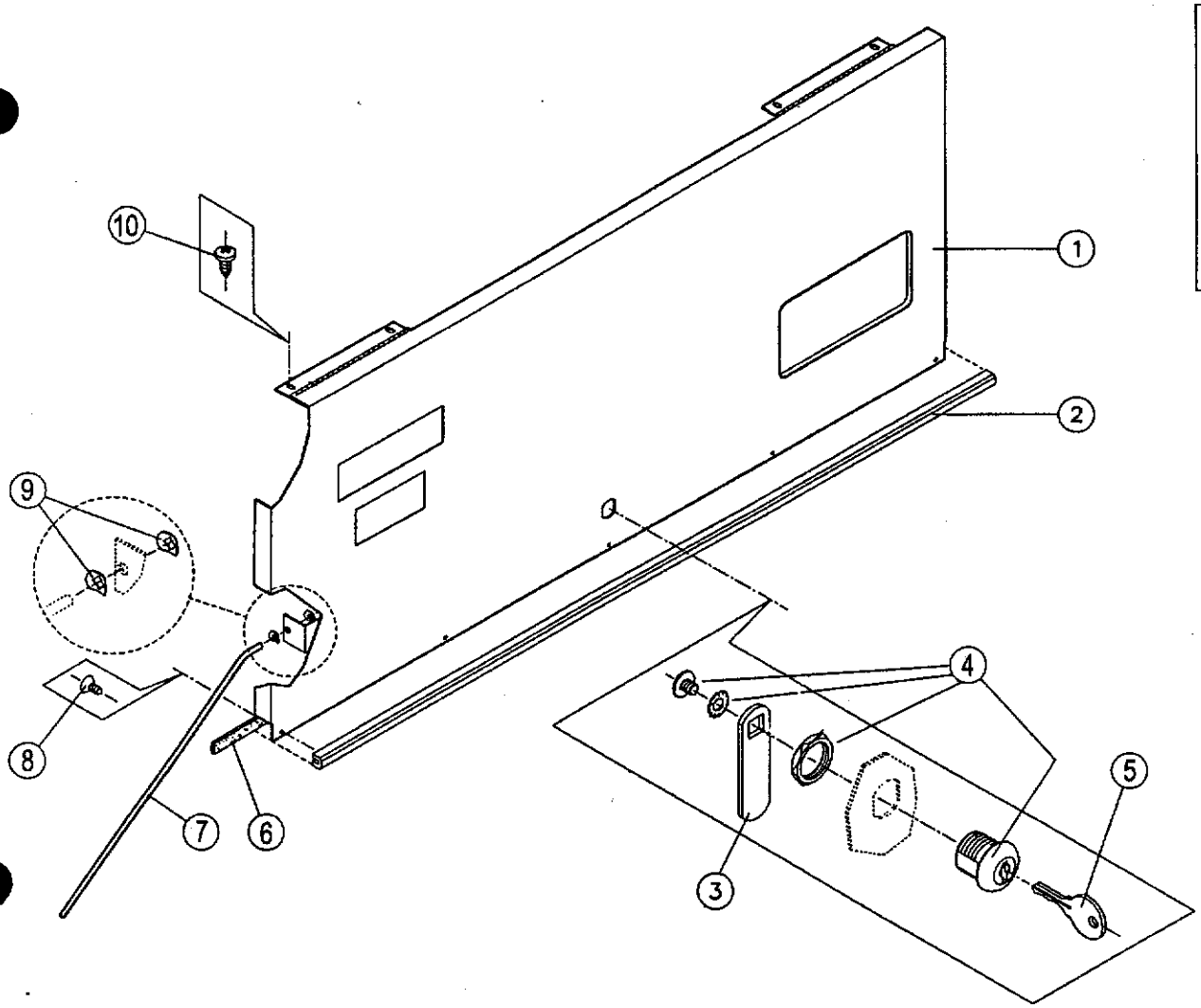
CONTROL DOOR ASSEMBLY





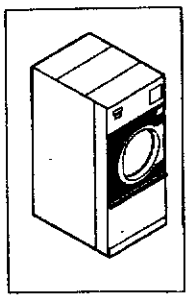
CSA-01582WH Complete control door assy. - Simple microprocessor

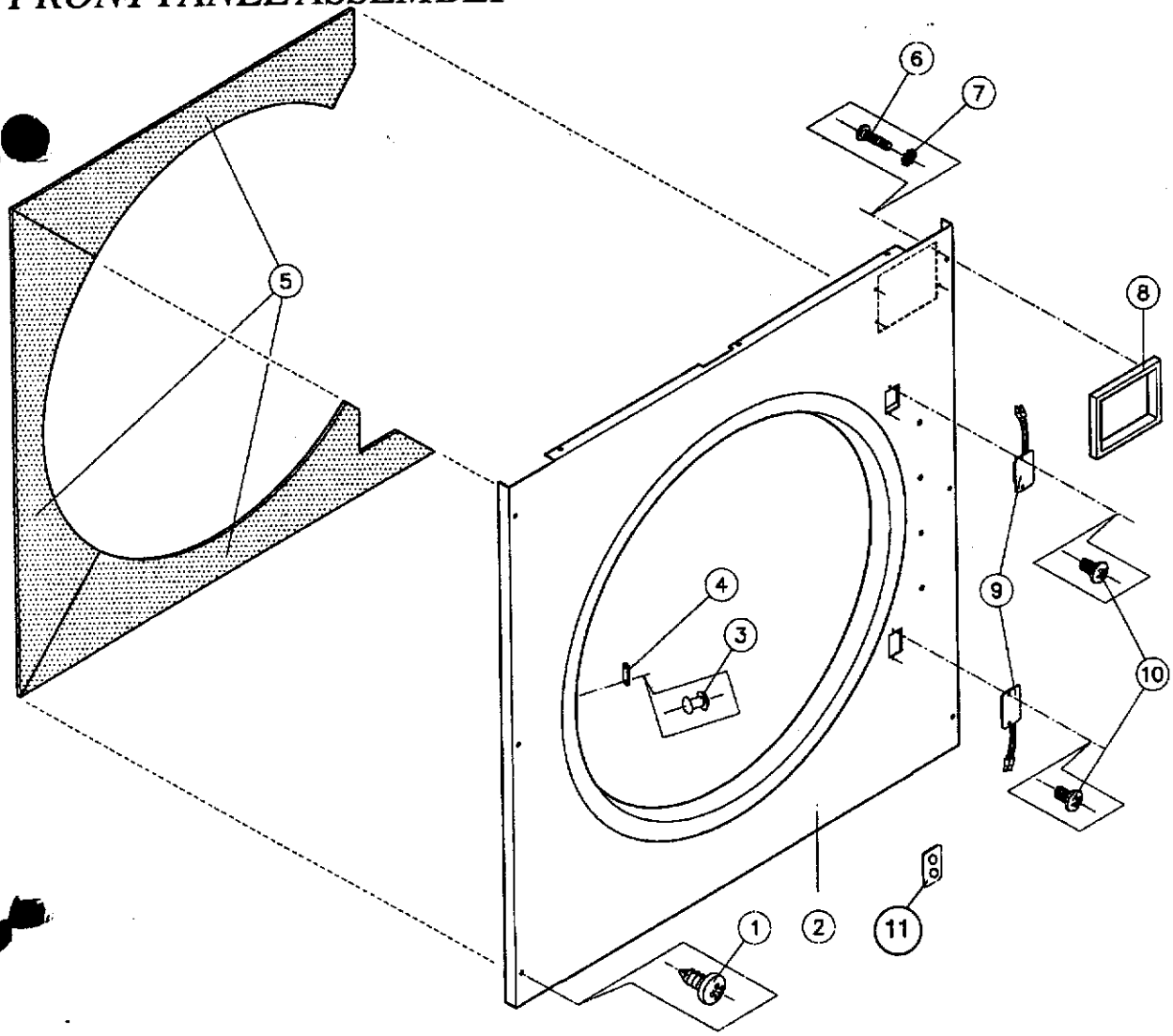
CSA-01407WH Complete control door assy. - Double Timer

Note: Door rod assy. is not part of above complete assy.

Ref. No.	Part No.	Description
1	CSA-01578WH	Control door assy. - Simple microprocessor
1	CSA-01408WH	Control door assy. - Double timer
2	CA-00856-0	Trim - Control door
3	LA-11941-0	Cam lock-Control door
4	LA-00121-0	Lock - Control door
5	LA-00119-0	Key - Control door
6	CA-13098-0	Gasket
7	CA-10085-0	Support rod
8	SB-00951-0	Screw -Phillips #8 X 7/16 flat hd.
9	SB-00971-0	Tinnerman push- on fastener
10	TU7733	Screw self drilling 8-18*1/2"

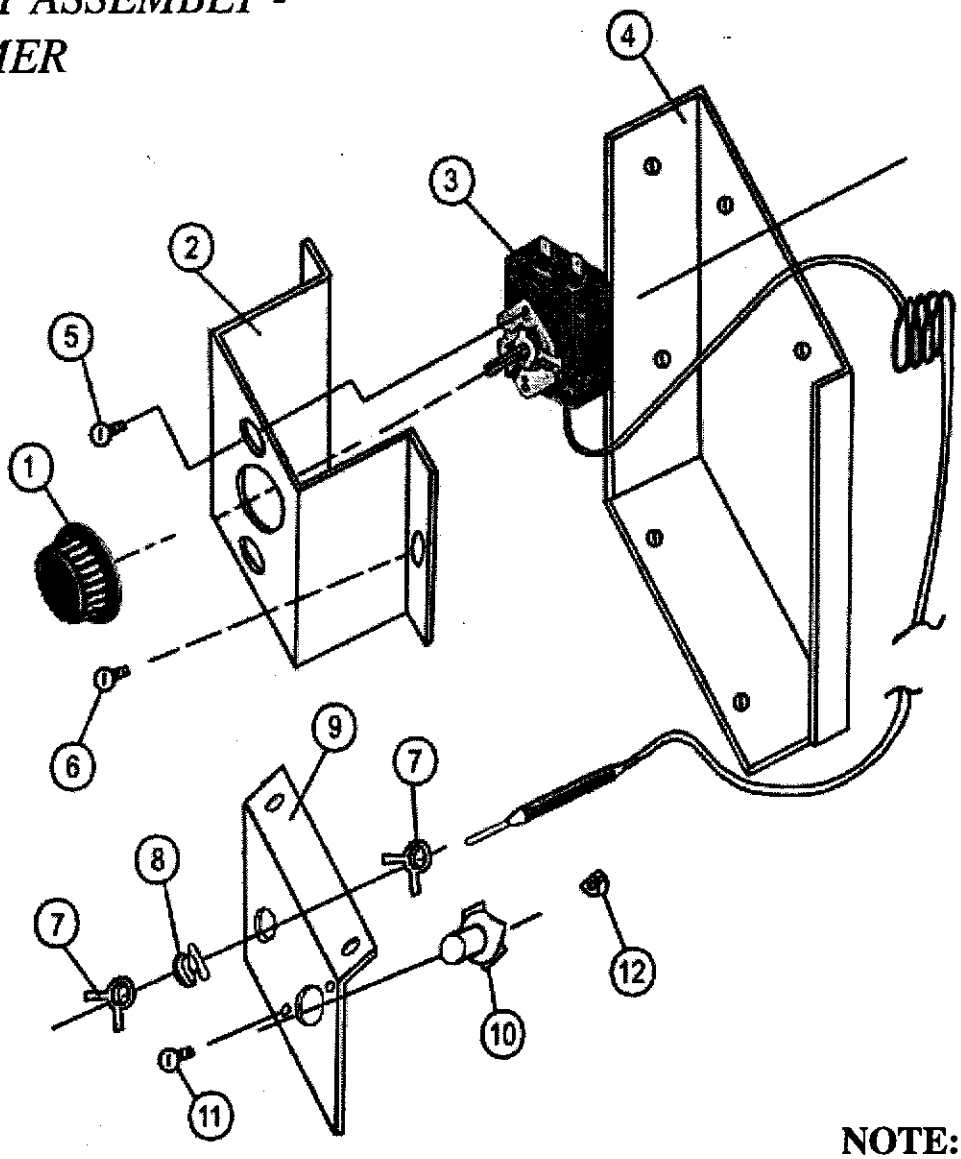
FRONT PANEL ASSEMBLY





Ref. No.	Part No.	Description
1	SB-00915-0	Screw self drilling #10-16 X 5/8
2	CSA-01564WH	Front panel, welded assy.-Coin
2	CSA-01563WH	Front panel, welded assy-OPL
3	TU3213	Pop Rivet PVD doorlocker
4	TU2876	Latch strap
5	CA-00675-1	Insulation
6	SB-00924-0	Screw 4-40*3/8 taptite
7	SB-00938-0	Washer 4 external tooth
8	CA-00699-0	Bezel - Coin box
9	ESA-00862-0	Reed switch assy.
10	SB-00975-0	Screw 6-32*1/4 phillips
11	EA-00827-0	Mounting plate - Reed switch

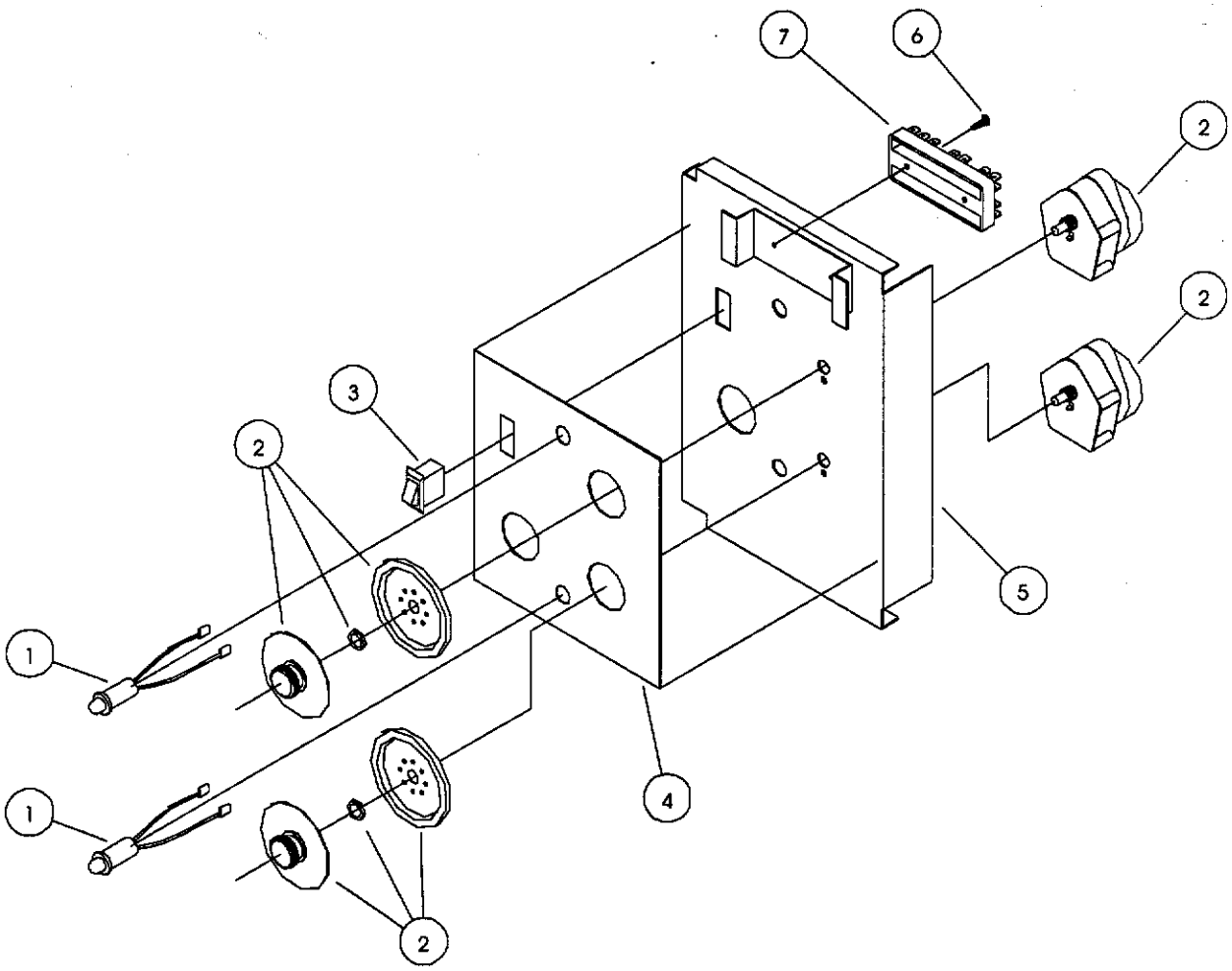
THERMOSTAT ASSEMBLY - DOUBLE TIMER



NOTE: Items 1 thru 6 mounted in front wire box. Items 7 thru 12 are mounted under the basket

Ref. No.	Part No.	Description
1	EA-00607-0	Thermostat knob
2	CA-13213-0	Thermostat bracket
3	EA-00606-0	Thermostat
4	CA-13215-0	Thermostat bracket adapter
5	TU3624	Screw 6 - 32 X 1/4"
6	TU7733	Screw - self drilling 8 - 18 X 12"
7	EA-00434-0	Clip - 3/8" spring
8	EA-00608 - 0	Grommet / rubber
9	CA-13214-0	Plate
10	EA-00594-0	Thermostat - HI-Limit
11	SB-00828-0	Screw 8-32 X 1/2"
12	TU3266	Nut-brass 8-32

WIRE BOX ASSEMBLY - DOUBLE TIMER



Ref. No.	Part No.	Description
	CSA-01608WH	Wire box door assy complete
1	TUT316	Light LED 24V
2	EA-11614-0	Timer-manual 24V - 60 min. complete
3	EA-00619-0	Switch - start
4	CA-13170-0	Overlay- dual timer non-rev
5	CSA-01608WH	Wire box door assy.
6	SB-00865-0	Screw-self drilling #6-20 X 12"
7	EA-00210-0	Terminal block
8	ESA-00967-0	Wire harness (not shown)
9	SB-00868-0	Bushing 7/8"

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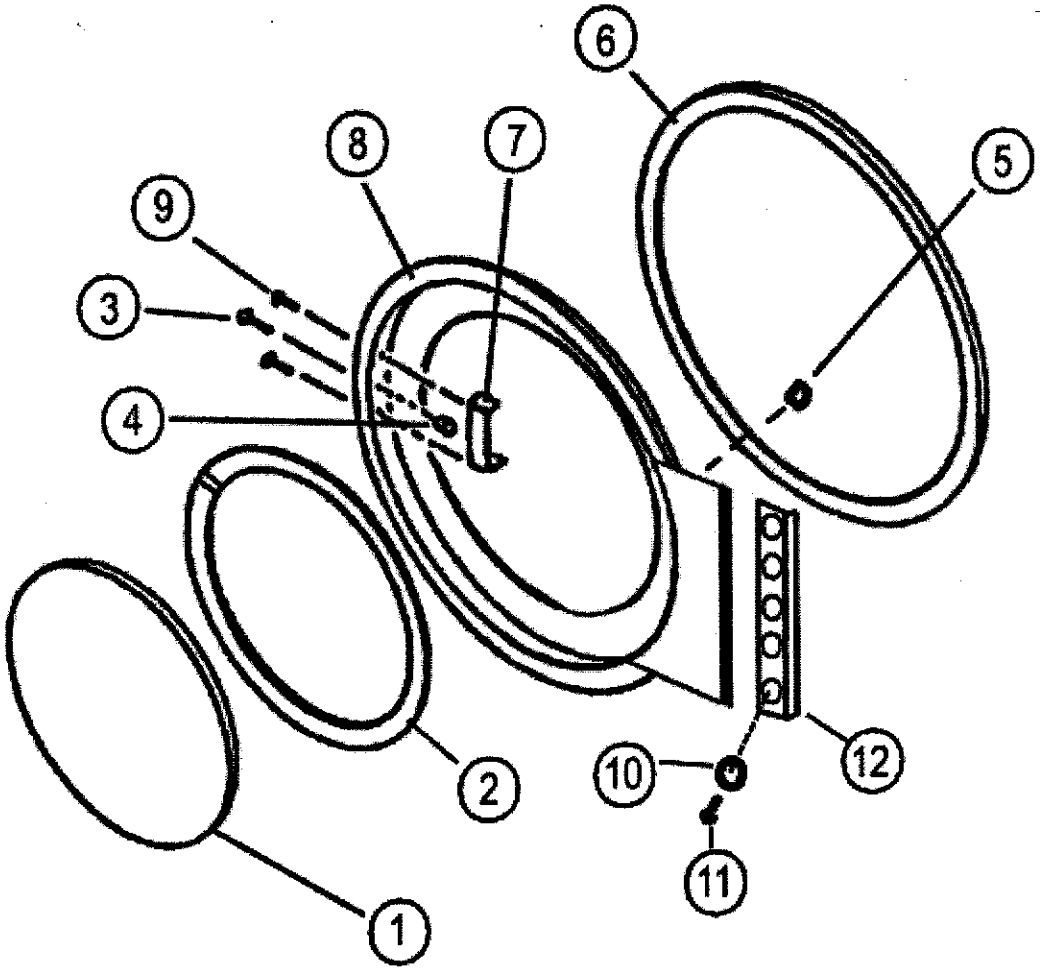

Ref. No.	Part No.	Description
	MSD-00859WH	Complete door assy (consists of items 1 thru 9 only)
1	MD-00362-0	Door Glass - clear
2	MD-00354-0	Gasket - door glass - straight
3	CA-13218-0	Catch Pin
4	TU4840	Crown nut
5	MD-00337-0	Magnet - read switch
6	MD-00338-0	Gasket - door rim
7	TU2874	Basket door handle
8	MSD-00857WH	Basket door
9	TU3215	Screw #10 - 32 X 3/8"
10	SB-00852-0	Washer 1/4" external starluck
11	SB-00921-0	Screw 1/4"-20 round head
12	MD-00348-0	Hinge spacer

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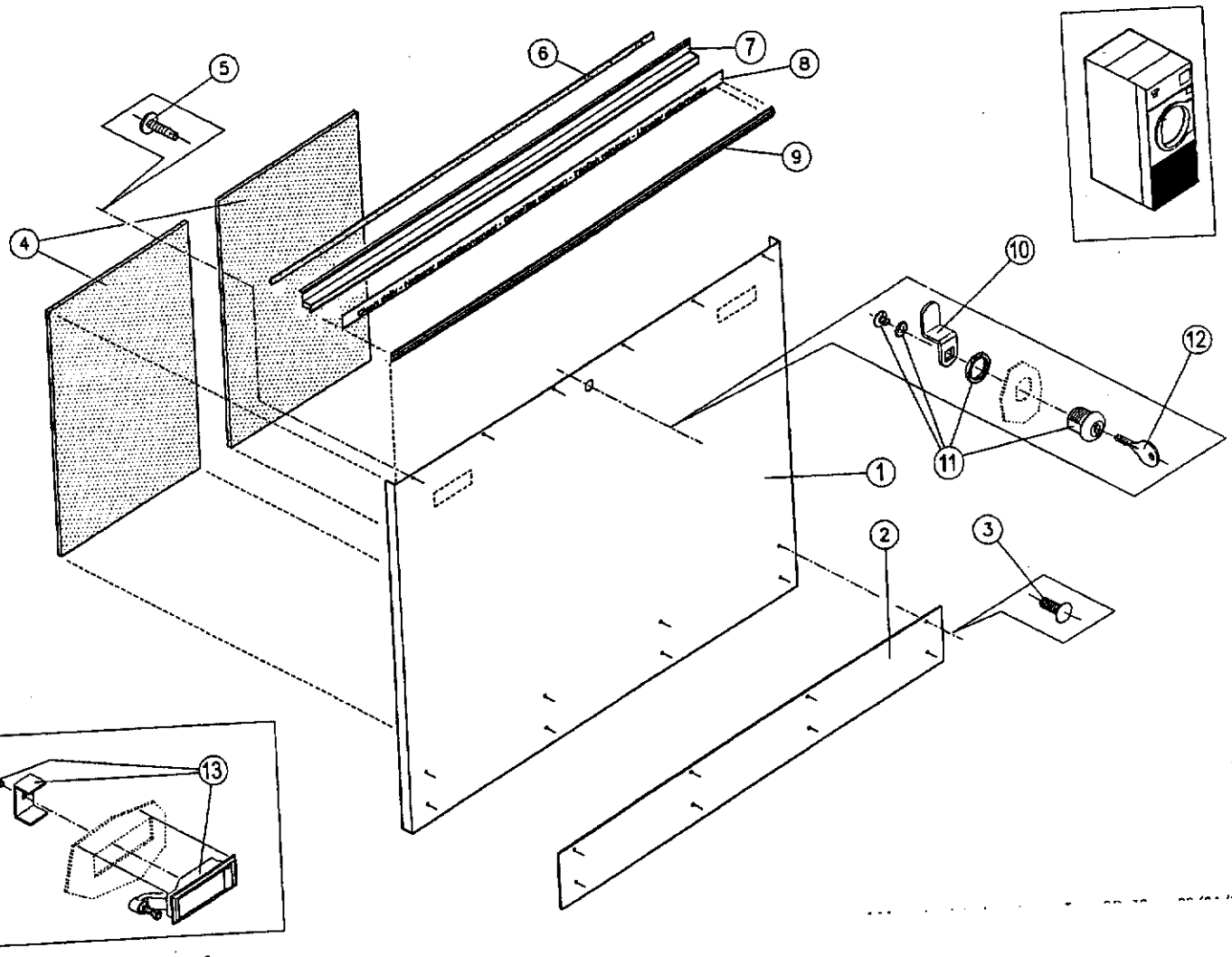
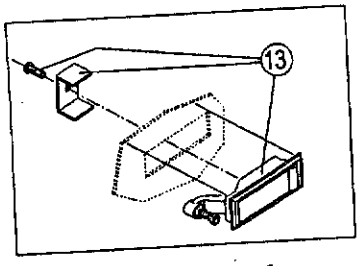
LINT DOOR ASSEMBLY

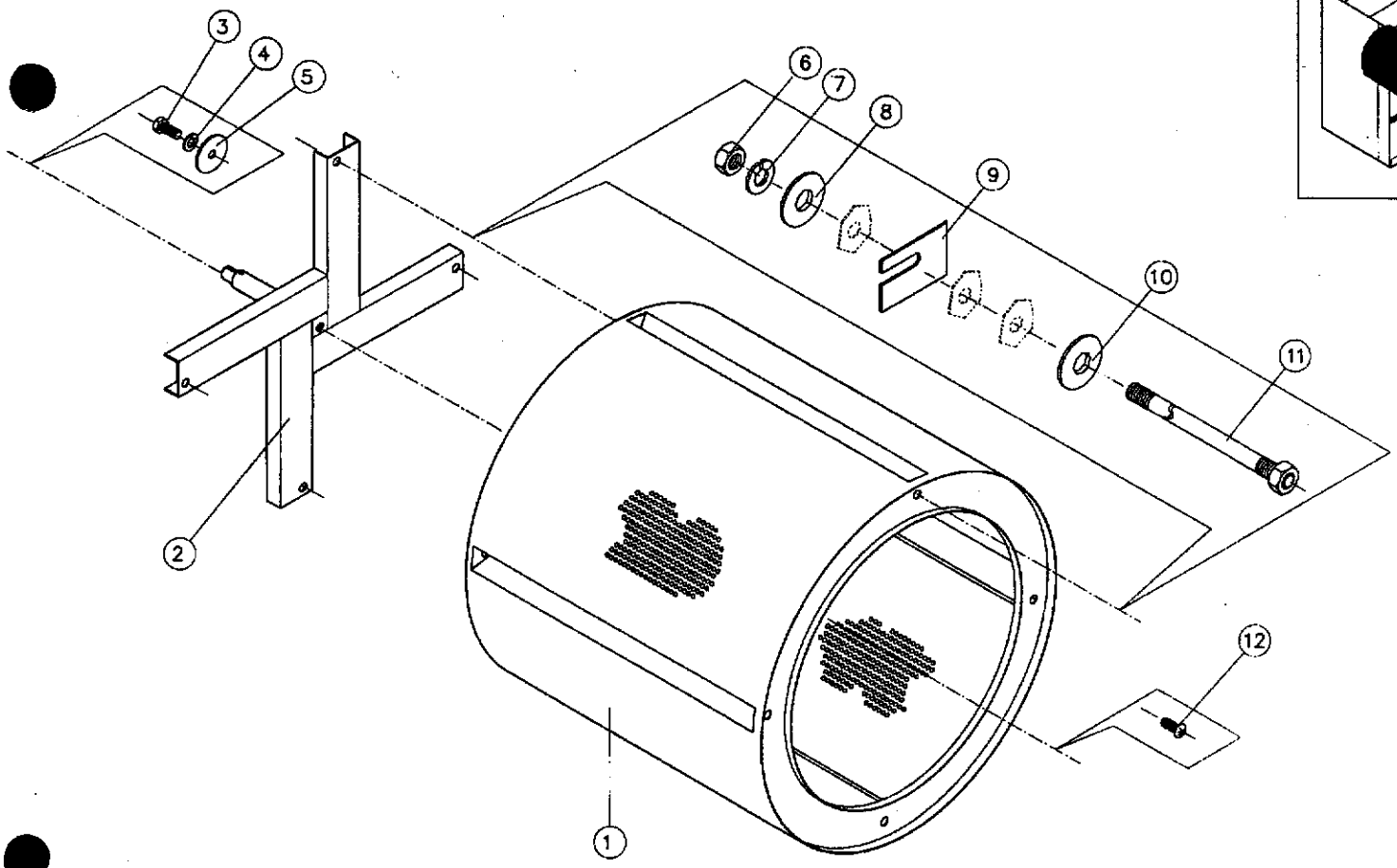




For OPL models only.

Ref. No.	Part No.	Description
	CSA-01386WH	Complete Asm - WMC30 OPL
	CSA-01465WH	Complete Asm - WMC30 Coin
1	CSA-01387WH	Lint door w/latch holes(white) OPL
1	CSA-01098WH	Lint door w/lock holes(white) Coin
2	CA-00833-0	Kickplate
3	SB-00949-0	Fastener plastic kickplate
4	CA-11930-0	Insulation lower frontpanel WMC30
5	SB-00915-0	Screw self drilling #10-16 X 5/8
6	TU2853	Gasket
7	CA-00646-0	Handle lint door
8	CA-00841-0	Label (not part of assy.)
9	CA-00655-0	Trim-rubrail-specify 33" long
10	LA-11359-0	Cam lock
11	LA-00121-0	Lock
12	LA-00119-0	Key
13	LA-00124-0	Latch - trigger

BASKET & SPIDER ASSEMBLY



Ref. No.	Part No.	Description
	CSA-01539-0	Basket & Spyder Asm.WMC30 - S.S.
	CSA-01637-0	Basket & Spyder Asm.WMC30 - Galv.
1	CSA-01538-0	Stainless steel basket assy.
1	CSA-01636-0	Galvanized basket assy.
2	CSA-01434-0	Spider assy.
3	TU5439	Screw-cap 5/16-18 X 3/4"
4	TU2814	Lock washer 5/16"
5	SB-00843-0	Washer fender 3/8" X 1 1/2"
6	SB-00906-0	Nut 5/16" - 18 stover
7	TU2814	Lock washer 5/16"
9	TU7006	Shim
10	CA-13208	Basket rib support
11	DA-00445-0	Tie rod
12	SB-00965-0	Screw-button cap 5/16 - 18

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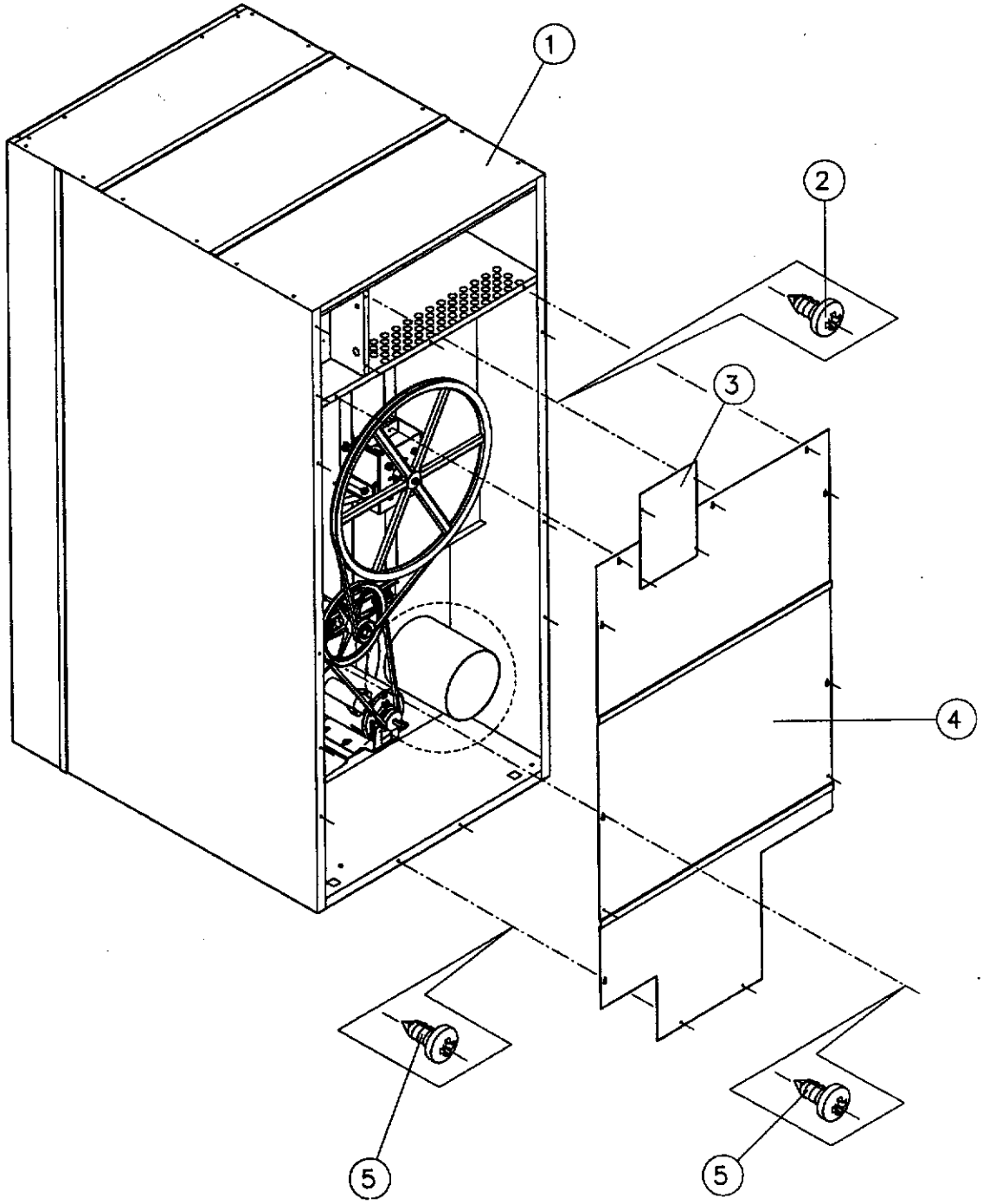
Ph:(502)587-1292, Fax: (502)585-3625
SERVICE /PARTS FAX: (502) 681-1275

REAR VIEW



Ref. No.	Part No.	Description
1	CA-11987-0	Top panel
2	TU7733	Screw self drilling 8-18*1/2"
3	CA-11936-0	Cover plate
4	CA-11975-0	Backpanel
5	TU7733	Screw self drilling 8-18*1/2"

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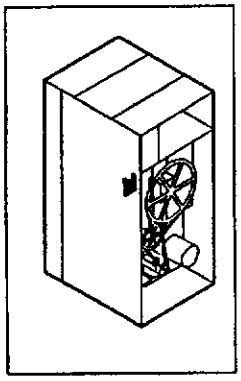
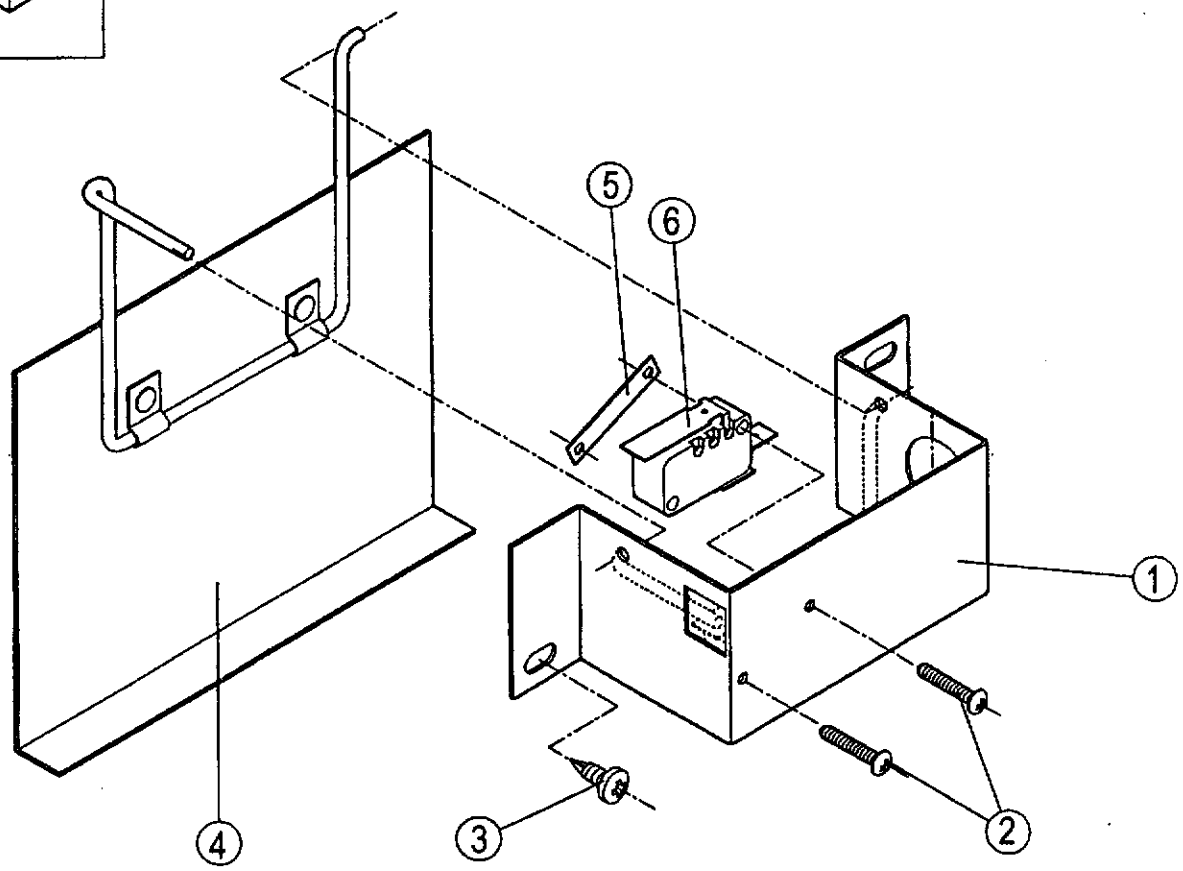
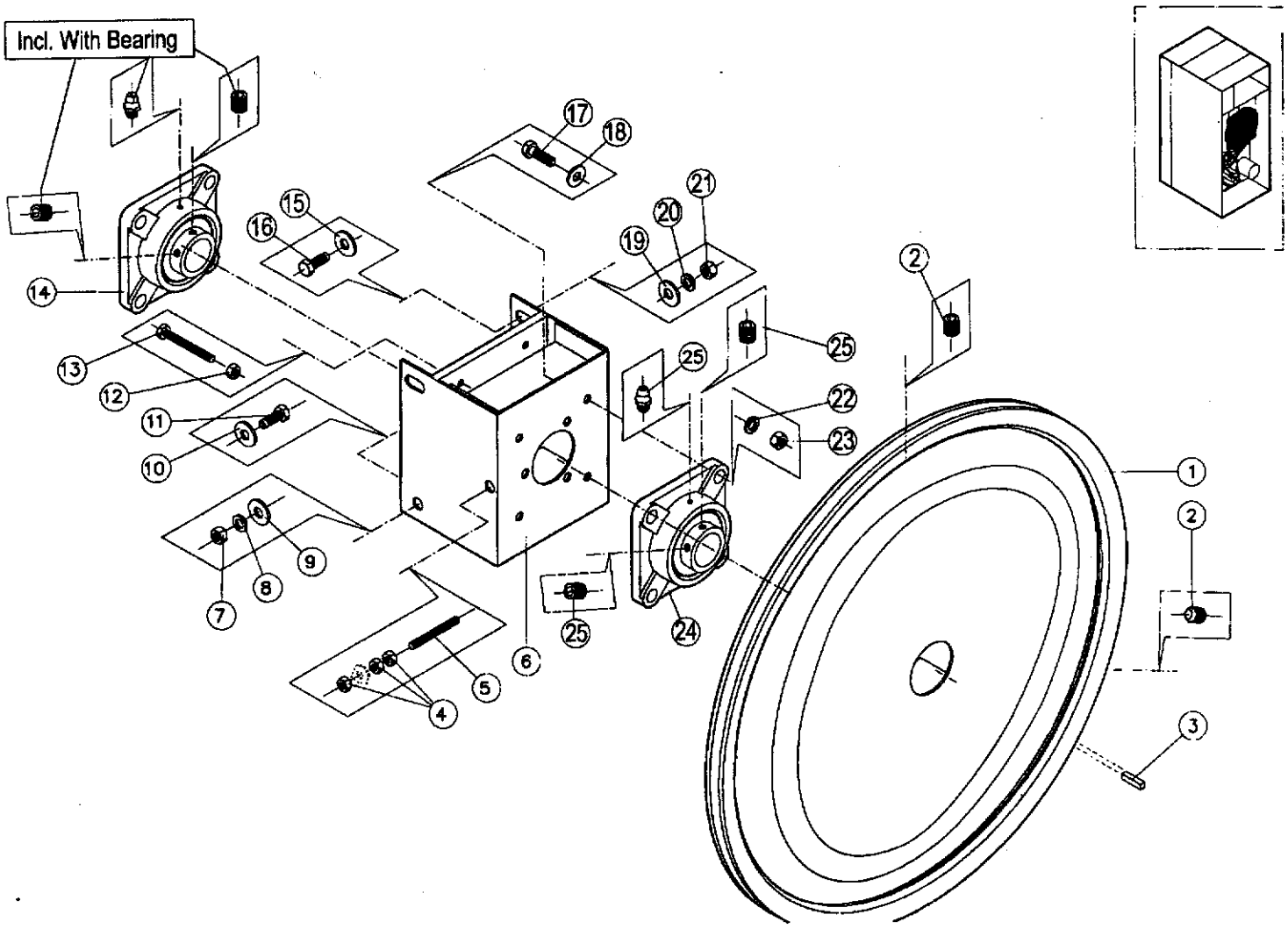




Ref. No.	Part No.	Description
	CSA-01334-0	Sail switch assy. complete
1	CA-11854-0	Bracket sailswitch
2	SB-00955-0	Screw phillips #4 X 3/4"
3	TU7733	Screw self drilling 8-18*1/2"
4	CSA-01669-0	Sailswitch plate and rod assy.
5	SB-00954-0	Clip-twin-Tinnerman
6	EA-00618-0	Microswitch

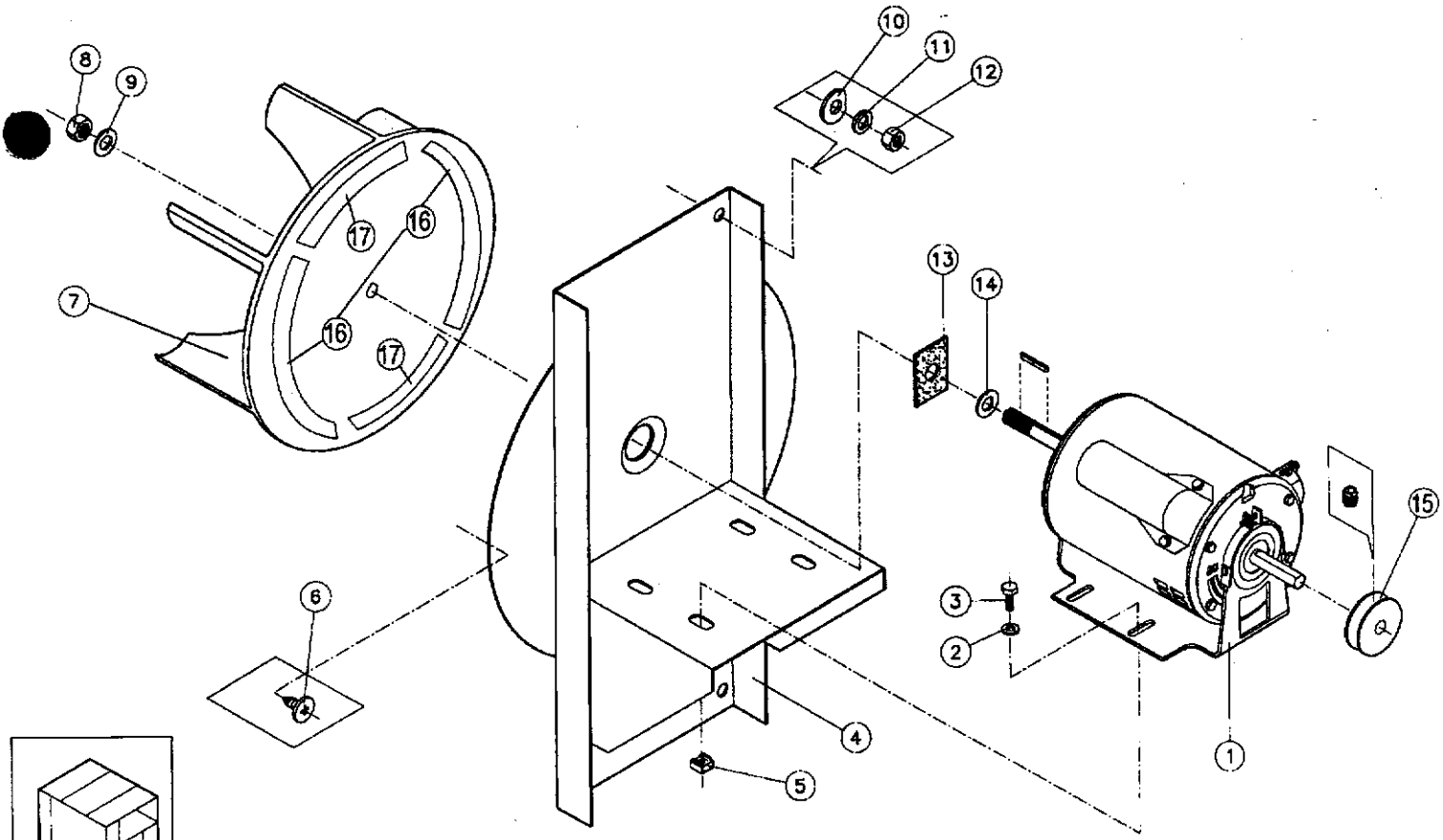
BASKET BEARINGS, SUPPORT, AND SHEAVE

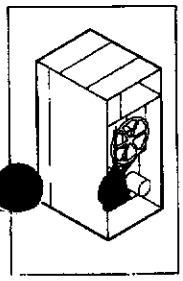


Ref. No.	Part No.	Description
1	DA-11911-0	Pulley - basket
2		Part of pulley
3	TU5887	Key
4	C249	Hex nut 5/16-18"
5	SB-00876-0	Stud - 5/16 - 18"
6	DSA-00728-0	Bearing box assy.
7	TU4787	Hex nut 3/8-16"
8	VSB134	Lock Washer 3/8"
9	IB140	Washer 3/8"
10	IB140	Washer 3/8"
11	IB139	Screw 3/8-16*1-1/4"
12	C249	Hex nut 5/16-18"
13	SB-00935-0	Screw cap 5/16 - 18 X 3
14	DA-00421-0	Bearing flange 1 3/8"

Ref. No.	Part No.	Description
15	IB140	Washer 3/8"
16	IB139	Screw 3/8-16*1-1/4"
17	IB139	Screw 3/8-16*1-1/4"
18	IB140	Washer 3/8"
19	IB140	Washer 3/8"
20	VSB134	Lock Washer 3/8"
21	TU4787	Hex nut 3/8-16"
22	VSB134	Lock Washer 3/8"
23	TU4787	Hex nut 3/8-16"
24	DA-00421-0	Bearing - flange 1 3/8"
25		Part of bearing

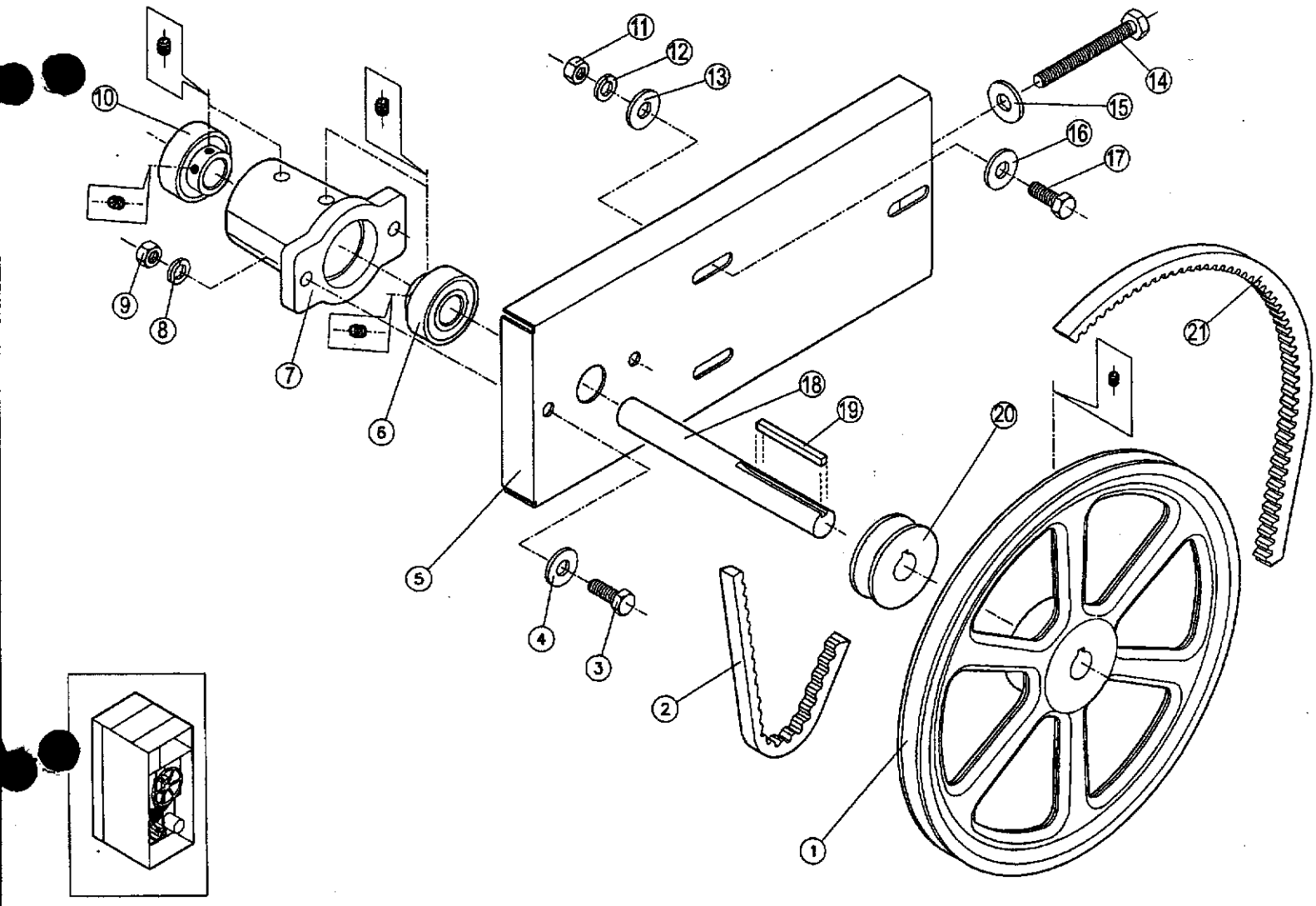
MOTOR & FAN ASSEMBLY- NON-REVERSING





Ref. No.	Part No.	Description
1	DA-00428-0	Fan motor 1/2 HP 115/208/230/60/50/1
2	TU2814	Lock washer 5/16"
3	TU5439	Screw-cap 5/16-18 X 3/4"
4	DSA-00801-0	Motor mount w/a - non-rev.
5	SB-00842-0	Nut, grip, Tinnerman
6	SB-00836-0	Screw, phillips, pancake head
7	DSA-00773-0	Fan (12")
8	SB-00813-0	Nut 1/2-20" - Left hand thread
9	SB-00847-0	Washer -1" O.D. X .505 I.D.
10	IB140	Washer cut 3/8"
11	VSB134	Washer lock 3/8"
12	TU4787	Hex nut 3/8-16"
13	DA-00460-0	Seal, acoustical
14	SB-00847-0	Washer -1" O.D. X .505 I.D.
15	DA-00509-0	Sheave, 60 cycle, 1/2" bore
15	DA-00508-0	Sheave, 50 cycle, 1/2" bore
16	TU2473	Gasket - curved (2 req'd)
17	TU2474	Gasket - straight (2 req'd)

IDLER ASSEMBLY



Ref. No.	Part No.	Description
1	DA--00531-0	Idler pulley 9"
2	DA-00523-0	Basket belt - non-reversing - AX66
2	DA-00523-0	Basket belt -reversing - AX66
3	FB124	Screw 5/16-18*1"
4	VSB130	Washer 5/16"
5	CA-12059-0	Idler adjusting plate
6	DA-00518-0	Bearing
7	DA-00517-0	Housing - idler bearing
8	TU2814	Lock washer 5/16"
9	C249	Hex Nut 5/16-18"
10	DA-00518-0	Bearing

Ref. No.	Part No.	Description
11	C249	Hex Nut 5/16-18"
12	TU2814	Lock Washer 5/16"
13	VSB130	Washer 5/16"
14	SB-00935-0	Screw 5/16"-18 X 3"
15	VSB130	Washer 5/16"
16	VSB130	Washer 5/16"
17	TU5439	Screw 5/16-18*1"
18	DA-11711-0	Idler shaft
19	TUD0187	Key 3/16 square 2-1/2"
20	DA-00530-0	V-belt pulley 2-1/2"
21	DA-00525-0	Belt - motor to idler pulley AX51 Non-reversing
21	TU10888	Belt - motor to idler pulley AX64 Reversing

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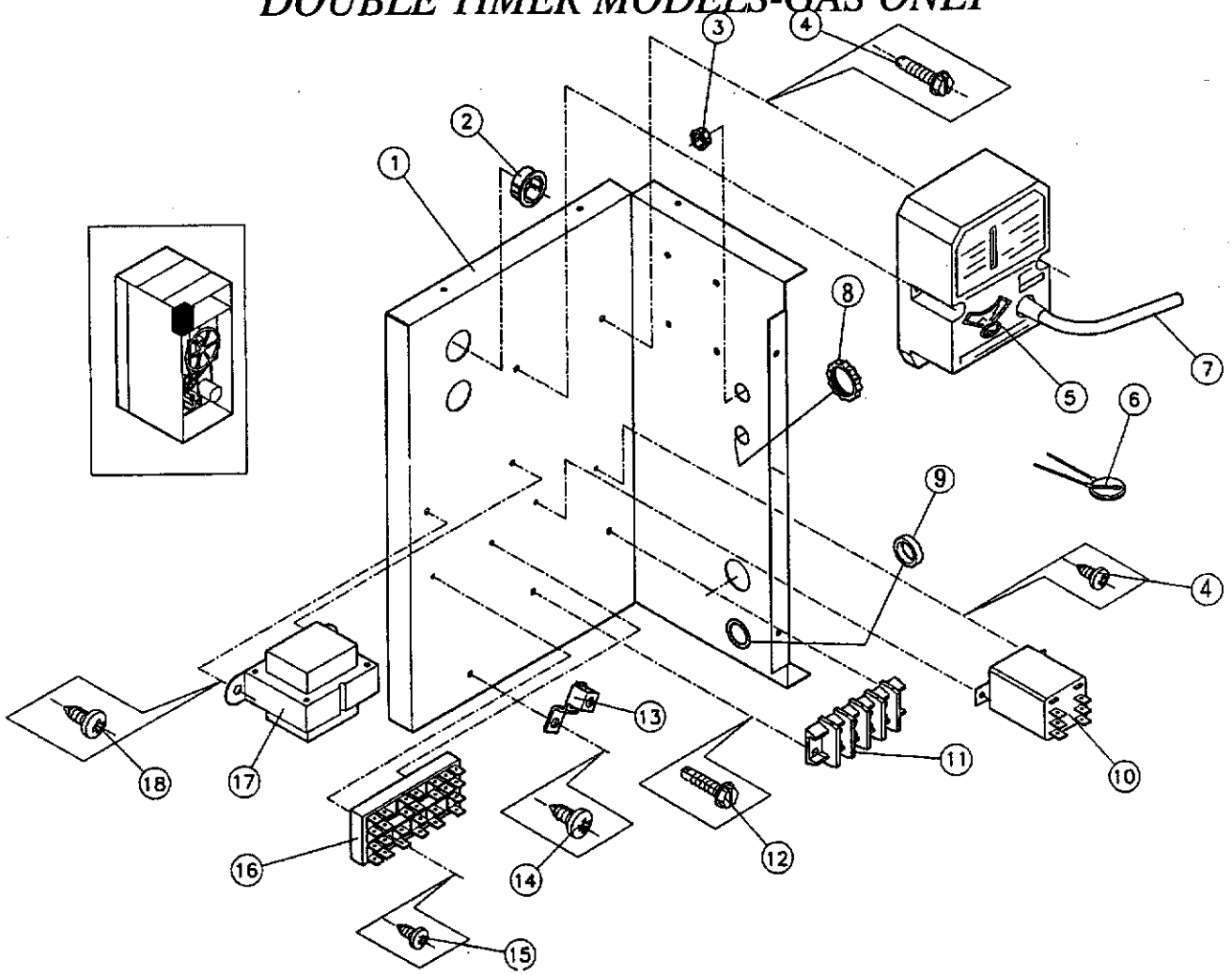
REAR CONTROL PANEL ASSEMBLY - NON-REVERSING DOUBLE TIMER MODELS-GAS ONLY



Ref. No.	Part No.	Description
	ESA-00966-0	Wire box assy, rear, gas - 115V - 2 timer
	ESA-00974-0	Wire box assy, rear, gas - 208/240V - 2 timer
1	CA-11935-0	Rear wiring box
2	SB-00868-0	Bushing, insulating 7/8"
3	SB-00867-0	Bushing, insulating 1/2"
4	TU7733	Screw self drilling 8-18 X 1/2"
5	GA-00765-0	Ignitor ram III DSI
6	EA-00651-0	Varistor/relay/motor
7	GA-00803-0	High voltage lead/ram
8	TU2490	Plug button
9	EA-00680-0	Knock-out plug
10	EA-11618-0	Motor relay- 3 pole -30amp - 24V

Ref. No.	Part No.	Description
11	EA-00467-0	Terminal block
12	TU7733	Screw self drilling 8-18 X 1/2"
13	TU7738	Ground lug
14	TU7733	Screw self drilling 8-18 X 1/2"
15	SB-00865-0	Screw self drilling 6 - 20 X 1/2
16	EA-00210-0	Terminal block
17	EA-00646-0	Transformer 24V
18	TU7733	Screw self drilling 8-18 X 1/2"

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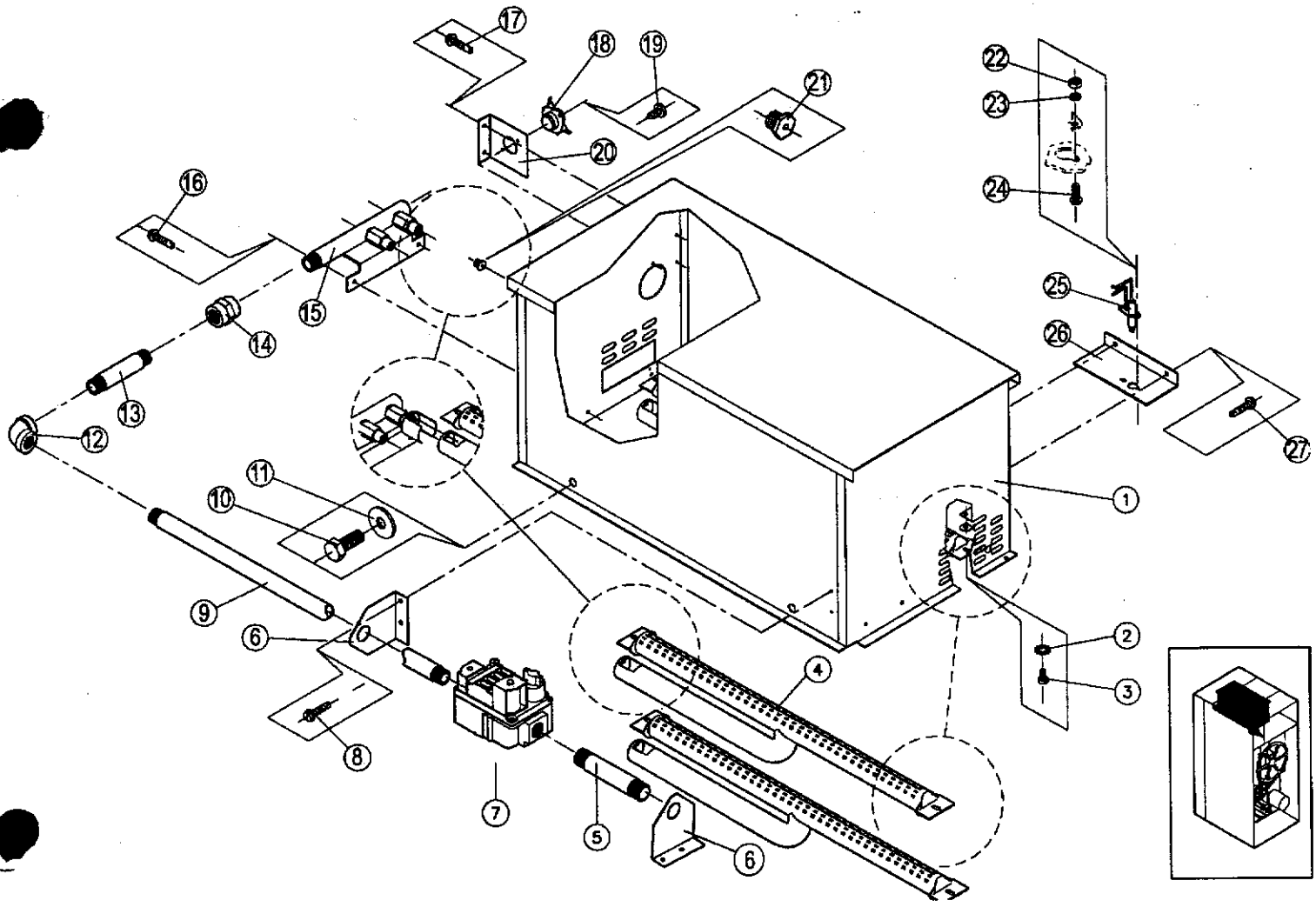
GAS HEATING UNIT



Ref. No.	Part No.	Description
	GSA-00784-0	Comp. assy. - Nat. gas
	GSA-00775-0	Comp. assy. - LP gas
1	GSA-00255-0	Housing gas burner
2	TU11613-0	Lock washer 10 external tooth
3	SB-00831-0	Screw 10-32*3/8"
4	GA-00756-0	Gas burner
5	LB20	Nipple - 1/2" X 3"
6	CA11878-0	Bracket -pipe
7	GA-00770-0	Gas valve 24V 1/2"(Nat.gas)
8	TU7733	Screw self drilling 8-18 X 1/2"
9	FG274	Gas pipe 1/2 X 30"
10	TU5439	Screw cap 5/16-18X3/4"
11	VSB130	Washer 5/16"
12	390501053	Elbow 1/2"
13	OP308	Nipple 1/2" X 4"

Ref. No.	Part No.	Description
14	OP314	Union (gas pipe)
15	GSA-00508-0	Manifold assy.
16	TU7733	Screw self drilling 8-18X1/2"
17	TU7733	Screw self drilling 8-18X1/2"
18	EA-00245-0	Thermostat HI LIMIT -330^0
19	TU7733	Screw self drilling 8-18 X 1/2"
20	CA11028-0	Bracket thermostat
21	GA-00761-0	Gas orifce (specify size)
22	TU3266	Hex nut-brass 8-32"
23	AT368	Lock washer #8
24	M262	Screw mach.truss head 8/32X3/8"
25	GA-11003-0	Gas ignition electrode
26	GA-10457-0	Bracket
27	TU7733	Screw self drilling 8-18 X 1/2"

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