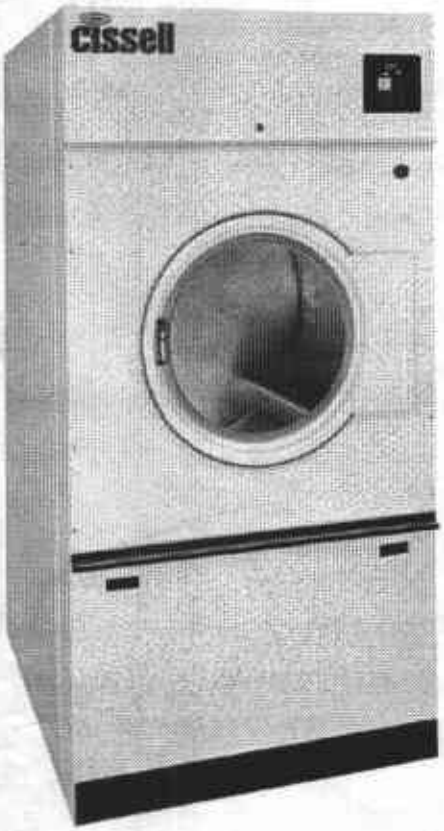
cissell

OWNER'S MANUAL

30 lb. HD LAUNDRY DRYER



Gas: Natural and LP

Steam

Electric

Technical specifications
Installation instructions
Operating instructions
Maintenance

HD30.1

Cissell Manufacturing Co.
831 S. First St. - P.O.Box 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 HD2030.1 06/00

D0627

IMPORTANT NOTICES—PLEASE READ

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

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

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

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

- WHAT TO DO IF YOU SMELL GAS

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

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

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

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

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

IDENTIFICATION NAMEPLATE

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

Contents

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

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 cleaned daily to insure proper air circulation throughout the dryer.

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

GENERAL INFORMATION

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 atmosphere. The dryer comes equipped with an inclined self-cleaning lint screen. In this system, lint accumulates on the underside of the screen until a blanket of lint falls from the screen to the bottom of the dryer cabinet. The lint should be removed daily or as required to prevent an over-accumulation.

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

DRYER "COOL-DOWN" CYCLE

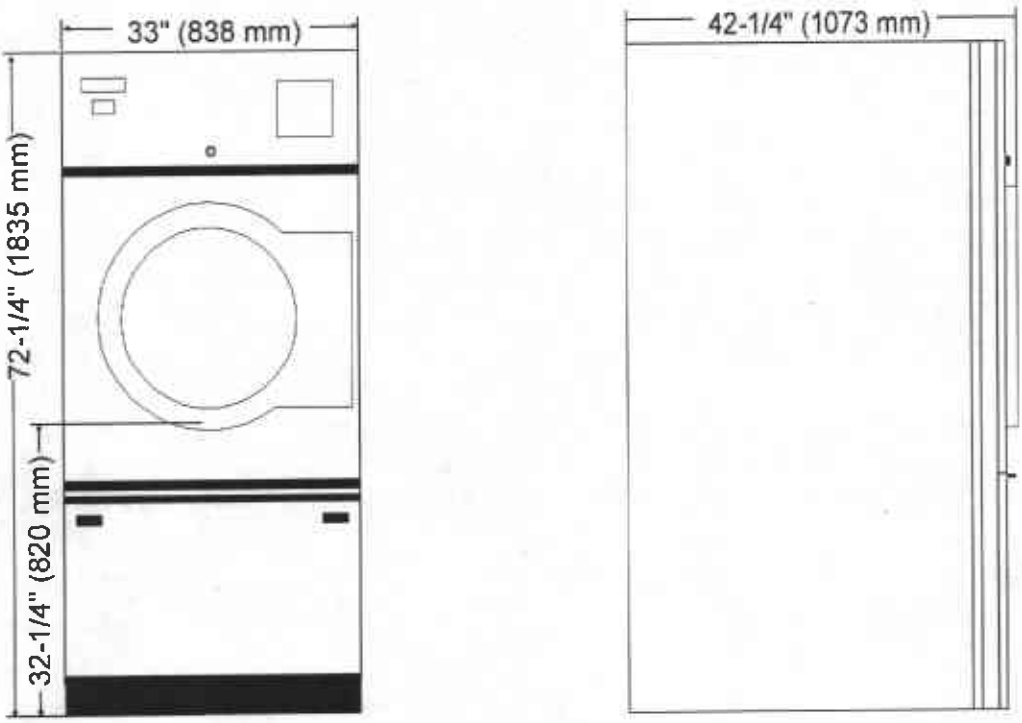
Permanent press, durable press and other modern day fabrics require the care that your laundry dryers now provide. At the end of the drying cycle, a timed "Cool-Down" control automatically takes over and continues the rotation of the fan and basket without heat until the garment load reaches a safe cool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

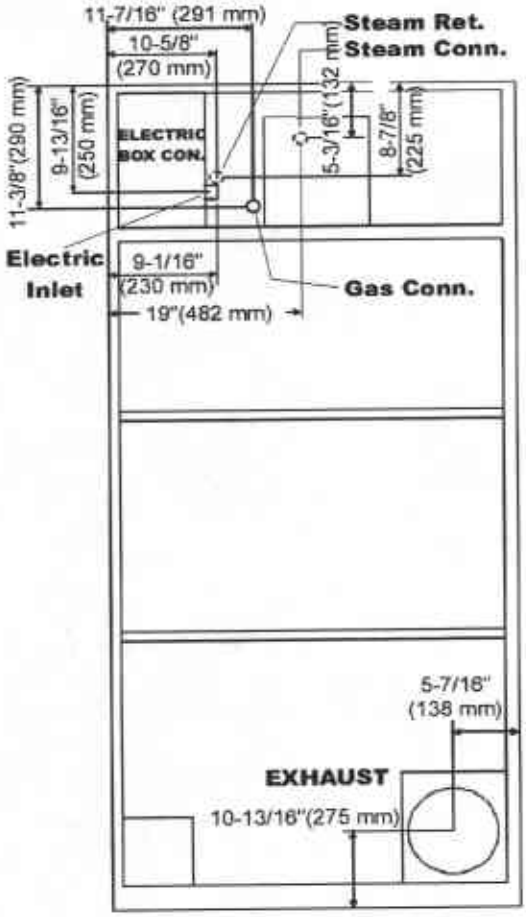
REPLACEMENT PARTS

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.

HD30.1 lb. Dryer Dimensions - Standard Gas, Steam and Electric Heated

Specifications	U.S. Measure	Metric Measure	
Capacity (Dry Linen)	30 lbs.	13.6 kg	
Basket			
Diameter	30 inches	840 mm	
Depth	29 inches	815 mm	
Volume	11.9 ft^3	335 liter	
Cabinet			
Height	72 inches	1828 mm	
Width	33 inches	838 mm	
Depth	43-5/16 inches	1100 mm	
Door Opening			
Diameter	22-5/8 inches	575 mm	
Loading height	31-1/2 inches	800 mm	
Temperature			
Minimum	100° F	38° C	
Maximum	185° F	85° C	
Motor			
Non-reversing	1/2 H.P.	0.37 kW	
Reversing - Drum	1/2 H.P.	0.37 kW	
Fan	1/3 H.P.	0.25 kW	
Exhaust			
Flow Rate	625 cfm	1063 m^3/h	
Diameter	8 inches	203 mm	
Electric Conn. - Electric Dryers		Non-Reversing	Reversing
208 V	60 - 3 PH	67 A	68 A
220/240 V	50/60 - 3 PH	55/60 A	55/60 A
380/415 V	50 - 3 PH	34/37 A	33/36 A
480 V	60 - 3 PH	30 A	31 A
Electric Conn. - Steam, Gas Dryers		Non-Reversing	Reversing
115/208-240 V	50/60 - 1 PH	9.4 A	4.8 A
380/415 V	50/60 - 3 PH	1.2 A	1.1 A
480 V	50/60 - 3 PH	0.9 A	0.9 A
Power			
Electric	22.5 kW	22.5 kW	
Gas	110,000 Btu/h	27,720 kcal/h	
Steam	4.5 B.H.P	38,000 kcal/h	
Steam connection			
Inlet	3/4"	DN20	
Outlet	1/2"	DN15	
Gas Connection			
Gas Connection	1/2"	DN15	
Gas Pressure	5" - 12"	12-30 mb	
Shipping Dimensions			
(H xW x D)	78 X 36 X 48 inches	1981 X 914 X 1219 mm	
Weight			
Net	507 lbs.	230 kg	
Gross	542 lbs.	246 kg	


33" (838 mm)
72-1/4" (1835 mm)
32-1/4" (820 mm)
42-1/4" (1073 mm)

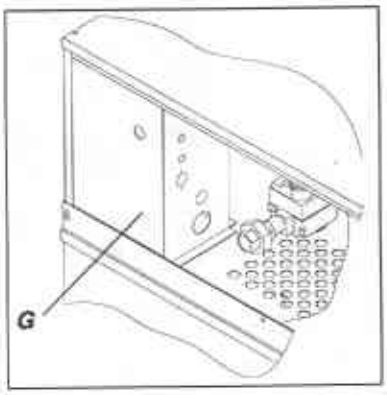

11-7/16" (291 mm)
10-5/8"
(270 mm)
Steam Ret.
Steam Conn.
11-3/8"(290 mm)
9-13/16"
(250 mm)
ELECTRIC
BOX CON.
5-3/16"(132 mm)
8-7/8"
(225 mm)
Electric
Inlet
9-1/16"
(230 mm)
19"(482 mm)
Gas Conn.
5-7/16"
(138 mm)
EXHAUST
10-13/16"(275 mm)

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, ANSI/NFPA 70 or the Canadian Electrical Code, CA C22.1.***

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.)

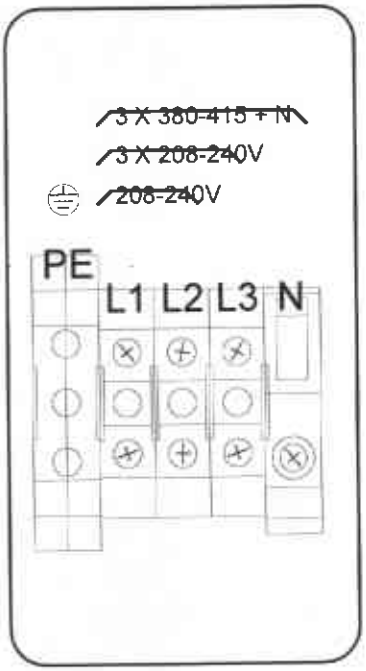
All panels must be in position before operation of dryer.



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

The connection cable needs to be brought in through the opening on 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 ***(Ll)*** and ***(L2)*** should be connected to the 2 left blocks and the ***yellow/green grounding wire (PE)*** should be connected to the grounding block.

208-240 and 480 V - 3 ph

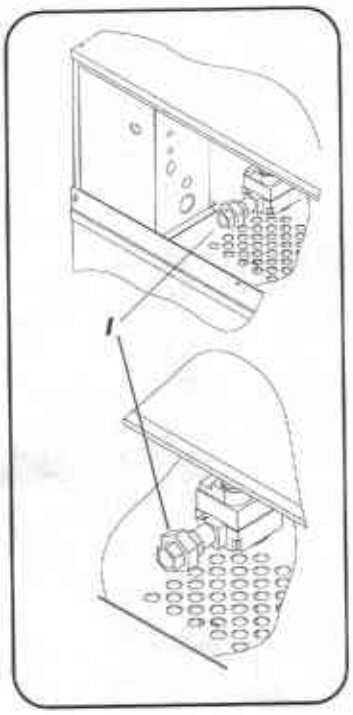
The ***3 mains wires (L1), (L2) and (L3)*** should be connected to the 3 left blocks and the ***yellow/green grounding wire (PE)*** should be connected to the grounding block.

380-415V - 3 ph

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

«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»

Gas connection



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

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

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

The use ***of too small gas pipes*** can result in unsufficient gas supply, which can lead to a bad heating-up and a 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 beturned on (clockwise).

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 or the CAN/CGA-B149, Installation Codes.***

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

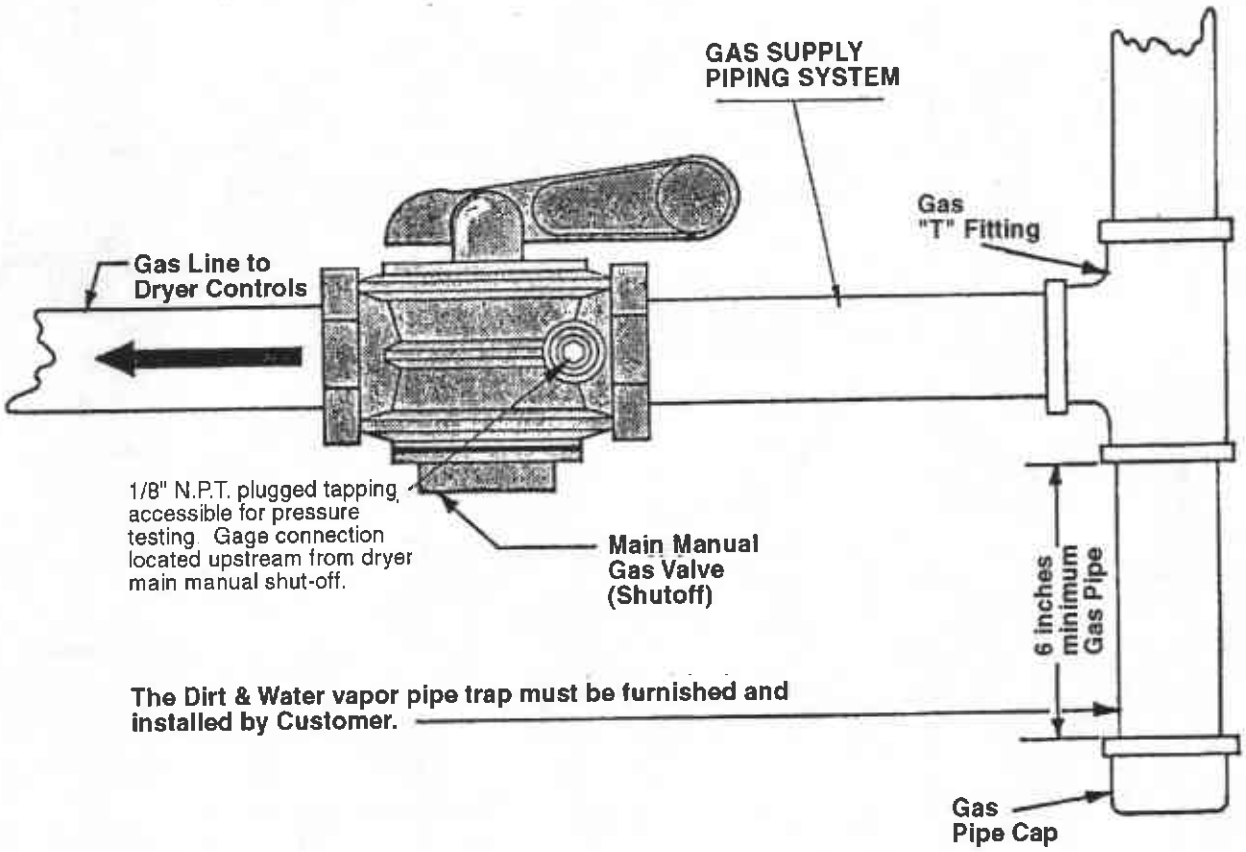
3. Check the altitude of dryer.

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

5. Natural gas only—check the gas pressure inlet supply to dryer, 11" water column (27.4 mbar) maximum. Manifold pressure—3.5" water column (8.8 mbar) pressure .

6. L.P. gas only—manifold pressure—13" water column (32.4 mbar) maximum.

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



The dryer and it's individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psi (.04 bar).

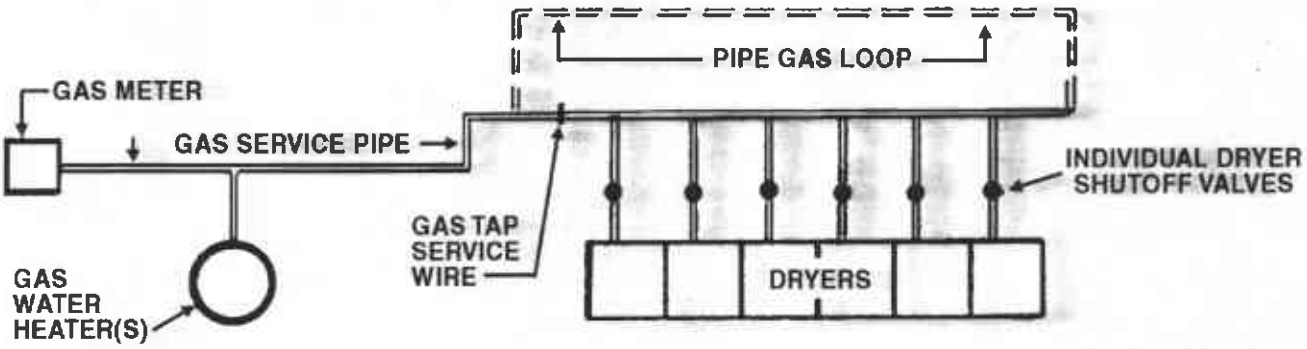
The dryer must be isolated from the gas supply piping system by closing it's individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psi (.04 bar).

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 the 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" (17.5 MM) W.C. PRESSURE In figuring total length of pipe, make allowance for tees and elbows.					
		(25 ft.) 7,62 m	(50 ft.) 15,24 m	(75 ft.) 22,86 m	(100 ft.) 30,48 m	(125 ft.) 38,1 m	(150 ft.) 45,72 m
60,000	15000	3/4	3/4	3/4	3/4	3/4	3/4
80,000	20000	3/4	3/4	3/4	1	1	1
100,000	25200	3/4	3/4	1	1	1	1
120,000	30200	3/4	1	1	1	1	1
140,000	35200	3/4	1	1	1	1	1 1/4
160,000	40300	3/4	1	1	1 1/4	1 1/4	1 1/4
180,000	45300	1	1	1	1 1/4	1 1/4	1 1/4
200,000	50400	1	1	1 1/4	1 1/4	1 1/4	1 1/2
300,000	75600	1	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2
400,000	100800	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2	2
500,000	126000	1 1/4	1 1/2	1 1/2	2	2	2
600,000	151200	1 1/2	1 1/2	2	2	2	2
700,000	176400	1 1/2	2	2	2	2	2 1/2
800,000	202000	1 1/2	2	2	2	2 1/2	2 1/2
900,000	230000	2	2	2	2 1/2	2 1/2	2 1/2
1,000,000	250000	2	2	2	2 1/2	2 1/2	2 1/2
1,100,000	270000	2	2	2 1/2	2 1/2	2 1/2	2 1/2
1,200,000	300000	2	2	2 1/2	2 1/2	2 1/2	2 1/2
1,300,000	330000	2	2 1/2	2 1/2	2 1/2	2 1/2	3
1,400,000	350000	2	2 1/2	2 1/2	2 1/2	3	3
1,500,000	380000	2	2 1/2	2 1/2	2 1/2	3	3
1,600,000	400000	2	2 1/2	2 1/2	3	3	3
1,700,000	430000	2	2 1/2	2 1/2	3	3	3
1,800,000	450000	2 1/2	2 1/2	3	3	3	3
1,900,000	480000	2 1/2	2 1/2	3	3	3	3
2,000,000	504000	2 1/2	2 1/2	3	3	3	3 1/2
2,200,000	550000	2 1/2	3	3	3	3 1/2	3 1/2
2,400,000	605000	2 1/2	3	3	3	3 1/2	3 1/2
2,600,000	650000	2 1/2	3	3	3 1/2	3 1/2	3 1/2
2,800,000	705000	2 1/2	3	3	3 1/2	3 1/2	3 1/2
3,000,000	750000	2 1/2	3	3 1/2	3 1/2	3 1/2	4
3,200,000	806000	3	3	3 1/2	3 1/2	3 1/2	4
3,400,000	850000	3	3 1/2	3 1/2	3 1/2	4	4
3,600,000	907000	3	3 1/2	3 1/2	3 1/2	4	4
3,800,000	960000	3	3 1/2	3 1/2	4	4	4
4,000,000	1000000	3	3 1/2	3 1/2	4	4	4

STEAM PIPING INSTALLATION INSTRUCTIONS

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

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

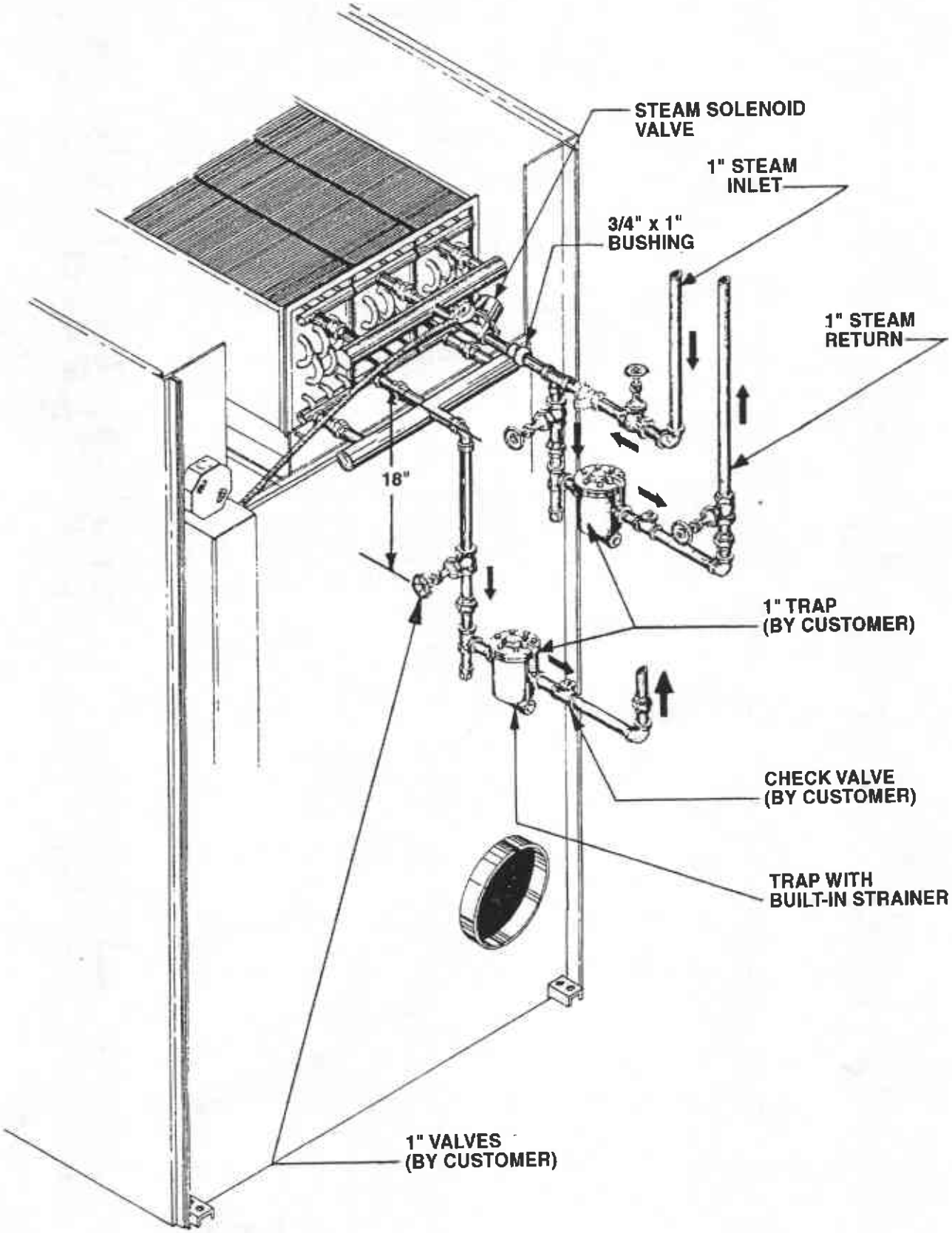
3. Whenever possible, horizontal runs of steam lines must drain, by gravity, to respective steam header. Water pockets, or an imporperly drained steam header will provide wet steam, causing improper operation of dryer. If pockets or improper drainage cannot be eliminated, install a by-pass trap to drain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

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

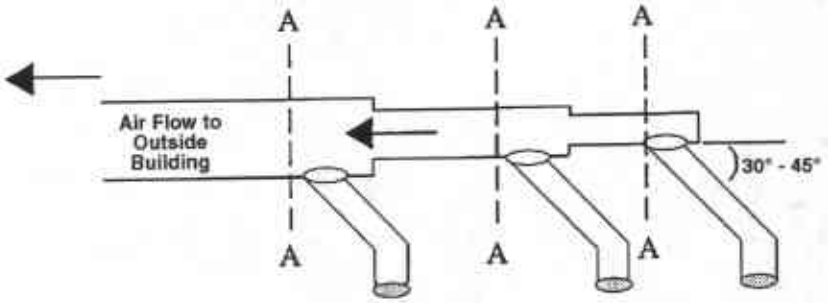
5. Before connecting trap and check valve to dryer, open globe valve in steam supply line and allow steam to flow through dryer to flush out any dirt and scale from dryer. This will assure proper operation of trap when connected.

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

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


STEAM SOLENOID VALVE
1" STEAM INLET
3/4" x 1" BUSHING
1" STEAM RETURN
18"
1" TRAP (BY CUSTOMER)
CHECK VALVE (BY CUSTOMER)
TRAP WITH BUILT-IN STRAINER
1" VALVES (BY CUSTOMER)

For Exhaust Duct less than 14 feet (5 m) and 2 elbows equivalent and less than 0.3 inches (.8 mbar)static pressure.

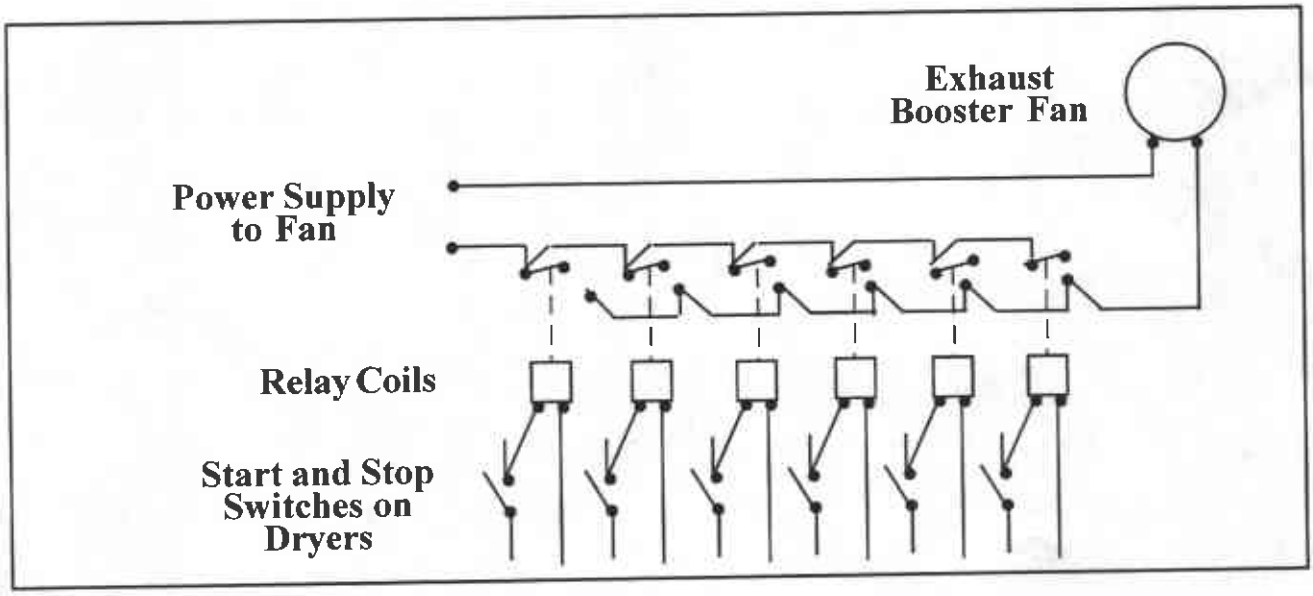


DRYER EXHAUSTS

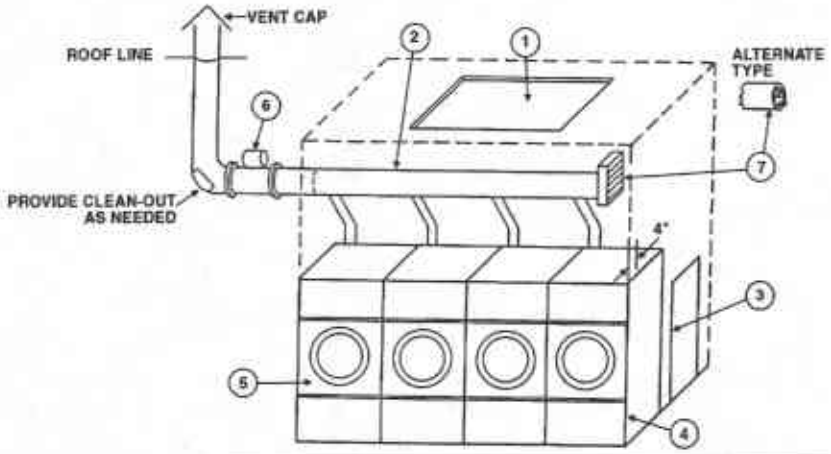
Area of section "A-A" must be equal to the sum of dryer exhaust pipes entering multiple exhaust pipe. (*See chart below.*)

HD30

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	35	41	46	51	56	58	61	66	68	71	73	76	78	81	84	86	89	91	94	97	99	100



Dryer Installation with Multiple Exhaust



DRYER INSTALLATION WITH MULTIPLE EXHAUST

For Exhaust Duct more than 14 feet (5 m) and 2 elbows equivalent and more than 0.3 inches (.8 mbar) static pressure. (See illustration on page 21.)

1. Make-up air from outside building may enter enclosure from top or side walls. ***(See Dryer Make-Up Air Chart on page 22)***
2. Use constant diameter duct with area equal to the sum of dryer duct areas. **EXAMPLE:** Six 8 inch (204 mm) diameter ducts = one (1) 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/h (6.3 kcal/h) for each cubic foot per minute (cfm) used.
4. Zero inches clearance to combustible material allowed on sides and at points within 4 inches (102 mm) of front on top.
5. Heat loss into laundry room from dryer fronts *only* is about 60 Btu/h per square foot (15 kcal/h per 0.1m²).
6. Flange mounted, belt driven tube-axial fan. Fan must run when one or more dryers are running. *See suggested Automatic Electrical Control Wiring Diagram on previous page.* Must meet local electrical codes. Fan air flow (cfm) (m³/min.) is equal to sum of dryer air flows, but static pressure (SP) is dependent on length of pipe and number of elbows.
7. Barometric bypass damper—adjust to *closed flutter position* with all dryers and exhaust fan running. Must be located within enclosure.

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

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

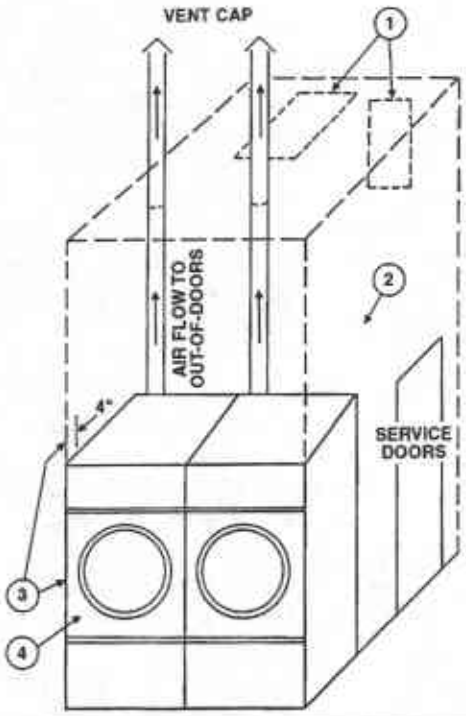
Suggested Minimum Dryer Make-up Air Requirements

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

Notes:

1) The Model C 30 ST has 2 pockets per dryer, each pocket has the above listed characteristics; each pocket is exhausted separately with a 6" (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.
4) E/S indicates an Energy Saving Model.

Dryer Installation With Separate Exhaust (Preferred)



DRYER INSTALLATION WITH SEPARATE EXHAUST (PREFERRED)

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

NEVER exhaust the dryer into a chimney.

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

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

1. Make-up air opening from outside the building may enter the enclosure from the top or side walls. ***(See Dryer Make-Up Air Chart on page 22)***
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) (.03m³/min.) used.
3. The installation clearance from all combustible material is 0" ceiling clearance for the first 4" (102 mm) from the front of the dryer. After the first 4" (102 mm), the ceiling clearance required is 6" (153 mm). The rear clearance required is 0", and the side clearance is 0" .
4. Heat loss into laundry room from dryer front panels is about 60 Btu/h per square foot (15 kcal/h per 0.1m²).

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 (.8 mbar) 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 (5 mm) 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 water column (.8 mbar) 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. See *Suggested Minimum Dryer Make-up Air Requirements* on page 20.
2. Use barometric shutters in the inlet air opening to control air when dryers are not running.

OTHER RECOMMENDATIONS

Other Recommendations
To assure compliance, consult local building code requirements.

TROUBLESHOOTING

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

RULES FOR SAFE OPERATION OF DRYER

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

ENERGY-SAVING TIPS

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

DIRECT SPARK IGNITION OPERATION

NOTE: All dryers manufactured 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 or 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.

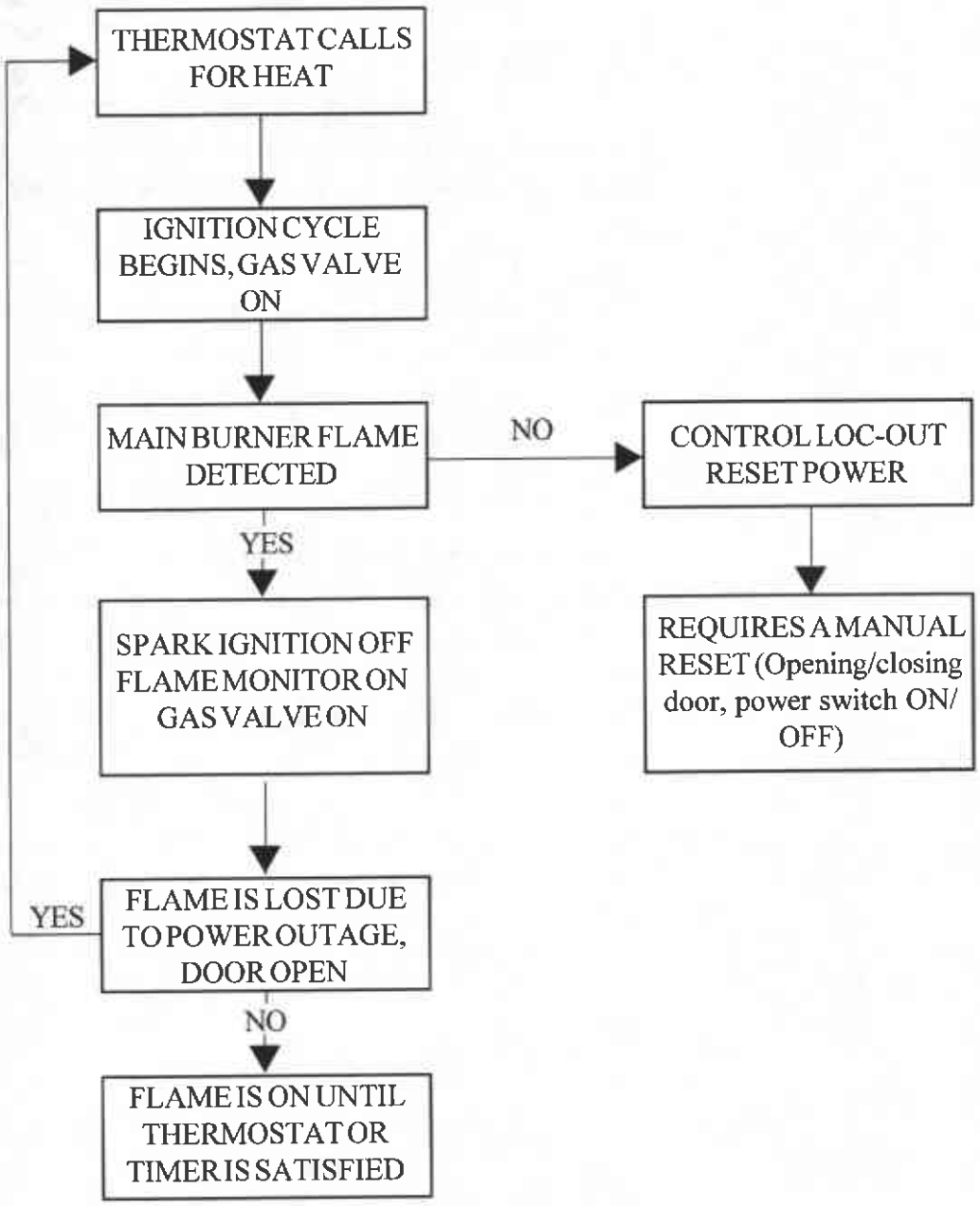
6. The dryer will continue to run in a cool-down mode without heat. This process will cool the load to the touch and help to eliminate wrinkling.

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 tumbling state until clothes are ready to be folded or pressed.

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)



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.

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

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

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

GENERAL MAINTENANCE (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.

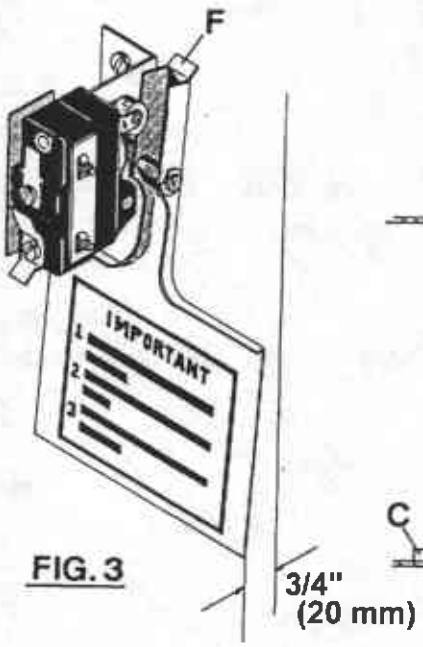


FIG. 3

3/4"
(20 mm)

FIG. 1

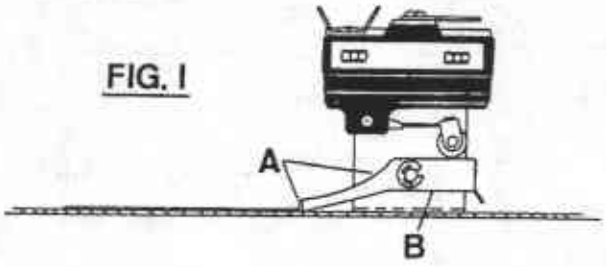
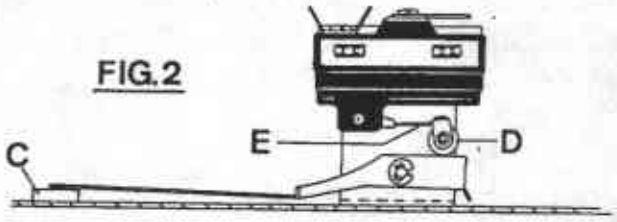


FIG.2



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" x 5/8" (10 mm x 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".

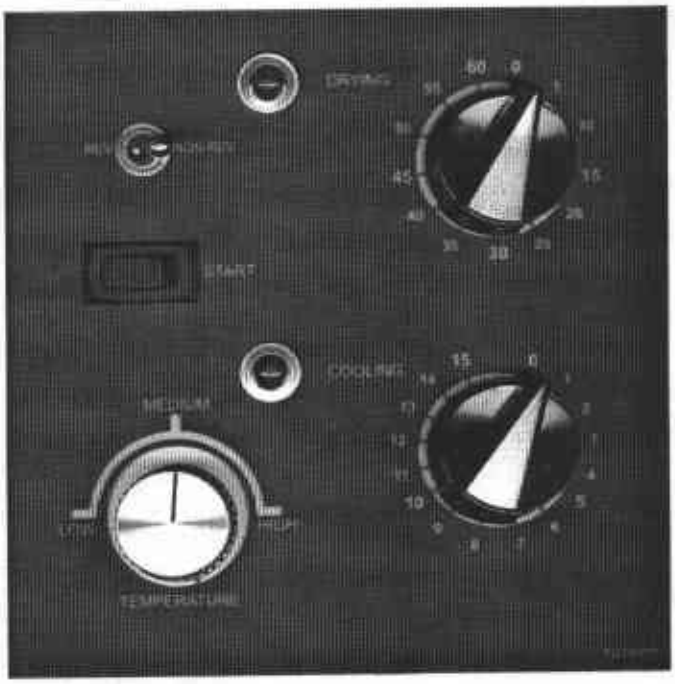
4. Maximum opening of air switch must be no greater than 3/4" (20 mm) (figure 3). Bend tab "F" in or out to maintain this dimension.

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.

OPERATING INSTRUCTION - DOUBLE TIMER

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 15 minute cooling (air) to the desired time.

4. Select the temperature desired: Low, Medium, or High.
   HIGH HEAT
   175° F (80° C) exhaust temperature, heavy fabrics and hard to dry, such as cottons, towels, denim, etc..
   ***PERMANENT PRESS* (medium)**
   155° F (69° C) exhaust temperature, synthetic blends, including a mixed wash load.
   LOW HEAT
   135° F (58° C) 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

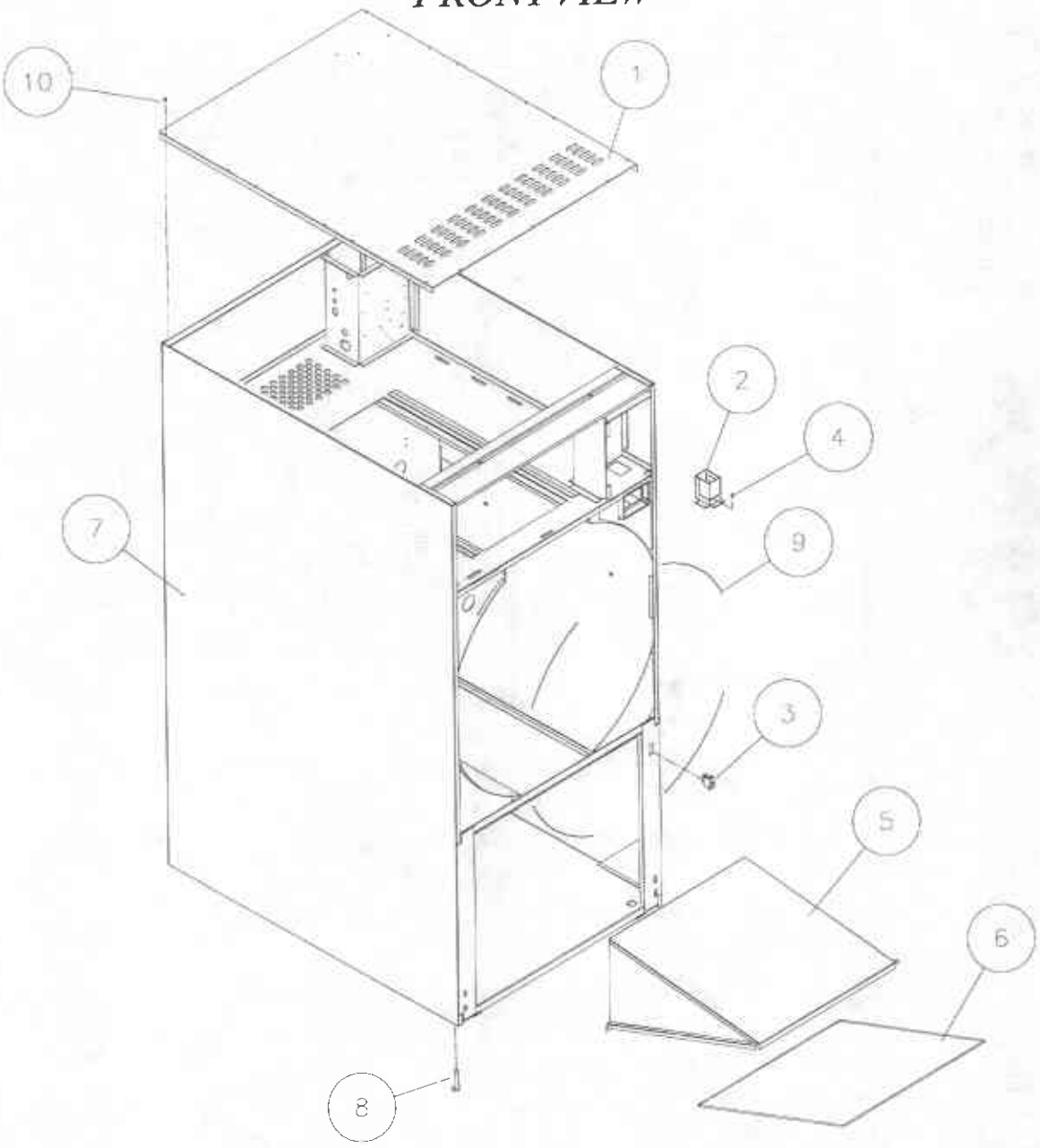
6. At the end of the drying cycle, the cool down cycle will automatically count down until all time runs out. The cool down light will stay on until the end of the cycle.

IMPORTANT

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

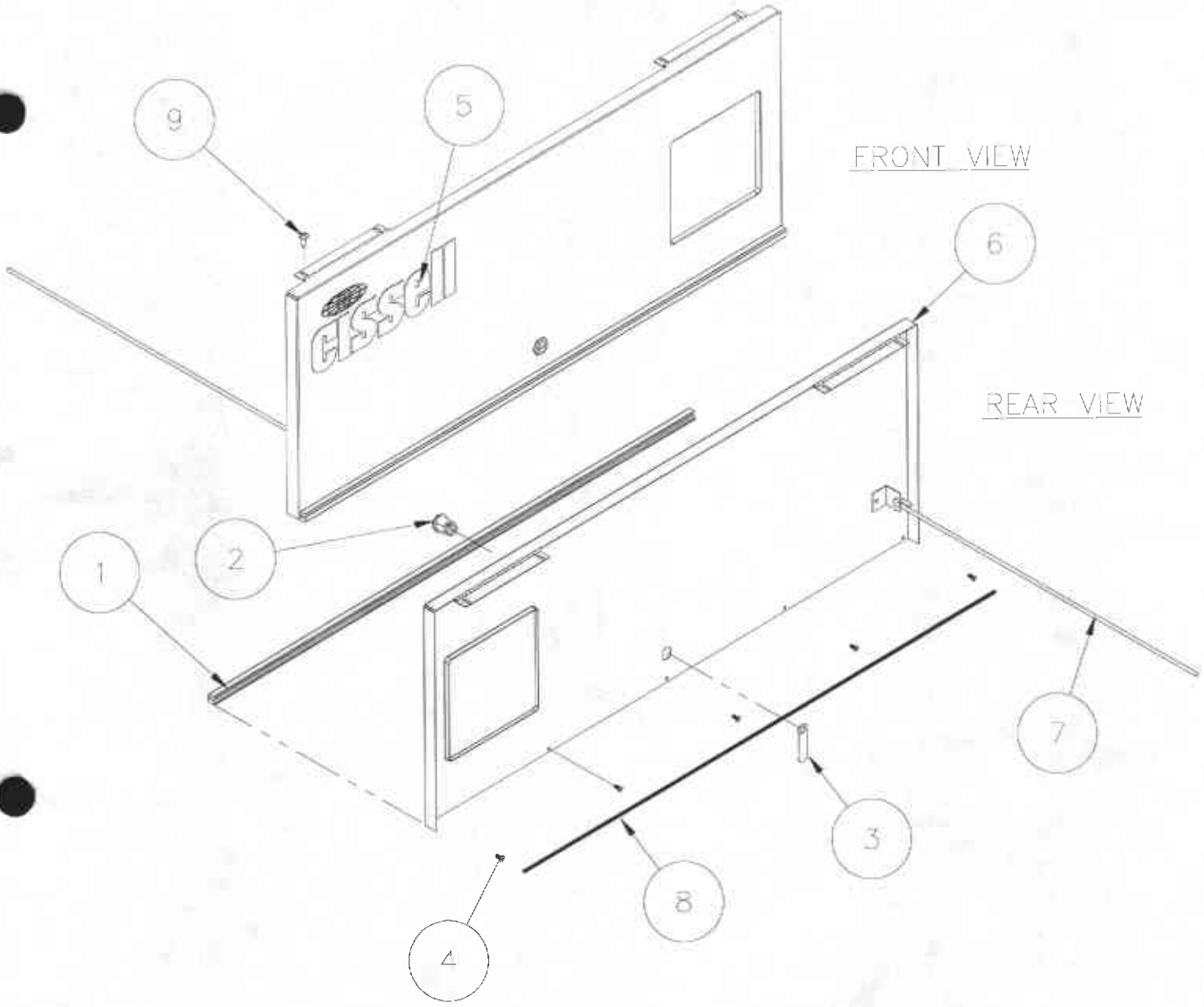
8. To shut the dryer off at any time during the cycles by opening the door.

FRONT VIEW



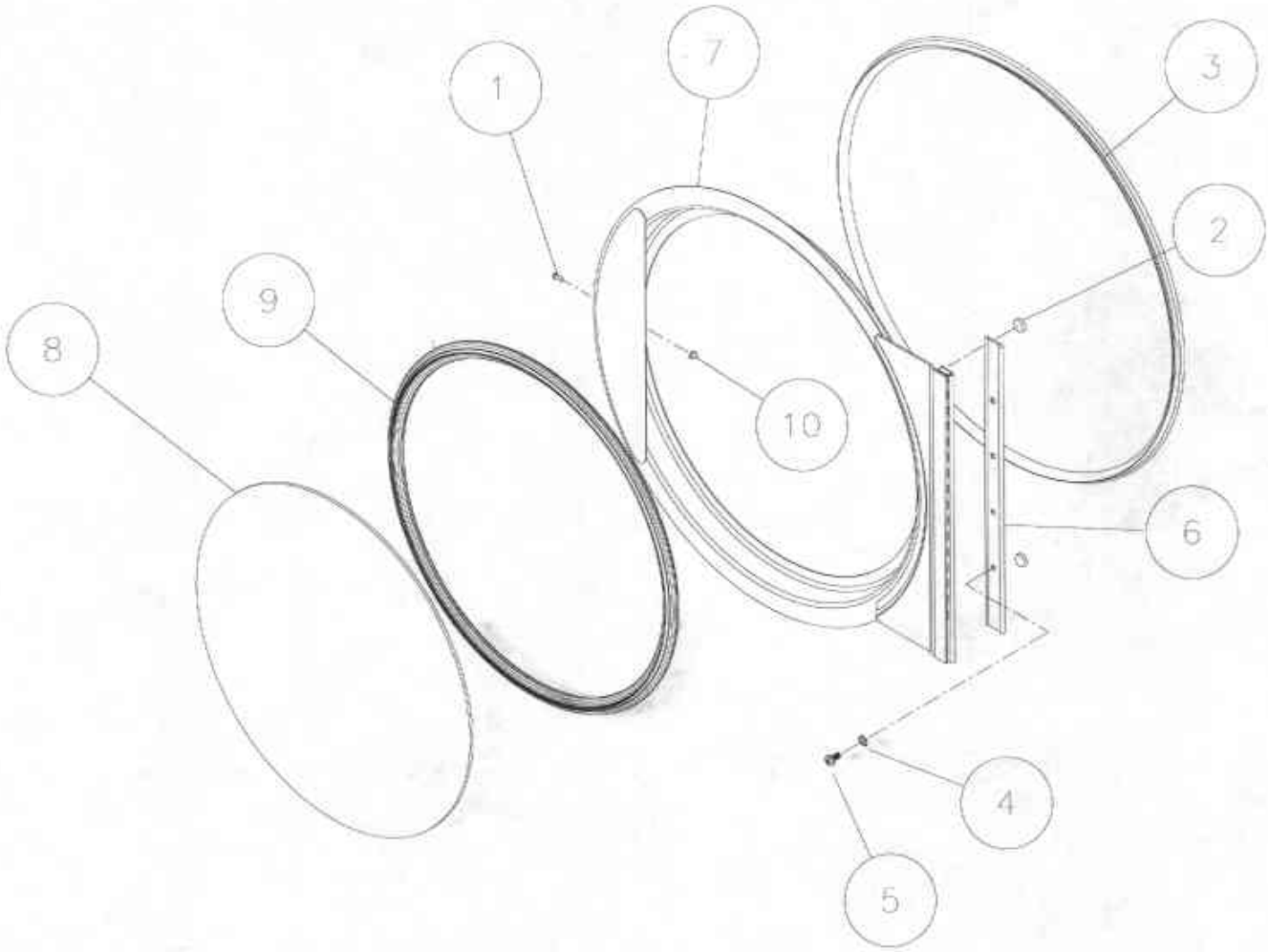
Ref. No.	Part No.	Description
1	TU15228	Top
2	CSA-01435-0	Coin chute
	TUD0375	Coin Chute (Mechanical Coin only)
3	EA-00650-0	Microswitch door
4	SC404	Pop rivet
5	CSA-01528-0	Lint trap w/a
6	CA-13033-0	Lint Screen
	CA-10567-0	Lint screen frame
7	TU15200WHT	Jacket (white)
8	TU3211	Leveling bolt
9	TU5876	Gasket set
10	TU7733	Screw self drilling 8-18 X 1/2"

ACCESS DOOR ASSEMBLY



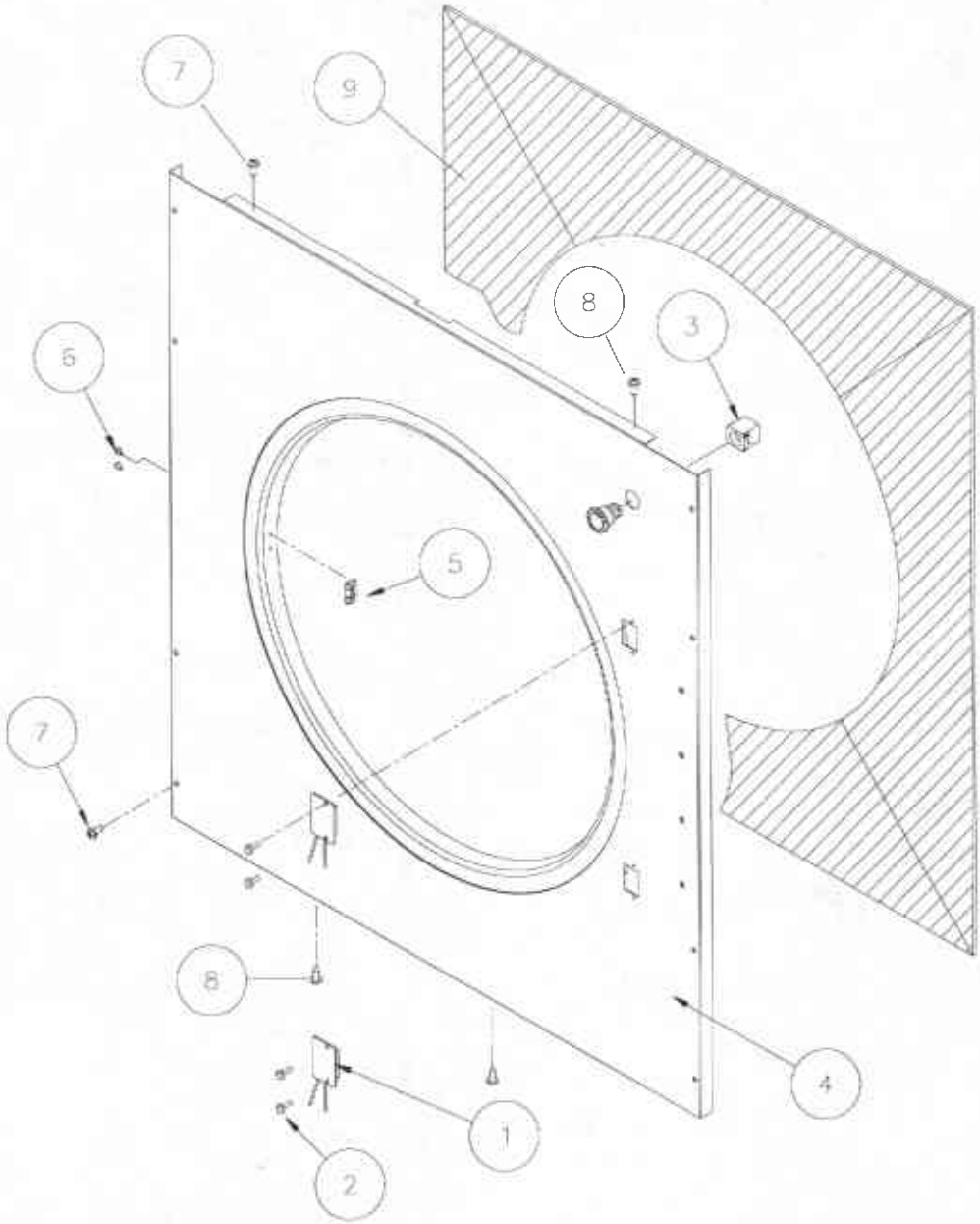
Ref. No.	Part No.	Description
	TU14700 - Access Door Complete	
1	CA-00856-0	Trim - Control door
2	LA-00121-0	Lock - Control door
3	LA-11941-0	Cam lock-Control door
4	SB-00951-0	Screw -Phillips #8 X 7/16 flat hd.
5	TU14957	Logo
6	TU14699WHT	Panel - Welded asm.
7	TU5729	Support arm.
8	CA-13098-0	Door gasket
9	TU7733	Screw, #8-18 self drilling

DOOR ASSEMBLY



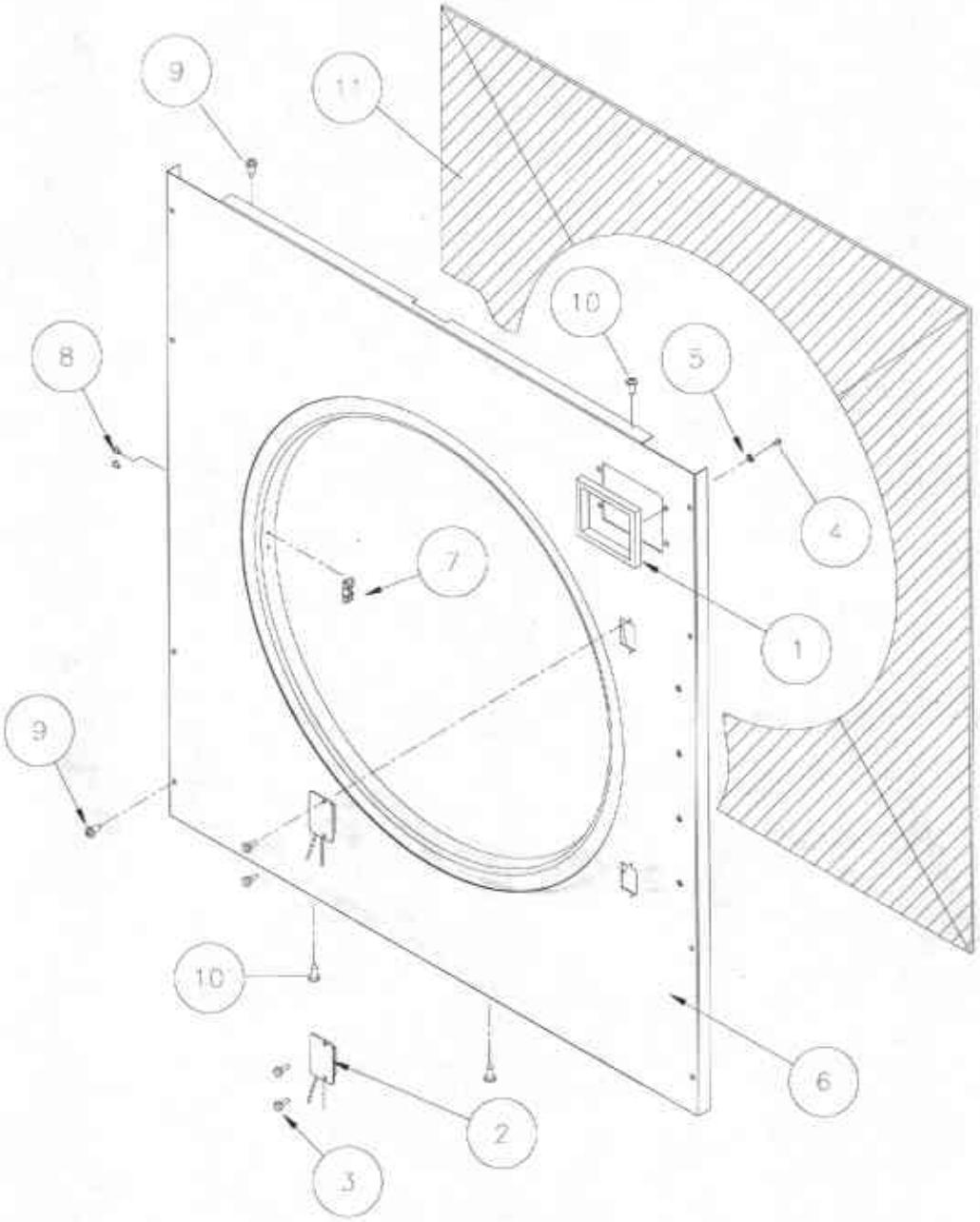
Ref. No.	Part No.	Description
	TU15110	Complete door assy
1	CA-13218	Catch pin
2	MD-00337-0	Magnet - read switch
3	MD-00360-0	Gasket - door rim gasket
4	SB-00852-0	Washer 1/4" external starluck
5	SB-00921-0	Screw 1/4"-20 round head
6	TU15073	Door hinge spacer
7	TU15076	Door rim w/a
8	TU15107	Door glass
9	TU15108	Door glass gasket
10	TU4840	#10-32 Crown nut

FRONT PANEL ASSEMBLY - OPL



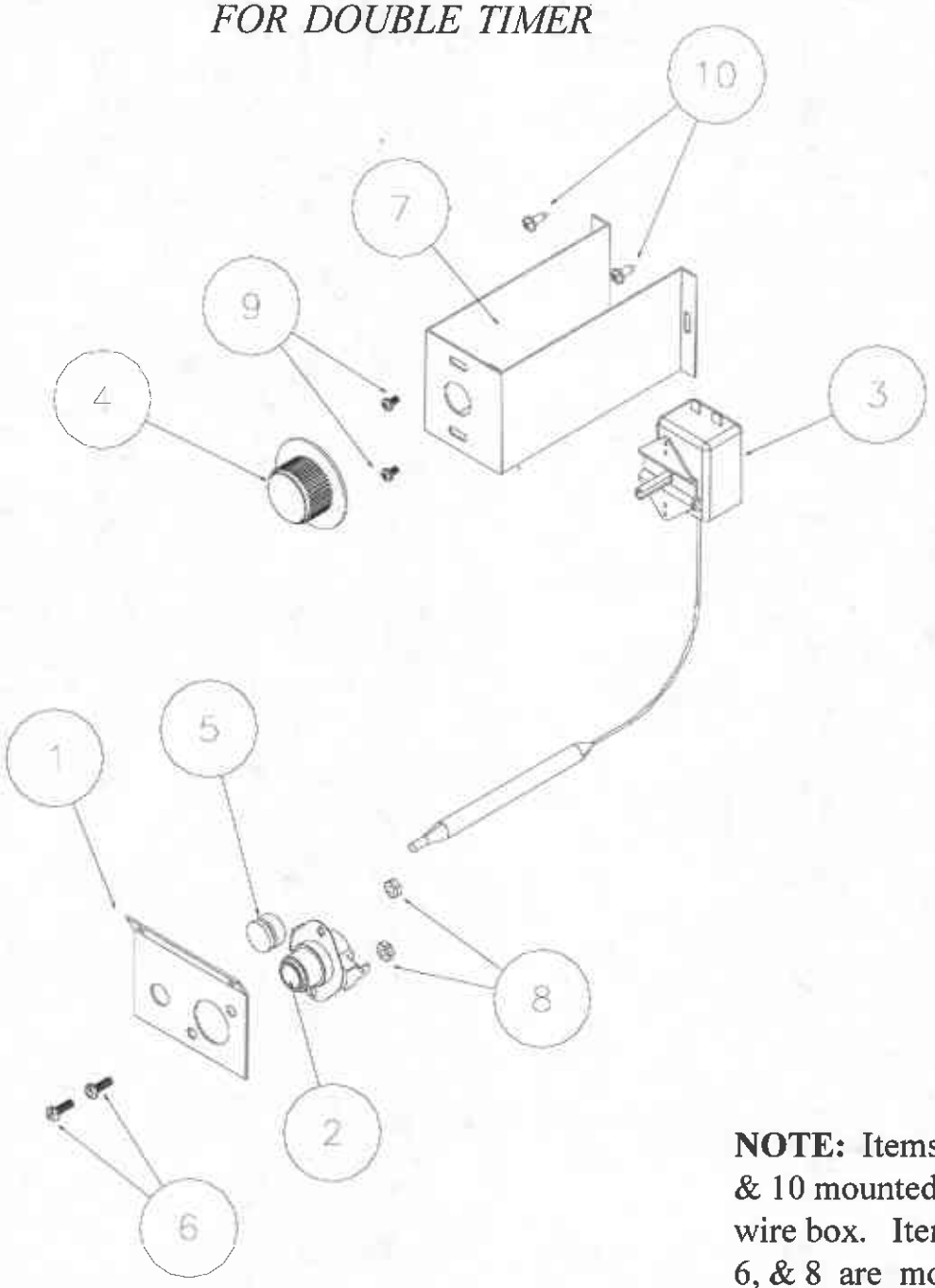
Ref. No.	Part No.	Description
	TU14546WHT - Front panel assembly complete	
1	ESA-00862-0	Reed switch
2	SB-00975-0	#6-32 Screw
3	TU14435	Emergency stop
4	TU14544WHT	Front panel W/A - OPL
5	TU2876	Door catch
6	TU3213	Pop rivet
7	SB-00915-0	Screw, #10-16 self drilling
8	SB-00836-0	#10 Pancake screw
9	TU14992	Insulation

FRONT PANEL ASSEMBLY - COIN



Ref. No.	Part No.	Description
	CSA-01572WH	Front panel assembly complete
1	CA-00699-0	Bezel - Coin box
2	ESA-00862-0	Reed switch
3	SB-00975-0	#6-32 Screw
4	SB-00924-0	4-40 x 3/8 Screw
5	SB-00938-0	#4 Ext. tooth lockwasher
6	CSA-01564WH	Front panel W/A - Coin
7	TU2876	Door catch
8	TU3213	Pop rivet
9	SB-00915-0	#10-16 Self drilling screw
10	SB-00836-0	#10 Pancake screw
11	TU14992	Insulation

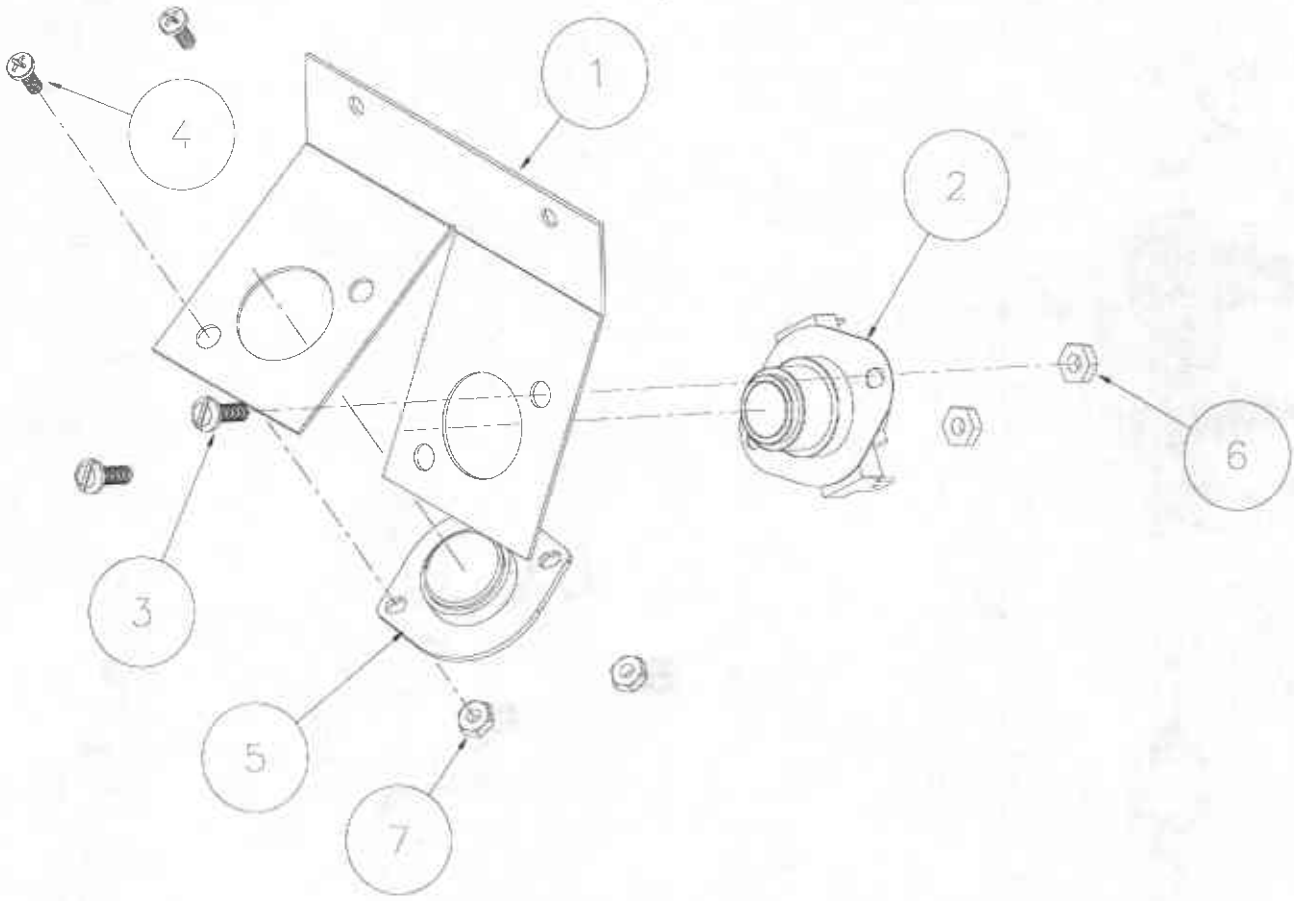
THERMOSTAT ASSEMBLY FOR DOUBLE TIMER



NOTE: Items 3, 4, 7, 9, & 10 mounted in front wire box. Items 1, 2, 5, 6, & 8 are mounted under the basket

Ref. No.	Part No.	Description
1	CA-13214-0	Plate
2	EA-00594-0	Thermostat - HI-Limit
3	EA-00606-0	Thermostat
4	EA-00607-0	Thermostat knob
5	EA-00608 - 0	Grommet / rubber
6	SB-00828-0	Screw 8-32 X 1/2"
7	TU15010	Thermostat bracket
8	TU3266	Nut-brass 8-32
9	TU3624	Screw 6 - 32 X 1/4"
10	TU7733	Screw - self drilling 8 - 18 X 1/2"

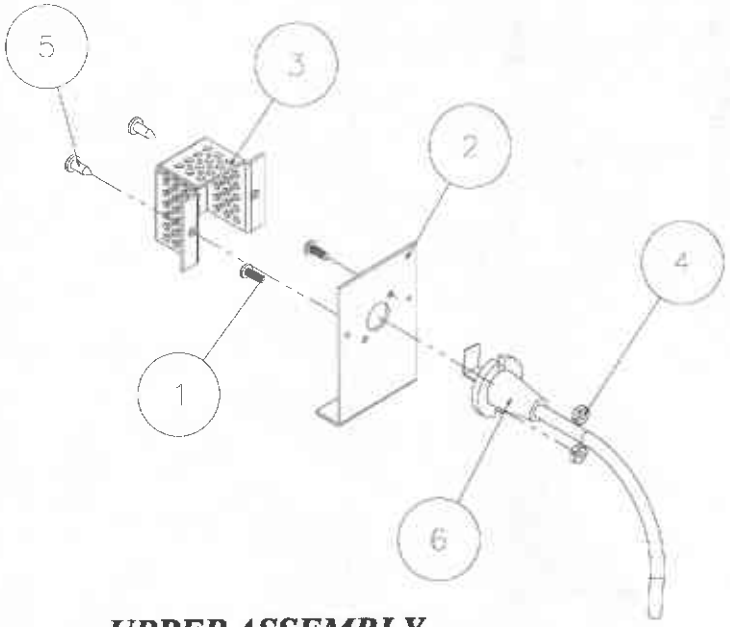
THERMOSTAT ASSEMBLY
FOR DMP COIN & OPL



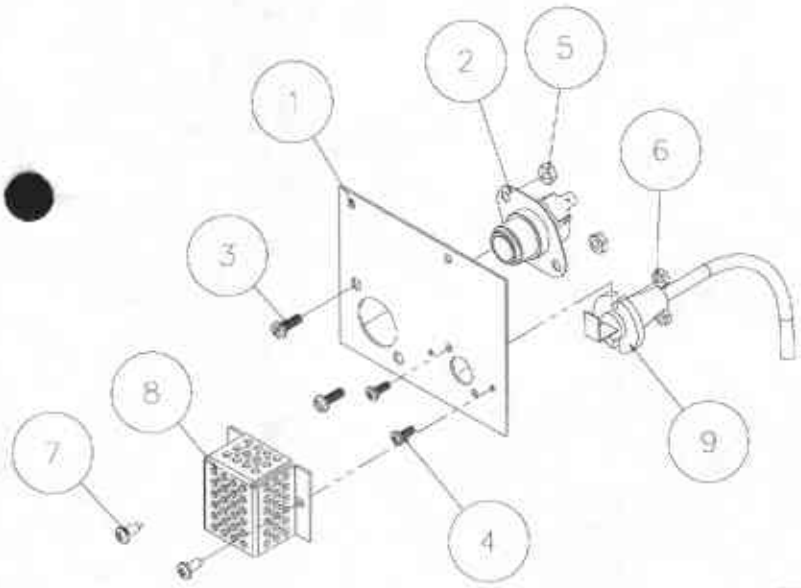
Ref. No.	Part No.	Description
ESA-00961-0 - Complete Assmebly		
1	CA-13172	Mtg. bracket
2	EA-00594	Switch
3	SB-00828	#8-32x1/2 Screw
4	SB-00952	#6-32x3/8 Screw
5	TU11991	Thermistor
6	TU3266	#8-32 Hex nut
7	TU3400	#6-32 Hex nut

PROHC SENSOR ASSEMBLY - UPPER and LOWER

Ref. No.	Part No.	Description
	TU14724	PROHC Sensor assembly (upper)
1	SB-00952-0	Screw, #6-32x 3/8" long
2	TU14693	Mounting plate upper probe
3	TU14694	Cover plate, probe
4	TU3400	Nut, #6-32
5	TU7733	Screw, self drill #8-18x 1/2" long
6	254/00060/00	Humidity sensor



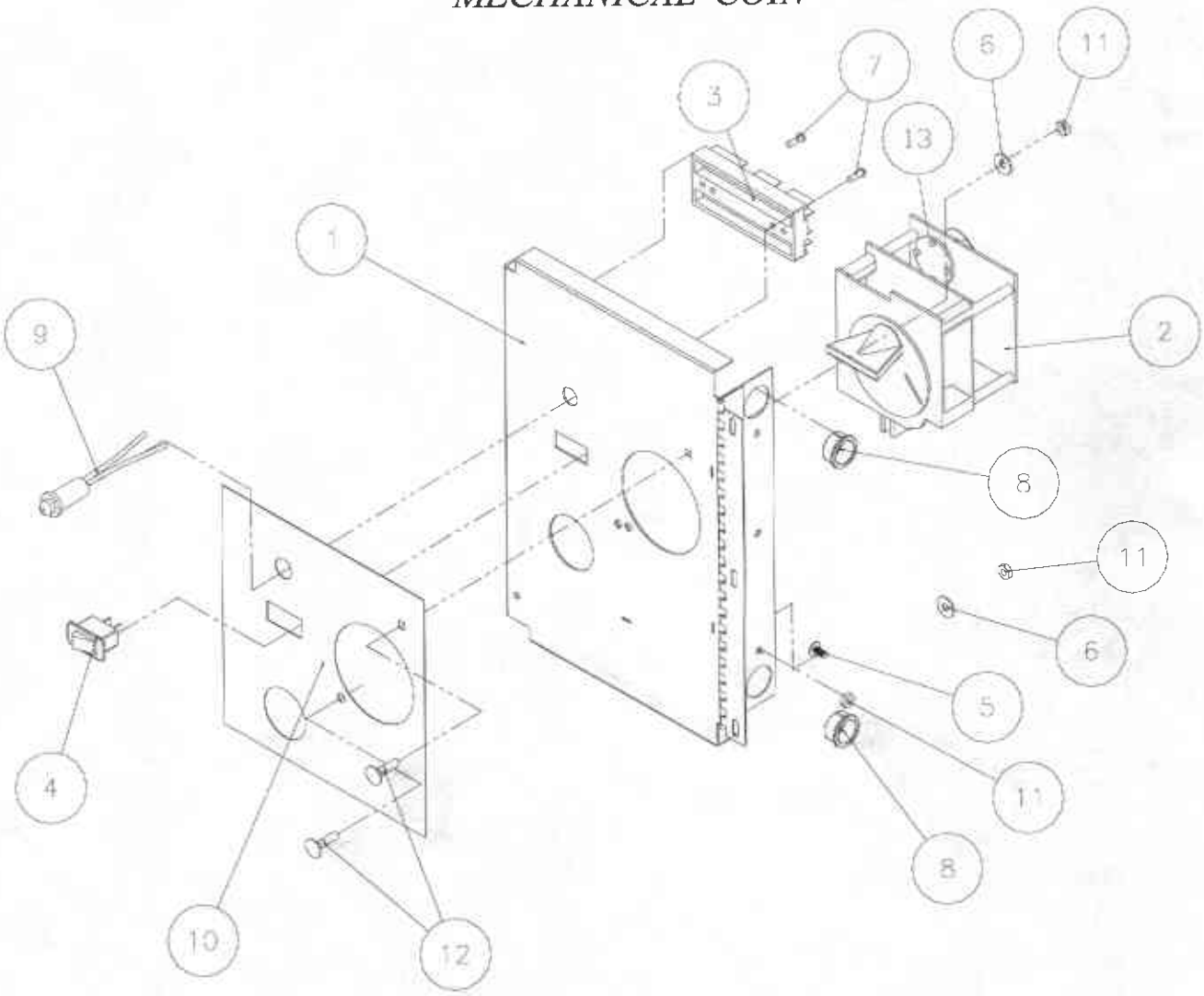
UPPER ASSEMBLY



LOWER ASSEMBLY

Ref. No.	Part No.	Description
	TU14723	PROHC Sensor assembly (lower)
1	CA-13067-0	Bracket (sensor)
2	EA-00594-0	Switch, 220 degrees
3	SB-00828-0	Screw, machine #8-32x 1/2" long
4	SB-00952-0	Screw, #6-32x 3/8" long
5	TU3266	Nut, hex brass #8-32
6	TU3400	Nut, hex brass #6-32
7	TU7733	Screw, self drill #8-18x 1/2" long
8	TU14694	Cover, plate
9	254/00060/00	Humidity sensor

CONTROL PANEL ASSEMBLY
MECHANICAL COIN

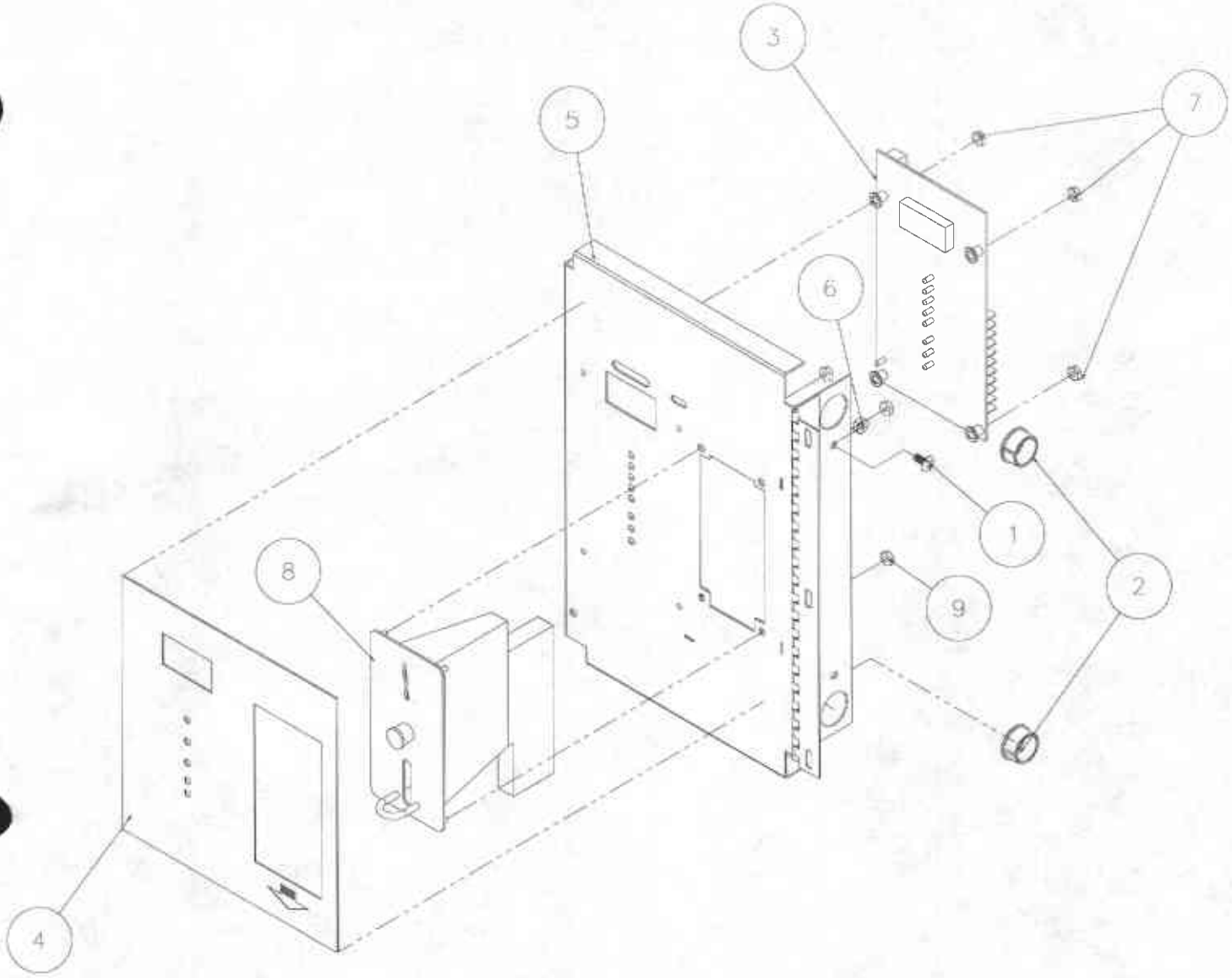


Ref. No.	Part No.	Description
	TU15251 - Complete Assembly	
1	TU15250	Control panel
2	CM7366	Coin meter 24V
3	EA-00210-0	Terminal block
4	EA-00619-0	Start switch
5	M262	#8-32 Screw
6	P104	1/4" Washer

Ref. No.	Part No.	Description
7	SB-00865-0	Screw, self drilling
8	SB-00868-0	Insulating bushing
9	TUT316	LED light 24V W 1/4 Q.C.
10	TUD0355	Overlay
11	TU3266	#8-32 Hex nut
12	TU4958	#8-32 Carriage bolt
13	SEE BELOW	

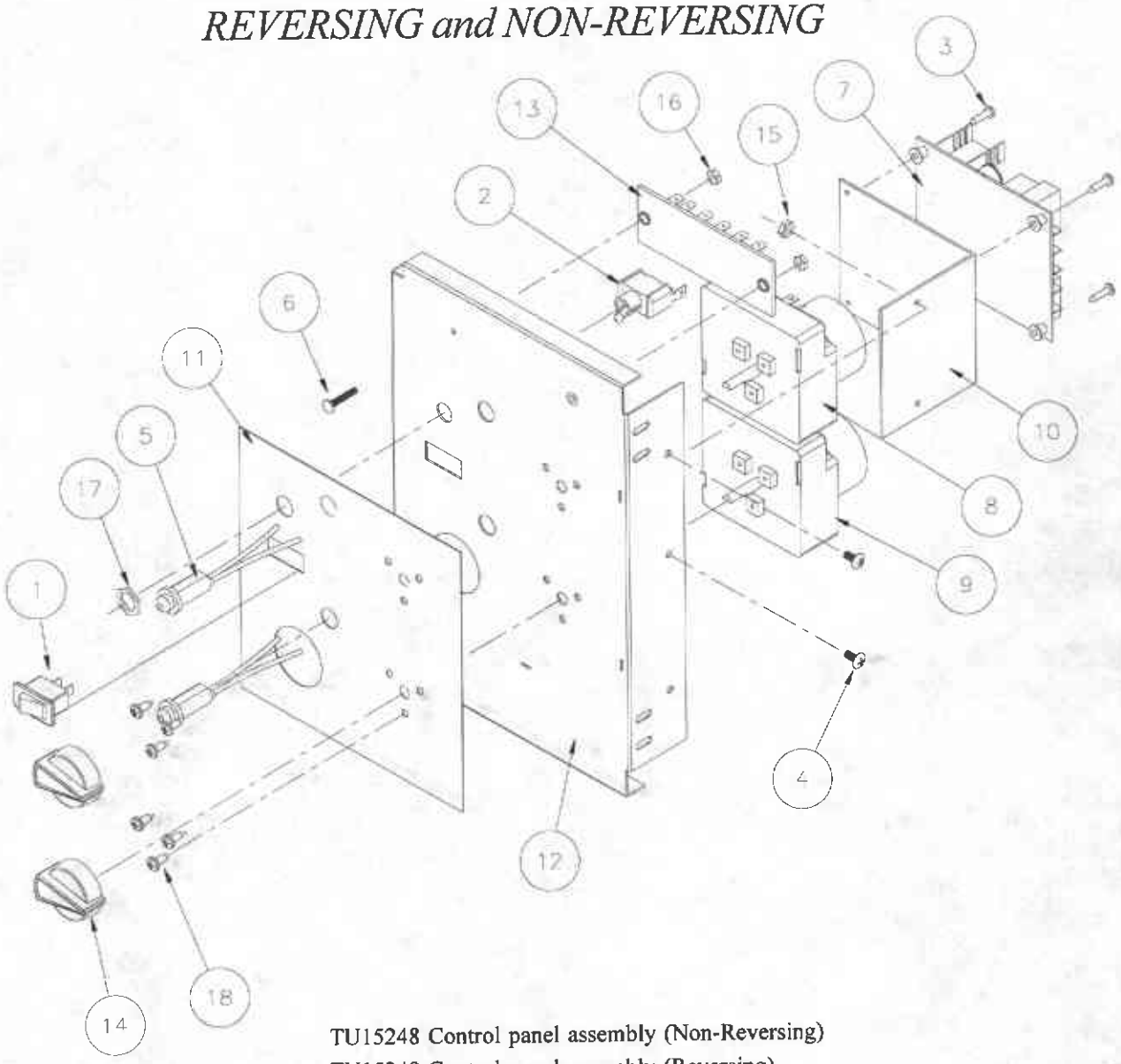
			TIMER MOTORS	
CISSELL PART NO.	VENDOR PART NO.	NO. OF PINS	30 MIN	60 MIN
TU3009	59-439-2	2	15	30
TU3010	59-439-3	3	10	20
TU3011	59-439-4	4	7-1/2	15
TU3012	59-439-5	5	6	12
TU3013	59-439-6	6	5	10
TU3014	59-439-8	8	3-3/4	7-1/2
TU3015	59-439-9	9	3-1/3	6-2/3
TU3016	59-439-10	10	3	6
TU3017	59-439-12	12	2-1/2	5

DMP COIN CONTROL ASSEMBLY



Ref. No.	Part No.	Description
	TU15256 - Complete assembly	
1	M262	Screw, mach truss HD #8-32X3/8"
2	SB-00868-0	Bushing, insulating ,#OCB-875-28
3	TU14404	Controller OPL/COIN board
4	TU14406	Overlay
5	TU5255	Control panel
6	TU3266	Nut, hex-brass #8-32
7	TU3400	Nut, hex #6-32
8	TUD0336	Coin drop-hanke
9	TUD0367	Nut, hex - #5-40 machine

CONTROL PANEL ASSEMBLY (DUAL TIMER) REVERSING and NON-REVERSING

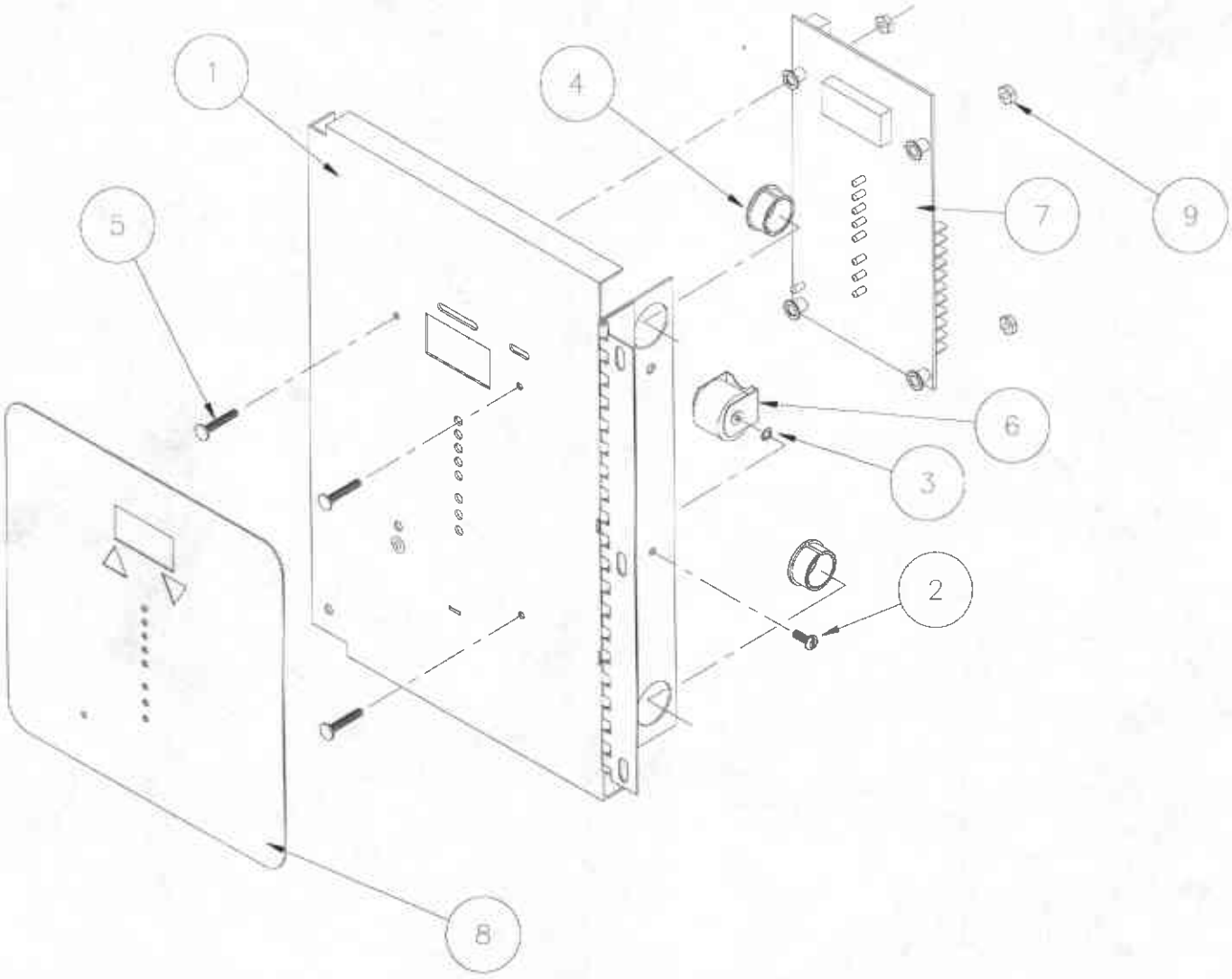


TU15248 Control panel assembly (Non-Reversing)
TU15249 Control panel assembly (Reversing)
* - Parts used on TU15249 only

Ref. No.	Part No.	Description
1	EA-00619-0	Switch - start
2	FG147*	Toggle switch spst 2 position
3	F540*	Screw, sheet metal #6x 5/8" long
4	M262	Screw, machine truss HD. #8-32
5	TUT316	Light, led 24V
6	TU12253	#6-32 Screw
7	TU12874*	Timer, solid state
8	TU12932	Timer 0-60 sec.
9	TU12933	Timer 0-15 sec.

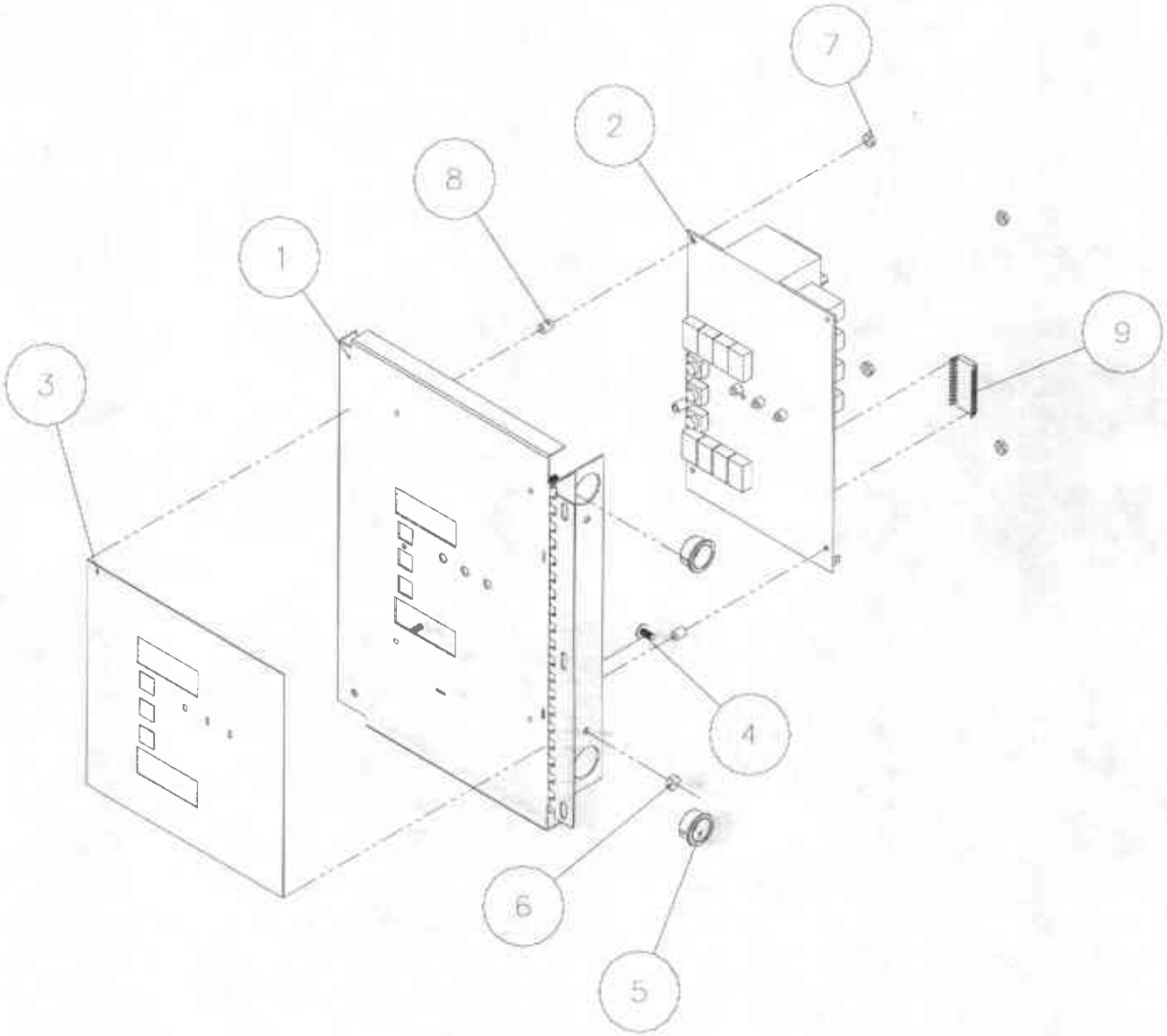
Ref. No.	Part No.	Description
10	TU14931*	Bracket, mounting rev. board
11	TU14936	Overlay, non-reversing
	TU14937*	Overlay, reversing
12	TU15247	Control panel
13	TU15265	Terminal board
14	TU2555	Knob
15	TU3266	Nut, hex. brass #8-32
16	TU3400	#6-32 Hex nut
17	TU3805	Nut
18	TU7733	Screw, self drill #8-18

DMP OPL CONTROL ASSEMBLY



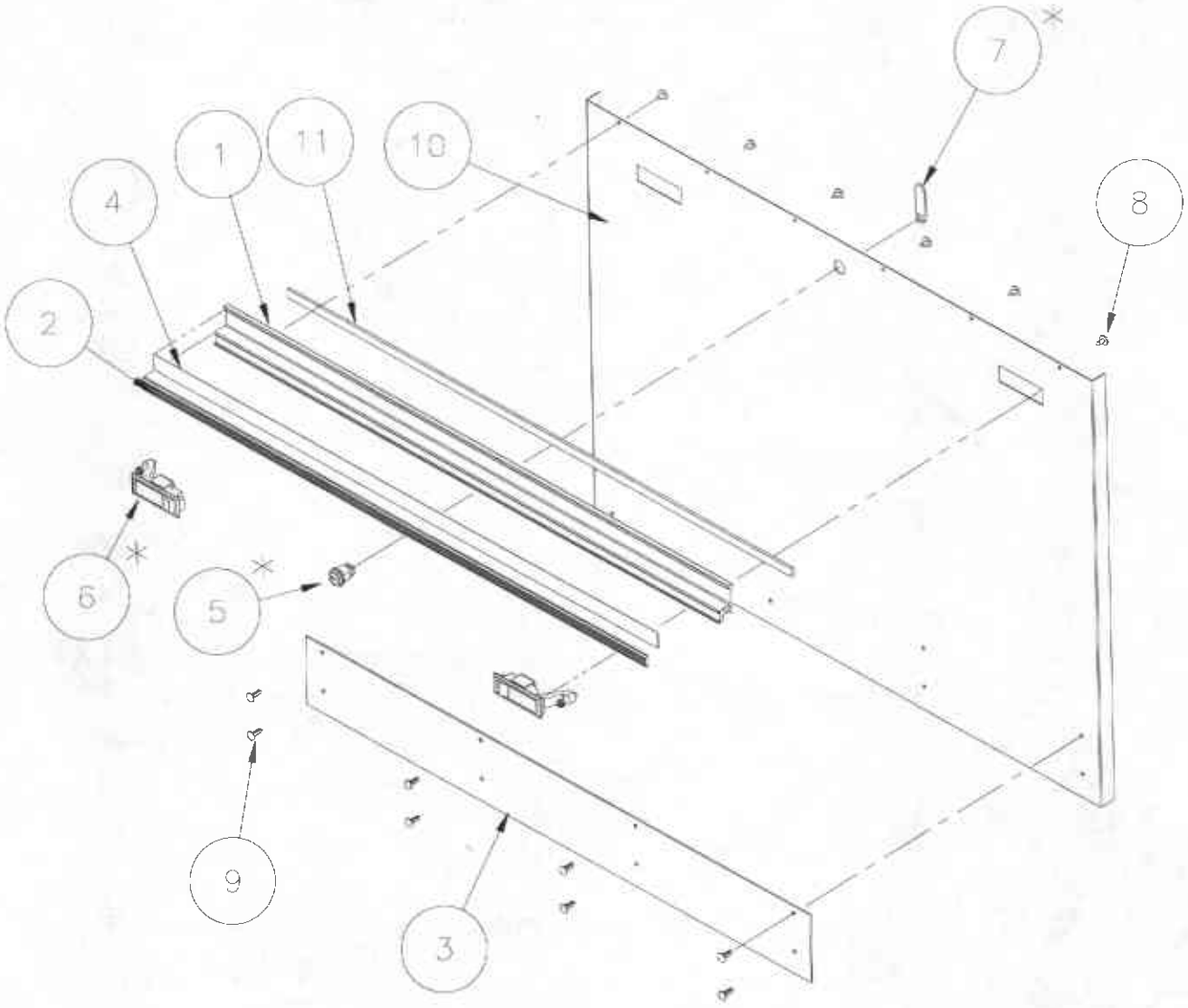
Ref. No.	Part No.	Description
	TU15253 - Non-Reversing control panel complete	
	TU15254 - Reversing control panel complete	
1	TU15252	Control panel
2	LB291	#6-32 R.H. Screw
3	M270	#6 Lockwasher
4	SB-00868-0	Bushing
5	TU12253	#6-32 Stud
6	TU14137	Buzzer 24V
7	TU14404	DMP control
8	TU14405	Overlay
9	TU3400	#6-32 Nut

PROHC CONTROL PANEL ASSEMBLY



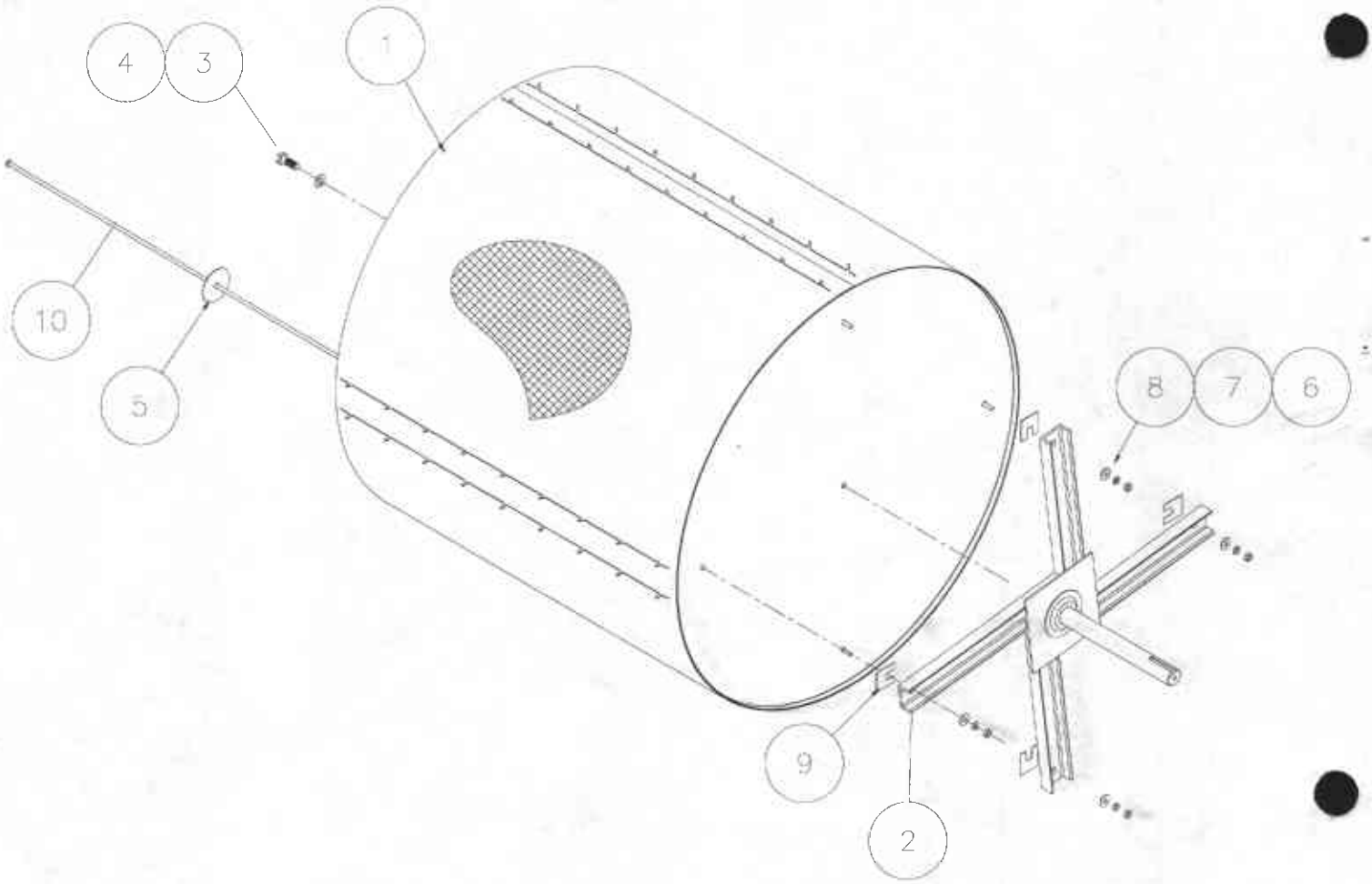
Ref. No.	Part No.	Description
	TU15258	Non-rev.Complete Assembly
	TU15298	Reversing Complete Assembly
1	TU15257	Wiring box welded assembly
2	254/00054/00	PCboard, professional
3	254/00018/00	Lable, PRO moisture controller
4	M262	Screw, machine truss #8-32x 3/8" long
5	SB-00868-0	Insulating bushing
6	TU3266	Nut, hex brass #8-32
7	TU3400	Nut, hex #6-32
8	TU14701	Spacer nylon 1/4" O.D. x 5/16" long
9	TU14452	Chip, EPROM, PROHC

LINT DOOR ASSEMBLY



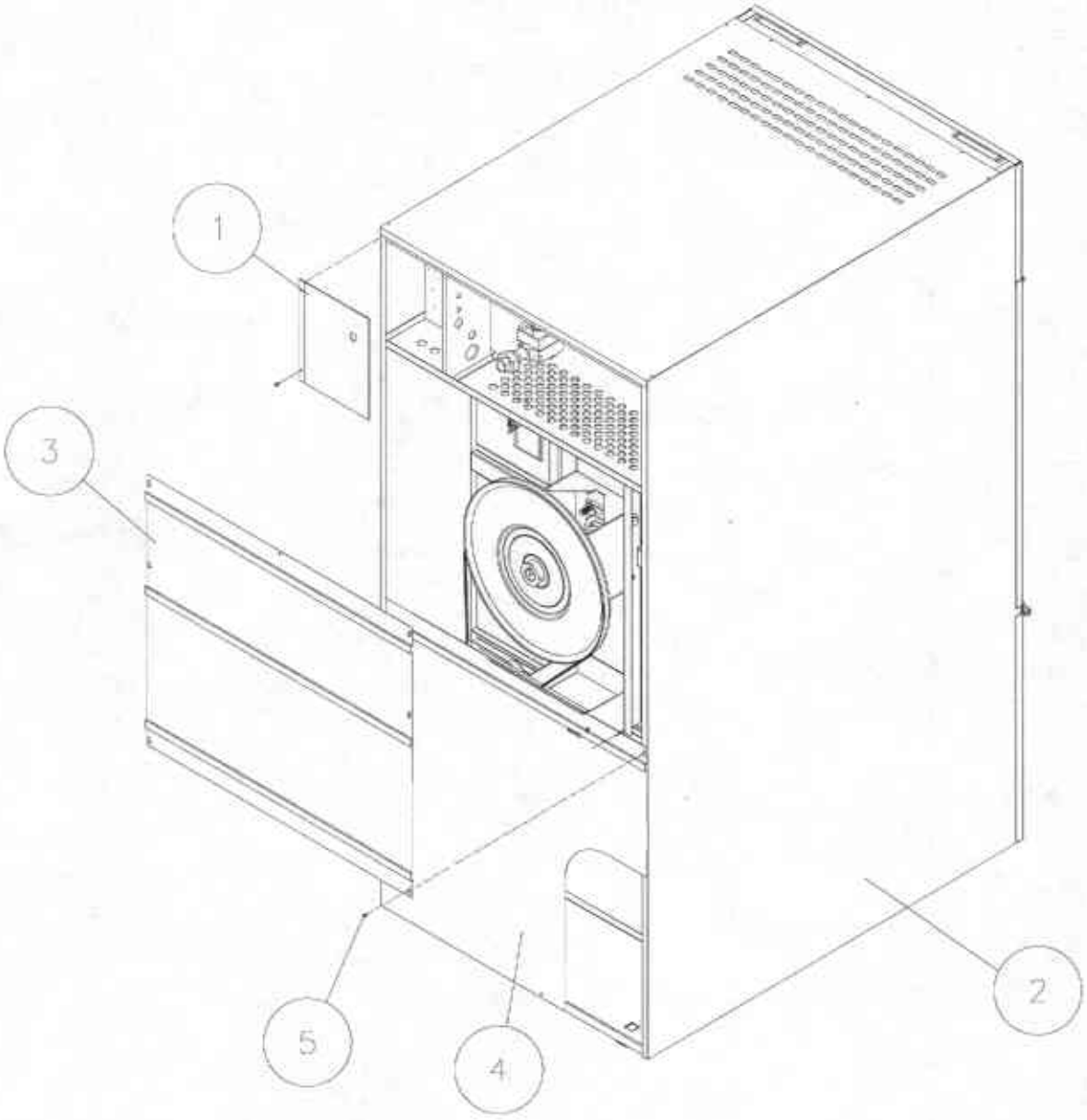
Ref. No.	Part No.	Description
	CSA-01386WH	Lint door w/latch holes(white) OPL
	CSA-01465WH	Lint door w/lock holes(white) Coin
1	CA-00646-0	Handle lint door
2	CA-00655-0	Trim-rubrail-specify 33" long
3	CA-00833-0	Kickplate
4	CA-00841-0	Label
5*	LA-00121-0	Lock (Coin only)
6*	LA-11359-0	Cam lock (Coin only)
7*	LA-00124-0	Latch - trigger (OPL only)
8	SB-00836-0	#10 Pancake screw
9	SB-00949-0	Fastener plastic kickplate
11	CSA-01387WH	Lint door w/a (OPL)
	CSA-01098WH	Lint door w/a (Coin)
12	TU2853	Gasket
13	CA-00119-0	Key (Not shown)

BASKET & SPIDER ASSEMBLY



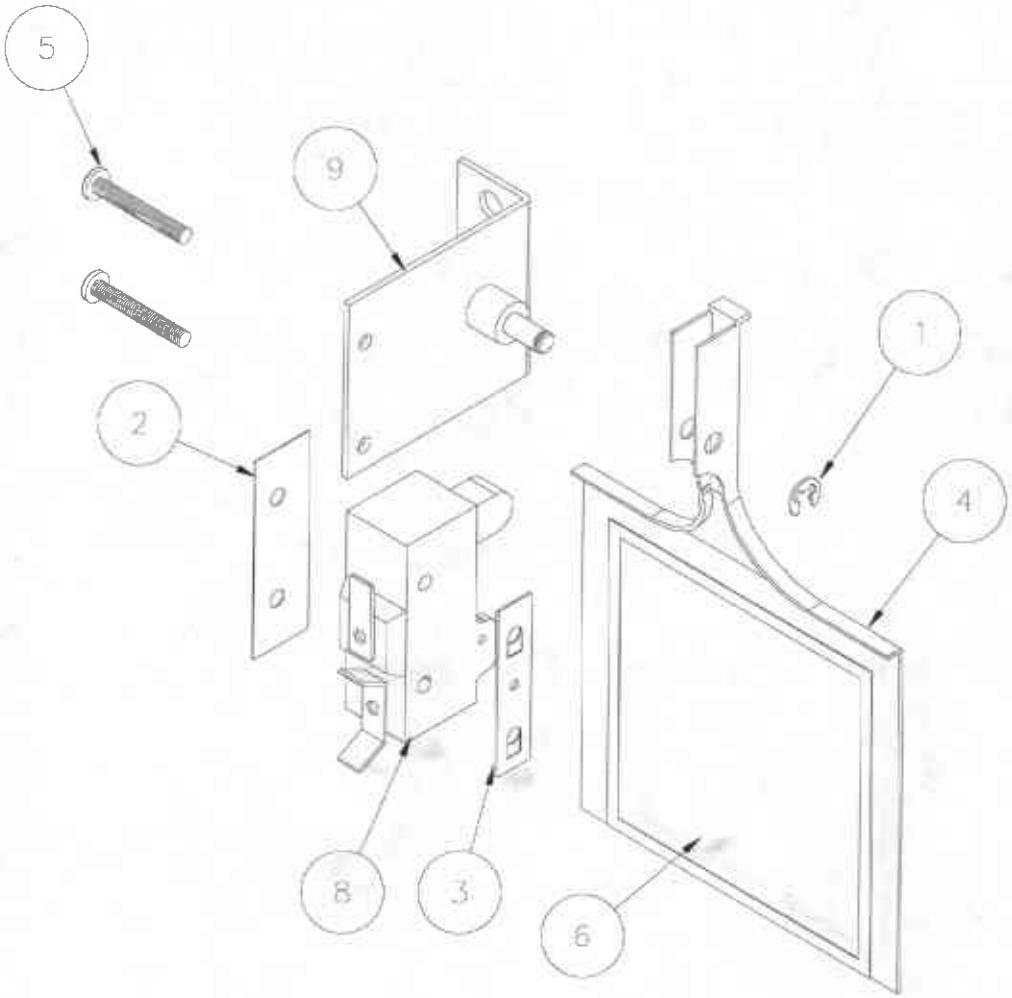
Ref. No.	Part No.	Description
	TUS15221	Basket & Spyder Asm. - S.S.
	TU15221	Basket & Spyder Asm. - Galv.
1	CSA-01538-0	Stainless steel basket assy.
1	CSA-01636-0	Galvanized basket assy.
2	TU15220	Spider assy.
3	SB-00965-0	Screw-button cap 5/16 - 18
4	TU2814	Lock washer 5/16"
5	SB-00843-0	Washer fender 3/8" X 1 1/2"
6	SB-00906-0	Nut 5/16" - 18 stover
7	TU2814	5/16" Lock washer
8	SB-00845-0	5/16" Flat washer
9	TU7006	Shim
10	DA-00445-0	Tie rod

REAR VIEW



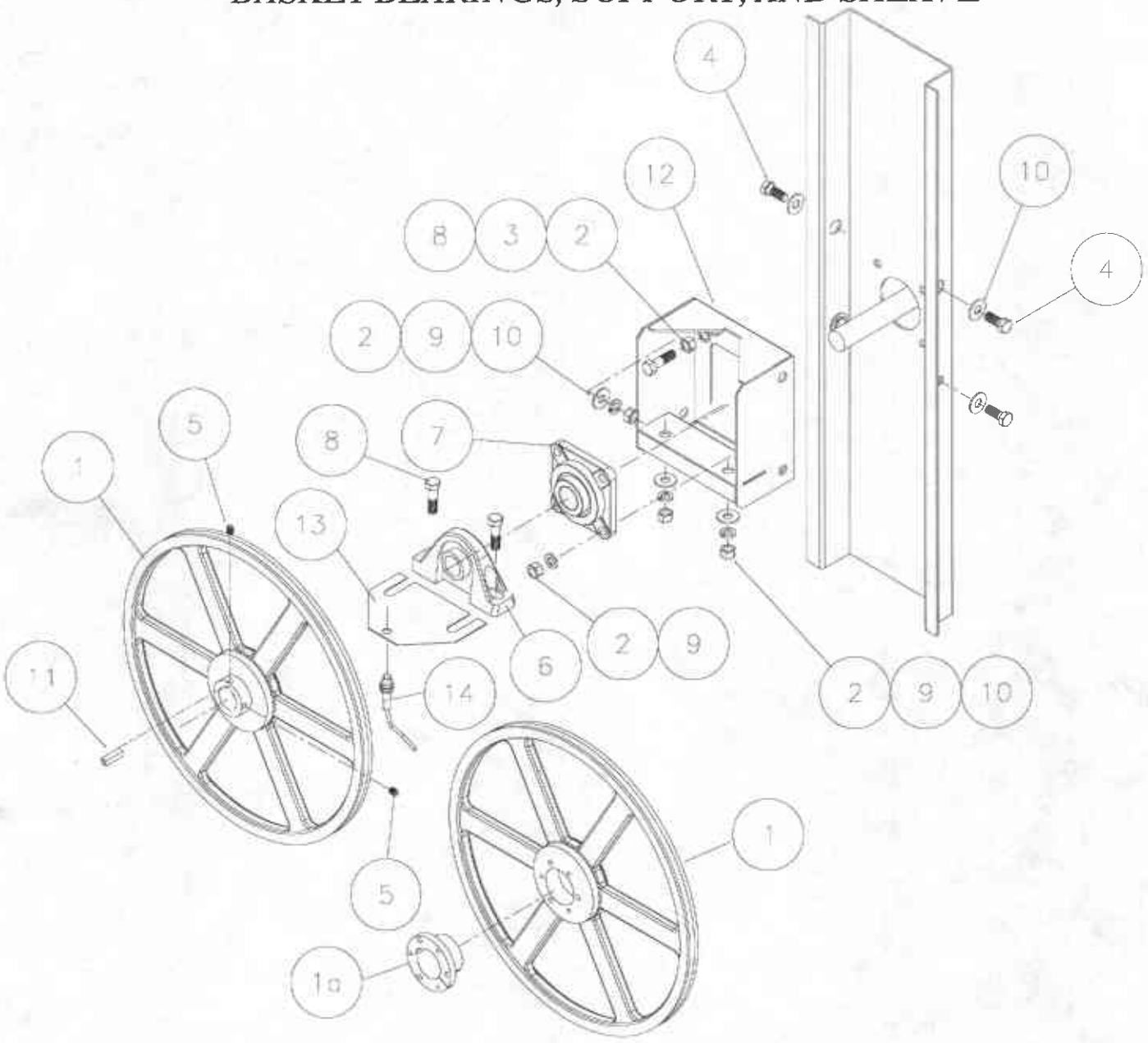
Ref. No.	Part No.	Description
1	TU14725	Cover plate
2	TU15200	Jacket (white)
3	TU15230	Upper rear cover
4	TU15231	Lower rear cover
5	TU7733	Screw self drilling 8-18 x 1/2"

AIR SWITCH ASSEMBLY - TU8206



Ref No.	Part No.	Description
1	F888	E-Ring
2	TU1770	Insulator
3	TU1771	#6 Tinnerman Nut
4	TU2463	Actuator Arm
5	TU3219	#6 x 1 S.M.S.
6	TU3476	Decal
7	TU7733	#8 x 1/2 S.M.S.
8	TU8155	Micro Switch
9	TU8171	Bracket Asm.

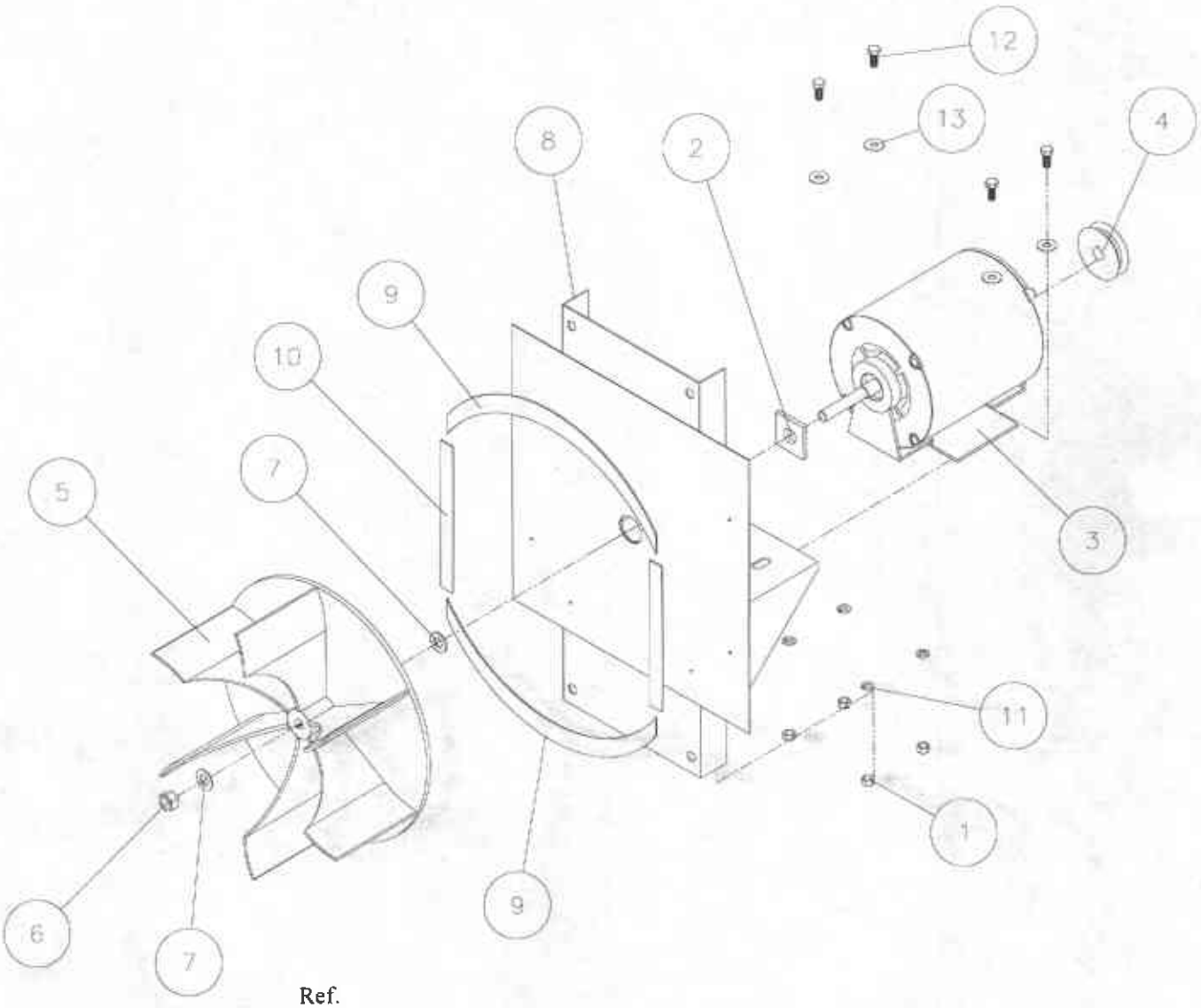
BASKET BEARINGS, SUPPORT, AND SHEAVE



Ref No.	Part No.	Description
1	TU15173	18" Dia. Sheave (Non-reversing)
	TU15157	18" Dia. Sheave (Reversing)
1a	TU15153	1 1/4" Tappered Bushing
2	OP233	1/2-13 Jam nut
3	OP251	1/2" Int. tooth lockwasher
4	RC347	1/2-13 x 1 1/4" H.H. Screw
5	TU10644	Set screw
6	TU10676	1 1/4" Pillow block bearing

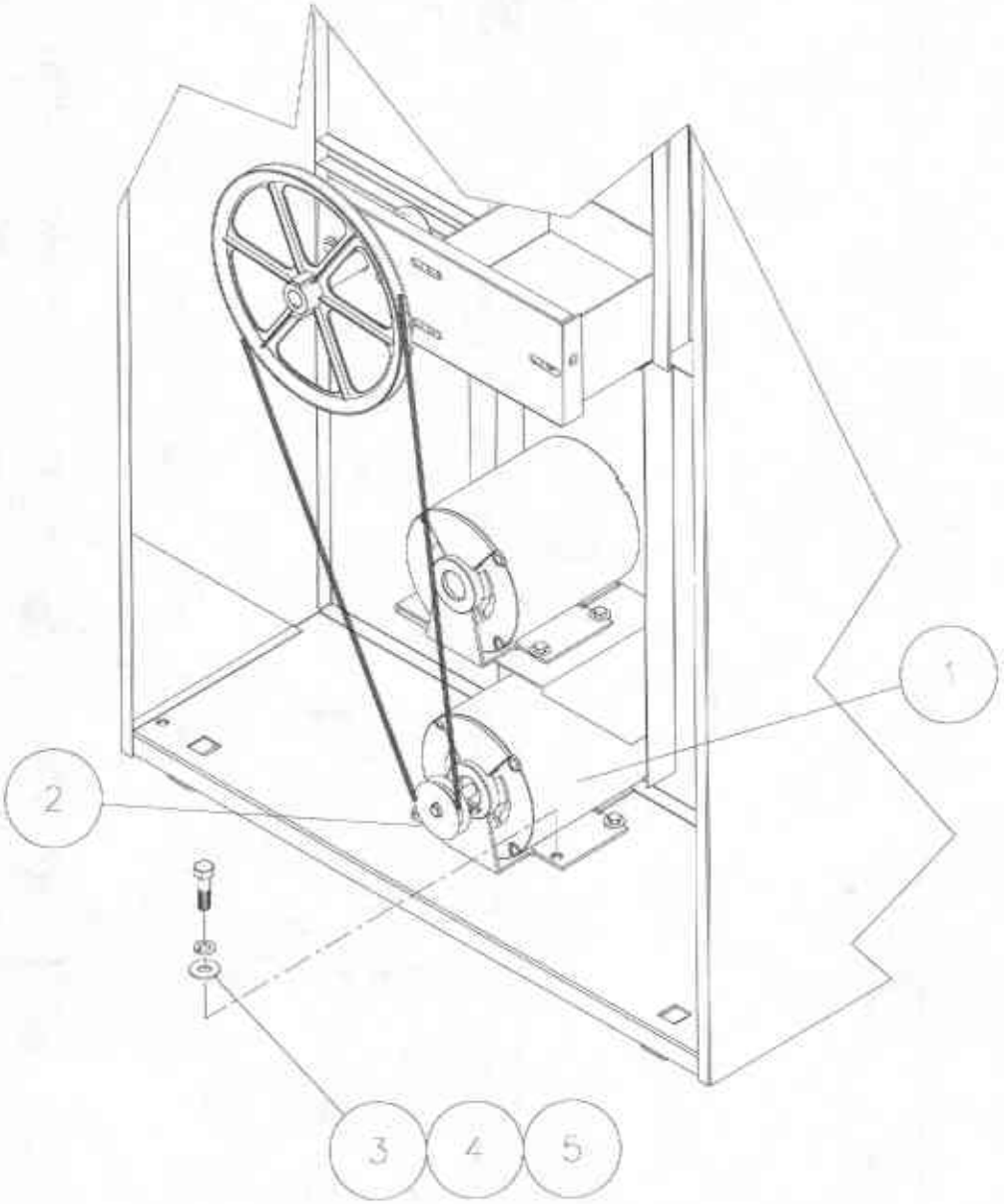
Ref No.	Part No.	Description
7	TU10850	1 1/4" Flange Bearing
8	TU2195	1/2-13 x 1 3/4" H.H. Screw
9	TU2831	1/2" Lockwasher
10	TU2883	1/2" Flatwasher
11	TU15304	1/4" Key
12	TU13147	Bearing box
13	TU14946	Rotation sensor brkt.
14	TU14414	Rotation sensor

MOTOR & FAN ASSEMBLY- NON-REVERSING



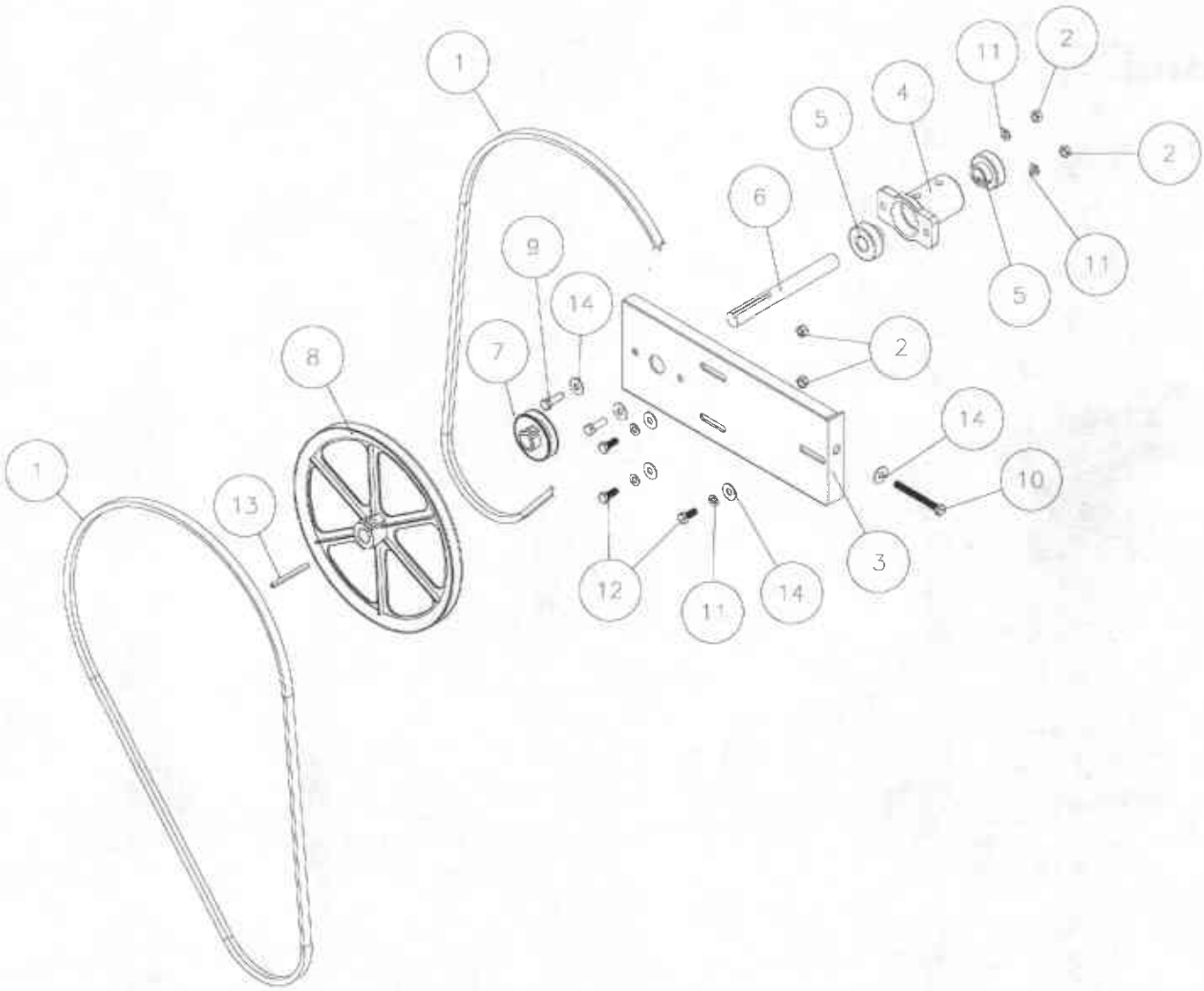
Ref. No.	Part No.	Description
1	C249	Nut, 5/16-18 (4 each)
2	DA-00460-0	Seal
3	DA-00428-0	1/2HP 110-240/50-60/1 N/R
	DA-00428-0	1/2HP 200-480/50-60/3 N/R
	DA-11907-0	1/3HP 200-415/50-60/3 Rev.
4	TU15162	Sheave, 1.8" dia. (60 hz)
	TU14689	Sheave, 2.2" dia. (50 hz)
5	DSA-00772-0	Fan 11"60hz
	DSA-00773-0	Fan 12" 50hz
6	SB-00813-0	Nut, 1/2-20 left hand rev. lock
7	SB-00847-0	Washer, 1" O.D. x .505 I.D. (2 each)
8	TU15227	Motor mount
9	TU2473	Gasket, curved (2 each)
10	TU2474	Gasket, cork 8" (2 each)
11	TU2814	Washer, lock 5/16" (4 each)
12	TU5439	Screw, cap HH 5/16-18 (4 each)
13	VSB130	Washer, cut 5/16" (4 each)

MOTOR ASSEMBLY- REVERSING



Ref. No.	Part No.	Description
1	DA-11909-0	1/2HP 200-415/50-60/3
2	TU15162	Sheave, 1.8" dia. (60 hz)
	TU14689	Sheave, 2.2" dia. (50 hz)
3	VSB130	Washer, cut 5/16"
4	TU2814	Washer, lock 5/16"
5	TU5439	Screw, cap HH 5/16-18

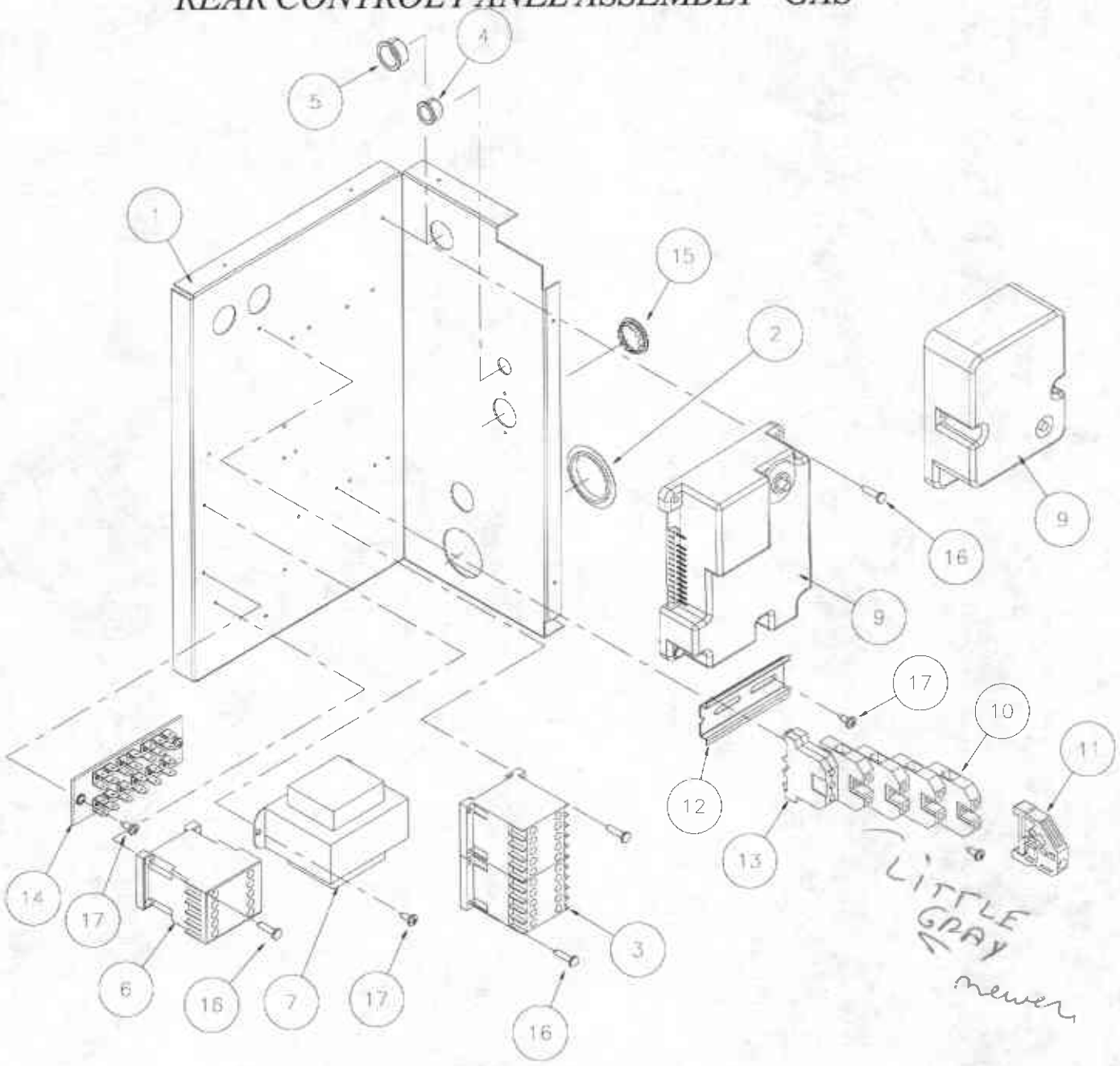
IDLER ASSEMBLY



Ref. No.	Part No.	Description
Reversing		
1	DA-00523-0	Belt, upper (Basket)
1	DA-00523-0	Belt, lower (Motor)
Non-reversing		
1	DA-00523-0	Belt, upper (Basket)
1	DA-00525-0	Belt, lower (Motor)
2	C249	Nut, Hex 5/16-18
3	CA-12059-0	Idler adjustment plate
4	DA-00517-0	Housing, idler bearing
5	DA-00518-0	Bearing
6	DA-11711-0	Idler shaft
7	TU14691	2.5" dia. pulley
8	TU15175	9" dia. idler pulley
9	FB124	Screw 5/16-18x 1"

Ref. No.	Part No.	Description
10	SB-00935-0	Screw 5/16-18x 3"
11	TU2814	Lock Washer 5/16"
12	TU5439	Screw 5/16-18x 1"
13	TUD0187	Key 3/16" square 2 1/2"
14	VSB130	Washer 5/16"

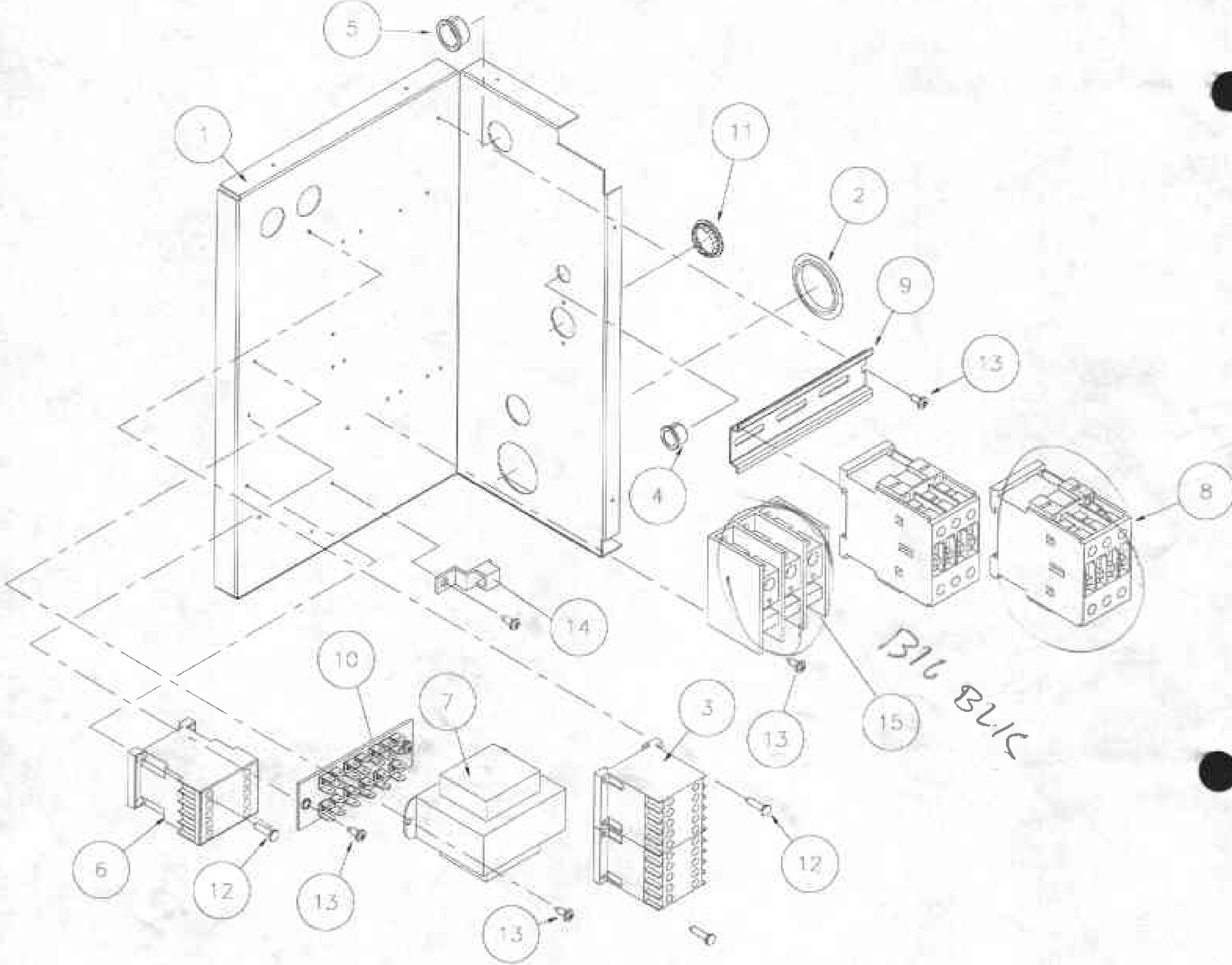
REAR CONTROL PANEL ASSEMBLY - GAS



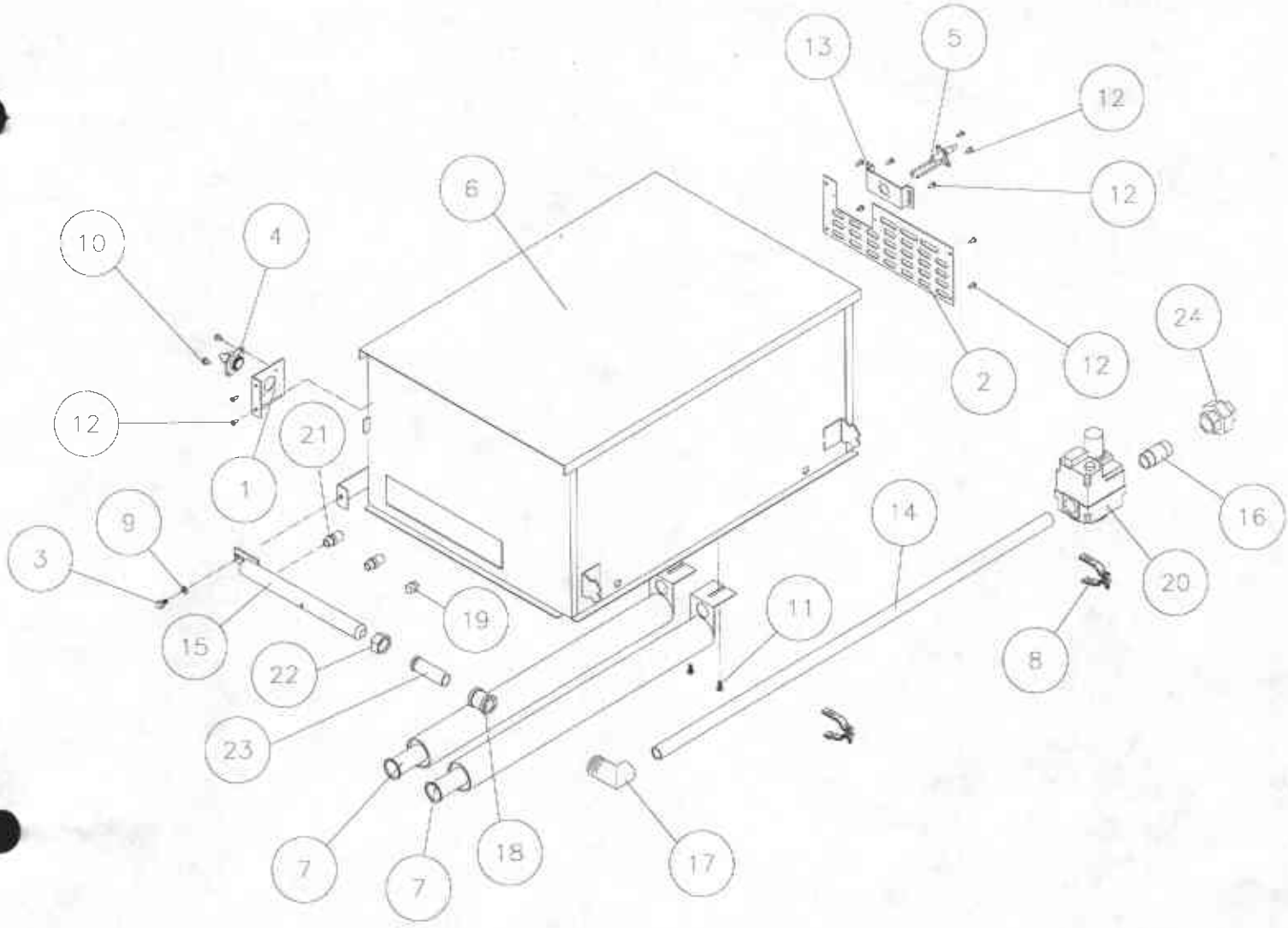
Ref. No.	Part No.	Description
1	CA-11935-0	Rear wiring box
2	EA-00680-0	Plug knock out
3	EA-00685-0	Reverse control, 24V coil
4	SB-00865-0	Screw, phillips head
5	SB-00867-0	Bushing, insulating
6	SB-00868-0	Bushing, insulating
7	TU13463	Contactor, 24VAC
8	TU13480	Transformer, 200-240V/24VA
9	GA-11007-0	Ignitor module 50Hz (C.E.)
	GA-00765-0	Ignitor module 60Hz

Ref. No.	Part No.	Description
10	TU14958	T-Block
11	TU14959	T-Block end
12	TU14985	Din rail
13	TU15007	T-Block ground end
14	TU15265	Terminal Board
15	TU2490	Plug, button
16	TU2793	#8-18 Self-drilling screw
17	TU7733	#8-18 Self-drilling screw

REAR CONTROL PANEL ASSEMBLY - ELECTRIC



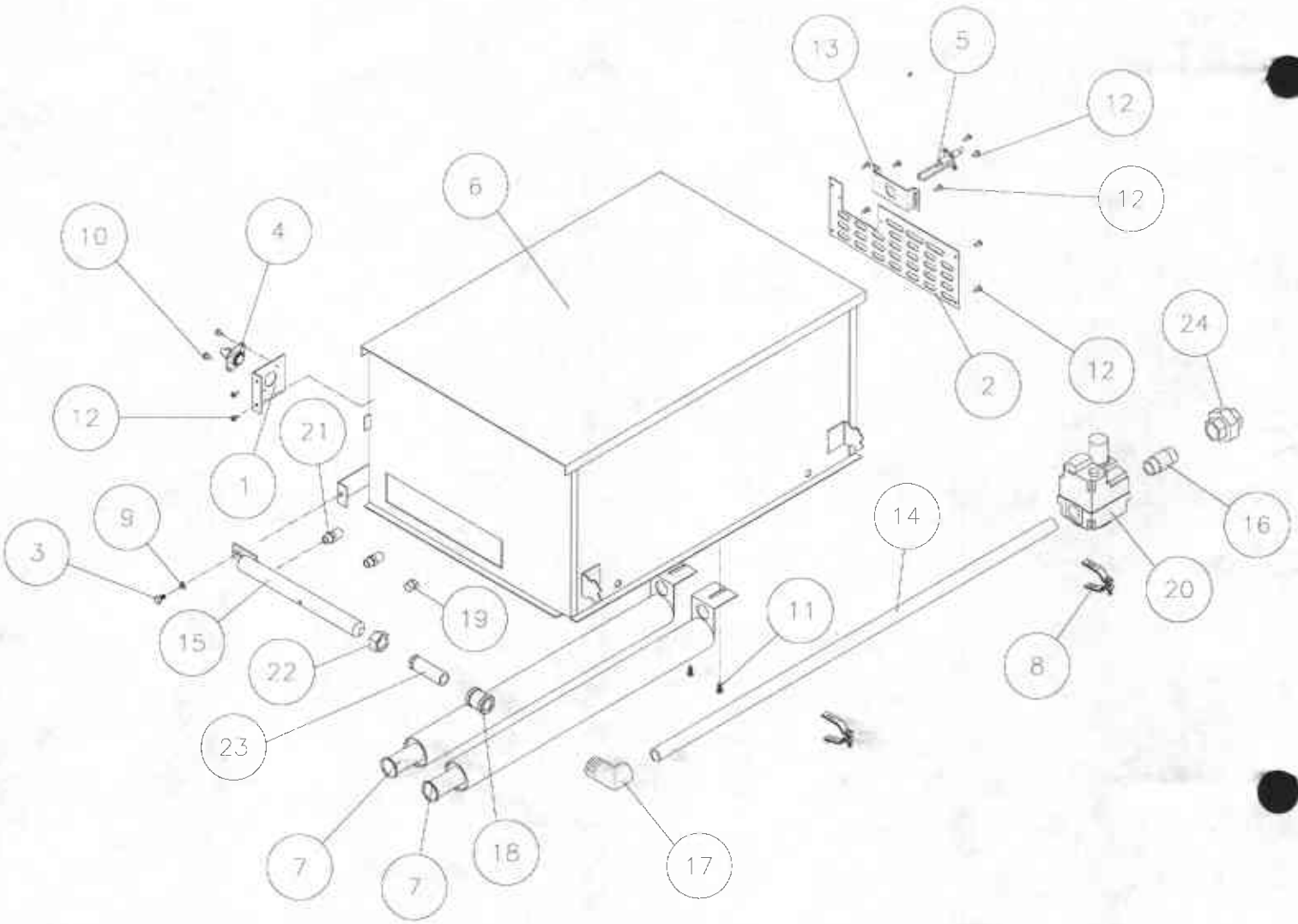
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	CA-11935-0	Rear wiring box	9	TU14986	Din rail
2	EA-00680-0	Plug knock out	10	TU15265	Terminal Board
3	EA-00685-0	Reverse control, 24V coil	11	TU2490	Plug, button
4	SB-00867-0	Bushing, insulating	12	TU2793	#8-18 Self-drilling screw
5	SB-00868-0	Bushing, insulating	13	TU7733	#8-18 Self-drilling screw
6	TU13463	Contactor, 24VAC	14	TU7738	Ground lug
7	TU13480	Transformer, 200-240V/24VA	15	TU9143	Terminal Block
8	TU13521	Contactor, 208-240V			
	TU14684	Contactor, 346-600V			



Ref. No.	Part No.	Description
	TU15129 - Complete assembly	
1	CA-11028-0	Bracket, HI limit
2	TU15106	Burner cover plate
3	CB36	Screw, hex 1/4-20
4	EA-00245-0	Switch, 330 degree
5	GA-00764-0	Electrode / straight
6	TU15101	Burner box housing
7	TU13502	Burner w/bracket
8	TU2226	Bracket assembly
9	TU2846	Lock washer 1/4"
10	TU2878	#10-16 Sheet metal screw
11	TU6263	#10-24 Screw, hex

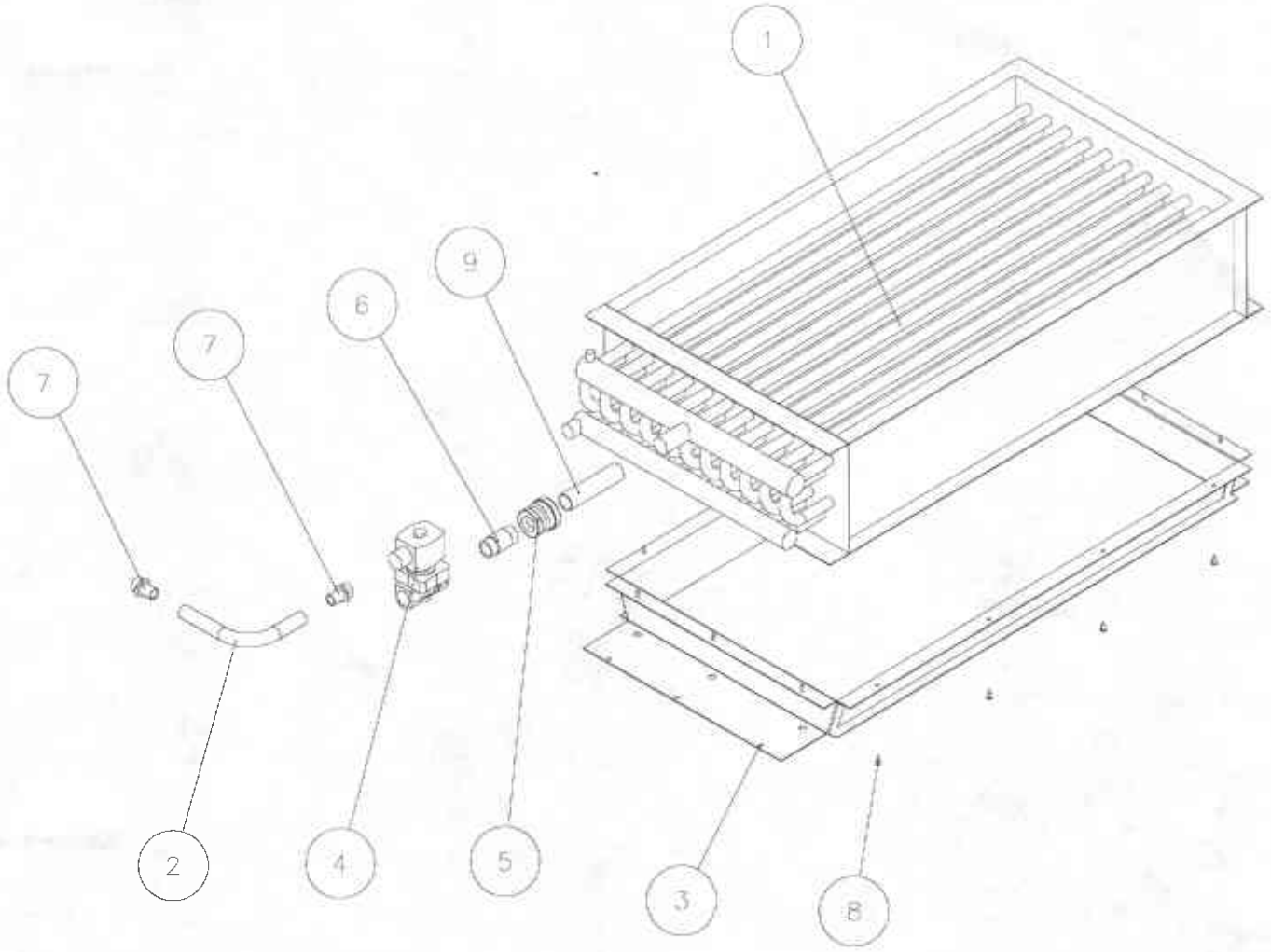
Ref. No.	Part No.	Description
12	TU7733	#8-12 Screw, self drilling
13	TUD0242	Ignitor mtg. bracket
14	FG274	1/2" x 30# lg. Nipple
15	GA-11006-0	Manifold
16	LB20	1/2" x 3"lg. Nipple
17	OP291	1/2-90 Street elbow
18	SC505	1/2" Pipe coupling
19	TU10946	Plug, pipe
20	TU14178	Valve, 1/2" N.G.
21	TU3539	Orifice
22	TU6862	Nut, gas manifold
23	664946146	Pipe, tail
24	OP314	1/2" Union

L.P. GAS HEATING UNIT



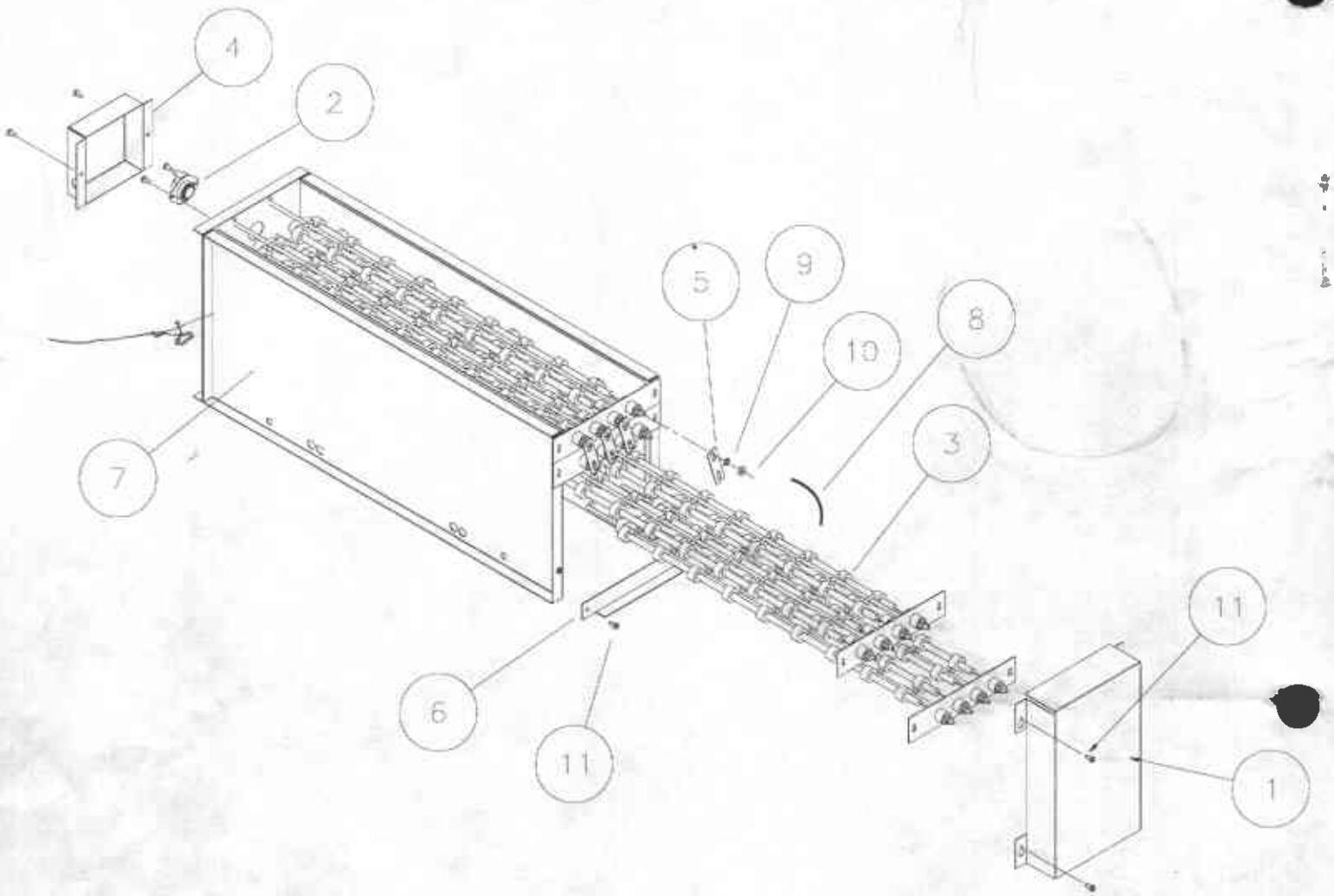
Ref. No.	Part No.	Description
	TU15122 - Complete assembly	
1	CA-11028-0	Bracket, HI limit
2	TU15106	Burner cover plate
3	CB36	Screw, hex 1/4-20
4	EA-00245-0	Switch, 330 degree
5	GA-00764-0	Electrode / straight
6	TU15101	Burner box housing
7	TU13502	Burner w/bracket
8	TU2226	Bracket assembly
9	TU2846	Lock washer 1/4"
10	TU2878	#10-16 Sheet metal screw
11	TU6263	#10-24 Screw, hex

Ref. No.	Part No.	Description
12	TU7733	#8-12 Screw, self drilling
13	TUD0242	Ignitor mtg. bracket
14	FG274	1/2" x 30# lg. Nipple
15	GA-11006-0	Manifold
16	LB20	1/2" x 3"lg. Nipple
17	OP291	1/2-90 Street elbow
18	SC505	1/2" Pipe coupling
19	TU10946	Plug, pipe
20	TU14177	Valve, 1/2" LP
21	TU3539	Orifice
22	TU6862	Nut, gas manifold
23	664946146	Pipe, tail
24	OP314	1/2" Union



Ref. No.	Part No.	Description
	CSA-01675-0	Complete assembly
1	CA-13220-0	Steam coil
2	CFB0900	Cable, GREENFIELD 1/2" X 9"
3	CSA-01643-0	Adaptor, w/a
4	TU13517	Valve, steam solenoid 3/4" 24V
5	TU2735	Reducer, pipe 1" x 3/4"
6	TU4608	Nipple, 3/4" x 2" black
7	TU4790	Connector
8	TU7733	Screw, self dr. #8-18 x 1/2"
9	TU9656	Nipple, 1" x 4" black

ELECTRIC BONNET ASSEMBLY



Ref. No.	Part No.	Description
	TU15281 - 380-415/30 Complete Asm.	
	ESA-01054-0 - 440-480/30 Complete Asm.	
	ESA-01002-0 - 240V Complete Asm.	
	ESA-01001-0 - 208V Complete Asm.	
1	CA-11984-0	Rear heater box cover
2	EA-00243-0	Bonnet high limt switch
3	EA-00472-0	Heater element
4	EA-10232-0	Switch cover
5	EA-10417-0	Jumper bars
6	EA-11373-0	Heater box back
7	ESA-00610-0	Heater box housing
8	ESA-00948-0	Jumper
9	TU11613	#10 Ext. tooth washer
10	TU2842	#10-32 Hex nut
11	TU7733	Screw, self dr. #8-18 x 1/2"