



**Preliminary
Parts and
Service Manual
for
24 Pound
Tumbler Dryers**

(Starting Serial Number LTCK 630211WD)

IMPORTANT: Warranty is void unless drying tumbler is installed according to instructions in this manual. Compliance with minimum specifications and requirements detailed herein, and with applicable local codes is a **MUST**. Because of varied requirements, applicable local codes should be thoroughly understood and all pre-installation work arranged for accordingly.

Installation must also conform with American National Standard Z223.1-1984 "National Fuel Gas Code" and Standard ANSI/NFPA 70-1984 "National Electrical Code" in the U.S.A. Standards CAN1-B149.1 or CAN1-B149.2 installation codes for gas burning appliances and equipment in Canada and/or local codes.

▲WARNING

FAILURE TO INSTALL, MAINTAIN AND/OR OPERATE THIS MACHINE ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS MAY RESULT IN CONDITIONS WHICH CAN PRODUCE BODILY INJURY AND/OR PROPERTY DAMAGE.

NOTE: The **WARNING** and **IMPORTANT** instructions appearing in this manual are not meant to cover all possible conditions and situations that may occur. It must be understood that common sense, caution and carefulness are factors which **CANNOT** be built into this tumbler. These factors **MUST BE** supplied by the person(s) installing, maintaining or operating the tumbler.

Always contact your dealer, distributor, service agent or the manufacturer on any problems or conditions you do not understand.

FOR YOUR SAFETY

If you smell gas

1. Open windows
2. Don't touch electrical switches
3. Extinguish any open flame
4. Immediately call your gas supplier

CONSIGNES DE SECURITE

Si vous sentez une odeur de gaz:

1. Ouvrez les fenêtres
2. Ne touchez pas aux interrupteurs électriques
3. Eteignez toute flamme nue
4. Contactez immédiatement votre compagnie du gaz

FOR YOUR SAFETY

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

CONSIGNES DE SECURITE

Il est interdit d'entreposer ou d'utiliser des liquides inflammables ou dégageant des vapeurs inflammables, à proximité de tout appareil fonctionnant au gaz.

IMPORTANT: Purchaser must consult with local gas supplier for suggested instructions to be followed if the dryer user smells gas. The gas utility instructions plus the warning note directly above must be posted in a prominent location near the dryer for customer use.

IMPORTANT SAFETY INSTRUCTIONS

(SAVE THESE INSTRUCTIONS)

⚠WARNING

To reduce the risk of fire, electric shock, or injury to persons when using the tumbler, follow these basic precautions:

IMPORTANT SAFETY INSTRUCTIONS shown on this page apply to people using the tumbler, and should be reprinted and posted in the laundry room.

DO NOT ALLOW CHILDREN TO PLAY IN, WITH OR AROUND THIS TUMBLER. SERIOUS INJURY MAY RESULT IF A CHILD SHOULD CRAWL INSIDE AND THE TUMBLER IS STARTED. THIS IS A SAFETY RULE FOR ALL APPLIANCES.

- Read all instructions before using the tumbler.
- Install this tumbler according to these installation instructions. All connections for gas supply, electrical power and grounding must comply with local codes and be made by licensed personnel when required.
- To minimize the possibility of electrical shock, make sure the tumbler has been properly grounded in accordance with these installation instructions.
- Because of hazards under certain conditions DO NOT use an extension cord.
- ALWAYS disconnect the electrical power to the tumbler before servicing.
- To prevent damage which may result in fire or shock hazard, DO NOT expose this tumbler to rain or excessive moisture.
- Tumbler will not operate with the loading door open. DO NOT by-pass the door safety switch by permitting the tumbler to operate with the door open. The tumbler will stop tumbling when the door is opened. Do not use the tumbler if it does not stop tumbling when the door is opened or starts tumbling without pressing the START mechanism. Remove the dryer from use and call the serviceman.

- Do not repair or replace any part of the tumbler or attempt any servicing unless specifically recommended in the Installation, Operating and Maintenance Instructions or in published user-repair instructions that you understand and have the skills to carry out.
- DO NOT reach into the tumbler if the cylinder is revolving.
- Before this tumbler is removed from service or discarded, remove the door to the drying compartment.
- Store laundry aids, dry cleaning solvents and disinfectants out of the reach of children (preferably in a locked cabinet) to help prevent poisoning or chemical burns.
- DO NOT tumble fiber glass curtains and draperies unless the label says it can be done. If they are dried, wipe out the cylinder with a damp cloth to remove particles of fiber glass.

⚠WARNING

- TO AVOID CREATING A FIRE, SPONTANEOUS COMBUSTION OR EXPLOSION HAZARD:
 - KEEP APPLIANCE AREA CLEAN AND FREE FROM COMBUSTIBLE MATERIALS.
 - To reduce the risk of fire, DO NOT put clothes which have traces of any flammable substances such as cooking oil, machine oil, flammable chemicals, thinner, etc., or anything containing wax or chemicals such as in mops and cleaning cloths, or anything dry-cleaned at home with a dry-cleaning solvent in the tumbler.
 - Remove laundry immediately after tumbler stops.
 - DO NOT place anything on top of the tumbler or drape items over the front of the tumbler.
 - DO NOT use flammable dry cleaning solvents, gasoline, kerosene or other flammable cleaners in or near the tumbler.
 - DO not dry articles that have been previously cleaned in, soaked in, washed in, or spotted with gasoline, dry cleaning solvents, other flammable or explosive substances as they give off vapors that could ignite or explode.
 - To reduce the risk of fire, DO NOT DRY plastics or articles containing foam rubber or similarly textured rubber-like materials.
- Always clean the lint filter daily. A layer of lint in the filter reduces drying efficiency and prolongs drying time.
- Always read and follow manufacturer's instructions on packages of laundry and cleaning aids. Heed all warning or precautions. To reduce the risk of poisoning or chemical burns, keep them out of reach of children at all times (preferably in a locked cabinet).

ALWAYS FOLLOW THE FABRIC CARE INSTRUCTIONS SUPPLIED BY THE GARMENT MANUFACTURER.

Table of Contents

SECTION I PARTS

Front Panels and Top	5
Control Panel and Thermostat	6
Loading Door, Door Switch and Lint Hood	7
Escutcheon and Metercase	8
Cylinder and Trunnion Assembly	9
Idler Drive	10
Hi-Limit Thermostat and Airflow Switch	11
Fan, Motor and Bracket	12
Burner Assemblies	13
Junction Box, Rear Guards and Thimble	15
Wire Harnesses and Jumpers	16
Decals	17

SECTION II SERVICE PROCEDURES

1. Control Panel	19
2. Push-To-Start Switch	19
3. Terminal Block	19
4. Burner System Components	19
5. Operating Thermostat	20
6. Door Handle	20
7. Front Panel	20
8. Airflow Switch	20
9. Chain Guard	20
10. Wire Cover	20
11. Belt	21
12. Idler	21
13. Sheave	21
14. Idler Housing	21
15. Trunnion Housing	21
16. Cylinder Assembly	22
17. Trunnion Shaft Assembly	22
18. Motor and Fan Assembly	23
19. Stove High Limit Thermostat	23

SECTION III ADJUSTMENTS

20. Leveling Legs	24
21. Main Gas Burner Air Shutter	24
22. Airflow Switch	24
23. Cylinder Door Switch	25
24. Cylinder Door Strike	25
25. Poly "V" Drive Belt Tension	26
26. Cylinder	26

SECTION IV SERVICE HELPS

27. Motor Does Not Start	27
28. Temperature Control and Limit System	28
29. Main Gas Burner Air Inlet Shutter	28
30. Air Flow Switch Adjustment	29
31. Selecting and Changing Gas Orifices	29
32. Cylinder Door Interlock	30
33. Cylinder Door Strike Adjustment	31
34. Drive Belt Tension	31
35. Cylinder Removal and Installation	31
36. Cylinder Clearance Adjustment	32
37. Idler Housing Removal and Replacement	33
38. Trunnion Housing and Bearings	33

REPLACEMENT PARTS INFORMATION

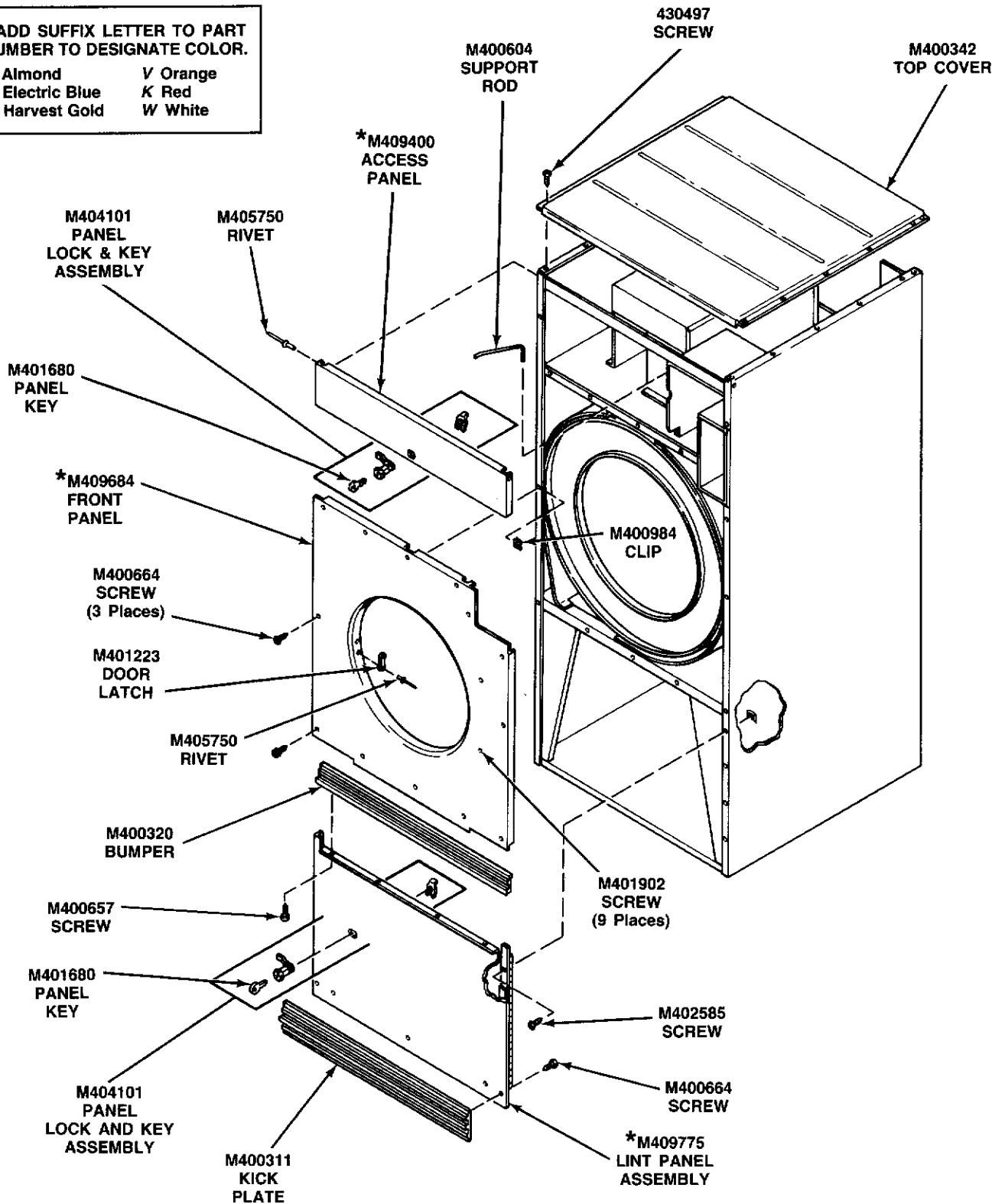
If replacement parts are required, contact the source from whom you purchased your tumbler or, contact Huebsch Originators, Shepard Street, P.O. Box 990, Ripon, Wisconsin 54971-0990, for the name and address of the nearest authorized Huebsch parts distributor.

SECTION I

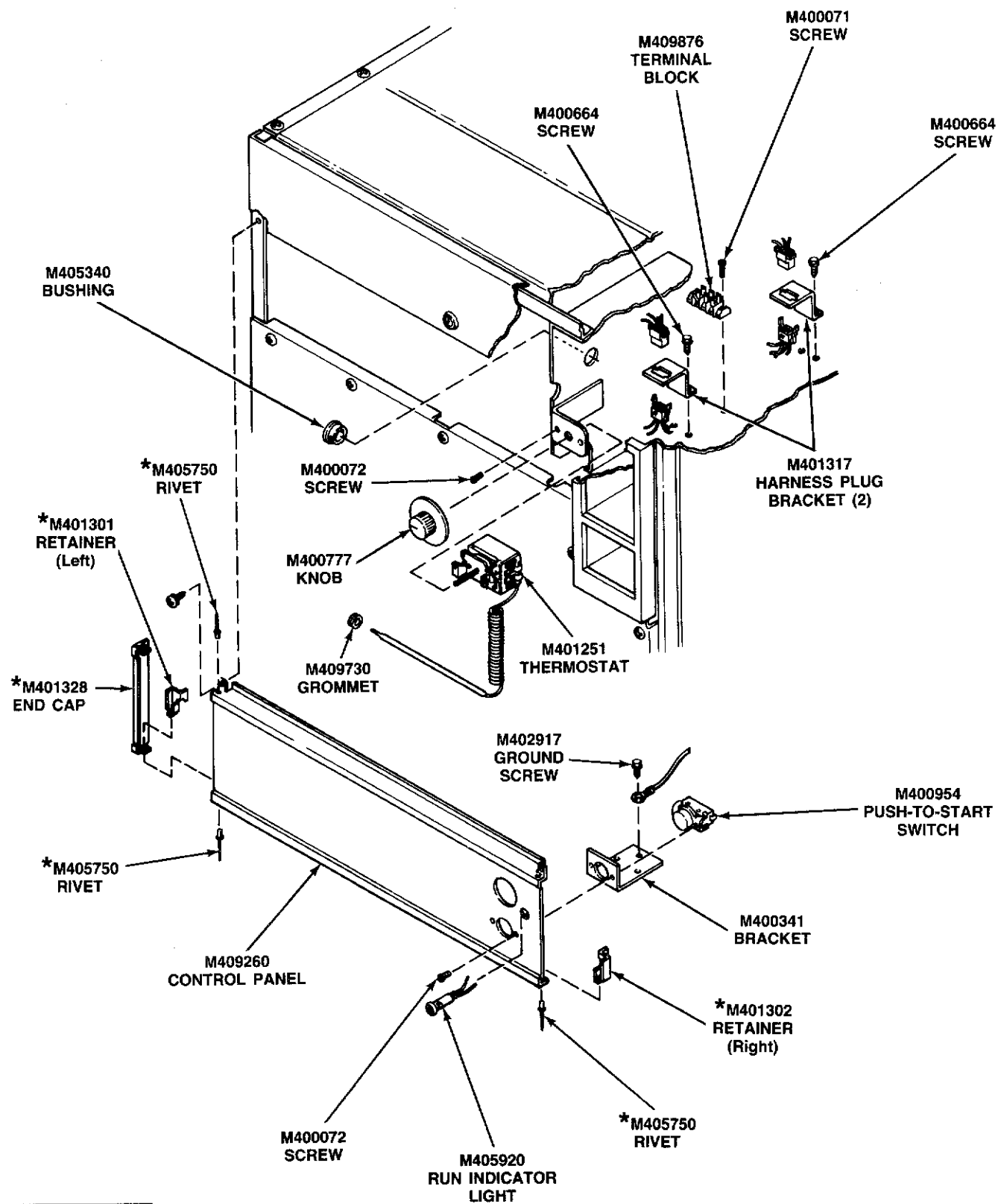
Parts Section

*ADD SUFFIX LETTER TO PART NUMBER TO DESIGNATE COLOR.

L Almond	V Orange
X Electric Blue	K Red
H Harvest Gold	W White



FRONT PANELS AND TOP

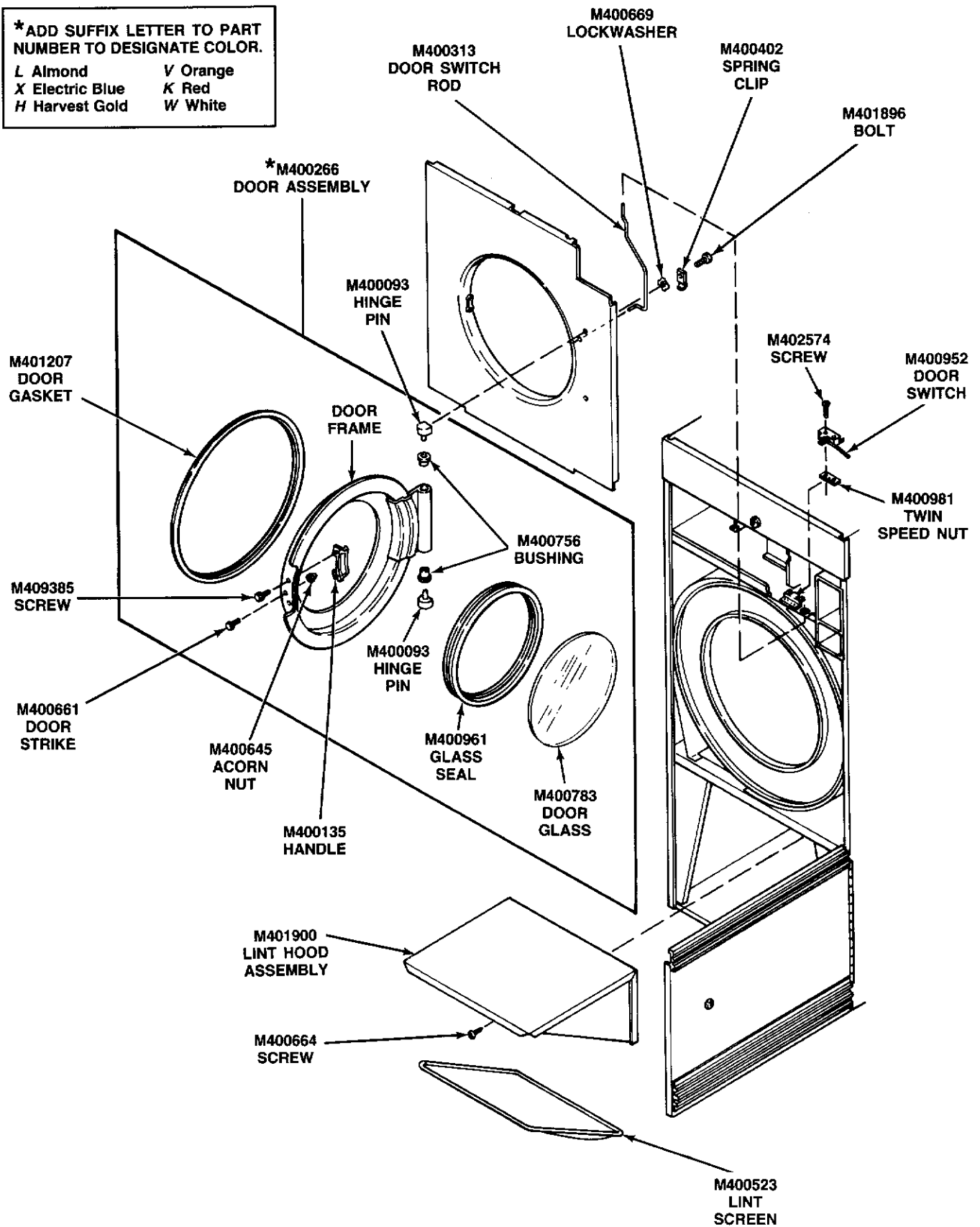


*Included with control panel.

CONTROL PANEL AND THERMOSTAT

*ADD SUFFIX LETTER TO PART NUMBER TO DESIGNATE COLOR.

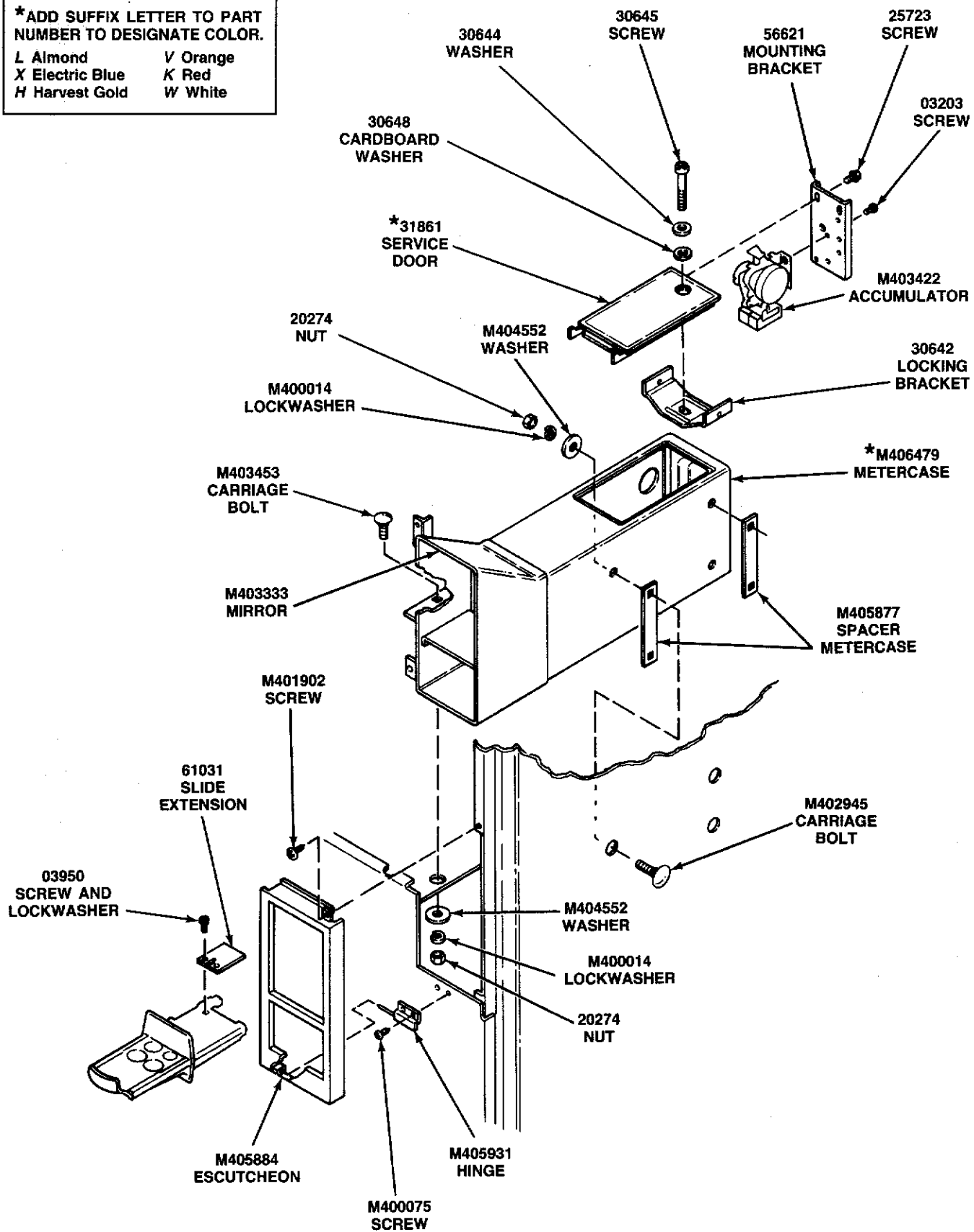
L Almond	V Orange
X Electric Blue	K Red
H Harvest Gold	W White



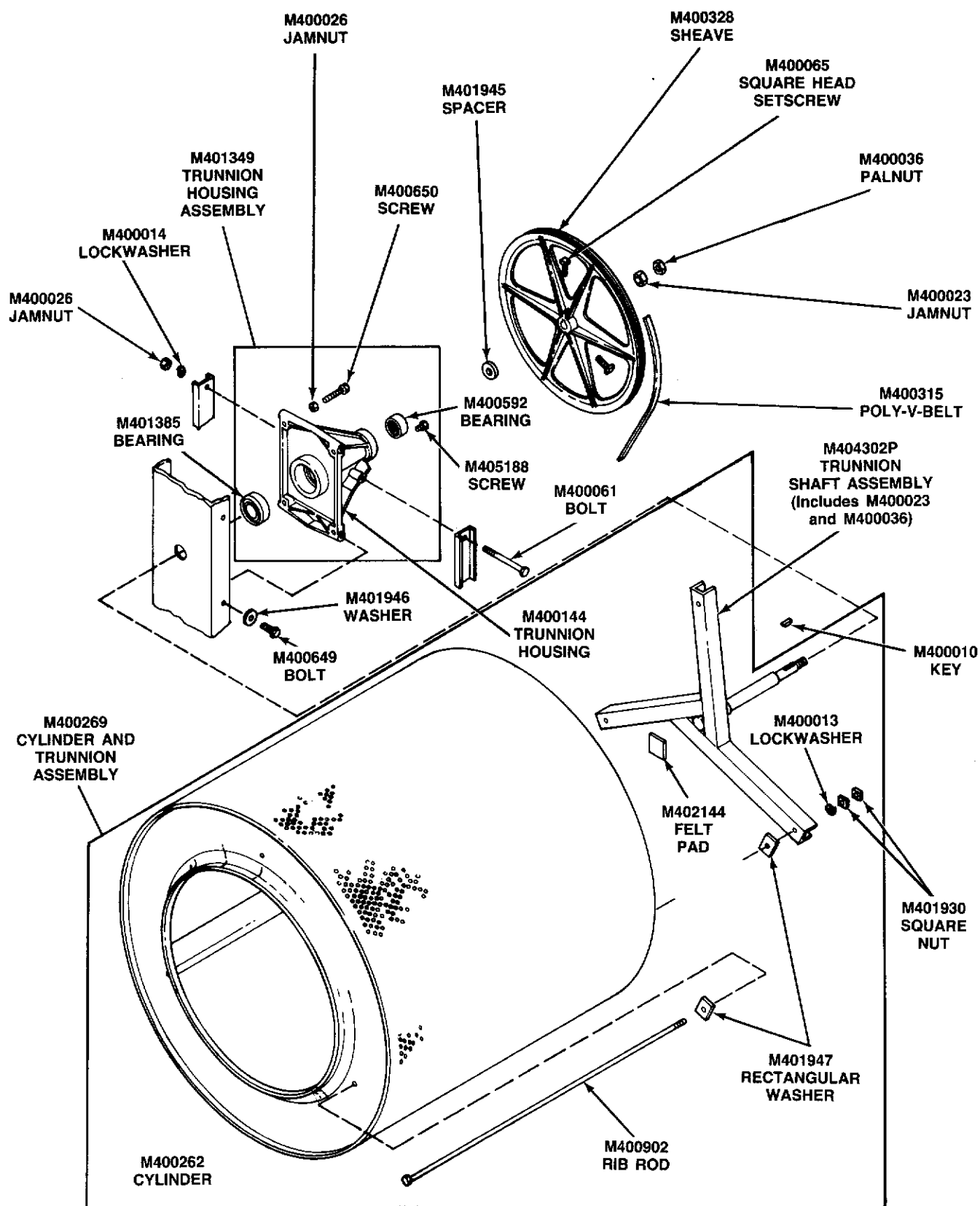
LOADING DOOR, DOOR SWITCH AND LINT HOOD

***ADD SUFFIX LETTER TO PART NUMBER TO DESIGNATE COLOR.**

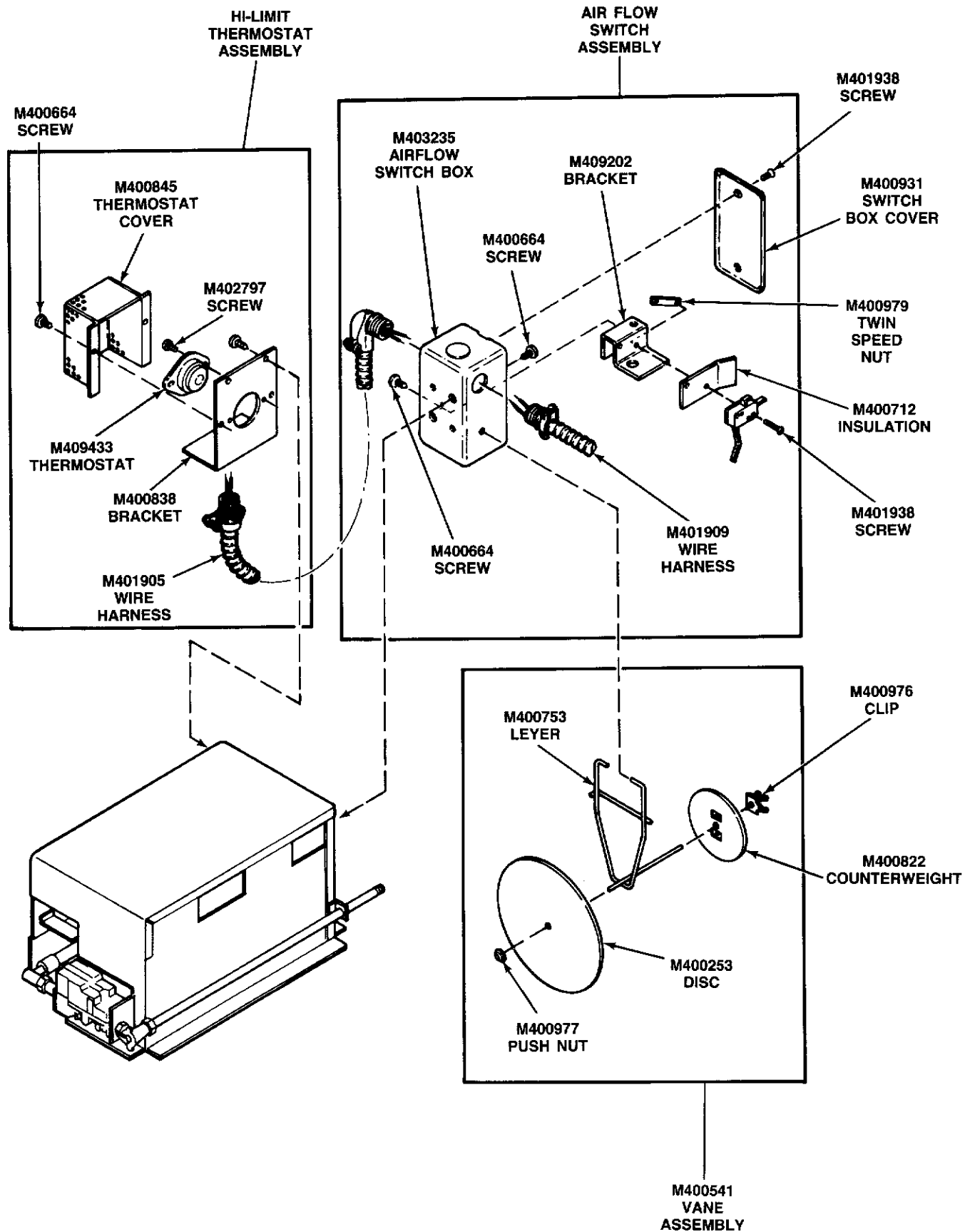
L Almond	V Orange
X Electric Blue	K Red
H Harvest Gold	W White



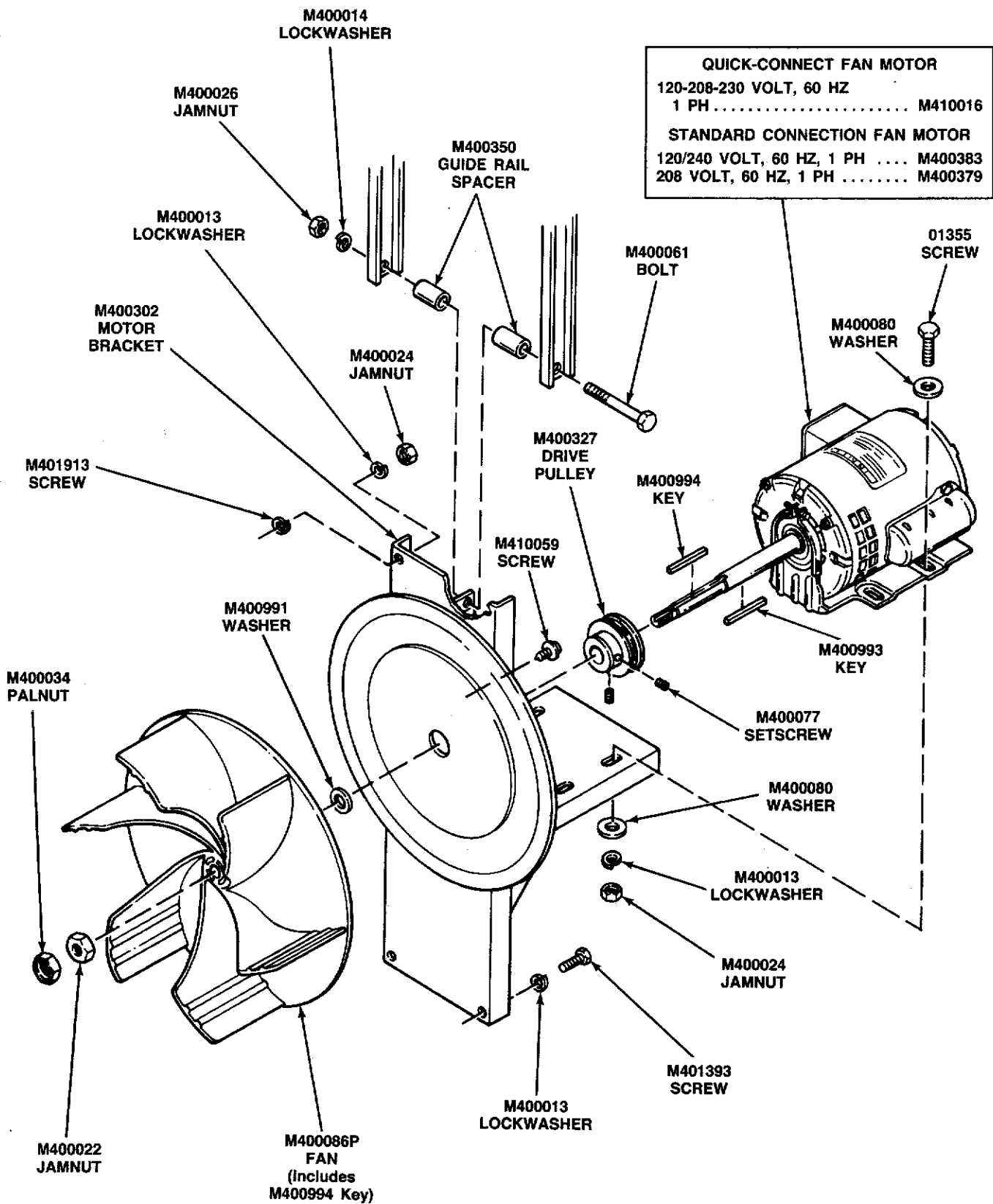
ESCUTCHEON AND METERCASE



CYLINDER AND TRUNNION ASSEMBLY



HI-LIMIT THERMOSTAT AND AIRFLOW SWITCH



FAN, MOTOR AND BRACKET

M406788
HIGH VOLTAGE
LEAD

M406934
SPARK
IGNITER

M406936
IGNITER
BRACKET

GAS VALVE
Natural ... M406782
L.P. M406783

M406178
1/4" TERMINAL
(Ground)

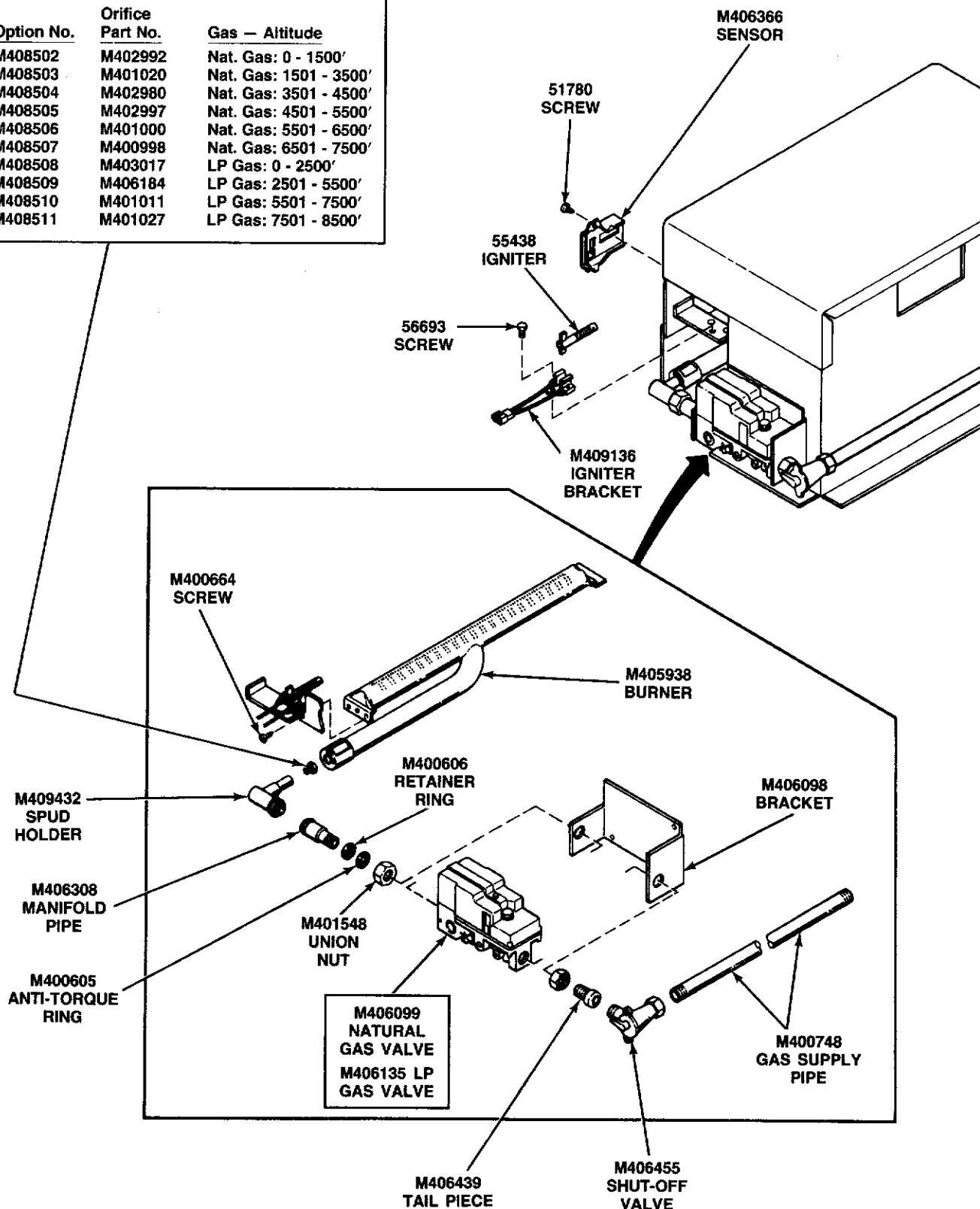
M406880
INSTANT ELECTRONIC
IGNITION HARNESS

M406789
INSTANT ELECTRONIC
IGNITION CONTROL

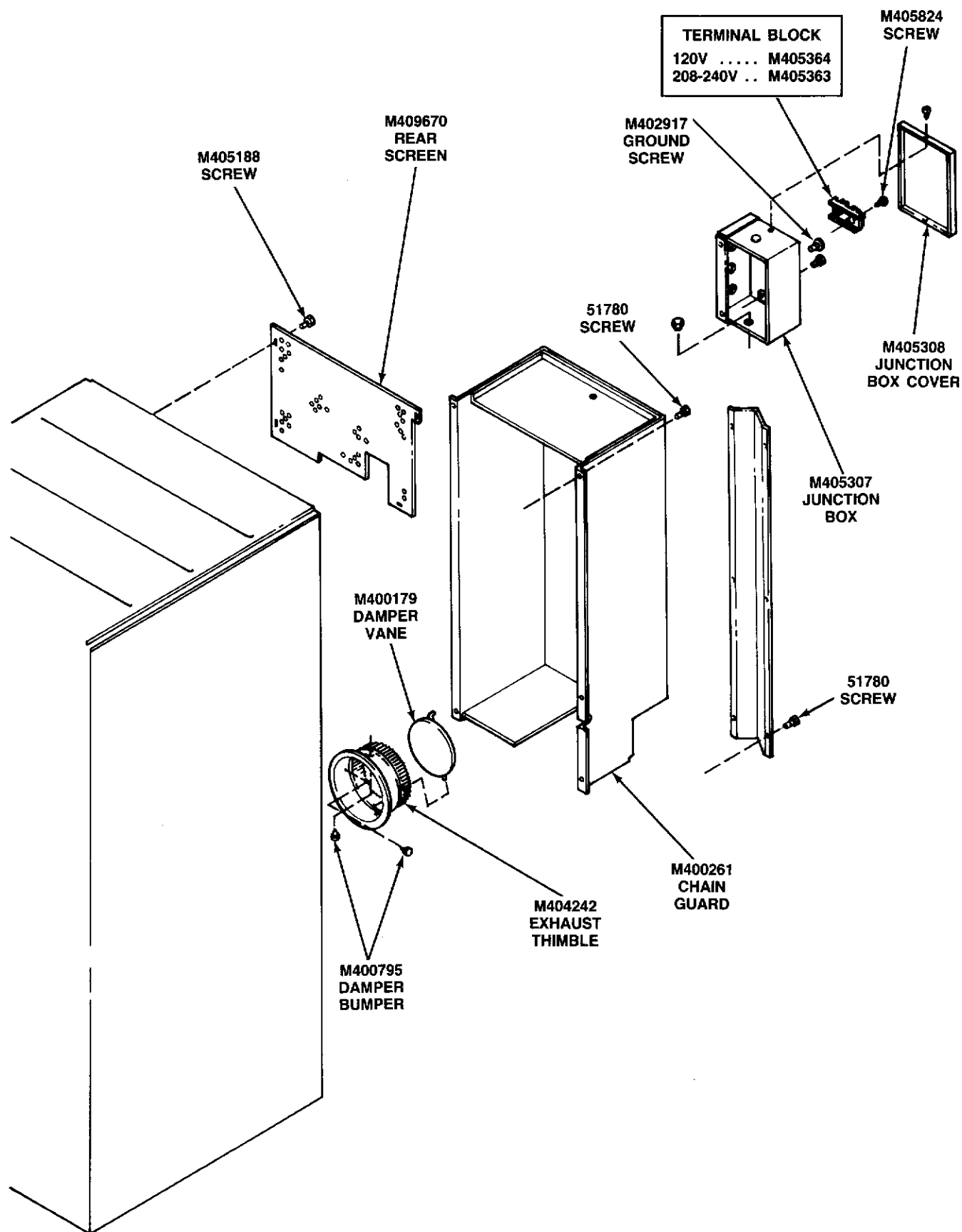
**BURNER ASSEMBLY
INSTANT ELECTRONIC IGNITION**

ORIFICE PART NUMBERS

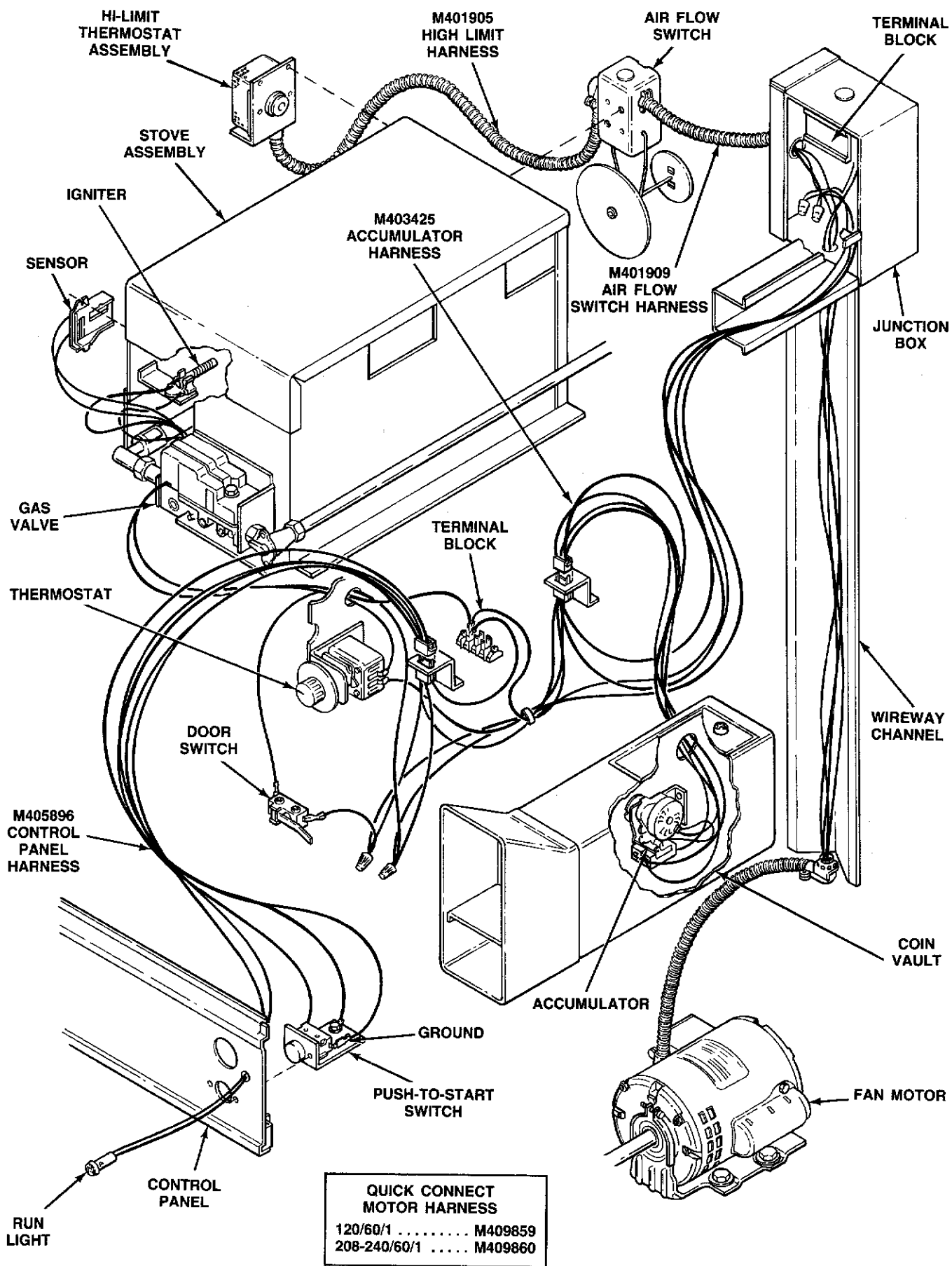
Option No.	Orifice Part No.	Gas — Altitude
M408502	M402992	Nat. Gas: 0 - 1500'
M408503	M401020	Nat. Gas: 1501 - 3500'
M408504	M402980	Nat. Gas: 3501 - 4500'
M408505	M402997	Nat. Gas: 4501 - 5500'
M408506	M401000	Nat. Gas: 5501 - 6500'
M408507	M400998	Nat. Gas: 6501 - 7500'
M408508	M403017	LP Gas: 0 - 2500'
M408509	M406184	LP Gas: 2501 - 5500'
M408510	M401011	LP Gas: 5501 - 7500'
M408511	M401027	LP Gas: 7501 - 8500'



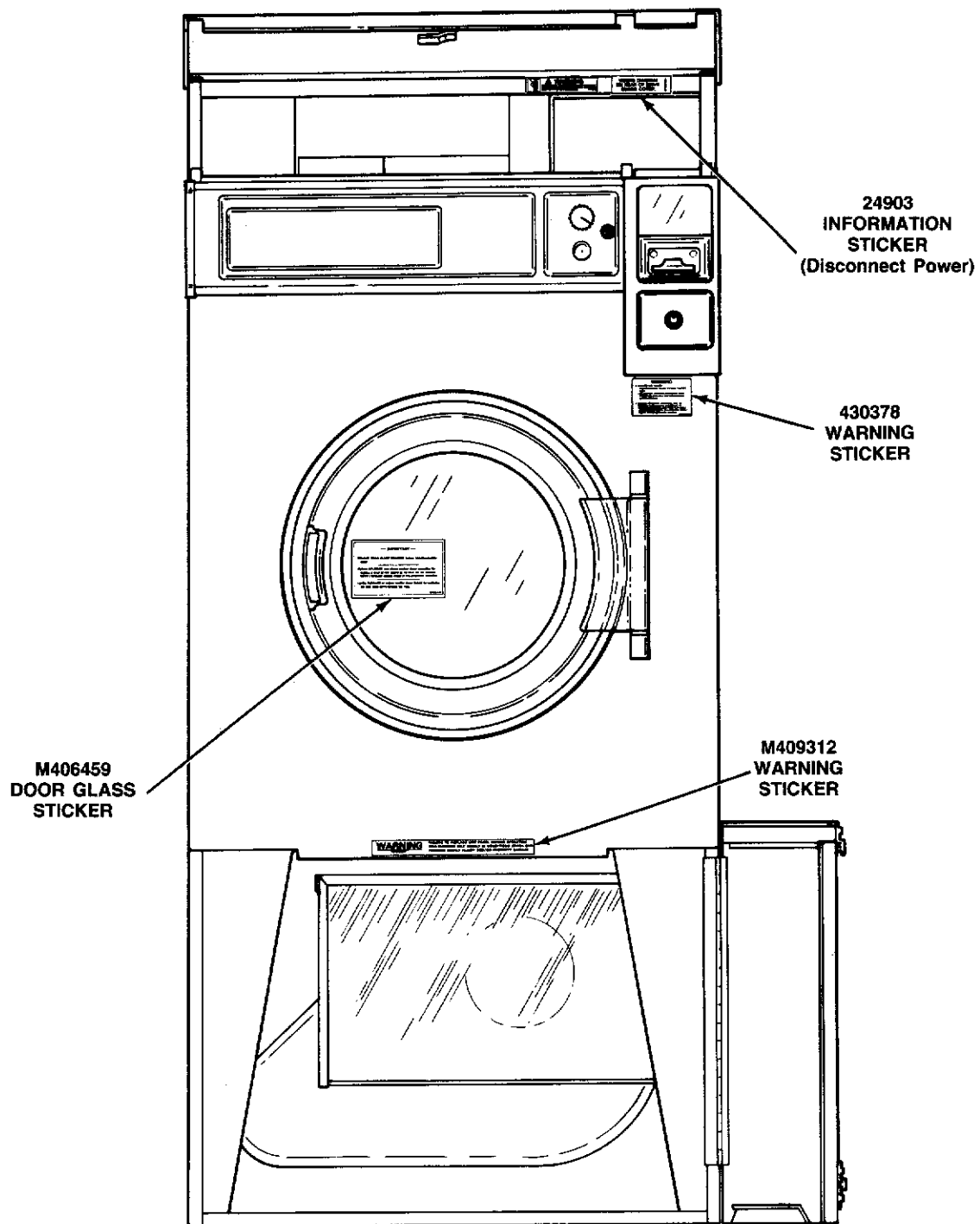
**BURNER ASSEMBLY
GLOWBAR IGNITION**



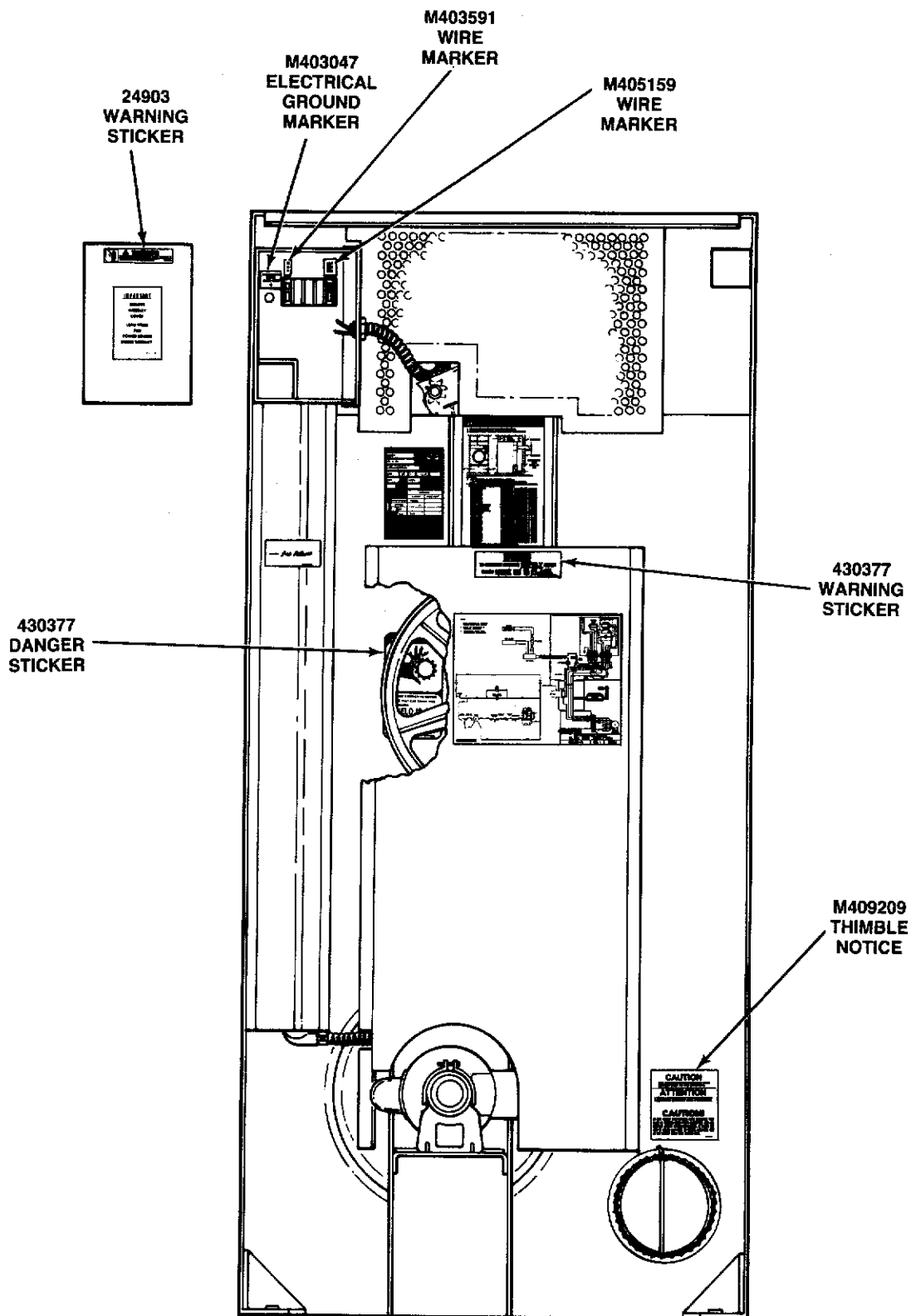
JUNCTION BOX, REAR GUARDS AND THIMBLE



WIRE HARNESSES AND JUMPERS



DECALS (Front of Unit)



DECALS (Rear of Unit)

SECTION II

Service Procedures

IMPORTANT: When reference to direction (right or left) is made in this manual, it is from the operator's position facing the front of the drying tumbler.

⚠WARNING

FOR SAFETY REASONS, DISCONNECT ELECTRICAL SERVICE AND CLOSE VALVE IN GAS SUPPLY LINE BEFORE SERVICING.

1. CONTROL PANEL

- a. Unlock and open access door.
- b. Remove two Phillips head screws holding control panel to cabinet.
- c. Lift control panel off brackets.
- d. Disconnect wire harness at the Molex plug, and remove control panel.

2. PUSH-TO-START SWITCH ASSEMBLY

- a. Remove control panel, paragraph 1.
- b. Remove two Phillips head screws holding start switch assembly to control panel.
- c. Disconnect wires from switch.

NOTE: Refer to wiring diagram when rewiring switch.

3. TERMINAL BLOCK

- a. Remove control panel, paragraph 1.
- b. Remove Phillips head screws holding terminal block(s) to bracket.
- c. Disconnect all wires from terminal block.

NOTE: Refer to wiring diagram when rewiring.

4. BURNER SYSTEM COMPONENTS

- a. Complete Gas Valve Assembly
 1. Unlock and open access door.
 2. Remove control panel assembly, paragraph 1.
 3. Close manual gas supply valve.

4. Disconnect all wires from gas valve and disconnect gas valve pipe unions.
5. Remove Phillips head screws holding gas valve and bracket to stove assembly.

NOTE: The holding coil, booster coil and secondary coil can be replaced individually or in a kit. Refer to the parts section of this manual for the part numbers and assembly sequence.

b. Burner Tube Assembly

1. Unlock and open access door.
2. Remove control panel assembly, paragraph 1.
3. Disconnect gas valve pipe union and remove manifold.
4. Remove Phillips head screws holding burner tube to stove frame and remove burner tube.

c. Igniter and Bracket

1. Unlock and open access door.
2. Using a 90 degree tip Tru-Arc pliers, insert the plier tips into holes in each mounting clip and spread clips just far enough for igniter removal.

⚠WARNING

USE EXTREME CARE WHEN HANDLING THE IGNITER AS IT IS VERY FRAGILE. HANDLE IGNITER BY GRASPING THE WHITE CERAMIC PORTION ONLY. DO NOT HANDLE THE SILICON CARBIDE PORTION OF THE IGNITER WITH HANDS OR ALLOW ANY OIL, GREASE OR OTHER FOREIGN MATERIAL TO CONTAMINATE IT. HAIRLINE CRACKS OR OIL, GREASE OR OTHER IMPURITIES WILL CAUSE IGNITER TO BURN OUT.

3. Remove screw holding igniter bracket to stove assembly.

4. Flame Sensor

- a. Unlock and open access door.
- b. Disconnect wires from flame sensor.
- c. Remove screw holding flame sensor to side of stove assembly.

5. OPERATING THERMOSTAT

- a. Unlock and open access door.
- b. Remove control panel assembly, paragraph 1.
- c. Pull thermostat knob off thermostat shaft.
- d. Disconnect all wires from thermostat.

NOTE: Refer to wiring diagram when rewiring thermostat.

- e. Remove two Phillips head screws holding thermostat to mounting bracket.
- f. Remove Phillips head screws holding wire cover to rear of tumbler.
- g. Unlock and open lint panel door.
- h. Spread locking tabs on sensing probe bracket.
- i. Carefully feed sensing probe through openings in cabinet and remove thermostat.

IMPORTANT: DO NOT bend or kink sensing tube when removing or installing thermostat.

6. DOOR HANDLE

- a. Open loading door.
- b. Remove two Phillips head screws holding door handle to door frame.

7. FRONT PANEL

- a. Unlock and open access door.
- b. Remove two Phillips head screws holding control panel to cabinet.
- c. Lift control panel off brackets.
- d. Disconnect wire harness at Molex plug, and set panel aside to prevent damage.
- e. Unlock, open and remove lint panel door and set aside to prevent damage.

NOTE: Nylon washer must be in place on lower hinge pin when reinstalling door.

- f. Support front panel and remove Phillips head screws holding front panel to tumbler cabinet.
- g. While supporting front panel, tilt panel away from tumbler far enough to permit removing wires from door switch.

8. AIRFLOW SWITCH

- a. Remove airflow switch box cover.
- b. Disconnect wires from switch.

NOTE: Refer to wiring diagram when rewiring switch.

- c. Remove two Phillips head screws holding switch and mounting bracket to switch box.
- d. Remove two screws holding switch to mounting bracket.

NOTE: After reinstalling airflow switch and mounting bracket into switch box, adjust switch, paragraph 22.

9. CHAIN GUARD

- a. Support chain guard and remove Phillips head screws holding guard to rear of tumbler.

⚠ WARNING

For personal safety, chain guard MUST be reinstalled after servicing has been completed.

10. WIRE COVER

- a. Remove Phillips head screws holding cover to rear of tumbler.
- b. Remove cover from the rear of the tumbler.

IMPORTANT: When reinstalling cover, be sure no wires are pinched between the rear of the tumbler cabinet and the cover.

11. BELT

- a. Support chain guard and remove Phillips head screws holding guard to rear of tumbler.

▲WARNING

For personal safety, chain guard MUST be reinstalled after servicing has been completed.

- b. Run belt off sheave and motor pulley.

NOTE: When reinstalling new belt, center 4 groove belt on 6 groove sheave and motor pulley, adjust belt, paragraph 25, then adjust chain.

- c. Loosen upper bolt and nut holding guide rails to trunnion housing.
- d. Remove lower bolt and nut from guide rail. Hinge guide rail out and slip belt out from under guide rails.

12. IDLER

- a. Remove chain guard, paragraph 9.
- b. Remove jamnut from idler sprocket locking bolt.
- c. Slide idler sprocket to the right and remove sprocket from bolt.

NOTE: After installing idler sprocket on locking bolt, adjust chain.

13. SHEAVE

- a. Remove chain guard, paragraph 9.
- b. Run belt off sheave and motor pulley.
- c. Loosen jamnut on idler sprocket and move idler sprocket to the right.
- d. Run chain off idler sprocket.
- e. Remove the upper and lower bolts, nuts and lockwashers holding guide rails to trunnion housing and motor bracket.
- f. Remove the sheave, guide rails and idler housing as an assembly from the rear of the tumbler.
- g. Remove snap ring from idler shaft.
- h. Loosen two setscrews holding sheave to idler shaft and pull sheave off idler shafts.

NOTE: Sheave is keyed to idler shaft.

IMPORTANT: Reassemble sheave to idler shaft; run sheave out until it butts against snap ring; insure key is positioned under set screw; tighten set screw above key first, then other set screw. Realign motor pulley directly under sheave.

NOTE: After installing sheave to the rear of the tumbler, adjust belt, paragraph 25, then adjust chain.

14. IDLER HOUSING

- a. Remove chain guard, paragraph 9.
- b. Run belt off sheave and motor pulley.
- c. Loosen jamnut on idler sprocket and move idler sprocket to the right.
- d. Run chain off idler sprocket.
- e. Remove the upper and lower bolts, nuts, and lockwashers holding guide rails to trunnion housing and motor bracket.
- f. Remove the sheave, guide rails and idler housing, as an assembly from the rear of the tumbler.
- g. Remove snap ring from idler shaft.
- h. Loosen two setscrews holding sheave to idler shaft and pull sheave off idler shaft.

NOTE: Sheave is keyed to idler shaft.

IMPORTANT: Key must be positioned properly on idler shaft when installing sheave.

NOTE: After installing sheave to the rear of the tumbler, adjust belt, paragraph 25, then adjust chain.

- i. Remove bolt, nut, lockwasher and two rectangular washers holding idler housing to guide rails. Support idler housing and carefully drive idler shaft from housing using a hammer and a hardwood dowel.
- j. Support idler housing and drive bearings from housing using hammer and hardwood dowel.

15. TRUNNION HOUSING ASSEMBLY

- a. Remove chain guard, paragraph 9.
- b. Run belt off sheave and motor pulley.

NOTE: After installing chain on the cylinder, drive and idler pulleys, adjust belt.

- c. Remove pulley from cylinder shaft.

NOTE: Pulley is keyed to shaft and may require being removed by means of a puller. However, if a puller is required, use extreme care so as not to damage the pulley during removal.

- d. Remove the upper and lower bolts, nuts, and lockwashers holding guide rails to trunnion housing and motor bracket.
- e. Remove the sheave, guide rails and idler housing.
- f. Remove four cap screws holding trunnion housing assembly to rear of tumbler cabinet.
- g. Use a gear puller and pull the trunnion housing assembly off the cylinder shaft.
- h. Remove the four bearing retainer screws holding the small bearing in housing.
- i. Support trunnion housing and drive small bearing from housing using hammer and hardwood dowel.
- j. Drive large bearing from housing using hammer and hardwood dowel.

NOTE: When installing new bearings, apply a film of oil to the bearing cavity surfaces in the housing and to the outside diameter of the bearings.

- k. Press bearings into housing.

NOTE: If press is not available for installing bearings into housing, tap bearings into housing using a prylin hammer.

- l. Install bearing retainer screws removed in step "h".

NOTE: After trunnion housing assembly is installed to the rear of the tumbler cabinet and cylinder pulley is installed on the shaft, adjust cylinder, paragraph 26.

- m. Install sheave and guide rails to trunnion housing.
- n. Install belt on motor pulley and sheave and attach guide rails to motor bracket.
- o. Install belt on cylinder pulley and idler pulley.

NOTE: After installing belt, adjust belt, paragraph 25.

16. CYLINDER ASSEMBLY

- a. Unlock and open access door.
- b. Remove two Phillips head screws holding control panel to cabinet.
- c. Lift control panel off brackets.
- d. Disconnect wire harness at the Molex plug and set control panel aside.
- e. Unlock, open and remove lint panel door.
- f. Open loading door.
- g. While supporting front panel, remove the Phillips head screws holding front panel to tumbler cabinet.

NOTE: Refer to wiring diagram when rewiring switch.

- h. Loosen jamnut on idler pulley and move idler sprocket to the right.
- i. Run chain off idler sprocket and drive sprocket.
- j. Lift chain off cylinder pulley.

NOTE: After reinstalling chain on the cylinder, drive and idler pulley, adjust belt.

- k. Remove pulley from cylinder shaft.

NOTE: Pulley is keyed to shaft and may require being removed by means of a puller. However, if a puller is required, use extreme care so as not to damage the sprocket during removal.

- l. Pull cylinder out through front of tumbler.

NOTE: When removing cylinder out through front of cabinet, spread cabinet slightly so cylinder will clear cabinet sides.

IMPORTANT: After installing cylinder and shaft, adjust cylinder, paragraph 26.

17. TRUNNION SHAFT ASSEMBLY

- a. Remove cylinder assembly, paragraph 16.
- b. Remove the three rib rods, washers and nuts holding trunnion shaft assembly to rear of cylinder.

IMPORTANT: When installing trunnion shaft assembly on cylinder, cylinder and shaft must be leveled. Support a six foot 2 x 4 and drill a hole in the 2 x 4 slightly larger than size of the trunnion shaft. Hang shaft and cylinder through the hole and place nut on shaft. While turning cylinder by hand, use a gauge and check the cylinder edge for levelness. If cylinder is not level, place a shim or shims between the appropriate trunnion bracket, rod and cylinder.

NOTE: After installing cylinder and shaft, adjust cylinder, paragraph 26.

18. MOTOR AND FAN ASSEMBLY

- a. Run belt off motor pulley.
- b. Remove the seven fan housing attaching screws.
- c. Remove the two cap screws, nuts and washers, holding motor bracket to rear of tumbler cabinet.
- d. Remove plate from motor junction box and disconnect wires from motor.

NOTE: When installing motor, refer to wiring diagram when rewiring motor.

- e. Using the guide rails as support, swing motor and fan assembly out and away from rear of tumbler.
- f. While supporting motor and fan assembly, remove the bottom bolt holding the motor fan and bracket to guide rails.
- g. Remove four nuts, washers and bolts holding mounting bracket to motor.
- h. Remove locknut and jamnut holding fan on motor shaft, and pull fan off motor shaft.

NOTE: Fan is keyed to motor shaft and may require being removed from shaft by means of a puller.

- i. Remove spacer washer from motor shaft.
- j. Loosen two setscrews holding motor pulley to motor shaft.

NOTE: A puller may be required to remove pulley from motor shaft.

19. STOVE HIGH LIMIT THERMOSTAT

- a. Reach in through rear of tumbler and remove two Phillips head screws holding thermostat, bracket and cover to left side of stove.
- b. Carefully remove thermostat, bracket and cover out through rear of tumbler as far as wire harness permits.
- c. Remove two Phillips head screws holding cover to mounting bracket.
- d. Disconnect wires from thermostat.
- e. Remove two Phillips head screws holding thermostat to mounting bracket.

SECTION III

Adjustments

20. LEVELING LEGS

NOTE: Each tumbler should be leveled from front to rear and from side to side.

- a. Check the front to rear level by rotating the clothes cylinder until one of the cylinder ribs is at the bottom.
- b. Place a level on the rib.
- c. Thread leveling legs, located at each corner of base, in or out of base as necessary to level the tumbler. Keep the tumbler as close to the floor as possible. All four legs must rest firmly on the floor.

NOTE: It is recommended to have the front of the tumbler slightly higher than the rear (approximately 1/8). This will prevent the clothes, while tumbling, from wearing on the door glass gasket.

- d. Check the side to side level by placing a level on the front and rear top panel.

21. MAIN GAS BURNER AIR SHUTTER

⚠WARNING

The air inlet shutter on the burner must be adjusted so sufficient air is metered into the system for proper combustion and maximum efficiency. Before adjusting the inlet shutter be sure that all lint is removed from lint compartment and lint screen.

Air shutter adjustments will vary from location to location and will depend on the vent system, number of units installed, make-up and line gas pressure. Opening the shutter increases the amount of air supplied to the burner while closing the shutter decreases the air supply. Adjust air shutter as follows:

- a. Unlock and open the access door.
- b. Start the tumbler and check the flame pattern. Correct air and gas mixture is indicated if the flame pattern is primarily blue, with small yellow tips, and bends to the right of the heater section. Too little air is indicated if the flame is yellow, lazy and smokey.
- c. To adjust the air shutter, loosen air shutter adjusting screw.
- d. Turn air shutter to the right or left as necessary to obtain flame intensity.
- e. After air shutter is adjusted for proper flame, tighten air shutter adjusting screw securely. Control panel may have to be removed temporarily to loosen air shutter screw and to turn shutter.
- f. If the shutter is correctly adjusted, but the flame pattern is straight up, insufficient air is flowing through the tumbler and airflow switch is improperly set. A flame pattern that flares to the right and left, indicates no air is flowing through the tumbler.

22. AIRFLOW SWITCH

The airflow switch (located on the rear of the stove) is set at the factory for proper operation. However, if there is a problem with the switch, it should be adjusted as follows:

⚠WARNING

CONTROL PANEL MUST BE IN PLACE AND ACCESS DOOR CLOSED BEFORE ATTEMPTING TO ADJUST AIRFLOW SWITCH.

IMPORTANT: Airflow switch disc must remain closed during operation. If it opens and closes during the drying cycle, this indicates insufficient airflow through the tumbler. If switch remains open, or pops open and closed during the cycle, the heating system will shut off. The cylinder and fan will continue to operate even though the airflow switch is malfunctioning.

⚠WARNING

AIRFLOW SWITCH OPERATION MAY BE AFFECTED BY A CLOGGED LINT SCREEN, LACK OF MAKE-UP AIR, OR OBSTRUCTIONS IN VERTICAL RECIRCULATION STACK OR IN THE CUSTOMER INSTALLED MAIN OR COLLECTOR DUCTS. THESE CONDITIONS MUST BE CHECKED AND NECESSARY CORRECTIONS MADE BEFORE ADJUSTING AIRFLOW SWITCH. ALWAYS ADJUST AIRFLOW AT INSTALLATION.

The airflow switch operation is controlled by the counterweight position on the shaft. Moving the counterweight either increases or decreases airflow switch sensitivity. The counterweight should be adjusted so the airflow will force the disc away from the cabinet when the lint panel is opened 1-1/2 inches (3.81 cm). Adjust the airflow switch as follows:

- a. Load the tumbler with a cotton load. This adjustment is much faster to make with one person opening lint panel in front and another adjusting the counterweight at the rear of the tumbler.
- b. Start the tumbler. Open the lint panel 1-1/2 inches (3.81 cm). The airflow disc should move away from the cabinet, opening the switch contacts and shutting off the heat system. This indicates proper operation and proper adjustment.
- c. If switch is not opening as described in step "b", it should be adjusted so it is **MORE** sensitive. Depress the spring clip and move counterweight toward disc. Retest by opening lint panel and continue moving counterweight toward disc until switch operates as described in step "b".
- d. If switch opens **BEFORE** lint panel is opened the proper distance, step "b", it should be adjusted so it is **LESS** sensitive. Depress the spring clip and move counterweight away from the disc. Retest by opening lint panel and continue moving counterweight away from disc until switch operates as described in step "b".

23. CYLINDER DOOR SWITCH

The door switch should be adjusted so the cylinder stops when door is opened two inches (5.08 cm), plus or minus 1/4 inches (6.35 mm). This switch is a normally open switch and is closed when the door is closed.

- a. Close door and start tumbler, slowly open loading door. Cylinder and heat system should shut off when door is open two inches (5.08 cm) plus or minus 1/4 inch (6.35 mm).

24. CYLINDER DOOR STRIKE

The door strike must be adjusted to have sufficient tension to hold loading door closed against force of load tumbling against it. Proper adjustment is when two to three pounds (.91 to 1.36 kg) pull is required to open door.

To adjust, open door, loosen jamnut and turn door strike screw in or out as required. Retighten jamnut.

25. POLY "V" DRIVE BELT TENSION

⚠WARNING

DISCONNECT POWER TO MACHINE BEFORE PERFORMING THIS OPERATION.

Proper tension is when the belt can be depressed approximately 1/2 inch (12.7 mm) by applying light thumb pressure at a point midway between the sheave and motor pulley.

- a. Remove chain guard from rear of tumbler.

IMPORTANT: Guard MUST be installed on rear of tumbler after belt adjustment is made.

- b. To adjust belt tension, loosen adjusting bolt holding idler housing assembly to the housing support.
- c. Lift idler housing assembly upward until proper belt tension is reached and retighten adjusting bolt.

26. CYLINDER

The clearance between the cylinder rim and front panel must be adjusted so the cylinder is centered within the front panel opening when the cylinder is fully loaded and is turning. However, the adjustment should be made when the cylinder is empty.

NOTE: If the cylinder is not properly adjusted, the cylinder rim will rub against the front panel.

- a. Open loading door and check the gap between the center of the front panel top flange and the cylinder rim.

NOTE: The gap should be 7/16 inch (11.113 mm).

- b. Remove chain guard, paragraph 9.

⚠WARNING

For personal safety, chain guard MUST be reinstalled after servicing is completed.

- c. Loosen the four trunnion housing cap screws.
- d. Loosen the locknuts on the trunnion housing adjustment screws.
- e. Turn the adjustment screws in or out as necessary to obtain proper clearance.

NOTE: Turning the adjusting screws clockwise will raise the cylinder and turning them counterclockwise will lower the cylinder. The cylinder can be shifted from side to side by turning one or the other adjustment screws in or out as required to obtain proper clearance.

- f. After the cylinder is properly adjusted, tighten the adjusting screw locknuts and the four trunnion housing cap screws.
- g. Install the chain guard removed in step "b".

SECTION IV

Service Helps

▲WARNING

FOR SAFETY REASONS, DISCONNECT ELECTRICAL SERVICE AND CLOSE VALVE IN GAS SUPPLY LINE BEFORE SERVICING TUMBLER.

IMPORTANT: Refer to appropriate wiring diagram for aid in testing tumbler components.

27. MOTOR DOES NOT START

POSSIBLE CAUSES	TO CORRECT
Electrical power off or fuses blown.	Check power supply, or replace fuses.
Loading door is not closed or inoperative door switch.	Close door, or test switch and replace if inoperative.
Door switch improperly adjusted.	Refer to ADJUSTMENT SECTION in this manual for door switch adjustment.
Trunnion shaft assembly binding in trunnion housing bearings.	Replace trunnion housing bearings.
Start circuit not completed.	Press start switch button, or test switch and replace if inoperative.
Idler shaft binding in idler housing bearings.	Replace bearings.
Inoperative motor.	Have motor tested and replace if inoperative.
Metered Models: Improper coins inserted in accumulator.	Check that proper coins are inserted.
Metered Models: Inoperative run switch (accumulator).	Test run switch and replace if inoperative.
Broken, loose, or incorrect wiring.	Refer to appropriate wiring diagram.

28. TEMPERATURE CONTROL AND LIMIT SYSTEM

Two thermal devices are used in the temperature control and limit system. They are:

- a. Temperature selector thermostat and temperature selector thermostat sensing probe.
- b. Stove high limit thermostat.

The temperature selector thermostat control point is regulated by the TEMPERATURE selector. The setting of this thermostat regulates the temperature of the air circulating through the load. The thermostat has a 140°F (60°C) to 190°F (88°C) range.

PROPER AIR FLOW THROUGH UNIT AND PROPER ADJUSTMENT TO THE MAIN GAS BURNER AIR INLET SHUTTER IS INDICATED WHEN THE FLAME IS PRIMARILY BLUE, WITH SMALL YELLOW TIPS, AND FLAME PATTERN BENDS.

INSUFFICIENT AIR FLOW THROUGH UNIT IS INDICATED WHEN THE FLAME PATTERN IS STRAIGHT UP.

NO AIR FLOW THROUGH UNIT IS INDICATED WHEN THE FLAME PATTERN IS STRAIGHT UP AND FLARES OUT TO THE LEFT AND RIGHT.

The temperature selector thermostat controls the circulating air temperature by opening and closing the main gas valve. When the circulating air temperature reaches the thermostat control point ($\pm 5^\circ\text{F}$) the main gas valve coil is de-energized, closes, and shuts off gas flow to the main gas burners. When the circulating air temperature falls below the control point the main gas valve coil is energized, opens, and gas flows to the main gas burner. The pilot flame lights the main gas burner.

The stove high limit thermostat is a bimetal disc type thermostat that opens when the heater section surface temperature exceeds 340°F (171°C). When this condition exists, gas flow to the main gas burner stops and the cylinder and fan continue to operate.

29. ADJUSTING MAIN GAS BURNER AIR INLET SHUTTER

The main gas burner air inlet shutter must be properly adjusted so sufficient air is metered into the gas burner for proper combustion.

⚠ WARNING

Proper combustion is essential for maximum efficiency. Before adjusting an air inlet shutter, check that lint is removed from the lint compartment and screen.

Adjusting the air inlet shutter is largely a matter of trial and error. Opening the shutter increases the air admitted to the burner. Closing the shutter decreases the air admitted to the burner. The following steps outline the procedure for adjusting the shutter:

- a. Unlock the panel lock and open the top panel.
- b. Start the unit and check the flame pattern. Correct air-gas mixture is indicated if the flame pattern is primarily blue, with small yellow tips, and bends to the right of the heater section. A low air-gas mixture is indicated if the flame is yellow.
- c. To adjust the shutter, loosen the air inlet shutter adjusting screw and turn the shutter to open or close the inlet as required. Tighten screw after final adjustment.
- d. If the shutter is correctly adjusted, but the flame pattern is straight up, insufficient air is flowing through the unit. A flame pattern that flares to the right and left indicates no air flowing through the unit.

30. AIR FLOW SWITCH ADJUSTMENT

The air flow switch acts to stop burner operation if air flow through the unit falls below a safe limit. The switch is normally held open by the spring loaded switch actuator. When the switch is open the main gas valve operator is de-energized, and the main gas valve closes. When air flow is sufficient the disc is drawn against the stove rear plate and the switch is actuated closed. When the switch is closed the main gas valve operator is energized, opening the main gas valve. This condition exists as long as there is proper air flow through the unit. If the air flow falls below the safe limit the spring loaded actuator overrides the circulating air closing force, the spring loader actuator pivots the disc away from the stove rear plate and the switch opens.

NOTE: The air flow switch is normally open. The switch closes and is held closed when the disc is drawn against the stove rear plate.

⚠WARNING

AIR FLOW THROUGH THE UNIT MAY BE AFFECTED BY A CLOGGED LINT SCREEN, LACK OF MAKE-UP AIR, CLOSED BACK DRAFT DAMPERS OR OBSTRUCTIONS IN THE CUSTOMER INSTALLED EXHAUST DUCT. THESE CONDITIONS SHOULD BE CHECKED AND REQUIRE CORRECTIVE ACTION TO BE TAKEN BEFORE ADJUSTING THE AIR FLOW SWITCH.

NOTE: The cylinder-fan motor continues to operate if the air flow switch is opened by insufficient air flow.

Air flow switch operation is controlled by the counterweight position on the shaft. Moving the counterweight increases or decreases air flow switch sensitivity. The counterweight should be adjusted so the switch actuator positions the disc away from the stove rear plate when the lint panel is opened 1-1/2 in.* or 5-1/2 in.** The following steps outline the procedure for adjusting the air flow switch.

NOTE: It is recommended the air flow switch operation be adjusted with the cylinder loaded to capacity (24 lb.)

- a. Load the cylinder with a 24 lb. capacity load.
- b. Start the unit. Open the lint panel 1-1/2 in.* or 5-1/2 in.** The air flow disc should move from the stove rear plate, and stop main gas burner operation. If this condition exists the counterweight is properly adjusted. If the switch is not actuated when the panel is opened 1-1/2 in.* or 5-1/2 in.** the counterweight should be adjusted so the switch is more sensitive. If the air flow disc moves away from the stove rear plate before the panel is opened 1-1/2 in.* or 5-1/2 in.** the counterweight should be adjusted so it is less sensitive.
- c. To adjust the counterweight compressing the spring clip and move the counterweight in the proper direction; outward to make the switch less sensitive or inward to make it more sensitive. Repeat step B as required until the switch is properly actuated.

31. SELECTING AND CHANGING GAS ORIFICES

A unit is shipped with orifice installed that normally are best suited for the gas being used (natural or LP) and for the elevation the unit will be installed at. The main gas orifices and pilot gas orifices must be changed if the unit is modified for a different type gas or the unit is installed at an elevation not compatible with the orifices installed. The orifices may also have to be changed if the heat value (BTU/cu. ft.) and specific gravity vary from that of natural gases normally furnished in North America.

* With capacity (24 lb) load

**No load

⚠WARNING

AFTER CHANGING ANY ORIFICE, CHECK FOR LEAKS WITH A SOAP AND WATER SOLUTION.

Before changing an orifice determine the BTU/cu. ft. value of the gas connected and then select the proper orifice.

Gas Burner Orifice Data

	Altitude	Drill Size	Part No.
Natural Gas	0-1,500	No. 21	M402992
1,000 BTU/cu. ft.	1,501-3,500	No. 23	M401020
Specific Gravity 0.60	3,501-4,500	No. 24	M402980
3.5 in. WC	4,501-5,500	No. 25	M402997
	5,501-6,500	No. 26	M401000
	6,501-7,500	No. 27	M400998
Propane Gas	0-2,500	No. 42	M403017
2,500 BTU/cu.ft.	2,501-5,500	No. 43	M406184
11 in. WC	5,501-7,500	No. 44	M401011
	7,501-8,500	No. 45	M401027

The following steps outline the procedure for changing the burner orifice.

- Loosen the manifold burner nut. Remove the gas burner manifold from the gas burner.
- Unscrew the gas burner orifice. Screw the proper size orifice in position finger-tight and then tighten them an additional 1/8 turn. Place the gas burner manifold in position and tighten the nut.

⚠WARNING

Do not overtighten the orifice or it may collapse and change the orifice size.

32. CYLINDER DOOR INTERLOCK SWITCH CHECK AND ADJUSTMENT

The cylinder door interlock system should be adjusted so the cylinder stops when the cylinder door is opened $2 \pm 1/4$ in. The cylinder door interlock switch is a normally open switch actuated closed by the interlock rod when the cylinder door is closed. The following steps outline the procedure for checking and adjusting the cylinder door interlock system.

- a. Start the unit. Slowly open the cylinder door. If the unit stops when the door is opened $2 \pm 1/4$ in. the interlock system components are properly adjusted. If the cylinder does not stop proceed with step B.
- b. Slowly close the door. When the cylinder door is approximately 2 in. from being fully closed the hinge plate should contact the cylinder door interlock rod and move it enough so it actuates the switch actuating lever enough to open the switch. This is evidenced by a slight click. If the rod does not move sufficiently to actuate the switch it must be adjusted. (Refer to step C).
- c. Open the top panel and remove the control panel. Loosen the screws and move the switch $1/8$ in. towards the front of the switch bracket. Tighten the screws. Repeat step A. If the switch is not actuated move the switch forward an additional $1/8$ in.

33. CYLINDER DOOR STRIKE ADJUSTMENT

The door strike must be adjusted so the forces created by the load striking the door will not open it. The door strike is properly adjusted when it contacts the door latch so an approximate force of two to three pounds is required to open the door. To adjust the door strike, turn the door strike in or out as required.

▲WARNING

Do not turn the door strike outward so far it gouges the door latch when it contacts the latch.

34. DRIVE BELT TENSION ADJUSTMENT AND REPLACEMENT

Two like belts (poly v-belts), a motor-idler belt, and an idler-cylinder belt are in the drive system. The motor-idler belt belts the motor pulley and the idler sheave. The idler-cylinder belt belts the idler drive pulley and the cylinder sheave.

▲WARNING

OPEN THE CUSTOMER FURNISHED DISCONNECT SWITCH OR PULL THE CUSTOMER FURNISHED CIRCUIT BREAKER BEFORE PERFORMING ANY BELT MAINTENANCE.

Proper tension on the idler-cylinder belt is automatically maintained by the spring loaded idler roller. If this belt slips check the belt for wear (worn grooves or v sections) and the idler roll spring for tension. Replace the belt if worn. Check roller spring tension by pulling outward on the idler roller. Normally a pull of two to three lbs. is required to pull the roller fully outward. If the force is less than two lbs. replace the spring.

Tension on the motor-idler belt is adjusted by raising or lowering the idler housing. The idler housing should be positioned so the belt can be depressed $3/8$ to $5/8$ in. by applying light finger pressure midpoint between the motor pulley and the idler sheave. To adjust motor-idler belt tension loosen the idler housing bolt, position the idler housing as required, and then tighten securely the idler housing bolt.

35. CYLINDER REMOVAL AND INSTALLATION

▲WARNING

THE CYLINDER SHEAVE, IDLER SHEAVE, AND MOTOR PULLEY ARE LOCKED BY SETSCREWS. SET-SCREW THREADS SHOULD BE COATED WITH 290 LOCTITE BEFORE THEY ARE INSTALLED.

⚠WARNING

THE CYLINDER SHOULD BE ADJUSTED SO THE GAP BETWEEN THE CYLINDER AND FRONT PANEL AT TOP CENTER IS $1/4 \pm 1/16$ IN. AND AT BOTTOM CENTER IS $7/16 \pm 1/16$ IN. WHEN THE CYLINDER IS EMPTY.

The following steps outline the procedure for removing and installing a cylinder.

⚠WARNING

OPEN THE CUSTOMER FURNISHED DISCONNECT SWITCH OR PULL THE CUSTOMER FURNISHED CIRCUIT BREAKER BEFORE PERFORMING ANY CYLINDER MAINTENANCE.

- a. Remove the front panel.
- b. Remove the idler-cylinder drive belt.
- c. Remove the palnut. Remove the jamnut.
- d. Remove the setscrews locking the cylinder sheave to the trunnion shaft.
- e. Strike the cylinder shaft with a prylin hammer or piece of wood to loosen the cylinder shaft and cylinder sheave. Remove the sheave. Remove the key from the trunnion shaft or cylinder sheave keyway. Remove the cylinder through the front opening.
- f. Before replacing a cylinder, coat the cylinder shaft with light grease. Insert the cylinder shaft through the front trunnion bearing and rear bearing. Place the key in the cylinder shaft keyway. Slide the cylinder sheave onto the shaft so the key mates with the sheave keyway. Position the sheave so it is aligned with the idler drive pulley. Tighten the setscrews. Screw the jamnut onto the cylinder shaft and securely tighten it. Install the palnut and tighten it against the jamnut.

Place the idler-cylinder belt around the cylinder sheave, idler roller and drive pulley.

- g. Adjust cylinder clearance. (Refer to paragraph 36.)

36. CYLINDER CLEARANCE ADJUSTMENT

The clearance between the cylinder rim and front panel must be adjusted so the cylinder is centered in the front panel opening when the cylinder is fully loaded and turning. The adjustment should be made when the cylinder is empty.

⚠WARNING

If the cylinder is not properly adjusted the cylinder rim will rub against the front panel.

The following steps outline the procedure for adjusting the clearance between the cylinder rim and front panel.

- a. Open the cylinder door. Check the gap between the center of the front panel top flange and cylinder rim top center. The gap should be $1/4 \pm 1/16$ in. Check the gap between the center of the front panel bottom flange and cylinder rim bottom center. The gap should be $7/16 \pm 1/16$ in. If the gaps are within tolerance the cylinder is properly centered in the front panel opening. If the gaps are not within tolerance proceed with steps B and C.
- b. Loosen the trunnion housing bolts. Loosen the jamnuts. Turn the trunnion housing setscrews in or out as required to adjust the cylinder.

37. IDLER HOUSING REMOVAL AND REPLACEMENT

The following steps outline the procedure for removing and replacing the idler housing assembly.

▲WARNING

OPEN THE CUSTOMER FURNISHED DISCONNECT SWITCH OR PULL THE CUSTOMER FURNISHED CIRCUIT BREAKER BEFORE STARTING TO REMOVE THE IDLER HOUSING.

- a. Remove the idler-cylinder drive belt from the idler drive pulley.
- b. Relieve the tension (refer to paragraph 34) from the motor-idler drive belt. Remove the belt from the idler sheave.
- c. Remove the idler housing bolt. Remove both guide rail bolts. Remove one guide rail.
- d. Remove the idler housing, idler sheave and idler drive pulley as an assembly. To remove the sheave from the idler shaft remove the snap ring, loosen both setscrews, and loosen the sheave by lightly tapping the idler shaft with a plastic mallet. Remove the key from the shaft or sheave keyway. To remove the idler drive pulley loosen both setscrews and lightly tap pulley or shaft with a plastic mallet to free the pulley and remove it. Remove the key from the pulley or shaft keyway.
- e. Before installing a new housing progressively place the cylinder sheave key in the shaft keyway, slide the sheave onto the shaft, tighten both setscrews and install the snap-ring. Place the idler drive pulley key in the shaft keyway and slide the pulley onto the shaft.
- f. Assemble the housing and guide rail in reverse order of disassembly.
- g. Place the motor-idler drive belt around the idler sheave and adjust belt tension. (Refer to paragraph 34). Place the idler-cylinder drive belt around the idler sheave and under the idler roller.

38. TRUNNION HOUSING, AND TRUNNION HOUSING BEARING REMOVAL AND REPLACEMENT

The following steps outline the procedure for removing and replacing the trunnion housing and replacing trunnion housing bearings.

▲WARNING

OPEN THE CUSTOMER FURNISHED DISCONNECT SWITCH OR PULL THE CUSTOMER FURNISHED CIRCUIT BREAKER BEFORE STARTING TO REMOVE THE TRUNNION.

- a. Remove the cylinder. (Refer to paragraph 35.)
- b. Remove the guide rail upper bolt and the trunnion housing bolts. Remove the trunnion housing. Remove the bearing retainer screws.
- c. Insert a wood or brass rod through the opening in the front trunnion bearing and place it against the rear trunnion bearing. Drive out the bearing by hitting the rod with a hammer.
- d. Insert the rod through the housing rear opening and place it against the front bearing. Drive out the bearing.
- e. Coat the housing bearing cavities and bearing race outer surfaces with light oil. Place one bearing in position so the outer race is parallel with the cavity. Press the bearing in place. Repeat for the second bearing. If a press is not available tap the bearings in place with a prylin hammer.

▲WARNING

If the bearings are tapped in place, hit only the outer race.

Install the bearing retainer screws.

- f. Install the trunnion housing by performing disassembly steps in reverse sequence.
- g. Install the cylinder. (Refer to paragraph 35) and adjust cylinder clearance. (Refer to paragraph 36).



