

# DOR-O-MATIC<sup>®</sup>



INSTRUCTIONS FOR INSTALLING AND USING THE

70587-9XX MICRO COMPUTER CONTROL BOX

## DOR-O-MATIC

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INSTRUCTIONS FOR INSTALLING THE #70587-9XX CONTROL BOX AND THE  
#72188-900 MOTOR AND GEAR BOX IN EXISTING ASTRO-SLIDE UNITS

A. GENERAL:

It has been a Dor-O-Matic policy to upgrade and improve our control box utilizing the latest computer technology. The #70587 is a continuation of this policy and was designed primarily to work with the #72188 motor gear box which has the door position sensor built into it to supply information to the computer for positive control of the door. This feature eliminates the need for any limit switches or position adjustments. This system can be used on any size single door opening from 15" to 8' and any size bi-parting pair door openings from 30" to 16'. For larger door sizes consult factory for special ordering information. The #70587 is furnished for operation on 115V 50/60 Hz  $\pm$  15% (Part #70587-900) or 230V 50/60 Hz  $\pm$  15% (Part #70587-991)

The #70587 control box has the following features:

1. Eliminates the resizing cycle when door or panel is broken away. Now when door or panel is broken out door stops. When door or panel recloses, door opens slowly then closes at normal speed and in normal operating mode.
2. Eliminates the requirement to turn off all power to reset the control box after the door has been jammed or activated when locked and safety shut down has occurred. Control box automatically resets when door is reactivated.
3. Eliminates the circuit breaker and the red and black wires from the control box to the circuit breaker.
4. Added a much smoother STOP AND REVERSE action when door is reactivated during the closing cycle. This is accomplished by automatically selecting the proper opening voltage depending on position of door.
5. The #70587 control box can be used to replace all previous control boxes on units using the rotary switch assembly and the #70120 motor.

Two new gray wires with a small Molex plug have been added to the control box. They function as a logic selector to tell the computer to read the Hall Effect sensor (when used with #72188 motor) or the microswitches when used with the #70120 motor. If you jumper the two wires together the computer will read the microswitches. If left open as received, the computer reads the Hall Effect counter.

Note:

Before attempting substitution of #70587 control box on units with the rotary switch assembly you must order the #72594-000 adapter kit which contains the #72588-000 jumper plug (for logic selection) and the #72595-000 adapter cable (for connecting control box to rotary switch assembly). See drawing #72594-984 - Page 6 for complete instructions.

B. INSTALLATION INSTRUCTIONS:

1. Turn off all power to operator.
2. Disconnect chain and cable assembly and remove old control box, rotary switch assembly and motor and gear box.

MOTOR

3. Install new #72188-900 motor and gear box exactly the same as the old #70120-900 being extra careful not to damage the wire cables.

CONTROL BOX

4. WARNING:

All activating controls should be installed, hooked up and checked out for operation before connecting to the two brown leads of the control box. Be sure that the two wires that connect to the control box do not have any power of any kind coming out of those two leads as this will permanently damage the #70587 control box. These activating contacts must be dry contacts.

5. Connect all remaining Molex connectors. All connectors are polarized so they can not be connected wrong. (See Fig. 3).
6. Reconnect chain and cable assembly and move door to closed position.
7. Set open speed switch to MED. and closing to SLOW.
8. Turn on power and activate door. Door should open fully and close at a very slow rate of speed. During the slow operation the computer is automatically setting the opening, back check, closing and latching positions. After the door has completed the slow cycle it automatically switches to the normal operation speed.

9. Set time delay as desired.
10. Door should now be operating normally with no further adjustment required.
11. If door is stalled during the opening cycle it will time out and reclose at normal closing speed. It can then be reactivated.

C. ADJUSTABLE AUTOMATIC REVERSING:

The #70587 features an adjustable automatic reversing control which permits proper door operation with various weights and sizes of doors. If the door is stalled during the closing cycle it will automatically reverse and reopen fully, then reclose at a very slow rate of speed looking for the obstruction. The door will continue to recycle at a slow speed until obstruction is removed.

NOTE: The closing force of the door must be adjusted to not exceed 30 lbs. to comply with the UL and ANSI safety codes.

D. SAFETY BEAM SHUT OFF:

The brown and white wires with the small Molex connection from the control box are connected to the brown and white wires from the safety beam as shown in Fig. #3, Page 5. These wires are wired to the safety beam receivers and automatically turn off the safety beam after the door is fully closed so that the door can not be reopened by breaking the safety beam. As soon as the door is reactivated the safety beam turns on and functions normally until door again closes fully.

E. EASY MORNING ENTRY AND NIGHT EXIT:

If sliding door is to be used for morning opening and night time closing of the store it is recommended that only the activating circuit to the control box be turned "off" by means of the on/off hold open switch and that the AC power to the control box be left on at all times. If the power is left on to the control box the door can be unlocked with a key and then pushed open a few inches manually at which point the door will automatically open the rest of the way under normal opening power and speed. The owner can then enter or leave the store and the door will close automatically. When the on/off hold open switch is turned on the "on" position, the door will open normally by carpets, motion detector, etc.

F. ENERGY-WISE:

1. The energy-wise switch is an optional feature that permits the total door opening size to be reduced if desired.
2. When the energy-wise switch is activated the door will only open to 75% of the normal door opening position. If the traffic flow through the door increases to a point where the door can not get completely closed before the next opening it will gradually and automatically increase the size of the opening to the full 100% position to allow for the increased traffic flow. When the traffic flow decreases the door will automatically return to the 75% opening size.

G. SAFETY SENSING:

Automatic sensing if the door is locked or blocked during opening cycle. (If the door is actuated when it is locked, it will time out and not continue to try to open. If the door is blocked during the opening cycle, it will time out and return to the closed position.) On next activation if the door is not locked or blocked, door will open slowly and close fast in normal operation.

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Note:

There is no stop adjustment. Door drives full open against rubber stop, unless the energy-wise switch is installed.

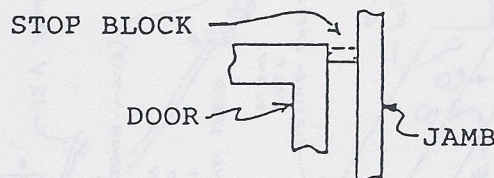


FIG. 1

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Note:

There is no Closed Door shut off adjustment. Door drives full closed against other door or jamb.

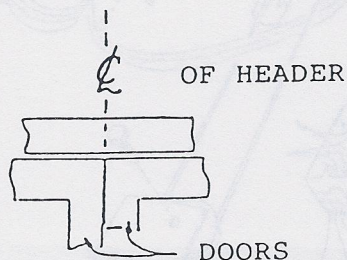


FIG. 2

**INSTRUCTIONS FOR INSTALLING THE 70587-9XX CONTROL BOX WITH A NEW STYLE MOTOR GEAR BOX (HAS MAGNETIC COUNTER).**

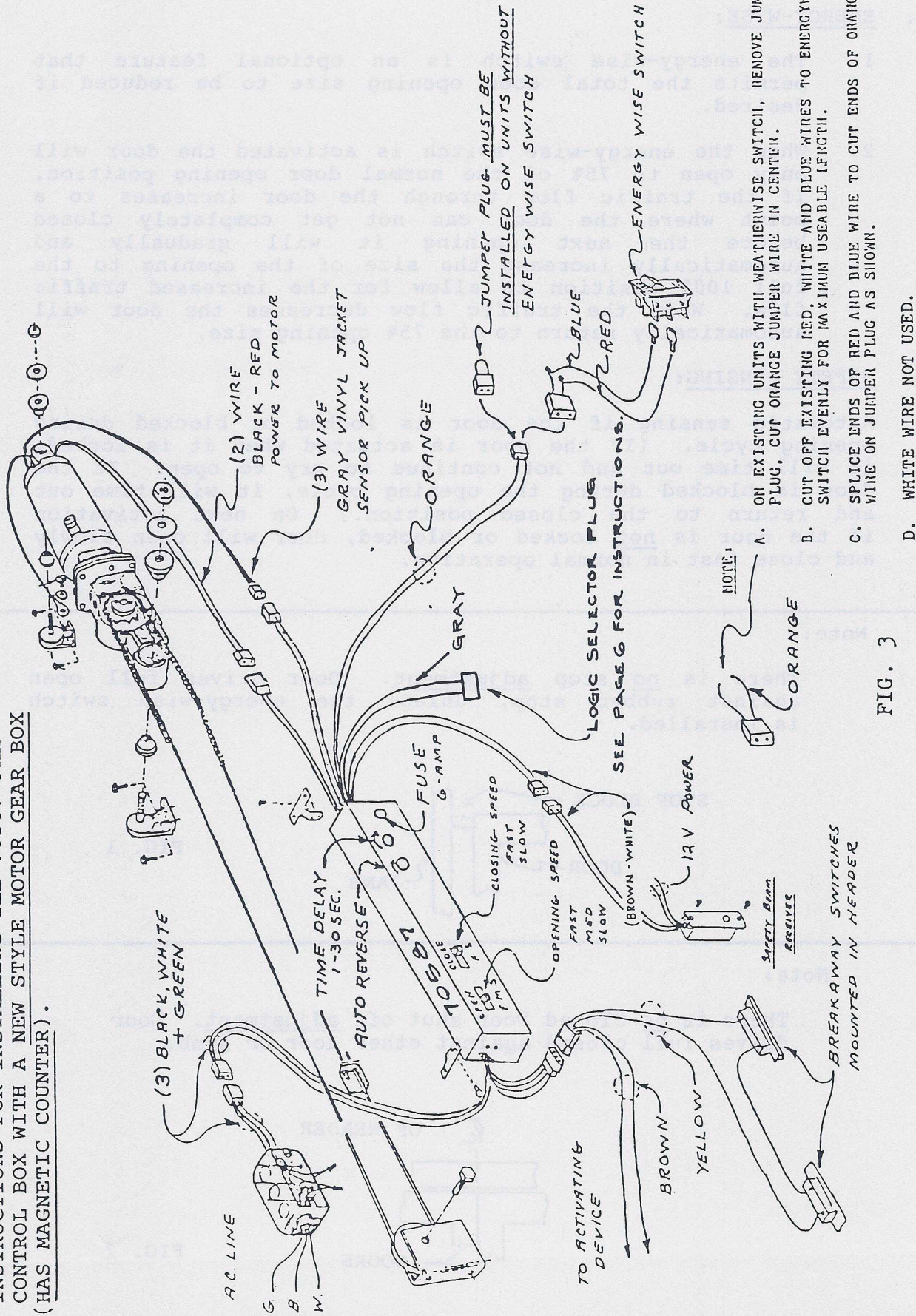
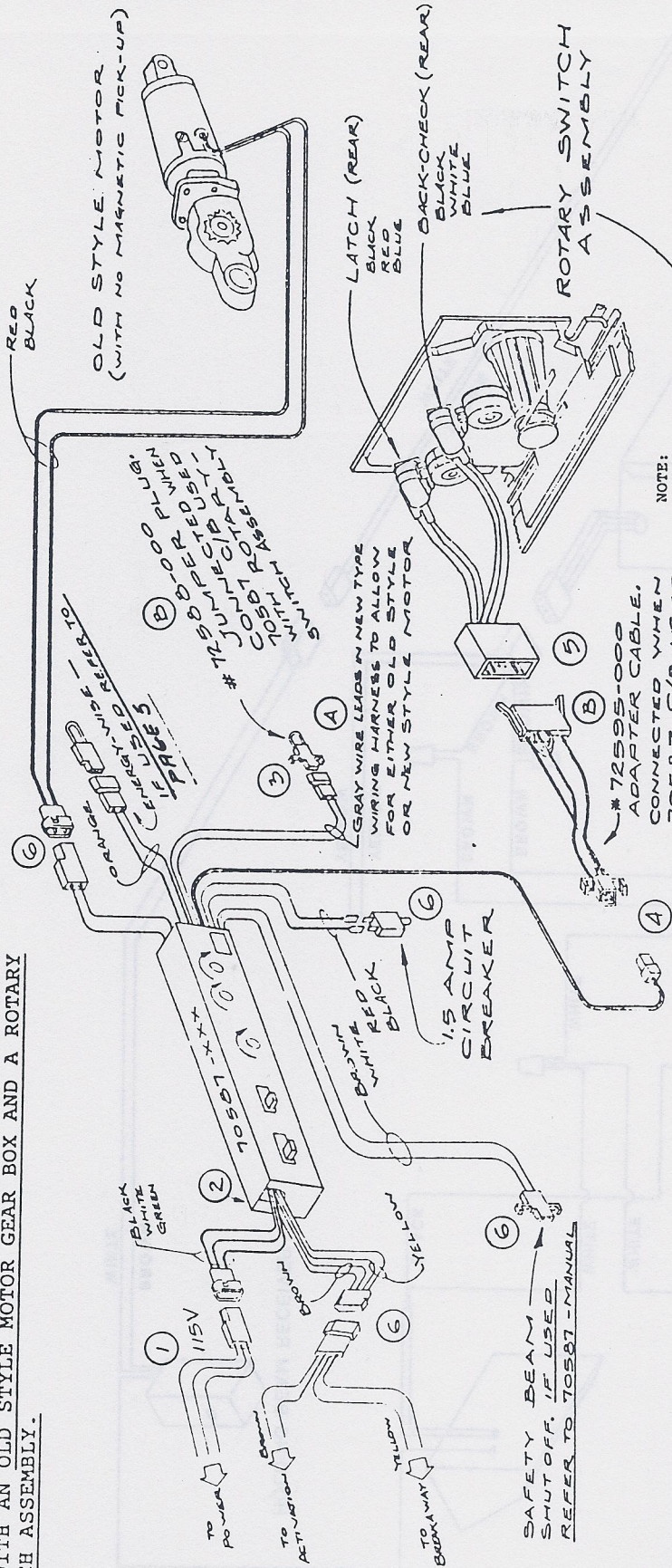


FIG. 3

# DOR-O-MATIC

INSTRUCTIONS FOR INSTALLING THE 70587-9XX CONTROL BOX WITH AN OLD STYLE MOTOR GEAR BOX AND A ROTARY SWITCH ASSEMBLY.



**NOTE:**

BEFORE ATTEMPTING INSTALLATION YOU MUST HAVE:

- (A) NEW TYPE #70587-9XX CONTROL BOX WITH GRAY WIRE LEADS.
- (B) # 72594-000 ADAPTER KIT CONTAINING THE #72588-000 JUMPER PLUG AND THE #72595-000 ADAPTER CABLE.

**INSTRUCTIONS:**

- (1) TURN OFF 115V POWER TO OPERATOR.
- (2) REMOVE OLD TYPE CONTROL BOX AND INSTALL NEW #70587 CONTROL BOX IN HEADER.
- (3) INSTALL #72588-000 JUMPER PLUG INTO THE MOLEX PLUG ON THE GRAY WIRE.
- (4) INSTALL #72595-000 ADAPTER CABLE ONTO GRAY MAGNETIC PICK UP CABLE FROM CONTROL BOX.
- (5) CONNECT #72595-000 ADAPTER CABLE TO THE ROTARY SWITCH ASSEMBLY.

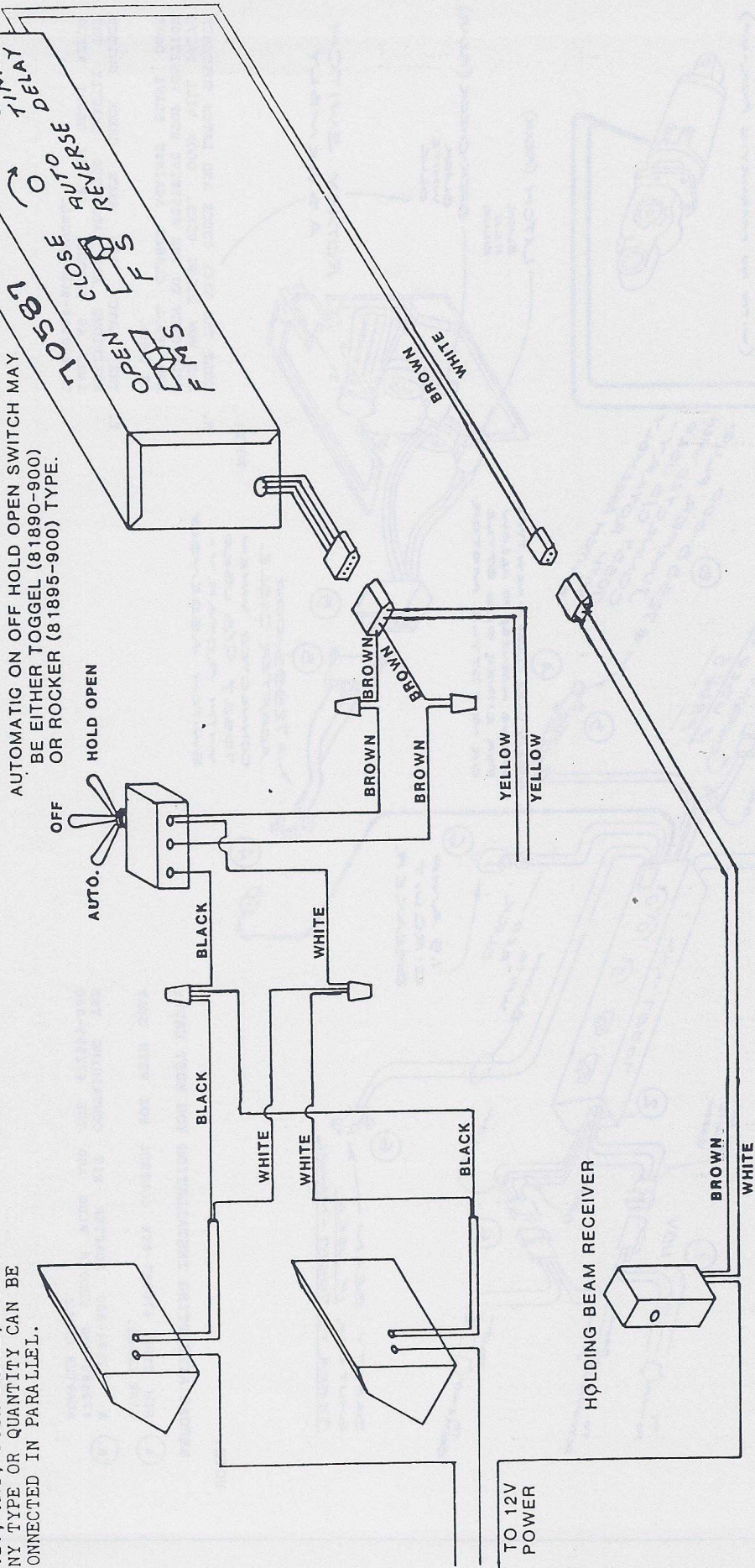
**NOTE:**

- A. ONLY THE BACK CHECK AND LATCH SWITCHES ARE NOW BEING USED. DOOR WILL DRIVE FULL OPEN TO THE POSITIVE STOP POSITION AND FULL CLOSED AGAINST SLAVE DOOR OR JAMB.
- B. THE LATCH AND BACK CHECK SWITCH POSITIONS ARE ADJUSTED EXACTLY THE SAME AS BEFORE. IF IN DOUBT REFER TO #70584-900 MANUAL.

- (6) CONNECT ALL REMAINING WIRES AS SHOWN.
- (7) DRESS DOWN ALL WIRES SO THEY WILL NOT INTERFERE WITH ANY MOVING PART.
- (8) TURN ON 115V POWER TO OPERATOR.
- (9) DOOR SHOULD SLOWLY OPEN AND CLOSE ONE TIME AND IS THEN READY FOR NORMAL OPERATION.
- (10) OPERATE DOOR AND CHECK POSITION OF BACK CHECK AND LATCH CAMS. THERE SHOULD BE APPROXIMATELY 6" OF CHUCKING ACTION IN BOTH DIRECTIONS. READJUST CAMS IF NECESSARY.

DETAIL FOR FIELD INSTALLING THE AUTOMATIC "ON OFF HOLD OPEN" SWITCH ON ASTRO-SLIDE OPERATOR.

ANY TYPE OF ACTUATION DEVICE  
M.D., MAT, PUSH PLATE, ETC.  
ANY TYPE OR QUANTITY CAN BE  
CONNECTED IN PARALLEL.



WIRING DIAGRAM FOR USE WITH #70587 CONTROL BOX



# TROUBLE SHOOTING GUIDE

CUSTOMER COMPLAINTS →

PROBABLE CAUSE ↓

	DEAD	WILL NOT OPEN	WILL NOT OPEN FULLY	ERRATIC OPENING OR CLOSING	WILL NOT CLOSE	RE-CYCLE	BLOWS FUSE OR CKT BREAKER	BLOWN PROGRAM
115V. POWER OFF	X							
IMPROPER WIRING	X						X	
NOT CONNECTED	X							
OPEN CKT BREAKER	X							
BLOWN FUSE	X							
DOOR LOCKED	X							
LOW VOLTAGE	X							
OPEN SIDE PANEL	X							
OPEN SWITCH, OFF POSITION	X							
INOPERATIVE ACTIVATING DEVICE	X							
DOORS, BINDING (SEE PG. 8)		X	X	X	X	X		
ENERGYWISE, JUMPER NOT INSTALLED			X	X	X	X		
LOOSE WIRES	X		X	X	X			
HALL UNIT NOT CONNECTED			X	X	X			
CLOSING SWITCH IN CENTER					X			
SAFETY BEAM ACTIVATED					X			
ACTIVATION DEVICE ACTIVATED					X			
AUTO. REVERSE SET TOO LOW						X		
PHANTOMING MOTION DETECTOR						X		
SHORTED WIRES	X	X		X	X		X	X
SHORTED MOTOR							X	X

## COMMENTS ON DOORS BINDING

Approximately one half of all field problems are related to some type of binding condition of the sliding door which in many cases cause premature failure of other parts in the system or improper operation of the door (sluggish, slow, erratic, or "just not quite right").

Service personnel must take the necessary time to check for, and correct any binding conditions that exist, or door problems will continue. With automatic doors there is no such thing as "that is someone else's problem". The automatic door manufacturer and the service personnel always get the blame.

### **Common causes of binding:**

1. Additional sweeps or weather stripping added to door.
2. Rocks, glass or dirt build up in guide track.
3. Door partially broken away and sagging down on floor.
4. Door rubbing on panel or side light.
5. Door dragging on threshold due to:
  - A. Metal expansion due to heat.
  - B. Heaving floor due to freezing and thawing.
  - C. Installing doors over building expansion joints.
6. Loose screws in guide track.
7. Anti riser screw adjusted up too tight.
8. Chain and cable adjusted too tight.
9. Bottom lock rods dragging on floor.
10. Uneven floor conditions.
11. Extra floor mats getting caught under door.
12. Ice or snow build up along bottom guide.
13. Carrier rollers not turning due to:
  - A. Frozen bearing.
  - B. Chips or dirt embedded in roller.
  - C. Bracket screw too long.
14. Cable roller not turning.
15. Motor or gear box damaged and binding up.