

STANLEY

®

MAGIC-DOOR

Stan-Guard Threshold Sensor with Auto-Tune
Application, Installation, Tune-In and Accessories Manual

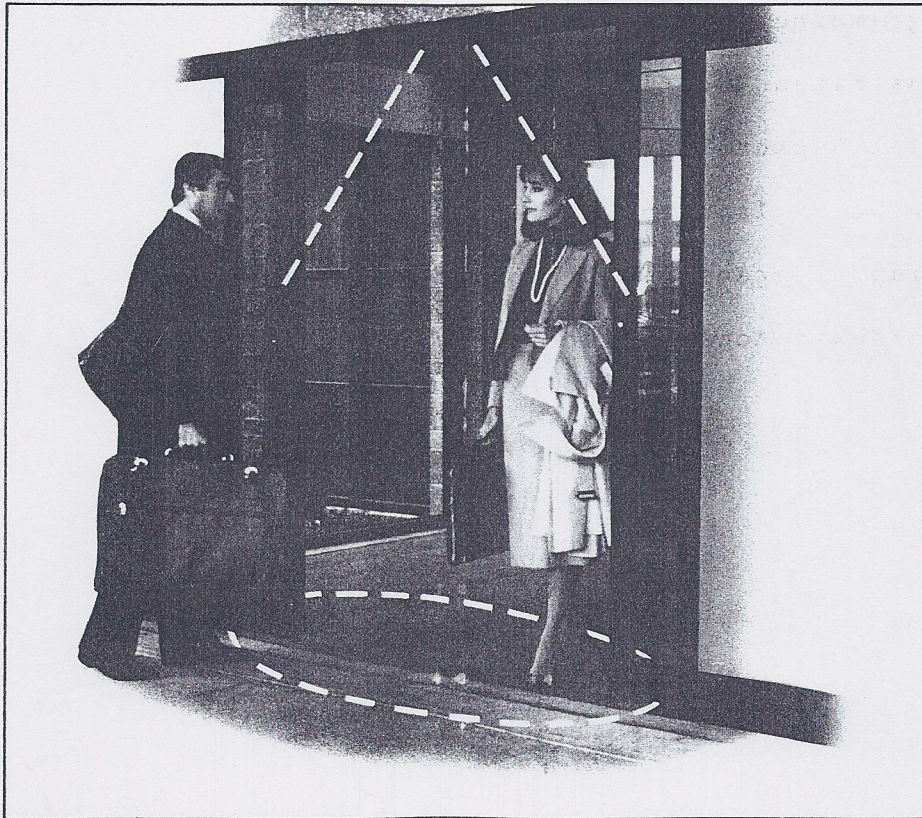


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STAN-GUARD™ THRESHOLD SENSOR

PRODUCT DESCRIPTION

The Stan-Guard sensor is an active infrared presence sensing device. The reflection of infrared light caused by the presence of a person or object in the Stan-Guard zone activates the sensor. The Stan-Guard sensor when activated holds the door open for as long as the person or object remains in its zone. Once the Stan-Guard detection zone is clear, a built-in selectable time delay extends the door hold open signal for 1.5 second.

STANLEY SLIDE DOOR SAFETY SCANNING SYSTEM

Principles of Operation

The Stan-Guard sensor works in conjunction with (2) motion sensors to create detection zones that provide through-the-door-coverage™ for pedestrian traffic. Typical zone patterns are illustrated below.

Figure #1

The motion of a person entering the approach zone will be detected by the motion sensor. An operate signal from the motion sensor opens the door and at the same time enables the Stan-Guard sensor. As the person moves through the zone, motion will continue to hold the door open. When the zone is clear, the motion sensor extends the door hold open signal for a variable time, depending on the sensor setting, with a minimum of 1-1/2 seconds.

NOTE: If the motion sensors do not have a minimum operate time delay of 1-1/2 seconds, an auxiliary time delay isolator (part #934 312984) must be added to the system. (For application and wiring details, refer to Time Delay Isolator on page 11 and figures #7 and #8 in manual.)

Figure #1

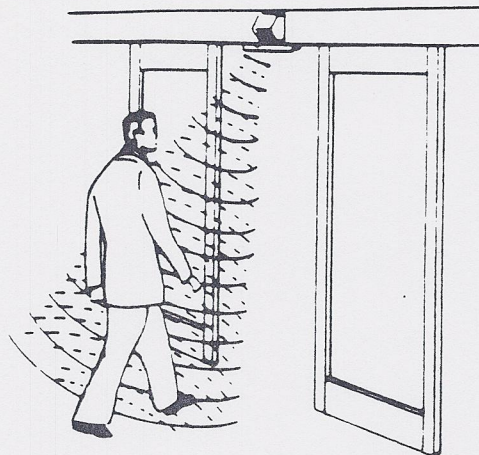


Figure #2

As the person enters the threshold area, he will be detected by overlapping detection zones of the motion sensor and Stan-Guard presence sensor. The reflection of infrared light caused by the presence of the person in the Stan-Guard zone, in conjunction with the operate signal from the motion sensor, will activate the sensor. The sensor will remain activated and will continue to hold the door open for as long as the person or object remains in the zone. Once the Stan-Guard detection zone is clear, a built-in selectable time delay extends the door hold-open signal for approximately 1.5 second.

Figure #3

As the person leaves the threshold area, they will be detected by Stan-Guard presence, then overlapping zones of Stan-Guard presence and motion and finally motion itself. The motion of a person will be detected by the egress side motion sensor. The motion sensor will continue to hold the door open for an additional 1-1/2 seconds after the zone has been cleared.

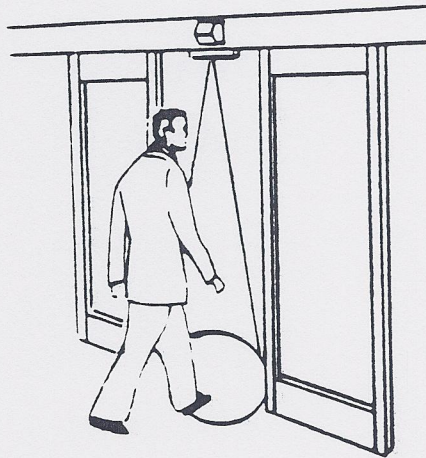


Figure #2

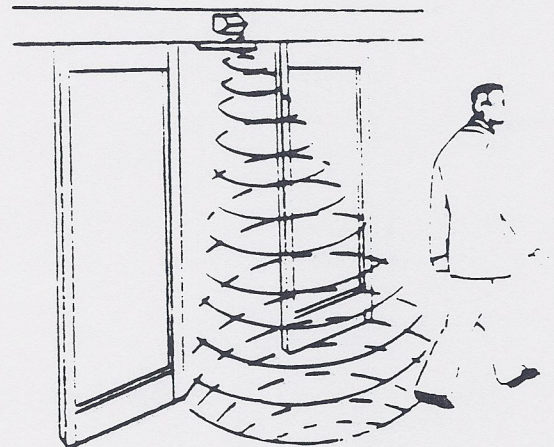
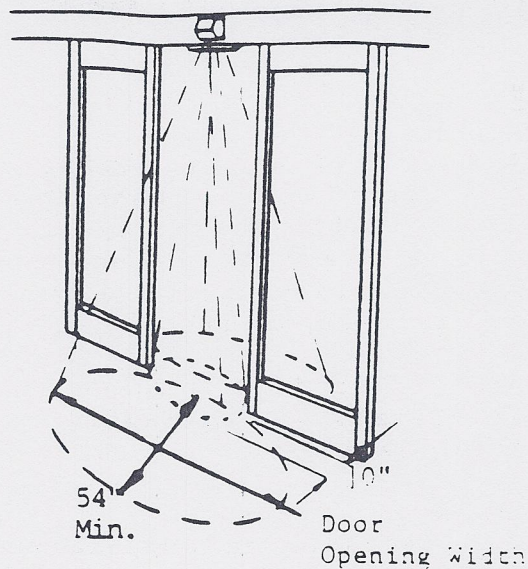


Figure #3

Figure #4

The Stanley slide door safety scanning system must be tuned-in and adjusted so that the motion and Stan-Guard zones intersect one another as illustrated.

Figure #4



SPECIALTY APPLICATION

Two motion sensors are required to achieve proper zone coverage, i.e.:

a) For push-plate applications, a time delay isolator along with a door position (cut-off) switch (Dura-Glide slider part #934 312987) or (Dyna-Glide part #910 411310) must be used. The timer isolator shall be adjusted such as to extend the push plate operate signal until the person reaches the motion sensor detection zone or for a minimum of 1.5 second. The cut-off switch must be wired in series with both motion sensors. The switch will enable the motion sensors as the door begins to open and disable them when the door reaches the closed position. While the door is open, the motion sensors will give the intended zone coverage on both sides of the door. (For wiring details, refer to figures #11, #12 and #13 in manual.)

b) For one-way traffic applications, a door position (cut off) switch (Dura-Glide slider part #934 312987) or (Dyna-Glide slider part #910 411310) must be wired in series with the egress side motion sensor. This switch will enable the egress side motion sensor as the door begins to open and disable it when the door reaches the closed position. While the door is open, both motion sensors will give the intended zone coverage on both sides of the door. For wiring details, refer to figure #14 in manual.)

INSTALLATION INSTRUCTIONS

TOOLS REQUIRED:

- Power drill
- #28 & 33/64" drill bits
- Phillips screwdriver
- Small flat blade screwdriver

INTRODUCTION

The following installation instructions are to be used when retrofitting a Stan-Guard Threshold Sensor to a Stanley or non-Stanley automatic sliding door system. On new Dura-Glide sliding door systems, the Stan-Guard sensor has been factory mounted. Simply remove the Stan-Guard end caps and lenses and proceed to programming section in manual.

The Stan-Guard sensor is a direct retrofit accessory with Stanley Dura-Glide and Dyna-Glide automatic sliding door systems that are utilizing motion sensors as operating devices.

NOTE: If the motion sensors do not have a minimum operate time delay of 1-1/2 seconds, an auxiliary time delay isolator (part #934 312984) must be added to the system. (For application and wiring details, refer to Time Delay Isolator on page 11 and figures #7 and #8 in manual.)

In all other applications, an auxiliary time delay isolator, 12 VAC transformer and door position switch (when applicable) will be required in addition to the Stan-Guard sensor. (For additional information, refer to Stan-Guard accessories on pages 20 and 21 in manual.)

MOUNTING INSTRUCTIONS FOR RETROFIT APPLICATIONS

- 1) Remove lenses from sensor housing.
- 2) Position sensor on header at center of door opening and mark the two mounting holes. Leave sufficient side clearance between the header and sensor housing for end caps.
- 3) Drill two #28 (.140 dia.) sensor mounting holes through header.
- 4) Fasten and ground sensor to header using two #8 x 1/2" LG. pan head self-tapping screws and external tooth washers (provided). Grounding lug is to be sandwiched between washer and screw head.
- 5) Using sensor end caps as templates, drill four #28 (.140 dia.) mounting holes through header.
- 6) On terminal block end of sensor, drill one 33/64" (.516 dia.) cable clearance hole through header.
- 7) Insert bushing into header cable clearance hole.

STAN-GUARD RETROFIT APPLICATIONS

- a) If the door opening exceeds 96" in height, a doorway holding beam must be installed 21" from the floor.
- b) If the door opening exceeds 96" in width, two Stan-Guards must be installed. Position Stan-Guards on header so that they are evenly spaced across the door opening. Wire both sensors in parallel.

FINAL ASSEMBLY

1) Insert four conductor cables from sensor through bushing and up into header. Route cable along side the header wiring harness to electrical connector board or control box.

NOTE: For ease of installation, insert a large drinking straw through cable clearance hole and push cable through straw.

2) Connect cable wires to Dura-Glide electrical connector board or Dyna-Glide control box (refer to figure #9). (For all other applications, refer to figures #10 through #12 in manual.)

3) Carefully slide lenses back into sensor housing groove. Make sure that the optical dam is fully engaged in the housing slot and that the lenses are seated properly against the optical dam.

ELECTRICAL CONNECTIONS (REFER TO FIGURE #5)

Terminal block TB1 accepts a 4-conductor cable as follows:

1 & 2 is 12VAC
3 & 4 is the output contact
(3=OPERATE; 4=COMMON)

Make sure that OP & COM connections are correct or the door will not close.

Dual Sensors: When two sensors are used on the same door, sensor interference may develop. Use the switch S1 to shift the frequency of one of the sensors to avoid interference in this situation.

PROGRAMMING AND TUNE-IN PROCEDURE

The quad switch S3 is used for programming the unit:

(FACTORY SETTING WITH ALL SWITCHES OFF WILL ASSURE ADEQUATE OPERATION FOR MOST APPLICATIONS.)

* Switch #1 selects the zone width:

OFF = wide zone (all IR emitting diodes work)
ON = narrow zone (only the 4 central IR diodes work)

Use the wide zone for openings in excess of 5':

* Switch #2 selects the mode of operation:

ON = continuous operation
OFF = triggered operation

Set the switch to OFF (triggered) for operation as threshold sensor.

* Switch #3 selects the waiting time with the sensor holding the door open before a retuning takes place:

ON = shorter time (1 min.)

OFF = longer time (5 min.)

A longer retune time is recommended for most applications.

* Switch #4 selects the sensitivity level:

ON = higher sensitivity

OFF = normal sensitivity

Use higher sensitivity setting for taller doors (over 7').

LED INDICATORS

There are three LED indicator lights on the circuit board:

- * A red LED indicates the state of the output: it will be in lighted state with the output contact open and it will turn off every time a door hold open signal is present at the sensor's output.
- * A green LED (D17) indicates the sensor "ON" state by turning on. A sensor "OFF" state will result in the green LED turning off during normal operation or flashing during the initialization procedure.
- * A yellow LED (D16) gives an indication on the level of reflected IR light received by the sensor and is used in the correct setting of the sensor's gain as described below.

START-UP & INITIAL TUNE-IN

The sensors are set up in the factory such that in applications with doors of normal height and neutral background no further adjustments are necessary.

At the application of power to the sensor, an automatic tune-in procedure is sequenced by the sensor microprocessor. With a working door, the learning mode will last as much as the learning mode of the Dura-Glide operator (i.e., will require the door to open and then close once). With a door held open, the initialization procedure will last approximately 25 seconds.

Traffic through the door during initialization is allowed, however, for highly reflective floors (such as white linoleum), a clear door opening is preferred.

NOTE: A verification of the gain setting (and in particular the status of the yellow LED with doors closed) is highly recommended for achieving optimum operation.

Remember, after any adjustments, slide the lenses back into place. The lenses will weaken transmitted and received light rays. Therefore, all functional checks must be done with lenses in place.

To perform this verification, proceed as follows:

- A) Power OFF. Program switch S3 as required. Turn the gain trimpot to minimum gain (CCW).
- B) Set AUT/CLS/OPN switch to CLS and push the door to fully open state. Keep the threshold clear of people and/or objects.
- C) Power ON. Observe the green and yellow LEDs from outside the detection zone. For the first 5 seconds they will be in "ON" state; next the green LED will start flashing and the yellow LED will be in either "OFF" or "ON" state.
- D) Wait approximately 30 seconds until the green LED stops flashing indicating the completion of the automatic tune-in procedure.
- E) Observe the yellow LED from outside the detection zone. If in "ON" state, leave the gain at minimum; otherwise increase gradually the gain (by turning the "gain" trimpot CW in small increments) until the yellow LED lights up.
- F) Now push the door manually to closed position. Observe the state of yellow LED. Normally it must be flashing indicating that the sensor "sees" the closed door as such. If the yellow LED is not flashing, disable the retune function by pushing in the miniature switch JP5.
- G) Turn the power off, then back on to reinitialize the sensor processor and set the door to automatic operation. After allowing the time for initialization, verify the operation and detection zones of the entire sliding door sensor system.

RESET (RETUNE) FUNCTION

Once initialized, the sensor will continue to operate and maintain its calibration for as long as the door is active by automatically making corrections of its reference settings whenever the detection zone is clear. This will compensate for slow variations such as temperature and illumination level.

With the door closed for a longer time (for example - overnight) or when a large variation takes place (such as a change in the number or position of the objects around the door), there may be the need for a re-initialization, which will be started automatically after the door had been held open by the sensor for more than a preset wait time (1 minute or 5 minutes depending on the state of the switch #3). The wait time is automatically made to be 1 minute after a failed initialization or when the door has been in closed state for longer than approximately 25 minutes.

It must be also noted that the users themselves can re-tune the sensor at any time by turning the power switch off and then on.

WHEN NOT TO USE THE RETUNE FUNCTION:

It is necessary not to use the retune function if for any reason the detection of the closed door by the sensor is not accomplished (as indicated by a yellow LED not flashing with the door closed).

If the retune function is not desired, it may be disabled by placing a short at Jumper JP5. (Push in the miniature switch).

ILLUSTRATED TUNE-IN

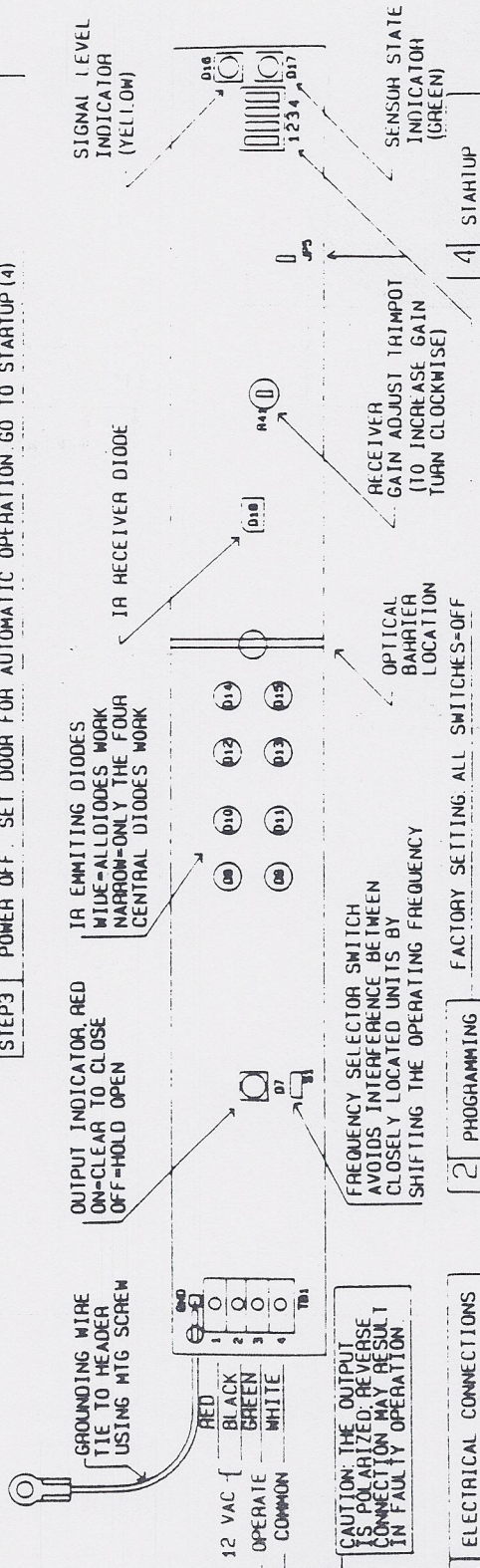
A condensed version of the foregoing instructions is included in figure #5. Remember, the Stan-Guard threshold sensor is factory pre-set so that in applications with doors of normal height and with a neutral background, no adjustment should be necessary. See figure #5 for fine tuning to suit particular applications.

STANGUARD AT INSTALLATION AND ADJUSTMENT

3 GAIN VERIFICATION AND SETUP

CAUTION: THE FOLLOWING CHECKS MUST BE PERFORMED WITH THE LENSES IN PLACE. SET THE GAIN THIMPOT TO MINIMUM (TURN CW). SW#2 MUST BE SET TO THRESHOLD (OFF). SET THE DOOR POSITION BY MANUAL ACTUATION. POWER ON; ALLOW 30 SECONDS WARMUP KEEP DETECTION ZONE CLEAR. OBSERVE THE YELLOW LED FROM OUTSIDE THE DETECTOR ZONE.

DOOR POS.	YELLOW LED	ACTIONS TO TAKE BEFORE GOING TO NEXT STEP
STEP1 OPEN	ON OFF	LEAVE GAIN AS IS. GO TO STEP2 INCREASE GAIN IN SMALL INCREMENTS (TURN CW) UNTIL THE YELLOW LED TURNS ON; IF THIS IS NOT ACHIEVED, LEAVE GAIN AT MAXIMUM
STEP2 CLOSED	FLASHING NO FLASHING	TUNE-IN COMPLETED. GO TO STEP 3 DISABLE RETUNE FUNCTION (PUSH IN SWITCH JP5)
STEP3 POWER OFF		SET DOOR FOR AUTOMATIC OPERATION. GO TO STARTUP(4)



1 ELECTRICAL CONNECTIONS

2 PROGRAMMING

- SW #1: ZONE (OFF=WIDE; ON=NARROW)
 - SW #2: OPERATION (OFF=THRESHOLD SENSOR; ON=CONTINUOUS OPERATION)
 - SW #3: RETUNE TIME (OFF=5 MIN; ON=1 MIN)
 - SW #4: SENSITIVITY (OFF=NORMAL; ON=HIGHER)
 - JP5: RETUNE FUNCTION (OFF=ACTIVE; ON=DISABLED)
- WHEN ACTIVE, THE RETUNE FUNCTION WILL RE-SET AND RE-TUNE THE SENSOR EVERY TIME THE DOOR IS HELD OPEN BY THE SENSOR IN EXCESS OF THE TIME SELECTED WITH SW3. THE SENSOR AVOIDS RETUNING WITH A CLOSED DOOR BY SEPARATELY DETECTING THIS CONDITION (AS INDICATED BY A FLASHING YELLOW LED).

STANGUARD AT INSTALLATION AND ADJUSTMENT

- POWER OFF DOOR SET TO AUTOMATIC OPERATION
- POWER ON
- BOTH THE GREEN AND YELLOW LEDS TURN ON FOR ABOUT 5 SECONDS. DOOR OPENS WITH THE DOOR REACHING THE OPEN POSITION.
- GREEN LED FLASHES, INDICATING THAT TUNE IN TAKES PLACE. THE DOOR THEN PROCEEDS TO CLOSE.
- DOOR TRAFFIC ALLOWED DURING INITIAL TUNE IN.
- IF INITIAL TUNE-IN FAILS THE DOOR IS HELD OPEN AND A RETUNE ATTEMPT WILL BE MADE AUTOMATICALLY AT 1 MINUTE.

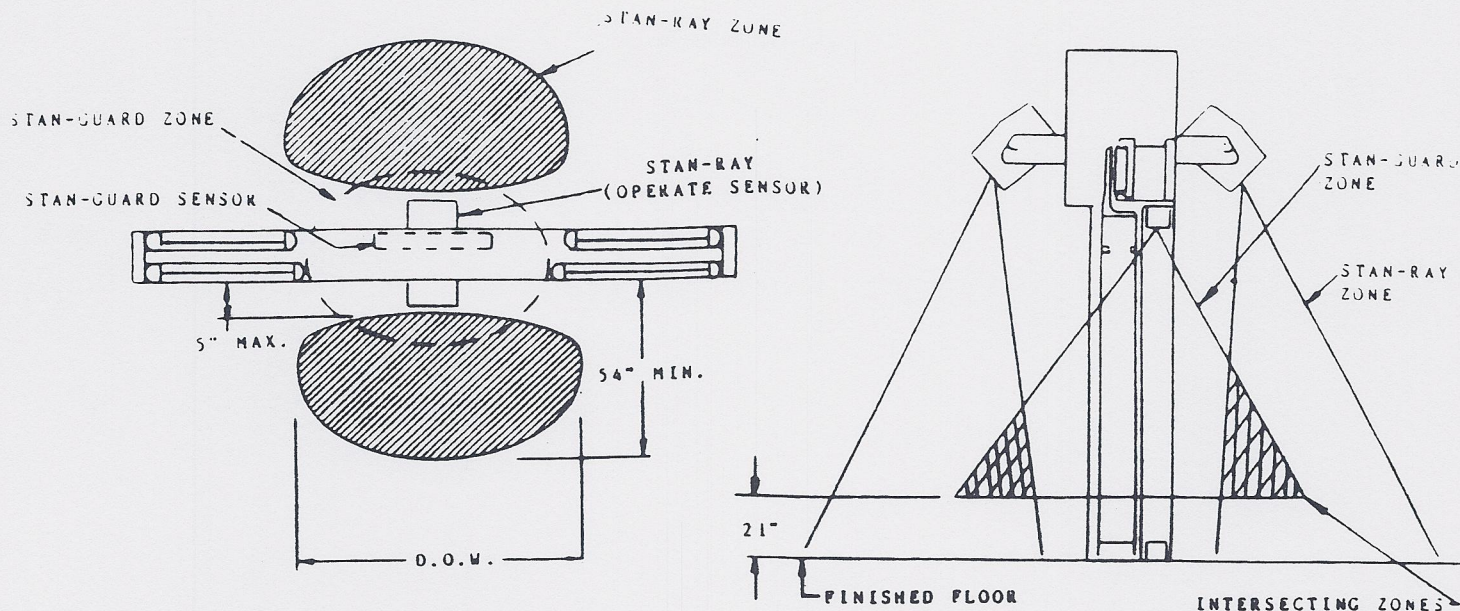


Figure #6

SENSOR SYSTEM TUNE-IN

1) The motion sensors should be tuned for maximum achievable sensitivity and positioned for maximum downward angle without causing the doors to recycle. This should create overlapping zones of the motion and Stan-Guard presence. (Refer to figure #6)

2) Verify that these overlapping zones of motion and presence have been created especially at the edges of the door opening. As the door is closing or about to close, try to enter the door from all angles, at slow and normal speeds. The doors should reopen without hitting you. If necessary, readjust sensor angle and sensitivity to achieve the optimal results.

3) Adjust the operate delay for a minimum of 1-1/2 seconds. (Refer to the Time Delay Isolator on page 12 if motion sensors have less than 1-1/2 seconds of operate delay.)

4) Set control box time delay to minimum.

NOTE: With Dura-Glide, use position 1 on the "time" flex switch only. If any longer hold open delays are needed, obtain them from the motion sensors or by using an additional time delay/isolator board.

TIME DELAY ISOLATOR

1) A time delay isolator is required when retrofitting a Stan-Guard sensor to any slider (other than Dura-Glide and Dyna-Glide) that utilize operating devices other than motion sensors. The a.c. operate signal voltage on vintage type Stanley and non-Stanley control boxes is not compatible with the Stan-Guard sensor.

Function - The time delay isolator isolates the Stan-Guard sensor and the operating devices from the control box.

2) A time delay isolator is also required when retrofitting a Stan-Guard sensor to any slider that utilizes push plates or devices other than motion sensors as operate devices. Time delay must be set for a minimum of 1-1/2 seconds.

Function - The time delay isolator holds the operate signal from the push plate or other operating device. It is adjustable from 0.5 to 25 seconds and is wired in conjunction with the operating device.

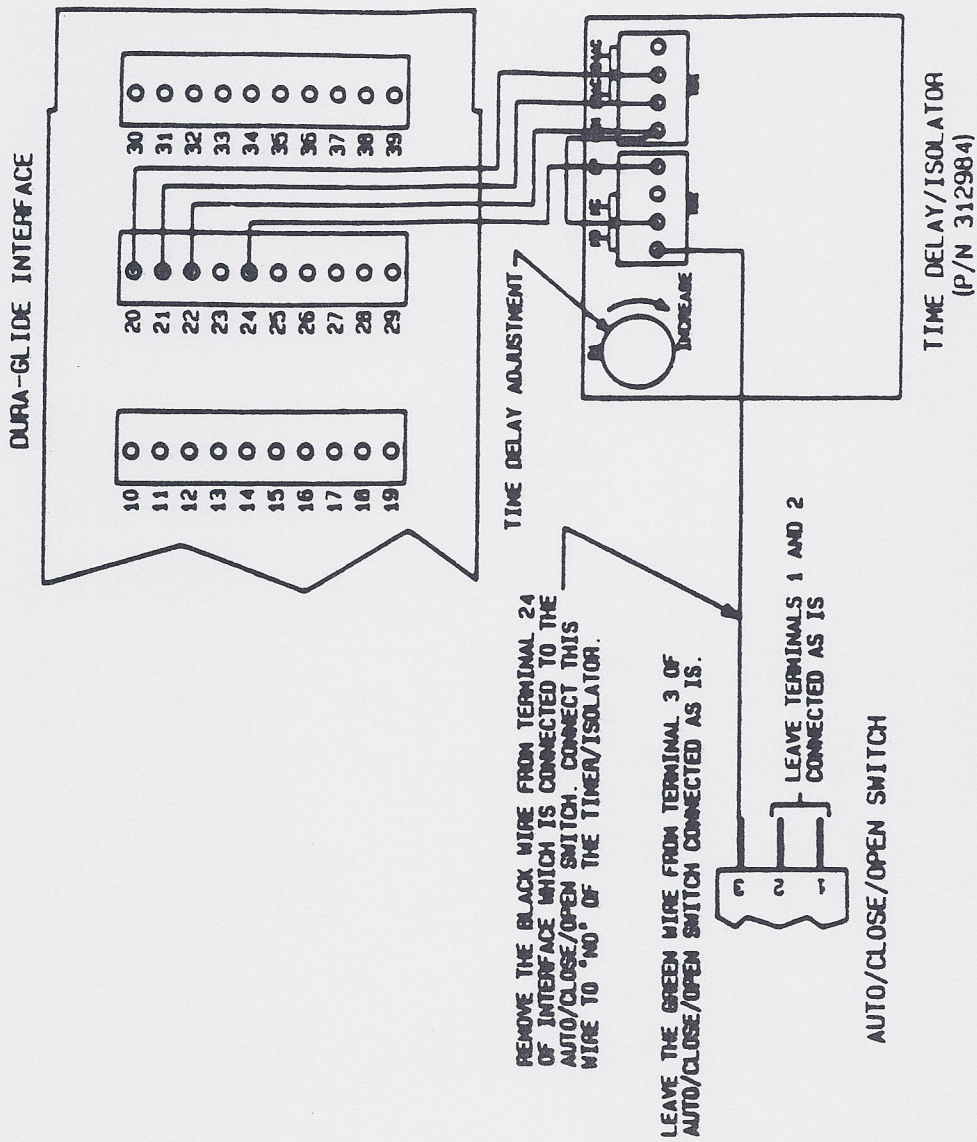
3) A time delay isolator is also required when the motion sensors have less than 1-1/2 seconds of operate time delay. Adjust the time delay so that the combined operate delay (motion and isolator) is a minimum of 1-1/2 seconds.

Function - (Refer to Stanley Slide Door Safety Scanning System in manual.)

MOUNTING INSTRUCTIONS

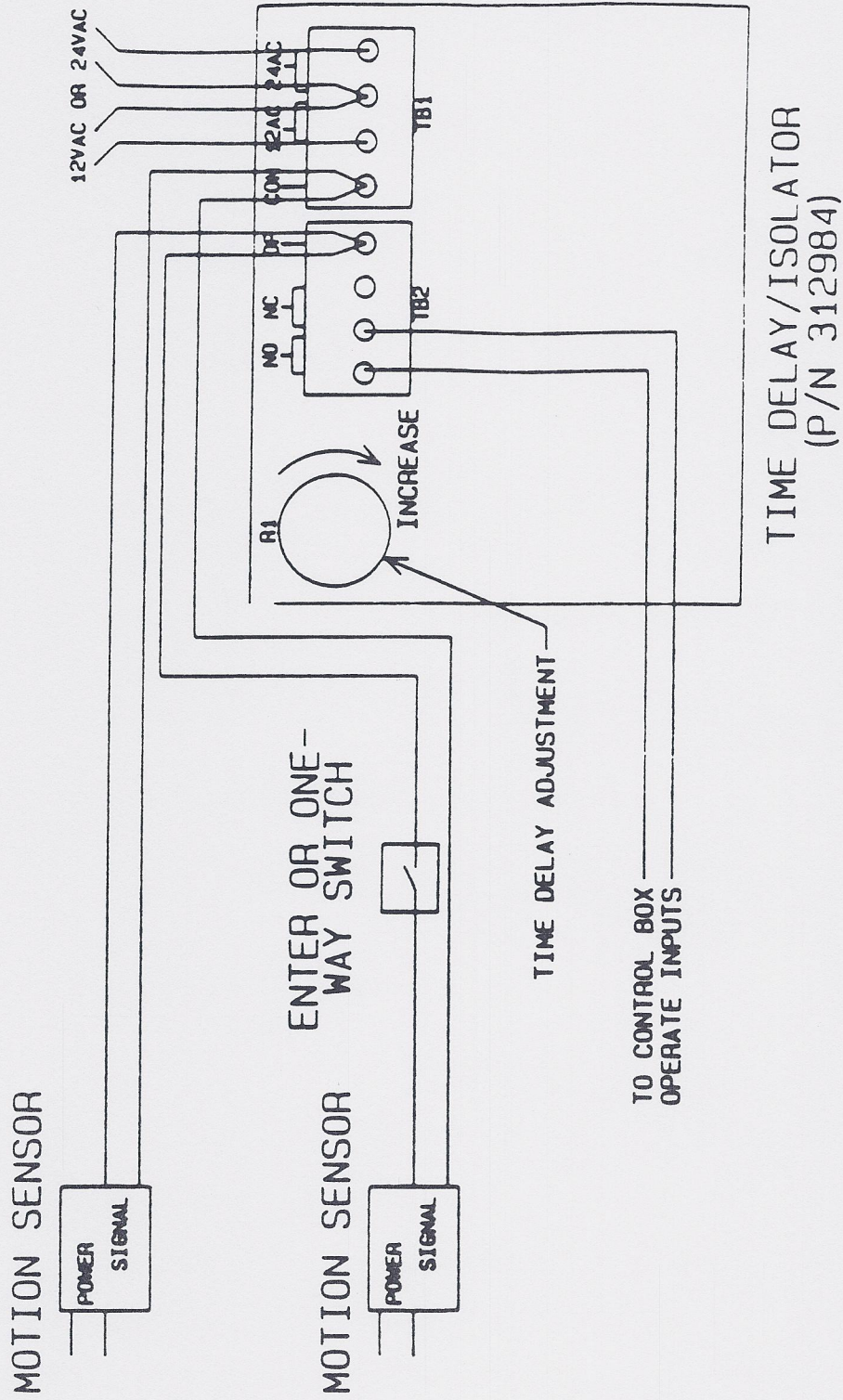
Remove paper backing from adhesive backed tape and mount the time delay isolator to a clean, dry surface.

Figure #7



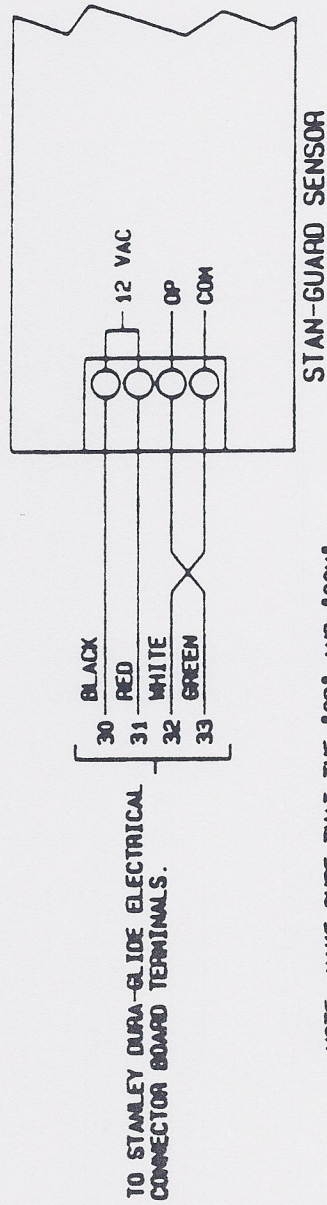
STANLEY DURA-GLIDE APPLICATIONS
INSTRUCTIONS FOR INSTALLING A TIME
DELAY/ISOLATOR TO MOTION SENSORS WITH
LESS THAN 1.5 SECONDS OF OPERATE TIME
DELAY.

Figure #8

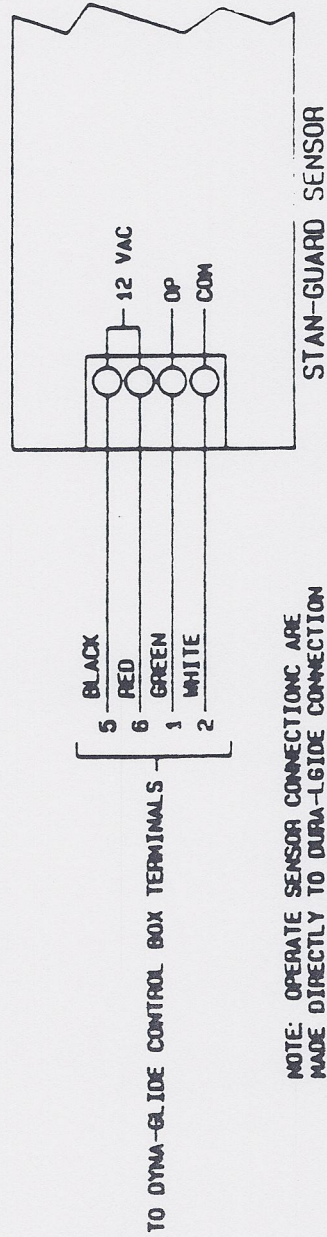


ALL SLIDERS OTHER THAN STANLEY DURA-GLIDE INSTRUCTIONS FOR INSTALLING A TIME DELAY/ISOLATOR TO MOTION SENSORS WITH LESS THAN 1.5 SECONDS OF OPERATE TIME DELAY.

Figure #9



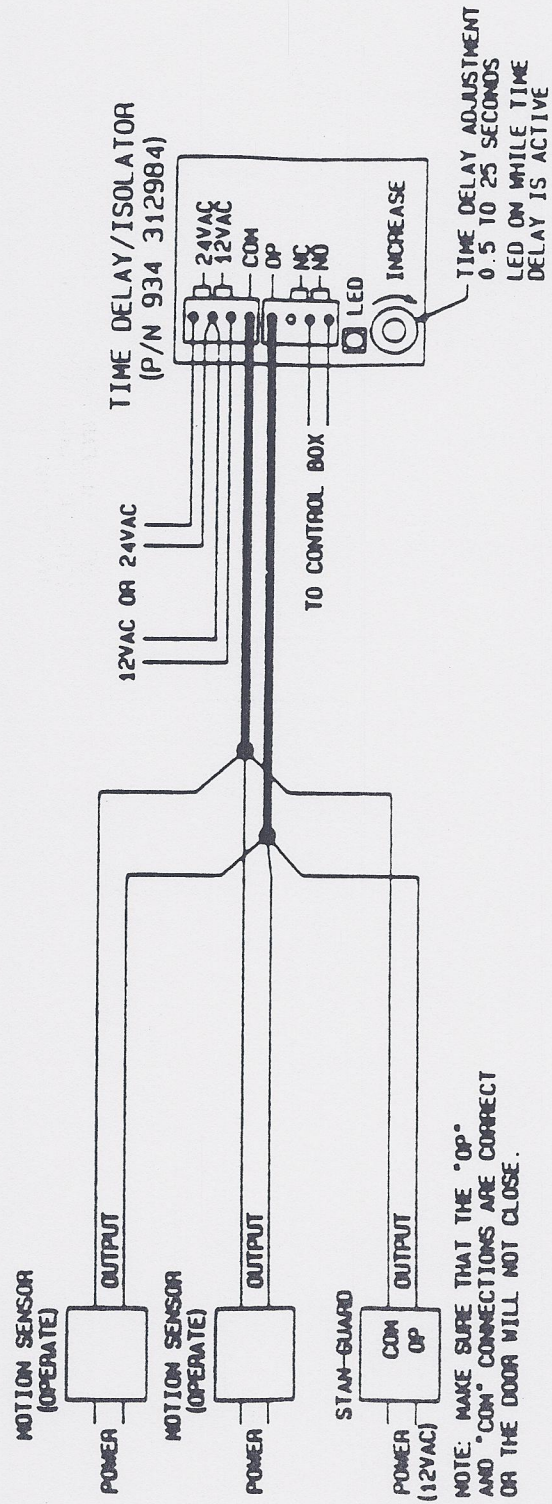
NOTE: MAKE SURE THAT THE "OP" AND "COM" CONNECTIONS ARE CORRECT OR THE DOOR WILL NOT CLOSE.



NOTE: OPERATE SENSOR CONNECTIONS ARE MADE DIRECTLY TO DURA-GLIDE CONNECTION BOARD OR DYNA-GLIDE CONTROL BOX.

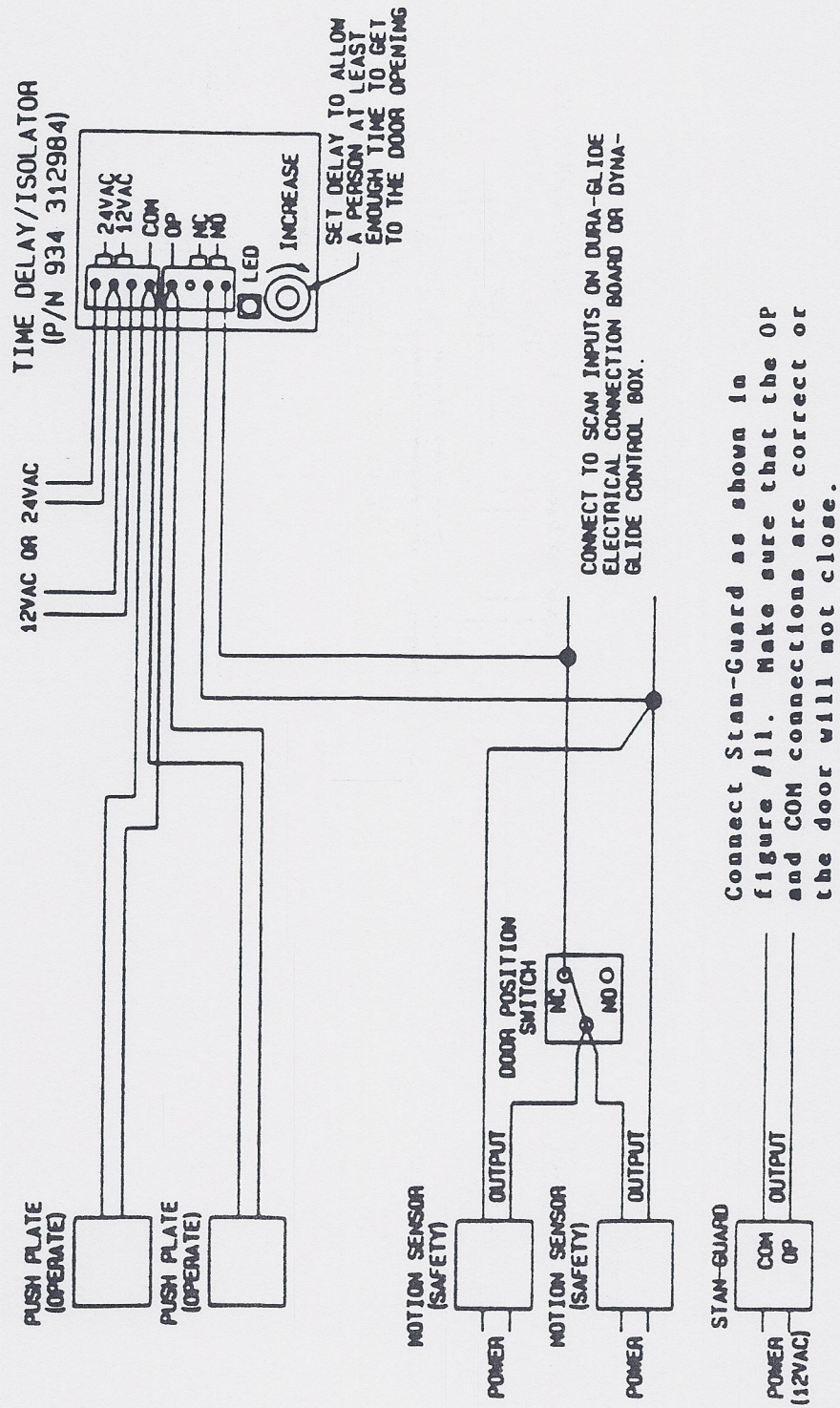
STAN-GUARD SENSOR CONNECTIONS TO STANLEY DURA-GLIDE AND DYNA-GLIDE SLIDERS WITH MOTION SENSORS OR CARPETS.

Figure #10



STAN-GUARD SENSOR CONNECTIONS TO ALL SLIDERS OTHER THAN DURA-GLIDE AND DYNA-GLIDE WITH MOTION SENSORS OR CARPETS.

Figure #11



STAN-GUARD SENSOR CONNECTIONS TO STANLEY DURA-GLIDE AND DYNA-GLIDE SLIDERS WITH PUSH PLATES.

Figure #12

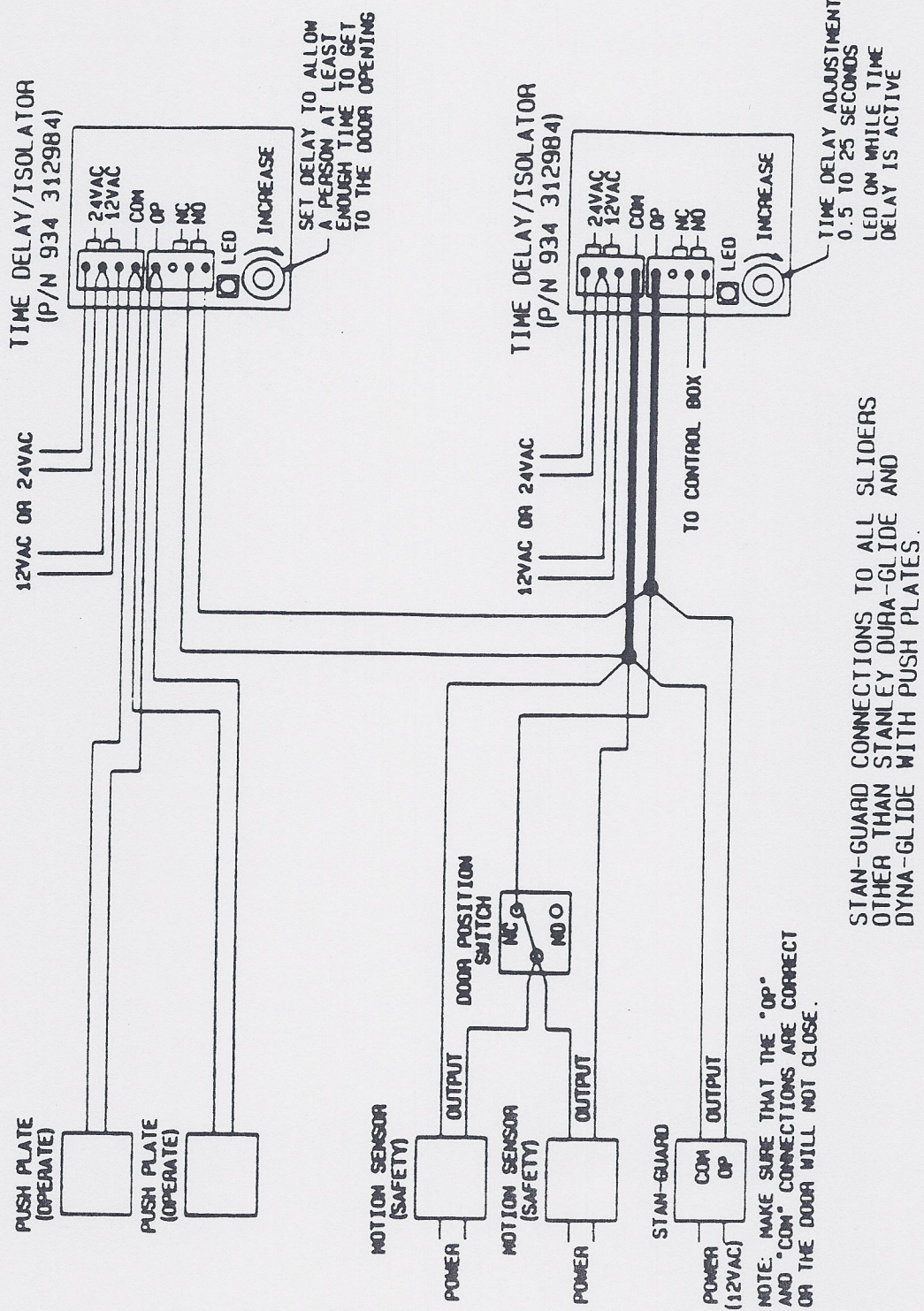
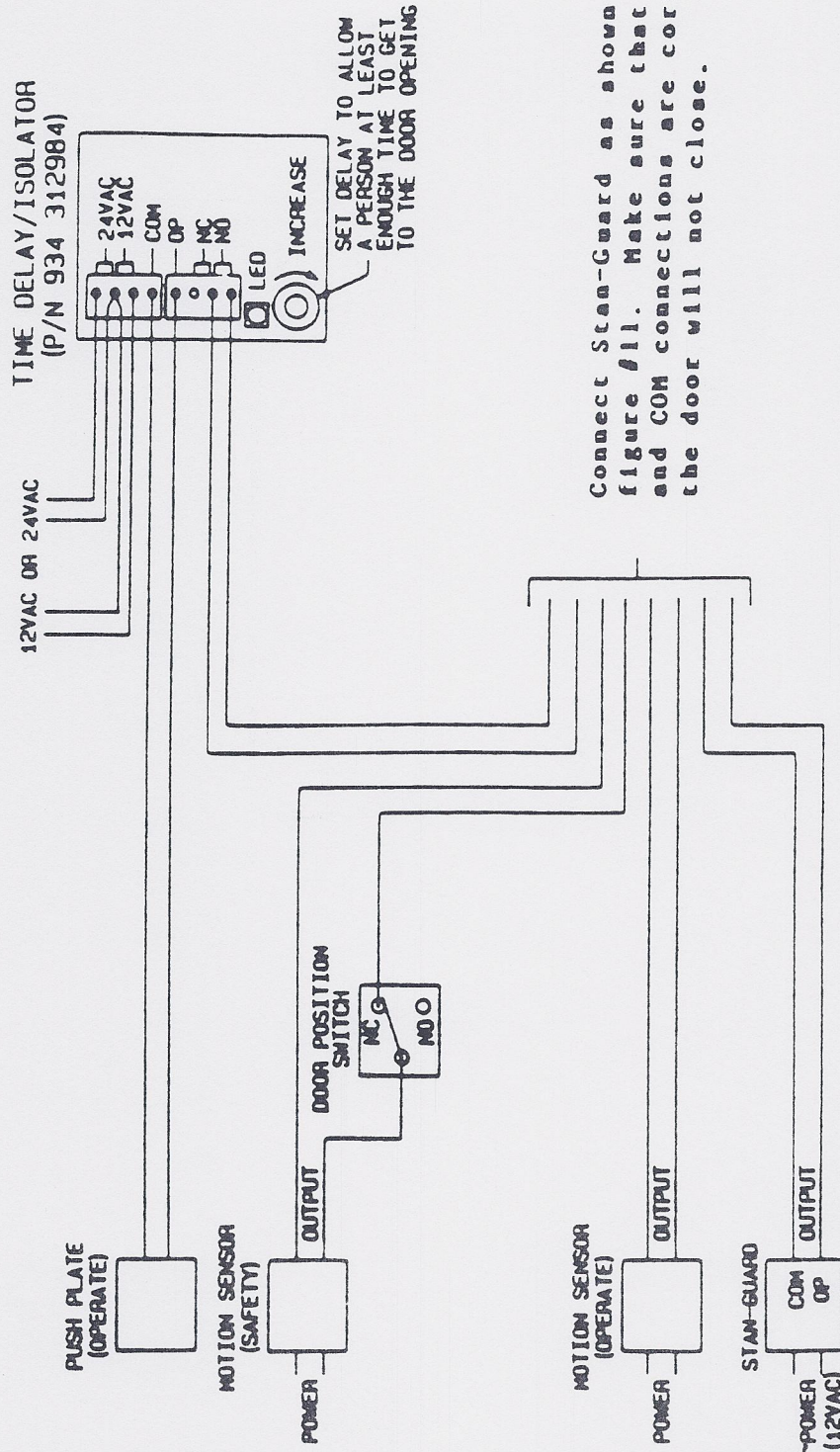


Figure #13

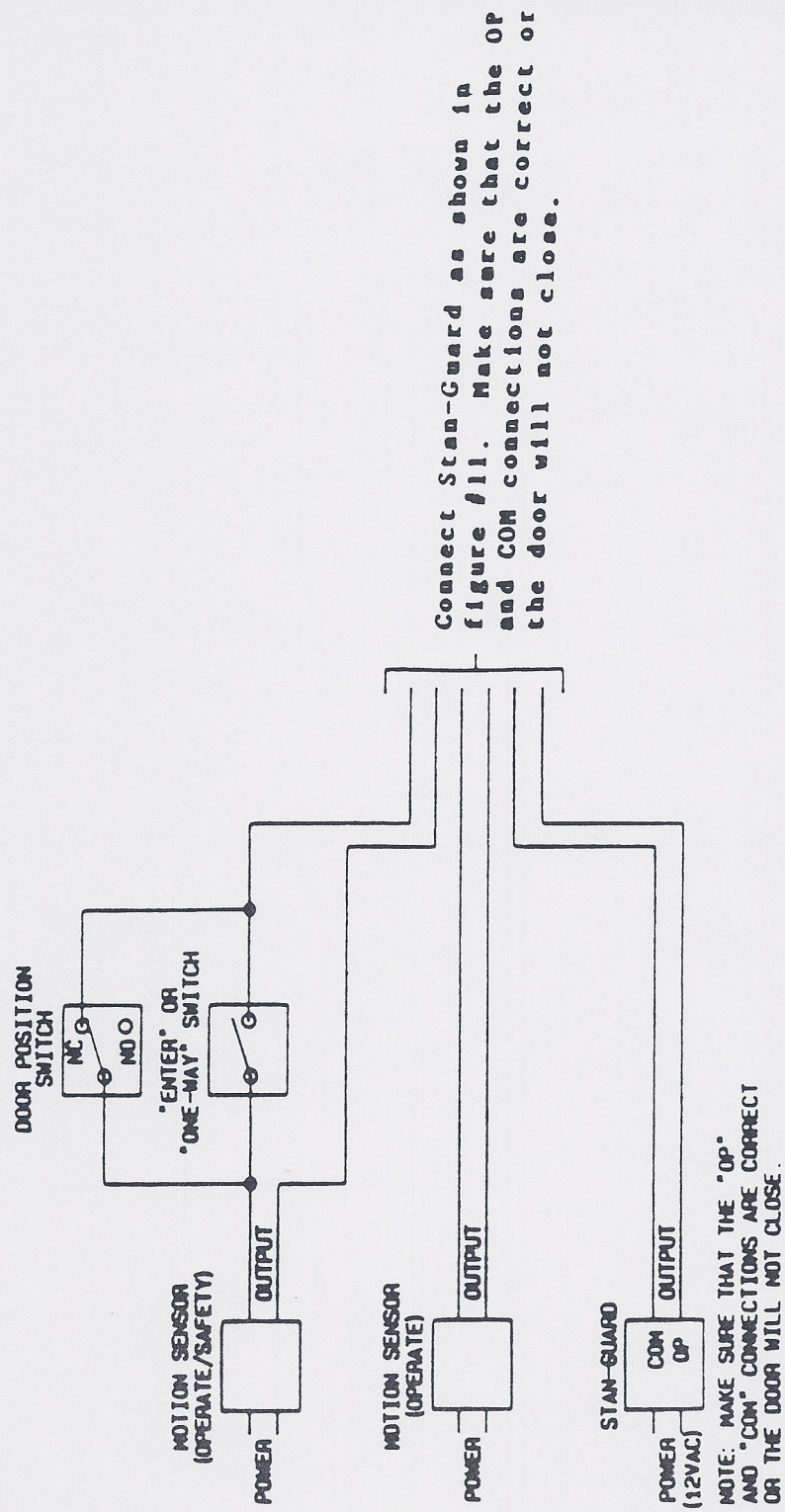


Connect Stan-Guard as shown in figure #11. Make sure that the OP and COM connections are correct or the door will not close.

NOTE: MAKE SURE THAT THE "OP" AND "COM" CONNECTIONS ARE CORRECT OR THE DOOR WILL NOT CLOSE.

ALL SLIDERS-PUSH PLATE/MOTION SENSOR COMBINATION. MOTION SENSOR ON PUSH PLATE SIDE OF DOOR CONNECTED THROUGH DOOR POSITION SWITCH, INACTIVE WHEN DOOR IS IN THE CLOSED POSITION.

Figure #14



Connect Stan-Guard as shown in figure #11. Make sure that the OP and COM connections are correct or the door will not close.

DOOR POSITION SWITCH. INSTRUCTIONS FOR DIRECTIONAL "ONE-WAY" TRAFFIC. ALL SLIDERS WITH MOTION SENSORS OR CARPETS.

STAN-GUARD ACCESSORIES

The applications listed below depict the accessories that are required to retrofit a Stanley Stan-Guard Threshold Sensor to all Stanley and non-Stanley automatic sliding door systems in use today.

APPLICATION

Stanley Dura-Glide and Dyna-Glide slider with operate sensors or carpets - two-way traffic.

QTY.	PART NO.	DESCRIPTION
1	934 312965	Stan-Guard Sensor

APPLICATION

Stanley Dura-Glide slider with operate sensor or carpets - one-way traffic.

1	934 312965	Stan-Guard Sensor
1	937 342361	Stan-Ray Sensor (W.B.)
1	934 312987	Door Position Switch

APPLICATION

Stanley Dyna-Glide slider with operate sensor or carpets - one-way traffic.

1	934 312965	Stan-Guard Sensor
1	937 342361	Stan-Ray Sensor (W.B.)
1	910 411310	Door Position Switch

APPLICATION

Stanley Dura-Glide with push plates - one-way or two-way traffic.

1	934 312965	Stan-Guard Sensor
2	937 342361	Stan-Ray Sensor (W.B.)
1	934 312984	Time Delay Isolator
1	934 312987	Door Position Switch
1	412100	12V Transformer (Required if not present)

APPLICATION

Stanley Dyna-Glide with push plates - one-way or two-way traffic.

1	934 312965	Stan-Guard Sensor
2	937 342361	Stan-Ray Sensor (W.B.)
1	934 312984	Time Delay Isolator
1	910 411310	Door Position Switch
1	412100	12V Transformer (Required if not present)

APPLICATION

All Stanley and non-Stanley sliders other than Dura-Glide and Dyna-Glide with operate sensors or carpets - two-way traffic.

1	934 312965	Stan-Guard Sensor
1	934 312984	Time Delay Isolator
1	412100	12V Transformer (Required if not present)

APPLICATION

All Stanley and non-Stanley sliders other than Dura-Glide and Dyna-Glide with operate sensor or carpets - one-way traffic.

1	934 312965	Stan-Guard Sensor
1	937 342361	Stan-Ray Sensor (W.B.)
1	934 312984	Time Delay Isolator
1	910 411310	Door Position Switch
1	412100	12V Transformer (Required if not present)

APPLICATION

All Stanley and non-Stanley sliders other than Dura-Glide and Dyna-Glide with push plates - one-way or two-way traffic.

1	934 312965	Stan-Guard Sensor
2	937 342361	Stan-Ray Sensor (W.B.)
2	934 312982	Time Delay Isolator
1	910 411310	Door Position Switch
1	412100	12V Transformer (Required if not present)