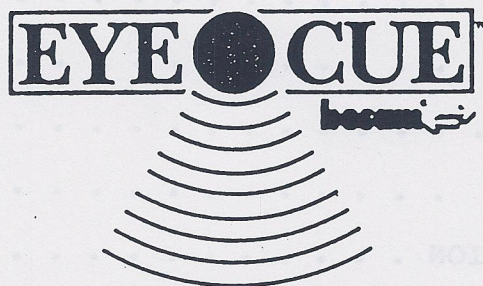


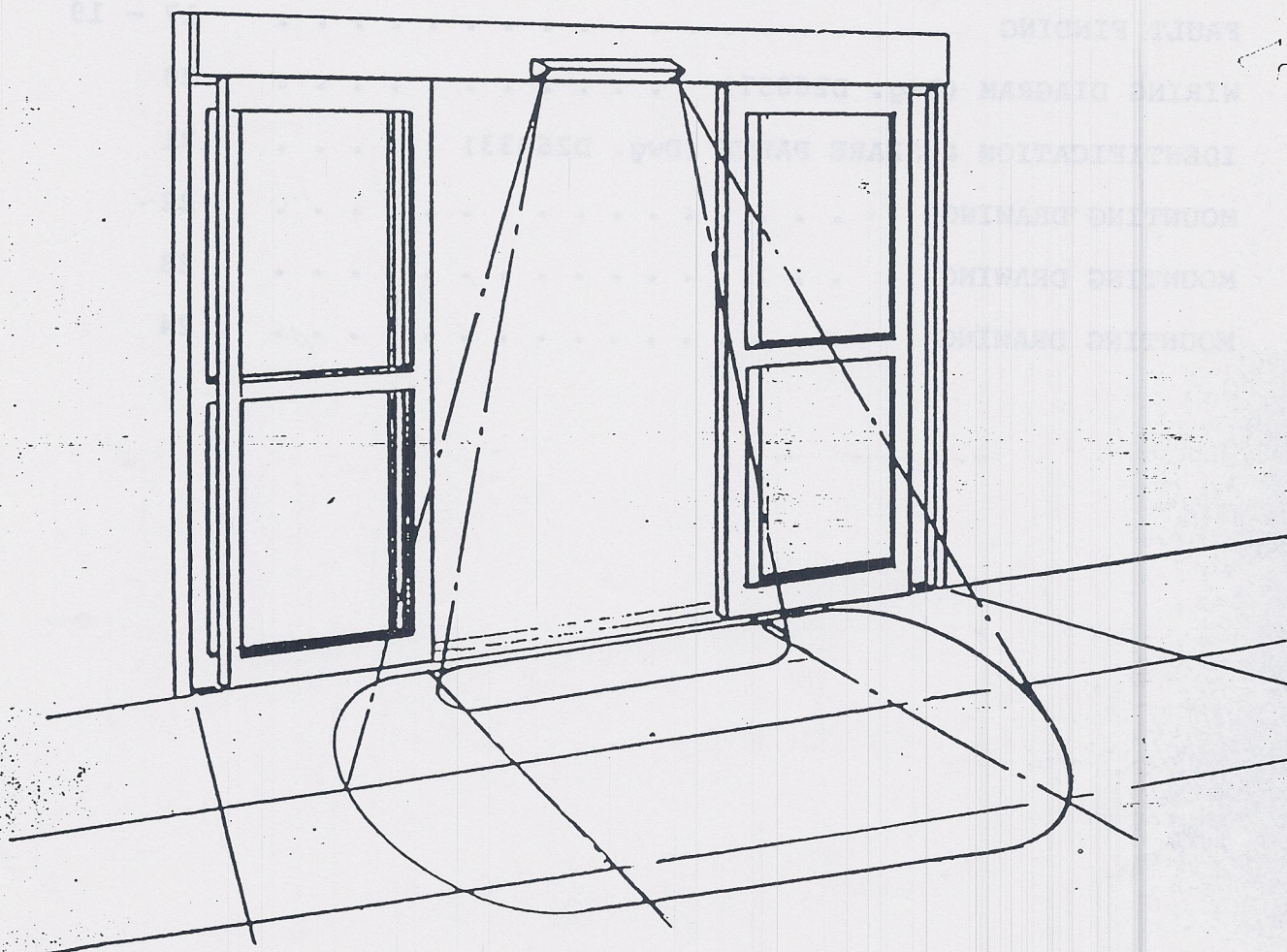
INSTALLATION / OWNERS  
MANUAL  
65-23-002

**besam**<sup>®</sup>  
AUTOMATIC DOOR SYSTEMS

# MOTION / PRESENCE DETECTION SYSTEM



Patent #4,736,097





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## INTRODUCTION

The Eye Cue system (see Fig.1) significantly enhances the coverage for the doorway of automatic sliding door systems in opening, closing and hold open functions. Eye Cue employs 4 microprocessors and a photon bridge and mutiple LED design to sense both motion and presence. The doorway opening is always bathed in an infrared light curtain with the hold open detection fields active during both opening and closing functions.

The system consists of the following components:

1. One (1) Power Supply
2. One (1) Main Logic Board
3. Two (2) sensors (combining both motion and self-adjusting presence detection).
4. Compensator Switch "C"
5. Interior cabling with supports.
6. Daily Perofrmance & Safety Check Procedures.

The Eye Cue system is center-mounted above the doorway threshold on both sides of the sliding door header and provides both motion and hold open detection. The presence detection zone is the complete width of the door opening (max. 84") and extends up to 16" on either side of the active leaf(s). The zone is microprocessor controlled and employs a programmable "learn mode" so that self-adjustments and changes to floor conditions will be made automatically. The motion detection is built into the same sensor and its zone is the complete width of the doorway (max. 84") and up to 60" out from the doorway. The combination of emitter/receiver positioning and optics eliminates troublesome impulsing from rain, snow and etc.

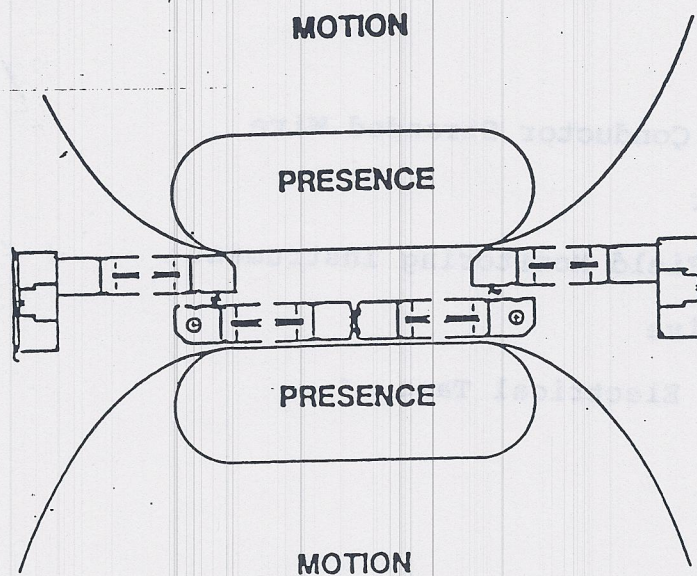


Fig. 1.



TECHNICAL SPECIFICATIONS

Motion Field	-	Depth 60", width 84" max
Presence Field	-	Depth 16", width 84" max
Mounting Height	-	Min. 78", Max. 96" (8' max)
Time Delay	-	Min. 1 to 10 seconds max.
Main Power	-	120V, 60Hz, 1A
Power Supply	-	17-20 V.D.C. unregulated
Control Voltage	-	12 V.D.C. regulated
Power Consumption	-	100 ma per detector
Temperature Range	-	-20F (-28C) to 125F (52C)

TOOLS REQUIRED

Power Drills	-	1/4" & 3/8"
Drill Bit	-	5/32" & -3/8"
Hole Saws	-	7/8" & 1 1/16"
Screw Drivers	-	Medium Phillips & Flat - Small Flat
Wrenches	-	6 mm. Allen - 6mm. Opened
Wire Cutter		
Wire Stripper		
18 to 22Ga, 4 Conductor Stranded Wire		
Volt/Ohm Meter		
Besam Visual Field Monitoring Instrument		
Sealant/Adhesive		
Vinyl Plastic Electrical Tape		



INSTALLATION STEPS (Refer to Dwg. D26033)PREPARATION

1. Check tool requirements and availability of special field monitoring instrument part #65-10-001.
2. Carefully unpack and check that all required components are supplied including appropriate sensors, main logic and power supply brackets.

Main Logic Board: Ez-Fit Series Bracket Part No.65-15-015  
Power Glide Series Bkt. Part No.65-15-014

Power Supply: Ez-Fit Series Bracket Part No.65-15-016  
Power Glide Series Bkt. Part No.65-15-017

Sensor: Ez-Fit Series & Special  
Application Brackets Part No.65-15-013

MOUNTING AND WIRINGMOUNTING AND WIRING

3. Carefully remove cover (A1) from sensor by sliding it sideways (always to the right) over end cap and gently twisting lower edge down and out. This will release cover from mounting plate.

4. Power Glide Series

- (a) Bi Parting Applications:

Using mounting plate (A1) as a template, center over door opening and 1/8" up from the bottom of the operator covers. Mark harness entry hole (V) and appropriate mounting holes (W.X.Y &Z). Prepare both sides of header.

- b) Single Slide Applications:

The normal detection width of the Eye Cue system is approx. 84". The sensor mounting location (See Fig. 2 & 3) will vary depending on side traffic consideration. Refer to suggested mounting locations prior to installing sensors.



# NORMAL TRAFFIC APPLICATION

Sensors installed on center line of door opening

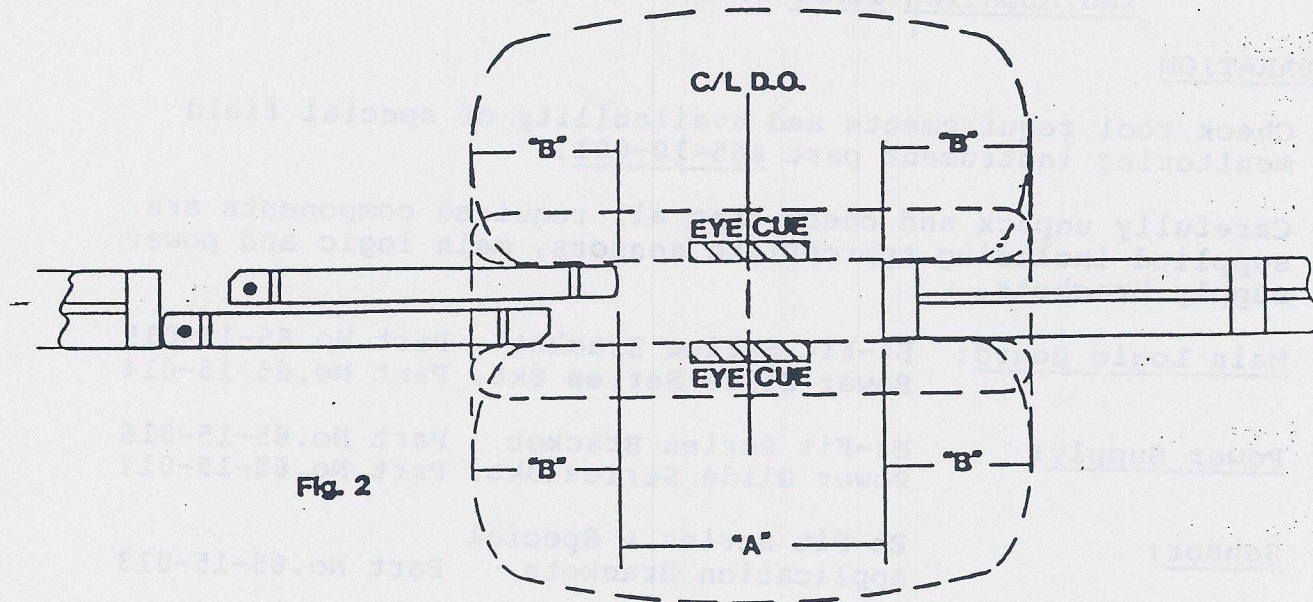


Fig. 2

Door Opening (A)      Detection Each Side (B)

36"	Approx. 24"
42"	Approx. 21"
48"	Approx. 18"
54"	Approx. 15"

## SIDE TRAFFIC APPLICATION

Center line of sensors installed 42" from closing jamb

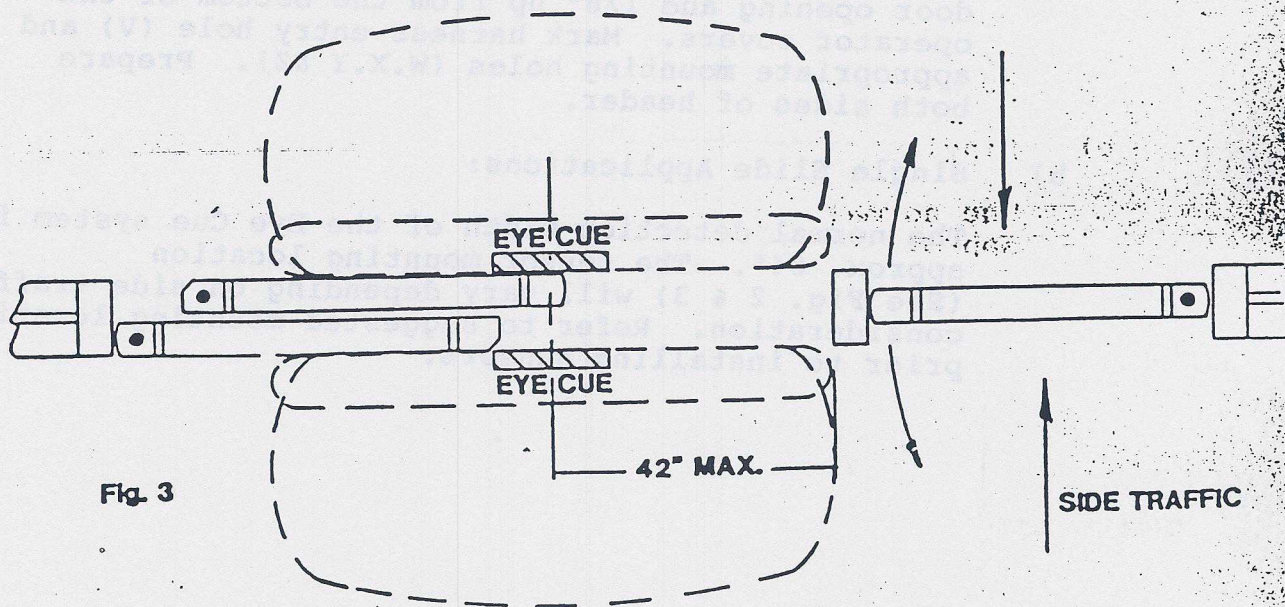


Fig. 3

SIDE TRAFFIC



## 5. Ez-Fit Series:

Because of the various reveals (sensor mounting surface to face of door) a special swivel bracket (Part No. 65-15-013) must be installed. The mounting brackets provide the additional adjustment range in order to properly position detection fields in close proximity to the active sliding door(s).

### a. Cover Mounting:

Using the mounting plate (A1) as a template, center over door opening on all bi-parting applications (for single slide application refer to Step 4b for location) and position it even with the bottom face of the operator cover. Mark only the mounting holes at the extreme ends of the mounting plate.

Important: Install sealant in unused mounting holes to protect sensor from moisture.  
Mark bracket mounting holes (see Fig.4) and secure to cover.

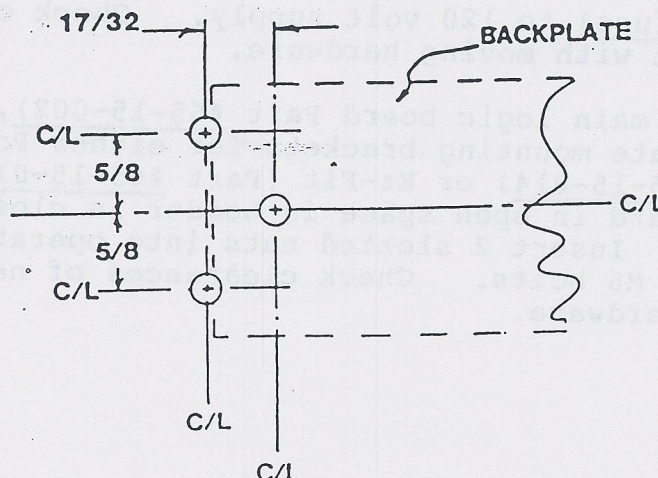
### b. Wall Mounting:

Using the mounting plate (A1) as a template center over door opening (for both bi-parting and single slide applications) and position the bottom even with the bottom of the mounting surface. Mark only the mounting holes at the extreme ends of the mounting plate. Always consider the emergency egress requirements when positioning all sensors. On certain applications i.e. reverse panic Ez-Fit, sensors must be installed high enough to clear swinging door(s).

Important: Install sealant in unused mounting holes to protect sensor from moisture.  
Mark bracket mounting holes (see Fig.4) and secure to wall. Check cable length requirements (max. length supplied, 9 feet). All exposed cable should be protected in a housing with a minimum I.D. of 3/4".

Fig. 4.

#### PIVOT BRACKET MOUNTING HOLES PATTERN





## (c) Sensor Bracket Adjustment:

Once system is activated, allow it to stabilize. All sensors utilizing the special mounting brackets must be rotated downward until the presence fields begin to detect (see Door Detection Test) the Door(s). Follow normal adjustment and test procedures to complete installation.

6. Open or remove appropriate operator cover(s) exposing all operator wiring.  
Note: Turn 120 volt main power OFF to operator.
7. Drill 7/8" hole in cover(s) for ribbon cable (2). Drill 5/32" holes for No.8 self-tapping mounting screws.  
Note: Check drilling clearances and protect drive belts, accessories and wiring located inside operator header.
8. Prepare ribbon cable access from interior to exterior sensor. This step will vary depending on type of operator. Follow appropriate instructions/drawings listed in Steps 9 or 10.

9. Besam Bi Parting Sliders

Powerglide 4000-2	-	See Dwg.	"A"
Powerglide 3000-2	-	See Dwg.	"B"
Ez-Fit 4050-2	-	See Dwg.	"C"
Ez-Fit 3050-2	-	See Dwg.	"D"

10. Besam Single Sliders

Powerglide 4000 R-L	-	See Dwg.	"A"
Powerglide 3000 R-L	-	See Dwg.	"B"
Ez Fit 4050 R-L	-	See Dwg.	"C"
Ez Fit 3050 R-L	-	See Dwg.	"D"

11. Assemble power supply (Part #65-15-003), install appropriate mounting brackets for either Powerglide (Part #65-15-016) or Ez-Fit (Part #65-15-017), install power supply in close proximity to main power inside operator. Insert 2 slotted nuts into operator and secure with 2 - M6 bolts. Wire primary (2 conductor wire without fuse) to 120 volt supply. Check clearances of new component with moving hardware.

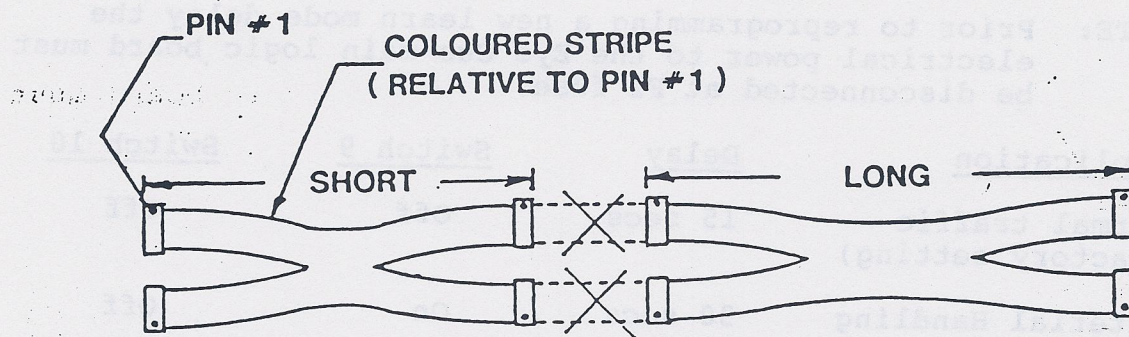
12. Assemble main logic board Part #65-15-002), install appropriate mounting brackets for either Powerglide (Part #65-15-014) or Ez-Fit (Part #65-15-015). Position logic board in open space in header in close proximity to sensor. Insert 2 slotted nuts into operator and secure with 2 - M6 bolts. Check clearances of new component with moving hardware.



13. Prepare ribbon cable (2) by removing (see Fig.5) center section between connectors. Measure cable length required from each sensor to the logic board. Use appropriate length cable for each sensor location. Unused cable should be dressed neatly.

NOTE: Due to cable length requirement on single slide applications, the ribbon cable (2) must be utilized in its full length.

#### RIBBON CABLE PREPARATION



#### CUT OUT MIDDLE SECTION

Fig. 5

14. Install ribbon cable (2) thru protective bushing (A6) and install into both sensor mounting plates. Carefully plug emitter cable (with single colored wire) into emitter PCB (B1). Colored wire is pin No.1 and is always positioned to the top of the connector when properly installed (see installation wiring diagram D261037). Install remaining detector cable into detector PCB (C1). The top wire is pin No.1 and is always in the up position (see installation wiring diagram D26037). Check all cables to see that they are plugged in securely (see installation wiring diagram D26037).

Caution: Misconnected cables will damage sensor or main logic board.

15. Install both sensors, dress wiring with adhesive cable supports (see installation Steps, 8, 9, 10) supplied.

16. Connect both sensor ribbon cables (2) to main logic board. See installation wiring diagram D26037.

Caution: Misconnected cables will damage sensor or main logic board.

17. Wire low voltage to Eye Cue main logic board. See installation wiring diagram D26037.

18. Install 4 conductor stranded (22-18Ga) wires from Eye Cue main logic board output to operators input terminal strip. See installation wiring diagram D26037, for proper connections.



ADJUSTMENTS

Check programmable dip switch setting (see installation wiring diagram D26037) for Eye Cue logic board. All switches are factory set to "OFF" position except for 4 and 6. In order to speed adjustment process the minimum (factory set) learn mode delay of 15 seconds should always be programmed. Once all adjustments are completed the learn mode delay should be reprogrammed to meet special applications. (See Suggested Delay Requirements).

NOTE: Prior to reprogramming a new learn mode delay the electrical power to the Eye Cue main logic board must be disconnected at F1 fuse.

<u>Application</u>	<u>Delay</u>	<u>Switch 9</u>	<u>Switch 10</u>
Normal traffic (factory setting)	15 secs.	Off	Off
Material Handling	30 secs.	On	Off
Health Care Facilities	60 secs.	Off	On
Highly Sensitive Material Handling	90 secs.	On	On

20. Adjust operator time delay to minimum. Adjust Eye Cue main logic board delay to minimum, counter clockwise adjustment to pots. decreases time delays. See installation wiring diagram D26037.

21. Plug in and mount visual field monitoring test instrument. See installation wiring diagram D26037.

22. Put operator position switch in OPEN mode. Turn 120v main power on. Allow system to fully stabilize (initial start up learn mode process) 10 minutes. After a period of 20 seconds max. light on test instrument should go out. If all lights do not go out refer to fault finding pages.

NOTE: Full sensitivity is achieved after 3 minutes of no detection, longer if fields are activated.

23. Test walk both motion and hold open detection fields, while visually checking test instrument lights for impulse detection.



24. Test and adjust both interior and exterior hold open detection fields. Put door position switch in automatic mode. Allow door(s) to power close while monitoring test instrument lights. Adjust both presence sensors receiving modules (C1) to provide door detection (door(s) recycle open/hold open lights illuminated), approximately the last six (6) to twelve (12) inches from fully closed.

- a) On sensors not providing door detection adjust receiver module (C1) by tilting it slightly downward (towards door) from the bottom with adjustment nuts (C4).
- b) On sensors detecting the door(s) before the required six (6) to twelve (12) inches adjust receiver module (C1) slightly outward (away from door) from the bottom with adjustment nuts (C4).

NOTE: Allow detectors to restabalize (learn mode 15 seconds) after each adjustment and repeat door detection test.

Replace cover after each adjustment when exposed to direct sunlight.

## 25. Door Compensation

The Eye Cue system requires a special "C" switch (included with package or factory installed) which will compensate for the additional hold open presence signal generated by most door(s) during closing cycle.

### Besam Sliders with Panic (PSA) Door Carriers:

Contact Besam Engineering for non-panic applications.

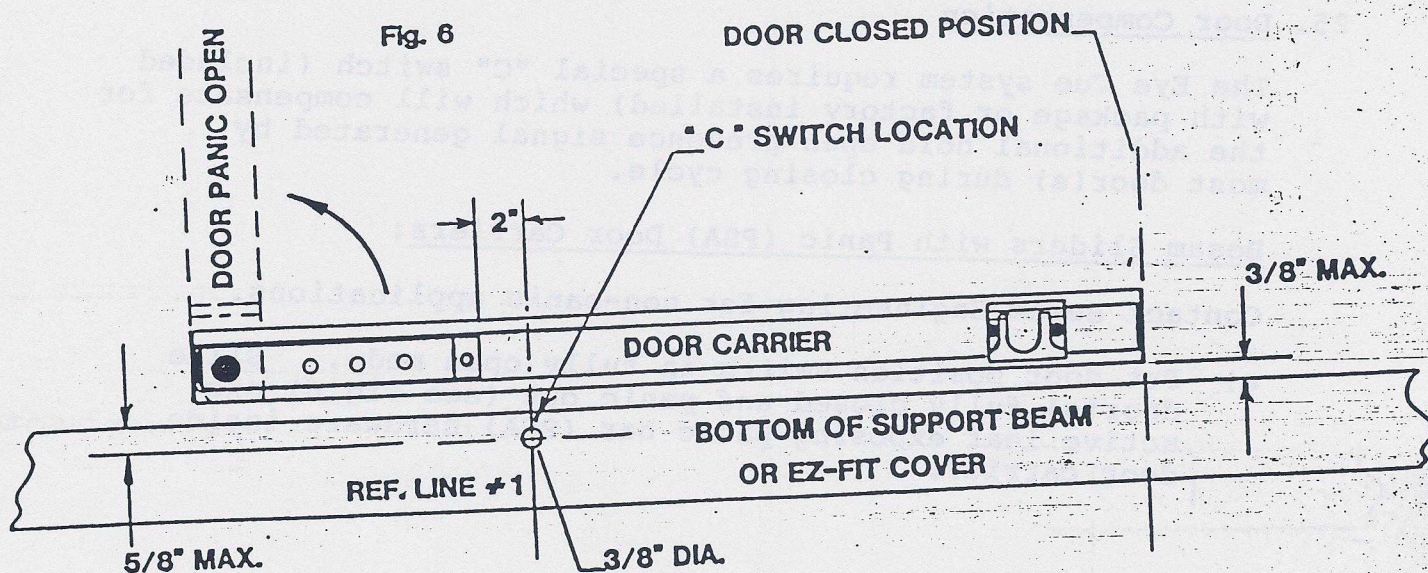
- a) Put door position switch in fully open mode. Slide door(s) fully closed and panic out (see Fig.6) one active leaf exposing panic bar (PSA) hardware inside door carrier.



- b). Mark a reference line #1 (see Fig. 6) on the bottom of the support beam on all Powerglide operators or cover on all Ez Fit operators two (2) inches from the end of panic (PSA) bar.

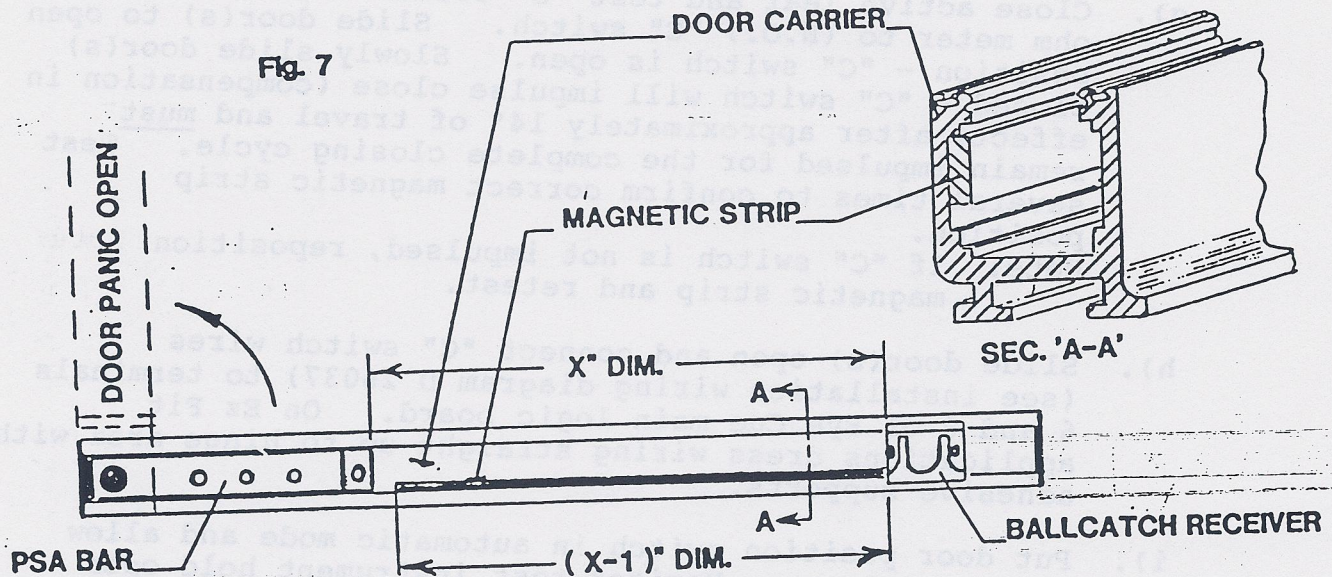
NOTE: "C" switch and magnetic strip may be factory installed.

- c). Carefully drill (check drilling clearances inside operator) 3/8 inch hole (see Fig.6) and install "C" switch with adhesive on reference line #1. Switch should be installed as close to door carrier as possible.

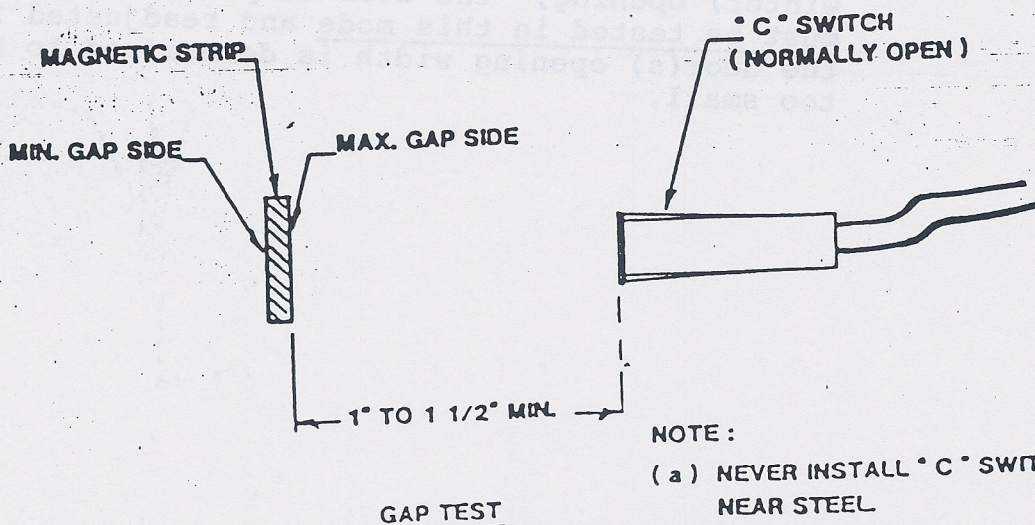




- d). Measure distance (see Fig. 7) between end of panic (PSA) bar and ballcatch. Deduct one (1) inch from measurement and cut magnetic strip to total measurement.



- e). Connect "C" switch (N.O.) to ohm meter. Check each flat surface of magnetic strip to determine which side impulses "C" switch (see Fig 8.) at the widest (Gap) distance. Clean and apply adhesive or double side tape to wide gap surface.



NOTE:

- (a) NEVER INSTALL "C" SWITCH COMPONENTS NEAR STEEL
- (b) ALWAYS INSTALL MAGNETIC STRIP BELOW AND IN CLOSE PROXIMITY TO "C" SWITCH

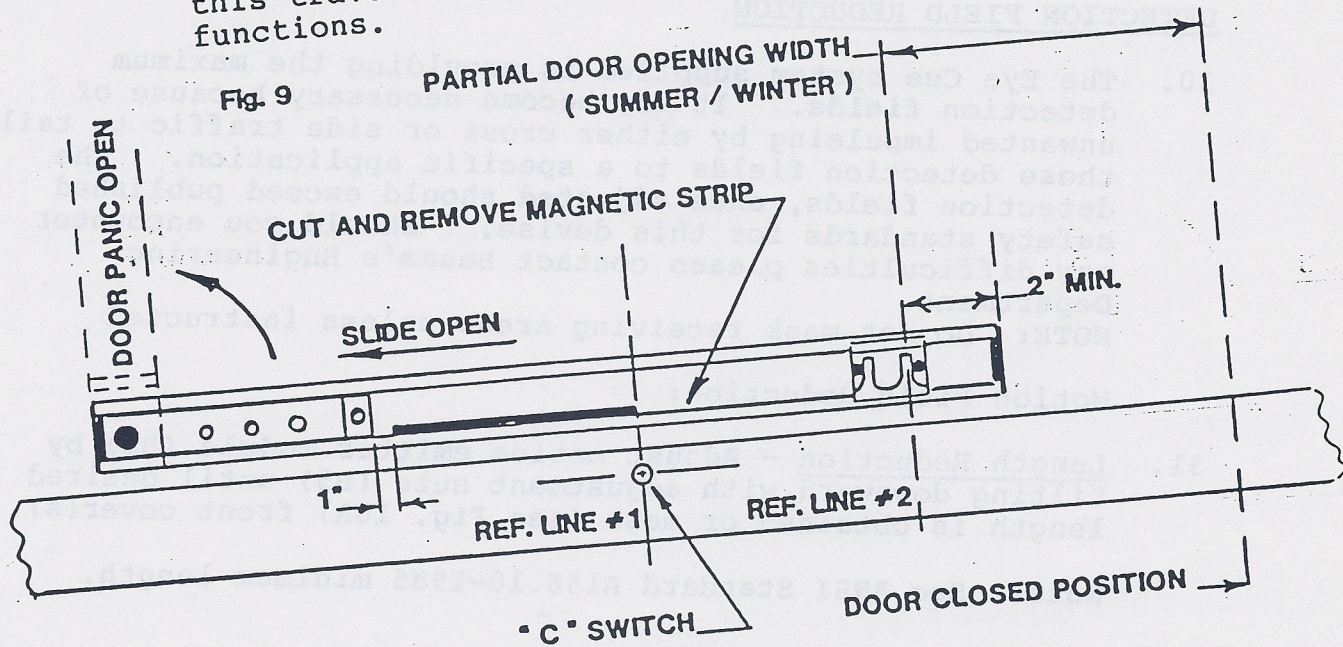
Fig. 8



- f). Clean inside of door carrier and install magnetic strip one (1) inch from end of panic (PSA) bar and at the lowest point (see Fig 7.) inside door carrier.
  - g). Close active leaf and test "C" switch function. Connect ohm meter to (N.O.) "C" switch. Slide door(s) to open position - "C" switch is open. Slowly slide door(s) closed - "C" switch will impulse close (compensation in effect) after approximately 14" of travel and must remain impulsed for the complete closing cycle. Test several times to confirm correct magnetic strip position.  
Note: If "C" switch is not impulsed, reposition magnetic strip and retest.
  - h). Slide door(s) open and connect "C" switch wires (see installation wiring diagram D 26037) to terminals 6 and 8 of Eye Cue main logic board. On Ez Fit applications dress wiring straight up to hinge area with adhesive supports.
  - i). Put door position switch in automatic mode and allow doors to close. Monitor test instrument hold open lights for any door detection. Test several closing cycles to confirm that there is no door detection (door(s) recycle open/hold open light(s) illuminated) during the complete closing cycle. If any detection is indicated a slight adjustment to sensors (see Step 25 (b)), receiver module C1 will be required. Allow adjusted detector to restabilize (learn mode 15 seconds) and repeat test.
26. Important: Partial (winter) opening applications. On all applications equipped with a partial (summer/winter) opening; the door compensating system must be tested in this mode and readjusted if the door(s) opening width is determined to be too small.
- Caution:



**Test:** Put door system in the partial opening (P.O.) mode and adjust, if necessary, to the desired opening width. Mark a reference line #2 (see Fig.9) on the bottom of the support beam where maximum P.O. is determined to be and activate P.O. system several times to confirm reference line #2 is correct. Put door in the full open position, disconnect "C" switch wiring and attach ohm meter, "C" switch will test open. Slide door(s) closed until door (carrier) is two (2) inches past reference line #2 (see Fig.9). "C" switch must not impulse close at any point during this travel. Reconnect "C" switch wiring and test functions.



**Adjustment** - To correct "C" switch premature impulsing, position door (carrier) two (2) inches past reference line #2 (see Fig.9), cut magnetic strip in line with "C" switch (reference line #1) and remove magnetic strip section towards ball catch. Reinstall "C" switch wiring and test functions.

27. Test hold open threshold detection. Put door position switch in fully open mode. While visually monitoring test instrument, crouch or kneel motionless (5-10 seconds) at different points across entire door(s) opening. The interior, exterior or both hold open lights should always indicate detection.
- Important:** Repeat test in the partial opening mode if applicable.
- NOTE:** This test may trigger learn mode and cause the door(s) to remain open approximately 15 seconds.



28. Carefully reinstall sensor covers. Allow 15 seconds for learn mode to stabilize. Test walk system for appropriate fields of detection. Adjust learn mode delay, see Page 8. Note: If detection fields must be reduced see special instructions.
29. Important:  
Once completed explain operation of Eye Cue system and learn mode function. Explain daily safety checks procedures. Explain special door locking procedures to responsible individuals. Supply and install instructional materials.

### DETECTION FIELD REDUCTION

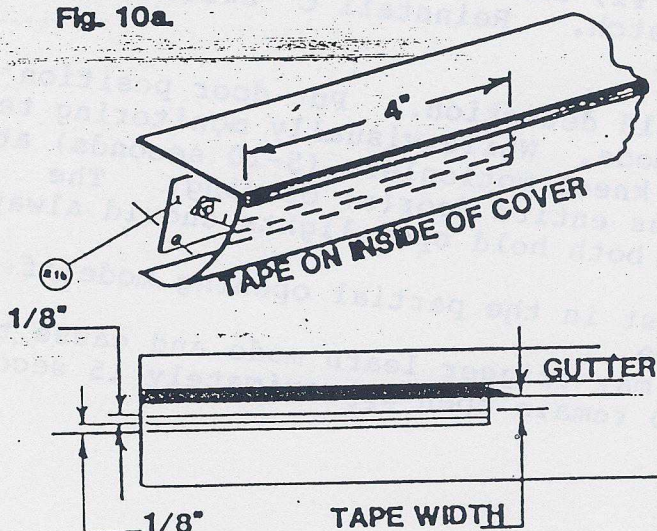
30. The Eye Cue system supplied is providing the maximum detection fields. It may become necessary because of unwanted impulsing by either cross or side traffic to tailor these detection fields to a specific application. The detection fields, once adjusted should exceed published safety standards for this device. Should you encounter any difficulties please contact Besam's Engineering Department.
- NOTE: Do not mask receiving areas unless instructed

#### Motion Field Reduction:

31. Length Reduction - Adjust motion emitter module (B2) by tilting downward with adjustment nuts (B5) until desired length is obtained or mask (see Fig. 10A) front cover(s).

Note: See ANSI Standard A156.10-1985 minimum length.

Fig. 10a.



### MOTION FIELD REDUCTION

#### Length - Masking of Cover

- Using black electrical tape on outside of cover; run first strip from left hand edge of cover (directly underneath gutter) approx. 4" to the right.
- Check field length reduction.
- Repeat masking in 1/8 increments down face of cover until desired field reduction is obtained.
- Match this masking on inside of cover; remove masking tape from front of cover & recheck field for desired length.

NOTE: Must check field width after masking cover for field length.



32. Width Reduction - Restrict (mask) infrared light emitter (see Fig. 10B) to either right or left side on motion emitter module (B1). Test all fields after each masking operation.

NOTE: See ANSI Standard A156.10-1985 for minimum width.

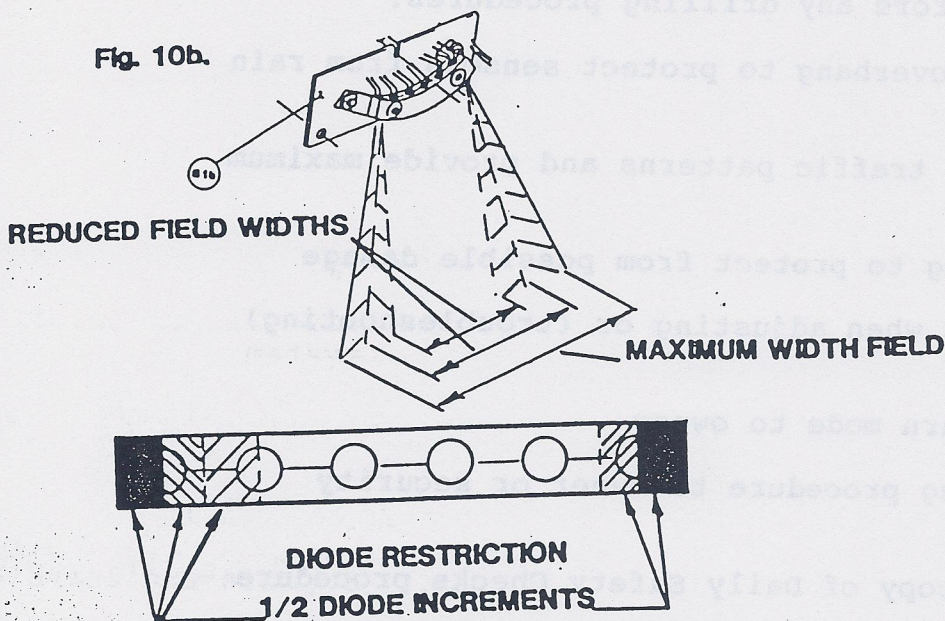
#### MOTION FIELD REDUCTION

##### Width - Masking of Diodes

- A. Using Black electrical tape restrict emittance by covering over (1/2) one half of extreme left & (or) right emitter diode(s). (see sketch)
- B. Check field width reduction.
- C. Repeat masking by (1/2) one half increments until;
  - (i) Desired field reduction is obtained.
  - (ii) A maximum total of
  - (3) three diodes have been restricted.

NOTE: Do not exceed note C(ii)

Fig. 10b.

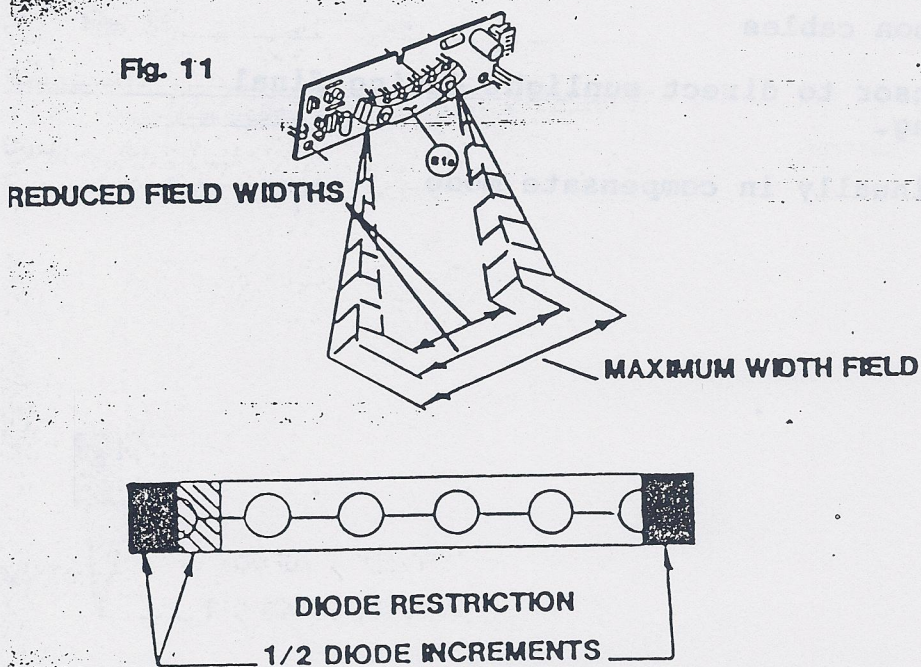


#### Presence Field Reduction:

33. Length - should always be at maximum
34. Width Reduction - Restrict (mask) infrared light emitter (see Fig. 11) to either right or left side of presence emitter module (B2). Test all fields after each masking operation.

Note: Minimum is clear door opening-width.

Fig. 11



#### PRESENCE FIELD REDUCTION

##### Width - Masking of Diodes

- A. Using black electrical tape restrict emittance by covering over (1/2) one half of extreme left & (or) right emitter diode(s). (See sketch)
- B. Check field width reduction.
- C. Repeat masking by (1/2) one half increments until;
  - (i) Desired field reduction is obtained
  - (ii) A maximum total of
  - (2) two diodes have been restricted.

NOTE: Do not exceed note C(ii).



ALWAYS

- . Disconnect main 120V during installation
- . Check clearances before any drilling procedures.
- . Check for adequate overhang to protect sensors from rain and snow.
- . Be aware of unusual traffic patterns and provide maximum detection fields.
- . Dress control wiring to protect from possible damage
- . Use test instrument when adjusting or (troubleshooting) system
- . Explain Eye Cue learn mode to owner
- . Explain door locking procedure to owner or security personnel
- . Explain and leave copy of Daily Safety Checks procedure, and leave

NEVER

- . Expose sensors on main logic board to moisture
- . Mask receiver modules, unless instructed.
- . Expose to direct overhead sunlight  
(install special reflective tape across top of cover)
- . Alter or extend ribbon cables
- . Expose uncovered sensor to direct sunlight during final adjustment or testing.
- . Operate system continually in compensate mode



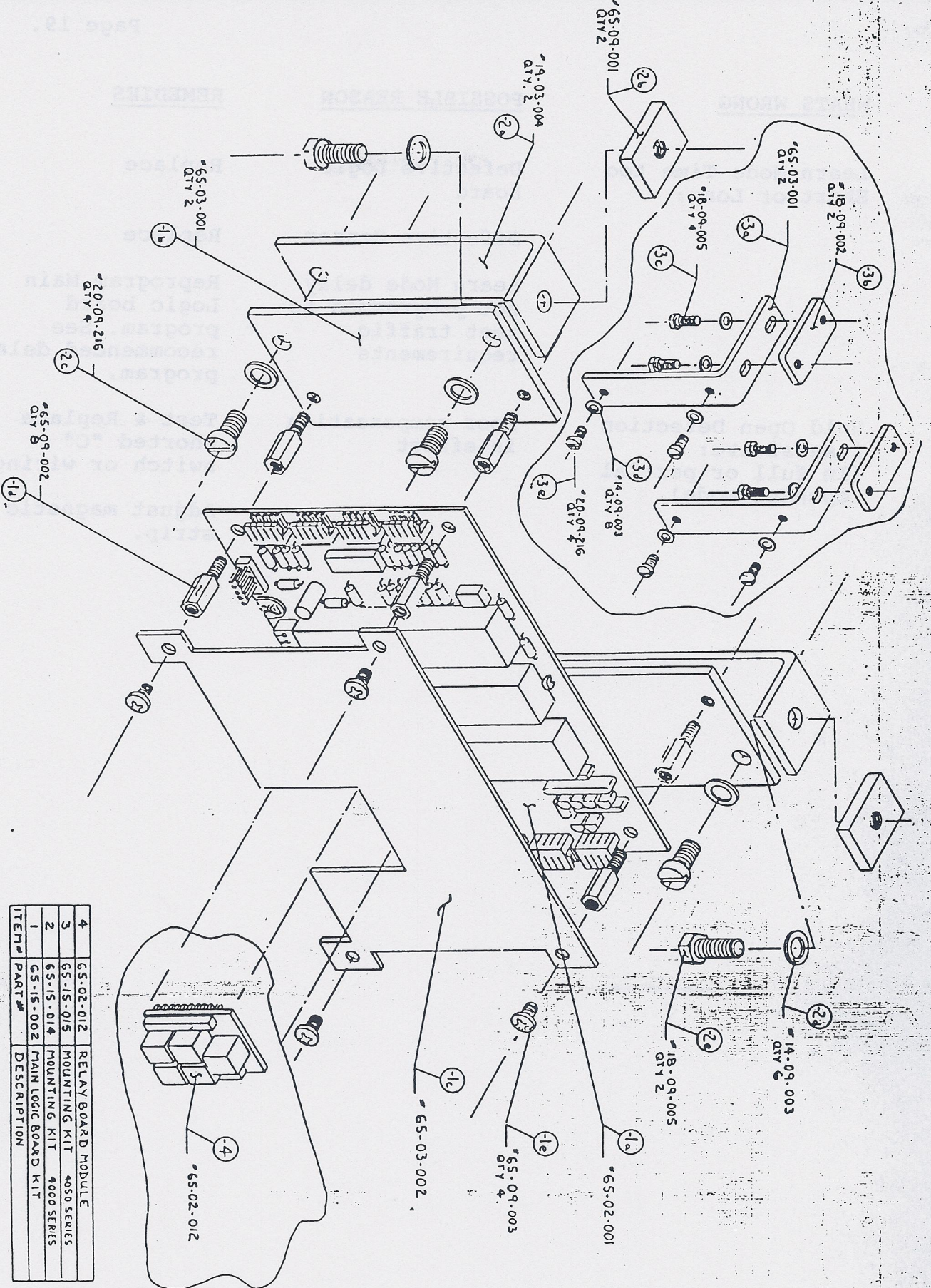
FAULT FINDING PROCEDURES (See Installation Wiring Diagram)

<u>WHATS WRONG</u>	<u>POSSIBLE REASON</u>	<u>REMEDIES</u>
System not functional: (Tester lights out)	No Main Power	Turn on system
	No Control Voltage	Check power supply & fuse - replace
	Tester not connected properly	Check same
	Defective Tester	Check on another operating system
Tester Lights Remain on:	Defective Logic Board	Replace same
	Operator & Logic Board not grounded	Ground same
	Low Primary or Secondary voltage	Correct same
	Defective Tester	Check on another operating system
Tester Lights go out but no detection:	Defective Logic Board	Replace same
	Cables misconnected	Check same
	Operator Position Switch in wrong mode	Put in Auto mode
	Defective Cable	Replace same
Interior or Exterior Impulsing Fields & Test Lights not synchronized:	Logic Board Programming on Rocker switch in wrong position	Change same
	Cables Misconnected	Reverse same
	Interior - Exterior impulse wiring to operator reversed	



<u>WHATS WRONG</u>	<u>POSSIBLE REASON</u>	<u>REMEDIES</u>
Erratic Operation:	Operator & Logic Board not grounded	Ground same
	Cables Misconnected	Correct same
	Cables dressed next to 120 volt lines	Reroute same
	Improper overhang sunlight entering top of sensor <i>PHOTOV BRIDGE OUT OF ALIGNMENT</i>	Install metallic tape across top of effected sensor housing
Door(s) Recycels Open: (Hold Open Light(s) on)	Door(s) being detected	Adjust Presence Emitter module (See instructions)
	Defective "C" switch or wiring	Test & Replace
	Objects moving in Detection Field i.e. floor mat, side traffic or adjacent doors	See Field reduction instructions
Door(s) continue to Recycle after all Adjustments:	Door(s) & Special hardware detected	Special masking required - Consult Besam Engineering.
Door(s) Recycle Open during closing cycle:	Door(s) being detected	Adjust motion emitter module
	Objects moving in Field	Secure or Remove same
	Side traffic or adjacent door(s) being detected	See field reduction instructions or mounting instructins
Time period door(s) remain open is too long or short:	Incorrect T.D. adjustment of operator PCB or logic board	Readjust all time delay in system





ITEM#	PART#	DESCRIPTION
4	65-02-012	RELAY BOARD MODULE
3	65-15-015	MOUNTING KIT 4050 SERIES
2	65-15-014	MOUNTING KIT 4000 SERIES
1	65-15-002	MAIN LOGIC BOARD KIT

MAIN LOGIC BOARD ASSEMBLY KITS  
EYE CUE

**besam**  
171 TWIN RIVERS DR.  
EAST WINDSOR, N.J. 08520  
609-443-5800

DATE C-14-86  
C26027  
DWC:MC



WHATS WRONGPOSSIBLE REASONREMEDIES

Learn Mode Time too  
Short or Long:

Defective Logic  
Board

Replace

Defective Sensor

Replace

Learn Mode delay  
not programmed to  
meet traffic  
requirements

Reprogram Main  
Logic board  
program. See  
recommended delay  
program.

Hold Open Detection  
insensitive:  
(In full or partial  
opening mode)

Door compensation  
in effect

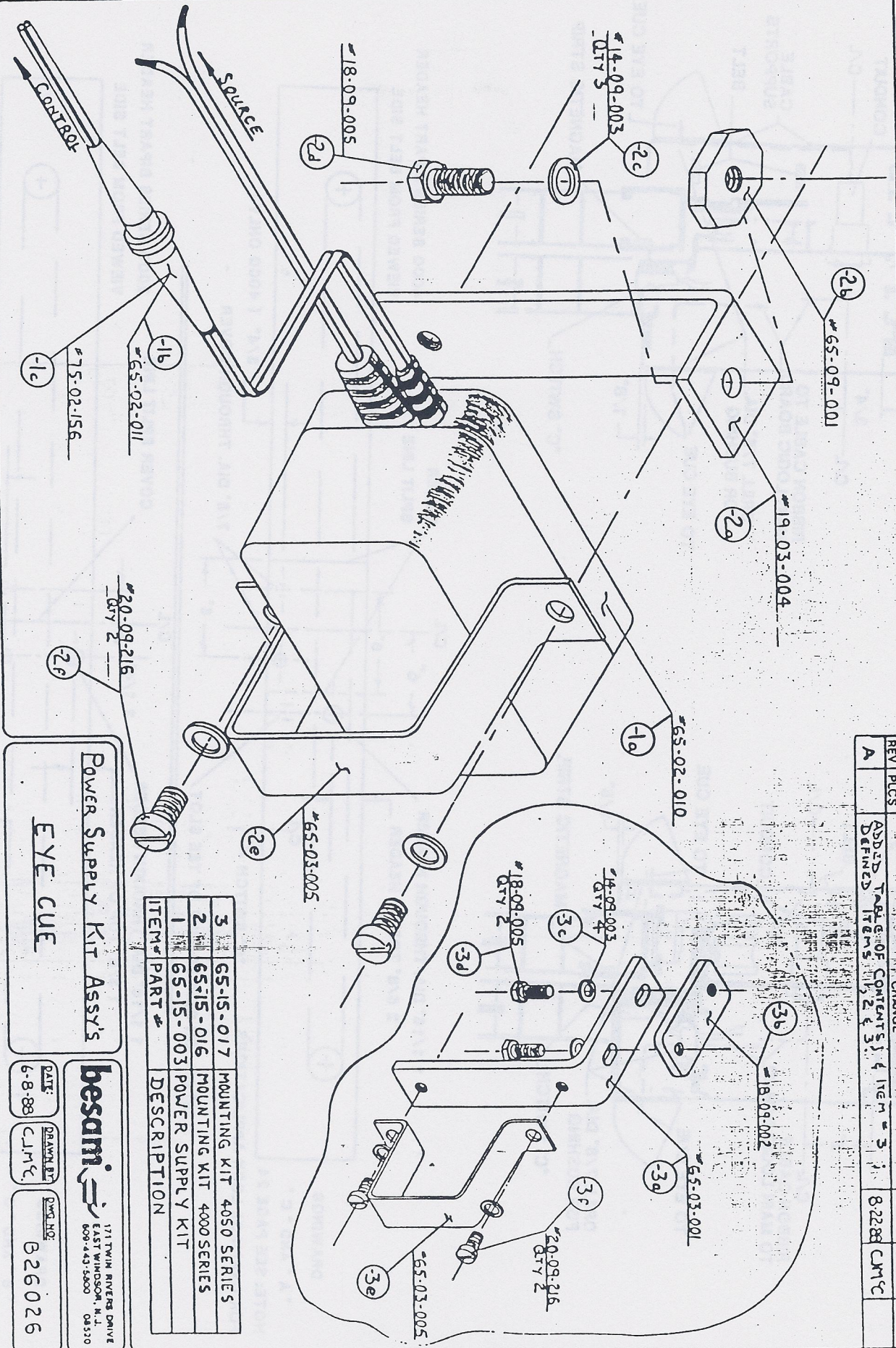
Test & Replace  
shorted "C"  
switch or wiring

Adjust magnetic  
strip.



128394

TRUCK/AMBI 3



Power Supply Kit Ass'y's

EYE CUE

DATE: 6-8-88  
DRAWN BY: C.M.C.

QMG NO: 626026

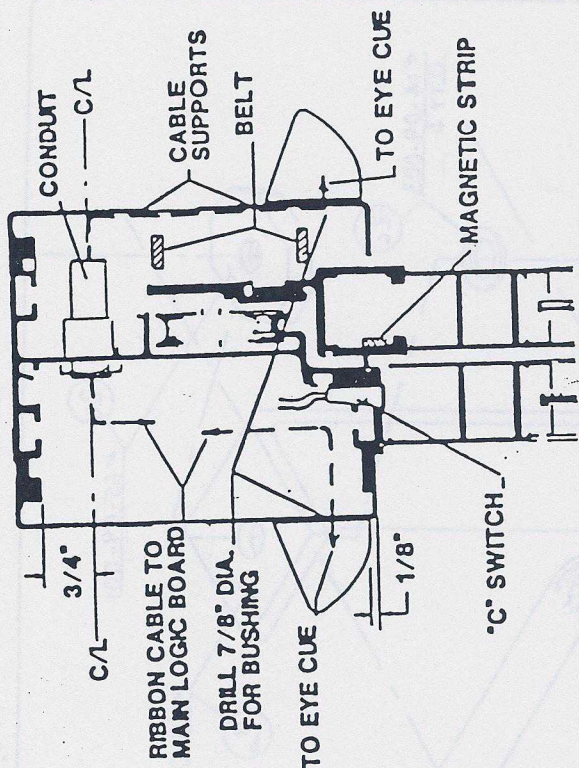
**besami**  
171 TWIN RIVERS DRIVE  
EAST WINDSOR, N.J. 08310  
800-443-5800

ITEM	PART #	DESCRIPTION
3	65-15-017	MOUNTING KIT 4050 SERIES
2	65-15-016	MOUNTING KIT 4000 SERIES
1	65-15-003	POWER SUPPLY KIT

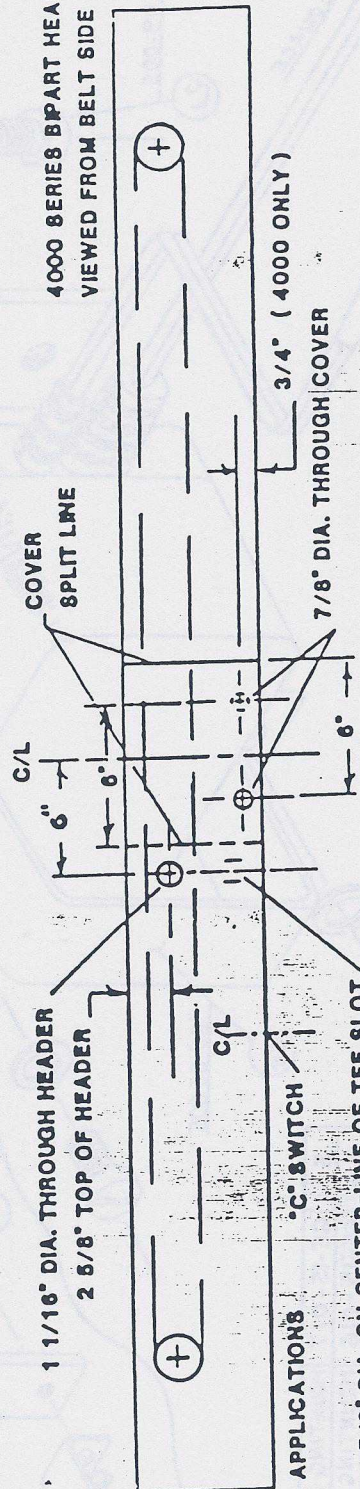
REV	PLCS	CHANGE	DATE	CHG BY	BY
A		Added Table of Contents, 1 Item = 3 Defined Items 1, 2 & 3	8/22/88	C.M.C.	



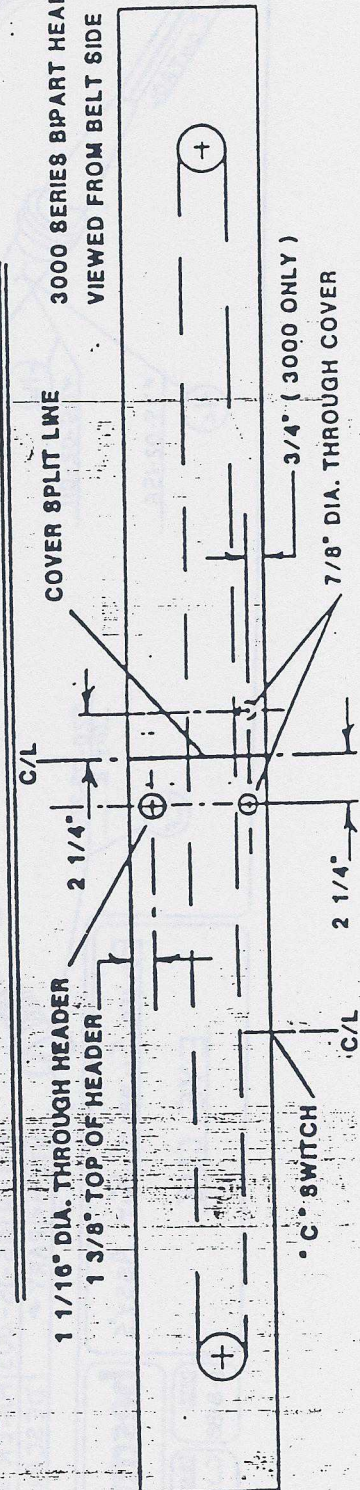
"B"  
- 3000 -



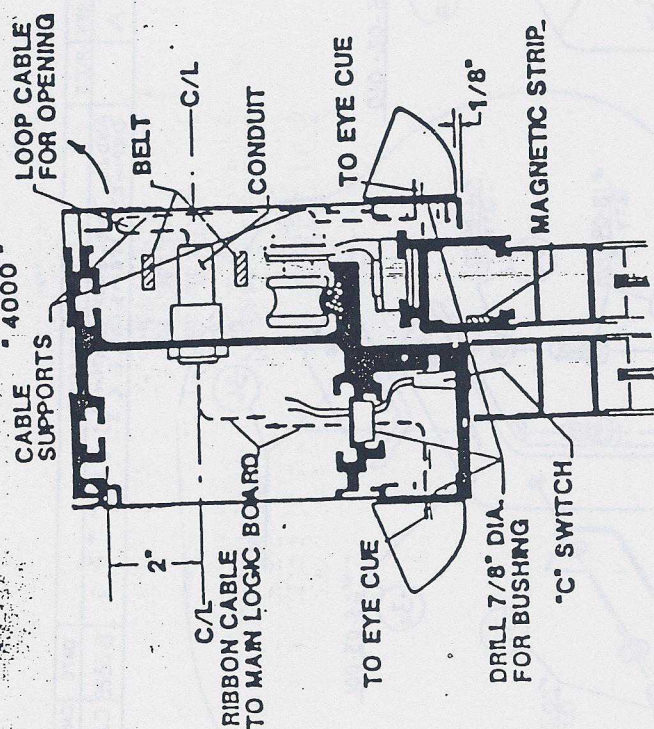
4000 SERIES BIPART HEADER  
VIEWED FROM BELT SIDE



3000 SERIES BIPART HEADER  
VIEWED FROM BELT SIDE



"A"  
- 4000 -



DRAWINGS

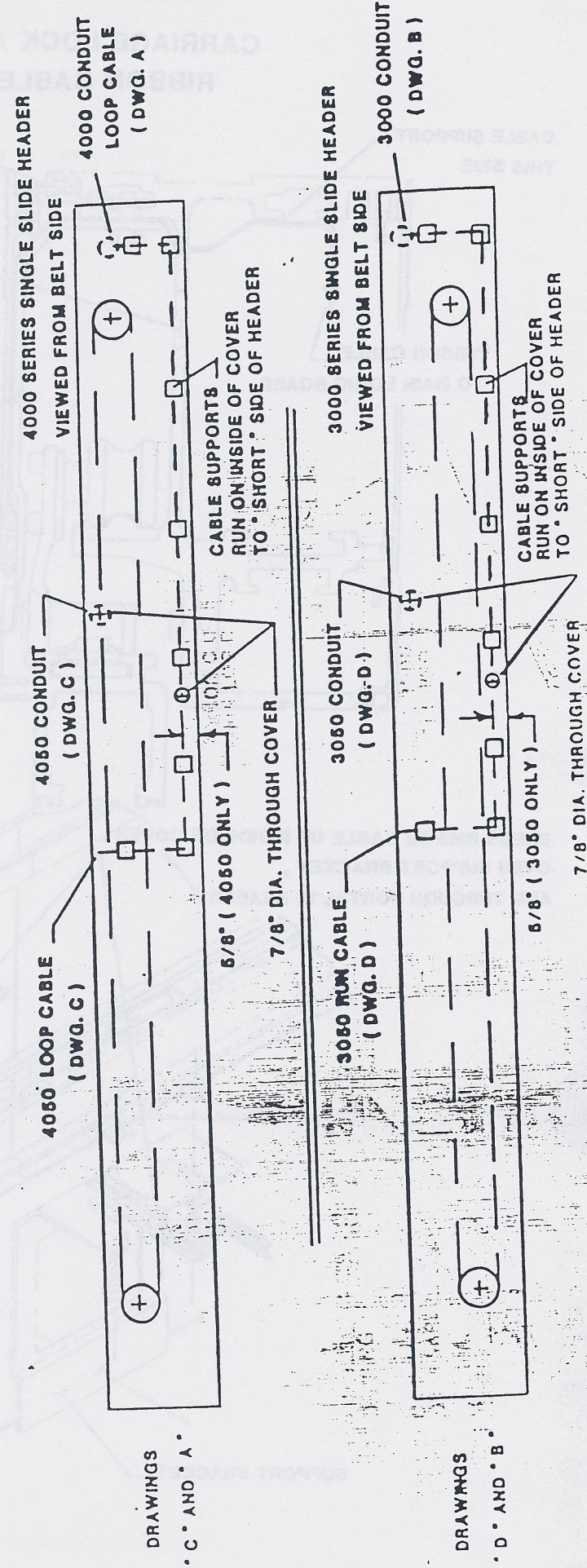
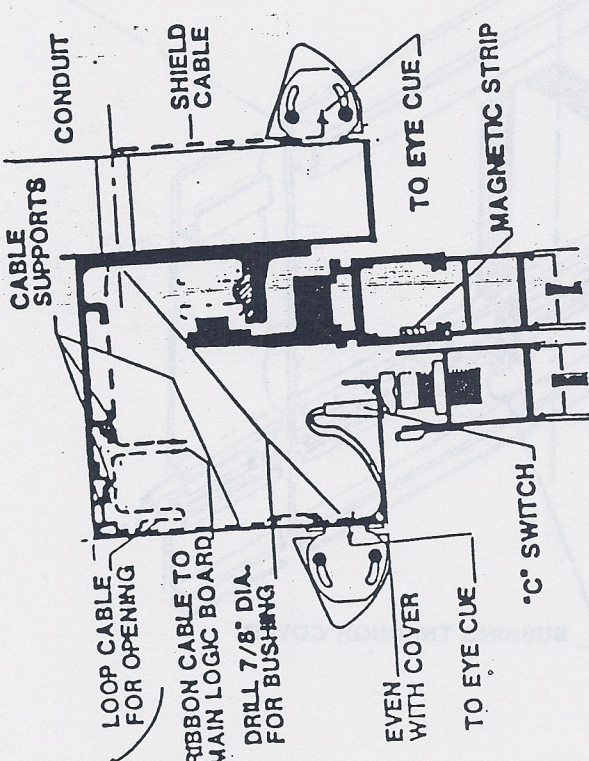
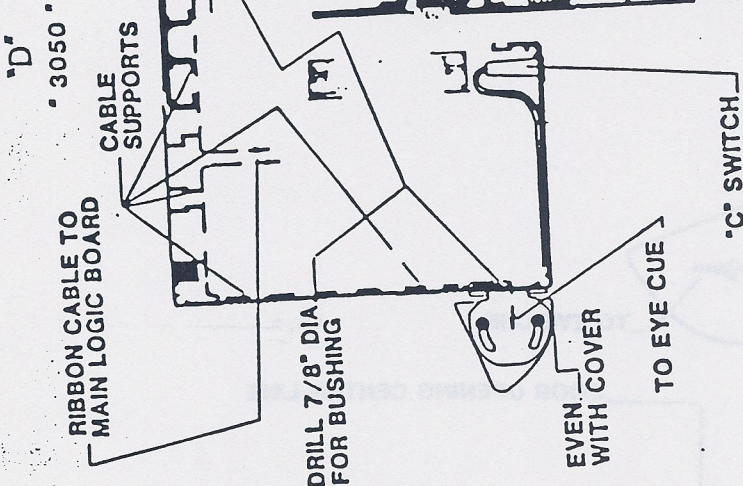
"A" AND "C"

NOTE: SEE PAGE 24  
FOR CARRIAGE LOCK APPLICATIONS

DRAWINGS

"B" AND "D"





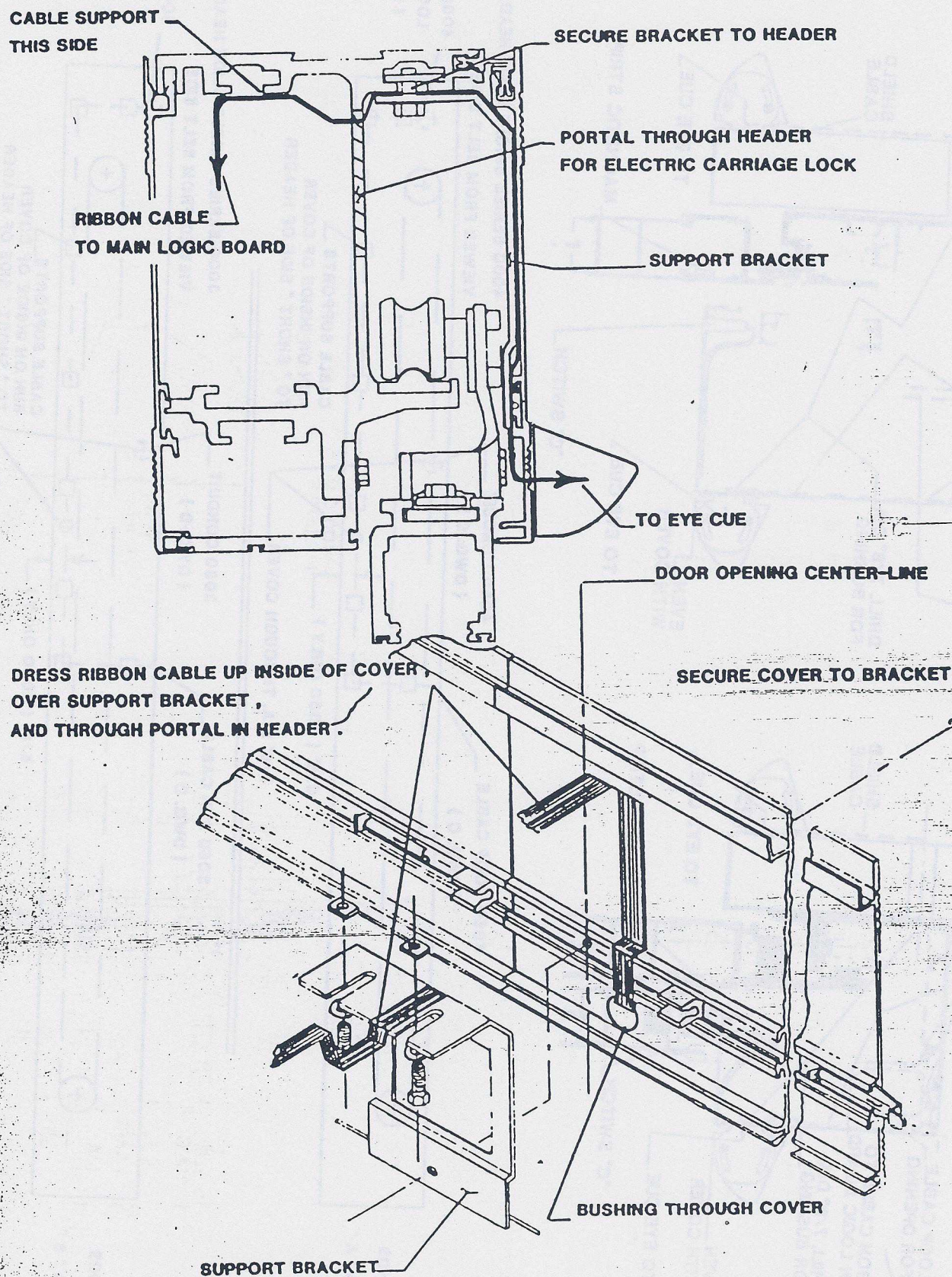
DRAWINGS  
"C" AND "A"

DRAWINGS  
"D" AND "B"



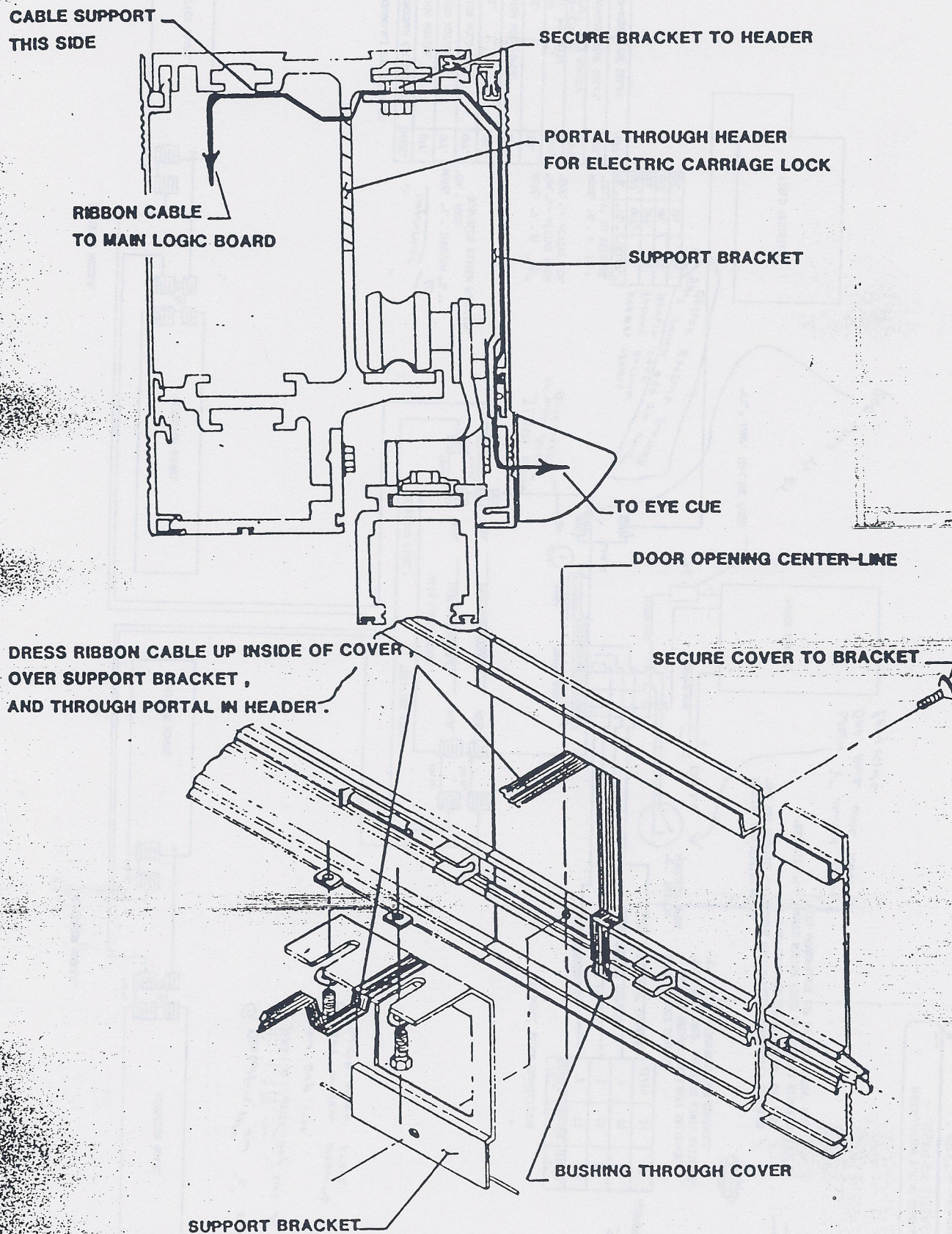
# CARRIAGE LOCK APPLICATIONS

## RIBBON CABLE DRESSING



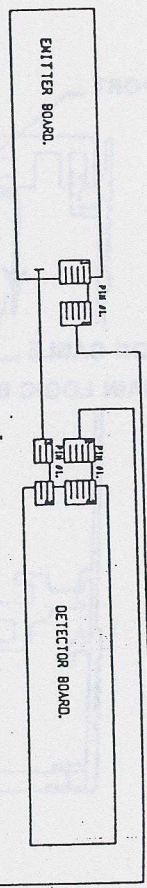


## CARRIAGE LOCK APPLICATIONS RIBBON CABLE DRESSING

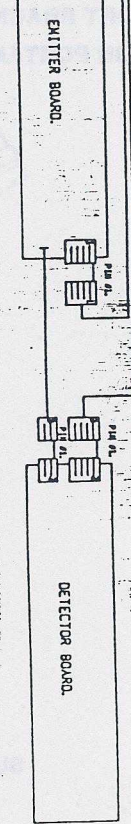




INTERIOR MODULE



EXTERIOR MODULE



PROGRAMMABLE DIP SWITCHES.

PROGRAM FACTORY SET.	MODE.
1. EXTERIOR MOTION.	OFF.
2. INTERIOR MOTION.	OFF.
3. INTERIOR HOLD-OPEN.	OFF.
4. FUTURE.	ON.
5. EXTERIOR HOLD-OPEN.	OFF.
6. FUTURE.	ON.
7. MOTION POLARITY.	OFF.
8. HOLD-OPEN POLARITY.	OFF.
9. LEARN-MODE TIME DELAY.	OFF.
10. LEARN-MODE TIME DELAY.	OFF.

NOTE: "1." THROUGH "6." "ON." MODE DISABLES SWITCH FUNCTION.

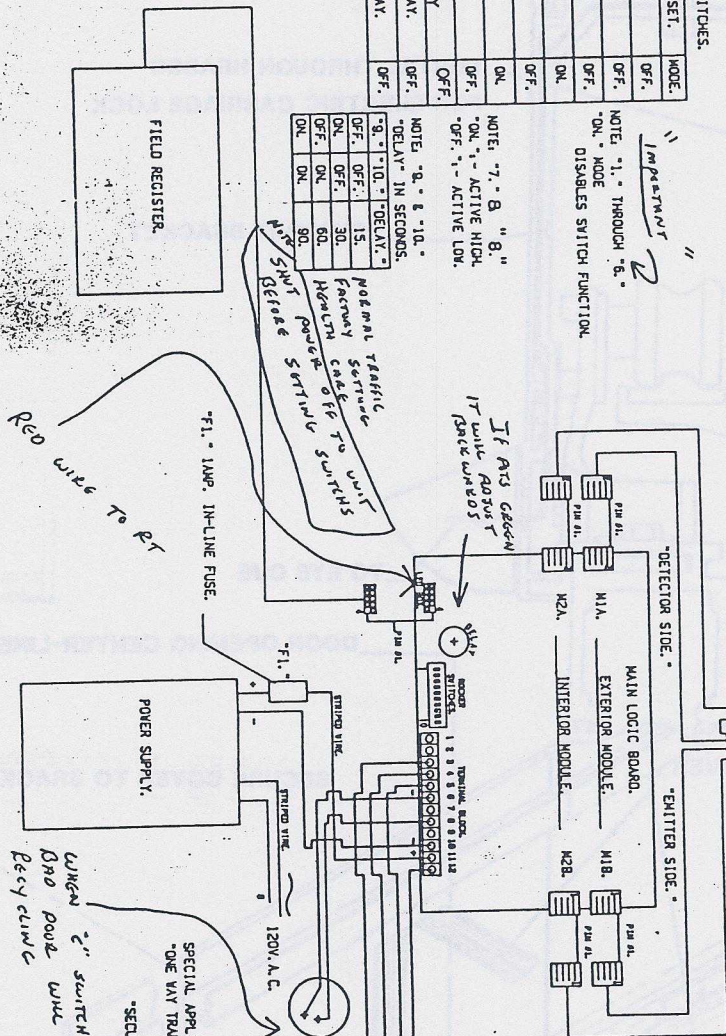
NOTE: "7." & "8." "ON." = ACTIVE HIGH.

NOTE: "9." & "10." "ON." = ACTIVE LOW.

NOTE: "9." & "10." "ON." = DELAY IN SECONDS.

OFF.	OFF.	15.
ON.	OFF.	30.
OFF.	ON.	60.
ON.	ON.	90.

NOTE: "9." & "10." "ON." = DELAY IN SECONDS. NORMAL TRAFFIC IT WILL GO TO UNIT. IF NOT CHECK IT WILL GO TO UNIT. IF NOT CHECK IT WILL GO TO UNIT.



TERMINAL BLOCK CONNECTIONS.

TERMINAL	WIRE	WIRE	WIRE
1	2	23	8
2	5	18	16
3	7	20	18
4	17/18	24	16

NOTE: SLIDER SERIES. "A" WITH MECHANICAL LIMIT SWITCHES. "B" WITH RED MAGNETIC LIMIT SWITCHES. "C" WITH MICROPROCESSOR CONTROLS.

SPECIAL APPLICATION NOTES. "ONE VAY TRAFFIC." "SECURITY." "NORMAL MOTION FIELD PERMANENTLY DISABLED." "WITH APPROPRIATE DIP SWITCH IN "ON" MODE." "DISABLED MOTION FIELD PERMANENTLY DISABLED." "WITH APPROPRIATE DIP SWITCH IN "ON" MODE."

INSTALLATION WIRING DIAGRAM

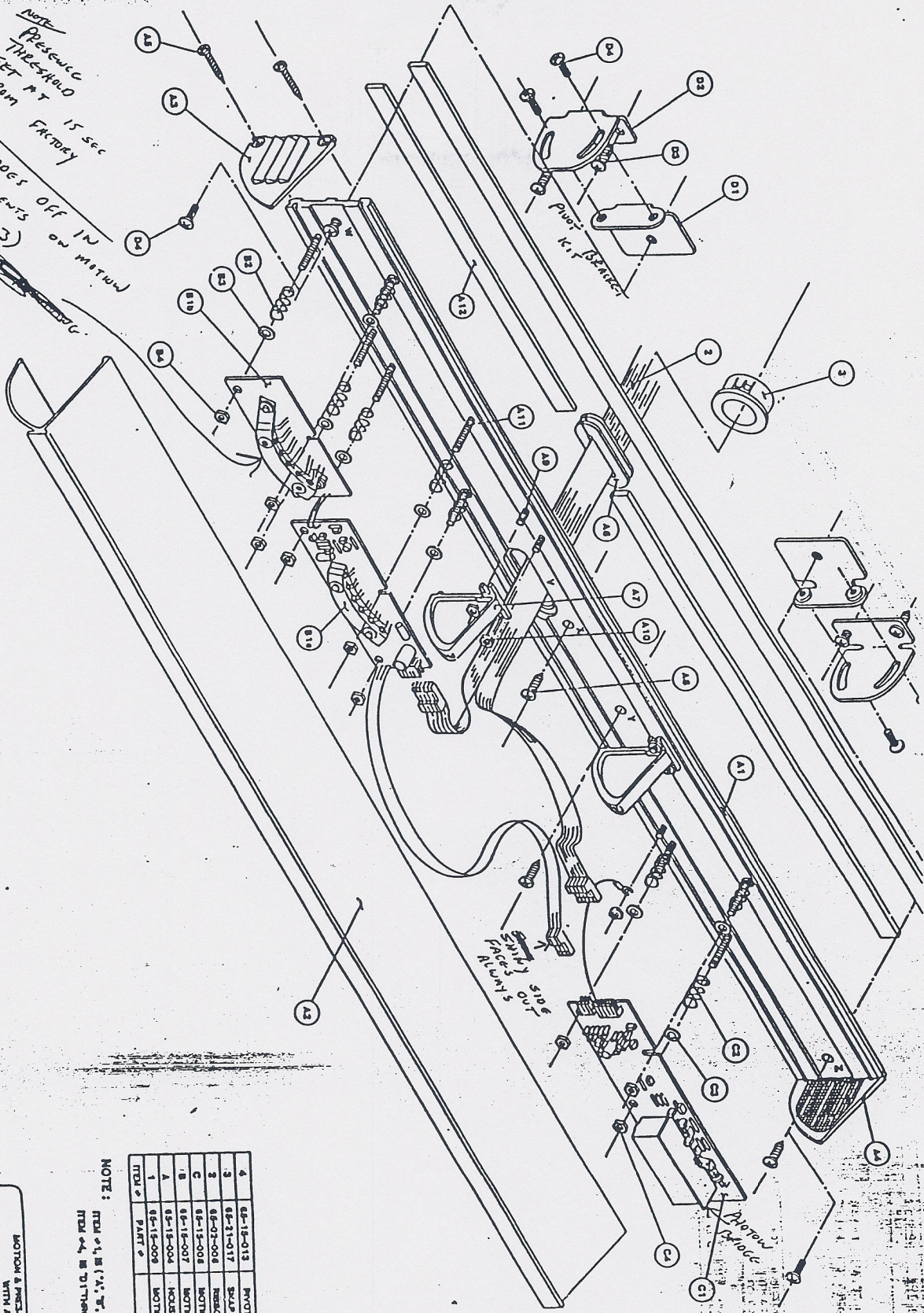
besam

9-12-88

D 25037



NOTE:  
 PRESENCE  
 THRESHOLD  
 SET RT  
 FROM FACTORY  
 15 sec  
 TAPE DIODES OFF IN  
 1/2 INCKEMENTS ON METER  
 (MAX 3)



ITEM #	PART #	DESCRIPTION
1	65-15-008	BOTTOM & PRESENCE MODULE ASSEMBLY
2	65-15-007	HOLDING ASSEMBLY
3	65-15-006	BOTTOM & PRESENCE DETECTION MODULE KIT
4	65-15-005	BOTTOM & PRESENCE DETECTION MODULE KIT
5	65-15-004	SHALL BEHOLD
6	65-15-013	PIVOT BRACKET KIT

NOTE:  
 ITEM #1 IS (1, 2, 3, 4, 5) COMPLETE ASSEMBLY  
 ITEM #4 IS DISMOUNT ONLY

1111 TOWN CENTER DR.  
 SUITE 100  
 DALLAS, TX 75243

1111 TOWN CENTER DR.  
 SUITE 100  
 DALLAS, TX 75243

1111 TOWN CENTER DR.  
 SUITE 100  
 DALLAS, TX 75243

D 26033







# EYE CUE

# UPDATES





NOV'89



# information bulletin

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## EYE CUE RETROFIT Wiring Revisions

Listed below are the revised wiring procedures for retrofitting the Eye Cue System to the earlier "A" Series (w/mechanical limit switches/or "B" Series (w/red magnetic limit switches) sliding door packages.

1. "A" or "B" Series without 4 position switch or electric carriage locks. Wiring: Normal wiring as shown on installation wiring Diagram D26037 in the manual (no special relay module required).
2. "A" Series with electric carriage lock or 4 position switch. Wiring: See enclosed installation wiring Diagram D26037 Revision A. (Special 5 relay module #65-02-012 required.)
3. "B" Series with electric carriage lock or 4 position switch. Wiring: See enclosed installation wiring Diagram D26037 Revision A. (Special 4 relay module #65-02-020 required.)

Please make the necessary revisions to all installation wiring diagrams.

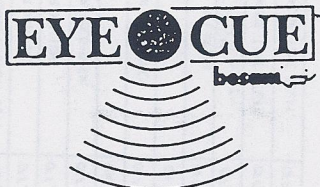
## SELECT SCAN II/EYE CUE SYSTEM

Enclosed are the installation instructions for combining the popular Select Scan II (closing impulse motion detector) with the Eye Cue threshold hold protection (motion fields eliminated) system.

### Select Scan II Application Notes:

1. Detectors can only be used in combination with the Eye Cue Threshold Protection System. They are not compatible, for safety reasons, with hold open beams.
2. Maximum detection field width is 60 inches. (P.G. 4000-2-12'0" net door opening 60").
3. Two detectors are always required for either one way or two way traffic applications.
4. One way traffic applications are not as effective as two way since one detection field remains active until the door(s) are completely closed.
5. Closing impulse signal can only be accepted by "C" series (computer control) sliders.





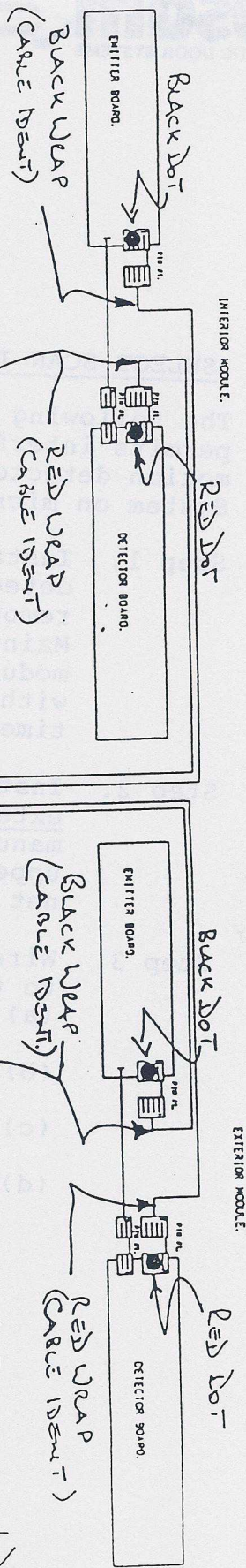
Patent #4,736,097

SELECT SCAN II (ROC) WITH EYE CUE THRESHOLD PRESENCE DETECTION

The following instructions should be followed carefully and permits interfacing of the Select Scan II (ROC) closing impulse motion detectors with the Eye Cue Threshold Presence Detection System on microprocessor controlled "C" sliders only.

- Step 1. Install, adjust, and test the Eye Cue threshold presence detection system (motion detection components factory removed) according to Manual 65-23-002. The Eye Cue Main Logic Board must be equipped with relay board module 65-02-020 (4 relays). Impulse system for testing with control unit impulse button. Adjust the operator time delay to 5 seconds maximum.
- Step 2. Install Select Scan II (ROC) on both interior and exterior side of operator according to instruction manual 75-23-002. DO NOT install metallic foil tape on upper part of lens. NOTE: For optimum detection the net door opening should never exceed 60 inches.
- Step 3. Wire the Select Scan II (ROC) motion detectors according to the diagram enclosed.
- (a) Red (+) leads from each motion detector to Terminal #1 on TBl.
  - (b) Black (-) leads from each motion detector to Terminal #7 on Eye Cue Main Logic Board.
  - (c) Connect jumper wire from Terminal #5 on Eye Cue Main Logic Board to Terminal #2 on TBl.
  - (d) Switch dip switch #8 on Eye Cue Main Logic Board to on position. This will energize relay K1 (located on relay board module) as long as power is present to Eye Cue System. NOTE: If the Eye Cue power is interrupted, the Select Scan II (ROC) function (interconnected through K1 Relay) will be disconnected also.





**NOTE: 1. EMITTER & DETECTOR CABLES ARE NOT INTERCHANGABLE!!**  
 LEAD FOR LEAD OR BETWEEN BOARDS.

PROGRAMMABLE DIP SWITCHES.

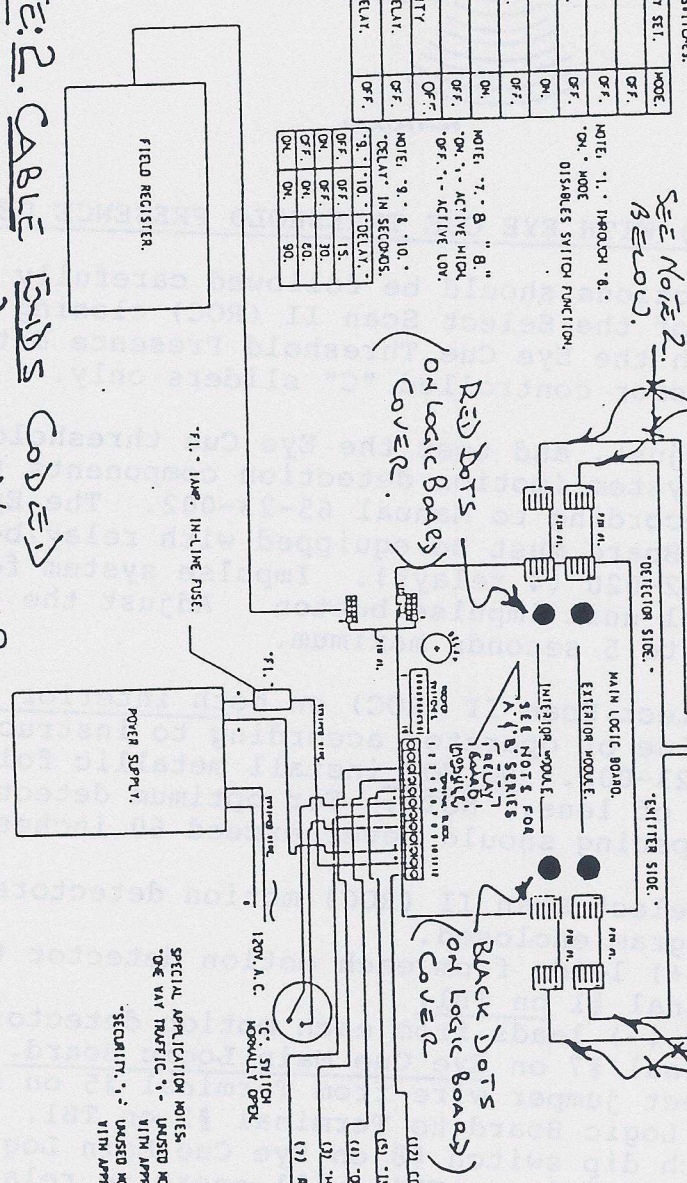
PROGRAM FACTORY SET.	MODE.
1. EXTERIOR MOTION.	OFF.
2. INTERIOR MOTION.	OFF.
3. INTERIOR HOLD-OPEN.	OFF.
4. RUN-UP.	ON.
5. EXTERIOR HOLD-OPEN.	OFF.
6. RUN-UP.	ON.
7. RUN-UP.	ON.
8. RUN-UP.	ON.
9. RUN-UP.	ON.
10. LEARN-MODE TIME DELAY.	OFF.

NOTE: "1." THROUGH "6." ON "MODE" DISABLES SWITCH FUNCTION.

NOTE: "7." "8." "9." "10." "ACTIVE LOW."

NOTE: "9." & "10." "DELAY" IN SECONDS.

"9."	"10."	"DELAY"
OFF.	OFF.	15.
ON.	OFF.	30.
OFF.	ON.	60.
ON.	ON.	90.



TERMINAL BLOCK CONNECTIONS.

TERMINAL	WIRE	WIRE	WIRE
1	23	17	15
2	19	17	15
3	17	19	15
4	17	19	15
5	17	19	15
6	17	19	15
7	17	19	15
8	17	19	15
9	17	19	15
10	17	19	15

SPECIAL APPLICATION NOTES.

"DE" MAY TRAFFIC "1." - CAUSED MOTION FIELD PERMANENTLY DISABLED.

"SECURITY" "1." - CAUSED MOTION FIELD PERMANENTLY DISABLED.

USED MOTION FIELD PERMANENTLY DISABLED.

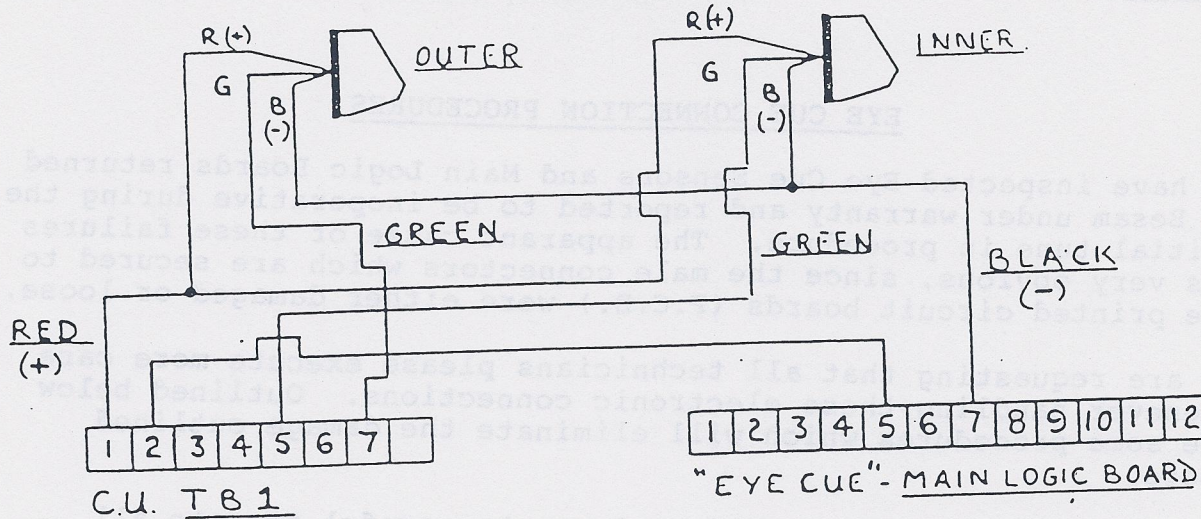
USED MOTION FIELD PERMANENTLY DISABLED.

USED MOTION FIELD PERMANENTLY DISABLED.

**NOTE: 2. CABLE LEADS CODED (RED OR BACK) WITH FIELD REGISTER MUST BE PUT INTO MAIN LOGIC BOARD TO OPTIMIZE SYSTEM FUNCTION**

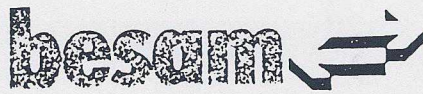


## SELECT SCAN II CLOSING IMPULSE



- Step 4. Adjust the Select Scan II depth of detection field to a point where it over laps the 16" threshold detection field and the closing impulse (walking away) is properly received at a fast to normal walking speed. NOTE: Eye Cue Sensors equipped with motion detection components may be used in the system. Both interior and exterior motion fields must first be disabled by switching dip switches 1 and 2 (on the Eye Cue Main Logic Board) to the ON Position.





# information bulletin

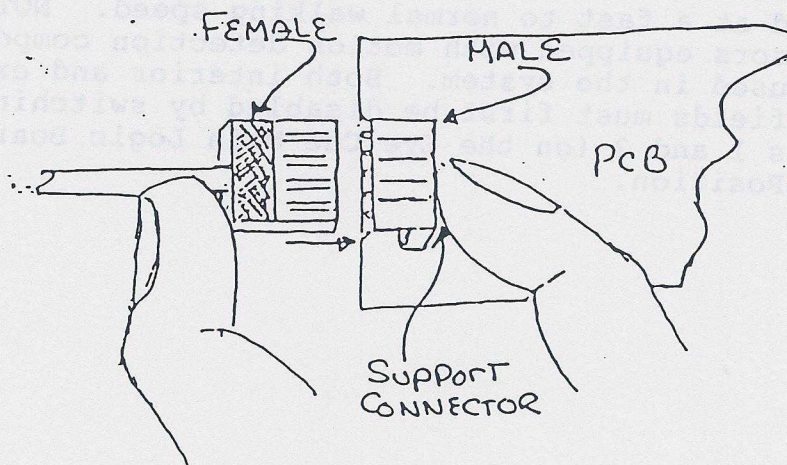
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## EYE CUE CONNECTION PROCEDURES

We have inspected Eye Cue Sensors and Main Logic Boards returned to Besam under warranty and reported to be inoperative during the initial tune in procedure. The apparent cause of these failures was very obvious, since the male connectors which are secured to the printed circuit boards (P.C.B.) were either damaged or loose.

We are requesting that all technicians please execute more care whenever handling these electronic connections. Outlined below are some procedures which will eliminate the damage outlined above.

1. Whenever connecting cables always be careful to mate all connector pins.
2. Engage both connectors approximately 1/8".
3. Grasp both connectors being certain to support (see sketch) the male connector on the P.C.B. The connectors are then carefully snapped together with the thumb and forefinger as shown.



4. When disconnecting cabling, the female connector on the P.C.B. must always be supported in the same manner.
5. Never pull on the cabling when unplugging the connectors.





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## EYE CUE PACKAGING

Listed below is the Eye Cue Packaging Policy with regards to all systems presently shipped from the factory.

### Item 1 - Eye Cue Container

Contents: 2 each sensors - 1 each main logic board - 1 each power supply with clip - 2 each cables at 4 foot. (Item 1 components are common with all applications.)

### Item 2 - Shrink Wrap Package (Located in operator.)

Contents: Mounting brackets/hardware -2 each cables. (Length of cables changes for a bipart or single slide application.)

Cable supports.

Labels and Safety Check List.

Wire.

Documentation.

Note: The components packaged with Item 2 are only compatible with a specific type of sliding door application and will also change if factory prep (new order) or field prep (retrofit) work is performed.

## EYE CUE (NON PANIC)

A "C" switch kit (compensation mode) is presently available (see drawings A26043 and A26044 enclosed) for all Powerglide 4000 and EZ Fit 4050 non,panic application requiring the Eye Cue System.

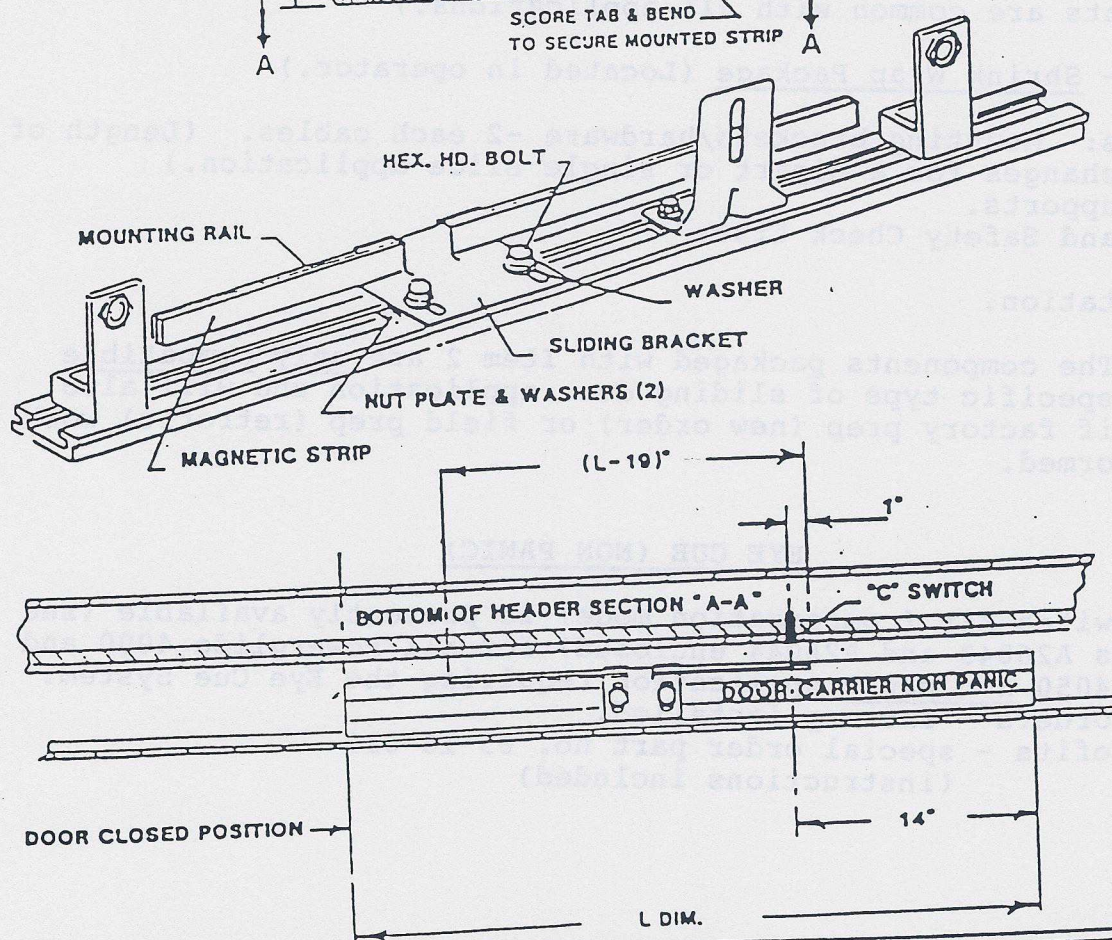
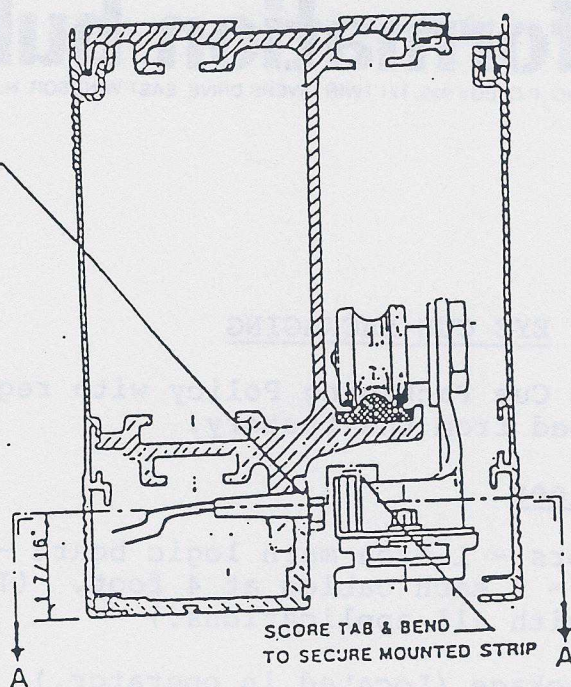
New orders - factory installed.

Retrofits - special order part no. 65-15-019  
(instructions included)



REV.	DESCRIPTION.	BY.	DATE.	CHK'D.

DRILL 3/8" DIA.  
& C/SINK 1/2" DIA.  
INSTALL "C" SWITCH  
WITH ADHESIVE



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609-443-5900.

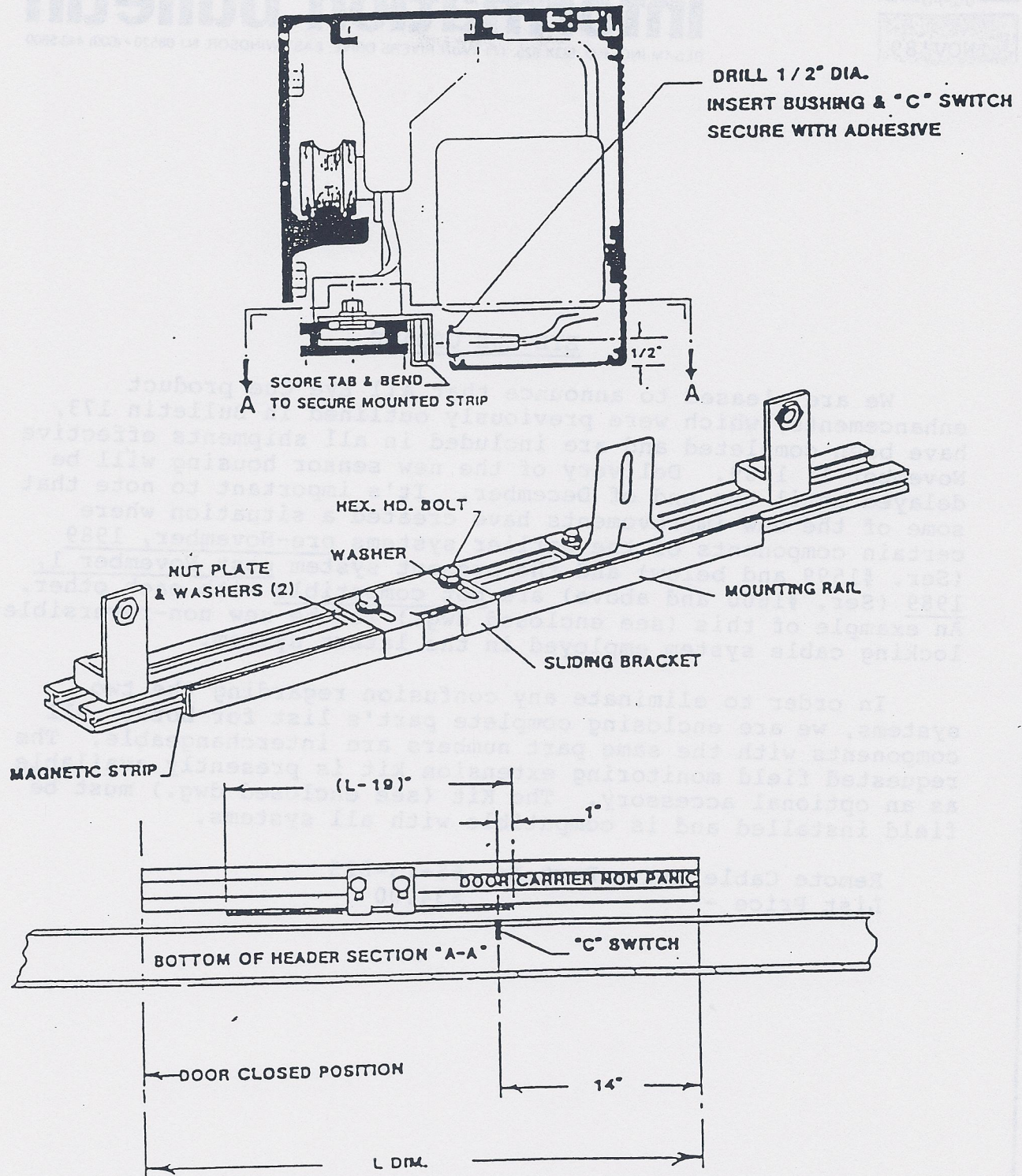
TITLE. EYE-CUE PREP & ASSY DWG.  
4000 SERIES-'C' SWITCH-NON PANIC

DRAWN BY.  
CIMCC.

DRAWING/INVENTORY NO.  
A 26043



REV.	DESCRIPTION.	BY.	DATE.	CHK'D.



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171 TWIN RIVERS DRIVE  
EAST WINDSOR, N. J. 08520.  
609-443-5800.

TITLE. EYE CUE - PREP & ASSY DWG  
4050 SERIES - "C" SWITCH - NON PANIC.

DRAWN BY.  
CJM<sup>CC</sup>

DRAWING/INVENTORY NO.  
A26044





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NOV '89

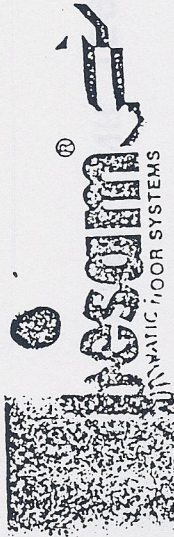
## EYE CUE UPDATE

We are pleased to announce that all Eye Cue product enhancements, which were previously outlined in Bulletin 173, have been completed and are included in all shipments effective November 1, 1989. Delivery of the new sensor housing will be delayed until the end of December. It's important to note that some of the new improvements have created a situation where certain components of the earlier systems pre-November, 1989 (Ser. #1599 and below) and the present system post November 1, 1989 (Ser. #1600 and above) are not compatible with each other. An example of this (see enclosed dwg.) is the new non-reversible, locking cable system employed in the latest system.

In order to eliminate any confusion regarding the two systems, we are enclosing complete part's list for both. All components with the same part numbers are interchangeable. The requested field monitoring extension kit is presently available as an optional accessory. The Kit (see enclosed dwg.) must be field installed and is compatible with all systems.

Remote Cable Kit - Part Nr. 65-15-025  
List Price - \$34.00





II. Post-November '89 Eye Cue: (Serial Number 1599 and before)

- Standard Components:
- A. Frequency Control on Main Logic PCB
  - B. Intensity Control on Emitters
  - C. New Cables (Round)
  - D. New Connectors (Locking, Non-Reversible)
  - E. New Housing (Slide Cover) - included end of Dec.

- Complete Systems:
- 65-15-040 Eye Cue, Motion and Presence System (Add A to Complete Systems.)
  - 65-15-041 Eye Cue, Presence System (Add A, B and C to Complete System)

- Spare Parts:
- 65-15-020 4000-Bi-Part Hardware Kit
  - 65-15-021 4000-Single Slide Hardware Kit
  - 65-15-022 4050-Bi-Part Hardware Kit
  - 65-15-023 4050-Single Slide Hardware Kit
  - 65-15-024 Retrofit Hardware Kit (includes "C" Switch Kit 65-15-018)
- Accessory:
- 65-10-001 Field Monitor
  - 65-15-025 Remote Plug Cable Kit, Field Monitor

II. Post-November '89 Eye Cue: (Serial Number 1600 and After)

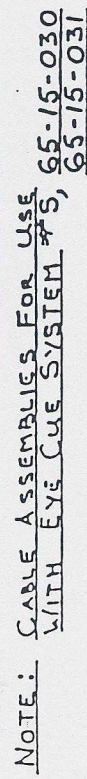
- Standard Components:
- A. Frequency Control on Main Logic PCB
  - B. Intensity Control on Emitters
  - C. New Cables (Round)
  - D. New Connectors (Locking, Non-Reversible)
  - E. New Housing (Slide Cover) - included end of Dec.

- Complete Systems:
- 65-15-040 Eye Cue, Motion and Presence System (Add A to Complete Systems.)
  - 65-15-041 Eye Cue, Presence System (Add A, B and C to Complete System)

- Spare Parts:
- 65-15-020 4000-Bi-Part Hardware Kit
  - 65-15-021 4000-Single Slide Hardware Kit
  - 65-15-022 4050-Bi-Part Hardware Kit
  - 65-15-023 4050-Single Slide Hardware Kit
  - 65-15-024 Retrofit Hardware Kit (includes "C" Switch Kit 65-15-018)

- Accessory:
- 65-10-001 Field Monitor
  - 65-15-025 Remote Plug Cable Kit, Field Monitor





**SERIAL NR. 1599 AND BELOW**



**SERIAL NR. 1600 AND ABOVE**





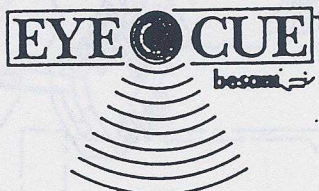




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Patent #4,736,097

## CONDENSED EYE CUE SENSOR ADJUSTMENTS

It has been requested that we condense the recommended Eye Cue sensor adjustment procedures outlined in the Installation/Owner's Manual 65-23-002. The enclosed procedures should prove to be very helpful, convenient and goes into more detail with regards to sensor adjustments and their effects on the system. The Installation Manual 65-23-002 is still valid, and product changes previously outlined in Besam Bulletin 173 requiring new instructions will be supplied with the product.

## UNIFORM BUILDING CODE INTERPRETATION

Enclosed is a copy of the code interpretation from the International Conference of Building Officials relative to power assist and low-energy, power operated doors dated July-August 1989.





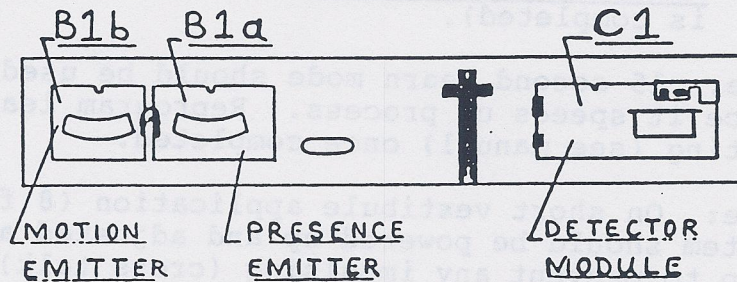
August 25, 1989

## EYE CUE SENSOR ADJUSTMENTS

Reference Installation Manual 65-23-002 for all instructions other than sensor adjustments.

Adjustment Steps - prior to energizing system.

Note: Compensating "C" switch function must be tested with an ohm meter or buzzer and must not be wired to main logic board.



Sensor Sketch

### Preadjustments (See Sensor Sketch)

1. Preadjust each sensor's detector module (C1) until parallel vertically with the housing backplate and at a mid-point position on the three (3) adjustment studs.
2. Preadjust each sensor's presence emitter module (B1a) as explained in Step 1. (Both presence emitter and detector modules are now properly aligned.)
3. Preadjust each sensor's motion emitter module (B1b) by rotating (away from doors) to it's maximum (see Fig. 1) outward position.

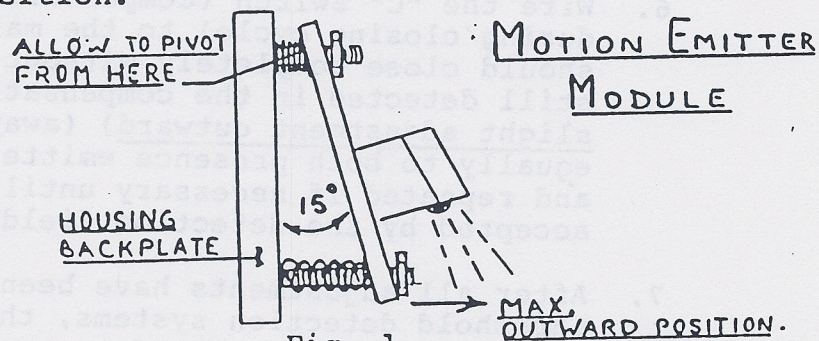


Fig. 1

Note: The Eye Cue System has been purposely designed so that a maximum inward or outward adjustment of either the presence or motion emitter modules cannot (two infrared fields are continually overlapped) create an area without emitted infrared.



### Threshold Protection Adjustments

4. Power up the entire system with the field monitoring device connected. Allow system to stabilize approximately ten minutes on initial startup.

Motion Field Lights should go out in two seconds or less (learn mode is completed).

Presence Field Lights in twenty seconds or less (learn mode is completed).

Note: 15 second learn mode should be used when adjusting system since it speeds up process. Reprogram learn mode to desired setting (see manual) once completed.

Note: On short vestibule application (8 feet or less) only one system should be powered up and adjusted at one time. This will help to prevent any impulsing (cross talk) between two unadjusted systems in very close proximity to each other.

5. Allow Door(s) to power close - ("C" switch wiring must be disconnected). Both presence detection fields should detect (optimum condition) the closing doors (seen on tester) approximately 6"-12" before the fully closed position and create a recycle effect on the door(s). If one or both of the threshold detection fields do not detect the closing door(s) as described above, the sensor or sensors (seen on tester) must be adjusted. This adjustment can be accomplished by rotating both the presence emitter module (Bla) and presence detector module (Cl) equal distance inward (towards doors) until the door(s) are properly detected as described above.
6. Wire the "C" Switch (compensation mode is now in effect during closing cycle) to the main logic board. Door(s) should close completely without detection. If door(s) are still detected in the compensating mode (seen on tester), slight adjustment outward (away from door) must be made equally to both presence emitter module and detector module and repeated if necessary until the closing doors are accepted by the detection fields.
7. After all adjustments have been completed to both sensor threshold detection systems, the "C" switch must then be temporarily disconnected to assure that the door(s) are still being detected (optimum condition) during the closing cycle. The "C" switch is then rewired to the main logic board after this test has been completed. Test hold operation threshold detection as described in Manual 65-23-002, Step 27.

Note: The 6"-12" recycle distance ("C" switch disconnected) may vary depending on door construction and surface applied hardware.



## Motion Detection Adjustments

8. The preadjusted motion emitter modules (Blb) (Step 3) are presently at their maximum length of detection range. Test walk all motion detection fields to see if acceptable and that each exceeds published safety standards.

## Motion Field Length Reduction

9. The length (from face door to start of field) can be reduced by rotating the motion emitter module (Blb) downward in gradual (toward doors) steps until desired (see Fig. 2) length is obtained.

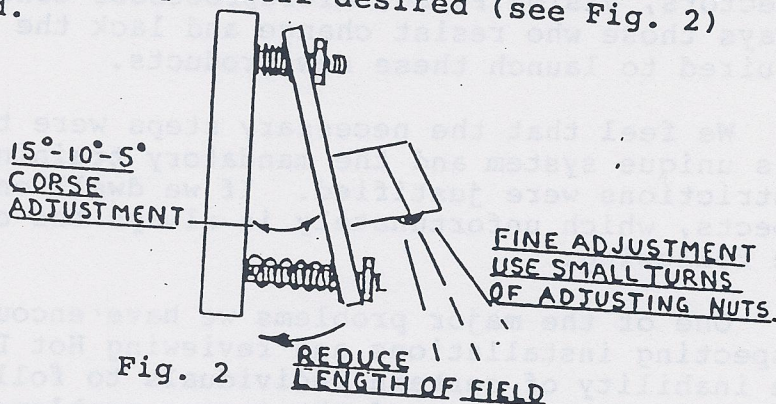


Fig. 2

Note: The motion emitter modules, if rotated too far downward, can cause the door(s) to be detected during their closing cycle. If doors are detected and the motion field length is still unacceptable, the motion emitter module (Blb) should be rotated slightly outward (away from doors) until door detection has been eliminated. To continue to reduce the length of the motion field, the front cover must be masked as described in Manual 65-23-002, Pg. 14, Step 31, Fig. 10a.

## Field Width Reductions

10. Please refer to Installation Manual 65-23-002 for width reduction instructions.

Note: During the masking procedure to either the motion or presence emitter modules, the black tape should always be carefully applied in long lengths from the bottom to the top (see Fig. 3) of the module and then tucked behind for improved adhesion.

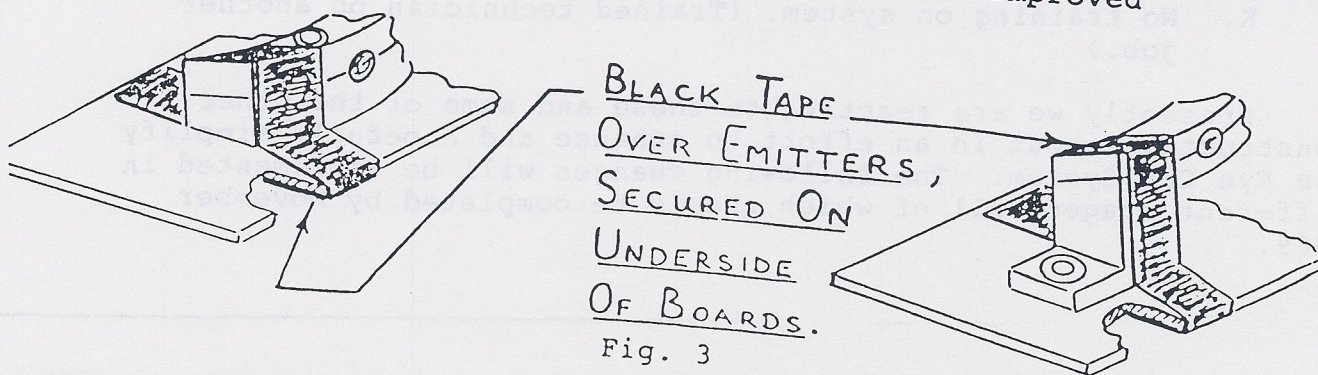


Fig. 3





# information bulletin

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## EYE CUE UPDATE

Since the introduction of the New Eye Cue Presence and Motion Detection System during the early part of 1989, we presently have nearly 1,000 complete systems shipped. Most systems are now operational in a variety of applications, and we are pleased to report the feedback has been very positive.

Unfortunately, like many of the past technology advancements in our industry such as the first Microwave Detectors, Vision Pulse, Microprocessor Controls, etc., there are always those who resist change and lack the necessary patience required to launch these new products.

We feel that the necessary steps were taken in introducing this unique system and the mandatory training and certain restrictions were justified. If we dwell on only the negative aspects, which unfortunately is always the case, we must report the following.

One of the major problems we have encountered after inspecting installations and reviewing Hot Line calls, has been the inability of certain individuals to follow instructions. Listed below are most of the common problems:

- A. Ribbon Cables not dressed properly resulting in damaged cabling.
- B. Ribbon Cables not run through protective Heyco Grommets resulting in shorts.
- C. Ribbon Cables not cut into two pieces as required on bi-parter slider applications.
- D. Ribbon Cable Connectors plugged in upside down on main logic boards and sensors.
- E. Ribbon Cable Connectors damaged.
- F. Misalignment motion photon bridge components through mishandling or improper lense removal.
- G. Sunlight entering sensor without reflective tape on top of lenses.
- H. Installing/trouble shooting system without field test monitoring device.
- I. Improper masking of motion filelds.
- J. No installation manuals at the job site.
- K. No training on system. (Trained technician on another job.)

Presently we are reacting to these and some of the other constructive input in an effort to enhance and hopefully simplify the Eye Cue System. The following changes will be implemented in different stages, all of which should be completed by November 1989.



### Product Revisions

1. Effective July '89 all motion field photon bridge components will be secured in plastic nests. (See Problem F.)
2. Effective October '89 time delay potentiometer on main logic board will be removed (desired time delay can be set on slider control board) and a new frequency control potentiometer will be added. The new potentiometer can be accessed by removing the Eye Cue main logic board cover. It should only be used on applications with short vestibules (8 foot and under) or where there is suspected cross talk (phantoming) between systems. To change the frequency between two systems in close proximity to each other one potentiometer should be adjusted fully clockwise (C.W.) and the other fully counter clockwise (C.C.W.).
3. Effective October '89 replace the present flat ribbon cable and connectors with new 24 GA. 5 conductor round cable and one way heavy duty plug in connectors. (See problems A, B, C, D & E.)
4. Effective October '89 the availability of an optional extension cable for the field monitoring device which can be field installed with each system and provides a convenient testing point whenever adjusting/troubleshooting a system without removing the operator covers. Remote Plug Kit Part No. 65-15-025. (Distributor's recommendation.)
5. Effective November '89 a new sensor housing which provides security of lenses, water protection, eliminates the need for reflective tape and reduces masking procedures.
6. Effective October '89 each sensor will be equipped with a motion field intensity potentiometer which will reduce masking procedures due to highly reflective surroundings. Instructions to be supplied with each sensor.

As you can see, we are taking the necessary corrective action where possible. Unfortunately, problem items H, I, J and K must be addressed by you the Distributor.



## Product Revision

1. Effective July '83 all action field option bridge components will be secured in plastic cases. (See Problem F.)
  2. Effective October '83 time delay potentiometer on main logic board will be removed (desired time delay can be set on slider control board) and a new frequency control potentiometer will be added. The new potentiometer can be accessed by removing the Eye One main logic board cover. It should only be used on applications with short vestibule (foot and under) or where there is suspected cross talk (phantom) between systems. To change the frequency between two systems in close proximity to each other one potentiometer should be adjusted fully clockwise (C.W.) and the other fully counter clockwise (C.C.W.).
  3. Effective October '83 replace the present flat ribbon cable and connectors with new 24 GA. 2 conductor round cable and one way heavy duty plug in connectors. (See problems A, B, C, D, E, F.)
  4. Effective October '83 the availability of an optional extension cable for the field monitoring device which can be field installed with each system and provides a convenient testing point whenever adjusting/troubleshooting a system without removing the operator covers. Remote Plug Kit Part No. 82-15-002. (Operator's recommendation.)
  5. Effective November '83 a new sensor housing which provides security of lenses, water protection, eliminates the need for collective tape and reduces marking procedures.
  6. Effective October '83 each sensor will be equipped with a motion field intensity potentiometer which will reduce marking procedures due to highly reflective surroundings. Instructions to be supplied with each sensor.
- As you can see, we are taking the necessary corrective action where possible. Unfortunately, problem items H, I, J and K must be addressed by you the Distributor.