INSTALLATION MANUAL
PART NO. 55-23-005

besam®

Ready-Fold™ 400

Automatic Bi-Folding door

INSTALLATION MANUAL
PART NO. 55-23-005

besam®

Ready-Fold™ 400

Automatic
Bi-Folding door

TABLE OF CONTENTS

Swingmaster® 405 Overhead Concealed Ready-Fold Header and Operator Installation

General

The Swingmaster® overhead concealed housing assembly (refer to drawing no. B28576, pg.3.2) is constructed of five main parts, factory assembled for ease of installation. These components consist of a fixed cover, removable cover, center strip, guide track and two steel end caps for attachment to the vertical door framing. The finished header assembly measures 6" high by 6"(152mmx152mm) wide by length as required for the door opening.

The Ready-Fold™ 400 package is offered in two configurations:

Low Energy: Opening and closing speeds must be field adjusted to comply with ANSI A156.19. Activation device is SelectScan ³ or press wall switches. Competitive motion sensors can not be used, they will not work properly with the Ready-Fold™ 400. A presence detection system is not required. For custom installations where additional safety is a requirement, optional Eye-Cue® Presence Detection System or Mats may be added to the Low Energy configuration.

Pedestrian: Opening and closing speeds must be field adjusted to comply with ANSI A156.10. Activation device is SelectScan ³ or press wall switches. Competitive motion sensors can not be used, they will not work properly with the Ready-Fold™ 400. Presence detection system consists of two guide rails (with 4 photo cells) to be mounted on the fold side of the door package and Eye-Cue® mounted as follows:
2 panel: Top horizontal rail of slave panel on fold side of door.
4 panel: Center mounted above the doorway threshold on the fold side of door header.

Swingmaster® 400 (Model 405) (Overhead concealed folding door operator)

- Factory handed operator for right hand or left hand operation.
- Internal clutch assembly.
- Low energy closing spring.

Note:
- The operator model used with Ready-Fold™ 400 should be Swingmaster® 405, Part Number 35-10-003 (Right Hand), 35-10-003 (Left Hand) with Low Energy Controls, Part Number 55-15-032 (Single) and 55-15-0033 (Dual).
- Once header is installed, run all control wires into header before installing operator.

The glazing material of all doors shall comply with the requirements in the American National Standard Performance Specification and Methods of Test for Safety Glazing Material used in Buildings, Z97.1-1975.

(Step 1.) Installation of Header

1. Establish operator height (Refer to Dwg. No. B28576, pg.3.2) and desired operator access. Note housing dimensions are 6" x 6" (152mm X 152mm).

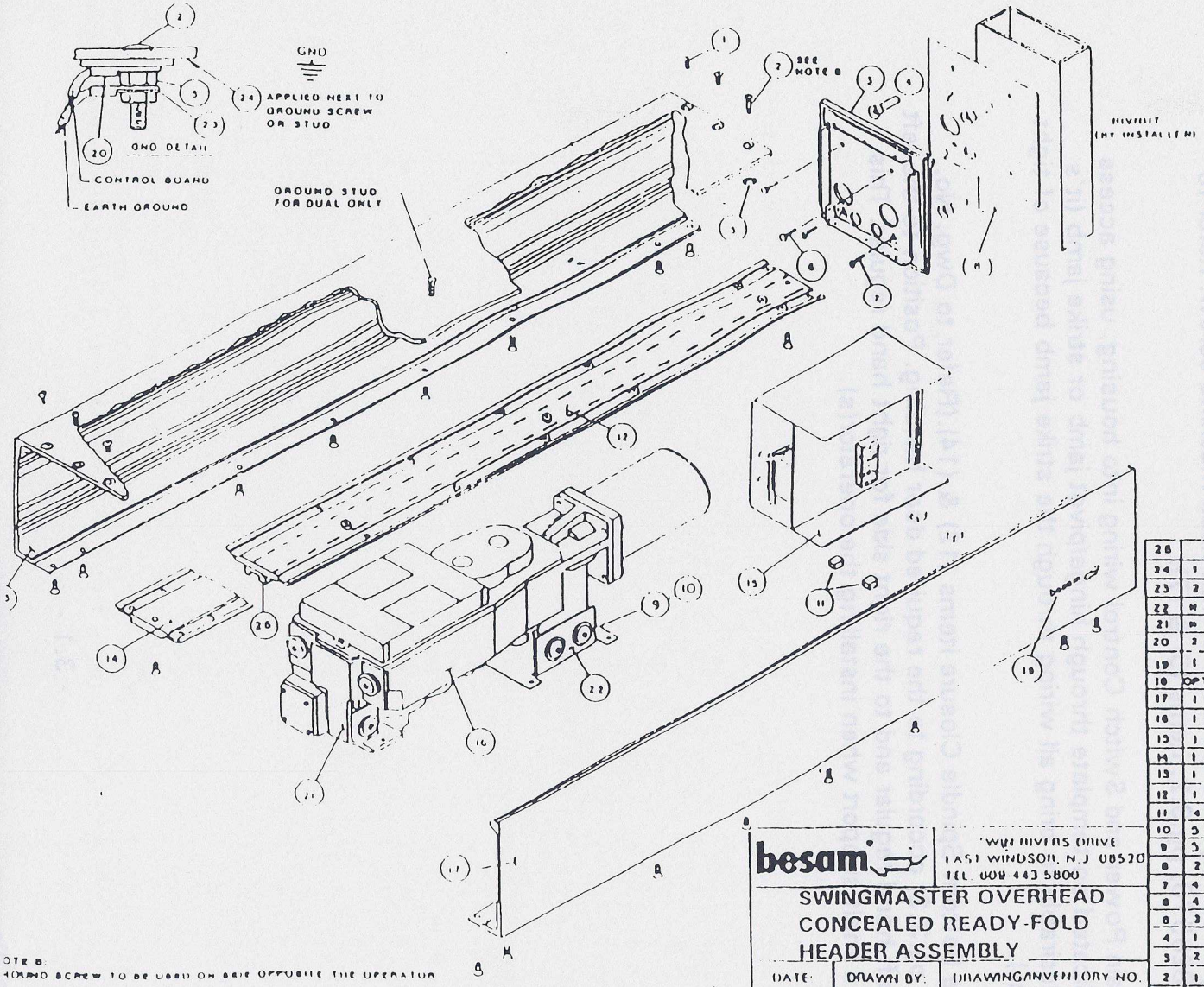
2. Prepare mounting and electrical entry holes in the jambs utilizing template provided.

3. Install (8) #1/4-20 countersunk rivnuts into the jamb as indicated (Refer to Dwg. No. B28576, pg.3.2).

4. Position header between jambs and secure end caps. The upper mounting holes require #1/4-20 x 1" hex head machine screw and the lower mounting holes require #1/4-20 x 1" flat head machine screw. Refer to drawing B28576, pg.3.2, items (6) & (7).

5. Install Main Power and Switch Control wiring into housing, using access holes indicated on template through hinge/pivot jamb or strike jamb (it's always desirable to bring all wiring through the strike jamb because of tight conditions).

6. Install the Bottom Spindle Closure items (12) & (14).(Refer to Dwg. No. B28576, pg.3.2) according to the required door handing. Position to the left side for left hand regular and to the right side for right hand regular. This provides a shelf support when installing the operator(s).



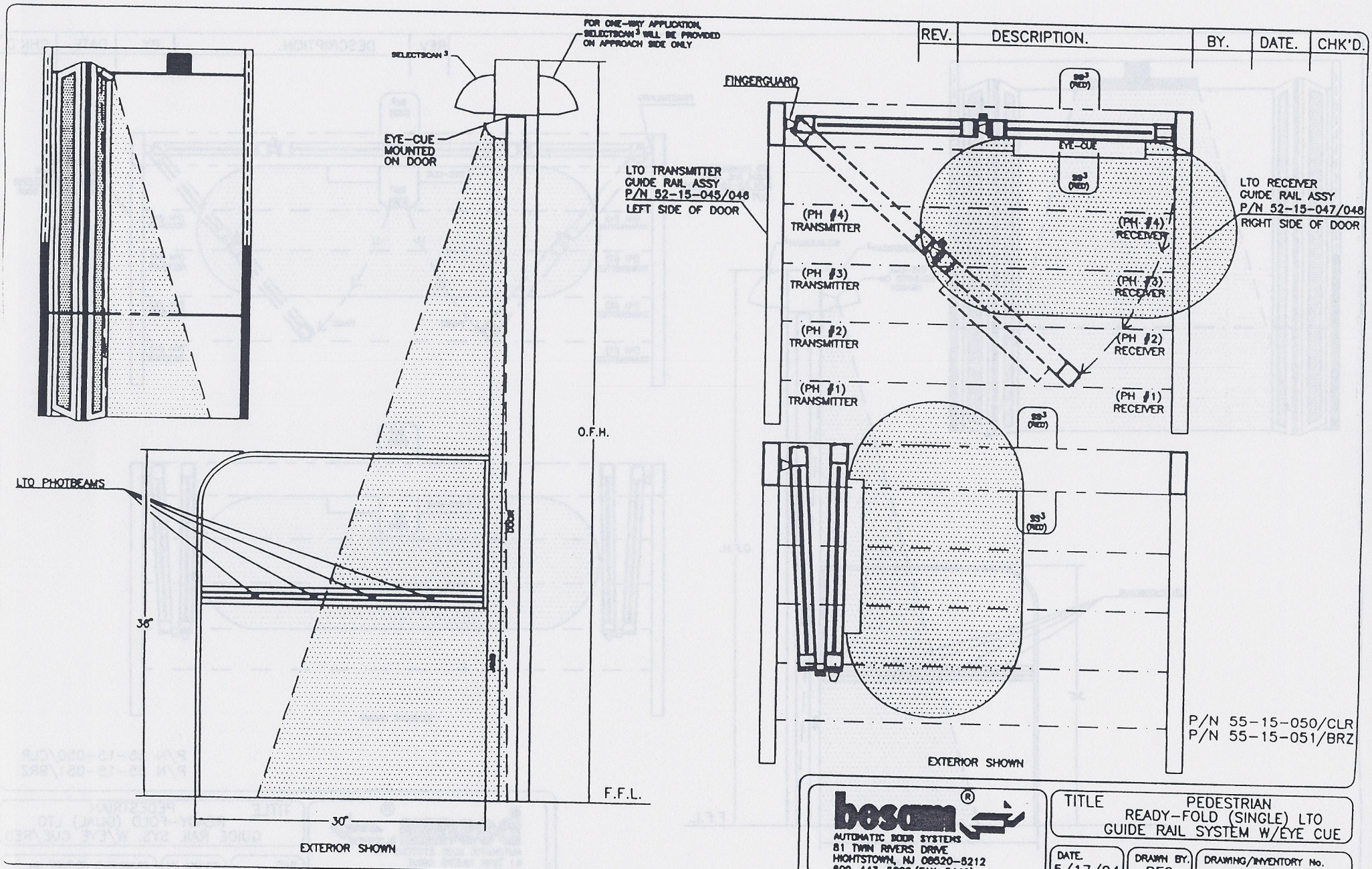
besam

WW RIVERS DRIVE
EAST WINDSOR, N.J. 08520
TEL 609 443 5800

SWINGMASTER OVERHEAD CONCEALED READY-FOLD HEADER ASSEMBLY

DATE:	DRAWN BY:	DRAWING/INVENTORY NO.
7/13/94	PFC	028576

ITEM	QTY	DESCRIPTION	P/N CLEAR	P/N BRONZE
26		GUIDE TRACK KIT	88-18-012	
24	1	LABEL, GROUND	30-24-006	
23	2	1/4" STAR WASHER INT	30-09-214	
22	M	MTG BRKT (OPERATOR) SEPARATE	30-04-006	
21	M	MTG BRKT (OPERATOR) SEPARATE	30-04-005	
20	2	LUG 1/4 20 CRIMP ON	30-02-019	
19	1	LABEL BESAM	11-20-203	
18	OPT	DUMMY PIVOT ASSY	30-15-315	
17	1	REMOVABLE COVER	30-15-324	30-15-325
16	1	OPERATOR 405	R.H. 35.10.003	L.H. 35.10.004
15	1	P.C. BD ASSY (SINGLE & DUAL)	55.15.032	55.18.033
14	1	CENTER COVER, BTM SPINDLE CLOSURE		
13	1	FIXED COVER	30-15-322	30-15-323
12	1	CENTER COVER	30-15-320	30-15-321
11	4	BUMPONS	30-20-231	
10	5	WASHER, FLAT 5/8-16	30-09-224	
9	5	5/8-16 x 1 1/4 TRUSS HD MACH SCR	30-09-223	
8	2	JAMB TUBE		
7	4	SCREW 1/4 20 x 1 1/4" FHMS	30-09-274	
6	4	SCREW 1/4 20 x 1 1/4" THMS	30-08-320	
5	3	NUT 1/4 20 HEX	30-09-107	
4	1	TEMPLATE, DRILL SCHEDULE	30-23-005	
3	2	END CAP ASSY	30-15-300	30-15-301
2	1	SCREW 1/4 20 x 1" THMS	31-08-200	
1	23	SCREW 1/4 20 x 3/8 PFH	40-09-200	



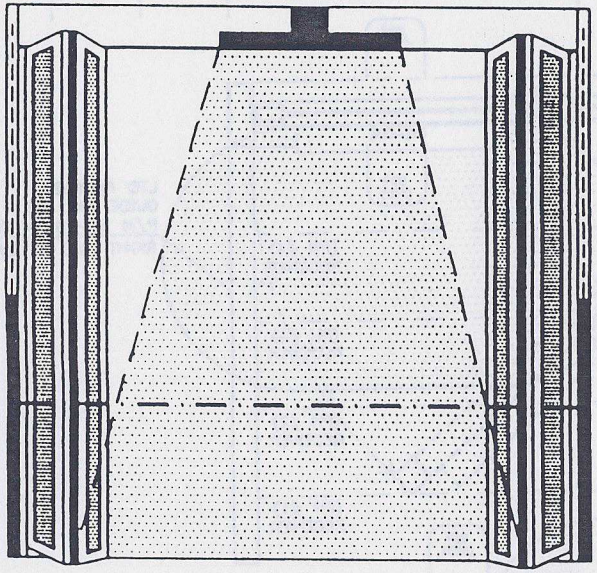
REV.	DESCRIPTION.	BY.	DATE.	CHK'D.

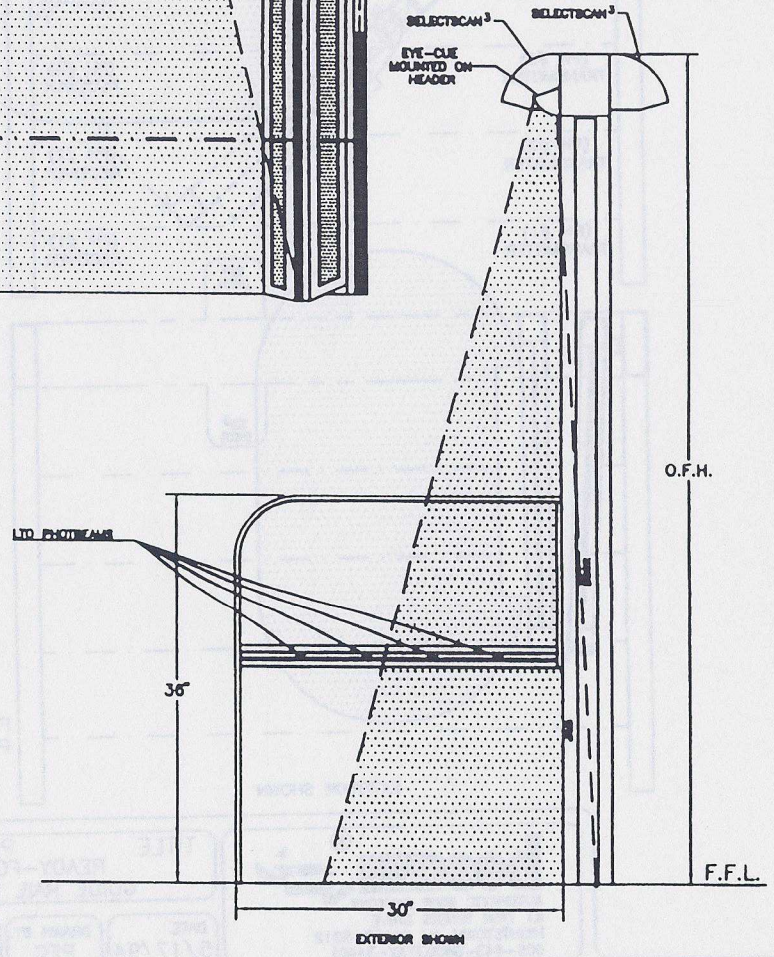
besam®
AUTOMATIC DOOR SYSTEMS
81 TWIN RIVERS DRIVE
HIGHTSTOWN, NJ 08520-5212
609-443-5600.(FAX-3440)

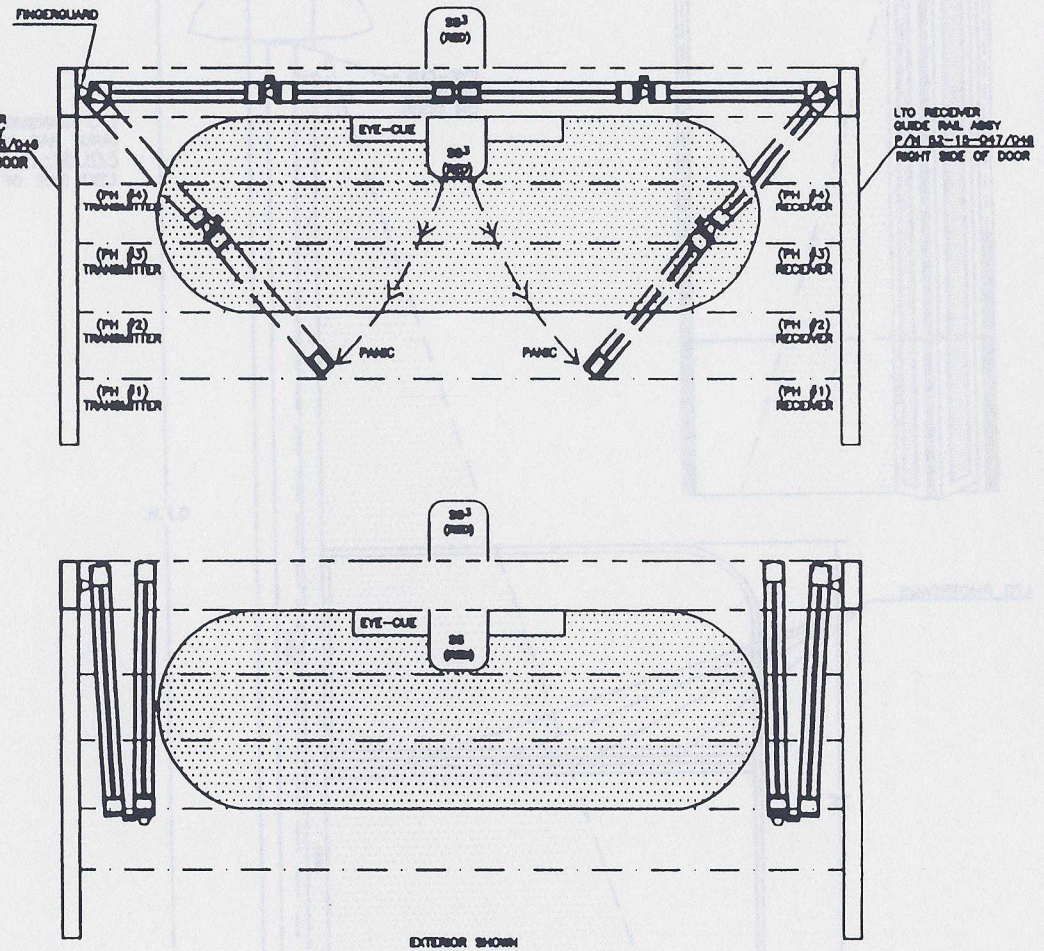
TITLE PEDESTRIAN READY-FOLD (SINGLE) LTO GUIDE RAIL SYSTEM W/EYE CUE

DATE.	DRAWN BY.	DRAWING/INVENTORY No.
5/17/94	PFC	B28564

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







P/N 55-15-050/CLR
P/N 55-15-051/BRZ

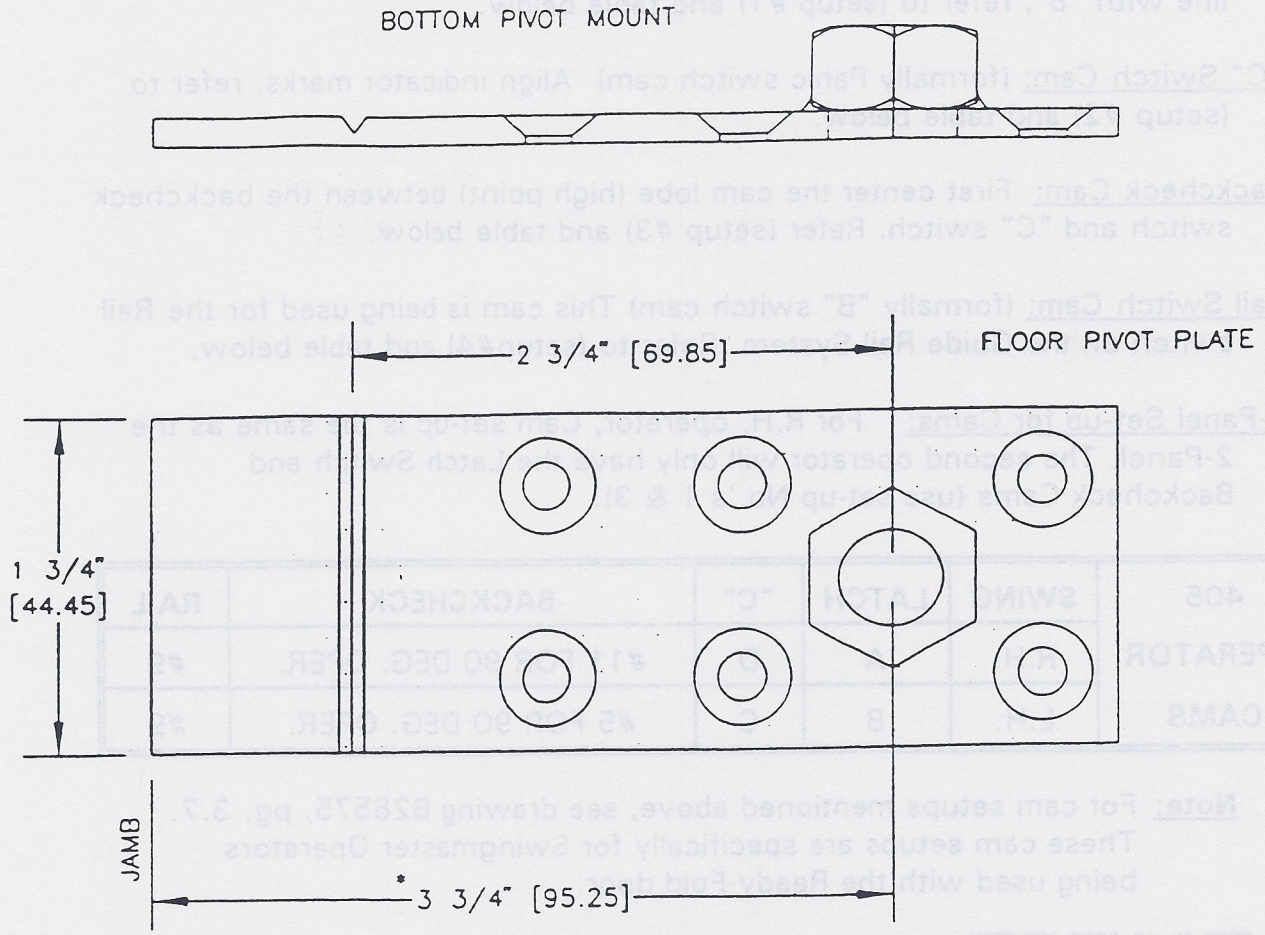
bosam®
AUTOMATIC DOOR SYSTEMS
81 TWIN RIVERS DRIVE
HIGHTSTOWN, NJ 08520-5212
609-443-5800.(FAX-3440)

TITLE: PEDESTRIAN READY-FOLD (DUAL) LTO GUIDE RAIL SYS. W/EYE CUE/RED

DATE.	DRAWN BY.	DRAWING/INVENTORY No.
7/14/94	PFC	B28578

(Step 2.) Installation of Bottom Pivot

The Folding Door has a center pivot location set at 3-3/4" (95mm) off jamb tube (see below).



(Step 3.) Fingerguard Installation

The 1" (25mm) Fingerguard is installed in the center of the jamb tube, from the bottom of the header to the floor, so that when the door is installed, the back of the rail will be in line with fingerguard. (Refer to Dwg. No. B28564, pg.3.3).

(Step 4.) Ready-Fold™ 405 Operator Set-up

1. Latch Switch Cam First center the indicator marks between "A" and "B" on the alignment ring. For right hand operation align closest indicator mark to be in line with "A". For left hand operation align closest indicator mark to be in line with "B", refer to (setup #1) and table below.

2. "C" Switch Cam: (formally Panic switch cam) Align indicator marks, refer to (setup #2) and table below.

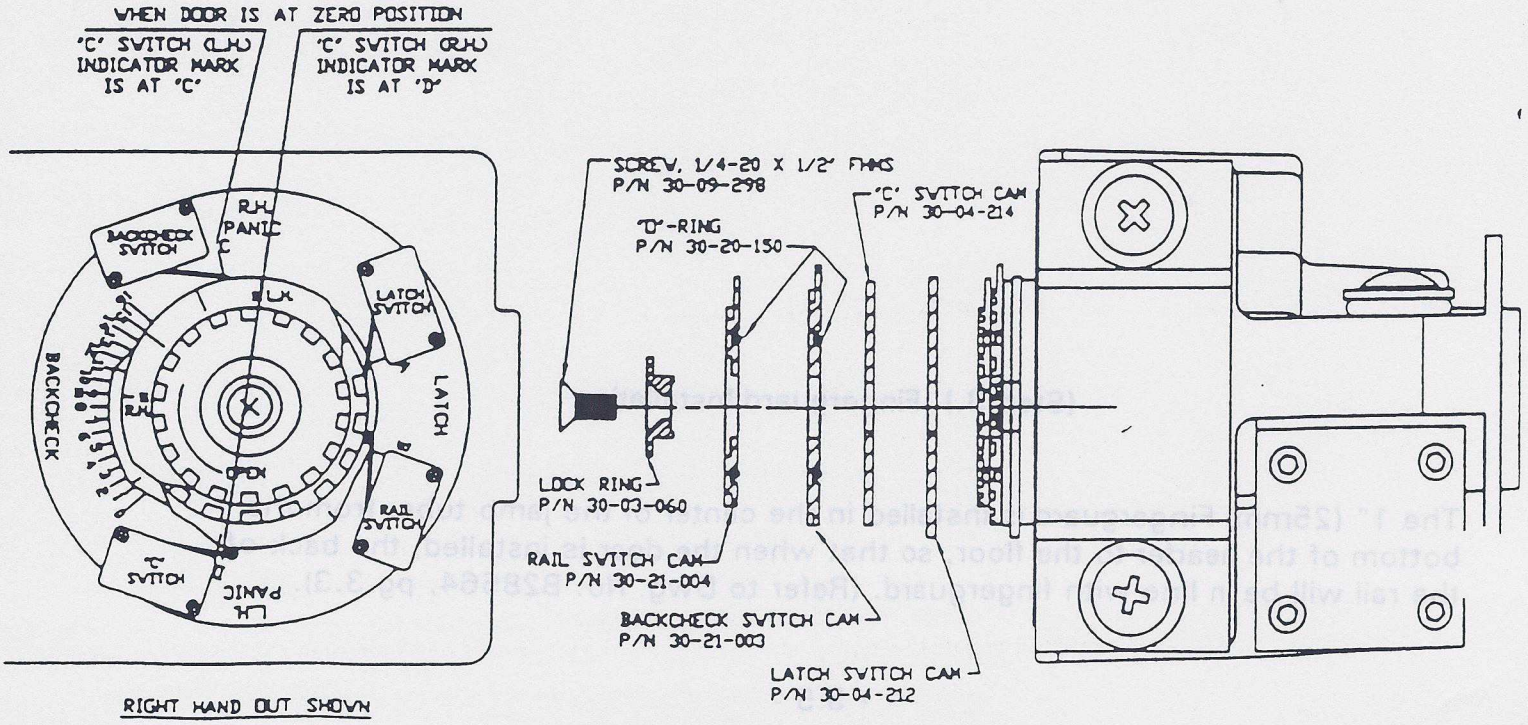
3. Backcheck Cam: First center the cam lobe (high point) between the backcheck switch and "C" switch. Refer (setup #3) and table below.

4. Rail Switch Cam: (formally "B" switch cam) This cam is being used for the Rail switch on the Guide Rail System. Refer to (setup#4) and table below.

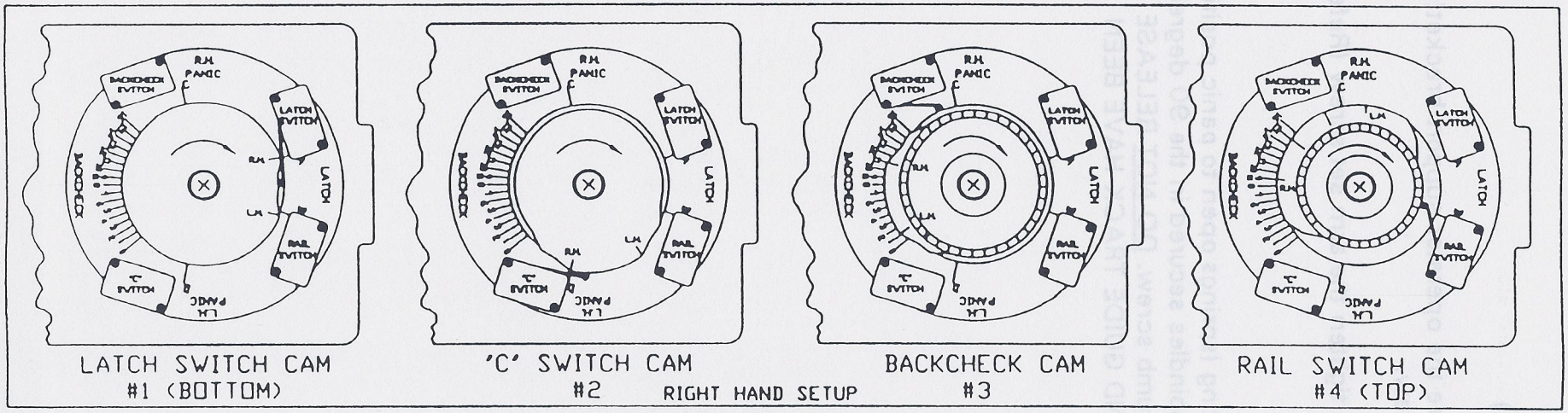
5. 4-Panel Set-up for Cams: For R.H. operator, Cam set-up is the same as the 2-Panel. The second operator will only have the Latch Switch and Backcheck Cams (use set-up No.'s 1 & 3).

405 OPERATOR CAMS	SWING	LATCH	"C"	BACKCHECK	RAIL
	R.H.	A	D	#11 FOR 90 DEG. OPER.	#9
	L.H.	B	C	#5 FOR 90 DEG. OPER.	#9

Note: For cam setups mentioned above, see drawing B28575, pg. 3.7. These cam setups are specifically for Swingmaster Operators being used with the Ready-Fold door.



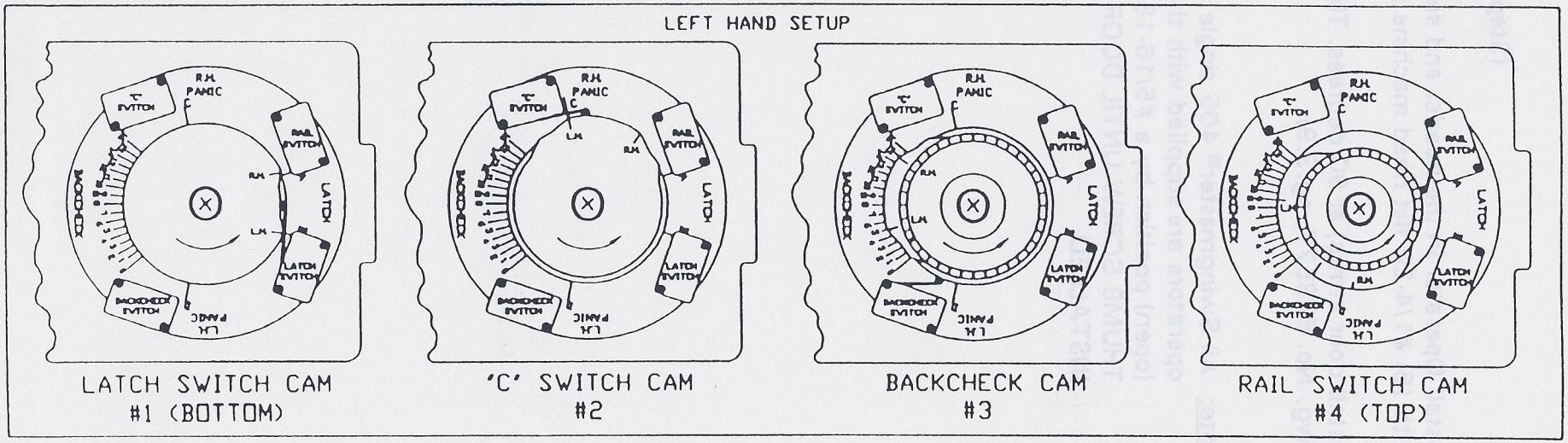
REV.	DESCRIPTION.	BY.	DATE.	CHK'D.



RIGHT HAND SETUP

READY-FOLD 405 OPERATOR CAM SETUP

LEFT HAND SETUP



besam®
AUTOMATIC DOOR SYSTEMS
81 TWIN RIVERS DRIVE
HIGHTSTOWN, NJ 08520-8212
609-443-5800 (FAX-3440)

TITLE: CAM SETUP (READY-FOLD) ADJUSTABLE CAMS

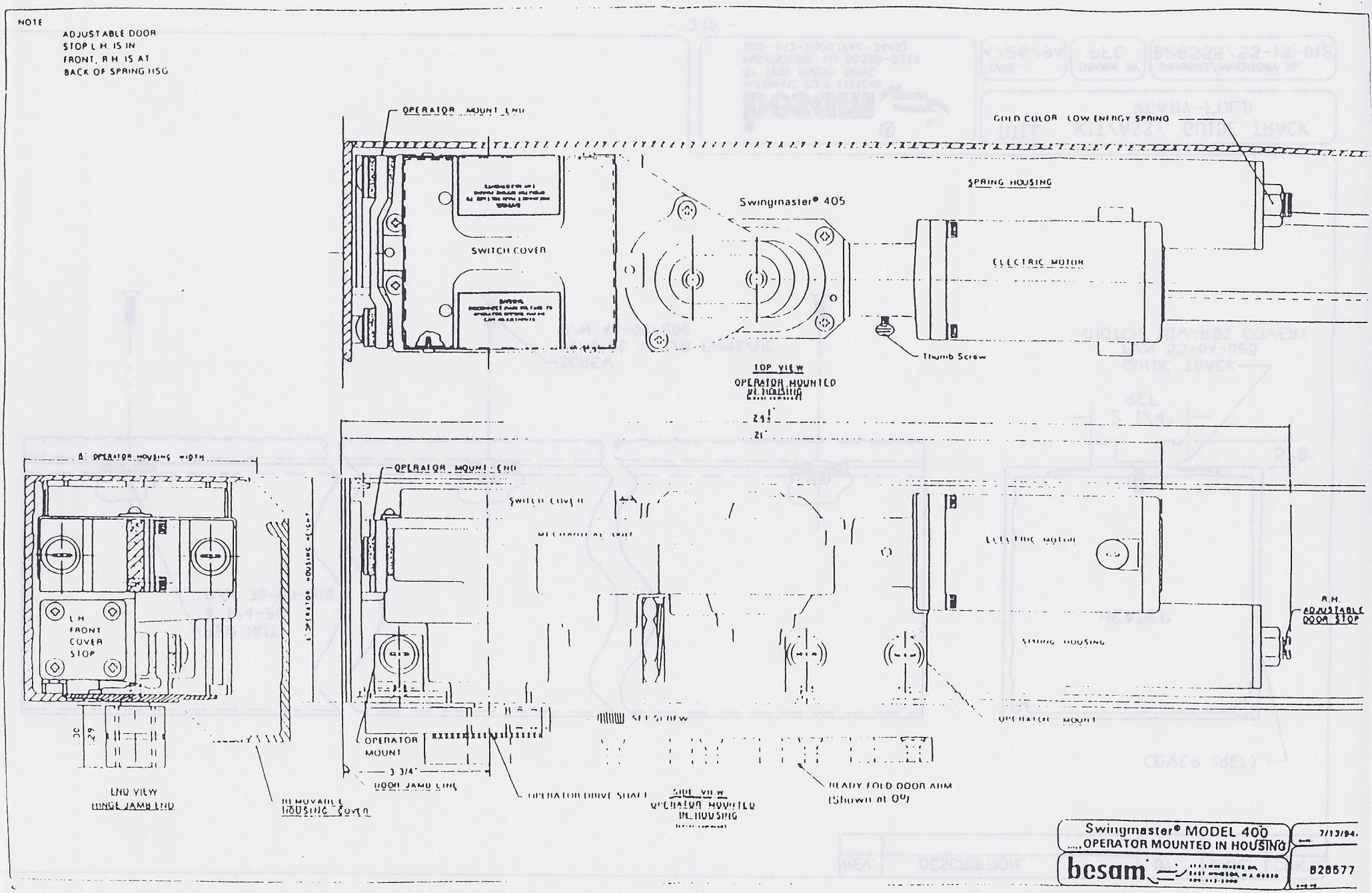
DATE.	DRAWN BY.	DRAWING/INVENTORY No.
7/12/94	PFC	B28575

(Step 5.)

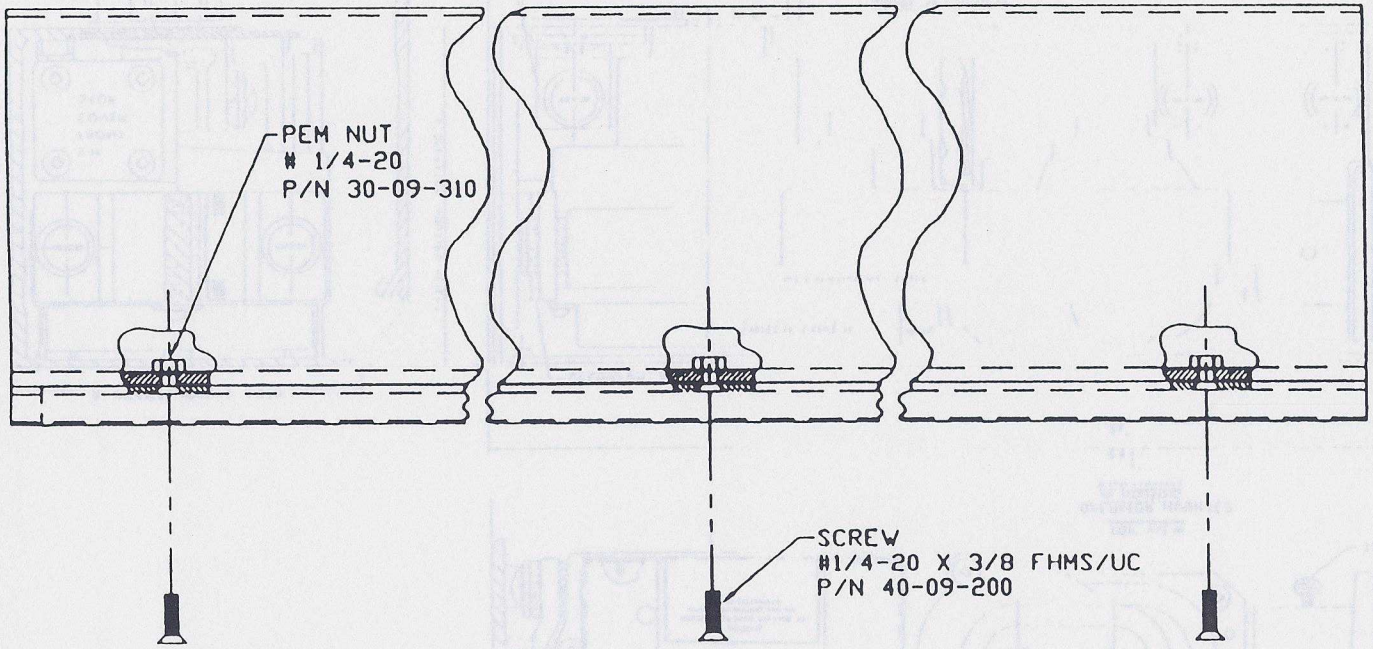
1. Install Operator in the header and secure the operator support bracket(s) with (6) #1/4-20 flat head machine screw.

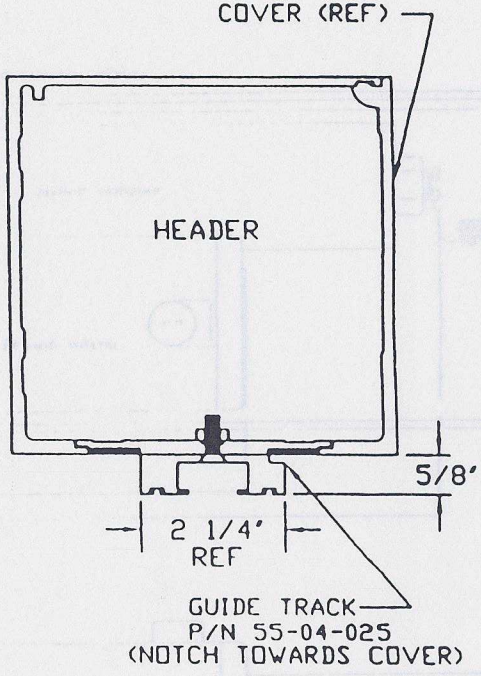
2. Install door arm(s) at 90 degrees. Then tighten the arm set screw (Refer to Dwg. No. B28577, pg.3.9).

Note: All Swingmaster® 405 single acting (springs open to panic position) operators are supplied with the spindles secured in the 90 degree (open) position by a #5/16-18 thumb screw. DO NOT RELEASE THUMB SCREW UNTIL DOOR AND GUIDE TRACK HAVE BEEN INSTALLED.


NOTE
ADJUSTABLE DOOR STOP L.H. IS IN FRONT, R.H. IS AT BACK OF SPRING HSG
OPERATOR MOUNT END
GOLD COLOR LOW ENERGY SPRING
SPRING HOUSING
Swingmaster® 405
SWITCH COVER
ELECTRIC MOTOR
Thumb Screw
TOP VIEW
OPERATOR MOUNTED IN HOUSING
A OPERATOR HOUSING WIDTH
L.H. FRONT COVER STOP
END VIEW
HINGE JAMB END
REMOVABLE HOUSING COVER
OPERATOR MOUNT
3 3/4"
DOOR JAMB LINE
OPERATOR DRIVE SHAFT
SET SCREW
SIDE VIEW
OPERATOR MOUNTED IN HOUSING
READY FOLD DOOR ARM (Shown at 0°)
R.H. ADJUSTABLE DOOR STOP
Swingmaster® MODEL 400
....OPERATOR MOUNTED IN HOUSING
7/13/84
besam
B28677

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





besam®
AUTOMATIC DOOR SYSTEMS
81 TWIN RIVERS DRIVE
HIGHTSTOWN, NJ 08520-5212
609-443-5800.(FAX-3440)

TITLE KIT/ASSY, GUIDE TRACK READY-FOLD

DATE.	DRAWN BY.	DRAWING/INVENTORY No.
4/26/94	PFC	B28555/55-15-012

(Step 6.) Installation of Control

The electronic control for the Swingmaster® 405 series is a printed circuit board (PCB) that sits inside of the housing and faces the removable cover of the operator housing. The main power (110 volts) is connected to a two wire disconnect harness, factory wired to Terminal 3 (neutral leg), Terminal 5 (110 volt hot leg) and the ground is connected to grounding post located on the housing. The motor(s) is plugged into either terminal J1 for righthand operators and/or J2 for lefthand operators. The switch harness is plugged into J3 on the PCB. Wiring and adjustment procedures are contained in Drawing B28559 (2-Pages). A three position switch (off-hold open-automatic) can be installed (see Drawing A-18018, pg. 5.7) to control the function of the door.

NOTE:

The 2 position Key Switch is to be installed to activate door from exterior side. When LTO Rail is ordered with door(s), the end of the transmitter rail will be factory prepped to accept this switch.

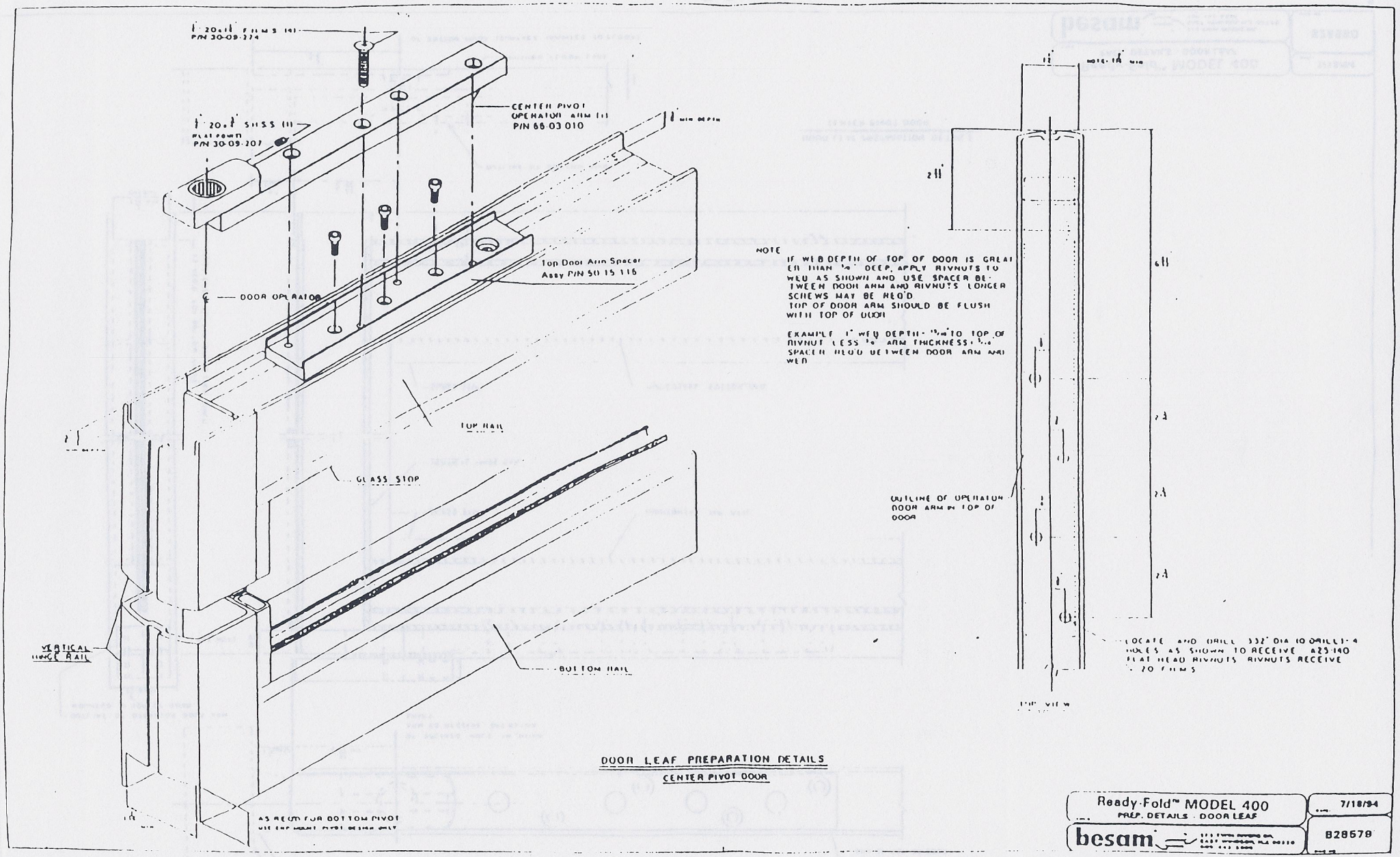
(Step 7.) Installation Of Ready-Fold™ Door

To install the door leaf, it is required that the door arm be attached to the operator spindle shaft in the door full open position -- 90 degrees. The arm must be held in the open position for proper installation of the door. By tightening the 5/16-18 thumb screw, pressure is applied to the motor coupling and will hold the door arm into whatever position it is set in until this thumb screw is released. (Do not over tighten, -- only 2 or 3 pounds of force is required to hold the coupling). Drill and pin top door arm spacer into top web of door. With the arm still attached to the operator shaft (90 deg.) and the bottom pivot set in place, slide the door in from the hinge end over the bottom pivot and guide the operator arm into the top web of the door. Move door in until it is lined up with the screw holes in the top arm and install 1/4-20 x 1" flat head phillips machine screw through the arm to connect to the top of the door. Now remove the guide track from the bottom of the header by removing the 1/4-20 x 3/8" screws. Place guide track over roller on top of door. Then by folding door back, relocate guide track back to bottom of Swingmaster header. Secure the track back onto the header by reinstalling the 1/4-20 x 3/8" screws.

At this point, loosen the set screw in the back of the operator arm which has been tightened to hold the arm on the operator shaft and allow the arm and door to settle against the bottom pivot. Now check the roller in the guide track to make sure that it is not on the bottom of the track. Re-tighten the top screws securely and then re-tighten the set screw in the door operator arm. To assure alignment of the clapper plate to both the top and bottom flux plates, two spacers are provided in the carrier. It is also very important to "hinge-block" the glass (opposite corners, see pg. 5.8, fig. 2) to maintain an even 1/32" sight line between carrier and the door. Once the sag is corrected, the proper alignment of clapper plate-to-magnet will maintain good contact. After this is complete, release the thumb screw holding the coupling and allow the door to close. Check alignment and square of door in opening and that it is opening and closing properly.

Note: Refer to Drawings:

B28555 - Pg.3.10
B28579 - Pg.5.2
B28580 - Pg.5.3
B28519 - Pg.5.4



DOOR LEAF PREPARATION DETAILS

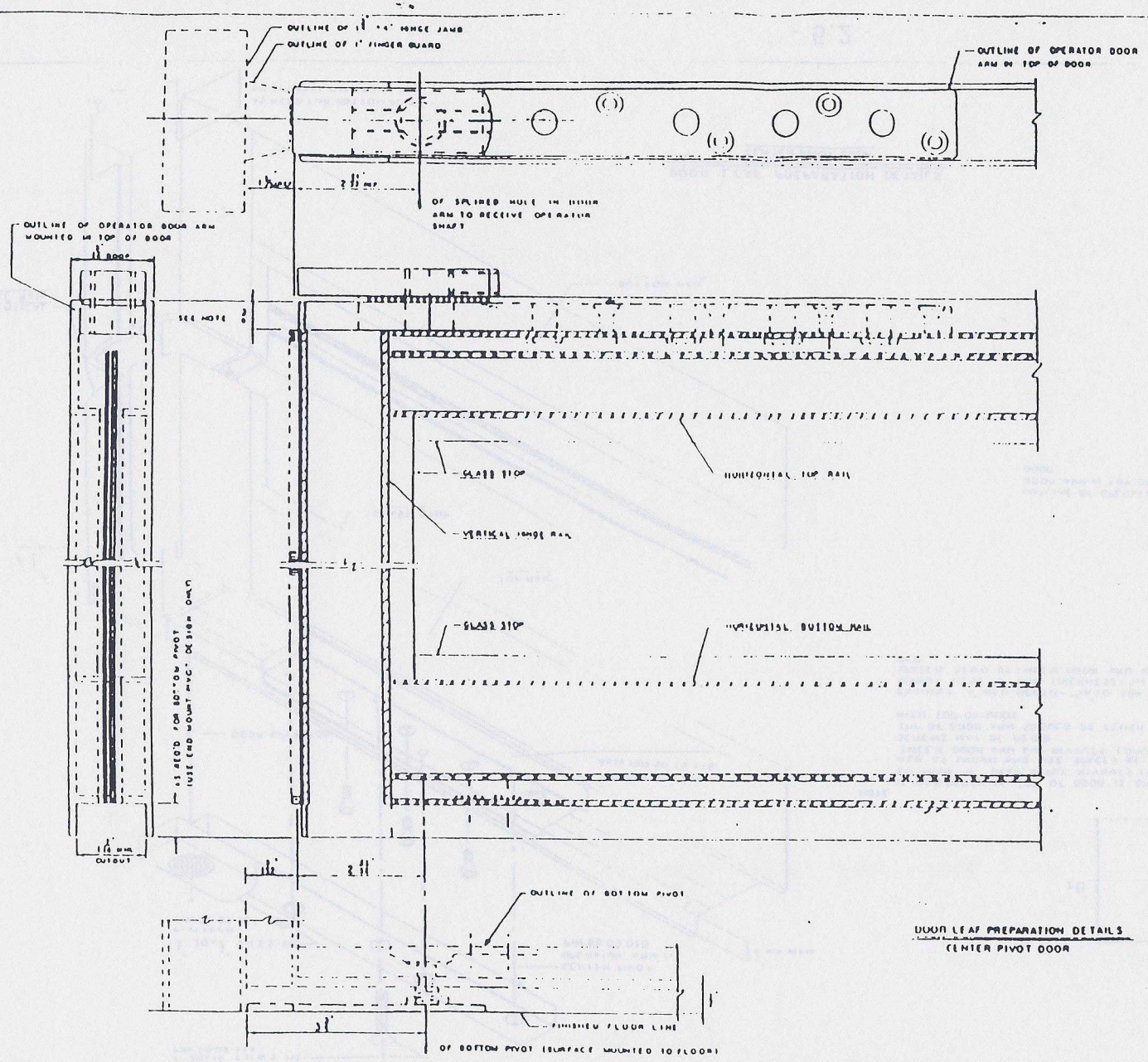
CENTER PIVOT DOOR

Ready-Fold™ MODEL 400
PREP. DETAILS - DOOR LEAF

7/18/94

besam

B28678



DOOR LEAF PREPARATION DETAILS
CENTER PIVOT DOOR

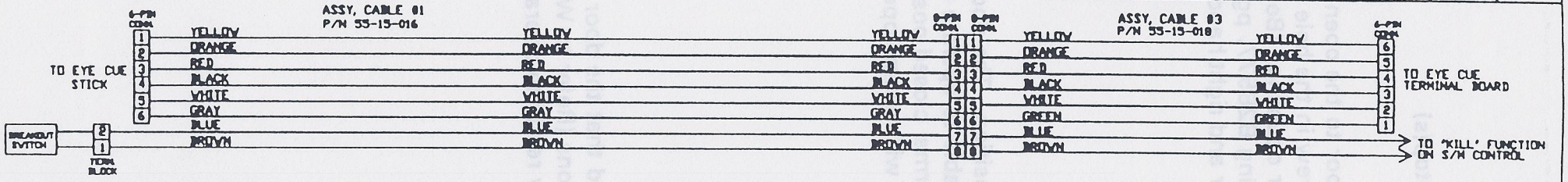
Ready-Fold™ MODEL 400
PREP. DETAILS - DOOR LEAF

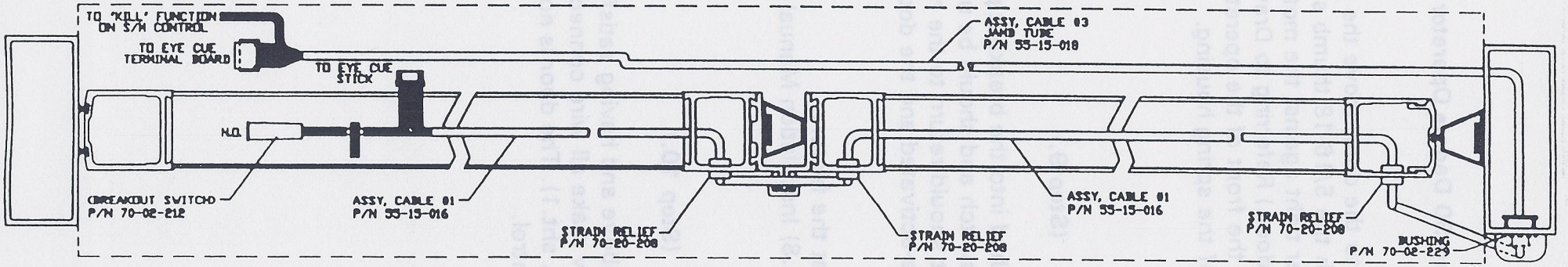
7/18/94

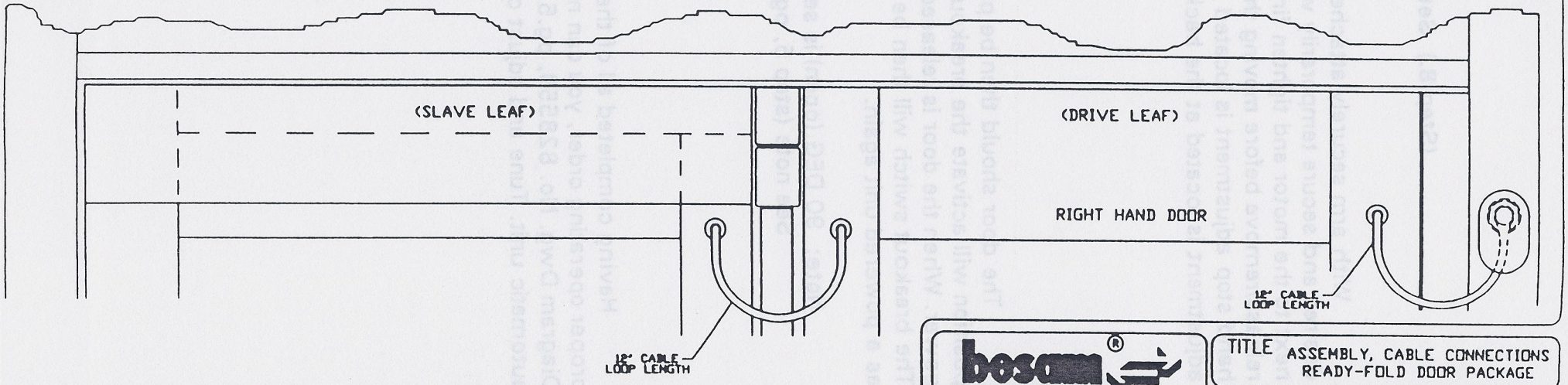
besam

B28680

REV.	DESCRIPTION.	BY.	DATE.	CHK'D.
A	DELETED CABLE ASSY #2	PFC	2/23/94	
B	P/N 70-02-212(N.O.) WAS 11-02-173(N.C.)	PFC	11/2/94	







PLOT: 1 = 2.4

besam®
AUTOMATIC DOOR SYSTEMS
81 TWIN RIVERS DRIVE
HIGHTSTOWN, NJ 08520-5212
609-443-5800 (FAX-3440)

TITLE ASSEMBLY, CABLE CONNECTIONS READY-FOLD DOOR PACKAGE

DATE.	DRAWN BY.	DRAWING/INVENTORY No.
01/11/94	PFC	B28519/55-15-019

(Step 8.) Setting 90 Degree Operator Stop(s)

With arm securely attached to the door, move the door to the open position desired and secure temporarily with the 5/16-18 thumb screw in the hole located next to the motor and tighten finger tight against the motor coupling. (Be sure to release/remove before moving the door.) Referring to Drawing B28577, pg.3.9, left hand stop adjustment is located at the front of the operator and right hand stop adjustment is located at the back of the spring housing.

(Step 9.)

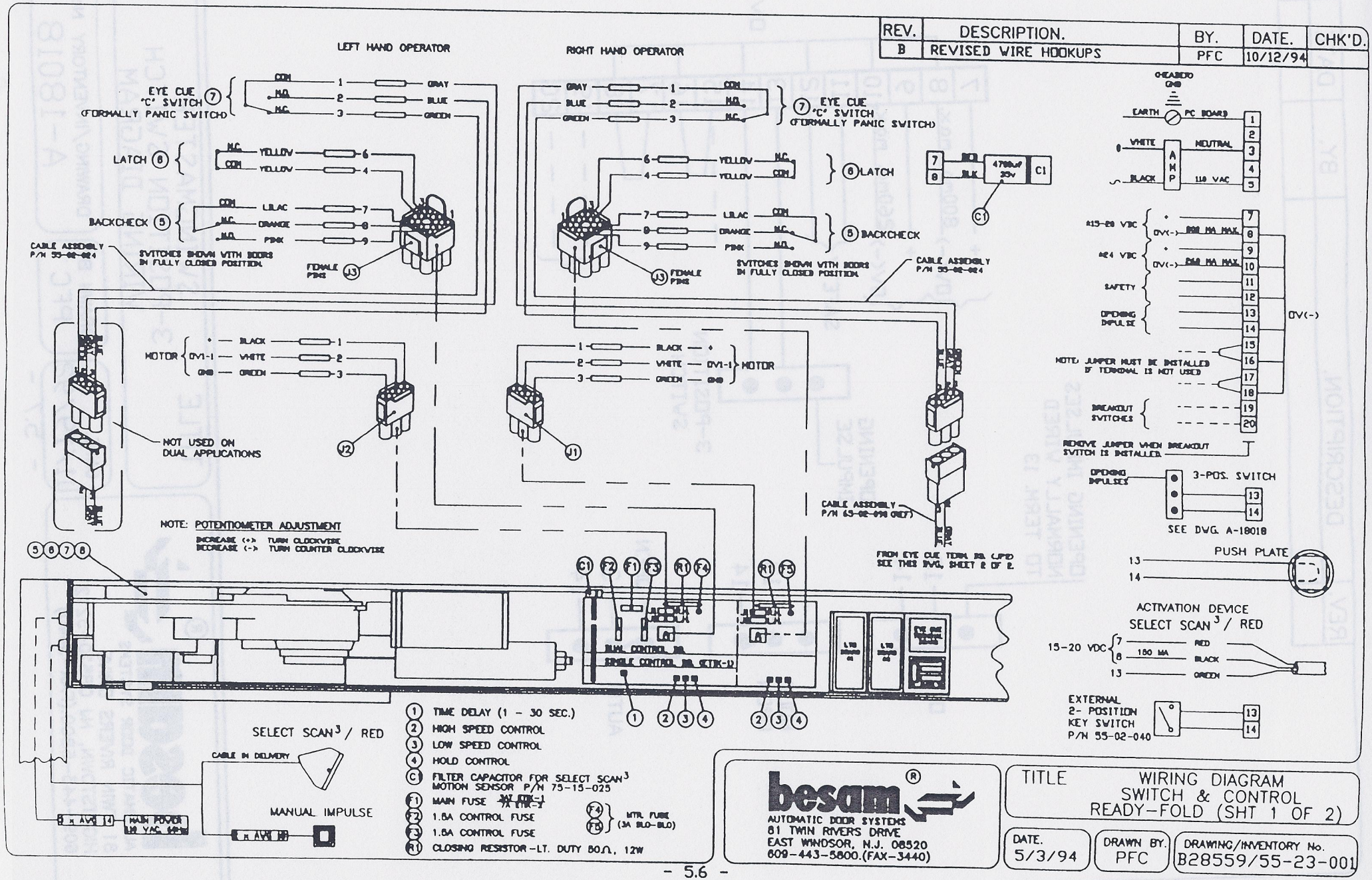
The door should then be pushed into the breakout position. The door in this position will activate the breakout switch and should be unable to operate under power. When the door is released it should return to the normal closed position. The breakout switch will then be de-activated and the door will resume operating as a powered unit again.

Note: 90 DEG.(open) is set at the factory.
See note (step 5, pg.3.8) Installation Manual

(Step 10.)

Having completed all of the above and having satisfied that the door is in proper operating order, you can now make all wire connections (Refer to Wiring Diagram Dwg. No. B28559, pg.5.6, sht.1). The door is now ready to operate as an automatic unit. Tune and adjust control.

REV.	DESCRIPTION.	BY.	DATE.	CHK'D.
B	REVISED WIRE HOOKUPS	PFC	10/12/94	

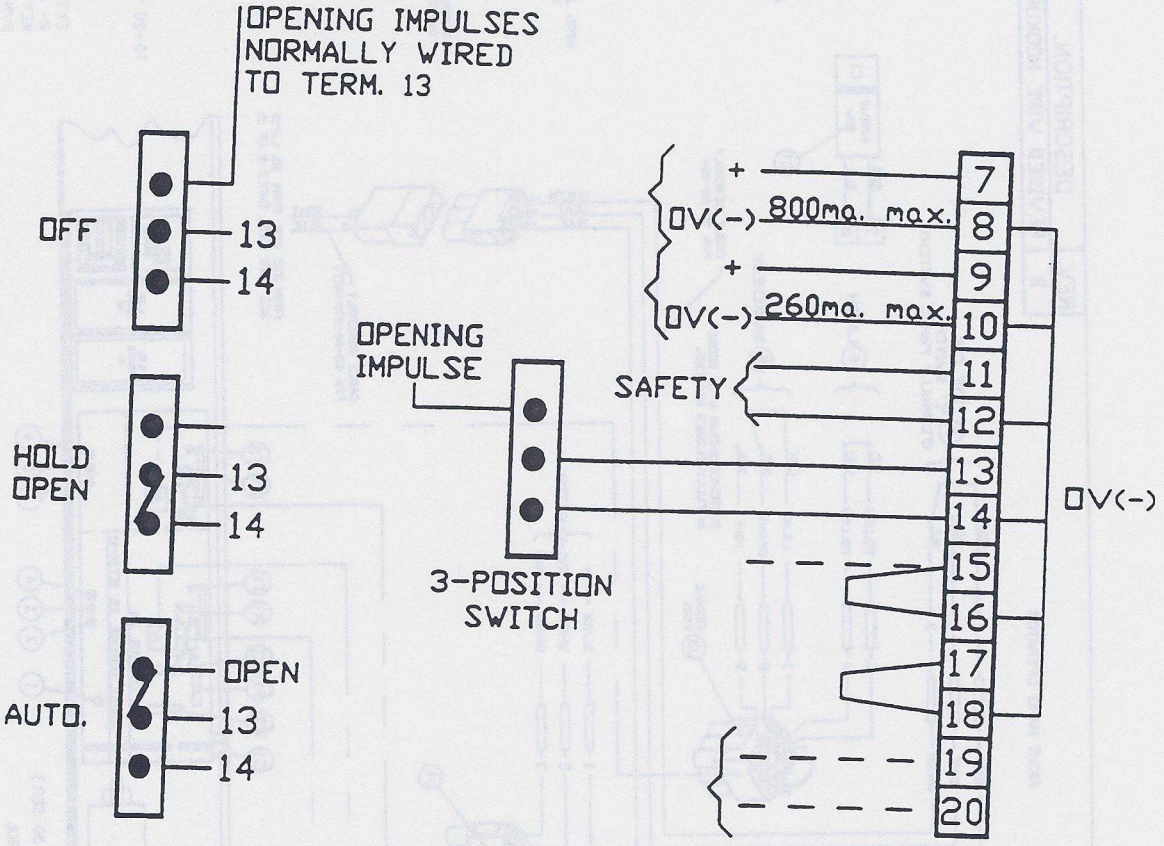


besam ®
AUTOMATIC DOOR SYSTEMS
81 TWIN RIVERS DRIVE
EAST WINDSOR, N.J. 08520
609-443-5800.(FAX-3440)

TITLE WIRING DIAGRAM SWITCH & CONTROL READY-FOLD (SHT 1 OF 2)

DATE.	DRAWN BY.	DRAWING/INVENTORY No.
5/3/94	PFC	B28559/55-23-001

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



besam®
AUTOMATIC DOOR SYSTEMS
81 TWIN RIVERS DRIVE
HIGHTSTOWN, NJ 08520-5212
609-443-5800.(FAX-3440)

TITLE SWINGMASTER
3-POSITION SWITCH
WIRING DIAGRAM

DATE.	DRAWN BY.	DRAWING/INVENTORY No.
11/19/92	PFC	A-18018

besam® AUTOMATIC DOOR SYSTEMS

81 TWIN RIVERS DRIVE
HIGHTSTOWN, NJ 08520-5212
TELEPHONE: 609-443-5800.
TELEFAX: 609-443-3440.

READY-FOLD™
2 PANEL
FOLDING DOOR SYSTEM

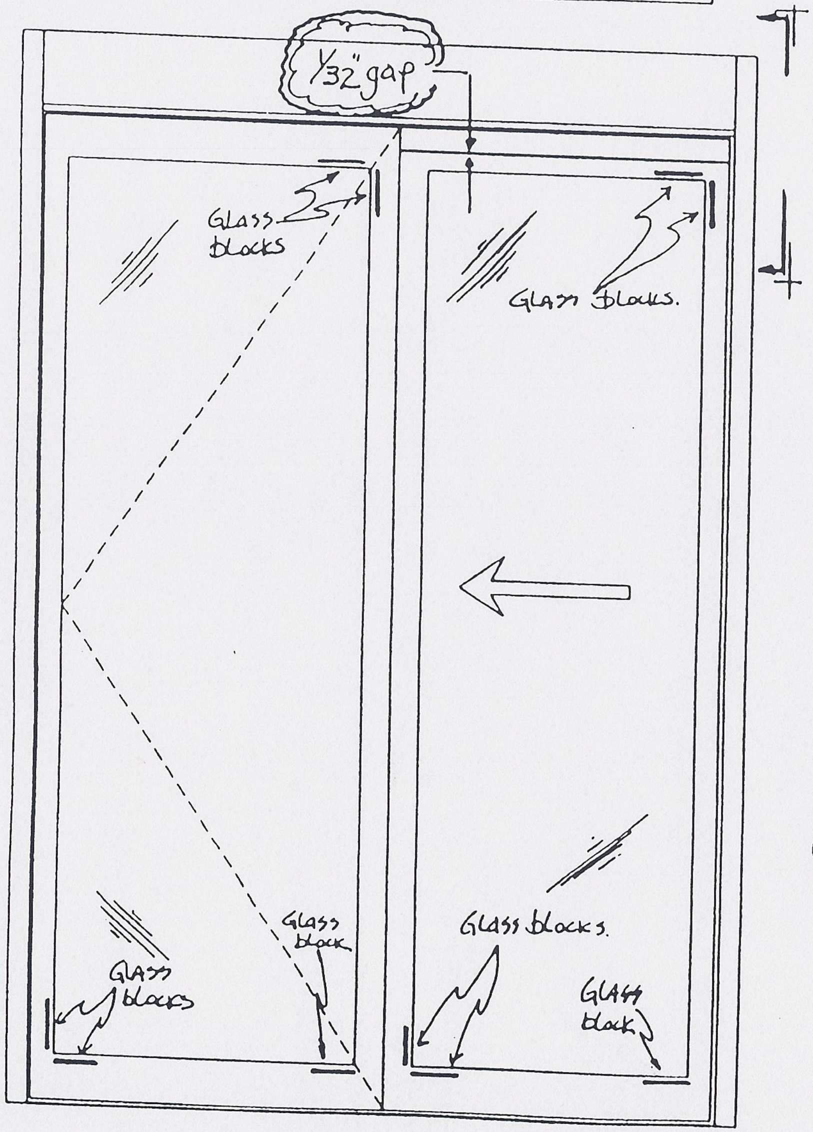


Fig #2

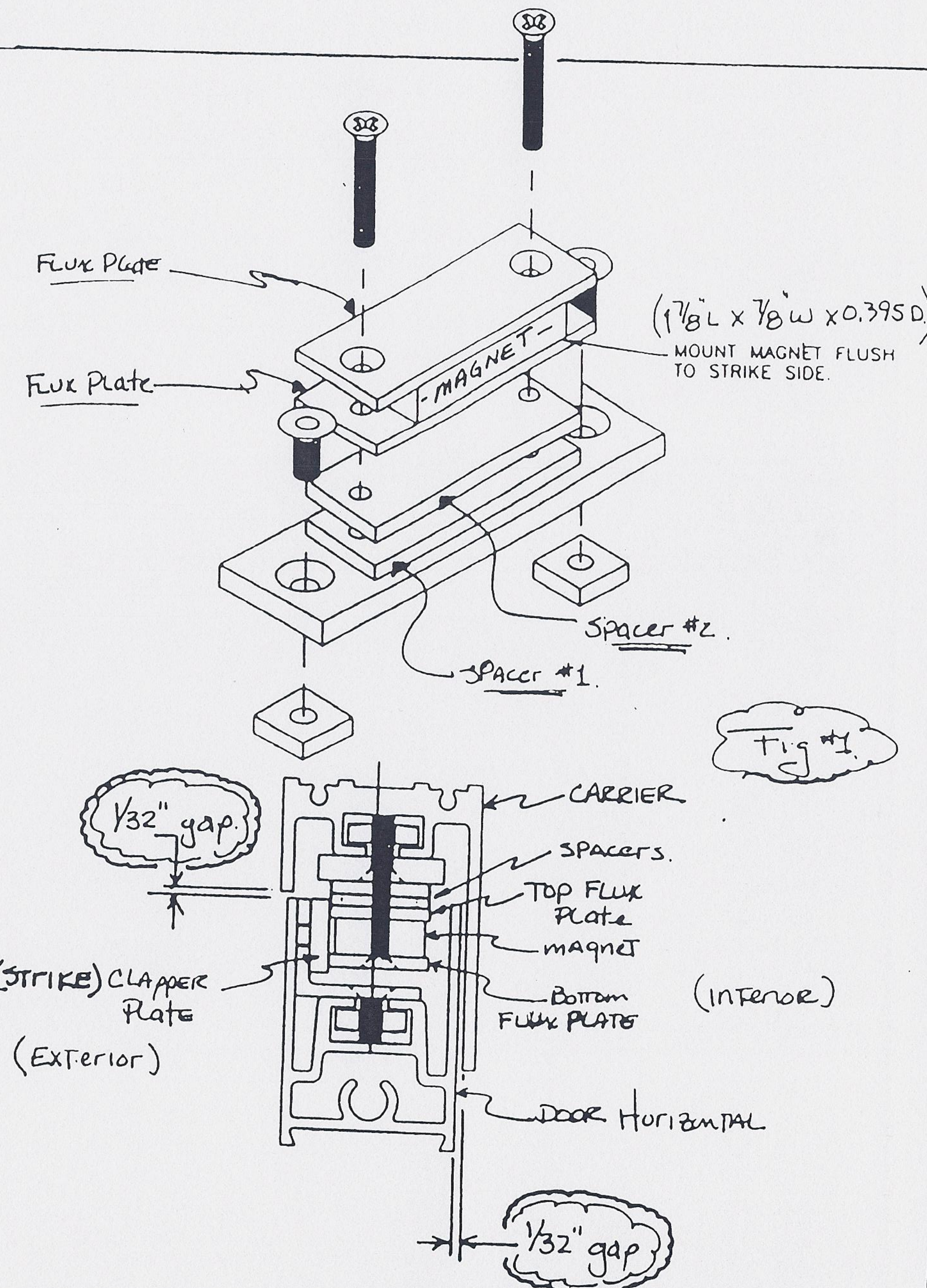
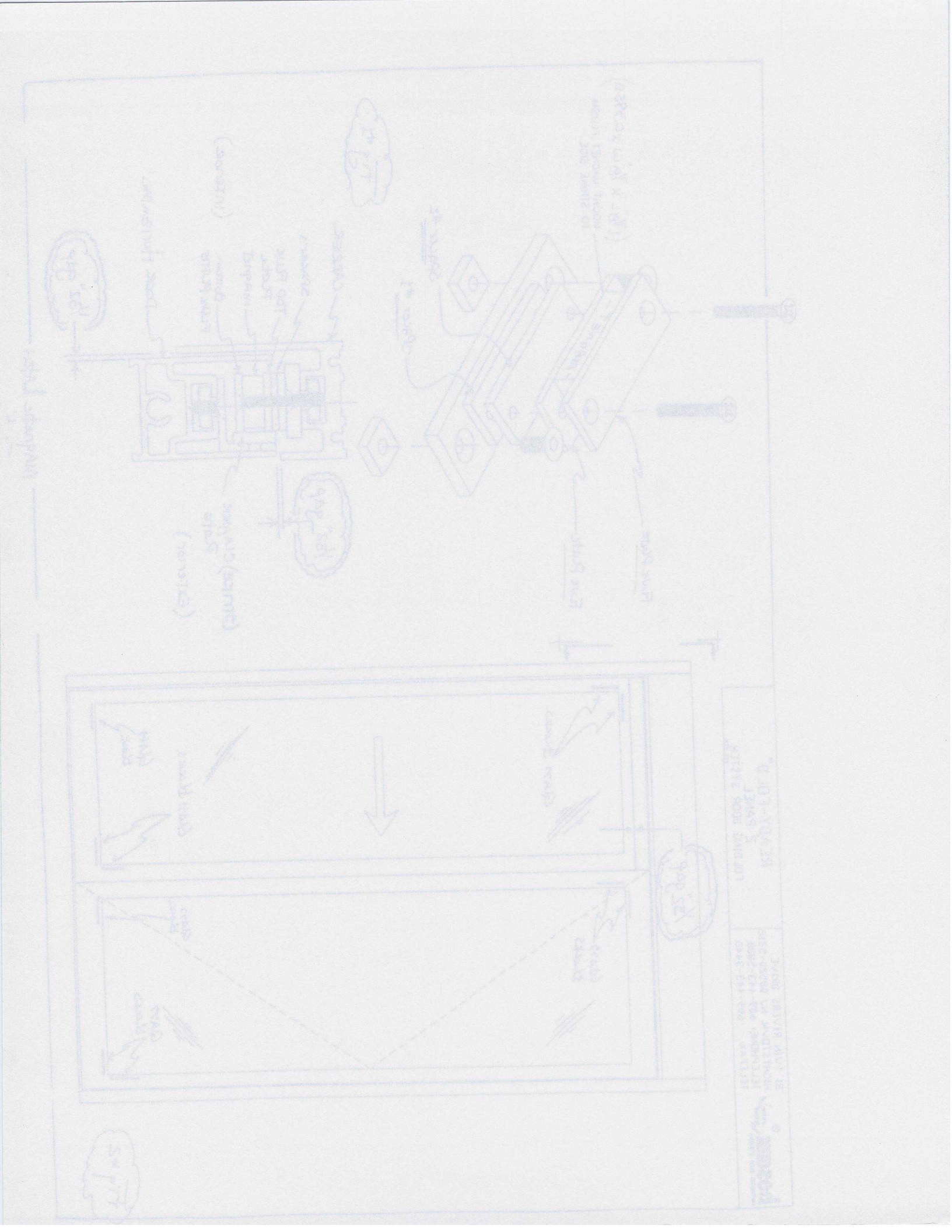


Fig #1

MAGNETIC LATCH



Troubleshooting Swingmaster®

When troubleshooting suspected Swingmaster® PCB faults, all detectors should be disconnected. Jumpers should be in place across No's. 15-16, 17-18, 19-20. Door should be activated with a jumper across terminal 13 and 14.

Fault	Possible Reasons Why	Remedies/Explanations
Door won't open.	Low or absent main power.	Check for 110 VAC at Terminals 3 (NEU) and 5 (HOT).
	Blown main fuse.	Check 4A fuse for single or 7A fuse for dual PCB for continuity.* NOTE: Also check PCB for physical damage or burnt components at this time.
	Blown control fuse.	Check both 1.5A fuse for continuity.* These fuses are in line with the 24 VCD regulated and the 15-20 VDC unregulated supplies
	CAM switches in incorrect position.	Check CAM chart and wiring diagram for correct CAM and switch position at 0°. Also check for correct switch harness wiring to plugs.

*All fuse continuity and switch function checks should be made with the mains disconnected.

Fault	Possible Reasons Why	Remedies/Explanations
	Open motor windings.	Unplug motor from PCB. Short white and black leads or motor plug and manually open door. Release door carefully to prevent glass breakage and observe closing speed. If extremely slow, motor windings are okay. If door slams closed, then motor windings are open. NOTE: PCB relay will still engage in both of these cases.
Door won't open.	Motor fuses blown.	On dual PCB's check 4A fuses located in fuse towers for continuity.
Door holds open.	Short PCB activate circuit.	PCB should be returned to Besam for repair.
	Mechanical problem with operator.	Operator should be returned to Besam for repair.
Door opens slow.	Operating in back check speed.	Mis-positioned CAM or defective back-check switch. Check function with ohm meter.
Door closes slow.	Contacts on PCB relay pitted or stuck.	Replace relay or return PCB to Besam for repair.
	Operating in latch speed.	Defective latch switch. Check function with ohm meter.

Fault	Possible Reasons Why	Remedies/Explanations
	Closing resistor R-1 value incorrect.	Match operator type with correct resistor value.
No speed control. Door slams open.	Short in motor drive circuits.	Return PCB to Besam for repair.
Door stops at back-check and recycles.	Problems with low speed switching control.	(1) Adjustment of back-check speed too low. (2) Back-check switch not contacting CAM. (3) Broken wire to back-check switch. (4) Harness wiring incorrect.
Door closes fast.	Closing resistor R-1 value incorrect.	Match operator type with correct resistor value.

INSTALLATION MANUAL
PART NO. 75-23-080

besam®

Eye-Cue®

PRESENCE DETECTION SYSTEM

Ready-Fold™ 400

EYE CUE™
besam

U.S. PATENT #4,736,097
CAN. PATENT #1,326,267

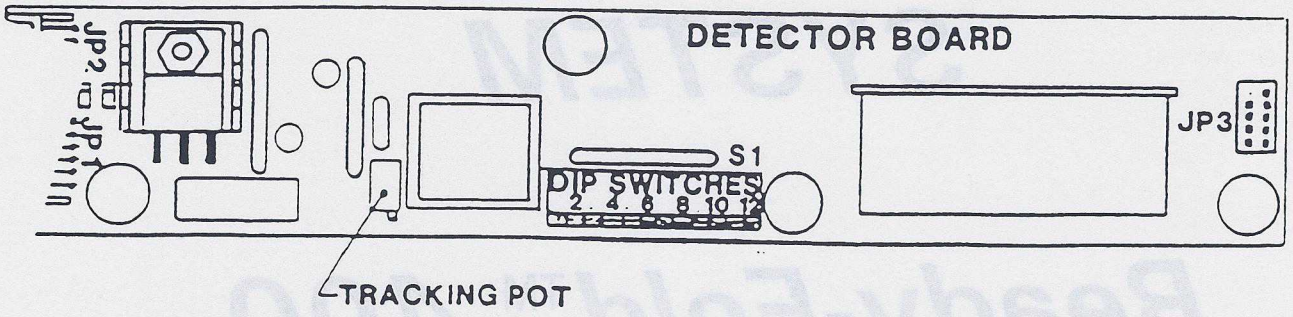
INTRODUCTION

The Eye-Cue® System significantly enhances the coverage for the doorway of automatic door systems in opening, closing and hold open functions. Eye-Cue® units are self-contained and employ microprocessors, a photon bridge, and multiple LED design to sense 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.

A complete Eye-Cue® System is center-mounted above the doorway threshold on the door header (4-panel) and on the slave leaf (2-panel) and provides open detection. The presence detection zone is the complete width of the door opening, max. 84" (2131mm) and can be adjusted up to 24" (609mm). 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 combination of emitter/receiver positioning and optics eliminates troublesome impulsing from rain, snow, etc.

Programming

Each Eye-Cue® Sensor provides independent operation since its equipped with its own programmable dip switches and potentiometer adjustment. The system **does not** require a reset procedure (power down) whenever making any adjustments or program changes. The following are dip switch and potentiometer functions along with factory settings.



Installation of Eye-Cue® and Cable Connections
Ready-Fold™ Door Package

On 2-panel door packages the Eye-Cue® installs on the Slave Leaf of the door (see drawing B28564, pg.3.3). On dual 4-panel door packages the Eye-Cue® installs on the center of the Swingmaster® header, under the SelectScan ³™ (see drawing B28578, pg.3.4). For wiring of the Eye-Cue® (see drawing B28559, pg.10.4, sht.2).

Tune In Procedures

(see drawing D26103 pg.9.6)

* Note: "C" Switch is not connected at this time.

1. All aspects of the folding door application should be completed i.e. hardware, wiring, switches, tune in, etc. prior to the tune in of the Eye-Cue® System.

2. Adjust operator time delay to minimum. The time delay can be increased if necessary after all adjustments have been completed.

   * Note: A minimum time delay of 1.5 seconds after leaving a detection field is required on all pedestrian door applications.

3. Check that the factory dip switch settings are programmed correctly (see dwg. A26126, pg.9.5).

4. Check that dip switch #2 is in the off position.

5. Program each sensor to operate at a different frequency.

6. Slide Eye-Cue® cover to the left and plug field tester onto the detector card right side pin connector.

   *** NOTE: Slide cover back in place fully after each adjustment is made, taking care not to cut or crimp the field tester ribbon cable.**

7. Allow system to stabilize. Blinking warm up LED on tester will shut off after approximately 8 minutes which indicates process is completed.

8. Wire "C" Switch into system and test (door(s) close completely) compensation mode. Tester "C" Switch LED will illuminate when "C" Switch is impulsed. Note: If "C" Switch remains illuminated, check dip switch 12. It must always be set to the ON position.

   (a) If door(s) close completely during the compensation mode ("C" Switch impulsed) fine tuning of door tracking potentiometer isn't necessary.

   (b) If door(s) recycle open during the compensation mode ("C" Switch impulsed) determine with tester (hold open LED will illuminate) which sensor is detecting the closing door(s) and carefully fine tune the sensors door tracking potentiometer.

9. Door tracking (fine tuning) adjustment.

   *** NOTE: If door(s) close completely during the compensation mode, "C" switch impulsed fine tuning of door tracking potentiometer is not necessary.**

   The door tracking potentiometer is a 20 turn potentiometer located on the Eye-Cue® detector card and when supplied from the factory is always set at the minimum tracking setting (completely counter clockwise).

   Whenever in doubt about the sensitivity setting, the potentiometer should always be readjusted (20 turn counter clockwise) to its mimimum setting.

* NOTE: Potentiometer has internal stop which will make a clicking noise when reached.

Door tracking is adjusted as follows:

(a) Start initial tracking adjustment by turning tracking potentiometer one half turn (1/2) clockwise.

(b) Power door(s) closed while observing tester's hold open LED for any detection.

(c) Repeat one half (1/2) clockwise turn adjustment procedure until the door(s) close completely without detection.

(d) Cycle door(s) several times to check adjustment.

10. Test the threshold detection across the entire opening on both sides with the lens in place.

11. Program 8-9 to desired delay.

12. S2 switch is used in conjunction with Rail System only.

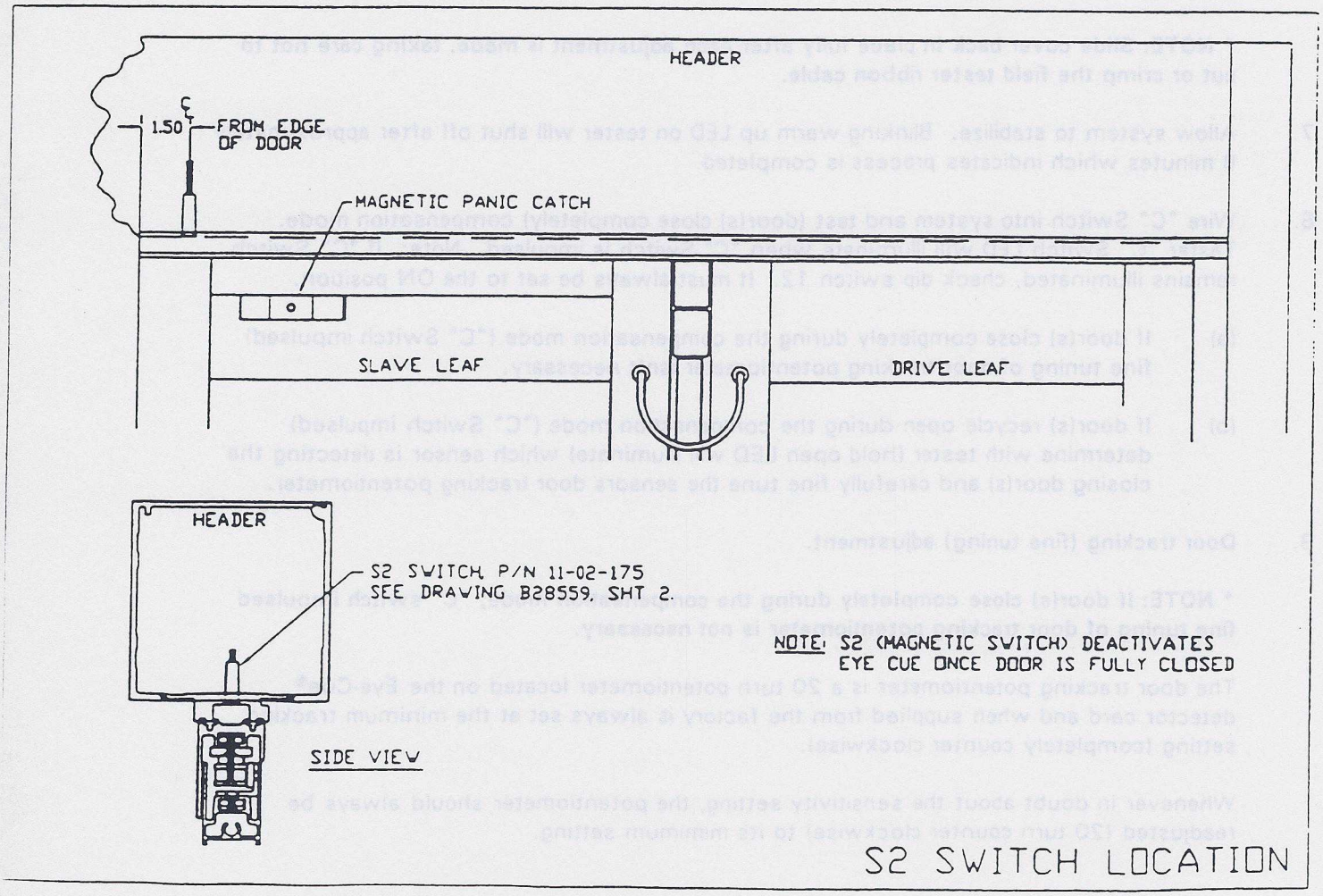


Fig. 1

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

DIP SWITCH VARIATIONS BLUE/YELLOW PROGRAMS.

No.	DESCRIPTION.	STATE.	SETTING.
1.	THRESHOLD SENSITIVITY	ON	* MORE SENSITIVE
		OFF	LESS SENSITIVE
2.		OFF	INACTIVE
3.	OUTPUT POLARITY	ON	ACTIVE HIGH
		OFF	* ACTIVE LOW
4. & 5.	FREQUENCY		CHANNEL BLUE/YELLOW
		ON/ON	* HIGH 1 2
		ON/OFF OFF/ON	MED 3 4
		OFF/OFF	LOW 5 6
6. & 7.		OFF/OFF	INACTIVE
8. & 9.	LEARN MODE TIME		
		ON/ON	15 SEC.
		ON/OFF	30 SEC.
		OFF/ON	60 SEC.
		OFF/OFF	INFINITE
10.		OFF	INACTIVE
11.	AUTO SENSITIVITY SET	ON	* ADAPTIVE SENSITIVITY
		OFF	FIXED SENSITIVITY
12.	INTERFACE MODE	ON	* EYE-CUE TESTER MODE
		OFF	PC INTERFACE MODE

(*) FACTORY SETTINGS

besam®
AUTOMATIC DOOR SYSTEMS
81 TWIN RIVERS DRIVE
EAST WINDSOR, N.J. 08520
609-443-5800.(FAX-3440)

TITLE SWITCH VARIABLES
SCREEN #2 DIP SWITCHES

DATE.	DRAWN BY.	DRAWING/INVENTORY No.
9/19/94	CJMcC.	A26134 SHT #1

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

DIP SWITCH VARIATIONS WHITE & GREEN PROGRAMS.

No.	DESCRIPTION.	STATE.	SETTING.	
1.		OFF	INACTIVE	
2.	OUTPUT POLARITY	ON	ACTIVE HIGH	
		OFF	ACTIVE LOW	
3,4, & 5.	FREQUENCY		MODE	CHANNEL
		ON /ON /OFF	NORMAL	1
		ON /OFF/ON	NORMAL	2
		ON /OFF/OFF	NORMAL	3
		OFF/ON /ON	NORMAL	4
		OFF/ON /OFF	NORMAL	5
		OFF/OFF/ON	NORMAL	6
	NOTE :- SETTINGS FOR USE ONLY AS SIDE SAFETY. (SLIDING DOORS ONLY) — ON /ON /ON		SIDE THRESHOLD	4
	NOTE :- SETTINGS FOR USE ONLY AS SIDE SAFETY. (SLIDING DOORS ONLY) — OFF/OFF/OFF		SIDE THRESHOLD	6
6. & 7.		OFF/OFF	INACTIVE	
8. & 9.	LEARN MODE TIME		NORMAL	SIDE THRESHOLD
		ON/ON	15 SEC.	4.2 SEC.
		ON/OFF	30 SEC.	5.25 SEC.
		OFF/ON	60 SEC.	6.3 SEC.
		OFF/OFF	INFINITE	INFINITE
10.		OFF	INACTIVE	
11.	AUTO SENSITIVITY SET	ON	ADAPTIVE SENSITIVITY	
		OFF	FIXED SENSITIVITY	
12.	THRESHOLD SENSITIVITY	ON	MORE SENSITIVE	
		OFF	LESS SENSITIVE	

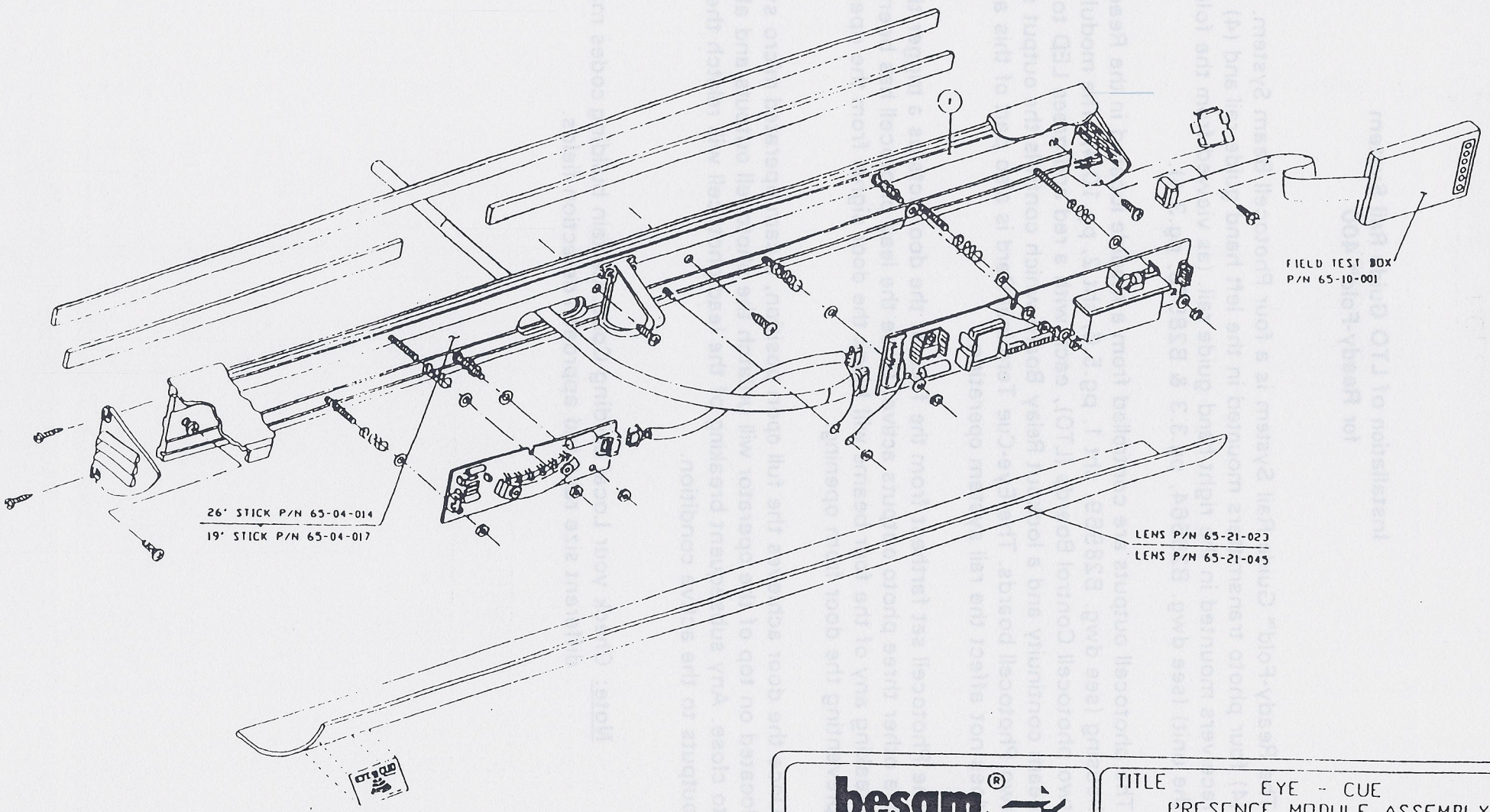
NOTE :- WHEN EYE-CUE II IS BEING USED IN ITS SIDE SAFETY CONFIGURATION (ie. 3,4 & 5. SWITCHES ARE ALL 'ON' OR ALL 'OFF') THEN THE LEARN MODE TIME IS AUTOMATICALLY SWITCHED (8. & 9.) TO THE TIMES SHOWN RELATIVE TO THE SWITCH SETTINGS.

besam®
AUTOMATIC DOOR SYSTEMS
81 TWIN RIVERS DRIVE
EAST WINDSOR, N.J. 08520
609-443-5800.(FAX-3440)

TITLE SWITCH VARIABLES
SCREEN #2 DIP SWITCHES

DATE.	DRAWN BY.	DRAWING/INVENTORY No.
9/19/94	CJMcC.	A26134 SHT #2

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



besam®
AUTOMATIC DOOR SYSTEMS
81 TWIN RIVERS DRIVE
HIGHTSTOWN, NJ 08520-5212
609-443-5800.(FAX-3440)

TITLE EYE - CUE
PRESENCE MODULE ASSEMBLY

DATE.	DRAWN BY	DRAWING/INVENTORY No.
6/20/91		D26103

Installation of LTO Guide Rail System for Ready-Fold™ 400

The Ready-Fold™ Guide Rail System is a four Photocell Beam System. It consists of (4) four photo transmitters mounted in the left hand guide rail and (4) four photo receivers mounted in the right hand guide rail. (as viewed from the folding side of the unit) (see dwg. B28564, pg.3.3 & B28578, pg.3.4).

The photocell outputs are controlled from a module located in the Ready-Fold™ housing (see dwg. B28559, sht 1, pg.5.6, sht 2, pg.10.4). The module consists of two photocell Control Boards (LTO), each with a red and green LED to indicate beam continuity and a lockout Relay Board which controls the output status of the two Photocell boards. The Eye-Cue Terminal Card is also part of this assembly, but does not affect the rail system operation.

The Photocell set farthest from the face of the door acts as a trigger that switches the other three photo outputs active. Once the lead photocell has been interrupted, breaking any of the four beams will block the door signal from the opening device, preventing the door from opening.

Once the door achieves the full open position, a cam operated micro switch located on top of the operator will unlatch the photocell outputs and allow the door to close. Any subsequent breaking of the lead photocell will relatch the photocell outputs to the active condition.

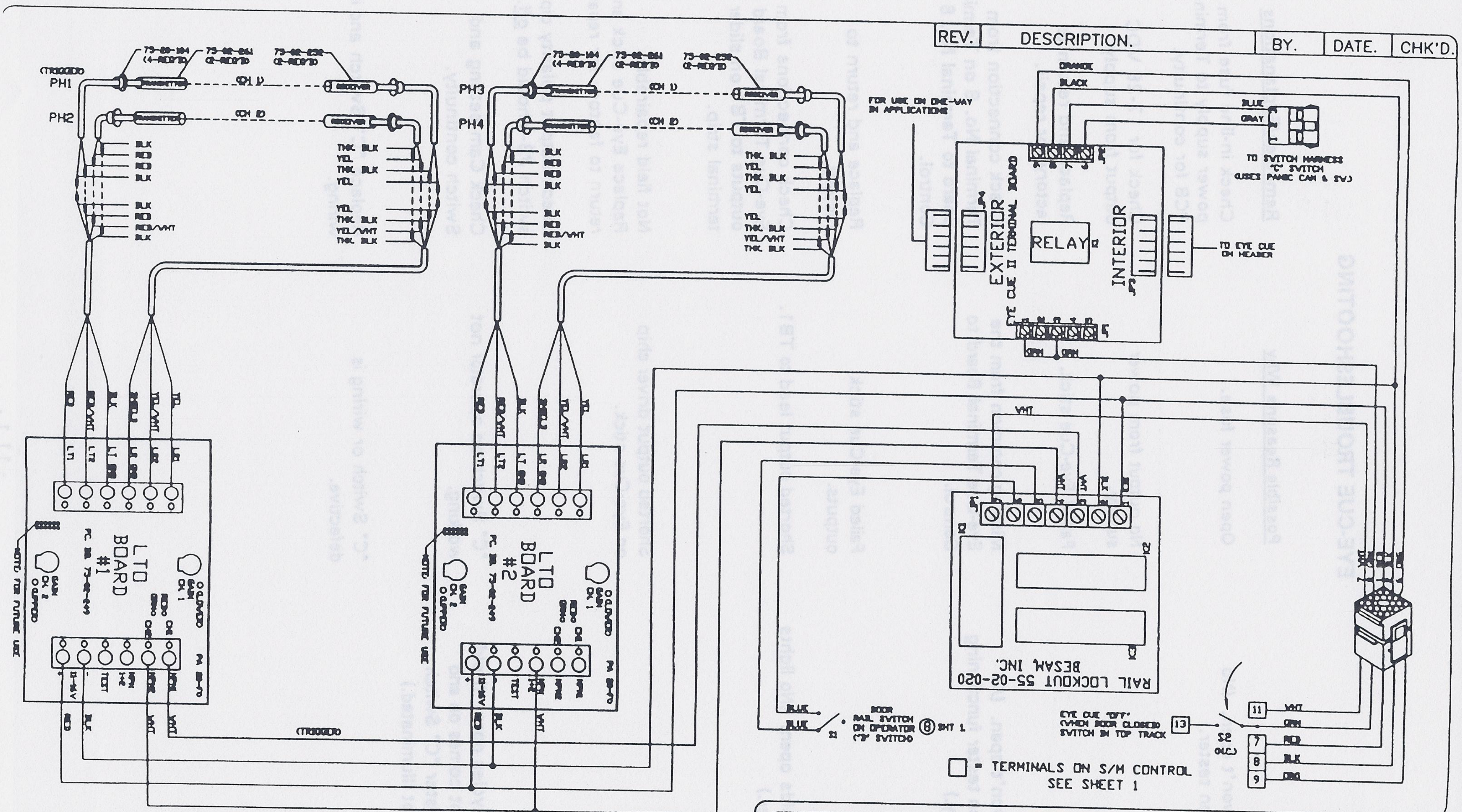
Note: Check your Local Building Code. Certain building codes may require different size rails and approach detection fields.

Troubleshooting Ready-Fold™ 400
Guide Rail System

Before attempting to troubleshoot the Ready-Fold™ 400 Guide Rail System, the main Ready-Fold™ functions should be checked for proper operation. If you suspect the system is not functioning properly, disconnect the **white** wire from terminal **#11** on the main PCB. (see dwg. B28559, pg. 10.4). This will effectively separate the rails from the system. If the Ready-Fold™ 400 begins to function there is a fault in the rail system or its' wiring. The following is a guideline for troubleshooting the Ready-Fold™ 400 Guide Rail System.

Fault	Possible Reasons	Remedies/Explanations
Door will not open.	No power to rail module.	Check output power at terminals #7 & #8 on Ready-Fold™ PCB for 15-20 VDC. (see dwg. B28559, pg.5.6).
	Inoperative photocell channel.	Check LTO control boards located on rail module to determine which channel is affected. If beam is broken or photocells are not functioning, indicator light for that channel will be out.
	Inoperative rail lockout board.	Contact factory for Lockout trouble-shooting procedure. 1-800-59 BESAM.
	Shorted connection from Rail Lockout Board to Ready-Fold™ p.c. board.	See dwg. B28559 for wiring information. (page 10.4).

Faults	Possible Reasons	Remedies/ Explanations
Door will not close	Inoperative or misadjusted door open switch on operator.	See pages 3.6 and 3.7 for correct cam adjustment.
	Inoperative Rail Lockout board.	Contact factory for Lockout trouble-shooting procedure. 1-800-59 BESAM.
	Inoperative photocell.	Check LTO control boards located on rail module to determine which channel is affected. If beam is broken or photocells are not functioning, indicator light for that channel will be out.
Door opens when beams are interrupted.	Open connection from Rail Lockout board to Ready-Fold™ PCB.	See dwg. B28559, page 10.4 for wiring information.
	Inoperative Rail Lockout board.	Contact factory for Lockout trouble-shooting procedure. 1-800-59 BESAM.



besam®
AUTOMATIC DOOR SYSTEMS
81 TWIN RIVERS DRIVE
EAST WINDSOR, N.J. 08520
609-443-5800.(FAX-3440)

TITLE	WIRING DIAGRAM SWITCH & CONTROL READY-FOLD (SHT 2 OF 2)

DATE.	DRAWN BY.	DRAWING/INVENTORY No.
5/6/94	PFC	B28559/55-23-001

EYE-CUE TROUBLESHOOTING

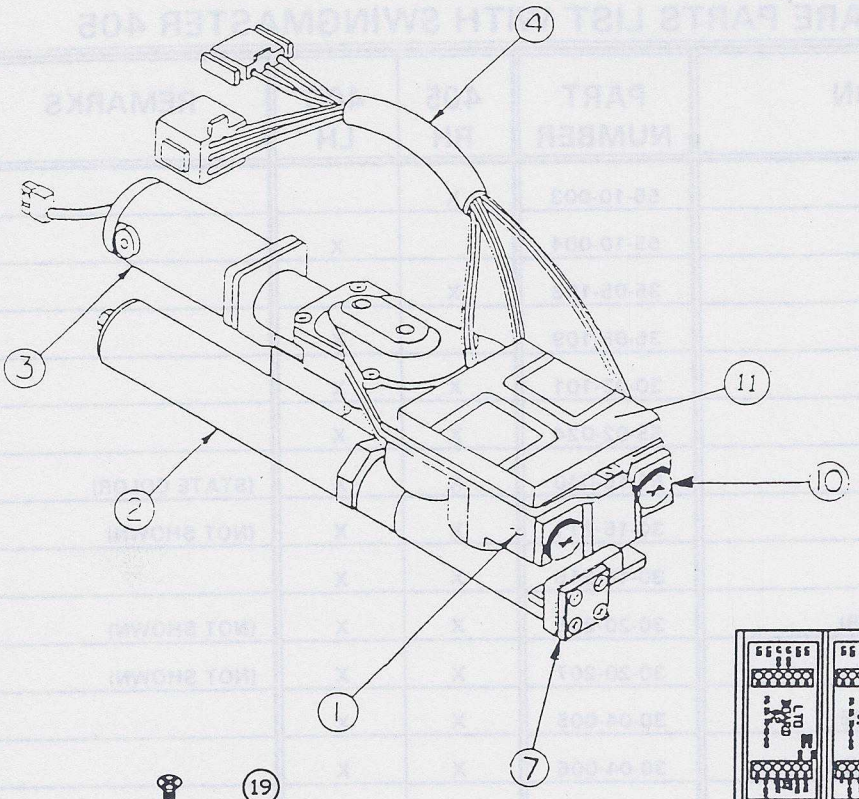
Fault	Possible Reasons Why	Remedies/Explanations
Door won't open. (No lights on tester.)	Open power fuse.	Check in-line fuse from power supply to Terminal PCB for continuity.
	No output from power supply.	Check for 17-28 VDC output from supply.
	Failed Eye-Cue stick.	Replace and return to factory for repair.
Door won't open. (All lights on tester functioning properly.)	Missing common from the Eye-Cue Terminal Board to Control.	Check connection from Terminal No. 8 on Terminal Board to Terminal No. 8 on Control.
	Failed Eye-Cue stick outputs.	Replace and return to factory.
Door holds open. (No lights on tester.)	Shorted output lead to TB1.	Check connections from Eye-Cue Terminal Board outputs to TB1 on slider terminal strip.
	Shorted output driver chip on Eye-Cue stick.	Not field repairable. Replace Eye-Cue stick and return to factory for repair.
		Check output polarity dip switch #3--should be <u>off</u>.
Door recycles open. (Hold open light comes on and field register "C" Switch L.E.D. not illuminated.)	"C" Switch on operator not working.	Check Cam setting and Switch continuity.
	"C" Switch or wiring is defective.	Replace "C" Switch and its wiring.

Fault	Possible Reasons Why	Remedies/Explanations
Continued	Misadjusted detector card.	The detector card contains the lensing system that controls the field of vision for the threshold detection system. If this card is tilted too far in towards the door, the doors may be detected even though the "C" Switch is functioning properly. When adjusting this card, the threshold emitter card should also be adjusted to coincide with the detector card setting.
	"C" switch affected by security system magnetic field. Magnet(s) are installed on active leaves.	Consult factory/security system installer for alternate solution.
	Cross talk between adjacent Eye-Cue Systems.	Adjust Frequencies so each stick has its' own setting.
	Broken solder connection on emitter card connector or cross-link connector.	Examine underside of emitter card where connector is soldered to PCB. Check for loose or broken solder connection between connectors and PCB.
	Open connector in cabling.	Check cable end to end for continuity.
Door holds open. (Hold open light stays on.)	Broken solder connection on emitter card connector or cross-link connector.	Examine underside of emitter card where connector is soldered to PCB. Check for loose or broken solder connection between connectors and PCB.
	Open connector in cabling.	Check cable end to end for continuity.
	Failed threshold circuit.	Replace Eye-Cue stick and return to factory.

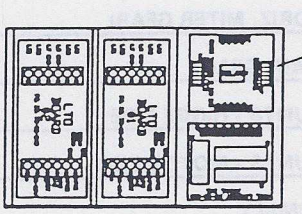
Fault	Possible Reasons Why	Remedies/Explanations
Threshold field acts like a motion field.	Shorted "C" Switch or "C" Switch connections.	If the "C" Switch leads or the "C" Switch itself is shorted, the threshold field will act like a motion detector rather that a presence detector. CAUTION: this condition should be corrected immediately. If necessary contact Besam Technical Staff at 1-800-59-BESAM for assistance.
Eye-Cue systems cross talk (short vestibule).	Proximity of infrared fields are too close.	In short vestibule situations (6-12 ft.), there is a possibility of cross talk between facing systems. To verify that this is the case, remove Eye-Cue power from one system. If the opposite system settles down then cross talk situation is occurring. This condition can be corrected by changing the operating frequency of all sticks in close proximity to each other. Reprogramming dip switches 4 and 5 (see programming instructions) will provide different operating frequencies.

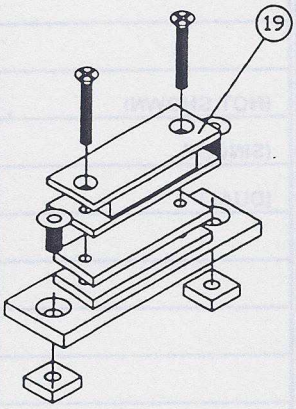
Ready-Fold 400 SPARE PARTS LIST WITH SWINGMASTER 405

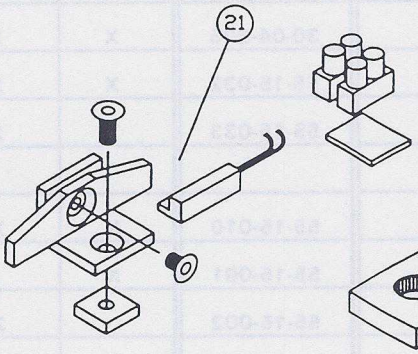
ITEM NO.	DESCRIPTION	PART NUMBER	405 RH	405 LH	REMARKS
1	OPERATOR COMPLETE	55-10-003	X		
1	OPERATOR COMPLETE	55-10-004		X	
2	SPRING TUBE ASSEMBLY	35-05-108	X		
2	SPRING TUBE ASSEMBLY	35-05-109		X	
3	ELECTRIC MOTOR	30-02-101	X	X	
4	SWITCH HARNESS	55-02-024	X	X	
5	CENTER PIVOT ARM	55-15-040	X	X	(STATE COLOR)
6	OPERATOR MOUNTING KIT	30-15-211	X	X	(NOT SHOWN)
7	RACK GEAR STOP KIT	30-15-216	X	X	
8	OIL SEAL (HORIZ. MITER GEAR)	30-20-206	X	X	(NOT SHOWN)
9	OIL SEAL (MAIN GEAR)	30-20-207	X	X	(NOT SHOWN)
10	RUBBER MOUNTS - HINGE SIDE	30-04-005	X	X	
10	RUBBER MOUNTS - MOTOR SIDE	30-04-006	X	X	
11	COVER ASSEMBLY	30-05-005	X	X	
12	MOTOR COUPLING COMPLETE	30-04-225	X	X	(NOT SHOWN)
13	CONTROL BOARD	55-15-032	X	X	(SINGLE)
14	CONTROL BOARD	55-15-033	X	X	(DUAL)
16	HINGE ASSEMBLY	55-15-010	X	X	
17	PIVOT ASSEMBLY	55-15-001	X		
18	PIVOT ASSEMBLY	55-15-002		X	
19	MAGNETIC CATCH ASSEMBLY	55-15-004	X	X	(CARRIER PORTION)
21	CLAPPER & SWITCH ASSEMBLY	55-15-005	X	X	(DOOR PORTION)
22	P.C. BOARD ASSY	55-02-025	X	X	
23	LTO TRANSMITTER	75-02-251	X	X	(NOT SHOWN)
24	LTO RECEIVER	75-02-252	X	X	(NOT SHOWN)
25	LTO TRANSMITTER CABLE	75-02-253	X	X	4-PLUGS (NOT SHOWN)
26	LTO RECEIVER CABLE	75-02-254	X	X	4-PLUGS (NOT SHOWN)

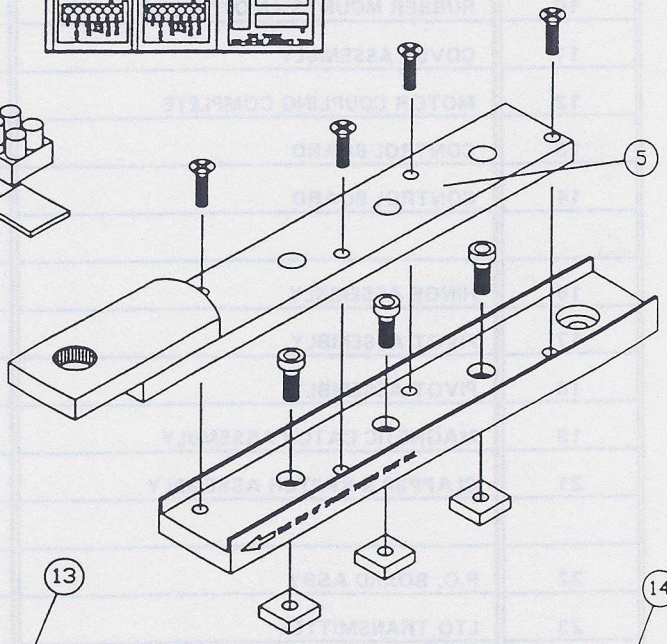


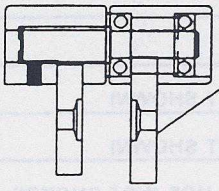
Naturally, to make sure this equipment continues to function properly for years to come, you will want to purchase only Replacement Parts that are designed to function with the original equipment. Genuine Replacement Parts from Besam are the finest parts money can buy. We do not cut corners. They are manufactured to exacting specifications and are not just designed to 'fit' -- they are made to function just as the original components. Genuine Besam Replacement Parts have been tested to ensure that they perform properly and reliably. Genuine Besam Replacement Parts are only available through an authorized Besam distributor.

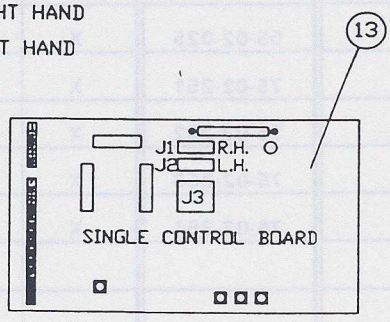


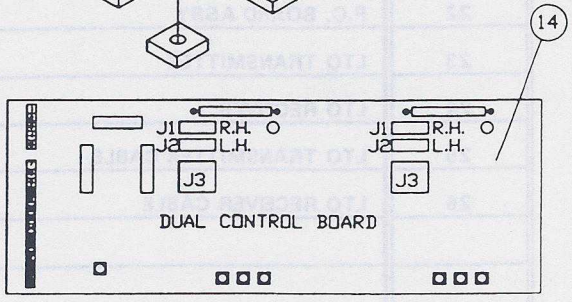


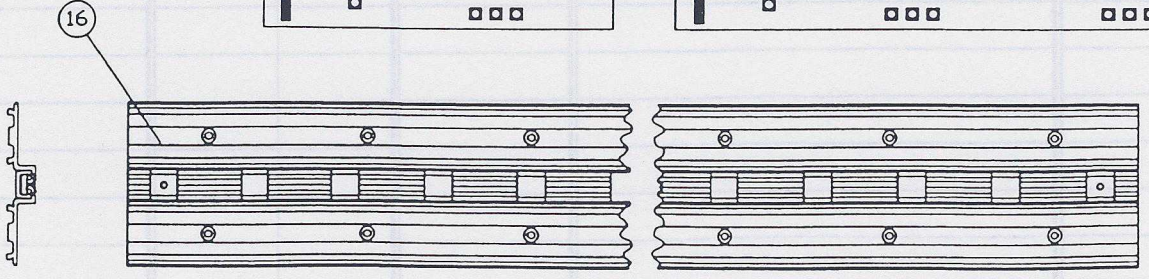












besam information bulletin

BESAM INC. ■ 81 TWIN RIVERS DRIVE ■ HIGHTSTOWN, NJ 08520-5212
(609) 443-5800 ■ FAX (609) ~~443-9162~~ 443-5629

#273

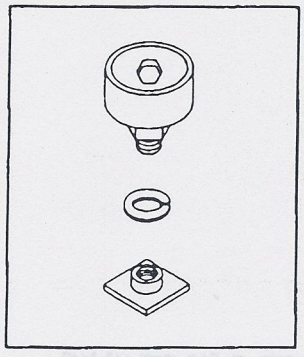
JULY 1998

READY-FOLD UPDATE

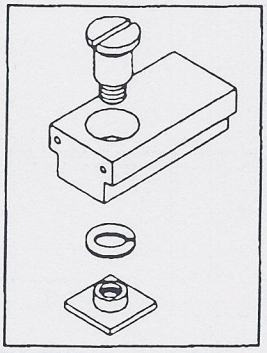
The Ready-Fold door has been designed so that the *Slide Block* (series 200 doors) and *Roller* (Ready-Fold 400) are interchangeable. While the slide block will continue to be the standard offering, certain field conditions may warrant the use of a roller instead. The door can be ordered with a roller simply by specifying your preference on the order form. If desired, the slide block can also be field changed to a roller. By the same token, a slide block kit is available for those who wish to change their older Ready-Fold from rollers to slide blocks.

Available Parts:

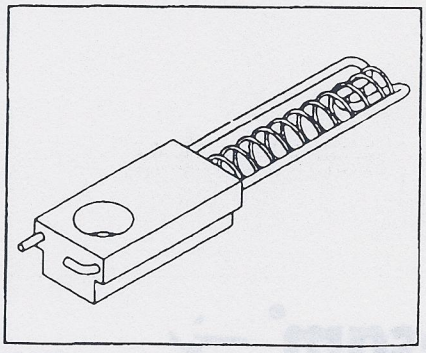
Carrier Roller Kit:
P/N 55-15-015s
(to replace existing rollers or slide blocks).



Slide Block Kit:
P/N 55-15-201s
(to retrofit Ready-Fold 400 doors*)



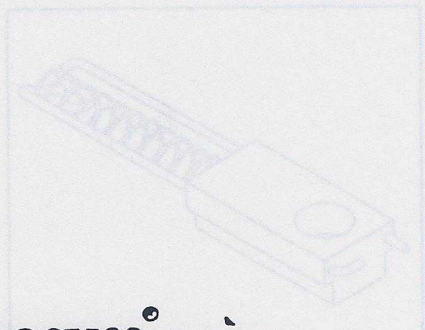
Slide Block:
P/N 55-15-345s
(replacement for Series 200 doors*)

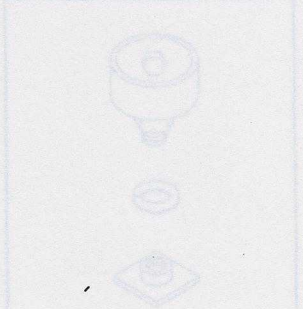


***Note:** *Ready-Fold 400* doors use a continuous hinge, *Ready-Fold Series 200* doors use separate top and bottom hinges.

[REMEMBER ENGINEERING DEPT. FAX # (609) 443-5629]

NOTES





besam

81 TWIN RIVERS DRIVE ■ HIGHTSTOWN, NEW JERSEY 08520 ■ (609) 443-5800 ■ FAX: (609) 443-3440