

DOR-O-MATIC®



ASTRO SWING

INSTALLATION AND SERVICE MANUAL

NOTICE

DOOR SIZE AND WEIGHT REQUIREMENTS

<u>TYPE</u>	<u>OPERATOR</u>	<u>MIN. DOOR WIDTH</u>	<u>MAX. WEIGHT</u>
SINGLE DOOR	ASTRO-SWING	36"	200 Lbs.
SIMULTANEOUS	ASTRO-SWING	30"	200 Lbs.

DOR-O-MATIC

Division of Republic Industries, Inc.

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81000-984
PRICE: \$15.00
6-79

ILLUSTRATIONS

FIGURE NUMBER

TITLE

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DESCRIPTION

The Astro Swing is a fully automatic swinging door operator for commercial pedestrian use. It is designed to be installed above the door opening and permitting traffic flow in one direction only. Model series No. 8663 is intended to use with center pivoted doors, and to be mounted directly above the door forming an integral part of the frame. Model series No. 9663 is intended for use with hinged or offset pivoted door, and is mounted to the door frame above existing doors. Both models have a breakaway feature which allows them to swing out in the direction of egress in the event of a power failure or other emergency. These operators are available for both single and simultaneously operated doors.

The Astro-Swing operator is a start on demand power open spring close system incorporating a permanent magnet D.C. motor, driving a multi-stage gear box, and connected to the door with a positive drive arm. The swinging door is driven under power to the full open position at which time the electrical power is turned off and the door is closed by spring force only.

The opening and closing cycles of the door are under complete control at all times, as individual potentiometers independently control the opening speed, back check, hold open, time delay, closing speed and latching speed. In the event of a power failure the operator acts as a manual door closer without fear of damage to the door or the automatic operator components. The operators may be activated with carpets, push plate switches, pull chain switches, photo electric cells or any normally open momentary contact switching device rated at 1 amp 24 v.a.c.

The electrical control circuit contains the activating, safety, and related motor control circuits. The safety circuit actually performs two different functions, depending on which portion of the cycle is in operation. If it is operated before the door is activated it will prevent the door from opening or it will hold the door open if it is operated after the door has been activated.

And adjustable time delay of 1 to 30 seconds continues to hold the door open for a pre-set time after the activating and safety circuits have been de-energized.

The activating circuit will reopen the door from any position in the closing swing provided the safety circuit is not energized.

The surfact applied Astro Swing may be installed for either push or pull application.

The basic components of astro swing are Header Assembly, Door Operator, Electrical Control Box, Cooling Fan, Breakaway Stop and Arm Assembly.

EQUIPMENT FURNISHED BY DOR-O-MATIC

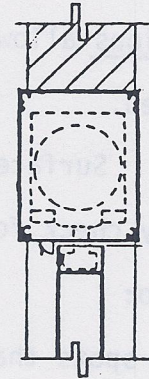
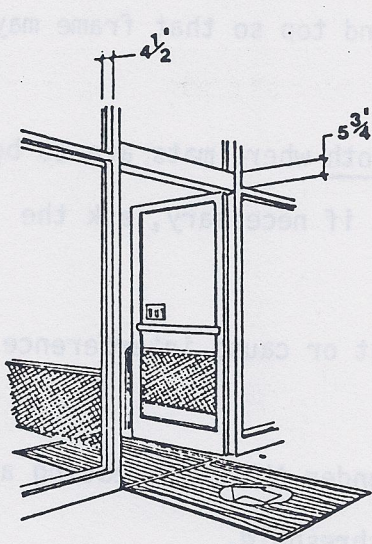
1. Header Assembly:
 - A. Header and dress plates,
 - B. Front and rear mounting brackets.
 - C. Door stop , solid or breakaway.
 - D. Control box mounting clips (4)
 - E. Fan and junction box assembly
 - F. Mounting hardware package,
2. Motor and gearbox assembly.
3. Electronic Control Box
4. All instruction and Safety operational decals,
5. Instruction and Service Manual,

ACCESSORY EQUIPMENT FURNISHED IF REQUIRED

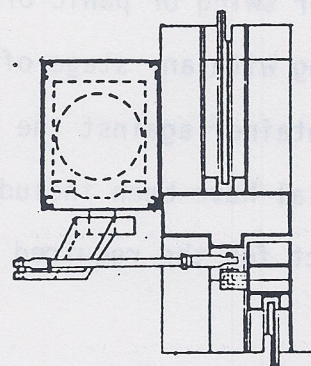
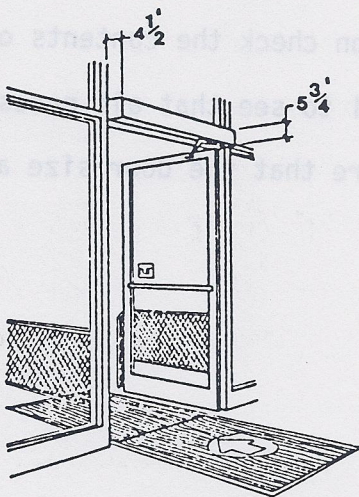
1. Activation System:
 - A. Carpets, push plates, pull chain, photo cell, or other types of activating devices.
 - B. Threshold Kit: the threshold kit furnished contains all required parts to compliment model ordered.
 - C. Guide Rails.
 - D. Glass Guards.

INSTALLATION INSTRUCTIONS

This manual covers the proper installation of both center pivoted door operators and surface applied operators for use on butt hinges or offset pivots, and for single or simultaneously operated pairs of doors,



CENTER PIVOTED ASTRO-SWING



SURFACE APPLIED ASTRO-SWING

Fig - 1

GENERAL:

- A. Check architectural prints and shop drawings for position of frame and structural openings.
- B. Check opening dimensions allowing $\frac{1}{4}$ " at each side and top so that frame may be plumbed and squared.
- C. Check floor surface. Surface must be flat and smooth where mats are to be installed. Carefully check for irregularities and, if necessary, ask the general contractor to:
 - 1. relieve any high spots that would damage the mat or cause interference with the operation of the door.
 - 2. fill in any low spots which would cause voids under the mat creating a water and dirt trap or improper fit of mat to threshold.
- D. Check floor grades. If floor is ramped, the break in grade must occur at the edge of the 2" threshold and must always slope away from entrance to allow proper door swing or panic breakaway.
- E. Before proceeding with any stage of the installation check the contents of the shipping container against the bill of material to see that all necessary parts and material have been included. also be sure that the door size and model are correct for the required installation.

1. PREPARATION:

- A. a 115 volt 1 ph. 60 H_z fused 10 amp 3 wire power supply must be brought to location of header. This work usually supplied by electrical contractor. For center pivoted doors the 115 volt power supply must be brought into junction box located inside the astro swing header on the lock side end. U.L. approved type flexible conduit is recommended for running through side jamb to header location.

Refer to Drilling template for location of wire passage holes through inner face of side jamb, approx. 12" of wire should be left for hook up.

See Fig. # 2

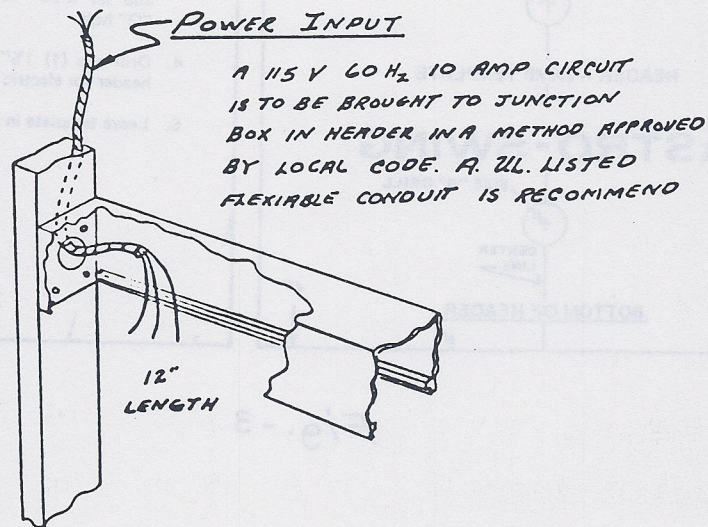


Fig.- 2

2. Door frame preparation and installation:

- A. It will be much easier to make all of the necessary hole preparations for header mounting, electrical power supply, and carpet wires, if required, before the jambs are installed.

- B. Two # 81306-184 templates have been provided to assure proper hole location in the jambs for the header and electrical power.
- All locating and drilling information is printed on template. (See Fig. 3)

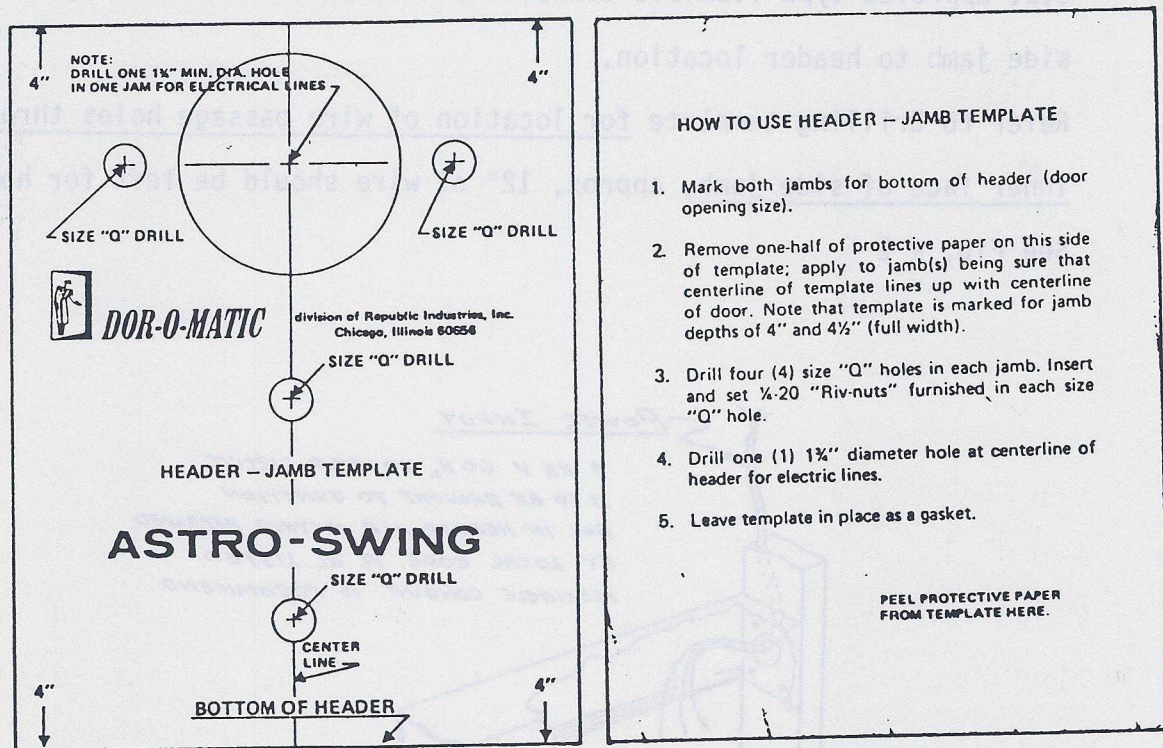


Fig. -3

- C. If carpets are to be used, provision for routing the wires into the lock side jamb must also be made at this time. It is recommended that a fish line be installed into side jambs and taped in place for future use or the mat wires extension could actually be installed at this time. (See Fig. 4)

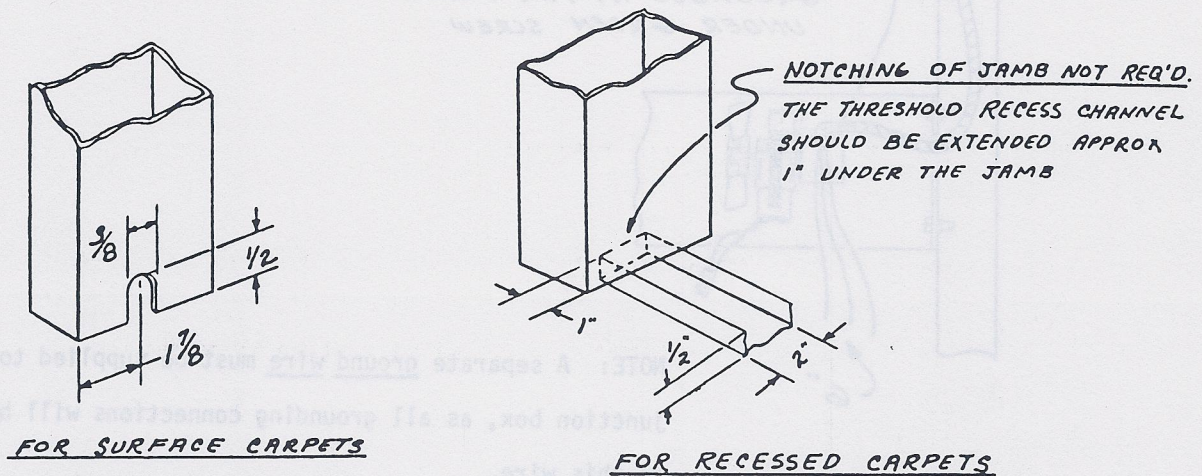
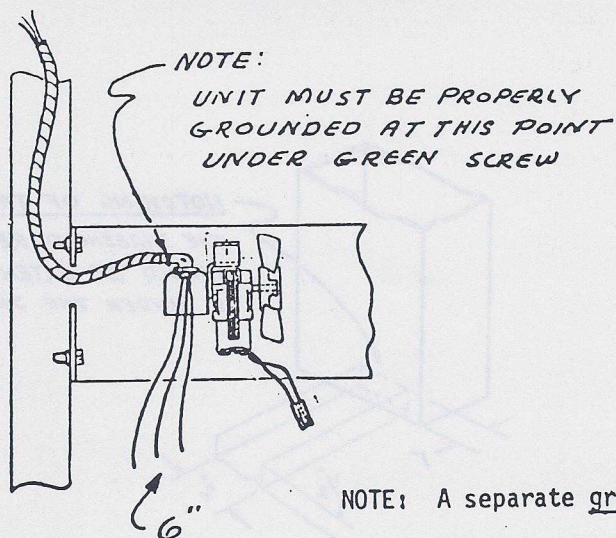


Fig.-4

- D. After jambs have been drilled and the 8 $\frac{1}{4}$ -20 RIV nuts have been installed the lock side jamb should be installed securely in the masonry opening. At this time it is very convenient to feed the flexible conduit for the 115 volt power down through the jamb tube to the exact header location. Make sure the jamb is plumb and square with the opening and mount securely in place.
- E. Loosely mount the hinge side jamb into approximate position. Properly position astro swing header between the jambs and mount securely with the 8 $\frac{1}{4}$ -20 hex head screws provided.
- F. Again making sure header is level, and square with opening, plumb and shim hinge side jambs into proper position and securely mount to masonry opening in normal manner.
- G. Securely connect the flexible conduit to the junction box leaving approximately 6" minimum wire length for final hook up.



NOTE: A separate ground wire must be supplied to the junction box, as all grounding connections will be made to this wire.

Fig.-5

- H. Connect the three (3) female wire connector, part # 81275-000 to the 115 volt line at junction box as shown.

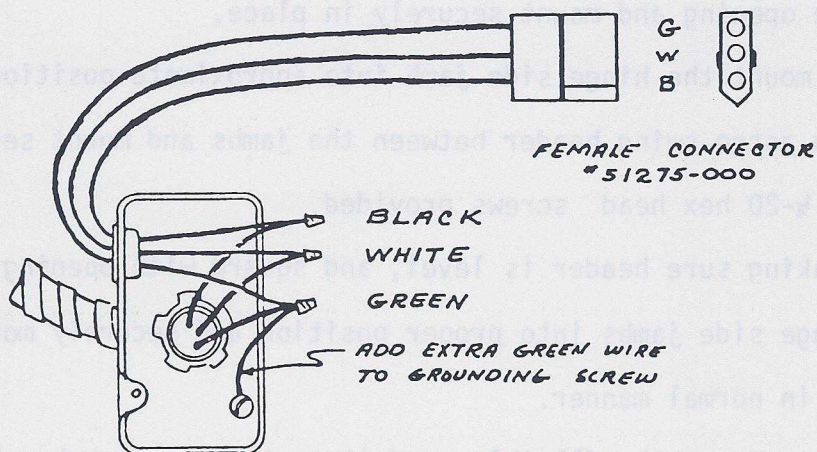


Fig.-6

3. Cooling Fan:

All operators are supplied with a cooling fan to keep the electronic components in the control box well within tolerance even when the header is exposed to direct sunlight for long periods of time,

A thermal sensor switch mounted inside the control box is set to turn the fan on when the temperature reaches 120° F, and to turn fan off when the temperature has been lowered to 90° F,

The fan and junction box are actually assembled together on the same bracket and have been pre-assembled into the header at factory. However, it will probably be desirable to loosen the allen head set screws and move the whole assembly during installation of mounting screws and electrical hook up,

NOTE: Fan blade should always be directed toward the control box.

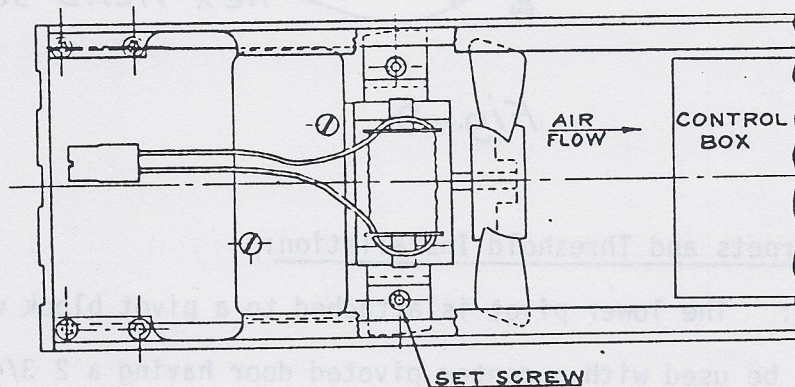


Fig. - 8

4. Installation of Operator:

A. Motor and gear box assembly: Making certain there is a rubber grommet in each of the four mounting holes push the complete motor gear box assembly up into the header and onto the four mounting bracket studs. The rubber grommets will be a snug fit and may require a little extra effort to get

them all the way up. Make certain 9 pin wire connector is free and hanging down out of the header, Place washers over the 4 5/16-18 hex head screws. Insert into the mounting bracket and tighten securely.

(See Fig. 9)

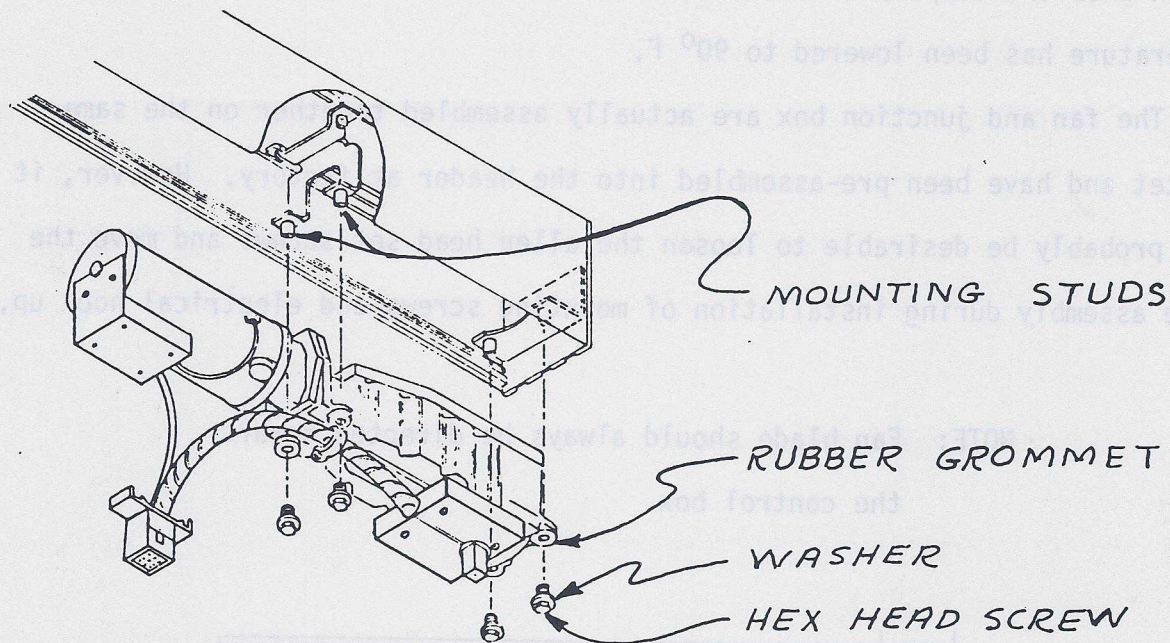


Fig.-9

5. Lower Pivot, Carpets and Threshold Installation:

A. Lower Pivot: The lower pivot is attached to a pivot block which is designed to be used with a center pivoted door having a 2 3/4" or 3 3/4" pivot mounting point,

If jambs have been set square and plumb the appropriate end of the pivot block may be pushed tightly against and centered with the jamb, Exact location can also be determined by dropping a plumb line from operator spindle to center line of pivot,

After pivot block is properly located install the (4) 1/4-20 screw anchors provided, and securely mount pivot block in place,

- B. The 2" wide interlocking threshold strip must be cut to proper length at time of installation. Carefully measure the distance between the pivot block and the lock side jamb and cut threshold to length before installing carpets.

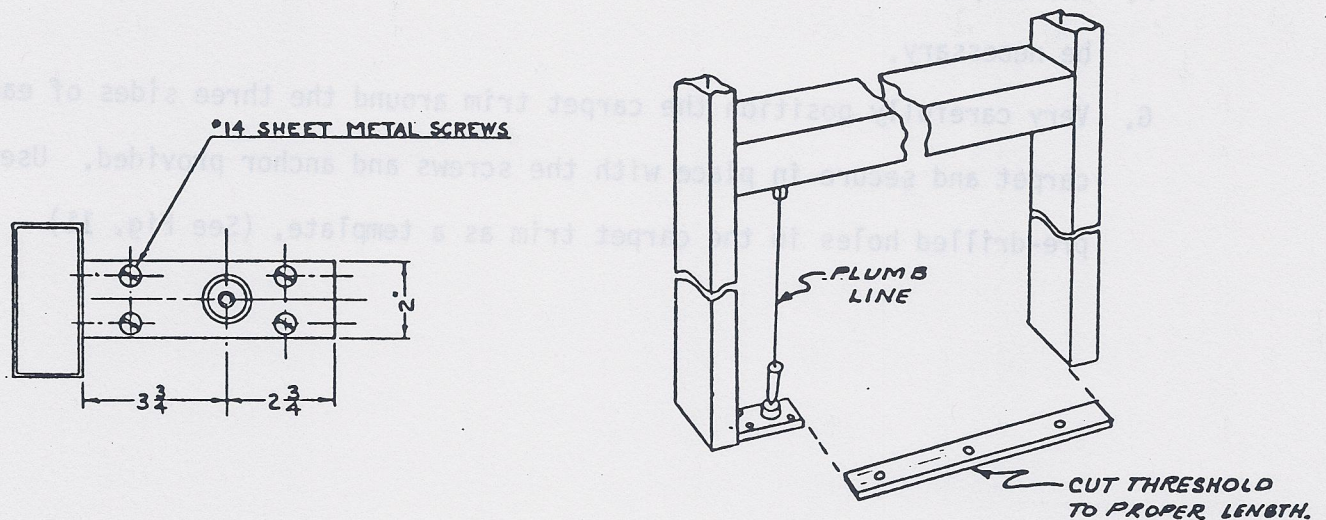
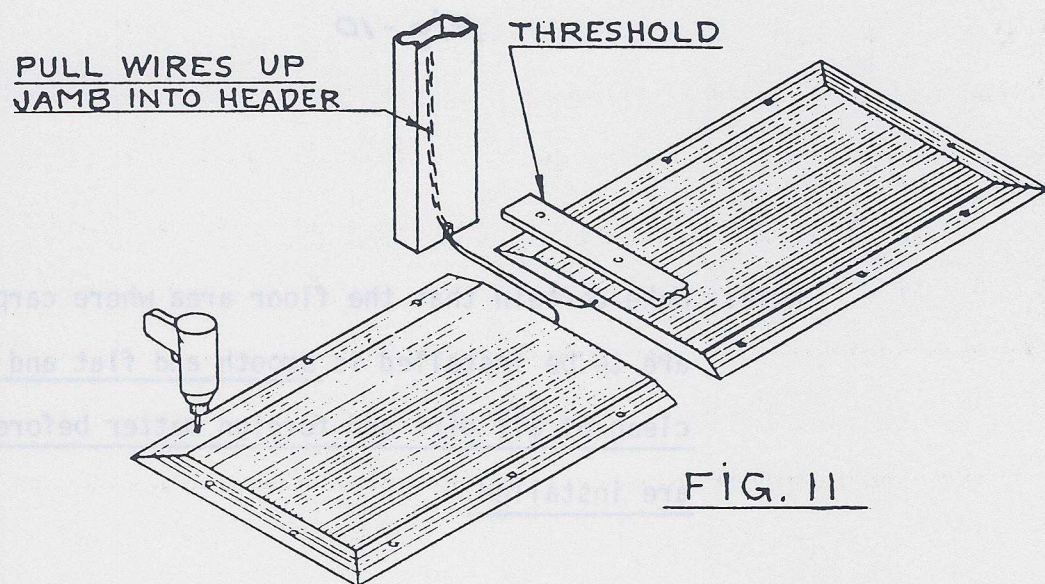


Fig.-10

NOTE: Make certain that the floor area where carpets are to be installed is smooth and flat and swept clean of all dirt and foreign matter before carpets are installed.

- C. Carefully remove carpets from shipping carton and properly position in doorway lining up with pivot block.
- D. Unwrap carpet wires and run over to lock side jamb. Very carefully splice on to mat wire extension or fish tape previously installed in jamb and pull wires up through the jamb into header. Very carefully dress carpet wires between carpets and tape down to floor if necessary.
- E. Install 2" threshold into locking channels on carpets and secure in place.
- F. The carpet trim has been factory cut to size and no field cutting should be necessary.
- G. Very carefully position the carpet trim around the three sides of each carpet and secure in place with the screws and anchor provided. Use the pre-drilled holes in the carpet trim as a template. (See Fig. 11)



H. Assuming that two wires from each carpet have been pulled into the header, carefully route the wires around other components in header over to control box location. Cut the wires to proper length and connect to the 3 pin male molex connector plug # 81276-000 as shown.

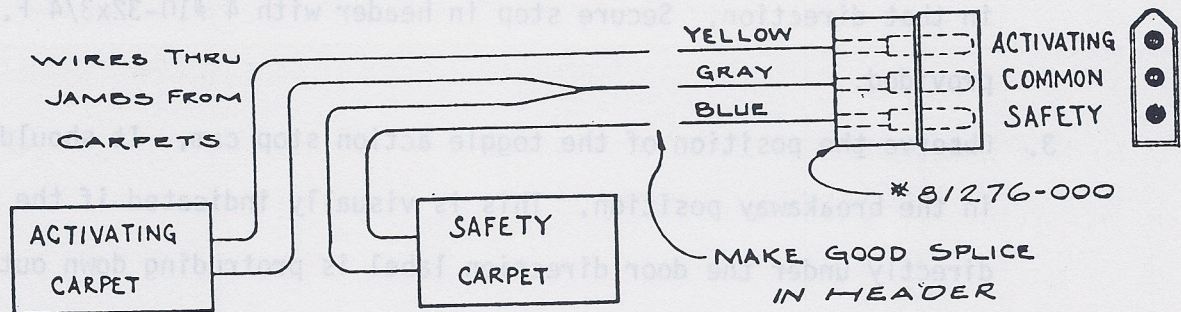


Fig.-12

6. Breakaway Stop:

A. Description: The breakaway stop serves a two fold purpose, and must be installed correctly to permit door to operate properly.

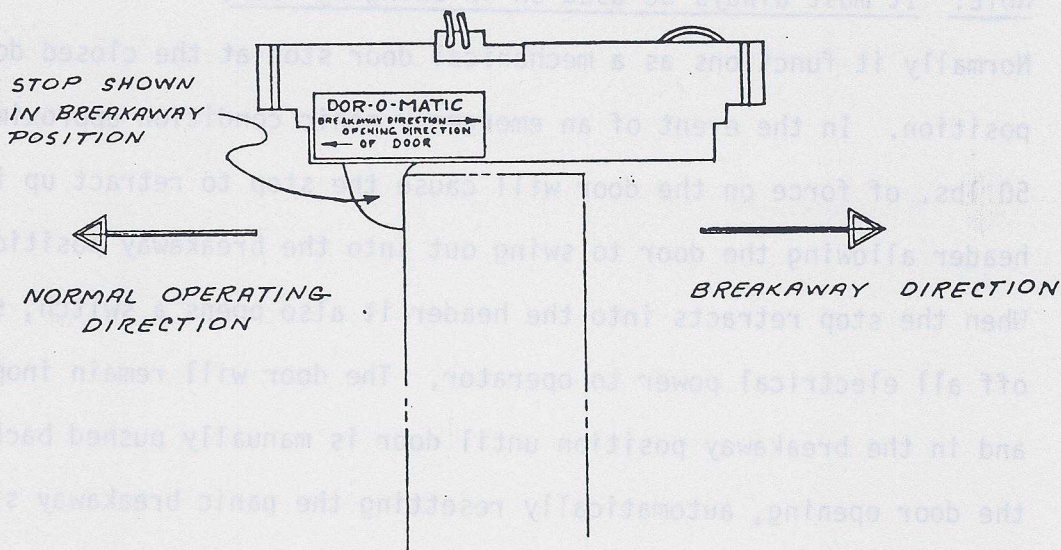
NOTE: It must always be used on in swinging door.

Normally it functions as a mechanical door stop at the closed door position. In the event of an emergency panic condition approximately 50 lbs. of force on the door will cause the stop to retract up into the header allowing the door to swing out into the breakaway position. When the stop retracts into the header it also opens a switch, shutting off all electrical power to operator. The door will remain inoperative and in the breakaway position until door is manually pushed back through the door opening, automatically resetting the panic breakaway stop and restoring power to operator.

B. Installation;

1. The breakaway stop is very clearly marked with a label on one side as to normal opening direction of the door and the breakaway direction.
2. Verify the direction the door is to open and install the breakaway stop with the red arrow indicating opening direction of door pointing in that direction. Secure stop in header with 4 #10-32x3/4 F.H.M.S. provided.
3. Observe the position of the toggle action stop cam. It should be set in the breakaway position. This is visually indicated if the stop directly under the door direction label is protruding down out of the header.

Fig.-13



7. Control Box:

- A. The control box is a snap in type mounting and no screws are required. The four spring clips that hold the control box in place have been pre-installed at the factory to assure proper placement.
- B. The control box should be positioned so the fuse holder is pointing down toward the floor and the end with the single 9 pin wire connector is pointed toward the motor.
- C. Visually line up the slots in the side of the control box with the spring clips in the header and push straight up until spring clips snap into place.

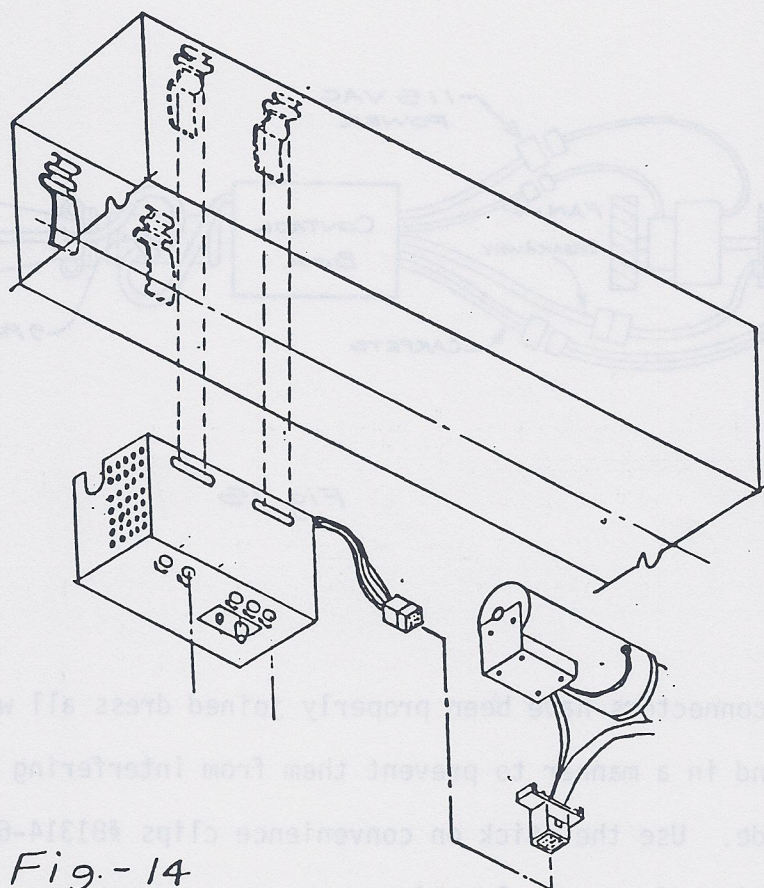


Fig.-14

- D. Gently pull down to assure that all clips are properly seated. Box may be removed by just pulling down harder.

8. Final Wire Connection:

- A. CAUTION: Whenever a molex plug and receptacle are joined or separated, DO NOT push or pull on wires. This may cause a wire to be pulled loose from a terminal and a malfunction could result.
- B. Connect the control box to the operator by gently dressing the wiring harness into an "S" shape over the motor and securely connecting the 9 pin molex connectors.
- C. Connect the remaining 4 connectors. The plugs and receptacles have been arranged in such a fashion that prevents incorrect joining.

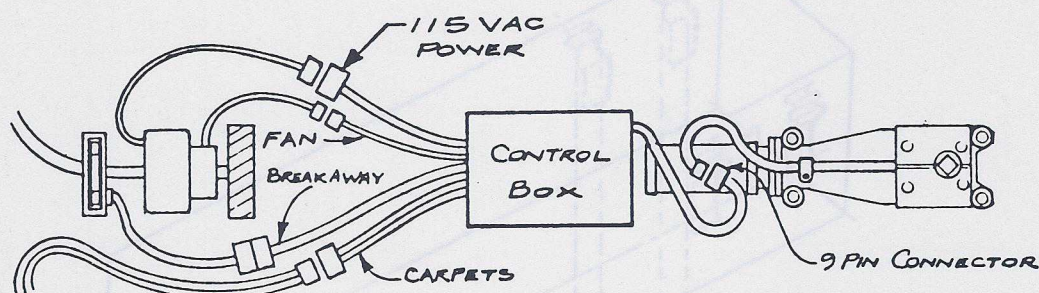


Fig. 15

- D. After all connectors have been properly joined dress all wires neatly together and in a manner to prevent them from interfering with rotation of fan blade. Use the stick on convenience clips #81314-600 provided to retain wires in proper location.

WIRE CONNECTION CHART

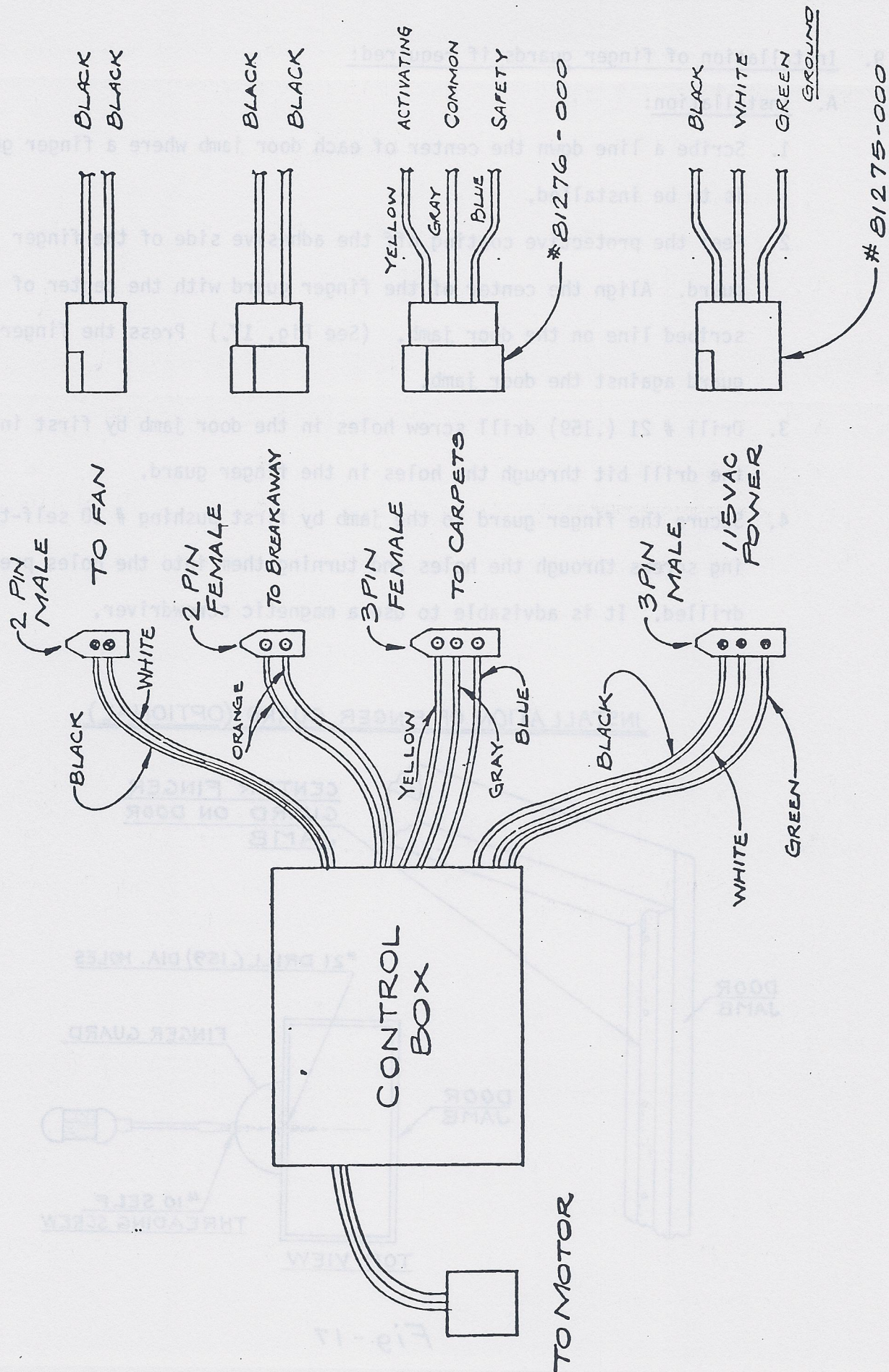


Fig-16

9. Installation of finger guards if required:

A. Installation:

1. Scribe a line down the center of each door jamb where a finger guard is to be installed.
2. Peel the protective coating off the adhesive side of the finger guard. Align the center of the finger guard with the center of the scribed line on the door jamb. (See Fig. 17.) Press the finger guard against the door jamb.
3. Drill # 21 (.159) drill screw holes in the door jamb by first inserting the drill bit through the holes in the finger guard.
4. Secure the finger guard to the jamb by first pushing # 10 self-threading screws through the holes and turning them into the holes previously drilled. It is advisable to use a magnetic screwdriver.

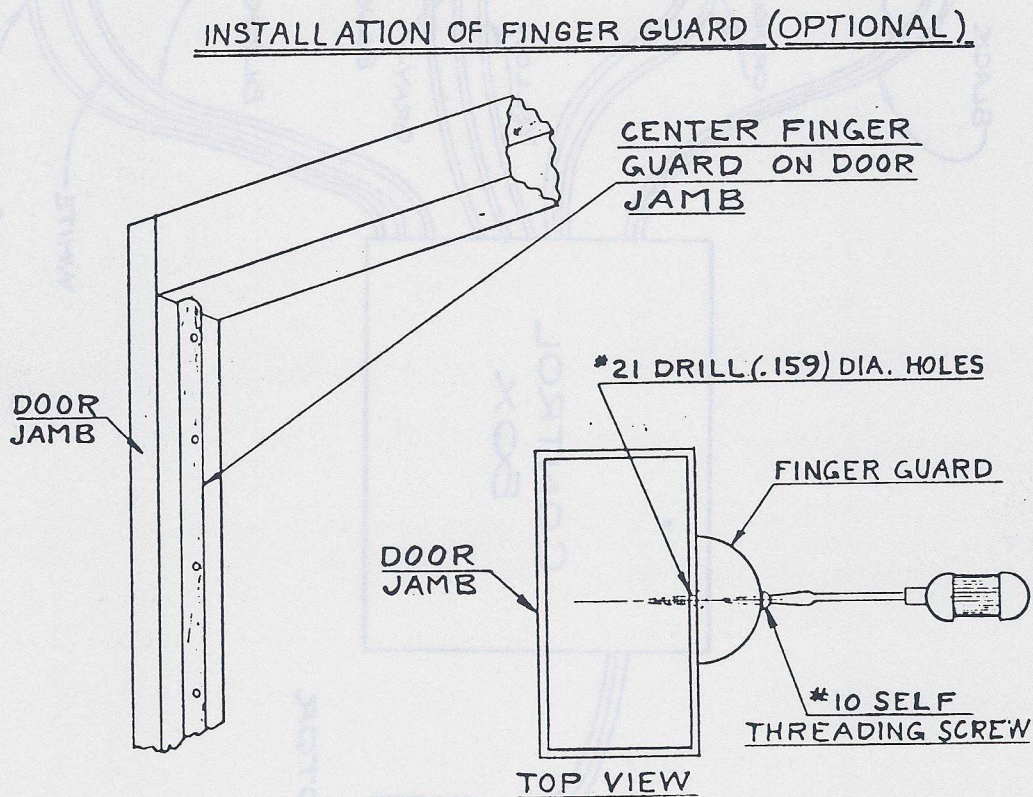


Fig.-17

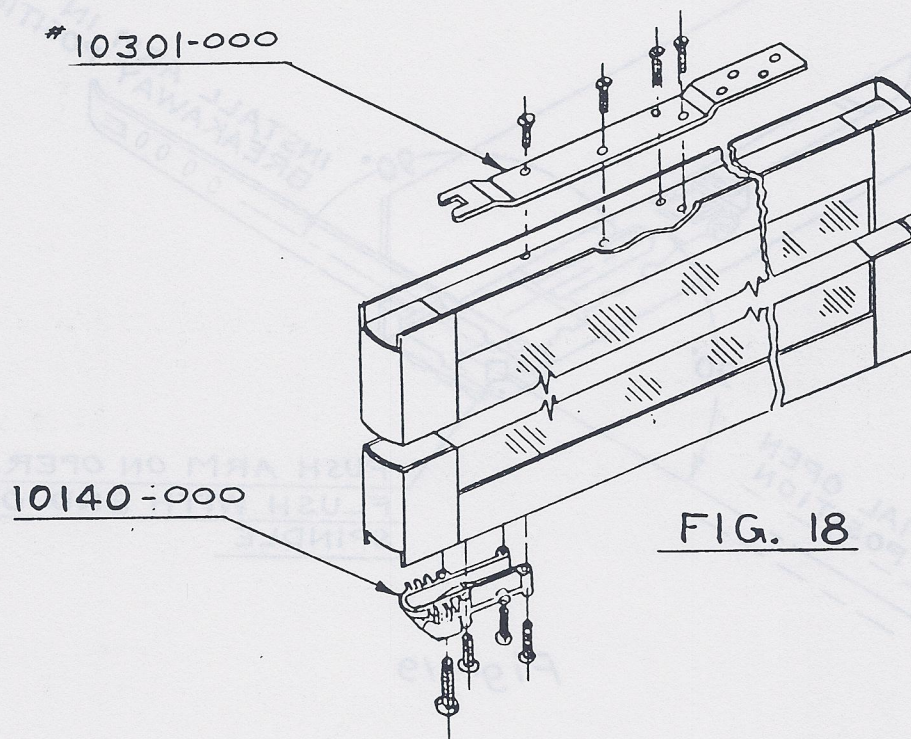
10. Door preparation and installation of center pivoted doors.

PREPARATION:

A. All doors manufactured by Dor-O-Matic are factory prepared for necessary mounting hardware, arms, pivots and locks if required. No field preparation is required.

If other type doors are to be installed, they must be prepared in accordance with the #880-I template furnished with header.

B. As shown in Fig. 18, install the arm attachment bar # 10301-000 and the bottom pivot assembly # 10140-000 securely into the door with proper screws provided. Door is now ready to be installed on operator.



- C. Install 880 arm on operator spindle.

NOTE: When the operator was received from factory and installed in header the spindle was in the normal breakout position.

- D. Keeping this in mind mentally determine which is the breakout position and position arm pointing in that direction.
- E. With the locking tabs pointing down toward floor gently press arm on spindle until spindle end is flush with bottom surface of arm.
- F. Tighten the allen head cap screw through arm securely. (See Fig. 19)

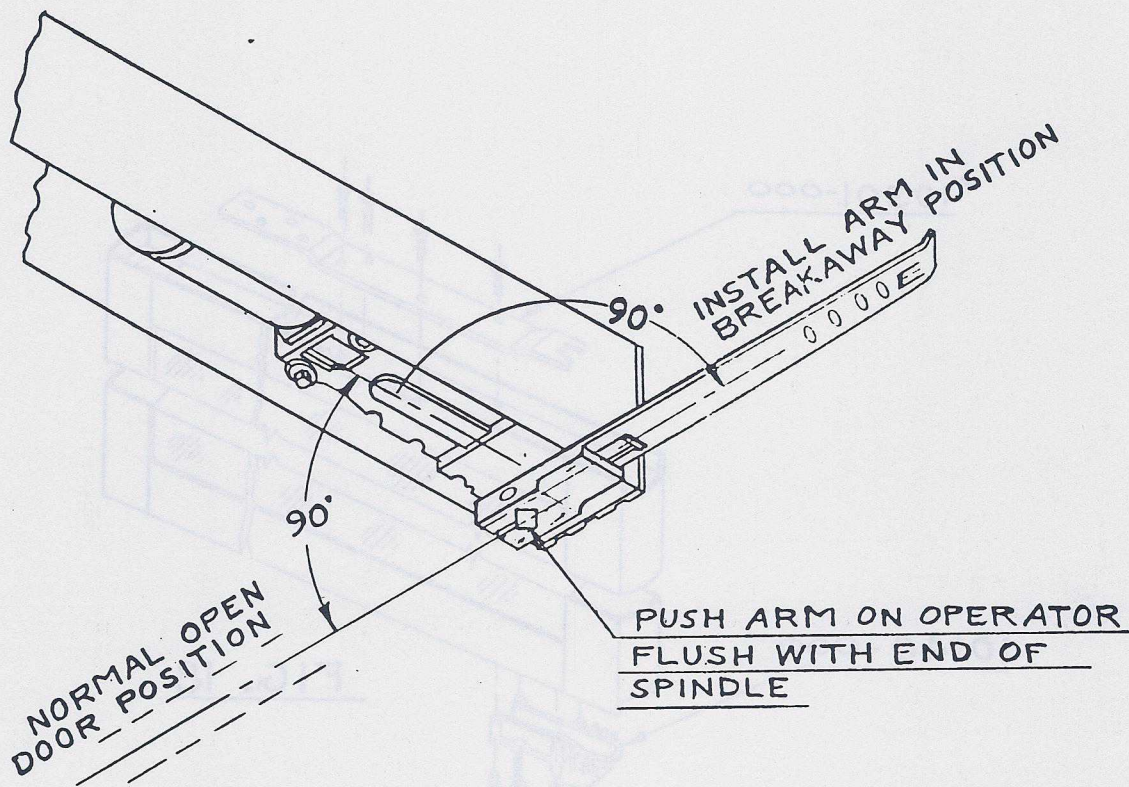


Fig.-19

D. Final attachment and proper centering of the door is provided by the 4 oval holes in the end of the arm. The oval holes permits the door to be adjusted approximately $1\frac{1}{2}^{\circ}$ in each direction from centerline of arm. Visually line up door to an exact 90° open position and secure arm to attaching bar with two $\frac{1}{4}$ -20- $\frac{1}{2}$ hex head cap screws. Two of the four holes and slots will always line up properly.

(See fig. 21)

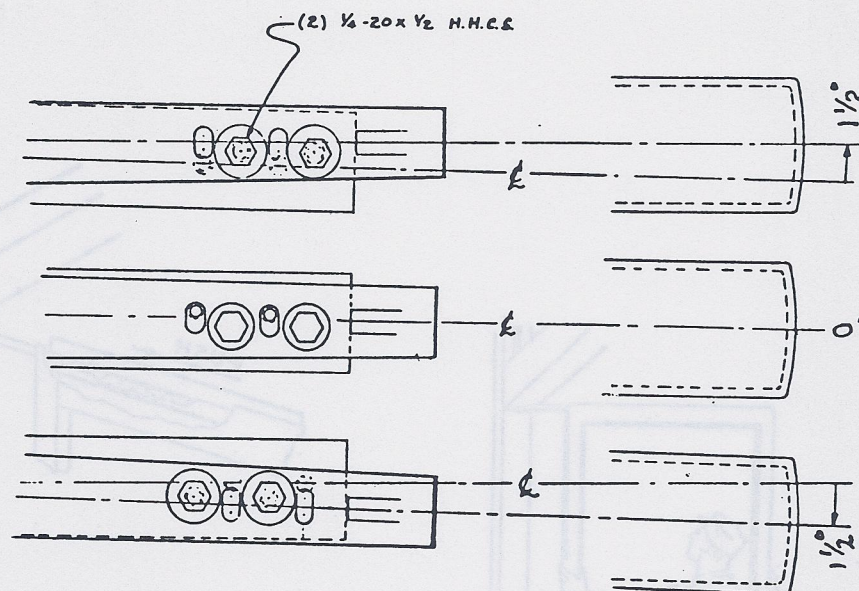


Fig.-21

E. Manually push door through a full 180° arc of swing to make sure everything is connected properly.

If everything is correct it will be possible to push door up to the normal closed door position, snap through the breakaway stop and continue on to the 90° full open position. Release door and it should close under control to the latch position and gently drift in to normal fully closed position.

11. Install Door.

A. The installation of the door is the same "snap-in" arrangement that Dor-O-Matic has used for several years.

As shown in Fig. #20, line up door with top arm, making sure arm is in top channel of door, gently slide door up against lower pivot.

B. Lift up door slightly and push back until bottom pivot locks into place.

C. Raise up on nose of door and push back until top arm snaps into place.

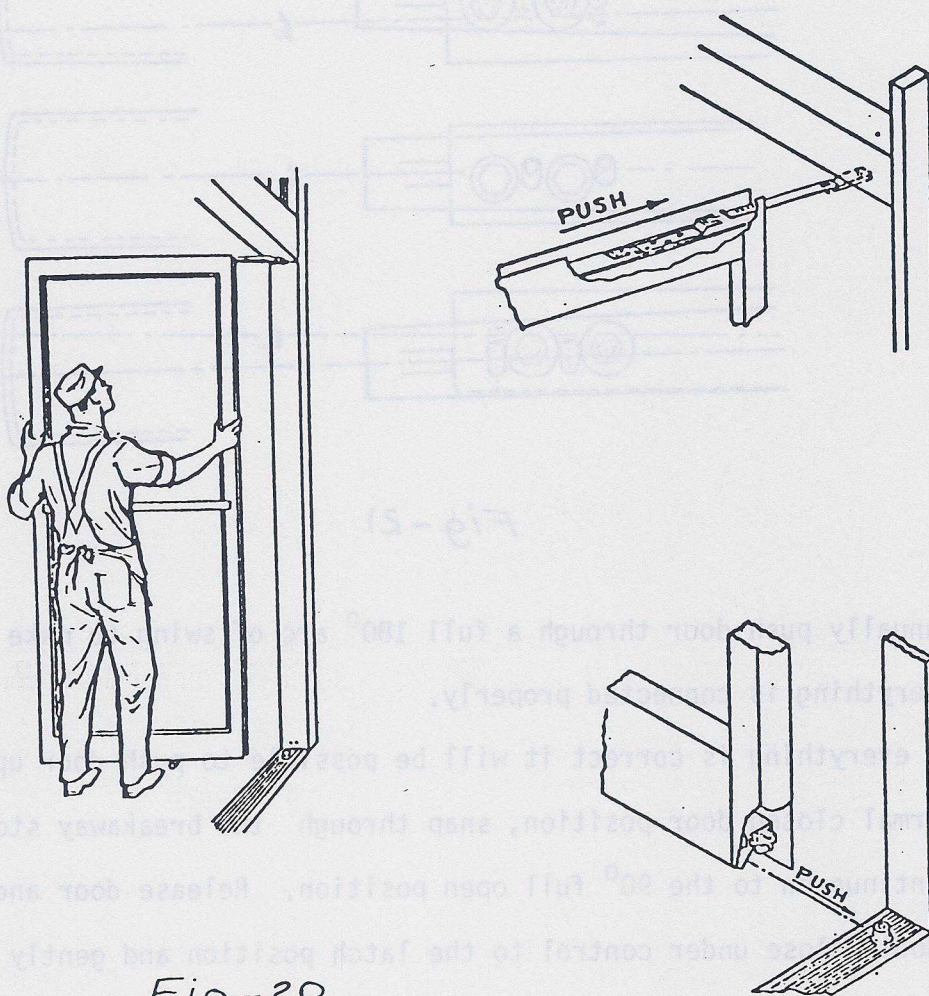


Fig-20

12. Glazing Door:

- A. Door may be operated automatically before it is glazed but the speed adjustments cannot be set properly until glass is installed,

CAUTION: The Glazing material used must comply with ANSI performance standard specification Z97.1-1972,

13. Operational check and adjustments:

WARNING: Extreme care must be used when making adjustments on control box. The potentiometers are very fragile and can be damaged if improper size screwdrivers are forced into driving slots or are forced beyond their limits of rotation.

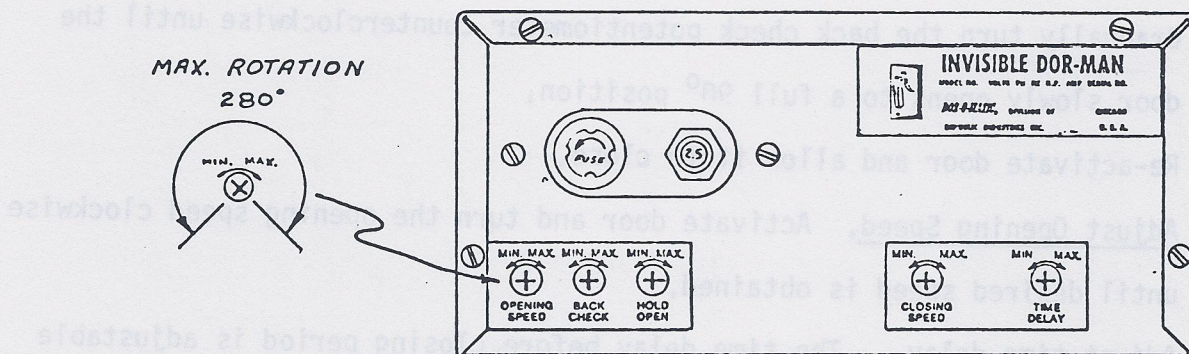


Fig - 22

- A. Turn all potentiometers counterclockwise to minimum settings.
B. Turn on power to operator.
C. Adjust hold open control. Step on carpet to activate, gradually increase "opening speed" potentiometer until door gently swings open to the 90° hold open point. Door should stop and cycle to and from the open position. Gradually turn the "hold open" potentiometer clockwise until the door stops cycling and remains in a steady position.

NOTE: If door does not cycle back and forth but remains steady with hold open control at minimum, do not attempt to increase control,

- D. Step off carpet and allow door to close.
 - E. Adjust closing speed. When door starts to close turn closing speed potentiometer clockwise to get desired closing speed.
 - F. Latching speed. There is no adjustment for the latching speed, it has been factory set to meet code requirements.
 - G. Adjust Back Check. Turn the back check potentiometer to maximum (the full clockwise position)
 - H. Step on carpet and activate door, it should open to approximately 75° and stop with a slight jolt and remain at this point.
 - I. Gradually turn the back check potentiometer counterclockwise until the door slowly opens to a full 90° position.
 - J. Re-activate door and allow it to close.
 - K. Adjust Opening Speed. Activate door and turn the opening speed clockwise until desired speed is obtained.
 - L. Adjust time delay. The time delay before closing period is adjustable from 1 to 30 seconds.
 - M. De-activate door and adjust time delay period as desired.
 - N. Re-cycle door several times to be certain all adjustments are correct.
- Repeat any or all of the preceding steps as required,

14. Operational Walk-Through Test.

NOTE: It is assumed that during the installation process any problems would have been found and corrected before this point. However, it is recommended that a complete walk-thru test now be performed.

It is recommended that this test be performed again when explaining proper operation to owner or person in charge as outlined in step 15-C.

- A. Opening and holding function: normally walk up to door and step on activating carpet. Door should open smoothly and silently to the back check point approximately 75° where it should slow down rapidly and drift into full 90° open without slamming.
- B. Remain standing on activating carpet for awhile making sure that door will not time out and close while activating carpet is activated.
- C. Step on through door opening and onto safety carpet. Again remain on safety carpet awhile also making sure that door will not close while safety carpet is activated.
- D. Step off safety carpet. After both carpets are clear the door should time out at the pre-set time delay period, Door should close quietly and smoothly to the latch point, approximately 15° open where it rapidly slows down and slowly drifts into the fully closed position without slamming.
- E. Safety function with door closed. Step back on safety carpet. Have someone else then step on activating mat. Door must not open.
- F. Step off safety mat and out of swing of door. Door should now open in normal manner.
- G. Have other person step off activating mat. Door should stand open until end of time delay cycle and then close as before.

15. Release of Astro-Swing system for service.

- A. Remove all tools and installation equipment and clean any debris from vicinity of door.
- B. Install all safety, traffic control, and instruction decals to door as required.

This is very important! Failure to do this leaves DOR-O-MATIC and the installer LIABLE for any accident that might occur. THIS MUST BE DONE.

- C. Verbally explain the proper operation of the door system to the owner or person in charge.
- D. Install the dress plates in the header.

MODEL 9663-000 SURFACE APPLIED OPERATOR

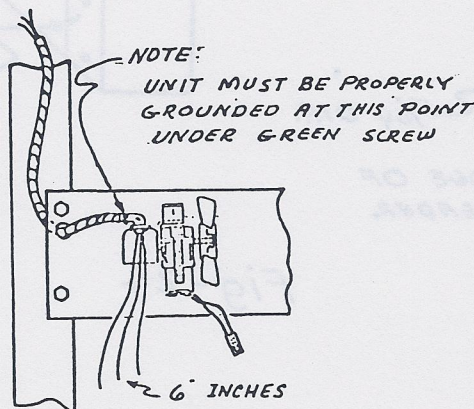
The surface applied and the center mounted headers are the same unit except for the end caps on header and the type arm supplied.

Most of the installation requirements are the same. The following instructions will not be as detailed as for the center mounted unit except in areas not covered previously.

16. PREPARATION:

- A. A suitable 115 volt power supply must be brought to the lock side end of header and connected to junction box in much the same manner, as previously described. Again this work usually is supplied by electrical contractor and exact routing of wiring must be determined at time of installation.

Fig-23



- B. Surface applied headers are shipped without mounting or wiring holes and must be prepared at time of installation. Drill templates are provided to aid in proper hole location.
- Because of numerous field conditions the exact location of wire entrance holes for the 115 volt power supply and the carpet leads is left entirely up to the ingenuity of the installer. However, all wiring must conform to all applicable building codes.

C. Header:

Apply drill template #81480-184 to header and transfer hole location with a center punch to both ends of header, 4 locations. For the center hole location establish proper center location from L. to R. Center punch on center line, $13/16$ up from the open end of header. Drill $5/16$ dia. holes for $1/4$ -20 x $5/8$ cap screws.

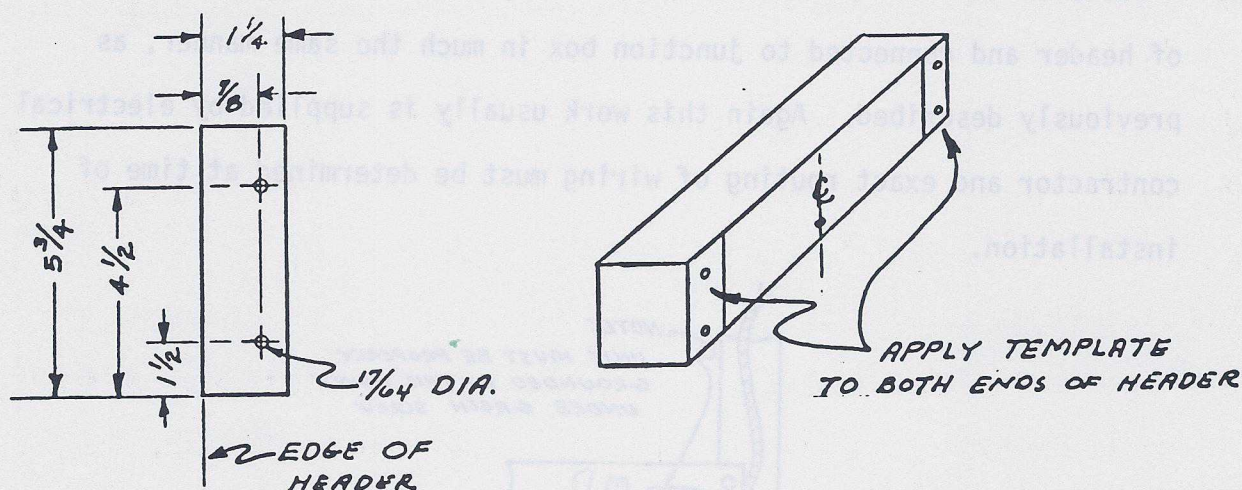


Fig-24

D. Frame:

Apply drill template #81481-184 to jamb and transfer hole locations with center punch to L.H. & R.H. vertical jams, 4 locations. For the center hole location establish proper center location from L. to R. center punch on center line $15/16$ " up from lower edge of headjamb. Drill & C' sink 5 holes for $1/4$ -20 flush mount rivet nuts, - install riv-nuts. (See Fig. 25)

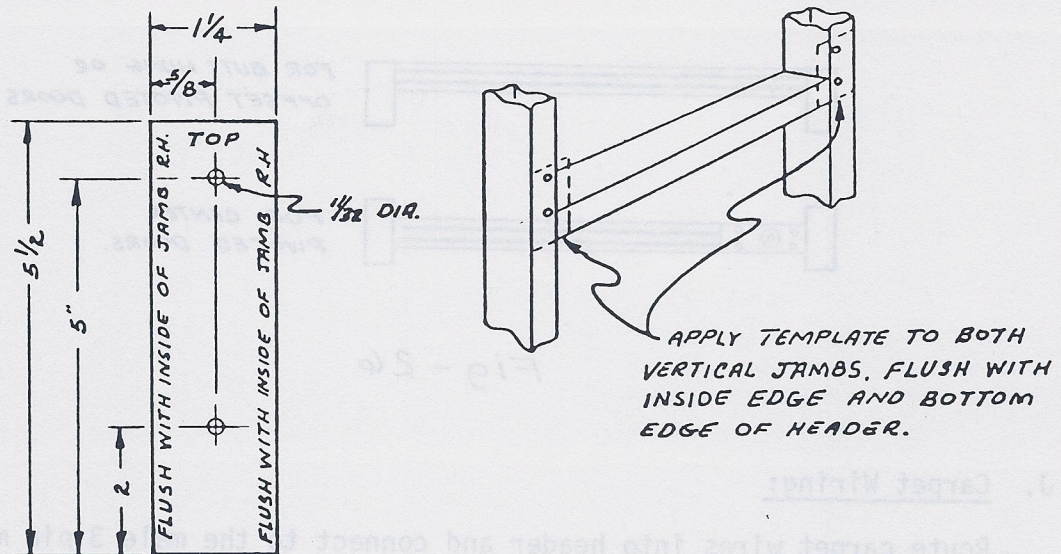


Fig - 25

- E. Make provisions for all power and carpet wiring holes at this time.
 - F. Header Mounting: Set header in place and secure with 5 - $\frac{1}{4}$ -20 x $\frac{5}{8}$ H.H. cap screws to door frame.
 - G. Wiring.
Connect the 115 volt line to junction box and connect the 3 wire female molex connector as described previously in Section 2 - H. Fig. # 6.
 - H. Operator:
Install operator as described in section 4 - A. Fig. 9
 - I. Carpets:
Install carpets and trim as required.
- NOTE: 1. If a center pivoted door is to be operated with a surface applied operator the carpet installation will be exactly the same as described in Section 5 - A through H.
2. If a butt hand or offset pivoted door is to be operated, no bottom pivot will be required. The pivot and block will be deleted and the threshold will go from jamb to jamb.
- (See Fig. 26)

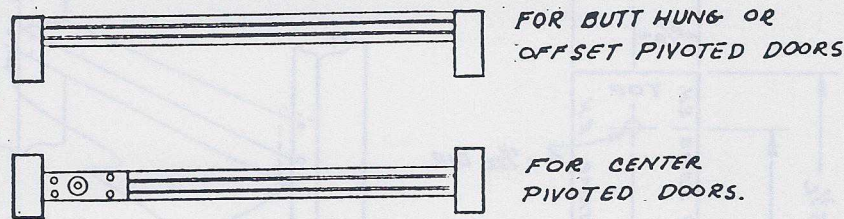


Fig - 26

J. Carpet Wiring:

Route carpet wires into header and connect to the male 3 pin molex connector plug as shown in Fig. 13.

17. Breakaway Stop:

- A. The breakaway stop is normally not required with surface applied units. If for some reason it is used, exact method of mounting must be worked out at time of installation.

18. Control Box:

- A. Install control box as described in Section 7 - A through D.

19. Final Wire Connection:

- A. Make all final wire connection the same as described in Section 8 - A through D. The only exception is that the breakaway switch assembly is not used and a jumper plug assembly must be used instead. (See Fig. 27)

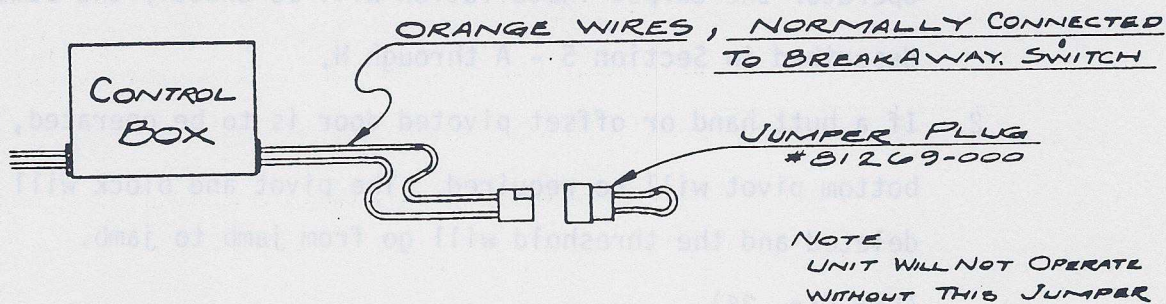
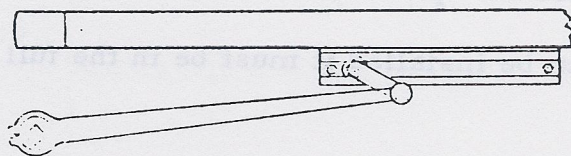


Fig. 27

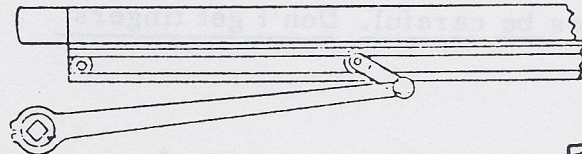
20. DOOR ARM INSTALLATION:

A. There are three types of arm assemblies available for use on different applications of surface applied operators.

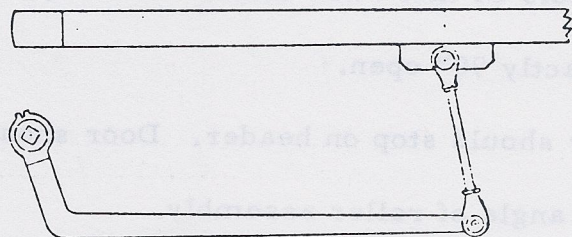
See Fig. #28.



#81100-XXX
NON HANDED
PULL TYPE NON BRAKEWAY



#81126-XXX
RIGHT OR LEFT HAND
PULL TYPE WITH PANIC BRAKEWAY



#81170-XXX
RIGHT OR LEFT HAND
PUSH TYPE

Fig-28

B. #81100-XXX NON BRAKEWAY ARM. (PULL)

1. Position the slide channel on face of door as indicated on template provided.
2. Mark exact position of 3 mounting screw holes on door, drill and tap for a #10-32 screw.
3. Permanently install slide channel on door and open door to full 90° position.
4. The operator has been setting with the spindle rotated to the full at rest position. Before arm can be installed it must be in the full 90° open position.
5. Turn on power to operator and activate door. It may start to move slowly toward the open position. If not, place a wrench on spindle and manually force door to the point where it will operate.

Caution: When operator activates be careful. Don't get fingers caught on header or door.

6. Keep operator activated until arm is completely installed.
7. Install #81158-000 roller assembly in slide channel as indicated on template.
8. Install adapter and arm on spindle so that when roller assembly and arm are attached door will be at exactly 90° open.
9. Let door close, plastic bumper should stop on header. Door should be fully closed. If not, re-adjust angle of roller assembly.
10. Repeat steps 8 and 9 as required.

Continued on next page.

B. #81100-XXX NON BRAKEWAY ARM (PULL) continued:

11. Refer to section 21 for adjustment of micro switches to obtain proper back check and latching operation.

C. #81126-XXX PANIC BREAKAWAY ARM (PULL)

1. The procedure for installing this arm assembly is virtually the same as outlined for the non-breakaway model.
2. Refer to template and previous procedure.

D. #81170-XXX ARM AND LINK ASSEMBLY (PUSH)

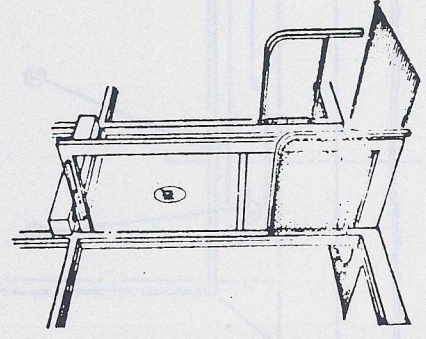
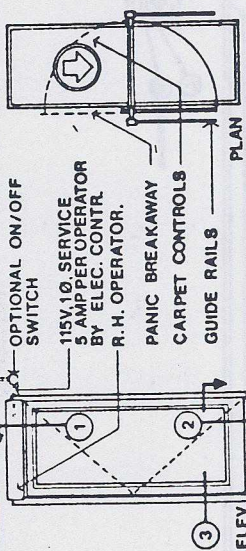
1. Position the door bracket on face of door as indicated on template.
2. Mark exact position of screw holes on door. Drill two holes through door for the 1/4-20 Sex bolts provided.
3. Secure door bracket to door and open to 90°.
4. Operator must now be opened automatically to the full open position. Refer to Section B. Steps 4, 5, and 6 for proper procedure.
5. Install arm on operator as indicated on template.
6. Very carefully measure exact length required for the threaded rod. Cut to length and install as indicated on template.
7. Let door close and check for proper operation of latch cam. Adjust if necessary. Refer to Section #21.

DOR-O-MATIC®

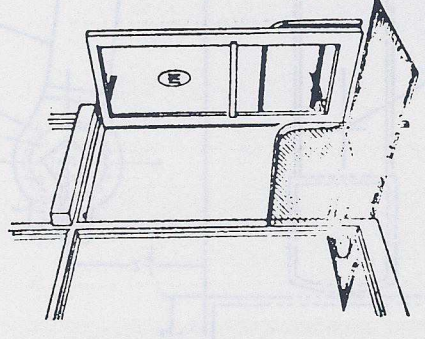
DIVISION OF REPUBLIC INDUSTRIES, INC.
7350 West Wilson Ave., Chicago, Ill. 60656
Phone (312) 867-7400

ASTRO SWING

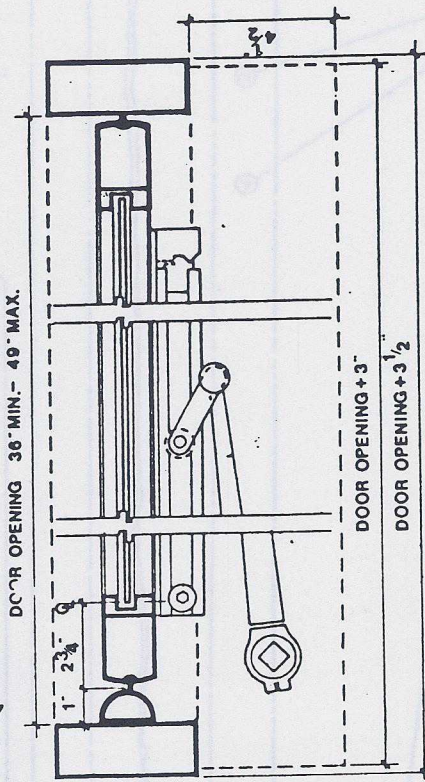
SWING DOOR SYSTEM
SINGLE DOOR, SURFACE APPLIED,
CENTER PIVOTED, INCOMING, PANIC



RIGHT HAND IN
VIEW FROM INTERIOR

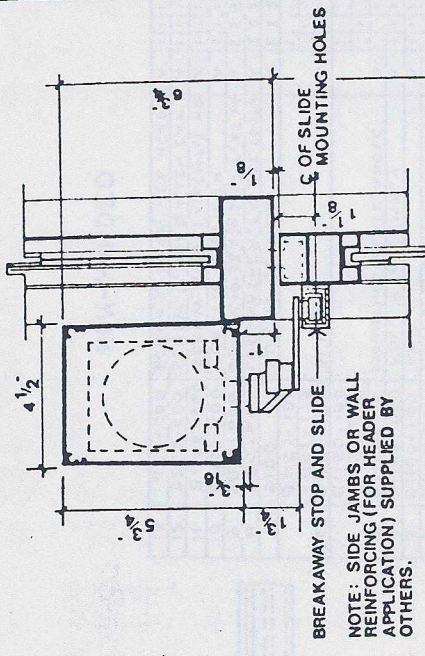
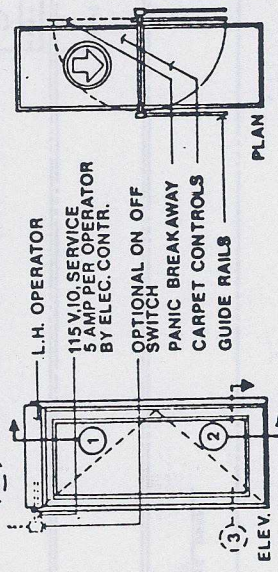


LEFT HAND IN
VIEW FROM INTERIOR

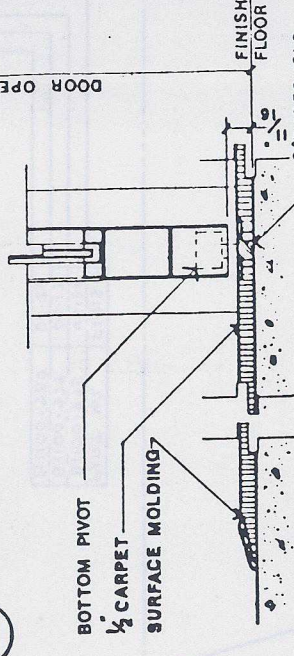


JAMB RIGHT HAND IN

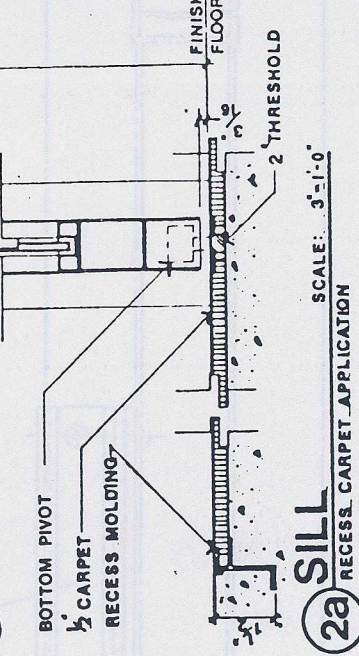
AMB FOR LEFT HAND IN REVERSE RIGHT HAND IN



1 HEAD
SCALE: 3" = 1'-0"



2 SILL
SCALE: 3" = 1'-0"

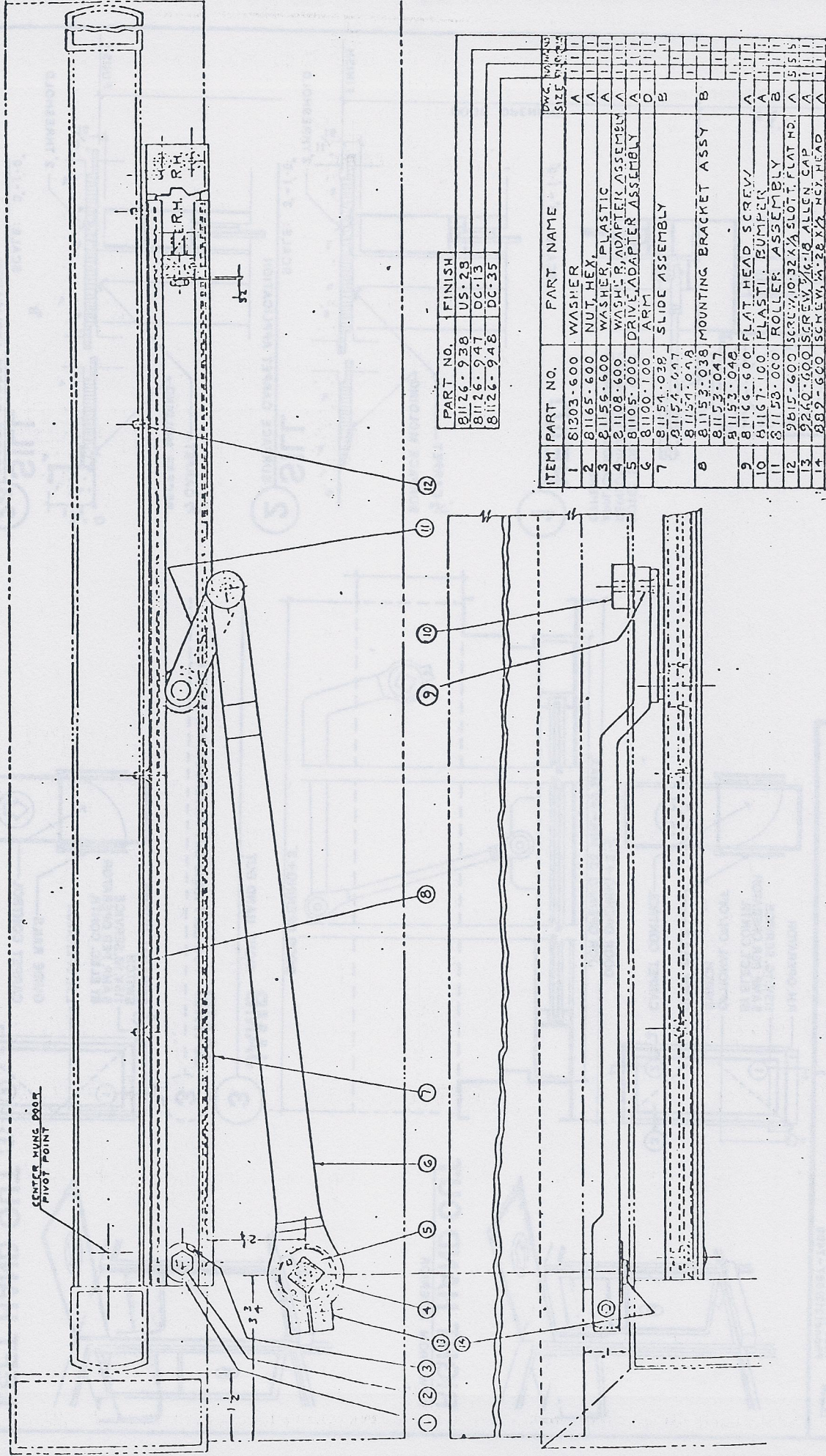


2a SILL
SCALE: 3" = 1'-0"

SWING-4 FEB 79

SWING-4 FEB 79

Fig - 30



PART NO.	FINISH
81126-938	US-28
81126-947	DC-13
81126-948	DC-35

ITEM	PART NO.	PART NAME	DWG. REV.	SIZE
1	81203-600	WASHER	A	1 1/2
2	81165-600	NUT, HEX.	A	1 1/2
3	81156-600	WASHER, PLASTIC	A	1 1/2
4	81108-600	WASHER, ADAPTER ASSEMBLY	A	1 1/2
5	81105-600	DRIVE ADAPTER ASSEMBLY	A	1 1/2
6	81100-100	ARM	D	1 1/2
7	81151-038	SLIDE ASSEMBLY	B	1 1/2
8	81153-038	MOUNTING BRACKET ASSY	B	1 1/2
9	81153-042			
10	81167-100	FLAT HEAD SCREW	A	1 1/2
11	81153-060	PLASTIC BUMPER	A	1 1/2
12	9815-600	ROLLER ASSEMBLY	B	1 1/2
13	9815-600	SCREW, 10-32 X 1/2, FLAT HD.	A	5/16
14	9815-600	SCREW, 10-32 X 1/2, FLAT HD.	A	5/16

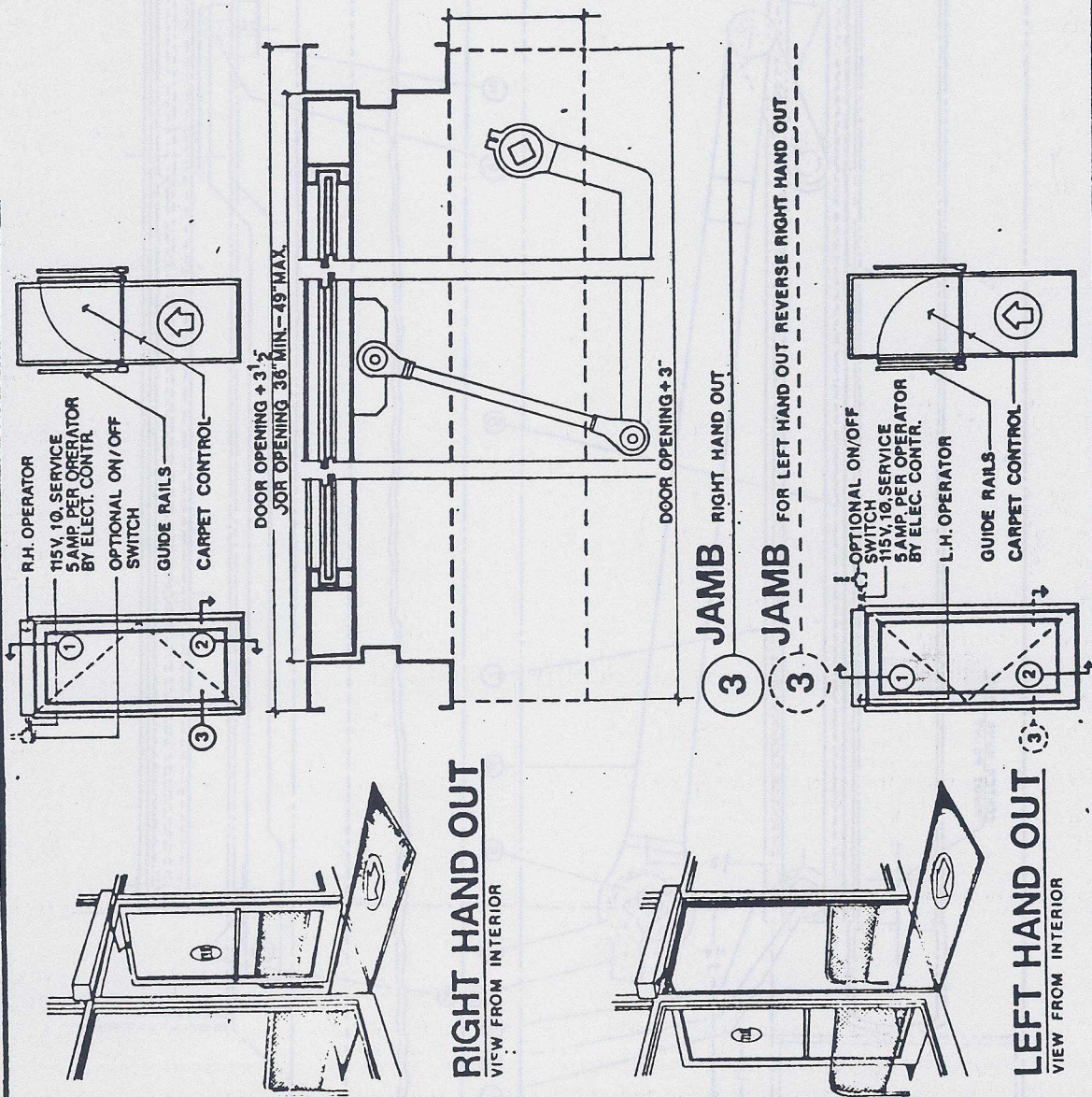
Fig - 30-A



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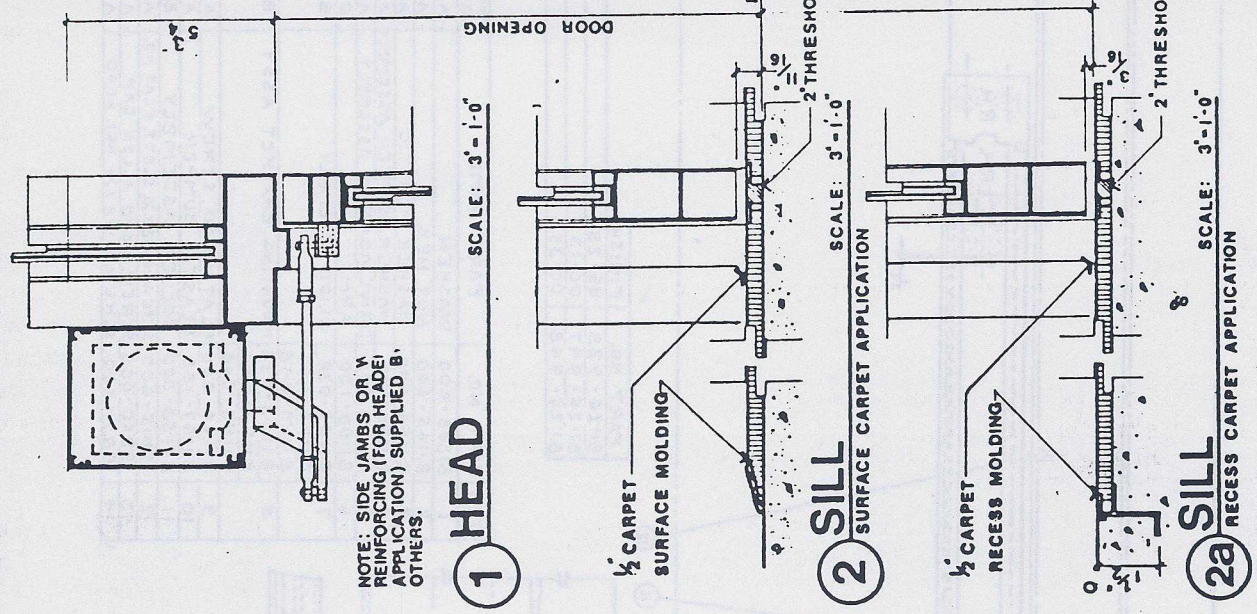
ASTRO SWING SWING DOOR SYSTEM
SINGLE DOOR, SURFACE APPLIED,
OFFSET PIVOTED, OUTGOING STANDARD



SWING-7 FEB 79

SWING-7 FEB 79

Fig - 31

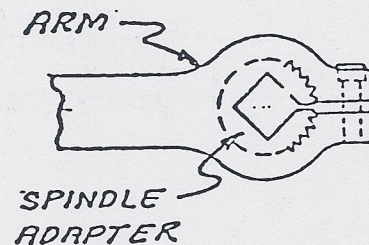
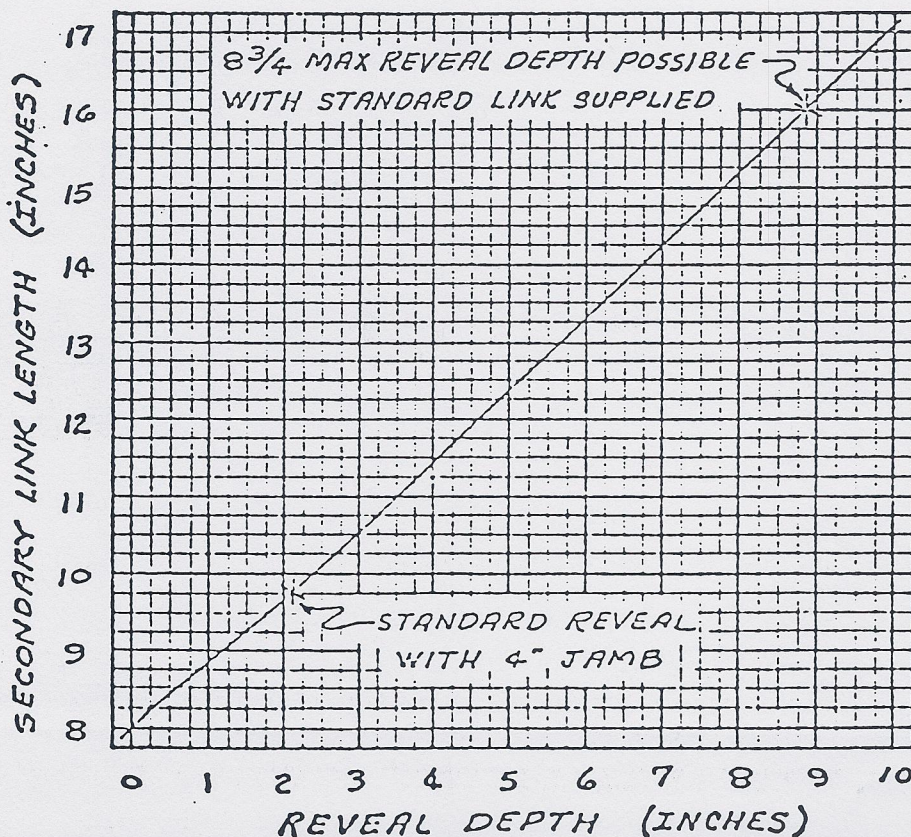
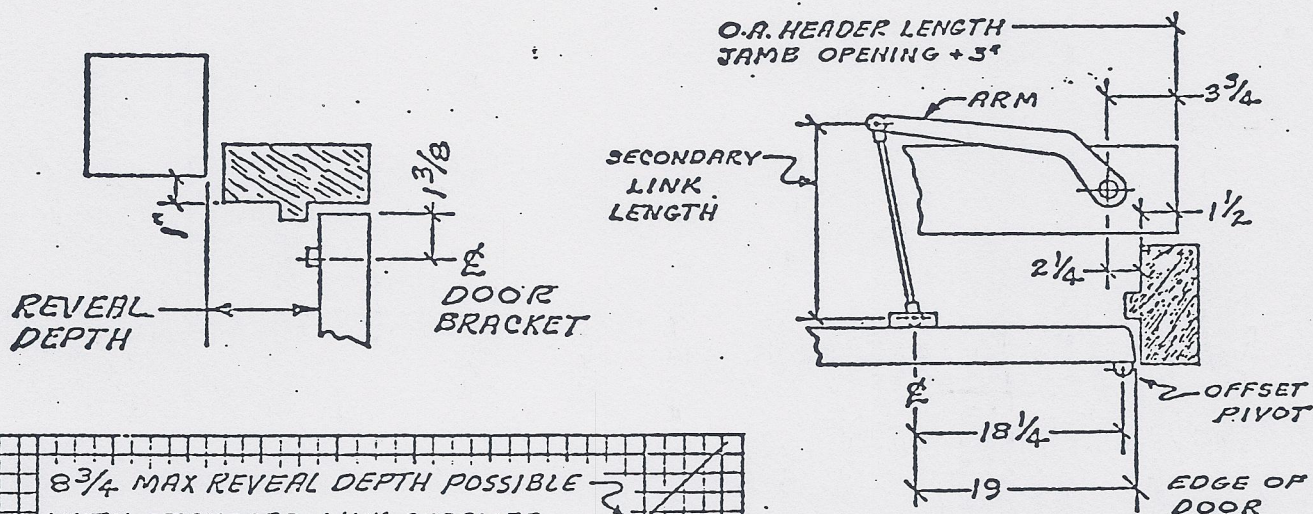


NOTE: SIDE JAMBS OR V REINFORCING (FOR HEAD) APPLICATION) SUPPLIED B. OTHERS.

FOR
SURFACE APPLIED ASTRO-SWING OPERATORS ON
3/4" OFFSET PIVOTED DOOR (PUSH OPERATION)

NOTE:

1. Make certain operator case is properly mounted above door as detailed below.
2. Secondary (link) Arm length is determined by measuring the reveal, dimension (in inches) from surface of door to which arm is attached to back surface of operator case. If Hanger Mouldings are used these are considered as a part of the reveal. Using the horizontal scale, calibrated in inches and quarter inches, follow the vertical line of the reveal dimension upwards until it intersects the slanted line. Reading to the left on the vertical scale will determine the exact length between centers of the turnbuckle, self centering, arm connections.
3. Some adjustment of back check and latch cams may be required, if so, refer to pages 43 and 44 of service manual.



NOTE:

Install arm and adapter so that slots are as near in line as possible. Should not need to be off center more than 3 notches either way.

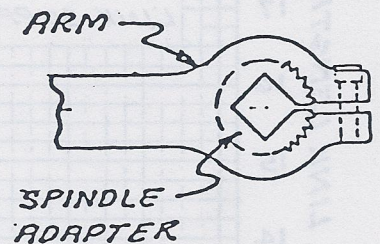
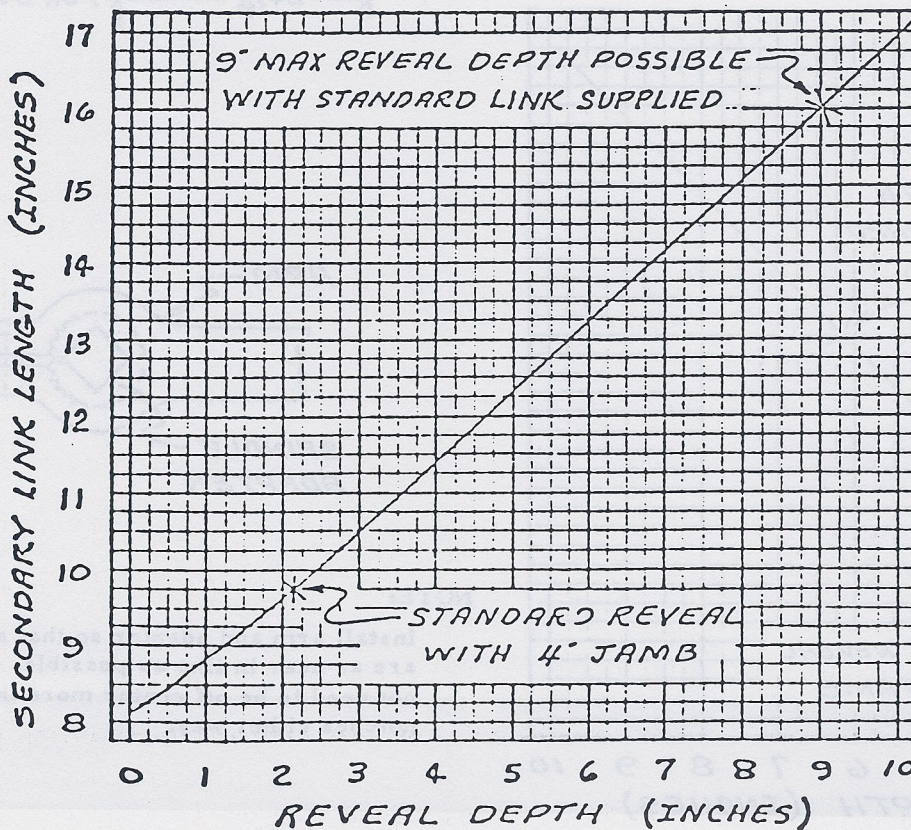
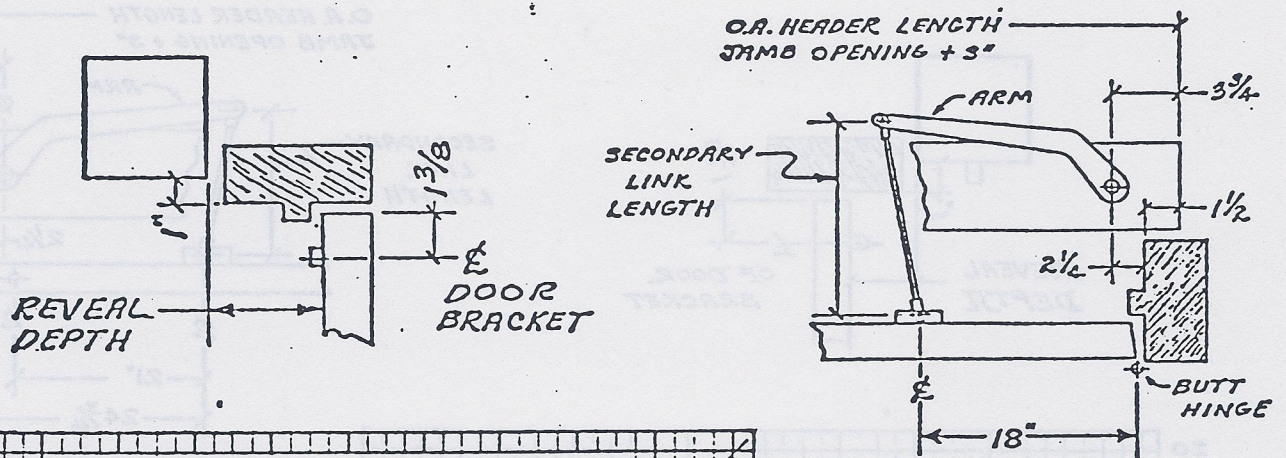
ATTACHMENT POINT AND LINK LENGTH CHART

FOR

SURFACE APPLIED ASTRO-SWING OPERATORS ON BUTT HINGED DOOR (PUSH OPERATION)

NOTE:

1. Make certain operator case is properly mounted above door as detailed below.
2. Secondary (link) Arm length is determined by measuring the reveal, dimension (in inches) from surface of door to which arm is attached to back surface of operator case. If Hanger Mouldings are used these are considered as a part of the reveal. Using the horizontal scale, calibrated in inches and quarter inches, follow the vertical line of the reveal dimension upwards until it intersects the slanted line. Reading to the left on the vertical scale will determine the exact length between centers of the turnbuckle, self centering, arm connections.
3. Some adjustment of back check and latch cams may be required, if so, refer to pages 43 and 44 of service manual.



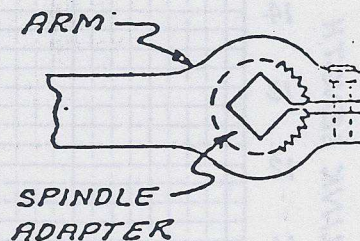
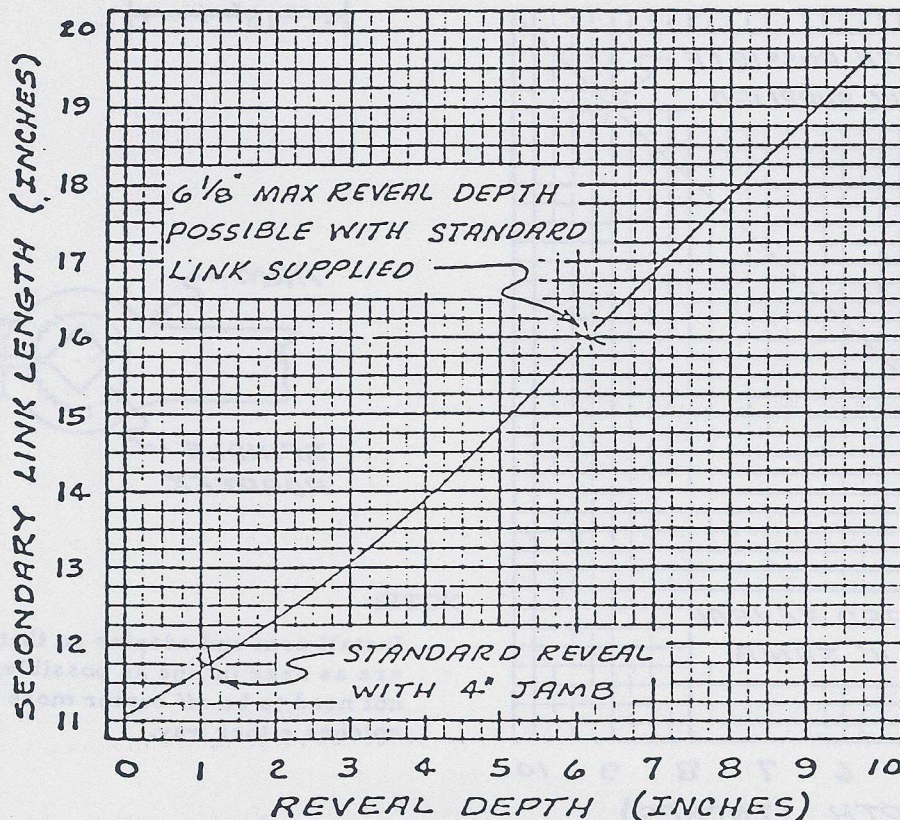
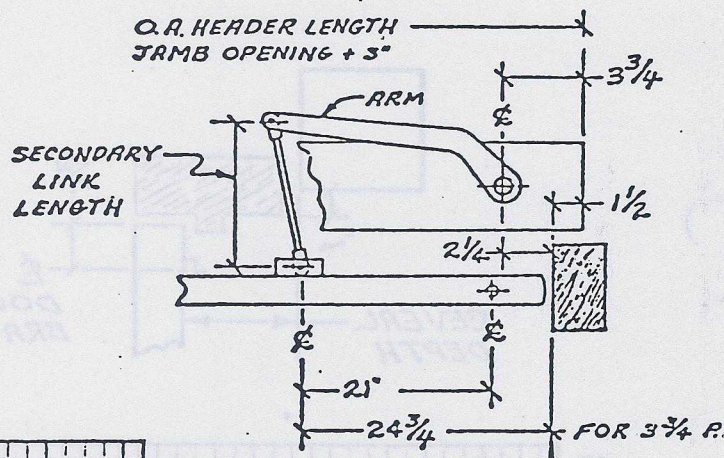
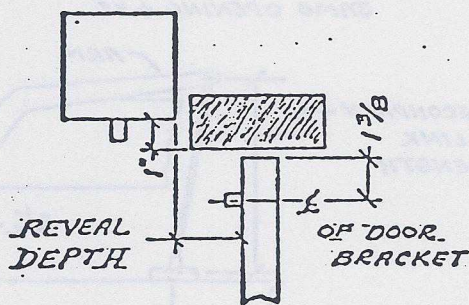
NOTE:

Install arm and adapter so that slots are as near in line as possible. Should not need to be off center more than 3 notches either way.

ATTACHMENT POINT AND LINK LENGTH CHART FOR SURFACE APPLIED ASTRO-SWING OPERATORS ON 3-3/4" CENTER PIVOTED DOOR (PUSH OPERATION)

NOTE:

1. Make certain operator case is properly mounted above door as detailed below.
2. Secondary (link) Arm length is determined by measuring the reveal, dimension (in inches) from surface of door to which arm is attached to back surface of operator case. If Hanger Mouldings are used these are considered as a part of the reveal. Using the horizontal scale, calibrated in inches and quarter inches, follow the vertical line of the reveal dimension upwards until it intersects the slanted line. Reading to the left on the vertical scale will determine the exact length between centers of the turnbuckle, self centering, arm connections.
3. Some adjustment of back check and latch cams may be required, if so, refer to pages 43 and 44 of service manual.



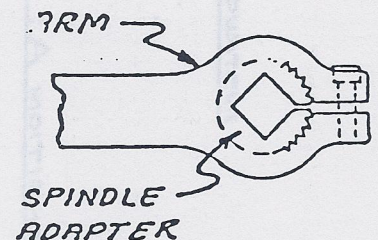
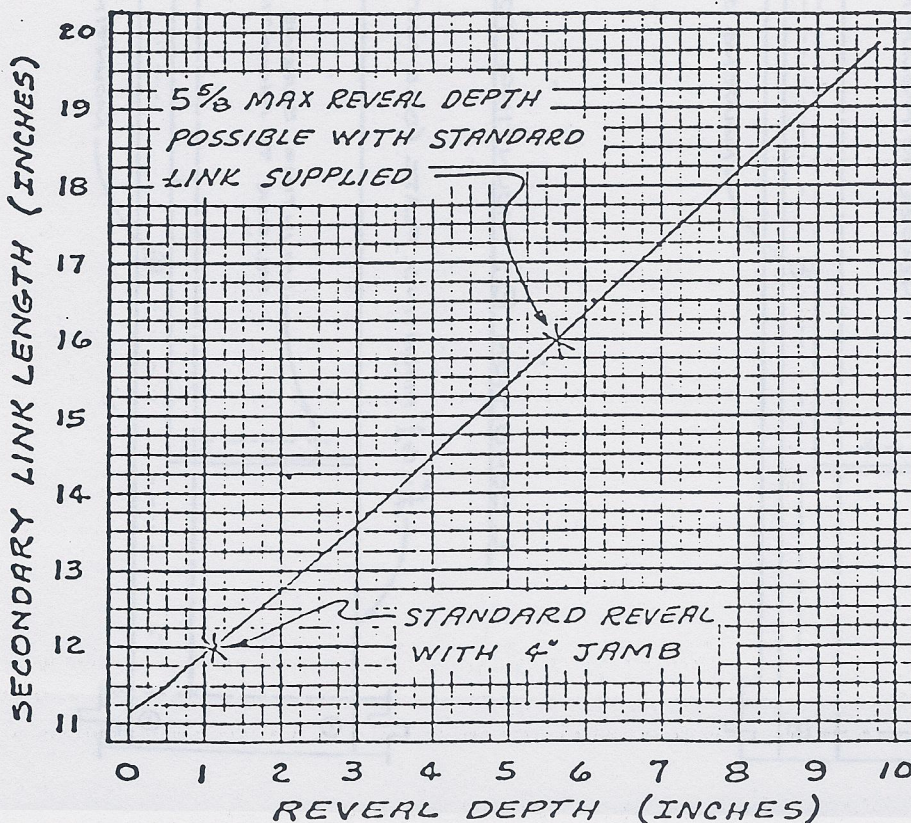
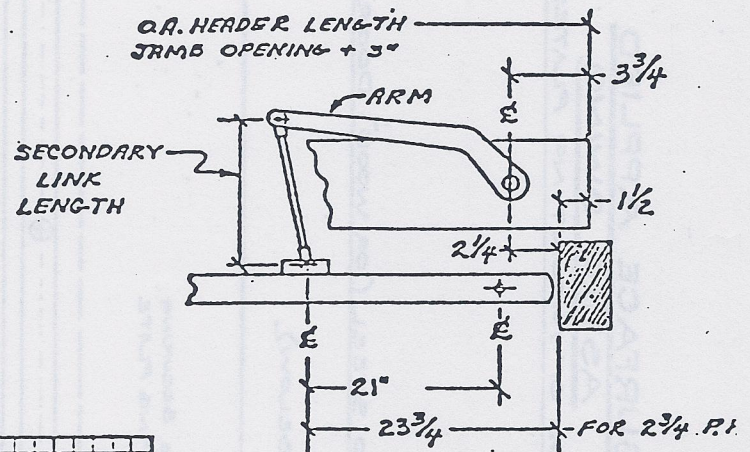
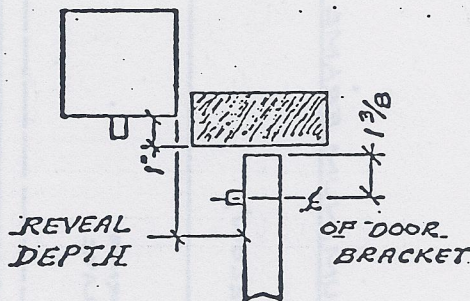
NOTE:

Install arm and adapter so that slots are as near in line as possible. Should not need to be off center more than 3 notches either way.

ATTACHMENT POINT AND LINK LENGTH CHART FOR SURFACE APPLIED ASTRO-SWING OPERATORS ON 2-3/4" CENTER PIVOTED DOOR (PUSH OPERATION)

NOTE:

1. Make certain operator case is properly mounted above door as detailed below.
2. Secondary (link) Arm length is determined by measuring the reveal, dimension (in inches) from surface of door to which arm is attached to back surface of operator case. If Hanger Mouldings are used these are considered as a part of the reveal. Using the horizontal scale, calibrated in inches and quarter inches, follow the vertical line of the reveal dimension upwards until it intersects the slanted line. Reading to the left on the vertical scale will determine the exact length between centers of the turnbuckle, self centering, arm connections.
3. Some adjustment of back check and latch cams may be required, if so, refer to pages 43 and 44 of service manual.



NOTE:

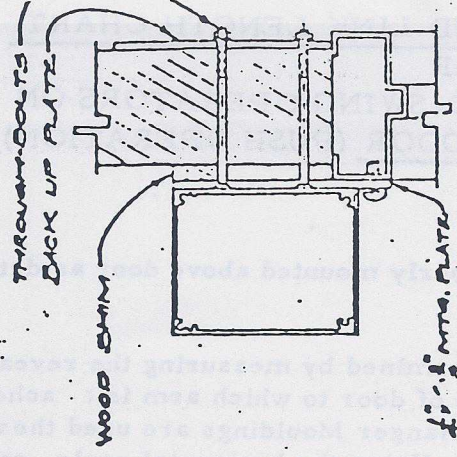
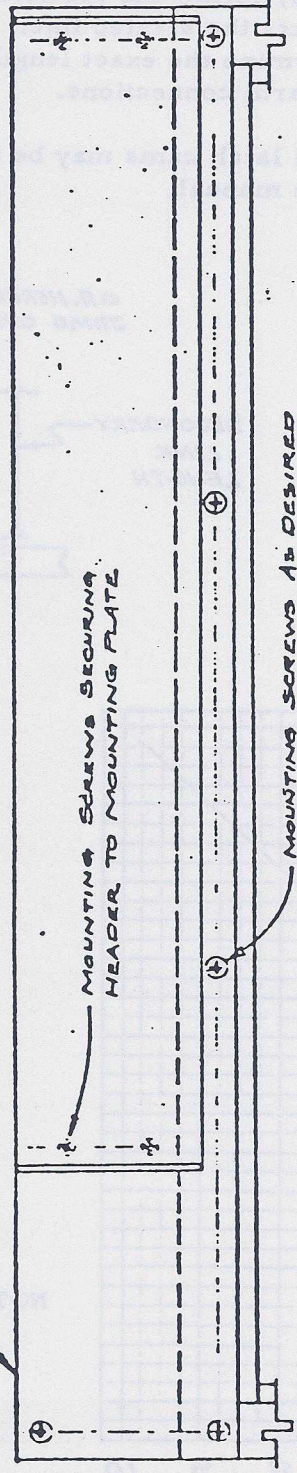
Install arm and adapter so that slots are as near in line as possible. Should not need to be off center more than 3 notches either way.

SURFACE APPLIED ASTRO SWING

INSTRUCTIONS FOR USE OF MOUNTING PLATES WHEN REQUIRED

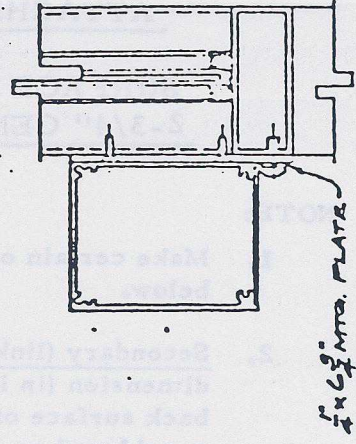
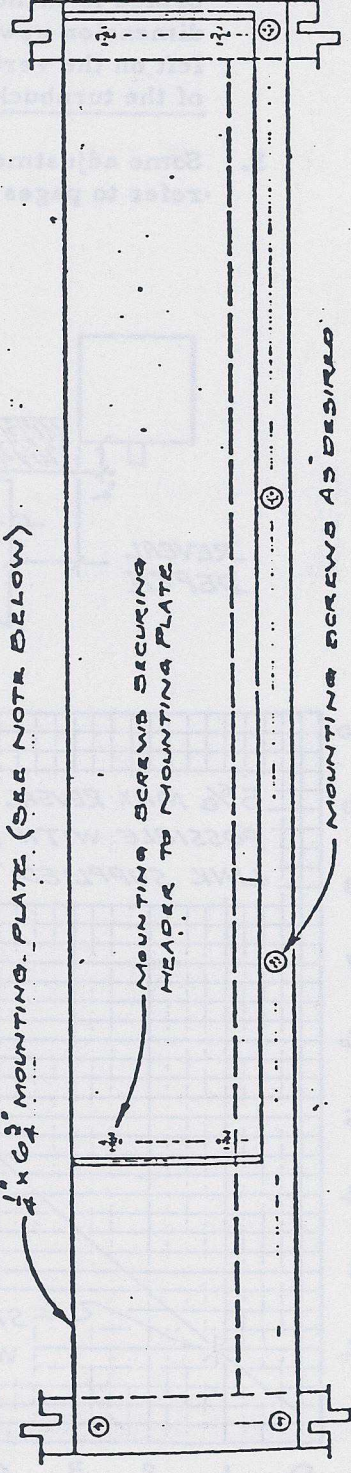
1. CONDITION A: MOUNTING TO STEEL (OR WOOD) DOOR FRAMES

$\frac{1}{4} \times 6 \frac{3}{4}$ " MOUNTING PLATE (SEE NOTE BELOW)



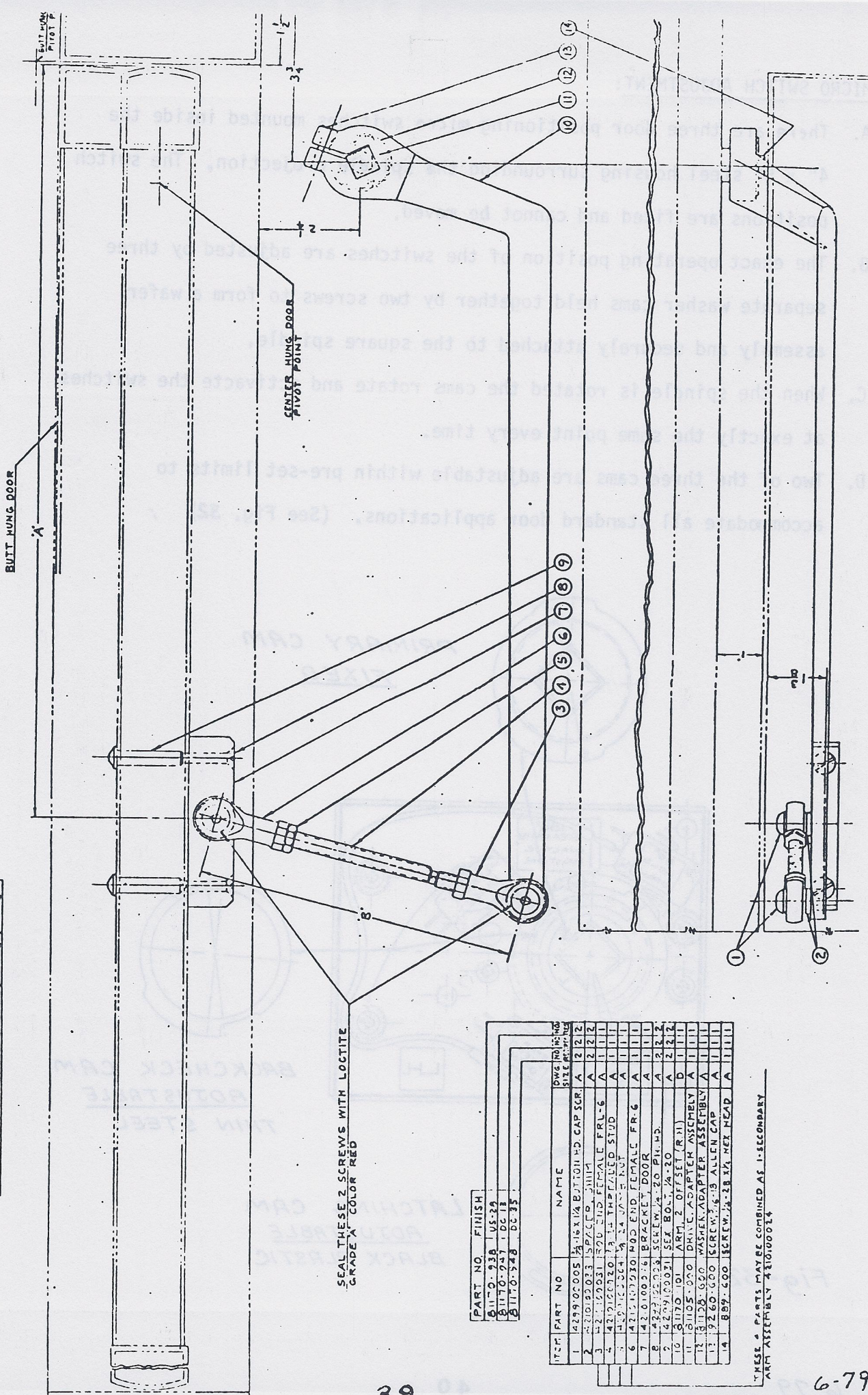
2. CONDITION B: MOUNTING TO ALUMINUM FRAME WITH GLASS TRANSOM

$\frac{1}{4} \times 6 \frac{3}{4}$ " MOUNTING PLATE (SEE NOTE BELOW)



NOTE: $\frac{1}{4} \times 6 \frac{3}{4}$ " MOUNTING PLATE STOCK IN 12'-0" LENGTH AVAILABLE FROM THE FACTORY

TYPE OF DOOR	DIM. A	DIM. B
CENTER HUNG (SHOWN)	17 3/4	7 1/8
BUTT HUNG	13 1/2	10 1/2



SEAL THESE 2 SCREWS WITH LOCTITE
GRADE A COLOR RED

PART NO.	FINISH
81170-238	US-24
81170-247	DC-18
81170-248	DC-35

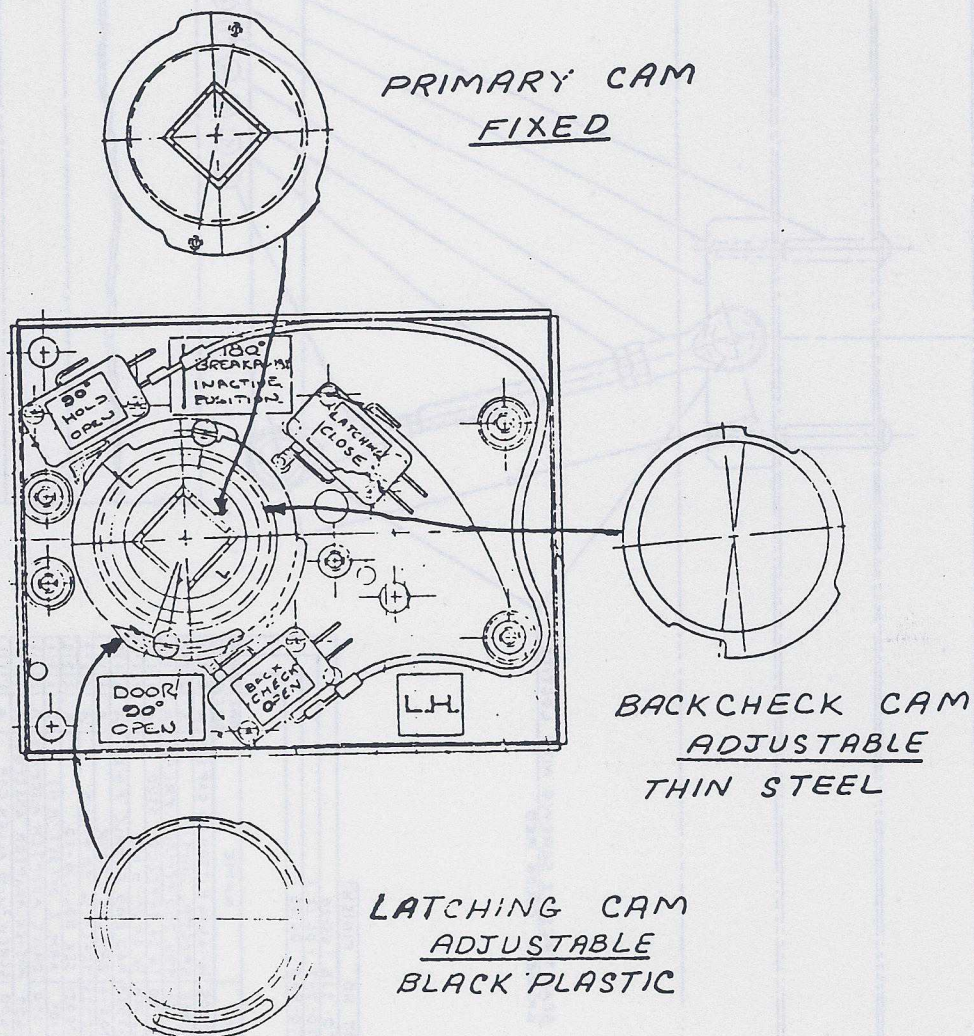
ITEM	PART NO.	NAME	DWG. NO.	REV.	DATE
1	4299-02005	1/4-18X1/4 BUTT HUNG DOOR CAP SCR.	A	2	12/2
2	421003-023	1/4-20X1/4 BRACKET DOOR	A	2	12/2
3	421100031	1/4-20X1/4 END FEMALE FRL-6	A	1	11/1
4	421000020	1/4-20X1/4 THREAILED STUD	A	1	11/1
5	421000024	1/4-20X1/4 NUT	A	1	11/1
6	421000020	1/4-20X1/4 END FEMALE FRL-6	A	1	11/1
7	421000024	1/4-20X1/4 NUT	A	1	11/1
8	421000023	1/4-20X1/4 BRACKET DOOR	A	2	12/2
9	421000023	1/4-20X1/4 BRACKET DOOR	A	2	12/2
10	421000023	1/4-20X1/4 BRACKET DOOR	A	2	12/2
11	421000023	1/4-20X1/4 BRACKET DOOR	A	2	12/2
12	421000023	1/4-20X1/4 BRACKET DOOR	A	2	12/2
13	421000023	1/4-20X1/4 BRACKET DOOR	A	2	12/2
14	421000023	1/4-20X1/4 BRACKET DOOR	A	2	12/2

THESE 4 PARTS MAY BE COMBINED AS 1-SECONDARY
ARM ASSEMBLY 421000023

Fig-31-A

21. MICRO SWITCH ADJUSTMENT:

- A. There are three door positioning micro switches mounted inside the 4" x 5" steel housing surrounding the spindle projection. The switch positions are fixed and cannot be moved.
- B. The exact operating position of the switches are adjusted by three separate washer cams held together by two screws to form a wafer assembly and securely attached to the square spindle.
- C. When the spindle is rotated the cams rotate and activate the switches at exactly the same point every time.
- D. Two of the three cams are adjustable within pre-set limits to accommodate all standard door applications. (See Fig. 32)



- E. To make cam position adjustments remove the 4 phillips head screws and remove the two sectional covers from switch housing. This arrangement makes it possible to adjust cam position even after door has been installed.
- F. To adjust position of cams gently loosen the two # 4-40 pan head screws holding the wafer together.
- G. By using a small screwdriver it is very easy to re-position the cams anywhere in their adjustment range as required.
- H. CAUTION: Do not remove the 2 #4-40 screws completely as two of the cams will fall off.

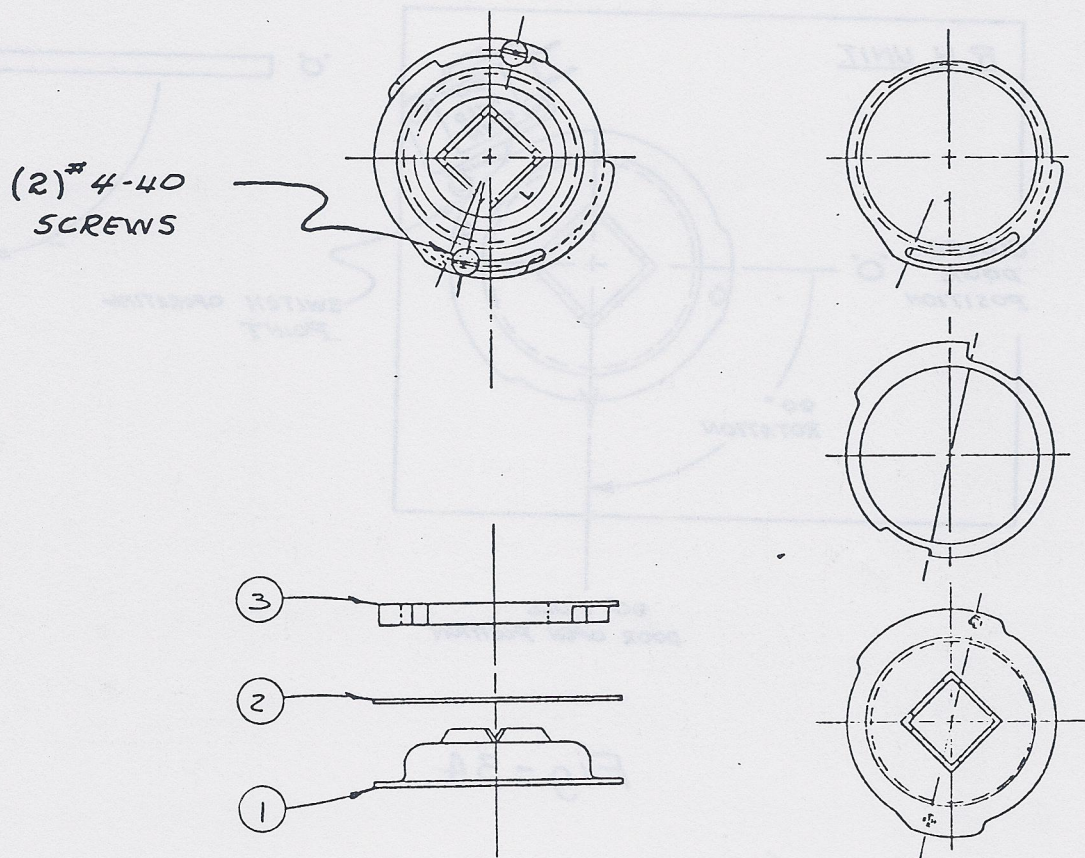


Fig - 33

22. Cam Identification and Adjustment Range Details:

A. The switch cams are as follows:

1. Primary Cam: This cam is non-adjustable as it is pressed onto the spindle. It also serves as the mounting for the other two cams. Its only function is to operate (depress) the 90° hold open switch. When door opens to a full 90°, at that point the applied voltage to motor is reduced to approximately 18 volts or just enough to hold door steady.

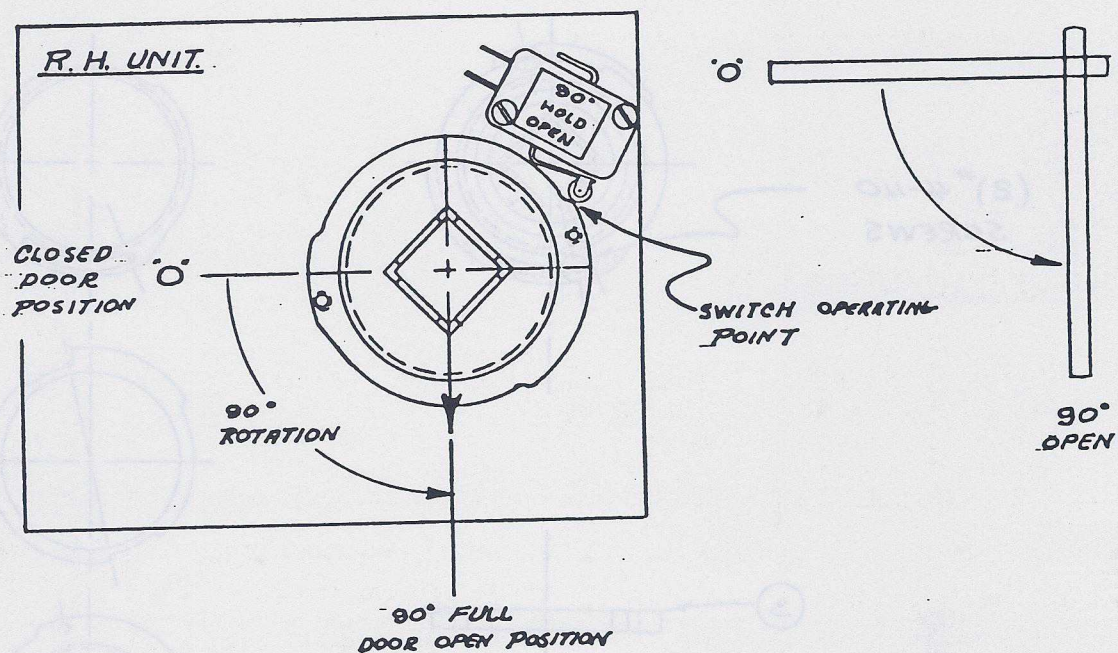


Fig - 34

2. Back Check Cam: This is a thin cam fitted around flange of the primary cam. It operates the micro switch marked "back check - open". This switch is functional during both the opening and back check cycles of the door. Its normal function is to keep the switch roller depressed during the opening portion of cycle and then release the switch for the back check portion of cycle. By rotating this cam we can adjust the point at which the switch is "released" to any point between 60° and 80° of open door position.

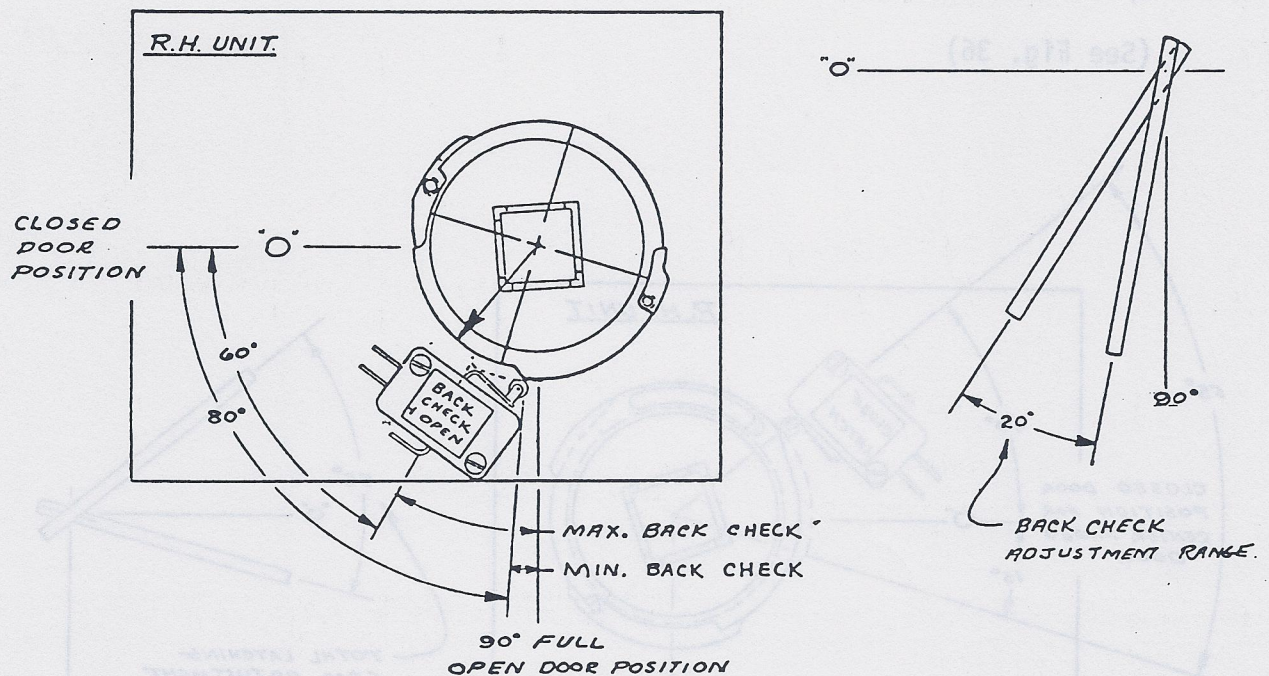


Fig-35

3. Latching Cam: This is a Black Delrin Cam which also fits around flange on the primary cam. It operates the micro switch marked "Latching - Close." This switch is functional during both the closing and latching cycles of the door. Its normal function is to keep the switch roller depressed during the closing portion of the cycle and then release the switch for the latch portion of cycle. This cam has an adjustment range of approximately 55° . It will also be the adjustment most often used when setting up a surface applied unit as this is the cam that allows us to effectively control the door for approximately 130° of spindle rotation. By rotating this cam we can adjust the point at which the switch is released to any point during the closing cycle from 75° to 130° of spindle rotation.

(See Fig. 36)

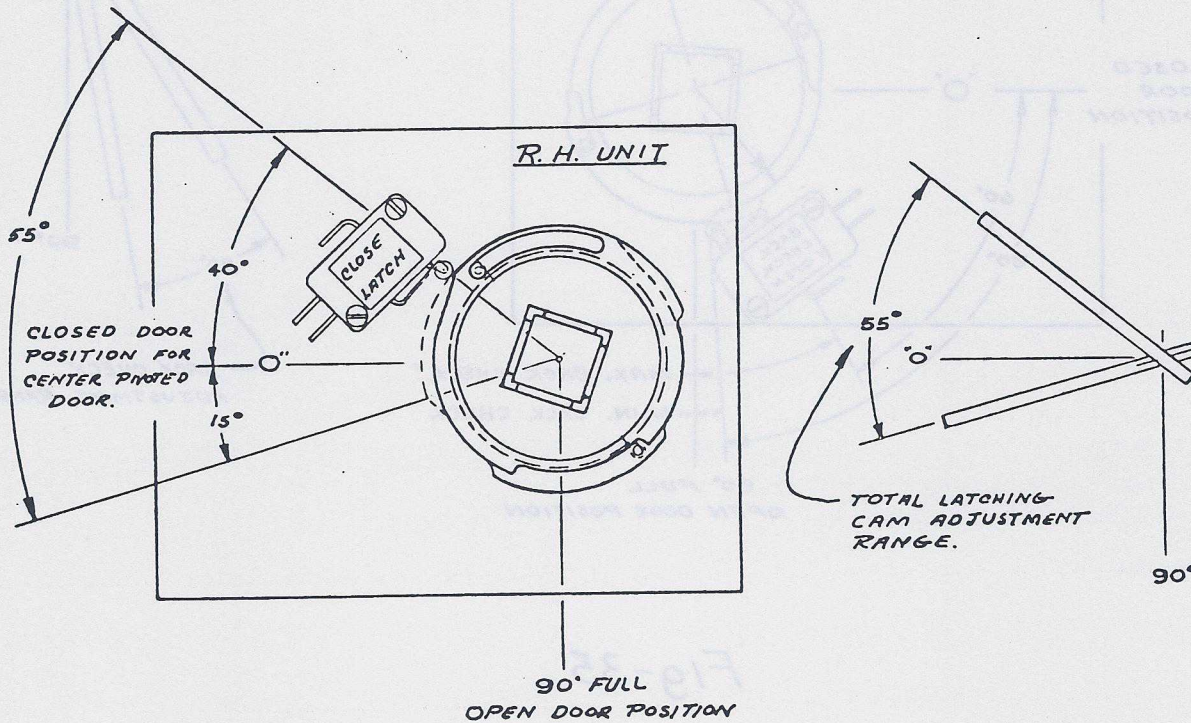


Fig-36

- B. After cams are adjusted to desired position be sure to re-tighten the 2 - #4-40 screws before trying to operate door,
- C. After all adjustments are complete install the two sectional covers to protect switches.

DO'S AND DON'TS

1. DO NOT try to use Astro-Swing on large, heavy doors without checking with factory first.
2. DO NOT connect any remote activating device to door unless it is located within "line of sight" of door.
3. DO NOT attempt to use a fuse larger than specified.
4. DO NOT attempt to modify factory wiring or connect into existing electrical circuit any other electrical device.
5. DO NOT attempt to connect the 115 volt power supply line into building lighting system operating FLORESCENT LIGHTS.
6. DO make certain operator is connected to a separate 115 volt circuit from entrance panel.
7. DO make certain operator is properly grounded, with a separate green wire.
8. DO make certain that all connections are proper and secure before turning on power.
9. DO make certain that all wires near the fan area are properly dressed and secured to prevent any interference with fan blade.
10. DO make certain that all safety labels and instruction decals relating to door operation are properly applied to door before leaving job.
11. DO verbally instruct owner or person in charge of proper operation of door.
12. DO also instruct owner or person in charge of his responsibility of inspecting door for:
 1. occasional damage
 2. developing problems
 3. minor preventative maintenance
 4. who and where to call for service when required.

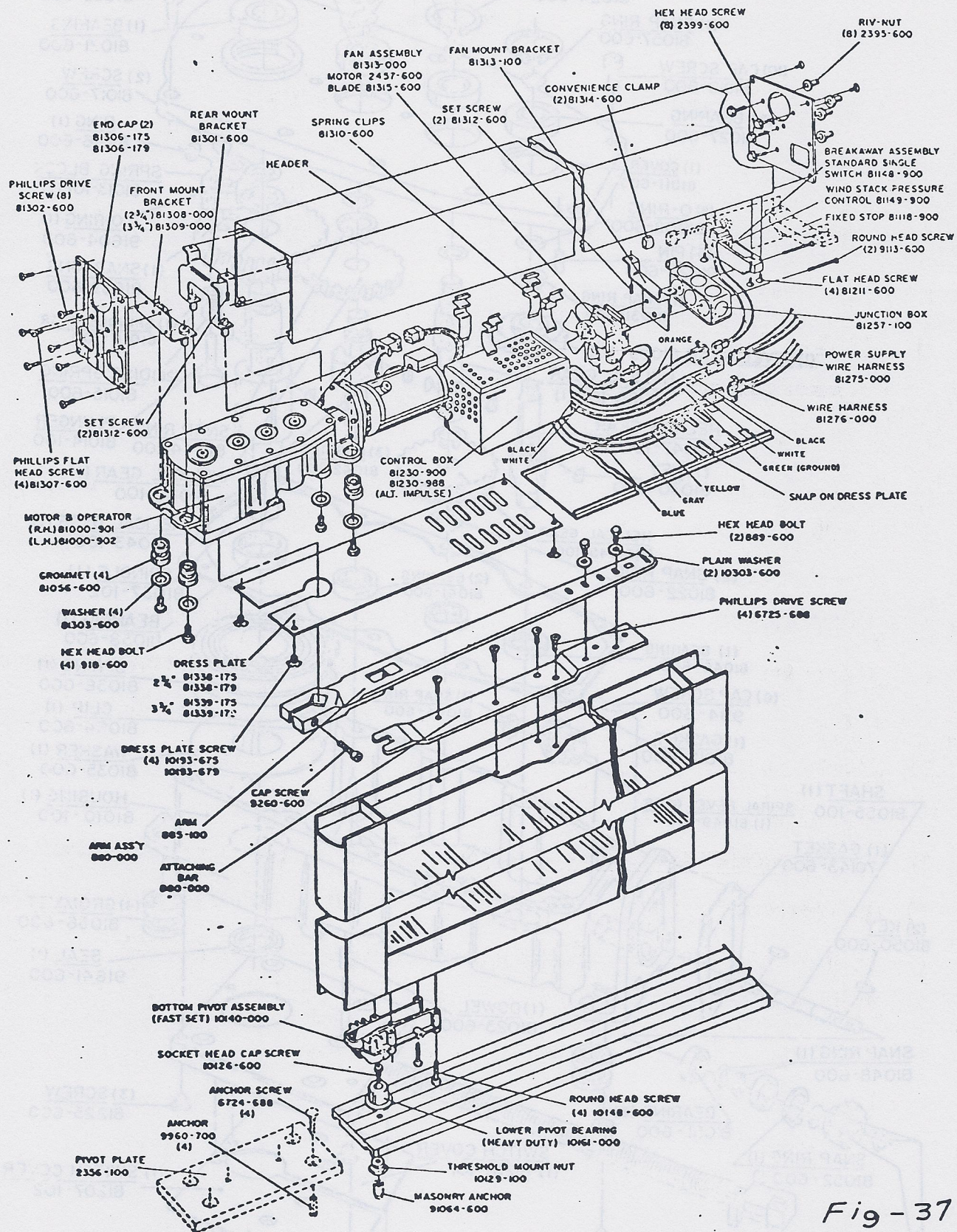


Fig - 37

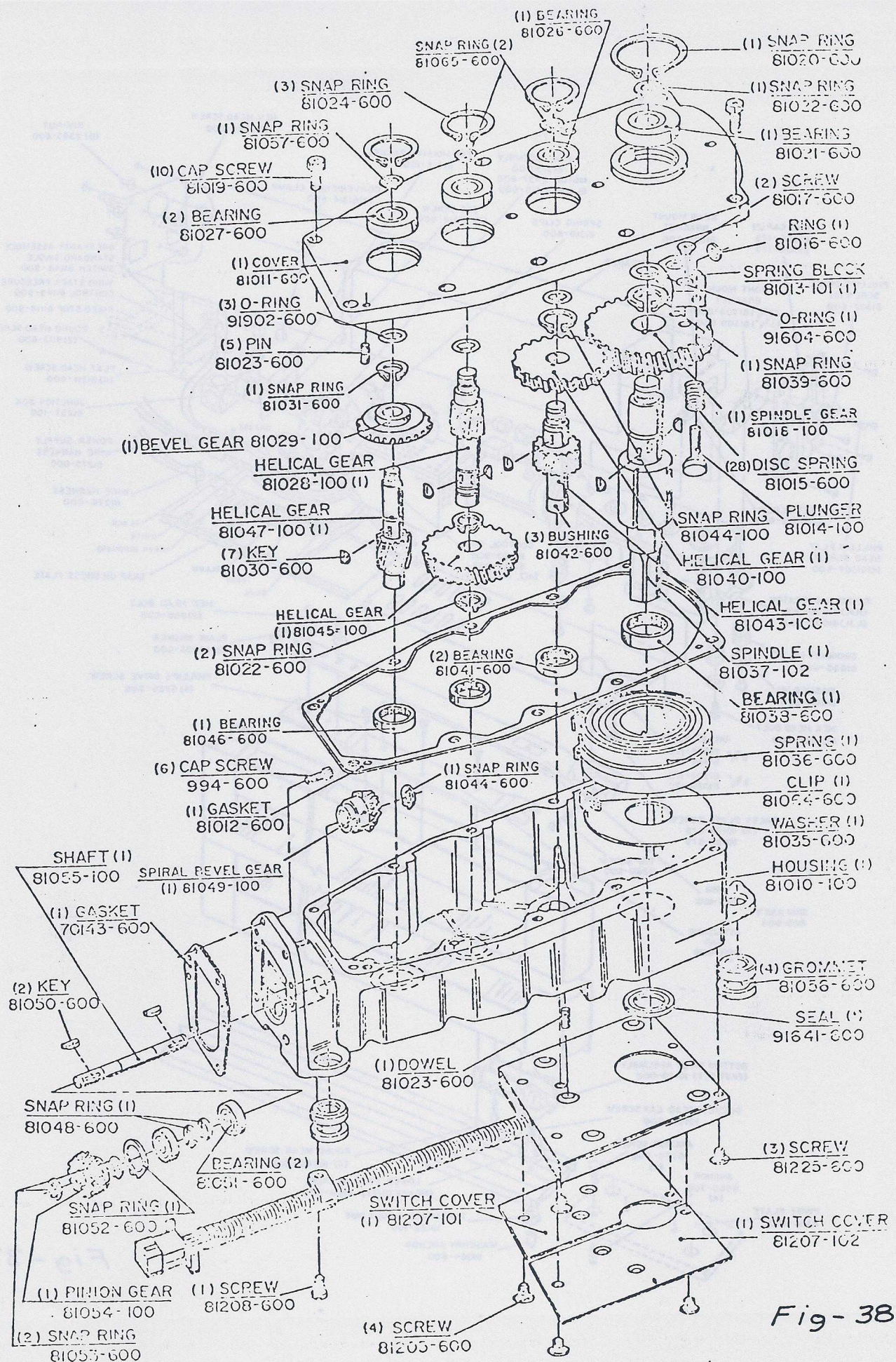


Fig-38

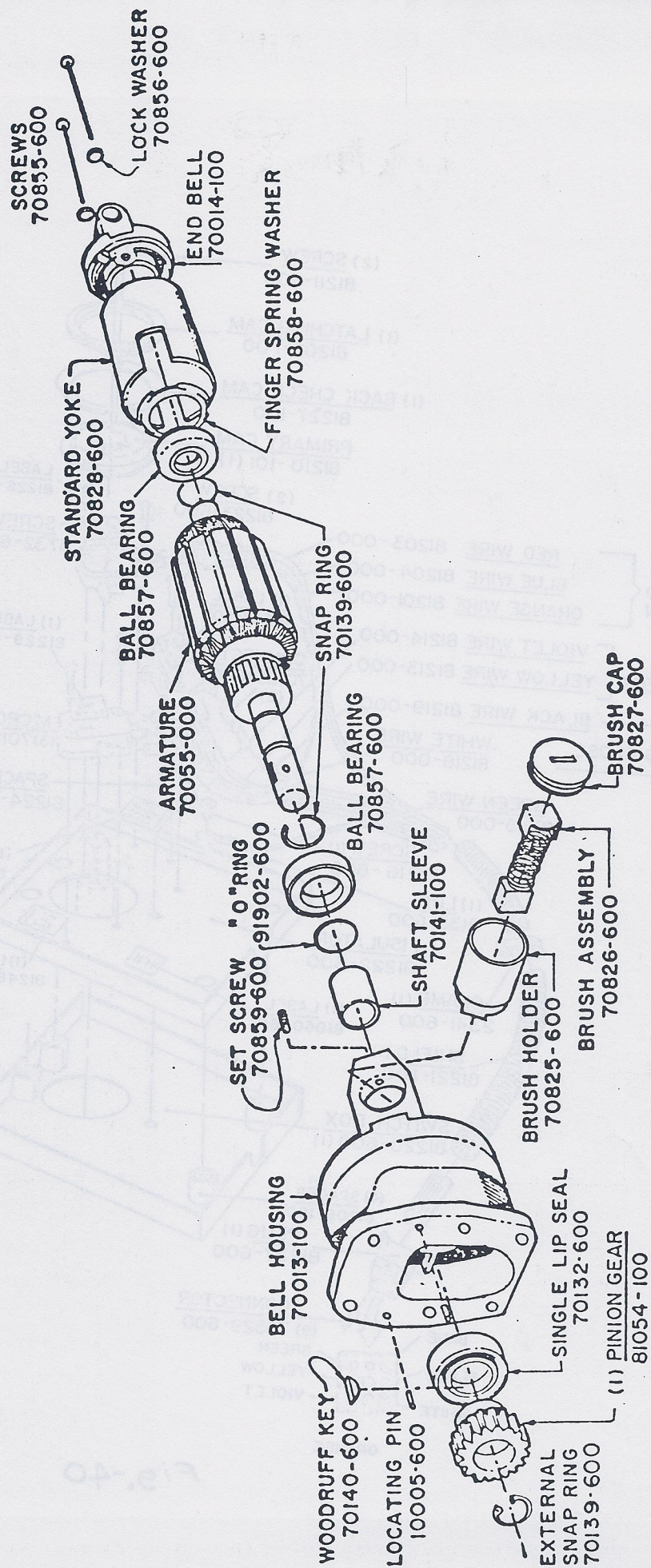


Fig-39

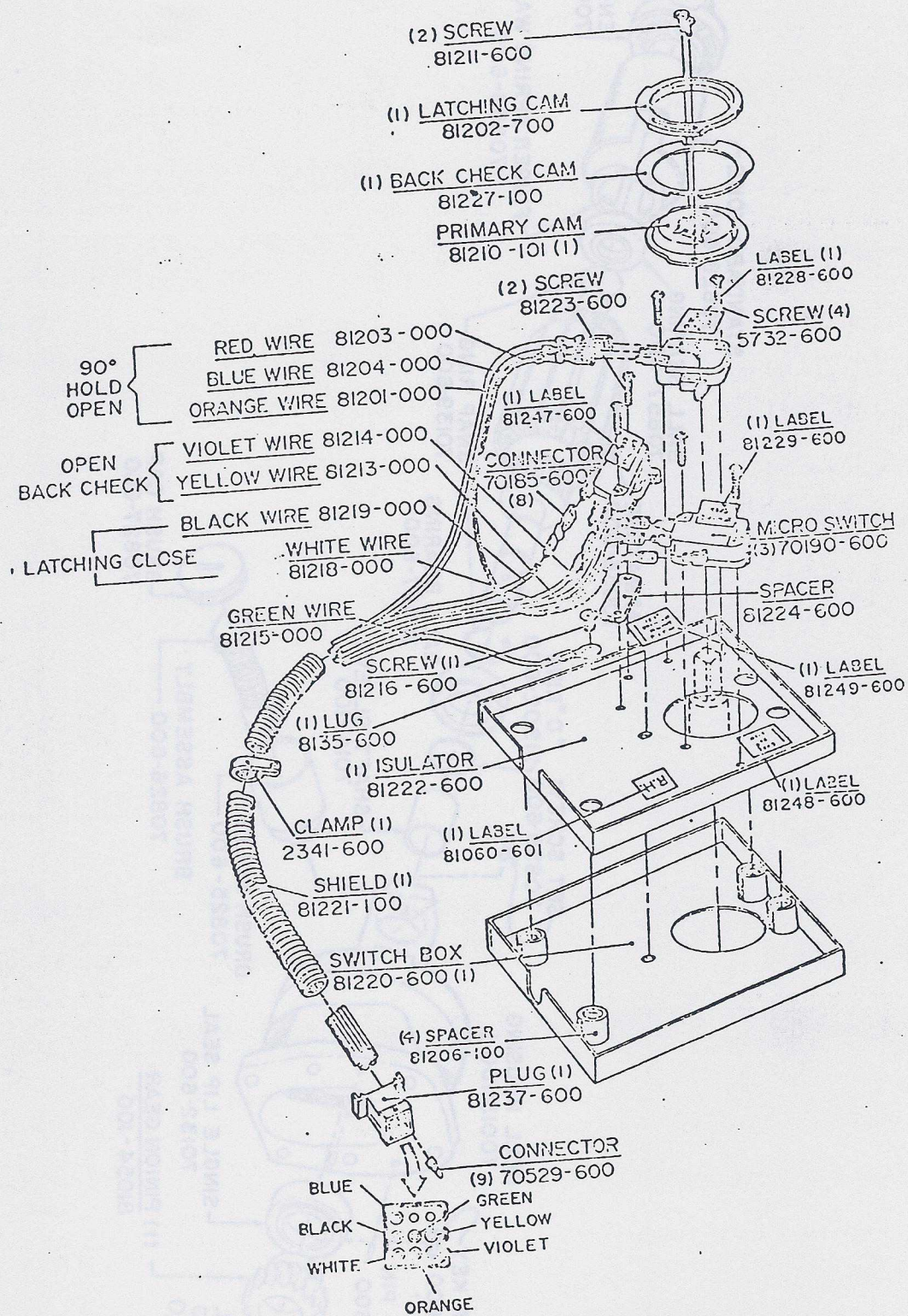
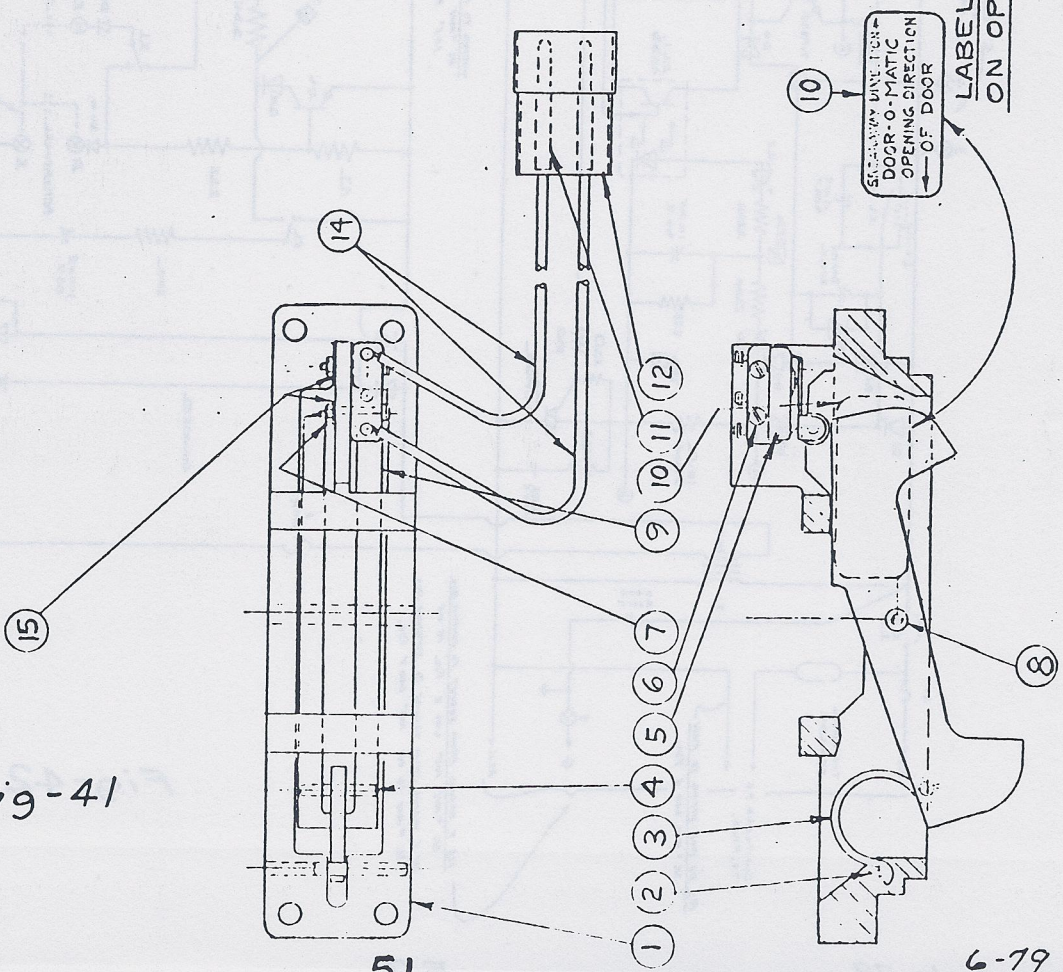


Fig.-40

PART NAME BREAKAWAY ASSY. SINGLE SWITCH		LTR		REVISION 78069		DATE	
MATERIAL <i>See Chart</i> STANDARD ASSY		DOR-O-MATIC BITING & REPAIR INDUSTRIES INC. CHICAGO, ILLINOIS		A		SUPERSEDES 81110-000	
USED ON ASTRO-SWING		CHK'D. DR. <i>See Chart</i> 8-3-78		A		REMOVED: 2-8111-600, 78106 2-81116-600, 1-81143-100 10-17-78	
SCALE FULL		APPROX. 5-8-78					
REV. A		FRACTIONAL DIMENSION TOLERANCES					
PART NO. 81148-900		UNLESS OTHERWISE SPECIFIED					

ITEM	PART NUMBER	NAME	NO. REQ.	DXG. SIZE
1	81110-100	HOUSING, BREAKAWAY	1	C
2	81111-600	ROLL PIN	1	A
3	81112-600	SPRING	1	A
4	81113-600	ROLL PIN	1	A
5	81140-600	MICRO SWITCH	1	A
6	5742-600	SCREW, 2-56 ROUND HD. 1/2 LONG	2	A
7	81142-600	NUT, 2-56 HEX.	2	A
8	81116-600	ROLL PIN	1	A
9	81117-600	TOGGLE	1	B
10	81119-600	LABEL, OPERATING DIRECTIONS	1	A
11	70529-600	MALE PIN	2	A
12	70527-600	SOCKET	1	A
14	81144-100	ORANGE WIRE	2	A
15	81147-600	#2 SPLIT LOCKWASHER	2	A

Fig-41



STANDARD BREAKAWAY ASSY

SWITCHES SHOWN IN OPERATING POSITION

REV. A	PART NO. 81148-900
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DO NOT SCALE DRAWING

