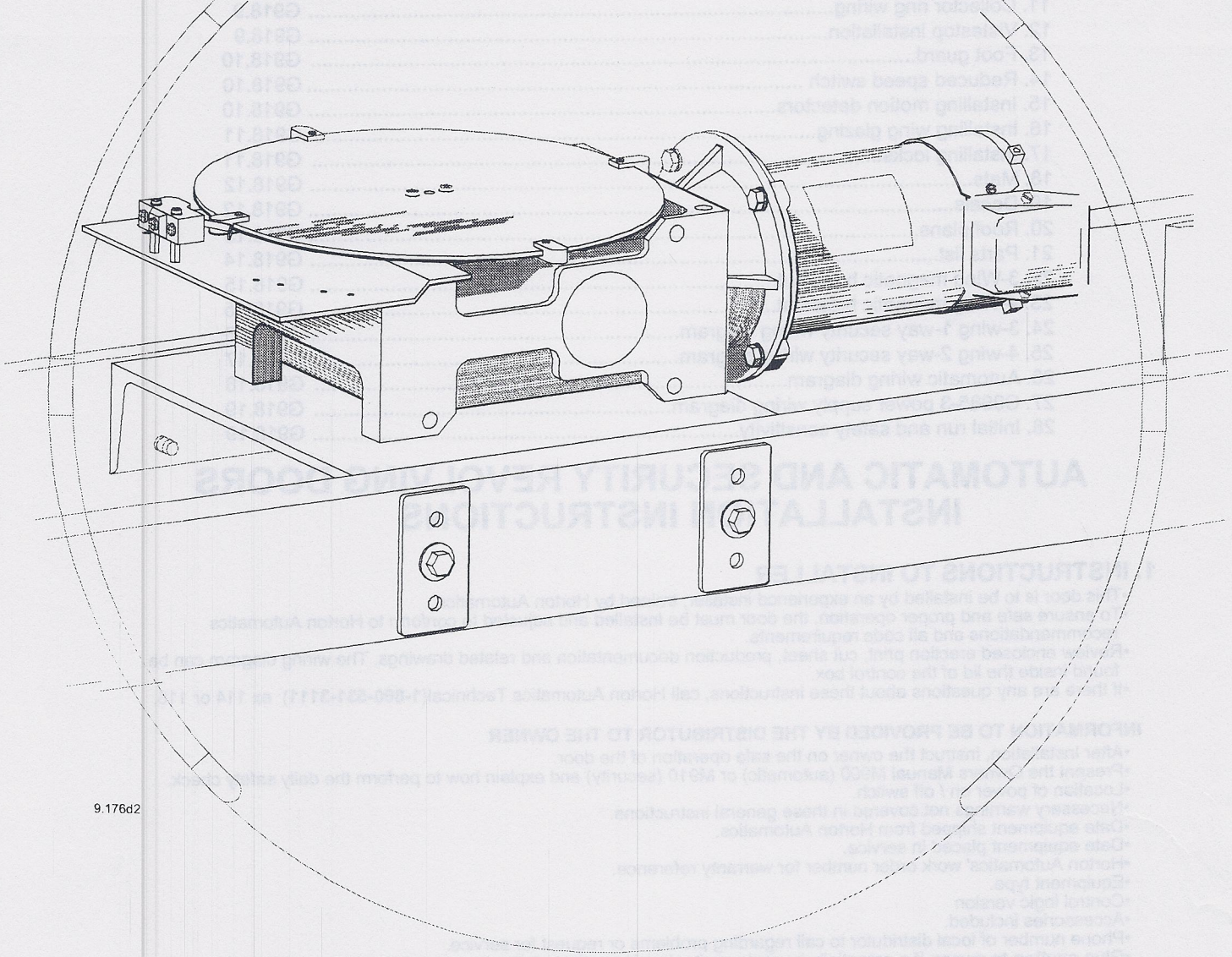
Series 9100 & 9200 Security
Series 9300 Automatic
Revolving Doors
Installation Instructions



9.176d2

G918, OCT 2000

Horton
AUTOMATICS

CONTENTS

AUTOMATIC AND SECURITY REVOLVING DOORS INSTALLATION INSTRUCTIONS

1. INSTRUCTIONS TO INSTALLER

- This door is to be installed by an experiencd installer, trained by Horton Automatics.
- To ensure safe and proper operation, the door must be installed and adjusted to conform to Horton Automatics recommendations and all code requirements.
- Review enclosed erection print, cut sheet, production documentation and related drawings. The wiring diagram can be found inside the lid of the control box.
- If there are any questions about these instructions, call Horton Automatics Technical(**1-800-531-3111**) ex 114 or 116.

INFORMATION TO BE PROVIDED BY THE DISTRIBUTOR TO THE OWNER

- After installation, instruct the owner on the safe operation of the door.
- Present the Owners Manual M900 (automatic) or M910 (security) and explain how to perform the daily safety check.
- Location of power on / off switch.
- Necessary warnings not covered in these general instructions.
- Date equipment shipped from Horton Automatics.
- Date equipment placed in service.
- Horton Automatics' work order number for warranty reference.
- Equipment type.
- Control logic version
- Accessories included.
- Phone number of local distridutor to call regarding problems or request for service.
- **Give caution** to owner: If a potentially hazardous situation is suspected, the door should be taken out of automatic service until a professional inspection is made and the problem is corrected.

2. GENERAL REQUIREMENTS

- Power: 120 VAC, 60Hz, 20 Amp service (in conduit) to each unit.
- Non-North American voltages can be 240 VAC, if so be sure the operator has a 240VAC power supply.
- For remote switch locations, routing of low voltage class II wiring (in conduit) to the operator controls will be required.
- Remote switch locations should be predetermined and wired before installation begins.
- The floor area must be level inside the revolving door area.
- Door panels may be glazed before or after installation .

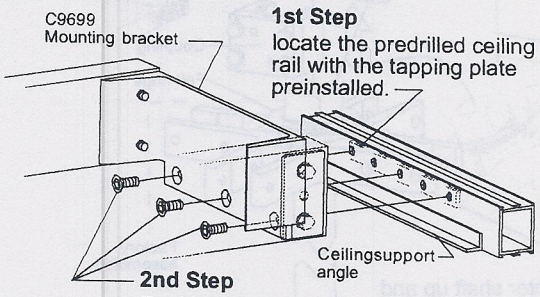
3. SUPPORT TUBE INSTALLATION

The drum (wall) assembly should be complete at this point.See manuals G915 (round doors) or G916 (segmented doors). Determine the proper placement of the support tube assembly from the plan views shown below.

ROUND REVOLVING DOORS

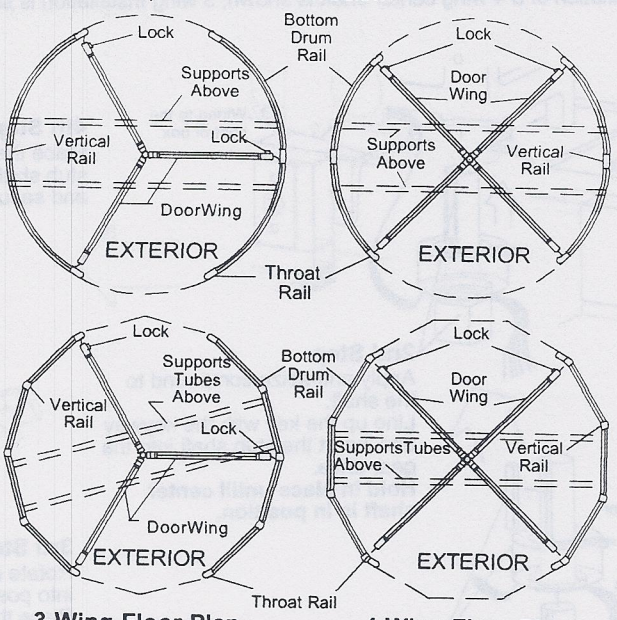
The support tube assembly on small diameter round doors is preinstalled in canopy at the factory. On larger diameter doors, the assembly must be installed during the drum assembly. (See G915 round drum instruction manual).
The ceiling may be installed at the same time, however the gear drive will have to be lifted over the canopy to install.

SEGMENTED REVOLVING DOORS



1st Step
locate the predrilled ceiling rail with the tapping plate preinstalled.

2nd Step
Position the Support assembly and secure with (3) 3/8" x 3/4" FHSCS



3-Wing Floor Plan **4-Wing Floor Plan**

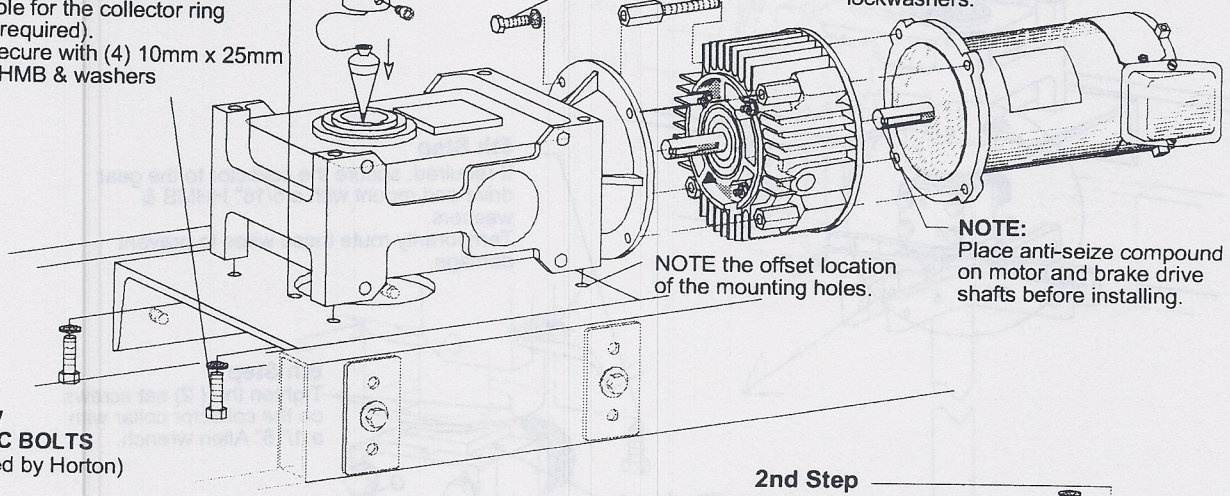
4. GEAR DRIVE AND MOTOR MOUNT INSTALLATION

NOTE: The gear drive and gear drive supports must be level in all directions.

1st Step
Position the gear drive on the mounting plate as shown. (Note the location of the 5/16" hole for the collector ring if required).
Secure with (4) 10mm x 25mm HHMB & washers

Position the plumb bob line as shown

2nd Step
If a motor brake is required, secure it to the motor with the studs provided. Secure the motor and brake assembly to the gear drive with (4) HHMB and lockwashers.



NOTE the offset location of the mounting holes.

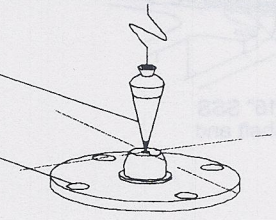
NOTE:
Place anti-seize compound on motor and brake drive shafts before installing.

NOTE !
METRIC BOLTS
(supplied by Horton)

5. CENTER PIVOT MOUNT

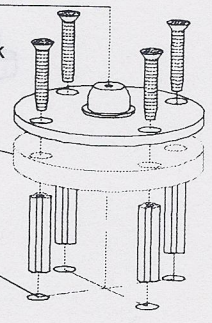
The motor may be installed before or after the center pivot.

1st Step
Locate the center point position with the plumb bob. Mark holes.



2nd Step
Place the center pivot on the center point and mark the hole locations.

Use 1/2" aluminum shim if mats are to be installed. (See section 18)

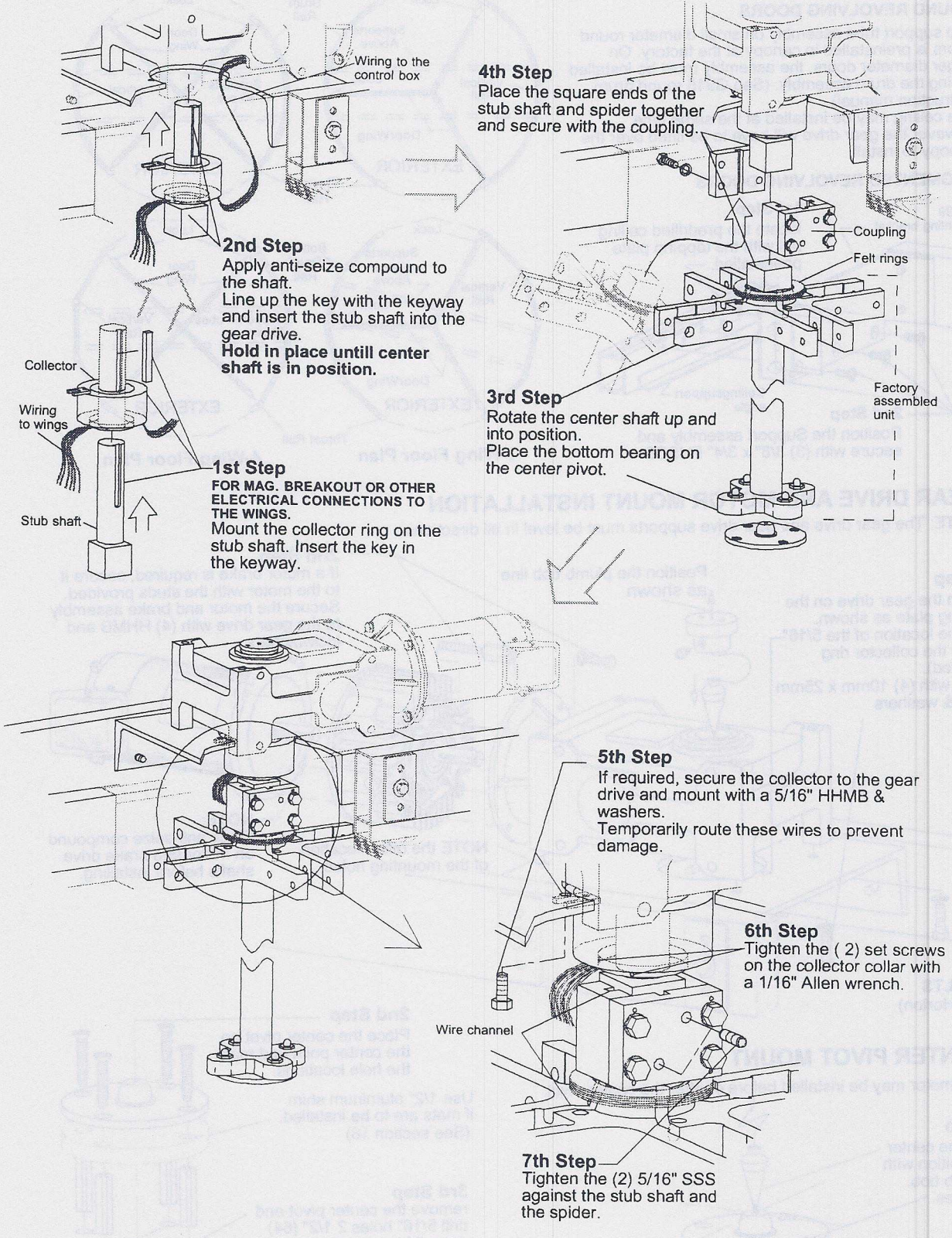


3rd Step
remove the center pivot and drill 5/16" holes 2 1/2" (64) deep. Mount pivot with anchors and screws.

NOTE: If mats are required they should be installed before the center shaft and door wings. (See section 18)

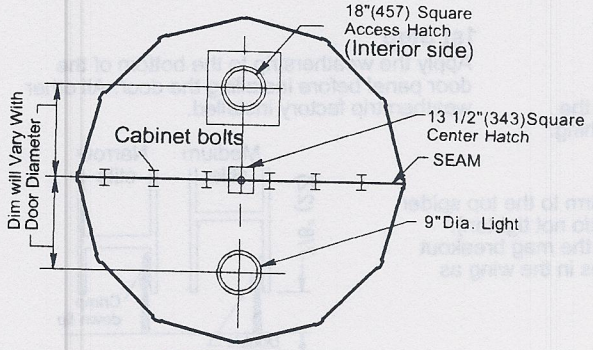
6. CENTER SHAFT INSTALLATION

Installation of a 4 wing center shaft is shown, 3 wing installation is similar.

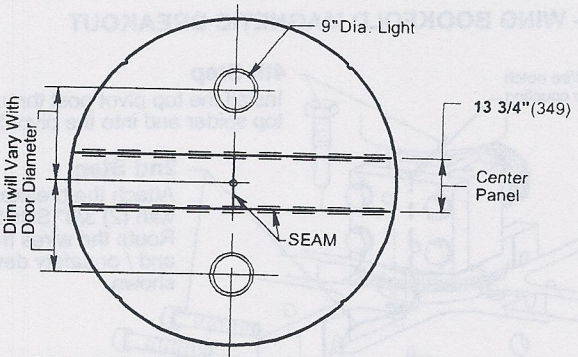


7. CEILING INSTALLATION

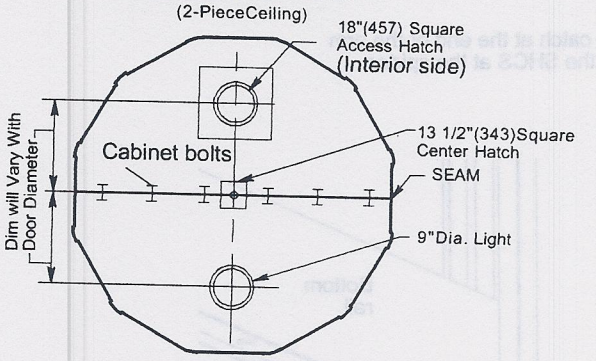
For small round doors the ceiling may be installed at the factory. For larger round doors and all segmented doors the ceiling wil be field installed. All ceilings are 3/4" (19) plywood laminated with .06 (1.5) aluminum or matching clad.



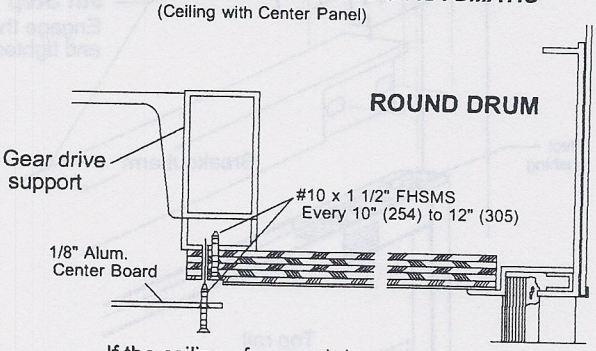
3- WING SEGMENTED
(2-PieceCeiling)



3 & 4-WING ROUND SECURITY & AUTOMATIC
(Ceiling with Center Panel)

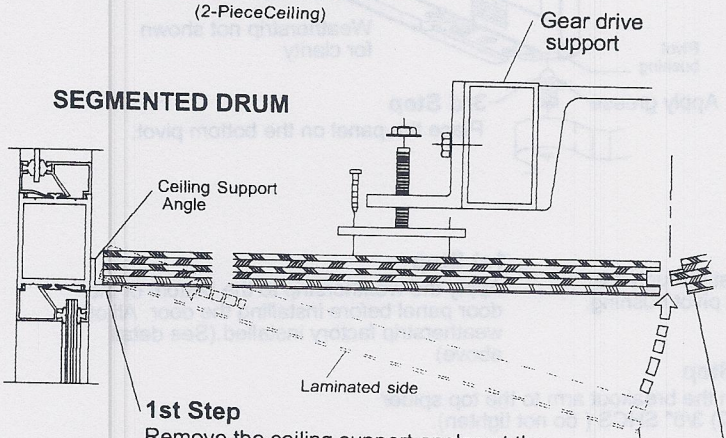


4- WING SEGMENTED
(2-PieceCeiling)



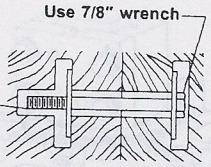
If the ceiling of a round door was not installed with the gear drive support (See G915) it may be installed now by maneuvering the panels into position and securing them to the support tubes as shown.
the center panel is installed after the center shaft is installed.

SEGMENTED DRUM



1st Step
Remove the ceiling support angles at the center section of the canopy (at the seam).
On 4 wing only.

2nd Step
Position the ceiling panels up in the canopy.
The ceiling angles that were removed should be replaced before the ceiling is put into final position.



4th Step
Install the cabinet bolts.
Do not overtighten.

3rd Step
Angle the panels up slightly and slide the tongue and groove joint together.

NOTE: Do not put any weight on the ceiling untill the lift plates are firmly attached.

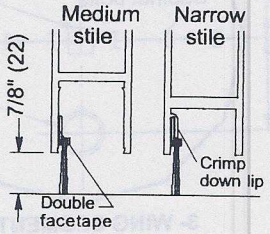
5th Step
Loosen the 3/8" nut to allow the lift plate to set flat on the ceiling.
Attach the lift plate with #10 x 3/4" SMS.

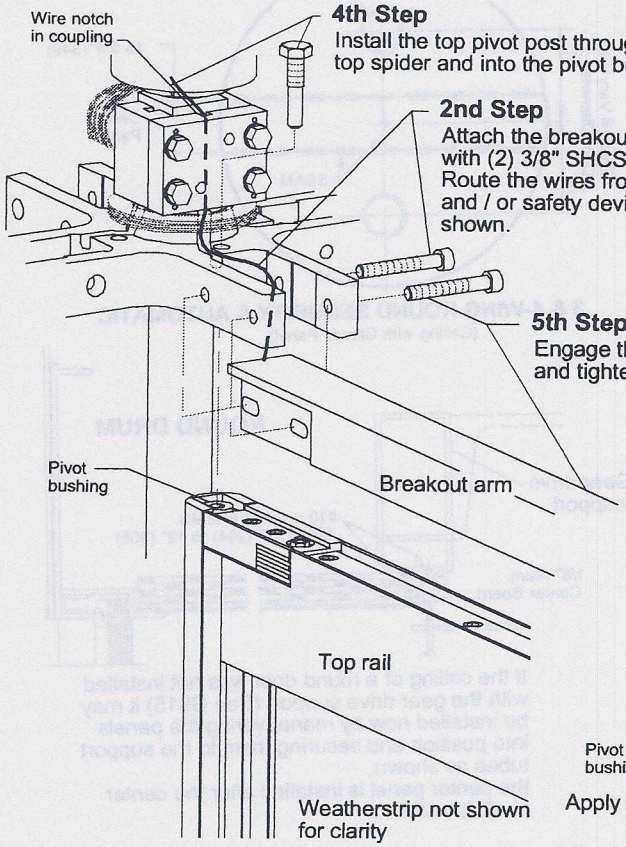
8. DOOR PANEL INSTALLATION

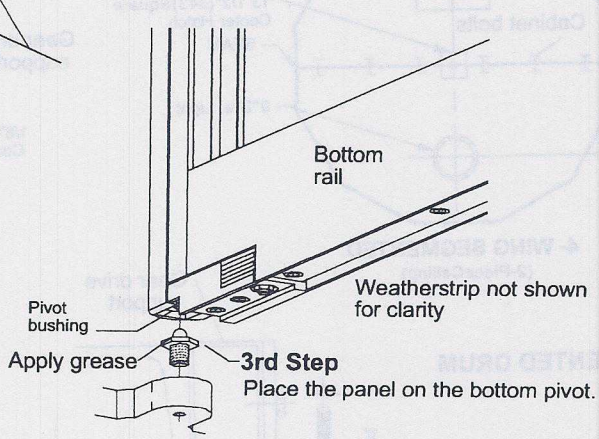
Be sure to place the door panels with lock prep in proper locking positon. See sections 3 &17 for lock locations and mounting. **BEFORE MOUNTING, LAY PANELS ON A SAW HORSE AND INSTALL GLASS (SEC16) AND OPTIONAL VISTASTOP AND / OR FOOT GUARD (SECT 12 & 13)**

4 - WING BOOKFOLD MAGNETIC BREAKOUT

1st Step
Apply the weatherstrip to the bottom of the door panel before installing the door. All other weatherstrip factory installed.

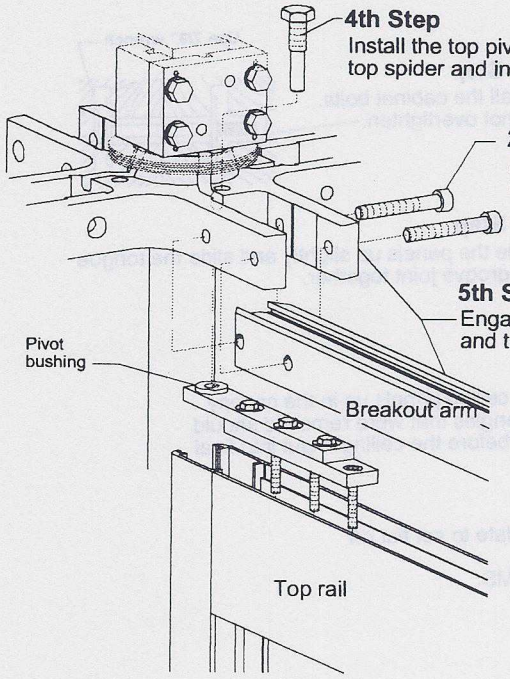


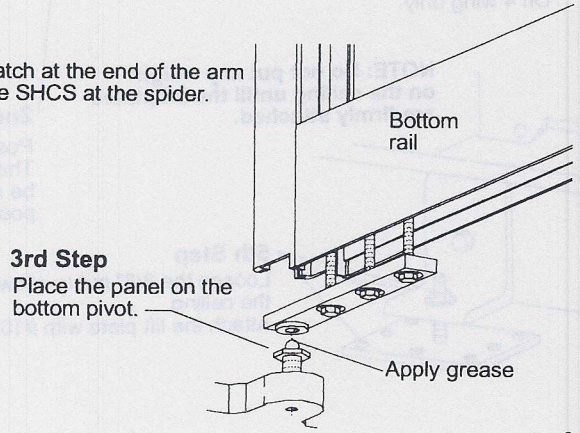




4 - WING ENGLISH (U.K.) BREAKOUT

1st Step
Apply the weatherstrip to the bottom of the door panel before installing the door. All other weatherstrip factory installed.(See detail above)

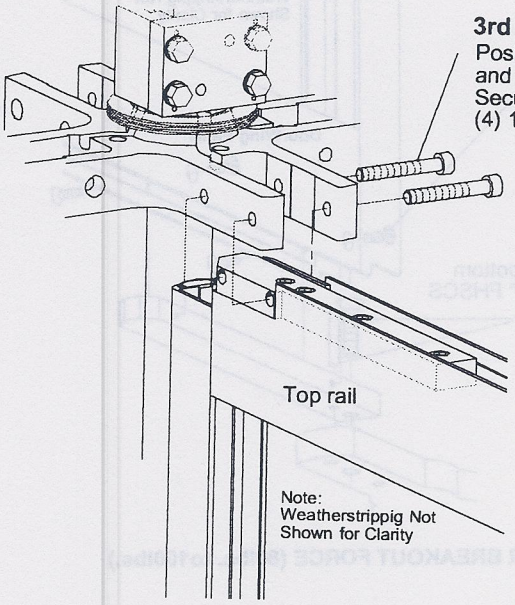




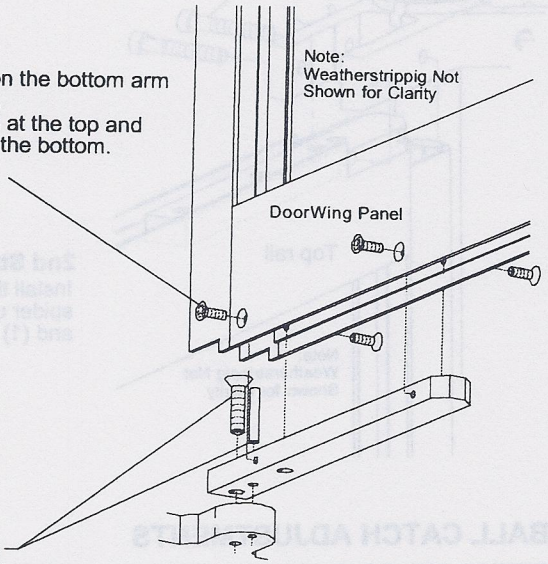
8. DOOR PANEL INSTALLATION CONTUNIED

4 - WING FIXED DOOR PANEL

1st Step
Apply the weatherstrip to the bottom of the door panel before installing the door. All other weatherstrip factory installed.(See detail)



3rd Step
Position the door panel on the bottom arm and slide into top spider .
Secure with (2) 3/8" SCS at the top and (4) 1/4" x 3/4" FHSCS at the bottom.



2nd Step
Install the lower arm on the bottom spider using (1) 3/8" x 1 1/2" FHSCS and (1) 1/4" 1 1/2" roll pin.

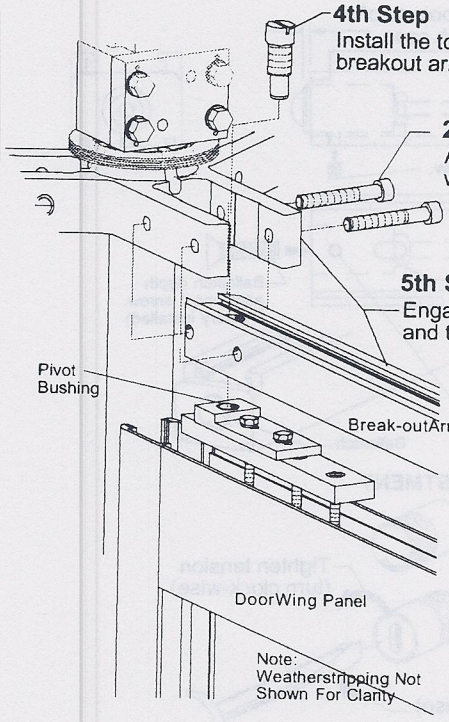
3 - WING STANDARD BREAKOUT

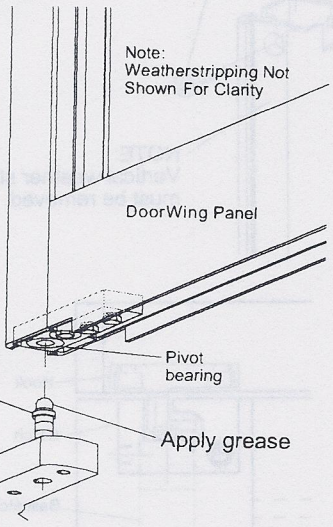
1st Step
Apply the weatherstrip to the bottom of the door panel before installing the door. All other weatherstrip factory installed.(See detail)

4th Step
Install the top pivot post through the breakout arm and into the pivot bushing.

2nd Step
Attach the breakout arm to the top spider with (2) 3/8" SHCS (do not tighten).

5th Step
Engage the catch at the end of the arm and tighten the SHCS at the spider.

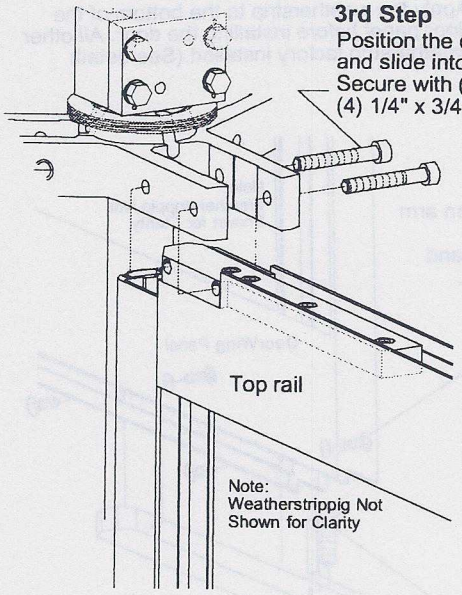




3rd Step
Place the panel on the bottom pivot.

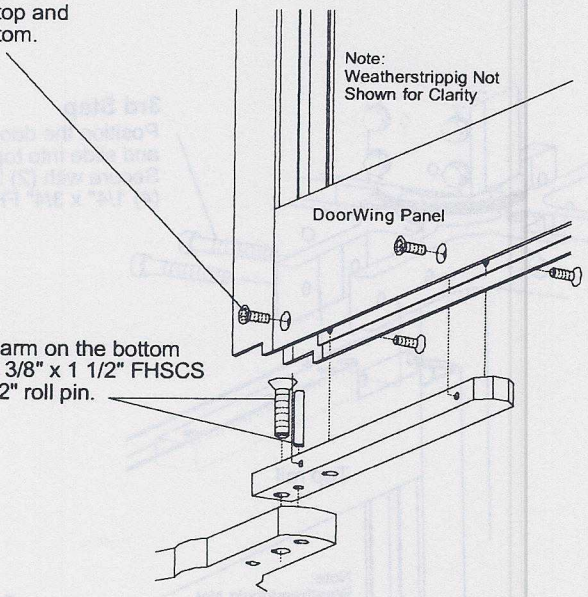
8. DOOR PANEL INSTALLATION CONTUNIED

3 - WING FIXED DOOR PANEL



3rd Step
Position the door panel on the bottom arm and slide into top spider .
Secure with (2) 3/8" SCS at the top and (4) 1/4" x 3/4" FHSCS at the bottom.

1st Step
Apply the weatherstrip to the bottom of the door panel before installing the door. All other weatherstrip factory installed.(See detail)

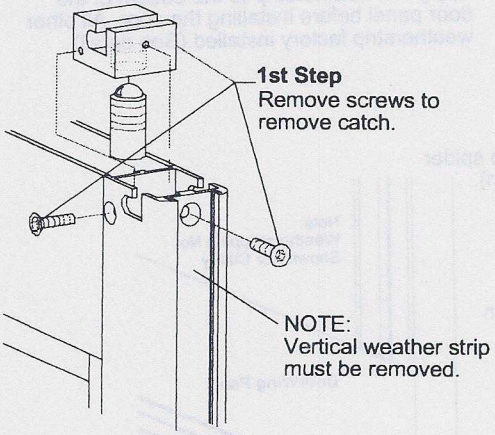


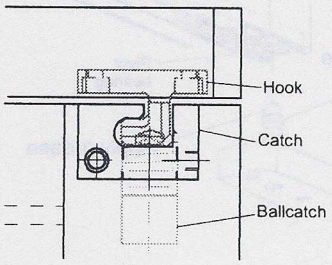
2nd Step
Install the lower arm on the bottom spider using (1) 3/8" x 1 1/2" FHSCS and (1) 1/4" 1 1/2" roll pin.

9. BALL CATCH ADJUSTMENTS

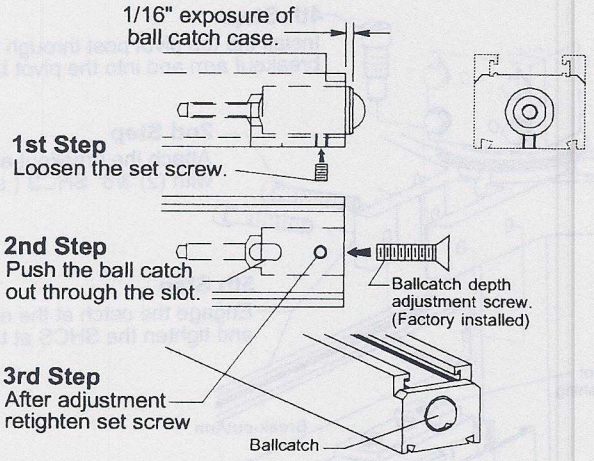
BEFORE REMOVING THE BALL CATCH, TEST THE DOOR FOR PROPER BREAKOUT FORCE (80lbs. to100lbs.)
-If adjustment is required, remove the ball catch as shown.
-Adjust the ball catch as shown.
-Reinstall the ball catch and test the breakout for proper force. Repeat if necessary.

BALLCATCH REMOVAL AND ADJUSTMENT FOR 4-WING REVOLVERS

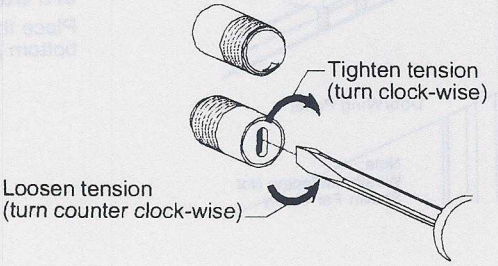




BALLCATCH REMOVAL AND ADJUSTMENT FOR 3-WING REVOLVERS



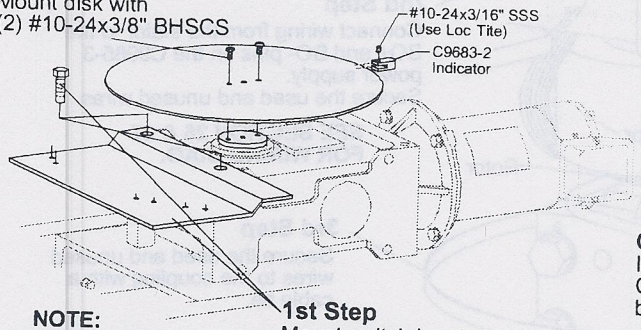
BALLCATCH ADJUSTMENT



10. SWITCH MOUNT AND LOCATION

Mount switches as per function in locations shown below.

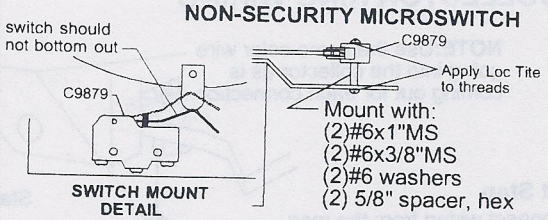
2nd Step
Mount disk with
(2) #10-24x3/8" BHSCS



NOTE:
METRIC BOLTS
(supplied by Horton)

1st Step
Mount switch bracket with
(2) 10mm x 16mm HHMB

NON-SECURITY MICROSWITCH

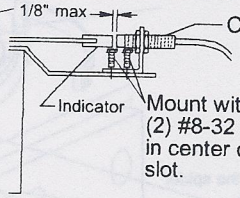


SWITCH MOUNT DETAIL

Mount with:
(2)#6x1"MS
(2)#6x3/8"MS
(2)#6 washers
(2) 5/8" spacer, hex

SECURITY PROXIMITY SWITCH

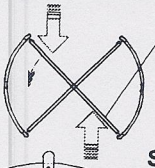
CAUTION
If the indicator strikes C9981 the switch will be destroyed.



Mount with:
(2) #8-32 x 1/2"
in center of adjustment slot.

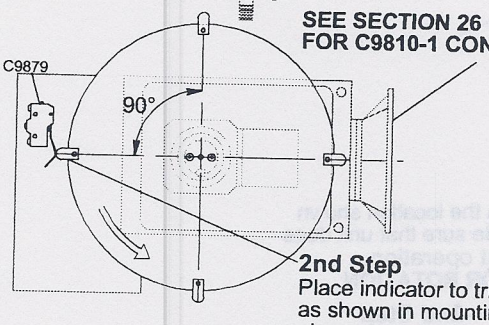
NOTE: After setup, rotate door and test for proper alignment on all indicators.

4 WING NON-SECURITY



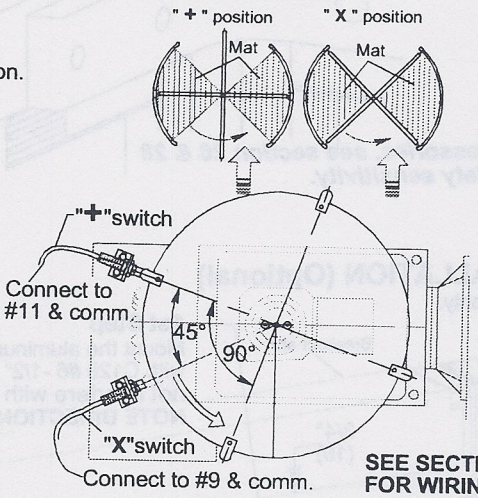
1st Step
Place door in park position.

SEE SECTION 26
FOR C9810-1 CONTROL



2nd Step
Place indicator to trip switch as shown in mounting detail above.
The door can be set up using 1 or 4 indicators.

4 WING SECURITY



1st Step
Connect the "+" & "x" switches to the C9922 control as shown.

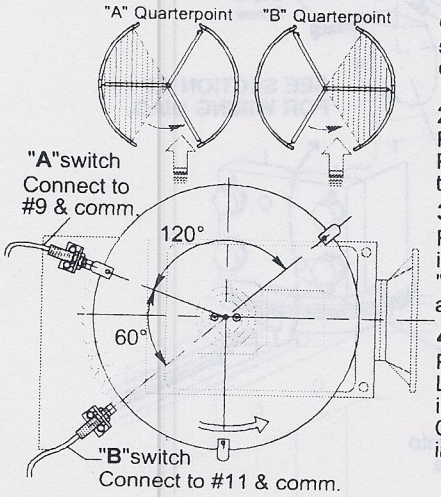
2nd Step
Place door in "+" position. Place indicator in line with the "+" switch as shown.

3rd Step
Rotate 90° and place next indicator in line with the "+" switch - continue until all indicators are set.

4th Step
Place door in "x" position. Line up "x" switch with the indicator placed in step 2. Check alignment of all 4 indicators with switch "x"

SEE SECTION 25
FOR WIRING DIAG.

3 WING 2-WAY SECURITY



SEE SECTION 25

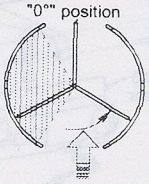
1st Step
Connect the "A" & "B" switches to the C9922 control as shown.

2nd Step
Place door in "A" position. Place indicator in line with the "A" switch as shown.

3rd Step
Rotate 120° and place next indicator in line with the "A" switch - continue unti all indicators are set.

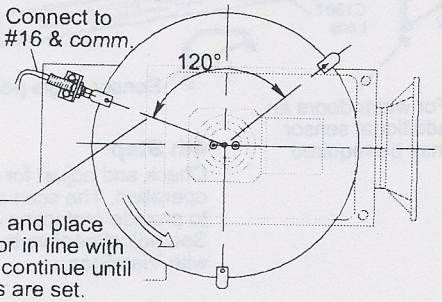
4th Step
Place door in "B" position. Line up "B" switch with the indicator placed in step 2. Check alignment of all 3 indicators with switch "x"

3 WING 1-WAY SECURITY



1st Step
Connect the switch to the C9921 control as shown.

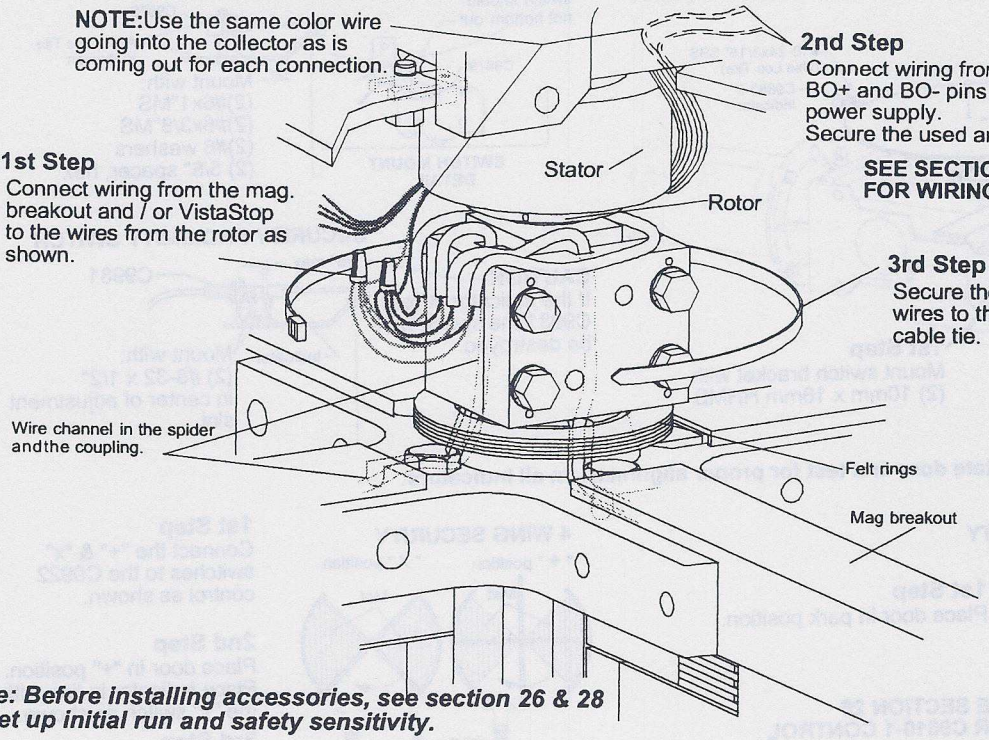
2nd Step
Place door in "0"" position. Place indicator in line with the switch as shown.



3rd Step
Rotate 120° and place next indicator in line with the switch - continue until all indicators are set.

SEE SECTION 24
FOR WIRING DIAG.

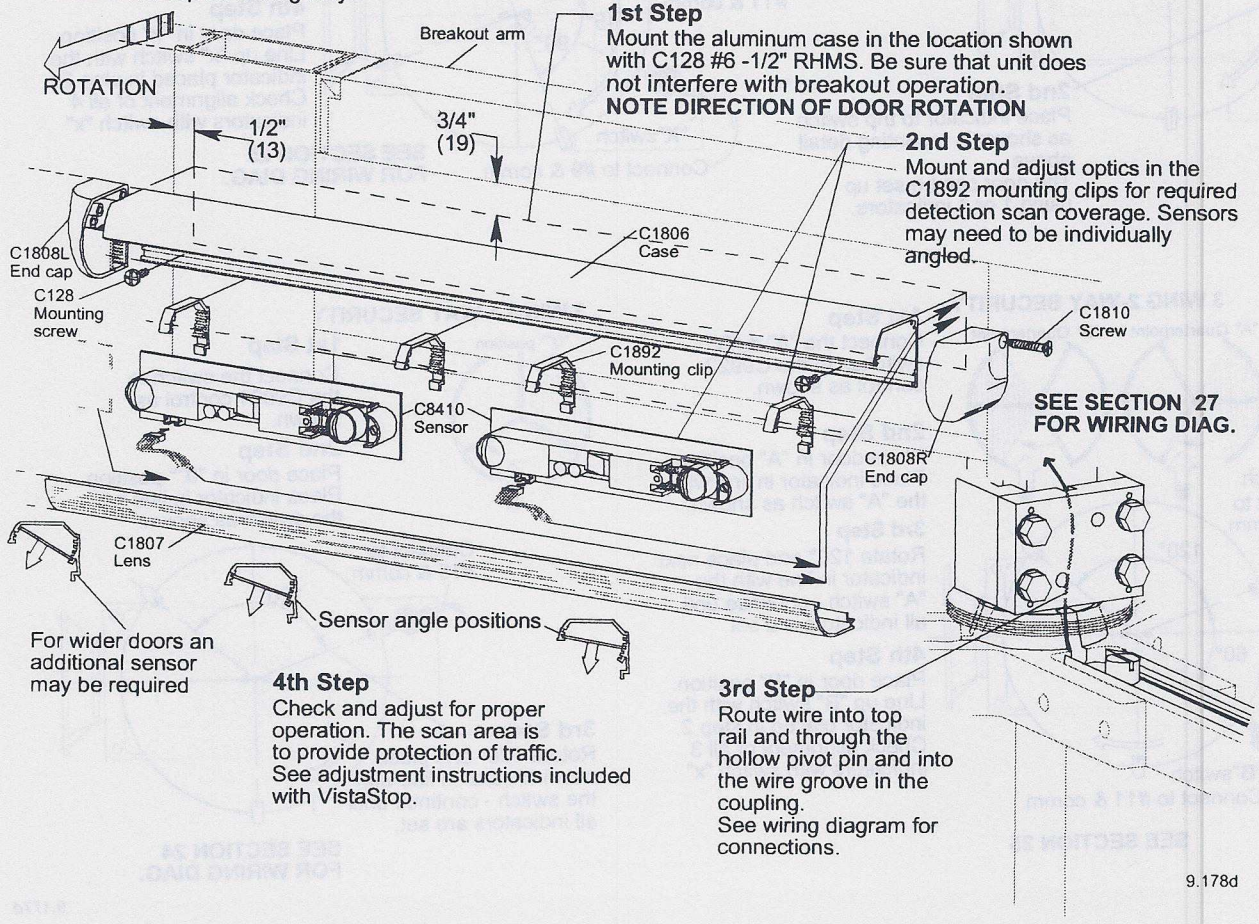
11. COLLECTOR RING WIRING



Note: Before installing accessories, see section 26 & 28 to set up initial run and safety sensitivity.

12. VISTASTOP INSTALLATION (Optional)

Install VistaStop on 3-wing only.



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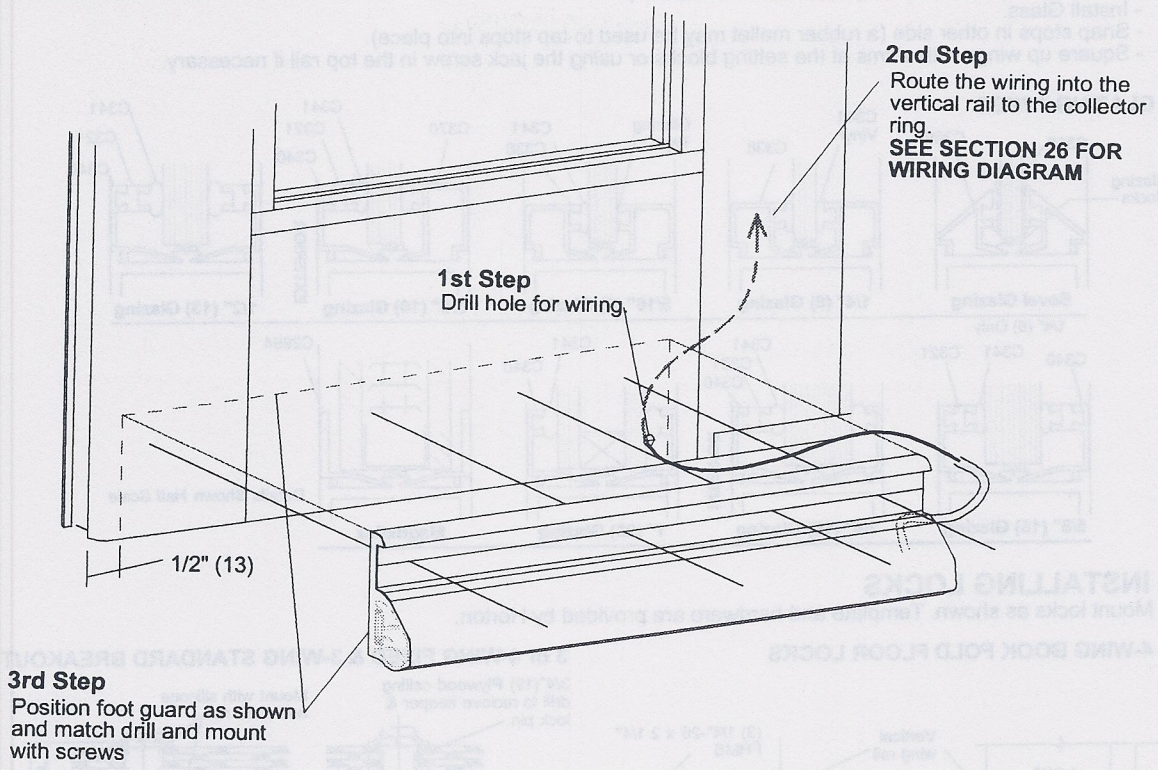
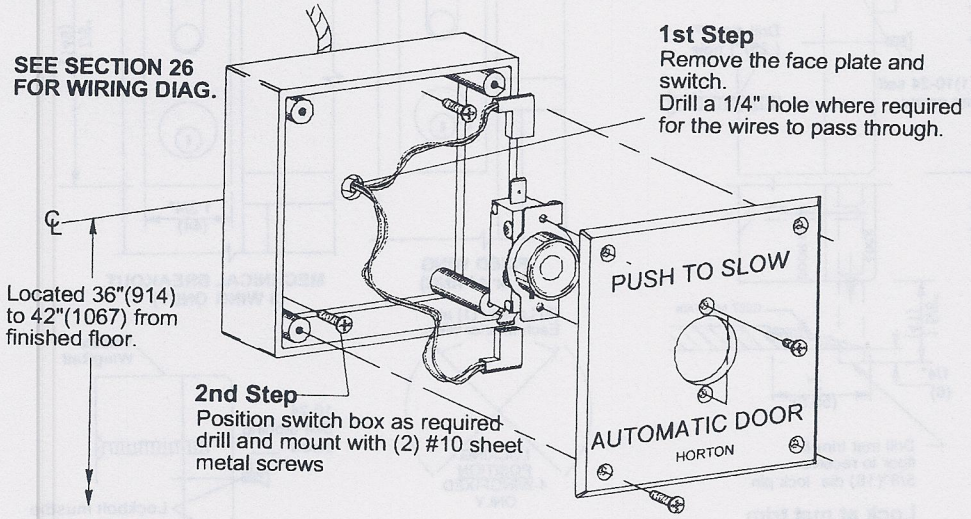
13. FOOT GUARD (Optional)

For 3-wing installation only



14. REDUCED SPEED SWITCH

The reduced speed switch may be mounted on a adjoining wall, a bollard or a vertical drum post. Mount as shown below as per application.



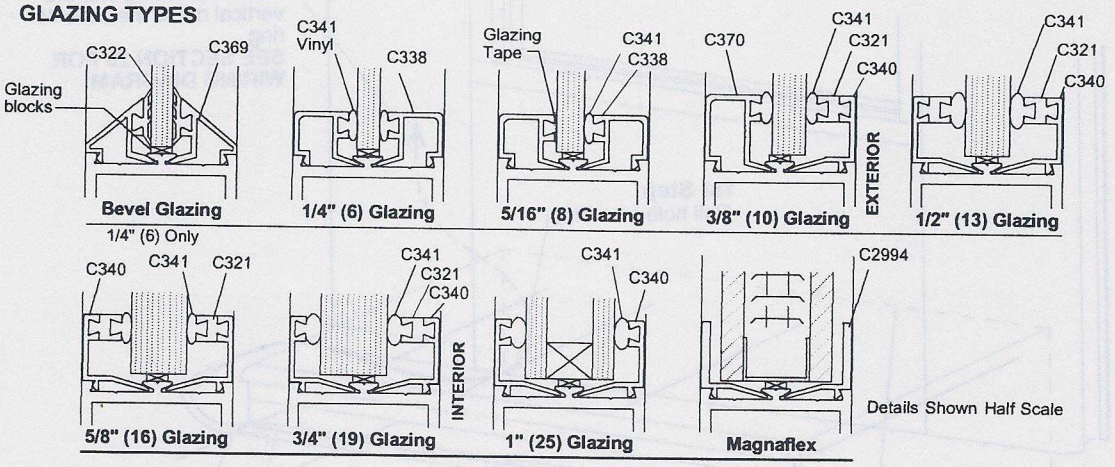
15. INSTALLING MOTION DETECTORS

Mount the motion detectors centered above the drum opening at a height not greater than 8'(2438). Drill through the canopy where required and run the wires to the detector. Drill and mount unit with sheet metal screws. See instructions included with the detector.

16. INSTALLING WING GLAZING

Be sure all nylon glazing blocks are in place. Panels may be glazed before or after installation.
- Install all stops to one side (horizontal then vertical).
- Install Glass.
- Snap stops in other side (a rubber mallet may be used to tap stops into place).
- Square up wings with shims at the setting blocks or using the jack screw in the top rail if necessary.

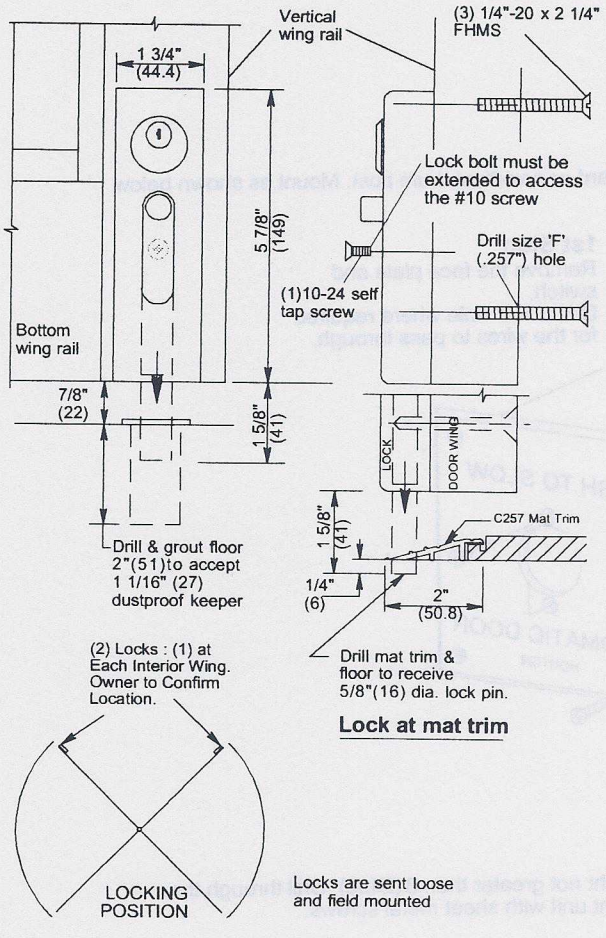
GLAZING TYPES



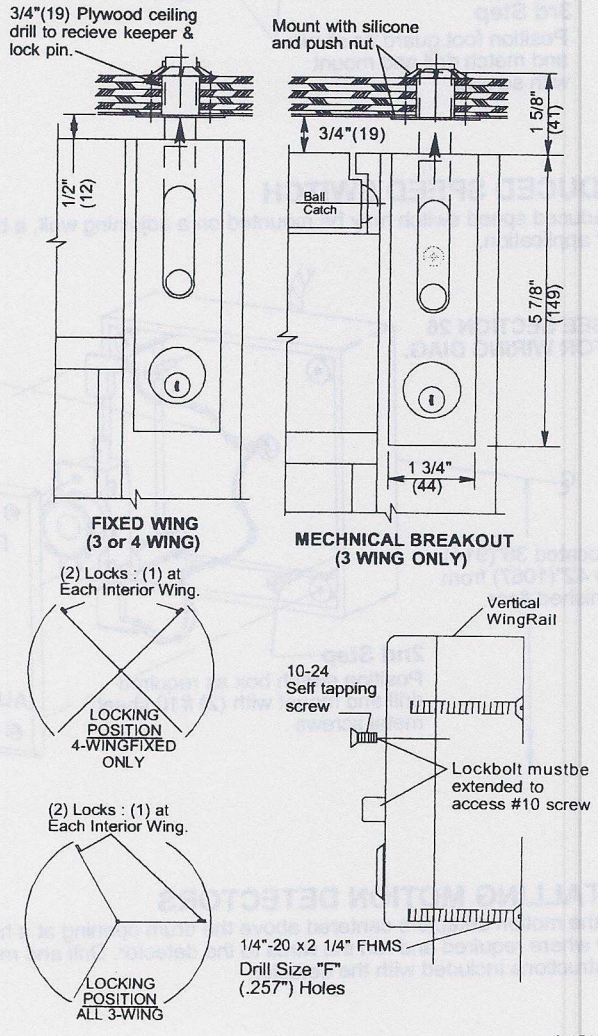
17. INSTALLING LOCKS

Mount locks as shown. Template and hardware are provided by Horton.

4-WING BOOK FOLD FLOOR LOCKS

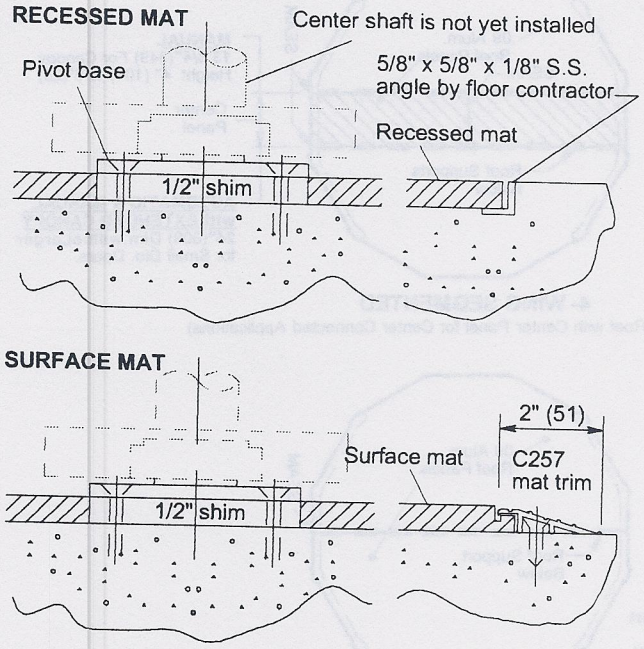


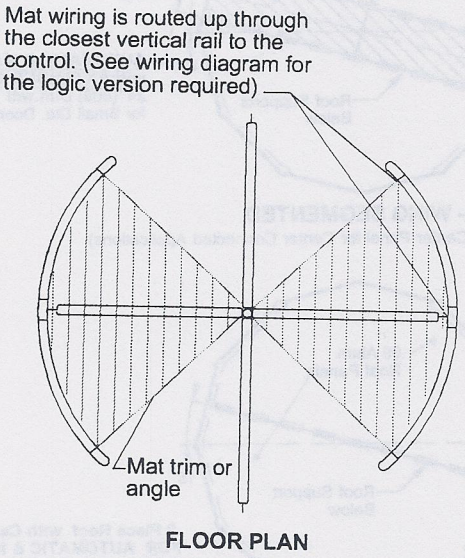
3 or 4-WING FIXED & 3-WING STANDARD BREAKOUT



18. MATS

When mats are installed, a 1/2" shim should have been installed under the center pivot in section 5. Mats are installed before the center shaft and wings. The floor should be smooth and level throughout.

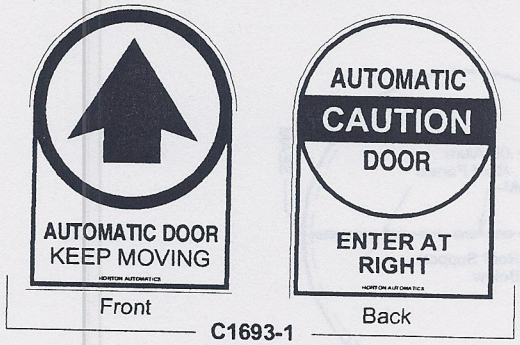


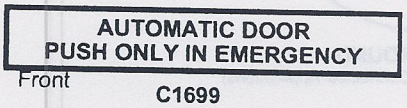


FLOOR PLAN

19. DECALS

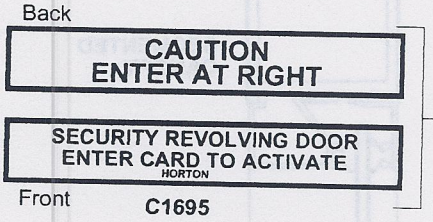
Apply the decals as shown. C1693-1 will go on all automatic and security doors. C1699 or C1694 or C1695 will be used as per series. The reduced speed decal should be placed near the reduced speed button.



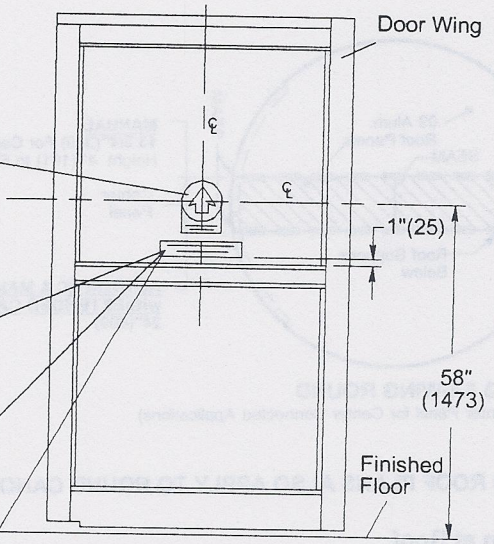


For 9300 series

For 9100 series

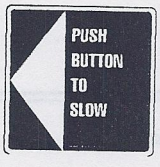


For 9200 series



C1696-2L
or
C1696-2R

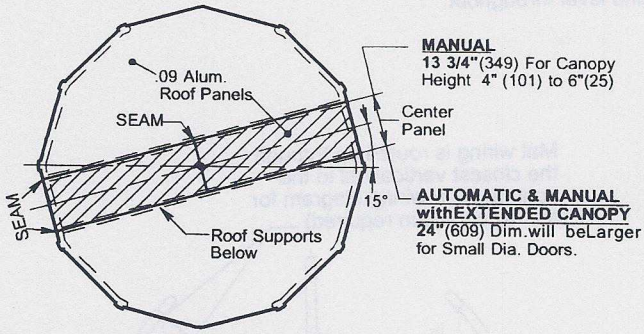
Place near the push to slow button.



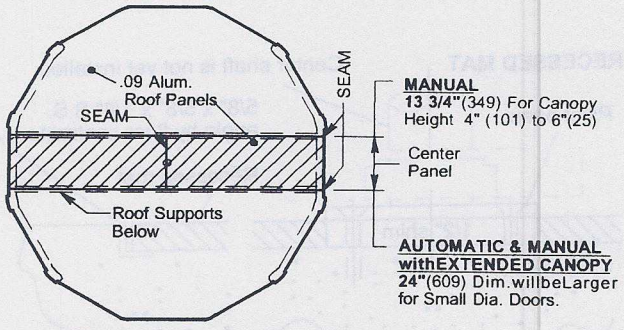
C1690 Daily safety check decal

Place on vertical entry rail

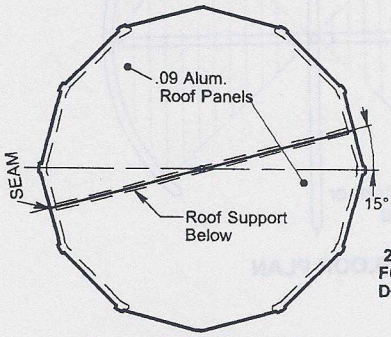
20. ROOF PLANS



3- WING SEGMENTED
(Roof with Center Panel for Center Connected Applications)

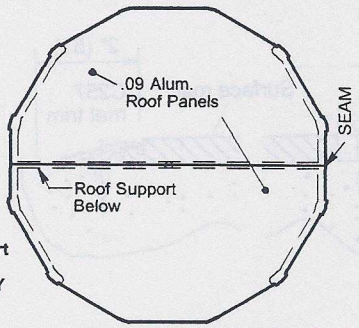


4- WING SEGMENTED
(Roof with Center Panel for Center Connected Applications)

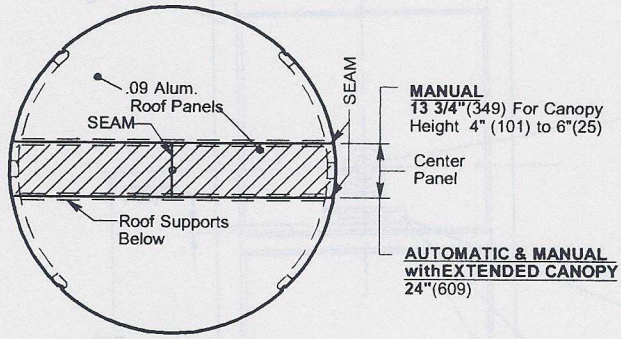


3- WING SEGMENTED
(2- Piece Roof for Entry Connected Applications)

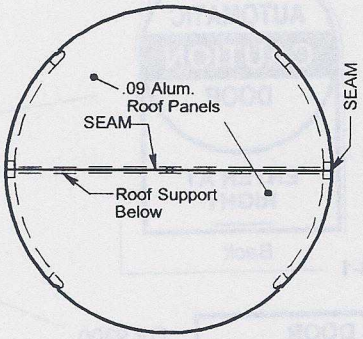
2 Piece Roof with Center Support
FOR AUTOMATIC & MANUAL
DOORS with EXTENDED CANOPY



4- WING SEGMENTED
(2- Piece Roof for Entry Connected Applications)



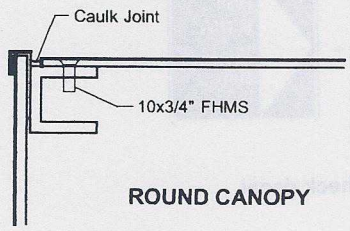
3 &4-WING ROUND
(Roof with Center Panel for Center Connected Applications)



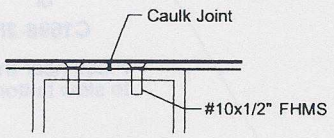
3 &4-WING ROUND
(2- Piece Roof for Entry Connected Applications)

ROUND ROOF PLANS ALSO APPLY TO ROUND CANOPY ON SEGMENTED DRUM

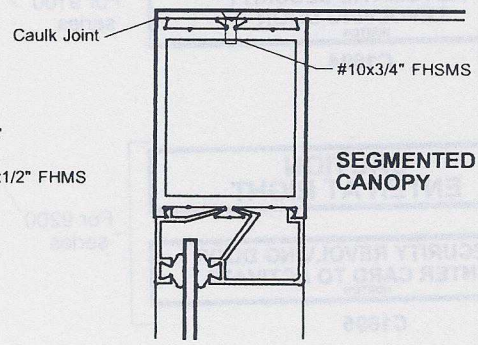
Section at Roof



ROUND CANOPY



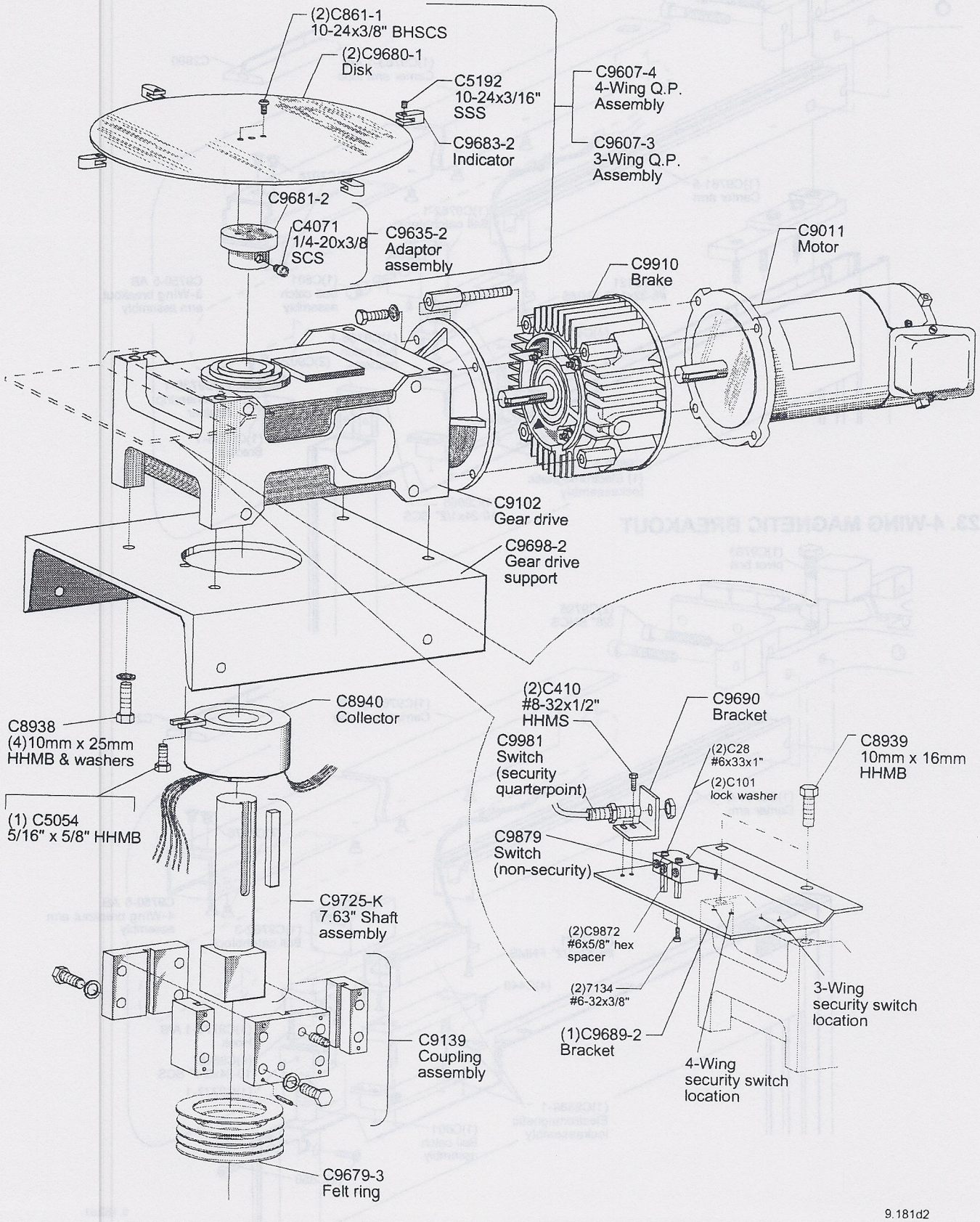
SECTION at ROOF SUPPORT



SEGMENTED CANOPY

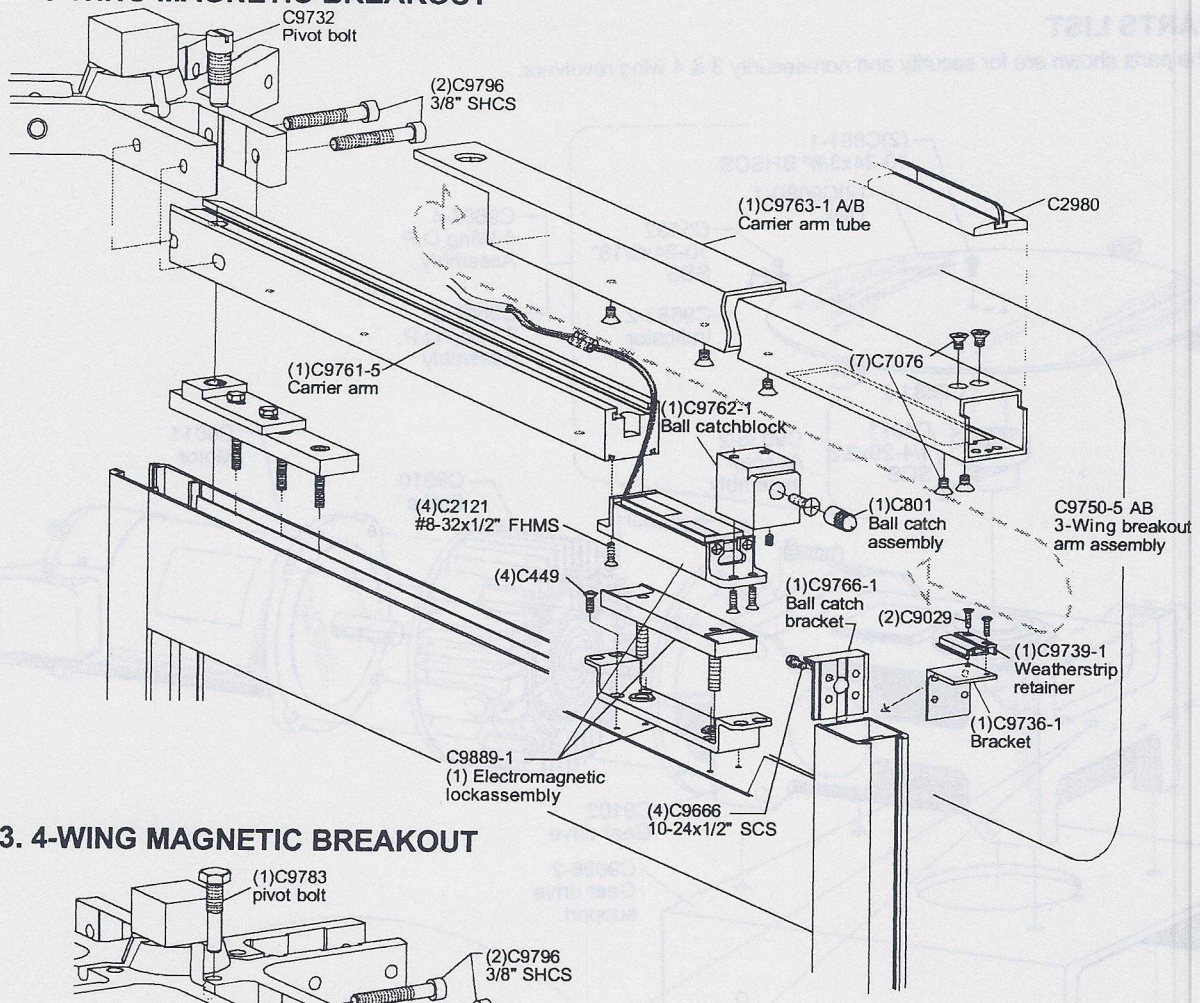
21. PARTS LIST

The parts shown are for security and non-security 3 & 4 wing revolvers.

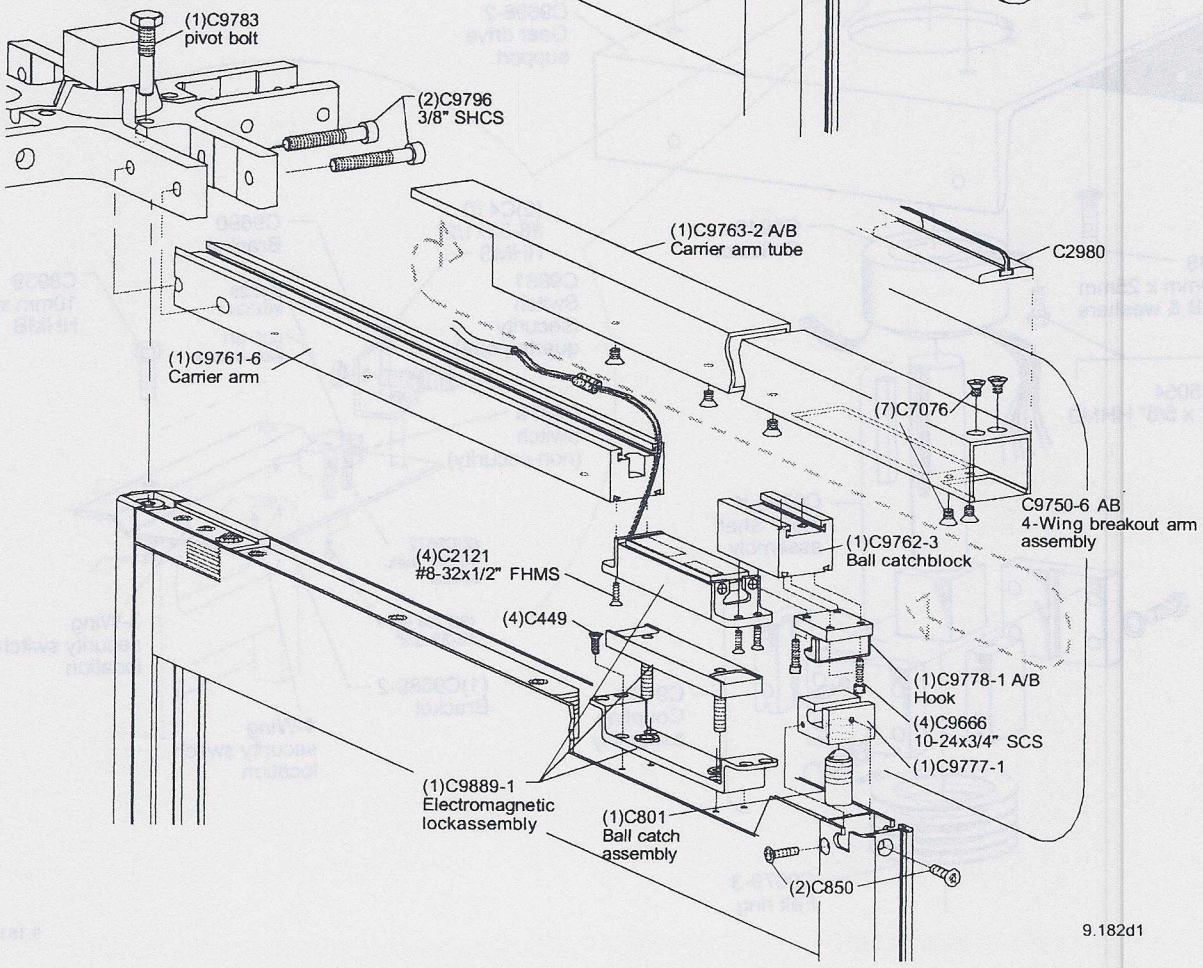


9.181d2

22. 3-WING MAGNETIC BREAKOUT



23. 4-WING MAGNETIC BREAKOUT



9.182d1

SYSTEM INSTALLATION & FEATURES (VERSION 2.60): G918.16

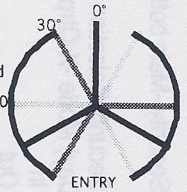
1. Door positioning is encoder - based, using a single proximity switch indicating the door is in the "Y" position, i.e., one wing is centered in the "exit" th This is considered to be the 0° reference point in door rotation; therefore the door will align with the drum leading edge at 30°, align on the center of the at 90°, and align with the drum trailing edge at 120°, at which point the next wing should be at the "Y" position / 0° reference point. A proximity switcl required for each wing (3) at the "Y" position / 0° reference point. If the door rotates 225° without a reference actuation, the system will lockdown anc itive 3 blink sequence of the "Timers Reset" LED on the C9953-1 Ouput Board.
2. Upon startup, if the door begins to run, then locks down and initiates a 2 blink sequence of the "Timers Reset" LED, the encoder phasing is wrong - swi and white wires on the encoder and restart. Proper encoder phasing can be checked by holding the security keyswitch actuated during startup for 5 secon watching the "Timers Reset" and "AUX1 OUT" LEDs. The Timers Reset LED should illuminate first when the door is manually rotated in the forward direct
3. Upon expiration of the motion detector actuate time delay and/or the handicap pushbutton delay, the door will slow down at the next 90° point and stop quent 30° point with the security mat switches enclosed by two door wings.
4. The Security Keyswitch has four different functions, depending upon door status:

A.) Door in normal mode - keyswitch will generate a security pass request (1 person is allowed to pass from the non-secure side to the secure side of the door).

B.) Door in safety stop (safety edge pressed) - keyswitch will switch door to "Idle" mode, allowing manual rotation of the door and unrestricted passage. Idle mode is exited & normal operation resumed when the keyswitch is momentarily actuated a second time.

C.) Door in security alarm lockup - keyswitch will clear the security alarm and return door to normal operation.

D.) Door in startup mode - if keyswitch is actuated during system initialization, the door will switch to encoder diagnostic mode.



5. Three conditions will cause the door to lockup, requiring the keyswitch to reset to normal mode:

A.) If the door is physically pushed backwards more than 5°, as indicated by the encoder.

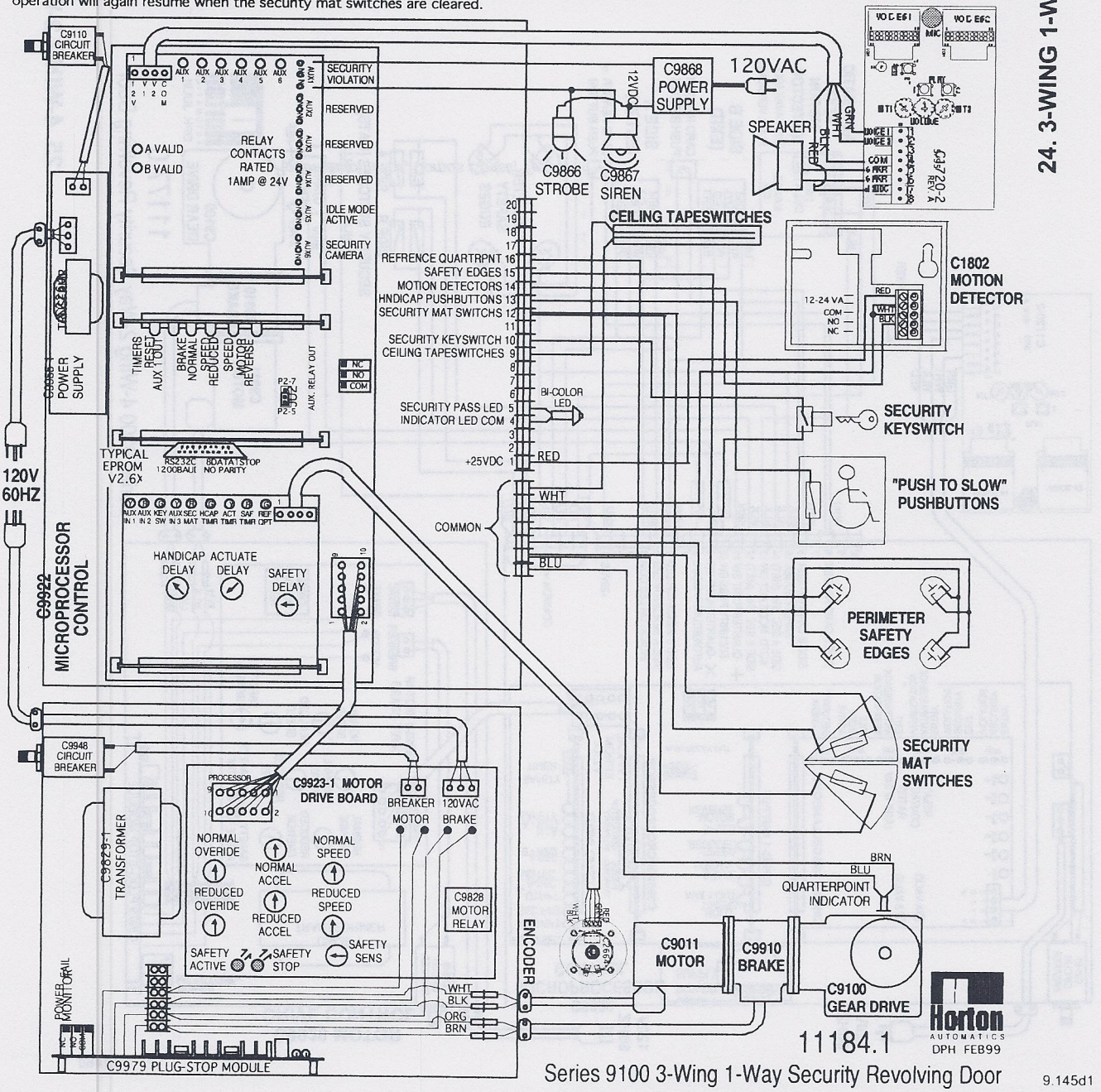
B.) If the ceiling mounted tapeswitches are actuated.

C.) If the security mat switches are actuated between 30° and 40° of door rotation from the "Y" position / 0° reference point. It is assumed an actuation is due to someone attempting to jump into the security mat area at the last minute and deliberately attempting to breach security.

Note: If a lockup occurs in the 0° to 40° area, a keyswitch reset will result in the door backing to the "Y" position / 0° reference point before resuming n

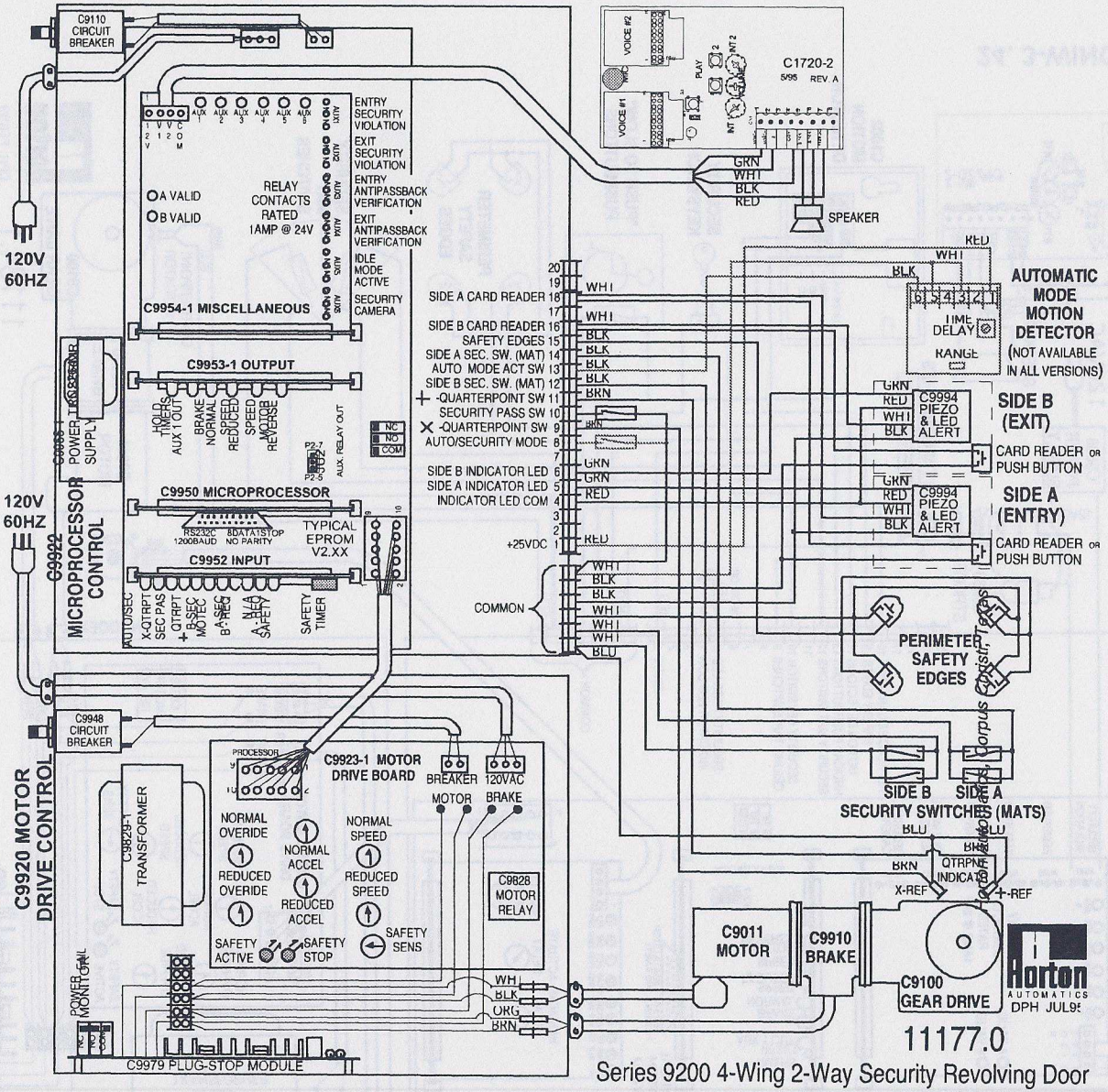
6. If a security mat actuation occurs in the 0° to 30° rotation, the door will immediately stop, annunciate "Security Violation, Door will Reverse", and sl "Y" position / 0° reference point. It will remain until the security mat switches are cleared, then resume normal operation.
7. If a security mat actuation occurs in the 40° to 120° rotation, the door will immediately slow down and proceed to the next "Y" position / 0° reference operation will again resume when the security mat switches are cleared.

24. 3-WING 1-WAY SECURITY WIRING DIAGRAM



Series 9100 3-Wing 1-Way Security Revolving Door

9.145d1



S9200 Schematic for Version 2.05

2Way Security -Mats both sides

Auto / Security Selection Switch (Pin 8)
Auto (Day) Mode -X-Qtrpt
Motec In
Motec Out

Security (Night) Mode - +-Qtrpt
CardReader (Card A) In
Motec Enables Mat / Mat Out

DPST Switch - turns off Exterior Motec
- turns off Pin 8 (enables Night Mode)

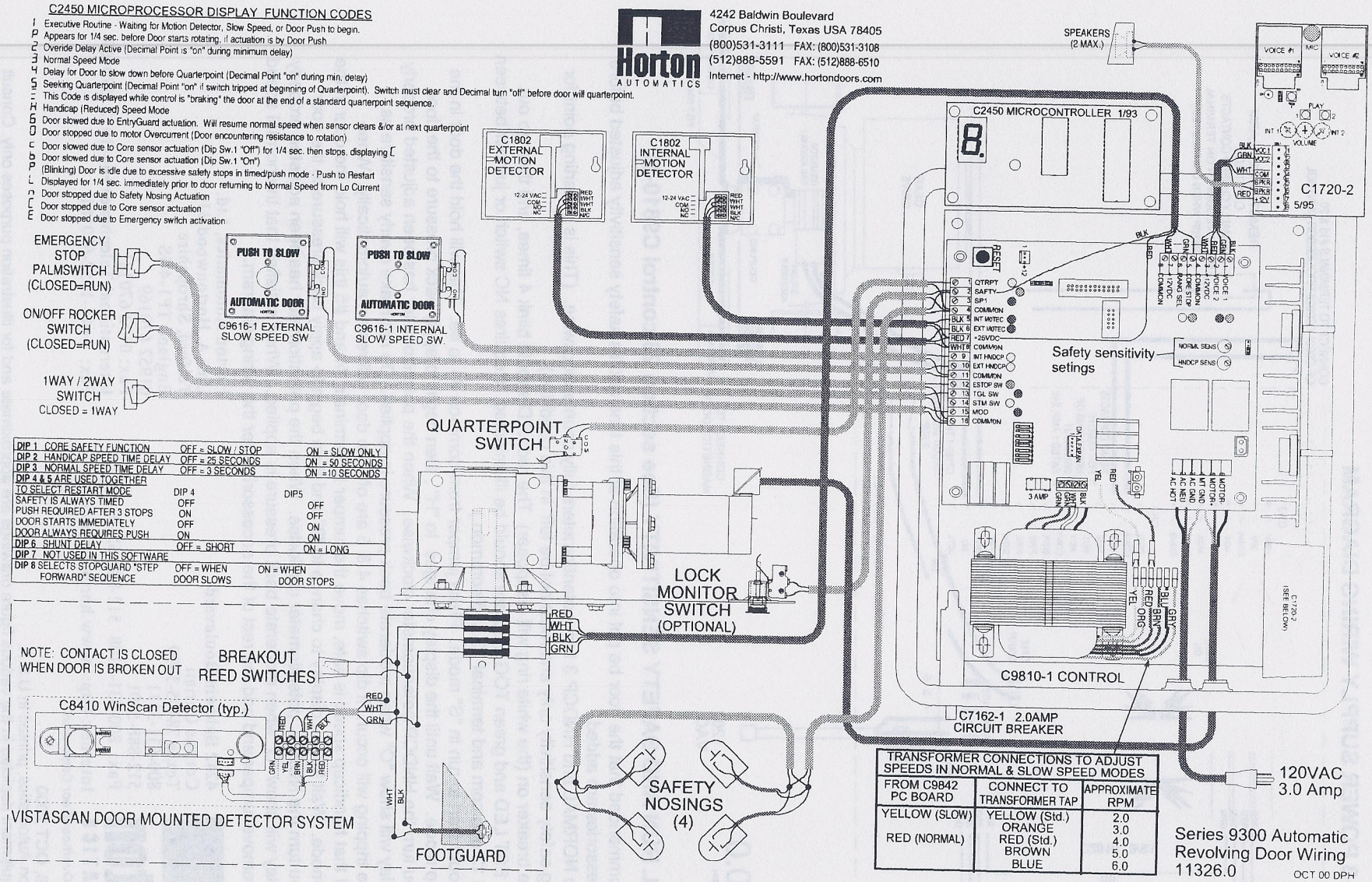
Security Pass Switch on Pin 10

Card B - N/A

G918.17

9.146d

25. 4-WING 2-WAY SECURITY WIRING DIAGRAM

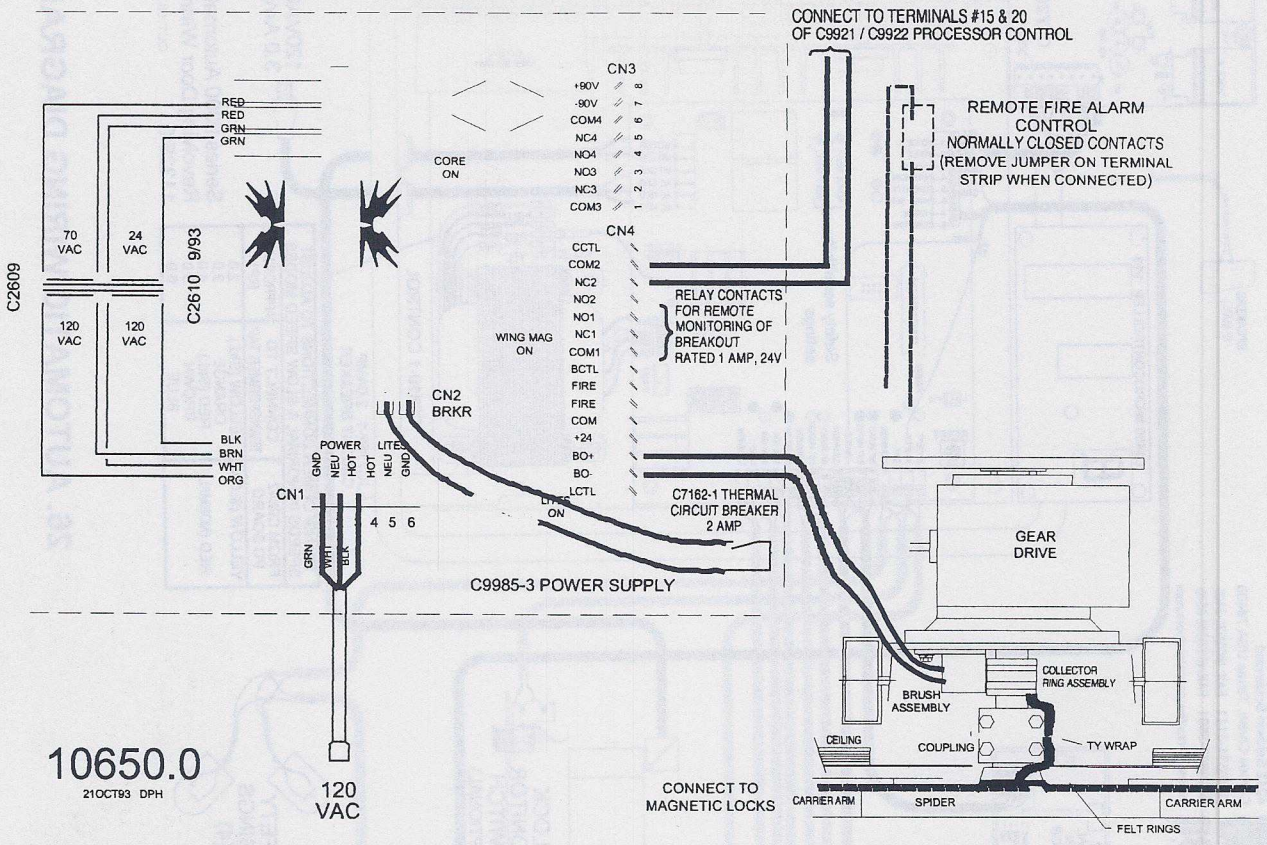


G918.18

9.144d2

26. AUTOMATIC WIRING DIAGRAM

27. C9985-3 POWER SUPPLY WIRING DIAGRAM



28. INITIAL RUN AND SAFETY SENSITIVITY (See section 26 control C9810-1)

It is recommended that the door be put into operation at this time and its safety sensitivity adjusted before any accessories are added.

Turn the NORMAL and HNDCP 3 turn potentiometers fully counterclockwise. (This is a starting point for adjusting safety sensitivity only and must not be left in this condition)

Push the breaker on (the white ring will disappear) The red LED should blink 4 times, and then go out. The red EST LED and green TOG LED are should be illuminated. (requires NC switch or jumper between terminal 12 and com and terminal 13 and common.)

Door should start to run in "S" mode. Place jumper from common #4 to #9. This will hold the door in the handicap mode. Wait until the display changes to "H" , then begin to apply back pressure to the door while you turn the HNDCP potentiometer clockwise. When the potentiometer has been adjusted properly the display will show "O" when moderate back pressure is applied. Do not make overly sensitive as nuisance tripping will occur. If dip switches 4 & 5 are off, the door will restart automatically. When satisfied that handicap speed is safe, move the jumper to terminals #4 and #5 this will hold the door in the normal mode. Wait for the display to change to "3" and then begin to apply back pressure to the door while you turn the NORML potentiometer clockwise. When the potentiometer has been adjusted properly the display will show "O" when moderate back pressure is applied. When satisfied that the normal speed is safe remove jumper and add the rest of the accessories per the wiring diagram.

Horton
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Form G918, OCT 2000