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# MOVFR DOOR OPERATOR INSTALLATION AND ADJUSTING MANUAL

**i**  
**COMMENTS**

All G.A.L. door operators are factory adjusted and tested for the actual job requirements. When installed correctly, they may require minor adjustments to suit actual job conditions.

**IMPORTANT:**

All equipment must be installed, adjusted, tested and maintained to comply with all Federal, State, and Local codes.

See section 7.6, page 28 in this manual for Kinetic Energy and closing force requirements.

Before mounting the operator, check that the car door is plumb, free and moves easily without bind. Check the attached standard measurements sheets. Install the operator according to the measurements supplied.

**ii**  
**FOREWORD**

It is the intent of this manual to give the reader certain key points of information critical to the proper installation of the door operator. It is not intended to give comprehensive installation procedures nor does it cover the installation of door headers, tracks, hangers, etc.

It is hoped that the procedures presented in this manual will reduce the installation and adjustment time and result in a smooth, long lasting door operation.

When properly installed, G.A.L. operators will give many years of trouble free service.

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**MECHANICAL SECTION:**

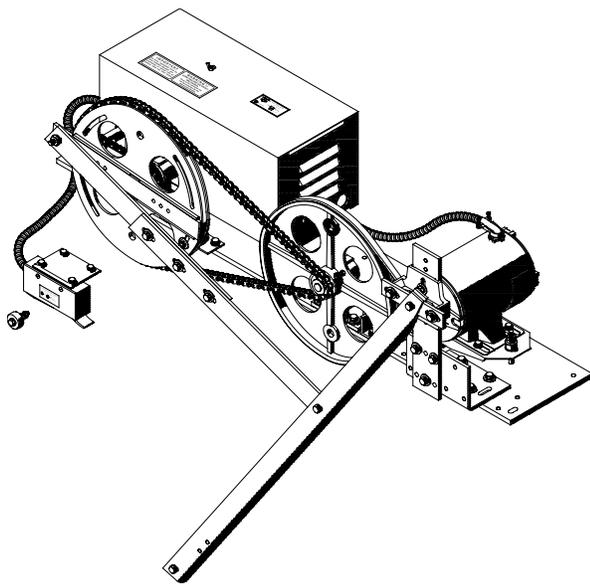
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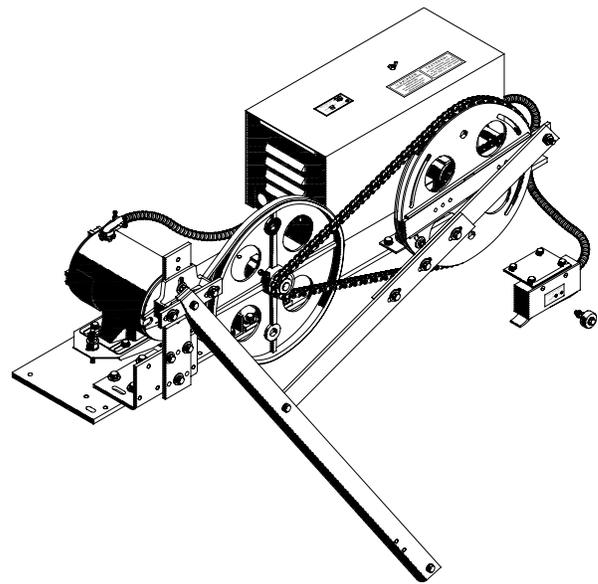
**MOVFR OPERATORS**

The MOVFR door operator is our newest model. It utilizes a 1/2 HP AC motor. the controls include the AC motor, a VVVF drive and a PC board.

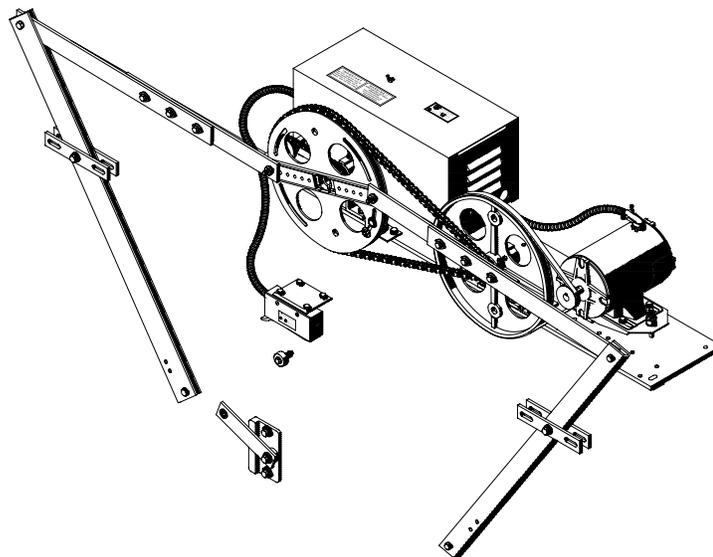
The illustrations on this page show the three different versions available; Left Hand, Right Hand and Center Parting.



**LEFT HAND SIDE OPENING**



**RIGHT HAND SIDE OPENING**

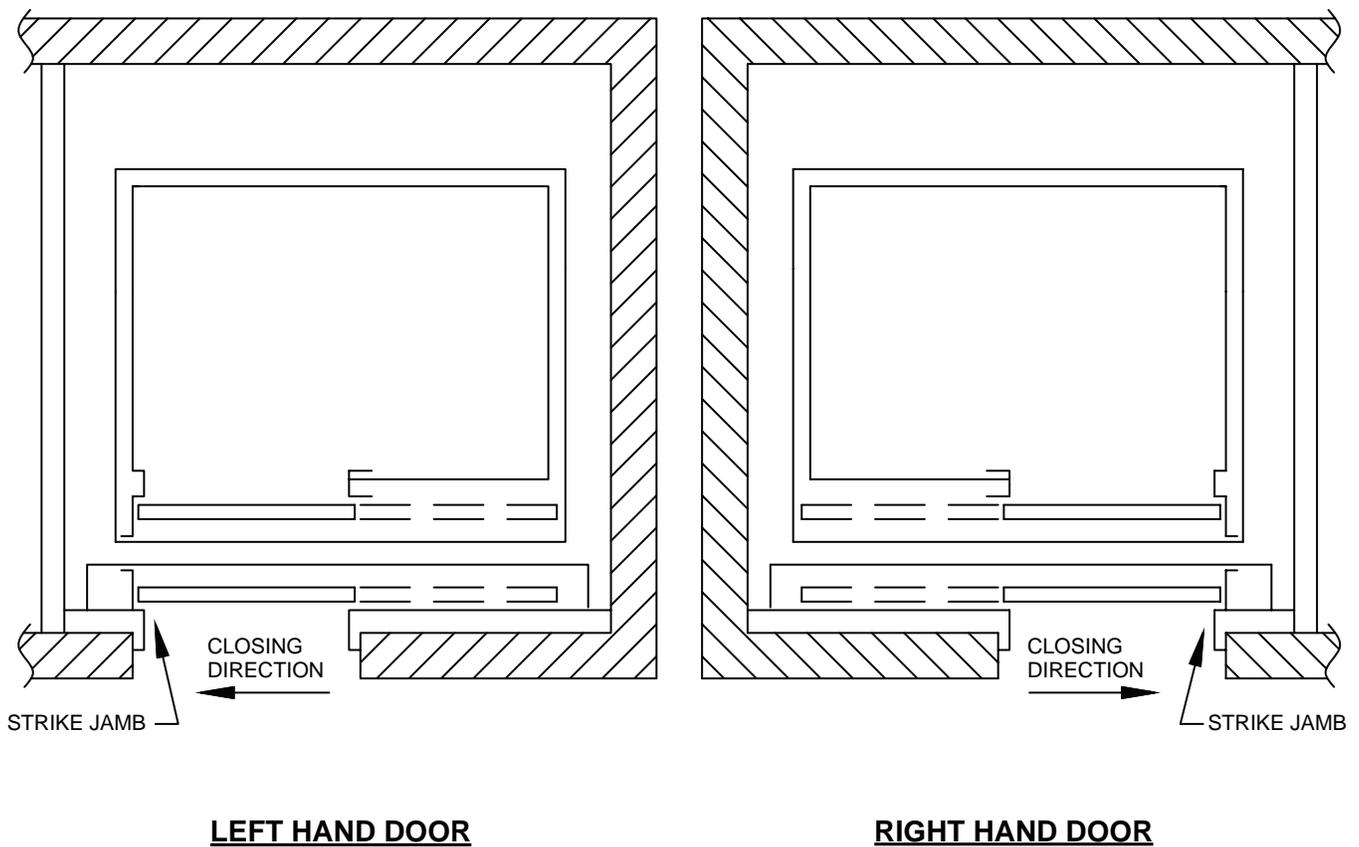


**CENTER PARTING**

2

**DETERMINING THE HAND OF THE DOOR**

G.A.L. door operators are available for right hand doors and for left hand doors. (Center parting doors use a variation of the left hand operator). to determine the hand of the door, stand in the lobby facing the elevator doors. If the doors close to the left, it is a left hand door. If the door closes to the right it is a right hand door. The left hand, center parting and right hand operators are not interchangeable. The figures below illustrate the door hand.



### 3

## MOUNTING THE OPERATOR

As with all G.A.L. operators it is important to have the proper mechanical set up. Before continuing, check that doors are hung properly and glide freely with no binding. The spring closer should also be set so that the hoistway door will close fully. The door operator should be mounted in the proper position with the drive arm plumb and the operator arm and pivots set according to the DATA sheets (DATA21 for single speed, DATA22 for two speed). Slight differences are acceptable.

### **Install the isolation pads.**

Isolation pads for the operator base are provided to minimize noise and vibration transmission into the cab. These pads must be glued to the operator base before mounting it to the car top.

### **Set the header plumb.**

Place the operator over the pre-tapped holes in the header assembly. Set the base flush with the face of the header assembly and tighten the front bolts only. Move the operator base and header until the header is perfectly plumb. Temporarily clamp the rear of the base to the operator support to prevent any further movement of the header.

### **Side opening Doors:**

With the header assembly correctly installed, the vertical centerline of the operator drive pulley should be 9 3/4" from daylight for a door opening of 22" to 44" and 14 3/4" for a door opening of 45" to 48" (see figure 3 and Appendix drawings No. DATA21 and DATA22).

### **Center parting Doors:**

With the header assembly correctly installed, the center of the door opening lines up with the center of the header track. the center of the operator drive pulley should also line up with center of the opening (see figure 6 and Appendix drawings No. DATA23).

### **Determining the position of the front edge of the door operator base:**

Mount the drive arms to the drive arm support brackets on the header assembly for center parting doors and to the drive arm support bracket for slide doors. The mounting brackets are slotted for fine adjustment later, if needed. At this time, position the arms in the center of the bracket and tighten it.

Attach the connecting linkage(s) to the drive pulley, making sure that when the word "CLOSED" is on top the doors will be closed. Tighten the linkage(s) to drive pulley.

Attach the clutch assembly to the drive door linkage, then attach the clutch to the drive door using the pre-tapped holes on the door panel. Tighten the clutch assembly to the drive door. Attach the other door (for center parting doors) to its linkage and tighten the door bracket to the center of the slots.

Raise or lower the rear operator support bracket mounted to the cab to vertically level the operator drive pulley. This helps to prevent binds in the opening and closing.

Check that the operator arms hang free and are not forced to or away from the operator drive pulley. Slide the operator forward or backward, if necessary. Turn the drive pulley by hand making sure that the

drive arms and connecting links are perpendicular and clear of door and track. If necessary, slide the operator base forward or backward.

Proper positioning of the operator is critical to the life of the arm bearings. Bending of the drive arms will place stress on the bearings reducing their operating life.

Once the operator base is in correct position, drill the holes to permanently fasten the rear of the operator and tighten all mounting bolts.

## 4

**PRE-ADJUSTMENT TIP****BEFORE PROCEEDING TO THE ADJUSTMENT SECTIONS, READ THE FOLLOWING TIP (REFER TO FIGURE 1)**

Think of the drive pulley crank arm(s) and the connecting link(s) as each having its own independent role **The crank arm determines the total door travel.** The further the arm is away from the drive pulley, the longer the door travels.

**The connecting link determines the door position.** The longer the arm, the further the door moves from the jamb.

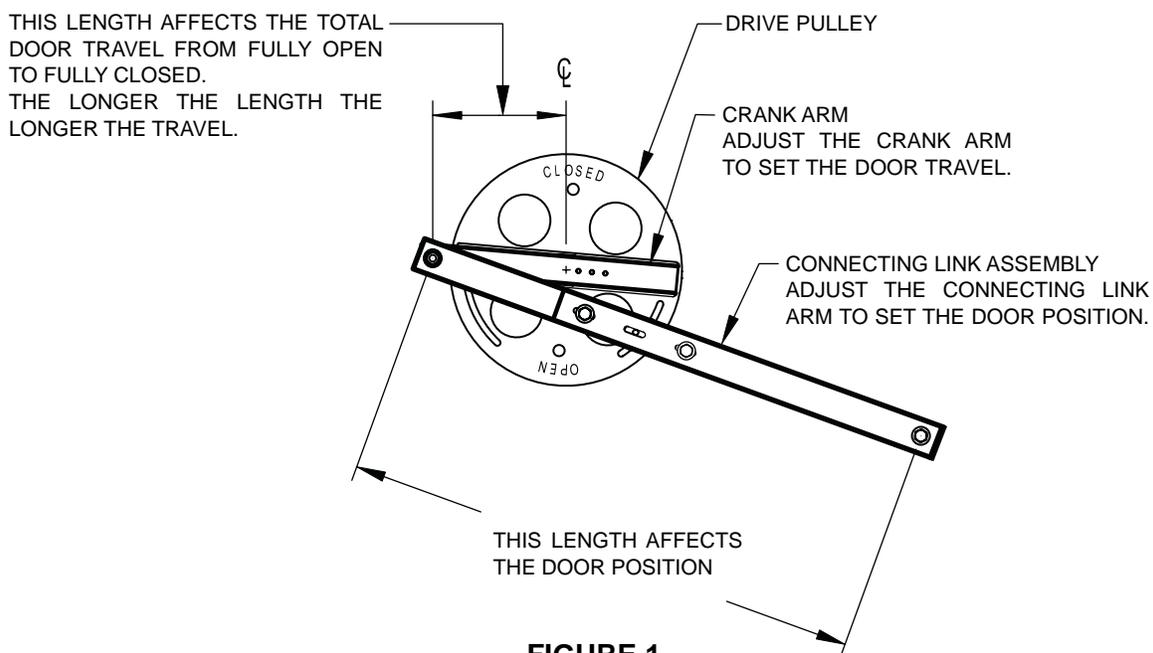
Example:

If the door opening is 42" but the door travels only 40" as stopped by the open and close limit cams, do not alter the cams. The cams have been factory pre-set. Correct the under travel by extending the crank arm outward from the drive pulley until the door travels 42" from fully open to fully closed (as determined by the limit cams), then fasten the crank arm in place.

Now, loosen the connecting link bolts, close the door against the stop roller and tighten one of the link bolts. Open the door until the open limit is activated and check the door position. If the door is not in the proper open position, close the door and readjust the connecting link. Repeat the above steps until the operation is complete and the fasten the two link bolts. Make sure that the closing door is stopped against the stop roller and not the strike post.

Remembering the above two points will facilitate door adjustments.

Bear in mind, that the drive pulley crank arm position and the cams are pre-set by our factory as indicated on the installation drawings.



5

**ADJUSTING THE SINGLE SPEED AND TWO SPEED SLIDE DOORS**

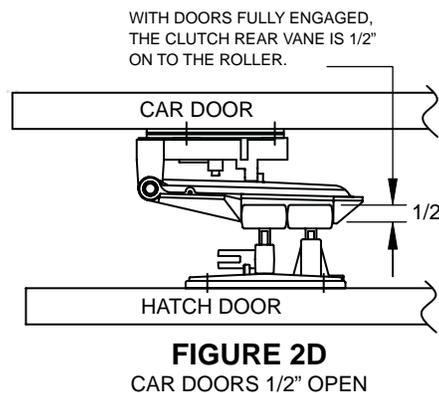
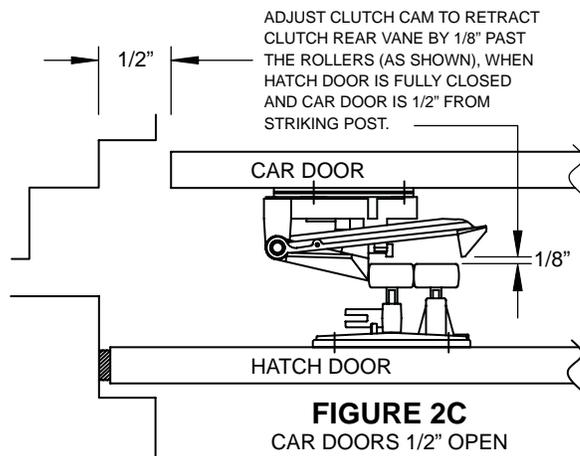
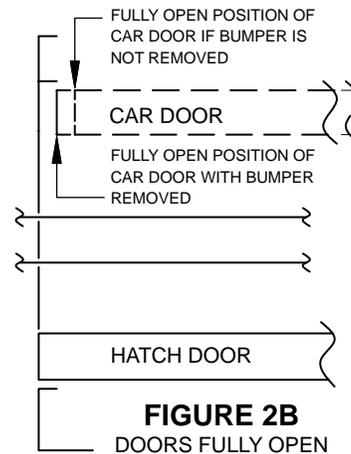
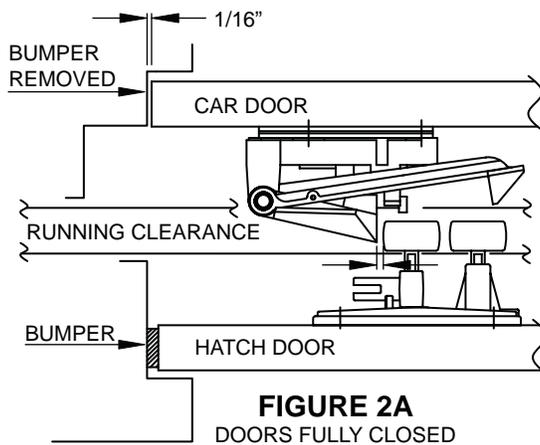
**5.1 Removing the zone locking device and the bumpers:**

Before adjusting the operator, remove the car door bumpers and the locking cam from the zone locking device, (see document LWZ-1). Removing the locking cam from the zone locking device, allows unimpeded movement of the doors.

Removing the bumpers - Because the car door moves to unlock the hoistway door, it must move approximately 7/16" further than the hoistway door. Removing the car door bumpers makes up some of this difference and allows better door alignment at full open.

**5.2 Adjusting the release roller and clutch:**

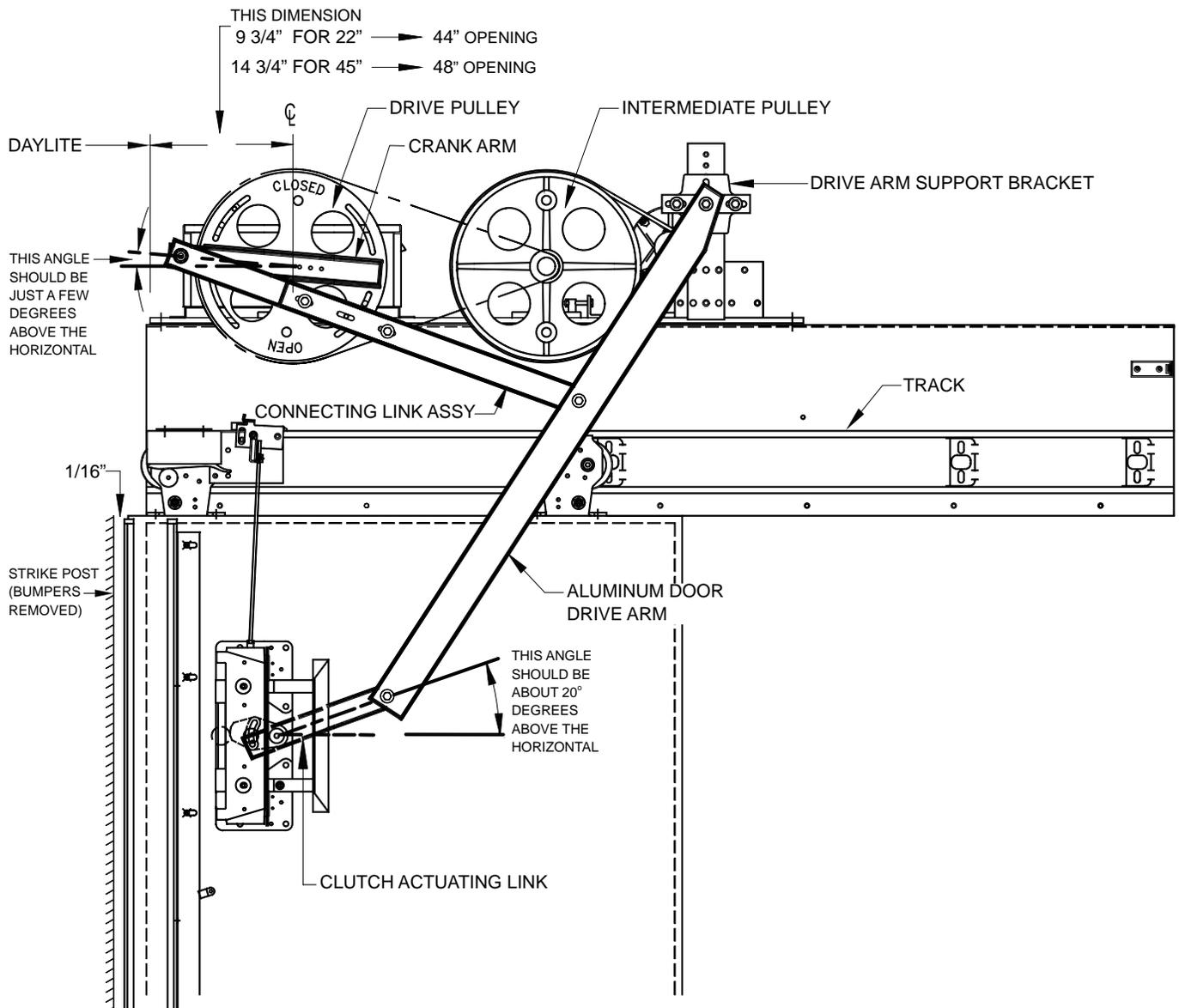
Referring to figure 2A, adjust the lock release rollers so that they will clear the clutch by about 3/16" when the car door is in its final closed position and the drive pulley stop roller is against the stop plate. Adjust the clutch cam and roller depth as per figures 2C and 2D. The clutch should retract as late as possible in the closing cycle.



**5.3 Crank arm and clutch link positions with door closed:**

Referring to figure 3, with the door fully closed, the crank arm should be just a few degrees above the horizontal and the clutch link about 20 degrees above the horizontal. This setting will help prevent slamming and roll back, yet still allow manual opening of the doors when the car is stopped at a landing during a power failure.

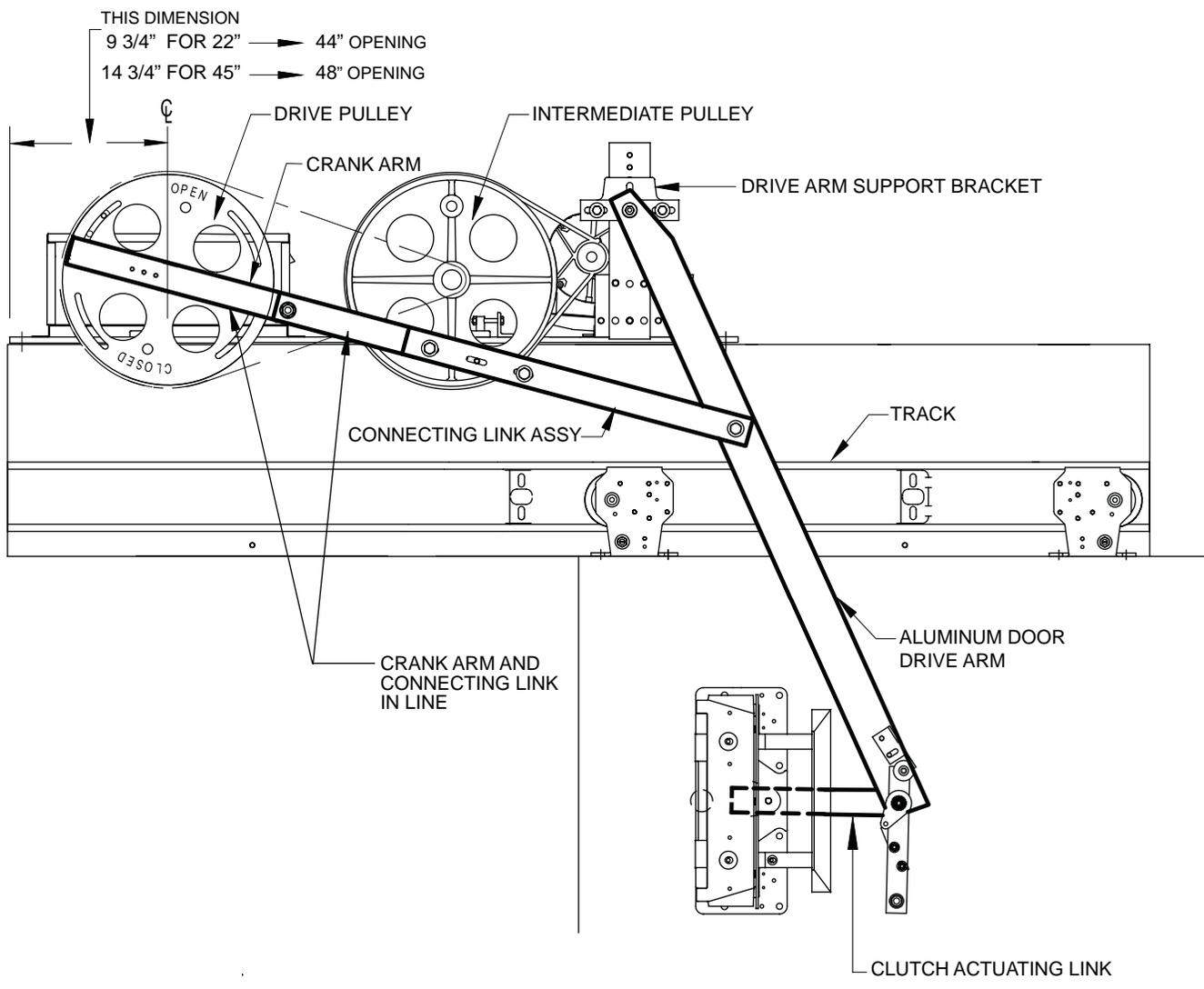
If adjustments are necessary, close the car door. Loosen the two connecting link bolts and the two crank arm bolts. Keeping the door fully closed, adjust the link and arms to the proper positions. If necessary move the bolts to new holes. Re-tighten all four bolts when finished.



**FIGURE 3**  
DOOR FULLY CLOSED

**5.4 Crank arm and clutch link positions with door open:**

Referring to figure 4, the best door opening operation occurs when the crank arm and the connecting link are in a straight line, the clutch link is about horizontal and the car door is approximately 1/2" past the return jamb. To make this adjustment, turn the drive pulley toward the open direction by hand until the crank arm and the connecting link are in line. Adjust the crank arm to bring the car door to 1/2" into the return jamb, then re-adjust the door open limit to stop the door electrically at this position.



**FIGURE 4**  
 DOOR FULLY OPEN

6

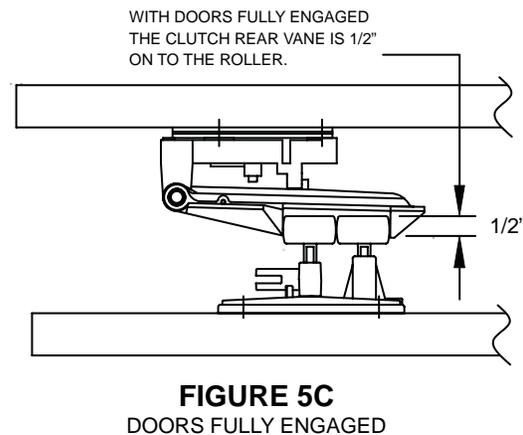
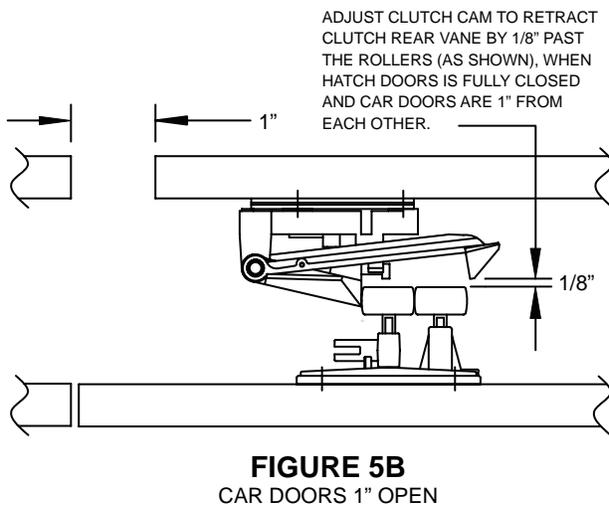
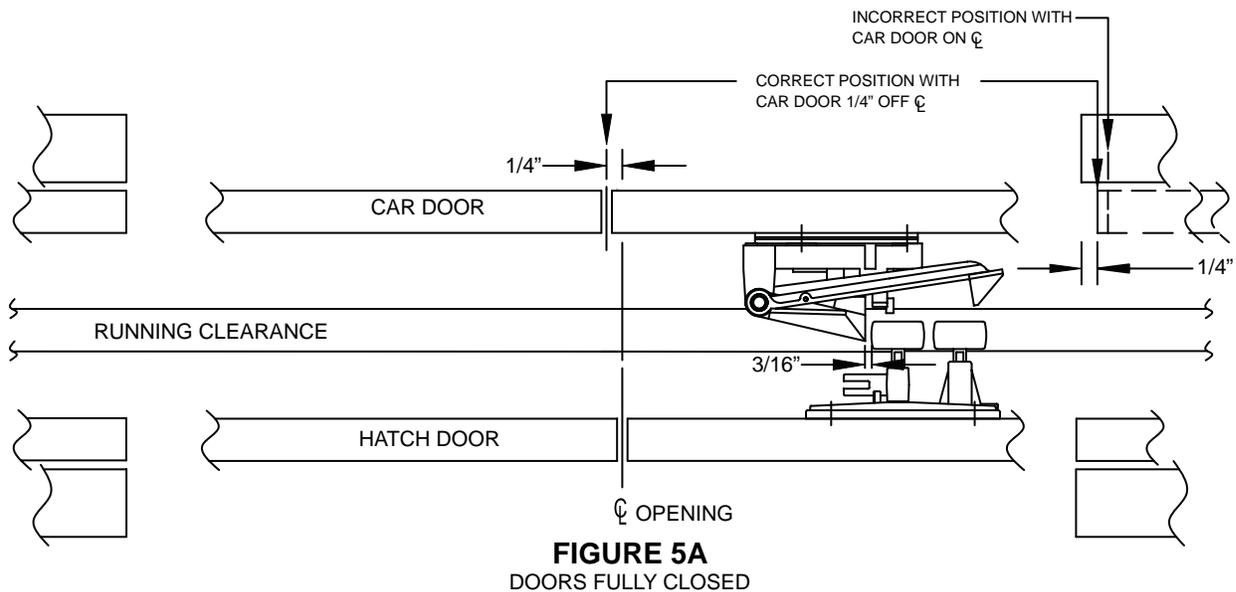
**ADJUSTING CENTER PARTING CAR DOORS**

**6.1 Adjusting the stop roller:**

Referring to figure 5A, we recommend adjusting the driven car door so that it leads the hoistway door by 1/4". This will make the car door more closely match the hoistway door when fully open. Adjust the stop roller on the drive pulley so that the closing doors will be stopped by the roller as they meet. Do not have pressure on the meeting car doors, otherwise it will place unwanted stress on the arms.

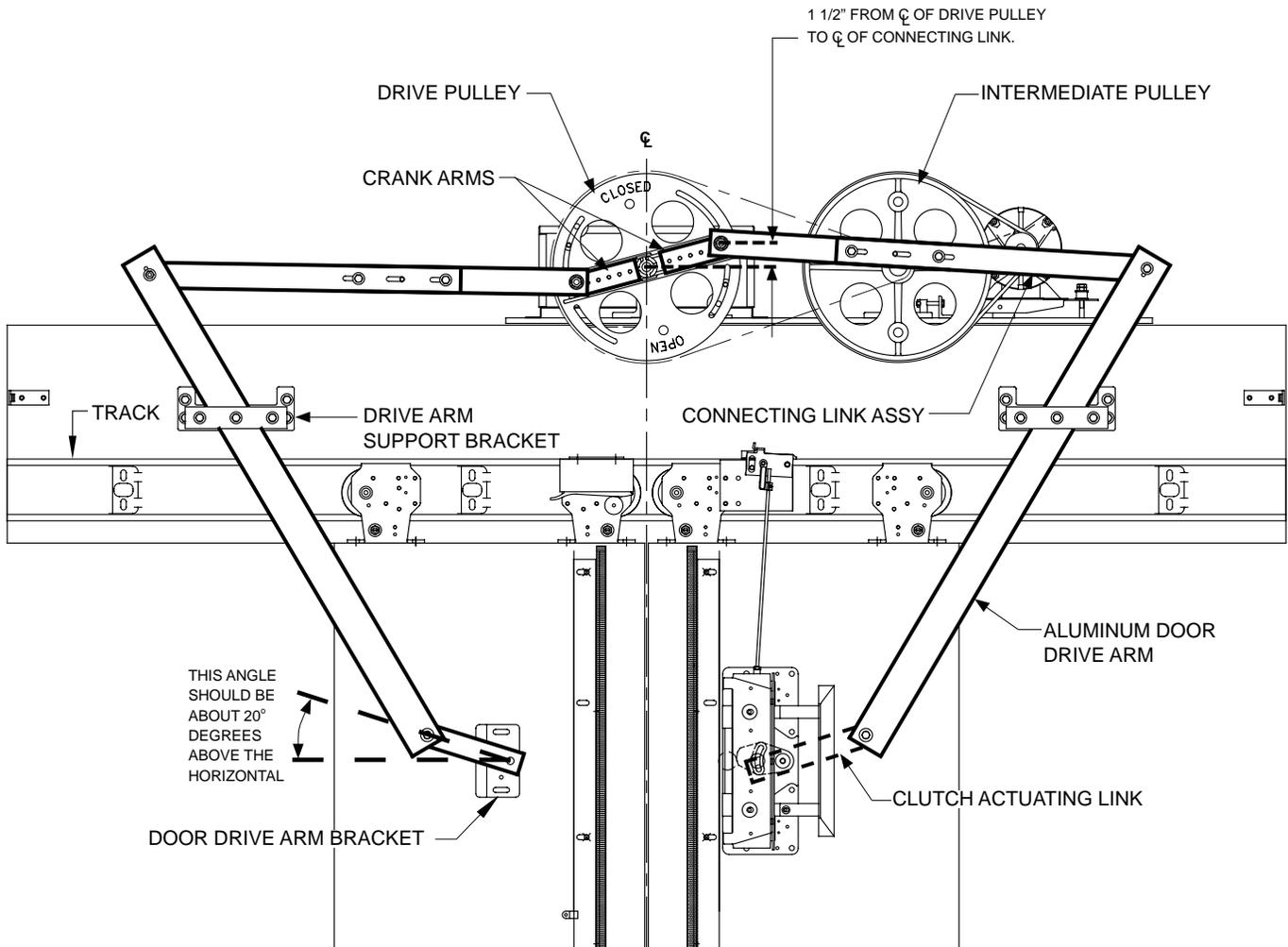
**6.2 Adjusting the release roller and clutch:**

Referring to figure 5A, adjust the lock release rollers so that they will clear the clutch by about 3/16" when the car doors are in their final closed position and the operator stop roller is against the stop plate. Adjust the clutch cam as per figures 5B and 5C. The clutch should retract as late as possible in the closing cycle.



**6.3 Crank arm and clutch link positions with doors closed:**

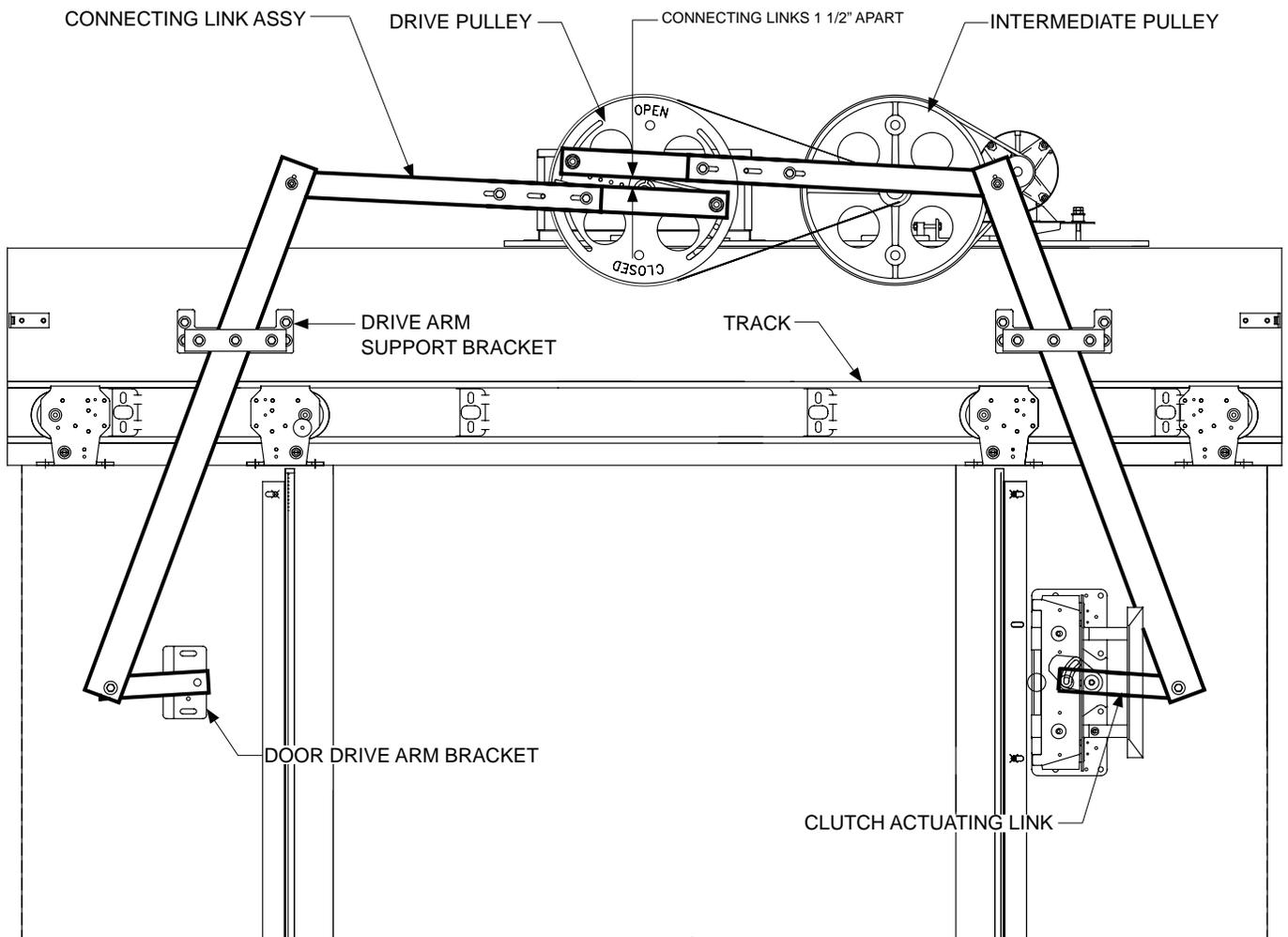
Referring to figure 6, with the doors fully closed, the connecting links should be about 1 1/2" from the horizontal centerline of the pulley. the clutch link should be at about 20 degrees above the horizontal. as shown.



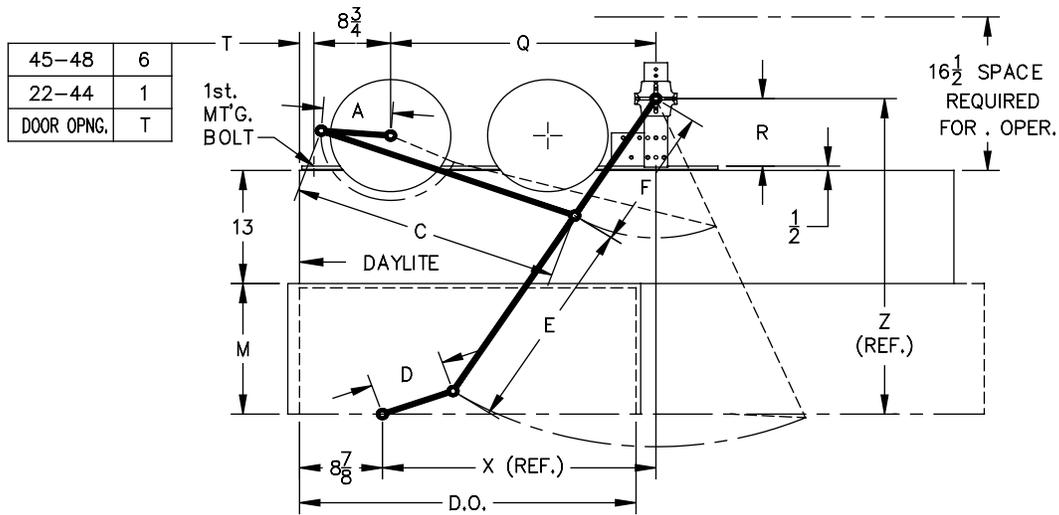
**FIGURE 6**  
DOOR FULLY CLOSED

**6.4 Crank arm and clutch link positions with doors open:**

Referring to figure 7, with the doors fully open, the connecting links should be about 1 1/2" apart. the clutch link should be at about 20 degrees above the horizontal.



**FIGURE 7**  
DOOR FULLY OPEN



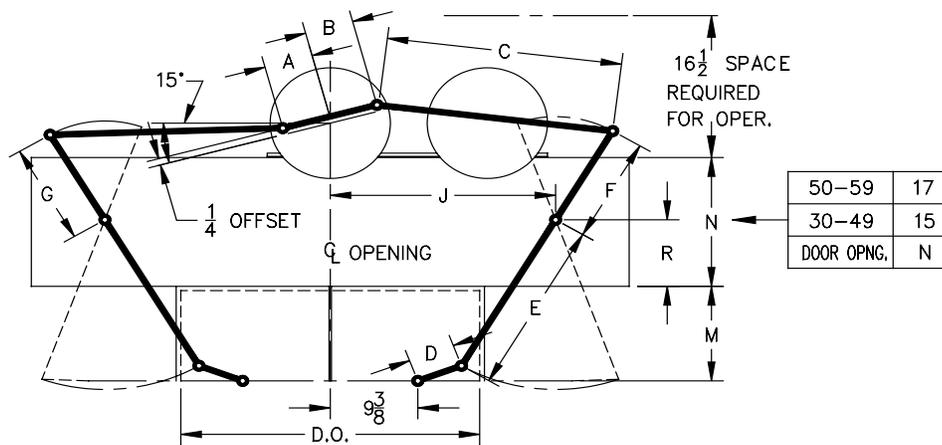
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46	9 11/16	33 15/16	12	31	21	23	39 5/8	47 1/2	33 3/4	11
45	9 1/2	33 3/4	12	31	21	23	39 5/8	47 1/2	33 3/4	11
44	9 7/8	34 3/4	10	26	20	19	34 5/8	42	33 3/4	9 1/2
43	9 11/16	34 9/16	10	26	20	19	34 5/8	42	33 3/4	9 1/2
42	9 7/16	34 3/8	10	26	20	19	34 5/8	42	33 3/4	9 1/2
41	9 3/16	34 3/16	10	26	20	19	34 5/8	42	33 3/4	9 1/2
40	9	34	10	26	20	19	34 5/8	42	33 3/4	9 1/2
39	8	29 3/8	8	24	16	15	29 1/4	36 1/4	28 3/8	7 3/4
38	7 13/16	29 3/16	8	24	16	15	29 1/4	36 1/4	28 3/8	7 3/4
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INCHES	A	C	D	E	F	M	X	Z	Q	R
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DOOR OPENING	OPERATOR ARMS	DOOR ARMS				CLUTCH	PIVOT		OPERATOR	
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	<h2 style="margin: 0;">SINGLE SPEED 22-48 D.O. OPERATOR DATA TABLE</h2>								NOV. 11, 1994 <b>DATA21</b>	
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INCHES	A	B	C	D	E	F	G	M	R	J
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