



MOVFE 2500
HARMONIC DOOR OPERATOR
MECHANICAL MANUAL

GAL CANADA

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M

HARMONIC

2500-3070

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, track, hangers, etcetera.

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

When properly installed, GAL door operators will give many years of trouble free service.

COMMENTS

All GAL 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 NOTES

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

Kinetic Energy and Stall Force must be adjusted to comply with ASME, A17.1, Rule 112.4/5, and CSA/B44, Rule 2.13.4/5.

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

Contact GAL if the following label is missing from the door operator.



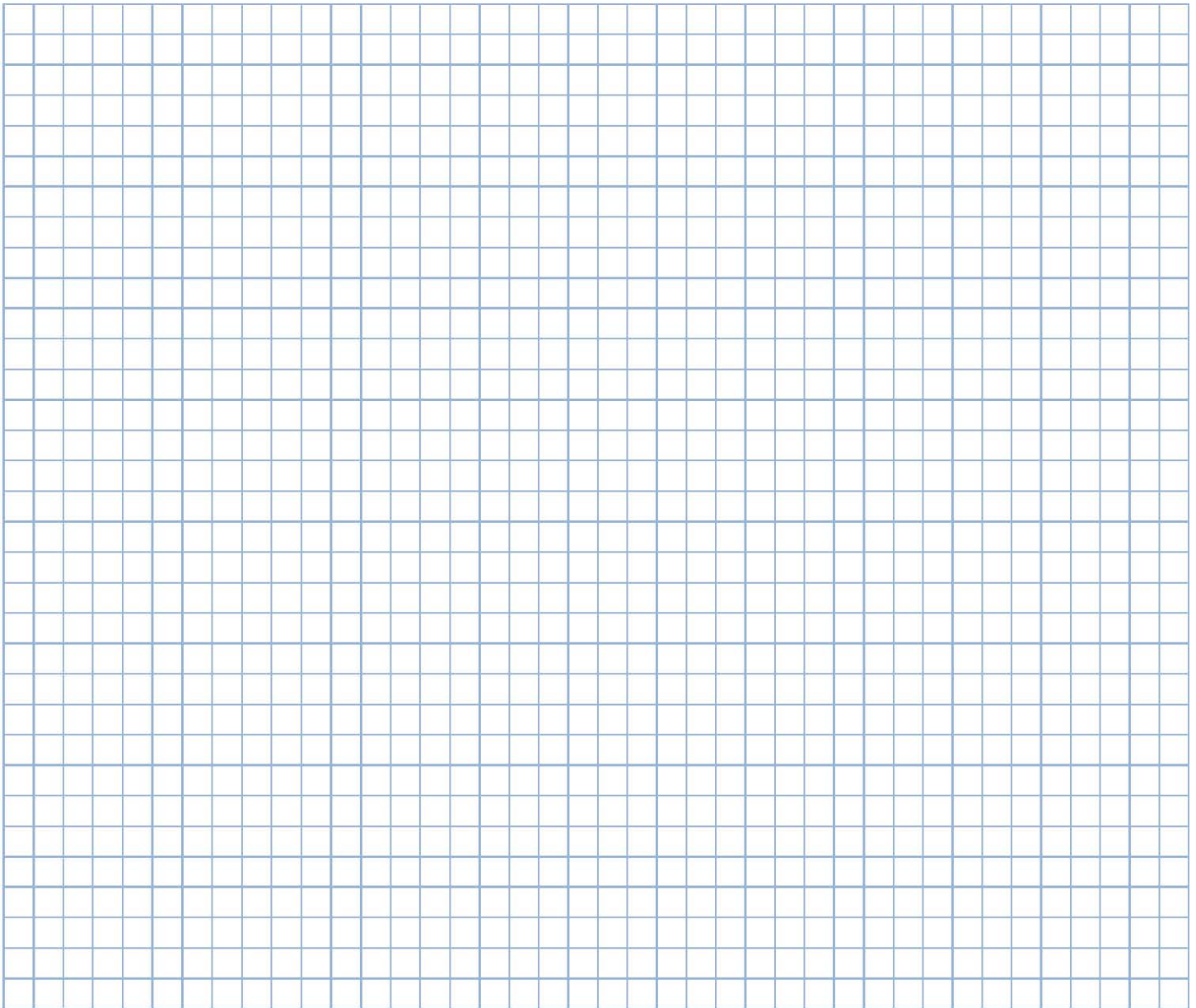
TYPE MOVFE2500 OPERATOR			® CSA B44.1/ASME-A17.5
		C	US
<input type="checkbox"/> 115 VAC	50/60 ~ 4A ½ HP.	<input type="checkbox"/> HH (HARMONIC)	<input type="checkbox"/> HL (LINEAR)
<input type="checkbox"/> 115 VAC	50/60 ~ 4A .122 HP	<input type="checkbox"/> GL	
<input type="checkbox"/> 230 VAC	1 Ø 50/60 ~ 2A. ½ HP.	<input type="checkbox"/> HH (HARMONIC)	<input type="checkbox"/> HL (LINEAR)
<input type="checkbox"/> 230 VAC	1 Ø 50/60 ~ 2A. 0.122 HP.	<input type="checkbox"/> GL (GEAR LINEAR)	
MINIMUM DOOR CLOSING TIMES			
CAN/CSA B44-00 & ASME A17.1-2000 RULE 2.13.4.2.4			
LIGHT DOORS	SERIAL #	<input type="text"/>	HEAVY DOORS
<input type="text"/>	SECONDS WITH REOPENING DEVICE ENABLED		<input type="text"/>
<input type="text"/>	SECONDS REOPENING DEVICE DISABLED (NUDGING)		<input type="text"/>
WARNING !		IMPORTANT	
MORE THAN ONE LIVE CIRCUIT, SEE DIAGRAM Parts of the controller are not de-energized by the Disconnect Switch.		All GAL equipment must be field installed, adjusted and maintained to comply with all federal, state/provincial and local codes.	
AVERTISSEMENT !		GAL CANADA MISSISSAUGA, ONTARIO CANADA	
CET EQUIPEMENT RENFERME PLUSIEURS CIRCUITS SOUS TENSION, VOIR LE SCHEMA Certaines composantes dans le panneau de contrôle ne sont pas désactivées par la mise hors tension de l'interrupteur d'alimentation.			
<input type="checkbox"/>	SUITABLE FOR USE ON A CIRCUIT CAPABLE OF DELIVERING NOT MORE THAN 5000 RMS SYMMETRICAL AMPERES, 240V MAXIMUM, WHEN PROTECTED BY 4 AMPERES, 240V RK5 FUSES.		
<input type="checkbox"/>	SUITABLE FOR USE ON A CIRCUIT CAPABLE OF DELIVERING NOT MORE THAN 5000 RMS SYMMETRICAL AMPERES, 120V MAXIMUM, WHEN PROTECTED BY 8 AMPERES, 120V RK5 FUSES.		

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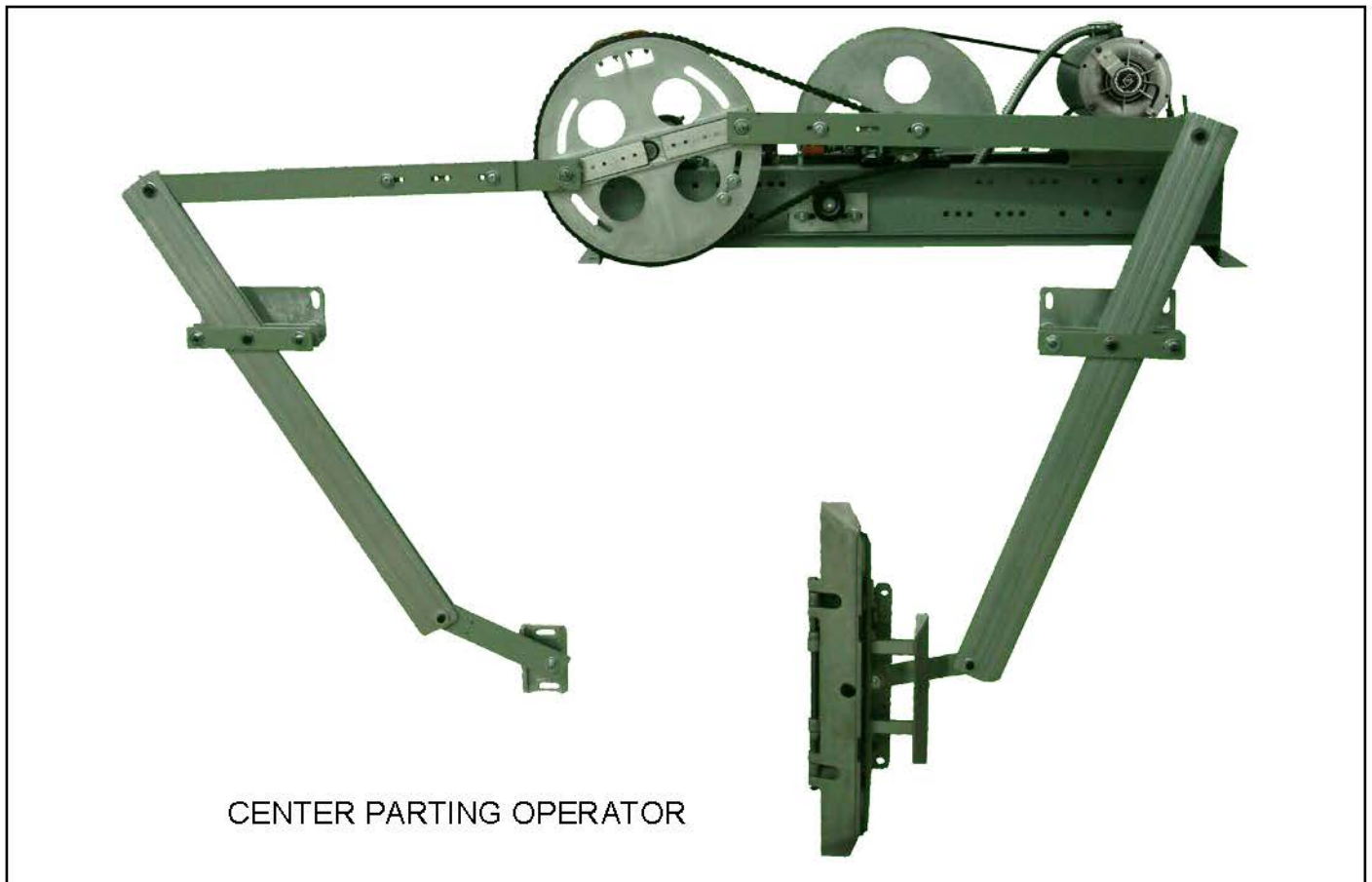
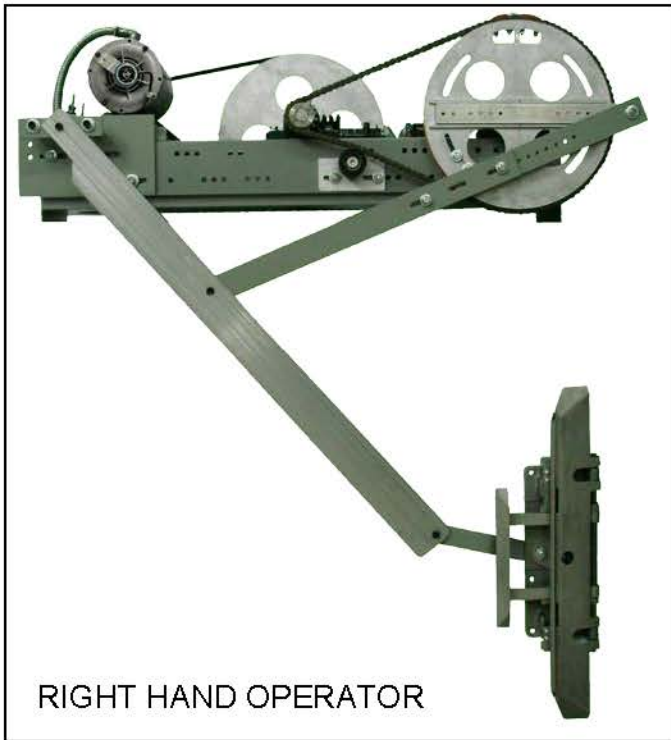
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NOTES

A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.

ILLUSTRATIONS OF MOVFE 2500 HARMONIC DOOR OPERATORS

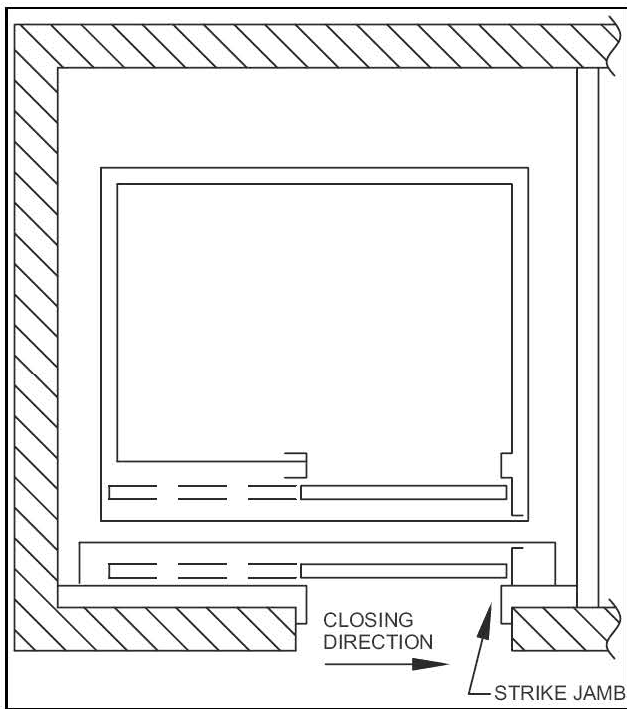
The MOVFE 2500 harmonic door operator utilizes a ½ HP AC motor. The controller includes a closed-loop VVVF Drive, a Cam Board and an optional I/O board for special jobs. The following illustrations show 3 available models: Right hand, Left hand and Center Parting.



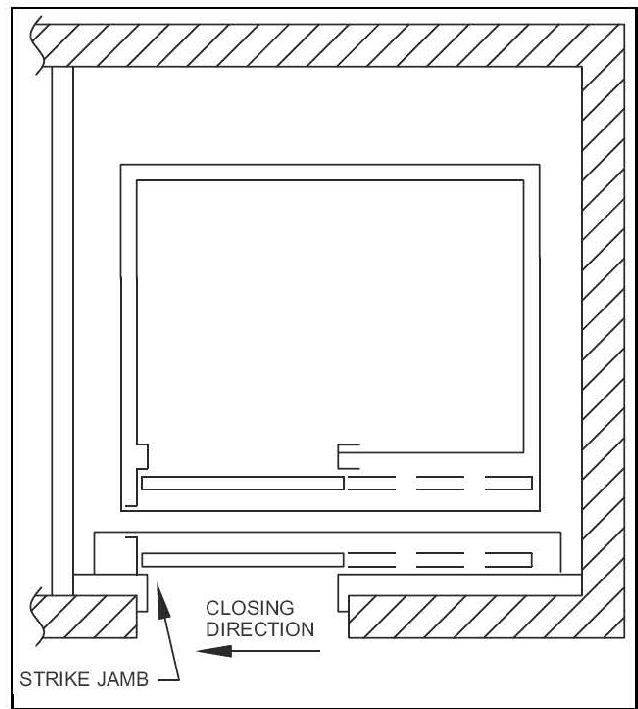
DETERMINING THE HAND OF THE DOOR

GAL door operators are available for Right hand doors and Left hand doors. (Center parting door operator is a variation of the Left hand operator.)

To determine the hand of the door, stand in the lobby facing the elevator door(s). If the door closes 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 **field interchangeable**. Figures below illustrate the door hand.



RIGHT HAND DOOR



LEFT HAND DOOR

POSITIONING THE DOOR OPERATORS:

GAL door operators are factory preset to the data marked on the shipping box.

It is important to have a proper mechanical set up with all GAL door operators. Make sure that doors are hung properly and glide freely without binding. The spring closer should also be set so that the hoist-way 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. Minor differences are acceptable.

The following paragraphs describe how to position the GAL door operators.

Mark daylight according to the data sheet, for example:

- a) 9 ¾ for single speed 36" door
- b) 14¾ for two speed 48" door
- c) Center of opening for C/P operators

For Center Parting door operator, center of the crank wheel onto the daylight.

Attach the linkage.

Make sure that the crank arm runs parallel to the door face. To set this, move the door operator towards or away from the hoist-way door.

Hand tighten the clamping screws.

Mount the clutch and shim accordingly, to engage the arm with the crank arm.

When the door is fully closed, the "A" linkage should be horizontal Side Opening (S/O) applications, or 15 degrees on Center Parting (C/P) application.

Set the rubber stop on the crank wheel against the operator base (1/16" clearance.)

Tighten all the clamping screws on the base, linkage and the clutch.

PRE-ADJUSTMENT

The drive pulley crank arm(s), and the connecting link(s) have their own **independent** functions.

The crank arm determines the total door travel. The farther the arm is away from the drive pulley, the longer the door travels.

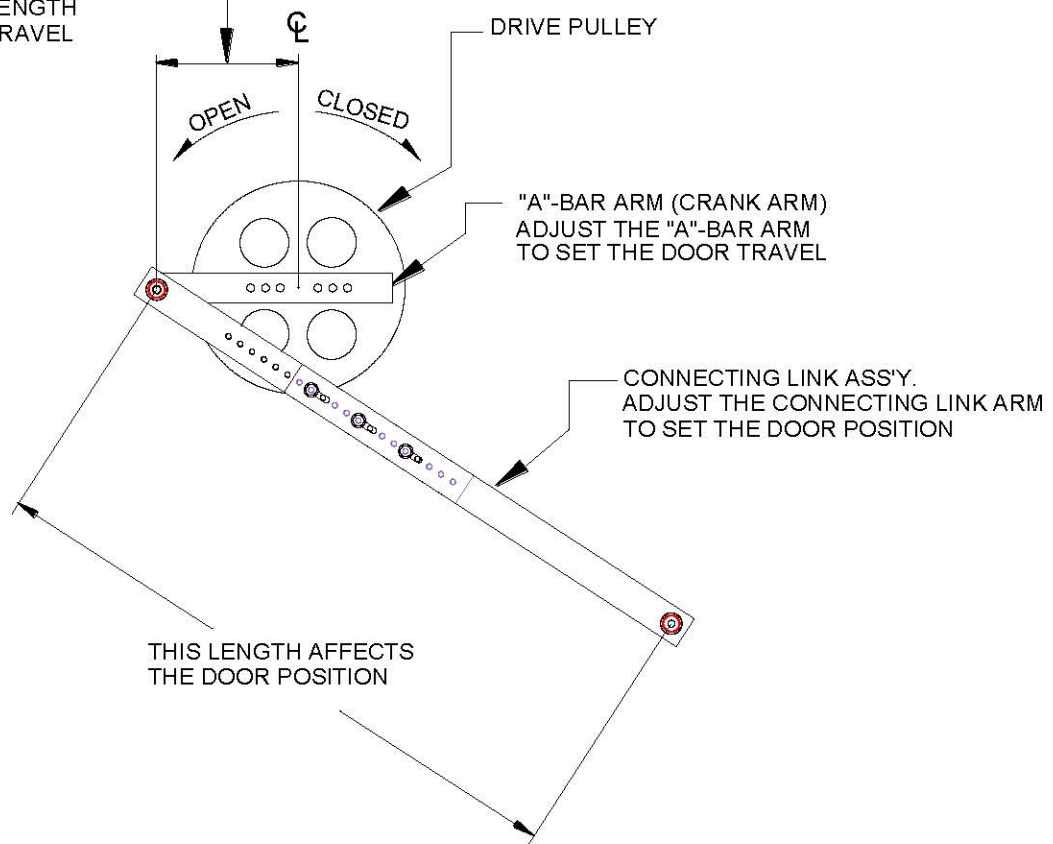
The connecting link determines the door position. The longer the arm, the further the door moves from the jamb.

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 tighten the two link bolts. Make sure that the closing door is stopped against the stop roller and not the strike post. 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.

THIS LENGTH AFFECTS THE TOTAL DOOR FROM FULLY OPEN TO FULLY CLOSED. THE LONGER THE LENGTH THE LONGER THE TRAVEL



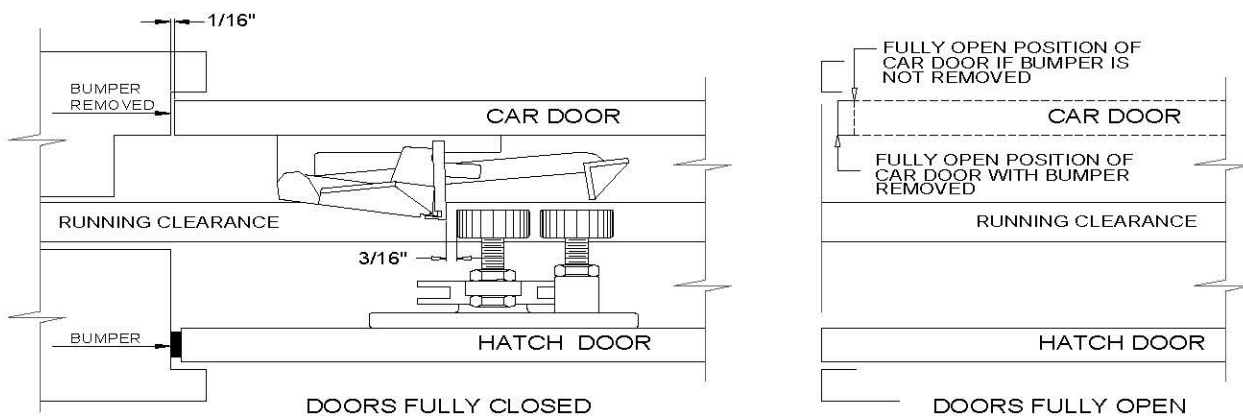
ADJUSTING SIDE OPENING DOORS

Removing the zone locking device and the bumpers:

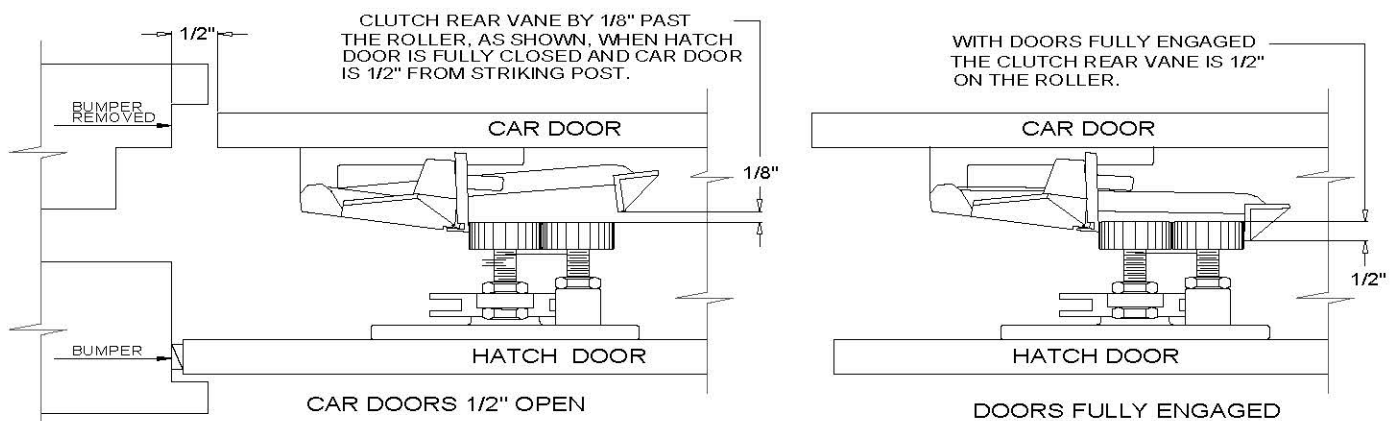
Before adjusting the operator, remove the car door bumpers and the locking cam from the zone locking device. Removing the locking cam from the zone locking device allows unimpeded movement of the doors. Because the car door moves to unlock the hatch door, it must move approximately $7/16"$ farther than the hatch door. Removing the car door bumpers makes up some of this difference and allows better door alignment at full open.

Adjusting the release roller and clutch:

Referring to figure below, 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.

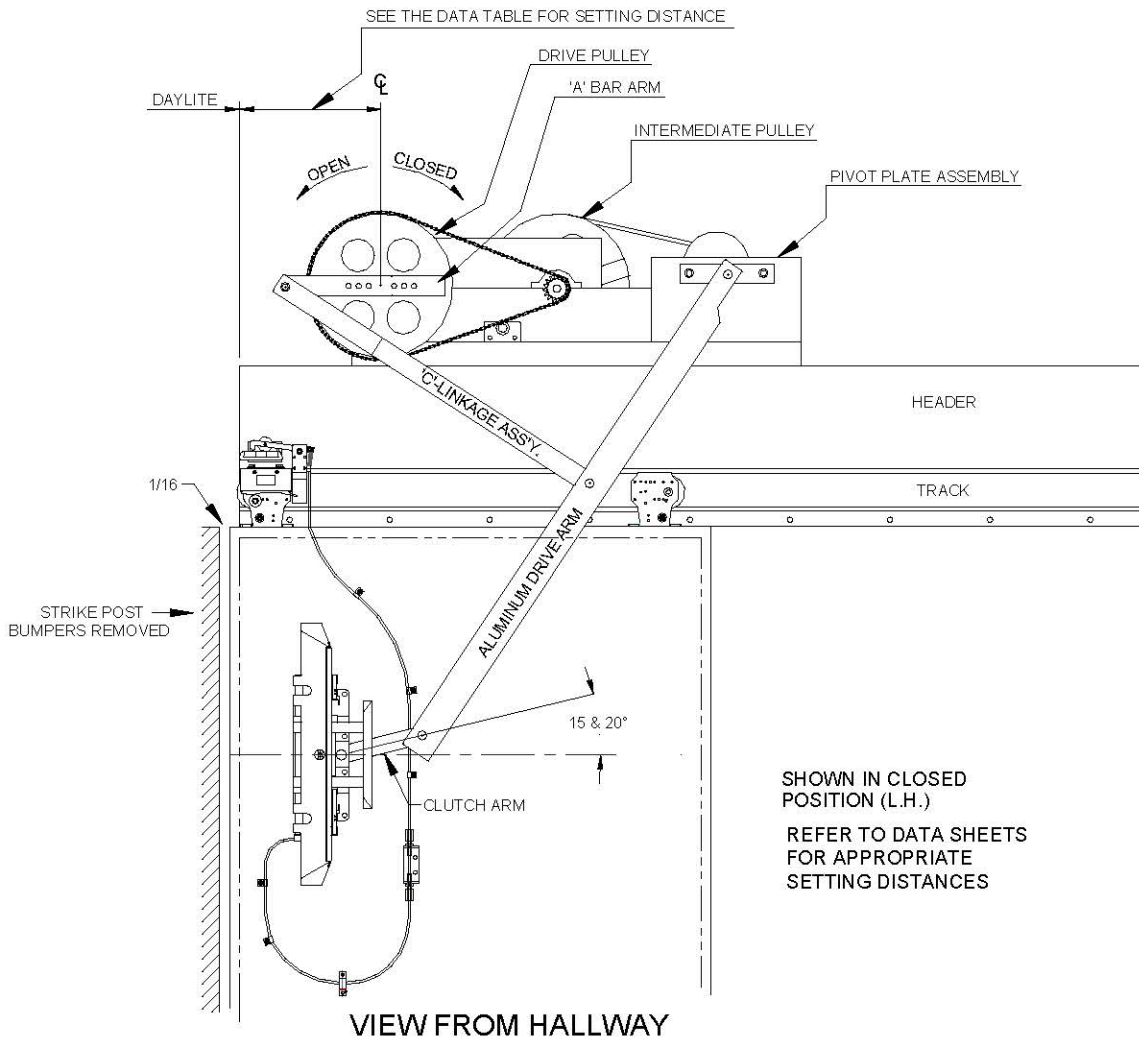


Adjust the clutch cam and roller depth as per figures below. The clutch should retract as late as possible in the closing cycle.



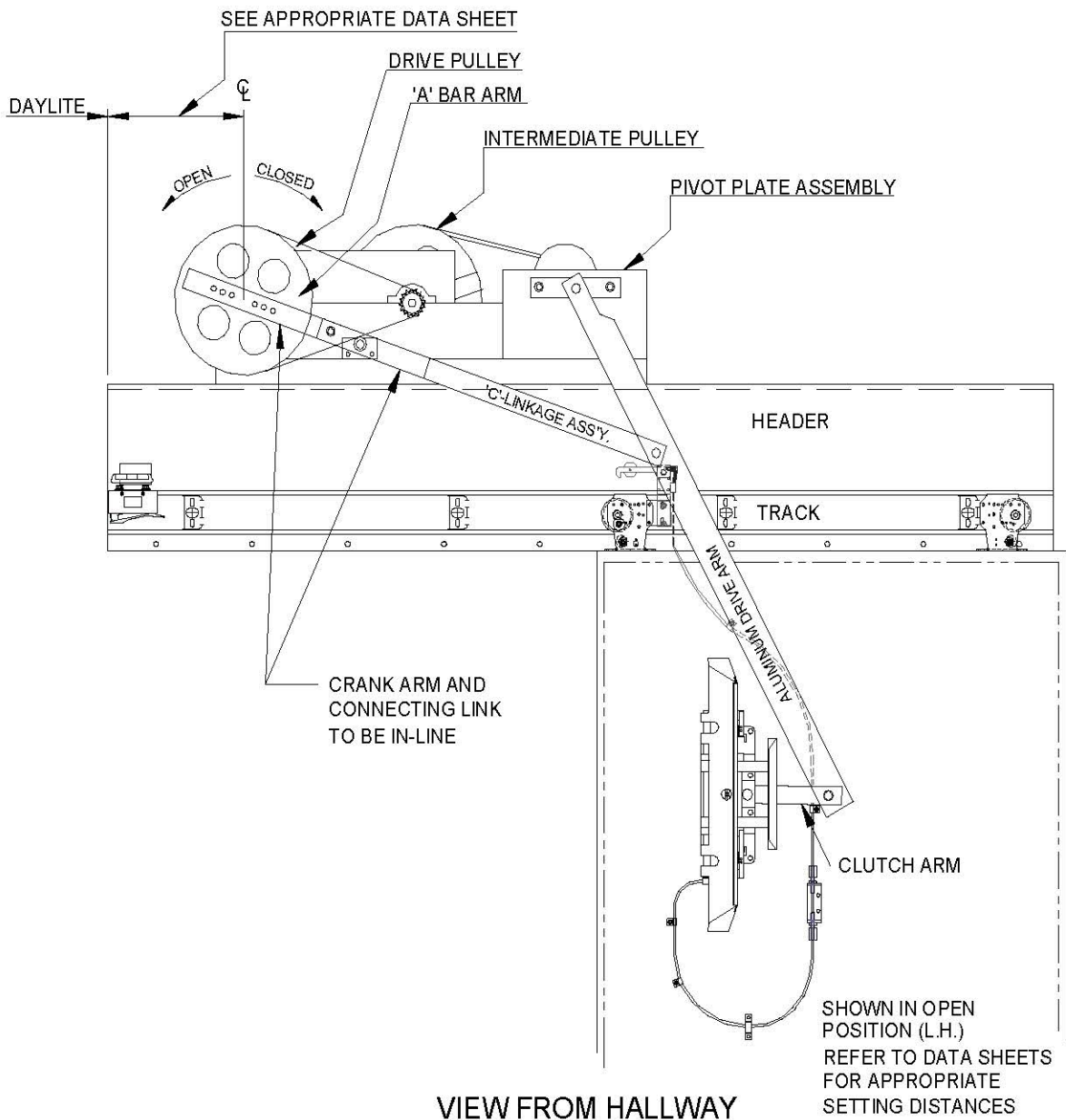
Crank arm and clutch link positions with door closed:

Referring to figure below, 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 C-link (C-LINKAGE ASS'Y) 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.



Crank arm and clutch link positions with door open:

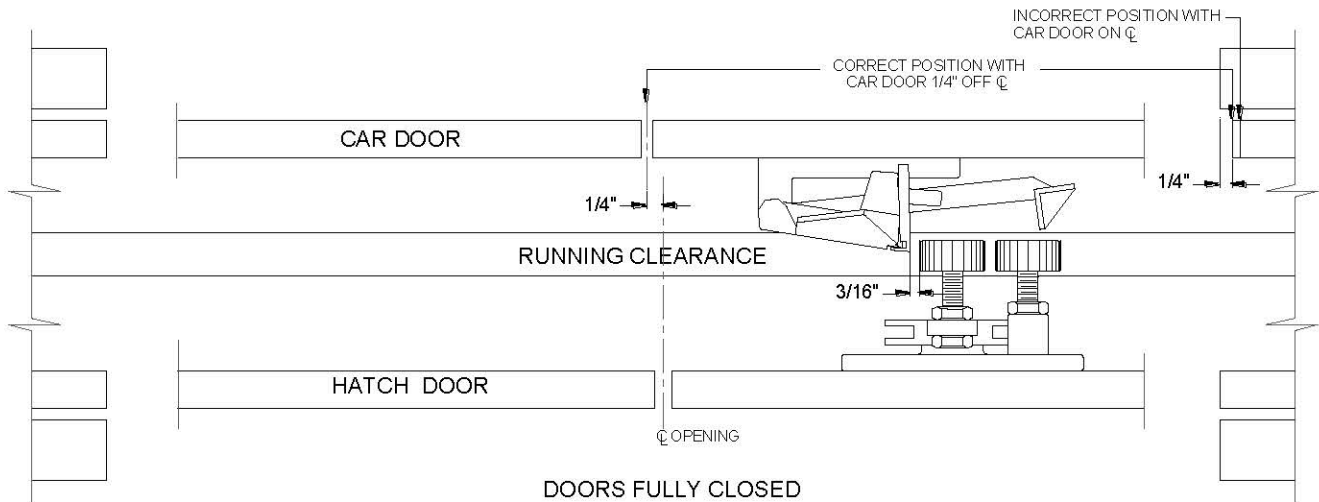
Referring to figure below, the best door opening operation occurs when the crank arm and the C- link are in a straight line, the clutch link is about horizontal and the car door is approximately 1/2" past the return jamb. To make this adjustment, turn the drive pulley toward the open direction by hand 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.



ADJUSTING CENTER PARTING DOORS

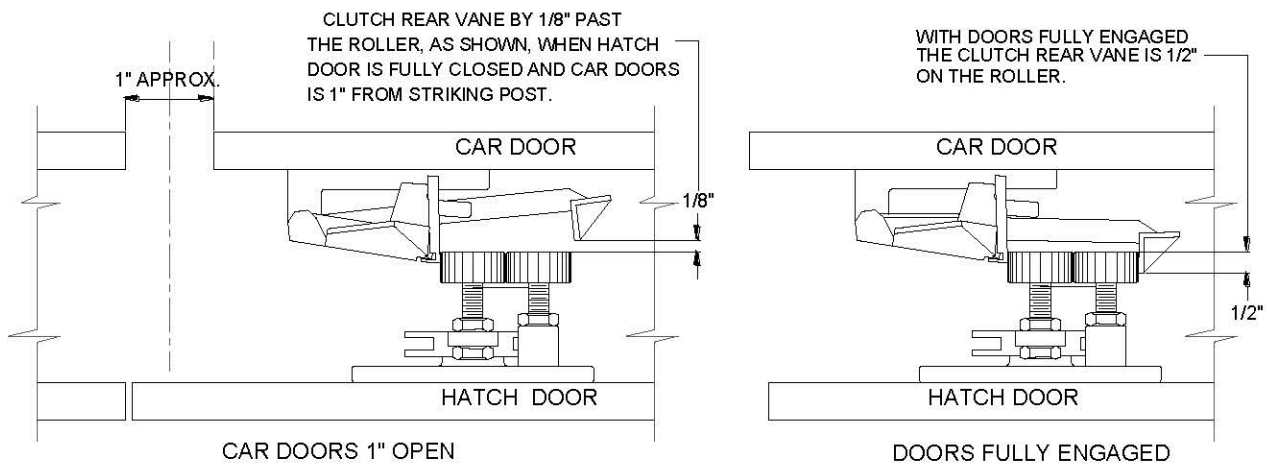
Adjusting the stop roller:

Referring to the figure below, we recommend adjusting the driven car door so that it leads the hatch door by 1/4". This will make the car door more closely match the hatch 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. If this is not done, the pressure on the meeting doors will place unwanted stress on the arms.



Adjusting the release roller and clutch:

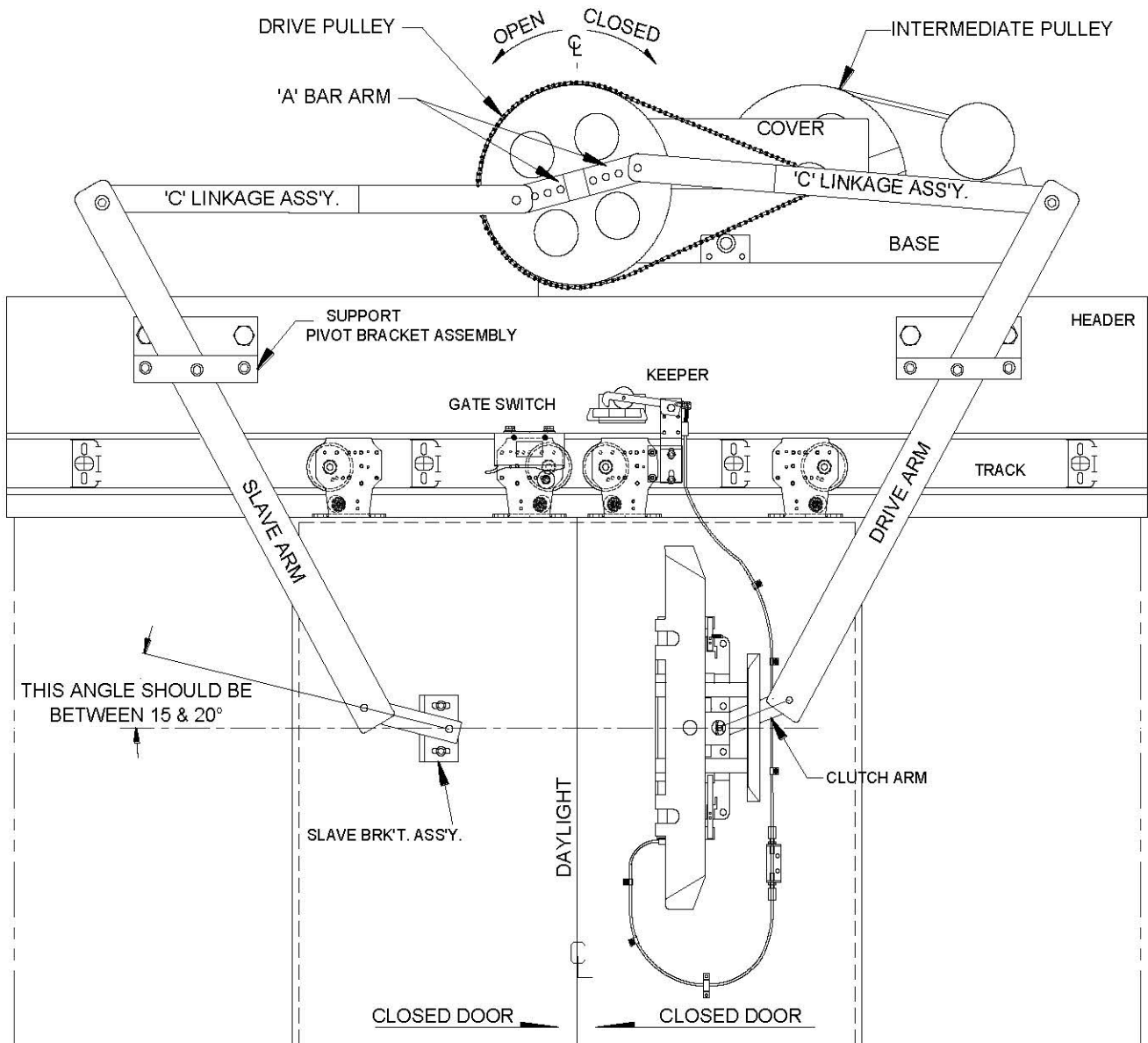
Referring to the previous figure, adjust the lock release rollers so that they will clear the clutch by about 3/16" when the car doors are in their final closed position and the operator stop roller is against the stop plate. Adjust the clutch cam as shown in the figures below. The clutch should retract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



Crank arm and clutch link positions with doors closed:

January 2012

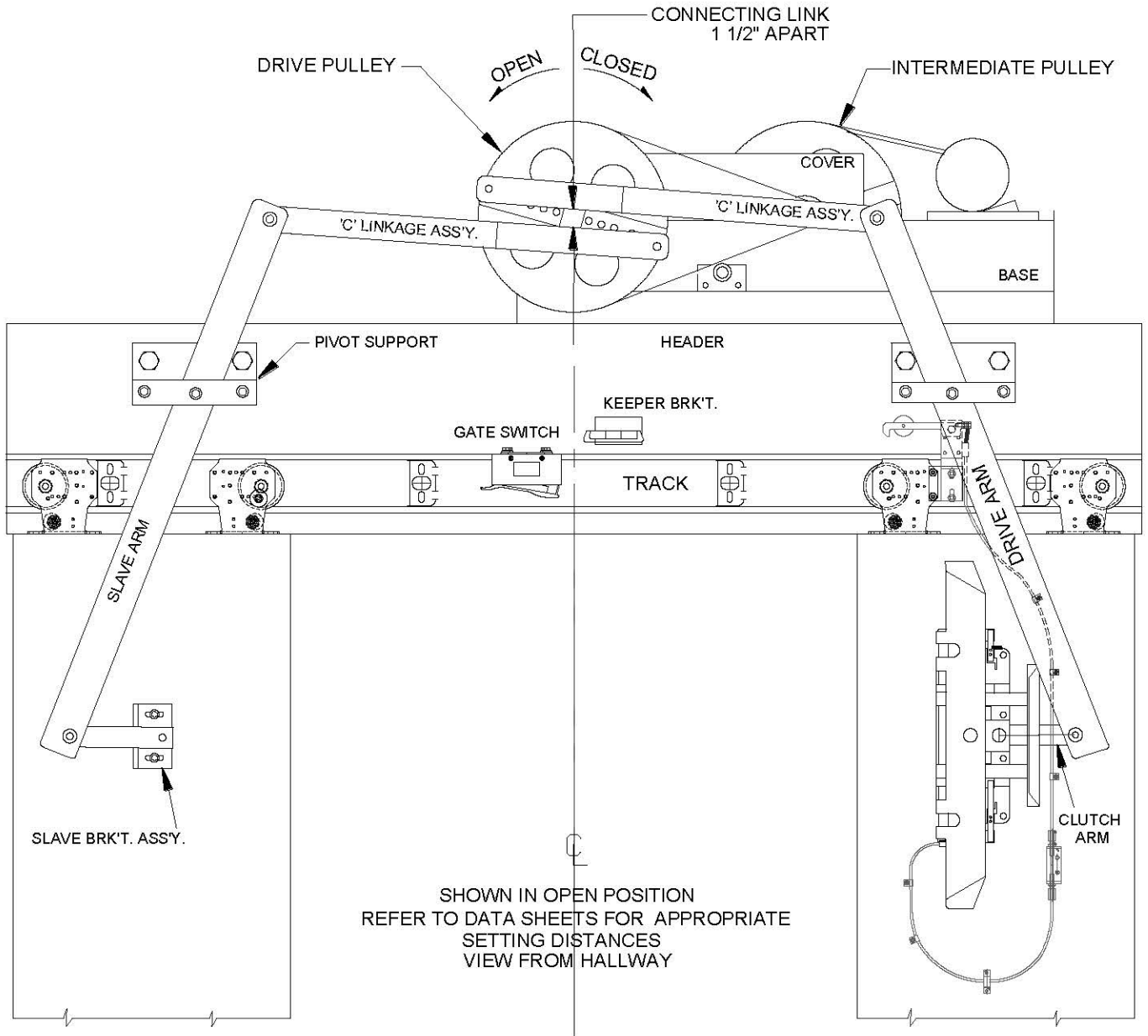
Referring to the next figure with the doors fully closed, the centerline of the C-link should be about 1 1/2" from the horizontal center of the pulley. The clutch link should be at about 20 degrees above the horizontal. As shown.



SHOWN IN CLOSED POSITION
REFER TO DATA SHEETS FOR APPROPRIATE
SETTING DISTANCES
VIEW FROM HALLWAY

Crank arm and clutch link positions with doors open:

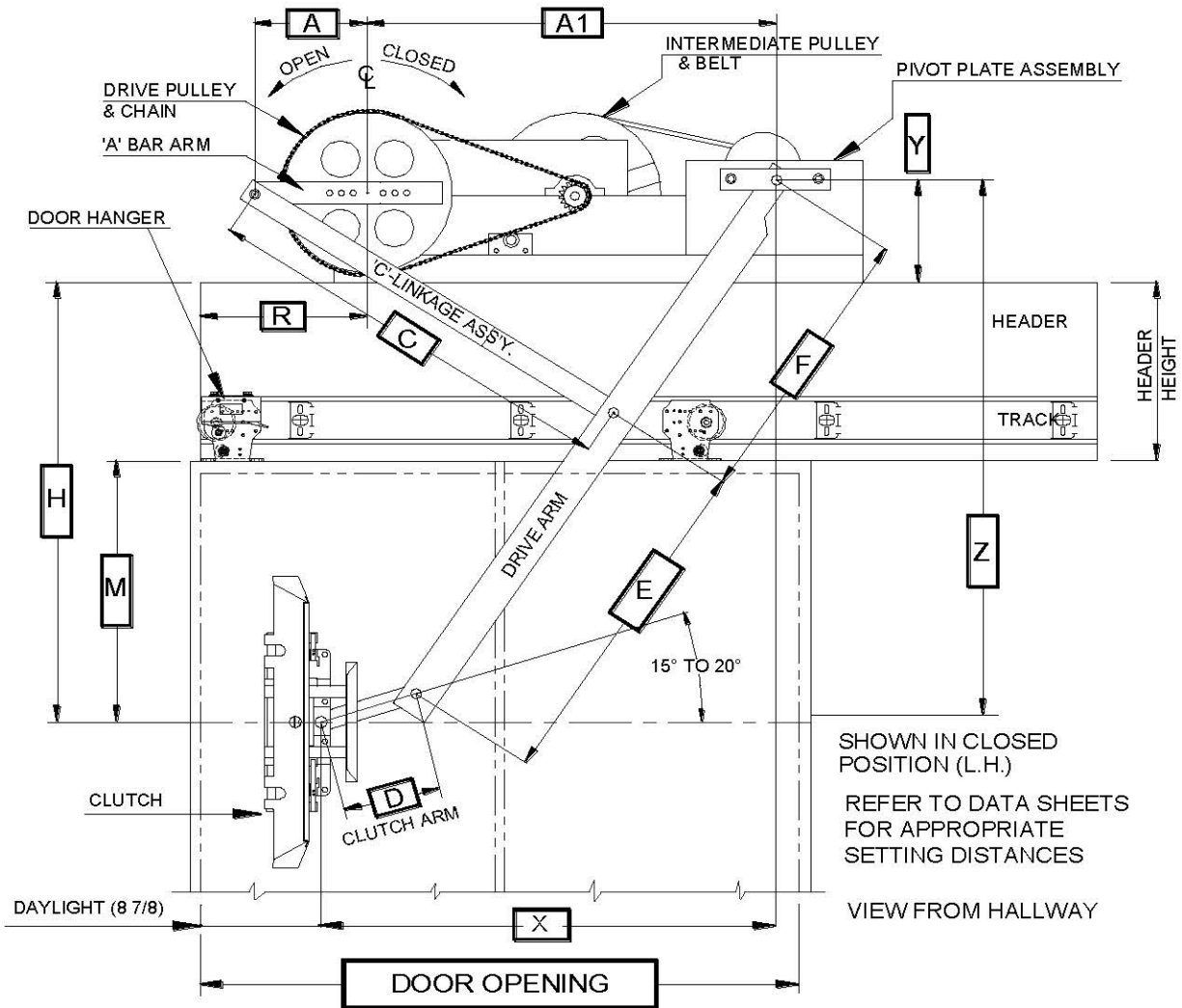
Referring to the following figure, with the doors fully open, the connecting links should be 1 1/2" apart.



SETTING DISTANCES FOR SIDE OPENING DOORS

Reference of Distances for Side Opening Doors:

The illustration shows the symbols of the reference of Distances Side Opening Door :



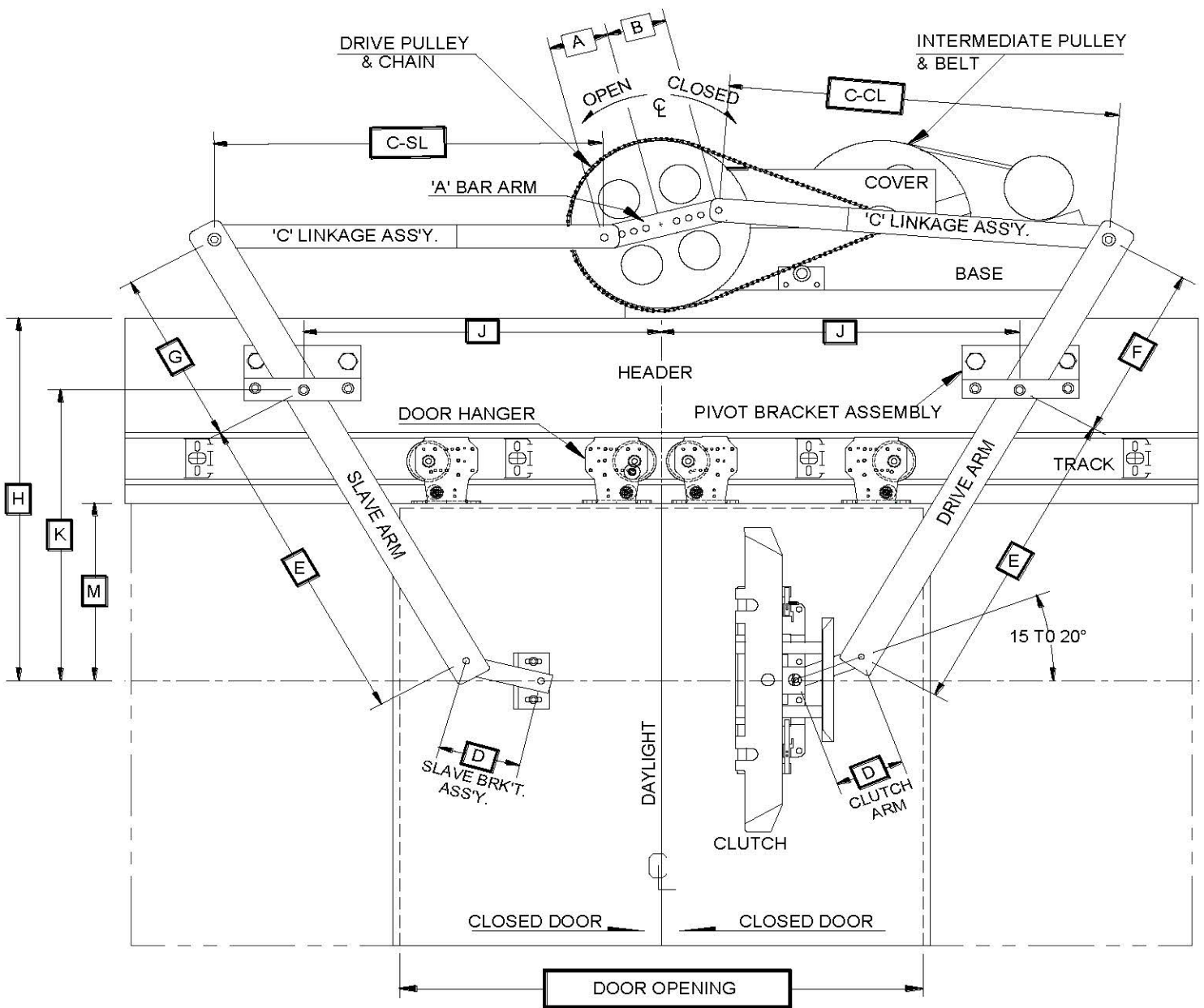
Setting Data for Side Opening Doors based on 8' cab height:

Door Opening (inches)	R	A	C	D	E	F	M	X	Y	Z	A1	H
28	9¼	6¼	29½	10	19	15	11	27¾	5½	32	26⅞	27
29	9¼	6½	29¾	10	19	15	11	27¾	5½	32	26⅞	27
30	9¼	5½	26½	6	25	15	15	24½	6½	37	23⅝	31
31	9¼	5¾	26¾	6	25	15	15	24½	6½	37	23⅝	31
32	9¼	6	27	6	25	15	15	24½	6½	37	23⅝	31
33	9¼	6¼	27¼	6	25	15	15	24½	6½	37	23⅝	31
34	9¼	6½	27¼	6	25	15	15	24½	6½	37	23⅝	31
35	9¼	7¼	31	8	24	16	15	29¼	5¾	36¼	28⅜	31
36	9¼	7½	31¼	8	24	16	15	29¼	5¾	36¼	28⅜	31
37	9¼	7½	31½	8	24	16	15	29¼	5¾	36¼	28⅜	31
38	9¼	7¾	31½	8	24	16	15	29¼	5¾	36¼	28⅜	31
39	9¼	7¾	31¾	8	24	16	15	29¼	5¾	36¼	28⅜	31
40	9¼	9	36½	10	26	20	19	34⅝	7½	42	33¾	35
41	9¼	9¼	36½	10	26	20	19	34⅝	7½	42	33¾	35
42	9¼	9½	36½	10	26	20	19	34⅝	7½	42	33¾	35
43	9¼	9¾	36¾	10	26	20	19	34⅝	7½	42	33¾	35
44	9¼	10	37	10	26	20	19	34⅝	7½	42	33¾	35
45	14¾	10	36¼	12	31	21	23	39⅞	9	47½	33¾	39
46	14¾	10¼	36¼	12	31	21	23	39⅞	9	47½	33¾	39
47	14¾	10¼	36¼	12	31	21	23	39⅝	9	47½	33¾	39
48	14¾	10¼	36¾	12	31	21	23	39⅝	9	47½	33¾	39
49	14¾	10¼	37	12	31	21	23	39⅞	9	47½	33¾	39
50	14¾	10¾	37	12	31	21	23	39⅞	9	47½	33¾	39
51	14¾	11	37¼	12	31	21	23	39⅝	9	47½	33¾	39
52	22¾	10½	32	12	35	22	27	42¼	9	51½	28⅜	43
53	22¾	10½	32¼	12	35	22	27	42¼	9	51½	28⅜	43
54	22¾	10¾	32¼	12	35	22	27	42¼	9	51½	28⅜	43

SETTING DISTANCES FOR CENTER PARTING DOORS

Reference of Distances for Center Parting Doors:

The illustration shows the symbols of the reference of Distances for Center Parting Door:



SHOWN IN CLOSED POSITION
 REFER TO DATA SHEETS FOR APPROPRIATE
 SETTING DISTANCES
 VIEW FROM HALLWAY

Setting Data for Center Parting Doors based on 8' cab height:

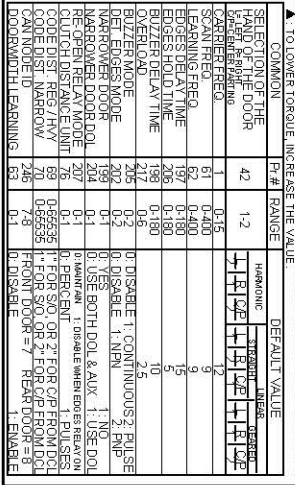
Door Opening (inches)	A	B	C-CL	C-SL	D	E	F	G	J	K	M	H	α
29	4½	5	24½	24½	5	22¾	13¼	11½	23¾	22	11	27	15
30	4½	5	24½	24½	5	22¾	13¼	11½	23¾	22	11	27	15
31	4½	5	24½	24½	5	22¾	13¼	11½	23¾	22	11	27	15
32	4½	5	24½	24½	5	22¾	13¼	11½	23¾	22	11	27	15
33	4½	5	24½	24½	5	22¾	13¼	11½	23¾	22	11	27	15
34	4½	5¾	27	27	6	23½	12½	10½	26¼	21	11	27	15
35	4½	5¾	27	27	6	23½	12½	10½	26¼	21	11	27	15
36	4½	5¾	27	27	6	23½	12½	10½	26¼	21	11	27	15
37	4½	5¾	27	27	6	23½	12½	10½	26¼	21	11	27	15
38	4½	5¾	27	27	6	23½	12½	10½	26¼	21	11	27	15
39	4½	5¾	27	27	6	23½	12½	10½	26¼	21	11	27	15
40	5½	6½	28¾	28¾	6	26¾	14½	12¾	28	24¾	15	31	15
41	5½	6½	28¾	28¾	6	26¾	14½	12¾	28	24¾	15	31	15
42	5½	6½	28¾	28¾	6	26¾	14½	12¾	28	24¾	15	31	15
43	5½	6½	28¾	28¾	6	26¾	14½	12¾	28	24¾	15	31	15
44	5½	6½	28¾	28¾	6	26¾	14½	12¾	28	24¾	15	31	15
45	5¾	6¾	30½	30½	6	28½	13½	12¾	29¾	25¾	15	31	15
46	5¾	6¾	30½	30½	6	28½	13½	12¾	29¾	25¾	15	31	15
47	5¾	6¾	30½	30½	6	28½	13½	12¾	29¾	25¾	15	31	15
48	5¾	6¾	30½	30½	6	28½	13½	12¾	29¾	25¾	15	31	15
49	5¾	6¾	30½	30½	6	28½	13½	12¾	29¾	25¾	15	31	15
50	6	6¾	34	34	8	31½	14¼	13	32¾	28¾	19	35	15
51	6	6¾	34	34	8	31½	14¼	13	32¾	28¾	19	35	15
52	6	6¾	34	34	8	31½	14¼	13	32¾	28¾	19	35	15
53	6	6¾	34	34	8	31½	14¼	13	32¾	28¾	19	35	15
54	6	6¾	34	34	8	31½	14¼	13	32¾	28¾	19	35	15

INSTRUCTIONS FOR THE VFE2500 PARAMETER UNIT

READ (DOWN) FROM THE DRIVE Press SET, Press Up Arrow, Press READ
 WRITE (DOWN) TO THE DRIVE Press SET, Press Up Arrow, Press WRITE
 CHANGE PARAMETERS Press SET, Enter Parameter Number, Press READ, Enter
 New Value, Press WRITE
 LEARNING DOWN/UP: Set DOL and DCL properly. Flip switch to SETUP
 Set Par. 63 = 1. Flip switch back to RUN. Flip next switch to MAN
 follow prompts on LED display.

CLOSING	P.#	RANGE	MINIMUM	DEFAULT VALUE	MAXIMUM
MAX. CLOSE SPEED	139	0.80	0.30	2.00	3.00
HOLDING TORQUE	137	0.40	0.16	0.6	0.7
HOLDING SPEED	138	0.40	0.2	0.2	0.2
DOOR OPEN TIME	120	0.40	0.2	0.2	0.2
DOOR CLOSE TIME	121	0.40	0.2	0.2	0.2
HIGH SPD THSD	141	0.40	0.25	2.0	2.0
FINAL SPD (F50)	142	0.40	0.2	1.0	1.0
F50 BEGINS	143	0.40	0.2	0.2	0.2
ANGLED	144	0.40	0.2	0.2	0.2
DECEL TIME	145	0.30	0.1	1.5	2.0
STALL REV FORCE	148	0.45	1.8	2.0	1.4

COMMON	P.#	RANGE	MINIMUM	DEFAULT VALUE	MAXIMUM
QUICK STOP ON REV	78	0.45	1.2	1.4	2.0
HOLDING TORQUE	79	0.3	0.6	0.6	0.2
HOLDING SPEED	80	0.3	0.2	0.2	0.2
DOOR OPEN TIME	81	0.100	0.99	0.99	0.99
DOOR CLOSE TIME	82	0.100	0.99	0.99	0.99
LEARNING REED	107	0.180	0.99	0.99	0.99
EDGES DELAY TIME	108	0.180	0.99	0.99	0.99
OVERLOAD	217	0.6	1.0	1.0	1.0
BUZZER MODE	216	0.6	0.1	2.5	2.5
NARROWER DOOR	202	0.1	0.1	0.1	0.1
RE OPEN DELAY TIME	207	0.1	0.1	0.1	0.1
CODE DIST. REV/HW	99	0.65555	1.1	FOR 30.0 OR 2.0 FOR C/P FROM DOL	1.1
CODE DIST. REV/HW	99	0.65555	1.1	FOR 30.0 OR 2.0 FOR C/P FROM DOL	1.1
DOOR WITH LEARNING	63	0.1	1.0	1.0	1.0



FOR THE LIGHT DUTY LINEAR MODEL, THE MOTOR WILL BE 230VAC 3PH AND THE ENCODER IS AN UNDERMOUNTABLE PART OF THE MOTOR, P/N: 2500-2016-UR

TO ELEVATOR CONTROLLER (SEE NOTE 1)

8 AMP SLOW-BLOW FUSES

115 VAC 500VA MIN.

GATE SWITCH

TO MOTOR

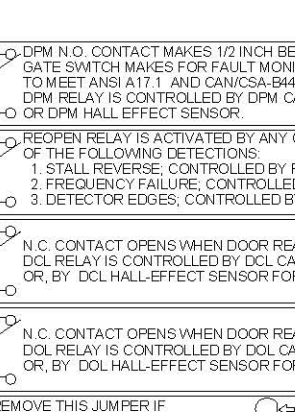
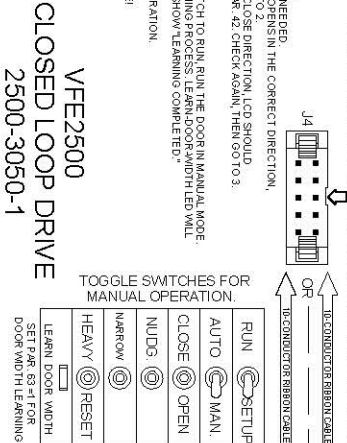
TO MOTOR

230VAC 1/2 HP 3PH INDUCTION MOTOR

ENCODER 2500-3057

EASY SETUP PROCEDURE

- ECH has done this procedure before shipping VFE2500 to customers. HOWEVER, THIS EASY SETUP PROVIDES USERS WITH THE PROUDEST WHEN NEEDED.
1. GO TO 2 IF NOT SWR ANY 2 OF MOTOR WIRING. CHECK AGAIN, THEN GO TO 2.
 2. SET PARAMETER 11 = 1 FOR REGULAR OPERATION.
 3. SET PARAMETER 11 = 1 FOR REGULAR OPERATION.
 4. FLIP FIRST TOGGLE SWITCH TO SETUP. SET PAR. 63 = 1. FLIP TOGGLE SWITCH TO RUN. RUN THE DOOR IN MANUAL MODE.
 5. FLIP FIRST TOGGLE SWITCH TO ZERO BY ITSELF.
 6. TEST DOOR IN MANUAL MODE, AND TEST DOOR IN AUTOMATIC MODE DONE!

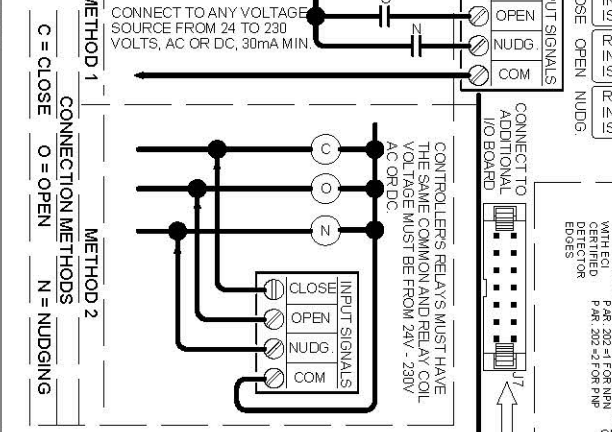
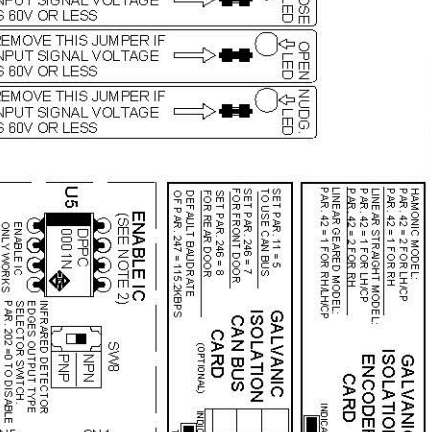
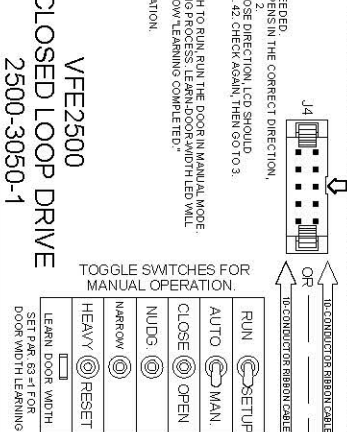


WARNING: ALL EQUIPMENT MUST BE INSTALLED AND ADJUSTED TO MEET FEDERAL, STATE /PROVINCIAL, AND LOCAL CODES. TO PREVENT ELECTRICAL SHOCK, METALLIC CONDUITS, ELECTRICAL BOXES, AND MOTOR MUST BE GROUNDED. WAIT FOR 10 MINUTES AFTER REMOVING POWER BEFORE SERVICING.

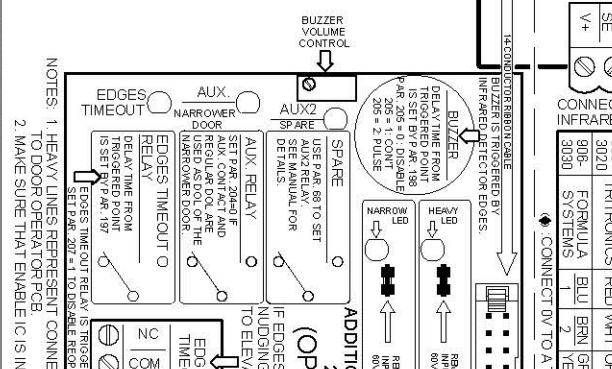
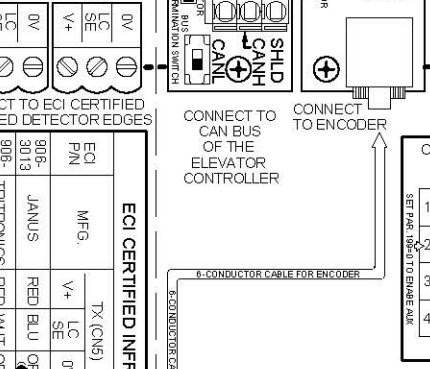
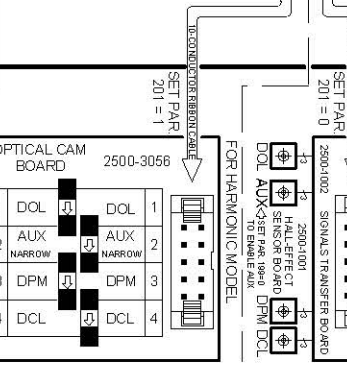
SUITABLE FOR USE ON A CIRCUIT CAPABLE OF DELIVERING NOT MORE THAN 5000 RMS SYMMETRICAL AMPERES, 120 VOLTS MAXIMUM, WHEN PROTECTED BY 8 AMPERES, 120V RK5 FUSES.

DRIVE OVERLOAD FACTORY SET AT 2.5A

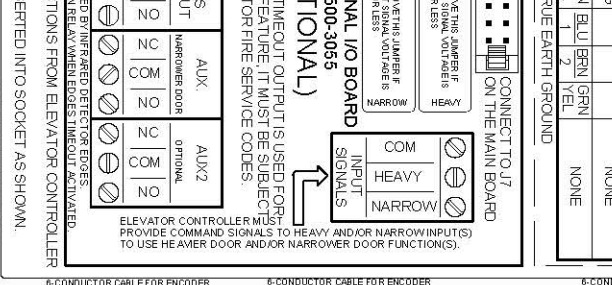
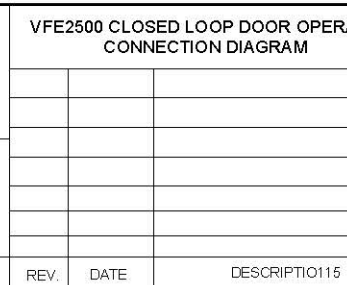
CONNECT TO OPTICAL CAM BOARD FOR HARMONIC MODEL. CONNECT TO SIGNAL TRANSFER BOARD FOR LINEAR MODEL.



FOR LINEAR MODEL



VFE2500 CLOSED LOOP DOOR OPERATOR CONNECTION DIAGRAM



GAL CANADA

6500 GOTTARDO CRT.
 MISSISSAUGA, ONTARIO
 L5T 2A2 CANADA
 TEL: (416) 747-9767
 FAX: (416) 747-9035

Doc. No: 2500-2001-S-1

KINETIC ENERGY, AND ASME A17.1 2000 FOR ELEVATOR DOOR SYSTEMS

Requirement 2.13.4.2.4 of ASME A17.1 2000 stipulates that a data tag must be attached to the door operator or car crosshead. If you are in a jurisdiction that has adopted the 2000 code, you need to read and understand this requirement, and all of the related requirements. (see attached)

The data tag is required to show:

- The minimum closing code time for the door system that will result in average kinetic energy of less than 7.37 foot-pounds.
- The minimum code closing time for the door system, when in nudging, that will result in average kinetic energy of less than 2.5 foot-pounds.

The attached data tables are designed to give GAL customers the information necessary to comply with these requirements. If you use all GAL equipment, and follow GAL instructions, these sheets will give you the minimum closing code time for all of the normal door configurations, sizes, and operator models available.

Notes:

Code Closing Distance / Time

On side opening, the code distance starts 2" from the jamb and goes to 2" from full close. (opening size – 4") On center opening, code distance starts 1" from the jamb and goes to 1" from full close. (still opening size – 4") Times shown are minimums for the code closing distance

Average Kinetic Energy (7.37 ft lbs)

This is the requirement for which the times shown on the data tables were calculated. The rotational inertia of the motor and operator is included in these calculations. GAL's calculations include equipment rigidly connected thereto and accommodate all hangers, rollers, clutches, closers, releases, and any normal reopening devices

Actual (peak) Kinetic Energy (17 ft lbs)

Using GAL equipment and following GAL instructions, you will not exceed the requirement for actual (peak) KE.

Nudging Kinetic Energy (2.5 ft lbs)

If taking the minimum closing code time for your application and doubling it, you will have a safe time to use for the requirement under nudging. (Note – this is a very conservative time, if you want to close your door more quickly while in nudging, call GAL for an absolute minimum)

Non Standard Systems

A non-standard application, like three speed doors, or panels that are so heavy or light that they fall outside the range shown on the data tables, you can call GAL and we will calculate closing code time for your job.

The following paragraphs are excerpted from ASME 17.1 2000. They are provided here for your convenience only.

2.13.4.2.4 Data Plate. A data plate conforming to 2.16.3.3 shall be attached to the power door operator or to the car crosshead and shall contain the following information:

(a) minimum door closing time in seconds for the doors to travel the code zone distance as specified in 2.13.4.2.2 corresponding to the kinetic energy limits specified in 2.13.4.2.1(b)(2);

(b) minimum door closing time in seconds for the doors to travel the Code zone distance as specified in 2.13.4.2.2 corresponding to the kinetic energy limits specified in 2.13.4.2.1(c)(2), if applicable [see 2.27.3.1.6(e)];

(c) where heavier hoist-way doors are used at certain floors, the minimum door closing time in seconds corresponding to the kinetic energy limits specified in 2.13.4.2.1(b)(2) and 2.13.4.2.1(c)(2), if applicable, for the corresponding floors shall be included on the data plate.

2.13.4.2.1 Kinetic Energy...

(a) Where the hoist-way door and the car door/gate are closed in such a manner that stopping either one manually will stop both, the kinetic energy of the closing door system shall be based upon the sum of the hoist-way and the car door weights, as well as all parts rigidly connected thereto, including the rotational inertia effects of the door operator and the connecting transmission to the door panels.

(b) Where a reopening device conforming to 2.13.5 is used, the closing door system shall conform to the following requirements.

(1) The kinetic energy computed for the actual closing speed at any point in the Code zone distance defined by 2.13.4.2.2 shall not exceed 23 J (17 ft-lbf);
and

(2) The kinetic energy computed for the average closing speed as determined in accordance with 2.13.4.2.2 shall not exceed 10 J (7.37 ft-lbf).

(c) Where a reopening device is not used, or has been rendered inoperative (see 2.13.5), the closing door system shall conform to the following requirements:

(1) The kinetic energy computed for the actual closing speed at any point in the code zone distance defined by 2.13.4.2.2 shall not exceed 8 J (6 ft-lbf).

(2) The kinetic energy computed for the average closing speed within the code zone distance (see 2.13.4.2.2), or in any exposed opening width, including the last increment of door travel, shall not exceed 3.5 J (2.5 ft-lbf).

The following tables show the minimum closing code time for VFE2500 doors:

NOTE:

The term "Door Weight" in the tables refers to the combined weight of all doors, including all car door (s) and all hoist-way door(s) (of one floor only).

Also, note that if the weight of the hoist-way door(s) varies by floor, different settings of the code distance closing time must be used from the table.

MINIMUM CLOSING TIME FOR SINGLE SPEED S/O DOOR

Heavy Duty Harmonic Operator

SINGLE SPEED SLIDING DOOR						
DOOR WIDTH (Inch)	Door Weight (lbs)	Equipment Weight (lbs)	Code Distance (Inch)	Average Kinetic Energy (ft-lbs)	Minimum Code Time (seconds)	Minimum Code Time When Door Protection Disabled (Nudging) (seconds)
30"	225	39	26	7.37	1.84	3.15
	250	39	26	7.37	1.90	3.25
	275	39	26	7.37	1.97	3.37
	300	39	26	7.37	2.03	3.47
	325	39	26	7.37	2.09	3.57
	350	39	26	7.37	2.15	3.68
	375	39	26	7.37	2.20	3.76
400	39	26	7.37	2.26	3.86	
32"	225	39	28	7.37	1.97	3.37
	250	39	28	7.37	2.04	3.49
	275	39	28	7.37	2.11	3.61
	300	39	28	7.37	2.18	3.73
	325	39	28	7.37	2.24	3.83
	350	39	28	7.37	2.31	3.95
	375	39	28	7.37	2.37	4.05
400	39	28	7.37	2.43	4.16	
34"	250	39	30	7.37	2.18	3.73
	275	39	30	7.37	2.26	3.86
	300	39	30	7.37	2.33	3.98
	325	39	30	7.37	2.40	4.10
	350	39	30	7.37	2.47	4.22
	375	39	30	7.37	2.53	4.33
	400	39	30	7.37	2.60	4.45
425	39	30	7.37	2.66	4.55	
36"	275	39	32	7.37	2.39	4.09
	300	39	32	7.37	2.47	4.22
	325	39	32	7.37	2.54	4.34
	350	39	32	7.37	2.62	4.48
	375	39	32	7.37	2.69	4.60
	400	39	32	7.37	2.76	4.72
	425	39	32	7.37	2.82	4.82
450	39	32	7.37	2.89	4.94	
38"	275	39	34	7.37	2.53	4.33
	300	39	34	7.37	2.61	4.46
	325	39	34	7.37	2.69	4.60
	350	39	34	7.37	2.77	4.74
	375	39	34	7.37	2.84	4.86
	400	39	34	7.37	2.92	4.99
	425	39	34	7.37	2.99	5.11
450	39	34	7.37	3.06	5.23	
40"	275	39	36	7.37	2.75	4.70
	300	39	36	7.37	2.84	4.86
	325	39	36	7.37	2.92	4.99
	350	39	36	7.37	3.00	5.13
	375	39	36	7.37	3.08	5.27
	400	39	36	7.37	3.15	5.39
	425	39	36	7.37	3.23	5.52
450	39	36	7.37	3.30	5.64	

SINGLE SPEED SLIDING DOOR						
DOOR WIDTH (Inch)	Door Weight (lbs)	Equipment Weight (lbs)	Code Distance (Inch)	Average Kinetic Energy (ft-lbs)	Minimum Code Time (seconds)	Minimum Code Time When Door Protection Disabled (Nudging) (seconds)
42"	325	39	38	7.37	2.99	5.11
	350	39	38	7.37	3.08	5.27
	375	39	38	7.37	3.16	5.40
	400	39	38	7.37	3.24	5.54
	425	39	38	7.37	3.32	5.68
	450	39	38	7.37	3.40	5.81
	475	39	38	7.37	3.48	5.95
500	39	38	7.37	3.55	6.07	
44"	325	39	40	7.37	3.14	5.37
	350	39	40	7.37	3.23	5.52
	375	39	40	7.37	3.32	5.68
	400	39	40	7.37	3.40	5.81
	425	39	40	7.37	3.49	5.97
	450	39	40	7.37	3.57	6.10
	475	39	40	7.37	3.65	6.24
500	39	40	7.37	3.73	6.38	
46"	350	39	42	7.37	3.38	5.78
	375	39	42	7.37	3.47	5.93
	400	39	42	7.37	3.56	6.09
	425	39	42	7.37	3.65	6.24
	450	39	42	7.37	3.74	6.40
	475	39	42	7.37	3.82	6.53
	500	39	42	7.37	3.91	6.69
525	39	42	7.37	3.99	6.82	
48"	375	39	44	7.37	3.62	6.19
	400	39	44	7.37	3.72	6.36
	425	39	44	7.37	3.81	6.52
	450	39	44	7.37	3.90	6.67
	475	39	44	7.37	3.99	6.82
	500	39	44	7.37	4.08	6.98
	525	39	44	7.37	4.17	7.13
550	39	44	7.37	4.25	7.27	
50"	375	39	46	7.37	3.76	6.43
	400	39	46	7.37	3.87	6.62
	425	39	46	7.37	3.96	6.77
	450	39	46	7.37	4.06	6.94
	475	39	46	7.37	4.15	7.10
	500	39	46	7.37	4.25	7.27
	525	39	46	7.37	4.34	7.42
550	39	46	7.37	4.43	7.58	
52"	400	39	48	7.37	4.03	6.89
	425	39	48	7.37	4.13	7.06
	450	39	48	7.37	4.24	7.25
	475	39	48	7.37	4.33	7.40
	500	39	48	7.37	4.43	7.58
	525	39	48	7.37	4.52	7.73
	550	39	48	7.37	4.62	7.90
600	39	48	7.37	4.80	8.21	

MINIMUM CLOSING TIME FOR TWO SPEED S/O DOOR

Heavy Duty Harmonic Operator

TWO SPEED SLIDING DOOR						
DOOR WIDTH (Inch)	Door Weight (lbs)	Equipment Weight (lbs)	Code Distance (Inch)	Average Kinetic Energy (ft-lbs)	Minimum Code Time (seconds)	Minimum Code Time When Door Protection Disabled (Nudging) (seconds)
30"	225	50	26	7.37	1.59	2.72
	250	50	26	7.37	1.63	2.79
	275	50	26	7.37	1.68	2.87
	300	50	26	7.37	1.73	2.96
	325	50	26	7.37	1.77	3.03
	350	50	26	7.37	1.81	3.10
	375	50	26	7.37	1.86	3.18
	400	50	26	7.37	1.90	3.25
32"	225	50	28	7.37	1.70	2.91
	250	50	28	7.37	1.75	2.99
	275	50	28	7.37	1.80	3.08
	300	50	28	7.37	1.85	3.16
	325	50	28	7.37	1.90	3.25
	350	50	28	7.37	1.95	3.33
	375	50	28	7.37	1.99	3.40
	400	50	28	7.37	2.04	3.49
34"	250	50	30	7.37	1.87	3.20
	275	50	30	7.37	1.92	3.28
	300	50	30	7.37	1.98	3.39
	325	50	30	7.37	2.03	3.47
	350	50	30	7.37	2.08	3.56
	375	50	30	7.37	2.13	3.64
	400	50	30	7.37	2.18	3.73
	425	50	30	7.37	2.22	3.80
36"	275	50	32	7.37	2.03	3.47
	300	50	32	7.37	2.09	3.57
	325	50	32	7.37	2.15	3.68
	350	50	32	7.37	2.20	3.76
	375	50	32	7.37	2.25	3.85
	400	50	32	7.37	2.30	3.93
	425	50	32	7.37	2.35	4.02
	450	50	32	7.37	2.40	4.10
38"	275	50	34	7.37	2.15	3.68
	300	50	34	7.37	2.21	3.78
	325	50	34	7.37	2.27	3.88
	350	50	34	7.37	2.32	3.97
	375	50	34	7.37	2.38	4.07
	400	50	34	7.37	2.44	4.17
	425	50	34	7.37	2.49	4.26
	450	50	34	7.37	2.54	4.34
40"	300	50	36	7.37	2.32	3.97
	325	50	36	7.37	2.38	4.07
	350	50	36	7.37	2.44	4.17
	375	50	36	7.37	2.50	4.28
	400	50	36	7.37	2.56	4.38
	425	50	36	7.37	2.62	4.48
	450	50	36	7.37	2.68	4.58
	475	50	36	7.37	2.73	4.67
42"	325	50	38	7.37	2.50	4.28
	350	50	38	7.37	2.57	4.39
	375	50	38	7.37	2.63	4.50
	400	50	38	7.37	2.69	4.60
	425	50	38	7.37	2.75	4.70
	450	50	38	7.37	2.81	4.81
	475	50	38	7.37	2.87	4.91
	500	50	38	7.37	2.93	5.01
44"	325	50	40	7.37	2.63	4.50
	350	50	40	7.37	2.70	4.62
	375	50	40	7.37	2.77	4.74
	400	50	40	7.37	2.83	4.84
	425	50	40	7.37	2.90	4.96
	450	50	40	7.37	2.96	5.06
	475	50	40	7.37	3.02	5.16
	500	50	40	7.37	3.08	5.27

TWO SPEED SLIDING DOOR						
DOOR WIDTH (Inch)	Door Weight (lbs)	Equipment Weight (lbs)	Code Distance (Inch)	Average Kinetic Energy (ft-lbs)	Minimum Code Time (seconds)	Minimum Code Time When Door Protection Disabled (Nudging) (seconds)
46"	350	50	42	7.37	2.82	4.82
	375	50	42	7.37	2.89	4.94
	400	50	42	7.37	2.96	5.06
	425	50	42	7.37	3.03	5.18
	450	50	42	7.37	3.09	5.28
	475	50	42	7.37	3.16	5.40
	500	50	42	7.37	3.22	5.51
	525	50	42	7.37	3.28	5.61
48"	375	50	44	7.37	3.02	5.16
	400	50	44	7.37	3.09	5.28
	425	50	44	7.37	3.17	5.42
	450	50	44	7.37	3.23	5.52
	475	50	44	7.37	3.30	5.64
	500	50	44	7.37	3.37	5.76
	525	50	44	7.37	3.43	5.87
	550	50	44	7.37	3.50	5.99
50"	375	50	46	7.37	3.12	5.34
	400	50	46	7.37	3.20	5.47
	425	50	46	7.37	3.27	5.59
	450	50	46	7.37	3.35	5.73
	475	50	46	7.37	3.42	5.85
	500	50	46	7.37	3.49	5.97
	525	50	46	7.37	3.56	6.09
	550	50	46	7.37	3.62	6.19
52"	400	50	48	7.37	3.33	5.69
	425	50	48	7.37	3.41	5.83
	450	50	48	7.37	3.49	5.97
	475	50	48	7.37	3.56	6.09
	500	50	48	7.37	3.64	6.22
	525	50	48	7.37	3.71	6.34
	550	50	48	7.37	3.78	6.46
	575	50	48	7.37	3.85	6.58
54"	400	50	50	7.37	3.46	5.92
	425	50	50	7.37	3.54	6.05
	450	50	50	7.37	3.62	6.19
	475	50	50	7.37	3.70	6.33
	500	50	50	7.37	3.78	6.46
	525	50	50	7.37	3.85	6.58
	550	50	50	7.37	3.93	6.72
	575	50	50	7.37	4.00	6.84
56"	400	50	52	7.37	3.58	6.12
	425	50	52	7.37	3.67	6.28
	450	50	52	7.37	3.75	6.41
	475	50	52	7.37	3.83	6.55
	500	50	52	7.37	3.91	6.69
	525	50	52	7.37	3.99	6.82
	550	50	52	7.37	4.07	6.96
	575	50	52	7.37	4.14	7.08
58"	425	50	54	7.37	3.79	6.48
	450	50	54	7.37	3.88	6.63
	475	50	54	7.37	3.97	6.79
	500	50	54	7.37	4.05	6.93
	525	50	54	7.37	4.13	7.06
	550	50	54	7.37	4.21	7.20
	575	50	54	7.37	4.29	7.34
	600	50	54	7.37	4.37	7.47
59"	450	50	55	7.37	3.95	6.75
	475	50	55	7.37	4.03	6.89
	500	50	55	7.37	4.12	7.05
	525	50	55	7.37	4.20	7.18
	550	50	55	7.37	4.28	7.32
	575	50	55	7.37	4.36	7.46
	600	50	55	7.37	4.44	7.59
	625	50	55	7.37	4.52	7.73

MINIMUM CLOSING TIME FOR SINGLE SPEED C/P DOOR

Heavy Duty Harmonic Operator

SINGLE SPEED CENTER PARTING DOOR						
DOOR WIDTH (Inch)	Door Weight (lbs)	Equipment Weight (lbs)	Code Distance (Inch)	Average Kinetic Energy (ft-lbs)	Minimum Code Time (seconds)	Minimum Code Time When Door Protection Disabled (Nudging) (seconds)
30"	225	50	13	7.37	1.01	1.73
	250	50	13	7.37	1.04	1.78
	275	50	13	7.37	1.07	1.83
	300	50	13	7.37	1.10	1.88
	325	50	13	7.37	1.13	1.93
	350	50	13	7.37	1.15	1.97
	375	50	13	7.37	1.18	2.02
400	50	13	7.37	1.21	2.07	
32"	225	50	14	7.37	1.07	1.83
	250	50	14	7.37	1.11	1.90
	275	50	14	7.37	1.14	1.95
	300	50	14	7.37	1.17	2.00
	325	50	14	7.37	1.20	2.05
	350	50	14	7.37	1.23	2.10
	375	50	14	7.37	1.26	2.15
400	50	14	7.37	1.29	2.21	
34"	250	50	15	7.37	1.17	2.00
	275	50	15	7.37	1.21	2.07
	300	50	15	7.37	1.24	2.12
	325	50	15	7.37	1.27	2.17
	350	50	15	7.37	1.31	2.24
	375	50	15	7.37	1.34	2.29
	400	50	15	7.37	1.37	2.34
425	50	15	7.37	1.40	2.39	
36"	275	50	16	7.37	1.28	2.19
	300	50	16	7.37	1.31	2.24
	325	50	16	7.37	1.35	2.31
	350	50	16	7.37	1.38	2.36
	375	50	16	7.37	1.42	2.43
	400	50	16	7.37	1.45	2.48
	425	50	16	7.37	1.48	2.53
450	50	16	7.37	1.51	2.58	
38"	275	50	17	7.37	1.34	2.29
	300	50	17	7.37	1.38	2.36
	325	50	17	7.37	1.42	2.43
	350	50	17	7.37	1.45	2.48
	375	50	17	7.37	1.49	2.55
	400	50	17	7.37	1.53	2.62
	425	50	17	7.37	1.56	2.67
450	50	17	7.37	1.59	2.72	
40"	300	50	18	7.37	1.45	2.48
	325	50	18	7.37	1.49	2.55
	350	50	18	7.37	1.53	2.62
	375	50	18	7.37	1.57	2.68
	400	50	18	7.37	1.61	2.75
	425	50	18	7.37	1.64	2.80
	450	50	18	7.37	1.68	2.87
475	50	18	7.37	1.71	2.92	
42"	325	50	19	7.37	1.57	2.68
	350	50	19	7.37	1.61	2.75
	375	50	19	7.37	1.65	2.82
	400	50	19	7.37	1.69	2.89
	425	50	19	7.37	1.73	2.96
	450	50	19	7.37	1.77	3.03
	475	50	19	7.37	1.80	3.08
500	50	19	7.37	1.84	3.15	
44"	325	50	20	7.37	1.64	2.80
	350	50	20	7.37	1.68	2.87
	375	50	20	7.37	1.72	2.94
	400	50	20	7.37	1.77	3.03
	425	50	20	7.37	1.81	3.10
	450	50	20	7.37	1.85	3.16
	475	50	20	7.37	1.89	3.23
500	50	20	7.37	1.92	3.28	

SINGLE SPEED CENTER PARTING DOOR						
DOOR WIDTH (Inch)	Door Weight (lbs)	Equipment Weight (lbs)	Code Distance (Inch)	Average Kinetic Energy (ft-lbs)	Minimum Code Time (seconds)	Minimum Code Time When Door Protection Disabled (Nudging) (seconds)
46"	350	50	21	7.37	1.76	3.01
	375	50	21	7.37	1.80	3.08
	400	50	21	7.37	1.85	3.16
	425	50	21	7.37	1.89	3.23
	450	50	21	7.37	1.93	3.30
	475	50	21	7.37	1.97	3.37
	500	50	21	7.37	2.01	3.44
525	50	21	7.37	2.05	3.51	
48"	375	50	22	7.37	1.88	3.21
	400	50	22	7.37	1.93	3.30
	425	50	22	7.37	1.97	3.37
	450	50	22	7.37	2.02	3.45
	475	50	22	7.37	2.06	3.52
	500	50	22	7.37	2.11	3.61
	525	50	22	7.37	2.15	3.68
550	50	22	7.37	2.19	3.74	
50"	375	50	23	7.37	1.99	3.40
	400	50	23	7.37	2.04	3.49
	425	50	23	7.37	2.08	3.56
	450	50	23	7.37	2.13	3.64
	475	50	23	7.37	2.17	3.71
	500	50	23	7.37	2.22	3.80
	525	50	23	7.37	2.26	3.86
550	50	23	7.37	2.30	3.93	
52"	400	50	24	7.37	2.12	3.63
	425	50	24	7.37	2.17	3.71
	450	50	24	7.37	2.22	3.80
	475	50	24	7.37	2.27	3.88
	500	50	24	7.37	2.31	3.96
	525	50	24	7.37	2.36	4.04
	550	50	24	7.37	2.40	4.10
575	50	24	7.37	2.44	4.17	
54"	400	50	25	7.37	2.20	3.76
	425	50	25	7.37	2.25	3.85
	450	50	25	7.37	2.30	3.93
	475	50	25	7.37	2.35	4.02
	500	50	25	7.37	2.40	4.10
	525	50	25	7.37	2.45	4.19
	550	50	25	7.37	2.50	4.28
575	50	25	7.37	2.54	4.34	
56"	400	50	26	7.37	2.33	3.98
	425	50	26	7.37	2.38	4.07
	450	50	26	7.37	2.44	4.17
	475	50	26	7.37	2.49	4.26
	500	50	26	7.37	2.54	4.34
	525	50	26	7.37	2.58	4.41
	550	50	26	7.37	2.63	4.50
575	50	26	7.37	2.68	4.58	
58"	425	50	27	7.37	2.42	4.14
	450	50	27	7.37	2.47	4.22
	475	50	27	7.37	2.53	4.33
	500	50	27	7.37	2.58	4.41
	525	50	27	7.37	2.63	4.50
	550	50	27	7.37	2.68	4.58
	575	50	27	7.37	2.73	4.67
600	50	27	7.37	2.78	4.75	
59"	450	50	27.5	7.37	2.46	4.21
	475	50	27.5	7.37	2.51	4.29
	500	50	27.5	7.37	2.57	4.39
	525	50	27.5	7.37	2.62	4.48
	550	50	27.5	7.37	2.67	4.57
	575	50	27.5	7.37	2.72	4.65
	600	50	27.5	7.37	2.77	4.74
625	50	27.5	7.37	2.82	4.82	

MINIMUM CLOSING TIME FOR TWO SPEED C/P DOOR

Heavy Duty Harmonic Operator






TWO SPEED CENTER PARTING DOOR						
DOOR WIDTH (Inch)	Door Weight (lbs)	Equipment Weight (lbs)	Code Distance (Inch)	Average Kinetic Energy (ft-lbs)	Minimum Code Time (seconds)	Minimum Code Time When Door Protection Disabled (Nudging) (seconds)
36"	275	84	16	7.37	1.14	1.95
	300	84	16	7.37	1.16	1.98
	325	84	16	7.37	1.19	2.03
	350	84	16	7.37	1.21	2.07
	375	84	16	7.37	1.24	2.12
	400	84	16	7.37	1.26	2.15
	425	84	16	7.37	1.28	2.19
	450	84	16	7.37	1.31	2.24
38"	275	84	17	7.37	1.20	2.05
	300	84	17	7.37	1.23	2.10
	325	84	17	7.37	1.25	2.14
	350	84	17	7.37	1.28	2.19
	375	84	17	7.37	1.31	2.24
	400	84	17	7.37	1.33	2.27
	425	84	17	7.37	1.36	2.33
	450	84	17	7.37	1.38	2.36
40"	300	84	18	7.37	1.29	2.21
	325	84	18	7.37	1.32	2.26
	350	84	18	7.37	1.34	2.29
	375	84	18	7.37	1.37	2.34
	400	84	18	7.37	1.40	2.39
	425	84	18	7.37	1.42	2.43
	450	84	18	7.37	1.45	2.48
	475	84	18	7.37	1.48	2.53
42"	325	84	19	7.37	1.38	2.36
	350	84	19	7.37	1.41	2.41
	375	84	19	7.37	1.44	2.46
	400	84	19	7.37	1.46	2.50
	425	84	19	7.37	1.49	2.55
	450	84	19	7.37	1.52	2.60
	475	84	19	7.37	1.55	2.65
	500	84	19	7.37	1.57	2.68
44"	325	84	20	7.37	1.44	2.46
	350	84	20	7.37	1.47	2.51
	375	84	20	7.37	1.50	2.57
	400	84	20	7.37	1.53	2.62
	425	84	20	7.37	1.56	2.67
	450	84	20	7.37	1.59	2.72
	475	84	20	7.37	1.62	2.77
	500	84	20	7.37	1.65	2.82
46"	350	84	21	7.37	1.53	2.62
	375	84	21	7.37	1.56	2.67
	400	84	21	7.37	1.60	2.74
	425	84	21	7.37	1.63	2.79
	450	84	21	7.37	1.66	2.84
	475	84	21	7.37	1.69	2.89
	500	84	21	7.37	1.72	2.94
	525	84	21	7.37	1.75	2.99
48"	375	84	22	7.37	1.63	2.79
	400	84	22	7.37	1.67	2.86
	425	84	22	7.37	1.70	2.91
	450	84	22	7.37	1.73	2.96
	475	84	22	7.37	1.76	3.01
	500	84	22	7.37	1.79	3.06
	525	84	22	7.37	1.82	3.11
	550	84	22	7.37	1.85	3.16





TWO SPEED CENTER PARTING DOOR						
DOOR WIDTH (Inch)	Door Weight (lbs)	Equipment Weight (lbs)	Code Distance (Inch)	Average Kinetic Energy (ft-lbs)	Minimum Code Time (seconds)	Minimum Code Time When Door Protection Disabled (Nudging) (seconds)
50"	375	84	23	7.37	1.73	2.96
	400	84	23	7.37	1.77	3.03
	425	84	23	7.37	1.80	3.08
	450	84	23	7.37	1.84	3.15
	475	84	23	7.37	1.87	3.20
	500	84	23	7.37	1.90	3.25
	525	84	23	7.37	1.93	3.30
	550	84	23	7.37	1.96	3.35
	52"	400	84	24	7.37	1.84
425		84	24	7.37	1.87	3.20
450		84	24	7.37	1.91	3.27
475		84	24	7.37	1.94	3.32
500		84	24	7.37	1.98	3.39
525		84	24	7.37	2.01	3.44
550		84	24	7.37	2.04	3.49
575		84	24	7.37	2.07	3.54
54"		425	84	25	7.37	1.94
	450	84	25	7.37	1.98	3.39
	475	84	25	7.37	2.01	3.44
	500	84	25	7.37	2.05	3.51
	525	84	25	7.37	2.08	3.56
	550	84	25	7.37	2.12	3.63
	575	84	25	7.37	2.15	3.68
	600	84	25	7.37	2.18	3.73
	56"	425	84	26	7.37	2.01
450		84	26	7.37	2.05	3.51
475		84	26	7.37	2.09	3.57
500		84	26	7.37	2.12	3.63
525		84	26	7.37	2.16	3.69
550		84	26	7.37	2.19	3.74
575		84	26	7.37	2.23	3.81
600		84	26	7.37	2.26	3.86
58"		450	84	27	7.37	2.12
	475	84	27	7.37	2.16	3.69
	500	84	27	7.37	2.20	3.76
	525	84	27	7.37	2.23	3.81
	550	84	27	7.37	2.27	3.88
	575	84	27	7.37	2.31	3.95
	600	84	27	7.37	2.34	4.00
	625	84	27	7.37	2.38	4.07
	59"	450	84	27.5	7.37	2.16
475		84	27.5	7.37	2.20	3.76
500		84	27.5	7.37	2.24	3.83
525		84	27.5	7.37	2.27	3.88
550		84	27.5	7.37	2.31	3.95
575		84	27.5	7.37	2.35	4.02
600		84	27.5	7.37	2.39	4.09
625		84	27.5	7.37	2.42	4.14

PARTS LIST

The following parts can be purchased from GAL



Note: GAL reserves the right to replace any items in this list at any time without notice.

Description	Picture	GAL Part No.
TAPPED 'C' LINKAGE ASS'Y. 20 HOLE		2500-3025
SLOTTED 'C' ASSEMBLY		2500-3026
'A' BAR ASSEMBLY S/O		1000-3020
'A' BAR ASSEMBLY C/P		1000-3027
ROLLER STOP ASSEMBLY- S/O ON INSIDE OF WHEEL		1000-3016

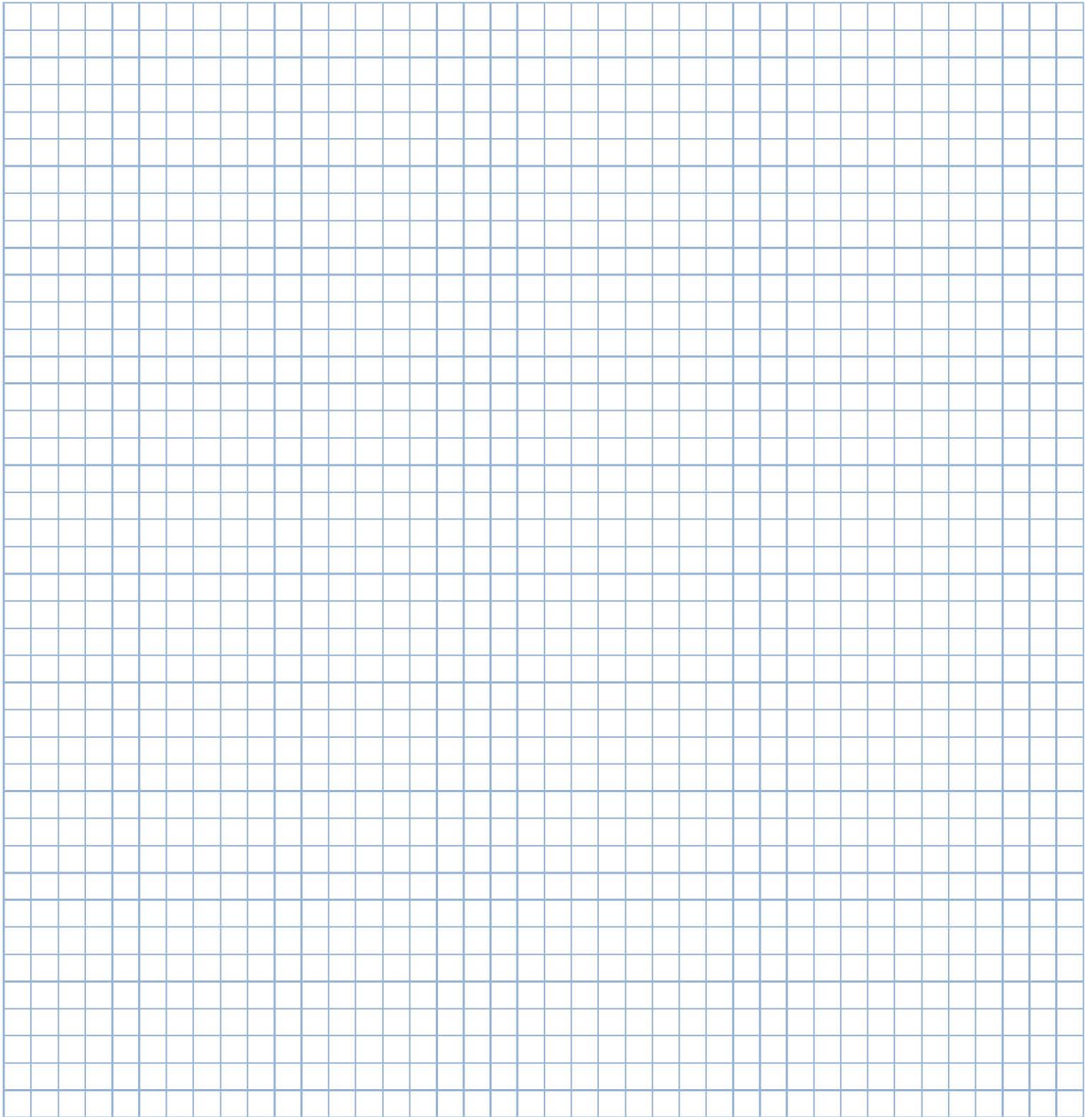
<p>ROLLER STOP ASSEMBLY C/P INSIDE OF WHEEL</p>	 <p>The image shows a metal bracket with two circular holes on the left and a yellow roller wheel on the right. Below the bracket is a clear plastic bag containing a roller wheel, a nut, and a bolt.</p>	<p>1000-3016-1</p>
<p>ROLLER STOP C/P ASSEMBLY ON OUTSIDE OF WHEEL</p>	 <p>The image shows a metal bracket with two circular holes on the left and a yellow roller wheel on the right. Below the bracket is a clear plastic bag containing a roller wheel, a nut, and a bolt.</p>	<p>1000-3016-2</p>
<p>PIVOT BAR ASSEMBLY S/O</p>	 <p>The image shows a metal bar with two vertical pins on the left and a central circular hole. The bar has a central circular hole and two vertical pins on the left side.</p>	<p>2500-3046</p>
<p>CHAIN TENSION ROLLER ASSEMBLY</p>	 <p>The image shows a metal bracket with two rectangular slots on the left and a black roller wheel on the right. Below the bracket is a clear plastic bag containing a roller wheel, a nut, and a bolt.</p>	<p>1000-3015</p>

<p>GATE SWITCH COMES WITH ACTUATOR</p>		<p>894-3000 (For CP) 894-3001 (For SO)</p>
<p>GATE SWITCH ACTUATOR S/O</p>		<p>894-3008</p>
<p>GATE SWITCH ACTUATOR C/P</p>		<p>894-3009</p>
<p>DRIVE ARM ASSEMBLY</p>	 <hr data-bbox="487 1079 1156 1083"/> <p><u>GAL1000 Drive Arm Assembly</u> When ordering a replacement drive arm GAL needs to know the followings:</p> <ul style="list-style-type: none"> •The dimension from center of clutch to base of operator. •The door opening width •Style of door operator (single slide, two speed, or center parting) <p>Please note that when ordering center parting drive arms, you need to order the quantity of two drive arms.</p>	<p>1000-3003</p>

<p>MOVABLE CAR DOOR CONTACT ASSEMBLY</p>		<p>894-3004</p>
<p>GATE SWITCH FLIPPER WITH CONTACT</p>		<p>894-3006</p>
<p>A-4C INTERLOCK BRACKET SET</p>		<p>890-2027</p>
<p>GATE SWITCH & INTERLOCK ECI MOUNTING PLATE</p>		<p>890-3025</p>
<p>PIVOT BRACKET ASSEMBLY C-P</p>		<p>2500-3029</p>

<p>SLAVE BRACKET ASSEMBLY C-P</p>	 A grey metal bracket assembly consisting of two main parts. The top part is a long, thin plate with two circular holes. The bottom part is a shorter, wider plate with a U-shaped cutout and a circular hole. The two parts are shown overlapping.	<p>2500-3028</p>
<p>GAL-GATE SWITCH</p>	 A rectangular metal switch component with a blue label. The label contains the following text: "ELEVATOR ELECTRIC CONTACT", "TYPE 'G' 230 VDC. 2A.", "NVC NEMA 250-00-10", "UL LISTED 487K", "ASME A17.1-1998 DEC. 1993", "JANUARY, 1992", "G.A.L. MFG. CORP. MC". The switch has two screws on top and a curved metal arm on the bottom.	<p>SW1-0001N</p>

NOTES



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