

i-MOTION® II Door Operator Linkage Assemblies

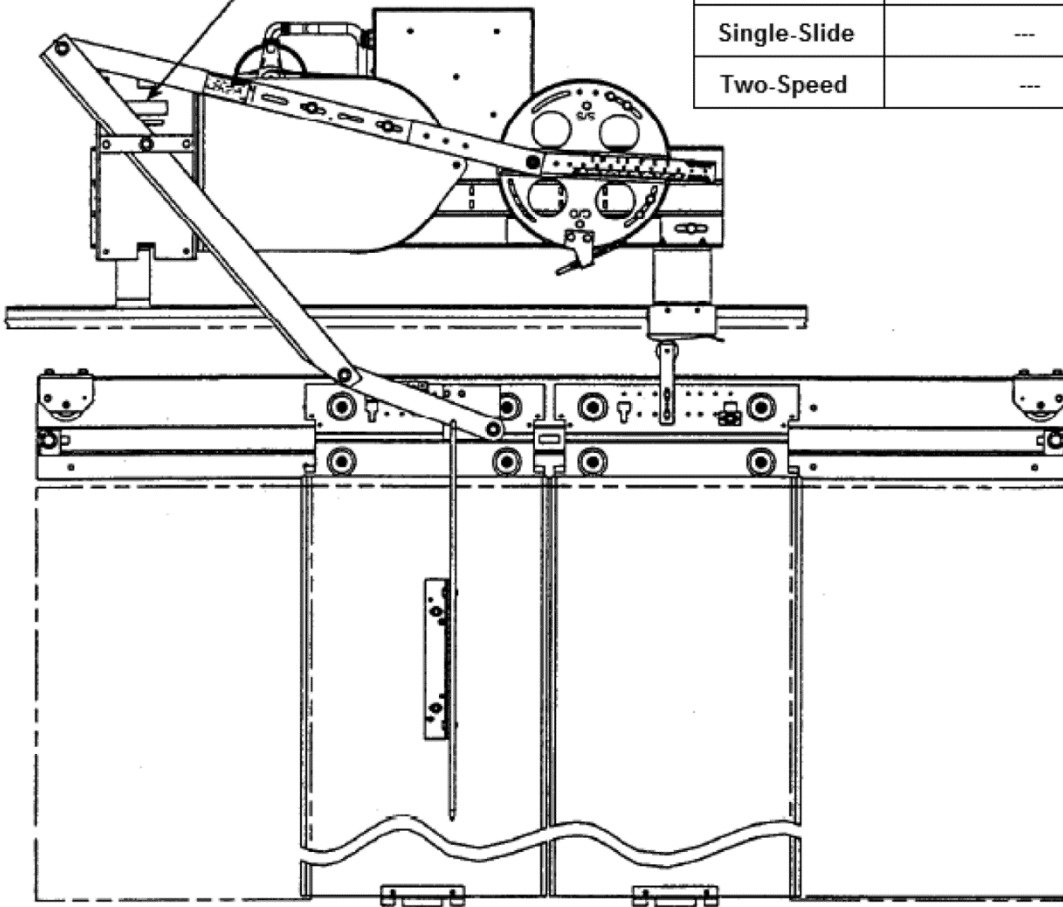
Spare Parts Leaflet

23-AAA24470M

November 25, 2020 / Page 1 of 19

23 AEA24470M	and Prior Vintages
23 ABB24470N	
23 AFA24460C	
23 AFA24450R	

DOOR SYSTEM	COMMENT
Center-Opening	Standard Cab, 84 in. H
Center-Opening	High Cab, 94 in. H
Single-Slide	---
Two-Speed	---



OTIS

This document does not contain any technical data subject to EAR or ITAR

SERVICE ENGINEERING
Otis Elevator Company
Bloomfield, Connecticut USA

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Leaflet Description

This leaflet provides spare parts information for i-MOTION® II door operator linkage assemblies for center-opening, single-slide, and two-speed doors. It covers AEA24470M, ABB24470N, AFA24460C, and AFA24450R linkage assemblies and their vintages.

Leaflet Revisions

Date Revised	Subject Matter Expert	Reason for Revision
March 1, 2001	Duane Stupienski	New leaflet; Initial release
May 5, 2003	Jeffrey Smith	Vintage Changes: 1. ACA24470M, ABA24470N, ADA24460C, and ADA24450R represent changes in linkage bearings. 2. ADA24470M, AEA24460C, and AEA24450R represent weldless door project changes.
August 6, 2008	Brian Regan	Added vintage for NG door system
February 9, 2009	Brian Regan	Corrected SPL reference in ref. 4 on pp. 6 and 10
January 15, 2014	Brian Regan	Separated SPL into 3 leaflets leaving AEA24470M, ABB24470N, AFA24460C, and AFA24450R and their vintages on the 23-AAA24470M SPL.
November 25, 2020	Peter Kelley	Added NOTES about p/n COMMBMT-100

Related Drawings

Drawing No.	Title	Drawing No.	Title
AAA24350BH	Door Operator i-MOTION II C/O, S/S, 2/S	AAA24460C	i-MOTION II and Linkage Assembly for 2/S Doors
AAA24470M	i-MOTION II and Linkage Assembly for C/O Doors	AAA24450R	i-MOTION II and Linkage Assembly for S/S Doors
AAA24470N	i-MOTION II and Linkage Assembly for C/O Doors		

Related Documents

Document ID	Title
SPL 23-AAA24350BH	Harmonic Drive i-MOTION II Door Operator Engine Unit

Subject Matter Expert

Name	Department
Peter Kelley	OSC Service Engineering

About Spare Parts Leaflets...

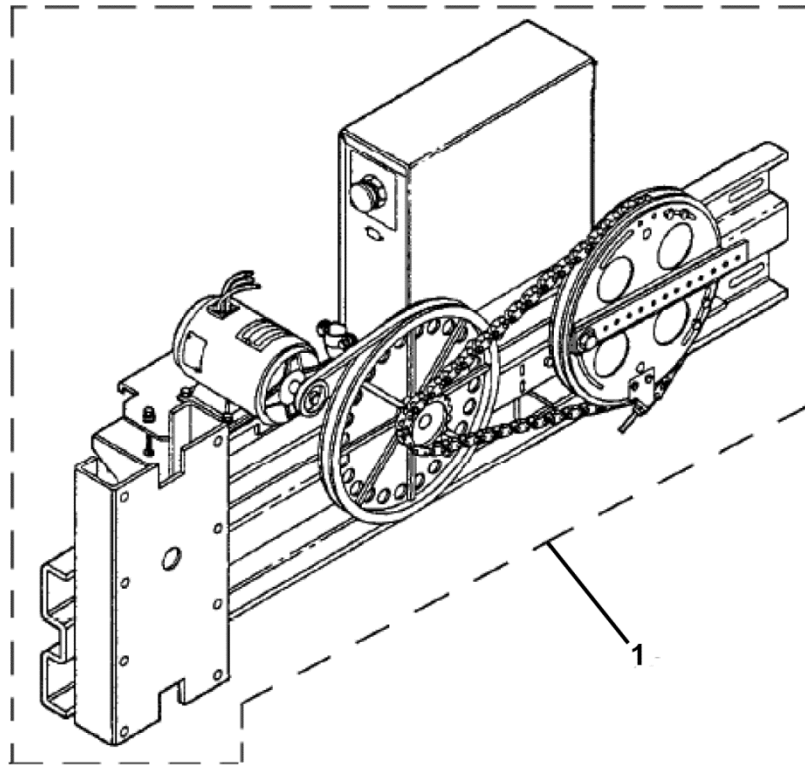
This document lists the lowest replaceable units (LRUs) for the standard version of the product. The LRUs are chosen by a team of Otis associates representing engineering and manufacturing.

While goal of this document is to make parts identification as easy as possible, the document cannot be all-inclusive. Elevator and escalator contracts classified as "special" or "custom" are not addressed here. For such contracts, please refer to specified information, the contract folder, TIPs, Field Education Articles, Construction Letters, etc. for further information.

If you have any suggestions about this document, please contact the subject matter expert listed on this page.


AAA24350BH Engine Assembly





23-AAA24470M



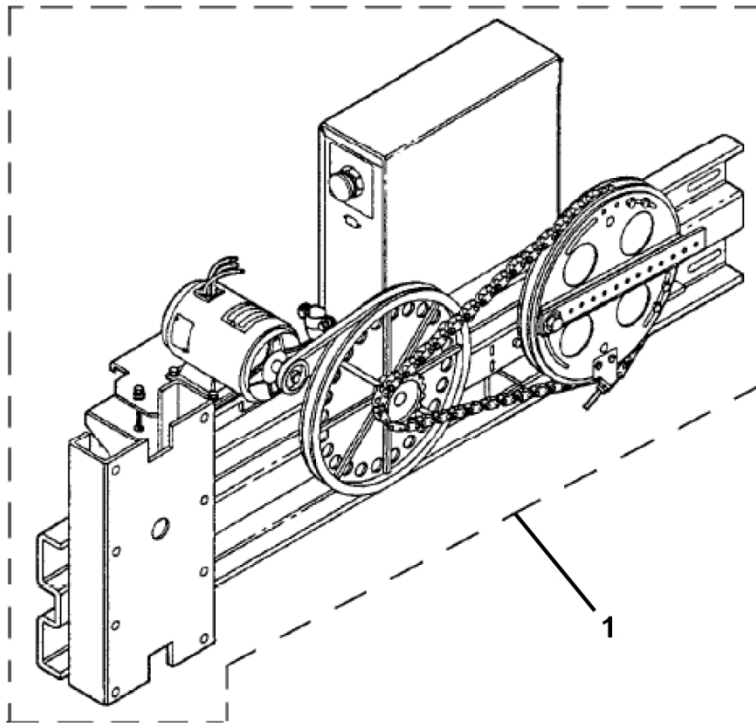
**AAA24470M
ABA24470M
AAA24470N
AAB24470N**

**ACA24470M
ADA24470M
ADB24470M
AEA24470M
ABA24470N
ABB24470N**

NOTE: For more detailed information on component parts of the engine assembly,  SPL 23-AAA24350BH.


REF. No.	PART No.		DESCRIPTION	WIRING
1	AAA24350BH2	ABA24350BH2	Assembly, Operator Engine,  for 36–60 in. C/O Doors	Discrete
	AAA24350BH4	ABA24350BH4	Assembly, Operator Engine,  for 36–60 in. C/O Doors	
	AAA24350BH6	ABA24350BH6	Assembly, Operator Engine,  for 36–60 in. C/O Doors	Multi-Drop w/ Loadweighing
	AAA24350BH8	ABA24350BH8	Assembly, Operator Engine,  for 36–60 in. C/O Doors	





NOTE: When replacing AAA vintage operator, see type ABA24350BH operator engine assembly and purchase a lever arm (p/n AAA395L1) to interface an operator with the existing linkage assembly.



**AAA244690C
ABA244690C
ACA244690C
AAA24450R
ABA24450R
ACA24450R**

**ADA24460C
AEA24460C
AEB24460C
ADA24450R
AEA24450R
AEB24450R
AFA24450R**

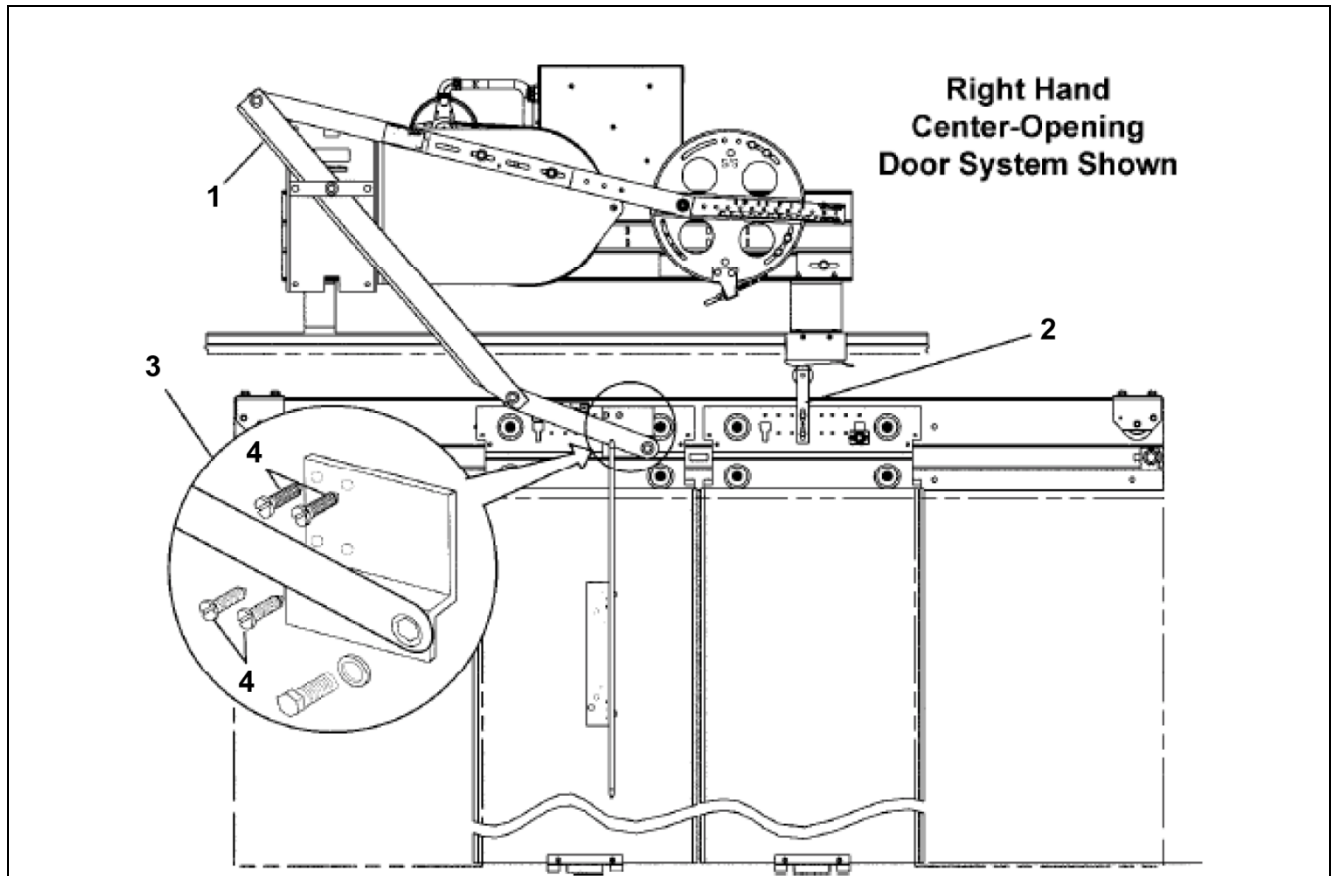
NOTE: For more detailed information on component parts of the engine assembly,  SPL 23-AAA24350BH.

REF. No.	PART No.		DESCRIPTION	WIRING
1	AAA24350BH1	ABA24350BH1	Assembly, Operator Engine,  for 32–42 in. S/S, and 36–55 in., 2/S Doors	Discrete
	AAA24350BH3	ABA24350BH3	Assembly, Operator Engine,  for 32–42 in. S/S. and 36–55 in. 2/S Doors	
	AAA24350BH5	ABA24350BH5	Assembly, Operator Engine,  for 32–42 in. S/S, and 36–55 in. 2/S Doors	Multi-Drop w/ Loadweighing
	AAA24350BH7	ABA24350BH7	Assembly, Operator Engine,  for 32–42 in. S/S, and 36–55 in. 2/S Doors	

NOTE: When replacing AAA vintage operator, see type ABA24350BH operator engine assembly and purchase a lever arm (p/n AAA395L1) to interface an operator with the existing linkage assembly.

Linkage Components, C/O Doors

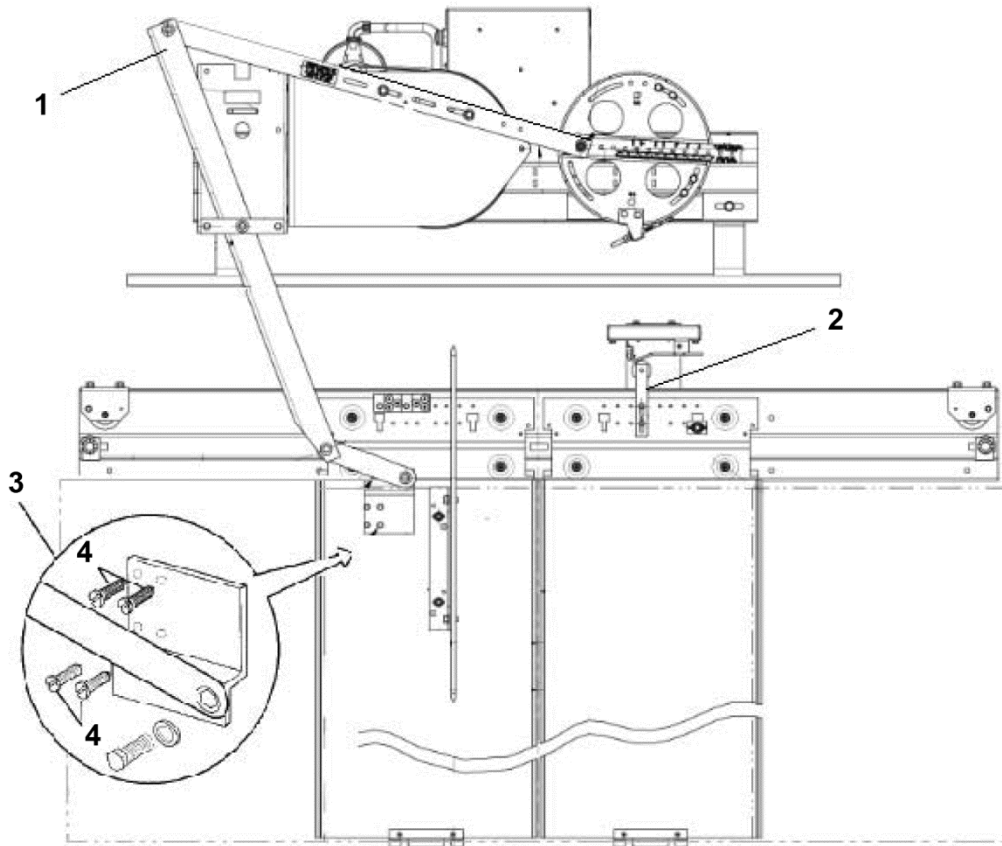
23-AAA24470M



REF. No.	PART No.			DESCRIPTION
	AAA24470M	AAB24470M ABA24470M	ACA24470M ADA24470M ADB24470M AEA24470M	
1	288TJ9	AAA288ACE1	AAA288ACE7	Arm, Door Drive Aluminum, 34.3 in. L, Entrance Height = 84 in., NOTE
2	288RH20			Assembly, Roller Arm, Arm Length = 9.12 in.
	288RH8			Assembly, Roller Arm, Arm Length = 6.12 in.
3	AAA430ES1	AAA430ES6	AAA430ES14	Assembly, Door Link w/ Bracket and Bolt, Link = 13.75 in. L
	AAA430ES11	AAA430ES12	AAA430ES19	Assembly, Door Link w/ Bracket and Bolt, Link 13.75 in. L
4	109P2			Screw, Thread-Forming, 1/4 x 5/8 in. (part is not included w/ Ref. 3)

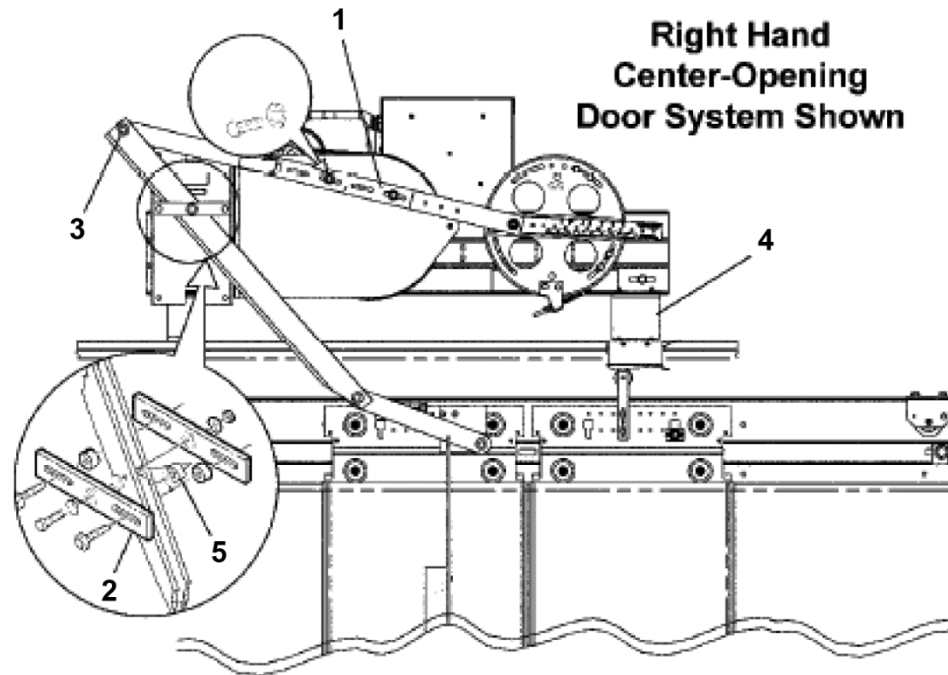
NOTE: Early and late vintage parts look identical, but are not. The distinguishing features are metric pivot bolts, mounting hardware, and holes.

Linkage Components, C/O Doors, High Cab



	AAA24470N	AAB24470N	ABA24470N ABB24470N	
REF. No.	PART No.			DESCRIPTION
1	288TJ13	AAA288ACE3	AAA288ACE9	Arm, Door Drive Aluminum, 55.15 in. L, Entrance Height = 96 in. NOTE
2	288RH8			Assembly, Roller Arm, Arm Length = 6.12 in.
3	AAA430ES4	AAA430ES9	AAA430ES17	Assembly, Door Link w/ Bracket and Bolt, Link = 8.75 in. L, Entrance Height = 96 in.
	AAA430ES5	AAA430ES10	AAA430ES18	Assembly, Door Link w/ Bracket and Bolt, Link = 8.75 in. L, Entrance Height = 96 in.
4	109P2			Screw, Thread-Forming, 1/4 x 5/8 in. (part is not included with ref. 3)

NOTE: Early and late vintage parts look identical, but they are not. The distinguishing features are metric pivot bolts, mounting hardware, and holes.

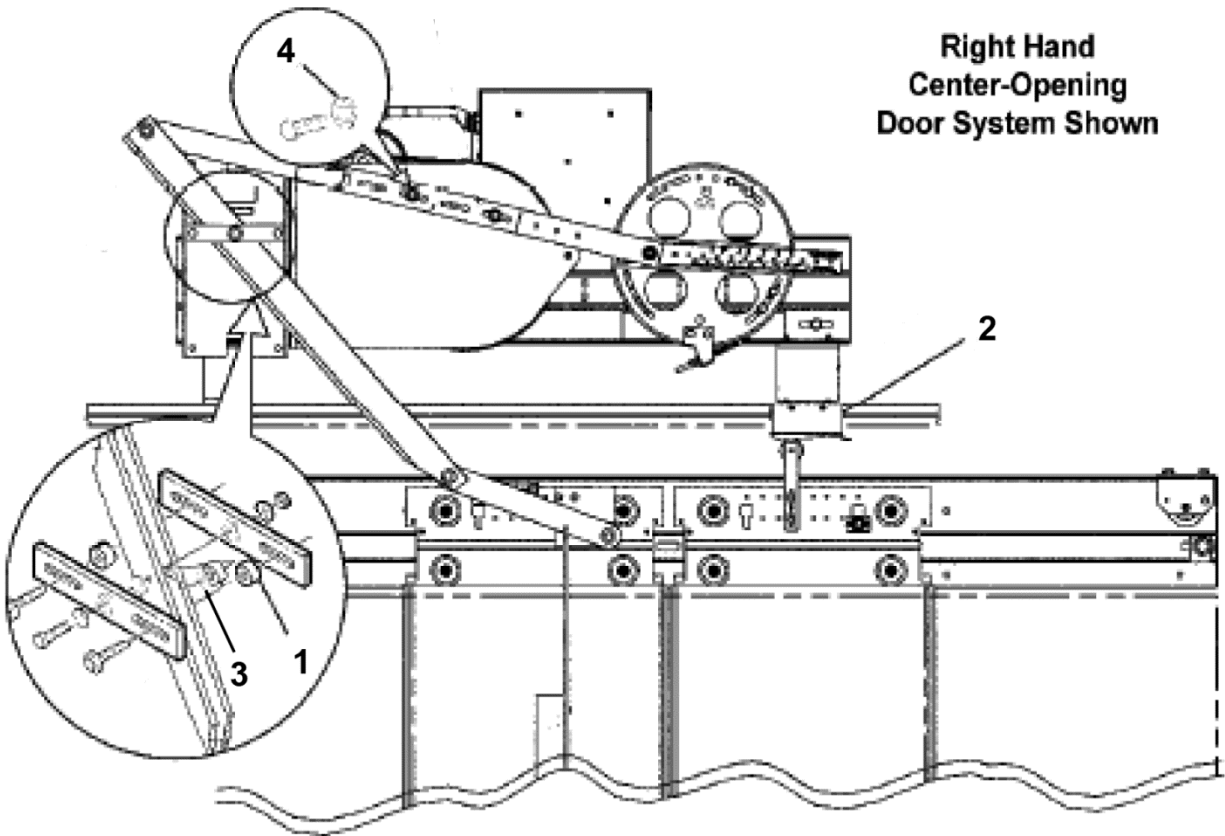


	AAA24470M	AAB24470M ABA24470M	ACA24470M ADA24470M ADB24470M AEA24470M	
REF. No.	PART No.			DESCRIPTION
1*	395F2	395F4	395F3	Assembly, Intermediate Drive Arm (two-piece assembly w/ hardware)
2	299AKG4	299AKG6	AAA299ANY4	Bar, Drive Arm Mounting, Two per Assembly,  NOTE
3	58AP4	NON1241M1 0X30-8.8Z	---	Bolt, Shoulder, Imperial, 3/8 x 1-1/4 in.
	--	--	AAA124HG1	Bolt, Shoulder, Metric, M8 x 20
4	AAA316GLV1			Bracket, Gate Switch, Standard Cab = 84 in. H
5	462HA129	462HA142	--	Spacer, Aluminum,  0.40 in, One per Assembly
	--	--	462HA144	Spacer, Aluminum,  0.42 in., One per Assembly

NOTE: Early and late vintage parts look identical, but they are not. A different bearing is used and the two are not interchangeable.

* Bearing removal tool p/n COMMBMT-100

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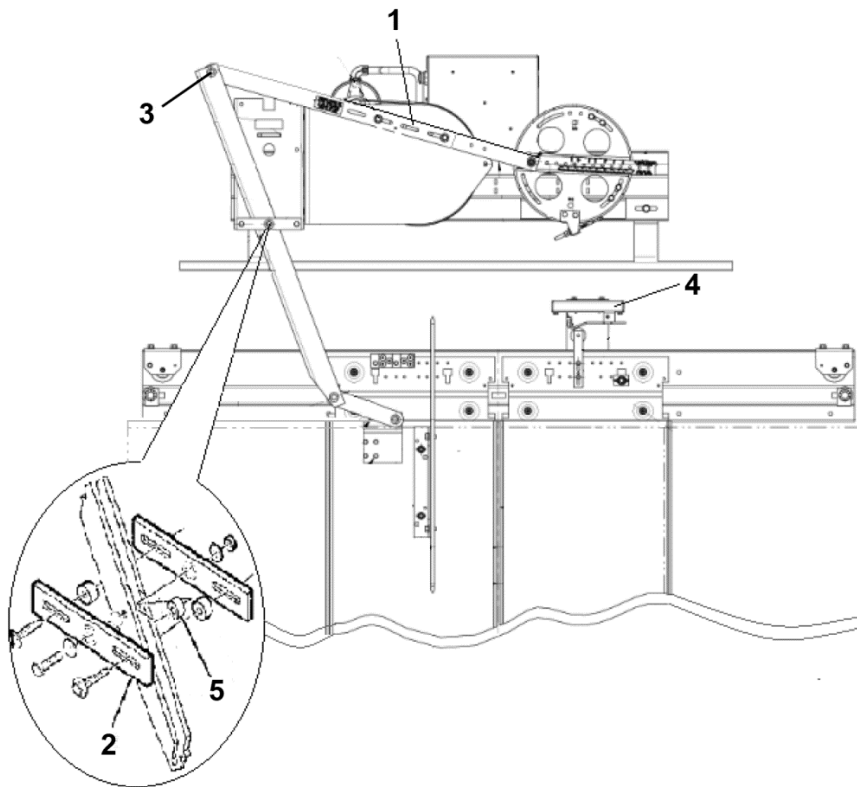
AAA24470M	AAB24470M ABA24470M	ACA24470M ADA24470M	ADB24470M AEA24470M
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REF. No.	PART No.		DESCRIPTION
1	462HA113	---	Spacer, Steel, 0.38 in., Two per Assembly
	---	462HA145	Spacer, Steel, 0.34 in., Two per Assembly
2	6098MV2	AAA25590X1	Switch, Gate
3	128AF18		Washer (Shim), 0.75 in., 0.016 in. Thick (quantity may vary)
	---	ISO7089M10-140HV-Z	Washer, 20 mm, 2 mm Thick
4	130J5	---	Washer, Interior / Exterior Lock, 5/16 in.

NOTE: Early and late vintage parts look identical, but they are not. A different bearing is used and the two are not interchangeable.

Linkage Components, C/O Doors, High Cab

23-AAA24470M



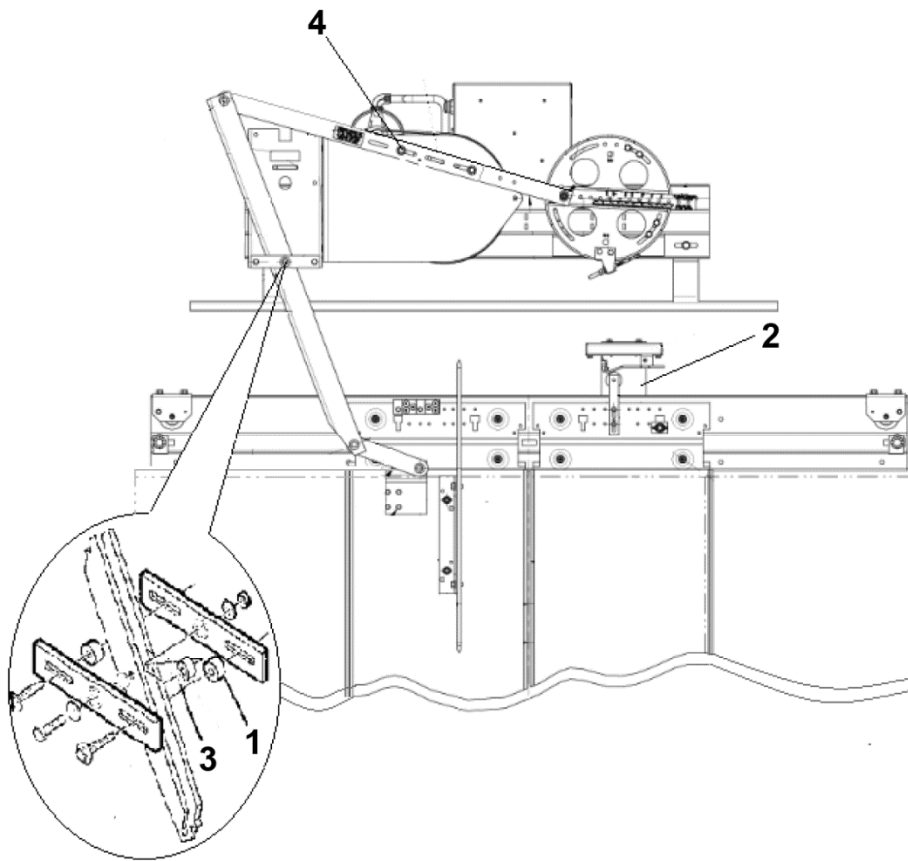
	AAA24470N	AAB24470N	ABA24470N ABB24470N	
REF. No.	PART No.			DESCRIPTION
1*	395F2	395F4	395F3	Arm, Transition
2	299AKG4	299AKG6	AAA299ANY4	Bar, Drive Arm Mounting, Two per Assembly, 👁 NOTE
3	58AP4	NON1241M1 0X30-8.8Z	---	Bolt, Shoulder, Imperial, 3/8 x 1-1/4 in.
	---	---	AAA124HG1	Bolt, Shoulder, Metric, M8 x 20
4	AAA316GLW2			Bracket, Gate Switch, High Cab = 96 in. H
5	462HA129	462HA142	---	Spacer, Aluminum, Ⓢ 0.40 in., One per Assembly
	---	---	462HA144	Spacer, Aluminum, Ⓢ 0.42 in., One per Assembly

NOTE: Early and late vintage parts look identical, but they are not. A different bearing is used and the two are not interchangeable.

* Bearing removal tool p/n COMMBMT-100

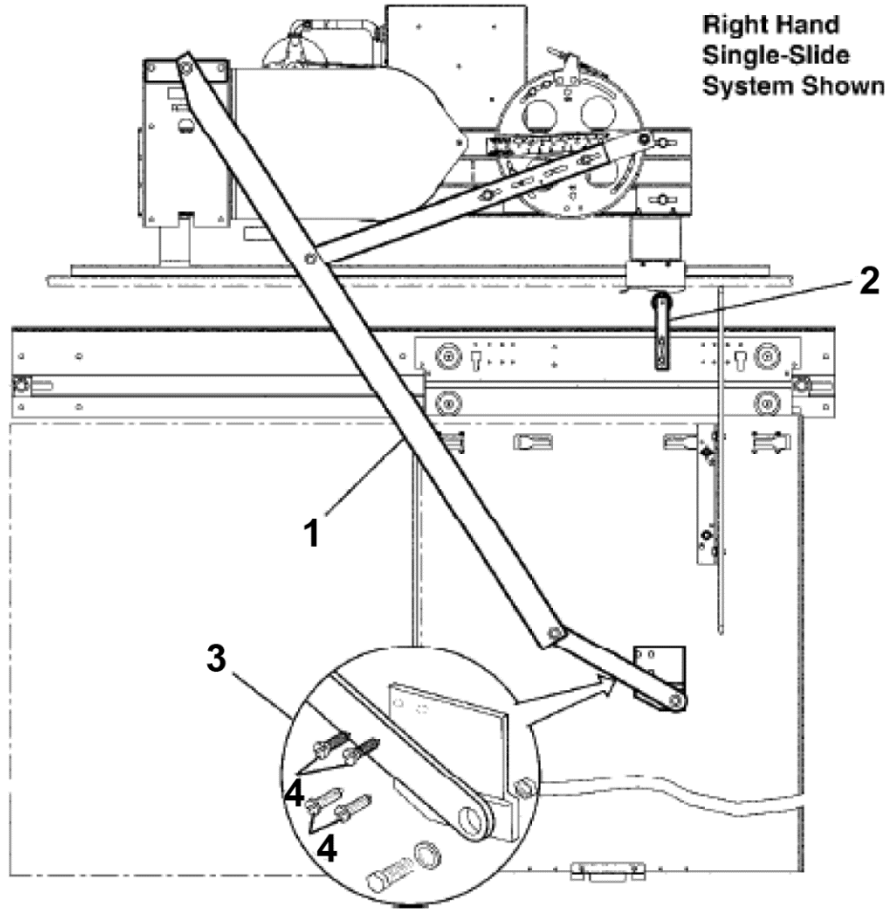
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Linkage Components, C/O Doors, High Cab



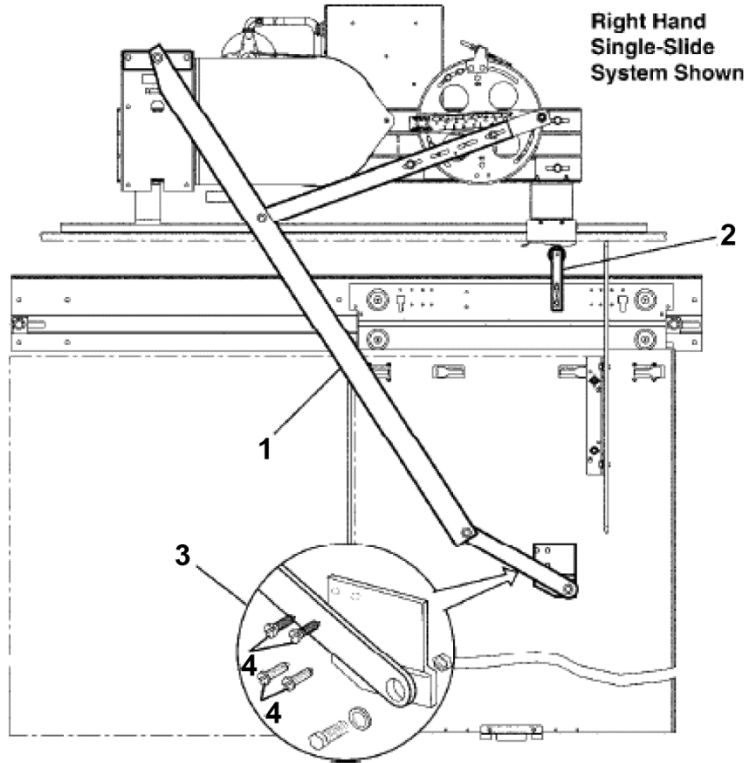
	AAA24470N	AAB24470N	ABA24470N	ABB24470N	
REF. No.	PART No.				DESCRIPTION
1	462HA113			---	Spacer, Steel, 0.38 in., Two per Assembly
	---			462HA145	Spacer, Steel, 0.34 in., Two per Assembly
2		6098MV2		AAA25590X1	Switch, Gate
3			128AF18		Washer (shim), 0.75 in., 0.016 in. Thick (quantity may vary)
		---		ISO7089M10-140HV-Z	Washer, 20 mm, 2 mm Thick
4	130J5			---	Washer, Interior / Exterior Lock, 5/16 in.

NOTE: Early and late vintage parts look identical, but they are not. A different bearing is used and the two are not interchangeable.



	AAA24450R	ABA24450R	ACA24450R	
REF. No.	PART No.			DESCRIPTION
1	288TJ12	AAA288ACE2		Arm, Door Drive Aluminum, 59.68 in. L, NOTE
2	288RH8			Assembly, Roller Arm, Arm Length = 6.12 in.
	288RH20			Assembly, Roller Arm, Arm Length = 9.12 in.
3	AAA430ES2	AAA430ES7	---	Assembly, Door Link w/ Bracket and Bolt, , Link 13.75 in. L, 11-Bolt Mounting Pattern
	AAA430ES3	AAA430ES8	---	Assembly, Door Link w/ Bracket and Bolt, , Link = 13.75 in. L, 4-Bolt Mounting Pattern
	---	---	AAA430ES13	Assembly, Door Link w/ Bracket and Bolt, Link = 13.75 in. L
4	109P2	---		Screw, Thread-Forming, 1/4 x 5/8 in.
	---	DIN7500DM6X16-Z		Screw, M6 x 1 x X16 Hex Thread-Rolling

NOTE: Early and late vintage parts look identical, but they are not. The distinguishing features are metric pivot bolts, mounting hardware, and holes.

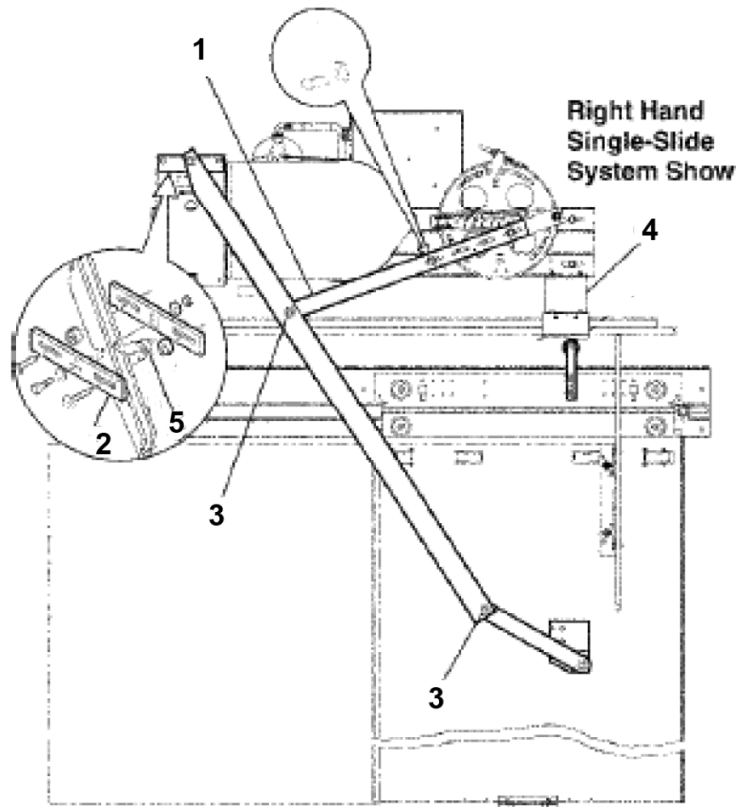


	ADA24450R	AEA24450R AEB24450R	AFA24450R	
REF. No.	PART No.			DESCRIPTION
1	AAA288ACE8			Arm, Door Drive Aluminum, 59.68 in. L, 👁️ NOTE
2	288RH8			Assembly, Roller Arm, Arm Length 6.12 in.
	288RH20			Assembly, Roller Arm, Arm Length 9.12 in.
3	AAA430ES15	---	---	Assembly, Door Link w/Bracket and Bolt, 🖐️ Link 13.75 in. L
	AAA430ES16	---	---	Assembly, Door Link w/Bracket and Bolt, 🖐️ Link 13.75 in. L
	--	AAA430ES20		Assembly, Door Link w/Bracket and Bolt, 🖐️ Link = 13.75 in. L
	---	---	AAA430ES21	Assembly, Door Link w/Bracket and Bolt, 🖐️ Link = 13.75 in. L
4	DIN7500DM6X16-Z			Screw, M6 X 1 X 16 Hex Head Thread-Rolling

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Linkage Components, S/S

23-AAA24470M

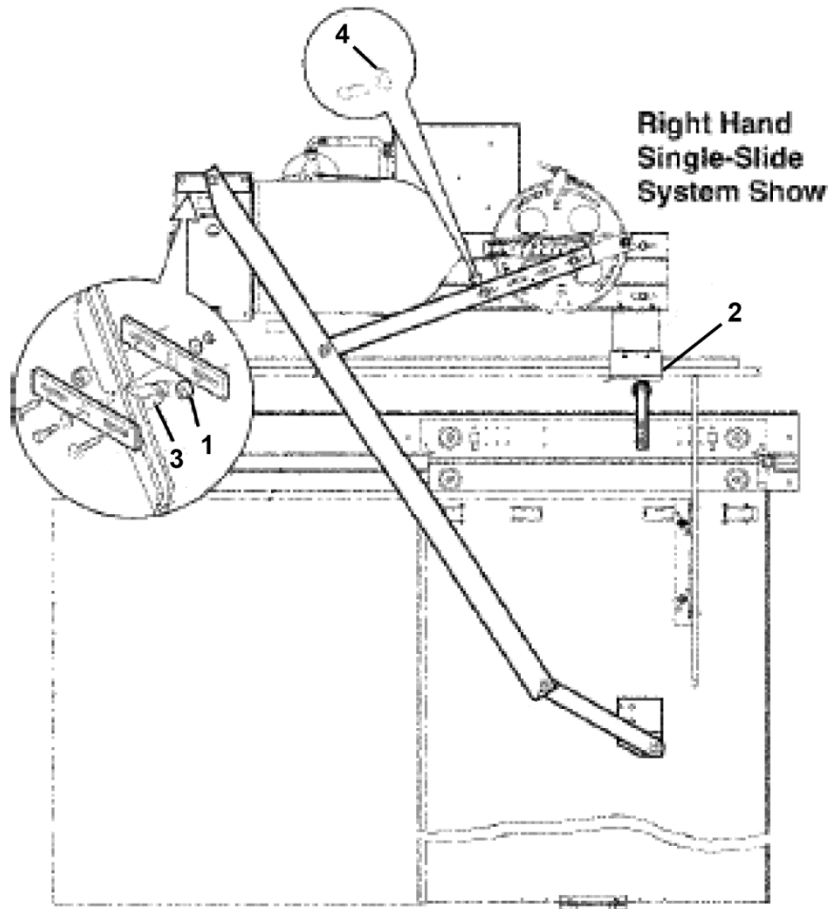


	AAA24450R	ABA24450R ACA24450R	ADA24450R AEA24450R	AEB24450R AFA24450R	
REF. No.	PART No.				DESCRIPTION
1*	395F2	395F4	395F3		Assembly, Intermediate Drive Arm (two-piece assembly w/ hardware)
2	299AKG4	299AKG6	AAA299ANY4		Bar, Drive Arm Mounting, Two per Assembly, NOTE
3	58AP4		---		Bolt, Shoulder, Imperial, 3/8 x 1-1/4 in.
	---		AAA124HG1		Bolt, Shoulder, Metric, M8 x 20
4	AAA316GLV2				Bracket, Gate Switch
5	462HA129	462HA142	---		Spacer, Aluminum, 0.40 in., One per Assembly
	---		462HA144		Spacer, Aluminum, 0.42 in., One per Assembly

NOTE: Early and late vintage parts look identical, but they are not. A different bearing is used and the two are not interchangeable.

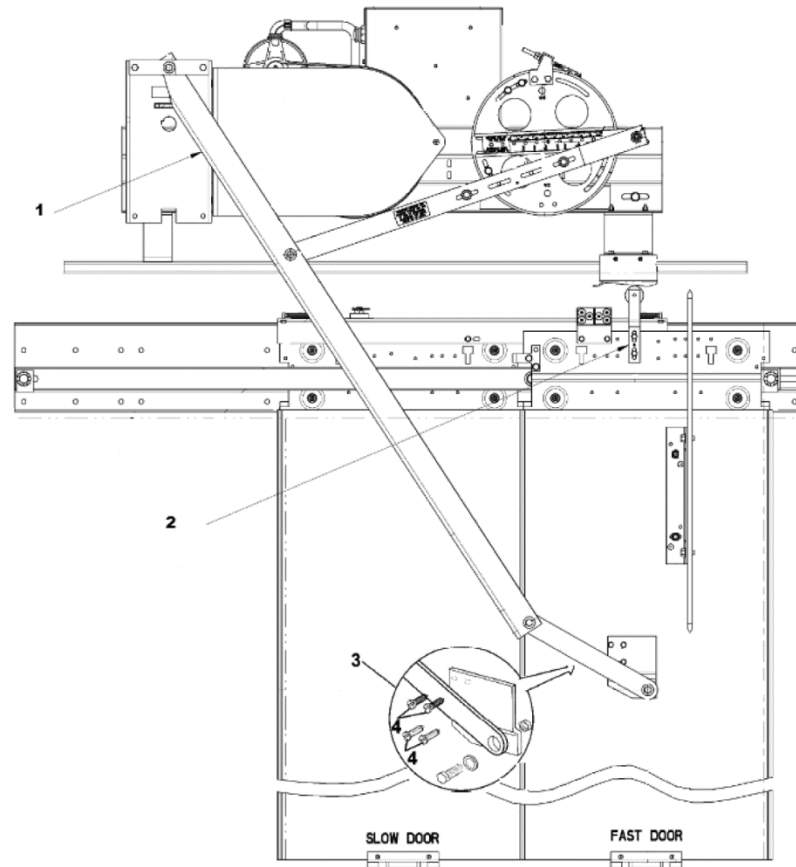
* Bearing removal tool p/n COMMBMT-100

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	AAA24450R	ABA24450R ACA24450R	ADA24450R AEA24450R	AEB24450R AFA24450R	
REF. No.	PART No.				DESCRIPTION
1	462HA113	---		---	Spacer, Steel, \varnothing 0.38 in., Two per Assembly
	---	462HA145		---	Spacer, Steel, \varnothing 0.34 in., Two per Assembly
2	6098MV2			AAA25590X1	Switch, Gate
3	128AF18				Washer (shim), \varnothing 0.75 in., 0.016 in. Thick
	---	ISO7089M10-140HV-Z		---	Washer, \varnothing 20 mm, 2 mm Thick
4	130J5	---		---	Washer, Interior/Exterior Lock, 5/16 in.

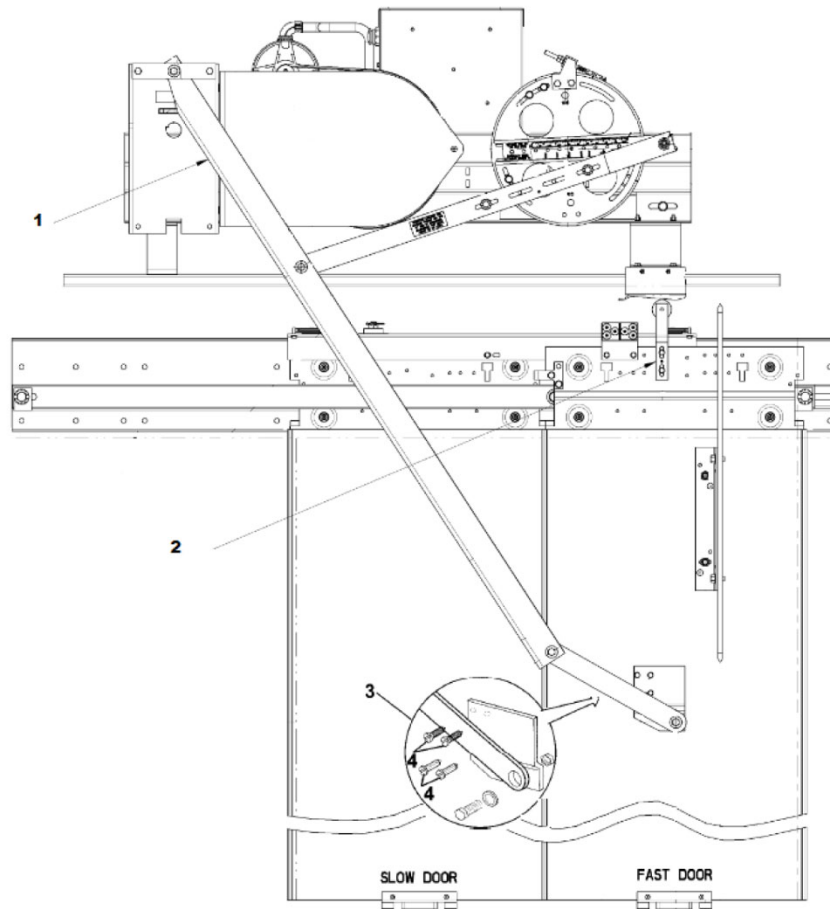
NOTE: Early and late vintage parts look identical, but they are not. A different bearing is used and the two are not interchangeable.



	AAA24460C	ABA24460C	ACA24460C	
REF. No.	PART No.			DESCRIPTION
1	288TJ12	AAA288ACE2		Arm, Door Drive Aluminum, 59.68 in. L, NOTE
2	288RH22			Assembly, Roller Arm, Arm Length 6.40 in.
	288RH20			Assembly, Roller Arm, Arm Length 9.12 in.
3	AAA430ES2	AAA430ES7	---	Assembly, Door Link w/ Bracket and Bolt, Link 13.75 in. L, 11-Bolt Mounting Pattern
	AAA430ES3	AAA430ES8	---	Assembly, Door Link w/ Bracket and Bolt, Link 13.75 in. L, 4-Bolt Mounting Pattern
	---	---	AAA430ES13	Assembly, Door Link w/ Bracket and Bolt, Link 13.75 in. L
4	109P2	---		Screw, Thread-Forming, 1/4 x 5/8 in.
	---	DIN7500DM6X16-Z		Screw, M6 X 1 x 16 Hex Head Thread-Rolling

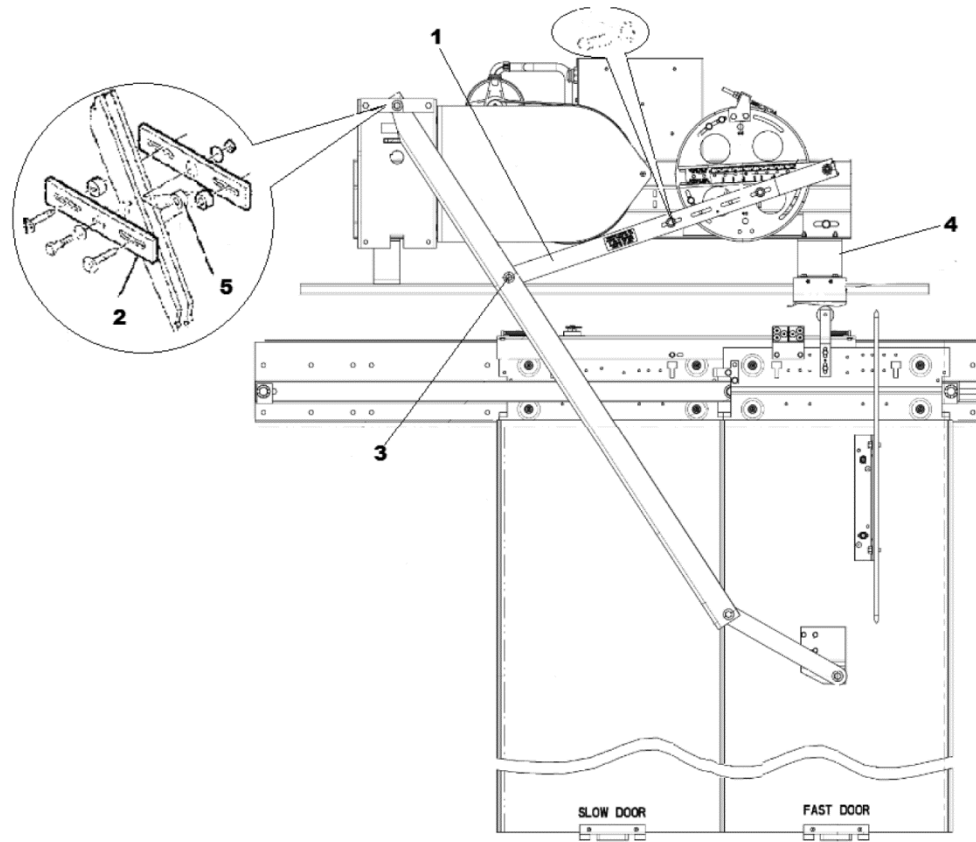
NOTE: Early and late vintage parts look identical, but they are not. The distinguishing features are metric pivot bolts, mounting hardware, and holes.

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	ADA24460C	AEA24460C AEB24460C	AFA24460C	
REF. No.	PART No.			DESCRIPTION
1	AAA288ACE8			Arm, Door Drive Aluminum, 59.68 in. L, 👁 NOTE
2	288RH22			Assembly, Roller Arm, Arm Length 6.40 in.
	288RH20			Assembly, Roller Arm, Arm Length 9.12 in.
3	AAA430ES15	---	---	Assembly, Door Link w/ Bracket and Bolt, Link 13.75 in. L 🖐
	AAA430ES16			Assembly, Door Link w/ Bracket and Bolt, Link 13.75 in. L 🖐
	---	AAA430ES20		
	---	---	AAA430ES22	
4	DIN7500DM6X16-Z			Screw, M6 X 1 X 16 Hex Head Thread-Rolling

NOTE: Early and late vintage parts look identical, but they are not. The distinguishing features are metric pivot bolts, mounting hardware, and holes.

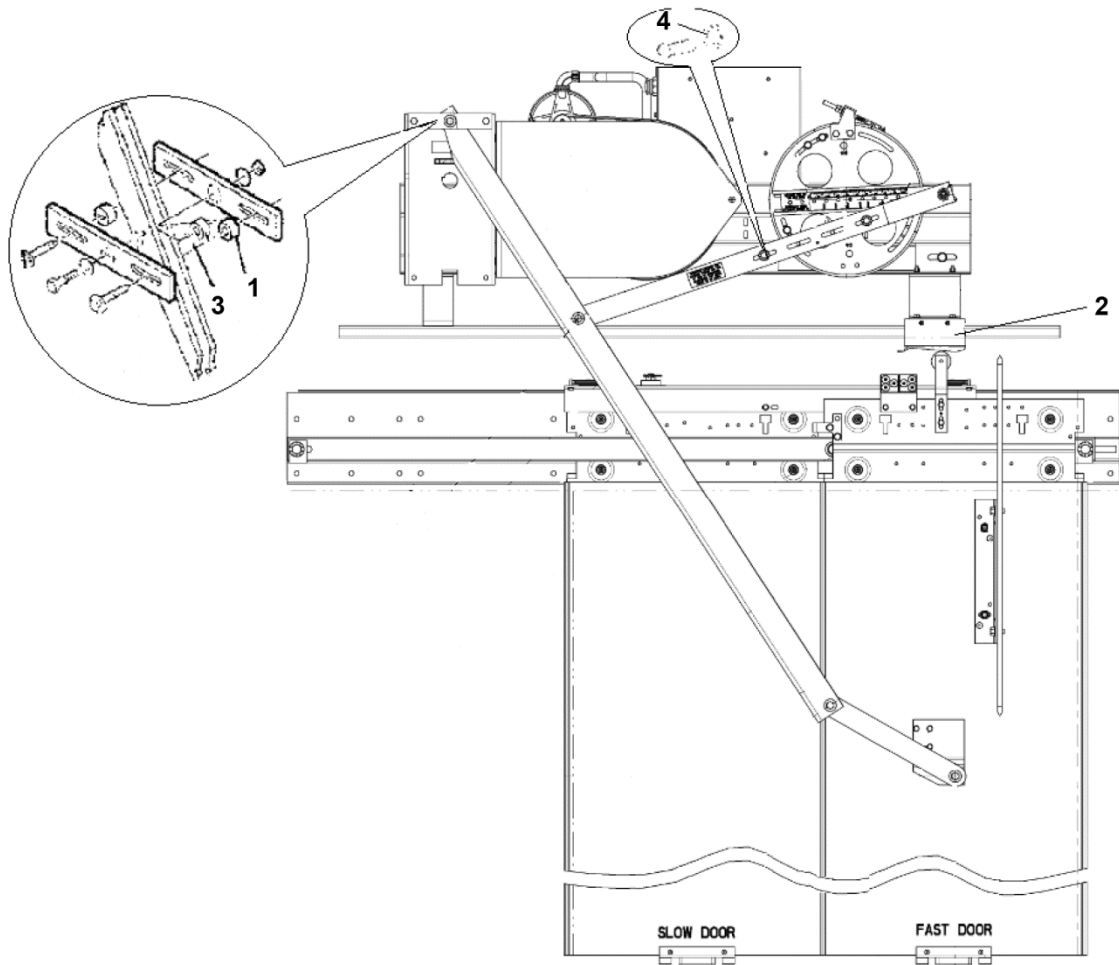


REF. No.	PART No.			DESCRIPTION
	AAA24460C	ABA24460C ACA24460C	ADA24460C AEA24460C AEB24460C AFA24460C	
1*	395F2	395F4	395F3	Assembly, Intermediate Drive Arm (two-piece assembly w/hardware)
2	299AKG4	299AKG6	AAA299ANY4	Bar, Drive Arm Mounting, Two per Assembly, 👁 NOTE
3	58AP4		---	Bolt, Shoulder, Imperial, 3/8 x 1-1/4 in.
	---		AAA124HG1	Bolt, Shoulder, Metric, M8 x 20
4	AAA316GLV3			Bracket, Gate Switch
5	462HA129	462HA142	---	Spacer, Aluminum, Ⓢ 0.40 in, One per Assembly
	---		462HA144	Spacer, Aluminum, Ⓢ 0.42 in., One per Assembly

NOTE: Early and late vintage parts look identical, but they are not. A different bearing is used and the two are not interchangeable.

* Bearing removal tool p/n COMMBMT-100

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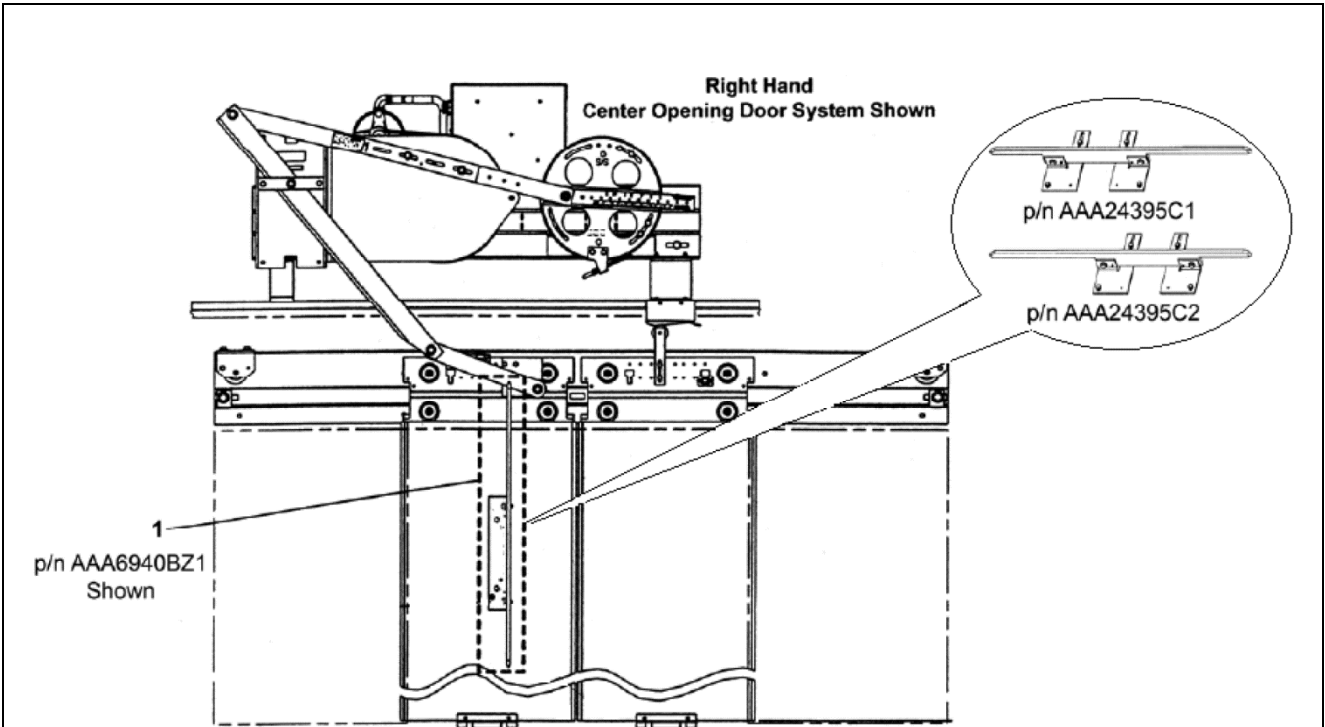


	AAA24460C	ABA24460C ACA24460C	ADA24460C AEA24460C	AEB24460C AFA24460C	
REF. No.	PART No.				DESCRIPTION
1	462HA113	---		---	Spacer, Steel, \varnothing 0.38 in., Two per Assembly
	---	462HA145		---	Spacer, Steel, \varnothing 0.34 in., Two per Assembly
2	6098MV2			AAA25590X1	Switch, Gate
3	128AF18				Washer (shim), \varnothing 0.75 in., 0.016 in. Thick
	---	ISO7089M10-140HV-Z			Washer, \varnothing 20 mm, 2 mm Thick
4	130J5	---		---	Washer, Interior / Exterior Lock, 5/16 in.

NOTE: Early and late vintage parts look identical, but they are not. A different bearing is used and the two are not interchangeable.

Vane Assembly for All Door Systems

23-AAA24470M



	<p>AAA24470M AAA24470N AAA24460C AAA24450R</p>	<p>AAB24470M ACA24470M AEA24470M AAB24470M ABA24470M ABB24470M ABA24450R ADA24450R AFA24450R ABA24460C ADA24460C AFA24460C</p>	<p>ABA24470M ADB24470M ACA24450R AEB24450R ACA24460C AEB24460C</p>	<p>ADA24470M AEA24450R AEA24460C</p>	
REF. No.	PART No.				DESCRIPTION
1	A6940AT3 AAA6940BZ1	---	---	---	Assembly, Vane, for Weldless Doors NOTE
	---	AAA6940BZ1	---	AAA6940BZ1	
	---	AAA24395C1			
	A6940AT4 AAA6940BZ2	---	---	---	Assembly, Vane, for Weldless Doors NOTE
	---	AAA6940BZ2	---	AAA6940BZ2	
	---	---	AAA24395C2		

NOTE: Replace vane with same mounting type vane: one-piece mounting for AAA6940BZ__ and two-piece mounting for AAA2439SC__.