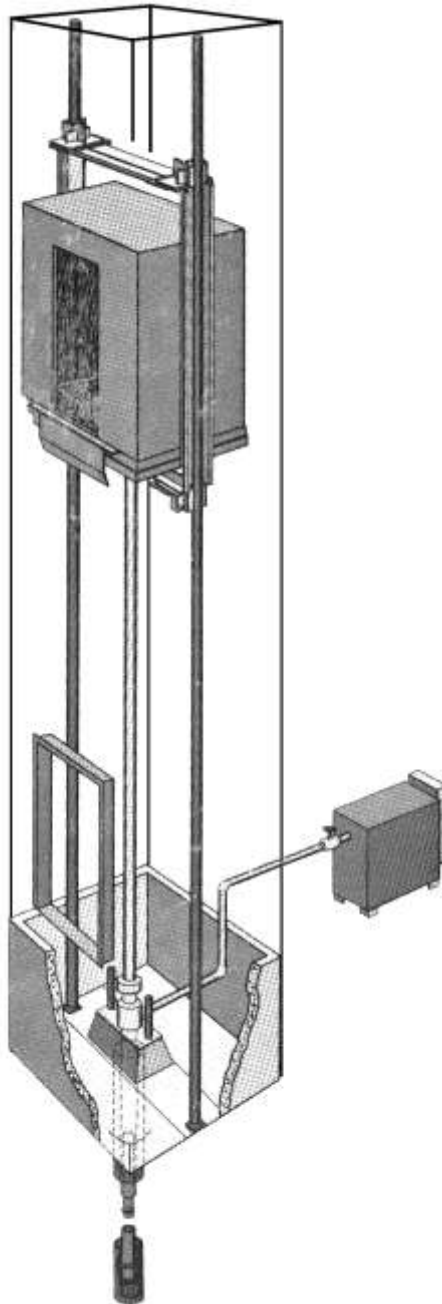


# LRV Hydraulic Elevator

**Spare Parts Leaflet**

**C-3000**

**January 11, 2012 / Page 1 of 25**



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**OTIS**

**Safety First!**

**SERVICE ENGINEERING**  
**Otis Elevator Company**  
**Bloomfield, Connecticut USA**

**Leaflet Description**

This leaflet lists parts used on the first generation LRV hydraulic elevators.

**Leaflet Revisions**

<b>Date Revised</b>	<b>Subject Matter Expert</b>	<b>Reason for Revision</b>
February 10, 1982	Jeffrey S. Costley, Senior Technical Writer	New SPL
March 23, 2011	Matt Fournier	Added history page; added alternate part number for P613AP9.
May 18, 2011	Joe Zych	Add missing notes. Update notes.
January 11, 2011	Matt Fournier	Updated relay information on p. 8.

**Related Drawings**

<b>Drawing No.</b>	<b>Title</b>	<b>Drawing No.</b>	<b>Title</b>
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**Related Documents**

<b>Document ID</b>	<b>Title</b>
TIP 1.2.0-38	P613AP6, 7, and 9 Aromat Relay Replacements

**Subject Matter Expert**

<b>Name</b>	<b>Department</b>
Matt Fournier	OSC Service Engineering

**About Spare Parts Leaflets...**

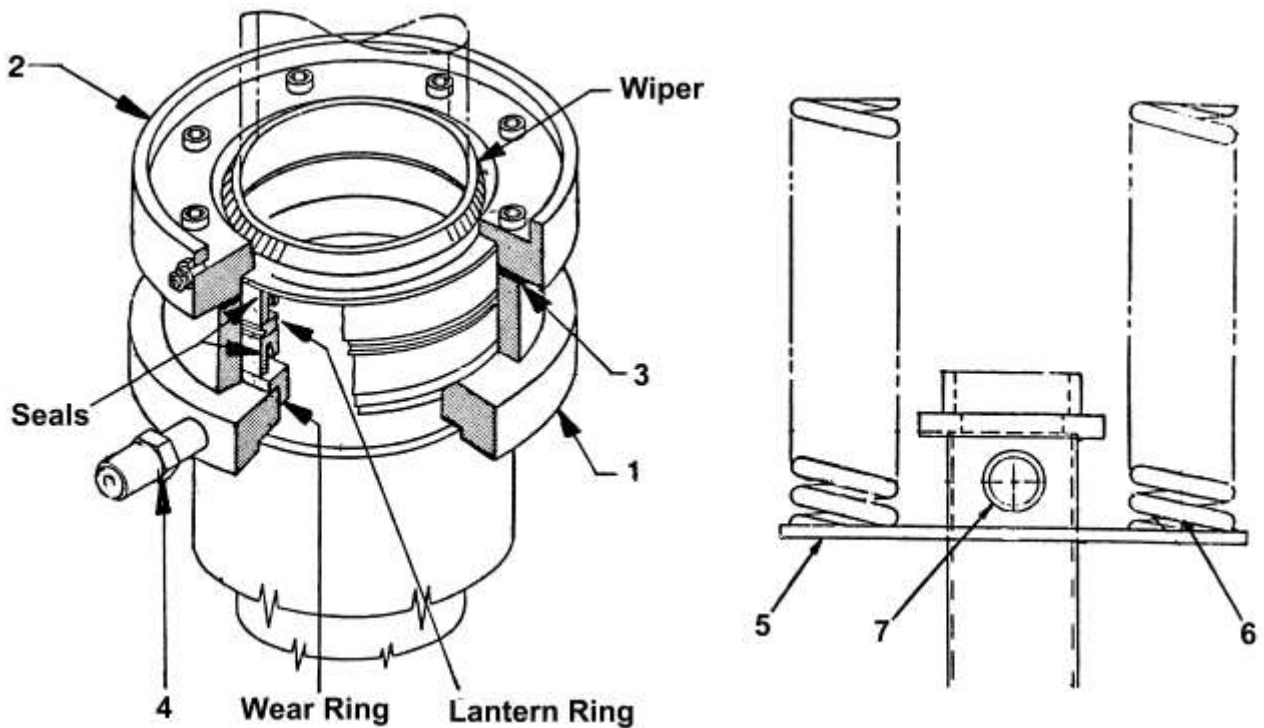
This document lists the lowest replaceable units (LRUs) for the standard version of the product. The LRUs are chosen by a team of Otis associates representing engineering and manufacturing.

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.

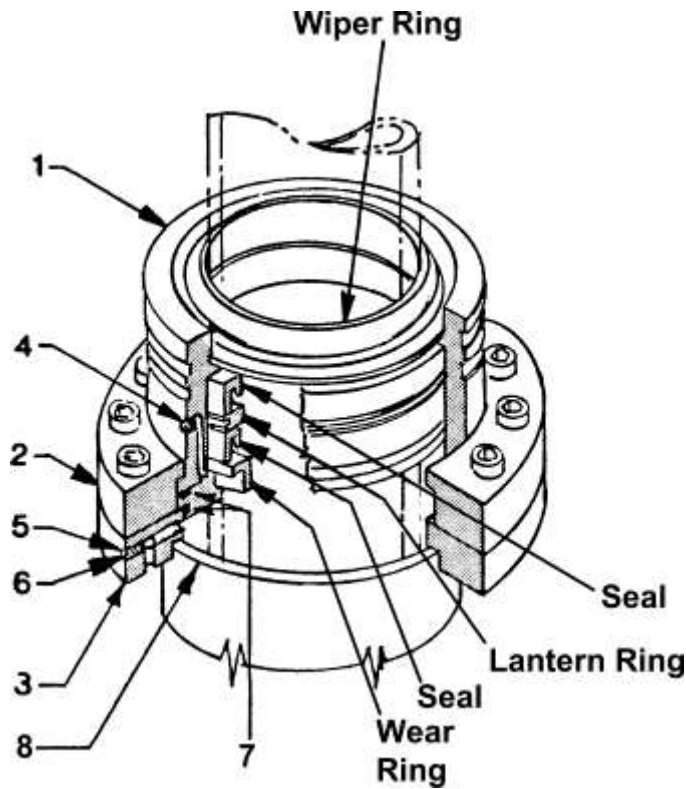
# Cylinder Head, Packing & Buffer

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Otis Cylinder Head, Packing and Buffer Fig. 1 & 2  
 Material lists 6942CC1, 2, 3, and 4  
 DWG A6942AP, 6942CC, 350AY

REF. No.	PART No. Plunger Size		DESCRIPTION
	3-7/8 in.	4 in.	
1	A390BH1	A390BH9	Cylinder Head
2	386BDG1	386BDG6	Clamp Plate
3	376FJ1		Gasket
---	AAA6942FT1	AAA6942FT11	Packing Kit. Includes: wiper, seals (2), Lantern Ring, and Wear Ring
4	PLUG HANSEN-CAT-2-K16 377DR2		Hansen 1/4 Two-Way Shut Off Plug
5	386BPR1	386BPR2	Plate
6	90RD12		Spring
7	CPG STD2		Coupling



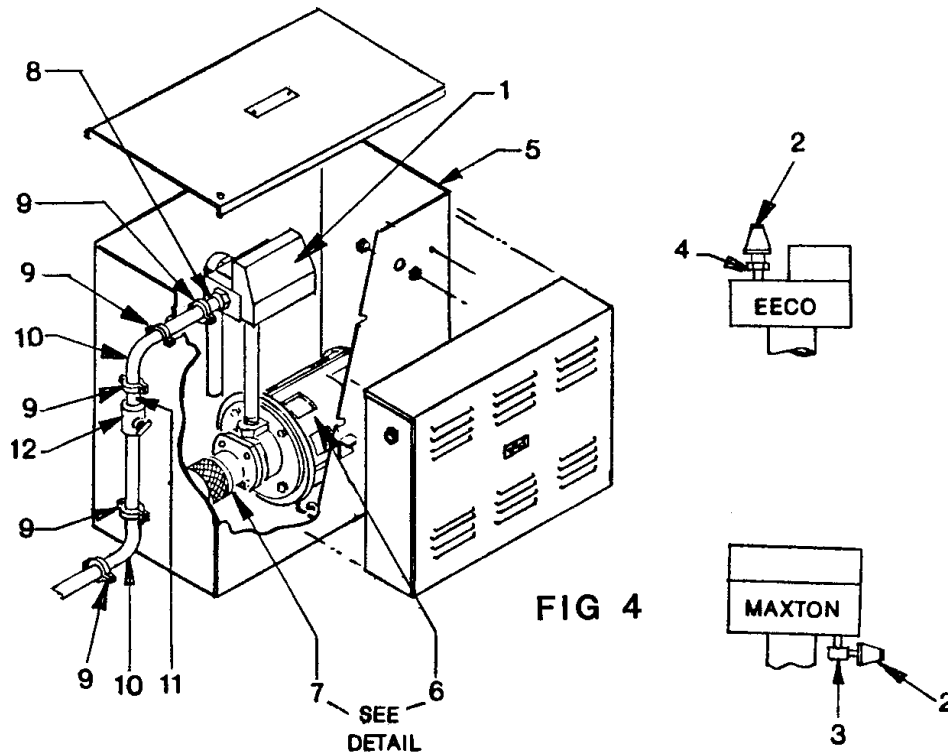
EECO, Jack Head Assembly Fig. 3  
DWG LJ-387, LJ-400

REF. No.	PART No. Plunger Size		DESCRIPTION
	3-7/8 in.	4 in.	
--	A-9330A	A-9339A	Head Assembly with:
1	A-933a	A-9340	Head
2	A-9333	A-9333	Clamp Ring
3	A-9221	A-9221	Flange
4	A-9089	A-9089	Plug
5	A-9246	A-9246	Set Screw
6	A-9247	A-9247	Ball, St. Steel
---	AAA6942GT1	AAA6942GT2	Packing Kit. Includes: wiper, seals (2), Lantern Ring, and Wear Ring
7	A-452	A-452	O-Ring
8	A-9332	A-9341	Insert Ring

**NOTE:** Replacement parts designated by A-\_\_\_ available from Elevator Equipment Corporation, 4035 Goodwin Ave., Los Angeles, CA 90039 (323) 245-0147

# Type 7070AH Machine

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**FIG 4**

Type 7070AH Machine, Material List 7077AH1, DWG. 7070AH

REF. No.	PART No.	DESCRIPTION	
1	271AP2	Valve, Maxton (Alt. No. UC-3AML), See <b>NOTE 1</b>	
	271AK5	Valve, EECO (Alt. No. UV-5A) for 3/4", See <b>NOTE 1</b>	
2	<del>PLUG HANSEN CAT-2-K16</del> 377DR2	Fitting, 1/4 Two-Way Shut-Off Plug	
3	Flodar PF-20-4-2	Fitting, Male Elbow, 1/4X1/8 90°, See <b>NOTE 2</b>	
4	<del>Flodar PF-10-4-2</del> AAA441FJ1	Fitting, Nipple, 1/4X1/8 Pipe Hex, See <b>NOTE 3</b>	
5	148EA1	Tank	
6	<del>PUMP DELAVAL 4S1C187</del>	Pump, Submersible <b>NOTE 4</b>	SPL 03-AAA20390E
7	<del>MOTOR AFD-S25</del>	Motor, Submersible <b>NOTE 4</b>	
8	441AP11	Vitaulic Fitting, 2" Adaptor Nipple	
9	441AS3	Vitaulic Coupling, 2"	
10	441BC1	Fitting, Elbow 90°	
11	441AP5	Fitting, Pipe Nipple	
12	271AG2	Gate Valve, Bronze Ball	

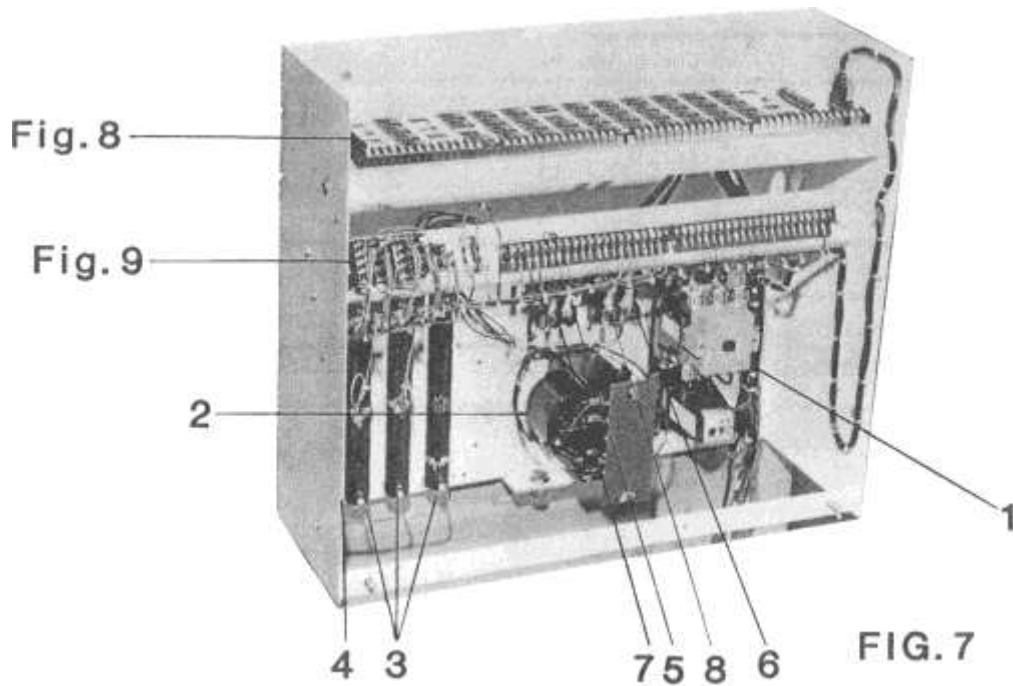
**NOTE 1:** Type valve specified per contract. When ordering replacement, be sure to differentiate between EEC4 and Maxton. With Maxton specify Serial No. stamped on valve (i.e., 3-82-1111-V).

**NOTE 2:** For use with Maxton valve or equivalent fitting.

**NOTE 3:** For use with EECO valve or equivalent fitting.

**NOTE 4:** To ensure proper fit between pump and motor, verify shaft and mounting hole dimensions. If unsure, replace both pump and motor.

**HVL Controller**



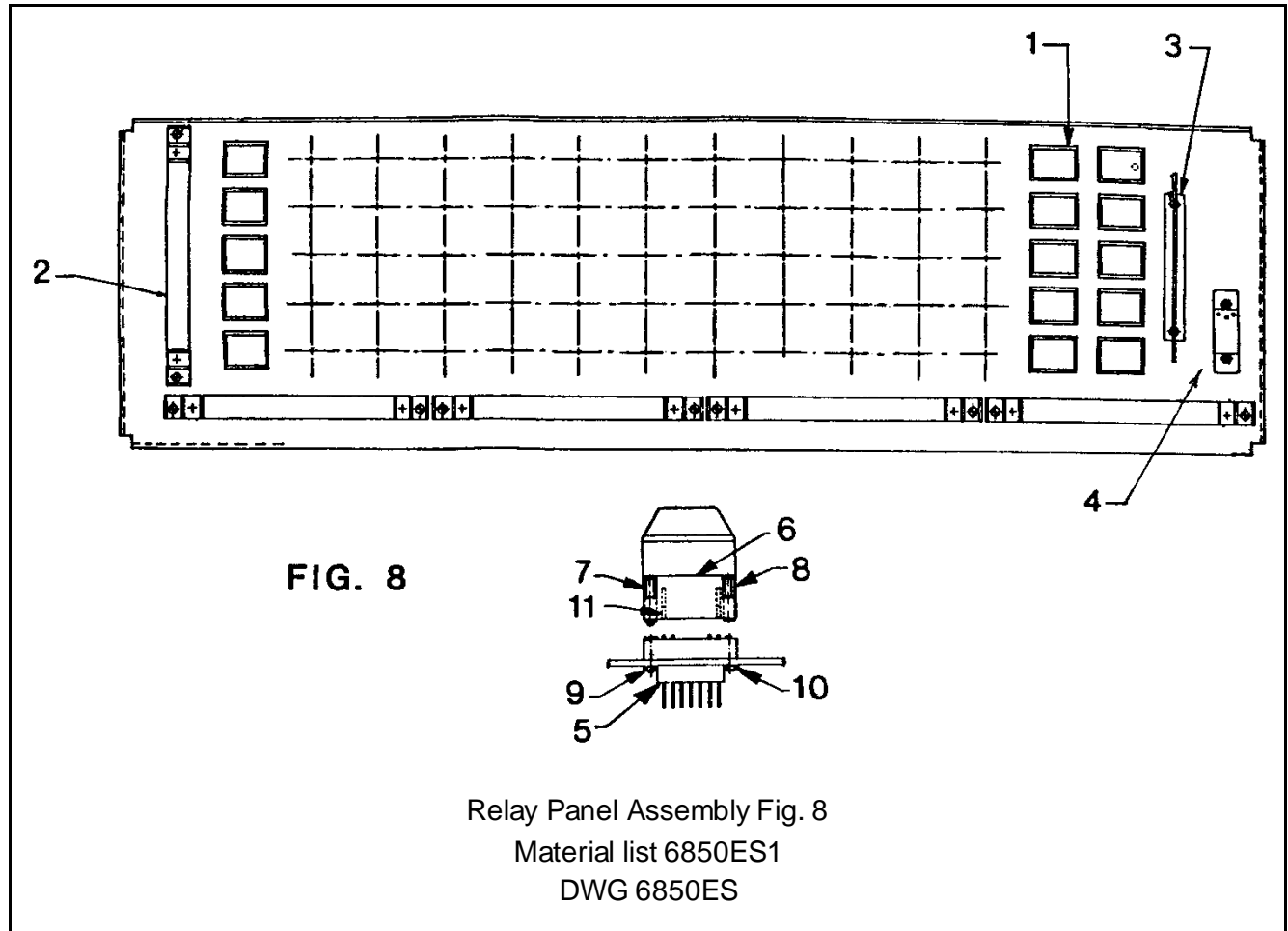
HVL Controller Fig. 7  
 Material list 7900B1  
 DWG 7900B

REF. No.	PART No.	QTY	DESCRIPTION
1	7151Y1	1	Starter, 200–240 V
1	7151W1	1	Magnetic Starter, 440–600 V
2	235CC2	1	Transformer, 200–240 V
2	235CP1	1	Transformer, 440–480 V
2	235CP2	1	Transformer, 500–600 V
3	P232BJ2	3	Resistor, 250 Ohms
4	P232BJ3	1	Resistor, 1000 Ohms
5	P180BP2	1	Fuse Holder
6	P180BP1	1	Fuse Holder
7	P375AS1	2	Fuse
8	P375AT1	2	Fuse, 200–250 V
8	P375AT2	2	Fuse, 250–600 V

# HVL Controller

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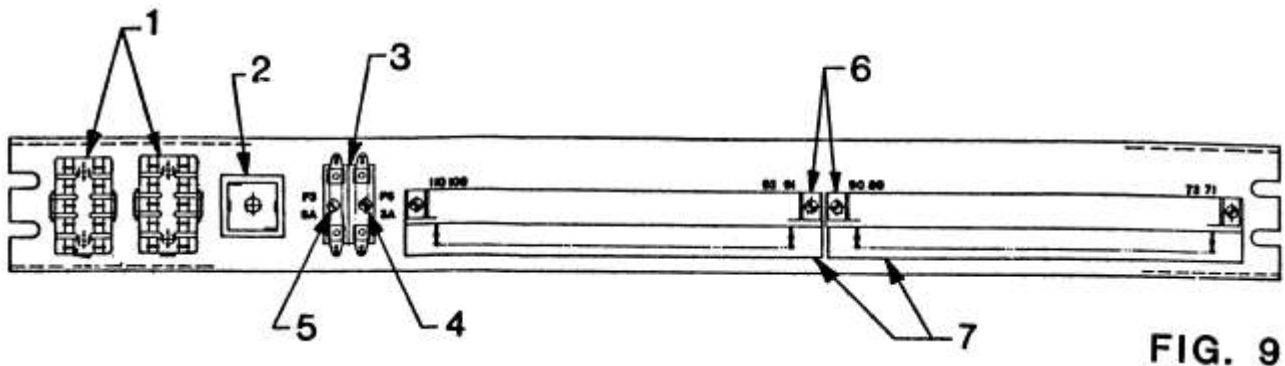
## With Relay Panel Assembly



REF. No.	PART No.	QTY	DESCRIPTION
1	P613AY3	Per Contract Specification	Switch, Magnetic
1	P613AY4	Per Contract Specification	Switch, Magnetic Set/Reset - <b>Never Substitute</b>
2	P303CC1	5	Board, Terminal
3	P614AJ1	1	Connector
*4	A8121Y1	1	Timer Board with Car Lantern
*4	A8121Y2	1	Timer Board without Car Lantern
5	P614H6	1	Connector
6	P614AN3	1	Connector
7	P124DD7	1	Locking Catch Set
8	P124DD8	1	Locking Spring Set
9	P124DD6	1	Guide, Socket
10	P124DD5	1	Guide Pin
11	P614AP1	20	Connector Pins

\* General location, parts not illustrated.

# HVL Controller With Door Operator Shelf Assembly



**FIG. 9**

Door Operator Shelf Assembly Fig. 10  
Material lists 6840DF1  
DWG 6840DF

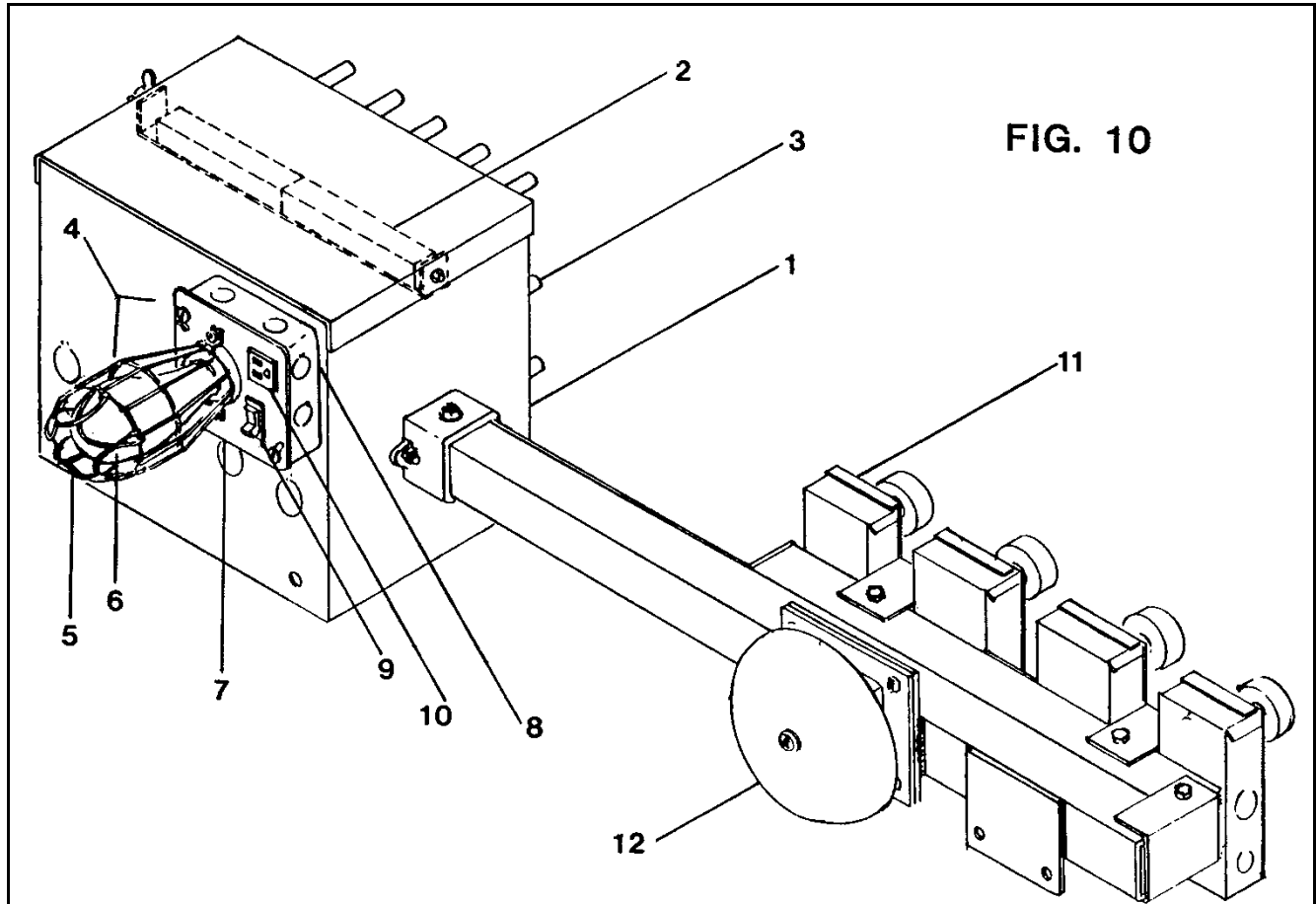
REF. No.	PART No.	QTY	DESCRIPTION
1	<del>P613AP9</del> AAA24831M9 AAA613DL16	2	Switch, Magnetic with Mounting Clips, See <b>NOTE</b>
2	P230BP2	1	Rectifier, Bridge
3	P180BR1	1	Fuse Holder
4	375P3	1	Fuse
5	375P6	1	Fuse
6	P303BN3	2	Terminal Board
7	P102GJ6	2	Marking Strips

**NOTE:** For first time replacement, order AAA24831M\_; for subsequent replacements, order AAA613DL\_. Refer to TIP 1.2.0-38, P613AP6, 7 and 9 Aromat Relay Replacements, for replacement options.



# Top of Car Junction Box

**C-3000**

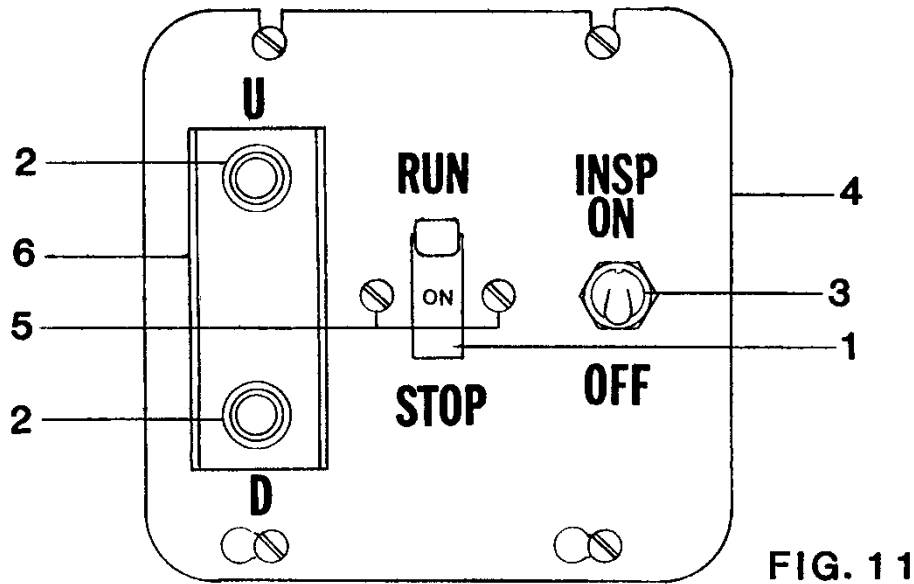


**FIG. 10**

Top of Car Junction Box Fig. 10  
Material lists 7003AM1 to 6  
DWG 7003AM

REF. No.	PART No.	DESCRIPTION
1	309BH1	Junction Box
2	P303CD1	Terminal Blocks
3	F0177BP1	Switch, Magnet
4	7138A1	Light fixture Assembly with:
5	V384MJ1	Guard
6	6599D10	Lamp, Incandescent 100 W, 120 V
7	346AJW1	Cover
8	V309BB1	Box, 4 in. sq. 1-1/2 Deep
9	V177BG1	Switch, 15 Amps, 125V
10	V614W1	Receptacle, with Ground
11	A6098B36	Mechanical Switch, Double Pole, Double Throw
12	<del>435-6C1-Bell-Edwards</del> AAA311E1	Bell, 6 VDC, 25 Amps

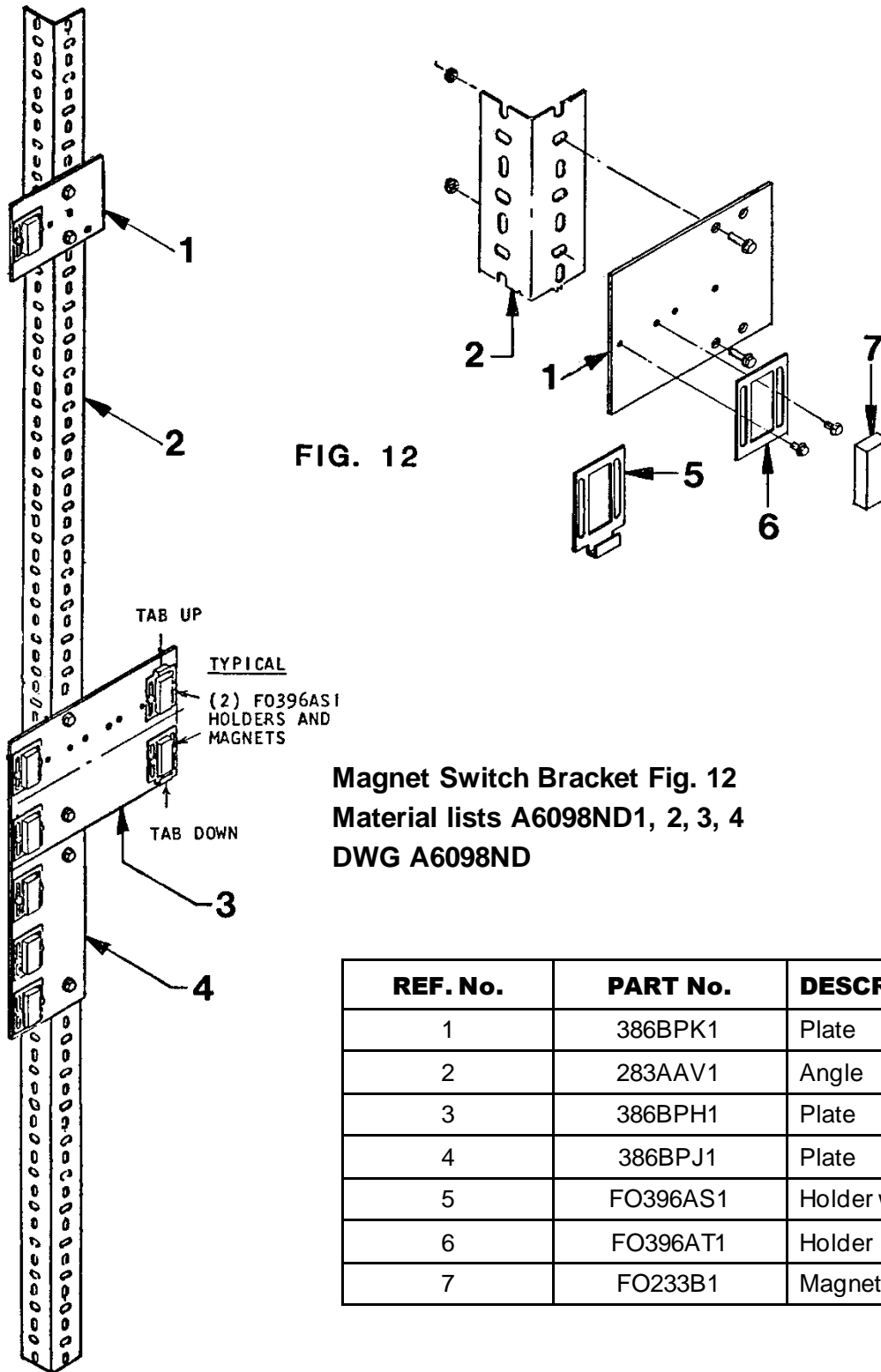
# Inspection and Emergency Stop Control Boxes



Inspection and Emergency Stop Control Boxes Fig. 11  
Material lists 7003AL1, 7003AL2  
DWG 7003AL

REF. No.	QTY	DESCRIPTION	Top of Car Inspection Control Box 7003AL1 PART No.	Emergency Stop Box 7003AL2 PART No.
1	1	Emergency Stop Switch MKD.: OFF/ON, RUN/STOP	P177BY1	P177BY1
2	1	Push Button Unit MKD.: U/D	P177BX1	---
3	1	Inspection Switch	6599A7	---
4	1	Cover	346AME1	346AME2
5	2	Pan Machine Screw	SCMA PP6-32X3/8CP	SCMA PP6-32X3/8CP
6	1	Channel	347HS13	---
*	1	Box, Outlet 4-11/16 SQ.	Box-72171-1/2	Box-72171-1/2

\* Part not illustrated.

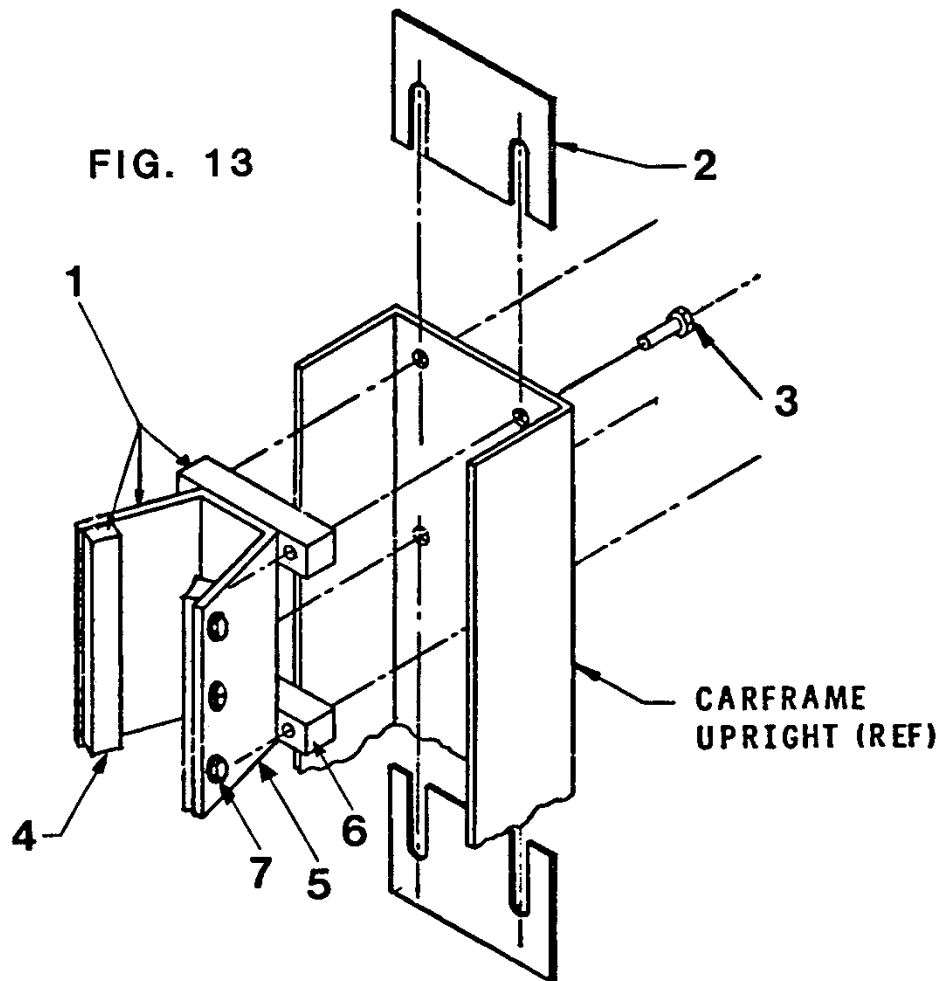


**Magnet Switch Bracket Fig. 12**  
**Material lists A6098ND1, 2, 3, 4**  
**DWG A6098ND**

REF. No.	PART No.	DESCRIPTION
1	386BPK1	Plate
2	283AAV1	Angle
3	386BPH1	Plate
4	386BPJ1	Plate
5	FO396AS1	Holder with Tab
6	FO396AT1	Holder
7	FO233B1	Magnet

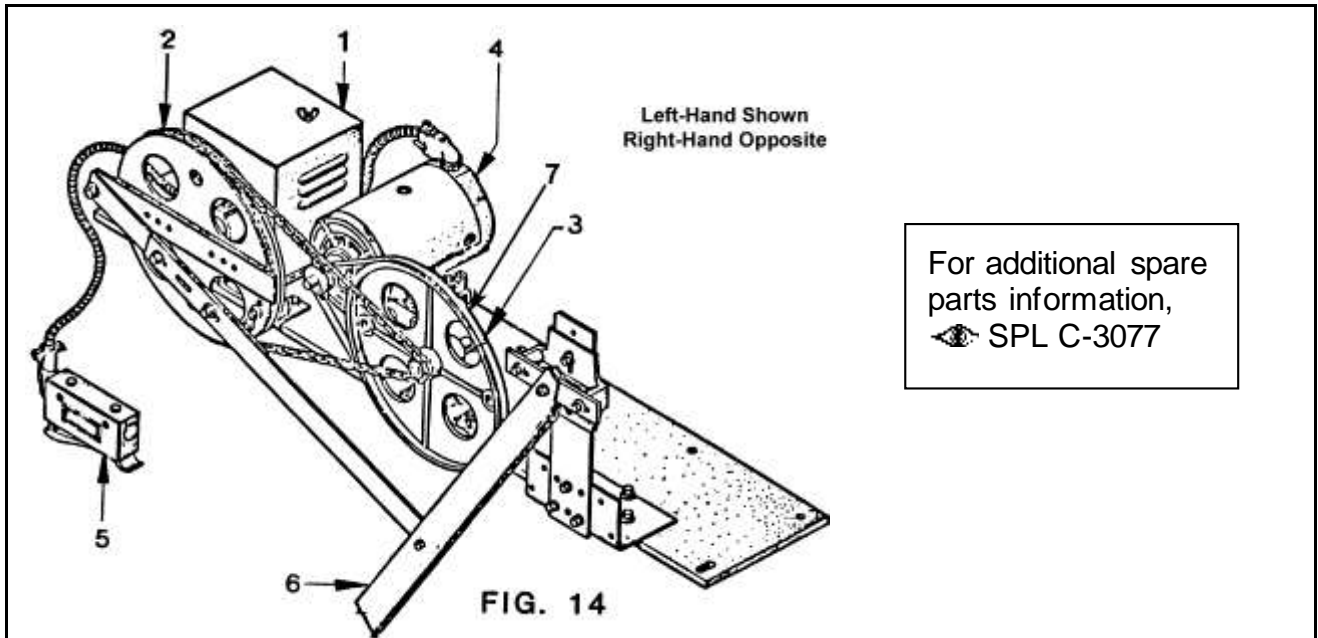
# Guide Shoe Assembly

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Guide Shoe Assembly Fig. 13  
Material list 4507F13  
DWG 6161W

REF. No.	PART No.	QTY	DESCRIPTION
1	273BY3	1	Shoe, Guide, Makeup of Items 4, 5, 6, and 7
2	255J3	4	Shim, .0312 Thick
3	SCMA LKFLG3/8 x 1 WHIZ	4	Whiz Lock Bolt
4	380BS2	2	Gib
5	316DKY1	1	Bracket
6	237BY1	2	Shoe
7	SCMA H1/4x3/4BR	6	Screw, Brass

**C-3000****Type "MODL" Door Operator**

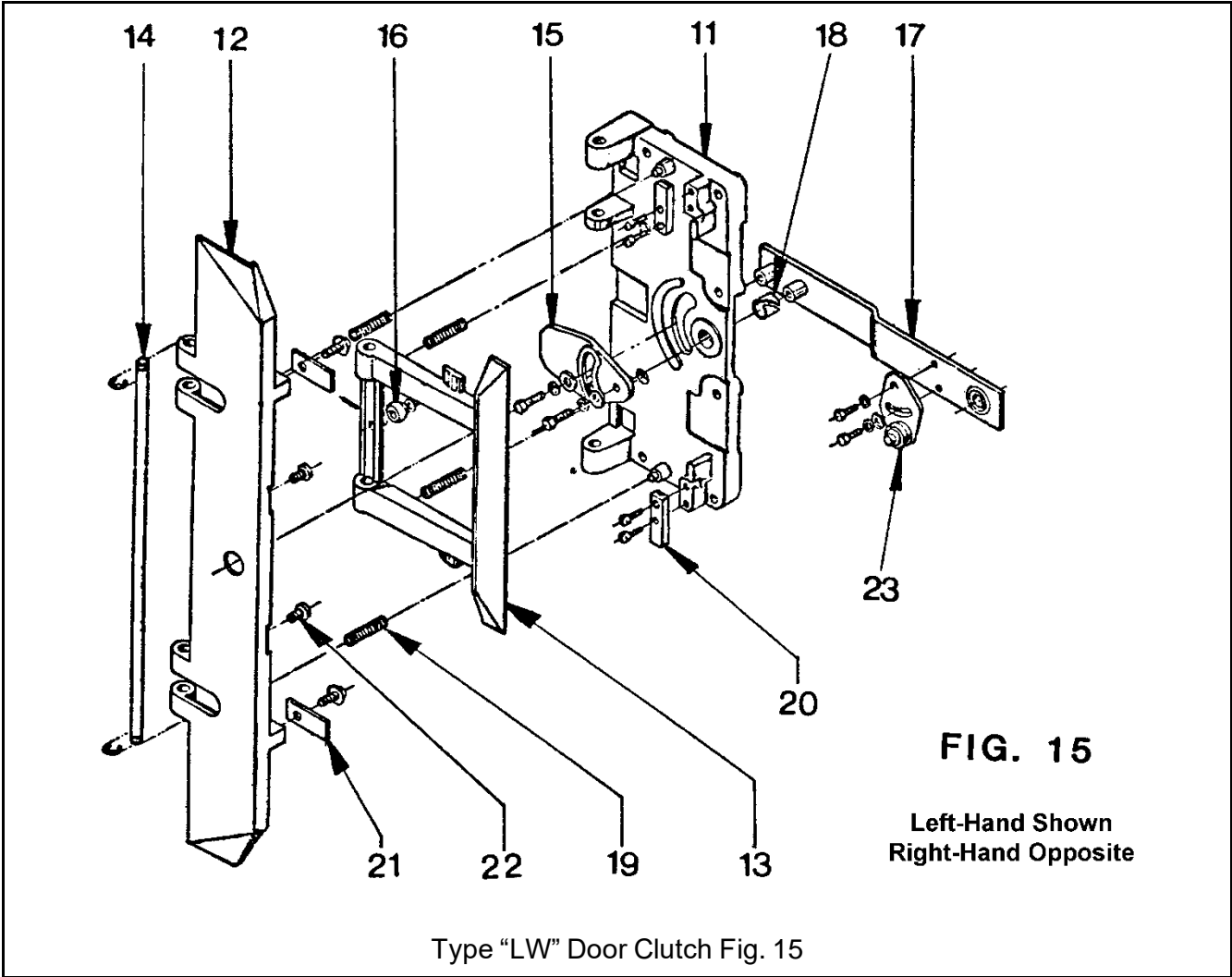
Type "MODL" Door Operator Fig. 14

REF. No.	ITEM No.	DESCRIPTION	Drawing No.
1	1	MOD Operator Limit Control with:	OP-10
	2	MOD Limit Switch	
	2D	Bridging Cam Assemblies	
	3	Activating Cam Set	
	4	Resistor Assembly	
	4A	Resistors, 300 Ohms, 100 Watt with Bands	
2	5	MOD Drive Pulley with:	OP-10
	5A	Chain and U Bolts	
	5B	Rubber Suppressor	
	5C	Bearing & Bearing Block	
	5D	MODL Stop Roller & Bracket	
3	1	Intermediate Pulley with:	OP-20
	2	Intermediate Bearing Block	
	3	Adjusting Stud	
	4	Adjusting Angle & Bolt	
	---	Chain Sprocket No. 35 with 15 Teeth, 3/8 Chain Pitch	
4	---	Motor, 1/6 HP, 220 VDC, Shunt Wound 1140 RPM	OP-1
5	<del>SW-C-1</del> 6098MV2	Gate Switch Complete,  	SW-1
	SW-1-3	Operating Cam Assembly	
	SW-1-5	Contact Base Assembly	
	SW-1-6	Roller Arm Assembly	
*6	1	"L" Operator Door Drive Arm Assy.  <b>NOTE</b>	OP-22
7	AAA717J2	Belt, V, 45 in.	

**NOTE:** When ordering replacement parts, specify opening width and hand of operation.

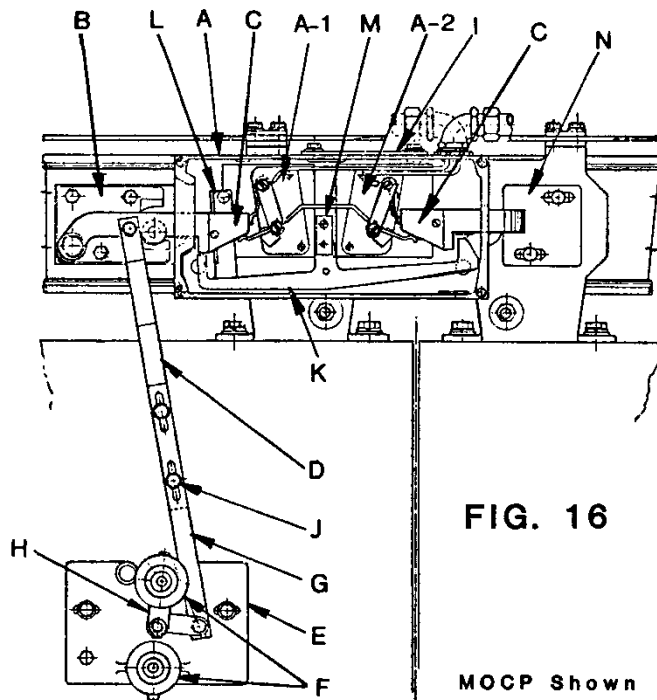
# Type "LW" Door Clutch


**C-3000**



Type "LW" Door Clutch Fig. 15

REF. No.	ITEM No.	QTY	DESCRIPTION	Drawing No.
11	1	1	Base, "L" Clutch	OP-30
12	2	1	"L" Door Open Vane	
13	3	1	"L" Retracting Vane, 6 1/4"	
14	4	1	Hinge Pin	
15	5	1	"L" Actuating Cam	
16	5-A	1	Actuating Roller	
17	6	1	Actuating Link ( <b>NOTE:</b> Specify Otis LRV)	
18	6-A	1	Nyliner Bushing	
19	7	4	Springs	
20	8	1	Stop Bumper, Door Open Vane Base	
21	8-A	2	Stop, Door Open Vane	
22	9	1	MO Keeper Stem Bumper	
23	10	1	RA Safety Edge Door Close Cam	



For additional parts information,  SPL C-3078

**FIG. 16**

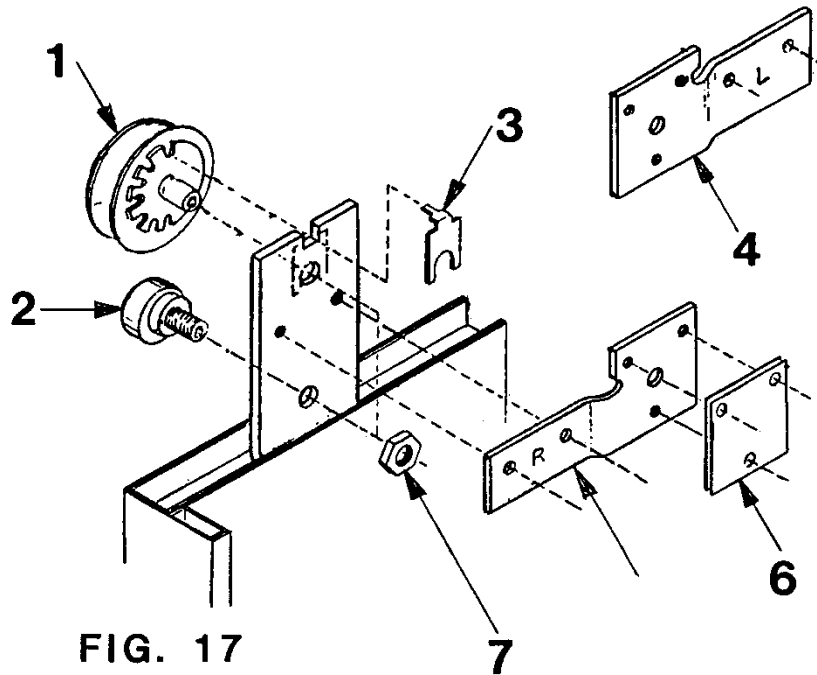
**MOCP Shown**

Type MOH and MOCP Interlocks Fig. 16  
DWG INT-1, INT-2

REF. No.	ITEM No.	DESCRIPTION	APPLICATION	
			MO	MOCP
A	1	MO or MOCP Switch with:	X	X
A-1	3L	MO Contact Base and Insulator, Left Hand	X	X
A-2	3R	MO Contact Base and Insulator, Right Hand	X	X
B	4	MO Keeper with:	X	X
C	5	MO Keeper Bridging Block	---	X
C	5	MO Keeper Bridging Block	X	---
D	6	MO Upper Link with:	X	X
	13	MOM Link Snap Pin	X	X
	14	MOM Nyliner Bushing #4L-2FF	X	X
E	9	MOH Release with:	X	X
F	10	MOM Roller and Shaft	X	X
G	11	MOM Lower Link	X	X
H	12	MOM Release Rocker	X	X
I	16	MO Lock Mounting Plate	X	X
J	17	Emergency Release Bolt	X	X
K	19	MOCP Rocker Arm Assembly	---	X
L	20	MOCP Rocker Arm Lift Up Cam	---	X
M	21	MOCP Rocker Arm Support Plate	---	X
N	23	MOCP Stationary Keeper Assembly	---	X


# Hanger Roller Assembly

**C-3000**




**FIG. 17**

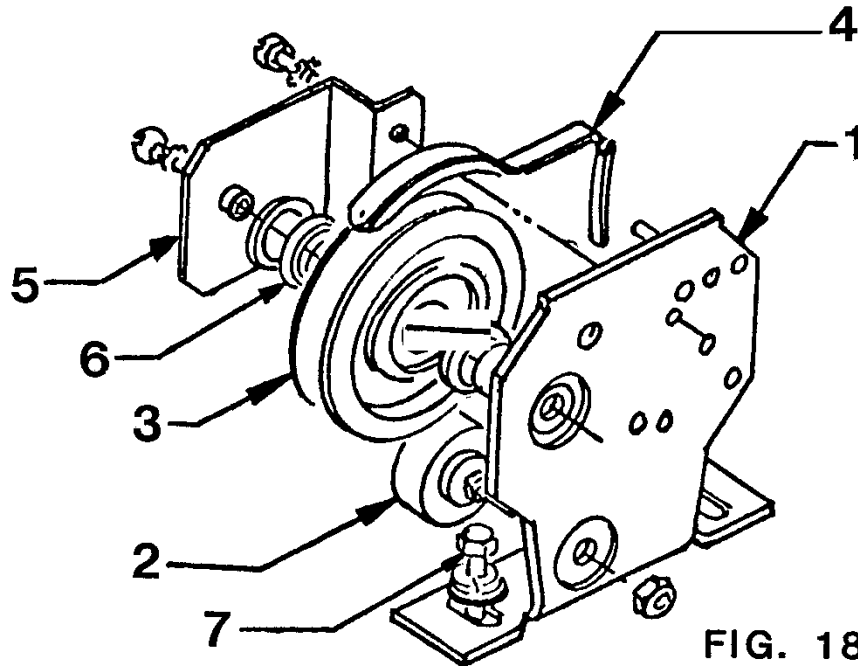
Hanger Roller Assembly Fig. 17

For additional parts information,  SPL C-3078

REF. No.	PART No.	QTY Single Slide	QTY Center Opening	DESCRIPTION
1	ER-1	2	4	Eccentric Roller
2	ER-2	2	4	Eccentric Upthrust Roller
3	LP-1	2	4	Eccentric Roller Lock Plate
4	KSL	1	1	GAL Keeper Adaptor, Left Hand
5	KSR	1	---	GAL Keeper Adaptor, Right Hand
6	KHS	3	6	GAL Keeper Hook Shim
7	JN	4	8	Jamb Nuts, 1/2X20



For additional parts information,  SPL C-3078



**FIG. 18**

Type "A" Car Door Sheave Assembly Fig. 18  
DWG CDH-1, CDH-2

REF. No.	ITEM No.	DESCRIPTION
1	2-A	Type "A" Sheave Mounting Bracket
2	2-C	Sheave Eccentric Roller Assembly
3	2-D	3-1/4 NH Roller
4	2-E	"A" Sheave Oiler Cleaner
5	2-G	Sheave Roller Support Plate
6	2-F	Sheave Roller Spacers
7	2-B	Sheave Pendant Bolt 3/8-16 x 1-1/2H HD

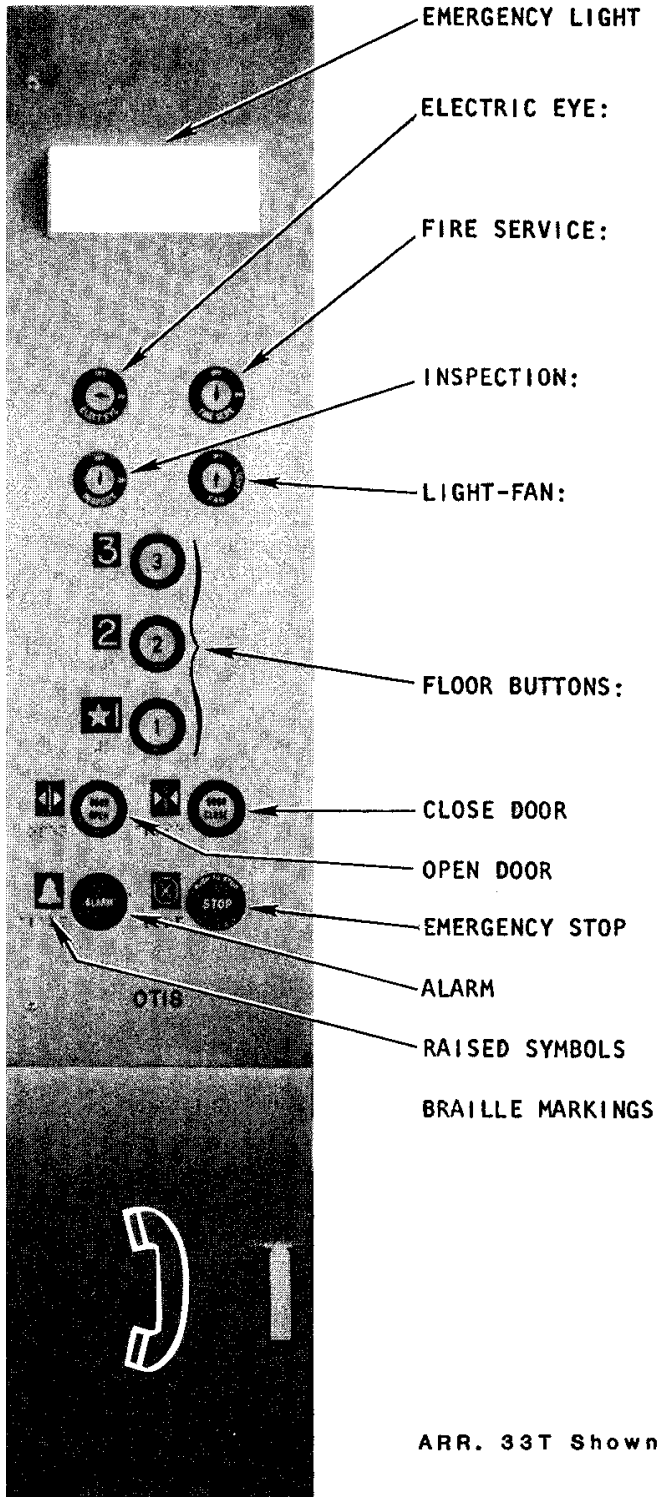
# Car Operating Panel

**C-3000**

## CAR OPERATING PANEL

Dwg. 7900D

FIG. 19



### KEY SWITCHES

Type STD 1601, 2 Position  
Key Release Both Positions  
Contacts, 1 Open, 1 Closed


Type FSS 1617, 2 Position  
Key Release "OFF" Position  
Contacts, 1 Open, 1 Closed  
Indicate Applicable Code

Type HA 1612, 2 Position  
Key Release Both Positions  
Contacts, 1 Open, 1 Closed

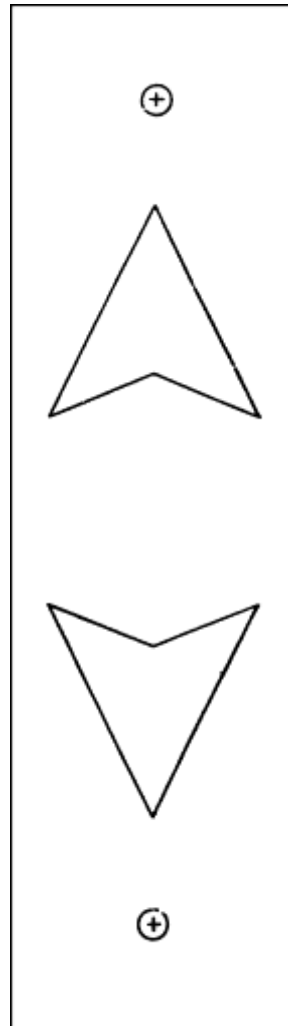
Type STD 1601, 3 Position  
Key Release All Positions

### BUTTONS

Type "RRB", Black Insert  
White Button, Black Number  
Contacts, 2 Open

For additional parts  
information,   
SPL C-3079

ARR. 33T Shown



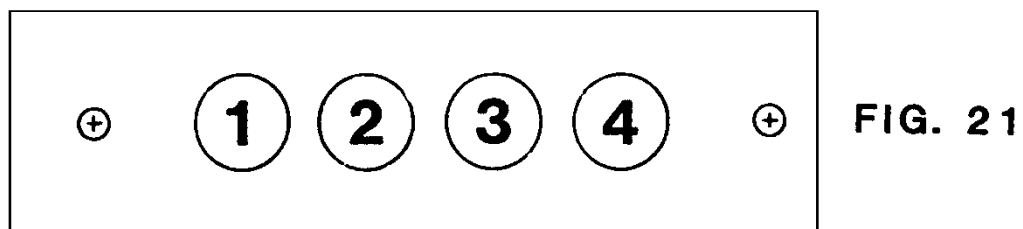
Replacement parts  
available from GAL  
Manufacturing Corp.,  
50 East 153 Street,  
Bronx, NY 10451

**FIG. 20**

Car Direction Indicator Fig. 20


Type 312-10, -12, with arrows 2-1/2 in. high, faceplate 3-3/4 in. x 12 in., No. 4 satin finish.  
2 lamps 120 V and gong part no. M-6432-3;  
Arrow's light: up (white), down (red)

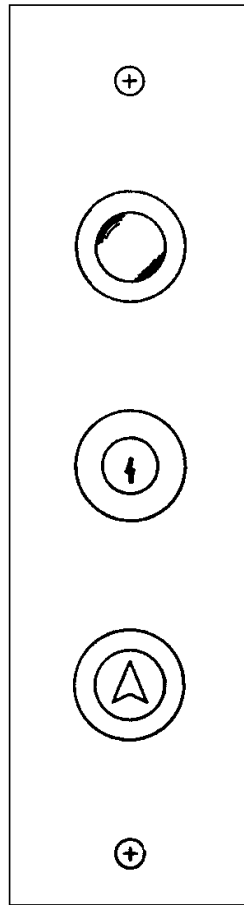
Replacement parts  
available from GAL  
Manufacturing Corp.,  
50 East 153 Street,  
Bronx, NY 10451



Car Position Indicator Fig. 21

Type 258-2, -3, -4, flush white inserts, black numerals, 1-1/16 in. diameter,  
faceplate 2-5/8 in. x 7-3/4 in., 120 V, No. 4 satin finish

For additional parts information,  SPL C-3079



**FIG. 22**

Hall Stations Fig. 22

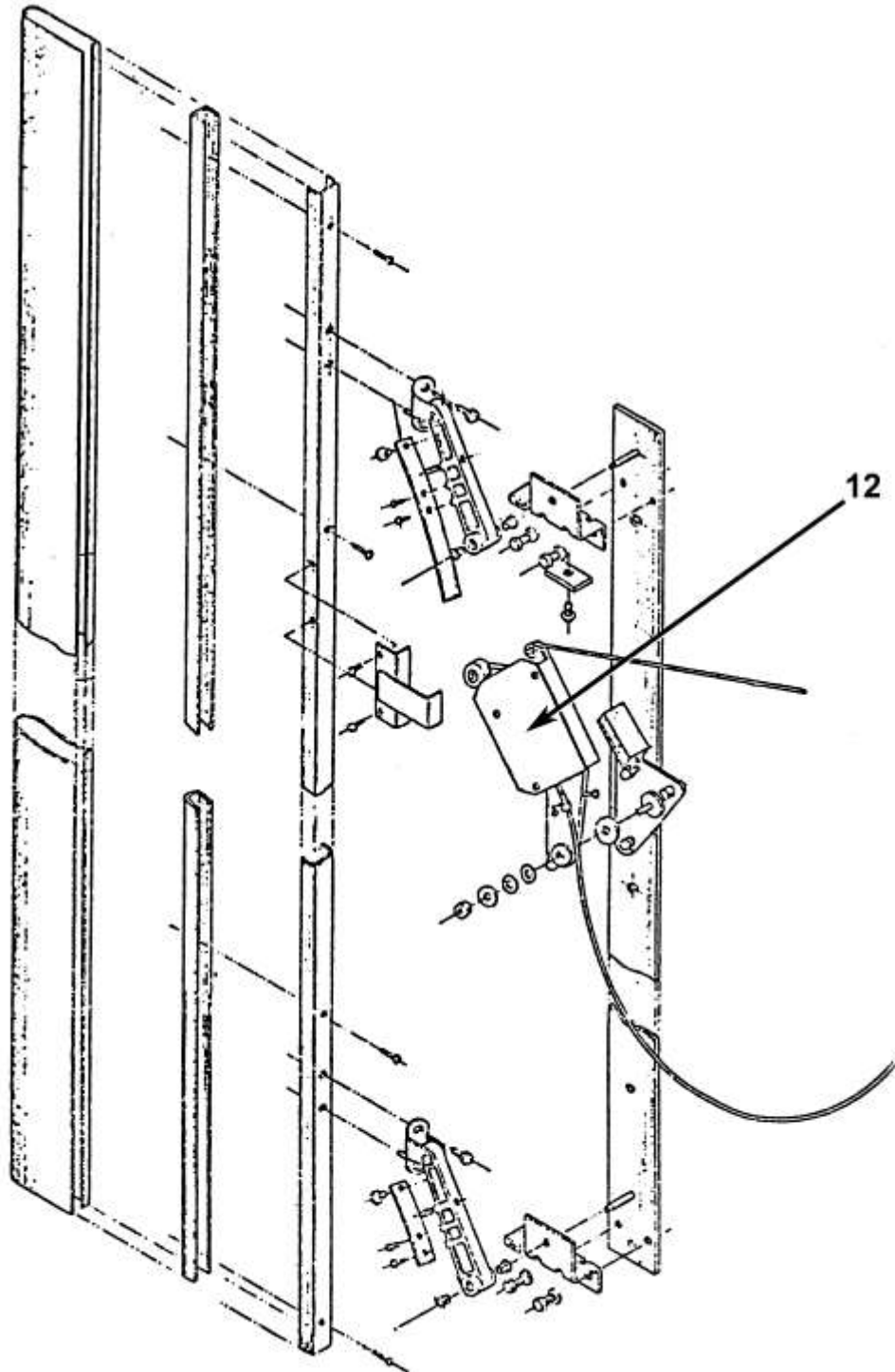
<b>Buttons</b>	
<b>Floor/Arrow</b>	Type RRB, Black Insert, White Button Black Marking, Contacts, 2 Open

<b>Keyswitches</b>	
<b>Marked/Unmarked</b>	Type 1613, 2 Position, Spring Return Key Release Both Positions, Contacts 2 Open, MKD.: OFF-ON/UP-DOWN
<b>Hoistway Access</b>	Type HA 1612, Spring Return, Key Release in "OFF" Position, Contacts 2 Open
<b>Fire Service</b>	Type FSS 1617, 3 Position, Key Release in OFF and ON Positions, MKD.: "FIRE SERV BYPASS-OFF-ON. Indicate Applicable Code.

<b>Faceplates</b>	
<b>Type 310</b>	1 or 2 Modules, 3-3/8"X9-3/4"
<b>Type 314</b>	3 Modules, 3-3/8"X14"
<b>Type 316</b>	4 Modules, 3-3/8"X16"

# Type "RAL" Safety Edge

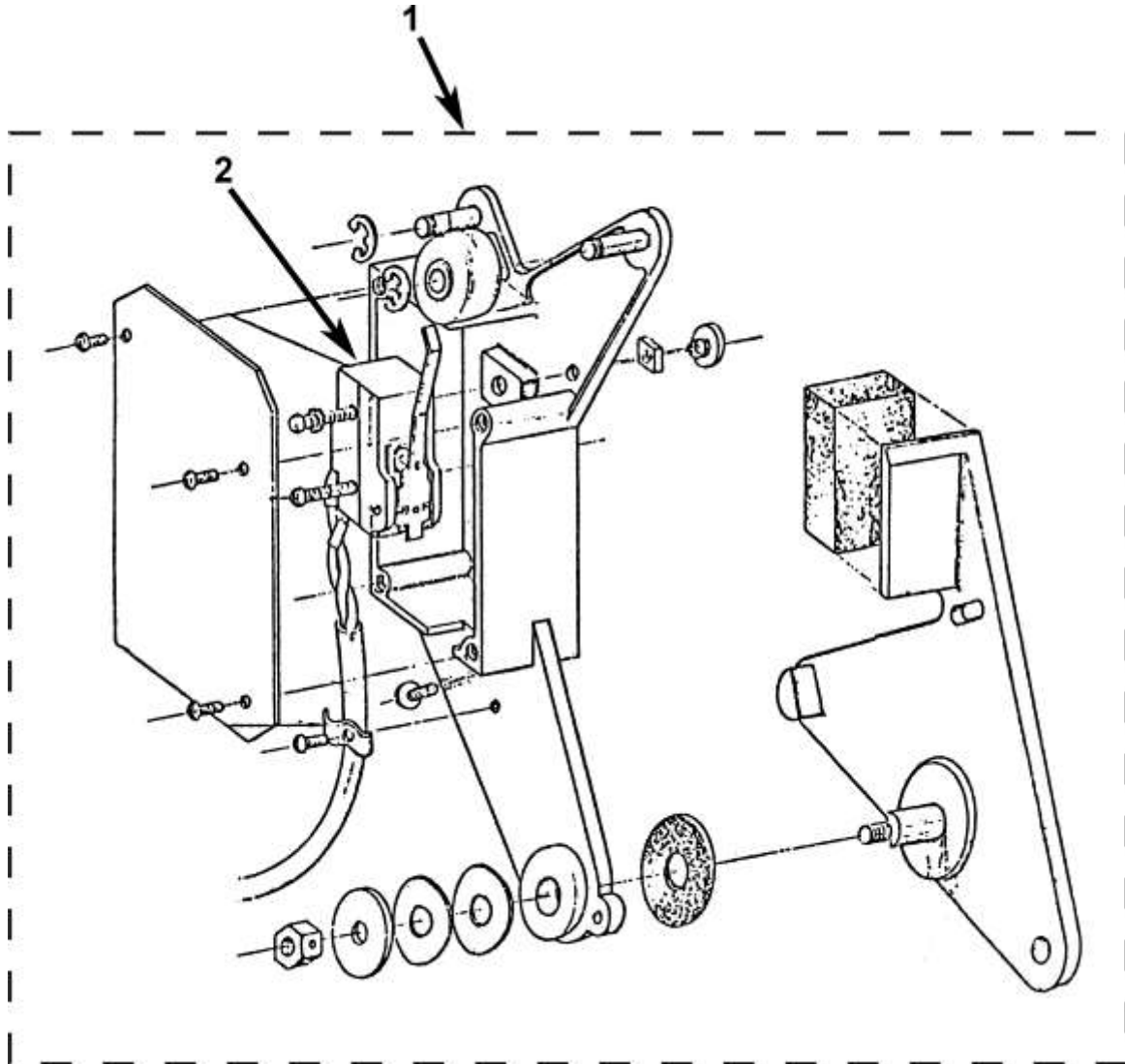
**C-3000**



Type "RAL" Safety Edge Fig. 23 DWG SE-1, SE-2

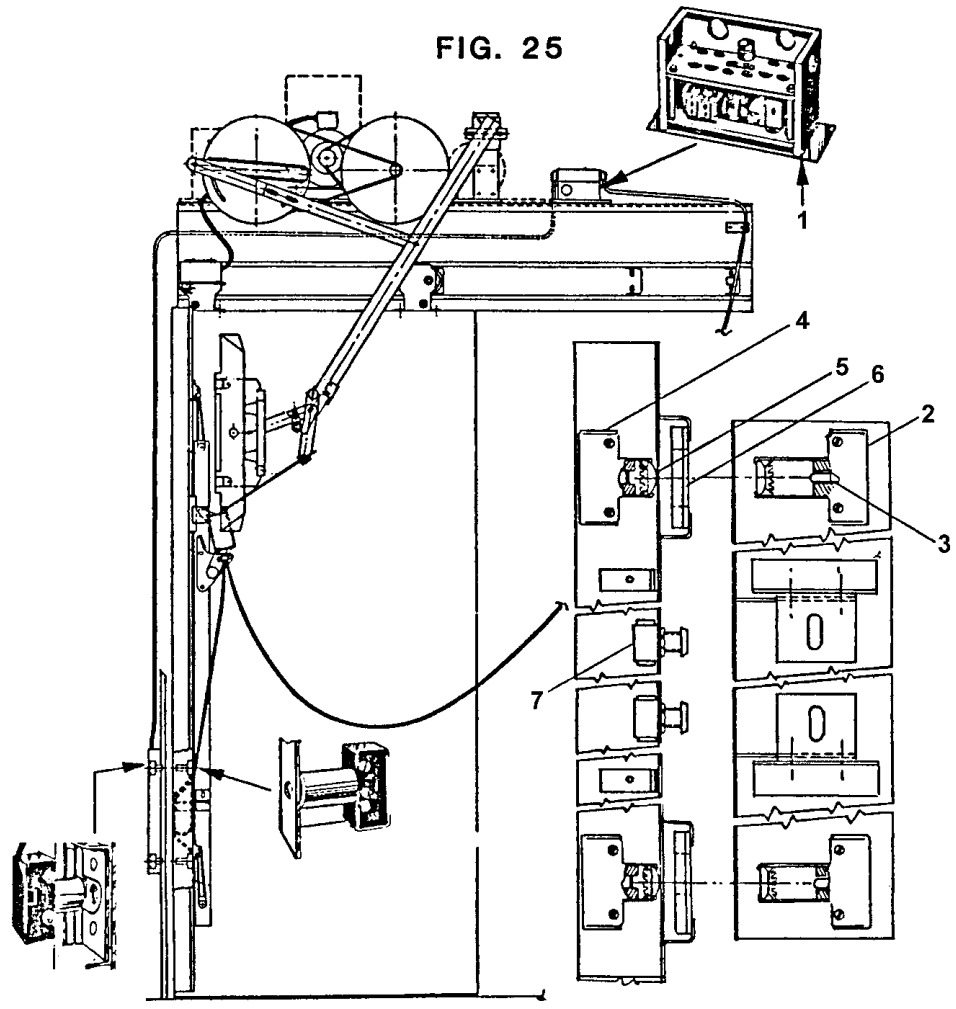
**All parts, except as noted, for the RAL safety edge are obsolete.**

REF. No.	PART No.	DESCRIPTION
12	SE-2	Switch Assembly



Type "RA" Safety Switch Assembly

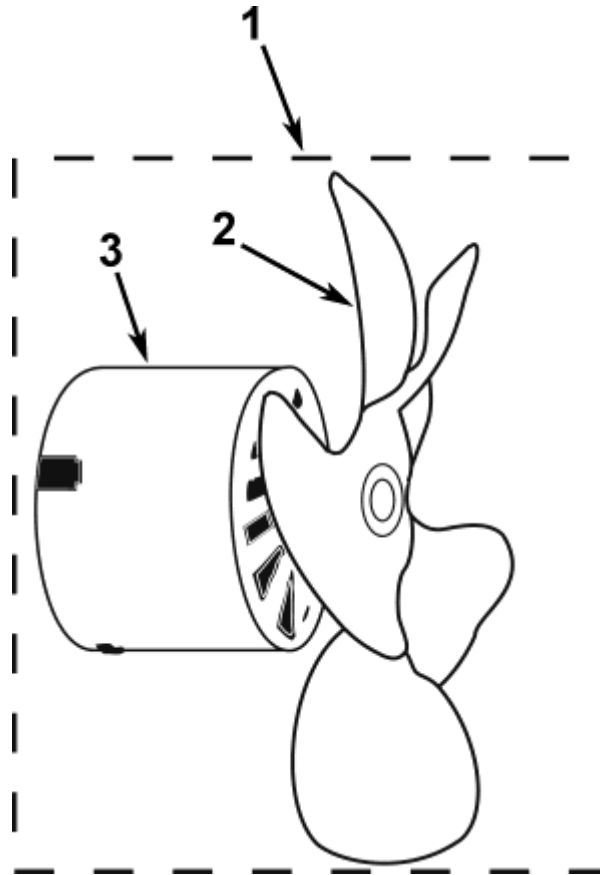
<b>REF. No.</b>	<b>PART No.</b>	<b>DESCRIPTION</b>
1	GALCSE2-0001L	Switch Assembly, LH
	GALCSE2-0001R	Switch Assembly, RH
2	GALCSE2-0006N	Micro Switch



Type "DB" Electric Eye Fig. 25  
DWG EE-1

**For related spare parts information, see SPL C-3080.**





<b>REF. No.</b>	<b>PART No.</b>	<b>DESCRIPTION</b>
1	7F647 6091AB1	Fan, Complete
2	4C470 301G1	Blade, Fan, Replacement for 6091AB1
3	6333DE1	Motor, Replacement for 6091AB1