

HPA 2000 HYDRAULIC ELEVATOR

Spare Parts Leaflet

C-1098

March 1997 / Page 1 of 19

Replaces C-1098 Dated January 31, 1973

Formerly Titled HPA 2000 Plunger Electric Elevator.

Form No. HPA-2000-1, 2 & 3

For HP-2000 Plunger Electric Elevator, see Parts Leaflet C-1053.

For Type 7300AA Door Operator and 7300E Door Link, see Parts Leaflet C-1039B.

For Type 6098 Mechanical Switches, see Parts Leaflet C-919G.

For Type 7035A Button Units, See Parts Leaflet C-1021B.

For Hoistway Interlock and Emergency Key Device, see Parts Leaflet 27-C6940AP.

For Door Closer, see Parts Leaflet 26-6940D, AD, AN.

For A7069A Illuminated Button, see Parts Leaflet 31-A7069A.

For Type 7014A Switch, see Parts Leaflet C-1024A.

For Type 6410E Key Operated Switch, see Parts Leaflet 31-6410A.

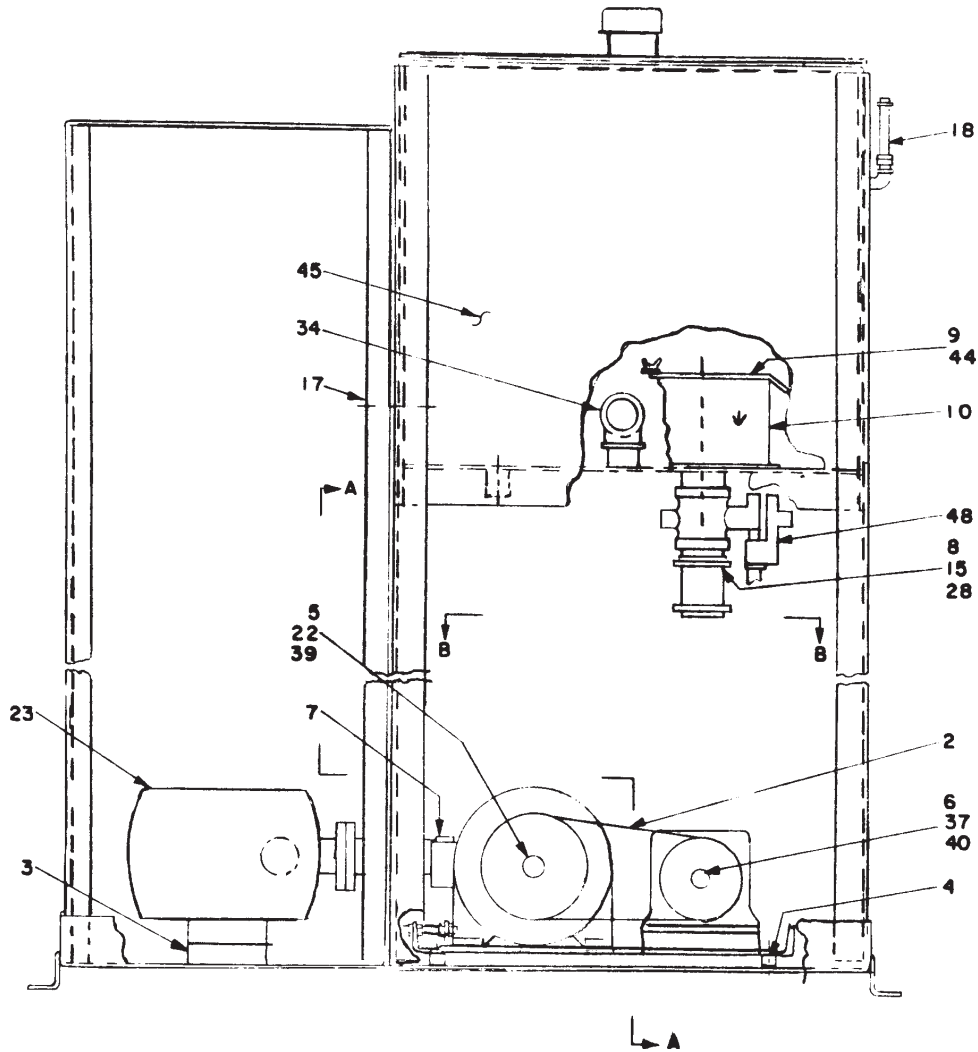
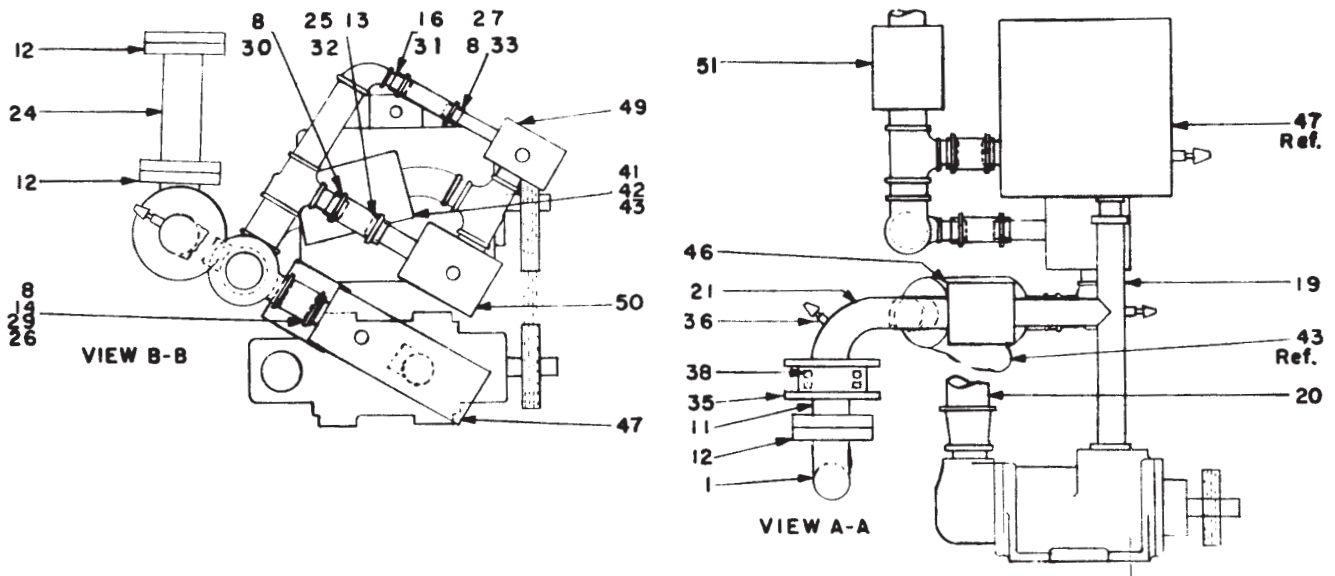
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SERVICE ENGINEERING

Otis Service Center
Bloomfield, Connecticut, USA



HPA 2000 HYDRAULIC ELEVATOR

C-1098

Parts for 7BA Hydraulic Machine HPA-2000 - Fig. 1
 (with 7BA Pumping Unit Type 7121AA)
 Form HPA 2000-1 dwg. 7070D, B7070D,
 M. L. 4031B3 - Furnished up to Feb. 1971, M. L. 4031B8 - Furnished after Feb. 1971

REF. No.	PART OR M.L.	DESCRIPTION
1	441BC1	Adapter, 90°, Victualic
2	-	Belt, V Wood 3V 400 (All belts should be replaced at same time)
3	310BE2	Block, Muffler
4	310JH1	Block, Sound Isolation
5	321DE8	Bushing, Motor
6	321DE6	Bushing, Pump
7	334G2	Bushing, Rubber
8	336DY1	Clamp, Hose
9	285DK1	Cover, Oil Filter
10	A254D1%	Filter, Bonnet 16-1/4 OD
	B254D1	Filter, Screen 8 OD
11	377BX3	Fitting, Isoline
12	441AS3	Fitting, Victaulic
13	134A29	Hose, 1-1/4 x 4 Down Valve
14	134A31%	Hose, 1-5/8 x 4 Up Valve
	134A47	Hose, 1-5/8 x 3 Up Valve
15	134A39	Hose, 2-3/4 x 6 Shut-Off
16	134A22%	Hose, 3/4 x 3-1/2 Down Level
	134A23	Hose, 3/4 x 5 Down Level
17*	615A1 615C2	Immersion, Tank Heater
18	269AW1	Indicator, Oil
19	377BT8%	Manifold, Vertical
	377BT9	Manifold, Vertical
20	B377BV11%	Manifold, Return
	441AH92	Manifold, Return Pipe
21	A377CB8%	Manifold, Horizontal
	A377CB9	Manifold, Horizontal
22	6333BR1	Motor, 208 Volts
	6333BV7	Motor, 220-408 Volts
	6333BR2	
	6333BV8	

* Arrow indicates location, the part itself not showing in illustration.

%Used on machines furnished prior to Feb. 1971.

NOTE: - Machines up to Feb. 1971 used two (2) Pipeline strainers, one, (1/2") for Down Lev. Valve and one, (1") for Down Valve. Machines after Feb. 1971 employed only one, (1-1/2") Pipeline Strainer.

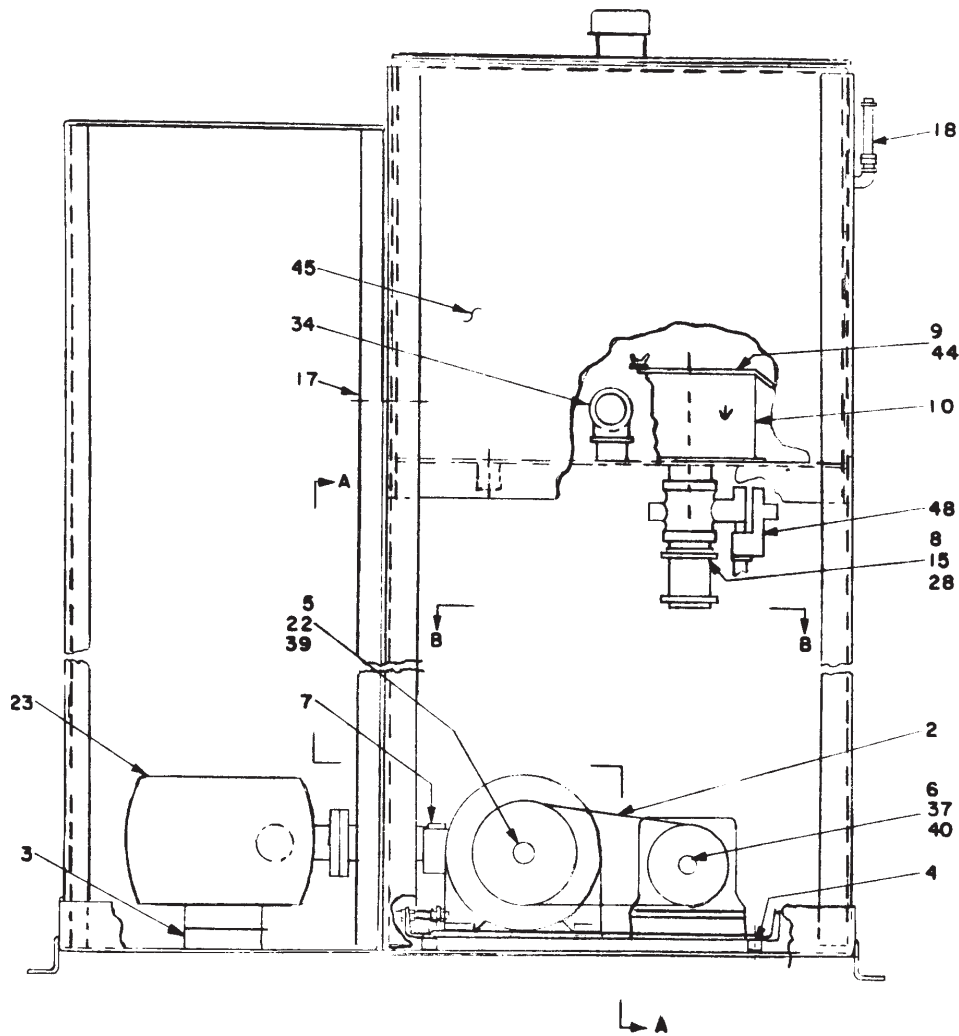
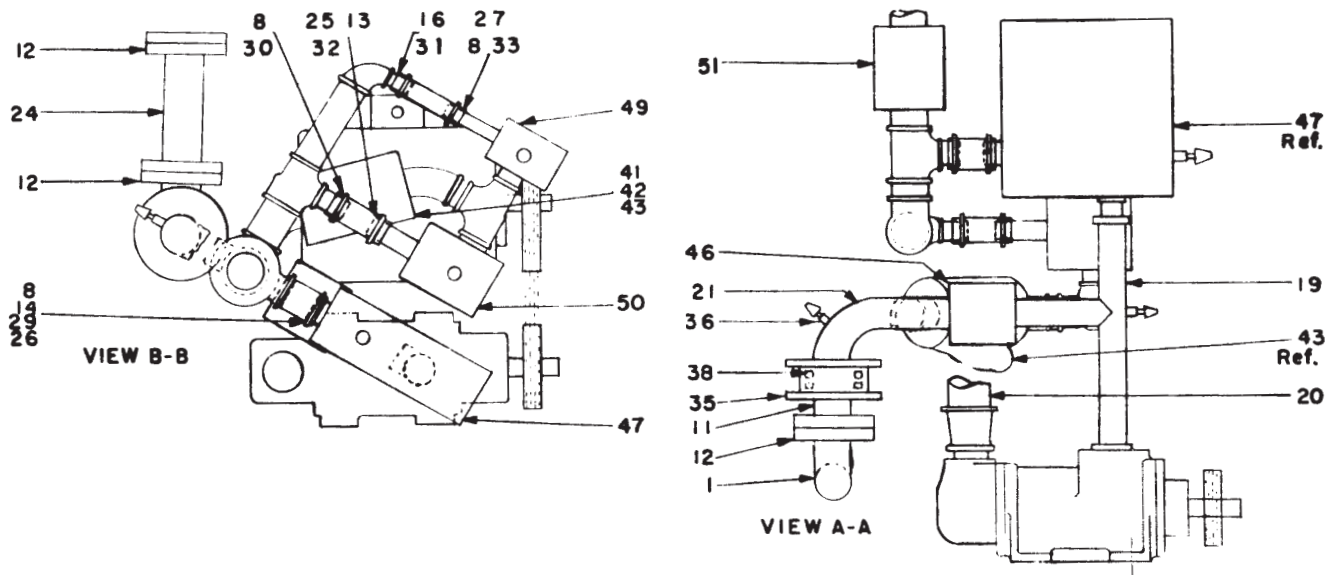
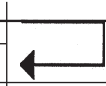


FIG. 1 (same as FIG.1, Page 2)

HPA 2000 HYDRAULIC ELEVATOR

C-1098

PARTS FOR 7BA HYDRAULIC MACHINE HPA-2000 - FIG. 1 (CONTINUED)
 (with 7BA Pumping Unit Type 7121AA)
 Form HPA 2000-1 dwg. 7070D, B7070D,
 M. L. 4031B3 - Furnished up to Feb. 1971, M. L. 4031B8 - Furnished after Feb. 1971

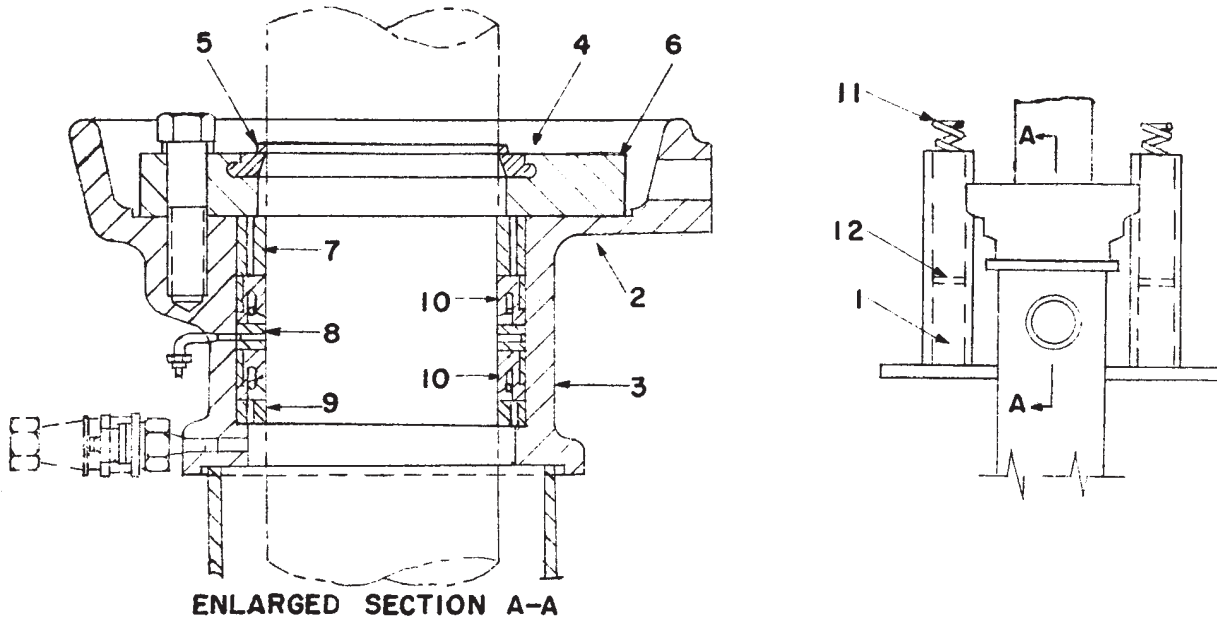
REF. No.	PART OR M.L.	DESCRIPTION
23	B441AM2	Muffler
24	-	Nipple, Victaulic #43 2 x 10 Grooved Both Ends
25*	441AH57%	Nipple-Half, Pipe St'l. 1 x 7-1/4 Down Valve
26*	441AH17%	Nipple-Half, Pipe St'l. 1-1/4 x 4 Up Valve
27*	441AH29%	Nipple-Half, Pipe St'l. 1/2 x 1-1/2 Dw. Level
28	441AH41	Nipple-Half, Pipe St'l. 2-1/2 x 2 Shut-Off
29	441AH95	Nipple-Half, Pipe St'l. 1-1/4 x 1-3/4 Up Valve
30	441AH28	Nipple-Half, Pipe St'l. 1 x 2-1/2 Down Valve
31	441AH30	Nipple-Half, Pipe St'l. 1/2 x 2 Down Level
32	441AH35	Nipple-Half, Pipe St'l. 1 x 4 Down Valve
33	441AH65	Nipple-Half, Pipe St'l. 1/2 x 4-3/8 Dw. Level
34	441BD1	Pipe, Discharge, Tank
35	386AYR3	Plate, Clamp
36	-	Plug, Shut-Off Hansen 1/4, 2-K16
37	6962J3	 Pump, Hydraulic DeLaval 1MO-A3DB Type 187 6962T1
38	182W3	Ring, Packing
39	265BM21	Sheave, Motor
40	265BM15	Sheave, Pump
41*	A441AV1%	Strainer, Pipeline 1/2 Down Leveling Valve
42*	A441AV3%	Strainer, Pipeline 1 Down Valve
43	A441AV5	Strainer, Pipeline 1-1/2 Dw. & Dw. Lev. Valve
44	298CA24%	Strip, Oil Filter
45	148W1%	Tank, 80 Gal.
	B148W1	Tank, 80 Gal.
46	271W2	Valve, Check ECCO 3000
47	A271AA3 _H	Valve, Up ECCO UV-3A
48	271AB3	Valve, Tank Shut-Off
49	271BA1	Valve, Dw. Lev. ECCO DL-3
50	271BA5 _H	Valve, Down ECCO DL-3
51	271AH1	Valve, Check Strataflo

* Arrow indicates location, the part itself not showing in illustration.

%Used on machines furnished prior to Feb. 1971.

NOTE: - Machines up to Feb. 1971 used two (2) Pipeline strainers, one, (1/2") for Down Lev. Valve and one, (1") for Down Valve.
 Machines after Feb. 1971 employed only one, (1-1/2") Pipeline Strainer.

H NOTE: For Replacement, Refer to T.I.P. 6.3.0-12

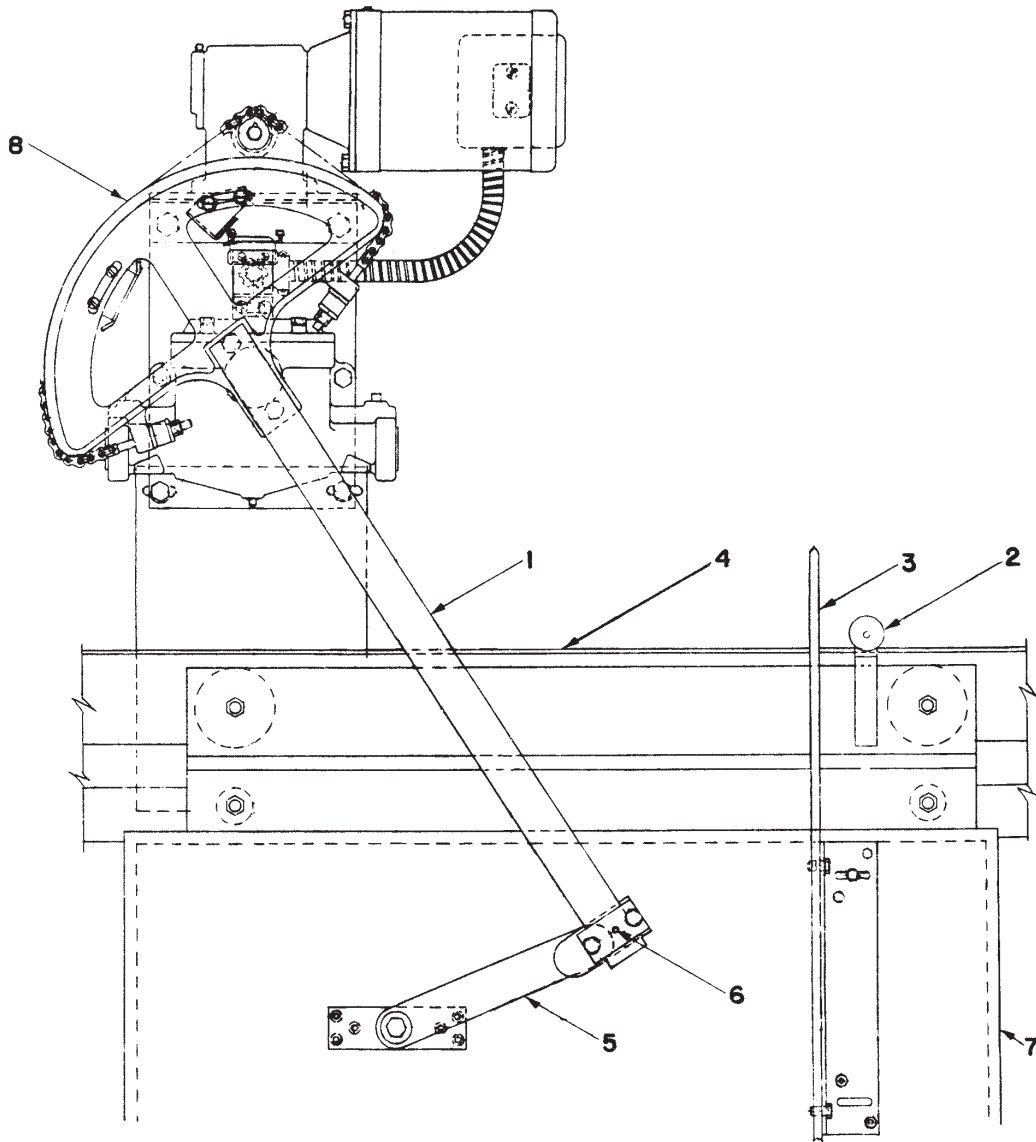


CYLINDER HEAD, PACKING AND BUFFER DATA - FIG. 2

6" and 7" Cylinder with 4-1/2" Plunger
 HPA 2000-3 M.L. 2223C26 & 111, 4031F12, 14, 18, 20, 21

REF. No.	PART OR M.L.	DESCRIPTION
1	310C12	Block, Wood
2*	376NG%	Gasket, 5-5/8 ID, 9-1/8 OD, .015 thk. Plastic
3	FOR CYLINDER HEAD PACKING REPLACEMENT PARTS SEE SPARE PARTS LEAFLET 03-6942Y	
4		
5		
6		
7		
8		
9		
10		
11	90ND5	Spring, Compression, 3-5/8 OD, 18-1/2 Lg.
12	127VD14	Washer, 1-1/4 ID, 3-3/4 OD, 1/4 thk. Steel

* Arrow indicates location, the part it self not showing in illustration.
 %These parts were used on packing & cylinder heads installed prior to October, 1970.



TYPE A7300AA DOOR OPERATOR AND TYPE A6993Y SAFETY SHOE - Fig. 3

Form HPA 2000-1 Single Slide Doors with Integral Hangers

REF. No.	PART OR M.L.	DESCRIPTION
1	288KL10	Arm, Operator, 36" long
2	C288KM2	Arm, Roller, Door Contact for 6098E Switch
3	327C8	Cam, Stationary
4	-	Hanger, Integral Door, For Details see Fig. 5, Page 10
5	7300E8%	Door Link, Assembly
6	81AX1	Pin, Spring 3/16 x 3/4 lg., Link and Arm
7	A6993Y1	Safety Shoe, For Details see Fig. 4, Page 8
8	A7300AA2%	Drive Unit
-	6098E6ψ	Switch

% For details, see Parts Leaflet C-1039B.

ψ Not illustrated, see parts Leaflet C-919G for details.

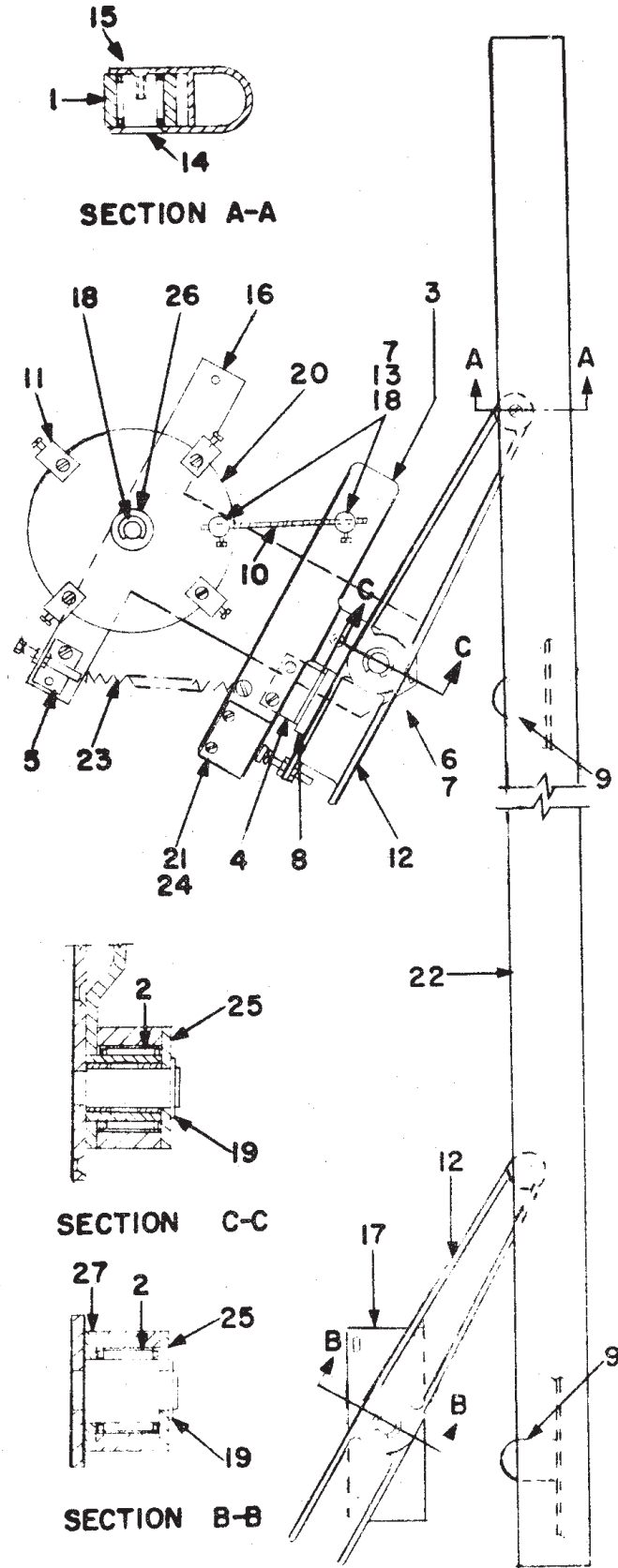






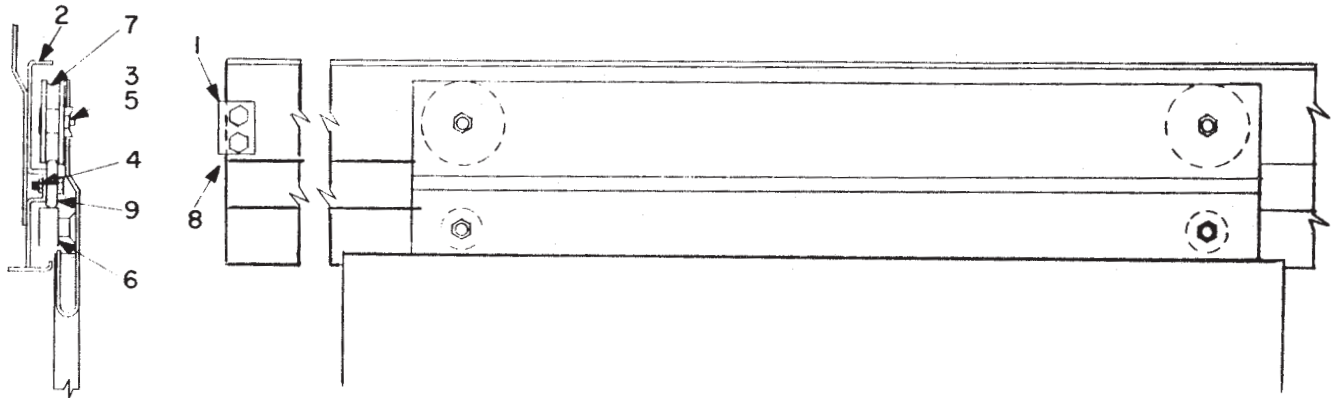
FIG. 4

PARTS FOR A6993Y SAFETY SHOE, RH ARR. - Fig. 4
HPA 1500-1, HPA 2000-1, and M.L. A6993Y1

REF. No.	PART OR M.L.	DESCRIPTION
1	209AF1	Bearing, Roller
2	209AF2	Bearing, Roller
3	A316CKE2	Bracket, Complete w/Bushings
4	A316CKM2	 Bracket Bumper & Bracket (orig. just Bracket)
	B316CKM2	
5	316CKF2	Bracket, Spring
6*	335E39	Bushing, for REF 3
7*	335E86	Bushing, for REF 3
8	320BD2	 Bumper, for REF 4 Bumper & Bracket (orig. just Bumper)
	B316CKM2	
9	320CD1	Bumper, for REF 22
10	174AS26	Cable
11	283KX1	Clamp, Angle
12	A288NS1	Lever
13	79BT1	Pin, Pivot 1-7/16 Long
14	81CM2	Pin, Complete
15*	81AX32	Pin, Spring, for REF 14
16	386BCA2	Plate, Pivot
17	386BBN6	Plate, Pivot
18	172DR2	Ring, Retaining, for REF 13
19	172DR8	Ring, Retaining, for Lever
20	265BN2	Sheave
21	278CA1	Shield
22	A470AS2	Shoe
23	91B20	Spring, Extension 11/32 OD x 5-1/8 lg. overall
24	7035A23%	 Switch, Single Breaking
	7035A101%	
25	127AS1	Washer, 21/32 ID x 1-7/8 OD
26	127VB31	Washer, 17/32 ID x 1-1/4 OD
27	428AG69	 Washer, Brass, 1-1/32 ID x 1-7/8 OD
	128AG69	

* Arrow indicates location, Part itself not showing in illustration.

% For details, see Parts Leaflet C-1021B.



PARTS FOR INTEGRAL DOOR HANGER - Fig. 5

Form HPA 2000-1

REF. No.	PART OR M.L.	DESCRIPTION
1	320AB2	Bumper
2	409CD2	Header, Car Single Slide with Track
3	77RK2	Pin, Eccentric
4	72DJ2	Nut, Grip, for Track
5	72AF2	Nut, st'l. 1/2-20NF
6	456CP1	Roller, Eccentric
7	456GX4	Roller, Complete with Bearing 207Z34
	456EW2	
8*	462BM4	Spacer, for Bumper
9	483MJ8	Track, 74 long

* Arrow indicates location, Part itself not showing in illustration.

*HOISTWAY INTERLOCK AND DOOR CLOSER
Form HPA 2000-1*

REF. No.	PART OR M.L.	DESCRIPTION
1	6471A2	Box, Emergency Key, see Page 17 for detail
2	321CV1	Bushing, for Key
3	A6940AD3 Ψ	Closer, Weight
4	6940AN1	Closer, Spring
	A6940AN2	
5	194AD3	Key, Emergency
6	288LS1	Lever, used with Key
	AAA288ZU1	
7	B6940C3	Lock, Hoistway Door
8	72DJ2	Nut, Grip, for REF 7
9	72DJ3	Nut, Grip, for REF 14
10	2119H7 Ψ	Parts for Mounting, for 6940A Interlock
11	2119H8	Parts for Mounting, for 6940AN Interlock
12	2235B6 Ψ	Parts, Mounting, for Weight Closer
13	172DN4	Ring, Retaining, used with Emerg. Key Device
14	6940AG1	Switch, Interlock
	A6940AG1	
15	130J4	Washer, Lock, for REF 14
16	130J11	Washer, Lock, for REF 7

Ψ Used on installation furnished prior to December 1969 only.

NOTE: For Hoistway Interlock and Emerg. Key Device, see Parts Leaflet 27-C6940AP.
For Door Closer, see Parts Leaflet 26-6940D, AD, AN.

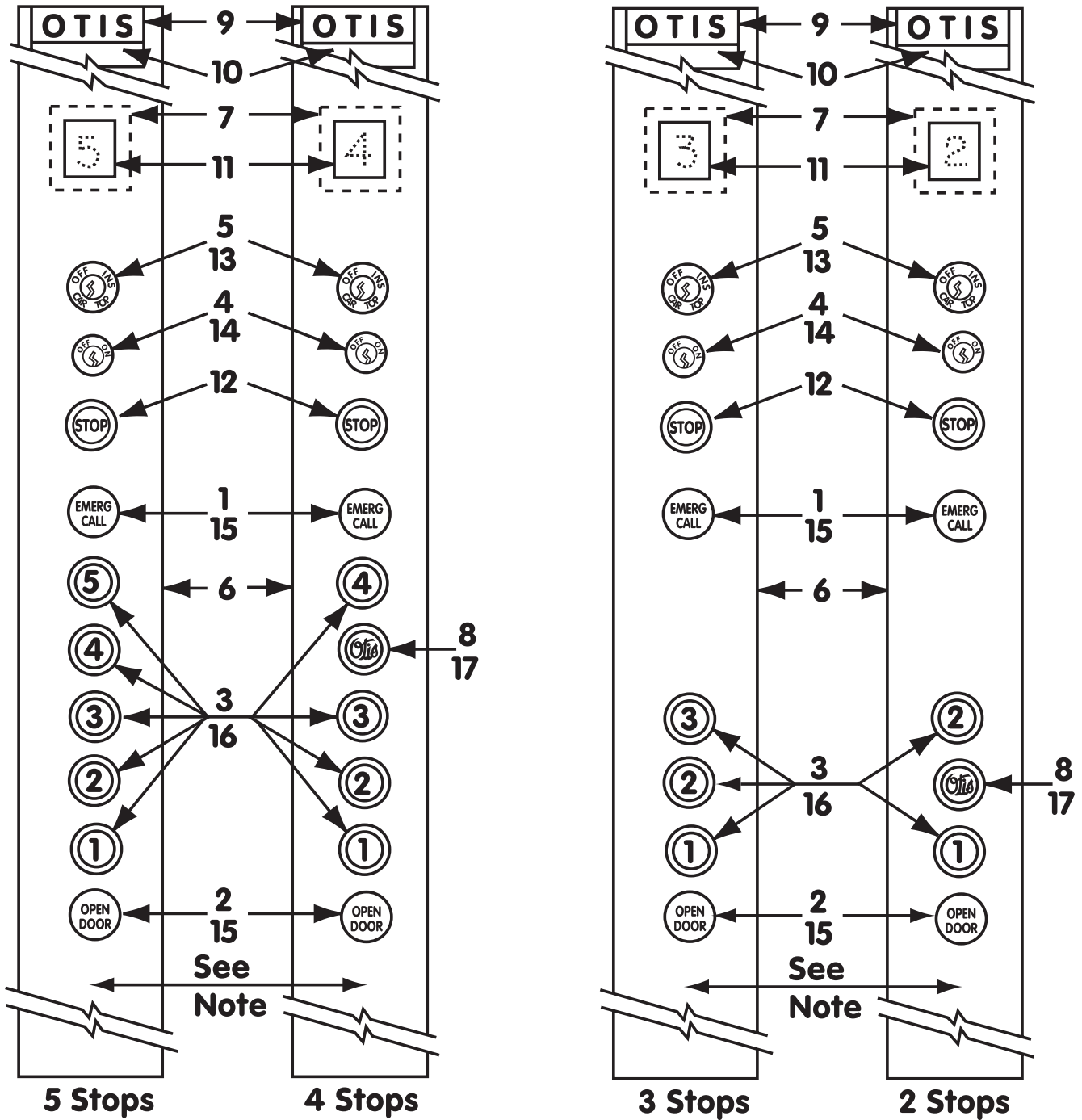






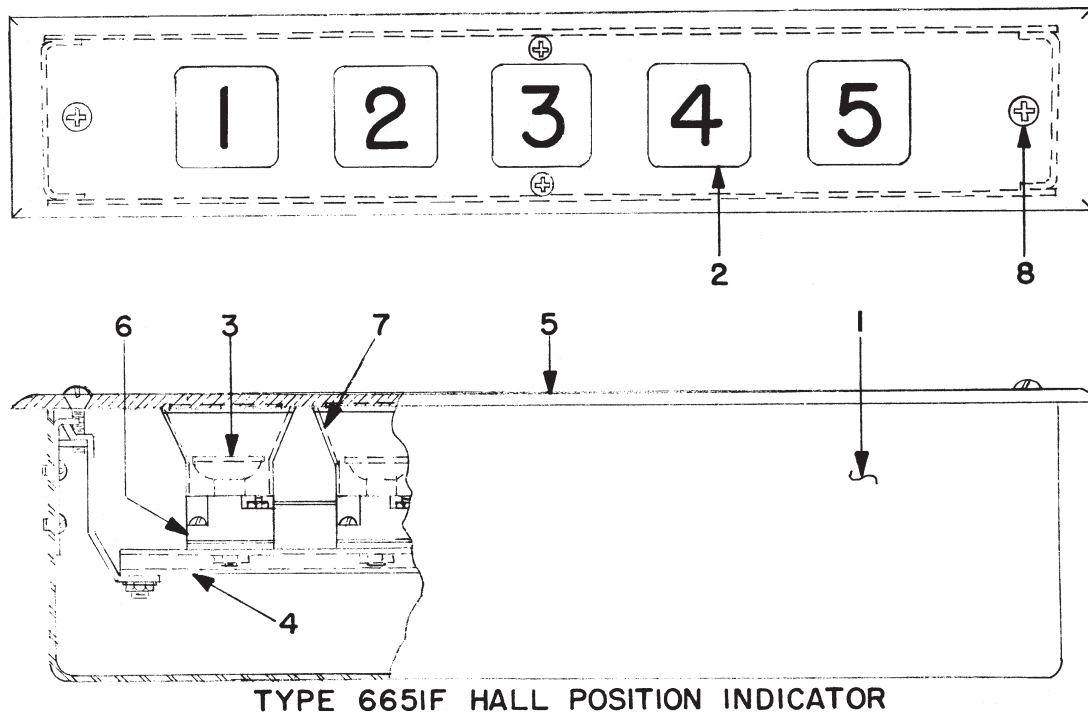
FIG. 7

7118W CAR OPERATING PANEL COLUMN
 TYPE INTEGRAL WITH CAB - Fig. 7
 M.L. 2213J1 thru J8 and 4031E2, E3, E5, and E6

REF. No.	PART OR M.L.	DESCRIPTION
1	323BD2+	
	A323BD2+	
2	323BD2+	
	A323BD2+	
3	A7069A1%Σ	Button, Illum., Marking per order
4	329J4	Cap, mkd. Off-On, for REF 14
-	339FF1%	Clips, for 7014A Switch
-	339FG1%	Clips, for 7035A Units
5	340AA2	Collar, mkd. Off-On-Insp. Car Top, for REF 13
6	367BH3	Column, Enclosure, Fin. #3, for 2 or 3 Stops
	367BH3	Column, Enclosure, Fin. #3, for 4 or 5 Stops
7	433BJ1	Glass
8	104D1%	Medallion
-	72DJ4%	Nut, Grip, for 7035A Units
-	74G2	Nut, for 6410E Key Switch
9	102BH1	Plate, Name
10	102BJ6	Plate, Capacity
11	7123C1	Readout, Digital
12	7014A9ψ	Switch, Emergency Stop
13	6410E4φ	Switch, Key, for Top of Car Insp.
14	6410R2	Switch, Key, for Off-On Switch
15	7035A2Ω%	
	7035A101Ω%	
16	7035A27%	
	7035A111%	
17*	127F17%	Washer, for Medallion REF 8

NOTE: A feature with 323BD2, Buttons Mkd. "U" & "D" and 7035A3 Units, was furnished on Car Operating Panels until Approx. June 1972.

- + For details, see Fig. 15, Page 19.
- % Quantity is variable, depending on No. of Floors.
- ψ For details, see Parts Leaflet C-1024A.
- φ For details, see Parts Leaflet 31-6410A.
- Ω For details, see Parts Leaflet C-1021B.
- Σ For details, see Parts Leaflet 31-A7069A.
- * Arrow indicates location. Part itself not shown.



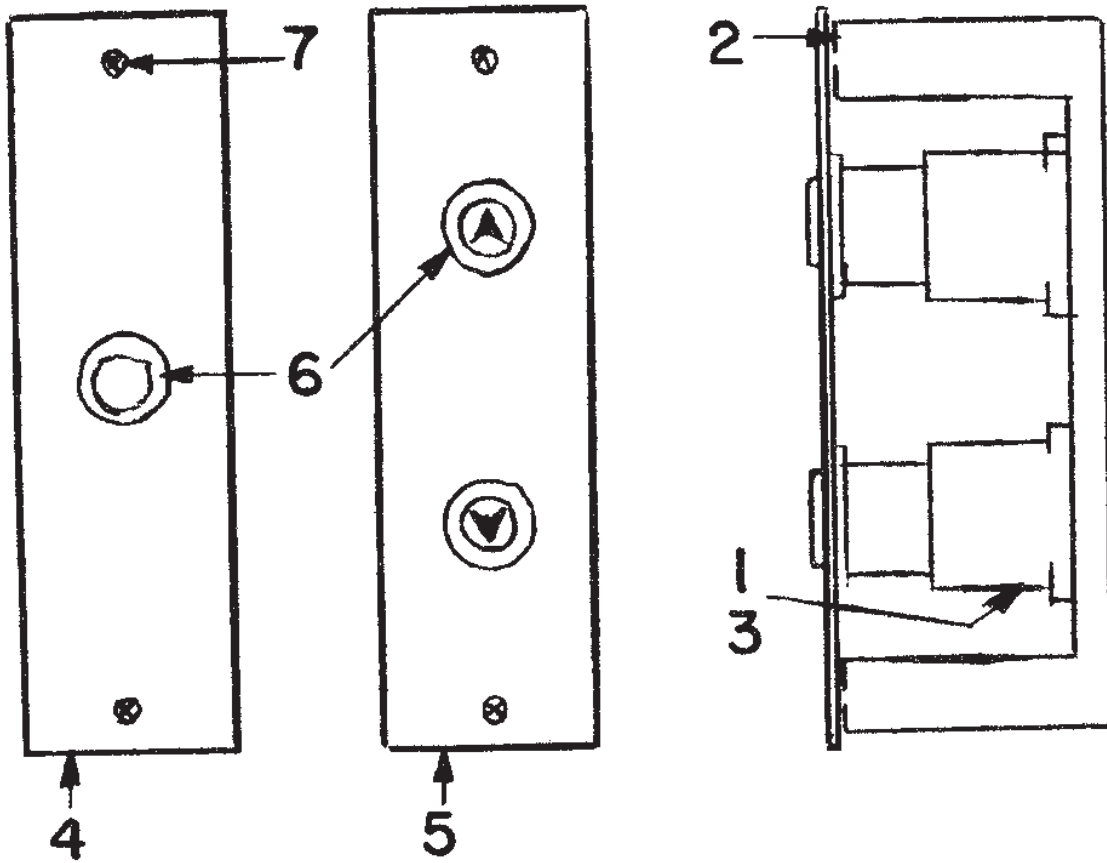
PARTS FOR HALL POSITION INDICATOR - Fig. 9

Type 6651A% M.L. 4031K1, 2, 3 Type 6651F M.L. 4031K4, 5, 6

REF. No.	PART OR M.L.	DESCRIPTION
1	313R1	Box
2	499AD1*	Jewel, Mkd. per order
3	424H1*	Lamp, Type S-6 120V
4	105CJ3	Plate, Base
-	A147BC3% B147BC3-3%	Plate, Face & Jewels Mkd. per order
5	B147BC3	Plate, Face Mkd. per order
6	2226A2*	Receptacle & Fastenings Consist of:
-	6644A3*	Base, Assembly
-	275AJ1*	Barrier, Insulating
-	386TV1*	Plate
7	278AD1*	Shield, Light
8	-	Screw, 10-32 x 7/8 Phillips Rec. Oval Mach. Fin. 25

% Used on installations furnished prior to Oct. 1970. Jewels were cast integral with Face Plate.

* Quantity is variable depending on Number of Stops.

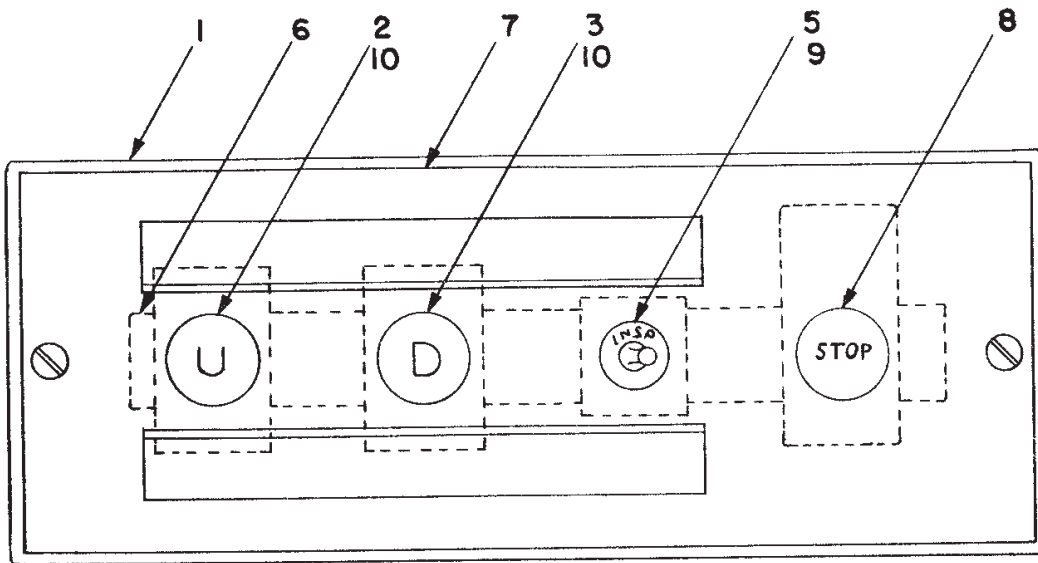


PARTS ILLUM. PUSH BUTTON HALL FIXTURE - Fig. 10

Type 7069R M.L. 4031H3 Terminal Floor
 Type 7069T M.L. 4031H4 Intermediate Floor

REF. No.	PART OR M.L.	DESCRIPTION
1*	339FG1	Clip
2*	72DJ4	Nut
3	7035A27Φ	Push Button, Unit
	7035A111Φ	
4	447JF9%	Plate, Face, Terminal Fl.
	147JF9-3%	
5	447JF10%	Plate, Face, Intermediate A147JF10-3%
6	A7069A1Σ	Illum. Button
7	-%	Screw, 10-32 x 1/2 Phillips Oval Mach.

* Arrow indicates location, part not shown.
 Φ For details, see Parts Leaflet C-1021B.
 Σ For details, see Parts Leaflet 31-A7069A.
 % Furnish contract number when ordering.



TOP OF CAR INSPECTION BOX - FIG. 11

TYPE 7131A1 TOP OF CAR INSPECTION & ALARM BELL
 Consisting of: B7003C1 Top of Car Inspection Box - see Fig. 11

TYPE 4033A1 TOP OF CAR INSPECTION & ALARM, W/EMERG. LIGHTING
 Consisting of: B7003C1 Top of Car Inspection Box - see Fig. 11
 6599D10 Lamp
 7003J1 Emergency Power Supply Unit Complete

INSPECTION CONTROL BOX M.L. B7003C1

REF. No.	PART OR M.L.	DESCRIPTION
1	A308DR1	Box
2	323BD2+	Button, Comp., Mkd. "U" per order
	A323BD2+	
3	323BD2+	Button, Comp., Mkd. "D" per order
	A323BD2+	
-	339FF1	Clip, for Switch REF 8
-	339FG2	Clip, for Unit REF 10
5	329G4	Collar, Mkd. Insp.
6	105CJ18	Plate, Base
7	B147DP2ψ	Plate, Face w/Buttons
8	7014A1%	Switch, Mkd. Push to Stop, Pull to Run
9	6599A8	Switch, Toggle w/Bracket
	REF6599A8	
10	7035A11φ	Unit, Button w/Clip, Double Making
	7035A102φ	

+ For details, see Fig. 15, Page 19.

% For details, see Parts Leaflet C-1024A.

ψ When ordering a face plate, add the following note: Assemble with necessary Button Guides A35AV1.

φ For details, see Parts Leaflet C-1021B.

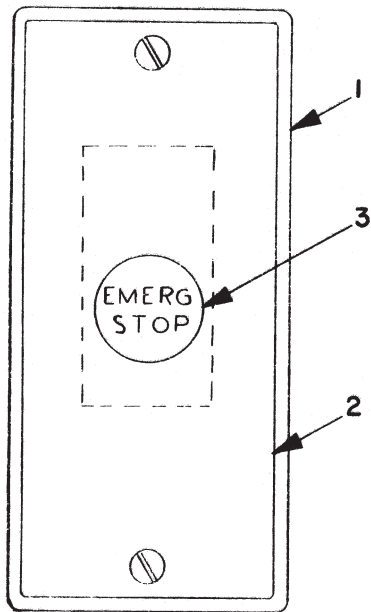


FIG. 12

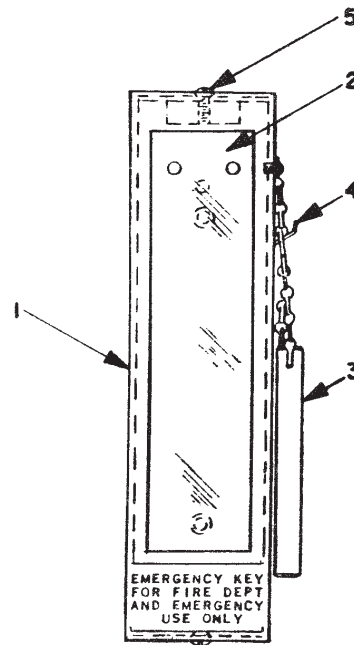


FIG. 13

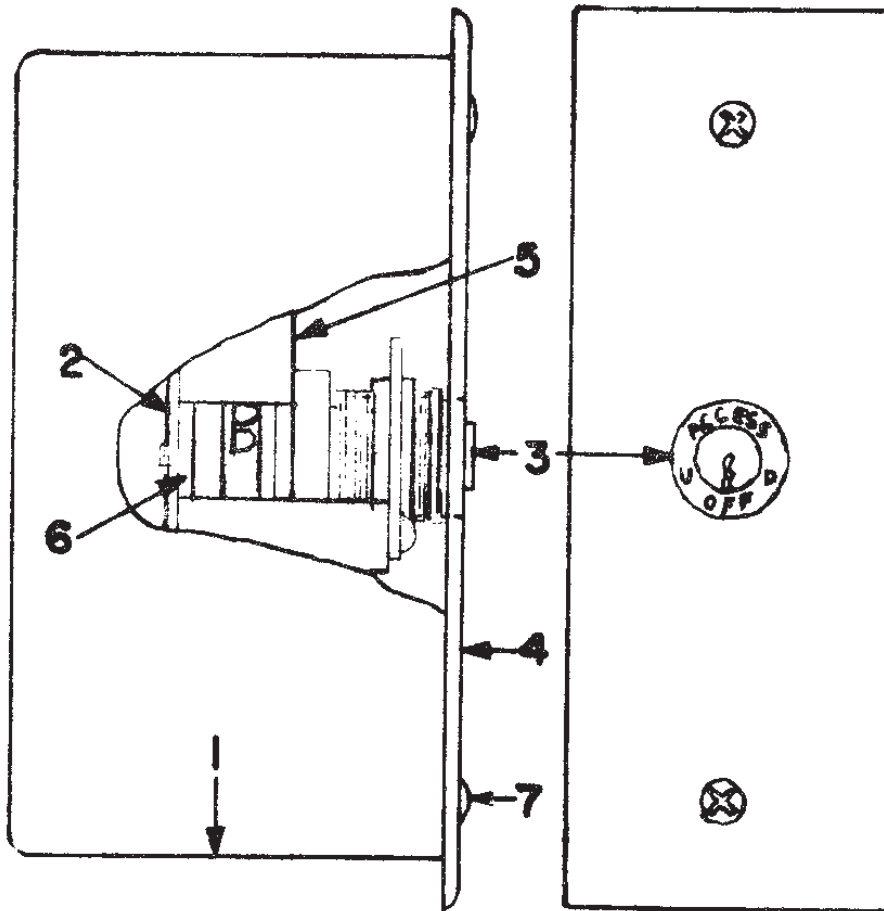
EMERGENCY STOP CONTROL BOX - Fig. 12
M.L. A7003B1 - Pit Switch

REF. No.	PART OR M.L.	DESCRIPTION
1	A308DP1	Box
-	339FF1	Clip
2	A147DN1	Place, Face
3	7014A1%	Switch, (Pit) Mkd. Push to Stop Pull to Run

% For details, see Parts Leaflet C-1024A.

PARTS EMERG. KEY BOX, LESS KEY - Fig. 13
M.L. A6471A2-3

REF. No.	PART OR M.L.	DESCRIPTION
1	346JG2	Cover, 11-1/2 L. Fin. 25
2	443J2	Glass, 1-5/8 x 11-15/16 Lg. 1/16 Thk.
3	387B1	Hammer, w/Chain & Ring Fin. 25
4	509D1	Hook, Fin. 25
5	-	Screw, Cross Slot Oval Ctsk. Hd. Mach. 8-32 x 1/2 Fin. 25



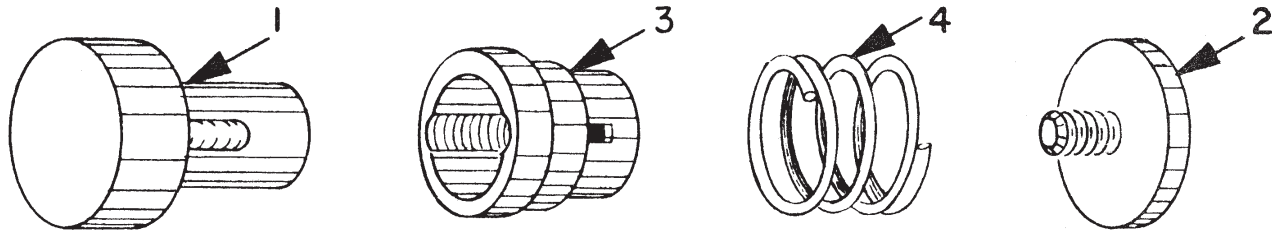
ACCESS KEY SWITCH - Fig. 14

M.L. 7003D1

REF. No.	PART OR M.L.	DESCRIPTION
1	308DS2	Box
2	316ACP4	Bracket
3	6410H1%	Contact, Key Oper., DBL. Mkg. & Brkg.
4	447DR1+ 147DR1-3+	Plate, Face, Fin. per. Order
5	278AT1	Shield
6	130J14	Washer
7	+	Screw, Phillips Oval Mach. 10-32 x 3/4, Fin. per. Order

% For details, see Parts Leaflet C-1021B.

+ Furnish sales no. when ordering



PARTS FOR 323BD BUTTONS - Fig. 15

REF. No.	PART OR M.L.	DESCRIPTION
1	323BD1	Button, Top, 1-1/32" dia., black, specify marking
	323BD6	Button, Top, 1-1/32" dia., red, specify marking
2	A323AF3	Button, Bottom, black, used w/Button Assem. 323BD2, 3 & 7
	A323AF6	Button, Bottom, black, used w/Button Assem. 323BD4
3	A385AV1	Guide

(FOR DETAILS OF 6098 TYPE MECH. SWITCHES SEE PARTS LEAFLET C-919G)

OPERATING DEVICES

Floor Stop & Access Zoning Switches w/Mountings

M.L. 6098JF1

M.L. 6098JF1 Employs one (1) A6098A1 Mech. Switch

FINAL LIMIT SWITCHES AND MOUNTINGS

M.L. 6098F1* AND 6098JF2**

* M.L. 6098JF1 Employs one(1) A6098A1 Mech. Switch

**M.L. 6098JF2 Employs one (1) A6098A4 Mech. Switch

CAR SWITCHES (CREEPAGE, LEVELING, & DOOR ZONE) & MOUNTINGS

M.L. 6098JJ1 AND A6098JJ1

M.L. 6098JJ1 or A6098JJ1 Employs three(3) A6098B22 Mech. Switches