

SIEMENS-ALLIS

Switchgear

**RENEWAL PARTS
ORDER GUIDE**

**FCV-500 AND FCV-750
VACUUM CIRCUIT BREAKERS
WITH
STORED ENERGY OPERATOR
NO. 515-2V**

Supplement to 18X5416

18X5417-01
November, 1979

HOW TO USE YOUR RENEWAL PARTS ORDERING GUIDE

1. Locate the part or parts to be replaced in one of the drawings in this manual.
2. Identify each part by item number, description and part number. Give drawing figure number in which part is shown.
3. Include breaker type, rating and breaker serial number with your order.
4. Place order with your Siemens-Allis representative.

ORDERING EXAMPLE

Type	<u>FCV-500</u>	Rated Amps	<u>1200</u>	Serial Number	<u>H61064-1</u>
Renewal Parts Ordering Guide		<u>18X5417</u>			
<u>Fig</u>	<u>Item</u>	<u>Description</u>	<u>Part Number</u>	<u>Quantity</u>	
1	2	Stud	18-724-685-001	1	
1	6	Insulator	00-871-275-001	2	
2	148	Shock Absorber	15-171-816-001	1	

If required part is not identified in this manual — — —

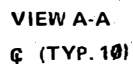
1. Make a copy of the drawing figure in which the part would appear.
2. Indicate with arrows or other markings location of part.
3. Describe or sketch required part.
4. Include breaker type, rating and breaker serial number with your order.
5. Place order with your Siemens-Allis representative.

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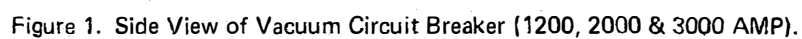
Figure 1. Breaker Assembly
 Figure 2. Frame and Operator
 Figure 3. Operator Assembly

USAGE CODE

Any Item No. with the letter A
 after it stands for 2000A.
 Letter B 3000A.

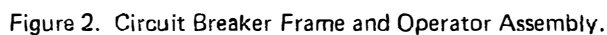


NOTE:
DO NOT CHANGE
FACTORY SETTINGS
OF ELASTIC STOP
NUTS.



ITEM DESCRIPTION FOR FIGURE 1

ITEM	DESCRIPTION	PART NUMBER	USAGE	ITEM	DESCRIPTION	PART NUMBER	USAGE
1	Frame & Operator	18-469-675-501		37A	Bolt	00-611-315-568	
2	Stud Ø1 & 3 Upper	18-724-685-001		38	Bolt	00-611-315-564	
2A	Stud Ø1 & 3 Upper	18-726-877-001		39	Bolt	00-611-315-480	
3	Stud Ø2 Upper	18-724-685-002		44B	Hex Nut	00-631-059-106	
3A	Stud Ø2 Upper	18-726-877-002		46B	Lock Washer	00-655-017-032	
4	Stud Ø1 & 3 Lower	18-724-685-004		47	Pin	71-104-754-035	
4A	Stud Ø1 & 3 Lower	18-726-877-003		48	Cotter Pin	00-671-195-191	
5	Stud Ø2 Lower	18-724-685-003		49	Nut R.H. Thd.	00-631-143-108	
5A	Stud Ø2 Lower	18-724-877-004		50	Nut L.H. Thd.	00-631-146-208	
6	Insulator	15-171-808-001		56	Tube	18-724-687-001	
9	Vacuum Tube Ass'y. (See Figure 1A)			56A	Tube	18-726-879-001	
	FCV-500, 1200A	18-393-620-501		57	Contact Finger Ass'y.	18-657-456-579	
	FCV-500, 2000A	18-393-620-502		57A	Contact Finger Ass'y.	18-723-565-501	
	FCV-500, 3000A				Screw	00-611-447-463	
	FCV-750, 1200A	18-393-620-503		58	Round Washer	00-651-007-214	
	FCV-750, 2000A	18-393-620-504			Lockwasher	00-651-017-214	
	FCV-750, 3000A			59	Phase Barrier, Center	18-657-411-303	
10B	Support	18-657-822-283		60	Panel	18-719-304-501	
12	Pivot	18-657-521-190		60B	Panel	18-730-066-501	
13	Adjusting Screw	18-657-780-183		61	Spring	71-113-600-001	
14	Clamp Bar	18-657-270-301		78	Spacer	18-166-847-004	
15	Contact	18-657-270-298		78A	Spacer	18-166-847-010	
16	Support	18-657-521-183		79	Angle	18-657-765-162	
17	Spacer	18-657-270-304		80	Shim	71-113-679-001	
20	Eye Bolt	18-657-521-188		83B	Contact Finger Ass'y.	18-657-511-578	
21	Insulator Bar	18-657-521-181		84B	Stud Ø1 & 3 Upper	18-730-065-501	
25	Stud Support	18-657-521-193		85B	Stud Ø2 Upper	18-730-065-502	
27	Stud	18-724-451-008		86B	Stud Ø1 & 3 Lower	18-730-065-503	
27A	Stud	18-724-451-015		87B	Stud Ø2 Lower	18-730-065-504	
28	Support	18-657-521-182		90B	Tube	18-726-879-003	
29	Stud	18-657-822-284		100	Danger Label	18-395-300-004	
30	Barrier	18-726-887-001		106	Phase Barrier Outer	18-657-825-057	
31	Support	18-724-680-001		107	Strip (Guide)	71-116-468-001	
32	Support	18-724-679-001		108	Rivet	00-671-501-070	
33	Support	18-724-679-002		114B	Washer	00-651-007-230	
35	Stud	18-724-451-007		115B	Hex Hd. Screw	00-611-315-466	
36	Washer	00-651-007-215		131B	Hex Soc. Button Hd. Screw	15-615-024-001	
36A	Spacer	18-194-796-001		132B	Lockwasher	00-655-047-140	
37	Bolt	00-611-315-566					



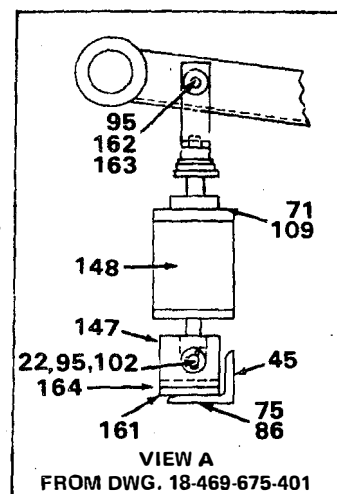
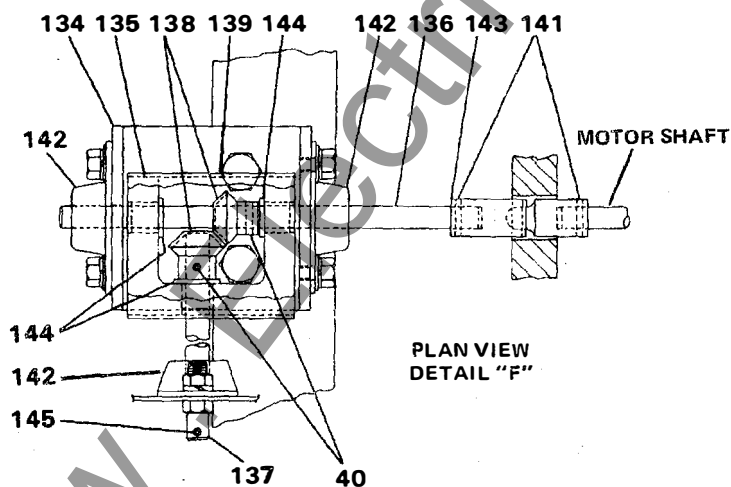
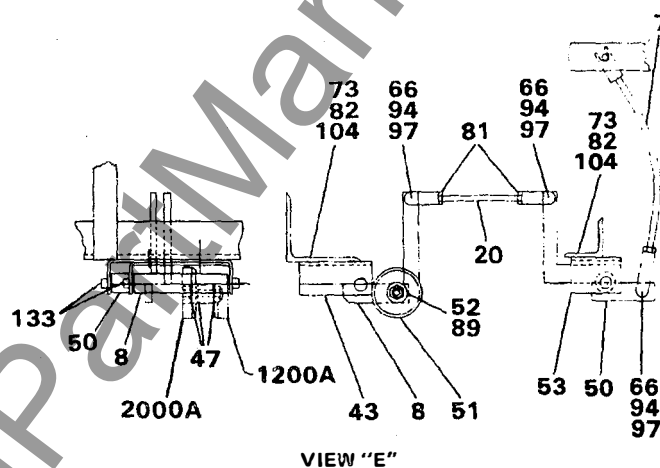
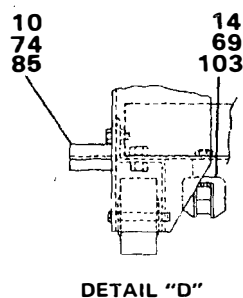
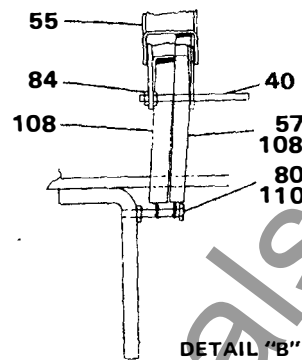
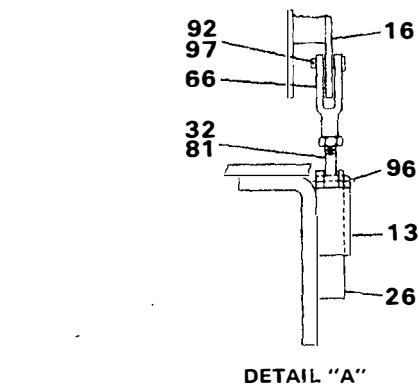


Figure 2A. Circuit Breaker Frame and Operator Assembly (Continued).

ITEMS DESCRIPTION FOR FIGURES 2 & 2A

ITEM	DESCRIPTION	PART NUMBER	USAGE	ITEM	DESCRIPTION	PART NUMBER	USAGE
1	Frame & Operator	18-469-675-501		88	Nut	00-633-074-105	
4	Operator Assembly	18-657-770-515		89	Nut	00-633-025-220	
6	(Radius) Arm Ass'y.	18-392-990-501		92	Cotter Pin	00-671-195-049	
7	Push Rod Assembly	18-723-509-501		93	Cotter Pin	00-671-195-115	
8	Crank Assembly	18-764-407-501		94	Cotter Pin	00-671-195-119	
9	Manual Charge Arrgt.	18-391-037-501		95	Cotter Pin	00-671-195-191	
10	Guide Assembly	71-113-437-501		96	Roll Pin	00-671-176-377	
11	Indicator Arm Ass'y.	71-113-474-501		97	Clevis Pin	15-171-181-001	
13	Guide Assembly	18-657-515-568		98	Clevis Pin	00-957-211-903	
14	Ground Contact Ass'y.	71-114-787-502		99	RD Washer	00-651-007-146	
15	Bracket Assembly	18-657-502-550		100	RD Washer	00-651-007-900	
16	Lever Assembly	72-120-568-502		101	RD Washer	00-651-007-214	
17	Foot Pedal Assembly	18-657-506-562		102	RD Washer	00-651-007-285	
18	Frame Assembly	72-320-035-502		103	Lockwasher	00-655-017-026	
19	Spring	71-204-604-028		104	Lockwasher	00-655-017-032	
20	Stud	18-292-228-031		105	Lockwasher	00-655-017-040	
21	Pin	71-104-754-034		106	Wheel	15-171-067-002	
22	Pin	71-104-754-035		108	Spring	15-171-700-001	
23	Pin	71-104-754-047		110	Jam Nut	00-631-171-104	
24	Shield Stud	71-108-105-003		111	Hex Hd Cap SCR	00-611-315-468	
25	Oper. Counter	71-110-940-002		121	Pin	18-657-464-105	
26	Plunger	71-113-442-001		122	Retaining Ring	00-673-165-075	
29	Angle	18-657-853-259		123	Washer	71-152-809-026	
32	Rod End	71-113-633-001		124	Indicator	71-101-247-001	
33	Spring	18-657-853-386		125	Indicator	71-101-248-001	
40	Rod	12-120-329-001		126	Sec. Disc	72-120-237-501	
41	Comp. Spring	71-140-125-001		127	Cotter Pin	00-671-195-257	
42	Spring	71-153-031-001		128	Nyliner Flg. Bushing	00-815-279-020	
43	Bracket	72-120-708-001		130	Rod End	00-691-713-102	
44	Pin	18-657-523-124		131	Jam Nut	00-631-171-204	
45	Angle	18-657-229-283		132	Roll Pin	00-671-176-187	
46	Pull. Rod	18-657-229-198		133	Roll Pin	00-671-176-453	
47	Washer	71-152-809-002		134	Bracket	18-724-562-001	
49	Bracket	18-657-522-326		135	Drive Support	18-657-768-200	
50	Crank Assembly	18-723-508-501		136	Drive Shaft	18-724-563-001	
51	Roller	72-120-706-001		137	Drive Shaft	18-724-563-002	
52	Hex Hd Bolt	00-611-343-030		138	Miter Gear	18-657-783-356	
53	Bracket	18-723-506-002		139	Cover	18-657-769-375	
54	Handle	15-171-175-001		140	Roll Pin	00-671-176-189	
55	Arm	72-120-399-001		141	Roll Pin	00-671-176-187	
56	Switch	15-171-044-004		142	Bearing	15-171-387-001	
57	Round (Rod)	71-104-107-013		143	V Joint	18-657-768-261	
58	Needle Bearing	00-813-119-814		144	Bearing	00-815-081-040	
66	Yoke End Adj.	00-691-701-901		145	Roll Pin	00-671-171-313	
67	Yoke End Adj.	00-691-701-903		146	Aux. Switch	71-208-922-504	
68	Self Tap SCR	00-615-598-124		147	Support	18-657-804-082	
69	Hex Hd Cap SCR	00-611-315-378		148	Shock Absorber Assy.	18-394-426-537	
70	Hex Hd Cap SCR	00-611-315-419		151	Rod Eye	00-691-713-103	
72	Hex Hd Cap SCR	00-611-315-424		152	Jam Nut	00-631-171-205	
73	Hex Hd Cap SCR	00-611-315-465		153	Stop Bar	18-727-107-001	
74	Hex Hd Cap SCR	00-611-315-466		154	Spring	15-171-331-011	
75	Hex Hd Cap SCR	00-611-315-546		155	Tore End	71-113-487-002	
76	Hex Hd Cap SCR	00-611-315-548		156	Jam Nut	00-631-171-110	
77	Hex Hd Cap SCR	00-611-315-562		157	Clevis Pin	15-171-497-002	
79	Cap	00-633-182-060		159	Cotter Pin	00-671-195-193	
80	Hex Hd Cap SCR	00-611-315-382		161	Support Block	18-657-804-080	
81	Hex Nut	00-631-003-204		162	Pin	71-104-754-047	
82	Hex Nut	00-631-059-106		163	Washer	71-152-809-024	
84	Locknut	15-171-063-006		164	Shim	18-657-765-182	
85	Locknut	15-171-063-011					
86	Locknut	15-171-063-012					

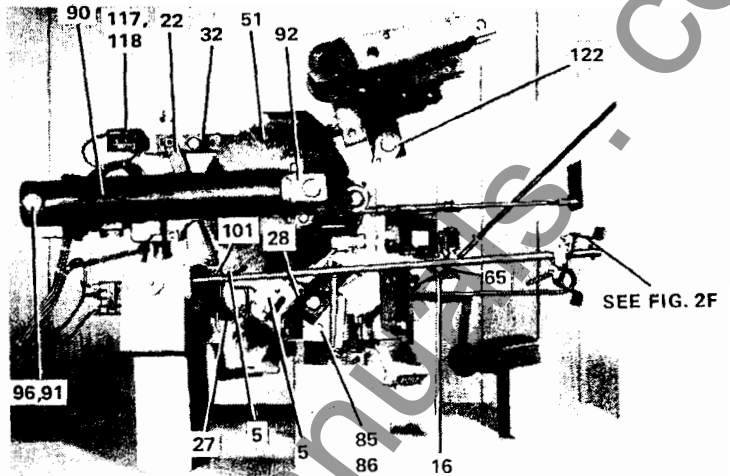


Figure 3A. 515-2V Operator L.H. View.

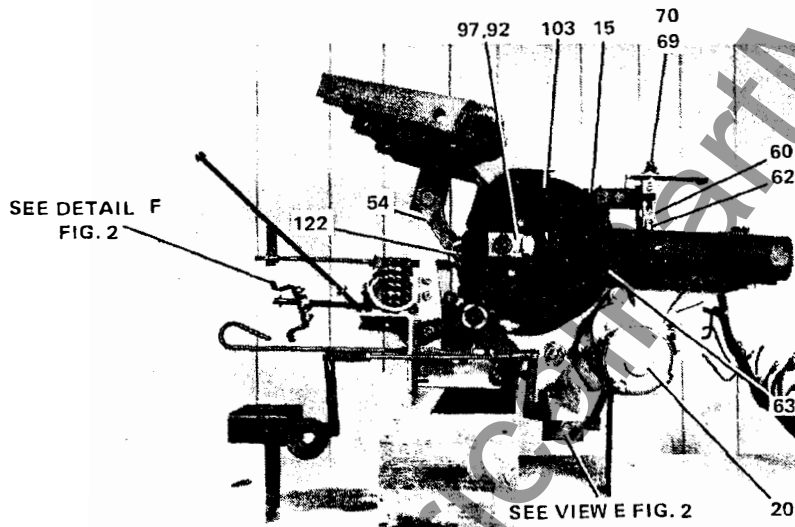


Figure 3B. 515-2V Operator R.H. View.

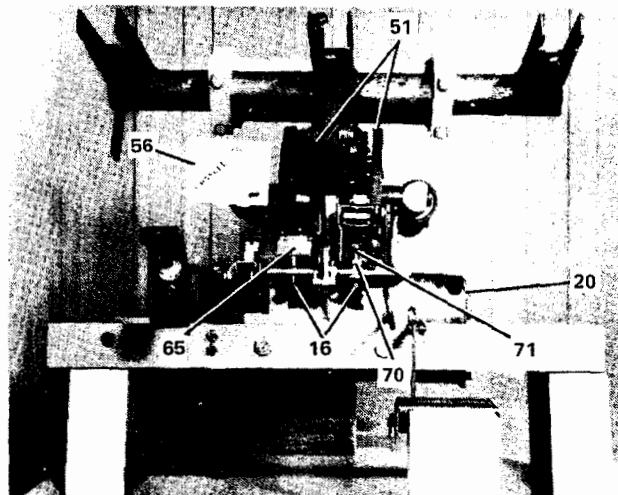


Figure 3C. 515-2V Operator Front View.

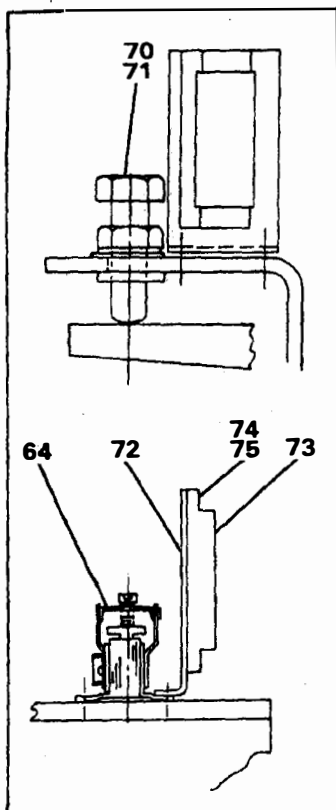


Figure 3D. Type 515-2 Stored Energy Operator Assembly.

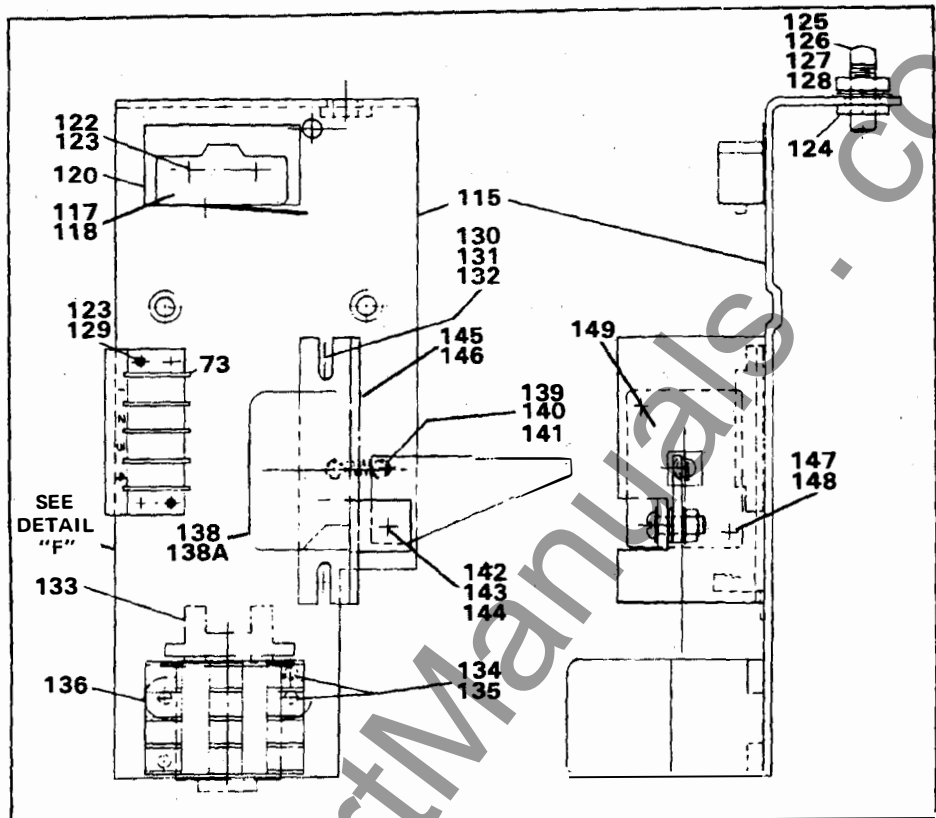


Figure 3E.

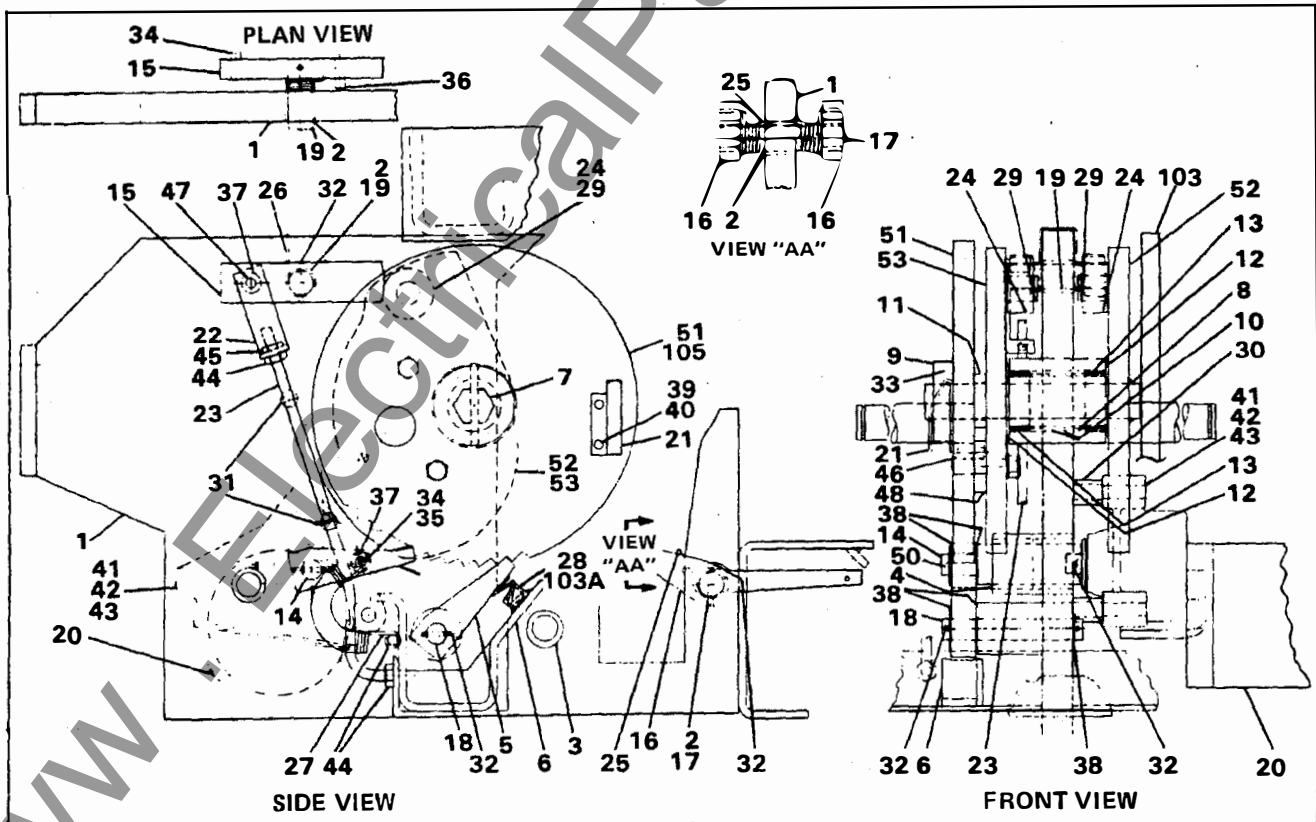
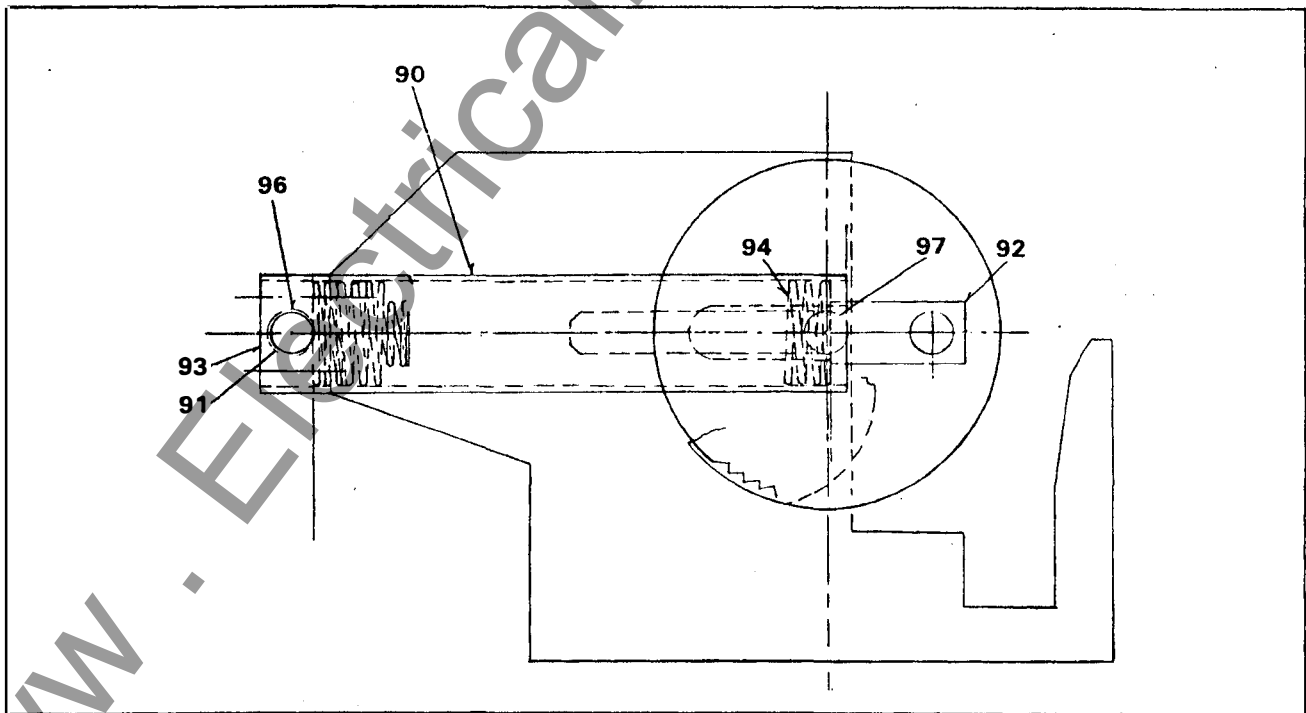
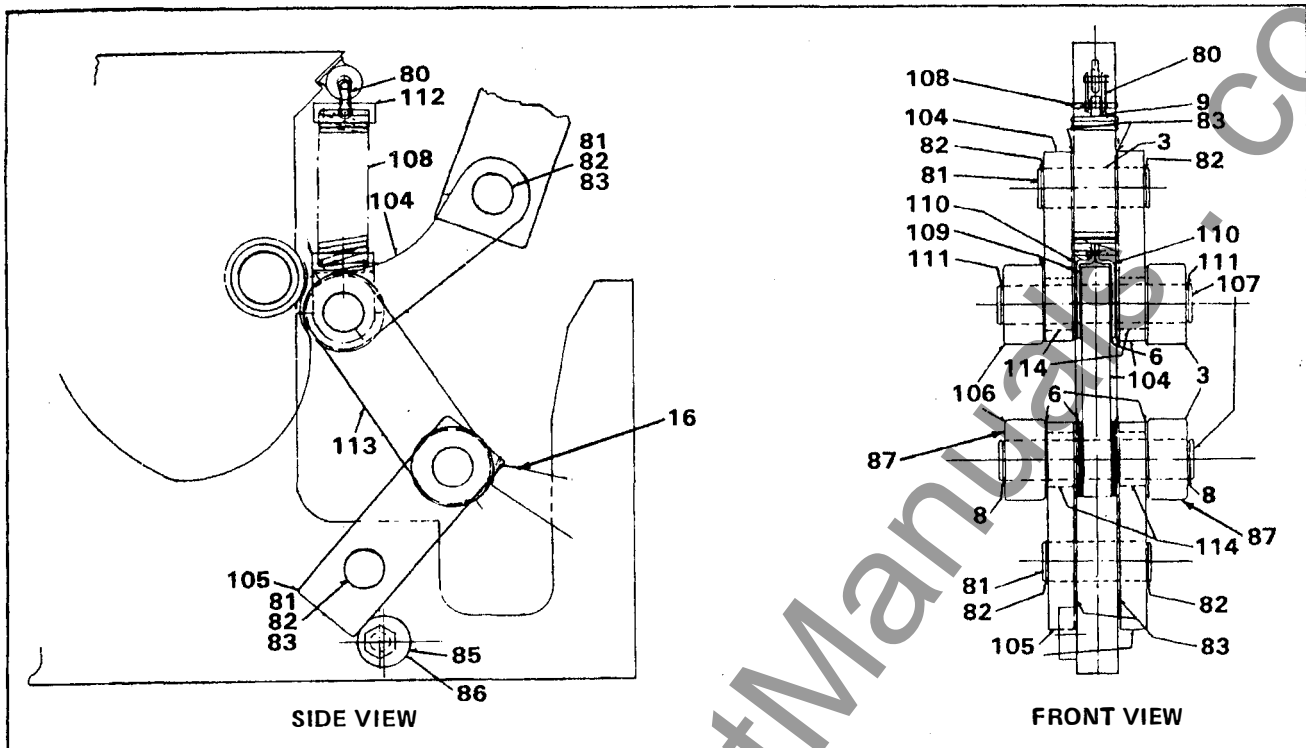


Figure 3F. Frame and Drive Assembly.



2	Contract Finger	18-657-524	224
3	Rotor Assembly	71-109-293	501
4	Barrier	18-723-775	001
5	Barrier	18-657-523	123
6	Bracket	71-208-921	003
7	Bushing	71-109-282	001
8	Shaft	71-114-838	001
9	Stud	18-292-228	029

10	Hex Nut (10-32) Brass	00-631-133	030
11	Stv. Locknut	15-171-063	003
12	Cotter Pin	00-671-195	049
13	#10 Lockwasher	00-655-059	100
14	Washer	71-110-035	001
15	Hex Nut (.250)	00-631-059	204
16	.25 Lockwasher	00-655-017	026
17	Bracket	71-208-921	004

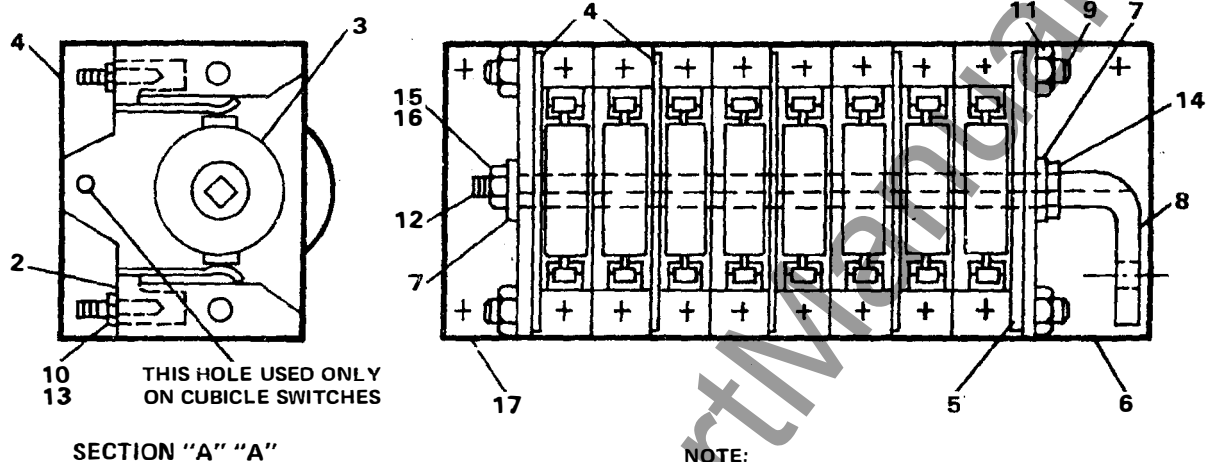


Figure 4. Auxiliary Switch.

ITEMS DESCRIPTION FOR FIGURES 3, 3A, 3B, 3C, 3D, 3E, 3F, 3G, 3H

ITEM	DESCRIPTION	PART NUMBER	USAGE	ITEM	DESCRIPTION	PART NUMBER	USAGE
1A	Operator Assembly	18-657-770-515		25	Torsion Spring	18-657-466-081	
1	Frame Assembly	18-469-509-501		26	Torsion Spring	18-657-466-080	
2	Needle Bearing	00-813-119-810		27	Pawl Return Spring	18-657-229-240	
3	Needle Bearing	00-813-119-814		28	Comp. Spring	15-837-321-005	
4	Needle Bearing	00-813-119-821		29	Retaining Ring	00-673-165-062	
5	Pawl Assembly	18-657-485-536		30	Spacer	18-158-935-011	
6	Stop Bracket Ass'y.	18-657-816-564		31	Adj. Screw	00-617-499-375	
8	Slit Spacer	18-657-800-113		32	Roll Pin	00-671-176-224	
9	Collar	18-657-467-290		33	Roll Pin	00-671-176-325	
10	Inner Race**	18-657-467-335		34	Roll Pin	00-671-176-383	
11	Spacer	18-158-935-009		35	Roll Pin	15-671-173-002	
12	Thrust Washer	00-815-225-131		36	Roll Pin	00-671-171-375	
13	Needle Bearing	15-813-119-003		37	Washer	18-657-522-303	
14	Pin	18-657-463-368		38	Washer, Thrust Race	15-171-091-005	
15	Stop Latch	18-657-463-388		39	Screw	00-615-245-218	
16	Trip Latch	18-657-463-390		40	Lockwasher	00-655-017-022	
17	Pin	18-657-464-012		41	Screw	00-611-315-392	
18	Pin	18-657-523-064		42	Washer	00-651-007-160	
19	Shaft	18-657-463-389		43	Lockwasher	00-655-017-026	
20	Motor*	18-469-223-001	48V DC 115 AC 125V DC 230 AC 250V DC }	44	Elastic Stop Nut	00-633-025-116	
	C.W. Rotation	18-469-223-002		45	Jam Nut	00-631-143-104	
		18-469-223-003		46	Roll Pin	00-671-176-373	
20A	Motor Brushes	15-171-450-001		47	Roll Pin	00-671-171-379	
21	Charge Disc. Actuator	18-657-522-305		48	Spacer	18-657-523-278	
22	Bracket	18-657-522-304		50	Roll Pin	00-671-176-189	
23	Interlock Rod	18-657-522-269		51	Ratchet Assembly	18-390-202-501	
24	Roller Bearing	15-813-073-003		52	Cam Assembly	18-389-061-501	***
				53	Cam Assembly	18-389-061-502	

ITEM DESCRIPTION FOR FIGURES 3, 3A, 3B, 3C, 3D, 3E, 3F, 3G, 3H (CONTINUED)

ITEM	DESCRIPTION	PART NUMBER	USAGE	ITEM	DESCRIPTION	PART NUMBER	USAGE
54	Linkage Assembly (Consists of items 104 to 113)	18-469-116-501		103	Flywheel	18-392-067-001	
55	Motor & Closing Control (Consists of 115 to 149)	18-390-246-501		103A	Bumper	18-657-822-286	
56	Indicator Assembly	18-723-511-502		104	Link	71-118-258-504	
57	Bracket*	18-657-782-273		105	Link	18-657-510-524	
58	Pin	18-724-690-003		106	Roller	15-813-073-001	
60	Solenoid Trip Link Assembly	18-657-770-518		107	Pin	18-657-464-104	
62	Roll Pin	00-671-176-309		108	Spring	18-657-523-331	
63	Closing Coil*	15-171-339-001	48V DC	109	Washer	71-152-809-026	
63A		15-171-339-002	125V DC	110	Spring Holder	18-657-523-332	
63B		15-171-339-003	250V DC	111	Retaining Ring	00-673-165-075	
63C		15-171-339-004	120V AC	112	Spring Anchor	18-657-523-333	
63D		15-171-339-005	240V AC	113	Link	18-657-800-115	
63E		15-171-339-012	24V DC	114	Needle Bearing	00-813-119-813	
64	Trip Solenoid *	15-171-339-006	24V DC	115	Plate	18-723-641-001	
64A		15-171-339-007	48V DC	116	Terminal Block	00-857-036-012	
64B		15-171-339-008	125V DC	117	Closing Latch Check Switch	15-171-323-001	AC
64C		15-171-339-009	250V DC	118	Closing Latch Check Switch	15-171-323-002	DC
64D		15-171-339-010	120V AC	119	Actuator Arm	18-657-769-376	
64E		15-171-339-011	230V AC	120	Shield	18-657-468-090	
66	Strip	18-657-467-239		121	Extension Spring	18-657-523-061	
67	Screw	00-615-223-172		122	Screw	00-615-471-130	
68	Lockwasher	00-655-017-020		123	Washer	00-655-047-060	
69	Screw	00-615-245-222		124	Nut	14-147-052-002	
70	Lockwasher	00-655-017-022		125	Screw	00-617-247-470	
71	Screw	00-615-245-218		126	Nut	00-631-171-106	
72	Term. Block Supp. Bracket	18-657-524-111		127	Washer	00-655-017-032	
73	Term. Block with Hardware	00-857-036-012		128	Washer	00-651-007-230	
74	Screw	00-615-471-124		129	Screw	00-615-471-124	
75	Lockwasher	00-655-047-060		130	Screw	00-615-485-216	
80	Chain Link	00-831-349-065		131	Washer	00-655-017-022	
81	Pin	18-657-464-105		132	Washer	00-651-007-907	
82	Retaining Ring	00-673-165-075		133	Relay, Anti-Pump	00-871-797-107	125V DC
83	Washer	71-152-809-026		133A	Relay, Anti-Pump	00-871-797-108	250V DC
85	Stop	18-657-464-118		133B	Relay, Anti-Pump	00-871-797-109	48V DC
86	Washer	00-655-067-200		133C	Relay, Anti-Pump	00-871-797-115	24V DC
87	Thrust Washer	15-813-129-001		133D	Relay, Anti-Pump	15-171-405-002	120V AC
88	Grease (1 lb. container)	00-337-131-001		133E	Relay, Anti-Pump	15-171-405-001	230V AC
90	Spring Retainer	18-657-523-038		134	Washer	00-655-047-080	
91	Shaft	18-657-463-369		135	Screw	00-615-223-174	
92	Drive Block	18-657-942-303		136	Relay	25-134-022-502	
93	Bearing Block	18-657-463-370		137	Capacitor Trip Device*	71-301-550-502	
94	Spring	15-171-833-001		138	Motor Cutoff Switch All Except 250 DC	18-657-514-567	
96	Retaining Ring	00-673-165-100		138A	Motor Cutoff Switch 250V DC Only	18-724-271-502	
97	Retaining Ring	00-673-165-087		139	Washer	00-651-007-059	
98	Shim	18-657-784-007		140	Nut	00-631-109-106	
99	Universal Joint	18-657-768-261		141	Eyelet	00-691-651-003	
100	Roll Pin	00-671-176-187		142	Washer Rd.	00-651-007-123	
101	Washer	71-114-297-001		143	Screw	00-615-245-375	
102	Screw	00-615-114-556		144	Elastic Nut	00-633-103-216	
				145	Screw	00-615-471-174	
				146	Lockwasher	00-655-047-080	
				147	Screw	18-657-780-193	
				148	Lockwasher	00-655-017-018	
				149	Spring	15-171-366-007	

NOTES:

- *Give Breaker S/N and Control Voltage when Ordering Item
- **Must Be Supplied in Pairs
- ***Must Be Supplied as a Matched Set