



INSTRUCTIONS

GEK-19797B

Supplement to GEK-19795
Supersedes GEK-19797A

OIL-BLAST CIRCUIT BREAKERS

STANDARD TYPES

FKA 38 -22000-6Y 38.0KV, 22000 INTERRUPTING AMPERES (NOMINAL 1500 MVA)
FKA 48.3-17000-6Y 48.3KV, 17000 INTERRUPTING AMPERES (NOMINAL 1500 MVA)
FKA 48.3-29000-6Y 48.3KV, 29000 INTERRUPTING AMPERES (NOMINAL 2500 MVA)

1200 CONTINUOUS AMPERES

CAPACITOR SWITCHING TYPES

FKA 38 -22000-6RY 38.0KV, 22000 INTERRUPTING AMPERES 30000 KVAR
FKA 48.3-17000-6RY 48.3KV, 17000 INTERRUPTING AMPERES 27000 KVAR
FKA-48.3-29000-6RY 48.3KV, 29000 INTERRUPTING AMPERES 27000 KVAR

1200 CONTINUOUS AMPERES

All instructions pertaining to the installation, operation and maintenance of the circuit breaker with the exception of the circuit breaker bushings, minor details of the interrupter, lift rod guide and the list of replacement parts are fully explained in the instruction book, GEK-19795, a copy of which is included in this book.

When assembling the interrupter to the bushings after maintaining the breaker the interrupters will require realignment if the upper adapter has been removed from the bushing or if the lower adapter has been removed from the upper adapter. In addition to the method of aligning the interrupter explained in GEK 19795 the following should be checked. A line drawn exactly through the center of the two exhaust ports of an interrupter should be at a 60-degree angle to a line drawn exactly

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the General Electric Company.

To the extent required the products described herein meet applicable ANSI, IEEE and NEMA standards; but no such assurance is given with respect to local codes and ordinances because they vary greatly.

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through the center of the two exhaust ports of the interrupter pointing toward the breaker tank wall. Another way of explaining this is by drawing a straight line through the center phase lift rod and through the center of the two interrupters. This line should then be exactly between the two exhaust ports of each interrupter when the exhaust ports of the interrupters face toward the breaker tank. See Fig. 21 of GEK 19795.

The adjustments and checks as found in the instruction book, GEK 19795, are the same for these breakers except for the following:

FKA-38 Breaker: There are no exceptions of adjustments or checks.

FKA-48.3 Breaker: The buffer adjustment, opening spring and follow-through spring setting, closing buffer, operating curves and opening speeds of the 72.5 kV breaker of the instruction book, GEK 19795, should be used in place of the adjustments and checks of the 48.3 kV breaker as described in the instruction book, GEK-19795.

CAPACITOR SWITCHING BREAKER

The capacitor switching ability of these capacitor switching breakers is listed in this tabulation:

Breaker	Rated Capacitor Switching Single Bank Only (Capacitor Bank Nameplate Rating) (KVAR)	
	Grounded Bank	Ungrounded Bank
FKA 38.0-22000-6RY	30,000	30,000
FKA 48.3-17000-6RY	27,000	27,000
FKA 48.3-29000-6RY	27,000	27,000

With the breaker in the partially open position the resistance of the grading resistors must be checked. This can be done by adjusting the stroke of the breaker so that the contact rod (36), Fig. 23 of instruction book GEK-19795, is making contact with the resistor contact finger (25) but not making contact with the finger cluster (18). Measure the contact rod to the lower adapter (7) for the resistance value. The resistance of the resistor (8), which surrounds the fiber glass interrupter tube (10) is as follows:

Breaker	Resistance Per Interrupter in Ohms
FKA 38.0-22000-6R	83 Ohms
FKA 48.3-17000-6R	150 Ohms
FKA 48.3-29000-6R	150 Ohms

The resistance must be +5 percent -10 percent of the stated value per interrupter but must be within ± 5 percent of any one phase.

The contact adjustment, contact rod clearance, and the remainder of the checks are identical with the adjustments and checks of the standard interrupter.

REPLACEMENT PARTS

The list of recommended replacement parts in GEK 19756 should be disregarded and the following list of recommended replacement parts should be substituted for it.

It is recommended that sufficient replacement parts be carried in stock to enable prompt replacement of worn, broken or damaged parts. A stock of such parts minimizes service interruptions caused by breakdowns and saves time and expense. When continuous operation is a primary consideration more renewal parts should be carried, the amount depending upon the severity of the service and the time required to secure replacements.

The following is the list of replacement parts. This list includes both recommended renewal parts as designated by the asterisk (*) as well as a listing of parts ordered most frequently. The actual drawing number as well as the figure and part numbers in this book are given. Where parts are required that do not appear on this list, and hence no drawing number is available, the instruction book number as well as the figure and part number should be given on the purchase order.

Replacement parts may not always be identical to the original parts since improvements are made from time to time. The parts which are furnished, however, will be interchangeable. All "O" rings and "O" ring gaskets have a limited shelf life of three years.

When ordering replacement parts, address the nearest Sales Office of the General Electric Company, giving the complete data shown on the breaker nameplate, such as serial number, type and rating of the breaker. The breaker nameplate is mounted on the inside of the front door of the operating mechanism compartment. Also, furnish a complete description of each part as outlined above, the quantity required and, if possible, the number of the requisition on which the breaker was originally furnished.

Fig. No.	Ref. No.	Quantity per Oil-blast Circuit Breaker						Catalog No.	Description
		FKA 38 22000		FKA 48.3 17000		FKA 48.3 29000			
		-6Y	-6RY	-6Y	-6RY	-6Y	-6RY		
4	*2	1	1	1	1	1	1	006370470P020	Oil Gage Glass Tube
4	*2	2	2	2	2	2	2	006440357P001	Gasket Oil Gage Upper and Lower
4	*3	6	6	-	-	-	-	7B532	Bushing (TBI)
4	*3	-	-	6	6	6	6	7B542	Bushing (TBI)
4	*3	6	6	-	-	-	-	7B534	Bushing (TBI) High Creep
4	*3	-	-	6	6	6	6	7B920	Bushing (TBI) High Creep
4	*10	1	1	-	-	-	-	0173A9024P004	Gasket - Tank
4	*10	-	-	1	1	1	1	0173A9024P005	Gasket - Tank
4	19	1	1	-	-	-	-	0153B5271G001	Tank Liner
4	19	-	-	1	1	1	1	0809B0203G001	Tank Liner
4	21	3	3	-	-	-	-	0155C09049P010	Lift Rod
4	21	-	-	3	3	3	3	0155C09049P012	Lift Rod
4	*22	6	-	6	-	6	-	0158A8776P002	Contact Rod
4	*22	-	6	-	6	-	6	0103A6272P011	Contact Rod
4	25	1	1	1	1	1	1	0368A0827P001	Drain Valve (1 Inch Globe)
4	30	2	-	-	-	-	-	0123B1903G011	Blade and Rod Assembly Complete - Phases 1 and 3
4	30	1	-	-	-	-	-	0123B1903G012	Blade and Rod Assembly Complete - Phase 2
4	30	-	2	-	-	-	-	0123B1903G015	Blade and Rod Assembly Complete - Phases 1 and 3
4	30	-	1	-	-	-	-	0123B1903G016	Blade and Rod Assembly Complete - Phase 2
4	30	-	-	2	-	2	-	0123B1903G021	Blade and Rod Assembly Complete - Phases 1 and 3
4	30	-	-	1	-	1	-	0123B1903G022	Blade and Rod Assembly Complete - Phase 2
4	30	-	-	-	2	-	2	0123B1903G023	Blade and Rod Assembly Complete - Phases 1 and 3
4	30	-	-	-	1	-	1	0123B1903G024	Blade and Rod Assembly Complete - Phase 2
6	9	6	6	6	6	6	6	0181V0744P001	Opening Dashpot Adjusting Nuts
6	10	3	3	3	3	3	3	0178L0271G001	Opening Dashpot
12	Ø	1	1	-	-	-	-	0104D5897G001	Lift Rod Guide Support Assembly Complete
12	Ø	-	-	1	1	1	1	0104D5897G002	Lift Rod Guide Support Assembly Complete
12	5	2	2	2	2	2	2	0193A2771P002	Lift Rod Guide Diagonal Brace
12	7	2	2	-	-	-	-	0399A0239 P001	Lift Rod Guide Vertical Support
12	7	-	-	2	2	2	2	0399A0239.P007	Lift Rod Guide Vertical Support
12	8	2	2	2	2	2	2	0103A3370P001	Lift Rod Guide Horizontal Support
14	*Ø	4	4	4	4	4	4	0183V0711 P001	Indicator Window - Gasket
14	*2	1	1	1	1	1	1	0399A0298P001	Gasket - Front Cover
14	*17	4	4	4	4	4	4	0178V0727P001	Indicator Window - Glass (Open & Closed)
14	*12	1	1	1	1	1	1	0399A0298P002	Gasket - Top Cover
14	28	3	3	3	3	3	3	006076406P567	Lever Pin (Steel)
14	32	1	1	1	1	1	1	183V0713P002	Upper Crank Link Pin (Steel)
14	33	1	1	1	1	1	1	183V0713P001	Front Link and Guide Crank Pin (Steel)
14	34	1	1	1	1	1	1	183V0713P002	Guide Crank Pin (Steel)
14	35	1	1	1	1	1	1	183V0710P001	Vertical Operating Rod Coupling Pin (Steel)
14	36	1	1	1	1	1	1	103A2124P018	Lower Front Crank Link Pin (Steel)
14	37	1	1	1	1	1	1	183V0713P004	Horizontal Operating Rod Rear Coupling Pin (Steel)
14	38	3	3	3	3	3	3	183V0713P003	Beam Pin (Steel)
14	39	3	3	3	3	3	3	183V0740P001	Lift Rod Coupling Pin (Steel)
14	40	3	3	3	3	3	3	103A2123P021	Lever and Beam Pin (Steel)
14	41	1	1	1	1	1	1	183V0713P004	Connecting Link Pin (Steel)
14	42	1	1	1	1	1	1	183V0713P004	Opening Spring Coupling Pin (Steel)
15	Ø	2	2	2	2	2	2	0269A2086 P001	Gasket - Upper Portion of BCT Conduit
15	Ø	2	2	2	2	2	2	0161A6080 P003	"O" Ring - Lower Portion of BCT Conduit
16 & 17	5	3	3	3	3	3	3	0397A0963P009	"O" Ring - Buffer Cover Bolt
16 & 17	7	3	3	3	3	3	3	0181V0113P001	Gasket - Buffer Cover
17	14	-	-	6	6	6	6	0181V0112P002	Washer - 1/8 Inch Thick
21	All	-	-	6	-	6	-	0214X0286G033	Interrupter Complete
21	All	6	-	-	-	-	-	0214X0286G031	Interrupter Complete
21	1	6	-	-	-	-	-	0991C0271P002	Upper Adapter
21	1	-	-	6	-	6	-	0991C0271P004	Upper Adapter
21	5	6	-	6	-	6	-	0103A6957P007	Upper Insulation Spacer
21	6	48	-	48	-	48	-	0153B5228P001	Flexible Connectors
21	7	48	-	48	-	48	-	006076150P001	Contact Finger Spring
21	8	6	-	6	-	6	-	0176V0880P004	Spring Cage
21	*11	6	-	6	-	6	-	0195X0154G001	Contact Finger Assembly (Finger Cluster)
21	*12	6	-	6	-	6	-	0267C0907G002	Baffle Stack
21	*20	6	-	6	-	6	-	0158A9646P001	Contact Stop
21	21	6	-	6	-	6	-	0382A0163P003	Spring Retainer
21	25	6	-	6	-	6	-	0103A6957P007	Intermediate Insulation Spacer
21	Ø	6	-	6	-	6	-	0123B1983G005	Interrupter Tube and Studs Assembled

Fig. No.	Ref. No.	Quantity per Oil-blast Circuit Breaker						Catalog No.	Description
		FKA 38		FKA 48.3		FKA 48.3			
		22000	-6Y -6RY	17000	-6Y -6RY	29000	-6Y -6RY		
22	All	-	6	-	-	-	-	0188B9267G001	Interrupter Complete
22	All	-	-	-	6	-	6	0188B9267G002	Interrupter Complete
22	1	-	6	-	-	-	-	0991C0271P002	Upper Adapter
22	1	-	-	-	6	-	6	0991C0271P004	Upper Adapter
22	8	-	6	-	-	-	-	0153B5200G003	Resistor and Resistor Wire Support (83 Ohms)
22	8	-	-	-	6	-	6	0153B5200G002	Resistor and Resistor Wire Support (150 Ohms)
22	9	-	6	-	6	-	6	0143B7630P001	Resistor Cover
22	12	-	48	-	48	-	48	0153B5228P001	Flexible Connectors
22	13	-	6	-	6	-	6	0176V0880P004	Spring Cage
22	14	-	48	-	48	-	48	006076150P001	Contact Finger Spring
22	15	-	6	-	6	-	6	0382A0163P003	Spring Retainer
22	*18	-	6	-	6	-	6	0195X0154G001	Contact Finger Assembly (Finger Cluster)
22	*20	-	6	-	6	-	6	0267C0907G002	Baffle Stack
22	22	-	18	-	18	-	18	006551729P001	Resistor Contact Finger Spring
22	23	-	18	-	18	-	18	006477415P009	Resistor Finger Pin
22	25	-	18	-	18	-	18	009924682P002	Resistor Contact Finger
22	35	-	6	-	6	-	6	0158A9646P001	Contact Stop
22	Ø	-	6	-	6	-	6	0123B1983G006	Interrupter Tube and Studs Assembled
22	Ø	-	6	-	6	-	6	0214X0873G002	Resistor Complete (With Resistor, Cover, Wire-wound Tube, Hardware and Upper and Lower Leads)
22	Ø	-	-	-	6	-	6	0214X0873G003	Resistor Complete (With Resistor, Cover, Wire-wound Tube, Hardware and Upper and Lower Leads)
28	1	2	2	2	2	2	2	006370567P009	Top Front Crank Link Bushing (Textolite)
28	2	2	2	2	2	2	2	006370567P067	Front Link Bushing (Textolite)
28	3	2	2	2	2	2	2	006370567P063	Horizontal Operating Rod Front Coupling Bushing (Textolite)
28	4	2	2	2	2	2	2	006370567P009	Guide Crank Bushing (Textolite)
28	5	2	2	2	2	2	2	006370567P015	Center Front Crank Link Bushing (Textolite)
28	6	2	2	2	2	2	2	006370567P009	Bottom Front Crank Link Bushing (Textolite)
28	7	2	2	2	2	2	2	006370567P063	Front Connecting Link Bushing (Textolite)
28	8	2	2	2	2	2	2	006370567P063	Horizontal Operating Rod Rear Coupling Bushing (Textolite)
28	9	6	6	6	6	6	6	006370566P059	Beam Bushing (Textolite)
28	10	6	6	6	6	6	6	006370566P061	Lever Bushing (Top) (Textolite)
28	11	6	6	6	6	6	6	006370566P061	Lever Bushing (Center) (Textolite)
28	12	6	6	6	6	6	6	182V0294P001	Lever Roller (Steel)
28	13	2	2	2	2	2	2	006370567P063	Center Connecting Link Bushing (Textolite)
28	14	2	2	2	2	2	2	006370567P063	Rear Connecting Link Bushing (Textolite)
28	15	2	2	2	2	2	2	006370567P063	Spring Coupling Bushing (Textolite)
30	13	6	6	-	-	-	-	0138A7102P004	Gasket - Bushing to Dome
30	13	-	-	6	6	6	6	0138A7102P005	Gasket - Bushing to Dome
30	14	6	6	-	-	-	-	0399A0231P001	Gasket Retainer
30	14	-	-	6	6	6	6	0399A0231P002	Gasket Retainer

Ø Not Numbered
 *Recommended Renewal Part

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