

RENEWAL PARTS

GEF-4150G  
Supersedes GEF-4150F

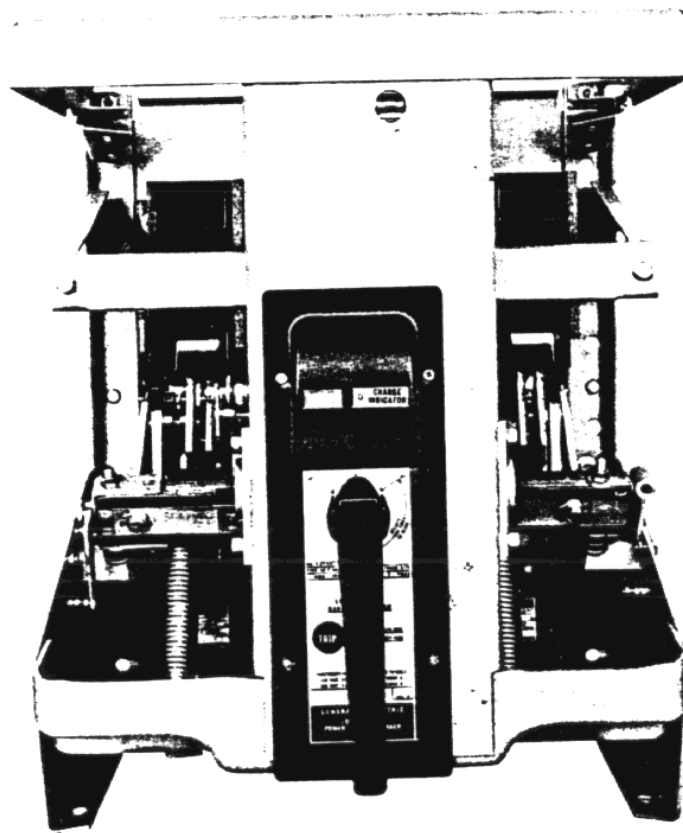


## POWER CIRCUIT BREAKERS

TYPES AK-2/3/2A/3A-50,  
AKU-2/3/2A/3A-50,  
AKT-2/3/2A/3A-50

### ORDERING INSTRUCTIONS

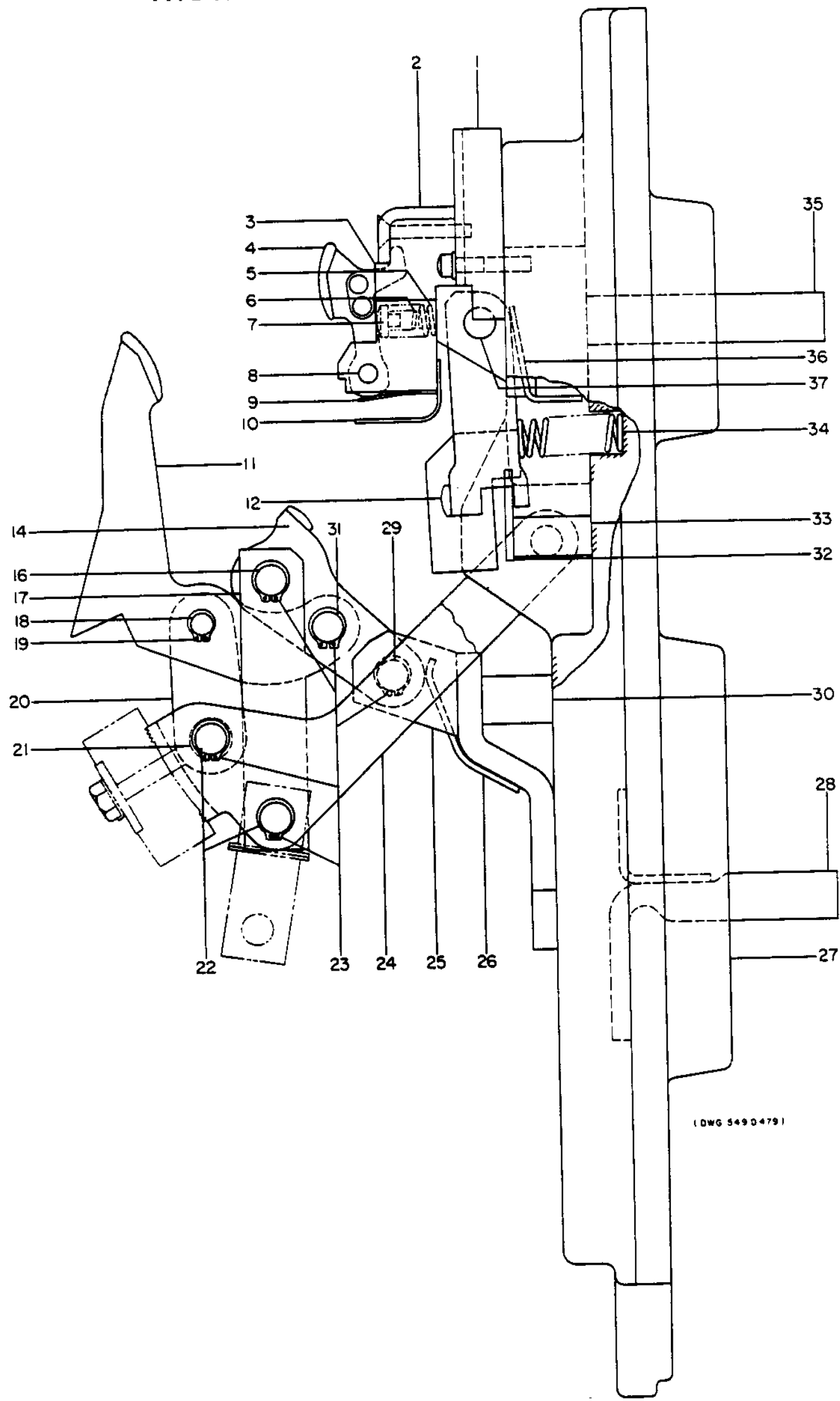
1. Always specify complete nameplate data of the breaker.
2. Specify the quantity, catalog number (if listed), reference number (if listed), description, and this bulletin number.
3. Standard hardware such as screws, bolts, nuts, washers, etc., is not listed in this bulletin. Such items should be purchased locally.
4. For prices, refer to the nearest office of the General Electric Company.



Manual breaker, Type AK-2-50

GENERAL  ELECTRIC

TYPE AK POWER CIRCUIT BREAKERS



(DWG 5490479)

Fig. 1. Pole unit

# TYPE AK POWER CIRCUIT BREAKERS

GEF-4150

| Fig. No. | Ref. No. | No. Required per Pole † |    |       |          |    |       |         |    |       |          |    |       | Cat. No.   | Description                                                                  |
|----------|----------|-------------------------|----|-------|----------|----|-------|---------|----|-------|----------|----|-------|------------|------------------------------------------------------------------------------|
|          |          | AK-2-50                 |    |       | AK-2A-50 |    |       | AK-3-50 |    |       | AK-3A-50 |    |       |            |                                                                              |
|          |          | Man.                    |    | Elec. | Man.     |    | Elec. | Man.    |    | Elec. | Man.     |    | Elec. |            |                                                                              |
|          |          | †                       | -1 | -2    | †        | -1 | -2    | †       | †  | †     | †        | †  | †     |            |                                                                              |
| 1        | 1        | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 371A208P1  | Spacer                                                                       |
| 1        | 2        | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 9921587P1  | Stop. AK-50 AC                                                               |
| 1        | 2        | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 449A994P3  | Stop. AK50 DC, AKU-50, AKT-50                                                |
| 1        | 3        | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 117A512P1  | Block, AK-50 AC                                                              |
| 1        | 3        | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 452A542P1  | Block, AK50 DC, AKU-50, AKT-50                                               |
| 1        | *4       | -                       | -  | -     | 2        | -  | -     | -       | -  | -     | -        | -  | -     | 295B408G1  | Stationary arcing contact, AK-50 AC                                          |
| 1        | *4       | -                       | -  | -     | 3        | -  | -     | -       | -  | -     | -        | -  | -     | 295B408G1  | Stationary arcing contact, AK-50 DC, AKU-50, AKT-50                          |
| 1        | *4       | 2                       | 2  | 2     | -        | 2  | 2     | 2       | 2  | 2     | 2        | 2  | 2     | 295B408G3  | Stationary arcing contact, AK-50 AC                                          |
| 1        | *4       | 3                       | 3  | 3     | -        | 3  | 3     | 3       | 3  | 3     | 3        | 3  | 3     | 295B408G3  | Stationary arcing contact, AK-50 DC, AKU-50, AKT-50                          |
| 1        | *5       | 2                       | 2  | 2     | 2        | 2  | 2     | 2       | 2  | 2     | 2        | 2  | 2     | 6509858P1  | Spring for stationary arcing contacts, (outer) AK-50 AC                      |
| 1        | *5       | 3                       | 3  | 3     | 3        | 3  | 3     | 3       | 3  | 3     | 3        | 3  | 3     | 6509858P1  | Spring for stationary arcing contacts, (outer) AK50 DC, AKU-50, AKT-50       |
| 1        | *6       | 2                       | 2  | 2     | 2        | 2  | 2     | 2       | 2  | 2     | 2        | 2  | 2     | 6509859P1  | Spring for stationary arcing contacts, (inner) AK-50 AC                      |
| 1        | *6       | 3                       | 3  | 3     | 3        | 3  | 3     | 3       | 3  | 3     | 3        | 3  | 3     | 6509859P1  | Spring for stationary arcing contacts, (inner) AK-50 DC, AKU-50, AKT-50      |
| 1        | 7        | 2                       | 2  | 2     | 2        | 2  | 2     | 2       | 2  | 2     | 2        | 2  | 2     | 6447046P1  | Spring guide for stationary arcing contact springs, AK-50 AC                 |
| 1        | 7        | 3                       | 3  | 3     | 3        | 3  | 3     | 3       | 3  | 3     | 3        | 3  | 3     | 6447046P1  | Spring guide for stationary arcing contact springs, AK-50 DC, AKU-50, AKT-50 |
| 1        | 8        | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 6404793P3  | Pivot pin for stationary arcing contacts, AK-50 AC                           |
| 1        | 8        | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 6404793P3  | Pivot pin for stationary arcing contacts, AK-50 DC, AKU-50, AKT-50           |
| 1        | 9        | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 433A319P2  | Leaf spring for stationary arcing contacts, AK-50 AC                         |
| 1        | 9        | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 433A319P1  | Leaf spring for stationary arcing contacts, AK-50 DC, AKU-50, AKT-50         |
| 1        | 10       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 459A373P3  | Insulation for stationary arcing contacts, AK-50 AC                          |
| 1        | 10       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 459A373P1  | Insulation for stationary arcing contacts, AK-50 DC, AKU-50, AKT-50          |
| 1        | *11      | 2                       | 2  | 2     | 2        | 2  | 2     | 2       | 2  | 2     | 2        | 2  | 2     | 9921572G2  | Moving arcing contact, AK-50 AC                                              |
| 1        | *11      | 3                       | 3  | 3     | 3        | 3  | 3     | 3       | 3  | 3     | 3        | -  | -     | 9921572G2  | Moving arcing contact, AK-50 DC, AKU-50, AKT-50                              |
| 1        | *12      | 3                       | 3  | 3     | 3        | 3  | 3     | 3       | 3  | 3     | 3        | 3  | 3     | 293B221G1  | Stationary main contact                                                      |
| 2        | *13      | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 459A385G1  | Stationary intermediate contact (includes barrier)                           |
| 1        | *14      | 3                       | 3  | 3     | 3        | 3  | 3     | 3       | 3  | 3     | 3        | 3  | 3     | 293B220G7  | Moving main contacts                                                         |
| 2        | *15      | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 293B220G4  | Moving intermediate contact                                                  |
| 1        | 16       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 452A528P1  | Pin for movable main contact                                                 |
| 1        | 17       | 2                       | 2  | 2     | 2        | 2  | 2     | 2       | 2  | 2     | 2        | 2  | 2     | 6404784P4  | Link for movable main contact                                                |
| 1        | 18       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 6447153P3  | Pin for movable arcing contact link, AK-50 AC                                |
| 1        | 18       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 6447153P1  | Pin for movable arcing contact link, AK-50 DC, AKU-50, AKT-50                |
| 1        | 19       | 2                       | 2  | 2     | 2        | 2  | 2     | 2       | 2  | 2     | 2        | 2  | 2     | 394A133P9  | Retainer                                                                     |
| 1        | 20       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 275B975P1  | Link for movable arcing contact, AK-50 AC                                    |
| 1        | 20       | 2                       | 2  | 2     | 2        | 2  | 2     | 2       | 2  | 2     | 2        | 2  | 2     | 275B975P1  | Link for movable arcing contact, AK-50 DC, AKU-50, AKT-50                    |
| 1        | 21       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 6447741P1  | Insulating tube                                                              |
| 1        | 22       | 2                       | 2  | 2     | 2        | 2  | 2     | 2       | 2  | 2     | 2        | 2  | 2     | 6203981P1  | Pin for side link                                                            |
| 1        | 23       | 10                      | 10 | 10    | 10       | 10 | 10    | 10      | 10 | 10    | 10       | 10 | 10    | 394A133P10 | Retainer                                                                     |
| 1        | 24       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 457A624G1  | Side link, right                                                             |
| 1        | 24       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 457A624G2  | Side link, left                                                              |
| 1        | 25       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 452A569G2  | Terminal                                                                     |
| 1        | 26       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 452A529P1  | Leaf spring for movable main contacts                                        |
| 1        | 27       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 6414314P2  | Pole unit base                                                               |
| 1        | 28       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 452A564G1  | Lower stud                                                                   |
| 1        | 29       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 6203981P9  | Pivot pin for movable main contacts                                          |
| 1        | 30       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 293B287P3  | Spacer for terminal                                                          |
| 1        | 31       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 6203981P13 | Pivot pin for movable arcing contact                                         |
| 1        | 32       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 453A116P1  | Stop for stationary main contacts                                            |
| 1        | 33       | -                       | -  | -     | 1        | -  | -     | -       | -  | -     | -        | -  | -     | 453A116P2  | Spacer for stationary main contact stop                                      |
| 1        | 33       | 1                       | 1  | 1     | -        | 1  | 1     | 1       | 1  | 1     | 1        | -  | -     | 453A116P3  | Spacer for stationary main contact stop                                      |
| 1        | 34       | -                       | -  | -     | 4        | -  | -     | -       | -  | -     | -        | 4  | -     | 6509893P1  | Spring for stationary main contacts                                          |
| 1        | 34       | 4                       | 4  | 4     | -        | 4  | 4     | 4       | 4  | 4     | -        | 4  | 4     | 412A0287P1 | Spring for stationary main contacts                                          |
| 1        | 35       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 293B240G1  | Upper stud, AK-50 AC                                                         |
| 1        | 35       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 293B240G2  | Upper stud, AK-50 DC, AKU-50, AKT-50                                         |
| 1        | 36       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 449A995P1  | Leaf spring for stationary main contacts                                     |
| 1        | 37       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 6447734P2  | Pivot pin for stationary main contacts                                       |
| 3        | 38       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 238D674G1  | Arc quencher, AK-50 AC                                                       |
| 3        | 38       | 1                       | 1  | 1     | 1        | 1  | 1     | 1       | 1  | 1     | 1        | 1  | 1     | 238D674G2  | Arc quencher, AK-50 DC, AKU-50, AKT-50                                       |

† To determine quantity required per breaker multiply by number of poles (2, 3 or 4).  
‡ Original breaker had no suffix letter or numeral.  
\* Recommended for stock for normal maintenance.

TYPE AK POWER CIRCUIT BREAKERS

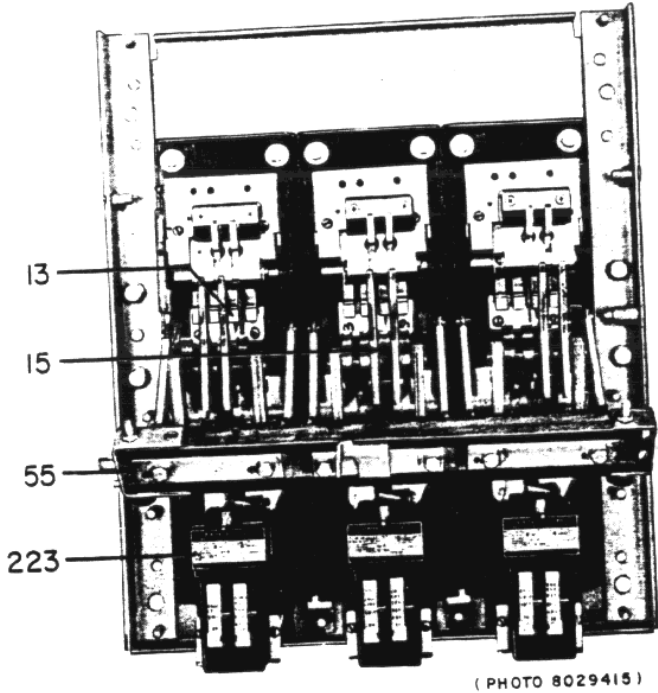


Fig. 2. Back frame assembly

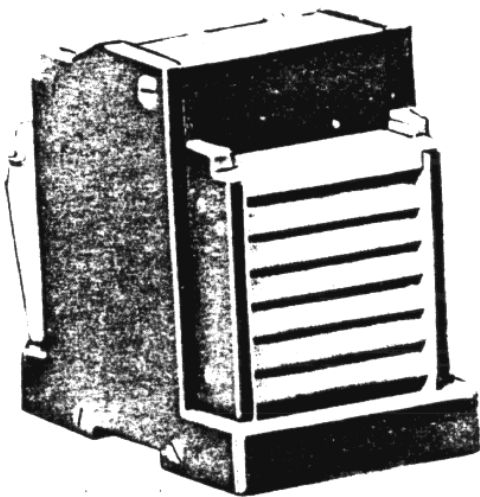


Fig. 3. Arc quencher (Ref. No. 38 )

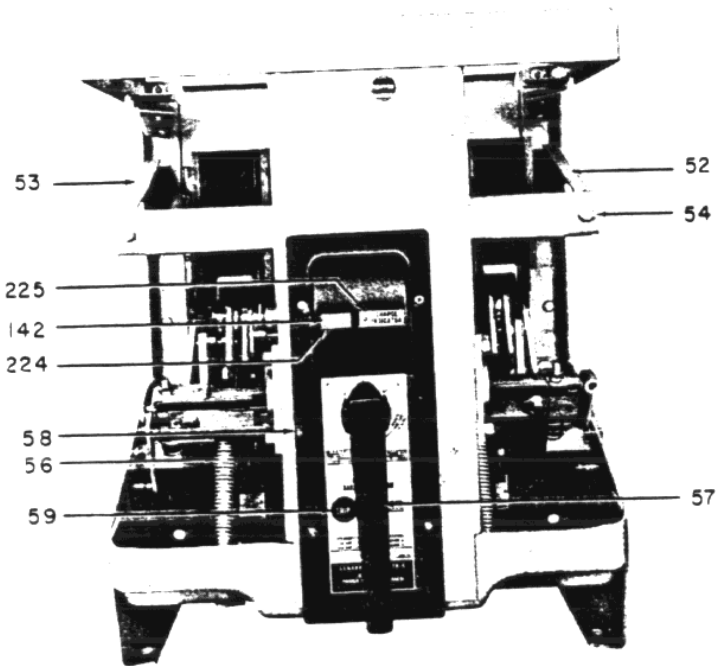


Fig. 4. AK-2-50 manual

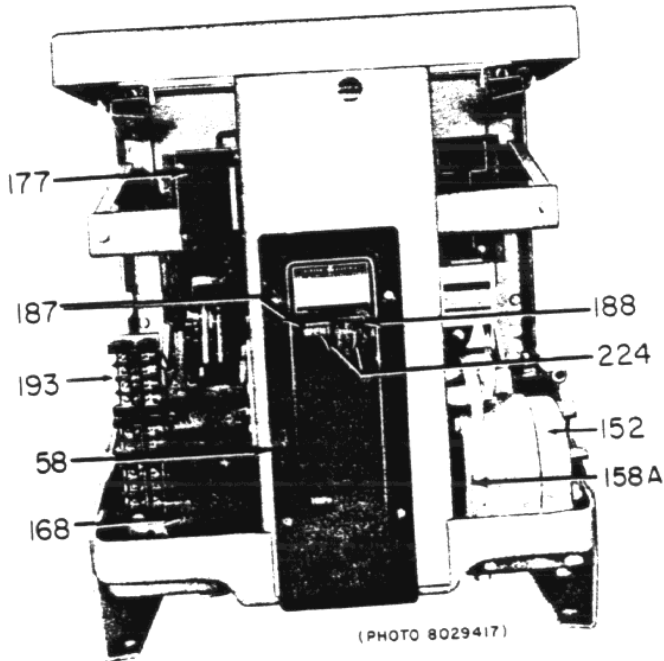


Fig. 5. AK-2-50 electrical

TYPE AK POWER CIRCUIT BREAKERS

GEF-4150

| Fig. No. | Ref. No. | No. Required per Pole † |    |    |       |    |    |          |       |         |       |          |       | Cat. No.   | Description                                          |
|----------|----------|-------------------------|----|----|-------|----|----|----------|-------|---------|-------|----------|-------|------------|------------------------------------------------------|
|          |          | AK-2-50                 |    |    |       |    |    | AK-2A-50 |       | AK-3-50 |       | AK-3A-50 |       |            |                                                      |
|          |          | Man.                    |    |    | Elec. |    |    | Man.     | Elec. | Man.    | Elec. | Man.     | Elec. |            |                                                      |
|          |          | †                       | -1 | -2 | †     | -1 | -2 | †        | †     | †       | †     | †        | †     |            |                                                      |
| *        | 51       | 2                       | 2  | 2  | 2     | 2  | 2  | 2        | 2     | 2       | 2     | 2        | 2     | 6414763P1  | Phase barrier                                        |
| 4        | 52       | 1                       | 1  | 1  | 1     | 1  | 1  | -        | -     | -       | -     | -        | -     | 372A275G1  | Lifting bracket, right (pearl gray)                  |
| 4        | 52       | 1                       | 1  | 1  | 1     | 1  | 1  | -        | -     | 1       | 1     | -        | -     | 372A275G3  | Lifting bracket, right (sand gray)                   |
| 4        | 53       | 1                       | 1  | 1  | 1     | 1  | 1  | -        | -     | -       | -     | -        | -     | 372A275G2  | Lifting bracket, left (pearl gray)                   |
| 4        | 53       | 1                       | 1  | 1  | 1     | 1  | 1  | -        | -     | 1       | 1     | -        | -     | 372A275G4  | Lifting bracket, left (sand gray)                    |
| 4        | 54       | 1                       | 1  | 1  | 1     | 1  | 1  | -        | -     | -       | -     | -        | -     | 9921630P1  | Arc quencher tie bar (pearl gray)                    |
| 4        | 54       | 1                       | 1  | 1  | 1     | 1  | 1  | -        | -     | 1       | 1     | -        | -     | 9921630P3  | Arc quencher tie bar (sand gray)                     |
| 4        | 54       | -                       | -  | -  | -     | -  | -  | 1        | 1     | -       | -     | 1        | 1     | 9921630P2  | Arc quencher tie bar                                 |
| 2        | 55       | 1                       | 1  | 1  | 1     | 1  | 1  | 1        | 1     | 1       | 1     | 1        | 1     | 267B101P2  | Cross bar                                            |
| 4        | 56       | 2                       | 2  | 2  | 2     | 2  | 2  | 2        | 2     | 2       | 2     | 2        | 2     | 6509914P1  | Opening spring, AC (not used on AKU or AKT)          |
| 4        | 56       | 2                       | 2  | 2  | 2     | 2  | 2  | 2        | 2     | 2       | 2     | 2        | 2     | 6509813P1  | Opening spring, AC (AKU or AKT)                      |
| 4        | 56       | 2                       | 2  | 2  | 2     | 2  | 2  | 2        | 2     | -       | -     | -        | -     | 6509813P1  | Opening spring, DC                                   |
| 4        | 57       | 1                       | 1  | 1  | -     | -  | -  | -        | -     | -       | -     | -        | -     | 6548046P3  | Handle (black)                                       |
| 17       | 57       | -                       | -  | 1  | -     | -  | -  | 1        | -     | -       | -     | 1        | -     | 669D0807P2 | Handle (gray)                                        |
| 4        | 58       | 1                       | 1  | 1  | -     | -  | -  | -        | -     | -       | -     | -        | -     | 698C997P1  | Front escutcheon (black)                             |
| 5        | 58       | -                       | -  | -  | 1     | 1  | 1  | -        | -     | -       | -     | -        | -     | 275B997P2  | Front escutcheon (w/o closing switch, black)         |
| *        | 58       | -                       | -  | -  | 1     | 1  | 1  | -        | -     | -       | 1     | -        | -     | 805B975P1  | Front escutcheon (with closing switch black)         |
| *        | 58       | -                       | -  | 1  | -     | -  | -  | 1        | -     | -       | -     | 1        | -     | 698C997P5  | Front escutcheon (blue)                              |
| *        | 58       | -                       | -  | -  | -     | -  | 1  | -        | 1     | -       | -     | -        | 1     | 805B975P2  | Front escutcheon (blue)                              |
| 4        | 59       | 1                       | 1  | 1  | 1     | 1  | 1  | 1        | 1     | 1       | 1     | 1        | 1     | 411A904G5  | Trip button and rod assembly                         |
| *        | 60       | 1                       | 1  | 1  | 1     | 1  | 1  | 1        | 1     | 1       | 1     | 1        | 1     | 412A139    | Trip button spring                                   |
| 7        | 61       | 1                       | 1  | 1  | 1     | 1  | 1  | 1        | 1     | 1       | 1     | 1        | 1     | 6203939P3  | Hand, trip paddle                                    |
| *        | 62       | 1                       | 1  | 1  | 1     | 1  | 1  | 1        | 1     | 1       | 1     | 1        | 1     | 192A9567P1 | Clamp                                                |
| 7        | 63       | 2                       | 2  | 2  | 2     | 2  | 2  | 2        | 2     | 2       | 2     | 2        | 2     | 276B250P1  | Trip shaft (outside)                                 |
| 7        | 64       | 2                       | 2  | 2  | 2     | 2  | 2  | 2        | 2     | 2       | 2     | 2        | 2     | 174V536P1  | Coupling                                             |
| 7        | 65       | 2                       | 2  | 2  | 2     | 2  | 2  | 2        | 2     | 2       | 2     | 2        | 2     | 127A6493P2 | Dowel pin                                            |
| 8        | 66       | 1                       | 1  | 1  | 1     | 1  | 1  | 1        | 1     | 1       | 1     | 1        | 1     | 276B250P2  | Trip shaft (center)                                  |
| *        | 67       | 2                       | 2  | 2  | 2     | 2  | 2  | 2        | 2     | 2       | 2     | 2        | 2     | 394A133P1  | Retainer                                             |
| *        | 68       | 4                       | 4  | 4  | 4     | 4  | 4  | 4        | 4     | 4       | 4     | 4        | 4     | 377A871P5  | Trip shaft bearing (side sheets and mechanism frame) |
| *        | 69       | 2                       | 2  | 2  | 2     | 2  | 2  | 2        | 2     | 2       | 2     | 2        | 2     | 394A133P16 | Retainer                                             |
| 6        | 74       | 1                       | 1  | 1  | 1     | 1  | 1  | 1        | 1     | 1       | 1     | 1        | 1     | 174V531P1  | Pin                                                  |
| 6        | 75       | 6                       | 6  | 6  | 6     | 6  | 6  | 6        | 6     | 6       | 6     | 6        | 6     | 394A133P10 | Retainer                                             |

† To determine quantity required per breaker multiply by number of poles (2 or 3).

\* Not shown.

† Original breaker had no suffix letter or numeral.

FIG. NO. 5, REF. NO. 152 - GEAR BOXES

177L316 and 177L362 gear boxes are no longer manufactured for AK-50, 75, 100 breakers. A modification of the AKR design electrical closing assembly is available to replace these units. The replacement unit will include a new closing motor. Select replacement for 175L316G1 or G2 gear box from Column 1. Replacements for 177L362G2 should be selected from Columns 1 to 4, for G3 select from Columns 5 to 8.

| REPLACEMENT KIT CAT. NO. 343L761 (Select Group Number Below) |       |                         |              |           |               |                  |          |           |               |
|--------------------------------------------------------------|-------|-------------------------|--------------|-----------|---------------|------------------|----------|-----------|---------------|
|                                                              |       | Conventional Close Type |              |           |               | Quick Close Type |          |           |               |
| Column                                                       |       | 1                       | 2            | 3         | 4             | 5                | 6        | 7         | 8             |
| Volts                                                        | Hertz | AK-1-50, 75, 100        | AK-2A-50     | AKT-2A-50 | AK-2A-75, 100 | AK-2-50, 75, 100 | AK-2A-50 | AKT-2A-50 | AK-2A-75, 100 |
|                                                              |       | AK-2-50, 75, 100        | AK-3A-50     | AKT-3A-50 | AK-3A-75, 100 | AK-3-50, 75, 100 | AK-3A-50 | AKT-3A-50 | AK-3A-75, 100 |
|                                                              |       | AK-3-50, 75, 100        | Includes AKU |           |               | Includes AKU     |          |           |               |
|                                                              |       | Includes AKU            |              |           |               |                  |          |           |               |
| 48                                                           | DC    | G37                     | G49          | G61       | G37           | G28              | G49      | G61       | G37           |
| 125                                                          | DC    | G38                     | G50          | G62       | G38           | G29              | G50      | G62       | G38           |
| 250                                                          | DC    | G39                     | G51          | G63       | G39           | G30              | G51      | G63       | G39           |
| 120                                                          | 60    | G40                     | G52          | G64       | G40           | G31              | G52      | G64       | G40           |
| 208                                                          | 60    | G44                     | G56          | G68       | G44           | G34              | G56      | G68       | G44           |
| 240                                                          | 60    | G43                     | G55          | G67       | G43           | G34              | G55      | G67       | G43           |
| 120                                                          | 50    | G41                     | G53          | G65       | G41           | G32              | G53      | G65       | G41           |
| 208                                                          | 50    | G46                     | G58          | G70       | G46           | G35              | G58      | G70       | G46           |
| 240                                                          | 50    | G45                     | G57          | G69       | G45           | G35              | G57      | G69       | G45           |

TYPE AK POWER CIRCUIT BREAKERS

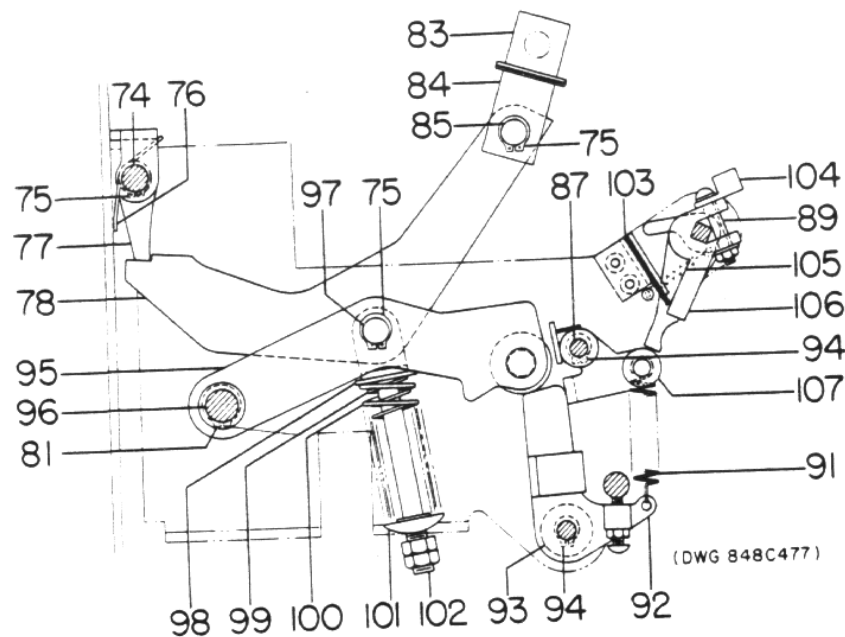


Fig. 6. AK-2-50 mechanism assembly

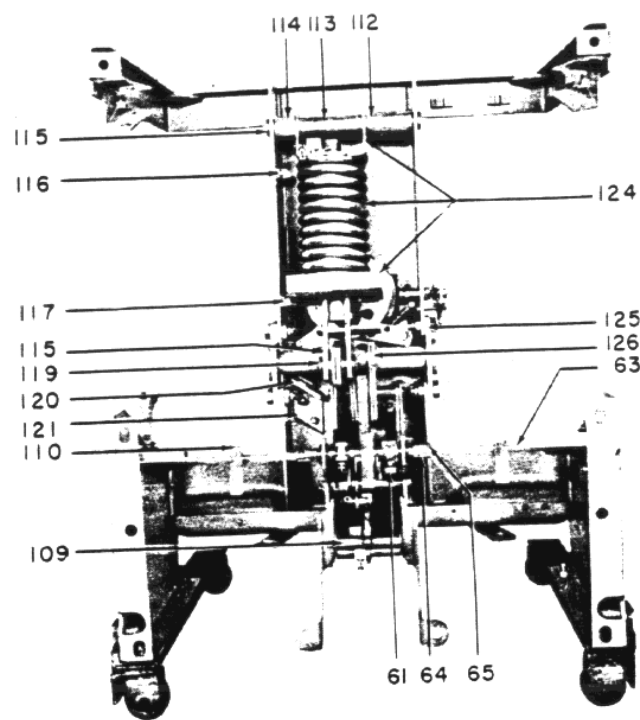


Fig. 7. AK-2-50 manual front frame assembly

| Fig. No. | Ref. No. | No. Required per Ereaker |    |       |          |       |         |       |          |       |   | Cat. No. | Description |             |                          |
|----------|----------|--------------------------|----|-------|----------|-------|---------|-------|----------|-------|---|----------|-------------|-------------|--------------------------|
|          |          | AK-2-50                  |    |       | AK-2A-50 |       | AK-3-50 |       | AK-3A-50 |       |   |          |             |             |                          |
|          |          | Man.                     |    | Elec. | Man.     | Elec. | Man.    | Elec. | Man.     | Elec. |   |          |             |             |                          |
|          |          | †                        | -1 | -2    | †        | -1    | -2      | †     | †        | †     | † |          |             | †           | †                        |
| 6        | 76       | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 412A140P1   | Spring                   |
| 6        | 77       | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 419A366P1   | Prop                     |
| 6        | 78       | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 6414743P1   | Cam                      |
| 6        | 83       | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 6555414P2   | Coupling                 |
| 6        | 84       | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 412A413P3   | Clevis                   |
| 6        | 85       | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 412A405P414 | Pin                      |
| 6        | 87       | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 6447744P1   | Pin                      |
| *        | 88       | -                        | -  | -     | 1        | 1     | -       | -     | -        | 1     | - | -        | -           | 457A610G1   | Reset latch              |
| 6        | 89       | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 6444916P1   | Latch bolt               |
| *        | 90       | -                        | -  | -     | 1        | 1     | -       | -     | -        | 1     | - | -        | -           | 6414764P1   | Latch                    |
| 6        | 91       | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 6403348 P1  | Spring                   |
| 6        | 92       | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 698C993G1   | Prop                     |
| 6        | 93       | 2                        | 2  | 2     | 2        | 2     | 2       | 2     | 2        | 2     | 2 | 2        | 2           | 377A871P2   | Prop shaft bearing       |
| 6        | 94       | 4                        | 4  | 4     | 4        | 4     | 4       | 4     | 4        | 4     | 4 | 4        | 4           | 394A133P9   | Retainer                 |
| 6        | 95       | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 457A622G1   | Link assembly            |
| 6        | 96       | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 6447099P1   | Pin                      |
| 6        | 97       | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 6447091P1   | Pin                      |
| 6        | 98       | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 6447331P1   | Spring guide (upper)     |
| 6        | 99       | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 148A2213P1  | Spring reset (inner)     |
| 6        | 100      | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 148A2214P1  | Spring reset (outer)     |
| 6        | 101      | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 6447353P1   | Spring guide (lower)     |
| 6        | 102      | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 6203914G1   | Spring support assembly  |
| 6        | 103      | 1                        | 1  | 1     | -        | -     | 1       | 1     | 1        | -     | 1 | 1        | 1           | 457A627G1   | Buffer assembly          |
| 6        | 104      | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 383A671G2   | Counter weight           |
| 6        | 105      | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 6403366P1   | Trip shaft return spring |
| 6        | 106      | 1                        | 1  | 1     | -        | -     | 1       | 1     | 1        | -     | 1 | 1        | 1           | 848C0487P1  | Latch                    |
| 6        | 107      | 1                        | 1  | 1     | -        | -     | 1       | 1     | 1        | -     | 1 | 1        | 1           | 889B0410G1  | Reset latch              |
| 7        | 109      | 1                        | 1  | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1 | 1        | 1           | 412A412P2   | Prop stop                |
| 7        | 110      | 3                        | 3  | 3     | 3        | 3     | 3       | 3     | 3        | 3     | 3 | 3        | 3           | 269C267G5   | Trip paddle              |

\* Not shown.  
† Original breaker had no suffix letter or numeral.



# TYPE AK POWER CIRCUIT BREAKERS

GEF-4150

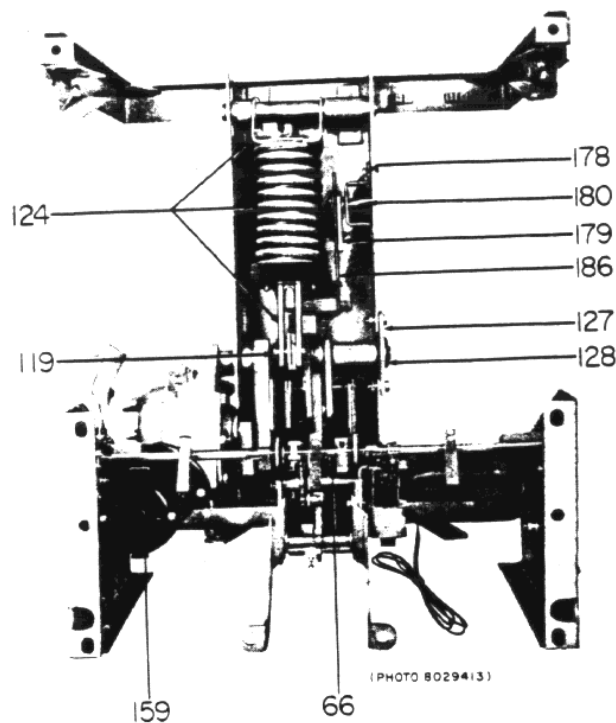


Fig. 8. AK-2-50 electrical front frame assembly

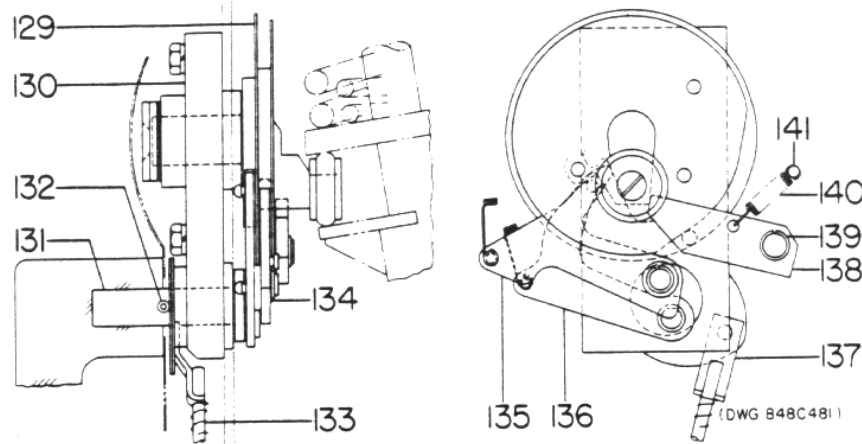


Fig. 9. AK-2-50 manual closing mechanism

| Fig. No. | Ref. No. | No. Required per Breaker |       |          |       |         |       |          |       | Cat. No. | Description |                                 |                                                                |
|----------|----------|--------------------------|-------|----------|-------|---------|-------|----------|-------|----------|-------------|---------------------------------|----------------------------------------------------------------|
|          |          | AK-2-50                  |       | AK-2A-50 |       | AK-3-50 |       | AK-3A-50 |       |          |             |                                 |                                                                |
|          |          | Man.                     | Elec. | Man.     | Elec. | Man.    | Elec. | Man.     | Elec. |          |             |                                 |                                                                |
|          |          | †-1-2                    | †-1-2 | †        | †     | †       | †     | †        | †     |          |             |                                 |                                                                |
| *        | 111      | 1                        | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1        | 6447767P1   | Trip shaft stop                 |                                                                |
| 7        | 112      | 1                        | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1        | 148A1946P10 | Spacer                          |                                                                |
| 7        | 113      | 1                        | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1        | 6447010P1   | Upper spring guide assembly pin |                                                                |
| 7        | 114      | 1                        | 1     | 1        | 1     | 1       | 1     | 1        | 1     | 1        | 148A1946P1  | Spacer                          |                                                                |
| 7        | 115      | 4                        | 4     | 4        | 4     | 4       | 4     | 4        | 4     | 4        | 394A133P4   | Retaining ring                  |                                                                |
| 7        | 116      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 698C996G5                       | Pawl spring support (upper)                                    |
| 7        | 117      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 698C996G4                       | Pawl spring support (lower)                                    |
| *        | 118      | 2                        | 2     | 2        | -     | -       | -     | 2        | -     | 2        | -           | 698C996P13                      | Pawl spring rollers                                            |
| 7        | 119      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 6447032P2                       | Lower spring guide assembly pin                                |
| 8        | 119      | -                        | -     | -        | 1     | 1       | 1     | -        | 1     | -        | 1           | 6447032P1                       | Lower spring guide assembly pin                                |
| 7        | 120      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 698C993P4                       | Buffer pin                                                     |
| 7        | 121      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 698C993P3                       | Buffer support                                                 |
| *        | 122      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 698C993P5                       | Buffer washer                                                  |
| *        | 123      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 393A993P24                      | Buffer stop nut                                                |
| 7        | 124      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 889B0408G1                      | Spring guide assembly (closing)                                |
| 8        | 124      | -                        | -     | -        | 1     | 1       | 1     | -        | 1     | -        | 1           | 273B569G4                       | Spring guide assembly (closing)                                |
| 7        | 125      | 2                        | 2     | 2        | -     | -       | -     | 2        | -     | 2        | -           | 698C992G5                       | Support (includes bearing less outer race)                     |
| 7        | 126      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 698C992G4                       | Crank (includes outer race of bearing)                         |
| 8        | 127      | -                        | -     | -        | 1     | 1       | 1     | -        | 1     | -        | 1           | 393A554P1                       | Support                                                        |
| 8        | 128      | -                        | -     | -        | 1     | 1       | 1     | -        | 1     | -        | 1           | 393A796P3                       | Bearing                                                        |
| 9        | 129      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 698C987G2                       | Ratchet assembly                                               |
| 9        | 130      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 698C988G3                       | Support assembly                                               |
| 9        | 131      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 698C990G2                       | Shaft assembly                                                 |
| 9        | 132      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 394A137P12                      | Roll pin                                                       |
| 9        | 133      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 127A8306P1                      | Spring                                                         |
| 9        | 134      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 394A133P28                      | Retainer                                                       |
| 9        | 135      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 698C985G1                       | Pawl with spring (rear)                                        |
| 9        | 136      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 698C985G2                       | Pawl with spring (front)                                       |
| 9        | 137      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 846C817G1                       | Spring arm                                                     |
| 9        | 138      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 698C991G5                       | Prop                                                           |
| 9        | 139      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 394A133P3                       | Retainer                                                       |
| 9        | 140      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 412A280 P1                      | Prop spring                                                    |
| 9        | 141      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 698C991P10                      | Pin                                                            |
| 4, 10    | 142      | 1                        | 1     | 1        | -     | -       | -     | 1        | -     | 1        | -           | 698C996G1                       | Indicator (when ordering indicator include label ref. No. 151) |

\* Not shown.

† Original breaker had no suffix letter or numeral.

TYPE AK POWER CIRCUIT BREAKERS

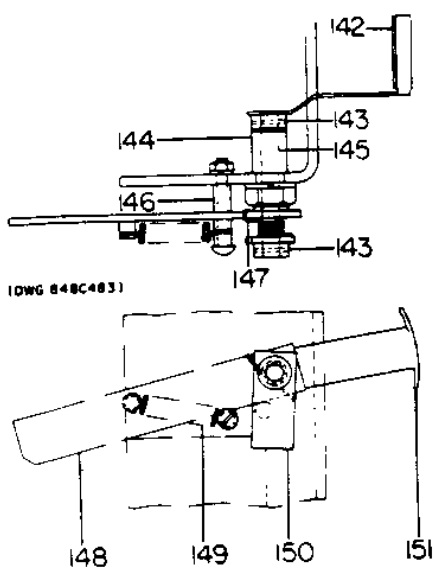


Fig. 10. AK-2-50 manual indicator assembly

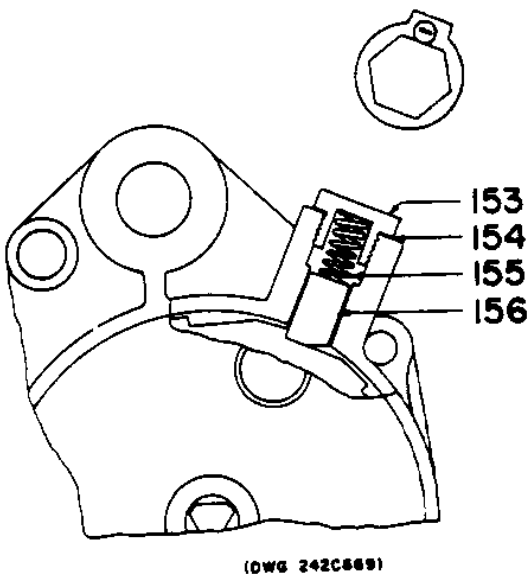


Fig. 11. Section of gear box

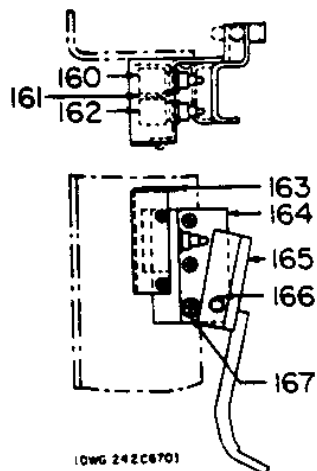


Fig. 12. Motor cut-off switch

| Fig. No. | Ref. No. | No. Required per Breaker |       |   |          |       |         |       |          |       |   | Cat. No. | Description |            |                                                         |
|----------|----------|--------------------------|-------|---|----------|-------|---------|-------|----------|-------|---|----------|-------------|------------|---------------------------------------------------------|
|          |          | AK-2-50                  |       |   | AK-2A-50 |       | AK-3-50 |       | AK-3A-50 |       |   |          |             |            |                                                         |
|          |          | Man.                     | Elec. |   | Man.     | Elec. | Man.    | Elec. | Man.     | Elec. |   |          |             |            |                                                         |
|          |          | †                        | 1     | 2 | †        | 1     | 2       | †     |          | †     |   |          |             | †          |                                                         |
| 10       | 143      | 2                        | 2     | 2 | -        | -     | -       | 2     | -        | 2     | - | 2        | -           | 394A137P11 | Roll Pin                                                |
| 10       | 144      | 1                        | 1     | 1 | -        | -     | -       | 1     | -        | 1     | - | 1        | -           | 698C995P2  | Bearing                                                 |
| 10       | 145      | 1                        | 1     | 1 | -        | -     | -       | 1     | -        | 1     | - | 1        | -           | 127A6493P3 | Rod                                                     |
| 10       | 146      | 1                        | 1     | 1 | -        | -     | -       | 1     | -        | 1     | - | 1        | -           | 698C995P14 | Tube                                                    |
| 10       | 147      | 1                        | 1     | 1 | -        | -     | -       | 1     | -        | 1     | - | 1        | -           | 412A267P1  | Spring                                                  |
| 10       | 148      | 1                        | 1     | 1 | -        | -     | -       | 1     | -        | 1     | - | 1        | -           | 698C995G1  | Indicator lever assembly                                |
| 10       | 149      | 1                        | 1     | 1 | -        | -     | -       | 1     | -        | 1     | - | 1        | -           | 412A0292P1 | Spring                                                  |
| 10       | 150      | 1                        | 1     | 1 | -        | -     | -       | 1     | -        | 1     | - | 1        | -           | 698C995G2  | Indicator crank assembly                                |
| 10       | 151      | 1                        | 1     | 1 | -        | -     | -       | 1     | -        | 1     | - | 1        | -           | 259C608P3  | Open-close label                                        |
| 11       | 153      | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 6447398P1  | Plug                                                    |
| 11       | 154      | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 393A992P2  | "O" ring for plug                                       |
| 11       | 155      | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 6509871P1  | Spring for ratchet pin                                  |
| 11       | 156      | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 372A383P1  | Ratchet pin                                             |
| *        | 157      | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 393A991P1  | Lubricant for gear box (4 oz.)                          |
| *        | 158      | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 6447101P1  | Gasket motor                                            |
| 5        | 158A     | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 6447102P1  | Gasket, gear box end plate                              |
| 8        | 159      | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 5P68MA6A   | Motor, 115 volts, 25, 50, 60 cycles and 125 volt DC     |
| 8        | 159      | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 5P66MA7A   | Motor, 208-230 volts, 25, 50, 60 cycles and 250 volt DC |
| 12       | 160      | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 192A7153P7 | Cut-off switch "G"                                      |
| 12       | 161      | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 174V521P1  | Cut-off switch insulation                               |
| 12       | 162      | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 192A7153P8 | Cut-off switch "F"                                      |
| 12       | 163      | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 371A235P1  | Cut-off switch cover                                    |
| 12       | 164      | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 371A233G1  | Cut-off switch mounting bracket                         |
| 12       | 165      | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 371A234G1  | Cut-off switch lever bracket                            |
| 12       | 166      | -                        | -     | - | 1        | 1     | 1       | -     | 1        | -     | 1 | -        | 1           | 394A133P9  | Cut-off switch retainer                                 |

\* Not shown.  
† Original breaker had no suffix letter or numeral.



# TYPE AK POWER CIRCUIT BREAKER

GEF-4150

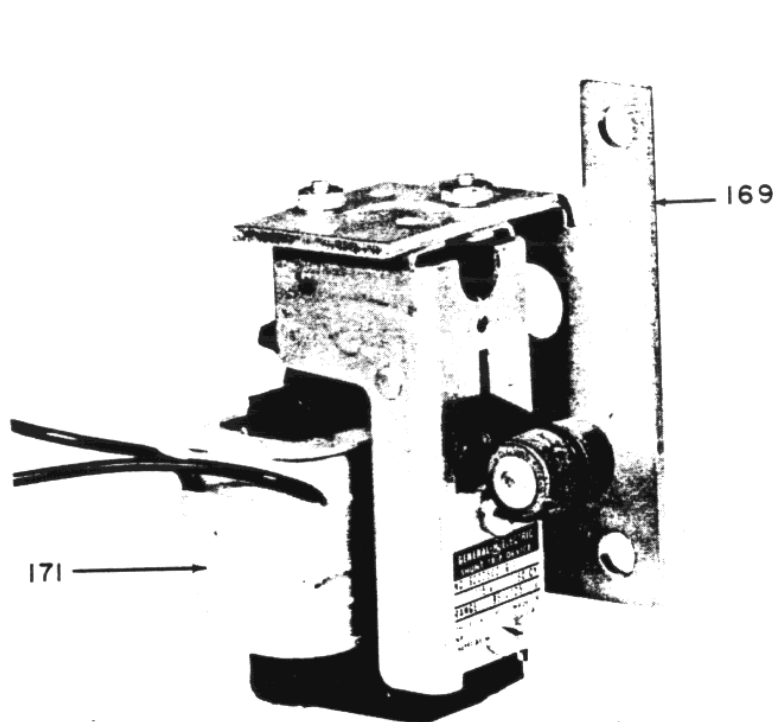


Fig. 13. Shunt trip  
(Ref. No. 170)

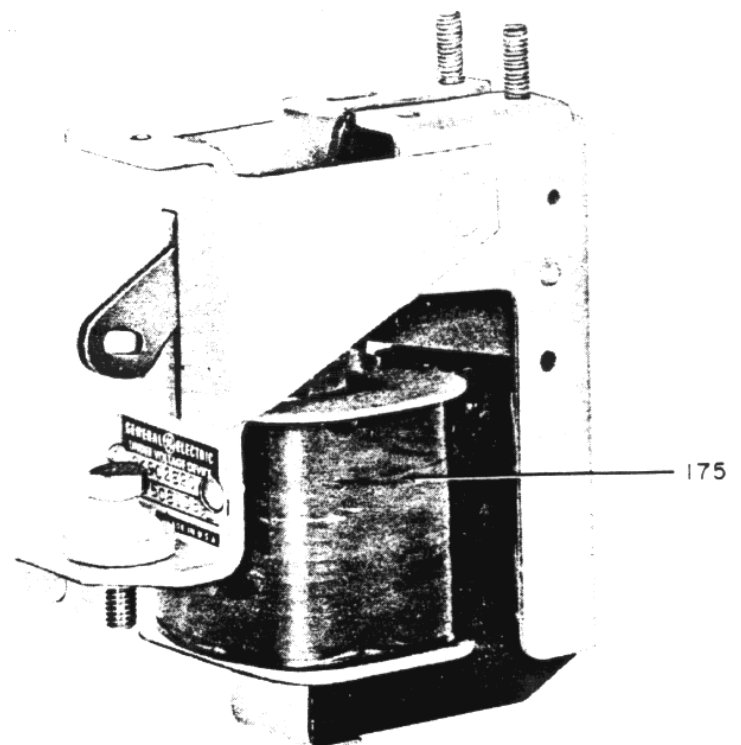


Fig. 14. Time delay undervoltage device  
(Ref. No. 173)

| Fig. No. | Ref. No. | No. Required per Pole † |    |    |          |    |         |       |          |       |      | Cat. No. | Description |               |                                                                                                 |
|----------|----------|-------------------------|----|----|----------|----|---------|-------|----------|-------|------|----------|-------------|---------------|-------------------------------------------------------------------------------------------------|
|          |          | AK-2-50                 |    |    | AK-2A-50 |    | AK-3-50 |       | AK-3A-50 |       |      |          |             |               |                                                                                                 |
|          |          | Man.                    |    |    | Elec.    |    | Man.    | Elec. | Man.     | Elec. | Man. |          |             | Elec.         |                                                                                                 |
|          |          | †                       | -1 | -2 | †        | -1 | -2      | †     | †        | †     | †    |          |             | †             | †                                                                                               |
| 12       | 167      | -                       | -  | -  | 1        | 1  | 1       | -     | 1        | -     | 1    | -        | 1           | 6176109P17    | Cut-off switch spacer                                                                           |
| 5        | 168      | -                       | -  | -  | 1        | 1  | 1       | -     | 1        | -     | 1    | -        | 1           | See Table "B" | Closing relay (X) - standard                                                                    |
| 5        | 168A     | -                       | -  | -  | 1        | 1  | 1       | -     | 1        | -     | 1    | -        | 1           | See Table "B" | Closing relay (X) - quick close                                                                 |
| *        | 168B     | -                       | -  | -  | 1        | 1  | 1       | -     | 1        | -     | 1    | -        | 1           | See Table "B" | Anti-pump relay (W) - quick close                                                               |
| *        | 168C     | -                       | -  | -  | 1        | 1  | 1       | -     | 1        | -     | 1    | -        | 1           | See Table "B" | Closing solenoid - quick close                                                                  |
| 13       | 169      | 1                       | 1  | 1  | 1        | 1  | 1       | 1     | 1        | 1     | 1    | 1        | 1           | 449A537P1     | Shunt trip device support                                                                       |
| 13       | 170      | 1                       | 1  | 1  | 1        | 1  | 1       | 1     | 1        | 1     | 1    | 1        | 1           | See Table "A" | Shunt trip device (with coil)                                                                   |
| 13       | 171      | 1                       | 1  | 1  | 1        | 1  | 1       | 1     | 1        | 1     | 1    | 1        | 1           | See Table "A" | Shunt trip coil                                                                                 |
| *        | 172      | 1                       | 1  | 1  | 1        | 1  | 1       | 1     | 1        | 1     | 1    | 1        | 1           | 423A380P1     | Undervoltage device support                                                                     |
| 14       | 173      | 1                       | 1  | 1  | 1        | 1  | 1       | 1     | 1        | 1     | 1    | 1        | 1           | δ             | Time delay undervoltage device, AC                                                              |
| 14       | 173      | 1                       | 1  | 1  | 1        | 1  | 1       | 1     | 1        | 1     | 1    | 1        | 1           | δ             | Time delay undervoltage device, DC                                                              |
| 15       | 174      | 1                       | 1  | 1  | 1        | 1  | 1       | 1     | 1        | 1     | 1    | 1        | 1           | #             | Static time delay, AC or DC (replaces complete oil displacement time delay undervoltage device) |
| 14       | 175      | 1                       | 1  | 1  | 1        | 1  | 1       | 1     | 1        | 1     | 1    | 1        | 1           | See Table "A" | Undervoltage device coil                                                                        |
| *        | 176      | 1                       | 1  | 1  | 1        | 1  | 1       | 1     | 1        | 1     | 1    | 1        | 1           | See Table "A" | Instantaneous undervoltage device, AC (with coil)                                               |
| *        | 176      | 1                       | 1  | 1  | 1        | 1  | 1       | 1     | 1        | 1     | 1    | 1        | 1           | See Table "A" | Instantaneous undervoltage device, DC (with coil)                                               |
| 5        | 177      | -                       | -  | -  | 1        | 1  | 1       | -     | 1        | -     | 1    | -        | 1           | 192A9791P3    | Auxiliary switch 3 stage                                                                        |
| 5        | 177      | -                       | -  | -  | 1        | 1  | 1       | -     | 1        | -     | 1    | -        | 1           | 192A9791P6    | Auxiliary switch 6 stage                                                                        |
| *        | 177      | 1                       | 1  | 1  | -        | -  | -       | 1     | -        | 1     | -    | 1        | -           | 192A9791P2    | Auxiliary switch 2 stage                                                                        |
| *        | 177      | 1                       | 1  | 1  | -        | -  | -       | 1     | -        | 1     | -    | 1        | -           | 192A9791P5    | Auxiliary switch 5 stage                                                                        |
| 8        | 178      | 1                       | 1  | 1  | 1        | 1  | 1       | 1     | 1        | 1     | 1    | 1        | 1           | 411A952G1     | Auxiliary switch crank bracket                                                                  |
| 8        | 179      | -                       | -  | -  | 1        | 1  | 1       | -     | 1        | -     | 1    | -        | 1           | 887B386G2     | Auxiliary switch link assembly                                                                  |
| 8        | 179      | 1                       | 1  | 1  | -        | -  | -       | 1     | -        | 1     | -    | 1        | -           | 887B386G1     | Auxiliary switch link assembly                                                                  |
| 8        | 180      | 1                       | 1  | 1  | 1        | 1  | 1       | 1     | 1        | 1     | 1    | 1        | 1           | 6447157P1     | Tube                                                                                            |
| *        | 181      | 1                       | 1  | 1  | 1        | 1  | 1       | 1     | 1        | 1     | 1    | 1        | 1           | 457A643P8     | Groove pin                                                                                      |
| *        | 182      | 1                       | 1  | 1  | 1        | 1  | 1       | 1     | 1        | 1     | 1    | 1        | 1           | 127A6463G2    | Auxiliary switch operating rod                                                                  |
| *        | 183      | 1                       | 1  | 1  | 1        | 1  | 1       | 1     | 1        | 1     | 1    | 1        | 1           | 127A6439P1    | Auxiliary switch coupling                                                                       |
| *        | 184      | 2                       | 2  | 2  | 2        | 2  | 2       | 2     | 2        | 2     | 2    | 2        | 2           | 6076402P203   | Pin                                                                                             |
| *        | 185      | 1                       | 1  | 1  | -        | -  | -       | 1     | -        | 1     | -    | 1        | -           | 887B387G1     | Adjusting plate                                                                                 |
| 8        | 186      | -                       | -  | -  | 1        | 1  | 1       | -     | 1        | -     | 1    | -        | 1           | 6203934P1     | Open and close indicator link                                                                   |
| 5        | 187      | -                       | -  | -  | 1        | 1  | 1       | -     | 1        | -     | 1    | -        | 1           | 265B268G1     | Open and close indicator                                                                        |
| 5        | 188      | -                       | -  | -  | 1        | 1  | 1       | -     | 1        | -     | 1    | -        | 1           | 265B268G2     | Charged and discharged indicator                                                                |

\* Not shown.

† Original breaker had no suffix letter or numeral.

δ When ordering time delay undervoltage devices, the following information must be included:

(1) Complete nameplate reading of breaker involved.

(2) Desired voltage rating of device, whether a-c or d-c, and if a-c, the frequency.

# Order by circuit breaker Serial No.

TYPE AK POWER CIRCUIT BREAKERS

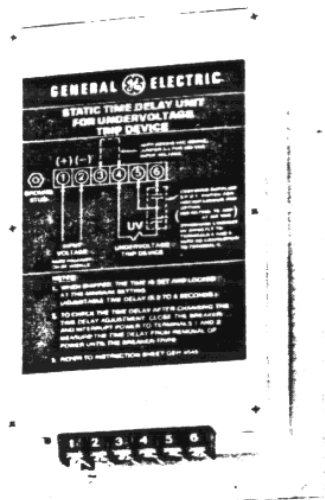


Fig. 15. Static time delay, (Ref. No. 174)

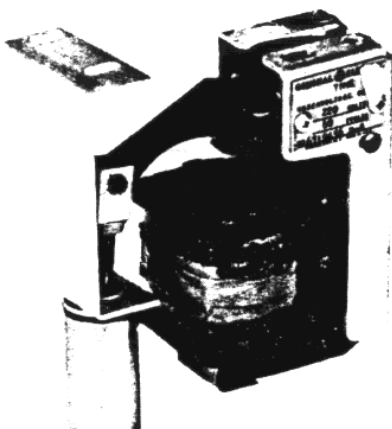


Fig. 15A. Oil-displacement type time-delay undervoltage tripping device.

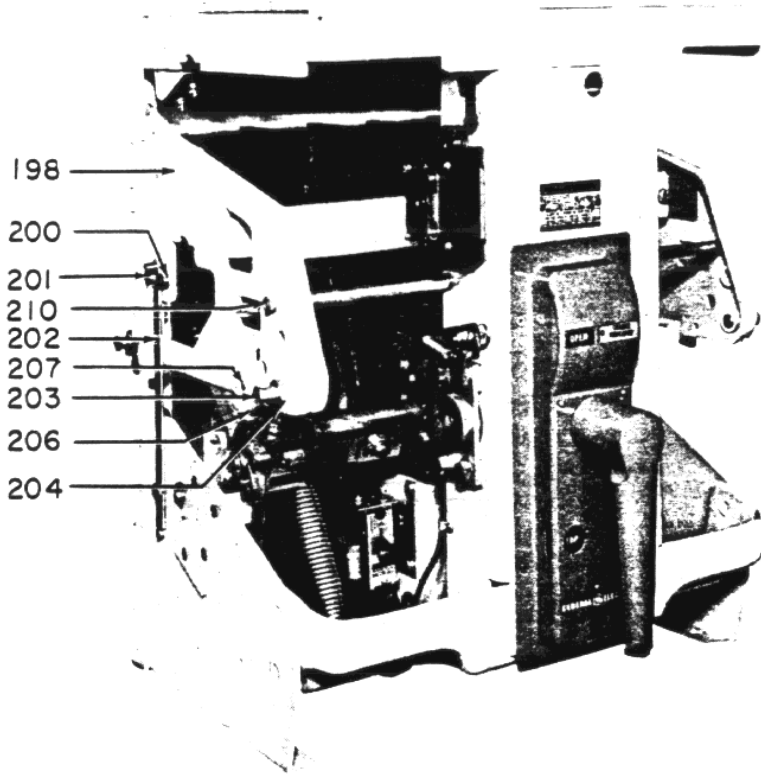


Fig. 16. AK-2A-50 manual

TABLE A

| Volts | Hertz | Shunt Trip Device                                          |                         | Instantaneous Undervoltage Device  |                                                                   | Time Delay Undervoltage Device†                            |                         |
|-------|-------|------------------------------------------------------------|-------------------------|------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------|-------------------------|
|       |       | Complete with Coil (less mounting) Reference 170 (Fig. 13) | Coil Only Reference 171 | Complete with Coil (less mounting) | Coil Only for Instantaneous or Old Design Dashpot Type Time Delay | Complete with Coil (less mounting) Reference 173 (Fig. 14) | Coil Only Reference 175 |
| 24    | DC    | 139C4378G1                                                 | 6275081G55              | 568B309G1                          | 6275081G15                                                        | -----                                                      | -----                   |
| 48    | DC    | 139C4378G3                                                 | 6275081G28              | 568B309G2                          | 6275081G9                                                         | -----                                                      | -----                   |
| 125   | DC    | 139C4378G4                                                 | 6275081G29              | 568B309G3                          | 6275081G18                                                        | 568B309G5                                                  | 6275081G61              |
| 250   | DC    | 139C4378G5                                                 | 6275081G30              | 568B309G4                          | 6275081G19                                                        | 568B309G6                                                  | 6275081G59              |
| 70    | 60    | 139C4378G6                                                 | 6275081G62              | -----                              | -----                                                             | -----                                                      | -----                   |
| 120   | 60    | 139C4378G7                                                 | 6275081G25              | 568B309G7                          | 6275081G26                                                        | -----                                                      | -----                   |
| 120   | 50    | 139C4378G8                                                 | 6275081G56              | 568B309G8                          | 6275081G4                                                         | -----                                                      | -----                   |
| 208   | 60    | 139C4378G10                                                | 6275081G26              | 568B309G10                         | 6275081G27                                                        | 568B309G24                                                 | 6275081G59              |
| 208   | 50    | 139C4378G11                                                | 6275081G26              | 568B309G11                         | 6275081G12                                                        | 568B309G24                                                 | 6275081G59              |
| 240   | 60    | 139C4378G13                                                | 6275081G26              | 568B309G13                         | 6275081G7                                                         | 568B309G24                                                 | 6275081G59              |
| 240   | 50    | 139C4378G14                                                | 6275081G26              | 568B309G14                         | 6275081G12                                                        | 568B309G24                                                 | 6275081G59              |
| 380   | 50    | 139C4378G17                                                | 6275081G27              | 568B309G17                         | 6275081G31                                                        | -----                                                      | -----                   |
| 480   | 60    | 139C4378G18                                                | 6275081G27              | 568B309G18                         | 6275081G31                                                        | -----                                                      | -----                   |
| 480   | 50    | 139C4378G19                                                | 6275081G4               | 568B309G19                         | 6275081G3                                                         | -----                                                      | -----                   |
| 575   | 60    | 139C4378G21                                                | 6275081G7               | 568B309G21                         | 6275081G20                                                        | -----                                                      | -----                   |
| 575   | 50    | 139C4378G22                                                | 6275081G29              | 568B309G22                         | 6275081G8                                                         | -----                                                      | -----                   |

NOTE: The static time undervoltage device (Fig. 14, Ref. 173) when used in combination with the static timing device (Fig. 15, Ref. 174) and a slight modification of breaker wiring will replace the older design oil-displacement type time delay undervoltage device shown in Fig. 15A.

TABLE B

CLOSING RELAYS AND COILS FOR CONVENTIONAL CLOSE AND QUICK CLOSE BREAKERS

Quick close breakers are identified by the letter "S" following the breaker type (i.e., AK-2A-50S-3).

| Rating |       | For Conventional<br>Close Breaker<br>Closing Relay "X" | For Quick Close Breaker |              |                            |                                  |
|--------|-------|--------------------------------------------------------|-------------------------|--------------|----------------------------|----------------------------------|
| Volts  | Hertz |                                                        | "X" Relay               |              | **"W" Relay,<br>Complete δ | *Closing Solenoid,<br>Complete δ |
|        |       |                                                        | Relay, Complete         | *Coil, Only  |                            |                                  |
| 125    | D-C   | 12HGA11H52                                             | 192A9770P2              | 116B7197P203 | 192A9771P2                 | CR9500B202H3A                    |
| 250    |       | 12HGA11H51                                             | 192A9770P3              | 116B7197P204 | 192A9771P3                 | CR9500B202H4A                    |
| 115    |       | 12HGA11H74                                             | 192A9770P5              | 116B7197P206 | 192A9771P4                 | CR9500B102A6A                    |
| 208    |       | 12HGA11H75                                             | 192A9770P7              | 116B7197P209 | 192A9771P5                 | CR9500B102A7A                    |
| 230    | 50    | 12HGA11H75                                             | 192A9770P9              | 116B7197P212 | 192A9771P6                 | CR9500B102A7A                    |
| 115    |       | 12HGA11H70                                             | 192A9770P4              | 116B7197P205 | 192A9771P4                 | CR9500B102A2A                    |
| 208    |       | 12HGA11H71                                             | 192A9770P6              | 116B7197P208 | 192A4771P5                 | CR9500B102A3A                    |
| 230    |       | 12HGA11H71                                             | 192A9770P8              | 116B7197P211 | 192A9771P6                 | CR9500B102A3A                    |

\* Recommended for stock for normal maintenance.  
δ Only complete relay furnished.

TYPE AK POWER CIRCUIT BREAKERS

GEF-4150

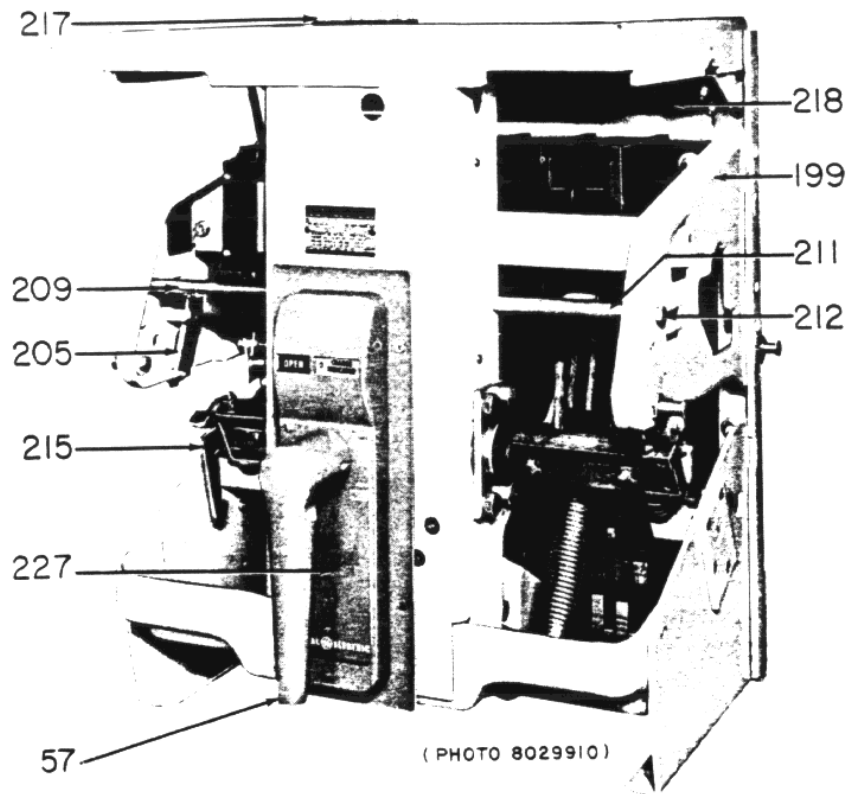


Fig. 17. AK-2A-50 manual

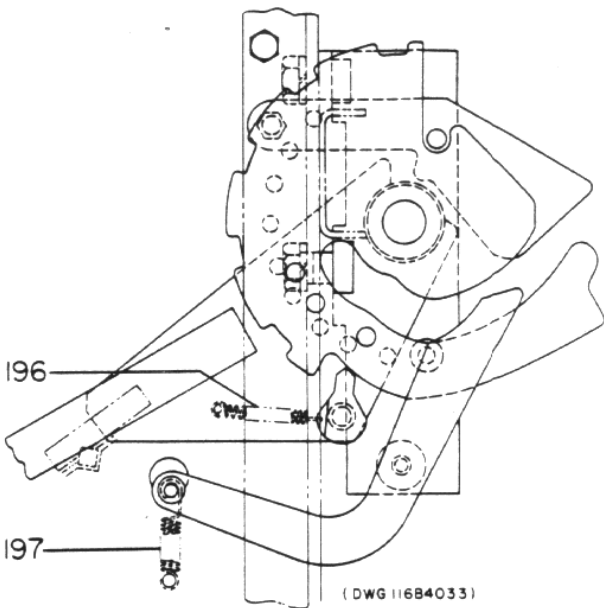


Fig. 18. Drawout racking mechanism, (Ref. No. 195)

| Fig. No. | Ref. No. | No. Required per Breaker |      |          |      |         |   |          |   |      |   | Cat. No. | Description |             |                                     |
|----------|----------|--------------------------|------|----------|------|---------|---|----------|---|------|---|----------|-------------|-------------|-------------------------------------|
|          |          | AK-2-50                  |      | AK-2A-50 |      | AK-3-50 |   | AK-3A-50 |   |      |   |          |             |             |                                     |
|          |          | Man.                     |      | Elec.    |      | Man.    |   | Elec.    |   | Man. |   |          |             | Elec.       |                                     |
|          |          | ‡                        | -1-2 | ‡        | -1-2 | ‡       | ‡ | ‡        | ‡ | ‡    | ‡ |          |             | ‡           | ‡                                   |
| *        | 189      | -                        | -    | -        | 1    | 1       | 1 | -        | 1 | -    | 1 | -        | 1           | 174V532P1   | Pin for indicator                   |
| *        | 190      | -                        | -    | -        | 3    | 3       | 3 | -        | 3 | -    | 3 | -        | 3           | 394A133P1   | Retainer for indicator              |
| *        | 191      | -                        | -    | -        | 2    | 2       | 2 | -        | 2 | -    | 2 | -        | 2           | 6176109P7   | Spacer for indicator                |
| *        | 192      | -                        | -    | -        | 1    | 1       | 1 | -        | 1 | -    | 1 | -        | 1           | 365A305P1   | Spring for indicator                |
| 5        | 193      | -                        | -    | -        | 1    | 1       | 1 | -        | - | -    | 1 | -        | -           | 6293908G185 | Terminal board (4 point)            |
| 5        | 193      | 1                        | 1    | 1        | 1    | 1       | 1 | -        | - | 1    | 1 | -        | -           | 6293908G168 | Terminal board (6 point)            |
| *        | 194      | 1                        | 1    | 1        | 1    | 1       | 1 | -        | - | 1    | 1 | -        | -           | 6423721P4   | Terminal board support              |
| *        | 194      | -                        | -    | -        | -    | -       | - | -        | - | -    | - | -        | -           | 9921543P1   | Terminal board support              |
| 18       | 195      | 1                        | 1    | 1        | 1    | 1       | 1 | -        | - | 1    | 1 | -        | -           | 238D689G1   | Drawout racking mechanism assembly  |
| 18       | 196      | 1                        | 1    | 1        | 1    | 1       | 1 | -        | - | 1    | 1 | -        | -           | 365A313P1   | Pawl spring                         |
| 18       | 197      | 1                        | 1    | 1        | 1    | 1       | 1 | -        | - | 1    | 1 | -        | -           | 412A135P1   | Link spring                         |
| 16       | 198      | -                        | -    | -        | -    | -       | - | 1        | 1 | -    | - | 1        | 1           | 669D0819G1  | Upper side sheet (left hand side)   |
| 17       | 199      | -                        | -    | -        | -    | -       | - | 1        | 1 | -    | - | 1        | 1           | 669D0819G2  | Upper side sheet (right hand side)  |
| 16       | 200      | -                        | -    | -        | -    | -       | - | 2        | 2 | -    | - | 2        | 2           | 888B0420P1  | Wheel                               |
| 16       | 201      | -                        | -    | -        | -    | -       | - | 2        | 2 | -    | - | 2        | 2           | 888B0420P2  | Shaft                               |
| 16       | 202      | -                        | -    | -        | -    | -       | - | 1        | 1 | -    | - | 1        | 1           | 846C0839G1  | Interlock link assembly             |
| 16       | 203      | -                        | -    | -        | -    | -       | - | 4        | 4 | -    | - | 4        | 4           | 127A8324P1  | Mounting stud                       |
| 16       | 204      | -                        | -    | -        | -    | -       | - | 4        | 4 | -    | - | 4        | 4           | 148A1988P1  | Jam nut                             |
| 17       | 205      | -                        | -    | -        | -    | -       | - | 1        | 1 | -    | - | 1        | 1           | 846C0839P1  | Latch                               |
| 16       | 206      | -                        | -    | -        | -    | -       | - | 1        | 1 | -    | - | 1        | 1           | 6076401P12  | Pin                                 |
| 16       | 207      | -                        | -    | -        | -    | -       | - | 1        | 1 | -    | - | 1        | 1           | 177L292P53  | Rivet                               |
| *        | 208      | -                        | -    | -        | -    | -       | - | 1        | 1 | -    | - | 1        | 1           | 846C0839P10 | Latch spring, in back of Ref. 205   |
| 17       | 209      | -                        | -    | -        | -    | -       | - | 1        | 1 | -    | - | 1        | 1           | 148A1946P5  | Spacer (left)                       |
| 16       | 210      | -                        | -    | -        | -    | -       | - | 1        | 1 | -    | - | 1        | 1           | 177L292P58  | Screw (left)                        |
| 17       | 211      | -                        | -    | -        | -    | -       | - | 1        | 1 | -    | - | 1        | 1           | 148A1946P6  | Spacer (right)                      |
| 17       | 212      | -                        | -    | -        | -    | -       | - | 1        | 1 | -    | - | 1        | 1           | 177L292P59  | Screw (right)                       |
| *        | 213      | -                        | -    | -        | -    | -       | - | 1        | 1 | -    | - | 1        | 1           | 6203939P5   | Trip paddle                         |
| *        | 214      | -                        | -    | -        | -    | -       | - | 1        | 1 | -    | - | 1        | 1           | 192A9567P1  | Clamp                               |
| 17       | 215      | -                        | -    | -        | -    | -       | - | 1        | 1 | -    | - | 1        | 1           | 801B138G4   | Anti rebound hook and slider        |
| *        | 216      | 1                        | 1    | 1        | 1    | 1       | 1 | 1        | 1 | 1    | 1 | 1        | 1           | 265B237P1   | Secondary disconnect support        |
| 17       | 217      | x                        | x    | x        | x    | x       | x | x        | x | x    | x | x        | x           | 386A110G2   | Secondary disconnect device (7 pt.) |
| 17       | 218      | 1                        | 1    | 1        | 1    | 1       | 1 | 1        | 1 | 1    | 1 | 1        | 1           | 362A494P1   | Insulation                          |
| *        | 219      | 2                        | 2    | 2        | 2    | 2       | 2 | 2        | 2 | 2    | 2 | 2        | 2           | 6176109P72  | Spacer                              |

† Original breaker had no suffix letter or numeral.  
x Order as required. Quantity of 3 maximum for AK-50 Breakers.  
\* Not shown.

TYPE AK POWER CIRCUIT BREAKERS

| Fig. No. | Ref. No. | No. Required per Breaker |    |    |       |    |    |          |       |         |       | Cat. No. | Description |                                              |                                                                             |
|----------|----------|--------------------------|----|----|-------|----|----|----------|-------|---------|-------|----------|-------------|----------------------------------------------|-----------------------------------------------------------------------------|
|          |          | AK-2-50                  |    |    |       |    |    | AK-2A-50 |       | AK-3-50 |       |          |             | AK-3A-50                                     |                                                                             |
|          |          | Man.                     |    |    | Elec. |    |    | Man.     | Elec. | Man.    | Elec. |          |             | Man.                                         | Elec.                                                                       |
|          |          | †                        | -1 | -2 | †     | -1 | -2 | †        | †     | †       | †     |          |             | †                                            | †                                                                           |
| 19A      | 220      | 3                        | 3  | 3  | 3     | 3  | 3  | 3        | 3     | 3       | 3     | 3        | 845C276G6   | Movable primary disconnect (not used on AKT) |                                                                             |
| 19B      | 220A     | 3                        | 3  | 3  | 3     | 3  | 3  | 6        | 6     | 6       | 6     | 6        | 6           | 132C2655G1                                   | Movable primary disconnect (for AKT only)                                   |
| *        | 221      | -                        | -  | -  | 1     | 1  | 1  | -        | 1     | -       | 1     | -        | 1           | 568B386G1                                    | Maintenance handle                                                          |
| *        | 222      | -                        | -  | -  | 1     | 1  | 1  | -        | 1     | -       | 1     | -        | 1           | 805B949G1                                    | Closing switch                                                              |
| 2        | 223      | 3                        | 3  | 3  | 3     | 3  | 3  | 3        | 3     | 3       | 3     | 3        | 3           | δ                                            | Overcurrent trip device                                                     |
| 5        | 224      | -                        | -  | -  | 2     | 2  | 2  | -        | 2     | -       | 2     | -        | 2           | 174V535P1                                    | Window                                                                      |
| 4        | 224      | 1                        | 1  | 1  | -     | -  | -  | 1        | -     | 1       | -     | 1        | -           | 269C272P8                                    | Window (open and close)                                                     |
| 4        | 225      | 1                        | 1  | 1  | -     | -  | -  | 1        | -     | 1       | -     | 1        | -           | 698C997P2                                    | Window (charge indicator) (when ordering window include label Ref. No. 226) |
| *        | 226      | 1                        | 1  | 1  | -     | -  | -  | 1        | -     | 1       | -     | 1        | -           | 698C997P4                                    | Label (charge indicator)                                                    |
| 17       | 227      | -                        | -  | -  | -     | -  | -  | 1        | -     | -       | -     | 1        | -           | NP148A1048                                   | Bib for front esc. (manual) (blue)                                          |
| 17       | 227      | -                        | -  | -  | -     | -  | 1  | -        | 1     | -       | -     | -        | 1           | NP148A1049                                   | Bib for front esc. (elec. breaker w/o closing switch) (blue)                |
| 17       | 227      | -                        | -  | -  | -     | -  | 1  | -        | 1     | -       | -     | -        | 1           | NP148A1050                                   | Bib for front esc. (elec. breaker with closing switch) (blue)               |

\* Not shown.  
‡ Original breaker had no suffix letter or numeral.  
δ (1) No parts furnished for field installation on EC-1 trip devices.  
(2) Only part furnished for field installation on EC-2 or EC-2A trip devices is plastic cover, Cat. No. 242C645P1.  
(3) When replacement trip devices are ordered, it is imperative that order includes complete nameplate reading of the breaker or breakers involved and, if a contemplated ampere rating change is involved, the order should also include information as to ampere rating, time-current characteristic, and instantaneous trip setting desired.

NOTE:  
Illustrations and catalog numbers listed on the following pages apply only to Type AK-3-50 and AK-3A-50 breakers.

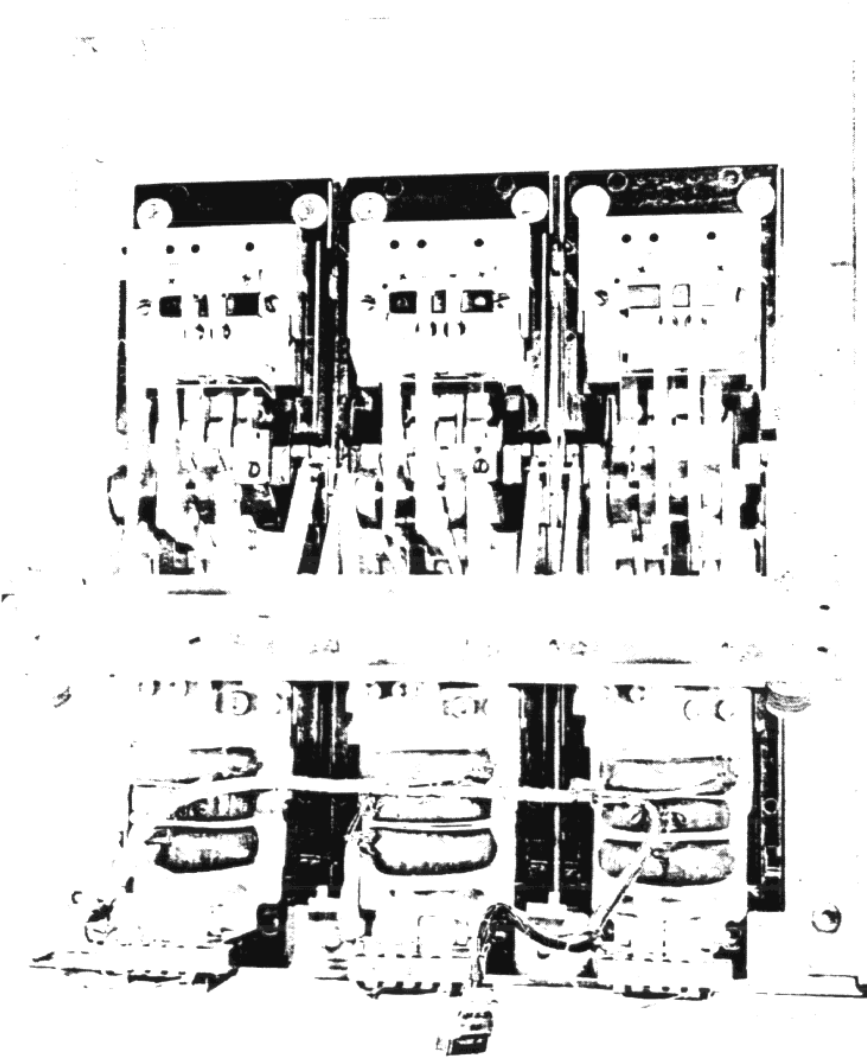


Fig. 19. Front view of back frame assembly—AK-3-50

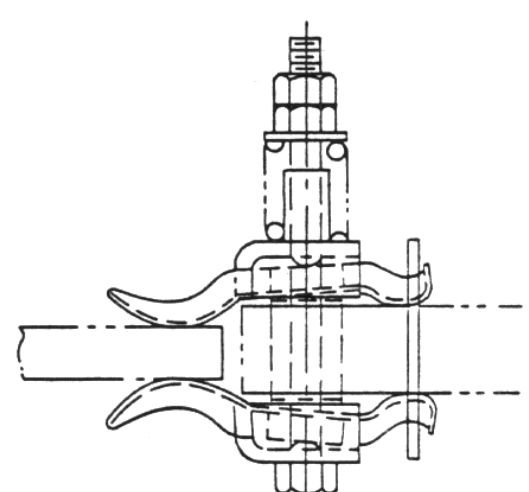


Fig. 19A. Primary disconnect assembly (for AK-50), Ref. No. 220.

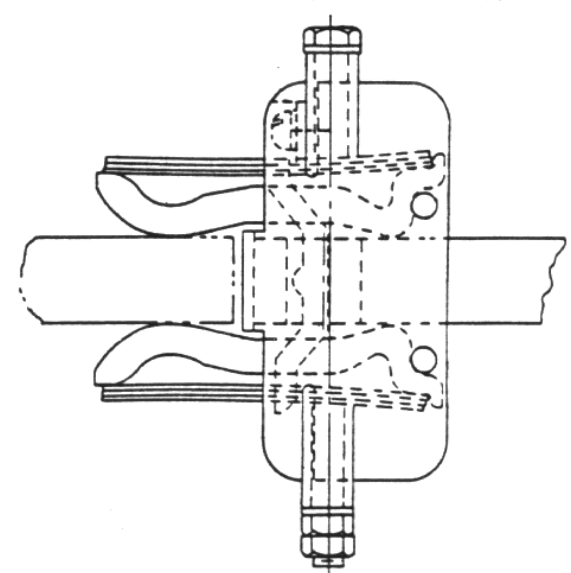


Fig. 19B. Primary disconnect assembly (for AKT-50), Ref. No. 220A.

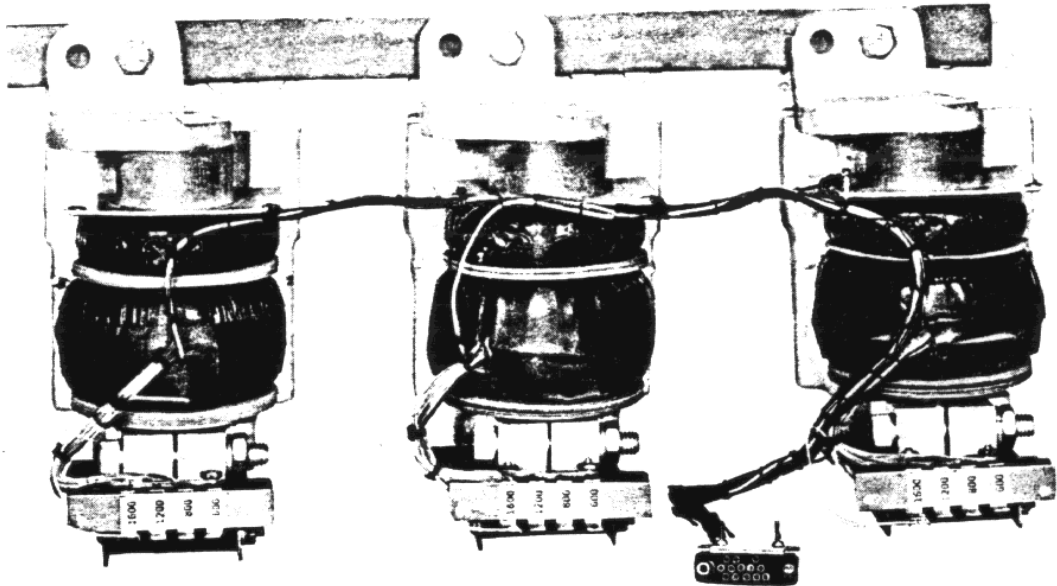


Fig. 20. Magnetic coil assembly for AK-3-50 breakers

Magnetic Sensor Coils - Assembly  
TABLE C

| Without ground trip |          |               | With ground trip   |          |               |
|---------------------|----------|---------------|--------------------|----------|---------------|
| Pole                | Rating   | Cat. No.      | Pole               | Rating   | Cat. No.      |
| 2P                  | 200/600  | 0133C1555 G2  | 3P                 | 200/600  | 0133C1555 G9  |
| 2P                  | 600/1600 | 0133C1555 G3  | 3P                 | 600/1600 | 0133C1555 G11 |
| 3P                  | 200/600  | 0133C1555 G5  | 3P For AKT-3/3A-50 | 800/2000 | 0133C1555 G16 |
| 3P                  | 600/1600 | 0133C1555 G7  |                    |          |               |
| 3P For AKT-3/3A-50  | 800/2000 | 0133C1555 G14 |                    |          |               |

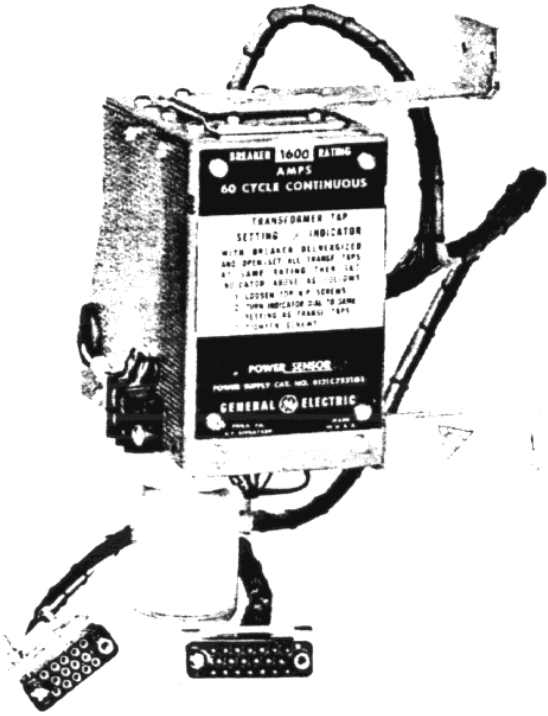


Fig. 21. Power supply unit

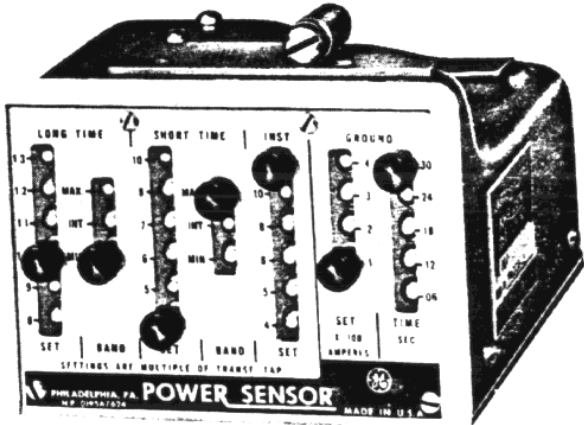


Fig. 22. Power sensor unit  
(See Table D)

Power Supply Units - Cat. No. 0152C9262G10  
0121C7501P24 (upper) mounting bracket  
0121C7501P21 (lower) mounting bracket

TYPE AK POWER CIRCUIT BREAKERS

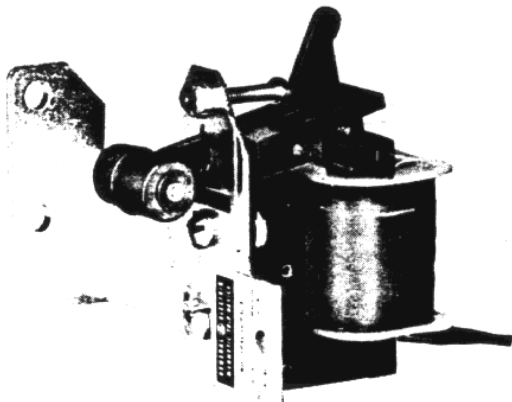


Fig. 23. Magnet trip device with mounting bracket

Magnet Trip Device with Mounting  
Bracket – Cat. No. 184L369G1

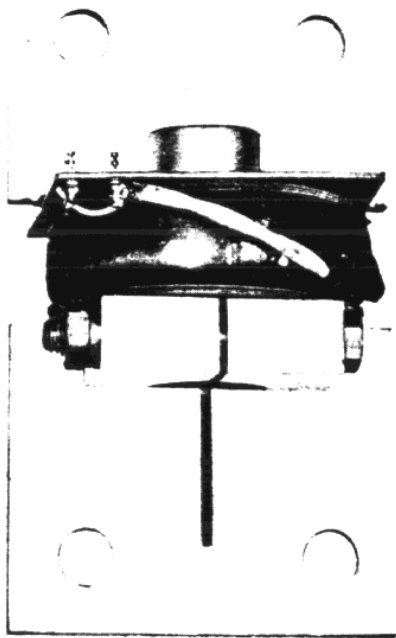


Fig. 24. Ground sensor coil with neutral mounting

Fourth Wire Grid Sensor Coils – Cat. No. 0152C9219G1

TABLE D POWER SENSOR LOGIC UNIT,  
TYPE PS-1A

| Trip Elements |                   |   |   | Cat. No.   |
|---------------|-------------------|---|---|------------|
| L             | S <sub>(LO)</sub> | I | G | 184L410G52 |
| L             | S <sub>(HI)</sub> | I | G | 184L410G55 |
| L             | S <sub>(LO)</sub> | - | G | 184L410G61 |
| L             | S <sub>(HI)</sub> | - | G | 184L410G64 |
| L             | -                 | I | G | 184L410G58 |
| -             | S <sub>(LO)</sub> | I | G | 184L410G67 |
| -             | S <sub>(HI)</sub> | I | G | 184L410G70 |
| -             | S <sub>(LO)</sub> | - | G | 184L410G73 |
| -             | S <sub>(HI)</sub> | - | G | 184L410G76 |
| -             | -                 | I | G | 184L410G79 |
| L             | S <sub>(LO)</sub> | I | - | 184L410G41 |
| L             | S <sub>(HI)</sub> | I | - | 184L410G42 |
| L             | S <sub>(LO)</sub> | - | - | 184L410G44 |
| L             | S <sub>(HI)</sub> | - | - | 184L410G45 |
| L             | -                 | I | - | 184L410G43 |
| -             | S <sub>(LO)</sub> | I | - | 184L410G46 |
| -             | S <sub>(HI)</sub> | I | - | 184L410G47 |
| -             | S <sub>(LO)</sub> | - | - | 184L410G48 |
| -             | S <sub>(HI)</sub> | - | - | 184L410G49 |
| -             | -                 | I | - | 184L410G50 |

L = Long time-delay element  
S<sub>(LO)</sub> = Short time-delay element (2 to 5X range)  
S<sub>(HI)</sub> = Short time-delay element (4 to 10X range)  
I = Instantaneous trip element  
G = Ground fault protective element

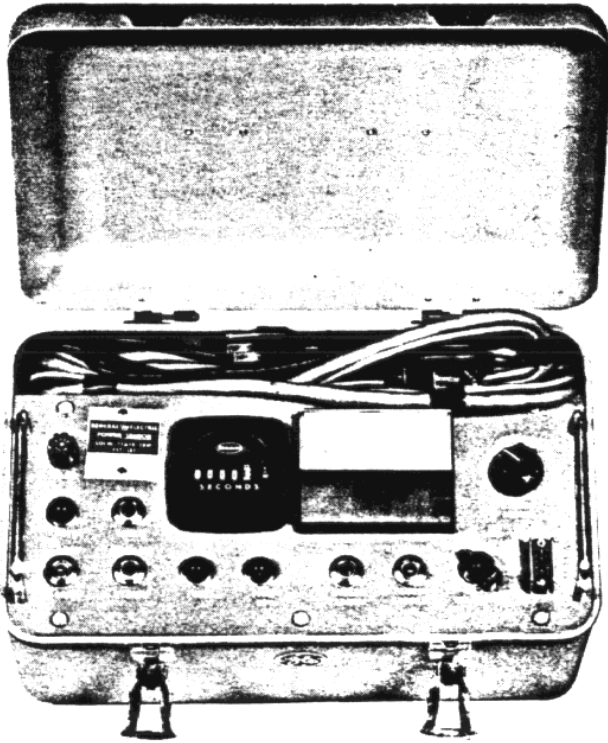


Fig. 25. Power sensor kit

Power Sensor Test Kit – Cat. No. 0102D2526G10



For further information  
call or write your local  
General Electric  
Sales Office or . . .

Distribution  
Equipment Division  
41 Woodford Avenue  
Plainville, CT 06062

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