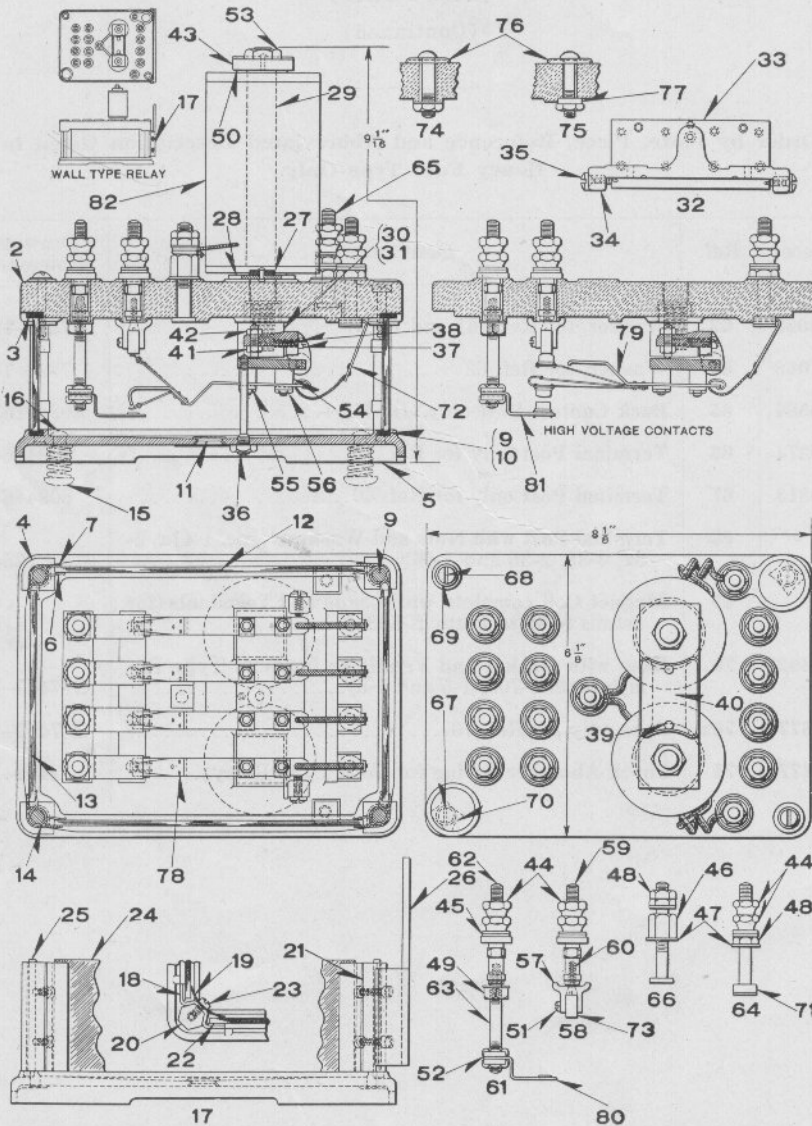


## UNION SWITCH & SIGNAL COMPANY



## UNION SWITCH &amp; SIGNAL COMPANY

## DETAILS OF MODEL 13 NEUTRAL RELAY

## SQUARE BASE (FOUR-POINT)

Order by Plate, Piece, Reference and Abbreviated Description Given in Heavy Face Type Only.

| Piece  | Ref. | Description                                                                                                                                                                                         | Drawing Reference |
|--------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 76514  | 2    | Top Plate with Gaskets .....                                                                                                                                                                        | C-7459-13         |
| 51655  | 3    | Gasket for Ref. 2 .....                                                                                                                                                                             | 8078-775          |
| 59317  | 4    | Gasket for Ref. 2 .....                                                                                                                                                                             | 8078-1089         |
| 71417  | 5    | Bottom Plate with Supports, Posts, Gaskets, Ventilator, Glass Shields, and Corner Linings (Inc. 1-5a, 4-6, 4-7, 4-8, 2-9, 2-10, 1-11, 2-12, 2-13 and 8-14) ..                                       | C-7459-9          |
| 51667  | 5a   | Bottom Plate, only for Refs. 5 and 17 .....                                                                                                                                                         | C-7459-9          |
| 145300 | 5b   | Bottom Plate with Supports, Posts, Gaskets, Ventilator, Glass Shields, Corner Linings and Shock Absorber Springs (Inc. 1-5c, 4-6, 4-7, 4-8, 2-9, 2-11, 1-11, 2-12, 2-13, 8-14, 4-15 and 4-16) ..... | C-7459-18         |
| 145299 | 5c   | Bottom Plate only, for Ref. 5b .....                                                                                                                                                                | C-7459-18         |
| 44224  | 6    | Support .....                                                                                                                                                                                       | 10932-10          |
| 44225  | 7    | Support .....                                                                                                                                                                                       | 10932-11          |
| 51559  | 8    | Post .....                                                                                                                                                                                          | 8114-298          |
| 37394  | 9    | Gasket .....                                                                                                                                                                                        | 8078-559          |
| 37396  | 10   | Gasket .....                                                                                                                                                                                        | 8078-559          |
| 34340  | 11   | Ventilator .....                                                                                                                                                                                    | C-7459-6          |
| 51561  | 12   | Glass Shield (Side) .....                                                                                                                                                                           | 8163-107          |
| 51628  | 13   | Glass Shield (End) .....                                                                                                                                                                            | 8163-164          |
| 130381 | 14   | Corner Lining .....                                                                                                                                                                                 | 10932-52          |
| 410218 | 15   | Shock Absorber Spring for Ref. 5b.                                                                                                                                                                  |                   |
| 145116 | 16   | Stud for Ref. 5b .....                                                                                                                                                                              | 8114-631          |

PLATE E-4838

## UNION SWITCH &amp; SIGNAL COMPANY

## DETAILS OF MODEL 13 NEUTRAL RELAY

## SQUARE BASE (FOUR-POINT)

(Continued)

Order by Plate, Piece, Reference and Abbreviated Description Given in  
Heavy Face Type Only.

| Piece  | Ref. | Description                                                                                                                                                                                         | Drawing<br>Reference |
|--------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 119756 | 17   | Bottom Plate with Supports, Posts, Gaskets, Screws,<br>Glass Shields, Ventilator and Wall Bracket (Inc.<br>1-5a, 4-18, 4-19, 2-20, 2-21, 8-22, 2-9, 2-10, 12-23,<br>2-24, 2-25, 1-11 and 1-26)..... | C-7459-16            |
| 60608  | 18   | Support.....                                                                                                                                                                                        | 10932-48             |
| 60606  | 19   | Support.....                                                                                                                                                                                        | 10932-38             |
| 60610  | 20   | Post.....                                                                                                                                                                                           | 8115-148             |
| 119778 | 21   | Post.....                                                                                                                                                                                           | 8115-148             |
| 60612  | 22   | Gasket.....                                                                                                                                                                                         | 8078-807             |
|        | 23   | Machine Screw No. 8-36x $\frac{5}{16}$ " Fil. Hd. S. (Cad. Pl.)                                                                                                                                     |                      |
| 60616  | 24   | Glass Shield (Side).....                                                                                                                                                                            | 8163-186             |
| 60618  | 25   | Glass Shield (End).....                                                                                                                                                                             | 8163-186             |
| 122093 | 26   | Wall Bracket.....                                                                                                                                                                                   | C-7459-16            |
| 76071  | 27   | Core Plate.....                                                                                                                                                                                     | C-7459-9             |
| 51611  | 28   | Washer.....                                                                                                                                                                                         | 7828-218             |
| 51617  | 29   | Core.....                                                                                                                                                                                           | 8101-206             |
| 51619  | 30   | Pole Piece (R. H.).....                                                                                                                                                                             | 8250-45              |
| 51618  | 31   | Pole Piece (L. H.).....                                                                                                                                                                             | 8250-44              |
| 96905  | 32   | Armature, with Bracket and Trunnions (Inc. 1-33, 1-<br>34 and 2-35).....                                                                                                                            | C-7459-8             |
| 71416  | 33   | Armature only for Ref. 32.....                                                                                                                                                                      | 8157-230             |
| 50225  | 34   | Armature Bracket only for Ref. 32.....                                                                                                                                                              | 8303-68              |
| 47579  | 35   | Trunnion only for Ref. 32.....                                                                                                                                                                      | 8378-197             |

## UNION SWITCH &amp; SIGNAL COMPANY

**DETAILS OF MODEL 13 NEUTRAL RELAY**  
**SQUARE BASE (FOUR-POINT)**

(Continued)

Order by Plate, Piece, Reference and Abbreviated Description Given in  
 Heavy Face Type Only.

| Piece  | Ref. | Description                                                                                       | Drawing Reference |
|--------|------|---------------------------------------------------------------------------------------------------|-------------------|
|        | 36   | Screw with Nut, used in shipping (Inc. 1-36a and 1-48)                                            | 12471             |
| 63316  | 36a  | Screw only, for Ref. 36                                                                           | 8098-951          |
| 121374 | 36b  | Screw, used in place of Ref. 36 when installed                                                    | 8098-1289         |
|        | 37   | Machine Screw No. 8-36x $\frac{1}{2}$ " Fil. Hd. Br. for fastening Ref. 32 to Pole Piece.         |                   |
| 49067  | 38   | Dowel Pin for Ref. 32                                                                             | 8097-336          |
|        | 39   | Drive Screw No. 4x $\frac{3}{16}$ " Hardened, for fastening Ref. 40 to Back Strap.                |                   |
| 46539  | 40   | Name Plate                                                                                        | 8225-135          |
| 49141  | 41   | Screw (Core Pin)                                                                                  | 8098-887          |
| 26942  | 42   | Nut for Ref. 41                                                                                   | 8109-184          |
| 51623  | 43   | Back Strap                                                                                        | 8162-152          |
| 29101  | 44   | Nut                                                                                               | 8109-193          |
| 29102  | 45   | Washer                                                                                            | 7828-139          |
| 56635  | 46   | Nut for Ref. 66                                                                                   | 8109-324          |
| 29104  | 47   | Washer                                                                                            | 7828-138          |
| 29103  | 48   | Nut                                                                                               | 8109-194          |
| 31670  | 49   | Nut for Ref. 61                                                                                   | 8109-218          |
| 122646 | 50   | Washer                                                                                            | 8078-1366         |
|        | 51   | Machine Screw No. 6-40x $\frac{1}{2}$ " Fil. Hd. S. Blued for fastening Ref. 73 to Terminal Post. |                   |
| 32186  | 52   | Lock Washer for Ref. 61                                                                           | 8486-129          |
| 51610  | 53   | Nut for Ref. 29                                                                                   | 8265-161          |



## UNION SWITCH & SIGNAL COMPANY

### DETAILS OF MODEL 13 NEUTRAL RELAY

#### SQUARE BASE (FOUR-POINT)

(Continued)

Order by Plate, Piece, Reference and Abbreviated Description Given in  
Heavy Face Type Only.

| Piece  | Ref. | Description                                                                                                                                          | Drawing<br>Reference |
|--------|------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 22621  | 54   | Bushing.....                                                                                                                                         | 8095-199             |
| 19409  | 55   | Lock Washer for Ref. 54.....                                                                                                                         | 8486-68              |
| 1515   | 56   | Nut for Ref. 54.....                                                                                                                                 | 8109-23              |
| 30274  | 57   | Terminal Post only, for Ref. 58.....                                                                                                                 | 8094-641             |
| 72926  | 58   | Terminal Post with Nuts, Washers, Screws and<br>Graphite Contact Tip (Inc. 1-57, 1-59, 2-44, 2-45,<br>1-51, 1-60 and 1-73).....                      | 12451-54             |
| 30812  | 59   | Terminal Post only, for Ref. 58.....                                                                                                                 | 8094-639             |
| 30810  | 60   | Screw for fastening Ref. 57 to Ref. 59.....                                                                                                          | 8098-538             |
| 91828  | 61   | Terminal Post with Nuts, Washers, Lock Washers<br>and L. V. Back Contact Post (Inc. 1-62, 1-63, 2-44,<br>2-45, 1-47, 1-49, 2-48, 2-52 and 1-79)..... | 12451-20             |
| 112832 | 61a  | Terminal Post with Nuts, Washers, Lock Washers<br>and H. V. Back Contact Post (Inc. 1-62, 1-63, 2-44,<br>2-45, 1-47, 1-49, 2-48, 2-52 and 1-81)..... | 12451-20             |
| 30813  | 62   | Terminal Post only, for Ref. 61.....                                                                                                                 | 8094-639             |
| 46277  | 63   | Terminal Post only, for Ref. 61.....                                                                                                                 | 8094-874             |
|        | 64   | Terminal Post with Nuts, Washers, and Lock Wash-<br>ers for Terminal Connector (Inc. 1-64a, 2-44, 2-45,<br>1-48, 1-47 and 1-71).....                 | 12451                |
| 30108  | 64a  | Terminal Post only, for Refs. 64 and 65.....                                                                                                         | 8094-706             |
|        | 65   | Terminal Post with Nuts and Washers for Magnet<br>Lead (Inc. 1-65a, 2-44, 3-45, 2-48 and 1-47).....                                                  | 12451                |
| 29147  | 65a  | Terminal Post only for Refs. 65 and 66.....                                                                                                          | 8094-706             |
|        | 66   | Terminal Post with Nuts and Washers for Magnet<br>Lead (Inc. 1-65a, 2-48, 1-45, 1-47 and 1-46).....                                                  | 12451-121            |

UNION SWITCH & SIGNAL COMPANY

DETAILS OF MODEL 13 NEUTRAL RELAY  
SQUARE BASE (FOUR-POINT)  
(Continued)

Order by Plate, Piece, Reference and Abbreviated Description Given in Heavy Face Type Only.

| Piece           | Ref. | Description                                                                                  | Drawing Reference |
|-----------------|------|----------------------------------------------------------------------------------------------|-------------------|
| 59306           | 67   | Screw, for fastening Top Plate to Corner Post.....                                           | 8098-1172         |
| 59371           | 68   | Screw, for fastening Top Plate to Corner Post.....                                           | 8098-1172         |
| 73493           | 69   | Washer for Ref. 68.....                                                                      | 7826-78           |
| 37661           | 70   | Anchor Washer for Ref. 67.....                                                               | 7828-168          |
| 132658          | 71   | Lock Washer for Ref. 64.....                                                                 | 8486-369          |
| 97875           | 72   | Terminal Connector.....                                                                      | 10934-162         |
| 30811           | 73   | Graphite Contact Tip.....                                                                    | 8341-32           |
| 94436           | 74   | Dummy Post with Nut and Washers for Front of Relay<br>(Inc. 1-74a, 1-76, 1-47 and 1-48)..... | 12471-3           |
| 31067           | 74a  | Dummy Post only, for Refs. 75 and 76.....                                                    | 8098-558          |
| 98875           | 75   | Dummy Post, with Nut and Washers for Back of Relay<br>(Inc. 1-74a, 1-76, 1-48 and 1-77)..... | 12471-11          |
| 36088           | 76   | Washer for Refs. 74 and 75.....                                                              | 7826-136          |
| 31068           | 77   | Washer for Ref. 75.....                                                                      | 7828-144          |
| Contact Springs |      |                                                                                              |                   |
| Piece           | Ref. | Description                                                                                  | Drawing Reference |
| 69755           | 78   | L. V. Front and Back                                                                         | 8385-1320         |
| 69756           | 78a  | L. V. Front                                                                                  | 8385-1321         |
| 76584           | 78b  | L. V. Front and H. V. Back                                                                   | 8385-1815         |
| 86140           | 78c  | L. V. Back                                                                                   | 8385-1320         |

## UNION SWITCH & SIGNAL COMPANY

### DETAILS OF MODEL 13 NEUTRAL RELAY

#### SQUARE BASE (FOUR-POINT)

(Continued)

Order by Plate, Piece, Reference and Abbreviated Description Given in Heavy Face Type Only.

| Piece | Ref. | Description                                                                            | Remarks | Drawing Reference |
|-------|------|----------------------------------------------------------------------------------------|---------|-------------------|
| 69759 | 79   | H. V. Front and Back                                                                   |         | 8385-1334         |
| 76280 | 79a  | H. V. Front                                                                            |         | 8385-1338         |
| 76198 | 79b  | H. V. Front and L. V. Back                                                             |         | 8385-1336         |
| 82292 | 79c  | H. V. Back                                                                             |         | 8385-1652         |
| Piece | Ref. | Description                                                                            |         | Drawing Reference |
| 74804 | 80   | Back Contact Post (Silver Tip $\frac{1}{4}$ " Diam.).....                              |         | 8094-2034         |
| 80916 | 80a  | Back Contact Post (Silver Tip $\frac{3}{8}$ " Diam.).....                              |         | 8094-2034         |
| 76384 | 81   | Back Contact Post (H. V.).....                                                         |         | 8094-2034         |
|       | 82   | Magnet Coil complete with Leads and Terminals (for details refer to Plate E-5025)..... |         | 8133              |