

MODULES  
for  
1A HIGH SPEED SELECTIVE CALLING SYSTEM  
PARTS

| FIGURE | CONTENTS   | PAGE |
|--------|--|------|
| 1      | 148278** Multi-Voltage Power Supply - MVPS 3   | 2    |
| 2      | 193001** Transmitter Start Code Generator Module - TSCG  | 3    |
| 3      | 193001** Transmitter Start Code Generator Module - TSCG (Continued)                                      | 4    |
| 4      | 193001** Transmitter Start Code Generator Module - TSCG (Continued)                                      | 5    |
| 5      | 193003** Receiving Distributor and Controls Module - RD  | 6    |
| 6      | 193003** Receiving Distributor and Controls Module - RD (Continued)                                      | 7    |
| 7      | 193004** High Speed Reader Controls Module - HISREC 5  | 8    |
| 8      | 193005** Transmitter Distributor and Controls Module - TD  | 9    |
| 9      | 193005** Transmitter Distributor and Controls Module - TD (Continued)                                    | 10   |
| 10     | 193005** Transmitter Distributor and Controls Module - TD (Continued)                                    | 11   |
| 11     | 193008** Sequence Detector Module Selector (1 to 60 Calls)   | 12   |
| 12     | 193009** Intercept Control Module - INTCO  | 13   |
| 13     | 193010** Special Electronic Accessories 2 L/H Module - SEA 2 L/H   | 14   |
| 14     | 193011** Special Electronic Accessories 1 L/H Module - SEA 1 L/H   | 15   |
| 15     | 193012** Special Electronic Accessories 2 H/L Module - SEA 2 L/H   | 16   |
| 16     | 193013** Special Electronic Accessories 1 H/L Module - SEA 1 H/L   | 17   |
| 17     | 193014** High Speed Reader and Alarm Circuits 2 with Sequence Detection. 3<br>Module - HISRAAC 2 W/SED 3 | 18   |
| 18     | 193164** High Speed Reperforator Control Module - HISRECO 5  | 19   |
| 19     | 193221** Multi-Voltage Power Supply - MVPS 4   | 20   |
| 20     | 193222** High Speed Reader and Alarm Circuits 2 Module - HISRAAC 2                                       | 21   |
| 21     | 193240** Reperforator Accessories Module - REACC   | 22   |
| 22     | 193283** High Speed Punch Control 3D Module - HISPUC 3D  | 23   |
| 23     | 193321** High Speed Punch Control 4B Module - HISPUC 4B  | 24   |
| 24     | 193322** Differential Message Counter 5 Module - DIMCO 5   | 25   |
| 25     | 193323** Tape Measure and Counter Control 3 Module - TAMACC 3  | 26   |
| 26     | 193323** Tape Measure and Counter Control 3 Module - TAMACC 3 (Continued)                                | 27   |
| 27     | 193323** Tape Measure and Counter Control 3 Module - TAMACC 3 (Continued)                                | 28   |
| 28     | 193001** and 193003** Positioning Reference Charts   | 29   |
| 29     | 193005** and 193008** Positioning Reference Charts   | 30   |
|        | Numerical Index  | 31   |

NOTE:

When ordering parts from this section  
prefix each number with the letters TP

PAINT FINISH SUFFIXES

| Multi-<br>Color Code | Color (Smooth)              | Suffix |
|----------------------|-----------------------------|--------|
|                      | Light Gray                  | EJ     |
| MH                   | Maritime Deck Gray (Medium) | BJ     |
|                      | Charcoal Gray (Dark)        | BZ     |

Other colors available upon request.

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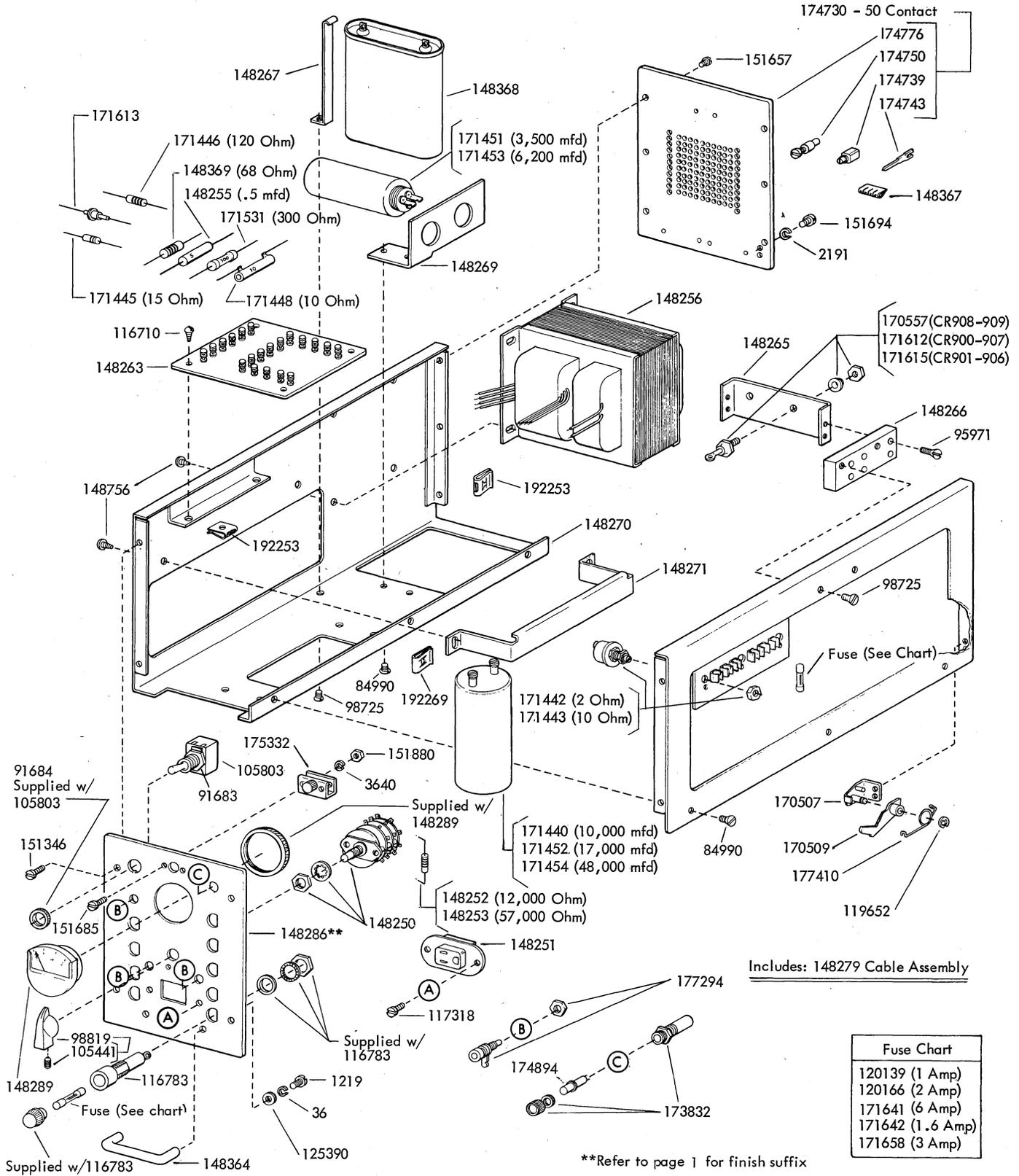


FIGURE 1. 148278\*\* MULTI-VOLTAGE POWER SUPPLY - MVPS 3

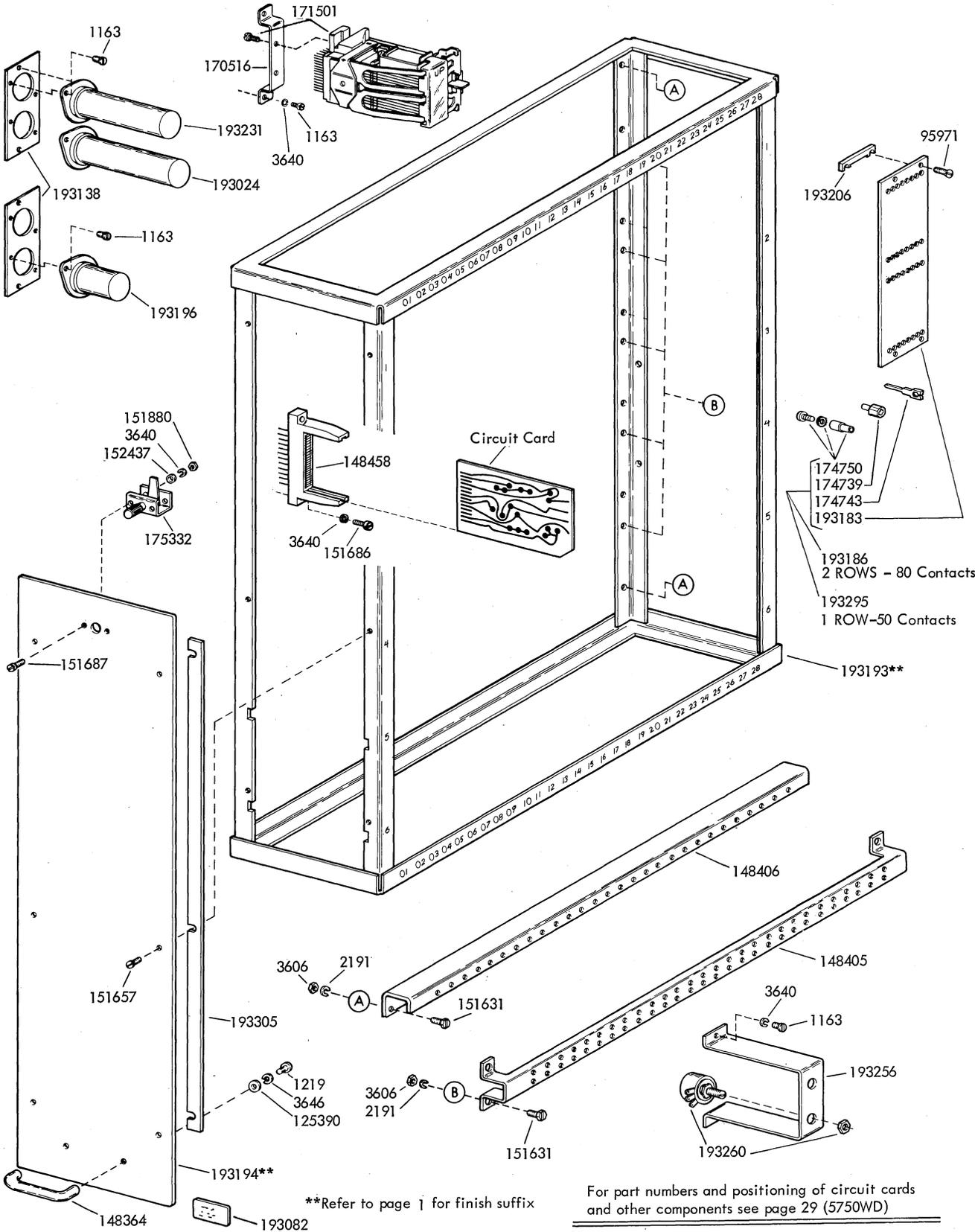
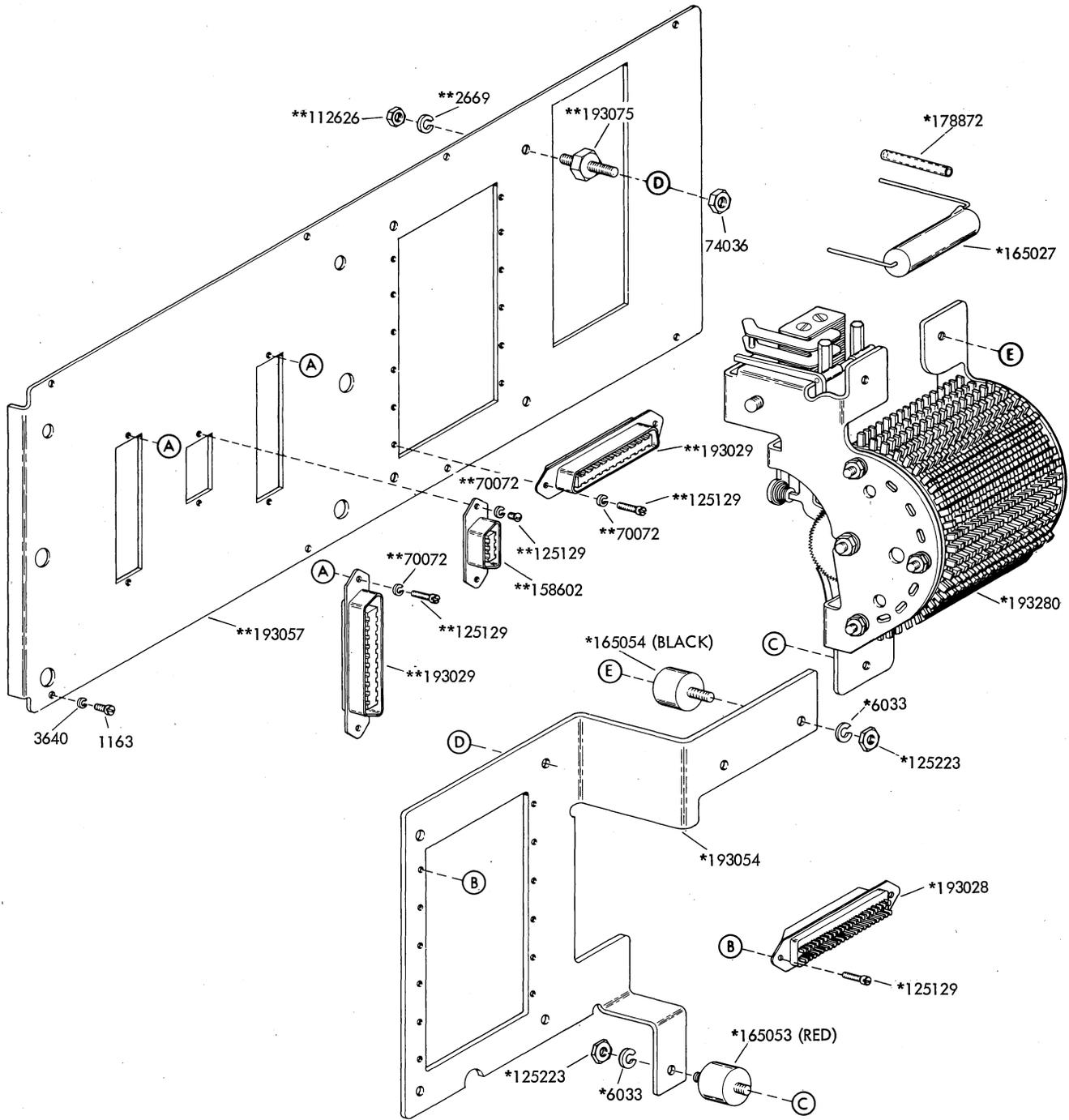


FIGURE 2. 193001\*\* TRANSMITTER START CODE GENERATOR MODULE - TSCG

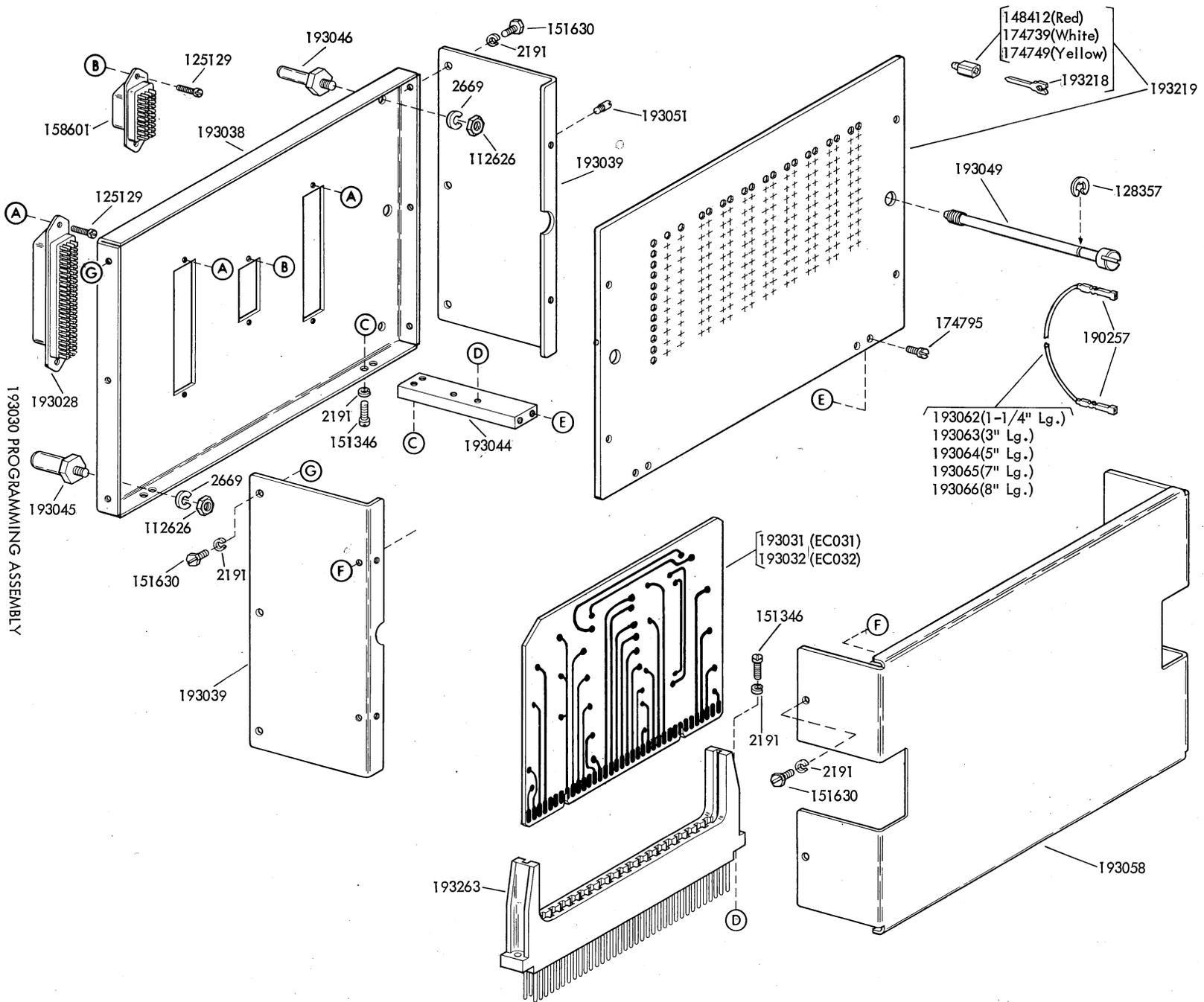


\*PART OF 193002 STEPPING SWITCH ASSEMBLY

\*\*PART OF 193195 MOUNTING PLATE ASSEMBLY

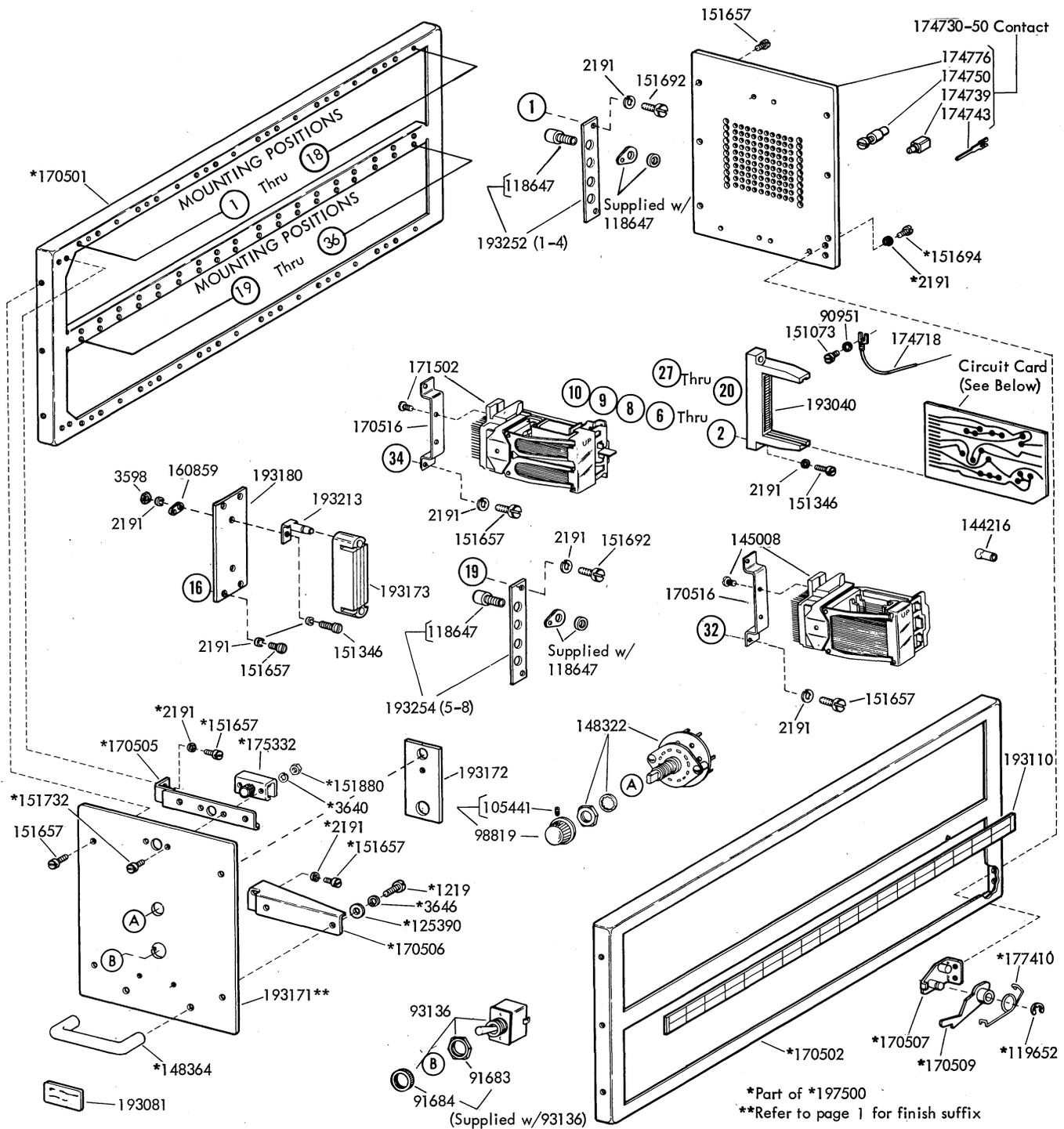
FIGURE 3. 193001\*\* TRANSMITTER START CODE GENERATOR MODULE - TSCG (Continued)

FIGURE 4. 193001\*\* TRANSMITTER START CODE GENERATOR MODULE - TSCG (Continued)









|        |        |        |        |        |        |        |        |        |        |        |        |    |        |    |        |    |    |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|--------|----|--------|----|----|
| 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13 | 14     | 15 | 16     | 17 | 18 |
| 193252 | 172359 | 172359 | 177503 | 177527 | 177552 | 172378 | 172359 | 172431 | 177528 | 177572 | 177572 |    |        |    |        |    |    |
| 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     | 27     | 28     | 29     | 30     | 31 | 32     | 33 | 34     | 35 | 36 |
| 193254 | 177575 | 172390 | 149162 | 172378 | 177572 | 177581 | 177530 | 177540 | 177542 | 149164 |        |    | 145008 |    | 171502 |    |    |

FIGURE 7. 193004\*\* HIGH SPEED READER CONTROLS 5 MODULE-HISREC 5

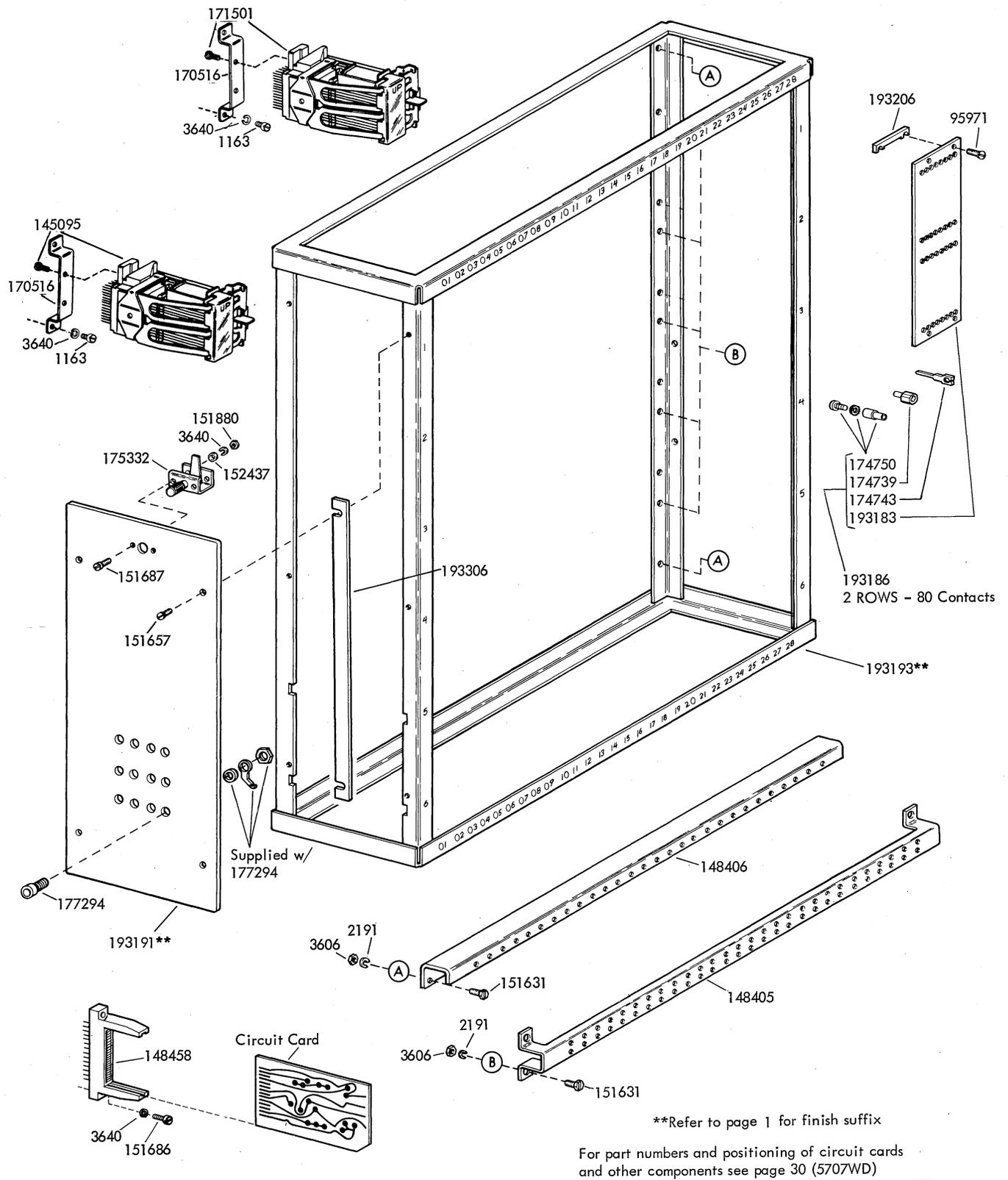


FIGURE 8. 193005\*\* TRANSMITTER DISTRIBUTOR AND CONTROLS MODULE - TD

SECTION 592-850-803

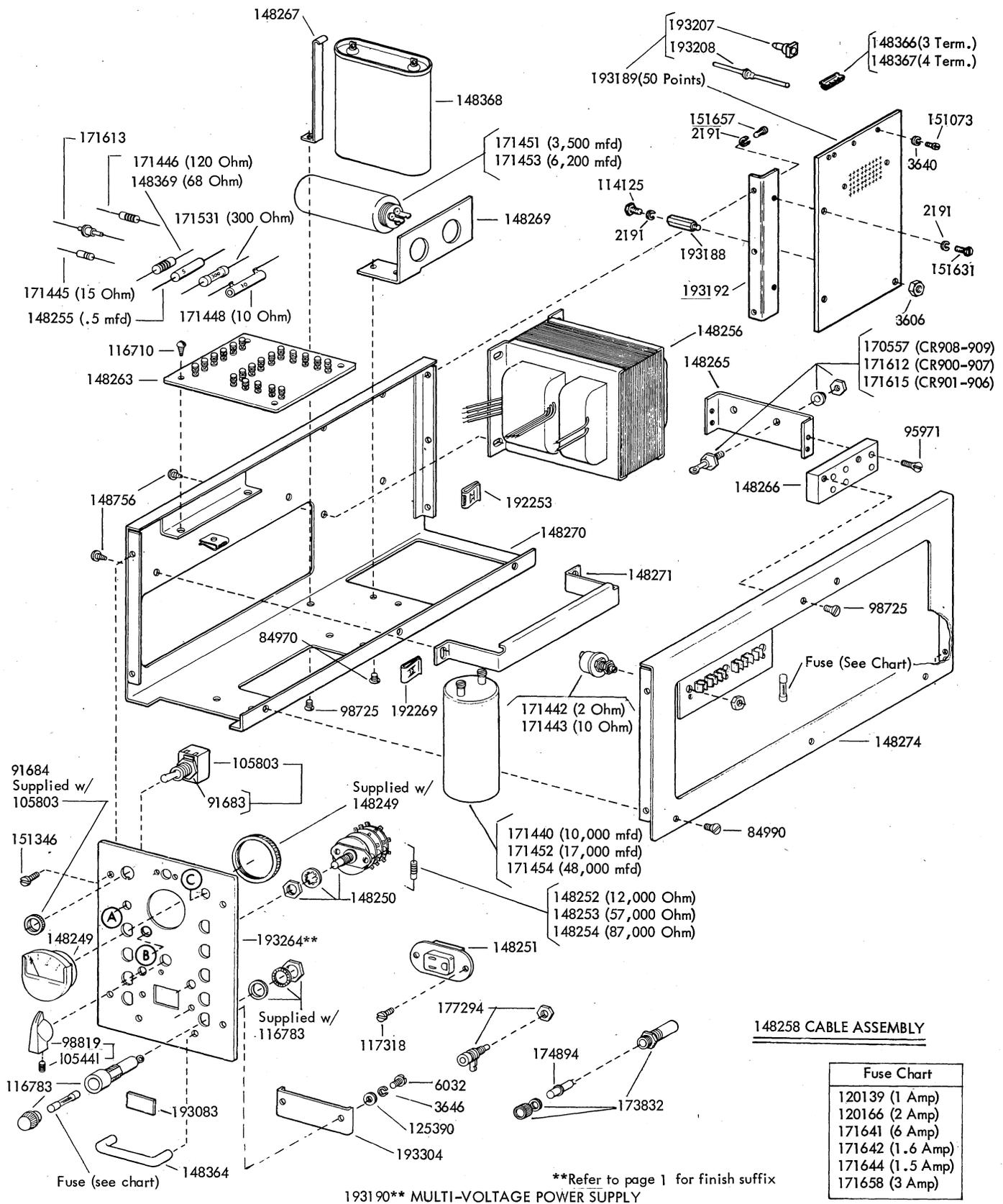
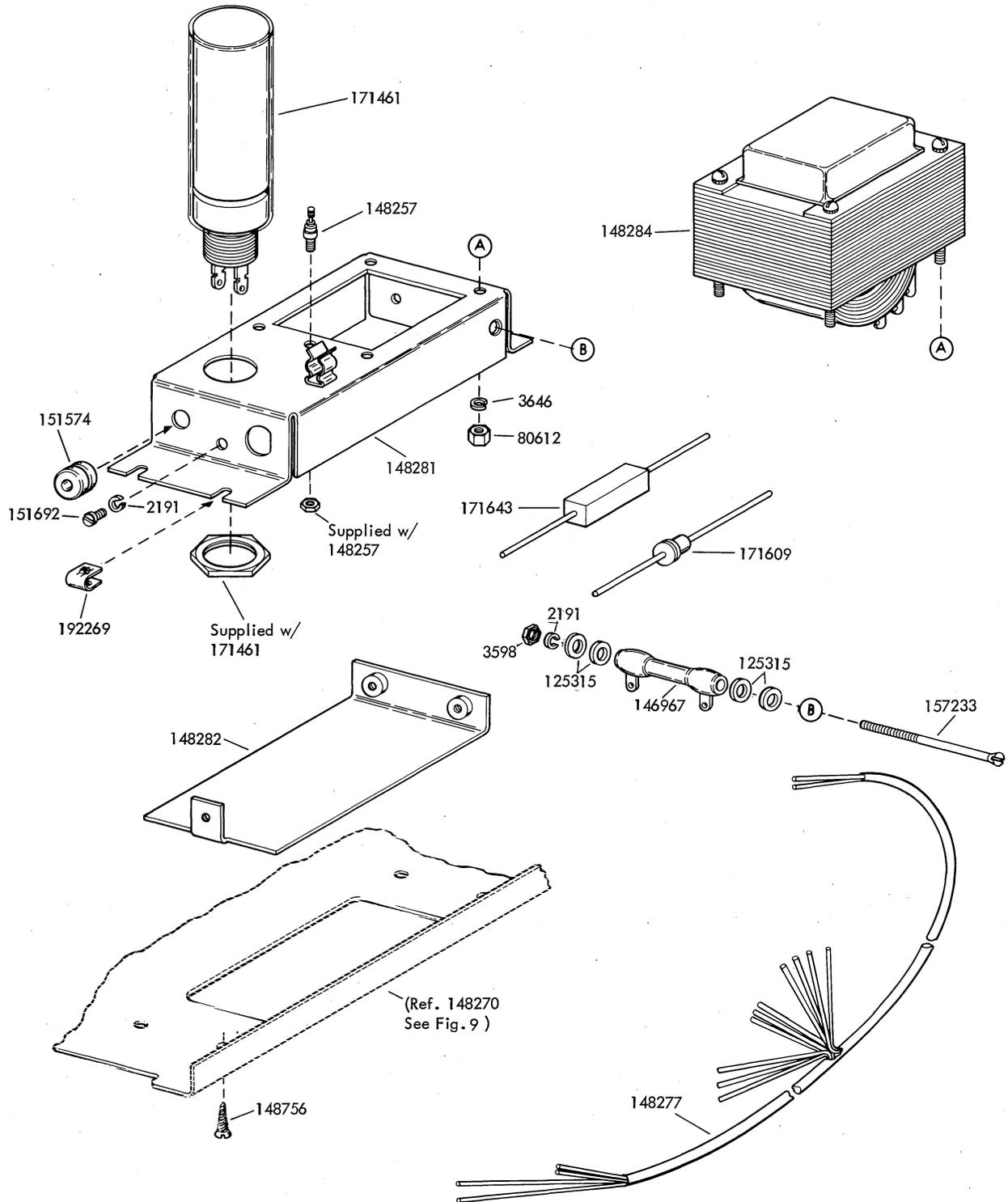


FIGURE 9. 193005\*\* TRANSMITTER DISTRIBUTOR AND CONTROLS MODULE - TD (Continued)



193190\*\* MULTI-VOLTAGE POWER SUPPLY (Continued)

FIGURE 10. 193005\*\* TRANSMITTER DISTRIBUTOR AND CONTROLS MODULE - TD (Continued)

SECTION 592-850-803

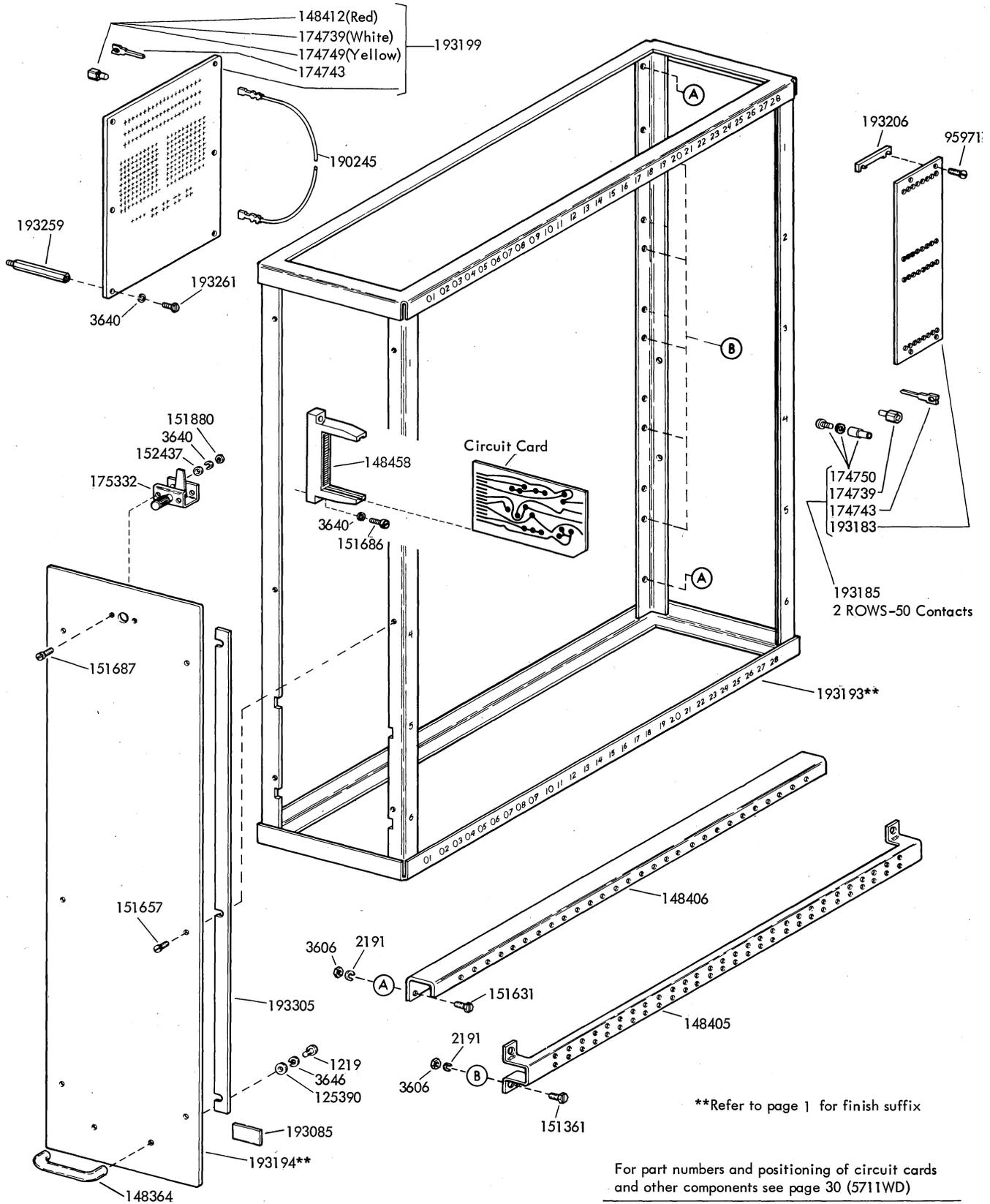
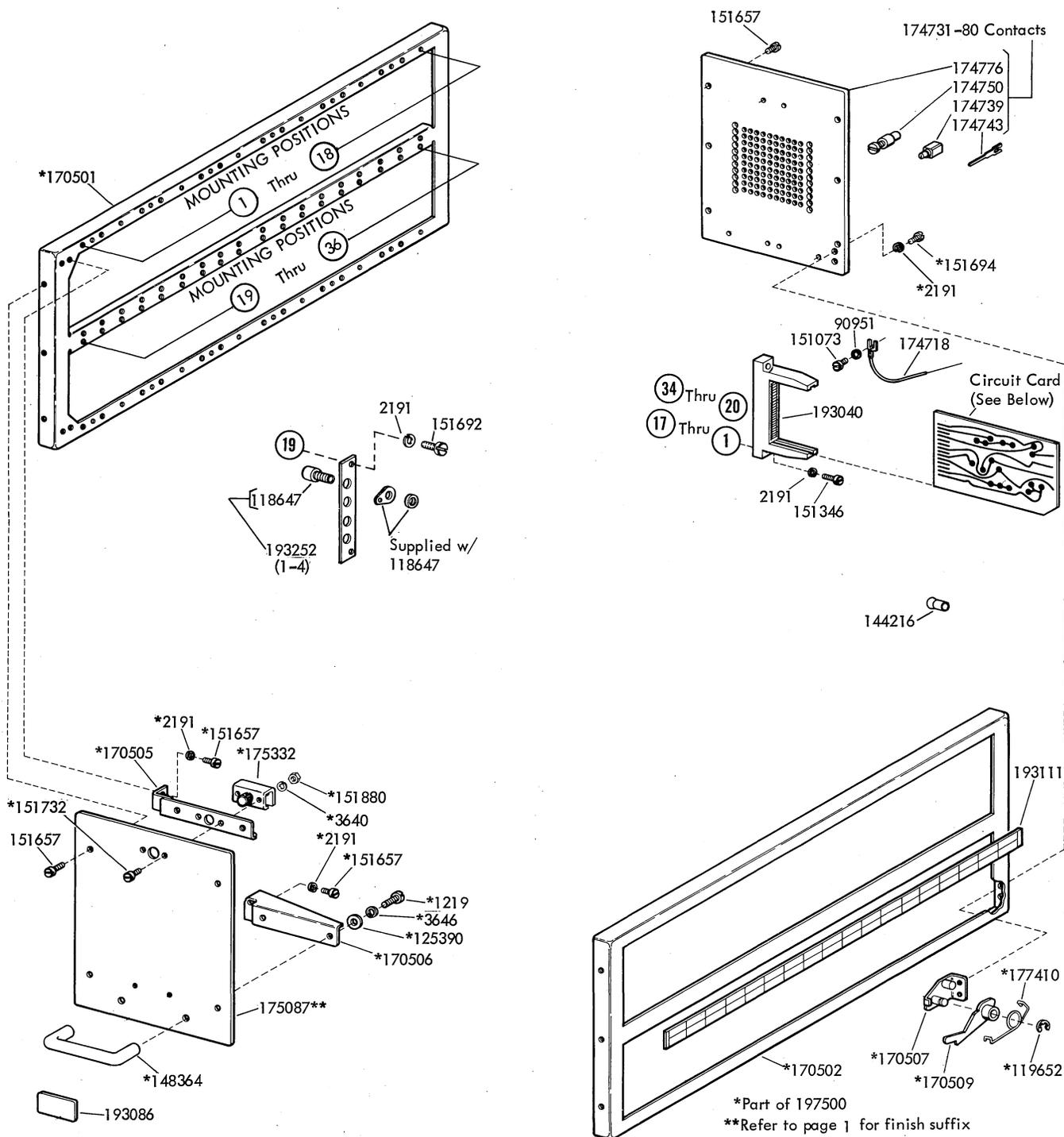
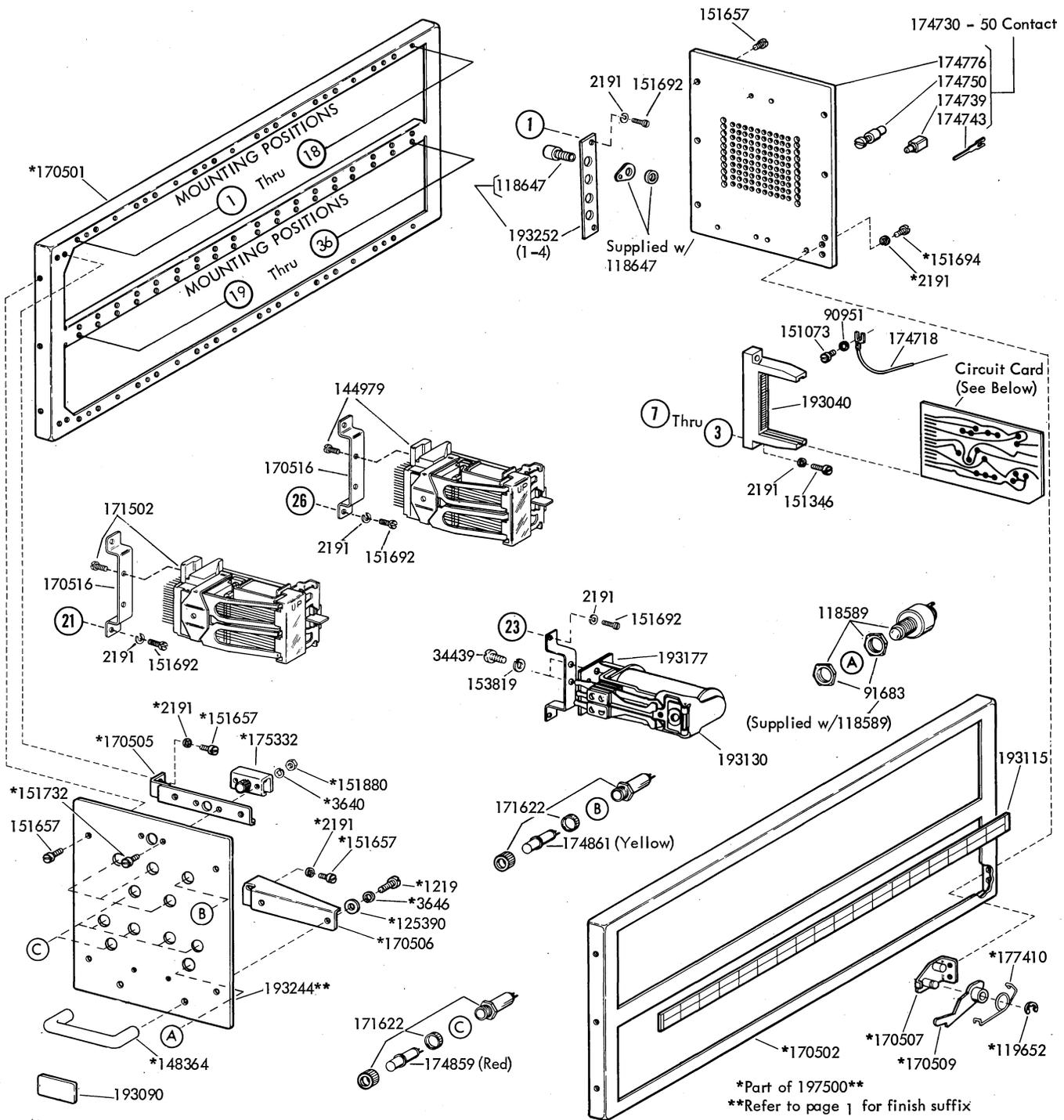


FIGURE 11. 19308\*\* SEQUENCE DETECTOR MODULE - SELECTOR (1 to 60 Calls)



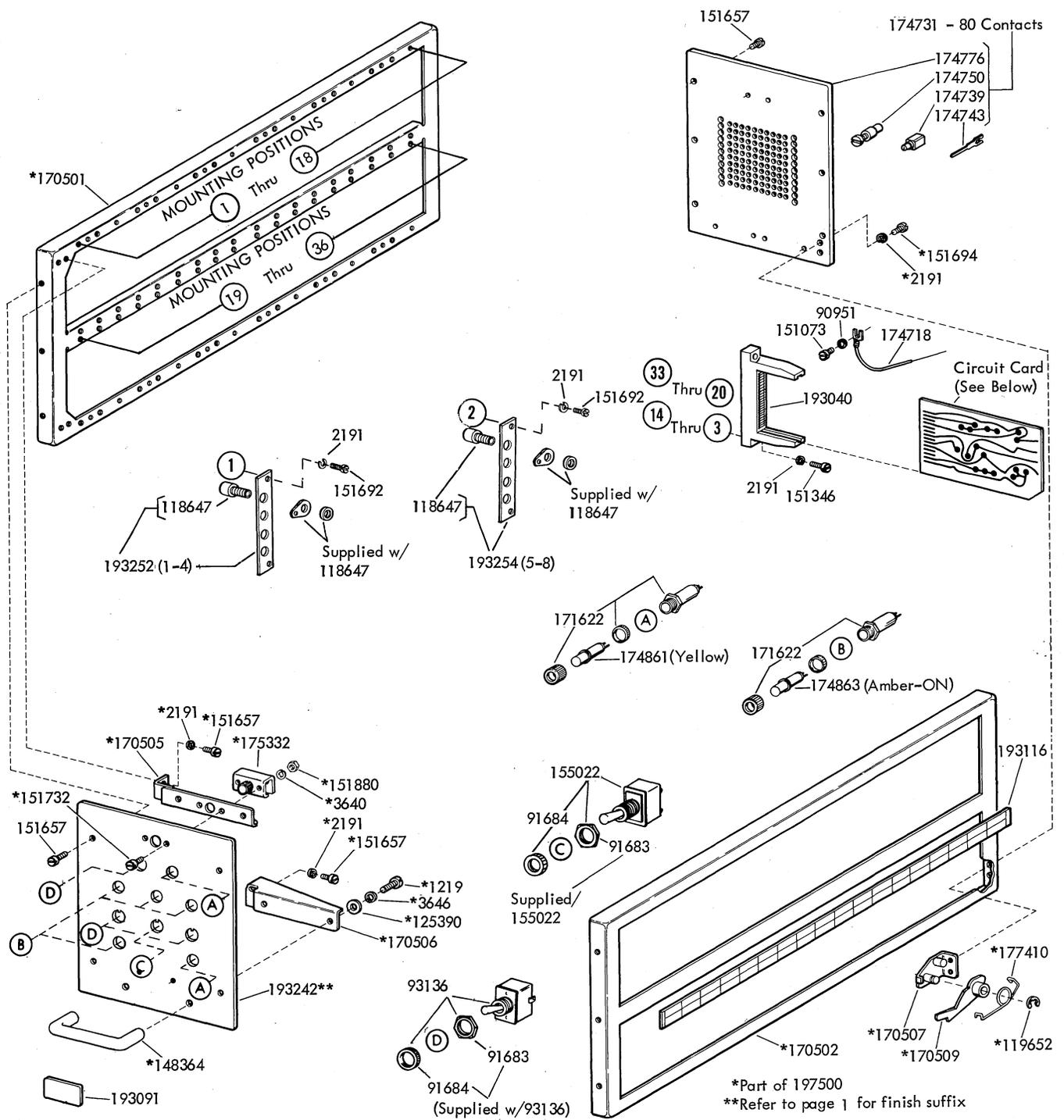
|        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|
| 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     | 15     | 16     | 17     | 18 |
| 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 177516 |    |
| 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     | 27     | 28     | 29     | 30     | 31     | 32     | 33     | 34     | 35     | 36 |
| 193252 | 177528 | 177527 | 177528 | 177527 | 177528 | 177527 | 177522 | 177503 | 172359 | 177540 | 172359 | 172359 | 177530 | 177572 | 177572 | 172401 |    |

FIGURE 12. 19309\*\* INTERCEPT CONTROL MODULE-INTCO



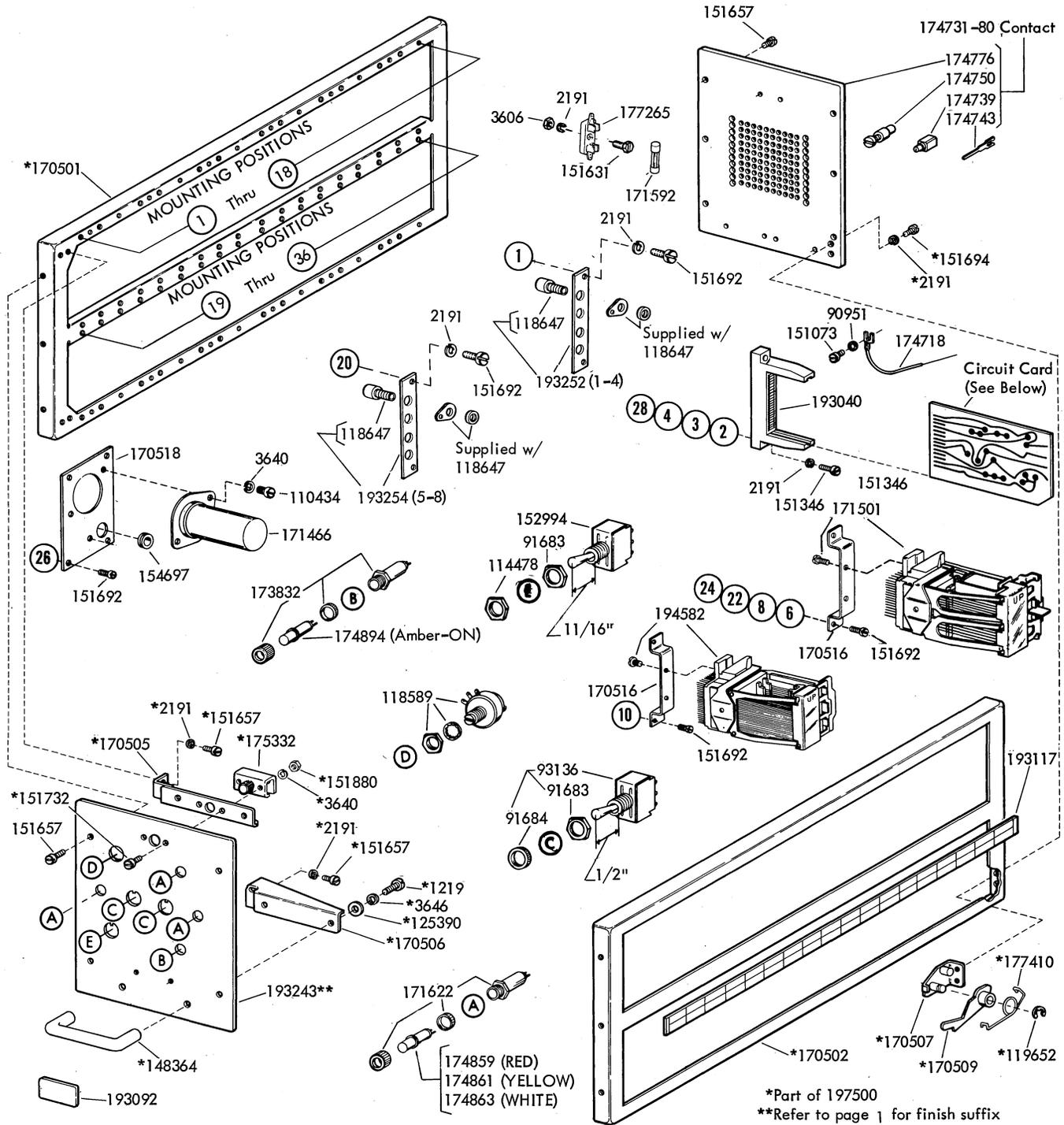
|        |    |        |        |        |        |        |        |    |    |    |    |    |    |    |    |    |    |
|--------|----|--------|--------|--------|--------|--------|--------|----|----|----|----|----|----|----|----|----|----|
| 1      | 2  | 3      | 4      | 5      | 6      | 7      | 8      | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 193252 |    | 172401 | 172390 | 149171 | 149165 | 149166 |        |    |    |    |    |    |    |    |    |    |    |
| 19     | 20 | 21     | 22     | 23     | 24     | 25     | 26     | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |
|        |    | 171502 | 193130 |        |        |        | 144979 |    |    |    |    |    |    |    |    |    |    |

FIGURE 13. 193010\*\* SPECIAL ELECTRONIC ACCESSORIES 2 L/H MODULE-SEA 2 L/H



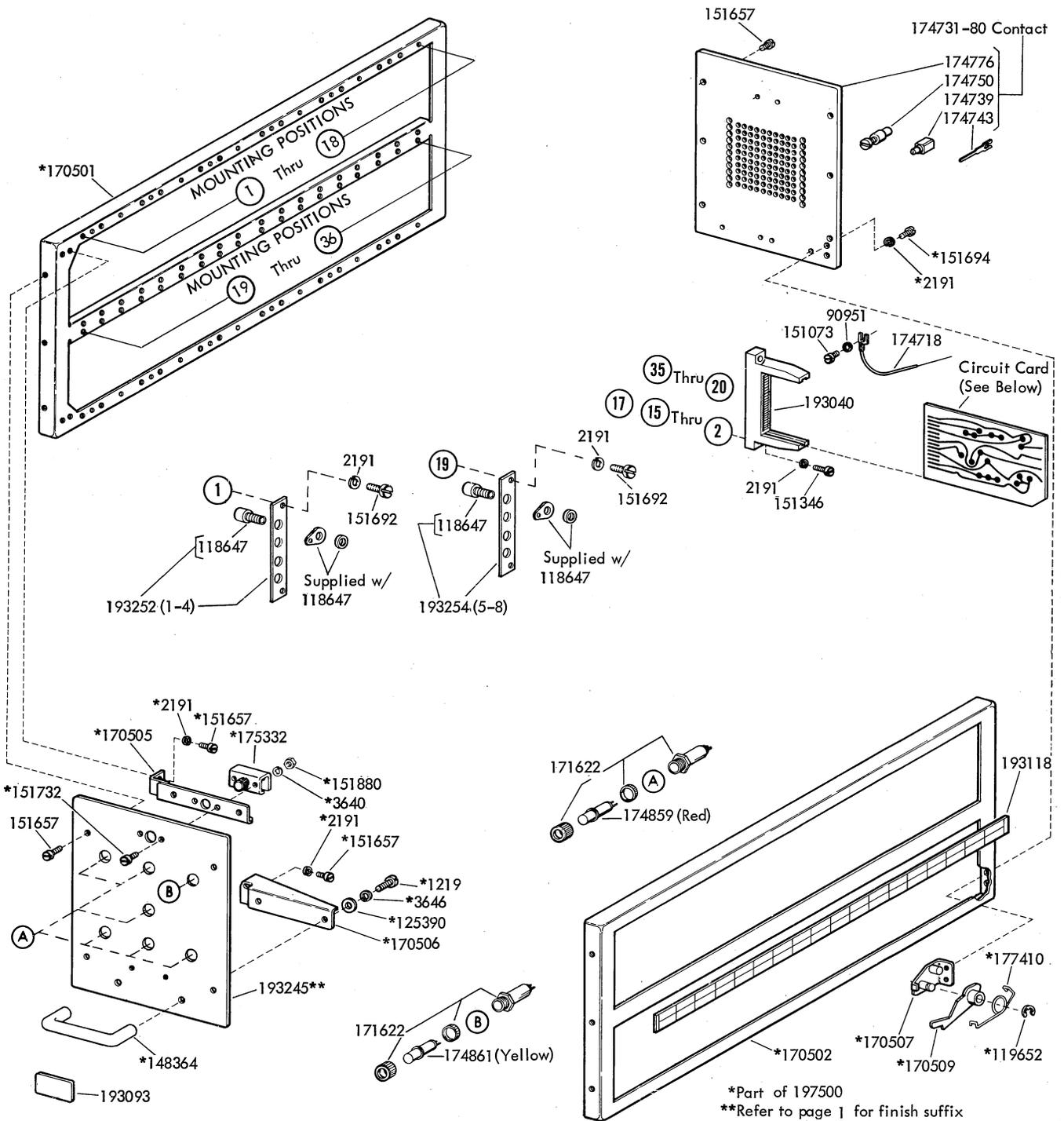
|        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |    |    |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|----|----|
| 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     | 15     | 16 | 17 | 18 |
| 193252 | 193254 | 177502 | 177507 | 177571 | 172359 | 177504 | 177512 | 177503 | 172359 | 172359 | 172439 | 172481 | 172419 |        |    |    |    |
| 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     | 27     | 28     | 29     | 30     | 31     | 32     | 33     | 34 | 35 | 36 |
|        | 172387 | 177571 | 172419 | 172359 | 172359 | 172359 | 172359 | 172359 | 172439 | 172439 | 172439 | 149171 | 149170 | 177530 |    |    |    |

FIGURE 14. 193011\*\* SPECIAL ELECTRONIC ACCESSORIES 1 L/H MODULE-SEA 1 L/H



|        |        |        |        |    |        |    |        |    |        |    |    |    |    |    |    |    |    |
|--------|--------|--------|--------|----|--------|----|--------|----|--------|----|----|----|----|----|----|----|----|
| 1      | 2      | 3      | 4      | 5  | 6      | 7  | 8      | 9  | 10     | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 193252 | 149167 | 149168 | 149169 |    | 171501 |    | 171501 |    | 194582 |    |    |    |    |    |    |    |    |
| 19     | 20     | 21     | 22     | 23 | 24     | 25 | 26     | 27 | 28     | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |
|        | 193254 |        | 171501 |    | 171501 |    | 171466 |    | 149119 |    |    |    |    |    |    |    |    |

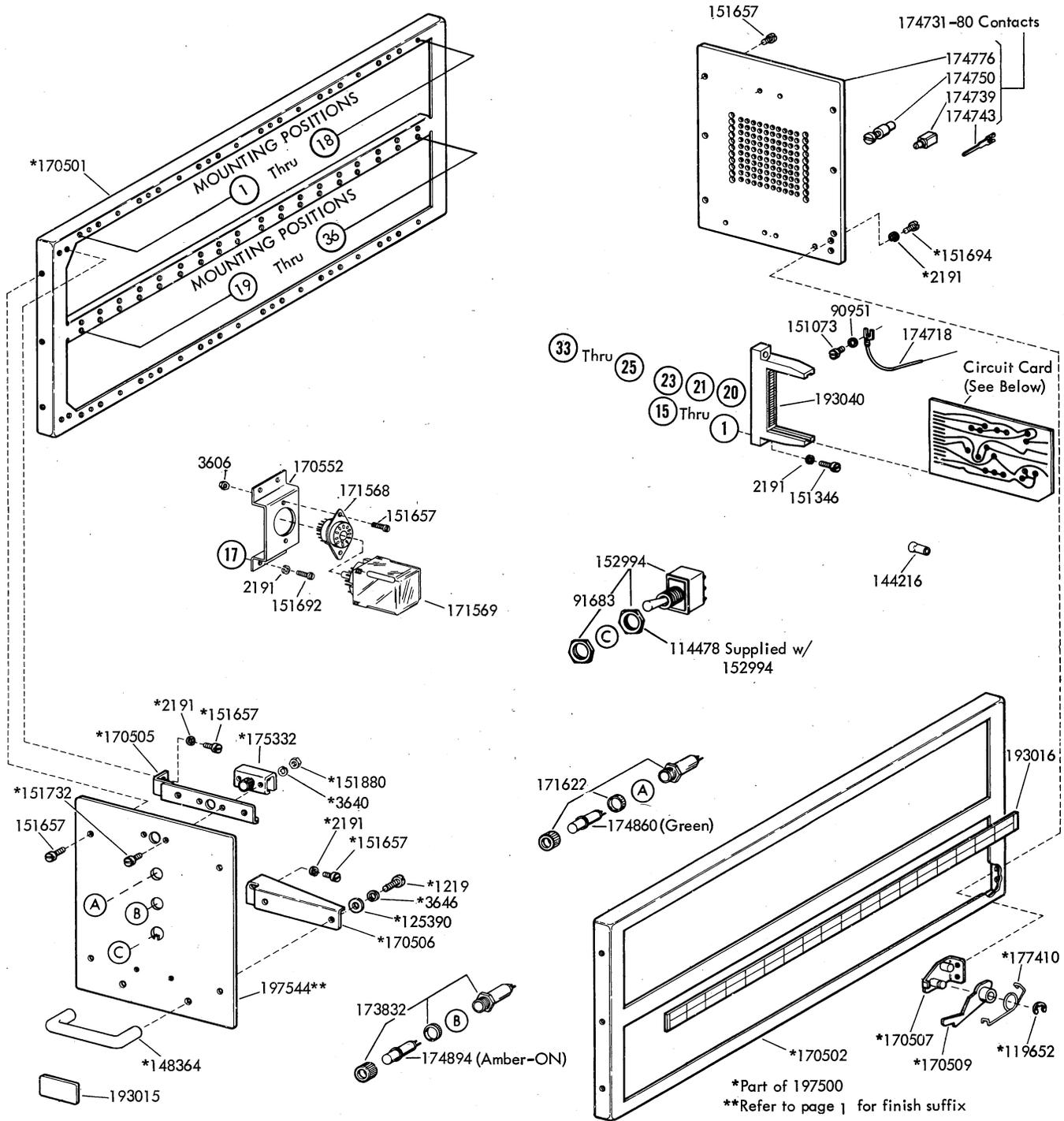
FIGURE 15. 193012\*\* SPECIAL ELECTRONIC ACCESSORIES 2 H/L MODULE-SEA 2 H/L



\*Part of 197500  
 \*\*Refer to page 1 for finish suffix

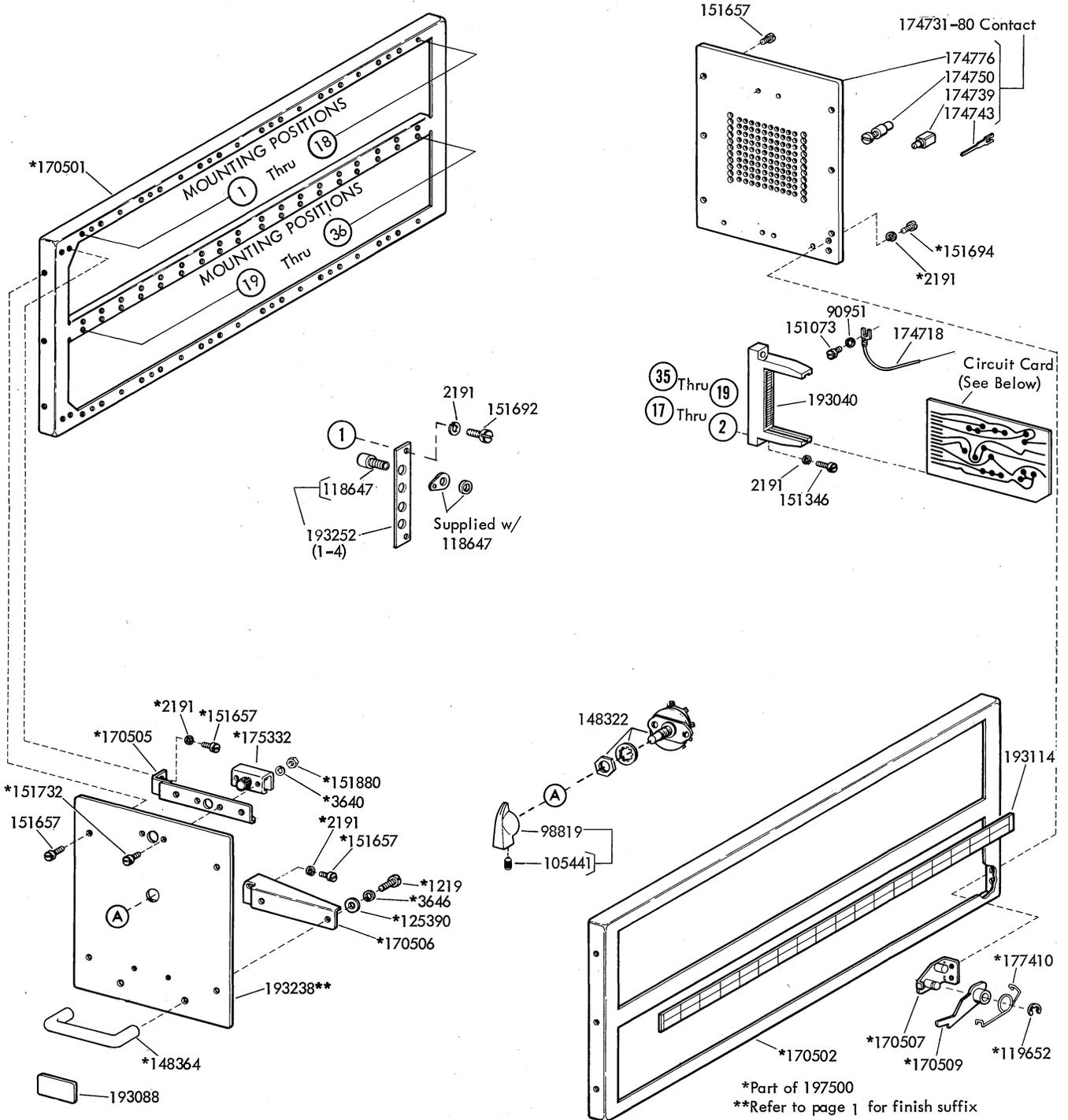
|        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     | 15     | 16     | 17     | 18     |
| 193252 | 149172 | 177504 | 172359 | 172359 | 172359 | 177528 | 177527 | 177503 | 177583 | 172439 | 177540 | 172419 | 177532 | 149171 |        |        | 172375 |
| 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     | 27     | 28     | 29     | 30     | 31     | 32     | 33     | 34     | 35     | 36     |
| 193254 | 172419 | 177512 | 177583 | 149175 | 172419 | 172419 | 172359 | 172359 | 177575 | 177552 | 172419 | 172400 | 172359 | 177576 | 177530 | 177537 |        |

FIGURE 16. 193013\*\* SPECIAL ELECTRONIC ACCESSORIES 1 H/L MODULE-SEA 1 H/L



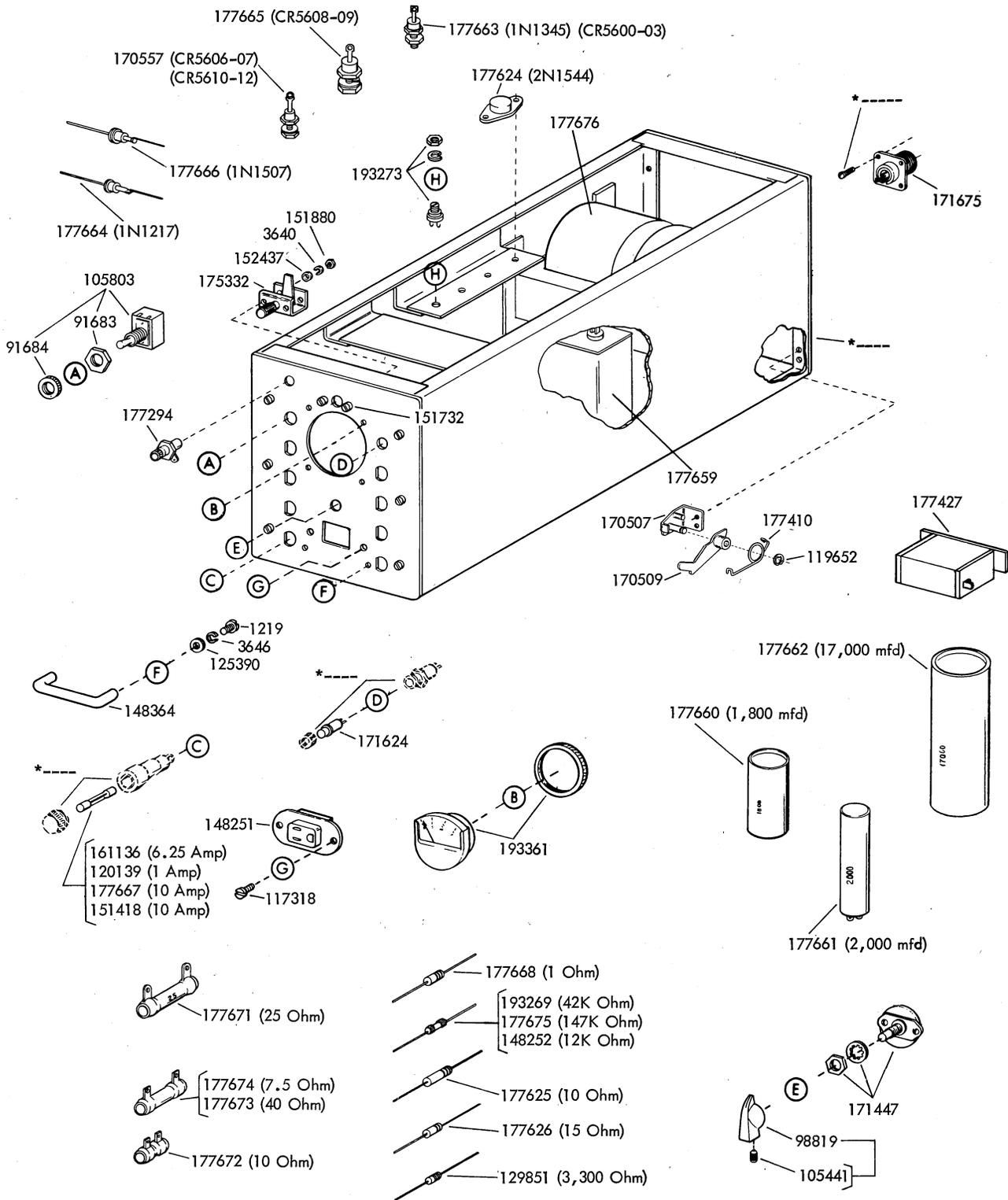
| 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     | 15     | 16 | 17     | 18 |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|--------|----|
| 177502 | 177502 | 177572 | 172390 | 172419 | 177507 | 177507 | 172390 | 172419 | 172359 | 172490 | 172429 | 177502 | 172431 | 149144 |    | 171569 |    |
| 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     | 27     | 28     | 29     | 30     | 31     | 32     | 33     | 34 | 35     | 36 |
|        | 172419 | 177507 |        | 177530 |        | 177463 | 177464 | 177465 | 172359 | 172359 | 172481 | 172419 | 172375 | 172369 |    |        |    |

FIGURE 17. 193014\*\* HIGH SPEED READER AND ALARM CIRCUITS 2 WITH SEQUENCE DETECTION 3 MODULE-HISRAAC 2 W/SED 3



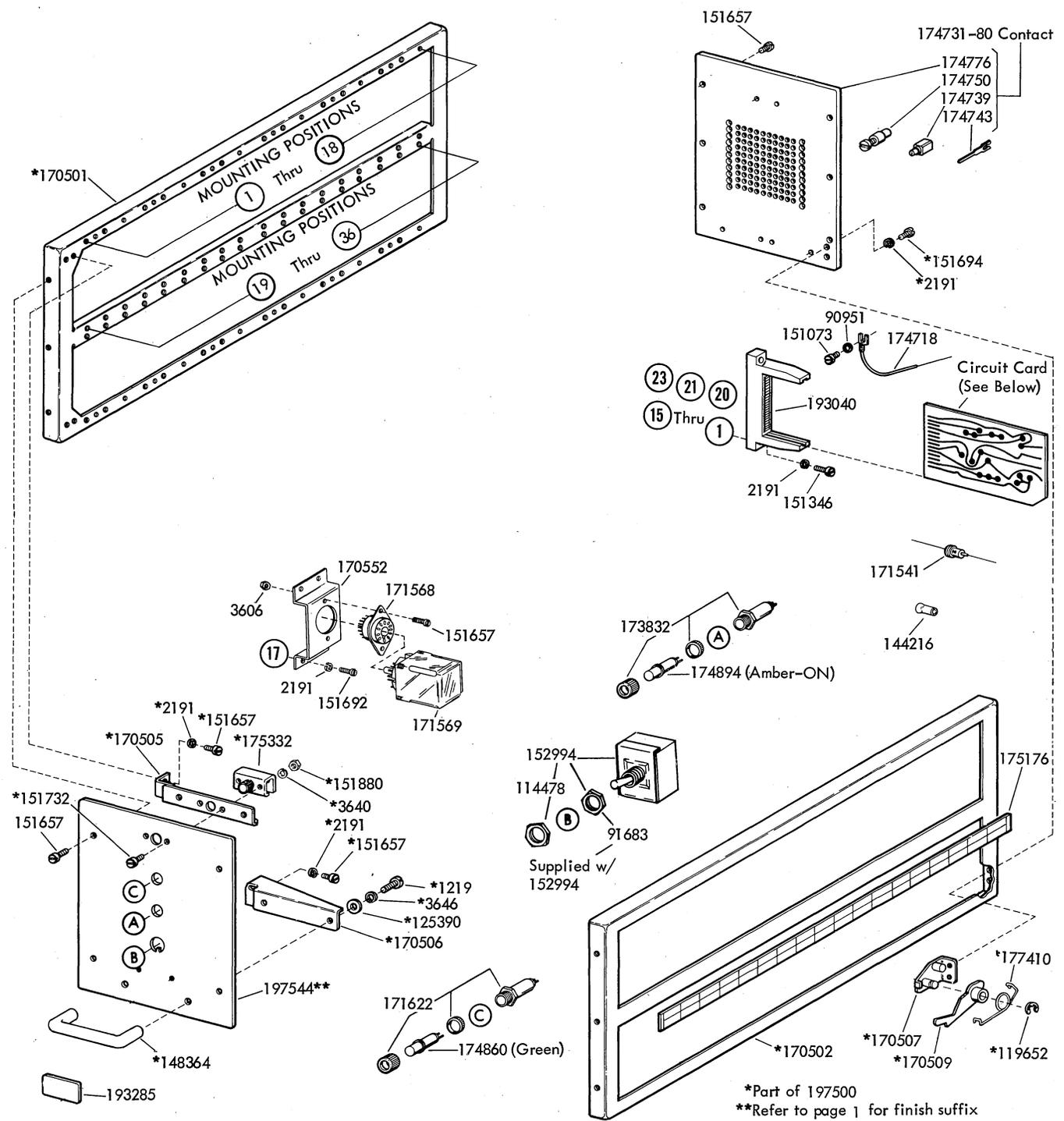
|        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|
| 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     | 15     | 16     | 17     | 18 |
| 193252 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 177516 | 177507 | 172469 | 172491 | 172492 | 177540 | 172359 | 177530 |    |
| 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     | 27     | 28     | 29     | 30     | 31     | 32     | 33     | 34     | 35     | 36 |
| 177516 | 172396 | 172396 | 172396 | 172396 | 172396 | 177550 | 172396 | 172396 | 172396 | 177550 | 172385 | 172417 | 172390 | 172431 | 177572 | 172359 |    |

FIGURE 18. 193164\*\* HIGH SPEED REPERFORATOR CONTROL 5 MODULE-HISRECO 5



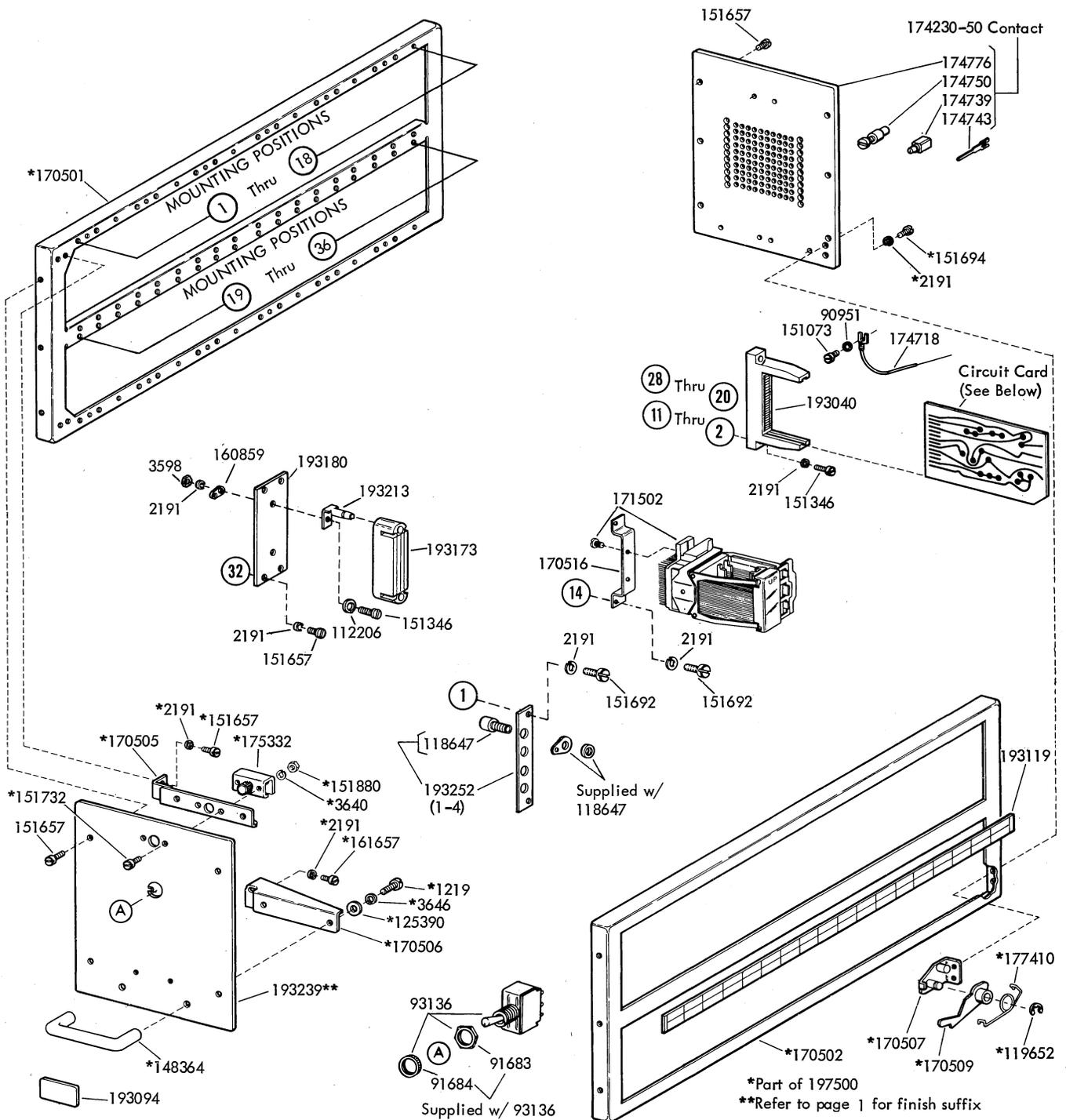
\*----Replacement Part Numbers Not Assigned.

FIGURE 19. 193221\*\* MULTI-VOLTAGE POWER SUPPLY - MVPS 4



|        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |        |    |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|--------|----|
| 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     | 15     | 16 | 17     | 18 |
| 177502 | 177502 | 177572 | 172390 | 172419 | 177507 | 177507 | 172390 | 172419 | 172359 | 172490 | 172429 | 177502 | 172431 | 149144 |    | 171569 |    |
| 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     | 27     | 28     | 29     | 30     | 31     | 32     | 33     | 34 | 35     | 36 |
|        | 172419 | 177507 |        | 177530 |        |        |        |        |        |        |        |        |        |        |    |        |    |

FIGURE 20. 193222\*\* HIGH SPEED READER AND ALARM CIRCUITS 2 MODULE -HISRACC 2



|        |        |        |        |        |        |        |        |        |        |        |    |    |        |    |    |    |    |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|----|--------|----|----|----|----|
| 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12 | 13 | 14     | 15 | 16 | 17 | 18 |
| 193254 | 172359 | 172359 | 172359 | 172359 | 177581 | 177507 | 149162 | 177576 | 172359 | 177542 |    |    | 171502 |    |    |    |    |
| 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     | 27     | 28     | 29     | 30 | 31 | 32     | 33 | 34 | 35 | 36 |
|        | 177540 | 177562 | 177540 | 177561 | 177504 | 177571 | 177540 | 177503 | 177530 |        |    |    | 193173 |    |    |    |    |

FIGURE 21. 193240\*\* REPERFORATOR ACCESSORIES MODULE-REACC

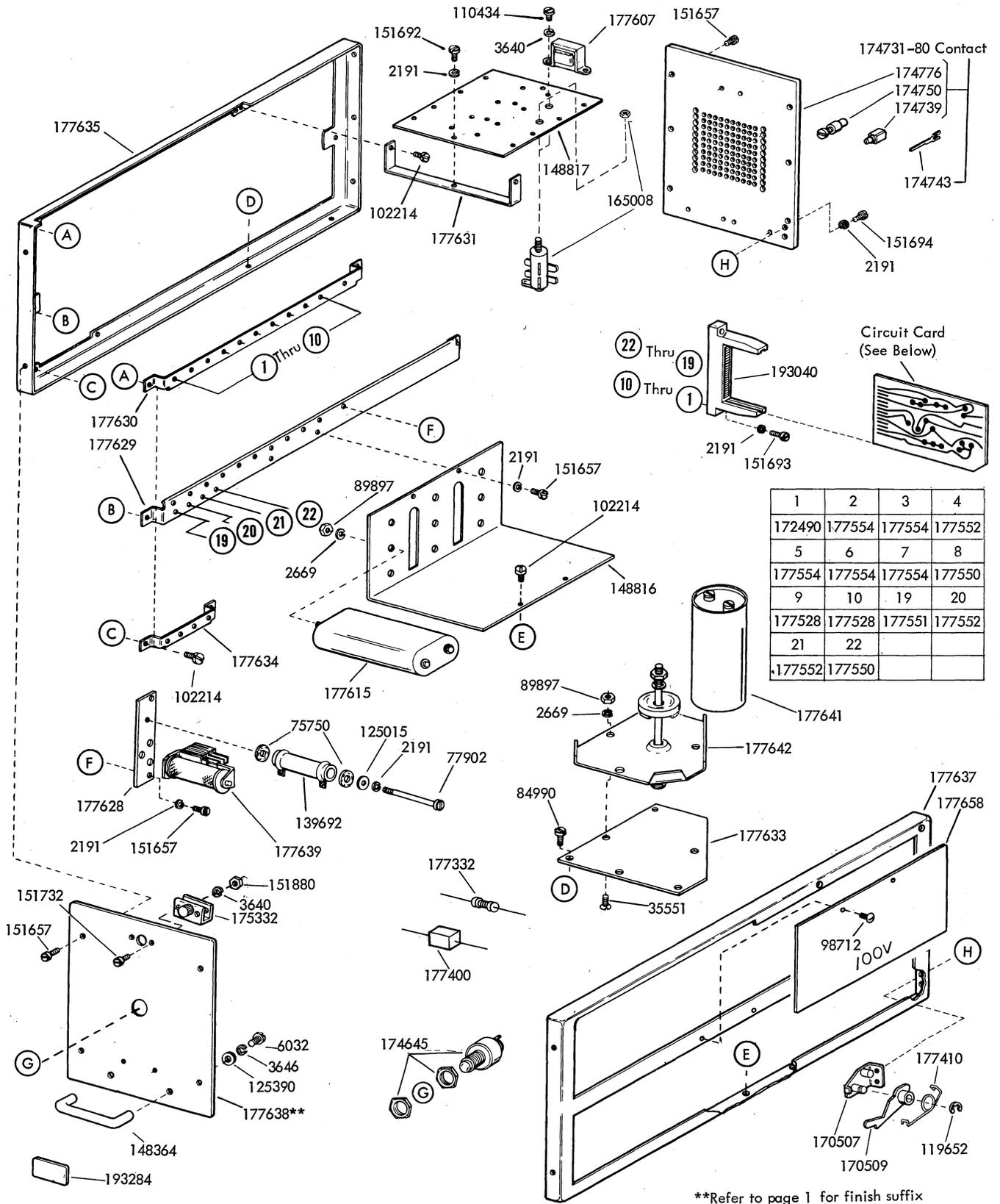
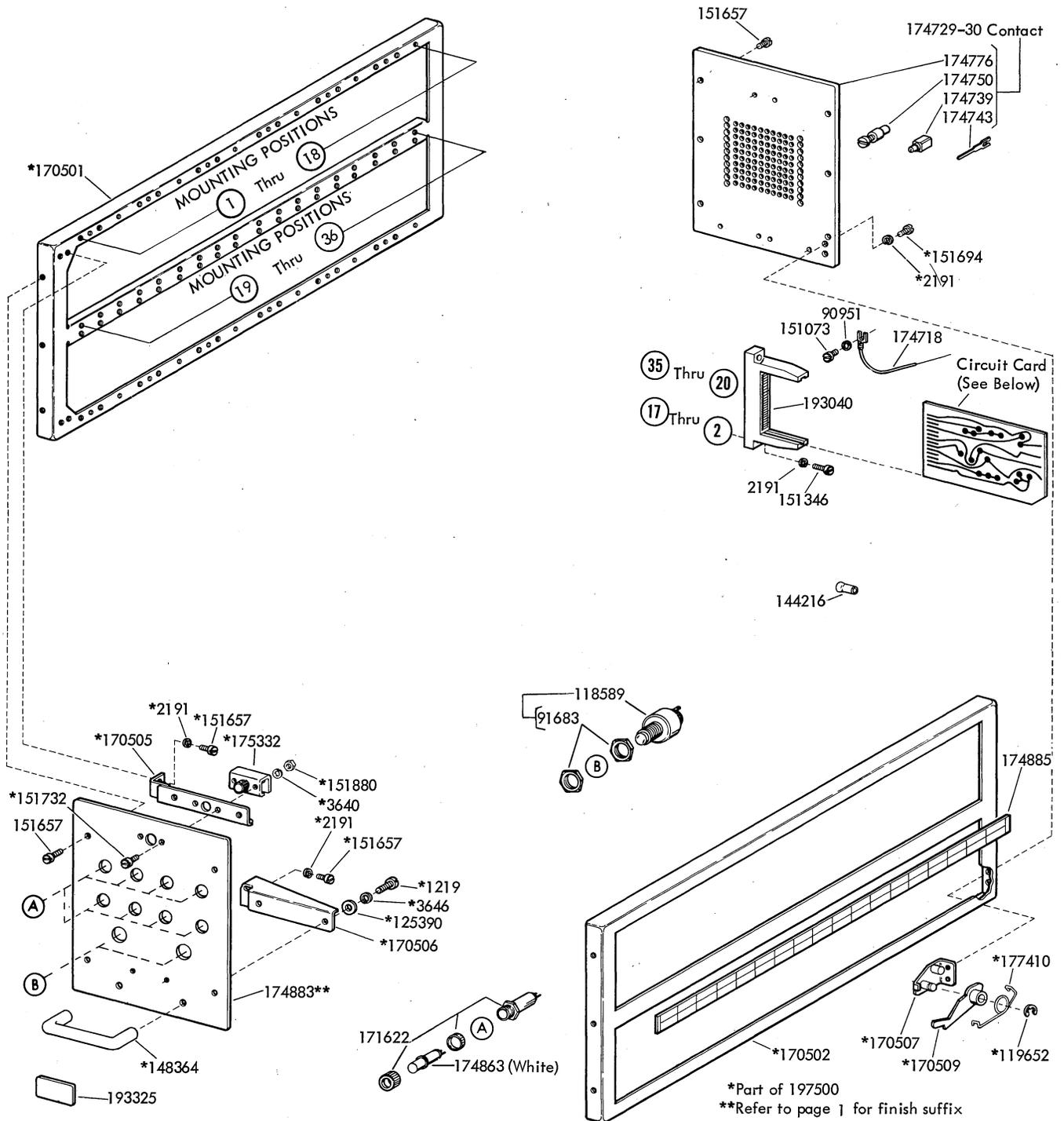


FIGURE 22. 193283\*\* HIGH SPEED PUNCH CONTROL 3D MODULE-HISPUC 3D



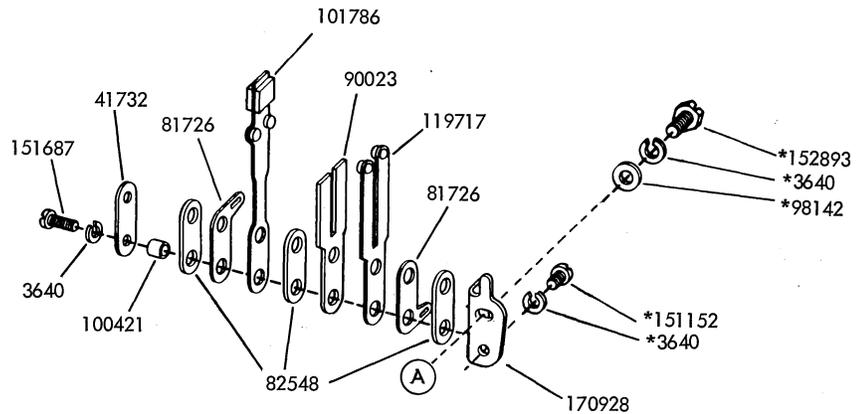


|    |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |    |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|
| 1  | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     | 15     | 16     | 17     | 18 |
|    | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 177501 | 172379 | 172379 | 149109 | 177506 | 172359 | 172359 | 172359 | 177501 |    |
| 19 | 20     | 21     | 22     | 23     | 24     | 25     | 26     | 27     | 28     | 29     | 30     | 31     | 32     | 33     | 34     | 35     | 36 |
|    | 172401 | 172386 | 172386 | 172386 | 172386 | 172386 | 172386 | 172439 | 172439 | 172439 | 172439 | 177530 | 172386 | 172386 | 172386 | 172490 |    |

FIGURE 24. 193322\*\* DIFFERENTIAL MESSAGE COUNTER 5 MODULE-DIMCO 5



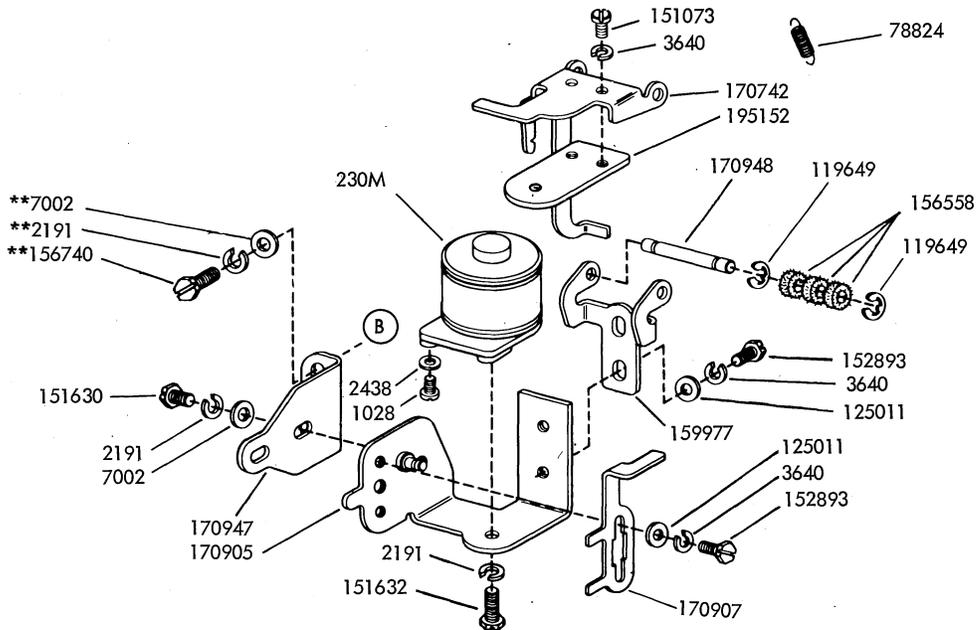




170747 Contact Assembly

\*Not part of 170747

(A) See Fig. 26 for Position



170910 Magnet Assembly

\*\*Not part of 170910

(B) See Fig. 26 for Position

175098 TAPE MEASURE ASSEMBLY

FIGURE 27. 193323\*\* TAPE MEASURE AND COUNTER CONTROL 3 MODULE-TAMACC 3 (Continued)

MODULE 193001\*\*

| POSITION ON BRACKET |   |                  |        |   |        |        |   |        |        |    |        |        |        |        |
|---------------------|---|------------------|--------|---|--------|--------|---|--------|--------|----|--------|--------|--------|--------|
| ROW                 | 1 | 2                | 3      | 4 | 5      | 6      | 7 | 8      | 9      | 10 | 11     | 12     | 13     | 14     |
| 1                   |   |                  |        |   |        |        |   |        |        |    |        |        |        |        |
| 2                   |   | 193231<br>193024 |        |   | 193196 |        |   | 193260 |        |    | 172375 | 177530 | 177572 | 177572 |
| 3                   |   |                  | 171501 |   |        | 171501 |   |        | 171501 |    | 149131 | 149132 | 149133 | 177527 |
| 4                   |   |                  | 171501 |   |        | 171501 |   |        | 171501 |    | 172400 | 172400 | 172400 | 177527 |
| 5                   |   |                  |        |   |        |        |   |        |        |    |        |        |        |        |
| 6                   |   |                  |        |   |        |        |   |        |        |    |        |        |        |        |

193001\*\*(continued)

| POSITION ON BRACKET |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| ROW                 | 15     | 16     | 17     | 18     | 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     | 27     | 28     |
| 1                   |        |        |        |        |        |        |        |        | 193186 |        |        |        | 193295 |        |
| 2                   | 177572 | 177572 |        | 172359 |        |        |        |        | 193186 |        |        |        |        |        |
| 3                   | 177501 | 177541 | 177542 | 172359 | 172359 | 172359 | 172359 | 177542 | 177503 | 172359 | 172359 | 172359 | 177503 | 172375 |
| 4                   | 172320 | 172319 | 172350 | 172359 | 172359 | 172360 | 177504 | 177527 | 177528 | 177503 | 177501 | 149134 | 177541 |        |
| 5                   |        |        |        | 193029 |        |        |        |        |        |        |        |        |        |        |
| 6                   |        |        |        | 193029 |        |        |        |        |        |        |        |        |        |        |

MODULE 193003\*\*

| POSITION ON BRACKET |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| ROW                 | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     |
| 1                   | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 177522 | 177527 | 172359 | 172359 | 172359 | 172359 |
| 2                   |        |        | 172359 | 177523 | 177501 | 177523 | 177528 | 177502 | 177528 | 177523 | 177528 | 177527 | 177528 | 177527 |
| 3                   | 172375 | 177516 | 177540 | 172359 | 172359 | 177502 | 172401 | 172359 | 172527 | 177528 | 177527 | 177522 | 172307 | 172422 |
| 4                   | 172359 | 177561 | 149176 |        | 177572 | 172359 | 172359 | 172368 | 177502 | 172380 | 172359 | 172359 | 177502 | 177523 |
| 5                   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 6                   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |

193003\*\*(continued)

| POSITION ON BRACKET |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| ROW                 | 15     | 16     | 17     | 18     | 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     | 27     | 28     |
| 1                   | 172359 | 172359 | 172359 | 172359 | 177527 | 177528 | 177527 | 177528 |        | 177528 | 177527 |        |        |        |
| 2                   | 172359 | 172359 | 172359 | 172359 | 172359 | 177528 | 177527 | 172359 | 172359 | 172359 | 172401 |        |        |        |
| 3                   | 172417 | 177502 | 177522 | 177503 | 172359 | 177504 | 177515 | 177556 | 177516 | 172359 | 177524 | 177516 | 177540 | 177516 |
| 4                   | 177530 | 172412 | 177528 | 177527 | 149137 |        |        | 145095 |        |        | 171501 |        |        | 171501 |
| 5                   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 6                   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |

FIGURE 28. 193001\*\* AND 193003\*\* POSITIONING REFERENCE CHARTS

MODULE 193005\*\*

| POSITION ON BRACKET |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| ROW                 | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     |
| 1                   | 172359 | 172375 | 177528 | 172401 | 177527 | 177527 | 177502 | 172359 | 172359 | 177502 | 172418 | 172417 | 172307 | 172422 |
| 2                   | 177516 | 177501 | 177502 | 172359 | 177523 | 172401 | 177504 | 172359 | 177523 | 172359 | 177502 | 172355 | 177502 | 149136 |
| 3                   | 149140 | 172380 | 172359 | 149140 | 172359 | 172477 | 172430 | 172401 | 172355 | 172375 | 172359 | 177542 | 177522 | 172400 |
| 4                   |        |        | 172359 | 177516 | 172401 |        |        |        | 177540 | 177527 | 172426 | 177572 | 177528 | 172400 |
| 5                   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 6                   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |

193005\*\*(Continued)

| POSITION ON BRACKET |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| ROW                 | 15     | 16     | 17     | 18     | 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     | 27     | 28     |
| 1                   | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172359 | 172430 |        |        |        |
| 2                   | 177527 | 177502 | 177530 | 177516 | 177524 | 172375 | 177540 | 177541 | 177516 | 177556 | 172380 |        |        |        |
| 3                   | 172407 | 172407 | 172370 | 177540 | 177502 | 177502 | 177538 | 177538 | 177538 | 177503 | 177503 | 177503 | 172409 | 172409 |
| 4                   | 149137 | 149137 |        |        | 171501 |        |        | 171501 |        |        | 145095 |        |        | 145095 |
| 5                   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 6                   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |

MODULE 193008\*\*

| POSITION ON BRACKET |   |   |   |   |        |   |   |   |   |    |    |        |        |        |
|---------------------|---|---|---|---|--------|---|---|---|---|----|----|--------|--------|--------|
| ROW                 | 1 | 2 | 3 | 4 | 5      | 6 | 7 | 8 | 9 | 10 | 11 | 12     | 13     | 14     |
| 1                   |   |   |   |   | 193199 |   |   |   |   |    |    | 172397 | 172397 | 172397 |
| 2                   |   |   |   |   |        |   |   |   |   |    |    | 172397 | 172397 | 172397 |
| 3                   |   |   |   |   |        |   |   |   |   |    |    |        |        |        |
| 4                   |   |   |   |   |        |   |   |   |   |    |    |        |        |        |
| 5                   |   |   |   |   |        |   |   |   |   |    |    |        |        |        |
| 6                   |   |   |   |   |        |   |   |   |   |    |    |        |        |        |

193008\*\*(Continued)

| POSITION ON BRACKET |        |        |        |        |        |        |        |    |    |    |    |    |    |        |
|---------------------|--------|--------|--------|--------|--------|--------|--------|----|----|----|----|----|----|--------|
| ROW                 | 15     | 16     | 17     | 18     | 19     | 20     | 21     | 22 | 23 | 24 | 25 | 26 | 27 | 28     |
| 1                   | 172397 | 172397 |        | 172380 | 177530 | 177512 | 177512 |    |    |    |    |    |    | 193185 |
| 2                   | 172397 | 172397 | 177504 | 177504 | 177504 | 177512 | 177512 |    |    |    |    |    |    |        |
| 3                   |        |        |        |        |        |        |        |    |    |    |    |    |    |        |
| 4                   |        |        |        |        |        |        |        |    |    |    |    |    |    |        |
| 5                   |        |        |        |        |        |        |        |    |    |    |    |    |    |        |
| 6                   |        |        |        |        |        |        |        |    |    |    |    |    |    |        |

FIGURE 29. 193005\*\* AND 193008\*\* POSITIONING REFERENCE CHARTS

## NUMERICAL INDEX

| Part Number | Description and Page Number                       | Part Number | Description and Page Number                   | Part Number | Description and Page Number  |
|-------------|---|-------------|---|-------------|--|
| 230M        | Coil, Magnet 27, 28                               | 113039      | Post 27                                       | 148282      | Cover, Base Plate 11   |
| 1028        | Screw (4-40 x 1/4 Fil) 28                         | 114119      | Washer, Insulating 24                         | 148284      | Transformer 11   |
| 1163        | Screw (4-40 x 3/16 Fil) 3, 4, 6, 9                | 114125      | Screw (6-40 x 3/8 Hex) 7, 10                  | 148286**    | Plate, Front 2   |
| 1171        | Screw (6-32 x 3/16 Fil) 24                        | 114478      | Nut (15/32-32 Hex) 16                         | 148289      | Voltmeter 2,7  |
| 1219        | Screw (8-32 x 5/16 Fil) 2, 3, 8, 12 to 22, 25, 26 | 116710      | Screw, Self-Tapping (6 x 1/2 Rd) 2, 7, 10     | 148322      | Switch, Rotary 8, 19   |
| 1248        | Screw (6-40 x 1/2 Flat) 24                        | 116783      | Holder, Fuse 2, 7, 10                         | 148364      | Handle 2, 3, 7, 8, 10, 12 to 26                                    |
| 2191        | Washer, Lock 2, 3, 5 to 19, 21 to 28              | 117318      | Screw (6-32 x 1/4 Fil) 2, 7, 10, 20           | 148366      | Clip, Jumper (3 Term.) 10  |
| 2438        | Washer, Flat 27, 28                               | 118589      | Switch, Push (NO- Black) 14, 16, 25           | 148367      | Clip, Jumper (4 Term.) 2, 7, 10                                    |
| 2669        | Washer, Lock 4, 5, 23                             | 118647      | Connector, Red Jack 8, 13 to 17, 19, 22       | 148368      | Capacitor (3 Mfd) 2, 7, 10   |
| 3598        | Nut (6-40 Hex) 8, 11, 22, 24, 27                  | 119647      | Ring, Retaining 27                            | 148369      | Resistor (68 Ohm) 2, 7, 10   |
| 3606        | Nut (6-40 Hex) 3, 6, 7, 9, 10, 12, 16, 18, 21, 24 | 119649      | Ring, Retaining 27, 28                        | 148405      | Bracket 3, 6, 9, 12  |
| 3640        | Washer, Lock 2, 3, 6 to 10, 12 to 23, 25 to 28    | 119652      | Ring, Retaining 2, 8, 13 to 26                | 148406      | Bracket 3, 6, 9, 12  |
| 3646        | Washer, Lock 2, 3, 7, 8, 10 to 26                 | 119717      | Spring, Contact 28                            | 148412      | Insulator, Red 5, 12   |
| 6032        | Screw (8-32 x 7/16 Fil) 7, 10, 23, 24             | 120139      | Fuse (1 Amp) 2, 7, 10, 20                     | 148458      | Connector, Receptacle (15 Pin) 3, 6, 9, 12                         |
| 6033        | Washer, Lock 4                                    | 120166      | Fuse (2 Amp) 2, 7, 10                         | 148756      | Screw, Self-Tapping (#6 x 1/2 Flat) 2, 7, 10, 11                   |
| 7002        | Washer, Flat 27, 28                               | 121538      | Terminal 27                                   | 148816      | Bracket 23   |
| 34439       | Screw (3-48 x 17/64 Fil) 14                       | 125011      | Washer, Flat 24, 28                           | 148817      | Plate 23   |
| 35551       | Screw (10-32 x 3/8 Flat) 23                       | 125129      | Screw (3-48 x 3/8 Fil) 4, 5                   | 149109      | Board, Terminal 25   |
| 41732       | Plate, Clamp 28                                   | 125168      | Screw (6-40 x 1/4 Fil) 24                     | 149119      | Board, Terminal 16   |
| 41974       | Spring 27   | 125223      | Nut (8-32 Hex) 4                              | 149131      | Board, Terminal 29   |
| 70072       | Washer, Lock 4                                    | 125315      | Washer, Insulating 11                         | 149132      | Board, Terminal 29   |
| 71695       | Spacer 26   | 125390      | Washer, Flat 2, 3, 7, 8, 10, 12 to 23, 25, 26 | 149133      | Board, Terminal 29   |
| 74036       | Nut (10-32 Hex) 4                                 | 125802      | Washer, Flat 24                               | 149134      | Board, Terminal 29   |
| 75750       | Washer, Insulating 23                             | 128357      | Ring, Retaining 5                             | 149136      | Board, Terminal 30   |
| 77902       | Screw (6-40 x 2-3/8 Rd) 23                        | 129851      | Resistor (3,300 Ohm) 20                       | 149137      | Board, Terminal 29, 30   |
| 78824       | Spring 28   | 130683      | Washer, Lock 24                               | 149140      | Board, Terminal 30   |
| 80612       | Nut (8-32 Hex) 11                                 | 139692      | Resistor (2,000 Ohm) 23                       | 149144      | Board, Terminal 18, 21   |
| 81726       | Terminal 28                                       | 143630      | Fuse (3/4 Amp) 24                             | 149147      | Board, Terminal 26   |
| 82548       | Insulator (.062") 28                              | 143675      | Knob 6  | 149162      | Board, Terminal 8, 22  |
| 84970       | Nut (15/32-32 Ring) 10                            | 144216      | Terminal 8, 13, 18, 21, 25, 26                | 149165      | Board, Terminal 14   |
| 84990       | Screw (6-40 x 1/4 Flat) 2, 7, 10, 23, 24          | 144979      | Relay (700 Ohm) 14                            | 149166      | Board, Terminal 14   |
| 89897       | Nut (10-32 Hex) 23                                | 145008      | Relay 8                                       | 149167      | Board, Terminal 16   |
| 90023       | Post 28   | 145095      | Relay 6, 9, 29, 30                            | 149168      | Board, Terminal 16   |
| 90517       | Spring 27   | 146967      | Resistor (750 Ohm) 11                         | 149169      | Board, Terminal 16   |
| 90951       | Washer, Lock 8, 13 to 19, 21, 22, 25, 26          | 148249      | Voltmeter 10                                  | 149170      | Board, Terminal 15   |
| 91683       | Nut (15/32-32 Hex) 8, 14, 15, 16, 18, 20, 21, 25  | 148250      | Switch, Rotary 2, 7, 10                       | 149171      | Board, Terminal 14, 15, 17   |
| 91684       | Nut (15/32-32 Ring) 8, 15, 16, 20                 | 148251      | Connector, Receptacle (3 Pt) 2, 7, 10, 20     | 149172      | Board, Terminal 17   |
| 93136       | Switch, Toggle(DP-DT) 8,15,16,22                  | 148252      | Resistor (12,000 Ohm) 2, 7, 10, 20            | 149175      | Board, Terminal 17   |
| 95971       | Screw (4-40 x 1/2 Flat) 2, 3, 6, 7, 9, 10, 12     | 148253      | Resistor (57,000 Ohm) 2, 7, 10                | 149176      | Board, Terminal 29   |
| 98142       | Washer, Flat 28                                   | 148254      | Resistor (87,000 Ohm) 10                      | 150089      | Screw (4-40 x 1/2 Fil) 24  |
| 98712       | Screw (4-40 x 1/4 Flat) 23                        | 148255      | Capacitor (.5 Mfd) 2, 7, 10                   | 151073      | Screw (4-40 x 5/32 Fil) 7, 8, 10, 13 to 19, 21, 22, 25, 26, 27, 28 |
| 98725       | Screw (6-40 x 3/8 Flat) 2, 7, 10                  | 148256      | Transformer 2, 7, 10                          | 151152      | Screw (4-40 x 3/16 Hex) 28   |
| 98819       | Knob 2, 7, 8, 10, 19, 20                          | 148257      | Terminal, Insulated 11                        | 151346      | Screw (6-40 x 3/8 Fil) 2, 5, 7, 8, 10, 13 to 19, 21, 22, 25, 26    |
| 100421      | Bushing 28  | 148258      | Cable Assembly 10                             | 151418      | Fuse (10 Amp) 20   |
| 101786      | Spring, Contact 28                                | 148263      | Board, Terminal 2, 10                         | 151574      | Grommet, Rubber 11   |
| 102214      | Screw (6-40 x 13/64 Flat) 23                      | 148265      | Sink, Heat 2, 7, 10                           | 151630      | Screw (6-40 x 1/4 Hex) 5, 27, 28                                   |
| 104701      | Screw (4-40 x 9/32 Fil) 24                        | 148266      | Block, Insulating 2, 7, 10                    | 151631      | Screw (6-40 x 5/16 Hex) 3, 6, 7, 9, 10, 12, 16, 27                 |
| 105441      | Screw, Set (8-32) 2, 7, 8, 10, 19, 20             | 148267      | Bracket 2, 7, 10                              | 151632      | Screw (6-40 x 3/8 Hex) 27, 28                                      |
| 105803      | Switch, Toggle 2, 7, 10, 20                       | 148268      | Plate, Front 7                                | 151657      | Screw (6-40 x 1/4 Fil) 2, 3, 6 to 10, 12 to 19, 21 to 26           |
| 110434      | Screw (4-40 x 3/16 Fil) 16, 23                    | 148269      | Bracket 2, 7, 10                              | 151685      | Screw (4-40 x 5/16 Fil) 2, 24                                      |
| 110743      | Washer, Lock 3, 4, 24                             | 148270      | Frame, Left 2, 7, 10                          | 151686      | Screw (4-40 x 3/8 Fil) 3, 6, 9, 12                                 |
| 112206      | Washer, Flat 22                                   | 148271      | Bracket 2, 7, 10                              | 151687      | Screw (4-40 x 7/16 Fil) 3, 6, 9, 28                                |
| 112626      | Nut (10-32 Hex) 4, 5                              | 148274      | Frame, Right 7, 10                            | 151692      | Screw (6-40 x 3/16 Fil) 8, 11, 13 to 19, 21 to 24                  |
|             |   | 148277      | Cable 11                                      | 151693      | Screw (6-40 x 9/16 Fil) 23   |
|             |   | 148278**    | Module Assembly 2                             | 151694      | Screw (6-40 x 11/32 Fil) 2, 8, 13 to 19, 21 to 26                  |
|             |   | 148279      | Cable 2, 7                                    |             |  |
|             |   | 148281      | Cover, Rectifier 11                           |             |  |

## NUMERICAL INDEX

| Part Number | Description and Page Number                            | Part Number | Description and Page Number   | Part Number | Description and Page Number                              |
|-------------|--|-------------|---|-------------|--|
| 151732      | Screw (4-40 x 11/32 Fil) 8<br>11 to 26                 | 170943      | Roller 27   | 172401      | Card, Circuit (EC401) 14, 25, 26,<br>29, 30              |
| 151880      | Nut (4-40 Hex) 2, 3, 6, 8, 9, 12<br>to 26              | 170946      | Shaft 27  | 172407      | Card, Circuit (EC407) 30                                 |
| 152437      | Spacer 3, 6, 9, 12, 20                                 | 170947      | Bracket 28  | 172409      | Card, Circuit (EC409) 30                                 |
| 152495      | Bushing 24   | 170948      | Shaft 28  | 172412      | Card, Circuit (EC412) 29                                 |
| 152893      | Screw (4-40 x 1/4 Hex) 28                              | 170949      | Bracket, Stop 27  | 172417      | Card, Circuit (EC 417) 19, 29, 30                        |
| 152994      | Switch, Toggle (TP-DT) 16, 18, 21                      | 171440      | Capacitor (10,000 Mfd) 2, 7, 10   | 172418      | Card, Circuit (EC418) 30                                 |
| 153819      | Washer, Lock 14  | 171442      | Rheostat (2 Ohm) 2, 7, 10   | 172419      | Card, Circuit (EC419) 15, 17, 18,<br>21, 26              |
| 154697      | Grommet, Rubber 16                                     | 171443      | Rheostat (10 Ohm) 2, 7, 10  | 172422      | Card, Circuit (EC 422) 29, 30                            |
| 155022      | Switch, Toggle (DP-DT) 15                              | 171445      | Resistor (15 Ohm) 2, 7, 10  | 172426      | Card, Circuit (EC426) 30                                 |
| 156537      | Armature 27  | 171446      | Resistor (120 Ohm) 2, 7, 10   | 172429      | Card, Circuit (EC 429) 18, 21, 26                        |
| 156558      | Washer, Felt 28  | 171447      | Switch, Rotary 20   | 172430      | Card, Circuit (EC430) 30                                 |
| 156575      | Screw, Eccentric Shoulder (6-40)<br>27                 | 171448      | Resistor (10 Ohm) 2, 7, 10  | 172431      | Card, Circuit (EC 431) 8, 18, 19,<br>21                  |
| 156740      | Screw (6-40 x 7/32 Hex) 27, 28                         | 171451      | Capacitor (3,500 Mfd) 2, 7, 10  | 172439      | Card, Circuit (EC439) 15, 17, 25                         |
| 156880      | Jumper (1-3/8 Black) 27                                | 171452      | Capacitor (17,000 Mfd) 2, 7, 10   | 172469      | Card, Circuit (EC469) 19                                 |
| 156881      | Jumper (1-1/2" Black) 27                               | 171453      | Capacitor (6,200 Mfd) 2, 7, 10  | 172477      | Card, Circuit (EC477) 30                                 |
| 157233      | Screw (6-40 x 2-3/8 Flat) 11                           | 171454      | Capacitor (48,000 Mfd) 2, 7, 10   | 172481      | Card, Circuit (EC 481) 15, 18                            |
| 158601      | Connector, Plug (14 Pt) 5                              | 171461      | Capacitor (900 Mfd) 11  | 172490      | Card, Circuit (EC 490) 18, 21, 23,<br>25, 26             |
| 158602      | Connector, Receptacle (14 Pt) 4                        | 171466      | Capacitor (300 Mfd) 16  | 172491      | Card, Circuit (EC 491) 19                                |
| 159977      | Hinge 28   | 171501      | Relay 3, 6, 16, 29, 30  | 172492      | Card, Circuit (EC492) 19                                 |
| 160859      | Terminal 8, 22   | 171502      | Relay 8, 14, 22   | 173832      | Holder, Lamp 2, 7, 10, 16,<br>18, 21                     |
| 161136      | Fuse (6-1/4 Amp SL-BL) 20                              | 171531      | Resistor (3,000 Ohm) 2, 7, 10   | 174230      | Bracket, Mounting 22                                     |
| 161657      | Plate, Identification 22                               | 171541      | Diode 21  | 174645      | Switch, Push (4P-DT Black) 23                            |
| 165008      | Turret 23  | 171567      | Capacitor (.005 Mfd) 26   | 174718      | Jumper (4" Black) 8, 13 to 19,<br>21, 22, 25, 26         |
| 165027      | Network, Spark Suppression 4                           | 171568      | Socket (11 Pt) 18, 21   | 174729      | Plate Assembly (30 Pt) 24,<br>25, 26                     |
| 165029      | Resistor (3,300 Ohm) 24                                | 171569      | Relay 18, 21  | 174730      | Plate Assembly (50 Pt) 2, 8<br>14                        |
| 165053      | Cushion, Rubber (Red) 4                                | 171592      | Fuse 1/2 Amp 16   | 174731      | Plate Assembly (80 Pt) 13,<br>15 to 19, 21, 23           |
| 165054      | Cushion, Rubber (Black) 4                              | 171609      | Diode 11  | 174739      | Insulator, White 2, 3, 5, 6, 8,<br>9, 12 to 19, 21 to 26 |
| 170501      | Frame, Left 8, 9, 13 to 19, 21,<br>22, 25, 26          | 171612      | Diode 2, 7, 10  | 174743      | Terminal, Plug Type 2, 3, 6, 8, 9,<br>12 to 19, 21 to 26 |
| 170502      | Frame, Right 8, 13 to 19, 21, 22,<br>25, 26            | 171613      | Diode 2, 7, 10  | 174749      | Insulator, Yellow 5, 12                                  |
| 170505      | Gusset, Upper 8, 13 to 19, 21,<br>22, 25, 26           | 171615      | Diode 2, 7, 10  | 174750      | Key Assembly 2, 3, 6, 8, 9,<br>12 to 19, 21 to 26        |
| 170506      | Gusset, Lower 8, 13, 14, 15, 18,<br>19, 21, 22, 25, 26 | 171622      | Holder, Lamp 14 to 18, 21, 25   | 174776      | Plate, Connector 2, 8, 13 to 19,<br>21 to 26             |
| 170507      | Bracket, Latch 2, 8, 13 to 26                          | 171624      | Cartridge, Lamp (Amber - On)<br>20  | 174795N     | Screw (6-40 x 1/4 Fil) 5                                 |
| 170509      | Latch w/Hub 2, 8, 13 to 26                             | 171641      | Fuse (6 Amp) 2, 7, 10   | 174859      | Lamp, Red 14, 16, 17                                     |
| 170516      | Bracket 3, 6, 8, 9, 14, 16, 22                         | 171642      | Fuse (1.6 Amp) 2, 7, 10   | 174860      | Lamp, Green 18, 21                                       |
| 170518      | Plate, Mounting 16                                     | 171643      | Connector, Plug (3 Pt) 11   | 174861      | Lamp, Yellow 14, 15, 16, 17                              |
| 170552      | Bracket, Mounting 18, 21                               | 171644      | Fuse (1.5 Amp) 10   | 174863      | Lamp, White 15, 16, 25                                   |
| 170557      | Diode 2, 7, 10, 20                                     | 171658      | Fuse (3 Amp) 2, 7, 10   | 174883**    | Plate, Front 25  |
| 170742      | Bail, Right Armature 28                                | 171675      | Connector, Plug (3 Pt) 20   | 174885      | Strip, Identification 25                                 |
| 170747      | Contact Assembly, Lower 28                             | 171678      | Card, Circuit (EC 307) 29, 30   | 174894      | Lamp, Amber (ON) 2, 7, 10, 16,<br>18, 21                 |
| 170902      | Bracket, Left Mounting 27                              | 172307      | Card, Circuit (EC 319) 29   | 175087**    | Plate, Front 13, 24                                      |
| 170903      | Bracket, Right Mounting 27                             | 172319      | Card, Circuit (EC320) 29  | 175098      | Measure Assembly, Tape 26, 27,<br>28                     |
| 170905      | Bracket, w/Stud 28                                     | 172350      | Card, Circuit (EC350) 29  | 175176      | Bracket, Retaining 21                                    |
| 170907      | Plate, Adjusting 28                                    | 172355      | Card, Circuit (EC355) 30  | 175241      | Plate, Rear 27   |
| 170909      | Magnet Assembly 27                                     | 172359      | Card, Circuit (EC359) 8, 13,<br>15, 17, 18, 19, 21, 22, 25, 26,<br>29, 30 | 175242      | Plate, Front 27  |
| 170910      | Magnet Assembly 28                                     | 172360      | Card, Circuit (EC 360) 29   | 175243      | Ratchet (72 T) 27  |
| 170914      | Shaft 27   | 172368      | Card, Circuit (EC 368) 29   | 175332      | Fastener 2, 3, 6, 8, 9, 12 to 26                         |
| 170915      | Plate, Reset 27  | 172369      | Card, Circuit (EC369) 18  | 177113      | Insulator 24   |
| 170917      | Pin, Detent 27   | 172370      | Card, Circuit (EC 370) 30   | 177228      | Switch, Push (Black) 26                                  |
| 170919      | Spring, Tension 27                                     | 172375      | Card, Circuit (EC375) 17, 18,<br>26, 29, 30                               | 177265      | Block, Fuse 16   |
| 170921      | Lever w/Hub 27   | 172378      | Card, Circuit (EC378) 8   |             |  |
| 170928      | Bracket, Contact 28                                    | 172379      | Card, Circuit (EC379) 25  |             |  |
| 170933      | Bail, Armature 27                                      | 172380      | Card, Circuit (EC 380) 29, 30   |             |  |
| 170934      | Bracket 27   | 172385      | Card, Circuit (EC 385) 19   |             |  |
| 170935      | Pawl, Feed 27  | 172386      | Card, Circuit (EC 386) 25   |             |  |
| 170939      | Screw, Eccentric (6-40) 27                             | 172387      | Card, Circuit (EC387) 15  |             |  |
| 170940      | Bracket, Guide 27                                      | 172390      | Card, Circuit (EC 390) 8, 14,<br>18, 19, 21                               |             |  |
| 170941      | Bail, Detent 27  | 172396      | Card, Circuit (EC 396) 19   |             |  |
|             |  | 172397      | Card, Circuit (EC397) 30  |             |  |
|             |  | 172400      | Card, Circuit (EC400) 17, 29, 30  |             |  |

## NUMERICAL INDEX

| Part Number | Description and Page Number   | Part Number | Description and Page Number               | Part Number | Description and Page Number                          |
|-------------|---|-------------|---|-------------|--|
| 177294      | Jack, Banana (Black) 2, 6, 7, 9, 10, 20                             | 177619      | Diode 24                                  | 193014**    | Module Assembly 18                                   |
| 177326      | Strip, Identification 26  | 177620      | Holder, Fuse 24                           | 193015      | Plate, Identification 18                             |
| 177332      | Capacitor (.002 Mfd) 23   | 177621      | Socket, Power Transistor 24               | 193016      | Strip, Identification 18                             |
| 177391**    | Plate, Front 26   | 177622      | Sink, Heat 24                             | 193024      | Capacitor (275 Mfd) 3, 29                            |
| 177400      | Capacitor (1 Mfd) 23  | 177624      | Transistor 20                             | 193028      | Connector, Plug (50 Pt) 4, 5                         |
| 177410      | Spring, Latch 2, 8, 13 to 26  | 177625      | Resistor (10 Ohm) 20                      | 193029      | Connector, Receptacle (50 Pt) 4, 29                  |
| 177427      | Filter (5 Amp) 20   | 177626      | Resistor (15 Ohm) 20                      | 193030      | Programming Assembly 5                               |
| 177463      | Card, Circuit (EC463) 18  | 177628      | Plate 23                                  | 193031      | Card, Circuit (EC031) 5                              |
| 177464      | Card, Circuit (EC464) 18  | 177629      | Bracket 23                                | 193032      | Card, Circuit (EC032) 5                              |
| 177465      | Card, Circuit (EC465) 18  | 177630      | Bracket 23                                | 193038      | Base 5   |
| 177501      | Card, Circuit (EC 501) 25, 26, 29, 30                               | 177631      | Bracket 23                                | 193039      | Plate, Side 5  |
| 177502      | Card, Circuit (EC502) 15, 18, 29, 30                                | 177633      | Plate 23                                  | 193040      | Connector w/Guide Slot 8, 13 to 19, 21 to 23, 25, 26 |
| 177503      | Card, Circuit (EC503) 8, 13, 15, 17, 22, 29, 30                     | 177634      | Bracket 23                                | 193044      | Bracket, Mounting 5                                  |
| 177504      | Card, Circuit (EC504) 15, 17, 22, 29, 30                            | 177635      | Frame, Left 23                            | 193045      | Foot, Locating 5                                     |
| 177506      | Card, Circuit (EC506) 25, 26  | 177637      | Frame, Right 23                           | 193046      | Foot, Locating 5                                     |
| 177507      | Card, Circuit (EC507) 15, 18, 19, 22                                | 177638**    | Plate, Front 23                           | 193049      | Screw, Captive (1/4-20 x 3-5/8) 5                    |
| 177511      | Card, Circuit (EC511) 26  | 177639      | Relay 23                                  | 193051      | Post 5   |
| 177512      | Card, Circuit (EC512) 15, 17  | 177641      | Capacitor (1750 Mfd) 23                   | 193054      | Plate, Stepping Switch 4                             |
| 177513      | Card, Circuit (EC513) 26  | 177642      | Bracket, Capacitor 23                     | 193057      | Plate 4  |
| 177515      | Card, Circuit (EC 515) 29   | 177643      | Frame, Left Module 24                     | 193058      | Cover 5  |
| 177516      | Card, Circuit (EC516) 13, 19, 29, 30                                | 177644      | Frame, Right Module 24                    | 193062      | Patchcord (1-1/4" Lg) 5                              |
| 177522      | Card, Circuit (EC522) 13, 29  | 177645      | Plate 24                                  | 193063      | Patchcord (3" Lg) 5                                  |
| 177523      | Card, Circuit (EC 523) 29, 30                                       | 177648      | Spacer 24                                 | 193064      | Patchcord (5" Lg) 5                                  |
| 177524      | Card, Circuit (EC524) 29, 30  | 177649      | Post 24                                   | 193065      | Patchcord (7" Lg) 5                                  |
| 177527      | Card, Circuit (EC527) 8, 13, 17, 29, 30                             | 177650      | Gusset, Left 24                           | 193066      | Patchcord (8" Lg) 5                                  |
| 177528      | Card, Circuit (EC528) 8, 13, 17, 23, 29, 30                         | 177651      | Gusset, Right 24                          | 193075      | Foot, Mounting 4                                     |
| 177530      | Card, Circuit (EC530) 8, 13, 15, 17, 18, 19, 21, 22, 25, 26, 29, 30 | 177652      | Resistor (6 Ohm) 24                       | 193081      | Plate, Identification 8                              |
| 177532      | Card, Circuit (EC532) 17  | 177653      | Resistor (500 Ohm) 24                     | 193086      | Plate, Identification 13                             |
| 177537      | Card, Circuit (EC537) 17  | 177654      | Plate 24                                  | 193088      | Plate, Identification 19                             |
| 177538      | Card, Circuit (EC538) 30  | 177655      | Board, Terminal 24                        | 193090      | Plate, Identification 14                             |
| 177540      | Card, Circuit (EC540) 8, 13, 17, 19, 22, 29, 30                     | 177658      | Board 23                                  | 193091      | Plate, Identification 15                             |
| 177541      | Card, Circuit (EC541) 29  | 177659      | Capacitor (8 Mfd) 20                      | 193092      | Plate, Identification 16                             |
| 177542      | Card, Circuit (EC542) 8, 22, 29, 30                                 | 177660      | Capacitor (1,800 Mfd) 20                  | 193093      | Plate, Identification 17                             |
| 177550      | Card, Circuit (EC550) 19, 23  | 177661      | Capacitor (2,000 Mfd) 20                  | 193094      | Plate, Identification 22                             |
| 177551      | Card, Circuit (EC551) 23  | 177662      | Capacitor (17,000 Mfd) 20                 | 193110      | Strip, Identification 8                              |
| 177552      | Card, Circuit (EC552) 8, 17, 23                                     | 177663      | Diode 20                                  | 193111      | Strip, Identification 13                             |
| 177554      | Card, Circuit (EC554) 23  | 177664      | Diode 20                                  | 193114      | Strip, Identification 19                             |
| 177556      | Card, Circuit (EC556) 29, 30  | 177665      | Diode 20                                  | 193115      | Strip, Identification 14                             |
| 177561      | Card, Circuit (EC561) 22  | 177666      | Diode 20                                  | 193116      | Strip, Identification 15                             |
| 177562      | Card, Circuit (EC562) 22  | 177667      | Fuse (10 Amp) 20                          | 193117      | Strip, Identification 16                             |
| 177571      | Card, Circuit (EC571) 15, 22  | 177668      | Resistor (1 Ohm) 20                       | 193118      | Strip, Identification 17                             |
| 177572      | Card, Circuit (EC572) 8, 13, 18, 19, 21, 29, 30                     | 177671      | Resistor (25 Ohm) 20                      | 193119      | Strip, Identification 22                             |
| 177575      | Card, Circuit (EC575) 8, 17   | 177672      | Resistor (10 Ohm) 20                      | 193130      | Relay 14   |
| 177576      | Card, Circuit (EC576) 17, 22  | 177673      | Resistor (40 Ohm) 20                      | 193138      | Bracket, Capacitor 3                                 |
| 177581      | Card, Circuit (EC581) 8, 22   | 177674      | Resistor (7.5 Ohm) 20                     | 193164**    | Module Assembly 19                                   |
| 177583      | Card, Circuit (EC583) 17  | 177675      | Resistor (147K Ohm) 20                    | 193171**    | Plate, Front 8                                       |
| 177607      | Coil, Choke 23  | 177676      | Reactor 20                                | 193172      | Plate, Backup 8                                      |
| 177611      | Rectifier 24  | 178872      | Sleeve, Insulating (1/16 ID x 1-1/4 Lg) 4 | 193173      | Flasher 8, 22  |
| 177612      | Coil, Choke 24  | 190245      | Patchcord 12                              | 193177      | Spacer, Relay 14                                     |
| 177614      | Rheostat (25 Ohm) 24  | 190257      | Terminal 5                                | 193178      | Switch, Illuminated Push 6                           |
| 177615      | Capacitor (5.5 Mfd) 23  | 192253      | Nut, Speed (#6) 2, 7, 10                  | 193179      | Lamp 6   |
| 177618      | Transistor, Power 24  | 192269      | Nut, Speed (#6-32) 2, 7, 10, 11           | 193180      | Plate, Mounting 8, 22                                |
|             |   | 193001**    | Module Assembly 3 to 5, 29                | 193183      | Plate, Connector 3, 6, 9, 12                         |
|             |   | 193002      | Switch Assembly, Stepping 4               | 193184      | Plate, Connector 6                                   |
|             |   | 193003**    | Module Assembly 6, 7, 29                  | 193185      | Plate, Connector 12, 30                              |
|             |   | 193004**    | Module Assembly 8                         | 193186      | Plate, Connector 3, 9, 29                            |
|             |   | 193005**    | Module Assembly 9, 10, 11, 30             | 193187**    | Module Assembly 7                                    |
|             |   | 193008**    | Module Assembly 12, 30                    | 193188      | Post 7, 10   |
|             |   | 193009**    | Module Assembly 13                        | 193189      | Plate, Connector (50 Pt) 7, 10                       |
|             |   | 193010**    | Module Assembly 14                        | 193190**    | Module Assembly 10, 11                               |
|             |   | 193011**    | Module Assembly 15                        | 193191**    | Plate, Front 9                                       |
|             |   | 193012**    | Module Assembly 16                        |             |  |
|             |   | 193013**    | Module Assembly 17                        |             |  |

## NUMERICAL INDEX

| Part Number | Description and Page Number | Part Number | Description and Page Number             | Part Number | Description and Page Number                        |
|-------------|-----------------------------|-------------|---|-------------|--|
| 193192      | Bracket, Mounting 7, 10     | 193242**    | Plate, Front 15                         | 193284      | Plate, Identification 23                           |
| 193193**    | Frame, Module 3, 6, 9, 12   | 193243**    | Plate, Front 16                         | 193285      | Plate, Identification 21                           |
| 193194**    | Plate, Front 3, 12          | 193244**    | Plate, Front 14                         | 193295      | Plate, Connector 3                                 |
| 193195      | Plate Assembly, Mounting 4  | 193245**    | Plate, Front 17                         | 193304      | Bracket, Mounting 10                               |
| 193196      | Capacitor (25 Mfd) 3, 29    | 193252      | Plate w/Jacks (1-4) 8, 13 to 17, 19, 22 | 193305      | Spacer 3, 12                                       |
| 193199      | Board, Program 12, 30       | 193254      | Plate w/Jacks (5-8) 8, 15, 16, 17, 22   | 193306      | Spacer 6, 9  |
| 193204      | Switch, Wafer 6             | 193256      | Bracket, Mounting 3                     | 193321**    | Module Assembly 24                                 |
| 193206      | Spacer 3, 6, 9, 12          | 193259      | Post 12                                 | 193322**    | Module Assembly 25                                 |
| 193207      | Bushing 7, 10               | 193260      | Potentiometer (1,000 Ohm) 3, 29         | 193323**    | Module Assembly 27, 28                             |
| 193208      | Terminal 7, 10              | 193261      | Screw (4-40 x 21/64 Hex) 12             | 193324      | Plate, Identification 24                           |
| 193213      | Bracket, Mounting 8, 22     | 193263      | Connector, Card 5                       | 193325      | Plate, Identification 25                           |
| 193218      | Terminal 5                  | 193264**    | Plate, Front 10                         | 193326      | Plate, Identification 26                           |
| 193219      | Board, Program 5            | 193265**    | Plate, Front 7                          | 193361      | Voltmeter 20                                       |
| 193221**    | Module Assembly 20          | 193269      | Resistor (42K Ohm) 20                   | 194582      | Relay 16   |
| 193222**    | Module Assembly 21          | 193271**    | Plate, Front 6                          | 195152      | Armature 28  |
| 193231      | Capacitor (125 Mfd) 3, 29   | 193273      | Potentiometer (30 Ohm) 20               | 195564      | Lens (White) 6                                     |
| 193238**    | Plate, Front 19, 23         | 193280      | Switch, Stepping 4                      | 197500**    | Frame Assembly, Module 8, 13 to 19, 21, 22, 25, 26 |
| 193239**    | Plate, Front 22             |             |   | 197544**    | Plate, Front 18, 21                                |
| 193240**    | Module Assembly 22          |             |   |             |  |