ACCESSORY

CANCELLED

Title

CESSNA NAV/COM 500 INSTALLATION KIT

MODELS AFFECTED

* 180
* 185
* A185

SERIALS AFFECTED

18051446 & ON
185-0777 THRU 185-1117
185-0968 & ON

NOTES

1. This kit is used to install AK205-85 for a complete radio installation.

2. The following additional kits or parts are not included and are listed for reference. They may be ordered separately if needed. Refer to Accessory Kit Catalog (alphabetical index) for applicable kit numbers.

   a. PANEL UNIT SHOCKMOUNTS: One of the following shockmounts is required per aircraft.

       No. of Cessna 500
       Series Radios Installed
       1
       2
       3
       4

       DUST COVER & SHOCKMOUNT ASSEMBLY
       PART NO. DESCRIPTION
       33370 Single Unit
       0770722-1 Dual Unit
       0770723-1 4-Unit
       0770723-1 4-Unit

   b. CESSNA 500 SERIES TSO RADIO COOLING KIT: This kit is required when 2 or more Cessna 500 Series radios are installed.

c. MICROPHONE & AUDIO SELFCTOR SWITCH KIT

d. VHF ANTENNA KIT

e. MAGNETO NOISE FILTER KIT (MODELS 180 & 182 ONLY)

f. RADIO LIGHTS RHEOSTAT: 0413126-5 Rheostat
       S1390-3 Knob

g. MICROPHONE: S1342-5

h. HEADSET: 0770037-1


j. SPEAKER: 0770715-1

3. When installing this kit with a second Cessna 500 Omni Receiver, order an 8002-1 "Tee" connector and an 8160-1 adapter in addition to this kit. These parts are required in order to connect the two receivers to one Omni antenna cable. Refer to figure 9 for wiring diagram.
PARTS LIST:

<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>PART NUMBER</th>
<th>NOMENCLATURE</th>
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<tbody>
<tr>
<td>8</td>
<td>AN515-6R6</td>
<td>Screw</td>
</tr>
<tr>
<td>8</td>
<td>AN515-8R16</td>
<td>Screw</td>
</tr>
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<td>0770049-1</td>
<td>Angle</td>
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<tr>
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<td>0770067-9</td>
<td>Channel</td>
</tr>
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<td>Channel</td>
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<td>Plate</td>
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<td>2</td>
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<td>Spacer</td>
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<td>AN3-4A</td>
<td>Bolt</td>
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<tr>
<td>4</td>
<td>AN960-10L</td>
<td>Washer</td>
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<tr>
<td>19</td>
<td>NAS879A08</td>
<td>Nut</td>
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<td>3</td>
<td>AN515B6R12</td>
<td>Screw</td>
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<td>1</td>
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<td>Circuit Breaker (A+ Power)</td>
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<td>4 ft.</td>
<td>S1460-16-2</td>
<td>Wire - Red</td>
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<td>S1367-2-6</td>
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<td>4 ft.</td>
<td>S1460-18-4</td>
<td>Wire - Yellow</td>
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<td>Cable Assembly - Transceiver to Acc. Units</td>
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<td>Cable Assembly - Marker Beacon Antenna</td>
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<td>1</td>
<td>0770400-222</td>
<td>Cable Assembly - Marker Beacon</td>
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<td>0770093-1</td>
<td>Placard Assembly - Marker Beacon</td>
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<td>UG-88C/U</td>
<td>Plug</td>
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<td>8019-1 (TNC)</td>
<td>Plug (DAGE)</td>
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<td>5</td>
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<td>2</td>
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<td>Splice</td>
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<td>1</td>
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<td>S1486DG3U</td>
<td>Clamp</td>
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<td>AN970-3</td>
<td>Washer</td>
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<td>1</td>
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1. CHANGE IN WEIGHT AND BALANCE:

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<th>MODEL</th>
<th>180, 185 &amp; A185</th>
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<tr>
<td>WEIGHT INCREASE</td>
<td>21.3 pounds</td>
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<tr>
<td>ARM</td>
<td>69.9 inches</td>
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<tr>
<td>RESULTANT MOMENT</td>
<td>1489 pound-inches</td>
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<tr>
<td>INDEX</td>
<td>1.489</td>
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CANCELLED
1. DESCRIPTION OF INSTALLATION.
   a. Installation of this kit consists of: (See figure 1.)
      (1) Installation of Transceiver and Indicator.
      (2) Installation of Dynavert and Converter.
      (3) Installation of Marker Beacon Antenna.
      (4) Installation of Marker Beacon Indicator Cable Assembly.
      (5) Installation of Audio Selector Switch.
      (6) Interconnection of Wiring and Testing.
      (7) Marker Beacon Antenna Adjustment Procedure.

2. INSTALLATION INSTRUCTIONS.

   **CAUTION**
   Disconnect negative lead to battery to prevent short circuits.

   a. Installation of Transceiver and Indicator. (Refer to figure 2.)
      (1) Remove the decorative panel from the radio mounting area on the instrument panel.
      (2) Position the transceiver mount (1, 2 or 6) vertically in the mounting area as desired. Locate and drill matching holes (5) through the mounting angles and install mount as shown using screws (3).
      (3) Install the indicator (8) in the shock mounted instrument panel using screws (7).
      (4) Cut the decorative panel to fit the transceiver mounting (1, 2 or 6) and replace panel.
      (5) Insert transceiver (4) in mount (1, 2 or 6) and lock in place using the locking screw on the face of the transceiver.
      (6) Attach cable assembly (14, figure 3) to transceiver (4) and indicator (8).

   b. Installation of Dynavert and Converter. (Refer to figure 3.)
      (1) Locate and drill holes (16), (19) and (20) as shown.
      (2) Attach angle (6) to bulkhead flanges using hardware called out in item (12).
      (3) Attach channels (8) and (11) to stringer (3) and angle (6) as shown using hardware (10).
      (4) Position plates (5) on channels (8 & 11) as shown and drill countersunk holes (17) and (18).
      (5) Attach plates (5) to channels (3 & 6) as shown using hardware called out in item (7).
      (6) Attach the shockmounts (4) to plates (5) using eight screws and nuts (9).
      (7) Insert the dynavert (2) and converter (1) into mounts (4) and secure with the locking lugs attached to the units.

   c. Installation of Marker Beacon Antenna. (Refer to figure 4.)
      (1) Locate and drill holes (1, 2, 5 & 6).
      (2) Install antenna rod assembly (3) on aircraft belly skin as shown.
      (3) Install grommet (5) and attach antenna cable assembly (13, figure 3) to antenna (3) with clamp (4). Note that antenna cable shield terminates under nut (1) and washer (1) on antenna rod stud. Secure cable (13, figure 3) to skin with clamps (6).
Figure 2. Cessna Nav/Com 500 Transceiver and Indicator Installation

NOTE

THE ABOVE DIAGRAM ILLUSTRATES RECOMMENDED LOCATIONS FOR A COMPLETE CESSNA 500 ELECTRONICS INSTALLATION. EXACT PLACEMENT OF UNITS MAY BE VARIED TO SUIT CUSTOMER PREFERENCE OR RADIO COMBINATION.

1. 0770722-1 MOUNT 1 REQD (FOR 2 STACK INSTALLATIONS)

2. 33370 MOUNT 1 REQD (FOR SINGLE RADIO INSTALLATION)

3. AN515-6R6 SCREW AS REQD

4. 33220-1000 TRANSCIEVER 1 REQD

5. NO. 26 (.147) HOLE AS REQD

6. 0770723-1 MOUNT 1 REQD (FOR 3 OR 4 STACK INSTALLATIONS)

7. AN515B6R12 SCREW 3 REQD

8. *27490 INDICATOR 1 REQD

NOTE

*= SUPPLIED IN BASIC KIT
Figure 3. Installation of Dynaverter, Converter and Cable Routing (Sheet 1 of 2)
Figure 3. Installation of Dynavertor, Converter and Cable Routing (Sheet 2 of 2)
Figure 4. Installation of Marker Beacon Antenna
(4) Route marker beacon antenna cable (13, figure 3) to dynavertor (2, figure 3) and secure cable as necessary to prevent chaffing.

d. Marker Beacon Indicator Cable Assembly Installation. (Refer to figure 5.)

(1) Install placard (2) and cable assembly (1) as shown.
(2) Replace existing nuts with nuts (3) and (4) as shown.
(3) Route cable assembly (1) with main cable assembly (14, figure 3) from instrument panel down the left side of aircraft and aft under floorboards to dynavertor (2, figure 3).

e. Audio Selector Switch Installation. (Refer to figure 5.)

(1) Install audio selector switch (5) in audio selector switch panel above radio stack.

f. Primary Power and Audio Amplifier Circuit Breakers Installation. (Refer to figure 5.)

(1) Install power circuit breaker (6) in circuit breaker panel in an empty "RADIO" circuit breaker position.
(2) Install audio amplifier circuit breaker (7) in circuit breaker panel position which is labeled "AUD AMP."

g. Interconnection of Wiring and Testing. (Refer to figures 6, 7 & 8.)

(1) Interconnection of wiring is to be accomplished in accordance with figure 6.
(2) Figures 7 and 8 show interconnection diagrams for either a single transmitter or dual transmitter. Wire in accordance with figure 7 for single radio installations or in accordance with figure 8 for dual radio installations.
(3) Items 1, 2 and 3 of figure 6 are to be installed on cable assembly ends as shown.
(4) Install terminals (4) and (5) as shown.

h. Marker Beacon Antenna Adjustment Procedure.

(1) The position of the tap-off clamp on the antenna rod is the only adjustment required for a Marker Beacon installation. This adjustment requires the following equipment:

- 1........Phone Plug
- 1........AC VTVM (Ballantine 300D or equiv.)
- 10'......Shielded Wire
- 1........Signal Generator capable of 75 mc output modulated to 30% at 400 cps
- 1........600 Ohm Resistor

(a) Terminate one end of the shielded wire with the phone plug. Connect the other end of the wire to the AC VTVM and parallel the VTVM input terminals with the 600 Ohm resistor. Insert the phone plug into the aircraft's phone jack.

(b) Connect a short length of wire to the signal generator output and allow it to lay on the ground under the marker beacon antenna. Allow the generator to warm up but do not tune it to 75 mc.

(c) Apply power to the marker beacon receiver and place the marker beacon audio selector switch to "phones" and the sensitivity switch to "HI." Note the reading on the AC VTVM.

(d) Tune the signal generator to 75 mc with 30% modulation at 400 cps. Adjust the signal generator output level to obtain a reading on the VTVM that is 6 db (2x voltage) above the reading noted in step 3.

(e) Adjust the position of the tap-off clamp on the antenna rod for maximum VTVM reading.
Figure 5. Instrument Panel Equipment Installation
Figure 6: Cessna Nav/Com 500 Wiring Diagram (Sheet 1 of 2)

1070400-222 CABLE ASSY
(REF)

1070400-230 CABLE ASSY
(REF)

BLU/TAN
BLU/WHT
BLU/RED
BLU/GRN
BLU/YEL
BLU/BLK

070400-222 CABLE ASSY
(REF)

WHT/TAN
WHT/WHT
WHT/GRN
WHT/YEL
WHT/BLK

070400-230 CABLE ASSY
(REF)

WHT/TAN
WHT/WHT
WHT/GRN
WHT/YEL
WHT/BLK

NOTES:

1. OPTIONAL CONNECTION TO (ARC) NO 26900 OMNI COUPLER (NAV-0-MATIC 300 SYSTEM)
2. ALL WIRE MATERIAL PER S-1450 EXCEPT AS SHOWN.
3. S-1557-1 CAPS REPLACED WITH S-1567-1-6 TERMINAL WHEN COMBINED WITH OTHER RADIOS.
4. RED/WHT WIRE (.150-AMP POWER) MAY BE CONNECTED TO A DIFFERENT CTK BKCR WHEN THIS SYSTEM IS COMBINED WITH ANOTHER 500 SERIES EQUIPMENT.
5. FABRICATE WIRES ON INSTALLATION.
1966 MODEL YEAR RADIOS WILL HAVE AN EXTRA PENDANT CABLE ON THE REAR OF THE RECEIVER UNIT. THIS CABLE IS USED TO CONTROL DME EQUIPMENT UTILIZING THE "TWO BY FIVE" SWITCHING SYSTEM. PIN IDENTIFICATION FOR THE EXTRA CABLE IS SHOWN IN THE FIGURE ABOVE.

Figure 6. Cessna Nav/Com 500 Wiring Diagram (Sheet 2 of 2)
Figure 7. Audio Selector Switches Diagram (Single Transmitter Installation)
Figure 8. Audio Selector Switches Diagram (Dual Transmitter Installation)
NOTES

1. When a Cessna 500 radio is installed as the only omni receiver, connect coaxial connector (3) to the transceiver as shown in figure 6, item 2.

2. Items (1) and (2) are used in addition to item (3) when a second omni receiver is installed. Wire as shown in the above diagram when these units are installed together.

3. Items marked with an asterisk (*) are not supplied in this kit, see note 3, page 1.

Figure 9. Dual Omni Installation