# Title

CESSNA NAV/OMNI 300 INSTALLATION KIT  
(14-VOLT WITH MARKER BEACON)

## MODELS AFFECTED
180  
185  
A185

## SERIALS AFFECTED
- ALL
- ALL
- ALL

## NOTES

1. This kit is used to install AK205-82 for a complete radio installation.

2. The following parts or kits are not included and are listed here for reference. Refer to Cessna Electronics Installations Manual and/or Accessory Kits Catalog to determine applicability or needs:
   - a. CESSNA OMNI ANTENNA KIT
   - b. TRANSMITTER-AUDIO SELECTOR SWITCH KIT
   - c. RADIO LIGHTS RHEOSTAT
   - d. MAGNETO NOISE FILTER KIT
   - e. RADIO COOLING KIT
   - f. STATIC DISCHARGERS KIT
   - g. HEADSET: 0770039-1
   - h. MICROPHONE AND HEADSET JACKS and wiring provisions
   - i. OMNI ANTENNA TEE CABLE ASSEMBLY: 0570400-206
   - j. OMNI SELECT SWITCH (Needed when dual omnis are used with autopilot)

## CANCELLED

## PARTS LIST:

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<td>Cable Assembly - Mkr Bcn Lights</td>
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CHANGE IN WEIGHT AND BALANCE:

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<td>ARM</td>
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<td>RESULTANT MOMENT</td>
<td>1135 pound-inches</td>
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1. DESCRIPTION OF INSTALLATION (See figure 1)

Installation of this kit consists of:
   a. Installation of Cable Assemblies
   b. Installation of Glide Slope Antenna
   c. Installation of Marker Beacon Antenna
   d. Installation of Accessory Unit
   e. Interconnection of Wiring
   f. Installation of Panel Units

2. INSTALLATION INSTRUCTIONS

   a. Installation of Cable Assemblies (See figure 1)
      
      (1) Remove connector plate from rear of receiver dust cover.
      
      (2) Remove seats, carpet and trim as required to gain access to wire route down left side of airplane.
      
      (3) Route cable assemblies (1) to accessory unit location following tail light wiring under cabin floorboard. Replace existing clamps with larger sizes as required.

   b. Installation of Glide Slope Antenna (See figure 2)
      
      (1) Remove uppermost screw (1) from windshield center strip. Locate and drill holes (2) in forward spar carrythru.
      
      (2) Attach cable assembly (3) to antenna assembly (5). Mount antenna with screw (1) and cement (4).
      
      (3) Route cable (3) to receiver location by concealing under trim down left docrpost. Secure cable to forward spar carrythru with clamps and screws (2).
c. Installation of Marker Beacon Antenna (See figure 3)

(1) Locate and drill holes (1, 2, 4 & 5). Install antenna rod assembly (3) with hardware (1 & 2).

(2) Install cable assembly (7) as shown using hardware (6). Note that the ground terminal on the cable assembly mounts under nut (1). Install grommet (4) and secure cable with clamps (5).

(3) Route cable assembly (7) to accessory unit location.

d. Installation of Accessory Unit

MODELS 180 & 185 THRU 1966 (See figure 4A)

(1) Assemble mounting (2) and angles (6) using screws and nuts (3).

(2) Use assembled parts as a pattern to locate holes (6) in angle (5). Attach angle (5) to assembled parts using screws, nuts and spacers (6).

(3) Use assembled parts as a pattern to locate holes (4) in bulkhead flanges and stringer on aircraft skin. Install assembled parts using screws, nuts and spacers (5 & 6).

(4) Install Accessory Unit (2) in mount and attach cables (1).

(5) Locate and drill holes (7) and secure cables (1) with clamps (7).

* SUPPLIED IN BASIC ELECTRONICS KIT (SEE NOTE 1, PAGE 1)

ACCESSORY UNIT INSTALLATION (SEE FIGURE 4)

GLIDE SLOPE ANTENNA INSTALLATION (SEE FIGURE 2)

MARKER BEACON ANTENNA INSTALLATION (SEE FIGURE 3)

0570400-229 CABLE ASSY*
0770400-254 CABLE ASSY
1 EACH REQD
(ROUTE FROM PANEL TO ACCESSORY UNIT, FOLLOW TAIL LIGHT WIRING. REPLACE EXISTING CLAMPS WITH LARGER SIZES AS REQUIRED)

Figure 1. Radio Installation, Cessna Nav/Omni 300
Figure 2. Glide Slope Antenna Installation

MODELS 180 & 185, 1967 & ON (See figure 4B)

6. Assemble mount (2), angles (8) and brackets (6 & 7) as shown using nut & screws (3).

7. Use assembled parts to locate holes (5) in angle (9). Attach assembled parts with two nuts & screws (5).

8. Using assembled parts as a pattern, locate and drill two holes (4) in bulkheads and two holes (5) in stringer on fuselage skin.

9. Install parts using remainder of screws and nuts (5) and screws, nuts and spacers (4).

10. Install accessory unit (2) in mount and attach cables (1).

11. Locate and drill holes (10) and secure cables (1) with clamps (10).

e. Interconnection of Wiring (See figures 5 & 6)

1. Attach antenna cables (1 & 2) to connector plate as shown in figure 5.

NOTE

If dual omnis are installed, use omni tee cable assembly (3) to connect omni antenna cable to both receivers. See Note 2, Page 1.

2. Refer to figure 6 and connect blue (phones output - Nav) wire to an audio selector switch (ref).

3. Connect grn/blu (phones output - Mkr Bcn) to an audio selector switch (Ref).

4. Route red/grn (Mkr Bcn Pwr) wire and red (Nav Receiver Pwr) wire to circuit breaker panel.

5. Connect yellow (radio dial lights) wire to radio dimming rheostat.

6. Connect gry/red & gry/grn (omni deviation output) wires to autopilot omni coupler if autopilot is installed.
Figure 3. Marker Beacon Antenna Installation
f. Installation of Panel Units (See figure 7)

(1) Install indicator (2) in desired location on pilot’s shock mounted instrument panel using screws (1) and nuts.

(2) Install marker beacon lights and switch (3) and placard (4) on shock mounted instrument panel as shown.

(3) Locate and drill holes (6). Attach connector plate to rear of dust cover (removed earlier) and install dust cover with screws and nuts (6).

(4) Install receiver (5) in dust cover.

(5) Install circuit breaker (7) in circuit breaker panel and attach red/grn and red wires to load side of circuit breaker.
3. ADJUSTMENT PROCEDURE

a. The position of the tap-off clamp is the only adjustment required for a Nav/Omni 300 installation. This adjustment requires the following equipment.

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

(1) 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 300 Ohm resistor. Insert the phone plug into the aircraft's phone jack.
Figure 5. Antenna Connections

(2) 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.

(3) 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.

(4) 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.

(5) Adjust the position of the tap-off clamp on the antenna rod for maximum VTVM reading.

NOTE

Refer to the 300 Series Electronics Service/Parts Manual for additional service information if required.
Figure 6. Wiring Diagram, Cessna Nav/Omni 300 w/Marker Beacon
Figure 7. Panel Units Installation

1. AN515B6R10 SCREW NAS487-20 NUT 3 EACH REQD

2. 32350 INDICATOR 1 REQD*

3. 0770400-254 CABLE AND LIGHTS ASSEMBLY (REF)

4. 0770093-1 PLACARD ASSEMBLY 1 REQD

5. 31380-1000 RECEIVER 1 REQD*

6. #26 (.147) HOLE NAS446-2-3 NUT S1022Z6-6 SCREW 4 EACH REQD

* Supplied in basic electronics kit (see note 1, page 1)