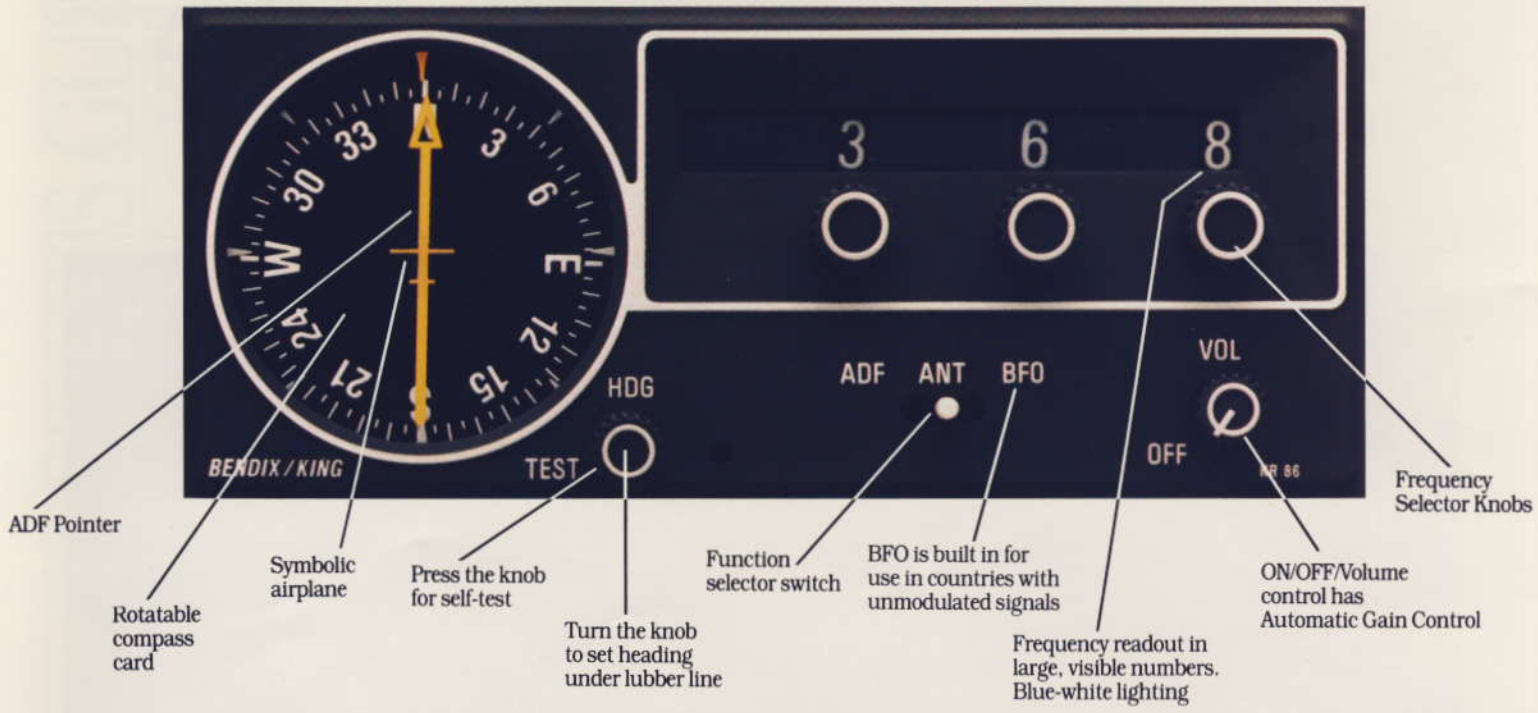
KR 86

Bendix/King Digital ADF

Powerful performance at an affordable price



Designed for the light airplane owner, the full-capability, digitally-tuned KR 86 Automatic Direction Finder (ADF) offers big performance in a package that fits your panel as well as your budget.

Tapered to fit the space on top of your radio stack, the KR 86 system features automatic band switching for added convenience. And its low price includes either combined or separate loop and sense antennas and 15 feet of antenna cable (24-foot loop cable optional). The KA 42B combination loop and sense antenna eliminates the cost and added drag of separate antenna installations, while providing the performance and reliability you expect from Bendix/King.

Pilot-friendly features

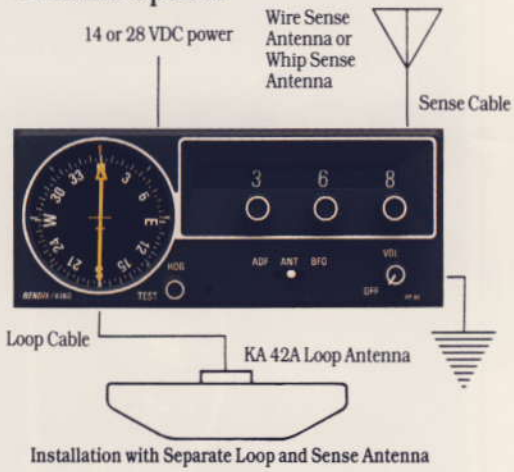
With its full-bandwidth (200–1750 kHz) digital tuning, the KR 86 enjoys an established record of pilot acceptance. A compact, self-contained unit, the KR 86 fits in a standard 6¼"x2⅝" panel cutout. Other than mounting the KR 86 panel unit itself, installation is as simple as adding and connecting the combination antenna or, for maximum range, separate loop and sense antennas.

The KR 86 features a built-in ADF indicator with rotatable azimuth card, to save panel space and installation time. Its easy-to-use self-test procedure can be activated before or during flight, and high-visibility blue-white internal lighting is standard.

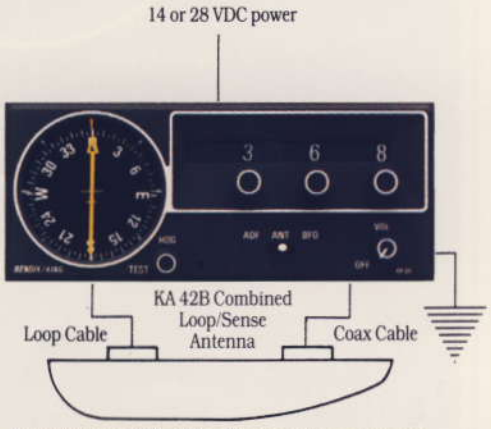
To identify stations transmitting an unmodulated signal, a Beat Frequency Oscillator (BFO) is built in—and available with the movement of a switch. Audio reception is available for identification of modulated ADF signals or listening to AM broadcast band stations.

Backed by a comprehensive two-year "no-hassle" warranty, and supported by our network of 1,000 authorized service centers, the KR 86 ADF offers the digital performance you'd expect from the leader in panel-mounted avionics—Bendix/King.

Antenna Options

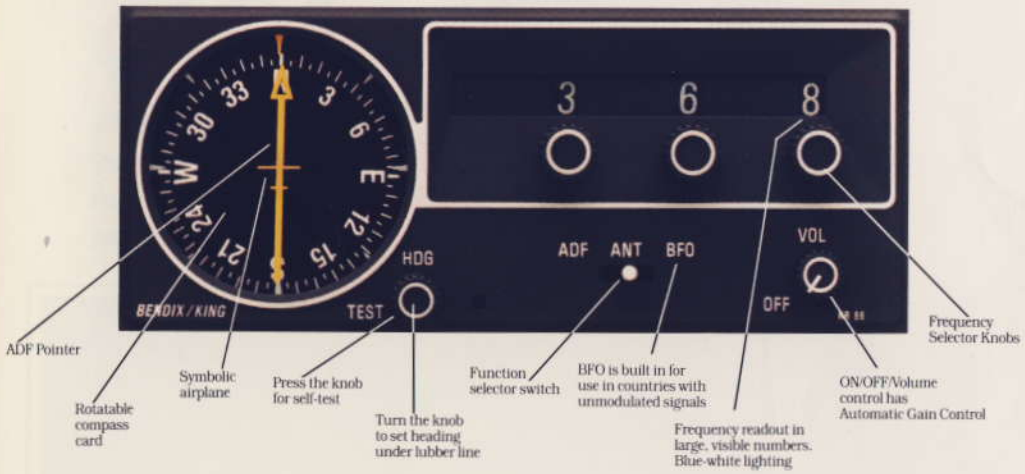


Installation with Separate Loop and Sense Antenna



Installation with Combined Loop and Sense Antenna

Pilot's Operating Instructions: KR 86 Digital ADF



Crystal-Controlled ADF

Digital tuning with crystal control eliminates the need for manual fine tuning and tuning meters, since each selected frequency is automatically set. Frequencies may be set in increments of 1 kHz, from 200 kHz to 1750 kHz.

Operation

Turn OFF/VOL knob (or avionics master switch) to OFF while engine is being started. To activate the unit, turn up VOL and move function selector switch to the ADF or ANT position. The ADF mode enables the indicator bearing pointer, which shows the direction of the transmitting station in relation to the aircraft's heading. If a magnetic bearing is required, use the heading knob to rotate the heading card to the aircraft's heading.

The ANT position provides optimum audio reception from the station being tuned. In this mode, the ADF pointer remains in position, even though it is deactivated.

The VOL knob turns the unit on and controls the volume of audio reception. To increase the level, rotate the knob clockwise. The KR 86 has an Automatic Gain Control circuit which helps hold the audio receiver level constant over widely varying RF signal input levels.

Frequency Selection

The far-left frequency selector knob controls the "100s" range, while the middle knob controls the "10s" and the right knob the "1s". Rotate the knob clockwise to increase the frequency.

Band switching is automatic. Simply dial the frequency desired, from low frequency (200–549 kHz) to commercial AM (550–1750 kHz). When listening to non-navigational AM frequencies, move the function switch to the ANT position, and tune 1 kHz higher or lower than the station frequency for best audio fidelity.

Built-In BFO

In the U.S., all AM and FAA transmissions are modulated. However, some stations in other countries broadcast an unmodulated signal. To identify an unmodulated signal, switch to BFO mode, and the Morse Code underlying the tone can be heard.

Pre-Flight Test

The following pre-flight check procedure should be performed prior to takeoff, to ensure accurate operation:

1. Position the aircraft on a known heading, such as a line parallel to a runway.
2. Consult your chart and select a station with a strong signal located approximately 50 miles from the airport.
3. Referring to the chart information, note the bearing of the station from the field relative to the aircraft's heading.
4. Switch the KR 86 function selector to ANT and identify the station. Then move the selector to ADF and observe the Indicator pointer. Compare its bearing to the chart listing.

ADF Test

Push the TEST knob and hold it. This will drive the pointer from its bearing position in a clockwise direction. Then release the TEST button and note whether it returns promptly to its original position before testing. No return or a sluggish return indicates a malfunction or a signal which is too weak.

This test may be performed before or during flight.

Erroneous ADF Bearings: RF Phenomena

In the U.S., the FCC will occasionally assign the same frequency to more than one station in an area. Certain conditions, such as night effect, may cause these signals to overlap. This fact should be taken into consideration when using AM broadcast stations for navigation.

Sunspots and atmospheric phenomena may occasionally distort reception so that signals from two stations may occasionally overlap. To confirm station identification, switch the function selector to ANT and listen for the station call letters.

Erroneous ADF Bearings: Electrical Storms

In the vicinity of electrical storms, an ADF indicator pointer tends to swing away from a tuned station toward the electrical discharge. Locating a storm can be useful, but the erratic behavior exhibited by the pointer should be noted.

Erroneous ADF Bearings: Night Effect

Night effect is the disturbance noted particularly just after sunset and just before sunrise which causes an ADF indicator pointer to swing erratically. If possible, tune to the most powerful available station at the lowest frequency. As an alternative, use the average of pointer oscillations to determine relative station bearing.

Erroneous ADF Bearings: Mountain Effect

Radio waves reflected from the surface of mountains may cause the pointer to fluctuate or show an erroneous bearing. Obviously, this phenomenon should be considered when flying over mountainous terrain.

Erroneous ADF Bearings: Coastal Refraction

Similarly, radio waves can be refracted when your aircraft is passing from land to sea, or when moving parallel to the coastline. Be prepared for fluctuations and bearing errors under these conditions.

Tear off this section along this line and fold in center for use as convenient Pilot's Operating Manual