Honeywell

INSTALLATION MANUAL

BENDIX/KING®

KI 202, KI 203, KI 204, KI 206, KI 207

NAVIGATION INDICATORS

MANUAL NUMBER 006-00137-0005
Revision 5, August 2002

WARNING

PRIOR TO EXPORT OF THIS DOCUMENT, REVIEW FOR EXPORT LICENSE REQUIREMENT IS NEEDED.

REVISION HISTORY

INSTALLATION MANUAL

BENDIX/KING

KI 202, KI 203, KI 204, KI 206, KI 207

Navigation Indicators

PART NUMBER	REV	DATE	DESCRIPTION
006-00137-0005	5	Aug/2002	Replaces P/N 006-00137-0004.
006-00137-0004	4	Mar/1988	Replaces P/N 006-00137-0003.

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SECTION I
GENERAL INFORMATION

1.1 INTRODUCTION

This manual contains information relative to the physical, mechanical, and electrical characteristics of the Silver Crown KI 202, KI 203, KI 204, KI 206, and KI 207.

1.2 EQUIPMENT DESCRIPTION

The KI 203 is designed to operate with VHF navigational equipment (such as the KX 170, KX 170A, KX 170B, KX 175, KX 175B, KN 53, KX 155, KX 155A, KX 165A) to provide OMNI range or localizer information. The navigational information from the VHF receiver is converted to DC signals to drive the left-right needle, To-From indicator, and warning flag. The OBS knob allows the pilot to select the desired radial from the VOR station.

The KI 204 performs the same function as the KI 203. Additionally, it contains a glideslope deviation needle and glideslope warning flag.

The KI 202 contains VOR/LOC left-right needle, To-From indicator, VOR/LOC warning flag, and OBS. The KI 202 version -26 contains a 25 pin sub-D connector.

The KI 206 contains VOR/LOC left-right needle, To-From indicator, VOR/LOC warning flag, glideslope deviation needle, glideslope warning flag, and OBS.

The KI 202, KI 203, KI 204, KI 206 may or may not be equipped with a course datum synchro for autopilot use.

The KI 207 is identical to the KI 206, except it does not contain an OBS and, therefore, has no course datum synchro. (The KI 207 -25 flavor (066-3034-25) does not contain a glideslope deviation needle or a glideslope warning flag.)

The KI 202 and KI 206 is available with either a 30 Hz or 400 Hz OBS resolver. The KI 206 is also available with 5V lighting.

1.3 TECHNICAL CHARACTERISTICS

TABLE 1-1 Technical Characteristics KI 202, KI 203, KI 204, KI 206, KI 207

SPECIFICATION	CHARACTERISTIC
SIZE:	See Figure 2-5 (P/N 155-05225-0000)
WEIGHT:	See Figure 2-5 (P/N 155-05225-0000)
TEMPERATURE RANGE:	Operating -15°C to +55°C, short time to +71°C. Storage -55°C to +85°C.
TSO: VOR Converter, Indicator VOR LOC Converter, Indicator LOC Glideslope Indicator Glideslope	 FAA TSO C40a Operation above 15,000 ft. DO 114 (by FAA approval). System bearing error less than 2.7° when used with any TSO'd navigation receiver having less than 1.5° phase error. FAA TSO C36c Class D RTCA DO 131. System centering error less than 7 uA when used with any TSO'd navigation receiver. FAA TSO C34c Class D RTCA DO 132. System centering error less than 10 uA when used with any TSO'd glideslope receiver/ converter having less than 7 uA centering error.
RTCA DO 138 Environmental Categories: Temperature, Altitude *Altitude Decompression Humidity Vibration AF Susceptibility RF Susceptibility RF Emission	 D* Tested for operation to 50,000 ft. at 25°C. From 50,000 ft. at 25°C per DO-138 sec. 4.5.2. A P A A A

TABLE 1-1 Technical Characteristics KI 202, KI 203, KI 204, KI 206, KI 207

SPECIFICATION	CHARACTERISTIC
Typical Accuracy:	
KI 203, KI 204 VOR Converter/ Indicator	Bearing error less than 1.7°. Full scale deflection for 10° course error.
KI 203, KI 204 LOC Converter/ Indicator	Centering error less than 3 uA. Three fifths deflection for 4 dB tone ratio.
KI 202, KI 206, KI 207 VOR Indicator and KI 204, KI 206, KI 207 Glideslope Warning Flag	Centering error less than 3 uA. Full scale deflection 150 uA. Nominal impedance 1 k ohms.
KI 203,KI 204 Converter Inputs:	
VOR Composite Input Input Impedance	0.5 ±10% Vrms ARINC phasing. 100 k ohms.
KI 203,KI 204 Converter Output Drive Capability:	
VOR/LOC Deviation To-From VOR/LOC Warning Flag	Five 1 k ohm loads, 150 uA full scale. Two 200 ohm, 200-0-200 uA loads. Five 1 k ohm, 0-260 uA loads.
KI 202, KI 203, KI 204, KI 206 Course Datum Synchro Input:	Standard ARINC XYZ 11.8 Vrms, 0.030 A, 400 Hz.
KI 202, KI 203, KI 204, KI 206 Course Datum Synchro Output:	393 mV/degree, 1° accuracy typical.
Mounting:	Unit may be front or rear mounted in a standard 3 inch ATI opening. To rear mount, use standard mooring plate P/N 073-00044-0001. To front mount, use standard black adapter plate P/N 073-00045-0000 with a standard mooring plate P/N 073-00044-0001.
KI 202, KI 203, KI 204, KI 206, KI 207 Lighting Requirements: 28 Vdc 14 Vdc 5 Vdc	 100 mA ±25 mA 200 mA ±60 mA 400 mA ±120 mA
Primary Power: KI 202 KI 203 KI 204 KI 206 KI 207	 None 11 to 33 Vdc @ 75 mA maximum 11 to 33 Vdc @ 75 mA maximum None None

1.4 UNITS AND ACCESSORIES SUPPLIED

1.4.1 KI 202, KI 203, KI 204, KI 206, KI 207

See Table 1-2 for product identification.

1.4.2 Installation Kits

1.4.2.1 Installation Kit 050-01524-0000:

NOTE: Connector pins supplied are solder pot type.

PART NUMBER	DESCRIPTION	QTY	VENDOR PART NUMBER
030-01077-0000	Contact, FM Solder	30	Positronix FS120N2-52 or Winchester 100-2520S
030-02154-0000	Hood, Conn 24P	1	Positronix G4100000J0 or Winchester MRE41H
030-02272-0000	Shell, Conn 41P	1	GMCT41F0N00VL or Winchester MRAC41SNVL

1.4.2.2 Installation Kit 050-01524-0001:

NOTE: Connector pins supplied are crimp type.

PART NUMBER	DESCRIPTION	QTY	VENDOR PART NUMBER
030-01080-0000	Contact, FM Crimp 20AWG	30	Positronix FC120N2-14 or Winchester 100-1020S112
030-02154-0000	Hood, Conn 24P	1	Positronix G4100000J0 or Winchester MRE41H
030-02272-0000	Shell, Conn 41P	1	GMCT41F0N00VL or Winchester MRAC41SNVL

1.4.2.3 KI 202 -26 Installation:

Connector pins supplied are solder pot type.

PART NUMBER	DESCRIPTION	QTY	VENDOR PART NUMBER
030-02348-0004	Shell, Conn 25P, M Sub-D	1	M24308/3-3

1.4.3 The following crimp-type pins and tool are available:

PART NUMBER	DESCRIPTION	QTY	VENDOR PART NUMBER
030-01085-0000	Contact, FM Crimp 16AWG	30	Positronix FC116N2 or Winchester 100-1016S

071-06025-0000	Crimp Tool or Crimp Tool w/ Turret Head	1	Positronix 9501 or Positronix 9502-1

1.4.4 The following VOR/LOC centering adjustment tool is available:

PART NUMBER	DESCRIPTION	QTY	VENDOR PART NUMBER
088-00706-0000	Adjustment Tool	1	

1.5 ACCESSORIES REQUIRED BUT NOT SUPPLIED

1.5.1 Extraction/ Insertion Tools:

PART NUMBER	DESCRIPTION	QTY	VENDOR PART NUMBER
005-02012-0012	Pin Extraction Tool	1	Positronix 9081
005-02012-0015	Pin Insertion Tool	1	Positronix 9099

1.5.2 For a standard 3 inch ATI opening Rear mount:

PART NUMBER	DESCRIPTION	QTY	VENDOR PART NUMBER
073-00044-0001	Mooring plate	1	

1.5.3 For a standard 3 inch ATI opening Front mount:

PART NUMBER	DESCRIPTION	QTY	VENDOR PART NUMBER
073-00045-0000	Black adapter plate	1	
073-00044-0001	with Mooring plate	1	
	OR		
073-00045-0001	Gray adapter plate	1	
073-00044-0001	with Mooring plate	1	

1.5.4 A KI 202 version -26 installation requires:

PART NUMBER	DESCRIPTION	QTY	VENDOR PART NUMBER
047-10544-0003	Bezel adapter plate	1	

1.5.5 Navigation receiver and navigation antenna.

1.5.6 Fabrication of necessary cabling is left to the installing agency.

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TABLE 1-2 Version Identification Table KI 202, KI 203, KI 204, KI 206, KI 207

UNIT	PART NUMBER	BEZEL	LIGHTING	VOR/LOC CONVERTER	VOR/LOC INDICATOR (M104)	NAV FLAG (M102)	TO/FROM FLAG (M101)	GS INDICATOR (M105)	GS FLAG (M103)	6 WIRE 30 HZ OBS RESOLVER (B101)	COURSE DATUM SYNCHRO (B102)	8 WIRE 30 HZ OBS RESOLVER (B103)	8 WIRE 400 HZ OBS RESOLVER (B104)	NO OBS	UNIT
KI 203	066-3034-00	BLK	14/28V WHT	-00	-00	-00	-00			-00					KI 203
KI 203	066-3034-01	BLK	14/28V WHT	-01	-01	-01	-01			-01	-01				KI 203
KI 204	066-3034-02	BLK	14/28V WHT	-02	-02	-02	-02	-02	-02	-02					KI 204
KI 204	066-3034-03	BLK	14/28V WHT	-03	-03	-03	-03	-03	-03	-03	-03				KI 204
KI 206	066-3034-04	BLK	14/28V WHT		-04	-04	-04	-04	-04			-04			KI 206
KI 206	066-3034-05	BLK	14/28V WHT		-05	-05	-05	-05	-05		-05	-05			KI 206
KI 207	066-3034-06	BLK	14/28V WHT		-06	-06	-06	-06	-06					-06	KI 207
KI 202	066-3034-07	BLK	14/28V WHT		-07	-07	-07					-07			KI 202
KI 202	066-3034-08	BLK	14/28V WHT		-08	-08	-08				-08	-08			KI 202
KI 202	066-3034-09	BLK	14/28V WHT		-09	-09	-09				-09		-09		KI 202
KI 206	066-3034-10	BLK	14/28V WHT		-10	-10	-10	-10	-10		-10		-10		KI 206
KI 202	066-3034-11	BLK	14/28V WHT		-11	-11	-11						-11		KI 202
KI 206	066-3034-12	BLK	14/28V WHT		-12	-12	-12	-12	-12				-12		KI 206
KI 206	066-3034-13	BLK	5V WHT		-13	-13	-13	-13	-13		-13	-13			KI 206
KI 206	066-3034-14	BLK	5V WHT		-14	-14	-14	-14	-14		-14		-14		KI 206
KI 206	066-3034-15	BLK	14/28V RED		-15	-15	-15	-15	-15			-15			KI 206
KI 206	066-3034-16	BLK	14/28V RED		-16	-16	-16	-16	-16				-16		KI 206
KI 207	066-3034-17	BLK	5V WHT		-17	-17	-17	-17	-17					-17	KI 207
KI 204	066-3034-18	BLK	5V WHT	-18	-18	-18	-18	-18	-18	-18					KI 204
KI 204	066-3034-19	BLK	5V WHT	-19	-19	-19	-19	-19	-19	-19	-19				KI 204
KI 204	066-3034-20	GRY	14/28V WHT	-20	-20	-20	-20	-20	-20	-20					KI 204
KI 204	066-3034-21	GRY	14/28V WHT	-21	-21	-21	-21	-21	-21	-21	-21				KI 204
KI 204	066-3034-22	GRY	5V WHT	-22	-22	-22	-22	-22	-22	-22					KI 204
KI 204	066-3034-23	GRY	5V WHT	-23	-23	-23	-23	-23	-23	-23	-23				KI 204
KI 206	066-3034-24	GRY	5V WHT		-24	-24	-24	-24	-24				-24		KI 206
KI 207	066-3034-25	BLK	5V WHT		-25	-25	-25							-25	KI 207
KI 202	066-3034-26	BLK	14/28V WHT		-26	-26	-26						-26		KI 202

1.6 LICENSE REQUIREMENTS

None.

1.7 REQUIREMENTS FOR TSO'D VOR/ ILS/ GLIDESLOPE SYSTEMS

The additional units used in conjunction with the KI 202, KI 203, KI 204, KI 206, KI 207 must meet the specifications listed below to comprise a completely TSO'd navigation system.

1.7.1 Navigation Receiver Requirements for use with KI 203, KI 204:

1.7.1.1 The navigation receiver shall meet all the applicable requirements of TSO C40a and TSO C36c.

1.7.1.2 VOR phase error shall not exceed 1.5°.

1.7.1.3 Variation in the VOR composite output shall not exceed ±3 dB from 0.500 Vrms as the RF input level of a Standard VOR Test Signal to the receiver is varied from 10 to 10,000 uV.

1.7.1.4 Variation in the LOC composite output shall not exceed ±2 dB from 0.333 Vrms as the RF input level of a Standard Localizer Centering Signal is varied from 50 to 10,000 uV.

1.7.1.5 A control line (ILS Energize) must be provided as a low impedance to ground when an ILS frequency is selected.

1.7.2 Glideslope Receiver/ Converter Requirements for use with KI 204, KI 206, KI 207:

1.7.2.1 The glideslope receiver/ converter shall meet all the applicable requirements of TSO C34c.

1.7.2.2 Centering current to be 0 ±7 uA into a 1000 ohm load with a 95% probability under all combinations of the service conditions listed in RTCA Paper DO-132, Minimum Performance Standards - Airborne ILS Glideslope Receiving Equipment, paragraph 2.1 sub-paragraph b. Centering Accuracy.

1.7.2.3 Deviation current with a 700 uV Standard Glideslope Deviation Signal (0.091 ±0.001 ddm tone ratio) applied to the receiver input shall be 78 ±10% uA into a 1000 ohm load. Deviation current shall not change more than 15% as the RF input level of a Standard Glideslope Deviation Signal is varied from 100 to 10,000 uV. Deviation current shall be proportional within 5% to the difference in depth of modulation of the 90 Hz and 150 Hz tones.

1.7.2.4 Warning signal output shall be a DC current less than 125 uA into a 1000 ohm load for a warning flag to fully visible. Warning signal output for a fully concealed warning flag shall be a DC current of 260 uA minimum into a 1000 ohm load.

1.7.3 Navigation Receiver and Converter Subsystem Requirements for use with KI 202, KI 206, KI 207:

1.7.3.1 The navigation receiver and converter subsystem shall meet the applicable requirements of TSO C36c and TSO C40a.

1.7.3.2 Current required for a centered Course Deviation Indicator shall be 0 ±3 uA into a 1000 ohm load with an 85% probability under the conditions listed in paragraph 2.1.6 Bearing Accuracy of RTCA Document DO-114, Minimum Performance Standards Airborne VOR Receiving Equipment and paragraph 2.1, sub-paragraph b. Centering Accuracy of RTCA Document DO-131, Minimum Performance Standards Airborne ILS Localizer Equipment.

1.7.3.3 Current for a concealed warning flag shall be 260 uA minimum.

1.7.3.4 Current for a revealed warning flag shall be 125 uA maximum.

1.7.3.5 The following navigation receivers or converters when used in conjunction with KI 202, KI 206, KI 207 will meet all TSO system requirements.

KNR 630	KN 77	KX 155 (via KN 72)
KNR 631	KX 165	KX 155A (via KN 72)
KNR 632	KNS 80	KX 165A
KN 72	KNS 81	
KN 74	KNR 634	

1.7.3.6 The following glideslope receivers when used in conjunction with KI 206, KI 207 will meet all TSO system requirements.

KN 73	KNR 631	KX 155
KN 75	KNS 80	KX 155A
KGS 681	KNS 81	
KMR 691	KX 165	
KNR 630	KX 165A	

1.7.3.7 The following navigation receivers or converters when used in conjunction with KI 203, KI 204 will meet all TSO system requirements.

KX 155	KX 155A
KN 53	KX 165A
KX 170B	
KX 175B	

1.7.3.8 The following glideslope receivers when used in conjunction with KI 204 will meet all TSO system requirements.

KN 73	KX 155
KN 75	KX 155A
KGS 681	KX 165A
KMR 691	

SECTION II
INSTALLATION

2.1 GENERAL

This section contains suggestions to consider before installation in the aircraft. Better performance results from following these instructions.

2.2 UNPACKING AND INSPECTING EQUIPMENT

Exercise extreme care when unpacking the equipment. Make a visual inspection of the unit for evidence of damage incurred during shipment. If a claim for damage is to be made, save the shipping container to substantiate the claim. The claim should be promptly filed with the transportation company. It would be advisable to retain the container and packaging material after all equipment has been removed in the event that equipment storage or reshipment should become necessary.

2.3 UNIT INSTALLATION

2.3.1 Select a suitable panel location offering unobstructed viewing and adequate clearance.

2.3.2 Refer to Figure 2-5 (P/N 155-05225-0000) or other appropriate drawing for the unit mounting dimensions.

2.3.3 The unit may be Rear mounted in a standard 3 inch ATI opening by using mooring plate P/N 073-00044-0001 or Front mounted with black adapter plate P/N 073-00045-0000 or gray adapter plate P/N 073-00045-0001 and mooring plate P/N 073-00044-0001. Refer to Figure 2-5 (P/N 155-05225-0000) or other appropriate drawing for hole punch, decal, or filing templates.

2.3.4 The KI 202 version -26 unit is mounted using bezel adapter plate P/N 047-10544-0003.

2.3.5 The unit is secured with three #6-32 screws. Mounting screws shall not extend more than 0.625 inches (1.6 cm) into the unit.

2.4 POST INSTALLATION CHECKOUT

An operational ramp test or a performance flight test is recommended after installation to insure satisfactory performance of the equipment in its normal environment.

2.4.1 RAMP TEST

2.4.1.1 Use VOR/ILS ramp generator IFR 401L or equivalent.

2.4.1.2 Set ramp generator to VOR, 90° TO. Set NAV receiver to VOR frequency. Rotate OBS until the D-bar centers, with the To/From indicator reading TO. The OBS should read 90° TO ±2°. Change the generator to 0° TO, center the D-bar, and check the OBS reading for 0° TO ±2°.

2.4.1.3 If the error is greater than ±2°on the KI 203, KI 204, VOR centering may be readjusted by R101 (behind top left mounting screw) using adjustment tool PN 088-00706-0000.

2.4.1.4 To adjust VOR centering on the KI 203, KI 204, change the generator to 90° TO, center the D-bar, and adjust R101 for 0° TO ±2°. Change the generator to 90° FROM, center the D-bar, and readjust R101 for half the reading at 90° TO. Repeat adjustments at 90° TO and 90° FROM until both are within ±2°. If large corrections are required to center the needle the source of error may be exist in another part of the VOR/LOC navigation system.

2.4.1.5 Change the generator to 0° TO, center the D-bar for 0° TO. Set OBS to 8° and check for 4 ±1/2 dots deflection to the Left. Set OBS to 352° and check for 4 ±1/2 dots deflection to the Right.

2.4.1.6 Rotate the OBS 360° and verify that the To/From flag changes state only at 270° ±30° and at 90° ±30° OBS position.

2.4.1.7 Remove VOR RF signal and verify that NAV warning flag appears.

2.4.1.8 Set ramp generator to ILS mode. Set NAV receiver to ILS frequency. Check the levels in Table 2-1 for ILS deflection and Table 2-2 for Glideslope deflection within ±1/2 dot.

TABLE 2-1 ILS Deflection

SIGNAL	LEVEL	PREDOMINATE MODULATION	DIRECTION	DEFLECTION (±1/2 dot)
LOC	+4 dB (+.093 ddm)	150 Hz	LEFT	3 dots
LOC	+0 dB (0 ddm)		CENTERED	±1/2 dot
LOC	-4 dB (-.093 ddm)	90 Hz	RIGHT	3 dots

TABLE 2-2 Glideslope Deflection

SIGNAL	LEVEL	PREDOMINATE MODULATION	DIRECTION	DEFLECTION (±1/2 dot)
GS	+2 dB (>.091 ddm)	150 Hz	UP	2 1/2 dots
GS	+0 dB (0 ddm)		CENTERED	±1/2 dot
GS	-2 dB (.091 ddm)	90 Hz	DOWN	2 1/2 dots

2.4.1.9 If the error is greater than ±1/2 dot on the KI 203, KI 204, LOC centering may be readjusted by R102 (behind top right mounting screw) using adjustment tool P/N 088-00706-0000 at 0 dB (0 ddm).

2.4.1.10 Remove ILS RF signal and verify that NAV/GS warning flag(s) appear.

2.4.2 FLIGHT TEST

2.4.2.1 To check the VOR/ILS System, select a VOR frequency within a forty nautical mile range. Listen to the VOR audio and insure that no electrical interference such as magneto noise is present. Check the tone identifier operation. Fly inbound or outbound on a selected VOR radial and check for proper LEFT-RIGHT and TO-FROM indications. Check VOR accuracy for ±5° of a known heading.

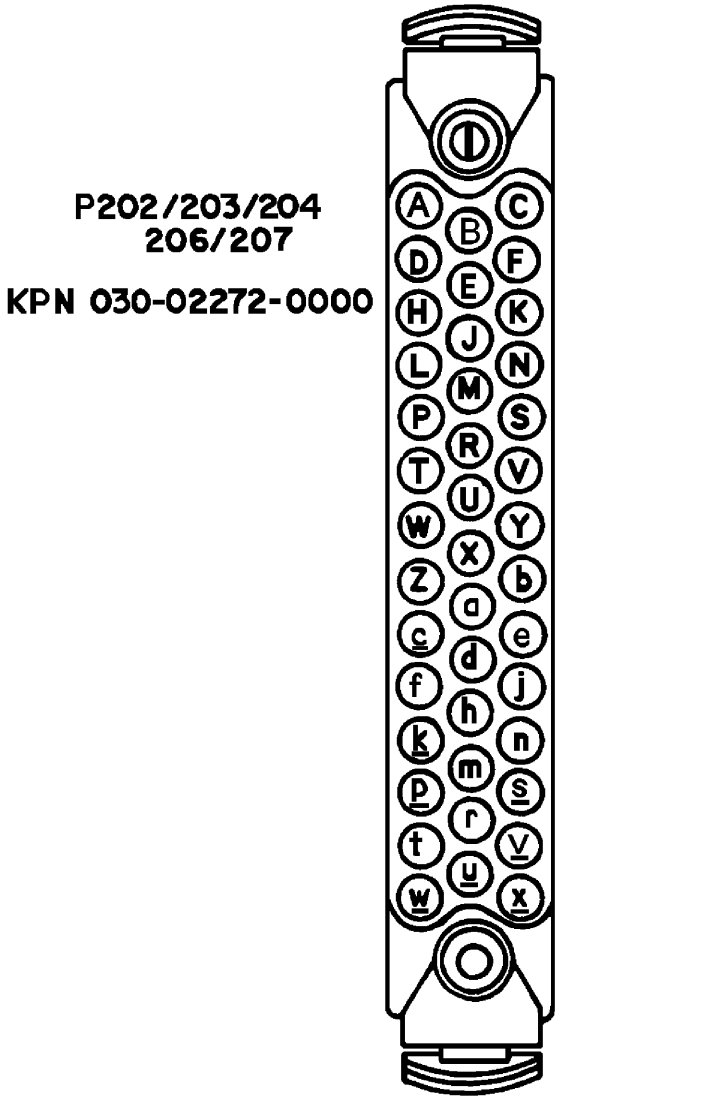
NOTE

VOR ground station scalloping may occur under weak signal conditions.

Channel off VOR NAV receiver and verify that the NAV warning flag appears.

2.4.2.2 Flight test the ILS operation by flying a simulated ILS approach. Check localizer LEFT-RIGHT deflection and, if applicable, glideslope deflection. Check the localizer accuracy in relation to the ILS runway.

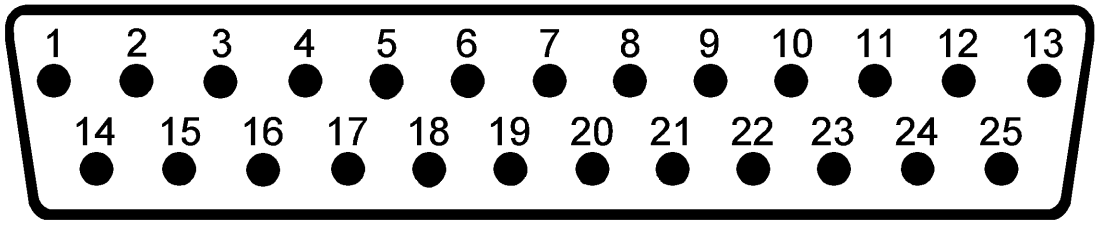
Channel off ILS NAV receiver and verify that NAV/GS warning flag(s) appear.



CONNECTOR PIN LOCATIONS

Figure 2-1 Connector, 41 Pin Shell P202, P203, P204, P206, P207

P/N 030-02348-0004



P202 FOR KI 202 -26

Figure 2-2 Connector, 25 Pin Sub-D P202 (KI 202 -26 only)

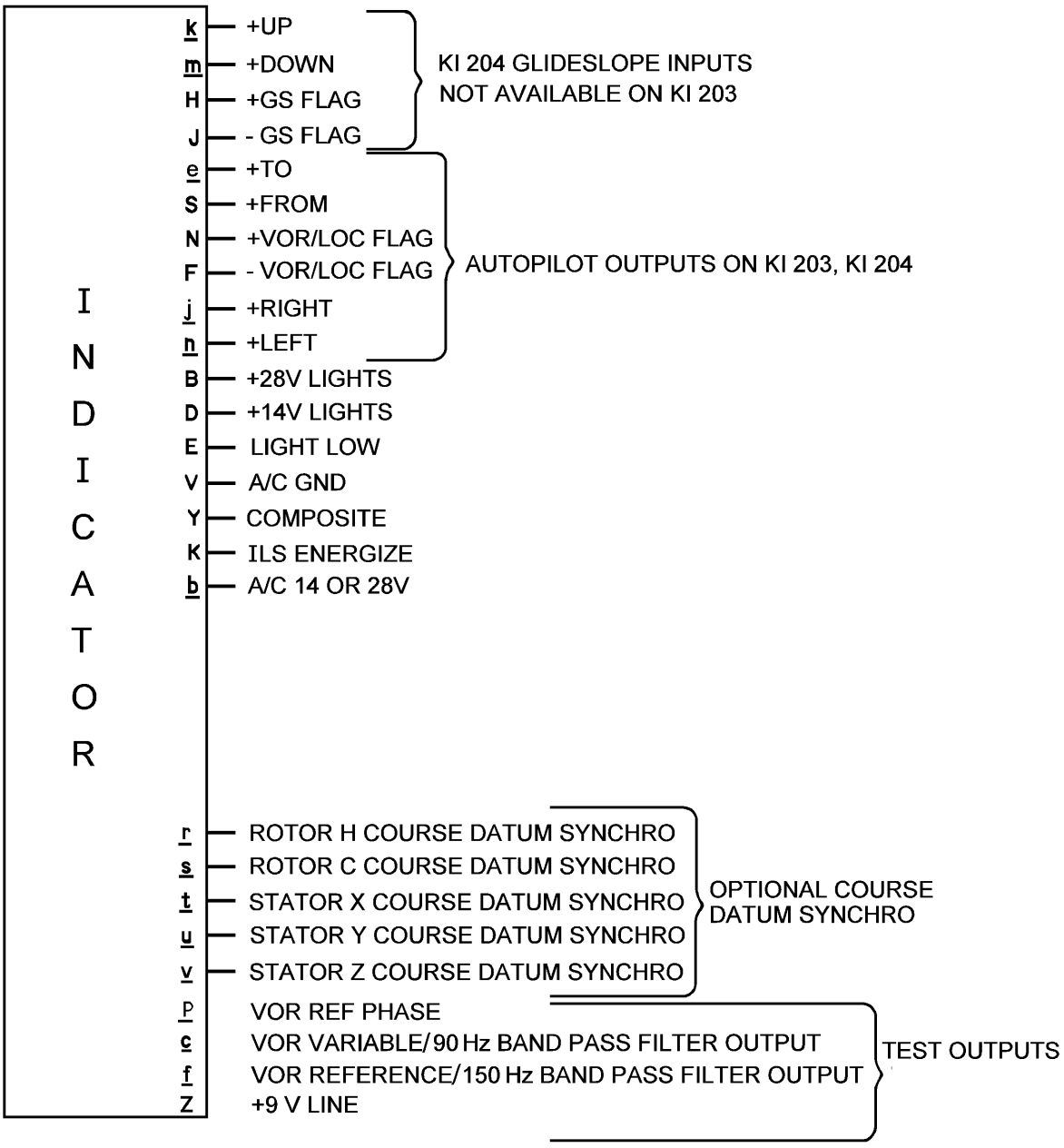


Figure 2-3 Pin Function Diagram KI 203, KI 204

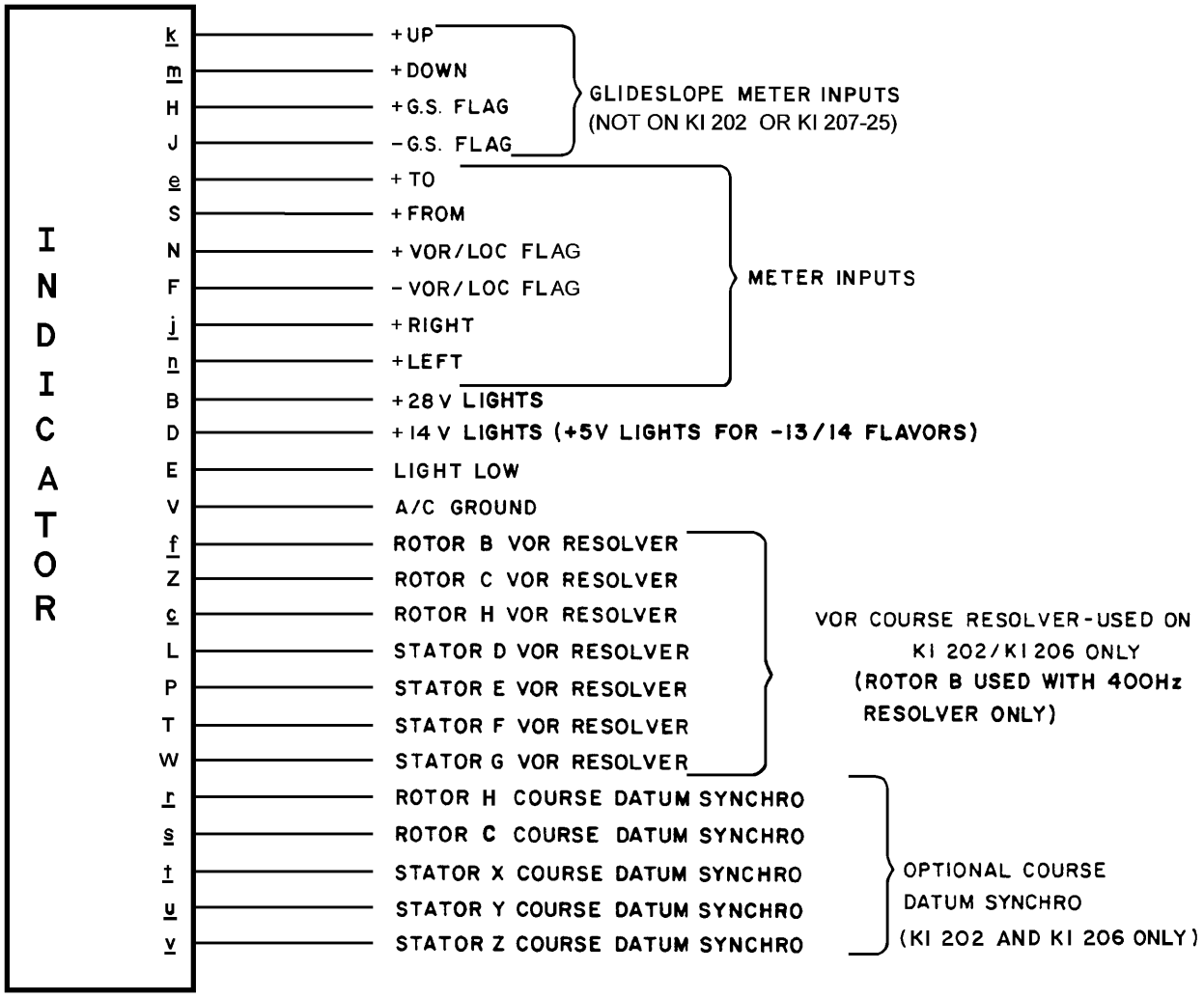


Figure 2-4 Pin Function Diagram KI 202, KI 206, KI 207

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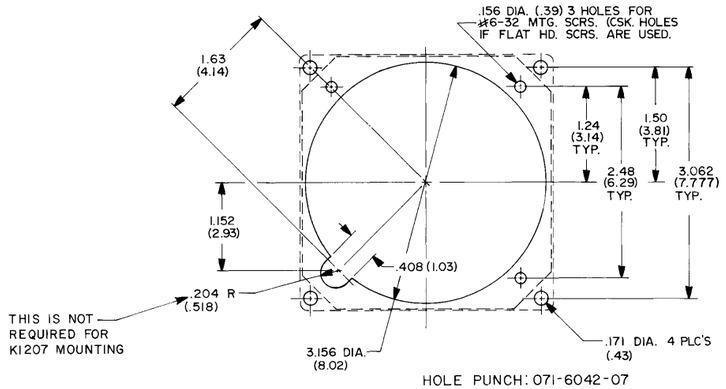
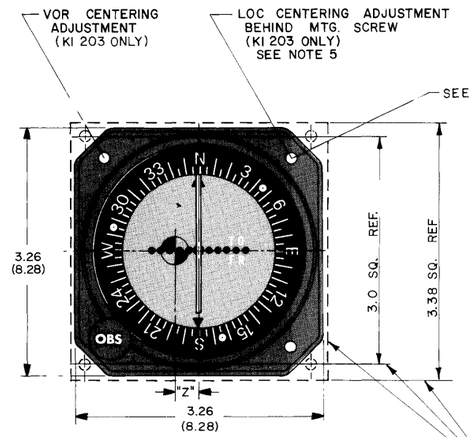
KI 202/203/204/206/207 MOUNTING HOLES
(NOT REQUIRED FOR KI 202 -26 VERSION)



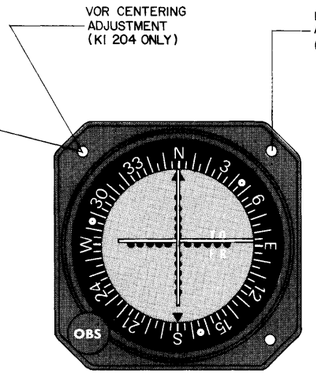
HOLE PUNCH: 071-6042-07
DECAL NO: KPN 057-2105-08
FILING TEMPLATE: KPN 071-6039-08



KI 202/203/207-25

NOTE: KI 207-25 DOES NOT HAVE AN OBS KNOB OR AZIMUTH CARD.

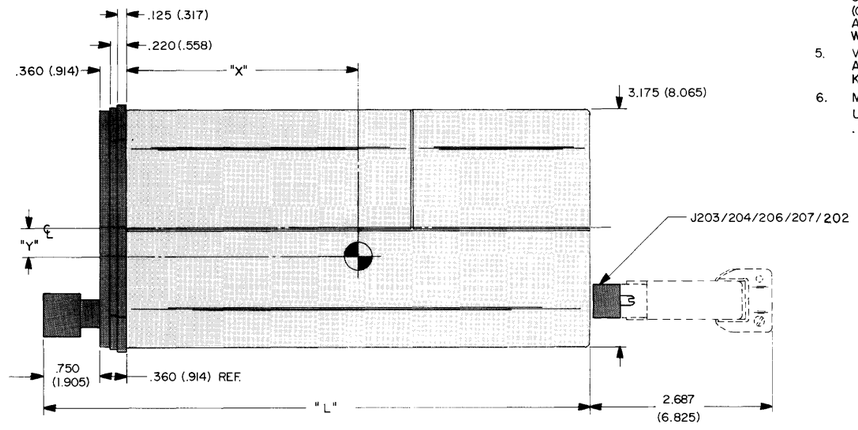
KI 202-26 ONLY
SPECIAL ADAPTER PLATE
047-10544-0003



KI 204/206/207-06

NOTE: KI 207-06 DOES NOT HAVE AN OBS KNOB OR AZIMUTH CARD.

			CENTER OF GRAVITY DIMENSIONS		
UNIT	WEIGHT	"L"	"X"	"Y"	"Z"
KI 203	1.6 LB. (.73 Kg)	7.16 (18.186)	3.000(7.620)	.037 (.094)	.062 (.158)
KI 204	1.7 LB. (.77 Kg)	7.16 (18.186)	2.930(7.440)	.097 (.246)	.142 (.361)
KI 206	1.3 LB. (.59 Kg)	5.37 (13.639)	2.000(5.080)	.187 (.475)	.087 (.221)
KI 207	1.0 LB. (.45 Kg)	5.37 (13.639)	" "	" "	" "
KI 202	1.3 LB. (.59 Kg)	5.37 (13.639)	" "	" "	" "
ADD .1LB. (.05Kg) FOR COURSE DATUM SYNCHRO					

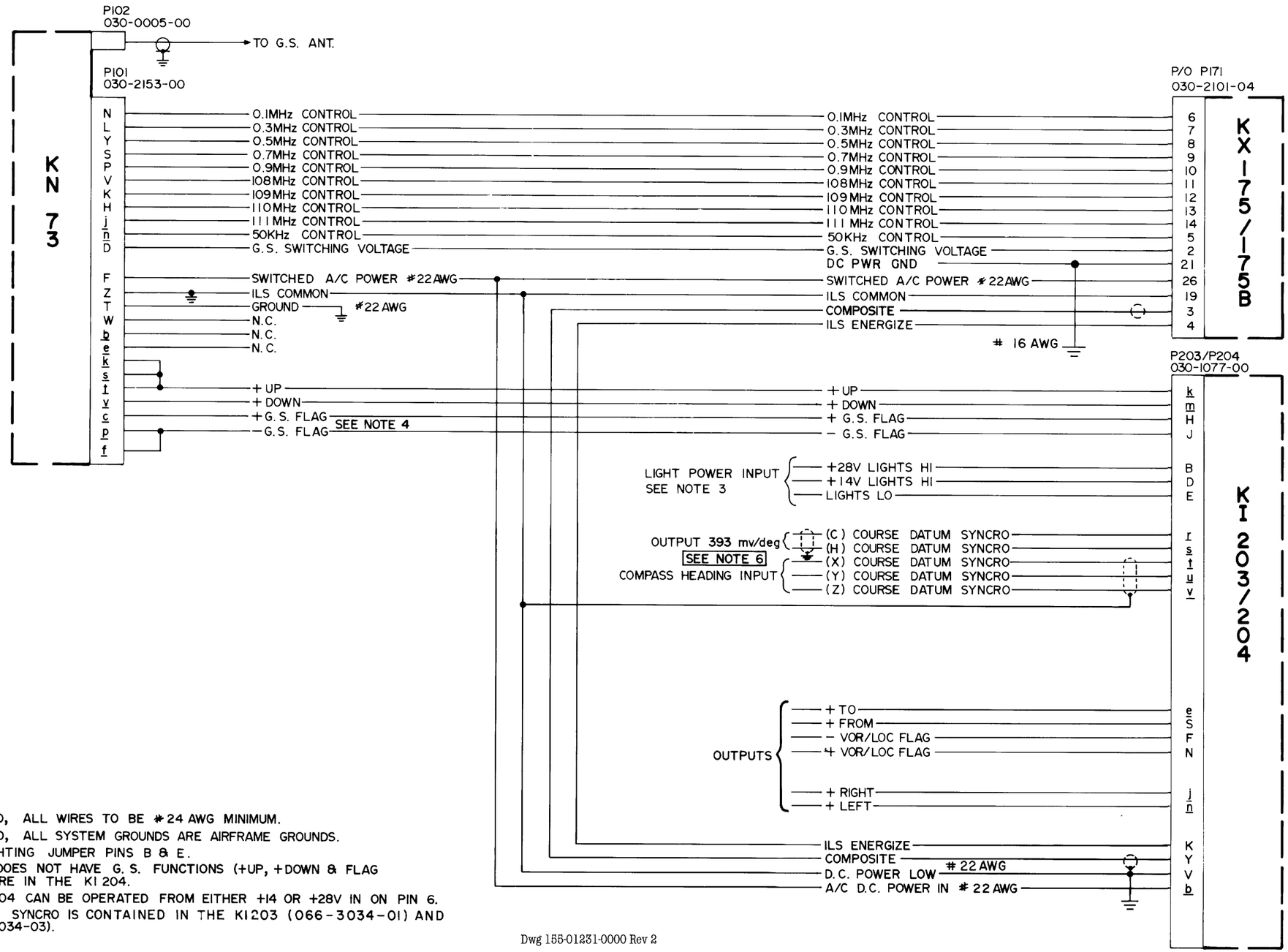


NOTES:

1. DIMENSIONS IN ( ) ARE IN CENTIMETERS.
2. J203/204/206/207 IS A 30 PIN CONNECTOR.
3. WEIGHT: SEE TABLE
4. THIS UNIT MAY BE FRONT OR REAR MOUNTED IN A STANDARD 3" A.T.I. OPENING. TO REAR MOUNT USE A STANDARD MOORING PLATE (073-0044-01). TO FRONT MOUNT UNIT USE A STANDARD BLACK ADAPTOR PLATE (073-0045-00) OR GRAY ADAPTOR PLATE (073-0045-01) WITH A STANDARD MOORING PLATE (073-0044-01).
5. VOR/LOC EXTERNAL ADJUSTMENTS CAN BE MADE BY USE OF A JEWLERS SCREWDRIVER OR SPECIAL KRC TUNING TOOL KPN 088-0706-00.
6. MOUNT WITH THE THREE # 6-32 SCREWS SHIPPED WITH EACH UNIT. MOUNTING SCREWS SHALL NOT EXTEND MORE THAN .625 (1.6 cm) INTO UNIT.

Dwg 155-05225-0000 Rev AA

FIGURE 2-5 Installation Drawing KI 202, KI 203, KI 204, KI 206, KI 207 (Dwg No 155-05225-0000, Rev AA)

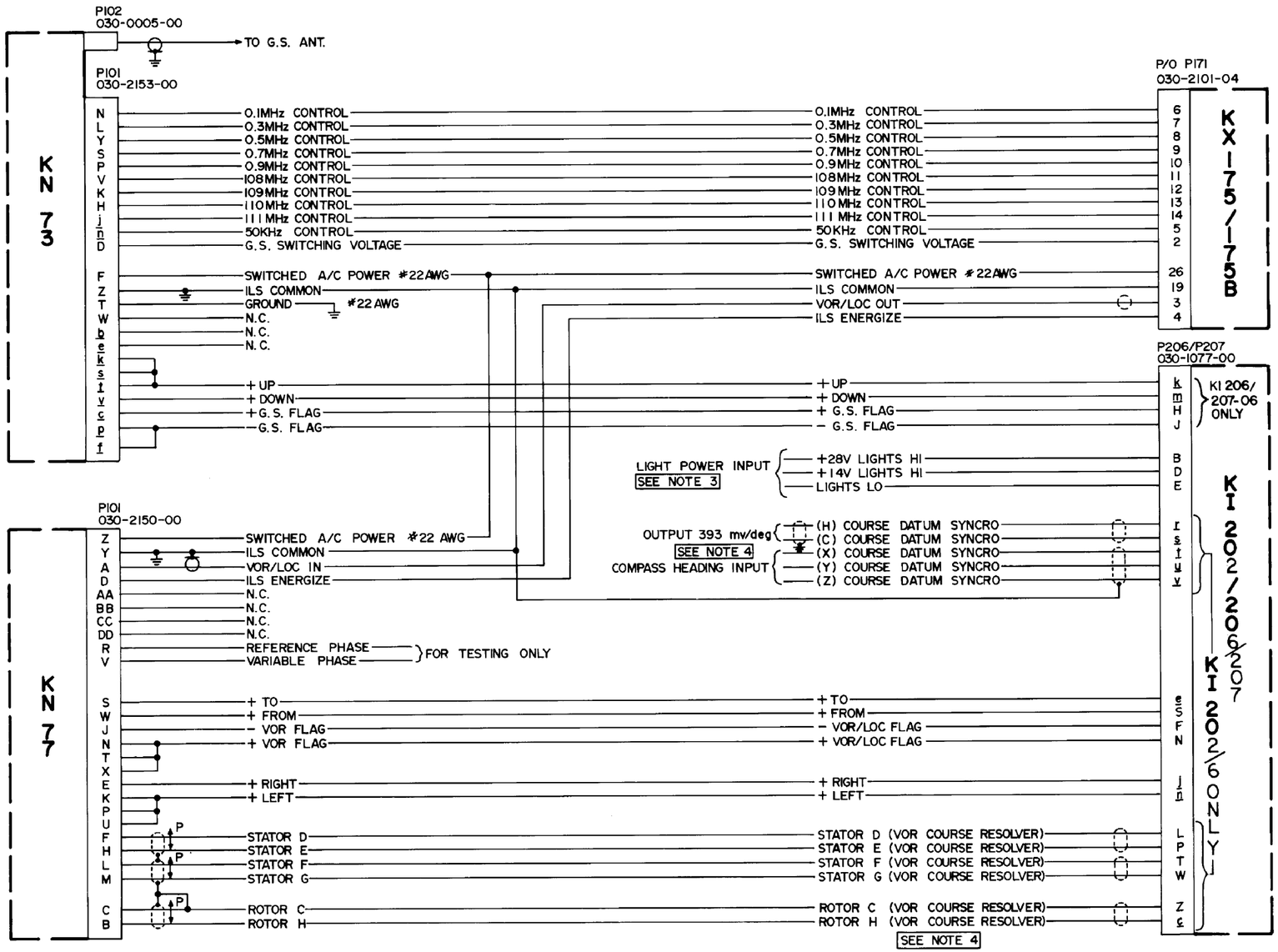


Dwg 155-01231-0000 Rev 2

NOTES:

1. UNLESS NOTED, ALL WIRES TO BE #24 AWG MINIMUM.
2. UNLESS NOTED, ALL SYSTEM GROUNDS ARE AIRFRAME GROUNDS.
3. FOR +14V LIGHTING JUMPER PINS B & E.
4. THE KI 203 DOES NOT HAVE G. S. FUNCTIONS (+UP, +DOWN & FLAG INPUTS) AS ARE IN THE KI 204.
5. THE KI 203/204 CAN BE OPERATED FROM EITHER +14 OR +28V IN ON PIN 6.
6. CORSE DATUM SYNCRO IS CONTAINED IN THE KI203 (066-3034-01) AND KI 204 (066-3034-03).

FIGURE 2-6 KI 203, KI 204 Interconnect to KN 73, KX 175, KX 175B (Dwg No 155-01231-0000, Rev 2)

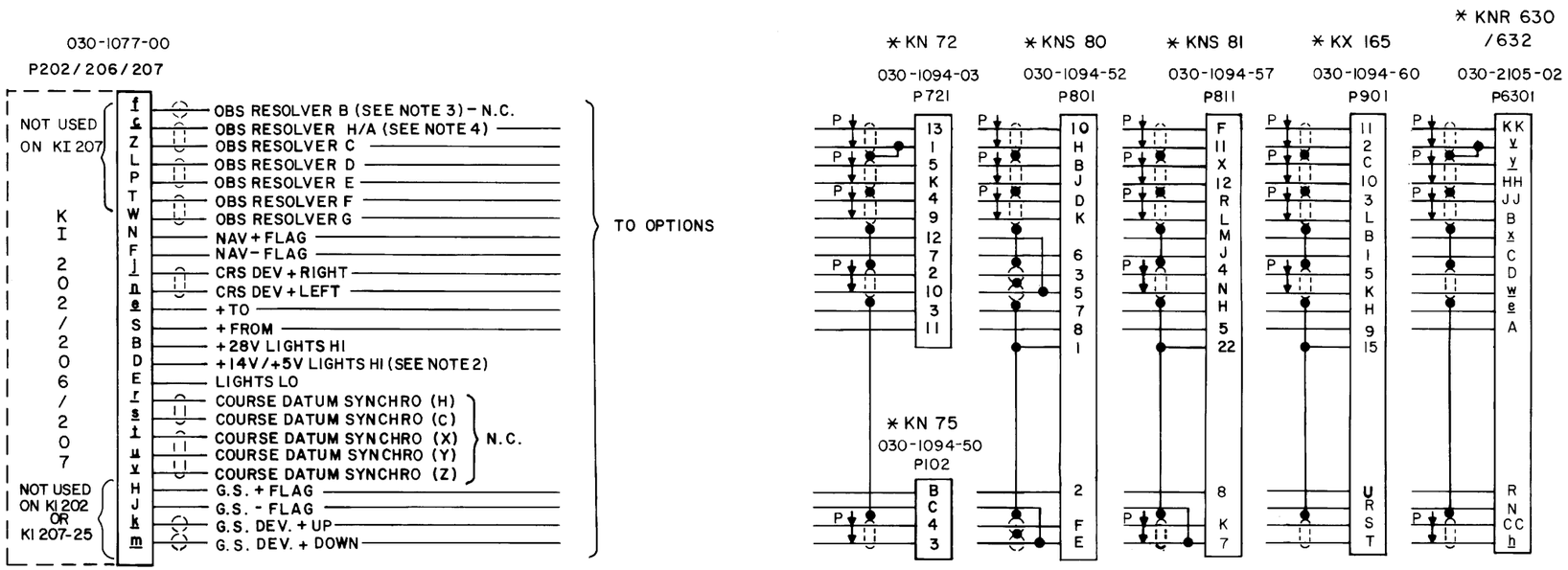


NOTES:

1. UNLESS NOTED, ALL WIRES TO BE #24AWG MINIMUM.
2. UNLESS NOTED, ALL SYSTEM GROUNDS ARE AIRFRAME GROUNDS.
3. FOR +14V LIGHTING JUMPER PINS B & E.
4. THE KI 202/6 CONTAINS A VOR COURSE RESOLVER (OBS CARD) AND AN OPTIONAL COURSE DATUM SYNCRO. THE KI 207 DOES NOT CONTAIN EITHER. THE COURSE DATUM SYNCRO IS CONTAINED IN KI202 UNIT NO. 066-3034-08 & KI 206 UNIT NO. 066-3034-05. ARINC NOTATION IS USED.

Dwg 155-01230-0000 Rev 3

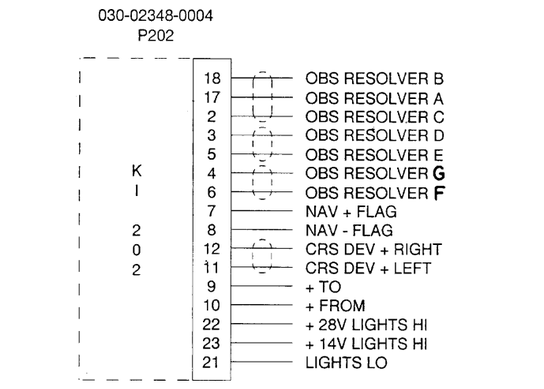
FIGURE 2-7 KI 202, KI 206, KI 207 Interconnect to KN 73, KN 77, KX 175, KX 175B (Dwg No 155-01230-0000, Rev 3)



NOTES:

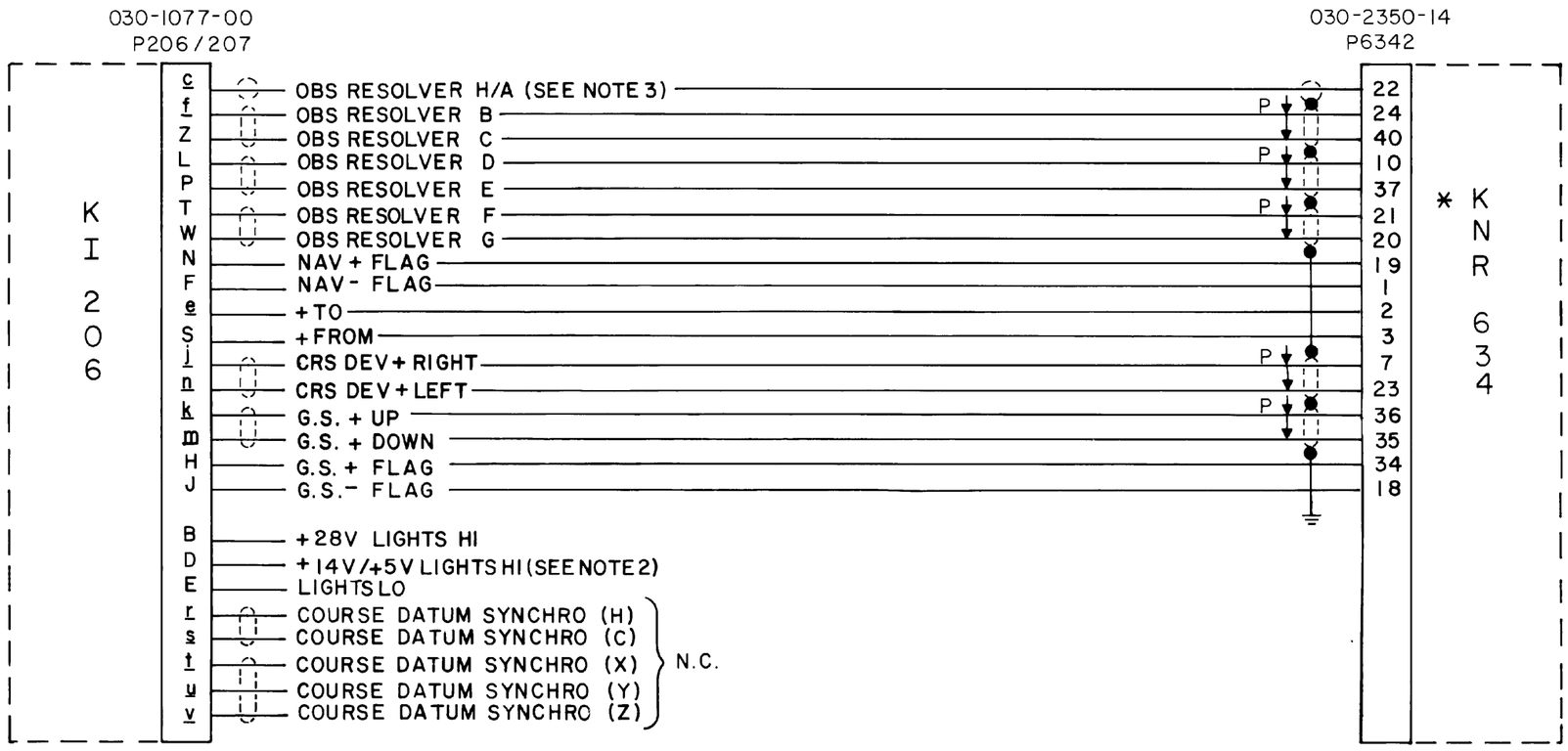
1. USE 24 AWG. UNLESS OTHERWISE NOTED.
2. FOR +14V/+5V LIGHTING JUMPER PINS B AND E, +5V LIGHTING IS USED ONLY ON -13 AND -14 AND -17. FLAVORS.
3. ROTOR B IS USED WITH 400 Hz RESOLVERS ONLY.
4. LINE CALLED ROTOR H WHEN 30Hz RESOLVER IS USED. LINE CALLED ROTOR A WHEN 400Hz RESOLVER IS USED.

* FOR COMPLETE UNIT INTERCONNECT SEE APPLICABLE INSTALLATION MANUAL.



Dwg 155-01414-0000 Rev 4

FIGURE 2-8 KI 202, KI 206, KI 207 Interconnect to KN 72, KNS 80, KNS 81, KX 165, KNR 630, KNR 632 (Dwg No 155-01414-0000, Rev 4)



*FOR COMPLETE KNR 634 INTERCONNECT SEE KNR 634 INSTALLATION MANUAL.

NOTES:

1. USE 24 AWG. UNLESS OTHERWISE NOTED.
2. FOR +14V/+5V LIGHTING JUMPER PINS B AND E. +5V LIGHTING IS USED ONLY ON -13 AND -14 FLAVORS.
3. LINE CALLED ROTOR H WHEN 30Hz RESOLVER IS USED. LINE CALLED ROTOR A WHEN 400Hz RESOLVER IS USED.
4. SHIELDED TWISTED PAIRS ARE HARBOUR 2XG-2634-SV OR EQUIVALENT.

Dwg 155-01415-0000 Rev 1

FIGURE 2-9 KI 206 Interconnect to KNR 634 (Dwg No 155-01415-0000, Rev 1)

SECTION III
OPERATION

3.1 UNIT OPERATION

3.1.1 VOR OPERATION

Channel the NAV receiver to the desired VOR and monitor the audio to positively identify the station. To intercept a selected VOR radial, turn the OBS to set the desired radial under the lubber line. The left-right needle will now deflect in the direction of the desired radial. Flying toward needle deflection will bring the aircraft to the desired radial. To fly inbound toward the station, turn the OBS to center the left-right needle while the To-From is indicating “TO.” Read the bearing under the lubber line and fly that magnetic heading. When the aircraft passes over the station, the To-From will momentarily disappear and then reappear as “FROM.” This indicates the aircraft is outbound from the station.

3.1.2 LOC OPERATION

Localizer circuitry is energized when the NAV receiver is channeled to an ILS frequency. The VOR/LOC flag will be out of view when the signal is usable. Corrections for approach should be made toward the needle, as in VOR, but due to increased sensitivity, corrections are smaller. When flying inbound on a back course, deflection of the needle will be reversed.

3.1.3 GLIDESLOPE OPERATION

Glideslope operation is much the same as the localizer just discussed. An Up deflection of the needle indicates the aircraft is below desired glidepath. The pilot must fly toward the needle for correction. A warning flag is provided to indicate usable signal conditions.

3.2 UNIT CONTROL FUNCTIONS

The following figure displays the control functions for the KI 204, KI 206. The KI 202, KI 203 differs in not having a glideslope needle or flag. The KI 207 -06, -17 differs in not having an OBS or azimuth card. The KI 207 -25 does not have an OBS, an azimuth card, or a glideslope needle.

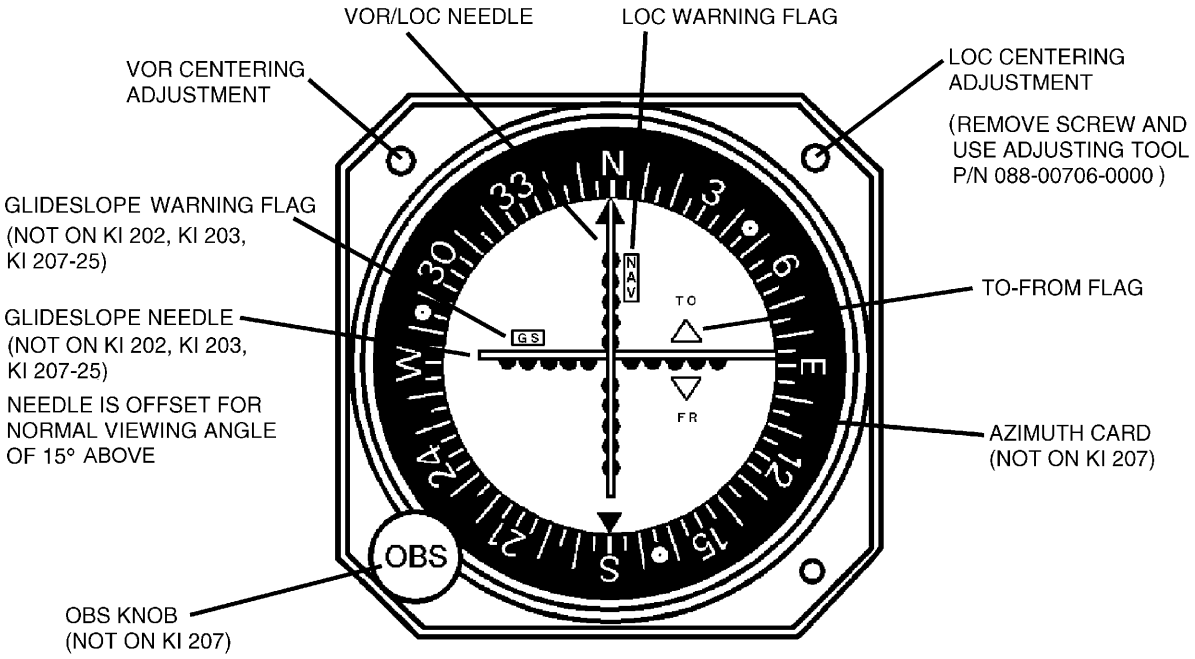


Figure 3-1 Controls and Display