**ELECTRICAL SYSTEM NOTES**

- Use 26-30 AWG for EXTERNAL CIRCUITS. CONTACT VANS ABOUT USING OTHER GAUGE.
- Use MIL-C-20655 REEL CASES. CONTACT VANS ABOUT USING OTHER BRANDS.
- LABEL THE PLUG IN USE OF EACH WIRE WITH THE TRANSCRIBED NOMENCLATURE AND WIRE NUMBER.
- CONNECT ALL 26-30 AWG WIRES TO SAME SIDE OF JACKS AND UNITS AS PER DRAWING. REFER TO FIG 3-10 TO FIT 16-20 AWG WIRES TO JUMPS AND USE TO FIT FIG 3-8 JACKS.
- CRIMPING TOOLS, T-CRIMP, AND AMP TERMINALS ARE TO BE CRIMPED WITH THE MANUFACTURER RECOMMEND CRIMPING TOOL.
- CRIMPED TERMINALS ARE TO BE INDIVIDUALLY FULL TESTED.
- DO NOT CRIMP WIRE WITH WIRE NET.
- CRIMPING WIRE SHOULD BE BUNDLED WITH LACING CHORD, WITH THE EXCEPTION OF BLUE TIE-WRAP USED AT BULKHEAD STATIONS.

**CIRCUIT LETTER FUNCTION**

- C: Special Electronic (TP Beacon)
- R: Radio Control
- P: Power Control
- I: Engine Control
- J: Ignition

**ELECTRICAL SYSTEM BENCH TEST PROCEDURE**

1. Connect P1 and P2 to Power (Both Directions).
2. Connect P3 and P4 to Serial (Both Directions).
3. Connect P5 and P6 to Starboard (Both Directions).
4. Connect P7 and P8 to Port (Both Directions).
5. Gross out the system using the system test harness.
6. Check all circuitry contained within the system.
7. Check all circuitry contained within the system.
8. Reconnect all circuitry contained within the system.
9. Reconnect all circuitry contained within the system.
10. Reconnect all circuitry contained within the system.
11. Reconnect all circuitry contained within the system.

**CONTROL SURFACE CIRCUITS**

- BLUE: INDEPENDENT RATING
- YELLOW: DEPENDENT UPON "NOTE CONNECTOR PIN RATING MAY BE LESS"
- MAX AMPERAGE
  - 100V GRN: MAX
  - 400V RED: MAX

**PCB TRACE**

- WIRING HARNESS NUMBER IF APPLICABLE
- PART NUMBER
- NAME LENGTH
- D-SUB PIN NUMBER
- GAUGE
- WIRE NUMBER
- X (NUMBER OF WIRES) MULTI CONDUCTOR WIRE
- SHIELDED
- SHIELD
- LENGTH OF WIRE (NOT COUNTING CONNECTORS)
- NOTE: IF NO WIRE COLOR IS WHITE

**CONNECTION**

- CONNECTOR BODY
- WIRE
- CONNECTOR
- SHIELD
- WIRE IDENTIFICATION
- SHIELD
- OPTIONAL WIRE
- OPTIONAL CONNECTOR
- OPTIONAL TOOL

**RS-232 CONFIGURATION (CHANNEL, INPUT, OUTPUT)**

- RS-232 1 OFF OFF
- RS-232 2 OFF ADS-B+ FORMAT 1
- RS-232 3 OFF OFF
- RS-232 4 CONNECT FORMAT 1 CONNECT FORMAT 2

**MSN SYSTEM CONFIGURATION**

- AIRINC 429 CONFIGURATION TX LOW SDI VOR/ILS 1
- SIDETONE VOLUME +26DB
- COM RX SQUELCH 0%
- COM SQUELCH MODE BASIC
- ENHANCED LIGHTING MODE ENABLED
- SYSTEM ID GTN 1
- ALTITUDE SRC INPUT CONNECTED
- RADIO ALTIMETER INPUT NOT CONNECTED
- HEADING SRC INPUT CONNECTED
- GPS SELECT AUTO
- AIR/GROUND DISCRETE ACTIVE FOR AIRBORNE
- AIR/GROUND THRESHOLD 30KT
- AIRFRAME TYPE FIXED-WING
- RS-232 1 MAPMX FORMAT 2 MAPMX FORMAT 2
- SDI LNAV 1
- AIRINC 429 OUT 2 LOW OFF
- AIRINC 429 OUT 1 LOW GARMIN 429
- AIRINC 429 IN 2 LOW OFF
- AIRINC 429 IN 1 LOW EFIS FORMAT 2

**VOR/LOC/GS CONFIGURATION**

- VERTEX 3 OUTPUT LEVEL 100.00%
- VERTEX 2 OUTPUT LEVEL 1.00%
- VERTEX 1 OUTPUT LEVEL 1.00%
- VERTEX 1 INPUT LEVEL 1.00%
- VERTEX 4 INPUT LEVEL 99.00%
- VERTEX 3 INPUT LEVEL 88.00%
- VERTEX 2 INPUT LEVEL 8.00%

**DISPLAY SOURCE SETTING**

- LIGHTING BUS 1
- LIGHTING BUS 2
- LIGHTING BUS 3
- LIGHTING BUS 4

**GARMIN GTN 650Xi**

- VERTEX 4 INPUT LEVEL 99.00%
- VERTEX 3 INPUT LEVEL 88.00%
- VERTEX 2 INPUT LEVEL 8.00%
- VERTEX 1 INPUT LEVEL 1.00%
- VERTEX 2 OUTPUT LEVEL 100.00%
- VERTEX 3 OUTPUT LEVEL 100.00%
- VERTEX 1 OUTPUT LEVEL 100.00%

**COORDINATE**

- GPS SELECT AUTO
- AIR/GROUND DISCRETE ACTIVE FOR AIRBORNE
- AIR/GROUND THRESHOLD 30KT
- AIRFRAME TYPE FIXED-WING
- RS-232 1 MAPMX FORMAT 2 MAPMX FORMAT 2
- SDI LNAV 1
- AIRINC 429 OUT 2 LOW OFF
- AIRINC 429 OUT 1 LOW GARMIN 429
- AIRINC 429 IN 2 LOW OFF
- AIRINC 429 IN 1 LOW EFIS FORMAT 2

**CONTRACT**

- Connect P1 to Power (Both Directions).
- Connect P2 to Serial (Both Directions).
- Connect P3 to Starboard (Both Directions).
- Connect P4 to Port (Both Directions).

**INTERNAL PRESETS**

- _Configure GTN 650Xi in accordance with "GTN 650Xi Internal Presets"
- _Check PFD & MFD Power On
- _Check Co-Pilot Freq Swap
- _Check Emergency Li Bat Warn Wire turns on warning in EFIS when grounded. (NOTE Check this error)
- _Check spar pin light comes on when spar pin switch es are not grounded.

**SYSTEM GROUP**

- _Setup AP servos if installed
- _Verify proper trim direction movement on screen in dicator and servo with input

**Cockpit Group**

- _Check PFD & MFD Power On
- _Check Emergency Li Bat Warn Wire turns on warning in EFIS when grounded. (NOTE Check this error)
- _Check Co-Pilot Freq Swap
- _Check Co-Pilot Trim Buttons (Both Directions)

**Audio Group**

- _Check Co-Pilot Mic Jack for Xmit
- _Check Co-Pilot Trim Buttons (Both Directions)
- _Check Co-Pilot Headset Jack
- _Check Co-Pilot Headset Jack

**POWER GROUP**

- _Check Co-Pilot Headset Jack
- _Check Co-Pilot Headset Jack
- _Check Co-Pilot Headset Jack
- _Check Co-Pilot Headset Jack

**GARMIN GTN 650Xi**

- _Configure GTN 650Xi in accordance with "GTN 650Xi Internal Presets"
- _Check PFD & MFD Power On
- _Check Emergency Li Bat Warn Wire turns on warning in EFIS when grounded. (NOTE Check this error)
- _Check spar pin light comes on when spar pin switch es are not grounded.

**SYSTEM GROUP**

- _Check PFD & MFD Power On
- _Check Emergency Li Bat Warn Wire turns on warning in EFIS when grounded. (NOTE Check this error)
- _Check Co-Pilot Freq Swap
- _Check Co-Pilot Trim Buttons (Both Directions)

**Audio Group**

- _Check Co-Pilot Mic Jack for Xmit
- _Check Co-Pilot Trim Buttons (Both Directions)
- _Check Co-Pilot Headset Jack
- _Check Co-Pilot Headset Jack

**POWER GROUP**

- _Check Co-Pilot Headset Jack
- _Check Co-Pilot Headset Jack
- _Check Co-Pilot Headset Jack
- _Check Co-Pilot Headset Jack
PILOT HEADSET JACKS

CO-PILOT HEADSET JACKS

LEFT WING CONNECTOR

RIGHT WING CONNECTOR

THESE COMPONENTS NOT INCLUDED IN AVIONICS KIT, NOR PART OF THE
WH-00136-1. SEE WH-00032 AND WH-0033 RV-12iS WING HARNESS DRAWINGS.