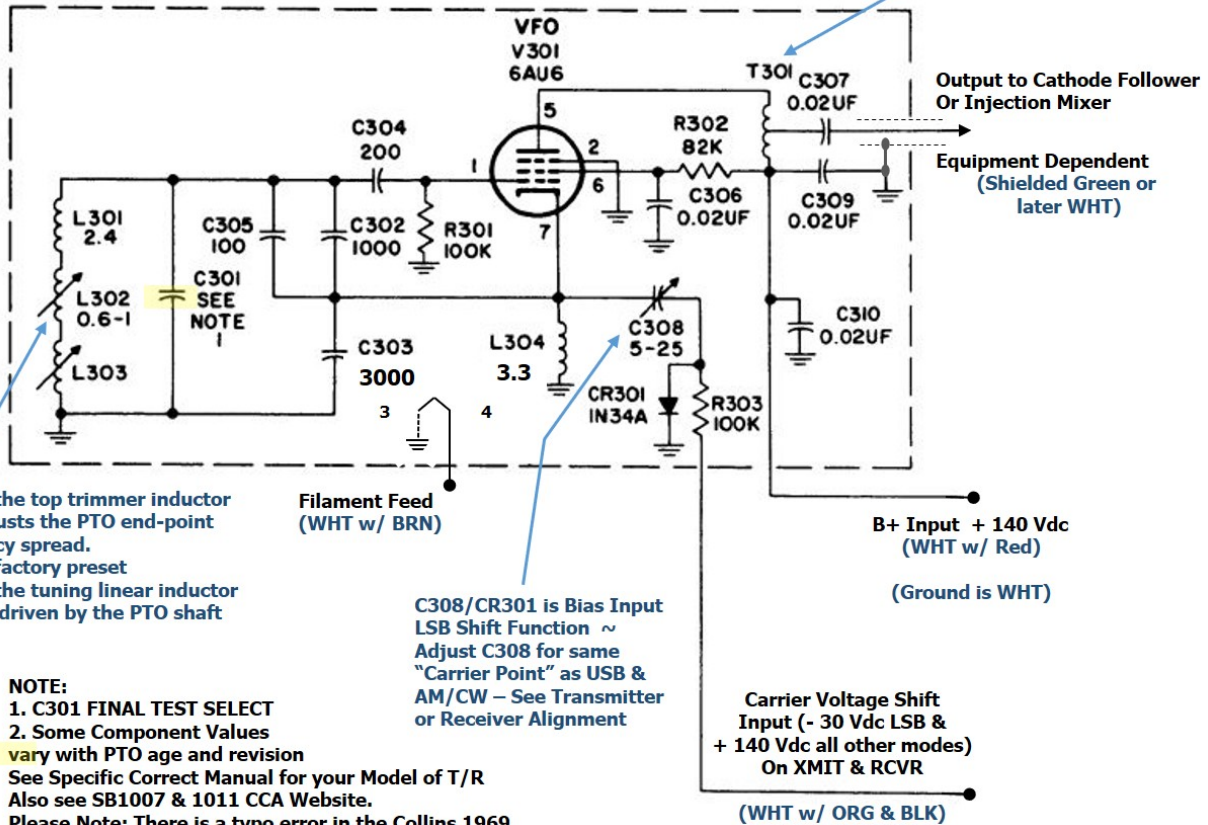


70K-2 PTO Annotated Schematics (w/ Alignment Notes and Lead Color Codes)

Frequency Range: Minimum: 2.5 to 2.7 MHz
 Typical Stop to Stop: 2.5 MHz – (2 to 10 kHz)
 to 2.7 MHz +(2 to 10 kHz) ~ Symmetrical

T301 – Output Peaking
 Should be adjusted prior to
 Making other frequency
 related adjustments

70K-2 OSC (Circa 1969)



L302 is the top trimmer inductor that adjusts the PTO end-point frequency spread.
 L301 is factory preset
 L303 is the tuning linear inductor and is driven by the PTO shaft

Filament Feed
 (WHT w/ BRN)

C308/CR301 is Bias Input
 LSB Shift Function ~
 Adjust C308 for same
 "Carrier Point" as USB &
 AM/CW – See Transmitter
 or Receiver Alignment

B+ Input + 140 Vdc
 (WHT w/ Red)
 (Ground is WHT)

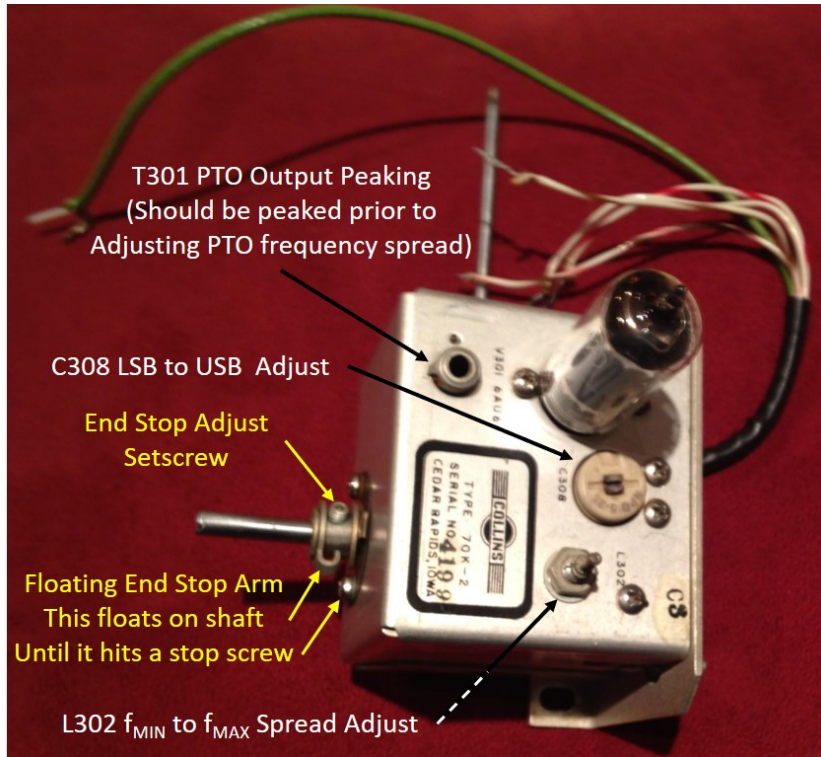
Carrier Voltage Shift
 Input (- 30 Vdc LSB &
 + 140 Vdc all other modes)
 On XMIT & RCVR
 (WHT w/ ORG & BLK)

NOTE:

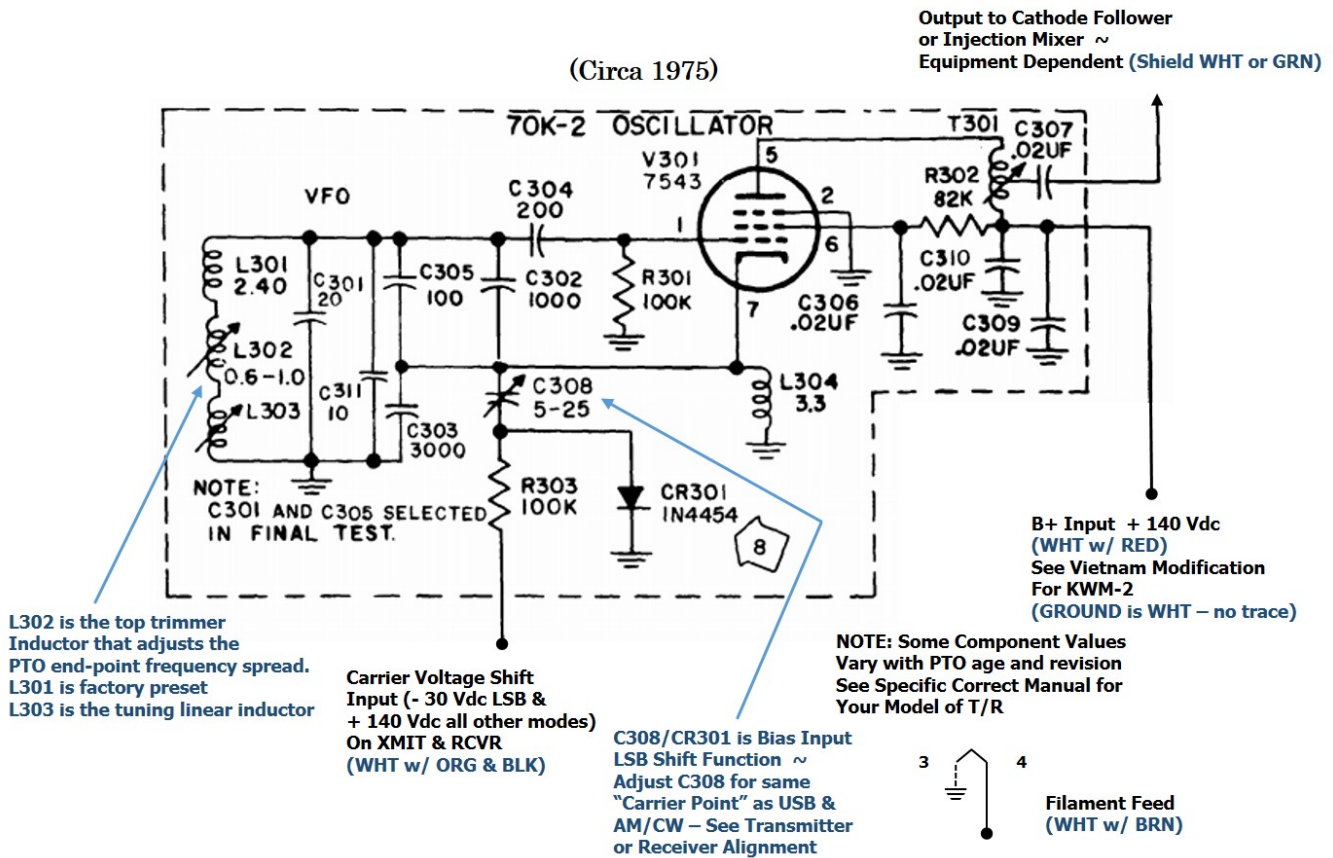
1. C301 FINAL TEST SELECT
2. Some Component Values vary with PTO age and revision

See Specific Correct Manual for your Model of T/R
 Also see SB1007 & 1011 CCA Website.

Please Note: There is a typo error in the Collins 1969 manual for the 32S-3 and that the value of C303 in the schematic is incorrectly shown as 2000 pf where it is correct in the parts list as 3000 pf and correct here.



70K-2 Annotated Schematic (later) ~ See below



70K-2 OSCILLATOR CAPACITOR SPECIFICATIONS		522-1093-00
*C301	CAPACITOR, FIXED, CERAMIC, DIELECTRIC: 20 uuf \pm 1 uuf, 500 vdc; -400 \pm 15% temperature coefficient; Centralab Div of Globe-Union, Inc. part no. DA933-002	913-0053-00
*C301	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 20 uuf \pm 1 uuf, 500 vdc; -600 \pm 15% temperature coefficient; Centralab Div. of Globe-Union, Inc. part no. DA933-006	913-0054-00
*C301	CAPACITOR, FIXED, CERAMIC DIELECTRIC 20 uuf \pm 1 uuf, 500 vdc; -800 \pm 15% temperature coefficient; Centralab Div. of Globe-Union, Inc. part no. DA933-007	913-0055-00
*C301	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 20 uuf \pm 1 uuf, 500 vdc; -1000 \pm 15% temperature coefficient; Centralab Div. of Globe-Union, Inc. part no. DA933-008	913-0056-00
*C301	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 20 uuf \pm 1 uuf, 500 vdc; -1200 \pm 15% temperature coefficient; Centralab Div. of Globe-Union, Inc. part no. DA934-017	913-0057-00
*C301	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 20 uuf \pm 1 uuf, 500 vdc; -1400 \pm 15% temperature coefficient; Centralab Div. of Globe-Union, Inc. part no. DA934-018	913-0058-00
*C301	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 20 uuf \pm 2 uuf, 500 vdc; -1600 \pm 15% temperature coefficient; Centralab Div. of Globe-Union, Inc. part no. DA934-023	913-0232-00
*C301	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 20 uuf \pm 2 uuf, 500 vdc; -1800 \pm 15% temperature coefficient; Centralab Div. of Globe-Union, Inc. part no. DA934-024	913-0233-00
*C301	CAPACITOR, FIXED, CERAMIC, DIELECTRIC: 20 uuf \pm 2 uuf, 500 vdc; -2000 \pm 15% temperature coefficient; Centralab Div. of Globe-Union, Inc. part no. DA934-025	913-0234-00
*C301	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 20 uuf \pm 2 uuf, 500 vdc; -2200 \pm 15% temperature coefficient; Centralab Div. of Globe-Union, Inc. part no. DA934-026	913-0235-00
C302	CAPACITOR, FIXED, MICA: 1,000 uuf \pm 1% 500 v dc; Electro Motive part no. DM20F102F-500WV	912-1749-00
C303	CAPACITOR, FIXED, MICA: 3000 uuf, \pm 1% 500 vdcw; Electro Motive Mfg. Co. part no. DM20F302F-500WV	912-1748-00
C304	CAPACITOR, FIXED, MICA: 200 uuf \pm 1% 300 v dc; Electro Motive part no. DM15E201F-300WV	912-3468-00
*C305	CAPACITOR, FIXED, CERAMIC: 100 uuf \pm 2% 500 v dc; Centralab part no. DA932-005	913-0074-00
*C305	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 100 uuf \pm 2 uuf, 500 vdc; -2000 \pm 15% temperature coefficient; Centralab Div. of Globe-Union, Inc. part no. DA933-016	912-0244-00

* Chosen per Operational Requirements (Factory Select)

ITEM	DESCRIPTION	COLLINS PART NUMBER
C306	CAPACITOR, FIXED, CERAMIC: 0.02 uf -40% +60%, 250 v dc; Sprague Electric Co. part no. 20C109	913-2097-00
C307	CAPACITOR, FIXED, CERAMIC: same as C306	913-2097-00
C308	CAPACITOR, VARIABLE, CERAMIC: 5.0 uuf min. to 37.5 uuf max., 350 v dc; Erie Resistor Corp. part no. 557018 COPO 39R	917-1073-00
C309	CAPACITOR, FIXED, CERAMIC: same as C306	
C310	CAPACITOR, FIXED, CERAMIC: same as C306	
C311	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 10 uuf ±1 uuf, 500 vdc; 0 ±30 PPM temperature coefficient; Centralab Div. of Globe-Union, Inc. part no. DA933-001	913-0043-00
CR301	SEMICONDUCTOR DEVICE, DIODE: germanium; Sylvania part no. 1N34A	353-0103-00
H301	WASHER, FLAT: brass, cadmium plated; 0.218 in. id, 0.375 in. od, 0.031 in. thk	503-4964-001
H302	LEADSCREW: brass, chrome plated; rh spiral groove, 8 turns per in., 1 in. lg; 0.187 in. dia by 2.962 in. lg o/a	543-7332-003
H303	WASHER, STOP: steel, cadmium plated; 0.191 in. id, 0.500 in. od, 0.164 in. thk; 1/8 in. w by 0.094 in. lg stop	542-5438-002
H304	WASHER, KEY: steel, cadmium plated; 0.191 in. id, 0.500 in. od, 0.253 in. h; 0.075 in. w by 0.093 in. lg prbent key	543-7328-002
H305	NUT, PLAIN, HEXAGON: brass, nickel plated; 4-40 NC-2 thd. 3/16 in. by 1/16 in. Pheoll Mfg. Co.	313-0156-00
H306	WASHER, FLAT: stainless steel; passivate finish; 0.120 in. id, 0.203 in. od, 0.025 in. thk	540-3022-003
L301	TRIMMER ASSEMBLY: 9 turns #28 AWG wire, 1 toroid coil and hardware	543-7323-00
L302	TRIMMER ASSEMBLY: same as L301	
L303	COIL, RADIO FREQUENCY: 10 turns no. 30 AWG; single layer wound	543-7333-003
L304	COIL, RADIO FREQUENCY: angle layer wound, magnet wire 3.30 uh; Communications Coil Co.	240-0695-00
MP301	BALL, GLASS: pyrex; 0.125 in. dia; Hartford Steel Ball Co. Inc.	309-0778-00
MP302	COVER, OSCILLATOR: aluminum; 1.978 in. by 2.180 in. by 2.500 in. excl hardware	543-7321-00
MP303	COVER REAR, OSCILLATOR: aluminum, chromate dipped; 5/8 in. by 2-3/16 in. by 3-1/4 in.	543-7329-002
MP304	CONTACT, ELECTRICAL: copper, gold plated; 0.250 in. by 0.673 in. by 1.030 in.	542-5439-002
MP305	COLLAR, STOP: cres. gold plated; 0.375 in. dia by 0.171 in. w	542-5437-002
MP306	PLATE, REAR: CRES. passivate finish; 0.078 in. thk; 1 in. dia	542-5431-002
R301	RESISTOR, FIXED, COMPOSITION: 0.10 megohms ±10%, 1/2 w; Allen Bradley Co. type EB	745-1436-00
R302	RESISTOR, FIXED, COMPOSITION: 82,000 ohms ±5%, 1/2 w; Allen Bradley Co. type EB	745-1432-00
R303	RESISTOR, FIXED, COMPOSITION: same as R301	
T301	TRANSFORMER, RADIO FREQUENCY: pri 380 uh nom; 790 kc; sec 2.7 uh nom; 2.6 mc; Delevan Electronics	240-0665-00
V301	ELECTRON TUBE: sharp cutoff pentode; RCA 7543	257-0301-00
XV301	SOCKET, TUBE: turret type, 7 pin miniature; 1-3/32 in. by 1-5/8 in. lg; Eby, Hugh H., Inc. part no. 9737-95	220-1189-00