

instruction book

Cedar Rapids Division | Collins Radio Company, Cedar Rapids, Iowa

136B-2

Noise Blanker

Collins Amateur Equipment Guarantee

The Collins Amateur Equipment described herein is sold under the following guarantee:

Collins agrees to repair or replace, without charge, any equipment, parts, or accessories which are defective as to workmanship or materials and which are returned to Collins at its factory or its designated Service Agency, transportation prepaid, provided:

- (a) Buyer presents properly executed Warranty Verification Certificate.
- (b) Notice of the claimed defect is given Collins or an authorized Service Agency, or an authorized Distributor, in writing, within 180 days from the date of purchase and goods are returned in accordance with Collins instructions.
- (c) Equipment, accessories, tubes, and batteries not manufactured by Collins or from Collins designs are subject to only such adjustments as Collins may obtain from the supplier thereof.
- (d) Any failure due to use of equipment for purposes other than those contemplated in normal amateur operations or in violation of Collins applicable Instruction Book shall not be deemed a defect within the meaning of these provisions.

This Warranty is void with respect to equipment which is altered, modified or repaired by other than Collins or Collins Authorized Service Agencies. However, alteration or modification in accordance with Collins Service Bulletins shall not affect this Warranty.

Collins reserves the right to make any change in design or to make additions to, or improvements in, Collins products without imposing any obligations upon Collins to install them in previously manufactured Collins products.

No other warranties, expressed or implied, shall be applicable to said equipment, and the foregoing shall constitute the Buyer's sole right and remedy under the agreements contained in these paragraphs. In no event shall Collins have any liability for consequential damages, or for loss, damage or expense directly or indirectly arising from the use of the products, or any inability to use them either separately or in combination with other equipment or materials or from any other cause.

NOTICE: With each equipment or set of equipments purchased, the distributor should furnish a Warranty Verification Certificate. It is necessary that this certificate accompany the equipment when it is returned for warranty repairs. Be sure that you get it from your distributor.

Warranty Repairs

On the opposite page are listed the Service Agencies authorized to perform warranty repair on Collins Amateur Equipments.

If you should wish to return material or equipment direct to Collins under the guarantee, you should notify Collins, giving full particulars including the details listed below, insofar as applicable. If the item is thought to be defective, such notice must give full information as to nature of defect and identification (including part number if possible) of part considered defective. Upon receipt of such notice, Collins will promptly advise you respecting the return. Failure to secure our advice prior to the forwarding of the goods or failure to provide full particulars may cause unnecessary delay in handling of your returned merchandise.

ADDRESS:

Collins Radio Company
Amateur Product Office
Cedar Rapids, Iowa

INFORMATION NEEDED:

- (A) Type number, name and serial number of equipment
- (B) Date of delivery of equipment
- (C) Date placed in service
- (D) Number of hours of service
- (E) Nature of trouble
- (F) Cause of trouble if known
- (G) Name of distributor from whom the equipment was purchased.

Equipment returned to the Service Agency or Collins for warranty repair must be accompanied with the Warranty Verification Certificate.

Out-of-warranty Repair, Modifications, Addition of Accessories, Alignment, etc.:

For information on service of this type write to the address shown below. If you wish to return your equipment for repairs, etc., without prior correspondence, be sure to include the following information attached to the equipment inside the packing carton:

HOW TO ORDER REPLACEMENT PARTS:

When ordering replacement parts, you should direct your order to one of the listed Collins distributors.

Please furnish the following information insofar as applicable:

COLLINS AUTHORIZED AMATEUR DISTRIBUTORS AND SERVICE AGENCIES

with respect to equipment which repaired by other than Collins or Agencies. However, alteration of equipment with Collins Service Bulletins is not permitted.

right to make any change in design, or improvements in, Collins products without assuming any obligations upon Collins to manufacture Collins products.

expressed or implied, shall be void, and the foregoing shall constitute the entire agreement and remedy under the agreement. In no event shall the distributor be liable for consequential damages, or for damages or indirectly arising from the use of the equipment either directly or indirectly arising from any inability to use them either directly or indirectly arising from any inability to use them either directly or indirectly arising from any cause.

ment or set of equipments purchased from a distributor should furnish a Warranty Certificate. It is necessary that this certificate be attached to the equipment when it is returned for warranty repairs. Be sure that you return the equipment to the distributor.

INFORMATION NEEDED:

- (A) Type number, name and serial number of equipment
- (B) Date of delivery of equipment
- (C) Date placed in service
- (D) Number of hours of service
- (E) Nature of trouble
- (F) Cause of trouble if known
- (G) Name of distributor from whom the equipment was purchased.

Service Agency or Collins for assistance accompanied with the Warranty Certificate.

on of

REPLACEMENT PARTS:

Replacement parts, you should direct orders to the listed Collins distributors.

Following information insofar as it applies to the equipment listed.

ALABAMA

Ack Radio Supply Company
3101 4th Avenue South
Birmingham 5
Phone: FAirfax 2-0588
Attn: E. C. Atkerson

*Beddow Engineering Services
2424 Teith Avenue South
Birmingham
Phone: ALpine 1-7582
Attn: Dr. C. P. Beddow
SEE ALSO: Atlanta, Georgia (Ack)

ALASKA

Yukon Radio Supply, Inc.
(P. O. Box 406)
645 I Street
Anchorage
Attn: A. E. Peterson

ARIZONA

Elliott Electronics, Inc.
418 N. 4th Avenue
Tucson
Phone: MAin 4-2473
Attn: Jerry Flewelling

**Southwest Electronic Devices
(P. O. Box 3647)
140 S. 2nd Street
Phoenix
Phone: ALpine 2-1743
Attn: Herman A. Middleton

ARKANSAS

Lavender Supply Company
(P. O. Box 1188)
518-520 E. 4th Street
Texarkana
Phone: 2-4195
Attn: Joe M. Lavender

Ed Moory's Radio & Appliance
12th & Jefferson
DeWitt
Phone: WHitney 6-2820
Attn: Ed Moory

CALIFORNIA

**Amrad Electronics
999 Howard Avenue
Burlingame
Phone: DIamond 2-5757
Attn: J. Steventon

Amrad Supply, Inc.
3425 Balboa Street
San Francisco
Phone: SKYline 1-4661
Attn: David K. Bradley

**Calamar Electronic Co.
2163 A. Fulton Ave.
Sacramento
Phone: 487-0633
Attn: Alex M. Hertz

*Communication Receiver Service
5016 Maplewood
Los Angeles 4
Phone: HOLlywood 2-2429
Attn: Charles C. Messman

Elmar Electronics
140 11th Street at Madison
Oakland 7
Phone: TE 4-3311
(TXW-OA73)
Attn: Elvin Feige/M. L. Chirose

Mission Ham Supplies
5474 Mission Blvd
Riverside
Phone: OV-30523
Attn: Wm. P. Hallquist

Quement Industrial Electronics
(P. O. Box 527)
161 San Fernando
San Jose
Phone: CYpress 4-0464
Attn: Frank Quement

Radio Products Sales, Inc.
1501 S. Hill Street
Los Angeles 15
Phone: RIchmond 8-1271
Attn: Ken Rausin

Scott Radio Supply, Inc.
266 Alamitos Avenue
Long Beach
Phone: HEmlock 6-1452/7-8629
Attn: Evelyn E. Scott

Western Radio & TV Supply Company
(P. O. Box 1728)
1415 India Street
San Diego 1
Phone: BElmont 9-0361
Attn: A. W. Prather/Art Stewart

COLORADO

Radio Products Sales Co.
1237-16th Street
Denver 2
Phone: CHerry 4-6591
Attn: Walter Nettles/Willard Wright

CONNECTICUT

Corky's Division
Hartford of Hartford
100 High Street
Hartford
Phone: JACkson 7-1881
Attn: Edward C. Gedney

Radio Shack Corp. of Connecticut
230 Crown Street
New Haven 10
Phone: SPRuce 7-6871
Attn: E. G. Alberino
SEE ALSO: Boston, Massachusetts

DELAWARE

Willard S. Wilson, Inc.
403-405 Delaware Avenue
Wilmington 9
Phone: OLYmpia 5-4321
Attn: Willard S. Wilson

DISTRICT OF COLUMBIA

Electronic Wholesalers, Inc.
2345 Sherman Ave. NW
Washington 1
Phone: HUDson 3-5200
Attn: Ray Avey

FLORIDA

**Amateur Radio Center, Inc.
2805-7 N. E. 2nd Avenue
Miami
Phone: FRanklin 4-4101
Attn: Wiley Girkison

**Electronic Wholesalers, Inc.
9390 NW 27th Avenue
Miami 47
Phone: OXFord 6-1620
Attn: Philip Konter

Grice Electronics, Inc.
(P. O. Box 1911)
360 E. Weight St

Specialty Distributing Co., Inc.
763 Juniper St. N. E.
Atlanta 8
Phone: TRinity 3-2521
Attn: J. E. Eaton/Doyle Hurley

HAWAII

**Honolulu Electronics
819 Keeaunoku Street
Honolulu 14
Phone: 995-466
Attn: Thomas Teruya

IDAHO

Robbie's Radio & TV, Inc.
(P. O. Box 5021)
3715 State Street
Boise
Phone: 28892
Attn: W. A. Robinson, Jr.

ILLINOIS

Allied Radio Corp.
100 N. Western Avenue.
Chicago 80
Phone: HAYmarket 1-6800
Attn: Jim Sommerville/Jason Thomas

Klaus Radio & Electric Company
403 E. Lake Street
Peoria
Phone: RH 8-3401
Attn: Clifford Morris
Newark Electronics Corporation
223 W. Madison Street
Chicago 6
Phone: STate 2-2944
Attn: Les Wilkins/A. L. Poncher

INDIANA

Brown Electronics, Inc.
1032 Broadway
Fort Wayne
Phone: ANThony 3382
Attn: A. A. Brown

Graham Electronics Supply, Inc.
122 S. Senate St.
Indianapolis 4
Phone: MELrose 4-8487
Attn: G. M. Graham/D. A. Hiltz/
J. F. Simpson

Radio Distributing Co., Inc.
(P. O. Box 1499)
1212 High St.
South Bend 15
Phone: ATLantic 8-4665
Attn: William A. Davidson

IOWA

Radio Trade Supply Co.
1224 Grand Avenue
Des Moines 9
Phone: 288-7237
Attn: Leo Vince Davis/Larry Woolis

World Radio Laboratories, Inc.
(P. O. Box 919)
3415 W. Broadway
Council Bluffs
Phone: 32-81851
Attn: Alan McMillan/Leo Meyerson/
C. H. Williams

LOUISIANA

**Radio Parts Inc.
1112 Magazine Street
New Orleans 13
Phone: 522-0217

Graham Radio, Inc.
505 Main Street
Reading
Phone: 944-4000
Attn: Robert T. Graham, Sr.

Radio Shack Corp.
730 Commonwealth Avenue
Boston 17
Phone: REgency 4-1000
Attn: Jack Schneider/Harry Waldman

*Two-Way Radio Engineers, Inc.
115 Ward Street
Boston
Phone: GARRison 7-3511
Attn: Sherman M. Wolf

MICHIGAN

*Communication Service Company
201 South Lincoln
Charlotte
Phone: 1770-W
Attn: Bart Rypstra

M. N. Duffy & Co.
2040 Grand Avenue W.
Detroit 26
Phone: WOODward 3-2270
Attn: M. N. Duffy/Bill Mains

Purchase Radio Supply
327 E. Hoover Avenue
Ann Arbor
Phone: NORmandy 8-8696/8-8262
Attn: Roy J. Purchase

Radio Supply & Engineering
90 Selden Avenue
Detroit 1
Phone: TEMple 1-317
Attn: C. N. Houser

Warren Radio Company
1710 South Westledge
Kalamazoo
Phone: FIREside 2-3720/2-7127
Attn: Frank Smith

MINNESOTA

Lew Bonn Company
1211 LaSalle Avenue
Minneapolis 3
Phone: FEderal 9-6351
Attn: Joe Hoth

**Electronic Center, Inc.
107 3rd Avenue North
Minneapolis 1
Phone: FEderal 8-8678
Attn: Ward Jensen

MISSOURI

Walter Ashe Radio Company
1125 Pine Street
St. Louis 1
Phone: CHEstnut 1-1125
Attn: Joe Novak

Burstein-Applebee Co.
1012-1014 McGee Street
Kansas City 6
Phone: BALTimore 1-1155
Attn: R. H. Friesz/Clyde Fritz

Henry Radio Company
211 North Main
Butler
Phone: ORchard 9-3127
Attn: Bob Henry/Helen DeArmond

NEW HAMPSHIRE

*Warner Engineering Co., Inc.
239 Lorraine Avenue
Upper Montclair
Phone: Pioneer 6-7900
Attn: Charles K. Atwater

NEW MEXICO

*Stumms Communications, Inc.
217 Camino Encantado
Sante Fe
Phone: YUCCA 2-9502
Attn: Preston W. Stumms

NEW YORK

Adirondack Radio Supply
(P. O. Box 88)
185-191 W. Main St.
Amsterdam
Phone: Victor 2-8350
Attn: Ward Hinkle

Ft. Orange Radio Distributing Co., Inc.
904-16 Broadway
Albany 7
Phone: HEMLOCK 6-8411
Attn: Harry Miller

Genesee Radio & Parts Co., Inc.
2550 Delaware Avenue
Buffalo 16
Phone: TR 3-9661
Attn: Martin Feigenbaum

Harrison Radio Corporation
225 Greenwich Street
New York 7
Phone: BARCLAY 7-7777
Attn: W. E. Harrison/Ben Snyder

Harvey Radio, Inc.
103 W. 43rd Street
New York 18
Phone: JUDSON 2-1500
Attn: Harvey Sampson/George Zarrin

NORTH CAROLINA

Electronic Wholesalers, Inc.
938 Burke Street
Winston-Salem
Phone: PARK 5-8711
Attn: Wayne Yelverton

**Freck Radio & Supply Co., Inc.
38 Biltmore Avenue
Asheville
Phone: ALPINE 3-3631
Attn: T. T. Freck

OHIO

Custom Electronics, Inc.
1918 South Brown Street
Dayton 9
Phone: BALDWIN 3-315
Attn: Richard Sauer/Jim Shupe

Pioneer Electronic Supply Co.
5403 Prospect Avenue
Cleveland 3
Phone: 432-0010
Attn: J. Fred Ohman/Herb Farr

Selectronic Supplies, Inc.
3185 Bellevue Road
Toledo 6
Phone: GREENWOOD 4-5477
Attn: Glenn Ingersoll

**Universal Service
114 N. Third Street
Columbus 15
Phone: CAPITOL 1-2335
Attn: Francis R. Gibb

OKLAHOMA

Radio, Inc.
1000 South Main Street
Tulsa 19
Phone: LU 7-9124
Attn: E. R. Durham/Ebert V. Gunn

OREGON

**Portland Radio Supply Co.
1234 S. W. Stark Street
Portland 5
Phone: CAPITOL 8-8647
Attn: C. B. Lucas

PENNSYLVANIA

Camradio Company
1121 Penn Avenue
Pittsburgh 22
Phone: EXPRESS 1-4000
Attn: Harry Kaplan/James W. Houston

Radio Electric Service Company
of Pa., Inc.
N. W. cor. 7th & Arch Sts.
Philadelphia 6
Phone: WALNUT 5-5840
Attn: Edward Miller

RHODE ISLAND

W. H. Edwards Company
116 Hartford Avenue
Providence 3
Phone: GASPEE 1-6614
Attn: Sal Infantolino

SOUTH CAROLINA

Dixie Radio Supply, Inc.
1900 Barowell Street
Columbia
Phone: ALPINE 3-5333
Attn: B. W. Krell

Wholesale Radio Supply Co.
(P. O. Box 2223)
515 East Bay St.
Charleston
Phone: RA 22634
Attn: Irving Sonenshine

SOUTH DAKOTA

Borghardt Radio Supply
(P. O. Box 746)
821 4th Street S. E.
Watertown
Phone: TURNER 6-5749
Attn: Stan Borghardt/AL Hodgkin

TENNESSEE

Electra Distributing Company
1914 West End Avenue
Nashville 4
Phone: ALPINE 5-8444
Attn: Richard B. Harris

W. & W. Distributing Company
(P. O. Box 436)
644-646 Madison Avenue
Memphis
Phone: JACKSON 7-4628
Attn: Mrs. S. D. Wooten, Jr.

TEXAS

All-State Electronics, Inc.
2411 Ross Avenue
Dallas 1
Phone: RI 1-3281
Attn: Walter Clayton/J. Howard Klein/
Paul W. Fain

Amateur Electronics, Inc.
2802 Ross Avenue
Dallas
Phone: RIVERSIDE 8-9871
Attn: Walter L. Jackson

**Busacker Electronic Equipment
Company, Inc.
(P. O. Box 13204)
1216 W. Clay Street
Houston 19
Phone: JACKSON 6-2578
Attn: Garth L. Johnson

*Communications Service, Inc.
3209 Canton Street
Dallas 26
Phone: RIVERSIDE 7-1852
Attn: Cecil A. White, Jr.

Crabtree's Wholesale Radio
2698 Ross Avenue
Dallas
Phone: RIVERSIDE 8-5361
Attn: R. B. Bryan/Clayton Baker

Electronic Equipment & Engineering Co.
(P. O. Box 3687)
805 South Staples Street
Corpus Christi
Phone: TULIP 3-9271
Attn: R. N. Douglas

Hargis-Austin, Inc.
(P. O. Box 716)
410 Baylor Street
Austin
Phone: GREENWOOD 8-6618
Attn: Mrs. Paul Hargis/Joe Fuchs

**Howard Radio Company
1475 Pine Street
Abilene
Phone: ORCHARD 2-9501
Attn: R. L. Howard

McNicol, Inc.
811 North Estrella Street
El Paso
Phone: LO 6-2936
Attn: C. C. McNicol

Radio & Television Parts Co.
1828 N. Saint Mary's St.
San Antonio 12
Phone: CAPITOL 6-5329
Attn: Charlie Hildebrandt

WASHINGTON

C & G Radio Electronics Co.
2502-6 Jefferson Avenue
Tacoma 2
Phone: BROADWAY 2-3181
Attn: Lloyd Norberg

C & G Radio Electronics Co.
2221 Third Avenue
Seattle 1
Phone: MAIN 4-4355
Attn: Dennis Ranier

Northwest Electronics Distributors
East 730 First Avenue
Spokane 3
Phone: KE 4-2644
Attn: J. P. McGoldrick

Pringle Electronic Supply, Inc.
2101 Colby
Everett
Phone: ALPINE 2-6303
Attn: M. U. Baker

WISCONSIN

Amateur Electronic Supply
3832 West Lisbon Avenue
Milwaukee 8
Phone: WEST 3-3262
Attn: Steve Potyandy/Terry Serman

Harris Radio Corporation
289 North Main Street
Fond du Lac
Phone: WALNUT 2-4670
Attn: Terry Serman/Harris E. Serman

Satterfield Electronics, Inc.
1900 South Park Street
Madison 5
Phone: ALPINE 7-4801
Attn: A. W. Satterfield/W. E. Uhart

COLLINS AUTHORIZED SERVICE AGENCIES

ALABAMA

*Beddow Engineering Services
2424 Teeth Avenue South
Birmingham
Phone: ALPINE 1-7582
Attn: Dr. C. P. Beddow

ARIZONA

**Southwest Electronic Devices
(P. O. Box 3647)
140 South 2nd St.
Phoenix

*Communication Receiver Service

5016 Maplewood
Los Angeles 4
Phone: HOLLYWOOD 2-2429
Attn: Charles C. Messman

**Henry Radio, Inc.
931 N. Euclid
Anaheim
Phone: PR 2-9290
Attn: Mary Silva

**Henry Radio Co., Inc.
(P. O. Box 64398)
11240 W. Olympic Blvd.

GEORGIA

*Southeastern Engineering Service
1356 Carolyn Drive N. E.
Atlanta 6
Phone:
Attn: Harvey Minsk

HAWAII

**Honolulu Electronics
819 Keeaumoku Street
Honolulu 14
Phone: 995-466
Attn: Thomas/Tennison

MINNESOTA

**Electronic Center, Inc.
107 Third Avenue North
Minneapolis 1
Phone: FEDERAL 8-8678
Attn: Ward Jensen

NEW JERSEY

*Warner Engineering Co., Inc.
239 Lorraine Avenue

OHIO

**Universal Service
114 North Third Street
Columbus 15
Phone: CAPITOL 1-2335
Attn: Francis R. Gibb

OREGON

**Portland Radio Supply Co.
1234 S. W. Stark Street
Portland 5
Phone: CAPITOL 8-8647

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(P. O. Box 716)
410 Baylor Street
Austin
Phone: Greenwood 8-6618
Attn: Mrs. Paul Hargis/Joe Fowles

**Howard Radio Company
1475 Pine Street
Abilene
Phone: Orchard 2-9501
Attn: R. L. Howard

McNicol, Inc.
811 North Estrella Street
El Paso
Phone: LO 6-2996
Attn: C. C. McNicol

Radio & Television Parts Co.
1828 N. Saint Mary's St.
San Antonio 12
Phone: Capitol 6-5329
Attn: Charlie Hildebrandt

WASHINGTON

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2101 Colby
Everett
Phone: ALPine 2-6303
Attn: M. U. Baker

WISCONSIN

Amateur Electronic Supply
3832 West Lisbon Avenue
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Phone: WEst 3-3262
Attn: Steve Potyandy/Terry Sterman

Harris Radio Corporation
289 North Main Street
Fond du Lac
Phone: WALnut 2-4670
Attn: Terry Sterman/Harris E. Sterman

Satterfield Electronics, Inc.
1900 South Park Street
Madison 5
Phone: ALPine 7-4801
Attn: A. W. Satterfield/ W. E. Uhalt

INSTRUCTION BOOK

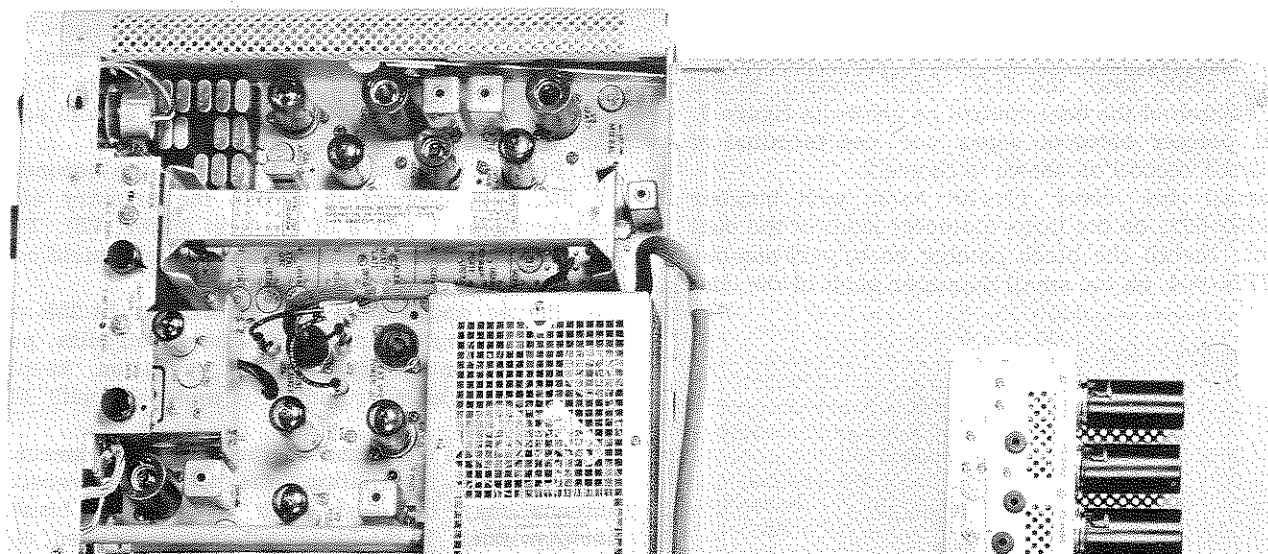
136B-2 NOISE BLANKER

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4th EDITION, 1 AUGUST 1962

© **COLLINS RADIO COMPANY**
1959, 1960, 1962

CEDAR RAPIDS, IOWA, U.S.A.

PRINTED IN THE UNITED STATES OF AMERICA



OHIO

**Universal Service
114 North Third Street
Columbus 15
Phone: CApitol 1-2335
Attn: Francis R. Gibb

OREGON

**Portland Radio Supply Co.
1234 S. W. Stark Street
Portland 5.
Phone: CApitol 8-8647
Attn: C. B. Lucas

JUMPER

1.1 DESCRIPTION.

The 136B-2 Noise Blanker converts noise to bias pulses for gating the receive circuits of the KWM-2 Transceiver. This minimizes receiver output noise when it is a result of radiated noise present on both the blanker and receiver antennas. Figure 1 shows the 136B-2 installed in the KWM-2.

Noise present in the 40.0-mc portion of the spectrum occurs simultaneously with that in the high-frequency (3-30 mc) portion. The 136B-2 should be provided with its own separately tuned 40.0-mc antenna. Although a six-foot, quarter-wave, coaxial-fed whip is best in a mobile installation, the broadcast whip may be used with reduced performance. This may be accomplished without disabling the broadcast receiver if adequate isolation is provided. See figure 2.

2.1 INSTALLATION.

- a. Remove the KWM-2 chassis from the cabinet.
- b. Remove the knob from the R.F. GAIN control. Unsolder the leads from the R.F. GAIN control terminals, noting the location of each lead. Remove the control from the front panel.
- c. Install the dual control, part number 367-2147-00, in the R.F. GAIN control mounting hole, using the nut and lock washer from the discarded control.
- d. Resolder the R.F. GAIN control leads to the rear section of the dual control, as shown in detail A, figure 7.
- e. Solder the two wires, which come out of the existing cable near the R.F. GAIN control, to the front section of the dual control as shown in figure 7. Install jumper between wiper and end terminal of R.F. GAIN control as shown in figure 7.
- f. Install the clear plastic knob, part number 545-3090-002, on the large diameter shaft of the dual control. Install the black pointer knob, part number 544-0779-004, on the small diameter shaft of the dual

control. Make sure the bushing (part number 545-3091-002) is placed over shaft end before the knob is installed. See figure 7.

g. Connect the 50-ohm r-f cable, part number 425-1005-00, from J26 to the NB ANT connector on the rear wall of the chassis. Solder the shielding to the ground lugs on the connectors as shown in figure 7. Remove the bus jumper between J22 and J23 (underchassis).

h. Replace the KWM-2 chassis in the cabinet, but do not secure.

i. Mount the 136B-2 Noise Blanker unit inside the top cover as shown in figure 7. Use existing holes in the perforated top as mounting holes. After the blanker is mounted, check clearance by closing cover and noting if any part of the blanker rubs on the meter shield, C106, PA cage, PA tuning shaft, or vfo tube. If any interference is found, the location of the blanker can be adjusted by loosening mounting screws and repositioning.

j. Remove the KWM-2 from its case, and insert noise blanker plugs P22, P23, P24, and P26 in proper jacks as marked on the KWM-2 chassis. Connect the KWM-2 for operation out of case.

k. Turn on the KWM-2. Set EMISSION switch to TUNE. Tune and load the KWM-2 into a dummy load at 14.3 mc. Switch meter to GRID position.

l. Make a swamping tool by connecting a 1000-ohm resistor and a 0.01-uf capacitor in series and connecting clips to their free pigtailed. Connect this swamping tool between terminal 3 (secondary winding) of T2 and ground. This terminal is connected to the T2 end of coupling capacitor C25.

m. Keep grid current at approximately midscale or lower by adjusting MIC GAIN control, and peak the primary of T2 with the tuning tool, such as Walsco 2543. The primary slug of T2 is at the bottom of the can. Use grid current as peak indication.

n. Remove the swamping tool from the secondary of T2, and connect it across the primary of T2 (between pins 1 and 6 of the first mixer, V5). Peak the secondary of T2 (slug at top of shield can). Remove the swamping tool.

o. Retune and reload the KWM-2 to 14.255 mc. Without swamping any of the tuned circuits, peak L4 for maximum grid current indication, keeping grid current at approximately midscale with MIC GAIN control.

p. Connect an antenna to the NB ANT connector. In a mobile installation, the broadcast receiver antenna may be used (with reduction of blanker performance). If the broadcast antenna is used, con-

bushing (part number
 er shaft end before the
 7.
 -f cable, part number
 e NB ANT connector on
 . Solder the shielding to
 tors as shown in figure 7.
 between J22 and J23

assis in the cabinet, but
 Blanker unit inside the top
 Use existing holes in the
 oles. After the blanker is
 closing cover and noting
 ubs on the meter shield,
 haft, or vfo tube. If any
 cation of the blanker can
 mounting screws and

om its case, and insert
 P24, and P26 in proper
 -2 chassis. Connect the
 ase.

Set EMISSION switch to
 VM-2 into a dummy load
 GRID position.

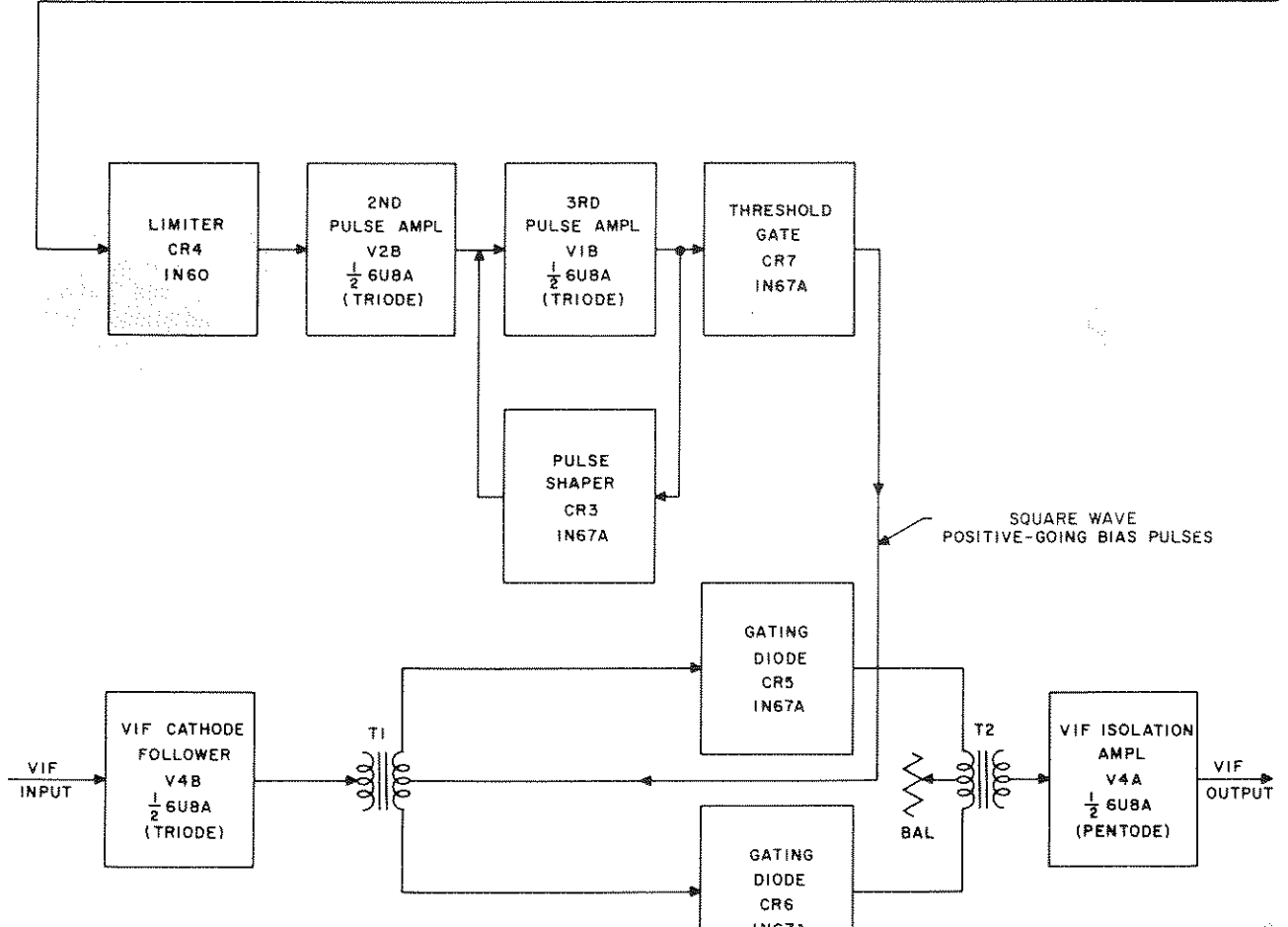
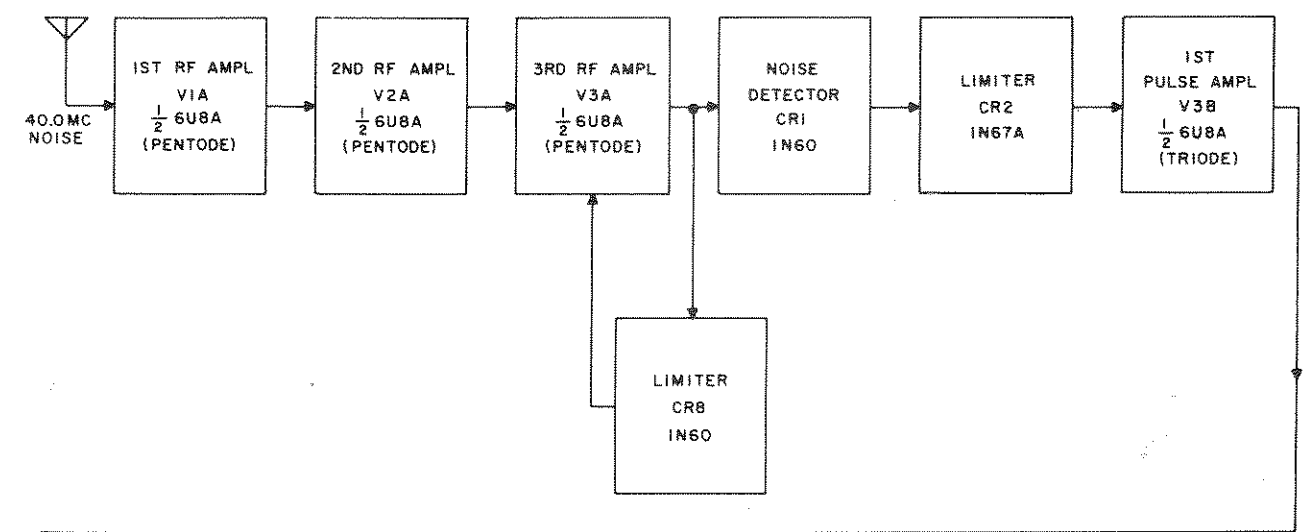
y connecting a 1000-ohm
 itor in series and con-
 pigtails. Connect this
 al 3 (secondary winding)
 ninal is connected to the
 C25.

roximately midscale or
 N control, and peak the
 ng tool, such as Walsco
 '2 is at the bottom of the
 k indication.

ool from the secondary
 oss the primary of T2
 e first mixer, V5). Peak
 at top of shield can).

KWM-2 to 14.255 mc.
 ne tuned circuits, peak
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 ily midscale with MIC

the NB ANT connector.
 the broadcast receiver
 h reduction of blanker
 st antenna is used, con-



q. After alignment, disconnect the noise blanker plugs from the KWM-2 chassis, and secure the KWM-2 in its case. Reconnect the noise blanker plugs P22, P23, P24, and P26 in their proper jacks on the KWM-2 chassis.

r. Secure the noise blanker cable to the cover of the KWM-2 with nylon clamps, as shown in figure 7. Dress the cable across the hinge and down the rear wall of the cabinet. The cable should lie near the chassis between the slug rack and the PA cage as shown in figure 7. This completes the installation.

3.1 OPERATION.

Set the function switch to NB position. After a sufficient warmup period, turn the blanker gain control clockwise until the noise level indicated on the S-meter drops sharply. This is the threshold point of most efficient blanker operation. Additional blanker gain is not desirable and may degrade performance. The required blanker gain setting is not a "set-and-forget" adjustment. Changing conditions, such as those encountered in driving from one area into another, will change the requirements for noise blanker gain setting. Whenever the noise level appears to have risen, reduce the blanker gain, and readjust for the threshold condition described above. If the blanker fails to reduce the noise level, turn it off. The repetition of the noise pulses may be too rapid for the blanker to gate, or a strong adjacent channel carrier may be causing erratic blanking.

4.1 CIRCUIT DESCRIPTION.

Figure 3 is a block diagram of the 136B-2, and figure 8 is a schematic diagram of the 136B-2. Tube sections V1A, V2A, and V3A are connected as a 40-mc tuned r-f amplifier. Gain of the r-f amplifier is controlled by potentiometer R25 in the cathode circuit of V2A. The output of V3A is limited by the action of diode CR8 and V3A. The positive component of the signal is clamped to the cathode of V3A. The signal is detected by CR1 and filtered by C15. The combination of C15 and R5 determines the length of the blanking pulse. The audio component of the noise is limited by CR2 and applied to the grid of the first pulse amplifier, V3B. Any negative portion of the waveform is clipped by CR4. Positive-going square pulses from V1B plate are applied through CR7 to the center tap of T1. The bias of CR7 keeps it cut off and at a high impedance to the low-level pulses, but high-level pulses overcome the bias and pass into the gate

bursts develop longer blanking pulses. Transformers T1 and T2 and the gating diodes are arranged in a balanced modulator configuration so that any noise which results from the gating action is canceled and prevented from entering the receiver circuits. Any discontinuity of signal resulting from the gating action is compensated by tuned-circuit restoration in the following stages of the receiver. Both sections of V4 serve to isolate the noise-operated gate circuit from the receiver circuits. V4A provides only enough gain to compensate for the small loss in the gate circuit, so that over-all gain through the noise blanker is approximately unity. Filament power, B+ power, and bias voltage are taken from the KWM-2 power supply.

5.1 LIMITATIONS.

The noise blanking scheme has the following three limitations which decrease the blanking efficiency.

a. Noise pulses which have no energy distribution at 40 mc will occur in the frequency spectrum of the radio receiver range. The noise blanker will not generate a blanking pulse and will permit passage of these noise pulses.

b. A very strong signal in the pass band between the first and second mixers can be modulated by blanking pulses. This modulation process will cause sidebands in the pass band which result in decreased blanking efficiency. To minimize this modulation effect, a blanker on-off control and blanker r-f gain control are provided on the KWM-2 front panel.

c. Some corona noise and static disturbances have a repetition rate in excess of one hundred thousand pulses per second. The blanking efficiency decreases as the pulse repetition rate exceeds five thousand pulses per second.

6.1 SERVICE INSTRUCTIONS.

The blanker is aligned at the factory and will not need realignment when installed in the KWM-2. Tubes may be replaced in the noise blanker without necessity of realignment or readjustment. If major repairs are made to the blanker, it should be realigned.

Test equipment necessary for r-f alignment and gate balance adjustments of the 136B-2 consists of a signal generator with calibrated output capable of 40.0-mc operation, a vacuum-tube voltmeter with r-f probe, and a noise source. An ordinary doorbell buzzer or electric razor makes an excellent noise source for

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b. Set the vtm to a low scale and zero meter. Connect the probe between the detector test point and ground.

NOTE

Broadband operation of the noise blanker is necessary for proper operation. DO NOT attempt front-end alignment for sharp response.

c. Set the signal generator output to 40.0 mc (unmodulated), and increase the generator output until an indication is obtained on the vtm. If a full-scale deflection results on a -1-volt scale with less than 200 microvolts input signal, the blanker may be oscillating. The blanker receiver is designed for broadband operation. If the coils are sharply peaked, oscillation can result. If this happens, detune L3 or L4 until oscillation ceases.

d. Adjust L1 and L4 for maximum indication on the vtm. Reduce generator output as necessary to keep the voltmeter indication between 0 and -1 volt d-c.

e. Set the signal generator to 40.3 mc and peak L3.

f. Set the signal generator to 39.7 mc and peak L2.

g. Repeat the alignment of L1, L2, L3, and L4 to assure optimum band pass. When the generator frequency is moved from 41 mc to 39 mc, the detector output voltage indicated on the voltmeter should vary

smoothly from a maximum at 40 mc to smaller value on either side. Any peaks between 40 and 39 or 40 and 41 mc indicate oscillations. If this occurs, repeak L2 at 39.5 mc and L3 at 40.5 mc.

6.1.2 GATE BALANCE.

a. Disconnect the KWM-2 antenna and leave the noise blanker antenna connected. Leave the KWM-2 turned on.

b. Turn on the noise source and loosely couple it to the noise blanker antenna.

c. Adjust gate balance potentiometer R32 and variable capacitor C28 for minimum noise output from the KWM-2 speaker. These two adjustments are interactive. First adjust one and then the other until neither produces any appreciable reduction in output noise.

6.1.3 VOLTAGE AND RESISTANCE MEASUREMENTS.

a. Table 1 lists the d-c voltage and resistance measurements on all tube sockets of the 136B-2.

b. All measurements are made with a vtm with all tubes in sockets.

c. Resistances of less than one ohm are listed at zero.

d. All measurements are made from socket pin to ground.

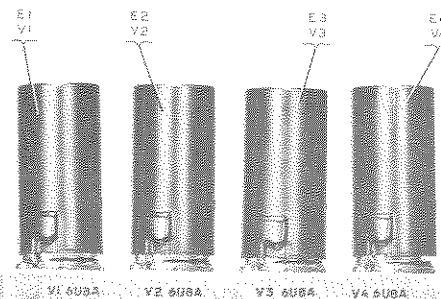
e. Double values of resistance on pins 1 and 9 of V2 and pins 7 and 9 of V3 are caused by diodes in the circuit and the polarity of the ohmmeter used.

TABLE 1. D-C VOLTAGE AND RESISTANCE MEASUREMENTS - 136B-2

TUBE		PIN NUMBER								
		1	2	3	4	5	6	7	8	9
V1	D-C V	100	0	110	0	0	195	2.2	2.6	0
	OHMS	50K	0	110K	0	0	30K	500	500	1.0 meg
V2	D-C V	135	0	*110 **210	0	0	205	*2.2 **15.0	4.5	0
	OHMS	45K/70K	4.7K	105K	0	0	25K	*500 **35K	3.0K	500/200K
V3	D-C V	40	0	115	0	0	220	2.6	0	-.5

7.1 SPECIFICATIONS.

Power source	Companion transceiver power supply.
Frequency range	The blanking gate of the noise blanker passes i-f signals in the range of 1.5-4.0 mc in the companion transceiver. The input frequency of the noise blanker is 40.0 mc with a minimum bandwidth of 1 mc and a maximum bandwidth of 2 mc.
Cross modulation	The noise blanker causes no more than 6 db deterioration in cross modulation and/or blocking characteristics of the companion transceiver.
Sensitivity	A pulse signal input to the noise blanker of 100 microvolts peak will cause a minimum of 35 db reduction of gain in the receiver signal path.
Spurious response	Internal noise and signals introduced by the noise blanker are less than 1.0 microvolt equivalent signal.
Input impedance	Noise blanker amplifier; 50 ohms nominal $\pm 50\%$ unbalanced.
Output impedance	Signal blanking circuit; high impedance.
Controls	Installation of the noise blanker requires the addition of an r-f gain control (furnished with kit).
Tube complement functions	Three r-f noise and pulse amplifiers, one i-f input and output amplifier.
Size	4-11/16 by 6-3/8 by 1-7/8 inches.
Mounting centers	1-1/2 by 5-3/4 inches.
Weight	1-1/4 pounds.



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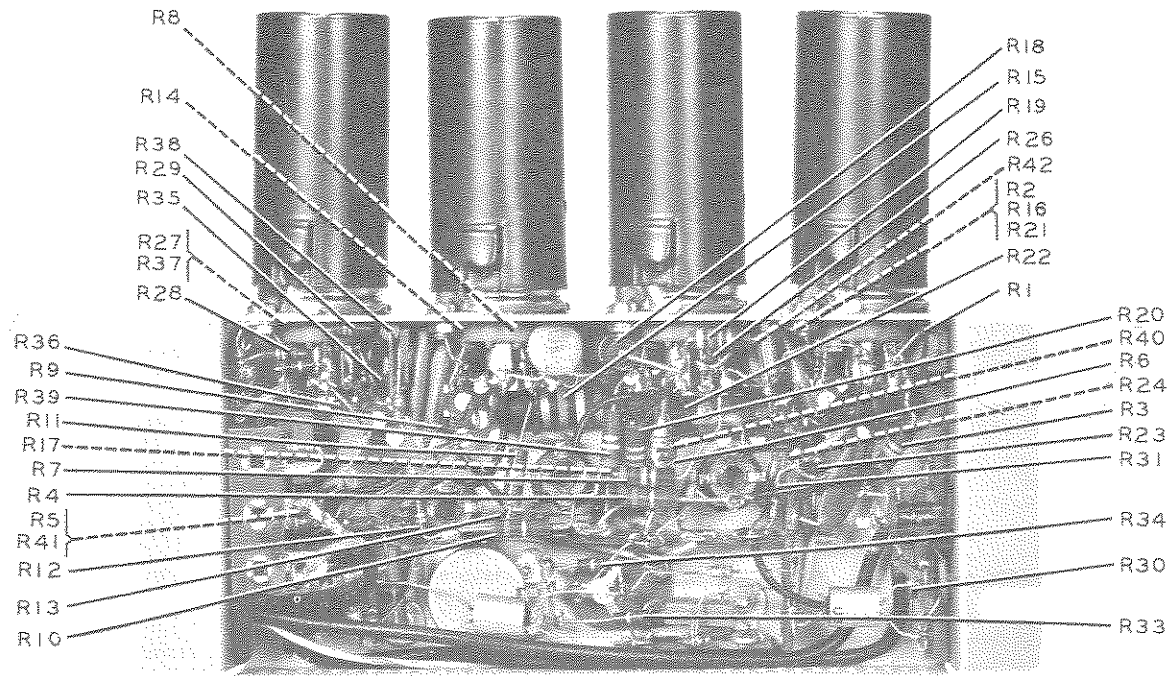
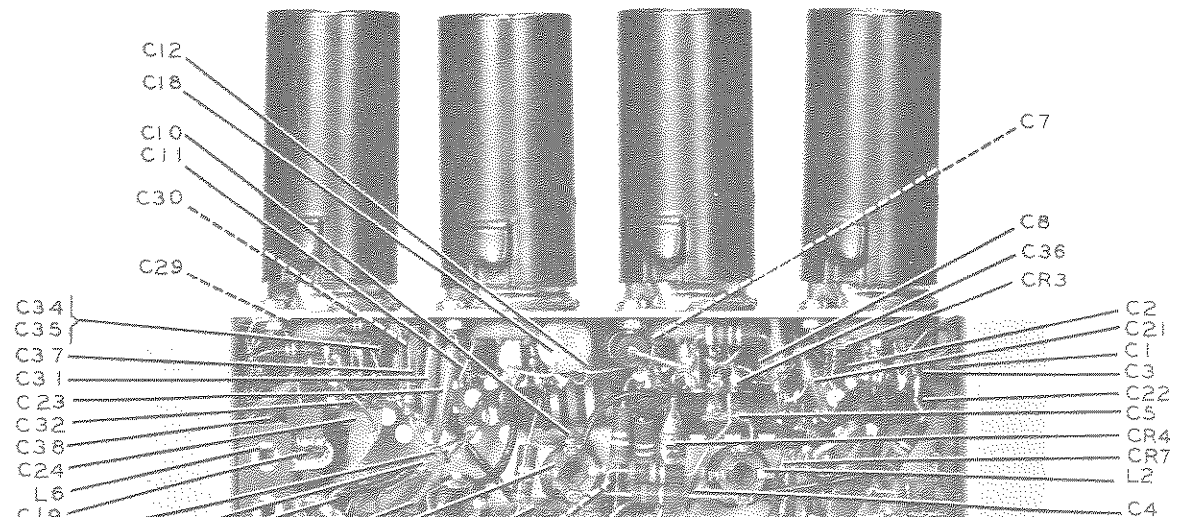


Figure 5. Bottom View, Showing Resistor Location

C534-05-P



PARTS LIST

ITEM	DESCRIPTION	COLLINS PART NUMBER
	136B-2 NOISE BLANKER	522-1661-00
C1,C38,C39	CAPACITOR, FIXED, MICA: 10 uuf ±5%; 500 vdcw	912-3837-00
C2 thru C14,C17,C18,C25,C29,C30,C32,C34 thru C37	CAPACITOR, FIXED, CERAMIC: 1000 uuf +50% -20%; 500 vdcw	913-3738-00
C15,C40	CAPACITOR, FIXED, MICA: 510 uuf ±5%; 300 vdcw	912-2867-00
C16,C22	CAPACITOR, FIXED, CERAMIC: .02 uf +60% -40%; 250 vdcw	913-2097-00
C19,C27	CAPACITOR, FIXED, CERAMIC: 4700 uuf +50% -20%; 500 vdcw	913-3729-00
C20	CAPACITOR, FIXED, ELECTROLYTIC: 10 uf -10% +100%, 25 vdcw	183-1163-00
C21,C23,C24,C31,C33	CAPACITOR, FIXED, CERAMIC: 10,000 uuf +50% -20%; 400 vdcw	913-3731-00
C26	CAPACITOR, FIXED, MICA: 20 uuf ±5%; 500 vdcw	912-3841-00
C28	CAPACITOR, VARIABLE, CERAMIC: 8 to 50 uuf; 350 vdcw	917-1075-00
C39	CAPACITOR, FIXED, MICA: 10 uuf ±10%, 500 vdcw	912-0432-00
CR1, CR4, CR8, CR2, CR3, CR7, CR6	SEMICONDUCTOR DEVICE, DIODE: germanium; Sylvania type 1N60	353-2010-00
	SEMICONDUCTOR DEVICE, DIODE: germanium; Hughes Aircraft type 1N67A	353-0147-00
	SEMICONDUCTOR DEVICE, SET: 1 matched pair diode semiconductor devices; Hughes Aircraft type 1N67	353-0127-00
E1 thru E4	SHIELD, ELECTRON TUBE: for 9 pin noval; 0.950 in. od by 1-15/16 in. lg	141-0329-00
L1	TRANSFORMER, AUTO: 40 mc. 1 winding, 0.66 to 1.06 uh inductance, 11 turns #32 AWG wire, 1 tap, tapped at 1-3/4 turns, phenolic coil form	278-0291-00
L2,L3	COIL, RADIO FREQUENCY: 40 mc. universal wound; #32 AWG formvar wire; 1.2 to 2.8 uh, 30 ma	240-0822-00
L4	COIL, RADIO FREQUENCY: 40 mc. universal wound; #32 AWG formvar wire; 1.7 to 3.8 uh, 30 ma	240-0823-00
L5	COIL, RADIO FREQUENCY: single layer wound; magnet wire; 10 uh inductance	240-0164-00
L6	COIL, RADIO FREQUENCY: single layer wound; magnet wire; 15 uh	240-0151-00
P1 thru P21	NOT USED	
P22,P23,P26	PLUG, TIP: phono type; 1 terminal; 1-1/4 in. lg	361-0062-00
P24	CONNECTOR, PLUG, ELECTRICAL: 9 male contacts; for u/w miniature tube socket	372-1822-00
P25	NOT USED	
R1,R26	RESISTOR, FIXED, COMPOSITION: 4700 ohms ±10%; 1/4 w	745-0773-00

ITEM	DESCRIPTION	COLLINS PART NUMBER
R2,R6,R9,R21,R37	RESISTOR, FIXED, COMPOSITION: 470 ohms ±10%; 1/4 w	745-0737-00
R3,R7,R11	RESISTOR, FIXED, COMPOSITION: 82,000 ohms ±10%; 1/4 w	745-0818-00
R4,R10	RESISTOR, FIXED, COMPOSITION: 2700 ohms ±10%; 1/4 w	745-0764-00
R5,R29	RESISTOR, FIXED, COMPOSITION: 22,000 ohms ±10%; 1/4 w	745-0797-00
R8,R12	RESISTOR, FIXED, COMPOSITION: 10,000 ohms ±10%; 1/4 w	745-0785-00
R13	RESISTOR, FIXED, COMPOSITION: 2700 ohms ±10%; 1/2 w	745-0764-00
R14	RESISTOR, FIXED, COMPOSITION: 15,000 ohms ±10%; 1/4 w	745-0791-00
R15	RESISTOR, FIXED, COMPOSITION: 39,000 ohms ±10%; 2 w	745-5719-00
R16,R24,R28	RESISTOR, FIXED, COMPOSITION: 1 megohm ±10%; 1/4 w	745-0857-00
R17,R30	RESISTOR, FIXED, COMPOSITION: 3300 ohms ±10%; 1/4 w	745-0767-00
R18	RESISTOR, FIXED, COMPOSITION: 68,000 ohms ±10%; 1/2 w	745-1429-00
R19,R23,R40,R41	RESISTOR, FIXED, COMPOSITION: 47,000 ohms ±10%; 1/4 w	745-0809-00
R20	RESISTOR, FIXED, COMPOSITION: 47,000 ohms ±10%; 1 w	745-3422-00
R22	RESISTOR, FIXED, COMPOSITION: 27,000 ohms ±10%; 2 w	745-5712-00
R25	RESISTOR, VARIABLE: composition; dual section; 10,000 ohms ea section, ±30%; 1/4 w	376-2147-00
R27	RESISTOR, FIXED, COMPOSITION: 100,000 ohms ±10%; 1/4 w	745-0821-00
R31	RESISTOR, FIXED, COMPOSITION: 0.27 megohm ±10%; 1/4 w	745-0836-00
R32	RESISTOR, VARIABLE: composition; 2500 ohms ±20%; 0.2 w	380-6286-00
R33,R34	RESISTOR, FIXED, COMPOSITION: 2200 ohms ±10%; 1/4 w	745-0761-00
R35	RESISTOR, FIXED, COMPOSITION: 1000 ohms ±10%; 1/4 w	745-0749-00
R36	RESISTOR, FIXED, COMPOSITION: 560 ohms ±10%; 1/4 w	745-0740-00
R38,R42	RESISTOR, FIXED, COMPOSITION: 68,000 ohms ±10%; 1/2 w	745-1429-00
R39	RESISTOR, FIXED, COMPOSITION: 0.12 megohm ±10%; 1/2 w	745-1440-00
T1	TRANSFORMER, DISCRIMINATOR: 2.5 mc center freq; shielded, 0.525 in. dia by 11/16 in. lg; ferrite core; 5 wire-lead terminals	278-1710-00
T2	TRANSFORMER, RADIO FREQUENCY: 2 windings, ferrite case, ferrite coil form, turn ratio 1.1, 4 wire terminals	278-1711-00
V1 thru V4	ELECTRON TUBE: triode-pentode; type 6U8A	255-0328-00

DESCRIPTION	COLLINS PART NUMBER
FIXED, COMPOSITION: 470 ohms	745-0737-00
FIXED, COMPOSITION: 82,000 ohms	745-0818-00
FIXED, COMPOSITION: 2700 ohms	745-0764-00
FIXED, COMPOSITION: 22,000 ohms	745-0797-00
FIXED, COMPOSITION: 10,000 ohms	745-0785-00
FIXED, COMPOSITION: 2700 ohms	745-0764-00
FIXED, COMPOSITION: 15,000 ohms	745-0791-00
FIXED, COMPOSITION: 39,000 ohms	745-5719-00
FIXED, COMPOSITION: 1 megohm	745-0857-00
FIXED, COMPOSITION: 3300 ohms	745-0767-00
FIXED, COMPOSITION: 68,000 ohms	745-1429-00
FIXED, COMPOSITION: 47,000 ohms	745-0809-00
FIXED, COMPOSITION: 47,000 ohms	745-3422-00
FIXED, COMPOSITION: 27,000 ohms	745-5712-00
VARIABLE: composition; dual section; sea section, ±30%; 1/4 w	376-2147-00
FIXED, COMPOSITION: 100,000 ohms	745-0821-00
FIXED, COMPOSITION: 0.27 megohm	745-0836-00
VARIABLE: composition; 2500 ohms	380-6286-00
FIXED, COMPOSITION: 2200 ohms	745-0761-00
FIXED, COMPOSITION: 1000 ohms	745-0749-00
FIXED, COMPOSITION: 560 ohms	745-0740-00
FIXED, COMPOSITION: 68,000 ohms	745-1429-00
FIXED, COMPOSITION: 0.12 megohm	745-1440-00
MER. DISCRIMINATOR: 2.5 mc center ed, 0.525 in. dia by 11/16 in. lg; ferrite e-lead terminals	278-1710-00
MER. RADIO FREQUENCY: 2 windings, ferrite coil form, turn ratio 1.1, 4 leads	278-1711-00
5T8A TUBE: triode-pentode; type 6U8A	255-0328-00

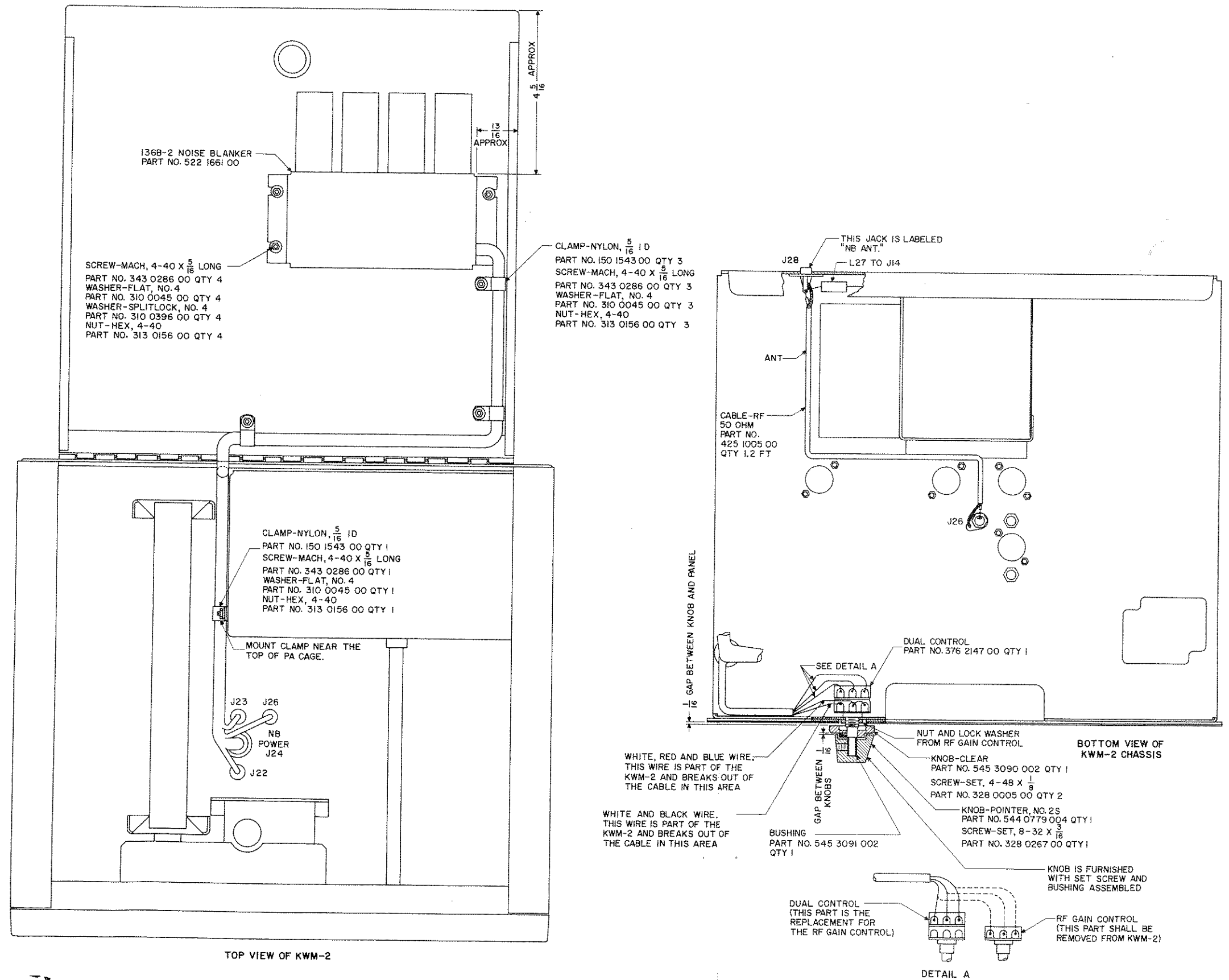
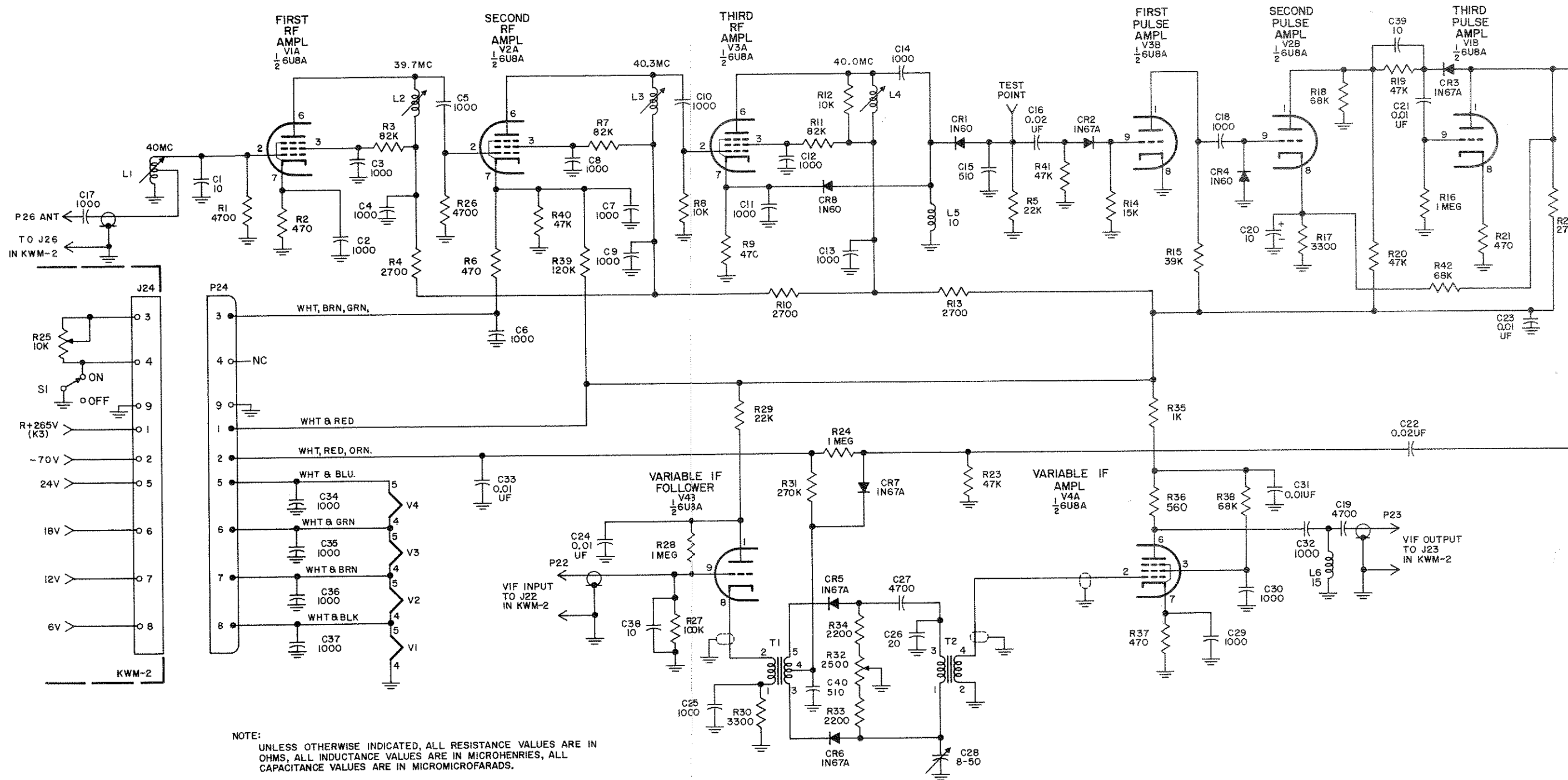


Figure 7. 136B-2 Noise Blanker, Installation Diagram



C534-02-5

Figure 8. 136B-2 Noise Blanker, Schematic Diagram

Electrical Wire Code

EXAMPLES:

DA 92	UNSHIELDED WIRE, POLYVINYL, NO. 22 AWG, WHITE WITH A RED TRACER				
	<u>D</u> Type of Wire	<u>A</u> Size of Wire	<u>9</u> Color of Body	<u>2</u> Color of Tracers	
DAS 9123	SHIELDED WIRE (SINGLE) POLYVINYL, NO. 22 AWG, WHITE BODY WITH BROWN, RED AND ORANGE TRACERS				
	<u>D</u> Type of Wire	<u>A</u> Size of Wire	<u>S</u> Shielded	<u>9</u> Color of Body	<u>123</u> Color of Tracers
DASJ (9) (92)	SHIELDED AND JACKETED WIRE (MULTIPLE), POLYVINYL, NO. 22 AWG, WHITE AND WHITE WITH RED TRACER				
	<u>D</u> Type of Wire	<u>A</u> Size of Wire	<u>SJ</u> Shielded and Jacketed	<u>(9)</u> First Conductor	<u>(92)</u> Second Conductor
AZA 91	UNSHIELDED WIRE, IRRADIATED POLYOLEFIN, NO. 22 AWG, WHITE WITH BLACK TRACER				
	<u>A2</u> Type of Wire	<u>A</u> Size of Wire	<u>9</u> Color of Body	<u>1</u> Color of Tracer	

TYPE OF WIRE CODE		SIZE OF WIRE		COVERING OF WIRE	COLOR CODE	
CODE	DESCRIPTION	CODE	SIZE		CODE	TYPE
A	Cotton Braid Over Plastic	A	No. 22 AWG		0	Black
A2	Irradiated Modified Polyolefin, (300 Volts)	B	No. 20		1	Brown
A3	Irradiated Modified Polyolefin, (600 Volts)	C	No. 18		2	Red
A4	Irradiated Modified Polyolefin, (1000 Volts)	D	No. 16		3	Orange
A5	Irradiated Modified Polyolefin, (3000 Volts)	E	No. 14		4	Yellow
B	Busswire, Round Tinned	F	No. 12		5	Green
C	Polyvinyl Chloride, MIL-W-16878, Type B (600 Volts) (No. 20-18-16)	G	No. 10		6	Blue
D	Polyvinyl Chloride, MIL-W-16878, Type B (600 Volts) (No. 22-26-28)	H	No. 8		7	Violet
E	Vinyl, MIL-W-5086, Type I (600 Volts)	J	No. 6		8	Gray (Slate)
E2	Vinyl, MIL-W-5086, Type II (600 Volts) (No. 22-12) Note 1	K	No. 4		9	White
E3	Vinyl, MIL-W-5086, Type II (600 Volts) (No. 0000-10) Note 2	L	No. 2		a	Clear
E4	Vinyl, MIL-W-5086, Type III (600 Volts) (No. 12-22) Note 3	M	No. 1		b	Tan
E5	Vinyl, MIL-W-5086, Type III (600 Volts) (No. 0000-10) Note 4	N	No. 0		c	Pink
G		P	No. 00		d	Maroon
H	Kel-F (Monochlorotrifluoroethylene)	Q	No. 000		e	Light Green
I	Not Available	R	No. 0000	S Shielded	f	Light Blue
J		T	No. 28			
K	Neon Sign Cable (15,000 Volts)	V	No. 26	SJ Shielded		
L	Silicone, MIL-W-16878, Type FF (600 Volts)	W	No. 24	&		
L2	Silicone, MIL-W-16878, Type FFW (1000 Volts)	X	No. 19	Jacketed		
L3	Silicone, Non-MIL (5000 Volts)	Y	No. 30			
L4	Silicone, Non-MIL (10,000 Volts)	Z				
L5	Silicone, Non-MIL (15,000 Volts)					
M						
N	Single Conductor Stranded (Non-Rubber)					
O	Not Available					
P	Single Conductor Stranded (Rubber Covered)					
Q						
R	Polyvinyl Chloride, MIL-W-16878, Type C (1000 Volts)					
S	Not Available					
T	Teflon (TFE), MIL-W-16878, Type E (600 Volts) Stranded					
U	Not Available					
V	Polyvinyl Chloride, MIL-W-16878, Type D (3000 Volts)					
W	Teflon (TFE), MIL-W-16878, Type FF (1000 Volts)					

