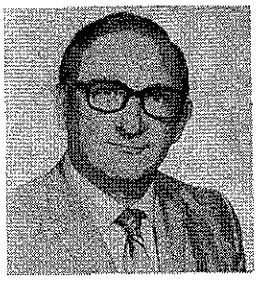
TUBE TESTER

B&K

INSTRUCTION MANUAL

MODEL 606

B&K DIVISION OF DYNASCAN CORPORATION



Dear Friend:

Congratulations on your purchase of B & K—Precision Test Equipment, and welcome to the B & K family. We hope your experience with your new test equipment will make you a lifetime B & K customer.

Your instrument is backed by more than 20 years of experience in designing and manufacturing. Our most important goal is your satisfaction. At B & K, test equipment is made to meet the demands of the field focusing on dependability and accuracy. We also concentrate on simplicity and operating ease with features that reduce the possibility of human error and speed the servicing process.

In order to determine the type of test units that are needed we have been guided by letters and reports from technicians and engineers who use the equipment daily. Our field tests and studies have helped provide better and faster service techniques. Close contact has been maintained with the manufacturers of consumer products which our test units will be checking and trouble-shooting.

Key personnel in our company cut their eye teeth in the TV service business. This is why we have more "sensitivity" for the problems and conditions under which the test equipment will be used.

B & K product designs are constantly reviewed, and refinements are made or new models developed to meet advances in our industry and to fill your needs. We set our standards high so you can be assured that the B & K test instruments you buy represent advanced design, quality construction, and dependable long-term performance at a price you can afford.

If you have any comments or thoughts about our products, or test equipment in general, I would be delighted to hear from you.

Thanks for your confidence in B & K and we look forward to serving you for a long time to come.

Sincerely,

Carl Korn
President

OPERATING INSTRUCTIONS

FOR

Model 606

DYNA-JET

TUBE TESTER

B & K DIVISION OF DYNASCAN CORP.
1801 West Belle Plaine Avenue
Chicago, Illinois 60613

MODEL 606 TUBE TESTER

What It Will Do

1. The Dyna Jet Model 606 Tube Tester will test all of the commonly used tubes in general use in radio and television sets.
2. In addition it will test many voltage regulator tubes, thyratron tubes, industrial types of tubes and many of the European types found in modern hi fi equipment.
3. Each tube is automatically checked for shorts and leakage to approximately one megohm. These tests are made from each element to every other element so that all possible combinations of shorts can be detected.
4. Grid Emission, Gas, Grid Contamination, or obscure Grid to Cathode leakage are all disclosed by an exceptionally sensitive grid current check. This test will reveal as little as 2 to 3 microamperes of current in the grid circuit and can be adjusted for a sensitivity of over 100 megohms.
5. Each section of a multi section tube is checked separately.
6. Each tube is checked for quality in a test circuit that determines the full capability of cathode emission under current loads simulating actual operating conditions.

Testing Tubes for Shorts

The Shorts check is automatically made when a tube is placed in the proper socket.

The Shorts check uses a neon lamp as the indicator. Shorts or leakages to approximately 1 megohm will cause this lamp to glow. This Shorts indicator is located just below the meter. See Fig. 1.

A check on grid to cathode leakage is made as soon as the tube is plugged into the socket. The Shorts check between all other elements is made by rotating the switch "C" through its positions, observing the Shorts light as the switch is rotated.

Testing Tubes for Quality

The test for the quality of a tube is a comprehensive cathode emission test. It is important to test the tube under a load condition which will insure that a tube passing this test will have adequate emission to properly operate in a circuit.

TESTING TUBES FOR GRID EMISSION AND GAS

The Grid Emission and Gas Test is an invaluable aid in TV servicing because it quickly picks out those tubes which can cause trouble in a.g.c., sync, I.F. amplifier, and R.F. tuner circuits.

In order to understand how a tube can have "grid emission" and "gas current" we must look into the theory of electron tubes.

There is normally some little evaporation of the cathode coating material on the grid of a tube. Some of this vapor tends to deposit on the grid and gives rise to what is known as "grid emission", where the grid itself emits electrons and draws current commonly known as "negative grid current". The flow of this "negative grid current" can be followed in Figure 2.

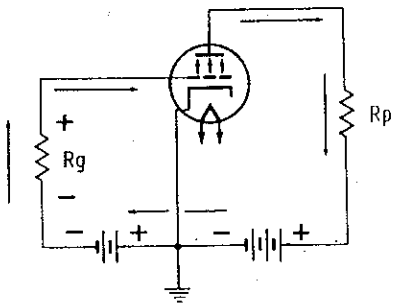


Figure 2
Negative Grid Current.

The electrons flow from the grid to the plate then back through the power supply to the grid leak resistor Rg and up to the grid again. Notice that the voltage drop across the grid leak resistor Rg is such that it causes the grid to go more positive than it normally would with no grid emission.

If a slight amount of "gas" is present in a tube some of the electrons from the cathode will collide with molecules of the gas and may knock off one or more electrons, leaving positive ions (ionization). Some of these positive ions may then strike the grid, taking an electron from the grid to form a gas molecule again. The electron flow of this "gas current" is exactly the same as it is for the "grid emission current" and can be traced on Figure 2. Notice again that the grid is made more positive by this "gas current".

Now let us see what happens if an I.F. amplifier tube in a TV set has grid emission current or gas current (negative grid current). In Figure 2 we noted that the grid would tend to go more positive if negative grid current flowed.

In Figure 3, a typical I.F. stage, we see that if there is any negative grid current, the bias voltage in that stage and other associated stages will go more positive because of the flow of current through R1. Making the grid more positive will drive the tubes to saturation, causing clipping or overloading.

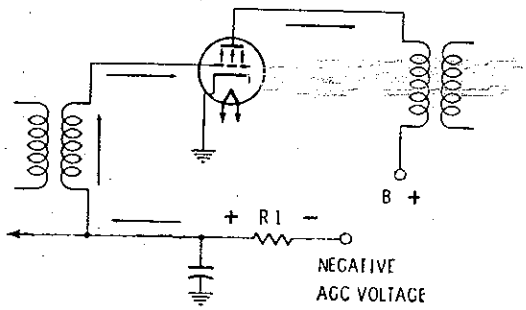


Figure 3
Typical I.F. Stage.

After detection, a video signal normally appears as shown in Figure 4. If the signal is clipped in an I.F. stage it will look like Figure 5. Now the horizontal oscillator will try to synchronize both on the blanking signal (A) and on the very black portions of the video (B). This results in pulling or snaking of the picture.

Figure 4
Normal Video and Sync Signal.

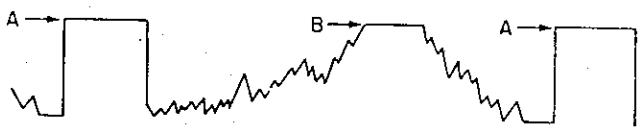


Figure 5
Overloaded or Clipped Video and Sync Signal.

To achieve this sensitive grid emission or gas test, the circuit shown in Figure 6 was employed.

The tube under test has its normal plate to grid voltage applied, but the grid is biased beyond cut-off so that no plate current flows. This bias is applied through the 5.6 megohm resistor. The same 5.6 megohm resistor is also in the grid circuit of a 6BN8 d.c. amplifier and the conditions in this tube are

such that it, too, is biased just beyond cut-off. Under these conditions, no plate current flows in the 6BN8 and no reading is obtained on the meter in its plate circuit.

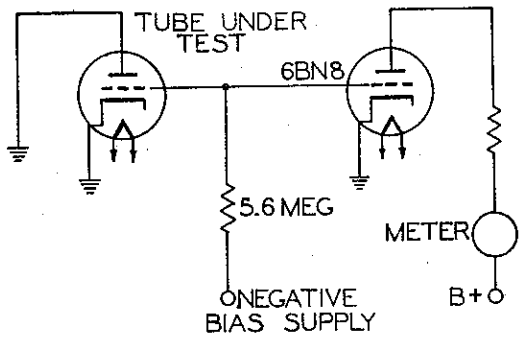


Figure 6—Grid Emission Test Circuit.

However, if the tube under test is gaseous, or its grid is contaminated with some of the cathode coating, then current will flow from grid to plate and through the 5.6 meg resistor back to the grid again. This will produce a positive voltage drop across the 5.6 meg resistor, lifting the cut-off bias on the 6BN8 and producing a meter deflection. Upon seeing this deflection, the technician immediately knows that the test tube is defective and a replacement is indicated.

HOW TO OPERATE THE DYNA JET MODEL 606 TUBE TESTER

Simplified Instructions

1. Look up tube in chart.
2. Set Heater to voltage indicated in Heater column of chart.
3. Set "A", "B" and "C" controls to positions indicated on chart.
4. Insert tube into proper socket as indicated on chart.
5. Allow tube to warm up and observe Shorts indicator. If Shorts light glows, reject tube.
6. Depress Grid Emission button. Any deflection of the meter pointer into the "Grid Emission-Reject" area of the scale is cause for reject of the tube.
7. Depress Quality button. Tube will read on the Good-Bad scale of the meter.
8. To test for all other shorts rotate Switch "C" through each of its positions and observe Shorts lamp. (The Shorts lamp may glow instantaneously while rotating switch "C" through its position. This is due to a capacitor discharge and is to be ignored.)

TEST PROCEDURE

The Model 606 Tube Tester is designed for use at 105-125 volts, 50-60 cycle A.C. only. The instrument is turned on and ready for use merely by inserting the line cord into an A.C. socket. The first step in the testing of a tube is to look up this tube in the chart contained in the cover of the instrument. Let us take a typical example such as a 6AU6. Fig. 7 shows a typical listing for this type. The heater voltage for this tube type is 6, as shown, and the heater switch must therefore be set to the 6 volt position. This will then apply the correct heater voltage to the tube under test.

Tube Type	Heater	"A"	"B"	"C"	Socket No.
6AU6	6	33	6	1	1

Figure 7.

If the tube in question had a 17 volt heater, the heater switch will be rotated to the 15-20 position. Any tube with a heater voltage between 15-20 volts is tested with the heater switch in this position.

CAUTION! THE HEATER SWITCH MUST BE SET TO THE CORRECT FILAMENT VOLTAGE BEFORE INSERTING THE TUBE IN THE SOCKET. FAILURE TO OBSERVE THIS PRECAUTION MAY RESULT IN BURNING OUT THE FILAMENT OF THE TUBE.

The "A" control is set to 33, the "B" switch placed in position 6, and the "C" switch in position 1. The tube is now inserted into socket No. 1, as shown in the last column of the type listing in Fig. 7. The tube is automatically tested for grid to cathode shorts and leakage as soon as the tube is inserted into the socket.

To test for grid emission, depress the Grid Emission button. Any deflection of the meter pointer into the "grid emission-reject" area of the meter scale indicates a defective tube. This tube should be discarded. If the tube passes the Grid Emission test, we then proceed to the Quality test.

The tube is tested for Quality by depressing the Quality button and observing the Good-Bad reading on the meter scale. A few tube types do not normally register a meter reading into the "Good" area because of our exceptionally critical Quality test. For these types the chart indicates the minimum numerical reading that this tube must have to be acceptable.

The tube can be tested for shorts or leakage between any of the other elements by rotating switch "C" through each of its positions. If the Shorts indicator neon lamp glows in any of the switch positions of switch "C", the tube should be rejected. (As the switch is rotated from one position to the next, the shorts indicator may instantaneously glow due to a capacitor discharge. This is to be ignored.)

Certain tube types have more than one pin connection for a given element, therefore the Short indicator lamp may normally glow in certain positions of Switch "C", even if there is no short in the tube. The chart will indicate where this "normal" short indication will occur. These tubes should not be rejected for these normal shorts.

This completes the test on the tube.

If the tube was multi section tube, there would be a second and possibly a third list of settings on the chart to test the additional sections. See Fig. 8.

Tube Type	Heater	"A"	"B"	"C"	Socket No.
6BN8	6	35	6	8	2
	6	35	6	1	2
	6	35	6	6	2

Figure 8.

SERVICE INSTRUCTIONS

The sensitivity of the grid emission test circuit is adjusted at the factory so that a leakage of 25 megohms just reads in the "Grid Emission-Reject" area on the meter scale. This order of sensitivity is the level that tube manufacturers recommend, in order not to reject good tubes. The adjustment of this sensitivity is a screwdriver adjustment available through a small opening just above and to the right of the Quality button. This adjustment is made in the following manner.

Place switch "B" to position 6, and switch "C" to position 1. Connect a 20 megohm resistor between Pins 1 and 7 of socket No. 1, push Grid Emission button, adjust the control for a reading of 20 on the meter. If you wish to make the Grid Emission test at greatly increased sensitivity, the following adjustment will give you a sensitivity in excess of 100 megohms. Place switch "B" in position 6 and switch "C" to position 1, push Grid Emission button and with no resistor in the socket adjust the Grid Emission Sensitivity Control so that the meter just reads zero.

This instrument has an internal adjustment for sensitivity of the short test circuit. This control has been set at the factory for a nominal 1 megohm sensitivity. This should be checked occasionally by placing a 1 megohm resistor between pin #3 and pin #8 of socket #8 with the B switch at 6 and the C switch at 3. Should this sensitivity control require re-adjusting, proceed in the following manner:

1. Remove panel from case.
2. Locate short sensitivity control which is across the short lite socket base.
3. Place 1 meg external resistor in test socket as outlined above. Rotate control so that the short lite just comes on, starting from end of control where lite is out.
4. Re-assemble tester, be sure to remove 1 meg resistor before testing tube.

The enclosed schematic diagram shows all voltage readings for the instrument and the parts list is printed on the back of the schematic diagram.

In order to keep your tube chart up to date, it is recommended that you subscribe to the B & K chart mailing service at a cost of $2.50 per year. This service will provide mailings every 90 days. Two mailings will consist of completely new charts and will occur in January and July. In addition, in April and October supplementary sheets will be mailed listing only the additional new types which have come out since the last complete chart was mailed. This will mean that within 90 days of the introduction of a new tube type you will automatically have the information on how it is tested in your B & K Tube Tester.

If you do not wish to use this "4 times per year" subscription service, the latest available chart may be obtained at any time by remitting $1.50 to the factory with the Model and Serial Number of your instrument.

WARRANTY SERVICE INSTRUCTIONS

1. Refer to the instruction manual for adjustments that may be applicable.
2. Check common electronic parts such as tubes. Always check instruction manual for applicable adjustments after such replacement.
3. Defective parts removed from units which are within the warranty period should be sent to the factory prepaid with model and serial number of product from which removed and date of product purchase. These parts will be exchanged at no charge.
4. If the above mentioned procedures do not correct the difficulty, pack the product securely (preferably double packed). A detailed list of troubles encountered must be enclosed as well as your name and address. Forward prepaid (express preferred) to the nearest B&K authorized service agency.

Contact your local B&K Distributor for the name and location of your nearest service agency, or write to

Service Department

B & K DIVISION OF DYNASCAN CORPORATION

1801 West Belle Plaine Avenue

Chicago, Illinois 60613

WARRANTY

"B & K warrants that each product manufactured by it will be free from defects in material and workmanship under normal usage and service for a period of ninety days after its purchase new from an authorized B & K distributor. Our obligation under this warranty is limited to repairing, or replacing any product or component which we are satisfied does not conform with the foregoing warranty and which is returned to our factory or our authorized service contractor, transportation prepaid, and we shall not otherwise be liable for any damages, consequential or otherwise. *The foregoing warranty is exclusive and in lieu of all other warranties (including any warranty of merchantability), whether expressed or implied.* Such warranty shall not apply to any product or component (i) repaired or altered by anyone other than B & K or its authorized service contractor (except normal tube replacement) without B & K's prior written approval; (ii) tampered with or altered in any way or subjected to misuse, negligence or accident; (iii) which has the serial number altered, defaced or removed; or (iv) which has been improperly connected, installed or adjusted otherwise than in accordance with B & K's instructions. B & K reserves the right to discontinue any model at any time or change specifications or design without notice and without incurring any obligation. *The warranty shall be void and there shall be no warranty of any product or component if a B & K warranty registration card is not properly completed and postmarked to the B & K factory within five days after the purchase of the product new from an authorized B & K distributor.*"

B & K *DIVISION OF DYNASCAN CORPORATION*

1801 W. BELLE PLAINE AVE. • CHICAGO, ILL. 60613

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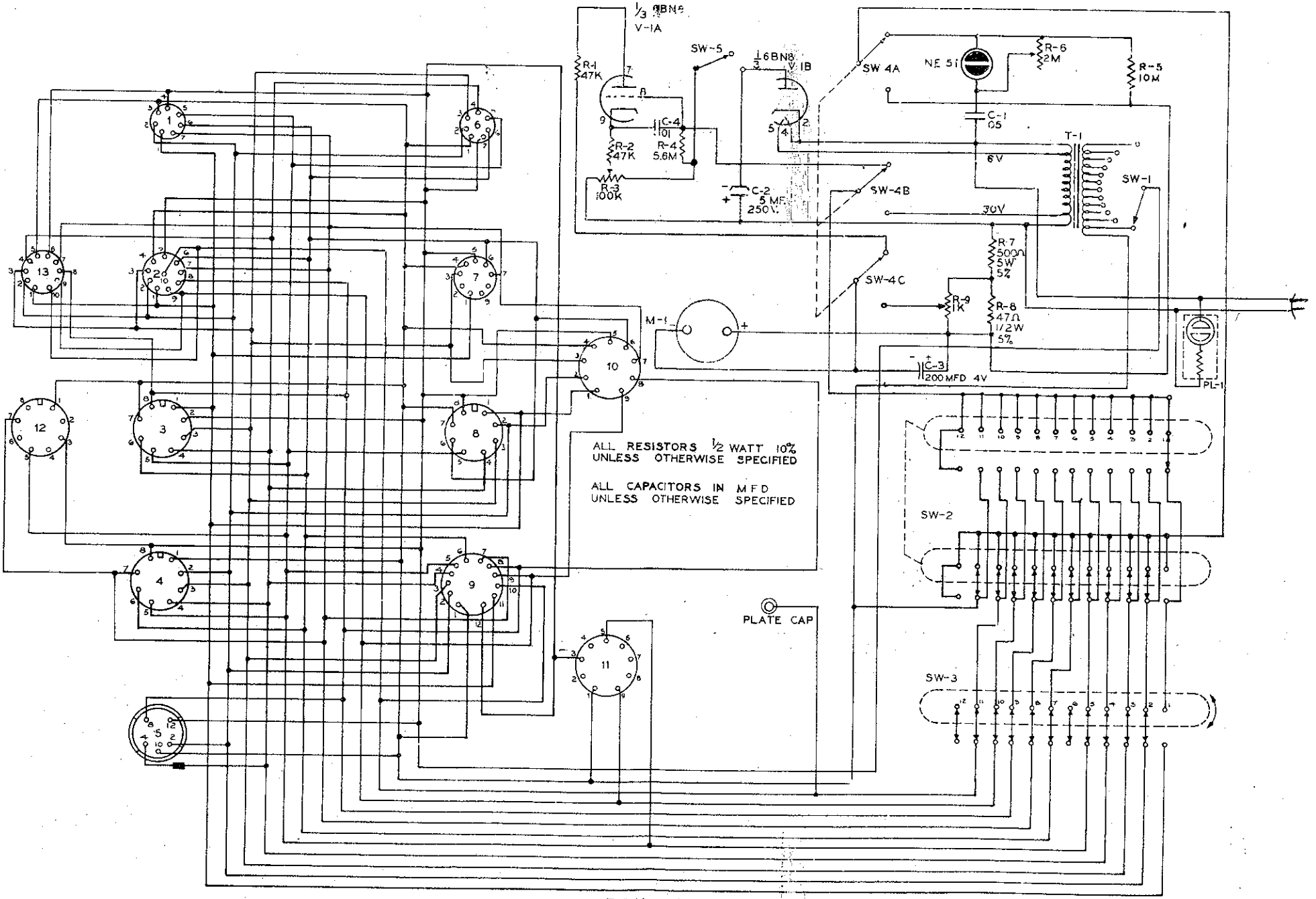

B&K MFG. CO.
MODEL 606
TUBE TESTER

488-051-9-C

B & K Model 606 Parts List

SCHEMATIC SYMBOL	DESCRIPTION	B & K PART No.

CAPACITORS

C-1	.05 MFD @ 500 V Disc Ceramic Capacitor	020-401-7-503
C-2	5 MFD @ 250 V Pigtail Electrolytic Capacitor	021-018-9-001
C-3	200 MFD @ 4 V Pigtail Electrolytic Capacitor	022-001-9-007
C-4	.01 MFD @ 500 V Disc Ceramic Capacitor	020-501-7-103

RESISTORS — CONTROLS

R-3	100K Ohm ⅓ Watt Control, "Gas Sensitivity Adjust"	008-001-9-009
R-6	2 Megohm Control (Short Adjust)	008-056-9-001
R-7	500 Ohm 5 Watt 5% Wire Wound Res.	006-005-5-501
R-9	1K Ohm Wire Wound Pot. (Special Taper) "A" Control	008-003-9-001
	or	009-021-9-001

SWITCHES

SW-1	Heater Switch	083-027-9-001
SW-2	"C" Selector	083-034-9-001
SW-3	"B" Selector	083-035-9-001
SW-4	"Quality" Push Button Switch	091-005-9-001
SW-5	"Grid Emission" Push Button Switch	091-004-9-001

SOCKETS

Plate-Grid Cap Assembly	ASM-45
Test Sockets No.1, No. 6 (7 Pin Min.)	749-002-9-007
Test Sockets No. 10, No. 11 (Novar)	749-025-9-001
Test Sockets No. 3, No. 8, No. 12 (Octal)	749-002-9-001
Test Socket No. 4 (Loctal)	749-014-9-001
Test Socket No. 5 (Nuvistor)	749-015-9-001
Test Socket No. 7 (9 Pin)	749-002-9-002
Test Socket No. 2 (10 Pin)	749-002-9-003
Test Socket No. 9 (12 Pin)	749-024-9-001
Test Socket No. 13 (Decal)	749-033-9-001
7 Pin—Pin Straightener	766-004-9-001
9 Pin—Pin Straightener	766-005-9-001

SCHEMATIC SYMBOL	DESCRIPTION	B & K PART NO.

MISCELLANEOUS PARTS

T-1	Power Transformer	065-039-9-001
M-1	Meter	320-010-9-001
V-1	6BN8 Tube	235-060-2-148
	Knob with line	751-010-9-001
	Knob, Push button	751-036-9-001
	Case	270-005-9-001
	"Shorts" Lamp (NE-51)	401-002-9-002
	"Shorts" Lamp Socket	749-005-9-001
	"Shorts" Lamp Clear Plastic Cap	750-001-9-002
	"Shorts" Lamp Bushing (includes nut 692-001-9-001)	849-007-9-001
	Lamp with Resistor	401-001-9-002
	Red Plastic Cap W/Tinnerman	750-003-9-001
	Carton and Filler	500-116-9-001
	6-Foot Black Line Cord	420-001-9-007
	Instruction Manual	480-067-9-001
	Tube Chart Subscription; Consisting of 4 issues per year	

Note: Standard value resistors are not listed.
Values may be obtained from schematic diagram.

Minimum charge $2.00 per invoice. Orders will be shipped C.O.D. unless previous open account arrangements have been made or remittance accompanies order. Advance remittance must cover postage or express charges.

488-051-9-002 1-68 RR PRESS

DYNASCAN CORPORATION

FACTORY AUTHORIZED PARTS AND SERVICE CENTERS

429-036-0-172

The following will handle any parts and/or service problems, either in or out of warranty. Your nearest service center has been selected for quality and prompt attention to your needs. Please take advantage of this service facility established for your benefit.

B & K Test Equipment (T) Cobra Communication Products (C) Precision (P)

ALABAMA

C Davidson's Communications
1103 Waverly Avenue
Muscle Shoals, Alabama 35660
AC 205 383-4222

C Statham TV Service
340 Killough Circle
Birmingham, Alabama 35215
AC 205 853-4530

ALASKA

C Rio Nova Electronics
1441 Laurene Street
P. O. Box 2624
Fairbanks, Alaska
AC 907 452-5958

ARIZONA

C Arizona Radio Communications
2717 E. McDowell
Phoenix, Arizona 85008
AC 602 274-5595

T Arizona Electric Standard Lab.
P 4430 North 19th Avenue
Phoenix, Arizona 85015
AC 602 264-9351

C Emmett Research Lab
1309 E. McDowell Road
Phoenix, Arizona 85006
AC 602 253-4783

ARKANSAS

C Prince Electronics
541 Quachita Avenue
Hot Springs, Arkansas 71901
AC 501 NA 4-2825

CALIFORNIA

C Electronic Service Company
T 7732 A Densmore Avenue
P Van Nuys, California 91406
AC 213 780-3071

C Guaranteed Electronics
T 5822 Mission Street
P San Francisco, California 94112
AC 415 DE 4-5900

T Hurley Electronics, Incorporated
2101 North Fairview
Santa Ana, California 92706
AC 714 638-7220

C Imtronix
T 305 North Broadway
AC 714 638-7220
Fresno, California 93701
AC 209 485-2741

C Imtronics
1635 "M" Street
Merced, California 95340
AC 209 723-2261

CALIFORNIA (Cont'd)

C Robert McQuade
Lakemont Pines Subdiv.
McKinzie Ave.
One Mile Below Arnold, Calif. 95223
(P.O. Box 215, Avery, Calif. 95224)
AC 209 795-2981

T Otto's Instrument Service
Ontario International Airport
Ontario, California 91761
AC 714 986-6624

C Whitmore & Company
T 10466 East Alondra Blvd.
P Bellflower, California 90706
AC 213 TO 7-5728 TO 6-8816

CANADA

C Atlas Electronics Limited
T 50 Wingold Avenue
P Toronto 19, Ontario, Canada
AC 416 781-6174

COLORADO

T Allstate Electronics Corp.
229 Vallejo
Denver, Colorado 80223
AC 303 744-2771

C Alpha Tronics, Inc.
14251 East Colfax
Aurora, Colorado 80010
AC 303 344-3484

C Briscoe Instrument Labs
T 8105 East Colfax
P Denver, Colorado 80220
AC 303 377-1167

C Clyde N. Still Electronics
T 2630 West Kiowa
P Colorado Springs, Colorado 80904
AC 303 633-8404

FLORIDA

C Commercial Electronics & Comm.
T 4853 58th Avenue North
St. Petersburg, Florida 33714
AC 813 525-8087

C Fowkes Electronics
T 1830 Fouraker Road
P Jacksonville, Florida 32205
AC 904 781-0574

C P.S.L. Electronics, Inc.
T 4860 N.W. 2nd Avenue
Miami, Florida 33127
AC 305 754-8801

C Superior Electronic Center
T 2010 Pine Terrace
P Sarasota, Florida 33581
AC 813 955-9300

GEORGIA

C Rodd Electronics
1645 East Albany Expressway
Albany, Georgia 31705
AC 912 435-1044

IDAHO

C **Ken Kline Company**
Star Route
Moyic Springs, Idaho 83845
AC 208 267-3209

C Royal Radio & TV Service
T 1922 E. 14th Street
Des Moines, Iowa 50316
AC 515 266-5315

C **TV Tuner Service**
T **118 Third Street West**
P **Twin Falls, Idaho 83301**
AC 208 733-5636 (P.O. Box 793)

ILLINOIS

C **Dynascan Corporation**
T **1801 W. Belle Plaine Avenue**
P **Chicago, Illinois 60613**
AC 312 327-7270

C **Put's Radio Sales**
737 East Marietta
Peoria Heights, Illinois 61614
AC 309 685-5271

T Turner Electronics
18 South New Jersey St.
Indianapolis, Indiana 46204
AC 317 639-9169

IOWA

C **Everts Electronics**
Post Office Box 350
128 3rd Street
Glidden, Iowa 51443
AC 712 659-3869

KANSAS

C **Electronics Specialists**
South Highway #283
Dodge City, Kansas 67801
AC 316 225-5881

T **Main Electronics, Inc.**
353 Pattie
Wichita, Kansas 67211
AC 316 267-3581

LOUISIANA

T **Audio & Instrument Associates**
P **5511 Sussex Street**
Shreveport, Louisiana 71108
AC 318 868-9577

C **Circle "D" Electronics**
206 Circle Drive
Post Office Box 4209
West Monroe, Louisiana 71201
AC 318 323-4732

C **Fisher Electronics Lab.**
T **8309 Apple**
P **New Orleans, Louisiana 70118**
AC 504 865-1380

C **Marshall F. Kelly Repair Service**
5738 Knoll Crest Street
Shreveport, Louisiana 71109
AC 318 631-4551

MARYLAND

C **Boyers Two-Way Radio**
5110 W. Howard Street
Hagerstown, Maryland 27140
AC 301 RE 3-6522

T **Meter Devices, Inc.**
11325 Maryland Avenue
Beltsville, Maryland 20705
AC 301 345-7775

MICHIGAN

C **Ajax Home Improvement Co.**
6530 Wyoming
Dearborn, Michigan 48128
AC 313 LU 4-9100

T Electro Instrument Repair
Div. Instrument Specialties, Inc.
1024 West 14 Mile Road
Clawson, Michigan 48017
AC 313 588-6688

C **Electronic Distributing, Inc.**
1960 Peck Street
Muskegon, Michigan 49441
AC 616 726-3196

C **Main Electronics**
T **5558 South Pennsylvania**
P **Lansing, Michigan 48910**
AC 517 882-5035

C **Whightsil's Distributing Co.**
605 South Main Street
Ithaca, Michigan 48847
AC 517 875-3659

MINNESOTA

C **Morningside Communications**
Highway 75 South
Moorhead, Minnesota 56560
AC 218 233-3035

C Citizens Band Sales & Service
8345 12th Ave.
Minneapolis, Minn. 55420
AC 218 854-3774

MISSOURI

C **Bill's Two-Way Radio**
3214 South 169 Highway
St. Joseph, Missouri 64503
AC 816 279-1152

C Bob's Television Communications
Hiway 240, Route 4
Marshall, Missouri 65340
AC 816 886-8247

C **Communications & Elec. Sve.**
8905 Manchester
Post Office Box 11584
Kansas City, Missouri 64138
AC 816 763-2132

C Lectronic Service, Inc.
T 321 S. Main Street
Lee's Summit, Mo. 64063
Area Code 816 524-0777

C **Peterson Radio & TV**
910 Ildereen Drive
Springfield, Missouri 65804
AC 417 866-1261

C **Scherrer Instruments**
T **7170 Manchester Avenue**
P **St. Louis, Missouri 63143**
AC 314 644-5362

C **Kermit Shetley**
T **2613 Marvin**
Cape Girardeau, Missouri 6370
AC 314 ED 4-2044

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C Westcon Electronics
8101 Troost Avenue
Kansas City, Missouri 64131
AC 816 333-0030

MONTANA

C Montana Precision Measurements
T 1021 Cook Avenue
Billings, Montana 59102
AC 406 245-3296

NEBRASKA

C **The CB Shop**
Nealrene Acres—Route 8
Lincoln, Nebraska 68516
AC 402 488-5803

C **Electronic Associates**
5125 Colfax
Lincoln, Nebraska 68504
AC 402 434-4655

C Randy's CB Center
6612 North 90th Street
Omaha, Nebraska 68134
AC 402 572-8905

NEVADA

T Neva Tronix Research
1928 Western Street
Las Vegas, Nevada 89102
AC 702 382-9639

NEW JERSEY

T **Hosica Laboratories**
P 715 Main Street
Singac, New Jersey 07424
AC 201 256-7724

C L & M Electronics
2005 Highway 35
Ocean, New Jersey 07712
AC 201 531-3727

C Simon Side Band Company
Holland Mountain Road
Oak Ridge, New Jersey 07438
AC 201 697-4246

C Cleon W. Taylor
Rte. 561 Haddonfield-Berlin Rd.
Gibbsboro, New Jersey 08026
AC 609 784-7447

NEW YORK

C Abco Communications Co.
550 Fourth Avenue
Brooklyn, New York 11215
AC 212 SO 8-0100

T Circle Tele-Tronics, Inc.
1008 Utica Avenue
Brooklyn, New York 11203
AC 212 345-5656

C Compton Industries
413 Commerce Road
Vestal, New York 13850
AC 607 729-9221

T Electrical Instrument Service
P 25 Dock Street
Mount Vernon, New York 13850
AC 914 699-9717

C Hirsch Sales Company
219 California Drive
Williamsville (Buffalo), N.Y. 14221
AC 716 632-1189

NEW YORK (Cont'd)

C Oliphant Electronics
146-22 Liberty Avenue
Jamaica, New York 11435
AC 212 OL 8-9041 JA 6-5994

C Purchase Radio
747 Main Street
Buffalo, New York 14203
AC 607 TL 4-2125

NORTH CAROLINA

C Electronic Service Center
772 N C 268 West
Elkin, North Carolina 28621
AC 919 835-5421

C Ship & Shore Communications
814 Greenhowe Drive
Wilmington, North Carolina 28401
AC 919 791-0828 (P.O. Box 492)

OHIO

C Ohio Browning Outlet
5044 South Main Street
Akron, Ohio 44319
AC 216 896-1902

C DeCulp Electronics
Eureka Star Route
Gallipolis, Ohio 45631
AC 614 446-1639

C Electronic Devices Company
Furlow Street
Millersburg, Ohio 44654
AC 216 674-6706

C Findlay Communications
229 North Main Street
Findlay, Ohio 45840
AC 419 422-0133

C Howard's Radio Communications
6 North Seltzer Street
Wapokoneta, Ohio 45895
AC 419 738-3224

C Popdavid Radio Service
T 1255 Shadyside SW
Canton, Ohio 44710
AC 216 452-2710

OKLAHOMA

C Robby's Two-Way Radio Company
T 9501 N.E. 10th Street
Oklahoma City, Oklahoma 73130
AC 405 732-8036

OREGON

C Electronic Wholesale Mart
T 631 Northeast Grand Avenue
Portland, Oregon 97232
AC 503 235-8373

PENNSYLVANIA

C Bennie's Communications
1612 Walnut Street
Berwick, Pa. 18603
AC 717 759-0795

Certified Calibration Labs
T 2709 N. Broad Street
P Philadelphia, Pennsylvania 19132
AC 215 229-7557

C Meridian Electronics
333 Meridian Road
Butler, Pa. 16001
AC 412 482-2575

PENNSYLVANIA (Cont'd)

C **Mobile Radio Repair**
Rock Road
Honeybrook, Pa. 19344
AC 215 273-3313

C Swop Shop
343 West Douglas Street
Reading, Pennsylvania 19601
AC 215 374-6152 - 6741

C Adams County Electronics
Lincoln-Way—East
New Oxford, Penn. 17350
AC 717 624-7103

C **R. W. Trautman Comm.**
1071 S. King Street
Palmyra, Pa. 17078
AC 717 838-4153

C **James A. Weaver**
P.O. Box 37A—RD #1
Perkiomerville, Pa. 18074
AC 215 287-9786 or 234-8874

C Adams County Electronics
Boundary & Albermarle Sts.
York, Pa. 17403
AC 717 854-2053

SOUTH CAROLINA

C **Radio Labs**
475-77 East Bay St.
Charleston, South Carolina 29403
AC 803 722-9813

SOUTH DAKOTA

C Gunderson Radio & Television
161 Fifth Street Northeast
Watertown, South Dakota 57201
AC 605 886-3439

TENNESSEE

T **Edwin Bohr Electronics**
P **5880 Dayton Blvd.**
Chattanooga, Tenn. 37415
AC 615 877-8207

C **Russ Hellen's CB Center**
1027 Brooks
Memphis, Tennessee 38116
AC 901 396-6666

C **Powell Electronics**
6101 Wellworth Avenue
Chattanooga, Tennessee 37412
AC 615 698-3551

TEXAS

C **L. Dale Andrews**
3830 Colina Lane
Waco, Texas 76705
AC 817 754-8130

C Industrial Radio Corporation
1318 Brazos
San Antonio, Texas 78207
AC 512 736-3119

C **Martin Electronics**
112 S. 17th St.
Nederland, Texas 77627
AC 713 772-8948

TEXAS (Cont'd)

C **Mitee TV Service**
T **3819 Mangum Road**
Houston, Texas 77018
AC 713 OV 2-7095

C **Permian Electronics**
2210 W. New Jersey
Midland, Texas 79701
AC 915 682-5011

T Whitlock Instrument
1306 North Texas Street
Odessa, Texas 79762
AC 915 337-3412

UTAH

T Salt Lake Instrument
1479 South Main Street
Salt Lake City, Utah 84115
AC 801 487-2541

VIRGINIA

T E.I.L. Instruments
P Division of Unitec Industries
121 Annondale
Falls Church, Virginia 22046
AC 703 532-0166

C **Falls Church Electronics**
6926 N. Fairfax Drive
Arlington, Virginia 22213
AC 703 534-2131

C S & W Electronics, Incorporated
3113 North Quebec Street
Arlington, Virginia 22207
AC 703 522-3966

C **Seaboard Electronics**
1737 Virginia Beach Road
Virginia Beach, Virginia 23453
AC 703 428-0349

WASHINGTON

C **BCB Sales, Inc.**
P.O. Box 840—
1908 E. George Washington Way
Richland, Washington 99352
AC 509 945-5300

C **Citizens Band Service**
17714 15th Avenue, N.E.
Seattle, Washington 98155
AC 206 EM 4-6410

T **Eicher Richards Company**
2727 N.E. Blakeley Street
Seattle, Washington 98105
AC 206 LA 3-7888

C **HCJ Electronics**
8214 E. Sprague Avenue
Spokane, Washington 99206
AC 509 WA 4-2343

T Sutherlands, Incorporated
South Annex, Boeing Field
Seattle, Washington 98108
AC 206 763-2491

WEST VIRGINIA

C **Ernie & Paul's Radio**
2013 3rd Avenue
Huntington, West Virginia 25703
AC 304 525-7638

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