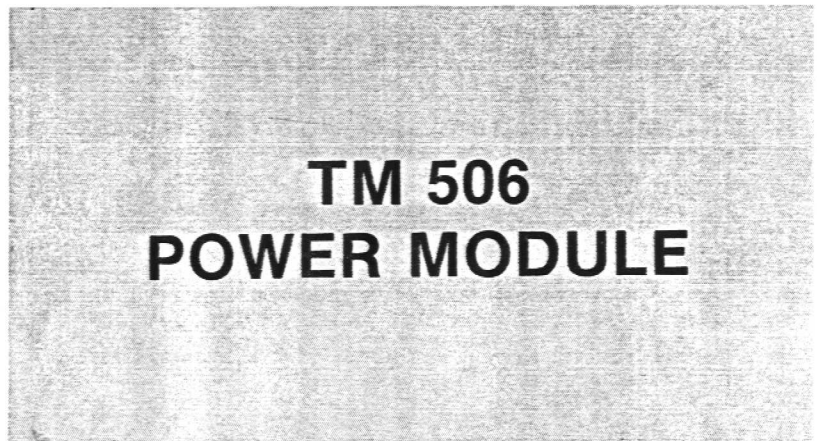


TEKTRONIX®



**TM 506
POWER MODULE**

INSTRUCTION MANUAL

Tektronix, Inc.
P.O. Box 500
Beaverton, Oregon 97077

Serial Number _____

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CHANGE INFORMATION

INSTALLATION PROCEDURE

Before you start...

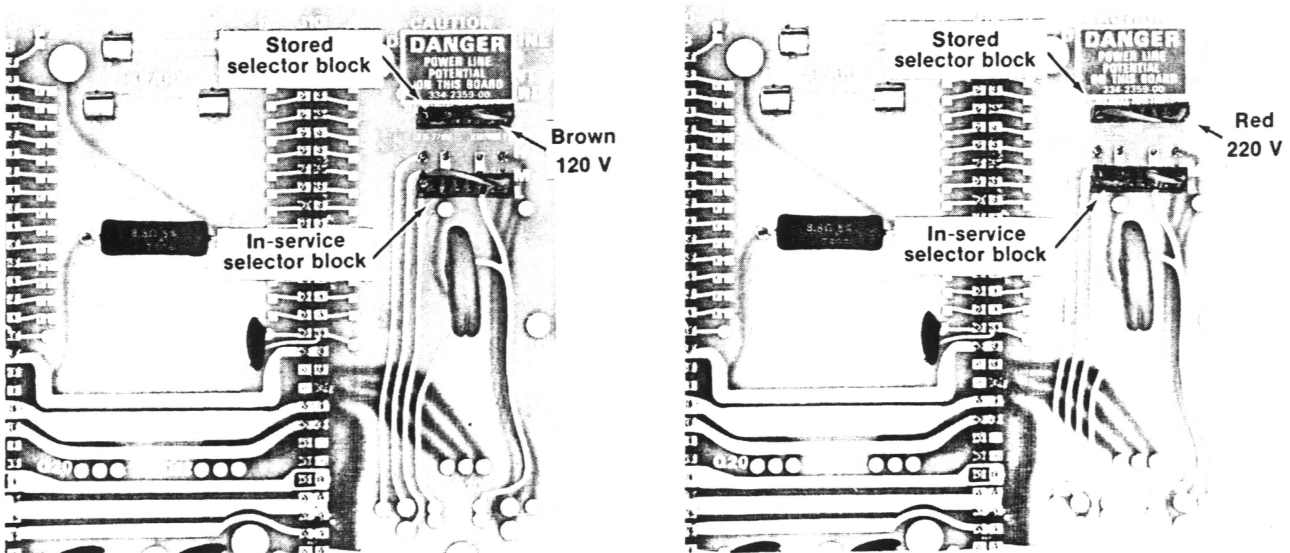
1. Check the rear panel markings. If the factory settings are compatible with the available line voltage and frequency, insert the desired plug-ins. Use the bail to raise the front of the instrument.

...go to Operating Instructions...

2. If a change is needed, follow these steps:

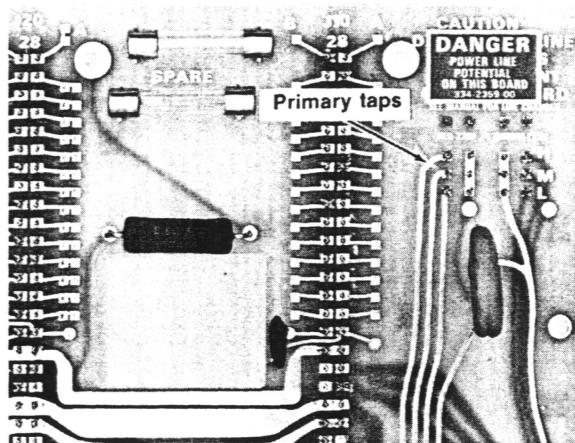
a. Line Selector Block(s)

Remove the four hold-down screws on the top of the dust cover cabinet and lift the cabinet off. This gives easy access to the Line Selector blocks located on the main circuit board.



The instrument can be damaged by using the 120 V Line Selector block with a 200 V nominal line voltage.

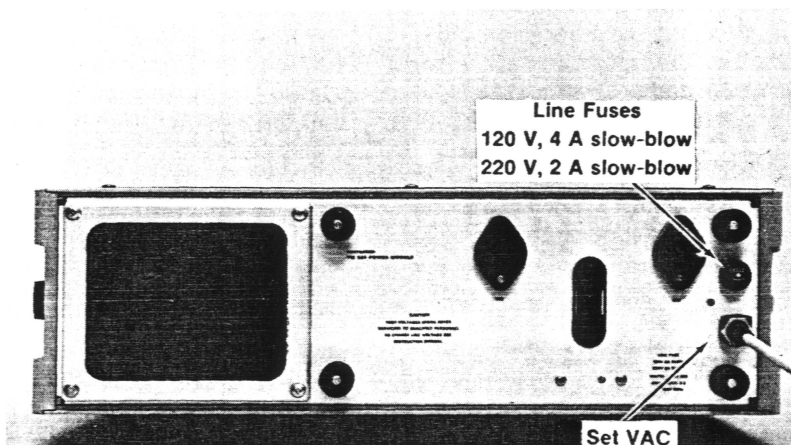
b. Line Range Taps



Universal Transformer

Line Selector Block Position	Regulating Ranges	
	120 Volts Nominal	220-Volts Nominal
L	90 VAC to 110 VAC	180 VAC to 220 VAC
M	99 VAC to 121 VAC	198 VAC to 242 VAC
H	108 VAC to 132 VAC	216 VAC to 264 VAC
Line Fuse Data	3A slow-blow	1.6A slow-blow

c. Rear Panel



3. Replace the cabinet.
4. If necessary, change the line cord power plug to match the power source receptacle or use an adapter.
5. Plug the cord into the power source.
6. Insert the desired plug-ins.
7. Use the bail to raise the front of the instrument. **...go to Operating Instructions...**

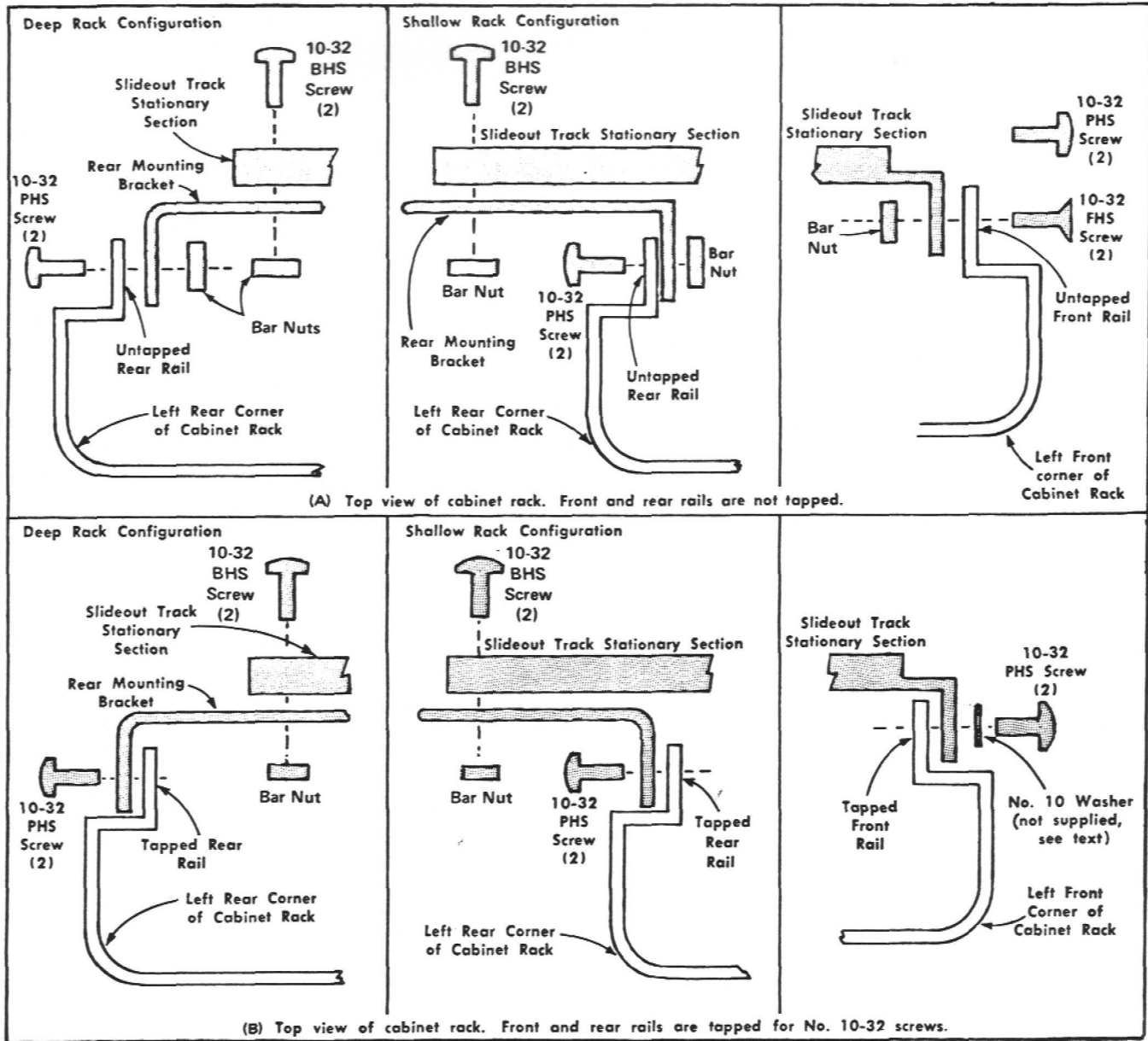


Fig. 0-1. Mounting the left stationary section (with its matched intermediate section, not shown in illustrations A and B) to the rack rails.

However, if this mounting method is used, the front panel will not fit flush against the front rail because of the stationary section and washer thickness. If a flush fit is preferred, method 1(a) should be used.

3. Mount the stationary slide-out sections to the rear rack rails using either of these methods.

(a) If the rear rack rail holes are not tapped to accept 10-32 machine screws, mount the left stationary section with hardware provided as shown in the left or center illustration of Fig. 0-1A. Note that the rear mounting bracket can be installed either way so the slide-out tracks will fit a deep or shallow cabinet rack.

Use Fig. 0-1A as a guide for mounting the right stationary section. Make sure that the stationary sections are horizontally aligned so they are level and parallel with each other.

(b) If the rear rack rail holes are tapped to accept 10-32 machine screws, mount the left stationary section with hardware provided as shown in the left or center illustration of Fig. 0-1B. Note that the rear mounting bracket can be installed either way so the slide-out tracks will fit a deep or shallow cabinet track. Use Fig. 0-1B as a guide for mounting the right stationary section. Make sure the stationary sections are horizontally aligned so they are level and parallel with each other.

Installation Procedure—TM 506

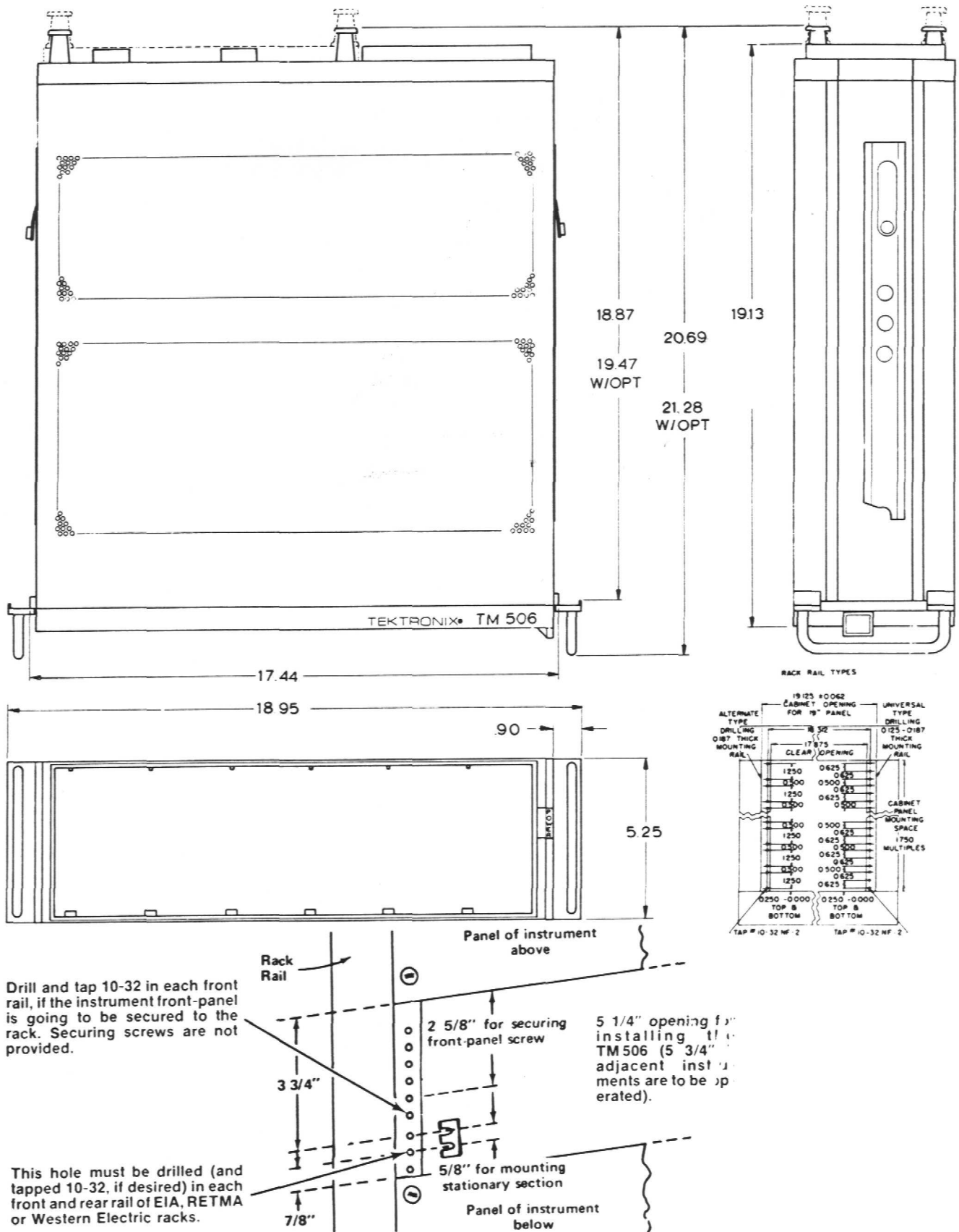


Fig. C-2. Dimensional diagram.

Installation Procedure—TM 506

TM 506 Installation and Adjustment

To insert the instrument into the rack, proceed as follows:

1. Pull the slide-out track intermediate sections out to the fully extended position.
2. Insert the instrument chassis sections into the intermediate sections.
3. Press the stop latches on the chassis sections and push the instrument toward the rack until the latches snap into their holes.
4. Again press the stop latches and push the instrument into the rack.

To adjust the slide-out tracks for smooth sliding action, loosen the screws used to join the stationary sections to the rails of the rack. Center the instrument, allowing the slide-out tracks to seek the proper width, then tighten the screws.

To secure the instrument front-panel to the rack, the rack must either have universal hole spacing, or a hole must be drilled and tapped for a 10-32 screw, see Fig. 0-2. Using the hardware (not furnished) indicated in Fig. 0-2, secure the TM 506 to the front rails of the rack.

Slide-Out Track Maintenance

The slide-out tracks require no lubrication. The special dark gray finish on the sliding parts is a permanent lubrication.

OPERATING INSTRUCTIONS

INTRODUCTION

Description

The TEKTRONIX TM 506 Power Module is a mainframe for the TM 500 Series of Modular Instrumentation. It accepts up to six independently functional plug-in modules to form a versatile and compact instrumentation system. The TM 506 provides the basic power source and an interconnecting scheme for the other members of the TM 500 Series family. Factory options allow customer modification using signal access at the plug-in module/power module interface to provide rear panel inputs and outputs, and interconnections between compartments.

Power Source

The instrument is designed to operate from a power source with its neutral at or near earth (ground) potential with a separate safety-earth conductor. It is not intended for operation from two phases of a multi-phase system, or across the legs of a single phase, three-wire system.

Power Usage

With six plug-in modules installed, the TM 506 requires up to 320 watts at the upper limits of the high line voltage

ranges. Actual power consumption depends on the particular module combination and operating modes selected.

NOTE

The compartment closest to the PULL ON POWER switch is high power. Some of the TM 500 Series plug-in modules require high power to operate at their maximum capabilities.

Operating Temperatures

The TM 506 can be operated in an ambient air temperature of 0°C to 50°C. Thermal cutout devices protect the system by disconnecting the power to the TM 506 Power Module when internal temperatures rise above a safe operating level. These devices automatically return power to the unit when the internal temperatures return to a safe level.

Since the TM 506 can be stored in temperatures between -40°C and +75°C, allow the instrument's chassis to return to within the operating limits before applying power.

POWER UP

Plug-In Modules

It is not necessary that all the plug-in compartments be utilized in order to operate the Power Module. The only modules needed are those necessary to accomplish the task.

It is recommended that the TM 506 be turned off before inserting or removing any module. Arcing at the connector terminals can reduce contact life. However, no internal damage will result if the module is inserted into a live Power Module.

Module Installation

1. Check the location of the white plastic barriers on the TM 506 interconnecting jack to ensure that their locations match the slots in the edge of the plug-in module's circuit board.
2. Align the plug-in-module chassis with the upper and lower guides of the selected compartment. Push the module in and press firmly to seat the circuit board in the interconnecting jack. (Remove the plug-in module by pulling on the white release latch in the lower left corner of each module.)

Operating Instructions—TM 506

Loading Considerations

With six plug-in modules installed, the TM 506 can require up to 320 watts from the line at high-line voltage range settings. Actual power consumed, of course, depends on the particular module combination selected at any one time.

3. Pull the PULL ON POWER button on the right side of the TM 506. Some plug-in modules have independent power switches, usually labeled OUTPUT, controlling application of mainframe power to the module. Push this button to activate the plug-in module.

This power capability can best be utilized by carefully planning the functional combinations of plug-ins, their external loads, and the resulting power distributions. Optimum conditions can be (1) equal loads in all five left hand compartments and full load in the high power compartment, (2) as much of the consumed power as possible dissipated in external loads, and (3) operating in an ambient temperature of about 25°C.

The TM 506 provides each plug-in module with access to a pair of heat-sinked, chassis-mounted, series-pass transistors, one NPN and one PNP. These transistors allow the plug-in modules to operate in power ranges not possible if the power were to be dissipated within the modules.

BUILDING A SYSTEM

Family Compatibility

Mechanically, the plug-in modules are very similar to other Tektronix product families. However, they are not electrically compatible. Therefore, the TM 506 interface has barriers on the mating connectors between pins 6 and 7 to ensure that incompatible modules cannot be inserted. See Fig. 1-1. A compatible module will have a matching slot between pins 6 and 7 of its main circuit board edge connector. This slot and barrier combination is the primary keying assignment.

TM 500-compatible plug-in modules are also identified by the white color of the release latch.

Customizing the Interface

The modularity of this instrumentation system provides for many different functions to be performed by the plug-in modules. Specific functions are grouped into families or classes, of which there may be several plug-in module members. For instance, some classes are Power Supplies, Signal Sources, Measurement, and so forth. Each modular member of a functional family will have a second slot peculiar to its family assignment located in its edge connector. The TM 506 user can "program" one or more compartments to accept only members of that family by installing a second barrier in the interface connector to match the module's slot location. An entire TM 506 can be "programmed" in this manner to set up instruction systems for specific work functions. For extra barriers, order Tektronix Part No. 214-1593-02.

Jumper wires can be used to further specialize the interface. Compartments can be made to "talk" to each other by connecting jumpers on the back side of the

interface board, using pins 14 through 28 (A-side and B-side both) of the interconnecting jacks. See the following description of Option 2. Refer to each plug-in module's Manual for the I/O assignments of each pin at the rear interface. Once having made interconnections of a specialized nature, it is recommended that barriers be installed on the interconnecting jacks to ensure module compatibility with the customized wiring.

Rear Panel

The rear subpanel has a connector mounting plate for BNC and multi-pin connector mountings. Customer or factory-installed connectors and wiring (see following description of Option 2) could provide external access to the interface for external I/O control. This feature makes the TM 500 Series Modular Instrumentation System very flexible in bench-top or rackmounted systems.

Option 2. This factory-installed option adds 25-mil square-pin connectors to the rear of the interconnecting jacks at all pin locations from pins 14A and B through pins 28A and B. This will keep the interface flexible by making it easy and fast to change customized wiring using prepared wires with square-pin receptacles and long-nose pliers or tweezers. It also protects the circuit board from damage by repeated soldering and unsoldering of jumper wires. This option also adds six BNC connectors and one 50-pin connector to the rear panel. These connectors are not pre-wired. Instead, prepared jumpers, coaxial cables, and interconnection jack barriers are included in a kit. This gives a system designer as much flexibility as possible.

SPECIFICATIONS

Power Requirements

Line Voltage Ranges. International Transformer: 100, 110, 120, 200, 220, 240 VAC all within 10%. Range change for transformer accomplished with quick change line-selector blocks.

Line Frequency Ranges. International Transformer: 48 Hz to 440 Hz.

Power Consumption. Maximum primary power is approximately 320 W at high line. Actual power consumption depends on plug-in selection and operating modes.

Supplies (Unregulated)

Lower Power (Left and Four Center Supplies). Two 25 VAC windings, 500 mA each, supplied to each compartment, independently.

18.5 VAC and ± 12 V, 6.5 A maximum, shared in any combination between these two supplies and shared among all five compartments.

High Power (Compartment Nearest Switch). Two 25 VAC winding, 1 A, supplied only to high power compartment.

18.5 VAC and 12 V, 4 A maximum, shared in any combination between these two supplies.

+33.5 VDC and -33.5 VDC, 2.1 A maximum, shared in all compartments.

Temperature Range

Operating: 0°C to +50°C.

Nonoperating: -40°C to +75°C.

Altitude Range

Operating: To 15,000 feet.

Nonoperating: To 50,000 feet.

Other

Dimensions with Feet and Bail: Width: 17.25 inches, Length: 19.75 inches, Height: 9.5 inches.

Weight without Plug-ins: Approximately 31 lbs.

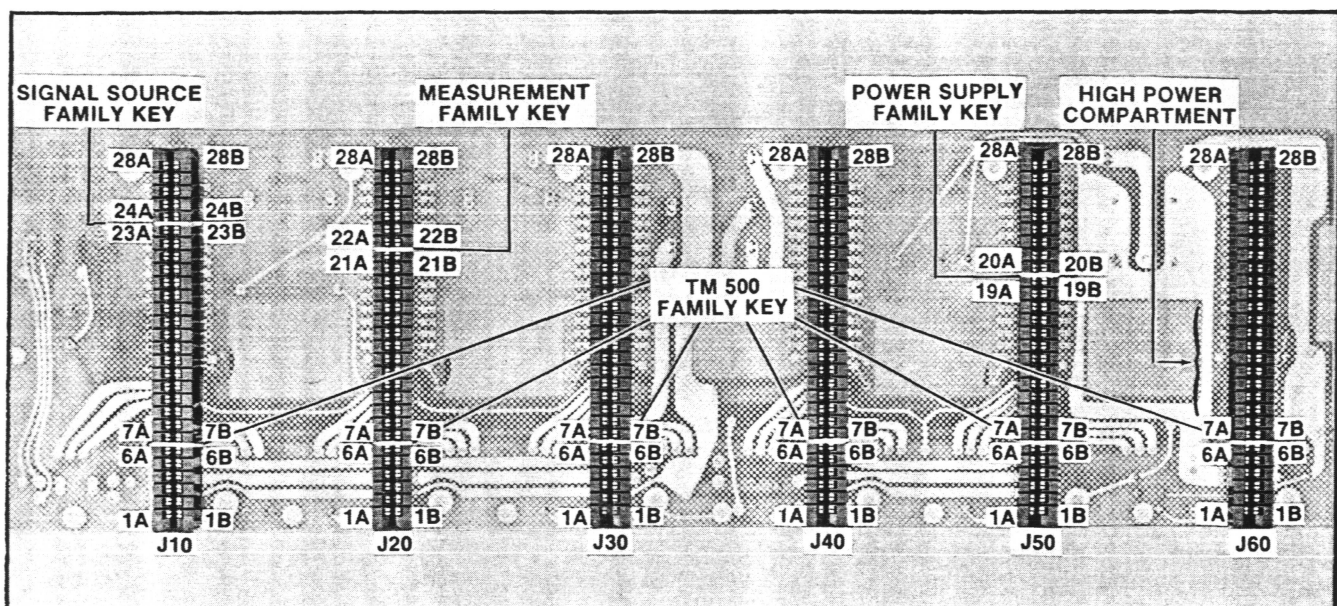


Fig. 1-1. Keying assignments for family functions. One of many possible sequence combinations.

SYSTEM MAINTENANCE

GENERAL

Introduction

This section of the manual is meant to support the entire TM 500 Series family of modules with a general coverage of the most commonly-needed service information pertinent to preventive maintenance, troubleshooting, ordering parts, and replacing components and sub-assemblies.

Cabinet Removal

WARNING

Dangerous potentials exist at several points throughout the system. When the system must be operated with the cabinet removed, do not touch exposed connections or components. Some transistors have voltage present on their cases. Disconnect power before cleaning the system or replacing parts.

Six screws on the top secure the cabinet to the TM 506 frame. Remove them and lift the cabinet straight up. Do not operate the system with the cabinet removed any longer than necessary for troubleshooting and calibration. Re-install the cabinet to protect the interior from dust and to remove personnel shock hazards.

Cleaning

CAUTION

Avoid using chemical cleaning agents which might damage plastic parts. Avoid chemicals containing benzene, toluene, xylene, acetone, or similar solvents.

Exterior. Loose dust may be removed with a soft cloth or a dry brush. Water and a mild detergent may be used. However, abrasive cleaners should not be used.

Interior. Cleaning the interior of a unit should precede calibration since the cleaning processes could alter the settings of calibration adjustments. Use low-velocity compressed air to blow off accumulated dust. Hardened dirt can be removed with a soft brush, cotton-tipped swab, or a cloth dampened in a solution of water and mild detergent.

Preventive Maintenance

Preventive maintenance steps performed on a regular basis will enhance the reliability of the instrumentation systems. However, periodic checks of the semiconductors in the absence of a malfunction are not recommended as preventive maintenance measures. See the semiconductor checking information under Troubleshooting Techniques which follow. A convenient time to perform preventive maintenance is just before instrument calibration.

Calibration

To ensure accurate signal generation and measurement, the performance of individual units comprising the system should be checked periodically. Refer to the Instruction Manual for each unit for complete calibration and verification procedures.

TROUBLESHOOTING AIDS

Introduction

The following is provided to augment information contained elsewhere in this and other TM 500 series family manuals when troubleshooting becomes necessary.

Circuit Description

Each manual has a section devoted to explaining circuit operating theory. Used conjointly with the schematics, this can be a powerful analytic tool.

Diagrams

Block diagrams and detailed circuit schematics are located on foldout pages in the service section of most of the TM 500 Series family manuals. The schematic diagrams show the component values and assigned circuit reference numbers of each part necessary to the circuit design. Usually the first page of the service section defines the circuit symbols and reference designators used in that particular instrument. Major circuits are usually identifiable by a series of component numbers. *Important waveforms and voltages may be shown within the diagrams or on adjoining aprons.* Those portions of the circuits located on circuit boards are enclosed with a blue tint outline.

Cam Switch Charts

Cam switches shown on the diagrams are coded on comprehensive charts to locate the cam number of the switch contact in the complete switch assembly, counting from the front, or knob end, toward the rear of the switch. The charts also indicate with a solid dot when each contact is closed.

Circuit Board Illustrations

Line illustrations showing component locations keyed with a grid scheme for each circuit board are usually placed on the back of a foldout page and sequenced as close as possible to an associated schematic. The GRID LOC columns, located near the Parts Location Grid, keys each component to easy location on the board.

Component and Wiring Color Codes

Colored stripes or dots on electrical components signify electrical values, tolerances, etc., according to EIA standards. Components not color-coded usually have information printed on the body. The wiring coding follows the same EIA standards with the exception of the ac power cord of the Power Modules. It is coded like this:

Black	Line
White	Neutral
Green with a	Safety Earth or
Yellow stripe	Ground

Testing Equipment

Generally, a wide-band oscilloscope, a probe, and a multimeter are all that is needed to perform basic waveform and voltage checks for diagnostic purposes. The calibration procedures in the manual for each plug-in module list specific test equipment and the features necessary to adequately check out that particular module.

TROUBLESHOOTING TECHNIQUES

Introduction

This troubleshooting procedure is arranged in an order which checks the simple trouble possibilities before proceeding to extensive troubleshooting.

Control Settings

Incorrect control settings can indicate a trouble that does not exist. If there is any question about the correct

function or operation of any control, see the Operating Instructions section of the manual for the instrument involved.

System and Associated Equipment

Before proceeding with troubleshooting the TM 500 Series system, check that the instruments in the system are operating correctly. Check for proper interconnection

between the power module and the plug-in modules. Check the line voltage at the power source. Check that the signal is properly connected and that the interconnecting cables and signal source are not defective.

The associated plug-in modules can be checked for proper operation quickly by substituting other like units known to be operating properly. If the trouble persists after substitution, then the power module is probably at fault. Moving a properly operating plug-in from compartment to compartment will help determine if one or more compartments have a problem.

Visual Check

Inspect the portion of the system in which the trouble is suspected. Many troubles can be located by visual clues such as unsoldered connections, broken wires, damaged circuit board, damaged components, etc.

Instrument Calibration

Check the calibration of the suspected plug-in module or the affected circuit if the trouble is obviously in a certain circuit. The trouble may only be a result of misadjustment or may be corrected by re-calibration. Complete calibration instructions are given in the manual for each instrument in the system.

Circuit Isolation

Note the trouble symptoms. These often identify the circuit in which the trouble is located. When trouble symptoms appear in more than one circuit, check the affected circuits by making waveform and voltage measurements.

Incorrect operation of all circuits often means trouble in the power supplies. Using a multimeter, check first for correct voltages of the individual regulated supplies according to the plug-in module schematics and calibration procedures. Then check the unregulated supplies of the power modules. Defective components elsewhere in the instruments can appear as power supply problems. In these instances, suspected circuits should be disconnected from apparently bad power supplies one at a time to narrow the search.

Voltages and Waveforms

Often defective components can be located by using waveform and voltage indications when they appear on the schematic or in the calibration procedures. Such waveforms and voltage labels are typical indications and will vary between instruments. To obtain operating conditions similar to those used to take these readings, refer to the first diagram in the service sections.

Component Checking

If a component cannot be disconnected from its circuit, then the effects of the associated circuitry must be considered when evaluating the measurement. Except for soldered-in transistors and integrated circuits, most components can be lifted at one end from the circuit board.

Transistors and IC's. Turn the power switch off before removing or replacing any semiconductor.

A good check of transistor operation is actual performance under operating conditions. A transistor can most effectively be checked by substituting a new component for it (or one which has been checked previously). However, be sure that circuit conditions are not such that a replacement transistor might also be damaged. If substitute transistors are not available, use a dynamic tester. Static-type testers are not recommended, since they do not check operation under simulated operating conditions. A suction-type desoldering tool must be used to remove soldered-in transistors; see component replacement procedure for details.

Integrated circuits can be checked with a voltmeter, test oscilloscope, or by direct substitution. A good understanding of the circuit description is essential to troubleshooting circuits using IC's. Operating waveforms, logic levels, and other operating information for the IC's are given in the circuit description information of the appropriate manual. Use care when checking voltages and waveforms around the IC's so that adjacent leads are not shorted together. A convenient means of clipping a test probe to the 14- and 16-pin in-line IC's is with an integrated circuit test clip. This device also doubles as an extraction tool.

Diodes. Do not use an ohmmeter that has a high internal current. High currents may damage the diode.

A diode may be checked for an open or shorted condition by measuring the resistance between terminals. With an ohmmeter scale having an internal source of between 800 mV and 3 V, the resistance should be very high in one direction and very low when the leads are reversed.

Resistors. Check the resistors with an ohmmeter. Resistor tolerances are given in the Electrical Parts List in every manual. Resistors do not normally need to be replaced unless the measured value varies widely from the specified value.

Capacitors. A leaky or shorted capacitor can be detected by checking resistance with an ohmmeter on the highest scale. Use an ohmmeter that will not exceed the

voltage rating of the capacitor. The resistance reading should be high after initial charge of the capacitor. An open capacitor can best be detected with a capacity meter or by checking whether it passes ac signals.

PARTS ORDERING AND REPLACING

Ordering

Standard Parts. All electrical and mechanical replacement parts can be obtained through the local Tektronix Field Office or representative. However, many of the standard electronic components can be obtained locally in less time than is required to order them from Tektronix, Inc. Before purchasing or ordering replacement parts, check the Parts List for value, tolerance, rating, and description. When selecting replacement parts, it is important to remember that the physical size and shape of the component may affect its performance in an instrument. All replacement parts should be direct replacements unless it is known that a different component will not adversely affect the instrument performance.

Special Parts. Some parts are manufactured or selected by Tektronix, Inc. to satisfy particular requirements, or are manufactured for Tektronix, Inc. to our specifications. Most of the mechanical parts used in this system have been manufactured by Tektronix, Inc. Order all special parts directly from the local Tektronix Field Office or representative.

Ordering Procedure. When ordering replacement parts from Tektronix, Inc., please include the following minimum information:

1. Instrument Type (PS 501, SG 502, DC 501, etc.)
2. Instrument Serial Number (For example, B010251)
3. A description of the part (if electrical, include the circuit number)
4. Tektronix part number

Please do not return any instruments or parts before receiving directions from Tektronix, Inc.

A listing of Tektronix Field Offices, Service Centers, and Representatives can be found in the Tektronix Product Catalog and Supplements and in the rear of the Power Module manuals.

Replacing

The exploded view drawings associated with the Mechanical Parts List, located to the rear of most manuals, may be especially helpful when disassembling or reassembling individual components or sub-assemblies.

Circuit Boards. If a circuit board is damaged beyond repair, either the entire assembly including all soldered-on components, or the board only, can be replaced.

To remove or replace a board, proceed as follows:

1. Disconnect all leads connected to the board (both soldered lead connections and solderless pin connections).
2. Remove all screws holding the board to the chassis or other mounting surface. Some boards may be held fast by plastic mounting clips around the board edges. For these, push the mounting clips away from the circuit board edges to free the board. Also, remove any knobs, etc., that would prevent the board from being lifted out of the instrument.
3. Lift the circuit board out of the unit. Do not force or bend the board.
4. To replace the board, reverse the order of removal. Use care when replacing pin connectors. If forced into place incorrectly positioned, the pin connectors may be damaged.

Transistors and IC's. Transistors and IC's should not be replaced unless they are actually defective. If removed from their sockets during routine maintenance, return them to their original sockets. Unnecessary replacement or switching of semiconductor devices may affect the calibration of the instruments. When a transistor is replaced, check the operation of the part of the instrument that may be affected.

Replacement semiconductors should be of the original type or a direct replacement. Figure 2-1 shows the lead configurations of the semi-conductors used in this instru-

ment system. When removing soldered-in transistors, use a suction-type desoldering tool to remove the solder from the holes in the circuit board.

An extracting tool should be used to remove the 14- and 16-pin integrated circuits to prevent damage to the pins. This tool is available from Tektronix, Inc. Order Tektronix Part No. 003-0619-00. If an extracting tool is not available, use care to avoid damaging the pins. Pull slowly and evenly on both ends of the IC. Try to avoid having one end of the IC disengage from the socket before the other end.

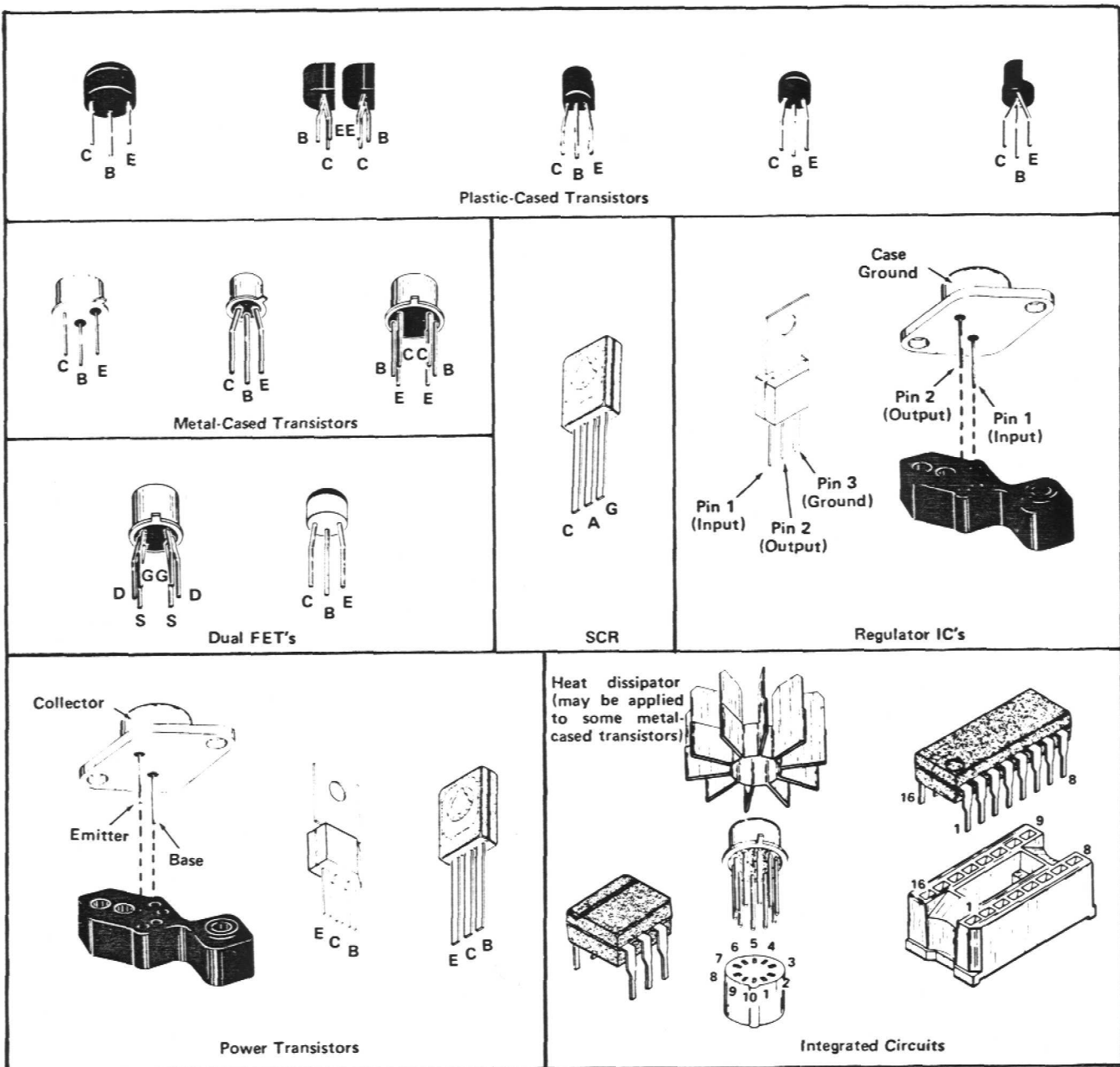


Fig. 2-1. Semiconductor device lead configurations found in the TM 500 family.

System Maintenance—TM 506

To replace one of the power transistors mounted on the Power Module chassis adjacent to the interface circuit board, first unsolder the leads. Then, loosen the nuts which clamp the transistor to the chassis. Remove the defective transistor. When replacing the transistor, use a mica washer on the metal tab to increase heat transfer from the transistor to the chassis.

Interconnecting Pins. To replace a pin that is mounted on a circuit board, first disconnect any pin connectors. Then, unsolder the damaged pin and pull it out of the board with a pair of pliers. Be careful not to damage the wiring on the board with too much heat. Ream out the hole in the circuit board with a 0.031-inch drill. Remove the ferrule from the new interconnecting pin and press the new pin into the hole in the circuit board. Position the pin in the same manner as the old pin. If the old pin was bent at an angle to mate with a connector, bend the new pin to match the associated pins.

NOTE

A pin replacement kit including necessary tools, instructions, and replacement pins is available from Tektronix, Inc. Order Tektronix Part No. 040-0542-00.

Cam Switches. Repair of cam-type switches should be undertaken only by experienced maintenance personnel. Switch alignment and spring tension of the contacts must be carefully maintained for proper operation of the switch. For assistance, contact your local Tektronix Field Office or representative.

NOTE

A cam-type switch repair kit including necessary tools, instructions, and replacement contacts is available from Tektronix, Inc. Order Tektronix Part No. 040-0541-00.

The cam-type switches consist of rotating cam drums which are turned by front-panel knobs, and sets of spring-leaf contacts mounted on adjacent circuit boards. The contacts are actuated by lobes on the cams. These switches can be disassembled for inspection, cleaning, repair, or replacement as follows:

1. Remove the screws which hold the metal cover on the switch, and lift the cover off the switch. The switch is now open for inspection or cleaning.
2. To completely remove a switch from the circuit board, first remove any knobs or shaft extensions. Loosen the coupling at the potentiometer at the rear of the switch, and pull the long shaft out of the switch assembly.
3. Remove the screws (from the opposite side of the circuit board) that holds the cam drum to the board.
4. To remove the cam drum from the front support block, remove the retaining ring from the shaft on the front of the switch and slide the cam drum out of the support block. Be careful not to lose the small detent roller.
5. To replace defective switch contacts, follow the instructions given in the switch repair kit.
6. To re-install the switch assembly, reverse the above procedure.

Pushbutton Switches. The pushbutton switches are not repairable and should be replaced as a unit if defective. Use a suction-type de-soldering tool to remove solder from the circuit board when removing these switches.

Incandescent Bulbs. Most of these light bulbs are mounted on the sub-panel using plastic sleeve stand-offs. Unsolder the lead wires and pull the bulb out of the sleeve from the rear of the sub-panel.

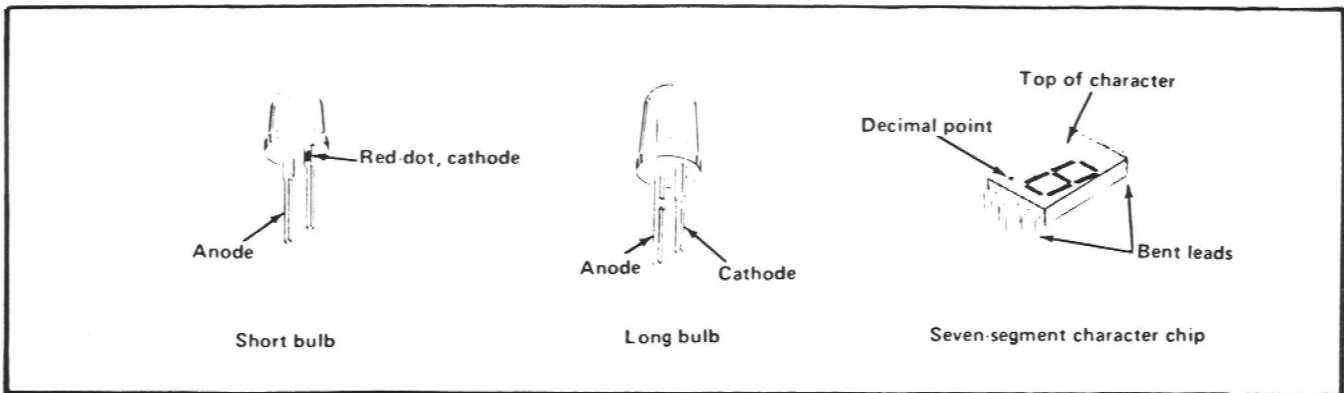


Fig. 2-2. Light-emitting diode (LED) lead orientation illustration.

Light-Emitting Diodes. LED's used as indicators are mounted on the sub-panels with plastic sleeve sockets similar to the incandescent bulb mountings or they are soldered directly to a sub-assembly and so mounted that they protrude through holes in the panel. In these cases, the sub-assembly must be exposed and the anode and cathode lead orientations carefully noted before unsoldering the defective LED. See Fig. 2-2 for LED lead identifying information.

Power Transformer. Replace the transformer only with a Tektronix direct replacement transformer. Refer to the exploded view drawing at the rear of the Power Module manuals for disassembly of the rear panel to expose the power transformer. Refer to the schematic diagram color-coding information for correct wiring. After replacement check out the power supply voltages before installing a plug-in module.

OPTION 2

INTRODUCTION

This factory installed option adds 25-mil square pin connectors to the rear of the interconnecting jacks at all pin locations from pins 14A and B. This will keep the interface flexible by making it easy and fast to change customized wiring using prepared wires with square pin receptacles. It also protects the circuit board from damage by repeated soldering and unsoldering of jumper wires. This option also adds six BNC connectors and one 50-pin connector to the rear panel. These connectors are not pre-wired in order to give a system designer as much flexibility as possible. Instead, prepared jumpers, coax cables, and interconnection jack barriers are included in the TM 506.

SYSTEM DESIGN DIRECTIONS

1. Plan the plug-in location based on the front-panel controls and operator convenience as well as interface connections.

2. Plan the wiring between interconnecting jacks and to the rear panel connectors carefully before starting assembly. A mating rear panel 50-pin connector and cover are provided for external cabling.

NOTE

There are no pin assignments for the rear panel connectors, due to the great variety of possible connections.

When high frequency or fast digital signals are involved, plan the wires so as to minimize crosstalk. Make allowance for the possible need to make auxiliary ground connections.

The 50-pin rear panel connector may be easier to connect if it is removed from the rear panel and remounted after connections are made. Remove the top rear cabinet piece for ease of access.

If more than 50 pins are needed, order Tektronix part number 015-0243-00 to receive a kit with a 104-pin connector shell, crimp-on pins, insertion tool and associated parts. This connector will fit the existing cut-out, crimping tool is not included.

3. Pin assignments for individual plug-ins will be found in the appropriate instruction manual.

4. Install an interconnection jack barrier at the appropriate location on the interconnection jack. Refer back to operating instructions for keying assignments for family functions.

5. Select and install the wires (hook-up or coax) following the guidelines in the Wire Use part of these instructions.

6. Wires or cables which may be at large potential differences should be dressed or bundled so as to avoid contact. Keep all interface wiring away from the TM 506 primary line wiring.

7. There is an empty cut-out which will mount the standard IEC digital interface connector. The connector is not supplied with this option.

WIRE USE

1. Hook up wire with square-pin receptacle on both ends. These may be used for low-frequency or dc circuits where impedance levels and crosstalk are not a problem. The wire is supplied in four lengths for connection between compartments (adjacent or non-adjacent) or between a compartment and the rear panel. For connection to the rear panel, cut to length then tin and solder the end going to the rear panel.

2. Coaxial wire with square pin receptacles on both ends. These are used for connections which require shielding or which must maintain a 50 ohm characteristic impedance. The outer conductor should be connected to either chassis ground or circuit ground. Plug-in lines which require coax leads usually have a specified ground pin assignment. If necessary, establish auxiliary ground connections at the appropriate wire ends. The coaxial wire is supplied in four lengths for connection between compartments (adjacent or non-adjacent) or between a compartment and the rear panel. For connection to the rear panel, cut to length then tin and solder the end going to the rear panel.

Mechanical Parts List

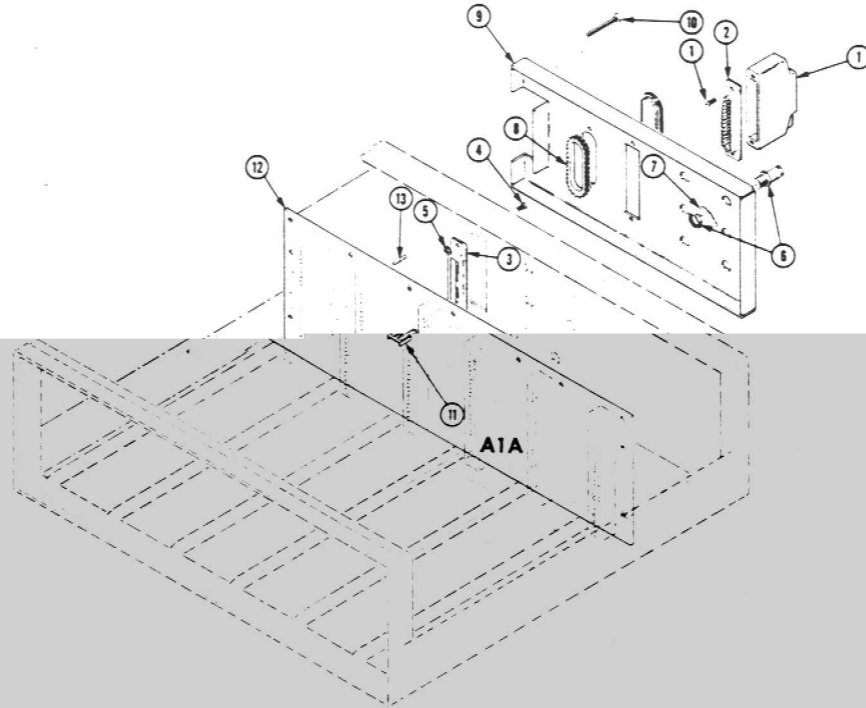


Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff	Dscnt	Qty	Name & Description					Mfr Code	Mfr Part Number
					1	2	3	4	5		
-1	131-1319-00			1						08051	DD51216-1
-2	131-1345-00			1						08051	DD-50S
-3	131-1344-00			1						08051	DD-50P
-4	211-0008-00			2						83385	OBD
-5	210-0586-00			2						78189	OBD
-6	131-0955-00			6						24931	28JR200-1
-7	210-0255-00			6						80009	210-0255-00
-8	255-0334-00			FT						80009	255-0334-00
-9	386-3224-00			1						80009	386-3224-00
-10	212-0102-00			4						80009	212-0102-00
-11	214-1593-02			20						80009	214-1593-02
-12	-----			1							
-13	131-0608-00			316						22526	47357
	020-0137-00			1						80009	020-0137-00

ELECTRICAL PARTS LIST AND SCHEMATICS

SYMBOLS AND REFERENCE DESIGNATORS

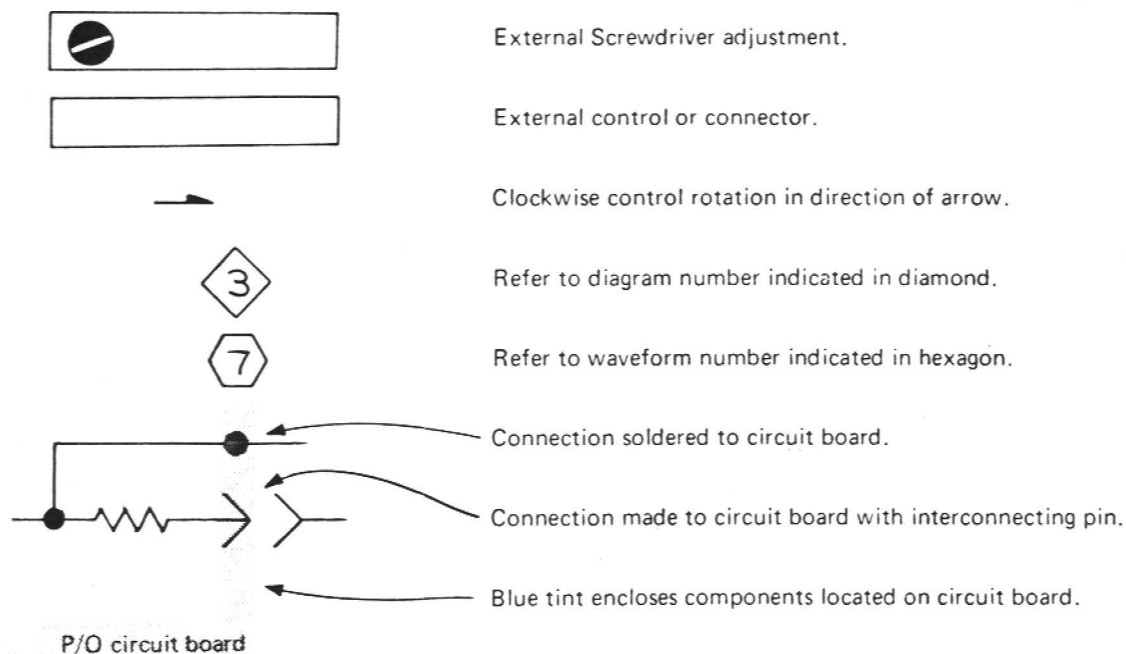
Electrical components shown on the diagrams are in the following units unless noted otherwise:

- Capacitors = Values one or greater are in picofarads (pF).
Values less than one are in microfarads (μ F).
- Resistors = Ohms (Ω)

Symbols used on the diagrams are based on ANSI Y32.2 – 1970.

Logic symbology is based on MIL-STD-806B in terms of positive logic. Logic symbols depict the logic function performed and may differ from the manufacturer's data.

The following special symbols are used on the diagrams:



REPLACEABLE ELECTRICAL PARTS

PARTS ORDERING INFORMATION

Replacement parts are available from or through your local Tektronix, Inc. Field Office or representative.

Changes to Tektronix instruments are sometimes made to accommodate improved components as they become available, and to give you the benefit of the latest circuit improvements developed in our engineering department. It is therefore important, when ordering parts, to include the following information in your order: Part number, instrument type or number, serial number, and modification number if applicable.

If a part you have ordered has been replaced with a new or improved part, your local Tektronix, Inc. Field Office or representative will contact you concerning any change in part number.

Change information, if any, is located at the rear of this manual.

SPECIAL NOTES AND SYMBOLS

X000 Part first added at this serial number
00X Part removed after this serial number

ITEM NAME

In the Parts List, an Item Name is separated from the description by a colon (:). Because of space limitations, an Item Name may sometimes appear as incomplete. For further Item Name identification, the U.S. Federal Cataloging Handbook H6-1 can be utilized where possible.

ABBREVIATIONS

ACTR	ACTUATOR	PLSTC	PLASTIC
ASSY	ASSEMBLY	QTZ	QUARTZ
CAP	CAPACITOR	RECP	RECEPTACLE
CER	CERAMIC	RES	RESISTOR
CKT	CIRCUIT	RF	RADIO FREQUENCY
COMP	COMPOSITION	SEL	SELECTED
CONN	CONNECTOR	SEMICOND	SEMICONDUCTOR
ELCTLT	ELECTROLYTIC	SENS	SENSITIVE
ELEC	ELECTRICAL	VAR	VARIABLE
INCAND	INCANDESCENT	WW	WIREWOUND
LED	LIGHT EMITTING DIODE	XFMR	TRANSFORMER
NONWIR	NON WIREWOUND	XTAL	CRYSTAL

CROSS INDEX MFR. CODE NUMBER TO MANUFACTURER

MFR.CODE	MANUFACTURER	ADDRESS	CITY,STATE,ZIP
01121	Allen-Bradley Co.	1201 2nd St. South	Milwaukee, WI 53204
02735	RCA Corp., Solid State Division	Route 202	Somerville, NY 08876
04713	Motorola, Inc., Semiconductor Products Div.	5005 E. McDowell Rd.	Phoenix, AZ 85036
56289	Sprague Electric Co.		North Adams, MA 01247
71400	Bussman Mfg., Division of McGraw-Edison Co.	2536 W. University St.	St. Louis, MO 63107
72982	Erie Technological Products, Inc.	644 W. 12th St.	Erie, PA 16512
80009	Tektronix, Inc.	P. O. Box 500	Beaverton, OR 97077
81439	Therm-O-Disc, Inc.	1320 S. Main St.	Mansfield, OH 44907
82877	Rotron, Inc.	7-9 Hasbrouck Lane	Woodstock, NY 12498
91418	Radio Materials Co.	4242 W. Bryn Mawr	Chicago, IL 60646
91637	Dale Electronics, Inc.	P. O. Box 609	Columbus, NB 68601
91929	Honeywell, Inc., Micro Switch Div.	Chicago & Spring Sts.	Freeport, IL 61032
95238	Continental Connector Corp.	34-63 56th St.	Woodside, NY 11377

Electrical Parts List—TM 506

Ckt No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description	Mfr Code	Mfr Part Number
A1	670-3303-00			CKT BOARD ASSY:INTERFACE	80009	670-3303-00
ALA	670-3984-00			CKT BOARD ASSY:INTERFACE OPTION 2	80009	670-3984-00
A2	670-3834-00			CKT BOARD ASSY:FILTER	80009	670-3834-00
B4	119-0026-00			FAN,AXIAL:1.500 X 4.750 INCH,WHISPER	82877	M745
C2	283-0022-00			CAP.,FXD,CER DI:0.02UF,900VRMS,1400VDC-AC	91418	TYPEU-02GMV1400V
C10	283-0004-00			CAP.,FXD,CER DI:0.02UF,+80-20%,150V	72982	855-547E203Z
C11	290-0637-00			CAP.,FXD,ELCTLT:5000UF,+75-10%,50V	56289	68D10527
C12	290-0637-00			CAP.,FXD,ELCTLT:5000UF,+75-10%,50V	56289	68D10527
C20	283-0004-00			CAP.,FXD,CER DI:0.02UF,+80-20%,150V	72982	855-547E203Z
C21	290-0637-00			CAP.,FXD,ELCTLT:5000UF,+75-10%,50V	56289	68D10527
C22	290-0637-00			CAP.,FXD,ELCTLT:5000UF,+75-10%,50V	56289	68D10527
C30	283-0004-00			CAP.,FXD,CER DI:0.02UF,+80-20%,150V	72982	855-547E203Z
C31	283-0004-00			CAP.,FXD,CER DI:0.02UF,+80-20%,150V	72982	855-547E203Z
C32	283-0004-00			CAP.,FXD,CER DI:0.02UF,+80-20%,150V	72982	855-547E203Z
C33	290-0508-00			CAP.,FXD,ELCTLT:18,000UF,+100-1%,15V	56289	68D10444
C35	290-0508-00			CAP.,FXD,ELCTLT:18,000UF,+100-1%,15V	56289	68D10444
C39	283-0004-00			CAP.,FXD,CER DI:0.02UF,+80-20%,150V	72982	855-547E203Z
C40	283-0004-00			CAP.,FXD,CER DI:0.02UF,+80-20%,150V	72982	855-547E203Z
C41	283-0004-00			CAP.,FXD,CER DI:0.02UF,+80-20%,150V	72982	855-547E203Z
C42	283-0004-00			CAP.,FXD,CER DI:0.02UF,+80-20%,150V	72982	855-547E203Z
C43	283-0004-00			CAP.,FXD,CER DI:0.02UF,+80-20%,150V	72982	855-547E203Z
C44	283-0004-00			CAP.,FXD,CER DI:0.02UF,+80-20%,150V	72982	855-547E203Z
C46	283-0004-00			CAP.,FXD,CER DI:0.02UF,+80-20%,150V	72982	855-547E203Z
C50	283-0004-00			CAP.,FXD,CER DI:0.02UF,+80-20%,150V	72982	855-547E203Z
C51	283-0004-00			CAP.,FXD,CER DI:0.02UF,+80-20%,150V	72982	855-547E203Z
C52	283-0004-00			CAP.,FXD,CER DI:0.02UF,+80-20%,150V	72982	855-547E203Z
C55	290-0508-00			CAP.,FXD,ELCTLT:18,000UF,+100-1%,15V	56289	68D10444
C60	283-0004-00			CAP.,FXD,ELCTLT:5000UF,+75-10%,50V	56289	68D10527
CR10	152-0198-01			SEMICONV DEVICE:SILICON,3A,200V	04713	1N4721
CR11	152-0198-01			SEMICONV DEVICE:SILICON,3A,200V	04713	1N4721
CR12	152-0198-01			SEMICONV DEVICE:SILICON,3A,200V	04713	1N4721
CR13	152-0198-01			SEMICONV DEVICE:SILICON,3A,200V	04713	1N4721
CR30	152-0274-00			SEMICONV DEVICE:SILICON,10A,100V	80009	152-0274-00
CR32	152-0274-00			SEMICONV DEVICE:SILICON,10A,100V	80009	152-0274-00
CR50	152-0274-00			SEMICONV DEVICE:SILICON,10A,100V	80009	152-0274-00
CR52	152-0274-00			SEMICONV DEVICE:SILICON,10A,100V	80009	152-0274-00
F2	159-0027-00			FUSE,CARTRIDGE:3AG,4A,125V,23SEC	71400	MDX4
F20	159-0126-00			FUSE,CARTRIDGE:2.5A,250VAC,FAST-BLOW	71400	AGC2-1/2
F22	159-0126-00			FUSE,CARTRIDGE:2.5A,250VAC,FAST-BLOW	71400	AGC2-1/2
F35	159-0096-00			FUSE,CARTRIDGE:3AG,7.5A,32V,FAST-BLOW	71400	AGC7 1/2
F50	159-0014-00			FUSE,CARTRIDGE:3AG,5A,250V,0.8SEC	71400	MTH5
J10	131-1078-00			CONNECTOR,RCPT,:28/56 CONTACT	95238	K600-11-56VA MOD
J20	131-1078-00			CONNECTOR,RCPT,:28/56 CONTACT	95238	K600-11-56VA MOD
J30	131-1078-00			CONNECTOR,RCPT,:28/56 CONTACT	95238	K600-11-56VA MOD
J40	131-1078-00			CONNECTOR,RCPT,:28/56 CONTACT	95238	K600-11-56VA MOD
J50	131-1078-00			CONNECTOR,RCPT,:28/56 CONTACT	95238	K600-11-56VA MOD
J60	131-1078-00			CONNECTOR,RCPT,:28/56 CONTACT	95238	K600-11-56VA MOD
Q10	151-0373-00			TRANSISTOR:SILICON,PNP	04713	SJE925
Q12	151-0436-00			TRANSISTOR:SILICON,NPN	80009	151-0436-00
Q20	151-0373-00			TRANSISTOR:SILICON,PNP	04713	SJE925
Q22	151-0436-00			TRANSISTOR:SILICON,NPN	80009	151-0436-00

Electrical Parts List—TM 506

Ckt No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description	Mfr Code	Mfr Part Number
Q30	151-0373-00			TRANSISTOR:SILICON,PNP	04713	SJE925
Q32	151-0436-00			TRANSISTOR:SILICON,NPN	80009	151-0436-00
Q40	151-0373-00			TRANSISTOR:SILICON,PNP	04713	SJE925
Q42	151-0436-00			TRANSISTOR:SILICON,NPN	80009	151-0436-00
Q50	151-0373-00			TRANSISTOR:SILICON,PNP	04713	SJE925
Q52	151-0436-00			TRANSISTOR:SILICON,NPN	80009	151-0436-00
Q60	151-0258-00			TRANSISTOR:SILICON,PNP	02735	2N4905
Q62	151-0413-00			TRANSISTOR:SILICON,NPN	02735	2N6258
R2	308-0704-00			RES.,FXD,WW:8.8 OHM,5%,5W	91637	RS5-D8R00J
R20	306-0102-00			RES.,FXD,COMP:1K OHM,10%,2W	01121	HB1021
R22	306-0102-00			RES.,FXD,COMP:1K OHM,10%,2W	01121	HB1021
R30	303-0102-00			RES.,FXD,COMP:1K OHM,5%,1W	01121	GB1025
R35	303-0511-00			RES.,FXD,COMP:510 OHM,5%,1W	01121	GB5115
R50	303-0511-00			RES.,FXD,COMP:510 OHM,5%,1W	01121	GB5115
S2	260-1222-00			SWITCH,PUSH-PUL:10A,250VAC	91929	2DM301
S3	260-0551-00			SW,THERMOSTATIC:8.0A,120VAC,RMS.	81439	S636336T21
S4	260-0551-00			SW,THERMOSTATIC:8.0A,120VAC,RMS.	81439	S636336T21
T1	120-0967-00			XFMR,PWR,SDN:	80009	120-0967-00

REPLACEABLE MECHANICAL PARTS

PARTS ORDERING INFORMATION

Replacement parts are available from or through your local Tektronix, Inc. Field Office or representative.

Changes to Tektronix instruments are sometimes made to accommodate improved components as they become available, and to give you the benefit of the latest circuit improvements developed in our engineering department. It is therefore important, when ordering parts, to include the following information in your order: Part number, instrument type or number, serial number, and modification number if applicable.

If a part you have ordered has been replaced with a new or improved part, your local Tektronix, Inc. Field Office or representative will contact you concerning any change in part number.

Change information, if any, is located at the rear of this manual.

SPECIAL NOTES AND SYMBOLS

X000 Part first added at this serial number
00X Part removed after this serial number

FIGURE AND INDEX NUMBERS

Items in this section are referenced by figure and index numbers to the illustrations.

INDENTATION SYSTEM

This mechanical parts list is indented to indicate item relationships. Following is an example of the indentation system used in the description column.

```

1 2 3 4 5           Name & Description
Assembly and/or Component
Attaching parts for Assembly and/or Component
    --- * ---
Detail Part of Assembly and/or Component
Attaching parts for Detail Part
    --- * ---
Parts of Detail Part
Attaching parts for Parts of Detail Part
    --- * ---
  
```

Attaching Parts always appear in the same indentation as the item it mounts, while the detail parts are indented to the right. Indented items are part of, and included with, the next higher indentation. The separation symbol --- * --- indicates the end of attaching parts.

Attaching parts must be purchased separately, unless otherwise specified.

ITEM NAME

In the Parts List, an Item Name is separated from the description by a colon (:). Because of space limitations, an Item Name may sometimes appear as incomplete. For further Item Name identification, the U.S. Federal Cataloging Handbook H6-1 can be utilized where possible.

ABBREVIATIONS

#	INCH	ELECTRN	ELECTRON	IN	INCH	SE	SINGLE END
ACTR	NUMBER SIZE	ELEC	ELECTRICAL	INCAND	INCANDESCENT	SECT	SECTION
ADPTR	ACTUATOR	ELCTLT	ELECTROLYTIC	INSUL	INSULATOR	SEMICOND	SEMICONDUCTOR
ALIGN	ADAPTER	ELEM	ELEMENT	INTL	INTERNAL	SHLD	SHIELD
AL	ALIGNMENT	EPL	ELECTRICAL PARTS LIST	LPHLDR	LAMPHOLDER	SHLDR	SHOULDERED
ASSEM	ALUMINUM	EQPT	EQUIPMENT	MACH	MACHINE	SKT	SOCKET
ASSY	ASSEMBLED	EXT	EXTERNAL	MECH	MECHANICAL	SL	SLIDE
ATTEN	ASSEMBLY	FIL	FILLISTER HEAD	MTG	MOUNTING	SLFLKG	SELF-LOCKING
AWG	ATTENUATOR	FLEX	FLEXIBLE	NIP	NIPPLE	SLVG	SLEEVING
BD	AMERICAN WIRE GAGE	FLH	FLAT HEAD	NON WIRE	NOT WIRE WOUND	SPR	SPRING
BRKT	BOARD	FLTR	FILTER	OBD	ORDER BY DESCRIPTION	SQ	SQUARE
BRS	BRACKET	FR	FRAME or FRONT	OD	OUTSIDE DIAMETER	SST	STAINLESS STEEL
BRZ	BRASS	FSTNR	FASTENER	OVH	OVAL HEAD	STL	STEEL
BSHG	BRONZE	FT	FOOT	PH BRZ	PHOSPHOR BRONZE	SW	SWITCH
CAB	BUSHING	FXD	FIXED	PL	PLAIN or PLATE	T	TUBE
CAP	CABINET	GSKT	GASKET	PLSTC	PLASTIC	TERM	TERMINAL
CER	CAPACITOR	HDL	HANDLE	PN	PART NUMBER	THD	THREAD
CHAS	CERAMIC	HEX	HEXAGON	PNH	PAN HEAD	THK	THICK
CKT	CHASSIS	HEX HD	HEXAGONAL HEAD	PWR	POWER	TNSN	TENSION
COMP	CIRCUIT	HEX SOC	HEXAGONAL SOCKET	RCPT	RECEPTACLE	TPG	TAPPING
CONN	COMPOSITION	HLCPS	HELICAL COMPRESSION	RES	RESISTOR	TRH	TRUSS HEAD
COV	CONNECTOR	HLEXT	HELICAL EXTENSION	RGD	RIGID	V	VOLTAGE
CPLG	COVER	HV	HIGH VOLTAGE	RLF	RELIEF	VAR	VARIABLE
CRT	COUPLING	IC	INTEGRATED CIRCUIT	RTNR	RETAINER	W/	WITH
DEG	CATHODE RAY TUBE	ID	INSIDE DIAMETER	SCH	SOCKET HEAD	WSHR	WASHER
DWR	DEGREE	IDNT	IDENTIFICATION	SCOPE	OSCILLOSCOPE	XFMR	TRANSFORMER
	DRAWER	IMPLR	IMPELLER	SCR	SCREW	XSTR	TRANSISTOR

CROSS INDEX MFR. CODE NUMBER TO MANUFACTURER

MFR.CODE	MANUFACTURER	ADDRESS	CITY,STATE,ZIP
12327	Freeway Corp.	9301 Allen Dr.	Cleveland, OH 44125
22526	Berg Electronics, Inc.	Youk Expressway	New Cumberland, PA 17070
24931	Specialty Connector Co., Inc.	3560 Madison Ave.	Indianapolis, IN 46227
70485	Atlantic India Rubber Works, Inc.	571 W. Polk St.	Chicago, IL 60607
71468	ITT Cannon Electric	666 E. Dyer Rd.	Santa Ana, CA 92702
71785	TRW Electronic Components, Cinch Connector Operations	1501 Morse Ave.	Elk Grove Village, IL 60007
74921	Iten Fibre Co., The	4001 Benefit Ave.	Ashtabula, OH 44004
75915	Littelfuse, Inc.	800 E. Northwest Hwy	Des Plaines, IL 60016
77250	Pheoll Manufacturing Co., Division of Allied Products Corp.	5700 W. Roosevelt Rd.	Chicago, IL 60650
78189	Illinois Tool Works, Inc. Shakeproof Division	St. Charles Road	Elgin, IL 60120
80009	Tektronix, Inc.	P. O. Box 500	Beaverton, OR 97077
81439	Therm-O-Disc, Inc.	1320 S. Main St.	Mansfield, OH 44907
82877	Rotron, Inc.	7-9 Hasbrouck Lane	Woodstock, NY 12498
83385	Central Screw Co.	2530 Crescent Dr.	Broadview, IL 60153
91929	Honeywell, Inc., Micro Switch Div.	Chicago & Spring Sts.	Freeport, IL 61032
95238	Continental Connector Corp.	34-63 56th St.	Woodside, NY 11377
95987	Weckesser Co., Inc.	4444 West Irving Park Rd.	Chicago, IL 60641

Mechanical Parts List—TM 506

FIGURE 1 STANDARD CABINET

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff	No. Dscont	Qty	1	2	3	4	5	Name & Description	Mfr Code	Mfr Part Number
1-1	200-0728-00			2						COV,HANDLE END:	80009	200-0728-00
-2	367-0116-00			1						HANDLE,CARRYING: (ATTACHING PARTS)	80009	367-0116-00
-3	212-0616-00			4						SCREW,SHOULDER:10-32 X 0.531" L,HEX,STL,CD PL	80009	212-0616-00
-4	386-1624-00			2						PL,RET.,HANDLE:	80009	386-1624-00
-5	386-1283-00			2						PLATE,HDL MTC:PLASTIC - - - * - - -	80009	386-1283-00
-6	124-0293-00			1						STRIP,TRIM:RIGHT	80009	124-0293-00
-7	390-0417-00			1						CAB.,WRAPAROUND:UPPER (ATTACHING PARTS)	80009	390-0417-00
-8	211-0622-00			6						SCREW,MACHINE:6-32 X 0.188",TH,SST - - - * - - -	77250	OBD
-9	348-0385-00			2						FOOT,CABINET: (ATTACHING PARTS FOR EACH)	80009	348-0385-00
-10	211-0537-00			1						SCREW,MACHINE:6-32 X 0.375 INCH,TRH STL - - - * - - -	83385	OBD
-11	124-0294-00			1						STRIP,TRIM:LEFT	80009	124-0294-00
-12	348-0398-00			1						FLIPSTAND,CAB:	80009	348-0398-00
-13	348-0074-00			2						SPT PIVOT,FLIP:RIGHT FRONT AND LEFT REAR (ATTACHING PARTS FOR EACH)	80009	348-0074-00
-14	211-0532-00			2						SCREW,MACHINE:6-32 X 0.75 INCH,FILH STL	83385	OBD
-15	348-0207-00			1						FOOT,CAB:LF & RR - - - * - - -	80009	348-0207-00
-16	348-0073-00			2						SPT PIVOT,FLIP:LEFT FRONT & RIGHT REAR (ATTACHING PARTS FOR EACH)	80009	348-0073-00
-17	211-0532-00			2						SCREW,MACHINE:6-32 X 0.75 INCH,FILH STL	83385	OBD
-18	348-0208-00			1						FOOT,CAB:LR & RR - - - * - - -	80009	348-0208-00
-19	390-0418-00			1						CAB.,WRAPAROUND:LOWER (ATTACHING PARTS)	80009	390-0418-00
	211-0622-00			2						SCREW,MACHINE:6-32 X 0.188",TH,SST - - - * - - -	77250	OBD

Mechanical Parts List—TM 506

FIGURE 2 RACKMOUNT CABINET

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Qty						Name & Description	Mfr Code	Mfr Part Number
				1	2	3	4	5			
2-1	390-0443-00		2						CABINET, WRAPAROUND: RACKMOUNT (ATTACHING PARTS FOR EACH)	80009	390-0443-00
-2	211-0502-00		6						SCREW, MACHINE: 6-32 X 0.188, FLH, 100 DEG, STL - - - * - - -	83385	OBD
-3	351-0101-00		1						SLIDE, DWR: EXT: (ATTACHING PARTS)	80009	351-0101-00
-4	212-0004-00		6						SCREW, MACHINE: 8-32 X 0.312 INCH, PNH STL	83385	OBD
-5	210-0858-00		6						WASHER, FLAT: 0.171 ID X 0.500 OD X 0.063 THK - - - * - - -	80009	210-0858-00
-6	367-0022-00		2						HANDLE, BOW: (ATTACHING PARTS)	80009	377-0022-00
-7	212-0004-00		2						SCREW, MACHINE: 8-32 X 0.312 INCH, PNH STL - - - * - - -	83385	OBD
-8	407-1458-00		2						BRACKET, ANGLE: RACKMOUNT (ATTACHING PARTS)	80009	407-1458-00
-9	212-0004-00		2						SCREW, MACHINE: 8-32 X 0.312 INCH, PNH STL - - - * - - -	83385	OBD

Mechanical Parts List—TM 506

FIGURE 3 EXPLODED

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Qty	Name & Description					Mfr Code	Mfr Part Number
				1	2	3	4	5		
3-1	384-1243-00		1	SHAFT,EXT:PWR SW					80009	384-1243-00
				(ATTACHING PARTS)						
-2	211-0105-00		2	SCREW,MACHINE:4-40 X 0.188"100 DEG,FLH STL					83385	OBD
				- - - - *						
-3	214-2010-00		1	ACTUATOR,SW:					80009	214-2010-00
-4	351-0379-01		6	GUIDE,PLUG-IN:UPPER					80009	351-0379-01
				(ATTACHING PARTS FOR EACH)						
-5	211-0030-00		1	SCREW,MACHINE:2-56 X 0.25"82 DEG,FLH STL					83385	OBD
				- - - - *						
-6	426-1120-00		1	FRAME SECT. ,CAB:UPPER FRONT					80009	426-1120-00
				(ATTACHING PARTS)						
-7	212-0040-00		4	SCREW,MACHINE:8-32 X 0.375 100 DEG,FLH STL					83385	OBD
				- - - - *						
-8	351-0286-04		6	GUIDE,PLUG-IN:BOTTOM					80009	351-0286-04
				(ATTACHING PARTS FOR EACH)						
-9	211-0101-00		1	SCREW,MACHINE:4-40 X 0.25" 100 DEG,FLH STL					83385	OBD
				- - - - *						
	334-2380-00		1	MARKER,IDENT:"HIGH POWER COMPT"					80009	334-2380-00
-10	426-1115-00		1	FRAME SECT. ,CAB:LOWER FRONT					80009	426-1115-00
				(ATTACHING PARTS)						
-11	212-0040-00		4	SCREW,MACHINE:8-32 X 0.375 100 DEG,FLH STL					83385	OBD
				- - - - *						
-12	200-0541-00		1	FR,AIR INL-OUT:					80009	200-0541-00
				(ATTACHING PARTS)						
-13	212-0033-00		4	SCREW,MACHINE:8-32 X 0.750 INCH,PNH STL					83385	OBD
-14	210-0804-00		4	WASHER,FLAT:0.17 ID X 0.375 INCH OD,STL					12327	OBD
				- - - - *						
-15	378-0029-00		1	FILTER,ELEM,AIR:					80009	378-0029-00
-16	214-0762-00		1	GRILLE,METAL:					82877	20132-2
				(ATTACHING PARTS)						
-17	211-0511-00		4	SCREW,MACHINE:6-32 X 0.50 INCH,PNH STL					83385	OBD
-18	210-0457-00		4	NUT,PLAIN,EXT W:6-32 X 0.312 INCH,STL					83385	OBD
				- - - - *						
-19	119-0026-00		1	FAN,AXIAL:1.500 X 4.750 INCH,WHISPER					82877	M745
-20	260-1222-00		1	SWITCH,PUSH-PUL:10A,250VAC					91929	2DM301
-21	407-0895-00		1	BRACKET,SW,MTG:POWER					80009	407-0895-00
				(ATTACHING PARTS)						
-22	211-0038-00		2	SCREW,MACHINE:4-40 X 0.312"100 DEG,FLH STL					83385	OBD
-23	210-0586-00		2	NUT,PLAIN,EXT W:4-40 X 0.25 INCH,STL					78189	OBD
				- - - - *						
-24	426-1121-00		1	FRAME SECT. ,CAB:UPPER REAR					80009	426-1121-00
				(ATTACHING PARTS)						
-25	212-0040-00		10	SCREW,MACHINE:8-32 X 0.375 100 DEG,FLH STL					83385	OBD
				- - - - *						
-26	-----		2	TRANSISTOR:(SEE Q32,Q40 EPL)						
				(ATTACHING PARTS FOR EACH)						
-27	211-0114-00		1	SCREW,MACHINE:4-40 X 0.438 INCH,FLH STL					83385	OBD
-28	210-0586-00		1	NUT,PLAIN,EXT W:4-40 X 0.25 INCH,STL					78189	OBD
-29	210-1122-00		1	WASHER,LOCK:DISHED,0.12 ID X 0.375"OD,STL					78189	4704-04-02
				- - - - *						
-30	342-0136-00		2	INSULATOR,WSHR:0.812 OD X 0.0025 INCH THK					80009	342-0136-00
-31	426-1116-00		1	FRAME SECT. ,CAB:LOWER REAR					80009	426-1116-00
				(ATTACHING PARTS)						
-32	212-0040-00		10	SCREW,MACHINE:8-32 X 0.375 100 DEG,FLH STL					83385	OBD
				- - - - *						
-33	-----		1	CKT BOARD ASSY:FILTER(SEE A2 EPL)						
				(ATTACHING PARTS)						
-34	211-0507-00		4	SCREW,MACHINE:6-32 X 0.312 INCH,PNH STL					83385	OBD
				- - - - *						
-35	352-0362-00		1	FUSEHOLDER: W/MOUNTING HARDWARE					75915	345001
				(ATTACHING PARTS)						
-36	210-0873-00		1	WASHER,NONMETAL:0.5 ID X 0.688 INCH OD,NPRN					70485	OBD
				- - - - *						

Mechanical Parts List—TM 506

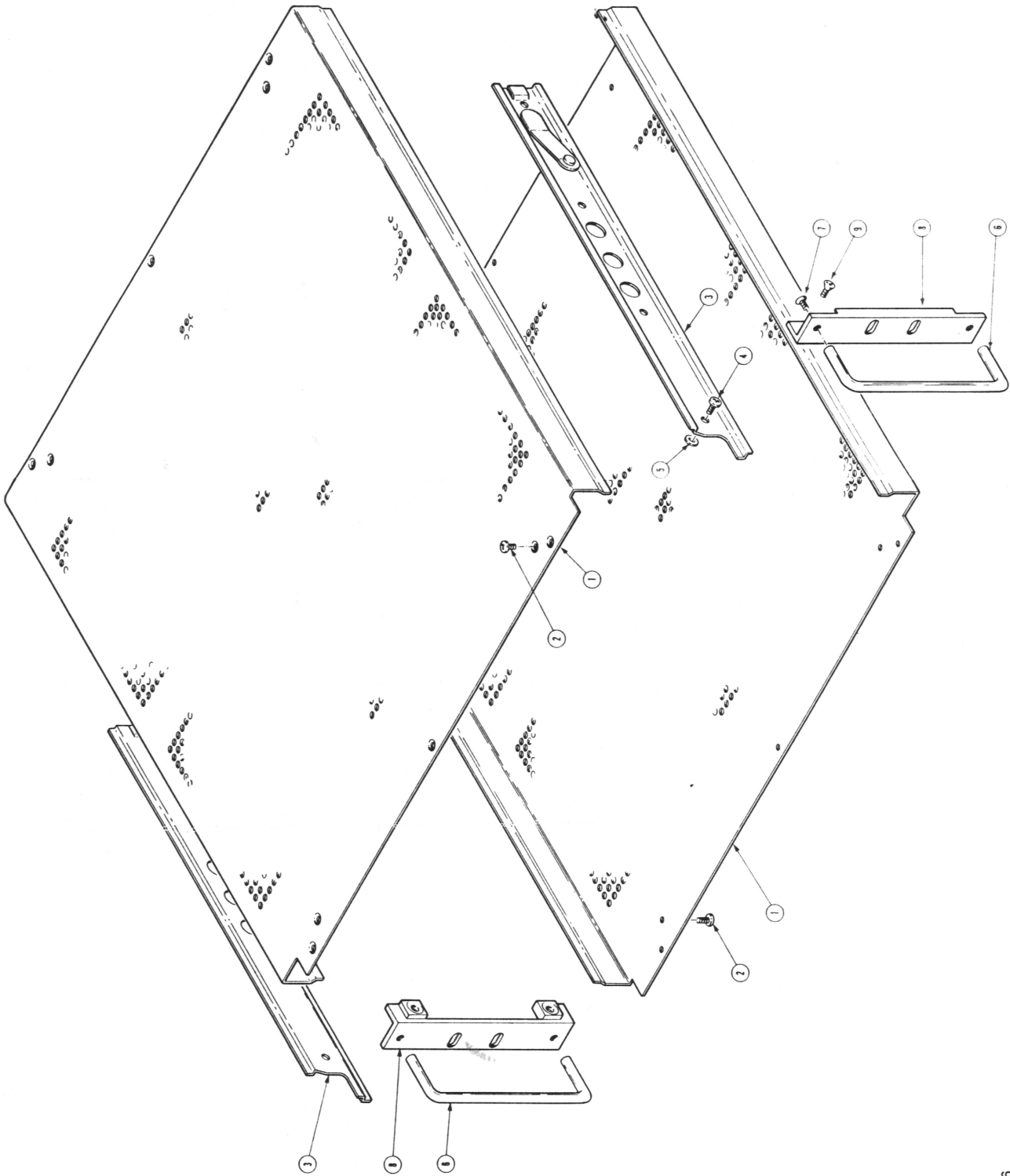
FIGURE 3 EXPLODED (cont)

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff	Dscnt	Qty	1 2 3 4 5					Name & Description	Mfr Code	Mfr Part Number
3-37	161-0033-04			1						CABLE ASSY,POWER:	80009	161-0033-04
-38	358-0515-00			1						BSHG.,STR,RLV:TOP	80009	358-0515-00
-39	358-0516-00			1						BSHG.,STR,RLV:BOTTOM	80009	358-0516-00
-40	200-1646-00			1						CA.NIP.,ELEC:	80009	200-1646-00
-41	214-2038-00			1						IND.,LINE VOLTS:	80009	214-2038-00
-42	200-1814-00			1						COVER,CONN HOLE:2.1 L X 0.8 W,PLASTIC	80009	200-1814-00
-43	200-0692-00			2						COV,TRANSISTOR:	80009	200-0692-00
										(ATTACHING PARTS FOR EACH)		
-44	211-0513-00			1						SCREW,MACHINE:6-32 X 0.625 INCH,PNH STL	83385	OBD
-45	210-0457-00			1						NUT,PLAIN,EXT W:6-32 X 0.312 INCH,STL	83385	OBD
-46	210-0802-00			1						WASHER,FLAT:0.15 ID X 0.312 INCH OD	12327	OBD
-47	210-0935-00			1						WASHER,NONMETAL:FIBER,0.14 IDX 0.375"OD	74921	253-2
										- - - * - - -		
-48	-----			2						TRANSISTOR:(SEE Q60,Q62 EPL)		
										(ATTACHING PARTS FOR EACH)		
-49	211-0511-00			1						SCREW,MACHINE:6-32 X 0.50 INCH,PNH STL	83385	OBD
-50	210-0457-00			1						NUT,PLAIN,EXT W:6-32 X 0.312 INCH,STL	83385	OBD
-51	210-0202-00			1						TERMINAL,LUG:SE #6	78189	2104-06-00-2520N
-52	210-0802-00			1						WASHER,FLAT:0.15 ID X 0.312 INCH OD	12327	OBD
-53	210-0935-00			1						WASHER,NONMETAL:FIBER,0.14 IDX 0.375"OD	74921	253-2
-54	386-0978-00			1						INSULATOR,PLATE:0.002 INCH MICA,FOR TO-3	80009	386-0978-00
										- - - * - - -		
-55	348-0191-00			4						LEG,ELEC EQUIP.:PLASTIC	80009	348-0191-00
										(ATTACHING PARTS FOR EACH)		
-56	212-0082-00			1						SCREW,MACHINE:8-32 X 1.250,PNH,STL,CD PL	83385	OBD
										- - - * - - -		
-57	131-0022-00			1						TERMINAL BOARD:1 SOLDER LUG,1 MTG LUG	71785	322-11-02-001
										(ATTACHING PARTS)		
-58	210-0586-00			1						NUT,PLAIN,EXT W:4-40 X 0.25 INCH,STL	78189	OBD
-59	210-0201-00			1						TERMINAL,LUG:SE #4	78189	2104-04-00-2520N
										- - - * - - -		
-60	260-0551-00			1						SW,THERMOSTATIC:	81439	S636336T21
										(ATTACHING PARTS)		
-61	211-0504-00			2						SCREW,MACHINE:6-32 X 0.250,PNH,STL,CD PL	83385	OBD
-62	210-0457-00			2						NUT,PLAIN,EXT W:6-32 X 0.312 INCH,STL	83385	OBD
										- - - * - - -		
-63	333-1841-00			1						PANEL:REAR	80009	333-1841-00
-64	-----			1						TRANSFORMER:(SEE T1 EPL)		
										(ATTACHING PARTS)		
-65	212-0511-00			4						SCREW,MACHINE:10-32 X 3.0 HEX HD,STL,CD PL	83385	OBD
-66	220-0410-00			4						NUT,EXTENDED WA:10-32 X 0.375 INCH,STL	83385	OBD
-67	210-0010-00			4						WASHER,LOCK:INT,0.20 ID X 0.376" OD,STL	78189	1210-00-00-0541C
-68	166-0434-00			4						INSUL SLVG,ELEC:0.19 ID X 0.891" LONG,MYLAR	80009	166-0434-00
										- - - * - - -		
-69	386-3002-00			2						SUPPORT,XFMR:	80009	386-3002-00
-70	260-0551-00			1						SW.THERMOSTATIC:	81439	S637337T21
										(ATTACHING PARTS)		
-71	211-0008-00			2						SCREW,MACHINE:4-40 X 0.25 INCH,PNH STL	83385	OBD
-72	210-0586-00			2						NUT,PLAIN,EXT W:4-40 X 0.25 INCH,STL	78189	OBD
										- - - * - - -		
-73	-----			4						DIODE:(SEE CR30,CR32,CR50,CR52 EPL)		
-74	-----			4						TRANSISTOR:(SEE Q10,Q20,Q30,Q50 EPL)		
										(ATTACHING PARTS FOR EACH)		
-75	211-0012-00			1						SCREW,MACHINE:4-40 X 0.375 INCH,PNH STL	83385	OBD
-76	210-1122-00			1						WASHER,LOCK:DISHED,0.12 ID X 0.375"OD,STL	78189	4704-04-02
										- - - * - - -		
-77	-----			4						TRANSISTOR:(SEE Q12,Q22,Q42,Q52 EPL)		
										(ATTACHING PARTS FOR EACH)		
-78	211-0012-00			1						SCREW,MACHINE:4-40 X 0.375 INCH,PNH STL	83385	OBD
-79	210-1122-00			1						WASHER,LOCK:DISHED,0.12 ID X 0.375"OD,STL	78189	4704-04-02
										- - - * - - -		
-80	342-0136-00			8						INSULATOR,WSHR:0.812 OD X 0.0025 INCH THK	80009	342-0136-00

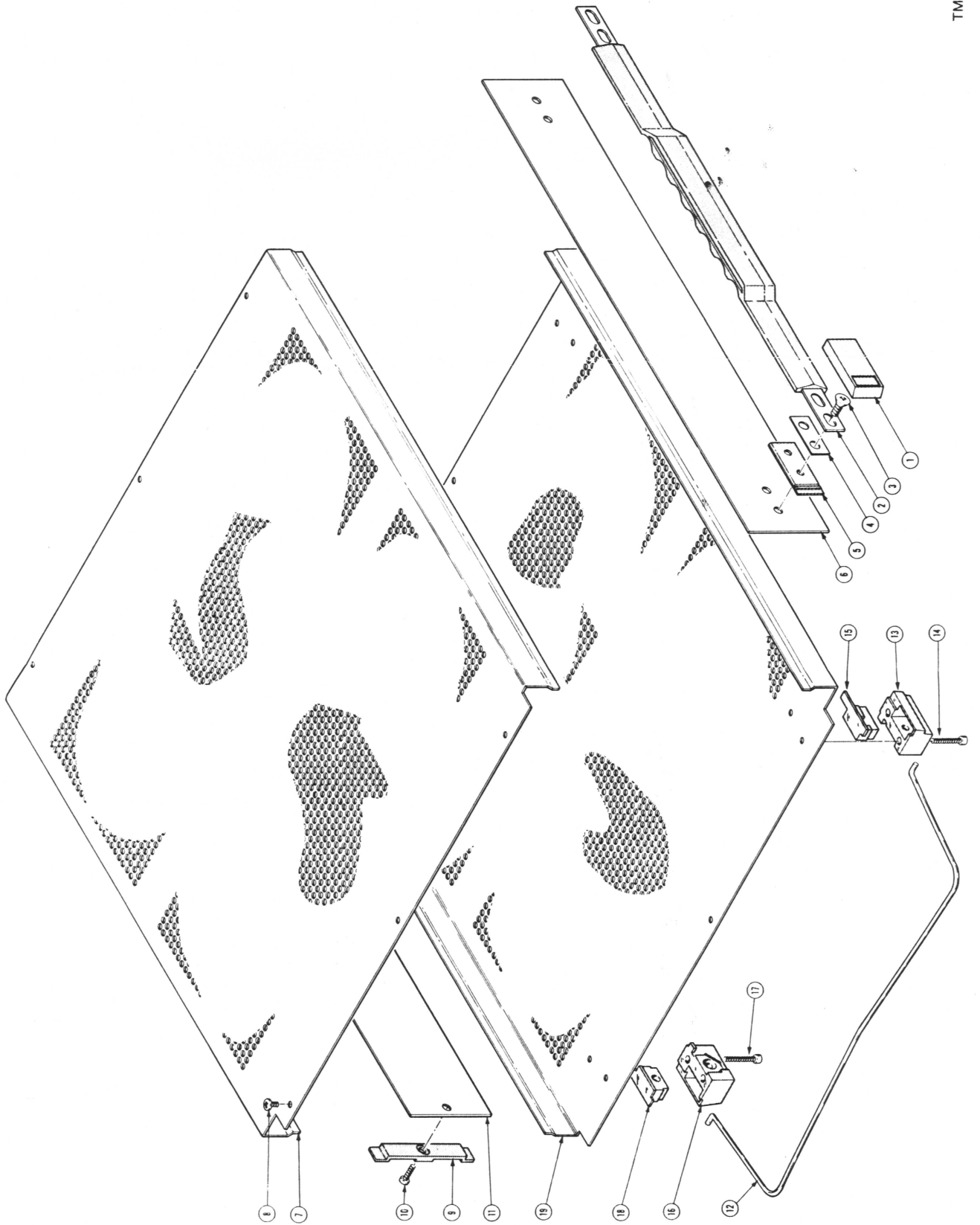
Mechanical Parts List—TM 506

FIGURE 3 EXPLODED

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Qty	1 2 3 4 5	Name & Description	Mfr Code	Mfr Part Number
3-81	343-0007-00		1		CLAMP, LOOP: (ATTACHING PARTS)	95987	5-8-68
-82	211-0097-00		1		SCREW, MACHINE: 4-40 X 0.312 INCH, PNH STL	83385	OBD
-83	210-0851-00		1		WASHER, FLAT: 0.119 ID X 0.375 OD - - - * - - -	83385	OBD
-84	214-2045-00		1		HEATSINK, XSTR: (ATTACHING PARTS)	80009	214-2045-00
-85	212-0040-00		4		SCREW, MACHINE: 8-32 X 0.375 100 DEG, FLH STL	83385	OBD
-86	210-0458-00		4		NUT, PLAIN, EXT W: 8-32 X 0.344 INCH, STL - - - * - - -	83385	OBD
-87	-----		1		CKT BOARD ASSY: INTERFACE (SEE A1 EPL) (ATTACHING PARTS)		
-88	211-0033-00		12		SCR, ASSEM WASH.: 4-40 X 0.312 INCH, PNH STL - - - * - - -	83385	OBD
	-----		-		. CKT BOARD ASSY INCLUDES:		
-89	334-2359-00		1		. LABEL: WARNING PWR LINE POTENTIAL	80009	334-2359-00
-90	131-0608-00		16		. CONTACT, ELEC: 0.365 INCH LONG	22526	47357
-91	352-0166-01		1		. HOLDER, TERM. CON: 8 WIRE BROWN	80009	352-0166-01
	352-0166-02		1		. HOLDER, TERM. CON: 8 WIRE RED	80009	352-0166-02
-92	131-0707-00		6		. CONTACT, ELEC: 0.48" L, 22-26 AWG WIRE	22526	47439
-93	344-0154-00		16		. CLIP, ELECTRICAL: FOR 0.25 INCH DIA FUSE	80009	344-0154-00
-94	214-1593-02		6		. KEY, CONNECTOR: FOR PLUG-INS	80009	214-1593-00
-95	131-1078-00		6		. CONNECTOR, RCPT, : 28/56 CONTACT	95238	K600-11-56VA MOD
-96	441-1230-00		1		. CHAS, PWR SUPPLY: (ATTACHING PARTS)	80009	441-1230-00
-97	212-0040-00		4		SCREW, MACHINE: 8-32 X 0.375 100 DEG, FLH STL - - - * - - -	83385	OBD
-98	210-0458-00		4		NUT, PLAIN, EXT, W: 8-32 X 0.344 INCH STL	83385	OBD
-99	426-1122-01		1		FRAME SECT. CAB: LEFT	80009	426-1122-01
-100	426-1114-01		1		FRAME SECT. CAB: RIGHT	80009	426-1114-01
-101	179-2191-00		1		WIRING HARNESS: CHASSIS	80009	179-2191-00
ACCESSORIES							
	070-1786-00		1		MANUAL, TECH: INSTRUCTION (NOT SHOWN)	80009	070-1786-00
	016-0610-00		1		COVER, FRONT: (NOT SHOWN)	80009	016-0610-00
	351-0104-00		1		SLIDE, SECT., DWR: PAIR (NOT SHOWN)	80009	351-0104-00
REPACKAGING							
	065-0239-00		1		CARTON ASSEMBLY: (NOT SHOWN)	80009	065-0239-00



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MANUAL CHANGE INFORMATION

At Tektronix, we continually strive to keep up with latest electronic developments by adding circuit and component improvements to our instruments as soon as they are developed and tested.

Sometimes, due to printing and shipping requirements, we can't get these changes immediately into printed manuals. Hence, your manual may contain new change information on following pages.

A single change may affect several sections. Sections of the manual are often printed at different times, so some of the information on the change pages may already be in your manual. Since the change information sheets are carried in the manual until ALL changes are permanently entered, some duplication may occur. If no such change pages appear in this section, your manual is correct as printed.



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MANUAL CHANGE INFORMATION

PRODUCT TM 506
070-1786-00

CHANGE REFERENCE C1/1274

DATE 12-18-74

CHANGE:

DESCRIPTION

INTERFACE ASSIGNMENTS AND BLOCK DIAGRAM PULLOUT CORRECTION

CHANGE: The upper 25 VAC windings description to read:

Six secondary windings supply raw AC power across pins 13A and
 B of each

CHANGE: The lower 25 VAC windings description to read:

Six secondary windings supply raw AC power across pins 1A and
 B of each

ADD: To the description of the "18.5 VAC WINDING" and the "411.5 V
 supply":

There are two of these supplies in the TM 506. One supply
 goes to all five low power compartments, while the other
 supply is used exclusively for the high power compartment.



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MANUAL CHANGE INFORMATION

PRODUCT TM 506

CHANGE REFERENCE C2/1274

EFF SN B010100-up

DATE 12-20-74

CHANGE:

DESCRIPTION

070-1786-00 Pilot Changes #1 & #2

ELECTRICAL PARTS LIST CHANGE

CHANGE TO:

F50	159-0006-00	FUSE, CARTRIDGE: 3AG, 5A, 125V, SLOW-BLOW
Q62	151-0140-00	TRANSISTOR: SILICON, NPN, 2N3055



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MANUAL CHANGE INFORMATION

PRODUCT GENERAL

CHANGE REFERENCE S23351

DATE 4-10-75

CHANGE:

DESCRIPTION

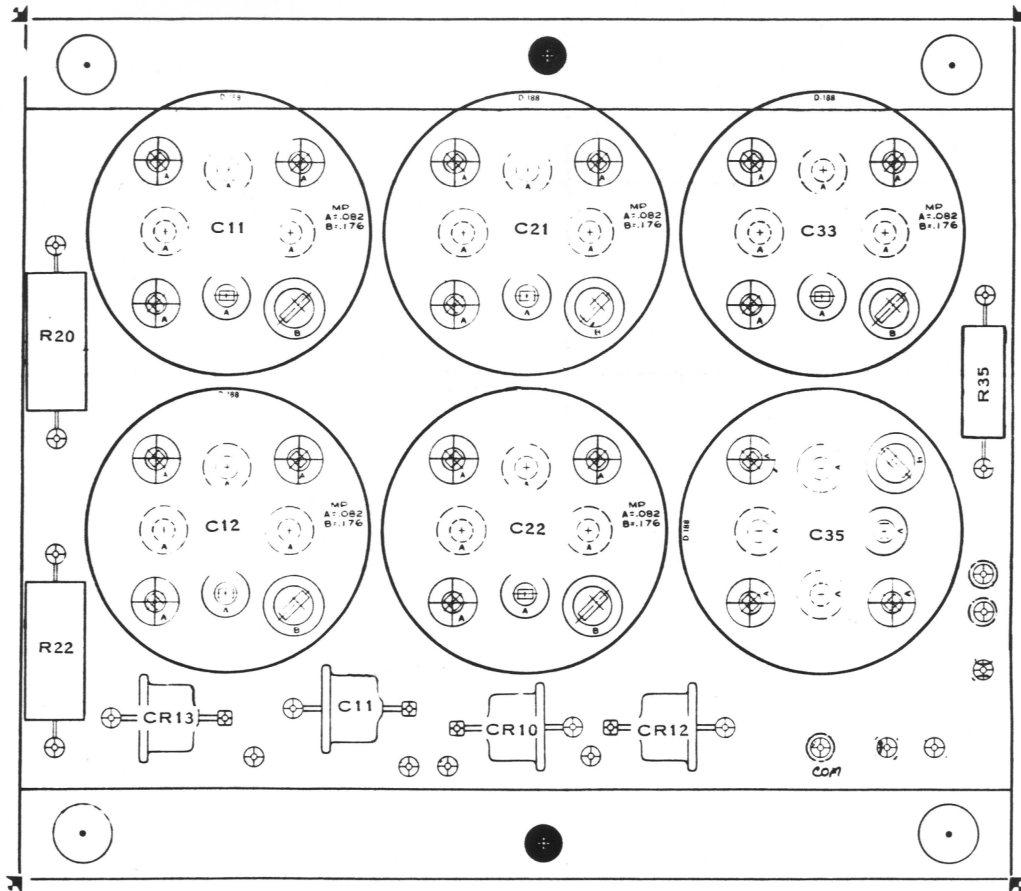
POWER CORD CHANGES

The 1974 National Electrical Code permits the use of IEC (International Electrotechnical Commission) power cord color codes. As production permits, we are changing the entire Tektronix product line to comply with IEC power cord color code requirements. As a result, the power cord on Tektronix instruments may conform to either IEC or the older NEC requirements. The change consists of the following:

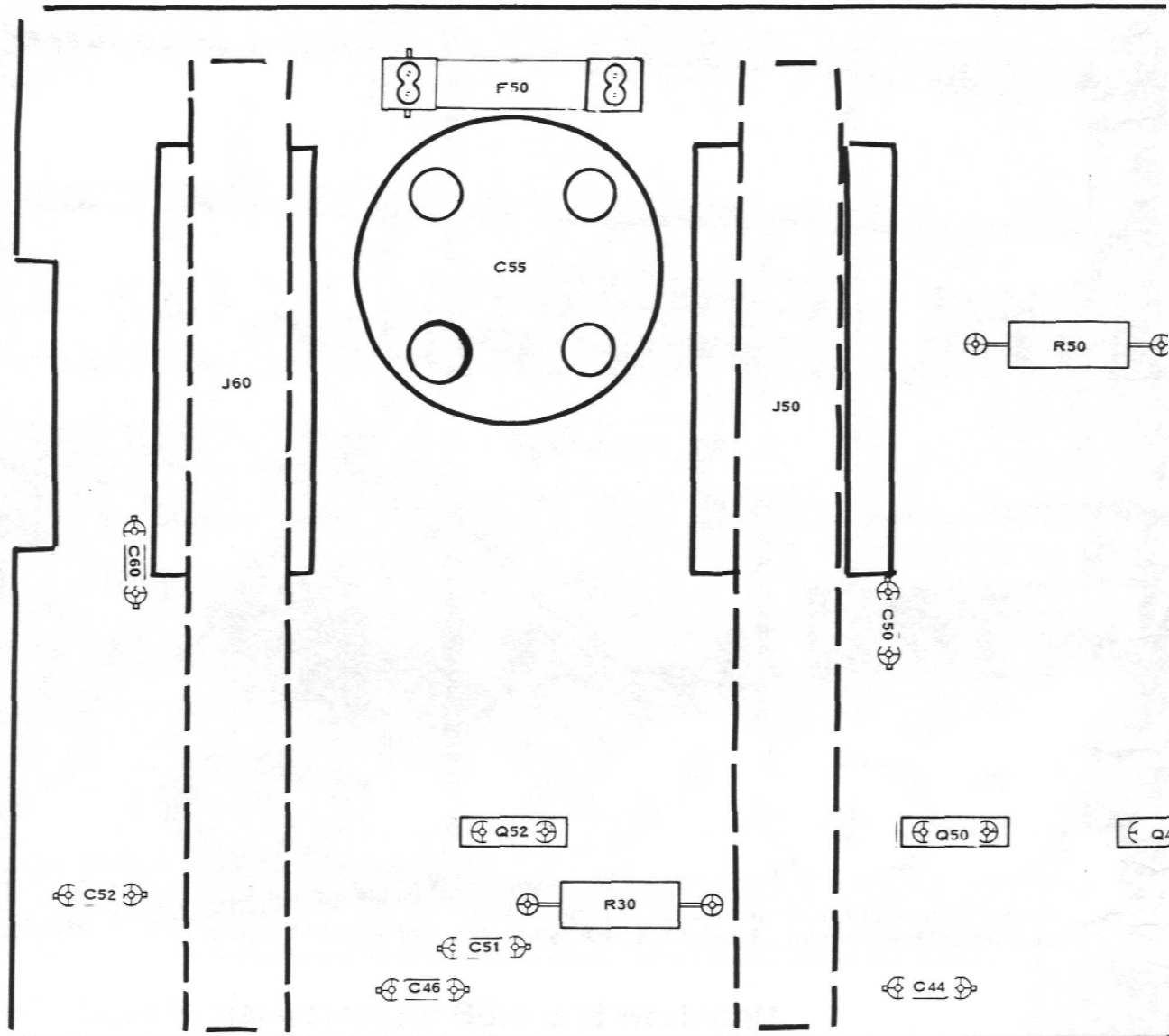
Conductor	NEC	IEC
Line	Black	Brown
Neutral	White	Light Blue*
Safety Earth	Green w/Yellow Stripe	Green w/Yellow Stripe

*Tinned copper conductor.

PARTS LOCATION GRID



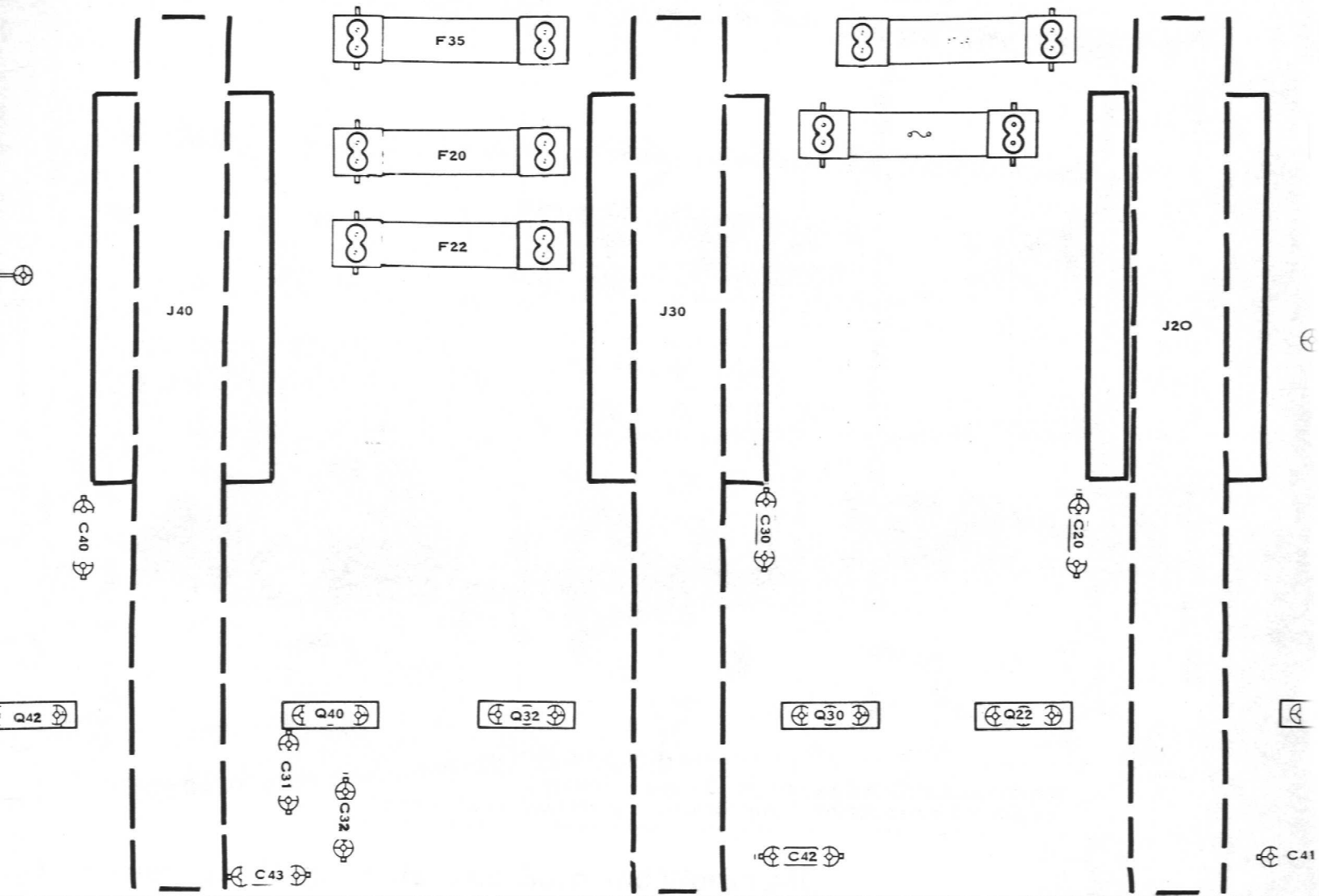
CKT NO	GRID LOC
C11	B2
C12	B3
C21	C2
C22	C3
C33	E2
C35	E3
CR10	C4
CR11	B4
CR12	D4
CR13	A4
R20	A2
R22	A4
R35	R3



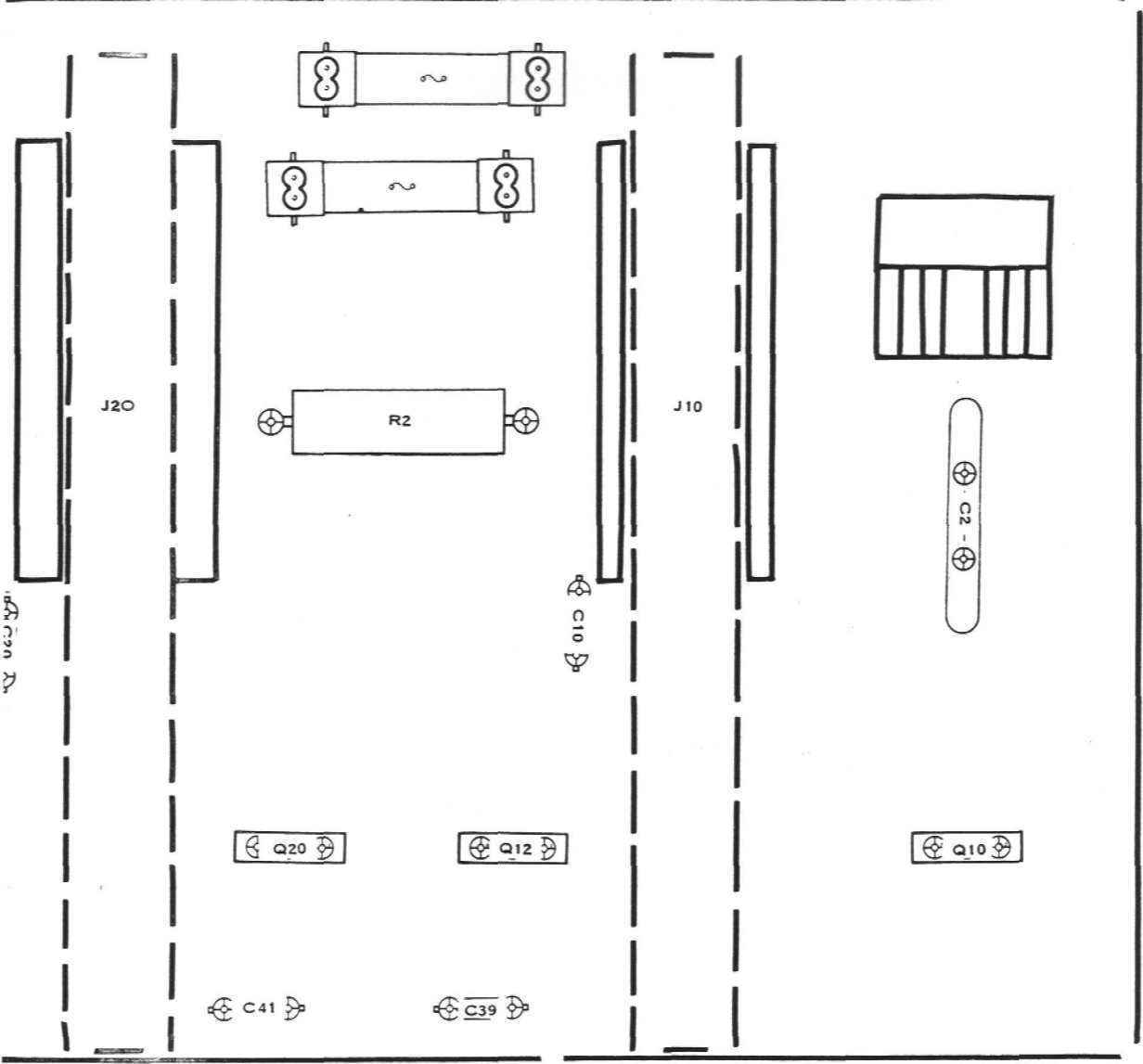
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CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C2	S3	F20	J2	Q40	I5
C10	Q4	F22	J2	Q42	G5
C20	N4	F35	J7	Q50	F5
C30	L4	F50	C7	Q52	C5
C31	I6				
C32	I6	J10	R3	R2	P3
C39	Q6	J20	O3	R30	D6
C40	H4	J30	K3	R50	G2
C41	O6	J40	H3		
C42	L6	J50	E3		
C43	I6	J60	B3		
C44	F6				
C46	C6	Q10	S5		
C50	F4	Q12	Q5		
C51	C6	Q20	P5		
C52	A6	Q22	N5		
C55	C2	Q30	L5		
C60	A4	Q32	J5		

PARTS LOCATION GRID



+

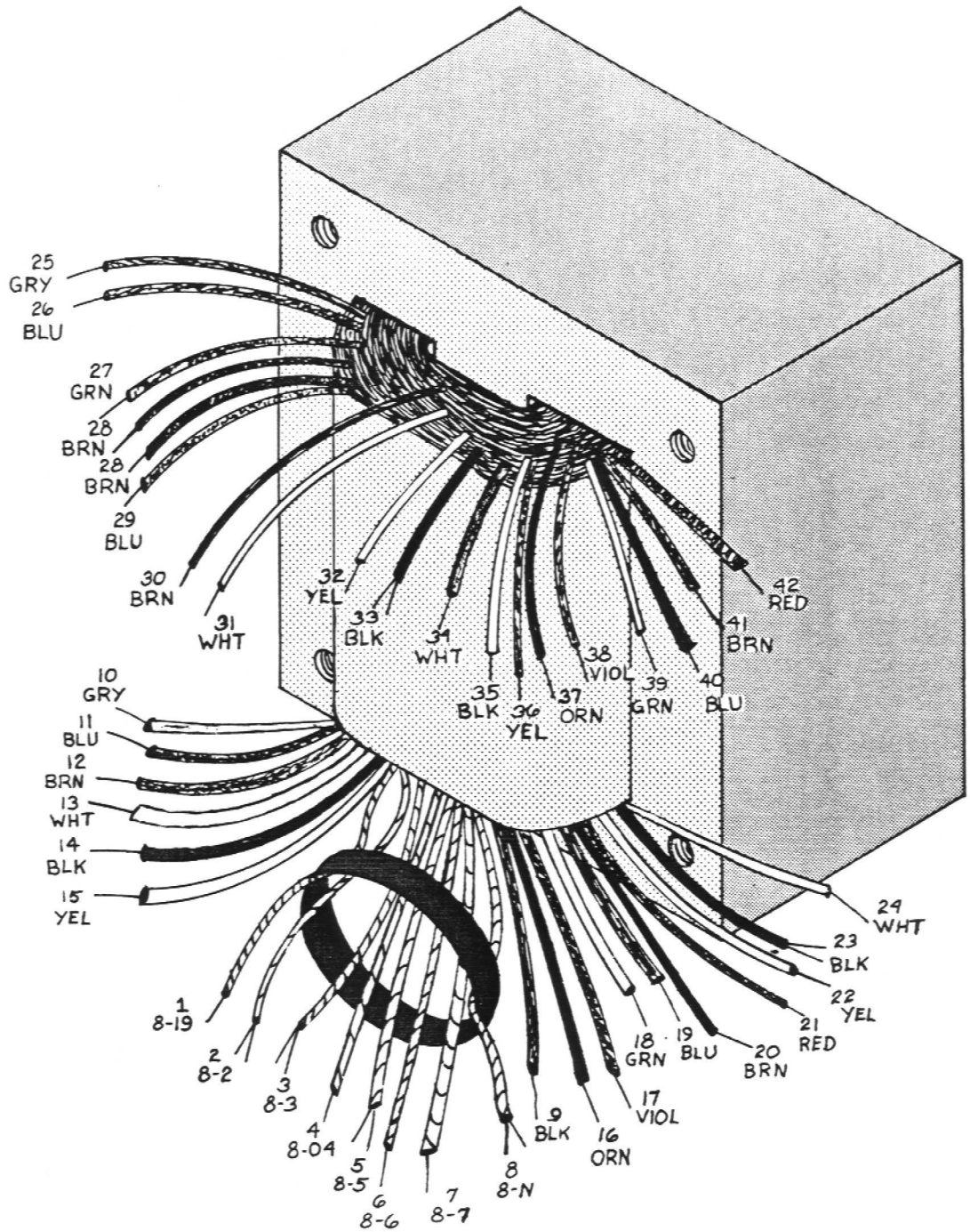


diffusion

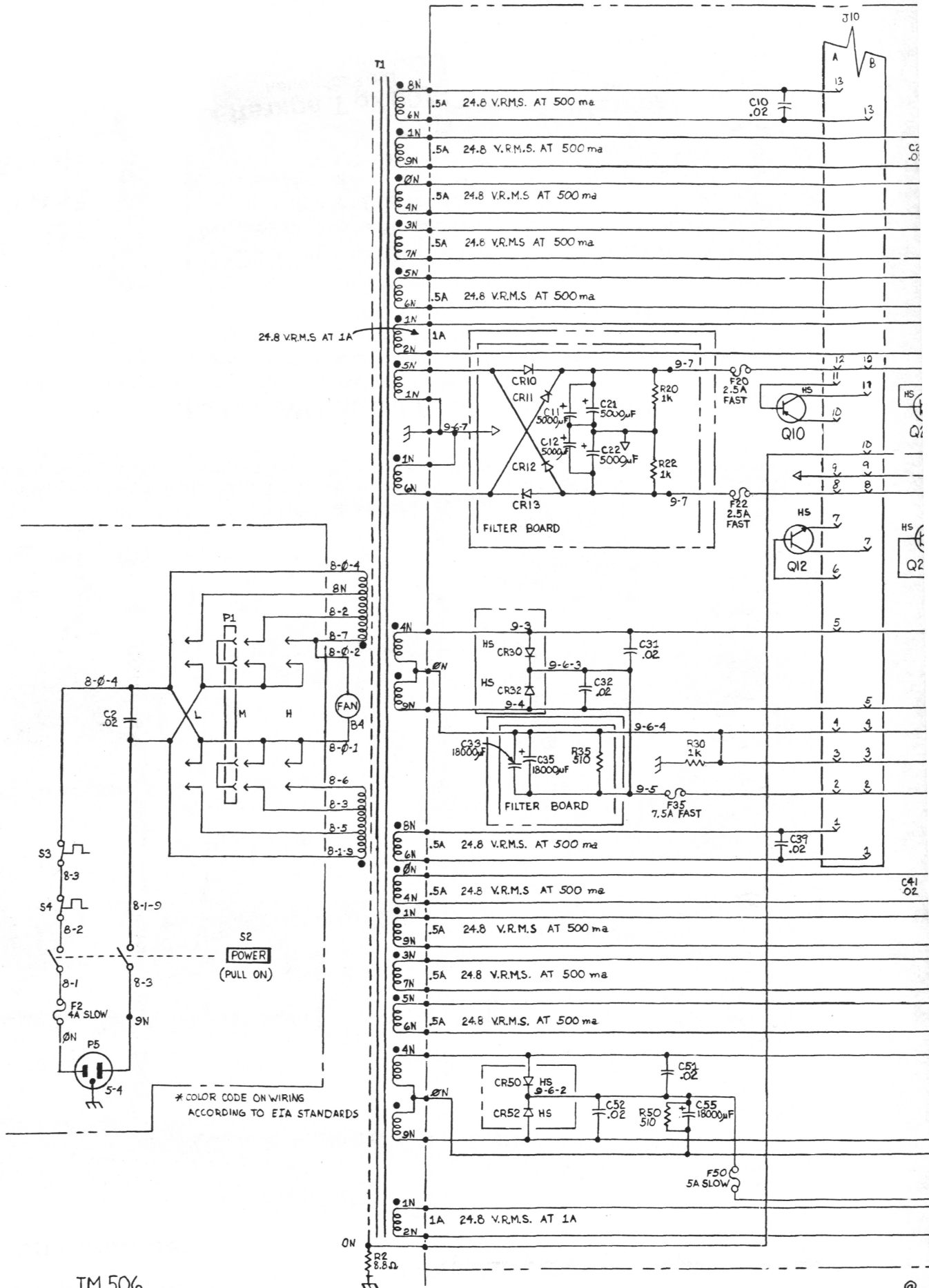
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POWER MODULE INTERFACE PIN ASSIGNMENTS

	A		B	
	28		28	
	27		27	
	26		26	
	25		25	
	24		24	
	23		23	
No permanent I/O assignments. Refer to plug-in module manuals for specific assignments.	22		22	No permanent I/O assignments. Refer to plug-in module manuals for specific assignments.
	21		21	
	20		20	
	19		19	
	18		18	
	17		17	
	16		16	
	15		15	
	14		14	
25 VAC winding.	13		13	25 VAC winding.
+33.5 V filtered DC.	12		12	+33.5 V filtered DC.
Base lead of PNP Series-Pass.	11		11	Collector lead of PNP Series-Pass.
Emitter lead of PNP Series-Pass.	10		10	Transformer shield lead.
±33.5 V common return.	9		9	±33.5 V common return.
-33.5 V filtered DC.	8		8	-33.5 V filtered DC.
Emitter lead of NPN Series-Pass.	7		7	Collector lead of NPN Series-Pass.
Base lead of NPN Series-Pass.	6		6	No connection.
18.5 VAC winding.	5		5	18.5 VAC winding.
+12 V common return.	4		4	+12 V common return.
+12 V common return.	3		3	+12 V common return.
+11.5 V filtered DC.	2		2	+12 V filtered DC.
25 VAC winding.	1		1	25 VAC winding.
	A		B	



Transformer wire colors.



* COLOR CODE ON WIRING
ACCORDING TO EIA STANDARDS

