



**PLEASE CHECK FOR CHANGE INFORMATION
AT THE REAR OF THIS MANUAL.**


TM 5006A
Power
Module

Tektronix, Inc.
P.O. Box 500
Beaverton, OR 97077
070-7614-02
Product Group 75

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INSTRUMENT SERIAL NUMBERS

Each instrument manufactured by Tektronix has a serial number on a panel insert, tag, or stamped on the chassis. The letter at the beginning of the serial number designates the country of manufacture. The last five digits of the serial number are assigned sequentially and are unique to each instrument. Those manufactured in the United States have six unique digits. The country of manufacture is identified as follows:

| | |
|---------|---|
| B010000 | Tektronix, Inc., Beaverton, Oregon, USA |
| J300000 | Sony/Tektronix, Japan |
| H700000 | Tektronix Holland, NV, Heerenveen, The Netherlands |

Instruments manufactured for Tektronix by external vendors outside the United States are assigned a two-digit alpha code to identify the country of manufacture (e.g., JP for Japan, HK for Hong Kong, IL for Israel, etc.).

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WARNING

THE FOLLOWING SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED PERSONNEL ONLY. TO AVOID PERSONAL INJURY, DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.

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OPERATORS SAFETY SUMMARY

The general safety information in this part of the summary is for both operating and servicing personnel. Specific warnings and cautions will be found throughout the manual where they apply, but may not appear in this summary.

TERMS

In This Manual

CAUTION statements identify conditions or practices that could result in damage to the equipment or other property.

WARNING statements identify conditions or practices that could result in personal injury or loss of life.

As Marked on Equipment

CAUTION indicates a personal injury hazard not immediately accessible as one reads the marking, or a hazard to property including the equipment itself.

DANGER indicates a personal injury hazard immediately accessible as one reads the marking.

SYMBOLS

In This Manual



This symbol indicates where applicable cautionary or other information is to be found.

As Marked on Equipment



DANGER—High voltage.



Protective ground (earth) terminal.



ATTENTION—refer to manual.

Power Source

This product is intended to operate from a power source that will not apply more than 250 volts rms between the supply conductors or between either supply conductor and ground. A protective ground connection by way of the grounding conductor in the power cord is essential for safe operation.

Grounding the Product

This product is grounded through the grounding conductor of the power cord. To avoid electrical shock, plug the power cord into a properly wired receptacle before connecting to the product input or output terminals. A protective ground connection by way of the grounding conductor in the power cord is essential for safe operation.

Danger Arising from Loss of Ground

Upon loss of the protective-ground connection, all accessible conductive parts can render an electric shock.

Use the Proper Power Cord

Use only the power cord and connector specified for your product. Use only a power cord that is in good condition. See Operating Instructions section of the Instruction Manual for power cord configuration. Refer cord and connector changes to qualified service personnel.

Use the Proper Fuse

To avoid fire hazard, use only the fuse of correct type, voltage rating and current rating as specified in the parts list of this manual. Refer fuse replacement to qualified service personnel.

Do Not Operate in Explosive Atmospheres

To avoid explosion, do not operate this product in an explosive atmosphere, unless it has been specifically certified for such operation.

Do Not Operate Without Covers

To avoid personal injury, do not operate this product without covers or panels installed.

SERVICE SAFETY SUMMARY

FOR QUALIFIED SERVICE PERSONNEL ONLY
Refer also to the preceding Operator Safety Summary.

Do Not Service Alone

Do not perform internal service or adjustment of this product unless another person capable of rendering first aid and resuscitation is present.

Use Care When Servicing With Power On

Dangerous voltages may exist at several points in this product. To avoid personal injury, do not touch exposed connections and components while power is on.

Disconnect power before removing protective panels, soldering, or replacing components.

Power Source

This product is intended to operate from a power source that will not apply more than 250 volts rms between the supply conductor and ground. A protective ground connection by way of the grounding conductor in the power cord is essential for safe operation.

SPECIFICATION

INTRODUCTION

The TEKTRONIX TM 5006A Power Module is a six-compartment mainframe for the TM 500 and TM 5000-Series of modular instrumentation. It accepts up to six independently functional plug-in modules to form a compact, versatile and low cost instrumentation system. The TM 5006A is a basic power source for plug-in modules of the TM 500/TM 5000 Series family. It provides unregulated dc and ac supplies and nondedicated power transistors for plug-in usage.

Accessories

Refer to the accessories list in the Replaceable Mechanical Parts list at the rear of this manual for part numbers.

Standard Accessories

- 1 — Instruction Manual
- 1 — Power Cord (US)

Optional Accessories

- 6 — Plug-in retainers
- 6 — Screws, 8-32 X 0.875
- 1 — Screwdriver bit, special

Options

Refer to the Options section of this manual for information on instrument options.

Performance Conditions

The values listed below are valid only when the instrument is operated at an ambient temperature between 0° C and +50° C.

ELECTRICAL CHARACTERISTICS

Table 1-1
Voltage Supplies

| Characteristics | Performance Requirements | Supplemental Information |
|---|---------------------------|--|
| +25 V dc | | |
| Tolerance ^a | +23.1 V to +29.9 V | |
| PARD ^b (Periodic and Random Deviation) | | ≤2.5 V pk-to-pk |
| Maximum Load | | 1 ampere per compartment |
| Maximum Load di/dt | | 10 mA/μs |
| -25 V dc | | |
| Tolerance ^a | -23.1 V to -29.9 V | |
| PARD ^b | | ≤2.5 V pk-to-pk |
| Maximum Load | | 1 ampere per compartment |
| Maximum Load di/dt | | 10 mA/μs |
| +8.2 V dc | | |
| Tolerance ^a | +7.6 V to +8.5 V | |
| PARD ^b | | ≤600 mV pk-to-pk |
| Maximum Load | | |
| Standard Compartment | 3 amperes per compartment | |
| High Power Compartment | 3 amperes per compartment | |
| Maximum Load di/dt | | 20 mA/μs |
| 25 V ac (2 each compartment) | | |
| Range | | 25.0 V rms +10%, -15% floating |
| Maximum Load | | |
| Standard compartment | | 1 ampere rms per winding |
| High Power Compartment | | 2.5 ampere per winding |
| Maximum Floating Voltage | | 350 V peak from chassis ground |
| 17.5 V ac | | |
| Range | | 20.5 V rms +10%, -20% with grounded center tap |
| Maximum Load | | 350 mA per compartment |
| MAXIMUM PLUG-IN POWER DRAWN FROM MAINFRAME ^b | | |
| Standard Compartment | | 30 W dc or 50 VA ac ^c |
| High Power Compartment | | 30 W dc or 125 VA ac ^c |

^aWorst case; low line with full load and high line with no load. These limits include PARD.

^bPeriodic and Random Deviation. See National Electrical Manufacturers Association (NEMA) Standards Publication PY1-1972.

^cCombined power draw sharing limits

**Table 1-2
Total Power Draw From Mainframe**

| Characteristics | Performance Requirements | Supplemental Information |
|--|--------------------------|--|
| COMBINED POWER DRAWN SHARING LIMITATION ^d | | |
| Standard Compartment | | $V_{A_{dc}} + 2.67 \text{ (watts } dc) \leq 100$ |
| High Power Compartment | | $V_{A_{dc}} + 2.67 \text{ (watts } dc) \leq 150$ |
| Combined Total All Compartments Sharing Limitation | | $V_{A_{dc}} + 2.67 \text{ (watts } dc) \leq 540$ |

^dAt nominal line voltage.

**Table 1-3
Series Pass Transistors**

| Characteristics | Performance Requirements | Supplemental Information |
|--------------------------|--------------------------|--------------------------|
| TYPE | | One each NPN or PNP |
| MAXIMUM DISSIPATION | | |
| Standard Compartment | | 10 W each, 20 W total |
| High Power compartment | | 30 W each, 50 W total |
| MAXIMUM FLOATING VOLTAGE | | 350 V peak |

**Table 1-4
Source Power Requirements**

| Characteristics | Performance Requirements | Supplemental Information |
|---------------------------|--------------------------|--|
| VOLTAGE RANGES | | Selectable 100 V, 120 V, 220 V, and 240 V nominal line $\pm 10\%$ (250 V maximum on 240 V range) |
| LINE FREQUENCY | | 48 Hz to 66 Hz |
| MAXIMUM POWER CONSUMPTION | | Approximately 650 W |
| FUSE DATA | | |
| 100 V, 120 V Ranges | | 6 A, 3 AG fast blow |
| 200 V, 240 V Ranges | | 4 A, 3 AG fast blow |

**Table 1-5
Miscellaneous**

| Characteristics | Performance Requirements | Supplemental Requirements |
|---|--------------------------|---------------------------|
| MAXIMUM RECOMMENDED PLUG-IN POWER DISSIPATION | | |
| One Wide | | 15 watts |
| Two wide | | 35 watts |

PHYSICAL CHARACTERISTICS

**Table 1-6
Environmental^b**

| Characteristics | Supplemental Information |
|-----------------------------|--|
| TEMPERATURE | Meets MIL-T-28800D, class 5. |
| Operating ^a | 0° C to +50° C |
| Nonoperating | -55° C to +75° C |
| HUMIDITY | 45-95% RH for 5 days cycled to +50° C. Exceeds MIL-T-28800D, class 5. |
| ALTITUDE | Exceeds MIL-T-28800D, class 5. |
| Operating ^a | 4.6 km (15,000 ft) |
| Nonoperating | 15 km (50,000 ft) |
| VIBRATION ^c | 0.38 mm (0.015"), 5 Hz to 55 Hz, 75 minutes. Exceeds MIL-T-28800D, class 5. |
| SHOCK ^c | 30 g's (1/2 sine), 11 ms, 18 shocks. Meets MIL-T-28800D, class 5. |
| BENCH HANDLING ^c | 45°, 4", or equilibrium, whichever occurs first. Meets MIL-T-28800D, class 5. |
| TRANSPORTATION ^d | Qualified under National Safe Transit Association Preshipment Test Procedures 1A-B-1 and 1A-B-2. |
| EMC | Electro-mechanical compatibility within limits of F.C.C. Regulations, Part 15, Subpart J, Class A. |

^aWith plug-ins. Some plug-ins require additional limitations.

^bSystem environmental specification subject to individual plug-in specifications.

^cWith mechanical load of 19 lbs. ±1 lb. evenly distributed. Three two-wide plug-ins, each weighing 6 1/3 lbs. ±1/3 lb. with two rear support pins and one rear interface ECB. Requires retainer clips.

^dWithout mechanical load (plug-ins).

**Table 1-7
Mechanical**

| Characteristics | Supplemental Information |
|-------------------------------------|---------------------------------|
| NOMINAL WEIGHT (without plug-in) | 32.0 lbs (14.5 kg) |
| OVERALL DIMENSIONS | |
| Height | 193.8 mm (7.63 inches) |
| Width | 444.73 mm (17.509 inches) |
| Length | 476 mm (18.74 inches) |

OPERATING INSTRUCTIONS

PREPARATION

This section of the manual contains instructions on preparing the power module for use, and installing plug-in modules.



Power Source

The TM 5006A 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.

A power cord with appropriate plug configuration is supplied with each power module. If you require a power cord other than the one supplied, refer to Table 2-1, Power-Cord and Plug Identification.

Power Usage/Loading Considerations

The TM 5006A may require up to 540 watts at the upper limits of high line voltage ranges. Actual power consumption depends on the particular plug-in combination and operating modes selected at any one time.

The power capability of the TM 5006A can best be used by carefully planning the plug-in configuration, the external loads, and the resulting power distributions. Optimum conditions may be obtained by:

1. Having equal loads in all compartments.
2. Dissipating as much power as possible in the external loads.
3. Operating the system in an ambient temperature near +25° C.

Each plug-in is provided access to a pair of heat-sinked, series-pass transistors, one NPN and the other PNP. These transistors enable the plug-in to operate in power ranges not possible if the power were to be dissipated within the plug-ins.

Fuse Replacement

To check or replace a fuse, perform the following:

1. Set the power switch to off, and disconnect the power cord from the instrument.
2. See Figure 2-1. To check or replace the main power fuse, press downward on the tab located on the Line Voltage Selector just above the power cord receptacle.

The door will open, and the fuse can be inspected or replaced.

3. Close the door to reconnect the fuse.

Line Voltage Selection

The line voltage selector is part of the line cord plug assembly, located on the rear of the power module. Verify that the voltage shown in the selector window is correct for the line voltage available.

If the displayed voltage selection is incorrect or the fuse needs replacement, perform the following procedure. Refer to Figure 2-1. (The voltage is indicated by the red-marked window.)

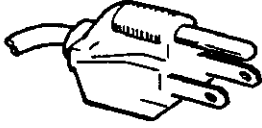
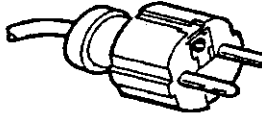

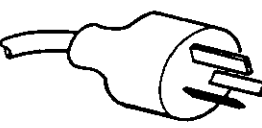
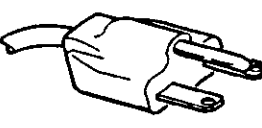
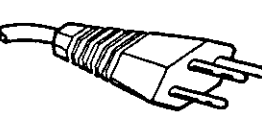
1. Assure that the power module power switch is turned off and the line cord is not plugged into the line voltage connector.
2. See Figure 2-1. Press downward on the tab located on the Line Voltage Selector just above the power cord receptacle. This opens the selector door.
3. Using a small screwdriver, gently pry, first on one edge, then the other, to remove the line selector card. This etched circuit card is approximately 3/4" square and 1/8" thick.
4. Note that on each edge of the selector card there is a red mark, but that the mark is in a different position on the edge.
5. Orient the selector card for the desired range, and press the card into its receptacle.
6. Ensure that the installed fuse matches the range selected.
7. Close the selector door. The proper range should show through the correct window.
8. Reconnect the power cord. The TM 5006A is ready for use.

Operating Temperatures

The TM 5006A can be operated in an ambient air temperature of 0° C to +50° C.

Since the TM 5006A can be stored in temperatures between -55° C and +75° C, allow the instrument's chassis to return to within the operating limits before applying power.

**Table 2-1
Power-cord and Plug Identification**

| Plug Configuration | Usage (Nominal Voltage/Max Current) | Reference Standards & Certification | Option Number |
|---|--|--|---------------|
|  | North American 120 V/6A | ANSI ¹ C73.11 NEMA ² 5-15-P IEC ³ 83 UL ¹⁰ CSA ¹¹ | Standard |
|  | European 220 V/6A | CEE ⁴ (7), II, IV, VII IEC ³ 83 VDE ⁸ SEMKO ⁹ | A1 |
|  | United Kingdom 240 V/6A | BSI ⁵ 1363 IEC ³ 83 | A2 |
|  | Australian 240 V/6A | AS ⁶ C112 ETSA ¹² | A3 |
|  | North American 250 V/10A | ANSI ¹ C73.20 NEMA ² 6-15-P IEC ³ 83 UL ¹⁰ CSA ¹¹ | A4 |
|  | Switzerland 220 V/6A, | SEV ⁷ | A5 |

¹ANSI—American National Standards Institute

²NEMA—National Electrical Manufacturer's Association

³IEC—International Electrotechnical Commission

⁴CEE—International Commission on Rules for the Approval of Electrical Equipment

⁵BSI—British Standards Institute

⁶AS—Standards Association of Australia

⁷SEV—Schweizerischer Elektrotechnischer Verein

⁸VDE—Verband Deutscher Elektrotechniker

⁹SEMKO—Swedish Institute for Testing and Approval of Electrical Equipment

¹⁰UL—Underwriters Laboratories

¹¹CSA—Canadian Standards Association

¹²ETSA—Electricity Trust of South Australia

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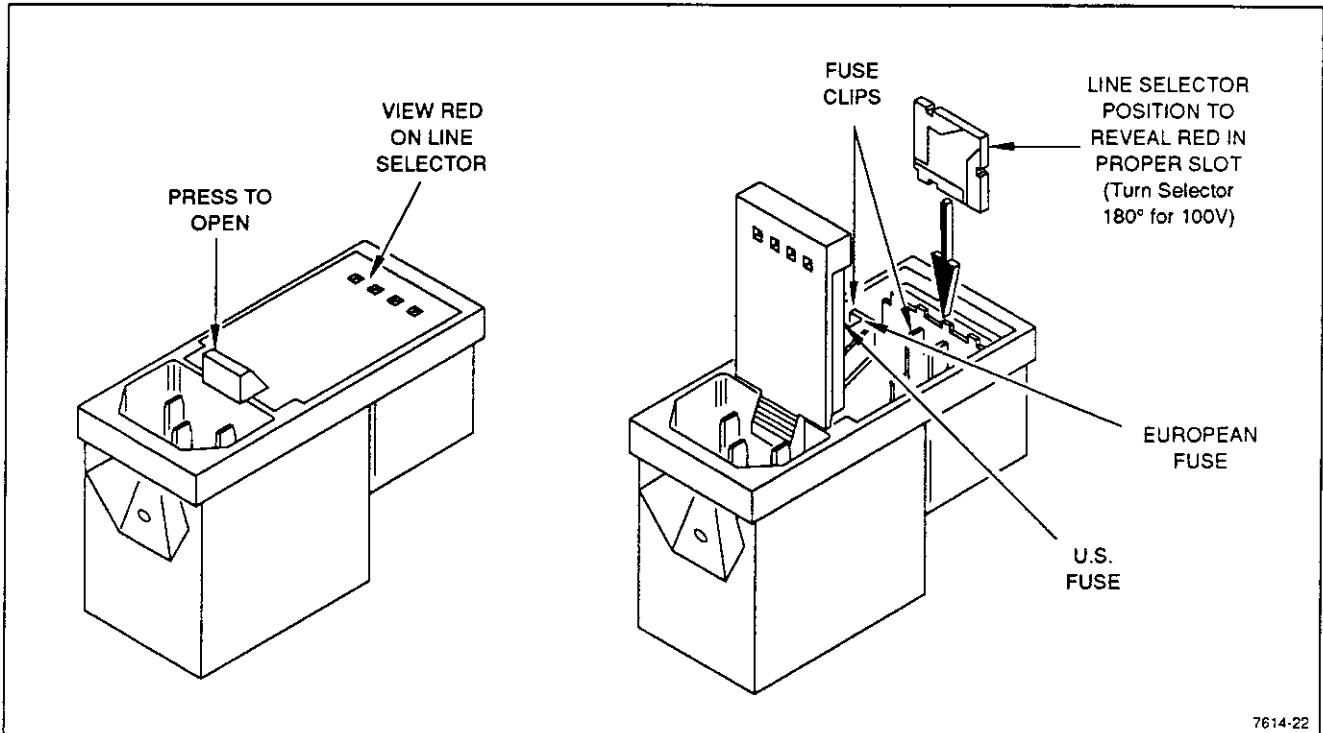


Fig. 2-1. Line voltage selection and main fuse replacement.

CAUTION

To assure proper cooling of all plug-in modules installed, the unused plug-in compartments must be covered with a blank plug-in.

partments to accept only members of that family, by installing a second barrier in the interface connector to match the modules slot location. An entire TM 5006A can be set up in this manner for specific work functions. For extra barriers, refer to the Replaceable Mechanical Parts list at the rear of this manual.

Family Compatibility

Mechanically, the TM 5000 plug-in modules are very similar to other Tektronix product families. However, they are not electrically compatible. Therefore, the TM 5006A interface has barriers on the mating connectors between pins 6 and 7 to ensure that incompatible modules cannot be inserted. Refer to Figure 2-11 at the end of this section. 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.

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 5006A user can select one or more com-

Cabling

CAUTION

Remove power cord before attempting cable installation.

For convenience, cabling from the front of the power module to the rear panel may be run through the air intake and cable raceway as shown in Fig. 2-3. To install this cabling first remove the access panel on the rear of the power module. See Fig. 2-2. Next remove the two bottom panel retainer screws and the bottom panel retainers. Slide the bottom panel out from the rear of the instrument. Pass the cable through the front air intake, across the bottom of the plug-in support rails and out the access panel. Replace the power module bottom cover.

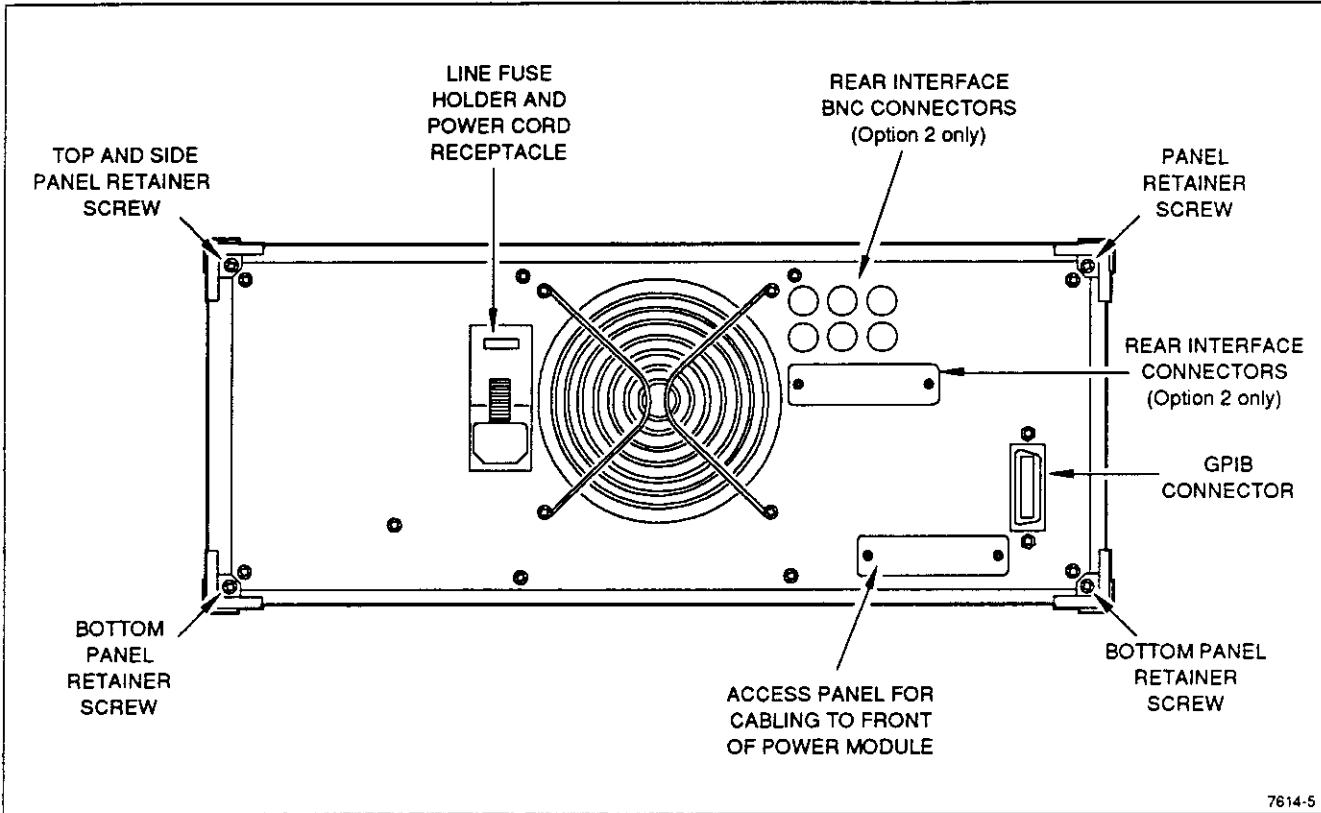


Fig. 2-2. TM 5006A rear panel.

CAUTION

To ensure proper cooling, do not operate the power module with any cover removed.

instrument below it. This is necessary to insure proper cooling. If the side panels have cooling holes, no special precautions are necessary.

If the rack has positive internal pressure for cooling purposes, the mainframes must have all compartments filled with plug-ins or blank front panels (available from Tektronix, Inc.) must be installed in the unused plug-in openings. If greater internal air flow is desired in a relatively highly pressurized rack, the grill opening at the bottom front of the TM 5006A may also be blocked.

Table Top Use

The power module may be operated with the front raised. To raise the front of the instrument extend the front bail.

Rack Dimensions. The TM 5006A, Option 10, is shipped from the factory ready for rack mounting. Figure 2-4 shows major dimensions. Figure 2-5 shows the spring-latch cutout in the stationary section.

Rear Panel

The rear panel has a connector mounting plate for bnc and multi-pin connector mountings. Customer-installed connectors and wiring (Option 02) can provide external access to the interface. This feature makes the TM 5000-Series Modular Instrumentation System very flexible in bench-top or rackmounted systems.

NOTE

The slide tracks supplied with the TM 5006A Option 10, have holes in the stationary sections to accommodate the spring latches. The TM 5006A, Option 10 should not be mounted with rack slides that do not have the rack-latch holes.

Rackmounting Instructions

Cooling. Examine the side panels of the TM 5006A, Option 10, power module. If there are no cooling holes in the side panels, at least 1-inch clearance must be maintained between the bottom of the power module and the

The TM 5006A, Option 10, fits the standard 19-inch side cabinet, rack or console. Spacing inside the front rails must be at least 17 3/4 inches. This allows clearance for the

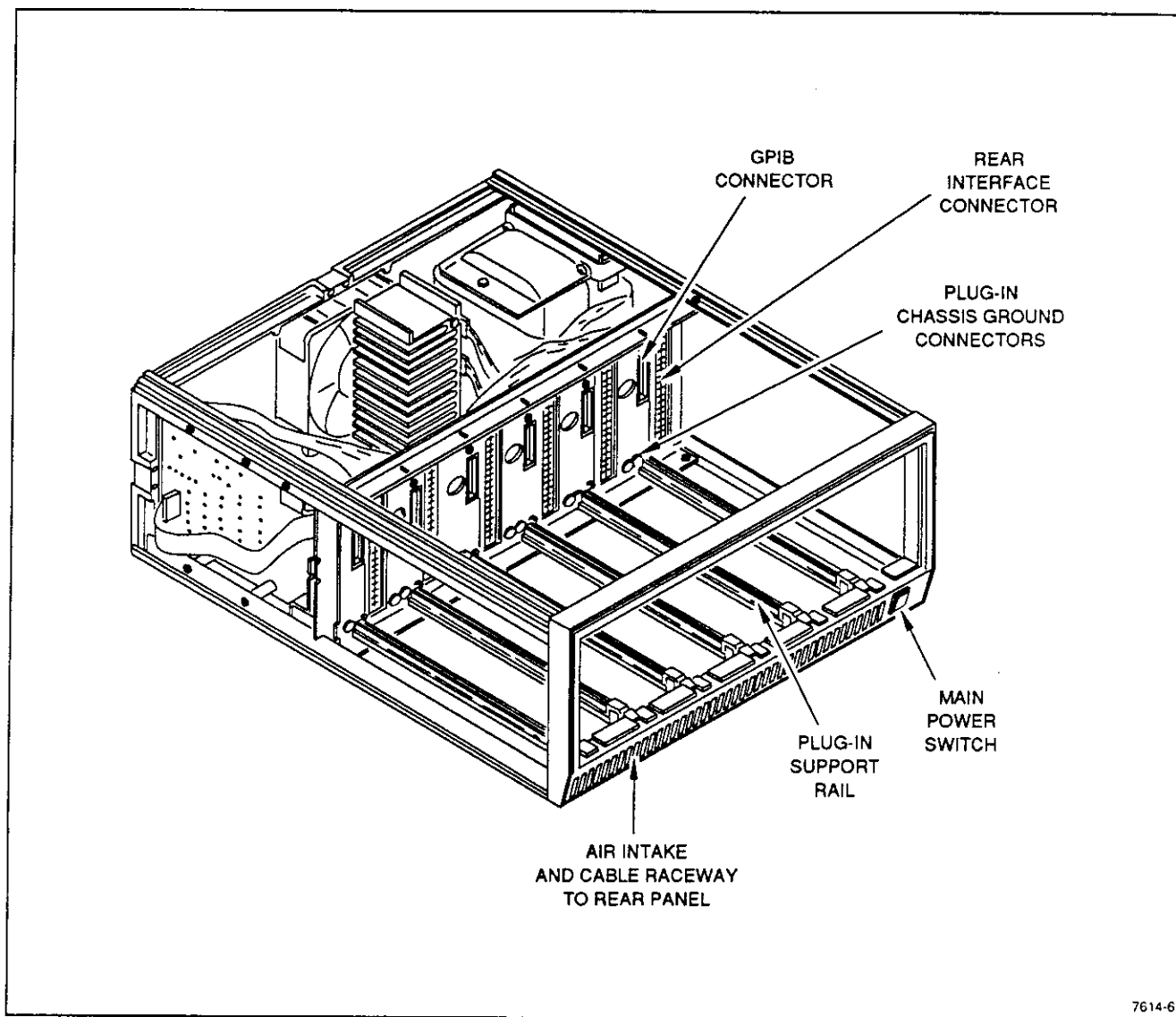


Fig. 2-3. TM 5006A front diagonal view.

stationary section of the slide-out tracks to permit the assembly to slide freely on the slid-out tracks.

The slide-out tracks, with existing hardware supplied, will conveniently mount in any rack with the front and rear rails spaced from 10 1/2 inches to 24 1/2 inches.

Mounting the Slide Tracks. Locate the proper rack holes for mounting as shown in Figure 2-6. Notice that the hole spacing in the racks varies. When installing the slides in the EIA type racks, make certain the slides are attached to the 1/2-inch spaced holes. Figure 2-6 also shows details for determining position of the slides in the rack. Mount the rails using enclosed hardware as shown in Figures 2-7 and 2-8. Figures 2-8B and C show rail-mounting details for deep and shallow racks. Make sure the stationary sections

are horizontally aligned so they are level and parallel with each other.

WARNING

During rackmount installation, interchanging the left and right slide-out track assemblies defeats the extension stop (safety latch) feature of the tracks. Equipment could, when extended, come out of the slides and fall from the rack, possibly causing personal and equipment damage.

When mounting the supplied slide-out tracks, inspect both assemblies to find the LH (left hand) and RH (right hand) designations to determine correct

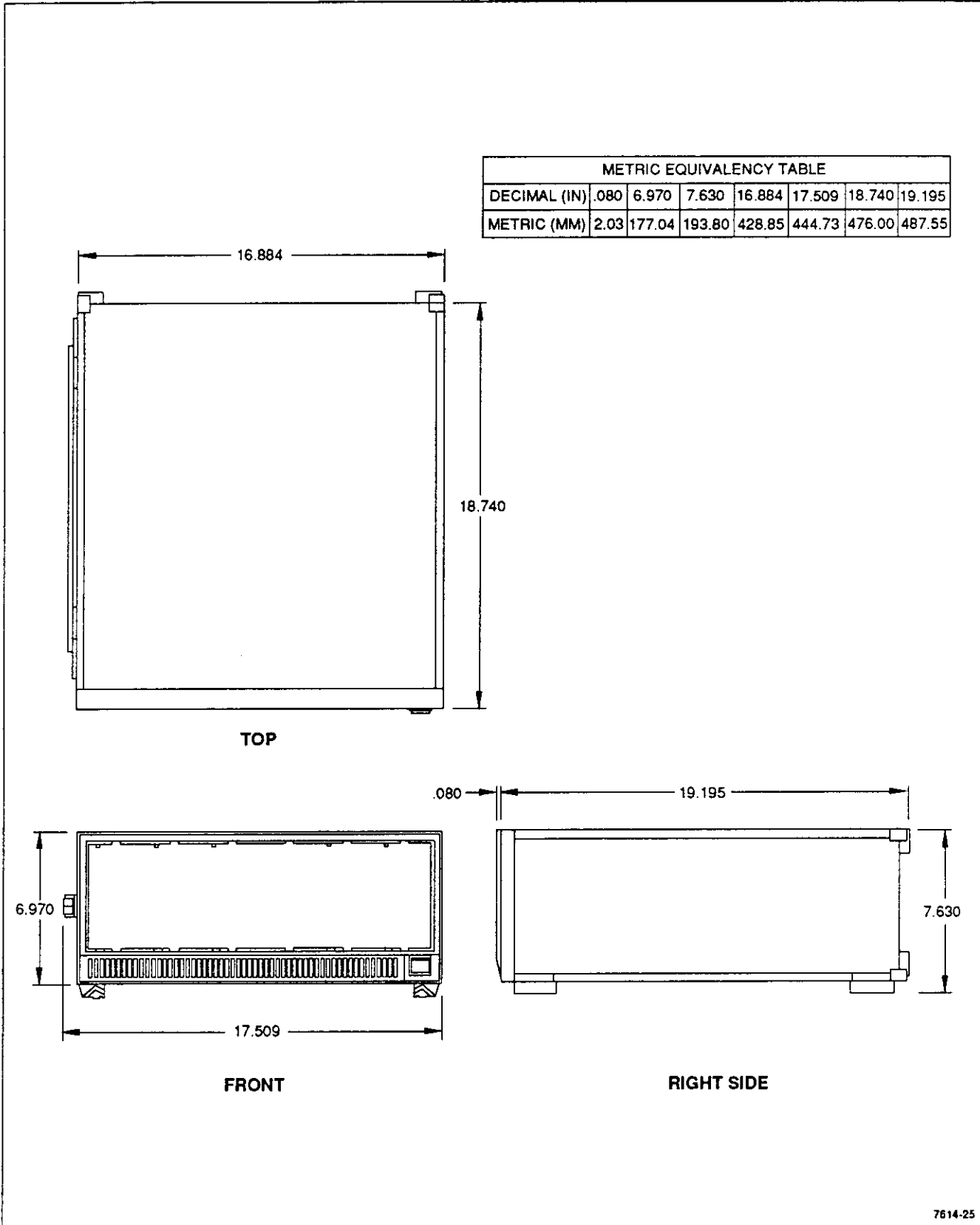


Fig. 2-4. TM 5006A overall dimensions.

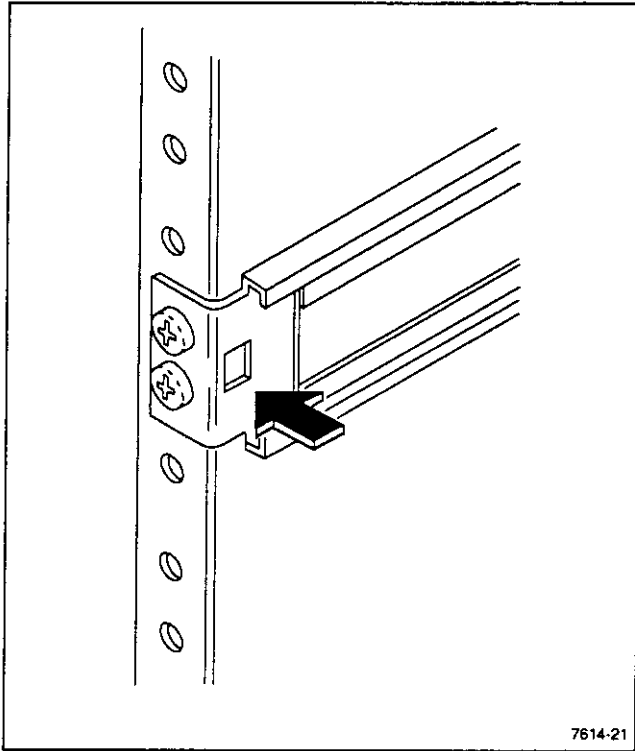


Fig. 2-5. Rack latch hole.

placement. Install the LH assembly to your left side as you face the front of the rack and install the RH assembly to your right side. Refer to the rackmounting instructions in this manual for complete information.

Installing the TM 5006A, Option 10, in the Rack Slides. Make certain all plug-ins are removed from the power module. Pull the slide-out track intermediate sections out as far as they will go. See Figure 2-9. Insert the instrument chassis sections into the intermediate section and push the instrument forward until the instrument chassis section locks into the intermediate section. Now press both buttons protruding from the stop-latch holes in the intermediate sections while pushing the instrument. The instrument can now be pushed into the rack, cabinet, or console. The latches holding the intermediate sections to the stationary sections are automatically operated by the instrument as it is pushed into the rack or cabinet. The quick release latches automatically engage the rack-latch holes in the stationary sections of the rails as the instrument is pushed fully into the rack.

Removing the Instrument. Remove all plug-ins from power module. Unscrew the two thumb screws at the top of the front panel. Pull the rectangular latches on both sides of the front panel. Using the latches pull the instrument from the enclosure until the slide intermediate sections latch with the instrument sections and the stationary sections. The instrument is firmly held in this position. To completely remove the instrument, press both release-

latch buttons visible in the stop-latch holes and carefully slide the instrument from the rack or cabinet.

Rack Adjustments. After installing the instrument in the rack, binding in the rack slides may occur if the slides are not properly adjusted. Slide the instrument from the rack until the front panel is about 10 inches from the front of the rack. Slightly loosen the screws holding the right and left tracks to the front rails. Allow the tracks to seek their normal position. Retighten the screws and check the tracks for smooth operation by sliding the instrument in and out of the rack.

Rack Slide Maintenance. The slide-out racks do not require lubrication. The dark gray finish on the tracks is a permanent lubricative coating.

MODULE INSTALLATION



Turn the Power Module off before inserting plug-in modules; otherwise damage may occur to the plug-in circuitry.

NOTE

The DC 505, DC 505A and LA501W plug-ins are not compatible with this power module.

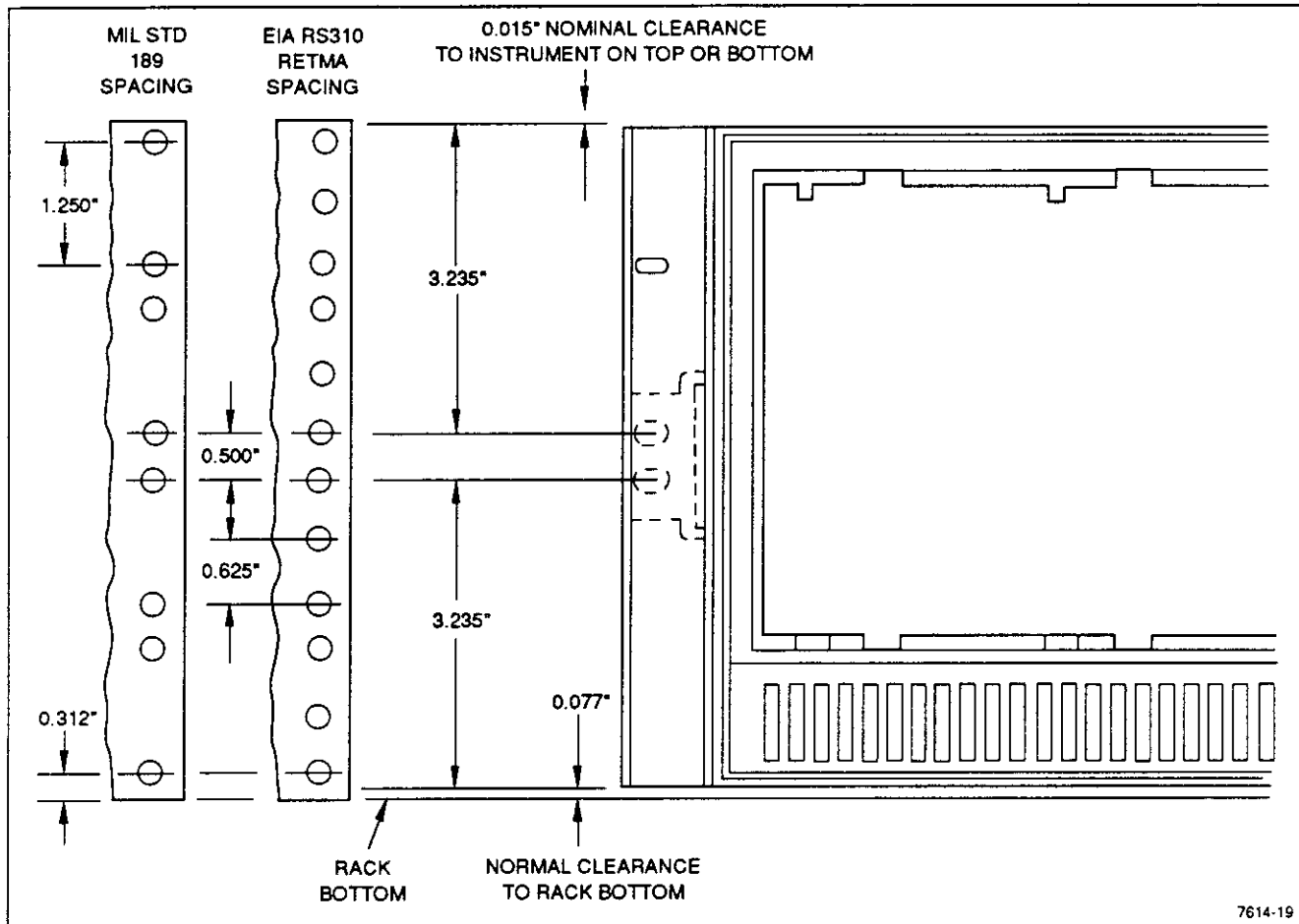
1. Check the location of the black plastic barrier key on the TM 5006A interconnecting jack of the selected power module compartment to ensure that its location matches the slot in the edge of the plug-in module's circuit board. If it does not match, refer to qualified service personnel.

2. Align the plug-in module chassis with the upper and lower guides of the selected compartment (see Fig. 2-10). 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 release latch in the lower left corner of the plug-in module.)

Plug-In Retainer Clip Installation

The retainer clips, provided with the instrument, are used to ensure that an installed plug-in module cannot come out of the power module while it is being moved or transported. Note that plug-in modules cannot be removed or inserted with the retainer clips installed.

To install the retainer clips, elevate the front of the power module with the bail. Install the retainer as shown in Figure 2-10. A T-20 Torx bit is required.



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Fig. 2-6. Dimensions and positioning in standard rack.

Turn-On Procedure

After completing the power module preparation and plug-in module installation instructions, install the power cord and connect to the proper power outlet. Turn on the power switch on the rear of the power module.

Some plug-ins have independent power switches, usually labeled OUTPUT, that control application of mainframe power to the plug-in.

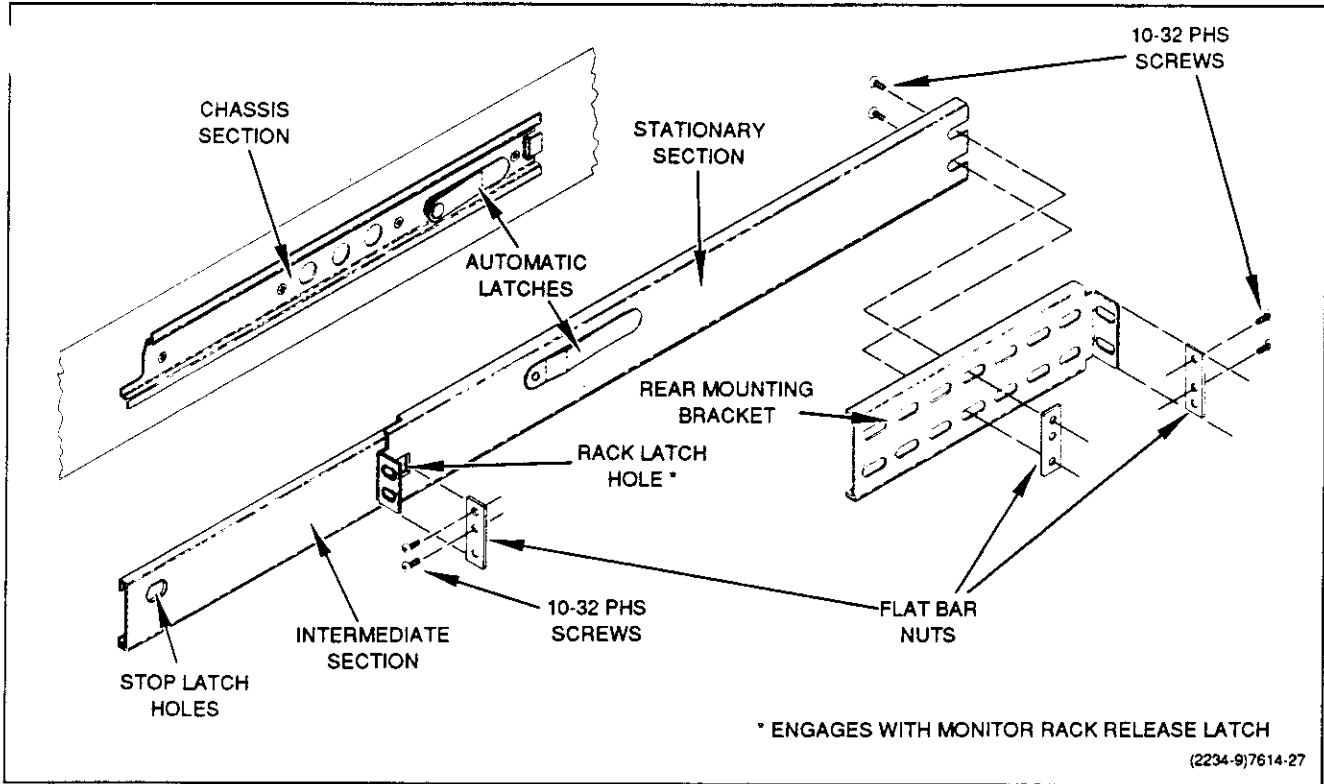


Fig. 2-7. Slide detail. Disgard bar nuts if rack is tapped.

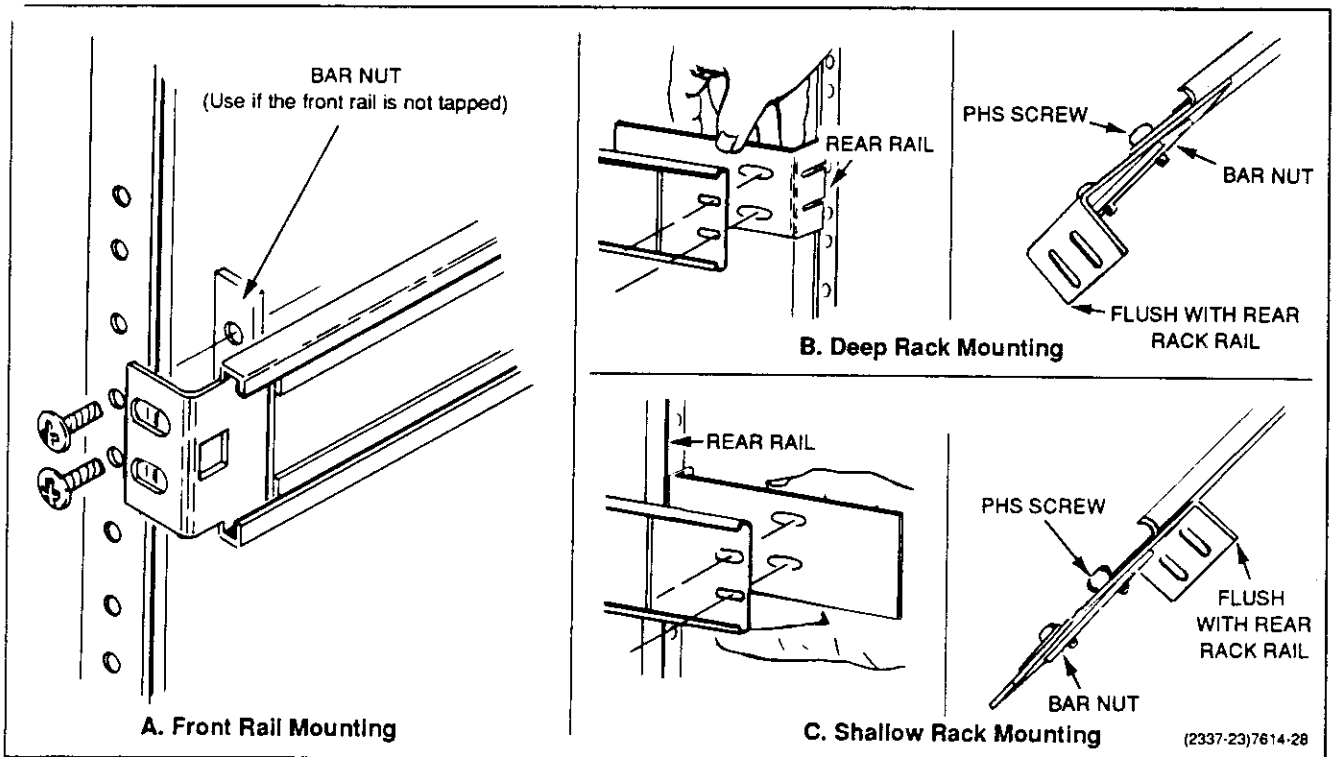


Fig. 2-8. Rackmounting slide details.

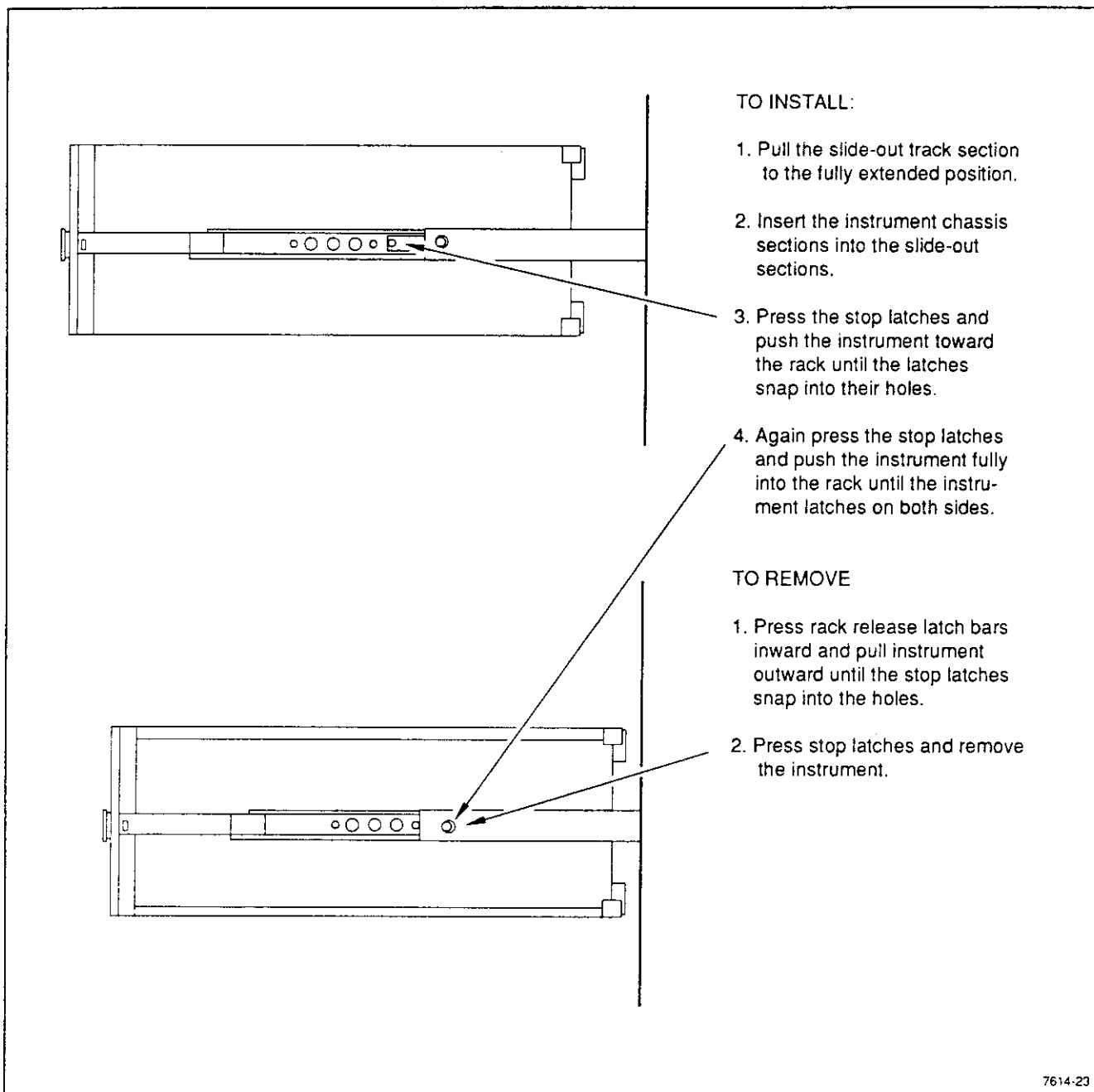
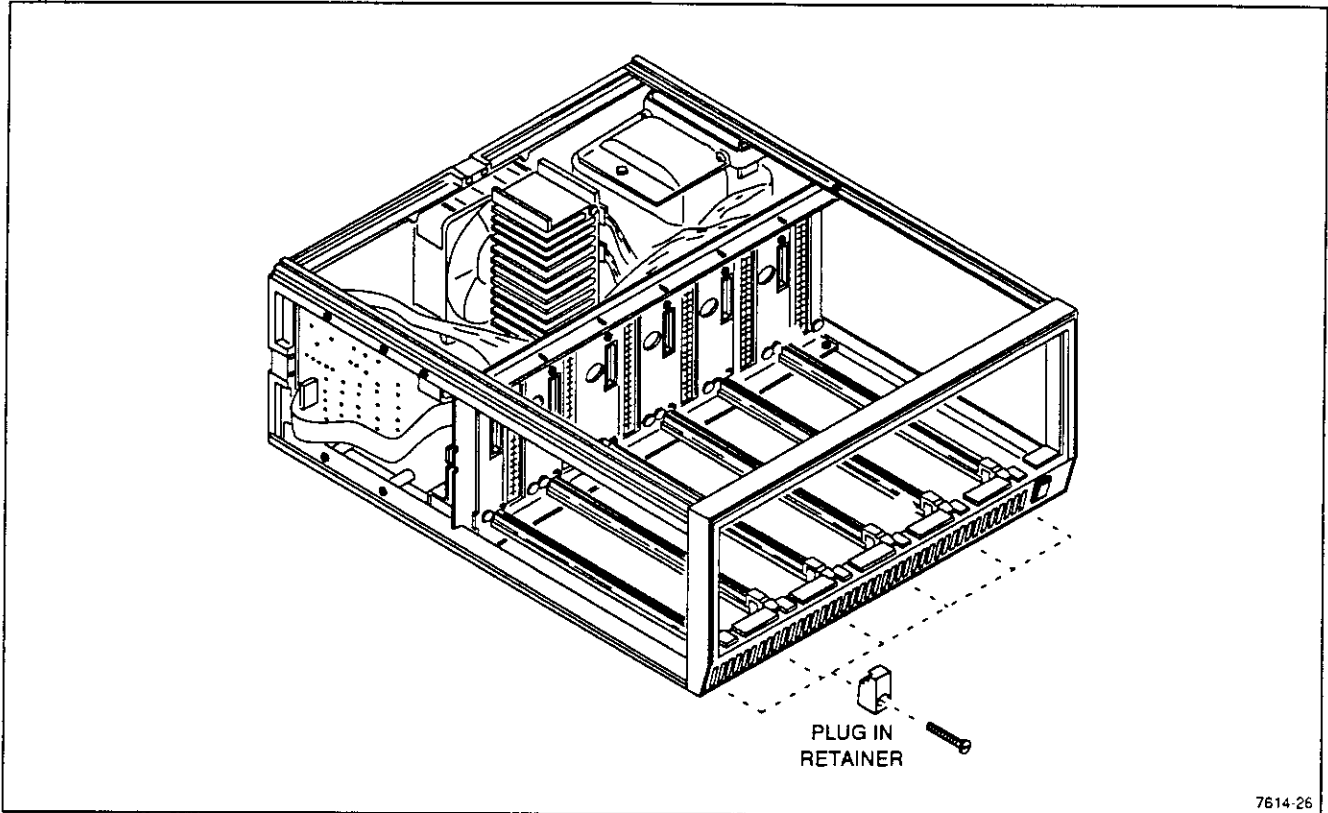
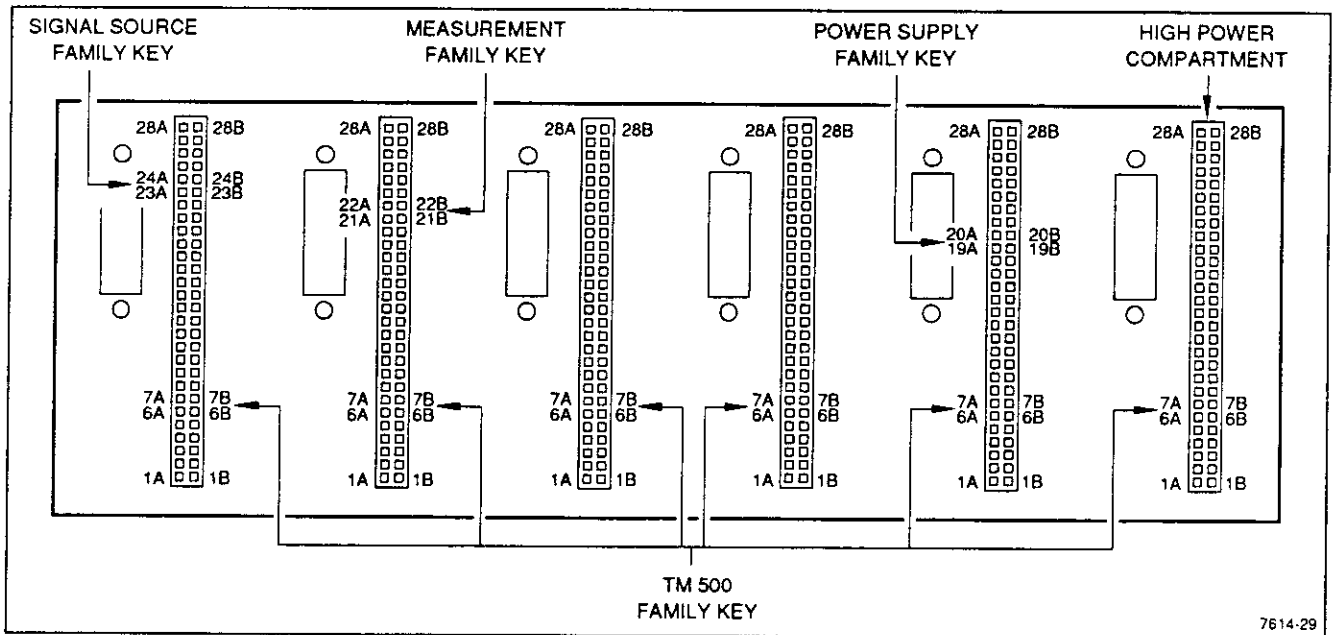


Fig. 2-9. Removing and installing TM 5006A in rack slides.



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Fig. 2-10. Plug-in installation and removal.



7614-29

Fig. 2-11. One of many possible keys for family functions.

WARNING

THE FOLLOWING SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED PERSONNEL ONLY. TO AVOID PERSONAL INJURY, DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO. REFER TO OPERATORS SAFETY SUMMARY AND SERVICE SAFETY SUMMARY PRIOR TO PERFORMING ANY SERVICE.



THEORY OF OPERATION

Introduction

For ease in understanding, this description refers to the schematics located in the pullout pages at the rear of this manual. Also refer to the block diagram located in the pullout pages and the timing diagram in Figure 3-1. Each block in the block diagram is outlined on the schematics.

The TM 5006A uses a pulse width modulated switching supply for dc voltages. A 60 Hz transformer provides the ac voltages necessary for plug-in operation. Connections to the six plug-in compartments as well as the series pass transistors are shown on diagram 3.

Line Selector and 60 Hz Transformer (Diagram 4)

Ac power is applied to the voltage select terminals through FL500 and FL600.

The two primary windings on T500 are connected in parallel for 120 V operation or in series for 240 V operation. Winding taps are provided for 100 V and 220 V line voltages. The secondaries provide ac voltages to the various plug-in compartments and to the Regulator Power Supply.

Rectifiers and Filters (Diagram 5)

The ac line voltage is applied through negative temperature coefficient resistances RT4010 and RT4011 to the rectifier diodes. As these resistances are highest when cold, the surge currents charging the high voltage capacitors when line voltage is applied, are limited, thus preventing component failure. These resistors then self heat to a low resistance.

In 220 V/240 V operation the four diodes function as a bridge rectifier (see Fig. 3-2). When the voltage-select circuit is set for 100 V/120 V operation, only the two series diodes operate. The circuit then becomes a voltage doubler with an output of approximately 350 V dc. The neon bulb (DS1052) in this circuit flashes to indicate when dc voltage is present.

The rectified and filtered dc is applied through low-pass filters L3051, L3050 and T4050, C4060, and passes through CR3085 to the drain of Q3087. RC networks C2054-C2052, R1051-R2040, and LR2053-LR2050 reduce the self resonance of L3051 and L3050.

PWM Regulator (Diagram 3)

U2020 in the PWM (Pulse Width Modulation) Regulator provides all of the control and regulator functions for the output stage. U2020 contains a voltage ref-

erence, an error amplifier, clock circuit, logic, pulse width control and output drivers.

Minimum output dead time is fixed by the discharge time of C2010 and R3017 (approximately 5 μ S). Maximum output pulse width is set by C2010 and R1015 and R1010 variable, for frequency adjustment (about 20 μ S), to make up 1/2 cycle of the output drivers. The error amplifier controls the output pulse prior to maximum width when the supply is in regulation. The maximum pulse width is also proportional to the voltage (when \leq about 4 V) at U2020 pin 8 the soft start control. Soft start timing capacitor C3020 is charged to approximately 5V by a 50 μ A source in U2020 causing a slowly increasing output pulse width at turn on or after a fault occurs to limit initial surge currents.

The +8.2V output of the supply is divided down to about +5.1V and adjusted by R1011, R1022, R1040 and is compared to the +5.1V reference from U2020 pin 16 by the error amplifier in U2020, which controls its output pulse width.

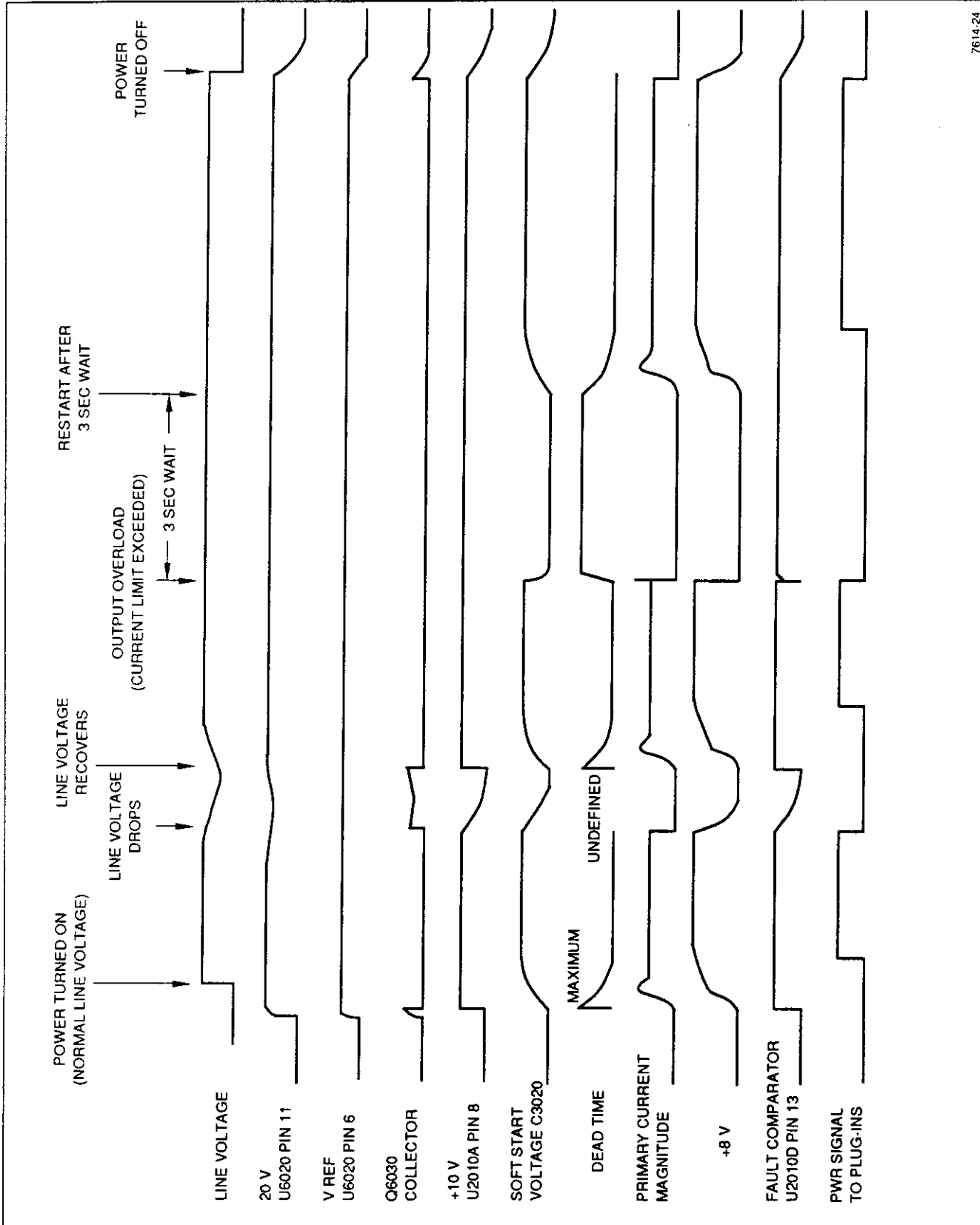
Active hi and low outputs U2020 pin 11 and pin 14 are either both low (dead time) or opposite levels for pulse output. R1012 limits output current.

Converter and Output Stage (Diagrams 5 & 3)

The output stage is a half bridge type with proportional gate drive. The turns ratio and phasing of T2080 provide approximately 10 volts of gate drive to either the Q3086 or Q3087 MOSFET depending on which output of U2020 is high. When both outputs of U2020 (diagram 3) are low the primary of T2080 is essentially shorted, reducing the gate drive to zero for both Q3086 and Q3087. Q3086 and Q3087 alternately conduct at a 20 kHz rate (their on and off times are controlled by U2020). Diodes CR3085 and CR3082 prevent drain gate current at turn off. A series resonant filter between the MOSFETs and the output transformer, T2050 (diagram 3) is composed of L2060 and C4071. During Q3086 and Q3087 off time, the tank current generated by L2060 and C4071 passes through CR3084 and CR3083. RC networks R4072, C4062 and R3070, C4070 and R5071, C5070 help reduce EMI. R2081, R2082 and R3080, R3081 reduce ringing due to gate drain capacitance.

The 20 kHz output voltage is stepped down to the correct levels by T2050.

Three sets of full-wave diode rectifiers are provided for each of the three dc voltage outputs. Schottky diodes are used in the +8.2 V supply for reduced forward volt-



7614:24

Fig. 3-1. Timing diagram for power on/off, fault, low line.

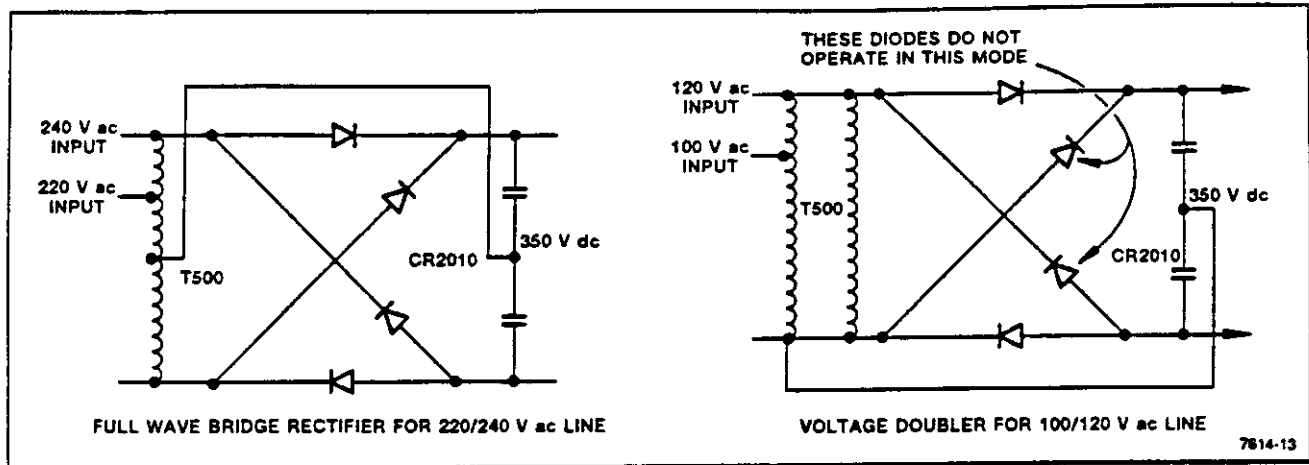


Fig. 3-2. Input line connections for 240 V and 120 V.

age drop. All filters are L-C pi-sections. Bleeder resistors are provided for all filter capacitors.

Overvoltage and Overcurrent Protection (Diagram 3)

U2010B, C, D outputs are wire or'd and normally keep Q1020 saturated which keeps U2020 pin 10 (output shut down) low along with holding off Q1010 which allows C3020 to charge. When a fault is sensed U2010s or'd output goes low turning off Q1020, allowing U2010 pin 10 to go high turning off its output and discharging C3020 through Q1010. C3010 insures that Q1020 is off long enough to allow C3020 to be completely discharged.

Pin 11 of U2010, the negative over-voltage detector, connects to a voltage divider between the -25 V supply and the reference $+7.15$ V. Should pin 11 go more negative than pin 10, pin 13 goes low shutting off the output. The input of U2010D is protected from a negative voltage by CR2130.

Primary current in output transformer T2050 flows through T3060. The secondary voltage of T3060 is proportional to the primary current. The secondary voltage of T3060 is rectified by CR5040, CR5041, CR5042 and CR5043 and terminated in R5052. When the primary current in T3060 exceeds the point where the voltage at pin 6 of U2010B exceeds the 7.15 V reference at pin 7, pin 1 goes low turning off the output.

The $+25$ V is applied through R5031 and CR5034 to pin 8 of U2010C, the positive over-voltage detector. The $+8.2$ V is also applied through R5030 and CR5033 to pin 8. Pin 9 of comparator U2010C connects to the $+7.15$ V reference voltage. If pin 8 of U2010C goes more positive than pin 9, pin 14 goes low shutting off the output.

Control Circuit Regulator (Diagram 3)

The 16 V ac winding on T500 is applied through F5010 to rectifier diode CR4020, which charges filter capacitor C5020 to approximately $+20$ V. The $+20$ V is applied to voltage regulator U6020. This regulator outputs two voltages: $+10$ V which is used throughout the entire supply, and $+7.15$ V, a reference voltage for the error sense circuit, at pin 6.

The line detector circuitry is composed of CR5030, C6030, Q6030 and associated components. When normal line voltage is applied, the voltage across C6030 is approximately 20 V. Transistor Q6030 is on and pin 2 of U6020 is about 0.2 V above ground. If about two cycles of line voltage is missed or the line voltage goes low, Q6030 no longer saturates. The collector of Q6030 rises, disabling the series pass transistor located internally in U6020. This series pass transistor is effectively connected between pins 11 and 10 of U6020. The $+10$ V is removed from the power supply during line drop out to prevent discharge of the main filter capacitors in the output stage. Positive feedback is provided through R4019 to the base of Q6030 to improve the switching action.

Power Valid Control (Diagrams 2 & 3)

The PWR signal circuitry (U2010A and Q3005) provides a signal to each compartment in the power module to give power supply status information to the plug-ins. See the rear interface information part of the Maintenance section (Section 5) of this manual for timing information.

U2010A compares the output of U6020 pin 13 and the level of the soft start capacitor C3020 at U2010A pin 4 with the dc level of the voltage divider R4014 and R3012 (4.5 V) on U2010A pin 5. At instrument turn on or after a fault C3020 charges slowly to approximately 5 V. When it reaches 4.5 V the PWM regulator has full con-

Theory of Operation—TM 5006A

troi of the TM5006A dc supplies and U2010A pin 2 goes low causing Q3005 (diagram 3) to saturate providing a high to each compartment indicating proper supply operation. When line loss or low line voltage occurs, U6020 pin 13 goes low causing the PWR signal to go low. The PWR signal will also go low if an error is detected and C3020 is discharged.

Main Interface (Diagram 2)

The various ac and dc supply voltages as specified are available at the rear interface connectors for each plug-in compartment. Each compartment has a PNP and an NPN transistor intended as series pass elements. Connecting pins to these elements are shown on the diagram.

CALIBRATION

PERFORMANCE CHECK PROCEDURE

Introduction

This procedure checks the Electrical Performance Requirements as listed in the Specification section in this manual. Perform the internal adjustment procedure if the instrument fails to meet these checks. If recalibration does not correct the discrepancy, circuit troubleshooting is indicated. Also, use this procedure to determine acceptability of performance in an incoming inspection facility.

Performance may be checked at any temperature between 0° and +50° C.

Test Equipment Required

The test equipment listed in Table 4-1, or equivalent, is suggested to perform the performance check and adjustment procedures.

WARNING

Dangerous voltages are present inside this power module. Exercise caution as this procedure requires removal of the power supply cover.

Test Loads for the Performance Check

The power supplies in this module must be loaded before starting the performance check procedure. Maximum load for the +8.2 V supply is 18 A, and for the 25 V supplies 6 A. Maximum dissipation from these loads is 144 W and 156 W. The total power draw from any combination of the +8.2 V and ± 25 V supplies is 180 W or 30 W per compartment.

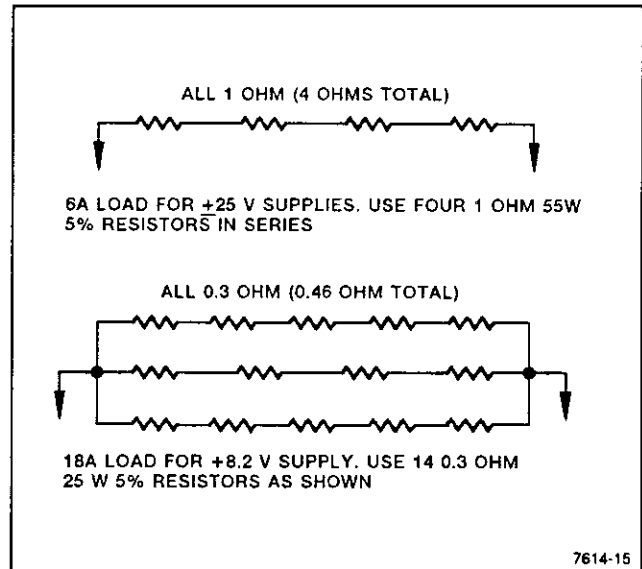


Fig. 4-1. Test loads for use with the performance check.

Figure 4-1 shows suggested loads. Any combination of resistors with sufficient dissipation is satisfactory. Connect the loads to the power module with not over 1.5 feet for each lead. Use 12 AWG for the 8.2 V load and 16 AWG for the 25 V loads. The ground lead should not exceed 1.5 feet of #12 AWG or larger.

Table 4-1
Suggested Test Equipment

| Description | Minimum Requirements | Performance Check Step | Adjustment Procedure Step | Recommended Equipment |
|----------------------------------|--|------------------------|---------------------------|---|
| Digital Multimeter | 8.2 V, -25 V, +25 V | All | 1 | TEKTRONIX DM 504A Autoranging DMM |
| Test Loads | | All | | See Figs. 4-1 and 4-3 |
| Variable Voltage Transformer | 1000 VA capability | All | 1 | Variac W10MT3W Autotransformer, General Radio USA |
| Oscilloscope w/10X Voltage Probe | Vertical sensitivity 10 V, Horizontal sweep 20 μ s | | 2 | TEKTRONIX SC 502 15 MHz Oscilloscope |

CAUTION

As considerable heat is generated in the test loads, do not apply power longer than necessary to complete tests.

Test Point Access

Remove the top cover to gain access to the supply buses. Figure 4-2 shows the test point locations.

1. Check +25 V dc

- Connect the test equipment as shown in Figure 4-2. Set the Variable Voltage Transformer line voltage for 10% below the nominal line voltage. (Nominal line voltage is the line voltage the instrument is set to operate on.)
- Connect a 4 Ω test load and the DMM between the +25 V supply and ground terminals shown in Figure 4-2.
- CHECK—that the DMM reads from +23.1 V to +29.9 V.
- Change the line voltage to 10% above nominal.
- Remove the load from the supply.
- Set the +8.2 V load for maximum.
- CHECK—that the +25 V supply reads from +23.1 V to +29.9 V.

- Remove the connections to the +25 V bus for the next step.

2. Check -25 V dc

- Connect the test equipment as shown in Figure 4-2. Set the Variable Voltage Transformer line voltage for 10% below the nominal line voltage.
- Connect a 4 Ω test load and the DMM between the -25 V supply and ground terminals shown in Figure 4-2.
- CHECK—that the DMM reads from -23.1 V to -29.9 V.
- Change the line voltage to 10% above the nominal line voltage.
- Remove the -25 V, 4 Ω test load from the supply.
- Connect a 0.46 Ω test load and the DMM between the +8.2 V supply and ground terminals shown in Figure 4-2.
- CHECK—that the supply reads from -23.1 V to -29.9 V.
- Remove the connections from the -25 V bus for the next step.

3. Check +8.2 V dc

- Connect the test equipment as shown in Figure 4-2. Set the Variable Voltage Transformer line voltage for 10% below the nominal line voltage.

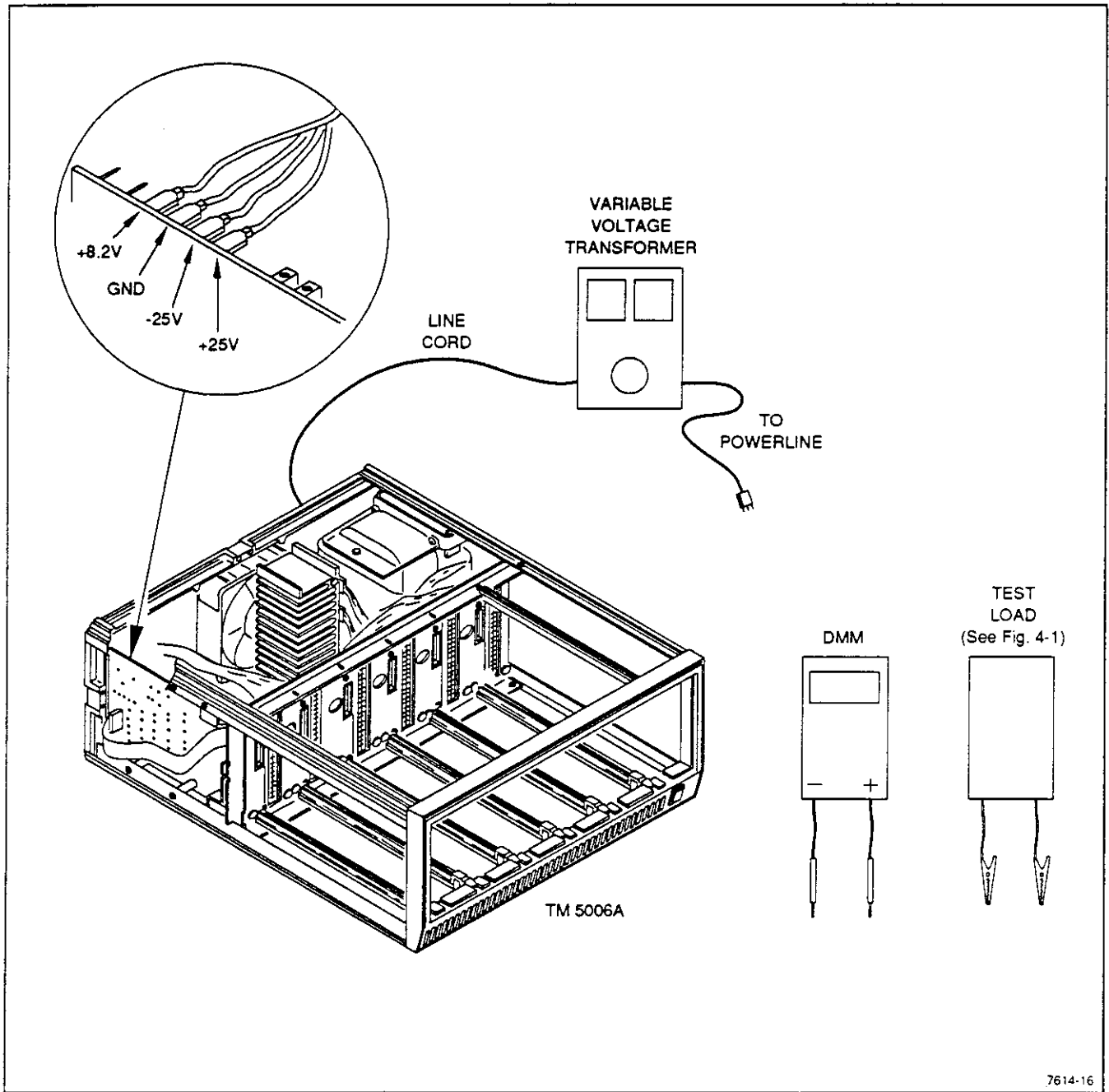


Fig. 4-2. Performance check setup.

- b. Connect a 0.46 Ω test load and the DMM between the +8.2 V supply and ground terminals shown in Figure 4-2.
- c. CHECK—that the DMM reads from +7.6 V to +8.5 V.
- d. Change the line voltage to 10% above the nominal.
- e. Remove the test load from the supply.
- f. CHECK—that the DMM reads from +7.6 V to +8.5 V.
- g. Remove all connections.
- h. This completes the Performance Check Procedure.

INTERNAL ADJUSTMENT PROCEDURE

Introduction

This procedure should be performed if the power module fails to meet the performance requirements of the electrical characteristics listed in the Specification section of this manual. To ensure continued instrument accuracy, we recommend that adjustment be performed every 1000 hours of operation or every 6 months if used infrequently. Adjustment is also recommended following repair or modification. Adjustments must be made in an ambient temperature of +20° C to +30°C.

Services Available

Tektronix, Inc. provides complete instrument repair and adjustment at local field service centers and at the factory service center. Contact your local Tektronix field office or representative for further information.

Test Equipment Required

Test equipment listed in Table 4-1 is required for adjustment of the TM 5006A. Specifications given for the test equipment are the minimum necessary for accurate adjustment. All test equipment is assumed to be correctly calibrated and operating within specification. If other test equipment is substituted, the calibration setup may need to be altered to meet the requirements of the equipment used.

Adjustment Access

Remove the top cover to gain access to the supply buses and the adjustments. Figure 4-4 shows the adjustment locations.

1. Adjust 8.2 V Adj (R1011)

- Connect the DMM to the +8.2 and ground terminals shown in Figure 4-4.
- Set the Variable Voltage Transformer for nominal line voltage as indicated by the rear-panel voltage selector setting.
- CHECK—DMM for a reading of +8.2 V, within the limits of +8.18 V and +8.22 V.
- ADJUST—R1011, 8.2 V Adj for a DMM reading of +8.2 V.

2. Adjust Clock Frequency (R1010)

- Set the Variable Voltage Transformer for 90% of the nominal line voltage indicated by the rear-panel voltage selector setting.
- Connect the oscilloscope 10X probe tip to TP1040 and the probe ground to TP1030.
- Set the oscilloscope sweep rate to 2 μ s/div, and the vertical sensitivity to display a 5-div signal.
- Connect a load as described in Figure 4-3 between +8.2 V and ground.
- Connect a load as described in Figure 4-3 between +25 V and ground.
- Connect a load as described in Figure 4-3 between -25 V and ground.
- ADJUST—R1010 for minimum pulse width displayed on the screen.
- Remove all connections.
- This completes the internal adjustment procedure.

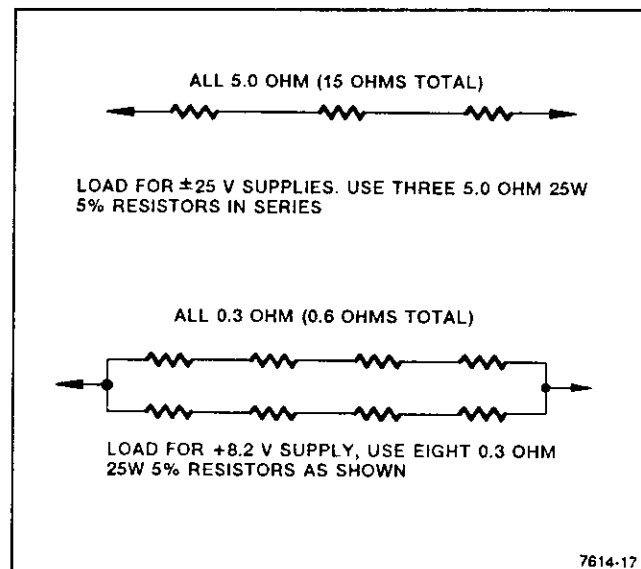


Fig. 4-3. Test loads for use with the adjustment procedure.

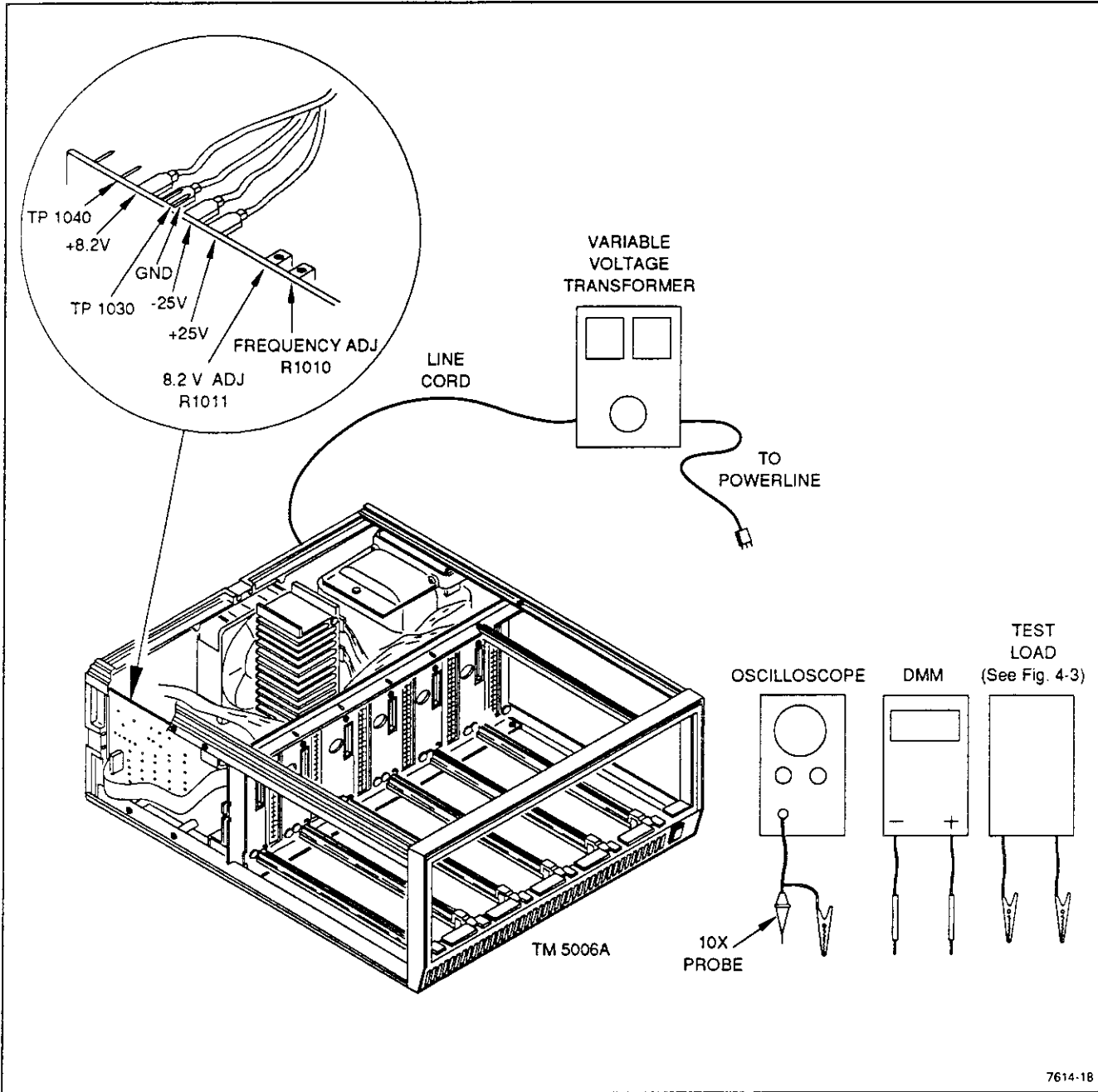


Fig. 4-4. Internal adjustment setup.

MAINTENANCE

Introduction

This section of the manual provides maintenance and service information for the TM 5006A Power Module, and information on custom plug-in kits for users that require a way to design their own plug-in units.

Static Sensitive Components

CAUTION

Static discharge can damage any semiconductor component in this instrument.

This instrument contains electrical components that are susceptible to damage from static discharge. See Table 5-1 for relative susceptibility of various classes of semiconductors. Static voltages of 1 kV to 30 kV are common in unprotected environments.

Table 5-1
Relative Susceptibility
To Static Discharge Damage

| Semiconductor Classes | Relative-Susceptibility levels ^a |
|---|---|
| MOS or CMOS microcircuits or discretes, or linear microcircuits with MOS inputs. (Most Sensitive) | 1 |
| ECL | 2 |
| Schottky signal diodes | 3 |
| Schottky TTL | 4 |
| High-frequency bipolar transistors | 5 |
| JFETS | 6 |
| Linear microcircuits | 7 |
| Low-power Schottky TTL | 8 |
| TTL (Least Sensitive) | 9 |

^aVoltage equivalent for levels:

| | | |
|------------------|------------------|-------------------------|
| 1 = 100 to 500 V | 4 = 500 V | 7 = 400 to 1000 V (est) |
| 2 = 200 to 500 V | 5 = 400 to 600 V | 8 = 900 V |
| 3 = 250 V | 6 = 600 to 800 V | 9 = 1200 V |

(Voltage discharged from a 100 pF capacitor through a resistance of 100 Ω.)

Cleaning

This instrument should be cleaned as often as operating conditions require. Loose dust accumulated on the outside of the instrument can be removed with a soft cloth or a small brush. Remove dirt that remains with a soft cloth dampened in a mild detergent and water solution. Do not use abrasive cleaners.

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 (approximately 5 lb/in²) to blow off accumulated dust. Hardened dirt can be removed with a soft brush or cloth dampened in a solution of water and mild detergent.

CAUTION

Circuit boards and components must be dry before applying power.

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

Preventive Maintenance/Calibration

The TM 5006A Power Module does not require preventive maintenance.

To ensure proper operation, check the electrical adjustment of this power module after each 2,000 hours of operation, or every 12 months if used infrequently.

Multi-pin Connectors

The pin connectors used to connect the wires to the interconnecting pins are clamped to the ends of the wires. To replace damaged multi-pin connectors, remove the old pin connector from the holder. Do this by inserting a scribe between the connector and holder to release the catch, and pull the connector from the holder. Clamp the replacement connector to the wire. Reinstall the connector in the holder.

If the individual end lead pin connectors are removed from the plastic holder, note the order of the individual wires for correct replacement in the holder.

Instrument Disassembly

The exploded-view drawings associated with the Replaceable Mechanical Parts list (at the rear of this manual) may be helpful in the removal or disassembly of individual components or subassemblies.

Cabinet Panel Removal

The top, side, and bottom covers will need to be removed for most repairs. Such removal is not mentioned in each procedure. As the covers would need to be removed before the individual circuit boards are located, it is assumed that they were off the instrument.

WARNING

Dangerous voltages exist at several points throughout this instrument.

When the instrument is operated with the covers removed, do not touch exposed connections or components.

Disconnect power before cleaning the instrument or replacing parts.

1. Remove the four screws attaching the four feet to the rear panel of the instrument. See Figure 5-1.
2. Slide the top panel and both side panels to the rear, and set aside.

3. Set the instrument on it's top.
4. Slide the two plastic bottom rail spacers to the rear, and set aside.
5. Remove the wire bail on the two front feet by compressing the bail where it enters the feet.
6. Slide the two front feet to the rear, and set aside.
7. Slide the bottom panel to the rear, and set aside.
8. To reassemble, reverse the order of removal. Remember, that the side panel with the handle goes on the left side of the instrument (side opposite power transformer).

Series Pass Transistor Replacement

Use this procedure only for the ten series-pass transistors located along the bottom edge of the A10—Interface circuit board. You can access these transistors only from the bottom of the instrument.

A separate procedure is provided to remove the two High-Power compartment series-pass transistors located on the finned heatsink.

NOTE

A new adhesive insulator plate must be applied to the transistor before installation. To maintain proper insulating characteristics, do not reuse the insulating plate from the transistor being replaced.

- a. Remove the securing screw, unsolder and remove the transistor being replaced, from the circuit board.

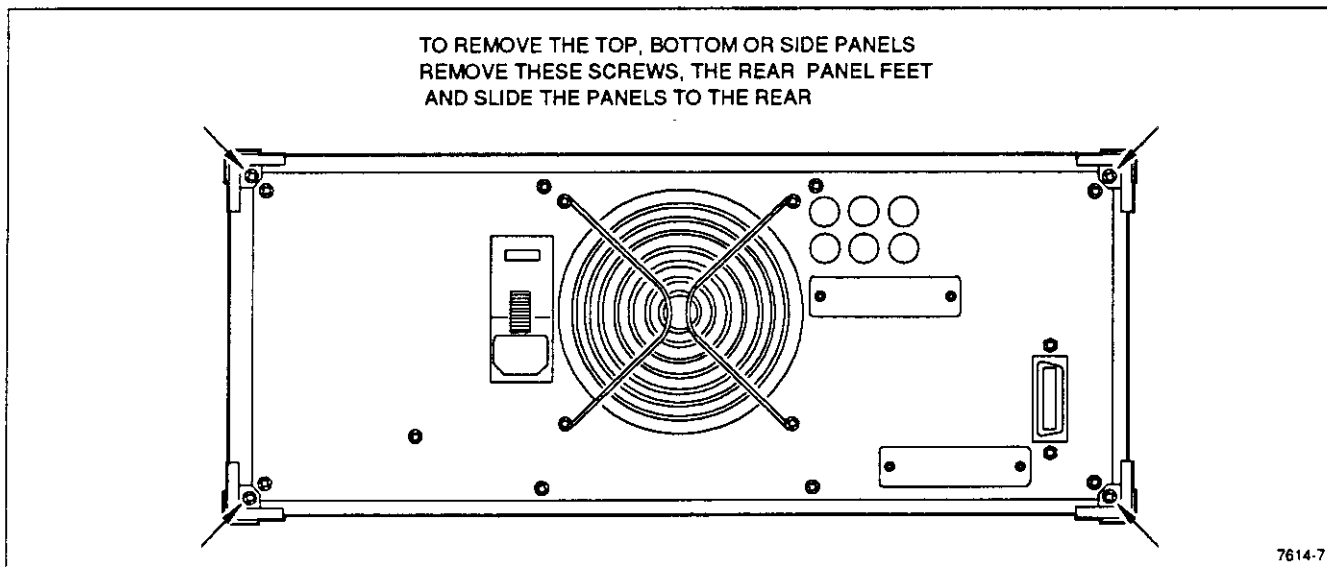


Fig. 5-1. Cabinet panel removal.

b. Apply a new adhesive insulator plate to the transistor side having exposed metal.

c. Insert the leads of the replacement transistor into the circuit board holes, with the insulating plate facing the metal chassis.

e. Reinstall the transistor securing screw.

f. Solder the transistor onto the board, applying minimum heat.

High Power Series Pass Transistor Replacement

The two High Power compartment series pass transistors are located on the large finned heat sink along with the thermal cutout. Remove the heat sink as follows:

a. Set the instrument on it's right side.

b. Disconnect the transistor and thermal cutout connector plugs.

c. Remove the two screws that secure the bottom of the heat sink to the A12—Converter circuit board. These two screws are accessed through holes in the chassis on the bottom of the instrument.

d. Hold heat sink in position and remove the 4-1/2 inch screw, spacer, washer, and locknut that secures the heat sink to the rear panel.

e. Remove heat sink from instrument.

f. Remove the securing screw, and remove the transistor being replaced from the heat sink.

NOTE

You do not need to replace the mica insulator plate unless damaged. Apply a thin coating of heat conducting grease (e.g., Thermalcote™) between the mica insulator and the heat sink, and on the contact surface of the new transistor.

g. To reassemble, reverse the order of removal.

A10—Interface Circuit Board Removal

a. Remove the top and bottom guide rails as shown in Figure 5-2.

b. Remove the 12 screws that secure the Interface circuit board to the interface chassis as shown in Figure 5-2.

c. Remove the 4 screws (with lockwashers) that secure the Interface chassis to the frame rails as shown in Figure 5-2.

d. Remove the cable support (nearest the interface chassis) from the frame rail and slide interface chassis toward the front of the instrument.

e. Remove the screws that secure the 10 series pass transistors to the bottom chassis.

f. Note the wire color coding, orientation, and position of the plugs and connectors on the rear of the Interface board. Disconnect all plugs and connectors from the rear of the Interface board.

g. Remove the 3 screws that secure each end of the Interface board, and remove the board.

h. To reinstall, reverse the order of removal.

Rear panel Removal

a. Remove the 2 hex-post screws that secure the GPIB connector, using a 1/4-inch nut driver. See Figure 5-3.

b. Remove the screw and insulator block that secures rectifier CR1050 to the rear panel as shown in Figure 5-3.

c. Remove the 4-1/2 inch screw, spacer, washer and locknut that secures the finned heat sink to the rear panel.

d. Remove the 9 screws that secure the rear panel to the rear casting (use a T-20 Torx tip screwdriver) and pull away from the rear casting.

A11—Regulator Circuit Board Removal

a. Remove the rear panel (see Rear Panel Removal procedure).

b. Note the wire color coding, orientation, and position of the plugs and connectors on the front and back of the Regulator board. Disconnect all plugs and connectors from the Regulator board.

c. Remove the 4 securing screws shown in Figure 5-4 and lift the Regulator board out through the top of the instrument.

d. To reinstall, reverse the order of removal.

A12—Converter Board Removal

a. Remove the rear panel (see Rear Panel Removal procedure).

b. Remove the cooling fan power connector.

c. Note the wire color coding, orientation, and position of the plugs and connectors on the top of the Converter board. Disconnect all plugs and connectors from the Converter board.

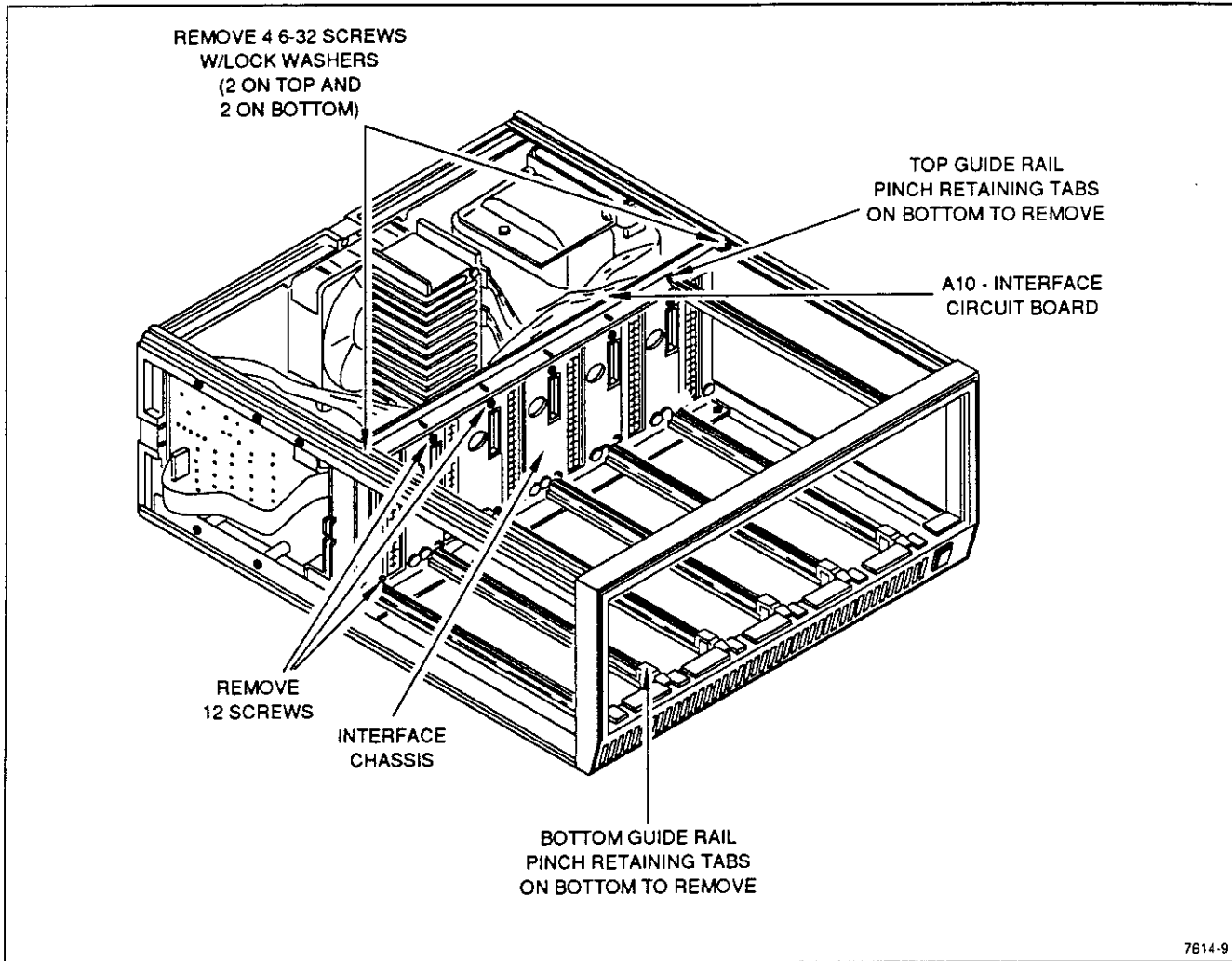


Fig. 5-2. Guide rail removal.

d. Remove the two screws that secure the switching transistors to the cable channel chassis, and lift off the plastic protective cover.

e. Note the color coding and orientation of the wires connected to the Line and Load connectors on the EMI filter. Disconnect all connectors from the EMI filter.

f. Remove the 2 screws that secure the EMI filter and lift out the filter.

g. Remove the 4 screws that secure the Converter board to the hex standoffs, and lift the board out through the top of the instrument.

Switching Transistor Replacement

The switching transistors are soldered to the A12—Converter circuit board and heat sinked to the cable channel chassis.

a. Remove the two screws that secure the switching transistors to the cable channel chassis, and lift off the plastic protective cover.

b. Clip the leads of the transistor to be replaced and remove transistor. Unsolder and remove the clipped leads from the circuit board.

c. Bend the replacement transistor leads 90° 1/4-inch from transistor body (bend in same direction as tab on transistor body).

d. Trim the transistor's lead length to extend just past the back of the circuit board.

e. Apply a thin coating of heat conducting grease (e.g., Thermalcote™) between the ceramic insulator and the contact surface of the transistor.

f. Replace the plastic protective cover, and start the 2 securing screws.

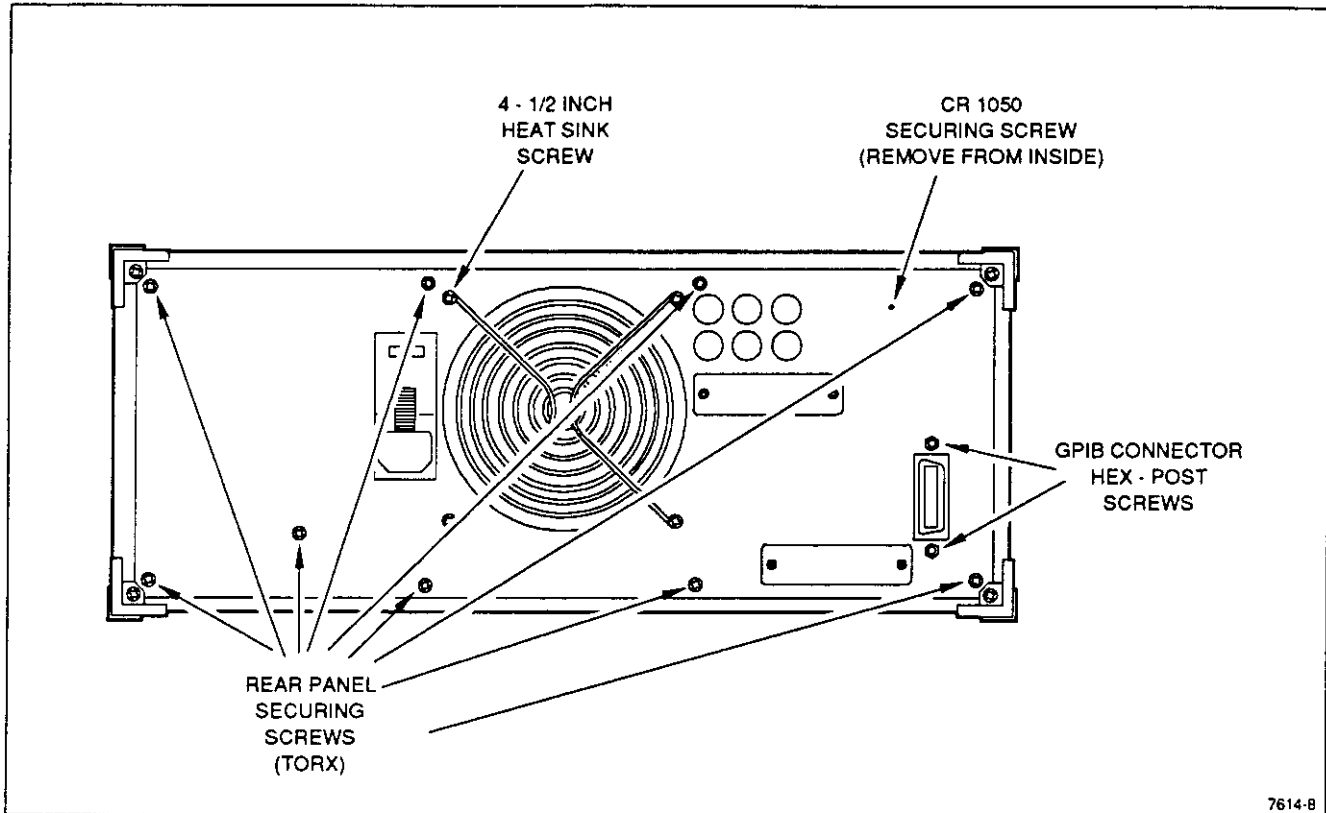


Fig. 5-3. Rear panel removal.

CAUTION

To avoid fracturing the ceramic insulator, you must tighten the 2 screws evenly and securely—DO NOT overtighten.

g. Solder the new transistor onto the board, applying minimum heat.

Power Transformer Replacement

a. Remove the rear panel (see Rear Panel Removal procedure).

b. Note the color coding and orientation of all the transformer wire connections, then disconnect all connections.

c. Remove the 4 screws that secure the transformer in place.

d. Lift the transformer out through the opening in the top of the instrument.

e. To reinstall, reverse the order of removal.

Line Voltage Selector/Filter Removal

a. Remove the rear panel (see Rear Panel Removal procedure).

b. Note the wire color coding, orientation, and position of the wires and connectors on the back of the line voltage selector/filter unit. Disconnect all wires and connectors from the unit.

c. Press the two edges of the butterfly spring (on the top of the unit) down flush with the top surface and move unit slightly toward the rear. Repeat with the butterfly spring on the bottom of the unit. Work unit back and forth until its free of the rear panel.

d. To reassemble, press unit into rear panel until the butterfly springs snap in the locked position, and reinstall the wires and connectors.

e. Reinstall the rear panel.

Obtaining Replacement Parts

Electrical and mechanical parts can be obtained through your local Tektronix Field Office or representative. However, it may be possible to obtain many of the standard electronic components from a local commercial source. Before purchasing or ordering a part from a source other

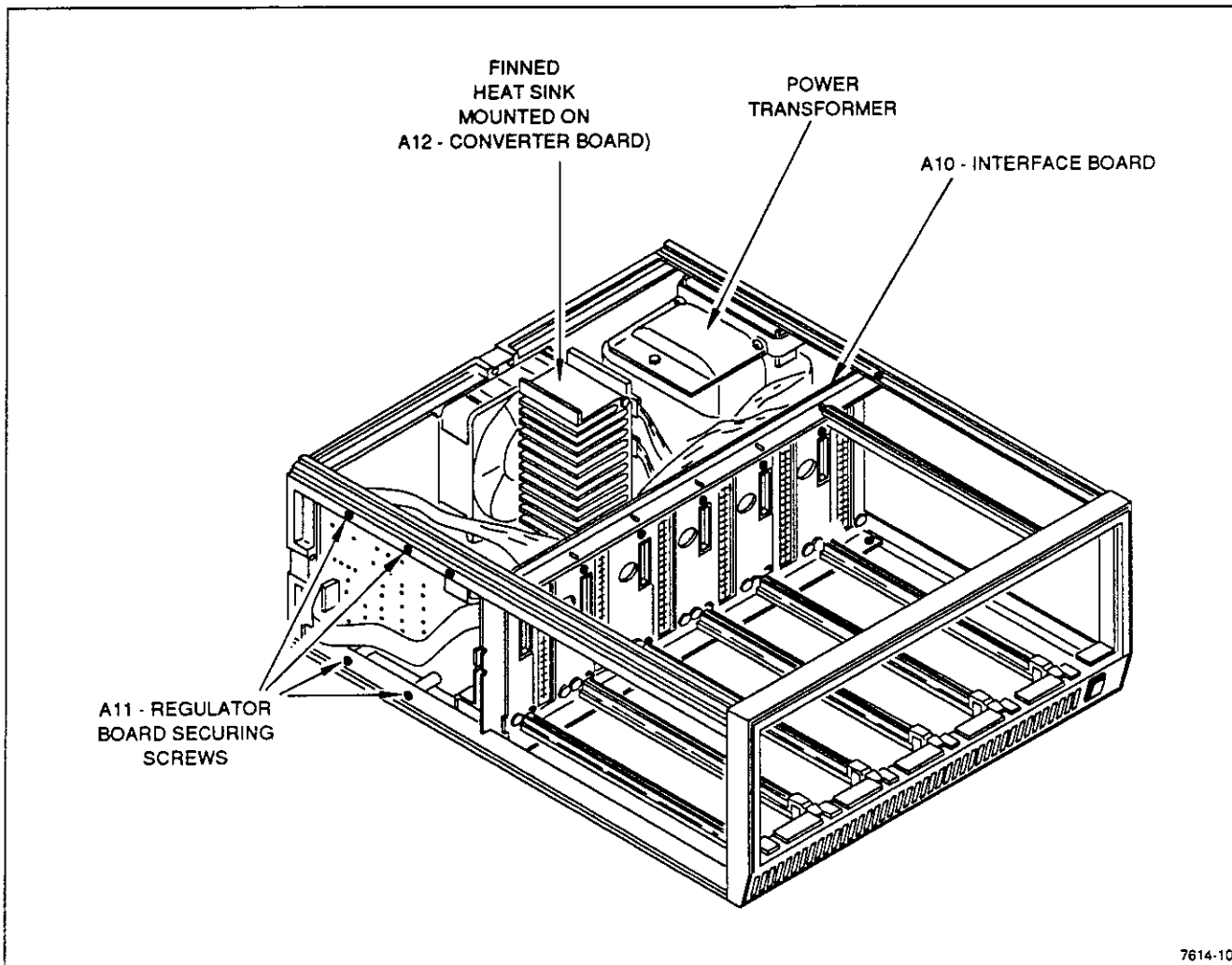


Fig. 5-4. Power supply circuit boards.

than Tektronix, Inc., check the Replaceable Electrical Parts list for the proper value, rating, tolerance, and description.

NOTE

When selecting replacement parts, remember that the physical size and shape of a component may affect its performance in the instrument.

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 instrument have been manufactured by Tektronix, Inc.. To determine the manufacturer, refer to the Replaceable Parts list and the Cross Reference index, Mfr. Code Number to Manufacturer.

When ordering replacement parts from Tektronix, Inc., include the following information:

1. Instrument type and option number.
2. Instrument serial number.
3. A description of the part (if electrical, include complete circuit number).
4. Tektronix part number.

Packaging Information

A list of standard accessories (and part numbers) is located in the Replaceable Mechanical Parts list.

If the Tektronix instrument is to be shipped to a Tektronix Service Center for service or repair, attach a tag showing owner (with address) and the name of an individual at your firm that can be contacted. Include the complete instrument serial number and a description of the service required.

Save and reuse the package in which your instrument was shipped. If the original packaging is unfit for use or not available, repackage the instrument as follows:

Surround the instrument with polyethylene sheeting to protect the finish of the instrument. Obtain a corrugated cardboard carton with inside dimensions of no less than 6 inches greater than the instrument dimensions.

Use a carton with a test strength of at least 200 pounds per square inch. Cushion the instrument by tightly packing 3 inches of dunnage or urethane foam between carton and instrument on all sides. Seal the carton with shipping tape or an industrial stapler.

CUSTOM PLUG-IN KITS

Applications

Tektronix, Inc. provides a variety of blank plug-in kits (see Table 5-2) for users that require a way to design their own plug-in units:

- Test engineers often require custom interfaces such as specialized signal or timing generators, amplifiers or converters, and signal routers to complete a test system.
- Design engineers frequently need to prototype a component manufacturer's "suggested circuit" or integrate an evaluation board when selecting a new component.
- Educators need sturdy demonstration aids and circuit construction tools for senior lab projects that do not tie up power supplies and valuable bench space.
- Instrument and equipment manufacturers in focused applications require a platform that does not require the development of new electrical and mechanical packages.

This is why the modular instruments line includes custom plug-in kits. The kits provide a mechanical package and development boards that allow rapid construction and wiring of circuits. The plug-ins are compatible with both TM 500 and TM 5000 mainframe power supplies.

Power Where Its Needed

Each 56-conductor slot connector supplies a wide assortment of dc voltages and isolated ac voltages to generate +5 V supplies, dual analog supplies, and other specialized sources. In addition, each mainframe slot has a dedicated pair of series pass NPN and PNP power transistors internal to the mainframe to simplify power supply design. Approximately 15 watts can be dissipated per slot of a TM 5000 mainframe (10 watts for a TM 500 mainframe).

Signals To Go

In addition to delivering power to the plug-ins, each 56-conductor slot edge-connector includes uncommitted conductors to transfer signals (with Option 2) to and from other slots, or to and from the rear panel of power module mainframes (up to 6 in a TM 506A or TM 5006A mainframe). The Rear-Interface Data Book, listed in Table 5-2, describes the rear-interface system in greater detail and lists rear interface signals for existing instruments. A Flexible Extender Cable (see Table 5-2) for the 56-conduc-

tor edge connector is available to extend the plug-in kit outside of the mainframe housing. A series of construction notes provides direction for building custom circuits.

Also, hardware is available to add GPIB capability to any of the custom plug-in kits listed below.

Single Compartment With Power Supply Board Kit

This kit includes parts and a pre-etched circuit board layout for (1) a ground-referenced positive and negative supply, capable of 7 to 20 V at up to 400 mA, and (2) a ground-reference supply, nominally 5 V, not adjustable, with up to 1 ampere current capability. The circuit board includes the edge-connector interface and has about 30 square inches of 0.1 inch grid perforated board with plated holes for circuit development.

Single Compartment With Development Board Kit

This kit comes without the power supply components or the pre-etched power supply circuit. The board includes the edge-connector interface and has about 35 square inches of board development area.

Single Compartment Without Board Kit

This kit comes without a board for applications where custom circuit boards are fabricated.

Dual Compartment With Development Boards Kit

This kit has two development boards (30 and 35 square inches of development area) for applications that require additional power, circuit area, or front-panel space.

Table 5-2
Custom Plug-In Kit Ordering Information

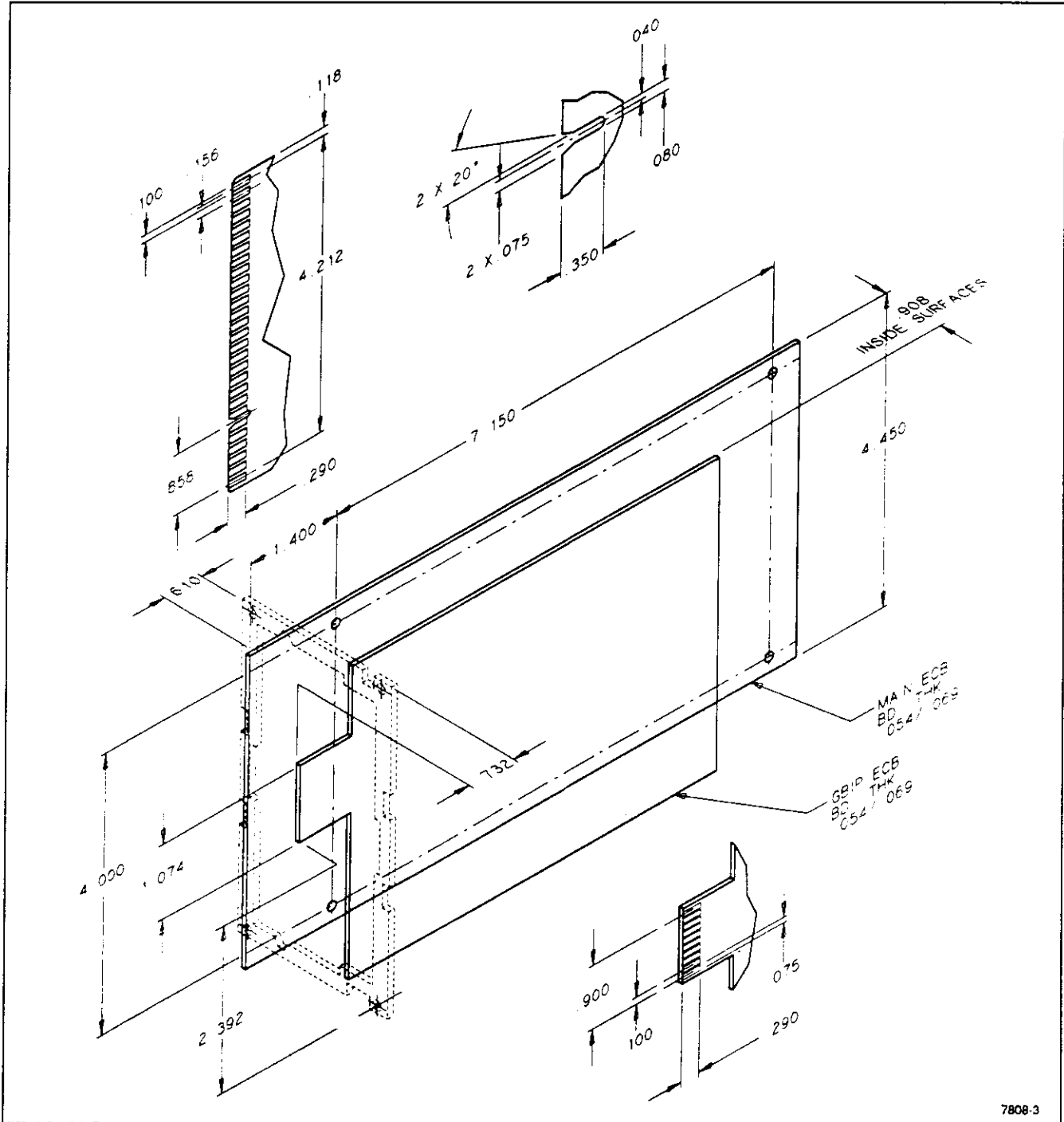
| Item | Order Part Number |
|---|-------------------|
| Single Compartment with Power Supply Board ¹ | 040-0803-XX |
| Single Compartment with Uncommitted Board ¹ | 040-0652-XX |
| Single Compartment Without Board ¹ | 040-0821-XX |
| Dual Compartment with Two Boards ¹ | 040-0754-XX |
| Rear-Interface Data Book | 070-2088-XX |
| Flexible Extender Cable | 067-0645-XX |

¹ GPIB hardware listing is available with kit.

Custom Circuit Board Fabrication

The following information is provided for those engineers and technicians who want to fabricate their own circuit boards.

Figure 5-5 illustrates a typical edge-connector main interface and GPIB circuit board. The illustration provides the circuit board dimensions and hole spacing required to fit the TM 5000-series Power Modules.



7808-3

Figure 5-5. Dimensions for plug-in module circuit boards.

REAR INTERFACE INFORMATION

PWR Indicator

A signal out on pin 6B of the plug-in interface connector provides the plug-ins with power supply status information. See Figure 5-6. This signal is TTL compatible with $\leq 30 \Omega$ output impedance. The maximum plug-in load per compartment is one standard TTL load. No pull-up resistors are allowed. The maximum capacitance per compartment must not exceed 150 pF. The fall and rise time (t_f and t_r) is $\leq 20 \mu\text{s}$.

Connector Pin Assignments

Figure 5-7 shows the pin assignments for the power module outputs to the plug-ins. Pins 14 through 28 (not shown in illustration) are reserved for signal connections.

See Sections 2 and 6 of this manual and the plug-in manuals for further information.

Figure 5-8 shows the pin assignments for the plug-in compartment GPIB connector.

Figure 5-9 shows the pin assignments for ribbon cable connector J4060, located on the rear of the A11—Regulator board.

Figure 5-10 shows the pin assignments for GPIB connector J4061, located on the instrument rear panel.

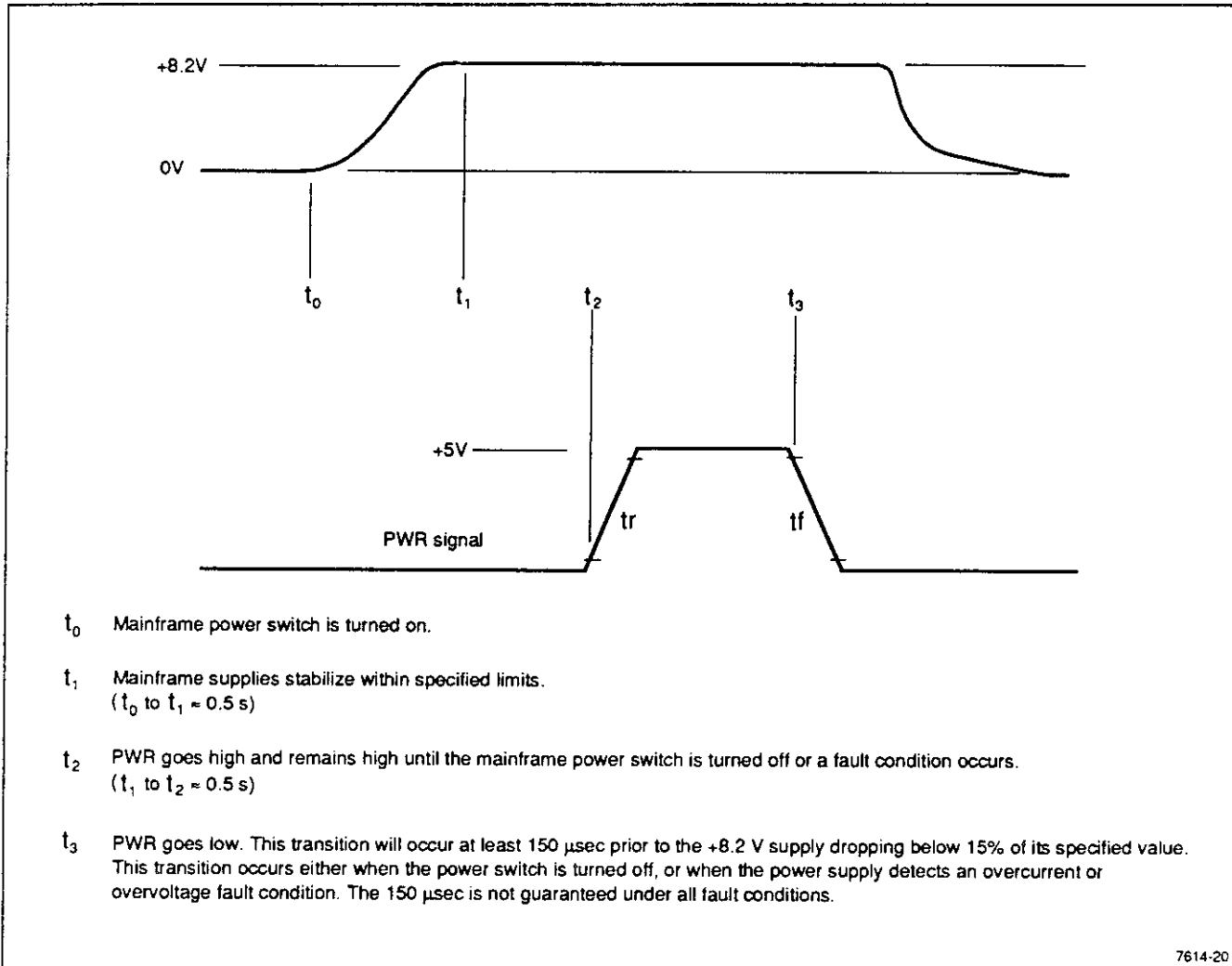


Fig. 5-6. PWR signal timing diagram.

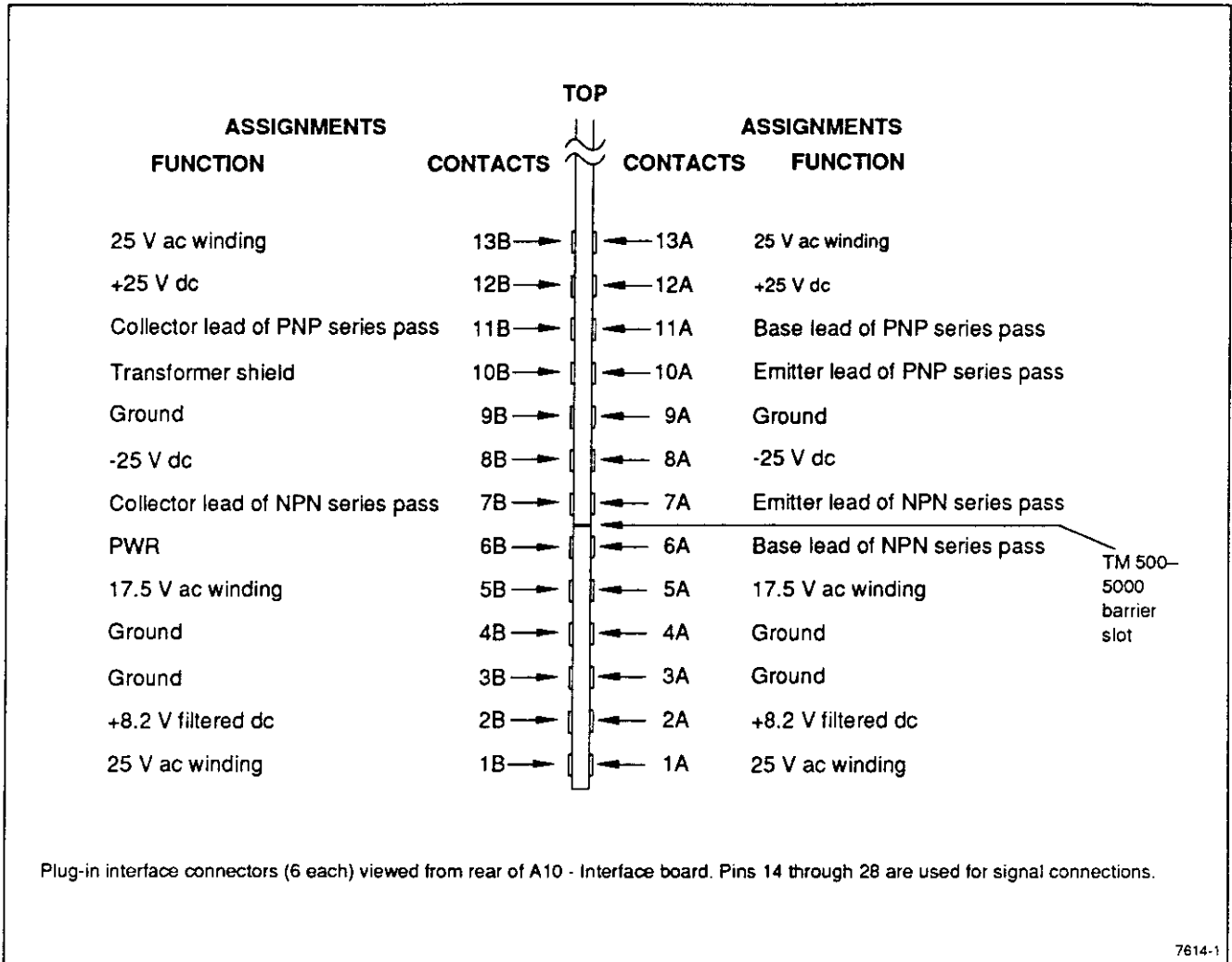


Fig. 5-7. Plug-in Interface connector pin assignments.

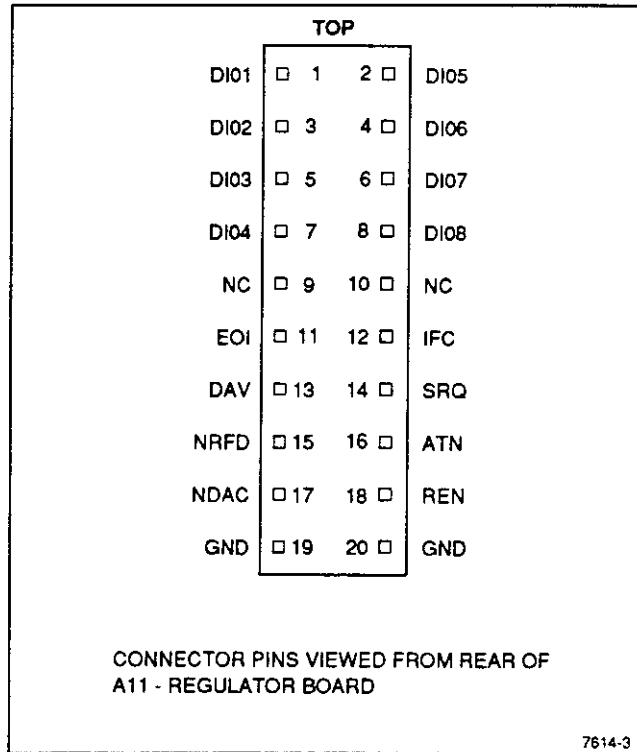
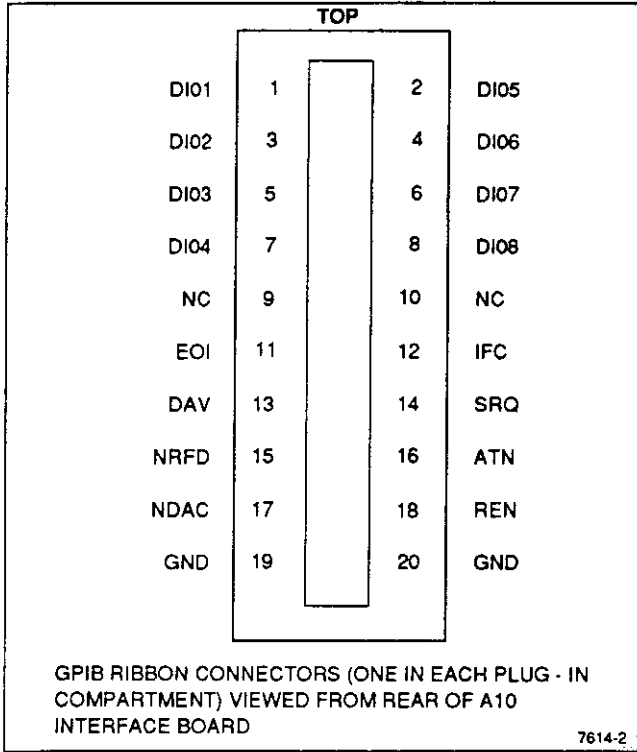


Fig. 5-8. Plug-in GPIB connector pin assignment.

Fig. 5-9. Ribbon connector J4060 pin assignments.

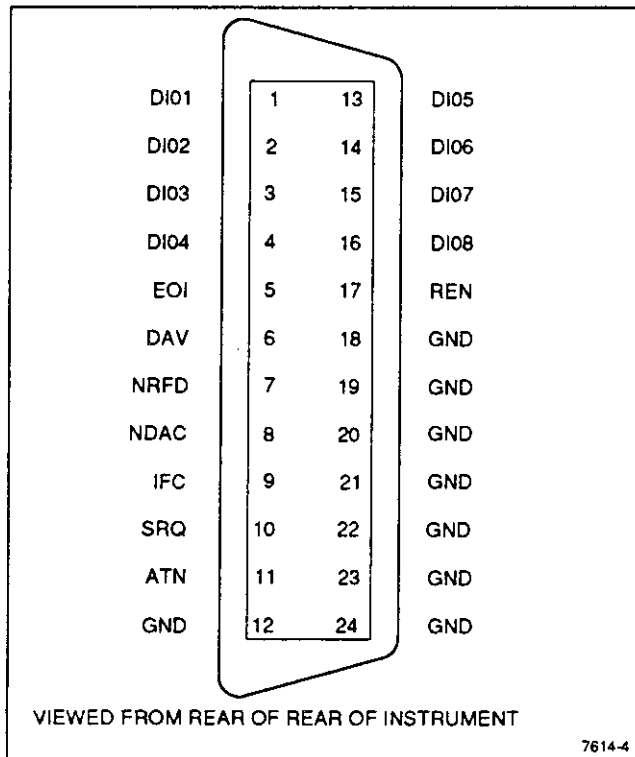


Fig. 5-10. Rear-panel GPIB connector pin assignment.

OPTIONS

The following options are available for the TM 5006A.

Options A1 Through A5

The following line cord options are available for the TM 5006A Power Module. Refer to Table 2-1, Power-cord and Plug Identification, in Section 2 for further information on Options A1 through A5.

Option A1—changes the power to Universal European (220 Volt, 6 Ampere).

Option A2—changes the power to United Kingdom (240 Volt, 6 Ampere).

Option A3—changes the power to Australian (240 Volt, 6 Ampere).

Option A4—changes the power to North American (250 Volt, 10 Ampere).

Option A5—changes the power to Switzerland (220 Volt, 6 Ampere).

Option 02

This option adds 25-mil square pin connectors to the rear of the interconnecting jacks at all pins from 14A and B to pins 28A and B. This option also adds bnc connectors and a 50-pin connector to the rear panel. These connectors are not prewired. Prepared jumpers, coaxial cables, square pins, and interconnection jack barriers are included in the kit.

Option 10

Provides factory installed rackmounting hardware on the instrument cabinet, and a hardware kit for mounting in a standard 19-inch rack.

Option 12

Provides a combination of Options 02 and 10 above.

Option 15

Provides additional EMI shielding for the TM 5006A.

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.

LIST OF ASSEMBLIES

A list of assemblies can be found at the beginning of the Electrical Parts List. The assemblies are listed in numerical order. When the complete component number of a part is known, this list will identify the assembly in which the part is located.

CROSS INDEX-MFR. CODE NUMBER TO MANUFACTURER

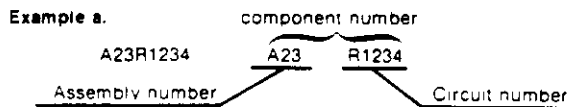
The Mfr. Code Number to Manufacturer index for the Electrical Parts List is located immediately after this page. The Cross Index provides codes, names and addresses of manufacturers of components listed in the Electrical Parts List.

ABBREVIATIONS

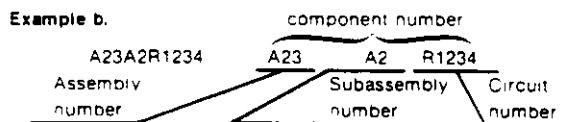
Abbreviations conform to American National Standard Y1.1

COMPONENT NUMBER (column one of the Electrical Parts List)

A numbering method has been used to identify assemblies, subassemblies and parts. Examples of this numbering method and typical expansions are illustrated by the following:



Read: Resistor 1234 of Assembly 23



Read: Resistor 1234 of Subassembly 2 of Assembly 23

Only the circuit number will appear on the diagrams and circuit board illustrations. Each diagram and circuit board illustration is clearly marked with the assembly number. Assembly numbers are also marked on the mechanical exploded views located in the Mechanical Parts List. The component number is obtained by adding the assembly number prefix to the circuit number.

The Electrical Parts List is divided and arranged by assemblies in numerical sequence (e.g., assembly A1 with its subassemblies and parts, precedes assembly A2 with its subassemblies and parts).

Chassis-mounted parts have no assembly number prefix and are located at the end of the Electrical Parts List.

TEKTRONIX PART NO. (column two of the Electrical Parts List)

Indicates part number to be used when ordering replacement part from Tektronix.

SERIAL/MODEL NO. (columns three and four of the Electrical Parts List)

Column three (3) indicates the serial number at which the part was first used. Column four (4) indicates the serial number at which the part was removed. No serial number entered indicates part is good for all serial numbers.

NAME & DESCRIPTION (column five of the Electrical Parts List)

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.

MFR. CODE (column six of the Electrical Parts List)

Indicates the code number of the actual manufacturer of the part. (Code to name and address cross reference can be found immediately after this page.)

MFR. PART NUMBER (column seven of the Electrical Parts List)

Indicates actual manufacturers part number

Replaceable Electrical Parts

CROSS INDEX – MFR CODE NUMBER TO MANUFACTURER

| Mfr Code | Manufacturer | Address | City, State, Zip Code |
|----------|--|---|------------------------------|
| 00779 | AMP INC | 2800 FULLING MILL | HARRISBURG PA 17105 |
| 00853 | SANGAMO WESTON INC COMPONENTS DIV | SANGAMO RD PO BOX 128 | PICKENS SC 29671-9716 |
| 01121 | ALLEN-BRADLEY CO | 1201 S 2ND ST | MILWAUKEE WI 53204-2410 |
| 03508 | GENERAL ELECTRIC CO | W GENESEE ST | AUBURN NY 13021 |
| 04222 | AVX CERAMICS DIV OF AVX CORP | 19TH AVE SOUTH P O BOX 867 | MYRTLE BEACH SC 29577 |
| 04713 | MOTOROLA INC | 5005 E MCDOWELL RD | PHOENIX AZ 85008-4229 |
| 05245 | CORCOM INC | 1600 WINCHESTER RD | LIBERTYVILLE IL 60048-1267 |
| 09023 | CORNELL-DUBILIER ELECTRONICS | 2652 DALRYMPLE ST | SANFORD NC 27330 |
| 0J7N9 | MCX INC | 30608 SAN ANTONIO ST | HAYWARD CA 94544 |
| 0J9R2 | HARRISON ELECTRIC CO LTD | ASAHIMACHI 5-CHOME IMABARI | EHIME JAPAN |
| 0JRO3 | ZMAN AND ASSOCIATES | 7633 S 180th | KENT WA 98032 |
| 12969 | UNITRODE CORP | 5 FORBES RD | LEXINGTON MA 02173-7305 |
| 13409 | SENSITRON SEMICONDUCTOR | 221 W INDUSTRY COURT | DEER PARK NY 11729-4605 |
| 14604 | ELMWOOD SENSORS INC SUB OF FASCO INDUSTRIES INC | 500 NARRAGANSETT PARK DR PO BOX 2325 | PAWTUCKET RI 02861-4325 |
| 15454 | KETEMA | 2900 BLUE STAR STREET | ANAHEIM CA 92806-2591 |
| 19701 | PHILIPS COMPONENTS DISCRETE PRODUCTS | PO BOX 760 | MINERAL WELLS TX 76067-0760 |
| 1W344 | UNITED CHEMI-CON INC | 9801 W HIGGINS | ROSEMONT IL 60018-4704 |
| 22526 | DU PONT E I DE NEMOURS AND CO INC | 515 FISHING CREEK RD | NEW CUMBERLAND PA 17070-3007 |
| 24165 | SPRAGUE ELECTRIC CO | 267 LOWELL ROAD | HUDSON NH 03051 |
| 25088 | SIEMENS CORP | 186 WOOD AVE S | ISELIN NJ 08830-2704 |
| 25403 | PHILIPS COMPONENTS DISCRETE PRODUCTS | GEORGE WASHINGTON HWY | SMITHFIELD RI 02917 |
| 26742 | METHODE ELECTRONICS INC | 7447 W WILSON AVE | CHICAGO IL 60656-4548 |
| 27014 | NATIONAL SEMICONDUCTOR CORP | 2900 SEMICONDUCTOR DR | SANTA CLARA CA 95051-0606 |
| 27264 | MOLEX INC | 2222 WELLINGTON COURT | LISLE IL 60532-1613 |
| 32997 | BOURNS INC | 1200 COLUMBIA AVE | RIVERSIDE CA 92507-2114 |
| 51406 | MURATA ERIE NORTH AMERICA INC | 2200 LAKE PARK DR | SMYRNA GA 30080 |
| 54583 | TDK ELECTRONICS CORP | 12 HARBOR PARK DR | PORT WASHINGTON NY 11550 |
| 54937 | DEYOUNG MANUFACTURING INC | 12920 NE 125TH WAY | KIRKLAND WA 98034-7716 |
| 55680 | NICHICON /AMERICA/ CORP | 927 E STATE PKY | SCHAUMBURG IL 60195-4526 |
| 57668 | ROHM CORP | 8 WHATNEY | IRVINE CA 92713 |
| 58050 | TEKA PRODUCTS INC | 45 SALEM ST | PROVIDENCE RI 02907 |
| 59660 | TUSONIX INC | 7741 N BUSINESS PARK DR | TUCSON AZ 85740-7144 |
| 60705 | CERA-MITE CORPORATION | 1327 6TH AVE | GRAFTON WI 53024-1831 |
| 6L334 | | | |
| 70903 | COOPER BELDEN ELECTRONICS WIRE AND CABLE | | |
| 71400 | BUSSMANN DIV OF COOPER INDUSTRIES INC | 114 OLD STATE RD PO BOX 14460 | ST LOUIS MO 63178 |
| 75042 | IRC ELECTRONIC COMPONENTS | 401 N BROAD ST | PHILADELPHIA PA 19108-1001 |
| 75498 | MULTICOMP INC | 3005 SW 154TH TERRACE #3 | BEAVERTON OR 97006 |
| 75915 | LITTELFUSE INC | 800 E NORTHWEST HWY | DES PLAINES IL 60016-3049 |
| 7W718 | MARQUARDT SWITCHES INC | 2711 ROUTH 20 EAST | CAZENOVIA NY 13035-1219 |
| 80009 | TEKTRONIX INC | 14150 SW KARL BRAUN DR | BEAVERTON OR 97077-0001 |

CROSS INDEX – MFR CODE NUMBER TO MANUFACTURER

| Mfr Code | Manufacturer | Address | City, State, Zip Code |
|----------|----------------------------|-----------------------------|----------------------------|
| 82877 | ROTRON INC | 7 HASBROUCK LN | WOODSTOCK NY 12498-1807 |
| 84411 | AMERICAN SHIZUKI CORP | 301 WEST O ST | OGALLALA NE 69153-1844 |
| 91636 | CURTIS INDUSTRIES INC | 34999 CURTIS BLVD | EASTLAKE OH 44094-4823 |
| 91637 | DALE ELECTRONICS INC | 2064 12TH AVE | COLUMBUS NE 68601-3632 |
| 95238 | CONTINENTAL CONNECTOR CORP | 34-63 56TH ST | WOODSIDE NY 11377-2121 |
| TK0515 | EVOX-RIFA INC | 100 TRI-STATE INTERNATIONAL | LINCOLNSHIRE IL 60015 |
| TK1601 | PULSE ENGINEERING INC | 2801 MOORPARK AVE | SAN JOSE CA 95128 |
| TK2073 | TOCOS AMERICA INC | 565 W GULF ROAD | ARLINGTON HEIGHTS IL 60005 |
| TK2292 | SENSOR AND SWITCHES INC | PO BOX 3297 | LEXINGTON OH 44904 |

Replaceable Electrical Parts-TM 5006A

| Component No. | Tektronix Part Number | Serial Number Effect | Serial Number Discont | Part Name & Description | Mfr Code | Mfr Part Number |
|---------------|-----------------------|----------------------|-----------------------|--|----------|----------------------|
| A10 | 671-0621-02 | | | CIRCUIT BD ASSY:MAIN INTERCONNECT | 80009 | 671-0621-02 |
| A10 | 671-2117-00 | | | CIRCUIT BD ASSY:OPT 2 MAIN INTERCONNECT (OPTION 02 ONLY) | 80009 | 671-2117-00 |
| A11 | 671-1381-00 | B010100 | B010606 | CIRCUIT BD ASSY:REGULATOR | 80009 | 671-1381-00 |
| A11 | 671-1381-01 | B010607 | B011090 | CIRCUIT BD ASSY:REGULATOR | 80009 | 671-1381-01 |
| A11 | 671-1381-02 | B011091 | | CIRCUIT BD ASSY:REGULATOR | 80009 | 671-1381-02 |
| A12 | 671-1382-00 | B010100 | B011090 | CIRCUIT BD ASSY:CONVERTOR | 80009 | 671-1382-00 |
| A12 | 671-1382-01 | B011091 | | CIRCUIT BD ASSY:CONVERTOR | 80009 | 671-1382-01 |
| A10 | 671-0621-02 | | | CIRCUIT BD ASSY:MAIN INTERCONNECT | 80009 | 671-0621-02 |
| A10C2011 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2013 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2014 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2019 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2021 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2023 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2037 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2038 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2041 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2043 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2044 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2051 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2053 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2055 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2064 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2065 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2070 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2073 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2074 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C2075 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C3016 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C3017 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C3021 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C3022 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C3043 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C3044 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C3053 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C3055 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C3067 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C3068 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C3075 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C3076 | 281-0774-00 | | | CAP,FXD,CER DI:0.022MFD,20%,100V | 04222 | SA201E223MAA |
| A10C3077 | 290-0194-00 | | | CAP,FXD,ELCTLT:10UF,+50-10%,100V | 00853 | 556DC100T100B |
| A10C3078 | 290-0194-00 | | | CAP,FXD,ELCTLT:10UF,+50-10%,100V | 00853 | 556DC100T100B |
| A10CR2034 | 152-0198-00 | | | SEMICOND DVC,DI:RECT,SI,200V,3A | 03508 | 1N5624 |
| A10CR2037 | 152-0198-00 | | | SEMICOND DVC,DI:RECT,SI,200V,3A | 03508 | 1N5624 |
| A10CR2038 | 152-0198-00 | | | SEMICOND DVC,DI:RECT,SI,200V,3A | 03508 | 1N5624 |
| A10J1005 | 131-1857-00 | | | CONN,HDR:PCB,MALE,STR,1 X 36,0.1 CTR,0.230 | 58050 | 082-3644-SS10 |
| A10J1025 | 131-1857-00 | | | CONN,HDR:PCB,MALE,STR,1 X 36,0.1 CTR,0.230 | 58050 | 082-3644-SS10 |
| A10J1045 | 131-1857-00 | | | CONN,HDR:PCB,MALE,STR,1 X 36,0.1 CTR,0.230 | 58050 | 082-3644-SS10 |
| A10J1065 | 131-1857-00 | | | CONN,HDR:PCB,MALE,STR,1 X 36,0.1 CTR,0.230 | 58050 | 082-3644-SS10 |
| A10J1070 | 131-1857-00 | | | CONN,HDR:PCB,MALE,STR,1 X 36,0.1 CTR,0.230 | 58050 | 082-3644-SS10 |
| A10J2041 | 131-2427-01 | | | TERM,QIK DISC.:TAB | 00779 | 62650-1 |
| A10J2043 | 131-2427-01 | | | TERM,QIK DISC.:TAB | 00779 | 62650-1 |
| A10J2045 | 131-2427-01 | | | TERM,QIK DISC.:TAB | 00779 | 62650-1 |
| A10J2047 | 131-2427-01 | | | TERM,QIK DISC.:TAB | 00779 | 62650-1 |
| A10J2079 | 131-2576-00 | | | CONN,HDR PWR:PCB,MALE,STR,1 X 6,0.156 CTR | 26742 | 3109-11-206-01 |
| A10J3015 | 131-1078-00 | | | CONN,EDGE CARD:PCB,STR,2 X 28,0.156 CTR | 95238 | X600-11-56Y25GDF-30N |
| A10J3025 | 131-1078-00 | | | CONN,EDGE CARD:PCB,STR,2 X 28,0.156 CTR | 95238 | X600-11-56Y25GDF-30N |
| A10J3040 | 131-1078-00 | | | CONN,EDGE CARD:PCB,STR,2 X 28,0.156 CTR | 95238 | X600-11-56Y25GDF-30N |

| Component No. | Tektronix Part Number | Serial Number | | Part Name & Description | Mfr Code | Mfr Part Number |
|---------------|-----------------------|---------------|---------|--|----------|----------------------|
| | | Effect | Discont | | | |
| A10J3055 | 131-1078-00 | | | CONN, EDGE CARD:PCB.;STR,2 X 28.0.156 CTR | 95238 | X600-11-56Y25GDF-30H |
| A10J3065 | 131-1078-00 | | | CONN, EDGE CARD:PCB.;STR,2 X 28.0.156 CTR | 95238 | X600-11-56Y25GDF-30H |
| A10J3080 | 131-1078-00 | | | CONN, EDGE CARD:PCB.;STR,2 X 28.0.156 CTR | 95238 | X600-11-56Y25GDF-30H |
| A1003005 | 151-0462-00 | | | TRANSISTOR,PWR:SI,TO-220 | 04713 | TIP30C |
| A1003011 | 151-0938-00 | | | TRANSISTOR,PWR:BIPOLAR,PNP;90V,10A,2.5 MHZ | 04713 | MJF2955 |
| A1003017 | 151-0937-00 | | | TRANSISTOR,PWR:BIPOLAR,NPN;90V,10A,2.5 MHZ | 04713 | MJF3055 |
| A1003025 | 151-0938-00 | | | TRANSISTOR,PWR:BIPOLAR,PNP;90V,10A,2.5 MHZ | 04713 | MJF2955 |
| A1003029 | 151-0937-00 | | | TRANSISTOR,PWR:BIPOLAR,NPN;90V,10A,2.5 MHZ | 04713 | MJF3055 |
| A1003036 | 151-0938-00 | | | TRANSISTOR,PWR:BIPOLAR,PNP;90V,10A,2.5 MHZ | 04713 | MJF2955 |
| A1003039 | 151-0937-00 | | | TRANSISTOR,PWR:BIPOLAR,NPN;90V,10A,2.5 MHZ | 04713 | MJF3055 |
| A1003051 | 151-0938-00 | | | TRANSISTOR,PWR:BIPOLAR,PNP;90V,10A,2.5 MHZ | 04713 | MJF2955 |
| A1003057 | 151-0937-00 | | | TRANSISTOR,PWR:BIPOLAR,NPN;90V,10A,2.5 MHZ | 04713 | MJF3055 |
| A1003067 | 151-0938-00 | | | TRANSISTOR,PWR:BIPOLAR,PNP;90V,10A,2.5 MHZ | 04713 | MJF2955 |
| A1003070 | 151-0937-00 | | | TRANSISTOR,PWR:BIPOLAR,NPN;90V,10A,2.5 MHZ | 04713 | MJF3055 |
| A10R3012 | 315-0332-00 | | | RES,FXD,FILM:3.3K OHM,5%,0.25W | 57668 | NTR25J-E03K3 |

Replaceable Electrical Parts—TM 5006A

| Component No. | Tektronix Part Number | Serial Number Effect | Serial Number Discnt | Part Name & Description | Mfr Code | Mfr Part Number |
|---------------|-----------------------|----------------------|----------------------|---|----------|---------------------|
| A11 | 671-1381-00 | B010100 | B010606 | CIRCUIT BD ASSY:REGULATOR | 80009 | 671-1381-00 |
| A11 | 671-1381-01 | B010607 | B011090 | CIRCUIT BD ASSY:REGULATOR | 80009 | 671-1381-01 |
| A11 | 671-1381-02 | B011091 | | CIRCUIT BD ASSY:REGULATOR | 80009 | 671-1381-02 |
| A11C1030 | 281-0563-00 | | | CAP,FXD,CER DI:0.47UF,20%,50V | 04222 | SA305E474MAA |
| A11C1031 | 281-0771-00 | | | CAP,FXD,CER DI:2200PF,20%,200V | 04222 | SA106E222MAA |
| A11C1040 | 281-0563-00 | | | CAP,FXD,CER DI:0.47UF,20%,50V | 04222 | SA305E474MAA |
| A11C1041 | 281-0563-00 | | | CAP,FXD,CER DI:0.47UF,20%,50V | 04222 | SA305E474MAA |
| A11C2010 | 283-0711-00 | | | CAP,FXD,MICA DI:2700PF,2%,500V | 09023 | CD19FD272G03 |
| A11C2011 | 281-0788-00 | | | CAP,FXD,CER DI:470PF,10%,100V | 04222 | SA102C471KAA |
| A11C2020 | 290-0818-00 | | | CAP,FXD,ELCTLT:390UF,+100-10%,40V | 24165 | 672D397H040DS5C |
| A11C2021 | 290-0818-00 | | | CAP,FXD,ELCTLT:390UF,+100-10%,40V | 24165 | 672D397H040DS5C |
| A11C2030 | 290-0818-00 | | | CAP,FXD,ELCTLT:390UF,+100-10%,40V | 24165 | 672D397H040DS5C |
| A11C2031 | 290-0818-00 | | | CAP,FXD,ELCTLT:390UF,+100-10%,40V | 24165 | 672D397H040DS5C |
| A11C2040 | 290-1237-00 | | | CAP,FXD,ELCTLT:12000PF,20%,16VDC | 1W344 | SME16VN123M22X40LLV |
| A11C3010 | 283-0177-05 | | | CAP,FXD,CER DI:1UF,+80-20%,25V | 04222 | SR305E105ZAATR |
| A11C3011 | 281-0788-00 | | | CAP,FXD,CER DI:470PF,10%,100V | 04222 | SA102C471KAA |
| A11C3012 | 281-0876-00 | | | CAP,FXD,CER DI:5.6PF,+/- 0.5PF | 04222 | SA106A5680 |
| A11C3013 | 281-0813-00 | | | CAP,FXD,CER DI:0.047UF,20%,50V | 04222 | SA105E473MAA |
| A11C3020 | 290-0943-00 | B010100 | B010606 | CAP,FXD,ELCTLT:47UF,+50-20%,25V | 1W344 | KMC25VB47RM6X11LL |
| A11C3020 | 290-0745-00 | B010607 | | CAP,FXD,ELCTLT:22UF,+50-20%,25VDC | 1W344 | SM63VB22RM6X11LL |
| A11C3021 | 290-1236-00 | | | CAP,FXD,ELCTLT:2200UF,20%,50VDC | 1W344 | SME50VN222M22X30T2 |
| A11C3030 | 290-1236-00 | | | CAP,FXD,ELCTLT:2200UF,20%,50VDC | 1W344 | SME50VN222M22X30T2 |
| A11C4010 | 281-0775-00 | | | CAP,FXD,CER DI:0.1UF,20%,50V | 04222 | SA105E104MAA |
| A11C4020 | 290-1237-00 | | | CAP,FXD,ELCTLT:12000PF,20%,16VDC | 1W344 | SME16VN123M22X40LLV |
| A11C4030 | 290-1237-00 | | | CAP,FXD,ELCTLT:12000PF,20%,16VDC | 1W344 | SME16VN123M22X40LLV |
| A11C5020 | 290-0919-00 | | | CAP,FXD,ELCTLT:470UF,+50-20%,35V | 1W344 | KME35VB471M10X20LL |
| A11C5021 | 281-0814-00 | | | CAP,FXD,CER DI:100 PF,10%,100V | 04222 | SA101A101KAA |
| A11C5030 | 281-0775-00 | | | CAP,FXD,CER DI:0.1UF,20%,50V | 04222 | SA105E104MAA |
| A11C6020 | 290-0974-00 | | | CAP,FXD,ELCTLT:10UF,20%,50VDC | 55680 | UVX1H100MAA |
| A11C6030 | 290-0974-00 | | | CAP,FXD,ELCTLT:10UF,20%,50VDC | 55680 | UVX1H100MAA |
| A11C6040 | 283-0194-00 | | | CAP,FXD,CER DI:4.7UF,20%,50V | 04222 | SR505E475MAA |
| A11CR1050 | 152-1118-00 | B010100 | B011004 | SEMICON DVC,DI:RECT,SI,30A,45V | 04713 | MR3045PT |
| A11CR1050 | 152-1118-01 | B011005 | | DIODE,RECT:SCHTKY,;45V,30A,COM-CATH | 04713 | MR3045PT |
| A11CR3010 | 152-0141-02 | | | DIODE,SIG:,ULTRA FAST:40V,150MA,4NS,2PF | 27014 | FDH9427 |
| A11CR3011 | 152-0141-02 | | | DIODE,SIG:,ULTRA FAST:40V,150MA,4NS,2PF | 27014 | FDH9427 |
| A11CR3040 | 152-0686-00 | | | SEMICON DVC,DI:RECT,SI,100V,5A,A264 | 04713 | MR821 |
| A11CR4010 | 152-0141-02 | | | DIODE,SIG:,ULTRA FAST:40V,150MA,4NS,2PF | 27014 | FDH9427 |
| A11CR4020 | 152-0066-00 | | | DIODE,RECT:;,400V,1A,IFSM = 30A:GP10G,DO-41 | 25403 | 1N5060 |
| A11CR4040 | 152-0686-00 | | | SEMICON DVC,DI:RECT,SI,100V,5A,A264 | 04713 | MR821 |
| A11CR4050 | 152-0686-00 | | | SEMICON DVC,DI:RECT,SI,100V,5A,A264 | 04713 | MR821 |
| A11CR4051 | 152-0686-00 | | | SEMICON DVC,DI:RECT,SI,100V,5A,A264 | 04713 | MR821 |
| A11CR5030 | 152-0066-00 | | | DIODE,RECT:;,400V,1A,IFSM = 30A:GP10G,DO-41 | 25403 | 1N5060 |
| A11CR5031 | 152-0066-00 | | | DIODE,RECT:;,400V,1A,IFSM = 30A:GP10G,DO-41 | 25403 | 1N5060 |
| A11CR5032 | 152-0066-00 | | | DIODE,RECT:;,400V,1A,IFSM = 30A:GP10G,DO-41 | 25403 | 1N5060 |
| A11CR5033 | 152-0141-02 | | | DIODE,SIG:,ULTRA FAST:40V,150MA,4NS,2PF | 27014 | FDH9427 |
| A11CR5034 | 152-0141-02 | | | DIODE,SIG:,ULTRA FAST:40V,150MA,4NS,2PF | 27014 | FDH9427 |
| A11CR5040 | 152-0141-02 | | | DIODE,SIG:,ULTRA FAST:40V,150MA,4NS,2PF | 27014 | FDH9427 |
| A11CR5041 | 152-0141-02 | | | DIODE,SIG:,ULTRA FAST:40V,150MA,4NS,2PF | 27014 | FDH9427 |
| A11CR5042 | 152-0141-02 | | | DIODE,SIG:,ULTRA FAST:40V,150MA,4NS,2PF | 27014 | FDH9427 |
| A11CR5043 | 152-0141-02 | | | DIODE,SIG:,ULTRA FAST:40V,150MA,4NS,2PF | 27014 | FDH9427 |
| A11F5010 | 159-0022-00 | | | FUSE,CARTRIDGE:3AG,1A,250V,FAST BLOWS | 71400 | AGC-1 |
| A11J1020 | 131-2427-01 | | | TERM,QIK DISC.:TAB | 00779 | 62650-1 |
| A11J1030 | 131-2427-01 | | | TERM,QIK DISC.:TAB | 00779 | 62650-1 |
| A11J1031 | 131-2427-01 | | | TERM,QIK DISC.:TAB | 00779 | 62650-1 |
| A11J1040 | 131-2427-01 | | | TERM,QIK DISC.:TAB | 00779 | 62650-1 |
| A11J3050 | 131-2576-00 | B010100 | B011090 | CONN,HDR PWR:PCB,;MALE,STR,1 X 6,0.156 CTR | 26742 | 3109-11-206-01 |
| A11J3050 | 131-5311-00 | B011091 | | CONN,HDR PWR:PCB,;MALE,STR,1 X 7,0.156 CTR | 27264 | 26-61-4070 |
| A11J4010 | 131-0608-00 | | | TERMINAL,PTIN:PRESSFIT/PCB,;MALE,STR,0.025 | 22526 | 48283-036 |

| Component No. | Tektronix | | Serial Number | | Part Name & Description | Mfr Code | Mfr Part Number |
|---------------|-------------|--------|---------------|--|---|----------|----------------------|
| | Part Number | Effect | Discont | | | | |
| A11J4061 | 131-3514-00 | | | | CONN,RIBBON:PCB.:FEMALE,RTANG,24 POS,0.085 | 22526 | 68277-001 |
| A11L3020 | 108-1022-00 | | | | COIL,RF:FIXED,8.85UH | 0JR03 | 108-1022-00 |
| A11L3030 | 108-1022-00 | | | | COIL,RF:FIXED,8.85UH | 0JR03 | 108-1022-00 |
| A11L3040 | 108-0950-00 | | | | COIL,RF:FIXED,5.5UH | 0JR03 | 108-0950-0 |
| A11O1010 | 151-0736-00 | | | | TRANSISTOR,NPN,SI,TO-92 | 04713 | 2N4401 |
| A11O1020 | 151-0190-00 | | | | TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ | 04713 | 2N3904 |
| A11O6030 | 151-0190-00 | | | | TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ | 04713 | 2N3904 |
| A11R1010 | 311-2273-00 | | | | RES,VAR,NONWV:TRMR,2K OHM,20%,0.5WLINEAR, | TK2073 | GF06VT2 202 M L20 |
| A11R1011 | 311-2257-00 | | | | RES,VAR,NONWV:TRMR,500 OHM,20%,0.5WLINEAR | 32997 | 3362-M-1-501R |
| A11R1012 | 301-0100-00 | | | | RES,FXD,FILM:10 OHM,5%,0.50W | 19701 | SFR30 2322-180-13100 |
| A11R1013 | 315-0103-00 | | | | RES,FXD,FILM:10K OHM,5%,0.25W | 19701 | 5043CX10K00J |
| A11R1014 | 315-0512-00 | | | | RES,FXD,FILM:5.1K OHM,5%,0.25W | 57668 | NTR25J-E05K1 |
| A11R1015 | 321-0293-00 | | | | RES,FXD,FILM:11.0K OHM,1%,0.125W,TC-TOMI | 91637 | OMF55116G11001F |
| A11R1020 | 315-0104-00 | | | | RES,FXD,FILM:100K OHM,5%,0.25W | 57668 | NTR25J-E100K |
| A11R1021 | 315-0104-00 | | | | RES,FXD,FILM:100K OHM,5%,0.25W | 57668 | NTR25J-E100K |
| A11R1022 | 321-0249-00 | | | | RES,FXD,FILM:3.8K OHM,1%,0.125W,TC-TOMI | 91637 | OMF55116G38300F |
| A11R1023 | 315-0104-00 | | | | RES,FXD,FILM:100K OHM,5%,0.25W | 57668 | NTR25J-E100K |
| A11R1024 | 315-0913-00 | | | | RES,FXD,FILM:91K OHM,5%,0.25W | 19701 | 5043CX91K00J |
| A11R1030 | 301-0100-00 | | | | RES,FXD,FILM:10 OHM,5%,0.50W | 19701 | SFR30 2322-180-13100 |
| A11R1040 | 321-0225-00 | | | | RES,FXD,FILM:2.15K OHM,1%,0.125W | 91637 | OMF55116G21500F |
| A11R2010 | 321-0336-00 | | | | RES,FXD,FILM:32.4K OHM,1%,0.125W | 91637 | OMF55116G32401F |
| A11R3010 | 315-0104-00 | | | | RES,FXD,FILM:100K OHM,5%,0.25W | 57668 | NTR25J-E100K |
| A11R3011 | 315-0751-00 | | | | RES,FXD,FILM:750 OHM,5%,0.25W | 57668 | NTR25J-E750E |
| A11R3012 | 315-0513-00 | | | | RES,FXD,FILM:51K OHM,5%,0.25W | 57668 | NTR25J-E51K0 |
| A11R3013 | 315-0692-00 | | | | RES,FXD,FILM:6.8K OHM,5%,0.25W | 57668 | NTR25J-E06K8 |
| A11R3014 | 315-0242-00 | | | | RES,FXD,FILM:2.4K OHM,5%,0.25W | 57668 | NTR25J-E02K4 |
| A11R3015 | 315-0203-00 | | | | RES,FXD,FILM:20K OHM,5%,0.25W | 57668 | NTR25J-E 20K |
| A11R3016 | 315-0153-00 | | | | RES,FXD,FILM:15K OHM,5%,0.25W | 19701 | 5043CX15K00J |
| A11R3017 | 321-0164-00 | | | | RES,FXD,FILM:499 OHM,1%,0.125W,TC-T0 | 91637 | OMF55116G499R0F |
| A11R3019 | 315-0223-00 | | | | RES,FXD,FILM:22K OHM,5%,0.25W | 19701 | 5043CX22K00J92U |
| A11R4010 | 315-0223-00 | | | | RES,FXD,FILM:22K OHM,5%,0.25W | 19701 | 5043CX22K00J92U |
| A11R4011 | 315-0103-00 | | | | RES,FXD,FILM:10K OHM,5%,0.25W | 19701 | 5043CX10K00J |
| A11R4012 | 315-0751-00 | | | | RES,FXD,FILM:750 OHM,5%,0.25W | 57668 | NTR25J-E750E |
| A11R4013 | 315-0224-00 | | | | RES,FXD,FILM:220K OHM,5%,0.25W | 57668 | NTR25J-E220K |
| A11R4014 | 315-0623-00 | | | | RES,FXD,FILM:62K OHM,5%,0.25W | 19701 | 5043CX62K00J |
| A11R4015 | 315-0223-00 | | | | RES,FXD,FILM:22K OHM,5%,0.25W | 19701 | 5043CX22K00J92U |
| A11R4016 | 315-0130-00 | | | | RES,FXD,FILM:13 OHM,5%,0.25W | 01121 | CB1305 |
| A11R4017 | 315-0103-00 | | | | RES,FXD,FILM:10K OHM,5%,0.25W | 19701 | 5043CX10K00J |
| A11R4018 | 315-0302-00 | | | | RES,FXD,FILM:3K OHM,5%,0.25W | 57668 | NTR25J-E03K0 |
| A11R4019 | 315-0134-00 | | | | RES,FXD,FILM:130K OHM,5%,0.25W | 57668 | NTR25J-E130K |
| A11R4020 | 315-0821-00 | | | | RES,FXD,FILM:820 OHM,5%,0.25W | 19701 | 5043CX820R0J |
| A11R4021 | 321-0279-00 | | | | RES,FXD,FILM:7.87K OHM,1%,0.125W,TC-TOMI | 91637 | OMF55116G78700F |
| A11R4040 | 308-0426-00 | | | | RES,FXD,WV:470 OHM,5%,3W | 91637 | QW2B-470R0J T/R |
| A11R4050 | 308-0426-00 | | | | RES,FXD,WV:470 OHM,5%,3W | 91637 | QW2B-470R0J T/R |
| A11R5020 | 315-0332-00 | | | | RES,FXD,FILM:3.3K OHM,5%,0.25W | 57668 | NTR25J-E03K3 |
| A11R5021 | 321-0279-00 | | | | RES,FXD,FILM:7.87K OHM,1%,0.125W,TC-TOMI | 91637 | OMF55116G78700F |
| A11R5022 | 321-0241-00 | | | | RES,FXD,FILM:3.16K OHM,1%,0.125W,TC-TOMI | 91637 | OMF55116G31600F |
| A11R5023 | 315-0130-00 | | | | RES,FXD,FILM:13 OHM,5%,0.25W | 01121 | CB1305 |
| A11R5024 | 315-0130-00 | | | | RES,FXD,FILM:13 OHM,5%,0.25W | 01121 | CB1305 |
| A11R5030 | 321-0225-00 | | | | RES,FXD,FILM:2.15K OHM,1%,0.125W | 91637 | OMF55116G21500F |
| A11R5031 | 321-0322-00 | | | | RES,FXD,FILM:22.1K OHM,1%,0.125W,TC-T0,MI | 91637 | OMF55116G22101F |
| A11R5032 | 321-0279-00 | | | | RES,FXD,FILM:7.87K OHM,1%,0.125W,TC-TOMI | 91637 | OMF55116G78700F |
| A11R5033 | 321-0279-00 | | | | RES,FXD,FILM:7.87K OHM,1%,0.125W,TC-TOMI | 91637 | OMF55116G78700F |
| A11R5040 | 308-0426-00 | | | | RES,FXD,WV:470 OHM,5%,3W | 91637 | QW2B-470R0J T/R |
| A11R5050 | 308-0426-00 | | | | RES,FXD,WV:470 OHM,5%,3W | 91637 | QW2B-470R0J T/R |
| A11R5051 | 308-0402-00 | | | | RES,FXD,WV:30 OHM,5%,5W | 91637 | QW2A-K30R0J T/R |
| A11R5052 | 323-0095-00 | | | | RES,FXD,FILM:95.3 OHM,1%,0.5W,TC-T0 | 91637 | OMF55116G95R30F |
| A11T2050 | 120-1299-00 | | | | XPRR,PWR,STPDR:HF | 75498 | 120-1299-00 |
| A11T3060 | 120-1822-00 | | | | TRANSFORMER,PWR:115 INPUT,12V OUT | 80009 | 120-1822-00 |

Replaceable Electrical Parts-TM 5006A

| Component No. | Tektronix Part Number | Serial Number Effect | Discont | Part Name & Description | Mfr Code | Mfr Part Number |
|---------------|-----------------------|----------------------|---------|---|----------|-----------------|
| A11TP1030 | 131-0608-00 | | | TERMINAL,PIN:PRESSFIT/PCB,:MALE,STR,0.025 | 22526 | 48283-036 |
| A11TP1031 | 131-0608-00 | | | TERMINAL,PIN:PRESSFIT/PCB,:MALE,STR,0.025 | 22526 | 48283-036 |
| A11TP1040 | 131-0608-00 | | | TERMINAL,PIN:PRESSFIT/PCB,:MALE,STR,0.025 | 22526 | 48283-036 |
| A11TP1041 | 131-0608-00 | | | TERMINAL,PIN:PRESSFIT/PCB,:MALE,STR,0.025 | 22526 | 48283-036 |
| A11TP6040 | 131-0608-00 | | | TERMINAL,PIN:PRESSFIT/PCB,:MALE,STR,0.025 | 22526 | 48283-036 |
| A11U2010 | 156-0411-00 | | | IC,LINER:BIPOLAR,COMPARATOR:QUAD,SINGLE | 04713 | LM339N |
| A11U2020 | 156-2024-00 | | | IC,LINER:BIPOLAR,SW-REGULATOR CONTROLLER | 12969 | UC3525AN |
| A11U6020 | 156-0071-00 | | | IC,LINER:BIPOLAR,VOLTAGE REGULATOR | 27014 | LM723CN |
| A11VR4010 | 152-0236-02 | | | SEMICON DVC,DI | 80009 | 152-0236-02 |

Replaceable Electrical Parts—TM 5006A

| Component No. | Tektronix | | Serial Number | | Part Name & Description | Mfr Code | Mfr Part Number |
|---------------|-------------|---------|---------------|--|--|----------|----------------------|
| | Part Number | Effect | Discont | | | | |
| A12 | 671-1382-00 | B010100 | B011090 | | CIRCUIT BD ASSY:CONVERTOR | 80009 | 671-1382-00 |
| A12 | 671-1382-01 | B011091 | | | CIRCUIT BD ASSY:CONVERTOR | 80009 | 671-1382-01 |
| A12C1020 | 283-0008-00 | | | | CAP,FXD,CER DI:0.1UF,20%,500V | 04222 | SR507C104MAA |
| A12C1021 | 283-0008-00 | | | | CAP,FXD,CER DI:0.1UF,20%,500V | 04222 | SR507C104MAA |
| A12C1030 | 285-1325-00 | | | | CAP,FXD,MTLZD:1UF,10%,400VDC | TK0515 | PMR27.5 105 K 400 |
| A12C1030 | 290-1203-00 | | | | CAP,FXD,ELCTLT:1200UF,20%,200V | 24165 | 80D2361 |
| A12C1040 | 290-1203-00 | | | | CAP,FXD,ELCTLT:1200UF,20%,200V | 24165 | 80D2361 |
| A12C1050 | 283-0008-00 | | | | CAP,FXD,CER DI:0.1UF,20%,500V | 04222 | SR507C104MAA |
| A12C1071 | 283-0008-00 | | | | CAP,FXD,CER DI:0.1UF,20%,500V | 04222 | SR507C104MAA |
| A12C2011 | 283-0008-00 | | | | CAP,FXD,CER DI:0.1UF,20%,500V | 04222 | SR507C104MAA |
| A12C2013 | 283-0008-00 | | | | CAP,FXD,CER DI:0.1UF,20%,500V | 04222 | SR507C104MAA |
| A12C2052 | 283-0029-00 | | | | CAP,FXD,CER DI:0.005UF,5%,500V | 59660 | 821-000B502J |
| A12C2054 | 283-0029-00 | | | | CAP,FXD,CER DI:0.005UF,5%,500V | 59660 | 821-000B502J |
| A12C3012 | 285-1218-00 | B010100 | B011090 | | CAP,FXD,PLASTIC:0.27UF,10%,400VDC | 84411 | ADVISE |
| A12C3012 | 285-1465-00 | B011091 | | | CAP,FXD,PAPER:0.27UF,20%,250V, | TK0515 | PME271M627K |
| A12C3052 | 285-1192-00 | | | | CAP,FXD,PPR DI:0.0022 UF,20%,250VAC | TK0515 | PME271Y422 |
| A12C3053 | 285-1192-00 | | | | CAP,FXD,PPR DI:0.0022 UF,20%,250VAC | TK0515 | PME271Y422 |
| A12C4060 | 285-1325-00 | | | | CAP,FXD,MTLZD:1UF,10%,400VDC | TK0515 | PMR27.5 105 K 400 |
| A12C4062 | 283-0000-00 | | | | CAP,FXD,CER DI:0.001UF,+100-0%,500V | 51406 | DD06450Y5U102P500V |
| A12C4070 | 283-0044-00 | | | | CAP,FXD,CER DI:1000PF,20%,3000V | 54583 | TCK45Y3F102M-G |
| A12C4071 | 285-1205-00 | | | | CAP,FXD,MTLZD:0.06UF,5%,1000V | 84411 | TEK 210 .06 5 1.000 |
| A12C5011 | 283-0358-00 | B010100 | B011090 | | CAP,FXD,CER DI:0.01UF,-20 +80%,1.4KVUL | 60705 | 440LS10 |
| A12C5011 | 285-1464-00 | B011091 | | | CAP,FXD,PAPER:0.01UF,20%,250V, | TK0515 | PME271Y510MS |
| A12C5020 | 283-0358-00 | B010100 | B011090 | | CAP,FXD,CER DI:0.01UF,-20 +80%,1.4KVUL | 60705 | 440LS10 |
| A12C5020 | 285-1464-00 | B011091 | | | CAP,FXD,PAPER:0.01UF,20%,250V, | TK0515 | PME271Y510MS |
| A12C5070 | 283-0000-00 | | | | CAP,FXD,CER DI:0.001UF,+100-0%,500V | 51406 | DD06450Y5U102P500V |
| A12CR2010 | 152-0750-00 | | | | DIODE,RECT: ,FAST RCVRY:BRIDGE,600V,3A | 6L334 | PB66F-BS01-S |
| A12CR3082 | 152-0655-00 | | | | SEMICON DVC,DI:RECT,SI,100V,3A | 13409 | SEN-R-246 |
| A12CR3083 | 152-0400-00 | | | | DIODE,RECT: ,FAST RCVRY:400V,1A,200NS:1N4936 | 25403 | 1N4936 |
| A12CR3084 | 152-0400-00 | | | | DIODE,RECT: ,FAST RCVRY:400V,1A,200NS:1N4936 | 25403 | 1N4936 |
| A12CR3085 | 152-0655-00 | | | | SEMICON DVC,DI:RECT,SI,100V,3A | 13409 | SEN-R-246 |
| A12DS1052 | 150-0030-00 | | | | LAMP,GLOW:60-90V MAX,0.6MA,A28-T,WIRE LEADS | 0J9R2 | NE-2B(AC/DC);R-T |
| A12E3013 | 119-0181-00 | | | | ARSR,ELEC SURGE:230,GAS FILLED,+/-15% | 25088 | B1-A230T |
| A12E4012 | 119-0181-00 | | | | ARSR,ELEC SURGE:230,GAS FILLED,+/-15% | 25088 | B1-A230T |
| A12J4013 | 131-3258-00 | B010100 | B011090 | | CONN,HDR PWR:PCB, :MALE,STR,1 X 2,0.156 CTR, | 26742 | 3107-11-202-01 |
| A12J4013 | 131-5313-00 | B011091 | | | CONN,HDR PWR:PCB, :MALE,STR,1 X 2,0.156 CTR,W, | 27264 | 26-61-4020 |
| A12J4014 | 131-2992-00 | B010100 | B011090 | | CONN,HDR | | |
| A12J4014 | 131-5312-00 | B011091 | | | CONN,HDR,PWR:PCB,MALE,STR,1 X 5,0.156 CTR | 27264 | 26-61-4050 |
| A12J4015 | 131-2992-00 | B010100 | B011090 | | CONN,HDR PWR:PCB, :MALE,STR,1 X 3,0.156 CTR | 26742 | 3107-11-103-01 |
| A12J4015 | 131-5312-00 | B011091 | | | CONN,HDR,PWR:PCB,MALE,STR,1 X 5,0.156 CTR | 27264 | 26-61-4050 |
| A12J4016 | 174-0177-00 | | | | CABLE ASSY,PWR: :2.18 AWG,125V,7.25 L | 70903 | ORDER BY DESCRIPTION |
| A12J5010 | 131-2427-01 | | | | TERM,01K DISC: :TAB | 00779 | 62650-1 |
| A12J5080 | 131-2576-00 | B010100 | B011090 | | CONN,HDR PWR: :PCB, :MALE,STR,1 X 6,0.156 CTR | 26742 | 3109-11-206-01 |
| A12J5080 | 131-5311-00 | B011091 | | | CONN,HDR PWR:PCB, :MALE,STR,1 X 7,0.156 CTR | 27264 | 26-61-4070 |
| A12L2060 | 108-1492-00 | | | | COIL,RF:FXD,1MH,POT CORE | 54937 | 500-4688 |
| A12L3011 | 108-1037-00 | | | | COIL,RF:FXD,500UH | 0JRO3 | 108-1037-00 |
| A12L3050 | 108-0972-00 | | | | COIL,RF:FIXED,500UH | 0JRO3 | 108-0972-00 |
| A12L3051 | 108-0972-00 | | | | COIL,RF:FIXED,500UH | 0JRO3 | 108-0972-00 |
| A12LR2050 | 108-0537-00 | | | | COIL,RF:FIXED,200UH | 0JRO3 | 108-0537-00 |
| A12LR2053 | 108-0537-00 | | | | COIL,RF:FIXED,200UH | 0JRO3 | 108-0537-00 |
| A12Q3086 | 151-1195-00 | | | | TRANSISTOR,PWR:MOS,N-CH:500V,8.0A,0.85 OHM | 04713 | MTP8N50E |
| A12Q3087 | 151-1195-00 | | | | TRANSISTOR,PWR:MOS,N-CH:500V,8.0A,0.85 OHM | 04713 | MTP8N50E |
| A12R1010 | 308-0767-00 | | | | RES,FXD:1.1 OHM,5%,1W | 75042 | SP-20-1.1 OHM -5% |
| A12R1011 | 308-0767-00 | | | | RES,FXD:1.1 OHM,5%,1W | 75042 | SP-20-1.1 OHM -5% |
| A12R1051 | 315-0471-00 | | | | RES,FXD,FILM:470 OHM,5%,0.25W | 57668 | NTR25J-E470E |
| A12R1060 | 303-0104-00 | | | | RES,FXD,CHPSN:100K OHM,5%,1W | 91637 | CHF65-42 100 K OHM 5 |
| A12R1061 | 303-0104-00 | | | | RES,FXD,CHPSN:100K OHM,5%,1W | 91637 | CHF65-42 100 K OHM 5 |
| A12R1070 | 301-0685-00 | | | | RES,FXD,FILM:6.8M OHM,5%,0.5W | 01121 | EB6855 |

Replaceable Electrical Parts-TM 5006A

| Component No. | Tektronix Part Number | Serial Number | | Part Name & Description | Mfr Code | Mfr Part Number |
|---------------|--------------------------|---------------|---------|--------------------------------------|-------------|--------------------|
| | | Effect | Discont | | | |
| A12R2012 | 308-0767-00 | | | RES,FXD:1.1 OHM,5%,1W | 75042 | SP-20-1.1 OHM -5% |
| A12R2020 | 308-0767-00 | | | RES,FXD:1.1 OHM,5%,1W | 75042 | SP-20-1.1 OHM -5% |
| A12R2040 | 315-0471-00 | | | RES,FXD,FILM:470 OHM,5%,0.25W | 57668 | NTR25J-E470E |
| A12R2081 | 315-0100-00 | | | RES,FXD,FILM:10 OHM,5%,0.25W | 19701 | 5043CX10RR00J |
| A12R2082 | 315-0431-00 | | | RES,FXD,FILM:430 OHM,5%,0.25W | 19701 | 5043CX430R0J |
| A12R3010 | 315-0361-00 | | | RES,FXD,FILM:360 OHM,5%,0.25W | 19701 | 5043CX360R0J |
| A12R3070 | 308-0426-00 | | | RES,FXD,WW:470 OHM,5%,3W | 91637 | QW2B-470R0J T/R |
| A12R3080 | 315-0100-00 | | | RES,FXD,FILM:10 OHM,5%,0.25W | 19701 | 5043CX10RR00J |
| A12R3081 | 315-0431-00 | | | RES,FXD,FILM:430 OHM,5%,0.25W | 19701 | 5043CX430R0J |
| A12R4061 | 315-0101-00 | | | RES,FXD,FILM:100 OHM,5%,0.25W | 57668 | NTR25J-E 100E |
| A12R4072 | 305-0470-00 | | | RES,FXD,CHPSN:47 OHM,5%,2WS | 01121 | HB 4705 |
| A12R5071 | 301-0331-00 | | | RES,FXD,FILM:330 OHM,5%,0.5W | 19701 | 5053CX330R0J |
| A12RT4010 | 307-0350-00 | | | RES,THERMAL:7.5 OHM,10%,3.9%/DEG C | 15454 | 750J7R5R0220SS-SIL |
| A12RT4011 | 307-0350-00 | | | RES,THERMAL:7.5 OHM,10%,3.9%/DEG C | 15454 | 750J7R5R0220SS-SIL |
| A12SC4080 | 342-0449-01 | | | INSULATOR,PLATE:TRANSISTOR,ALUMINA | 80009 | 342-0449-01 |
| A12T2080 | 120-1655-00 | | | TRANSFORMER,PWR:GATE DR.1:1:1,1.5MH | 24165 | 96Z4600JEE |
| A12T4050 | 120-1734-00 | | | TRANSFORMER,RF:COMMON MODE,4MH,4ADC | TK1601 | PE-62916 |
| A12W4050 | 195-0497-00 | | | LEAD FRAME:MICROCKT,16 DIP,SPOT GOLD | 80009 | 195-0497-00 |

| Component No. | Tektronix Part Number | Serial Number Effect | Discont | Part Name & Description | Mfr Code | Mfr Part Number |
|---------------|-----------------------|----------------------|---------|--|----------|----------------------|
| CHASSIS PARTS | | | | | | |
| B500 | 119-0147-00 | | | FAN, VENTILATING: 115VAC, 14W, 50-60HZ, 105 CFM (OPTION 10 AND OPTION 12 ONLY) | 82877 | 028021 |
| B500 | 119-0721-00 | | | FAN, TUBEAXIAL: 115 VAC, 10W, 50-60 HZ, 80 CFM (STANDARD ONLY) | 82877 | WR2H1 |
| F500 | 159-0013-00 | | | FUSE, CARTRIDGE: 3AG, 6A, 250V, FAST BLOW (STANDARD ONLY) | 75915 | 312006 |
| F500 | 159-0017-00 | | | FUSE, CARTRIDGE: 3AG, 4A, 250V, FAST BLOW (OPTION A1 EUROPEAN) | 71400 | AGC-4 |
| F500 | 159-0017-00 | | | FUSE, CARTRIDGE: 3AG, 4A, 250V, FAST BLOW (OPTION A2 UNITED KINGDOM) | 71400 | AGC-4 |
| F500 | 159-0017-00 | | | FUSE, CARTRIDGE: 3AG, 4A, 250V, FAST BLOW (OPTION A3 AUSTRALIAN) | 71400 | AGC-4 |
| F500 | 159-0017-00 | | | FUSE, CARTRIDGE: 3AG, 4A, 250V, FAST BLOW (OPTION A4 NORTH AMERICAN) | 71400 | AGC-4 |
| F500 | 159-0017-00 | | | FUSE, CARTRIDGE: 3AG, 4A, 250V, FAST BLOW (OPTION A5 SWITZERLAND) | 71400 | AGC-4 |
| FL500 | 119-3212-00 | | | SELECTOR, LINE V-W/LINE FILTER, RCPT & FUHLR (STANDARD AND OPTIONS) | 91636 | PE60FS06 |
| FL600 | 119-3634-00 | | | FILTER, RFI: 6A, 120VAC, 50-60HZ (OPTION 15 ONLY) | 05245 | 6EQ1 |
| Q450 | 151-0652-00 | | | TRANSISTOR, PWR: BIPOLAR, NPN: 100V, .25A, 3.0MHZ | 04713 | TIP35C |
| Q650 | 151-0651-00 | | | TRANSISTOR, PWR: BIPOLAR, PNP: 100V, .25A, 3.0MHZ | 04713 | TIP36C |
| SW500 | 260-1961-00 | | | SWITCH, ROCKER: DPST, 6(4)A, 250V | 7W718 | 1802-1121 |
| SW600 | 260-1710-00 | | | SWITCH, THERMSTC: NC, OPEN 92.97, CL 80.4, 10A | 14604 | 2450-47-16 |
| SW650 | 260-0907-00 | | | SWITCH, THERMSTC: NC, OPEN 97.8, CL 75.6 | TK2292 | 430-349 |
| T500 | 120-1845-00 | B010100 | B011090 | XFMR, PWR, STPON: PRI 100/220VAC W/TAPS, 60HZ | 75498 | 128-9032-EE |
| T500 | 120-1845-01 | B011091 | | TRANSFORMER, PWR: PRIM TAPPED 100/120/220/240 | 75498 | T3818 |
| W200 | 174-2006-00 | | | CA ASSY, SP, ELEC: 6.22 AWG, 7.5 L | 80009 | 174-2006-00 |
| W300 | 174-1287-00 | | | CA ASSY, SP, ELEC: 4.18 AWG, 8-N, 24.0 L (STANDARD ONLY) | 80009 | 174-1287-00 |
| W300 | 174-2003-00 | | | CA ASSY, SP, ELEC: MULTI COND, 24.0 L, W/FAST (OPTION 15 ONLY) | 80009 | 174-2003-00 |
| W310 | 196-3298-00 | | | LEAD, ELECTRICAL: 18 AWG, 21.0 L (OPTION 15 ONLY) | 80009 | 196-3298-00 |
| W311 | 343-0013-00 | | | CLAMP, LOOP: 0.375 ID, PLASTIC (OPTION 15 ONLY) | 06915 | E6 CLEAR ROUND CABLE |
| W312 | 196-3296-00 | | | LEAD, ELECTRICAL: 18 AWG, 7.50 L (OPTION 15 ONLY) | 80009 | 196-3296-00 |
| W314 | 174-2004-00 | B010100 | B011090 | CA ASSY, SP, ELEC: 2.18 AWG, 3.63 L | 80009 | 174-2004-00 |
| W314 | 174-2004-01 | B011091 | | CA ASSY, SP, ELEC: 2.16 AWG, 3.63 L | 80009 | 174-2004-01 |
| W315 | 174-2005-00 | B010100 | B011090 | CA ASSY, SP, ELEC: 3.18 AWG, 6.5 L | 80009 | 174-2005-00 |
| W315 | 174-2005-01 | B011091 | | CA ASSY, SP, ELEC: 3.18 AWG, 6.5 L | 80009 | 174-2005-01 |
| W400 | 175-5970-01 | | | CA ASSY, SP, ELEC: 3.26 AWG, 5.12 L, RIBBON | 80009 | 175-5970-01 |
| W410 | 196-3220-00 | | | LEAD, ELECTRICAL: 18 AWG, 2.5 L, 5-4 | 0J7N9 | 196-3220-00 |
| W450 | 198-5712-00 | | | WIRE SET, ELEC: 4 WIRE W/QUICK DISC, FERRITE | 80009 | 198-5712-00 |
| W470 | 198-5711-00 | B010100 | B011090 | WIRE SET, ELEC: 4 WIRE W/1 X 6 HOLDERS | 80009 | 198-5711-00 |
| W470 | 198-5711-01 | B011091 | | WIRE SET, ELEC: 4 WIRE W/1 X 6 HOLDERS | 80009 | 198-5711-01 |
| W500 | 174-2011-00 | | | CA ASSY, SP, ELEC: 20 COND, 23.4 L | 80009 | 174-2011-00 |

DIAGRAMS AND CIRCUIT BOARD ILLUSTRATIONS

Symbols

Graphic symbols and class designation letters are based on ANSI Standard Y32.2-1975.

Logic symbology is based on ANSI Y32.14-1973 in terms of positive logic. Logic symbols depict the logic function performed and may differ from the manufacturer's data.

The overline on a signal name indicates that the signal performs its intended function when it is in the low state.

Abbreviations are based on ANSI Y1.1-1972.

Other ANSI standards that are used in the preparation of diagrams by Tektronix, Inc. are:

- Y14.15, 1966 Drafting Practices.
- Y14.2, 1973 Line Conventions and Lettering.
- Y10.5, 1968 Letter Symbols for Quantities Used in Electrical Science and Electrical Engineering.

American National Standard Institute
1430 Broadway
New York, New York 10018

Component Values

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).

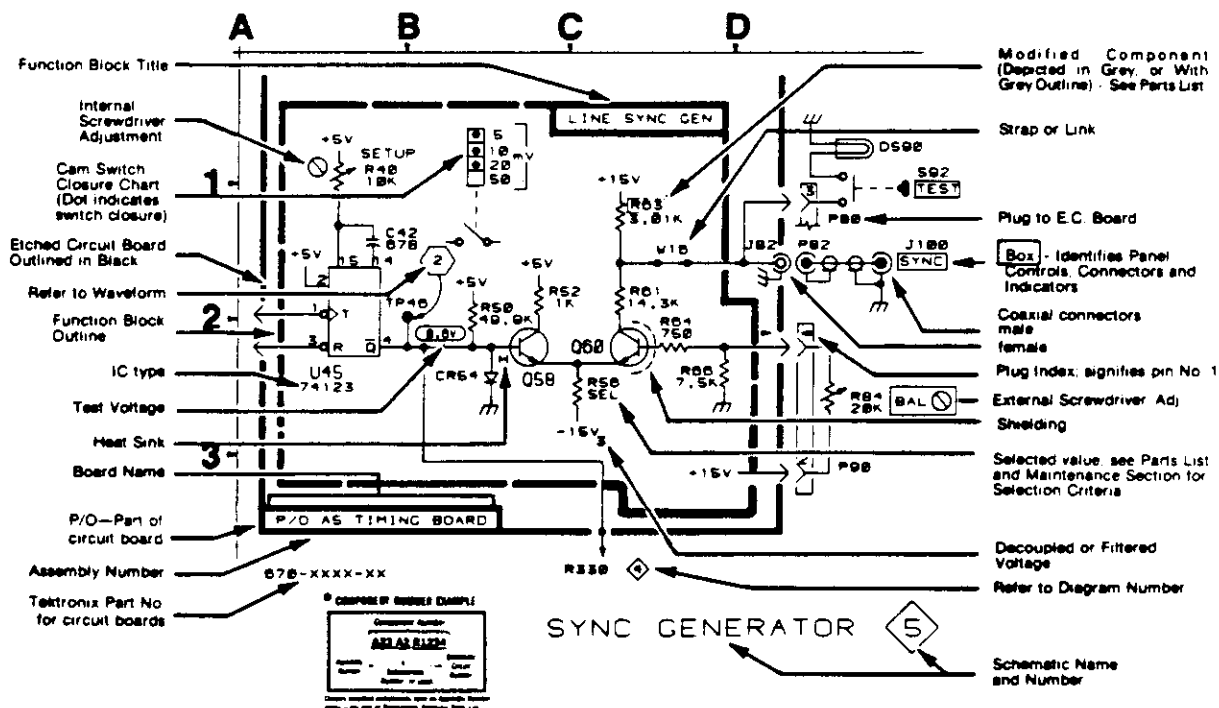
Resistors = Ohms (Ω).

———— The information and special symbols below may appear in this manual. ————

Assembly Numbers and Grid Coordinates

Each assembly in the instrument is assigned an assembly number (e.g., A20). The assembly number appears on the circuit board outline on the diagram, in the title for the circuit board component location illustration, and in the lookup table for the schematic diagram and corresponding component locator illustration. The Replaceable Electrical Parts list is arranged by assemblies in numerical sequence; the components are listed by component number *(see following illustration for constructing a component number).

The schematic diagram and circuit board component location illustration have grids. A lookup table with the grid coordinates is provided for ease of locating the component. Only the components illustrated on the facing diagram are listed in the lookup table. When more than one schematic diagram is used to illustrate the circuitry on a circuit board, the circuit board illustration may only appear opposite the first diagram on which it was illustrated; the lookup table will list the diagram number of other diagrams that the circuitry of the circuit board appears on.



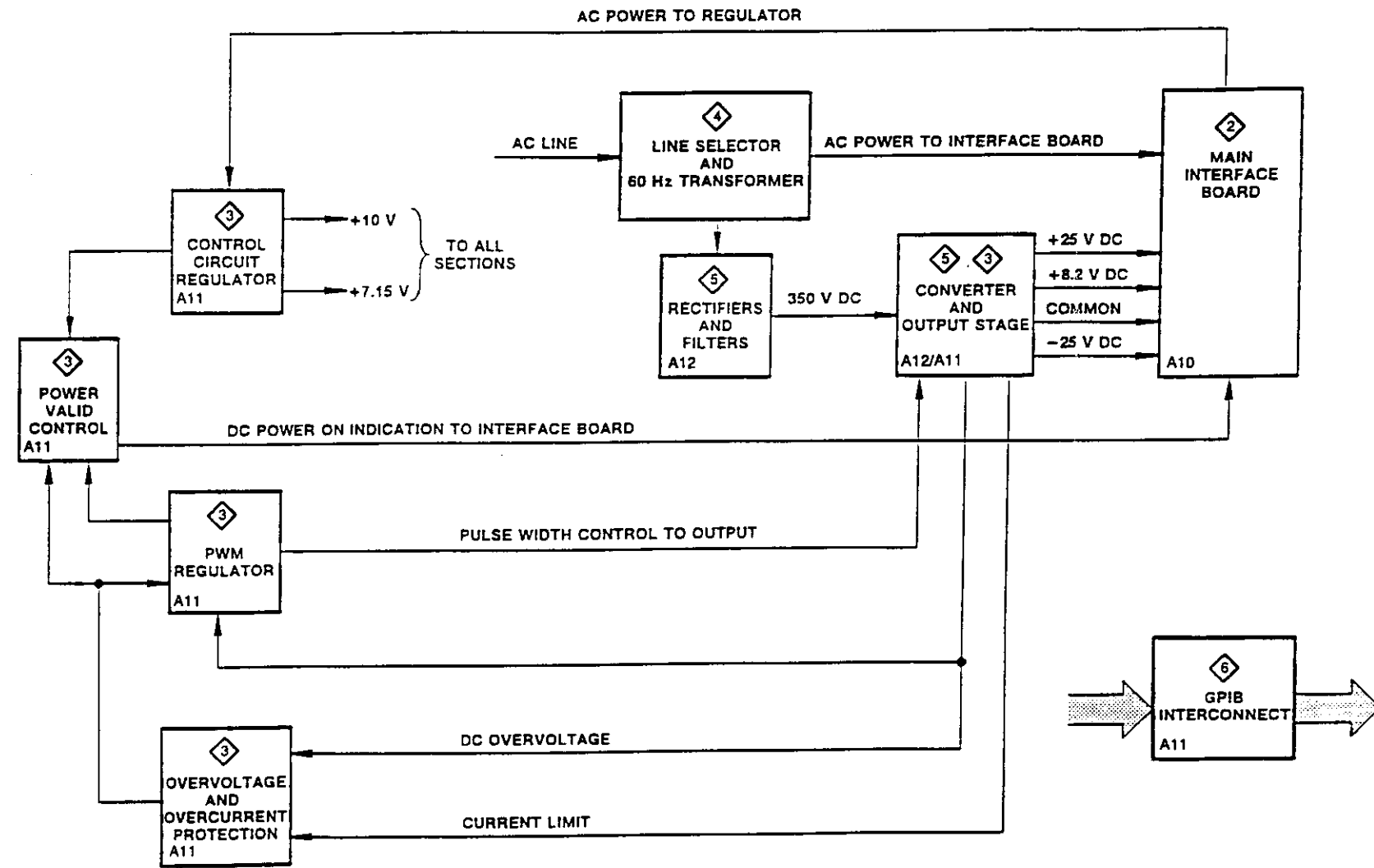


Fig. 8-1 TM 5006A Block Diagram

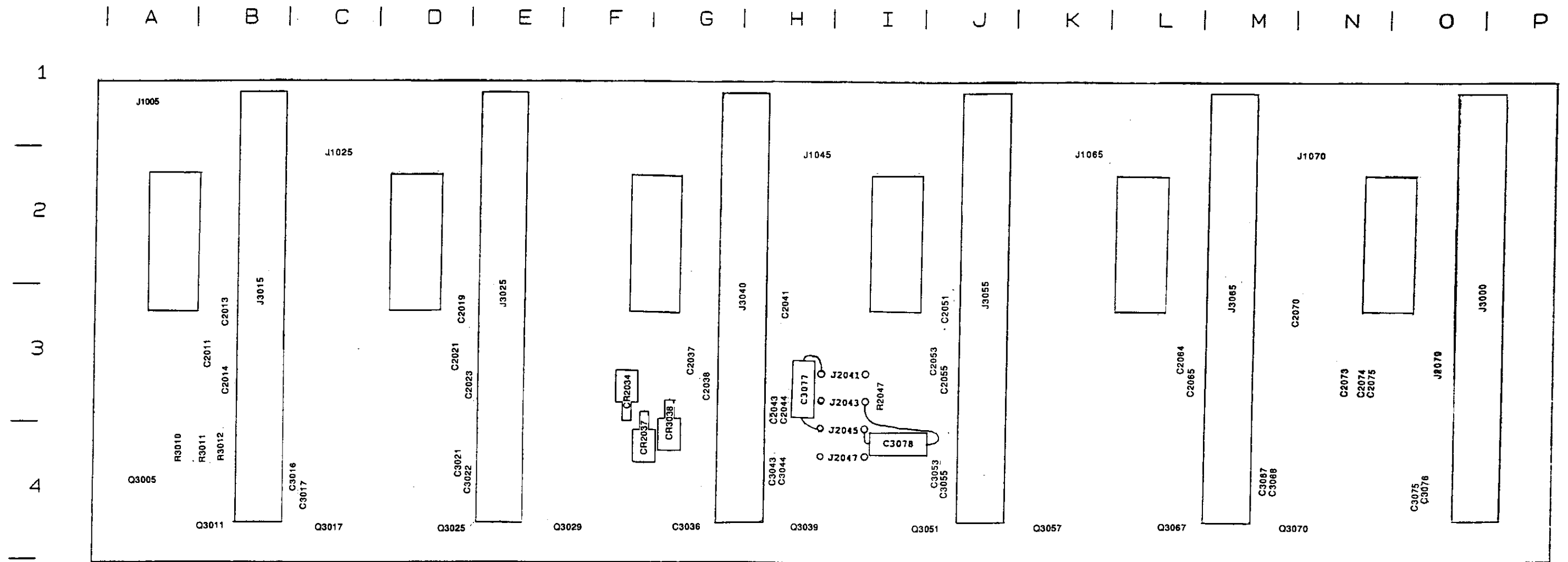
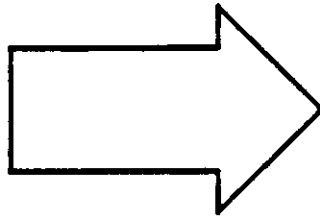


Fig. 8-2 A10 - Main Interface Circuit Board Assembly.

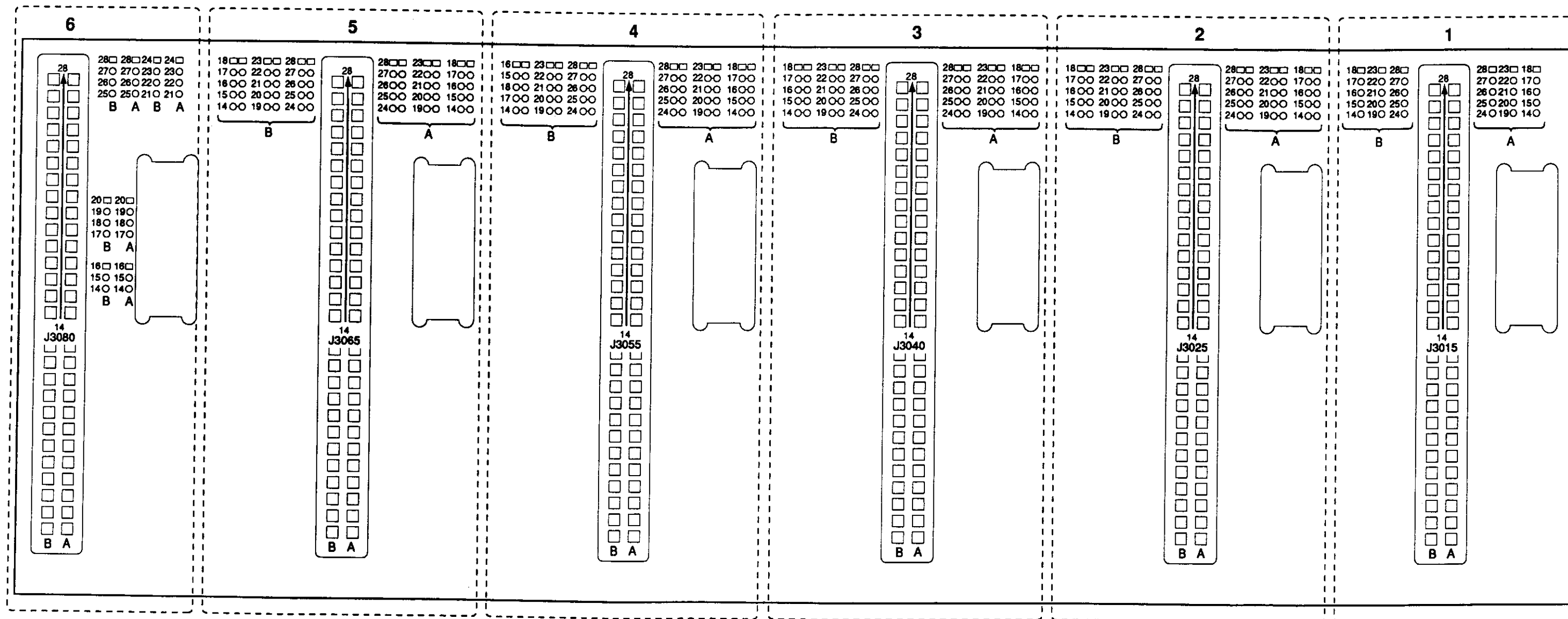
SEE
OTHER
SIDE



**Table 8-1
Component Reference Chart**

| | |
|------------------|------------------|
| P/O A10 ASSEMBLY | MAIN INTERFACE 1 |
|------------------|------------------|

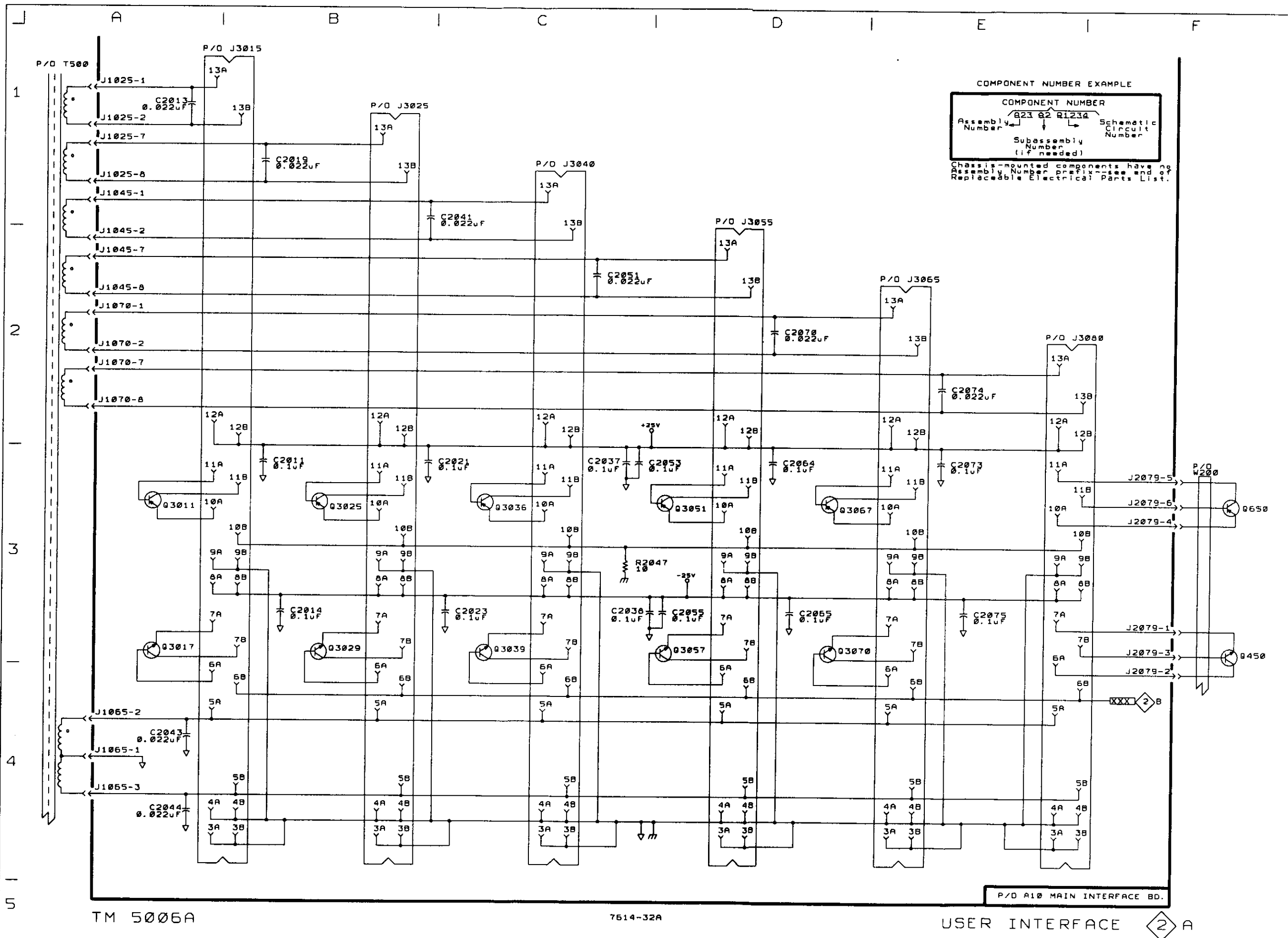
| CIRCUIT NUMBER | SCHEMATIC LOCATION | BOARD LOCATION |
|----------------|--------------------|----------------|
| J3015 | A1 | B3 |
| J3025 | B1 | E3 |
| J3040 | C1 | H3 |
| J3055 | D1 | J3 |
| J3065 | E1 | M3 |
| J3080 | F1 | O3 |



TM506A/TM5006A INTERFACE BOARD
(REAR VIEW)

**Table 8-2A
Component Reference Chart**

| P/O A10 ASSEMBLY | | | MAIN INTERFACE 2A | | |
|------------------|--------------------|----------------|-------------------|--------------------|----------------|
| CIRCUIT NUMBER | SCHEMATIC LOCATION | BOARD LOCATION | CIRCUIT NUMBER | SCHEMATIC LOCATION | BOARD LOCATION |
| C2011 | B3 | B3 | J2079 | F3 | O3 |
| C2013 | A1 | B3 | J3015 | B1 | B3 |
| C2014 | B3 | B3 | J3025 | B1 | E3 |
| C2019 | B1 | D3 | J3040 | C1 | H3 |
| C2021 | B3 | D3 | J3055 | D2 | J3 |
| C2023 | C3 | E3 | J3065 | E2 | M3 |
| C2037 | C3 | G3 | J3080 | E2 | O3 |
| C2038 | C3 | G3 | | | |
| C2041 | B1 | H3 | Q3011 | A3 | B4 |
| C2043 | A4 | H3 | Q3017 | A3 | C4 |
| C2044 | A4 | H3 | Q3025 | B3 | D4 |
| C2051 | C2 | J3 | Q3029 | B3 | F4 |
| C2053 | C3 | J3 | Q3036 | C3 | G4 |
| C2055 | D3 | J3 | Q3039 | C3 | H4 |
| C2064 | D3 | L3 | Q3051 | D3 | J4 |
| C2065 | D3 | L3 | Q3057 | D3 | K4 |
| C2070 | D2 | M3 | Q3067 | D3 | L4 |
| C2073 | E3 | N3 | Q3070 | D3 | M4 |
| C2074 | E2 | N3 | Q450 | F3 | OFF BD. |
| C2075 | E3 | N3 | Q650 | F3 | OFF BD. |
| | | | | | |
| J1025 | A1 | C2 | R2047 | C3 | I3 |
| J1045 | A1 | H2 | | | |
| J1045 | A2 | H2 | T500 | A1 | OFF BD. |
| J1065 | A4 | K2 | | | |
| J1070 | A2 | N2 | W200 | F3 | OFF BD. |



COMPONENT NUMBER EXAMPLE

| COMPONENT NUMBER | | |
|------------------|--------------------------------|--------------------------|
| 823 | 82 | 81234 |
| ↓ | ↓ | ↓ |
| Assembly Number | Subassembly Number (if needed) | Schematic Circuit Number |

Chassis-mounted components have no Assembly Number prefix--see end of Replaceable Electrical Parts List.

TM 5006A

7614-32A

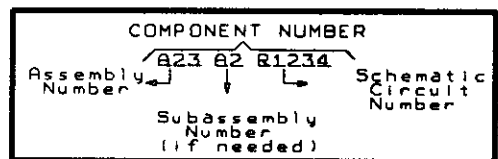
USER INTERFACE 2 A

**Table 8-2B
Component Reference Chart**

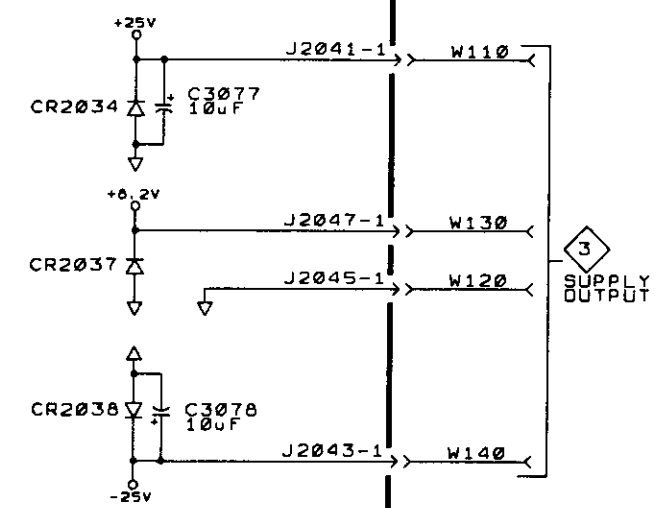
| P/O A10 ASSEMBLY | | | MAIN INTERFACE 2B | | |
|------------------|--------------------|----------------|-------------------|--------------------|----------------|
| CIRCUIT NUMBER | SCHEMATIC LOCATION | BOARD LOCATION | CIRCUIT NUMBER | SCHEMATIC LOCATION | BOARD LOCATION |
| C3016 | B2 | C4 | J2041 | F1 | I3 |
| C3017 | A3 | C4 | J2043 | F2 | I3 |
| C3021 | B2 | D4 | J2045 | F1 | I4 |
| C3022 | B3 | E4 | J2047 | F1 | I4 |
| C3043 | C2 | H4 | J3015 | B2 | B3 |
| C3044 | B3 | H4 | J3025 | B2 | E3 |
| C3053 | D2 | J4 | J3040 | C2 | H3 |
| C3055 | C3 | J4 | J3055 | D2 | J3 |
| C3067 | E2 | M4 | J3065 | E2 | M3 |
| C3068 | D3 | M4 | J3080 | E2 | O3 |
| C3075 | E4 | O3 | J4010 | F2 | OFF BD. |
| C3076 | E2 | O3 | | | |
| C3077 | E1 | H3 | Q3005 | E3 | A4 |
| C3078 | E2 | I4 | | | |
| CR2034 | E1 | F3 | R3010 | E3 | A4 |
| CR2037 | E1 | G4 | R3011 | E3 | B4 |
| CR2038 | E2 | G3 | R3012 | E3 | B4 |
| J1005 | F3 | A1 | T500 | A2 | OFF BD. |
| J1005 | F2 | A1 | | | |
| J1025 | A2 | C2 | W110 | F1 | OFF BD. |
| J1025 | A3 | C2 | W120 | F1 | OFF BD. |
| J1045 | A3 | H2 | W130 | F1 | OFF BD. |
| J1070 | A4 | N2 | W140 | F2 | OFF BD. |
| | | | W400 | F2 | OFF BD. |

A | B | C | D | E | F

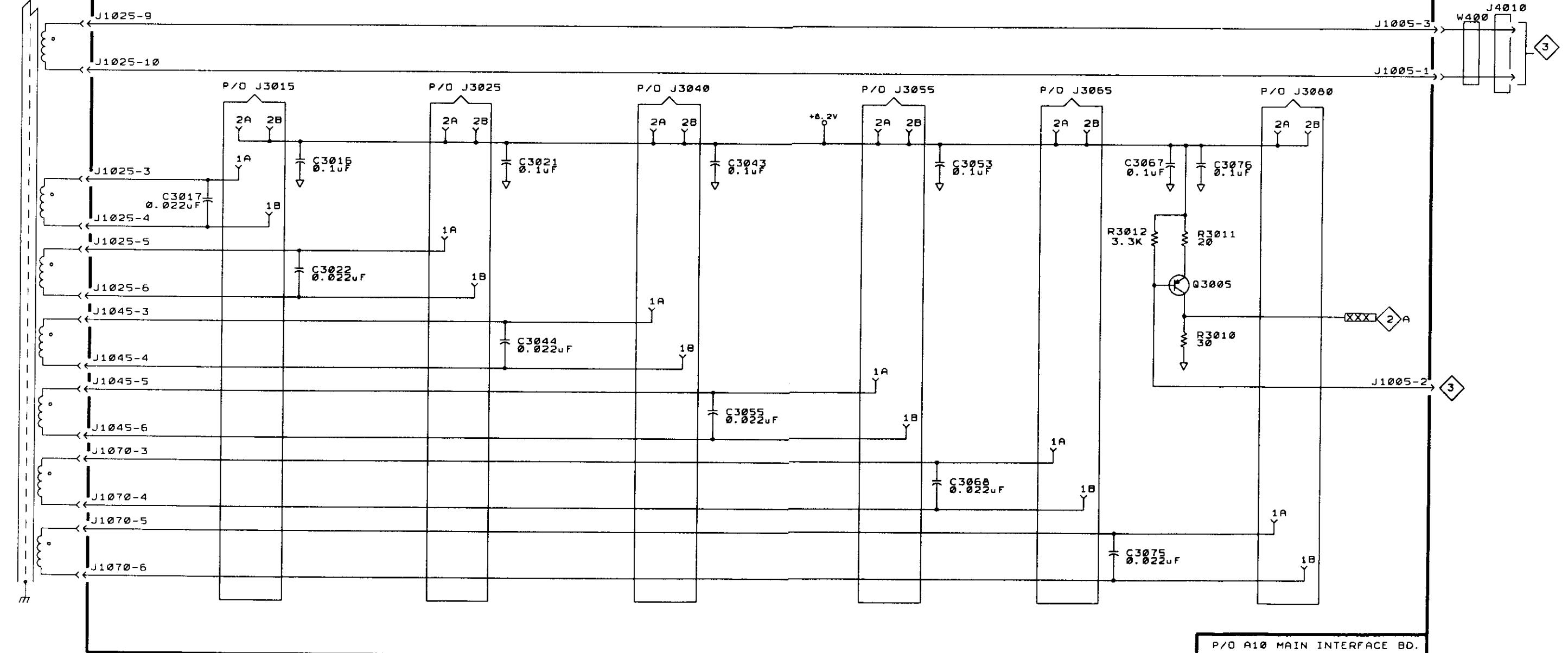
COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix--see end of Replaceable Electrical Parts List.



P/O T500



P/O A10 MAIN INTERFACE BD.

Table 8-3

DC POWER/REGULATOR **3** - REGULATOR BD. - ASSEMBLY A11

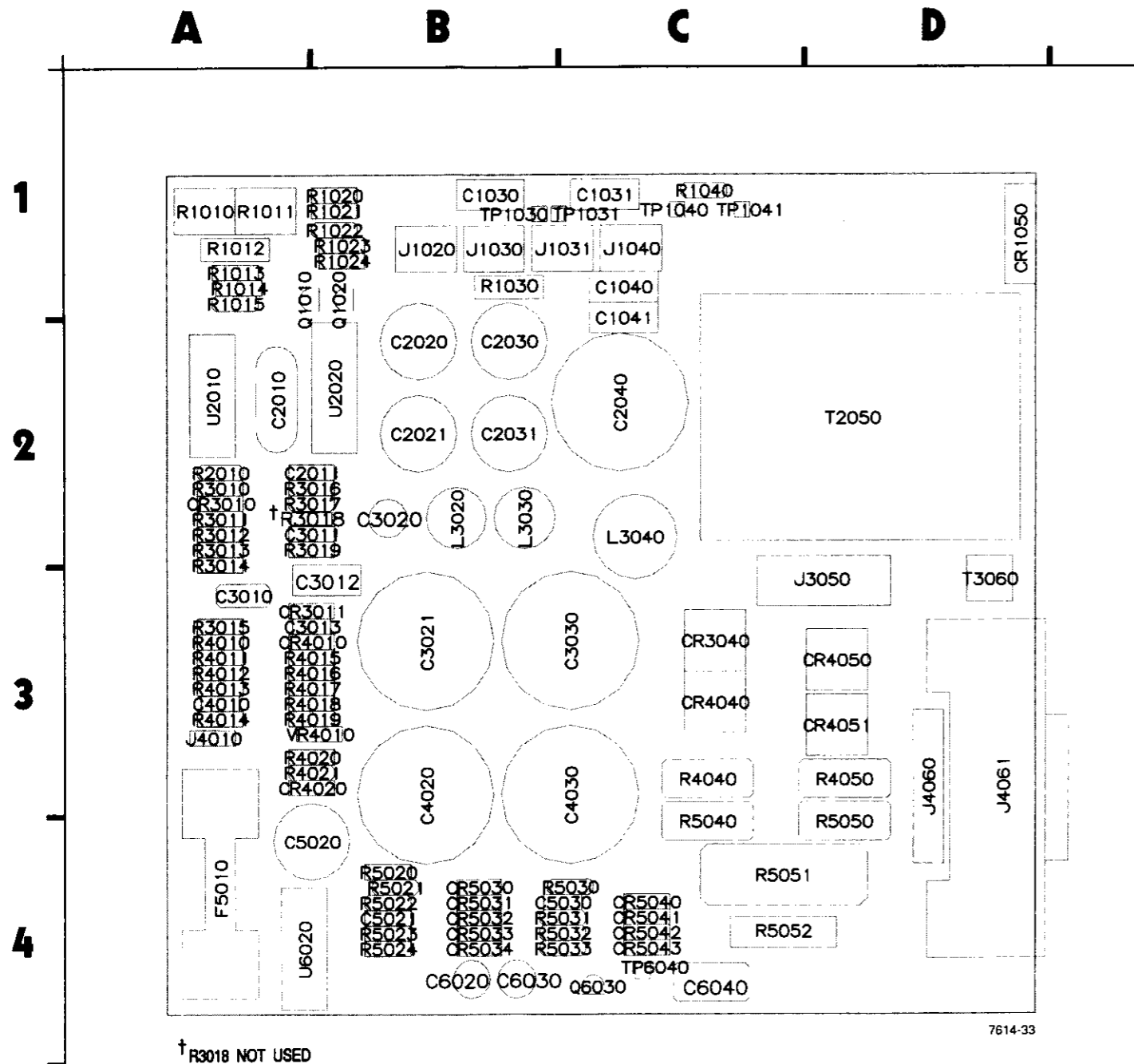


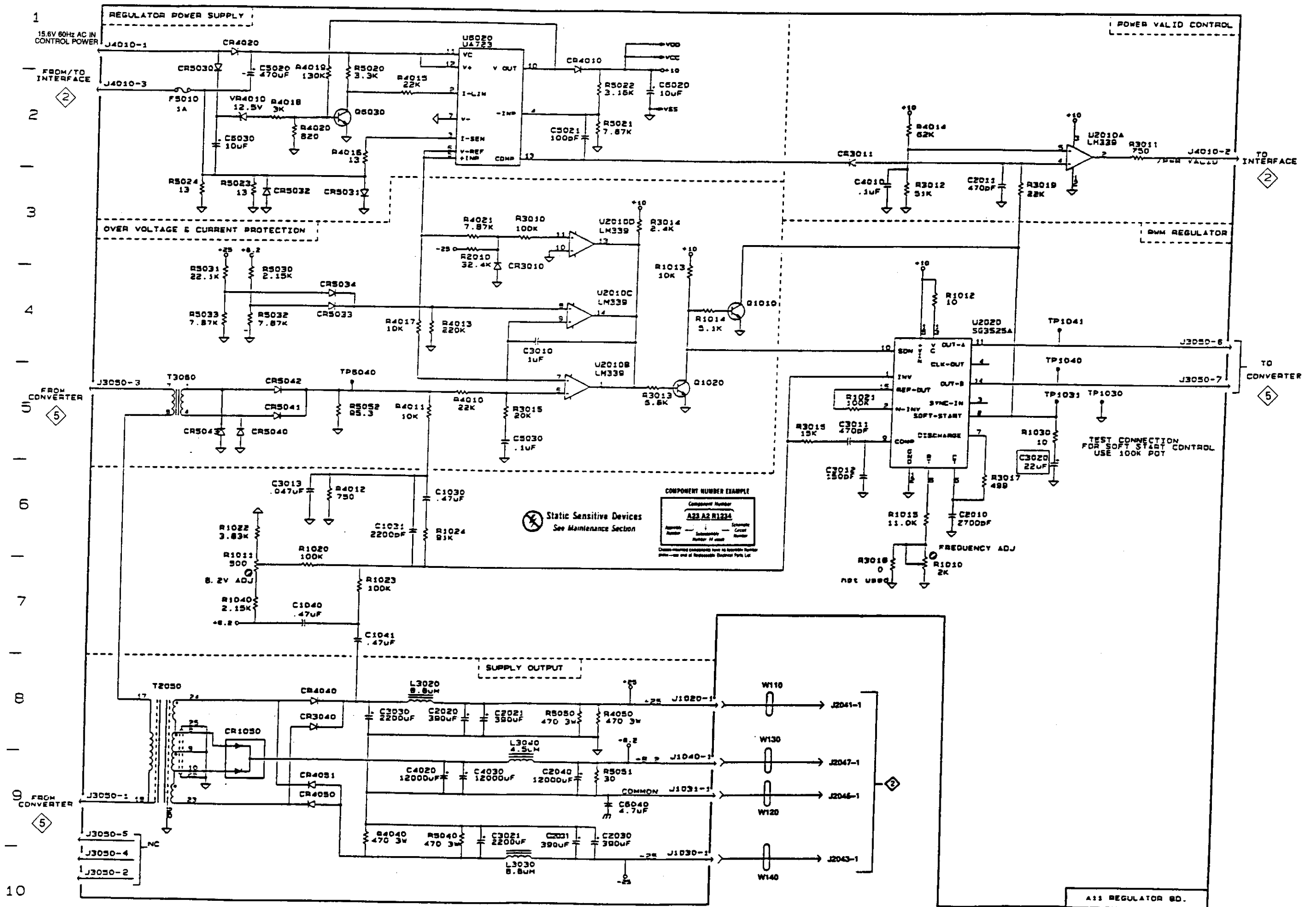
Fig. 8-3 A11 - Regulator Circuit Board Assembly.

| CIRCUIT NUMBER | SCHEMATIC LOCATION | BOARD LOCATION | CIRCUIT NUMBER | SCHEMATIC LOCATION | BOARD LOCATION | CIRCUIT NUMBER | SCHEMATIC LOCATION | BOARD LOCATION |
|----------------|--------------------|----------------|----------------|--------------------|----------------|----------------|--------------------|----------------|
| C1030 | F6 | B1 | F5010 | B2 | A4 | R4010 | G5 | A3 |
| C1031 | F6 | C1 | J1020 | K8 | B1 | R4011 | F5 | A3 |
| C1040 | D7 | C1 | J1030 | K10 | B1 | R4012 | D6 | A3 |
| C1041 | E7 | C1 | J1031 | K9 | B1 | R4013 | F4 | A3 |
| C2010 | N6 | A2 | J1040 | K8 | C1 | R4014 | M2 | A3 |
| C2011 | O2 | A2 | J3050 | A9 | D3 | R4015 | F2 | A3 |
| C2020 | G8 | B2 | J3050 | R4 | D3 | R4016 | E2 | A3 |
| C2021 | G8 | B2 | J3050 | A5 | D3 | R4017 | F4 | A3 |
| C2030 | I9 | B2 | J4010 | R2 | A3 | R4018 | D2 | A3 |
| C2031 | H9 | B2 | J4010 | A1 | A3 | R4019 | D1 | A3 |
| C2040 | H9 | C2 | J4060 | D2 ^{††} | D3 | R4020 | D2 | A3 |
| C3010 | H4 | A3 | J4061 | B2 ^{††} | D3 | R4021 | G3 | A3 |
| C3011 | M5 | A2 | L3020 | F8 | B2 | R4040 | E9 | C3 |
| C3012 | M6 | A3 | L3030 | H10 | B2 | R4050 | I8 | D3 |
| C3013 | D6 | A3 | L3040 | H8 | C2 | R5020 | E1 | B4 |
| C3020 | P5 | B2 | Q1010 | K4 | A1 | R5021 | I2 | B4 |
| C3021 | G9 | B3 | Q1020 | J5 | B1 | R5022 | I2 | B4 |
| C3030 | E8 | B3 | Q6030 | E2 | C4 | R5023 | C3 | B4 |
| C4010 | M2 | A3 | R1010 | N6 | A1 | R5024 | B3 | B4 |
| C4020 | F9 | B3 | R1011 | C7 | A1 | R5030 | C4 | B4 |
| C4030 | G9 | B3 | R1012 | N4 | A1 | R5031 | C4 | B4 |
| C5020 | C1 | A4 | R1013 | J3 | A1 | R5032 | C4 | B4 |
| C5021 | H2 | B4 | R1014 | J4 | A1 | R5033 | C4 | B4 |
| C5030 | G5 | B4 | R1015 | N6 | A1 | R5040 | G9 | C4 |
| C6020 | I2 | B4 | R1020 | D7 | B1 | R5050 | H8 | D3 |
| C6030 | C2 | B4 | R1021 | M5 | B1 | R5051 | I8 | C4 |
| C6040 | I9 | C4 | R1022 | C6 | B1 | R5052 | D5 | C4 |
| CR1050 | C8 | D1 | R1023 | E7 | B1 | T2050 | B8 | D2 |
| CR3010 | G3 | A2 | R1024 | F6 | B1 | T3060 | B5 | D3 |
| CR3011 | L2 | A3 | R1030 | P5 | B1 | TP1030 | P5 | B1 |
| CR3040 | D8 | C3 | R1040 | C7 | C1 | TP1031 | P5 | B1 |
| CR4010 | H1 | A3 | R2010 | G3 | A2 | TP1040 | P4 | C1 |
| CR4020 | C1 | A3 | R3010 | G3 | A2 | TP1041 | P4 | C1 |
| CR4040 | D8 | C3 | R3011 | Q2 | A2 | TP6040 | E5 | C4 |
| CR4050 | D9 | D3 | R3012 | M2 | A2 | U2010A | P2 | A2 |
| CR4051 | D9 | D3 | R3013 | J5 | A2 | U2010B | H5 | A2 |
| CR5030 | C1 | B4 | R3014 | I3 | A3 | U2010C | H4 | A2 |
| CR5031 | E3 | B4 | R3015 | G5 | A3 | U2010D | H3 | A2 |
| CR5032 | C3 | B4 | R3016 | L5 | A2 | U2020 | N4 | B2 |
| CR5033 | D4 | B4 | R3017 | O6 | A2 | U6020 | G1 | A4 |
| CR5034 | D4 | B4 | † R3018 | M6 | A2 | VR4010 | C2 | A3 |
| CR5040 | C5 | C4 | R3019 | O2 | A2 | | | |
| CR5041 | C5 | C4 | | | | | | |
| CR5042 | C5 | C4 | | | | | | |
| CR5043 | C5 | C4 | | | | | | |

† R3018 NOT USED

†† Located on Diagram **3** at the indicated location.

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R |



Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE

| | |
|------------------|--------------|
| Component Number | A22 A2 R1234 |
| Agency Number | |
| Manufacturer | |
| Control Number | |

Classify and control items to Agency Number
 Item - see end of Reference Section Parts List

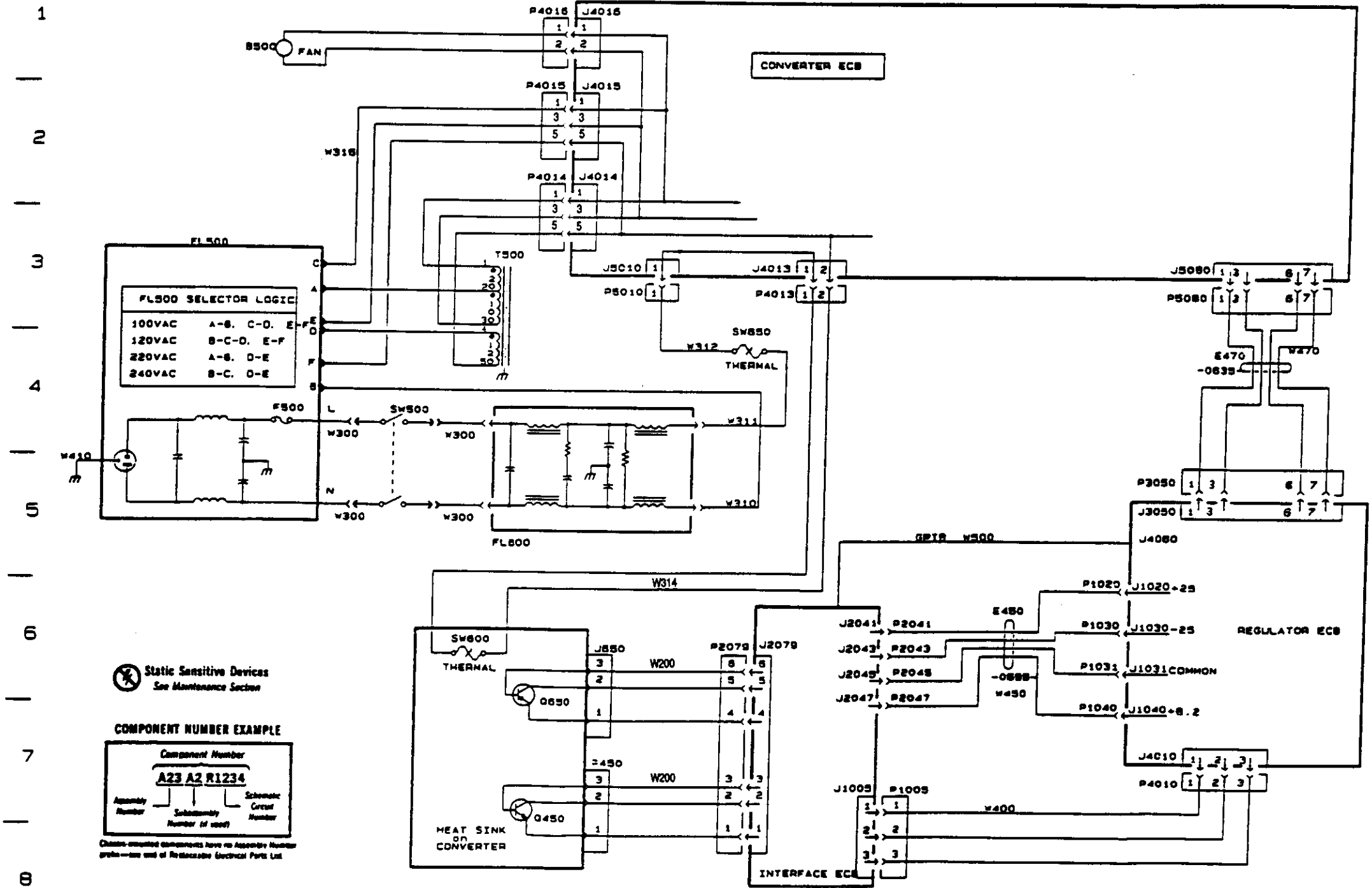
A11 REGULATOR BD.

Table 8-4

LINE POWER 

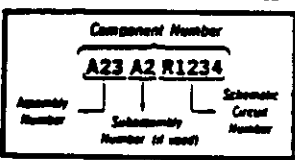
| CIRCUIT NUMBER | SCHEMATIC LOCATION | CIRCUIT NUMBER | SCHEMATIC LOCATION |
|----------------|--------------------|----------------|--------------------|
| B500 | C1 | P2043 | J6 |
| | | P2045 | J6 |
| E450 | K6 | P2047 | J7 |
| E470 | N4 | P2079 | H6 |
| | | P3050 | N5 |
| F500 | C4 | P4013 | I3 |
| | | P4014 | F2 |
| FL500 | A3 | P4015 | F2 |
| FL600 | E5 | P4016 | F1 |
| | | P450 | G7 |
| J1005 | J8 | P5010 | G3 |
| J1020 | M6 | P5080 | N3 |
| J1030 | M6 | | |
| J1031 | M6 | Q450 | F7 |
| J1040 | M6 | Q650 | F6 |
| J2041 | J6 | | |
| J2043 | J6 | SW500 | D4 |
| J2045 | J6 | SW800 | E6 |
| J2047 | J7 | SW850 | H4 |
| J2079 | I6 | | |
| J3050 | N5 | T500 | E3 |
| J4013 | I3 | | |
| J4014 | F2 | W200 | G6 |
| J4015 | F2 | W300 | E5 |
| J4016 | F1 | W300 | E4 |
| J4060 | M5 | W300 | C4 |
| J5010 | G3 | W300 | C5 |
| J5080 | N3 | W310 | H5 |
| J650 | G6 | W311 | H4 |
| | | W312 | H4 |
| P1005 | J8 | W315 | C2 |
| P1020 | M6 | W400 | K8 |
| P1030 | M6 | W410 | A5 |
| P1031 | M6 | W450 | K6 |
| P1040 | M6 | W470 | O4 |
| P2041 | J6 | W500 | K5 |

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q



⊗ Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Circle-mounted components have no Assembly Number prefix and are listed in Reference Electrical Parts List.

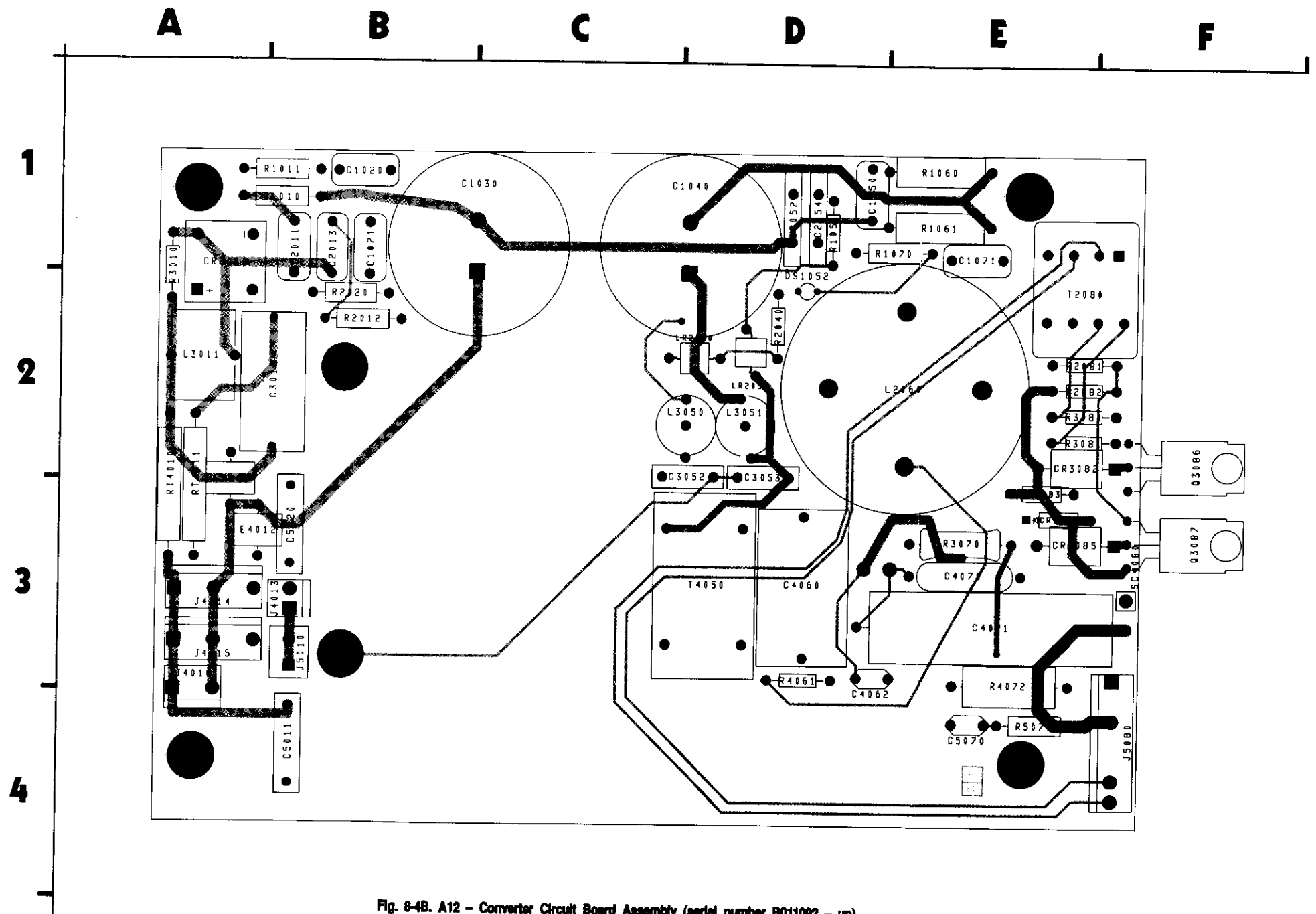



Fig. 8-4B. A12 - Converter Circuit Board Assembly (serial number B011082 - up)

Table 8-5A

 CONVERTER 5 — CONVERTER BD. — ASSEMBLY A12 (serial number B010100-B011091)

| CIRCUIT NUMBER | SCHEMATIC LOCATION | BOARD LOCATION | CIRCUIT NUMBER | SCHEMATIC LOCATION | BOARD LOCATION | CIRCUIT NUMBER | SCHEMATIC LOCATION | BOARD LOCATION |
|----------------|--------------------|----------------|----------------|--------------------|----------------|----------------|--------------------|----------------|
| C1020 | D4 | B1 | E3013 | C3 | A3 | R1070 | H2 | E1 |
| C1021 | D2 | B2 | E4012 | C3 | A3 | R2012 | E2 | A2 |
| C1030 | F3 | B1 | | | | R2020 | E2 | B2 |
| C1040 | F3 | C1 | J4013 | A4 | B3 | R2040 | I3 | C2 |
| C1050 | G2 | D1 | J4014 | A3 | A3 | R2081 | E4 | E2 |
| C1071 | I3 | E1 | J4014 | A2 | A3 | R2082 | F4 | E2 |
| C2011 | D3 | A2 | J4015 | A2 | A3 | R3010 | C2 | A2 |
| C2013 | D2 | A2 | J4015 | A3 | A3 | R3070 | J5 | E3 |
| C2052 | I3 | D2 | J4016 | A2 | B3 | R3080 | E5 | E2 |
| C2054 | H1 | D2 | J5010 | A4 | A4 | R3081 | F5 | E2 |
| C3012 | C3 | B2 | J5080 | A5 | F4 | R4061 | I5 | D3 |
| C3052 | K3 | D2 | | | | R4072 | H5 | E3 |
| C3053 | K2 | D2 | L2060 | I4 | E2 | R5071 | K5 | E4 |
| C4060 | L2 | D3 | L3011 | C2 | A2 | | | |
| C4062 | H5 | D3 | L3050 | I4 | C2 | RT4010 | B2 | A3 |
| C4070 | J5 | E3 | L3051 | J1 | D2 | RT4011 | B4 | A3 |
| C4071 | J4 | E3 | | | | | | |
| C5011 | B2 | A4 | LR2050 | J3 | C2 | SC4080 | G4 | F3 |
| C5020 | B4 | B4 | LR2053 | J1 | D2 | | | |
| C5070 | K5 | E4 | | | | T2080 | D5 | E2 |
| | | | Q3086 | G5 | F2 | T4050 | K2 | D3 |
| | | | Q3087 | G4 | F3 | | | |
| CR2010 | E2 | A2 | | | | W4050 | G5 | |
| CR3082 | G5 | E2 | | | | | | |
| CR3083 | H5 | E2 | R1010 | E3 | A2 | | | |
| CR3084 | H4 | E3 | R1011 | E4 | A1 | | | |
| CR3085 | H4 | E3 | R1051 | I1 | D1 | | | |
| | | | R1060 | F3 | D1 | | | |
| DS1052 | H3 | D1 | R1061 | F3 | D1 | | | |

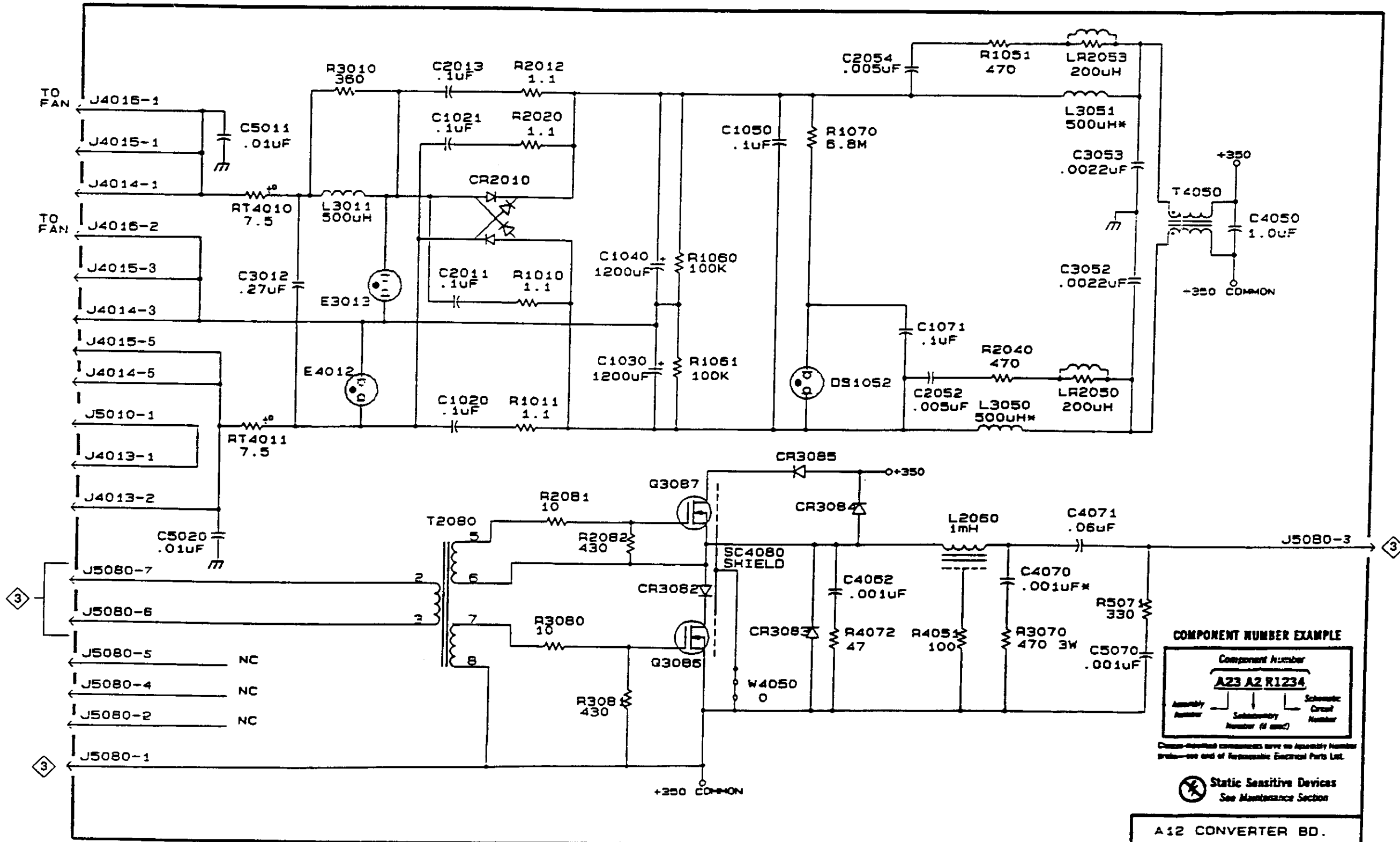
Table 8-5B

CONVERTER  — CONVERTER BD. — ASSEMBLY A12 (serial number B011092-up)

| CIRCUIT NUMBER | SCHEMATIC LOCATION | BOARD LOCATION | CIRCUIT NUMBER | SCHEMATIC LOCATION | BOARD LOCATION | CIRCUIT NUMBER | SCHEMATIC LOCATION | BOARD LOCATION |
|----------------|--------------------|----------------|----------------|--------------------|----------------|----------------|--------------------|----------------|
| C1020 | D4 | B1 | DS1052 | H3 | D2 | R1060 | F3 | E1 |
| C1021 | D2 | B1 | | | | R1061 | F3 | E1 |
| C1030 | F3 | B1 | E3013 | C3 | A3 | R1070 | H2 | D1 |
| C1040 | F3 | C1 | E4012 | C3 | A3 | R2012 | E2 | B2 |
| C1050 | G2 | D1 | | | | R2020 | E2 | B2 |
| C1071 | I3 | E1 | J4013 | A4 | B3 | R2040 | I3 | D2 |
| C2011 | D3 | B1 | J4014 | A3 | A3 | R2081 | E4 | E2 |
| C2013 | D2 | B1 | J4015 | A2 | A3 | R2082 | F4 | E2 |
| C2052 | I3 | D1 | J4016 | A2 | A3 | R3010 | C2 | A2 |
| C2054 | H1 | D1 | J5010 | A4 | B3 | R3070 | J5 | E3 |
| C3012 | C3 | B2 | J5080 | A5 | F4 | R3080 | E5 | E2 |
| C3052 | K3 | D2 | | | | R3081 | F5 | E2 |
| C3053 | K2 | D2 | L2060 | I4 | E2 | R4061 | I5 | D3 |
| C4060 | L2 | D3 | L3011 | C2 | A2 | R4072 | H5 | E3 |
| C4062 | H5 | D3 | L3050 | I4 | C2 | R5071 | K5 | E4 |
| C4070 | J5 | E3 | L3051 | J1 | D2 | | | |
| C4071 | J4 | E3 | | | | RT4010 | B2 | A3 |
| C5011 | B2 | B4 | LR2050 | J3 | D2 | RT4011 | B4 | A3 |
| C5020 | B4 | B3 | LR2053 | J1 | D2 | | | |
| C5070 | K5 | E4 | | | | SC4080 | G4 | F3 |
| | | | Q3086 | G5 | F2 | | | |
| CR2010 | E2 | A1 | Q3087 | G4 | F3 | T2080 | D5 | E2 |
| CR3082 | G5 | E2 | | | | T4050 | K2 | D3 |
| CR3083 | H5 | E3 | R1010 | E3 | B1 | | | |
| CR3084 | H4 | E3 | R1011 | E4 | B1 | W4050 | G5 | |
| CR3085 | H4 | E3 | R1051 | I1 | D1 | | | |

I | A | B | C | D | E | F | G | H | I | J | K | L | M |

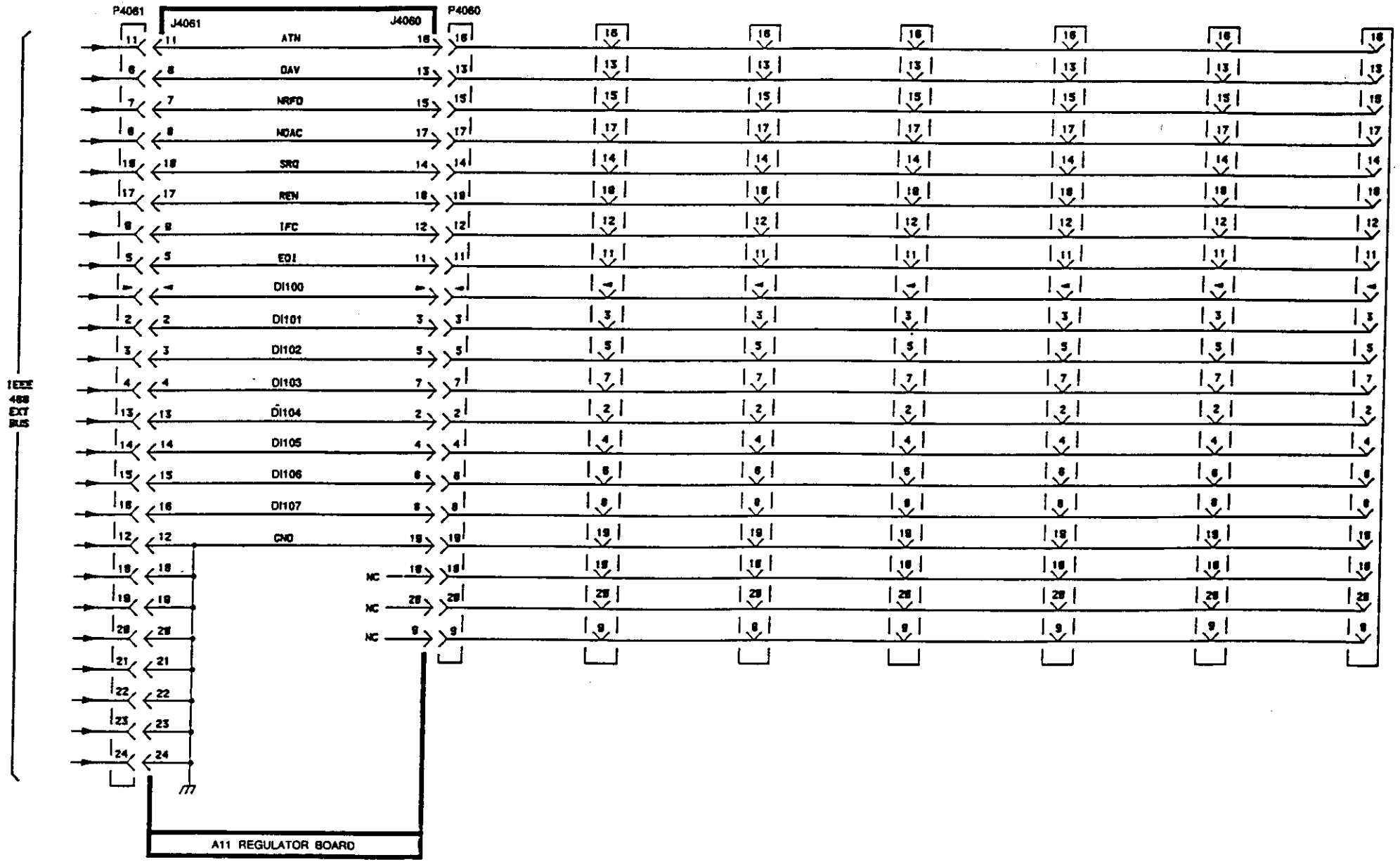
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A12 CONVERTER BD.

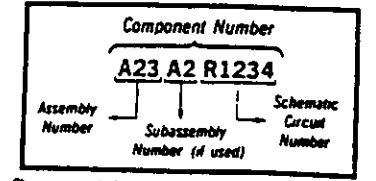
A | B | C | D | E | F | H | J | K | L | M

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⊗ Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Replaceable Mechanical Parts-TM 5006A

| Fig. & Index No. | Tektronix Part Number | Serial Number Effect | Discont | Qty | 12345 Part Name & Description | Mfr Code | Mfr Part Number |
|------------------|-----------------------|----------------------|---------|------|---|----------|----------------------|
| 1-1 | 348-0544-00 | | | 4 | RTNR,CAB,COVER:CORNER,TEK BLUE,PC ATTACHING PARTS | 80009 | 348-0544-00 |
| -2 | 213-0782-00 | | | 4 | SCREW,TPG,TF:8-32 X 0.625,FILH,STL END ATTACHING PARTS | 83486 | ORDER BY DESCRIPTION |
| -3 | 348-0201-00 | | | 1 | FLIP-STAND,CAB.:2.875 H,SST | 8X345 | 348-0201-00 |
| -4 | 348-0776-00 | | | 4 | PAD,CAB,FOOT:POLYURETHANE | 2K262 | ORDER BY DESCRIPTION |
| -5 | 348-0617-00 | | | 4 | FOOT,CABINET:BOT,TEK BLUE,POLYCARBONATE | 80009 | 348-0617-00 |
| -6 | 390-1044-00 | | | 1 | CABINET,BOTTOM:FULL RACK X 17.956,ALUMINUM | 0J260 | ORDER BY DESCRIPTION |
| -7 | 390-1040-00 | | | 1 | CABINET,SIDE:7 X 17.956,ALUMINUMSAFETY | TK1943 | ORDER BY DESCRIPTION |
| -8 | 390-1043-00 | | | 1 | CABINET,TOP:FULL RACK X 17.956,ALUMINUM | TK1465 | ORDER BY DESCRIPTION |
| -9 | 390-1042-00 | | | 1 | CABINET,SIDE:7 X 17.956,W/HANDLE RTNR | TK1943 | ORDER BY DESCRIPTION |
| -10 | 200-2191-00 | | | 2 | CAP,RETAINER:PLASTIC | 0JR05 | ORDER BY DESCRIPTION |
| -11 | 367-0248-01 | | | 1 | HANDLE,CARRYING:16.341 L.W/CLIP | TK1465 | ORDER BY DESCRIPTION |
| -12 | 378-0182-00 | | | 5 | BAFFLE,AIR: | 0JR05 | ORDER BY DESCRIPTION |
| -13 | 351-0619-00 | | | 6 | GUIDE,PL-IN UNI :BOTTOM | 0JR05 | ORDER BY DESCRIPTION |
| -14 | 378-2044-00 | | | 1 | GRILLE,AIR:INTAKE,TEK BLUEPOLYCARBONATE | 0JR05 | 378-2044-01 |
| | 348-0792-01 | | | 2 | GASKET: ELECTRICAL SHIELD,34.0 L | 18565 | ORDER BY DESCRIPTION |
| | 348-0276-00 | | | 4 FT | SHLD GSKT,ELEK MESH TYPE,0.124 OD,BULK | 28817 | ORDER BY DESCRIPTION |
| -15 | 200-2576-00 | | | 1 | COVER,SWITCH: | 0JR05 | 200-2576-00 |
| -16 | ----- | | | | | | |
| -17 | 200-2565-01 | | | 1 | SWITCH,ROCKER:DPST,6(4)A,250V | 7W718 | 1802.1121 |
| -18 | 426-2388-00 | B010100 | B011199 | 1 | COVER,SWITCH:FRONT,TEK BLUE,PC | 0JR05 | 200-2565-01 |
| | 426-2388-01 | B011200 | | 1 | FR SECT,PLUG-IN:FINISHED,TH5006A | 0J260 | ORDER BY DESCRIPTION |
| | | | | 1 | FR SECT,PLUG-IN:FINISHED,TH5006A | 80009 | 426-2388-01 |
| -19 | 211-0502-00 | | | 8 | END ATTACHING PARTS | | |
| -20 | 124-0354-00 | B010100 | B010672 | 2 | SCREW,MACHINE:6-32 X 0.188,FLH,100 DEG,STL | TK0435 | ORDER BY DESCRIPTION |
| | 124-0380-00 | B010673 | | 2 | STRIP,TRIM:CORNER,TOP,BLUE,17.41 L | 80009 | 124-0354-00 |
| | 124-0355-00 | B010100 | B010672 | 2 | STRIP,TRIM:17.41 L,CORNER W/STEP,TOP,TEK | 61153 | 124-0380-00 |
| -21 | 124-0381-00 | B010673 | | 2 | STRIP,TRIM:CORNER,BOT,BLUE,13.91 L | 80009 | 124-0355-00 |
| | 343-0003-00 | | | 2 | STRIP,TRIM:13.91 L,CORNER W/STEP,BOT,TEK | 61153 | 124-0381-00 |
| -22 | 211-0578-00 | | | 2 | CLAMP,LOOP:0.25 ID,PLASTIC | 06915 | E4 CLEAR ROUND CABLE |
| -23 | 210-0863-00 | | | 2 | CLAMP,LOOP:0.375 ID,PLASTIC | 06915 | E6 CLEAR ROUND CABLE |
| -24 | 210-0457-00 | | | 2 | SCREW,MACHINE:6-32 X 0.438,PNH,STL | 0KB01 | 211-0578-00 |
| -25 | 210-0863-00 | | | 2 | WSHR,LOOP CLAMP:0.091 ID U/W 0.5 W CLP | 85480 | C191 |
| -26 | 426-1480-01 | | | 2 | NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL | 0KB01 | ORDER BY DESCRIPTION |
| -27 | 213-0863-00 | | | 1 | FRAME,CABINET:REAR,7.0 X FULL RACK | TK1828 | ORDER BY DESCRIPTION |
| -28 | | | | 4 | SCREW,TPG,TR 8-32 X 1.375,STL CD PL,TORX, END ATTACHING PARTS | 0KB01 | ORDER BY DESCRIPTION |
| -29 | 426-2278-00 | | | 4 | FRAME SECT,CAB.:ALUMINUM | 0J7N4 | ORDER BY DESCRIPTION |

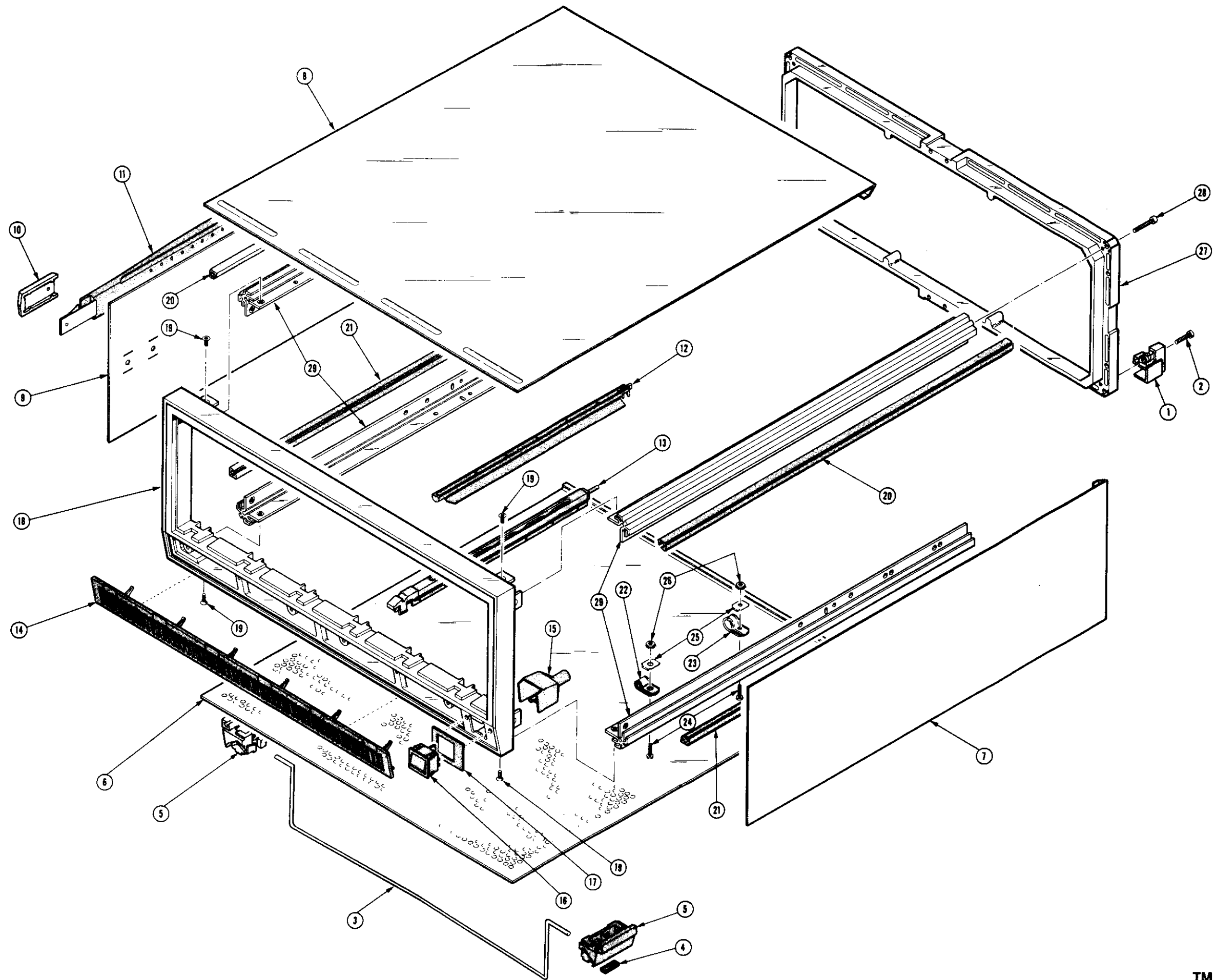
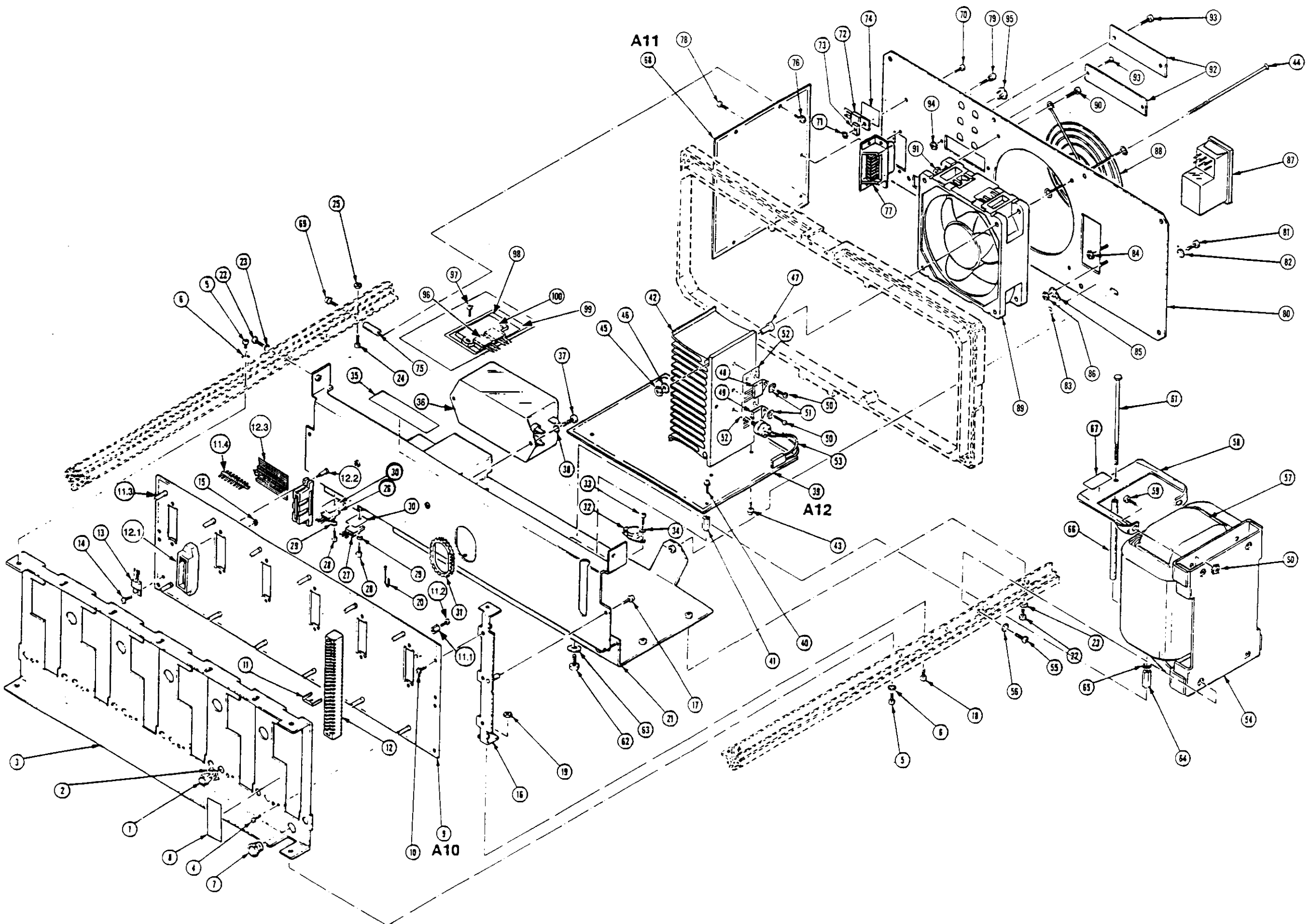


FIG. 1 CABINET

FIG. 2 EXPLODED VIEW



Replaceable Mechanical Parts-TM 5006A

| Fig. & index No. | Tektronix Part Number | Serial Number Effect | Discont | Qty | 1245 Part Name & Description | Mfr Code | Mfr Part Number |
|------------------|-----------------------|----------------------|---------|-----|---|----------|----------------------|
| 2 -1 | 348-0640-00 | | | 12 | GROMMET, PLASTIC: BLACK, ROUND, 0.188 ID | QJR05 | ORDER BY DESCRIPTION |
| -2 | 214-3026-00 | | | 12 | SPRING, GROUND: CU BE | TK1569 | ORDER BY DESCRIPTION |
| -3 | 386-5773-01 | | | 1 | SUPPORT, CKT BD: ALUMINUM | QJ260 | ORDER BY DESCRIPTION |
| | | | | | ATTACHING PARTS | | |
| -4 | 211-0244-00 | | | 12 | SCR, ASSEM WSHR: 4-40 X 0.312, PNH STL CD PL | 01536 | 821-02775 |
| -5 | 211-0504-00 | | | 4 | SCREW, MACHINE: 6-32 X 0.250, PNH, STL | TK0435 | ORDER BY DESCRIPTION |
| -6 | 210-0006-00 | | | 4 | WASHER, LOCK: #6 INTL, 0.018 THK, STL | 78189 | 1206-00-00-0541C |
| | | | | | END ATTACHING PARTS | | |
| -7 | 342-0313-00 | | | 2 | GROMMET, PLASTIC: 0.437 ID X 0.562 OD, NYLON | 28520 | 2066 |
| -8 | 334-2380-00 | | | 1 | MARKER, IDENT: MKD HIGH POWER COMPARTMENT | TK0860 | ORDER BY DESCRIPTION |
| -9 | ----- | | | 1 | CIRCUIT BD ASSY: MAIN INTERCONNECT (SEE A10 REPL) | | |
| | | | | | ATTACHING PARTS | | |
| -10 | 211-0244-00 | | | 6 | SCR, ASSEM WSHR: 4-40 X 0.312, PNH STL CD PL | 01536 | 821-02775 |
| | | | | | END ATTACHING PARTS | | |
| -11 | 214-1593-02 | | | 6 | .KEY, CONN PLZN: CKT BOARD CONN | QJR05 | ORDER BY DESCRIPTION |
| -11.1 | 361-1084-00 | | | 1 | .SPACER, ACTUATOR: 0.33 L X 0.25 DIA, PLASTIC | 80009 | 361-1084-00 |
| -11.2 | 211-0244-00 | | | 1 | .SCR, ASSEM WSHR: 4-40 X 0.312, PNH STL CD PL | 01536 | 821-02775 |
| -11.3 | 129-0814-00 | | | 12 | .SPACER, POST: 0.622 L, 4-40 INT THRU, BRS, 0.28 | OKB01 | 129-0814-00 |
| -11.4 | 131-1857-00 | | | 10 | .CONN, HDR: PCB: MALE, STR, 1 X 36, 0.1 CTR, 0.23 | 58050 | 082-3644-SS10 |
| -12 | 131-1857-00 | | | 6 | .CONN, HDR: PCB: MALE, STR, 1 X 36, 0.1 CTR, 0.230 (A10J1005, J1025, J1045, J1065, J1070, J2079) | 58050 | 082-3644-SS10 |
| | | | | | .HOUSING, CONN: FLOATING, PLASTIC | | |
| -12.1 | 380-0655-00 | | | 6 | ATTACHING PARTS | QJR05 | ORDER BY DESCRIPTION |
| -12.2 | 211-0295-00 | | | 12 | .SCREW, SHOULDER: 2-56 X 0.54, HEX HD, STL | OKB01 | ORDER BY DESCRIPTION |
| | | | | | END ATTACHING PARTS | | |
| -12.3 | 174-2011-00 | | | 1 | .CA ASSY, SP, ELEC: 20 COND, 23.4 L | 80009 | 174-2011-00 |
| -13 | ----- | | | 1 | .TRANSISTOR: PNP, SI, TO-220 (SEE A1003005 REPL) | | |
| | | | | | ATTACHING PARTS | | |
| -14 | 211-0244-00 | | | 1 | .SCR, ASSEM WSHR: 4-40 X 0.312, PNH STL CD PL | 01536 | 821-02775 |
| -15 | 210-0586-00 | | | 1 | .NUT, PL, ASSEM WA: 4-40 X 0.25, STL CD PL | OKB01 | ORDER BY DESCRIPTION |
| | | | | | END ATTACHING PARTS | | |
| -16 | 386-4350-00 | | | 2 | SUPPORT, CKT BD: INTERFACE, AL | TK1943 | ORDER BY DESCRIPTION |
| | | | | | ATTACHING PARTS | | |
| -17 | 211-0244-00 | | | 8 | SCR, ASSEM WSHR: 4-40 X 0.312, PNH STL CD PL | 01536 | 821-02775 |
| -18 | 211-0510-00 | | | 4 | SCREW, MACHINE: 6-32 X 0.375, PNH, STL | TK0435 | ORDER BY DESCRIPTION |
| -19 | 210-0457-00 | | | 4 | NUT, PL, ASSEM WA: 6-32 X 0.312, STL CD PL | OKB01 | ORDER BY DESCRIPTION |
| | | | | | END ATTACHING PARTS | | |
| -20 | 006-053100 | | | 3 | STRAP, TIEDOWN E: BLUE PLASTIC BEADED | 24618 | 700-3688 |
| -21 | 337-3503-01 | | | 1 | SHIELD, ELEC: ALUMINUM | TK1943 | ORDER BY DESCRIPTION |
| -22 | 212-0023-00 | | | 4 | SCREW, MACHINE: 8-32 X 0.375, PNH, STL | 93907 | ORDER BY DESCRIPTION |
| -23 | 210-0008-00 | | | 4 | WASHER, LOCK: #8 INTL, 0.02 THK, STL | OKB01 | ORDER BY DESCRIPTION |
| -24 | 212-0023-00 | | | 4 | SCREW, MACHINE: 8-32 X 0.375, PNH, STL | 93907 | ORDER BY DESCRIPTION |
| -25 | 210-0458-00 | | | 2 | NUT, PL, ASSEM WA: 8-32 X 0.344, STL CD PL | OKB01 | 210-0458-00 |
| | | | | | ATTACHING PARTS | | |
| -26 | ----- | | | 5 | TRANSISTOR, PWR: BIPOLAR, PNP: 90V, 10A, 2.5 MHZ (SEE Q3011, Q3025, Q3036, Q3057, Q3067) | 04713 | MJF2955 |
| -27 | ----- | | | 5 | TRANSISTOR, PWR: BIPOLAR, NPN: 90V, 10A, 2.5 MHZ (SEE Q3017, Q3029, Q3039, Q3057, Q3070)) | 04713 | MJF3055 |
| | | | | | ATTACHING PARTS | | |
| -28 | 211-0012-00 | | | 10 | SCREW, MACHINE: 4-40 X 0.375, PNH, STL | 93907 | ORDER BY DESCRIPTION |
| -29 | 210-1122-00 | | | 10 | WASHER, LOCK: 0.12 ID, DISHED, 0.025 THK, STL | OKB01 | 210-1122-00 |
| -30 | 342-0902-00 | | | 10 | INSULATOR, PLATE TRANSISTOR, Q PAD II, TO-220 | 65285 | ORDER BY DESCRIPTION |
| | | | | | END ATTACHING PARTS | | |
| -31 | 255-0334-00 | | | 1 | PLASTIC CHANNEL: 12.75 X 0.175 X 0.155, NYLON | 11897 | 122-NN-2500-060A |
| -32 | ----- | | | 1 | SWITCH, THERMSTC: NC, OPEN 92.97, CL 80.4, 10A (SEE SW600 REPL) | 14604 | 2450-47-16 |
| | | | | | ATTACHING PARTS | | |
| -33 | 211-0504-00 | | | 2 | SCREW, MACHINE: 6-32 X 0.250, PNH, STL | TK0435 | ORDER BY DESCRIPTION |
| -34 | 210-0006-00 | | | 2 | WASHER, LOCK: #6 INTL, 0.018 THK, STL | 78189 | 1206-00-00-0541C |
| | | | | | END ATTACHING PARTS | | |
| -35 | 334-4126-00 | | | 1 | MARKER, IDENT: MKD WARNING | 07416 | ORDER BY DESCRIPTION |
| -36 | 119-3634-00 | | | 1 | FILTER, RFI: 6A, 120VAC, 50-60HZ (OPTION 15 ONLY) | 05245 | 6E01 |
| | | | | | ATTACHING PARTS | | |
| -37 | 212-0023-00 | | | 4 | SCREW, MACHINE: 8-32 X 0.375, PNH, STL | 93907 | ORDER BY DESCRIPTION |

Replaceable Mechanical Parts-TM 5006A

| Fig. & Index No. | Tektronix Part Number | Serial Number Effect | Discont | Qty | 1245 Part Name & Description | Mfr Code | Mfr Part Number |
|------------------|-----------------------|----------------------|---------|-----|---|----------|----------------------|
| 2 -38 | 210-0008-00 | | | 4 | WASHER, LOCK:#8 INTL, 0.02 THK, STL END ATTACHING PARTS | OKB01 | ORDER BY DESCRIPTION |
| -39 | ----- | B010100 | B011090 | 1 | CIRCUIT BD ASSY: CONVERTOR | | |
| | ----- | B011091 | | 1 | CIRCUIT BD ASSY: CONVERTOR (SEE A12 REPL) ATTACHING PARTS | | |
| -40 | 211-0658-00 | | | 4 | SCR, ASSEM WSHR: 6-32 X 0.312, PNH, STL, POZ | 78189 | S51-060545-0X |
| -41 | 385-0146-00 | | | 4 | SPACER, POST: 0.688 L W/6-32 THD EA END, AL END ATTACHING PARTS | 80009 | 385-0146-00 |
| -42 | 214-4301-00 | | | 1 | HEAT SINK: (2) T0-218, ALUMINUM ATTACHING PARTS | 05820 | ORDER BY DESCRIPTION |
| -43 | 211-0658-00 | | | 2 | SCR, ASSEM WSHR: 6-32 X 0.312, PNH, STL, POZ | 78189 | S51-060545-0X |
| -44 | 211-0790-00 | | | 1 | SCREW, MACHINE: 6-32 X 4.625 L, SLOTTED | OKB01 | ORDER BY DESCRIPTION |
| -45 | 210-0457-00 | | | 1 | NUT, PL, ASSEM WA: 6-32 X 0.312, STL CD PL | OKB01 | ORDER BY DESCRIPTION |
| -46 | 210-0803-00 | | | 1 | WASHER, FLAT: 0.15 ID X 0.375 OD X 0.032, STL | 12327 | ORDER BY DESCRIPTION |
| -47 | 210-1428-00 | | | 1 | WASHER, SHLDR: 0.156 ID X 0.375 OD END ATTACHING PARTS | TK0588 | ORDER BY DESCRIPTION |
| -48 | ----- | | | 1 | TRANSISTOR, PWR: BIPOLAR, PNP: 100V, 25A, 3.0MHZ (SEE 0650 REPL) | | |
| -49 | ----- | | | 1 | TRANSISTOR, PWR: BIPOLAR, NPN: 100V, 25A, 3.0MHZ (SEE 03450 REPL) ATTACHING PARTS | | |
| -50 | 211-0012-00 | | | 2 | SCREW, MACHINE: 4-40 X 0.375, PNH, STL | 93907 | ORDER BY DESCRIPTION |
| -51 | 342-0860-00 | | | 2 | INSULATOR, XSTR: POLYSULFONE, BLACK OR NATURAL | 0JRO5 | 342-0860-00 |
| -52 | 342-0863-00 | | | 2 | INSULATOR, XSTR: T0-218 END ATTACHING PARTS | 08530 | 5677-20 |
| -53 | 260-1710-00 | | | 1 | SWITCH, THRMSTC: NC, OPEN 92.97, CL 80.4, 10A | 14604 | 2450-47-16 |
| -54 | 386-4351-00 | | | 1 | SUPPORT, XFMR: ALUMINUM SAFETY CONTROLLED ATTACHING PARTS | TK1943 | ORDER BY DESCRIPTION |
| -55 | 212-0023-00 | | | 4 | SCREW, MACHINE: 8-32 X 0.375, PNH, STL | 93907 | ORDER BY DESCRIPTION |
| -56 | 210-0008-00 | | | 4 | WASHER, LOCK:#8 INTL, 0.02 THK, STL END ATTACHING PARTS | OKB01 | ORDER BY DESCRIPTION |
| -57 | ----- | B010100 | B011090 | 1 | XFMR, PWR, STPDN: PRI 100/220VAC W/TAPS, 60HZ | | |
| | ----- | B011091 | | 1 | TRANSFORMER, PWR: PRIM TAPPED 100/120/220/240 (SEE T500 REPL) ATTACHING PARTS | | |
| -58 | 407-2497-00 | | | 1 | BRACKET, XFMR: ALUMINUM | TK1943 | ORDER BY DESCRIPTION |
| -59 | 212-0507-00 | | | 4 | SCREW, MACHINE: 10-32 X 0.375, PNH, STL | 93907 | MACHINE SCREW: 10-32 |
| -60 | 220-0410-00 | | | 4 | NUT, PL, ASSEM WA: 10-32 X 0.375 HEX, STL CD PL | OKB01 | 511-101200-50-0542C |
| -61 | 212-0565-00 | | | 1 | SCREW, MACHINE: 10-32 X 4.25, HEX HD, STL | OKB01 | ORDER BY DESCRIPTION |
| -62 | 212-0507-00 | | | 1 | SCREW, MACHINE: 10-32 X 0.375, PNH, STL | 93907 | MACHINE SCREW: 10-32 |
| -63 | 210-1227-00 | | | 1 | WASHER, FLAT: 0.203 ID X 0.5 OD X 0.048, STL | 12327 | ORDER BY DESCRIPTION |
| -64 | 129-1371-00 | | | 1 | SPACER, POST: 1.0 L, 10-32 THRU, AL, 0.375 HEX | OKB01 | ORDER BY DESCRIPTION |
| -65 | 210-0009-00 | | | 4 | WASHER, LOCK:#10 EXT, 0.022 THK, STL | OKB01 | ORDER BY DESCRIPTION |
| -66 | 361-1040-00 | | | 1 | SPACER, SLEEVE: 3.66 L X 0.245 ID, AL END ATTACHING PARTS | TK0588 | ORDER BY DESCRIPTION |
| -67 | 334-2332-00 | | | 1 | MARKER, IDENT: DANGER: VOLTAGE IN THIS AREA | 07416 | ORDER BY DESCRIPTION |
| -68 | ----- | B010100 | B010606 | 1 | CIRCUIT BD ASSY: REGULATOR | | |
| | ----- | B010607 | B011090 | 1 | CIRCUIT BD ASSY: REGULATOR | | |
| | ----- | B011091 | | 1 | CIRCUIT BD ASSY: REGULATOR (SEE A11 REPL) | | |
| -69 | 211-0658-00 | | | 4 | SCR, ASSEM WSHR: 6-32 X 0.312, PNH, STL, POZ | 78189 | S51-060545-0X |
| -70 | 211-0097-00 | | | 1 | SCREW, MACHINE: 4-40 X 0.312, PNH, STL CD PL, POZ | 93907 | ORDER BY DESCRIPTION |
| -71 | 210-0586-00 | | | 1 | NUT, PL, ASSEM WA: 4-40 X 0.25, STL CD PL END ATTACHING PARTS | OKB01 | ORDER BY DESCRIPTION |
| -72 | ----- | B010100 | B011004 | 1 | SEMICOND DVC, DI: RECT, SI, 30A, 45V | | |
| | ----- | B011005 | | 1 | DIODE, RECT: SCHKY, :45V, 30A, COM-CATH (SEE A11CR1050 REPL) | | |
| -73 | 342-0860-00 | | | 1 | INSULATOR, XSTR: POLYSULFONE, BLACK OR NATURAL | 0JRO5 | 342-0860-00 |
| -74 | 342-0863-00 | | | 1 | INSULATOR, XSTR: T0-218 | 08530 | 5677-20 |
| -75 | 385-0160-00 | | | 4 | SPACER, POST: 0.812 L W/6-32 THD THRU, AL ATTACHING PARTS | TK0588 | ORDER BY DESCRIPTION |
| -76 | 211-0658-00 | | | 4 | SCR, ASSEM WSHR: 6-32 X 0.312, PNH, STL, POZ END ATTACHING PARTS | 78189 | S51-060545-0X |
| -77 | ----- | | | 1 | CONN, RIBBON: PCB, : FEMALE, RTANG, 24 POS, 0.085 (SEE A11J4061 REPL) ATTACHING PARTS | | |

Replaceable Mechanical Parts-TM 5006A

| Fig. & Index No. | Tektronix Part Number | Serial Number | | Qty | 12245 Part Name & Description | Mfr Code | Mfr Part Number |
|------------------|-----------------------|---------------|---------|-----|--|----------|----------------------|
| | | Effect | Discont | | | | |
| 2 -78 | 211-0244-00 | | | 4 | SCR,ASSEM WSHR:4-40 X 0.312,PNH STL CD PL | 01536 | 821-02775 |
| | 129-1003-00 | | | 2 | SPACER,POST:0.705 L,6-32 EXT/M3.5 X 6-6G END ATTACHING PARTS | TK1288 | ORDER BY DESCRIPTION |
| -80 | 333-3806-00 | B010100 | B010804 | 1 | PANEL,REAR: | TK1943 | ORDER BY DESCRIPTION |
| | 333-3806-01 | B010805 | B011004 | 1 | PANEL,REAR:TM5006A | 80009 | 333-3806-01 |
| | 333-3806-02 | B011005 | | 1 | PANEL,REAR:TM5006A ATTACHING PARTS | 80009 | 333-3806-02 |
| -81 | 213-0906-00 | | | 9 | SCREW,TPG,TR:8-32 X 0.375,PNH,STL | 83385 | ORDER BY DESCRIPTION |
| -82 | 210-0008-00 | | | 4 | WASHER,LOCK:#8 INTL,0.02 THK,STL | OKB01 | ORDER BY DESCRIPTION |
| | | | | | END ATTACHING PARTS | | |
| -83 | 334-3379-00 | | | 1 | MARKER,IDENT:MKD GROUND SYMBOL | 80009 | 334-3379-04 |
| -84 | 210-0457-00 | | | 1 | NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL | OKB01 | ORDER BY DESCRIPTION |
| -85 | 210-0202-00 | | | 1 | TERMINAL,LUG:0.146 ID,LOCKING,BRZ TIN PL | 86928 | A-373-158-2 |
| | | | | | ATTACHING PARTS | | |
| -86 | 210-0457-00 | | | 1 | NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL | OKB01 | ORDER BY DESCRIPTION |
| -87 | ----- | | | 1 | END ATTACHING PARTS | | |
| | | | | | SELECTOR,LINE V:W/LINE FILTER,RCPT & FUHLR (SEE FL500 REPL) | | |
| -88 | 200-2222-00 | | | 1 | GUARD,FAN: | TK2105 | 08213 |
| -89 | ----- | | | 1 | .FAN,TUBEAXIAL:115 VAC, 10W,50-60 HZ,80 CMH (SEE B500 REPL) | | |
| | | | | | ATTACHING PARTS | | |
| -90 | 211-0513-00 | | | 4 | SCREW,MACHINE:6-32 X 0.625,PNH,STL | 93907 | 880-00032-003 |
| -91 | 210-0457-00 | | | 4 | NUT,PL,ASSEM WA:6-32 X 0.312,STL CD PL | OKB01 | ORDER BY DESCRIPTION |
| | | | | | END ATTACHING PARTS | | |
| -92 | 200-2467-01 | | | 2 | COVER,CONNECTOR:ALUMINUM ATTACHING PARTS | 80009 | 200-2467-00 |
| -93 | 211-0244-00 | | | 4 | SCR,ASSEM WSHR:4-40 X 0.312,PNH STL CD PL | 01536 | 821-02775 |
| -94 | 210-0586-00 | | | 4 | NUT,PL,ASSEM WA:4-40 X 0.25,STL CD PL | OKB01 | ORDER BY DESCRIPTION |
| -95 | 134-0159-00 | | | 6 | BUTTON,PLUG:0.38 DIA,PLASTIC | OJRO5 | 134-0159-00 |
| -96 | ----- | | | 1 | TRANSISTOR,PWR:MOS,N-CH:500V,8.0A,0.85 OHM (SEE 03086,03087 REPL) | | |
| | | | | | ATTACHING PARTS | | |
| -97 | 211-0551-00 | | | 2 | SCREW,MACHINE:6-32 X 0.562,PNH STL CD PL | TK0435 | ORDER BY DESCRIPTION |
| -98 | 342-0458-00 | | | 1 | INSULATOR,PLATE:TRANSISTOR,MICA | 08530 | ORDER BY DESCRIPTION |
| -99 | 342-0449-01 | | | 1 | INSULATOR,PLATE:TRANSISTOR,ALUMINA | 80009 | ORDER BY DESCRIPTION |
| -100 | 200-2269-01 | | | 1 | CAP,END:BLACK,ACETAL END ATTACHING PARTS | 80009 | 200-2269-01 |

Replaceable Mechanical Parts-TM 5006A

| Fig. & Index No. | Tektronix Part Number | Serial Number Effect | Discont | Qty | 12345 Part Name & Description | Mfr Code | Mfr Part Number |
|------------------|-----------------------|----------------------|---------|-----|--|----------|----------------------|
| OPTION 02/12 | | | | | | | |
| 3 -1 | 131-0955-00 | | | 6 | CONN, RF JACK: BNC, ;50 OHM, FEMALE, STR, SLD | 24931 | 28JR200-1 |
| -2 | 210-0255-00 | | | 6 | TERMINAL, LUG: 0.391 ID, LOCKING, BRS CD PL (OPTION 02, 12 ONLY) | TK1572 | ORDER BY DESCRIPTION |
| -3 | 131-1344-00 | | | 1 | CONN, D-SUB:: PNL/CABLE, SLD CUP: MALE, STR, 50 (OPTION 02, 12 ONLY) | 71468 | DD-50P A208 |
| -4 | 131-1345-00 | | | 1 | CONN, D-SUB:: PNL/CABLE, SLD CUP: FEMALE, STR (OPTION 02, 12 ONLY) | 59610 | DD-50S |
| -5 | 214-1593-02 | | | 40 | KEY, CONN PLZN: CKT BOARD CONN (OPTION 02, 12 ONLY) | QJR05 | ORDER BY DESCRIPTION |
| -6 | 131-1319-00 | | | 1 | SHLD, D-SUB HSG: ROUND CABLE, CLAMP: 50 POS (OPTION 02 ONLY) | 71468 | DD51216 |
| -7 | 175-3301-00 | | | 12 | CABLE ASSY, RF: 50 OHM COAX, 15.0 L, 9-4 (OPTION 02, 12 ONLY) | 80009 | 175-3301-00 |
| -8 | 195-0993-00 | | | 12 | LEAD, ELECTRICAL: 22 AWG, 15.0 L, 9-4 (OPTION 02, 12 ONLY) | TK1997 | ORDER BY DESCRIPTION |
| -9 | 352-0171-00 | | | 72 | HLD, TERM CONN: 1 WIRE, BLACK SAFETY (OPTION 02, 12 ONLY) | QJR05 | 352-0171-00 |
| -10 | 351-0636-00 | | | AR | SLIDE, DWR, EXT: 20.0 X 1.69, PAIR, R&L | 06666 | C-1252 |
| -11 | 351-0104-03 | | | AR | SL SECT, DWR EXT: 12.625 L, W/O HARDWARE ATTACHING PARTS | 06666 | C-720-3 (WITHOUT HAR |
| -12 | 212-0070-00 | | | 8 | SCREW, MACHINE: 8-32 X 0.312, FLH, 100 DEG, STL | OKB01 | ORDER BY DESCRIPTION |
| -13 | 210-0458-00 | | | 8 | NUT, PL, ASSEM WA: 8-32 X 0.344, STL CD PL END ATTACHING PARTS | OKB01 | 210-0458-00 |
| -14 | 367-0022-00 | | | 2 | HANDLE, BOW: 4.579 L, BRS CRPL ATTACHING PARTS | 08730 | VPC 815 |
| -15 | 211-0755-00 | | | 4 | SCREW, MACHINE: 10-32 X 0.5, PNH, POZI END ATTACHING PARTS | OKB01 | 211-0755-00 |
| -16 | 390-1105-00 | | | 2 | CABINET SIDE: RACKMOUNT (OPTION 10, 12 ONLY) ATTACHING PARTS | 80009 | 390-1105-00 |
| -17 | 213-0183-00 | | | 4 | SCREW, TPG, TF: 6-20 X 0.5, TYPE B, PNH, STLCD PL END ATTACHING PARTS | 93907 | ORDER BY DESCRIPTION |
| | 119-0147-00 | | | 1 | FAN, VENTILATING: 115VAC, 14W, 50-60HZ, 105 CFM | 82877 | 028021 |
| | 390-1049-01 | | | AR | CABINET, BOTTOM: ALUMINUM | TK1943 | ORDER BY DESCRIPTION |
| | 390-1043-00 | | | 1 | CABINET, TOP: FULL RACK X 17.956, ALUMINUM (SEE FIG 1-8 REPL) | TK1465 | ORDER BY DESCRIPTION |

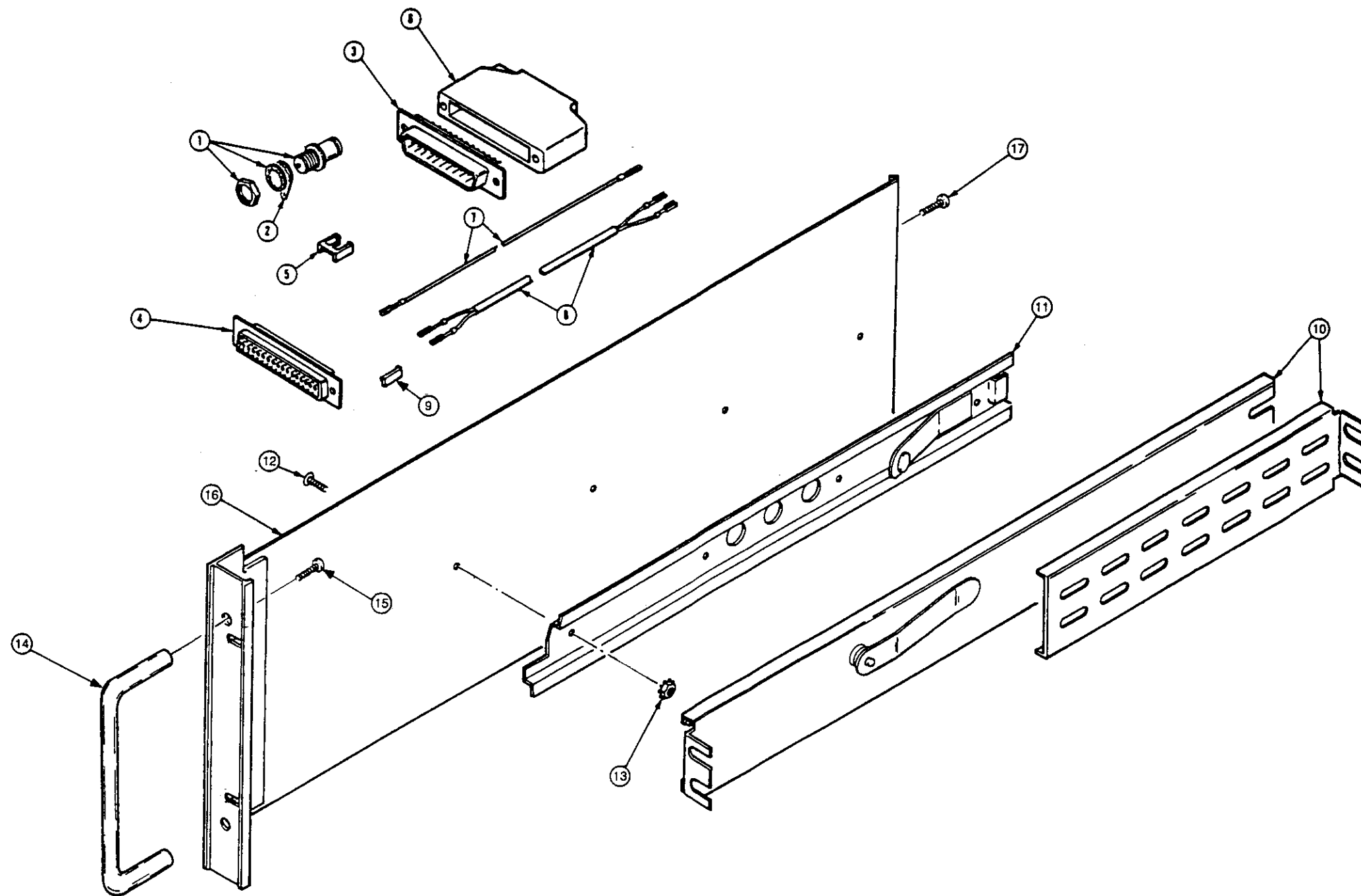
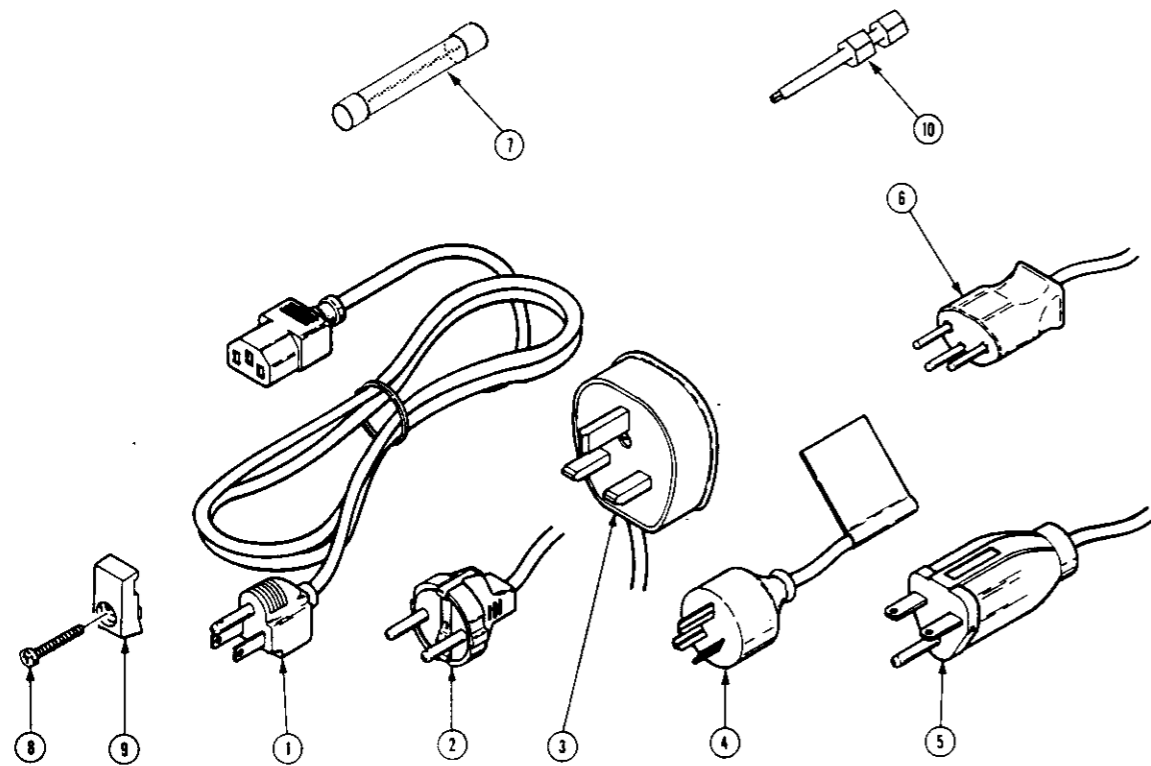


FIG. 3 OPTION 02, OPTION 10

FIG. 4 ACCESSORIES



Replaceable Mechanical Parts-TM 5006A

| Fig. & Index No. | Tektronix Part Number | Serial Number Effect | Discont | Qty | 12345 Part Name & Description | Mfr Code | Mfr Part Number |
|-------------------------------------|-----------------------|----------------------|---------|-----|---|----------|----------------------|
| STANDARD ACCESSORIES | | | | | | | |
| 4 -1 | 161-0066-00 | | | 1 | CABLE ASSY,PWR, :3.18AWG,115V,98.0 L | 0B445 | EQM-161-0066-00 |
| -2 | 161-0066-09 | | | 1 | CABLE ASSY,PWR, :3.0.75MM SQ,220V,99.0 | S3109 | 86511000 |
| -3 | 161-0066-10 | | | 1 | CABLE ASSY,PWR, :THREE 0.75MM SQ,250V,2.5 | S3109 | BS/13-H05VVF3G0.75-V |
| -4 | 161-0066-11 | | | 1 | CABLE ASSY,PWR, :3.1.00MM SQUARED,250V,10AMP | TK1373 | 161-0066-11 |
| -5 | 161-0066-12 | | | 1 | CABLE ASSY,PWR, :3.18 AWG,250V,99.0 L | 29870 | ORDER BY DESCRIPTION |
| -6 | 161-0154-00 | | | 1 | CABLE ASSY,PWR, :3.1.00MM SQ,250V,10A | S3109 | 12-H05VVF3G 00-5 0 |
| -7 | 159-0013-00 | | | 1 | FUSE,CARTRIDGE:3AG,6A,250V,FAST BLOW (STANDARD ONLY) | 75915 | 312006 |
| | 159-0017-00 | | | 1 | FUSE,CARTRIDGE:3AG,4A,250V,FAST BLOWS (OPTION A1 EUROPEAN) (OPTION A1 EUROPEAN) (OPTION A2 UNITED KINGDOM) (OPTION A3 AUSTRALIAN) (OPTION A4 NORTH AMERICAN) (OPTION A5 SWITZERLAND) | 71400 | AGC-4 |
| | 070-7614-02 | | | 1 | MANUAL,TECH:TM5006A POWER MODULE | 80009 | 070-7614-02 |
| OPTION 15 ONLY STANDARD ACCESSORIES | | | | | | | |
| -8 | 213-0760-00 | | | 6 | SCREW,TPG,TF:8-32 X 0.875,SPCL TAPTITE,FILH | 72228 | ORDER BY DESCRIPTION |
| -9 | 343-1085-00 | | | 6 | RTNR,PL-IN UNIT:NYLON,SLATE GRAY | 0JRO5 | ORDER BY DESCRIPTION |
| OPTIONAL ACCESSORIES | | | | | | | |
| -10 | 003-0866-00 | | | 1 | BIT,SCREWDRIVER:PWR,T-20 SCR SIZE,0.25 | 11195 | 100-T20 OR EQUAL |
| | 343-1085-00 | | | 6 | RTNR,PL-IN UNIT:NYLON,SLATE GRAY | 0JRO5 | ORDER BY DESCRIPTION |
| | 213-0760-00 | | | 6 | SCREW,TPG,TF:8-32 X 0.875,SPCL TAPTITE,FILH | 72228 | ORDER BY DESCRIPTION |
| | 070-7614-02 | | | 1 | MANUAL,TECH:TM5006A POWER MODULE | 80009 | 070-7614-02 |

