



KB 5150
OPERATOR'S MANUAL

WARNING!!

**TURN OFF POWER PRIOR TO CONNECTING OR
DISCONNECTING THIS KEYBOARD FROM SYSTEM.
FAILURE TO DO SO CAN CAUSE DAMAGE NOT
COVERED BY WARRANTY!**

THE KB 5150 KEYBOARD

The KB 5150 Keyboard is a plug compatible replacement for the unit provided with your IBM* Personal Computer. Using it is exactly the same as described in the IBM Personal Computer Guide To Operations Handbook you received with your Personal Computer. Install per instructions found in the Handbook.

Key Tronic, the world leader in keyboards, has listened to market commentary on the IBM design, and has chosen to include some features not found on the original. These selections enhance ease of operation, and in no way alter the normal function or use of the Personal Computer.

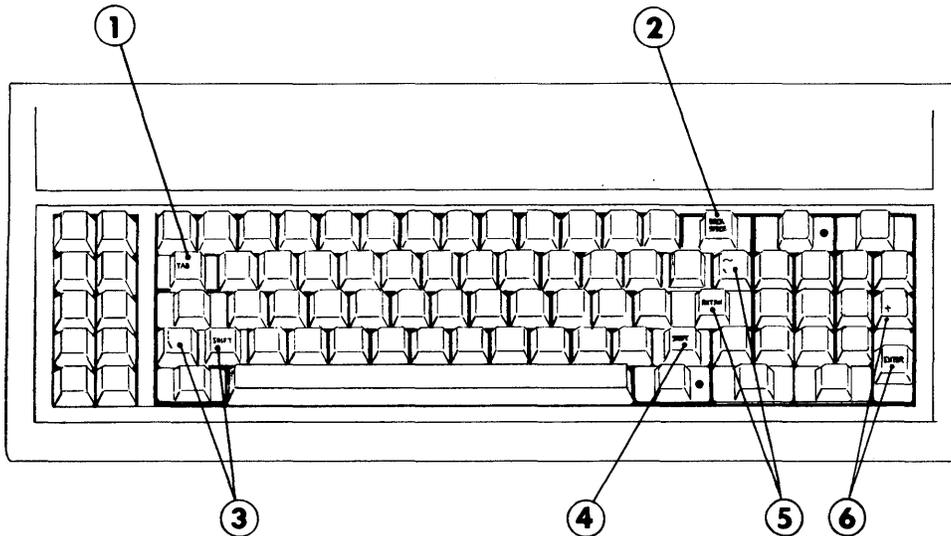
ADDED FEATURES

LED STATUS INDICATORS

A frequent cause of operating errors is inadvertant setting of the Numerical Lock or Capitals Lock keys. To help reduce the number of such errors, the KB 5150 adds Status LED's to these keys. You can now tell at a glance which modes these keys are in, greatly reducing chance entry of false data or commands. We think you will be pleased with the improvement.

KEY RELOCATION

The KB 5150 design returns certain keys to the standard locations, and replaces some symbolic legends with conventional alpha legends. Our surveys show that this style offers greater user convenience, and also reduces the problems created by the need to relearn a keyboard for one application. The diagram below shows the differences in the two styles. Keep handy for reference.



- 1 - TAB legend replaces ARROW symbols.
- 3 - BACKSLASH and left SHIFT keys interchanged. SHIFT legend replaces ARROW symbol.
- 5 - RETURN key reconfigured to Home Row and ACCENT KEY relocated to upper row. RTRN legend replaces ARROW symbol.

- 2 - BACKSPACE legend replaces ARROW symbol.
- 4 - Right SHIFT legend replaces ARROW symbol.
- 6 - Numeric keypad + reconfigured into + and ENTER keys.

TECHNICAL DATA

NOTE: The following material is for those who are interested in the technical areas

of the KB 5150. This data does not apply to normal operating requirements.

POWER REQUIREMENT

+5VDC @ 250ma Nominal

KEYBOARD CODES

The diagram below shows the codes output by the KB 5150 on key actuation. This is a dual encoded scheme, meaning that each key depression/release produces a "Down" and "Up" code cycle.

The top code is the "Down" value, and the bottom code is the "Up" value. These codes are based on positive logic and a negative strobe.

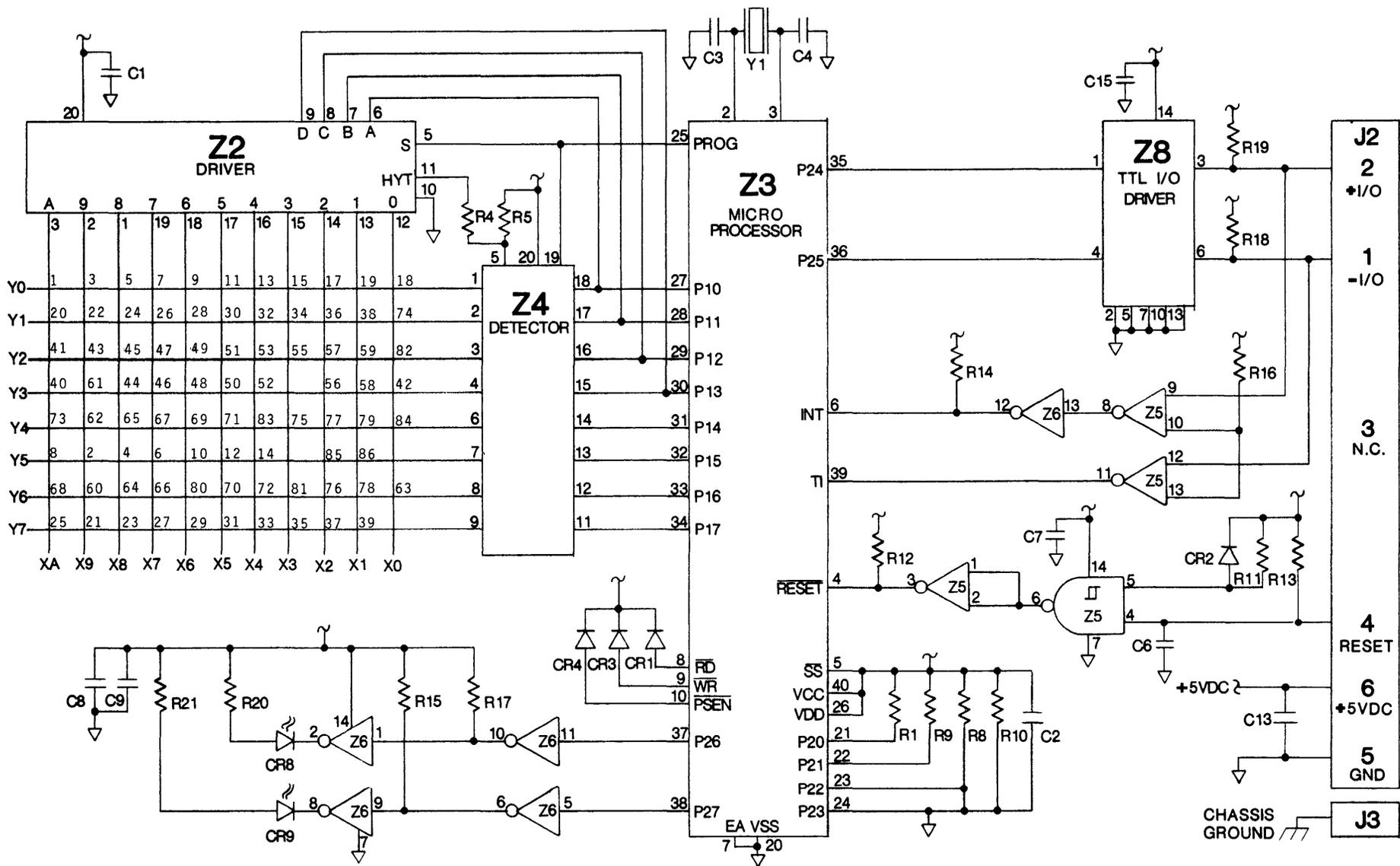
3B BB	3C BC	01 81	02 82	03 83	04 84	05 85	06 86	07 87	08 88	09 89	0A 8A	0B 8B	0C 8C	0D 8D	0E 8E	45 C5	46 C6		
3D BD	3E BE	0F 8F	10 90	11 91	12 92	13 93	14 94	15 95	16 96	17 97	18 98	19 99	1A 9A	1B 9B	29 A9	47 C7	48 C8	49 C9	4A CA
3F BF	40 C0	1D 9D	1E 9E	1F 9F	20 A0	21 A1	22 A2	23 A3	24 A4	25 A5	26 A6	27 A7	28 A8	1C 9C	4B CB	4C CC	4D CD	4E CE	
41 C1	42 C2	2B AB	2A AA	2C AC	2D AD	2E AE	2F AF	30 B0	31 B1	32 B2	33 B3	34 B4	35 B5	36 B6	37 B7	4F CF	50 D0	51 D1	1C
43 C3	44 C4	38 B8	39 B9										3A BA	52 D2	53 D3	9C			

CODE CHART - KB 5150

KEY LOCATIONS

Correlation of key codes to their location on the schematic matrix is as follows: The key numbers run from left to right across the diagram. Exception: Numbers 16 and 54 are not used in this configuration.

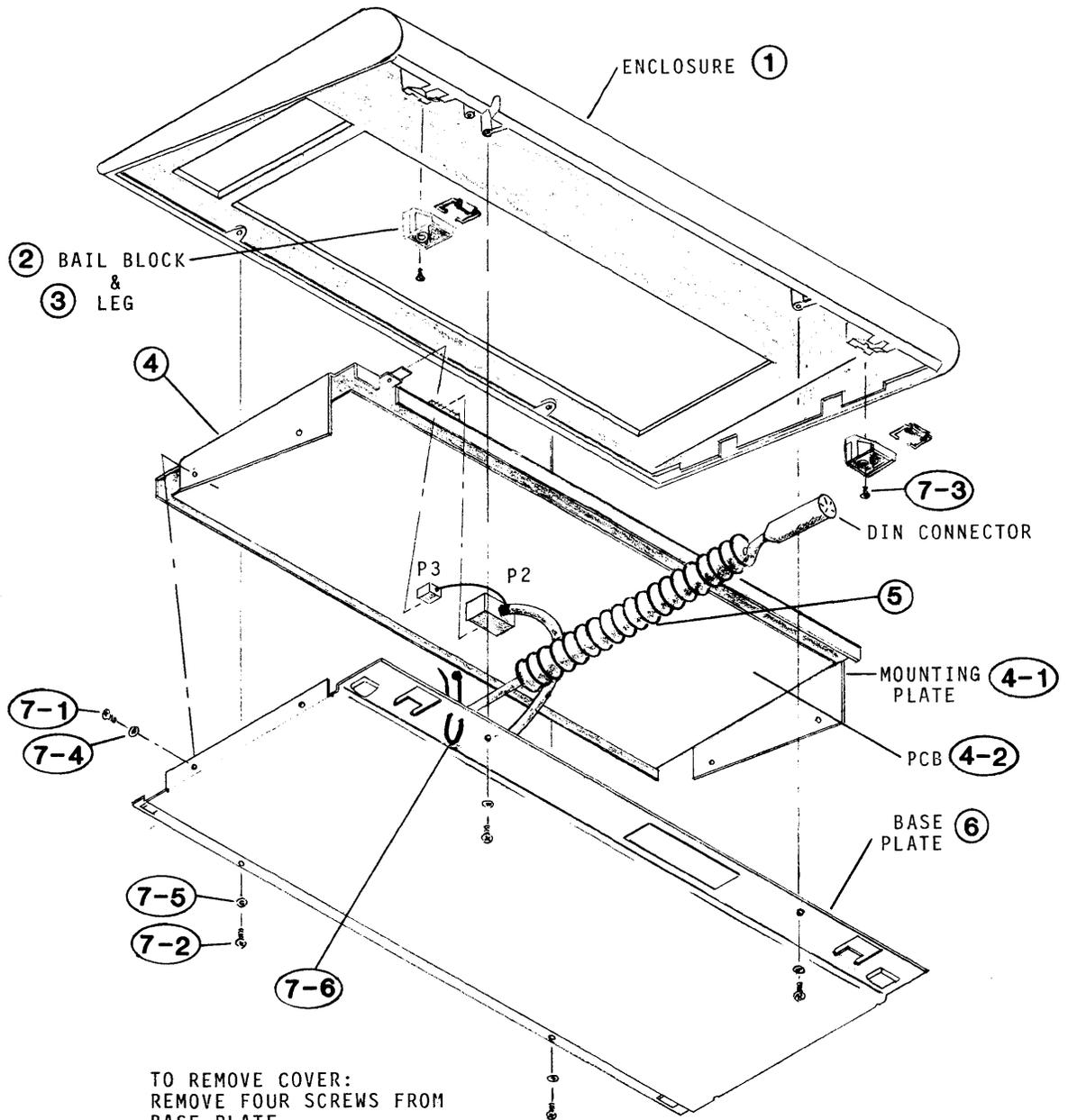
The top row is thus Keys 1 through 19. The second Keys 20 through 39, the Home Row 40 through 59, the fourth 60 through 79, and the bottom row 80 through 86.



SCHMATIC - KB 5150

TOP ASSEMBLY

EXPLODED VIEW



PARTS LIST

TOP ASSEMBLY

Refer To Exploded View:

1 - Enclosure, Keyboard	44-00211-001
2 - Bail Block, 30mm	44-00193-000
3 - Leg, 30mm	45-00057-000
4 - Keyboard Assy	65-02402-024
1 - PCB	01-02402-207
2 - Plate, PCB Mount	49-01439-000
3 - Keyswitch, 30mm	61-04024-001
4 - Keytop Set, IBM 30mm	66-02402-024
5 - Cable Assy, Shielded	48-00616-000
6 - Plate, Base	49-01394-000
7 - Mounting Hardware	Commercial
1 - Screw, Phillips 4-40	.312
2 - Screw, Phillips 6-32	.250
3 - Screw, Self Tap 3-28	.625
4 - Washer, Lock #4	
5 - Washer, Star, Int Tooth #6	
6 - Cable Tie #8	

PRINTED CIRCUIT BOARD

Refer To Schematic:

Z2 KTC Custom Driver	22-00950-003
Z3 Microprocessor Type 8748	Commercial
Z4 KTC Custom Detector	22-00908-003
Z5 74LS132N	Commercial
Z6 7406N	" "
Z8 TTL Driver 74125N	" "
C1 Ceramic .033uf 25V	" "
C2 " " "	" "
C3 Ceramic 10pf 50V	" "
C4 Ceramic 18pf 50V	" "
C5 Tantalum 33uf 10V	" "
C6 Ceramic 33pf 1KV	" "
C7 Ceramic .033uf 25V	" "
C8 " " "	" "
C9 " " "	" "
C13 Tantalum 10uf 10V	" "
C15 Ceramic .033uf 25V	" "
CR1 Diode 1N4148	" "
CR2 " " "	" "
CR3 " " "	" "
CR4 " " "	" "
CR8 LED, Red Type 3401	" "
CR9 " " "	" "
R1 3.3K 5% 1/4W	" "
R4 6.8K 5% 1/4W	" "
R5 806 Ohm Precision Res.	18-08060-006
R8 3.3K 5% 1/4W	Commercial
R9 " " "	" "
R10 " " "	" "
R11 33K 5% 1/4W	" "
R12 3.3K 5% 1/4W	" "
R13 " " "	" "
R14 " " "	" "
R15 " " "	" "
R16 " " "	" "
R17 " " "	" "
R18 " " "	" "
R19 " " "	" "
R20 82 Ohm 5% 1/4W	" "
R21 " " " "	" "
J2 Header, 6 Pin Rt Angle	39-00763-000
Y1 Crystal, 4.608 MHz 4 Pin DIP	Commercial

WARRANTY AND SERVICE POLICY

WARRANTY

Key Tronic warrants this keyboard free of defects in material and workmanship for a period of 90 (Ninety) days from the date of shipment from the factory.

PACKAGING NOTICE

Please retain original packaging for reuse should your unit ever need to be returned for service. The foam shell and the bag in which you received it are a custom design to protect the keyboard from electrostatic and mechanical shock in shipment.

TECHNICAL ASSISTANCE

Should you encounter problems with the use of this keyboard, first consult your IBM* Personal Computer Guide To Operations. The Handbook troubleshooting section will provide a check list method of deciding if the problem may be in the keyboard. If you find that there may be a fault in the keyboard, please contact our Product Support Specialist for technical assistance.

To reach the PSS, call toll free from 8 AM through 4 PM Pacific Standard Time, Monday through Friday, to 1-800-262-6006.

IN WARRANTY SERVICE

To obtain Warranty Service, carefully read and follow Shipping Instructions. The unit will be repaired free of charge, with turn around of ten days plus shipping time.

OUT OF WARRANTY SERVICE

For Factory Service after warranty period, follow Shipping Instructions. Repairs will be made at your expense. Normal turnaround is ten days on prepaid returns, subject to availability of parts.

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INSPECTION NOTICE

Inspect this product carefully upon receipt for damage. Key Tronic does not accept any responsibility for damages incurred during shipment.

If damage is found, hold all packaging and documents and file a claim with the carrier for repair cost. Key Tronic will repair the damage under terms of Out Of Warranty.

SHIPPING INSTRUCTIONS

Prior to shipping your keyboard back to Key Tronic, contact Customer Service by calling 1-800-262-6006 Monday through Friday during the hours of 8AM through 4PM PST. You will be given a Returned Material Authorization number for the shipment. The RMA number is to be posted prominently on the label side of the shipping carton. Fill in the Service Card below, and pack with the keyboard. Be sure all requested information is entered to insure efficient handling. NOTE: The RMA must be posted on outside, or shipment will not be accepted at our dock.

The unit must be repacked in the original packaging to protect the unit in shipment from electrostatic and mechanical shock.

The keyboard is to be shipped to Key Tronic at your expense. If the unit is still under warranty, it will be returned via prepaid UPS surface. If repairs are made under Out Of Warranty conditions, you will be billed for UPS surface. Any other mode selected by you will be at your expense.

PLEASE NOTE:

The Warranty is rendered invalid if unit is opened, repaired at another facility, used on other than IBM Personal Computers, or in any other way tampered with or modified.

CUT

KEYBOARD SERVICE CENTER INFORMATION

NAME _____

STREET/BOX NUMBER _____

CITY _____ STATE _____ ZIP _____

PHONE _____
AREA CODE _____ NUMBER _____

REASON FOR RETURN _____

RMA NUMBER _____

ORDER NUMBER _____

SERIAL NUMBER _____

BE SURE RETURNED MATERIAL AUTHORIZATION NUMBER IS POSTED ON OUTSIDE OF PACKAGE.

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

WARNING This keyboard has been certified to comply with the limits for a Class B computing device pursuant to Subpart J of Part 15 of FCC Rules. Only computers certified to comply with the Class B limits may be attached to this keyboard. Operation with non-certified computers is likely to result in interference to Radio and TV reception.

INSTRUCTIONS TO USER

This equipment generates and uses radio frequency energy and if not installed and used properly, i.e., in strict accordance with the operating instructions, reference manuals, and the service manual, may cause interference to Radio and Television reception. It has been tested and found to comply with the limits for a Class B computing device pursuant to Subpart J of Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference when operated in a residential installation.

If this equipment does cause interference to Radio and Television reception, refer to the Apple II Reference Manual, Radio and Television Interference section (Precedes Chapter 1).

If necessary, consult your dealer service representative for additional suggestions.

The manufacturer is not responsible for any Radio and TV interference caused by unauthorized modifications to this equipment. It is the user's responsibility to correct such interference.



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