

SECTION 4

PARTS REMOVAL/REPLACEMENT PROCEDURES

- 4.1 Product Safety Precautions
- 4.2 Parts Removal Matrix
- 4.3 Mainboard Socketed Chips
- 4.4 Illustrated Parts Breakdown

4.1 PRODUCT SAFETY PRECAUTIONS



Due to the advanced state - of - the - art technology in the electronic components used today in Tandon products, proper handling of Logic Boards used in the PCX/PCA systems must be addressed, in order to prevent damage by static discharge (ESD) to sensitive components on the Logic Boards....

- * Do Not run hands over Logic Board components.
- * Do Not remove or install any Logic Boards with power applied.
- * Do Not connect or disconnect any system cabling with power applied.
- * When cycling power "OFF" and back "ON", wait 15 to 20 seconds (to allow capacitors to discharge in power supply).
- * Before moving PCX/PCA systems, the hard disk drives must have the heads positioned over the parking area using the "FXPARK" command (supplied with the TANDON DOS diskette). This applies to Models TM 252, TM 262, and TM 502 only.
- * Packaged parts in the spare kits must remain in their original packing until used or installed to replace a bad part; at this point, the bad part can be transferred to the original packing and returned to TANDON in the appropriate packaging materials to minimize any damage in transit.
- * Parts should always be handled with care. Parts should never be dropped or placed roughly on any surface. Parts should be placed on a flat, padded work surface during installation, whenever possible.

Notes:

4.2 PARTS REMOVAL MATRIX

Refer to the PCA Illustrated Parts Figure at the end of this section. To remove or install a part, locate the item on the top line of the matrix. To access the area of the item selected, complete the steps indicated by the "X's" from top to bottom of the matrix.

Part To Remove Or Install 								
Item To Remove With Information Concerning 	PCBA's	Floppy Disk Drive	Hard Disk Drive	Power Supply	Mainboard (CPU)	Co-Processor	Memory Chips	Chassis
COVER (5 Screws--PCA Plus has additional 4 screws on bottom of chassis)	X	X	X	X	X	X	X	X
PCBA's (Retainer Bracket Screw and Cabling)	X			X	X	X	X	X
FLOPPY DISK DRIVE - Power Plug, Control Cable, Retaining Brackets (2 Screws), Filler Panel, Rails, if applicable		X			X			X
HARD DISK DRIVE Power Plug, Control Cable, Data Cable, Retaining Bracket (& Screws), Rails if applicable			X	X				X
POWER SUPPLY - Disconnect from mainbd & disk drives				X				X
MAINBOARD - (9 Screws) Disconnect Speaker, System Key, Power Supply Plug, Serial & Parallel Plugs for 189370-xxx & 199720-xxx ONLY					X			X
CO-PROCESSOR						X		
MEMORY CHIPS In Expansion Area on Mainboard, if sockets used							X	
CHASSIS								X

4.3 MAIN BOARD SOCKETED CHIPS

Part Number 189230-xxx or 188740-xxx

<u>LOCATION</u>	<u>FUNCTION</u>	<u>PART NUMBER</u>
U2	Real Time Clock	MC 146818 AP
U5	Keyboard Controller	188977-001 Rev 1.1A
U29	I/O Decoder	188781-001C
U49	Co-Processor	80287-6
U53	Refresh RAM Address Decoder	188779-001E
U60	Pal 2	188775-001
U61	BIOS (Even)	188782-002
U73	Empty	
U92	BIOS (Odd)	188782-001
U112	Empty	
U137	Pal 1	188780-001 Rev - C
256 x1 D RAM Chips	150 nanosecond	977616-002

Part Number 189370-001, -002

U3	Co-Processor	80287-6
U42	Keyboard Controller	188977-001 Rev. 1.1A
U62	BIOS Even	188782-002
U63	BIOS Odd	188782-001
U64	Empty	
U65	Empty	

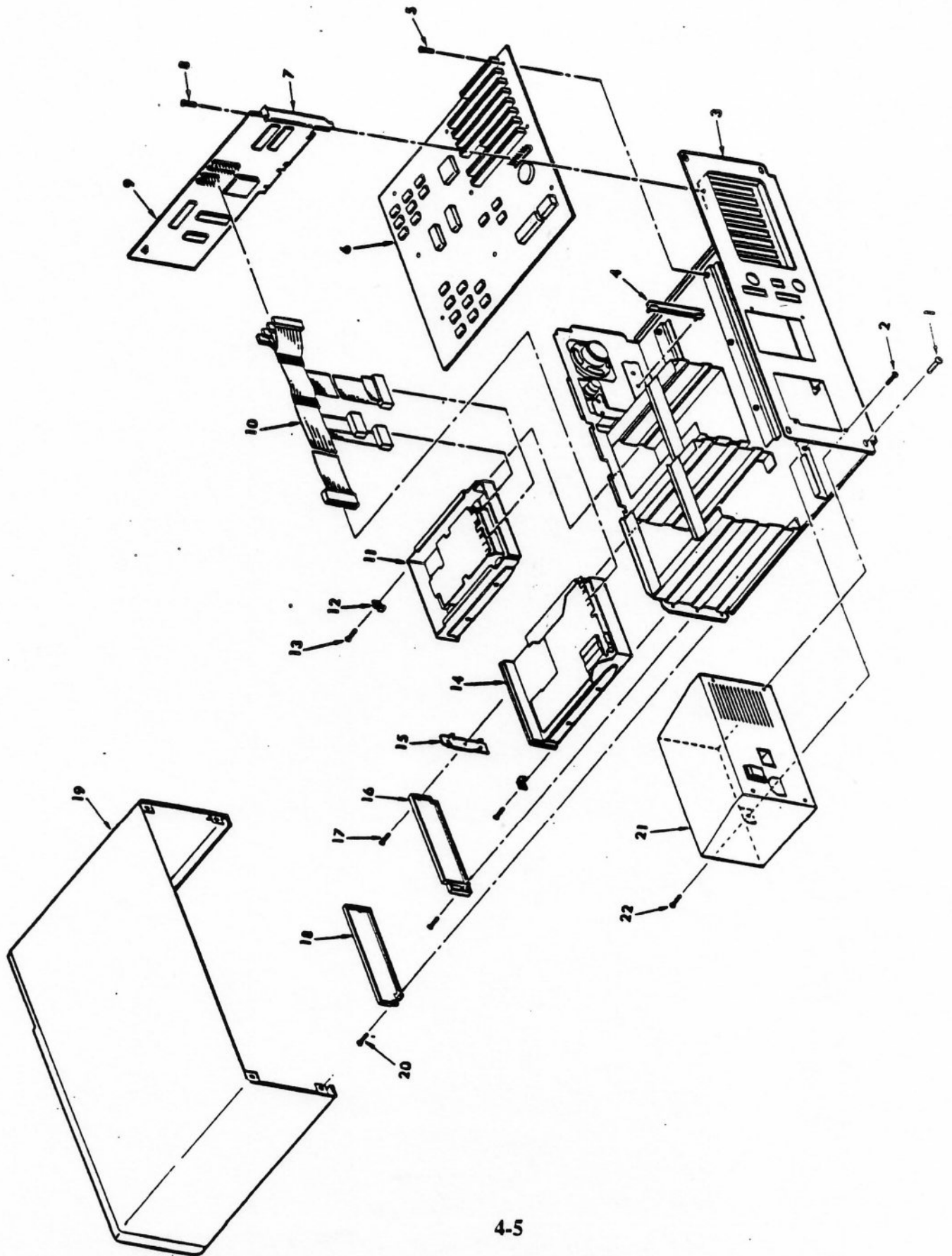
LOCATION**FUNCTION****PART NUMBER****Part Number 189370-004, -005**

U3	Co-Processor	80287-6
U42	Keyboard Controller	188977-001 Rev 1.1A
U62	BIOS Even	188782-010
U63	BIOS Odd	188782-009
U64	Empty	
U65	Empty	

Part Number 199720-001 - PCA "Plus"

U3	Co-Processor	80287-10
U42	Keyboard Controller	188977-001 Rev. 1.1A
U62	BIOS Even	188782-032A
U63	BIOS Odd	188782-031A
U64	Empty	
U65	Empty	

4.4 ILLUSTRATED PARTS BREAKDOWN



SECTION 5

PCA STANDARD SPARE PARTS AND ACCESSORIES

(Refer to the PCA Illustrated Parts Figure in Section 4.)

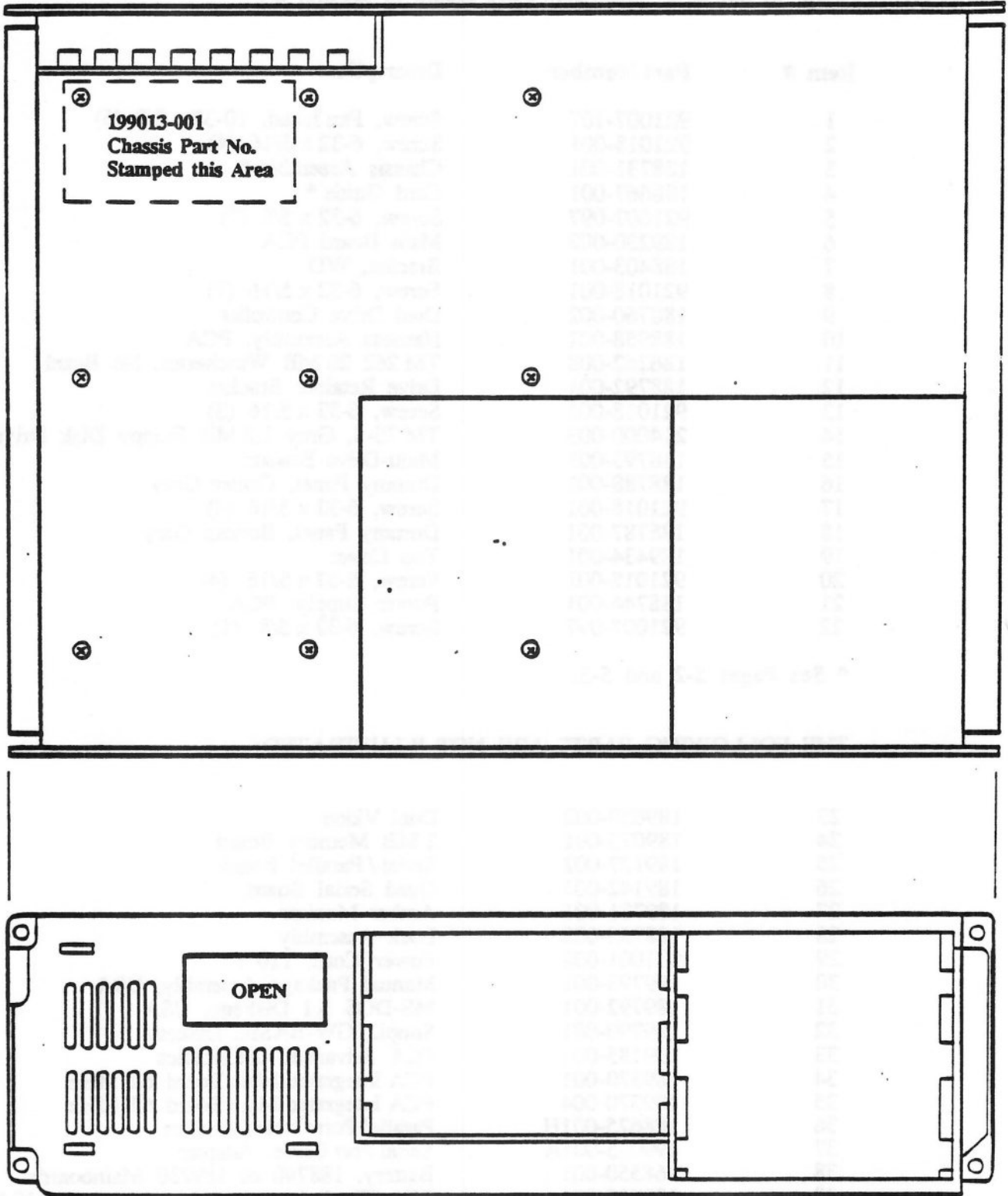
Item #	Part Number	Description
1	921007-107	Screw, Pan Head, 10-32 x 3/8 (5)
2	921018-001	Screw, 6-32 x 5/16 (4)
3	188731-001	Chassis Assembly *
4	188667-001	Card Guide *
5	921007-097	Screw, 6-32 x 5/8 (7)
6	189230-002	Main Board PCA
7	188403-001	Bracket, WD
8	921018-001	Screw, 6-32 x 5/16 (1)
9	188760-002	Dual Drive Controller
10	188958-001	Harness Assembly, PCA
11	186262-008	TM 262 20 MB Winchester, No Bezel
12	188792-001	Drive Retainer Bracket
13	921018-001	Screw, 6-32 x 5/16 (3)
14	214000-003	TM 75-8, Grey 1.2 MB Floppy Disk Drive
15	188793-001	Multi-Drive Bracket
16	188788-001	Dummy Panel, Center Grey
17	921018-001	Screw, 6-32 x 5/16 (4)
18	188787-001	Dummy Panel, Bottom Grey
19	189434-001	Top Cover
20	921018-001	Screw, 6-32 x 5/16 (4)
21	188744-001	Power Supply, PCA
22	921007-097	Screw, 6-32 x 5/8 (1)

* See Pages 5-2 and 5-3.

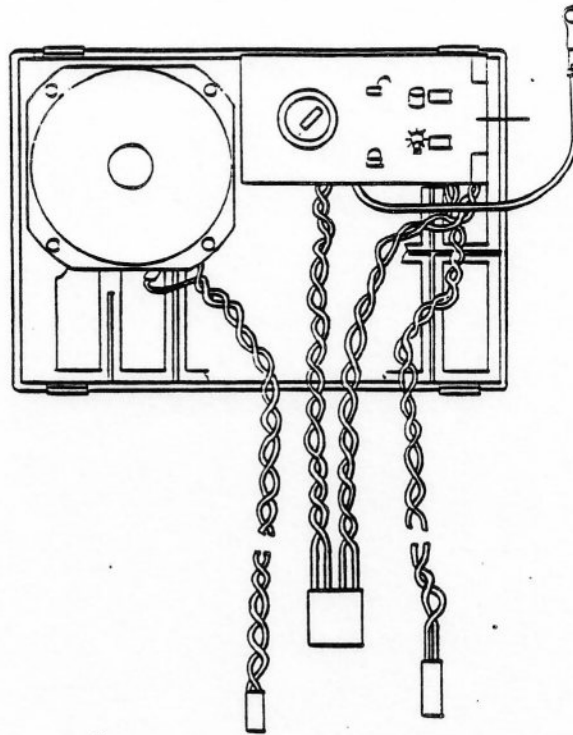
THE FOLLOWING PARTS ARE NOT ILLUSTRATED:

23	189050-002	Dual Video
24	189073-001	2 MB Memory Board
25	189127-002	Serial / Parallel Board
26	189142-001	Quad Serial Board
27	189721-001	Amber Monitor
28	188755-002	Lock Assembly
29	931001-008	Power Cord, 110 V
30	189793-001	Manual Package Assembly, USA
31	189792-001	MS-DOS 3.1 Diskette, USA
32	189790-001	Suppl. / GW-BASIC Diskette
33	199185-001	PCA Advanced Diagnostics
34	189370-001	PCA Integrated Main Board 6/8 MHz
35	189370-004	PCA Integrated Main Board 6/8 MHz
36	188625-001H	Parallel Port Cable / Adapter
37	199035-001A	Serial Port Cable / Adapter
38	968550-001	Battery, 188740 or 189230 Mainboards
39	199720-001	PCA "Plus" Integrated Mainboard -- 8 / 10 MHz
40	964100-001	Battery, Lithium, AA, 3.6 V (Leadless)
41	189885-001	Ass'y, Battery, Lith., 3.6V (189370-004, -005 or (199720-xxx mainboards))

Additional Part Information:



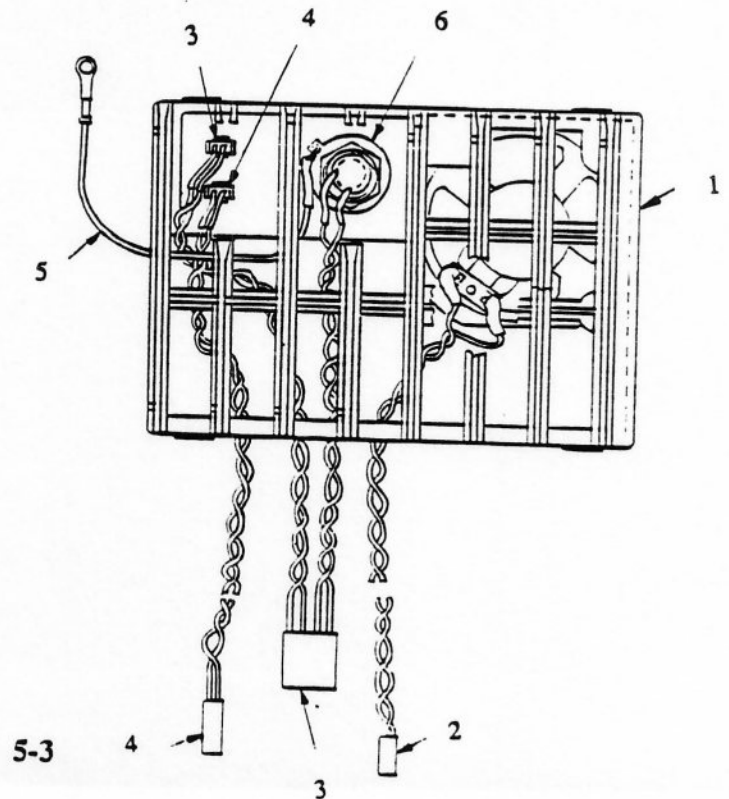
Chassis Part Number 199013-001 for snap-in card guide, switch, speaker assembly 189952-xxx.



Part Number 189952-001 8 MHz
 -002 10 MHz

Card Guide, Switch, Speaker assembly for chassis Part Number 199013-001

Item Description	Part Number
1. Card Guide, AT	199125-001
2. Speaker Assembly	188448-003
3. Switch, LED Ass'y	199338-001 8 MHz 199836-001 10 MHz
4. LED Assembly	199337-001
5. Ground Cable	199339-001
6. Ground Ring	199353-001



SECTION 6

SCHEMATICS

This section contains the schematic drawings for the PCA computer. One schematic for the Discrete Component Mainboard (P/N 189230-xxx) and the Integrated Mainboard (P/N 189370-xxx) is provided in this Service Manual. Mainboard schematics not provided in this Service Manual may be requested through Tandon Customer Service, Training Department.

1. Part Number 189230-xxx
2. Part Number 189370-004