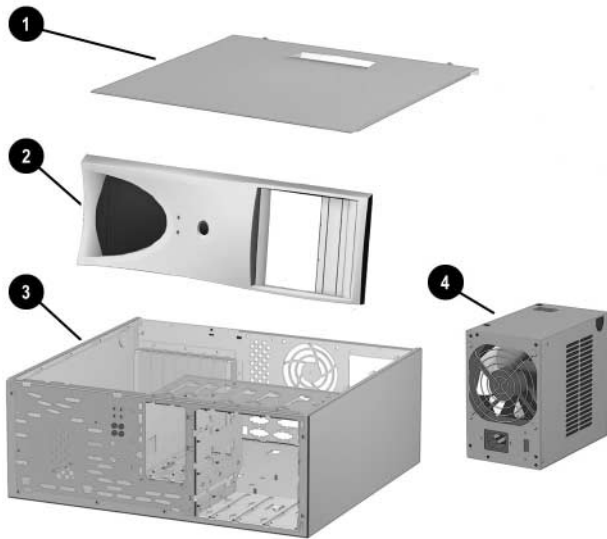


Compaq Deskpro Workstation AP230 Illustrated Parts Map



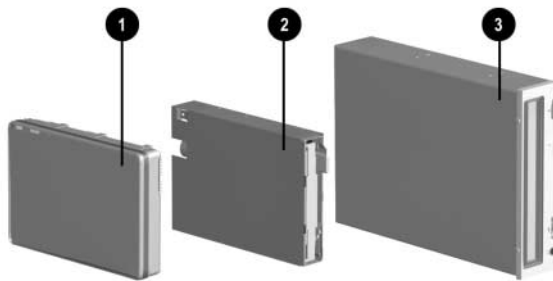
COMPAQ



System Unit

1	Access panel	Not spared
2	Front bezel assembly	158268-001
3	Chassis/basepan	Not spared
4	Power supply, 200 Watt, Non-PFC	103748-001
*	Power supply, 200 Watt, PFC (EMEA)	224894-001

*Not shown



Mass Storage Devices

1	20.0-GB Ultra ATA hard drive (100/7200)	180475-001
*	20.0-GB Ultra ATA Quiet hard drive (100/7200)	180476-001
*	40-GB Ultra ATA Quiet hard drive (100/7200)	202904-001
*	60-GB Ultra ATA hard drive (100/7200)	232022-001
*	18-GB Ultra3 SCSI hard drive (10000)	229737-001
*	18-GB Ultra3 SCSI hard drive (15000)	194585-001
*	36-GB Ultra3 SCSI hard drive	192197-001
2	Diskette drive, 3.5-inch (122712-001)	123958-001
3	48X Max tray load IDE CD-ROM drive	187263-001
*	16X DVD-ROM drive	213251-001
*	32X Max CD-RW drive	217824-001

*Not shown

Shipping Boxes (not illustrated)

Return Kit with buns (U.S.)	166990-001
Return Kit (international)	166990-002

Documentation and Software (not illustrated)

Illustrated Parts Map	235026-001
Service Reference Guide	225698-001
Quick Troubleshooting Guide	153837-001

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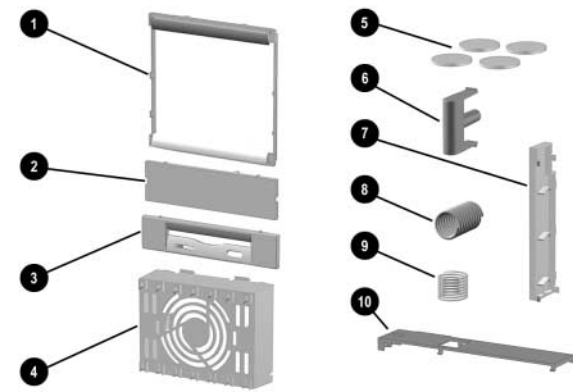
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August 2001

Part Number 234828-002



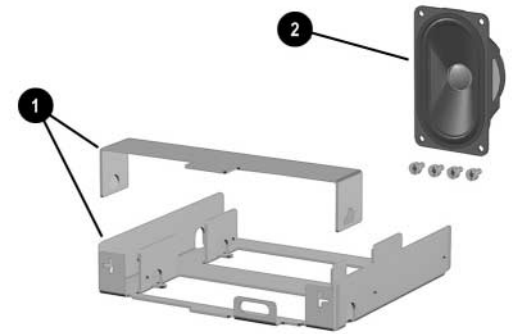
Spare Part Number 235026-001



Miscellaneous Plastics Kit

Miscellaneous Plastics Kit, includes:		166878-001
1	Panel, sub (166835-001)	
2	Bezel, blank (166775-001)	
3	Diskette bezel (166776-001)	
4	Card guide (166778-001)	
5	Foot, rubber (4 ea.) (166939-002)	
6	Button, power (166774-001) (not this product)	
7	Drivelock, DT (166779-001)	
8	Spring, power button (166837-001) (not this product)	
9	Springs, drivelock (2 ea.) (166837-002)	
10	Drivelock, MT (166780-001)	
*	Retention mechanism (2 ea.) (350767-001)	

*Not shown



Miscellaneous Parts

1	Diskette drive adapter (for bay 3 use only)	180808-001
2	Speaker with screws	192518-001
*	Battery	153099-001
*	Mouse, 3-button, opal	327716-001
*	DVI to VGA adapter	202997-001
*	Rear fan assembly (replaced by 166922-001)	207609-001
*	Chassis fan assembly with guard (replaces 207609-001)	166922-001
*	Heatsink for 933 MHz and 1.0 GHz processors	245261-001
*	Heatsink for 1.20 GHz processors	239119-001

*Not shown

Keyboards (not illustrated)

Easy Access Keyboard 123130-xxx

Arabic	-171	International	-B31
Belgian	-181	LA Spanish	-161
Brazilian	-201	Norwegian	-091
*BHCSY	-B41	Polish	-246
Czech	-221	Portuguese	-131
Danish	-081	Russian	-251
Dutch/Netherlands	-B31	Slovakian	-231
Finnish	-351	Spanish	-071
French	-051	Swedish	-101
French Canadian	-121	Swiss	-111
German	-041	Taiwanese	-AB1
Greek	-151	Thai	-281
Hungarian	-211	Turkish	-141
Italian	-061	UK	-031
Japanese	-191	US	-001
Korean (Hangul)	-AD1		

* Bosnia-Herzegovina, Croatia, Slovenia, and Yugoslavia

Standard and Optional Boards (not illustrated)

System Board (replaced by 239116-001)	187498-001
System Board, Tualatin ready (replaces 187498-001)	239116-001
Intel Pentium III Processor	
933/133MHz with fansink (158807-306), clip and interface thermal pad	201490-001
1GHz/133MHz with heatsink (158807-307), fan w/ clip and interface thermal pad	218316-001
1.20 GHz without heatsink	239113-001
Memory Module, 128 MB/133MHz	170081-001
Memory Module , 256MB/133MHz	192014-001
NVIDIA Quadro2 EX Graphics Board	233122-001
NVIDIA Quadro2 MXR Graphics Board	221492-001
NVIDIA NV15GL Graphics Board	225829-001
NVIDIA NV11GL Graphics Board	244278-001
Synergy II Graphics Board	146140-001
Matrox 450 32MB AGP Graphics Board	203626-001
Modem, 56K, control/based PCI	157071-B21
SCSI PCI Board	158364-001

Cables

Cable Kit includes: 166879-002

1	Diskette drive cable with twist, 11" (143218-001)
2	40-position IDE data cable, 12.5" (105876-001) (not this product)
4	IDE Ultra ATA dual device, hard drive/CD-ROM cable, 18", with pull tab, center polarization, (108950-007)
*	Dual-LED power cable (1 ea.), (387727-001)
*	Switch mounting bracket (3 ea.), (166777-001)
*	Diskette drive/tape cable, with twist, 34" (356107-001) (not this product)
*	Diskette drive cable with twist, 11", (387795-001) (not this product)

Cable Kit includes: 192264-001

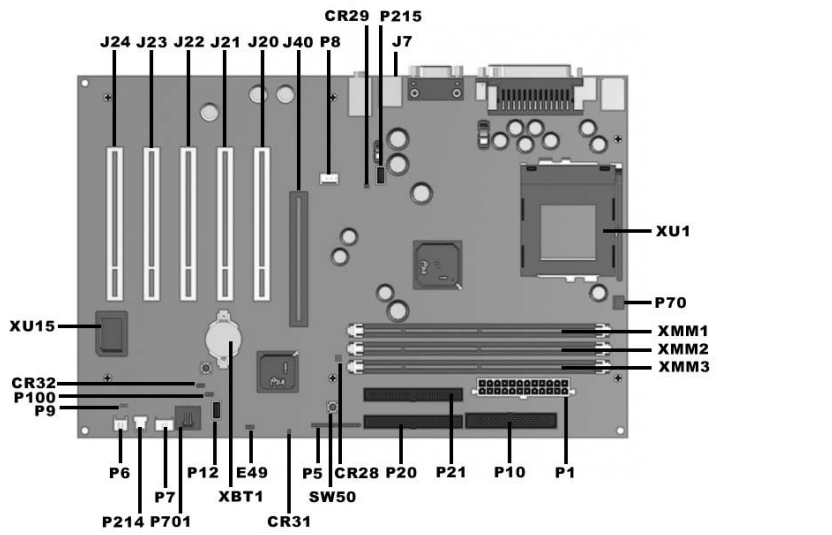
3	IDE Ultra ATA dual device, hard drive/CD-ROM cable, 18" (108950-019)	
5	Audio cable, 21", (288489-002) (not this product)	
*	40-position IDE data cable (105876-001) (not this product)	
*	Audio cable, Panther, 21" (387527-001)	
*	IDE Ultra ATA dual device, hard drive/CD-ROM cable, 18" (108950-021)	
*	SCSI cable LVD, five device	158277-001
*	SCSI cable w/LED	247485-001
*	IDE Dual connector, 18"	224484-001
*	IDE Dual connector, 12"	192263-001
*	Audio cable, Panther, 21" (387527-001)	149806-001

* Not shown

Miscellaneous Screw Kit (not illustrated)

Miscellaneous Screw Kit, includes: 179180-001

6-32 x 1/4 hi-top, thread-forming screw with serrations (4 ea.) (192308-001)
6-19 x 5/16 panhead, plastite screw (5 ea.) (101346-068)
6-19 x .5/16 hi-top, taptite screw with captive washer (4 ea.) (114399-069)
6-32 x 3/16 hi-top, thread-forming screw with serrations (5 ea.) (192308-003)
M3 x 5mm, hi-top, taptite screw with serrations (3 ea.) (247348-001)
6-32 x 3/16 buttonhead tamper-resistant, taptite screw with serrations (4 ea.) (296769-002)
6-32 x 5/16 hi-top, taptite screw (5 ea.) (109834-568)
6-19 x 1/2 Panhead, plastite screw (4 ea.) (101346-071)
Thumbscrew, molded cap (179333-002)
6-32 x 3/16 buttonhead tamper-resistant, taptite screw with serrations (4 ea.) (296769-002)



Connectors and Jumpers

CR28	3.3V Aux LED	P10	Diskette drive connector
CR29	3.3V Main LED (NI)	P12	SOS connector
CR31	Power button LED (ON when pushed)	P20	Primary IDE connector
CR32	5V Aux (ON)/PS_ON_LED (OFF)	P21	Secondary IDE connector
E49	Password jumper (Installed = Enabled, Removed = Cleared)	P70	CPU fan
J7	RJ-45 connector	P100	ITP connector
J20-24	PCI Slots	P214	Hood intrusion sensor
J40	AGP/AIMM connector	P215	Hood lock solenoid connector
P1	Power supply connector	P701	CD-ROM audio
P5(pins 1-9)	Power button, Pwr LED and HD LED connector	SW50	Clear CMOS
P5(pins 10-11)	SCSI LED connector	XBT1	External battery
P6	Speaker connector	XMM1-3	DIMM memory slots
P7	CD-ROM audio	XU1	Primary processor socket
P8	Chassis fan connector	XU15	ROM socket
P9	Wake On LAN connector		

System Hardware Interrupts

IRQ	System Function	IRQ	System Function
0	Timer Interrupt	8	Real-Time Clock
1	Keyboard	9	Available for PCI
2	Interrupt Controller Cascade	10	Available for PCI
3	Serial Port (COM B)	11	Available for PCI
4	Serial Port (COM A)	12	Mouse
5	Available for PCI	13	Coprocessor
6	Diskette Drive	14	Primary IDE Controller
7	Parallel Port (LPT 1)	15	Secondary IDE Controller

System Hardware DMA

DMA	System Function	DMA	System Function
0	Unused	4	DMA Controller Cascading
1	Unused	5	Unused
2	Diskette Drive	6	Unused
3	ECP Parallel Port LPT1 (Default; Alternate = DMA 0)	7	Unused

ICH Fixed I/O Registers

Port	Register Name
00h, 02h, 04h, 06h	Channel 0, 1, 2, 3 DMA Base & Current Address Register
C0h, C4h, C8h, CCh	Channel 4, 5, 6, 7 DMA Base & Current Address Register
01h, 03h, 05h, 07h	Channel 0, 1, 2, 3 DMA Base & Current Count Register
C2h, C6h, CAh, CEh	Channel 4, 5, 6, 7 DMA Base & Current Count Register
10h-1Fh	Aliased at 00h-0Fh
20h	Master PIC ICW1 Init. Cmd Word 1 Register Master PIC OCW2 Op Ctrl Word 2 Register Master PIC OCW3 Op Ctrl Word 3 Register
21h	Master PIC ICW2 Init. Cmd Word 1 Register Master PIC ICW3 Init. Cmd Word 1 Register Master PIC ICW4 Init. Cmd Word 1 Register Master PIC OCW1 Op Ctrl Word 3 Register
24h-25h, 28-29h, 2Ch-2Dh, 30h-31h, 34h-35h, 38h-39h, 3Ch-3Dh	Aliased at 20h-21h
40h	Counter 0 Interval Time Status Byte Format Counter 0 Counter Access Port Register
41h	Counter 1 Interval Time Status Byte Format Counter 1 Counter Access Port Register
42h	Counter 2 Interval Time Status Byte Format Counter 2 Counter Access Port Register
43h	Timer Control Word Register Timer Control Word Register Read Back Counter Latch Command
50h-53h	Aliased at 40h-43h
61h	NMI Status and Control Register
70h	NMI Enable Register Real-Time Clock (Standard RAM) Index Register
71h	Real-Time Clock (Standard RAM) Target Register
72h	Extended RAM Index Register
73h	Extended RAM Target Register
74h-75h	Aliased at 70h-71h
76h-77h	Aliased at 72h-73h or 70h-71h
80h, 84h-86h, 88h	Reserved Page Registers
81h, 82h, 83h	Channel 2, 3, 1 DMA Memory Low Page Register
89h, 8Ah, 8Bh	Channel 6, 7, 5 DMA Memory Low Page Register
8Ch-8Eh	Reserved Page Registers
8Fh	Refresh Low Page Register
91h-9Fh (except 92h)	Aliased at 81h-8Fh

ICH Fixed I/O Registers (Continued)

Port	Register Name
92h	Fast A20 and INIT Register
A0h	Slave PIC ICW1 Init. Cmd Word 1 Register Slave PIC OCW2 Op Ctrl Word 2 Register Slave PIC OCW3 Op Ctrl Word 3 Register
A1	Slave PIC ICW2 Init. Cmd Word 2 Register Slave PIC ICW3 Init. Cmd Word 3 Register Slave PIC ICW4 Init. Cmd Word 4 Register Slave PIC OCW1 Op Ctrl Word 1 Register
A4h-A5h, A8h-A8h, ACh-ADh, B0h-B1h, B4h-B5h, B8h-B9h, BCh-BDh	Aliased at A0h-A1h
B2h	Advanced Power Management Control Port Register
B3h	Advanced Power Management Status Port Register
C0h, C4h, C8h, CCh	Channel 4, 5, 6, 7 DMA Base and Current Address Register
C1h	Aliased at C0h
C5h	Aliased at C4h
C9h	Aliased at C8h
CDh	Aliased at CCh
C2h, C6h, CAh, CEh	Channel 4, 5, 6, 7 DMA Base and Current Count Register
C3h	Aliased at C2h
C7h	Aliased at C6h
CBh	Aliased at CAh
CFh	Aliased at Ceh
D0h	Channel 4-7 DMA Command Register Channel 4-7 DMA Status Register
D1h	Aliased at D0h
D4h	Channel 4-7 DMA Write Single Mask Register
D5h	Aliased at D4h
D6h	Channel 4-7 DMA Channel Mode Register
D7h	Aliased at D6h
D8h	Channel 4-7 DMA Clear Byte Pointer Register
D9h	Aliased at D8h
DAh	Channel 4-7 DMA Master Clear Register
DBh	Aliased at DAh
DCh	Channel 4-7 DMA Clear Mask Register
DEh	Aliased at DCh
DEh	Channel 4-7 DMA Write All Mask Register
DFh	Aliased at DEh
F0h	Coprocessor Error Register
170h-177h	PIO Mode Command Block Offset for Secondary Drive
1F0h-1F7h	PIO Mode Command Block Offset for Primary Drive
376h	PIO Mode Control Block Offset for Secondary Drive
3F6h	PIO Mode Control Block Offset for Primary Drive
4D0h	Master PIC Edge/Level Triggered Register
3F6h	PIO Mode Control Block Offset for Primary Drive
4D0h	Master PIC Edge/Level Triggered Register
4D1h	Slave PIC Edge/Level Triggered Register
400-47F	Super I/O
CF9h	Reset Control Register
F800-F87F	Reserved (power management)
FA00-FA3F	Reserved (GPIO management)
FC00-FC0F	Reserved (SMBUS controller)

Note: When the POS_DEC_EN bit is set, additional I/O ports get positively decoded by the ICH

System Memory Map

Size	Memory Address	System Function
512 KB	FFFFFFFFh to FFF80000	System ROM
2030 MB	FEDFFFFFFh to 80000000h	PCI Memory Expansion
2047 MB	7FFFFFFFh to 00100000h	HOST or PCI Memory Expansion
128KB	000FFFFFFh to 000E0000h	System ROM
128 KB	000DFFFFFFh to 000C0000h	PCI Option ROMs
128 KB	000BFFFFFFh to 000A0000h	Video RAM
640 KB	0009FFFFFFh to 00000000h	Base Memory

Clearing CMOS*

The computer's configuration (CMOS) may occasionally be corrupted. If it is, it is necessary to clear the CMOS memory using jumper SW50

To clear and reset the configuration, perform the following procedure:

1. Prepare the computer for disassembly.



CAUTION: The power cord must be disconnected from the power source before pushing the Clear CMOS Button (NOTE: All LEDs on the board should be OFF). Failure to do so may damage the system board

2. Remove the access panel (Section 4.6).
3. Press the CMOS button located on the system board and keep it depressed for 5 seconds.
4. Replace the access panel.
5. Turn the computer on.
6. Run F10 Computer Setup (delete-utility) to reconfigure the system.

*When the CMOS button is pushed or the jumper is removed, both the power-on password and the setup password become invalid because both are stored in the configuration memory. You will need to reset the passwords.

Disabling or Clearing the Power-On and Setup Passwords*

1. Turn off the computer and any external devices, and disconnect the power cord from the power outlet.
2. Remove the access panel.
3. Locate the header and jumper labeled E49.
4. Remove the jumper from pins 1 and 2. Place the jumper over pin 2 only, in order to avoid losing it.
5. Replace the access panel.
6. Plug in the computer and turn on power to all equipment. Allow the operating system to start. This clears the current passwords and disables the password features.
7. To re-enable the password features, repeat steps 1-3, then replace the jumper on pins 1 and 2.
8. Repeat steps 5-6, then establish new passwords.

Refer to the Computer Setup (F10 Setup) instructions to establish new passwords.

*When the CMOS button is pushed or the jumper is removed, both the power-on password and the setup password become invalid because both are stored in the configuration memory. You will need to reset the passwords.