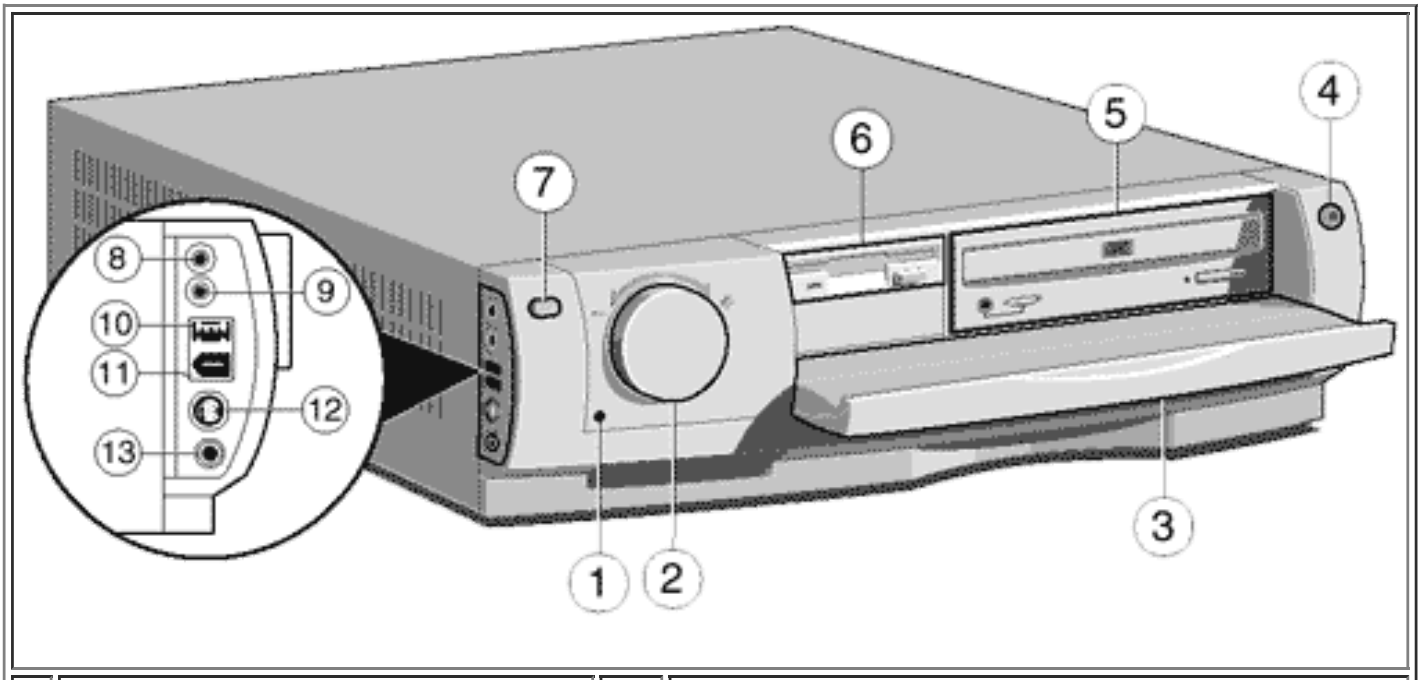
MITSUBISHI

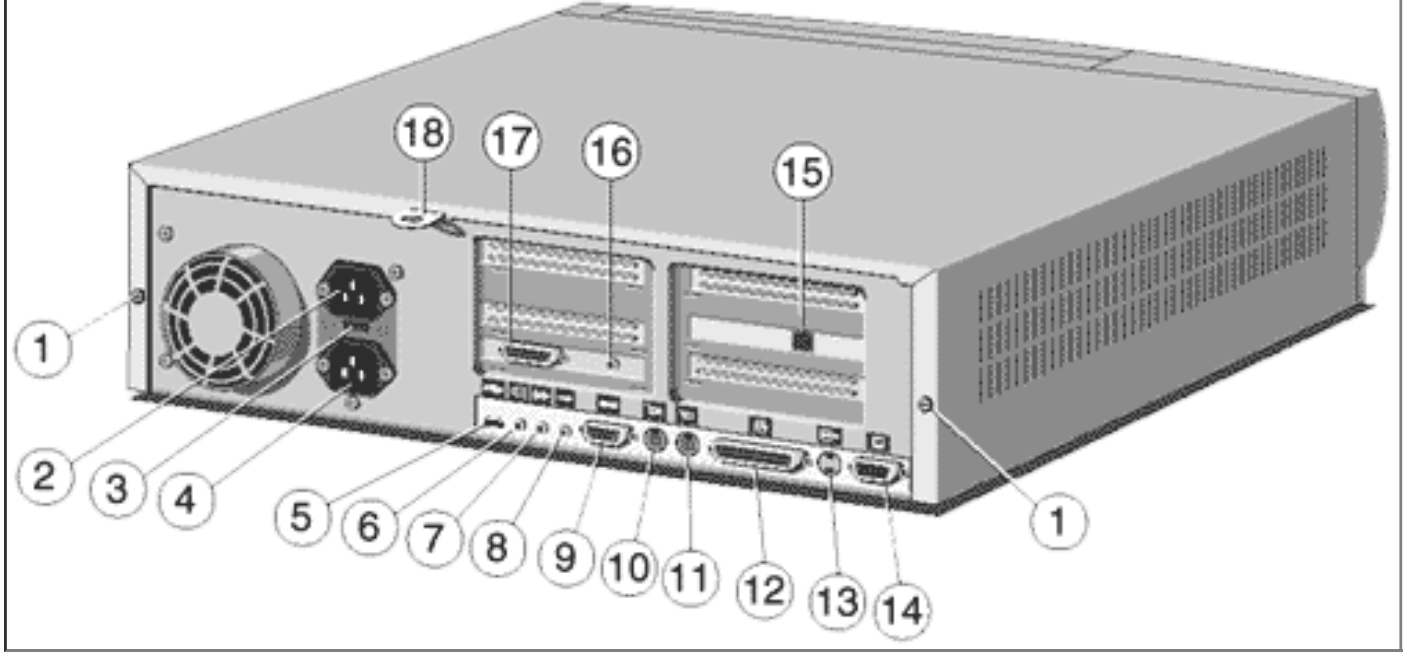
Mustang Motherboard

Front View



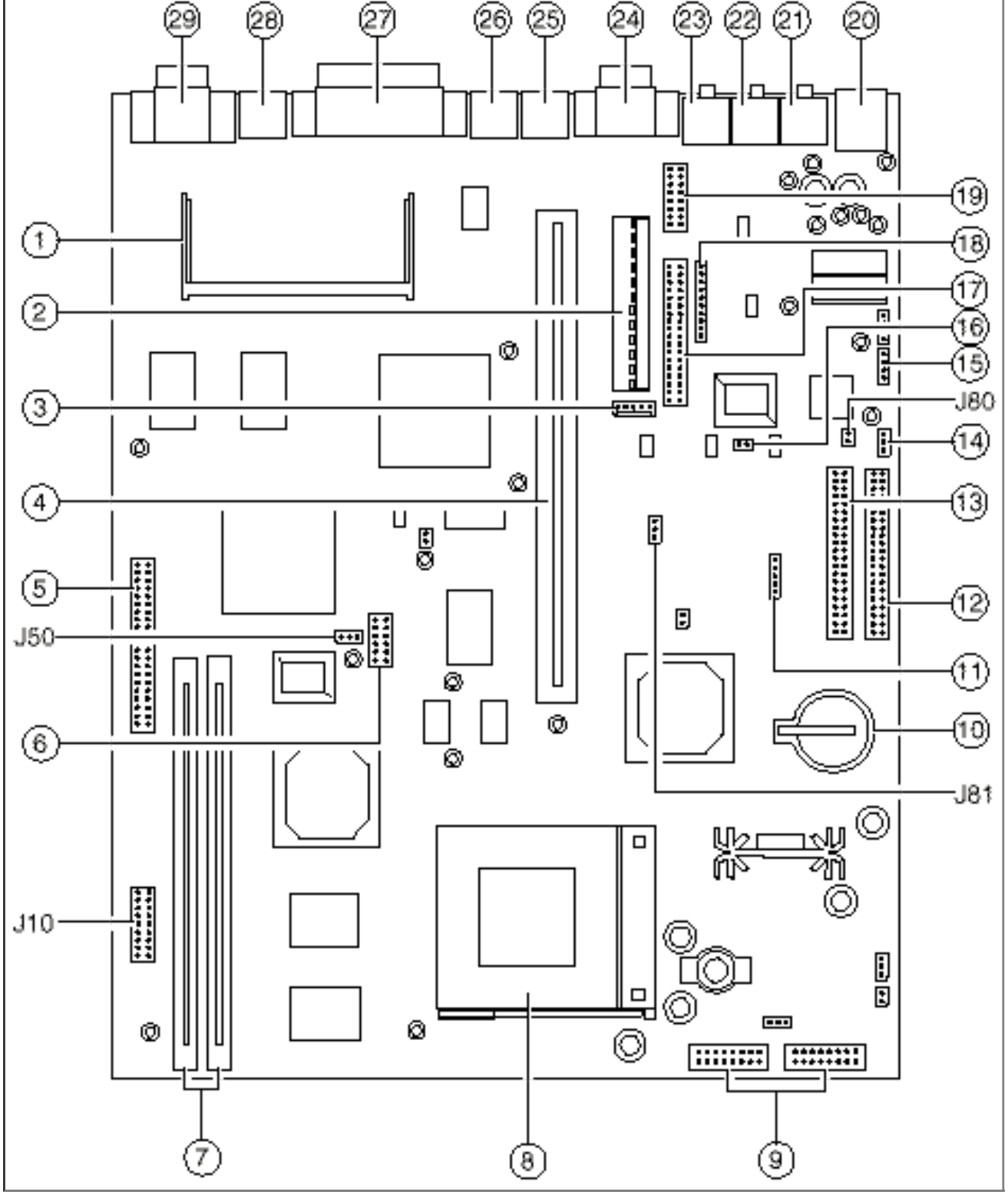
1	Power Mode light	8	Line In socket
2	Power buttonCD Eject button	9	Headphones socket
3	Front bezel door	10	Universal Serial Bus (USB) port
4	Message Button (and light)	11	FireWire port (factory option)
5	CD-ROM	12	S-Video In port (factory option)
6	Diskette drive	13	Composite Video In port (factory option)
7	Infra-red sensor		

Rear View



1	Casing screws for the top cover	10	Keyboard port
2	AC power outlet for monitor	11	Mouse port
3	Voltage selection switch	12	Parallel (printer) port
4	AC power inlet from AC supply	13	TV Out port (factory option)
5	Universal Serial Bus (USB) port	14	Monitor port
6	Speaker socket	15	Modem port
7	Line Out socket	16	SPDIF digital audio output (factory option)
8	Microphone socket	17	MIDI/Joystick port
9	Seria port	18	Security loop for cable or padlock

Motherboard



1	Video memory upgrade socket	16	SPDIF internal connector
2	Motherboard power connector	17	1.44 Mbyte diskette drive connector
3	PSU logic connector	18	Speakerphone modem audio connector
4	Riser Board connector	19	Joystick/MIDI internal connector
5	VFC/AMC video feature connector	20	Universal Serial Bus (USB) port
6	TV tuner/MPEG-2 card connector	21	Speaker socket
7	DIMM sockets	22	Line Out socket
8	Processor ZIF socket	23	Microphone socket

9	Front panel connectors	24	Serial port
10	CMOS battery	25	Keyboard port
11	Front panel USB internal connector	26	Mouse port
12	Primary E-IDE connector	27	Parallel (printer) port
13	Secondary E-IDE connector	28	TV Out (S-Video) port (factory option)
14	"Wake on Call"" modem connector	29	Monitor port
15	CD audio connector		

Memory

The motherboards two DIMM sockets accept DIMMs of up to 128 Mbytes in any combination (giving a maximum memory capacity of 256 Mbytes)

Technical Note
The DIMMs you use must have the following specification: gold contacts, 3.3V, 64-bit, unbuffered, SDRAM-type with Serial Presence Detect (SPD) and a CAS latency of 2 at 66 MHz. If you use any other type of DIMM you risk damaging the motherboard.

Cache

Cannot be Upgraded

Video RAM

Cannot be Upgraded

Processor Upgrade (MS500 MW)

This section covers processor upgrades for the MS500 with the model number prefix MW.

To use the tables below, select the processor you wish to upgrade to and confirm that the upgrade is possible. Then check additional requirements such as BIOS upgrades & processor speed jumper settings.

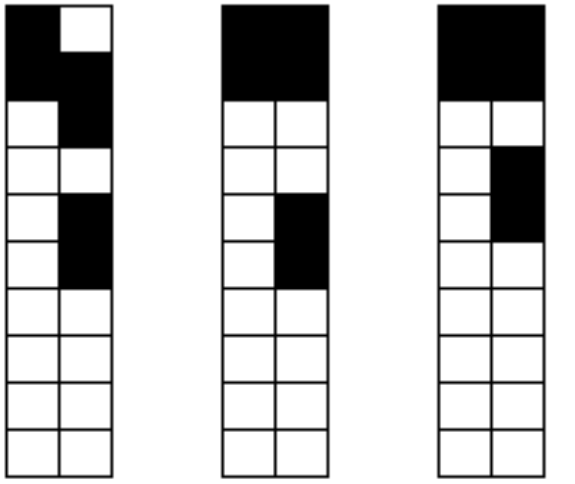
MS500 (MW) Processor upgrades	
Processor type and speed	**Is it supported?**
Pentium 166 MMX	YES - Set speed jumpers correctly

Pentium 200 MMX	YES - Set speed jumpers correctly
Pentium 233 MMX	YES - Set speed jumpers correctly

Processor Speed Jumper Table

Listed below are the Processor Speed Jumpers for an MS Series computer with a model number prefix of MW.

MS500 (MW) Motherboard Processor Speed Jumper Settings.



Processor Speed Jumpers J10

Jumper Settings

On-board video disabling (J50)
If you install a video adapter expansion card, the computer should automatically detect this and disable the on-board video adapter. If for some reason this does not happen, and you experience problems with a newly-fitted card, you can manually disable the on-board video adapter by moving the jumper in block J50 to pins 2 - 3.

Audio disabling (J80)
The on-board audio codec can be disabled bt moving the jumpers on jumper block J80 to pins 2 - 3. Disabling the audio system frees the interrupts and DMA channels used by that system (normally IRQ5, IRQ11, DMA0 and DMA1).

BIOS Upgrade

For MW (MS500) model machines, the latest version of the BIOS is 11.01, which you can Download Here.

Once the BIOS update file has been downloaded & saved in your C:\WINDOWS\TEMP folder:

Click on START
Click on RUN
Type in C:\WINDOWS\TEMP\MSTNG_15.EXE (this will create three files in your C:\WINDOWS\TEMP folder).
Place a blank formatted disk into the floppy drive A:
Click on START
Click on RUN
Type in C:\WINDOWS\TEMP\IMAGE MUSTANG.IMG A: /M /B /Q
When the boot disk has been created, restart the computer and boot from the diskette. When the BIOS update has completed, remove the diskette and restart the computer.

CMOS

Replacing the configuration battery
The computer keeps a record of its current hardware configuration in a CMOS memory chip which is sustained by a small battery. This battery has a life of up to 5 years. If you find that you have to reconfigure the computer every time you turn it on, the battery is probably failing and needs to be replaced.

The battery is a 3 volt lithium type (CR2032 or equivalent) typically used in calculators and other small, battery-powered electronic items.

To replace the battery

1. Turn off the computer and unplug all power cords.
2. Take suitable anti-static precautions and remove the system unit cover. For more information see the section on "Anti-static precautions" in the Safety & Regulatory Notices at the start of this manual.
3. Remove any expansion cards that impede access to the battery holder.
4. Using a non-conductive implement, release the latch that holds the battery in place. The battery will pop up allowing you to lift it out of the holder.

Warning
You must not use a metal or other conductive implement to remove the battery. If a short-circuit is accidentally made between the battery's positive and negative terminals, the battery may explode.

5. Check that the replacement battery looks the same as the battery you have removed.
6. Taking care not to touch the top or bottom surface of the battery, pick up the replacement with the positive (+) terminal upwards. Press the battery into the holder using a non-conductive implement.
7. Replace any expansion cards you removed earlier and refit the system unit

cover.
8. Dispose of the discharged battery in accordance with the battery manufacturer's instructions.

The next time you turn on the computer you will have to run the BIOS Setup utility to reset the hardware configuration.

System Resources

Components	**Interrupts (IRQs)**															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
System timer																
Keyboard controller																
PIC daisy chain																
Infra-red remote control BS																
Serial port 1 BS																
Audio JS																
Diskette controller BS																
Parallel port (usually sharable) BS																
Real time clock																
On-board video (sharable) JS																
USB (sharable) BS																
Mouse																
Co-processor																
Primary E-IDE BS																
Secondary E-IDE BS																

Components	**DMA channels**							
	0	1	2	3	4	5	6	7
Audio JS								
Diskette controller BS								
Parallel port (in ECP mode) BS								

DMAC daisy chain								

KEY

Fixed assignment

Usual assignment

Alternative assignment by BIOS Setup

Alternative assignment by Plug-and-Play

BS = Can be disabled by BIOS Setup

JS = Can be disabled by changing a motherboard jumper setting

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Beep Codes

Code	Beeps	Test which failed
16	1-2-2-3	BIOS ROM checksum
20	1-3-1-1	DRAM refresh.
22	1-3-1-3	8742 keyboard controller
2C xxxx	1-3-4-1	RAM failure on address line xxxx.
2E xxxx	1-3-4-3	RAM failure on data bits xxxx of low byte of memory bus.
30 xxxx	1-4-1-1	RAM failure on data bits xxxx of high byte of memory bus.
46	2-1-2-3	Check ROM copyright notice
58	2-2-3-1	Test for unexpected interrupts
98	1-2	Video configuration failure, or option ROM checksum failure. (One long, two short beeps.)
