YAMAHA
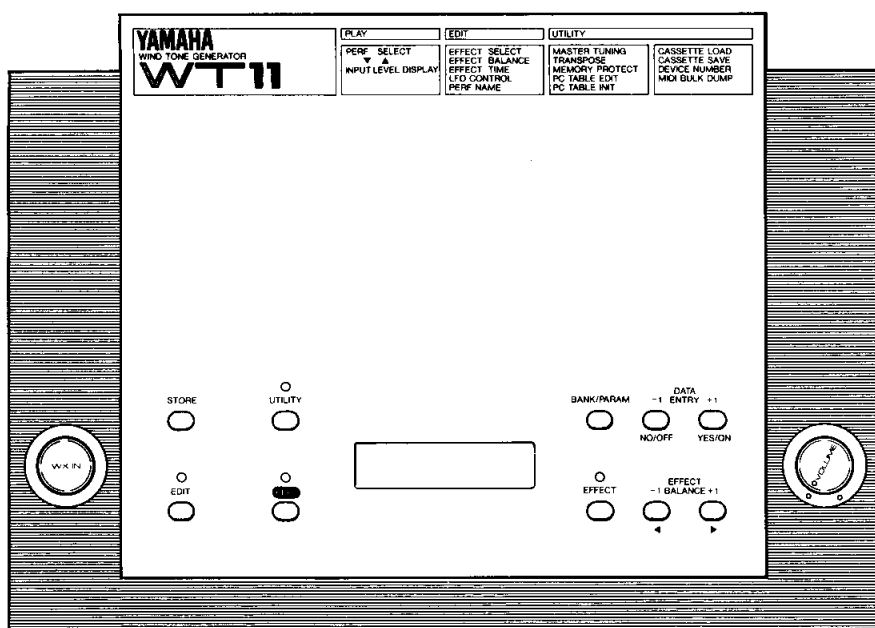
WT11

WIND TONE GENERATOR
GENERATEUR DE SON
WIND TONE GENERATOR

OPERATION MANUAL
MANUEL D'INSTRUCTIONS
BEDIENUNGSANLEITUNG

YAMAHA WIND TONE GENERATOR WT11	PLAY	EDIT	UTILITY	
	PERF SELECT ▼ ▲ INPUT LEVEL DISPLAY	EFFECT SELECT EFFECT BALANCE EFFECT TIME LFO CONTROL PERF NAME	MASTER TUNING TRANSPOSE MEMORY PROTECT PC TABLE EDIT PC TABLE INIT	CASSETTE LOAD CASSETTE SAVE DEVICE NUMBER MIDI BULK DUMP

STORE UTILITY BANK/PARAM DATA −1 ENTRY +1 NO/OFF YES/ON

WX IN EDIT EFFECT EFFECT −1 BALANCE +1 VOLUME

Congratulations!

Your YAMAHA WT11 is a high-performance, sophisticated MIDI tone generator system that will deliver outstanding sound and versatility when used with the YAMAHA WX11 or WX7 Wind MIDI Controller.
To ensure that you make the most of the WT11's extensive performance potential, we urge you to read this operation manual thoroughly, and keep it in a safe place for future reference.

WT11 MAIN FEATURES

◆ High-quality YAMAHA digital FM-synthesis tone generator system offers dynamic, vibrant, life-like sound quality.

◆ 96 superb preset performance combinations (a "performance combination" includes voices, effects and LFO settings) designed for use with the YAMAHA WX11 or WX7 Wind MIDI Controller. The preset performance combinations respond ideally to the WX11 or WX7 control system, giving the player the type of intimate response he would expect from an acoustic wind instrument.

◆ A range of 10 high-quality digital effects — including reverberation, delay, echo and distortion — can be edited and used in your own performance combinations. LFO control characteristics and performance combination titles can also be edited.

◆ New voices created using external equipment such as the YAMAHA TX81Z FM Tone Generator or DX11 Digital Programmable Algorithm Synthesizer can be loaded into the WT11 and used in WT11 performance combinations.

◆ 32 internal RAM memory locations for storage of original performance combinations.

◆ Built-in cassette interface for convenient storage and retrieval of performance and other data.

> **Note**
>
> The WT11 is designed for use with YAMAHA WX-series Wind MIDI Controllers.

CONTENTS

PRECAUTIONS

1. AVOID EXCESSIVE HEAT, HUMIDITY, DUST AND VIBRATION

Keep the unit away from locations where it is likely to be exposed to high temperatures or humidity — such as near radiators, stoves, etc. Also avoid locations which are subject to excessive dust accumulation or vibration which could cause mechanical damage.

2. AVOID PHYSICAL SHOCKS

Strong physical shocks to the unit can cause damage. Handle it with care.

3. DO NOT OPEN THE CASE OR ATTEMPT REPAIRS OR MODIFICATIONS YOURSELF

This product contains no user-serviceable parts. Refer all maintenance to qualified YAMAHA service personnel. Opening the case and/or tampering with the internal circuitry will void the warranty.

4. MAKE SURE POWER IS OFF BEFORE MAKING OR REMOVING CONNECTIONS

Always turn the power OFF prior to connecting or disconnecting cables. This is important to prevent damage to the unit itself as well as other connected equipment.

5. HANDLE THE CABLES CAREFULLY

Always plug and unplug cables by gripping the connector, not the cord. Also avoid applying excessive force to the cables or connectors during use.

6. CLEAN WITH A SOFT DRY CLOTH

Never use solvents such as benzine or thinner to clean the unit. Wipe clean with a soft, dry cloth.

7. POWER SUPPLY

The WT11 must be powered from the supplied YAMAHA PA-1505 AC Adapter (the AC input voltage of the adapter supplied depends on the area in which the equipment is sold). Attempting to use other AC adapters can cause serious damage to the WT11.

8. ELECTRICAL INTERFERENCE

Since the WT11 contains digital circuitry, it may cause interference and noise if placed too close to TV sets, radios or similar equipment. If such a problem does occur, move the WT11 further away from the affected equipment.

9. BACKUP BATTERY

The WT11 contains a long-life backup battery that retains the contents of its RAM memory locations even when the power is turned OFF. The backup battery will last for approximately 5 years. When the battery finally fails, the contents of the internal RAM memory will be lost. If this happens, have the battery replaced by qualified YAMAHA service personnel. Dot not attempt to replace the battery yourself.

FCC INFORMATION (U.S.A)

1. **IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!**
   This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

2. **IMPORTANT:** When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.

3. **NOTE:** This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

   Relocate either this product or the device that is being affected by the interference.

   Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

   In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

   If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA 90620

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA.

■ Front Panel
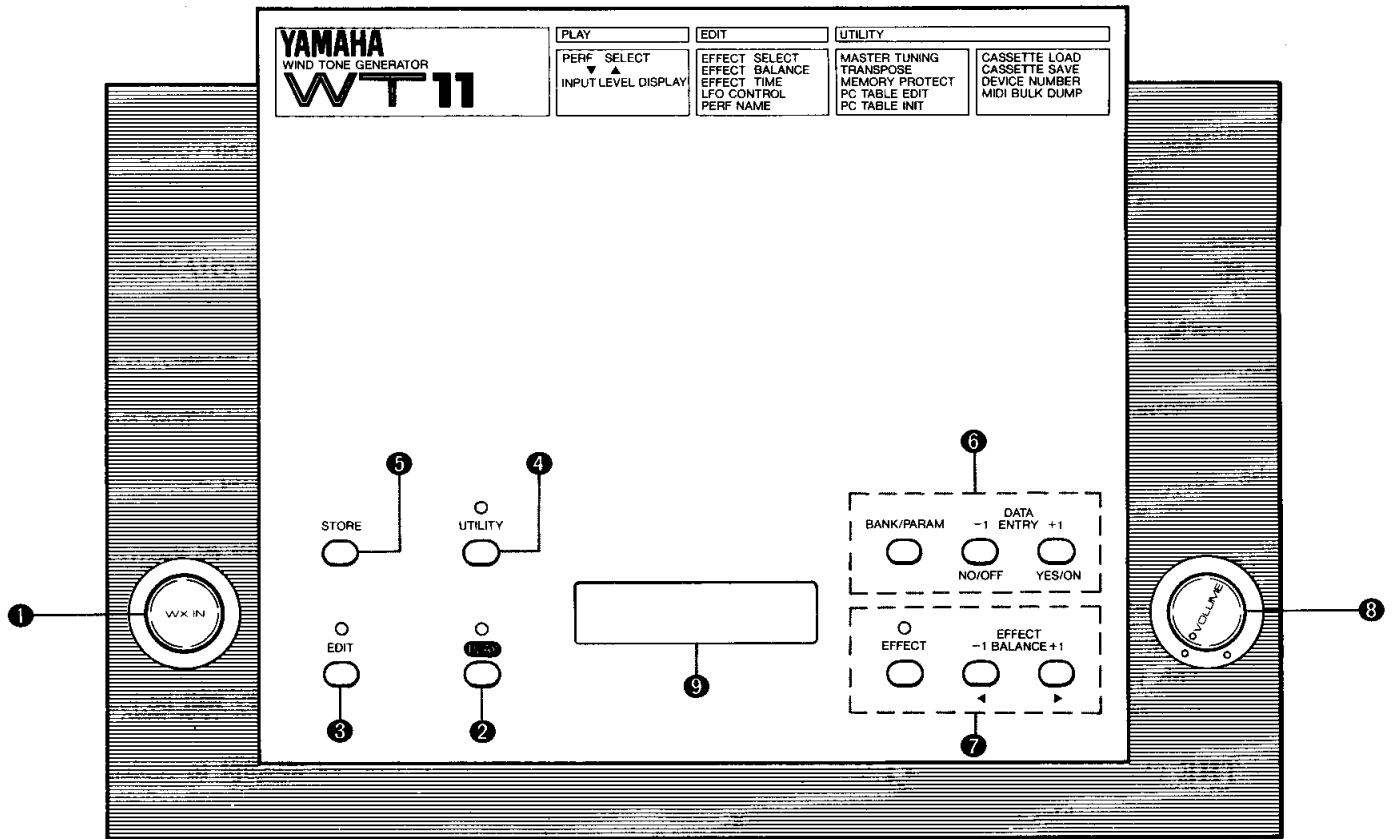
■ Rear Panel

❶ WX IN Connector

This connector accepts the cable from the WX11 or WX7 Wind MIDI Controller (in the case of the WX7, the supplied "extension cable" is used). The connector cover flips up allowing access to the connector.

❷ PLAY Button

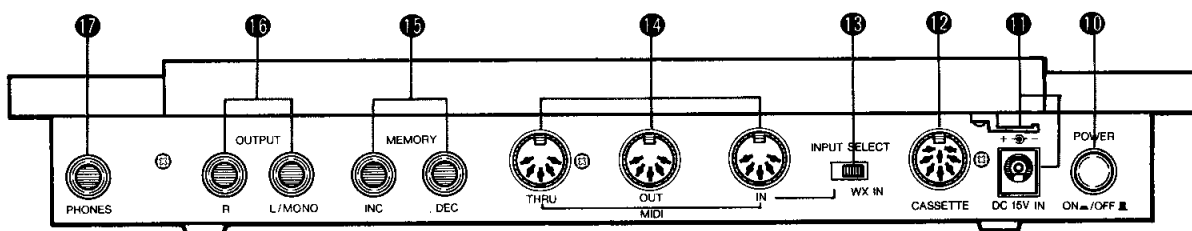The PLAY button activates the WT11's PLAY mode — the normal mode in which the WT11 performance combinations are selected and "played." If the PLAY button is pressed a second time after the PLAY mode has been activated, the LCD display changes to a bar-graph breath level meter which is useful when setting the sensitivity of the

wind controller.

❸ EDIT Button

This button accesses the EDIT mode, in which performance combinations consisting of voices, digital effect such as reverb or delay, LFO control status, and an original title, can be edited.

❹ UTILITY Button

The UTILITY button accesses the UTILITY mode which includes a number of important utility functions: master tuning, transposition, cassette save/load control, and others.

❺ STORE Button

The STORE button is used to store a performance combination created in the EDIT mode into one of the 32 memory locations in the WT11's memory BANK I.

❻ BANK/PARAM and DATA ENTRY –1/+1 Buttons

In the PLAY mode the BANK/PARAM button selects one of the WT11's four memory banks, and the –1 and +1 buttons select one of the 32 performance combinations available in the selected bank. In the EDIT and UTILITY modes, the BANK/PARAM button selects the desired function or parameter within the selected mode, and the –1 and +1 buttons are used to set the value of the selected parameter or execute/abort the selected function.

❼ EFFECT and EFFECT BALANCE –1/+1 Buttons

The EFFECT button turns ON or OFF the effect when a performance combination to which an effect has been assigned in the EDIT mode is selected. The EFFECT BALANCE +1 and –1 buttons are used to adjust the balance between the "dry" voice and the effect sound. The EFFECT BALANCE –1 and +1 buttons also function as cursor controls when editing certain parameters.

❽ VOLUME Control

Adjusts the level of the output signal delivered to the OUTPUT and PHONES jacks.

❾ LCD Display Panel

This 16-character backlit liquid crystal display shows selected performance combination numbers and names as well as parameters and prompts according to the selected mode and function.

❿ POWER Switch

Press the POWER switch in to turn the power ON, Press a second time to turn power OFF.

⓫ DC 15V IN Jack and Cable Clip

The DC output cable from the PA-1505 AC Adapter supplied with the WT11 should be connected here. The cable should also be clipped into the plastic cable clip located just above the DC 15V IN jack, to prevent accidental removal during use.

⓬ CASSETTE Connector

The supplied cassette connector cable connects the WT11 to an external cassette data recorder via this jack. The cassette interface built into the WT11 allows storage of performance combination data to a standard or data cassette recorder, and later retrieval of the data when required.

⓭ INPUT SELECT Switch

This switch selects either the front-panel WX IN connector or the rear-panel MIDI IN connector. Normally, when the WT11 is used with a WX-series Wind MIDI Controller, the INPUT switch should be set to the WX IN position. If a different MIDI device which connects to the standard MIDI IN connector is used, the INPUT switch must be set to the MIDI IN connector position.

⓮ MIDI IN, OUT and THRU Connectors

The WT11's MIDI IN connector is necessary if a MIDI device other than a WX-series Wind MIDI Controller is used. The MIDI OUT connector of the device should be connected to the MIDI IN connector on the WT11 using a standard MIDI cable. The MIDI OUT connector permits transmission of WT11 performance combinations and other data to a second MIDI device. The MIDI THRU terminal re-transmits the MIDI data received at the WX IN or MIDI IN connector, so the WT11 can be "chained" to a second tone generator or other MIDI device.

⓯ MEMORY INC and DEC Jacks

Optional YAMAHA FC4 or FC5 Footswitches can be connected to these jacks, allowing convenient foot selection of performance combinations within the selected memory bank.

⓰ OUTPUT L/MONO and R Jacks

These are the main audio outputs from the WT11. Since many of the WT11's performance combinations offer true stereo sound, we recommend that you connect both outputs to a stereo sound system or separate input channels of an audio mixer. If you intend to use a mono sound system, however, connect it to the WT11 OUTPUT L/MONO jack and leave the OUTPUT R jack unconnected. When only the L/MONO jack is connected, the signals from both outputs are internally mixed and delivered via the L/MONO jack.

⓱ PHONES Jack

The PHONES jack accepts any standard pair of stereo headphones. This is extremely handy for private or late-night practice. The VOLUME control adjusts headphone listening level.

PRESET PERFORMANCE COMBINATIONS & MEMORY CONFIGURATION

The WT11 has four "banks" of 32 memory locations each: BANK A, B, C and I. The first three banks (A, B and C) contain the WT11's preset performance combinations — 3 banks x 32 performance combinations for a total of 96 preset performance combinations. Any of the performance combinations in these three banks can be selected and played, but the data in banks A, B and C is "fixed," and can not be altered. The fourth bank — "I" for "Internal" — is a RAM memory area into which you can store performance combinations that you create on your own by editing effects and LFO settings. You can also give performance combinations you create an original title to differentiate them from the preset performance combinations. Details on editing effects in performance combinations and storing them in BANK I are given in "THE EDIT MODE — EDITING & USING EFFECTS" on page 7. BANK I initially contains exactly the same performance combinations as BANK A, so you can edit the BANK I performance combinations immediately without losing important data.

It is also possible to store all 32 performance combinations in BANK I to a cassette recorder for later reloading and use. The cassette save and load functions are described on page 13, 14. Another advanced feature provided by the WT11 is the ability to create totally original sounds by loading new voices from external equipment (each performance combination uses one or more "voices" which define the basic sound of the performance combination). See "Using External Equipment to Create New WT11 Voices" on page 16 for more details.

BANKS	PERFORMANCE COMBINATIONS
BANK A	A1 — A32 PRESETS
BANK B	B1 — B32 PRESETS
BANK C	C1 — C32 PRESETS
BANK I	I1 — I32 RAM MEMORY FOR ORIGINAL PERFORMANCE COMBINATIONS

See "WT11 PRESET PERFORMANCE COMBINATIONS" on page 18.

Connecting the WX Cable

1. Flip up the WX IN connector cover: the front edge of the cover flips up towards the rear of the WT11.

2. Pull outward on the cover as you raise it. This will allow it to remain in a vertical position.

3. Align the lug on the WX cable connector with the groove in the WT11 connector and insert firmly.

4. To close the connector cover, press downward slightly as you lower it, then snap it into place.

* To connect the other end of the WX cable to the WX-series Wind MIDI Controller, align the arrow on the WX body with the arrow on the cable connector (the connector with the screw ring) and insert firmly. Screw in the screw ring (clockwise) to secure.

1.　　　　2.　　　　3.

Lug

Groove
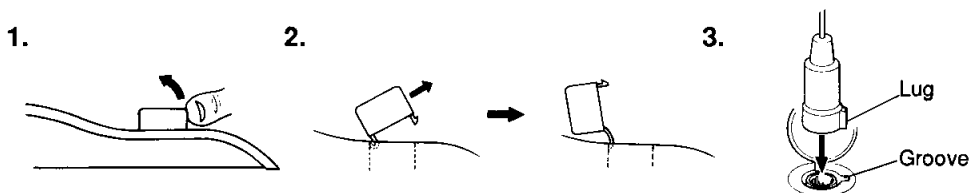
SETTING UP

The WT11 is designed primarily for use with a YAMAHA WX-series Wind MIDI Controller, and you will obtain the easiest, smoothest operation by using this combination. Here's how your system should be set up:
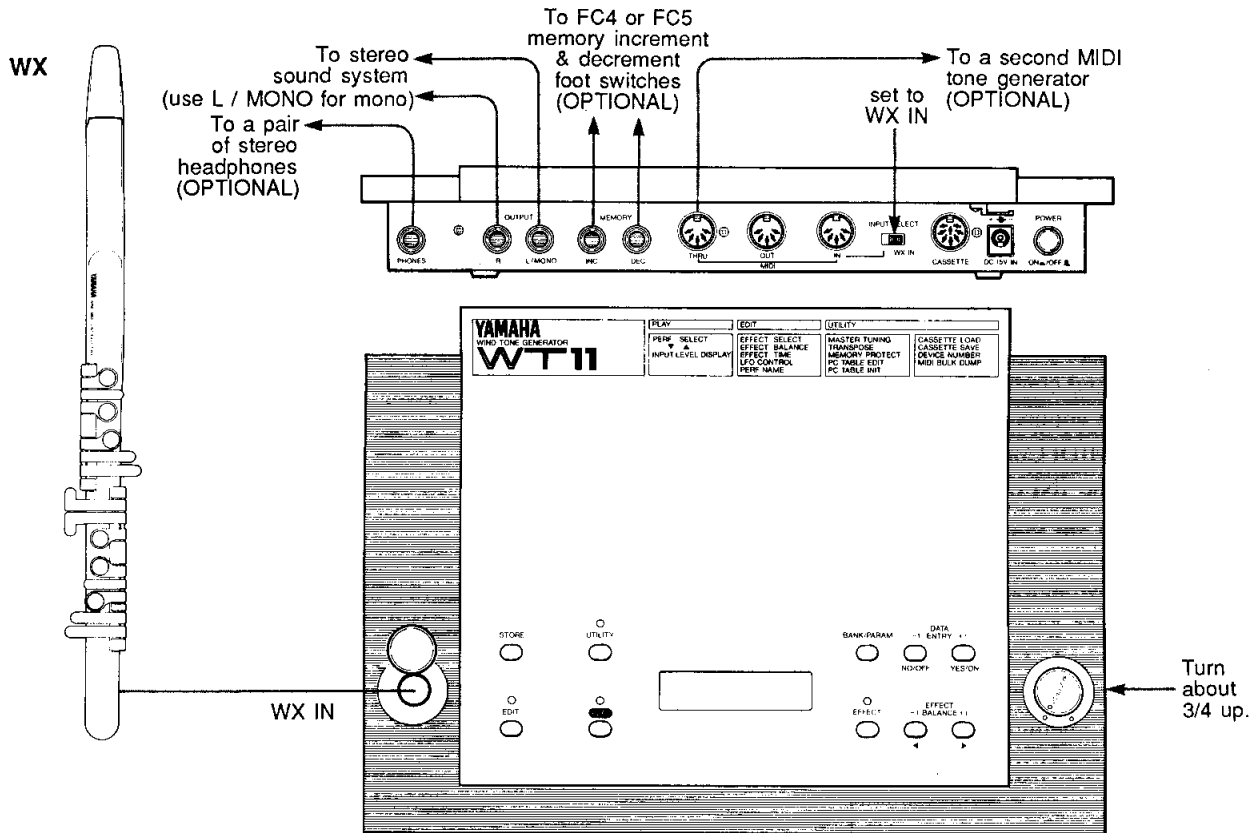
The simplest possible system requires no more than a WX-series Wind MIDI Controller, the WT11 and a sound system. A stereo sound system will provide the best sound, but a mono sound system (such as an instrument amplifier) can be used as an alternative. If you use a mono sound system, use the L/MONO OUTPUT jack from the WT11 (when only the L/MONO OUTPUT jack is connected, the L/MONO and R OUTPUT signals are mixed and delivered via the L/MONO jack). More control versatility is provided by connecting a pair of optional YAMAHA FC4 or FC5 footswitches to the MEMORY INC and DEC jacks. These footswitches can be used to select different performance combinations while playing. It is also possible to connect the WT11's MIDI THRU connector to a second MIDI tone generator, allowing the WX-series Wind MIDI Controller to control two tone generators at once. In this case, the outputs of the WT11 and the second tone generator should be fed to an audio mixer which in turn feeds the sound system. For private or late-night practice, a pair of headphones can be plugged into the WT11 PHONES jack. Although not shown in the diagram, the WT11's AC power adapter must be plugged into an appropriate AC wall outlet, and the adapter's output cable connected to the DC 15V IN jack.

> **Note**
>
> If the WT11 is to be used with a MIDI device other than a WX-series Wind MIDI Controller, the rear-panel INPUT SELECT switch should be set to the MIDI IN connector position, and the MIDI cable from the device should be connected to the MIDI IN connector.

Turning the Power ON

Turn ON the rear-panel POWER switch. For a few seconds after the POWER switch is turned ON, all the panel LEDs will light and " ✳ YAMAHA WT11 ✳ " will appear on the LCD display panel. After this, the mode that was active when the power was last turned OFF will be automatically re-selected and the WT11 is ready for operation. If you are using the WT11 with the WX11 or WX7 Wind MIDI Controller, make sure the WX is connected to the WT11 before turning the power ON. This is important because some of the Wind MIDI Controller's operating modes are automatically set when the system power is initially turned ON (Refer to the WX operation manual for details).

THE PLAY MODE

The PLAY mode is the normal mode in which the WT11 is "played." In the PLAY mode you can select any of the 96 preset performance combinations in banks A, B or C, or any of the performance combinations you have created and stored in BANK I.

1. If the PLAY LED is not lit, press the PLAY button to enter the play mode. At this point you should be able to play the WX11 or WX7 and produce some sound — assuming that your system is properly set up as described in the previous section. The PLAY button LED should flash whenever a "NOTE ON" message is received from the Wind MIDI Controller (i.e. whenever you play a note). If nothing happens, check all connections and controls again (Is your sound system turned ON? Is the volume control turned up? If you're using the WX7 Wind MIDI Controller, is it set to transmit on MIDI channel 1? Is the INPUT SELECT switch set properly?).

2. Use the BANK/PARAM button to select any of the available performance combination banks (A, B, C or I), and then use the DATA ENTRY +1 and –1 buttons to select any of the 32 performance combinations contained in the selected bank. The display will look something like this:

```
P:A01 Oboe 1
```

The "P" to the left of the display indicates that the PLAY mode is active. "A01" is the bank and performance combination number, and "Oboe 1" is the name of the selected performance combination.

3. Play your WX-series Wind MIDI Controller and adjust the VOLUME control for the desired volume level. If the sound from your sound system is "dirty" or distorted, try reducing the volume control setting until a clean sound is achieved. The PLAY LED flashes whenever a MIDI note-on message is received from the MIDI controller used.

Note

The EFFECT and EFFECT BALANCE –1 and +1 buttons also function in the PLAY mode. See "Using the EFFECT and EFFECT BALANCE –1/+1 Buttons" on page 10 for details.

Using MEMORY INC and DEC Footswitches to Select Performance Combinations

If you have connected a pair of optional YAMAHA FC4 or FC5 Footswitches to the WT11's MEMORY INC and DEC jacks, these footswitches can be used to select performance combinations within the currently selected bank. Pressing the INC footswitch increases the memory location number by 1, and pressing the DEC footswitch decreases the memory location number by 1.

MEMORY INC footswitch   MEMORY DEC footswitch
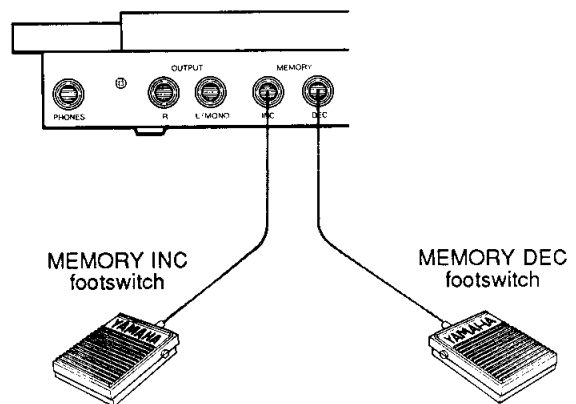
THE EDIT MODE — EDITING AND USING EFFECTS

The WT11 EDIT mode makes it possible to use any of the 10 internal digital effects in a performance combination, modify the effect to some degree, set up the desired type of LFO control, and create an original title for your new performance combination. The 10 digital effects provided in the WT11 are described below.

The Internal Digital Effects

Rev. Hall (Reverb Hall)
A realistic simulation of the type of natural reverberation you would experience in a fairly large concert hall. This effect has a very warm, spacious sound.

Rev. Room (Reverb Room)
The reverberation produced by this effect simulates the reverb you would experience in a medium-size room, rather than a hall. It has a "tighter" sound than Reverb Hall, but still offers lots of depth and warmth.

Rev. Plate (Reverb Plate)
This is a very clean-sounding reverberation effect that simulates the sound of a high-quality studio plate reverb unit.

Delay (Mono Delay)
This is a simple delay effect that produces a single delayed repeat right in the center of the stereo sound field.

Delay L/R (Left- and Right-channel Delay)
Delay L/R produces two delayed repeats — the first in the left channel and the second in the right channel of the stereo sound field.

Stereo Echo
This effect creates a number of slowly-decaying repeats in both the left and right channels.

Dist. + Rev. (Distortion and Reverb)
This is a powerful combination of distortion and the reverb effect. The distortion can completely change the character of certain voices.

Dist. + Echo (Distortion and Echo)
This effect combines distortion with the echo effect.

Gate Rev. (Gate Reverb)
This is a fascinating contemporary effect in which the reverberation is shut off suddenly before it decays naturally. The result is a very tight sound that goes well with percussive voices.

Reverse Gt (Reverse Gate)
Reverse Gate is similar to the Gate Reverb effect, except that the level of the reverb sound increases before being shut off by the gate instead of decaying as it would do naturally. The effect is somewhat like a tape being played backwards.

Editing Effects

1. In the PLAY mode, select the performance combination in which you wish to edit an effect. You can start with one of the performance combinations in banks A, B or C, or change an effect already used in a performance combination in bank I.

2. Press the EDIT button to enter the EDIT mode. If the following display does not appear immediately when the EDIT button is pressed, press the BANK/PARAM button a few times to scroll through the EDIT parameters until it does appear:

```
E : Ef=XXXXXXXXX
```

"XXXXXXXX" in this display could be "off" or the name of an effect. The "E" to the left of the display tells you that the WT11 is in the EDIT mode. The "E" will change to a lower-case "e" as soon as any parameter in the edit mode is changed. Also note that if you return to the PLAY mode after changing any parameter in the EDIT mode, the capital "P" that normally appears to the left of the PLAY mode display will appear as a lower-case "p."

3. Use the DATA ENTRY −1 and +1 buttons to select the desired effect. You can play the Wind MIDI Controller while selecting and editing effects to check and confirm the resulting sound.

4. Press the BANK/PARAM button once to move on to the Effect Balance parameter (the Effect Balance parameter will **not** appear if no effect has been selected).

> **Note**
>
> If a new effect is selected, the effect balance and effect time parameters that follow are automatically set to their initial values (see chart on following page).

```
e : Ef Balance= 50
```

The Effect Balance parameter adjusts the balance between the "dry" voice sound and the effect. The range is from "0" to "99." A setting of "50" produces approximately equal balance between the voice and effect sound, a setting "0" produces the dry sound of the voice only with no effect, and a setting of "99" produces the effect sound only.

5. Use the DATA ENTRY −1 and +1 buttons to set the desired Effect Balance value.

6. Press the BANK/PARAM button once to move on to the Effect Time parameter (or Room Size in the case of the Gate Reverb and Reverse Gate effects). The Effect Time parameter will **not** appear if no effect has been selected.

```
e : Ef Time = 2.6s
```

The Effect Time parameter appears when any effect other than Gate Reverb or Reverse Gate is selected. The data range for the reverb type effects (Rev. Hall, Rev. Room, Rev. Plate, Dist. + Rev.) is 0.3s — 10.0s (0.3 to 10.0 seconds). The data range for the delay and echo type effects (Delay, Delay L/R, Stereo Echo, Dist. + Echo is 0.1ms — 300 ms (0.1 to 300 milliseconds). Increasing the value therefore increases the length of the reverb or delay effect.

```
e : Room Size= 2.6
```

The Room Size parameter appears only when the Gate Reverb or Reverse Gate effect is selected. The Room Size data range is 0.5 — 3.2, the values being an arbitrary representation of the size of the simulated room in which the effect is produced. The larger the room size, the longer the effect.

• **Effect Time (Room Size) Range & Initial Value**

Effect name	Range	Init. Value
Rev. Hall	0.3 — 10.0 sec.	2.6 sec
Rev. Room	0.3 — 10.0 sec.	1.5 sec
Rev. Plate	0.3 — 10.0 sec.	1.8 sec
Delay	0.1 — 300 msec.	60 msec
Delay L/R	0.1 — 300 msec.	256 msec
Stereo Echo	0.1 — 300 msec.	300 msec
Dist + Rev.	0.3 — 10.0 sec.	2.6 sec
Dist + Echo	0.1 — 300 msec.	300 msec
Gate Rev.	0.5 — 3.2	2.6
Reverse Gt.	0.5 — 3.2	2.6

* Effect Balance initial value is 50.

8

7. Use the DATA ENTRY −1 and +1 buttons to set the desired Effect Time or Room Size value.

> **Note**
>
> The effect is now applied to the selected performance combination, but will only remain so until a new performance combination is selected. If you want to keep a performance combination, it is necessary to use the STORE function described on page 9 to store the new data to a location in BANK I. Before you STORE your performance combination, however, you might want to set the LFO control parameters and give the performance combination an original title. These steps are described below.

LFO Control

The LFO Control parameter can be accessed by pressing the BANK/PARAM button once after completing step 7 in "Editing Effects," above. Of course you could also enter the EDIT mode directly from some other mode and press the BANK/PARAM button a few times until the LFO Control parameter appears.

```
e : LFO Ctrl = brth
```

This parameter can be set to "brth," "lip" or "off." Use the DATA ENTRY −1 and +1 buttons to select the desired setting.

The LFO Control parameter determines whether breath pressure (this is the normal setting) or lip pressure controls the LFO (Low Frequency Oscillator) for the selected performance combination, or no LFO control is to be applied (the "off" setting). Since the LFO controls tremolo, vibrato, or other types of time-based timbre variation, depending on the selected performance combination, the LFO Control parameter allows you to select whether the effect will be introduced as breath pressure is increased, as lip pressure on the Wind MIDI Controller reed is increased, or not at all.

> **Note**
>
> The LFO effect may not be noticeable on some performance combinations.

> **Note**
>
> Lip pitch will not function when the LFO Control parameter is set to "lip."

Creating an Original Title

Before storing a performance combination you have created in
one of the BANK I memory locations, you can give the per-
formance combination an original title to identify it and differ-
entiate it from the other performance combinations.

1. In the EDIT mode, press the BANK/PARAM button a few
   times until the name of the selected performance combina-
   tion appears on the LCD.

```
┌──────────────────────┐
│  e : A01 Oboe 1      │
└──────────────────────┘
         └─cursor
```
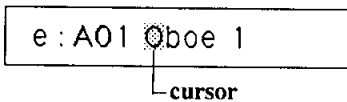
A flashing block cursor will appear over the first character of
the performance combination name.

2. Use the DATA ENTRY –1 and +1 buttons to select the
   desired new first character for your original title. The –1 and
   +1 buttons can be used to scroll through the character list
   given below, placing the selected character under the flash-
   ing cursor.

   ```
   [ SPACE ] ! " # $ % & ' ( ) * + , - . /
   0 1 2 3 4 5 6 7 8 9 : ; < = > ? @
   A B C D E F G H I J K L M N O P Q
   R S T U V W X Y Z [ ¥ ] ^ _ `
   a b c d e f g h i j k l m n o p q
   r s t u v w x y z { | } -> <-
   ```

3. Press the EFFECT BALANCE +1 button to move the flash-
   ing block cursor to the next character position, and select the
   next character as described above. Repeat this process until
   your original title is complete. The EFFECT BALANCE –1
   and +1 buttons can be used to move the cursor backward or
   forward as desired, making it simple to change any charac-
   ter in the title.

The STORE Function

Once you have created a performance combination (voice +
effect + LFO control + title) in the EDIT mode, the new per-
formance combination must be stored in one of the 32 BANK I
memory locations before a new memory location is selected or
the edited data will be lost. Also note that when a STORE
operation is performed to a BANK I memory location, any
previous data in that location will be overwritten and erased.

1. Before the STORE function will operate, the WT11's
   Memory Protect function must be turned OFF. Press the
   UTILITY button to enter the UTILITY mode, then press the
   BANK/PARAM button a few times until the following dis-
   play appears:

   ```
   ┌──────────────────────┐
   │  U : Protect : on    │
   └──────────────────────┘
   ```
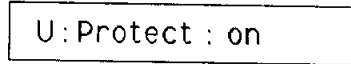
   The "U" to the left of the display indicates that the UTILITY
   mode is active. Memory Protect can now be turned "off" by
   pressing the DATA ENTRY –1 button. When off, it can be
   turned "on" by pressing the DATA ENTRY +1 button.

2. Once Memory Protect has been turned "off," press and hold
   the STORE button. The following display will appear:

   ```
   ┌──────────────────────┐
   │  Store A01 -> I ?    │
   └──────────────────────┘
   ```
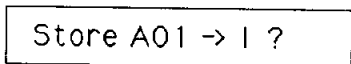
   "A01" in the example display above will actually be the bank
   and number of the performance combination you have edited.

3. While still holding the STORE button, use the DATA EN-
   TRY –1 and +1 buttons to select the BANK I memory loca-
   tion to which you wish to store the new performance combi-
   nation. If, for example, you decide to store to location I06,
   the display will look something like this:

   ```
   ┌──────────────────────┐
   │  Store A01 -> I06?   │
   └──────────────────────┘
   ```
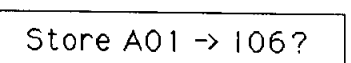
4. Release the STORE and –1 or +1 buttons and the following
   confirmation display will appear:

   ```
   ┌──────────────────────┐
   │  Store to I06 OK ?   │
   └──────────────────────┘
   ```
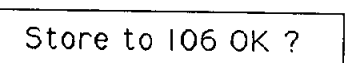
5. Press the DATA ENTRY +1 (YES) button to execute the store operation. "**Store completed!**" will appear on the display for a few seconds then the WT11 will return to the mode it was in prior to performing the STORE operation. The store operation can be aborted by pressing any button other than the DATA ENTRY +1 button.

Your performance combination is now located in the selected BANK I memory location, and can be selected and played normally in the PLAY mode. The WT11 has an internal backup battery that retains the contents of the BANK I memory even when the power is turned OFF.

Note

It is a good idea to return to the UTILITY mode and turn Memory Protect "on" after storing a new performance combination, to prevent accidental erasure of important data.

Note

If you attempt to use the STORE function while Memory Protect is "on," the "**Memory protected**" display will appear and the STORE operation will be aborted.

Using the EFFECT and EFFECT BALANCE –1/+1 Buttons

Turning the Effect ON or OFF
When you select a performance combination to which an effect has been assigned, the EFFECT button LED will light indicating that an effect is active. By pressing the EFFECT button you can alternately turn the effect ON or OFF as required. The EFFECT LED will go out or light accordingly. If you press the EFFECT button when a performance combination to which no effect has been assigned, the "No efct selected" display will appear as long as the EFFECT button is held.

Changing the Effect Balance
The EFFECT BALANCE –1 and +1 buttons can be used to temporarily change the effect balance (except in functions in which a cursor appears on the LCD). When either the EFFECT BALANCE –1 or +1 button is pressed (when a performance combination to which an effect has been assigned is selected), the name of the effect will appear on the LCD, followed by the effect balance value. Holding the –1 or +1 button down causes the effect balance value to decrease or increase continuously in the specified direction. The effect balance value set in this way will remain active only until another memory location is selected. As with the Effect Balance parameter in the EDIT mode, the data range is from "0" to "99," with a setting of "50" producing approximately equal balance between the dry voice and effect sounds. If you press the EFFECT BALANCE –1 or +1 button when a performance combination to which no effect has been assigned, the "**Effect is off**" display will appear as long as the button is held.
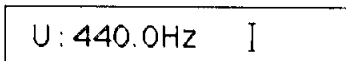
THE UTILITY MODE

The UTILITY mode contains a number of important function for general WT11 operation. The UTILITY mode functions are accessed by first pressing the UTILITY button to activate the UTILITY mode, and then pressing the BANK/PARAM button as many times as necessary to call the desired utility function.

Master Tuning

This function permits fine tuning of the WT11's pitch over approximately a semitone range. This is useful to match the pitch of the WT11 to other instruments or recorded material.

1. Press the UTILITY button to enter the UTILITY mode, then press the BANK/PARAM button until the following display appears:

```
U : 440.0Hz      I
```

The "U" to the left of the display indicates that the UTILITY mode is active.

2. 440.0 Hertz is the "standard" pitch of A3 (the first A key above middle C on a piano). The DATA ENTRY –1 and +1 buttons can be used to set the pitch of A3 over a range of 415.3 Hertz to 465.7 Hertz in approximately 0.4 Hertz steps, providing a total tuning range of approximately one semitone.

The Lip Zero Bar Graph
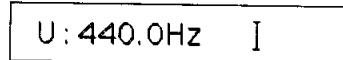
The WT11 greatly facilitates the job of adjusting lip zero on the WX11 or WX7 Wind MIDI Controller (refer to the WX11 or WX7 operation manual for details) by providing a special lip zero bar graph function. The lip zero bar graph is included in the UTILITY mode tuning function display — press the UTILITY button to enter the UTILITY mode, then press the BANK/PARAM button until the following display appears:

```
U : 440.0Hz      I
```

The vertical bar to the right of the display represents the central (normal) pitch when the tight lip mode is selected, or the lowest (also normal) pitch when the loose lip mode is selected. When lip pressure is applied to the Wind MIDI Controller mouthpiece (or released in the tight lip mode) a bar graph will move to the left or right of the vertical bar, indicating the amount and direction of pitch bend applied.
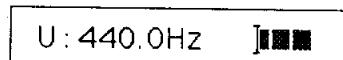
```
U : 440.0Hz      I
```
• Normal pitch (loose or tight lip mode)

```
U : 440.0Hz   ■I
```
• Downward pitch bend (tight lip mode)
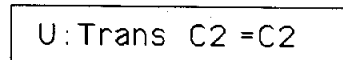
```
U : 440.0Hz      ]■■
```
• Upward pitch bend (loose or tight lip mode)

After adjusting lip zero using the WT11 lip zero bar graph, you can return to the play mode simply by pressing the PLAY button.

Transposition

The function makes it possible to shift the overall pitch of the WT11 up or down in semitone steps over a range of 4 octaves (2 up and 2 down).

1. Press the UTILITY button to enter the UTILITY mode, then press the BANK/PARAM button until the following display appears:

```
U : Trans  C2 = C2
```

2. "C2 = C2" represents normal pitch: i.e. the C2 note sounds at the standard C2 pitch. The DATA ENTRY –1 and +1 buttons can be used to shift this value up by a maximum of 2 octaves (max. C2 = C4) or down by a maximum of 2 octaves (max C2 = C0) in semitone steps. To shift pitch up by one semitone, for example, you would press the DATA ENTRY +1 button once, resulting in a setting of "C2 = D♭2."

Memory Protect

The Memory Protect function prevents writing to any of the WT11's RAM memory locations (except the program change assignment table, described below), thus preventing accidental erasure of important data. The Memory Protect function is automatically turned "on" (memory protected) when the power is initially turned on, and it must be turned "off" in order to perform a STORE operation or to load data from external equipment (see "Using External Equipment to Create New WT11 Voices" on page 16).

1. Press the UTILITY button to enter the UTILITY mode, then press the BANK/PARAM button a few times until the following display appears:

```
U:Protect : on
```

Memory Protect can now be turned "off" by pressing the DATA ENTRY –1 button. When off, it can be turned "on" by pressing the DATA ENTRY +1 button.

Edit Program Change Table

The WT11 makes it possible to select specific memory locations via external MIDI control. The WX11 Wind MIDI Controller's Program Change and Octave keys, for example, can be used to directly select up to 5 different memory locations. This is possible because each time you simultaneously press the Program Change key and an Octave key on the WX11, it transmits the corresponding MIDI PROGRAM CHANGE NUMBER. The WT11 receives this PROGRAM CHANGE NUMBER and selects the memory location that you have assigned to it using the Edit Program Change Table function.

Initially the program change table is programmed as follows:

Program Change Number	Selected Memory Location
1 — 32	I01 — I32
33 — 64	A01 — A32
65 — 96	B01 — B32
97 — 128	C01 — C32

1. Press the UTILITY button to enter the UTILITY mode, then press the BANK/PARAM button until the following display appears:

```
U:Edit PC Tbl ?
```
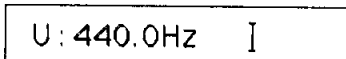
2. If you intend to edit the program change table, press the DATA ENTRY +1 (YES) button. The display should now look like this:

```
U:PGM  I = I01
        └cursor
```

This display means that MIDI program change number 1 is assigned to WT11 memory location I01.

3. A flashing cursor appears over the program number value. The cursor can be moved to the memory location number by pressing the EFFECT BALANCE +1 button, and then back to the program change number by pressing the EFFECT BALANCE –1 button. The DATA ENTRY –1 and +1 buttons are used to select the desired program change or memory location number, depending on where the flashing block cursor is positioned. You can simply select any program change number or memory location number, move the cursor to the other parameter, and assign as required.

4. Press the BANK/PARAM button to exit the program change table edit mode.

Initialize Program Change Table

This function initializes the entire program change table to the standard values (see chart in "Edit Program Change Table," above) in one simple operation.

1. Press the UTILITY button to enter the UTILITY mode, then press the BANK/PARAM button until the following display appears:

```
U:Init PC Tbl ?
```
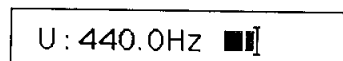
2. Press the DATA ENTRY +1 (YES) button if you intend to initialize the program change table. The WT11 will respond with the following display:

```
U:Are you sure ?
```

3. Confirm by pressing the DATA ENTRY +1 (YES) button one more time, or abort the operation by pressing any button other than the DATA ENTRY +1 button.

Load Data from Cassette

This function reloads data you have previously saved to cassette tape using the Save Data to Cassette function described below. The WT11 comes with a special cassette cable that connects between the WT11 CASSETTE connector and the MICROPHONE and EARPHONE jacks on a cassette data recorder. The miniature phone plug with the red wire should be connected to the cassette recorder MICROPHONE jack when saving data, and the miniature phone plug with the white wire should be connected to the cassette recorder EARPHONE jack when loading data. Any standard cassette recorder of reasonable high quality can be used, but a cassette recorder specifically designed for data recording is highly recommended. You might have to adjust the recorder's volume control to find the right level for playback and loading of data into the WT11.

1. Turn the Memory Protect function "off."

2. Press the UTILITY button to enter the UTILITY mode, then press the BANK/PARAM button until the following display appears:

```
U:Load data ?
```

3. If you intend to load data into the WT11, press the DATA ENTRY +1 (YES) button. The WT11 will respond with the following display:

```
U:Load all ?
```

Pressing the DATA ENTRY –1 (NO) button at this point will switch to the following display:

```
U:Load 32 pfm ?
```

Pressing the DATA ENTRY –1 (NO) button alternates between these two displays, giving you a choice of loading all WT11 data (assuming that all required data has been previously saved on the cassette tape using the "Save all" function described below), or only loading 32 performance combinations and 32 voices into BANK I.

4. Select the data you wish to load using the DATA ENTRY –1 button.

5. Press the DATA ENTRY +1 (YES) button. The WT11 will respond with:

```
U:Load ready ?
```

6. Press the DATA ENTRY +1 (YES) button again to begin actually loading the data. Then begin playback of the cassette tape from a point before the beginning of the data (this can normally be verified by ear).

7. The WT11 will display the type of each data block as it is loaded, and the "U:Load completed" display will appear when the load operation has been successfully completed. If an error occurs during the load operation, the "Tape error!", "Bad format!" or "Checksum err!" display will appear. If this happens, try repeating the load operation. If the second attempt fails you may have bad connections between the WT11 and cassette recorder, improper cassette recorder settings, or a bad cassette tape.

> **Note**
>
> The load operation can be aborted at any time by pressing the DATA ENTRY –1 (NO) button.

Save Data to Cassette

This function saves data and original performance combinations you have created to cassette tape for later re-loading and use. For connections see "Load Data From Cassette," above.

1. Press the UTILITY button to enter the UTILITY mode, then press the BANK/PARAM button until the following display appears:

```
U:Save data ?
```
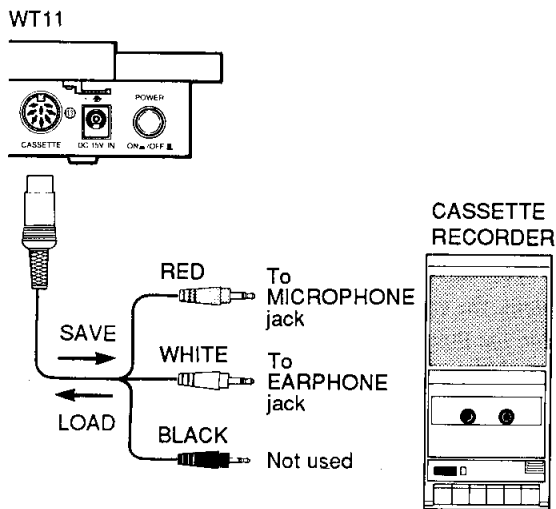
2. If you intend to save data to cassette tape, press the DATA ENTRY +1 (YES) button. The WT11 will respond with the following display:

```
U:Save all ?
```

Pressing the DATA ENTRY –1 (NO) button at this point will switch to the following display:

```
U:Save 32 pfm ?
```

Pressing the DATA ENTRY –1 (NO) button alternates between these two displays, giving you a choice of saving all WT11 data, or only saving 32 performance combinations and 32 voices from BANK I.

> **Note**
>
> When "**Save all**" is selected, the following data is saved:
> - 32 internal performance combinations + 32 internal voices*.
> - Program change assignment table.
> - Setup data (Master Tune, Transpose, Memory Protect, Device Number)
>
> *see "'Actual" WT11 Memory Configuration' on page 16.

3. Select the data you wish to save using the DATA ENTRY –1 button.

4. Press the DATA ENTRY +1 button. The WT11 will respond with:

```
U:Save ready ?
```

5. Start the cassette recorder running in the record mode, then press the DATA ENTRY +1 button again to begin actually saving the data.

6. The WT11 will display each data block as it is saved, and the "**U:Verify ?**" display will appear when the save operation has been successfully completed.

7. If you do not wish to verify the data (compare the data on the tape with that in the WT11's memory), simply press the DATA ENTRY –1 (NO) button. To verify the saved data, make sure that the plug on the white wire of the cassette cable is plugged into the cassette recorder's EARPHONE jack, rewind the tape to the beginning of the saved data, and press the DATA ENTRY +1 (YES) button. The WT11 will respond with "**U:Verify ready ?**" Press the DATA ENTRY +1 (YES) button again and start playback of the tape. The WT11 will display each data block as it is verified, and the "**U:Verify completed!**" display when the verify operation is completed and no errors have been detected.

> **Note**
>
> If an error is detected during the verify operation, the "**U:Verify error!**" or "**Tape error!**" display will appear. If this occurs, try saving and verifying the data again. If you have consistent difficulty in saving and loading data, the cassette recorder you are using may not be suitable for this type of data storage. It is also important to keep the recorder's head perfectly clean to prevent data errors.

> **Note**
>
> The save operation can be aborted at any time by pressing the DATA ENTRY –1 (NO) button.

Device Number

"Device Number" refers to a special "channel" that the WT11 and other YAMAHA MIDI devices use for transfer of MIDI system exclusive information. MIDI system exclusive information includes voice, performance and other data that is specific to YAMAHA equipment. Refer to "Using External Equipment to Create New WT11 Voices" on page 16 for more details.

1. Press the UTILITY button to enter the UTILITY mode, then press the BANK/PARAM button until the following display appears:

```
U:Device No=all
```

In this display, "all" means that all device number "channels" are active. Other possible settings are "off," meaning that no device number is active, or individual device numbers 1 through 16.

2. Use the DATA ENTRY +1 and −1 to select the desired device number, or "all," or "off."

Bulk Dump

The Bulk Dump function allows transmission of all WT11 data, data for the 32 performance combinations in BANK I, or data for a single performance combination (excluding voice data) to be transmitted via the MIDI OUT connector. Data thus "dumped" can be stored on a MIDI Data Recorder such as the YAMAHA MDF1 or a sequencer with a MIDI data recorder function such as the YAMAHA QX3. Stored data can be reloaded to the WT11 whenever needed. Data can also be transmitted to a YAMAHA tone generator or synthesizer that allows editing of the WT11 voices (See "Using External Equipment to Create New WT11 Voices" on page 16).

1. Press the UTILITY button to enter the UTILITY mode, then press the BANK/PARAM button until the following display appears:

```
U: Bulk dump ?
```

2. If you intend to perform a bulk dump, press the DATA ENTRY +1 (YES) button. The following display will appear:

```
U: Dump all ?
```

Pressing the DATA ENTRY −1 (NO) button at this point will switch to the following display:

```
U: Dump 1 pfm ?
```

If the DATA ENTRY −1 (NO) button is pressed again the following display will appear:

```
U: Dump 32 pfm ?
```

Pressing the DATA ENTRY −1 (NO) button alternates be-

tween these three displays, giving you a choice of transmitting all WT11 data, 1 performance combination (the currently selected performance combination), or 32 performance combinations and 32 voices from BANK I.

3. Select the data you wish to transmit using the DATA ENTRY −1 button.

4. Press the DATA ENTRY +1 (YES) button. The WT11 will respond with:

```
U: Dump ready ?
```

5. Press the DATA ENTRY +1 (YES) button again to actually beging the bulk dump operation. "**U:Transmitting !**" will appear on the display while the bulk dump is in progress, and "**Dump completed**" wil appear when the dump is finished.

> **Note**
>
> The WT11 MIDI OUT connector must be connected to the MIDI IN connector of the MIDI Data Recorder, tone generator or synthesizer via a standard MIDI cable. Refer to your MIDI Data Recorder, tone generator or synthesizer operation manual for operating details.

> **Note**
>
> To reload data from a MIDI Data Recorder, tone generator or synthesizer, connect the data recorder, tone generator or synthesizer MIDI OUT connector to the WT11 MIDI IN connector (make sure the INPUT SELECT switch is set to the MIDI IN connector position), make sure that the WT11 Device Number and that of the connected device are the same, turn the WT11 Memory Protect function "off," and transmit the appropriate data from the data recorder, tone generator or synthesizer. The transmitted data will be received and automatically stored in the appropriate memory location(s) by the WT11.

Using External Equipment to Create New WT11 Voices

The WT11 allows direct editing of the effects, LFO control status and titles used in its performance combinations, but not the voices used in the performance combinations and other performance parameters. If you have a YAMAHA TX81Z tone generator or DX11 synthesizer, however, these devices can be used to create new voices which can then be loaded into the WT11 and used in performance combinations.

■ "Actual" WT11 Memory Configuration

Earlier in this operation manual we looked at the basic WT11 memory configuration -- that is, the memory that you deal directly with when normally using the WT11. Here, however, we'll take a more detailed look at the memory in order to help you understand how voices created using external equipment can be used by the WT11.

* Utility memory not shown.
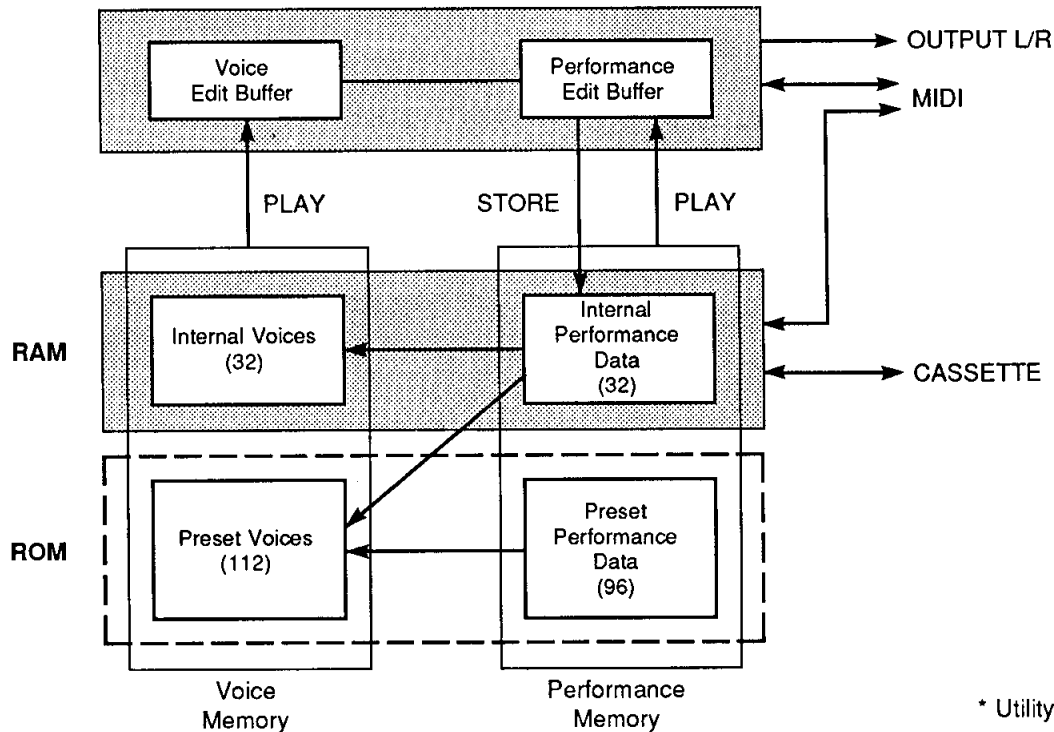
As shown in the diagram above, the WT11 memory is divided into ROM and RAM memory areas, each of which contains PERFORMANCE and VOICE memory areas. The PERFORMANCE memory areas contain only the data required to define a performance combination rather than the data itself. Instead of complete voice data, for example, a PERFORMANCE location contains only the number(s) of the voice(s) to be used for that performance combination. The VOICE memory locations contain the actual voice data. When bank I is selected, the RAM PERFORMANCE area and any of the ROM or RAM VOICE areas can be used. Since the ROM voice data is in read-only memory, (ROM = Read Only Memory), only the voice data in the WT11 RAM (RAM = Random Access Memory) memory area can be used to load voices from external equipment. Voices are loaded into the WT11 by "bulk dumping" a single voice or a set of 32 voices from an external TX81Z tone generator or DX11 synthesizer to the WT11.

■Preparation for Data Transfer

The MIDI OUT connector of the TX81Z or DX11 must be connected to the MIDI IN connector of the WT11. Make sure that the WT11 INPUT SELECT switch is set to the MIDI IN connector position.

The DX11 or TX81Z "Transmit Channel" number must be matched to the WT11 Device Number. The "Exclusive" parameter must also be turned "on." The Memory Protect function of the WT11 must be turned "off."

■Transferring Data from the TX81Z or DX11 to the WT11

1. Use the standard TX81Z or DX11 editing procedures — as described in their respective operation manuals — to create the desired voices or performance combinations. Please note that the WT11 will not accept program change table or setup data from the DX11 or TX81Z.

2. Transmit the edited data from the TX81Z or DX11 to the WT11 using the transmission (bulk dump) procedure described in the respective operation manual.

3. A single performance combination received by the WT11 is placed in the WT11 "edit buffer" and must then be stored to an appropriate BANK I memory location using the WT11 STORE function. A dump of 32 performance combinations is received and automatically stored in the 32 WT11 BANK I memory locations.

4. Turn the WT11 Memory Protect function back "on".

Note

When an effect is applied to a WT11 performance combination, all sound is assigned to the center of the stereo sound field even if the OUT ASSIGN parameter for an externally-created voice has been set to "L" or "R."

■Editing Performance Data Directly in the WT11 Memory

It is also possible to edit the performance data for the selected WT11 performance combination using the external MIDI device (e.g. DX11) controls. Monitor the sound from the WT11 while editing. The WT11 and external MIDI device must be connected as follows:
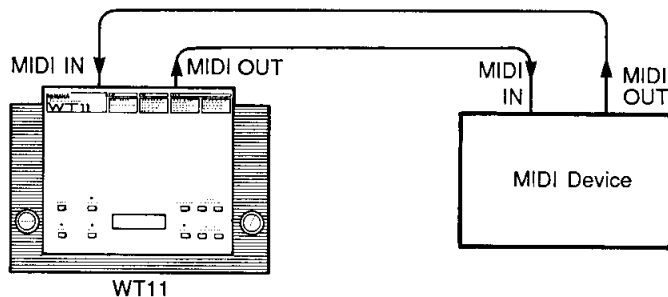
1. Turn the WT11 and external MIDI device memory protect functions off (see page 12).

2. Turn the external MIDI device Exclusive parameter "on," and match its basic receive and transmit channels to the WT11's device number (see page 14).

3. Select the performance combination to be edited on the WT11.

4. Perform the WT11 1 performance bulk dump operation (see page 15).

5. Set the external MIDI device to the performance edit mode.

6. When an edit operation is performed on the external edit voice, the corresponding WT11 data will be changed and the character to the left of the WT11 display will change to lower case (if the edited parameter can be displayed by the WT11, the WT11 EDIT mode will automatically be selected).

7. Use the WT11 STORE operation after editing has been completed to store the new data in one of the WT11's bank-I memory locations (see page 9).

WT11 Preset Performance Combinations List

■ A BANK (Woodwinds/Synth Woodwinds)

No.	Performance Name	LFO Control	Description
A01	Oboe 1	brth	A fairly "fat" oboe sound. The high range is ideal for slow phrases.
A02	Oboe 2	brth	Thinner than the Oboe 1 sound, this oboe has a slightly sad feel.
A03	Bassoon	lip	The bassoon — one of the richest voices in the woodwind range.
A04	Clarinet	lip	A clarinet sound. Bite the reed for a vibrato effect.
A05	Piccolo	lip	Piccolo with sax-type fingering. Great for marches, etc.
A06	Flute	lip	This flute performance combination makes it possible to use tongueing to produce breath sound.
A07	PanFlute	brth	Pan flute — an arrangement of vertical pipes blown indidivually to produce the required pitch.
A08*	PuffPanFlt	brth	Pan flute with a sharper, more "folky" attack.
A09	SopranoSax	—	The sweet sound of soprano saxophone.
A10	TenorSax 1	—	Tenor saxophone. Use embouchure to create a natural-sounding vibrato effect.
A11	TenorSax 2	—	A mellow tenor sax sound ideally suited for ensemble performance.
A12	BaritonSax	—	Baritone saxophone. This performance combination sounds surprisingly real if you play loud notes.
A13	Recorder	lip	The familiar sound of recorder. Bite the reed for a vibrato effect.
A14	Ocarina	brth	The simple sound of an ocarina. Play with clear phrasing for the best effect.
A15	Shakuhachi	—	Shakuhachi — one of Japan's best-known traditional wind instruments.
A16	ClearWinds	brth	A woodwind ensemble consisting of flute and bassoon.
A17	WoodWinds	—	An ensemble of double-reeds: oboe and bassoon.
A18	Picc/Clar	lip	A bright ensemble of piccolo and clarinet.
A19	PowerWood	—	A woodwind-type synthesizer sound that offers extremely expressive dynamics.
A20	HolloWood	—	A synthesizer sound that resembles clarinet.
A21	HardWood	—	A more exaggerated version of A20 — ideal for use with the delay effect.
A22	ReedWinds	lip	A synthesizer sound that falls somewhere between clarinet and oboe.
A23	SilverWind	lip	A synthesizer sound based on flute and piccolo.
A24	FatReed 1	—	Blow gently for an accordion sound, harder for a powerful solo synthesizer sound.
A25	FatReed 2	—	Another solo syntheszier sound.
A26	FluteEns.	—	An ensemble consisting of several flutes.
A27	Flute 5ths	brth	A flute duo playing in fifths.
A28	SaxSect.1	brth	A complete saxophone section that can be used for backing or solos.
A29	SaxSect.2	brth	A deeper saxophone section with emphasis on the baritone sax sound.
A30*	Chime/Oboe	brth	A pretty chime sound appears with the oboe on toungued notes.
A31	BassoonDuo	lip	A duo with bassoons playing in diferent octaves.
A32*	Mammoth !	brth	An extremely large-scale voice based on the saxophone sound.

■ B BANK (Brass/Synth Brass)

No.	Performance Name	LFO Control	Description
B01	Trumpet 1	brth	A powerful, bright trumpet sound suited to jazz or rock music.
B02	Trumpet 2	—	A classical trumpet sound. Great for fanfares.
B03	MutedTrp.	—	Muted trumpet. Particularly realistic on loud notes.
B04	Flugel 1	brth	A fat, orthodox flugelhorn sound.
B05	Flugel 2	brth	Flugelhorn with a sweet tone — somewhat reminiscent of French horn.
B06	Trombone	—	Trombone. Use the pitch bender for slides if you use a WX7.
B07	FrenchHorn	—	This French horn performance combination should be be played gently with a few loud bursts for maximum realism.
B08	Tuba	—	A jolly tuba sound. Play "bouncy" phrases for the best effect.
B09	BrassEns	—	A brass ensemble featuring trombone and tuba.
B10	FusionBrs	—	A brass ensemble that's perfect for fusion or pops type backing.
B11*	HardPopBrs	—	A brass and saxophone ensemble that can be used in a range of genres from pops to jazz.
B12	HvyPopBrs	—	A heavy brass ensemble with emphasis on baritone saxophone.
B13	ClassicBrs	—	An orchestra brass section.
B14	ClassicHrn	brth	A French horn sound that's ideally suited for classical phrases.
B15	OrchHorns	brth	An orchestra French horn section.
B16	MuteBrass	brth	A muted brass section. Play strongly for the best effect.
B17*	TuttiBrass	—	An extremely thick brass section. Key hold cannot be used with this performance combination.
B18	HarmoSynth	lip	Synth brass with a similarity to harmonica.
B19	SmoothBrs	brth	A mild, orthodox synth brass sound.
B20	DualSynth	brth	Synth brass that becomes brighter the stronger you play.
B21	LyriSynth	brth	An analog synth type sound, similar to B19.
B22	MelloSynth	brth	A slightly milder synth brass sound than B21.
B23	BuzzySynth	brth	Synth brass with a bright attack.
B24	SharpSynth	brth	Synth brass with a very percussive attack.
B25	SolidSynth	brth	An exceptionally bright synth brass sound — with delay effect.
B26*	SwampSynth	brth	Best suited for synth bass lines. Key hold cannot be used with this performance combination.
B27	SandyBrass	brth	Synth brass with a metallic attack.
B28	AttackSyn.	brth	Synth brass with a trumpet-like attack.
B29	SynthBrs 1	lip	A thick, trombone-like synth brass sound.
B30	SynthBrs 2	brth	Synth brass with an attack reminiscent of clavinet.
B31	SynthBrs 3	—	Blow gently for a strings-like effect.
B32	SynthOrch	brth	An extremely powerful voice — a synthesizer version of B17.

■ C BANK (Non-wind Instruments/Synthesizer/Key Hold Combination)

No.	Performance Name	LFO Control	Description
C01	Harmonica 1	brth	Bright harmonica with a clear, pretty high range.
C02	Harmonica 2	brth	A harmonica sound that's best suited to slow-tempo tunes.
C03	Concertina	brth	A small type of accordion.
C04	Bandonion	brth	A type of accordion used frequently in French chanson styles.
C05	Accordion	brth	An accordion sound that delivers the fattest tone between C03 and C05.
C06	Violin	brth	Violin — best played with variations in breath pressure.
C07	Cello	brth	Cello. Bowed instruments of this type are easy to play realistically on a wind controller.
C08	Strings	brth	A rich, spacious sounding string ensemble.
C09	DualString	brth	Dual string ensembles playing in different octaves.
C10	DistGuitar	brth	Electric guitar with distortion.
C11*	A.Guitar	brth	Acoustic guitar. Tongueing produces the picking sound.
C12	Fretless	—	A fretless electric bass that features slower attack than standard bass sounds.
C13	UpriteBass	—	The woody sound of an upright acoustic bass.
C14	PipeOrgan	lip	A grandiose pipe organ. With this performance combination changes in breath pressure do not produce changes in volume and timbre.
C15	Choir	brth	The soul-stirring sound of a choir.
C16	Whistle	brth	A person whistling — a touch of reverb adds a deep effect.
C17	Bells	—	Bells — with a particularly impressive low range.
C18	GuitarSyn	—	A type of sound frequently heard with guitar synthesizers.
C19*	PortaLead	brth	A solo synthesizer sound with a portamento "slide" effect.
C20	Clavidion 1	—	A cross beteen clavi and accordion.
C21	Clavidion 2	—	Similar to C20, but with an analog syntheszier type low range.
C22	SynthLead	brth	A sharp solo synth sound.
C23	FuzzySax	brth	A slightly distorted saxophone sound.
C24	Fuzz 5ths	lip	A hard synth sound in fifths.
C25*	BreathHit	—	Tongueing produces a strong attack sound.
C26	Breath 5th	brth	A second sound a fifth above the basic breath sound appears when played strongly.
C27	TalkingBox	brth	A simulation of the formerly popular "talking box" effect.
C28	HarmoWhist	brth	A mix of harmonica and whistling.
C29	SpaceDust	—	A "spacey" sound that's reminiscent of a female chorus.
C30	Str/Flute	brth	These three performance combinations have been designed for use with the key hold function. Press either octave down key and play in the selected range for a strings harmony or bass sequence which can be held by pressing the hold key. You can now play a flute or oboe sound in the upper registers. Please note that the key hold function will be disengaged if a note in the strings range is played while using C30 or C31.
C31	Str/Oboe	brth	
C32	FreeJazz	brth	

- The "LFO Control" parameter determines whether vibrato (a periodic pitch variation) can be applied ("brth" or "lip") or not ("off"). The "brth" setting causes vibrato to be controlled by breath pressure, while the "lip" setting causes vibrato to be controlled by lip pressure. These settings can be changed using the EDIT mode (see page 7).

- Some voices do not cover the entirety of the WX11's extraordinarily wide 7-octave range. This only applies to the extreme ends of the range, however, and should not cause problems in actual use.

- Performance combinations marked with an asterisk (*) may act unpredictably when used with the key hold function (no hold sound, altered attack). We do not recommend using the hold key with these voices.

- The MIDI receive channel for ALL voices is 1.

TROUBLESHOOTING

In most cases, problems that **appear** to be caused by equipment malfunction can be traced to human error — wrong settings, improper connections, etc. Before blaming the equipment, refer to the list of problems and possible causes given below.
If a problem is persistent, try reducing your system to the bare essentials — i.e. disconnect all peripheral equipment, use headphones instead of an amplifier to monitor the sound, set the simplest possible settings, etc. This way it is easier to isolate and cure elusive faults.

PROBLEM 1: No Sound

(POSSIBLE CAUSES)

1. Is the POWER switch turned ON?

2. Is the controller you are using compatible with the WT11?
   The WT11 requires MIDI breath controller data to control the preset performance combinations. The YAMAHA WX-series controllers provide the required output, but if you use a different controller make sure it is capable of outputting the required breath controller data. Some YAMAHA models — the WX7, for example — allow breath control data output to be turned ON or OFF. Make sure it is turned ON for use with the WT11.

3. Is the volume control on the WT11, amplifier or other related equipment turned up high enough?

4. Are all cables connected properly?
   Check the WX controller's dedicated cable, MIDI cables and audio cables. Also make sure that the WT11 INPUT SELECT switch is set to the appropriate position for the controller you are using (see page 5). Problems can sometimes be caused by cables becoming open or shorted. When in doubt, try a different cable. You can tell whether the MIDI data is reaching the WT11 from the controller by checking to see if the PLAY LED flashes when a note is played.

5. Is the WT11 in the SAVE, LOAD or VERIFY mode?
   No sound is produced when any of these modes are active. You will have to wait until the SAVE, LOAD or VERIFY operation finishes, or abort the operation.

6. Is the controller set to transmit on MIDI channel 1?
   The WT11 receives only on MIDI channel 1. There is no possibility for error when using the WX11, but the WX7 must be set to transmit on channel 1.

PROBLEM 2: Performance Combinations Cannot Be Selected Using the WT11 Controls

(POSSIBLE CAUSES)

1. Is the PLAY mode active?
   Performance combinations cannot be selected if the breath data bar graph is showing.

PROBLEM 3: No Pitch Variation

(POSSIBLE CAUSES)

1. Is the controller you are using capable of transmitting pitch bend data?

2. Have you properly adjusted the lip sensor controls?
   If the controller's lip sensor control(s) have not been properly adjusted, it may be impossible to produce pitch bend. Refer to the lip sensor adjustment instructions in your WX-series Wind MIDI Controller operation manual.

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PROBLEM 4: No LFO Control

(POSSIBLE CAUSES)

1. **Is LFO control turned on?**
   LFO control must be set to either "brth" (breath) or "lip" for LFO control to be effective. If set to "off," no LFO effect will be produced. See page 8 for details. Also, LFO control is not possible with some of the WT11 preset performance combinations (see the Preset Performance Combinations List on page 18).

2. **Is your controller capable of transmitting the data required for LFO control?**
   Either pitch bend or breath controller data must be available, depending on the WT11 LFO control setting.

PROBLEM 5: No Effect

(POSSIBLE CAUSES)

1. Is an effect selected (see page 7)?.

2. Is the EFFECT button ON?

3. **Is the EFFECT BALANCE set at a high enough level?**
   If EFFECT BALANCE is set to "0" no effect will be produced (see page 7).

PROBLEM 6: Sound Level too Low

(POSSIBLE CAUSES)

1. **Is the breath sensor properly adjusted?**
   The volume level of the WT11 performance combinations is controlled by breath control data from the controller. Adjust the sensitivity of the controller to match your own breath pressure (refer to your WX-series controller operation manual for details).

2. Is the volume control turned up high enough?

PROBLEM 7: Distorted Sound

(POSSIBLE CAUSES)

1. **Are volume levels and playback equipment appropriate?**
   If the volume is set too high, or the playback equipment you are using does not match the output level of the WT11, distorted sound can result.

2. **Is a distortion-type effect selected?**
   When one of the WT11 distortion-type effects is selected, the sound will be distorted when the effect is turned ON. Distortion will only sound good with certain types of performance combinations, and can simply be turned off if not desired (see page 7).

PROBLEM 8: Performance Combinations Cannot Be Selected via MIDI Control

(POSSIBLE CAUSES)

1. **Is the controller set to transmit on MIDI channel 1?**
   The WT11 receives program change data only on MIDI channel 1. Please set the appropriate MIDI transmit channel when using a controller other than the WX11.

2. **Is the program change assignment table set up properly?**
   Program change selection via MIDI control is carried out according to how the WT11 Program Change Table is set up. If the Program Change Table is not set up properly, you won't be able to select the desired performance combinations via MIDI control. Refer to page 12 for details.

PROBLEM 9: Improper Pitch

(POSSIBLE CAUSES)

1. **Are the KEY TRANSPOSE and/or MASTER TUNE functions set properly?**
   In addition to the WT11 MASTER TUNE utility function, adjustment of the controller's lip zero affects overall pitch. Some controllers also have a transpose function which should be checked.

2. **Are you playing a "normal" performance combination?**
   Some performance combinations are more like sound effects than melodic voices, and may not have a distinct pitch.

If you've checked all of the above possible causes but still have a problem, have the WT11 examined by your YAMAHA dealer. Explain the problem as clearly as you can as well as the circumstances under which the problem occurs (settings, other equipment used, etc). And don't forget your guarantee card!

MIDI Error Messages

Under unusual circumstances the following MIDI error message may appear on the LCD display panel:

| MIDI buffer full |

This display will appear if MIDI data is transmitted to the WT11 at a rate faster than it can handle. This should not occur during normal operation, but can occur if, for example, a sequencer is being used to transmit a very complex composition to the WT11. The solution is to reduce the complexity of the transmitted data.

| MIDI data error |

This display will appear if an error is detected in the incomming MIDI data. Bad connections or MIDI cables can cause this to happen. Check the MIDI connections carefully or try a different MIDI cable.

SPECIFICATIONS

SOUND SOURCE		FM Tone Generator
		(4 Operators, 8 Algorithms)
SIMULTANEOUS NOTES OUTPUT		8 notes (last note priority)
INTERNAL EFFECT (DSP)		10 effects
INTERNAL MEMORIES		
	Preset Performances	96
	Users' Performances	32
	Preset Voices	112
	Users' Voices	32
	Program Change Table	1
	System Setup	1
EXTERNAL MEMORY		Cassette Interface
FRONT PANEL		
	Keys/Control	Mode Select (PLAY, EDIT, UTILITY, STORE),
		BANK/PARAM, DATA ENTRY (–1/NO/OFF, +1/YES/ON),
		EFFECT, EFFECT BALANCE (–1/◀, +1/▶), VOLUME
	Displays	Backlit LCD (16 char. x 1 line)
		LED Indicator x 4
SWITCHES		POWER, INPUT SELECT
TERMINALS		WX IN, OUTPUT (L/MONO, R), MEMORY (DEC, INC),
		CASSETTE,
		MIDI (IN, OUT, THRU), PHONES, DC15V IN
GENERAL		
	POWER SOURCE	DC15V, 500mA using PA-1505 AC Adaptor
	POWER CONSUMPTION	7W
	DIMENSIONS (WxHxD)	310 x 43.2 x 221 mm
		(12-3/16" x 1-11/16" x 8-11/16 ")
WEIGHT		1.2 kg (2 lbs 10 oz)
ACCESSORIES		AC Adaptor (PA-1505), Cassette Cable

* Specifications and appearance subject to change without notice.

INDEX

MIDI DATA FORMAT

1. MIDI RECEPTION CONDITIONS

```
                    ▼ Channel voice message
                    (1-16, omni)
MIDI →              ■ ──────────────────────────── $8n  Note off
                    CH.                              $9n  Note on (off)
                        ▼ Control change
                    ── $Bn ─────────────────────── $01  Modulation wheel
                                                    $02  Breath control
                                                    $04  Foot control
                                                    $07  Volume
                                                    $0A  PAN
                                                    $40  Sustain switch
                                                    $41  Portamento switch
                                                    $Dn  After touch
                                                    $En  Pitch bender
                                                    $C0  Program change
                    ▼ Channel mode message
                    (1-16, omni)
                    ■ ──── $Bn ─────────────────── $7B  All note off
                    CH.
                    ▼ System real time message
                    ───────────────────────────── $FE  Active sensing
                    ▼ System exclusive message
                        Dev.No.        ▼ Bulk dump
                ── $F0, $43 ─■ ──────── $0n ─────── $03  VCED
                    (off, 1-16, all)                 $7E  ACED  (LM__8976AE)
                                                     $7E  ACED2 (LM__8023AE)
                                                     $7E  PCED  (LM__8976PE)
                                                     $7E  PCED2 (LM__8023PE)
                                        Memory protect
                                        □ ───────── $04  VMEM
                                                     $7E  PMEM  (LM__8976PM)
                                                     $7E  PMEM2 (LM__8073PM)
                                                     $7E  SETUP (LM__8053SU)
                                                     $7E  PCT   (LM__8053PC)
                                        ▼ Parameter change
                                        $1n ──────── $12  VCED
                                                     $13  ACED/ACED2
                                                     $10  PCED
                                                     $10  PCED2
                                                     $10  SETUP
                                                     $10  PCT
                                        ▼ Dump request
                                        $2n ──────── $xx  Dump request
                                        ▼ Parameter change
                                        $1n ──────── $10  Remote switch
```

■ = select switch
□ = on/off switch
VCED = Voice edit buffer
ACED = Additional voice edit buffer
PCED = Performance edit buffer
VMEM = Voice memory
PMEM = Performance memory
SETUP = System set up data
PCT   = Program change table

2. MIDI TRANSMISSION

All bulk dump data shown in the reception chart (above) can be transmitted. No other messages can be transmitted.

3. CHANNEL MESSAGE

Channel messages received but not transmitted.

3.1. CHANNEL VOICE MESSAGES

The following messages are received.

3.1.1. NOTE OFF

```
STATUS      1000nnnn   ($8n)  n = channel number
NOTE No.    0kkkkkkk          k = 0(C-2) — 127(G8)
VELOCITY    0vvvvvvv          ignored
```

3.1.2. NOTE ON

```
STATUS      1001nnnn   ($9n)  n = channel number
NOTE No.    0kkkkkkk          k = 0(C-2) — 127(G8)
VELOCITY    0vvvvvvv          v = 0 — 127
                              (0=Note off)
```

3.1.3. CONTROL CHANGE

```
STATUS          1011nnnn   ($Bn)  n = channel number
CONTROL No.     0ccccccc
CONTROL VALUE   0vvvvvvv
```

The following parameters can be controlled via MIDI.

CONTROL No.	PARAMETER	DATA
1	Modulation wheel	0 — 127
2	Breath control	0 — 127
4	Foot control	0 — 127
7	Volume	0 — 127
10	PAN	0 — 127 *1
64	Sustain switch	0 — 127 *2
65	Portamento switch	0 — 127 *2

*1 0 — 42(L), 43 — 85(L+R), 86 — 127(R)
*2 0 — 63(off), 64 — 127(on)

3.1.4. PROGRAM CHANGE

```
STATUS          11000000   ($C0)  Channel number = 0
PROGRAM No.     0ppppppp           p = 0 — 127
```

When a program change message is received, the performance combination assigned to it in the Program Change Table is selected.

NOTE: Program change messages are only received on channel 1.

3.1.5. AFTER TOUCH

```
STATUS      1101nnnn   ($Dn)  n = channel number
VALUE       0vvvvvvv          v = 0 — 127
```

3.1.6. PITCH BEND

```
STATUS        1110nnnn   ($Dn)  n = channel number
VALUE(LSB)    0uuuuuuu          ignored
VALUE(MSB)    0vvvvvvv          v = 0 — 127
```

Pitch bend control is carried out using only the MSB byte of the pitch bend message.

3.2. CHANNEL MODE MESSAGES

The following messages are received.

3.2.1. ALL NOTES OFF

```
STATUS          1011nnnn   ($Bn)  n = channel number
CONTROL No.     01111011   ($7B)
CONTROL VALUE   0vvvvvvv          ignored
```

3.2.2. CONTROL NO. $7A, $7C, $7D, $7E, $7F

No operation performed after reception.

4. SYSTEM MESSAGES

4.1. SYSTEM COMMON MESSAGES

The following message is received.

4.1.1. STATUS $F1 — $F7

Status is recorded internally but no operation is performed.

4.2. SYSTEM REAL TIME MESSAGES

The following messages are received.

4.2.1. ACTIVE SENSING

STATUS	1 1 1 1 1 1 1 0	($FE)

Sensing begins when received. If a MIDI signal is not received within approximately 300 milliseconds the MIDI receive buffer is cleared and a NOTE OFF and SUSTAIN OFF are performed.

4.2.2. STATUS $F8 — $FD, $FF

No operation performed after reception.

4.3. SYSTEM EXCLUSIVE MESSAGES

Parameter change and dump request reception, and bulk dump transmission/reception are performed.

4.3.1. BULK DUMP

The following 10 data groups are available for bulk dump transmission and reception. Transmission can be initiated in the utility mode or through a received dump request.

a) The following data group combinations can be transmitted by panel control in the utility mode:

- PMEM2 + PMEM + VMEM + PCT + SETUP ....“all”
- PMEM2 + PMEM + VMEM ....“32 pfm”
- PCED2 + PCED ....“1 pfm”

The transmission order is as shown above. The time interval between each bulk is approximately 200 milliseconds.

b) Reception

Reception operation is described below. “—” means no change occurs.

BUFFER RECEIVE DATA	VCED	ACED	ACED2	PCED	PCED2	PMEM	PMEM2
VCED only	SET	CLEAR	CLEAR	—	—	—	—
ACED only	—	SET	CLEAR	—	—	—	—
ACED + VCED	SET	SET	CLEAR	—	—	—	—
ACED2 only	—	—	SET	—	—	—	—
ACED2 + ACED	—	SET	SET	—	—	—	—
ACED2 + ACED + VCED	SET	SET	SET	—	—	—	—
PCED only	—	—	—	SET	DEFAULT	—	—
PCED2 only	—	—	—	—	SET	—	—
PCED2 + PCED	—	—	—	SET	SET	—	—
PMEM only	—	—	—	—	—	SET	DEFAULT
PMEM2 only	—	—	—	—	—	—	SET
PMEM2 + PMEM	—	—	—	—	—	SET	SET

The basic data format for each bulk dump is as follows.

STATUS	1 1 1 1 0 0 0 0	($F0)	
ID No.	0 1 0 0 0 0 1 1	($43)	
SUB STATUS	0 0 0 0 n n n n	($0n)	n=device number
FORMAT No.	0 f f f f f f f		
BYTE COUNT(MSB)	0 b b b b b b b		
BYTE COUNT(LSB)	0 b b b b b b b		
CLASSIFICATION NAME	0 1 0 0 1 1 0 0	($4C)	‘L’
	0 1 0 0 1 1 0 1	($4D)	‘M’
	0 0 1 0 0 0 0 0	($20)	‘ ’
	0 0 1 0 0 0 0 0	($20)	‘ ’
DATA FORMAT NAME	0 m m m m m m m		
	. . . .		
	0 m m m m m m m		
DUMP DATA	0 d d d d d d d		
	. . . .		
	0 d d d d d d d		
CHECK SUM	0 e e e e e e e		
EOX	1 1 1 1 0 1 1 1	($F7)	

For the format for dump data, below, marked with a “ * ”, refer to the above.

(1) VCED (Voice Edit Buffer) BULK DUMP

FORMAT No.	= 3 ($03)
BYTE COUNT	= 93 = $005D ($00 & $5D)
CLASSIFICATION	= Not specified
DUMP DATA	= <*VCED data>
TOTAL BULK SIZE	= 93 + 8 = 101

$F0, $43, $0n, $03, $00, $5D, <*VCED data>, sum, $F7

The voice edit buffer voice data can be transmitted and received. This data has no header. For the <*VCED data> see chart 1 on page Add-5.

(2) ACED (Additional Voice Edit Buffer) BULK DUMP

FORMAT No.	= 126 ($7E)
BYTE COUNT	= 10 + 23 = 33 = $0021 ($00 & $21)
DATA FORMAT	= ‘8976AE‘
DUMP DATA	= <*ACED data>
TOTAL BULK SIZE	= 33 + 8 = 41

$F0, $43, $0n, $7E, $00, $21, ‘LM_ _8976AE’, <*ACED data>, sum, $F7

The ACED data section of the voice edit buffer can be transmitted and received. For the <*ACED data> see chart 2 on page Add-5.

(3) ACED2 (Additional Voice Edit Buffer 2) BULK DUMP

FORMAT No.	= 126 ($7E)
BYTE COUNT	= 10 + 10 = 20 = $0014 ($00 & $14)
DATA FORMAT	= ‘8023AE’
DUMP DATA	= <*ACED2 data>
TOTAL BULK SIZE	= 20 + 8 = 28

$F0, $43, $0n, $7E, $00, $14, ‘LM_ _8023AE’, <*ACED data>, sum, $F7

The ACED2 data section of the voice edit buffer can be transmitted and received. For the <*ACED2 data> see chart 3 on page Add-5.

(4) PCED (Performance Edit Buffer) BULK DUMP

FORMAT No.	= 126 ($7E)
BYTE COUNT	= 10 + 110 = 120 = $0078 ($00 & $78)
DATA FORMAT	= ‘8976PE’
DUMP DATA	= <*PCED data>
TOTAL BULK SIZE	= 120 + 8 = 128

$F0, $43, $0n, $7E, $00, $78, ‘LM_ _8976PE’, <*PCED data>, sum, $F7

The performance edit buffer performance data can be transmitted and received. For the <*PCED data> see chart 5 on page Add-6.

(5) PCED2 (Performance Edit Buffer 2) BULK DUMP

```
FORMAT No.      = 126 ($7E)
BYTE COUNT      = 10 + 33 = 43 = $002B ($00 & $2B)
DATA FORMAT     = '8073PE'
DUMP DATA       = <*PCED2 data>
TOTAL BULK SIZE = 43 + 8 = 51
```

$F0, $43, $0n, $7E, $00, $2B, 'LM_ _8073PE', <*PCED2 data>, sum, $F7

The PCED2 data section of the performance edit buffer can be transmitted and received. For the <*PCED2 data> see chart 6 on page Add-6.

(6) VMEM (Voice Memory) BULK DUMP

```
FORMAT No.      = 4 ($04)
BYTE COUNT      = 128 x 32 = 4096 = $1000 ($20 & $00)
CLASSIFICATION  = Not specified
DUMP DATA       = <*VMEM data>
TOTAL BULK SIZE = 4096 + 8 = 4104
```

$F0, $43, $0n, $04, $20, $00, <*VMEM data>, sum, $F7

The voice data in the 32 internal memory locations can be transmitted or received. This dump has no header. For the <*VMEM data> see chart 4 on page Add-6.

(7) PMEM (Performance Memory) BULK DUMP

```
FORMAT No.      = 126 ($7E)
BYTE COUNT      = 10 + 76 x 32 = 2442 = $098A ($13 & $0A)
DATA FORMAT     = '8976PM'
DUMP DATA       = <*PMEM data>
TOTAL BULK SIZE = 2442 + 8 = 2450
```

$F0, $43, $0n, $7E, $13, $0A, 'LM_ _8976PM'<*PMEM data>, sum, $F7

The performance data in the 32 internal memory locations can be transmitted or received. For the <*PMEM data> see chart 7 on page Add-7.

(8) PMEM2 (Performance Memory 2) BULK DUMP

```
FORMAT No.      = 126 ($7E)
BYTE COUNT      = 10 + 25 x 32 = 810 = $032A ($06 & $2A)
DATA FORMAT     = '8073PM'
DUMP DATA       = <*PMEM2 data>
TOTAL BULK SIZE = 810 + 8 = 818
```

$F0, $43, $0n, $7E, $06, $2A, 'LM_ _8073PM', <*PMEM2 data>, sum, $F7

The PMEM2 data section of the performance data in the 32 internal memory locations can be transmitted or received.
For the <*PMEM2 data> see chart 8 on page Add-7.

(9) SETUP (System Setup Data) BULK DUMP

```
FORMAT No.      = 126 ($7E)
BYTE COUNT      = 10 + 16 = 26 = $001A ($00 & $1A)
DATA FORMAT     = '8053SU'
DUMP DATA       = <*SETUP data>
TOTAL BULK SIZE = 26 + 8 = 34
```

$F0, $43, $0n, $7E, $00, $1A, 'LM_ _8053SU', <*SETUP data>, sum, $F7

All required setup data for the WT11 is dumped as a single group. For the <*SETUP data> see chart 9 on page Add-7.

(10) PCT (Program Change Table) BULK DUMP

```
FORMAT No.      = 126 ($7E)
BYTE COUNT      = 10 + 2 x 128 = 266 = $010A ($02 & $0A)
DATA FORMAT     = '8053PC'
DUMP DATA       = <*PCT data>
TOTAL BULK SIZE = 266 + 8 = 274
```

$F0, $43, $0n, $7E, $02, $0A, 'LM_ _8053PC', <*PCT data>, sum, $F7

The program change table data for the WT11 is dumped as a single group. For the <*PCT data> see chart 10 on page Add-7.

4.3.2. PARAMETER CHANGE

The following 7 parameter change messages can be received. The basic data format is as shown below. In (4), (5) and (6), however, the data section is two bytes, while in (6) the data section is three bytes.

```
STATUS          1 1 1 1 0 0 0 0   ($F0)
ID No.          0 1 0 0 0 0 1 1   ($43)
SUB STATUS      0 0 0 1 n n n n   ($1n)   n = device number
GROUP No.       0 g g g g g h h           g = group,
                                          h = sub group
PARAMETER No.   0 p p p p p p p
DATA            0 d d d d d d d
EOX             1 1 1 1 0 1 1 1   ($F7)
```

(1) VCED PARAMETER CHANGE

```
g g g g         = 4 (00100)
h h             = 2 (10)
```

This message makes it possible to change each VCED parameter. For ppppppp and ddddddd, see chart 1 on page Add-5.

$F0, $43, $1n, $12, $pp, $dd, $F7

(2) ACED/ACED2 PARAMETER CHANGE

```
g g g g         = 4 (00100)
h h             = 3 (11)
```

This message makes it possible to change each ACED/ACED2 parameter. For ppppppp and ddddddd, see chart 2 & 3 on page Add-5.

$F0, $43, $1n, $13, $pp, $dd, $F7

(3) PCED PARAMETER CHANGE

```
g g g g         = 4 (00100)
h h             = 0 (00)
```

This message makes it possible to change each PCED parameter. For ppppppp and ddddddd, see chart 5 on page Add-6.

$F0, $43, $1n, $10, $pp, $dd, $F7

(4) PCED2 PARAMETER CHANGE

```
g g g g         = 4 (00100)
h h             = 0 (00)
p p p p p p     = 110 ($6E)
0 k k k k k k k           k = parameter number
0 d d d d d d d           d = parameter value
```

This message makes it possible to change each PCED2 parameter. For kkkkkkk and ddddddd, see chart 6 on page Add-6.

$F0, $43, $1n, $10, $6E, $kk, $dd, $F7

(5) SETUP PARAMETER CHANGE

```
g g g g        = 4 (00100)
h h            = 0 (00)
p p p p p p    = 119 ($77)
0 k k k k k k k          k = parameter number
0 d d d d d d d          d = parameter value
```

This message makes it possible to change each SYSTEM SETUP DATA parameter. For kkkkkkk and ddddddd, see chart 9 on page Add-7.

$F0, $43, $1n, $10, $77, $kk, $dd, $F7

(6) PCT PARAMETER CHANGE

```
g g g g        = 4 (00100)
h h            = 0 (00)
p p p p p p    = 127 ($7F)
0 k k k k k k k          k = program change number
0 0 0 0 0 0 0 b          b = PMEM number MSB
0 n n n n n n n          n = PMEM number
```

This message makes it possible to change the program change table data. For details see chart 10 on page Add-7.

$F0, $43, $1n, $10, $7F, $kk, $0b, $nn, $F7

(7) REMOTE SWITCH

```
g g g g        = 4 (00100)
h h            = 0 (00)
p p p p p p    = 119 ($77)
0 k k k k k k k          k = switch number
0 d d d d d d d          d = switch value (0=on, 127=off)
```

This message has the same effect as pressing the switch represented by kkkkkkk. For details on kkkkkkk see chart 11 on page Add-7.

$F0, $43, $1n, $10, $7A, $kk, $dd, $F7

4.3.3. DUMP REQUEST

The WT11 can receive the following 7 dump requests. The appropriate data is dumped when one of these dump request messages is received. The data format is as shown below.

(1) VCED	$F0, $43, $2n, $03, $F7
(2) ACED + VCED	$F0, $43, $2n, $7E, 'LM_ _8976AE', $F7
(3) ACED2 + ACED + VCED	$F0, $43, $2n, $7E, 'LM_ _8023AE', $F7
(4) VMEM	$F0, $43, $2n, $04, $F7
(5) PCED	$F0, $43, $2n, $7E, 'LM_ _8976PE', $F7
(6) ACED2 + ACED	$F0, $43, $2n, $7E, 'LM_ _8073PE', $F7
(7) PMEM	$F0, $43, $2n, $7E, 'LM_ _8976PM', $F7
(8) PMEM2 + PMEM	$F0, $43, $2n, $7E, 'LM_ _8073PE', $F7
(9) SETUP	$F0, $43, $2n, $7E, 'LM_ _8053SU', $F7
(10) PCT	$F0, $43, $2n, $7E, 'LM_ _8053PC', $F7

The hex code for the ASCII characters above is as follows.

ASCII	HEX
LM_ _8976AE	4C, 4D, 20, 20, 38, 39, 37, 36, 41, 45
LM_ _8023AE	4C, 4D, 20, 20, 38, 30, 32, 33, 41, 45
LM_ _8976PE	4C, 4D, 20, 20, 38, 39, 37, 36, 50, 45
LM_ _8073PE	4C, 4D, 20, 20, 38, 30, 37, 33, 50, 45
LM_ _8976PM	4C, 4D, 20, 20, 38, 39, 37, 36, 50, 4D
LM_ _8073PM	4C, 4D, 20, 20, 38, 30, 37, 33, 50, 4D
LM_ _8053SU	4C, 4D, 20, 20, 38, 30, 35, 33, 53, 55
LM_ _8053PC	4C, 4D, 20, 20, 38, 30, 35, 33, 50, 43

< CHART 1 >

*** VCED data format and corresponding parameter number ***

data size = 93 bytes
gggg = 4 (00100)
hh = 2 (00)

prm#	b7	b6	b5	b4	b3	b2	b1	b0	Data	Note
0	0	0	0		—----AR-----				0-31	OP.4
1	0	0	0		-----D1R-----				0-31	
2	0	0	0		-----D2R-----				0-31	
3	0	0	0	0		---RR----			1-15	
4	0	0	0	0		---D1L----			0-15	
5	0				----LS---				0-99	
6	0	0	0	0	0		--RS--		0-3	
7	0	0	0	0	0		-EBS--		0-7	
8	0	0	0	0	0	0	0	AME	0-1	
9	0	0	0	0	0		--KVS--		0-7	
10	0				----TL-----				0-99	
11	0	0			------CRS-----				0-63	(RATIO)
	0	0			------CRS--		×	×	0-63	(FIX)
12	0	0	0	0	0		--DET---		0-6	(center=3)
13										OP.2
26										OP.3
39										OP.1
52	0	0	0	0	0		---ALG--		0-7	
53	0	0	0	0	0		---FBL--		0-7	
54	0				----LFS-------				0-99	
55	0				----LFD-------				0-99	
56	0				---PMD------				0-99	
57	0				---AMD------				0-99	
58	0	0	0	0	0	0	0	SYNC	0-1	LFO SYNC
59	0	0	0	0	0	0		--LFW	0-3	
60	0	0	0	0	0		-PMS-		0-7	
61	0	0	0	0	0	0		--AMS-	0-3	
62	0	0			---TRPS-------				0-48	(center=24)
63	0	0	0	0	0	0		MONO	0-1	
64	0	0	0	0		---PBR----			0-12	
65	0	0	0	0	0	0	0	PM	0-1	Portamento mode
66	0				---PORT--				0-99	
67	0				--FC VOL---				0-99	
68	0	0	0	0	0	0	0	SUS	0-1	sus.(F.SW)
69	0	0	0	0	0	0	0	POR	0-1	por.(F.SW)
70	0	0	0	0	0	0	0	CHRS	0-1	*Ignored
71	0				---MW PITCH----				0-99	
72	0				---MW AMPLI----				0-99	
73	0				--BC PITCH----				0-99	
74	0				--BC AMPLI----				0-99	
75	0				--BC P BIAS-----				0-100	(center=50)
76	0				--BC E BIAS----				0-99	
77	0				--VOICE NAME 1------				32-127	
78	0				--VOICE NAME 2------				32-127	
79	0				--VOICE NAME 3------				32-127	
80	0				--VOICE NAME 4------				32-127	
81	0				--VOICE NAME 5------				32-127	
82	0				--VOICE NAME 6------				32-127	
83	0				--VOICE NAME 7------				32-127	
84	0				--VOICE NAME 8------				32-127	
85	0				--VOICE NAME 9------				32-127	
86	0				--VOICE NAME 10------				32-127	
87	0				------PR1--------				0-99	PEG rate 1
88	0				------PR2--------				0-99	PEG rate 2
89	0				------PR3--------				0-99	PEG rate 3
90	0				------PL1--------				0-99	PEG level 1 center=50
91	0				------PL2--------				0-99	PEG level 2 center=50
92	0				------PL3--------				0-99	PEG level 3 center=50
93	0	0	0	0	OP1	OP2	OP3	OP4	0-15	op. on(1)/off(0) (parameter change only)

< CHART 2 >

*** ACED additional parameters(1 bulk edit format) ***

data size = 23 bytes
gggg = 4 (00100)
hh = 3 (11)

prm#	b7	b6	b5	b4	b3	b2	b1	b0	Data	Note
0	0	0	0	0	0	0	0	FIX	0-1	OP.4
1	0	0	0	0	0		— FIXRG--		0-7	0(255Hz)-7(32KHz)
2	0	0	0	0	0		-- FINE ---		0-15	(7:F=0-3)
3	0	0	0	0	0		-- OSW--		0-7	
4	0	0	0	0	0	0	-EGSFT-		0-3	0(off) 3(12dB)
5 . . .										OP.2
10 . . .										OP.3
15 . 19									0	OP.1 *Regarded as OFF
20	0	0	0	0	0	0	--REV--		0-7	0(off),7(first)
21	0			--- FC PITCH -----					0-99	
22	0			--- FC AMPLI -----					0-99	

< CHART 3 >

*** ACED2 additional parameters 2 ***

data size = 10 bytes
gggg = 4 (00100)
hh = 3 (11)

prm#	b7	b6	b5	b4	b3	b2	b1	b0	Data	Note
23	0			--- AT PITCH -----					0-99	
24	0			--- AT AMLI -----					0-99	
25	0			--- AT P.BIAS-----					0-100	center 0 = 50
26	0			--- AT EG BIAS ----					0-99	
27	0			--- reserved ----						
28	0			--- reserved ----						
29	0			--- reserved ----						
30	0			--- reserved ----						
31	0			--- reserved ----						
32	0			--- reserved ----						

< CHART 4 >
*** VMEM data format ***
data size = 128 bytes(88 bytes is in use)

NO.	b7	b6	b5	b4	b3	b2	b1	b0	Data	Note
0	0	0	0	—	—	—AR—	—	—	0-31	OP.4
1	0	0	0	—	—	—D1R—	—	—	0-31	
2	0	0	0	—	—	—D2R—	—	—	0-31	
3	0	0	0	0	—	—RR—	—	—	1-15	
4	0	0	0	0	—	—D1L—	—	—	0-15	
5	—	—	—	—	—LS—	—	—	—	0-99	
6	0	AME	—	EBS—	—	—	KVS—	—	0-1,0-7,0-7	
7	0	—	—	—	—TL—	—	—	—	0-99	
8	0	0	—	—	—	—CRS—	—	—	0-63	(RATIO)
	0	0	—	CRS—	—	—	×	×	0-63	(FIX)
9	0	0	0	—	RS	—	DET—	—	0-3,0-6	
10 .										OP.2
20 .										OP.3
30 .										OP.1
40	0	SYNC	—	FBL—	—	—	—ALG	—	0-1,0-7,0-7	
41	0	—	—	—	—LFS—	—	—	—	0-99	
42	0	—	—	—	—LFD—	—	—	—	0-99	
43	0	—	—	—	—PMD—	—	—	—	0-99	
44	0	—	—	—	—AMD—	—	—	—	0-99	
45	0	—PMS—	—	—AMS—		LFW	—	—	0-7,0-3,0-3	
46	0	—	—	—	—TRPS—	—	—	—	0-48	
47	0	0	0	0	—	—PBR—	—	—	0-12	
48	0	0	0	CHRS	MONO	SUS	POR	PM	0-1(each)	
49	0	—	—	—	—PORT—	—	—	—	0-99	
50	0	—	—	—	FC VOL	—	—	—	0-99	
51	0	—	—	MW	PITCH	—	—	—	0-99	
52	0	—	—	MW	AMPLI	—	—	—	0-99	
53	0	—	—	BC	PITCH	—	—	—	0-99	
54	0	—	—	BC	AMPLI	—	—	—	0-99	
55	0	—	—	BC	P BIAS	—	—	—	0-100	
56	0	—	—	BC	E BIAS	—	—	—	0-99	
57	0	—	—	VOICE	NAME	1	—	—	32-127	
58	0	—	—	VOICE	NAME	2	—	—	32-127	
59	0	—	—	VOICE	NAME	3	—	—	32-127	
60	0	—	—	VOICE	NAME	4	—	—	32-127	
61	0	—	—	VOICE	NAME	5	—	—	32-127	
62	0	—	—	VOICE	NAME	6	—	—	32-127	
63	0	—	—	VOICE	NAME	7	—	—	32-127	
64	0	—	—	VOICE	NAME	8	—	—	32-127	
65	0	—	—	VOICE	NAME	9	—	—	32-127	
66	0	—	—	VOICE	NAME	10	—	—	32-127	
67	0	—	—	—	—PR1—	—	—	—	0-99	
68	0	—	—	—	—PR2—	—	—	—	0-99	
69	0	—	—	—	—PR3—	—	—	—	0-99	
70	0	—	—	—	—PL1—	—	—	—	0-99	
71	0	—	—	—	—PL2—	—	—	—	0-99	
72	0	—	—	—	—PL3—	—	—	—	0-99	
73	0	0	—EGSET—		FIX	—FIXRG—				OP.4
74	0	—	—OSW—		—	—	—FINE—	—	0-48	
75 .										OP.2
77 .										OP.3
79 .										OP.1
4	0	0	0	0	—	—REV	—	—		FUNCTION
82	0	—	—	—	FC PITCH	—	—	—	0-99	
83	0	—	—	—	FC AMPLI	—	—	—	0-99	
84	0	—	—	AT	PITCH	—	—	—		
85	0	—	—	AT	AMPLI	—	—	—		
86	0	—	—	AT	P.BIAS	—	—	—		Center=0
87	0	—	—	AT	EG BIAS	—	—	—		
88-127	0	0	0	0	0	0	0	0		

Note)   AT P.BIAS data 0,,,,,,49,50,51,,,,,,100
　　　　　　　　　LCD -50,,,, -1, 0,+1,,,,,,+50
　　　　　　　　　MIDI -51,,,,,-100,0,+1,,,,,,+50

< CHART 5 >
* * * PCED data format and corresponding parameter number * * *
data size = 110 bytes
ggggg = (00100)
hh = (00)

prm#	b7	b6	b5	b4	b3	b2	b1	b0	Data	Note
0	0	0	0	0	—	NUM of NOTE	—	—	0-8	INST1
1	0	0	0	0	0	0	0	MSB	0-1	MSB of Voice number
2	0	—	—	—	Voice Number	—	—	—	0-127	without MSB
3	0	0	0	—	—	Recv. ch	—	—	0-16	16(omni)
4	0	—	—	—	LIMIT/L	—	—	—	0-127	0(c-2)-127(G8)
5	0	—	—	—	LIMIT/H	—	—	—	0-127	
6	0	0	0	—	—	—	DETUNE	—	0-14	7(center)
7	0	0	—	—	NOTE	SHIFT	—	—	0-48	24(center)
8	0	—	—	—	VOLUME	—	—	—	0-99	
9	0	0	0	0	0	0	OUT	ASGN	0-3	*note1
10	0	0	0	0	0	0	—	LFOS—	0-3	*note2
11	0	0	0	0	0	0	0	MTE	0-1	*Regarded as 0(off)
12 .										INST2
24 .										INST3
36 .										INST4
48 .										INST5
60 .										INST6
72 .										INST7
84 .										INST8
96	0	0	0	0	—	—	MTTBL	—	0-12	*Ignored
97	0	0	0	0	0	0	0	ASMODE	0-1	0(norm),1(alter)
98	0	0	0	0	—	—	EFSEL	—	0-12	*Regarded as 0(off)
99	0	0	0	0	—	—	KEY	—	0-11	*Ignored
100	0	—	—	—	PFM NAME 1	—	—	—	32-127	ASCII
101	0	—	—	—	PFM NAME 2	—	—	—		
.										
109	0	—	—	—	PFM NAME 10	—	—	—		

note1) OUT-ASGN   0(off),1(L),2(R),3(L & R)
note2) LFOS   0(off),1(1st Inst),2(2nd Inst),3(vib)

< CHART 6 >
* * * PCED2 data format and corresponding parameter number * * *
data size = 33 bytes
ggggg = 4 (00100)
hh = 0 (00)
ppppppp = 110 ($6E)

prm#	b7	b6	b5	b4	b3	b2	b1	b0	Data	Note
0	0	—	—	—	—reserved—	—	—	—		INST1
1	0	0	0	0	0	0	0	DSPE	1	*Fixed to 1(on)
2 .										INST2
4 .										INST3
6 .										INST4
8 .										INST5
10 .										INST6
12 .										INST7
14 .										INST8
16	0	0	0	0	—	—DSP SEL	—	—	0-10	0:off,1-10:DSP
17	0	—	—	—	—BALANCE	—	—	—	0-99	
18	0	—	—	—	—reserved—	—	—	—		
19	0	—	—	—	—reserved—	—	—	—		
20	0	—	—	—	—TIME	—	—	—	0-36	
21	0	—	—	—	—reserved—	—	—	—		
22	0	—	—	—	—reserved—	—	—	—		
23	0	—	—	—	LFO CONTROL	—	—	—	0-2	0:brth,1:lip,2:off
24	0	—	—	—	—reserved—	—	—	—		
25	0	—	—	—	—reserved—	—	—	—		
26	0	—	—	—	—reserved—	—	—	—		
27	0	—	—	—	—reserved—	—	—	—		
28	0	—	—	—	—reserved—	—	—	—		
29	0	—	—	—	—reserved—	—	—	—		
30	0	—	—	—	—reserved—	—	—	—		
31	0	—	—	—	—reserved—	—	—	—		
32	0	—	—	—	—reserved—	—	—	—		

< CHART 7 >

* * *PMEM data format * * *

data size = 76 bytes

prm#	b7	b6	b5	b4	b3	b2	b1	b0	Data	Note
0	0	OUT-ASGN		MSB	— —NUM of NOTE — —					INST1
1	0	— — — —VOICE NO(without MSB) — — — —								
2	0	— —LFOS—		— — — —RCV CH— — — —						
3	0	— — — — —LIMIT/L — — — —								
4	0	— — — — —LIMIT/H — — — —								
5	0	0	0	0	— —DETUNE — —					
6	0	MTE	— — — —NOTE SHIFT— — — —							
7	0	— — — — VOLUME — — — — — —								
8										INST2
.										
16										INST3
.										
24										INST4
.										
32										INST5
.										
40										INST6
.										
48										INST7
.										
56										INST8
.										
64	0	0	— —EFSEL2 —	— — — —MTTBL — —					
65	0	— · — KEY — — —	— —EFSEL1 — ASMODE						
66	0	— — — —PFM NAME 1 — — — — —								
67	0	— — — —PFM NAME 2 — — — — —								
.										
.										
75	0	— — — — PFM NAME 10 — — — — —								

< CHART 8 >

* * *PMEM2 data format * * *

data size = 25 bytes

NO.	b7	b6	b5	b4	b3	b2	b1	b0	Data	Note
0	0	DSPE	— — — — — reserved— — — — —						1,0	INST1
1	0	DSPE	— — — — — reserved— — — — —						1,0	INST2
2	0	DSPE	— — — — — reserved— — — — —						1,0	INST3
3	0	DSPE	— — — — — reserved— — — — —						1,0	INST4
4	0	DSPE	— — — — — reserved— — — — —						1,0	INST5
5	0	DSPE	— — — — — reserved— — — — —						1,0	INST6
6	0	DSPE	— — — — — reserved— — — — —						1,0	INST7
7	0	DSPE	— — — — — reserved— — — — —						1,0	INST8
8	0	0	0	0	— — DSP SEL — — —				0-10	0:off,1-10:DSP
9	0	— — — — —BALANCE — — — — —							0-99	
10	0	— — — — — reserved — — — — —								
11	0	— — — — — reserved — — — — —								
12	0	— — — — —TIME — — — — — —							0-36	
13	0	— — — — — reserved— — — — —								
14	0	— — — — — reserved— — — — —								
15	0	— — — — LFO CONTROL— — — — —							0-2	0:brth,1:lip,2:off
16	0	— — — — — reserved— — — — —								
17	0	— — — — — reserved — — — — —								
18	0	— — — — — reserved— — — — —								
19	0	— — — — — reserved— — — — —								
20	0	— — — — — reserved— — — — —								
21	0	— — — — — reserved— — — — —								
22	0	— — — — — reserved— — — — —								
23	0	— — — — — reserved— — — — —								
24	0	— — — — — reserved— — — — —								

< CHART 9 >

* * *SETUP data format and corresponding parameter number* * *

data size = 16 bytes

gggg = 4 (00100)

hh = 0 (00)

pppppp = 119 ($77)

prm#	b7	b6	b5	b4	b3	b2	b1	b0	Data	Note
0	0	— — — — —MASTER TUNE — — — — —						0-127	(center =64)
1	0	0	0	— — — —TRANSPOSE — — —				0-48	(center =24)
2	0	0	0	— — — —DEV.NO. — — —				0-16	*note1
3	0	0	0	0	0	0	0	MLOCK	0-1	memory protect
4	0	— — — — — reserved— — — — —								
5	0	— — — — — reserved— — — — —								
6	0	— — — — — reserved— — — — —								
7	0	— — — — — reserved— — — — —								
8	0	— — — — — reserved— — — — —								
9	0	— — — — — reserved— — — — —								
10	0	— — — — — reserved— — — — —								
11	0	— — — — — reserved— — — — —								
12	0	— — — — — reserved— — — — —								
13	0	— — — — — reserved— — — — —								
14	0	— — — — — reserved— — — — —								
15	0	— — — — — reserved— — — — —								

note1) Device number   0(off),1..16,7(all)

< CHART 10 >

* * *Program change table data format and corresponding parameter number * * *

data size = 256 bytes

gggg = 4 (00100)

hh = 0 (00)

pppppp = 127 ($7F)

NO.	prm#	b7	b6	b5	b4	b3	b2	b1	b0	Data	Note
0	0	0	0	0	0	0	0	0	MSB	0	PGM1
1		0	— — —NUMBER(without MSB) — — — — —						0-127	
2	1										PGM2
.	.										.
.	.										.
254	127										PGM128
255											

note) NUMBER

     0 ~ 31 : I01 ~ I32

     31 ~ 63 : A01 ~ A32

     64 ~ 95 : B01 ~ B32

     96 ~127 : C01 ~ C32

     128 ~ : not assigned

< CHART 11 >

* * *Switch remote parameter number list * * *

gggg = 4 (00100)

hh = 0 (00)

ppppppp = 119 ($77)

prm#	b7	b6	b5	b4	b3	b2	b1	b0	Data	Note
64	0	— — — — — [PLAY SWITCH] — — — — —						0-127	0-63:off,64-127:on
65	0	— — — — — [UTIL SWITCH] — — — — —						0-127	0-63:off,64-127:on
66	0	— — — — — [EDIT SWITCH] — — — — —						0-127	0-63:off,64-127:on
67	0	— — — — — [BANK SWITCH] — — — — —						0-127	0-63:off,64-127:on
68	0	— — — — — [DEC SWITCH] — — — — —						0-127	0-63:off,64-127:on
69	0	— — — — — [INC SWITCH] — — — — —						0-127	0-63:off,64-127:on
70	0	— — — — — [EFFECT SWITCH] — — — — —						0-127	0-63:off,64-127:on
71	0	— — — — — [EFL- SWITCH] — — — — —						0-127	0-63:off,64-127:on
72	0	— — — — — [EFL+ SWITCH] — — — — —						0-127	0-63:off,64-127:on
73	0	— — — — — [STORE SWITCH] — — — — —						0-127	0-63:off,64-127:on
74	0	— — — — — [POWER SWITCH] — — — — —						0-127	0-63:off,64-127:on

```
 YAMAHA  [ Wind Tone Generator ]                    Date : 10/3, 1988
        Model   WT11     MIDI Implementation Chart  Version : 1.0
```

Function ...	Transmitted	Recognized	Remarks
:Basic Default	x	1 - 16	memorized
:Channel Changed	x	1 - 16	
:Mode Default	x	1, 2, 3, 4	memorized
: Messages	x	x	
: Altered	**************	x	
:Note	x	0 - 127	
:Number : True voice	**************	12 - 107	
:Velocity Note ON	x	o v=1-127	
: Note OFF	x	x	
:After Key's	x	x	
:Touch Ch's	x	o	
:Pitch Bender	x	o 0-12 semi *1:7 bit resolution	
: 1	x	o	:Modulation wheel
: 2	x	o	*2:Breath control
: 4	x	o	:Foot control
: Control			
: 7	x	o	:Volume
: Change			
: 10	x	o	:Pan(L,L+R,R)
: 64	x	o	:Sustain
: 65	x	o	:Portamento
:Prog	x	o 0 - 127	:Assignable
:Change : True #	**************	0 - 127	:(Channel=1 only)
:System Exclusive	o	o	:Voice parameters
:System : Song Pos	x	x	
: : Song Sel	x	x	
:Common : Tune	x	x	
:System :Clock	x	x	
:Real Time :Commands	x	x	
:Aux :Local ON/OFF	x	x	
: :All Notes OFF	x	o (123)	
:Mes- :Active Sense	x	o	
:sages :Reset	x	x	

```
:Notes: *1 = recognized as breath control(LFO) if LFO control is lip.
:       *2 = no effect on LFO if LFO control is off or lip.
```

```
Mode 1 : OMNI ON,  POLY     Mode 2 : OMNI ON,  MONO      o : Yes
Mode 3 : OMNI OFF, POLY     Mode 4 : OMNI OFF, MONO      x : No
```

YAMAHA