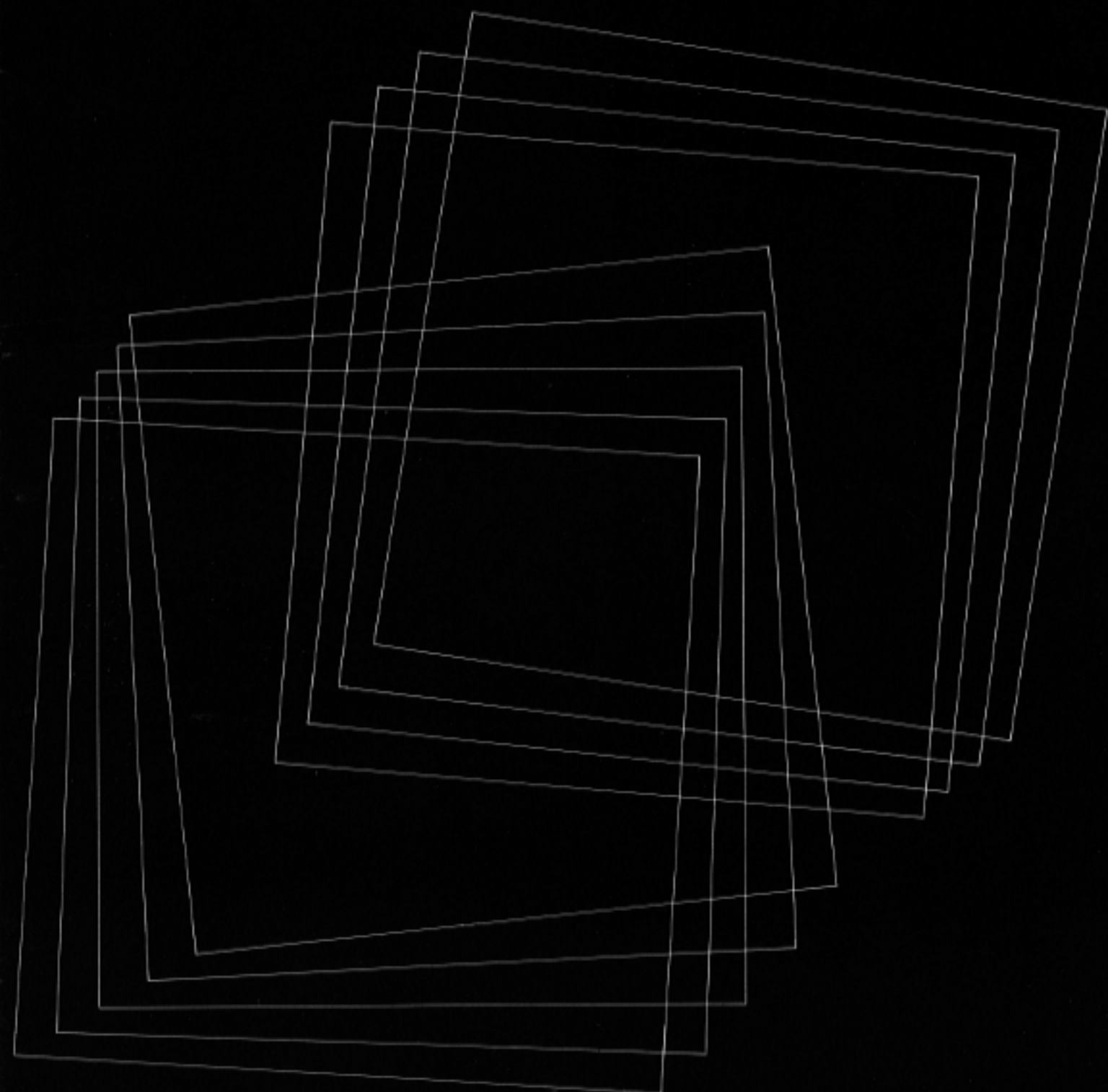


YAMAHA COMBO ENSEMBLE

CE20

OWNER'S MANUAL



Congratulations

Congratulations on becoming an owner of the Yamaha CE20 Combo Ensemble. Despite its light weight and compact size, the CE20 offers remarkably natural, "acoustic" sound through the use of advanced FM tone generator technology. The CE20 is ideal not only for the professional keyboard player, but also for use at home as the family keyboard.

Please be sure to read this manual thoroughly in order to gain maximum performance and enjoyment from your CE20 Combo Ensemble.

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Precautions

LOCATION

Avoid placing your CE20 Combo Ensemble in direct sunlight or close to a source of heat. It is also important to avoid locations in which the instrument is likely to be subjected to vibration, excessive dust, cold or moisture.

Be sure to unplug your CE20 Combo Ensemble if you will not be using it for an extended period of time.

HANDLING

Avoid applying excessive force to the instrument's knobs and switches.

POWER CORD

Always grip the power plug directly when unplugging. Removing the power plug from the wall socket by pulling on the power cord can result in damage to or shorting of the power cord.

Be sure to unplug your CE20 Combo Ensemble if you will not be using it for an extended period of time.

RELOCATION

When moving the CE20 Combo Ensemble once it has been set up, be sure to disconnect all cords that connect the instrument to other equipment. This will help to prevent accidental damage to or shorting of interconnection cables.

CONNECTION

Follow the "CONNECTION" instructions given in this manual carefully when setting up your CE20 Combo Ensemble. Connection errors can lead to serious damage to the instrument, amplifier and speakers.

CLEANING

Do not use solvents such as benzine or thinner to clean your CE20 Combo Ensemble, as these may cause discoloration or staining of the instrument's exterior. Use a soft, dry cloth.

SAVE THIS MANUAL

After studying this manual thoroughly, it should be stored in a safe place for future reference.

LIGHTNING

In the event of an electrical storm, the instrument's power cord should be unplugged to eliminate the possibility of serious damage.

OTHER APPLIANCES

Use your CE20 Combo Ensemble where its digital circuitry cannot be influenced by electromagnetic radiation from appliances such as televisions, radios, etc.



Connections

The CE20 Combo Ensemble does not have an internal power amplifier. An external amplifier/Speaker system must be used.

*No external amplifier is required for headphone operation.

Power Cord

Insert the CE20 power plug into the most convenient AC wall outlet.

* VOLTAGE SELECTOR (GENERAL MODEL ONLY)

- If your CE20 has a voltage selector on the bottom cover, check that it is set to your local voltage before plug in. If not properly set, turn the selector to the correct voltage indication.

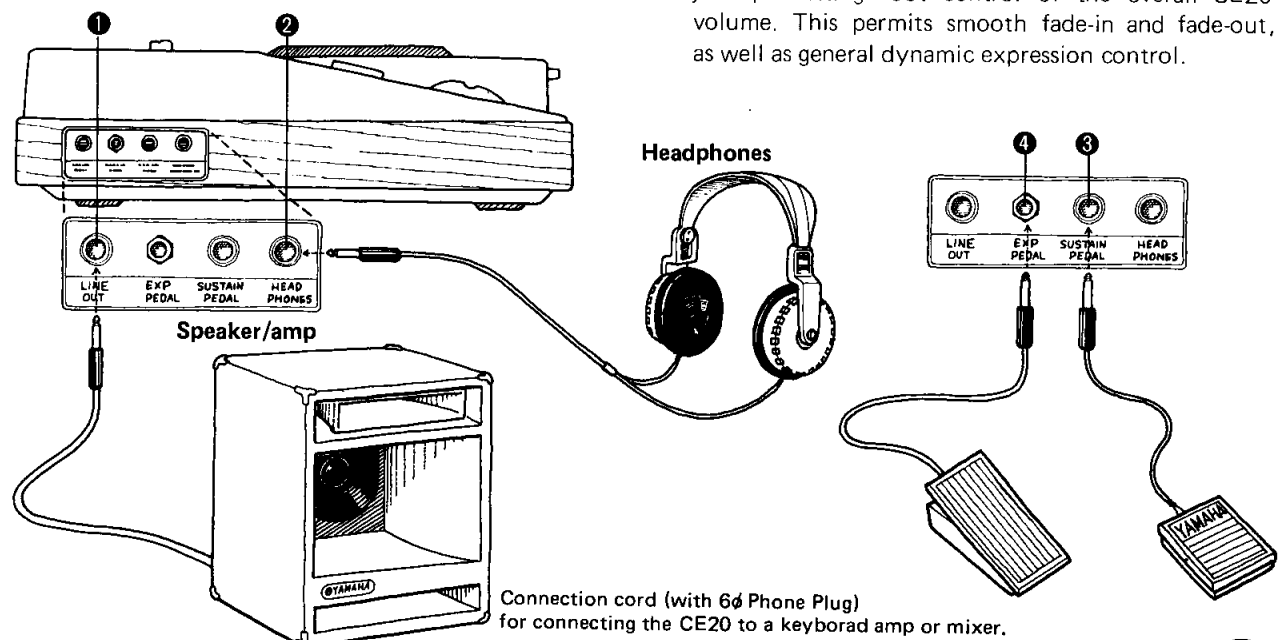
External Amplifier/Speaker Systems

The CE20 can be connected to an external power amplifier and speaker system, an integrated keyboard amp/spaker, a mixer/PA system, or a stereo amplifier.

- * Do not connect the CE20 to the microphone or phone inputs of a stereo amplifier or mixer.

① LINE OUT

Connection to an external amplifier is accomplished via the leftmost (LINE OUT) jack.



② HEADPHONES

A pair of headphones can be connected directly to this jack. Special monaural keyboard headphones or standard stereo headphones can be used.

Control Pedal Connection Jacks

Expression and sustain control foot pedals (supplied) can be connected to these terminals for convenient foot control of volume and the sustain on/off function.

③ SUSTAIN PEDAL

The supplied sustain pedal is connected to this jack permitting foot on/off control of the CE20 sustain function.

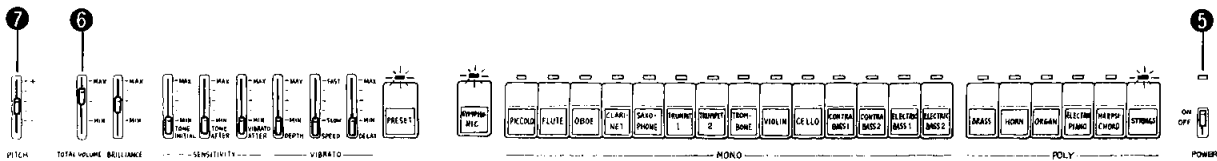
- If two keys are pressed simultaneously when using one of the CE20's monophonic voices, the sustain effect may be cut off.

④ EXP PEDAL

The supplied expression pedal is connected to this jack permitting foot control of the overall CE20 volume. This permits smooth fade-in and fade-out, as well as general dynamic expression control.

Basic Operations

After making all required connections, double-check to make sure that there are no connection errors. If everything is OK, turn on the POWER switch try out your CE20.



5 POWER

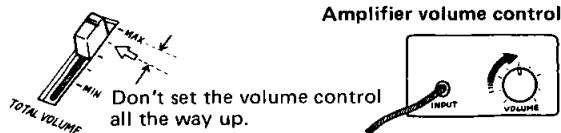
The POWER switch is located to the far right of the control panel. When you turn the power switch on, the three indicators shown in the illustration will light. These show that the STRINGS source is selected, the SYNPHONIC effect is on and the vibrato effect and touch response are set to their PRESET values.

Repeated on/off switching of the POWER switch can cause a loss of sound output.

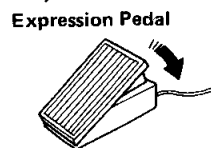
6 TOTAL VOLUME

Adjusts the overall volume of the CE20 sound.

- After the power switch has been turned on, raise the TOTAL VOLUME control and you should be able to play the CE20.
- Set the external amplifier/speaker volume control so that the most comfortable overall volume is obtained when the CE20 TOTAL VOLUME control is set to about "8".



- If the expression pedal is connected to its side-panel jack, you can use this pedal to control overall volume. If the TOTAL VOLUME control is at its minimum setting, no sound will be heard even if the expression pedal is pressed. Conversely, if the expression pedal is set its minimum volume position, no sound will be heard even if the TOTAL VOLUME control is raised.



7 PITCH

This is the CE20 "tuning" control. Moving this lever towards the "+" end of the scale raises the overall pitch, while moving towards the "-" end of the scale lowers overall pitch. Control range is from 435 to 447 Hz (A3).

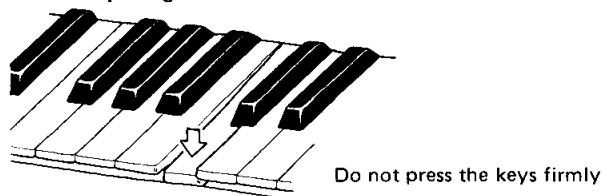
Keyboard

The CE20 keyboard covers 4 octaves with 49 keys. The overall range of the keyboard depends on the voice selected.

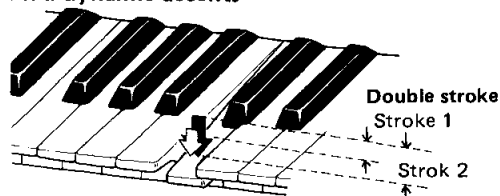
Double-Stroke Key

The CE20 keyboard action has two stages. If a key is pressed normally, it will stop at the first stage. If the same key is then pressed even further you will initiate the second stage. This double-stroke key feature gives the CE20 its unique touch response capability. Please refer to the Touch Response section of this manual for further details.

For soft passages

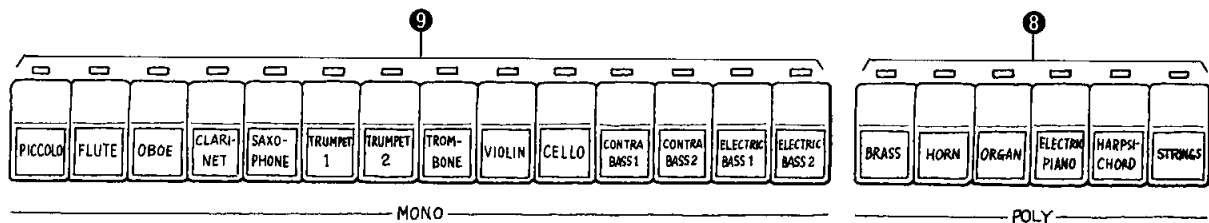


Add dynamic accents



Sound Variation

The CE20 Combo Ensemble offers 6 polyphonic voices that permit simultaneous output of up to 8 notes, and 14 high-note priority monophonic voices—any of which can be selected at the touch of a button. Thanks to highly advanced FM voice generation technology, all of the CE20's voices are exceptionally real and natural.



8 POLY (Polyphonic Voice Selectors)

This section provides polyphonic STRINGS, HARPSICORD, ELECTRIC PIANO, ORGAN, HORN and BRASS voices.

The STRINGS voice is automatically selected when the power switch is initially turned on.

- When the polyphonic STRINGS or ORGAN voices are selected, the SYMPHONIC effect is automatically activated. The SYMPHONIC effect can then be turned off by pressing the SYMPHONIC button.
- SYMPHONIC can be applied to the other 4 polyphonic voices by pressing the SYMPHONIC button ON.

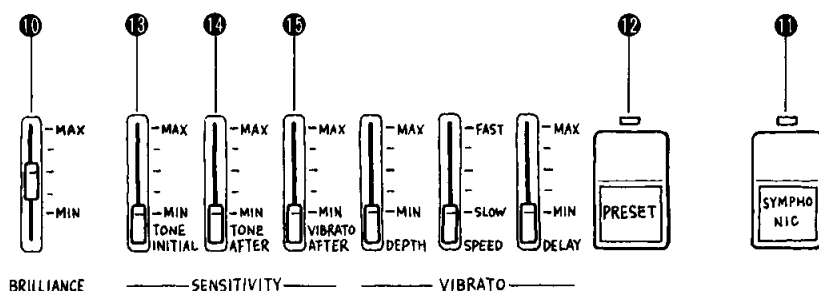
9 MONO (Monophonic Voice Selectors)

This section permits selection of any of 14 monophonic simulated string, brass and woodwind instrument voices.

- With the monophonic voices, if more than one key is pressed at one time the highest note pressed will have priority.
- The SYMPHONIC effect can be applied to any of the monophonic voices by pressing the SYMPHONIC button ON.
- With the monophonic voices, the sustain effect will be defeated if more than one key is pressed at a time.

Touch Response

The CE20 Combo Ensemble offers an extensive array of effects that you can apply to the 20 voices provided to create your own sound.



10 BRILLIANCE

This control adjusts the overall tonality of all the CE20 voices. Setting this control towards the "MAX" end of the scale produces a brighter, crisper sound quality, while setting towards the "MIN" end of the scale creates a softer, rounder tonality.

11 SYMPHONIC

This effect creates a "thick," multi-instrument sound.

- THE SYMPHONIC effect is automatically turned on whenever the polyphonic STRING or ORGAN voices are selected.

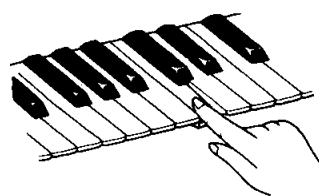
have been preset into the CE20 by Yamaha music specialists. These parameters are activated by pressing the PRESET button, so you don't have to set the six touch response and vibrato parameter levers yourself to take advantage of their extensive expressive capabilities.

- The PRESET mode is automatically activated when the instrument is initially turned on.
- The six touch response (SENSITIVITY) and vibrato controls have no effect when the PRESET button is ON. If you wish to set up your own touch response and vibrato parameters, the PRESET button must be turned OFF.

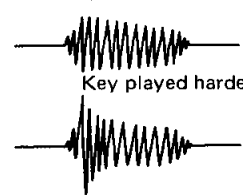
Vibrato & Touch Response

One of the most advanced features of the CE20 is its remarkable touch response capability. This function permits control over tonality, volume and vibrato depth according to the pressure applied to the instrument's keys. This means that the CE20 provides the same type of dynamic expression capability as an acoustic piano, and greater realism can be added to wind and string instrument sounds by appropriate variation of vibrato depth.

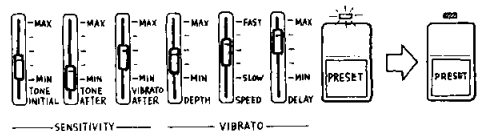
Touch Control



Key played normally



TONE INITIAL effect

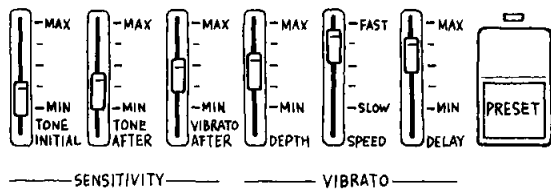


When the PRESET button is ON, these levers have no effect

PRESET must be OFF in order to use the SENSITIVITY controls

Preset Parameters

When the PRESET button is turned ON, the SENSITIVITY and VIBRATO parameters are set to the following relative values for each voice.



Voice	TONE INITIAL	TONE AFTER	VIBRATO AFTER	VIBRATO DEPTH	VIBRATO SPEED	VIBRATO DELAY
PICCOLO	9	7	0	0	0	0
FLUTE	9	7	3	1	2	0
OBOE	9	9	0	1	2	3
CLARINET	6	5	0	1	2	4
SAXOPHONE	6	9	1	0	0	0
TRUMPET 1	9	7	0	6	1	4
TRUMPET 2	9	7	0	6	1	4
TROMBONE	10	7	0	4	0	3
VIOLIN	9	9	4	0	2	0
CELLO	6	5	4	0	1	0
CONTRA BASS 1	9	5	1	0	0	0
CONTRA BASS 2	10	0	0	0	0	0
ELECTRIC BASS 1	10	0	0	0	0	0
ELECTRIC BASS 2	6	0	0	0	0	0
BRASS	4	7	0	0	0	0
HORN	9	7	0	0	0	0
ORGAN	6	0	0	0	0	0
ELECTRIC PIANO	10	9	0	0	0	0
HARPSI CHORD	4	0	0	0	0	0
STRINGS	6	7	0	0	0	0

* The number "10" indicates the highest control setting, while a "0" indicates the lowest control setting.

SENSITIVITY

These controls adjust the sensitivity of the touch response function. Setting these controls towards the "Max" end of their scales increases sensitivity resulting in a greater change in sound with lighter pressure.

13 TONE INITIAL

Adjusts the initial note attack. If this lever is moved towards the "MAX" end of the scale, a lighter key stroke produces a less prominent note attack while a heavier key stroke produces a stronger note attack.

14 TONE AFTER

Adjusts the sound variation produced by key pressure variation after initial attack. If this lever is moved towards the "MAX" end of the scale, varying the pressure applied to a held key produces a larger variation in the sound.

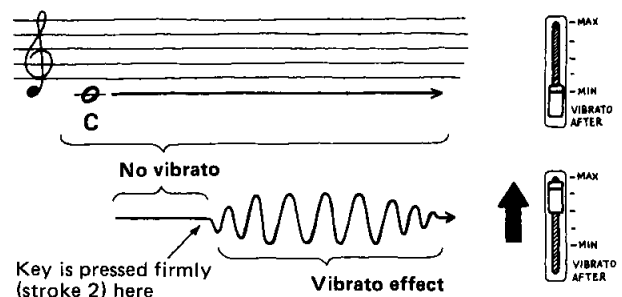
- With voices that decay after initial attack—such as electric piano—the setting of the TONE AFTER lever will have little effect.

15 VIBRATO AFTER

Adjusts the amount of variation in vibrato depth caused by varying key pressure. The speed of the vibrato effect is determined by the VIBRATO SPEED lever.

If this control is set towards the "MAX" end of the scale, increasing key pressure results in a corresponding increase in vibrato depth.

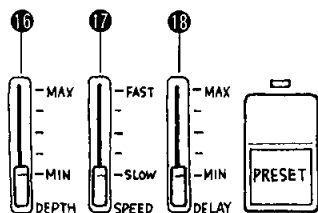
VIBRATO AFTER effect



Modulation

VIBRATO

The vibrato effect can be applied according to pressure applied to the CE20's keys. Vibrato can also be used independently of the touch response feature using the following 3 controls.



16 DEPTH

Adjusts the depth of the vibrato effect. Setting this control towards the "MAX" end of the scale produces a deeper vibrato effect, while setting to the "MIN" end of the scale produces a shallower vibrato effect. Set all the way to "MIN" cancels the vibrato effect.

17 SPEED

Adjusts the speed of the vibrato effect. Setting towards the "FAST" end of the scale produces a faster vibrato effect. The speed control range is from approximately 4 to 10 Hz.

- The touch response vibrato speed is also adjusted using this lever.

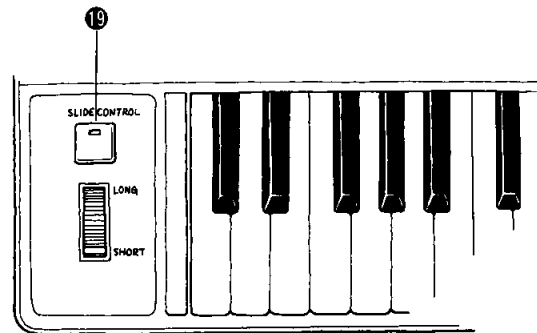
18 DELAY

Adjusts the length of time it takes for the vibrato effect to be applied after a key has been pressed. This effect — known as delayed vibrato — creates an exceptionally realistic vibrato sound.

The further this control is set towards the "MAX" end of the scale, the longer it takes for the vibrato effect to be applied.

SLIDE CONTROL

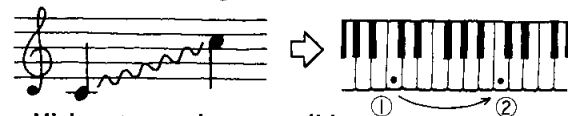
This effect functions only with the 14 monophonic voices.



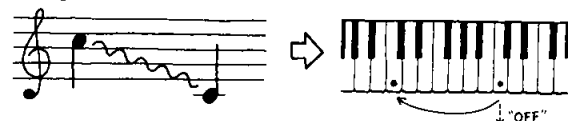
19 SLIDE CONTROL

If the SLIDE CONTROL button is pressed ON (indicator lights), moving the slide wheel towards "LONG" creates a smooth pitch slide between played consecutively on the keyboard. Pressing a high note on the keyboard before releasing a low note causes a smooth slide from the low note up to the high note. If the low note is held and the high note is released the high note will slide smoothly down to the low note. The further the slide wheel is set towards "LONG," the longer the slide.

● Low note — high note slide



● High note — low note slide



Play a high note while holding a high note, then release the high note

Specifications

Keyboard	49 keys, C2 ~ C6
Simultaneous Output Notes	Polyphonic : 8 Voices (first notes played) Monophonic : 1 Voice (high-note priority)
Voice Selector	
Monophonic	PICCOLO, FLUTE, OBOE, CLARINET, SAXOPHONE, TRUMPET 1, TRUMPET 2, TROMBONE, VIOLIN, CELLO, CONTRA BASS 1, CONTRA BASS 2, ELECTRIC BASS 1, ELECTRIC BASS 2
Polyphonic	BRASS, HORN, ORGAN, ELECTRIC PIANO, HARPSICHORD, STRINGS
Touch Control	PRESET switch SENSITIVITY: TONE INITIAL lever TONE AFTER lever VIBRATO AFTER lever VIBRATO : DEPTH lever SPEED lever 4 ~ 10Hz DELAY lever
Controls	SYMPHONIC switch BRILLIANCE lever PITCH control 436 ~ 447Hz (A3) SLIDE CONTROL : switch, wheel (functions with monophonic voices)
Jacks	LINE OUT : 600 Ω , unbalanced HEADPHONE : 8 Ω , MONO(stereo headphones can be used) EXP. PEDAL: Expression Pedal EP-1 Connectable SUSTAIN PEDAL: Sustain Pedal FC-5 Connectable
Others	
Power Source	110, 130, 220 or 240V selectable, 50/60Hz
Power Consumption	35W
Dimension (W x H x D)	841 x 86 x 294 mm
Weight	9 kg
Standard Accessories	Expression Pedal EP-1, Sustain Pedal FC-5, Music Stand

*Specifications are subject to change without notice.

Service

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. THERE ARE NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO A QUALIFIED SERVICE PERSONNEL.

SERVICE

The CE20 is supported by Yamaha's worldwide network of qualified dealer service personnel. In the event of a problem, contact your nearest Yamaha dealer or authorized service center.

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