

YAMAHA COMBO ORGAN YC-20

OWNER'S MANUAL



SINCE



1887

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INTRODUCTION

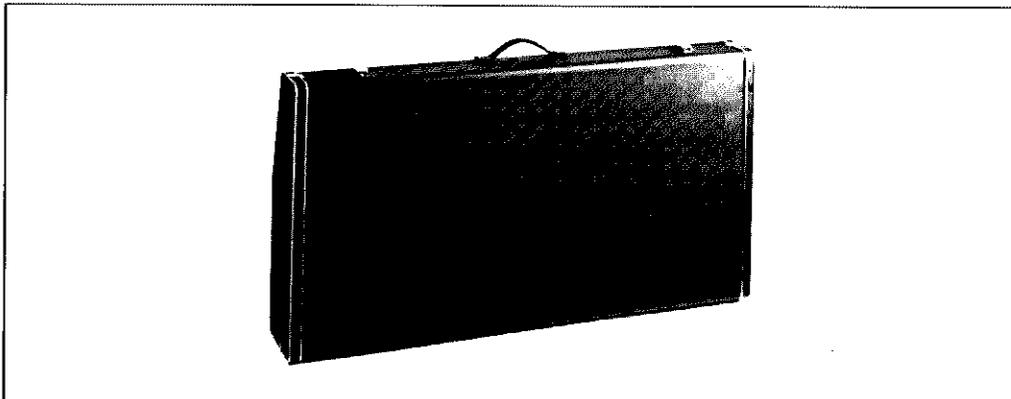
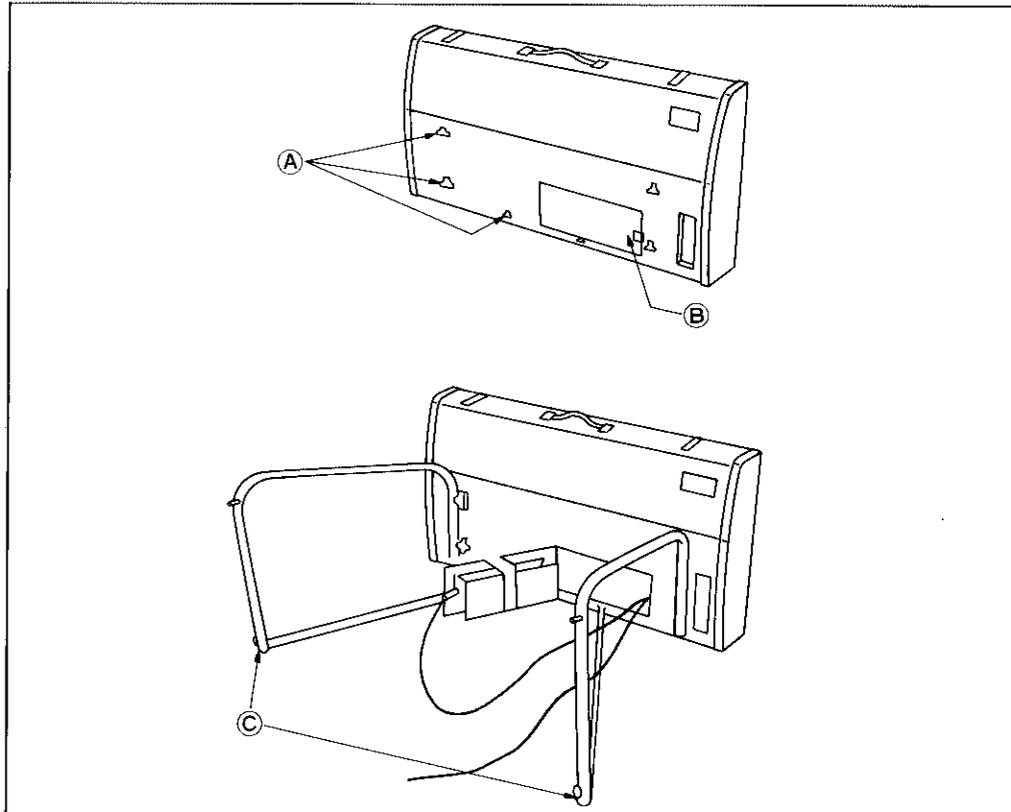
Thank you for selecting the Yamaha YC-20 for your combo organ! We hope you will read this manual carefully and will experiment with the organ's many special features, in order that a more complete understanding of its versatility will be yours.

The Yamaha YC-20 Combo Organ includes such features as percussive effect, continuously variable tone levers, a manual-bass control for independent bass section, and bright effect, allowing you to select exactly the tonal rendition which you desire. And in addition to ordinary variable-speed vibrato, this model has the phenomenally popular 'Touch Vibrato', an exclusive Yamaha feature previously available only on the costliest console organs. Another grand feature is a choice of two channels on the manual that can be mixed to your taste. The two channel feature can be used as a preset by manipulating the balance control from one extreme to the other, however it is much more versatile than a preset, as the two channels can be mixed in any degree. The result is a range of tonal mixtures sufficient to please the most demanding musician without the vast number of controls needed by other makes that sometimes discourages the coming musician.

The above mentioned controls and features will be explained in more detail in the following pages so that you again and please, read on.

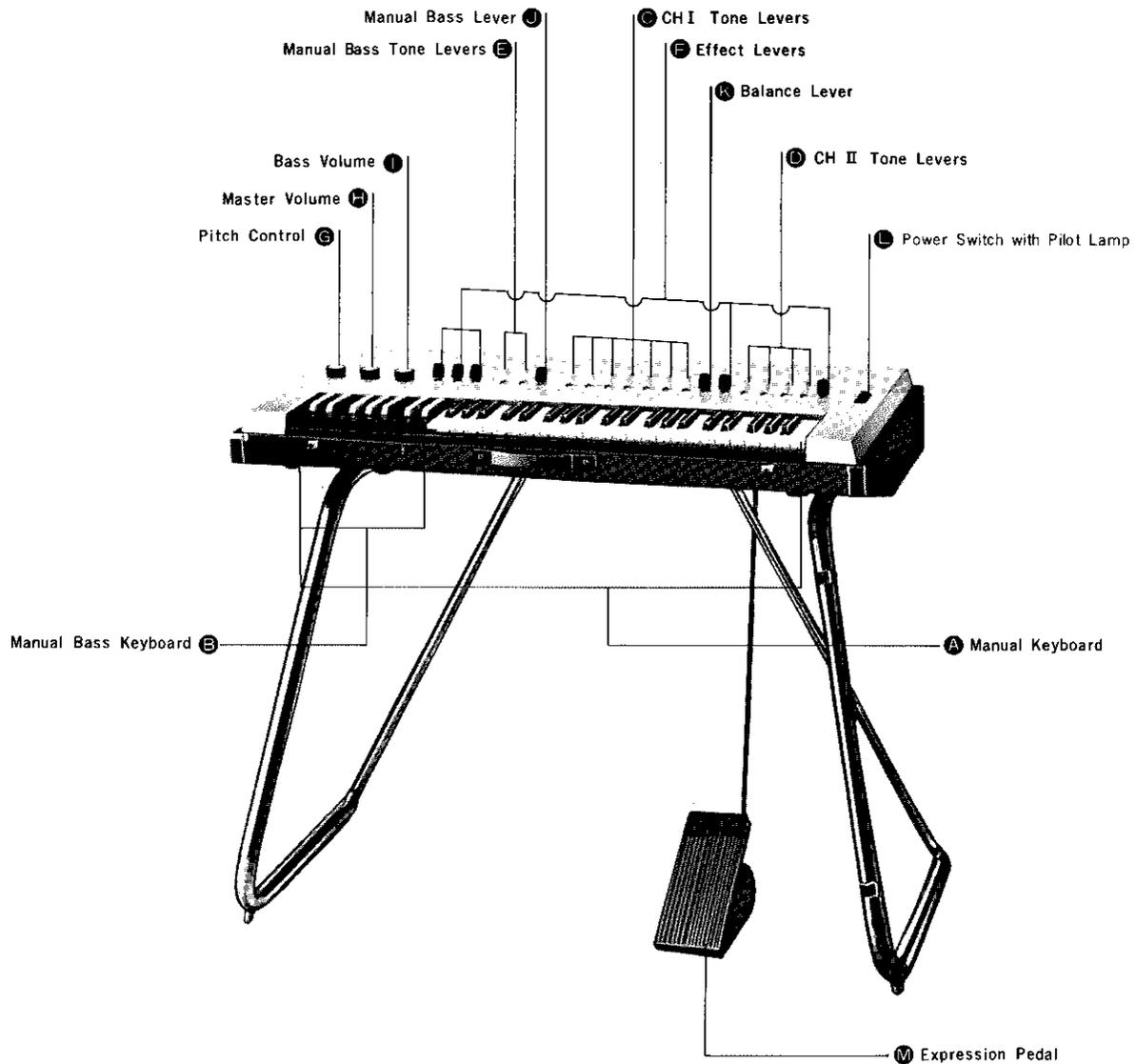
ASSEMBLY

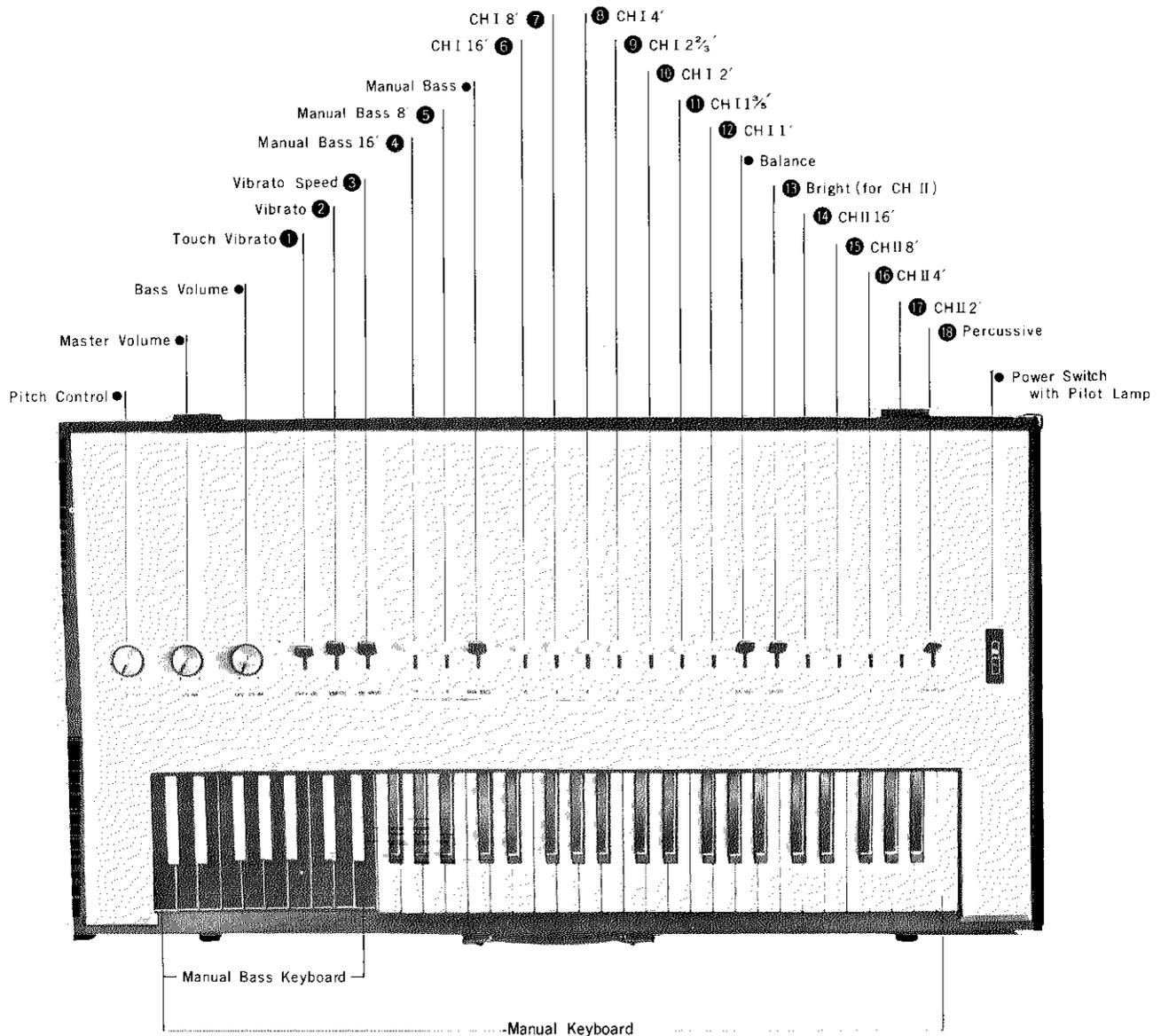
1. After loosening six screws (A) about half way, install the legs (which are in a separate vinyl carrying bag) as shown in the figure and tighten the screws.
2. Open the cover by releasing catch (B). The expression pedal and power supply cord can then be removed.
3. Check the input cord for loose or intermittent connections.
4. When standing the unit upright, balance it by adjusting balancing screw (C).



Completely disassembled, parts stored, and cover in place, your YC-20 Combo Organ becomes a convenient, portable unit as shown.

PARTS' IDENTIFICATION





HOW TO USE YOUR YC-20

1. Keyboards

The keyboards of the YC-20 Combo Organ are as follows:

Manual **A** 61 keys C~c₄ (5 octaves)

Manual Bass **B** 17 keys C~e (1½ octaves)

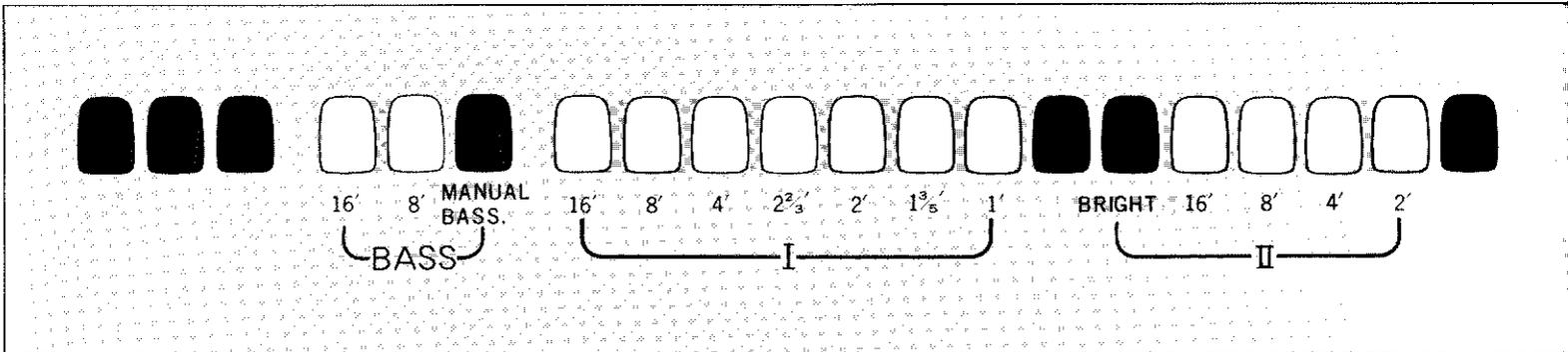
The Manual Keyboard has CH.I and CH.II Tone Levers **C**, **D** for tone color selection.

The 17 bass keys, identified by reverse key colors, become the manual bass section when the Manual Bass Lever **B** is used. At that time, tone color can be selected by the Manual Bass Tone Levers **E**.

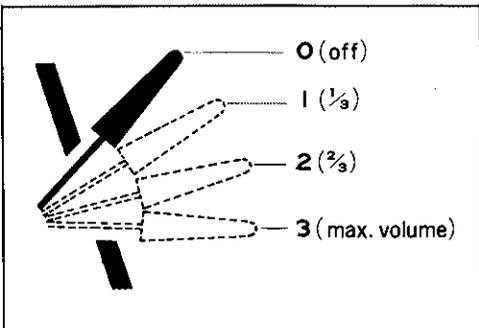
2. Tone Levers

On the panel of the Combo Organ, white tone levers are divided into three groups.

- (1) Channel I Tone Levers **C** 7 voices
- (2) Channel II Tone Levers **D** 4 voices
- (3) Manual Bass Tone Levers **E** 2 voices



Yamaha's Exclusive Tone Lever System



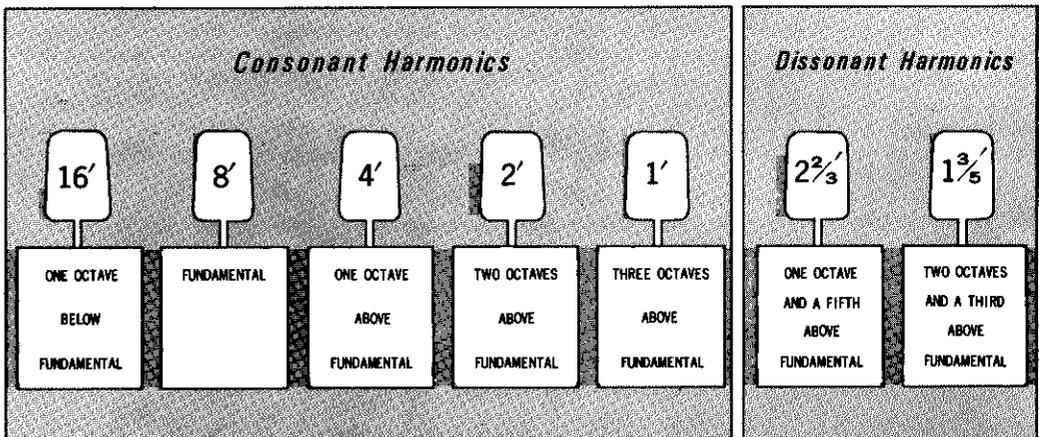
Each tone lever serves to impart a distinctive tonal quality to each note played. However instead of the usual simple on-off action, the Yamaha tone lever offers the unique advantage of continuously variable control. This means that even the finest shadings of volume control can be obtained from each and every lever, an amazing advantage in breadth of expression and ease of playing. For quick changes, another aid to precision is provided: As the tone lever is depressed, two 'click-stop' positions are felt, where the lever catches slightly. These indicate $\frac{1}{3}$ and $\frac{2}{3}$ of the maximum setting attained when

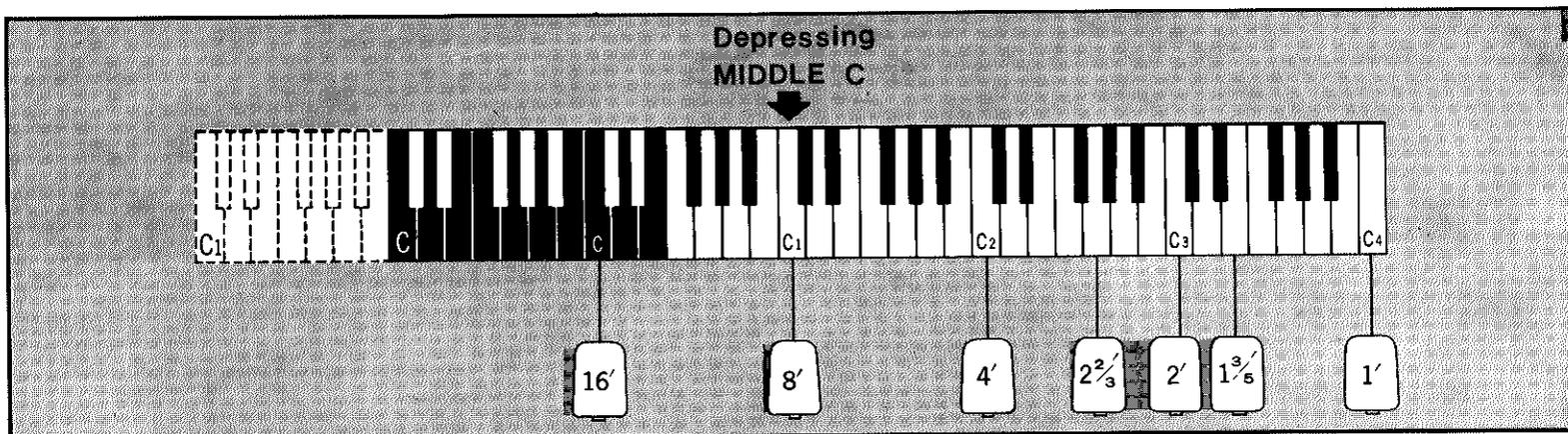
the lever is fully depressed. This exclusive Yamaha tone lever system allows the combination of these tones giving a virtually limitless range of tone, with a full spectrum of rich harmonics.

The Combo Organ YC-20 is thus able to satisfy even the most demanding professional organist. The most important point in developing good tone registration is the early mastery of the tone levers. Make it a practice to listen to good music and build your taste for sounds so you can use the tone levers duplicate them. Experiment in the creation of tone colors to suit your own taste.

Harmonics

Tone levers are of several varieties: 8', 16', 2 $\frac{2}{3}$ ', etc., each variety having a different pitch. The 8' tone levers are 'fundamentals', that is, they have the same pitch as the written note. The others, called 'harmonics' are pitched a certain interval above or below the fundamental. Harmonics can be further subdivided into consonants, at octave intervals from the fundamental and dissonants, separated by a third or a fifth from the fundamental.





As an example of what this means when you play, let us see which note can be produced by using one of the tone levers and pressing the key of middle C (c_1). Pressing middle C and using the 4' tone lever, for example, will result in the same note as would be produced by pressing c_2 (using the 8' tone lever, i.e. its Fundamental.)

It can thus be seen that the use of these harmonic levers actually results in increasing the YC-20 Combo Organ's compass above and below that which is indicated by the keys alone. The use of the 16' lever, for example, will extend the manuals down a further octave to C_1 . (See dotted line above). Similarly the 1' lever raises the tone three octaves but, in actual practice, the highest note on the YC-20 is b_5 . Thus when a scale is continued upward beyond b_2 , the previous octave is repeated. This is no cause for alarm. It is inherent in the design of the YC-20 and will cause you no inconvenience at all when playing.

The major use of the harmonic levers, however is to increase the richness of tone—they are the spices that, when applied to the fundamental, will give big full sound to the performance.

Let your ears be your guide to the creation of good music, try not to over-work the full effect as this will weaken its effectiveness. Change your registration as often as the mood of the music requires.

CH. I C (16' 6 , 8' 7 , 4' 8 , $2\frac{2}{3}$ ' 9 , 2' 10 , $1\frac{3}{5}$ ' 11 , 1' 12)

If the Balance Lever K is set to the "0" position (far side), the tone color of the Manual Keyboard can be selected by a combination of the CH.I tone levers.

The CH.I tone color is the basic sound of the Combo Organ.

CH. II D (16' 14 , 8' 15 , 4' 16 , 2' 17)

If the Balance Lever K is set to the "3" position (near side), the tone color of the Manual Keyboard can be selected by a combination of the CH.II tone levers.

The tone color of CH.II can be widely changed by operation of the Bright Lever B . If the Bright Lever is set at "0", a flute-family tone color (a tone color with less overtone) can be produced. If set to "3", a string-family tone color (with rich overtones) can be produced.

CH. I/CH. II

When the Balance Lever K is set to the middle position, tone color of the Manual Keyboard can be selected by a combination of the CH.I and CH.II tone levers C D .

Volume (Master Volume) H

Although this control actually belongs to a group of OTHER CONTROLS (page 10), it will be described here because it has a relationship with the Tone Levers. The tones selected with the maximum volume of the tone levers of CH. I, CH.II and Manual Bass are regulated with this control.

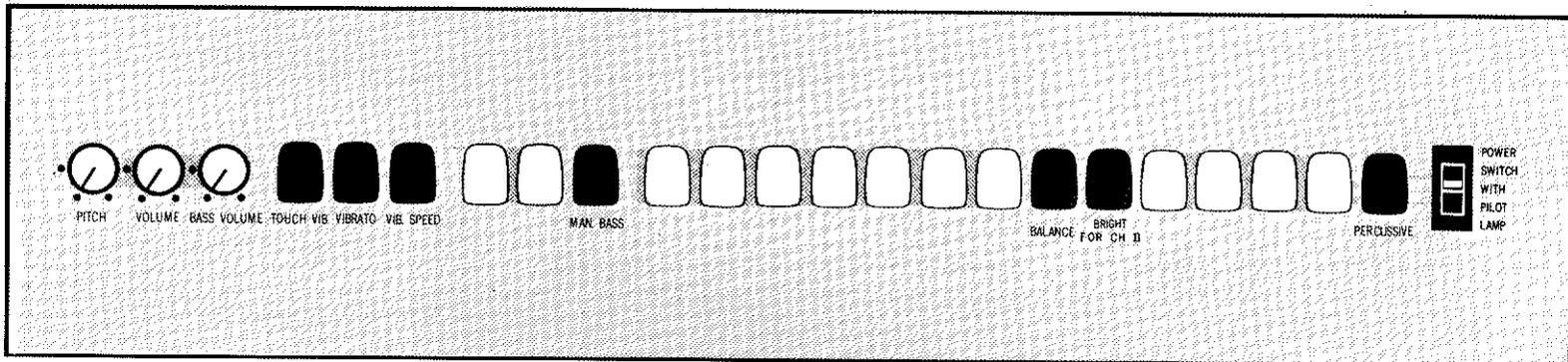
Manual Bass E (16' 4 , 8' 5)

If the Manual Bass lever E is operated (set to near side), the 17 bass keys identified by reverse key colors, are changed to produce bass tones. Tone color is selected by a combination of the 16' and 8' Manual Bass Tone Levers.

Bass Volume I

This also belongs to a group of OTHER CONTROLS (described later). Tone volume of Manual Bass can be regulated by the Bass Volume control, indirectly controlled by the Master Volume.

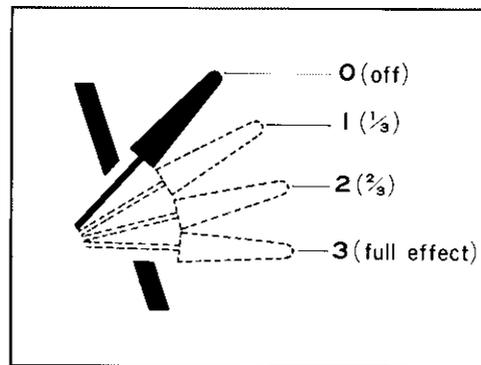
3. Effect Levers



The effect levers ① of the YC-20 provide a wide range of tonal effects which add to the variety of possible combinations. These levers have the same operation as the tone levers and allow the organist to vary the depth or speed of their effects according to their stop positions as illustrated.

Touch Vibrato ①

In the YC-20, Yamaha offers what no one else can—true vibrato that will thrill you with its sheer magic; will enthrall listeners with its vibrant life. No other electronic organ at any price can match this natural tonal beauty, because no other vibrato effect is produced by the lateral vibration of the hand, just as in the violin, cello or clarinet. This is the 'Touch Vibrato', the most revolutionary electronic triumph in organ history. Now are opened to you almost endless horizons of expression, all achieved with



brehtaking authenticity.

If the Vibrato lever ② is turned on after the Touch Vibrato lever, the latter will be automatically cancelled.

Vibrato ②

The use of vibrato adds a romantic quality to the tone and makes relatively simple passages seem brisk and lively. The depth of the vibrato is controlled by this lever.

Vibrato Speed ③

Used in conjunction with the Vibrato lever, it controls the oscillating speed of the Vibrato, which increases as it is pulled down.

Bright (for CH. II) ④

The explanation of this effect is given under CH. II Tone Levers, page 8.

Percussive ⑤

The Percussive lever lends a sharp, vital quality to your playing. Percussive makes only the sound of the first key depressed. If that key is continuously depressed, any subsequent keys which are depressed will produce no sound. Therefore, the first key must first be released before depressing a second key.



4. Other Controls

Pitch Control Ⓒ

As shown in the figure, it is tuned at A = 440 Hz, the standard pitch. By turning the Pitch control, a range of from A = 439—455 Hz can be obtained. Thus you can tune to match the instruments with you.



Volume (Master Volume) Ⓓ

By using this control, the tone of the Manual and Bass Keyboard, as selected by CH.I and CH.II Tone Levers, can be regulated. (See p. 8)

Bass Volume Ⓔ

Tone volume of Manual Bass Keyboard can be adjusted by this control, indirectly controlled by the Master Volume (See p. 8).

Manual Bass Ⓙ

By using this lever, the 17 bass keys, identified by reverse key colors, become the manual bass section. At that time, the tone color can be selected by the Manual Bass Tone Levers. (See p. 8)

Balance Ⓚ

Explanation of this lever is given under Tone Levers, page 8.

Power Switch with Pilot Lamp Ⓛ

Pushing the Power Switch once turns it on; pushing it again turns it off; pushing it once more turns it on again. The Pilot Lamp lights to indicate the switch is on.

Expression Pedal Ⓜ

Expressive shading within each piece and the accenting of individual notes can be achieved with this pedal, within the overall range set by the Master Volume and Bass Volume controls.

CARE OF YOUR YAMAHA COMBO ORGAN

In general, you should treat your Combo Organ with the same care you would give any fine musical instrument. However the following points are suggested to assure optimum enjoyment.

1. When you have finished playing, be sure to turn off the power switch.
is on. Pilot Lamp will light to indicate this.
2. In order to clean manual keys, tabs, etc., use a damp cloth. Never apply household cleaners or solvents such as alcohol, as they may damage the plastic materials used.
3. If your Yamaha Combo Organ becomes inoperative or does not function properly, first follow this simple step-by-step check list before calling for service.
 - (1) Make certain that the line cord is plugged into a live AC outlet. Make sure the wall receptacle is not faulty. (Hum from the speaker may be reduced by reversing the line cord plug in the wall outlet.)
 - (2) Be sure the "ON-OFF" Power Switch
 - (3) Check the input cord for loose connections or shorts.
 - (4) Make sure the master volume control is turned up at least part way and that the swell shoe is firmly attached and depressed. At least one tone volume lever must be on, and the balance lever set to favor that section of voices.
4. If, after checking the above points, the instrument still seems to be out of order, contact your Yamaha Service Agent. The Yamaha Combo Organ uses IC's and other solid state devices so, do not attempt to touch or otherwise interfere with the circuits or internal elements of this instrument.

CAUTION VOLTAGE SELECTOR

Before you plug in the AC supply, please check that the voltage selector is set to your local current. If not properly set, pull out the socket and reinsert it to the correct voltage position.

Voltage settings: 100, 110, 117, 125, 220 or 240V. U.S., Canadian, European, British and Australian models are set to the proper voltage before shipment.



SPECIFICATIONS OF YAMAHA COMBO ORGAN YC-20

KEYBOARD

61 keys C~c₄ (17 Bass keys)

TONE LEVERS

Channel I 16' 8' 4' 2 $\frac{2}{3}$ ' 2' 1 $\frac{2}{3}$ ' 1'

Channel II - 16' 8' 4' 2'

Manual Bass 16' 8'

EFFECT LEVERS

Touch Vibrato, Vibrato, Vibrato Speed,

Bright (for Ch. II), Percussive

OTHER CONTROLS

Pitch Control, Master Volume, Bass Volume,

Manual-Bass, Balance, Power Switch

(with pilot lamp), Expression Pedal

ELECTRICAL RATINGS

Silicon Transistors 52

IC's 24

Diodes 7

Power Consumption 15 W AC 50~60 Hz

DIMENSIONS

Width 102 cm (40")

Depth 53 cm (21")

Height 85 cm (33") (set up)

Weight 27 kg (60 lbs.)

FINISH

High gloss, polyester finish

AVAILABLE COLORS

Red, Ivory, Black

VINYL CARRYING BAG

Provided for legs which are also included with the organ.

Specifications subject to change without notice



For British-Standard Organist

As the colours of the wires in the mains lead of the apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows. The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol \equiv or coloured GREEN or GREEN-and-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

IMPORTANT

THE WIRES IN THE MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.

GREEN-AND-YELLOW:	EARTH
BLUE:	NEUTRAL
BROWN:	LIVE

WARNING:

THIS APPARATUS MUST BE EARTHED.



SINCE 1887  **YAMAHA**
NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN