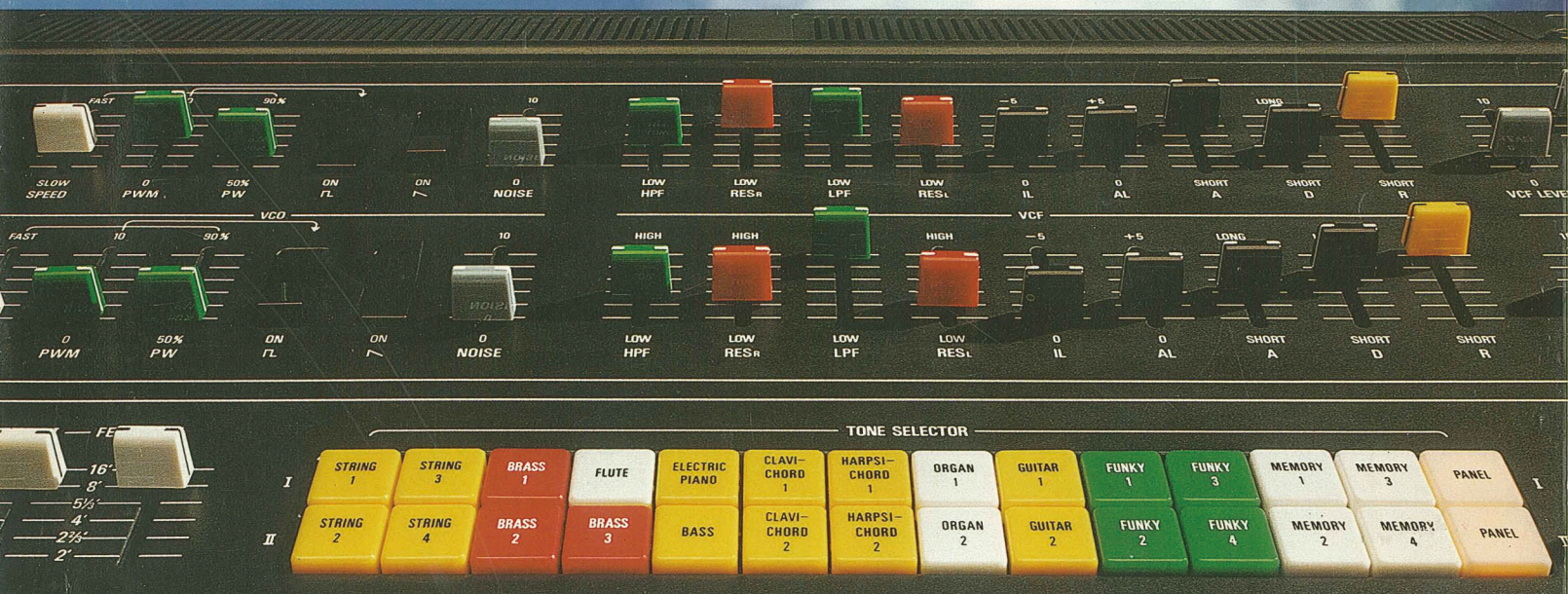
SYNTHESIZER CS-80

Polyphonic! Undreamed of Touch Response!



YAMAHA

YAMAHA

CS-80 — The Very Best of an Excellent Line of Synthesizers.

The new CS-80 from Yamaha is really different. It has outstanding features and versatility that place it head and shoulders above other synthesizers in this class. And toping this list of great "extras" is a touch that gives your hands control over dynamics and expression in the manner of a traditional piano or string/brass instruments.

As you'd expect, the CS-80 has a long history behind it. We worked closely with players and put our top engineers to work on the project in efforts to create the most versatile, most playable and very best polyphonic stage synthesizer. Of course, Yamaha's 90 years in the musical field also played an important part. The grand result is the CS series with the CS-80 at the pinnacle.

The CS-80 is many things but first of all it's polyphonic; 8 notes can be played at the same time for a fuller, more lively performance. These notes are produced by 16 tone generators divided into two channels that can work alone or be mixed in different proportions as the player chooses. The musician selects as he wants and is not held back by the limitations imposed by the instrument.

Second, the CS-80 has the touch of a traditional acoustic piano. Piano players will really like this feature since they don't have to adapt their touch to the synthesizer. They can play as they've been trained to play. In addition with the unique "AC Sensors" you can get an independent effect after depressing each key.

Another great plus for the CS-80 is the built-in Memory Banks. Once you put your original sounds in these four Memory Banks they can be recalled simply, exactly and quickly by just pushing the right MEMORY lever. As a matter of fact, any of the 22 preprogrammed sounds can also be selected in a similar way . . . by a flick of a finger on the right lever in the TONE SELECTOR. You get the fast action and right sounds you need in the heat and action of a live performance on stage.

It's next to impossible to explain the CS-80 in words. Go to your nearest Yamaha dealer and try the CS-80 for yourself. The touch, the memory, the versatility will put you in control of a new dimension in sounds.


YAMAHA

The Right Sound & Effect for Each Performance.

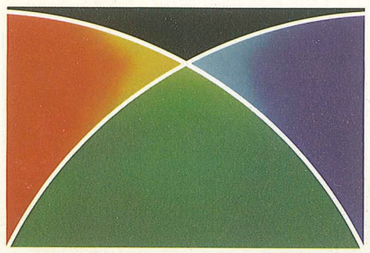
The CS-80 is a two channel synthesizer. A glance at the photo below shows that it is divided into five main sections: (1) Keyboard (2) TONE SELECTOR in the center (3) "Programmable Section" on top (4) Effect Controls (5) Memory Banks located below the cover on which the Block Diagram is printed. These five sections give you all the freedom and expression you need to create the right sound and right effect for each and every performance.

The functions of the controls are easily understood by studying the following color code. White is for pitch, green for tonal color, grey for volume, yellow for sustain, red for resonance and black for others.

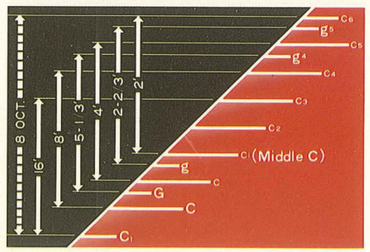
KEYBOARD

Polyphonic Sounds
The CS-80 is a polyphonic synthesizer; 8 notes can be obtained simultaneously. It's a truly revolutionary instrument and the limits of sounds can be greatly expanded thanks to the 16 tone generators and two channels.

Two Channels
There are two channels in the TONE SELECTOR, Programmable Section and Memory Banks. This means that instead of one you have something like two separate instruments. Or if the player wishes he can mix the two in any proportion for really great variety.



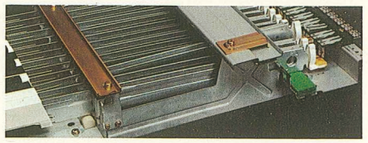
FEET Selectors
The CS-80 has 61 keys and covers 5 full octaves by itself. However, with the FEET Selectors above the Keyboard it effectively extends to as many as 8 octaves. These selectors can be set the same for both channels or differently for all the variety you will ever want.



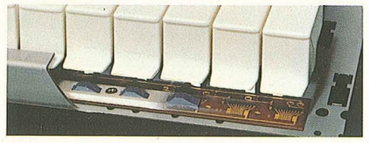
Piano Touch
The touch is like that of a traditional acoustic piano. It has an easy, fast action and control over expression and dynamics is the same as players learned for the piano. Each key has grand piano length and mass for a perfectly realistic piano touch.

TOUCH RESPONSE

Initial Control: The best way to describe the CS-80 touch is "traditional". When you strike the keys harder, it gets louder. With the PITCH BEND lever, the extent to which the pitch is lowered can be varied by the speed you use when depressing the keys.



After Controls: The harder you press the keys, the greater the effect you get. According to the setting of the levers, you get vibrato and/or wah-wah, and changes in their speed. Each key responds independently thanks to Yamaha's original "AC Sensor" in each key.



KEYBOARD CONTROL
These controls give the effect of two keyboards to the player. HIGH and LOW tone color and volume can be changed as you want for your performance.

SLIDE CONTROLLER
This is a black felt strip above the Keyboard. It is designed to change the pitch of the depressed keys when you move your finger up or down the strip. The pitch can be continuously moved one octave up or down below the lowest audible note. Try it for special effects and for some really fast unusual scales.

TONE SELECTORS

The TONE SELECTOR provides outstanding playability. 22 preprogrammed tones divided equally into Channel I and Channel II are at your fingertips. Tones for STRING, BASS, FUNKY and all the rest can be selected by merely pushing the right switch. In a live performance, when there's no time for time-consuming adjustments, these selectors are what you need.

PROGRAMMABLE SECTION

These slider type controls and switches, separate for CH I and CH II, give the musical freedom of expression you need. Waveforms, harmonics, the singing of imaginary birds . . . all are yours to synthesize. With these controls original tones can be polyphonically created which were formerly only possible on a studio synthesizer. Your imagination is about the only thing that will set limits to what you can do with this section. Variations are infinite. Start playing and you'll understand.

VCO (Voltage Controlled Oscillator)
The VCO section is the sound source of the synthesizer and is the basic determiner of the pitch. With it the player selects the sound source waveform that is best suited for the tone color that he wishes to create.

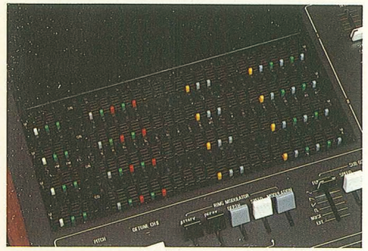
VCF (Voltage Controlled Filter)
The VCF section adds much variation as it refines the tone and alters harmonics. It controls the voltage envelope to vary tone color from moment to moment for more natural-like sounds. A unique feature of the VCF is Yamaha's own filter envelope. With five levers this envelope can be changed to match the wishes of the player.

VCA (Voltage Controlled Amplifier)
The VCA section provides control over volume or, more precisely, amplitude of sound signal. Here again controls are provided for Attack/Decay/Release Time and Sustain Level. This section helps the player imitate the constantly changing volume of sound from the start to the die-away in a musical instrument.

TOUCH RESPONSE Section
This section lets you recreate much more realistically the effects of traditional musical instruments or gives you the freedom to create your own effects just as you want them. Just set the levers for INITIAL and AFTER for the tone color and volume that is perfect for your sound.

MEMORY BANKS

The CS-80 comes with four Memory Banks. You can retain any of your original sounds and, just as important, bring them back quickly and easily. The levers for the Memory Banks have the exact same functions as the levers in the Programmable Section. By using the two channels, six original sounds can be stored and recalled with a flick of the finger.



EFFECT CONTROLS

The Effect Controls are designed to modify the sounds created by the settings of the levers of the two channels of the Programmable Section as well as the sounds chosen quickly and easily with the TONE SELECTOR. Another way that the Yamaha CS-80 puts you in complete command.

RING MODULATOR
The RING MODULATOR creates a third output signal which contains the sums and differences of two oscillator frequencies. Unique sounds like a gong, chimes, etc. can be produced by employing this RING MODULATOR and the AD Envelope Generator.

SUB OSCILLATOR
The SUB OSCILLATOR produces a low frequency waveform of the modulation signal. The work of the SUB OSCILLATOR is to create variations, in addition to the waves of each block, VCO, VCF and VCA. The VCO lever increases/decreases vibrato and the VCF lever does the same for wah-wah. It's amplitude which produces electronic tremolo or repeat effect is altered with the VCA lever. The SPEED lever controls the speed of the four basic modulation signals.

RESONANCE
The RESONANCE lever stresses a specified harmonic frequency for a truly unique effect.

BRILLIANCE
The BRILLIANCE lever is used to add feeling to the tones. Raise or lower the lever and you get a more brilliant or softer feeling.

SUSTAIN
The SUSTAIN lever controls the length of the signal after the key is released. On the CS-80 there are two different types of sustain. With SUSTAIN I the sustain effect is obtained for all of the released notes. However, with SUSTAIN II the sustain effect will be only on the last key released.

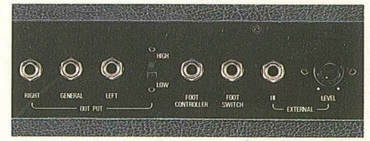
PORTAMENTO/GLISSANDO
When you change from one note to another higher or lower note, you hear a change from the first note to the next. With PORTAMENTO the change is continuous or a "tonal slide". With GLISSANDO the change is in step from the moment one key is depressed until the following one.

Tremolo Effects
The TREMOLO/CHORUS circuitry gives a wavering effect to the musical passage. Separate choices for a fast speed (TREMOLO) that is ideal for lively music or a slow speed (CHORUS) that fits perfectly with stately church-type music are quickly made. SPEED is continuously variable and DEPTH can be adjusted from a very deep effect to a very shallow modulation.

OTHER FEATURES

PITCH/DETUNE
The coarse pitch control lets you raise or lower the pitch by about half an octave in relation to the center click position while the fine control provides more delicate adjustments. With the unique DETUNE lever, the pitch of CH II can be altered a quarter tone up and the same down for an adjustment range of one semitone. With it you can mimic a harpsichord, a honky-tonk piano or other sounds.

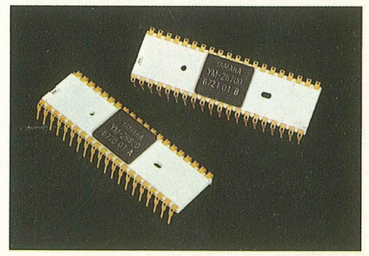
Rear Panel
Connections are easily made here. Other audio signals are used as a modulation signal for the SUB OSCILLATOR when fed into the EXTERNAL IN and variety applied with the synthesizer. There are a GENERAL output, and RIGHT & LEFT outputs which can be used as the player pleases for a stereo phasing effect.



Pedals
The Foot Controller (Expression Pedal) permits continuous changes in the volume, wah-wah effect or a mix of the two as previously set by the FOOT SELECTOR. The Foot Switch Pedal turns SUSTAIN or PORTAMENTO/GLISSANDO on or off.

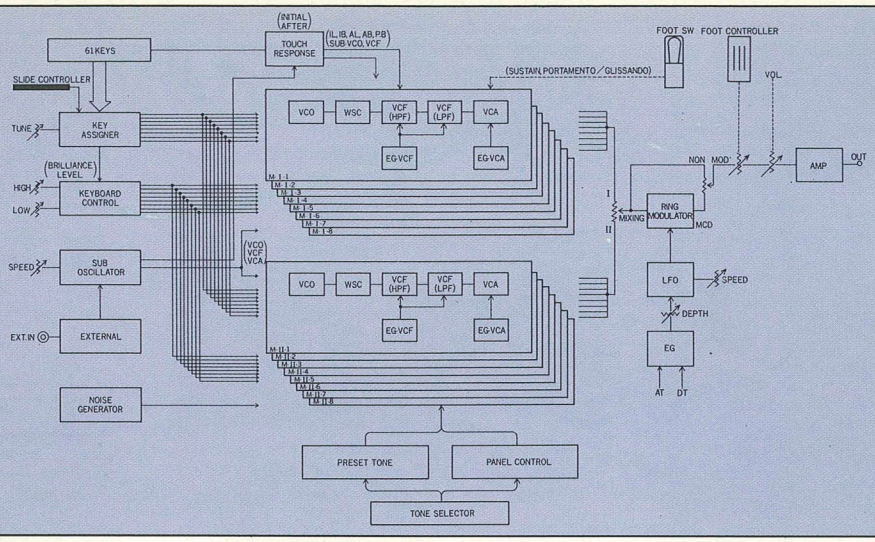
Headphone Jack
A set of optional headphones can be connected to this jack for clear monitoring under any surroundings.

LSI Circuit
One of the secrets to the superior sound, incredible reliability and portability of the CS-80 is the LSI circuit. Yamaha is the first and only musical instrument manufacturer in the world to design, develop and produce its own LSI. They are manufactured under strict quality control and are your assurance of enjoyable, trouble-free performance.



Case
The Yamaha CS-80 itself comes in its own sturdy case. For the leg assembly, pedals and detachable castors, there is a separate soft carrying bag with convenient carrying straps. Both are ideal for easy moves on the road.

REPRESENTATION OF THE CS-80



CS-80 SPECIFICATIONS

KEYBOARD

61 keys C ~ c_4 (5 octaves)

TONE SELECTORS

Channel I	Channel II
STRING 1	STRING 2
STRING 3	STRING 4
BRASS 1	BRASS 2
FLUTE	BRASS 3
ELECTRIC PIANO	BASS
CLAVICHORD 1	CLAVICHORD 2
HARPSICHORD 1	HARPSICHORD 2
ORGAN 1	ORGAN 2
GUITAR 1	GUITAR 2
FUNKY 1	FUNKY 2
FUNKY 3	FUNKY 4
MEMORY 1	MEMORY 2
MEMORY 3	MEMORY 4
PANEL	PANEL

PROGRAMMABLE SECTION

VCO Section
- SPEED
- PWM (Pulse Width Modulation)
- PW (Pulse Width)
- ⊓ (Square Wave) Switch (On/Off)
- ◺ (Sawtooth Wave) Switch (On/Off)
- NOISE

VCF Section
- HPF (High-Pass Filter)
- RES_H (Resonance High)
- LPF (Low-Pass Filter)
- RES_L (Resonance High)
- IL (Initial Level)
- AL (Attack Level)
- A (Attack Time)
- D (Decay Time)
- R (Release Time)

VCA Section
- VCF LEVEL
- ∿ (Sine Wave)
- A (Attack Time)
- D (Decay Time)
- S (Sustain Level)
- R (Release Time)
- LEVEL

TOUCH RESPONSE Section
- INITIAL Controls
  - BRILLIANCE
  - LEVEL
- AFTER Controls
  - BRILLIANCE
  - LEVEL

Memory Banks
- MEMORY 1
- MEMORY 2
- MEMORY 3
- MEMORY 4

EFFECT CONTROLS

RING MODULATOR
- ATTACK TIME
- DECAY TIME
- DEPTH
- SPEED
- MODULATION

TOUCH RESPONSE
- INITIAL Control
  - PITCH BEND
- AFTER Controls
  - SUB OSCILLATOR SPEED
  - SUB OSCILLATOR VCO
  - SUB OSCILLATOR VCF

SUB OSCILLATOR
- FUNCTION Selector (∿, ◺, ◸, ⊓, NOISE, EXTERNAL)
- SPEED
- VCO
- VCF
- VCA

SUSTAIN
- Select Switch (I/II)
- SUSTAIN Time

PORTAMENTO/GLISSANDO
- Select Switch (PORTAMENTO/GLISSANDO)
- PORTAMENTO/GLISSANDO Time

SLIDE CONTROLLER

RESONANCE

BRILLIANCE

KEYBOARD CONTROLS
- BRILLIANCE
  - LOW, HIGH
- LEVEL
  - LOW, HIGH

TREMOLO/CHORUS
- Voice Selector (ON/OFF)
- TREMOLO
- CHORUS
- SPEED
- DEPTH

FEET Selectors (Channels I & II)
(16', 8', 5-1/3', 4', 2-2/3', 2')

OTHER CONTROLS

- PITCH (Coarse & Fine Controls)
- DETUNE (Channel II only)
- CH I/CH II MIX
- Master VOLUME
- FOOT CONTROLLER (Pedal)
- EXTERNAL IN LEVEL
- FOOT PEDAL Selectors (EXP./EXP. & WAH/WAH)
- FOOT SWITCH Selectors (On/Off)
  - SUSTAIN
  - PORTAMENTO/GLISSANDO
- POWER SWITCH (with Indicator)

OTHER FITTINGS

- EXTERNAL IN Jack
- OUTPUT Jacks with Selector (HIGH/LOW)
- HEADPHONE Jack
- FOOT CONTROLLER Jack
- FOOT SWITCH Jack
- Carrying Straps
- Metal Corners
- Slip Fittings
- Power Cord Storage Space

OUTPUT CHARACTERISTICS

Nominal Levels
- High: 0dBm (775mV rms)
- Low: −20dBm (78mV rms)
- Headphones: −10dBm (250mV rms)

Nominal Impedance
- Output Jacks: 600 ohms
- Headphone Jack: 8 ohms

CIRCUITRY

- Solid State
- Power Consumption: 180 Watts
- Power Source: AC, 50/60Hz

DIMENSIONS (WxHxD)

- Assembled: 1,205x945x702mm (47-1/2x37-1/4x27-5/8")
- In Case: 1,205x290x702mm (47-1/2x11-3/8x27-5/8")
- Height to Keyboard: 842mm (33-1/8")

WEIGHT

100Kg (220.5lbs.)
Including Standard Accessories

FINISH

Black Leatherette with Walnut Veneer Panel Siding

STANDARD ACCESSORIES

- Removable Cover
- Vinyl Carrying Bag for Legs and Pedals
- Foot Controller (Expression Pedal)
- Foot Switch Pedal
- Detachable Castors
- Music Rest

Specifications subject to change without notice.

For details please contact:

SINCE 1887 YAMAHA
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