YAMAHA

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A Stage Piano That Enthralls Musicians

The Yamaha CP1

Exploring the Technology and Passion behind the Newest State-of-the-Art Model

In preparation for the year 2010, Yamaha's CP stage pianos have evolved in a new direction.

With state-of-the-art SCM technology, the CP1 stoically focuses on the pursuit of "piano sound." The CP1, which returns to the roots of the CP stage pianos, is already generating significant buzz among musicians. In this special report, we will elucidate the construction of the CP1 and explore the true value of the CP1 as a stage piano by asking professional musicians to try it out.

By listening to the sounds produced by some of the world's most prolific musicians, you can evaluate the quality of the CP1 yourself.

Introduction–Summary of CP1

Background and Construction of This New Generation of Stage Pianos

The CP1 is equipped with a number of newly-developed technologies.
First, let's explore the construction of this high-quality stage piano.

The Legacy of the "Stage Piano" Concept Inherited by the CP1

The number "1" has been passed on for generations to flagship Yamaha keyboards that epitomize the eras in which they are born. Examples from the past include the GX-1, which announced the arrival of the era of polyphonic synthesizers; the GS1, the vanguard of FM synthesizers; the DX1, the pinnacle of FM tone generators; and the VL1, the world's first virtual acoustic tone generator. The newest successor to this number is the CP1, which started selling after much anticipation at the end of 2009. The legacy of the CP1 makes its status as a world-class instrument readily apparent.

"CP," the model number that comes before the number "1," is also the heir to an honorable history. That history began all the way back in 1976. That's when the CP70 started selling. Its 73 keys had the same action as a grand piano, and its impact changed the history of music. The CP70 (see picture ①), which was referred to as an "electric grand piano," was a special type of electric piano that had hammers that actually hit their strings. The resulting vibrations were detected by pickups and amplified by an amp. Compared with earlier pickup-based electric pianos that used pieces of metal or reeds and electric pianos that used an analog tone generation method, the CP70 provided a sound and feel that were much closer to those of an acoustic piano. Along with the CP80, an 88-key model that started selling two years later in 1978, the CP70 was used extensively on the stage. The "CP" electric pianos were sold until the middle of the 1980's. They gradually disappeared after the introduction of PCM models that were capable of producing tones closer to those of an acoustic piano.
However, the tones produced by the CP pianos had a different kind of appeal to them than those produced by acoustic pianos, and many artists love playing CP pianos even today.
After 30 years, the CP model number was revived in 2006. The new models that were introduced were the CP300 and CP33 (see picture ②). Of course, these pianos do not have strings, but they are the successors to the stage piano concept of the CP80, and they are used often now as stationary pianos for rehearsals and in studios. And now, the CP1 has arrived. Its name indicates that it is the pinnacle of stage pianos.

◀ Picture ① This is the CP70, an electric piano with the same action as an acoustic piano. The sound that results from hitting one of the strings with a hammer is detected by a pickup and output.

▼Picture ② This is a representative modern stage piano, the CP300. It is equipped with an AWM tone generator and an 88-key GH keyboard.

State-of-the-Art Tone Generator and a Component System That Enables You to Make Tones Freely

Of course, when you first turn on the CP1, it plays a grand piano tone. This tone is based on samples of Yamaha's CFIIIS concert grand piano. However, the nuance of the sounds is distinct from that of normal PCM pianos. Whereas the sounds of a PCM piano feel as if they are piercing through the air, the piano tones of a CP1 piano feel as if they are being absorbed into the air. Another way of expressing this is to say that the CP1 has a warmer sound. It goes without saying that this sound is good for solo performances, but it should also blend harmoniously with the sounds of a band. This sound has a toughness to it that prevents it from being drowned out by other instruments.
It is the sound of a stage piano that was clearly designed for band performances.
The CP1 is equipped with a newly developed "SCM (Spectral Component Modeling) tone generator." The tones of the CP1 (referred to as the performance) are created through the use of four blocks. These blocks are the piano, modulation-effect, power-amp/compressor, and reverb blocks. Additionally, the piano block, which corresponds to the instrument itself, consists of piano types and a pre-amp. The sound signal created by these four blocks passes through a master equalizer, and is then converted to sound (picture ③). Imagine that the actual piano sound is picked up by a microphone, and then sent to the PA, where effects are added to it. The resulting signal is then amplified additionally and output through the speakers. Then the sound reaches the ears of the listener after it is affected by the ambience of the hall.
The four blocks of the CP1 can be said to simulate this process.

▲Picture ③ The four blocks that are used to create the CP1 tones are displayed in order through the use of buttons. The piano block consists of the PIANO and PRE-AMPLIFIER sections. It is followed by the MODULATION EFFECT, POWER AMPLIFIER/COMPRESSOR, and REVERB blocks. At the end is the MASTER EQUALIZER.
When a button's indicator is lighted, it means that the corresponding block is on.

On the CP1, in addition to the tones of two acoustic pianos (the CF and the S6) the tones of electric pianos that use metal rods (the Rd I and Rd II) and the tone of an electric piano that uses pieces of metal (the Wr) are included. These electric piano tones are installed by year. 1971, 1973, and 1975 model Rd I tones are installed. The tones of the 1978 Rd II are installed in addition to other tones such as those of the Dyno. Two types of Wr tones are installed: those of the 1969 Wr and those of the 1977 Wr. A total of 17 types of keyboard tones are installed, including those of the CP80 and the DX electric pianos, which have FM tone generators. These are the piano types referred to earlier. Essentially, it's as if there are 17 instruments inside of the CP1. The tones of these instruments are processed by the blocks after the piano type block to produce tones known as parts.

As written earlier, the CP1 has four blocks: a piano block, a modulation effect block, a power amp block, and a reverb block. In the piano block, when you select a piano type, a corresponding pre-amp is selected.

The configuration parameters are the optimum settings for the piano type. For example, if you set the piano type to the Rd, you can adjust parameters based on the instrument's sound production system (see picture ④), such as the decay, release, hammer hardness, key-off (the volume of the sound of a damper holding down a string when a key is released), and stroke position (the position of the vibrating object that is hit by the hammer). By turning on the modulation effect block, you can add effects, such as phaser and chorus effects, that are used frequently with electric pianos and that are based on vintage effectors. Additionally, the power amp block has a simulator that models the speakers of an electric piano, so you can create sounds as if they came from an instrument's actual speakers (see picture⑤).

Furthermore, the six most vital adjustment parameters have been carefully selected and are assigned to six knobs below the screen.

Each of the preset tones consists of two parts. You can turn the two parts on and off using the switches at the top of the panel. The A-1 "CF Grand" tone that is played when you first turn on the CP1 actually has a DX electric piano tone assigned to its other part, but this part is off by default. In other words, even when you are performing using the grand piano tone, you can instantly turn the DX electric piano on and play the two parts in unison.

◀Picture ④ This is the piano type adjustment screen that appears when you press and hold the PIANO button. For Preset-B-1, "Case 71," you can adjust the decay, release, key-off, stroke position, and hammer hardness.

◀Picture ⑤ This is the power-amp/compressor adjustment screen. This screen also appears when you press and hold its corresponding button. Here, you can change the power amp type to a type other than the preset type.

Superb Performance Provided by a Newly Developed Keyboard and a Simple yet Refined Controller Area

The newly developed "NW-STAGE keyboard" is a wooden piano keyboard that limits vibrations and offsets when the keys are hit (see picture ⑥). Not only does it conform well to the grand piano tone, it also conforms well to all the other tones as well, so that every tone feels natural when you play it. The surfaces of the keys are ivory finished. They don't slip easily, and your fingers will feel comfortable when you play on them. You can set a velocity curve to determine the relationship between the volume and the strength with which the keys are hit.

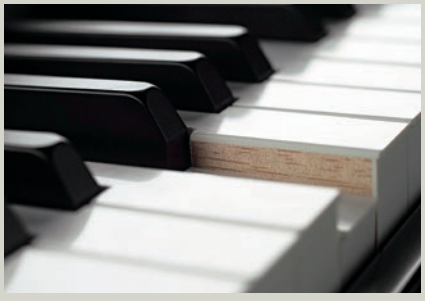
You can change tones using the buttons on the right of the panel. To select a tone, you specify a combination of bank, group, and number (for example, "Preset-A-9"). The A group of the Preset bank contains the tones of the CF, S6, CP, and DX. The B group contains the tones of the various versions of the Rd and of the Wr. You can switch between the tones in these groups with the simple push of a number button (see picture ⑦). In addition, there is a master keyboard feature that enables you to specify four zones on the keyboard and generate sounds from up to four external tone generators.

The six large knobs in the center of the CP1 panel stand out. While you may see them on a synthesizer, these kinds of control are rare on digital pianos. Parameters are pre-assigned to these, and you can change the tone by turning the knobs (see picture ⑧). The parameters that are assigned to the knobs vary depending on the performance. For example, for "CF Grand," the following six parameters are assigned: the low, mid, and high band equalizers; the hammer hardness; key-off; and reverb.

Of course, you can change how the knobs are assigned. So for example, instead of assigning key-off to a knob, you could assign decay to it and adjust the decay time. On the stage, performers often worry about these types of parameters and whether they fit with the acoustic conditions and the sound of the band. One of the things that makes the CP1 such a superb stage piano is that it enables you to adjust these parameters easily. The knobs themselves are also large and easy to use.

Special half-damping pedals are also included. There are three pedals: the sustain, sostenuto, and soft pedals (the FC3 is necessary for the use of the separately sold sustain pedal). Furthermore, not only is the CP1 equipped with assignable foot-switch and foot-controller inputs, the sostenuto and soft pedals are also assignable, so you can adjust a variety of different parameters while performing. The CP1 is also equipped with USB ports and other connectors. If you insert a USB memory device with your tone setup into the CP1, you can play without loading the setup into the user memory.

Finally, we would like to touch on the design of the CP1. The CP1 lives up to its name as a stage piano: it has a leather-finished paint job that is reminiscent of the CP80, and its other specifications, including those of its metallic top panel and wooden side panels, make it appear impressive and strong. The rounded "CP1" logo exudes presence. The Yamaha logo glows! And the large, easily operable knobs are innovative and new. This simple yet fresh design is one of the great appeals of the CP1. The more you use it, the more you'll love it.



▲ Picture ⑥ The newly developed NW-STAGE keyboard performs consistently every time you play it. It matches firmly with any tone type and increases your range of expression.

▲Picture ⑦ To select a tone (performance), use the buttons on the right to select a bank, and then press a number button.

▲Picture ⑧ The six optimum parameters for changing the tone are pre-assigned to the knobs at the bottom of the screen (these parameters can be changed freely). For Preset-B-1, "Case 71," in the picture, the following parameters are assigned to the six knobs in the center of the panel: the hammer striking point (StrkPos), hammer hardness (Hammer), output volume (Volume), power amp distortion (Drive), vibrato depth (Depth), and speed (Speed).

Story Behind the Birth of CP1

The Story of the Birth of the CP1, Told By One of Its Creators

A number of new technologies, such as the SCM tone generator and the NW-STAGE keyboard are installed in the CP1.
We asked one of the members of the CP1 development group to tell us the story of the CP1's creation.

There Was No Set Method, So We Built and Rebuilt It Over and Over Again

This is our flagship stage piano.
When we asked about the concept behind the CP1, the product development producer, Kensuke Ide, replied by saying that it's easy to say that something is "number 1," but that making something that is better than everything else is impossible without an extraordinary amount of effort. Nevertheless, Mr. Ide, who worked on the development of the CP300 and CP33, still strived to make something that he could say is "number one," as he makes clear in the quote below.
It's rather difficult to keep playing at performances while maintenancing an old instrument. That's why we decided to create an easily transportable keyboard that keeps the sounds of the old instruments and enables musicians to keep their performing power on the stage.
Up until now, higher model numbers in the CP series corresponded to higher quality. However, historically, Yamaha flagship models have used "1" in their names—so we decided to show our dedication as a manufacturer to this product by reversing the normal logic and using the number "1" in its name. Mr. Ide spoke of the concepts behind the CP1 enthusiastically. However, the path to development was difficult. Fumitsugu Ohtaka, who handled the development of content (tones) for the development group, looks back on that path in the quote below.
We were trying to make something with a degree of precision that was totally different from that of previous models. The new technology known as "SCM" was of a type not seen before, so it didn't have a set method. We just had to build and rebuild over and over again. So it took us quite a lot of time.
The CP1 is equipped with an SCM (Spectral Component Modeling) tone generator. The truth is, this name doesn't just refer to one tone generation method. Daisuke Miura, who worked on the tone generator modeling, explained it like this: *"Spectral component modeling" is used to symbolically refer to a group of characteristics of this system. With frequency characteristic analysis (spectral), the CP1 can create natural and real sounds based on the speed with which the performer presses the keys. The piano types, effects, and amp all use modeling technology (modeling), and you can combine these elements to create your own unique customizations (component).*
Mr. Ide told us that "technically, other than the fact that they are all produced using a modeling tone generator, the technologies that are used for each of the piano types are different." It's a complicated system that cannot be fully expressed with just a few words. According to Mr. Ide, the SCM tone generator "is intended for producing sound. It focuses on making the performance feel good. It uses as much of the optimal technology for each sound as is necessary."

After All, the Sound Is the Key—We Were Relentless in Our Pursuit of the Most Musical Sound

Some of the characteristics of the CP1 include what is referred to as a component system, in which blocks such as the effect block and the power amp block can be inserted and removed, and a customization feature that enables parameter values and types to be changed simply. However, the core of the CP1 sound, the combination of a piano type and a pre-amp in the piano block, is fixed (it is possible to turn the piano block on and off). This is because of the relentless focus on sound that we have been discussing. *We carefully selected the parameters so that they would fit on a single page of the screen. As a consequence of this, we thoroughly scrutinized the non-adjustable parameters. For example, you cannot change the high and low frequencies of the pre-amp's 3Band EQ for the CF 3Band and S6 3Band piano types, but we set separate, ideal frequencies for each piano.*
After saying this, Mr. Ohtaka continued saying "a lot of hidden effort went into the CP1. But because it's a piano, not a synthesizer, we focused more on having people enjoy playing it rather than on touting its technology and specifications." The CP1 is filled to the brim with "hidden" technology. Mr. Ide said, "in the CPs up until now, we focused on creating better and better acoustic piano tones, but reevaluating the CP's role as stage pianos, we realized that good electric piano tones are also extremely important." Just as Mr. Ide says, with the vintage sounds of the Rd and Wr and pure Yamaha sounds, such as those of the CP and DX electric pianos, the CP1 has a rich assortment of electric piano tones. And the technology behind those tones is vast. Mr. Miura explained the development process as quoted below.
For example, for the Rd, we started developing the pre-amp by acquiring the circuit diagram of the original instrument. It's a very unique instrument. We tried to model it accurately, but even when we analyzed it logically and created a model that should have matched the instrument precisely, some of the sounds just weren't right. In the end, we found ourselves repeatedly creating sounds and making fine adjustments to create tone control characteristics that matched the waveforms of the CP1.
One of the main issues for the electric piano sounds was "distortion." The development group realized that the uniquely warm sound that comes from vintage instruments is a result of the natural distortion created by their internal circuitry, and they decided to reproduce that distortion in the CP1 pre-amp. "As Yamaha worked on developing the VCM analog circuit modeling technology, we accumulated techniques for reproducing distortion. We are using those techniques in the CP1," said Mr. Miura. The way that distortion is produced varies depending on the year of the instrument being modeled. Elements such as the auto pan fluctuation also vary.
Mr. Ohtaka said that "the piano type and pre-amp combinations are fixed. You can't edit them as if you were using a synthesizer. For example, you can't set the piano type to 73 Rd I and the pre-amp to 78 Rd II." Mr. Ide continued, *a product might seem interesting if you enable the use of an Rd pre-amp to play a Wr sound.*
We can make it possible to combine sounds more freely and adjust parameters in more detail, but that doesn't necessarily lead to a good sound, the kind of sound that musicians are striving for. There were a number of arguments, but in the end we decided to go with fixed combinations because they simply produced the best sound. The fixed combinations ensure that the instrument never misses its sweet spot.

Members of CP1 Development Group


Sound Processing Group
Daisuke Miura


Contents Group
Fumitsugu Ohtaka


DE Produce Group
Kensuke Ide


HIF Development Group
Ichiro Ohsuga


Product Design Laboratory
Daizo Sato


Mechanical Design Group
Takeshi Ando

We Strove to Create a Keyboard with a Unique Sense of Value That Is Exhilarating to Play for Any Tone

The concept of "never missing the sweet spot" was applied thoroughly to every aspect of the CP1. This concept manifests itself in the subtle distortion that occurs when you apply a phaser effect and raise the drive and in the ability to mix the line and speaker output in the power amp block. Of course, this concept was not just applied to the tone generator, but also to the development of the keyboard. What the producer Mr. Ide strove for was a keyboard "with a good response that won't make you tired on the stage." We asked Ichiro Ohsuga, who was the person in charge of keyboard development in the development group, about the process behind the development of the NW-STAGE keyboard.

The NW (natural wood) keyboard, which is installed in the current model of the Clavinova, is the rightful successor to the legacy of the GH (grade hammer) keyboard, which simulates the feel of a grand piano, and it is even more refined than its predecessors. This time we enhanced the NW keyboard so that it would be more comfortable for a professional to play on a live stage and so playing both acoustic and electric piano tones on it would be an exhilarating experience. We strived to create a keyboard with a unique sense of value.

The enhancement of the keyboard was always centered around how the performer feels when playing it. According to Mr. Ohsuga, the keyboard was developed "to be easy for someone who is accustomed to playing pianos to get used to and to enable you to play with precision all the way to the end of a live performance without becoming tired." The developers strove toward this goal as they created the keyboard.

It wasn't simply a matter of imitating a piano keyboard. There is a type of touch that is most appropriate for electronic instruments. On the other hand, we had to create a subtle touch that would enable someone to easily use the senses that they had developed training on a piano.

In order to achieve this touch, Mr. Ohsuga said that "even though the physical characteristics are different from those of a piano, we kept some piano-like elements to give performers a sense of security. To make it difficult for performers to tire while playing the piano, we added elements to make the keyboard feel more nimble, while at the same time maintaining an exquisitely balanced weight so that no control was lost." Also, the synthetic ivory was not just used to make the keyboard appear more piano-like, it also reduces the amount by which sweat on the fingers changes the friction between the fingers and the keys. By incorporating the multitude of elements discussed above and adjusting the keyboard to match the tone generator, the developers created a keyboard that has "a good response and won't make you tired on the stage" no matter which of the CP1's piano types are used with it.

We Thought of a New CP Image while Taking Its Legacy into Account

"The people in charge of developing the tone generator and the keyboard were saying 'this will be a great piano.' They were extremely confident. I did certainly feel pressure to come up with something that would meet their expectations," said Daizo Sato, who was in charge of the CP1's design. Mr. Ide said with a laugh, "I asked him to make something that would look 'cool' on stage. In terms of direction, I wanted to take the looks of the CP70 and CP80 into account. Because the piano is used on stage, its design needed to be simple, without anything excessive. I was hoping for something with beautility." Mr. Sato took that image and expanded on it.

When I thought of a new CP design while taking its legacy into account, I felt instinctively that the traditional design of a black body with silver parts stretching across horizontally would be compatible with the look of a stage piano. One other thing that was necessary was to figure out how to convey the majesty of a flagship model. The overall image of an instrument is determined by the accumulation of a variety of details, so I decided to focus on details, starting with the paint job and the knobs.

Takeshi Ando worked with Mr. Sato on the exterior of the CP1.

The two of them started from scratch, without using any parts from existing products. They used extensive trial and error to bring their detailed vision to life. According to Mr. Ando, *it was a tough job. All the parts were custom, and everything was new.*

I remember we tried so many different paint jobs. The seasons can affect the final product, so at the transitions between spring, summer, fall, and winter, we sought out the best conditions, and were then finally able to settle on the manufacturing specifications.

Hidden technology is also used in the exterior of the CP1. One of example of this is the paint job. A team of painting specialists in Yamaha were developing a new painting method. Sato learned of this method by chance and was certain that he could use it on the CP1. So worked tirelessly to implement it. That is how the CP1's body, with its black leather-finished look and intense vintage feel, was born. Also, the side panels are wood, and a finish was used on them that shows the wood grain beneath it exquisitely. The glowing "YAMAHA" logo was Mr. Ando's idea. He says he got the idea from the glowing license plates of automobiles. The CP1 logo was made to be three-dimensional and rounded, like the emblem on a car. As Mr. Ando and Sato worked on the look of the CP1, they were also focusing keenly on its operability. Mr. Sato said the following about the layout of the panel area:

We focused the switches in the metal area and made it distinct from the leather-finished area. The goal of this was to distinguish the control area from the area of instrumental musical expression. Consequently, the switches are lined up without much space between them, but what we really focused on was making sure that performers wouldn't accidentally press a switch during a performance. That's why we designed the CP1 with the highest vertical distance between the keyboard and the area behind it of any Yamaha electronic instrument. Creating a large step from the keyboard helps to prevent mistaken operations so that players can relax and focus on performing.

"We painted the switches using colors that blended with the metal to reduce the amount of information that enters the eyes and create an environment conducive to focusing on playing the instrument," Mr. Sato said, indicating that his pursuit of simplicity was not just aimed at producing visual beauty. "The way an instrument looks can stimulate the performer's feelings. If the performer feels good playing the instrument, we're happy," said Mr. Sato. Surely, all the development team members feel the same way. While Mr. Ohtaka is confident that the CP1 sounds boast a heretofore unseen completeness, he also said that "what we want isn't for performers to evaluate the CP1 as a technological device, but to evaluate it as an instrument according to its musical expressiveness."

This spring, in addition to the CP1, other models in the series, namely the CP5 and CP50, will also be arriving. "We want a variety of people to use these instruments," Mr. Ide said hopefully. *In every step of development, we focused on creating an instrument that would make performer's fingers dance naturally on the keys no matter what sound they were playing. When people hear that this is a flagship model, they may think "well, my piano skills aren't that good," but the CP1 is a piano that anyone can produce a good sound on.*

I would really like to invite anyone to give it a try.

Sound Making with CP1

The Sounds Born from the CP1 Are Meant for the Stage

The tones installed on the CP1 are equipped with the optimum parameters, and the CP1 makes highly free music creation possible. Here we will take a look at some of the CP1's tones and discuss how they were made.

Explained and performed by Jun Abe
Photographed by Hironao Arai

Impression towards CP1

Personally, I have examined quite a few piano tone generators up until now, and I've used a number of software synthesizers, but for playing, I've always felt that hardware synthesizers were better in the long run. It's amazing how in the CP1, Yamaha has taken the advantages of a hardware synthesizer and used the technology that they have developed as a manufacturer to add software synthesizer nuances to it. The sounds in the CP1 are ideal for performing on the stage. I believe that many people have been waiting for these sounds. Of course, the CP1 can also be used extensively in recording. With regular pianos, the tuning and condition of the instrument can prevent musicians from recording good sounds. But if you use the CP1, you can quickly adjust the sound to the recording conditions.

Sound 1

A Piano with Presence Whose Sound Stands out in a Band

Track 01 / 02

Preset-A-1, "CF Grand," is the piano sound that plays when you turn on the CP1 (Track 01). This is the ideal sound for stage performances. You can raise the key-off and increase the percussive feel to make it sound even more real. But bands tend to play at high volumes, and when they do, you may want to stand out. In that kind of situation, you can try increasing the hammer hardness (Track 02). This is the perfect sound if you want to play powerful solos in intense songs but also maintain a natural feel.

Sound 2

Enhance Softness and Let Echoes Resonate Using the Soft Pedal

Track 03 / 04

Preset-A-2, "S6 Grand" is a soft, gently resonating tone (Track 03). You can raise the key-off for this tone and decrease the hammer hardness to produce a floating sound that makes you feel like you're in water. We also tried adding reverb and pressing the soft pedal (Track 04). We think you'll agree that the resulting reverberations feel very good. This sound would be very appropriate for a ballad performed by a single singer and a piano player. The truth is that this sound was used recently in a recording.

Listen to CP1 Sound
http://www.yamahasynth.com/jp/library/cp1_5_50_en/sb/

Sound 3

Creating a Feeling of Expansiveness by Adding Reverb to the Phaser Sound

Track 05 / 06

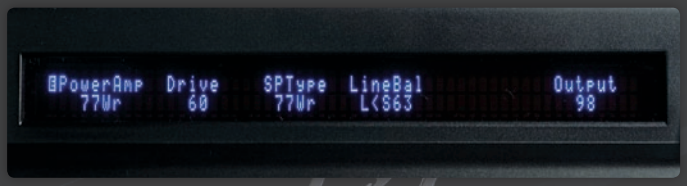
We are going to introduce the Rd sound of Preset-B-2, "Case 73." For this tone, when you turn on the modulation effect block, a phaser called the Small Phaser is applied. This sound brings back memories of the original sound and is very pleasant (Track 05). Furthermore, striving for a sound like that of Richard Tee, we tried adding reverb (Track 06). This sound resonates beautifully when long notes are played, so it's great for ballads and other songs where you really want the listeners to focus on the tone. If you are playing in a band, you can make the sound stand out more by increasing the hardness of the hammer.

Sound 4

Creating a Rock n' Roll Sound by Adding Distortion in the Power Amp

Track 07 / 08

Let's try out the sound of the Wr. Here, we selected Preset-B-16, "77 Tremolo." As the name implies, this is a sound with tremolo added to it (Track 07). If you raise the key off and power amp drive you get a very powerful sound that really stands out. It sounds great doesn't it? It makes you want to play staccato. Next, we'll try changing the power amp line/speaker balance. As you can tell, it's very different from the sound of the preset (Track 08). We think this is a tone that can square off against a guitar in songs with a bluesy texture.



Sound 5

Using the Presets as They Are and Producing Vintage Sounds

Track 09 / 10

Listening to the sounds of the CP made me feel nostalgic. The best way to produce vintage sounds is to use the presets as they are, so we are going to introduce some of the pure preset sounds. The interesting thing about the CP1 is that it has CP sounds from different years. A-9, "CP8 Studio," (Track09) is from the 80s. The "CP88" waveforms set for A-10, "CP80 Live," (Track 10) are a modeled sound based on what a CP would sound like if it was built today. Even though they are all CPs, it's interesting that their sounds are so different.
Because the CP80 Live gives a richer impression and is more piercing, it is probably more suitable for live performances.

Sound 6

Use 816 Sounds and Play Them Magnificently

Track 11 / 12

For the DX electric pianos, I chose Preset-A-14, "DXEP 1," because I think it is the easiest to understand. This tone has a chorus known as "816Chorus" added to it from the start. This is a reproduction of the chorus achieved on the famous TX816 through the detuning of eight DX tone generators. First, let's listen to the sound when the chorus is turned off (Track 11). Now, let's listen to the sound with the effect turned on (Track 12). To make the sound as magnificent as possible, I set the mix level to the maximum level of 127.
I think this results in a pleasant detuned sound.

Sound 7

Layered Tones That Shine Even in Band Ensembles

Track 13 / 14

Preset bank C contains useful layered tones that can be used on the stage. I will introduce two of those tones. C-11, "FunkyWurli," is a combination of the Wr and DX electric piano sounds (Track 13). The DX electric piano has a touch wah added to it and produces a Clavinova-like sound. This sound is useful when you want to play the CP1 percussively, like a guitar. I am especially fond of C-16, "What a CP!" (Track 14). This is the layered sounds of a CF and an Rd. The balance is extremely good. Even in a band, I'm sure this sound will resonate without sinking back.

CP5

In Addition to Piano and Electric Piano Sounds, There Are 305 Various Instrument Voices

The CP5 is not just a lower-grade version of the CP1. It has the same "SCM" tone generation system as the CP1, and while it inherits the same fundamental design, it was conceptualized as a somewhat different type of instrument.

One could say that the CP5's concept is that of a keyboard instrument that enables you to enjoy performing using different combinations of voices.

This concept is made evident by the six knob controllers arranged on the left of the front panel. The CP5 has two acoustic piano voices and 17 types of electric piano voices, including those of electric pianos that used metal rods and plates (the Rd and Wr); pickup-based electric pianos, such as the venerable CP80, that used strings; and FM pianos, represented by the DX series. For all of these voices, you can create original piano tones by adjusting parameters such as the hammer hardness and strike position and adjusting the parameters of components such as the amp and effects. Another one of the main characteristics of the CP5 is that it has 305 musical instrument tones that can be freely combined with piano tones to create the actual tones (referred to as performances) that you perform with. The instrument sounds are arranged by type and include guitar, bass, string, brass, synth reed, and synth pad sounds.

You Can Turn Sounds On and Off and Adjust Them Instantly While You Play

The CP5 has six parts, including the one part that is assigned to the mic. You can assign instruments to these parts when you play. The six knobs on the left are the controllers for these parts. In addition to adjusting the volume balance for each of the parts as if you were operating a mixer, you can also turn each part on or off by pressing the buttons below the knobs. You can also turn splitting on or off using the button on the panel. The knob farthest to the left is assigned to the sound received from the microphone connected to the microphone input on the rear panel. During times such as when you are playing and singing, you can use this knob to adjust the balance between your voice and the instrument sounds. You can also load and replay audio files. This means that with just the CP5, you can sing and play over an orchestra sound that you created using a PC or other device.

While playing the piano, it's not unusual to think "I want to adjust the sound." In these situations, it is usually the brightness of the sound and the decay that performers want to adjust. Of course, this is impossible on an acoustic piano, but on the CP5, even this can be accomplished easily. The five knobs on the right of the front panel control the five-band master equalizer. Using these knobs, you can control the tone of your sound. For example, you can enhance the low sounds when there is only piano accompaniment in the beginning of a song, and then when the band comes in, you can lower the intensity of the low sounds and enhance the high sounds. Also, you can assign parameters freely to the three knobs in the center. For example, if you assign "Release" to one of the knobs, you can perform while making fine adjustments to the speed at which the notes decay. As discussed above, the CP5 is a high performance stage piano with a multitude of features for supporting piano performances on stage.

CP50

Expressive Performances That Combine Sounds from the CP1 with a Variety of Tones

The CP50 is a compact stage piano that uses the SCM tone generator from the CP1. The CP50 has acoustic piano voices and 12 types of electric piano voices, including those of electric pianos that used metal rods and plates (the Rd and Wr); the venerable string-based piano sounds of the CP80; and the voices of FM pianos, which people are familiar with from the DX series. For these sounds you can adjust the level and decay for each range. You can adjust parameters that have been specifically prepared for each voice, such as the strike point and damper effect. You can also adjust the parameters of the modulation effect block, whose many effects include fader, flanger, chorus, delay, tremolo, and distortion effects, and the parameters of the power-amp/compressor block. By making these adjustments, you can create sounds with extreme precision. In addition to the piano voices, there are 215 types of instrument voices that you can combine with piano tones to enjoy expressive performances. Also, to really get the most of the nuanced tones of the CP 50, we equipped it with a grade hammer keyboard, which reproduces different weights for different ranges, making the CP50 an instrument that enables the performer's thoughts to be converted into sound as smoothly as possible.

Equipped with a Refined Controller and Recording and Playback Features

In addition to an expressiveness that surpasses that of acoustic instruments, the CP50 also has real-time performance flexibility that would be impossible to achieve on an acoustic instrument.

There are three knobs and buttons on the left side of the front panel, and they can be used to turn on and off the three combined tones (parts) and adjust their balance. Even within a single song, you can change the tone according to the progression of the music. The sets of three knobs in the center and on the right side are also indispensable items. The three knobs on the right side control the three-band master equalizer. You can assign up to three of the parameters discussed above to the three assignable controllers in the center. By assigning decay or effect parameters to these knobs, even during performances, you can make precise adjustments in real-time.

The CP50 has 100 preset rhythm patterns, and it can load and play .wav and MIDI files, so you can play over an orchestra sound that you created using a PC or other device. Also, the CP50 can record its own performances. In addition, just as with the CP1 and CP5, the DAW software application Cubase AI is included with the CP50, so if you have a PC, you can set up a music creation environment quickly.

One of the great appeals of the CP50 is that if you have just one, you can do anything. Also, it enables you to acquire the state-of-the-art SCM tone generator featured on the CP1 flagship model for a modest price. The CP50 packs all the features you need into a compact body, making it a stage keyboard that truly excels in cost performance.

The Yamaha CP Legacy:

Exploring the Origins of the Stage Piano

In this day and age, digitally sampled realistic piano sounds are considered the norm for stage pianos. However, the original stage piano, which arrived in 1976, was the CP-70 electric grand piano, which used pickups with a grand piano structure. Even now, the name of the CP-70 can be seen in synthesizer presets, so even generations who never knew the era of the CP-70 may be familiar with its name. The CP-70 instantly took the world by storm. It was used by a vast number of musicians. The CP-70 and the various models that came after it defined an era. At the same time, pianos were released under the CP name that were totally different from the electric grand type of piano. These were what are known as "electric pianos." Here, we will follow the legacy of the Yamaha CP series and explore its era, its sound, and its appeal.

Part 1

The Yamaha CP-70/80 and Their Era

The age of YAMAHA CP

The CP-70/80 revolutionized the history of stage pianos and came to define an era.
Here, we will examine the history from before these instruments arrived to the present.

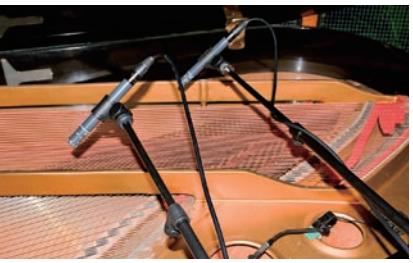
The Night before the Arrival of the CP-70/80

Throughout history, pianos have been an essential instrument for rock and pop. We can all conjure up images of performers singing and playing the piano. From the rolling sounds of rock-and-roll pianos to the classical phrases of progressive rock, pianos have made their mark in a wide range of genres. However, having said that, it's rather difficult to incorporate pianos into a band sound. This is especially true at live performances, where the extended setup time and limitations on the instrument layout pose great challenges.

The first problem is size. Even a small grand piano has a length close to 2 m and a weight of over 200 kg. A full-sized concert grand is even larger. It would be impossible for someone to just walk around with their own piano, and it takes a group of people to set a piano up.

What makes things even more difficult is that the sound is difficult to pick up. When you play a piano with a band, it's necessary to use PA speakers to project the sound. In order to pick up all the sounds of a piano that has hundreds of strings stretched within its huge body, it's necessary to set up multiple microphones at somewhat removed positions, just as one would when recording. However, if you do that, the sounds of the other instruments also make their way in. Even if you try to make the sound of the piano louder, you also end up making the sounds of the drums and guitar that made their way to the microphones louder too. Also, in that type of situation, it's easy for feedback to occur. The result is that it's easy for pianos to end up not having enough volume.

Of course even now, it is not uncommon for microphones to be used in cases where acoustic piano sounds are important, such as in performances of musicians who sing and play at the same time. Skilled engineers can effectively pick up the sound of a piano using two microphones, and pickups designed for pianos are now available. However, these techniques can usually only be used when the volume of other instruments is low or in an all-acoustic ensemble, and the reality is that picking up piano sounds is still difficult in very loud band performances. In fact, there are many players who have performed in clubs where the amount of setup time and the stage size is limited and who have suffered the experience of finding that the piano is drowned out by the volume of the rest of the band.



◀An image of piano recording. To adequately pick up the sounds of a piano, multiple microphones are necessary as shown here.

The Arrival of the CP-70!

From 1950s to 70s, as the era of bands began, a number of stage pianos were proposed to deal with these problems. The Fender Rhodes, which is now praised for its unique sound, was one of the instruments developed as a solution, and electric pianos such as the RMI Electra Piano were also introduced. However, electro-mechanical pianos that produced sound using tone bars instead of strings and the analog electronic pianos of the time all produced sounds that were too different from those of acoustic pianos for them to be used as direct replacements.

This was the context within which the long-awaited Yamaha CP-70 arrived in 1976. As the name electric grand suggests, the action was fundamentally the same as that of a piano. The sound resulting from hitting one of the strings with a hammer was detected by a specialized pickup and then output. Because the heart of the sound generation mechanism was the same as that of a grand piano, the sound

◀The CP-70/80 could be split into two pieces and carried (from a Yamaha catalog of the time).

YAMAHA CP TIME LINE

CP-70 ▶

CP-10 ▶

YAMAHA CP	1976	1977	1978	1979
	• CP-70 (Electric Grand Piano) • CP-30	• CP-20	• CP-70B • CP-80 (88 key model)	• CP-10

CP-30 ▶

was also vastly different from that of the electric pianos developed up until then. The CP-70 was the first stage piano to create the same sound as an acoustic piano, so it caused a huge sensation.

The CP-70 wasn't just a grand piano with pickups attached to it. One of the other main characteristics of the CP-70 is that a number of measures were taken to make it smaller and lighter. Specially developed strings were used to keep the string length extremely short. Also, while three strings are typically used for each of the mid high notes, only two strings are used in the CP-70, and the hammer action was partially simplified. The body had a case, and the keyboard section and string section could be separated during transport. The total weight exceeded 100 kg, but thanks to the CP-70's design, it could be transported easily through the use of a normal van.

As for the tone, one of the most important parts, it had a uniqueness brought on by the reductions in weight and size mentioned above. Because the strings were shorter and the resonance from the body was less than that of a normal piano, the sustain was also shorter and notes faded quickly. While this was the case, through the positions and characteristics of the pickups, the sound of impact from the hammer was limited so that the higher ranges were smooth and the lower ranges did not get extremely out of control. The well managed sound did not mask other instruments in live performances, and the range was limited to make it easy for PA systems to handle. The unique, light, consistent sound was perfect for the brisk, distinct sounds of 80s fusion and new music.

The CP-70 did not simply stop at being a stage replacement for the grand piano: the unique CP sound came to be loved by a variety of artists.

The CP Lineup

The 73-key CP-70 was a popular model because it was compact and because having only 73 keys did not pose much of a problem for rock and pop. After a short period of time, the CP-70 was refined to a model with an external power supply, the CP-70B. The CP-70B was the epitome of the CP series, and its use was extremely common at the time. In addition, when the CP-70B was released in 1978, the CP-80, which had the same 88 keys as a grand piano, was also released.

Sales of the CP-70/80 continued for over 10 years. Over this time, while the fundamental electric grand design didn't change, the instrument's functionality was slowly improved. Models whose names ended in D were equipped with seven-band graphic equalizers. Models whose names ended in M were equipped further with MIDI OUT connectors. Also, the smaller upright CP-60M was introduced. It was seen frequently in practice studios and other locations.

There are also models in the CP series that don't use strings. The CP-30, which was released at the same time as the CP-70, was an electronic piano with an analog oscillator. As was typical for electronic pianos, the CP-30 had three piano tones in its presets and a harpsichord tone. While the tones of the CP-30 sounded different from those of a piano or electric piano, it had interesting features, such as the ability to blend two tones. This electronic piano series progressed to the lower-priced CP-20/10 before evolving into the CP-35/25 and then continuing to the CP-11. Historically, it could be said that these CPs were the last of the analog electronic pianos, and perhaps now more than ever, we should appreciate their unique flavor.

Moving Forward to the Digital CP

The CP-70/80 series was well-loved, but over the course of the 90s, as pianos that used digital sampling began to arrive, the CP-70/80 series role as stage pianos began to diminish. Even when the CP name was revived in 2006 with the Yamaha CP300/33, the new models were digital pianos with AWM tone generators.

Not only were these types of digital stage pianos light and easy to configure, they also boasted incredibly versatile sound, with the ability to achieve sustain and low notes comparable to those of a grand piano and also to produce piercing sounds with enhanced hammer noise. With current stage pianos, it's common to select from a wide range of piano sounds based on the melody and genre.

As one of those piano sounds, the sound of the CP-70/80 still flourishes. The tone of the CP-70/80 is still the best match for playing 80s style arrangements and repertoire. Also, it is an excellent tone for rounding out a simple ensemble because it doesn't interfere with the band sound. When the sound of a normal acoustic piano is too heavy or stands out too much, the tone of the CP is the perfect choice.

If you check your tone generator or piano presets, you will probably find the sound of the CP-70/80 listed under "electric grand" or "electric acoustic piano."

1981	1982	1985	2006	2010
• CP-35/25, CP-11 (Analog tone generation model)	• CP-11W/7	• CP-80D/70D (Graphic equalizer built in model) • CP-80M/70M (MIDI equipped) CP60M (Upright piano type)	• CP300 and CP33	• CP1, CP5 and CP50

Part 2

The Design of a Famous Instrument That Dominated an Era

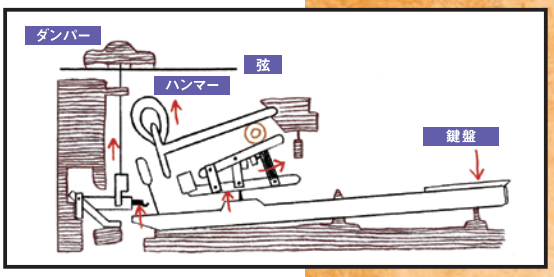
What's YAMAHA CP?

The Yamaha CP pianos, which are the epitome of stage pianos, have a variety of different models with different ages and sizes. These models use a variety of different tone generation methods. The most famous models are the string-based electric grands, the CP-70/80 series. Here, focusing on this series, we will delve into the structures of the main models.

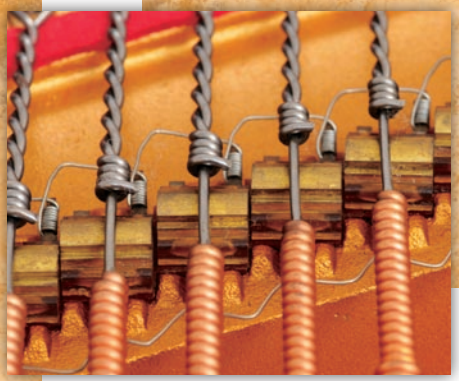
CP-70/80 (CP-60M)

When most keyboardists hear "CP," the first things they think of are probably the CP-70 (73 keys) and the CP-80 (88 keys). Just as these pianos look like grand pianos from the outside, their internal structures and sound producing mechanisms are also extremely close to those of a grand piano. The relationship between a grand piano and the CP-70/80 is easy to understand if you think of it in terms of the relationship between an acoustic guitar and an electric guitar. The basic sound producing method of an electric guitar is the same as that of an acoustic guitar, but while an acoustic guitar uses its hollow body to amplify the sounds of the strings through resonance, an electric guitar is designed not to use resonance but to instead use pickups to detect the sounds of the strings and then transmit the sounds through an external amp.

The CP-70/80 is also similar to a grand piano up to the point where it produces sounds by hitting the strings stretched across its steel frame using hammers connected to the keyboard. However, because the CP-70/80 does not have a table for amplifying the sounds of those strings, the raw sound that it produces is extremely faint. Instead of being amplified by a table, the vibrations are detected by piezoelectric pickups attached to each string and then finally transmitted as powerful sound by external playback equipment. The result is that a unique piano sound is produced that you can play at high volume without worrying about surrounding sounds being mixed in or feedback occurring.



▲The action of the CP-70/80, which is the same as that of a grand piano. The hammer, which moves in sync with the keyboard, hits the strings stretched across the upper area.



▲The piezoelectric pickups installed below each string. Because the electronics for the pickups and controllers are all installed in the upper frame part, it only needs to be physically attached to the keyboard part. There is no need to use cables to attach the two parts.

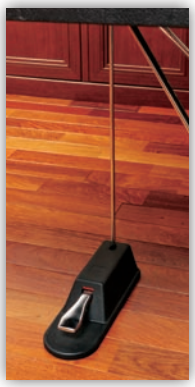
However, to keep the size of the piano compact while maintaining the necessary tension and range, the designers only used two strings in the middle to high ranges, where three strings would be used on a normal piano. The designers also made the area of the low range where only one string is used larger than that of a normal piano. The result is that the sounds in these areas have their own unique nuance. They are simpler than the sounds of a normal acoustic piano. This unique nuance, along with the characteristics of the pickups, is one of the major elements that define the "CP sound."
Another characteristic of the CP-70/80 is that it is equipped with a three-band equalizer and a tremolo circuit.

▲The control panel on the left side of the CP-80 keyboard. The controls, from left to right, are the effect loop, volume, three-band equalizer, brilliance level, tremolo on/off, tremolo rate, and depth controls.

▲The control panel of the upright CP-60M, which was sold at the same time as the CP-70M/80M (the overall design is the same as that of the CP-70M/80M). The controls, from right to left, are the red power switch, the volume, the equalizer on/off switch and seven-band graphic equalizer, the effect loop on/off switches, the tremolo on/off, and the tremolo rate and depth.
For the MIDI feature, a separate on/off switch and split-setting switch are available on a separate panel (on the left of the CP-60M's power switch, and on the right of the CP-70M/80M's power switch). In addition to the mechanical damper pedal, the foot switch can also be used as a MIDI sustain pedal.

▲As is appropriate for a stage piano, the CP output section is equipped with cannon (XLR) connectors. Unlike the 1/4" connectors below them, because the XLR connectors are special connectors for output to the PA system, their signals are not affected by the control panel volume. The pickup output is monaural, but because a stereo pan effect can be achieved when the tremolo effect is used, the output is stereo.

▲A reliable cannon connector is used to connect the AC adapter.



The CP-70/80 series pedal. As you can see here, it is connected to the instrument by a rod.

The CP-60M connector area. In addition to MIDI output, there are also power supply and foot switch connectors. It is equipped with two separate effect loops and output.

As described above, the CP-70/80 sound production system makes it truly worthy of being called an "electric grand." However, the most significant characteristic of the CP is most likely the structure of its body. The keyboard area and frame area of the CP-70/80 can be separated and stored in two separate cases along with the pedals, legs, power supply, and other parts. The result is that the CP-70/80 is much easier to carry around than a grand piano. However, perhaps because of this structure, the feel of the keyboard is heavier than that of a piano.

As shown here, it's simple to connect the keyboard part (lower half) and the frame part (upper half). And there is a handle for carrying on the left side.

There are a number of variations in the CP-70/80 series. First of all, the CP-70 sold in 1976 had a built-in power supply. In 1978, the CP-70B arrived. Its power supply was contained in an external AC adapter. The CP-80, which had 88 keys, also started selling that year. In the beginning of 1985, the CP-70D/80D was released. It had a seven-band graphic equalizer and two separate effect loops. In the summer of the same year, a model with the same features plus a midi output, the CP-70M/80M, was released, along with the upright CP-60M. It became possible for CPs to be connected by MIDI to a synthesizer, such as the DX7, and layered in performances. While the body of the CP-60M could not be split up like older versions, it still had a design that was conducive to touring, with a keyboard section that could be folded down into the instrument. The M series were the last CP models to use strings.
As a substitute for an acoustic piano, the CP-70/80 is vastly superior to electric pianos that use reeds or tone bars, such as the Rhodes and Wurlitzer pianos, and to electronic pianos that use oscillators. Also, there are a number of artists who use the CP-70/80 for recording because of its unique sound. However, while the CP-70/80 is much lighter than a grand piano, it still weighs 100 kg, and the fact that it has to be tuned like a regular piano is a negative aspect that can't be overcome. So, with the arrival of much more compact yet still sufficiently real-sounding PCM tone generators, the CP-70/80 had to withdraw from the front line.

Other CP Series

The other CPs released in the 1970s did not use strings, but instead used analog tone generators based on electronic oscillators. Of course, they were "electronic pianos," and their sounds had a totally different character than the sound of the CP-70/80.
Their fundamental structure was similar to that of an electronic organ or analog synthesizer: a single master oscillator produced the fundamentals for each of the key notes through the use of an IC for dividing the frequencies into those of a tempered scale. Then preset filters, VCAs, and other methods were used to modify the tones so that they were similar to those of a piano or harpsichord.
Of course, the tones that these pianos produced were "piano-like sounds produced by an analog synthesizer," and were not sufficient substitutes for a piano.

The most popular model in this popular series was the CP-30. It had two built-in tone generators, each with three piano tones and four harpsichord tones. The reason the CP-30 was so popular was because the tones of its two generators could be combined and detuned to produce unique new tones. Like the string-based CPs, the CP-30 was designed to be portable. For example, its lid could be separated into two parts and used as a stand. The CP-20/30 eventually developed into the expansion model, the CP-25/35. The CP-25/35 used a pulse tone generator with a key assigner circuit equipped with a processor for assigning played notes to the tone generator. This made decay control through envelopes possible.
Like the CP-30, the CP-35 had two tone generators. Because it enabled users to set different decays for each tone generator, it enabled sophisticated sound creation in which the attack and delay time were used to change the tone. It also had a preset feature for changing tones at the push of a button, an equalizer, tremolo, and a flanger.
Furthermore, in the beginning of the 1980s, products such as the CP-11 arrived. The CP-11 had an automatic accompaniment feature, which would later be found in portable keyboards, and its own built-in speakers.

▲CP-30

Part 3

Yamaha CP Gallery

Do you know all models?

CP-20

The first-generation instrument from the same line as the CP-11. It started selling in 1977, the year after the CP-70 and CP-30. It was a smaller version of the CP-30, which had 76 keys and two tone generators. While this version had 61 keys and one tone generator, like the CP-30, it had four tone tablets and touch response. Its price at the time was $740.

CP-80

The 88-key model that started selling in 1978. It had longer strings than the 73-key model and produced a purer, more natural tone.
Functionally, it was the same as the CP-70B. Its price at the time was $4000.

CP-60M

The upright model that came out in 1985. Like the CP-70M/80M, it was equipped with MIDI and a seven-band graphic equalizer. It was designed so that its keyboard area could be stored inside its body. Its price at the time was $1840.

CP-11

This is a CP not from the string-based line but from the line of electronic pianos that used analog tone generators with electronic oscillators.
It also had an automatic accompaniment feature and built-in speakers. Later came the CP-11W, which had a woodgrain panel. Its price in 1981 was $4250.

CP-30

An electronic piano with an analog tone generator. It arrived in 1976 at the same time as the CP-70. In addition to a touch response like that of an acoustic piano, it also enabled musicians to enjoy sophisticated tone creation with two tone generators, two tones, two decays, two pitches, and two separate tremolo controls. Its price at the time was $950.

CP-10

An instrument that was based on the CP-30/20, this CP came about as a result of the tenacious pursuit of cost performance. Its price in 1979 was $499.
Like the two instruments introduced above, this CP had four tone tablets and a five-band graphic equalizer.

CP-35

This was the ultimate instrument from the second generation of electronic pianos with analog tone generators. It was an unquestionably professional instrument. Musicians could create sounds using two newly developed pulse tone generators, each with four types of wave switches for setting the tone generator waveform, and filter switches. It arrived in 1981, and sold for $1800.

CP-7

This was an instrument for home use that was introduced in 1982. Like the other CPs before it, it had four tone tablets, but it also had a main chorus effect and two 5-watt speakers. After this, no electronic pianos with the name CP were released until 2006. At the time, it sold for $280.

CP300

The pinnacle of stage pianos, boasting functions and features designed for live performances and band ensembles.
Its price is $3150.

CP33

This small, lightweight model is half as heavy as the CP300, and it has a depth of approximately 70% that of the CP300. Its price is $1700.

CP1

Pedal Unit included.

Specifications

			CP1	CP5	CP50
Keyboard			88 keys, NW-STAGE keyboard (Wooden synthetic ivory weighted keyboard)	88 keys, NW-STAGE keyboard (Wooden synthetic ivory weighted keyboard)	88 keys, GH keyboard
Maximum Polyphony			128	128	128
Tone Generator			SCM	SCM + AWM2	SCM + AWM2
Performances		Preset	16 x 3 banks	10 x 4 groups x 3 banks	10 x 4 groups x 3 banks
		User	16 x 3 banks	10 x 4 groups x 3 banks	10 x 4 groups x 3 banks
		External	16 x 3 banks (USB Flash Memory)	10 x 4 groups x 3 banks (USB Flash Memory)	10 x 4 groups x 3 banks (USB Flash Memory)
	Parts		2	6	3
	Voice Block		17 piano types	17 piano voices + 305 other voices	12 piano voices + 215 other voices
	Modulation Effect Block		10 types	49 types	49 types
	Power Amplifier / Compressor Block		8 types	8 types	—
	Reverb		8 types	8 types	8 types
	Master Compressor		—	3-band	3-band
	Master Equalizer		5-band	5-band	3-band
Rhythm		Number of Kits	—	14	14
		Number of Patterns	—	100	100
Display			55 character x 2 lines, VFD	24 character x 2 lines, VFD	24 character x 2 lines, VFD
Controllers			Pitch bend wheel, Master volume, Knobs 1 to 6	Pitch bend wheel, Master volume, Knobs 1 to 3, Part volume x 6, Gain Master equalizer x 5	Pitch bend wheel, Master volume, Knobs 1 to 3, Part volume x 3, Master equalizer x 3
Connectors		Output	PHONES L/MONO, R (Unbalanced) L, R (Balanced)	PHONES L/MONO, R (Unbalanced) L, R (Balanced)	PHONES L/MONO, R (Unbalanced)
		Foot Switch	SUSTAIN, SOSTENUTO, SOFT, ASSIGNABLE	SUSTAIN, ASSIGNABLE	SUSTAIN, ASSIGNABLE
		Foot Controller	x 2	x 2	x 1
		Mic Input	—	x 1	—
		MIDI	IN, OUT, THRU	IN, OUT, THRU	IN, OUT, THRU
		USB	TO HOST, TO DEVICE	TO HOST, TO DEVICE	TO HOST, TO DEVICE
Power Consumption			28W	25W	7W
Dimensions (W x D x H; not including pedal unit)			1,385 x 420 x 173 mm	1,381 x 405 x 174 mm	1,381 x 332 x 165 mm
Weight (not including pedal unit)			27.2 kg	25.2 kg	20.9 kg
Additional Package Contents			Power cord, Pedal unit, Illustrated Guide to the CP1 booklet, Owner's Manual, Data List booklet, Software DVD-ROM*	Power cord, Foot pedal FC3, Owner's Manual, Owner's Manual CD-ROM, Software DVD-ROM*	Power adaptor PA-150 (or an equivalent recommended by Yamaha), Foot pedal FC3, Owner's Manual, Owner's Manual CD-ROM, Software DVD-ROM*

Options for CP1/CP5/CP50 •Keyboard Stand: LG-800 •Foot Pedal: FC3 •Foot Switch: FC4, FC5 •Foot Controller: FC7, FC9

* Software DVD-ROM: Steinberg Cubase AI DAW Software.

CUBASE AI Integrated Music Production System

Specifications and appearance are subject to change without notice.

For details please contact:

YAMAHA
YAMAHA CORPORATION
P.O. Box 1, Hamamatsu, Japan
www.yamahasynth.com