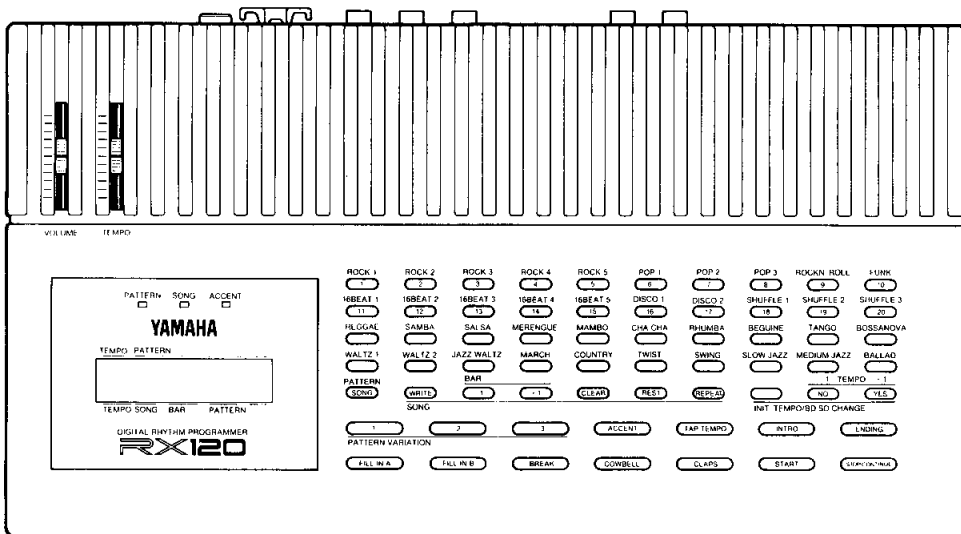# YAMAHA

DIGITAL RHYTHM PROGRAMMER
PROGRAMMEUR DE RYTHMES NUMERIQUE
DIGITALER RHYTHMUS PROGRAMMIER
PROGRAMADOR DE RITMOS DIGITAL

RX120

OPERATING MANUAL
MANUEL D'UTILISATION
BEDIENUNGSANLEITUNG
MANUAL DE INSTRUCCIONES

INTRODUCTION

Thank you for purchasing the Yamaha RX120 Digital Rhythm Programmer. The RX120 lets you connect rhythm patterns to program your own songs, using the 38 sampled percussion instruments in a wide variety of preset patterns. Some of the many features of the RX120 are ...

- 38 sampled percussion instruments.
- 40 preset patterns, each with three variations, two fill- ins, break, intro and ending. (Total of eight ways to play each preset.)
- 20 song memories to program your own songs, each up to 500 measures long.
- Foot switch jacks for remote control of Fill In or Start/Ending.

- The sampled percussion instruments can be played from a MIDI keyboard.
- Playback can be synchronized with an external MIDI sequencer.

In order to take full advantage of the RX120's functions, please read this manual carefully.

TABLE OF CONTENTS

PRECAUTIONS

Your new RX120 is a fine musical instrument - and should be treated as such. Though it is ruggedly constructed and offers the reliability of solid-state circuitry, handle it with care and common sense. Keep the following points in mind, and your RX120 will give you years of reliable service.

● **Location**

Avoid exposure to direct sunlight or other sources of heat. Vibration, excessive dust, cold, low or high humidity can also cause malfunction.

● **Relocation**

When moving the RX120, unplug the AC adapter and all other connecting cables to prevent damage to cords and jacks.

● **Handling**

Avoid rough handling. Don't drop the RX120 as this can damage the internal circuitry. Applying excessive force to terminals or controls may lead to malfunctions. Always remove plugs from jacks or other terminals by gripping them directly, not by pulling the cord.

● **AC Power Connection**

Connect only to a power supply conforming to the specifications shown on the AC adapter.

Disconnect the RX120 from the AC outlet when not using it for an extended period of time. Electrical storms (lightning) can give rise to power surges, damaging digital circuitry even if power is turned off.

● **Cleaning**

Clean the exterior with a soft, dry cloth. Using chemical solvents will damage the finish.

● **Interference Through Electromagnetic Fields**

Do not use your RX120 close to television sets, radio receivers or other equipment generating electromagnetic fields. This could cause both malfunctions of the RX120 digital circuitry as well as interference noise in the other appliance.

● **Service and Modifications**

The RX120 contains no user serviceable parts. Opening it or tampering with it in any way can lead to electrical shock as well as damage and will void the product warranty. Refer all servicing to qualified YAMAHA personnel.

SPECIFICATIONS

● **User memory**

    20 song memories

● **Preset memory**

    40 patterns x 8 variations

● **Wave memory**

    2 Mbit ROM x 1, 1 Mbit ROM x 1

● **Voices**

    38 instruments, 12-note simultaneous polyphony

● **Display**

    16 character illuminated LCD

● **Terminals**

    MIDI IN, FILL IN, START/ENDING, PHONES, OUTPUT R, OUTPUT L/MONO, DC12V IN

● **LED indicators**

    PATTERN, SONG, ACCENT

● **Switches**

    40 patterns, PATTERN/SONG, WRITE, −/+1, CLEAR, REST, REPEAT, INIT TEMPO/BD SD CHANGE, NO, YES, PATTERN VARIATION 1—3, ACCENT, TAP TEMPO, INTRO, ENDING, FILL IN A--B, BREAK, COWBELL, CLAPS, START, STOP/CONTINUE

● **Sliders**

    VOLUME, TEMPO

● **Dimensions (D x W x H)**

    191 x 350 x 54.5 mm (7-1/2" x 13-3/4" x 2-1/8")

● **Weight**

    1.5 kg (3 lb 5 oz)

● **Included Items**

    PA—1 AC adaptor

FRONT PANEL
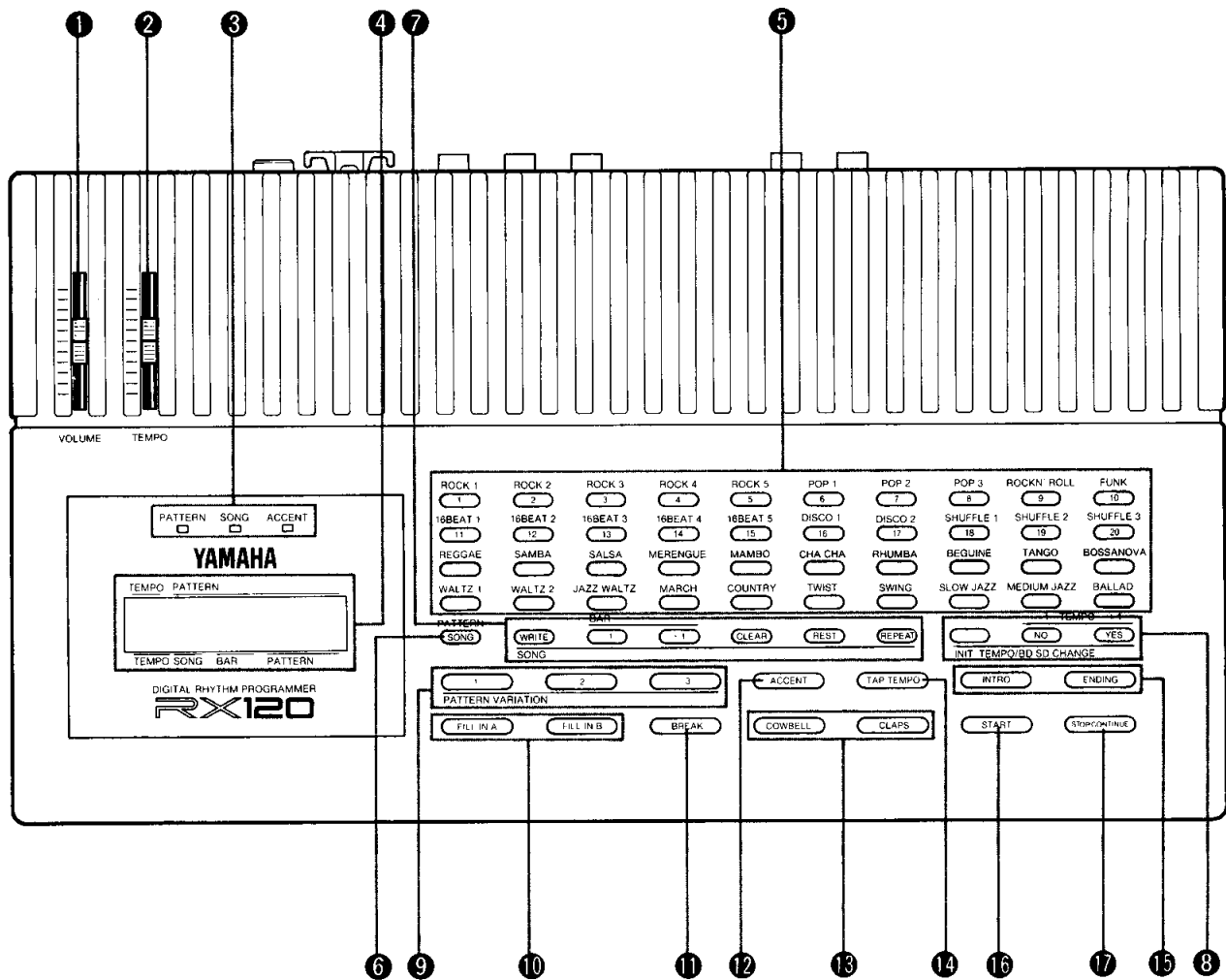
❶ **VOLUME:** This slider controls the overall volume of the RX120.

❷ **TEMPO:** This slider controls the tempo of Patterns or Songs over a range of 40–250 beats per minute.

❸ **LEDs:** The PATTERN and SONG LEDs indicate the mode you are in, and also blink to indicate tempo. The ACCENT LED indicates that the Accent has been turned on.

❹ **LCD:** A 16-character Liquid Crystal Display, illuminated for visibility.

❺ **PATTERN SELECT SWITCHES:** The RX120 has 40 rhythm patterns, from ROCK 1 through BALLAD. The upper two rows are also used to select a song (1–20).

❻ **PATTERN/SONG:** Press this switch to go between Song mode and Pattern mode.

❼ **SONG:** These switches are used when programming your own song.

❽ **INIT TEMPO/BD SD CHANGE:** These switches are used to select or cancel Initial Tempo, and to select the Bass and Snare sounds. The NO and YES keys are also used to answer prompts in the LCD, and to change the tempo.

❾ **PATTERN VARIATION 1–3:** Each of the 40 rhythm patterns has three basic variations.

❿ **FILL IN A, B:** Each of the 40 rhythm patterns has two types of fill in.

❶ MIDI IN: The percussive sounds of the RX120 can be played by incoming MIDI Note On messages from a keyboard or sequencer connected to this MIDI terminal. In MIDI Sync Mode, the RX120 will be synchronized with a sequencer or rhythm machine when the MIDI OUT of these instruments is connected here.

❷ FILL IN: A on/off-type footswitch (FC 4 or FC 5) connected to this jack will alternately trigger FILL IN A and FILL IN B.

❸ START/ENDING: A on/off-type footswitch (FC 4 or FC 5) connected to this jack will alternately function as the front panel START and STOP/CONTINUE switches (in Song mode), or START and ENDING switches (in Pattern mode).

❹ PHONES: Connect a pair of standard stereo headphones to this jack.

❺ R, L(MONO): Connect these jacks to an amp/speaker system. The 38 percussive sounds are spread over the stero field. (The stereo position of each sound is fixed, and cannot be changed.) If only one channel is to be used, connect the L(MONO) jack.

❻ DC 12V IN: Connect the included PA- 1 AC adaptor to this jack.

⑪ BREAK: Each of the 40 rhythm patterns has a "minimal" rhythm break.

⑫ ACCENT: Switching on Accent will add additional emphasis for rhythmic accents.

⑬ COWBELL, CLAPS: You can manually play a Cowbell and Claps by pressing these switches.

⑭ TAP TEMPO: Tapping this switch on the second beat of the rhythm will set the RX120 to the new tempo.

⑮ INTRO, ENDING: Each of the 40 rhythm patterns has an Intro pattern and an Ending pattern.

⑯ START: Press this switch to start a Song or Pattern from the beginning.

⑰ STOP/CONTINUE: Press this switch to stop play, or to begin playing a Song or Pattern from the current point.

CONNECTIONS

Connect the rear panel R and L output jacks to an amp/speaker system (use L/MONO if you have only one input) and connect the included PA-1 AC adaptor to the DC12V IN jack. (You can loop the AC adaptor cable through the brackets to prevent it from accidently being pulled out.)

Stereo Headphone

Keyboard or Sequencer (optional)

FC 4 or FC 5 (optional)

Amp./Speaker system

PA-1 (included)

YAMAHA
MODEL RX120
DC12V PATENT PENDING
YAMAHA CORPORATION MADE IN JAPAN
SER.NO.

MIDI IN

FILL IN START/ENDING
└─FOOT SW─┘

COMPLIES WITH THE LIMITS FOR A "CLASS B" COMPUTING DEVICE
PURSUANT TO SUBPART J OF PART 15 OF FCC RULES

PHONES   R   L(MONO)
        └─ OUTPUT ─┘

＋-⊙-－
DC 12V IN
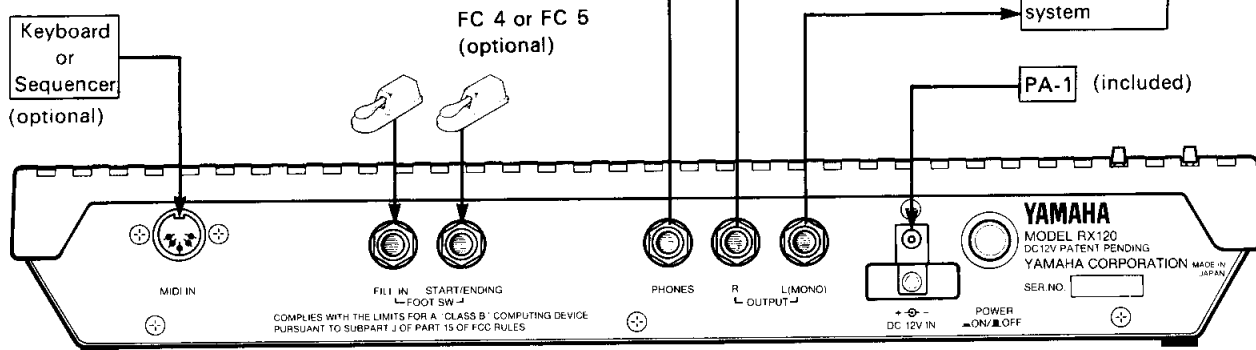
POWER
▬ON/▬OFF

TRY THE PRESET PATTERNS

When you turn the power on, the RX120 will be in PATTERN mode, ready for you to try out the preset patterns. (A front panel red LED will indicate PATTERN.) Press START, and the rhythm will begin. Adjust the RX120 front panel volume slider and the controls of your amp/speaker system. Select patterns and variations.

1. Begin play   START
2. Select patterns   ROCK 1   BALLAD
                      ⊂1⊃ — ⊂⊃
3. Select variations VARIATION ⊂1⊃ – ⊂3⊃
                      ⊂FILL IN A⊃ , ⊂FILL IN B⊃
                      ⊂BREAK⊃

4. Repeat steps 2—3 to select other patterns and variations.
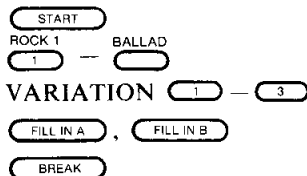
PATTERN MODE on this page gives further details.

TRY THE PRESET SONGS

With playback stopped, press PATTERN/SONG. The LCD will briefly show "SONG", and a red LED will indicate SONG mode. Press 1—20 (upper two rows) to select a song, and press START. Notice how the LCD shows the abbreviated name of the current pattern and variation as the song progresses.

1. Enter Song mode   PATTERN
                      ⊂SONG⊃
2. Select a song   ⊂1⊃ — ⊂20⊃
3. Begin play   ⊂START⊃
4. When the song is over, repeat steps 2—3 to select and play another song.

SONG MODE on page 5 explains how to write your own songs.

PATTERN MODE

The RX120 has 40 basic rhythm patterns (ROCK 1 ... BALLAD), and 8 variations (3 pattern variations, 2 fills, 1 break, 1 intro, 1 ending) for each — a total of 320 patterns. (Actually, the Break variations are the same for some patterns.)

In Pattern mode you can select and individually play the rhythm patterns and their variations. Each time you press the PATTERN/SONG switch, you will alternate between Pattern mode and Song mode. (The LCD will briefly show "PATTERN" or "SONG", and a red LED will indicate the mode.)

SELECT PATTERNS

Press the pattern switches to select from the 40 patterns; ROCK 1, ROCK 2, ROCK 3 ... BALLAD. When you select a new pattern (or variation) while playing in the middle of a measure, the display will change immediately, but the new pattern will begin playing from the next measure. (The black triangle in the LCD indicates that the new pattern has not yet started.)

Pattern selected (but not playing yet)

140▶Rock   2   . 1
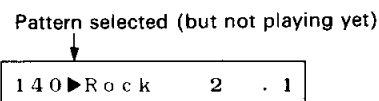
PATTERN VARIATIONS 1—3

Press the PATTERN VARIATION switches 1—3 to select the three variations for each pattern. The variation number will be shown in the right of the LCD.

```
        Pattern      Variation 1–3
           │              │
           ▼              ▼
    ┌──────────────────────────┐
    │ 1 4 0 : R o c k   1  . 1 │
    └──────────────────────────┘
```
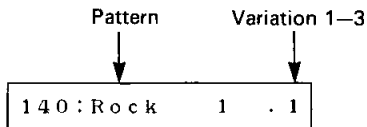
FILL IN A—B, BREAK

When you press the FILL IN A or FILL IN B switches, a fill in pattern will sound — a more complex rhythm for points of emphasis. When you press the BREAK switch, a basic, "minimal" rhythm will sound — usually just the bass drum or high-hat cymbal. Fill In and Break patterns will begin sounding from the next quarter note.

INTRO, ENDING

Each rhythm pattern also has an Intro and an Ending pattern. While the RX120 stopped, pressing INTRO will play the intro pattern, and continue playing, as if you had pressed START. While playing, pressing ENDING will play the ending pattern and stop, as if you had pressed STOP.

TEMPO

In Pattern mode, the Song LED blinks at the beginning every bar (whole note), and the Pattern LED blinks every beat (quarter note).

```
    PATTERN    SONG
       □        □

       ♩        ○
```

SONG MODE

Up to 500 patterns can be connected to make a Song. The RX120 has 20 song memories for you to program your own songs. Each press of the Pattern/Song switch will take you between Pattern mode and Song mode. (The LCD will briefly show "PATTERN" or "SONG", and a red LED will indicate the mode.)
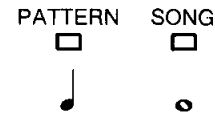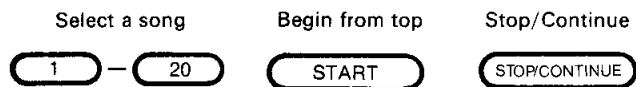
PLAY A SONG

When the RX120 is shipped, the song memories contain pre-programmed songs. Press 1—20 to select a song, and press START.

```
   Select a song      Begin from top     Stop/Continue
  ┌───┐   ┌────┐      ┌──────────┐      ┌─────────────┐
  │ 1 │ — │ 20 │      │  START   │      │STOP/CONTINUE│
  └───┘   └────┘      └──────────┘      └─────────────┘
```

While stopped, you can use the BAR −1/+1 switches to move through the bars of a song, and press (STOP/CONTINUE) to continue from that point in the song.

WRITE A SONG

To write your own song, select the song memory (1—20) you want to write into, and press WRITE. The LCD will blink "WRT".

```
   Select a song (1—20)              Press WRITE
  ┌───┐   ┌────┐                    ┌───────┐
  │ 1 │ — │ 20 │                    │ WRITE │
  └───┘   └────┘                    └───────┘

                      Song    Pattern
                       │         │
                       ▼         ▼
              ┌─────────────────────────┐
              │ W R T : 1 : 0 0 1 : 1 6 B 4 . in │
              └─────────────────────────┘
                           ▲         ▲
                           │         │
                          Bar     Variation
```

5
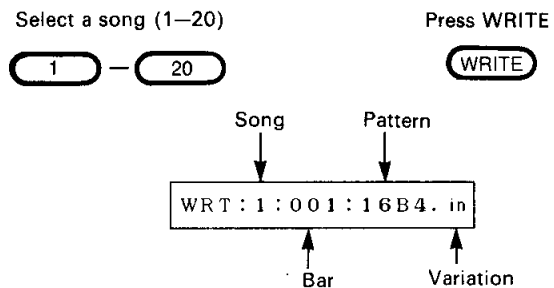
Now use the — 1 and + 1 switches to move through the bars of the song. (At bar "zero", you can use the TEMPO — 1/+ 1 keys or the TEMPO slider to set the tempo for the song. However if Initial Tempo is off, this setting will not be used. See page 7.)

Set tempo at bar 0
using (NO), (YES)

```
WRT:1:000:  ♩=120
```

First bar

```
WRT:1:001:Rck1.in
```
↑
(-1)
(+1)
↓

(select pattern and
variation for each bar.)

.
.
.

Last bar

```
WRT:1:015:Rck1.||
```
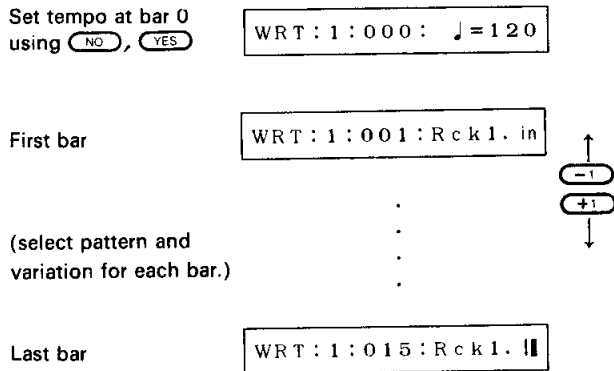
Select a Pattern (ROCK 1 ... BALLAD) and Variation (PATTERN VARIATION 1–3, FILL IN A–B, BREAK, INTRO, ENDING) for each bar just as in Pattern mode. Note t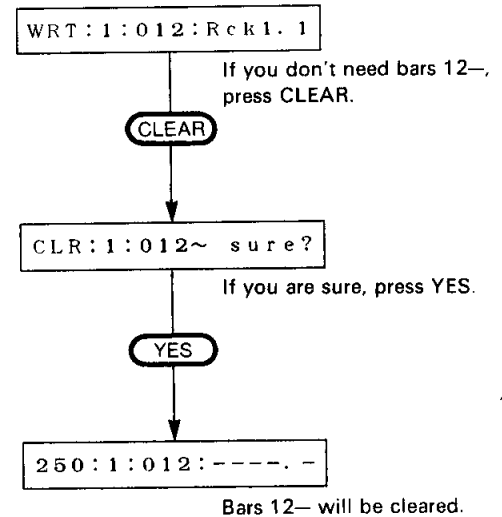hat the INTRO and ENDING patterns do not necessarily have to be at the beginning or end of a song — they can be used anywhere, and a song can begin or end with any type of pattern. To program a Rest, press the REST switch. Sucessive pressing of the REST switch will alternate through 3-beat and 4-beat rests so you can select the one you need. Pattern Variations and Rests are shown in the LCD as follows;

Fill in A : A   Ending : ||
Fill in B : B   Break : x
Intro : in   Rest : ♪ x4   o r   ♪ x 3

While writing a song, you can press PLAY to hear the currently selected rhythm pattern.

When you have completed your song, press WRITE again. Or, if there are any unwanted bars after the point where you want your song to end, press CLEAR. If you are sure you want to clear, press YES. The current measure and all later measures will be cleared.

```
WRT:1:012:Rck1.1
```
If you don't need bars 12—,
press CLEAR.

(CLEAR)

```
CLR:1:012~ sure?
```
If you are sure, press YES.

(YES)

```
250:1:012:————.—
```
Bars 12— will be cleared.

Your new song is now ready to play.

REPEAT

At any time, you can press the REPEAT switch, making a " ♪ " mark appear in the LCD. The song will continue repeating until you press STOP. A song written with Repeat On will repeat when you select it. (A song that contains no data cannot be repeated.)

Song will continue repeating
until you press STOP.
↓
```
250:1♪001:16B1.2
```
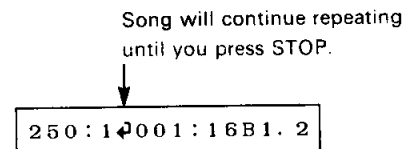
TEMPO

In Song mode, the Pattern LED blinks at the beginning of every bar (whole note), and the Song LED blinks on every beat (quarter note).

PATTERN   SONG
□   □

o   ♩
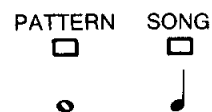
OTHER FUNCTIONS

INIT TEMPO / BD SD CHANGE

These three switches control two different functions, alternating each time you press the switch. While holding the INIT TEMPO/BD SD CHANGE switch, use the NO/YES switches to select the alternatives.
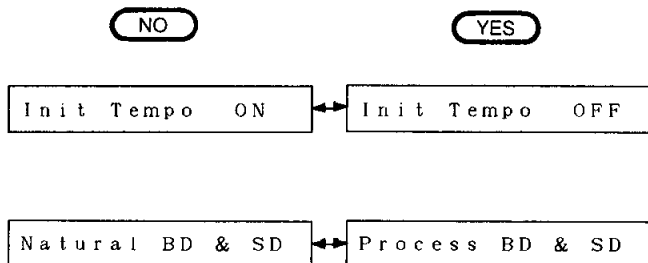
```
( NO )                        ( YES )
```

Init Tempo ON	◄►	Init Tempo OFF

Natural BD & SD	◄►	Process BD & SD

Init Tempo: Each pattern has its own initial tempo that is automatically used when you play the pattern. By switching Init Tempo OFF, you can disable this, so that newly selected patterns (and songs) will not change the tempo.

BD & SD: For the top two rows of pattern switches (ROCK 1 to SHUFFLE 3), you may select a natural-sounding Bass and Snare, or a more electronic-sounding, "processed" Bass and Snare.

COWBELL, CLAPS

At any time, you may press COWBELL or CLAPS to play the respective sounds.

TAP TEMPO

At any time while playing in Pattern mode or Song mode, you may set the tempo by pressing the TAP TEMPO switch on the second beat of the tempo you want. For a four-beat rhythm, you would count "one, two, three, four" and press TAP TEMPO on "two". The tempo range is 40—250 beats per minute.

You may find this function useful when setting the RX120 to follow a live performance.

Tap Tempo can be set while the RX120 is stopped. When you press TAP TEMPO, the LEDs will begin blinking to indicate tempo (there will be no sound). This will continue until you press STOP/CONTINUE. Now press TAP TEMPO on the second beat as explained above.

LOAD DEMO SONG

When the RX120 is shipped, its song memories (1—20) contain factory-programmed songs. You may write your own songs into memory to replace these, but if you want to restore the original factory-programmed data, turn the RX120 on while pressing PATTERN VARIATION 2. You will be asked "Load demo SONG ?". If you wish to do so, press YES. If you are sure you want to erase your own songs and load the factory-programmed songs, press YES again.

ERROR MESSAGES

If the RX120 encounters an unexpected condition, it will issue one of the following error messages.

! Memory Full !: Too many measures have been used in songs. (Each song can use up to 500 measures, but the RX120 can remember a total of between about 900 and 3800 measures. Using a different pattern for each measure uses more memory.)

! Buffer Full !: Too much data has been received too rapidly at the MIDI IN terminal. Press PATTERN/SONG to return to normal operation.

! Change Battery !: The memory backup battery inside the RX120 has dropped to less than 2.2V, and needs to be changed. Please contact your Yamaha dealer. Press YES to return to normal operation.

! No Battery !: The memory backup battery inside the RX120 has dropped to less than 1.5V, and needs to be changed. Please contact your Yamaha dealer immediately. Press YES to return to normal operation.

The MIDI IN terminal on the rear panel of the RX120 can be connected to the MIDI OUT terminal of other devices such as MIDI keyboards and MIDI sequencers.

MIDI NOTE RECEPTION

The 38 percussive instruments in the RX120 can be played from a MIDI keyboard connected to the RX120 MIDI IN. If your keyboard is velocity sensitive the sounds in the RX120 will be louder as you play harder. The RX120 instruments are arranged across the keyboard as follows;

Instrument	Note	Number
Bass Drum 1	A1	45
Bass Drum 2	G#1	44
Snare Drum 1	E2	52
Snare Drum 2	C#2	49
Snare Drum 3	B1	47
Rim Shot 1	D#2	51
Rim Shot 2	A#1	46
Tom 1	F2	53
Tom 2	D2	50
Tom 3	C2	48
Electric Tom 1	G1	43
Electric Tom 2	F#1	42
Electric Tom 3	F1	41
High-hat Open	B2	59
High-hat Closed	A2	57
High-hat Pedal	A#2	58
Ride 1 (cup)	D3	62
Ride 2 (edge)	D#3	63
Crash	C3	60
China	C#3	61
Cowbell	G2	55
Claps	F#2	54
Timbale High	A#3	70
Timbale Low	A3	69
Tambourine	B3	71
Conga High Mute	F#3	66
Conga High Open	F3	65
Conga Low	E3	64
Bongo High	G#3	68
Bongo Low	G3	67
Agogo High	D#4	75
Agogo Low	D4	74
Whistle	F#4	78
Shaker	G#2	56
Cuica High	F4	77
Cuica Low	E4	76
FM Percussion 1	A#4	82
FM Percussion 2	B4	83

MIDI RECEIVE CHANNEL

The RX120 will normally receive the above Note On messages on any MIDI channel (i.e., Omni mode). If you need to restrict Note On reception to a specific channel, turn the power on while pressing a Song Select switch (1—16). The LCD will show the selected channel as "Receive CH: 16".

You would use this function if you were independently controlling the RX120 and other MIDI devices over the same cable (using THRU connections).

Refer to the owner's manual for information on how to set its Transmission channel.

MIDI SYNCHRONIZATION

Normally, the RX120 keeps time using its own internal clock. However if you want to synchronize the RX120 to an external sequencer or rhythm machine connected to the rear panel MIDI IN terminal, you can set the RX120 to MIDI Sync by turning the power on while holding PATTERN VARI-ATION 1. The LCD will briefly show "MIDI sync". In this mode, the TEMPO slider and TEMPO −1/+1 keys will have no effect, and the LCD will show "EXT" in the space where the tempo (40—250) would normally be displayed.

In MIDI Sync mode, the RX120 receives Start, Stop, Continue, Timing Clock, Song Position Pointer and Song Select messages. (Song Select messages 0—19 select RX120 song memories 1—20.) Song Select and Song Position Pointer are received only in "MIDI Sync" in "Song Mode". If there are no Timing Clock messages coming in to the RX120 MIDI IN, it will not play.

In MIDI Sync mode, the RX120 will not accept Note On messages to play its percussive sounds.

Note:
Most rhythm patterns are one measure long. However, some of the rhythm patterns (all patterns of the third row of buttons; Reggae, Samba, etc.) are two measures long. The RX120 synchronizes by pattern, not measure. This means that when the RX120 is synchronized to an external sequencer or rhythm machine, some of these two-measure patterns will play twice as fast as normal.

Function ...	Transmitted	Recognized	Remarks
:Basic Default	x	1	OMNI ON
:Channel Changed	x	1 - 16	OMNI OFF
:Mode Default	x	1	
Messages	x	x	
Altered	**************	x	
:Note	x	41 - 83 *1	
:Number : True voice	**************	41 - 83	
:Velocity Note ON	x	o v=1-127	
Note OFF	x	x	
:After Key's	x	x	
:Touch Ch's	x	x	
:Pitch Bender	x	x	
:Control	x	x	
:Change			
:Prog	x	x	
:Change : True #	**************	x	
:System Exclusive	x	x	
:System : Song Pos	x	o *2	
: Song Sel	x	o 0 - 19 *2	
:Common : Tune	x	x	
:System :Clock	x	o *2	
:Real Time :Commands	x	o *2	
:Aux :Local ON/OFF	x	x	
:All Notes OFF	x	x	
:Mes- :Active Sense	x	x	
:sages:Reset	x	x	

:Notes: *1 = Note number 41-83 which correspond to each instrument are
        recognized only in INTERNAL SYNC mode.
    *2 = These messages are recognized only in MIDI SYNC mode.

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

(i)

RHYTHM PATTERN GUIDE

Each of the 40 basic rhythm patterns in the RX120 has a total of 8 different variations; Intro, Variation 1—3, Ending, Fill In A/B, and Break. Here are examples of how the variations differ for three of the basic rhythm patterns; ROCK 1, POP 1 and 16 BEAT 1. Standard percussion notation is used, as shown on the staff below. Special instruments such as FM percussion or Latin percussion are shown on a separate staff.

GUIDE DES MOTIFS RYTHMIQUES

Chacun des 40 motifs rythmiques de base de l'RX120 vous offre 8 variantes: Intro, Variations 1—3, Fill IN A/B et Break. Voici quelques exemples qui vous montreront en quoi ces variantes diffèrent pour trois des motifs rythmiques de base: ROCK 1, POP 1 et 16 BEAT 1. La notation standard pour les percussions est utilisée, comme indiqué sur la portée ci-dessous. Des instruments spéciaux tels que les percussions FM et les percussions latines sont indiqués sur une portée séparée.

PATTERN-VARIATIONEN

Der RX120 enthält 40 Grundrhythmen mit je 8 Variationen: Intro, Variation 1 bis 3, Schluß, Fill-in A/B und Break. Hier werden die Variationen für 3 Grundrhythmen dargestellt: ROCK 1, POP 1 und 16 BEAT 1. Normale Notation für Perkussion wird verwendet, wie unten gezeigt. Spezialinstrumente wie FM Percussion oder Latin Percussion werden auf einer separaten Notenlinie gezeigt.

GUÍA DE PATRONES DE RITMOS

Cada uno de los 40 patrones de ritmos básicos del RX120 tiene un total de 8 variaciones distintas; Preludio, Variación 1 — 3, Coda Relleno A/B, e Interrupción. Aquí daremos algunos ejemplos de cómo se diferencian las variaciones para tres de los patrones de ritmos básicos; ROCK 1, POP 1, y 16 BEAT 1. Se usa la escritura estándar de percusión, como se muestra abajo. Los instrumentos especiales, tales como percusión de FM o percusión latina, se muestran en un apartado separado.

(ii)

ROCK 1

● INTRO

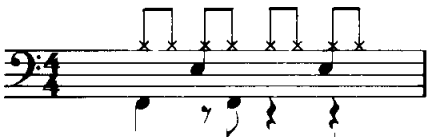● VARIATION 1

● VARIATION 2

● VARIATION 3

● ENDING

● FILL IN A

● FILL IN B

● BREAK

POP 1

- INTRO

FM perc 1

- VARIATION 1

- VARIATION 2

FM perc 1

- VARIATION 3

- FILL IN A

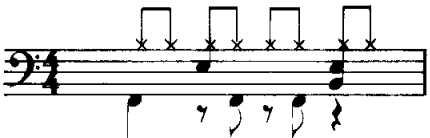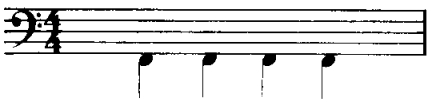- FILL IN B

FM perc 1

- BREAK

- ENDING
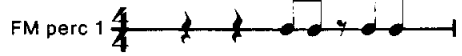
16BEAT 1

- INTRO

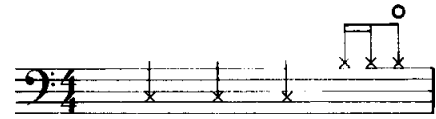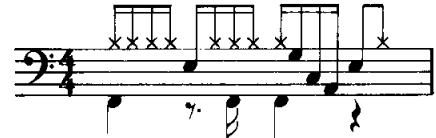- VARIATION 1

- VARIATION 2

- VARIATION 3

- FILL IN A

- FILL IN B

- BREAK

- ENDING

YAMAHA