

KORG MONOPHONIC SYNTHESIZER MS-20

セッティング チャート
Setting Examples

このチャート集にはMS-20による30種類のいろいろな音のつて
おります。この通りのセッティングで利用するだけでなく、新し
い音を発見するための出発点としてもお役立てください。

This booklet shows you how to get a variety of specific a sounds
with the MS-20.
You can use these settings as they are, and as a base for discover-
ing new effects.

Sound
Revolution
KORG

トランペット

ハイトーンの特ランペットです。VCLPFのPEAKのつまみを発振寸前（目盛で7-9ぐらい）のところまで回すと、より音の通るトランペットになります。

Trumpet

For a more penetrating sound, turn up the VCLPF PEAK knob to between "7" and "9", the point right before self-oscillation begins.

クラリネット

VCHPFのfcをEG-2で動かしています。FcMのEG-2/EXTのつまみで、よりクラリネットらしく調整してください。

Clarinet

EG-2 controls the VCHPF fc. Adjust the FcM EG2/EXT knob to get the most realistic clarinet sound.

サクソホン

ピンクノイズで周波数変調(ビブラート)をするのがポイントですが、あまりかけすぎないように注意してください。

Saxophone

The use of pink noise for frequency modulation is important, but be careful not to increase it too much.

| | | | | | | | | |
|-------------------------------------------|-----------------------------------------------------|----------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|
| VCO 1 WAVE FORM PW SCALE PORT | VCO 2 WAVE FORM PITCH SCALE MASTER TUNE | VCO MIXER VCO 1 VCO 2 FM MG/T.EXT EG1/EXT | VC HPF fc PEAK FcM MG/T.EXT EG2/EXT | VC LPF fc PEAK FcM MG/T.EXT EG2/EXT | VOA EG 2 & EXT MG EG 1 WAVE FORM FREQ | EG 2 HOLD ATTACK DECAY SUSTAIN RELEASE | EXT SIG PROCESSOR AMP BPF F-V CON EF | SIG LEVEL LOW CUT HIGH CUT CV ADJ THRES LEVEL |
|-------------------------------------------|-----------------------------------------------------|----------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|

オーボエ

VCO-1のPWのつまみで音色を微調整することが、よりリアルなオーボエの音を合成するポイントです。

Oboe

To get the most realistic oboe sound, carefully adjust the tone color with the VCO-1 PW knob.

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|-------------------------------------------|-----------------------------------------------------|----------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|
| VCO 1 WAVE FORM PW SCALE PORT | VCO 2 WAVE FORM PITCH SCALE MASTER TUNE | VCO MIXER VCO 1 VCO 2 FM MG/T.EXT EG1/EXT | VC HPF fc PEAK FcM MG/T.EXT EG2/EXT | VC LPF fc PEAK FcM MG/T.EXT EG2/EXT | VOA EG 2 & EXT MG EG 1 WAVE FORM FREQ | EG 2 HOLD ATTACK DECAY SUSTAIN RELEASE | EXT SIG PROCESSOR AMP BPF F-V CON EF | SIG LEVEL LOW CUT HIGH CUT CV ADJ THRES LEVEL |
|-------------------------------------------|-----------------------------------------------------|----------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|

フルート①

やわらかなフルートの音です。パッチングによってデレイ（遅れてかかる）ヒブラートの効果が得られます。

Flute 1

A soft flute sound. Use patching to get a delayed vibrato effect.

| | | | | | | | | | | | |
|-------------------------------------------|-----------------------------------------------------|----------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| VCO 1 WAVE FORM PW SCALE PORT | VCO 2 WAVE FORM PITCH SCALE MASTER TUNE | VCO MIXER VCO 1 VCO 2 FM MG/T.EXT EG1/EXT | VC HPF fc PEAK FcM MG/T.EXT EG2/EXT | VC LPF fc PEAK FcM MG/T.EXT EG2/EXT | VCA EG 2 & EXT MG EG 1 WAVE FORM FREQ | EG 2 HOLD ATTACK DECAY SUSTAIN RELEASE | VCO 1, VCO 2, VCO MIX, VC HPF, VC LPF, VCA, VOL, SIG OUT, PHONES, MG, EG 1, EG 2, VCO-1, VCO-2, S/H, VCF, NG, EXT SIG PROCESSOR, AMP, BPF, F-V CON, EF, SIG LEVEL, LOW CUT, HIGH CUT, CV ADJ, THRES LEVEL | | | | |
|-------------------------------------------|-----------------------------------------------------|----------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|

フルート②

フルート①に比べて複雑なパッチングでよりリアルなフルートの音を作ります。VCFへのパッチングは音程に比例して音色が明るくなるようにしています。また、ピンクノイズはESP部のBPFで音色を調整してからFMに用いています。

Flute 2

This more complex patching produces a more realistic flute sound than that of the Flute 1 setting. The VCF is patched so that the sound becomes brighter in proportion to pitch. The tone color of the pink noise is adjusted by the ESP BPF and then used for FM.

| | | | | | | | | | | | |
|-------------------------------------------|-----------------------------------------------------|----------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| VCO 1 WAVE FORM PW SCALE PORT | VCO 2 WAVE FORM PITCH SCALE MASTER TUNE | VCO MIXER VCO 1 VCO 2 FM MG/T.EXT EG1/EXT | VC HPF fc PEAK FcM MG/T.EXT EG2/EXT | VC LPF fc PEAK FcM MG/T.EXT EG2/EXT | VCA EG 2 & EXT MG EG 1 WAVE FORM FREQ | EG 2 HOLD ATTACK DECAY SUSTAIN RELEASE | VCO 1, VCO 2, VCO MIX, VC HPF, VC LPF, VCA, VOL, SIG OUT, PHONES, MG, EG 1, EG 2, VCO-1, VCO-2, S/H, VCF, NG, EXT SIG PROCESSOR, AMP, BPF, F-V CON, EF, SIG LEVEL, LOW CUT, HIGH CUT, CV ADJ, THRES LEVEL | | | | |
|-------------------------------------------|-----------------------------------------------------|----------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|

バイオリン

KBD CV OUTをVCFのFcMに使用して、鍵盤の高音部と低音部の音色を変えています。

Violin

Since the KBD CV OUT is used for VCF FcM, the tone color changes between the upper and lower range of the keyboard.

| | | | | | | | | | | | |
|--------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
| VCO 1 WAVE FORM PW 4' SCALE 1.5 PORT | VCO 2 WAVE FORM PITCH SCALE 0 MASTER TUNE | VCO MIXER VCO 1 0 VCO 2 0 FM 1.5 MG/T.EXT 0 EG1/EXT 0 | VC HPF 0 fc 0 PEAK 0 MG/T.EXT 0 EG2/EXT 0 | VC LPF 7.5 fc 0 PEAK 0 MG/T.EXT 10 EG2/EXT 10 | VCA EG 2 & EXT MG EG 1 WAVE FORM 3.5 FREQ | EG 2 0 HOLD 1.5 ATTACK 0 DECAY 2 DELAY 2 ATTACK 10 SUSTAIN 1 RELEASE | | | | | |
| | | | | | | | | | | | |

セロ①

ポルタメントを少しかけて、フレットレス（フレットがないネック）の感じを出しています。

Cello 1

By adding a little portamento, the fretless effect is obtained.

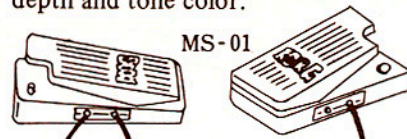
| | | | | | | | | | | | |
|-------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------------------------------------------------------|--|--|--|--|--|
| VCO 1 WAVE FORM PW 16' SCALE 2 PORT | VCO 2 WAVE FORM PITCH SCALE 0 MASTER TUNE | VCO MIXER VCO 1 10 VCO 2 0 FM 1 MG/T.EXT 0 EG1/EXT 0 | VC HPF 0 fc 0 PEAK 0 MG/T.EXT 0 EG2/EXT 0 | VC LPF 5 fc 7 PEAK 0 MG/T.EXT 0 EG2/EXT 0 | VCA EG 2 & EXT MG EG 1 WAVE FORM 4 FREQ | EG 2 0 HOLD 2 ATTACK 4 DECAY 5 SUSTAIN 1 RELEASE | | | | | |
| | | | | | | | | | | | |

セロ②

コルグ MS-01フットコントローラーを用いてビブラートの深さと音色を変化させています。

Cello 2

Use the Korg MS-01 foot controller to vary vibrator depth and tone color.



| | | | | | | | | | | |
|-------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--|--|--|--|
| VCO 1 WAVE FORM PW 16' SCALE 0 PORT | VCO 2 WAVE FORM PITCH SCALE 0 MASTER TUNE | VCO MIXER 10 VCO 1 0 VCO 2 1.5 FM MG/T.EXT 0 EG1/EXT | VC HPF 0 fc 0 PEAK 0 FoM MG/T.EXT 0 EG 2/EXT | VC LPF 5 fc 7 PEAK 0 FoM MG/T.EXT 2 EG 2/EXT | VCA EG 2 & EXT MG EG 1 WAVE FORM ATTACK 3.5 FREQ RELEASE | EG 2 0 HOLD 2 ATTACK 4 DECAY 5 SUSTAIN 1 RELEASE | | | | |
| | | | | | | VOL SIG OUT PHONES EXT SIG PROCESSOR AMP BPF F-V CON EF SIG LEVEL LOW CUT HIGH CUT CV ADJ THRES LEVEL | | | | |

アコーディオン

VCO-1のPWのつまみでパルス幅をVCO-2のWAVE FORMにパルス波と同じ位の幅にするのがポイントです。

Accordion

Note that it is important to adjust the VCO-1 PW knob so that the pulse width matches that of the VCO-2 pulse waveform.

| | | | | | | | | | | |
|------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--|--|--|--|
| VCO 1 WAVE FORM PW 8' SCALE 0 PORT | VCO 2 WAVE FORM PITCH SCALE 0 MASTER TUNE | VCO MIXER 10 VCO 1 10 VCO 2 0 FM MG/T.EXT 0 EG1/EXT | VC HPF 0 fc 0 PEAK 0 FoM MG/T.EXT 5 EG 2/EXT | VC LPF 10 fc 7 PEAK 0 FoM MG/T.EXT 6 EG 2/EXT | VCA EG 2 & EXT MG EG 1 WAVE FORM ATTACK 3.5 FREQ RELEASE | EG 2 0 HOLD 1.5 ATTACK 1.5 DECAY 10 SUSTAIN 0 RELEASE | | | | |
| | | | | | | VOL SIG OUT PHONES EXT SIG PROCESSOR AMP BPF F-V CON EF SIG LEVEL LOW CUT HIGH CUT CV ADJ THRES LEVEL | | | | |

ウッドベース(ボーイング)

ウッドベースを弓で弾く時の音です。鍵盤の弾き方にも注意してください。

Acoustic bass

This is the sound of a bass played with a bow. Be careful to play the keyboard to bring out this effect.

| | | | | | | | | | | | |
|-------------------------------------------|-----------------------------------------------------|----------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|-------------------------------------------------------|-------------|--|--|--|--|
| VCO 1 WAVE FORM PW SCALE PORT | VCO 2 WAVE FORM PITCH SCALE MASTER TUNE | VCO MIXER VCO 1 VCO 2 FM MG/T.EXT EG1/EXT | VC HPF fc PEAK FcM MG/T.EXT EG2/EXT | VC LPF fc PEAK FcM MG/T.EXT EG2/EXT | VCA EG2 & EXT MG EG1 WAVE FORM FREQ | EG 2 HOLD ATTACK DELAY SUSTAIN RELEASE | | | | | |
| 0 | 0 | 10 | 0 | 5 | EG2 & EXT | 0 | VOL | | | | |
| 0 | 0 | 6 | 0 | 6 | MG | 2.5 | PHONES | | | | |
| 32' | 16' | 0 | 0 | 0 | EG1 | 4 | VCO-1 | | | | |
| 2 | 0 | 1 | 0 | 0 | EG2 | 5 | VCO-2 | | | | |
| 0 | 0 | 0 | 0 | 0 | WAVE FORM | 1 | AMP | | | | |
| | | 0 | 0 | 0 | FREQ | 0 | BPF | | | | |
| | | 0 | 0 | 0 | RELEASE | 0 | F-V CON | | | | |
| | | 0 | 0 | 0 | RELEASE | 0 | EF | | | | |
| | | 0 | 0 | 0 | RELEASE | 0 | SIG LEVEL | | | | |
| | | 0 | 0 | 0 | RELEASE | 0 | LOW CUT | | | | |
| | | 0 | 0 | 0 | RELEASE | 0 | HIGH CUT | | | | |
| | | 0 | 0 | 0 | RELEASE | 0 | CV ADJ | | | | |
| | | 0 | 0 | 0 | RELEASE | 0 | THRES LEVEL | | | | |

バンジョー

1弦1弦ピッキングで弾くような感じで演奏してください。

Banjo

Play the keyboard so that it sounds like you are playing one string at a time.

| | | | | | | | | | | | |
|-------------------------------------------|-----------------------------------------------------|----------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|-------------------------------------------------------|-------------|--|--|--|--|
| VCO 1 WAVE FORM PW SCALE PORT | VCO 2 WAVE FORM PITCH SCALE MASTER TUNE | VCO MIXER VCO 1 VCO 2 FM MG/T.EXT EG1/EXT | VC HPF fc PEAK FcM MG/T.EXT EG2/EXT | VC LPF fc PEAK FcM MG/T.EXT EG2/EXT | VCA EG2 & EXT MG EG1 WAVE FORM FREQ | EG 2 HOLD ATTACK DELAY SUSTAIN RELEASE | | | | | |
| 0 | 0 | 0 | 5 | 6 | EG2 & EXT | 0 | VOL | | | | |
| 0 | 0 | 10 | 6 | 2 | MG | 0 | PHONES | | | | |
| 0 | 8' | 0 | 0 | 0 | EG1 | 1 | VCO-1 | | | | |
| 0 | 0 | 0 | 0 | 0 | EG2 | 0 | VCO-2 | | | | |
| 0 | 0 | 0 | 0 | 0 | WAVE FORM | 0 | AMP | | | | |
| 0 | 0 | 0 | 0 | 3 | FREQ | 0 | BPF | | | | |
| 0 | 0 | 0 | 0 | 0 | RELEASE | 0 | F-V CON | | | | |
| 0 | 0 | 0 | 0 | 0 | RELEASE | 0 | EF | | | | |
| 0 | 0 | 0 | 0 | 0 | RELEASE | 0 | SIG LEVEL | | | | |
| 0 | 0 | 0 | 0 | 0 | RELEASE | 0 | LOW CUT | | | | |
| 0 | 0 | 0 | 0 | 0 | RELEASE | 0 | HIGH CUT | | | | |
| 0 | 0 | 0 | 0 | 0 | RELEASE | 0 | CV ADJ | | | | |
| 0 | 0 | 0 | 0 | 0 | RELEASE | 0 | THRES LEVEL | | | | |

エレキベース

モーメンタリースイッチを押すとピッチベンドがかかってピッチが上昇します。上昇する幅はFMのEG-1/EXTのつまみで調整してください。

Electric bass

When you press the Momentary Switch, you'll get a pitch bend and the pitch will rise. Use the FM EG-1/EXT knob to set the amount the pitch rises.

Control panel for Electric Bass synthesizer. The panel includes various knobs and switches for VCO 1, VCO 2, VCO MIXER, VC HPF, VC LPF, VOA, EG 2, and an EXT SIG PROCESSOR. A keyboard is shown at the bottom.

| | | | | | | | |
|--------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| VCO 1 WAVE FORM PW 32' SCALE PORT | VCO 2 WAVE FORM PITCH SCALE MASTER TUNE | VCO MIXER VCO 1 VCO 2 FM MG / T. EXT EG1/EXT | VC HPF fc PEAK FcM MG / T. EXT EG 2/EXT | VC LPF fc PEAK FcM MG / T. EXT EG 2/EXT | VOA EG 2 & EXT MG EG 1 WAVE FORM FREQ | EG 2 HOLD ATTACK DECAY SUSTAIN RELEASE | EXT SIG PROCESSOR AMP BPF F-V CON EF SIG LEVEL LOW CUT HIGH CUT CV ADJ THRES LEVEL |
|--------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|

エレキピアノ

EG-2のSUSTAIN（サスティン）が「1」だと弾き方によっては音が切れてしまうこともあります。前に打鍵したキーから指を完全に離してから次のキーを押すようにスタッカートで演奏してください。

Electric piano

Release one key before you play the next, so that you get a staccato effect. If the EG-2 SUSTAIN knob is at "1", the sound may become inaudible if you are not careful how you play.

Control panel for Electric Piano synthesizer. The panel includes various knobs and switches for VCO 1, VCO 2, VCO MIXER, VC HPF, VC LPF, VOA, EG 2, and an EXT SIG PROCESSOR. A keyboard is shown at the bottom.

| | | | | | | | |
|-------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| VCO 1 WAVE FORM PW 8' SCALE PORT | VCO 2 WAVE FORM PITCH SCALE MASTER TUNE | VCO MIXER VCO 1 VCO 2 FM MG / T. EXT EG1/EXT | VC HPF fc PEAK FcM MG / T. EXT EG 2/EXT | VC LPF fc PEAK FcM MG / T. EXT EG 2/EXT | VOA EG 2 & EXT MG EG 1 WAVE FORM FREQ | EG 2 HOLD ATTACK DECAY SUSTAIN RELEASE | EXT SIG PROCESSOR AMP BPF F-V CON EF SIG LEVEL LOW CUT HIGH CUT CV ADJ THRES LEVEL |
|-------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|

Hammond organ

モーメンタリースイッチを押すと回転スピーカ ーの効果が得られます。VCO-2のピッチをVCO-1のピッチよりも3 度又は5度上げてく ださい。これはVCO-1を「ド」の音とした場合「ミ」または「ソ」の音です。

Hammond organ

Press the Momentary Switch to get the rotating speaker effect. Set the VCO-2 pitch three of five degrees above that of VCO-1. In other words, if VCO-1 is "do", then set VCO-2 to "mi" or "soh".

The Hammond organ control panel features the following settings:

- VCO 1:** WAVE FORM (sawtooth), PW (0), SCALE (16')
- VCO 2:** WAVE FORM (sawtooth), PITCH (0), SCALE (2')
- VCO MIXER:** VCO 1 (10), VCO 2 (10), FM (0), MG/T.EXT (0), EG1/EXT (0)
- VC HPF:** f_c (0), PEAK (0), FcM (0), MG/T.EXT (0), EG2/EXT (0)
- VC LPF:** f_c (5), PEAK (5), FcM (4), MG/T.EXT (8), EG2/EXT (8)
- VCA:** EG2 & EXT (triangle), MG (0), EG1 (0), WAVE FORM (sawtooth), FREQ (5)
- EG 2:** HOLD (0), ATTACK (0), DECAY (0), SUSTAIN (10), RELEASE (0)
- EXT SIG PROCESSOR:** SIG LEVEL (0), LOW CUT (0), HIGH CUT (0), CV ADJ (0), THRES LEVEL (0)

クラビネット

VCO-1のPWのパルス幅をVCO-2のWAVE FORMのパルス波と同じくらいの幅にしてください。

Clavinet

Set the pulse width of VCO-1 PW so that it matches the width of the VCO-2 pulse waveform.

The Clavinet control panel features the following settings:

- VCO 1:** WAVE FORM (square), PW (0), SCALE (32')
- VCO 2:** WAVE FORM (square), PITCH (0), SCALE (8')
- VCO MIXER:** VCO 1 (10), VCO 2 (6), FM (0), MG/T.EXT (0), EG1/EXT (0)
- VC HPF:** f_c (5), PEAK (5), FcM (0), MG/T.EXT (4), EG2/EXT (4)
- VC LPF:** f_c (6), PEAK (7), FcM (0), MG/T.EXT (10), EG2/EXT (10)
- VCA:** EG2 & EXT (triangle), MG (0), EG1 (0), WAVE FORM (square), FREQ (0)
- EG 2:** HOLD (0), ATTACK (0), DECAY (1), SUSTAIN (0), RELEASE (0)
- EXT SIG PROCESSOR:** SIG LEVEL (0), LOW CUT (0), HIGH CUT (0), CV ADJ (0), THRES LEVEL (0)

大正琴

VCO-1とVCO-2のピッチをわずかにずらすのがポイントです。

Japanese Taishogoto (A modernized version of the traditional koto)

It is important to slightly vary the pitch between VCO-1 and VCO-2.

| | | | | | | | |
|----------------------------------|-------------------------------|------------------------|-----------------|-----------------|-------------------|-----------------|-------------------------------------------------------------------------------------------------|
| VCO 1 WAVE FORM: \square -L | VCO 2 WAVE FORM: \square | VCO MIXER VCO 1: 10 | VC HPF fc: 5 | VC LPF fc: 8 | VCA EG 2 & EXT | EG 2 HOLD: 0 | |
| PW: 0 | PITCH: 0 | VCO 2: 10 | PEAK: 5 | PEAK: 3 | MG | ATTACK: 0 | |
| SCALE: 4' | SCALE: 2' | FM | FcM: 0 | FcM: 0 | EG 1 | DECAY: 1.5 | |
| PORT: 0 | MASTER TUNE: 0 | MG/T.EXT: 0 | EG 2/EXT: 5 | EG 2/EXT: 8 | WAVE FORM | SUSTAIN: 0 | |
| | | EG1/EXT: 0 | | | FREQ | RELEASE: 1.5 | EXT SIG PROCESSOR AMP, BPF, F-V CON, EF SIG LEVEL, LOW CUT, HIGH CUT, CV ADJ, THRES LEVEL |

ティンパニー

低い方の鍵盤をたたくように弾いてください。ESP部のBPFでノイズの音色を微調整してからミキシングしています。

Timpani

Sharply strike the lower notes on the keyboard. Mix in the noise after adjusting tone color with the ESP BPF.

| | | | | | | | |
|----------------------------------|--------------------------|-----------------------|-----------------|-----------------|-------------------|-----------------|-------------------------------------------------------------------------------------------------|
| VCO 1 WAVE FORM: \square -L | VCO 2 WAVE FORM: RING | VCO MIXER VCO 1: 8 | VC HPF fc: 3 | VC LPF fc: 3 | VCA EG 2 & EXT | EG 2 HOLD: 0 | |
| PW: 0 | PITCH: 0 | VCO 2: 10 | PEAK: 7 | PEAK: 5 | MG | ATTACK: 0 | |
| SCALE: 32' | SCALE: 16' | FM | FcM: 0 | FcM: 0 | EG 1 | DECAY: 3 | |
| PORT: 0 | MASTER TUNE: 0 | MG/T.EXT: 0 | EG 2/EXT: 0 | EG 2/EXT: 7 | WAVE FORM | SUSTAIN: 0 | |
| | | EG1/EXT: 0 | | | FREQ | RELEASE: 3 | EXT SIG PROCESSOR AMP, BPF, F-V CON, EF SIG LEVEL, LOW CUT, HIGH CUT, CV ADJ, THRES LEVEL |

カウベル

VCFの発振(セルフオシレーション)を音源として使っています。
 VCHPFのfcつまみを動かすと音程の異なるカウベルの音になります。

Cow-bell

VCF self-oscillation is used as a sound source. Use the VC HPF fc knob to vary the pitch of the cow-bell.

Control panel settings for Cow-bell:

- VCO 1: WAVE FORM (circle), PW (circle), SCALE (circle), PORT (circle)
- VCO 2: WAVE FORM (circle), PITCH (circle), SCALE (circle), MASTER TUNE (circle)
- VCO MIXER: VCO 1 (0), VCO 2 (0), FM (circle), MG/T.EXT (circle), EG/EXT (circle)
- VC HPF: fc (5), PEAK (10), FcM (0), MG/T.EXT (circle), EG 2/EXT (0)
- VC LPF: fc (5), PEAK (8), FcM (0), MG/T.EXT (circle), EG 2/EXT (7)
- VCA: EG 2 & EXT (triangle), MG (circle), EG 1 (circle), DELAY (circle), ATTACK (circle), RELEASE (circle), FREQ (circle)
- EG 2: HOLD (0), ATTACK (0), DECAY (0.5), SUSTAIN (0), RELEASE (0.5)
- EXT SIG PROCESSOR: AMP (circle), BPF (circle), F-V CON (circle), EF (circle)
- SIGNAL LEVELS: SIG LEVEL, LOW CUT, HIGH CUT, CV ADJ, THRES LEVEL (all circles)

口笛

コントロールホイールで音程を上げ、さらにKBD CV OUTを使いピブラートの深さを音程に比例させています。

Whistle

The control wheel raises the pitch, while the KBD CV OUT is used to vary vibrato depth in proportion to pitch.

Control panel settings for Whistle:

- VCO 1: WAVE FORM (triangle), PW (circle), SCALE (4'), PORT (2)
- VCO 2: WAVE FORM (circle), PITCH (circle), SCALE (circle), MASTER TUNE (0)
- VCO MIXER: VCO 1 (10), VCO 2 (0), FM (circle), MG/T.EXT (2), EG/EXT (6)
- VC HPF: fc (0), PEAK (0), FcM (0), MG/T.EXT (circle), EG 2/EXT (0)
- VC LPF: fc (6), PEAK (4), FcM (0), MG/T.EXT (circle), EG 2/EXT (0)
- VCA: EG 2 & EXT (triangle), MG (circle), EG 1 (circle), DELAY (circle), ATTACK (circle), RELEASE (circle), FREQ (3)
- EG 2: HOLD (0), ATTACK (2.5), DECAY (5), SUSTAIN (2), RELEASE (1)
- EXT SIG PROCESSOR: AMP (circle), BPF (circle), F-V CON (circle), EF (circle)
- SIGNAL LEVELS: SIG LEVEL, LOW CUT, HIGH CUT, CV ADJ, THRES LEVEL (all circles)

シンセサウンド

Synthe sounds

シンセサウンド①

VCO-2のピッチをVCO-1と3度ずらしてください。これはVCO-1を「ド」とした時の「ミ」の音程の事です。

Synthesizer 1

Raise the VCO-2 pitch to the 3d degree above VOC-1. In other words, raise it to "mi" if VCO-1 is "do".

シンセサウンド②

コントロールホイールを用いて音程と音色を変えている例です。音程はFMのMG/T・EXTのつまみで中央のクリニックポイントより1オクターブ高くなるようにしてください。

Synthesizer 2

An example of using the Control Wheel to change pitch and tone color. Set the FM MG/T. EXT knob so that the pitch is one octave higher than at the center click-stop.

シンセサウンド③

ファンタスティックなサウンドにマッチする丸みのある音色です。MGの出力でオートワウ（音色にヒブラートをかける装置）の効果をかけています。

Synthesizer 3

A rounded tone color suitable for spacey sounds. The MG gives an automatic "wow" effect.

Control panel for Synthesizer 3. The interface includes the following sections:

- VCO 1:** WAVE FORM (square wave), PW (0), SCALE (8').
- VCO 2:** WAVE FORM (sawtooth), PITCH (0), SCALE (0).
- VCO MIXER:** VCO 1 (10), VCO 2 (0), FM (0), MG/T.EXT (0), EGI/EXT (0).
- VC HPF:** fc (0), PEAK (0), FcM (0), MG/T.EXT (0), EG 2/EXT (0).
- VC LPF:** fc (4), PEAK (7), FcM (4), MG/T.EXT (7), EG 2/EXT (7).
- VCA:** EG 2 & EXT, MG, EG 1, DELAY, WAVE FORM, ATTACK, RELEASE, FREQ (3).
- EG 2:** HOLD (0), ATTACK (0.5), DECAY (2), SUSTAIN (3), RELEASE (2).
- EXT SIG PROCESSOR:** AMP, BPF, F-V CON, EF.
- Output:** VOL, SIG OUT, PHONES.
- Filters:** SIG LEVEL, LOW CUT, HIGH CUT, CV ADJ, THRES LEVEL.

The keyboard below the panel shows a piano-style layout with 12 keys.

シンセサウンド④ギターシンセ

ESP部のセッティングはエレキギターによって多少異なります。お手持のギターに合ったセッティングに再調整してください。

Synthesizer 4 Guitar synthesizer

The optimum ESP setting will slightly vary according to the electric guitar used. Adjust the ESP to get the best results from your guitar.

Control panel for Synthesizer 4. The interface includes the following sections:

- VCO 1:** WAVE FORM (sawtooth), PW (0), SCALE (16').
- VCO 2:** WAVE FORM (sawtooth), PITCH (0), SCALE (16').
- VCO MIXER:** VCO 1 (10), VCO 2 (10), FM (0), MG/T.EXT (0), EGI/EXT (0).
- VC HPF:** fc (0), PEAK (0), FcM (0), MG/T.EXT (0), EG 2/EXT (0).
- VC LPF:** fc (5), PEAK (7), FcM (0), MG/T.EXT (10), EG 2/EXT (10).
- VCA:** EG 2 & EXT, MG, EG 1, DELAY, WAVE FORM, ATTACK, RELEASE, FREQ (10).
- EG 2:** HOLD (0), ATTACK (1), DECAY (2), SUSTAIN (5), RELEASE (0).
- EXT SIG PROCESSOR:** AMP, BPF, F-V CON, EF.
- Output:** VOL, SIG OUT, PHONES.
- Filters:** SIG LEVEL (6), LOW CUT (2), HIGH CUT (7), CV ADJ (5), THRES LEVEL (7).

The keyboard below the panel shows a piano-style layout with 12 keys. A guitar is illustrated at the bottom right, connected to the keyboard area.

効果音

Sound effects

アメパトサイレン

VCO-1とVCO-2で2台のパトカーがサイレンを鳴らします。
MGのWAVE FORMをへにしているのがこの音のポイントです。

Police siren (U.S.A.)

With VCO-1 and VCO-2, it sounds like two patrol cars.
The key to this effect is the use of the MG sawtooth waveform.

Control Panel Settings for Police Siren:

| | | | | | | | |
|----------------------------------|----------------------------------|------------------------|-----------------|-----------------|-------------------------------|-----------------|--------------------------------------------|
| VCO 1 WAVE FORM: Sawtooth (L) | VCO 2 WAVE FORM: Sawtooth (L) | VCO MIXER VCO 1: 10 | VC HPF fc: 0 | VC LPF fc: 5 | VCA EG 2 & EXT: [Triangle] | EG 2 HOLD: 0 | EXT SIG PROCESSOR AMP, BPF, F-V CON, EF |
| PW: [Up Arrow] | PITCH: +1 | VCO 2: 10 | PEAK: 0 | PEAK: 5 | MG: [Off] | EG 1: [Off] | |
| SCALE: 8' | SCALE: 8' | FM: 5 | FcM: 0 | FcM: 0 | WAVE FORM: [Sawtooth] | ATTACK: 0 | |
| PORT: 0 | MASTER TUNE: 0 | MG/T.EXT: 0 | EG 2/EXT: 0 | EG 2/EXT: 0 | FREQ: 2 | RELEASE: 0 | |

Keyboard: A hand icon is positioned over the 4th key from the left (C4).

嵐

モーメンタリースイッチを押すと雷の音が出ます。ボリュームをいっぱいにして楽しんでください。

Storm

The wind blows when you hit a key. Press the Momentary Switch for thunder. Turn up the volume for realism.

Control Panel Settings for Storm:

| | | | | | | | |
|--------------------------------|----------------------------------|-----------------------|-----------------|-----------------|-------------------------------|-----------------|--------------------------------------------|
| VCO 1 WAVE FORM: [Waveform] | VCO 2 WAVE FORM: Sawtooth (L) | VCO MIXER VCO 1: 5 | VC HPF fc: 0 | VC LPF fc: 5 | VCA EG 2 & EXT: [Triangle] | EG 2 HOLD: 6 | EXT SIG PROCESSOR AMP, BPF, F-V CON, EF |
| PW: [Off] | PITCH: +1 | VCO 2: 10 | PEAK: 0 | PEAK: 7 | MG: [Off] | EG 1: [Off] | |
| SCALE: [Off] | SCALE: 2' | FM: 0 | FcM: 0 | FcM: 0 | WAVE FORM: [Off] | ATTACK: 0 | |
| PORT: 0 | MASTER TUNE: 0 | MG/T.EXT: 10 | EG 2/EXT: 0 | EG 2/EXT: 5 | FREQ: [Off] | RELEASE: 6 | |

Keyboard: A hand icon is positioned over the 4th key from the left (C4).

効果音

Sound effects

光線銃

所々の鍵盤を連続的に叩いてみてください。また、鍵盤を押しっぱなしにした場合には音が出る時間が短くなります。

Laser gun

Hit one key after another. If you keep a key depressed, the sound will be shorter.

Parameters for Laser gun:

- VCO 1: WAVE FORM (sawtooth), PW (0), SCALE (0), PORT (0)
- VCO 2: WAVE FORM (square), PITCH (0), SCALE (0), MASTER TUNE (0)
- VCO MIXER: VCO 1 (10), VCO 2 (0), FM (0), MG/T.EXT (0), EG1/EXT (0)
- VC HPF: fc (4), PEAK (10), FcM (0), MG/T.EXT (10), EG2/EXT (10)
- VC LPF: fc (6), PEAK (10), FcM (0), MG/T.EXT (10), EG2/EXT (10)
- VCA: EG 2 & EXT (triangle), MG (0), WAVE FORM (square), FREQ (0), RELEASE (0)
- EG 2: HOLD (0), ATTACK (0), DECAY (1), SUSTAIN (1.5), RELEASE (2)
- EXT SIG PROCESSOR: AMP (0), BPF (0), F-V CON (0), EF (0), SIG LEVEL (0), LOW CUT (0), HIGH CUT (0), CV ADJ (0), THRES LEVEL (0)

急降下爆撃

右はじの鍵盤を一度押してからモーメンタリースイッチのボタンを押してください。そして爆発したらすぐにスイッチから指を離してください。

Dive bombing

After playing the furthest key to the right, depress the momentary switch. Release the switch as soon as the bomb explodes.

Parameters for Dive bombing:

- VCO 1: WAVE FORM (triangle), PW (0), SCALE (8), PORT (0)
- VCO 2: WAVE FORM (square), PITCH (0), SCALE (0), MASTER TUNE (0)
- VCO MIXER: VCO 1 (7), VCO 2 (0), FM (0), MG/T.EXT (0), EG1/EXT (10)
- VC HPF: fc (0), PEAK (0), FcM (0), MG/T.EXT (0), EG2/EXT (0)
- VC LPF: fc (10), PEAK (0), FcM (0), MG/T.EXT (0), EG2/EXT (0)
- VCA: EG 2 & EXT (triangle), MG (0), WAVE FORM (square), FREQ (0), RELEASE (7)
- EG 2: HOLD (0), ATTACK (5), DECAY (0), SUSTAIN (10), RELEASE (3.5)
- EXT SIG PROCESSOR: AMP (0), BPF (0), F-V CON (0), EF (0), SIG LEVEL (10), LOW CUT (0), HIGH CUT (6), CV ADJ (0), THRES LEVEL (0)

効果音

Sound effects

チャイム

VCO-2のピッチのずれ加減でチャイムの感じが異なってきます。

Chime

Change the chime effect by varying the pitch difference of VCO-2.

| | | | | | | | |
|----------------------------|--------------------------|-------------------------------------|-----------------|-----------------|-----------------------|-----------------|---------------------------------------------------|
| VCO 1 WAVE FORM: [Sine] | VCO 2 WAVE FORM: RING | VCO MIXER VCO 1: 10 VCO 2: 10 | VC HPF fc: 5 | VC LPF fc: 7 | VCA EG 2 & EXT | EG 2 HOLD: 0 | |
| PW: [Slider] | PITCH: +2.5 | FM: 10 | PEAK: 6 | PEAK: 8 | MG: [Slider] | ATTACK: 0 | |
| SCALE: 4' | SCALE: 4' | FcM: 0 | EG 2/EXT: 0 | EG 2/EXT: 8 | EG 1: [Slider] | DECAY: 4 | |
| PORT: 0 | MASTER TUNE: 0 | EG1/EXT: 0 | EG 2/EXT: 0 | EG 2/EXT: 0 | WAVE FORM: [Triangle] | SUSTAIN: 0 | |
| | | | | | | RELEASE: 4 | SIG LEVEL, LOW OUT, HIGH CUT, CV ADJ, THRES LEVEL |

流れ星

VCHPF (ハイパスフィルター)を発振させて音源にしています。星の落ちる感じの効果はMGとEG-2によって発振音の音程を変化させて出しています。

Falling star

The self-oscillating VC HPF is used as the sound source. The MG and EG-2 vary the oscillation to give the falling effect.

| | | | | | | | |
|----------------------------|----------------------------|-----------------------------------|-----------------|------------------|-----------------------|-----------------|---------------------------------------------------|
| VCO 1 WAVE FORM: [Sine] | VCO 2 WAVE FORM: [Sine] | VCO MIXER VCO 1: 0 VCO 2: 0 | VC HPF fc: 6 | VC LPF fc: 10 | VCA EG 2 & EXT | EG 2 HOLD: 7 | |
| PW: [Slider] | PITCH: [Slider] | FM: 0 | PEAK: 10 | PEAK: 0 | MG: [Slider] | ATTACK: 0 | |
| SCALE: [Slider] | SCALE: [Slider] | FcM: 0 | EG 2/EXT: 6 | EG 2/EXT: 0 | EG 1: [Slider] | DECAY: 5 | |
| PORT: [Slider] | MASTER TUNE: [Slider] | EG1/EXT: 0 | EG 2/EXT: 8 | EG 2/EXT: 0 | WAVE FORM: [Triangle] | SUSTAIN: 0 | |
| | | | | | | RELEASE: 0 | SIG LEVEL, LOW OUT, HIGH CUT, CV ADJ, THRES LEVEL |

◎パッチワークの利点

シンセサイザーにおける最大の楽しみは、自分の頭の中で考えた自分だけの音色を合成し、実際の音として表現し聞くことができることです。

パッチングシステムは、この自分だけの音の可能性を無限大に広げるために考えられたシンセサイザー本来のシステムです。

グレードアップを考える場合、このように入出力ジャックがパネル上に出ていると自由自在に外部コントロールができます。マイクロコンピューターで音の各要素をコントロールしたり、他のシンセサイザーや自作のコントローラーなどでいくつかの音の要素をコントロールすることが、これらのジャックに接続するだけで簡単にできるわけです。

MS-20は、向って左側のツマミによるコントロールセクションだけでも十分な音作りを楽しむことができます。しかし、それ以上の効果を得たい場合や、もう一台のシンセサイザーを接続する時にパッチワークの必要がでてきます。

それでは具体的にパッチワークについて考えてみましょう。

★パッチワークとは、内部接続されていない部分を、パッチコードで接続する作業です。言い換えれば、必要に応じて一時的な改造をしてシンセサイザーの応用範囲を広げる作業なのです。MS-20では個々の部分(VCO、VCF、VCA、EG、S/Hなど)が独立しており、それぞれ内部接続されている部分(パッチパネル上で白線でつながっている)と、パネル上に入出力ジャックがでているだけで、他とは全く切り離されている部分があります。自分の得たい効果を考えて、その内部接続されていない部分を接続します。その結果、内部接続では味わえないような、より自由な変化を楽しむことが出来るのです。

★パッチワークの注意点

シンセサイザーは電圧で制御されている以上、その『きまり』を考えた上でパッチワークをしなければ、目的とする効果が得られなかったり、また全く変化しない場合もありますので、その基本的な『きまり』は覚えて下さい。

①接続したい各部分の間が適切な範囲の電圧、または適切な電圧信号であるかどうかを確認して下さい。これは、各部分の入出力ジャックの下に表示してあるコントロール電圧(-5V~+5V、0~+5V、 \downarrow GNDなど)をよくチェックすることで確認できます。例えば、-5V~+5Vと表示されている出力から、0~+5Vと表示されている入力へ接続した場合、有効なコントロール範囲は0~+5Vだけとなります。この事は、5ℓしか入らないカップに10ℓの水を入れたのと同じですから、残りの5ℓはこぼれてしまいます。つまり、半分だけが有効な範囲ということです。

② \downarrow GNDと表示されているON、OFFのみのスイッチ入力に、-5V~+5Vなどと表示してある連続的な変化をする電圧の出力を接続する場合には、出力電圧が+3V以上でOFF、0V以下でONになると考えて接続して下さい。例えば、コントロールホイール(-5V~+5V)から、EG-1のTRIG IN(\downarrow GND)に接続して、その変化を確かめてください。

◎ Why Use a Patching System

The greatest pleasure of using a synthesizer is being able to listen to actual sounds that you create from your imagination.

A patching system is something that was thought up to infinitely expand the possibilities of creating your own sounds. Since there are input and output jacks on the front panel for all synthesizer functions, it is possible to have completely free external control.

With these jacks available, you can use a microprocessor, another synthesizer, or even a homemade control unit to vary each of the basic elements of sound.

Although you can get a lot out of the synthesizer merely by using the knobs in the control section on the left side of the front panel, you'll need to set up a patch if you want more different effects or if you want to connect two synthesizers together.

Practically speaking, patching is not that complicated.

★ Patching means using patch cords to connect those sections of the synthesizer that are not already connected by the internal patch (the built-in circuitry). In other words, it is a temporary alteration that expands the synthesizer's capabilities according to your needs.

On the MS-20, each module (VCO, VCF, VCA, EG, S/H, MG, etc.) is basically independent; some of these are connected by the internal patch (shown by the white lines on the patch panel), while other modules are completely separate and are only provided with input and output jacks on the panel. You think up an effect and try to recreate it on the synthesizer by connecting these jacks (when the internal patch cannot do the job). In this way you can go beyond the limitations of the internal patch and have more freedom and creative control of the sounds you produce.

★ Important points to remember when setting up a patch

Since the synthesizer is voltage controlled, you must be systematic in your approach if you want a specific effect. If you don't follow the rules dictated by voltage control, either you'll get a sound you weren't looking for, or nothing will happen at all. Therefore, keep in mind the following basic rules:

(1) Always check to see whether you are using the appropriate type of voltage signal and voltage range for the sections you want to connect.

This means checking the control voltage displayed below the jacks of the sections you wish to use.

(Marked -5V~+5V, 0~+5V, \downarrow GND, etc.)

For example, if you connected an output marked "-5V~+5V" to an input marked "0~+5V", the effective control range would only be from 0 to +5V; nothing would happen during those portions of the signal between -5V and 0. This is similar to what happens if you try and pour 10 liters of water into a container that will hold only 5 liters. Since 5 liters are going to overflow, your effective range is limited to only half your input.

(2) If you connect an output marked "-5V~+5V" (or any other continuously varying control voltage) to an input marked \downarrow GND (which is a digital ON/OFF switch-type input), the section you are trying to control will turn OFF when the control voltage goes above +3V and it will turn ON when the voltage goes below 0V. You can try this by connecting the Control Wheel output (-5V~+5V) to the EG1 TRIG IN (\downarrow GND) input.

◎パッチワークの手順

シンセサイザーのモジュール(キーボード、VCO、VCF、VCA、EG、S/H、MGなどの各部分)は、基本的に3つに分類できます。まず、EG-1やEG-2、MG、コントロールホイールです。これらは社会的に例えると、肉屋さん、魚屋さん、八百屋さんのように材料を与えてくれるお店に相当します。もちろん、調理をしないでも良い場合もあります。また、S/Hとか、変調用のVCA、ESP部などは、家庭の台所に相当します。つまり、各自の口に合ったように調理する所なのです。そしてこの各自の口がシンセサイザーの基本モジュールであるVCO、VCF、VCAとなるわけです。

この分類をもとにして、各モジュールがそれぞれどのような変調信号の発生器なのか、そして音声信号のどの要素をコントロールするのかを、整理して覚えてください。

では、これらの知識を基にした具体的なパッチワークの手順を示します。

- ①求める効果を分解する。(効果の分解)
- ②分解した結果から使用するモジュールを選択する。(モジュールの選択)
- ③選択したモジュールを組み立てる。(組立)

このような順序で考えて方針を決め、パッチワークをしなければ、思い通りの効果は得られません。もちろん、内部接続の範囲内で音作りをする時でも、必要な知識と手順は同じです。同じ効果を得る方法はいくつか考えられるはずですが、できるだけシンプルな方法で、その効果が得られるように考えるということも、音作りの大切なノウハウです。

◎Patching procedure

You can divide synthesizer modules into three groups:

1. The EG-1, EG-2, MG, and control wheel. These "manipulators" can be thought of as being like the different sections of a supermarket since they supply the raw materials.
2. The S/H, modulation VCA, and ESP. These "convertors" are like a kitchen. Here the raw materials are chopped and cooked. Of course the kitchen can be bypassed and the materials eaten raw.
3. The VCO, VCF, and VCA. These are the mouths that eat the food. If the raw materials and cooking suit these palates, you got the effect you wanted. In other words, these modules are what they eat.

When you set up a patch, you first have to consider the following:

1. What kind of modulating signals are available from which modules?
2. If you are going to process the modulating signal, in what way do you want to change it, and what is the best module to do the job?
3. Which part of the sound signal are you going to control (pitch, tone color, volume).

With the above concepts in mind, let's go on to the actual patching procedure. If you follow the steps below when thinking about setting up a patch, you have a reasonable chance of getting the effect you want.

1. **Analyse** the effect you want.
2. **Select** the modules to use based on your analysis.
3. **Set up** the patch using the modules you selected.

If you want the synthesizer to work for you and make the sounds you want, you have to use it in this kind of step-by-step fashion. Otherwise it will be like the blind leading the blind: you'll bump into all sorts of strange effects, but only by accident.

Exactly the same rules apply when you use the internal patch. There are usually several ways you can go about getting the same effect; try and use the simplest method possible. If you get into this habit, it will be much easier when you get around to synthesizing a really complex sound.

EX.1ディレイ・ビブラートを得る場合

①分解

- a. 音声記号の周波数(音程)が変化…VCOのFM(ピッチの変化)する。
- b. 周期的に(繰り返して)変化する…MG(繰り返し信号を発生) (~~~~)。
- c. 周期的な信号の量が変化する。…VCA
- d. 打鍵後しばらくしてビブラート…EG-1(タイミングのコントロール)がかかる

②モジュールの選択

Example 1. Delayed vibrato.

1. Analysis of effect.

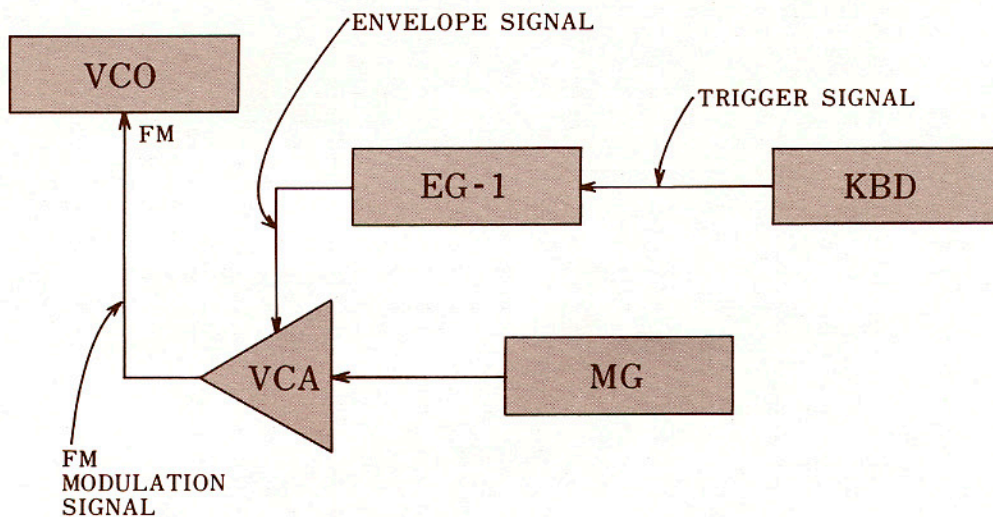
- a. The frequency (pitch) of the audio signal changes.
- b. It changes in a regular cyclic way.
- c. The amount of cyclic variation also changes.
- d. The beginning of the vibrato is delayed after a key is played.

2. Selection of modules.

- a. VCO FM (to change pitch)
- b. MG (to generate a cyclic signal)
- c. VCA
- d. EG-1 (to control timing)

③組立

3 set-up



EX.2 手許でビブラートの深さをコントロールする場合

Example 2. Manual control of vibrato depth.

①効果の分解

- a. 音声信号の周波数(音程)が変化…VCOのFM(ピッチの変化)する
- b. 周期的に(繰り返して)変化する…MG(繰り返し信号を発生)
- c. 周期的な信号の量を変化させる…VCA
- d. 手許で変化させる………コントロールホイール(手元で出力電圧をコントロールする)

1. Analysis of effect.

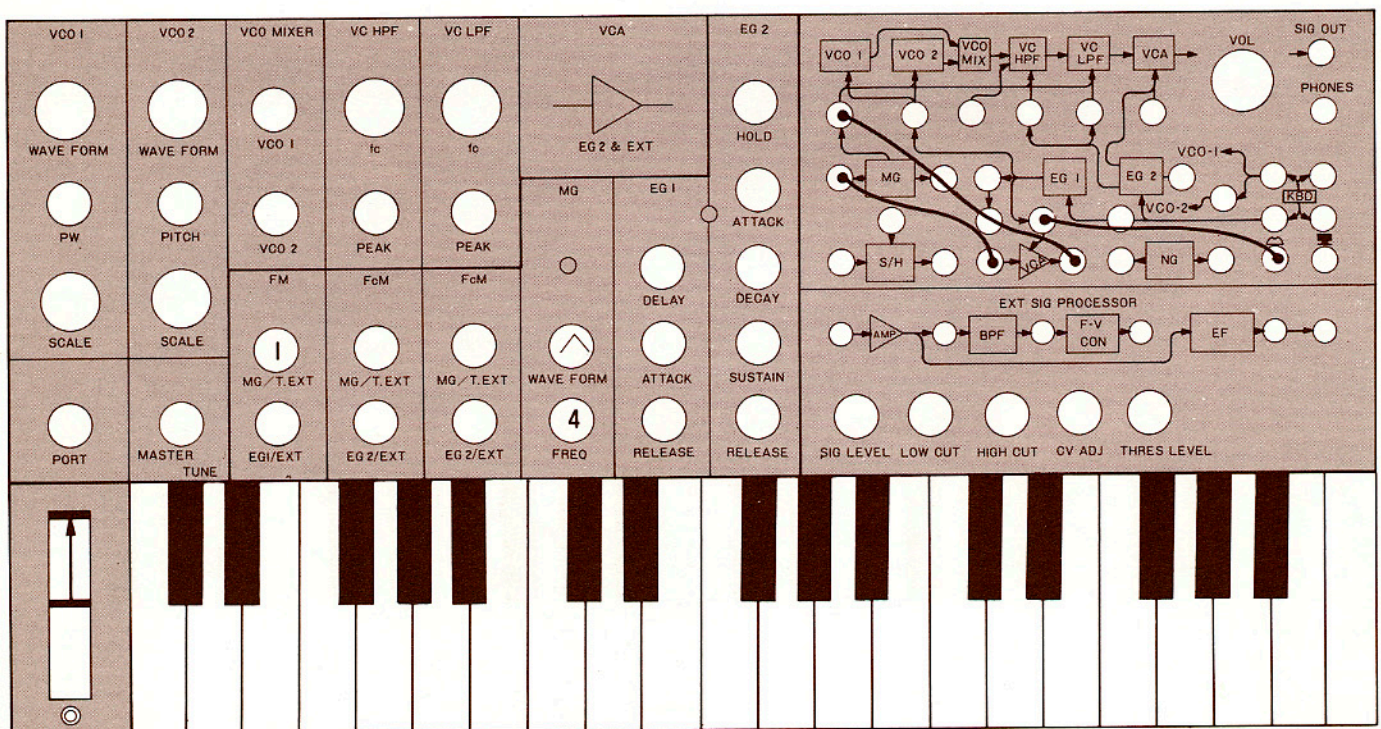
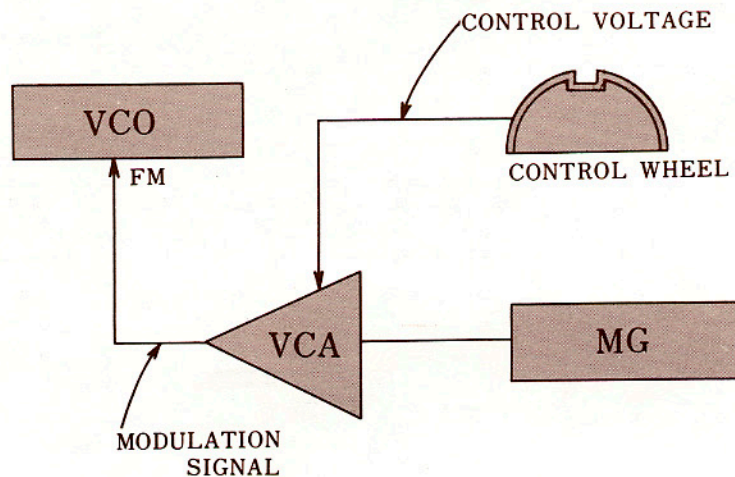
- a. The frequency (pitch) of the audio signal changes.
- b. It repeatedly rises and falls in a regular pattern.
- c. The amount of this cyclic variation increases and decreases.
- d. You control the amount of change by hand.

2. Selection of modules.

- a. VCO FM (to change pitch)
- b. MG (to generate a cyclic signal)
- c. VCA
- d. Control Wheel (to control the output voltage by hand)

③組立

3 set-up



EX.3 スイッチで音色をゆっくりと変化させる場合

Example 3. Switch controlled slowly changing tone color.

①効果の分解

②モジュールの選択

- a. 音色を変化させる.....VCFのFcM (音色の変化)
- b. 徐々に変化させる.....EG-1(タイミングのコントロール)
- c. スイッチを使う.....モーメンタリースイッチ(MSW)
(効果のON,OFF)

1. Analysis of effect.

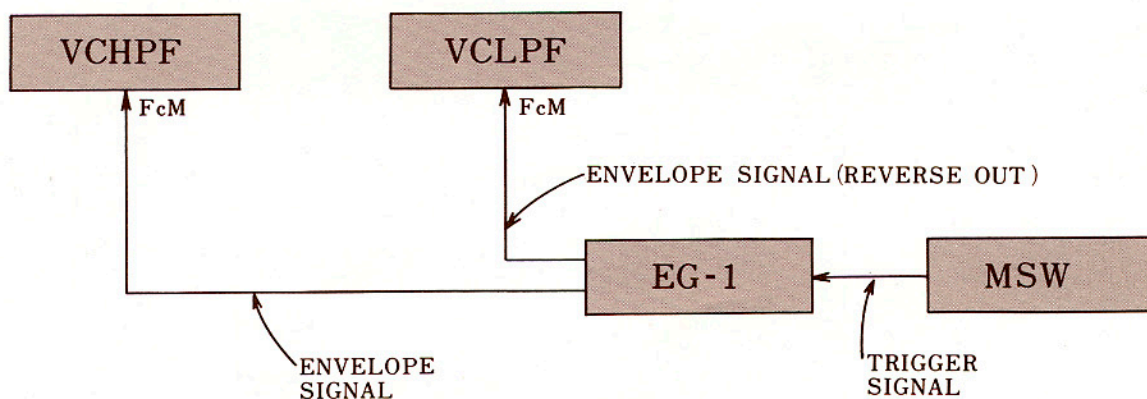
- a. The tone color changes.
- b. It changes gradually.
- c. You use a switch to turn on the effect.

2. Selection of modules.

- a. VCF FcM (to change tone color)
- b. EG-1 (to control timing)
- c. Momentary switch (to turn the effect on and off)

③組立

3 set-up



EX.4 スイッチで音程と音色を周期的に変える場合

①効果の分解

- a. 音程を変化させる.....VCOのFM (ピッチの変化)
 - b. 音色を変化させる.....VCFのFcM (音色の変化)
 - c. 周期的に(繰り返して).....MG (繰り返し信号を発生)
 - d. スイッチで.....モーメンタリースイッチ(MSW)
- (効果のON,OFF)

②モジュールの選択

Example 4. Switched cyclic change of pitch and tone color.

1. Analysis of effect.

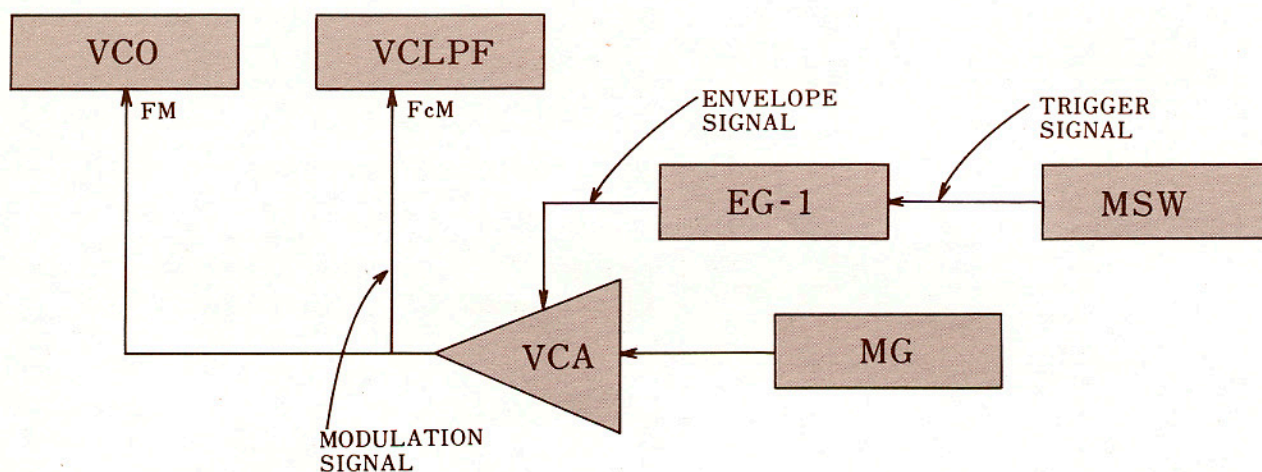
- a. The pitch changes.
- b. The tone color changes.
- c. They change cyclically (repeatedly).
- d. The effect is turned on by a switch.

2. Selection of modules.



- a. VCO FM (to change pitch)
- b. VCF FcM (to change tone color)
- c. MG (to generate a cyclic signal)
- d. Momentary Switch (To turn the effect on and off)

③組立

3set-up



EX.5 スイッチでグリッサンドをかける場合

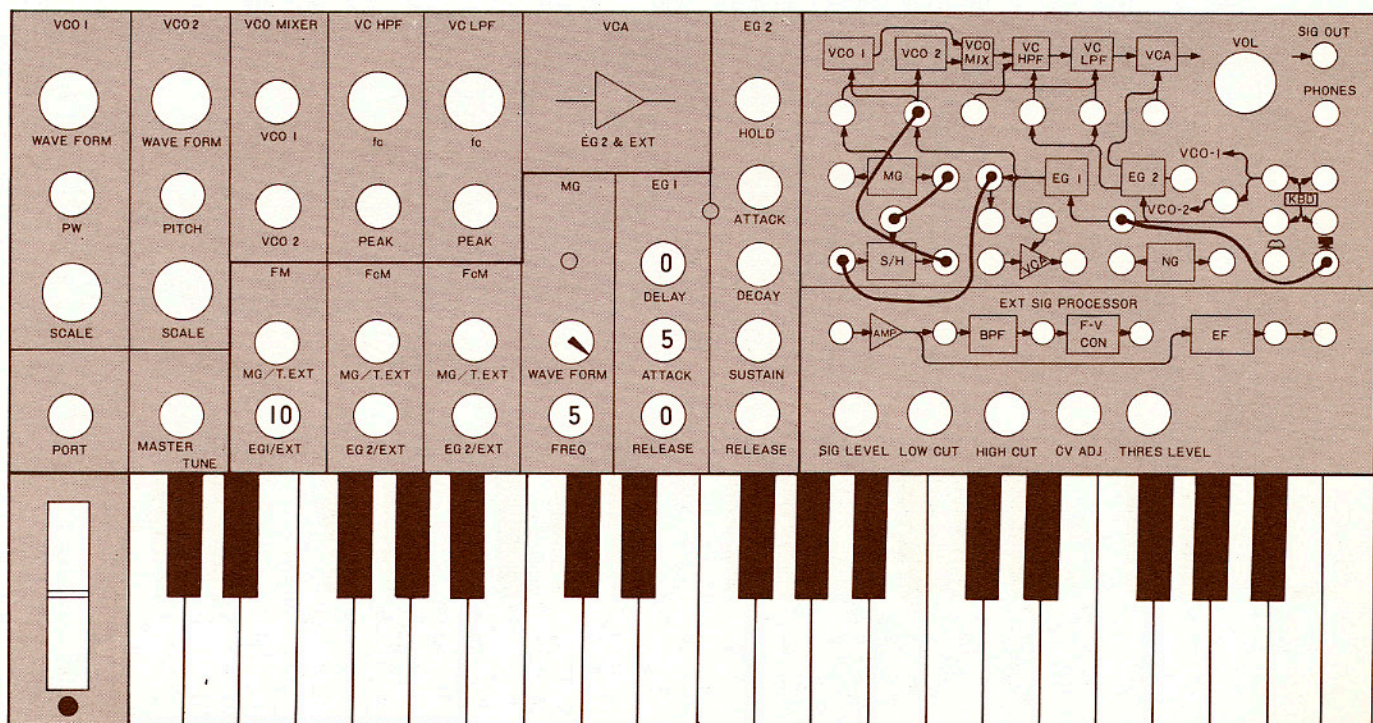
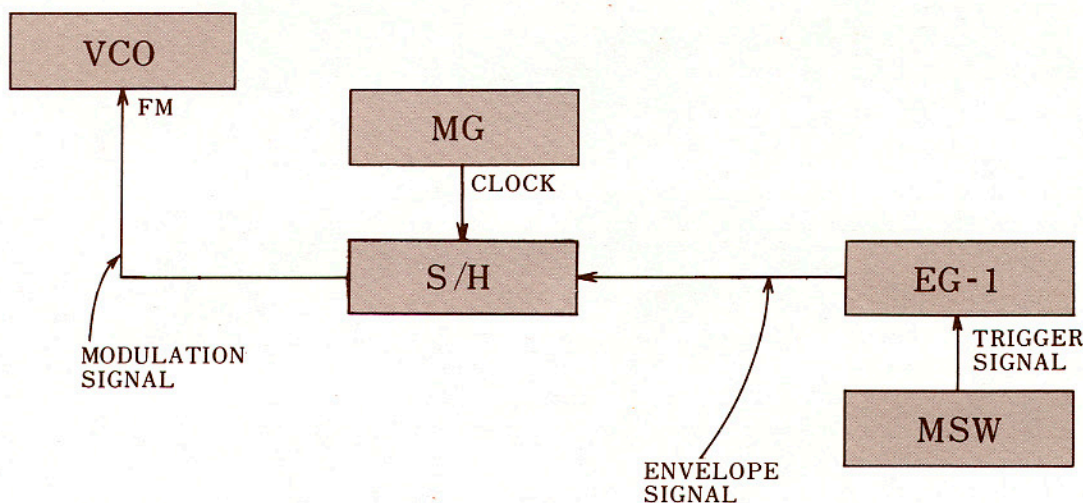
- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <p>①効果の分解</p> <p>a. ピッチが変わる……………VCOのFM(ピッチの変化)</p> <p>b. 階段状に変化する。(「」)……………S/H(連続的な変化を、ステップ的な変化にする)</p> <p>c. 徐々に上がる。(「」)……………EG-1(タイミングのコントロール)</p> <p>d. 押しボタンを使う……………モーメンタリースイッチ(MSW)(効果のON、OFF)</p> | <p>②モジュールの選択</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|

Example 5. Glissando controlled by a switch.

1. Analysis of effect.
 - a. The pitch changes.
 - b. It changes in steps.
 - c. It rises step by step.
 - d. The effect is switched on by a button.
2. Selection of modules.
 - a. VCO FM (for pitch change)
 - b. S/H (to make a continuously varying signal into one that changes in steps.)
 - c. EG-1 (for control of timing)
 - d. Momentary Switch (M SW) (to turn the effect on and off)

③組立

3 set-up



EX.6 手許でグリッサンド効果を得る場合

①効果の分解

- a. ピッチを変化させる.....FM (ピッチの変化)
- b. 階段状に変化させる.....S/H (連続的な変化をステップ的な変化にする)
- c. 手許で行なう.....コントロールホイール (手元で出力電圧をコントロールする)

②モジュールの選択

Example 6. Convenient control of glissando.

1. Analysis of effect.

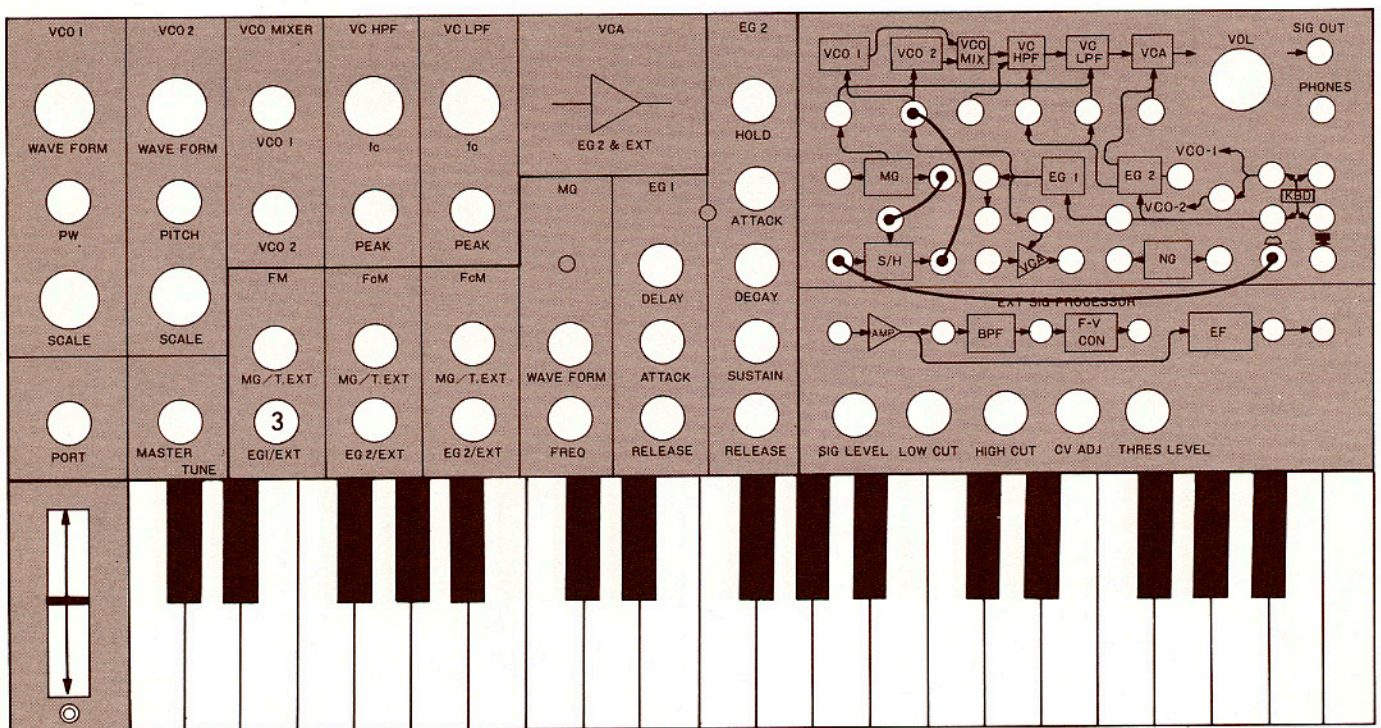
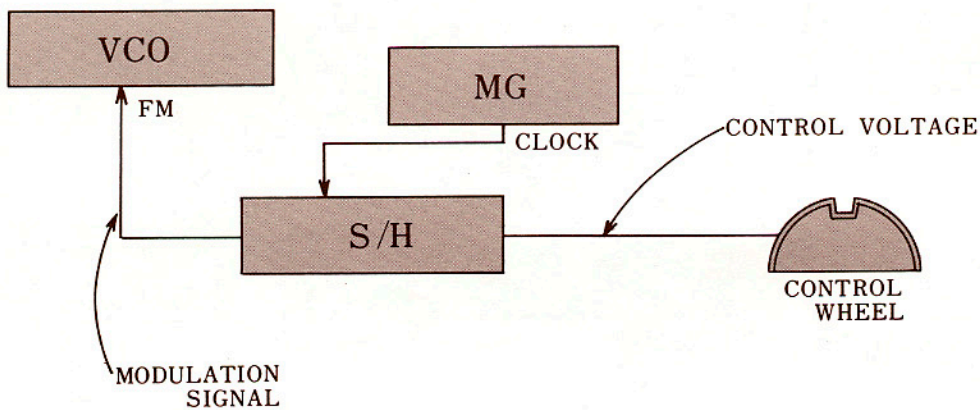
- a. The pitch changes.
- b. It changes in steps.
- c. You can conveniently control the effect.

2. Selection of modules.

- a. FM (to change the pitch)
- b. S/H (to change a continuously varying signal into a stepped signal)
- c. Control Wheel (to control output voltage by hand)

③組立

3 set-up



EX.7 スイッチで音程をランダムに変化させる場合

①効果の分解

- a. 音程が変化する.....FM (ピッチの変化)
- b. ステップ的に変える.....S/H+MG (階段上の変化を連続的に発生)
- c. ランダム(メチャクチャ)である...NG(ノイズジェネレーター)
- d. スイッチで行なう.....モーメンタリースイッチ (MSW)+EG-1(効果のタイミングコントロールど効果のON、OFF)

②モジュールの選択

Example 7. Switched random pitch change.

1. Analysis of effect.

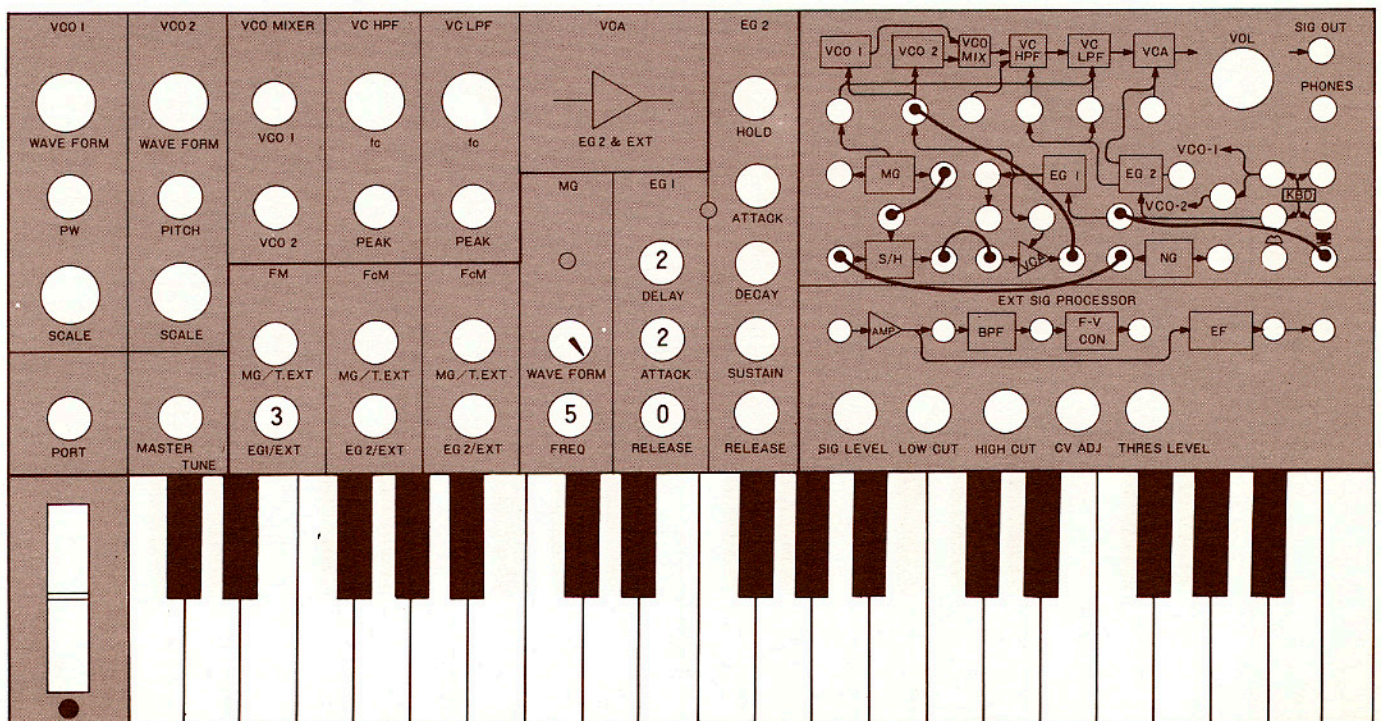
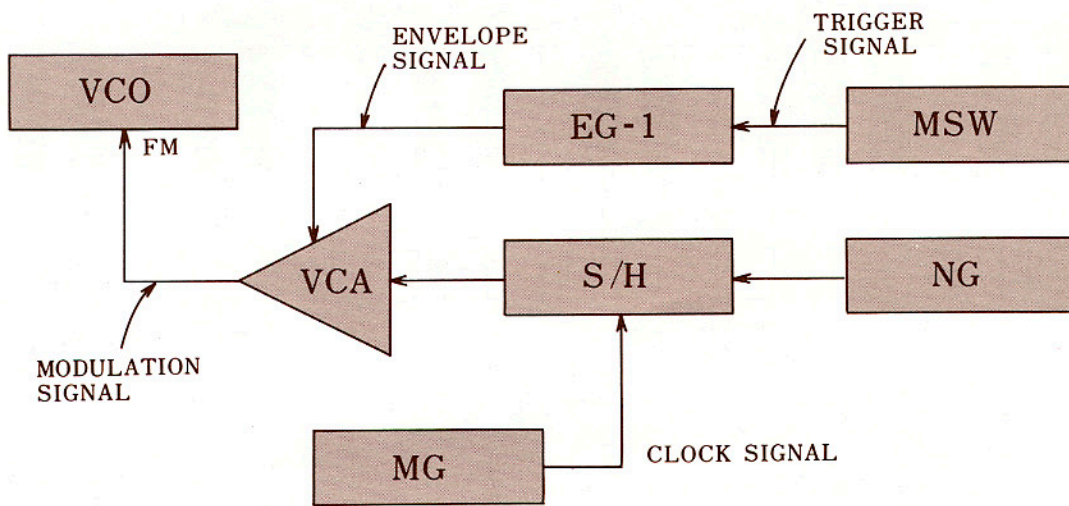
- a. The pitch changes.
- b. It changes in steps.
- c. The changes are random.
- d. The effect is turned on by a switch.

2. Selection of modules.

- a. FM (to change pitch)
- b. S/H and MG (To continuously generate stepped changes)
- c. NG (Noise Generator) (to provide a non-cyclic signal to be sampled by the S/H)
- d. Momentary Switch (MSW) and EG-1 (to control timing and switch the effect on and off)

③組立

3 set-up



ブランク チャート

Blank Charts

このブランクチャートは、ご自分で合成した音の記録にご使用下さい。後で再現することが容易にできます。

Use these blank charts to record the settings you find useful.

This chart provides a comprehensive overview of the synthesizer's controls and internal architecture. The control panel on the left includes sections for VCO 1 and VCO 2 (Wave Form, PW, SCALE, PORT, MASTER TUNE), VCO MIXER (VCO 1, VCO 2, FM, MG/T.EXT, EG/EXT), VC HPF (fc, PEAK, FcM, MG/T.EXT, EG 2/EXT), VC LPF (fc, PEAK, FcM, MG/T.EXT, EG 2/EXT), VCA (EG 2 & EXT, MG, EG 1, WAVE FORM, ATTACK, DELAY, SUSTAIN, FREQ, RELEASE), and EG 2 (HOLD, ATTACK, DECAY, SUSTAIN, RELEASE). The schematic diagram on the right illustrates the signal flow from two VCOs through a mixer, filters, and amplifiers, including an external signal processor (AMP, BPF, F-V CON, EF) and output options (SIG OUT, PHONES). The bottom section features a piano keyboard with 48 keys and a vertical slider on the left.

This is an identical copy of the blank chart described above, providing the same control panel layout, schematic diagram, and piano keyboard interface for recording synthesizer settings.

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Use these blank charts to record the settings you find useful.

This chart is a comprehensive control interface for a synthesizer. It is organized into several functional sections:

- Control Knobs and Buttons (Left Side):**
 - VCO 1 & 2:** Includes Wave Form, Pitch, Scale, and Port controls.
 - VCO MIXER:** Controls for VCO 1, VCO 2, and FM.
 - VC HPF & LPF:** High Pass Filter (fc, PEAK) and Low Pass Filter (fc, PEAK) controls.
 - VCA:** Includes EG 2 & EXT, MG, EG 1, and Wave Form controls.
 - EG 2:** Includes Hold, Attack, Decay, Sustain, and Release controls.
 - EXT SIG PROCESSOR:** Includes Amp, BPF, F-V CON, and EF controls.
 - Output Section:** Includes Sig Level, Low Cut, High Cut, CV Adj, and Thres Level controls.
- Schematic Diagram (Right Side):** A detailed block diagram showing the signal flow from two VCOs through a mixer, filters, envelopes, and a VCA to the output. It also shows an external signal processor path.
- Piano Keyboard (Bottom):** A 48-key keyboard with a vertical slider on the left side, used for recording notes.

This is an identical copy of the blank chart described above, providing a second set of controls and recording space for the synthesizer.

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This chart provides a comprehensive overview of the synthesizer's controls and internal architecture. The control panel on the left includes sections for VCO 1 and VCO 2 (Wave Form, PW, SCALE, PORT, MASTER TUNE), VCO MIXER (VCO 1, VCO 2, FM, MG/T.EXT, EG/EXT), VC HPF (fc, PEAK, FcM, MG/T.EXT, EG 2/EXT), VC LPF (fc, PEAK, FcM, MG/T.EXT, EG 2/EXT), VCA (EG 2 & EXT, MG, EG 1, WAVE FORM, ATTACK, DELAY, FREQ, RELEASE), and EG 2 (HOLD, ATTACK, DECAY, SUSTAIN, RELEASE). The schematic diagram on the right illustrates the signal flow from two VCOs through a mixer, filters, and amplifiers, leading to an external signal processor (AMP, BPF, F-V CON, EF) and output stages (VOL, SIG OUT, PHONES). The bottom section features a piano keyboard with 48 keys and a vertical slider on the far left.

This is an identical copy of the blank chart described above, providing the same control panel layout, schematic diagram, and piano keyboard interface for recording synthesizer settings.

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Use these blank charts to record the settings you find useful.

This chart provides a comprehensive overview of the synthesizer's controls and internal architecture. The control panel on the left includes sections for:

- VCO 1 & 2:** Wave form, PW, and SCALE controls.
- VCO MIXER:** VCO 1, VCO 2, and FM controls.
- VC HPF & LPF:** Frequency center (fc) and peak controls.
- VCA:** EG 2 & EXT, MG, EG 1, DELAY, ATTACK, SUSTAIN, and FREQ controls.
- EG 2:** HOLD, ATTACK, DECAY, and RELEASE controls.
- EXT SIG PROCESSOR:** AMP, BPF, F-V CON, and EF controls.
- Output & Tuning:** VOL, SIG OUT, PHONES, PORT, MASTER TUNE, EG1/EXT, EG2/EXT, and THRES LEVEL.

The central schematic diagram illustrates the signal flow from the VCOs through the mixer, filters, and envelope generators to the VCA and output stages. The bottom section features a piano keyboard with 48 keys, including a sub-octave section on the left.

This is an identical copy of the blank chart described above, providing the same control panel, schematic diagram, and piano keyboard layout for recording synthesizer settings.

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This chart provides a comprehensive overview of the synthesizer's controls and internal architecture. The control panel on the left includes sections for:

- VCO 1 & 2:** Wave form, PW, and SCALE controls.
- VCO MIXER:** VCO 1, VCO 2, and FM controls.
- VC HPF & LPF:** Frequency cutoff (fc) and PEAK controls.
- VCA:** EG 2 & EXT, MG, EG 1, DELAY, ATTACK, SUSTAIN, and RELEASE controls.
- EG 2:** HOLD, ATTACK, DECAY, and SUSTAIN controls.
- Keyboard:** PORT, MASTER TUNE, and EG/EXT controls.
- EXT SIG PROCESSOR:** SIG LEVEL, LOW CUT, HIGH CUT, CV ADJ, and THRES LEVEL controls.

The central schematic diagram illustrates the signal flow from the VCOs through the mixer, filters, and envelope generators to the VCA and output stages. It also shows the external signal processor path.

This is an identical copy of the blank chart described above, providing a second set of controls and a schematic for recording synthesizer settings.

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Use these blank charts to record the settings you find useful.

This chart provides a comprehensive overview of the synthesizer's controls and internal architecture. The control panel on the left includes:

- VCO 1 & 2:** Wave form, PW, and SCALE controls.
- VCO MIXER:** VCO 1, VCO 2, and FM controls.
- VC HPF & LPF:** Frequency center (fc) and peak controls.
- VCA:** EG 2 & EXT, MG, EG 1, DELAY, ATTACK, SUSTAIN, and FREQ controls.
- EG 2:** HOLD, ATTACK, DECAY, and RELEASE controls.
- Other:** PORT, MASTER TUNE, and EG/EXT controls.

The schematic diagram on the right illustrates the signal flow from the VCOs through the mixer, filters, and envelope generators to the VCA and output stages. It also shows the EXT SIG PROCESSOR section with an amplifier, bandpass filter, frequency-to-voltage converter, and envelope follower.

At the bottom, a piano keyboard is shown with a vertical slider on the left side, likely for pitch bending or modulation.

This is an identical copy of the blank chart described above, providing the same control panel layout, schematic diagram, and keyboard representation for recording synthesizer settings.

KORG

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