



**KORG®**

## Welcome to the OASYS CX-3 Expansion Instrument!

The CX-3 EXi modeling engine in OASYS faithfully reproduces a tonewheel organ and an accurate emulation of its rotary speaker amp, allowing nuanced control over such parameters as tonewheel leakage, key click, tube emulation, adjustable overtones, with proper foldback characteristics. The CX-3 Expansion Instrument in OASYS improves upon the original CX-3 with improvements in the Rotary Speaker algorithm, assignability of percussion to either 'manual' in a split, and new chromatic pitch choices for the EX drawbars and percussion. This Tour Guide is your first stop on an amazing journey of discovery. Our goal here is to get you comfortable working with this model, so that you can fully take ownership and give this amazing organ emulation your personal stamp.

After you've finished this tour, you can learn more about this great instrument by working with the OASYS Operation and Parameter Guides. And you'll find new OASYS tutorials, tips and tricks, support materials, and discussions with other OASYS owners by visiting [www.korg.com/oasys](http://www.korg.com/oasys), [www.karma-labs.com/oasys](http://www.karma-labs.com/oasys) and [www.korgforums.com/forum/phpBB2](http://www.korgforums.com/forum/phpBB2) on a regular basis!

## Where to find the CX-3 Programs...

### Select Program Bank User-F

The CX-3 Programs occupy the lower numbers of Bank U-F, U-F-000 through U-F-051. The higher numbers contain more great AL-1 Programs. Why not more? Much of the variety and magic of playing a tonewheel organ comes from moving the drawbars yourself, and operating the controls in realtime – it's not about changing presets as much as it is playing with the instrument in an interactive fashion! Plus, it's so easy to edit the drawbars and tone to your liking, that you'll be creating your own original CX-3 Programs in no time!

### Tutorial: Select Program Bank User-F-000, Felix's Da Kat

This great program emulates an "all-stops-out" organ: think "Good Lovin" by the Rascals from the 60's.

Note that the factory organ programs all 'wake up' with the **CONTROL ASSIGN** mode defaulting to **MOD: TONE ADJUST**. Faders 1-8 are your first eight drawbars, and the **MASTER** fader behaves as drawbar #9. Move the faders as you play, noting that the display's drawbars update to the changes you make. Touch the small drawbar area beneath Upper and an enlarged view appears, which also updates and responds to your fader movements.

Push the joystick away from you (**+Y**), and the Rotary Speaker slows down; push it again and it accelerates. Try this while holding a low note and a high note together and you can hear the accuracy of the CX-3 rotary model: there are separate acceleration/deceleration rates for the horn (the highs) and the rotor (the revolving drum for the lows).

## Split Mode, and Controlling the Lower Drawbars

Pull the joystick towards you (-Y), to make use of a pre-programmed split, each half of the keyboard having its own set of drawbars. The Upper Drawbars are linked to the Control Surface. As for the Lower, note that the 16' drawbar is colored red: this is the 'cursor'. The red drawbar is linked to the **VALUE** slider and **VALUE** wheel. Touch any drawbar, either Lower or Upper and note that its position can now be adjusted by the **VALUE** fader and wheel.

*Note: The Upper Drawbars default to always being linked to the Control Surface. We'll see in a little bit how we can customize the Control Surface to behave differently.*

### More on Split Mode...

On the display, press the tab labeled **Keyboard Split**. Besides **Joystick -Y**, you can enable a Split just by checking the box labeled **Split Enable**. On this page you can:

1. Change the Split point to any key. Highlight the default 'B3' in this example ▶ Use the **VALUE** Slider or Wheel to modify, or \***SHORTCUT**\* Hold **ENTER** and press the desired key. ▶ (Note: You are setting the uppermost note for the Lower zone.).
2. Independently shift the octave of the Upper or Lower zone. Try setting the Lower Octave Shift to **+2**.

*Why This Is Cool: Organists will often set the Lower Manual as a chordal accompaniment to their soloing on the Upper; or they find it useful to use the Upper and Lower as if they were two different 'patches', so that they can change up their soloing with two different voices without any fuss.*

3. Change the source of the Split command. To review: AMS stands for Alternate Modulation Source Press the popup after AMS: These are the wealth of sources you can apply for this Split message, or any modulation message.
4. A desirable AMS application for a organist would be to enable hands-free switching of the rotary speaker speed ▶ Press the **Amp/ VC/ Rotary Speaker** tab, then press the Rotary Speaker tab in the second row ▶ In the **Mode/Speed** cell, locate the setting **Speed SW: Slow**, and notice the AMS popup which is currently set to **JS+Y** ▶ Press this popup and select **Damper (CC#64)** from the list: now your damper pedal will toggle the rotary speed ▶ Note that the **AMS Mode** parameter offers the choice of a Momentary setting, so that the rotary would be fast only as long as the pedal is depressed.

## Tutorial: Extended Drawbar Mode: Example: Program U-F-10, EX Otones

*Concept: One of the most innovative features of Korg's CX-3 Organ was the introduction of four additional overtones (or drawbars) to the standard nine. Let's explore how OASYS implements and extends this unique idea:*

1. After selecting **Program U-F-10**, EX-Otones, press the smaller set of four drawbars in the second row beneath **Upper**: this quickly takes you to the Extended drawbars. (Alternate navigation: Press **EXi1** ▶ Press **Basic**: Notice that here you can select either Normal or EX Mode ▶ Press **Split/Drawbars** ▶ Press **EX Drawbars**)
2. Touch each EX Drawbar in Upper EX Drawbars to turn it red and extend all four out to their fullest using the **VALUE** slider or wheel.
3. After **EX Drawbar Pitch Mode**, select **Custom** ▶ Touch the arrows under each of the EX Drawbars and select **4'**, **4'+3**, **4'+6**, and **2'+3**: You now have the tones of a diminished seventh chord, something that is not possible with the nine traditional drawbars alone! *OASYS' CX-3 Custom table allows you to set the EX drawbars to any chromatic pitch you like, over a five-octave range!*
4. Note that if you Split the keyboard, you can also add four EX tones to the Lower!

## OASYS also offers Extended Percussion!

5. Staying with **Program U-F-10, EX-Otones**, press the small box of drawbars labeled **EX Percussion**. (Alternate navigation: Press **EXi1** ▶ Press the **Percussion** tab ▶ Press SW2 or the popup by **Percussion: Off** to turn it on.

*New: Notice the parameter Percussion Assign: In OASYS, either the Upper or Lower 'Manual' can be assigned percussion!*

6. Press the **EX Percussion** tab 'Normal' is the 'volume fader' drawbar for the entire EX Percussion section ▶ The first two EX Percussion harmonics are fixed ▶ The last two take on whatever pitches you've previously assigned to EX drawbars 1 and 2!

## Tutorial: CX-3 Signature sounds and modeling noise artifacts

1. Select Program **U-F-017, LS Dirty Funk** ▶ Without playing the keyboard, listen to the amount of modeled artifacts in this 'dirty' sound, enabling it to capture all the audio aspects and funky taste of Dr. Lonnie Smith, one of the premier jazz organists of our time!
2. Press the 'Clean' **Wheel Type** instead of Vintage and hear the noise change in character ▶ Press to highlight the **Leakage** Level value ▶ Play and change this value to extremes and note the sonic accuracy Try altering the Overtones level in the same way To hear the Overtone changes play a simple triad, or a fifth on the keyboard while you vary the values.

*Why This Is Cool: Adjacent tonewheels in a tonewheel organ might leak' or 'cross-talk' into one another, especially with age. The CX-3 model in OASYS captures every nuance of this electro-mechanical wear and tear.*

3. Press the Noise Level parameter ▶ Bring the Noise Level down to 0, then gradually up to suit taste. ▶ If you've turned Percussion on with SW2, turn it off to more easily listen to the Key Click parameters ▶ Highlight the **Key-On Click Level** and try different values ▶ Leave it parked somewhere in the middle range, around 50 ▶ Now highlight the **Key-Off Click Level** ▶ Exaggerate this value to 99: OASYS generates two separate key clicks, one on the downstroke, and the second on the key release, accurately modeling varying degrees of 'dirty' contact noise.

**\*SHORTCUT: Remember that any of these tweaks can immediately be written to the current Program location simply by pressing the SEQ REC/WRITE key and pressing OK in response to the question "Are You Sure"**

1. Press the tab **Amp/VC/Rotary SP** and press the value field after **Amp Type:**. **Type 2** was modeled after the classic sound of an organ played through both a Rotary Speaker and a "British" guitar amp, as made famous by rock organist Keith Emerson. This sound emphasizes more highs (visible in the EQ graph to the right), and its overdrive characteristic becomes even more pronounced when you increase **Amp Gain** ▶ **Amp Gain** has an **AMS** control assigned to it ▶ Change **the Intensity** to about +60 and listen to the amp 'dirty up' as you play and slide on the ribbon towards the right: What a cool way to add emphasis to certain notes or phrases as you solo!
2. Note that Vibrato/Chorus can be independently turned on and off for each Manual Also note that this function can be assigned to a switch, or any other modulation source you like.
3. To the right is a column labeled '**Preset**' (History: Tonewheel organs have a rotary knob that chooses one of three speeds of vibrato or chorus ▶ OASYS not only faithfully captures these effects, but expands the possibilities by allowing you to create your own effect speed, with your own modulator: Imagine having velocity (normally disregarded by an organ) modulate the chorus speed, for example!

## Tutorial: CX-3 and the Control Surface

4. Select Program **U-F-043, GP NicePerc**, created by keyboard maestro Greg Phillinganes > Press the **Control Surface** tab button > Look at the wealth of parameters that can be controlled in real time: Percussion on/off, plus choice of 2<sup>nd</sup> or 3<sup>rd</sup> harmonic; Vibrato/Chorus on/off per manual; EQ; Amp gain; Key On Click; and something called Wheel Brake. (History: Before there were pitchbend wheels/joysticks, there were the two motor switches on a tonewheel organ labeled Start and Run; organists discovered that the Run status could be interrupted with the Start switch, causing a steady pitch fall while the switch was held.) Press the Switch labeled **6/14** and mimic this effect without endangering any moving electrical parts!
5. During our study of the Lower Drawbars in a Split, we learned that the Control Surface links to the Upper Drawbars by default, *but not by limitation!* Press the popup by **Upper DrawB6** and select **Lowr DrawB1** > Press the popup by **Upper DrawB7** and select **Lowr DrawB2** > Press the popup by **Upper DrawB8** and select **Lowr DrawB3** > You now have control over all the currently active drawbars plus one!
6. There are still four unassigned switches in this example: press the popups and add even more personal expression to your sound! This Tone Adjust setup is the same for all the CX3 sounds in the OASYS, with the traditional controls available in the same "areas" as the original. So you can feel instantly familiar when playing any CX-3 organ sound you choose!

*OASYS offers the utmost in flexibility and expression through the quality of its models and their integration with the Control Surface.*

## Addendum: EX Drawbar Feet-to-Pitches table

<b>16'</b> = note 8vb (one octave below fundamental)	<b>2'</b> = note 2 octaves up
16'+1 = note 8vb + ½ step (M7 below)	2'+1 = note 2 oct's up + m2
16'+2 = note 8vb + step up (m7 below)	2'+2 = note 2 oct's up + M2
16'+3 = note 8vb + 1 1/2 steps up (M6 below)	2'+3 = note 2 oct's up + m3
16'+4 = note 8vb + 2 steps up (m6 below)	2'+4 = note 2 oct's up + M3
16'+5 = note 8vb + P4 (P5 below)	2'+5 = note 2 oct's up + P4
16'+6 = note 8vb + aug4 (tritone below)	2'+6 = note 2 oct's up + aug4
8'-5 = note 8vb + P5 (P4 below)	1'-5 = note 2 oct's up + P5
8'-4 = note 8vb + m6 (M3 below)	1'-4 = note 2 oct's up + m6
8'-3 = note 8vb + M6 (m3 below)	1'-3 = note 2 oct's up + M6
8'-2 = note 8vb + m7 (M2 below)	1'-2 = note 2 oct's up + m7
8'-1 = note 8vb + M7 (m2 below)	1'-1 = note 2 oct's up + M7
<b>8'</b> = note	<b>1'</b> = note 3 octaves up
8'+1 = m2 above	1'+1 = note 3 oct's up + m2
8'+2 = M2	1'+2 = note 3 oct's up + M2
8'+3 = m3	1'+3 = note 3 oct's up + m3
8'+4 = M3	1'+4 = note 3 oct's up + M3
8'+5 = P4	1'+5 = note 3 oct's up + P4
8'+6 = aug4	1'+6 = note 3 oct's up + aug4
4'-5 = P5	1'+7 = note 3 oct's up + P5
4'-4 = m6	1'+8 = note 3 oct's up + m6
4'-3 = M6	1'+9 = note 3 oct's up + M6
4'-2 = m7	1'+10 = note 3 oct's up + m7
4'-1 = M7	1'+11 = note 3 oct's up + M7
<b>4'</b> = note 8va	<b>1'+12 = note 4 octaves up</b>
4'+1 = note 8va + m2	1'+13 = note 4 oct's up + m2
4'+2 = note 8va + M2	1'+14 = note 4 oct's up + M2
4'+3 = note 8va + m3	1'+15 = note 4 oct's up + m3
4'+4 = note 8va + M3	1'+16 = note 4 oct's up + M3
4'+5 = note 8va + P4	1'+17 = note 4 oct's up + P4
4'+6 = note 8va + aug4	1'+18 = note 4 oct's up + aug4
2'-5 = note 8va + P5	1'+19 = note 4 oct's up + P5
2'-4 = note 8va + m6	1'+20 = note 4 oct's up + m6
2'-3 = note 8va + M6	1'+21 = note 4 oct's up + M6
2'-2 = note 8va + m7	1'+22 = note 4 oct's up + m7
2'-1 = note 8va + M7	1'+23 = note 4 oct's up + M7
	<b>1'+24 = note 5 octaves up</b>