

Organist Version

# Operation Manual

## The Next Generation Processors

Traditional Display Build

[www.opustwoics.com](http://www.opustwoics.com)

*Celebrating 20 years – 2002-2022*

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## Introduction

Welcome to the Opus-Two Instrument Control System, the most flexible field-programmable control system available today. The Opus-Two hardware can control instruments ranging from no keyboards (MIDI only) to over eight keyboards, with a virtually unlimited number of combinations in between. The system is designed to be extremely easy for the organist and organ builder to use and will provide many years of reliable service if properly installed.

No technical background or expertise is required for the organist to use the system. Interface with the organist is most commonly through a Multi-Line Display, controlled by several labeled buttons. The first section of this document explains how to access and use the user features.

## Organist Operation

### System Features (At a Glance)

- Flexible Level Combination Action divided into folders. Over 100,000 levels are available.
- Each memory level features individual ranges/masks (optional)
- Full Range Transposer
- Fully Programmable MIDI In & Out
- High Resolution Internal Record/Playback Sequencer
- MIDI Select System for Expanders

### Interacting With The Display

The Opus Two Display is designed to give at quick glance a snapshot of the current status of the features commonly used by the organist, including Transposer, Memory Level Selector, and Crescendo Status.

There are 6 buttons located in proximity to the display that are used to control it:

Up	Transpose	Track	Play	Record	Down
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The features described below are part of all systems and are enabled by default. Any functions that are controlled externally with dedicated up/down pistons and/or LED displays may not appear in the menu window. Some functions may be configured to only appear on the display when they are active such as transposer, crescendo readout, and sequencer.

#### *Default Display*

```

Folder 01  Lvl  1
  Transposer Off
Track      1 Protected
  
```

If not configured to be different, the default display is shown above. In the configuration of the system, transposer, crescendo, and Record/Playback can all be hidden (or hidden unless they are in use).

Normally hidden unless active is the third line, which shows Recording and Playing in progress.

### Memory Level Selection

A memory level is an individual set of pistons, designed to be used together. Each piston can contain different contents for each level. Often organists are assigned one or more levels for their specific use. The Opus-Two system Next Generation systems are configured by their installer to a set number of levels. Under normal circumstances, the system is in Memory Level mode, where the up/down pistons at the display change the memory level.

### Memory Folder Selection

A folder is a group of levels, designed to be used together. By default, each folder contains 300 levels. This can be customized by the organ builder and may be different for each instrument. To navigate folders, hold down the set button while pressing the display's up and down buttons. While the set button is held, these buttons will change folders.

### Transposer

The transposer allows the organist to shift keying up or down one semitone at a time, allowing a piece to be played in its original key, but sound in a different key. This is often used when accompanying instruments that have a different center of tuning (such as most b flat orchestral instruments).

To use the transposer, simply press the "transpose" button and the up/down pistons will then control the transposer. To release control of the transposer, press transposer again; this will release the up/down pistons to control memory levels. Pressing general cancel will also release the transposer control.

### Piston Tracking (Optional)

```
Folder 01  Lvl  1
Last General: 12
Track      1 Protected
```

The piston tracking displays the last piston pressed. This can be helpful for a variety of reasons and also functions during the piston sequencer. The display will continue to show the last piston button pressed regardless of changes made to the physical stop controls. This line will clear when general cancel is pressed.

## Crescendo

The crescendo allows stops to be added blindly (stop tabs do not move), gradually building the organ to a near full organ sound. Each stage is individually programmable in the menu. The current stage is shown on the display. While most instruments only have one crescendo, Opus-Two supports up to 7 unique crescendos, typically controlled by dedicated lit pistons.

### Setting the Crescendo

To access the *crescendo set* mode of the display:

- 1) Hold Track and press Transpose until you see “Crescendo Setup”.

To create/modify a crescendo program:

- 1) Once in Crescendo Setup mode, press the up and down pistons to select a particular step. As you navigate, the stops will move to show what is on each step. If you make changes and press the record button, the system will save what is on the tab rail to that step and advance to the next step. When using Record to advance steps (as opposed to Up), the system will NOT load the existing next stage to the stops. It pre-loads the stage you just set, enabling you to make small changes and save them.
- 2) After making all changes, press the “Transpose” button repeatedly until back to a normal display to exit.

**Note:** The crescendo is permanently saved step-by-step as it is created. Therefore, if overwriting an existing crescendo, the existing data is overwritten a little more each time the Record button is pressed.

## Sforzando/Tutti

The sforzando/tutti allows stops to be added blindly (stop tabs do not move), typically providing a full organ sound. Each sforzando is individually programmable in the menu.

### Setting the Tutti

To access the *Tutti Set* mode of the display:

- 1) Hold Track and press Transpose until you see “Tutti Setup”.
- 2) Once in Tutti Setup mode, press the up and down pistons to select a particular tutti (most organs only use Sforz1/Tutti 1, the first option). Once on the desired tutti, pressing the Play button will display what is saved in that tutti. Pressing the record button will save what is on the stop rail to that tutti.
- 3) After making all changes, press the “Transpose” button repeatedly until back to a normal display to exit.

## Combination Action & Piston Management

### *A Word About Pistons*

There are two factors that come into play with pistons, the range and the actual contents. The range determines what stops the piston can control. Just because a piston is labeled general or divisional does not mean that it is limited to that capacity. Each and every piston can control just one division, several divisions, all divisions, some features, etc.

The organ builder/technician will set the appropriate “global” ranges when setting up the control system. If a change is made to global ranges, it will affect all pistons on all levels that do not have custom ranges.

If an organist wishes to change an individual piston’s range on a particular level, those are “local” ranges.

Further information is available in Appendix A: *More Information About Piston Ranges*.

### Setting the Range

Only follow this procedure to change which stops a particular piston can control. See “Setting a Piston” for normal combination action use. To view or change the current range on an individual piston:

- 1) Hold Transpose and press Track until you see “Piston Range” on the screen.
- 2) The display will say “Global Ranging” or “Local Ranging.” Press the Track button to toggle between them. Be certain the system is in the correct mode before changing ranges!
- 3) To view an existing range, hold Play while pressing an individual piston to view its current range.
- 4) To change or set a piston range, turn on all stops or couplers that should be in the range (they may already be on). Hold Record and press the piston to store the range to that piston. It is not necessary to release the Record button between multiple piston range settings.
- 5) After making all desired changes, press the “Transpose” button repeatedly until back to the home screen.

### Setting a Piston

This is the normal piston/saving procedure to use on a daily basis. To save currently selected stops to an individual piston:

- 1) Press and hold the [SET] piston.
- 2) Momentarily press the piston in question.
- 3) Release the [SET] piston.
- 4) The stops that are on have now been saved to that piston.

### **Piston Sequencer (optional)**

The piston sequencer allows an organist to “step through” the existing general pistons in order. The piston sequencer is configured by the organ builder to know which pistons are generals and will typically include all of them. The piston sequencer can have an enable button or can be active all the time. Dedicated “Next” and “Previous” buttons (sometimes marked + and -) on the console will control the sequencer. Typically, when the sequencer reaches the last piston on a memory level, it will automatically advance to the next level and begin sequencing through the pistons on the next level.

It is important to understand that the sequencer uses existing general pistons and does not have a “dedicated memory bank” of separate pistons as some other manufacturers do.

Please be aware that the sequencer acts upon the last general piston pressed. If cancel was pressed and no generals have since been pressed, it will not have a “starting point” until a general is pressed.



### General Piston Shift (optional)

The General Piston Shift takes advantage of the fact that Opus-Two has a large amount of memory and can store more pistons on a level than actual controls that physically exist. If an instrument has 20 general pistons, and the General Piston Shift is enabled, those generals will now function as 21-40, effectively doubling the capacity of the level from a piston sequencing perspective. This feature is quite useful in historic restorations where the client does not desire to have a different number of pistons than existing originally, but desires some degree of flexibility.

General Piston Shift can be layered for additional flexibility. Layers would typically be labelled as “General Piston Shift A” through “General Piston Shift D” (or as many layers are created). This allows even more generals to be in a single memory level, all accessible within a single memory level.

This chart shows how a console with only 5 general pistons can have 20 generals worth of space on each memory level.

	General Shift A	General Shift B	General Shift C	General Shift D
General Piston #1	1	6	11	16
General Piston #2	2	7	12	17
General Piston #3	3	8	13	18
General Piston #4	4	9	14	19
General Piston #5	5	10	15	20

## Built In Performance Sequencer

### *Introduction to the Sequencer*

The built in sequencer is one of the most popular Opus-Two features. The sequencer allows a number of songs to be recorded into the organ for playback later. Organists often record postludes, preludes, or even anthems (freeing them to direct the choir). These songs are recorded individually, or in groups.

### *Tracks*

The name “Track” could be interchanged with “song.” Because of the large amount of memory available to the Opus-Two system, a large number of tracks are available. Organists will sometimes record several pieces onto one track with a small pause between them if they are to be played back together (such as two preludes).

### *Selecting a Track*

The system defaults to track 1 on startup. Holding the Track piston while pressing the up/down pistons will change the current track.

### *Unlocking a Track*

By default, all tracks are protected and cannot be overwritten. To unlock a selected track, simply hold the track piston and touch Record. The display will update change from “Track x protected” to “Track x enabled.” Please be warned, this is the only step stopping the user from accidentally deleting a track.

**Be sure you want to erase/rewrite the contents of a track BEFORE you unlock it.**

### *Recording a Track*

When the track is enabled (unprotected), simply press the Record piston to start recording. A timer will show that the system is recording. Pressing Record will immediately erase anything on that track and start recording from the beginning.

### *Playing a Track*

To play the selected track, simply press the Play button. Press Track during playback to pause/resume. Press Play again to stop the playback. Make sure no stops are selected on the console and that the expression shoes are closed for most accurate results.

## Getting Service/Help

### *First Things First*

Call your pipe organ technician. They should always be your first resource for troubleshooting problems.

### *Then What?*

Go to [www.opustwoics.com](http://www.opustwoics.com) and look for a big button that says “Contact Us.” There you can put in a “trouble ticket” and get a personal reply from a technician (often within a few minutes, always within 24 hours).

## Further Information

### More Information About Piston Ranges

Please find a few pieces of information below to help understand exactly how the combination action works with pistons and ranges.

- 1) When a piston is saved, the mask is not used. The entire stop rail is saved, regardless of which piston it is and whether the stops are on or off. All stop states are recorded.
- 2) When a piston is pressed, the control system checks to see if an individual range has been set for that piston. If one has, it uses it. If one hasn't, it uses the global range.
- 3) Once a range has been chosen, the piston contents are compared against the range to determine which stops will be affected.
- 4) Because of this method, changing a range after setting a piston will allow it to recall stops that were not previously visible.
- 5) If a console is equipped with a "clear" button, all custom ranges are deleted when the level is cleared. The pistons will then default to using the global ranges.
- 6) A "range" or "scope" button will ONLY set local ranges. It can not set global ranges. This helps ensure the integrity of global ranges.