



# CFM-10 Operation Guide

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## Introduction

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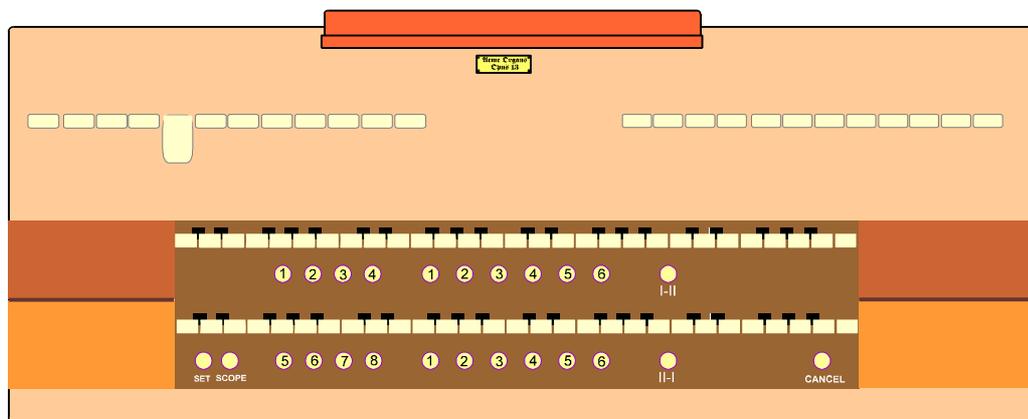
This organ is equipped with a powerful but easy to use capture system from Solid State Organ Systems called Capture For MultiSystem or CFM-10 for short.

## The Use of Combination Capture Systems

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As the name suggests, capture systems are used to capture the stop settings on the console and save them for later use. A capture system allows an organist to make simple or complicated registration changes quickly, with little, or no interruption to the music. There are a number of basic controls that are common to all capture systems, together with some more sophisticated ones that vary in operation from one organ to another.

A simple view of a console is shown below. This picture will be used in the following instructions to explain the setting procedure.



## Basic Controls

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**Stops.** Tab stops are used on the picture to illustrate open and closed stops. Currently one stop is open, drawstops follow the same principle.

**Pistons.** The pistons are used to operate the capture system.

Below each set of keys are grouped a set of pistons, usually marked 1,2,3,4... There may also be similar groups of pistons in other parts of the console. In the example above there are 11 pistons below the top manual and 14 below the bottom manual.

There are 6 pistons situated centrally under each manual. These pistons are normally used to control the stops associated with the manual above, and are called divisional or departmental pistons. There are 8 pistons at the left side, 4 under each manual. These pistons normally control all of the stops on the instrument and are called General Pistons.

Each manual has a piston to the right of the 6 Divisional Pistons that is used to turn a Coupler on and off. These are called Reversibles.

In the bottom left corner are two pistons, one marked Set and the other marked SCOPE. The function of these and General Cancel (bottom right of the console) are described later in this guide.

## Basic Functions

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CFM supports all of the basic capture system functions. As well as set, general cancel, programmable pistons and reversers, CFM introduces a new basic function called SCOPE.

SCOPE allows each piston on the console to control any group of stops from the whole specification. This enables the capture system to be configured with the usual divisional, general and reversible pistons. In addition SCOPE allows pistons to be re configured in the following ways:-

- ◆ If extra general pistons are required divisional pistons can be configured as generals.
- ◆ Divisional pistons can be configured to affect or not affect certain couplers.
- ◆ Any piston can be turned into a reverser.
- ◆ Any reverser can be turned into a divisional or general piston.

Each memory level (see below) has it's own SCOPE to allow maximum flexibility.

For more information on SCOPE see: Scope

p. 7 - 9.

### General Cancel

General Cancel is used to turn off all the stops.

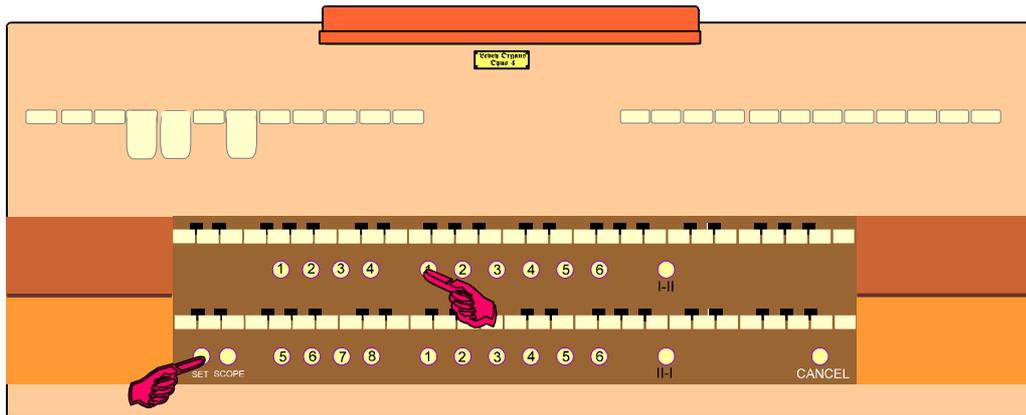
When General Cancel is pressed a number of events normally take place:

- ◆ All stops which are drawn at the console will be moved to their off position.
- ◆ All reversible tuttis will be cancelled, and their lamps will go off.
- ◆ All reversible ventils will be cancelled, and their lamps will go off.

Some of the above functions may not cancel with General Cancel, this depends on the configuration of your CFM-10.

## Setting Pistons

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Set is used to program the pistons with their particular combination of stops. in CFM-10

If you wish to program a stop combination onto a piston:

1. Set up the required registration on the console as shown above
2. Hold in set (left hand)
3. Press the piston (right hand)
4. Press General Cancel
5. Press the piston to confirm your selection is correctly set

The set piston is not operational on a locked level.

*See also:*

*Setting the Scope of a Piston p. 8*

## Using Pistons

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When a registration is set to a piston it remains in CFM-10 until changed. To recall the registration, push the piston at the required time when playing.

If you push another piston CFM-10 will override the previous one and any stops not set as part of the new registration will move off.

## Scope

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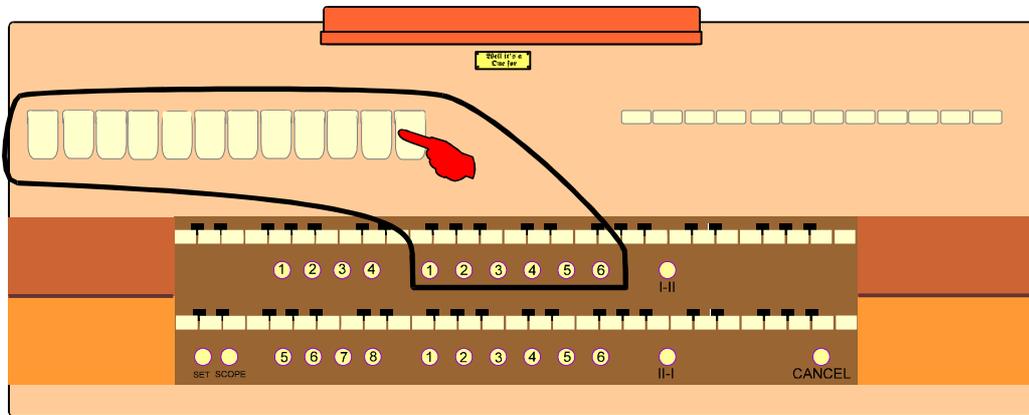
When a piston is pushed, only the stops that the piston has control over are moved. Using SCOPE it is possible to adjust the piston to control a different number of stops.

In short, you can 'teach' the piston it's range of control, or if you prefer, the SCOPE of it's operation!

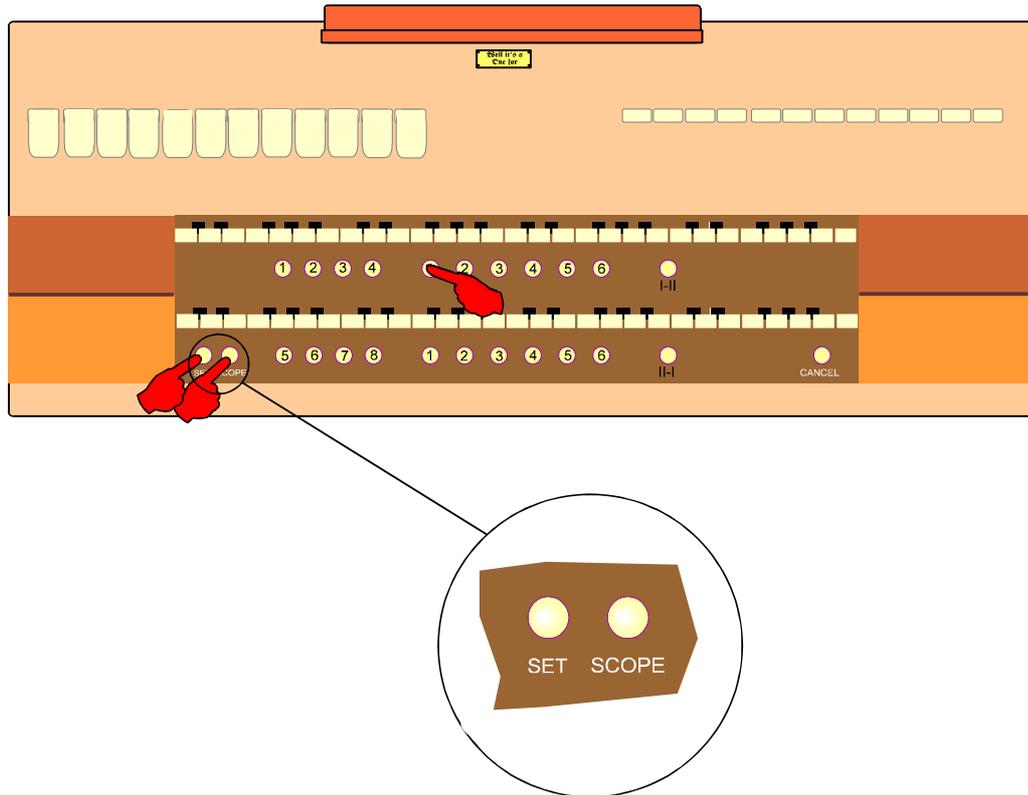
Returning to our console diagram, pistons 1-6 under the top manual have been allocated to the 12 stops of the Swell Division. Those pistons therefore have their SCOPE set to the Swell Division.

Your instrument's pistons will already have their SCOPE set by your organ builder. If you wish, you can adjust this quickly and simply with the following procedures.

If you do not have a SCOPE piston on your console contact your organ builder and he will inform us. Returning to our console for a moment there are 12 stops on the left side of the console, we wish to use these on the divisional pistons for the top manual.



*The SCOPE of the 6 pistons on the top manual needs to be set to cover the 12 stops shown. This will allow the 6 pistons to have a SCOPE of operation limited to the 12 stops selected.*



To change a piston's SCOPE do the following:

1. A good check is to always push General Cancel first to clear any unnoticed stops
2. Draw all stops which are to be affected by the piston. In this case the 12 stops shown as on
3. Hold in both the set and the SCOPE pistons
4. Press the piston(s) whose SCOPE you wish to set
5. Release the SCOPE piston

Only those stops which are within the SCOPE of the piston will be set onto the piston.

*See also:*

*Viewing the Scope of a Piston p. 9*

## Viewing the Scope of a Piston

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To view a pistons SCOPE, i.e. those stops which will be affected by the piston:

1. Hold in the SCOPE piston
2. Press the piston whose SCOPE you wish to view
3. The stops which move are those which are within the SCOPE of the piston

*See also:*

*Setting the Scope of a Piston p. 8*

## Making a Piston a Reverser

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Any pistons can be configured to become reversible for any single stop. This is made possible by the SCOPE facility.

Setting a piston as a reverser is similar to setting the SCOPE of a piston.

1. A good check is to always push General Cancel first to clear any un-noticed stops
2. Select the stop that is to become reversible
3. Hold in both the Set and the SCOPE pistons
4. Press the piston you want to operate as the reversible
5. Release the SCOPE piston

Using the SCOPE feature in this way, any piston with a SCOPE of only one stop automatically becomes a reverser.

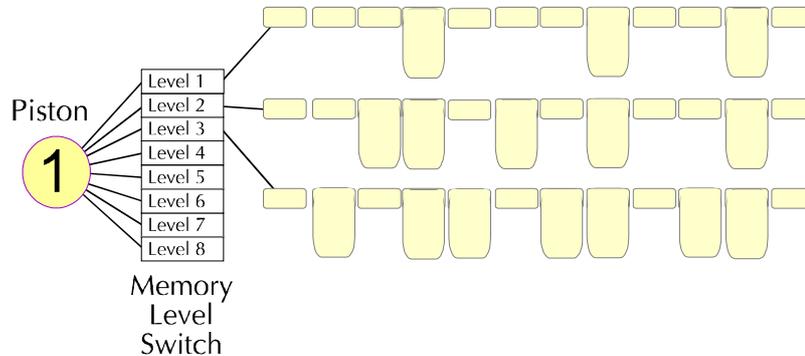
When viewing the SCOPE of a piston programmed as a reverser, the first press of the piston will cancel all stops and turn on the one stop which is reversible. Successive presses will reverse the stop, confirming the fact that the piston has become a reverser.

## Memory Functions

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So far we have discussed a capture system with each piston controlling whichever stops are set as part of it's SCOPE. To increase the flexibility of the system even further we use a system of memory levels.

This allows each piston to be re-usable for each level selected. Each level contains a completely independent setting for each of the pistons.



Individual levels are selected by means of a rotary switch fitted onto the console.



### Locking and Unlocking a Level

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If a lockswitch has been provided with this system, then individual levels may be locked. When a level is locked the pistons and blind functions on that level may not have their SCOPE or setting changed. Pistons and blind functions (see page 11) already set on that level will still be available for use.

An optional keyswitch may have been provided to lock individual levels. An indicator lamp will light on any level that is locked.

While a level is locked the locked lamp will light.

To lock a level:

1. Select the level to be locked
2. Turn and release the keyswitch
3. The locked lamp will light to show the level is locked

To unlock a level:

1. Select the locked level
2. Turn and release the keyswitch
3. The locked lamp will go out showing that the level is no longer locked

A memory level with no piston setting cannot be locked.

## Clearing a Level

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If the piston settings on a level are no longer required, and you wish to use the level with completely different settings it may be appropriate to clear the level.

Clearing a level removes all of the piston settings therefore the piston SCOPES are unaffected as are the settings of blind functions (ventils, tuttis etc.).

A level may be cleared using the following procedure.

1. Select the level to be cleared
2. Hold in set and press the clear button
3. The clear lamp will light to indicate the level has been cleared

The pistons on a locked level may be used, but they may not be changed.

If a level has already been cleared then clearing it a second time has a different effect. See p. 11.

*See also:*

*Copying Levels p. 12*

## Restoring the Default Level

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If the piston SCOPES on a level are no longer required, and you wish to use the level with different settings and SCOPES it may be appropriate to restore the default level.

The default piston SCOPES are restored including the default settings of blind functions (ventils, tuttis etc.) However restoring the default level removes all of the piston settings.

The default level may be restored using the following procedure.

Firstly the level must be cleared.

1. Select the level to be cleared
2. Hold in set and press the clear button
3. The clear lamp will light to indicate the level has been cleared

Now the default level may be restored to the current level by;

1. Hold in set and press the clear button a second time

*See also:*

*Copying Levels p. 12*

## Copying Levels

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Sometimes it is desirable to base the piston settings of one level on those already defined on another level. This can save a lot of time by avoiding the need to create a level from the beginning.

Copying a level is a two stage process.

- The first stage is to take a copy of the required level
- The second stage is to put that copy into the new level

### Stage One

- A. Select the level to be copied
- B. If the copy lamp is lit then press the copy button once to extinguish it
- C. Hold in set and press the copy button. The copy lamp will light indicating that a copy has been taken

### Stage Two

- D. Select the new level
- E. Hold in set and press the copy button again. The lamp will extinguish, indicating the copy has been used

*HINT: To use the copy again press the copy button, the lamp will light. Now repeat Stage Two.*

## Blind Functions

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CFM supports numerous blind functions, all of which are programmable. Blind functions are those which operate stops at the organ without moving them at the console. Blind functions include:-

- ◆ Ventils
- ◆ Tuttis & Sforzandos

The CFM system has blind function pistons, these pistons may be programmed to operate as desired. A full explanation of the setting procedure is given below.

If your console is equipped with a SCOPE piston or switch, you will be able to change which type of blind function is associated with each switch or piston.

If your console is not equipped with a SCOPE control you will not be able to change the function type of a blind function. However, you will be able to change the stops which are turned on or off by the blind function.

For Example: you will not be able to change an inclusive tutti to an exclusive tutti, although you will be able to change which stops the inclusive tutti brings on. Your organ builder will be able to set this for you.

## Blind Check

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Blind check is a facility that allows the settings and scope of blind functions to be viewed and changed.

The Blind Check switch is a reversible which toggles CFM in and out of blind check mode. The Blind Check lamp will light when the system is in blind check mode.

When the system is in Blind Check mode, all of the blind functions act as ordinary pistons. This allows the SCOPE and setting of blind functions to be changed in much the same way as that of normal pistons.

When the system is in blind check mode, all pistons act as general pistons. This is necessary for correctly viewing the stops set on blind functions.

## Viewing Blind Functions

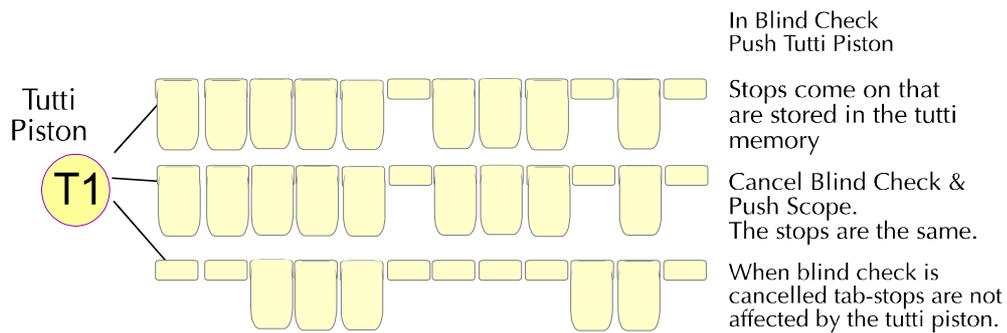
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The stops associated with blind functions can only be viewed when the system is in Blind Check mode

On a console with a SCOPE control, the SCOPE can be viewed in the same way as that of an ordinary piston (p. 9).

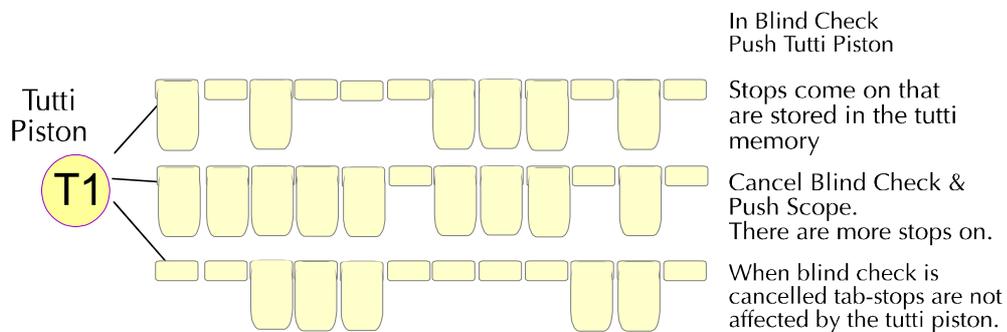
## Inclusive Tutti

The SCOPE and setting of an inclusive tutti will be the same. The only stops it affects (its SCOPE) are those which it will bring on blind (its setting).



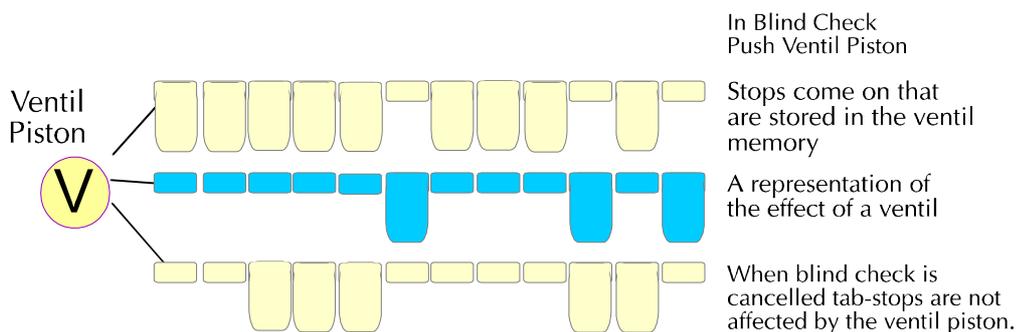
## Exclusive Tutti

The SCOPE of an exclusive tutti will show those stops which are affected by the tutti. The setting will show which of those stops will be turned on. All stops which are within SCOPE, but aren't in the setting will be forced off.



## Ventils

Ventils operate in a similar way to other blind functions, with one difference. Ventils are designed to cancel stops not add them. This is difficult to set on the console, so we reverse the setting procedure, to make it more simple!



To view the settings of a ventil

Select Blind Check

Push a ventil piston

The stops that come on (see picture above) are the stops set to cancel with a ventil.

## Setting an Inclusive Tutti

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A blind function becomes an inclusive tutti when its SCOPE and setting are the same. The only stops it affects (its SCOPE) are those which it will bring on blind (its setting).

Inclusive tutti are set as follows:

1. Turn on blind check.
2. Turn on only those stops which are to be brought on by the tutti
3. Set both the SCOPE of the piston, and the piston setting to the selected stop combination

*Hint: Once a blind function has become an inclusive tutti it may be more easily changed as described at the end of this guide for systems without SCOPE.*

## Setting an Exclusive Tutti

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A blind function becomes an exclusive tutti when its SCOPE is broader than its setting. It affects all stops within its SCOPE, turning those in its setting on, and the others off.

Exclusive tutti are set as follows:

1. Turn on blind check
2. Turn on those stops which are to be affected by the tutti
3. Set the SCOPE
4. Turn off those stops which are to be turned off by the tutti, leaving the others on
5. Set the tutti

*Hint: Once the SCOPE of an exclusive tutti has been set, the stops it brings on may be changed as described below for systems without SCOPE. If you set all the stops off on an exclusive tutti, it will become a ventil. To get back to being an exclusive tutti you will have to carry out the procedure described on page 16.*

## Setting a Ventil

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A blind function becomes a ventil when its setting is set to no stops. The only stops it affects (its SCOPE) are those which it will take off (its empty setting).

Ventils are set as follows:

1. Turn on blind check
2. Turn on those stops which are to be taken off by the ventil
3. Set the SCOPE of the piston to the selected stop combination
4. Turn all stops off (use general cancel)
5. Set the ventil

Once set as a ventil, the stops it affects may be changed without carrying out steps 4 & 5. Once a blind function has become a ventil it will not show its setting the same way other functions do. See Viewing Blind Functions on page 13.

## Changing a Ventil to a Tutti

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To change a ventil to another blind function type it is necessary to carry out the procedure which follows.

If you try to set stops into a ventil, CFM will interpret your actions as an attempt to change the stops the ventil affects (really its SCOPE), and not an attempt to put stops into the setting. The reason it would do this is to enable the ventil to be changed on consoles not fitted with a SCOPE switch.

Procedure:

1. Turn on blind check.
2. Press/turn on SCOPE and press the piston
3. Release/turn off SCOPE
4. Set the piston

This programs the stop memory to be the same as the SCOPE memory. This turns the piston into an inclusive tutti. It may now be easily changed to the required tutti type and setting following the procedures on page 15.

## Using the system with the scope control fitted as a switch

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### SCOPE Piston & SCOPE Switch

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There are three mounting options for SCOPE:

1. SCOPE may have been mounted as a piston adjacent to the set piston. This allows the easiest access to the SCOPE facility.
2. SCOPE may have been mounted as a concealed switch, e.g. in a drawer or behind the music stand
3. SCOPE may not be accessible, other than to the organ builder

### Setting SCOPE with a SCOPE Switch

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To change a pistons SCOPE do the following:

1. Switch on the SCOPE switch
2. Draw all stops which are to be affected by the piston. Turn all other stops off
3. Hold in the set piston
4. Press the piston whose SCOPE you wish to set
5. Switch off the SCOPE switch

### Viewing Pistons with a SCOPE Switch

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To view a pistons SCOPE, i.e. those stops which will be affected by the piston, do the following:

1. Switch on the SCOPE switch
2. Press the piston whose SCOPE you wish to view
3. The stops will move. The stops which are on are those which are within the SCOPE of the piston
4. Switch off the SCOPE switch

### Setting an Inclusive Tutti on systems without a SCOPE control

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Assuming the organ builder has already programmed the function as inclusive, by using SCOPE, it is possible to change the setting of an inclusive tutti without using SCOPE.

1. Turn on blind check
2. Turn on those stops which are to be brought on by the tutti
3. Set the blind function

The system automatically updates both the SCOPE and the setting.

### Setting an Exclusive Tutti in systems without a SCOPE control

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Assuming the organ builder has already set the SCOPE, it is possible to change the stops brought on without affecting the SCOPE.

1. Turn on blind check
2. Turn on those stops which are to be brought on by the tutti
3. Set the blind function

The SCOPE remains unaffected

## Setting a ventil on systems without a SCOPE control

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Assuming the organ builder has already used SCOPE to program the function as a ventil, it is possible to change the stops it affects without using SCOPE.

The procedure is as follows:

1. Turn on blind check
2. Press the ventil piston
3. This will turn on all stops that are to be affected by the ventil, and turn off all stops which the ventil will not cancel
4. Adjust the stops according to the change you want to make
5. Set the ventil

The system automatically updates the SCOPE and leaves the setting blank.