Survey Menu

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SV Command

The survey command SV is a utility that manages the axis compensation data. Each axis controller card stores the screw compensation, zero offset for the scales, and the servo gain settings.

To view or edit data you must use the SV command.

Using SV

The previously used SV utility program was replaced in System 98 with a more advanced and easier to use editing utility screen. This new program offers a complete "What you see is what you get" style environment. When entering the survey menu (typing SV at the "enter next command" prompt), the survey menu now automatically loads the survey into memory, starting with the default X Axis survey. If no survey exists, a new empty survey will be created. The survey is then automatically displayed on the screen in groups of 40 values at a time. If more than 40 values in any given survey exists, there will be an additional option located at the bottom of the first column called "survey values." This option will allow the user to toggle between Page 1 (the first 40 values) and Page 2 (the remaining values), of the survey. The zero offset and gain options are also displayed on the bottom of the first column.

Review or Change Survey

To edit any values, the user must move a selector cursor defined by an asterisk (*) symbol around the screen. This selector cursor may be moved up, down, left, or right by pressing the "U," "enter" or "D," "backspace" or "L", and "R"

keys respectively. To change the axis that is currently being displayed, the user must move the selector cursor to the currently selected axis located at the top of the first column. At this point, the user will be prompted with an "Enter Axis ID" prompt. The user may now type in the desired axis (X, Y, Z, A, or B).

The actual survey values may be altered by moving the selector cursor to the desired index location and then typing in the corresponding value. The editor will then place the value in the correct location and will check for errors. Errors will occur if the difference in the values of two adjacent indexes is greater than 9. If errors are found, the brackets around the index value will change from square brackets "[ ]" to round brackets "( )". All of the numerical errors must be corrected before the user is allowed to exit the menu by pressing the manual key, or by selecting another axis in the survey menu.

Two new editing features have been added to help speed up the process of entering similar index values. The first feature, called the ALL command, is invoked by pressing the "A" key while the selector cursor is located on any index value. This command will give all of the indexes following the currently selected index the same value as that index. If, for example, the last 10 survey values all had the value of 1, the user may just type the first 1, move the selector cursor back up to that value, and press the "A" key. The last 9 indexes will now have the same value as the selected index.

If a currently selected index has the same value as the previous index, then the user may press the space bar to copy the previous survey value into the current index. This feature may be used when adjacent index values have the same value.

Changing the Zero Offset

The zero offset is used for scales and AC drives. The zero offset will move the axis in 0.0001 of an inch (0.00254mm) from the cold start position. To reset the zero offset, follow these steps:

1) In the SV program, move the selector cursor to the Zero Offset Index position, and enter the value 0.

2) Press Manual to save the survey and exit.

3) Determine the proper offset value by locating the index mark.

4) For AC-Drive systems, Cold Start axes, and then Jog from the Cold Start position to the Cold Start Marker position. Select the index position closest to the Cold Start Markers. Using the position value reported on the screen, insert this value into the SV program at the Zero Offset Index selection.

5) For Scale systems, use the SVT-0081 Encoder Tester (1000 line) and disconnect the scale feedback cable from the Axis Controller card and connect it to the Encoder Tester. Connect the Encoder Tester to the spindle controller card for 5-volt power. Cold Start the axes, and Jog the axis until the closest green index light is seen. Using the position value reported on the screen, insert this value into the SV program at the Zero Offset Index selection, and change the sign from "+" to "-" or from "-" to "+."

Changing Gain

The default gain option may be changed by moving the selecting cursor to the change gain index. Select either normal, intermediate, or maximum gain.

Saving a Survey to the Axis Control Card

A survey may be saved by either exiting out of the survey menu by pressing the Manual key, or by selecting another survey to edit. On exiting, the CNC will automatically cold start to enable the changes. If a survey has not been altered before exiting, the CNC will not require a cold start. This new feature allows the user to go into the survey menu just to look at the current settings, without having to wait for a cold start when exiting.

If a mistake has been made and a user wants to reload an axis without saving the changes, move the selector cursor to display the "Enter Axis ID" prompt. At this prompt, re-enter the axis that is currently being edited. A "Do You Want To Save Survey Before Re-Loading (Y/N)" message will appear. Press "N" to reload the survey without saving the changes.

Copying a Survey to a New Axis Control Card

If an axis card needs to be replaced, copying the survey to a new axis card can be done in one of two ways. The easiest way is to use two new features called the SVREAD and SVWRITE commands. To replace an axis card, follow these steps:

1) Type SVREAD at the ìenter next commandî prompt. All of the surveys will automatically be loaded into memory.

2) Shut off the machine and exchange the axis card to be replaced.

3) Turn the machine back on and type SVWRITE at the ìenter next commandî prompt.

4) When prompted, type in which axis is to be replaced.

5) The survey will be automatically saved and a ìsurvey successfully savedî message will be displayed.

Another method of copying axis surveys is to save them to disk using the PU,5 command. See Punch command for more details. This option may also be

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used to prevent any accidental losses of surveys. To load a saved survey from a disk, the user must enter the diagnostics option (option 7) in the Functions menu. A sub menu will appear with the option, "5-load configuration." If this option is invoked, the user will be asked for the filename of the survey. The survey will now be automatically loaded and saved. Note that any previously stored survey will be destroyed. To prevent a user from accidentally loading in a survey, the survey may not be loaded in through the disk command in the functions menu.