

Appendix C

DX32 Workshift

The following is information regarding the workshift function on the DX32 control. This function is found in the SETUP menu (F3 from the BASIC menu). The workshift feature is generally used when multiple setups are required on the machine at the same time.

Workshift Coordinate Systems

There are 6 different work coordinate systems available on the DX32. These coordinate systems are G54-G59. The default or BASE coordinate system after powering up the machine is the G54 coordinate system. The G54 coordinate system operate operates identical to the SET X, Y or Z commands found in the JOG or SETUP menus. The G54 coordinate system is in effect until another coordinate system is commanded during automatic operation of a part program. When not in the RUN mode i.e., SETUP, JOG, etc., the G54 coordinate system is active. All other work coordinate systems are the absolute distance from machine zero. This means that when the G54 or BASE coordinate system is changed by resetting X, Y, Z or changing the G54 coordinates, this does not affect the locations of the G55-G59 workshifts.

Setting the Workshift Coordinate Systems

In the SETUP menu the number 1 WKSHFT command allows setting of the various work coordinate systems. When this is selected a prompt will appear at the top of the screen requiring the input of the coordinate system being established. Follow the steps below for enetering the proper data for the coordinate system. The system should be in the absolute (ABS) positioning mode while setting the coordinate systems.

NOTE: For the following example, we will be using the G55 work coordinate system. The following example is for a two (2) station setup. The first station or BASE coordinate system (original X, Y zero) is on the left of the table and the second is to the right. The same procedure would apply for all the available work coordinate systems (G55-G59).

- 1) Establish the BASE coordinates (set X, Y zero on left part).
- 2) Position the spindle to the desired datum of the second station.
- 3) In SETUP select 1 WRKSHFT
- 4) Enter the desired coordinate system at the prompt (G55).

5) Enter the current position in relation to the second stations Datum (if you are at the zero position for station two enter zero for the X and Y).

NOTE: If Z is not changing, leave that field blank.

The coordinate system for the second station has now been established. You will notice the coordinates on the display have not changed. This is because the Base coordinate system is ALWAYS active in the SETUP mode. To verify the coordinate system is correct, use the following procedure.

Activating the Work Coordinate Systems

The work coordinate system can be activated in two ways. The most common is during part program operation commanding a G54-G59 which will make the new coordinate system active. The new coordinate system will remain active until another coordinate system is commanded or part program operation is terminated in which case G54 or the BASE coordinate system will be reinstated. A new coordinate system can also be activated by commanding the desired coordinate system in the MDI mode found in the F4 RUN screen. Use the following procedure to verify the desired coordinate system has been set properly.

- 1) Position machine at the datum or X, Y zero position for station #2.
- 2) Select F5 MDI from the run mode.
- 3) Depress the asteric (*) key which will now prompt for a G mode.
- 4) Enter the desired work coordinate system (G55).
- 5) When the enter key is pressed the new coordinate system will be activated updating the X, Y Z display to the position in relation to the coordinate system. If you had been over the datum of the second station, the display should be X, Y zero.

All moves now commanded will be in relation to the new coordinate system commanded. The Base coordinate system (G54) will be restored when the MDI mode is terminated.

Clearing the Work Coordinate Systems

The following is the procedure for restoring any of the work coordinate systems.

- 1) Position the machine to the original (BASE COORDINATE SYSTEM) X, Y zero.
- 2) At zero select the 1 WRKSHFT command from the SETUP menu.

3) Enter the desired WORKSHIFT to be cleared.

4) Enter ZERO for all three axes.

Refer back to "SETTING THE WORKSHIFT COORDINAT SYSTEM" for setting additional workshifts.