

CHAPTER 10

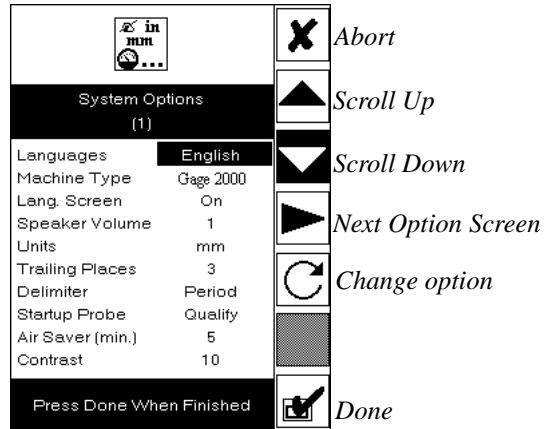
System Options

- 10-3 Introduction to System Options
- 10-4 Language and Machine Type
- 10-5 Language Screen, Speaker Volume, Units
- 10-6 Trailing Places, Angles, Delimiters, Startup Probe
- 10-7 Air Saver and Contrast
- 10-8 Points / Sec. & Minimum Distance
- 10-9 Nearest Nom., Ref. Length, Min. Cyl. Depth
- 10-10 Qual Sphere Diameter, Squareness Limit, Cone Angle
- 10-11 Perpendicular Angles, Send to Printer
- 10-12 Send out Serial
- 10-13 Playback Pause, Print Company, Print Operator
- 10-14 Print Part Name, Print Date, Print Time
- 10-15 Print Note and Require Points
- 10-16 Mouse, Printer Format, Baud Rate, Word Length, Parity
- 10-17 Stop Bits, Probe Holder, TTP Type, Vorne Display, Dial Indicator
- 10-18 XYZ Counters, Height Gage Mode, Digitize Mode, Measurements
- 10-19 DCC Playback, Prehit Distance, Posthit Distance
- 10-20 Alignments, Clearance Speed, Pre/Posthit Speed, Max Acceleration

System Options

Introduction to System Options

System Options are used for setting such items as the machine type, the controller's screen contrast, and the qualification sphere's diameter. Because there are too many options to fit in a single screen, 5 screens are used. Shown below is the first screen of System Options, known as "Page 1" of the System Options.



Note: Because all system options are saved in the controller's memory, the system will remember these saved values next time the controller is started.

Important: Never reinsert a previous version software card unless absolutely necessary. Because the structures that hold the options will most likely be different, doing so will result in a loss of your saved options.

System Options

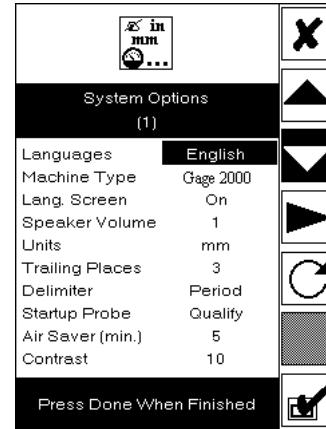
Language & Machine Type

Language

Default: English

Values: English, German, Italian, French, Spanish, Portuguese, Swedish, Finnish, Polish, Dutch, Danish, Czech, Simplified Chinese, Traditional Chinese, Japanese & Korean.

Description: The Language option sets the language of the system. The startup sequence's language screen also allows language selection. By placing this option here, the language can be set without rebooting the controller.



System Options Page 1

Machine Type

Default: Gage2000

Values: *Bridge type machine* (Based on Volcomp file type): Gage2000, Derby, uXcel 765/r, uXcel 7105/r, RefleX 343, RefleX 454, or other.

Horizontal type machine (Based on Volcomp file type): Gage2000H, or Derby II.

TTL type machine (Based on Controller type): Mistral 775, Mistral 1077, Mistral 7105, or Other.

Heidenhain Machine (Based on Controller type): Other.

DCC Machines (Based on serial query): Microval PFX 454

Arm Machines (Based on serial query): Gage2000 A



Other Machine

Description: This option tells the system which machine is being used. When set to "Other", a "Other Machine" softkey appears which allows a user, after entering the password, to enter axis lengths, axis direction, pitch, etc. This machine type is used for upgrades purposes.

Troubleshooting: If you Measurement Mode's part drawing isn't scaling correctly, or the flying probe isn't visible, it can only be caused by two things:

1. The machine was not homed correctly, or
2. The "Machine Type" option is set incorrectly.

System Options

Language Screen, Speaker Volume & Units

Language Screen

Default: On

Values: On, Off

Description: This option allows you to turn the startup sequence's language screen on or off.

Tip: If you are working in a uni-lingual shop, turn the "Language Screen" option off to facilitate system startup.

Speaker Volume

Default: 10

Values: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

Description: The volume of the system's speaker can be set with a value from 0 to 10. At a value of 0 the speaker is off.

Note: If you have a controller from before October, 1999, this option is not available. Older controllers have a "Sound" option which is either "Enabled" or "Disabled. Also note that some of these controllers were much quieter.



Note: On Arm machines, there is also a "Arm Beep Volume" option which controls the volume of the arm's internal speaker.

Units

Default: mm

Values: Inches or mm.

Description: This option lets you set the system's measurement units to either metric millimeters or English Inches.

Tip: Notice how switching between mm and Inches changes the "Trailing Places" option located below the "Units" option.

System Options

Trailing Places, Angles, Delimiter, Startup Probe

Trailing Places

Default: 3 for millimeters or 5 for Inches

Values: MM: 2, 3. Inches: 4, 5.

Description: This option lets you set the number of decimal places shown. For example, if the system's "Units" option was set to "mm" and the "Trailing Places" option was set to 3, a typical value would be displayed as "12345.678". See the "Units" option above.

Angles

Default: Decimal

Values: Decimal or DD:MM:SS

Description: This option lets you set an angle display. An angle displayed in "Decimal" format will look like "45.008". An angle displayed in "DD:MM:SS" will look like "045:00:27"

Tip: Remember, for an angle, the decimal value "45.510" is very different than "45:51:00".

Delimiter

Default: Period

Values: Period, Comma

Description: This option lets you set the symbol to represent the decimal point. You can choose either a period (123.456) or a comma (123,456).

Startup Probe

Default: Qualify

Values: Qualify, Saved

Description: This option specifies whether the system requires you to qualify a probe on startup, or allows you to use a previously saved probe. This option has the same effect as the "Save Startup Probe" found in the Probe menu.

System Options

Air Saver & Contrast



Air Saver

Default: 0 (Off)

Values: 0-999 minutes

Description: The Air Saver timeout sets the number of minutes the system will wait before turning off the air via the optional Air Saver. A value of 0 disables the Air Saver. This option is not shown for Arm or DCC machines.

Tip: For non-arm and non-DCC machines, the air filters are supposed to remove all of the oil from the air. But, some customers with extremely high concentrations of oil still have problems. By turning off the air when the machine is not in use, the air saver can provide a very inexpensive fix to a potentially serious problem.

Contrast

Default: Factory set to optimum contrast

Values: 0-25

Description: This option lets you set the contrast of the controller's screen.

Note: The screen's contrast will change with temperature and location of the operator.

Note: Changing the contrast and setting the system's volume are the only options that can be set with the controller without having a software card inserted. The reason for this is so that if you set the contrast to a value in which the screen can not be viewed and then turn off the controller, there is no way for you to navigate the menus to get back to the system options to reset the contrast. Use the top and bottom right buttons to set the contrast.

System Options

Points / Sec. & Minimum Distance

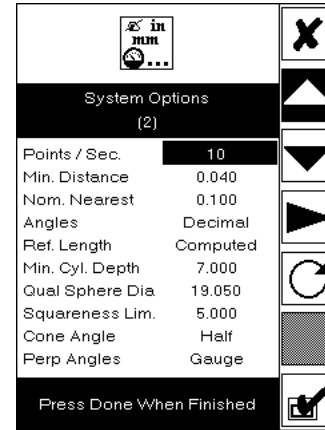
Points / Sec.

Default: 10

Values: 1,2,3,4,5,6,7,8,9,10

Description: This option sets the number of points taken per second when scanning with a hard probe.

Troubleshooting: If Counters update slowly, it is because the "Points/Sec." option is set to a value lower than 10.



Min. Distance

Default: 0.040 mm.

Values: 0.000 mm. and up

Description: "Min. Distance" is the "Minimum Distance between points". This feature, especially important during hard probe scanning, prevents multiple points being taken when the machine has briefly stopped moving.

Troubleshooting: If while scanning, the system is taking points sporadically, or taking 1 and only 1 point, it is because the "Min. Distance" option is set to a high value.

System Options

Nearest Nom., Ref. Length, Min. Cyl. Depth

Nearest Nom.

Default: 0.100 mm.

Values: Any positive value greater than 0.000.

Description: This option (Nearest Nominal) defines how the system will calculate the nominal, based on the measured value.

- 0 Truncates the measured value
- 1 Rounds the value to nearest whole value
- other Approximates to nearest fractional value.

Example: For a measured value of 50.083 mm, the system will calculate a nearest nominal of 50.100 mm, when this option is set to 0.100.

Ref. Length

Default: Computed

Values: Computed, User Defined

Description: This option (Reference Length), is used to compute squareness, parallelism, and angularity. The value can be either based on the points measured, or you can key in a value.

Min. Cyl. Depth

Default: 7.000 mm

Values: 1.000 mm and up

Description: This option (Minimum Cylinder Depth) helps the system distinguish between circles and cylinders. If you do not lock the appropriate axis when measuring a circle, it may look like a cylinder to the system. Also, when you measure very small bores, they may look like circles to the system. This option helps distinguish between the two.

Tip: Even if your cylinder is solved as a circle, or vice-versa, you can always force the solved feature to the desired feature. See Chapter 5 for more information.

System Options

Qual Sphere Diameter, Squareness Limit, Cone Angle

Qual Sphere Dia

Default: 19.050 mm

Values: All positive values

Description: The Qualification Sphere Diameter is the diameter of the qualification, or reference, sphere. This diameter is often stamped on the side of the sphere's support arm.

Troubleshooting: If this option is set incorrectly, the "Qualification Results" screen will consistently show high or low probe diameters.

Squareness Limit

Default: 5.000 degrees or 005:00:00 degrees

Values: All positive values.

Description: This option helps the system distinguish between parallel or square features and oblique features.

Example: If the Squareness Limit was set to 5 degrees, two cylinders with an included angle of 2 degrees would be considered parallel. If that squareness limit were set to 1 degree, they would be considered oblique.

Troubleshooting: If you cannot see intersection screens, such as the "intersection between two lines" screen, it is because you did not lock an axis and the two lines don't intersect. The other possibility is that the squareness limit is set to an invalid value. An appropriate value for the squareness limit option is 5.000 mm.

Cone Angle

Default: Half

Values: Half, Full

Description: This option is used to select the display of a cone's angle. The half angle represents the angle between the cone's axis and its surface. The full angle represents the included angle of the cone.

System Options

Perpendicular Angles, Send to Printer

Perp. Angle

Default: Actual

Values: Actual, Gauge

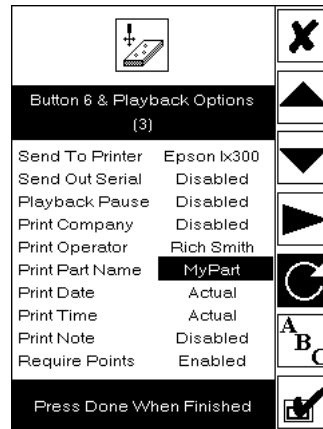
Description: This option is used in the display of perpendicular angles. When "Actual" is selected, an angle of 89.997 will be displayed as 89.997 degrees. When "Gauge" is selected, the deviation between 90 degrees and the angle is shown. In this case the gauge angle would be 0.003 degrees.

Send to Printer

Default: Disabled

Values: Disabled, Epson LX300 (U.S. & China), Epson LQ570+ (U.S.), Okidata 320 (U.S.), Panasonic 2135 (Europe), Epson VP-600 (Japan), Epson LQ-570HD (Korea)

Description: When a valid printer, has been chosen, the "Print" softkey will appear in the "Measurements", "Height Gage", and "XYZ Counters" modes. Note: The printer will not be visible in the Measurement Mode until a valid feature has been measured.



Print



Print

Playback Stop
Send to Stats
Serial Out

Note: The printers listed above are the only printers supported by Brown & Sharpe.

Troubleshooting: Most printing problems are a direct result of using unsupported printers. Before contacting your local service person, verify that you are using a supported printer.

Tip: Although the system may not be able to print to your favorite printer directly, there is another way. Use the serial output capabilities to transfer your measurement results to a serial capture utility such as Window's Hyperterminal program. Then print from there. Some customers even take it one step further and create a Microsoft Word™ template complete with logos, digital pictures, and work instructions. Using this procedure, you can create reports that are only limited by your imagination.

System Options

Send out Serial

Send out Serial



Serial Out



Print

Playback Stop

Send to Stats

Serial Out

Default: Disabled

Values: Disabled, DataPage, Gage Talker, Mitutoyo, Generic, Print Format

Description: This option sets the serial output format. Toleranced circle data, shown below, is sent out in the 5 formats. Because the system uses the serial port to communicate with the machine's controller, on a dcc system, serial output is disabled.

DataPage:

```
!SOT
DEFAULT CIX1 X 75.076 75.100 0.100 -0.100
DEFAULT CIY1 Y 87.272 87.300 0.100 -0.100
DEFAULT CIID1 D 53.083 53.100 0.100 -0.100
!EOT
```

Gage Talker:

```
DEFAULT ,1, X, CI, 75.076,75.100,0.100,-0.100,-0.024
DEFAULT ,1, Y, CI, 87.272,87.300,0.100,-0.100,-0.028
DEFAULT ,1,ID, CI, 53.083,53.100,0.100,-0.100,-0.017
```

Mitutoyo:

```
01A 53.082737
```

Generic:

```
DEFAULT ,1, X, CI, 75.076,75.100,0.100,-0.100,-0.024
DEFAULT ,1, Y, CI, 87.272,87.300,0.100,-0.100,-0.028
DEFAULT ,1,ID, CI, 53.083,53.100,0.100,-0.100,-0.017
```

Print Format:

==> Circle (1)

...: Circle

	MEASURED	NOMINAL	UPPER TOL	LOWER TOL	DEVIATION	OUT/TOL
X	75.076	75.100	0.100	-0.100	-0.024	==*=====
Y	87.272	87.300	0.100	-0.100	-0.028	==*=====
Diameter	53.083	53.100	0.100	-0.100	-0.017	==*=====

Note: For more information about the different Print formats, see section 5-15

System Options

Playback Pause, Print Company, Print Operator



Playback Pause

Playback Pause

Default: Disabled

Values: Disabled, Enabled



Print

PlaybackPause
Send to Stats
Serial Out

Description: This option lets you stop and view the results of a measurement before continuing with the playback process.

Print Company

Default: Disabled

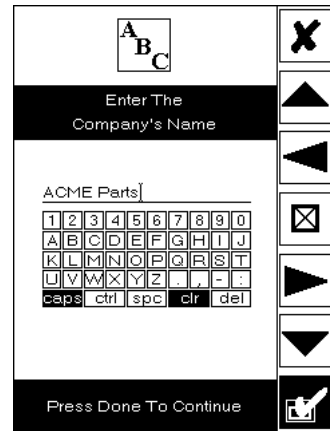
Values: Disabled, (blank), Company1



Enter Text

Description: This option lets you enter the company's name into the system. The "Enter Text" softkey brings up a keyboard to enter text. Later, when the "Print Headers" softkey is pressed (See Chapter 5) or a program is recalled, the following will be sent to the printer:

Company: ACME Parts Inc.



Print Operator

Default: (blank)

Values: (blank), Name1, Name2, Name3, Name4, Name5, Disabled



Enter Text

Description: This option lets you enter your name into the system. The "Enter Text" softkey brings up a keyboard to enter text. Later, when the "Print Headers" softkey is pressed (See Chapter 5) or a program is recalled, the following will be sent to the printer:

Name: John Smith

System Options

Print Part Name, Print Date, Print Time

Print Part Name

Default: (blank)

Values: (blank), Actual, Disabled, Part 1

Description: This option, set to Actual, prints out the saved program name at the top of the printout. It can also be used to key in a different, user defined part name.



Enter Text

Part Name: DemoBlk1

Print Date

Default: Disabled

Values: (blank), Actual, Disabled

Description: This option, set to Actual, displays the date at the top of a printout. When the "Print Headers" softkey is pressed (See Chapter 5) or a program is recalled, the following will be sent to the printer:



Enter Date

Date: 1/1/98

Note: Regardless of software version, older controllers are unable to remember time and date. Newer controllers, however, have a Y2K (Year 2000 Compliant) clock, similar to ones found in a computer.

Print Time

Default: Disabled

Values: (blank), Actual, Disabled

Description: This option, set to Actual, displays the time at the top of a printout. When the "Print Headers" softkey is pressed (See Chapter 5) or a program is recalled, the following will be sent to the printer:



Enter Time

Time: 12:53 PM

System Options

Print Note, Require Points

Print Note

Default: Disabled

Values: Disabled, (blank), Actual

Description: This option lets you print a comment at the top of a printout. The "Enter Text" softkey brings up a keyboard to enter text.. When the "Print Headers" softkey is pressed (See Chapter 5) or a program is recalled, the following will be sent to the printer:



Note: Measured By RefleX

Tip: Use the "Print Headers" feature as often as possible to reduce confusion when dealing with many parts and printouts.

Require Points

Default: Disabled

Values: Disabled, Enabled

Description: This option, when enabled required the operator to take as many points in playback, as was learned in the original inspection. So, for example, if a you take 13 points to measure a circle, in playback, the done button will not appear until you've taken 13 points.

Note: This option should be enabled for DCC playback.

System Options

Mouse, Printer Format, Baud Rate, Word Length, Parity

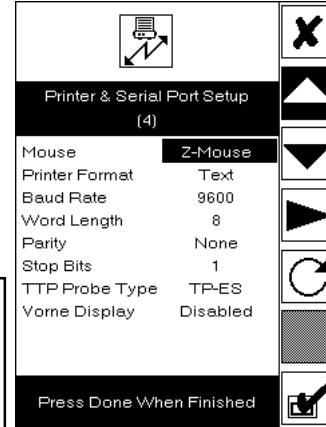
Mouse

Default: ZMouse

Values: ZMouse, Desk Mouse, Scan/Done, None.

Description: This option lets you switch between a ZMouse, Desk Mouse, and Scan Done assembly.

Troubleshooting: If the cursor only scrolls up and down through the softkeys when you move the ZMouse left to right, then you have a desk mouse selected, instead of a ZMouse.



Tip: When using an optical probe, use a desk mouse, or serial mouse, instead of a ZMouse. The ZMouse is difficult to access when the optical probe is installed. Using a desk mouse will reduce Z-rail movement.

Printer Format

Default: Text

Values: Text, Graphic, Both

Description: This option lets you chose the type of printout. A Graphic printout displays exactly what is shown in the results section of the Measurement Mode's screen. The Text printout sends text only to the printer. See the "Print Format" serial output format type in Chapter 5 for an example.

Baud Rate

Default: 9600

Values: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200

Description: This option sets the baud rate of the serial port.

Word Length

Default: 8

Values: 7, 8

Description: This option sets the word length of the serial port.

Parity

Default: None

Values: None, Even, Odd

Description: This option sets the parity for the serial port.

System Options

Stop Bits, Probe Holder, TTP Type, Vorne Display, Dial Indicator

Stop Bits

Default: 1

Values: 1, 2

Description: This option sets the stop bits for the serial port.



Probe Holder

Default: Standard

Values: Standard, Universal

Description: This option, available for the horizontal machines only, is used to switch between the two possible probe holders. If the wrong holder is selected, the machine will not compute the correct offsets during probe qualification.



Universal



Standard

TTP Type

Default: TP-ES

Values: TP-ES, TP-MIP

Description: This option chooses which TTPprobe is being used. After setting this option correctly, the correct probe will be shown in the qualification screens.



TP-ES



TP-MIP

Vorne Display

Default: Disabled

Values: Disabled/Enabled

Description: This option enables or disables the external, optional Vorne XYZ counter display. Before using this display, its serial port must be set up. (Usually 9600 Baud, 8 data bits, 1 stop bit. - See Vorne manual) RefleX's serial port should also be set up accordingly (Section 10-16). Be sure to obtain the correct Vorne serial cable as it is not a standard "straight through" or "null-modem" cable. Note: The Vorne display will not work in the digitize and passthrough modes because the serial port is already being utilized.



Vorne Display

Dial Indicator

Default: Enabled

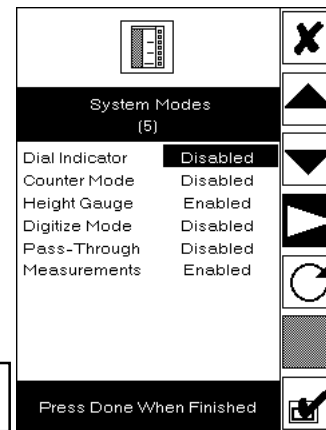
Values: Enabled, Disabled

Description: This option enables or disables the Dial Indicator Mode. When disabled, the Dial Indicator Mode softkey no longer appears in the system modes screen.



Dial Indicator Mode

Note: The Dial Indicator mode is only available when a hard probe is qualified.



System Options

System Options

XYZ Counter Mode / Height Gage Mode, Digitize Mode, PassThrough Measurements



XYZ Counters /Scribe Mode

XYZ Counter Mode / Scribe Mode

Default: Enabled

Values: Enabled, Disabled

Description: If the machine is a horizontal type machine, this option will enable or disable the Scribe Mode. If the machine is a bridge type machine, this option will enable or disable the XYZ Counter Mode. When disabled, the XYZ Counter or Scribe softkey no longer appears in the system modes screen.



Height Gauge Mode

Height Gauge

Default: Enabled

Values: Enabled, Disabled

Description: This option enables or disables the Height Gauge Mode. When disabled, the Height Gauge softkey no longer appears in the system modes screen.



Digitize Mode

Digitize Mode

Default: Enabled

Values: Enabled, Disabled

Description: This option enables or disables the Digitize Mode. When disabled, the Digitize softkey no longer appears in the system modes screen. Because there are 6 modes and only 5 slots available to display the modes, when the digitize mode is enabled, passthrough mode is automatically disabled.



PassThrough Mode

Pass-Through Mode

Default: Enabled

Values: Enabled, Disabled

Description: This option enables or disables the PassThrough Mode. When disabled, the PassThrough softkey no longer appears in the system modes screen. Because there are 6 modes and only 5 slots available to display the modes, when the passthrough mode is enabled, digitize mode is automatically disabled.



Measurements Mode

Measurements Mode

Default: Enabled

Values: Enabled, Disabled

Description: This option enables or disables the Measurements Mode. When disabled, the Measurements softkey no longer appears in the startup system modes.

Tip: Turn off the modes you do not use to alleviate startup confusion.

System Options

DCC Playback, Prehit Distance, Posthit Distance

DCC Playback

Default: Disable

Values: Enabled, Disabled

Description: This option turns DCC playback on or off. When disabled, no point information is saved and playback will run just like a manual system. When this option is enabled, the point information is saved.

Prehit Distance

Default: 5.000

Values: Any value greater than 0.000

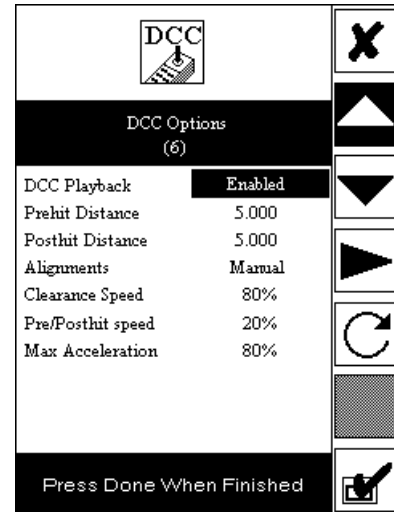
Description: This option tells the system how far before the nominal measured point to begin searching for the part. During this "searching" period, the system's velocity is set to the "pre/posthit speed". If the system does not contact the part during the prehit region, it will continue searching through the posthit region.

Posthit Distance

Default: 5.000

Values: Any value greater than 0.000

Description: This option tells the system how far after the nominal measured point to continue searching for the part. During this "searching" period, the system's velocity is set to the "pre/posthit speed". If the system does not contact the part during the posthit region, an error screen will be displayed.



Note: This "DCC Options" screen is only available if the controller is plugged into a DCC Machine.

System Options

Alignments, Clearance Speed, Pre/Posthit Speed, Max Acceleration

Alignments

Default: Manual

Values: Manual, DCC

Description: When set to "Manual", playback will prompt the user to measure the first few features manually until a datum has been established. After that, DCC playback will begin. When set to "DCC", all steps will be measured in DCC mode. This means that subsequent measured parts must be in the same location as the part which was learned. (This is often used in fixture programming)

Clearance Speed

Default: 80%

Values: 10% - 100 %

Description: This option sets the velocity which the machine will move when it is not in the prehit / post hit zone.

Pre/Post hit Speed

Default: 20%

Values: 10% - 100 %

Description: This option sets the velocity which the machine will move in the prehit / post hit zone.

Max Acceleration

Default: 80%

Values: 10% - 100 %

Description: This option sets the maximum acceleration which the controller is allowed to exert on the machine.