SHRIKE MACHINE

Simplify Machining

INDEX

ABOUT **SHRIKE** CONTROLLER

This Is A Compact Android Mobile Application For Shrike Machine CNCs.

Use Your Smartphone To Stream G-code To Your CNC Machine.
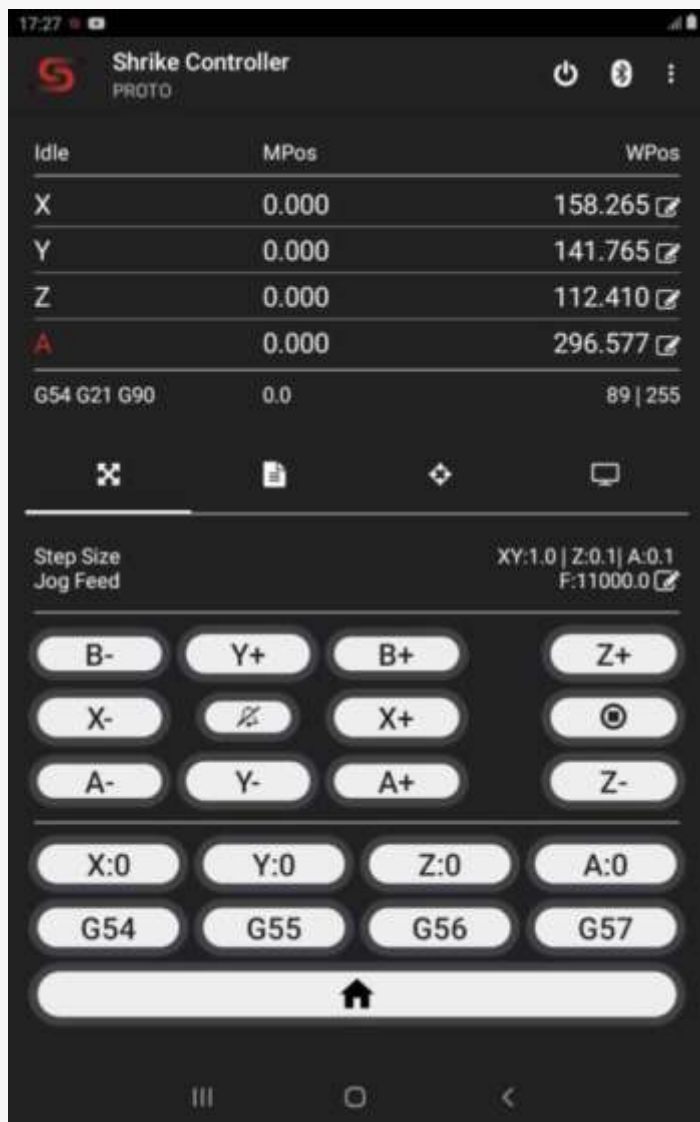
FEATURES

- ★ Supports Bluetooth and USB OTG connection.

- ★ Supports Real-time feed, Spindle Speed, and Rapid Overrides.

- ★ Simple and Powerful Jogging Control.

- ★ Dual Color Jogging Buttons for Accurate Jogging

- ★ Supports 5 Axis Jogging Control.

- ★ Real-Time Machine Status Reporting (Work Position, Machine Position, Feed, Spindle Speed, Buffer State).

- ★ Supports Sending G-Code Files Directly from Mobile Phone. (Supported Extensions are .tap, .gcode, .nc, .ngc, .fnc and .txt files can be Placed Anywhere in the Phone or External Storage).

- ★ Supports Short Text Commands (You can send G-Code Commands Directly from the Application).

- ★ Supports Probing (G38.3) and Auto Adjusts.

- ★ * Four Highly Configurable Custom Buttons which Supports Multi line Commands (Supports both Short Click and Long Click).

- ★ Application can Work in Background Mode, by utilizing the Less Resources, thereby Consuming Less Power.

- ★ Haptic Feedback (Enables Short Vibration when Buttons are pressed) User can Enable and Disable Vibration from Setting Tab.

PROBING TAB

- Use M7 command to Turn Probing on & M9 to Turn Probing off.

- Use 6mm Probing Tool for Accurate Offset

- 5 Probing Buttons for Corner, Center & Tool Height Offset.

- For Inside center Probing users have to Measure the inside Dimension of the Workpiece & put the Length and Width of the Workpiece.

- For Outside Center Probing users has to Measure the Outside Dimension of the Workpiece & put Length and Width of the Workpiece

- also Z-Min (Accurate Value in Negative Direction) Z-Max (Clearance Value in Positive Direction).

- Use Tutorial Link for more Information about Probing

REQUIREMENTS

1   Bluetooth enabled or USB OTG Supported Smart Phone with Android Version >= 4.4 (Kit Kat or above).

2   Shrike machine Customized GRBL Firmware

3   Bluetooth Should be Already Paired with Smart Phone.

4   USB OTG Adapter.

NOTES

1. For Any Type of Help Please Send Direct E-mail to given E-mail Address. We can't Provide Any Type of Support in Google Play Store Comments.

2. On Android Versions "Marshmallow" or above, use your OS Permission Manager and Grant "Read External Storage" Permission to get File Streaming Working.

3. G-Code Files can be Placed Anywhere in the Phone Memory or External Storage, but they must end with one of the Supported Extensions .gcode or .nc or .tap or .ngc or .fnc or .txt

4. To get the Application Work in Background without Any Issues, You Should Disable Power Management (If Applicable) for This Application.

5. Homing is Highly Recommended When Tool Change or Any Connect Disconnect Event Appears.

6. Do not Turn Probing on When Machine on Run State.

7. Use a Larger Step Size for Rapid Jogging.

8. Jogging Buttons are not Accurate for Machining so use Short Command for Nice Surface Finish.

9. For the short arc movement we recommend USB communication.

MACHINE STATUS PANEL AND APPLICATION TITLE BAR

APPLICATION TITLE BAR

The Application title bar consists of two or more quick action buttons. A Number of visible buttons depends on the screen size of the device.

⏻ Shrike Machine Reset Button

Pressing the reset button will send a soft reset signal to the machine.

You can configure this button to ask for a confirmation (which is the default) before doing a soft reset, this will prevent any accidental reset of the machine.

✺ Bluetooth Connect And Disconnect Button.

1. ✳ Not connected to any device.
Clicking on this button will bring you a list of paired devices in your phone, where you can select the device you want to connect to.

2. ✱ Connected to a Bluetooth device.
When in already connected state clicking on the button will give you a prompt to disconnect the device.

⋮ Ellipsis Or Hidden Menu.

Access to additional menu items like "Settings", "Restart App", "About".

Machine Status Panel

Machine status panel shows the current status of machine like machine position, work position, G-Code parser state, feed rate and buffer state.

Machine State (1)

* Valid states types: Idle, Run, Hold, Jog, Alarm, Door, Check, Home, and Sleep. If not connected to any device then it will show the state as "Unknown"

Machine Position and Work Position. (2)(3)

* This section shows the current machine and work position of X, Y, Z, and A axis. Axis labels 4 X, Y, Z and A will turn to red color if the corresponding axis limit switch is triggered.

G-Code Parser State. (5)

* The selected coordinate system G54 or G55 or G56 or G57 or G58 or G59

* Unit Mode G20 (inches) or G21 (millimeters)

* Distance Mode. G90 absolute distance mode or G91 incremental distance mode

Current Feed Rate (6)   Buffer State. (7)

Work Coordinates

🖊 After Clicking on This Button Dialogue Box as per the Image will open.

For Manual work offset user can put any numerical value in the Dialogue text box.

Users can also put calculation formula and the example is as follows.

Example – X is -192.8 in Current work Coordinates and the user wants

to set half of the work coordinate value so just input -192.8/2 and press the ok button.

Set Coordinate System G10 L20 P0 Y-

changes Y axis location in the current coordinate system to the given value

0.0

CANCEL   OK

Jogging Control Panel

Jogging Control, Homing, And Return To Zero

* Step Size | Jog Feedadjust jogging step and feed rate here. Max feed rate value depends on the machine settings. Max step size can be configured in settings.
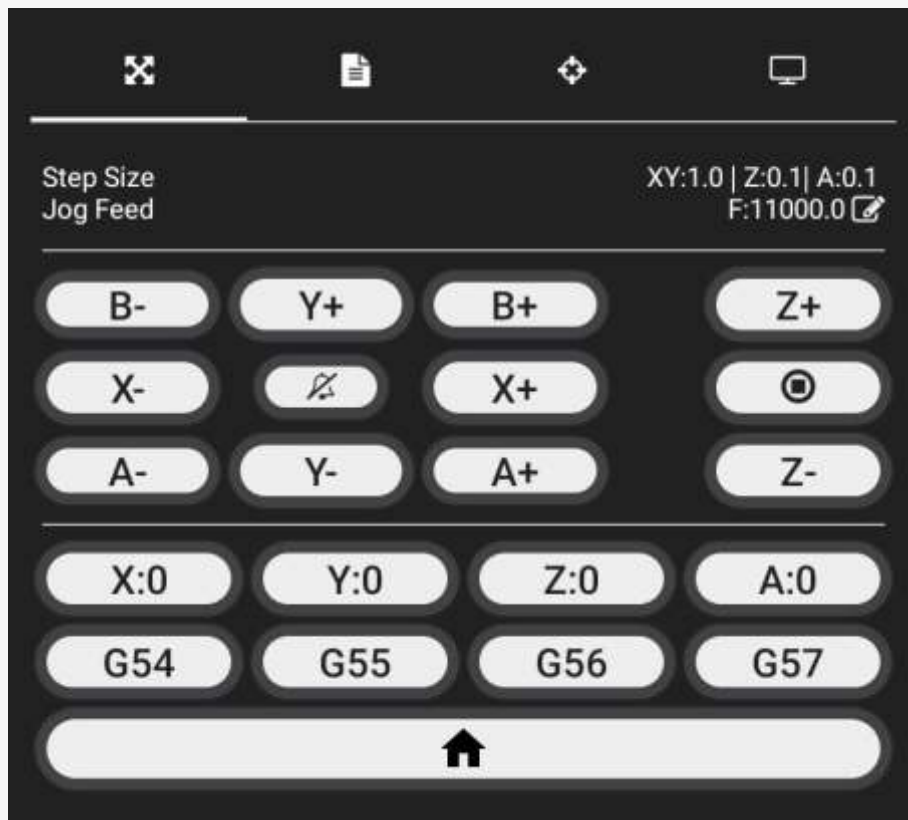
* **X+** — X+ Move the machine in X positive direction.
* **Y+** — Y+ Move the machine in Y positive direction
* **Z+** — Z+ Move the machine in Z positive direction
* **X-** — X- Move the machine in X negative direction
* **Y-** — Y- Move the machine in Y negative direction
* **Z-** — Z- Move the machine in Z negative direction
* **A+** — A+ Move the machine in A positive direction.
* **A-** — A- Move the machine in A negative direction.

🏠 Homing Button

1. Short Click: Do machine home

2. Long Click: Set all axis location in current coordinate system to zero

⏹ Jog cancel | Go to zero

1. Short Click: Tries to stop the current jogging or any custom button task

2. Long Click: Go to zero position in current work coordinates (this will first move the z-axis to zero in machine coordinates then moves x,y to zero in work coordinates then moves the z-axis to zero in work coordinates)

Alarm unlock and axis control

Alarm status | Alarm Unlock

1 🔕 Alarms not active. Clicking on this state does nothing.

2 🔔 Alarm is triggered. Clicking on this button will send unlock command

X-Axis control (X : 0)

1 Short Click: Set X-axis location in current coordinate system to zero

2 Long Click: Move X-axis to zero position in current coordinate system G0X0

Y-Axis control (Y : 0)

1 Short Click: Set Y-axis location in current coordinate system to zero

2 Long Click: Move Y-axis to zero position in current coordinate system G0Y0

Z-Axis control (Z : 0)

1 Short Click: Set Y-axis location in current coordinate system to zero

2 Long Click: Move Y-axis to zero position in current coordinate system G0Y0

A-Axis control (A : 0)

1 Short Click: Set A-axis location in current coordinate system to zero

2 Long Click: Move A-axis to zero position in current coordinate system G0A0

# Work Coordinate Offsets

G54 Coordinate System 1 (G 54)

1   Short Click: Select coordinate system 1
2   Long Click: Saves current work position to coordinate system 1

G55 Coordinate System 2 (G 55)

1   Short Click: Select coordinate system 2
2   Long Click: Saves current work position to coordinate system 2

G56 Coordinate System 3 (G 56)

1   Short Click: Select coordinate system 3
2   Long Click: Saves current work position to coordinate system 3

G57 Coordinate System 4 (G 57)

1   Short Click: Select coordinate system 4
2   Long Click: Saves current work position to coordinate system 4
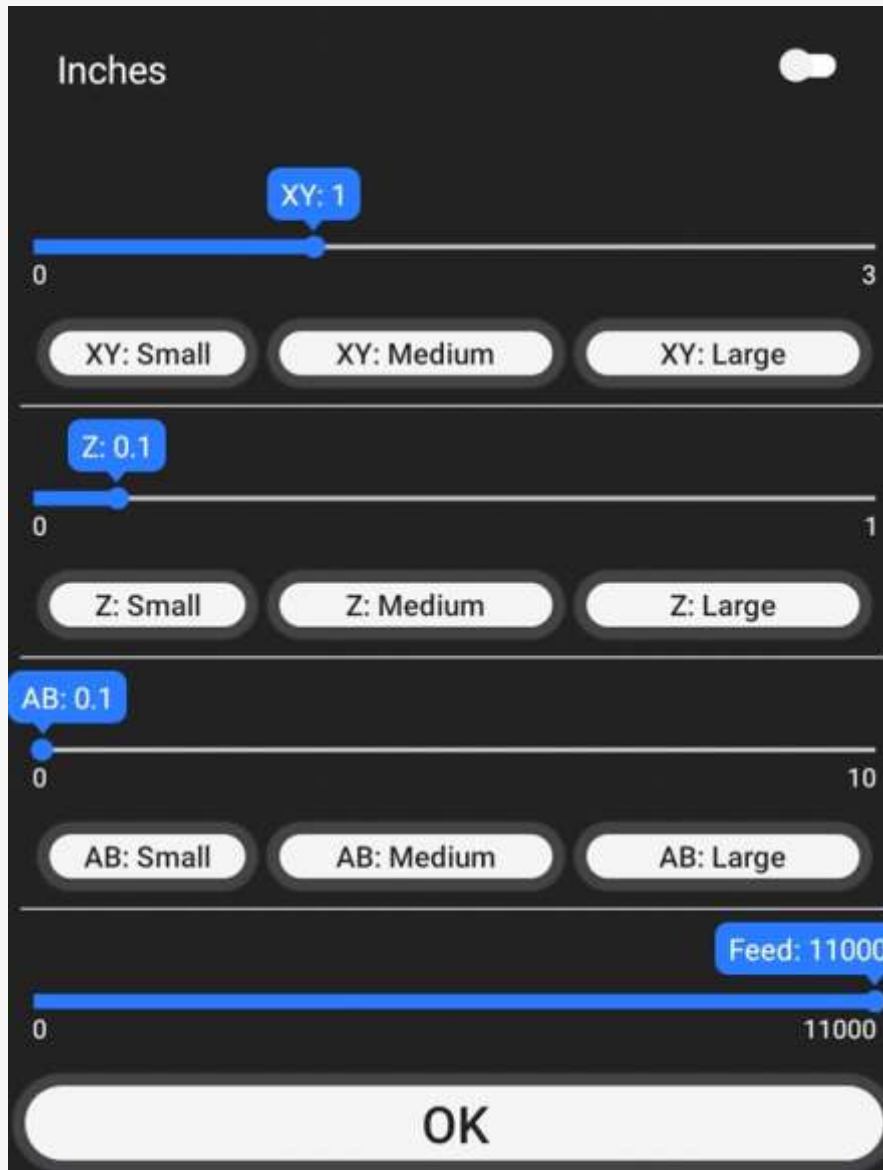
Jogging Step Size And Feed Rate Adjusting

This Dialog Pops Upon Clicking Step Size | Jog Feed

- Inches When turned on machine units for jogging is set to "Inches"

- To adjust the X and Y axis step size slide the XY: progress bar.

- To adjust the Z axis step size slide the Z: progress bar.

- To adjust the A and B axis step size slide the AB: progress bar.

- To adjust the jogging feed rate slide the Feed: progress bar.

NOTE: Maximum value of X, Y, Z, and AB axis progress bar can be configured in application settings.

Quick Step Setting Buttons

Quick buttons are providing to set the step size to a predefined value. Value of each button can be set in application settings from Jogging Preferences.

XY: Small   (XY : Small)

1   Short Click: Sets the configured low value as X and Y axis step size.

2   ong Click: Changes the pre-configured low value to current XY progress bar value

XY: Medium — **XY : Medium**

1. Short Click: Sets the configured medium value as X and Y axis step size.

2. Long Click: Changes the pre-configured medium value to current XY progress bar value

XY: Large — **XY : Large**

1. Short Click: Sets the configured high value as X and Y axis step size.

2. Long Click: Changes the pre-configured high value to current XY progress bar value

Z: Small — **Z : Small**

1. Short Click: Sets the configured low value as X axis step size.

2. Long Click: Changes the pre-configured low value to current Z progress bar value

Z: Medium — **Z : Medium**

1. Short Click: Sets the configured medium value as Z axis step size.

2. Long Click: Changes the pre-configured medium value to current Z progress bar value

Z: Large — **Z : Large**

1. Short Click: Sets the configured high value as Z axis step size.

2. Long Click: Changes the pre-configured high value to current Z progress bar value

AB : Small — **AB : Small**

1. Short Click: Sets the configured high value as Z axis step size.

2. Long Click: Changes the pre-configured high value to current Z progress bar value

AB : Medium (**AB : Medium**)

1 Short Click: Sets the configured medium value as A and B axis step size.

2 Long Click: Changes the pre-configured medium value to current AB progress bar value

AB : Large (**AB : Large**)

1 Short Click: Sets the configured high value as A and B axis step size.

2 Long Click: Changes the pre-configured high value to current AB progress bar value

Custom Buttons

Application supports four custom buttons in the jog control panel (needs to be enabled in settings).

Button labels and actions can be customized via settings.

Custom buttons also supports both short click and long click events and can behave accordingly.

Custom buttons supports commands up to 2048 characters in length, will be sent to

Controller using character counting protocol. You can cancel any currently running custom command

by pressing the "Jog Cancel" ◉ Jog cancel | Go to zero button

File **Streaming** And **Overrides**
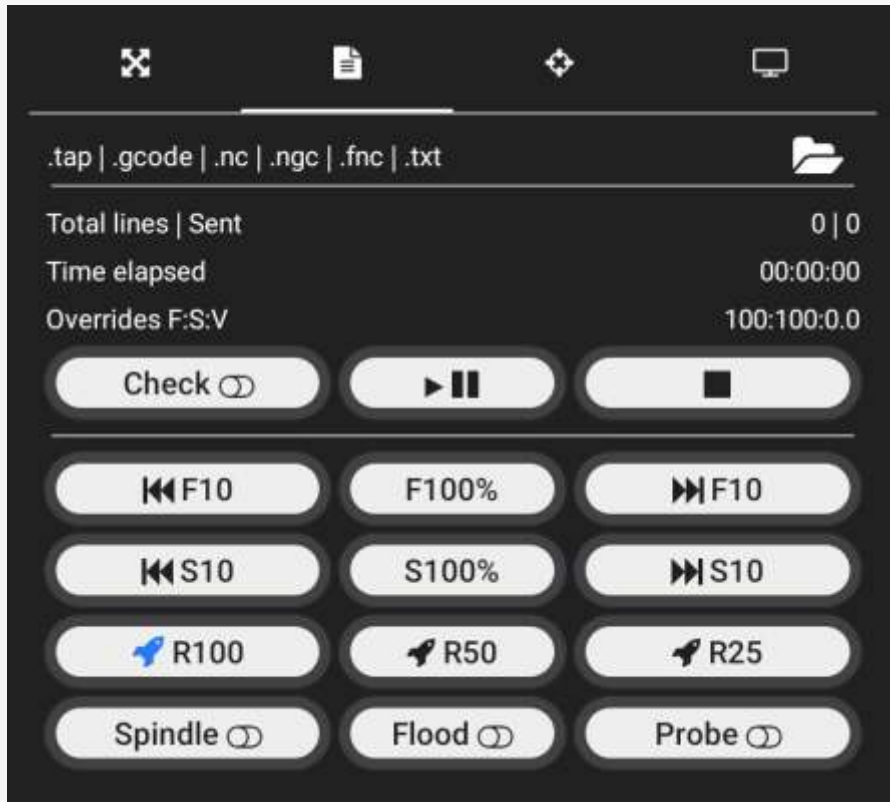
File Selection and Streaming Status

* **tap | .gcode | .nc | .ngc | .fnc | .txt** List of supported file types by the application, when user selects the file it will show the name of the selected file

* 📂 Clicking on this will open the file picker to select the gcode file.

* **Total lines | Sent** Shows the number of gcode lines present in the file (blanks and comment lines are not included) and number lines sent to Shrike Controller

* **Time elapsed Shows** the time elapsed since the file streaming is started in the format of HH::MM:SS (pausing the streaming job will not pause this timer)

* **Overrides F:S** Current overrides information
   1. F: Current feed override percentage.
   2. S: Current spindle override percentage.
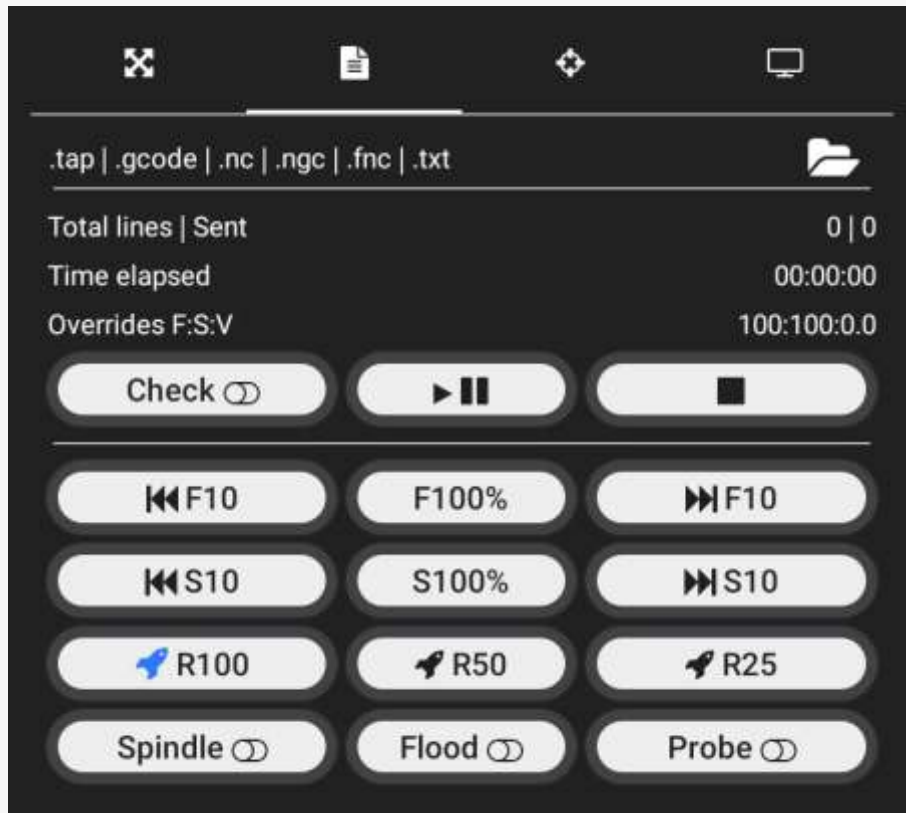
★ ▶II File streaming start or pause button

1. Used to start the file streaming process

2. If streaming is already started and running, it will pause it.

3. If the machine is in a hold state it will resume the streaming

★ ■ Streaming stop button, this button behavior can be configured in settings.

1. Stop streaming and soft reset the machine.
2. Just stop streaming. (Machine may continue to run until its buffer gets empty)
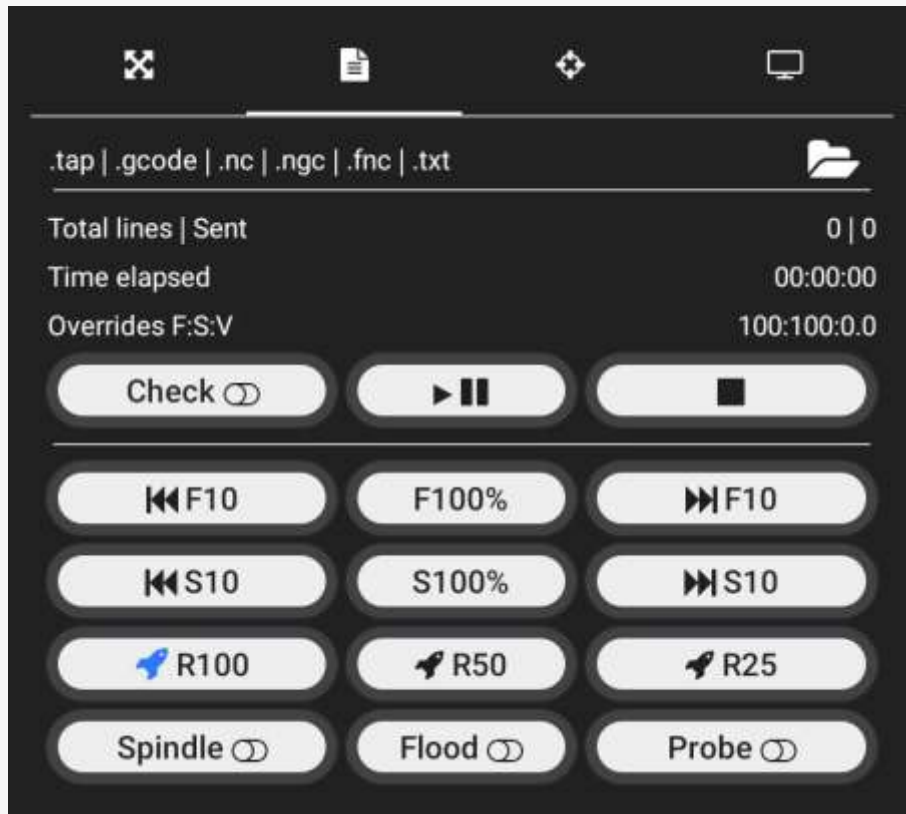
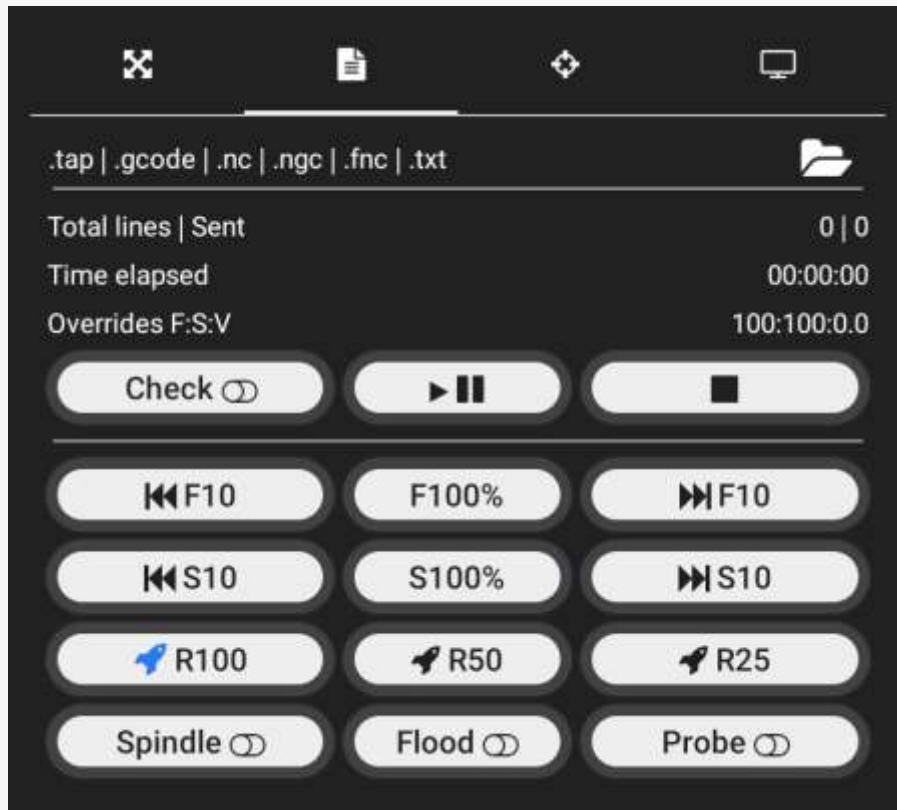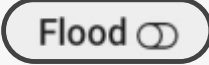- **Feed overrides, immediately alters the feed override value.**

  1. (▶▶| F10) Decrease feed rate by 10%

  2. (F100%) **Will set the feed rate to its 100% of the programmed rate**

  3 (▶▶| F10) Increase feed rate by 10%

- **Rapid overrides, immediately alters the rapid override value.**

  1. (🚀 R100) Sets rapid feed rate to 100%

  2. (🚀 R50) Sets rapid feed rate to 50%

  3 (🚀 R25) Sets rapid feed rate to 25%

- ★ **Flood coolant and Mist coolant control.**

  1. Flood ⬭ Flood/Mist coolant is off

  2. Flood 🔵 Flood/Mist coolant is on

- ★ **Spindle overrides, immediately alters the Spindle Speed override value.**

  1. ⏮ S10 Decrease Spindle Speed by 10%

  2. S100% Will set the Spindle Speed to its 100% of the programmed rate

  3. ⏭ S10 Increase Spindle Speed by 10%

- ★ **Spindle control**

  1. Spindle ⬭ Spindle is off

  2. Spindle 🔵 Spindle is on

NOTE: Spindle control will only work when machine is in "Hold" state.

Probing And **Tool Length Offset**
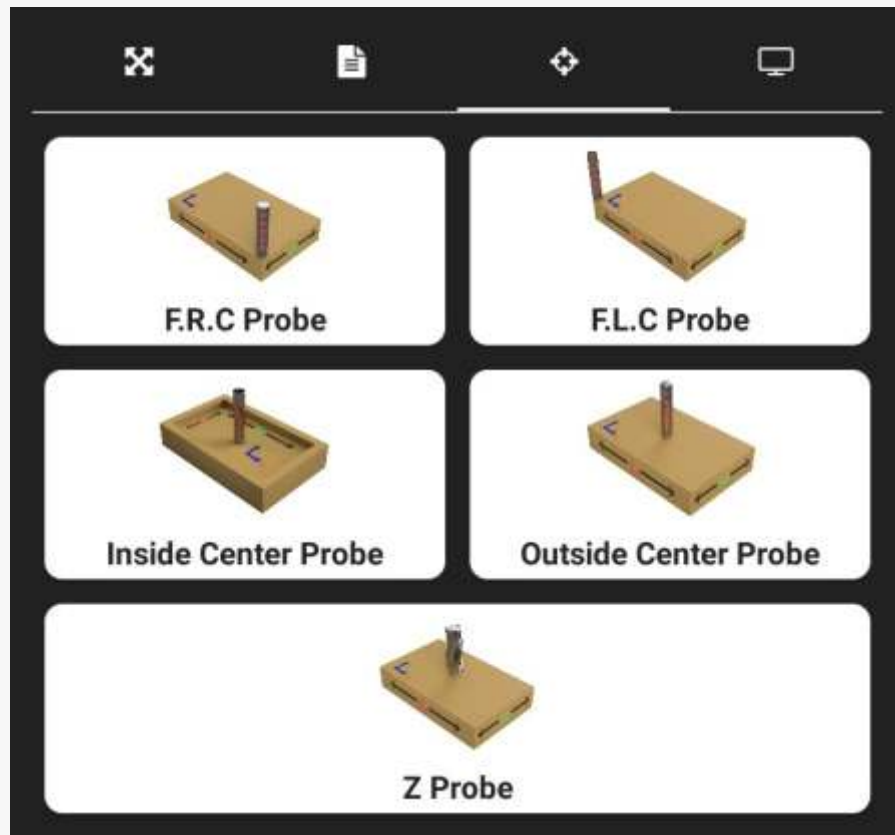
* **Features :**

As You can See in Probing Tab, Application Supports 5 types of probing and they are as Follows

1. Front Right Corner Probing (F.R.C Probe)

2. Front Left Corner Probing (F.L.C Probe)

3. Inside Center Probing

4. Outside Center Probing

5. Z Probing

Note – Probing Must Done With 6mm Blind Tool and Probing Will only work on conductive materials.

Front Right Corner Probing

Front Right Corner Probing

Z Min

Keep tool inside the corner and atleast 5mm above from work piece.

Tutorial   CANCEL   RUN

★ **Front Right Corner Probing**

After Click on F.R.C Probe Button Dialogue Box as per Image will open.

1. Keep Tool inside the Front Right Corner (Approximately) and Approx 5mm above form the workpiece (Do not Need 100% Perfection)

2. In Z Min Text box Input The Z Value in negative numbers only.

3. After Input the Number Press Run Button to start probing Cycle.

Example – Your Work Piece is **5mm** In Height and you want Z to go down by **3mm** so put -3 in Z Min Text Box so that the probing tool will First touch the workpiece surface and then go down by **3mm** from the surface For Corner Probe.

Note -To see How it Works Press Tutorial Button

Front Left Corner Probing

Keep tool inside the corner and atleast 5mm above from work piece.

Tutorial   CANCEL   RUN

★ **Front Left Corner Probing**

After Click on F.L.C Probe Button Dialogue Box as per Image will Open.will open.

1. Keep Tool inside the Front Left Corner (Approximately) and Approx 5mm above the workpiece (Do not Need 100% Perfection)

2. In Z Min Text box Input The Z Value in negative numbers only.

3. After Input the Number Press Run Button to start probing Cycle.

Example – Your Work Piece is **5mm** In Height and you want Z to go down by **3mm** so put **-3** in Z Min Text Box so that the probing tool will First touch the workpiece surface and then go down by **3mm** from the surface For Corner Probe.

Note- To see How it Works Press Tutorial Button

Inside Center Probe

Length

Width

Keep tool inside work piece and approx center of work piece.

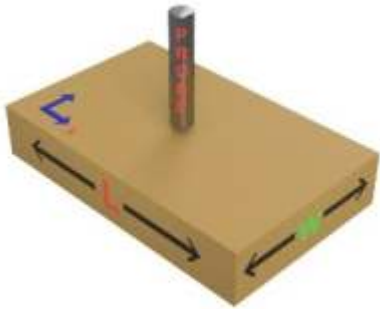Tutorial   CANCEL   RUN
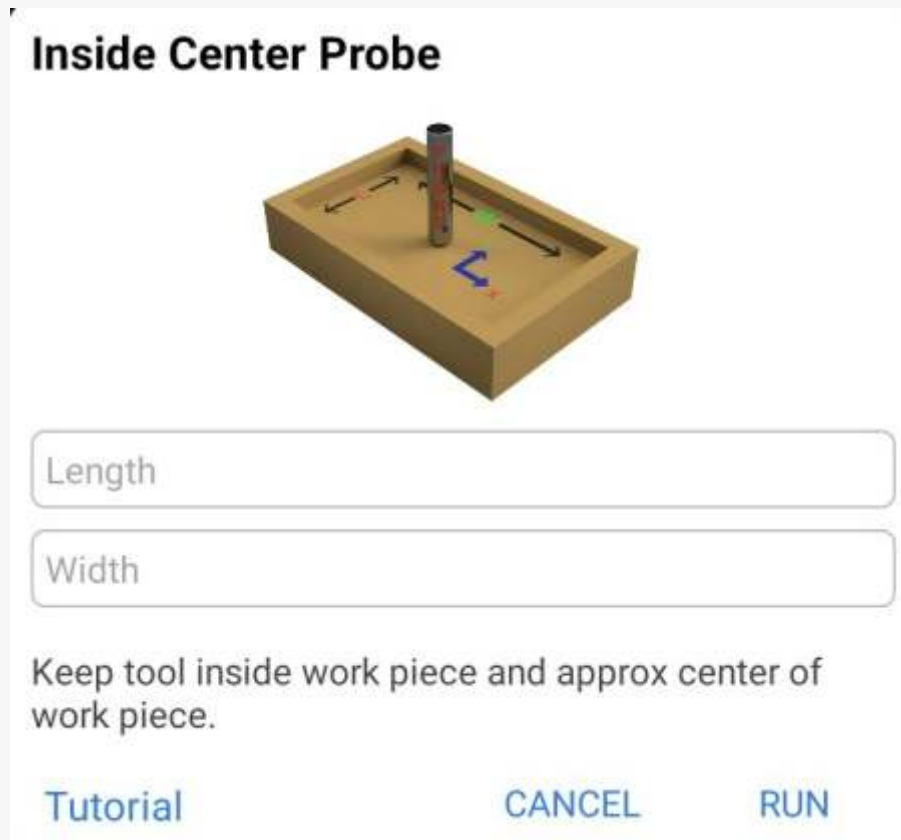
★ Inside Center Probing

After Click on Inside Center Probe Button Dialogue Box as per Image will Open.

1. Keep Tool inside the Workpiece and Approx in Center of workpiece also. (As Per the image) (Do not Need 100% Perfection)

2. In Length & Width Text Box input Approx Inside Dimension of the Workpiece only.

3. After Input the Numbers Press Run Button to start the probing Cycle.

Example – As in Image Your Work Piece is 150mm In Length 100mm in Width and 25mm in Height and inside dimension is 130mm * 80mm so input 130 in Length Text Box and 80 in Width Text Box.

Note- To see How it Works Press Tutorial Button

Outside Center Probe

Length

Width

Z Max

Z Min

Keep tool 1mm above and approx center of work piece.

Tutorial   CANCEL   RUN

★ **Outside Center Probing**

After Click on Outside Center Probe Button Dialogue Box as per Image will Open.
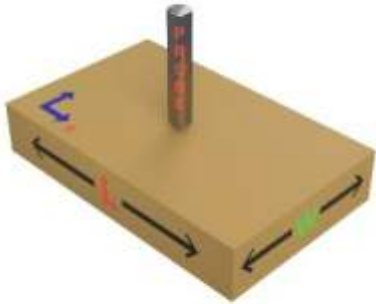
1. Keep Tool Approx 1mm above the Workpiece and Keep Tool Approx in Center of workpiece also. (As Per the image) (Do not Need 100% Perfection)

2. In Length & Width Text Box input Approx Out Side Dimension of the Workpiece, in Z Max Text box input Z Value in Positive Numbers and in Z Min Text Box input Z Value in Negative Numbers only.

3. After Input the Numbers Press Run Button to start the probing Cycle.

Example – As in Image Your WorkPiece is 150mm In Length 100mm in Width and 25mm in Height and so input 150 in Length Text Box and 100 in Width Text Box.

Outside Center Probe

Length

Width

Z Max

Z Min

Keep tool 1mm above and approx center of work piece.

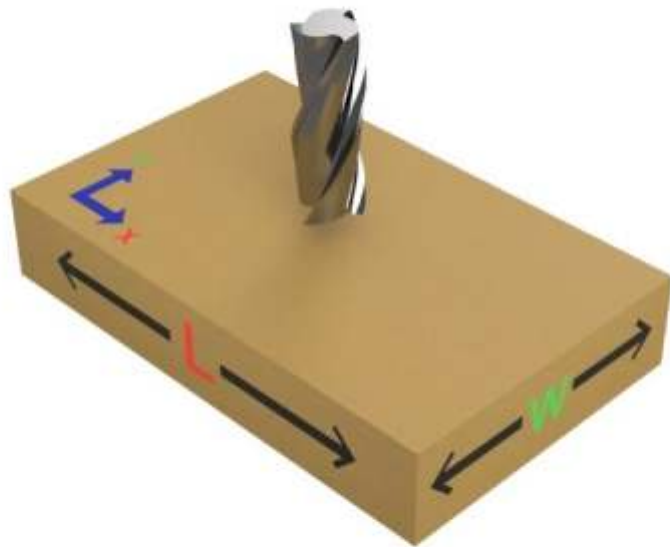Tutorial   CANCEL   RUN

Z Max – If we keep Tool 1 mm above the workpiece and input 5 in Z Max Text Box so the tool will be go up by 6mm from the surface of workpiece and then move to the opposite direction for probing.

Z Min – If we keep Tool 1 mm above the workpiece and input -5 in Z Min Text Box so the tool will be go down by 4mm from the surface of work piece for probing.

Note – For Cylindrical Workpiece Length and Width will be same as Outside diameter

Note- To see How it Works Press Tutorial Button

Z Probe

Keep tool atleast 5mm above from work piece.

Tutorial   CANCEL   RUN

★ **Z Probing / Tool length Offset**

After Click on Z Probe Button, the Dialogue Box as per Image will Open.

Keep Tool at least 5 mm above the workpiece (As Per the Image) (Do not Need 100% Perfection) and Press Run Button to start probing Cycle.

Note – To see How it Works Press Tutorial Button

Console Interface And Custom Commands

* In gcode text box Write G code Manually and press ✈ for send the command to Shrike Controller

(Example - Write M03S10000 and Press ✈ the spindle will run at given RPM and to stop the spindle write M05 and press)

↺ History Button

Press this button to see previous given manual commands in Shrike Controller

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