DIMRS+

USER INSTRUCTION GUIDE

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SECTION 01

Introduction

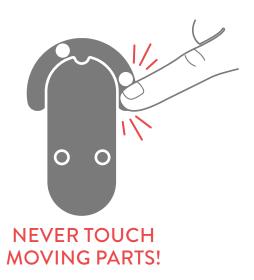
01 | INTRODUCTION

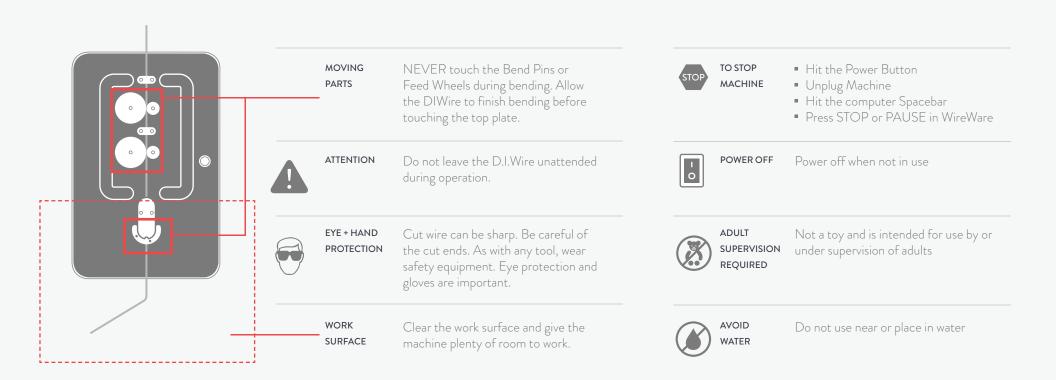
Introduction

- BEND SAFETY
- WHAT'S IN THE BOX
- GETTING TO KNOW THE D.I.WIRE PLUS
- WIREWARE MODES OVERVIEW

Bend Safety

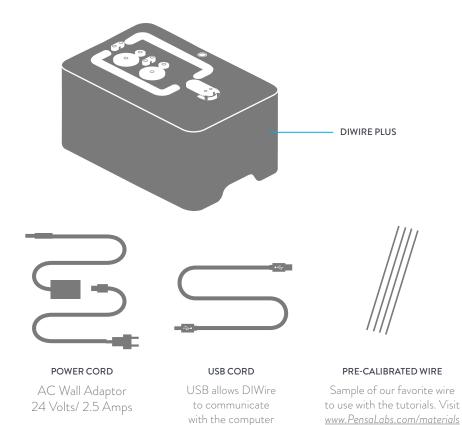
The D.I.Wire Pro has moving parts that should be treated with care. While the wheels and Bend Pin may move slowly, the D.I.Wire is powerful and can cause injury.





01 INTRODUCTION

What's in the Box



to learn more!



BEND HEAD + FEED WHEELS

DIWire is assembled with either 1/8" or 1/16" Bend Head and Feed Wheels.

If the Starter Kit was purchased then the 1/16" versions are provided in the little black pouch. Keep these somewhere safe!



T15 TORX SCREWDRIVER + 5/32 HEX CREWDRIVER

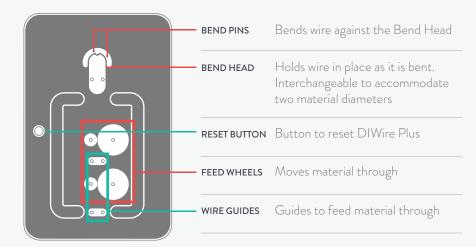
Used to change Bend Head and Feed Wheels and Clamp Adjust

01 | INTRODUCTION

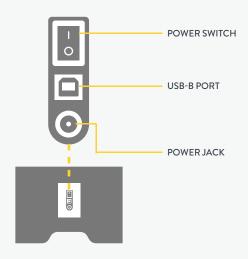
Getting to know the D.I.Wire Plus

Take a few minutes to get oriented to the D.I.Wire Plus.

TOP VIEW



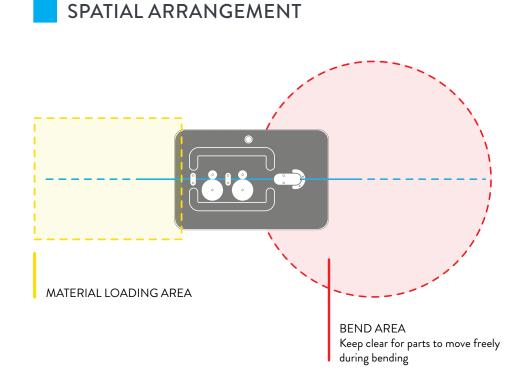
BACK VIEW



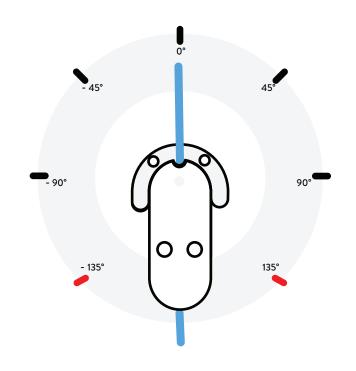
01 | INTRODUCTION

D.I.Wire Plus Orientation

Work area requires space for material loading and bending, as well as a space for the computer with WireWare installed.



BEND ANGLE COMPASS



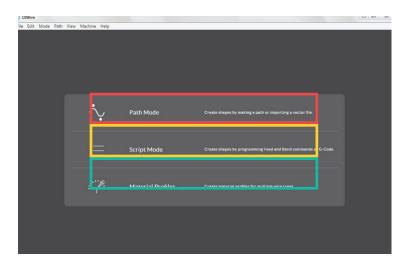
The A axis is the bend axis, with 0° at "12 o'clock." Use negative values for counter-clockwise bends and positive values for clockwise bends.

The X axis is the feed axis. Positive values move material forward, negative values move it back.

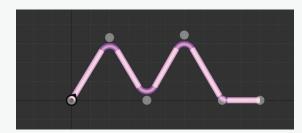
The maximum angles for the D.I.Wire Plus are 135° and -135°, but spring back will make a significant impact on that. WireWare will display an error message if the angle attempted is out of range.

WireWare Modes

WireWare is comprised of three sections, Path Mode, Script Mode and the Material Profile Mode. Path Mode and Script Mode are used to edit and create input for bending. The Material Profile Mode contains a library of Material Profiles for each wire type that compensate for the spring back of the wire during a bend.



PATH MODE



Create or manipulate curves visually or numerically within the workspace.

FEATURES	
OVERVIEW	

Create bend path or import SVG files from other programs

Manipulate bend angles and segment lengths on the workspace

Reference saved Material Profiles for best accuracy

Save files as paths or G-Code

SCRIPT MODE



Use WireWare Scripts and G-Code to precisely control bend actions.

FEATURESHigh level of control over your outputOVERVIEWUse WireWare scripts or basic G-Code

Create complex, smooth curves

Access advanced features like roll bending

MATERIAL PROFILES



Save Material Profiles for all wire types.

FEATURESCreate and save new calibrated MaterialOVERVIEWProfiles for any wire.

The Material Profile works with Path Mode and WireWare Script to compensate for material springback. **SECTION 02**



02 | SETUP

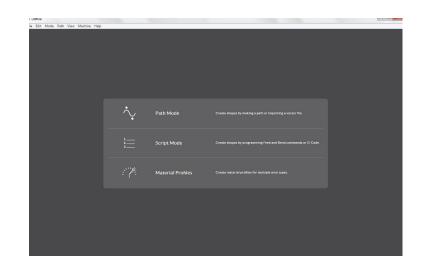
Getting Set Up

- DOWNLOAD WIREWARE
- SET UP HARDWARE
- LOADING WIRE

02 | SETUP

Download WireWare

Download WireWare software to run the D.I.Wire Plus. WireWare prepares your files for bending on the DIWire.





After recieving WireWare, download to the computer. Reference the materials that come with the software.

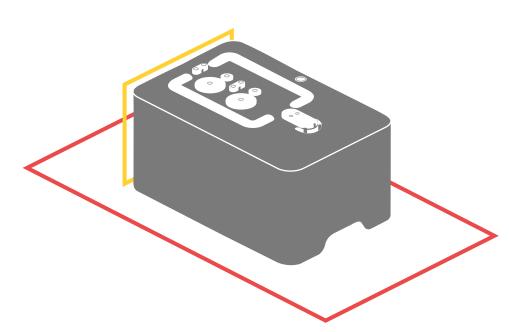
2 CONTACT US

For any questions or problems with download or installation contact Pensalabs.

WINDOWS /	Choose either Windows or Mac version
MAC	of WireWare to install on the computer.

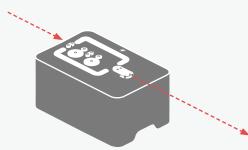
EMAIL	support@pensalabs.com
PHONE	844-434-9473, ext. 2

Set Up Hardware



Choose a work area and plug in the D.I.Wire.



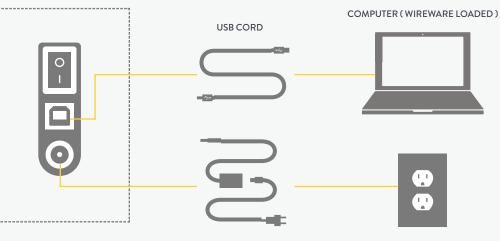


Choose a work area for the D.I.Wire Plus. Consider the area needed for wire entering the feed wheels and exiting the bend head.

WHAT'S DIWire Plus, USB Cord, Power Cord NEEDED

ADDITIONAL Computer Elements

2 PLUG-IN

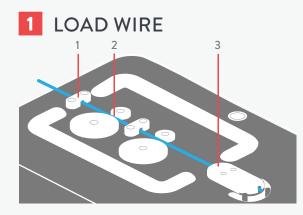


POWER CORD

Loading Wire

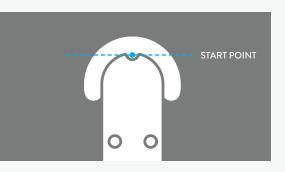
Loading wire into the D.I.Wire is a simple process.





Load the wire through the Wire Guides (1), the Feed Wheels (2) and into the Bend Head (3).

2 START POINT



Load the wire up to the Start Point.

STARTThere is an indent at the front of the bendPOINThead at the Start Point. The wire can be
marked with a Sharpie in this indent.

Loading the wire past the Start Point will cause the Bend Pins to hit the wire during the homing sequence.

3 HOMING SEQUENCE



Before bending, the D.I.Wire needs to go through the homing sequence to ensure the bend pin is in the proper position.

HOME	Commands the D.I.Wire to locate and
BUTTON	rest at Home (machine position zero)

The machine must be homed when turning on the machine or restarting, or if it has lost its location

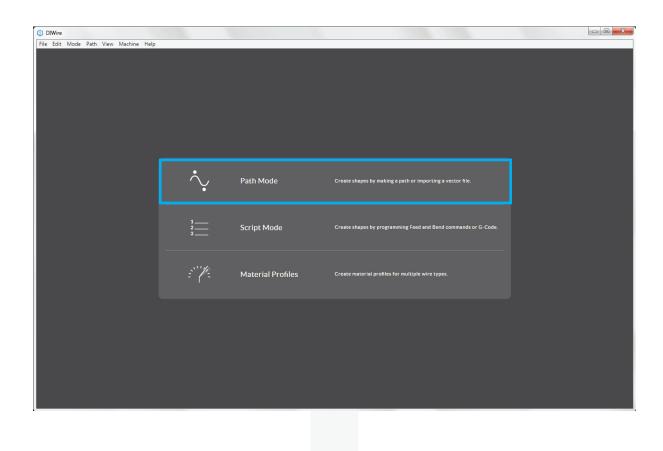
SECTION 04

Path Mode

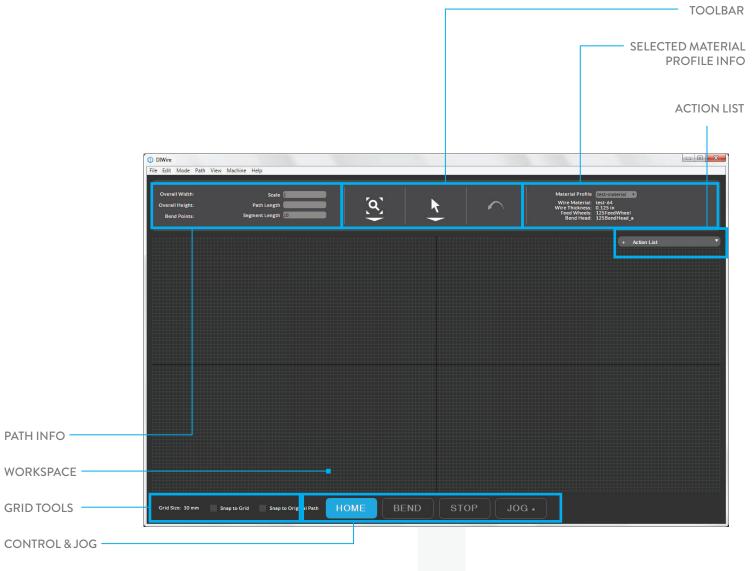
Path Mode Path Mode

Import .SVG files, or create a bend path in Path Mode. It is an interactive workspace to view and edit paths and prepare them for bending. It has been designed to provide basic manipulation and adjustments to bend points and line segments and to manage multiple paths on the work area.

- OVERVIEW
- GETTING STARTED
- PATH & WORKSPACE INFO
- TOOLBAR
- MATERIAL PROFILE SELECTION
- ACTION LIST
- CONTROL & JOG BAR
- ARROW KEY CONTROLS
- OTHER FEATURES

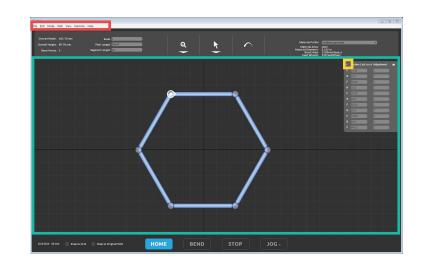


Screen Overview



Getting Started

Import a curve as an .SVG format or create a path.



IMPORTAFILE

le Edit Mode	Path View	Machine	неір			
Open	Ctrl+O	- 10				
Save Shape	Ctrl+S		Scale	1		
Save Shape As	Ctrl+Shift+S		Path Length		=	
Save As Gcode			Segment Length		=	
Close File	Ctrl+W		Jegment Length			
Exit	Ctrl+Q					

Go to File, Open a saved SVG file from your computer.

ctrl+o Quick key to open a file

CREATE A SHAPE

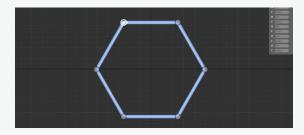


Add Bend (B) and Feed (F) points to the Action List to start creating a new part.

(+) The Plus icon adds feed and bend points to the list. Clicking the Plus will add a bend and feed after the last segment of a shape.

> After adding several Feed/Bend Actions, zoom out to view and manipulate the new set of segments and bend points.

WORKSPACE

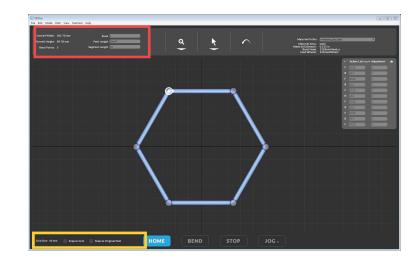


The path is a series of bend angles and line segments.

These bend angles and line segments can be manipulated using the tools on the following pages.

Path & Workspace Info

The Path Info section displays properties of the shape and Grid Tools provide Grid Size units and Snap behavior control.



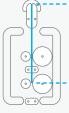
PATH INFO

Overall Width: Overall Height: Bend Points:	89.78 mm	Scale Path Length Segment Length	296.47	
OVERALL WIDTH	Overall width	of the path	1	
OVERALL HEIGHT	Overall height of the path			
BEND POINTS	Number of be active path	end points (of the	
SCALE	The scale of the s	ne part rela	tive to	

PATH LENGTH

The estimated total wire length needed for the part

engaged.



8.25" (209mm) of extra wire is needed so that the feed wheels are always

SEGMENT LENGTH

Shows the minimum distance between bend points on a path. Enter a small segment length value to get a smoother curve with many bend points. Segment lengths smaller than 0.47" (12mm) may require using the Adjustment Fields for additional compensation.

GRID TOOLS

Grid Size: 1	LO mm Snap to Grid Snap to Original Path			
GRID SIZE	Size of the grid on the workspace and the units in use			
Change the units by going to the Edit Tab and selecting Change Units.				
SNAP TO GRID	Bend points and line segments will snap to the grid as they are moved around on the workspace.			
SNAP TO ORIGINAL PATH	Bend points and line segments will snap to the ghosted imported path as they are moved around on the workspace.			

The Zoom, Select and Undo tools allow for flexible navigation of the workspace and control of the path.

ZOOM



Zoom tools help you to navigate around your workspace.

[Q]	FIT TO SCREEN	Resize the view of the workspace to show the entire active part.
જ	ZOOM IN	Zoom into desired details of the workspace.
ବ୍	ZOOM OUT	Zoom out to view more of the workspace.
₩	PAN	Move around the viewable area of the workspace by clicking and dragging.

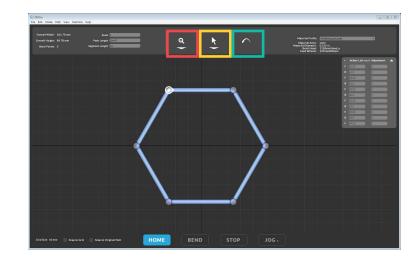
SELECT

POINT



Select Tool allows you to click on line segments and bend points and move them.

6	SELECT VERTICES	Click on line segments and bend points to move them around on the workspace.
o	ADD A VERTEX	Add new bend points on the active path
•	REMOVE A VERTEX	Remove bend points from the active path
0	ADD A PAUSE POINT	Select a Bend Point where the machine will pause before the bending at that location
)	CHANGE STARTING	Choose which end of the path to start bending



UNDO TOOL



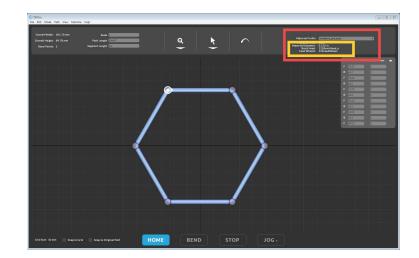
Undo changes made to the Path.

SHIFT + U

	UNDO TOOL	Click on the Undo Tool to undo changes made on the path
CTRL + U	Undo	previous action on the Workspace
CTRL +	Redo	previous action on the Workspace

Material Profile Selection

Selecting the Material Profile that matches the wire in use ensures accurate bending of the Path. A Material Profile is needed to bend from Path Mode or WireWare Script commands in Script Mode.



MATERIAL PROFILE



The Material Profile data is used to compensate for the spring back of the wire. Any material used in the D.I.Wire needs a Material Profile

DROPDOWN Select among saved Material Profiles MENU

In order to modify or create new Material Profiles go to <u>Material Profile Mode</u>

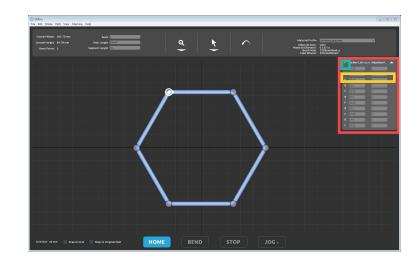
SELECTED MATERIAL INFO

Wire Material: test-64 Wire Thickness: 0.125 in Feed Wheels: 125FeedWheel Bend Head: 125BendHead_a

Displays the associated Wire Material, Wire Thickness, Feed Wheels and Bend Head

Action List

The Action List shows an editable sequential list of all of the actions that the machine will make while bending the Path.



BENDS (B) & FEEDS (F)

+	Action List (mm/*)	Adjustment	
F	50.00	0	
۲	60.0	0	
F	50.00	0)

If a file is imported into the Path Mode workspace, WireWare breaks the shape up into Feed and Bend actions.

BEND (B) &A sequential list of feed (F) and bendFEED (F)(B) actions and their values.FIELDS

SELECTION Click on a Bend Point or line segment to see its corresponding Action, or click on the Action to see the corresponding Bend Point/ line in the Path. Change values to adjust Path.

ACTION LIST ADJUSTMENTS



Action List values can be changed on the list and the Path will update on the workspace.

ADJUSTMENT Allows for corrections to discrepancies FIELDS on the bent wire part.

> For example, if a 10° Action results in a 9° bend output simply put a 1° in the adjustment field for a correction.

ADDING TO A SHAPE

	÷	Action List (mm/*) Adjustment	
_	F	50.00	0	
	В	60.0	0	
	F	50.00	0	

Add Bend (B) and Feed (F) points to the Action List to add to the end of a Path.

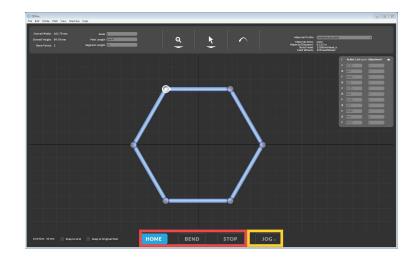
(+)

The Plus icon adds Feed and Bend Points to the list. Clicking the Plus will add a bend and feed after the last segment of a shape.

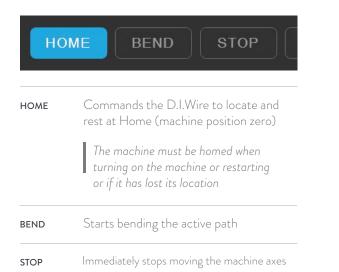
> After adding several Feed/Bend Actions, zoom out to view and manipulate the new set of segments and bend points

Control & Jog Bar

The Control Bar and Jog Bar at the bottom of the workspace can be found in every mode. These controls Home the bend pin, Bend the path or Run the script and Stop the D.I.Wire. The Jog bar shows the location and controls to move the bend pin and feed wheels.



HOME, BEND & STOP



JOG

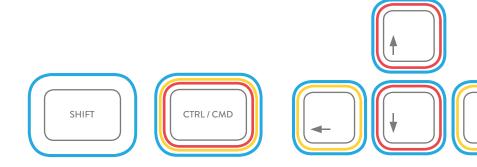
JOG 🖌

Jog controls the machine with simple movements set in the numerical fields for each moving part of the machine

This may be helpful for loading wire

Speed (%) 100	A -252 X 307.66 Z -0.36 Zero GO TO RUN STOP JOG +
SPEED %	Shows the speed the machine is running as a percent of the maximum speed determined by machine settings
A	Controls position of the bend pin, measured in degrees
x	Controls the feed of the wire, measured ir the units in use (inches or mm)
Z	Controls the up/down position of the pin
ZERO	Sets the current position of the specified axis to O
GO TO	Go to the position entered in the jog bar





Hold control and press arrow keys to manually move the bend pin or feed the wire. This is helpful loading new wire.



DOWN ARROW	Feeds the material back
+	
CMD/CTRL	

2 MOVE BEND PIN



LEFT ARROW Moves the bend pin (counter-clockwise)

CMD/CTRL

RIGHT ARROW Moves the bend pin (clockwise)

CMD/CTRL

3 INCREMENTAL MOVES



LEFT / RIGHT ARROW Moves the bend pin incrementally + (0.5° per move) SHIFT + CMD/CTRL

ARROW	UP	/ DOWN	Moves the material incrementally
+			(0.047" / 1mm per move)
SHIFT	+	CMD/CTRL	

Other Path Features

These are other Path Mode tools that are helpful for Path selection, imported file clean up and quick undo/redo of actions on the Workspace.

	Select	Esc	
0	Next Path	Ctrl+N	
Overall Width	Previous Path	Ctrl+P	ale [
Overall Height Bend Points	Hide Original File		gth gth 10
Bend Points	Split Selected Vertices	Ctrl+J	Still 20
	Delete Selected Vertices	Backspace	
	Delete Short Segments		
	Undo Edit	Ctrl+U	
	Redo Edit	Ctrl+Shift+U	

PATH SELECTION

SELECT	Selects the "Select bend points" Tool
ESC KEY	

NEXT	Selects the next Path in
PATH	order of creation
CTRL + N	

Selects the Path that was PREVIOUS previously selected PATH CTRL + P

Hides / Shows the ghosted HIDE silhouette of the imported path ORIGINAL FILE

PATH CLEAN UP

Use these tools to modify the imported Path. Paths must be modified to accomodate Bend Head geometry and minimum segment lengths.

SPLIT Divides a selected Bend Point into two equal angle Bend Points. SELECTED VERTICES

CTRL+J

e.g. a 160 ° bend angle into two 80 ° Bend Points. This allows easier manipulation of larger angles.

DELETE Deletes selected Bend Point. SELECTED VERTICES BACKSPACE



DELETE	Simplifies complex Paths by deleting
SHORT	segments smaller than a threshold
SEGMENTS	relative to the path size.

For more on handling Path issues, see Pensalabs.com

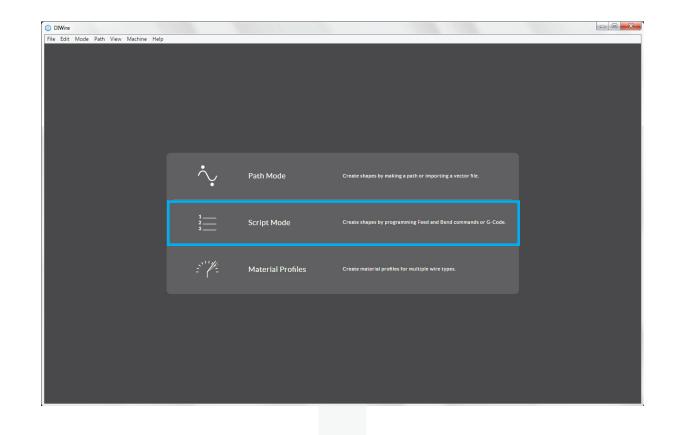
SECTION 05



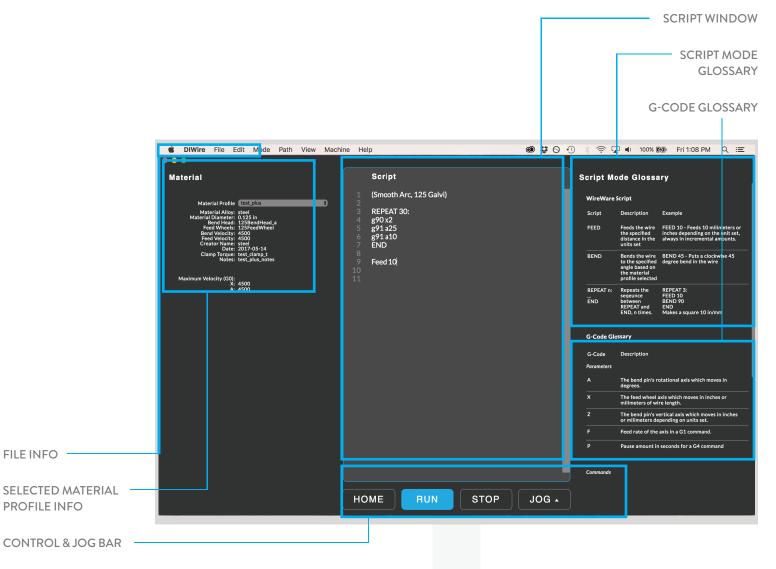
Script Mode

Create precise shapes using written WireWare script commands or G-Code commands to control the D.I.Wire. These allow for a higher level of control over the output.

- OVERVIEW
- GETTING STARTED
- MATERIAL PROFILE SELECTION
- CONTROL & JOG BAR
- ARROW KEY CONTROLS



Screen Overview



Getting Started

Start a new Script in the Script Window using WireWare Script or G-Code commands.

Material lower Scription Scription Medical lower Scription Scription Scri

SCRIPT WINDOW



Click into the Script Window to copy and paste text or type in commands.

WIREWARE Create shapes using the WireWare script SCRIPT + commands or G-Code G-CODE

The Script Window is active when it has a blue outline. Click anywhere outside of the Script Window to be able to use the keys for manually driving the machine.

IMPORT A FILE



Use the file menu to open a saved file from your computer.

CTRL + O Open a file from your keyboard

Paths can be saved as G-Code from Path Mode and opened in Script Mode.

SCRIPT MODE GLOSSARY

Script Mode Glossary					
WireWare Scri	pt				
Script	Description	Example			
FEED	Feeds the wire the specified distance in the units set	FEED 10 - Feeds 10 milimet depending on the unit set, a incremental amounts.			

This is a glossary of WireWare Script and G-Code commands.

Material Profile Selection

When using the WireWare script select a material profile to compensate for the wire spring back.

Material	Sc	ript		Scrip: Mo	ode Glossa	ry
Material Profile test plus	1 (Sm 2	rooth Arc, 125 Galvi)		WireWare	Script	
Material Alloy: steel Material Diameter: 0.125 in Bend Head: 125BendHead a		PEAT 30:		Script	Description	Example
Bend Head: 125BendHead, a Feed Wheels: 125FeedWheel Bend Velocity: 4500 Feed Velocity: 4500 Creator Name: steel Date: 2017-05-14	5 g9:	1a25 1a10			the specified	FEED 10 - Feeds 10 milimete inches depending on the unit always in incremental amount
Clamp Forque: Est. Clamp, 1 Clamp Forque: Est. Clamp, 1 Notes: Est. Shus_notes Maximum Velocity (G0): X 4500	8 9 Fee 10 11	zd 10		BEND	Bends the wire to the specified angle based on the material profile selected	BEND 45 - Puts a clockwise 6 degree bend in the wire
* 4500 * 4500				REPEAT n: ËND	Repeats the sequence between REPEAT and END, n times.	REPEAT 3: FEED 10 BEND 90 END Makes a square 10 in/mm
				G-Code Glo	ssary	
				G-Coce	Description	
				A A	The bend pin's re degrees.	otational axis which moves in
						ods which moves in inches or relength.
					The bend pin's w or millimeters de	ertical axis which moves in inc pending on units set.
					Feed rate of the	axis in a G1 command.
					Pause amount in	seconds for a G4 command
				Commands		

MATERIAL PROFILE

Material Profile	windows_pro_test	ł
Feed Wheels: Bend Velocity: Feed Velocity: Creator Name:	0.125 in 125BendHead_a 125FeedWheel 5000 4000 steel 2017-05-14 don't know	
	4000 5000	

When you select a Material Profile you will also be able to view its associated information.

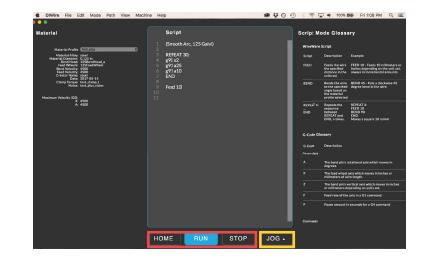
DROPDOWNDrop down menu lets you selectMENUamong saved Material Profiles

G-Code will not use Material Profile information.

In order to modify or create new material profiles qo to <u>Material Profile Mode.</u>

Control & Jog Bar

The Control Bar and Jog Bar at the bottom of the workspace can be found in every mode. These controls Home the bend pin, Bend the path or Run the script and Stop the D.I.Wire. The Jog bar shows the location and controls to move the bend pin and feed wheels.



1 HOME, RUN & STOP

	HOME RUN STOP
HOME	Commands the D.I.Wire to locate and rest at Home (machine position zero)
	The machine must be homed when turning on the machine or restarting or if it has lost its location.
RUN	Runs the full Script
STOP	Immediately stops moving the machine axes

2 JOG

JOG •

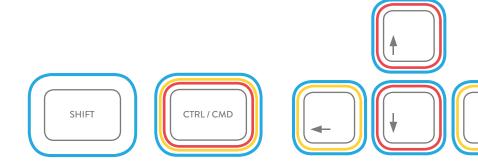
Opens jog controls to use the machine with simple movements set in the numerical fields for each moving part of the machine.

This may be helpful for loading wire or during the prototyping process.

P Pace Speed (%) 100 A 0.0 X 0.00 Z 0.00 Zero A GO TO

SPEED %	Shows the speed the machine is running as a percent of the maximum speed determined by machine settings
A	Controls position of the bend pin, measured in degrees
x	Controls the feed of the wire, measured in the units in use (inches or mm)
ZERO	Sets the current position of the specified axis to O
GO TO	Go to the position entered in the jog bar





Hold control and press arrow keys to manually move the bend pin or feed the wire. This is helpful loading new wire.



DOWN ARROW	Feeds the material back
+	
CMD/CTRL	

2 MOVE BEND PIN



LEFT ARROW Moves the bend pin (counter-clockwise)

CMD/CTRL

RIGHT ARROW Moves the bend pin (clockwise)

CMD/CTRL

3 INCREMENTAL MOVES



LEFT / RIGHT ARROW Moves the bend pin incrementally + (0.5° per move) SHIFT + CMD/CTRL

ARROW	UP	/ DOWN	Moves the material incrementally
+			(0.047" / 1mm per move)
SHIFT	+	CMD/CTRL	

SECTION 06

Material Profile Mode

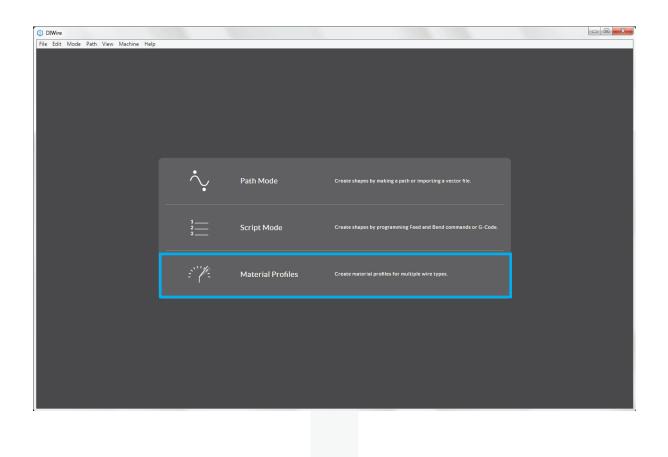
Material Profile Mode

A Material Profile can be created for any material used in the D.I.Wire. Material Profile data is used to compensate for material spring back during a bend.

A Material Profile is needed to bend from Path Mode or run WireWare Script commands in Script Mode.

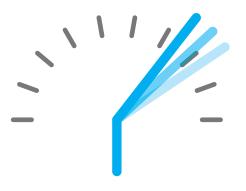
WireWare comes pre-loaded with Material Profiles for wire sold on Pensalabs.com

- WHAT IS A MATERIAL PROFILE?
- LIBRARY OVERVIEW
- CREATE NEW MATERIAL PROFILE
- EDIT A MATERIAL PROFILE



What is a Material Profile?

When creating a Material Profile the D.I.Wire learns how much to compensate for wire spring back. Material Profiles consist of hardware definition information and dataset measurements.



HARDWARE DEFINITION



The Material Profile Definition is information about the wire material, and Bend Head and Feed Wheel setup of the D.I.Wire.

This information needs to be entered every time a new Material Profile is created.

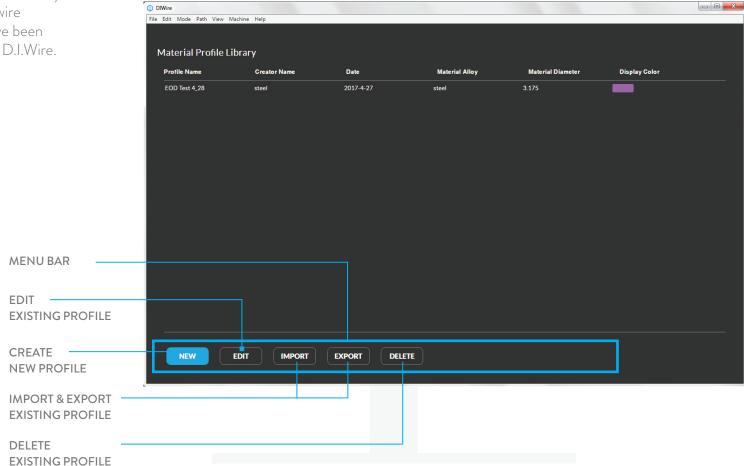
DATASET MEASUREMENTS



A dataset consists of bending descrete angles, measuring each using a protractor and inputting the results into a table. It is necessary to complete all three Datasets.

Library Overview

The Material Profile Library is a collection of wire materials that have been calibrated for the D.I.Wire.



Creating a Material Profile

1 PREPARATION

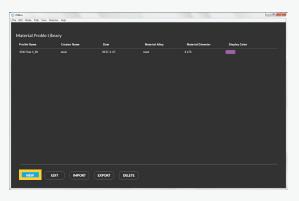
Prepare the following to create a NEW Material Profile.

MATERIALSD.I.Wire, at least ~20 feet (610cm) of wire,NEEDEDcutting tool and protractor

A digital protractor is recommended

TIME 1-2hrs total NEEDED

2 CREATE NEW PROFILE



Select the NEW button from the Material Profile Library Screen

3 PROFILE DEFINITION

File Edit Mode Path View Machine Help			
Enter Material Profile Definition:	Data Set 1 Clockwise	Data Set 2 Clockwise	
Material Profile Name: (2020 Gav. Stee)	A 87 10		A
Material Alloy: 010000			в
Material Diameter:	C 100 1 10		с
Bend Head : Differences in	D 1714 1 16		D
*Feed Wheel: (1970-1	E 928 96		E
Bend Velocity: (2000	• F 1142 1 25		E.
Feed Velocity: 2000	C 1323 Pi		G
Creator Name: Entra	-		
Date: 05126/2017	Data Set 1 Counter-clockwise	Data Set 2 Counter-clockwise	G
Display Color:	н 6		н
Clamp Torque:	1 226 26		ь. С
Notes:	J 508 18		
Indicates required held before pro	cceeding K 1226 BS		к
	L 662 16		E.
	EGIN M 1143 B		м
	N 133.3		N
	HOME BEND ST	JOG +	s

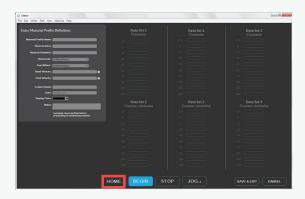
Fill in the information about the wire and the D.I.Wire hardware setup and click BEGIN when ready to move on.

Red* fields are required, others are optional

To determine the Bend and Feed Velocities for the wire being used, refer to Pensalabs.com/support/ for a reference guide.

Creating a Material Profile

4 HOME BEND PIN

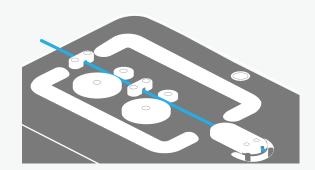


Before bending, the D.I.Wire needs to go through the homing sequence to ensure the bend pin is in the proper position.

HOME	Commands the D.I.Wire to locate and
BUTTON	rest at Home (machine position zero)

The machine must be homed when booted or if it has lost its location

5 LOAD WIRE



Load the wire through the Wire Guides, the Feed Wheels and into the Bend Head.

6 BEND

ter Material Pro	file Definition:	Data Set 1 Clockwise	Data Set 2 Clockwise	Data Set 3 Clockwise
Material Profile Na		-15	-15	
Material Al Material Diamo			•	
	wd : 1250endrived a		3	
	eel: 125Beneficad_a			
Bend Velos Feed Velos				
Display Co	ate: mm/dd/yyyy far:			
sic Calibrations				
	trem ipsum doller sit amet, consectetur adipiscing 15, sed do musmod tempor inciditidunt ut labore et plore magna nos			
:	tione magna nos			
Losd Wire Li	iren losin dalar sit anet, soniestetur adializine			
	it, sed do elusmod temper incididunt ut labora et			
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•	olore magna nos			
	erem ipsum dater sit amet, consectetur adipissing it, sed do eiusmod tempor incididunt ut labore et			
:	IC, sed do enusited tempor incididunt ut labora et. plore magna nos			
Inter Ander La	orem josum dotor sit amet, consectetur adiojacing			
	it, sed do elusmod tempor incididunt ut labore et			

Click BEND to bend your first datapoint. Use the cutting tool to remove the bent wire from the D.I.Wire

The BEND button will automatically feed material out and bend the angle of the active data field.

Creating a Material Profile

7 MEASURE ANGLE



Measure the angle of the bent wire using a protractor.

8 INPUT

O DWire			
File Edit. Mode Path View Machine Help			
Enter Material Profile Definition:	Data Set 1 Clockwise	Data Set 2 Clockwise	Data Set 3 Clockwise
Material Profile Name: Staal Material Allen	-15		48
Material Alley: Material Diameter: 025			•
Bend Head : 125Bendhead a			48
Feed Wheel : 1258endHead,#			20
Bend Velocity: 12 Feed Velocity: 8			4
Fees vencery: 0			
Creator Name: CettingDarted			
Date: www.lid/yyyy Disalay Color:			78
Display Color:			10
			\$05
			120
Basic Calibrations Instructions			
Visit www.penalsbu.com/betwish for complete instructions	Data Set 1 Counter-clockwise	Data Set 2 Counter-clockwise	Data Set 3 Counter-clockwise
			15
 Home Machine Lorem (psum dollar sit amet, consectitur adiplicing etit, sed du elusimod tempor incidiabunt ut labore et dollare magna nos 			
2 Load Wire Loren lycom dolar sit amet, consectetor adjoining alls, sed de elucanod tempor incididum ut labore et			-15
dotore nagra nos			30
3 Bend & Cut. Loren Josun datar all anes, consectetur edistating			-45
3 Bend & Cut Lorem losum dollar sits amet, consectetur adjoincing elit, sed da alusmod tempor incididunt ut labore et dolore magna not			-40
			-76
4 Measure Lorem ipsum dalar sit amet, consectetur adipissing elit; sed do elusmod tempor incididunt ut labore et			-90
dolore magna nos			-105
S Input Angle Lorem (pour dotor sit amet, consectetur adipiscing elit; sed do elusional tempor incididunt ut labore et			-120
			No.
	HOME BEND STO	DP JOG .	SAVE & EXIT CANCEL

Type measurement into the dataset fields, press the ENTER key to move down to the next datapoint. All values will be positive for the Material Profile.

9 REPEAT & SAVE

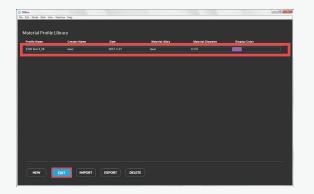
ter Material Profile Definition:	Data Set 1 Clockwise	Data Set 2 Clockwise	Data Set 3 Clockwise
Material Profile Name: Staat	-15		
Material Alley Material Dismeter: 0.35	•		
Bend Head . 1255endHead a			
Feed Wheel: 1255entHead,#			
Feed Velocity: 0			
Creator Name: CettingDarted Date: excitations			
Display Color:			
sic Calibrations Instructions			
	Data Set 1 Counter-clockwise		
	Counter-clockwise		
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doore magna nos			
Load Wire Lorem ipcam dolor sit amet, consectetor adiplosing alit, sed da elusmod tampor incididunt ut labore et			
dotore magna nos			
Dend & Cut Lorem lpsum-dolor sit amet, consectetur adipiscing elit, sed da eluurod tampor incididunt ut labore et	- 44		
elit, sed da elucinod tempor incididunt ut labore et dolore magna nos			
Measure Leven ipsum dolor sit amet, consectetur adiplosing elic, sed do elustrod tampor incididunt ut labore et dolore mazra nos.	-19		
and a magna new	-105		
Input Angle Lorem ipsum dotor sit amet, consectetur adipiscing allt, sed do elucated tempor incididunt ut labore et	-120		

Repeat these steps for every datapoint in the Dataset.

- save & EXIT Click the Save & Exit button to save a completed or in-progress Material Profile
 - The file will not show up in the Materal Profile drop down lists until all three datasets are complete.
- **CANCEL** Click the Cancel button to exit without saving the file.

Editing a Material Profile

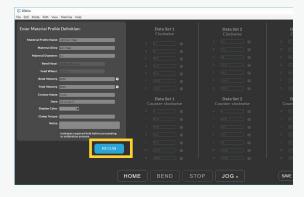
1 EDIT PROFILE



In the Material Profile Library, select the Material Profile to be edited and click the EDIT button.

The blue box will appear around the Material Profile when it is selected

2 EDIT DEFINITION



Make any needed changes to the Material Profile Definition and click BEGIN.

Note that the Bend Head and Feed Wheel types and velocities cannot be changed as the datapoints are linked to this information

3 INITIATE EDITING

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<u> </u>	F (162	P 0145	F 114.6
		G 112.4 🛛	G 1324 🛛 🖬
15	Data Set 1 Counter-clockwise	Data Set 2 Counter-clockwise	Data Set 3 Counter-clockwise
plete instructions			
tten before loading wire			
st deteccint			
st oftepant			
tool to remove the best angle			
d protractor			
ent leto the dataset fields, press th		OP JOG .	SAVE & EXIT CANCEL

Click the EDIT icon next to the datapoint that needs to be edited.

Editing a Material Profile

4 EDIT DATAPOINT

						- σ ×
e Help		1		1		
iition:	Data Set 1 Clockwise		Data Set 2 Clockwise		Data Set 3 Clockwise	
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chiead_a		8				8
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ons	Data Set 1 Counter-clockwi		Data Set 2 Counter-clocky		Data Set 3 Counter-clockw	
omplete instructions						
button before loading wire						
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first datapoint						8
inst ostaport.						8
ng tool to remove the bent angle						2
Ital protractor	d [222	8				
ensent into the dataset fields, press the HOME	BEND	STOP	JOG •		SAVE & EXIT	CANCEL

Click BEND to rebend this value and/or input measured angle.

After new numerical value is entered, press the ENTER key to move down.

5 SAVE & EXIT



Save and Exit the Material Profile at anytime if needed. However, this file will not appear in a Material Profile drop down list until all 3 Datasets are complete. **SECTION 07**



07 | MAINTENANCE

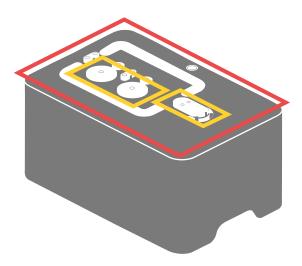
Maintenance

- SWITCHING BEND HEAD & FEED
- CLAMP ADJUST

07 | MAINTENANCE

Switching Bend Head + Feed Wheels

D.I.Wire Bend Head and Feed Wheels must be changed to accomodate different wire dimensions.

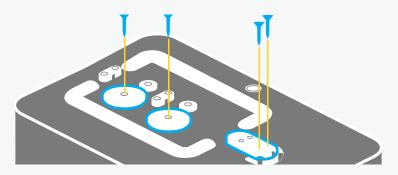


1 PREPARATIONS

WHAT'S NEEDED: Bend Head and Feed Wheels (1/8" or 1/16") T15 Torx Screwdriver

> The Bend Head and Feed Wheels need to be changed to ensure the wire remains centered while bending. As the wire diameter gets larger, the groove in the Bend Head gets larger and the Feed Wheels get smaller.

2 SWITCH BEND HEAD + FEED WHEELS



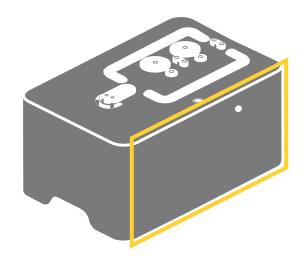
Unscrew assembled Bend Head and two Feed Wheels from the D.I.Wire PLUS machine with the T15 Torx Screwdriver.

Screw the new Bend Head and Feed Wheels onto the D.I.Wire.

07 | MAINTENANCE

Clamp Adjust

If the Feed Wheels are slipping, meaning they are not effectlively pulling wire through, the Clamp Adjust needs to be modified.

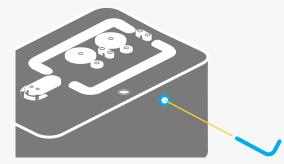


1 PREPARATIONS

WHAT'S NEEDED

5/32 Hex Screwdriver

2 CLAMP ADJUSTMENT



Turn the Clamp Adjust on the D.I.Wire with the 5/32 Hex Screwdriver. Going against convention, turn left to tighten and turn right to loose.

Overtime, it is possible to get a feel for the variation in how tightly the bearings pull towards the Feed Wheels

SECTION 06



Quick Key Commands

MODE	COMMAND	FUNCTION	DESCRIPTION
Global Global Global Global Global	Command/CTRL + T Command/CTRL + O Command/CTRL + Q Command/CTRL + Shift + C Command/CTRL + Shift + G Command/CTRL + Shift + P	Connect Open Exit Material Profile Mode Script Mode Path mode	Connect to a plugged in D.I.Wire Open a file in either Path or Script Mode Quits WireWare Switch to Material Profile Mode Switch to Script Mode Switch to Path Mode
Path Path Path Path Path Path Path Path	Command/CTRL + S Command/CTRL + Shift + S Command/CTRL + U Command/CTRL + Shift + U Command/CTRL + N Command/CTRL + P L Backspace Escape CTRL + 1 CTRL + 2 E Click and drag + Shift + CTRL Click and drag + Shift + CTRL Click and drag + alt	Save Shape Save Shape As Undo Redo Next Shape Previous shape Zoom Extents Delete selected vertices Select Mode Snap to Grid Snap to Grid Snap to Original Show/Hide Original Shoap to Horizontal/Vertical Snap to Tangent Pan	Saves shape in Path Mode Workspace Opens Save As dialog for path in Workspace Undo last action in Workspace Redo last action in Workspace Switch to the next path when there are multiple paths on the Workspace (in order of creation) Switch to the previous path when there are multiple paths on the Workspace Center camera on Path and zoom to fill application window Delete currently selected Bend Points Switch to select mode Click and drag Path interactions snap to the grid Click and drag Path interactions snap to the original shape Show or hide the original Path outline While in the Workspace, snap interactions to horizontal/vertical While in the Workspace, snap interactions to the tangent line of the next and previous Bend Points While in the Workspace, Pan across the Workspace with mouse
Script Script Script	Command/CTRL + X Command/CTRL + C Command/CTRL + V	Cut Copy Paste	Cut selected text Copy selected text Paste text in clipboard