# LASER CUTTING



**BELMONT UNIVERSITY**

## DIGITAL FABRICATION LAB

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# PRE-STARTUP

## STEP 1:

**BEFORE YOU TURN ON THE LASER, PUT YOUR MATERIAL INTO THE BED AND ALIGN IT TO THE TOP LEFT**
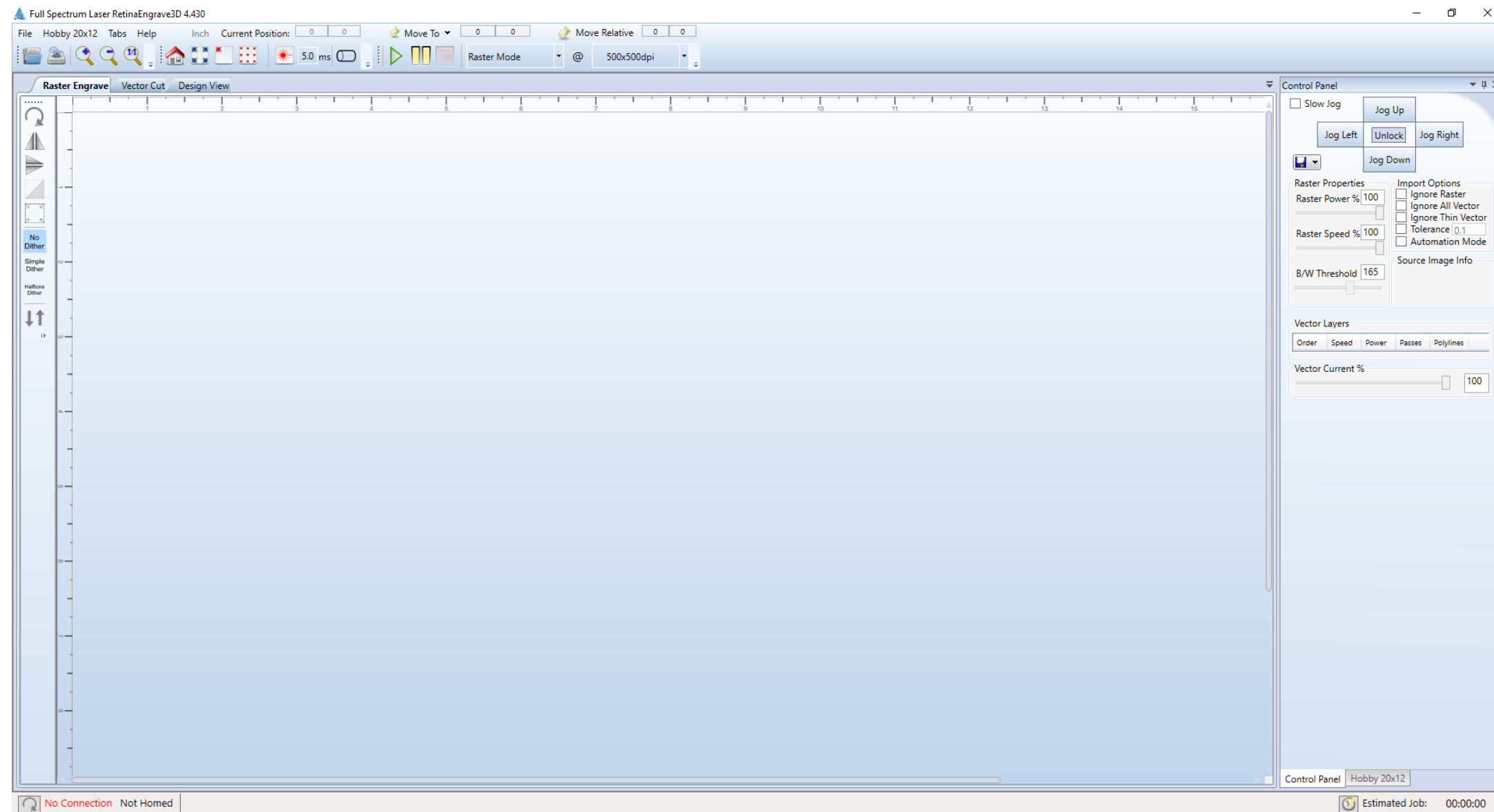
# PRE-STARTUP

## STEP 2:

ON THE COMPUTER OPEN THE SOFT-WARE: RETINA ENGRAVE. THIS IS THE PROGRAM THAT WILL RECIEVE YOUR DESIGN AND TELL THE LASER WHAT TO CUT

THIS WILL TAKE SOME EFFORT TO CORRECTLY SCALE AND PROPORTION YOUR FILE FROM AUTOCAD TO THE FORMAT REQUIRED FOR THE LASER CUTTER. SEE FERNANDO OR A FABLAB ASSISTANT FOR HELP

# TURNING ON THE LASER

## STEP 1:

PRESS AND HOLD THE POWER BUTTON ON THE BELKIN BATTERY BELOW THE LASER CUTTER THIS SHOULD TURN ON THE CHILLER, AIR COMPRESSION, AND EXHAUST SYSTEM
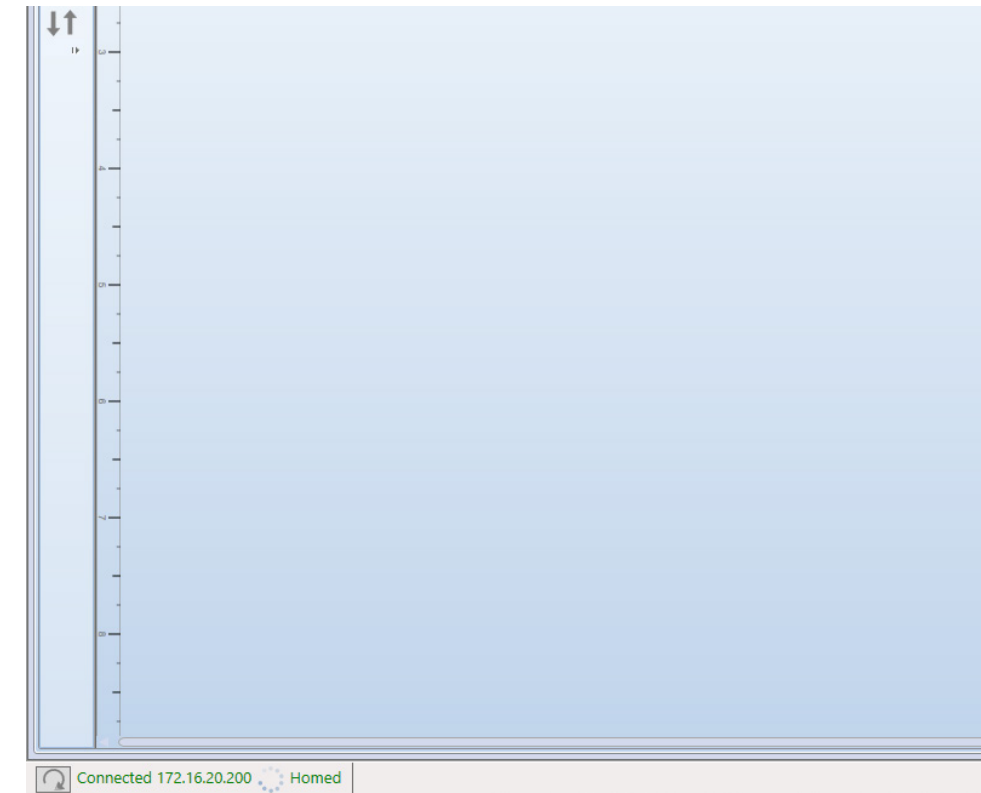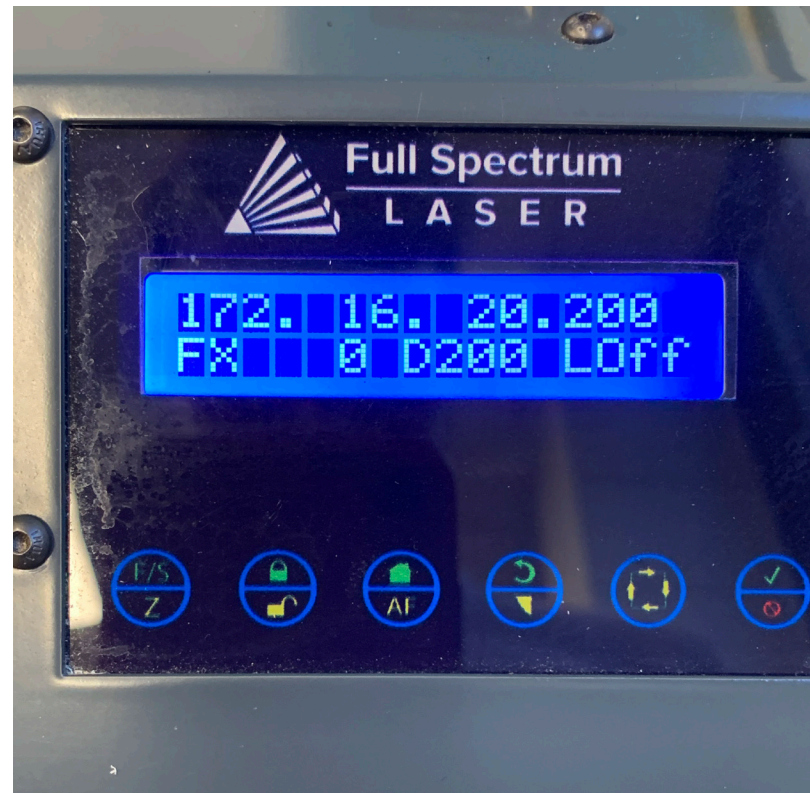
THE SYSTEM WILL BE LOUD ON AND ON STARTUP LISTEN FOR THE BEEPS UNTIL THEY STOP AND CHECK FOR THE GREEN LIGHT ON THE CHILLER. IF THE FANS ARE HEARD AND THE LIGHT COMES ON, EVERYTHING SHOULD BE GOOD TO GO

IF YOU ARE EVER UNSURE, GET HELP!

# TURNING ON THE LASER

## STEP 2:

MAKE SURE THE LASER CUTTER IS SET TO THE SAME IP ADDRESS AS SHOWN ON RETINA ENGRAVE ON THE COMPUTER. IF THEY DIFFER, REFRESH THE IP ON THE COMPUTER AND SELECT THE MATCHING IP ADDRESS SHOWN ON THE LASER
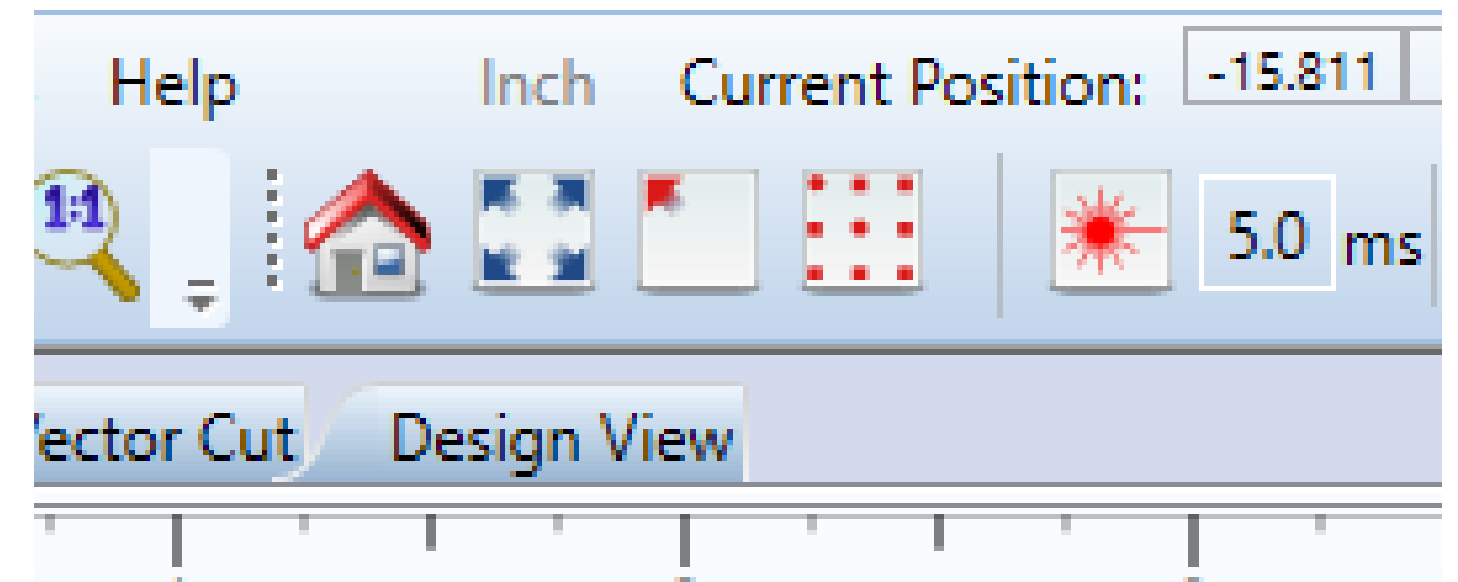
# TURNING ON THE LASER

## STEP 3:

THE LASER SHOULD BE VISIBLE ON YOUR MATERIAL IN THE BED WITH A RED DOT. THE STARTING POINT CAN BE MOVED USING THE ARROW CONTROLS ON THE LASER CONTROL PANEL. GENERALLY, THE DOT SHOULD BE SET TO THE TOP LEFT CORNER

USE THE JOG FUNCTION TO CHECK FOR FIT, THIS WILL MARK THE PERIMITER OF WHAT YOU WANT TO CUT
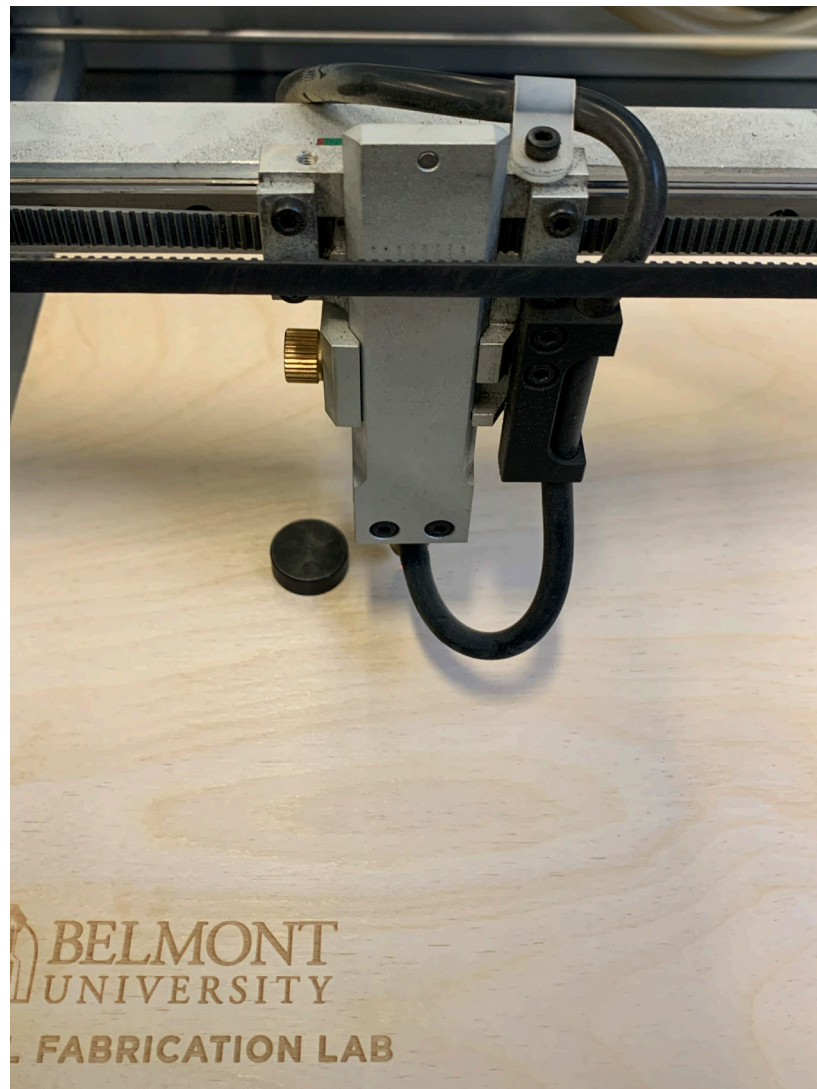
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Help    Inch    Current Position:    -15.811

5.0 ms

ector Cut    Design View

# TURNING ON THE LASER

## STEP 4:

FOR THE LAST STEP OF CALIBRATION, SET THE LASER HEIGHT USING THE BLACK COIN BY RESTING IT ON YOUR MATERIAL AND THE LASER ON TOP OF THAT

THE LASER HEIGHT CAN BE ADJUSTED BY LOOSENING THE KNOBS ON EACH SIDE OF THE LASER POINT ITSELF AND RETIGHTENING

# CUTTING YOUR DESIGN

## STEP 1:

YOU ARE NOW READY TO CUT. AFTER FINISHING ALL CALIBRATION, CLOSE THE HOOD AND PRESS THE PLAY BUTTON ON RETINA ENGRAVE. THIS WILL START THE LASER BASED ON THE SETTINGS YOU HAVE CHOSEN

DO NOT OPEN THE HOOD AT ANY TIME WHILE THE LASER IS POWERED ON AND CUTTING. USE THE EMERGANCY SHUTOFF IF THE LASER NEEDS TO BE STOPPED IMMEDIATELY. FIND FABLAB PERSONNEL FOR HELP ASAP

EVERY MATERIAL WILL HAVE DIFFERENT OPTIMAL SETTINGS TO AVOID ACCIDENTS OR DAMAGE. SEE THE MATERIAL LIBRARY FOR SETTINGS BEST SUITED FOR WHAT YOU'RE CUTTING OR ASK  A ASSISTANT OR FERNANDO

# OTHER SAFTEY DO'S/DON'TS

**WHILE RUNNING DO NOT:**

-STICK YOUR HAND IN THE LASER BED

-LEAVE THE ROOM

-LOOK DIRECTLY AT THE LASER (YES IT PRETTY BUT NOT GOOD FOR YOUR EYES)

**IN CASE OF FIRE:**

-USE EMERGANCY SHUTOFF

-FIRE EXTINGUISHER IS LOCATED TO THE RIGHT OF THE LASER CUTTERS

-OPEN THE HOOD AND SPRAY THE FOAM INTO THE BED TO SMOTHER FLAMES