QUALITY ASSURANCE RECORD

Model: LulzBot Workhorse Desktop 3D Printer

Serial Number:

KT-PR0051 -

Date Completed:

CONFIGURATION

Electronics: RAMBo 1.4a
Firmware: Marlin Version _____
Nozzle: Hardened Steel – 0.5mm diameter

STEPPER DRIVER SETTINGS

Motor Axis	Steps/mm	Travel	Microstep Mode	Digipot
X	100	295mm	16µsteps/step	975 mA
Y	100	308mm	16µsteps/step	975 mA
Z	500	299mm	32µsteps/step	975 mA
E	420	NA	16µsteps/step	960 mA

BACKLASH

Name	Backlash
X	mm
Y	mm
Z	mm

BELT TENSIONS

Belt	Type	Length	Tension
X	Cut to length	1164	N
Y	Continuous	956	N
Z Left	Continuous	866	N
Z Right	Continuous	866	N

Z OFFSET

Name	Offset
Z	

GENERAL

- ❑ Are all the screws torqued to spec?
- ❑ Are all the zip ties tight and trimmed?
- ❑ Does the spool arm flip up and sit securely?
- ❑ Are the switches and bump stops installed securely?
- ❑ Is the PEI sheet free of bubbles and wrinkles?
- ❑ Are the frame and control panel free of scratches and scuffs?
- ❑ Is the certification sticker free of bubbles, debris, and straight?

Tested by:

Y AXIS ASSEMBLY

- ❑ All fasteners are tight and torqued to specification.
- ❑ The print bed moves freely through the entire travel.
- ❑ The Y-axis is not loose when twisted side to side by hand.
- ❑ The Y-belt is centered on the idler bearings.
- ❑ One of the set screws on the Y-pulley is aligned with the flat on the motor shaft.
- ❑ The pulley height is set so it does not rub on the bearing above or motor below
- ❑ The Y-belt tension is in specification.
- ❑ 4 rubber feet are installed and tight to the bottom of the Y-Corners.

Tested by:

FRAME ASSEMBLY

- ❑ All fasteners are tight and torqued to specification.
- ❑ The bushing compression screws are set to specification.
- ❑ The belts are centered in the idlers, and do not rub anywhere in travel.
- ❑ The Z-motor mount screws are flat against the mount and tight.
- ❑ The spool arm and feed tube holder are at the intended height on the frame.
- ❑ 4 rubber feet are installed

Tested by:

Belt	Tension
Z Left	N
Z Right	N

CONTROL BOX POWER

- ❑ The control box meets the workmanship standard for scratches.
- ❑ All inserts and studs required by the design are present.
- ❑ The tie bases have been inspected for placement and orientation.
- ❑ The power entry module is oriented with the fuse tray towards the bottom.
- ❑ There are fuses present in the fuse tray on the power entry module.
- ❑ The rocker switch is oriented with the circle towards the off side.
- ❑ The power entry module and rocker switch are connected correctly.
- ❑ The control box fan is oriented so that sticker faces the case wall.
- ❑ The screws that hold the fan on have washers and are tight.

Tested by:

CONTROL BOX ASSEMBLY

- ❑ Have the protective coverings been removed from the LCD and clear polycarbonate LCD cover?
- ❑ Does the LCD not move up or down or side to side?
- ❑ Is the LCD knob tightly secure to the LCD?
- ❑ The control box cover fasteners are tightened according to specification.
- ❑ The SD card can be inserted without interference.
- ❑ The Y-Cable mount is zip-tied to the bed harnesses.
- ❑ The harnesses are routed properly with no pinched wires.
- ❑ The ground lugs are on the ground post with the star washer and lock nut.
- ❑ 2 rubber feet are installed in the intended locations.
- ❑ 24v extrusion fan turns on and off as intended.
- ❑ Hot end temperature controls function as intended.
- ❑ LCD functions normally.
- ❑ Case fan spins freely.

Tested by:

CALIBRATION FINAL CHECKLIST

- ❑ Extrusion fan operates as intneded.
- ❑ Hot End temperature control verified.
- ❑ The bearing conditioning (burn in) is complete.
- ❑ The X, Y and Z motion is smooth over range and speeds.
- ❑ The PEI print surface is free of bubbles and wrinkles.
- ❑ The printer has passed hi-pot testing.
- ❑ Verify automatic calibration and record values.
- ❑ The wipe sequence is in the center of the wiper pad.
- ❑ The flat of the nozzle contacts all four bed corners.
- ❑ The Z offset is calibrated and verified.
- ❑ The bed temperature control verified.
- ❑ Test print successful.
- ❑ Belt tensions are still within spec after burn-in and test prints.
- ❑ Print head moved to shipping position.
- ❑ The certification sticker is free of air bubbles, debris, and is parallel with the edge of the cover.

Tested by:

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