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Install Guide for Takoto HE on to Modix

While we do not (yet) have a full "how to" video prepared, we can offer some guidance based on design intent and Test Pilot experiences.

- If you have not installed a Bondtech to a Modix previously, we recommend removing the stepper motor and disassembling the motor to enable drilling the end cap to fit the gear inside. Bondtech suggest the gear should be installed with the set-screw/grub-screw outer-most, however that can make fitment a little more difficult. Drilling the end-plate of the motor enables the gear to be placed with the set-screw inboard.
- We also recommend a small modification to the Bondtech that will enable the stepper motor to be retained to the Tool Carriage if the Bondtech requires removing. We suggest relieving the back of the Bondtech to allow room for a M3 x 6 cap-screw (socket-head or pan-head) in the "forth fastener" position. For reference, the centre-to-centre distance of the fasteners is 31mm. We use an end-mill, but as a DIY example we made a simple/rough drill-jig to use a 6.0 drill. We are sure a soldering iron (to melt a recess) or a Dremel would be equally viable. Download images from here.
- Ensure the stepper motor electrical connector is facing up or towards the BL-Touch. The Takoto Fan Duct will interfere if it is facing down.
- For assembly, we strongly recommend that you DO NOT remove Takoto's 3 uppermost fasteners that hold the top Mounting Plate to the Stand-off Spacers. The lower hexagons on the Stand-offs nest into the Heat-block and removing the top fasteners will require you to re-phase them to the Heat-block.
- Remove the M6 x 20 cap-screw. It is only there to retain the Heat-break Sleeve while in transit. Take care that the Heat-break Sleeve and Heatsink do not fall out & get lost (albeit that they will need to come out).
- Remove the Silicone Sock.
- Remove the 3 lower fasteners that hold the Heat-block to the Stand-offs. Take care not to drop the copper Heatsink when the assembly comes apart.
- Remove the Heat-break Sleeve (if it is still in the Heat-block).
- Insert & fasten your Heaters & Sensor.
- Mount your Fan to the Duct. Again - we strongly recommend a fan with high flow (>12cfm). We use a 15.8cfm 4028 unit from Delta available for purchase from here. The fan mounting holes in the Duct are suitable for screwing M3 threads in, or appropriate self-tapping screws.
- Fasten the Mount Plate (with Stand-offs) to the Bondtech.
- Insert the Heat-break Sleeve into the Heat-block and insert your favourite nozzle until it seats; then back it off at least one turn.
- Place the Heatsink over the Heat-break Sleeve and present the assembly to the Mount Plate & Stand-offs. Take care that the Heatsink spigots into the recess in the Mount Plate. Re-fasten with the cap-screws.
- The Heater wires should route nicely between the motor & the Fan Duct.
- Tighten the Nozzle.
- Run the Heaters to operating temperature. Note that there will be some smoke/odour on the first heat cycle as the oil & mould-release on various components vaporises (keep ventilated until it passes). Don't forget to run a Heater PID calibration.

There are some STL's available for the Print Fan Duct (both Primary & Secondary) & also a combination Intake Duct/Wiring Tray.
If you experience a clog (even Takoto can clog), in most cases you should be able to clear it by simply removing the nozzle & cold-extruding. This will typically push the Heat-break Sleeve out with the filament. To clear the Sleeve, hold a 2.0mm drill bit in a vice and hand-twist the Sleeve to "drill" the filament. The Sleeve is titanium and is surface-hardened so reasonable aggression can be used.
When reassembling, be sure to align the Heatsink into the recess in the Mount Plate; ensuring the Nozzle is loose until the Heat-block is seated & fastened to the Standoffs.

Happy printing!