Hot air gun Disassembly

Exploring design methods for an industrial tool

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INTRODUCTION

The target user for the tool is a professional who uses a heat for forming and bending a variety of materials.

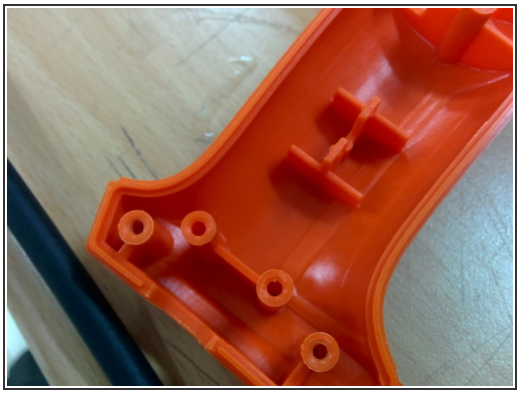
TOOLS:

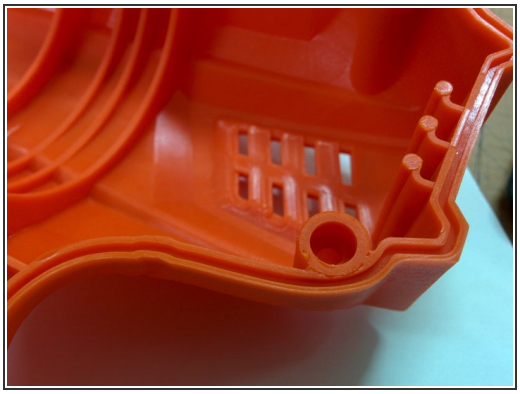
- Mako Driver Kit - 64 Precision Bits (1)

Step 1 — Overall structure


- All screws on one side for ease of assembly
- Wire has a stiffener for protection
- Switch is placed on handle in an ergonomic position so that one hand operation is easy
- The back of the handle and the back of the body are in a straight plane in order to place the gun in vertical position after operation to cool it down
- Vents are placed in the top part to facilitate air flow
- The product is colored in industrial orange to be easily visible and distinguishable from the work environment

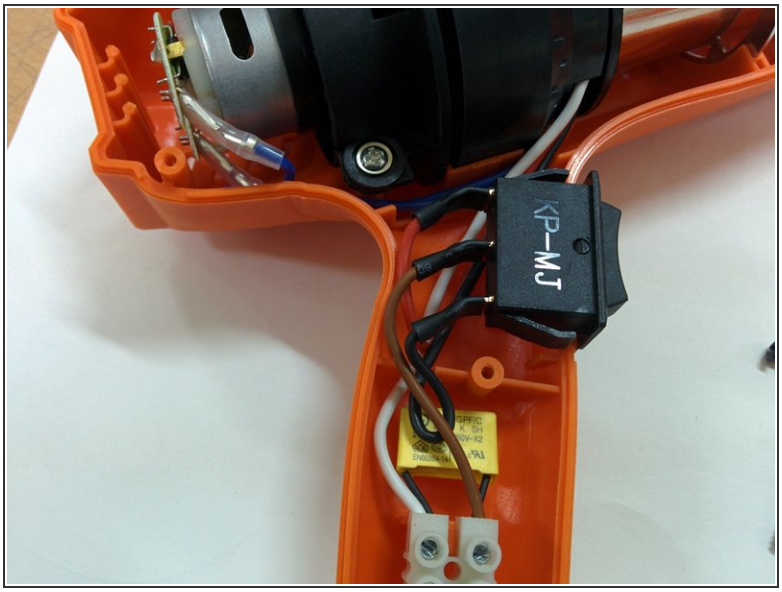
Step 2 — Plastic detailing

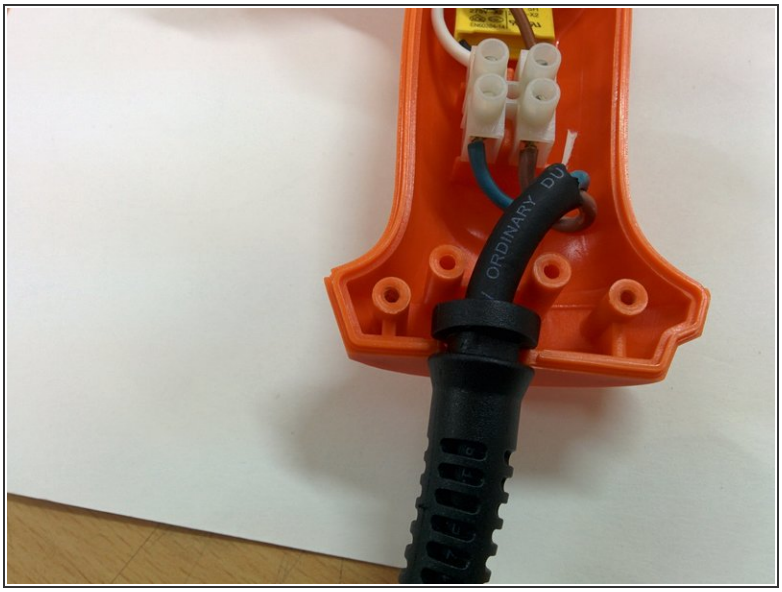




- All plastic detailing is made to have no overhangs
- screwing details are used in order to locate the two half together without external jig
- A lip joint is used in order to secure the assembly and also make it impermeable and rigid

Step 3 — Electrical component placement

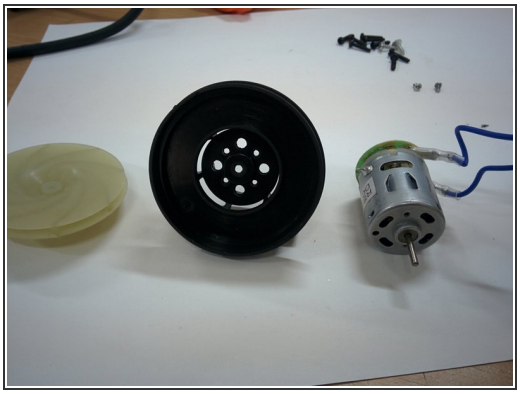




- All electrical components are connected using connectors instead of direct soldering to facilitate easy replacement
- The components have negative placers inbuilt in the in plastic injection mold
- The electrical components are placed in order to prevent shorting

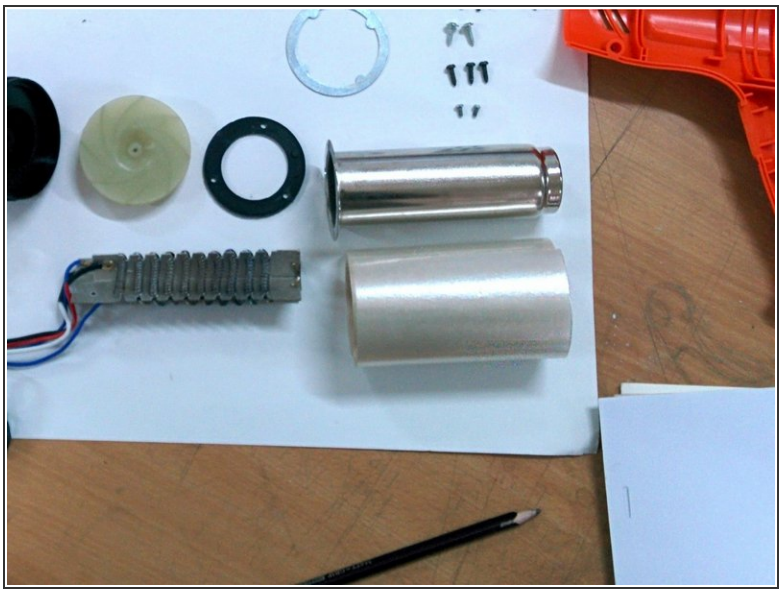
Step 4 — Heat component placements

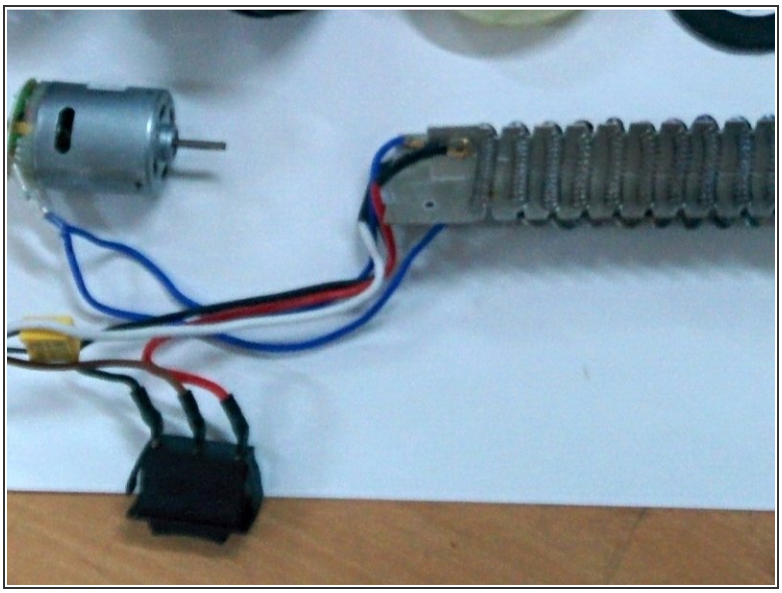




- All heat components are suspended in order to prevent the heated elements to come in contact with plastic parts
- The blower chamber is designed in heat resistant pet in order to prevent it from deformation
- The motor and the blower fan has a press fit

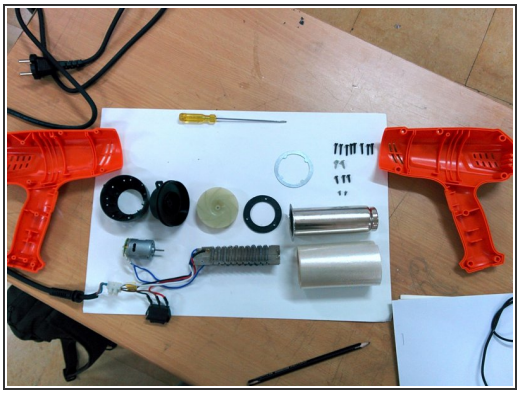
Step 5 — Heat tube

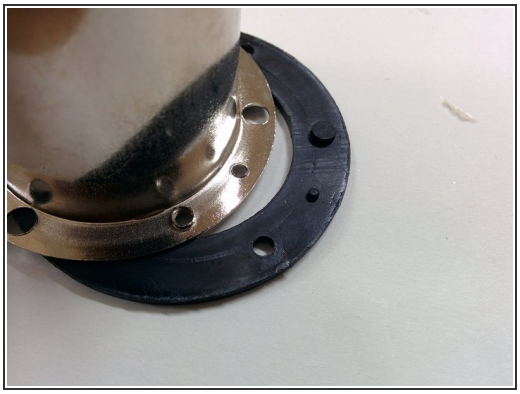


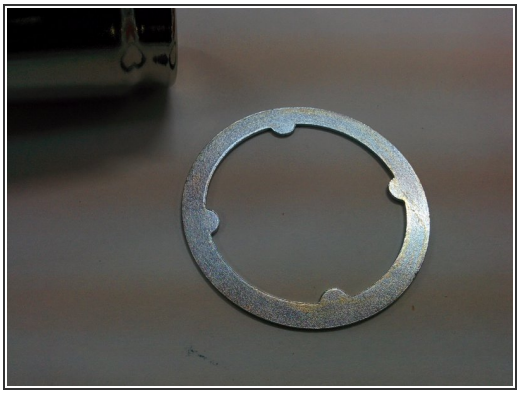


- The heat tube is using mica support and kapton insulation
- The external heat tube is stainless steel to prevent degradation of the tube.
- The heat coil is used as a resistor to step down voltage for motor and hence it has a dual perpose
- The heat coil is made of nichrome wire.

Step 6 — Detail assembly







- Minimum number of screws (variety) are used and all screws are self tapping in order to eliminate the use of nuts and loose parts.
- Assembly has location pins to align circular parts in a fixed orientation.
- Heat rings are used in order to over heating

