Detailing group!

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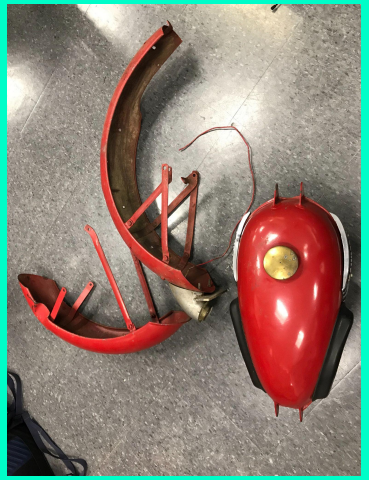
Overview of our responsibilities

1. Labeling drawers and organizing all of the tools
2. Degreasing/Sandblasting parts
3. Working with bondo
4. Sanding parts
5. Polishing parts
6. Priming/Spray painting parts
7. Designing and ordering the class hoodie and crew neck

Degreasing/ Sandblasting

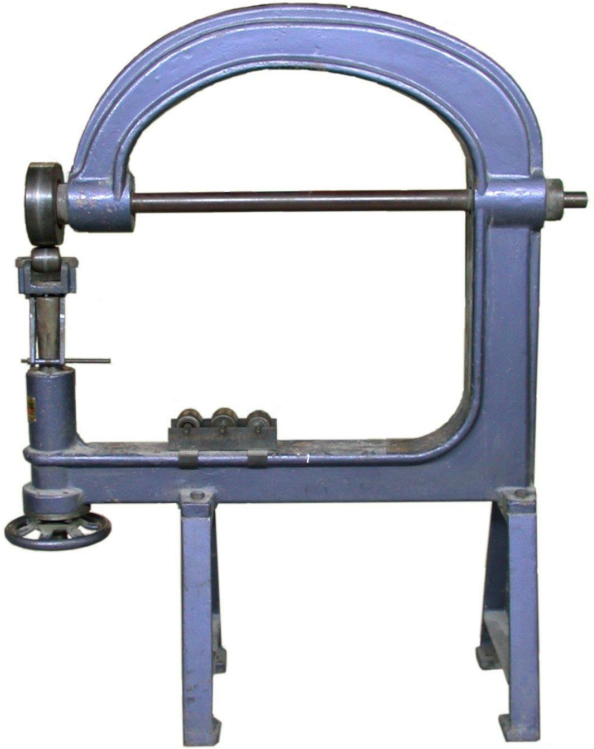
- Wash with soap and water
- Degrease in degreaser tub
- Sandblast—Abrasive blasting
  - Silica sand, sometimes: walnut shells and corn husks
  - Don’t sandblast too much—take off metal
  - Kick the tub if the sand does not get into the pipe



The English Wheel!

Reversing a dent in the fender

- An English Wheel: A tool that can shape aluminum and steel
- Used for panel beating and it is for forming metal
- There are many different shapes of anvils to roll out the metal (different levels of beveling, or “crowns”)
- Start with the low-crowned and work your way up



Hammers

- The English Wheel was partially helpful
- To get the rest of the dent out, we used a hammer:
  - We put a towel on the floor, the fender on top, and hit it around the same area multiple times to reverse the dent

BONDO!!!


bondo Brand
SANDABLE IN 15 MINUTES
DESIGNED FOR INTERIOR AND EXTERIOR HOME USE
ALL-PURPOSE PUTTY
Quickly and easily fills, patches, seals, and repairs almost anything in and around the home.
Repairs – Metal, wood, drywall, concrete and masonry surfaces.
Paintable • Permanent • Non-Shrinking
WARNING. OXIDIZER. FLAMMABLE LIQUID AND VAPOR. CAUSES EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION.
Read carefully other cautions on the side/back panel.
Net Wt: Putty 1.9 lb (861 g)
Hardener 1 oz (28 g)
20052
3M

BONDO

Bondo is a putty used to cover holes or rough and uneven surfaces.

- The putty is a mixture of fiberglass (polyester) resin and talc
- The polyester resin makes bondo a good adhesive and the talc allows it to flow smoothly
- Hardener is added to a catalyze a chemical reaction that allows the putty to harden.

Bondo (Cont.)

- First, we mixed bondo with hardener
- Then, we used a scraping device to apply the bondo to different parts of the motorcycle (ex: the fenders and the engine)

BONDO (CONT.)

- We let the bondo dry and then used sandpaper to create a smooth finish.
- After that, we applied primer to the parts and then spray painted them.

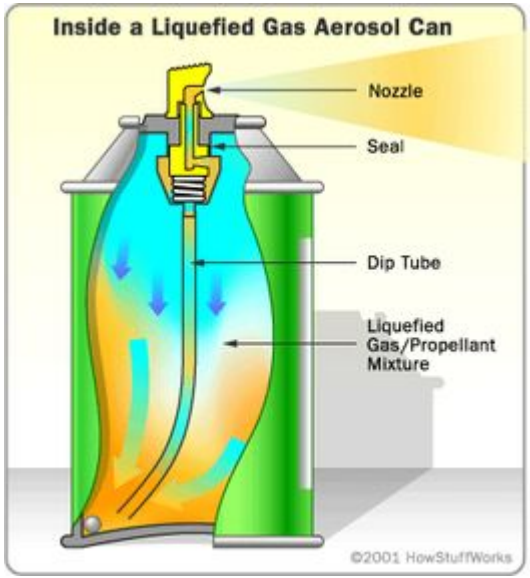
Sanding!!

Sanding parts

- We sanded parts prior to priming and after priming in order to smooth out the surfaces of our parts. Only then could we paint!
- Sandpaper is made of abrasive materials to smooth the metal parts
- Emory Paper:
  - We mostly used 320

Spray Painting!!!

Spray Painting/Aerosol Can Science



Aerosol Can Components:

- **Liquid** (paint,primer,hairspray…)
  - liquid at room temp
- **Propellant**
  - Gas at room temp/low pressure
    - Needs to be pumped into can
  - But, liquid at high pressures (so liquid in the can)
- **Ball bearing**
  - mixes liquid and propellant together inside can

- When you press down nozzle, the pressure in the can lowers
- The propellant boils
- Paint/primer is released and atomized, released as a fine spray

Spray Painting Technique

- Shake can thoroughly
  - Ball bearing mixes liquids
- Hold it at correct distance
  - Too close=too much paint!
- Start the spray away from object
- Keep can upright
- Move slowly/carefully/evenly
- Paint enough for it to be glossy
  - But not enough for drips!


FLAMMABLE
KEEP FIRE AWAY

PAINTING THE BADGES!

- I used a fine q-tip and gently dabbed the lettering.
- Then I let it dry and applied a second coat of paint.
- I had to be careful not to paint outside the lines!

Attaching the light

Finding the right screw

- We first looked at the parts manual (Triumph Replacement Parts No.10.)
- We found the screw and tried to look on Ebay for replacements
  - But they wouldn't arrive on time
- So we searched through all the screws and one that was about 1 inch long with a 3/16 diameter and 32 threads per inch.
- We used a caliper!

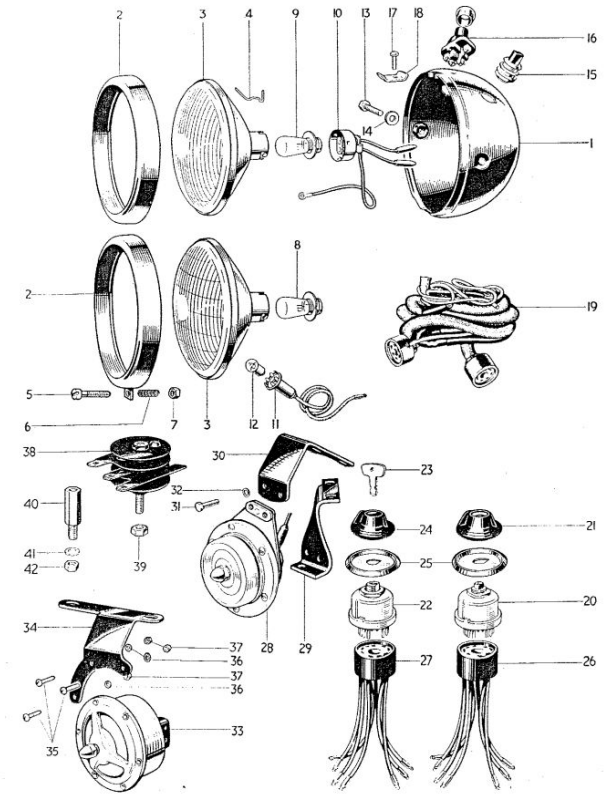


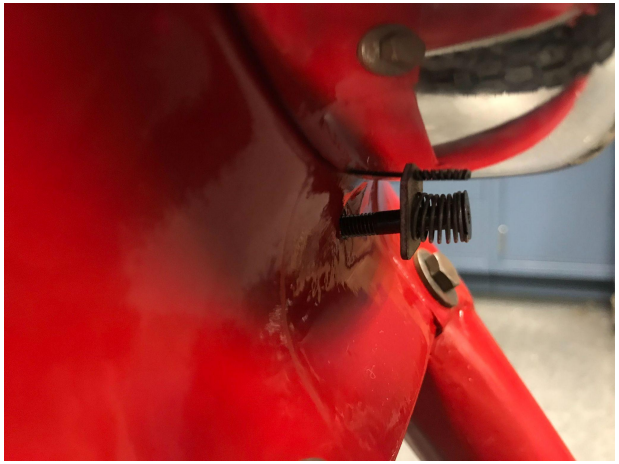
Fig. 23. ELECTRICAL EQUIPMENT, T20, T20SS AND T20SH

62

5	516710	Screw (H876)	...	...	...	...	...	...	...	...	1	–	–
6	552373	Spring (H875)	...	...	...	...	...	...	...	...	1	–	–

Finding the right spring

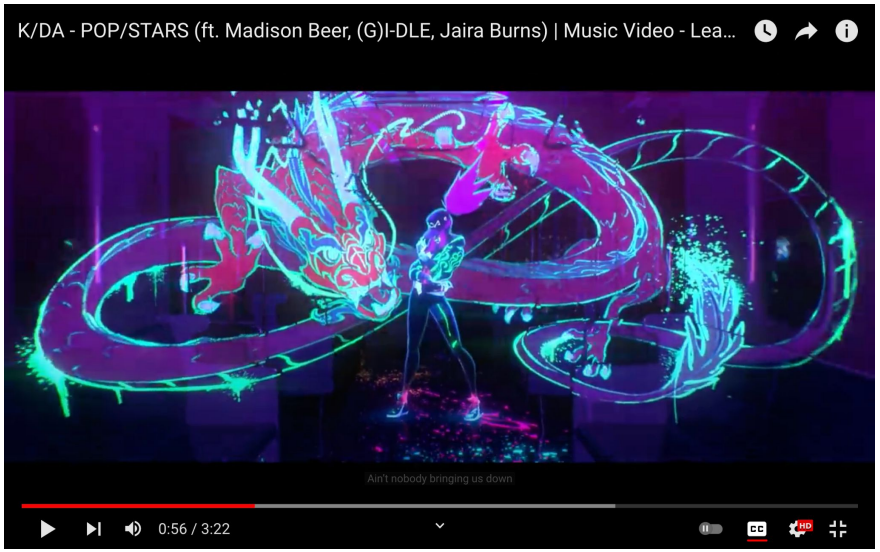
- We searched through Jon's drawer of springs
- We put the spring between the protruding part of the headlight and the head of the screw—this would help with the tension of the parts
- We also attached the speedometer and other parts of the head temporarily for show (the cables were not attached)



SWEATSHIRTS!

Art References and Ibis Paint X

The Triumph Terrier



THE DESIGN WENT THROUGH MANY ITERATIONS (128 HOURS+ OF WORK)

Princeton University

Art and Science of Motorcycle Design

Professor Michael Littman

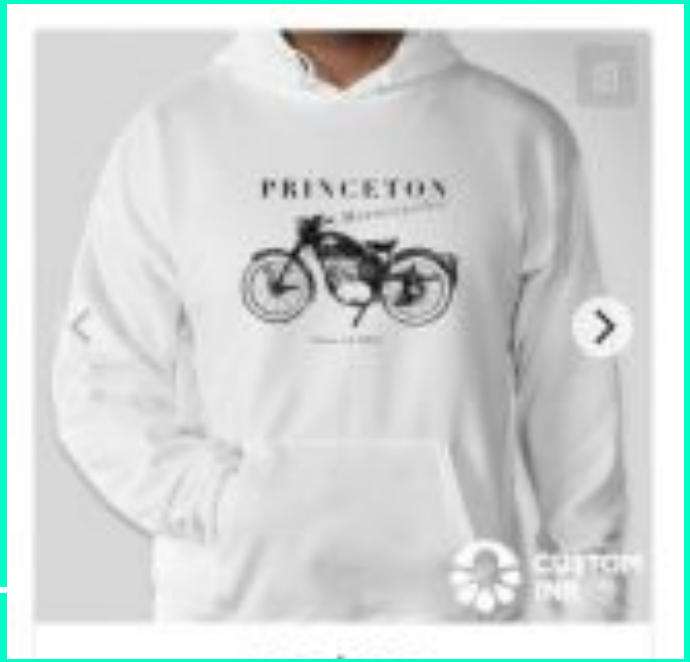
1954 Triumph Terrier

Class of 2025

Designed by
Audrey Zhang '25

We designed and ordered grey crewnecks and white hoodies through Custom Ink

A special thank you to Professor Littman for all your help during this process!



Glowing Wheels :)

Roll over image to zoom in

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Final Task: Make a presentation

THANK YOU! & QUESTIONS

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http://www.secondchancegarage.com/public/555.cfm

https://www.sharpen-up.com/english-wheel-basics-use-one/

https://www.aviationpros.com/home/article/10387129/the-english-wheel-some-insight-into-using-this-sheet-metal-forming-tool

https://startwoodworkingnow.com/how-does-a-sandblaster-work/#:~:text=The%20principle%20of%20operation%20of,water%20from%20a%20collecting%20container.

https://theshopmag.com/news/how-bondo-body-filler-made/#:~:text=Bondo%20Body%20Filler%20utilizes%20a,harden%20until%20it%20becomes%20sandable.

https://www.masterclass.com/articles/how-do-aerosol-cans-work#:~:text=Spray%20paints%20are%20typically%20contained,pressure%20inside%20of%20the%20can.

https://science.howstuffworks.com/innovation/everyday-innovations/aerosol-can3.htm

https://www.explainthatstuff.com/aerosolcans.html

https://www.thespruce.com/choose-the-right-sandpaper-grit-1822681#:~:text=Today%2C%20most%20sandpaper%20consists%20of,preparation%20for%20finishing%20or%20painting.