Back to my courses

RC Excavator - How To

69% COMPLETE

What We're Building

Sourcing Parts

Soldering

Assembling Lower Body & Track Support

Arm Assembly

Cab Lights and Rear Cover

Test Drive

Rotating Claw

Parts Required

1. 1x 12v 100RPM N20 Motor- https://amzn.to/3ycxsND
2. 1x MG90S Servo or PTK Votik 9497 Servo
    a. https://amzn.to/3UHLtKW
    b. aliexpress
3. Servo extension- https://amzn.to/3yff9Yc
4. 8x 2.6x8mm Screws
9. 1x 3D Printed "Output Gear for Claw Rotation"
10. 1x 3D Printed "Rotating Claw Servo Holder"
11. 1x 3D Printed "Claw Arm Left"
12. 1x 3D Printed "Claw Arm Right"
13. 1x 3D Printed "Claw Servo Push Link"

IF YOU DOWNLOADED YOUR MODELS BEFORE 5/11/2024 you'll want to re-download/re-print the dipper/bucket

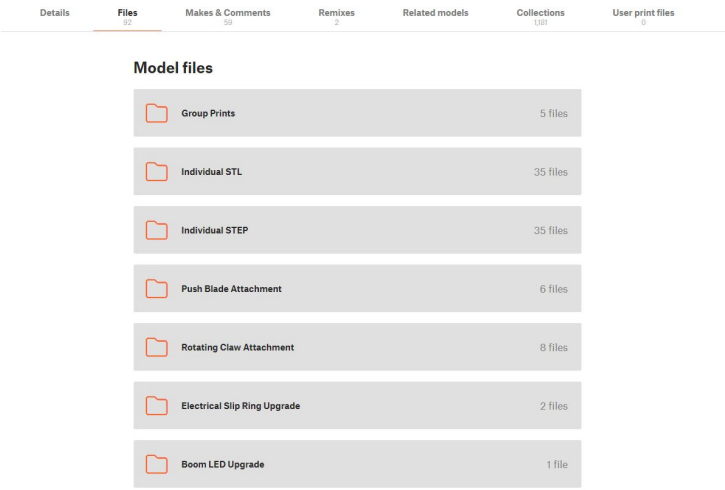
Attachments/Upgrades

- ○ Electrical Slip Ring Upgrade
- ○ Push Blade Attachment
- Rotating Claw
- ○ Dipper Lights Upgrade

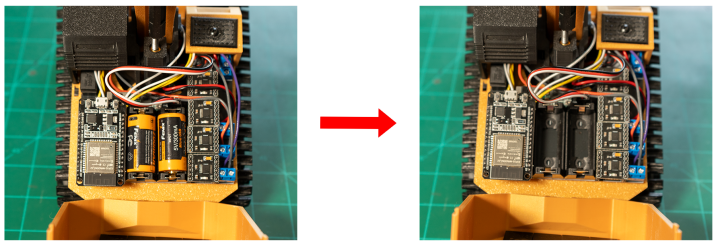
push link as it now has a cutout for the claw servo wires.

STEPS

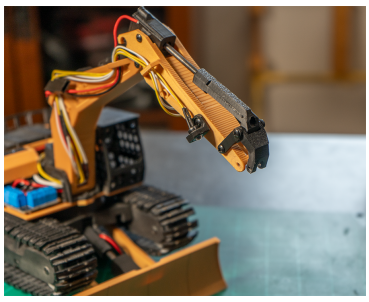
- Attachments can be downloaded on printable's under the "Files" section in their corresponding folders.



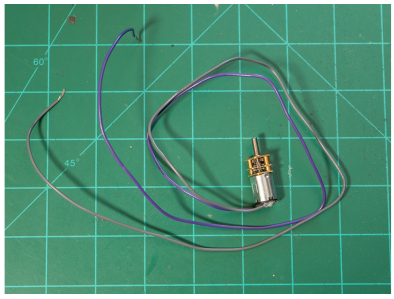
1.) Remove the batteries.



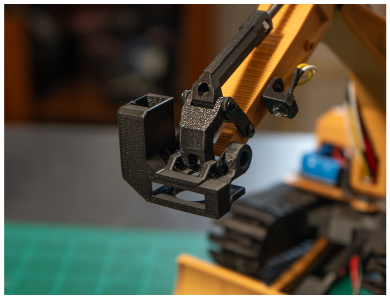
2.) If the bucket and thumb are installed please start by removing them as well as the 3D Printed "Attacher".



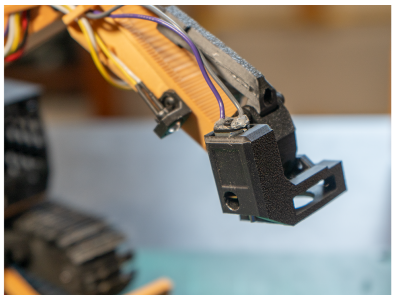
3.) Solder on a set of 22awg 50cm wires to the 12v 100rpm N20 motor.



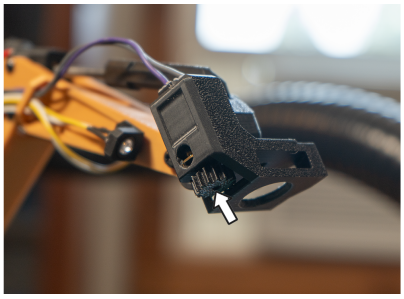
4.) Attach the 3D printed "Rotating claw Attacher" to the end of the dipper using 2 2.6x8mm screws, then secure the "bucket push link" to the "Rotating Claw Attacher" using 2 2.6x6mm screws.



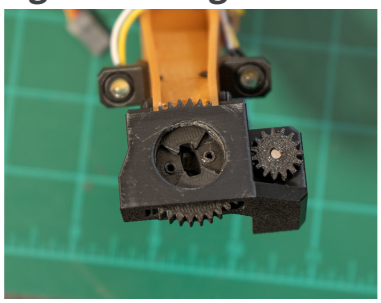
5.) Insert the 12v 100RPM N20 motor into the rotating claw attacher. Route the wires back down the arm into either terminal block "aux-atch" or "thumb" depending on your controller layout preference after stripping back the wires 1cm.



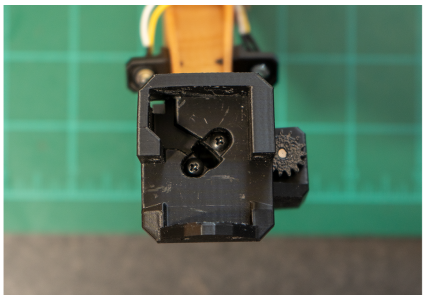
6.) Press the 3D printed "Pinion Gear for Claw Rotation Motor" onto the shaft of the N20 motor.



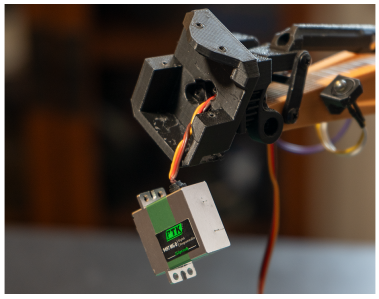
7.) Slide the 3D printed "Output Gear for Claw Rotation" into the rotating claw attacher with the cutouts on the gear facing down.



8.) First align the center cutouts on the servo holder, output gear, and attacher then Secure the "Rotating Claw Servo Holder" to the output gear using 2 2.6x8mm screws.

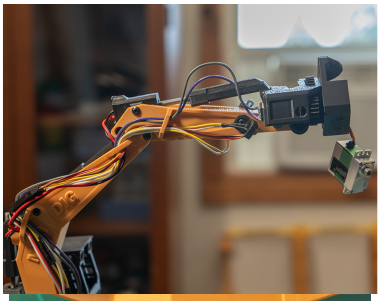


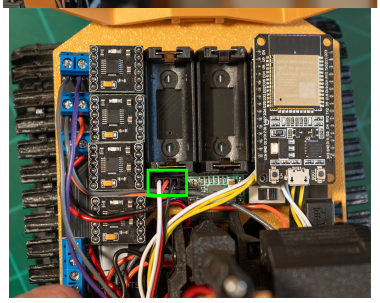
9.) Route the servo wires through the center and then out through the cutout in the dipper.



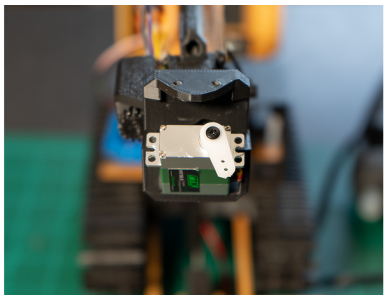
10.) Route the servo wires back down the arm as far as it can reach and then

extend it using a servo extension cable(Make sure to align the brown wires). Plug the servo into pin set "5-Claw" with the brown wire facing towards the label.



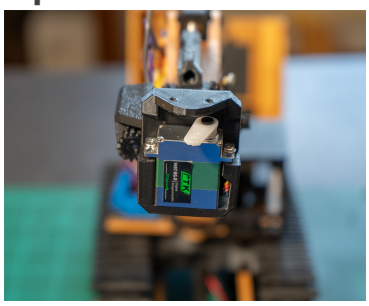


11.) Power on the excavator so the servo initiates to its startup position. Place the servo horn on at about 160 degrees if looking down from the top(This is also a good time to trim the servo horn so only 2-3 holes show that way the end doesn't run into the claw arms).

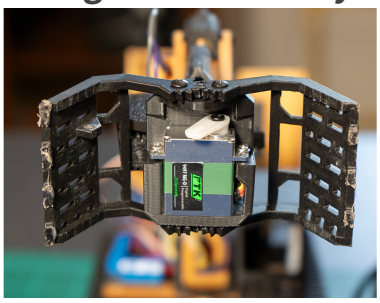


12.) Press the servo wire into the provided channel along the back of the servo holder and then press the servo into place, putting the servo horn on the right side of the servo holder if looking from the front. Lock the servo into place using the two silver screws

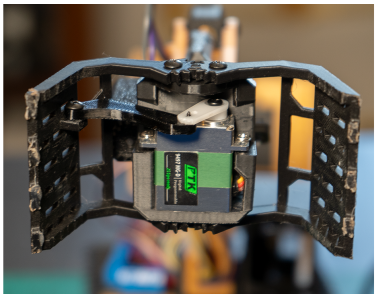
provided with it.



13.) Secure both the left and right claw arms onto the servo holder using 4 2.6x8mm screws. Taking care to mesh the gears correctly.



14.) Run the 3D Printed "Claw Servo Push Link" from the left arm(secured via a 2.6x6mm screw to the 2-3rd hole from the center of the servo horn using a smaller 2x6mm screw.



15.) Power up the excavator and make sure you have full range of motion on the claw using the "Triangle" and "X" buttons on the right side of the controller. If not power down and adjust the servo horn placement.

COMPLETE AND CONTINUE