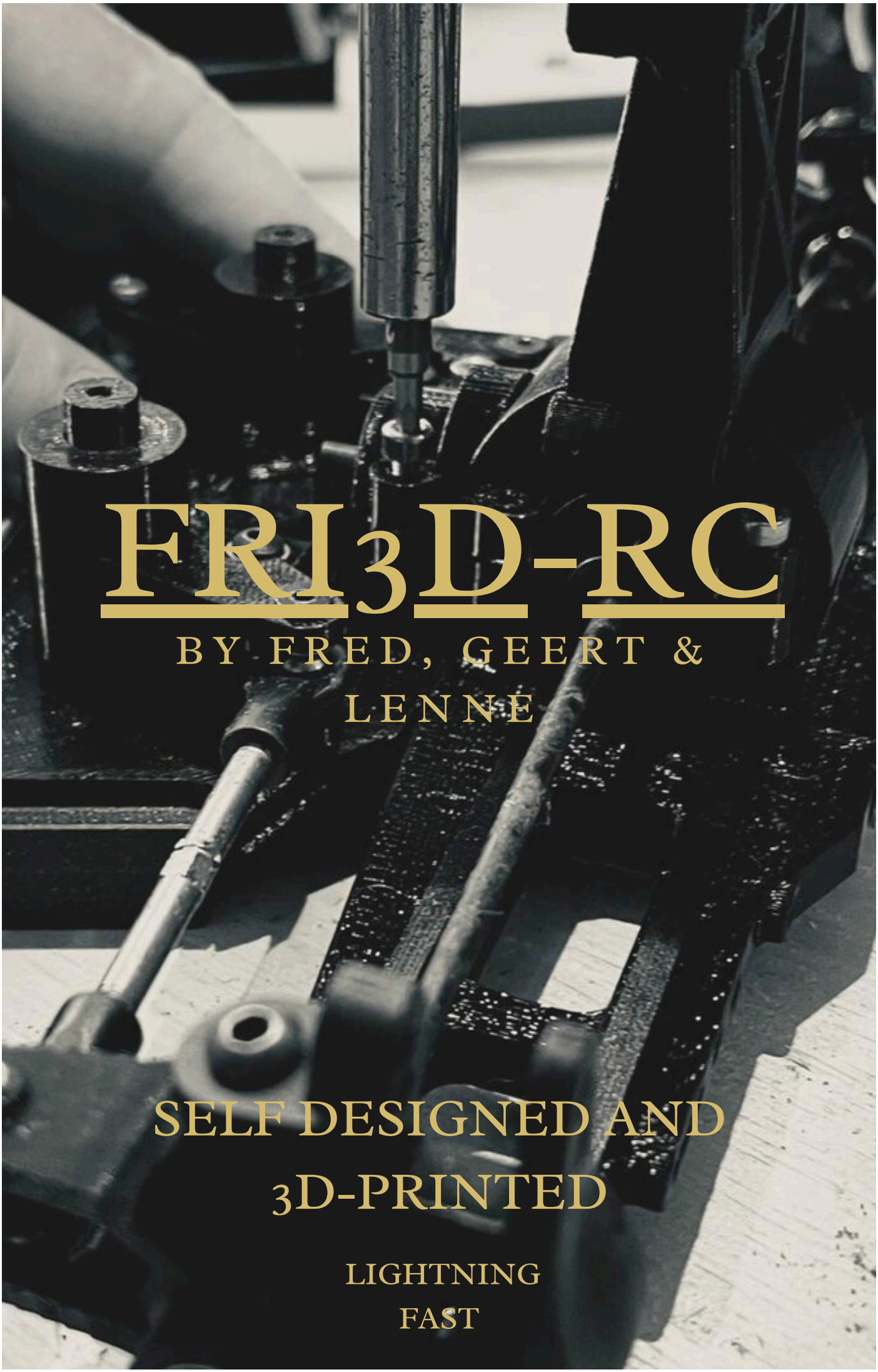

FRI3D-RC
BY FRED, GEERT & LENNE
SELF DESIGNED AND 3D-PRINTED
LIGHTNING FAST

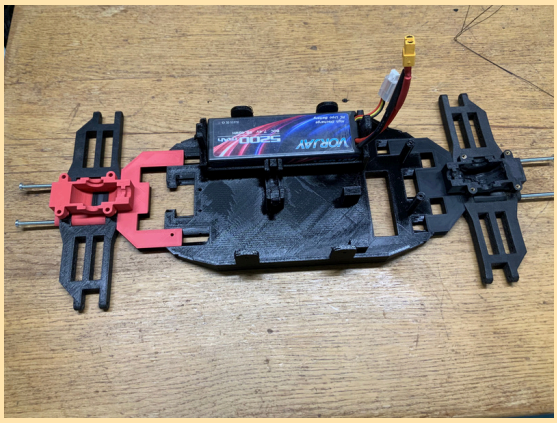
FRI3D-RC

WELCOME, EVERYONE. TODAY'S OBJECTIVE IS TO CONSTRUCT THE FASTEST AND MOST POWERFUL RC CAR POSSIBLE. THIS VEHICLE WILL BE POWERED BY BATTERIES, COMMONLY KNOWN AS LIPOS. TOGETHER, WE WILL ASSEMBLE A CAR THAT OPERATES SIMILARLY TO A FULL-SCALE VEHICLE, WITH NUMEROUS COMPONENTS WORKING IN UNISON.

THIS GUIDE WILL PROVIDE A DETAILED OVERVIEW OF THE NECESSARY STEPS AND CONSIDERATIONS TO ENSURE YOUR RC CAR IS NOT ONLY FAST BUT ALSO ROBUST. BY CAREFULLY SELECTING AND ASSEMBLING EACH PART, YOU WILL BE ABLE TO CREATE A HIGH-PERFORMANCE MACHINE THAT REFLECTS THE PRINCIPLES OF REAL-WORLD AUTOMOTIVE ENGINEERING. LET'S GET STARTED ON BUILDING YOUR ULTIMATE RC CAR.

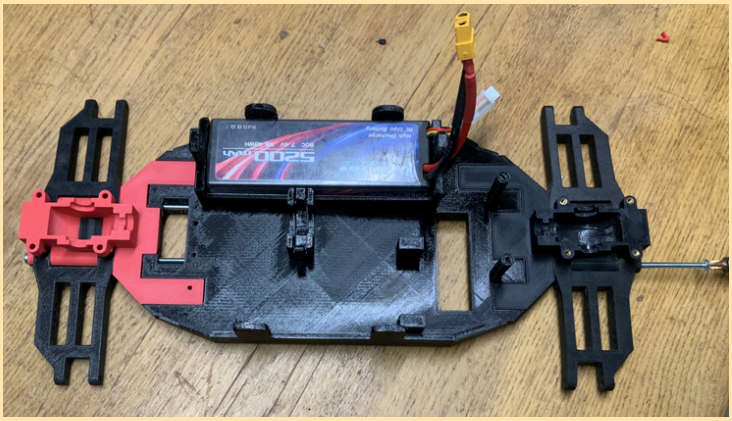
SUCCES!!!

THE BoDY



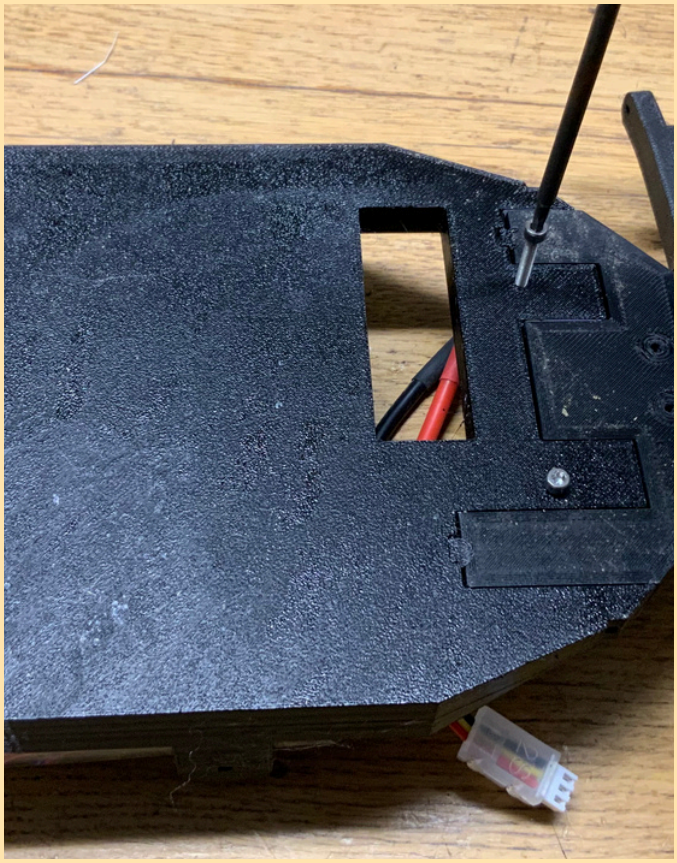
THE PIECES YOU HAVE SHOULD BE ASSEMBLED TOGETHER AS SHOWN IN THE PHOTO, THE FRONT, WITH THE TWO UNEQUAL PINS, AND THE REAR, WITH THE EQUAL PINS, SHOULD FIT PERFECTLY INTO PLACE. IF YOU NOTICE ANY EXCESS PLASTIC, FEEL FREE TO REMOVE IT SO THAT THE FRONT AND REAR SECTIONS ALIGN PERFECTLY. THE CLOSER THE FIT, THE BETTER THE OVERALL ASSEMBLY WILL BE.

NEXT, FULLY TIGHTEN THE SCREWS THAT WERE ALREADY PARTIALLY INSERTED. BE SURE TO APPLY FIRM PRESSURE WHILE DOING THIS TO AVOID DAMAGING THE SCREW HEADS, AS THEY ARE SOMEWHAT FRAGILE. WHEN FINISHING, AVOID OVERTIGHTENING TO ENSURE THAT THE ARMS, WHICH ARE ALREADY IN PLACE, CAN MOVE SMOOTHLY.



CUSTOM CAR

STEP 1

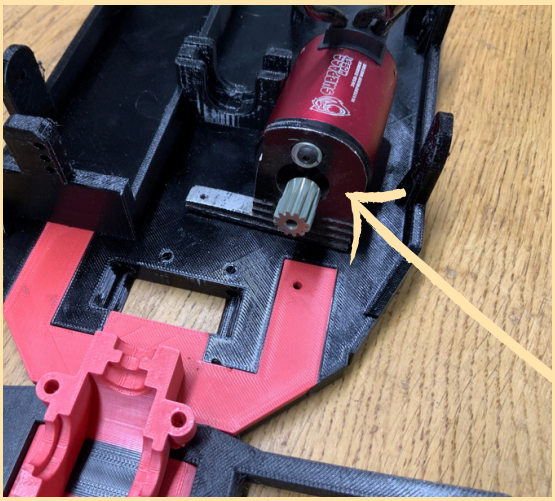


NOW, YOU NEED TO SCREW TWO 25MM SCREWS INTO THE TWO HOLES AT THE FRONT ON THE UNDERSIDE. THESE SCREWS WILL REINFORCE THE PINS ABOVE THEM TO PREVENT THEM FROM BREAKING.

BE SURE NOT TO OVERTIGHTEN THE SCREWS AT THE END, AS THIS COULD CAUSE THE PINS TO SNAP.

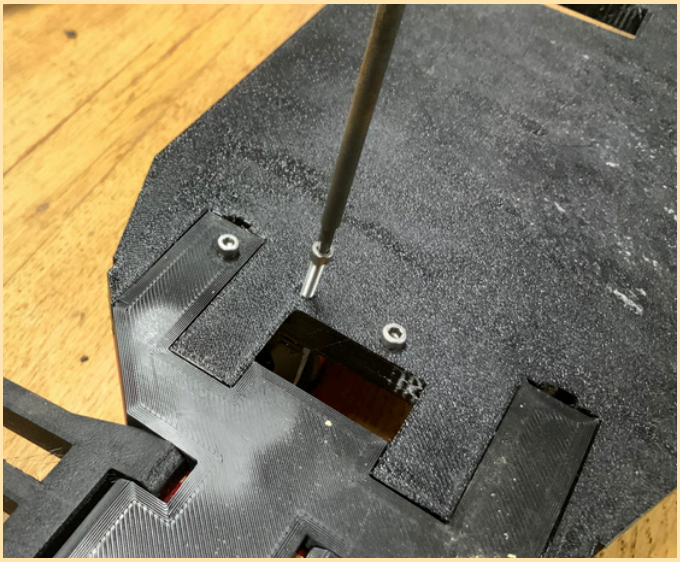
LEVEL UP

STEP 2



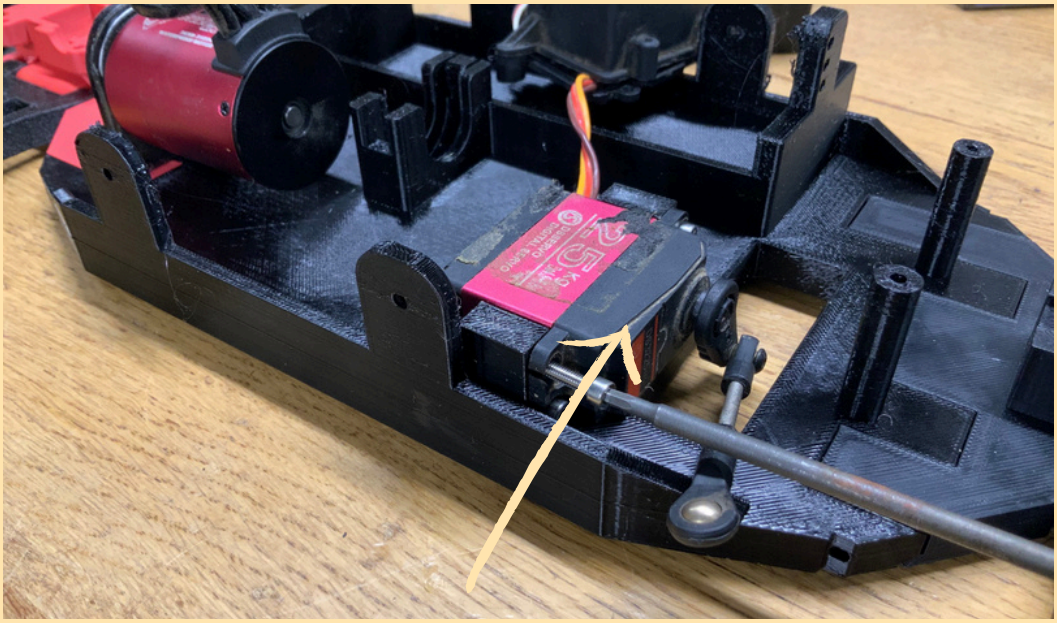
NOW, WE WILL ATTACH THE MOTOR. THIS IS THE DRIVING FORCE OF THE CAR—WITHOUT THE MOTOR, THERE IS NO MOVEMENT. THREE PINS CONNECTED TO ELECTRICAL WIRES EXTEND FROM THE MOTOR. YOU WILL CONNECT THESE LATER.
THESE WIRES ARE RESPONSIBLE FOR DELIVERING POWER TO THE MOTOR, AND THEY ALSO TRANSMIT SIGNALS FROM THE REMOTE CONTROL.

TO SECURE THE MOTOR, ALIGN THE METAL BRACKET AT THE BOTTOM OF THE MOTOR WITH THE THREE HOLES. FROM UNDERNEATH, SCREW IN THE FOLLOWING SCREWS IN ORDER FROM LEFT TO RIGHT: 12MM, 16MM, AND 16MM. THESE SHOULD BE TIGHTENED FIRMLY.



GAME ON

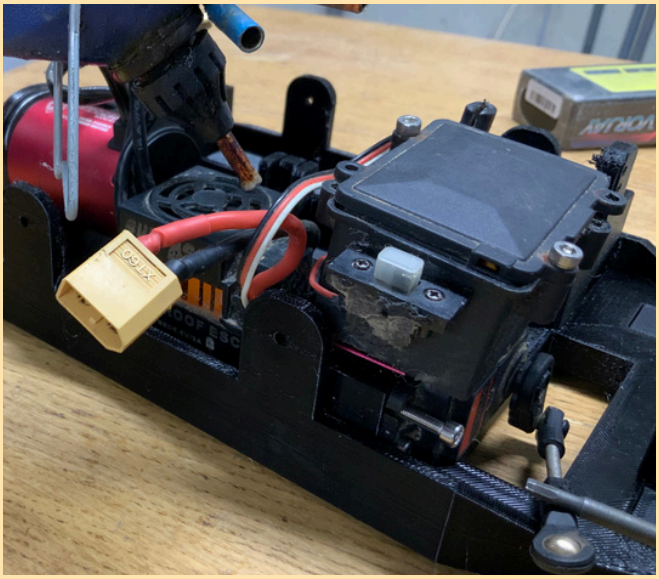
STEP 3



NEXT, IT'S TIME TO INSTALL THE SERVO. ATTACH IT BETWEEN THE TWO BLOCKS NEAR THE FRONT USING FOUR 16MM SCREWS. THE SERVO IS RESPONSIBLE FOR STEERING AND CAN ROTATE THE PROTRUDING PIN WHEN IT RECEIVES THE CORRECT SIGNAL, MAKING IT PERFECT FOR CONTROLLING THE DIRECTION OF THE CAR.

just breathe

STEP 4

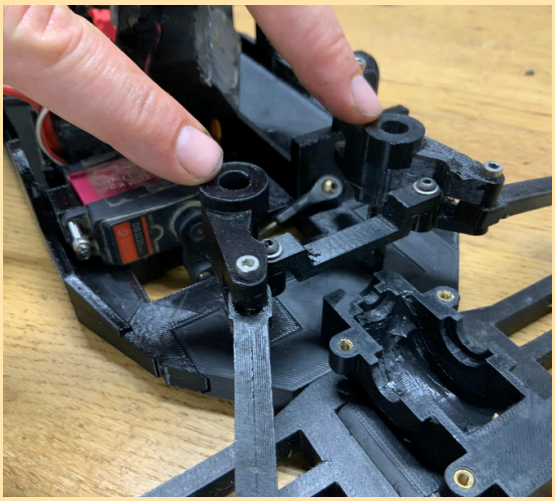


NOW IT'S TIME TO INSTALL THE ESC (ELECTRONIC SPEED CONTROLLER) AND THE RECEIVER. THE RECEIVER PICKS UP SIGNALS FROM THE CONTROLLER—LIKE WHEN YOU PUSH FORWARD—AND SENDS THAT SIGNAL TO THE ESC. THE ESC THEN TRANSLATES THIS SIGNAL SO THE MOTOR AND SERVO CAN CARRY OUT THE COMMAND.

START BY ATTACHING THE ESC BETWEEN THE MOTOR AND THE SERVO USING A HOT GLUE GUN. AFTER THAT, ATTACH THE RECEIVER ON TOP OF THE SERVO, ENSURING THAT THE RECEIVER IS POSITIONED CENTRALLY.

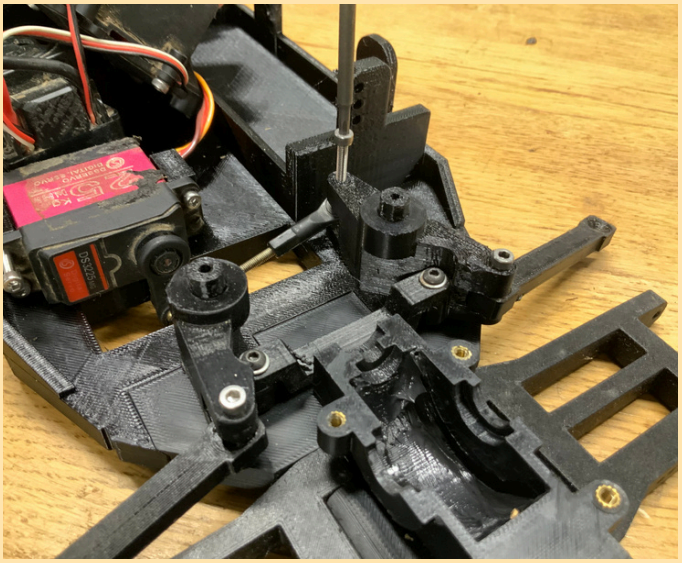
RC SUCCES!

STEP 5



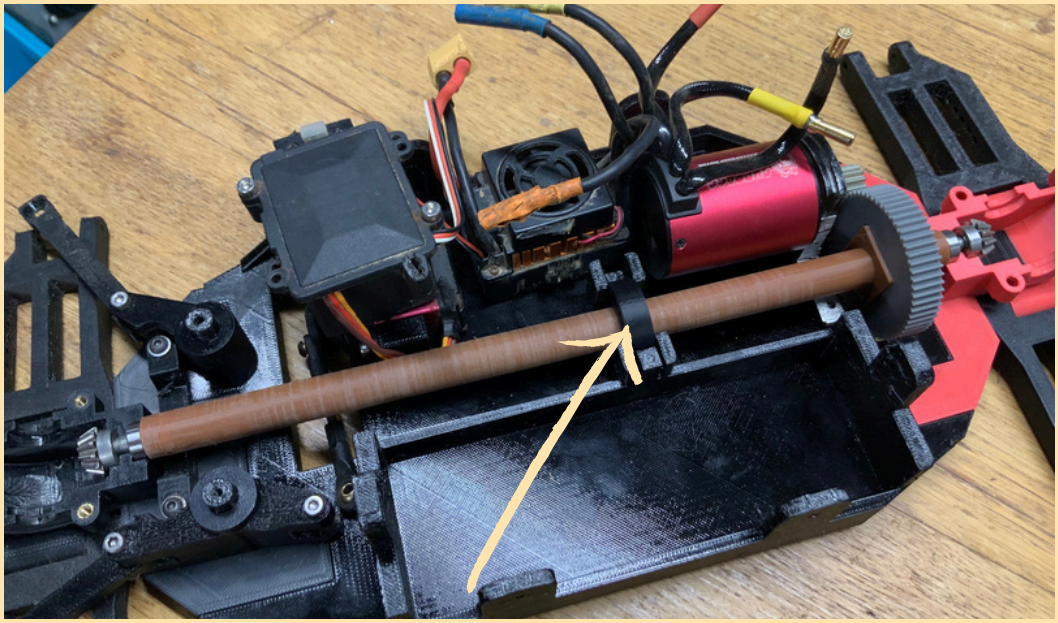
NOW, PRESS THE PROVIDED PART OF THE STEERING MECHANISM INTO PLACE OVER THE REINFORCED PINS. THIS COMPONENT CONVERTS THE MOVEMENT OF THE SERVO INTO THE NECESSARY MOTION FOR THE WHEELS TO TURN LEFT OR RIGHT.

NOW, SECURE THE ARM THAT IS ALREADY ATTACHED TO THE SERVO TO THE END OF THE STEERING MECHANISM, WHICH IS ALREADY POSITIONED ON THE PINS, USING AN 18MM SCREW. WE WILL ATTACH THE OTHER TWO ENDS LATER.



ACTION

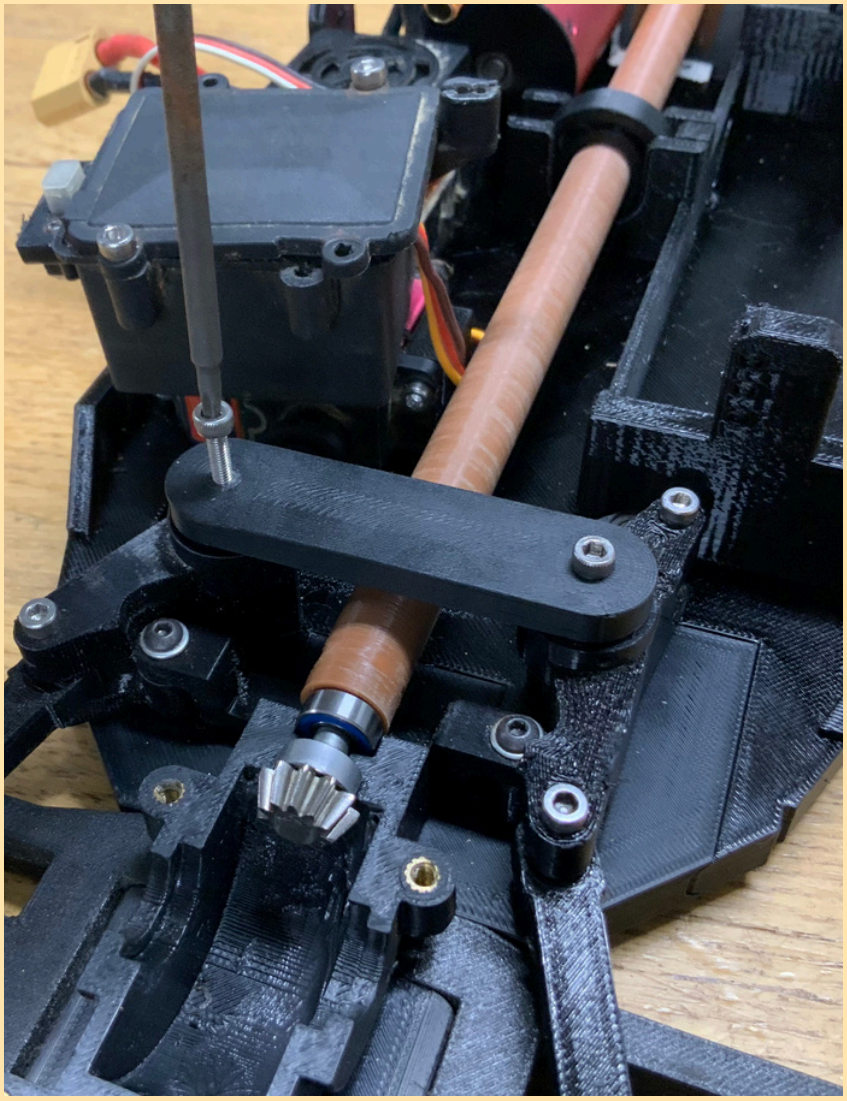
STEP 6



FINALLY, WE WILL ATTACH THE DRIVESHAFT. THIS COMPONENT TRANSFERS THE MOTOR'S MOVEMENT TO THE DIFFERENTIAL HOUSING AT BOTH THE FRONT AND REAR. FIRST, ENSURE THAT THE BEARING ON THE DRIVESHAFT IS SEATED CORRECTLY IN ITS HOLDER. NEXT, INSERT ONE END OF THE DRIVESHAFT INTO THE DIFFERENTIAL HOUSING, FOLLOWED BY THE OTHER END. MAKE SURE THAT THERE IS ONE BEARING ON THE INSIDE AND ONE ON THE OUTSIDE OF THE DIFFERENTIAL HOUSING.

fun

STEP 7



THIS IS THE LAST PIECE FOR THIS CHAPTER. IT HOLDS THE PINS TOGETHER AND ENSURES THAT THE DRIVESHAFT CANNOT COME LOOSE. IN THE TWO HOLES AT THE TOP, SCREW IN TWO 16MM SCREWS. TIGHTEN THEM SECURELY TO ENSURE EVERYTHING IS FIRMLY IN PLACE.

GREAT JOB