

10 MAY 2020

images & words Pat Skene

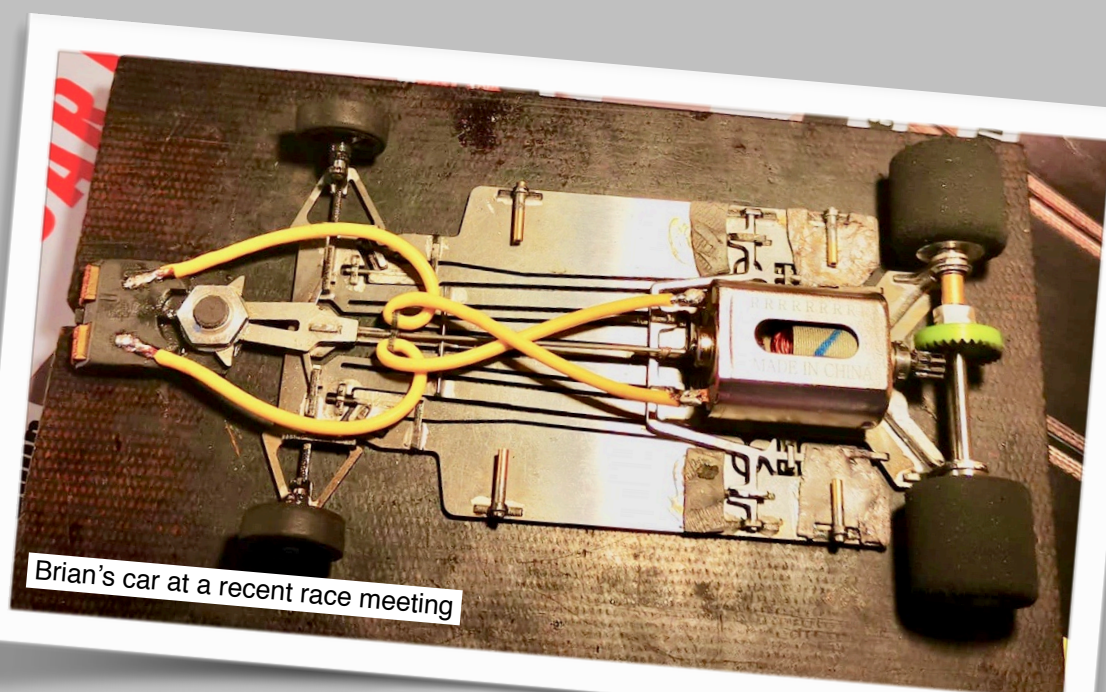
# BSP F2 BUILD

The Covid19 lockdown in the UK made me look around for something to build and as I have not raced in this class before I was tempted to build one. The latest chassis which is readily available for this class is the Brian Saunders designed one which only comes in kit form. It is quite a complex design and features some interesting design concepts from Brian's creative mind.

F2 is a BSCRA class which is effectively ISRA F1 rules but with an FK

type motor. I have used a JK Hawk 7 in this build. I have to say it is a good few years since I have built a steel chassis kit but it all came flooding back. I also have to add that I had not seen the chassis built so had to go blind in a few areas. Keith Gibson who sells Brians kits sent

me some photos which explained where a lot of the parts go. Hopefully this article will fill in the gaps and encourage racers to have a go at building one themselves.



Brian's car at a recent race meeting

First some basic rules to follow for building all types of steel chassis.

- build it the right way up. More important for angle winders. For this build I have built it smooth side down. Brians chassis a quite scratched on one side which I prefer to be on the top.
- Cleanliness is most important. Before building and cutting parts off I wash and polish the chassis with rubber blocks varying in smoothness and finish off with apples on fine emery paper

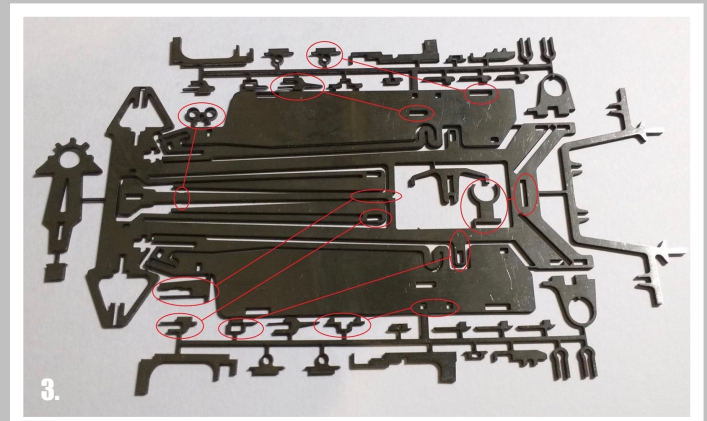
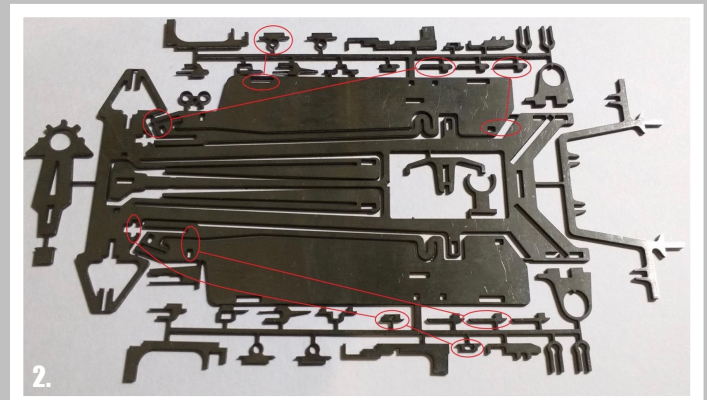
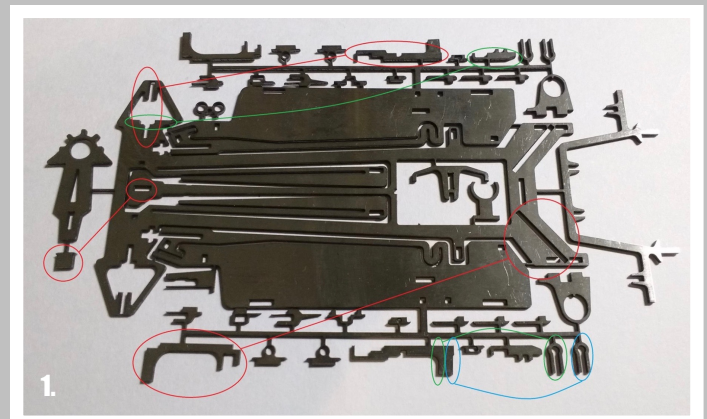
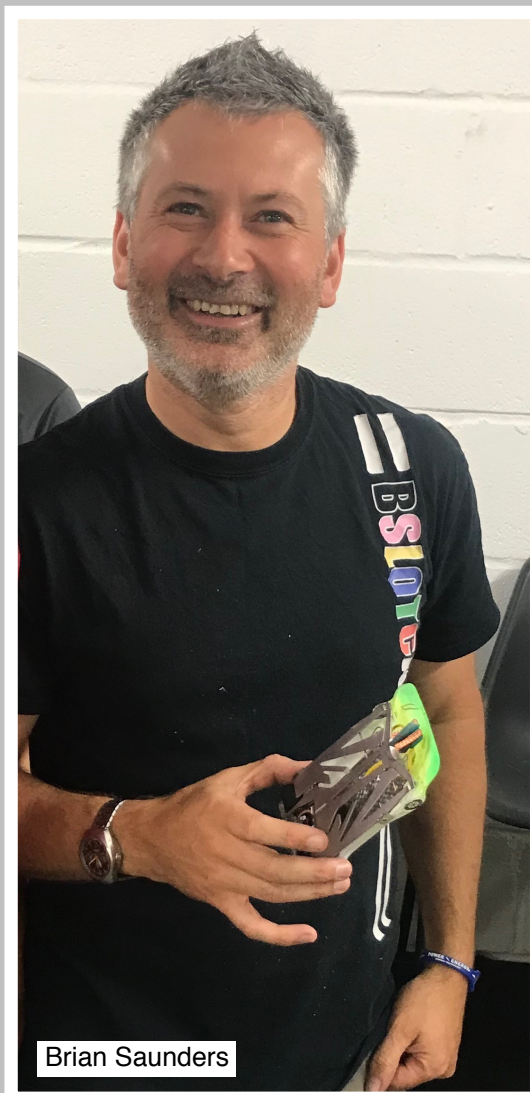
before washing again. See the Lee parsons video on Face Book.

- The chassis must be totally flat. Build it on a flat tech block. The chassis kit I had was super flat to start with which was great.
- Solder by applying a SMALL amount of flux on the top side of the chassis at the part too be soldered. Then apply solder on the iron to the underside of the chassis. The flux will attract the solder through into a neat joint. Then polish the excess solder off

by rubbing the underside of the chassis on fine sand paper.

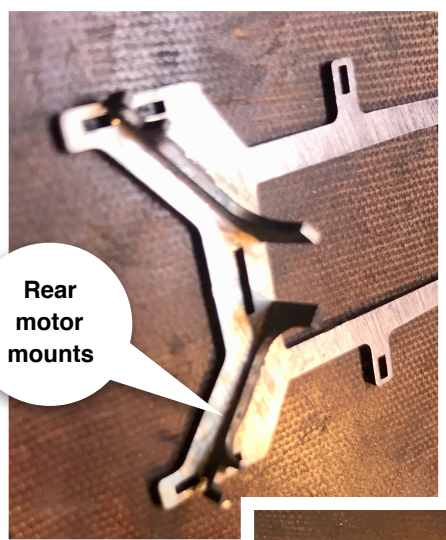
- Have a jar of soapy water handy along with a tooth brush to clean the flux off the chassis after every joint is made.
- Take great care when cutting parts off the kit tree so that you don't loose any. I place them in part bins allocated to the front, middle and back of the chassis. Remember to polish the edges of the parts with a diamond burr to ensue clean strong solder joints.

**Pictures showing the allocation of individual parts. It also shows a reasonable building order. Starting with image 1 and working your way through.**

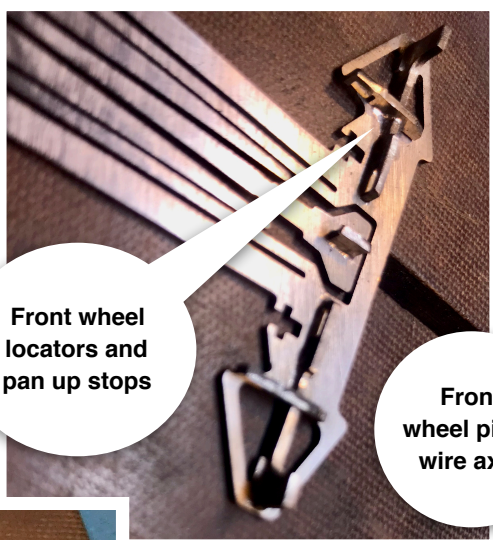


f2

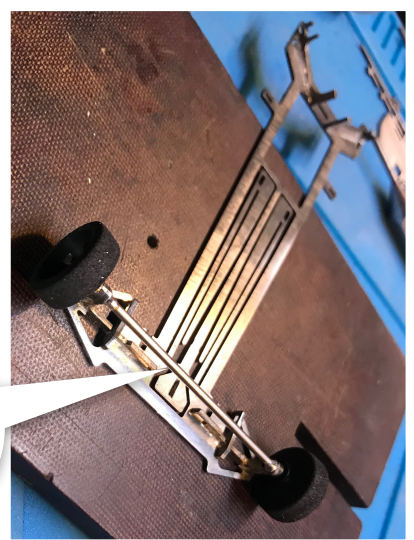
# SLOT CAR RACING NEWS EXTRA



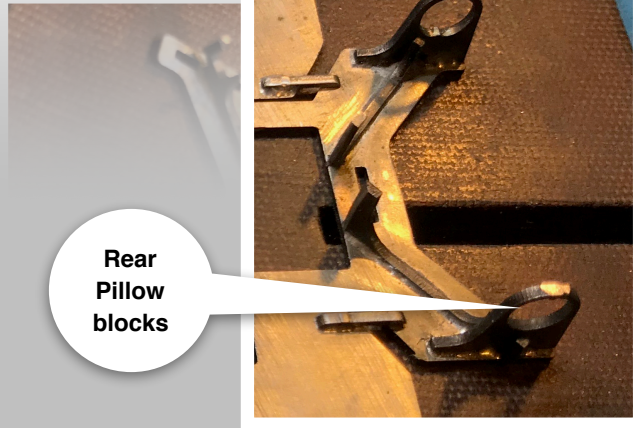
Rear motor mounts



Front wheel locators and pan up stops



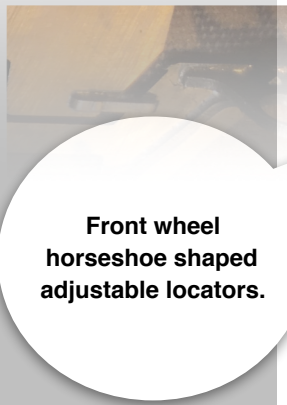
Front wheel piano wire axle.



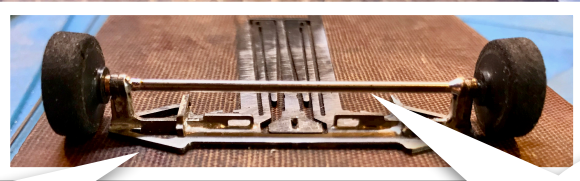
Rear Pillow blocks



Spacers inserted and track measured to 68mm as per the rules. Front wheels are plastic Horky ones. Recek has bought out some sexy anodised steel wheels if you prefer.



Front wheel horseshoe shaped adjustable locators.



The piano wire axle is cut later to create two stub axles.

f2

I like to make sure the chassis is hard on the deck for most tracks with the wheels just touching.



I use a 3/32 axle as a pacer below the guide tongue to help make sure the guide tongue is level and at the right height when soldering.

Front pan hinges.

Front wheel axle cut to create axle stubs

Now the centre section is complete time to take a rest and go and thoroughly scrub it with an oven cleaner material like "Astonish"

Guide tongue assembly in three parts. 1 spacer/guide steering stop, 2 guide tongue and 3 locating peg. Tin the chassis, spacer and guide tongue before final soldering.

# f2



# SLOT CAR RACING NEWS EXTRA



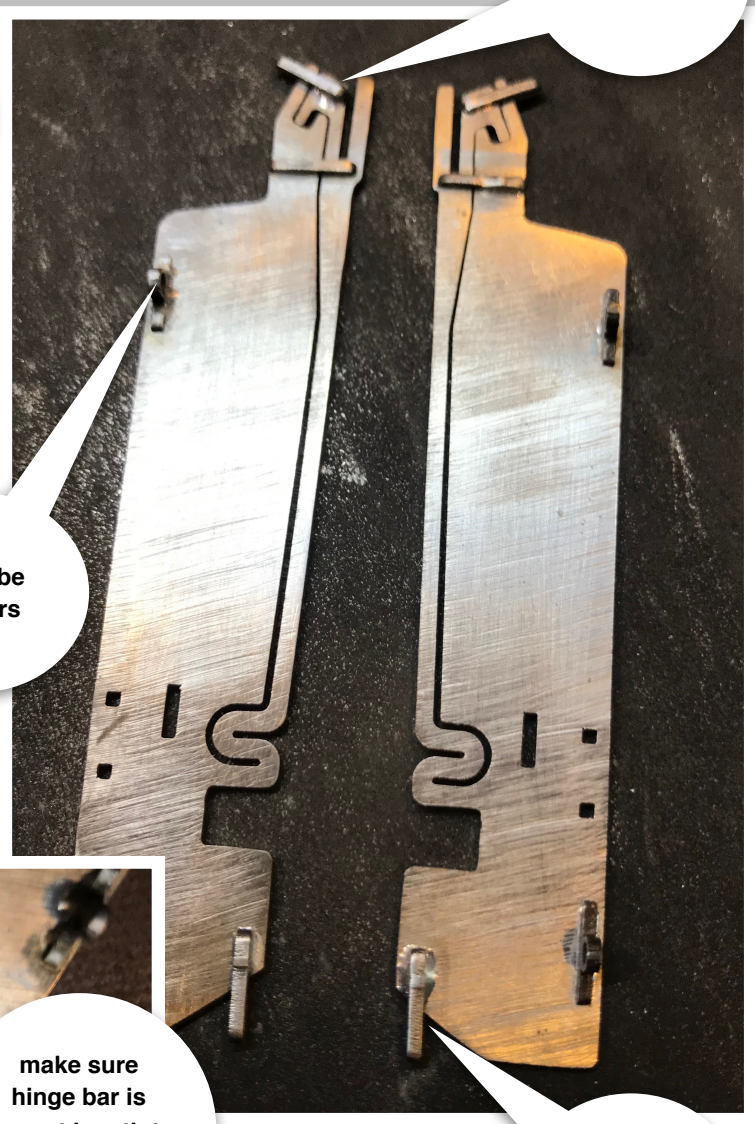
pan soldered on the underside



solder polished off by scrubbing on sand paper



scrub on sandpaper



pan stops

pin tube holders

piano wire front hinge bar



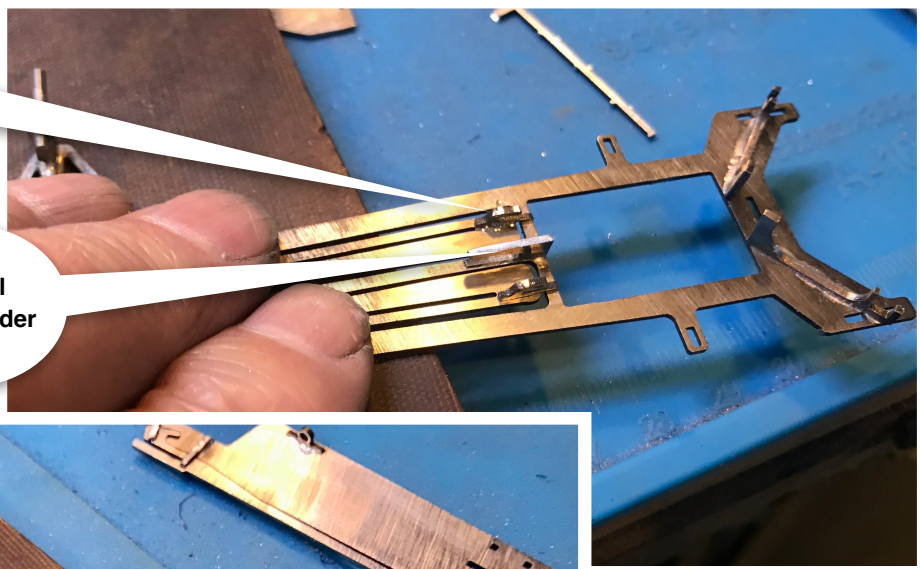
make sure hinge bar is correct length to allow pans to move forward

pan stops

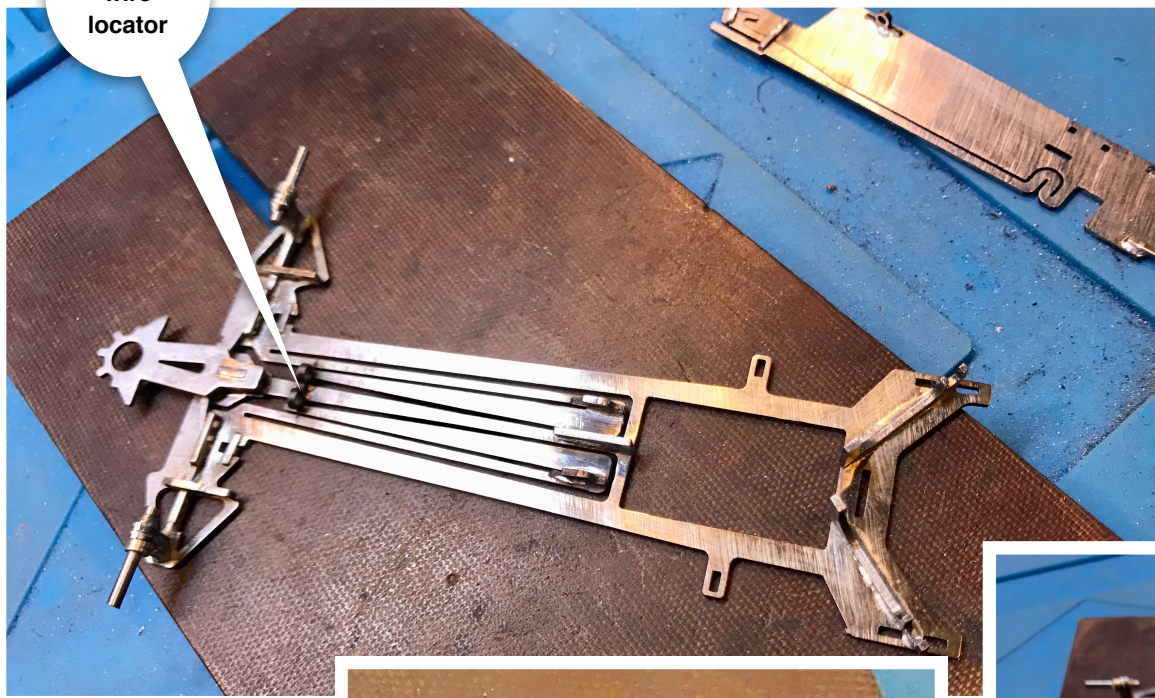
# f2

Bite bar stops

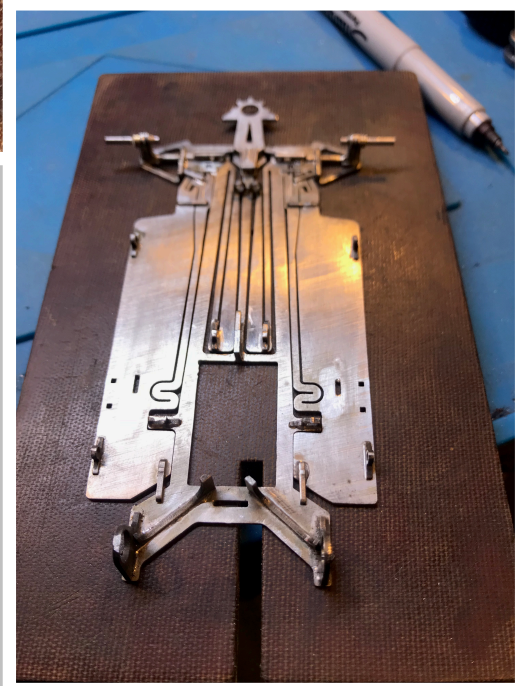
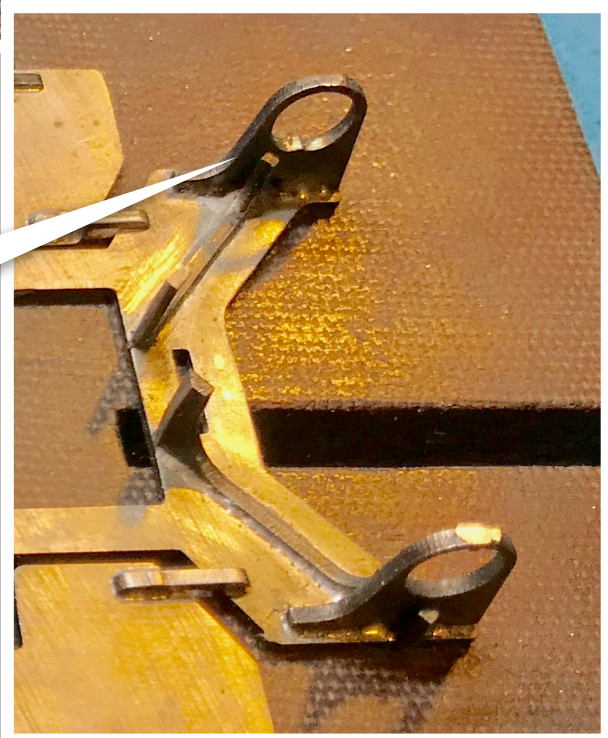
Central spine holder



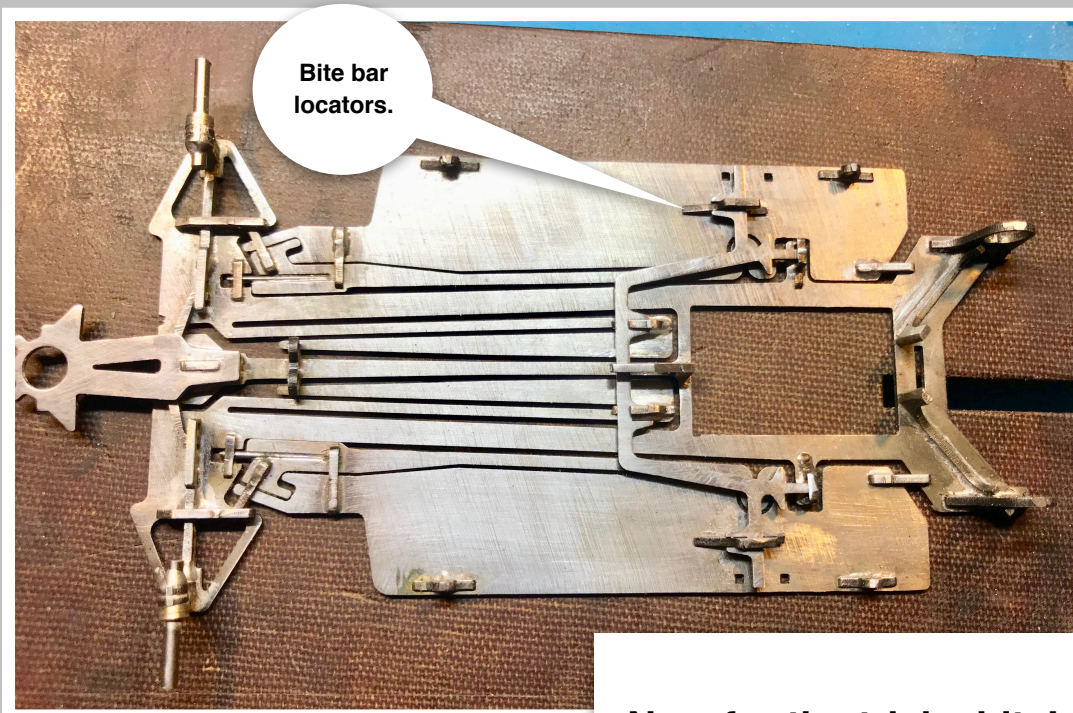
lead wire locator



Rear Pillow blocks

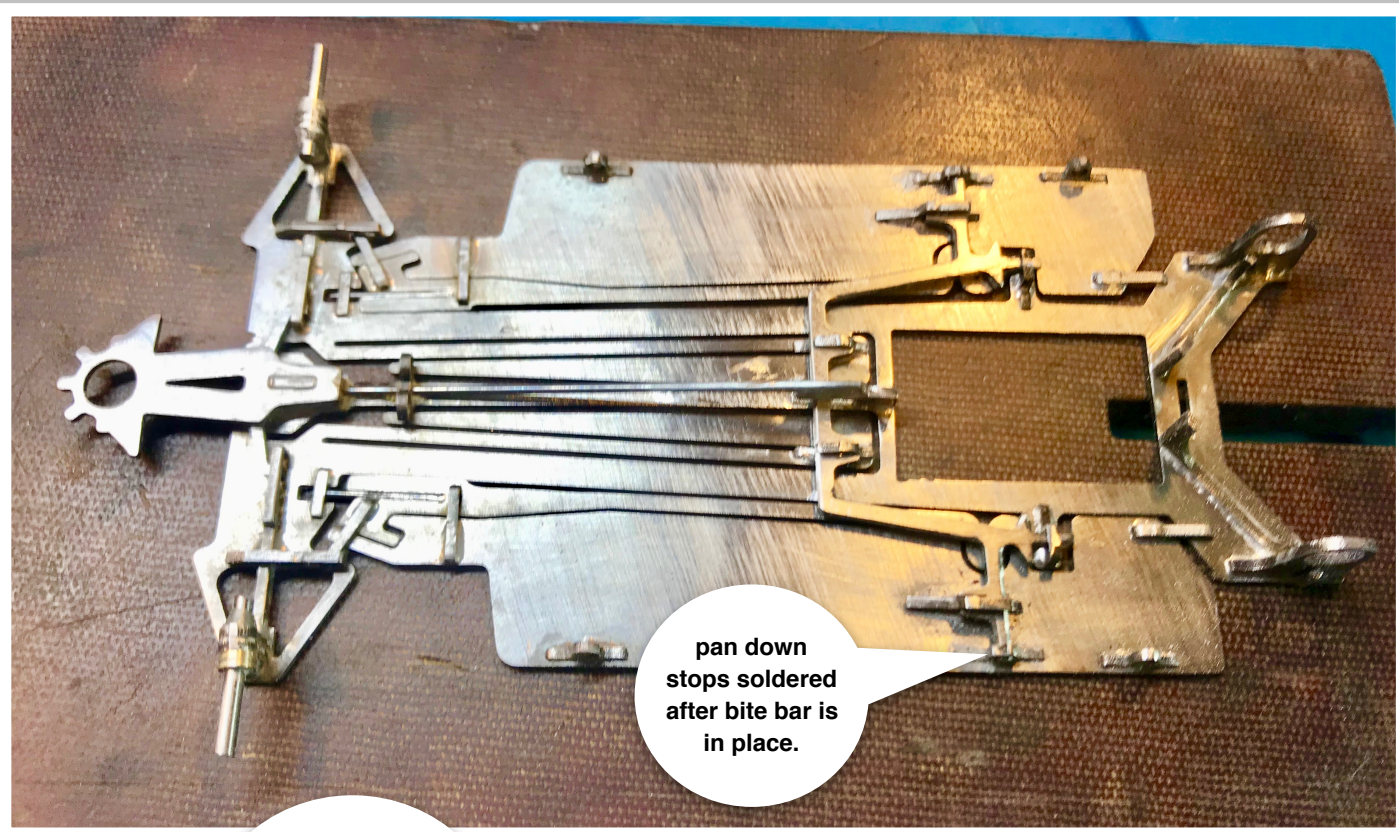


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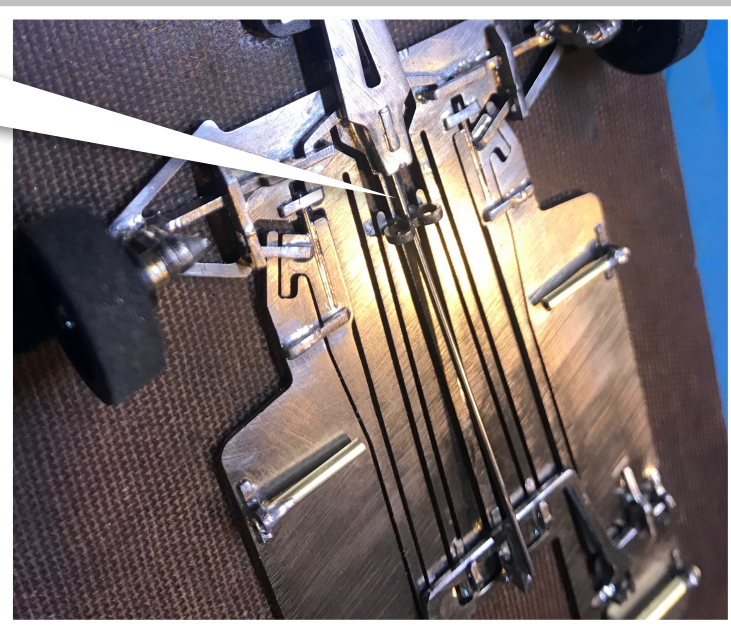


**Now for the tricky bit. Install the bite bar. I had a couple goes at this before I could get the movement of the pans to be nice and smooth. The pan bite bar locators in the middle of the pan are adjustable forward and back. I found the pans worked better when this stop was set as far back as it could go. I may adjust this later after testing and discussion with Brian.**

# f2

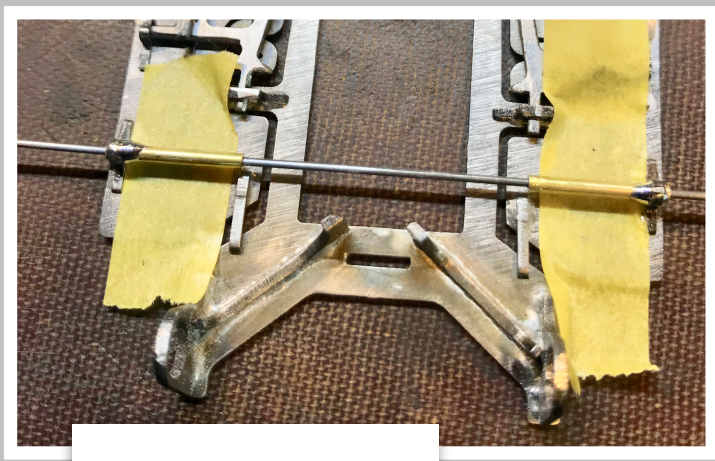
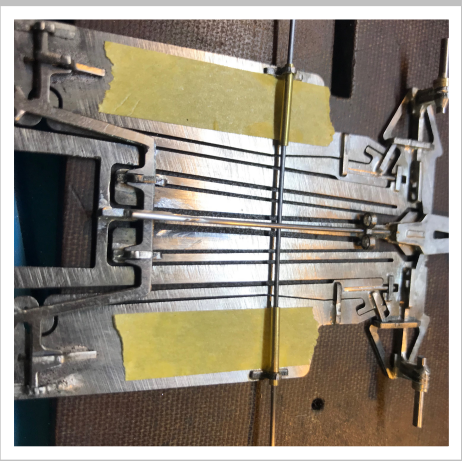


piano bar spine pushed through hole in lead wire locator and then soldered to spine locator

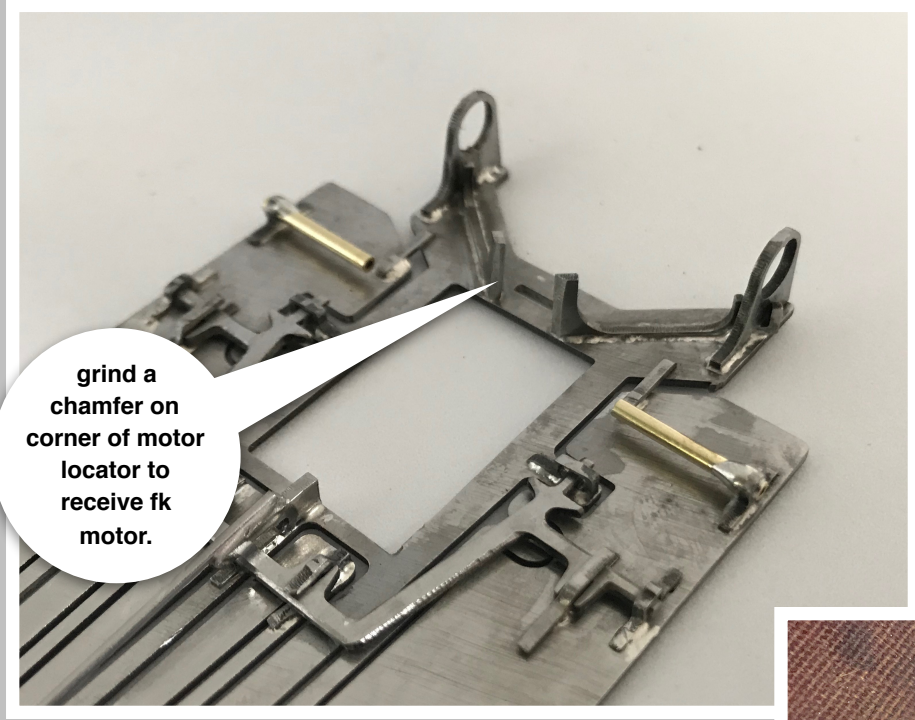


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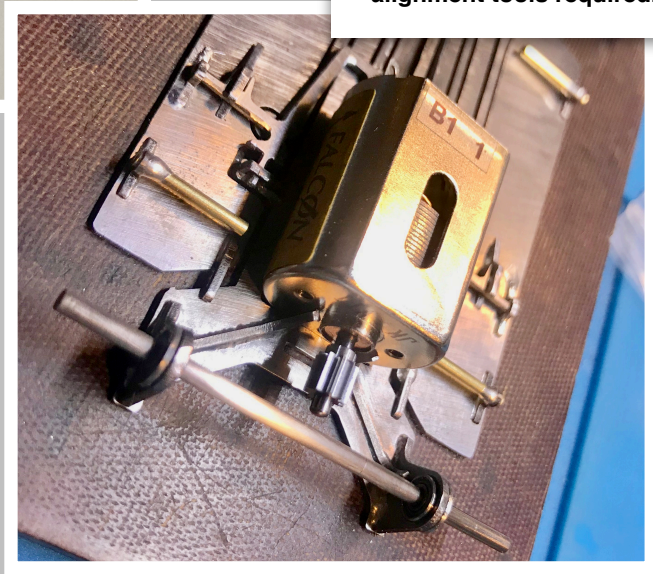


I use piano wire to help locate the pin tubes. Tape is there to stop flux going onto the chassis.



grind a chamfer on corner of motor locator to receive fk motor.

Once the motor locaters are chamfered the motor fits perfectly into the chassis without any alignment tools required.



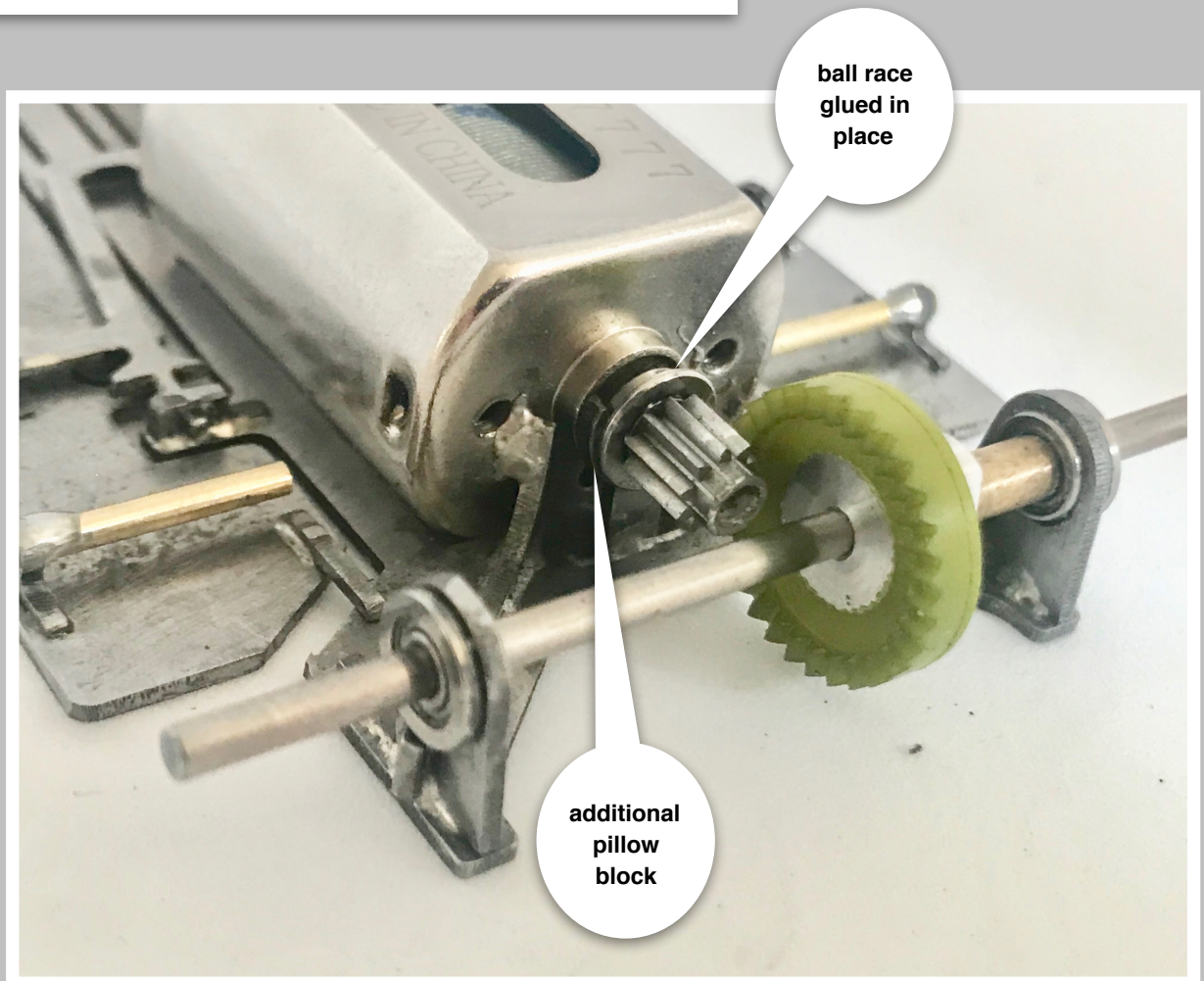
# f2

Now for the piece of Brian magic.

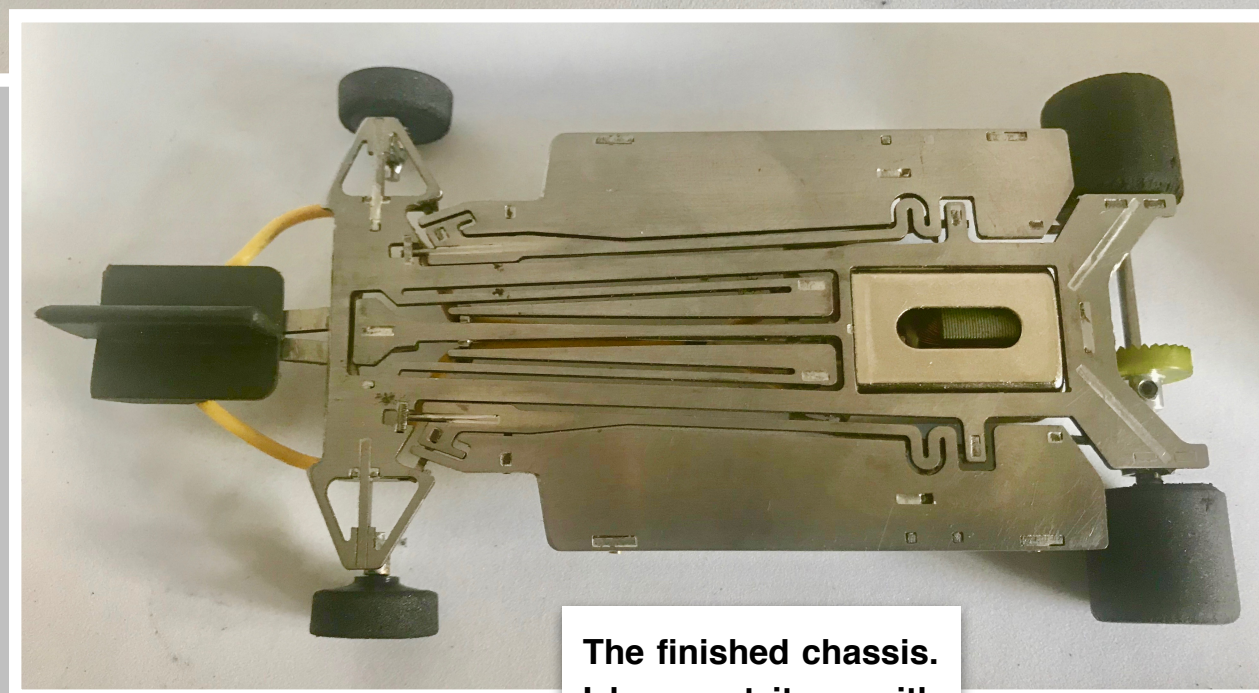
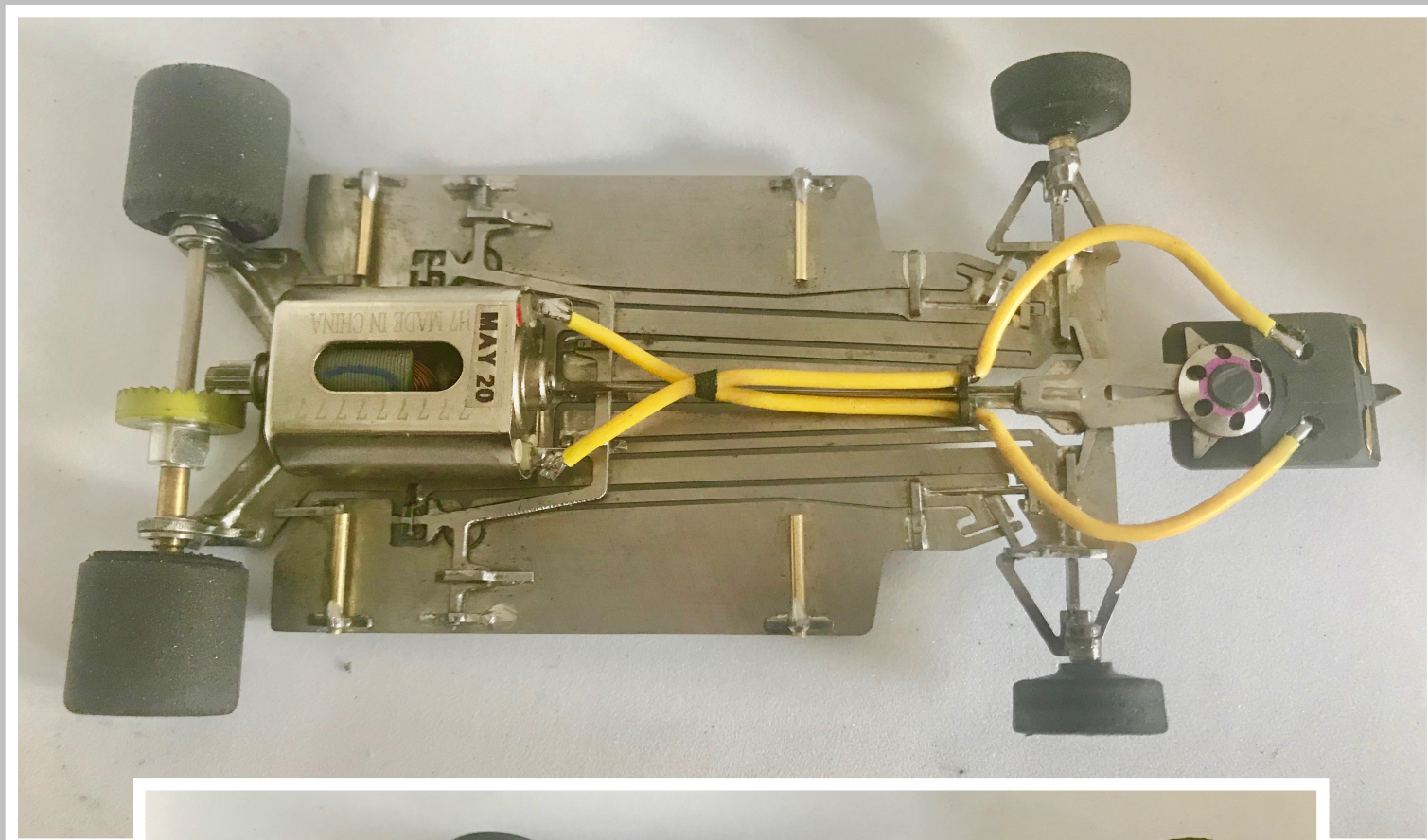
Having built all of the above you will see there is a piece left over which looks like a superfluous pillow block. It isn't it is for a third ball race.

At the worlds I was talking to Brian and he has pulled apart a lot of FK motors. He says the problem is the can bearing and not the brushes. He tried soldering a ball race to the motor and noticed an increase in performance and reliability/motor life.

Rules don't allow a ball race on the can so he puts it on the chassis. As the can bearing wears out the ball race takes over. Typical Brian, brilliant.



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**The finished chassis.  
I have set it up with  
an S&K gear and  
ARP pinion, Cahozza  
guide, JK guide nut,  
Slick 7 lead wire and  
JK Hawk 7 motor.**

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