



# PINE HILLS DIRT RACING - A GUIDE BOOK TO RACING

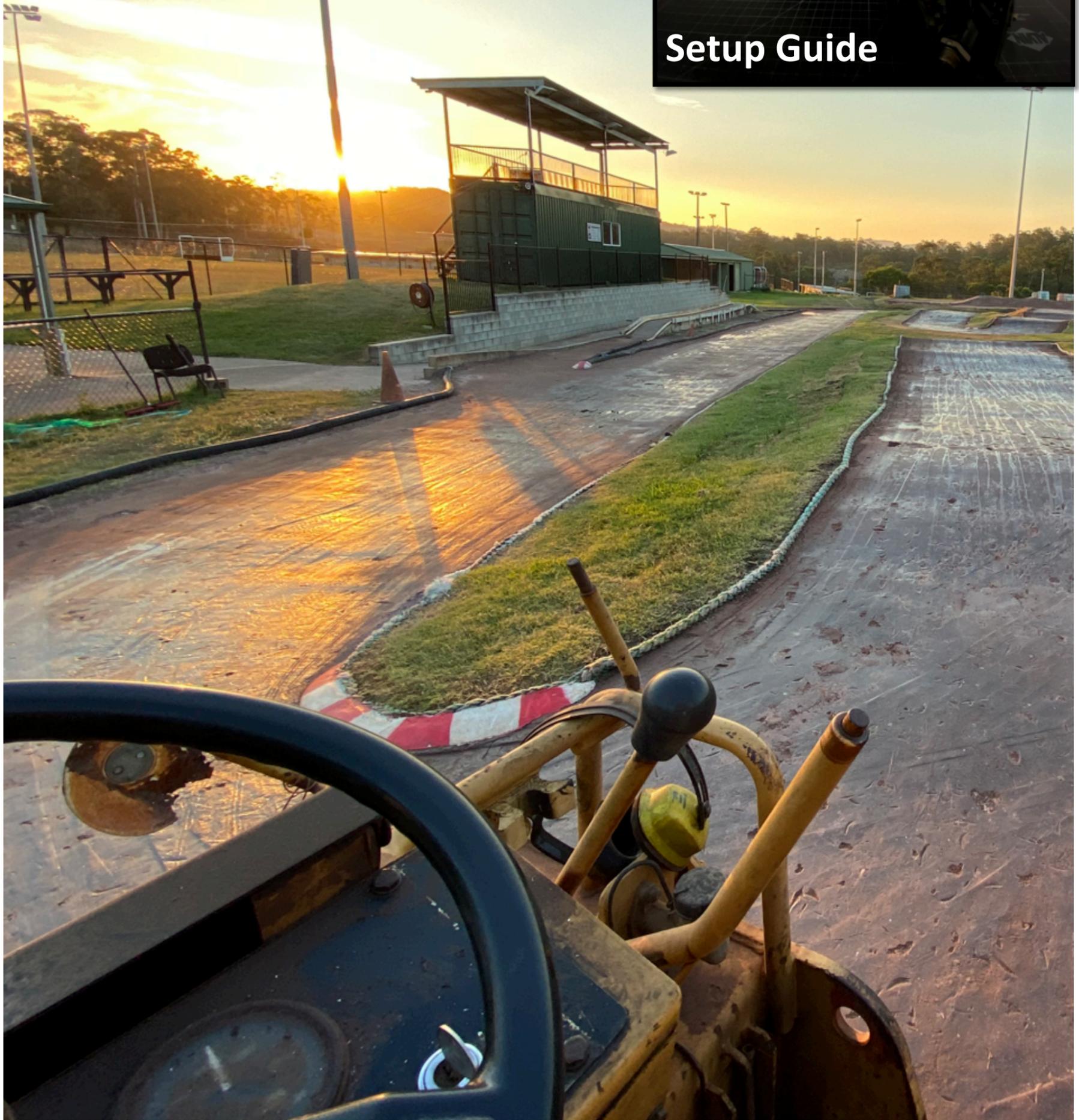
Version 1 - Australia's Premium Offroad Racing Facility

**A complete guide book to getting into racing, covering everything from setting up the car to learning to drive.**

Written by Zac Ryan



**Setup Guide**



# PINE HILLS DIRT RACING - A GUIDE BOOK TO RACING

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# 1.0 - Facilities

Fully Established Canteen Serving hot and cold food!



Large Bitumen Carpark



Undercover pit areas, including lights and power



Permanent Bathroom facilities



Massive drivers stand designed to accommodate up to 15 drivers



Large light poles for night racing



Permanent professional track and layout



Compressor bays



## 2.0 - How to Get into Racing

**?** **What is this?** Pine Hills Dirt Racing has been an R/C club stretching back to the 1990's. This is a dedicated facility and track specifically designed to accommodate r/c car racing. PHDR aims to provide to the community, racing for children (typically 12 yrs or older) in cost-effective electric stock racing; through to classes for all ages yrs in ready-to-run buggies; through to high-end custom nitro and electric vehicles. One of the great pleasures is seeing parents and their young children competing together in a safe and friendly environment.

 **Webpage** - Full details about the club, learn more about our club! <http://pinehillsdirtracing.com/>

 **Committee Page** - Where the committee posts information about practice and racing, first place to check for announcements [www.facebook.com/phdradmin](http://www.facebook.com/phdradmin)

**Members Page** - This is a public group that anyone can join, this is a place for anyone to discuss racing, inquire about information etc. [www.facebook.com/groups/439369329569849](http://www.facebook.com/groups/439369329569849)

**When can I get on the track?**  
**Practice:** If you want to get into racing but have never raced before its ok, we offer lots of opportunity to come and practice so you can learn to get around the track before coming to a club race. Practice is open to anyone and is \$10 for as many laps as you like. We announce practice sessions on the committee and members page, they are typically every Wednesday/ second Friday.  
**Racing:** We race every fortnight usually on a Sunday and in summer typically on a Saturday night under lights. Club racing is \$15 for the day. PHDR Member (inc Reciprocal Clubs) \$15 first race class \$5 per additional class  
 PHDR Juniors \$6 per class  
 Temporary-Members (limit of 3 events pa) \$20 per class  
 After Hours Access – The committee holds regular practice days during the week and on weekends

**What cars do we use?**  
**The main classes we race are:**  
 1/8 Nitro Buggy - **Main Class**  
 1/8 Electric Buggy - **Main Class**  
 1/10 Electric buggies, Trucks and Short Course Trucks  
 1/8 Truggy

**Transponders**  
 Transponders are used in the car which allow the electronic lap counting system to record your lap times! AMB is the only brand we use, it plugs into your receiver. You can buy at your local hobbyshop.



**Age?** There is not really a minimum age, if the kid is really young we prefer to have adults marshal as the cars can travel quite fast on the track.

**Membership**  
 Full calendar year (membership now renewable in Jan/Feb of the following year),  
 Why become a member? Reduce your racing fees and help support the club, membership fees goes to maintaining the track and facility.  
**Full Adult membership** – 1 year \$80  
**Full Junior Membership** – 1 year \$30 (Junior is aged 15 or under)

You can become a member through the link below, link also in our "About" section on our PHDR facebook page:  
<https://forms.gle/ZUUVYuebfcQsk2b78>

### Where can I buy a car and how much is it going to cost? Full detail on parts in Section 9.0-11.0

Local Hobbyshops	Hobbyshop Name	Number	Website	Location
	OZ RC	(07) 3265 4547	<a href="http://OZRC.com.au">http://OZRC.com.au</a>	1/129 Rd E, Geebung QLD 4034
	Speedy RC	0418 776 974	<a href="http://speedyrc.com.au">http://speedyrc.com.au</a>	Mansfield, QLD (no shop front)
	Mischief and Mayhem	(07) 5441 4731	<a href="http://facebook.com/mischiefandmayhemhobbies/">facebook.com/mischiefandmayhemhobbies/</a>	960 Nambour Connection Rd North Nambour
	rchoobbiesgoldcoast	(07) 5594 7900	<a href="http://rchoobbiesgoldcoast.com">rchoobbiesgoldcoast.com</a>	Unit 6/22/20 Manufacturer Dr, Molendinar QLD 4214
	Hearn's Hobbies	(03) 9614 3603	<a href="http://www.hearnshobbies.com">www.hearnshobbies.com</a>	295 Flinders St, Melbourne VIC
	2nd Hand Cars	<a href="http://www.facebook.com/groups/AustralianRCTraders">www.facebook.com/groups/AustralianRCTraders</a>		You can also find 2nd hand cars for sale here

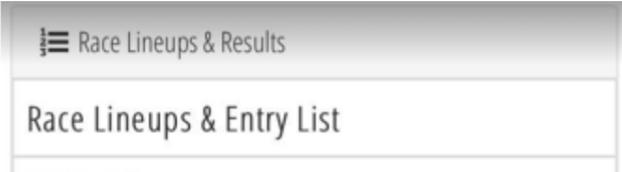
1/10 Short Course		Good Brands	What you will need	Other Info
		Team Associated Team Losi Traxxas	Typically these come in a ready to run package which include everything you need to get the car racing.	RC Hobbies GoldCoast have test kits and a small indoor track where you can test and try a car before you buy.  Short Course is a good cheap entry into rc racing.

1/10 4wd Electric		Good Brands	What you will need	Other Info
		HB Racing Team Associated Team Losi Yokomo Tekno Kyosho	Car kit Radio/ Transmitter Charger Batteries Speed Control Servos + Tires	A good cheap entry point to get into more serious racing. Being a smaller class the equipment is generally cheaper then its 1/8th counterparts.

1/8 Electric Buggy		Good Brands	What you will need	Other Info
		HB Racing Team Associated Team Losi Mugen Seiki Tekno Kyosho	Car kit Radio/ Transmitter Charger Batteries Speed Control Servos + Tires	<b>Hearn's Hobbies</b> have a race package with all the best gear in a combo deal. You can find out about this special package at:  <a href="http://www.hearnshobbies.com/collections/1-8-buggy-rtr-race-combo-deal">www.hearnshobbies.com/collections/1-8-buggy-rtr-race-combo-deal</a>

1/8 Nitro Buggy		Good Brands	What you will need	Other Info
		HB Racing Team Associated Team Losi Mugen Seiki Tekno Kyosho	Car kit Radio/ Transmitter Charger Receiver Battery Engine .21 Servos + Tires	This class is for the more experienced racer, please discuss with a committee member if you wish to know more about this class and we can give you more information on the best way to get into Nitro!

# 3.0 - Club Racing

Intro	<p>The most important part about club racing is that its for all skill levels and ages. PHDR aims to cater to both the new/novice driver and the top end racer. We all started as a beginner and there are lots of different experience and skill level at the club, so if you're thinking oh I cant do this because i'm not good enough, think again!! These steps can be followed to make club racing super easy!</p> <p>We also offer weekly Wednesday night practice sessions from 4:30-9pm, this is a great way to meet some racers in the club and learn the track.</p>
1.0 When you turn up	<p>First thing to do is unpack and find a pitspace, usually there is enough room that you can pit in the permanent undercover pit area. If it's a big race meeting we recommend bringing a portable table and chair, you can pick these up at bunnings pretty cheaply. For most club days though you should be pretty right to pit under the permanent pit area.</p>
2.0 Sign up for the day at race Control	<p>Usually one of the committee members will be in the race control, which is the green container under the drivers stand. Its best you write down your transponder number and head up and see the race director. They can enter in your details into the live timing software and ensure that you're in the right class for the day.</p> <p>Once you have signed up head to the canteen where you can pay for your nominations. Club days are \$15 for members and \$20 for non members.</p>
3.0 Open practice	<p>We usually have an open track for an hour before racing starts, if you get to the track early enough and set up you can do some practice before the race meeting to make sure your car is working as required. A few good things to check are:</p> <ol style="list-style-type: none"> <li>1. You car is driving straight, so many racers dont check their trim regular enough and the car might drive slightly to one side. You can correct this with you radio trim settings.</li> <li>2. Make sure you brakes are set correctly, again this can be done with your radio brake end point adjustment. For nitro you can also apply it through your brake linkages, make sure you have slightly more front brake then rear, or the car will loose rear traction under brakes.</li> <li>3. Make sure your transponder is working, the computer will call your name and your lap time as you cross the line.</li> <li>4. Marshaling is not compulsory in practice, but it is a good way to learn the track by watching other cars.</li> <li>5. Setting your car down: Always start from the staging area/pitlane, then queue up at the drivers stand (Up stair). <b>DO NOT</b> put your car on the straight while waiting for your turn - if a car is travelling at high speed on the straight and hits your car, both will be damaged.</li> </ol>
4.0 Heat Sheets posted and Drivers Briefing	<p>Once all the nominations have been taken the race director will post the nominations where you can see which heat you are in. We usually post the latest link to our facebook page so keep an eye on that page. You can also access via the PHDR live RC page, this is where all the live timing data goes. This webpage is updated live. Find the heat sheet under the Race line ups and Results sections, click the link below:  <a href="https://phdr.liverc.com/results/">https://phdr.liverc.com/results/</a></p> <div style="display: flex; align-items: center; justify-content: center;">   </div> <p>Once the heats are posted the race director will usually have a small drivers briefing to talk about how the race is going to be run and marshaling responsibilities. The heat list is usually the order of the races so check which heat you are in so you know when you're up. The first race is usually 5 minutes after the drivers meeting, so make sure your car is prepared to go before the meeting commences.</p>
5.0 Qualifying	<p>Have your car ready to go a few minutes before the end of the previous race, there are computer screens up to display remaining minutes left in the race. Place your car in the staging area or keep your car on the warm up bench if you are running nitro.</p> <p>All the drivers will line up at the bottom of the driver stand before the qualifying race, once all the drivers from the previous race have finished and they have left the drivers stand you are right to head up on the stand. The race director will usually announce track is open, you are now right to drive out of the staging area or for your pitman to release your car into the pits.</p> <p>You will usually get a minute to "Warm up" where your laps aren't recorded and you can practice before the qualifier. The computer will announce the time before the start of the qualifier.</p> <p>Qualifying is racing against the clock, using a staggered start system (often called IFMAR qualifying). Once the computer calls the qualifying started, each driver can start their own timing by crossing the loop. Once you cross the line the "loop is live" then you are on the clock. Now you have to do as many clean laps in the allocated time. For example if its a 5 minute qualifier your total laps and times will be summed up at the end to give you an overall time, such as 10Laps in 5minutes and 5 seconds.</p> <p>Once the timer has expired the computer will call each racer finished as they cross the line. Its important to understand you are racing yourself and the clock even though there are other cars on the track. <b>Before starting your race, get clean track and separate yourself from other cars! All starting at the same time will mean you are in traffic and will most likely mean your laps will be slower!</b></p>
6.0 Marshaling	<p>Typically you marshal the next race after your race. As soon as your qualifier is finished pick up your car as soon as possible and drop it off at your pits and then head out to the track to marshal the next race.</p> <p>Please read the marshaling rules under section - 4.0 Rules for Marshaling</p>
7.0 Finals	<p>Once all the qualifying is done the finals grid positions will be posted, head back to the Live RC page to view your position and results.</p> <p>As per qualifying the same process is followed, only change with finals is with 30 seconds to go before the start of the race, you will line up on the marked grid positions on the straight. The computer or race director will call you to the grid as well so please listen to the instructions.</p> <p><b>Electric</b> - Usually 3 races , best of 2 of 3 races to count. Your finishing position will give you points and you will drop your worst final result.</p> <p><b>Nitro</b> - Usually one long final, you will require a pitman to drop you on the grid and refuel you. You are racing the cars on the track and your final results will be how many laps you can do in the allocated time, you may require a pitman to refuel you depending on how long the race is and how long you get out of a tank. Typical mileage is around 7.5 minutes, so come into the pits before then so you dont run out!</p>

# 4.0 Calendar

See below our racing calendar to see when we race next!

You can download a version here: [https://drive.google.com/file/d/1\\_rFWEf\\_JZ1oV1y6dCusRaTt\\_PT3yeB9/view?usp=sharing](https://drive.google.com/file/d/1_rFWEf_JZ1oV1y6dCusRaTt_PT3yeB9/view?usp=sharing)

Jan-2021							Feb-2021							Mar-2021							Events	
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
				1	2	3	1	2	3	4	5	6	7	1	2	3	4	5	6	7		Practice 4:30pm-9pm
4	5	6	7	8	9	10	8	9	10	11	12	13	14	8	9	10	11	12	13	14		7 Round Sat Series 2pm-8pm
11	12	13	14	15	16	17	15	16	17	18	19	20	21	15	16	17	18	19	20	21	6-Feb	QLD Series - Meakin
18	19	20	21	22	23	24	22	23	24	25	26	27	28	22	23	24	25	26	27	28	27-Feb	QLD Series - PHDR
25	26	27	28	29	30	31								29	30	31					20-Mar	QLD Series - Sunshine Coast
Apr-2021							May-2021							Jun-2021							Events	
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
			1	2	3	4						1	2		1	2	3	4	5	6		Practice 4:30pm-9pm
5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13		7 Round Sat Series 2pm-8pm
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20		8 Round Club Series 9am-3pm
19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27	7-9 May	Major Race TBD
26	27	28	29	30			24	25	26	27	28	29	30	28	29	30						
							31															
Jul-2021							Aug-2021							Sep-2021							Events	
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
			1	2	3	4							1			1	2	3	4	5		Practice 4:30pm-9pm
5	6	7	8	9	10	11	2	3	4	5	6	7	8	6	7	8	9	10	11	12		8 Round Club Series 9am-3pm
12	13	14	15	16	17	18	9	10	11	12	13	14	15	13	14	15	16	17	18	19		5 Round Night Series 6:30pm-9:30pm
19	20	21	22	23	24	25	16	17	18	19	20	21	22	20	21	22	23	24	25	26	13-15 Aug	Major Race TBD
26	27	28	29	30	31		23	24	25	26	27	28	29	27	28	29	30					
							30	31														
Oct-2021							Nov-2021							Dec-2021							Events	
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
				1	2	3	1	2	3	4	5	6	7			1	2	3	4	5		Practice 4:30pm-9pm
4	5	6	7	8	9	10	8	9	10	11	12	13	14	6	7	8	9	10	11	12		5 Round Night Series 6:30pm-9:30pm
11	12	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	16	17	18	19	3-5 Dec	King of the Hill
18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26		
25	26	27	28	29	30	31	29	30						27	28	29	30	31				

## 4.1 Wednesday Night Practice and Training Clinics

Each Wednesday the committee aims to hold practice from approx 4-9pm, please keep an eye on our facebook page for confirmation posts.

We offer **free** training clinics, please ask for Zac and we can set up a one on one session to review and go over your car and make sure its set up right. This usually includes a test drive so we can feel how the car drivers on the track and then some driving tips and tricks.



## 5.0 - Rules

### Rules to Race at PHDR



The objective of Pine Hills Dirt Racing is to provide a World class facility that is fun and vibrant, where everyone is welcome regardless of ability. All PHDR members and competitors must read and adhere to the below rules for the betterment of the club.

#### **Club Rules**

1. No drugs or alcohol are permitted on the facility, we are not a licensed premises.
2. Never yell from the drivers stand. Foul language will not be tolerated.
3. Help out others and remember this is a fun hobby, no aggressive behaviour will be tolerated
4. Clean up the area around you and use the bins provided.
5. Assist committee if required to open up or close up facility, every bit of help is much appreciated.
6. Closed footwear must be worn.

#### **10 Racing Rules:**

1. Do not argue with the Race Director, remember we are all volunteers trying our best to run these events for everyone's enjoyment.
2. Children under 12 must have parental supervision.
3. After your race drop your car off in the pits as quickly as possible and head straight out to marshal, non-marshaling will result in your best round being dropped.
4. Never drive into another car from the rear (it's your fault).
5. If you cause a wreck, don't just take off, let the person you hit take the lead back.
6. If you jump the course, you must stop and let the person behind you pass before you start again.
7. Once you have been lapped, DO NOT race with the leaders, if you take out the leader after you have been lapped, you will be asked to pull off and let them go by.
8. If there are any racing incidents raise them with the race director after the race, not the individual in question.
9. Control speed through pitlane, no jumping into pitlane.
10. Drivers are to refrain from leaning forward on the Drivers Stand as this obstructs other drivers view of the circuit.

#### **10 Marshaling Rules:**

1. Corner Marshall immediately after your race.
2. Cars running on track have right-of-way.
3. Don't use your mobile phone while the race is on, watch your corner.
4. Never flip or throw the cars.
5. Place cars in the direction of traffic.
6. Don't touch a car if it's wheels are still moving. Revving nitro cars will not be marshaled until brakes are applied!
7. Watch your corner not the race. Marshal the way you would like to be marshaled.
8. In a pile up, first car that crashed should be the first car turned over.
9. Corner Marshall's DO NOT fix cars.
10. If returning car to pits, hold car above loop so lap is not recorded.

The PHDR committee welcomes you to the club and we hope you enjoy everything PHDR. Thank you for your participation.



## 6.0 - Driving Techniques

### Throttle and Brake Application

One of the most common mistakes new people have when they start racing is they have too much power. If you're starting out its good to ease into the power, you can control this through the end point adjustment on your radio. Dial back the throttle end point adjustment, if you run say 80% of you full throttle this will actually reduce the power band through the whole stroke on your trigger. Your physical trigger movement on your radio will stay the same but your servo or speed control will be proportionally reduced through the whole stroke of the throttle.

Its important to practice smoothly pulling the throttle out of corners, new people tend to "blip" the throttle (aggressively pull the trigger) this can unsettle your car as you pull the trigger, if you pull the trigger too hard you will lose rear traction and then you will be trying to correct the steering to keep the car straight. During all of this you're not driving straight and you're losing lap speed.

The same slow smooth motion for brakes is just as important as squeezing the throttle, when you watch the fast drivers half the reason they are fast is all in how they apply brakes. They will apply brakes when their car is in a straight line and smoothly so the brakes dont lock up. They will squeeze the brake forward allowing the car to slow down quickly but in control without breaking traction. This all assists in keeping the car in the correct direction in the corner and maintaining corner speed.

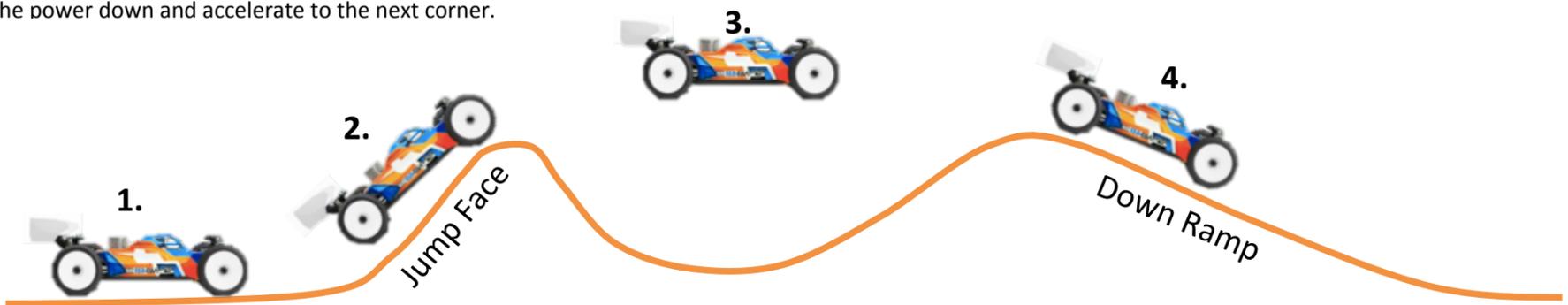


Slowly Squeeze the trigger and apply the brake in smooth motions.

### Jumping

Jumping an r/c car has a certain skill to it, but it can be made easier by just a few tricks, if you follow the 4 steps below it will make your car jump straight and flatter:

1. Make sure you are driving at the jump face as straight as possible! If you're at an angle as you go up the jump face, the car wont jump straight.
2. As you car's front wheels reach the bottom of the jump face you want give the throttle a quick blip until your front wheel lift off the top of the jump face. Then you want to get off the throttle as quickly as you can, bringing your throttle back to neutral.
3. As you car leaves the jump face you want to slowly start to apply the brakes. The centrifugal (rotational energy) of you wheels stopping will make the car rotate forward in the air and bring the nose of the car down. Note if your car leaves the jump face and the nose is "down", you need to apply throttle and the centrifugal force of the tires accelerating will bring the nose of the car upwards. You can use the brake and throttle appropriately in the air to alter the cars angle and keep it as flat as possible.
4. Now as your car is about to land on the down ramp you need to apply your brakes in the air slightly to align the car to the angle of the down ramp. The more aligned to the angle of the down ramp the smoother the car will land. As your car lands you can squeeze the throttle and power down the ramp. If you can practice this routine and get your car to land as close to the top of the down ramp, the quicker you will be between each section of the track. The key is to hit the top of the down ramp, if you're over shooting the down ramp and landing on the flat section at the bottom, your car will get unsettled and it will be slower to put the power down and accelerate to the next corner.

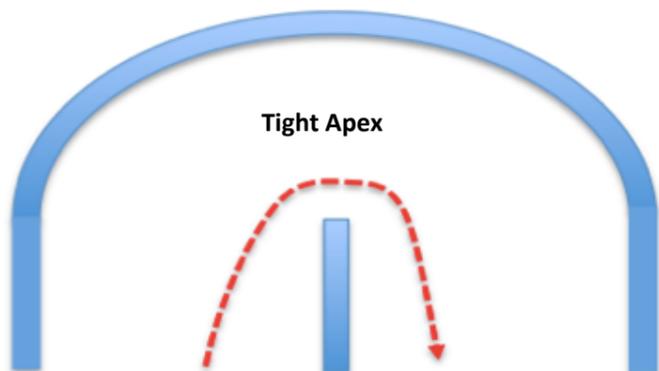


### Cornering through 180's

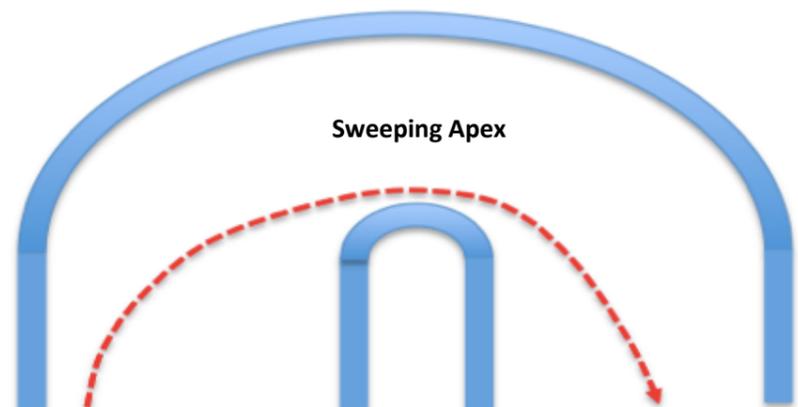
There are typically two types of cornering methods and they are usually dependent on the type of corner.

**Tight Apex** - This is typically when there is just one straight pipe to the apex, usually its very tight and the best approach is to go at the corner at a slight angle and then brake heavily into the corner while turning, you want to try and get the rear end of the car to rotate and flick around, as the car is rotating you then want to get back on power which will help straighten the car back up allowing you to control the car and drive to the next corner.

**Sweeping Apex** - When the corner has a wider apex its usually quicker to arc the car through the corner, you start on the outside lane on entry and brake before the corner, once slowed you **drive through** the corner hugging as close to the apex as possible and exit about mid track, this method will hold the most amount of corner speed through a sweeping apex.

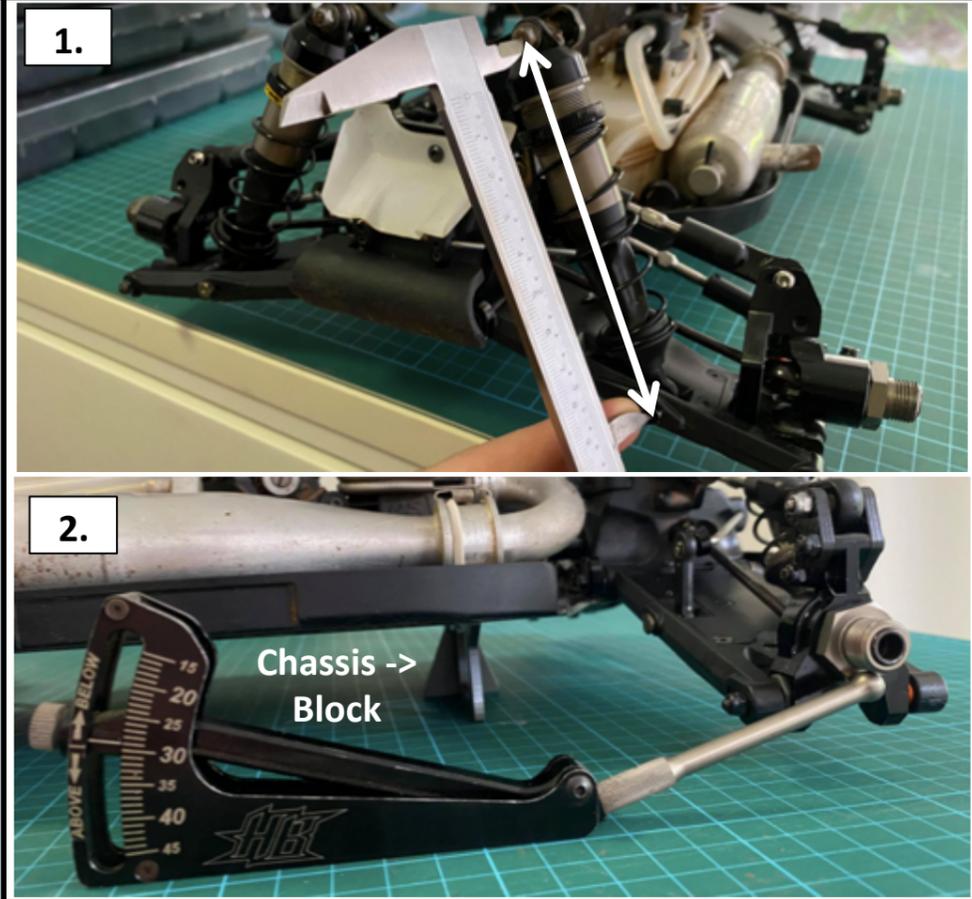
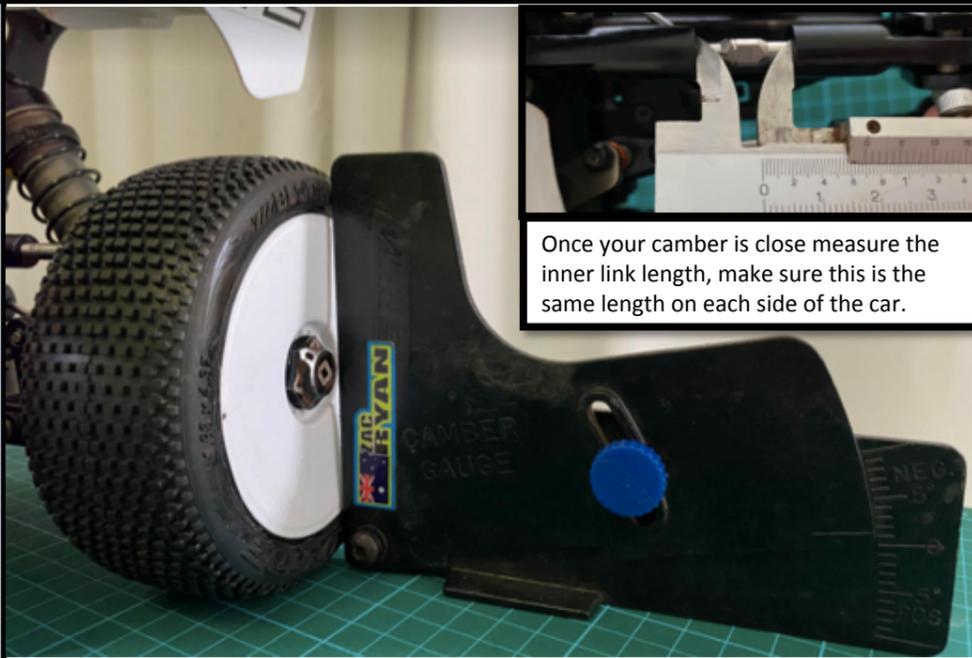
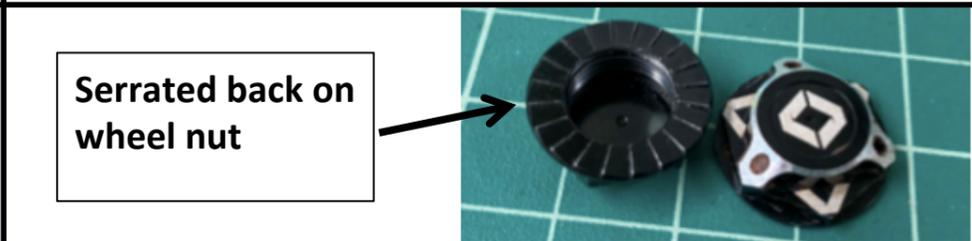


Tight Apex



Sweeping Apex

# 7.0 - Pre Race Checklist

<p><b>Intro</b></p>	<p>This is a few simple things to get check before the start of your race, its good to get into a routine of checking each of these as they tend to change if you've had a crash or the temperature has changed. Running through these few checks before you race will make sure your car is consistent and you will be less likely have a DNF (Did Not Finish). It's important to do these checks in this order as each step will impact the next.</p>	
<p><b>1. Batteries</b></p>	<p>While this may be a simple one, its easy to get side tracked, make sure you batteries are charged and ready to go.</p>	
<p><b>2. Droop</b></p>	 <p><b>1.</b></p> <p><b>2.</b></p> <p>Chassis -&gt; Block</p>	<p>Droop or "Downtravel" is the amount of movement your arms have downwards. It is one of the most underlooked parts of a setup.</p> <p>More droop = More weight transfer, car rolls more and is more responsive. Good for slippery/bumpy tracks.</p> <p>Less Droop = Less weight transfer, car rolls less, makes the car more stable and less prone to traction roll. Good for smooth high grip tracks.</p> <p><b>1.</b> The easiest method of measuring your droop is to measure from centre of shock stand off on the tower to centre of shock pin on arm. A set of calipers is the best tool to measure with.</p> <p><b>2.</b> The most preferred option is to measure axle height. Depending on manufacture you will need to buy the right sized block and gauge. We set the car on the blocks without wheels and measure the height to the bottom of the axle. This is the most consistent way of measuring as if you change pills in the arm your shock length might stay the same but your axle height could be different. HB offer a specific ride height gauge to go with 35.5mm blocks. Example on gauge shows the centre of the axle is 1mm below the chassis level. <b>HB Gauge (HB204227)</b></p>
<p><b>3. Ride Height</b></p>		<p>Its important to be consistent when measuring ride height. Set your car up as if you're about to go on the track, i.e body on and tank full/battery in.</p> <p>Drop the car from about 30cm, this will allow the car to settle to its natural height. Now measure the front and rear from the flat sections of the chassis.</p> <p><b>More ride height</b>, car will roll more, good for slippery track if you are looking for more grip.</p> <p><b>Less ride height</b>, car will roll less, good for high bite track and if you're looking to take away grip/traction roll.</p>
<p><b>4. Camber</b></p>	 <p>Once your camber is close measure the inner link length, make sure this is the same length on each side of the car.</p>	<p>First its important to understand our cars usually have quite a bit of slop so this is a hard measurement to get perfect. Don't buy expensive set up stations, they are a waste of money, just buy a camber gauge and a set of calipers. We want to measure the camber once the ride height is set. Again drop the car from ~30cm.</p> <p>Measure the angle of the wheel as close to the centre as possible, if you're measuring your front wheels make sure you have you car and radio turned on so you are measuring with your wheels at neutral!</p> <p>The right camber is mainly determined by how much grip you have, if there is lots of grip your car will roll more and your wheel will roll outwards, in this case you want a lot of camber (-3/-4 deg), this will ensure your tire has the most contact patch in the middle of the corner. If there is less grip your car will roll less and you will need less camber (-1/-2 deg) to keep the most contact patch.</p>
<p><b>5. Wheel Nuts</b></p>	 <p>Serrated back on wheel nut</p>	<p>A simple step but sometimes over looked. If you're tires have been on for a while the nuts may have vibrated loose. Just double check they are tight before heading out.</p> <p>The best wheel nuts have a small serrated surface to help them bite into the rim and stop them from coming undone.</p>

# 8.0 - Setup Guide - What to Change

There are lots of different options to setting up your car, the below guide will help point you in the right direction when you're searching on what to change to improve your car's handling.

When we are racing we can quickly get lost on what is the most important change. Its key to remember some changes will have far greater impact to your car's handling than others. You should always focus on the most influential setup changes first before you worry about small changes like link positions and pill inserts.

Before you look into setup ensure your mechanical build is correct. E.g. link length the same, servo centered, EPA set correctly left to right, servo saver tension set correctly, brake and throttle linkages smoother and aligned, arms free when you have your shocks off, no binding anywhere.

When you have your kit built correctly the order of the most influence in off-road set up is usually:

**1. Tyres and Compound (70% of your setup) 2. Shocks - Oil and Springs 3. Diff Oil 4. Ride Height 5. Sway Bar Size 6. Engine Tune and Clutch 7. Shock Angle 8. Caster 9. Camber 10. Link Position 11. Wheel Base**

Guides are in order of influence from most to least difference:

### What to do first on a high traction track:

1. Harder tyre compound (S3/S2)
2. Front shock out on arm
3. Thicker diff oil Front/Rear
4. Stiffer sway bars
5. Less ride height
6. Smaller piston holes or thicker shock-oil

### What to do first on a low traction track:

1. Softer tyre compound (M4/M3)
2. More ride height
3. Lighter diffs
4. Lean shocks over
5. Larger piston holes, or thinner oil
6. Long upper links

### More Overall Steering:

1. Tighter servo saver tension
2. More steering lock
3. Lower shock mounting in on arm.
4. Thinner oil in front shocks.
5. Softer front springs
6. Stiffer rear springs
7. Short rear upper link
8. Longer front upper link
9. Thinner sway bar
10. More front arm kickup
11. Less rear toe in
12. Short Ackermann plate

### More Steering Into the Corner:

1. Thinner oil in front diff
2. Less caster
3. Stand up front shocks on tower
4. Front upper link down on tower
5. Short ackerman plate
6. Steering link back on Ackermann plate
7. Thinner rear sway bar
8. Lean rear shocks down on tower

### More Steering Mid-to-Exit of the Corner and On-Power:

1. Thicker oil in Front diff
2. More caster
3. Lean front shocks down on tower
4. Thicker rear sway bar
5. Stand up rear shocks on tower

### Better Jumping Ability:

1. Stand up shocks
2. Stiffer shock springs
3. Thicker shock oil
4. Smaller piston holes
5. More anti-squat
6. More down travel (specially front)
7. More kickup

### More Rear Traction:

1. Thinner diff oils
2. More rear toe-in
3. Larger holes, or more holes in piston
4. Lean rear shocks over on tower
5. Lower complete lower link
6. Long rear upper link
7. Raise upper link on tower compared to hub

### Better Bump Handling:

1. Adjust shock oil (usually thinner)
2. Thinner diffs (if slippery)
3. More ride height
4. Lean shocks over on tower
5. More down travel (droop)

### More acceleration and forward bite:

1. Thicker oil in diffs
2. Long upper links
3. Thicker clutch springs
4. Smaller clutchbell, larger main gear

### Less Overall Steering:

1. Front shock out on arm
2. Thicker front shock oil
3. Thicker oil in front diff
4. Thicker front sway bar
5. Stiffer front spring
6. More rear toe-in
7. Long rear upper link
8. Raise front upper link on tower

### More stability in long sweeping corners:

1. Stiffer sway bars
2. Thicker oils in diffs
3. Stiffer front springs



# 9.0 - 1/10 Electric What to Buy?

## Car - 1/10th Electric 4wd Buggy



You cant go wrong if you buy any of the major brands:

- HB Racing
- Team Associated
- Team Losi
- Mugen Seiki
- Tekno
- Xray

Approx. \$700

## Servos



Not as critical as Nitro to get large torque KG ratings.

Spec you are aiming for are:  
Torque around 20kg.  
Speed below 0.1s/60deg

- Good Examples:
- Protek 160T
  - Savox SC-1267SG
  - Spektrum RC S6245
  - Futaba BLS371SV

## Motor



4WD Stock is 13.5T,  
2WD Stock is 17.5T  
4WD Mod is usually 5.5/6.5T  
2WD Mod is usually 8.5T. But you can run any turn motor in Mod. Good 4wd Mod Motor:

**Hobbywing Xerun V10 G3 Competition Modified Brushless Motor (5.5T)**

If you intend to race sanctioned races later, buy an approved motor, you can see the latest approved motor list below.

<https://www.brca.org/rules-documents/18-electric-boa>

## Tires



Please see section 11.0 - Tire Guide - What tires and compound should you buy?

## Speed Control



Hobbywing make a great speed control - Hobbywing XERUN XR10 Pro G2 Elite Edition 160Amp Brushless ESC - **HWA30112610**

## Pinion



Its best to check out a few setups that the pros are running. Usually you can find these on the Car manufactures website to see what gearing they are going with.

## Battery



There are a lot of batteries on the market, most of them are reasonable quality.

Typically a "shorty" pack is the best sized pack for 1/10

Approx. \$120

## Charger



Please see section 19.0 Chargers for recommendations

## Radio



Futaba is the most reliable brand.

- 7PXR - ~\$900
- 4PM - ~\$400
- 3PV - ~\$200

Sanwa also offer a great radio

- M17 - ~\$750
- MT44 - \$390

## How-To: Wire Your RC Car For A Clean Factory Look



<https://www.youtube.com/watch?v=3BUR5ub2Bco>

# 10.0 - 1/8 Electric What to Buy?

## Car - 1/8th Electric Buggy



You cant go wrong if you buy any of the major brands:

- HB Racing
- Team Associated
- Team Losi
- Mugen Seiki
- Tekno
- Kyosho
- Xray

## Servos



Futaba have the best quality servos, I've gotten years out of a futaba servo before, while they are a little more expensive you really do get what you pay for.

**FUTABA HPS-CB700**  
Specs: (0.07S/49KG)

You only need one for steering

## Motor



Hobbywing 4268G2 1900kv  
Anything around the 1900kv mark is a good sized motor that will cover you for most tracks

## Tires



Please see section 11.0 - Tire Guide - What tires and compound should you buy?

## Speed Control



Hobbywing XR8 Plus has been run by a number of club members with great success.

## Pinion



Its best to check out a few setups that the pros are running. Usually you can find these on the Car manufactures website to see what gearing they are going with.

## Battery



There are a lot of batteries on the market, most of them are reasonable quality.

Jackson Beale has had great success with the Team Zombie 6400Mah 120c HV series - 14.8-15.2v

## Charger



Please see section 19.0 Chargers for recommendations

## Radio



Futaba is the most reliable brand.

- 7PXR - ~\$900
- 4PM - ~\$400
- 3PV - ~\$200

Sanwa also offer a great radio  
M17 - ~\$750  
MT44 - \$390

## XT60 Plugs



A great plug to use on your batteries is the XT60 plugs, you should be able to pick these up at your local hobbyshop.

# 11.0 - 1/8 Nitro What to Buy?

## Car - 1/8th Nitro Buggy



You cant go wrong if you buy any of the major brands:

HB Racing  
Team Associated  
Team Losi  
Mugen Seiki  
Tekno  
Kyosho  
Xray

## Servos



Futaba have the best quality servos, I've gotten years out of a futaba servo before, while they are a little more expensive you really do get what you pay for.

Specs Aim for: (0.07s/25kg)

**FUTABA HPS-CB700**  
These can be used for both steering and throttle.  
Specs: (0.07S/49KG)

## .21 Engine



There are a few brands on the market but by far OS Engines are the most reliable and readily available. We strongly recommend OS, best to ensure the engine comes with a 21J carb, this is the best carb available!

The Adam Drake 2 comes with 21J Carb, this engine is one of the best on the market.

Best engine of all time OS B2101 with 21J

## Tires



Please see section 11.0 - Tire Guide - What tires and compound should you buy?

## Pipe



Its important to go with the pipe that matches the engine, the best all rounder is the OS 2090. This has the smoothest power delivery out of all the pipes

## Receiver Battery - 7.4v Lipo



There are a lot of batteries on the market, most of them are reasonable quality.

LRP offer a great pack which is 2700 mAh 7.4V Lipo. It best to get 7.4v lipos as the latest servos need the lipo voltage.

## Plug



Usually a P4 plug is your best all round plug with 30% nitro. If the temperatures are really cold then P3 is suitable.

The gold OS plugs have no performance gain, don't waste your money on them just run the normal plugs.

## Glow Warmer



Mugen Seiki offer the best glow warmer, it comes with a plug gauge that will show if the glow plug is broken. Very handy glow warmer!

**Part No. MUGB0244-1**

## Radio



Futaba is the most reliable brand.

7PXR - ~\$900  
4PM - ~\$400  
3PV - ~\$200

Sanwa also offer a great radio

M17 - ~\$750  
MT44 - \$390

## Starter Box



Hudy offer the lightest and most reliable box

# 12.0 - Tire Guide - What tires and compound should you buy?

1/10 Tires				
	Tires that work well at PHDR - 1. Holeshoot 2. Fugitive Foam - Molded foams are preferred over stock white open cells		Tires that work well at PHDR - 1. Sprinter, 2. Reflex, 3. Double Dees. Foam - Molded foams	
	Compound Guide	Condition	Compound Guide	Condition
	M4	When grip is Low, temp is cool	Black	When grip is Low, temp is cool
Preferred - M3	When grip is med/high, temp is cool	Preferred - Green	When grip is med/high, temp is cool	
S3	When grip is high, temp is hot	Blue	When grip is high, temp is hot	
1/8 Tires				
	Slide lock, these are the most common tire at PHDR, these are the most recommended and quickest tires.		Reflex - Best all round tire from J concepts, easiest to drive if off line and quick in most conditions.	
	Compound Guide	Condition	Compound Guide	Condition
	M4	When grip is Low, temp is cool	Green	When grip is med, temp is cool
Preferred - M3	When grip is med/high, temp is cool	Preferred - Blue	When grip is med/high, temp is cool	
S3	When grip is high, temp is hot	Red	When grip is high, temp is hot	
1/8 Tires				
	Fugitives, these are a great all rounder tire, easier to drive then the Slidelocks and they last a lot longer, great for the beginner.		Rehab - A very fast tire when the track is clean, more suited to a more experienced racer.	
	Compound Guide	Condition	Compound Guide	Condition
	M4	When grip is Low, temp is cool	Green	When grip is med, temp is cool
Preferred - M3	When grip is med/high, temp is cool	Preferred - Blue	When grip is med/high, temp is cool	
S3	When grip is high, temp is hot	Red	When grip is high, temp is hot	

# 13.0 - How to Prep and Glue Tires

## What you need

There are a couple of items that will make gluing tires a lot easier. **First never glue in aircon, super glue needs moisture to set properly! Always glue outside!!**

- 1. **Tire Bands** - These can be picked up at your local hobby shop, they help keep the pressure on the tire once the glue has been applied. J Concepts JCO2212-2
- 2. **Blue towel** - Helps clean the rubber \$10 from the PHDR canteen
- 3. **Super Glue** - \$12 from the PHDR canteen, this is the best glue available! Don't use cheap glue! **Always store your super glue in the fridge or it will go off in the bottle and deteriorate**
- 4. **Hole punch** - from bunnings for about \$12.
- 5. **Simple Green** \$7- used to clean the rubber from the release mold to help ensure they glue correctly. Diggers all purpose Thinners is also a good substitute.



**Step 1**  
Punch two holes in the corner of the tire opposite each other. This is critical to allow the air to escape the tire once its glued, if you don't punch holes in the tire, it will balloon up when you're driving and the car will feel "bouncy".



**Step 2**  
With the foam in the tire, spray a small amount of simple green/thinners on the blue towel and then rub the bead of the tire. You may see a small amount of brown mold release come off the bead. Keep doing this until you don't see any more mold release, this is critical to ensure the glue penetrates the rubber when you're gluing.



**Step 3**  
Put the tire on the rim and then the tire band. Its good to peel back the bead of the tire from the rim slightly with your thumb to make sure the bead is seated nicely on the rim before you start gluing. Push bead into place so that it sits flush with rim.



**Step 4**  
Gluing is the tricky part, you want to peel back the bead and drop a small amount of glue inbetween the bead and the rim. Then push the bead back onto the rim working the glue around until the drop of glue has run out. Repeat process until tire is glued all the way around, once glued write on the inside of the rim the compound e.g. M3.



# 14.0 - How to Recycle your Rims

You can save a bit of money if you recycle your rims, typically you can get at least one more set of tires use out of a set of rims.

Bunnings has all you need to recycle the rims, in the paint section pick up a 4L tin of Acetone, this will last you a couple of years. Its also important to get the right bucket. A bucket with a solid sealed lid is important otherwise the acetone will evaporate, the Handy 11.1 bucket comes with a great sealed lid, I've been using it for 2 years and I'm still on the same 4L of acetone and I've recycled about 20 sets of rims.

**Note always have adult supervision and appropriate Personal Protective Equipment when using Acetone, rubber gloves and eye protection recommended.**



**Handy Pail 11.1L  
Handy Pail With Lid**

I/N: 4470109 ★★★★★ 2.7 (3)

**\$11.99**

**Buy online**

- Click & Collect**  
Orders after 4pm will be processed the next trading day; order by 4pm on 22nd December for Collection before Christmas.
- Delivery**  
Expect delivery of this item within 2 days



**Diggers 4L Acetone  
Cleaning Solvent**

I/N: 1560261 ★★★★★ No reviews yet

**\$45**

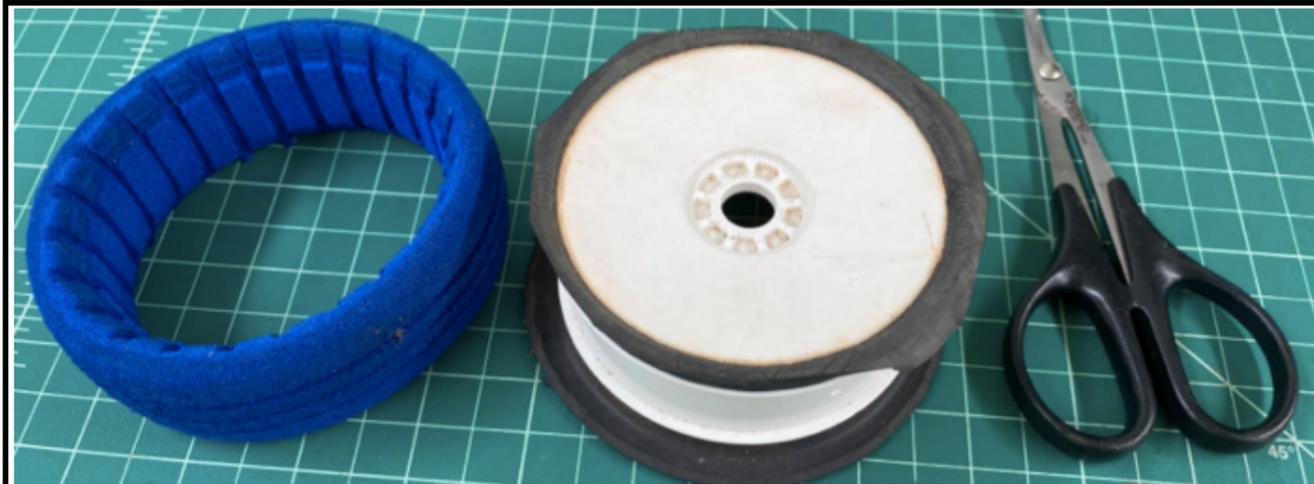
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Mentone [View more stores](#)

In stock | Aisle: 24

**Buy online**  
This product is not available to buy online.

[Save to Wishlist](#)

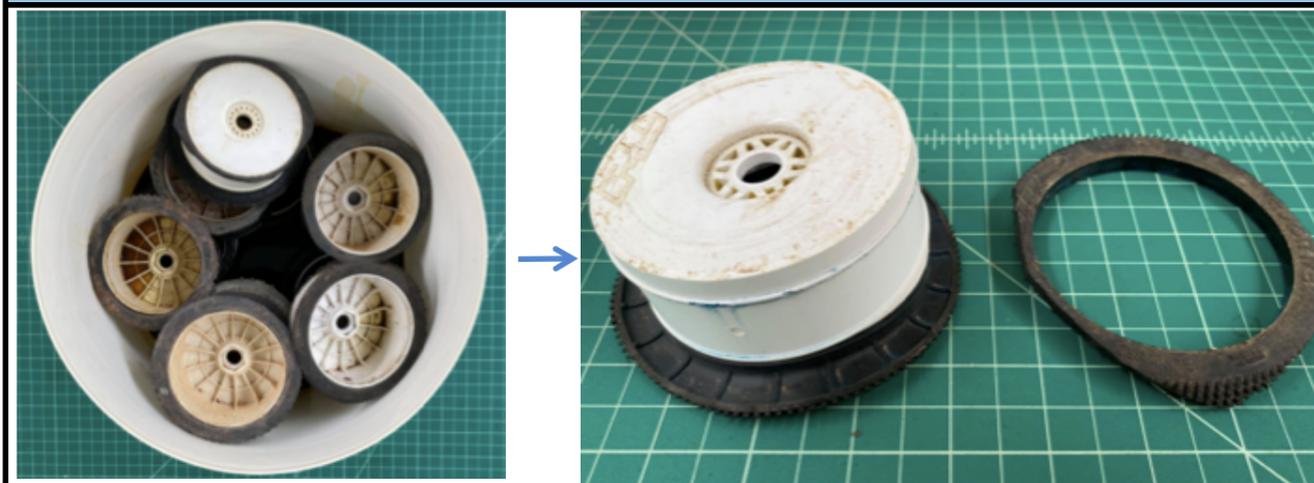
## Step 1



Cut your foams out, you can also re use the foams at least twice. Its best to use curved scissors for this so you don't damage the foam when you're cutting them out.

You want to have just the rubber bead left, this will allow you to fit more rims into the bucket at once.

## Step 2

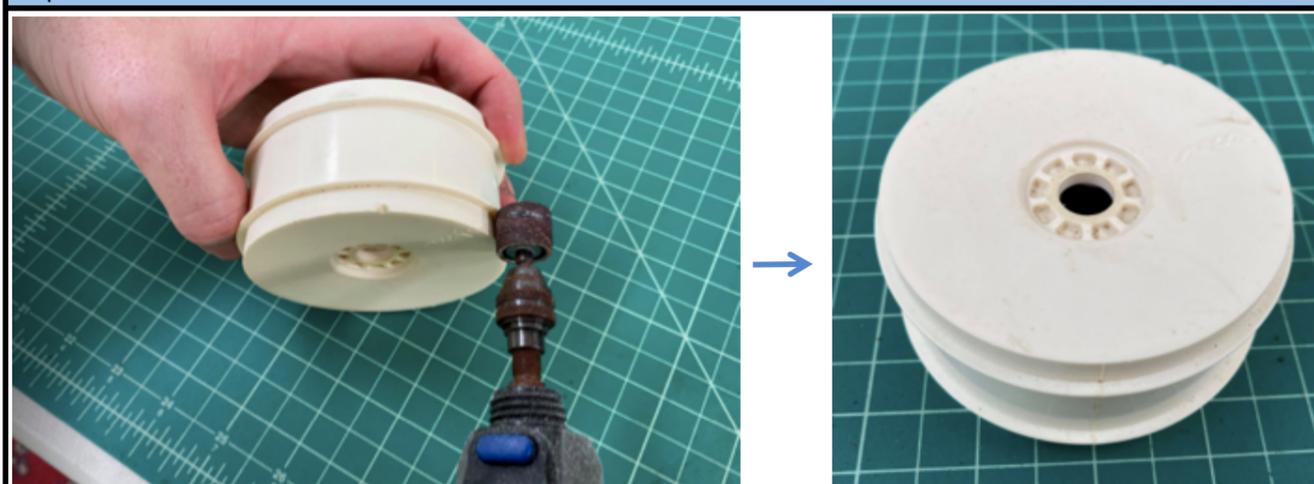


Put the rims into the bucket full of acetone, its ok if the rims aren't submerged in the acetone, the fumes will still dissolve the glue.

Make sure when you replace the lid that it is firmly shut.

Typically I wait a 3-4 days before I remove the rims from the bucket. Once done the rubber beads will pull straight off the rim ready for the rim to be cleaned.

## Step 3



Wash the rim in soapy water, give them a good scrub, remember the acetone only dissolves the glue it doesn't clean them.

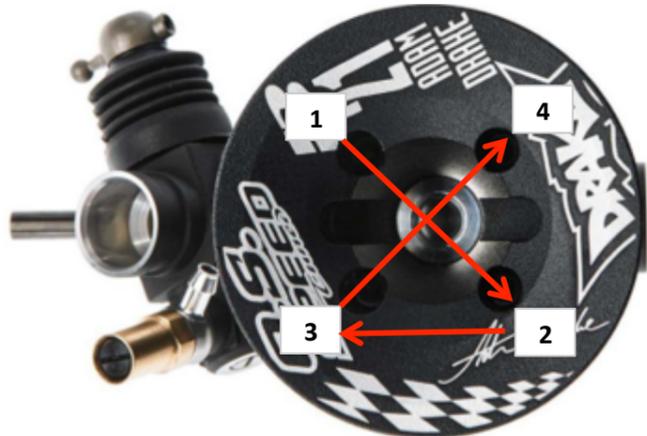
Once the rims are clean I use a dremel with a sanding bit and lightly sand the bead to help remove any excess old glue and roughen up the surface for the next time I glue a set of tires on.

That's it, you're ready to go with a new set of recycled rims, easy as that!

# 15.0 - Setting up a Nitro Engine

Keeping a nitro engine in good working order requires attention to detail on a few core components. To make sure your engine is reliable you need to check these components before installing the engine. Too often I see people having a reliability issue and they keep restarting the engine and then it flames out again. If the engine is routinely flaming out, its not going to be fixed by just restarting it, you need to pull the engine out and inspect the engine and make sure all the components are in good working order. Lets run through a few important components and how to set them up.

## 1 - Engine bolts



Its good to go over your screws and make sure the engine head and back plate are tight. When ever you are tightening up these screws make sure you tighten them in order displayed, this ensures the button goes on flat.

## 2 - Collet



Usually kits come with a copper collar, these tend to deform when you tighten the flywheel and can come undone. The best collar on the market is the kyosho steel collar. When installing the fly wheel I usually put one washer behind the collar. When tightening the clutch nut to secure the flywheel you need to make sure its very tight, crank down on the nut really really tight, I don't run Loctite. **Part no. IFW143 Steel Collet**

## 3 - Clutch Shoe Shimming



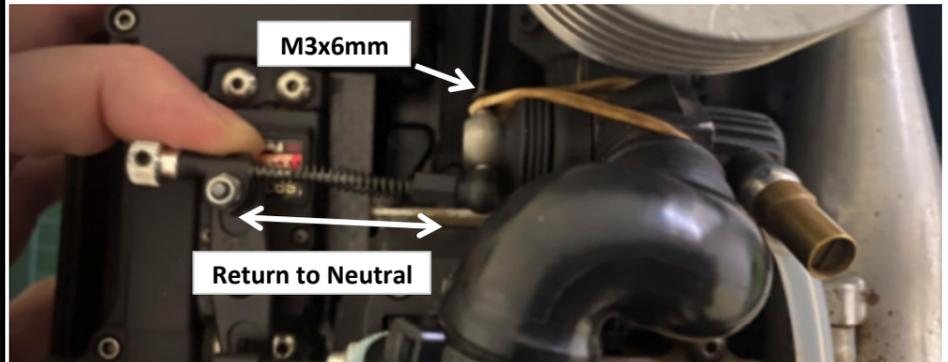
Its important to put small shims between you clutch shoe and flywheel. When the clutch shoes wear they get burs on their sides and get stuck on the flywheel. By shimming them off the flywheel you ensure the shoe can return at idle and not stall the engine. Typically its best to run 0.5mm under each clutch shoe. **Part no. KYO96641 Kyosho Shim set**

## 4 - Clutchbell Shimming



When installing your clutchbell you need a small amount of float between the clutch bearings and the crank washer, this gives room for expansion when the parts get hot which ensures the bearings don't get lateral loading/pressure. Once everything is tight you can still rock the bell back and forth approx. 0.5mm.. **Part no. PTK-H-5905 Protek Clutchbell Shim**

## 5 - Return Rubber Band to enact as failsafe if radio shuts down



Remove the grub screw in the carb ball and install an M3x6mm button head with Loctite. Install a rubber band over the button head and loop it over the top end needle. Once the engine is installed in the car make sure when the radio gear is turned off that you can pull the servo to full throttle by hand and the servo returns to neutral. If it doesn't, align you carb straighter to the servo or install more bands.

## 7- Fuel Line



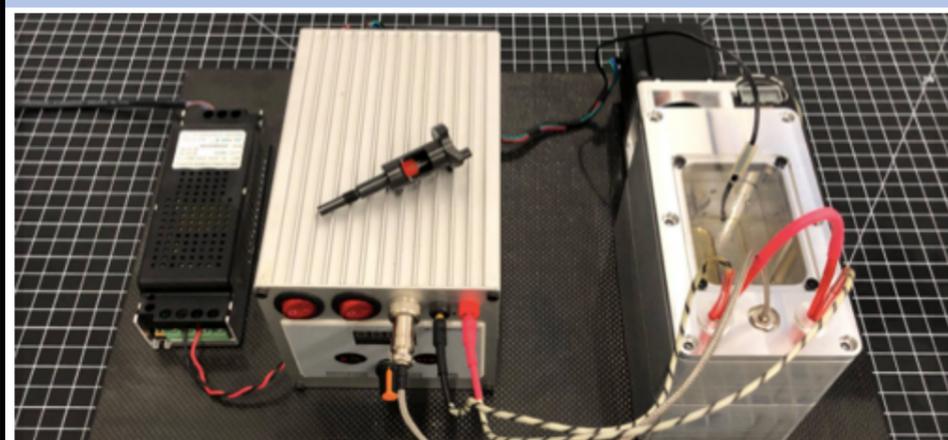
When installing fuel line keep it simple, you don't need to run an inline fuel filter as the tanks have stone filters, The best fuel tube on the market is the Losi tube **Part No. LOSA9314 Losi Ultra Fuel Tubing**

## 7- How to run the engine in



Adam Drake has a great video which runs through everything from start to finish [https://www.youtube.com/watch?v=2\\_qddxn1k6A](https://www.youtube.com/watch?v=2_qddxn1k6A)

## 8- Precision Internals Run in Service - Automated Oil Bath Run in Service



Save yourself the hassle and get your engine run in for you at Precision Internals <https://www.facebook.com/precisioninternals>

# 16.0 - Setting up a Starter Box

Starter boxes if not set up correctly can make starting the engine difficult and also wear out the rubber wheel quickly, check out these steps to set it up!

## Step 1



Use double sided velcro tape on the battery and put the opposite side of the velcro strip inside the starterbox. I also put super glue on the bottom side of the strip before sticking the velcro down onto the box so it sticks more permanently.

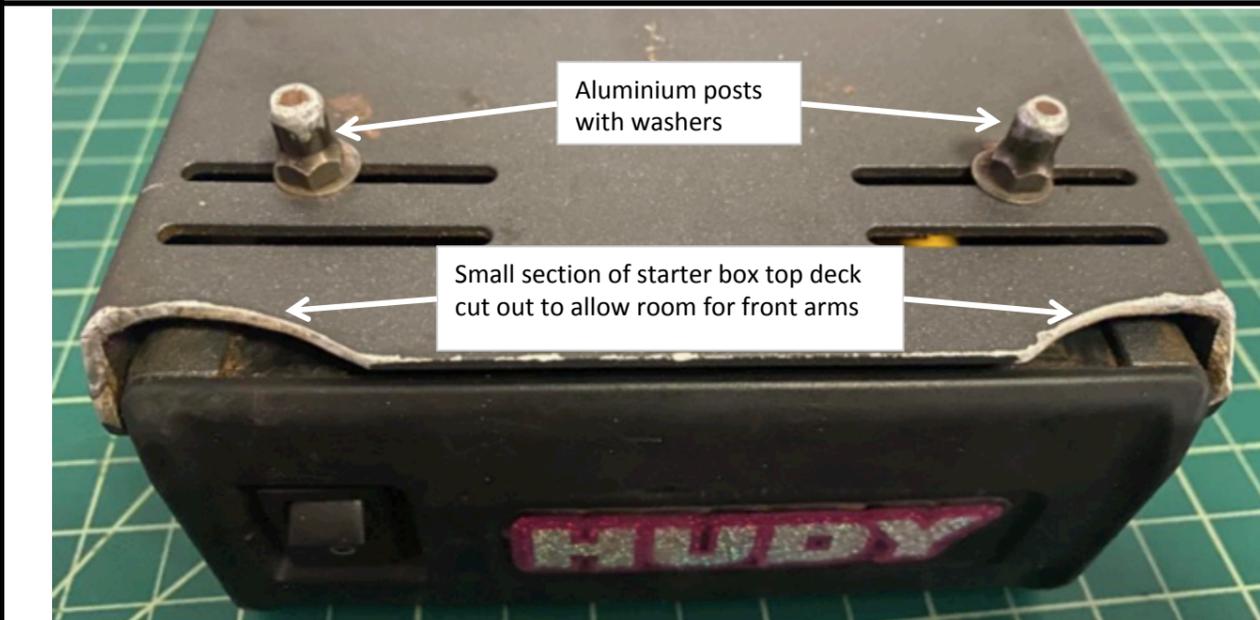
Best battery which is also light weight is the Zippy - 2200 mAh 4 cell 14.8v.

## Step 2



Its best to install the battery in the back compartment next to the motor. You can see the battery stuck into the box with the velcro tape.

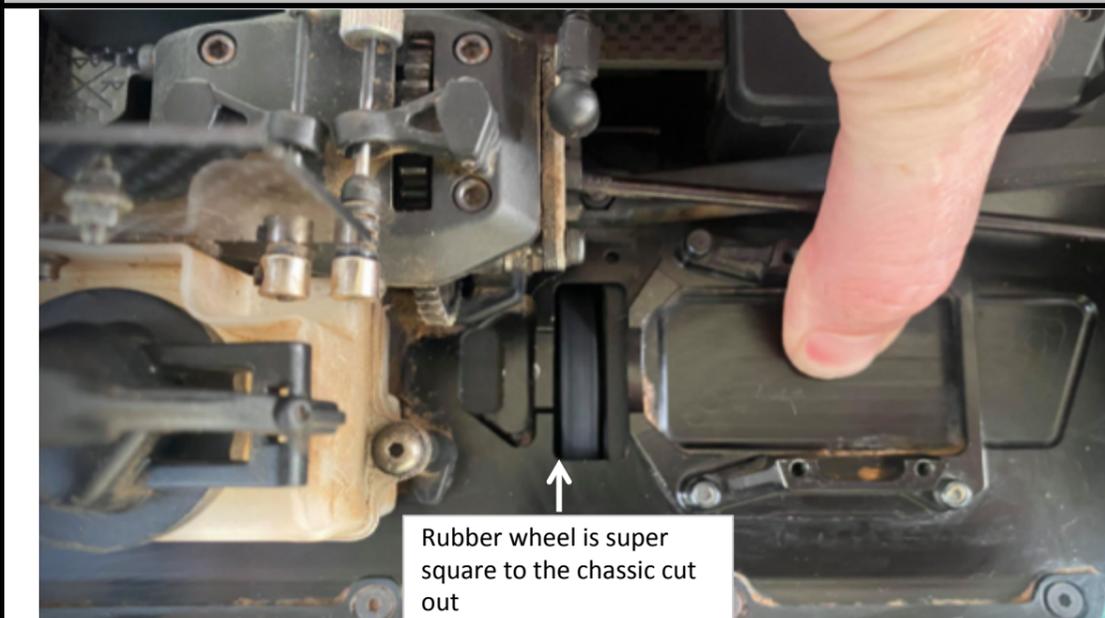
## Step 3



Depending on which car you have, I've found if you cut the front of the top plate on the start box as shown the front arms don't rub on the starter box and this allows the chassis to sit flat on the box.

For the posts I don't use the plastic posts that come with the box, try and find some aluminium posts, I use the Kyosho **IFW402B** Aluminum Wing Stay Collar Set and cut them in half. Being aluminium allows you to tighten them up really well compared to the plastic ones. This ensure they dont move once they're in the right place.

## Step 4



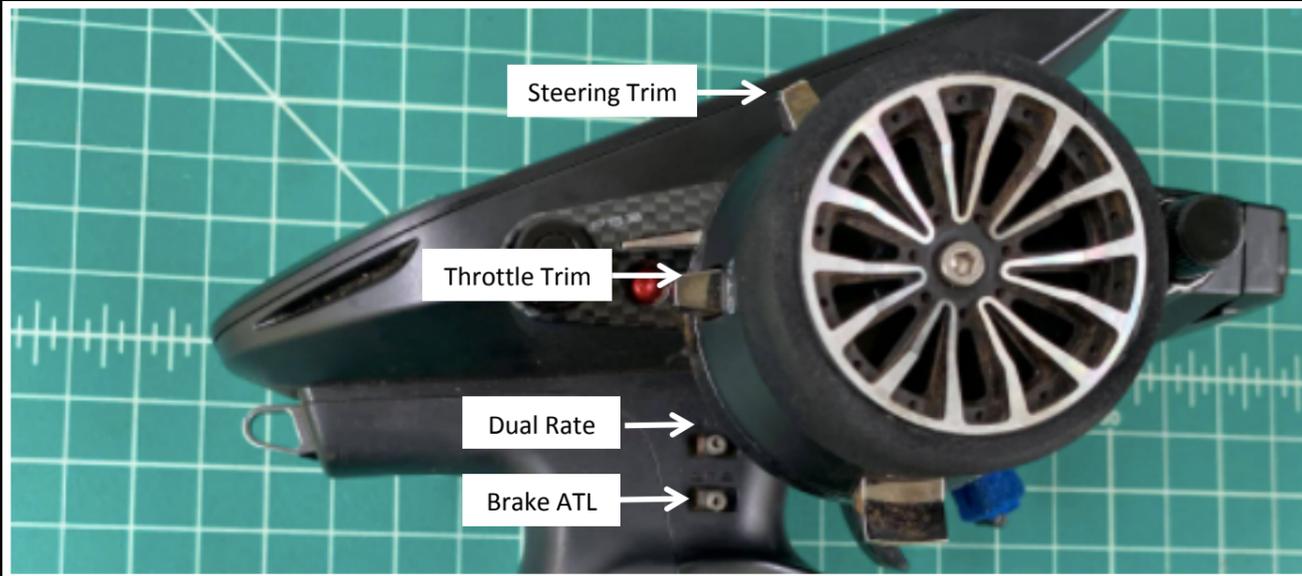
Final step is lining up the box. Take your engine out of the car and then push your car down on the box and observe where the rubber wheel sits in the chassis cut out. You want to adjust the post on the box so that the rubber wheel is as square and central to the cut out as possible!

Spend the time getting this perfect so the car cant move around on the box between the posts. If you get this right you will get ages out of the rubber wheel and your engine will start super easy!

# 17.0 - Radio Tricks and Tips

While there are a lot of functions on a radio, typically you only need to understand a few to set your radio and car up properly. These include:

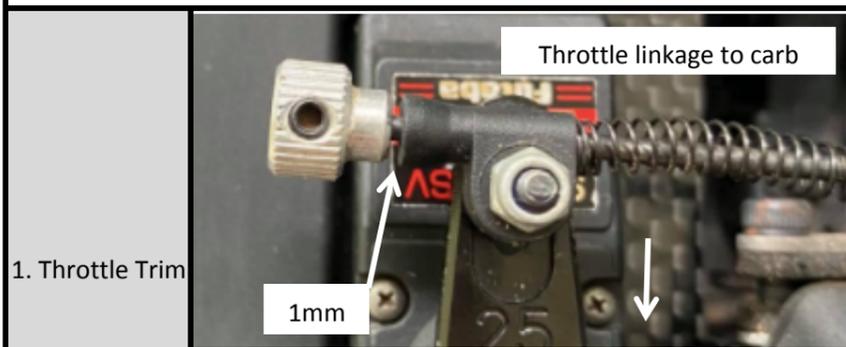
1. **Throttle trim** - Sets where the center position of your servo is for the throttle/brake.
2. **Steering Trim** - Sets where the center position of your servo is for the steering.
3. **End Point Adjustment** - Sets how far your servo will travel for either throttle, brake or steering left to right. Each set individually.
4. **Dual Rate** - Evenly increases or decreases your steering end point position left and right at the same time.
5. **Brake ATL** - This is just your Brake end point adjustment.



It's good to set your radio buttons up so that's it's easy to adjust the main functions from your buttons.

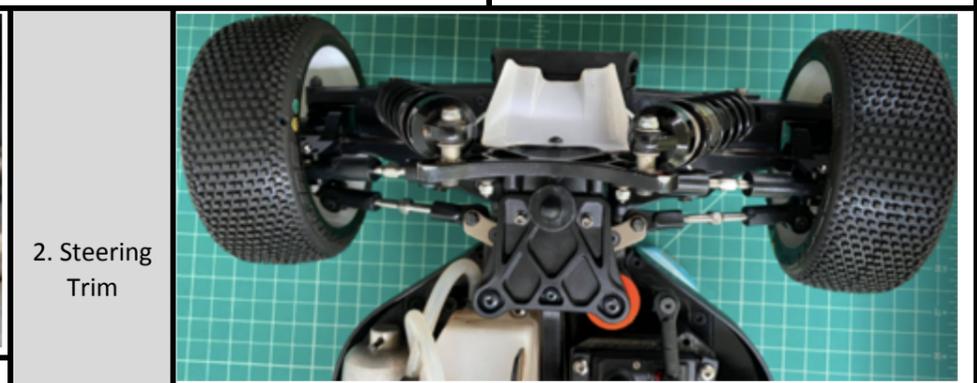
The Futaba comes with two buttons for your thumb I set these as:  
 - Dual Rate  
 - Brake ATL  
 The buttons above the wheel I set as throttle trim and steering trim.

Setting these buttons up allows you to quickly and easily adjust if you need to fine tune your car on the track. Please refer to your radio's manual for details on how to set your button functions.



1. Throttle Trim

Set your throttle at neutral, you want to ensure the car rolls freely and the brake isn't on. A good tip for nitro is to make sure you also have about 1mm gap between your servo horn and throttle grommet, this gives room for the car to flex and not apply throttle.



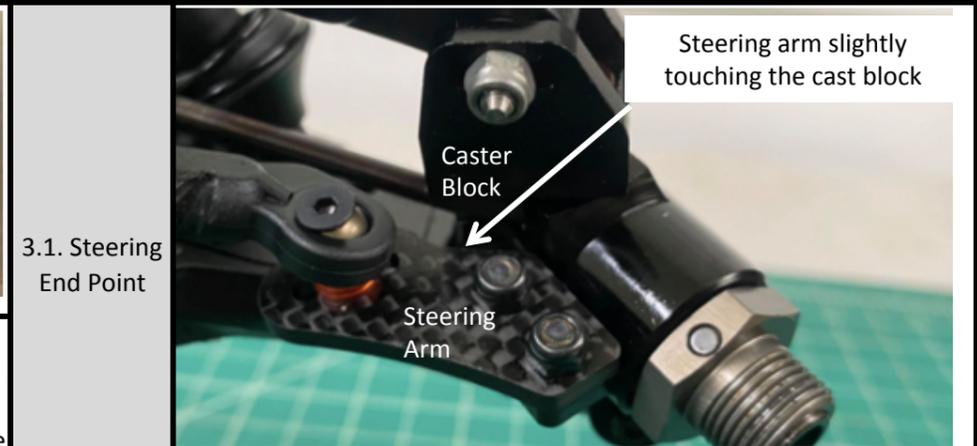
2. Steering Trim

Set your wheels so they are as straight as possible, then next time you're driving down pitlane, drive slowly and keep the wheels in neutral and observe if the car drives straight, adjust accordingly with your trim button so at neutral the car drives straight.



3. Throttle End Point

Pull full throttle and adjust your high end point adjustment so the carb is just fully open to the venturi. Sometimes if I find I have too much power I will reduce the throttle end point so that when I pull full throttle it doesn't open all the way to the venturi. This helps smooth out power delivery, the minimum I would go is 80% of fully open.



3.1. Steering End Point

You want your steering end point to be set so when you turn full left or right the steering arm slightly touches the caster block.

Once you have set up your steering end point adjustments this is a great function to evenly reduce or increase steering end point.

This function can be used frequently depending on how much grip there is. If you feel your car has too much steering then you can reduce your Dual Rate by clicking a few % out on the button. Or if you feel your car doesn't have enough steering then increase your dual rate to evenly increase your steering's end point adjustments.

Note be careful when increasing your dual rate you don't go to far and stress the servo. if your servo is flexing the radio tray on full lock its most likely too far, its best to reduce your dual rate until your servo isn't flexing the tray.

4. Dual Rate

Once you have set your end point for brake, I usually initially set it so at full brake I have lots of brake, then you can fine tune the brake amount by reducing your brake % by clicking out the Brake ATL button.

During warm up sessions before a qualifier or final, I will testing the amount of brake pressure I have on the track by driving into a corner and applying full brake. By either adding or reducing the Brake ATL button I can get the right amount of brake feel, where the brakes don't slam on too hard or aggressively or too softly and not pull the car up in time. This is where you can easily add or reduce brakes depending on the grip level and find the perfect amount of brake pressure at full brake that you like to drive with.

5. Brake ATL

# 18.0 - How to Prep a Body Shell

## What you need

There are a couple of items that will make cutting out a body shell super easy, having the right tools is the first step!

1. Curved scissors you can pick these up at your local hobbyshop. 2. Dremel sanding bit and smaller metal cutting bit. 3 Hobby Knife 4. Insulation tape (bunnings has this tape, its expensive but last for ever).



**Ametalin 72mm x 50m Reinforced Insulation And Ducting Tape**

I/N: 0029077 ★★★★★ 5.0 (3)

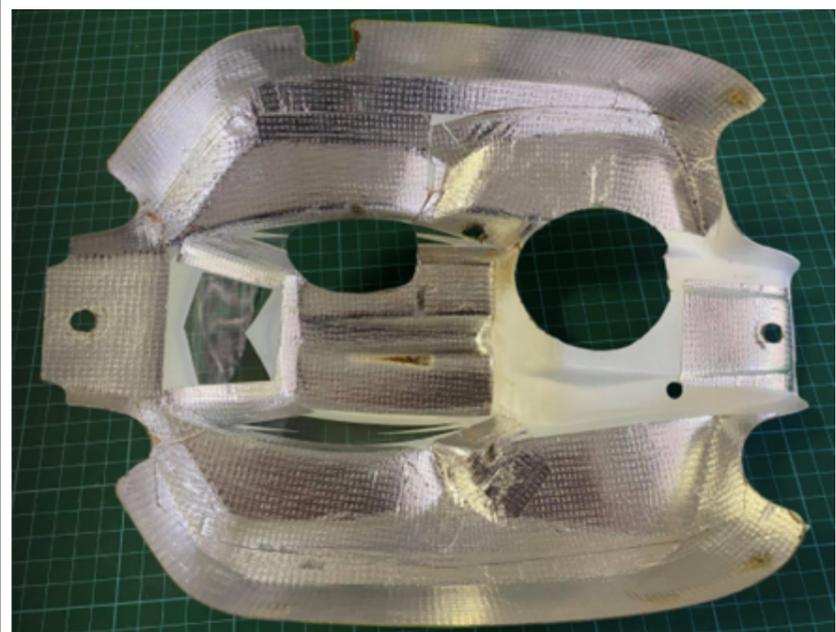
**\$27.42**



**Step 1** - Cut out the body as close to the cut lines as you can with the curved scissors, then go around and clean up all the edges with a sanding dremel bit. In some cases its hard to cut directly on the line, thats ok the dremel will allow you to cut into the tricky spots.



**Step 2** - Use the the smaller metal cutting bit to make your body post holes, typically I don't just make these a circle hole, I make them an oval shape the width of the body post. By making them an oval shape you allow the body to move back and forwards on the body post when the car flexes which reduces the chance of the body cracking under a crash.



**Step 3** - Once the body is cut out I use the silver insulation tape and cover the inside of the body. I usually cut it into strips and lay it down in the body and work the tape into the groves with my fingers. Once in I use a hobby knife to cut and trim the tape to the holes. This tape makes the body last way longer and saves your paint from being scratched off.



**Repairs** - Now if you do get cracks in your body, the best repair method is to use "Original Shoe Goo" in clear. Its by far the best shoe goo on the market and will hold the body together really well if you get cracks. It can be hard to find but usually you can buy it on EBay or Amazon

# 19.0 Chargers and Soldering

## Chargers

This is a good all round charger for 1/8 nitro and Electric. Price range between \$160-\$200. Many club members use this charger with no issues, its handy as its one of the smallest chargers on the market, good for travel.

### iSDT D2 Smart AC Lithium Battery Charger (6S/10A/200W)



SKYRC D100 V2 AC/DC DUAL CHARGER, This charger is excellent for the 1/8 EP racer, it also has phone app integration and fast charge for 1/8 batteries. Local hobby shops have availability of this charger. Approx \$180.

<https://speedyrc.com.au/collections/battery-chargers/products/skyrc-d100-v2-ac-dc-dual-charger-power-supply-sku-sk-100131>



## Soldering

Soldering is a technique which will take time to master, but if you follow these few steps you will one step closer to becoming a soldering guru!

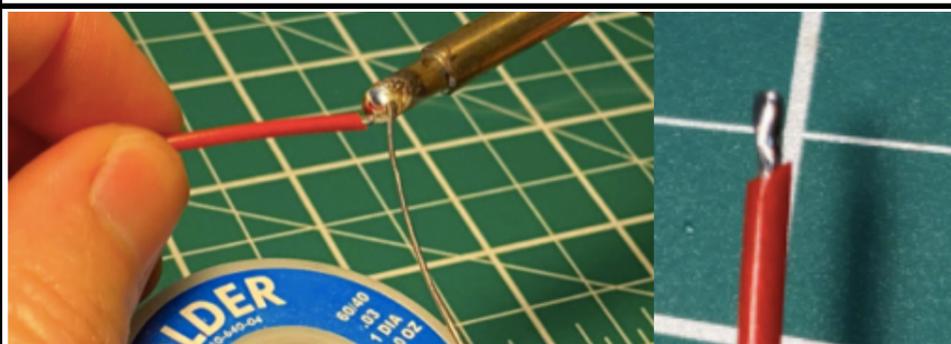


**Step 1** - Critical to be able to solder correctly is having the right tools. A soldering iron that can get up to about 300 deg c is important. Resin Core High Grade solder is also important to get a good join.

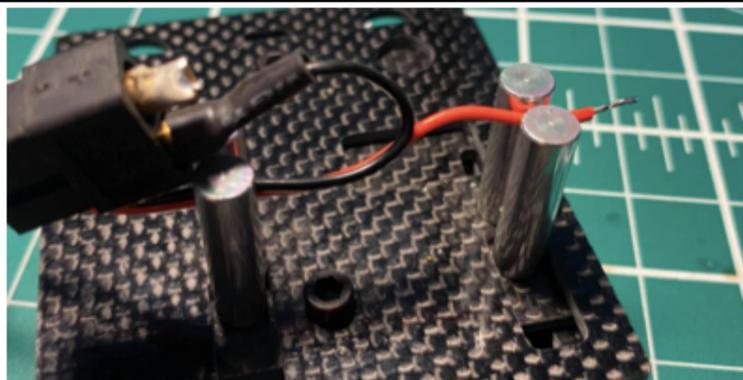
**Step 4** - Tin the tip by melting a small amount of solder on the tip. I find the best type of tip is a flat tip, it gives more area for solder and therefore more surface area for the type of soldering we usually do with R/C.



**Step 2** - Make sure you have a wet sponge, once the solder tip is hot, clean the tip by wiping it on the sponge.



**Step 5** - Tin both the end of the wire and what you about to solder it to. Using the solder tip, heat the joint and push the solder wire into the wire/connector until its covered in solder. Slide your heat shrink over the wire now.



**Step 3** - Its handy having a multi tool to hold wires so you can tin the wire.  
Part no. PTK-5340 ProTek RC Carbon Fiber Soldering Jig



**Step 6** - Again clean the tip in the wet sponge and tin the soldering tip. Using the multi tool to holder the wires/plugs heat the wires/plugs pushing them together with the soldering tip. Hold them together with the tip until both have melted together. Release the solder tip and hold the wires together until cooled. Job done!

# 20.0 - 1/10 EP Setup with Chris Sturdy

## Driver Interview

**Name** - Christopher Sturdy

**Age** - 24

**How long have you been racing and what class did you start in?**

14 years, started in 1/10th ep offroad

**Home Track?**

PHDR, Logan, Chargers RC

**Favorite Event?**

2019 Reedy Race Of Champions

**Racing Highlights?**

IFMAR Worlds in 2wd

7x EP Offroad Australian Champion

**Sponsor Time, here is the chance to thank the people who help you out.**

Team Associated

Plaig Bearings

Factory Team

Jspec Stickers

Reedy Power

T-Works

Pro-Line

Speedy RC

Protoform

Bezerk RC, Subway Batemans Bay,

1up Racing

JA Designs, Gazza Motorsport

## Car Details

**Car** Team Associated B74.1

**Motor** Reedy M4 5.5T

**ESC** Reedy Blackbox 510R

**Radio** Futaba 7PX-R

**Servos** Reedy RT1508

**Tires** Pro-Line

**Battery** Reedy SG3 6100mAh

## Other Notes/Option Parts used:

### Bezerk:

B74.1 5mm front shock tower

B74.1 rear tower(extra  
camber link hole)

Lipo tab holder set

+3 steering plates

Steering bellcrank arm

### RDRP

Alloy +4 steering rack

Alloy steering bellcranks

Alloy rear wheel hubs

### T-Works:

Gold steel and titanium bolts

### 1Up Racing:

Servo mounting screws

Precision Alloy Shims

### Team Associated:

Chrome shock shafts

Fox coated shock bodies

Machined internal shock spacers

Titanium turn buckles

10deg castor blocks



# 21.0 1/8 EP Mugen MBX8 with Jackson Beale

## Driver Interview

**Name** - Jackson Beale

**Age** - 15

**How long have you been racing and what class did you start in?**

6yrs and I started at PHDR in nitro buggy.

**Home Track?**

Pine Hills Dirt Racing

**Favorite Event?**

IFMAR 2018 Worlds Perth

**Racing Highlights?**

- 1 - Worlds Junior finalist
- 2 - Rocky Cup: TQ and 1st Nitro Truggy and 3rd Nitro Buggy
- 3 - Meakin Masters: TQ and 1st place Truggy, Best U/15 Driver.
- 4 - Queensland State Titles TQ and 1st Place Nitro Truggy
- 5- Australian National Titles – A Main finalist Nitro Buggy, 3rd Nitro Truggy

**Sponsor Time, here is the chance to thank the people who help you out.**

#Proline, #MMI, #mugenseiki, #grasshopperslawncare, #racersedgeaustralia, #maximafuels, #speedyrc, #TeamZombie

## Car Details

<b>Car</b>	Mugen MBX8 Eco with Worlds edition upgrades
<b>Motor</b>	Hobbywing 4268G2 1900kv
<b>ESC</b>	Hobbywing XR8 Plus
<b>Pinion/Spur</b>	15T / 46T
<b>Radio</b>	Futaba 7PX
<b>Servos</b>	Futaba S9373SV
<b>Tires</b>	Proline - Usually M3/S3 at PHDR
<b>Battery</b>	Team Zombie 6400Mah 120c HV series 14.8v

## Other Notes/Option Parts used:

Aluminum Servo Horn & rear Hubs  
Worlds Edition center Dog Bones



# 22.0 1/8 Nitro AE RC8 B3.2 with Alex Bernadzik

## Driver Interview

**Name** - Alex Bernadzik

**Age** - 18

**How long have you been racing and what class did you start in?**

7 years, I started in 2wd Short Course

**Home Track?**

Pine Hills Dirt Racing

**Favorite Event?**

2018 IFMAR Worlds Perth

## Racing Highlights?

1. 2019 National Series Champion
2. Sunshine Coast Night Race 1st Place
3. King Of The Valley 2020 1st Place

**Sponsor Time, here is the chance to thank the people who help you out.**

Team Associated, Reedy Power, JConcepts, Runnertime and Dad for all of his help.

## Car Details

<b>Car</b>	Team Associated RC8B3.2
<b>Engine</b>	O.S B21 Ty
<b>Pipe</b>	OS 2090
<b>Plug</b>	OS P4
<b>Radio</b>	Sanwa M17
<b>Servos</b>	Reedy RT2706A
<b>Tires</b>	Jconcepts
<b>Battery</b>	Reedy Power 2400mah

## Other Notes/Option Parts used:

Kashima Shock Bodies, Titanium Screw Kit, JConcepts titanium turnbuckles, Aluminium servo saver arm, Aluminium shock standoffs, Fast Race Shock Caps, 30 gram brass chassis weight



# 23.0 1/8 Nitro HB D819RS with Zac Ryan

## Driver Interview

**Name** - Zac Ryan

**Age** - 34

**How long have you been racing and what class did you start in?**

20 years! I started in the best class ever the 1/10 gas trucks.

**Home Track?**

Pine Hills Dirt Racing

**Favourite Event?**

Thailand Buggy Party, Manila Masters and any major race at PHDR.

**Racing Highlights?**

Winning Australian Gas truck titles, runner up twice at 1/8 gas buggy nats, 3rd at FEMCA, Winning the last thailand buggy party race

**Sponsor Time, here is the chance to thank the people who help you out.**

HB Racing, Hearn's Hobbies, Proline Australia and all the legends at PHDR!

## Car Details

**Car** HBD819RS

**Engine** OS Speed B2101

**Pipe** OS 2090

**Plug** OS P4 in most occasions, P3 if its cold <10 deg

**Radio** Futaba 7PX

**Servos** Futaba S9372SV

**Fuel** VP Pro 30%

**Tires** Proline - Usually M3/S3 at PHDR

**Battery** LRP 2700 Mah 7.4v Hump Pack

## Other Notes/Option Parts used:

Sway bar kit is very useful to have

HB Alloy Servo horns for throttle and steering

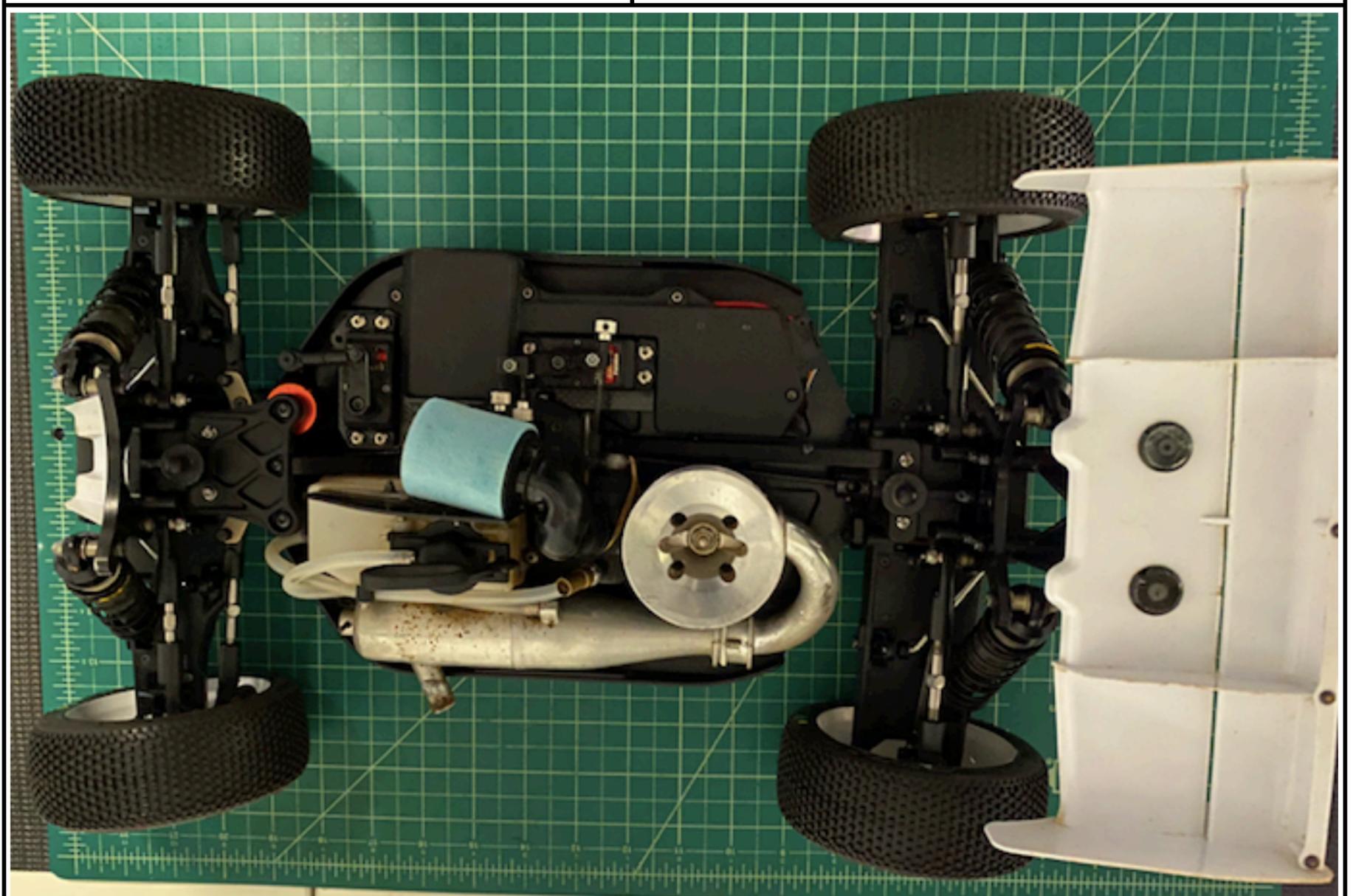
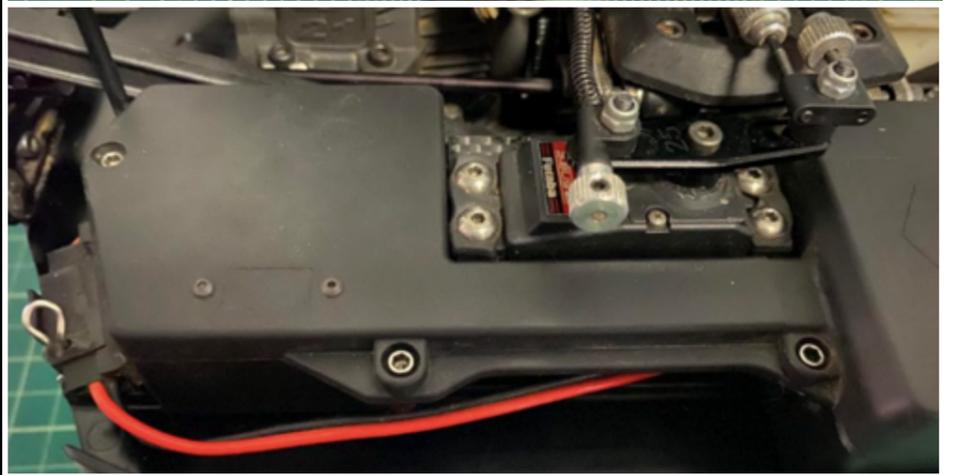
Carbon Fibre top deck, made by Bezerk RC - Australian Company

Carbon Fibre tank guard, made by Bezerk RC - Australian Company

Lundsford Titanium Screws to bolt servos to radio tray

Losi Tank Puller

5Dot - D817 Arm Mount B (+2.8mm) HB204054



## 24.0 Local Hobbyshops

Info

Links



A great local hobby shop with lots of racing equipment for sale, up to stock with most major brands.

<https://speedyrc.com.au/>



Located at 1/129 Robinson Rd E, Geebung QLD 4034. This is an awesome hobby shop which stocks a huge range of rc gear. Head into the hobby shop and check out their selection. They are great at ordering in gear if they don't have stock.

<https://ozrc.com.au/>



Great supple of HB Racing gear, hobby shop located in Melbourne but offer great shipping options and an easy website to navigate.

<https://www.hearnshobbies.com/>



Campbelltown has lots of the major rc brands, specifically J concepts if you're chasing tires this is the place to go. Hobby shop located in NSW.

<https://www.campbelltownhobbies.com.au/>



**Mischief and Mayhem  
Hobbies**

@mischiefandmayhemhobbies · Hobby Store

Located in Nambour, this is a great local hobby shops which supports local racing, check em out!

<https://www.facebook.com/mischiefandmayhemhob>

## 25.0 - Working Bees

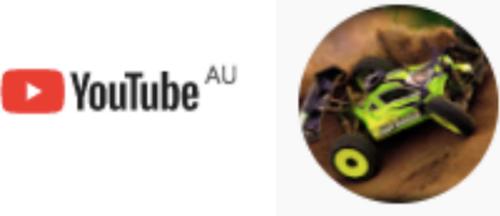
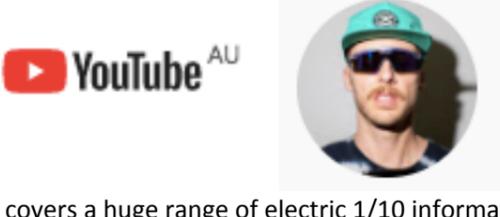
One of the best part about being in a club is being part of the community and helping to keep the facility in great condition for everyone to enjoy. PHDR hosts working bees usually once a month, this is the time when we don't race but instead improve and maintain the facility.

If you can spare a little bit of your time to help out at working bees, its fun and every little bit goes a long way to having the best facility around!

Thanks to all the champions that make this facility so great, check them out below working hard!



## 26.0 - Video and Links

Info	Links
 <p>A great podcast that covers a massive range of topics, interviews with pros and info about the latest big races happening. They are on spotify as well, check them out!</p>	<p><a href="https://thenonamercpodcast.podbean.com/">https://thenonamercpodcast.podbean.com/</a></p>
 <p><b>JQRacingTV</b> 6.68K subscribers</p> <p>Lots of info about 1/8 setup and engine tuning!</p>	<p><a href="https://www.youtube.com/user/JQProductsTV">https://www.youtube.com/user/JQProductsTV</a></p>
 <p><b>Adam Drake</b> 14.1K subscribers</p> <p>A legend of the hobby, Adam runs through a huge amount of setup advice and 1/8 nitro tricks and tips.</p>	<p><a href="https://www.youtube.com/user/AdamDrake117">https://www.youtube.com/user/AdamDrake117</a></p>
 <p><b>Ryan Harris</b> 32.1K subscribers</p> <p>Ryan covers a huge range of electric 1/10 information from racing to setup and maintenance.</p>	<p><a href="https://www.youtube.com/c/RyanHarrisRC/videos">https://www.youtube.com/c/RyanHarrisRC/videos</a></p>
 <p><b>Robert Batlle</b> 2.46K subscribers</p> <p>An IFMAR world champion Robert Batlle runs through lots of different information on 1/8 Nitro racing</p>	<p><a href="https://www.youtube.com/channel/UC_N6DnCnM3oMQs_3hCF63LA">https://www.youtube.com/channel/UC_N6DnCnM3oMQs_3hCF63LA</a></p>
 <p><b>David Ronnefalk</b> 5.52K subscribers</p> <p>An IFMAR world champion David Ronnefalk runs through lots of different information on 1/8 Nitro racing mainly focused on setups for HB racing buggies.</p>	<p><a href="https://www.youtube.com/user/davidronnefalk">https://www.youtube.com/user/davidronnefalk</a></p> <p><a href="http://www.davidronnefalk.com/">http://www.davidronnefalk.com/</a></p>
 <p><b>Pine Hills Dirt Racing</b> @phdradmin · Race Track</p> <p>Our video section of our facebook page, lots of historic videos!</p>	<p><a href="https://www.facebook.com/phdradmin/videos/">https://www.facebook.com/phdradmin/videos/</a></p>
 <p>Website with the latest racing news.</p>	<p><a href="https://circusrc.com/">https://circusrc.com/</a></p>

# Pine Hills Dirt Racing



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