

TEKNO

PERFORMANCE PARTS



DISCLAIMER: Please read these instructions carefully to ensure proper installation. Improper installation can result in damage and/or injury. Tekno RC is not responsible for any damage or personal injury encountered while operating your vehicle. So read carefully!

Thank you and congratulations on your purchase of the Tekno RC V4 brushless conversion kit. The V4 kits represent the new state of the art in 1/8th Electric racing. Utilizing your vehicle's front, rear, and center assemblies along with the Tekno RC chassis and other components, your electric 1/8th vehicle will be performing at its highest level

You will need a suitable brushless motor, brushless ESC, and battery pack to complete the conversion. More about choosing the right gear can be found at www.teknorc.com. A 3 channel radio with throttle mixing is preferred if you are running mechanical brakes. For motor brake setups, a 2 channel radio will work just fine.

Before You Begin: Start with a clean work area. Be sure to keep any screws that you remove as we will be re-using most of them. Remove all radio gear before doing major disassembly. Make sure you have a good set of tools :)

Other parts that may be needed: If you are converting a 1.0 buggy, you will need the longer center rear driveshaft (LOSA3536) and droop screws (LOSA6249). If you are converting a 1.0 truggy, you will need the longer center rear driveshaft (LOSA3590), droop screws (LOSA6253), 2.0 shock towers, body mounts, and 2.0 body. If you are converting an 8E buggy, you will need the nitro center diff mounts (LOSA4415).

1. Disassembly of stock/nitro parts: Start by removing the center differential assembly. If you are converting a nitro vehicle and you don't plan to use mechanical brakes, now is the perfect time to remove all related hardware (discs, pads, linkages, etc.). If you do plan on running them please refer to the brake setup section at the end of this document.

Next remove the rear suspension assembly and rear chassis brace. Then remove the front suspension/steering assembly and front chassis brace. You will be using the stock driveshafts and chassis braces for the Losi 8B/T conversion.

Don't forget to remove the droop pad screws from your old 8B/8T 2.0 chassis and make sure to install them now on the new V4 chassis. If you have the 8B 1.0 kit, you will need to buy Losi part# LOSA6249 AND if you have the 8T 1.0 kit, you will need Losi part# LOSA6253 droop screws.

2. Front and Rear Assembly to V4 Chassis: The next step will be to attach the front and rear assemblies to your new V4 chassis. When installing the front and rear assemblies onto the chassis, be sure to thread each screw a little at a time. This will ensure that the assembly goes down evenly and does not tweak to one side or the other. Next install the center differential mount. Be sure that both front and rear drive shafts are seated in the drive cups before screwing the diff mount down to the chassis.

3. Battery Tray: Locate the battery, screw Bag A, and the battery straps. The two short straps go through the holes running along the **length** of the tray (the "long" sides), underneath the tray and between the chassis and the tray. The long strap goes through the two holes running along the **width** of the tray (the "short" sides). Insert the straps hook side first with the hook side facing towards the outside of the tray. The direction of the straps and where the buckle ends up is a matter of personal preference.

For Truggy Kits: Thread the included (4x) M4x8mm screws through the chassis and into the tray.

For Buggy Kits: Thread the included (6x) M4x6mm screws through the tray and into the chassis. Be sure to use blue thread lock on all six screws.

NOTE: TO ENSURE YOUR BATTERY DOES NOT EJECT FROM THE VEHICLE, IT IS ESSENTIAL THAT YOU INSTALL AND FASTEN ALL THREE BATTERY STRAPS. RUNNING LESS THAN THREE STRAPS IS NOT RECOMMENDED AND WILL MORE THAN LIKELY RESULT IN A BATTERY ACCIDENT.

4. Receiver Box: Locate the receiver box and screw bag 'B'. Test fit your receiver to find the best placement. Secure your receiver with servo tape and screw the receiver box bottom to the chassis with (2x) M3x6mm screws. There are 3 sets of holes to mount the RX box, use the set that allows the RX box to fit between the battery tray and the steering posts. Once your servos and ESC are installed and you've set up your radio, install the receiver box top.

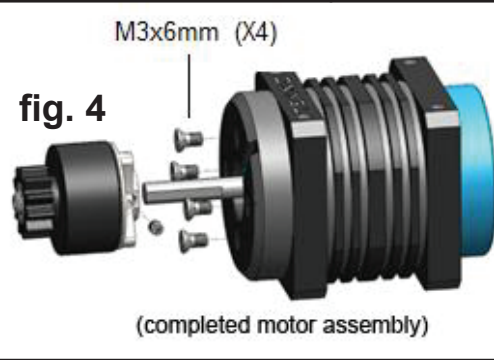
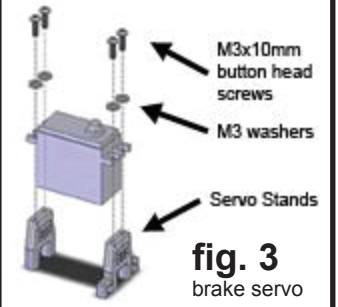
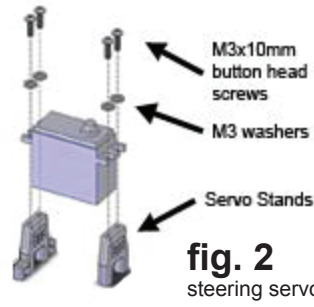
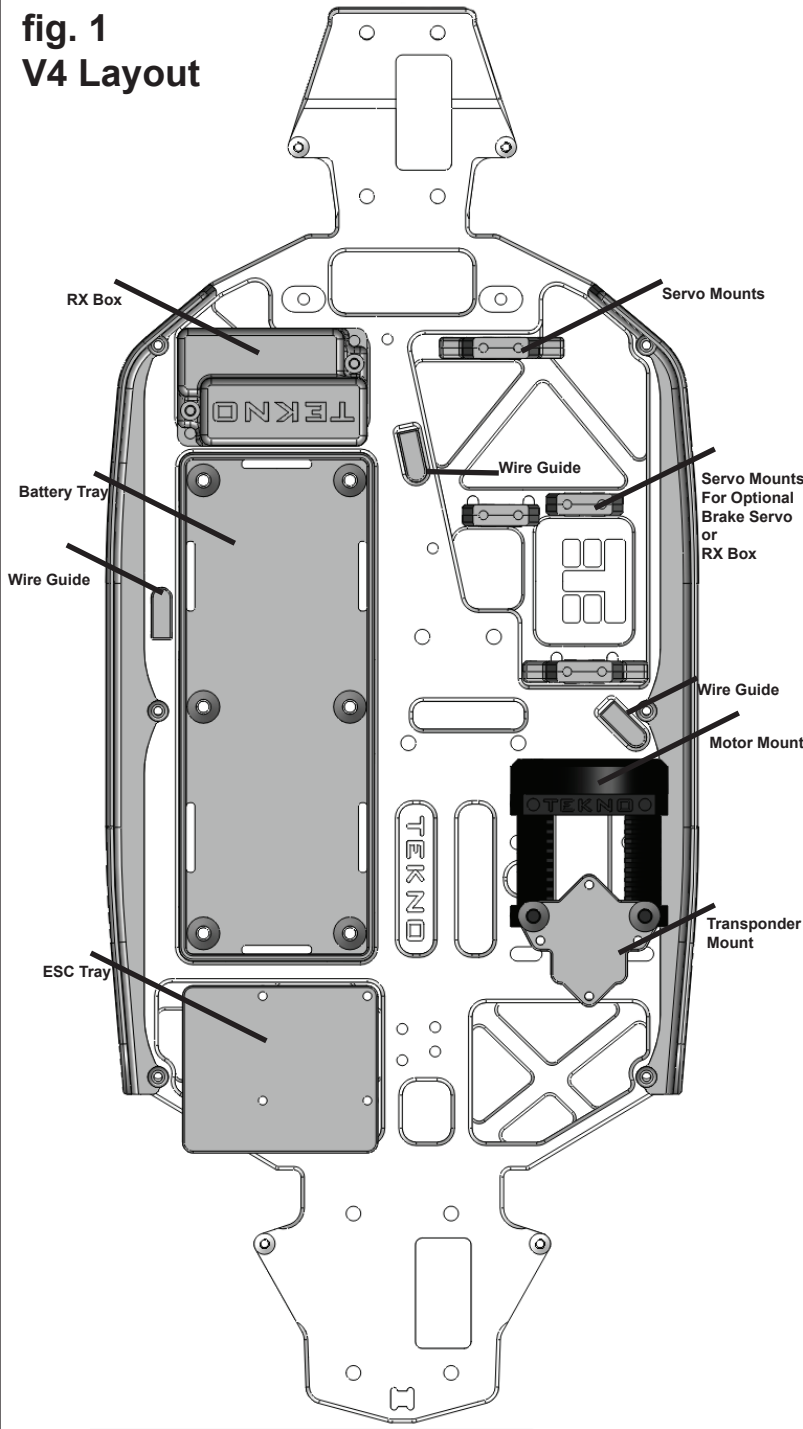
4a. Receiver Box: If you are not using mechanical brakes, the RX box can be mounted where the brake servo would be.

5. Wire Guides: Locate the wire guides and screw bag 'H'. There are 3 wire guides included with your V4 kit. They look like upside down 'U's. There are cutouts on the chassis indicating the position and orientation of the guides except for the one to the left of the battery tray (see fig. 1). Where the wire guides go will depend on where you mount the RX box and if you are using mechanical brakes. If you mount the RX box where the 2nd servo would go, you only need the wire guide in front of the motor for the ESC lead. Otherwise, you will use only the other two. Install them at this point using the supplied M3x6mm screws, but leave them loose so you can run the servo and ESC wires underneath them. Tighten them down once the electronics are properly installed.

6. Servos: Locate screw bag 'C'. Install the servo(s) on to the servo mounts as shown in fig. 2 and fig. 3. There are some small wire guides on the servo mounts to also help with wire routing. You can trim them off if you'd like or if they are in the way. However, no trimming is necessary if you mount them as in fig. 2 and fig. 3.

7. ESC: Locate the ESC tray and screw bag 'I'. Test fit your ESC before securing anything down so you are sure it won't hit any of the other components. Once you have decided on your ESC position use servo tape to secure it to the tray. It is also recommended that you use a long zip-tie to go around the tray and ESC for added security. Use the included 3x6mm screws to attach the tray to the chassis. Route the wire through the wire guide to keep it out of harms way, then into the RX box.

fig. 1
V4 Layout



8. Motor: Locate the motor mount and screw bag 'G'. Install your motor into the Tekno RC motor mount using the (4x) M3x6mm screws and blue thread lock. If your motor only allows two holes to line up (Tekin for example) this is fine. Install your pinion/long shank pinion/Elektri-Clutch/Traktion Drive on the motor shaft with thread lock. See fig. 4.

On your V4 chassis there are two sets of motor slots, a forward set and a rear set (in relation to the cars front and rear). If you are running standard pinion and motor brakes you will be using the rear set of slots. For all other options you will be using the forward slots. Note: If you're running the Traktion Drive or Elektri-Clutch you may need to cut about 1/8" off of the motor shaft for proper fitment. In most cases this does not void the manufacturer's warranty. Use the (4x) M4x8mm screws with blue thread lock to attach the mount to the chassis.

9. Transponder Mount: Locate the Transponder Mount and screw bag 'J'. The transponder mount was designed to sit on top of the motor mount (see layout diagram, fig. 1). The (2x) M4x8mm screws secure the transponder mount to the motor mount. The (2x) M3x6mm screws secure the transponder to the transponder mount. You can also use servo tape or velcro if your transponder doesn't have mounting tabs. If this position does not suit your application, simply mount it somewhere else without the use of the transponder mount.

10. Mudguards: Locate the Mudguards and screw bag 'D'. The right mudguard needs the rear mounting boss ground down. Both left and right mudguards are secured with (3x) M3x10mm screws.

Choosing your power system:

Be aware, our recommendations are based on racing setups. These setups will run cool and provide speeds of approximately 30-40 mph. If you need more speed or torque simply increase your voltage or motor kv but be aware that this will put more stress on you electronics and drive train.

Your motor and battery choice are dependent upon each other. Running a high voltage battery should be paired with a lower kv motor. Running a lower voltage battery should be paired with a higher kv motor to achieve the same speed.

How to obtain the appropriate set-up:

- 1) Choose the voltage you want to run, 4s is the most common however 5s or 6s should be more efficient when paired with the correct motor
- 2) Pick a motor from the chart below that will give you 28-35k rpm with that voltage
- 3) Start with the stock nitro gearing for your car, if more or less speed is needed, you can adjust 1-2 teeth on the pinion/spur gear without harm.

Know that a properly set up high voltage system will draw less amps than a properly set up low voltage system that generates the same speed (Volts(battery) x Amps(motor) = Watts). A system that draws less amps will generate less heat. Voltage is your friend. If your speed control can handle the voltage, then run it. Pick a motor that is appropriate for the voltage and your setup WILL run cooler than a lower voltage setup that yields the same power.

Kv	4S (4 cells)	5S (5 cells)	6S (6 cells)
1300	19,240 RPM	24,050 RPM	28,860 RPM
1400	20,720 RPM	25,900 RPM	31,080 RPM
1500	22,200 RPM	27,750 RPM	33,300 RPM
1600	23,680 RPM	29,600 RPM	35,520 RPM
1700	25,160 RPM	31,450 RPM	37,740 RPM
1800	26,640 RPM	33,300 RPM	39,960 RPM
1900	28,120 RPM	35,150 RPM	42,180 RPM
2000	29,600 RPM	37,000 RPM	44,400 RPM
2100	31,080 RPM	38,850 RPM	46,620 RPM
2200	32,560 RPM	40,700 RPM	48,840 RPM
2300	34,040 RPM	42,550 RPM	51,060 RPM
2400	35,520 RPM	44,400 RPM	53,280 RPM

Tips from the Team:

Motor wires: You can use an air filter support or pipe hanger wire to keep your motor wires out of harm's way. Mount the support on top of the center differential assembly and position it to best protect your motor wires. This is also useful to keep the motor wires from bouncing around during operation. If these wires are left to bounce around without being held down, they can fail over time. Use zip ties wherever possible to keep all wires under control. Shorten or extend wires so there is no stress on them.

Center Diff Clearance: Sometimes gearing choices can affect the clearance between the clutch bell and center differential supports. The smaller the clutch bell choice, the more likely it is there may be a clearance issue. The center diff supports can be ground down where the clutch bell makes contact. In all of our testing, this has not caused any issues or failures.

Gear Mesh: You'll want to adjust your gear mesh so there is a small bit of play between the clutch bell and spur gear. Same goes if you are using the Long Shank Pinions. After setting it a few times, you will become familiar with the proper setting. You can use a sheet of paper in between the teeth if you are not sure how tight or loose it should be. Proper gear mesh is critical to smooth and durable operation. Clutch Adapter: To make sure your clutch adapter or pinion gear doesn't move during operation, it is recommended to clean the parts with motor spray to remove any oils used during manufacturing. Additionally, use a Dremel or file to lightly scuff the shaft of the motor. Lightly, meaning not much at all. The set screw just needs a micro texture on the shaft to dig into when tightened down. This will ensure the adapter will not move during operation. Always use thread locking compound whenever tightening or adjusting the adapter set screw.



Mechanical Brakes:

Recommended: Your brake servo can be plugged into channel 3 of your receiver and "channel mixing" can be programmed with your transmitter to enable the optimum brake setup. Slave channel 3 or aux. to the throttle channel on your transmitter and set up proper direction of travel and amount of throw for proper brake engagement. (This is usually a feature of high end radio systems, check your manual to see that 'throttle' mixing is possible).

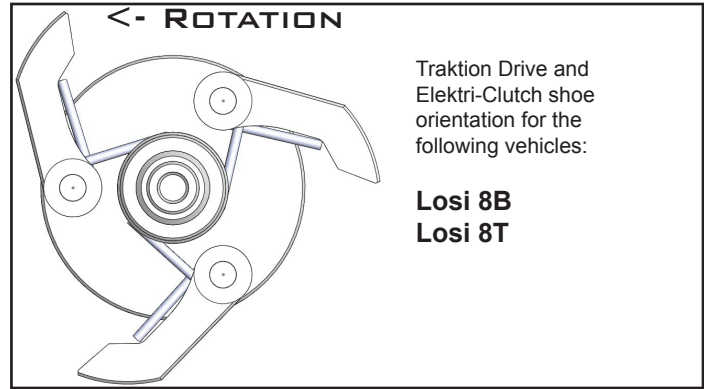
Alternative: If you don't have a transmitter with channel mixing capabilities, a 'Y' connector can be used from the receiver's throttle channel. One lead goes to the brake servo, the other goes to the ESC. The brake servo operates in both directions with this setup, so make sure the brakes aren't engaging when applying full throttle.

Alternative: If when using a Y connector your servo moves in the wrong direction to engage the brakes, you may need a Y connector with a reverse buffer (GWS makes one, available at www.allerc.com). One of the leads from this device will change the direction of your servo for proper brake engagement.

Once your brake setup is completed, you can adjust the brake linkages to obtain proper "brake bias" (F/R brake control)

IMPORTANT Traktion Drive / Elektri-Clutch note:

If you will be using one of our traction control systems in a V4 Losi kit, you **MUST RUN THE SHOES** in the position below. This only applies to kits where the motor is not flipped around.



Power Delivery Option Chart

Drive Option Features	Mechanical Brakes	Motor Brakes	Drivetrain Protection / Traction Control	Freewheeling Drivetrain	Lower Temps / Electronics Protection
Standard Pinion		X			
Long Shank Pinion	X	X			
Traktion Drive	X	X	X		X
Elektri-Clutch	X		X	X	X

Traktion Drive / Elektri-Clutch Spring Recommendation Chart:

Condition / Spring Recommendation	Grooved / Hard Pack outdoor	Medium Traction outdoor	Loose / Dusty / Loamy outdoor	High Bite indoor	Loose indoor
Elektri-Clutch – 0.7mm	X	X	X	X	X
Elektri-Clutch – 0.8mm		X	X		
Elektri-Clutch – 0.9mm			X		
Traktion Drive – 0.8mm		X	X	X	X
Traktion Drive – 0.9mm		X		X	X
Traktion Drive – 1.0mm	X			X	
Traktion Drive – 1.1mm	X			X	

Motor Mount Slot Use Chart

Power Delivery Option Chart	Brake Opt	Chassis Slots Used
Direct Drive (standard pinion) +	Motor Brakes	= rear chassis slots
Direct Drive (long shank pinion) +	Motor Brakes	= use standard pinion
Direct Drive (long shank pinion) +	Mech Brakes	= forward slots
Traktion Drive +	Motor Brakes	= forward slots
Traktion Drive +	Mech Brakes	= forward slots
Elektri-Clutch +	Mech Brakes	= forward slots

Body Notes:

We have tested many bodies. None fit as well as the Losi 8E body (LOSA8097). Other narrow bodies may fit, but this is the best place to start. Use velcro instead of the body posts and the body will fit snug to the mudguards.

Setup Advice:

Center Diff: If you've converted your nitro over, we only suggest thickening your center diff fluid 1-2k.

Shocks: As for shocks springs and oil, the new V4 kits work great with the nitro setups and no changes are recommended. If you are running a heavy battery however (over 1.25 lb), going up one spring rate and ~5wt in oil may be necessary.

Should You Run Mechanical Brakes?: Mechanical brakes are not suited for every track condition. They really shine on outdoor tracks where traction is scarce and speeds are higher. Being able to adjust brake bias will help you maintain control and traction going into a corner. By not having the front wheels lock up and pushing through the turn, you will be quicker in and out of the corners.

If the weather is really hot, mechanical brakes might be a necessity as they allow the motor and ESC to run up to 30-40 degrees F cooler.

If you are running a **truggy**, you are pushing more weight around and really working the ESC and motor. It is recommended to run mechanical brakes in truggies in almost any condition.

Elektri-Clutch, Traktion Drive, or Direct Drive?: This is probably the question we get asked most. Although direct drive is what most people are using to power their cars, we don't recommend it in any condition. Sure it works, but you will be a smoother driver with some sort of traction control. Driving smoother will make you more consistent and crash less, resulting in faster lap times around the track.

For indoor tracks, we recommend Traktion Drive with thick springs (1.0mm or 1.1mm).

For outdoor tracks, Traktion Drive with thinner springs (0.8mm or 0.9mm) or Elektri-Clutch with 0.7mm springs are the best choice for maintaining control through rough and slick sections of the track. The Traktion Drive system is championship tested, taking a respectable 2nd place at the 2010 ROAR 1/8th Electric Nationals.