

# WUGGY

## HYBRID MONSTER TRUCK



# Operations Guide

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800-0303 JA 7-12-06

# MUGGY

## HYBRID MONSTER TRUCK

### **Introduction**

Thank you for choosing the Team Losi Sport Muggy Hybrid Monster Truck. This is a highly developed off-road vehicle that features a sophisticated computer based radio system and does require some mechanical experience and direct adult supervision. This guide contains the basic instructions and drawings for operating and maintaining your new Muggy. Please take the time to read it completely before running the truck. **Your hobby dealer cannot under any circumstances accept a model for return or exchange that has been run.**

### **Customer Support Contact:**

**Horizon Hobby Inc.  
4105 Fieldstone  
Champaign, IL 61821  
1-877-504-0233**

### **Safety Precautions**

**THIS IS NOT A TOY!** The Muggy is a sophisticated high performance radio controlled model, which needs to be operated with caution and common sense. Failure to operate this model in a safe and responsible manner could result in personal and/or property damage. It is your responsibility to see that the instructions are followed and precautions adhered to. The Muggy is not intended for use by children without direct adult supervision. Team Losi, JR, and Horizon Hobby shall not be liable for any loss or damages, whether direct, indirect, special, incidental, or consequential arising from the use, misuse or abuse of this product or any product required to operate it. **This is still a model, do not expect it to do unrealistic stunts.**

### **Warnings**

- Fuel is dangerous if handled carelessly. Follow all directions and precautions on the fuel container.
- Keep fuel and all chemicals out of reach of children.
- Always keep the fuel container closed and never use around an open flame or while smoking.
- The exhaust emits poisonous carbon monoxide fumes. Always run the model in a well ventilated area and never attempt to run it indoors.
- The top of the engine and the exhaust pipe are extremely hot during and for a time after use. Use caution not to touch these parts, especially when fueling.
- The engine can be loud, especially when run in a confined area. If you find the noise objectionable, use ear protection.
- This model is controlled by a radio signal that is subject to interference from sources outside your control. Interference can cause temporary loss of control so it is advisable to always keep a safety margin in all directions to avoid collisions.
- Always operate your model in an open area away from people and cars. The potential speed of this model can cause injury or damage.

## Required Equipment

You will need the following items to operate your new Muggy.

8 AA Alkaline batteries for the transmitter.

1 C Alkaline battery for the igniter.

Quality Model Car Fuel - preferably Team Losi Nitrotane Sport Fuel with 20% Nitro Content.  
Fuel bottle.

7.2v 6 cell "Stick" battery pack for the remote starter.

Battery charger for the 7.2v 6 cell "Stick" battery pack.



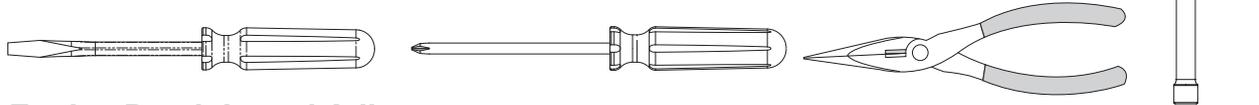
## Tools You Will Find Handy

In addition to the tools included with the Muggy, you will find the following both useful and in some cases necessary.

- Small flat blade and Philips screwdrivers.

- Needle nose pliers.

- Quality .050", 1/16", 5/64", 3/32", 1.5mm, 2.5mm, and 3mm hex (allen) drivers.



## Engine Break-In and Adjustments

Breaking-in your new engine is critical for proper performance. Failure to follow the break-in procedures can cause damage and shortened engine life. During break-in always use the same fuel and nitro content you plan to run. The carburetor is preadjusted at the factory and you must be familiar with the following adjustments and break-in procedure. If you change fuel or run in dramatically different environments (hot/cold, high/low elevations, etc.) you will probably have to adjust at least the high speed needle to prevent overheating and maintain proper performance. **Never allow the engine to rev uncontrollably with the wheels off the ground.**

## Break-In Procedure

The first three tanks of fuel should be run with the high and low speed needles noticeably "rich" (see explanation below). There should be a slight sluggishness and thick smoke when accelerating with the smoke decreasing as the model gains speed. At speed there should still be a noticeable trail of smoke from the exhaust pipe. Run the Muggy on a flat surface in an oval pattern. Ease into the throttle as you accelerate on the straight sections easing off as you approach turns letting the model roll through the turn before easing back on the throttle. This will allow you to get a feel for the steering response and handling characteristics of the truck. You can also break in the engine by placing the truck up against a wall or fixed object and allow the engine to idle through two tanks of fuel.

## Understanding "Rich" and "Lean" Fuel Mixture

Adjusting the carburetor is one of the most critical facets of running a nitro powered R/C vehicle. The fuel mixture is referred to as being "rich" when there is too much fuel and "lean" when there is not enough fuel for the amount of air entering the engine. The amount of fuel entering is adjusted with high and low speed threaded needle valves. The low-speed needle is located in the front of the moving slide. The high-speed needle sticks straight up at the back of the carburetor. Both have a slotted head that is used as a reference and receptacle for a flat blade screwdriver for adjustments. The mixture is made richer by turning the needle counter-clockwise and leaner by turning clockwise. An overly "rich" mixture will yield sluggish acceleration and performance with thick smoke from the exhaust. A "lean" mixture can cause the engine to hesitate before suddenly accelerating briskly or in some cases lose power momentarily after initial acceleration. A lean mixture also makes the engine operate hotter than desired and does not provide enough lubrication for the internal engine components causing premature wear and damage. It is always advisable to **run the engine slightly rich** and **never lean** to avoid overheating and possible damage.

## Base Start-up Settings from the Factory

High-Speed Needle -- 4 turns out from bottom

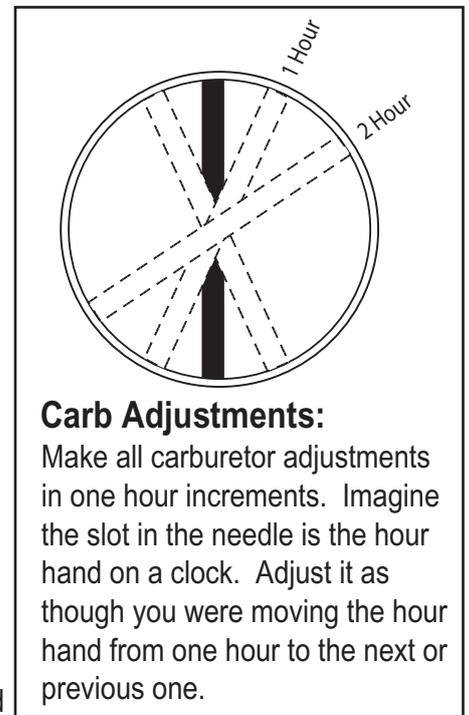
Low-Speed Needle -- 2.5 turns out from bottom

## Engine Tuning

After the engine is broken in you can tune it for optimum performance. When tuning, it is critical that you be cautious of overheating as severe damage and premature wear can occur. You want to make all carburetor adjustments in "one hour" increments.

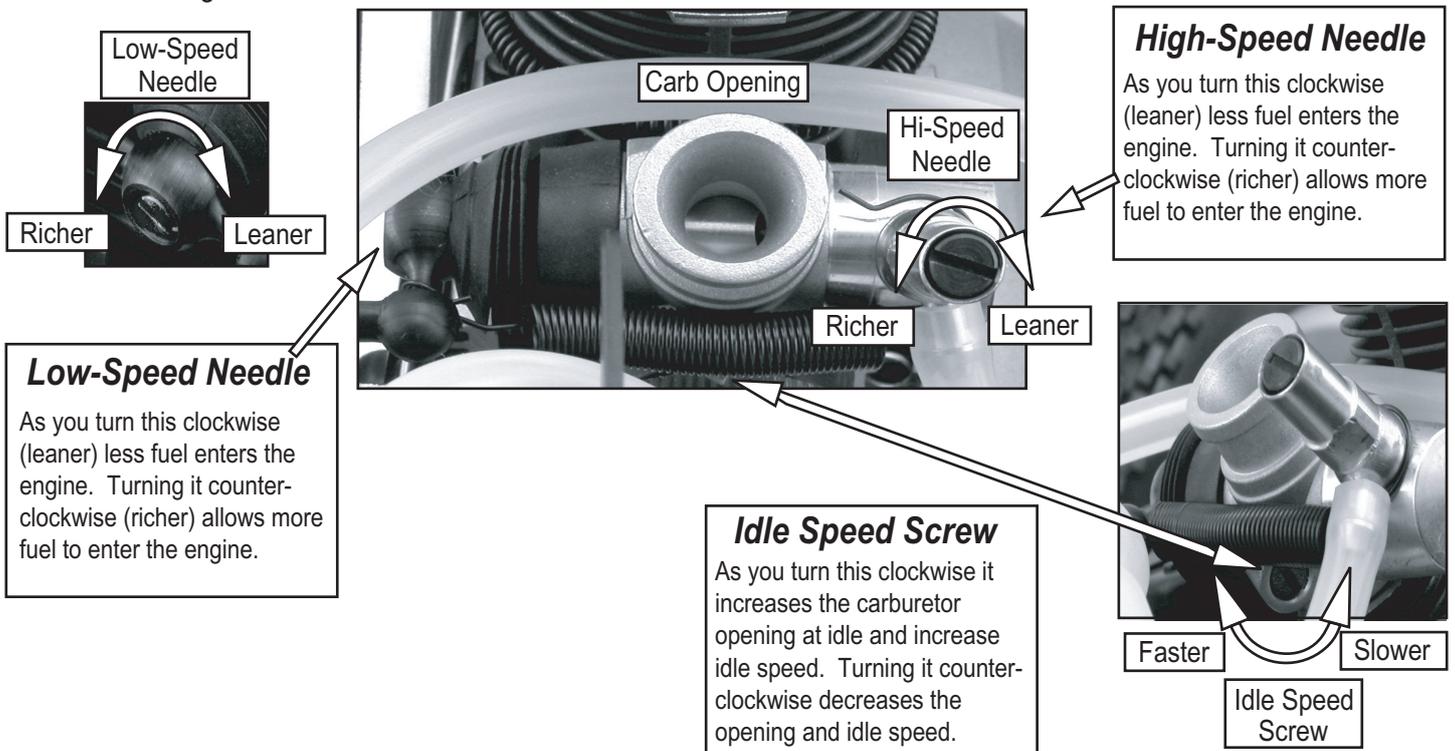
### Low Speed Adjustment

The low speed adjustment affects both the idle and slightly above idle performance. The optimum setting allows the engine to idle for at least 8-10 seconds. The truck should then accelerate with a slight amount of sluggishness and a noticeable amount of smoke. The simplest way to check this is to make sure the engine has been warmed up and let the engine idle for 8-10 seconds. If the low speed mixture is so far off that the engine won't stay running this long, turn the idle screw clockwise, increasing the idle speed. While the engine is at idle pinch and hold the fuel line near the carburetor, cutting off the flow of fuel and listen to the engine RPM (speed). If the low speed needle is set correctly the engine speed will increase only slightly and then shutoff. If the engine increases several hundred RPM before stopping; the low speed needle is rich. Lean the mixture by turning the needle clockwise one hour. Perform the same test again by pinching the fuel line. If the engine speed does not increase but shuts off the needle is too lean and needs to be richened by turning the low-speed needle counter-clockwise one hour. Perform the same test again by pinching the fuel line. After you have optimized the low-speed needle setting; the engine may be idling faster. You will have to adjust the idle stop screw counter-clockwise to slow down the engine idle speed. The engine should accelerate at a constant pace without hesitating.



### Carb Adjustments:

Make all carburetor adjustments in one hour increments. Imagine the slot in the needle is the hour hand on a clock. Adjust it as though you were moving the hour hand from one hour to the next or previous one.



## Hi-Speed Adjustment

After initial acceleration the engine should pull at a steady rate while maintaining a two-stroke whine and a noticeable trail of smoke. If the engine labors and is sluggish with heavy smoke, the mixture is too rich and needs to be leaned by turning the Hi-Speed needle clockwise in one hour increments until it runs smooth. If the engine is not smoking, it is too lean and you must richen the mixture by turning the needle counter-clockwise. Don't be confused by the sound of the engine and the actual performance. A leaner mixture will produce a higher pitch exhaust note but this does not necessarily mean improved performance as the engine is on the verge of over heating and possible damage. Ideally you want to run the engine so that it is on the slightly rich side of optimum. This will give you the best combination of speed and engine life. **CAUTION:** The engine is too lean and overheating if it accelerates rapidly with a high pitch scream then seems to labor, stop smoking, or loses speed. This can be caused by the terrain, atmospheric conditions, or drastic altitude changes. To avoid permanent engine damage, Immediately richen the mixture by turning the Hi-Speed needle counter-clockwise at least "two hours" and be prepared for further adjustments before running again.

## About Glow Plugs

The glow plug is like the ignition system in your automobile. The coiled element in the center of the plug glows red hot when connected to a Glow Igniter. This is what ignites the fuel/air mixture when compressed in the cylinder. When the engine fires the heat generated from the burning fuel/air mixture keeps the element hot. Common reasons for the engine not starting are the Glow Igniter failing, glow plug wet with fuel, or damaged glow plug element. Use a spare glow plug to check the igniter battery. If the igniter lights the spare glow plug, remove the plug from the engine to check it in the same manner. A wet glow plug means there is excessive fuel in the engine; commonly called "flooding". To eliminate this put a rag over the head and turn the engine over a few seconds with your "Spin-Start". Install the glow plug making sure you have the brass gasket on it. The engine should start now.

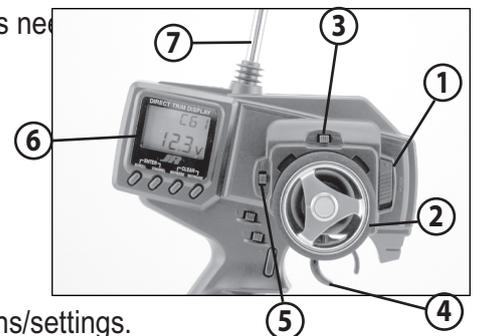
## Testing the Temperature

The ideal operating temperature for the engine will vary with the air temperature but in general it should be in the 200 to 230 degree Fahrenheit range. A simple way to check the engine temperature is to put a few drops of water on the top of the head/heatsink. It should take 3-5 seconds for the water to evaporate. If it boils away quickly the engine is overheating and the Hi-Speed needle must be richened (turned counter-clockwise) at least "two hours". If you plan on racing or prolonged hi-speed running, there are several inexpensive hand held digital temperature gauges available you may want to invest in.

## About the Transmitter

The JR radio installed in the Muggy is a professional level system with many more features compared to radios contained in other RTR vehicles.. Be sure to read through the Transmitter manual included for complete instructions on what and how to use these features. The following is a simple guide to commonly used and referred to items ne

1. Power Switch - Turns the Transmitter ON and OFF.
2. Steering Wheel - Controls the steering.
3. Steering Trim Tab - Fine tunes the steering neutral position.
4. Throttle Trigger - Pull back for throttle and push forward for brakes.
5. Throttle Trim Tab - Fine tunes the Idle/Brakes.
6. Transmitter Display - Digital readout shows battery voltage and feature functions/settings.
7. Transmitter Antenna - Transmits signal to the receiver.



## Transmitter Operation

It is important that you familiarize yourself with the radio system, as this is your direct link to the truck.

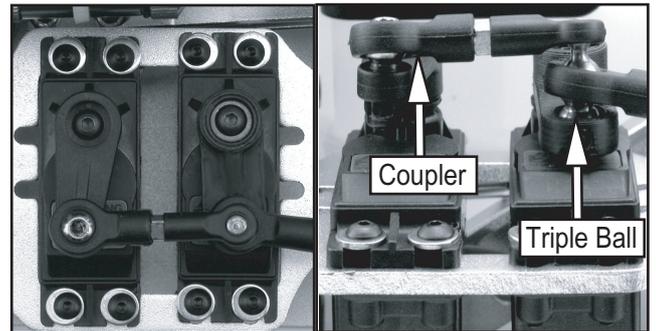
- Never run your truck with low receiver or transmitter batteries.
- Never leave the switch on, while not in use, or the batteries will not last long.
- Always fully extend the transmitter antenna before running your truck.
- When finished running, always turn the truck OFF before the transmitter.
- For best operation it will be necessary to keep the "trims" adjusted for both the steering and throttle as noted below.

**Steering Trim:** The truck should go straight without turning the steering wheel. If not, tap the trim tab found just above the steering wheel in the direction needed to make the truck go straight. Each tap of the trim tab will be accompanied by an audible tone indicating a change has been made. It may take several taps to get the correct trim setting.

**Throttle Trim:** The truck should idle without the tires rotating when the trigger is at its neutral position. If not, tap the trim tab located to the left of the steering wheel to reposition the throttle servo and close the carburetor and apply more brakes. Note that additional braking force is applied when you push the trigger forward.

**Synchronizing the Steering Servos:** If you remove the steering servos you will probably have to make some small adjustments to insure they are working together at maximum capacity.

- Turn on the transmitter and reset the steering trim to read "0", which is neutral, on the transmitter screen.
- Adjust the steering servo coupler so that the "Triple Ball" is vertical.
- Adjust the steering servo tie rod and steering tie rods so that the front tires are pointing straight ahead.
- Use the steering trim tab on the transmitter to ensure the truck goes in a straight line.
- Depending upon your setup the trucks front tires may have toe-in or toe-out.



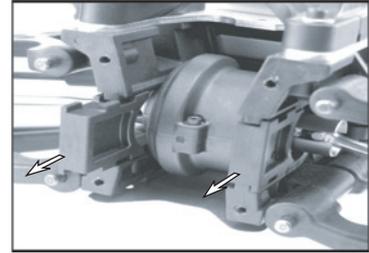
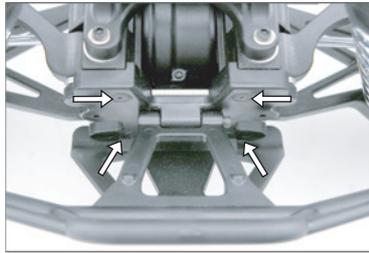
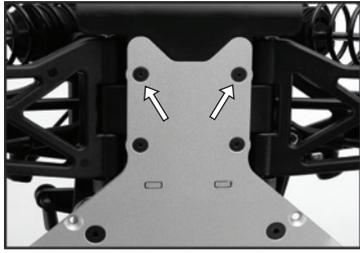
## Maintenance

In addition to the service needs pointed out in this guide you should try to maintain your new truck for proper performance and to prevent wear. If dirt gets in the moving parts it can seriously hinder the performance of the model. Use compressed air, a soft paintbrush, and/or toothbrush to remove dirt and dust. Avoid using solvents, if possible, as this can actually wash the dirt into bearings and areas not accessible without disassembly causing additional wear. We suggest you follow these basic guidelines.

- Remove as much free standing dirt and dust as noted above.
- Never leave fuel in the tank for more than a couple of hours.
- When done running for the day or longer let the engine run out of fuel. Remove the air cleaner and pour a few drops of WD40 or quality after-run engine oil into the carburetor and spin the engine over for a few seconds.
- If needed clean and oil the air cleaner before installing it back on the engine.
- Inspect the truck for worn, broken, or binding parts and repair as necessary.

## Maintaining the Differentials

The differentials should be serviced periodically. Be sure to clean and inspect all of the gears and replace if severely worn. Always use plenty of high-quality grease (like Team Losi LOSA3066) on all gears. **NOTE:** These can also be made into racing type viscous diffs as noted below. Always service one diff at a time and pay close attention to install the housing with the "TOP" marking up so it can be seen looking down on the truck.

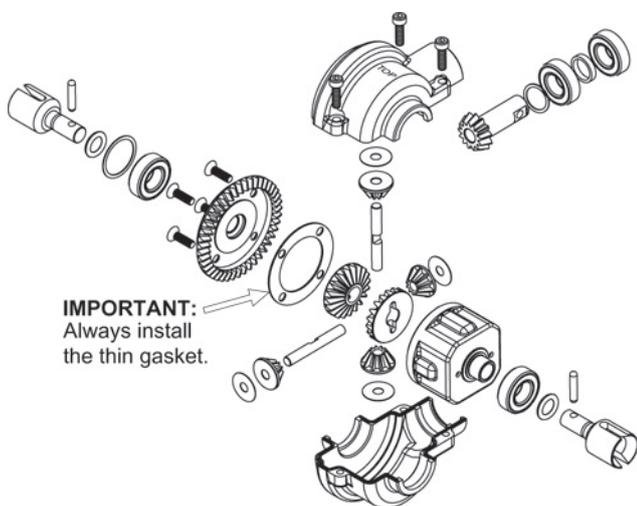


### Removing the Diffs

- Remove the two screws in the bottom at the extreme end of the chassis.
- Remove the four screws in the bulkhead allowing the bumper/skidplates and pin mounts to be removed.
- Remove the diff retainers and slide the diff out. **NOTE:** On the front end only you will have to remove the lower front shock attachment screws and swing the shocks up and out of the way.

### Diff Service

- Remove the three 5/64" cap head screws and the top of the differential housing; then the diff.
- Remove the four 3mm flat head screws from the ring gear allowing it to be removed from the diff case.
- Inspect the ring and pinion gears for wear; replace if necessary.
- Remove the cross shafts, bevel gear, and shims from the diff case.
- Clean and inspect all parts; replace if necessary.
- Check all ball bearings; clean or replace if necessary.
- Remove pins from the out drives.
- Remove the out drives and inspect for wear; clean or replace if necessary.
- Lube all shafts and gears with LOSA3066 assembly grease and assemble.
- Load cross shaft assembly with gears and shims into the diff case.
- Apply a liberal amount of grease or silicone fluid. See viscous differential below.
- Install the blue diff gasket on the diff case followed by the ring gear and four 3mm screws.
- Install assembled diff into the diff housing and into the truck.



### For Viscous Differential

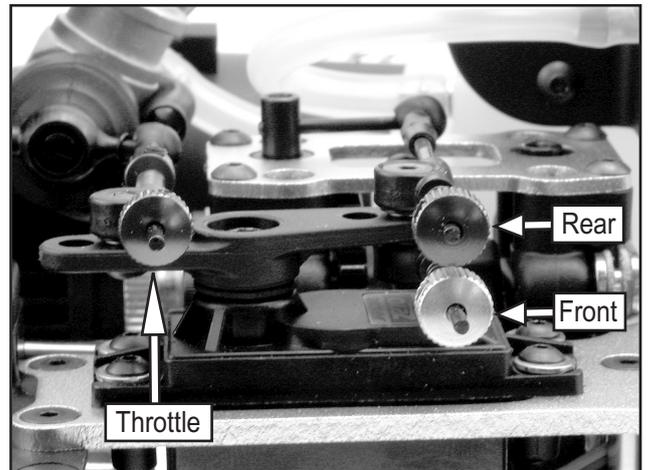
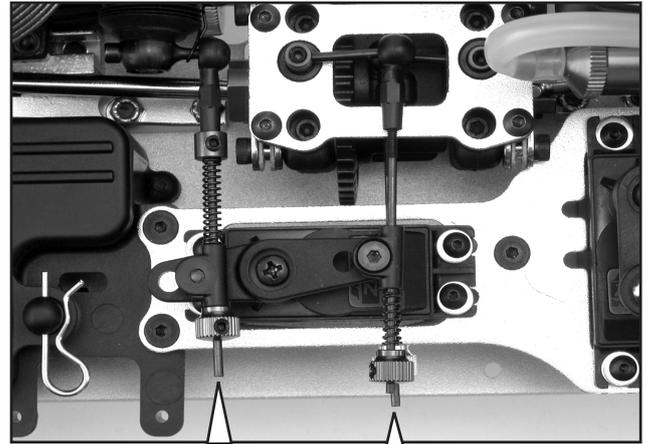
Instead of grease you can use silicone fluid in the differential for a limited slip feel as desired for racing. Simply fill the diff up to the top of the gears before replacing the ring gear. Don't forget to install the blue diff gasket. You may have to replace the o-rings on the out drives at the same time you change to this type of setup if the old o-rings are worn. Popular silicone fluids are 7,000wt in the front, 10,000wt in the center, and 5,000wt in the rear. These can be found at your local hobby shop.

## Throttle/Brake Linkage

The Muggy is equipped with front and rear adjustable brakes.

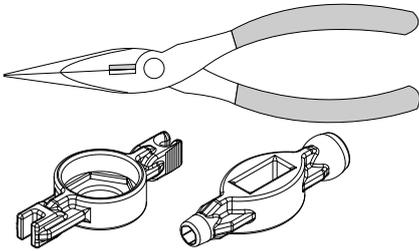
### Setup

- Turn on the Transmitter and set the throttle trim to read "0", which is neutral, on the transmitter screen.
- Turn on the switch in truck.
- Loosen the set screw in the blue adjusting collar and attach the throttle linkage ball cup to the carburetor.
- Slide the blue adjusting collar up to the servo linkage slide and tighten the collar. Do not preload the collar against the slide.
- Loosen the set screw in the silver collar and attach the ball cup to the front brake arm located under the center diff top plate.
- Slide the silver adjusting collar against the spring and tighten the set screw. Do not preload the collar against the spring. Ensure the brake arm is lined-up front to back of the truck.
- Loosen the set screw in the red collar and attach the ball cup to the rear brake arm located above the center diff top plate.
- Slide the red adjusting collar against the spring and tighten the set screw. Do not preload the collar against the spring. Ensure the brake arm is lined-up front to back of the truck.



# Rebuilding/Refilling the Shocks

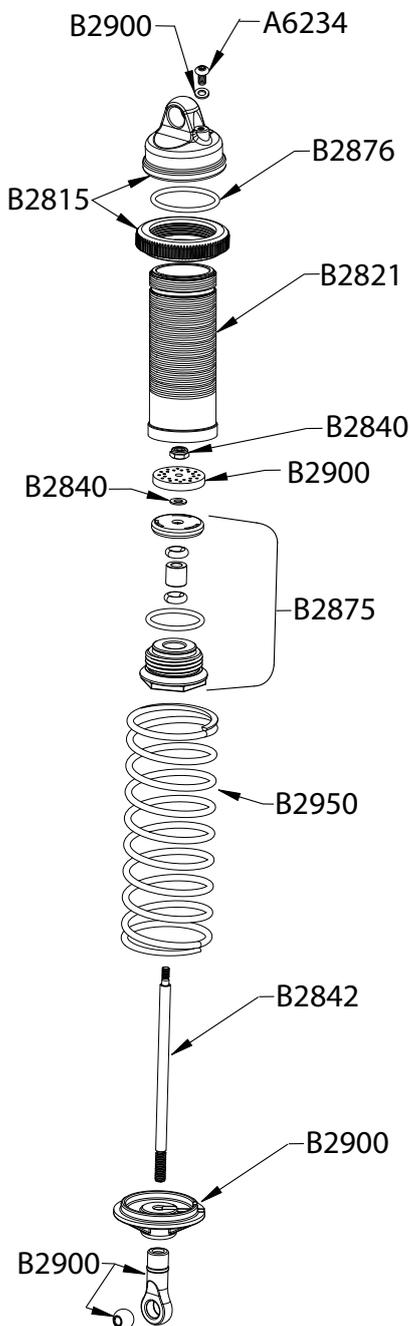
## Tools Needed



**Step 1.**  
After removing the shock, push up on the lower spring cup and snap it off of the shaft. Remove the spring.

**NOTE:** If you only wish to change or fill the shock fluid skip to step 6.

**Step 2.**  
Turn the shock upside down and using the included shock tool, remove the black shock cartridge/shaft assembly from the shock body by turning it counter clockwise.



**Step 3.**  
Remove the 1/4" nut by turning it counter-clockwise. Remove the piston and washer. Remove the old cartridge. Put a drop of shock oil on the shock shaft before installing new shock cartridge.

Hold Here with needle nose pliers

**Step 4.**  
Install washer onto the shock shaft until it stops. Slide the shock piston onto the shaft against the washer. Reinstall 1/4" nut and tighten by turning it clockwise.

Be sure to reinstall washer

**Step 5.**  
If you plan on completely changing the shock fluid (suggested) dump out the old fluid from the shock body before reinstalling the cartridge/shaft assembly. Pull the shaft out so that the piston is next to the cartridge and reinstall the assembly into the shock body and tighten in a clockwise direction.

**Step 6.**  
Note: If you are just refilling your shocks, be sure to use Team Losi 30wt silicone shock fluid. Remove the shock cap and the small button head screw and washer in the top of it. Carefully fill the shock body with fluid to the top. Move the shaft up and down slowly to remove bubbles. Top off with oil if needed.

**Step 7.**  
Holding the shock upright, push the shock shaft in slowly until it bottoms out. While holding the shock shaft in this position, replace the small screw and washer in the shock top. If fluid leaks around the threads of the cartridge, it is probably not tight enough.

**Step 8.**  
Slide the spring over the shock body against the shock adjuster nut. Slide the lower shock cup onto the shock shaft and snap it onto the shock end being sure that it seats on the mount.

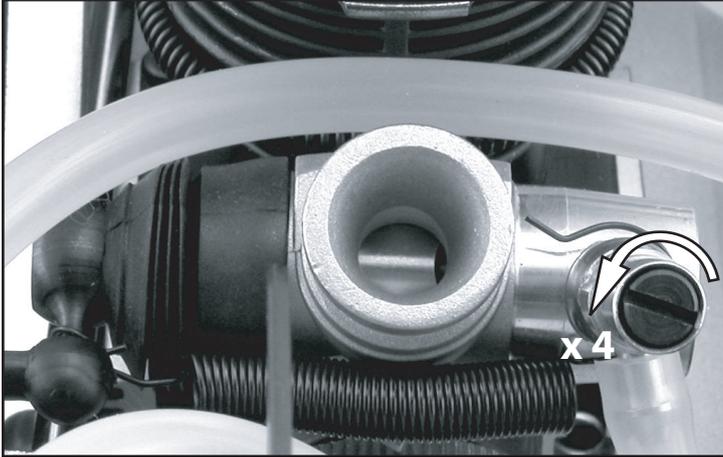
"snap!"

Reinstall the shock.

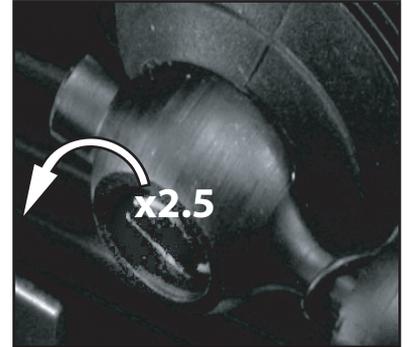
# Quick Reference Guide

## Initial Factory Settings

### Engine



Hi-Speed Needle 4 Turns Out



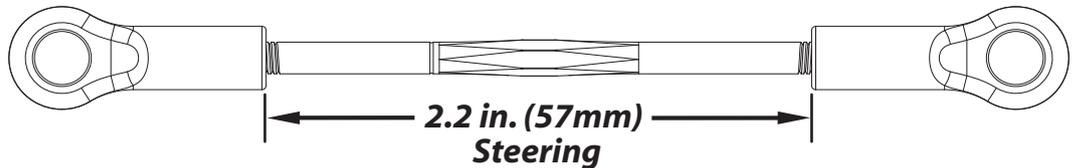
Low-Speed Needle 2.5 Turns Out

### Shocks



Team Losi 30wt  
Shock Oil  
(LOSA5224)

### Tie Rods



# Trouble shooting Chart

Problem	Things to Check	Remedy
Engine won't start.....	<ul style="list-style-type: none"> <li>- Out of fuel</li> <li>- Spoiled or improper fuel</li> <li>- Glow plug not lighting</li> <li>- Engine overheating</li> <li>- Engine flooded</li> <li>- Aircleaner blocked</li> <li>- Exhaust blocked</li> </ul>	<ul style="list-style-type: none"> <li>- Check/replace glow plug</li> <li>- Charge/change battery</li> <li>- Let cool - see "Testing the Temperature"</li> <li>- Clean and oil aircleaner</li> </ul>
Engine won't turn over.....	<ul style="list-style-type: none"> <li>Engine is flooded</li> <li>Engine seized</li> </ul>	See "About Glow Plugs"
Engine starts then stalls.....	<ul style="list-style-type: none"> <li>- Idle speed set too low</li> <li>- Glow plug is fouled/weak</li> <li>- Air bubbles in fuel line</li> <li>- Engine is overheated</li> <li>- Insufficient fuel tank pressure/blockage</li> </ul>	<ul style="list-style-type: none"> <li>- See "Carburetor Adjustments"</li> <li>- See "About Glow Plugs"</li> <li>- Check for split/hole in fuel line</li> <li>- See "Testing the Temperature"</li> <li>- Clear pressure line</li> </ul>
Engine performing poorly.....	<ul style="list-style-type: none"> <li>- Hi-Speed fuel mixture is too rich</li> <li>- Engine overheating</li> <li>- Leaking glow plug</li> <li>- Carburetor dirty or blocked</li> <li>- Bad fuel or contaminated</li> <li>- Clutch slipping</li> <li>- Bound drive-train</li> <li>- Engine worn out</li> </ul>	<ul style="list-style-type: none"> <li>- See "Engine Tuning"</li> <li>- Replace glow plug</li> <li>- Try fresh fuel</li> <li>- Clean, Adjust, Repair</li> <li>- Check for damaged parts</li> <li>- Rebuild</li> </ul>
Engine overheats.....	<ul style="list-style-type: none"> <li>- Hi-Speed fuel mixture is too lean</li> <li>- Low-Speed fuel mixture is too lean</li> <li>- Bad, contaminated, or improper fuel</li> <li>- Restricted air flow across the heatsink</li> <li>- Excessive load on the engine</li> </ul>	<ul style="list-style-type: none"> <li>- See "Understanding Rich and Lean"</li> <li>- Clean head fins</li> <li>- Check for damaged parts</li> </ul>
Engine hesitates or stumbles...	<ul style="list-style-type: none"> <li>- Engine overheated</li> <li>- Hi-Speed mixture too lean</li> <li>- Low-Speed Mixture too rich</li> <li>- Air bubbles in fuel line</li> <li>- Glow plug fouled</li> </ul>	<ul style="list-style-type: none"> <li>- See "Engine Tuning"</li> <li>- Check fuel line for holes</li> <li>- Change glow plug</li> </ul>
Engine stalls instantly when throttle is fully opened from idle.	<ul style="list-style-type: none"> <li>- Glow plug fouled</li> <li>- Hi-Speed mixture too rich</li> <li>- Low-Speed mixture too lean</li> </ul>	<ul style="list-style-type: none"> <li>- Change glow plug</li> <li>- See "Engine Tuning"</li> </ul>
Engine stalls while driving around turns.....	<ul style="list-style-type: none"> <li>- Fuel level is low</li> <li>- Idle speed set too low</li> </ul>	<ul style="list-style-type: none"> <li>- Add fuel</li> <li>- Increase idle speed</li> </ul>
Engine stalls while idling.....	<ul style="list-style-type: none"> <li>- Low-Speed mixture too rich</li> <li>- Low-Speed mixture too lean</li> <li>- Idle speed too low</li> <li>- Clutch shoes not disengaging</li> <li>- Clutch spring broken</li> <li>- Clutch bearings broken</li> <li>- Engine worn out.</li> </ul>	<ul style="list-style-type: none"> <li>- See "Engine Tuning"</li> <li>- Increase idle speed</li> <li>- Check for broken clutch parts</li> <li>- Check, clean, replace</li> <li>- Rebuild</li> </ul>

# MUGGY Parts List

## Suspension Parts

LOSB2002 F/R Suspension Arms (pr) (LST2/Mug).....	\$10.00
LOSB2003 Lower F/R Shock Mounts.....	\$2.00
LOSB2104 Front Spindles and Carriers (LST2/Mug).....	\$7.00
LOSB2106 Rear Hub Carriers (LST2/Mug).....	\$5.00
LOSB2110 Steering Bell Cranks & Bushings.....	\$4.50
LOSB2111 Steering Saver Hardware.....	\$6.00
LOSB2112 Steering Post Set.....	\$5.00
LOSB2113 Steering Tiebar & Bushings.....	\$6.50
LOSB2114 Steering Brace, Alum.....	\$5.00
LOSB2152 F/R Shock Tower & Pin Mount.....	\$8.00
LOSB2202 F/R Suspension Pin Brace Set (AL).....	\$7.00
LOSB2221 F/R Sway Bar Kit (LST2/Mug).....	\$14.99
LOSB4101 Hinge Pin, 70mm (LST2/Mug).....	\$10.99

## Chassis Parts

LOSB2257 R/L Bulkheads & Diff Retainer (LST2/Mug).....	\$6.00
LOSB2258 F/R Bulkhead Set.....	\$6.00
LOSB2265 Chassis.....	\$89.99
LOSB2266 Bulkhead Top Plates.....	\$9.99
LOSB2267 Front Chassis Brace.....	\$14.99
LOSB2268 Rear Chassis Brace.....	\$16.99
LOSB2351 Receiver Box & Cover.....	\$10.99
LOSB2352 Radio Tray & Stand-Offs.....	\$12.99
LOSB2401 F/R Bumpers & Braces (LST2/Muggy).....	\$10.99
LOSB2450 F/R Body Mount Posts & Hardware (LST2/Mug).....	\$3.50
LOSB2501 Wing Mount & Brace (LST2/Mug).....	\$9.00
LOSB8151 Wing & Washers, Black (LST2/Mug).....	\$9.00

## Shocks

LOSB2815 Shock Nut & Cap Molded (4) (LST2/Mug).....	\$9.00
LOSB2821 Shock Body, Molded (Mug).....	\$9.99
LOSB2842 Shock Shaft (Mug).....	\$5.00
LOSB2875 Shock Cartridges & Seals (2) (LST2/Mug).....	\$6.00
LOSB2876 Shock Cart. & Cap O-Rings (8).....	\$3.00
LOSB2900 Shock Hardware, All Plastics (LST2/Mug).....	\$6.50
LOSB2950 Shock Springs (Silver) (LST2/Mug) (pr).....	\$6.50

## Drive Train Parts

LOSB3125 Trans Drive & Selector Pin Set (LST2/Mug).....	\$2.00
LOSB3505 CV Coupler & Pin Set (LST2/Mug).....	\$7.00
LOSB3512 20mm Whgeel Hex Set-Blue (LST2/Mug).....	\$16.99
LOSB3513 Wheel Nuts, Blue for 20mm Hex (LST2/Mug).....	\$4.00
LOSB3520 F/R Super-Duty Drive CV Shaft (pr) (LST2/Mug).....	\$39.99
LOSB3521 F/R Super-Duty Drive CV Shaft Only(LST2/Mug).....	\$12.99
LOSB3522 F/R Super-Duty CV Axle (LST2/Mug).....	\$7.00
LOSB3523 F/R Super-Duty CV Rebuild Set (pr) (LST2/Mug).....	\$7.50
LOSB3530 F/R Differential Case Set (LST/Mug).....	\$9.50
LOSB3537 F/R Diff Housing (LST2/Mug).....	\$4.00
LOSB3538 F/R Diff Bevel Gear Set (LST2/Mug).....	\$7.00
LOSB3539 F/R Diff Seal Set (2) (LST2/Mug).....	\$3.50
LOSB3540 F/R Diff Out Drive Set (LST2/Mug).....	\$9.00
LOSB3541 F/R Diff Drive Yoke (LST2/Mug).....	\$5.00
LOSB3545 Center CV Driveshaft, Front (LST2/Mug).....	\$10.99
LOSB3546 Center CV Driveshaft, Rear.....	\$13.99
LOSB3557 F/R Diff Pinion Gear, 11T.....	\$12.99
LOSB3558 F/R Diff Ring Gear, 45T.....	\$21.99
LOSB3559 Center Diff Out Drives (2).....	\$7.50
LOSB3560 Spur Gear 46T.....	\$21.99
LOSB3561 Center Diff Mounts & Threaded Inserts.....	\$10.99
LOSB3562 Center Diff Support Plate.....	\$11.99
LOSB3608 Brake Discs, Steel (2).....	\$4.00
LOSB3609 Brake Pads & Spacers (4).....	\$7.00
LOSB3610 Brake Cam Set.....	\$6.00

## Clutch Parts

LOSB3302 Flywheel 3-Pin.....	\$10.99
LOSB3305 Flywheel Collet.....	\$4.00
LOSB3306 Clutch Nut & Shims, 5 x 7mm (LST2/Mug).....	\$5.00
LOSB3322 Clutch Spring Set (3) Silver (LST2/Mug).....	\$3.00
LOSB3324 Gold Al. Clutch Shoe & Spring Set (LST2/Mug).....	\$22.99
LOSB3360 Clutch Bell 13T.....	\$13.99

## Hardware

LOSA4002 Antenna Tube & Cap.....	\$2.25
LOSA4003 Antenna Caps.....	\$1.25
LOSA5014 O-Ring for Shock Cartridge (8).....	\$1.99
LOSA6106 4mm E-Clips (12).....	\$2.00
LOSA6204 4-40 x 1/2" Cap Head Screw (10).....	\$1.50
LOSA6206 4-40 x 3/8" Cap Head Screw (10).....	\$1.50
LOSA6212 4-40 x 1/8" Button Head Screw.....	\$1.25
LOSA6215 #4 Narrow Washers (10).....	\$1.25
LOSA6216 4-40 x 7/8" Cap Head Screw (10).....	\$1.50
LOSA6220 4-40 x 1/2" Flat Head Screw (10).....	\$1.50
LOSA6223 4-40 x 1" Cap Head Screw.....	\$2.00
LOSA6226 4-40 x 7/8" Flat Head Screw.....	\$2.00
LOSA6228 5-40 x 1/8" Set Screw.....	\$1.80
LOSA6229 4-40 x 3/8" Button Head Screw (10).....	\$2.00
LOSA6233 4-40 x 5/8" Flat Head Screw (10).....	\$2.50
LOSA6234 4-40 x 1/4" Button Head Screw (10).....	\$2.50
LOSA6241 5-40 x 5/8" Cap Head Screw (8).....	\$2.50
LOSA6242 5-40 x 1 1/4" Cap Head Screw (4).....	\$2.50
LOSA6244 Kingpin Screw (LST2/Mug) (8).....	\$4.00
LOSA6250 4mm & 5mm Set Screws (4 ea).....	\$2.50
LOSA6271 5-40 x 1/2" Flat Head Screw.....	\$2.50
LOSA6298 8-32 x 1/8" Set Screw.....	\$2.50
LOSA6307 5-40 Nuts, Lock & Hex (4 ea).....	\$2.00
LOSA6305 4-40 Steel Lock Nuts.....	\$3.50
LOSA6350 #4 & 1/8" Hardened Washers.....	\$2.50
LOSA6355 2.2 & 3.6mm Washers (6 ea).....	\$2.00
LOSA6356 5 & 6mm Shim Set.....	\$2.00
LOSA6937 5 x 10mm Shielded Ball Bearings (2).....	\$6.50
LOSA6942 8 x 16mm Sealed Ball Bearings (4).....	\$8.00
LOSA6944 15 x 21mm x 4mm Shielded Ball Bearings (2).....	\$7.00
LOSA8200 Body Clips.....	\$1.25
LOSB3870 8-32 x 3/8" Button Head Screw.....	\$2.25
LOSB3890 4-40 x 1 1/8 Cap Head Screw.....	\$3.00
LOSB3902 3 x 6mm Flat Head Screw.....	\$5.00
LOSB3903 3 x 8mm Flat Head Screw.....	\$5.00
LOSB3904 3 x 10mm Flat Head Screw.....	\$5.00
LOSB3905 3 x 12mm Flat Head Screw.....	\$5.00
LOSB3908 3 x 8mm Button Head Screw.....	\$5.00
LOSB3910 3 x10mm Button Head Screw.....	\$5.00
LOSB3920 5 x 8mm Pan Head Screw.....	\$4.00
LOSB3930 3 x14mm Cap Head Screw.....	\$5.00
LOSB3990 3mm Std. & Lock Nuts (12).....	\$4.00
LOSB4002 Turnbuckle Steering Rod Set.....	\$6.00
LOSB4020 Rod Ends & Pivot Balls (8) (LST2/Mug).....	\$7.00
LOSB4104 Pivot Pin Set (4 ea) (LST2/Mug).....	\$11.99
LOSB4206 Throttle & Brake Linkage Set.....	\$16.99
LOSB4207 Steering Servo Linkage Set.....	\$11.99
LOSB4208 Steering Servo Mounting Hardware.....	\$5.00
LOSB4602 Tool Set (LST2/Mug).....	\$4.50
LOSB4603 4-Way Wrench (Steel).....	\$6.00

# MUGGY Parts List

## Losi Sport 427 Engine Parts

LOSB5111 Spin-StartBackplate,.26 (LST/2/Muggy).....	\$6.00
LOSR1021 Head Button, 427.....	\$9.00
LOSR1023 Head Shims, .1mm (2), 427.....	\$2.00
LOSR1024 Head Shims, .2mm (2), 427.....	\$2.00
LOSR1026 Wrist Pin, 427.....	\$4.00
LOSR1027 Wrist Pin Clips (2), 427.....	\$2.00
LOSR1028 Connecting Rod, 427.....	\$35.99
LOSR1030 Crank Shaft (w/PS), 427.....	\$59.99
LOSR1031 Back Plate PS, 427.....	\$6.00
LOSR1032 One-Way Bearing, PS, 427.....	\$14.00
LOSR1033 Shaft, PS, 427.....	\$2.50
LOSR1038 O-Ring Set, 427.....	\$7.00
LOSR1039 Head Screw (4), 427.....	\$2.00
LOSR1040 Screw Set, PS, 427.....	\$3.00
LOSR1060 Cylinder Head, 427.....	\$49.99
LOSR1062 Crankcase, 427.....	\$71.99
LOSR1063 Piston/Sleeve, 427.....	\$49.99
LOSR1064 Carburetor, 8.5mm, 427.....	\$43.99
DYN0911 Carburetor Pinch Bolt, 427.....	\$5.99
DYN0913 Front Bearing, Mach 26.....	\$9.49
DYN0915 Rear Bearing, Mach 26.....	\$19.99

## Engine Accessories

LOSA9315 Fuel Tubing, 24".....	\$5.00
LOSB5006 Fuel Filter, Hi-Volume (Al) (LST/2/Mug).....	\$8.95
LOSB5008 Fuel Tank & Mounts, 150cc.....	\$15.99
LOSB5020 Air Cleaner w/Oil (LST/2/Mug).....	\$11.99
LOSB5021 Air Cleaner Foam Set (LST/2/Mug).....	\$6.99
LOSB5029 Engine Mount Set, RTR.....	\$15.99
LOSB5051 Ex Header Seals & Springs (2) (LST/2/Mug).....	\$6.00
LOSB5054 Ex Pipe Seals & Springs (LST/2/Mug).....	\$6.00
LOSB5063 Ex Header.....	\$19.99
LOSB5064 Ex Pipe HT.....	\$39.99

## Wheels & Tires

LOSB7011 420 Series Dish Wheels, Yellow (pr) (LST2/Mug).....	\$12.00
LOSB7210 420 Series Kingpin Tire (pr).....	\$29.99
LOSB7410 420 Series Wheels (Yellow) w/420 Kingpin Tires (pr).....	\$44.99

## Bodies

LOSB8017 Muggy Body, Orange w/Stickers.....	\$49.99
LOSB8018 Muggy Body Clear w/Window Mask & Stickers.....	\$29.99
LOSB8204 Muggy Sticker Sheet.....	\$5.50

## Option Parts

### Drive Train Parts

LOSB3531 Aluminum Diff Cases, Polished (LST/2/Muggy).....	\$10.00
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### Hardware

LOSB4021 Pivot Balls, Hard Ano. Alum. (4) (LST/2/Muggy).....	\$8.00
LOSB4102 Titanium Nitride Inner Hinge Pins (LST/2/Muggy).....	\$8.00

### Engine Accesories

LOSB5028 One Piece Alum. Engine Mount.....	\$24.99
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### Receiver Pack

LOSB9950 5 Cell 6V 1100mAh Receiver Pack (LST/2/Muggy).....	\$31.99
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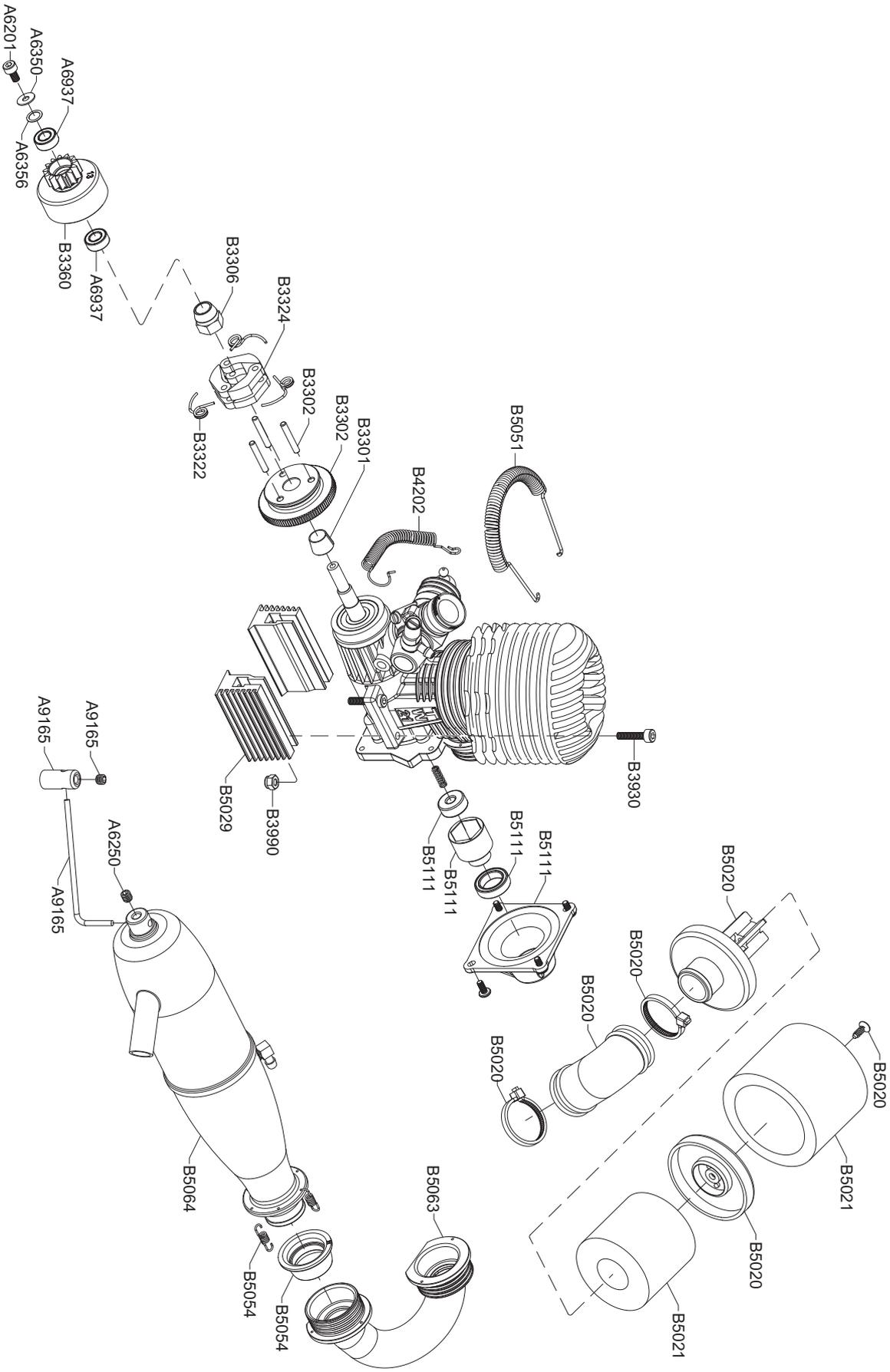








**CLUTCH & EXHAUST ASSEMBLY**



# LOSI SPORT 427 Exploded View

