

Warranty

Axial is dedicated to offering the highest quality products to our customers. Axial offers a one-year limited warranty that ensures that your engine will be free from manufactures defects.

Axial does not cover under warranty, normal wear, abuse, improper fuel, neglect, damage from glow plugs, overheating, or crash damage to product. All repairs and replacement are under the discretion of Axial.

Axial shall not be liable for any loss or damage, whether direct or indirect from any special situation arising from the use, misuse or abuse of this product.

If you do have a warranty claim, please contact Axial for a Return Merchandise Authorization (RMA) number. Any product returned without a RMA will be refused. Axial will inspect and determine if the engine is under warranty. If it is found under warranty, Axial will repair and return the engine. If it is found not under warranty, Axial will contact the customer to get authorization to complete the repair. Items found not under warranty will be charged for parts and labor. Payment authorization must be made prior to repairs are being completed.

To obtain a RMA number, please contact Axial at 949-600-8642 x 403 or service@axialracing.com.

The engine must be returned complete with crankshaft, piston, sleeve, connecting rod, cylinder head, carburetor, and pull starter. You should not return the clutch, flywheel collet, nut, air cleaner, manifold, or muffler.

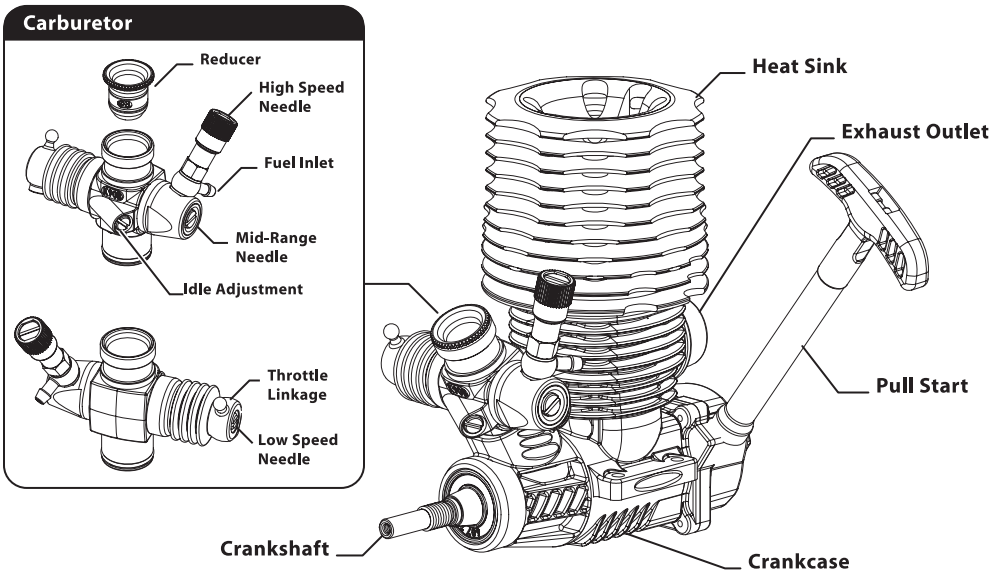
To ensure quick turn around, please make sure to write your RMA number on the outside of the box. Axial recommends that you insure the package for up to \$200 dollars. Axial is not responsible for lost incoming shipments.

Axial
21092 Bake Parkway Suite 114
Lake Forest, CA 92630

28RR Spec 1 Nitro Engine

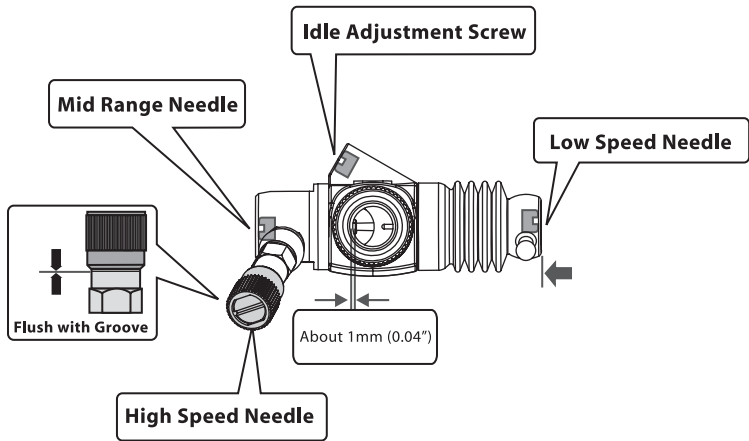


Engine Features

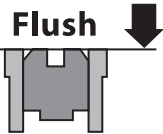


****NOTE**** Some features and parts may differ depending on which model engine you have.

Factory Carburetor Settings



Do not adjust your carburetor. The needles are preset from the factory for engine break in. The needles are designed to sit flush, this makes it easy to reset them to the factory break in settings. If your engine is already broken in, this setting may be too rich for your engine.



Tuning After Break In

High Speed Needle

Turn the high speed needle in 1/8 turn increments to lean out the fuel mixture for increased top speed and throttle performance. Drive the car to notice the changes in speed and throttle responses.

Continue tuning the carburetor in this way, turning in 1/8 turn increments only. (Maximum of 2 1/2 turn from flush)

Idle Adjustmen Screw

The idle speed is set after the engine is up to operating speed. To properly set the idle speed turn on your radio and set the throttle trim to neutral. Turn the idle adjustment screw counter clockwise to reduce the idle speed, or clockwise to increase the idle speed. The idle should be set high enough to keep the engine running, but low enough to prevent the clutch from engaging.

Idle Adjustmen Screw

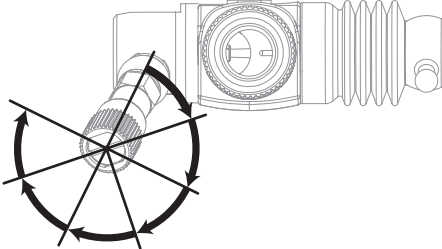
We recommend that you do not touch the low speed needle. If adjustment is needed, the low speed needle is set after the high speed needle is adjusted. If the low speed needle is set too lean you will experience the following:

- 1.Flame out at part throttle
- 2.Overheating

If you experience any of the above, reset to factory settings and start the tuning process over.

Important

Read this section carefully. Failure to follow these tuning steps could result in damage to your engine and void your engine warranty!



Tuning Tips

While a lean motor will have higher performance, it will lead to premature engine wear and failure. Use the following information to tune your engine to your driving conditions. Remember, a slightly rich setting is a safer setting.

More Fuel = RICH

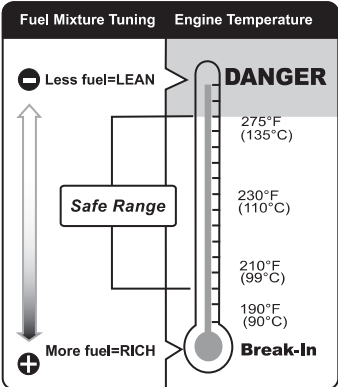
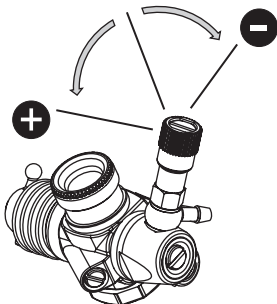
Rich Fuel Mixture

A slightly rich fuel mixture delivers a cooler running temperature and more lubrication, but with slightly less power and longer engine life.

Less Fuel = LEAN

Lean Fuel Mixture

Provides stronger combustion and power, but if you lean out too much the result is more engine heat and a shorter engine life. Symptoms of an engine that are too lean are sputtering, rough idle, no smoke from the exhaust and hard to restart.



Stop Tuning

If your engine shows any of the following signs:

1. There is no white smoke when at full throttle
2. The engine hesitates or bogs
3. Reduced top speeds or loss of power
4. Temperatures above 275° F (135° C)

Troubleshooting

Description	Possible Problem	Solution
Engine does not start	Fuel mixture needle settings are out of range	Set the needles to the factory setting
	Engine could be worn out	Replace piston and sleeve
	Out of fuel	Refill fuel tank
	Contaminated fuel	Replace fuel
	Glow plug igniter is not charged	Charge glow igniter
	Glow plug is bad	Replace glow plug
	No fuel flow	Check fuel lines for cracks, leaks, and holes. Replace fuel line if necessary.
	Engine flooded	Remove glow plug and discharge fuel
	Engine has overheated	Allow engine to cool, richen the fuel mixture and then restart
	Throttle valve isn't adjusted properly	Set idle and adjust needle valve to the manufacturers recommended settings
	Air cleaner is blocked	Check air filter. Clean or replace if necessary
Engine starts, then stalls	Idle speed is set too low	Adjust the idle speed
	Air bubbles in the fuel line	Check for leaks or cracks in the fuel line
	Glow plug is bad	Replace glow plug
	Engine is overheated	Allow engine to cool and then restart
	Airflow through system is bad	Check connections between tank, engine and exhaust
	Throttle servo is improperly set up	Set servo to neutral and reset linkages according to radio and model manufacturer's specifications.
	Throttle servo glitch	Replace the radio batteries

Maintenance and Cleaning

Important

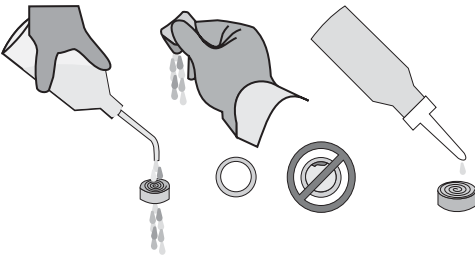
Read this section carefully. Failure to follow proper care and maintenance of your engine could result in damage to your engine and void your engine warranty!

Air Filter

Dirt is the biggest enemy to your engine. Proper air filter maintenance is one of the most important factors that will affect your engines performance and life. We recommend cleaning the element after every run. Please follow the instructions from the manufacturer recommendations on the proper cleaning and maintenance of your filter. Always check you air filter after each run to make sure it is properly seated to the filter body and the carburetor. **Never run your engine without the air filter!**

Cleaning the Air Filter:

Remove the air filter element from the air filter body. It is important to take care during this step to insure no dirt gets inside the carburetor. Flush any dirt from the element using nitro fuel. Squeeze any excess fluid from the element. Apply high quality air filter oil to the element.



Reinstalling the Air Filter:

After properly cleaning the air filter make sure it is reinstalled correctly. Make sure there are no gaps between the air filter and the body. Make sure the air filter body is seated on the carburetor and secure with a tie strap. **Never run your engine without the air filter!**

Engine Storage

Properly maintaining and storing your engine is critical to the life of your engine. Nitro fuel contains castor for lubrication. If the castor is not burned out properly over time it can gum up and damage the crank bearings. Using your fuel bottle, drain all the remaining fuel from the tank. Use a fully charged igniter and try to restart the engine to burn any remaining fuel out of the lines. Repeat this step until the engine will not start. After burning off the fuel remove the glow plug and add several drops of after run oil, then crank the engine over to spread it throughout the engine. To prepare the engine for use, use 70% Isopropyl Alcohol or Denatured Alcohol and cycle it through the engine. **DO NOT TRY TO START THE ENGINE WITH ALCOHOL!** The few minutes you spend to properly care for your engine will add valuable time to its operating life and maintain optimum performance.

Glow Plug

Proper Glow Plug Selection:



Proper glow plug selection depends on several factors. Fuel type, nitro methane content, weather, and altitude can drastically effect performance. Finding the best combination of fuel and plug temperature for your driving condition is the key to getting the maximum performance out of your engine.

Extending the Life of Your Glow Plug:

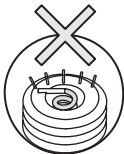
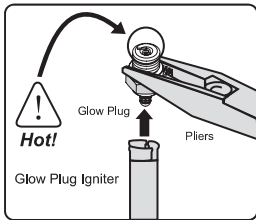
- To maximize and extend the life of your glow plug follow these simple tips:
- Remove the glow igniter when using more than 1/2 throttle or if the engine does not start with a few seconds
 - Do not run the engine lean. Lean conditions will overheat the plug causing the element to be damaged or fail
 - Use the best Fuel/Plug combination for your driving conditions
 - Use a fuel that has lower nitro content

When to Replace the Glow Plug:

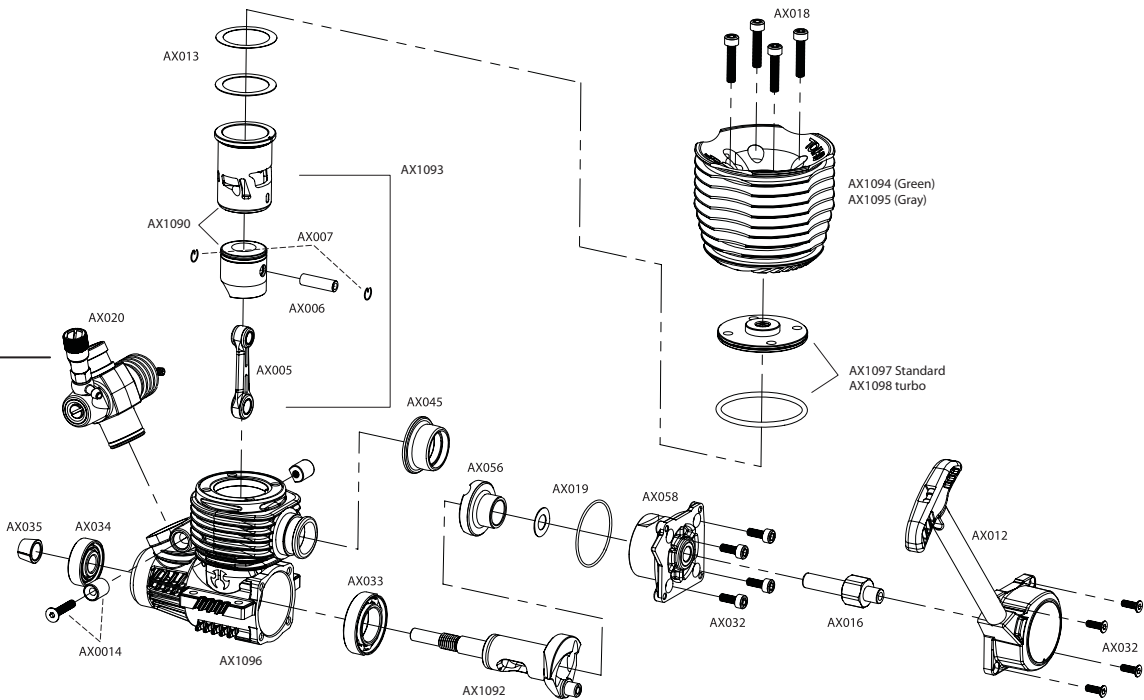
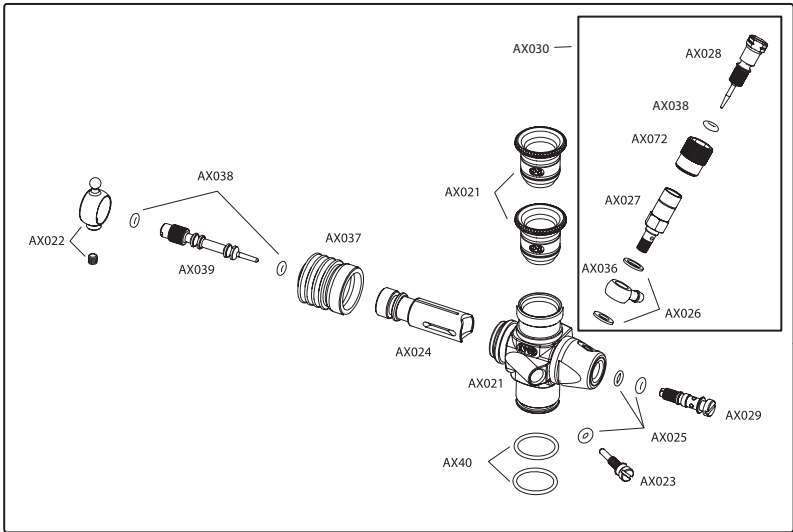
- Fuel and temperature will have an effect on the performance, reliability, and life span of the glow plug and therefore should be considered expendable engine components. Aside from burnout or plug failure, there are several signs that can indicate the plug should be replaced.
- Plug filament/body is discolored or the surface is rough
 - Engine cuts out when idling
 - Plug filament is distorted or bent
 - Engine becomes difficult to start

Outdoor Temp	Glow Plug
 Cold	Medium - 3 Medium plug for .12-.15/.21 engines
	Medium Cold - 4 Medium cold plug for .25 engines
 Hot	Cold - 5 Cold plug for summer/hot conditions

Glow Plug Testing



Spare Parts



****NOTE** Some features and parts may differ depending on which model engine you have.**

Number	Description	Number	Description	Number	Description
AX005	28/32 Connecting Rod	AX025	28/32 O-Ring 2x1.7mm (3pcs) / O-Ring 8x1mm (1pcs)	AX040	28/32 O-ring 11.5x1.25mm (2pcs)
AX006	28 Piston Pin / Retainer set	AX026	28/32 Fuel Line Fitting / Washer Set	AX056	32 Pullstart Shaft Holder
AX007	28/32 Piston Pin / Retainer set	AX027	28/32 High Speed Needle Valve	AX058	32 Cover Plate Set
AX012	Pullstart Assy	AX028	28/32 High Speed Needle w/O-ring	AX072	28/32 Adjuster Cap
AX013	28 Gasket Set (0.15mm/0.3mm)	AX029	28/32 Mid Range Needle	AX1090	.28 Pro Cylinder / Piston Set
AX014	28/32 Lock Pin for Carburetor	AX030	28/32 High Speed Needle Valve Set	AX1092	.28 Pro CrankShaft
AX016	28/32 Starting Shaft	AX032	28/32 Set Screw (8pcs)	AX1093	.28 Pro Cylinder / Piston / Connecting Rod Set
AX018	28/32 Screw M3.5x16mm (4pcs)	AX033	28/32 Rear Bearing 14x25x6	AX1094	.28 Pro Heat Sink Head (Green)
AX019	28/32 Dust Protection Set	AX034	28/32 Front Bearing 7x19x6	AX1095	.28 Pro Heat Sink Head (Gray)
AX020	28/32 Slide Carburetor Complete	AX035	28/32 Brass Collet	AX1096	.28 Pro Crankcase
AX021	28/32 Slie Carburetor Main Body	AX036	28/32 Fuel Inlet	AX1097	.28 Pro Button Head
AX022	28/32 Uniball	AX037	28/32 Carb Dust Boot	AX1098	.28RR Spec 1 Optional Turbo Button Head
AX023	28/32 Idle Screw	AX038	28/32 O-Ring 2x1.5mm (2pcs)	AX0330	.28 Pro Engine (w/Green Cooling Head)
AX024	28/32 Slide Valve	AX039	28/32 Low Speed Needle Valve		