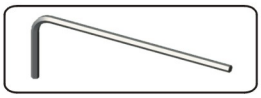
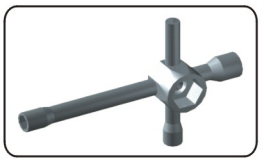
Tools

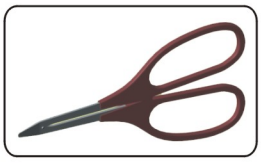
The following tools are necessary for the assembly & maintenance of your new R/C car. For your safty, exercise care when using any hand tools , sharp instruments , or power tools during construction. Always use safety glasses . If you have any questions, please consult your local hobby shop.



Hexagon wrench (kit tools supplied)
1.5mm, 2mm, 2.5mm,3mm.



Cross wrench (hexagon socket tools)
5.5mm, 7mm, 8mm, 10mm, 12mm, 17mm.



Hobby scissors
For cutting and trimming the car's body, decals.

Grease
Lubrication of gears; reduces friction.

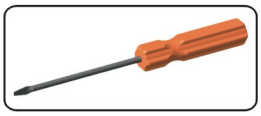
CA Glue
Use to glue tires onto the wheels; temporary repairs.

! Always use hand and eye protection with cyanoacrylic glue.

Threadlock
Note: Threadlock should be used wherever a metal screw is being fastened into a metal part.
Threadlock prevents screws from loosening due to vibration.

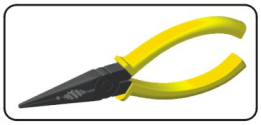
Hobby knife
Use for trimming and cutting.

! This knife cuts plastic and fingers with equal ease, so be careful



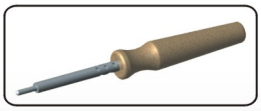
Flat blade screwdriver

Phillips screwdriver



Needle nose pliers
Clamping parts during assembling and disassembly

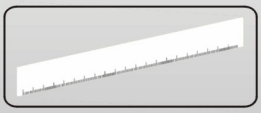
Hand drill
2mm, 3mm, 6mm.



Soldering iron (40~50 watts) and a small amount of solder. (May not be needed)

! Be careful iron is very hot

Liquid dish soap



Ruler

SAFETY PRECAUTIONS

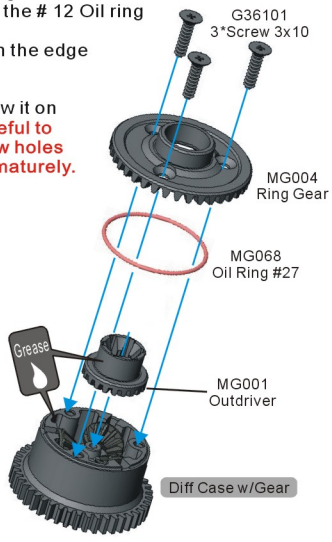
- This radio controlled model is not a toy. For yours and others safty, the following guidelines and cautions should be followed carefully.
  WARNING: Do not operate R/C car in the following locations:
  1. Street
  2. Crowded area; keep away from children.
  3. Indoors or an unventilated room.
  SUGGESTION: Outside in a large open area without obstructions; R/C race track.
- This kit uses many kinds of small parts, sharp tools, large polybag, and chemical materials. Please keep these and other potentially harmful items away from children.
- Use only FCC approved ground frequency crystals in the R/C unit.
- Do not operate a Gas powered car in a residential area. The noise could disturb the peace.
- If you are operating several cars together, check the frequencies to make sure none are the same. Operating the cars on the same frequency can cause radio interference and loss of control of the car.
- If the car is not operating properly, stop immediately and check the condition of the car.
- To avoid damage to the R/C equipment, or losing control of the car, avoid running in or near water.
- To always maintain control of your car and to avoid a jump start, Please do the following:
  1. ON - First turn on the transmitter, then the car's receiver. 2. OFF - Turn off the car's receiver, then the transmitter.
- Do not touch the R/C car after operation, as the engine, muffler, electric motor, battery, and speed controller will be very hot! Allow to cool before handling. While charging your car's battery, it could become hot. Carefully read your battery charger's instructions for proper use.
- When the R/C car is in operation, do not touch any of its moving parts such as drive shafts, wheel ,etc., as the rotating parts can cause serious injury.
- After operation of the R/C car, it is necessary to remove the battery for protection of the R/C equipment.
- Paint and grease are extremely flamable, keep away from sources of ignition. Do not puncture or throw away spray paint cans into garbage.

01-01 Rear Differential

1. slide the #12 Oil ring over the main out-driver gear. Then insert the main out-driver gear into the differential case with main gear.
2. Insert your three differential planet gears onto your internal differential hub,
3. Next place it into the Differential case.

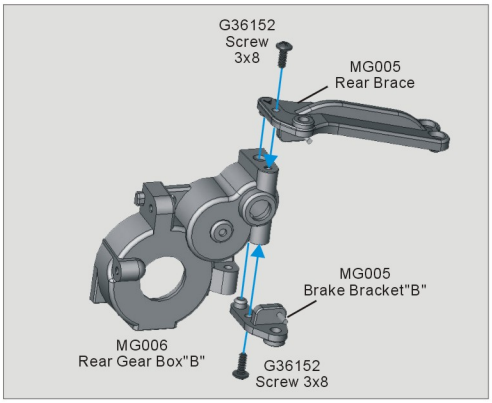
01-02 Rear Differential

1. Note it is recommended to insert some grease into the differential
2. Insert the 2nd main out-driver gear with the # 12 Oil ring into the top of the differential.
3. Now carefully place the # 27 Oil ring on the edge of the Diff. Case w/Gear.
4. Next gently place the large ring gear over the top of the differential and screw it on using three 3x10mm screws. **Be careful to not over tighten as it can strip the screw holes and damage the differential gears prematurely.



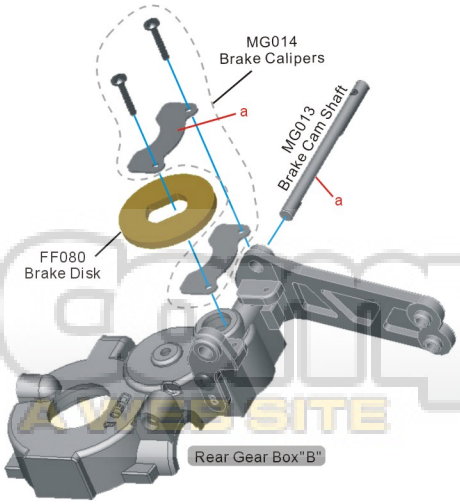
01-03 Brake Bracket

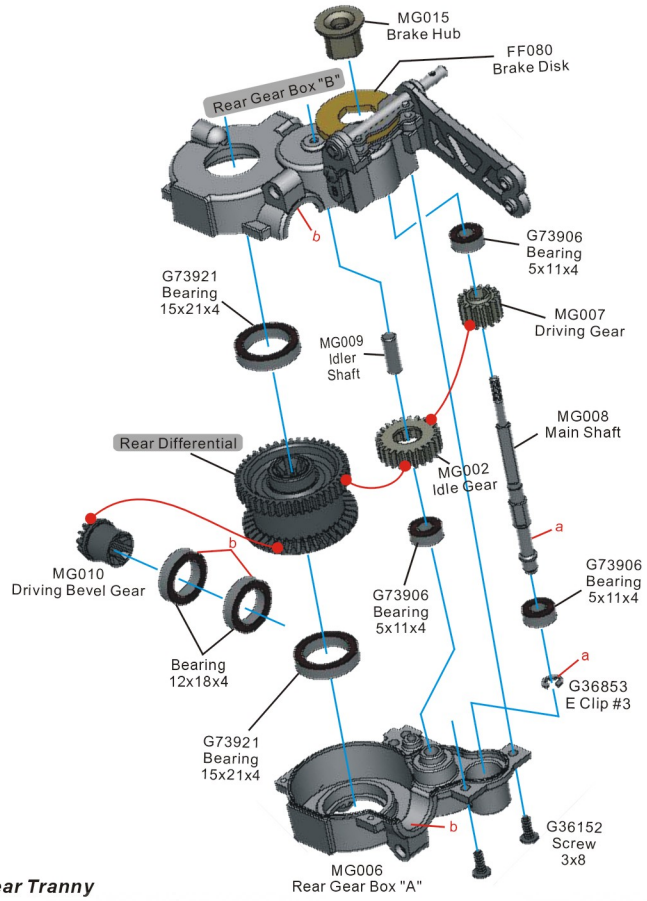
1. Secure your Rear brace and brake bracket"B" to the top and bottom of the rear gear box "B" as shown in the diagram with 3x8mm button head screws.



01-04

1. Slide the brake calipers onto the brake mounts as shown in diagram .
2. Next slide the brake cam shaft down through the holes on the brake mounts making sure that the flat side is to ward the gear box..



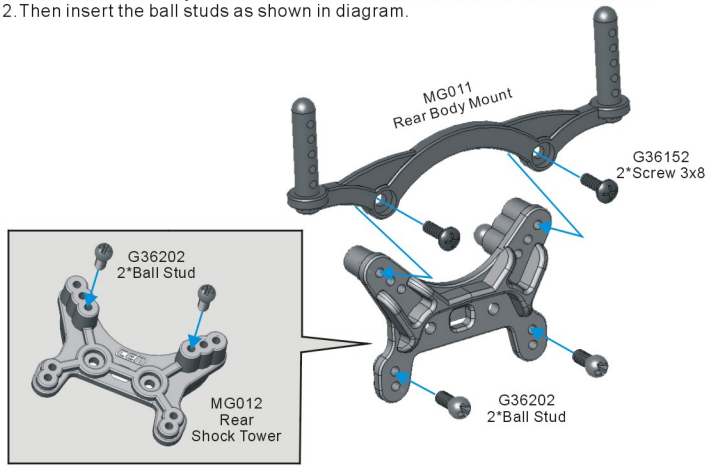


01-05 Rear Tranny

1. Take the main shaft and insert the 5x11x4 bearing onto the end securing it with a #3 E clip.
2. Slide the driving gear onto the main shaft followed by another 5x11x4 bearing.
3. Insert a 5x11x4 bearing into the idler gear. Secure the idler shaft into the rear gear box. Now slide the idler gear with bearing onto the shaft. It should spin freely.
4. Slide the brake hub onto the main shaft matching the slot on the brake disk.
5. Now insert the large 15x21x4 bearings into the rear gear box as shown.
6. Insert the main shaft through the open side of the rear gear box as shown in the picture, the driving gear should mesh up with the idler gear and spin freely.
7. Now you are ready to insert the rear differential, slide it through the large bearing meshing the large gear to the idler gear.
8. Next slide two 12x18x4 bearings onto the driving bevel output gear and secure it to the rear gear box aligning it with the large bevel gear on the rear differential.
9. Close the two rear gear box halves together and secure them using 3x8mm screws as shown in diagram.

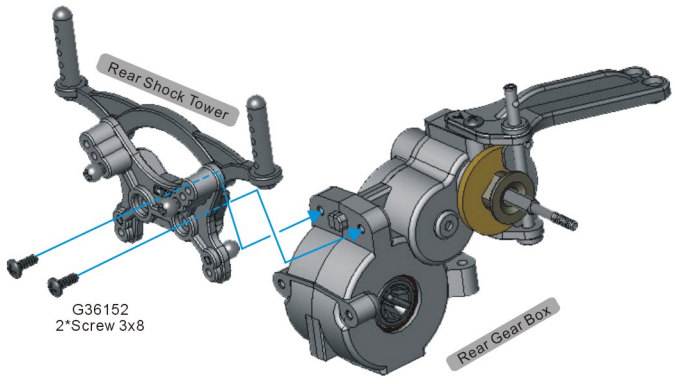
01-06 Rear Body Mount

1.Secure the rear body mount to the rear shock tower with two 3x8mm screws.
2.Then insert the ball studs as shown in diagram.



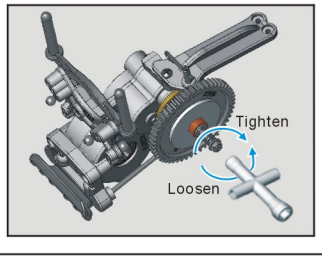
01-07 Rear Shock Tower

1.Secure the rear shock tower to the rear gear box using two 3x8mm screws.

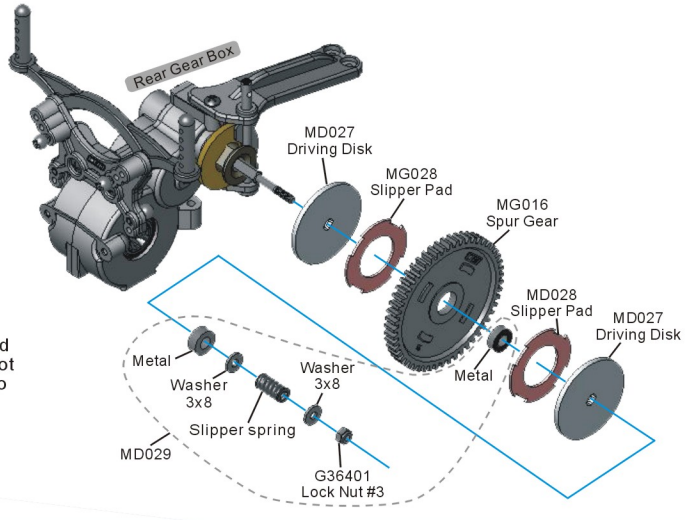


01-08 Slipper Unit

1.Slide the driving disk onto the main shaft.
2.Insert the spur gear Metal budhing into the center of the spur gear. Carefully align the two slipper pads onto each side of the main spur gear resting on the grooves. Gently slide the main spur gear onto the main shaft without allowing the slipper pads to move out of the grooves.
3.Slide the outside driving disk onto the main shaft. Secure the slipper clutch unit by sliding on the metal followed by the 3x8mm washer, slipper spring, 3x8mm and lock nut as shown in diagram.
4.Tighten the nut all the way until the slipper spring compresses completely and then loosen 2-3 turns complete turns.

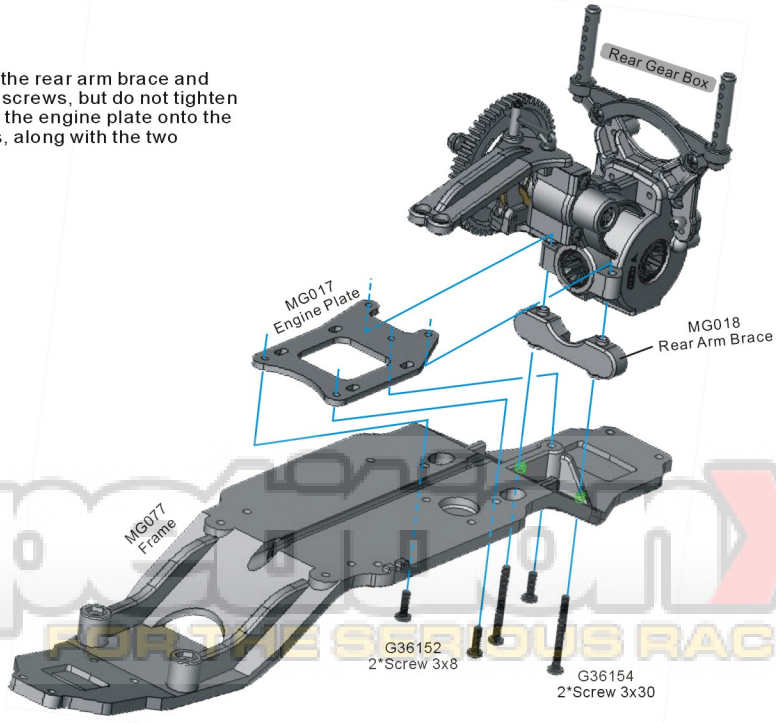


Adjusting the Slipper Clutch
Please use the hex wrench provided with your vehicle to adjust the slipper clutch as shown in picture. Slipper clutch is designed to protect the drivetrain parts. Please do not over tighten or loosen the slipper clutch too much as damages may occur.



01-09 Rear End

1.Rress two #3 locknuts onto the frame.
2.Place the rear arm brace onto the frame. Then secure the rear arm brace and rear gear box assembly to the frame with two 3x30mm screws, but do not tighten the 3x30mm screws all the way. You will have to place the engine plate onto the frame and secure it with the same two 3x30mm screws, along with the two 3x8mm screws as shown in the figure.



01 REAR END

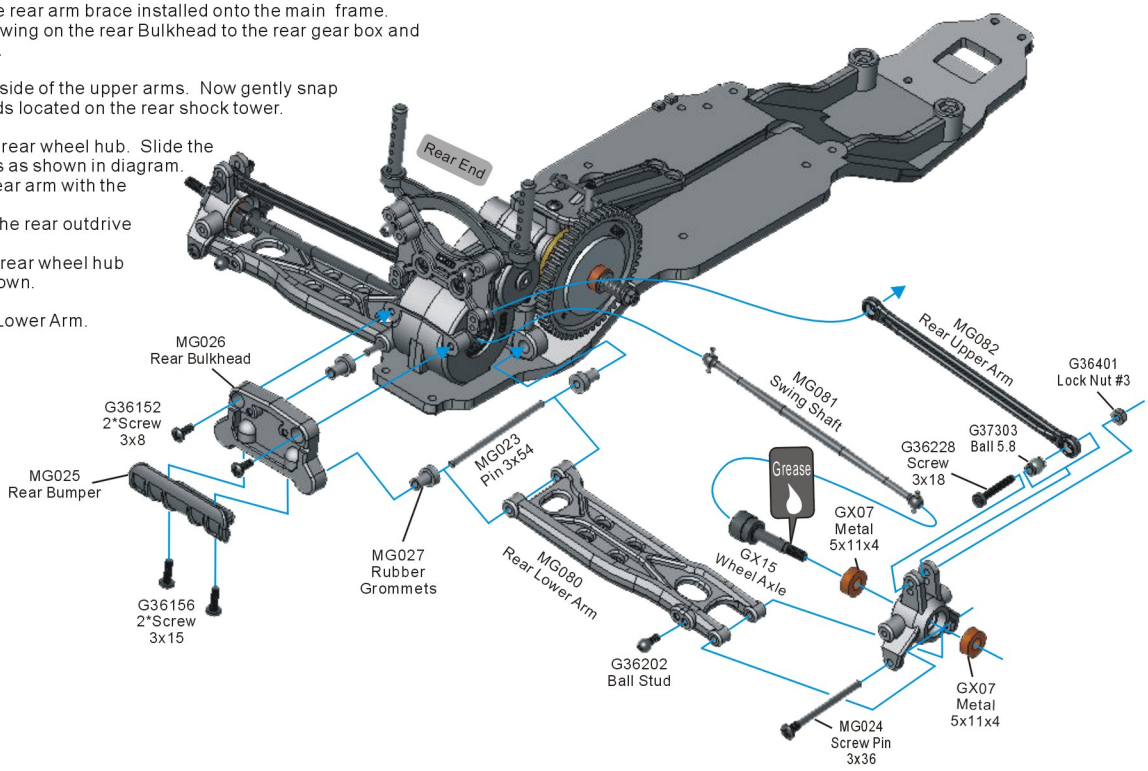
01-10 Rear Suspension

1. Slide the rear inner hinge pins through the rear arms followed by the rubber grommets as shown.
   Next install the rear arms onto the rear arm brace installed onto the main frame.
2. Now secure the rear arms by screwing on the rear Bulkhead to the rear gear box and chassis using the 3x8mm screws.

3. Snap the 5.8 ball joint into the outside of the upper arms. Now gently snap the rear upper arm to the ball studs located on the rear shock tower.

4. Install two 5x11x4 Metals into the rear wheel hub. Slide the wheel axle into the 5x11x4 Metals as shown in diagram.
5. Install the rear wheel hub to the rear arm with the 3x36mm screw hinge pin.
6. Now slide the rear dog bone into the rear outdrive grooves and rear hub axle.
7. Secure the rear upper arm to the rear wheel hub with the screw and lock nut as shown.

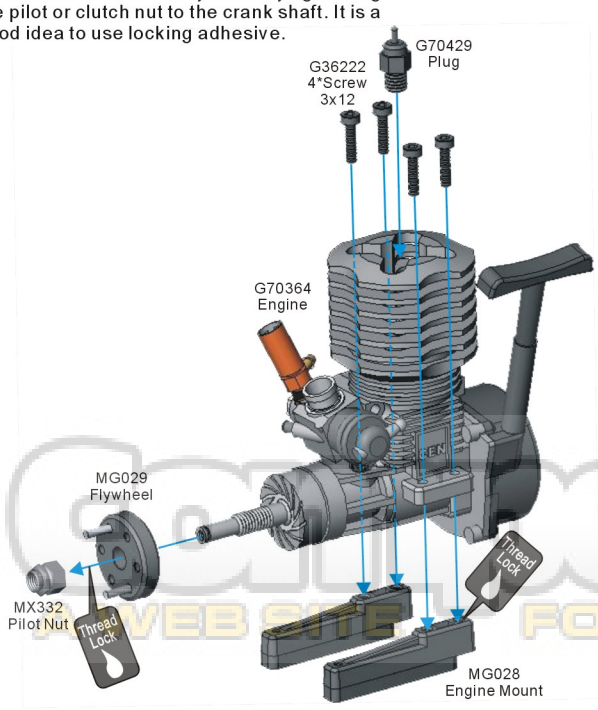
8. Screw the ball stud onto the rear Lower Arm.



02 ENGINE

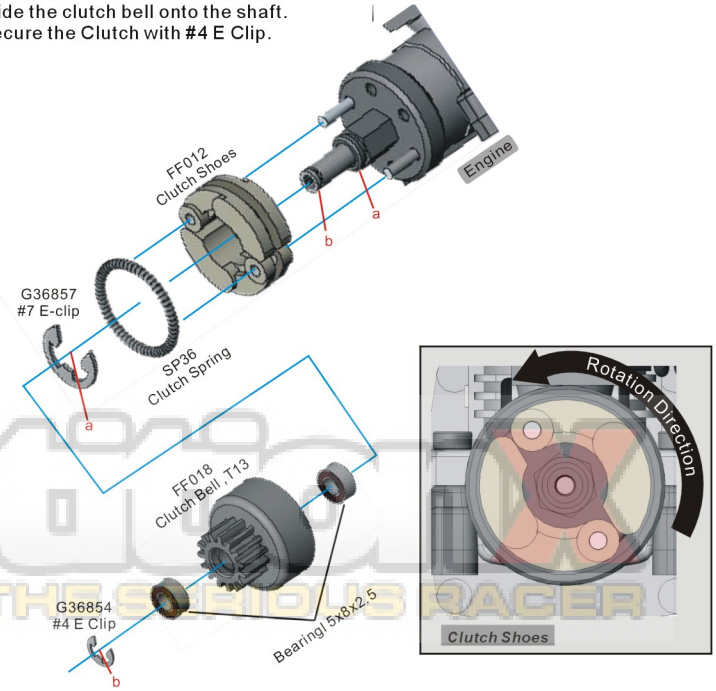
02-01 Engine Mount , Flywheel

1. Secure the engine mounts to the engine using 3x12mm cap screws.
2. Now slide the flywheel onto the engine's crankshaft. Secure the flywheel by tightening the pilot or clutch nut to the crank shaft. It is a good idea to use locking adhesive.



02-02 Clutch Unit

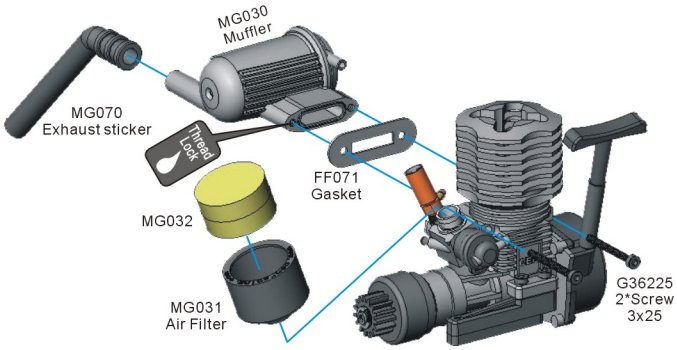
1. slide the two clutch shoes onto the flywheel, making sure that they are on the correct way. Look at figure.
2. Next stretch the clutch spring over the clutch shoes and secure the shoes with the #7 E clip.
3. Install two 5x8x2.5 Metals into each side of the clutch bell and slide the clutch bell onto the shaft.
4. Secure the Clutch with #4 E Clip.



02 ENGINE

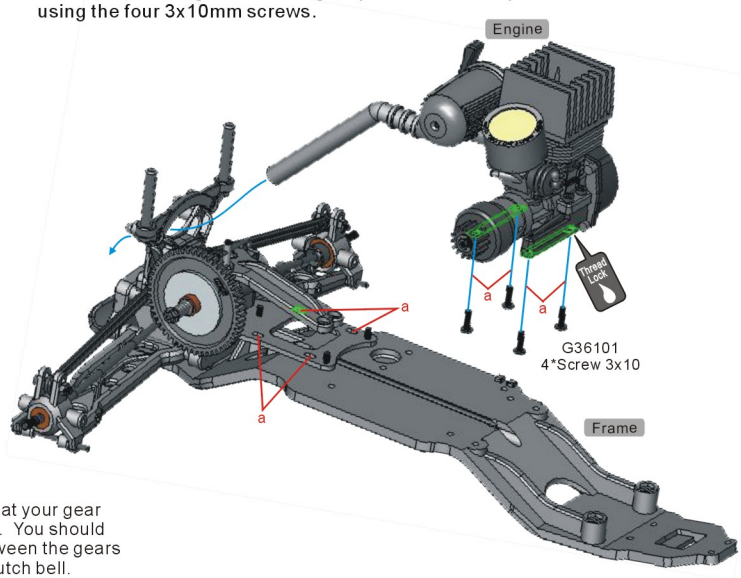
02-03 Muffler , Air Filter

1. Install the air filter onto the engine as shown. It is recommended to use zip locking ties to secure the air filter to the engine.
2. Next install the muffler to the engine making sure the gasket is in between the engine block and muffler as shown. Use two 3x25mm cap screws.

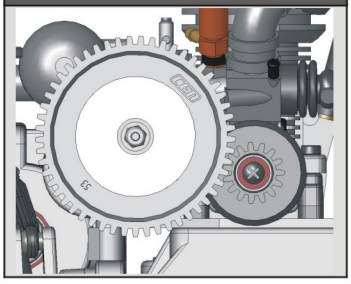


02-03 Engine

1. Now install the engine to the engine plate located on your main frame using the four 3x10mm screws.



Gear Clearance



2. It is VERY important to make sure that your gear mesh is set correctly. Look at figure. You should have the least amount of play in between the gears without binding the spur gear and clutch bell.

03 FRONT GEAR BOX

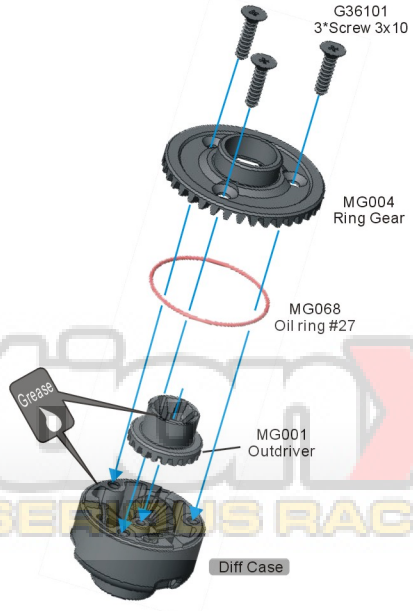
03-01 Front Differential

1. slide the #12 Oil ring over the main out-driver gear. Then insert the main out-driver gear into the differential case.
2. Insert your three differential planet gears onto your internal differential hub.
3. Next place it into the Differential Case.

03-02 Front Differential

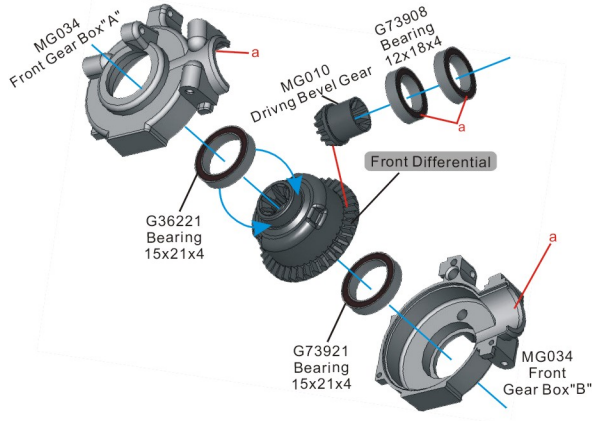
1. Note it is recommended to insert some grease into the differential.
2. Insert the 2nd main out-driver gear into the top of the differential.
3. Now carefully place the #27 Oil Ring on the edge of the Diff. Case w/Gear.
4. Next gently place the large ring gear over the top of the differential and screw it on using three 3x10mm screws.

* Be careful to not over tighten as it can strip the screw holes and damage the differential gears prematurely.



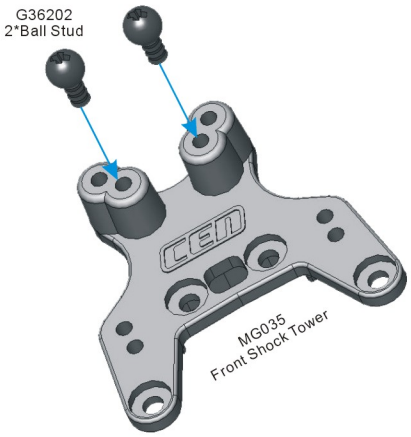
03-03 Front Gear Box

1. Insert the two large 15x21x4 bearings into the front gear box cases as shown.
2. Next slide two 12x18x4 bearings onto the driving bevel gear.
3. Carefully insert the driving bevel gear and front differential into the front gear box as shown and set it aside for now.



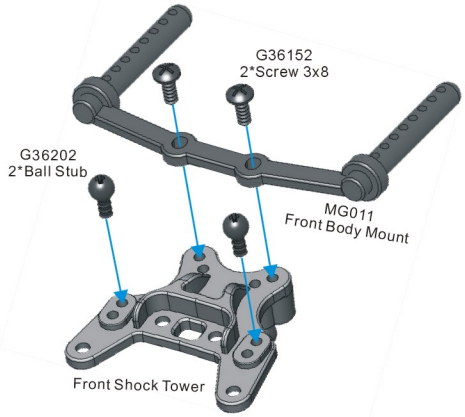
03-04 Front Shock Tower

Insert two ball studs into the front shock tower as shown in figure.



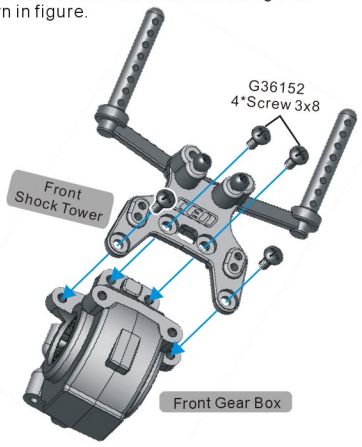
03-05 Front Body Mount

1. Insert two ball studs into the front shock tower.
2. Secure the Front body mount to the front shock tower with two 3x8mm Screws.

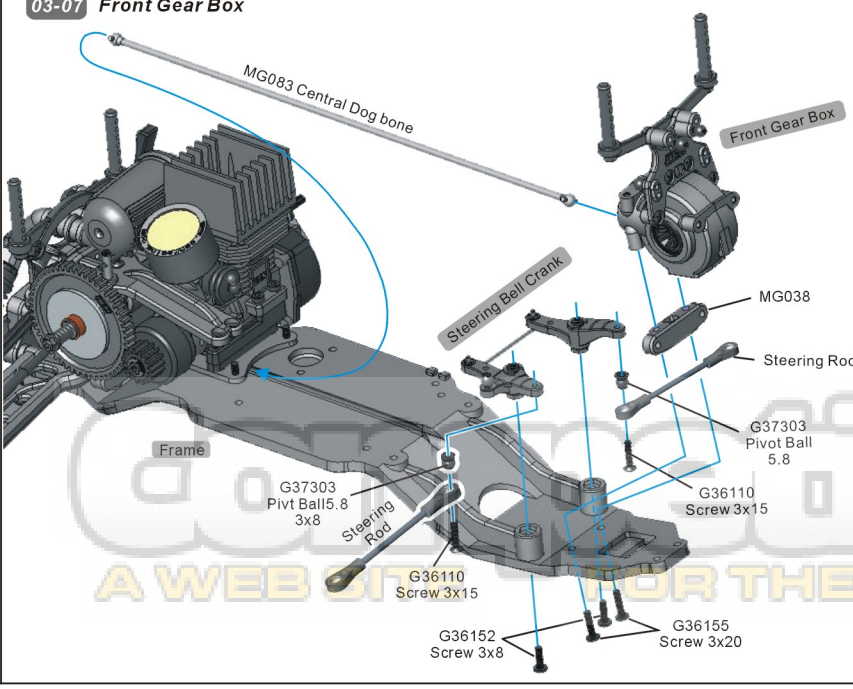


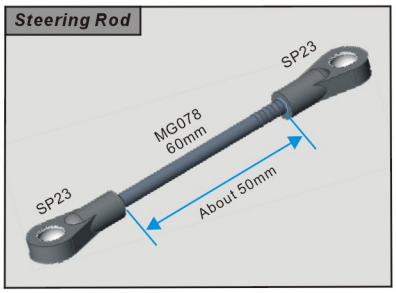
03-06 Front Shook Tower

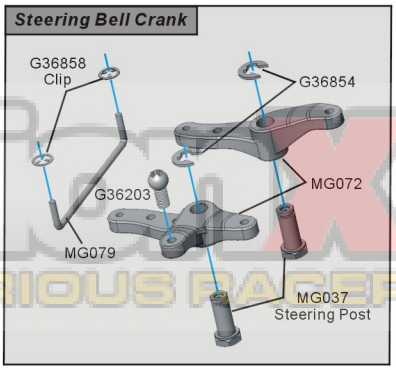
1. Secure the Front shock tower to the front Gear Box using Four 3x8mm screws as shown in figure.



03-07 Front Gear Box

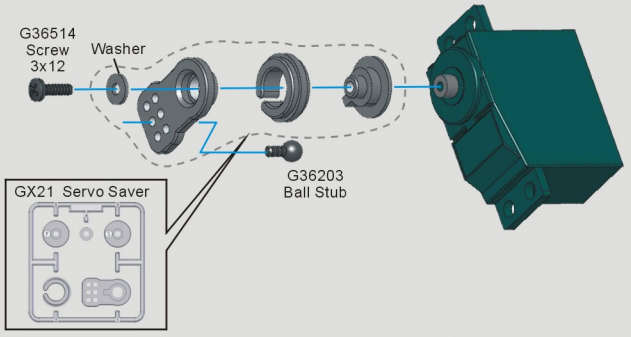




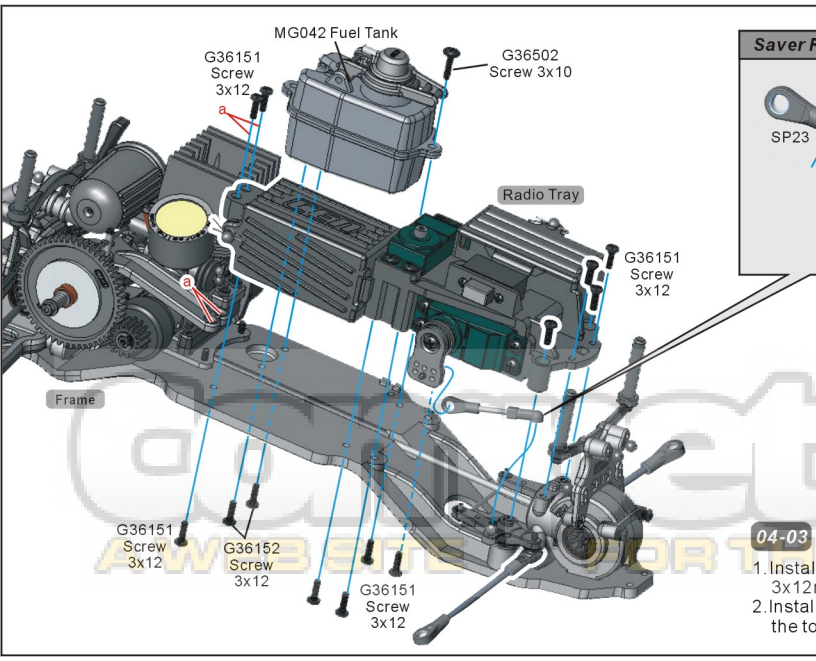


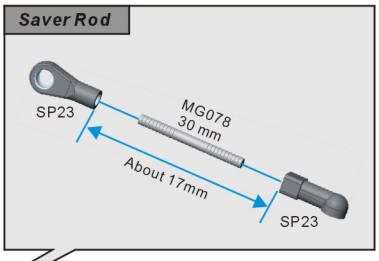
04-01 Steering Servo

1. Install the servo saver and servo horn to the steering servo by securing it with a 3x12mm screw and a washer as shown in figure .
Carefully screw a ball stud into the Lower hole.



04-02 Radio Tray



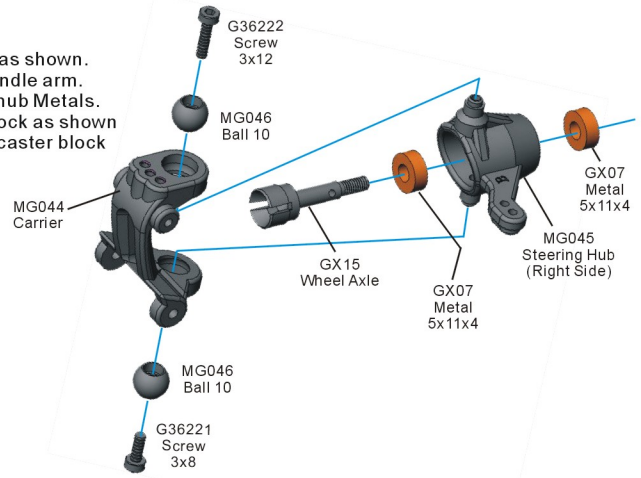


04-03 Radio Box

1. Install the completed radio tray unit onto the main frame by securing it with Six 3x12mm screws on top and five 3x12mm screws on bottom as shown in diagram.
2. Install the Fuel Tank onto the main frame by securing it with one 3x10 screws on the top and two 3x8 Screws on the bottom as shown in diagram.

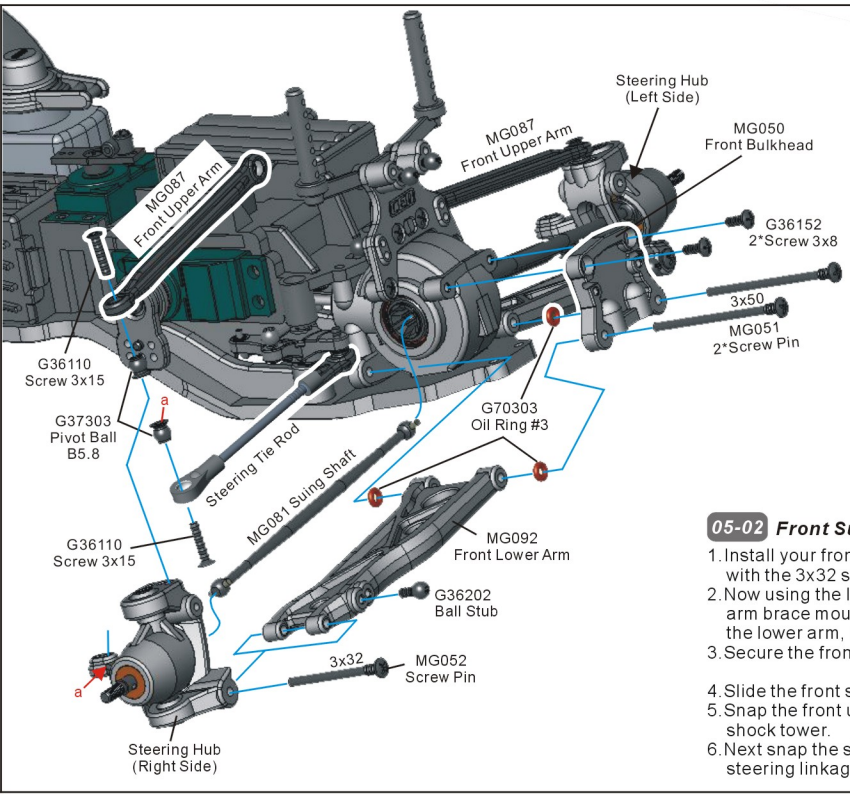
05-01 Steering Hub (Rigt Side)

1.Slide the two 5x11x4 Metals into the front wheel hub as shown.
2.Next, screw the ball stud on the front wheel hub's spindle arm.
3.Slide the front wheel axle through the 5x11x4 wheel hub Metals.
4.Next snap the front wheel hub into the front caster block as shown in figure. Place the #10 balls on top and bottom of the caster block and secure them with the screws.



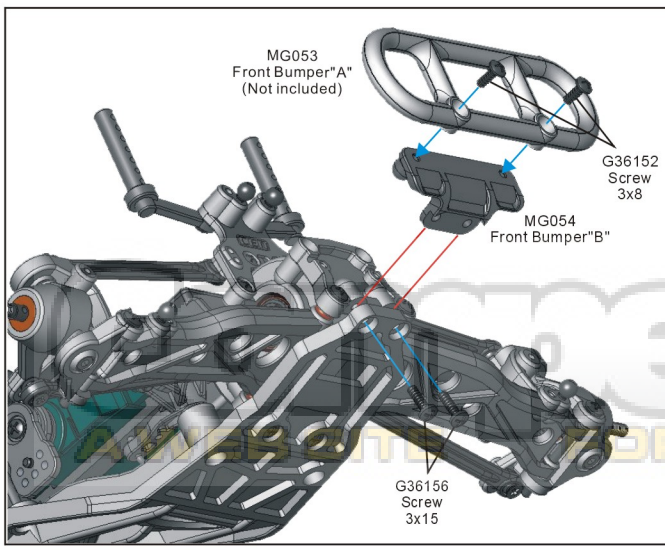
Left Side

Right Side



05-02 Front Suspension

1. Install your front wheel hub and front caster unit (left and right) to the front lower arm with the 3x32 screw hinge pins.
2. Now using the longer 3x50 screw hinge pins install the front lower arms to the front lower arm brace mounted on the main frame. Be sure to slide on #3 Oil ring onto each side of the lower arm, on the inner screw hinge pin to remove slop as shown in figure 05-02.
3. Secure the front bulk head to the front gear box using two 3x8mm screws.
4. Slide the front swing shaft into the front gear box and wheel hub out-drives.
5. Snap the front upper arm onto the ball studs located on the front caster block and front shock tower.
6. Next snap the steering rod to the ball studs located on the front wheel hub spindle and steering linkage as shown.

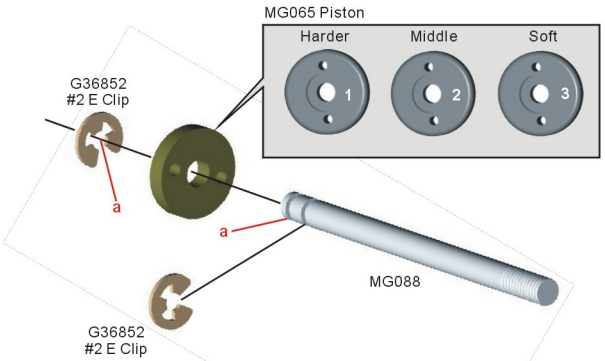


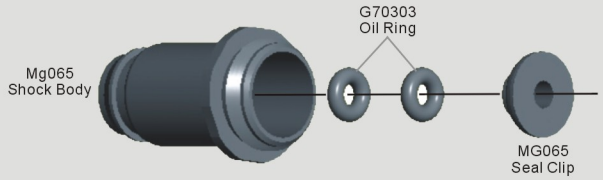
05-03 Front Bumper

1. Slide the front bumper "B" underneath the front Bulkhead as shown.
2. Secure the front bumper "A" to front bumper"B" using two screws.
3. Next secure the entire bumper unit to the main frame using two 3x15mm screws as shown in figure.

06-01 Pistons

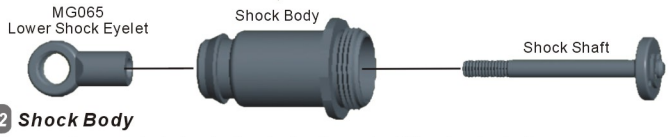
1. Snap #2 E-clip into the notch in the Shock Shaft.
2. Slide the shock piston of your choice over the shaft until it rests against the E-clip. Secure the piston by snapping the other #2 E-clip into the notch over the piston.





Shock Body

1.Install two oil rings into the shock body followed by the seal clip.
** Be sure the seals are not twisted and are fully seated.

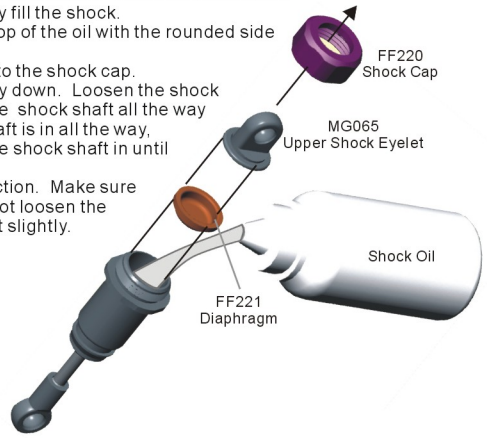


06-02 Shock Body

1. Apply a small amount of shock oil onto the threads of the shock shaft.
2. Carefully insert the shafts through the shock body. ** Be careful not to tear or damage the seals.
3. Thread the shock eyelet onto the shock shaft. ** Make sure to screw the eyelets on equally on all shocks.

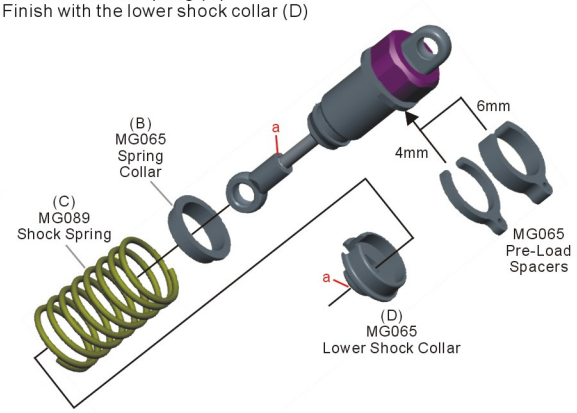
06-03 Shock Oil

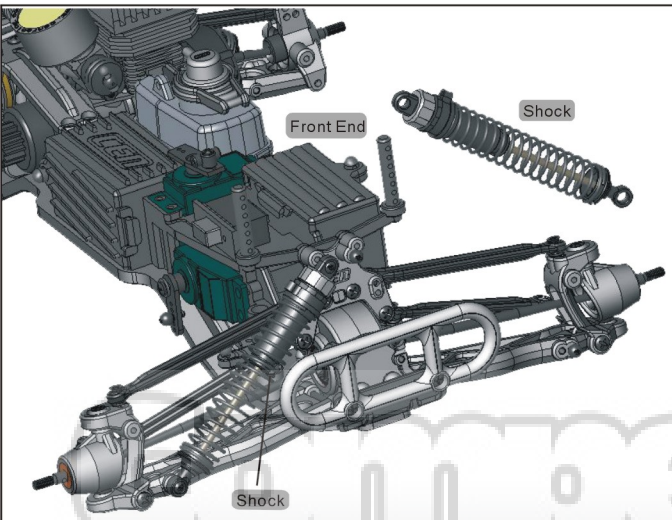
1. Fill the shock body with the supplied shock oil. Gently work the shaft up and down to work out all the air bubbles. When no bubbles are remaining add oil to completely fill the shock.
2. Put the rubber diaphragm on top of the oil with the rounded side towards the oil.
3. Put the plastic shock eyelet into the shock cap.
4. Screw the shock top all the way down. Loosen the shock cap about 1/2 turn and push the shock shaft all the way up slowly. When the shock shaft is in all the way, tighten the shock cap. Hold the shock shaft in until finished tightening the cap.
5. Check the shock for smooth action. Make sure the shaft compresses fully, if not loosen the shock cap and bleed the oil out slightly.



06-04 Shocks

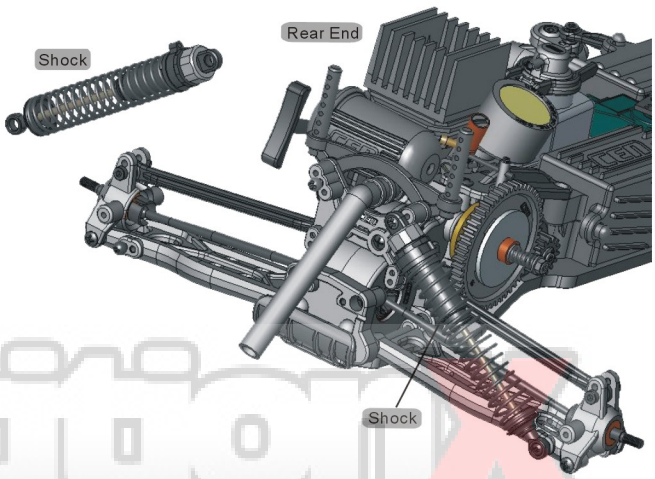
1. Clip on shock pre-load spacers (A) followed by the spring collar (B).
2. Install the shock spring (C)
3. Finish with the lower shock collar (D)





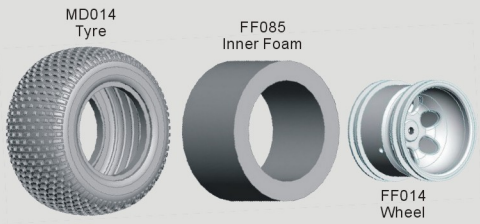
06-05 Front Shocks

1. Install the front shocks to the front end of the MG16 Unit by snapping the top shock cap to the ball stud located on the top of the shock tower as shown.
2. Then snap the bottom shock rod end to the ball stud located on the lower suspension arms.



06-06 Rear Shocks

1. Install the rear shocks to the rear end of the MG16 Unit by snapping the top shock cap to the ball stud located on the top of the shock tower as shown.
2. Then snap the bottom shock rod end to the ball stud located on the lower suspension arms.

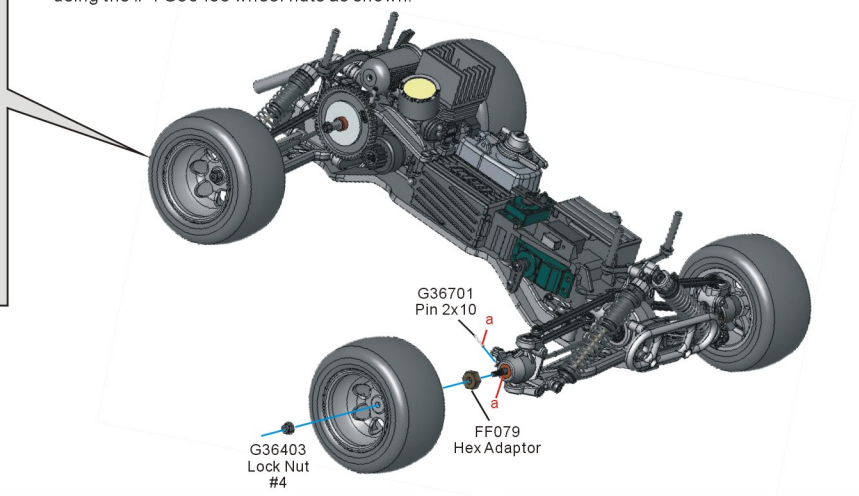


07-01

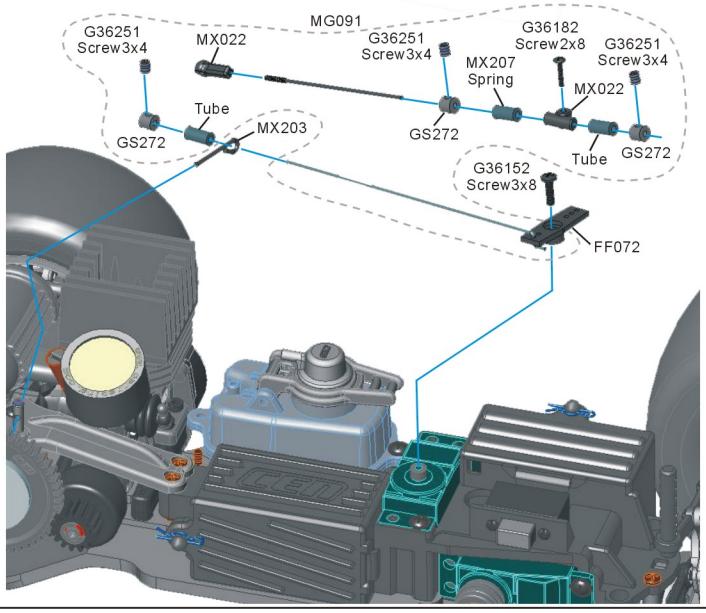
1. Insert the FF085 tire foam into the tire.
2. Make sure to evenly disperse the FF085 inner foam throughout the tire for the best performance.
3. Next slide the FF014 wheel through the tire and foam lining up the tire's beads to the bead of the FF014 wheel.

07-02 Wheels

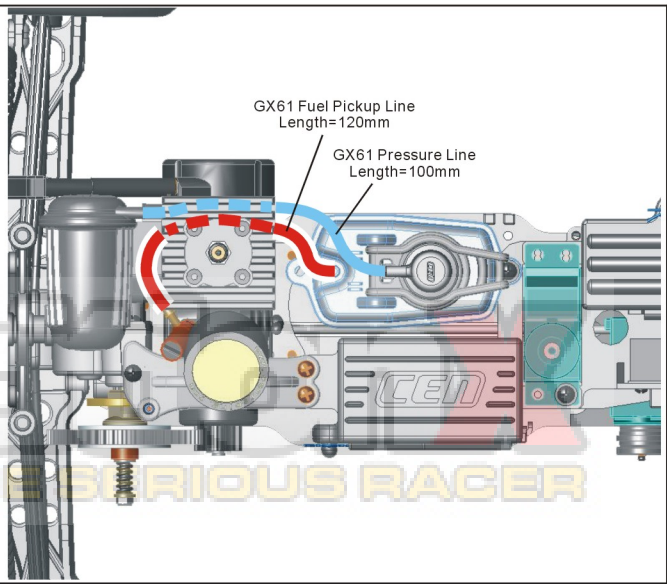
1. Slide the G36701 2x10mm pin through all four wheel axles. Then slide the FF079 wheel hex adaptor over the shaft and G36701 wheel pin as shown.
2. Next install the assembled tires over the wheel hex and secure the wheels by using the # 4 G36403 wheel nuts as shown.



07-03 Control Linkage

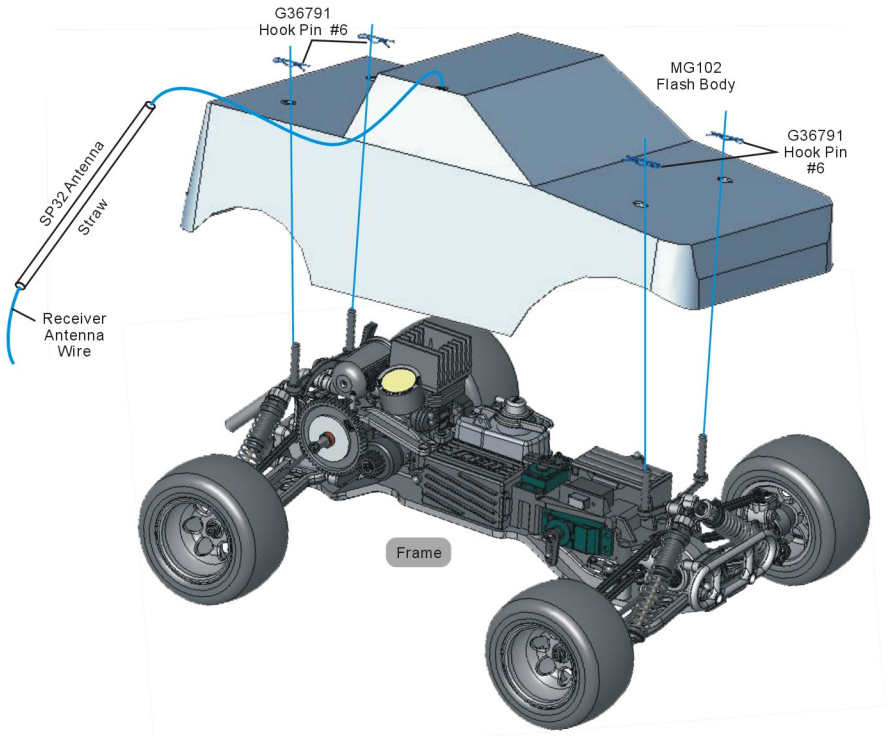


07-04 Fuel Tube Layout



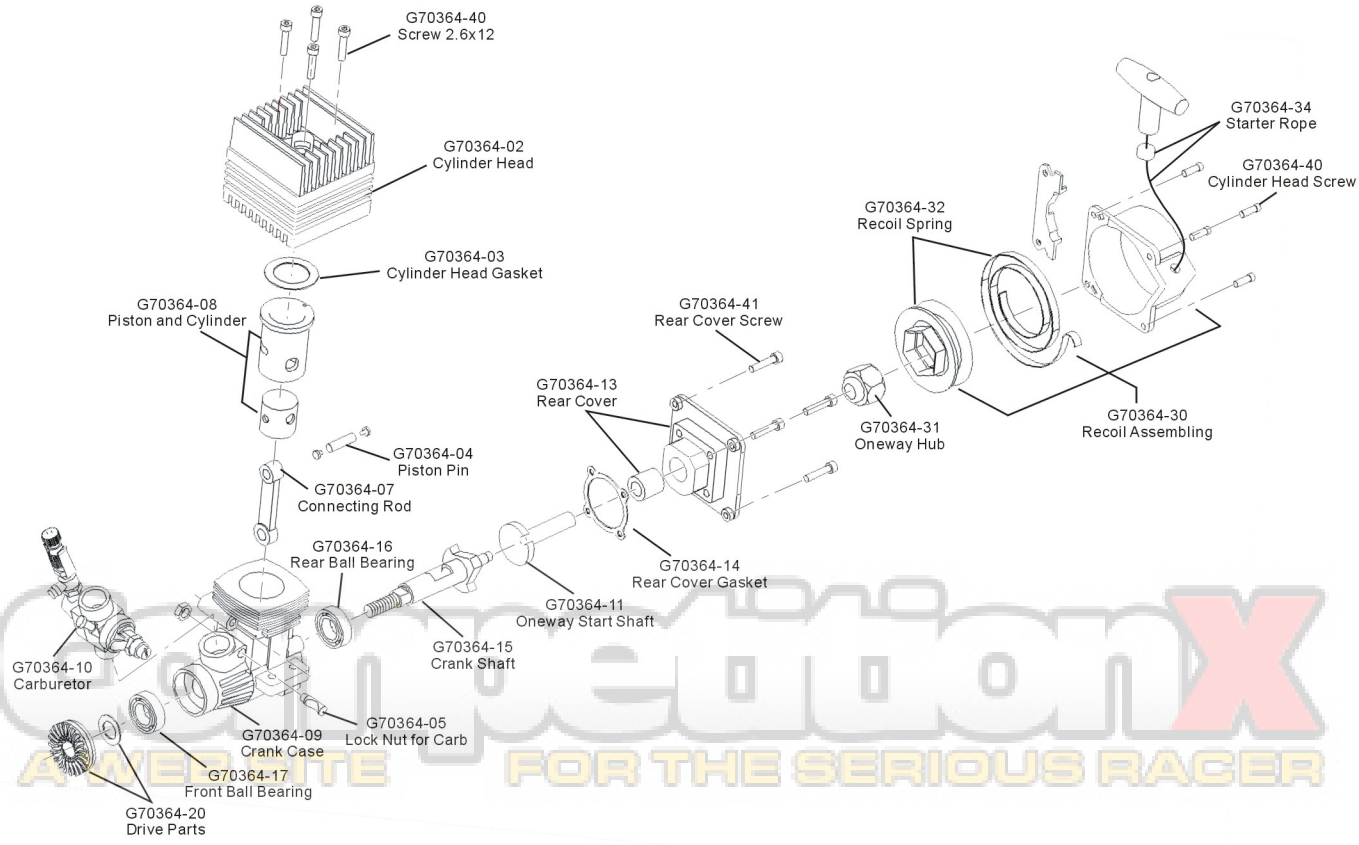
07 Frame

07-05 Body



Engine Exploded View

G70364 Engine NX-15L



Parts List

Spare Parts	
MG001	Diff. Bevel Gear(Outdriver)
MG002	Idler Gear
MG003	Diff. Case with Gear
MG004	Ring Bevel Gear
MG005	Brake Bracket , Rear Brace
MG006	Rear Tranny Case
MG007	Driving Gear
MG008	Main Shaft
MG009	Idle Shaft
MG010	Pinion Bevel Gear
MG011	Body Mounts
MG012	Rear Shock Tower
MG013	Brake Cam Shaf
MG014	Brake Calipers
MG015	Brake Hub
MG016	Spur Gear
MG017	Engine plate
MG018	Rear Arm Brace
MG023	Rear Inner Hinge Pin3x54
MG024	Rear Outer Hinge Screw Pin3x36
MG025	Rear Bumper
MG026	Rear Bulkhead
MG027	Rubber Grommets
MG028	Engine Mounts
MG029	Flywheel
MG030	Muffler
MG031	Air Filter Body
MG032	Air Filter Sponge
MG033	Diff. Case
MG034	Front Tranny Case
MG037	Steering Post
MG038	Front Arm Brace
MG042	Fuel Tank 75cc
MG044	Carrier
MG045	Spindle
MG046	King Balls B10
MG050	Front Bulkhead
MG051	Front Inner Hinge Screw Pin3x50
MG052	Front Outer Hinge Screw Pin3x32
MG053	Front Bumper
MG054	Front Skid
MG055	Battery Case,MG16
MG065	Shock Plastic Parts
MG067	Controlled rod,MG16
MG068	Diff. Seal Ring #27
MG070	Exhaust Sticker
MG072	Steering Crank Bell,MG16
MG077	Frame,MG10
MG078	Tie Rod ,MG10
MG079	Steering Linkage,MG10
MG080	Rear Lower Suspension Arms,MG10
MG081	Dogbone Swing Shaft,MG10
MG082	Rear Upper Suspension Arms ,Mg10
MG083	Central drive Shaft,MG10
MG084	Radio Tray,MG10
MG085	Receiver Cover,MG10
MG086	Battery Cover,MG10
MG087	Front Upper Suspension Arms,MG10
MG088	Shock Shafts,MG10
MG089	Shock Springs,MG10
MG090	Shocks,108mm
MG091	Controlled rod,MG10
MG092	Front Lower Suspension Arms ,Mg10
MG102	Flash Body,MG10
G36101	Flat Head Screw 3x10
G36103	Flat Head Screw 3x20
G36104	Flat Head Screw 3x5
G36105	Flat Head Screw 3x8
G36106	Flat Head Screw 3x16
G36107	Flat Head Screw 3x12
G36109	Flat Head Screw 3x30
G36110	Flat Head Screw 3x15
G36151	Binding Head Screw 3x12
G36152	Binding Head Screw 3x8
G36153	Binding Head Screw 3x10
G36154	Binding Head Screw 3x30
G36155	Binding Head Screw 3x20
G36156	Binding Head Screw 3x15
G36181	Round Head Screw 2x10
G36182	Round Head Screw 2x8
G36191	Round Head Screw 3x12
G36202	Ball Stud B5.8(L)
G36203	Ball Stud B5.8(S)
G36221	Cap Screw 3x8
G36222	Cap Screw 3x12
G36223	Cap Screw 3x16
G36224	Cap Screw 3x20
G36225	Cap Screw 3x25
G36226	Cap Screw 3x6
G36227	Cap Screw 3x10
G36228	Cap Screw 3x18
G36229	Cap Screw 3x14
G36231	Cap Screw 3x18
G36251	Set Screw 3x4
G36252	Set Screw 3x3
G36261	Set Screw 4x4
G36263	Set Screw 4x6
G36401	Lock Nut #3
G36402	Lock Nut #4
G36403	Flange Lock Nut #4
G36501	Tapping Flange Screw 3x14
G36502	Tapping Flange Screw 3x10
G36701	Pin 2x10
G36791	Hook Pin #6
G36801	Washer 3x6x0.5
G36802	Washer 3x8x0.8
G36803	Washer 4x10x0.8
G36804	Washer 3x10x0.8
G36851	E2.5 Clips
G36852	E2 Clips
G36853	E3 Clips
G36854	E4 Clips
G36857	E7 Clips
G36858	#2 Shaft Clip
G36901	Shim5x7
G36904	Shim12x16x0.5
G36905	Shim7x11x0.8
G36907	Shim12.2x14.8
G37301	Ball B5.8x3.5xM3
G70303	Oil Ring P3
G73901	Bearing 5x8x2.5
G73906	Bearing 5x11x4
G73908	Bearing 12x18x4
G73921	Bearing 15x21x4
FF012	Clutch Shoes w/ Spring
FF014	Wheels
FF018	Clutch Bell(T13)
FF068	Zip Ties #3.5x120
FF071	Exhaust Gasket
FF072	Servo Horn
FF079	Wheel Hex. Driver,H12
FF080	Brake DisK(FRP)
FF085	Inner Sponge,98*55*52
FF212	Diff. Hub
FF216	Shock Piston
FF220	Shock Cap
FF221	Shock Diaphragm
G70364	Engine .15
G70429	Glow Plug #3
GX07	Metal Bushing
GX15	Wheel Axle
GX21	Servo Saver
GX61	Fuel Tube
GS272	Rod Stopper
GS274	Throttle Spring
MD014	Tires
MD027	Splipper Driving Disc
MD028	Slipper Pad
MD029	Slipper Metal Parts
MX203	Brake Lever
MX332	Pilot Nut
SP32	Antenna Straw
SP36	Clutch Spring
SP50	Zipper Ties #3x80
Tuned Parts	
MG058	Front Aluminum Shock Tower
MG059	Rear Aluminum Shock Tower
MG069	Special Shock Pistons
MG071	Aluminum King Balls #10
G37101	Turnbuckle 3x25
G37102	Turnbuckle 3x30
G37103	Turnbuckle 3x35
G37104	Turnbuckle 3x40
G37105	Turnbuckle 3x45
G37106	Turnbuckle 3x50
G37107	Turnbuckle 3x55
G37108	Turnbuckle 3x60
G37109	Turnbuckle 3x65
G37110	Turnbuckle 3x70
G37111	Turnbuckle 3x75
G37112	Turnbuckle 3x80
G37113	Turnbuckle 3x85
G37201	E-Clip Pins 3*32.2
G37202	E-Clip Pins 3*36.2
G37203	E-Clip Pins 3*50.2
G37302	Ball B5.8x11xM3
G37303	Ball B5.8x6
G70318	Manifold
G70336	Muffler
G73920	Bearing 3/16x3/8x1/8
FF081	Clutch Bell (T15)
FFS001	CNC Clutch Bell,M10
FFS002	Adjusting Shim,10*12
FFS13	Pinion Gear,T13(M10)
FFS14	Pinion Gear,T14(M10)
FFS15	Pinion Gear,T15(M10)
FFS16	Pinion Gear,T16(M10)
FFS034	Pinion Gear,T11+(M10)
MX061	Fuel Filter
MX202	Tube Clamp