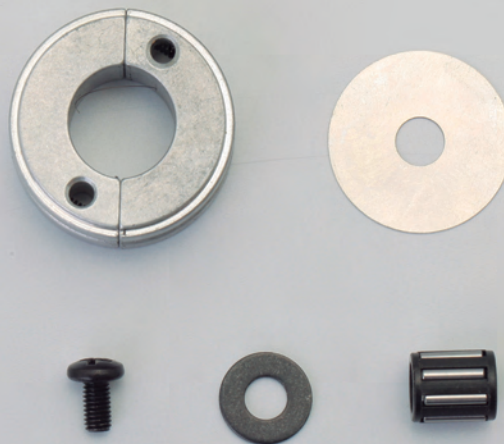


Installing the clutch shoe

Your parts



Clutch shoe
5 × 20mm shim washer
3 × 6mm binding-head screw

4.5 × 10mm washer
Clutch bearing

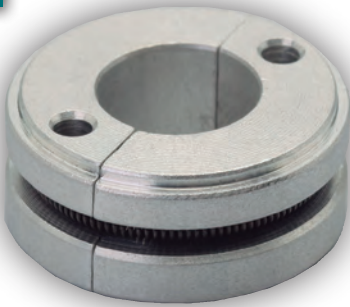
Tools and materials

Allen key (Stage 58)
Crankcase assembly (Stage 63)

HUMMER H1: STEP BY STEP

1

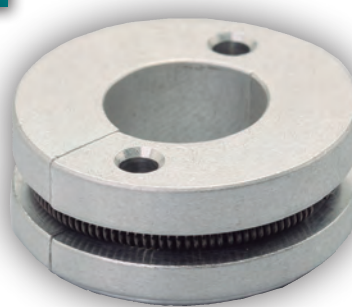
Front



Familiarise yourself with the pre-assembled clutch shoe. The photo above shows its front side. Note the step around the upper edge.

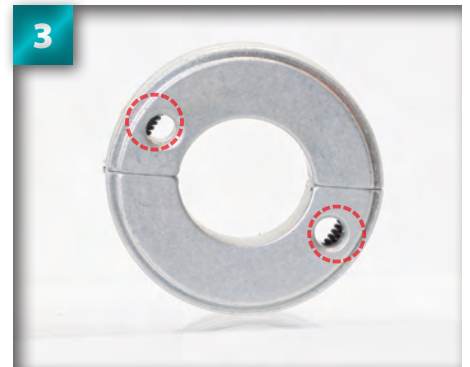
2

Back



This is the back of the clutch shoe. Its edge is straight and un-stepped.

3



You should be able to see the edge of a spring when you look through the central hole.

4



Do not attempt to disassemble your clutch shoe. To give you an idea of its components, the photo above shows the shoe in its separate parts. The two aluminium alloy rims are set around the 'clutch spring', which is an essential part of the clutch's operation.

5



Line up the clutch shoe to the flywheel, with its back facing the crankcase.

6

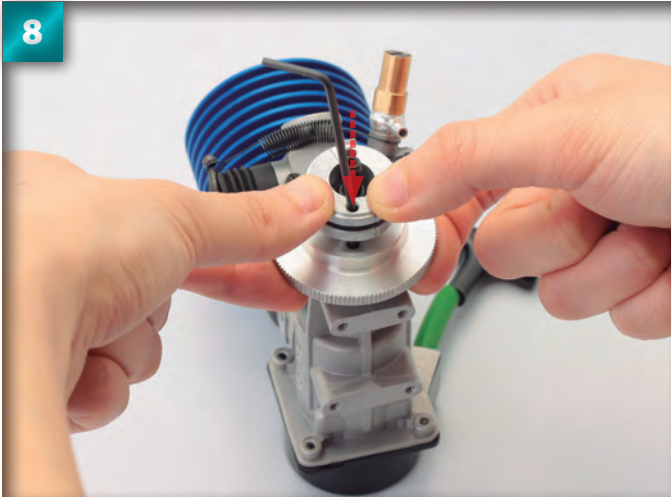


Insert both of the flywheel's pins into the two holes in the clutch shoe, making sure they do not get caught on the internal clutch spring.

7



Insert the longer tip of the 2mm Allen key into the first hole in the clutch shoe, and push the spring aside to clear the path for the flywheel pin.



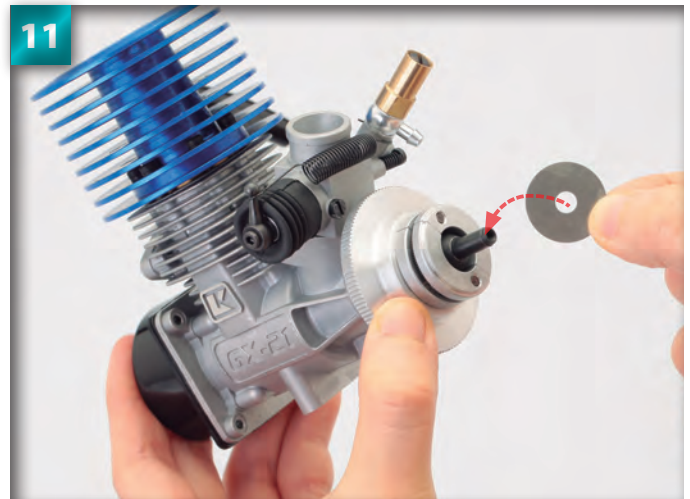
While keeping the Allen key in the hole, with the spring to the outside of the tip, press the clutch shoe down over the shaft.



Then reinsert the Allen key into the opposite hole, again pushing the spring to the outside of the tip.



As you did with the first pin, press down on the clutch shoe.



Place the 5 × 20mm shim washer over the pilot shaft. Make sure to handle this part carefully, as it is very thin and has sharp edges.



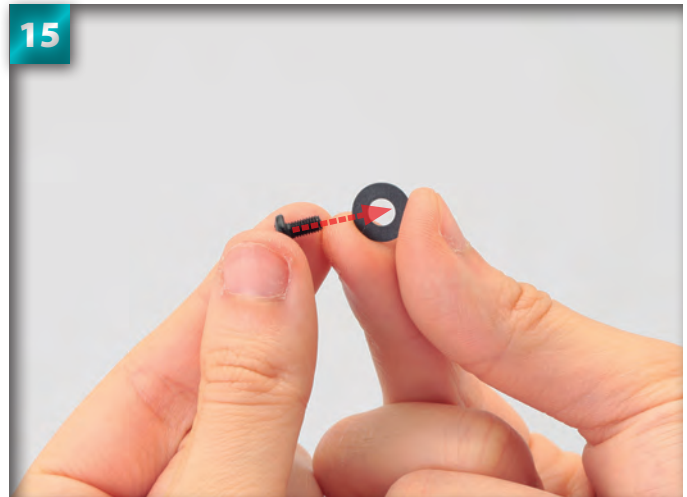
Press over the pilot shaft.



Next, place the clutch bearing over the pilot shaft. It does not matter which way round the bearing goes.



Your assembly should look like this.



Fit the 3 × 6mm binding-head screw through the 4.5 × 10mm washer, entering from the un-rounded back of the part.



Holding the screw and washer together, place the screw's tip into the open end of the pilot shaft.



Turn the screw by hand into the pilot shaft, only tight enough that it does not fall out, as this is a temporary assembly.

Assembled parts

This stage is complete, and the engine is nearing its final stages. As always, store safely in a plastic bag until the next session.



Stage 65

Completing and installing the engine.

Your parts



Clutch bell

Tools and materials

Phillips screwdriver
2.5mm Allen key (Stage 7)
Cutters
Crankcase assembly (Stage 64)
Main chassis assembly
Bodywork assembly (Stage 53)
Air cleaner (Stage 3)
Silencer assembly (Stage 54)

Body pins × 4 (Stage 35)
Nylon cable ties (Stage 53)
Manifold gasket (Stage 53)
3 × 10mm cap screws × 2 (Stage 53)
3 × 8mm binding-head screws × 4 (Stage 53)
Shock oil (Stage 9)
Paper

Completing the engine

1



Familiarise yourself with the clutch bell. The gear at the top is the pinion gear, which transmits the rotational power from the engine to the driveshaft.

2



The back of the clutch bell is hollow. This will accommodate the clutch shoe.

Remove the washer and screw temporarily fitted in the previous stage.

3



Place a drop of shock oil onto the clutch bearing.

4



5



Hold the clutch bell next to the pilot shaft.

6



With the clutch bell aligned, push the part over the pilot shaft, back side first.

When the clutch bell is on fully, with the tip of the pilot shaft protruding out of the top side's gear, place the washer onto the tip.

7



Next, replace the screw removed in Step 3.

8





Tighten the screw fully with the screwdriver.



Your Hummer H1's GX-21 engine is now complete, and ready to be mounted onto the chassis.

Mounting the engine



Take the silencer assembly (Stage 54) and place the two cap screws (Stage 53) into the holes on either side of the manifold base.



Both cap screws should be inserted fully.



Holding the cap screws in place from beneath, line up the manifold gasket (Stage 53) to the tips of the screws.



Place the manifold gasket over the screws, against the manifold itself.

HUMMER H1: STEP BY STEP



Line up the manifold end of the silencer assembly to the exhaust port of the engine.

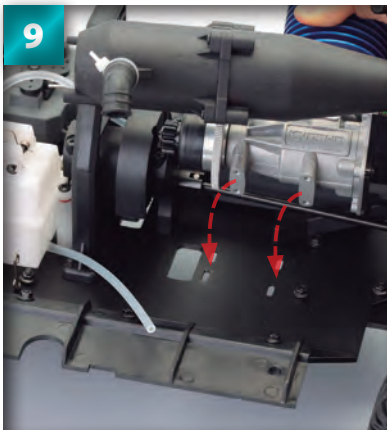


Place the recoil starter between the engine and the silencer body, then join the manifold to the exhaust port.

Hold the manifold in place, and tighten both cap screws. Tighten each gently first before going on to fasten both fully.



Loosen and remove the screw from the exhaust end of the silencer assembly and keep to one side.



Take the main chassis assembly and locate the arrowed holes. The engine will be fitted through these.



Lower the engine onto these holes.

Rotate the engine slightly to line up the holes.



Turn the assembly over and make sure the four holes are lined up entirely.



13



Place a 3 x 8mm binding-head screw (Stage 53) into the first of the holes. Tighten lightly by hand.

14



Repeat for all of the four screws.

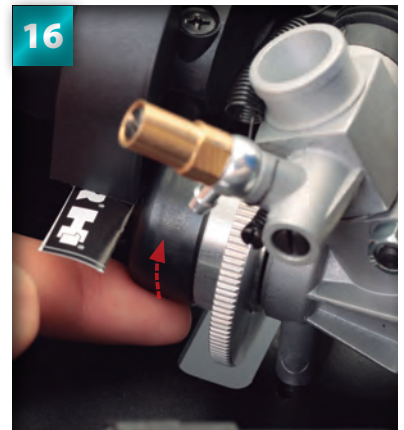
Turn the assembly back over and line up the engine's clutch bell to the centre gear cover, so that the teeth of the pinion gear and centre gear interlock. Cut a small length of paper to a width of 1cm and place between the gears. This is to ensure that there is a sufficient gap between the teeth to prevent their locking.

15



Gently rotate the clutch bell with your fingertip. The paper should be pulled into the centre gear cover with little resistance. Once you are sure the gap is sufficient, stop rotating – the paper should remain fully visible.

16



17



Holding the parts in place, turn the assembly on its side and tighten the first screw fitted in Step 13, though not fully.

18



Tighten the screw diagonally opposite.

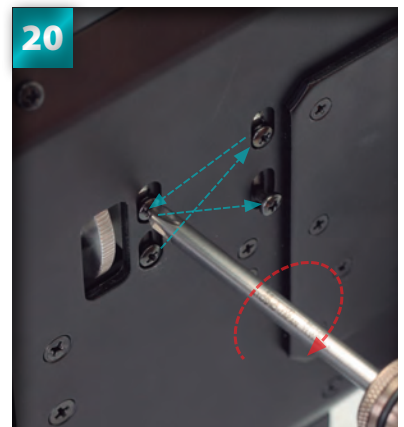
Turn the assembly over, then remove the paper, holding the engine straight.

19



Once perfectly aligned, turn the assembly and fully tighten the remaining screws.

20



HUMMER H1: STEP BY STEP

21



Take the silicon tube attached to the bottom of the fuel tank in your hand, and line it up to the silver fuel inlet at the bottom of the carburettor.

22



Being careful not to scratch or tear the silicon tube, push it over the inlet.

Double check that the silicon tube at the front of the silencer is still fitted properly.

23



Fit the silencer to the silencer stay at the exhaust end of the part.

24



25



Reinsert the screw you removed in Step 8 and tighten to attach the silencer.

26



Next, take the other silicon tube, from the top of the fuel tank, and line up to the exhaust port on the silencer.

As you did for the carburettor, carefully push the tip of the tube over the inlet.

27



Loop a cable tie around the joint between the manifold end of the silencer and the silicon tube.

28





Tighten the cable tie.



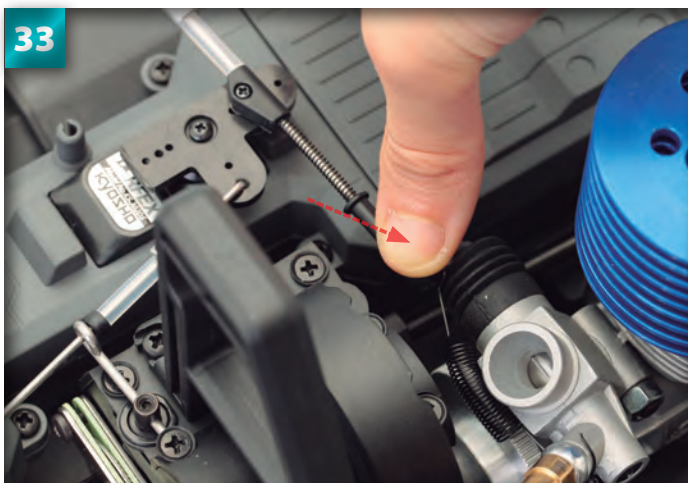
Use the cutters to trim the excess length of cable tie.



Take the throttle linkage rod's ball end and line it up to the ball link of the carburettor (circled).



Press the ball end onto the ball link so that the two connect.

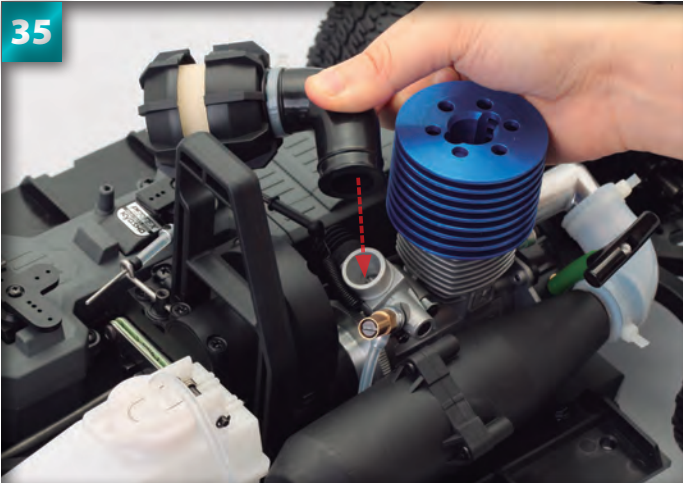


It is very important that the throttle linkage rod is connected to the carburettor's ball link, so press firmly until you are sure it is in.



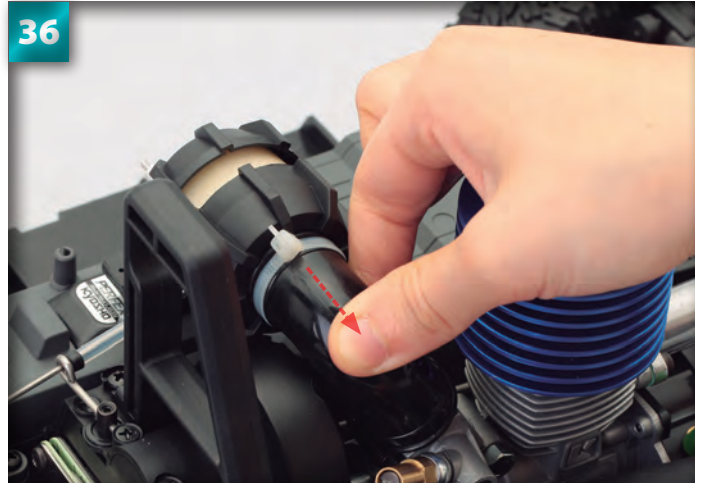
Take the air filter that you assembled in Stage 3, and fasten a cable tie firmly around the pipe, as shown.

35



Line up the air cleaner to the carburettor's air intake port, using the photo for guidance.

36



Press the air intake pipe firmly over the air intake port.

The engine is now fitted to the rest of the model, and the last step of assembling your Hummer is to fit the bodywork.



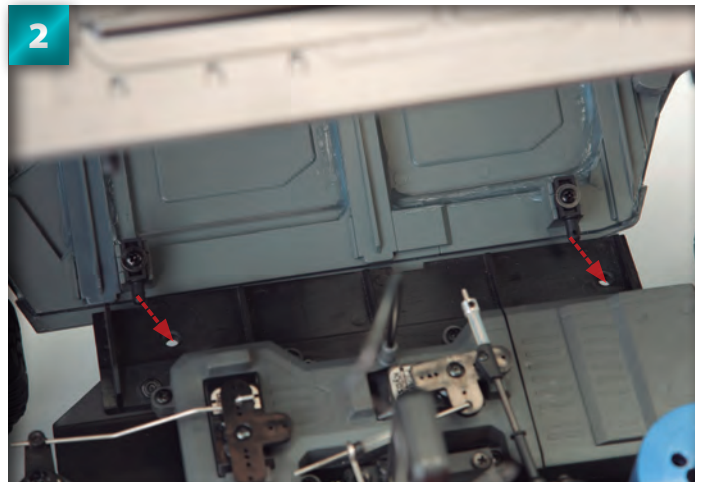
Fitting the bodywork

1

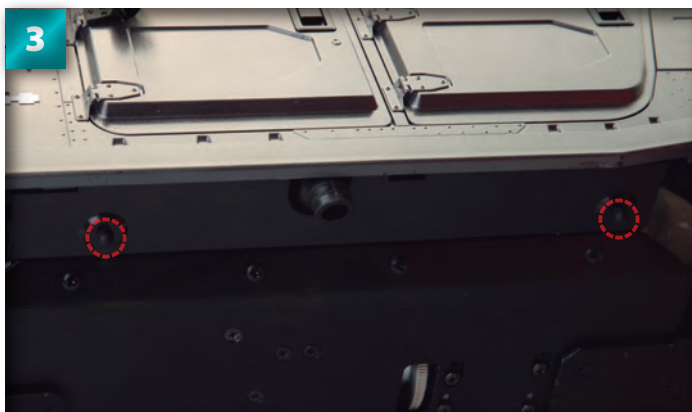


Take the bodywork assembly and hold over the chassis.

2



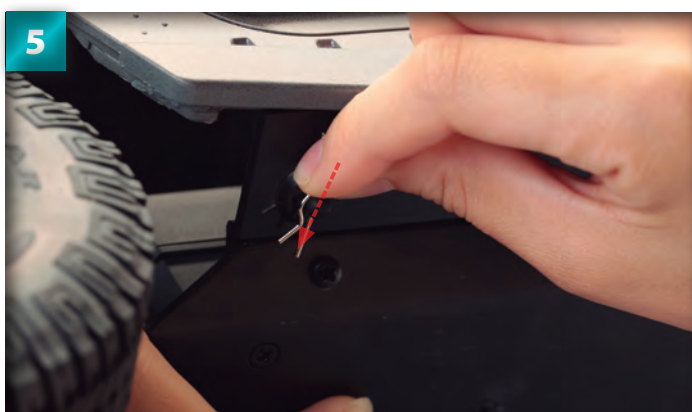
Line up the mounting bars with the mounting holes in the chassis.



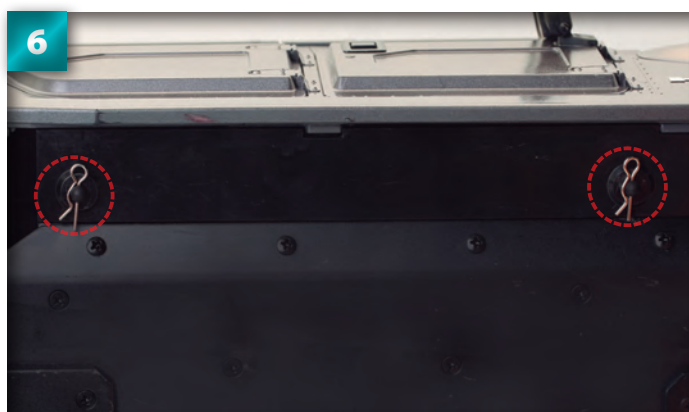
Make sure that the mounting bars protrude through the bottom of the chassis.



Slide the first mounting pin from the outside through the hole in the mounting bar.



Repeat with the second mounting pin.



Press both pins to the side, so that they lie flat against the bottom of the chassis. Repeat for the opposite side of the bodywork to complete the assembly of your Hummer.

Assembled parts

The assembly of your Hummer H1 model is now complete. In the next and final pack, you will fit the necessary radio control apparatus, and be instructed on how to safely and efficiently run your model. The photo shows a display model arrangement – it is advised that you remove the side and rear windows when you run the model.

Note: do not attempt to start or run your Hummer H1 until you have read the instructions, coming in the next pack.

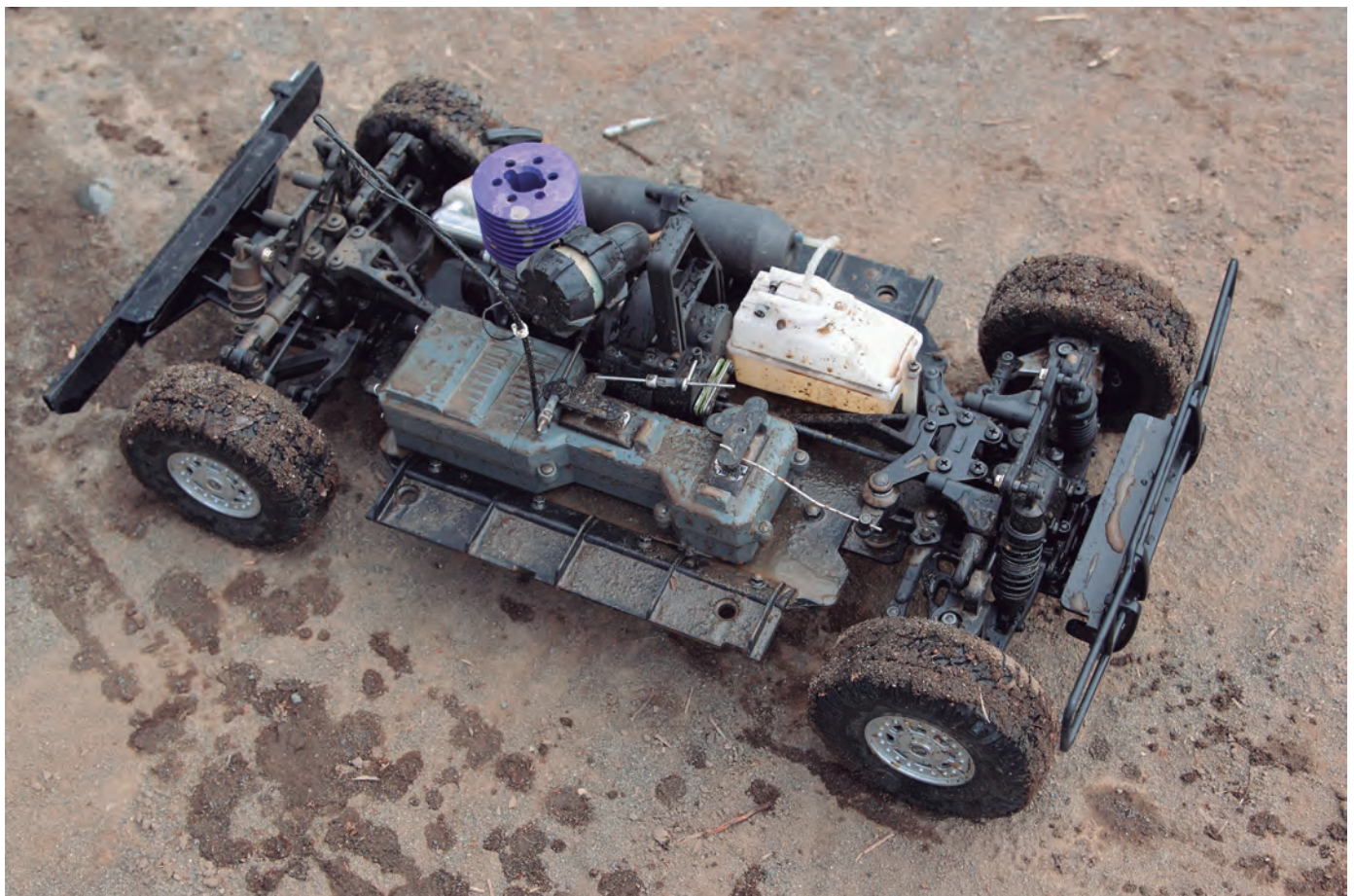


Operational running and safety guide for your Hummer H1 RC car

User manual

Please read this manual before using the product, to ensure it is used correctly and safely.

Page	Contents
305	Parts specifications
306	Installing the receiver
308	The transmitter
309	Preparing the transmitter
312	Glow plug heater and charger for your nitro-engined Hummer
313	Engine starting and 'break-in'
316	Operational information
317	GX21 Engine
318	Safety precautions



Parts specifications



KR-3 Receiver

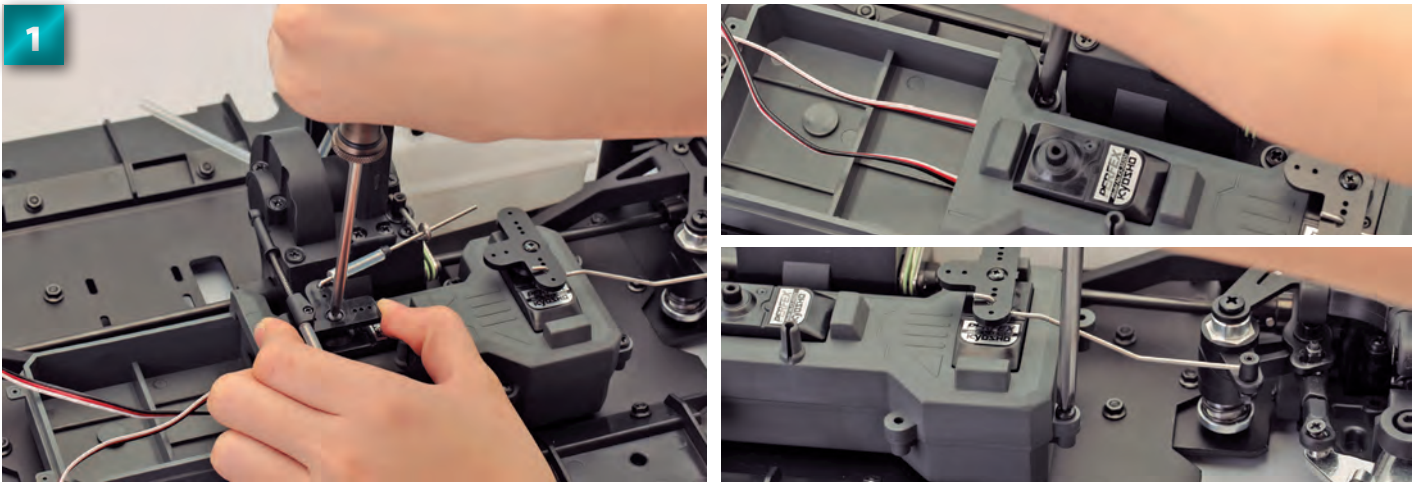
- | | |
|--------------------------|--|
| • Receiver | KR-3 (2-channel, AM receiver) |
| • Reception frequency | 27 MHz band |
| • Intermediate frequency | 455 kHz |
| • Power source | 4.8 - 8.4V (BEC included) |
| • Power consumption | 30 mA (at 4.8V / no signal)
45 mA (at 8.4V / no signal) |
| • Dimensions | 46 x 30 x 20.5mm |
| • Weight | 21.5g |

KT-3HS Transmitter

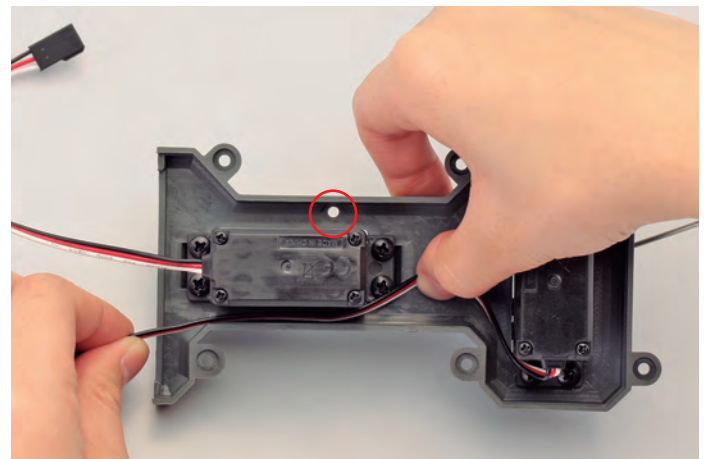
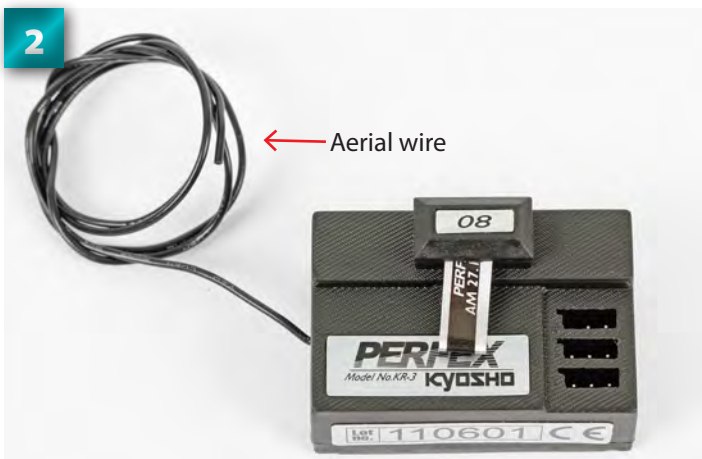
- | | |
|--------------------------|--|
| • Transmitter | KT-3HS (2-channel, wheel-type transmitter) |
| • Transmission frequency | 27 MHz band |
| • Modulation method | AM (amplitude modulation) |
| • Power source | 12V (eight AA dry cell batteries) |
| • Power consumption | Max. 150 mA |



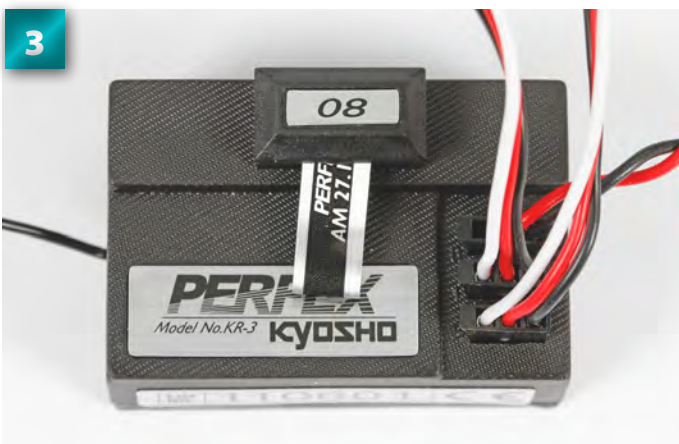
Installing the receiver



Unscrew the servo horn on both the steering and throttle servos, and the screw holding the lid of the radio box. Remove the lid.



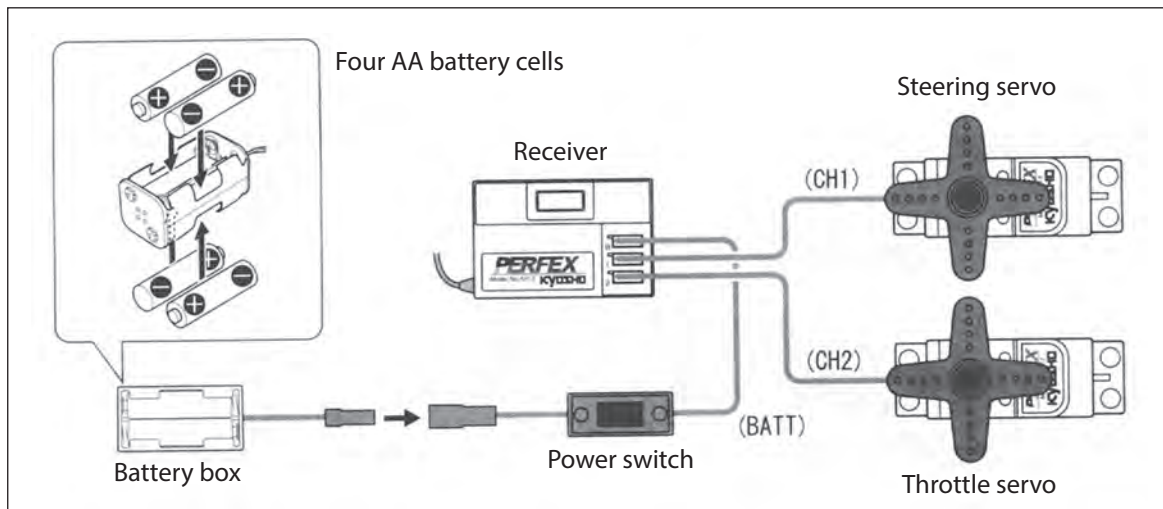
Then, take the aerial wire from the receiver and pass it through the hole next to the throttle servo (circled). Re-fit the lid of the radio box and re-connect the servo horns.



Insert the ends of the servo and power switch cables into the three holes on top of the receiver, following the diagram on page 307.



Connect the battery box to the power switch.



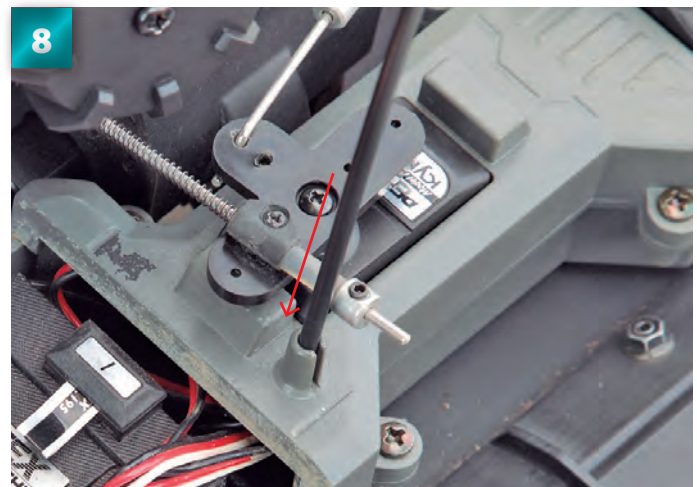
Insert four AA battery cells into the battery box.



Place the receiver and power switch into the slots in the radio box, next to each other. Try to store wires out of the way as much as possible.



Place the battery box into the space in the radio box next to the receiver.



Take the aerial tube from Stage 45 and insert the aerial wire into it and gently feed through until it emerges at the far end. Then secure the tube into the hole in the radio box from above (arrow).

The transmitter

KT-3HS transmitter



Battery level indicator

The 3 LEDs show how much charge remains in the batteries.

Red

Batteries are completely drained

Yellow

Time to change the batteries

Green

Batteries are sufficiently charged



Transmitter crystal

Preparing the transmitter



Insert the metal aerial into the hole on top of the radio control and screw into place.



Insert the batteries into the transmitter correctly. Ensure that the batteries are in the correct orientation (+/-) and that they are properly connected.



Switch the power on, and check that the three battery level indicator LEDs come on. If they don't, check for loose connections or wrongly orientated batteries.



The servo reverse switches

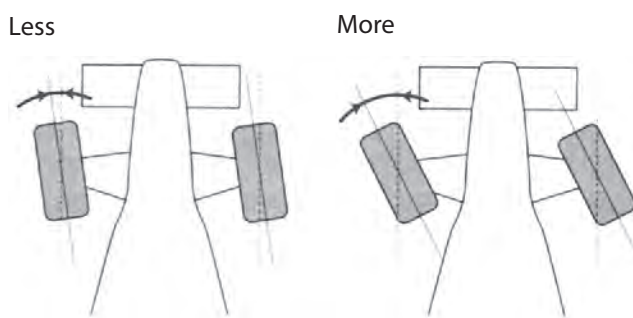
If the servos work in the opposite way from the transmitter's controls, use the servo reverse switches to reverse their directions.



Adjusting the trim

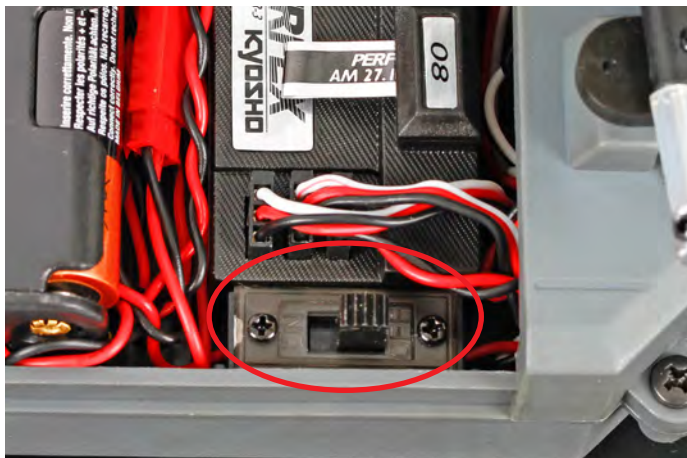
Set the steering and throttle servos to neutral (central position, such as the steering trim seen above). Move the steering trim to right or left to adjust the steering servo's neutral (central) position. Adjust it so that the R/C car runs straight.

Move the throttle trim to right or left to adjust the throttle servo's neutral (central) position. Adjust it so that the R/C car only moves off when the throttle is operated.



Adjusting the steering direction (D/R) adjuster

This adjusts the steering angle (the amount by which the steering servo moves in response to a steering operation on the transmitter).



Sequence of operations

If these operations are performed incorrectly, there is a risk of the R/C car running out of control.

When turning on the power, without touching the throttle trigger on the transmitter, extend the transmitter aerial and move the power switch to ON (circled left). Then switch on the power on the receiver (circled right).

When turning off the power, always stop the engine first by sealing the exhaust outlet. Place an old rag over the exhaust outlet until the engine stops. Switch off the power on the receiver, and then switch off the power on the transmitter.

Testing operation ALWAYS PERFORM THIS STEP

Always perform a pre-run operational test before starting your Hummer. Ask an assistant to hold the Hummer, or place it on a maintenance stand so that it cannot run off, and try out each servo to check whether or not they are following the operations sent by the transmitter. If they do not move in response to the controls, or if they operate in an unintended way, DO NOT RUN THE CAR.

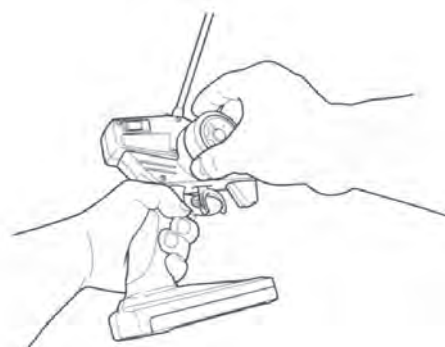
Make sure that the transmitter aerial is fully extended while in use. If the product is used with the aerial less than fully extended, the range of the radio waves will be reduced and there is a risk this could cause malfunctions or make the car run out of control. There is also a chance that it will run out of control if there is any fault on the transmitter or car body, etc., so it is always best to double check.

You may wish to consider the fitting of a failsafe unit into your model, which protects the model from damage should you lose the signal from your transmitter due to low transmitter/receiver battery power or the model going out of range. A failsafe unit can be purchased from any R/C model car dealer.

Correct way to hold the transmitter

The transmitter should be held firmly with both hands, as shown in the diagram to the right, with the aerial kept upright.

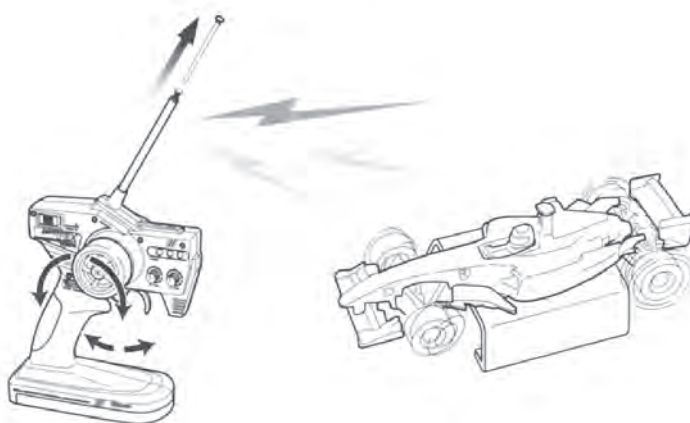
Operate the throttle with your left hand and the steering with your right hand.



Checking operation

Check that each part works properly by following the table below.

Be sure the car is securely placed on a maintenance stand or similar location when you do this.



	Problem	Solution	See page
1	Steering servo moves in opposite direction	Operate steering reverse switch	310
2	Throttle servo moves in opposite direction	Operate throttle reverse switch	310
3	Car does not steer straight	Adjust the steering trim	310
4	Model does not accelerate as intended	Adjust the throttle trim	310

Glow plug heater and charger for your nitro-engined Hummer



Using the glow plug heater and charger

How a glow plug works

Spark plugs in petrol engines cause ignition with a spark. In nitro engines, glow plugs cause ignition with heat. Heat is created initially by connecting a glow starter or 1.5V battery to the plug. Once the plug heats up, the battery is disconnected and the heat retained by the combustion chamber will keep the engine running. Engine timing is automatic and controlled by the engine's RPM. Running at higher RPM makes the plug hotter and 'fires' the fuel-air mix sooner. At lower RPM, the filament cools and the plug fires less frequently.

Charging the plug heater

- The glow plug heater can be charged from any USB socket, such as on a computer.
- Do not cover the charger or charge the heater near inflammable items, as this may cause a fire.
- Remove the protective cap from the glow plug heater.
- Pull up the spring-loaded clip on the heater and insert the charging plug. Release the clip, then make sure the plug is securely locked in place and can't fall out.
- Insert the USB plug on the charger into a suitable USB slot and make sure that the charging lamp comes on.
- When charging the plug heater's battery for the first time, allow it to charge for 10 hours. Thereafter, the normal charging time is 8 hours. Do not over-charge the heater: the indicator light stays on even when the battery is fully charged, so it is important to disconnect the charger after the stated times.
- Unplug the charger from the USB slot and release the charging plug from the heater by pulling up the spring clip.
- Replace the protective cap on the glow plug heater to avoid the risk of it short-circuiting.

Using the plug heater

- Remove the protective cap from the glow plug heater.
- Pull up the spring-loaded clip on the heater and push the tip onto the glow plug on top of the engine.

- Release the clip to lock the heater in place, but steady the heater with your hand while you start the engine.
- When the engine is running smoothly, pull up the clip to release the starter. Do not leave it in place longer than necessary, as this will quickly drain the battery.
- Replace the protective cap on the glow plug heater to avoid the risk of it short-circuiting.

Precautions

- If the engine is not starting as it should, it may be that the glow starter is not sufficiently warmed up. Remove it and check that the filament inside is glowing – do not touch it. If it is not glowing, the heater may need recharging. If the glow plug does not glow even on full charge, the plug may be faulty and in need of replacement.
- Keep the glow plug starter clean and dry. If it gets dirty, wipe it clean with a dry cloth.
- Always replace the protective cap when the starter is not in use.
- If the body of the heater or the charger gets hot while charging, disconnect immediately and stop charging.
- The rechargeable battery in the plug heater will decline over time and is not replaceable.

Choosing the right glow plug

Getting the best engine performance means choosing the right glow plug, which depends on a number of different factors, such as the engine type, air–fuel mix, nitro percentage, and air temperature.

Ambient conditions can change the type of glow starter required, so keeping a range of glow plugs on hand will help you fine-tune your glow heat and enjoy maximum performance under all conditions. Generally, hot plugs provide better idle and acceleration than cold plugs. Cold plugs will produce more power, but may idle more roughly and make it harder to tune the engine.

Glow plug tips

- Buy quality plugs. You're protecting your investment.
- Store plugs where it's dry. Moisture can ruin them.
- Use the right glow plug. Follow the guidelines above.
- Follow proper break-in procedures.
- Tune your engine carefully. Running too lean will make your engine 'blow' plugs more often. Proper tuning helps extend plug life.
- Never touch the filament of a glow plug, even when cold. Doing so can break the filament and ruin a plug.
- Don't over-tighten your plug. Tighten it until it's just snug.
- Be sure to shim your engine correctly. A plug that's too close to the piston can cause detonation, which will quickly damage a glow plug.
- Use only a glow starter or 1.5V battery to heat your plug, otherwise, your plug may burn out ahead of its time.
- Don't be afraid to ask for help. Advice from experienced modellers can save you time and money – and most are glad to help.

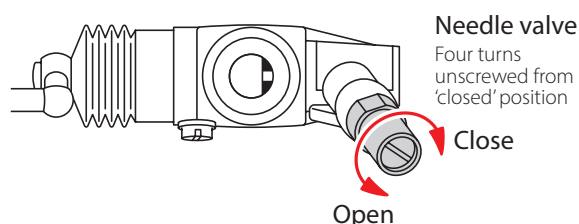
Engine starting and 'break-in'

Proceed as follows when starting and breaking in the engine.



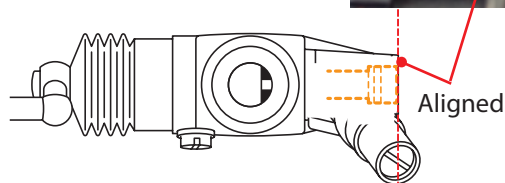
Before starting the engine, you will need to adjust the needle valve, the idle adjustment screw and the air/fuel mixture adjustment screw. These adjustments should not only be done when starting the engine for the first time, but every time you start the engine. These parts will always require adjustment, because they can be affected by many factors.

Adjust the needle valve and air/fuel mixture adjustment screw to their standard position as follows:



Adjustments may slightly vary according to the type of glow plug and glow fuel.

Tighten the air/fuel mixture adjustment screw until it is aligned with the edge of the carburettor.



Note: The optimum setting may vary according to the kind of glow plug and glow fuel used!

Note: The optimum setting may vary due to changing weather conditions!

The best position of the needle valve is between 2.5 and 3 turns from the fully closed position. Warning: closing

the needle valve too much carries the risk of seriously damaging the engine.

Caution: Only do these adjustments while running your car! The engine will be damaged if the wheels are off the ground and spinning free.

MAINTENANCE

After each use, drain off all the leftover fuel from the fuel tank, as well as any inside the engine. Leaving fuel inside the engine may clog it up and make it difficult to start. Treat the engine with 'after run' oil.

Remove any dirt from the outside of the engine using methanol and a brush. Do not allow fire or any excessive heat source to come into contact with methanol – it is highly flammable!

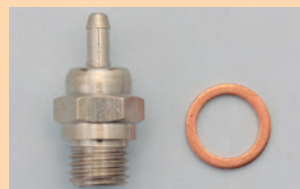
Never use petrol or thinner when cleaning! This may also cause a fire.



The higher the nitromethane content of the fuel, the faster the model will go, but this will also increase the engine wear rate. 16% is recommended for the GX21 engine, but 15-25% is also acceptable. In addition to canned fuel, you can buy beginner's sets, which include everything you need to start running your RC car.



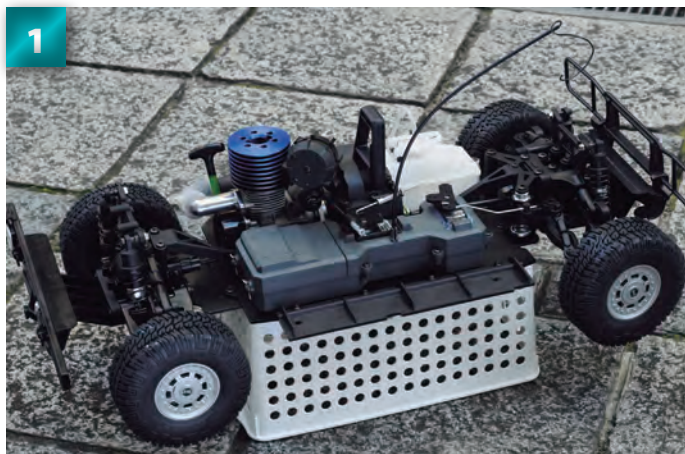
A glow plug heater and charger are also a necessity. There are different types, available from our website at www.model-space.com or in most RC model shops.



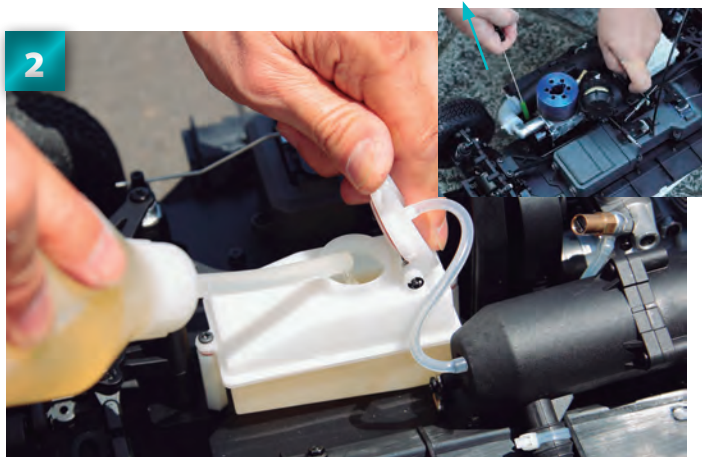
Glow plugs wear out, so it is a good idea to always have spares available.



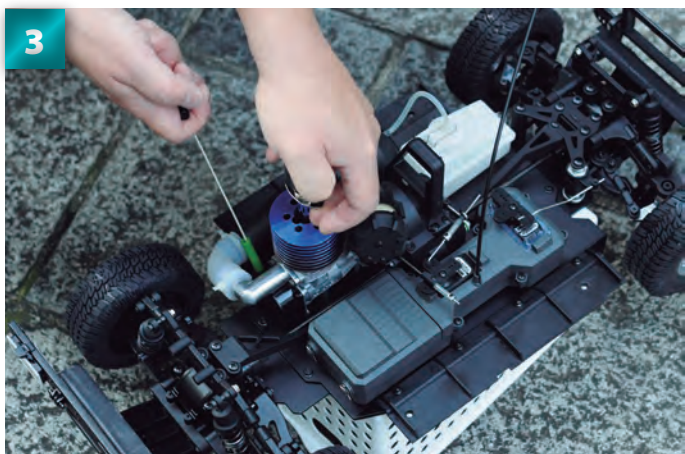
You will need a screwdriver with a head width of no more than 4mm for adjustments to the engine.



Make sure the needle valve is unscrewed 4 turns from closed position. Then place the model on a raised surface, so the wheels can't touch the ground.



Pour fuel into the tank. Move the throttle lever to the high position, prime the engine (push the choke button 2-3 times or put 2-3 drops of fuel directly into the carburettor) and move the throttle lever back to the slow throttle position. **CAUTION: check for dirt in the tank! If there is any dirt inside, carefully remove the tank and clean it out.**



Attach the booster cord or one-touch glow plug heater to the engine in order to electrify the glow plug.



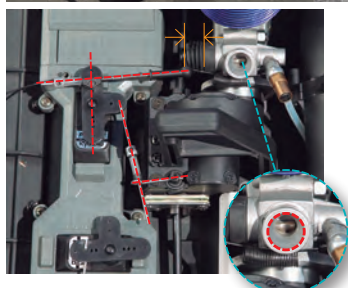
Pull the recoil starter rope (starter knob) several times. Only pull out 20-30cm of cord. **Caution: Be careful not to pull out more than 50cm of cord because you may tear it and the spring inside the recoil starter!**



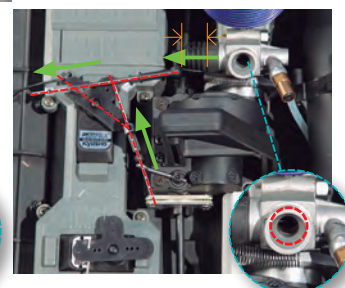
Once the engine has started, wait 5-10 seconds before releasing the cord or removing the glow plug heater.



Before driving the model, hold it with one hand or place it on a raised surface where the wheels can't touch the floor. Then, test that the radio signal is working by gently squeezing and releasing the throttle and turning the steering to check functionality is correct.



Carburettor and throttle linkage in 'neutral'.

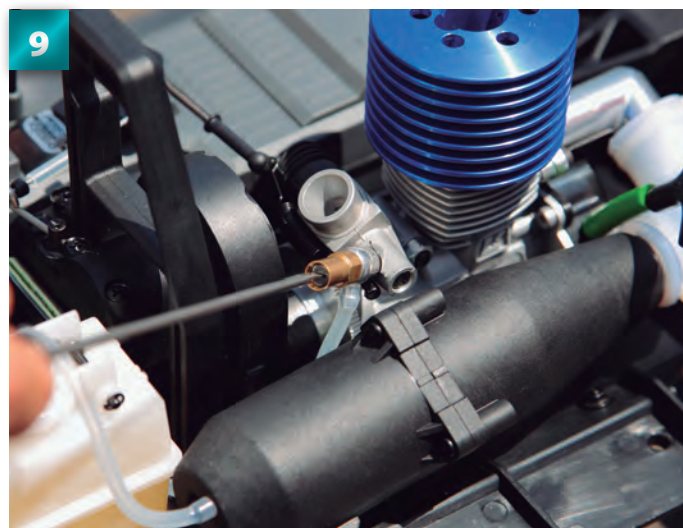


Carburettor and throttle linkage at 'full throttle'.

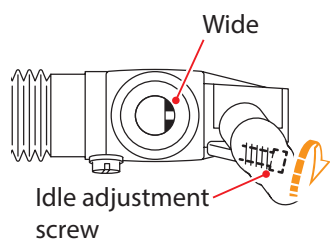


Drive the model in figure eights, running the engine for 2-3 tanks of fuel. Make sure you do not apply full throttle during these tests. Do not increase RPM abruptly. Tighten the needle valve by 1/8 of a turn and continue to run the engine, handling it gently.

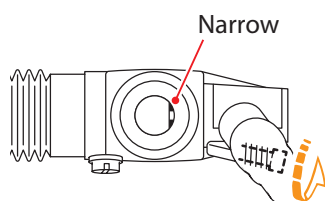
Caution: After each tank, allow the engine to cool off naturally!



Now adjust the needle valve. Its optimum setting is when the engine performs best and the throttle control is in the high position. If tightened further, engine RPM will drop, leading to engine damage. Once you have found the needle valve's optimum setting, unscrew it 10-20° for normal operation.



Idle speed goes up when screw is loosened.



Idle speed drops when screw is tightened.



If the logo on the wheel is still visible when the engine is running, the idle speed is correct.



If the logo on the wheel is not visible, the wheel is rotating too fast, and the idle speed needs adjusting.

During the break-in, adjust the idle RPM with the idle adjustment screw. If rotating it clockwise, idle RPM increases. Idle RPM is halfway between RPM when the clutch engages and RPM when the engine stalls. Set idle RPM towards the lower end if possible.



Now you will set the air/fuel mixture adjustment screw. Stop the car and move the throttle control from the idle position to high position. If fumes exiting the exhaust are white and RPM increases slowly, fuel is too abundant when idle. To correct this, rotate the air/fuel mixture adjustment screw clockwise, each time by 30-40°. If the engine stalls, fumes are not visible or the RPM increases slowly, not enough fuel is available. This time, adjust the mixture by rotating the screw anticlockwise, each time by 30-40°.

Operational information

Do not run the model without its air filter. Any debris ingress will seriously damage the engine and reduce its life.

Consider fitting a fuel filter into the fuel line to prevent ingress of debris into the engine via the fuel tank.

Fuel health and safety: always follow fuel manufacturer guidelines. Nitro fuel is toxic by inhalation and when in contact with skin, and poisonous if swallowed. Keep fuel containers out of reach of children at all times!

Nitro fuel is highly flammable, so keep it far away from sources of ignition – even cigarette ash could ignite it. Store within a tightly sealed and secure container, in a well-ventilated area and maintain a low temperature.

The methanol content of nitro fuel is 'hygroscopic', meaning that it absorbs moisture from the atmosphere. Therefore avoid leaving the fuel container open for long periods.

Servicing

- General cleanliness – a clean car is a happy car. Use a large natural-hair bristle brush to remove dust/dirt from the chassis and inside the body. Specific nitro cleaning products are also available.
- Differentials – you should check the areas around the differential shafts for grease leaks. If you see a leak, you need to take the differential apart and put more grease in it, and look to servicing the differential every 20 – 25 runs to renew the grease.

- Gear mesh – the relationship between the primary drive gear (pinion or clutchbell) and the secondary drive gear (spur gear) is very important. A tight gear mesh will produce friction, overwork the engine and could burr the teeth of the spur gear. A loose gear mesh may cause the pinion gear to strip the teeth of the spur gear.
- Air filter – a clean air filter will allow a constant clean flow of fresh air to flow freely into your engine, boosting engine performance. It will also prolong the life of your engine by reducing the risk of dirt and dust from getting in. More frequent cleaning of the filter is required for an off-road model such as the Hummer.

How to clean the air filter: remove the air filter from the carburettor, then remove the foam element from the filter body.

Rinse the foam filter element from the inside face to the outside face with nitro fuel to remove all the dirt and dust (do this in a well-ventilated area and wear rubber gloves). Apply air filter oil to moisten the foam filter element. Use your fingers to gently squeeze the foam to disperse the oil throughout the element. Reinstall the filter element into the filter housing, make sure there are no gaps between the two elements. Then re-attach the air filter body onto the carburettor.

Troubleshooting

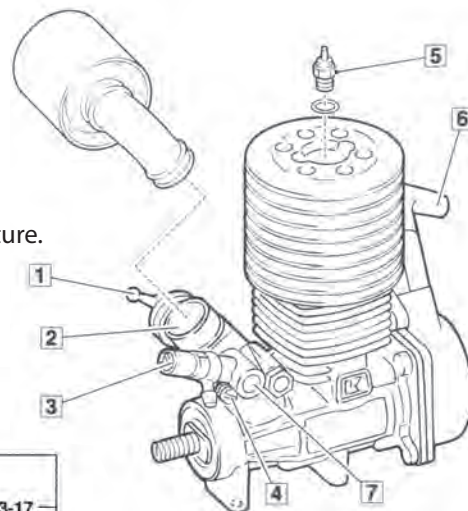
If you suspect a malfunction, check each part according to the table below.

Symptom	Item to check	Solution
Transmitter	Batteries flat Batteries inserted incorrectly Loose connections with battery contacts Dirty battery contacts	Replace with new dry cell batteries Change position to match polarity markings If contact panel is deformed, correct its shape Wipe clean with dry cloth
Aerial	Loose Not fully extended	Screw it in until it locks Extend fully
Crystal	Crystal loose Wrong band Not as specified Crystal broken	Push in firmly until seated Match transmitter/receiver bands (crystals) Replace with item specified by manufacturer Replace with new crystal
Connections	Wrong wiring Loose	Plug into right locations Push in connectors firmly until seated
Receiver aerial	Close to other wiring Cut Tied up	Move away from other wiring Have it repaired Use aerial wire extended, not rolled/tied up
Linkage	Jammed or warped	Adjust on car to ensure it moves smoothly

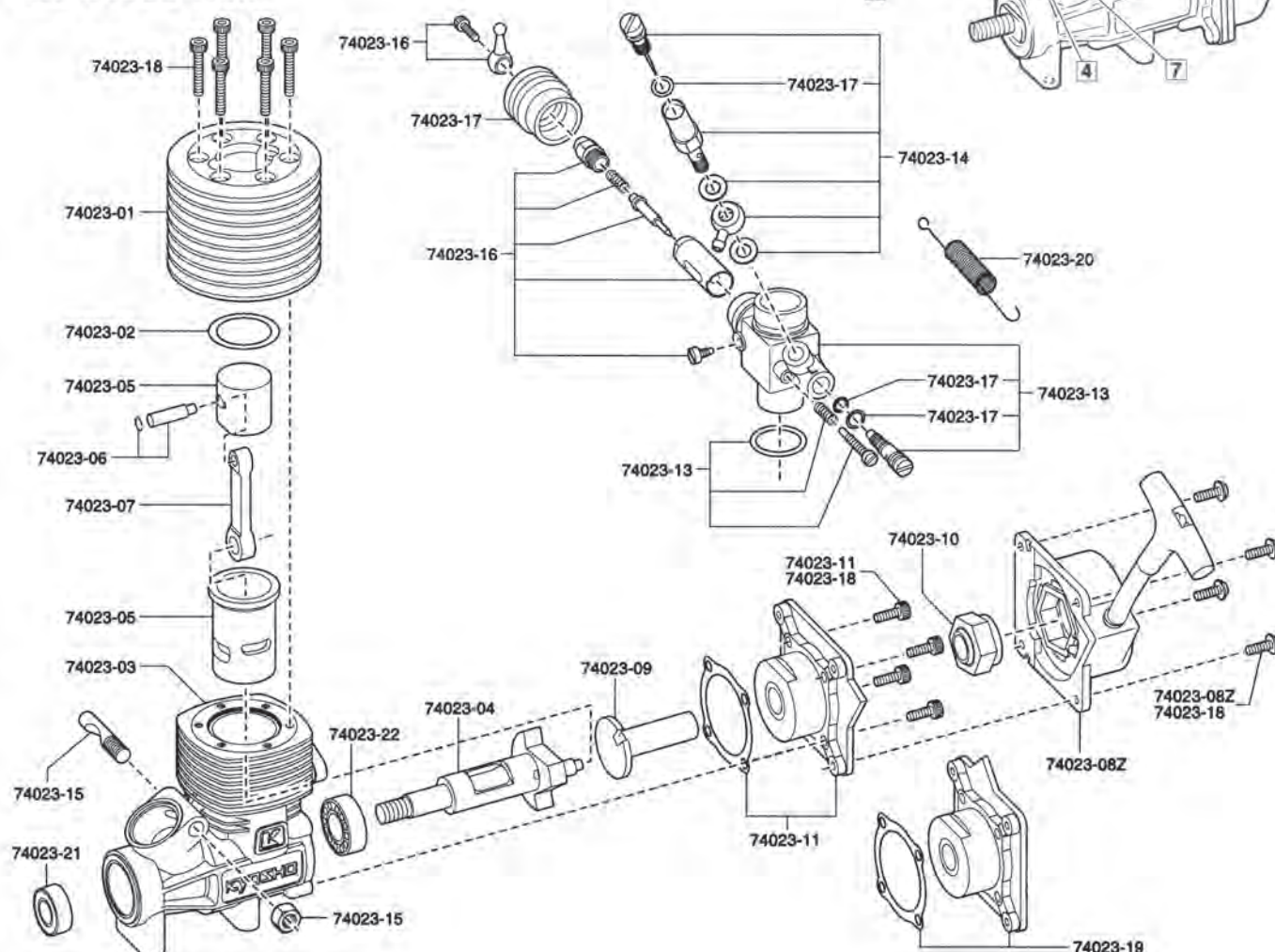
GX21 ENGINE MANUAL

As long as the engine is hot, avoid touching anything except the needle valve! You may get burned if you ignore this warning!

1. Throttle lever: adjusts the amount of air-fuel mixture inflow and controls the engine's RPM.
2. Carburettor: mixes the air and fuel appropriately to control engine running.
3. Needle valve: adjusts the amount of fuel inflow for the mixture.
4. Idle adjustment screw: adjusts the carburettor opening when idling.
5. Glow plug : ignites the compressed air-fuel mixture.
6. Recoil starter: starts the engine.
7. Air/fuel mixture adjustment screw.: adjusts the volume of air and fuel in mixture.



EXPLODED VIEW



Part number

Part name

74023	GX21 engine
74023-01	Cylinder head
74023-02	Head gasket
74023-03	Crankcase
74023-04	Crankshaft
74023-05	Piston and cylinder set
74023-06	Piston pin
74023-07	Connecting rod
74023-08Z	Recoil starter assembly
74023-09	One-way shaft (recoil starter)
74023-10	One-way bearing (recoil starter)
74023-11	Starter holder rear plate

Part number

Part name

74023-12	Slide carburettor set
74023-13	Carburettor case set
74023-14	Needle valve assembly
74023-15	Carburettor stopper
74023-16	Slide valve set
74023-17	Maintenance kit
74023-18	Screw set
74023-19	Starter holder (for side pull-starter)
74023-20	Throttle return spring
74023-21	Sealed bearing
74023-22	Open bearing

Notes on use

- Your radio control is specifically for use with your Hummer H1 R/C model. It should not be used for any other purpose.
- If using this product outside of the UK, check that its use is permitted by local radio laws. You must not use the product without such permission.
- We bear no liability should you alter this product in any way, through modification or replacement parts etc.

Safety precautions

IMPORTANT

This manual contains important information designed to prevent harm to the user and other people, and damage to property, as well as to allow you to use the product correctly and safely. Make sure you understand the next section and ensure you follow what is written. This manual should be kept even after you have read it.

Warnings and cautions

Warning: Indicates a risk of serious harm to life or limb.

Caution: Indicates a risk of lesser harm to people and/or damage to property.

Detailed warnings

- Do not run R/C cars near other people or public roads. However unlikely, this could result in serious injuries if it were to run out of control due to some fault with the transmitter or the car itself.
- Do not run R/C cars outside your field of view. There is a risk that it can run out of control if you have lost sight of it.
- Avoid running R/C cars on rainy days, through puddles, or at night. Water can enter the device and may cause a malfunction.
- Check all connectors. Ensure that the connectors for the receiver, servos, batteries and so on are inserted fully and securely. There is a risk of the car running out of control if a connector comes loose due to vibration etc. while in motion.
- Check the receiver aerial. Do not cut off or tie up the receiver aerial's wire end. Also, do not tie it up with the servo lead wires or allow it to come close to a source of noise. This could reduce the reception sensitivity and the operational range, and cause the car to run out of control. Make sure it is at least 1cm away from parts bearing large currents, such as the motor or motive power batteries (including their wiring). Noise travels along items that convey electricity, such as metal or carbon, so keep it away from these parts too.
- Only use official KYOSHO crystals. Using other brands could lead to malfunctions.

Detailed cautions

- Do not simultaneously run R/C cars that use the same radio frequency. The radio waves will interfere and the R/C cars may run out of control. Interference will arise when the frequencies are the same – even if different modulation methods are used (AM, FM, PCM etc.).
- Do not use it near (up to around 3km from) other R/C circuits. It may end up out of control due to interference from other radio waves, etc.
- Make sure the polarity of the batteries is correct. Getting the polarity wrong will damage the transmitter.
- Remove the dry cell batteries when the product is not being used. If any leaks are found, carefully wipe off any residue adhering to the case or contacts.
- Do not recharge dry cell batteries. This is very dangerous.
- Do not use oxyride batteries. These cannot be used due to the higher voltage.
- If using Ni-MH batteries: For safety reasons, the battery box is fitted with a rib (partition) to prevent inverted connection. In some batteries the plus terminal is quite short and fails to make a connection, so be sure to check this before purchasing batteries.
- Battery indicator display. If the green light on the battery level indicator (LED) goes out, you should immediately replace the batteries with new ones.