

2008 GRP ENGINE LINE
**USER AND
MAINTENANCE
MANUAL**



ENGINE USER AND MAINTENANCE MANUAL

We wish to thank you for choosing our engines and we assure you that the greatest care has been given to planning, production and assembly in order to ensure your total satisfaction with, this product and any future purchases. We are always available to answer any queries you may have.

Before attempting to start the engine, it is extremely important that you read and comply with the "GENERAL SAFETY INSTRUCTIONS AND WARNINGS" contained in this User and Maintenance Manual.

Furthermore, we ask you to study carefully the complete content of this User and Maintenance Manual so that you are acquainted with all the functions, procedures and technical features of your new engine.

Keep this User and Maintenance Manual in a safe and convenient place so you can consult it at all times. All the parts of this Manual can be printed freely so you have a copy on hand whenever needed.

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Each single engine, comes with this colour-printed English manual and the same manual is also available in other languages in pdf format, which can be downloaded directly from our GRP website (www.grpgandini.com).

GENERAL SAFETY INSTRUCTIONS AND WARNINGS

Never consider your engine a "toy", but a true and proper internal combustion engine of the latest generation, with a power that could injure yourself or others if not used with due caution. Responsibility for any damages caused by incorrect use will be due to the owner of the engine who must use the greatest professional care. If another person uses your engine in any way, you must ensure they have a copy of this User and Maintenance Manual.

The following **WARNINGS** apply to **ALL MODEL COMBUSTION ENGINES** and are grouped under two headings according to the damage or danger that could occur due to abuse or negligence.

WARNINGS

These indicate dangers that could imply serious injuries (even fatal in extreme cases).

NOTES

These indicate less evident, general hazards that could however cause damage or injury.

WARNINGS

Never start or use the engine in a closed space. These small engines, just like those in cars, emit lethal carbon monoxide. Therefore use your engine only in the open air.

The fuel used for model engines is poisonous. Make sure it never comes into contact with eyes or mouth. Always keep the fuel in a clearly marked container and out of reach of children.

This fuel used in model engines is also highly inflammable. Keep it away from any open flame, excessive heat, sparks or anything else that could set it alight. Never smoke or allow others to smoke nearby.

Model engines generate high temperatures. Never touch any part of the engine until it has cooled down. Direct contact with the exhaust pipe, cooling head or manifold in particular will cause severe burns.

NOTES

This engine is designed to be used on model cars. It cannot be used on any other type of model or for any other purpose.

Mount the engine securely on your model following the manufacturer's instructions and using appropriate screwdrivers and wrenches.

Install an efficient exhaust and make sure it remains so. Frequent and close exposure to a noisy exhaust (especially in case of powerful high-speed engines) can damage your hearing and the noise can be bothersome to other people even at a distance.

Carefully check that the cables for lighting the glow plug and/or the battery cables for starting the model do not come into contact with any engine's rotating parts. Check also that the throttle servo is correctly connected and assembled.

To stop the engine, close the throttle using your transmitter, then manually close the suction on the carburetor air filter, or press the fuel supply pipe. **NEVER TRY TO STOP THE ENGINE BY SLOWING DOWN THE FLYWHEEL WITH YOUR FINGERS OR OTHER OBJECTS.**

Immediately after stopping the engine, when the glow plug is still hot, the engine could restart **WITHOUT** the glow plug starter being connected, due only to the rotation of the engine parts.

For their own safety, keep all spectators (adults and children), at a distance of at least five metres when you prepare to start your model-engine.

BEFORE STARTING THE ENGINE

In order to install the engine on your model car and to make it work, you will need the following optional parts, tools and various items:

OPTIONAL PARTS

GLOW PLUG, the engine is supplied with the best type, but it may be necessary to use another type according to the climate or the track conditions. For further information refer to the table describing use of plugs on pages 7 and 8.

AIR FILTER single or double layer foam specific for the type of model car must be fitted. See the GRP special production of Air Filters on page 66.

EXHAUST MANIFOLD specific for each model car, as shown in the spare parts list, there are short, medium and long versions. We advise buying one of each type to cover all types of circuits. See the GRP special production of Manifold on pages 66 and 67.

EXHAUST PIPE special homologated type for every kind of model racing car (See the spare parts list for precise article codes). Each engine guarantees maximum performance when using only the exhaust pipe recommended by the manufacturer. See the GRP special production of Pipe on pages 66 and 67.

TOOLS

HEXAGONAL SCREWDRIVERS sizes 1.5 mm, 2 mm, 2.5 mm, 3 mm.

STRAIGHT SCREWDRIVER medium size.

ALLEN WRENCH size 8 mm. For the glow plug (Recommended with long cross handle).

VARIOUS ITEMS

BLENDED FUEL specifically for model racing cars, containing 10% - 30% nitromethane and 8% - 10% oil.

Initially we recommend using a mix containing less nitromethane (20%), and more oil (10%).

Later, after running in, you can use more nitromethane (30%), and less oil (8%).

The ideal then is to use the same sort of fuel, but if you wish to change the brand or mix, we recommend repeating the running in phase as if the engine were new.

The quality of the fuel influences greatly the engine's performance and life. Fuel containing a high percentage of nitromethane, generates more power but reduces the life of the engine components.

FUEL FILTER specific must be installed along the fuel tube between fuel tank and carburetor to prevent dirt from entering the carburetor.

GLOW PLUG LIGHTING PIPETTE specific for all model car engines.

STARTING BOX specific for each type of model car, for starting the engine. (Normally the manufacturer's own model).

FUEL FILLER plastic with long metal tube for filling the tank.

SILICONE FUEL TUBE 5 mm, heat-resistant, for connection between the fuel tank and the carburetor.

ADJUSTING THE CARBURETOR

The carburetor requires 3 adjustment checks:

A. FULL SPEED NEEDLE to adjust the quantity of fuel when the carburetor throttle is fully open. (Medium/High Rpm)

Turn clockwise (-) to reduce the quantity of fuel, for leaner carburation.

Turn anti-clockwise (+) to increase the quantity of fuel, for richer carburation.

B. BASE SPEED NEEDLE to adjust the quantity of fuel to give the best acceleration from a static position. (Low Rpm)

Turn clockwise (-) to reduce the quantity of fuel, for leaner carburation.

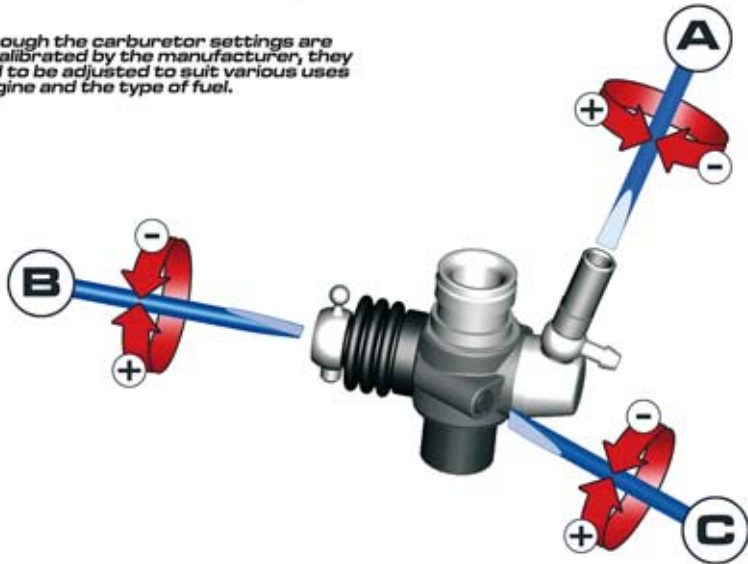
Turn anti-clockwise (+) to increase the quantity of fuel, for richer carburation.

C. BASE SPEED ADJUSTING SCREW to adjust the engine's idle or slow running speed when the throttle is closed.

Turn clockwise (+) to increase the minimum Rpm.

Turn anti-clockwise (-) to reduce the Rpm.

N.B.: although the carburetor settings are already calibrated by the manufacturer, they may need to be adjusted to suit various uses of the engine and the type of fuel.



CHOICE OF GLOW PLUG

CHOICE OF GLOW PLUG

The choice of the correct plug and the compatibility between glow plug and fuel can greatly influence engine performance, so you must choose the correct glow plug after a brief test. In the following pages, you will find the types of glow plugs available for this specific engine, please refer to the table below to assist you in making your choice:

Air temperature	Plug for .12 and smaller engines	Plug for .21 and bigger engines
0° - 15°	C4	C5
15° - 30°	C5	C6
25° - 40°	C6	C7

Install carefully the glow plug using the appropriate wrench; the glow plug must turn easily until completely inserted then tighten securely.

USE OF GLOW PLUG

The engine starts when the glow plug's wire is incandescent due to the connection with a 1.5-volt battery.

When the battery is disconnected, the heat retained in the engine combustion chamber is sufficient to keep the glow plug's wire alight, thus keeping the engine running.

GLOW PLUG LIFE

In case of these high-performance model-racing engines, glow plugs should be considered as consumable components.

The high technology used in production, and the top quality of the materials used, ensure that our glow plugs have a longer life than others on the market.

The life of a glow plug can be lengthened and maximum engine performance guaranteed by a correct use, for example:

- Choosing the right glow plug.
- Using good quality fuel.
- Never leave the glow plug starter attached to the glow plug for too long when warming up the engine or when it is running.
- Never use the engine with a too lean carburation.

REPLACING THE GLOW PLUG

Naturally, apart from when the glow plug is burnt out, it may be necessary to replace it because it is not giving maximum performance, such as when:

- The glow plug's wire is deformed
- Dirt is stuck to the glow plug's wire or the glow plug body is corroded
- The surface of the glow plug's wire has become rough and white
- The engine tends to cut out when at minimum
- Ignition becomes difficult

N.B.: when a glow plug burns out, part of the wire could fall into the engine and cause damage the next time it is started. To prevent this risk, we recommend that you always check the engine and clean all parts such as piston and head after a glow plug burns out.



GRP has designed with much care a special line of glow plugs, for its own engines. Glow plugs are a very important component for the good engine functioning and to take from it the maximum possible performance. It often happens that problems or breakages that happen on an engine are attributable to a defective glow plug or the latter produced with very low-quality material, which causes a much higher damage to the end-user than the actual cost of a quality glow plug.

To avoid this kind of problem GRP has produced its own glow plug line, for each engine, and for all racing situation. In our complete line you will find 3 versions: **STANDARD, CONICAL and PLUS**. All glow plugs are packed in a plastic box of 1 or 5 pieces.

INTERNAL WIRE

The internal wire of glow plug is made using a special Platinum alloy, studied by GRP, which guarantees maximum resistance and very long lasting, up to 5 times more compared to normal glow plugs.

EXTERNAL BODY

The external body of glow plug is made fully with a special stainless steel to guarantee maximum resistance of its thread and maximum resistance to electrostatic corrosion.

INTERNAL INSULATOR

The internal insulating package is made with special material and a particular design, which guarantees maximum insulation at all conditions between the external body and the central pin, where the wire is welded.

CENTRAL PIN

Even the central pin of glow plug is made fully with a special stainless steel to guarantee maximum resistance to electrostatic corrosion, and to very high temperature the wire reaches.



STANDARD

Our standard version is a glow plug, which carries all special GRP characteristics, and it comes with its own copper washer and it is used in all SPORT line engines. It is available in four different degrees of temperature:

- 4 - Hot
- 5 - Medium
- 6 - Cold
- 7 - Very Cold

The use of various types depends on the type of engine used and on the weather and racing conditions. It can be used in combination with any other engine on the market that uses a standard connection and not a conical one.

CONICAL

Our conical version is a glow plug, which carries all special GRP characteristics, and the most used indeed since it is mounted in all TUNED line engines. It is available in four different degrees of temperature:

- 4 - Hot
- 5 - Medium
- 6 - Cold
- 7 - Very Cold

The use of various types depends on the type of engine used and on the weather and racing conditions. It can be used in combination with any other engine on the market, providing that its cone-shaped end is matching.

PLUS

Our plus version is a patent pending glow plug worldwide by GRP, which has a special design of the sparking internal part, where the wire is more exposed in the combustion chamber of the engine, guaranteeing:

- Better sparking
- Better combustion
- Less likely for an engine to die down

This glow plug was studied for the use in very hard conditions, when it rains and it is very cold, and it is then very easy for an engine to die down. It is available in three different degrees of temperature:

- 5 - Medium
- 6 - Cold
- 7 - Very Cold

The use of various types depends on the type of engine used and on the weather and racing conditions.



ENGINE STARTING UP

Before starting the engine, it is necessary to install the following accessories correctly and with great care.

GLOW PLUG

Insert carefully the supplied glow plug in the cavity of the engine head, making sure the threads match before tightening it firmly.
(The glow plug is supplied already fitted to the engine, but we recommend the above procedure every time you have to remove it. Conical glow plugs do not have gaskets).

EXHAUST MANIFOLD

Fit the silicone gasket to the special grooves on the exhaust pipe. Do not use any metal tools as this could damage the gasket.
Smear the gasket with oil and insert the manifold into the pipe, turning it gently into position with the 4-hole flange. Fit the 4 springs to hold the manifold to the exhaust pipe.

EXHAUST FLS PIPE

Mount the silicone gasket on the special grooves on the exhaust pipe. Do not use any metal tools as this could damage the gasket.
Smear the FLS O-Ring gasket with small quantity of oil, and insert the exhaust pipe in the manifold, turning it gently.
The exhaust pipe must be fastened to the chassis using a flexible metal wire that will absorb vibrations to prevent any damage to the exhaust pipe.

CARBURETOR

The engine is supplied with its carburetor installed but not firmly fastened in the standard position. Loosen the fastening screws and place the carburetor in the ideal position for your model car.
Press the carburetor towards the engine while tightening the securing screw.
Tighten the screw firmly taking care not to damage the carburetor body.
Now fit the air filter described previously.

CLUTCH BLOCK

Fit the flywheel and clutch assembly and adjust the clutch in accordance with the model manufacturer's instructions.

COMPLETE ENGINE

MAKE SURE THAT THE SURFACES OF THE MOUNTED ENGINES ARE ALL ON THE SAME LEVEL AND ON THE SAME PLANE.
Incorrect installation can cause distortion of the casing, bearings, etc. at high temperature, resulting in a considerable loss of performance.

We recommend using of the correct screws, according to the type of model, and to check that the screw holes are perfectly centred.
Check also that the engine casing does not touch the base of the model's chassis.

ENGINE RUNNING IN

Now you have completed the engine with all its parts and mounted it on your model, continue as follows.

ENGINE RUNNING IN

To guarantee long life and top performance, each engine needs to be run in, bearing in mind that the more careful the running in, the longer the engine will give its best performance. Running in must be done carefully with the engine installed on the model, in the following way:

- Fill up the tank with fuel.
- Remove the glow plug temporarily to check that, when connected to the battery, the wire heats up and becomes incandescent (Orange/yellow). Put the plug back into the engine.
- Switch on the transmitter and receiver and set the throttle slightly open from the idle position.
- Place the model on the starter box and rotate so that the fuel flows from the tank to the carburetor. If the engine is not rotating due to the piston being tight, do not force the starter box, but release the engine, using a screwdriver on the flywheel.
- When you see through the transparent silicone tube that the fuel is reaching the carburetor, connect the glow plug starter to heat the wire and start the engine. **PLEASE NOTE:** it is extremely important not to accelerate the engine for a long period of time when the car model is not in contact with the ground (ie. model resting on the starting box) because it would quickly overheat, causing serious damages.
- When you switch on the engine, leave it running a few minutes with rich carburation, with the glow plug starter connected and with the wheels turning freely off the ground. Under these conditions, the oily carburation perfectly lubricates all the engine's internal parts. To know whether the carburation is sufficiently rich, abundant smoke should be emitted from the exhaust pipe. Repeat the operation until all the fuel in the tank has been used up.
- Disconnect the glow plug starter and try to run the car on the track. If the carburation is too rich, slowly increase the speed to keep the engine running as long as possible. If it stops because carburation is too rich, turn the full speed needle clockwise by a third of a turn and try again.
- If the engine continues to run even when carburation is very rich, continue to use the model until you have consumed at least 3 fuel tanks. Then close the full speed needle by a further third of a turn and consume another 2 fuel tanks. Repeat the procedure until you have consumed at least 6 tanks of fuel. However the exhaust pipe should continue emitting abundant smoke.
- To stop the engine, close the throttle completely using the throttle lever on the transmitter, then press your thumb on the carburetor air filter, or pinch the fuel pipe to the carburetor. Never try to stop the engine by slowing down the flywheel with your fingers or other objects.

NB: whenever any major components of the engine are replaced, such as piston, sleeve, crankshaft, bearings, etc., or if you change fuel, the complete running in procedure must be repeated.

WARNING!

Never touch rotating parts, the engine or the exhaust pipe after stopping the engine because they are very hot and any contact could cause severe burns.

ENGINE FINAL TUNING

Final tuning of the carburation must be done only after completing the running in, and according to the following procedure:

- *Run the model (with the carburetor completely open) on the longest possible track's straight, to observe the speed. Close the full speed needle by a third of a turn and repeat the run, noting down the improvement in performance.*
- *Continue with more runs, closing gradually the full speed needle, with the intention of reaching the straight run at the highest speed. Always remember that if the needle is closed too much (carburation too lean), the engine overheats and loses speed with a visible reduction of exhaust smoke. In this case, slow down immediately, stop the model and open the full speed needle by one-quarter of a turn.*
- *With the engine running, and the wheels of the model raised above the ground, close the throttle and leave it idling for at least 5 seconds, then fully reopen the throttle. If at this point the engine discharges an excessive amount of smoke and the engine does not accelerate smoothly and rapidly, the minimum carburation is probably too rich. In this case, turn the base speed needle clockwise by half of a turn. If during the rapid acceleration phase the engine suddenly "coughs", the minimum carburation is too lean. You can correct this by opening the base speed needle by half of a turn.*

N.B.: the carburetor needles must be adjusted gradually and not more than a third of a turn, always checking accurately the effect of any tiny adjustment on the throttle. Make the adjustment patiently, under racing conditions, until the engine responds rapidly and promptly to the throttle control.

WARNING!

Adjustments of the carburetor by means of the minimum and maximum needles cannot be made accurately when the wheels of the model are raised off the ground since this does not reproduce the real conditions of use, and an operation of this kind could damage the engine by overheating.

When you reach the optimum carburation, a slight trail of smoke will be visible during high-speed runs and the engine revolutions per minute increase smoothly during acceleration.

Remember that, if carburation is too lean, the engine will overheat and will not give maximum performance. If prolonged this may cause severe damage to the engine components.

As for all engines, we recommend setting a slightly richer carburation than the optimal point, as a safety measure.

If the engine, with the carburetor completely closed, remains at a too high off throttle speed, turn anti-clockwise the minimum screw to reduce the opening of the carburetor throttle.

Never over rev the engine (it can reach 50,000 rpm), which would cause a serious damage to the crankshaft and conrod.

WARRANTY

This engine has been produced using high-tech materials and maximum precision machines. However, you have to consider that the severe conditions prevailing during competitions and the use of fuel containing increasing quantities of nitromethane constitute situations that cannot be controlled by the manufacturer.

We therefore regret that we cannot extend our normal warranty conditions to this engine.



ENGINE CLEANING AND MAINTENANCE

Remember that the performance and life of your engine depend directly on its care and maintenance, as described below.

AIR FILTER

Very often it happens that the driver does not pay due attention to the importance of air filter, which although it is a very low cost part, it may seriously damage your engine, or compromise anyway your engine performance. It is very important to replace often your air filter, without washing it or recycling it for several times. The new GRP air filter line is sold at a very low price to help a frequent replacement by the driver, and therefore to avoid any engine deterioration. See the GRP special production of Air Filters on page 68.

FUEL FILTER

Tiny dirty particles, present in all fuels, can accumulate and partially obstruct the flow of the fuel, causing an incorrect and unreliable carburation, with the consequent reduction of performance. A fuel filter must be installed on the suction pipe in your supply container to prevent any foreign bodies from entering in the fuel can. We also recommend installing a good filter between the tank and the carburetor. Always remember to clean the filters regularly to remove any dirt that has accumulated inside.

CARBURETOR

For the carburetor to function correctly, the small holes through which the fuel passes must be kept clean. At regular intervals, disassemble the carburetor and clean each needle and adjustment screw. Carefully check the O-rings on the various pins, making sure they are not damaged or broken. We recommend changing the O-rings regularly even if they are not damaged or broken. After cleaning, reassemble the carburetor placing the needles in the positions they occupied previously. Small errors are possible in positioning, so we recommend checking the carburation when the engine is restarted.

TANK

After each competition, empty the fuel tank completely then restart the engine to burn up completely the fuel still present in the silicone tube. This ensures that the remaining fuel does not deposit any residue of oil on the tank floor, which would create problems when the engine is used later.

ENGINE

When the engine stops because it has used up all the fuel in the tank, remove the air filter and inject a few drops of standard oil into the carburetor, and start the engine using the starting box for the 4-5 seconds to distribute the oil over all internal parts. This procedure reduces the risk of internal corrosion until the engine is next started. To clean the exterior, we recommend using methanol or kerosene. Do not use solvents that could damage the silicone fuel tube.

CHECKING AND MAINTENANCE

Remember that performance of the engine, even when correctly used, will normally tend to diminish after a certain period of time due to the wear on mechanical parts. Therefore it is necessary to carry out maintenance and replace promptly any worn parts to ensure the efficient operation of the engine.

REPLACEMENT OF PARTS

We recommend replacing the relative parts when you come across the following problems:

Engine noise becomes metallic and it overheats more than usual.

Replace the front and back bearings, using the special tools we produce for this specific operation. (See pages 14 and 15)

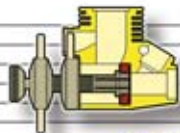
Power and acceleration performance are drastically reduced.

Replace the Cylinder/Piston/Conrod block, and in this case it is better to replace also the bearings described above. (See pages 14 and 15)

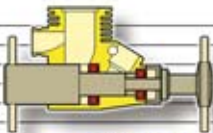
Minimum rpm is unstable and the engine tends to cut out.

Replace the Sleeve/Piston/Conrod block as described above. It may also be necessary to replace the crankshaft, if a careful check detects visible scoring in the suction area. Check also that the tolerance between the crankshaft pin and relative hole on the conrod is no more than 0,06 mm. (See pages 14 and 15)

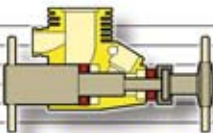
GRP - ENGINE TOOLING SYSTEM



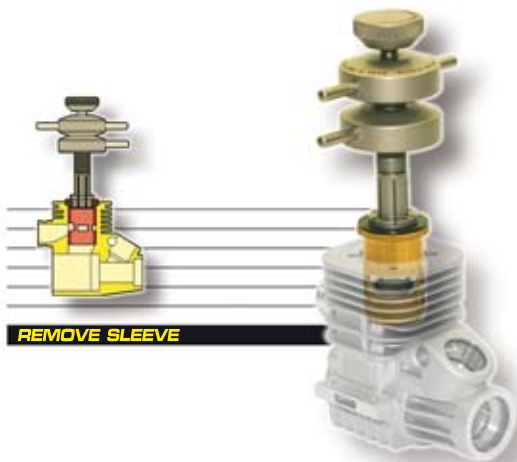
**DISASSEMBLE
REAR BEARING**



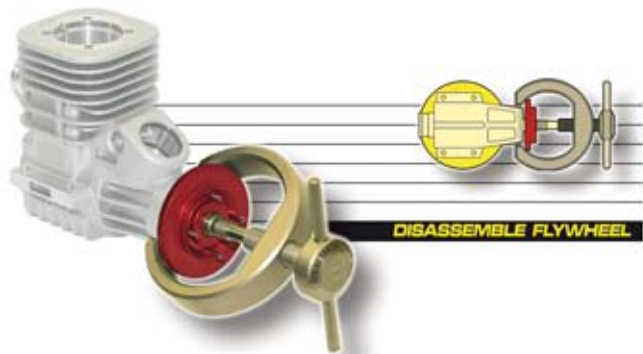
**DISASSEMBLE
FRONT BEARING**



INSERT FRONT & REAR BEARINGS



REMOVE SLEEVE



DISASSEMBLE FLYWHEEL

TROUBLESHOOTING - 1

Symptom: THE ENGINE DOES NOT START

The tank is empty and the fuel cannot reach the carburetor.
Fill up the tank with fuel, and repeat the starting procedure.

The glow plug is burnt out or the glow plug igniter battery is flat.
Replace the glow plug or recharge the glow plug igniter battery.

The fuel filter, air filter or exhaust pipe is clogged.
Clean the fuel filter or the air filter, or unclog the exhaust pipe.

Too much fuel has been taken up and the engine is flooded.
Remove the glow plug and let the engine idle to evacuate the excess fuel.

The fuel pipe is disconnected, or broken or perforated.
Connect the fuel pipe to the carburetor, or check the pipe and replace it if it is broken.

Carburetor needles not positioned correctly.
Place the needles in their original position, as supplied initially by the manufacturer.

The carburetor is not connected correctly to the throttle servo control.
Position the servo control centrally and reconnect the carburetor or adjust on transmitter.

The engine's starting box turns in the wrong direction.
Check the direction of rotation of the starting box and invert the electrical connections if necessary.

Symptom: THE ENGINE STOPS AND STARTS BUT DOES NOT REMAIN ON

Insufficient fuel in the tank.
Fill up the tank with fuel.

The glow plug, although not burnt out, has deteriorated.
Replace the glow plug.

The engine is hot from previous use.
Wait until the engine has cooled down.

Clutch setting not correct.
Check and adjust the setting of the clutch in accordance with the model manufacturer.

Fuel filter or air filter clogged, exhaust pipe clogged.
Clean the fuel filter or the air filter, or unclog the exhaust pipe.

The glow plug igniter disconnected immediately.
Leave the igniter connected to the glow plug until the engine is running smoothly.

Foam forms on the fuel in the tank.
Tank mountings must be flexible to absorb the vibrations of the chassis.

TROUBLESHOOTING - 2

Symptom: THE ENGINE DOES NOT MAINTAIN A STABLE MINIMUM REGIME

Type of glow plug not suitable for climatic conditions.

Use the type of plug suggested in the manufacturer's instructions.

Type of fuel not suitable.

Use a type of fuel with a low percentage of nitromethane.

The exhaust pipe and manifold are not fastened correctly.

Install the exhaust pipe and manifold securely, following the manufacturer's instructions.

Symptom: THE ENGINE DOES NOT REACH MAXIMUM REGIME

Insufficient running in period, or not done correctly.

Adjust the full speed needle after warming up the engine, or repeat the running in procedure.

The exhaust pipe and manifold are not fastened correctly.

Install the exhaust pipe and manifold securely, following the manufacturer's instructions.

The fuel pipe is disconnected, broken or perforated.

Connect the fuel pipe to the carburetor, or check the pipe and replace it if it is broken.

Symptom: THE ENGINE DOES NOT RESPOND READILY TO ACCELERATION

Although not burnt out, the glow plug has deteriorated.

Replace the glow plug.

Combustion is not correct, probably too much oil.

Gradually shut maximum and minimum feed in clockwise direction.

The transmitter's exponential electronic control is not set correctly.

Check the settings on your transmitter.

Symptom: THE ENGINE DOES NOT QUICKLY LOWER THE RPM

The minimum screw is not adjusted correctly.

Open the minimum screw in anti-clockwise direction.

The carburetor is secured correctly.

Check the securing screw on the carburetor and tighten it if necessary.

TUNED .12 Touring / Stadium - TECHNICAL DATA

Model Car		1:10 Touring / Stadium
Engine Code		GTO1-12TC/GTO1-12ST
Displacement	cm3	2.10
Rotation max.	rpm	45.000
Stroke	mm	13.79
Bore	mm	14.02
Ports	n	3
Sleeve		ABC
Crankshaft Diam.	mm	12 / 12 Std
Glow Plug Type		Conical
Carburetor Diam.	mm	5.5 (Variable)
Carb. Material		Aluminium
Weight	gr	205



TUNED .12 Touring - CONSTRUCTION DETAILS

The functions of these model engines are quite different from other combustion engines. Compression is not obtained by a piston ring, but by the fact that both the piston and cylinder are slightly conical and this allows the perfect closure of the combustion chamber when the piston is at its maximum upper stroke. When the engine is cold, the piston is tightly locked within the cylinder and for this reason it is difficult to turn the engine manually, but this is absolutely normal since the ideal contact between piston and cylinder is obtained when both reach the normal temperature for operating the engine.

CONROD

It is produced with a special advanced technological material, which has allowed the exclusion of a bushing on piston side. This gives a greater lightness, leading to a higher acceleration and rotational rate. Moreover, this material has a specific heat resistance at high temperatures of use guaranteeing a minimal deformation.

SLEEVE/PISTON

The piston has a particular design and it is made directly from a "cnc" production, using a special aluminium alloy, which guarantees a very high dimensional stability at high temperatures, a very high wear resistance and it gives easy running and lower friction. The sleeve is made with a special AEC alloy, but the main technical and mechanical characteristics are gained after special internal treatments, which guarantee a very high hardness and a considerable wear-resistance. All external surfaces are tried to assure the highest dimensional quality.

CRANKSHAFT - APS

It is designed with a special profile through which we can obtain the perfect balancing of the piece, without having to balance it up with some weights, which generally creates heterogeneous deformations at temperatures of use. APS - ABRASION PROTECTION SYSTEM is an exclusive treatment studied after many tests that can be applied on different components. These pieces are wear resistant and they guarantee a reduction of loss of friction and therefore power.

CRANKCASE

It has been studied with the most developed and advanced software of mechanical simulation, to simulate all deformations at high temperatures of use. Therefore, we managed to create a very stiff structure, mainly in the area of cylinder/exhaust and carburetor joint/intake. The manifold joint is fixed with 4 identical springs, which are perfectly fitted between the cooling fins. The special aluminium alloy used for the press fusion process, combined with the patent system for port production are extremely important.

REAR COVER - APS

It is made with ergal and then it undergoes an APS treatment. It is resistant to abrasion, due to conrod rotation. APS - ABRASION PROTECTION SYSTEM.

CARBURETOR - TCS

It is made from a single piece of an Aluminium alloy, through a press fusion process. All O-rings are made with a special material to guarantee the highest elasticity and resistance to fuel. All carburetors are supplied with a TCS bush. TEMPERATURE CONTROL SYSTEM is a technical concept for the separation of direct contact of carburetor body with crankcase, to control the temperature of the carburetor itself. An insulating bush made with a very special mineral material interrupts the heating passage to the carburetor body, guaranteeing a better regulation of the carburetor functioning.

TUNED .12 Touring-Stadium - STANDARD ACCESSORIES

STANDARD FEATURES ON EACH ENGINE - GT01-12TC/ST

This is an engine for competitions, high-powered with 2.1 cc capacity, for 1:10 TOURING/STADIUM car models, specially designed to use in contests. It is supplied with a "C - Conical" glow plug, which improves considerably engine performance in terms of both power and regular functions, whilst reducing fuel consumption.

The air reducers on the carburetor can be exchanged, thus adapting the engine functions to various types of tracks and different driving styles. The 5.5 mm reducer is part of standard supply, but spare parts include all sizes from 5.0 mm to 9.0 mm.

Each single engine comes with a security cap on the exhaust, entrance of carburetor, fuel intake and on the crankshaft. It is sold in a plastic box, complete with standard accessories included with each engine kit:

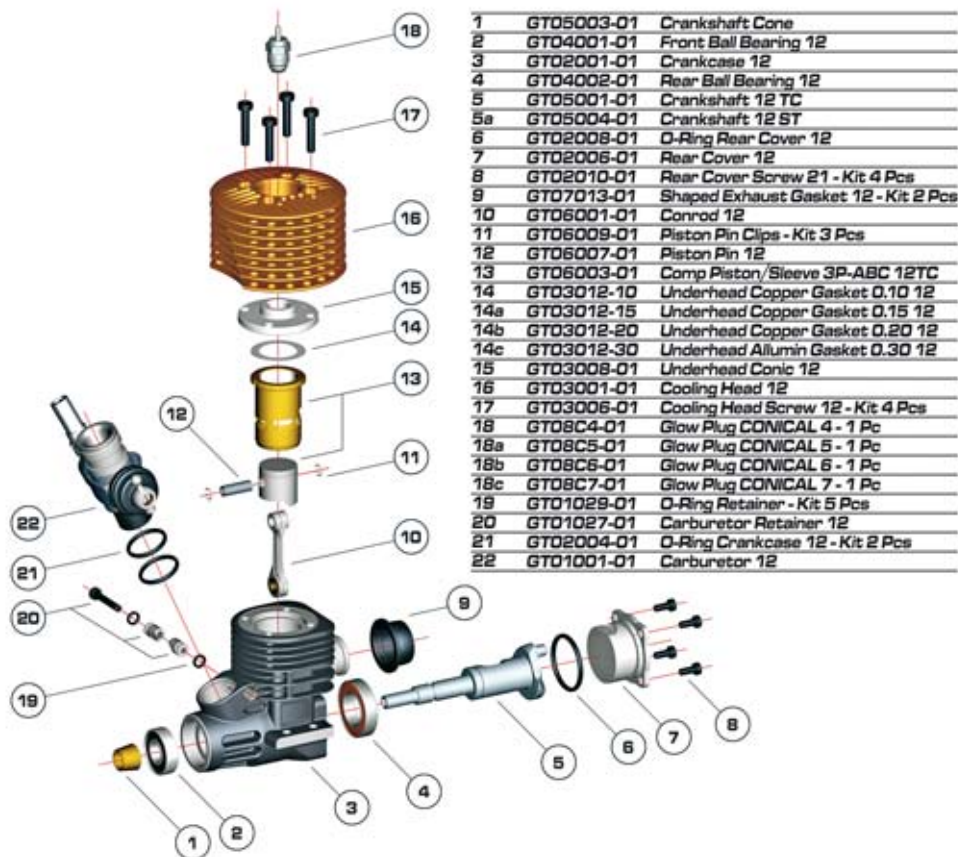
- Conical glow plug C5 (Mounted directly on engine, code GT08C5-01).
- 0.1 mm Head gasket (2 pieces code GT03012-10).
- Exhaust gasket (1 piece code GT07013-01).
- Manifold fastening spring (4 pieces code GT07011-01).
- 5.5 mm carburetor air reducer (Mounted directly on engine, code GT01025-55).
- Engine protection cover (Mounted directly on engine, code GT07015-01).
- Decal logo on engine
- Use and Maintenance Manual (1 piece code GRP108MAN01)

Each GRP engine, is available also in our PromoKit version, which comes in its carton case with a plastic handle, complete with standard accessories included with each engine kit, and plus:

- Special Pipe (1 piece).
- GT07001-01 - Efra2632
- Special Manifold (1 piece code GT07004-01).
- GRP Cap (1 piece code GRP01CAP).
- or GRP Towel (1 piece code GRP01TOW).
- Various GRP Gadgets

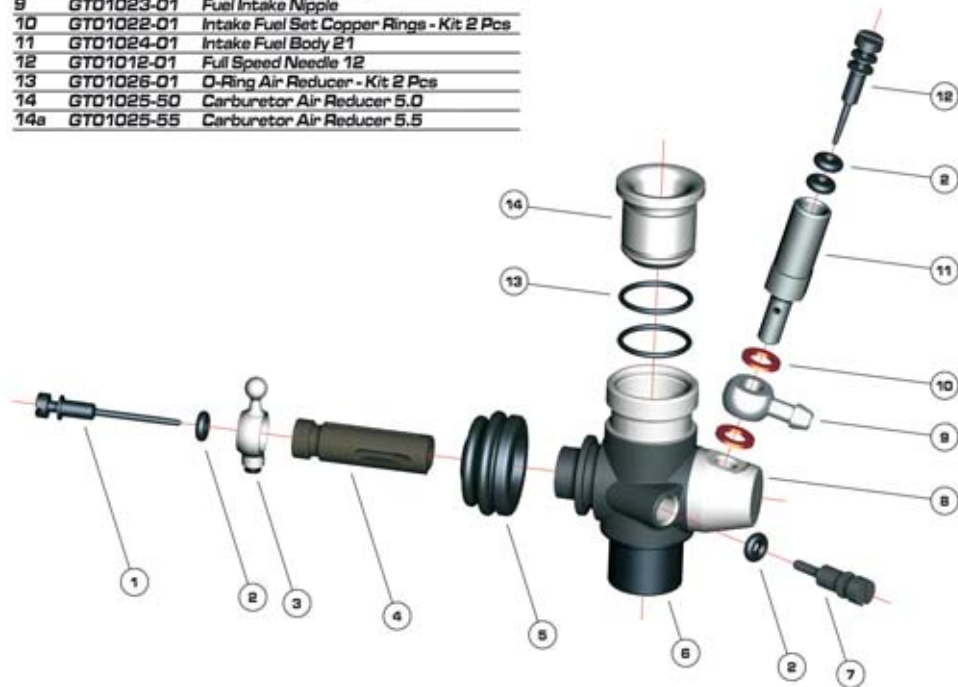


TUNED .12 Touring-Stadium - ENGINE - EXPLODED VIEW



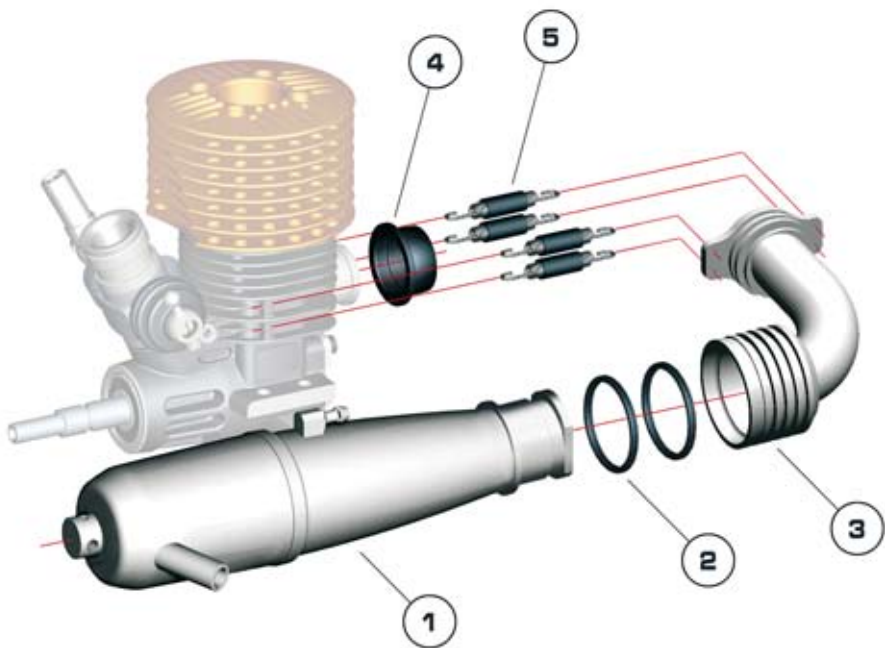
TUNED .12 Touring - CARBURETOR - EXPLODED VIEW

1	GT01014-01	Base Speed Needle 12
2	GT01007-01	O-Ring Needle - Kit 5 Pcs
3	GT01020-01	Uniball Ball Joint 12
4	GT01018-01	Carburetor Throttle 12
5	GT01008-01	Rubber Dust Protection 12
6	GT01010-01	Carburetor TCS Bushing 12
7	GT01016-01	Base Speed Adjusting Screw 12
8	GT01004-01	Carburetor Body 12
9	GT01023-01	Fuel Intake Nipple
10	GT01022-01	Intake Fuel Set Copper Rings - Kit 2 Pcs
11	GT01024-01	Intake Fuel Body 21
12	GT01012-01	Full Speed Needle 12
13	GT01026-01	O-Ring Air Reducer - Kit 2 Pcs
14	GT01025-50	Carburetor Air Reducer 5.0
14a	GT01025-55	Carburetor Air Reducer 5.5



TUNED .12 Touring-Stat - EXHAUST - EXPLODED VIEW

1	GT07001-01	Special Pipe FLS 12 - Efra 2632
2	GT07010-01	O-Ring Pipe Gasket FLS - Kit 2 Pcs
3	GT07003-01	Manifold Conical Short FLS 12
3a	GT07004-01	Manifold Conical Long FLS 12
4	GT07013-01	Shaped Exhaust Gasket 12 - Kit 2 Pcs
5	GT07011-01	Manifold Spring 12 - Kit 4 Pcs



TUNED .21 OnRoad - TECHNICAL DATA

Model Car		1:8 OnRoad
Engine Code		GT01-210N
Displacement	cm3	3.49
Rotation max.	rpm	48.000
Stroke	mm	16.79
Bore	mm	16.27
Ports	n	7
Sleeve		ABC
Crankshaft Diam.	mm	14
Glow Plug Type		Conical
Carburetor Diam.	mm	8.5 (Variable)
Carb. Material		Aluminium
Weight	gr	305



The functions of these model engines are quite different from other combustion engines. Compression is not obtained by a piston ring, but by the fact that both the piston and cylinder are slightly conical and this allows the perfect closure of the combustion chamber when the piston is at its maximum upper stroke. When the engine is cold, the piston is tightly locked within the cylinder and for this reason it is difficult to turn the engine manually, but this is absolutely normal since the ideal contact between piston and cylinder is obtained when both reach the normal temperature for operating the engine.

CONROD

It is produced with a special advanced technological material, which has allowed the exclusion of a bushing on piston side. This gives a greater lightness, leading to a higher acceleration and rotational rate. Moreover, this material has a specific heat resistance at high temperatures of use guaranteeing a minimal deformation.

SLEEVE/PISTON

The piston has a particular design and it is made directly from a "cnc" production, using a special aluminium alloy, which guarantees a very high dimensional stability at high temperatures, a very high wear resistance and it gives easy running and lower friction. The sleeve is made with a special AEC alloy, but the main technical and mechanical characteristics are gained after special internal treatments, which guarantee a very high hardness and a considerable wear-resistance. All external surfaces are treated to assure the highest dimensional quality.

CRANKSHAFT - APS

It is designed with a special profile through which we can obtain the perfect balancing of the piece, without having to balance it up with some weights, which generally creates heterogeneous deformations at temperatures of use. **APS - ABRASION PROTECTION SYSTEM** is an exclusive treatment studied after many tests that can be applied on different components. These pieces are wear resistant and they guarantee a reduction of loss of friction and therefore power.

CRANKCASE

It has been studied with the most developed and advanced software of mechanical simulation, to simulate all deformations at high temperatures of use. Therefore, we managed to create a very stiff structure, mainly in the area of cylinder/exhaust and carburetor joint/intake. The manifold joint is fixed with 4 identical springs, which are perfectly fitted between the cooling fins. The special aluminium alloy used for the press fusion process, combined with the patent system for port production are extremely important.

REAR COVER - APS

It is made with ergal and then it undergoes an APS treatment. It is resistant to abrasion, due to conrod rotation. **APS - ABRASION PROTECTION SYSTEM.**

CARBURETOR - TCS

It is made from a single piece of an Aluminium alloy, through a press fusion process. All O-rings are made with a special material to guarantee the highest elasticity and resistance to fuel. All carburetors are supplied with a TCS bush. **TEMPERATURE CONTROL SYSTEM** is a technical concept for the separation of direct contact of carburetor body with crankcase, to control the temperature of the carburetor itself. An insulating bush made with a very special mineral material interrupts the heating passage to the carburetor body, guaranteeing a better regulation of the carburetor functioning.

TUNED .21 OnRoad - STANDARD ACCESSORIES

STANDARD FEATURES ON EACH ENGINE - GT01-210N

This is an engine for competitions, high-powered with 3.5 cc capacity, for 1:8 ONROAD car models, specially designed to use in contests. It is supplied with a "C - Conical" glow plug, which improves considerably engine performance in terms of both power and regular functions, whilst reducing fuel consumption. Anyone wishing to use the "S - Standard" plug has to replace only the head gasket, found in the spare parts list for this engine.

The air reducers on the carburetor can be exchanged, thus adapting the engine functions to various types of tracks and different driving styles. The 8.5 mm reducer is part of standard supply, but spare parts include all sizes from 5.0 mm to 9.0 mm.

Each single engine comes with a security cap on the exhaust, entrance of carburetor, fuel intake and on the crankshaft. It is sold in a plastic box, complete with standard accessories included with each engine kit:

- Conical glow plug C6 (Mounted directly on engine, code GT08C6-01).
- 0.1 mm Head gasket (2 pieces code GT03013-10).
- Exhaust gasket (1 piece code GT07014-01).
- Manifold fastening spring (4 pieces code GT07012-01).
- 8.5 mm carburetor air reducer (Mounted directly on engine, code GT01025-85).
- Engine protection cover (Mounted directly on engine, code GT07016-01).
- Decal logo on engine
- Use and Maintenance Manual (1 piece code GRP108MAND1)

Each GRP engine, is available also in our PromoKit version, which comes in its carton case with a plastic handle, complete with standard accessories included with each engine kit, and plus:

- Special Pipe (1 piece).

GT07002-01 - Efra2053
For NON-EUROPEAN Market

GT07002-02 - Efra3008
For EUROPEAN Market

- Special Manifold (1 piece).

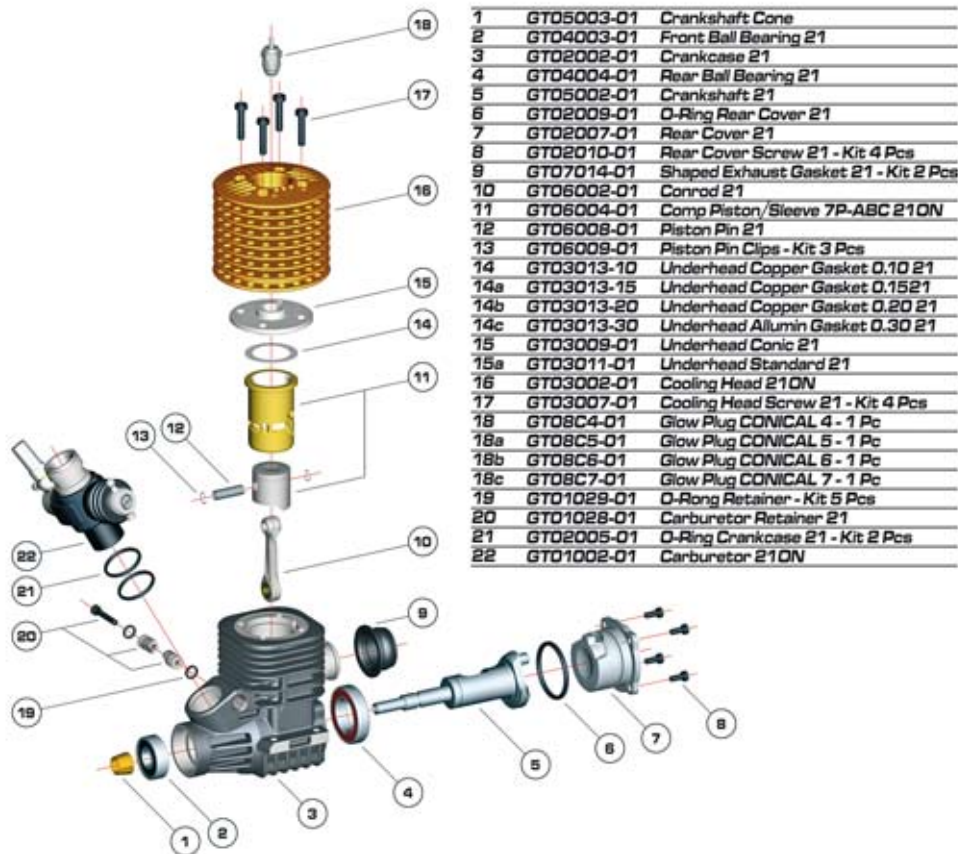
GT07006-01 - Conical Medium
For NON-EUROPEAN Market

GT07006-02 - Cylindrical Medium
For EUROPEAN Market

- GRP Cap (1 piece code GRP01CAP).
- or GRP Towel (1 piece code GRP01TOW).
- Various GRP Gadgets



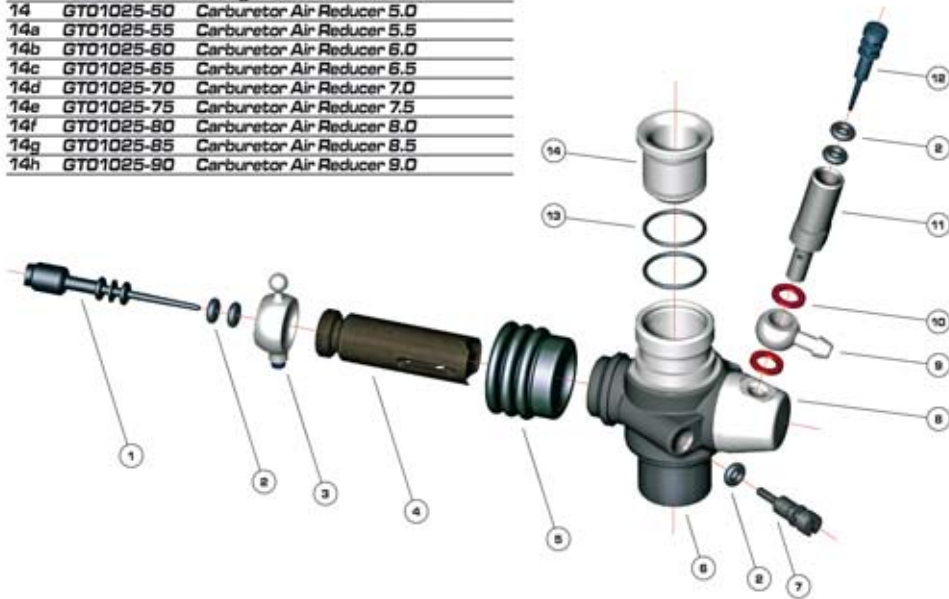
TUNED .21 OnRoad - ENGINE - EXPLODED VIEW



1	GT05003-01	Crankshaft Cone
2	GT04003-01	Front Ball Bearing 21
3	GT02002-01	Crankcase 21
4	GT04004-01	Rear Ball Bearing 21
5	GT05002-01	Crankshaft 21
6	GT02009-01	O-Ring Rear Cover 21
7	GT02007-01	Rear Cover 21
8	GT02010-01	Rear Cover Screw 21 - Kit 4 Pcs
9	GT07014-01	Shaped Exhaust Gasket 21 - Kit 2 Pcs
10	GT06002-01	Conrod 21
11	GT06004-01	Comp Piston/Sleeve 7P-ABC 210N
12	GT06008-01	Piston Pin 21
13	GT06009-01	Piston Pin Clips - Kit 3 Pcs
14	GT03013-10	Underhead Copper Gasket 0.10 21
14a	GT03013-15	Underhead Copper Gasket 0.15 21
14b	GT03013-20	Underhead Copper Gasket 0.20 21
14c	GT03013-30	Underhead Allumin Gasket 0.30 21
15	GT03009-01	Underhead Conic 21
15a	GT03011-01	Underhead Standard 21
16	GT03002-01	Cooling Head 210N
17	GT03007-01	Cooling Head Screw 21 - Kit 4 Pcs
18	GT08C4-01	Glow Plug CONICAL 4 - 1 Pc
18a	GT08C5-01	Glow Plug CONICAL 5 - 1 Pc
18b	GT08C6-01	Glow Plug CONICAL 6 - 1 Pc
18c	GT08C7-01	Glow Plug CONICAL 7 - 1 Pc
19	GT01029-01	O-Ring Retainer - Kit 5 Pcs
20	GT01028-01	Carburetor Retainer 21
21	GT02005-01	O-Ring Crankcase 21 - Kit 2 Pcs
22	GT01002-01	Carburetor 210N

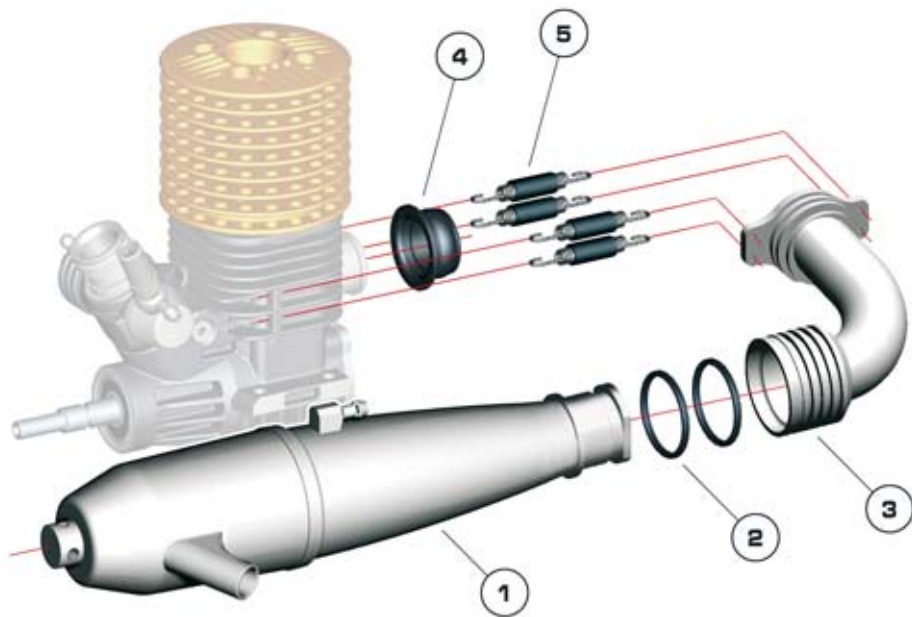
TUNED .21 OnRoad - CARBURETOR - EXPLODED VIEW

1	GT01015-01	Base Speed Needle 21
2	GT01007-01	O-Ring Needle - Kit 5 Pcs
3	GT01021-01	Uniball Ball Joint 21
4	GT01019-01	Carburetor Throttle 21
5	GT01009-01	Rubber Dust Protection 21
6	GT01011-01	Carburetor TCS Bushing 21
7	GT01017-01	Base Speed Adjusting Screw 21
8	GT01005-01	Carburetor Body 21ON
9	GT01023-01	Fuel Intake Nipple
10	GT01022-01	Intake Fuel Set Copper Rings - Kit 2 Pcs
11	GT01024-01	Intake Fuel Body 21
12	GT01013-01	Full Speed Needle 21
13	GT01026-01	O-Ring Air Reducer - Kit 2 Pcs
14	GT01025-50	Carburetor Air Reducer 5.0
14a	GT01025-55	Carburetor Air Reducer 5.5
14b	GT01025-60	Carburetor Air Reducer 6.0
14c	GT01025-65	Carburetor Air Reducer 6.5
14d	GT01025-70	Carburetor Air Reducer 7.0
14e	GT01025-75	Carburetor Air Reducer 7.5
14f	GT01025-80	Carburetor Air Reducer 8.0
14g	GT01025-85	Carburetor Air Reducer 8.5
14h	GT01025-90	Carburetor Air Reducer 9.0



TUNED .21 OnRoad - EXHAUST - EXPLODED VIEW

1	GT07002-01	Special Pipe FLS 21 - Efra 2053
1a	GT07002-03	Special Pipe FLS 21ON - Efra 3008
2	GT07010-01	O-Ring Pipe Gasket FLS - Kit 2 Pcs
3	GT07005-01	Manifold Conical Short FLS 21ON
3a	GT07006-01	Manifold Conical Medium FLS 21ON
3b	GT07007-01	Manifold Conical Long FLS 21ON
3c	GT07005-02	Manifold Cylindrical Short FLS 21ON
3d	GT07006-02	Manifold Cylindrical Medium FLS 21ON
3e	GT07007-02	Manifold Cylindrical Long FLS 21ON
4	GT07014-01	Shaped Exhaust Gasket 21 - Kit 2 Pcs
5	GT07012-01	Manifold Spring 21 - Kit 4 Pcs



TUNED .21 Rally - TECHNICAL DATA

Model Car		1:8 Rally
Engine Code		GTO1-21RA
Displacement	cm3	3.49
Rotation max.	rpm	48.000
Stroke	mm	16.79
Bore	mm	16.27
Ports	n	7
Sleeve		ABC
Crankshaft Diam.	mm	14
Glow Plug Type		Conical
Carburetor Diam.	mm	8.5 (Variable)
Carb. Material		Aluminium
Weight	gr	355



TUNED .21 Rally - CONSTRUCTION DETAILS

The functions of these model engines are quite different from other combustion engines. Compression is not obtained by a piston ring, but by the fact that both the piston and cylinder are slightly conical and this allows the perfect closure of the combustion chamber when the piston is at its maximum upper stroke. When the engine is cold, the piston is tightly locked within the cylinder and for this reason it is difficult to turn the engine manually, but this is absolutely normal since the ideal contact between piston and cylinder is obtained when both reach the normal temperature for operating the engine.

CONROD

It is produced with a special advanced technological material, which has allowed the exclusion of a bushing on piston side. This gives a greater lightness, leading to a higher acceleration and rotational rate. Moreover, this material has a specific heat resistance at high temperatures of use guaranteeing a minimal deformation.

SLEEVE/PISTON

The piston has a particular design and it is made directly from a "cnc" production, using a special aluminium alloy, which guarantees a very high dimensional stability at high temperatures, a very high wear resistance and it gives easy running and lower friction. The sleeve is made with a special AEC alloy, but the main technical and mechanical characteristics are gained after special internal treatments, which guarantee a very high hardness and a considerable wear-resistance. All external surfaces are tried to assure the highest dimensional quality.

CRANKSHAFT - APS

It is designed with a special profile through which we can obtain the perfect balancing of the piece, without having to balance it up with some weights, which generally creates heterogeneous deformations at temperatures of use. APS - ABRASION PROTECTION SYSTEM is an exclusive treatment studied after many tests that can be applied on different components. These pieces are wear resistant and they guarantee a reduction of loss of friction and therefore power.

CRANKCASE

It has been studied with the most developed and advanced software of mechanical simulation, to simulate all deformations at high temperatures of use. Therefore, we managed to create a very stiff structure, mainly in the area of cylinder/exhaust and carburetor joint/intake. The manifold joint is fixed with 4 identical springs, which are perfectly fitted between the cooling fins. The special aluminium alloy used for the press fusion process, combined with the patent system for port production are extremely important.

REAR COVER - APS

It is made with ergal and then it undergoes an APS treatment. It is resistant to abrasion, due to conrod rotation. APS - ABRASION PROTECTION SYSTEM.

CARBURETOR - TCS

It is made from a single piece of an Aluminium alloy, through a press fusion process. All O-rings are made with a special material to guarantee the highest elasticity and resistance to fuel. All carburetors are supplied with a TCS bush. TEMPERATURE CONTROL SYSTEM is a technical concept for the separation of direct contact of carburetor body with crankcase, to control the temperature of the carburetor itself. An insulating bush made with a very special mineral material interrupts the heating passage to the carburetor body, guaranteeing a better regulation of the carburetor functioning.

TUNED .21 Rally - STANDARD ACCESSORIES

STANDARD FEATURES ON EACH ENGINE - GT01-21RA

This is an engine for competitions, high-powered with 3.5 cc capacity, for 1:8 RALLY car models, specially designed to use in contests. It is supplied with a "C - Conical" glow plug, which improves considerably engine performance in terms of both power and regular functions, whilst reducing fuel consumption. Anyone wishing to use the "S - Standard" plug has to replace only the head gasket, found in the spare parts list for this engine.

The air reducers on the carburetor can be exchanged, thus adapting the engine functions to various types of tracks and different driving styles. The 8.5 mm reducer is part of standard supply, but spare parts include all sizes from 5.0 mm to 9.0 mm.

Each single engine comes with a security cap on the exhaust, entrance of carburetor, fuel intake and on the crankshaft. It is sold in a plastic box, complete with standard accessories included with each engine kit:

- Conical glow plug C6 (Mounted directly on engine, code GT08C6-01).
- 0.1 mm Head gasket (2 pieces code GT03013-10).
- Exhaust gasket (1 piece code GT07014-01).
- Manifold fastening spring (4 pieces code GT07012-01).
- 8.5 mm carburetor air reducer (Mounted directly on engine, code GT01025-85).
- Engine protection cover (Mounted directly on engine, code GT07016-01).
- Decal logo on engine
- Use and Maintenance Manual (1 piece code GRP108MAN01)

Each GRP engine, is available also in our PromoKit version, which comes in its carton case with a plastic handle, complete with standard accessories included with each engine kit, and plus:

- Special Pipe (1 piece).

GT07002-01 - Efra2053
For NON-EUROPEAN Market

GT07002-02 - Efra3008
For EUROPEAN Market

- Special Manifold (1 piece).

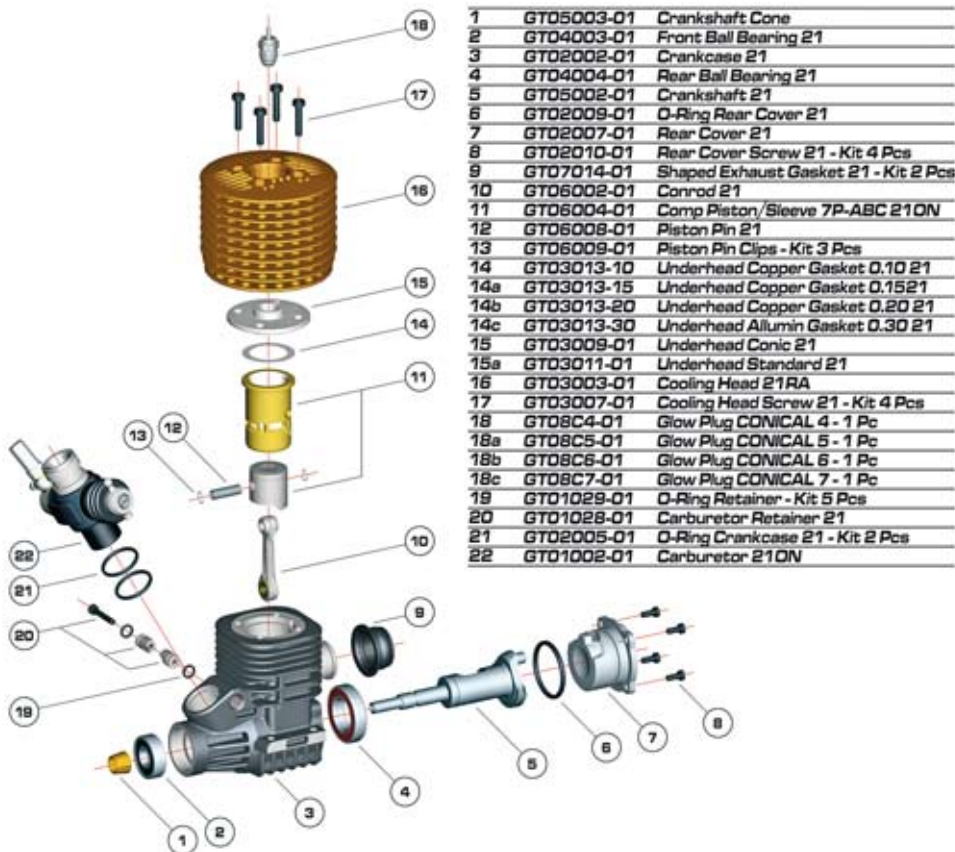
GT07006-01 - Conical Medium
For NON-EUROPEAN Market

GT07006-02 - Cylindrical Medium
For EUROPEAN Market

- GRP Cap (1 piece code GRP01CAP).
- or GRP Towel (1 piece code GRP01TOW).
- Various GRP Gadgets

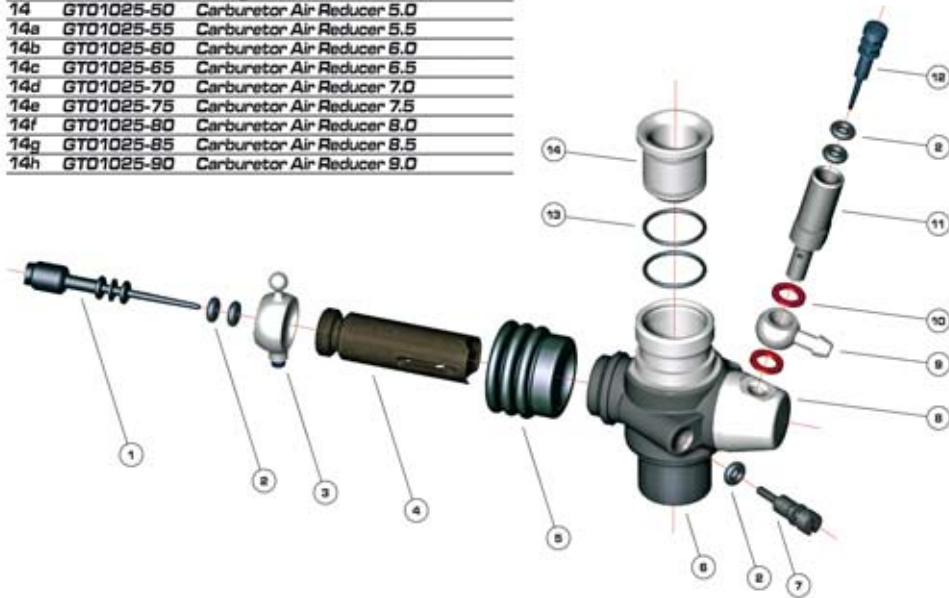


TUNED .21 Rally - ENGINE - EXPLODED VIEW



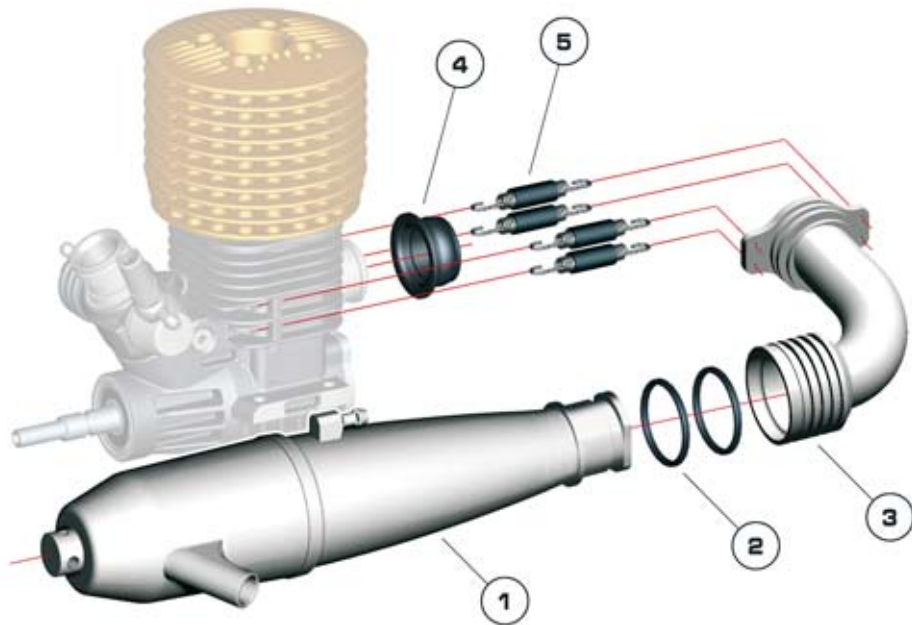
TUNED .21 Rally - CARBURETOR - EXPLODED VIEW

1	GT01015-01	Base Speed Needle 21
2	GT01007-01	O-Ring Needle - Kit 5 Pcs
3	GT01021-01	Uniball Ball Joint 21
4	GT01019-01	Carburetor Throttle 21
5	GT01009-01	Rubber Dust Protection 21
6	GT01011-01	Carburetor TCS Bushing 21
7	GT01017-01	Base Speed Adjusting Screw 21
8	GT01005-01	Carburetor Body 210N
9	GT01023-01	Fuel Intake Nipple
10	GT01022-01	Intake Fuel Set Copper Rings - Kit 2 Pcs
11	GT01024-01	Intake Fuel Body 21
12	GT01013-01	Full Speed Needle 21
13	GT01026-01	O-Ring Air Reducer - Kit 2 Pcs
14	GT01025-50	Carburetor Air Reducer 5.0
14a	GT01025-55	Carburetor Air Reducer 5.5
14b	GT01025-60	Carburetor Air Reducer 6.0
14c	GT01025-65	Carburetor Air Reducer 6.5
14d	GT01025-70	Carburetor Air Reducer 7.0
14e	GT01025-75	Carburetor Air Reducer 7.5
14f	GT01025-80	Carburetor Air Reducer 8.0
14g	GT01025-85	Carburetor Air Reducer 8.5
14h	GT01025-90	Carburetor Air Reducer 9.0



TUNED .21 Rally - EXHAUST - EXPLODED VIEW

1	GT07002-01	Special Pipe FLS 21 - Efra 2053
1a	GT07002-02	Special Pipe FLS 210N - Efra 3008
2	GT07010-01	O-Ring Pipe Gasket FLS - Kit 2 Pcs
3	GT07005-01	Manifold Conical Short FLS 210N
3a	GT07006-01	Manifold Conical Medium FLS 210N
3b	GT07007-01	Manifold Conical Long FLS 210N
4	GT07014-01	Shaped Exhaust Gasket 21 - Kit 2 Pcs
5	GT07012-01	Manifold Spring 21 - Kit 4 Pcs



TUNED .21 Buggy - TECHNICAL DATA

Model Car		1:8 Buggy
Engine Code		GTO1-21BU
Displacement	cm ³	3.49
Rotation max.	rpm	43.000
Stroke	mm	16.79
Bore	mm	16.27
Ports	n	5
Sleeve		ABC
Crankshaft Diam.	mm	14
Glow Plug Type		Conical
Carburetor Diam.	mm	8.0 (Variable)
Carb. Material		Aluminium
Weight	gr	355



TUNED .21 Buggy - CONSTRUCTION DETAILS

The functions of these model engines are quite different from other combustion engines. Compression is not obtained by a piston ring, but by the fact that both the piston and cylinder are slightly conical and this allows the perfect closure of the combustion chamber when the piston is at its maximum upper stroke. When the engine is cold, the piston is tightly locked within the cylinder and for this reason it is difficult to turn the engine manually, but this is absolutely normal since the ideal contact between piston and cylinder is obtained when both reach the normal temperature for operating the engine.

CONROD

It is produced with a special advanced technological material, which has allowed the exclusion of a bushing on piston side. This gives a greater lightness, leading to a higher acceleration and rotational rate. Moreover, this material has a specific heat resistance at high temperatures of use guaranteeing a minimal deformation.

SLEEVE/PISTON

The piston has a particular design and it is made directly from a "cnc" production, using a special aluminium alloy, which guarantees a very high dimensional stability at high temperatures, a very high wear resistance and it gives easy running and lower friction. The sleeve is made with a special AEC alloy, but the main technical and mechanical characteristics are gained after special internal treatments, which guarantee a very high hardness and a considerable wear-resistance. All external surfaces are treated to assure the highest dimensional quality.

CRANKSHAFT - APS

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CRANKCASE

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REAR COVER - APS

It is made with ergal and then it undergoes an APS treatment. It is resistant to abrasion, due to conrod rotation. APS - ABRASION PROTECTION SYSTEM.

CARBURETOR - TCS

It is made from a single piece of an Aluminium alloy, through a press fusion process. All O-rings are made with a special material to guarantee the highest elasticity and resistance to fuel. All carburetors are supplied with a TCS bush. TEMPERATURE CONTROL SYSTEM is a technical concept for the separation of direct contact of carburetor body with crankcase, to control the temperature of the carburetor itself. An insulating bush made with a very special mineral material interrupts the heating passage to the carburetor body, guaranteeing a better regulation of the carburetor functioning.

TUNED .21 Buggy - STANDARD ACCESSORIES

STANDARD FEATURES ON EACH ENGINE - GT01-21BU

This is an engine for competitions, high-powered with 3.5 cc capacity, for 1:8 BUGGY car models, specially designed to use in contests. It is supplied with a "C - Conical" glow plug, which improves considerably engine performance in terms of both power and regular functions, whilst reducing fuel consumption. Anyone wishing to use the "S - Standard" plug has to replace only the head gasket, found in the spare parts list for this engine.

The air reducers on the carburetor can be exchanged, thus adapting the engine functions to various types of tracks and different driving styles. The 8.0 mm reducer is part of standard supply, but spare parts include all sizes from 5.0 mm to 9.0 mm.

Each single engine comes with a security cap on the exhaust, entrance of carburetor, fuel intake and on the crankshaft. It is sold in a plastic box, complete with standard accessories included with each engine kit:

- Conical glow plug C6 (Mounted directly on engine, code GT08C6-01).
- 0.1 mm Head gasket (2 pieces code GT03013-10).
- Exhaust gasket (1 piece code GT07014-01).
- Manifold fastening spring (4 pieces code GT07012-01).
- 8.0 mm carburetor air reducer (Mounted directly on engine, code GT01025-80).
- Engine protection cover (Mounted directly on engine, code GT07016-01).
- Decal logo on engine
- Use and Maintenance Manual (1 piece code GRP108MAND1)

Each GRP engine, is available also in our PromoKit version, which comes in its carton case with a plastic handle, complete with standard accessories included with each engine kit, and plus:

- Special Pipe (1 piece).

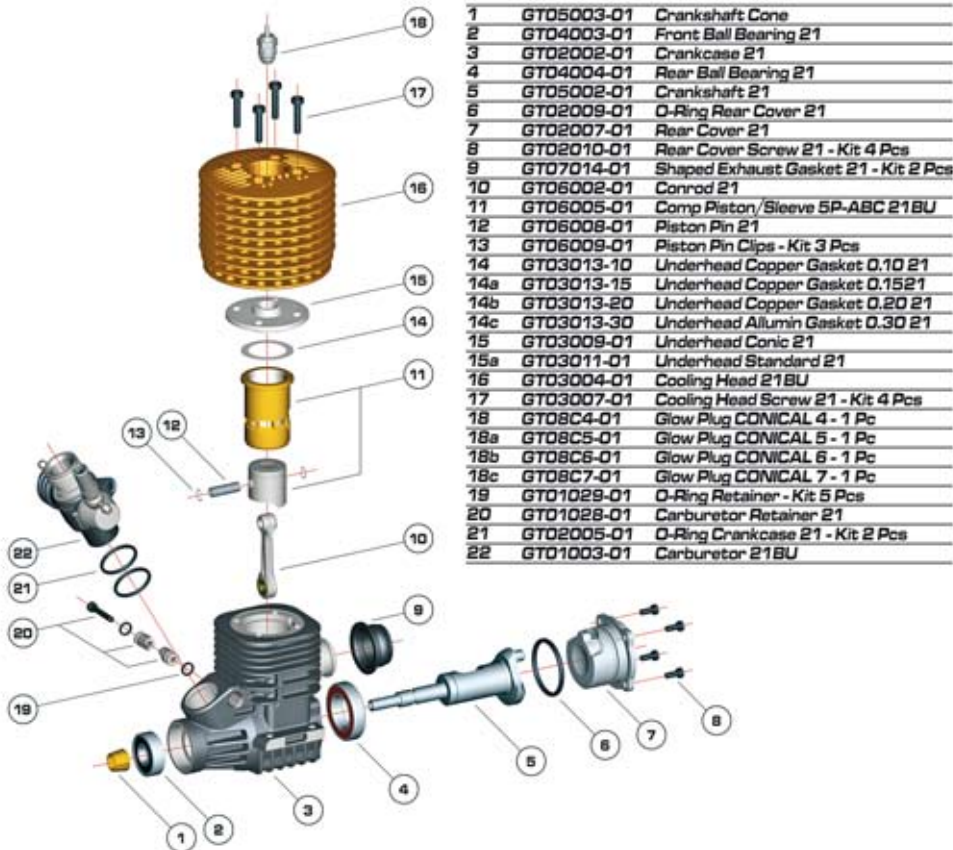
GT07002-01 - Efra2053
For NON-EUROPEAN Market

GT07002-03 - Efra3009
For EUROPEAN Market

- Special Manifold (1 piece code GT07009-01).
- GRP Cap (1 piece code GRP01CAP).
- or GRP Towel (1 piece code GRP01TOW).
- Various GRP Gadgets

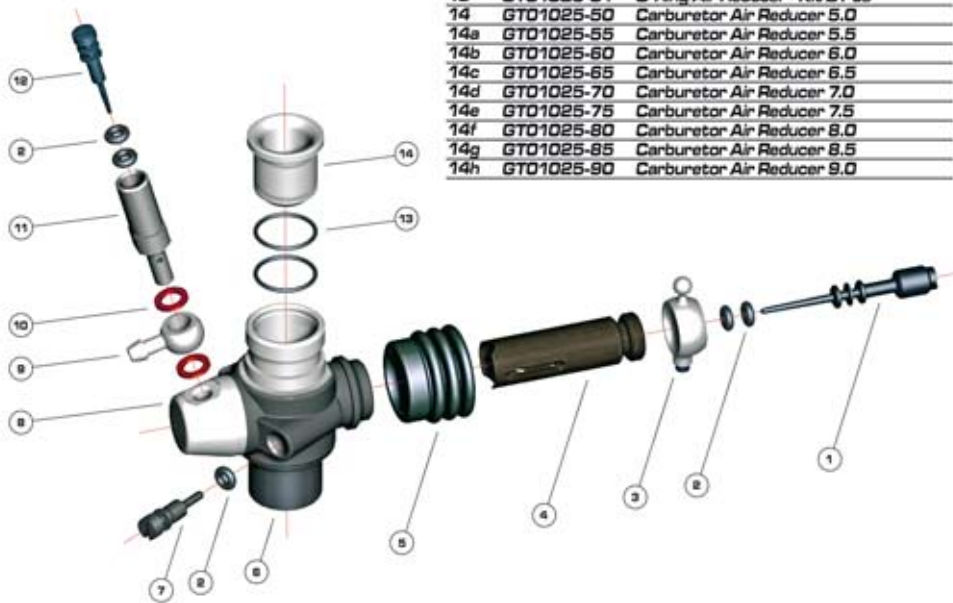


TUNED .21 Buggy - ENGINE - EXPLODED VIEW



1	GT05003-01	Crankshaft Cone
2	GT04003-01	Front Ball Bearing 21
3	GT02002-01	Crankcase 21
4	GT04004-01	Rear Ball Bearing 21
5	GT05002-01	Crankshaft 21
6	GT02009-01	O-Ring Rear Cover 21
7	GT02007-01	Rear Cover 21
8	GT02010-01	Rear Cover Screw 21 - Kit 4 Pcs
9	GT07014-01	Shaped Exhaust Gasket 21 - Kit 2 Pcs
10	GT06002-01	Conrod 21
11	GT06005-01	Comp Piston/Sleeve 5P-ABC 21BU
12	GT06008-01	Piston Pin 21
13	GT06009-01	Piston Pin Clips - Kit 3 Pcs
14	GT03013-10	Underhead Copper Gasket 0.10 21
14a	GT03013-15	Underhead Copper Gasket 0.15 21
14b	GT03013-20	Underhead Copper Gasket 0.20 21
14c	GT03013-30	Underhead Allumin Gasket 0.30 21
15	GT03009-01	Underhead Conic 21
15a	GT03011-01	Underhead Standard 21
16	GT03004-01	Cooling Head 21BU
17	GT03007-01	Cooling Head Screw 21 - Kit 4 Pcs
18	GT08C4-01	Glow Plug CONICAL 4 - 1 Pc
18a	GT08C5-01	Glow Plug CONICAL 5 - 1 Pc
18b	GT08C6-01	Glow Plug CONICAL 6 - 1 Pc
18c	GT08C7-01	Glow Plug CONICAL 7 - 1 Pc
19	GT01029-01	O-Ring Retainer - Kit 5 Pcs
20	GT01028-01	Carburetor Retainer 21
21	GT02005-01	O-Ring Crankcase 21 - Kit 2 Pcs
22	GT01003-01	Carburetor 21BU

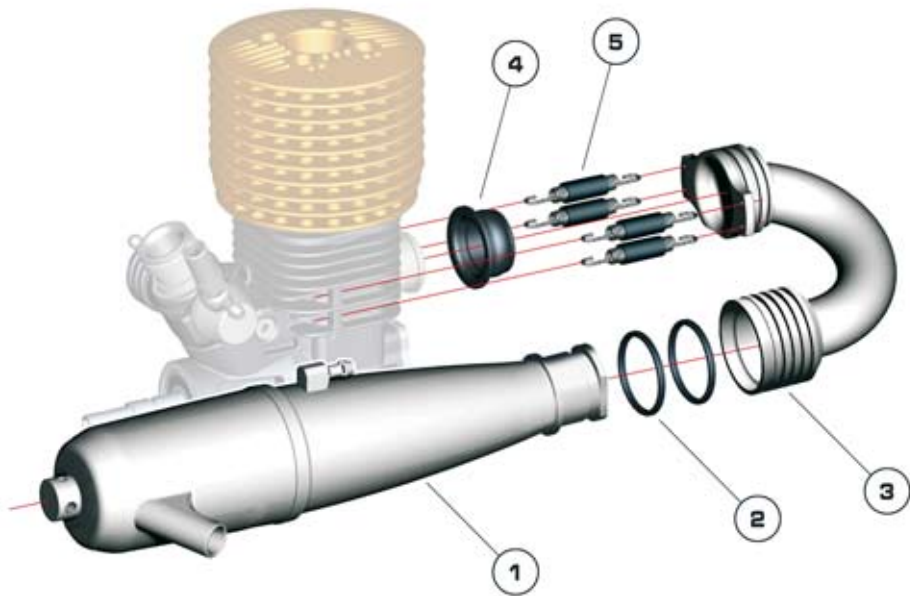
TUNED .21 Buggy - CARBURETOR - EXPLODED VIEW



1	GTD1015-01	Base Speed Needle 21
2	GTD1007-01	O-Ring Needle - Kit 5 Pcs
3	GTD1021-01	Unibal Ball Joint 21
4	GTD1019-01	Carburetor Throttle 21
5	GTD1009-01	Rubber Dust Protection 21
6	GTD1011-01	Carburetor TCS Bushing 21
7	GTD1017-01	Base Speed Adjusting Screw 21
8	GTD1006-01	Carburetor Body 21BU
9	GTD1023-01	Fuel Intake Nipple
10	GTD1022-01	Intake Fuel Set Copper Rings - Kit 2 Pcs
11	GTD1024-01	Intake Fuel Body 21
12	GTD1013-01	Full Speed Needle 21
13	GTD1026-01	O-Ring Air Reducer - Kit 2 Pcs
14	GTD1025-50	Carburetor Air Reducer 5.0
14a	GTD1025-55	Carburetor Air Reducer 5.5
14b	GTD1025-60	Carburetor Air Reducer 6.0
14c	GTD1025-65	Carburetor Air Reducer 6.5
14d	GTD1025-70	Carburetor Air Reducer 7.0
14e	GTD1025-75	Carburetor Air Reducer 7.5
14f	GTD1025-80	Carburetor Air Reducer 8.0
14g	GTD1025-85	Carburetor Air Reducer 8.5
14h	GTD1025-90	Carburetor Air Reducer 9.0

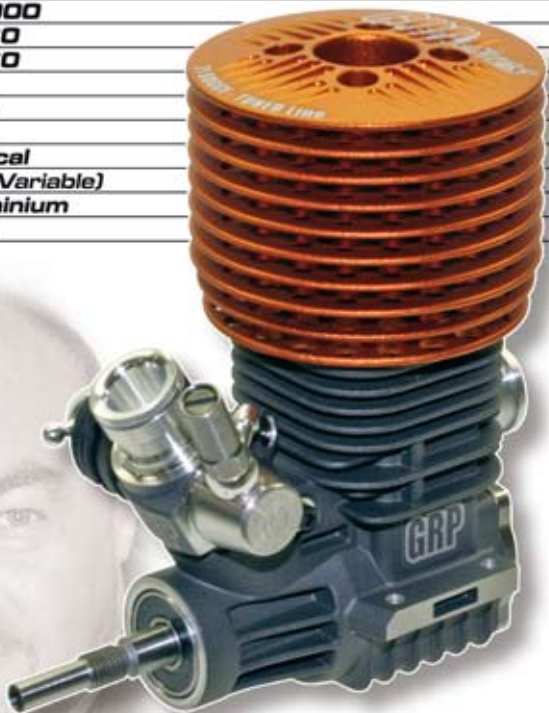
TUNED .21 Buggy - EXHAUST - EXPLODED VIEW

1	GT07002-01	Special Pipe FLS 21 - Efra 2053
1a	GT07002-03	Special Pipe FLS 21BU - Efra 3009
2	GT07010-01	O-Ring Pipe Gasket FLS - Kit 2 Pcs
3	GT07008-01	Manifold Short FLS 21BU
3a	GT07009-01	Manifold Long FLS 21BU
4	GT07014-01	Shaped Exhaust Gasket 21 - Kit 2 Pcs
5	GT07012-01	Manifold Spring 21 - Kit 4 Pcs



TUNED .28 Truggy - TECHNICAL DATA

Model Car		1:8 Truggy
Engine Code		GTO1-28TR
Displacement	cm3	4.60
Rotation max.	rpm	43.000
Stroke	mm	16.80
Bore	mm	18.60
Ports	n	5
Sleeve		ABC
Crankshaft Diam.	mm	14
Glow Plug Type		Conical
Carburetor Diam.	mm	8.0 (Variable)
Carb. Material		Aluminium
Weight	gr	355



TUNED .28 Truggy - CONSTRUCTION DETAILS

The functions of these model engines are quite different from other combustion engines. Compression is not obtained by a piston ring, but by the fact that both the piston and cylinder are slightly conical and this allows the perfect closure of the combustion chamber when the piston is at its maximum upper stroke. When the engine is cold, the piston is tightly locked within the cylinder and for this reason it is difficult to turn the engine manually, but this is absolutely normal since the ideal contact between piston and cylinder is obtained when both reach the normal temperature for operating the engine.

CONROD

It is produced with a special advanced technological material, which has allowed the exclusion of a bushing on piston side. This gives a greater lightness, leading to a higher acceleration and rotational rate. Moreover, this material has a specific heat resistance at high temperatures of use guaranteeing a minimal deformation.

SLEEVE/PISTON

The piston has a particular design and it is made directly from a "cnc" production, using a special aluminium alloy, which guarantees a very high dimensional stability at high temperatures, a very high wear resistance and it gives easy running and lower friction. The sleeve is made with a special AEC alloy, but the main technical and mechanical characteristics are gained after special internal treatments, which guarantee a very high hardness and a considerable wear-resistance. All external surfaces are treated to assure the highest dimensional quality.

CRANKSHAFT - APS

It is designed with a special profile through which we can obtain the perfect balancing of the piece, without having to balance it up with some weights, which generally creates heterogeneous deformations at temperatures of use. APS - ABRASION PROTECTION SYSTEM is an exclusive treatment studied after many tests that can be applied on different components. These pieces are wear resistant and they guarantee a reduction of loss of friction and therefore power.

CRANKCASE

It has been studied with the most developed and advanced software of mechanical simulation, to simulate all deformations at high temperatures of use. Therefore, we managed to create a very stiff structure, mainly in the area of cylinder/exhaust and carburetor joint/intake. The manifold joint is fixed with 4 identical springs, which are perfectly fitted between the cooling fins. The special aluminium alloy used for the press fusion process, combined with the patent system for port production are extremely important.

REAR COVER - APS

It is made with ergal and then it undergoes an APS treatment. It is resistant to abrasion, due to conrod rotation. APS - ABRASION PROTECTION SYSTEM.

CARBURETOR - TCS

It is made from a single piece of an Aluminium alloy, through a press fusion process. All O-rings are made with a special material to guarantee the highest elasticity and resistance to fuel. All carburetors are supplied with a TCS bush. TEMPERATURE CONTROL SYSTEM is a technical concept for the separation of direct contact of carburetor body with crankcase, to control the temperature of the carburetor itself. An insulating bush made with a very special mineral material interrupts the heating passage to the carburetor body, guaranteeing a better regulation of the carburetor functioning.

TUNED .28 Truggy - STANDARD ACCESSORIES

STANDARD FEATURES ON EACH ENGINE - GT01-28TR

This is an engine for competitions, high-powered with 4.6 cc capacity, for 1:8 TRUGGY car models, specially designed to use in contests. It is supplied with a "C - Conical" glow plug, which improves considerably engine performance in terms of both power and regular functions, whilst reducing fuel consumption.

The air reducers on the carburetor can be exchanged, thus adapting the engine functions to various types of tracks and different driving styles. The 8.0 mm reducer is part of standard supply, but spare parts include all sizes from 5.0 mm to 9.0 mm.

Each single engine comes with a security cap on the exhaust, entrance of carburetor, fuel intake and on the crankshaft. It is sold in a plastic box, complete with standard accessories included with each engine kit:

- Conical glow plug C6 (Mounted directly on engine, code GT08C6-01).
- 0.1 mm Head gasket (2 pieces code GT03014-10).
- Exhaust gasket (1 piece code GT07014-01).
- Manifold fastening spring (4 pieces code GT07012-01).
- 8.0 mm carburetor air reducer (Mounted directly on engine, code GT01025-80).
- Engine protection cover (Mounted directly on engine, code GT07016-01).
- Decal logo on engine
- Use and Maintenance Manual (1 piece code GRP108MAND1)

Each GRP engine, is available also in our PromoKit version, which comes in its carton case with a plastic handle, complete with standard accessories included with each engine kit, and plus:

- Special Pipe (1 piece).

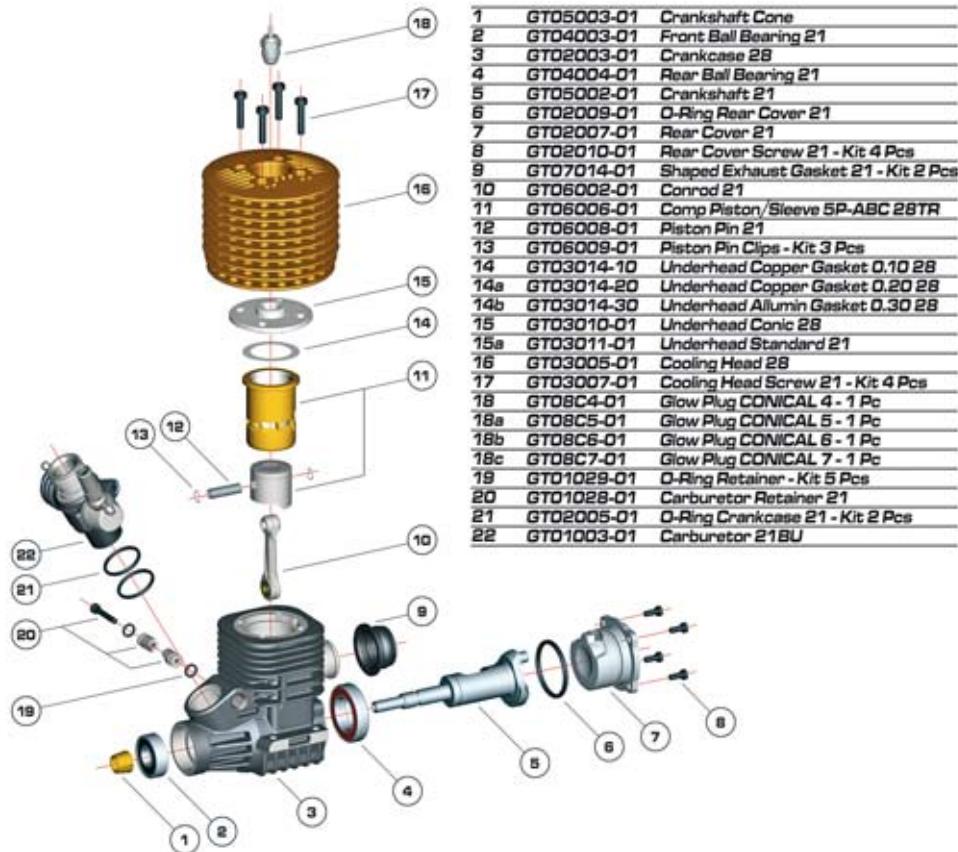
GT07002-01 - Efra2053
For NON-EUROPEAN Market

GT07002-03 - Efra3009
For EUROPEAN Market

- Special Manifold (1 piece code GT07009-01).
- GRP Cap (1 piece code GRP01CAP).
- or GRP Towel (1 piece code GRP01TOW).
- Various GRP Gadgets

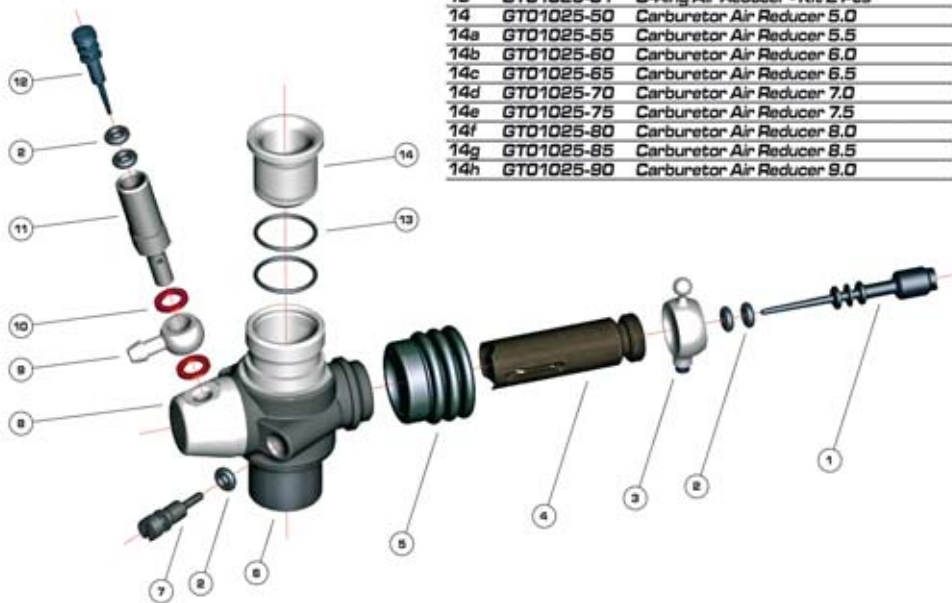


TUNED .28 Truggy - ENGINE - EXPLODED VIEW



1	GT05003-01	Crankshaft Cone
2	GT04003-01	Front Ball Bearing 21
3	GT02003-01	Crankcase 28
4	GT04004-01	Rear Ball Bearing 21
5	GT05002-01	Crankshaft 21
6	GT02009-01	O-Ring Rear Cover 21
7	GT02007-01	Rear Cover 21
8	GT02010-01	Rear Cover Screw 21 - Kit 4 Pcs
9	GT07014-01	Shaped Exhaust Gasket 21 - Kit 2 Pcs
10	GT06002-01	Conrod 21
11	GT06006-01	Comp Piston/Sleeve 5P-ABC 28TR
12	GT06008-01	Piston Pin 21
13	GT06009-01	Piston Pin Clips - Kit 3 Pcs
14	GT03014-10	Underhead Copper Gasket 0.10 28
14a	GT03014-20	Underhead Copper Gasket 0.20 28
14b	GT03014-30	Underhead Allumin Gasket 0.30 28
15	GT03010-01	Underhead Conic 28
15a	GT03011-01	Underhead Standard 21
16	GT03005-01	Cooling Head 28
17	GT03007-01	Cooling Head Screw 21 - Kit 4 Pcs
18	GT08C4-01	Glow Plug CONICAL 4 - 1 Pc
18a	GT08C5-01	Glow Plug CONICAL 5 - 1 Pc
18b	GT08C6-01	Glow Plug CONICAL 6 - 1 Pc
18c	GT08C7-01	Glow Plug CONICAL 7 - 1 Pc
19	GT01029-01	O-Ring Retainer - Kit 5 Pcs
20	GT01028-01	Carburetor Retainer 21
21	GT02005-01	O-Ring Crankcase 21 - Kit 2 Pcs
22	GT01003-01	Carburetor 21BU

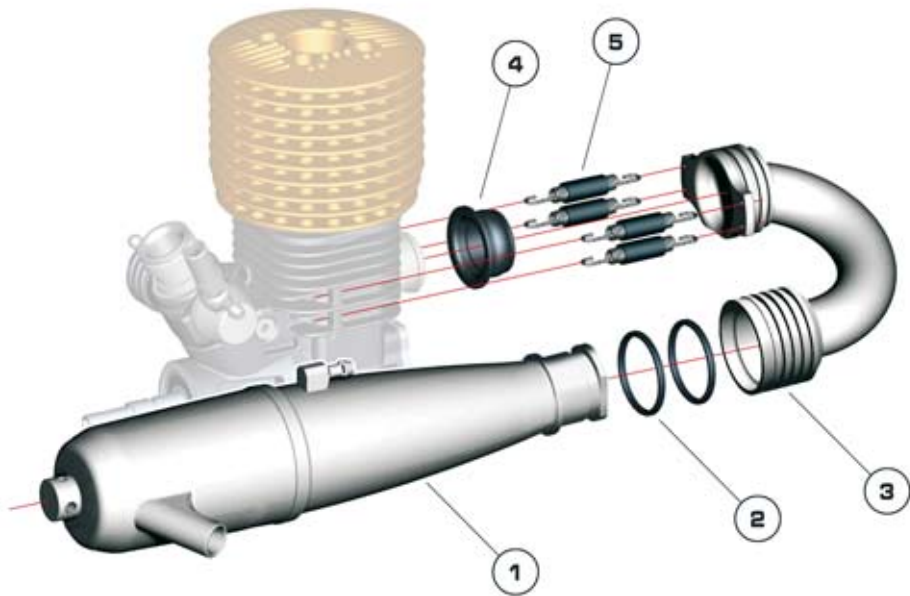
TUNED .28 Truggy - CARBURETOR - EXPLODED VIEW



1	GTD1015-01	Base Speed Needle 21
2	GTD1007-01	O-Ring Needle - Kit 5 Pcs
3	GTD1021-01	Uniball Bail Joint 21
4	GTD1019-01	Carburetor Throttle 21
5	GTD1009-01	Rubber Dust Protection 21
6	GTD1011-01	Carburetor TCS Bushing 21
7	GTD1017-01	Base Speed Adjusting Screw 21
8	GTD1006-01	Carburetor Body 21BU
9	GTD1023-01	Fuel Intake Nipple
10	GTD1022-01	Intake Fuel Set Copper Rings - Kit 2 Pcs
11	GTD1024-01	Intake Fuel Body 21
12	GTD1013-01	Full Speed Needle 21
13	GTD1026-01	O-Ring Air Reducer - Kit 2 Pcs
14	GTD1025-50	Carburetor Air Reducer 5.0
14a	GTD1025-55	Carburetor Air Reducer 5.5
14b	GTD1025-60	Carburetor Air Reducer 6.0
14c	GTD1025-65	Carburetor Air Reducer 6.5
14d	GTD1025-70	Carburetor Air Reducer 7.0
14e	GTD1025-75	Carburetor Air Reducer 7.5
14f	GTD1025-80	Carburetor Air Reducer 8.0
14g	GTD1025-85	Carburetor Air Reducer 8.5
14h	GTD1025-90	Carburetor Air Reducer 9.0

TUNED .28 Truggy - EXHAUST - EXPLODED VIEW

1	GT07002-01	Special Pipe FLS 21 - Efra 2053
1a	GT07002-03	Special Pipe FLS 21BU - Efra 3009
2	GT07010-01	O-Ring Pipe Gasket FLS - Kit 2 Pcs
3	GT07008-01	Manifold Short FLS 21BU
3a	GT07009-01	Manifold Long FLS 21BU
4	GT07014-01	Shaped Exhaust Gasket 21 - Kit 2 Pcs
5	GT07012-01	Manifold Spring 21 - Kit 4 Pcs



SPORT .12 Touring - TECHNICAL DATA

Model Car		1:10 Touring
Engine Code		GSD1-12TC
Displacement	cm ³	2.10
Rotation max.	rpm	40.000
Stroke	mm	13.79
Bore	mm	14.02
Ports	n	3
Sleeve		ABC
Crankshaft Diam.	mm	12
Glow Plug Type		Standard
Carburetor Diam.	mm	5.5 (Variable)
Carb. Material		Aluminium
Weight	gr	225



SPORT .12 Touring - CONSTRUCTION DETAILS

The functions of these model engines are quite different from other combustion engines. Compression is not obtained by a piston ring, but by the fact that both the piston and cylinder are slightly conical and this allows the perfect closure of the combustion chamber when the piston is at its maximum upper stroke. When the engine is cold, the piston is tightly locked within the cylinder and for this reason it is difficult to turn the engine manually, but this is absolutely normal since the ideal contact between the piston and cylinder is obtained when both reach the normal temperature for operating the engine.

CONROD

It is produced with a special advanced technological material, which has allowed the exclusion of a bushing on piston side. This gives a greater lightness, leading to a higher acceleration and rotational rate. Moreover, this material has a specific heat resistance at high temperatures of use guaranteeing a minimal deformation.

SLEEVE/PISTON

The piston has a particular design and it is made directly from a "cnc" production, using a special aluminium alloy, which guarantees a very high dimensional stability at high temperatures, a very high wear resistance and it gives easy running and lower friction. The sleeve is made with a special ABC alloy, but the main technical and mechanical characteristics are gained after special internal treatments, which guarantee a very high hardness and a considerable wear-resistance. All external surfaces are tried to assure the highest dimensional quality.

CRANKCASE

It has been studied with the most developed and advanced software of mechanical simulation, to simulate all deformations at high temperatures of use. Therefore, we managed to create a very stiff structure, mainly in the area of cylinder/ exhaust and carburetor joint/intake. The manifold joint is fixed with 4 identical springs, which are perfectly fitted between the cooling fins. The special aluminium alloy used for the press fusion process, combined with the patent system for part production are extremely important.

CARBURETOR

It is made from a single piece of an Aluminium alloy, through a press fusion process. All O-rings are made with a special material to guarantee the highest elasticity and resistance to fuel.

SPORT .12 Touring - STANDARD ACCESSORIES

STANDARD FEATURES ON EACH ENGINE - GSO1-12TC

This is an engine for competitions, high-powered with 2.1 cc capacity, for 1:10 TOURING car models, specially designed to use in contests.

The air reducers on the carburetor can be exchanged, thus adapting the engine functions to various types of tracks and different driving styles. The 5.5 mm reducer is part of standard supply, but spare parts include all sizes from 5.0 mm to 9.0 mm.

Each single engine comes with a security cap on the exhaust, entrance of carburetor, fuel intake and on the crankshaft. It is sold in a plastic box, complete with standard accessories included with each engine kit:

- Conical glow plug S5 (Mounted directly on engine, code **GTOBS5-01**).
- 0.1 mm Head gasket (2 pieces code **GTO3012-10**).
- Exhaust gasket (1 piece code **GTO7013-01**).
- Manifold fastening spring (4 pieces code **GTO7011-01**).
- 5.5 mm carburetor air reducer (Mounted directly on engine, code **GTO1025-55**).
- Engine protection cover (Mounted directly on engine, code **GTO7015-01**).
- Decal logo on engine
- Use and Maintenance Manual (1 piece code **GRP108MAN01**)

Each GRP engine, is available also in our PromoKit version, which comes in its carton case with a plastic handle, complete with standard accessories included with each engine kit, and plus:

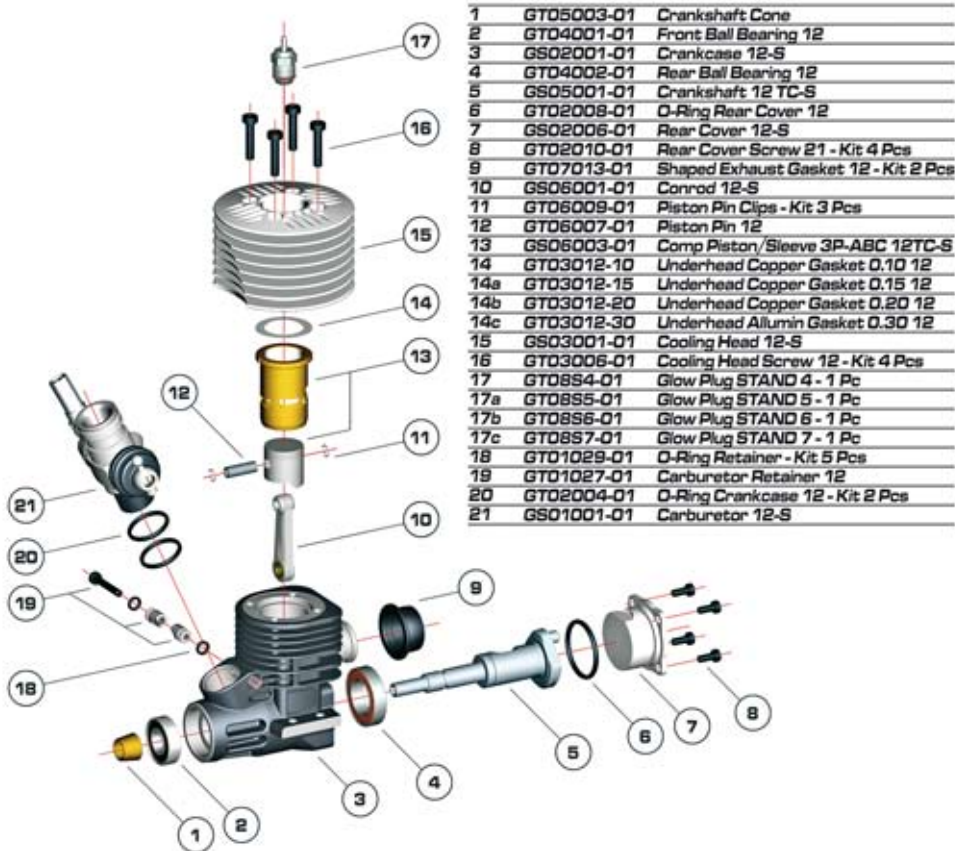
- Special Pipe (1 piece).

GTO7001-01 - Efra2632

- Special Manifold (1 piece code **GTO7004-01**).
- GRP Cap (1 piece code **GRP01CAP**).
- or GRP Towel (1 piece code **GRP01TOW**).
- Various GRP Gadgets



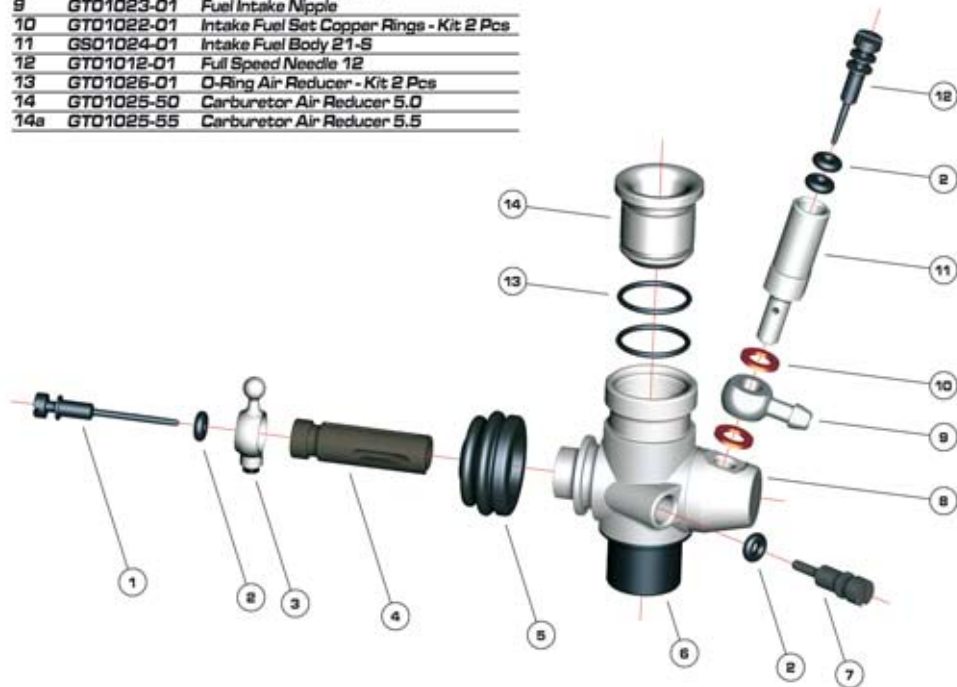
SPORT .12 Touring - ENGINE - EXPLODED VIEW



- | | | |
|-----|------------|--------------------------------------|
| 1 | GT05003-01 | Crankshaft Cone |
| 2 | GT04001-01 | Front Ball Bearing 12 |
| 3 | GS02001-01 | Crankcase 12-S |
| 4 | GT04002-01 | Rear Ball Bearing 12 |
| 5 | GS05001-01 | Crankshaft 12 TC-S |
| 6 | GT02008-01 | O-Ring Rear Cover 12 |
| 7 | GS02006-01 | Rear Cover 12-S |
| 8 | GT02010-01 | Rear Cover Screw 21 - Kit 4 Pcs |
| 9 | GT07013-01 | Shaped Exhaust Gasket 12 - Kit 2 Pcs |
| 10 | GS06001-01 | Carrod 12-S |
| 11 | GT06009-01 | Piston Pin Clips - Kit 3 Pcs |
| 12 | GT06007-01 | Piston Pin 12 |
| 13 | GS06003-01 | Comp Piston/Sleeve 3P-ABC 12TC-S |
| 14 | GT03012-10 | Underhead Copper Gasket 0.10 12 |
| 14a | GT03012-15 | Underhead Copper Gasket 0.15 12 |
| 14b | GT03012-20 | Underhead Copper Gasket 0.20 12 |
| 14c | GT03012-30 | Underhead Allumin Gasket 0.30 12 |
| 15 | GS03001-01 | Cooling Head 12-S |
| 16 | GT03006-01 | Cooling Head Screw 12 - Kit 4 Pcs |
| 17 | GT0854-01 | Glow Plug STAND 4 - 1 Pc |
| 17a | GT0855-01 | Glow Plug STAND 5 - 1 Pc |
| 17b | GT0856-01 | Glow Plug STAND 6 - 1 Pc |
| 17c | GT0857-01 | Glow Plug STAND 7 - 1 Pc |
| 18 | GT01029-01 | O-Ring Retainer - Kit 5 Pcs |
| 19 | GT01027-01 | Carburator Retainer 12 |
| 20 | GT02004-01 | O-Ring Crankcase 12 - Kit 2 Pcs |
| 21 | GS01001-01 | Carburator 12-S |

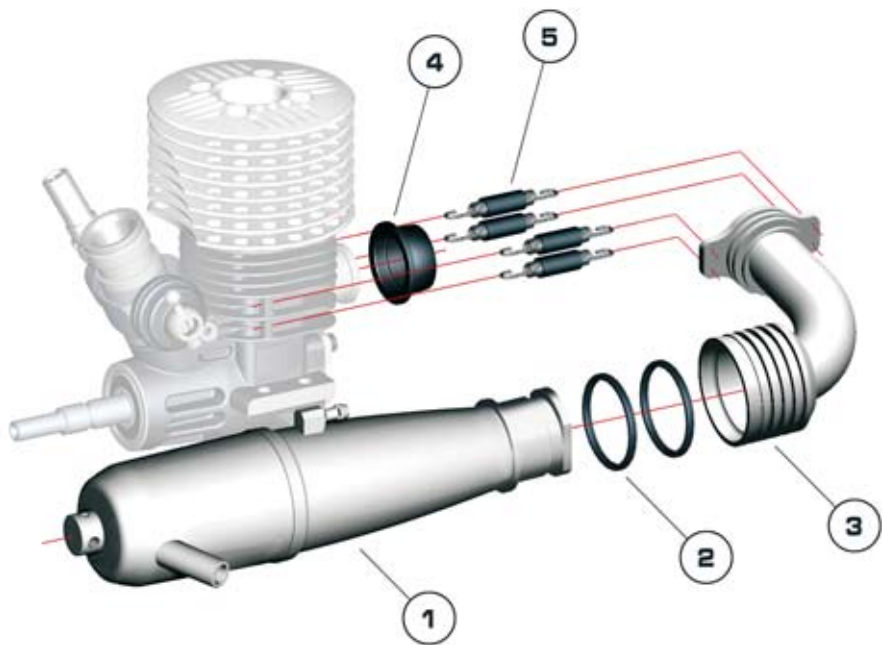
SPORT .12 Touring - CARBURETOR - EXPLODED VIEW

1	GT01014-01	Base Speed Needle 12
2	GT01007-01	O-Ring Needle - Kit 5 Pcs
3	GT01020-01	Uniball Ball Joint 12
4	GT01018-01	Carburetor Throttle 12
5	GT01008-01	Rubber Dust Protection 12
6	GT01010-01	Carburetor TCS Bushing 12
7	GT01016-01	Base Speed Adjusting Screw 12
8	GSO1004-01	Carburetor Body 12-S
9	GT01023-01	Fuel Intake Nipple
10	GT01022-01	Intake Fuel Set Copper Rings - Kit 2 Pcs
11	GSO1024-01	Intake Fuel Body 21-S
12	GT01012-01	Full Speed Needle 12
13	GT01026-01	O-Ring Air Reducer - Kit 2 Pcs
14	GT01025-50	Carburetor Air Reducer 5.0
14a	GT01025-55	Carburetor Air Reducer 5.5



SPORT .12 Touring - EXHAUST - EXPLODED VIEW

1	GT07001-01	Special Pipe FLS 12 - Efra 2632
2	GT07010-01	O-Ring Pipe Gasket FLS - Kit 2 Pcs
3	GT07003-01	Manifold Conical Short FLS 12
3a	GT07004-01	Manifold Conical Long FLS 12
4	GT07013-01	Shaped Exhaust Gasket 12 - Kit 2 Pcs
5	GT07011-01	Manifold Spring 12 - Kit 4 Pcs



SPORT .21 Rally - TECHNICAL DATA

Model Car		1:8 Rally
Engine Code		GSD1-21RA
Displacement	cm3	3.49
Rotation max.	rpm	40.000
Stroke	mm	16.79
Bore	mm	16.27
Ports	n	7
Sleeve		ABC
Crankshaft Diam.	mm	14
Glow Plug Type		Standard
Carburetor Diam.	mm	8.5 (Variable)
Carb. Material		Aluminium
Weight	gr	355



SPORT .21 Rally - CONSTRUCTION DETAILS

The functions of these model engines are quite different from other combustion engines. Compression is not obtained by a piston ring, but by the fact that both the piston and cylinder are slightly conical and this allows the perfect closure of the combustion chamber when the piston is at its maximum upper stroke. When the engine is cold, the piston is tightly locked within the cylinder and for this reason it is difficult to turn the engine manually, but this is absolutely normal since the ideal contact between the piston and cylinder is obtained when both reach the normal temperature for operating the engine.

CONROD

It is produced with a special advanced technological material, which has allowed the exclusion of a bushing on piston side. This gives a greater lightness, leading to a higher acceleration and rotational rate. Moreover, this material has a specific heat resistance at high temperatures of use guaranteeing a minimal deformation.

SLEEVE/PISTON

The piston has a particular design and it is made directly from a "cnc" production, using a special aluminium alloy, which guarantees a very high dimensional stability at high temperatures, a very high wear resistance and it gives easy running and lower friction. The sleeve is made with a special ABC alloy, but the main technical and mechanical characteristics are gained after special internal treatments, which guarantee a very high hardness and a considerable wear-resistance. All external surfaces are tried to assure the highest dimensional quality.

CRANKCASE

It has been studied with the most developed and advanced software of mechanical simulation, to simulate all deformations at high temperatures of use. Therefore, we managed to create a very stiff structure, mainly in the area of cylinder/ exhaust and carburetor joint/intake. The manifold joint is fixed with 4 identical springs, which are perfectly fitted between the cooling fins. The special aluminium alloy used for the press fusion process, combined with the patent system for part production are extremely important.

CARBURETOR

It is made from a single piece of an Aluminium alloy, through a press fusion process. All O-rings are made with a special material to guarantee the highest elasticity and resistance to fuel.

SPORT .21 Rally - STANDARD ACCESSORIES

STANDARD FEATURES ON EACH ENGINE - GSO1-21RA

This is an engine for competitions, high-powered with 3.5 cc capacity, for 1:8 RALLY car models, specially designed to use in contests.

The air reducers on the carburetor can be exchanged, thus adapting the engine functions to various types of tracks and different driving styles. The 8.5 mm reducer is part of standard supply, but spare parts include all sizes from 5.0 mm to 9.0 mm.

Each single engine comes with a security cap on the exhaust, entrance of carburetor, fuel intake and on the crankshaft. It is sold in a plastic box, complete with standard accessories included with each engine kit:

- Standard glow plug S6 (Mounted directly on engine, code **GT08S6-01**).
- 0.1 mm Head gasket (2 pieces code **GT03013-10**).
- Exhaust gasket (1 piece code **GT07014-01**).
- Manifold fastening spring (4 pieces code **GT07012-01**).
- 8.5 mm carburetor air reducer (Mounted directly on engine, code **GT01025-85**).
- Engine protection cover (Mounted directly on engine, code **GT07016-01**).
- Decal logo on engine
- Use and Maintenance Manual (1 piece code **GRP108MAN01**)

Each GRP engine, is available also in our PromoKit version, which comes in its carton case with a plastic handle, complete with standard accessories included with each engine kit, and plus:

- Special Pipe (1 piece).

GT07002-01 - Efra2053
For NON-EUROPEAN Market

GT07002-02 - Efra3008
For EUROPEAN Market

- Special Manifold (1 piece).

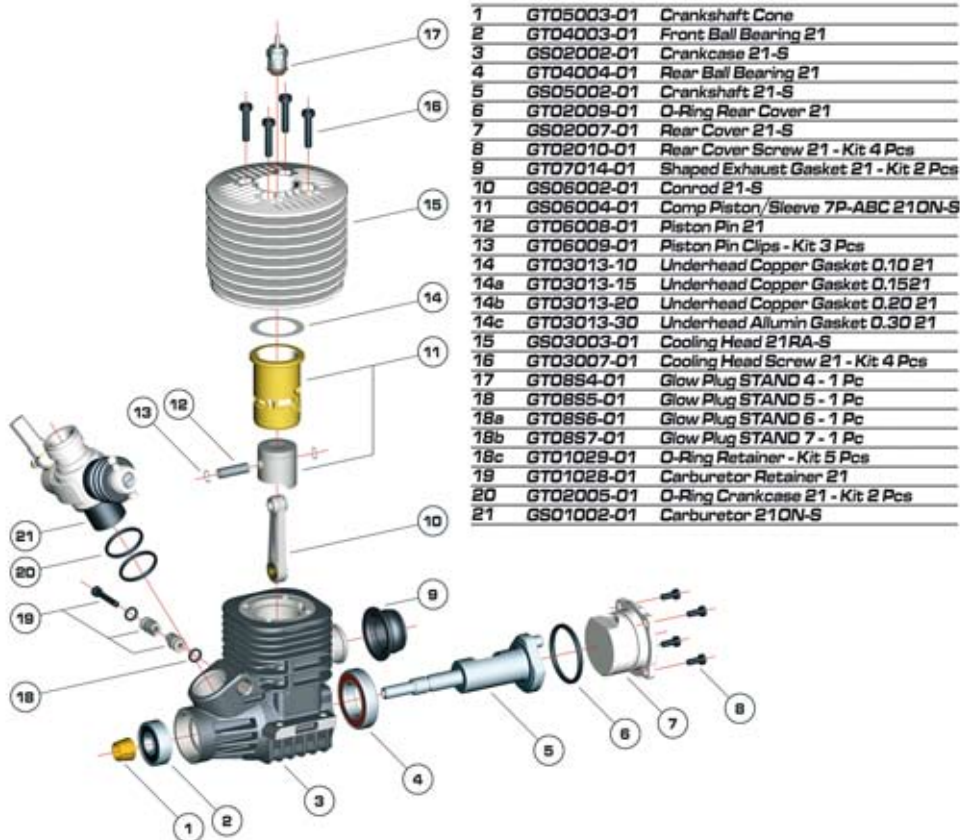
GT07006-01 - Conical Medium
For NON-EUROPEAN Market

GT07006-02 - Cylindrical Medium
For EUROPEAN Market

- GRP Cap (1 piece code **GRP01CAP**).
- or GRP Towel (1 piece code **GRP01TOW**).
- Various GRP Gadgets

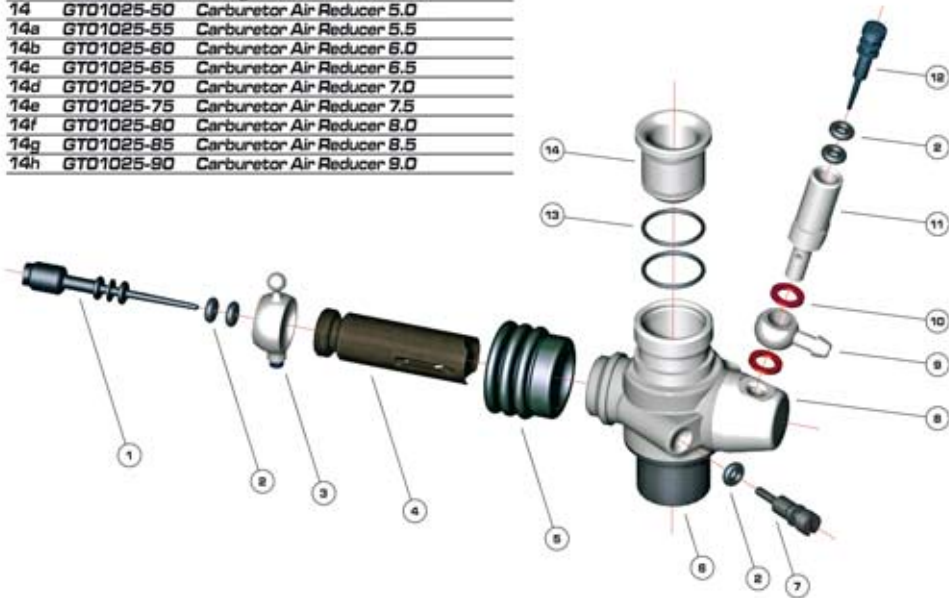


SPORT .21 Rally - ENGINE - EXPLODED VIEW



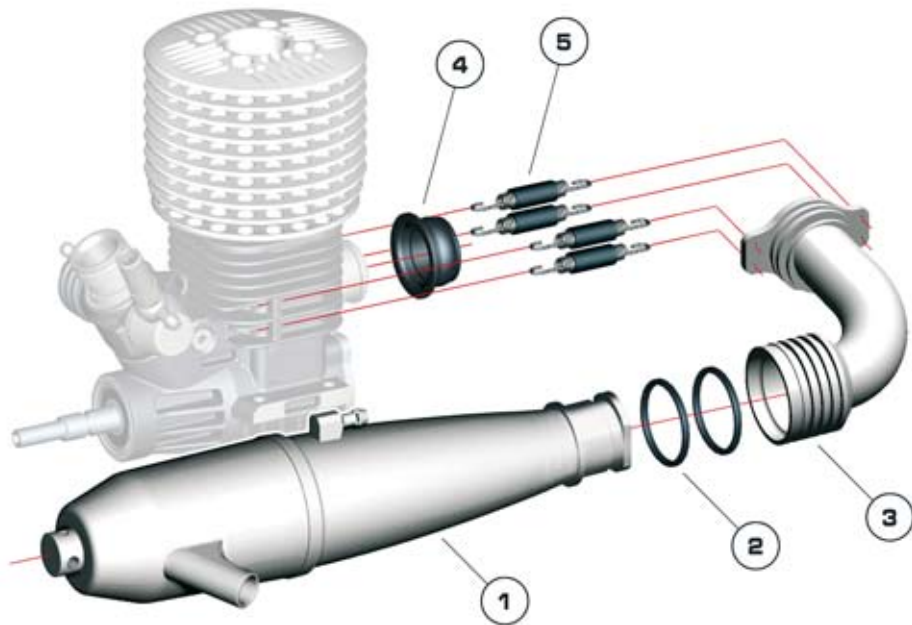
SPORT .21 Rally - CARBURETOR - EXPLODED VIEW

1	GT01015-01	Base Speed Needle 21
2	GT01007-01	O-Ring Needle - Kit 5 Pcs
3	GT01021-01	Uniball Ball Joint 21
4	GT01019-01	Carburetor Throttle 21
5	GT01009-01	Rubber Dust Protection 21
6	GT01011-01	Carburetor TCS Bushing 21
7	GT01017-01	Base Speed Adjusting Screw 21
8	GSO1005-01	Carburetor Body 210N-S
9	GT01023-01	Fuel Intake Nipple
10	GT01022-01	Intake Fuel Set Copper Rings - Kit 2 Pcs
11	GSO1024-01	Intake Fuel Body 21-S
12	GT01013-01	Full Speed Needle 21
13	GT01026-01	O-Ring Air Reducer - Kit 2 Pcs
14	GT01025-50	Carburetor Air Reducer 5.0
14a	GT01025-55	Carburetor Air Reducer 5.5
14b	GT01025-60	Carburetor Air Reducer 6.0
14c	GT01025-65	Carburetor Air Reducer 6.5
14d	GT01025-70	Carburetor Air Reducer 7.0
14e	GT01025-75	Carburetor Air Reducer 7.5
14f	GT01025-80	Carburetor Air Reducer 8.0
14g	GT01025-85	Carburetor Air Reducer 8.5
14h	GT01025-90	Carburetor Air Reducer 9.0



SPORT .21 Rally - EXHAUST - EXPLODED VIEW

1	GT07002-01	Special Pipe FLS 21 - Efra 2053
1a	GT07002-02	Special Pipe FLS 21ON - Efra 3008
2	GT07010-01	O-Ring Pipe Gasket FLS - Kit 2 Pcs
3	GT07005-01	Manifold Conical Short FLS 21ON
3a	GT07006-01	Manifold Conical Medium FLS 21ON
3b	GT07007-01	Manifold Conical Long FLS 21ON
4	GT07014-01	Shaped Exhaust Gasket 21 - Kit 2 Pcs
5	GT07012-01	Manifold Spring 21 - Kit 4 Pcs



SPORT .21 Buggy - TECHNICAL DATA

Model Car		1:8 Buggy
Engine Code		GSD1-21BU
Displacement	cm ³	3.49
Rotation max.	rpm	38.000
Stroke	mm	16.79
Bore	mm	16.27
Ports	n	5
Sleeve		ABC
Crankshaft Diam.	mm	14
Glow Plug Type		Standard
Carburetor Diam.	mm	8.0 (Variable)
Carb. Material		Aluminium
Weight	gr	355



SPORT .21 Buggy - CONSTRUCTION DETAILS

The functions of these model engines are quite different from other combustion engines. Compression is not obtained by a piston ring, but by the fact that both the piston and cylinder are slightly conical and this allows the perfect closure of the combustion chamber when the piston is at its maximum upper stroke. When the engine is cold, the piston is tightly locked within the cylinder and for this reason it is difficult to turn the engine manually, but this is absolutely normal since the ideal contact between piston and cylinder is obtained when both reach the normal temperature for operating the engine.

CONROD

It is produced with a special advanced technological material, which has allowed the exclusion of a bushing on piston side. This gives a greater lightness, leading to a higher acceleration and rotational rate. Moreover, this material has a specific heat resistance at high temperatures of use guaranteeing a minimal deformation.

SLEEVE/PISTON

The piston has a particular design and it is made directly from a "cnc" production, using a special aluminium alloy, which guarantees a very high dimensional stability at high temperatures, a very high wear resistance and it gives easy running and lower friction.

The sleeve is made with a special ABC alloy, but the main technical and mechanical characteristics are gained after special internal treatments, which guarantee a very high hardness and a considerable wear-resistance. All external surfaces are tried to assure the highest dimensional quality.

CRANKCASE

It has been studied with the most developed and advanced software of mechanical simulation, to simulate all deformations at high temperatures of use. Therefore, we managed to create a very stiff structure, mainly in the area of cylinder/ exhaust and carburetor joint/intake. The manifold joint is fixed with 4 identical springs, which are perfectly fitted between the cooling fins.

The special aluminium alloy used for the press fusion process, combined with the patent system for part production are extremely important.

CARBURETOR

It is made from a single piece of an Aluminium alloy, through a press fusion process. All O-rings are made with a special material to guarantee the highest elasticity and resistance to fuel.

SPORT .21 Buggy - STANDARD ACCESSORIES

STANDARD FEATURES ON EACH ENGINE - GSO1-21BU

This is an engine for competitions, high-powered with 3.5 cc capacity, for 1:8 BUGGY car models, specially designed to use in contests.

The air reducers on the carburetor can be exchanged, thus adapting the engine functions to various types of tracks and different driving styles. The 8.0 mm reducer is part of standard supply, but spare parts include all sizes from 5.0 mm to 9.0 mm.

Each single engine comes with a security cap on the exhaust, entrance of carburetor, fuel intake and on the crankshaft. It is sold in a plastic box, complete with standard accessories included with each engine kit:

- Standard glow plug S6 (Mounted directly on engine, code **GT08S6-01**).
- 0.1 mm Head gasket (2 pieces code **GT03013-10**).
- Exhaust gasket (1 piece code **GT07014-01**).
- Manifold fastening spring (4 pieces code **GT07012-01**).
- 8.0 mm carburetor air reducer (Mounted directly on engine, code **GT01025-80**).
- Engine protection cover (Mounted directly on engine, code **GT07016-01**).
- Decal logo on engine
- Use and Maintenance Manual (1 piece code **GRP108MAN01**)

Each GRP engine, is available also in our PromoKit version, which comes in its carton case with a plastic handle, complete with standard accessories included with each engine kit, and plus:

- Special Pipe (1 piece).

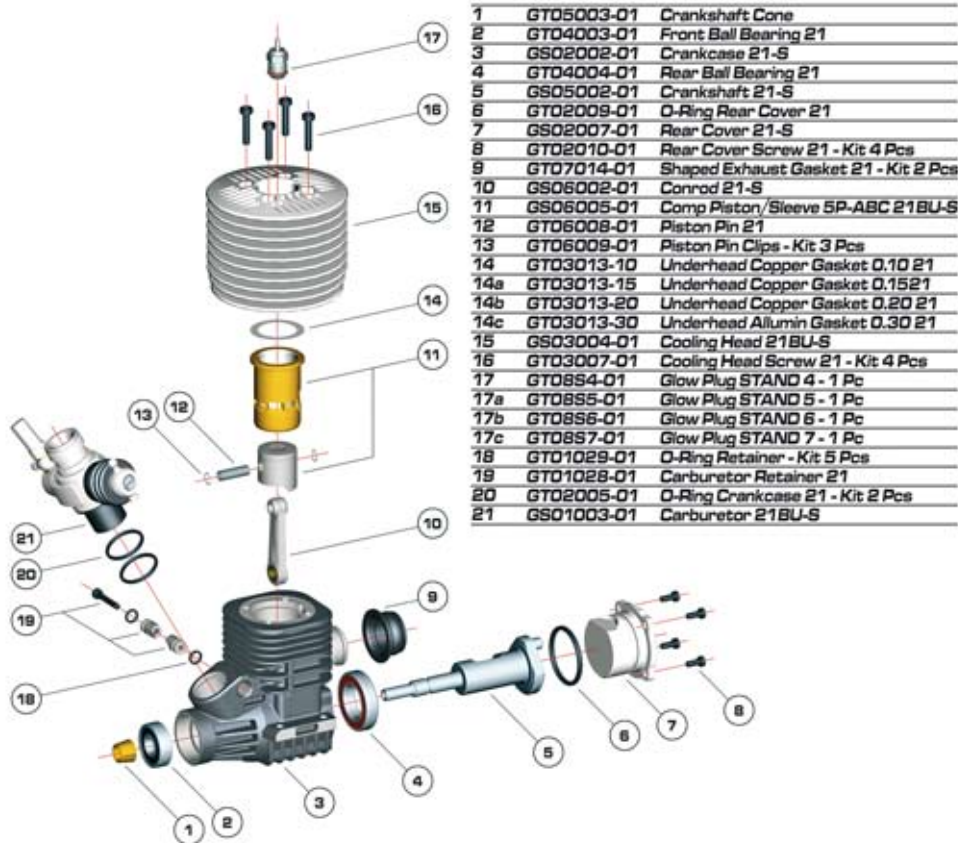
GT07002-01 - Efra2053
For NON-EUROPEAN Market

GT07002-03 - Efra3009
For EUROPEAN Market

- Special Manifold (1 piece code **GT07009-01**).
- GRP Cap (1 piece code **GRP01CAP**).
- or GRP Towel (1 piece code **GRP01TOW**).
- Various GRP Gadgets

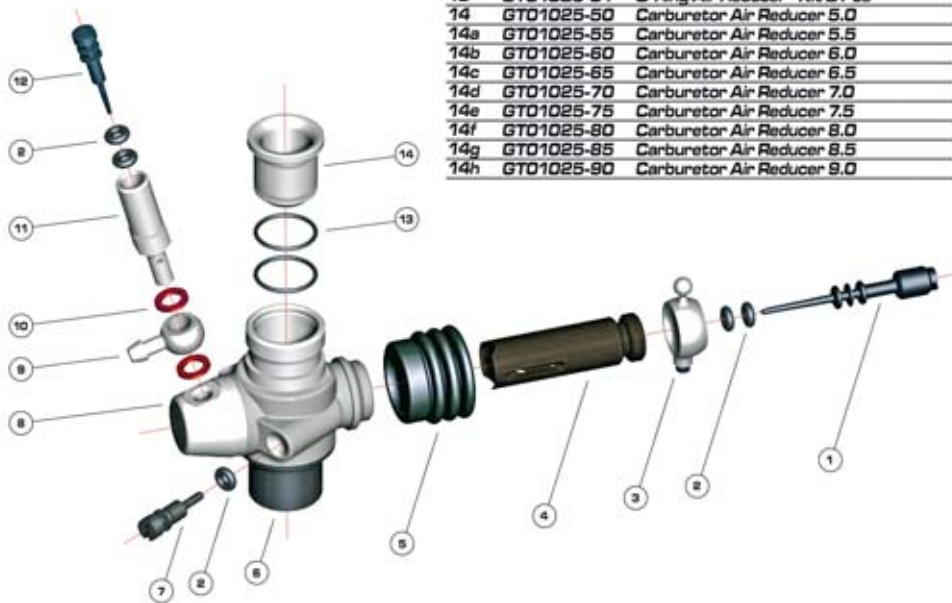


SPORT .21 Buggy - ENGINE - EXPLODED VIEW



- | | | |
|-----|------------|--------------------------------------|
| 1 | GT05003-01 | Crankshaft Cone |
| 2 | GT04003-01 | Front Ball Bearing 21 |
| 3 | GS02002-01 | Crankcase 21-S |
| 4 | GT04004-01 | Rear Ball Bearing 21 |
| 5 | GS05002-01 | Crankshaft 21-S |
| 6 | GT02009-01 | O-Ring Rear Cover 21 |
| 7 | GS02007-01 | Rear Cover 21-S |
| 8 | GT02010-01 | Rear Cover Screw 21 - Kit 4 Pcs |
| 9 | GT07014-01 | Shaped Exhaust Gasket 21 - Kit 2 Pcs |
| 10 | GS06002-01 | Conrod 21-S |
| 11 | GS06005-01 | Comp Piston/Sleeve 5P-ABC 21BU-S |
| 12 | GT06008-01 | Piston Pin 21 |
| 13 | GT06009-01 | Piston Pin Clips - Kit 3 Pcs |
| 14 | GT03013-10 | Underhead Copper Gasket 0.10 21 |
| 14a | GT03013-15 | Underhead Copper Gasket 0.15 21 |
| 14b | GT03013-20 | Underhead Copper Gasket 0.20 21 |
| 14c | GT03013-30 | Underhead Allumin Gasket 0.30 21 |
| 15 | GS03004-01 | Cooling Head 21BU-S |
| 16 | GT03007-01 | Cooling Head Screw 21 - Kit 4 Pcs |
| 17 | GT0854-01 | Glow Plug STAND 4 - 1 Pc |
| 17a | GT0855-01 | Glow Plug STAND 5 - 1 Pc |
| 17b | GT0856-01 | Glow Plug STAND 6 - 1 Pc |
| 17c | GT0857-01 | Glow Plug STAND 7 - 1 Pc |
| 18 | GT01029-01 | O-Ring Retainer - Kit 5 Pcs |
| 19 | GT01028-01 | Carburetor Retainer 21 |
| 20 | GT02005-01 | O-Ring Crankcase 21 - Kit 2 Pcs |
| 21 | GS01003-01 | Carburetor 21BU-S |

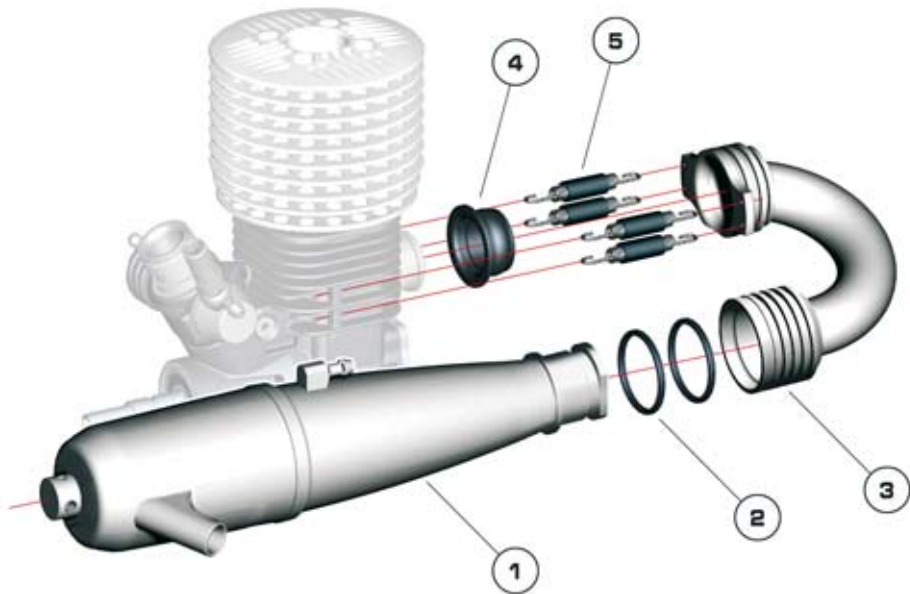
SPORT .21 Buggy - CARBURETOR - EXPLODED VIEW



1	GTD1015-01	Base Speed Needle 21
2	GTD1007-01	O-Ring Needle - Kit 5 Pcs
3	GTD1021-01	Uniball Ball Joint 21
4	GTD1019-01	Carburetor Throttle 21
5	GTD1009-01	Rubber Dust Protection 21
6	GTD1011-01	Carburetor TCS Bushing 21
7	GTD1017-01	Base Speed Adjusting Screw 21
8	GSO1006-01	Carburetor Body 21BU-S
9	GTD1023-01	Fuel Intake Nipple
10	GTD1022-01	Intake Fuel Set Copper Rings - Kit 2 Pcs
11	GSO1024-01	Intake Fuel Body 21-S
12	GTD1013-01	Full Speed Needle 21
13	GTD1026-01	O-Ring Air Reducer - Kit 2 Pcs
14	GTD1025-50	Carburetor Air Reducer 5.0
14a	GTD1025-55	Carburetor Air Reducer 5.5
14b	GTD1025-60	Carburetor Air Reducer 6.0
14c	GTD1025-65	Carburetor Air Reducer 6.5
14d	GTD1025-70	Carburetor Air Reducer 7.0
14e	GTD1025-75	Carburetor Air Reducer 7.5
14f	GTD1025-80	Carburetor Air Reducer 8.0
14g	GTD1025-85	Carburetor Air Reducer 8.5
14h	GTD1025-90	Carburetor Air Reducer 9.0

SPORT .21 Buggy - EXHAUST - EXPLODED VIEW

1	GT07002-01	Special Pipe FLS 21 - Efra 2053
1a	GT07002-03	Special Pipe FLS 21BU - Efra 3009
2	GT07010-01	O-Ring Pipe Gasket FLS - Kit 2 Pcs
3	GT07008-01	Manifold Short FLS 21BU
3a	GT07009-01	Manifold Long FLS 21BU
4	GT07014-01	Shaped Exhaust Gasket 21 - Kit 2 Pcs
5	GT07012-01	Manifold Spring 21 - Kit 4 Pcs





GRP has studied and realized a new special line of pipes and manifolds FLS. The main novelty consists of a new fast link initialled FLS, created and patented worldwide by GRP. This system allows the elimination of usage of holding springs, shaped gaskets and it guarantees, apart from a quick fastening, a 100% sure hold too. We have introduced many other novelties, such as special material, its CNC machining exhaust pipe and its internal design and other particular features as described below.



NEW FLS SYSTEM

All pipes and manifolds of this new line, come with the new "FLS" quick block system, patented worldwide by GRP, which guarantees the following advantages:

- Quick link and release without any springs.
- Maximum safety even in case of a hard crash or bump.
- Maximum hold of exhaust gas, through the usage of big O-rings.
- O-Ring made with a special material resistant to abrasion and high temperature.
- Consumption reduction, to be more precise, the connection between manifold and pipe.
- Anti vibrating link to best absorb any vibration.
- Reduction of encumbrance measures in the link area.



**NEW PRESSURE
INTAKE**

**NEW RAW
MATERIAL**

**NEW FRONTAL
JOINT**

**NEW EXHAUST
TUBE**

GRP - FLS EXHAUST LINE

GRP FLS Exhaust Line .12



Article Code	GT07001-01	GT07003-01	GT07004-01
Engine Line	.12 TOURING	.12 TOURING	.12 TOURING
Description and Homologation	Efrs 2632	Conical SHORT	Conical LONG

GRP FLS Exhaust Line .21



Article Code	GT07002-01	GT07005-01	GT07005-01	GT07005-01	GT07005-01	GT07007-01
Engine Line	.21ON .21BU .25TR	.21BU .25TR	.21BU .25TR	.21ON	.21ON	.21ON
Description and Homologation	Efrs 2083	SHORT	LONG	Conical SHORT	Conical MEDIUM	Conical LONG

GRP FLS Exhaust Line .21


New 2008 Efrs rules



Article Code	GT07002-03	GT07002-02	GT07005-02	GT07005-02	GT07007-02
Engine Line	.21BU .25TR	.21ON	.21ON	.21ON	.21ON
Description and Homologation	Efrs 3009	Efrs 3008	Cylindrical SHORT	Cylindrical MEDIUM	Cylindrical LONG

GRP has studied and produced a complete line of air filters for its own engines. Very often it happens that the driver does not pay due attention to the importance of air filters, which although it is a very low cost part, it may seriously damage your engine, or compromise anyway your engine performance.


ONROAD Air Filter



An orange plastic storage box is open, showing several blue cylindrical air filters inside. To the right of the box are two individual components: a black plastic cap and a yellow plastic bottle with a green conical top.

Article Code	GT10001-05
Engine Line Use	.12 TOURING .21 ONROAD .21 RALLY
Filters quantity - Pcs	5
Oil quantity - N x Cl	1 x 20
Oil Type	Castor Oil

BUGGY Air Filter



An orange plastic storage box is open, showing a green rectangular air filter inside. To the right of the box are two individual components: a green cylindrical cap and a pink plastic bottle with a green conical top.

Article Code	GT10002-12
Engine Line Use	.21 BUGGY .28 TRUGGY
Filters quantity - Pcs	12
Oil quantity - N x Cl	2 x 20
Oil Type	Special Oil

ARTICLE LIST - 1



All GRP engine line and all accessories and spare parts are packed and sold in appropriate colored see-through plastic boxes. This type of packaging ensures the maximum guarantee that the product does not get damaged during transportation to the hobby shop.

Each item is checked off by an article code, a description and a barcode for its complete identification.

GRP guarantees the absolute product authenticity only for articles, which come in their original sealed packaging. Moreover, our product guarantee on engines is acknowledged only if our engine is used with its original GRP spare parts.

Here below the type of use for each GRP article is indicated.

Article Code	Article Description	Article Engine Destination					
		12TC TUNED	12ST TUNED	21ON TUNED	21RA TUNED	21BU TUNED	28TR TUNED
GTO1-12TC	GRP ENGINE Tuned 01 - 12 TOURING	☐					
GTO1-12ST	GRP ENGINE Tuned 01 - 12 STADIUM		☐				
GTO1-21ON	GRP ENGINE Tuned 01 - 21 ONROAD			☐			
GTO1-21RA	GRP ENGINE Tuned 01 - 21 RALLY				☐		
GTO1-21BU	GRP ENGINE Tuned 01 - 21 BUGGY					☐	
GTO1-28TR	GRP ENGINE Tuned 01 - 28 TRUGGY						☐
GTO1K-12TC	GRP ENGINE Tuned 01 PromoKit - 12 TOURING	☐					
GTO1K-12ST	GRP ENGINE Tuned 01 PromoKit - 12 STADIUM		☐				
GTO1K-21ON	GRP ENGINE Tuned 01 PromoKit - 21 ONROAD			☐			
GTO1K-21RA	GRP ENGINE Tuned 01 PromoKit - 21 RALLY				☐		
GTO1K-21BU	GRP ENGINE Tuned 01 PromoKit - 21 BUGGY					☐	
GTO1K-28TR	GRP ENGINE Tuned 01 PromoKit - 28 TRUGGY						☐
GSO1-12TC	GRP ENGINE Sport 01 - 12 TOURING						☐
GSO1-21RA	GRP ENGINE Sport 01 - 21 RALLY						☐
GSO1-21BU	GRP ENGINE Sport 01 - 21 BUGGY						☐
GSO1K-12TC	GRP ENGINE Sport 01 PromoKit - 12 TOURING						☐
GSO1K-21RA	GRP ENGINE Sport 01 PromoKit - 21 RALLY						☐
GSO1K-21BU	GRP ENGINE Sport 01 PromoKit - 21 BUGGY						☐

ARTICLE LIST - 2

Article Code	Article Description	Article Engine Destination						12TC 12.5HP	12ST 12.5HP	21ON 21.0HP	21RA 21.0HP	21BU 21.0HP	28TR 28.0HP	12TC 12.5HP	21RA 21.0HP	21BU 21.0HP
		12TC 12.5HP	12ST 12.5HP	21ON 21.0HP	21RA 21.0HP	21BU 21.0HP	28TR 28.0HP									
GT01001-01	Carburetor 12	0	0													
GSO1001-01	Carburetor 12-S												0			
GT01002-01	Carburetor 21ON			0	0											
GSO1002-01	Carburetor 21ON-S													0		
GT01003-01	Carburetor 21BU					0	0									
GSO1003-01	Carburetor 21BU-S															0
GT01004-01	Carburetor Body 12	0	0													
GSO1004-01	Carburetor Body 12-S												0			
GT01005-01	Carburetor Body 21ON			0	0											
GSO1005-01	Carburetor Body 21ON-S															0
GT01006-01	Carburetor Body 21BU					0	0									
GSO1006-01	Carburetor Body 21BU-S															0
GT01007-01	O-Ring Needle - Kit 5 Pcs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GT01008-01	Rubber Dust Protection 12	0	0													
GT01009-01	Rubber Dust Protection 21			0	0	0	0	0	0	0	0	0	0	0	0	0
GT01010-01	Carburetor TCS Bushing 12	0	0													
GT01011-01	Carburetor TCS Bushing 21			0	0	0	0	0	0	0	0	0	0	0	0	0
GT01012-01	Full Speed Needle 12	0	0										0			
GT01013-01	Full Speed Needle 21			0	0	0	0	0	0	0	0	0	0	0	0	0
GT01014-01	Base Speed Needle 12	0	0										0			
GT01015-01	Base Speed Needle 21			0	0	0	0	0	0	0	0	0	0	0	0	0
GT01016-01	Base Speed Adjusting Screw 12	0	0										0			
GT01017-01	Base Speed Adjusting Screw 21			0	0	0	0	0	0	0	0	0	0	0	0	0
GT01018-01	Carburetor Throttle 12	0	0										0			
GT01019-01	Carburetor Throttle 21			0	0	0	0	0	0	0	0	0	0	0	0	0
GT01020-01	Unibell Bell Joint 12	0	0										0			
GT01021-01	Unibell Bell Joint 21			0	0	0	0	0	0	0	0	0	0	0	0	0
GT01022-01	Intake Fuel Set Copper Rings - Kit 2 Pcs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GT01023-01	Fuel Intake Nipple	0	0										0			
GT01024-01	Intake Fuel Body 21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GSO1024-01	Intake Fuel Body 21-S												0			
GT01025-50	Carburetor Air Reducer 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GT01025-55	Carburetor Air Reducer 5.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GT01025-60	Carburetor Air Reducer 6.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GT01025-65	Carburetor Air Reducer 6.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GT01025-70	Carburetor Air Reducer 7.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GT01025-75	Carburetor Air Reducer 7.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GT01025-80	Carburetor Air Reducer 8.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GT01025-85	Carburetor Air Reducer 8.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GT01025-90	Carburetor Air Reducer 9.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GT01026-01	O-Ring Air Reducer - Kit 2 Pcs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GT01027-01	Carburetor Retainer 12	0	0										0			
GT01028-01	Carburetor Retainer 21			0	0	0	0	0	0	0	0	0	0	0	0	0
GT01029-01	O-Ring Retainer - Kit 5 Pcs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GT02001-01	Crankcase 12	0	0													
GSO2001-01	Crankcase 12-S												0			

ARTICLE LIST - 3

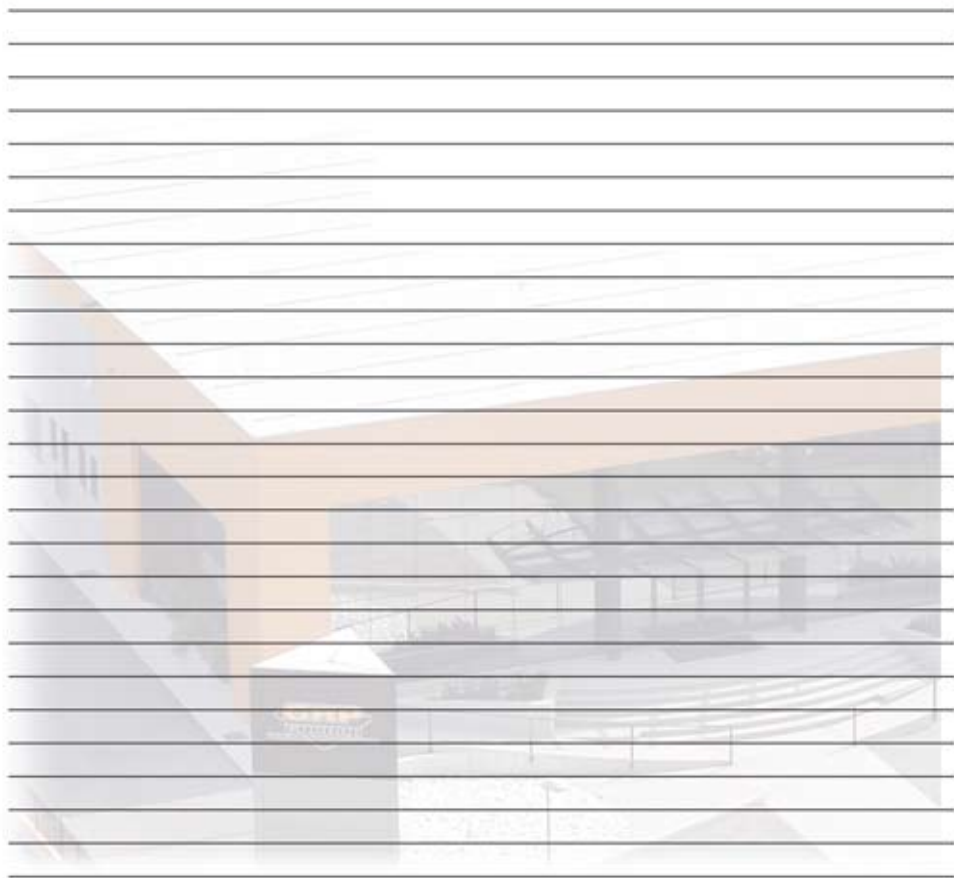
Article Code	Article Description	Article Engine Destination						12TC 12TC-5	12ST 12ST-5	21ON 21ON-5	21RA 21RA-5	21BU 21BU-5	28TR 28TR-5	12TC 12TC-5	21RA 21RA-5	21BU 21BU-5
GT02002-01	Crankcase 21			0	0	0										
GS02002-01	Crankcase 21-S														0	0
GT02003-01	Crankcase 28											0				
GT02004-01	O-Ring Crankcase 12 - Kit 1 Pz		0	0									0			
GT02005-01	O-Ring Crankcase 21 - Kit 2 Pz				0	0	0	0						0	0	0
GT02006-01	Rear Cover 12		0	0												
GS02006-01	Rear Cover 12-S												0			
GT02007-01	Rear Cover 21				0	0	0	0								
GS02007-01	Rear Cover 21-S													0	0	0
GT02008-01	O-Ring Rear Cover 12			0	0											
GT02009-01	O-Ring Rear Cover 21				0	0	0	0						0	0	0
GT02010-01	Rear Cover Screw 21 - Kit 4 Pcs		0	0	0	0	0	0	0	0	0		0	0	0	0
GT03001-01	Cooling Head 12		0	0												
GS03001-01	Cooling Head 12-S												0			
GT03002-01	Cooling Head 21ON					0										
GT03003-01	Cooling Head 21RA						0									
GS03003-01	Cooling Head 21RA-S													0		
GT03004-01	Cooling Head 21BU									0						
GS03004-01	Cooling Head 21BU-S															0
GT03005-01	Cooling Head 28										0					
GT03006-01	Cooling Head Screw 12 - Kit 4 Pz		0	0									0			
GT03007-01	Cooling Head Screw 21 - Kit 4 Pz				0	0	0	0	0	0	0			0	0	0
GT03008-01	Underhead Conic 12		0	0												
GT03009-01	Underhead Conic 21				0	0	0	0								
GT03010-01	Underhead Conic 28										0					
GT03011-01	Underhead Standard 21					0	0	0	0	0						
GT03012-10	Underhead Copper Gasket 0.10 12		0	0	0	0							0			
GT03012-15	Underhead Copper Gasket 0.15 12		0	0	0	0							0			
GT03012-20	Underhead Copper Gasket 0.20 12		0	0	0	0							0			
GT03012-30	Underhead Alumin Gasket 0.30 12		0	0	0	0							0			
GT03013-10	Underhead Copper Gasket 0.10 21				0	0	0	0						0	0	0
GT03013-15	Underhead Copper Gasket 0.15 21				0	0	0	0						0	0	0
GT03013-20	Underhead Copper Gasket 0.20 21				0	0	0	0						0	0	0
GT03013-30	Underhead Alumin Gasket 0.30 21				0	0	0	0						0	0	0
GT03014-10	Underhead Copper Gasket 0.10 28										0					
GT03014-20	Underhead Copper Gasket 0.20 28										0					
GT03014-30	Underhead Alumin Gasket 0.30 28										0					
GT04001-01	Front Ball Bearing 12		0	0									0			
GT04002-01	Rear Ball Bearing 12		0	0									0			
GT04003-01	Front Ball Bearing 21				0	0	0	0	0					0	0	0
GT04004-01	Rear Ball Bearing 21				0	0	0	0	0					0	0	0
GT05001-01	Crankshaft 12 TC		0													
GS05001-01	Crankshaft 12 TC-S												0			
GT05004-01	Crankshaft 12 ST		0													

ARTICLE LIST - 4

Article Code	Article Description	Article Engine Destination						12TC FLS 12	12ST FLS 12	21ON FLS 21	21RA FLS 21	21BU FLS 21	28TR FLS 28	12TC FLS 12	21RA FLS 21	21BU FLS 21
GT05002-01	Crankshaft 21			0	0	0	0									
GS05002-01	Crankshaft 21-S												0	0	0	0
GT05003-01	Crankshaft Cone			0	0	0	0	0	0	0	0	0	0	0	0	0
GT06001-01	Conrod 12		0	0												
GS06001-01	Conrod 12-S												0			
GT06002-01	Conrod 21				0	0	0	0								
GS06002-01	Conrod 21-S													0	0	
GT06003-01	Camp Piston/Sleeve 3P-ABC 12TC		0	0												
GS06003-01	Camp Piston/Sleeve 3P-ABC 12TC-S													0		
GT06004-01	Camp Piston/Sleeve 7P-ABC 21ON				0	0										
GS06004-01	Camp Piston/Sleeve 7P-ABC 21ON-S														0	
GT06005-01	Camp Piston/Sleeve 5P-ABC 21BU					0										
GS06005-01	Camp Piston/Sleeve 5P-ABC 21BU-S															0
GT06006-01	Camp Piston/Sleeve 5P-ABC 28TR						0									
GT06007-01	Piston Pin 12		0	0									0			
GT06008-01	Piston Pin 21				0	0	0	0	0	0	0	0		0	0	0
GT06009-01	Piston Pin Clips - Kit 3 Pcs		0	0	0	0	0	0	0	0	0	0	0	0	0	0
GT07001-01	Special Pipe FLS 12 - Efra 2632		0	0									0			
GT07002-01	Special Pipe FLS 21 - Efra 2053				0	0	0	0	0	0	0	0		0	0	0
GT07002-02	Special Pipe FLS 21ON - Efra 3008				0	0	0	0	0	0	0	0		0	0	0
GT07002-03	Special Pipe FLS 21BU - Efra 3009				0	0	0	0	0	0	0	0		0	0	0
GT07003-01	Manifold Conical Short FLS 12		0	0									0			
GT07004-01	Manifold Conical Long FLS 12		0	0									0			
GT07005-01	Manifold Conical Short FLS 21ON				0	0								0		
GT07006-01	Manifold Conical Medium FLS 21ON				0	0								0		
GT07007-01	Manifold Conical Long FLS 21ON				0	0								0		
GT07005-02	Manifold Cylindrical Short FLS 21ON				0	0								0		
GT07006-02	Manifold Cylindrical Medium FLS 21ON				0	0								0		
GT07007-02	Manifold Cylindrical Long FLS 21ON				0	0								0		
GT07008-01	Manifold Short FLS 21BU				0	0	0	0	0	0	0	0		0	0	0
GT07009-01	Manifold Long FLS 21BU				0	0	0	0	0	0	0	0		0	0	0
GT07010-01	O-Ring Pipe Gasket FLS - Kit 2 Pcs		0	0	0	0	0	0	0	0	0	0	0	0	0	0
GT07011-01	Manifold Spring 12 - Kit 4 Pcs		0	0									0			
GT07012-01	Manifold Spring 21 - Kit 4 Pcs				0	0	0	0	0	0	0	0		0	0	0
GT07013-01	Shaped Exhaust Gasket 12 - Kit 2 Pcs		0	0												
GT07014-01	Shaped Exhaust Gasket 21 - Kit 2 Pcs				0	0	0	0	0	0	0	0		0	0	0
GT07015-01	Protection Cover 12 - Kit 4 Pcs		0	0									0			
GT07016-01	Protection Cover 21 - Kit 4 Pcs				0	0	0	0	0	0	0	0		0	0	0

ARTICLE LIST - 5

Article Code	Article Description	Article Engine Destination						12TC 12-001	12ST 12-002	21DN 21-001	21RA 21-002	21BU 21-003	28TR 28-001	12TC 12-001	21RA 21-002	21BU 21-003
GT08S4-01	Glow Plug STAND 4 - 1 Pc															
GT08S5-01	Glow Plug STAND 5 - 1 Pc												0 0 0	0 0 0	0 0 0	
GT08S6-01	Glow Plug STAND 6 - 1 Pc													0 0 0	0 0 0	
GT08S7-01	Glow Plug STAND 7 - 1 Pc														0 0 0	
GT08C4-01	Glow Plug CONICAL 4 - 1 Pc	0 0 0														
GT08C5-01	Glow Plug CONICAL 5 - 1 Pc	0 0 0	0 0 0													
GT08C6-01	Glow Plug CONICAL 6 - 1 Pc			0 0 0	0 0 0											
GT08C7-01	Glow Plug CONICAL 7 - 1 Pc				0 0 0	0 0 0										
GT08P5-01	Glow Plug PLUS 5 - 1 Pc	0 0	0 0													
GT08P6-01	Glow Plug PLUS 6 - 1 Pc	0 0	0 0								0 0	0 0				
GT08P7-01	Glow Plug PLUS 7 - 1 Pc											0 0				
GT08S4-05	Glow Plug STAND 4 - 5 Pcs					0 0							0 0		0 0	
GT08S5-05	Glow Plug STAND 5 - 5 Pcs					0 0	0 0							0 0 0	0 0 0	
GT08S6-05	Glow Plug STAND 6 - 5 Pcs					0 0	0 0	0 0						0 0 0	0 0 0	
GT08S7-05	Glow Plug STAND 7 - 5 Pcs					0 0	0 0	0 0	0 0					0 0 0	0 0 0	
GT08C4-05	Glow Plug CONICAL 4 - 5 Pcs	0 0	0 0			0 0	0 0	0 0				0 0				
GT08C5-05	Glow Plug CONICAL 5 - 5 Pcs					0 0	0 0	0 0	0 0							
GT08C6-05	Glow Plug CONICAL 6 - 5 Pcs	0 0	0 0			0 0	0 0	0 0	0 0							
GT08C7-05	Glow Plug CONICAL 7 - 5 Pcs					0 0	0 0	0 0	0 0							
GT08P5-05	Glow Plug PLUS 5 - 5 Pcs	0 0	0 0													
GT08P6-05	Glow Plug PLUS 6 - 5 Pcs	0 0	0 0							0 0	0 0					
GT08P7-05	Glow Plug PLUS 7 - 5 Pcs									0 0	0 0					
GT09001-01	Engine Tooling System Kit - 12	0 0	0 0										0 0			
GT09002-01	Engine Tooling System Kit - 21					0 0	0 0							0 0	0 0	
GT10001-05	Air Filter with Oil ON - Kit 5 Pcs	0 0	0 0	0 0	0 0								0 0	0 0		
GT10002-12	Air Filter with Oil BU - Kit 12 Pcs									0 0	0 0					0 0





Each single engine, comes with this colour-printed English manual and the same manual is also available in other languages in pdf format, which can be downloaded directly from our GRP website (www.grpgandini.com).



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Manual Code **GRP108MAND1**