

O.S. ENGINE

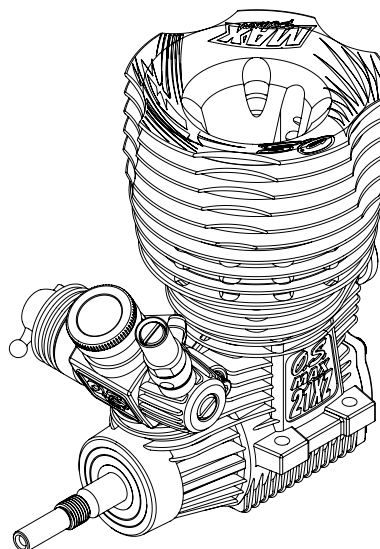
Expressly for 1/8 off-road buggy
racing competitions

MAX-21XZ-B

INSTRUCTION MANUAL

It is of vital importance, before attempting to operate your engine, to read the general '**SAFETY INSTRUCTIONS AND WARNINGS**' section on pages 2-5 of this booklet and to strictly adhere to the advice contained therein.

- Also, please study the entire contents of this instruction manual, so as to familiarize yourself with the controls and other features of the engine.
- Keep these instructions in a safe place so that you may readily refer to them whenever necessary.
- It is suggested that any instructions supplied with the vehicle, radio control equipment, etc., are accessible for checking at the same time.



O.S. ENGINE

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SAFETY INSTRUCTIONS AND WARNINGS ABOUT YOUR O.S. ENGINE


Remember that your engine is not a "toy", but a highly efficient internal-combustion machine whose power is capable of harming you, or others, if it is misused.






As owner, you, alone, are responsible for the safe operation of your engine, so act with discretion and care at all times.

If at some future date, your O.S. engine is acquired by another person, we would respectfully request that these instructions are also passed on to its new owner.

■ The advice which follows applies basically to ALL MODEL ENGINES and is grouped under two headings according to the degree of damage or danger which might arise through misuse or neglect.

|  WARNINGS |
|--|
| <p>These cover events which might involve serious (in extreme circumstances, even fatal) injury.</p> |

|  NOTES |
|---|
| <p>These cover the many other possibilities, generally less obvious sources of danger, but which, under certain circumstances, may also cause damage or injury.</p> |

|  WARNINGS | |
|---|---|
| <ul style="list-style-type: none"> • Model engine fuel is poisonous. Do not allow it to come into contact with the eyes or mouth. Always store it in a clearly marked container and out of the reach of children. |  |
| <ul style="list-style-type: none"> • Model engine fuel is also highly flammable. Keep it away from an open flame, excessive heat, sources of sparks, or anything else which might ignite it. Do not smoke or allow anyone else to smoke, near to it. |  |
| <ul style="list-style-type: none"> • Never operate your engine in an enclosed space. Model engines, like automobile engines, exhaust deadly carbon-monoxide. Run your engine only in an open area. |  |
| <ul style="list-style-type: none"> • Model engines generate considerable heat. Do not touch any part of your engine until it has cooled. Contact with the muffler (silencer), cylinder head or exhaust header pipe, in particular, may result in a serious burn. |  |



NOTES

- This engine is intended for model cars. Do not attempt to use it for any other purpose.
- Mount the engine in your model securely, following the manufacturers' recommendations, using appropriate screws and locknuts.
- Install an effective silencer (muffler). Frequent close exposure to a noisy exhaust (especially in the case of the more powerful highspeed engines) may eventually impair your hearing and such noise is also likely to cause annoyance to others over a wide area.
- The wearing of safety glasses is also strongly recommended.
- Take care that the glowplug clip or battery leads do not come into contact with rotating parts. Also check that the linkage to the throttle arm is secure.
- For their safety, keep all onlookers (especially small children) well back (at least 20 feet or 6 meters) when preparing your model for running.

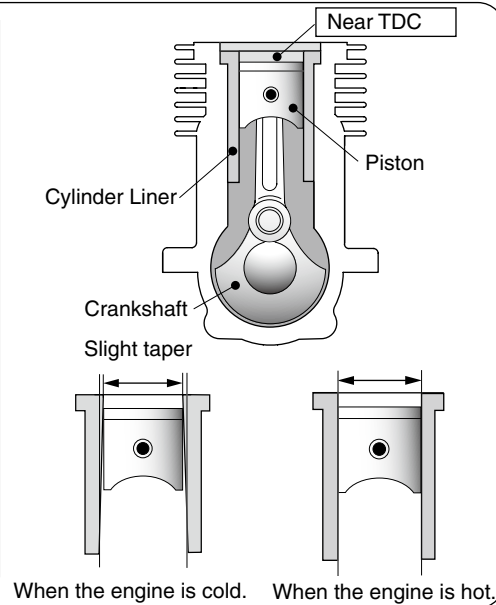


NOTES

- Before starting the engine, always check the tightness of all the screws and nuts especially those of joint and movable parts such as throttle arm. Missing retightening the loose screws and nuts often causes the parts breakage that is capable of harming you.
- To stop the engine, fully retard the throttle stick and trim lever on the trans-mitter, or, in an emergency, cut off the fuel supply by pinching the fuel delivery line from the tank.
- Warning! Immediately after a glowplug-ignition engine has been run and is still warm, conditions sometimes exist whereby it is just possible for the engine to abruptly restart if it is rotated over compression WITHOUT the glowplug battery being reconnected.

ENGINE CONSTRUCTION

With this engine, the piston will feel tight at the top of its stroke (TDC) when the engine is cold. This is normal. The cylinder bore has a slight taper. The piston and cylinder are designed to achieve a perfect running clearance when they reach operating temperature.

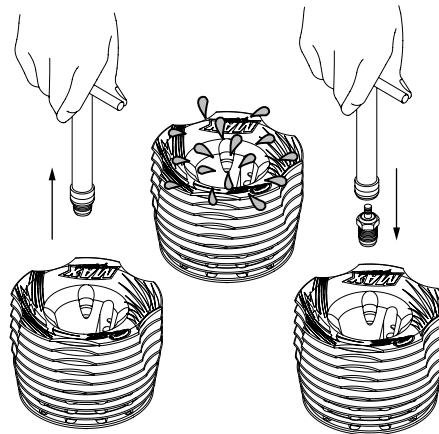


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NOTES WHEN APPLYING AN ELECTRIC STARTER

Do not over-prime. This could cause a hydraulic lock and damage the engine on application of the electric starter.

If over-primed, remove glowplug, close needle-valve and apply starter to pump out surplus fuel. Cover the head with a rag to prevent any pumped out fuel from getting into your eyes.



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GUARANTEE

This engine is constructed from the very best materials available and to the very highest engineering standards, using the most advanced precision machinery. However, the extremely high stresses imposed by car racing operation under very severe conditions, as well as stresses which are exacerbated by the use of powerful fuels containing very high concentrations of nitromethane, constitute hazards which are beyond a manufacturer's control. Accordingly, we regret that it is not possible to extend our usual warranty terms to this particular engine -i.e. no guarantee is offered against material wear, or damage resulting therefrom, in actual use.

While Operating

- Please do not run on a public street, this could cause serious accidents, personal injuries and/or property damage.
- Please do not run near pedestrians or small children.
- Please do not run in small or confined areas.
- Please do not run where loud noises can disturb others, such as hospitals and residential areas.

NOTE

As delivered, the engine has the carburetor lightly fit into its intake. Secure it changing its angle according to the car chassis.

The MAX-21XZ-B is a high performance 3.5cc class power unit for one-eighth-scale radio-controlled 'off-road' or 'buggy' cars. It has been expressly designed for racing competitions.

T-type plug (turbo plug) design improves the power, fuel consumption and durability.

The new 21J2 carburetor is supplied with 7mm dia. reducer.

Standard accessories

- Glow Plug P3 T-type head (Turbo head)
1piece
(Hot Type)



- Exhaust Seal Ring 1piece



- Dust Cap $\varnothing 3, \varnothing 16, \varnothing 18$ 1piece each



Tools, accessories, etc. The following items are necessary for operating the engine.

■ **Optional Extras**

GLOW PLUG T-Type (Turbo Plug)

P3 is supplied with the engine. As replacement, suggested O.S. plugs are P3, P4 and P5.



SUPER AIR CLEANER 203 ASSEMBLY

This is a heavy-duty wet type air cleaner designed specifically for 3.5cc 'off-road' model car engines.

M2000SC EXHAUST HEADER PIPE ASSEMBLY

This is designed to use with the T-2060SC Tuned Silencer.

T-2060SC WN TUNED SILENCER ASSEMBLY

This is designed specifically for 3.5cc 'off-road' model car engines.

T-2060SC WN TUNED SILENCER COMPLETE SET

This is a set of T-2060SC Tuned Silencer and M2000SC Exhaust Header Pipe Assembly.

SUPER JOINT TUBE 21

This is to use with joint tube connection type silencer.

M2000 EXHAUST HEADER PIPE ASSEMBLY

This is designed to use with the T-2060 Tuned Silencer.

T-2060 WN TUNED SILENCER ASSEMBLY

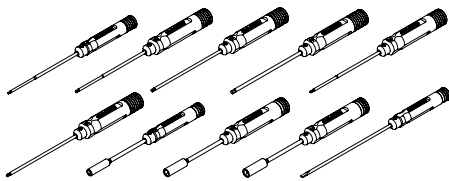
This is designed specifically for 3.5cc 'off-road' model car engines.

28XZ HYPER FLYWHEEL SETS

They are designed to match the engine power characteristics.

■ **TOOLS**

O.S. SPEED DRIVER TOOLS



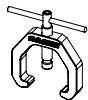
O.S. SPEED FLYWHEEL KEY



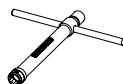
O.S. SPEED CLUTCH WRENCH & ADJUSTER



O.S. SPEED FLYWHEEL PULLER



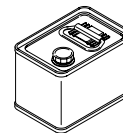
O.S. SPEED PLUG WRENCH



■ **Items necessary for starting**


FUEL

Generally, it is suggested that the user selects a fuel that is commercially available for model two-stroke engines and contains 10-30% nitromethane. As a starting point, we recommend a fuel containing 20% nitromethane, changing to a fuel containing more nitro if necessary. When the brand of fuel is changed, or the nitro content increased, it is advisable to repeat the running-in procedure referred to in the RUNNING-IN paragraphs. Please note that with high-nitro fuels, although power may be increased for competition purposes, glowplug elements do not last as long and engine life will be shortened.



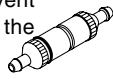
REMINDER!

⚠ **Model engine fuel is poisonous. Do not allow it to come into contact with the eyes or mouth. Always store it in a clearly marked container and out of the reach of children.**

 **Model engine fuel is also highly flammable. Keep it away from open flame, excessive heat, sources of sparks, or anything else which might ignite it. Do not smoke or allow anyone else to smoke, near to it.**

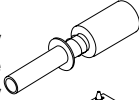
FUEL FILTER

To installed in the fuel line between fuel tank and carburetor to prevent foreign matter from entering the carburetor.



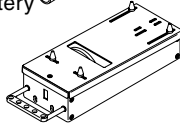
GLOWPLUG IGNITER

Commercially available handy glowplug heater in which the glowplug battery and battery leads are integrated.



STARTER BOX

For starting the engine.



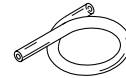
FUEL PUMP

For filling the fuel tank, a simple, polyethylene "squeeze" bottle, with a suitable spout, is required.

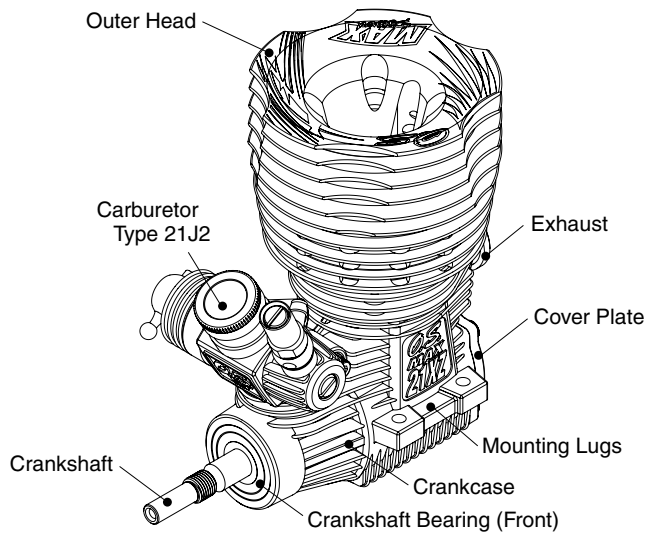


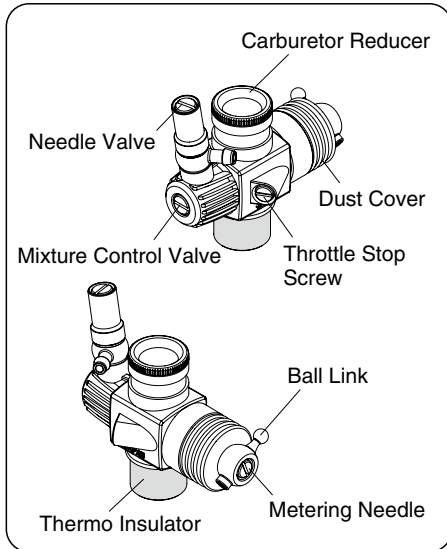
SILICONE FUEL LINE

Heatproof silicone tubing of approx. 5mm o.d. and 2mm i.d. is required for the connection between the fuel tank and engine.



BASIC ENGINE PARTS





Four adjustable controls are provided on this carburetor.

- **The Needle-Valve(Adjusted at the factory):**
For adjusting the mixture strength when the throttle is fully open.
- **The Mixture Control Valve:**
For changing the mixture strength at mid speed and acceleration. (Do not rotate the screw more than one turn.)
- **The Metering Needle:**
For adjusting the mixture strength at part-throttle and idle speed, to obtain steady idling and smooth acceleration to mid speed.
- **The Throttle Stop Screw (Adjusted at the factory):**
For setting the minimum idle speed:

NOTE: Readjustment may be necessary, occasionally to allow for changes in fuel formula, gear ratio or clutch engagement point.



Since the compatibility of glowplug and fuel may have a marked effect on performance and reliability, it may be worthwhile to choose the R/C type plug found most suitable after tests. Recommended O.S. plugs are P3, P4 and P5. Carefully install plug finger-tight, before final tightening with the correct size plug wrench.

The role of the glowplug

With a glowplug engine, ignition is initiated by the application of a 1.5-volt power source. When the battery is disconnected, the heat retained within the combustion chamber remains sufficient to keep the plug filament glowing, thereby continuing to keep the engine running. Ignition timing is 'automatic' : under reduced load, allowing higher rpm, the plug becomes hotter and, appropriately, fires the fuel/air charge earlier; conversely, at reduced rpm, the plug become cooler and ignition is retarded.

Glowplug life

Particularly in the case of very high performance engines, glowplugs must be regarded as expendable items. However, plug life can be extended and engine performance maintained by careful use, i.e.:

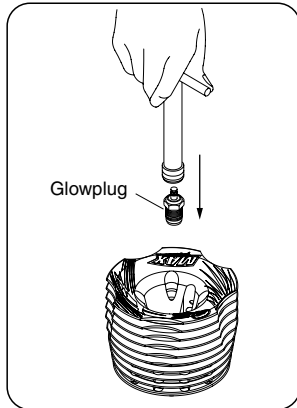
- Install a plug suitable for the engine.
- Use fuel containing a moderate percentage of nitromethane unless more is essential for racing events.
- Do not run the engine too lean and do not leave the battery connected while adjusting the needle.

When to replace the glowplug

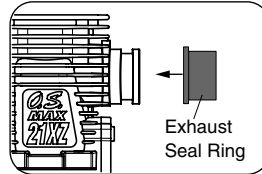
Apart from when actually burned out, a plug may need to be replaced because it no longer delivers its best performance, such as when:

- Filament surface has roughened and turned white.
- Filament coil has become distorted.
- Foreign matter has adhered to filament or plug body has corroded.
- Engine tends to cut out when idling.
- Starting qualities deteriorate.

Installing the glow plug. Insert P3 plug supplied into heatsink-head carefully, making sure that it is not cross-threaded before tightening firmly. (All the O.S. T-Type plugs including the P3 are not supplied with a washer.)



Install the exhaust seal ring supplied.

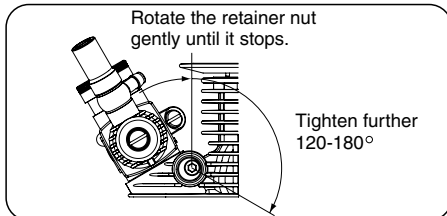


INSTALLATION OF THE DUST CAP SET

If the engine is to be stored or out of use for a while, install the included exhaust and carburetor dust caps to prevent foreign matter from entering the engine.

As delivered, the engine has its carburetor lightly installed in the intake boss. Secure it as follows.

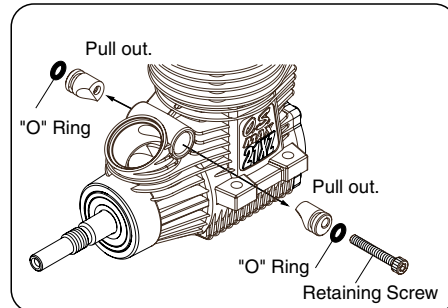
1. Loosen the retainer screw, rotate the carburetor to its correct position and make sure that it is pressed well down into the intake boss, compressing the rubber gasket, before retightening screw.
2. Rotate the retainer screw gently until it stops, then tighten a further 120-180°. Do not overtighten the screw as this will damage the carburetor body.



Note

Be careful not to damage the O rings when removing the carburetor retainer from the engine.

First, remove the retainer Retaining screw, then pull out each part. Do not push the part in or damage the O rings.



Make sure that the vehicle's engine mounting surfaces are level and in the same plane. Poor installation may cause distortion of the crankcase, bearings, etc., resulting in erratic running and loss of performance.

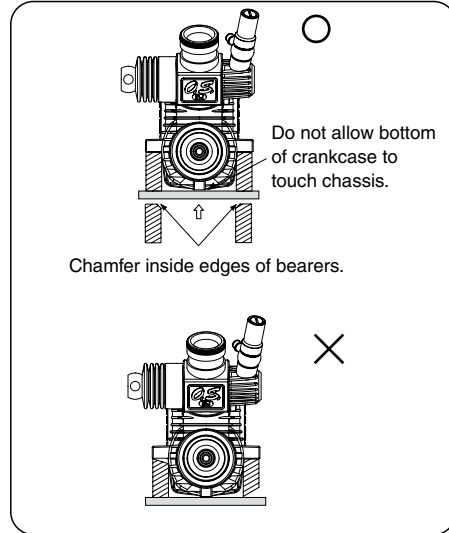
The recommended screws for securing the engine are 3mm or 4-40 steel Allen hexagon socket type. If existing holes in the engine mount do not align perfectly with engine mounting lugs, enlarge them slightly with a needle-file so that screws are in alignment with the mounting holes.

NOTE

The engine bottom may interfere with chassis of some models. In this case, file off the chassis so that the engine may not interfere with the chassis when it is installed.

Note:

Be sure to use a collet supplied when use a optional 28XZ Hyper Flywheel Set.



RUNNING-IN ('Breaking-in)

Running-in is a procedure for an engine to come close to actual running conditions (fuel, r.p.m., engine temperature, etc.).

Excessively rich running and prolonged low speed running should be avoided. Prolonged low speed running and low temperature running may result in the oil in the fuel becoming gelled and the piston/liner becoming stuck together.

PRESSURIZED FUEL SYSTEM

The somewhat violent changes of vehicle attitude that occur in off-road running, combined with the fact that, in buggy type cars, the fuel tank is often located some distance from the carburetor, means that fuel 'head' at the carburetor can vary and upset running. Therefore, it is recommended that a muffler pressurized fuel feed system be used.

- Never run your vehicle without installing the air cleaner. Dust and dirt that may otherwise be drawn into the engine will rapidly shorten its life.

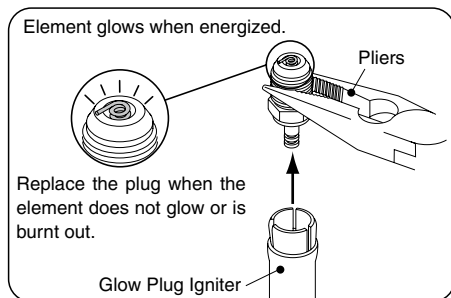


Before starting the engine, always check the tightness of all the screws and nuts especially those of joint and movable parts such as throttle arm. Missing retightening the loose screws and nuts often causes the parts breakage that is capable of harming you.

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The following procedure is suitable for this engine when the O.S. T-2060WN tuned silencer and a fuel containing 30% nitromethane are used.

- ◆ Fill the tank completely with fuel.
- ◆ Temporarily remove the glowplug to check that it glows bright red when energized.

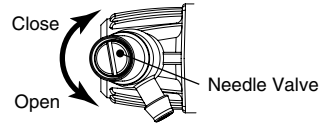


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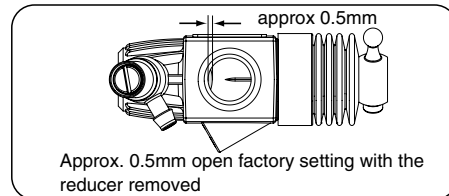
The carburetor is set as shown below at the factory. Start the engine as it is.

- ◆ The needle-valve is set approx. 3 and 1/4 turns opened from the fully closed position.

Turn the needle-valve clockwise until it stops. This is the fully closed position. Do not force it to turn further.

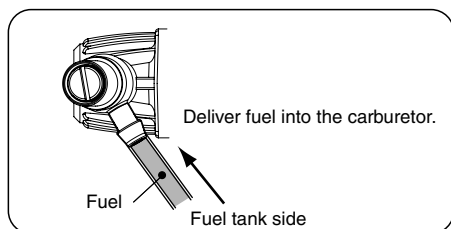


- ◆ Throttle is set approx. 0.5mm open.



O.S. ENGINE

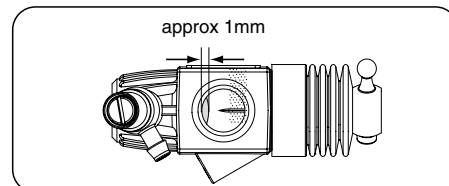
- ◆ Metering needle and mixture control valve are set at basic position. (Refer to P26.)
- ◆ Switch on the transmitter and make sure that each linkage moves correctly.
- ◆ Turn the engine with starter box to draw fuel into the engine.



- ◆ Now connect glowplug battery lead to heat the plug filament and start the engine.

When the engines does not start or stops right after being started, try the followings.

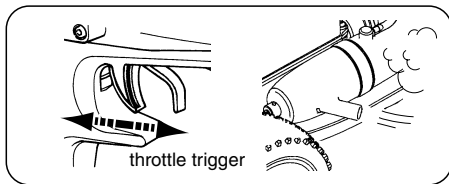
- Set the needle-valve approx. 3 turns open from the fully closed position. Do not force the needlevalve to turn beyond a lightly closed position.
- Set the throttle opening a little wider that the factory setting by adjusting the Throttle Stop Screw.



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- ◆ When the engine starts, warm it up by repeatedly increasing the rpm to medium speed and back again to a fast idle with the mixture set very rich, the glowplug connected, and the driving wheels clear of the ground. The rich mixture will provide adequate lubrication and cooling indicated by profuse exhaust smoke.



Attention:

It is vitally important to set the throttle at the correct position before starting the engine.



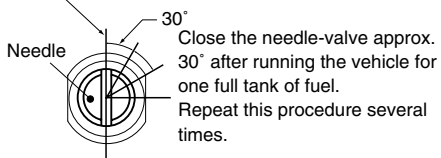
If the engine is allowed to run with the throttle too far open under "no load" conditions (i.e. with the driving wheels not in contact with the ground) it will rapidly over-heat and may be seriously damaged.

- ◆ Next, disconnect the glowplug battery and try running the car on the track. If the engine stalls, open the throttle fractionally, but try to keep the engine running as rich as possible: if it stops because of being excessively rich, close the Needle-Valve 30° and try again.
- ◆ Run the car on the track until one tank of fuel has been consumed, then close the Needle-Valve 30° and run the car for another full tank of fuel. Repeat this procedure until approx. 2 liters of fuel have been consumed, during which time the throttle may be opened for brief bursts of increased power. If the engine stops at medium speeds, close the Mixture Screw 45°.

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The position of the needle-valve when starting the engine.



Note:

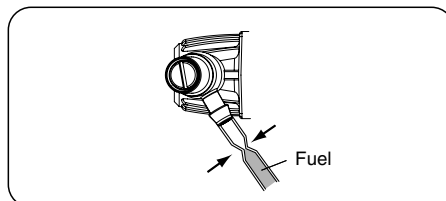
In the event of any major working parts (e.g. piston/cylinder liner assembly) being replaced or the fuel being changed, especially to high nitro fuel, the complete running-in should be repeated.

■ How to stop the engine

To stop the engine, close the throttle to idle speed and shut it off completely with the trim lever on the transmitter then cut off the fuel supply by pinching the fuel delivery tube to the carburetor.

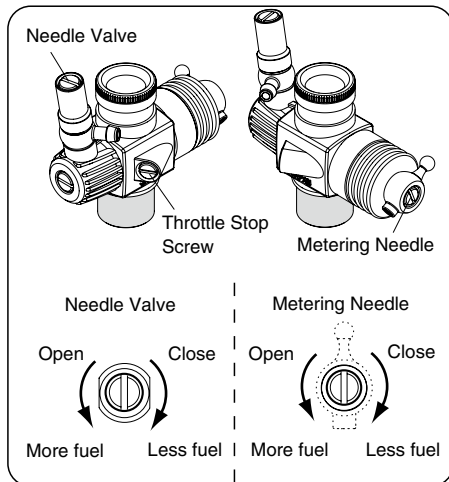
Warning!

Do not touch rotating parts, engine and silencer when stopping the engine as they become very hot, and contact with them may result in a serious burn.



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■ Final adjustment should be carried out only after the running-in has been completed.



- ◆ Run the vehicle (with throttle fully open) over the longest available straight course, in order to observe the model's speed. Next return the car to the starting point, close the Needle-Valve 15° and repeat the run, taking note of the improvement in performance.
- ◆ Continue with further runs, gradually reducing the Needle-Valve setting and aiming to achieve the highest straight-line speed. Remember, however, that, if the Needle-Valve is shut down too far, the engine will overheat, accompanied by visibly diminished exhaust smoke and the model will lose speed. At this point, throttle down immediately, stop the vehicle and reopen the Needle-Valve 45-90°.

- ◆ With the engine running, close the throttle and allow it to idle for about five seconds, then reopen the throttle fully. If, at this point, the engine puffs out an excessive amount of smoke and the vehicle does not accelerate smoothly and rapidly, it is probable that the idle mixture is too rich. In this case, turn the Metering Needle clockwise 15-30°. If, on the other hand, the engine tends to speed up momentarily and then cut out abruptly when the throttle is opened, the idle mixture is too lean. Correct this by turning the Metering Needle counter-clockwise 15-30°.

NOTE:
Metering Needle adjustment should be made in steps of not more than 15-30°, carefully checking the effect, on throttle response, of each small adjustment.

- ◆ Carry out adjustments patiently, under actual running conditions, until the engine responds quickly and positively to the throttle control.

Warning!
Mixture adjustments (whether via the Metering Needle, or the Needle-Valve) cannot be made accurately under 'no-load' conditions, which, in any case, are not advised, since such operation carries the risk of seriously damaging the engine through over-revving and overheating.

- ◆ With the optimum mixture control position, light smoke is visible during high speed running, and the engine rpm increases smoothly during acceleration. Remember that, if the engine is operated with the fuel/air mixture slightly too lean, it will overheat and run unevenly. As with all engines, it is advisable to set both the needle-valve and metering needle slightly on the rich side of the best rpm setting, as a safety measure.
- ◆ If the engine runs too fast with the throttle closed, the throttle stop screw should be turned counter-clockwise to allow the throttle opening to be reduced.

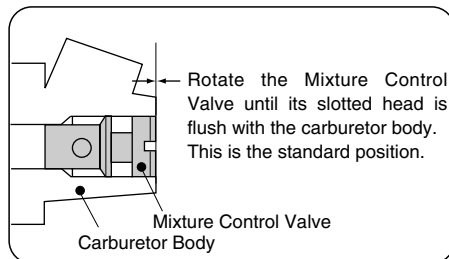
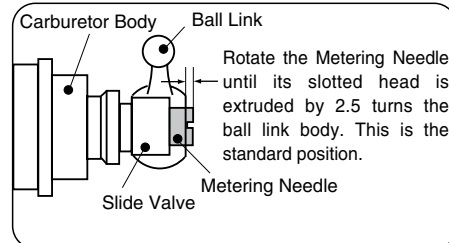
- ◆ Finally, beyond the nominal break-in period, a slight readjustment toward a leaner needle setting may be required to maintain maximum performance.

■ CARBURETOR CLEANLINESS

The correct functioning of the carburetor depends on its small fuel orifices remaining clear.

● REALIGNMENT OF METERING NEEDLE AND MIXTURE CONTROL VALVE

In the course of making carburetor adjustments, it is just possible that the Metering Needle and the Mixture Control Valve may be inadvertently screwed in or out too far and thereby moved beyond its effective adjustment range. The basic positions can be found in the sketches shown right.



CARE AND MAINTENANCE

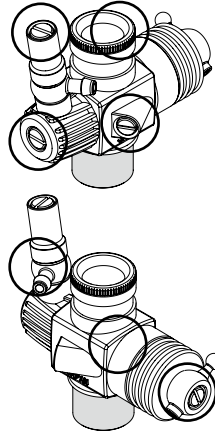
1. The minute particles of foreign matter, that are present in any fuel may, by accumulating and partially obstructing fuel flow, cause engine performance to become erratic and unreliable.
O.S. 'Super-Filters' (large and small) are available, as optional extras, to deal with this problem.
One of these filters installed to the pickup tube inside your refueling container, will prevent the entry of foreign material into the fuel tank. It is also recommended that a good in-line filter be installed between the tank and carburetor.
2. Do not forget to clean the filters regularly to remove dirt and lint that accumulate on the filter screens. Also, clean the carburetor itself occasionally.
3. At the end of each operating session, drain out any fuel that may remain in the fuel tank. Afterwards, energize the glow-plug and try to restart the engine, to burn off any fuel that may remain inside the engine. Repeat this procedure until the engine fails to fire. Do this while the engine is still warm.
4. Then, inject some after-run oil into the engine, and rotate the engine with an electric starter for 4 to 5 seconds to distribute the oil to all the working parts.

Note:

Do not inject after-run oil into the carburetor as this may cause the O-rings inside the carburetor to deteriorate. These procedures will reduce the risks of starting difficulties or corrosion after a period of storage.

5. Finally, when cleaning the exterior of the engine, use methanol or a household cleaning agent. Do not use gasoline, kerosene, or any petroleum based chemical which can damage silicone fuel tubing.

Dirt and dust may lodge in ○ marked places.



If the engine will not develop normal performance after long time running due to wearing of parts. It is suggested to replace necessary parts when the following symptoms are detected.

- ◆ Engine sound changes and easily overheats.
- ◆ Power has dropped extremely.
- ◆ Idle is unstable and/or engine tends to stop at idle.

In most cases, ball bearings, cylinder & piston assembly, connecting rod and/or crankcase have become worn. Check the parts carefully and replace them if necessary.

| Symptom | |
|---|---|
| Engine fails to fire. | |
| Cause | Corrective action |
| Fuel tank is empty. Fuel not reaching the engine. | Fill the tank with fuel and repeat Priming procedure. |
| Glowplug element is burnt out. Glowplug battery discharged | Replace glowplug. Recharge or replace the battery. |
| Clogged fuel filter Air cleaner and silencer inside is dirty. | Clean or replace fuel filter. Replace cleaner element and clean inside silencer. |
| Over priming | Remove glowplug and pump out excess fuel. |
| Fuel tubing is disconnected. Fuel tubing is kinked, split or has a hole. | Connect fuel tubing securely. Check the tubing carefully and replace if necessary. |
| Incorrect servo linkage | Connect correctly after setting servo at neutral. |
| Reverse rotating direction of starter box. | Make sure it rotates counter clockwise seen from crankshaft side. |

| Symptom | |
|--|---|
| Engine fires intermittently but does not run. | |
| Cause | Corrective action |
| Insufficient fuel in the tank. | Fill the tank with fuel. |
| Deteriorated glowplug | Replace glowplug. |
| Clogged fuel filter Air cleaner and silencer inside is dirty. | Clean or replace fuel filter. Replace cleaner element and clean inside silencer. |
| Engine overheated | Wait until engine is cool. |
| Incorrect clutch release | Adjust the tension of clutch spring. |
| Starting battery disconnected too soon. | Do not disconnect plug battery and wait until r.p.m. becomes stable. |
| Vibration causing air bubbles in fuel. | Install "O" rings to the tank screws to prevent bubbles. |

0.S. ENGINE

| Symptom | |
|---|---|
| Unstable idle | |
| Cause | Corrective action |
| Unsuitable glowplug | Use suggested glowplug in the instructions. |
| Unsuitable fuel | Do not use extremely high nitro or low oil content fuel. |
| Extremely light flywheel | Add heavier flywheel. |
| Silencer is disconnected or has play | Install silencer securely. |
| Symptom | |
| Not reaching expected peak r.p.m. | |
| Cause | Corrective action |
| Insufficient warming up or running-in. | Set the needle only after warming up. Complete running-in. |
| Silencer or manifold is not securely connected or disconnected. | Replace seal ring. Check the connections and secure them. |
| Fuel tubing from tank is split or broken. | Replace the tubing. |

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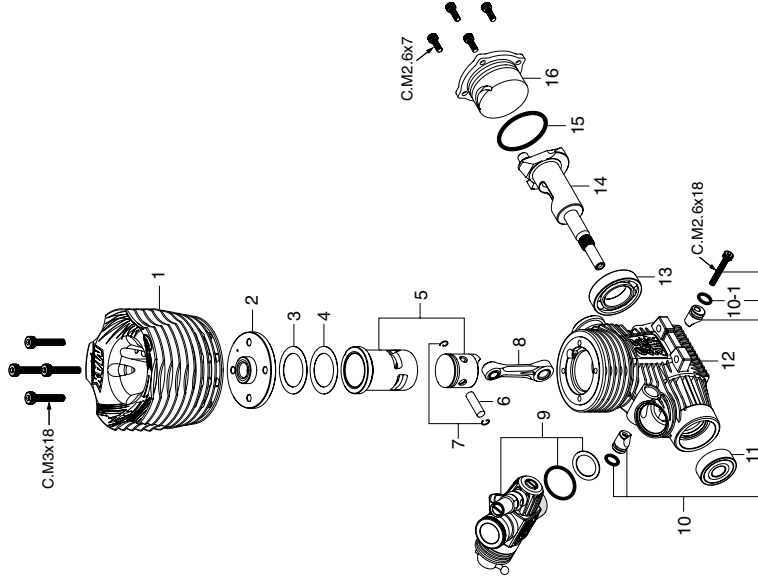
0.S. ENGINE

| Symptom | |
|--|--|
| Poor response | |
| Cause | Corrective action |
| Deteriorated glowplug | Replace glowplug. |
| Incorrect carburetor settings | Readjust low r.p.m. range with metering needle and mixture control valve. |
| Incorrect setting of transmitter Exponential function. | Check the transmitter setting. |
| Incorrect linkage | Make sure the throttle servo linkage does not bind and is connected correctly. |
| Symptom | |
| Poor r.p.m. drop | |
| Cause | Corrective action |
| Throttle position open too far. | Close metering needle to adequate position to lower idle r.p.m. |
| Carburetor not fully seated | Install carburetor securely. |
| Metering needle closed too far. | Open the metering needle a little. |

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| No. | Code No. | Description |
|------|----------|---------------------------------|
| 1 | 22414000 | Outer Head |
| 2 | 22414100 | Inner Head |
| 3 | 22014160 | Head Gasket (0.2mm) |
| 4 | 22014170 | Head Gasket (0.1mm) |
| 5 | 22413000 | Cylinder & Piston Assembly |
| 6 | 22016000 | Piston Pin |
| 7 | 21817000 | Piston Pin Retainer (2pcs.) |
| 8 | 23755020 | Connecting Rod |
| 9 | 22481000 | Carburetor Complete (Type 21J2) |
| 10 | 23981740 | Carburetor Retainer Assembly |
| 10-1 | 24881824 | "O" Ring (2pcs.) |
| 11 | 23731020 | Crankshaft Ball Bearing (Front) |
| 12 | 22411000 | Crankcase |
| 13 | 23730020 | Crankshaft Ball Bearing (Rear) |
| 14 | 22412000 | Crankshaft |
| 15 | 23107100 | Cover Gasket |
| 16 | 22417000 | Cover Plate |
| | 71641300 | Glow Plug P3 |
| | 22826140 | Exhaust Seal Ring |
| | 22884250 | Dust Cap Set (3mm, 16mm, 18mm) |

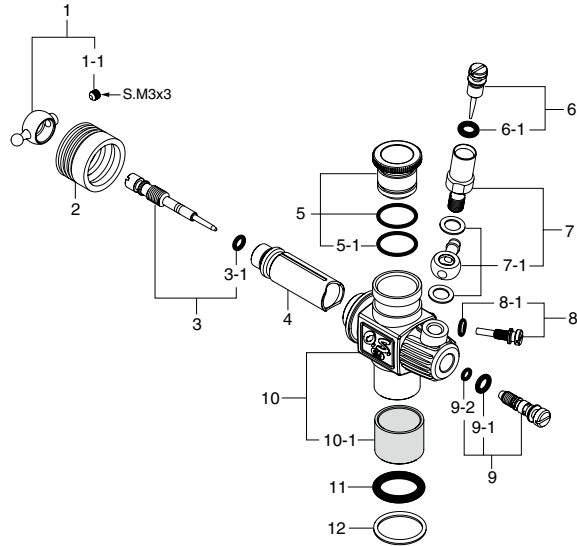
The specifications are subject to alteration for improvement without notice.



CAP SCREW SETS (10pcs./sets)

| Code No. | Size | Pcs. used in an engine |
|----------|---------|--|
| 79871020 | M2.6x7 | Cover Plate Retaining Screw (4pcs.) |
| 79871055 | M2.6x18 | Carburetor Retainer Retaining Screw (1pc.) |
| 79871180 | M3x18 | Cylinder Head Retaining Screw (4pcs.) |

* Type of screw
C...Cap Screw



* Type of screw
S...Set Screw

| No. | Code No. | Description |
|------|----------|--------------------------------------|
| 1 | 23781400 | Ball Link No.3 |
| 1-1 | 26381501 | Retaining Screw |
| 2 | 23981520 | Dust Cover |
| 3 | 22082340 | Metering Needle Assembly |
| 3-1 | 27881820 | "O" Ring (2pcs.) |
| 4 | 22848210 | Slide Valve |
| 5 | 71533272 | Carburetor Reducer 7mm (YELLOW) |
| 5-1 | 22615000 | "O" Ring |
| 6 | 23618197 | Needle Assembly |
| 6-1 | 46066319 | "O" Ring |
| 7 | 22082940 | Needle Holder Assembly |
| 7-1 | 22082950 | Fuel Inlet (No.15) |
| 8 | 22848160 | Throttle Stop Screw |
| 8-1 | 27881820 | "O" Ring |
| 9 | 22082600 | Mixture Control Valve Assembly |
| 9-1 | 46066319 | "O" Ring (L) (2pcs.) |
| 9-2 | 22781800 | "O" Ring (S) (2pcs.) |
| 10 | 22848130 | Carburetor Body (w/Thermo Insulator) |
| 10-1 | 23781110 | Thermo Insulator |
| 11 | 29015019 | Carburetor Rubber Gasket |
| 12 | 23818190 | Carburetor Sealing Washer |

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■ **GLOWPLUG**

- P3 (71641300)
- P4 (71641400)
- P5 (71641500)



■ **M2000SC EXHAUST HEADER PIPE ASSEMBLY**
(72106440)

- Header Pipe Spring (2pcs.) (72101272)
- Exhaust Seal Ring (2pcs.) (22826140)

■ **T-2060SC WN TUNED SILENCER ASSEMBLY**
(72106130)

- Exhaust Seal Ring (2pcs.) (22826140)
- Joint Spring (3pcs.) (72106042)

■ **T-2060SC WN TUNED SILENCER COMPLETE SET**
(72106135)

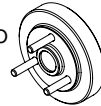
- T-2060SC WN Tuned Silencer Assembly (72106130)
- M2000SC Exhaust Header Pipe Assembly (72106440)

■ **28XZ HYPER FLYWHEEL SET (For MUGEN)** (71812000)

- 28XZ Hyper Flywheel MUGEN (71812100)
- Collet (71801100)

(For KYOSHO) (71813000)

- 28XZ Hyper Flywheel KYOSHO (71813100)
- Collet (71801100)



■ **SUPER AIR CLEANER 203**
(72413000)

- 203 Filter Element (4pcs.) (72413200)



■ **O.S. SPEED DRIVER TOOLS**

| Code No. | Description |
|----------|---------------------------------------|
| 71410150 | O.S. SPEED HEX WRENCH DRIVER 1.5 |
| 71410200 | O.S. SPEED HEX WRENCH DRIVER 2.0 |
| 71410250 | O.S. SPEED HEX WRENCH DRIVER 2.5 |
| 71410300 | O.S. SPEED HEX WRENCH DRIVER 3.0 |
| 71411200 | O.S. SPEED HEX BALL WRENCH DRIVER 2.0 |
| 71411250 | O.S. SPEED HEX BALL WRENCH DRIVER 2.5 |
| 71412300 | O.S. SPEED FLAT HEAD SCREWDRIVER 3.0 |
| 71413550 | O.S. SPEED NUT DRIVER 5.5 |
| 71413600 | O.S. SPEED NUT DRIVER 6.0 |
| 71413700 | O.S. SPEED NUT DRIVER 7.0 |

■ **O.S. SPEED CLUTCH WRENCH & ADJUSTER**
(71415300)

■ **O.S. SPEED FLYWHEEL KEY**
(71415200)

■ **O.S. SPEED FLYWHEEL PULLER**
(71415100)

■ **O.S. SPEED PLUG WRENCH**
(71520100)

| Code No. | Description |
|----------|--|
| 71414015 | O.S. SPEED HEX WRENCH TIP ONLY 1.5 |
| 71414020 | O.S. SPEED HEX WRENCH TIP ONLY 2.0 |
| 71414025 | O.S. SPEED HEX WRENCH TIP ONLY 2.5 |
| 71414030 | O.S. SPEED HEX WRENCH TIP ONLY 3.0 |
| 71414120 | O.S. SPEED HEX BALL WRENCH TIP ONLY 2.0 |
| 71414125 | O.S. SPEED HEX BALL WRENCH TIP ONLY 2.5 |
| 71414230 | O.S. SPEED FLAT HEAD SCREWDRIVER TIP 3.0 |
| 71414355 | O.S. SPEED NUT DRIVER TIP ONLY 5.5 |
| 71414360 | O.S. SPEED NUT DRIVER TIP ONLY 6.0 |
| 71414370 | O.S. SPEED NUT DRIVER TIP ONLY 7.0 |

■ **DUST CAP SET** ■ **CAP SCREW SET**

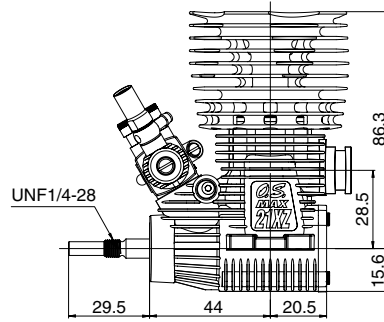
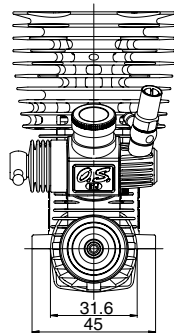
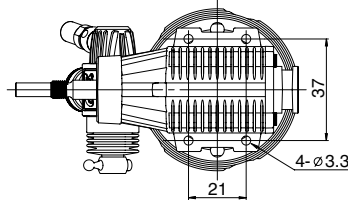
- **3mm** (5pcs.) (73300305) M2.6x7 (79871022)
- **16mm** (3pcs.) (73301612) M2.6x18 (79871055)
- **18mm** (3pcs.) (73301812) M3x18 (79871180)



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SPECIFICATIONS

| | |
|--------------------|-----------------------------------|
| ■ Displacement | 3.49cc (0.21 cu.in.) |
| ■ Bore | 16.27mm (0.64 in.) |
| ■ Stroke | 16.8mm (0.66 in.) |
| ■ Practical R.P.M. | 4,000-40,000 r.p.m. |
| ■ Power output | 2.55 ps / 2.59 hp / 33,000 r.p.m. |
| ■ Weight | 362 g (12.77 oz.) |



Dimensions (mm)

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