INSTRUCTIONS FOR O.S. MAX-46VX-DFABC ENGINE

It is of vital importance, before attempting to operate your engine, to read the general 'SAFETY INSTRUCTIONS AND WARNINGS' section below and to strictly adhere to the advice contained therein. Also, please study the entire contents of this instruction sheet, 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 aircraft, radio-control equipment, etc., are accessible for checking at the same time.

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 or abused.

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 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

These cover events which might involve serious(in extreme circumstances, even fatal) injury.

⚠ NOTES

These cover the many other possibilities, generally less obvious sources of danger, but which, under certain circumstances, may also cause damage or injury.

⚠ WARNINGS

- Never touch, or allow any object to come into contact with, the rotating propeller and do not crouch over the engine when it is running.

- A weakened or loose propeller may disintegrate or be thrown off and, since propeller tip speeds with powerful engines may exceed 600 feet(180 metres) per second, it will be understood that such a failure could result in serious injury. (see 'NOTES' section relating to propeller safety).

- 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 naked 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.

- 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.

- 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 was designed for model aircraft. 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.

⚠ NOTES

- Be sure to use the silencer (muffler) supplied with the engine. Frequent exposure to an open exhaust may eventually impair your hearing. Such noise is also likely to cause annoyance to others over a wide area.

- Fit a top-quality propeller of the diameter and pitch specified for the engine and aircraft. Locate the propeller on the shaft so that the curved face of the blades faces forward-i.e. in the direction of flight. Firmly tighten the propeller nut, using the correct size wrench.
- Always check the tightness of the propeller nut and retighten it, if necessary, before restarting the engine, particularly in the case of four-stroke-cycle engines. If a safety locknut assembly is provided with your engine, always use it. This will prevent the propeller from flying off in the event of a "backfire", even if it loosens.
- If you fit a spinner, make sure that it is a precision made product and that the slots for the propeller blades do not cut into the blade roots and weaken them.
- Discard any propeller which has become split, cracked, nicked or otherwise rendered unsafe. Do not attempt to repair such a propeller: destroy it. Do not modify a propeller in any way, unless you are highly experienced in tuning propellers for specialized competition work such as pylon-racing.
- Preferably, use an electric starter. The wearing of safety glasses is also strongly recommended.
- Take care that the glow plug clip or battery leads do not come into contact with the propeller. Also check the linkage to the throttle arm. A disconnected linkage could also foul the propeller.
- After starting the engine, carry out any needle-valve readjustments from a safe position behind the rotating propeller. Stop the engine before attempting to make other adjustments to the carburettor.
- Adjust the throttle linkage so that the engine stops when the throttle stick and trim lever on the transmitter are fully retarded. Alternatively, the engine may be stopped by cutting off the fuel supply. Never try to stop the engine physically.
- Take care that loose clothing (ties, shirt sleeves, scarves, etc.) do not come into contact with the propeller. Do not carry loose objects (such as pencils, screwdrivers, etc.) in a shirt pocket from where they could fall through the propeller arc.
- Do not start your engine in an area containing loose gravel or sand. The propeller may throw such material in your face and eyes and cause injury.
- For their safety, keep all onlookers (especially small children) well back (at least 20 feet or 6 metres) when preparing your model for flight. If you have to carry the model to the take-off point with the engine running, be especially cautious. Keep the propeller pointed away from you and walk well clear of spectators.
- 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 the propeller is casually flipped over compression WITHOUT the glowplug battery being reconnected. Remember this if you wish to avoid the risk of a painfully rapped knuckle!

INSTALLATION NOTES

Mount the engine securely on rigid hardwood mounts or metal bearers. For highest performance and safe running, it is recommended that the bearers should be as heavy and as rigid as possible. Make sure that the engine bearers are parallel and that their mounting surfaces are in the same plane. Use 3.5mm or 4-40 steel screws, such as Allen type, with locknuts, for bolting the engine to the bearers. As this is a rear-induction engine, please observe the following points.

- The distance between the carburettor air intake and any bulkhead near the engine should be at least 13mm (1/2"), otherwise the induction efficiency will be reduced.
- Vacuum Clean the model's " engine room " before installing the engine, in order to eliminate the risk of foreign matter, such as sandpaper residue, glass wool, dust, etc., being drawn through the carburettor.
- Apply a liquid polymer thread-lock, such as " LOCTITE ", to all screw and nuts in the " engine room ", to prevent them from loosening while the engine is running. If such nuts or screws are loosened and become detached, they might be drawn through the carburettor and cause severe damage to the engine.

RUNNING-IN (" Breaking-in ")

The O.S. special piston/cylinder construction and the use of twin ball-journal main bearings, plus a bronze bushed connecting rod, etc., enable this engine to be operated after a shorter running-in period. Preliminary bench running can be omitted. However, for long life and peak performance, please observe the following procedure:

Install the engine in your model and fly it with a rich needle-valve setting so that it runs at a fast ' four-stroke ' for the first two or three flights. Then, readjust the needle-valve for a slightly less rich mixture (i.e. at a reduced speed ' two-stroke ') for the next four to six flights.

FUEL

The most powerful model engine fuels currently available are those containing a high proportion of nitromethane. This engine is designed to accept the stresses imposed by such fuels. However, it should be appreciated that, with any engine, the use of high-nitro fuels inevitably shortens engine life and certain precautions should be observed. For example, castor-oil will not blend properly with fuels containing more than 40-50% nitromethane. It then becomes necessary to substitute part (preferably), or all, of the castor-oil content with a suitable synthetic lubricant.

Generally speaking, synthetic lubricants give less protection to an engine in the event of the needle-valve being set too lean. There are many types of synthetic oil. Those which provide a cleaner exhaust (i.e. do not stain the model) are usually among the least suitable since they tend to burn with the fuel and their lubrication and cooling properties are severely reduced. Therefore, choose an oil that provides adequate lubrication at high temperature and pressures and make doubly sure that you do not run your engine with too lean a needle-valvesetting.

For consistent performance and long engine life, it is essential to use a good quality fuel containing NOT LESS THAN 18% lubricant.

GLOWPLUGS

Since the compatibility of the glow-plug and fuel can have a considerable effect on performance and reliability, it is suggested that the user selects the R/C type plug found most suitable after tests. Recommended O.S. glow-plug are No.8.

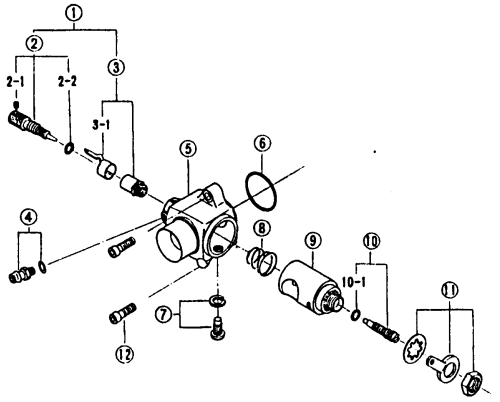
CARBURETTOR

The special O.S. automatic carburettor described in the attached instruction sheet is fitted, as standard, to this engine. An exhaust pressurized fuel system should be used with this carburettor for best results.

- As the carburettor is hidden inside the fuselage in some installations, it may be difficult to adjust the needle-valve. In this case, it is advisable to use the In-Flight Control Needle Valve which is available as an optional extra part (Code No.71703009).

SPECIFICATIONS

Displacement	7.45cc (0.455cu.in.)
Bore	22.0mm (0.866in.)
Stroke	19.6mm (0.772in.)
Practical r.p.m.	2,500-28,000
Power output	2.5BHP/23,000r.p.m.
Weight	———
Shaft thread	UNF1/4-28



PARTS LIST

No.	Code No.	Description
①	2 5581 900	Needle Valve Assembly
②	2 2681 980	Needle(w/ " 0 " ring & set-screw)
2-1	2 6381 501	Set-screw
2-2	2 4981 837	" 0 " Ring
③	27381 940	Needle Valve Holder Assembly
3-1	2 6711 305	Ratchet Spring
④	2 2681 953	Fuel Inlet
⑤	2 5581 100	Carburettor Body
⑥	2 5515 000	Carburettor Rubber Gasket
⑦	2 5581 220	Rotor Guide Screw(w/washer)
⑧	2 8281 500	Rotor Spring
⑨	2 5581 200	Carburettor Rotor
⑩	2 8281 300	Mixture Control Screw(w/ " 0 " ring)
10-1	2 7881 820	" 0 " Ring
⑪	2 8281 400	Throttle Lever Assembly
⑫	2 5581 700	Caburettor Fixing Screw

PARTS LIST

Code No.	Description
2 5501 000	Crankcase
2 5502 000	Crankshaft
2 5501 800	Rear Housing
2 5503 000	Cylinder & Piston Assembly
2 5504 000	Cylinder Head Assembly
2 5541 100	Cylinder Head (A)
2 5504 010	Cylinder Head (B)
2 5505 000	Connecting Rod
2 5306 019	Piston Pin
2 4517 000	Piston Pin Retainer
2 5358 019	Drive Washer
2 3209 003	Propeller Washer
2 3210 007	Propeller Nut
2 5513 000	Screw Set
2 5514 000	Gasket Set
2 4530 000	Crankshaft Ball Bearing(Front)
2 7330 010	Crankshaft Ball Bearing (Rear)
2 5516 000	Rear Drum
2 5581 000	Carburettor Complete(40A)
2 5326 130	Exhaust Adaptor(404)

The above specifications are subject to change without notice for improvement.

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