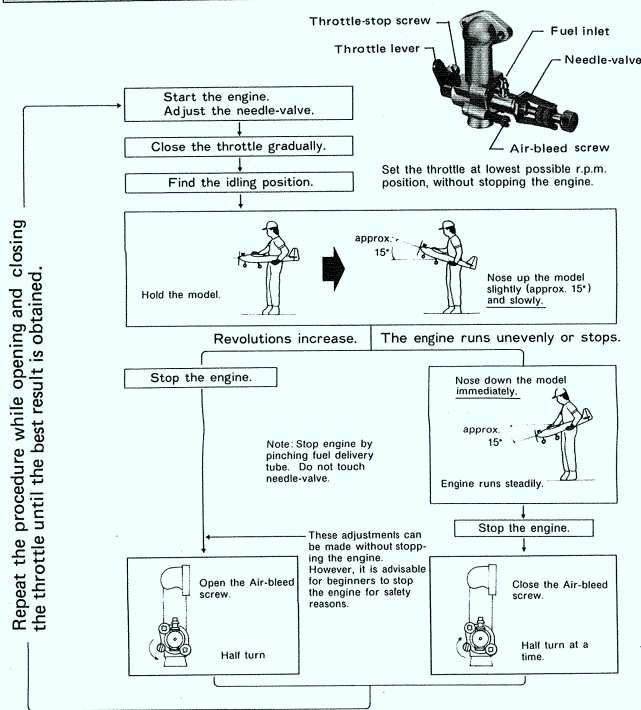


CARBURETTOR THROTTLE ADJUSTMENT



Attention: Do not leave the glowplug connected to the battery while adjusting the carburettor throttle.

TROUBLE SHOOTING WHEN THE ENGINE FAILS TO START

Three key points

For quick, reliable starting, the following three conditions are required:

- ① Good compression. ② Adequate "glow" at glowplug. ③ Correct mixture.

If the engine fails to start, or does not keep running after being started, check symptoms against the following chart and take necessary corrective action. Note: The most common causes of trouble are marked with three asterisks, the less common problems with one or two asterisks.

Symptom	Factor	Cause	Corrective action
Engine fails to fire.	①	*** Insufficient battery capacity	Recharge lead-acid cell or replace dry battery. (Note: An unused, or almost unused, dry battery may sometimes be of insufficient capacity if it is "old stock".)
	②	* Glowplug element is burned out.	Replace glowplug. Check that applied voltage is not too high.
	③	* Something wrong with battery leads.	Check glowplug heating using other leads.
Engine fires intermittently but does not run.	①	*** Engine "flooded" due to excessive priming.	Disconnect battery from glowplug and flip the propeller several times to eject excess fuel. (Priming is not necessary at this time.)
	②	*** Insufficient priming.	Repeat priming procedure referring to ① Priming.
	③	*** Incorrect heating of glowplug.	Voltage too high or too low. Re-check and re-adjust referring to "BEFORE STARTING" paragraph 4.
Engine fires once or twice, then fails to fire.	①	* Flipping is not quick enough.	Disconnect battery from glowplug and flip the propeller several times to eject excess fuel. (Priming is not necessary at this time.) Practice flipping prop more vigorously. (When starting the engine by flipping the prop counter-clockwise.)
	②	*** Insufficient battery capacity.	Recharge lead-acid cell or replace dry battery. (Note: An unused, or almost unused, dry battery may sometimes be of insufficient capacity if it is "old stock".)
Engine starts but revolutions decrease and engine eventually stops.	①	*** Insufficient priming.	Repeat priming procedure referring to ① Priming.
	②	*** Mixture too rich.	Close needle-valve half turn (180°) and wait for several minutes then re-start. (Priming is not necessary.)
Engine starts, then revolutions increase and engine cuts out.	①	* Fuel not reaching the engine.	Make sure that tank is filled with fuel. Check that there is not something wrong with fuel tubing (kinked or split). Check that carburettor is not clogged with dirt.
	②	*** Mixture too rich.	Close the needle-valve a little.
Engine stops when battery leads are disconnected after starting.	①	*** Mismatch of glow plug and fuel.	Change fuel or glowplug.
	②	*** Mismatch of glow plug and fuel.	Change fuel or glowplug.

The engine starts but the prop rotates in the reverse direction. Reversed rotation of a model engine may be caused in a number of ways. If the engine persists in running in the reverse direction after several re-starts, change starting direction to opposite rotation, or reduce the priming quantity. Too high a voltage at the glowplug may also cause reversed running. Remove glowplug and check that element glows bright red, not bright orange/yellow.

VALVE CLEARANCE ADJUSTMENT

Valve clearances are correctly set before your engine leaves the factory and, in normal use, will seldom require adjustment. However, if, after a considerable amount of running time has accumulated, a loss of power is detected, or if the engine has to be disassembled or repaired as a result of a crash, valve clearances should be checked and readjusted if necessary. For checking and adjusting the valve clearances, a valve adjusting kit is available containing two feeler gauges and two wrenches.

Note: Valve clearances on this engine must be checked and re-set only when the engine is COLD.

- 1) Remove the rocker cover by unscrewing two Allen screws from the rocker box on top of the cylinder head.
- 2) Turn propeller until compression is felt, then turn it one quarter turn and stop. Both valves should now be closed.
- 3) The required valve clearance is between 0.04 mm and 0.10 mm (.0015 to .004 in) measured between the valve stem and rocker-arm. Use the 0.04 mm (thinner one) and 0.10 mm (thicker one) feeler gauges to check clearance. The 0.04 mm feeler should pass through the gap: the 0.10 mm gauge should not.
- 4) If the gap is found to be less than 0.04 mm or more than 0.10 mm, carefully slacken the locknut on the rocker-arm with the 5 mm spanner, turn adjusting screw to open or close gap, then retighten locknut. Finally, re-check gap and readjust if necessary.

Important

Incorrect valve clearances may cause difficult starting (due to valve not closing properly) or loss of power (due to valve not opening sufficiently).

SILENCER

The FS-40 SURPASS and FS-48 SURPASS are supplied with silencer as standard, while the FS-20 and FS-61 are not. For these engines, a silencer is available as an optional part.

Installation for FS-20

Slide the silencer over the exhaust pipe, and secure it with two set-screws supplied with the silencer. Re-check tightness of screws when engine is hot.

Installation for FS-40 SURPASS, FS-48 SURPASS & FS-61

Screw the exhaust header pipe into the exhaust port until it "bottoms", then unscrew it just sufficiently to achieve the required exhaust outlet angle. Secure the pipe in this position by tightening the locknut firmly against the cylinder head with the wrench supplied. Then, screw the silencer onto the end of the header pipe and tighten locknut firmly. Re-check tightness of locknuts when engine is hot.

CARE AND MAINTENANCE

To ensure that you obtain long life and peak performance from your engine, observe the following.

1. Avoid running the engine under dusty conditions. If necessary, lay a sheet of plywood or hardboard in front and under the nose of the model when starting the engine.
2. Foreign matter in the fuel can cause the carburettor jet to be partially clogged. Therefore:
 - rinse out the fuel tank with methanol or fuel before installing it
 - fit a fuel filter in the fuel delivery tube between tank and carburettor
 - fit a fuel filter to the outlet of your squeeze bottle, or to the pump inlet if you use a manual or electric pump
 - do not leave your fuel container open needlessly
 - check filters periodically and clean them when necessary.
3. Do not leave raw fuel in the engine at the conclusion of a flying session: it may cause corrosion. The best practice is to disconnect the delivery tube from the carburettor while the engine is running. After the engine has run dry, inject preserving oil or light machine oil liberally into the crankcase, via the breather hole, to protect the working parts from corrosion. Remaining fuel in the tank should also be drained off.
4. Clean the exterior of the engine with a clean cotton cloth. If this is not done, oil and dirt will burn onto the outside of the engine each time it is run and the engine will soon become blackened.
5. If the engine is not in use for a while (more than two months) remove the glowplug and rinse out the interior with kerosene (not gasoline), by rotating the crankshaft. Shake out residue, then inject light machine-oil through the exhaust pipe and breather hole, again rotating the shaft to distribute the protective oil to all working parts.
6. Avoid unnecessary dismantling of your engine.

INSTRUCTIONS FOR O.S. FS SERIES ENGINES

(FS-20, FS-40 SURPASS, FS-48 SURPASS & FS-61)

IMPORTANT: Before attempting to operate your engine, please read through these instructions so as to familiarize yourself with the controls and other features of the engine. Also, pay careful attention to the recommendations contained in the "Safety Instructions and Warnings" leaflet enclosed.

The FS Series engines are up-to-date overhead-valve four-stroke-cycle engines for model aircraft use and are the outcome of a long period of technical development. The FS Series engines are produced by the world's oldest and largest model engine manufacturing company; a company which also pioneered the quantity production of model four-cycle motors.

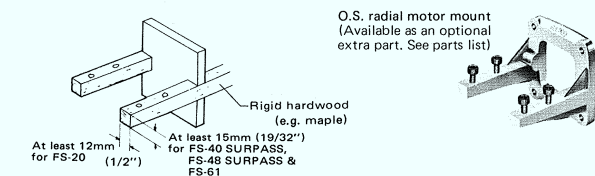
Like all O.S. engines, the FS Series engines are manufactured to standards of skilled craftsmanship that have been developed through 50 years of O.S. engine production history. Fully computerized modern precision machinery and selected top quality materials are employed to ensure consistent performance and long life.

Note: The engine shown in these instructions is the FS-20.

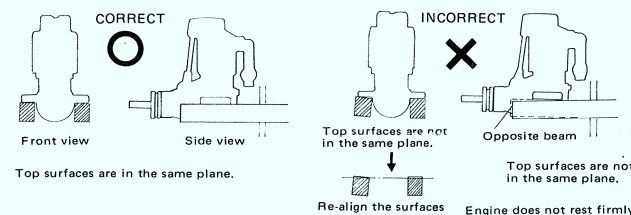
INSTALLATION OF THE ENGINE

Installation in the model

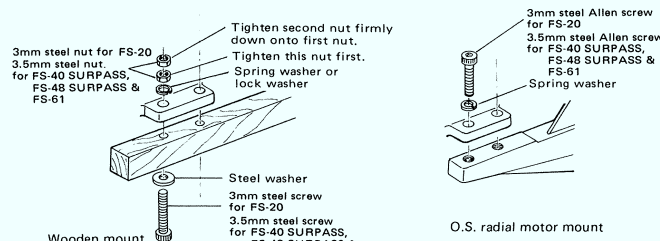
A typical method of beam mounting is shown below, left.



Make sure that the mounting beams are parallel and that their top surfaces are in the same plane.

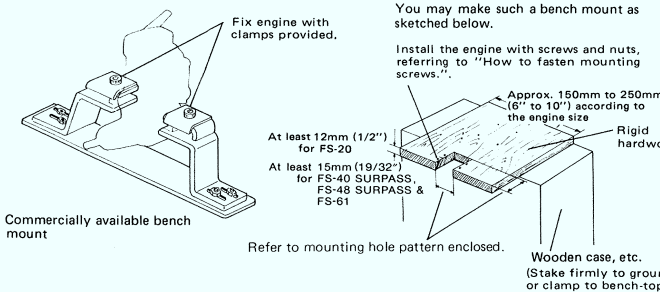


How to fasten the mounting screws.



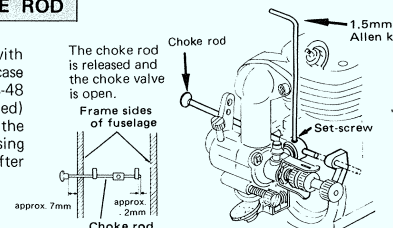
Bench mount

Usually, the engine is installed directly in the model. If, however, you are unfamiliar with handling model engines, it is recommended that you first run the engine on a bench mount as shown below.



INSTALLATION OF CHOKE ROD

The FS Series engines are equipped with self-reopening choke valves. In the case of the FS-20, FS-40 Surpass and FS-48 Surpass, the choke rod (supplied) to the length indicated, then secure the rod by tightening the set screw, using 1.5mm Allen wrench (supplied), after installing the engine.

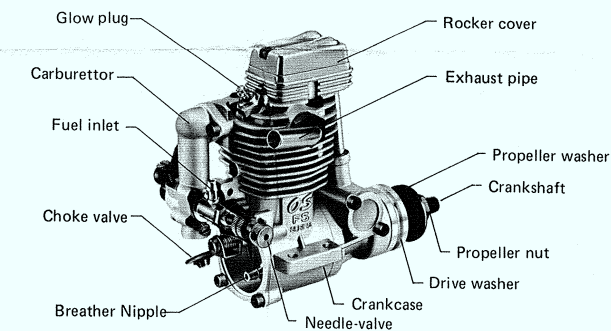


NEEDLE VALVE EXTENSION

The needle-valve supplied with this engine is designed to incorporate an extension so that, when the engine is enclosed within the fuselage, the needle-valve may be adjusted from the outside. Cut the L-shaped rod supplied to the required length, insert it into needle's centre hole and secure it by tightening the set-screw in the needle-valve knob with 1.5mm Allen key supplied.

NAMES OF ENGINE PARTS

In the following instructions, engine parts are identified as shown:

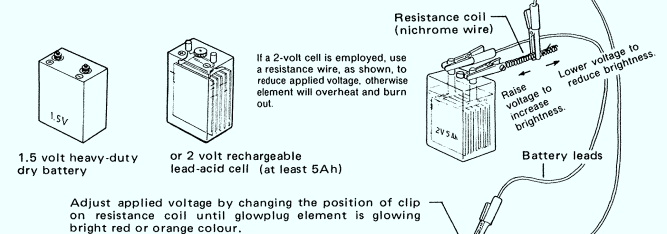


BEFORE STARTING

Tools, accessories, etc.

The following items are necessary for operating the engine.

- 1 Fuel
Model glowplug engine fuel of good quality, preferably containing a small percentage of nitromethane. (See "Advice on selection of fuel and propeller")
- 2 Glowplug
An O.S. Type "F" glowplug (recommended) is fitted to the engine.
- 3 Propeller
Suggested propellers are shown in the separate instructions sheet.
- 4 Glowplug battery
The power source for heating the glowplug may be either a large heavy-duty 1.5-volt dry cell, or preferably, a 2-volt rechargeable lead-acid cell (accumulator).



5 Plug wrench

Used for tightening glowplug. The O.S. two-way socket wrench, which also fits the propeller-nut, is available as an optional accessory. Also, the O.S. long socket wrench w/plug grip is very convenient for use when the engine is hidden in cowl.

6 Battery leads

These are used to conduct current from the battery to the glowplug. Basically, two leads, with clips, as illustrated above, are required, but, for greater convenience, twin leads with special glowplug connectors, as shown on the right, are commercially available.

7 Fuel tank

Suggested tank size is shown in the separate instruction sheet. For bench running, a rectangular tank of a little larger capacity may be found more convenient.

8 Fuel bottle or pump

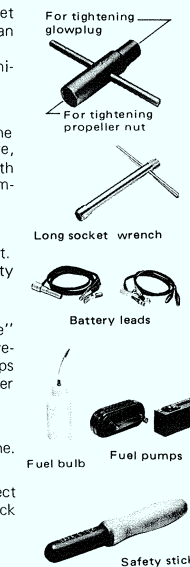
For filling the fuel tank, a simple, polyethylene "squeeze" bottle, with a suitable spout, is all that is required. Alternatively, one of the purpose-made manual or electric fuel pumps may be used to transfer fuel directly from your fuel container to the fuel tank.

9 Silicone tubing

This is required for the piping between the fuel tank and engine.

10 Safety ("Chicken") stick

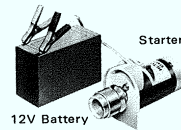
This is used to flip the propeller for starting and so protect one's fingers against possible injury. An alternative is a thick ribbed rubber finger protector.



O.S. ENGINES MFG. CO. LTD.
6-15 3-chome Imagawa Higashiumiyoshi-ku
Osaka 546, Japan. TEL. Osaka (06) 702-0225

11 Electric starter and starter battery

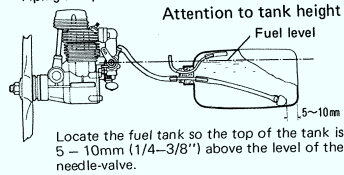
An electric starter may be used to start the engine. However, this, together with the 12-volt battery required for it, is a rather costly luxury. Most engines can be started more quickly with an electric starter, but, with practice, even beginners will find FS Series engines quite easy to start by hand.



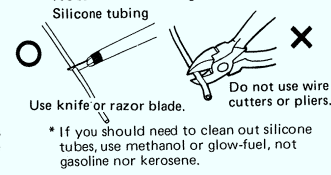
Fuel and pressure lines

Connect suitable lengths of silicone tubing, as illustrated, after installing the engine.

Piping and position of fuel tank



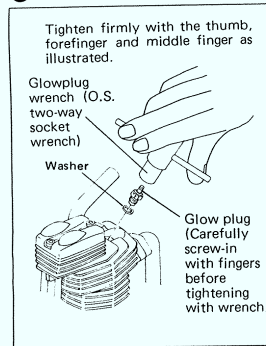
Note: When cutting silicone tubing



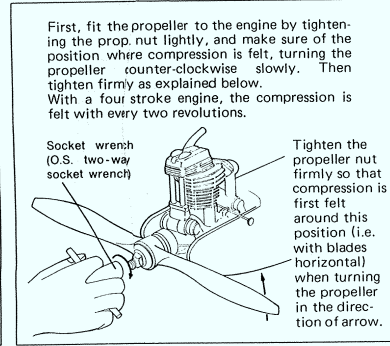
STARTING THE ENGINE

Preparations

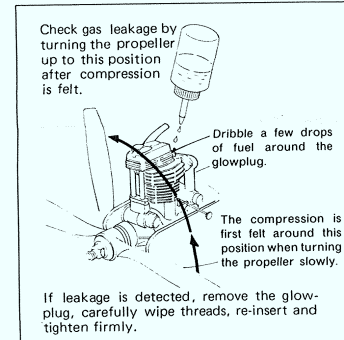
1 Fitting the glowplug



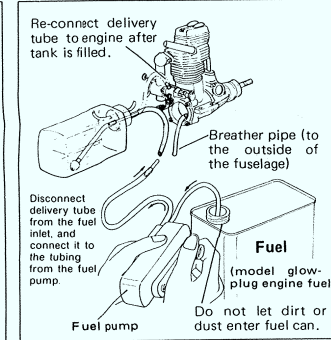
2 Fitting the propeller



3 Checking for gas leakage

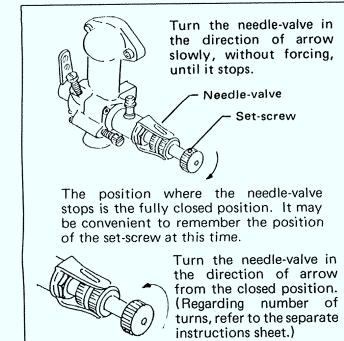


4 Filling the fuel tank

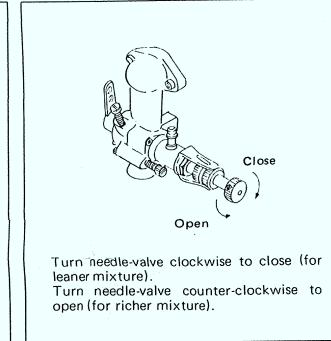


Starting

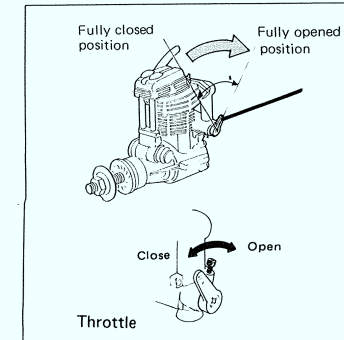
5 Setting the needle-valve



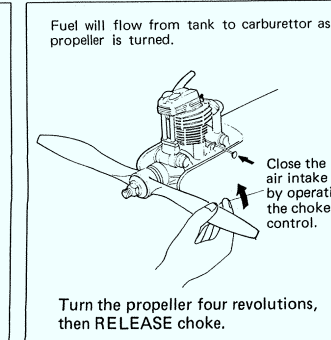
6 Opening and closing of the needle-valve



7 Open the throttle fully



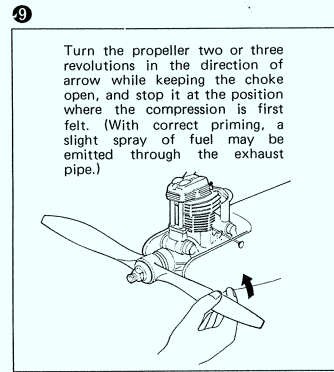
8 Priming



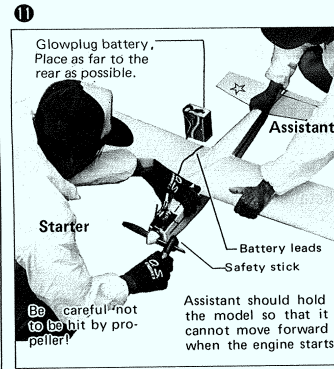
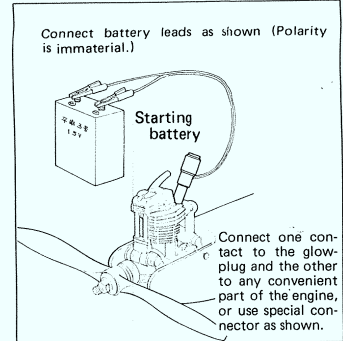
Priming quantity

WARNING

If very strong compression is felt when trying to turn the propeller counterclockwise, too much fuel has been drawn into the engine. In this case, do not use force but turn the propeller clockwise slowly to eject excess fuel through exhaust pipe.



10 Heat glowplug



17 Needle-valve adjustment - Summary

	A	B
Methanol	75%	70%
Castor Oil	20%	20%
Nitromethane	5%	10%

ADVICE ON SELECTION OF FUEL & PROPELLER

Fuel

Use a good quality commercial fuel containing 5 - 15% nitromethane or one of the blends shown in the table. Fuel "A" is suitable for running-in and ordinary use. Fuel "B" is for use when more power is required and for improved flexibility. Note that even a small quantity of nitromethane (3 - 5%) will improve flexibility, making the needle-valve adjustment less critical and improving throttle response. Use only materials of the highest purity. Synthetic oils are permissible but are less tolerant of a "lean run" than castor-oil. If, therefore, a synthetic lubricant is used in the fuel, readjust the needle-valve to a slightly richer setting, as a safety measure, in case the fuel/air mixture becomes too lean through manoeuvres in flight. If a more powerful fuel is used, the engine should be checked out to make sure that it is sufficiently run-in to operate on that particular fuel without overheating. Do not use fuels containing less than 20% lubricant.

Attention: Methanol (methyl alcohol) and nitromethane are poisonous. Keep out the reach of small children. Use and keep in a well ventilated area, also keep away from heat and open flame.

Propeller

Suggested propellers are shown in the separate instruction sheet. As the ideal propeller diameter, pitch and blade area vary according to the size, weight and type of model, final propeller selection can be made after practical experiment.

Warning: Check the balance of the propeller before fitting it to the engine. Unbalanced propellers cause vibration and loss of power. There is always a danger, especially with nylon propellers (and depending on engine speed and weather conditions), of the propeller fracturing and a blade flying off and, obviously, this can cause injury. Therefore, never crouch over the engine when it is running and keep all onlookers well back - preferably behind the model. If a spinner is used, make sure that the spinner notches are large enough to clear the propeller blades and so do not cut into and weaken the blade roots.

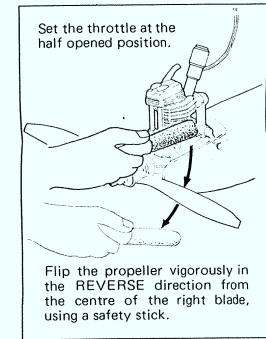
CARBURETTOR

The FS Series engines are equipped with a throttle type carburettor which provides a wide range of engine speed control. With the throttle lever linked to a suitable electric servo in the model, movement of the throttle control on the transmitter will enable engine revolutions to be varied, proportionally, from idling speed to full power.

The carburettor of your engine has been factory set for the approximate best results and no adjustment (except to the needle-valve) should be required provided that the fuel tank is correctly located, as previously described. After the engine has been run-in, check the operation of the throttle according to the following chart. Re-adjust the controls only when necessary.

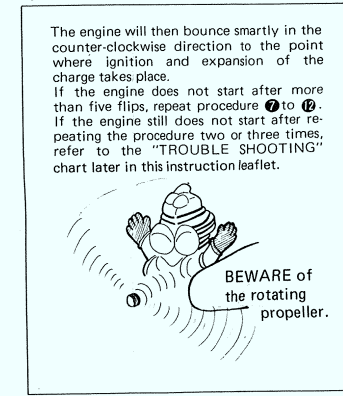
Note for those starting a model engine for the first time.

12 Flip propeller to start

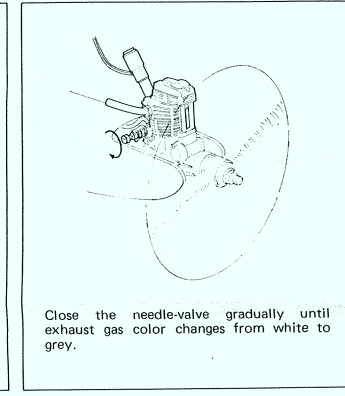


Note for those starting a model four-stroke engine for the first time. (To be read in conjunction with steps 1 and 2.)
Your engine may also be started by flipping the propeller counter-clockwise (i.e. in the normal running direction). However, the bounced start method, as described in steps 12 and 13, is considered a safer and more reliable procedure for the beginner. With a four-stroke engine, especially if it is over-primed, flipping the prop in the running direction can result in a sharp "kick" as the engine fires.
WARNING
When it is intended to start the engine, as recommended, by flipping the prop in the reverse direction, be sure to position the propeller blade so that the beginning of the compression-stroke is felt as the prop is turned in the normal (counter-clockwise) running direction, as noted in steps 2 and 3. This ensures that the propeller is free to rotate a full 1 1/2 turns before being bounced back cleanly in the running direction. Any attempt to flip the prop clockwise, from the position where compression is first felt while turning the prop COUNTERCLOCKWISE, is likely to be met by strong resistance and pre-ignition.

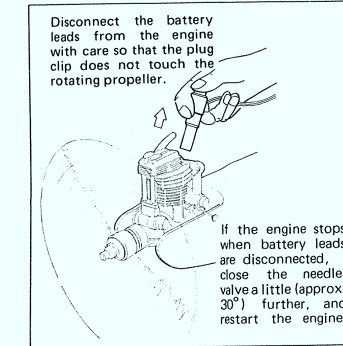
13 Engine starts



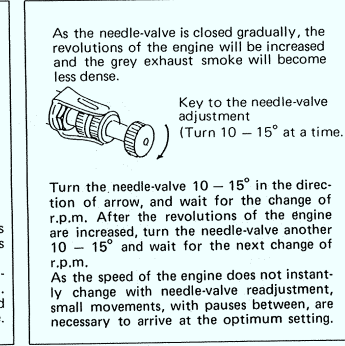
14 Needle-valve adjustment (1)



15 Disconnect battery leads



16 Needle-valve adjustment (2)



Starting the engine with an electric starter

If an electric starter is used, the procedures are the same as for hand starting outlined above, except for steps 2 and 3 which are modified as follows:

2 Fit an O.S. solid alloy spinner-nut to the engine (available as an optional extra part) for centering the rubber drive insert of the starter. Alternatively, a spinner assembly, enclosing the propeller boss, may be used, but make sure that it is of sturdy construction and that the spinner shell does not loosen when the starter is used.
Warning: When using a spinner assembly, make sure that the notches in the spinner shell are large enough to clear the propeller blades and so do not cut into and weaken the blade roots.

12 Re-set the throttle at one-third open from the fully closed position. Bring the starter into contact with the spinner-nut or spinner and depress the starter switch for one or two seconds. Repeat if necessary. When the engine fires, withdraw the starter immediately.

Attention: Never close the choke valve when applying the starter. Such an action will cause an excess quantity of fuel to be drawn into the cylinder and result in an hydraulic lock that may damage the engine.

Subsequent starting procedure

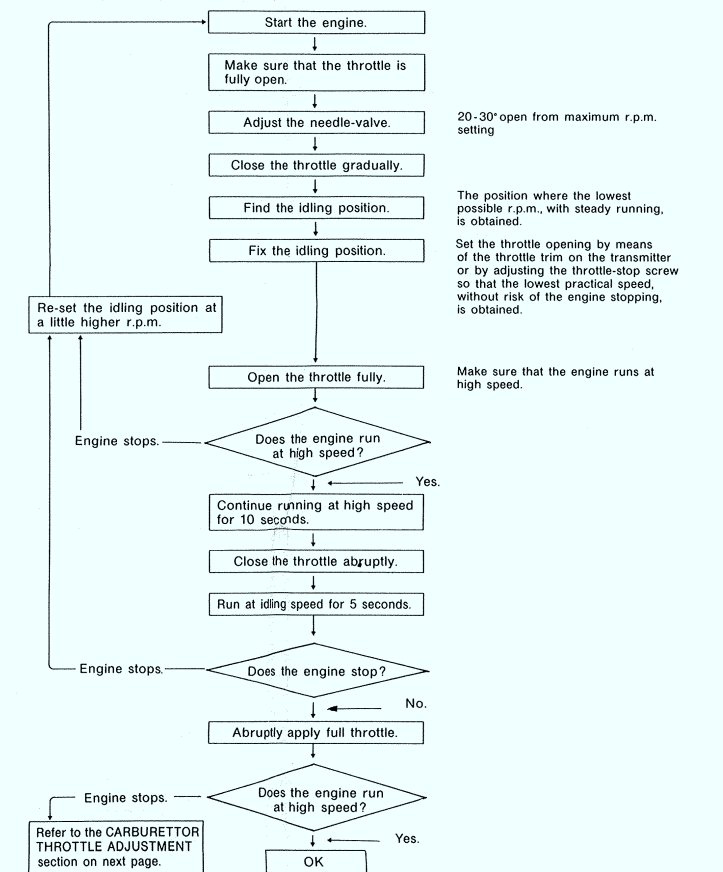
Once the optimum needle-valve setting has been established (see 17 "Needle-valve adjustment - Summary") the procedure for starting is simplified as follows:

- 1) Open the needle-valve one half-turn (180°) from the optimum setting.
- 2) When the engine is cold, prime the engine by rotating the propeller two revolutions with the choke closed. When it is warm, after a run, first try just flipping the propeller with the throttle in the idling position after re-energising the glowplug. If the engine does not restart, re-prime it by closing the choke valve while rotating the propeller twice with the throttle open. Initially, high temperature inside the combustion chamber may turn the liquid fuel into gas and emit it through the exhaust pipe. Therefore, repeat the priming procedure once or twice until the cylinder becomes cool enough for restarting.
- 3) Set the throttle one-third open from the fully closed position, re-energize the glowplug and flip the prop. When the engine starts, re-open the throttle and re-adjust the needle-valve to the optimum setting.
Note: When re-starting the engine on the same day, provided that atmospheric conditions have not changed significantly, it may be practicable to re-start the engine on its optimum (running) needle-valve setting. Also, if the engine is being re-started immediately after a run (i.e. hot), priming should not be necessary.

RUNNING-IN ("Breaking-in")

All internal-combustion engines benefit, to some degree, from extra care when they are run for the first few times - known as running-in or breaking-in. This is because the working parts of a new engine take a little time to settle down after being subjected to high temperatures and stresses. However, because O.S. engines are made with the aid of the finest modern precision machinery and from the best and most suitable materials, only a very short and simple running-in procedure is required and can be carried out with the engine installed in the model. The process is as follows:

- 1) Start the engine and, with the throttle fully open, open the needle-valve an extra half turn (180°) from the optimum setting. This will produce a rich mixture that will result in cooler running. Allow the engine to run out a full tank on the ground. (Avoid dusty surroundings.)
- 2) Now fly the model with the needle-valve re-set 20-30 degrees open from the optimum setting (i.e. 40°-60° from the highest rpm setting).
- 3) Close the needle-valve very slightly on successive flights so that the engine is running on its optimum needle setting at the fifth or sixth flight.



O.S. FS-48 サーパス 4サイクルエンジン取扱説明書

INSTRUCTIONS FOR O.S. FS-48 SURPASS FOUR STROKE CYCLE ENGINE

このたびは、OS FS-48サーパスをお買いあげいただきありがとうございます。このエンジンは、OS 4サイクルエンジンの優れた資質を受け継ぎ、新しい時代の個性として、圧倒的な力強さを与えられた、高性能パワフルエンジンです。その優れた性能をフルにご活用いただくために、本説明書を参考にしながら「OS 4サイクルエンジンFSシリーズ取扱説明書」をお読みください。

プロペラ

プロペラは、機体（大きさ、重量、翼面積）や用途（飛行速度）等により、実際に使用された上で最良のものを選ばなければなりません。次の表を参考にしてください。なお、ブレイクインには11×7のプロペラを使用してください。

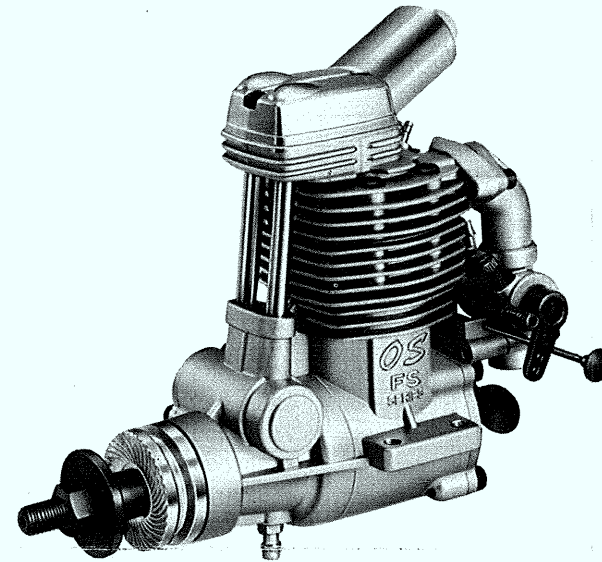
機体のタイプ	適合プロペラ
比較的大きな翼面積の機体 (ゆっくりとした飛行を目的とした古典機など)	12×6, 12.5×6
軽飛行機タイプのスケール機や 一般のスポーツ機、練習機など	11×6, 11×7, 11×7.5 12×5, 12×6
曲技を目的としたスポーツ機 またはスタント練習機	10×8, 10×9, 10.5×8 10.5×9, 11×6, 11×7

燃料タンク

約200ccの燃料タンクを使用してください。約12分の飛行が可能です。

ニードルバルブ

始動の時、全閉より2～3回開いてください。



要目 SPECIFICATIONS

行程体積	Displacement	7.89cc (0.481 cu.in.)
ボア	Bore	23.0mm (0.906in.)
ストローク	Stroke	19.0mm (0.748in.)
実用回転数	Practical R.P.M.	2,200-12,000r.p.m.
出力	Power output	0.8BHP/12,000r.p.m.
重量 (サイレンサー付)	Weight (including silencer)	412g (14.5oz.)

Detailed information on the operation and care of O.S. FS Series engines will be found in the enclosed large fully-illustrated 4-page sheet entitled "INSTRUCTIONS FOR O.S. FS SERIES FOUR-STROKE-CYCLE ENGINES".

This smaller sheet is supplementary to the full instructions and is to advise you of the recommended propeller sizes, fuel tank size and needle-valve setting for the FS-48 Surpass model only, together with specifications and part numbers.

IMPORTANT: Before attempting to operate your FS-48, please read through both instruction sheets and also pay careful attention to the "Safety Instructions and Warnings" leaflet also enclosed.

The FS-48 Surpass is one of a new generation of O.S. four-stroke engines that benefits from our unrivalled experience in model four-stroke engine design and production, which began with the O.S. FS-60, the engine that brought the advantages of the four-stroke-cycle to the notice of the model world and began the model four-stroke revolution.

PROPELLER

The choice of propeller depends on the size and weight of the model and on the type of flying envisaged. Determine the best size after practical experiment. As starting points, suggested propellers are listed below.

For scale models of aircraft with large wing area and low wing loading	12 x 6 or 12.5 x 6
For light-aircraft type models (sport, scale or trainer)	11 x 6, 11 x 7, 11 x 7.5, 12 x 5 or 12 x 6
For sport type aerobatic models	10 x 8, 10 x 9, 10.5 x 8, 10.5 x 9, 11 x 6 or 11 x 7

For running-in purposes, an 11 x 7 propeller will be suitable.

FUEL TANK

A fuel tank of 200cc (6.8 oz.) capacity will run this engine for approximately 12 minutes.

NEEDLE-VALVE OPENING

Turn the needle-valve 2 to 3 turns counter-clockwise from the fully closed position.

部 品 表 PARTS LIST

品名コード Code No.	品 名	Description	品名コード Code No.	品 名	Description
45581000	クランクケース	Crankcase	45860000	インテーク・バルブ 一式	Intake Valve Assembly
45801100	カム・カバー	Cam Cover	45260010	エキゾースト・バルブ 一式	Exhaust Valve Assembly
45802000	クランクシャフト	Crankshaft	45261010	ロッカー・アーム 一式	Rocker Arm Assembly
45803100	シリンダー・ライナー	Cylinder Liner	45261400	ロッカー・サポート 一式	Rocker Support Assembly
45803200	ピストン	Piston	45262010	カムシャフト	Camshaft
45803400	ピストン・リング	Piston Ring	45664000	カムフォロア	Cam Follower
45804000	シリンダー・ヘッド(バルブ付)	Cylinder Head (w/Valve Ass'y)	45866000	プッシュ・ロッド	Push Rod
45804100	シリンダー・ヘッド	Cylinder Head	45866100	プッシュ・ロッド・カバー 一式	Push Rod Cover Assembly
45204210	ロッカー・カバー	Rocker Cover	45869000	インテーク・マニホールド 一式	Intake Pipe Assembly
45205000	コンロッド	Connecting Rod	22681953	ブリーザ・ニッブル(ワッシャ付)	Breather Nipple (w/Washer)
45806000	ピストン・ピン	Piston Pin	71615009	グロー・プラグ(タイプF)	Glow Plug Type "F"
45807000	カバー・プレート	Cover Plate	45881000	キャブレター・スロツトル	Carburettor Complete
45808000	ドライブ・ワッシャ(キー付)	Drive Washer (w/Key)	45825010	サイレンサー本体	Silencer
23209003	プロペラ・ワッシャ	Propeller Washer	45226000	エキゾースト・マニホールド 一式	Exhaust Header Pipe Assembly
23210007	プロペラ・ナット	Propeller Nut	45884000	チョーク・バルブ 一式	Choke Valve Assembly
45813000	スクリュー・セット	Screw Set	*72200060	タペット調整キット	Valve Adjusting Kit
45814100	ヘッド・ガスケット	Head Gasket	*71913000	ラジアル・マウント・セット	Radial Motor Mount
26531005	クランクシャフト・ベアリング(前)	Crankshaft Ball Bearing (Front)	*45262091	逆転カムシャフト	Reverse-rotation Camshaft
27330000	クランクシャフト・ベアリング(後)	Crankshaft Ball Bearing (Rear)	*23024008	スピナー・ナット	Spinner Nut
45231100	カムシャフト・ベアリング	Camshaft Ball Bearing			

*印 オプション Optional extra

本仕様は改良のため予告なく変更することがあります。
The specifications are subject to alteration for improvement without notice.

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