

MDS Instruction Manual

For Motors fitted with the "C2" and "Pro2" Carburettors

Please read the following instruction manual carefully before running your engine

Thank you for purchasing an MDS engine. The following information and recommendations are presented to help you in the operation and maintenance of your MDS engine. It is extremely important that you read and thoroughly understand the assembly and break-in procedures. The few minutes devoted to familiarising yourself with these instructions will save you hours of frustration when the time comes to operate the motor. Also, please ensure you read the enclosed safety guidelines and warranty information. We hope you enjoy the many features and benefits of your MDS engine including its high performance and trouble free operation.

IMPORTANT - SAFETY INSTRUCTIONS AND WARNINGS

READ BEFORE OPERATION

The MDS engine you have purchased is a highly efficient internal combustion engine that is capable of producing tremendous power which if not used in a responsible manner could seriously damage you or other people. Always ensure your engine is properly maintained and treated with the utmost respect during operation.

WARNINGS

- ALWAYS ensure the engine is securely mounted on a stand or model.
- NEVER touch or allow any object to touch or come into contact with the rotating engine parts or propeller.
 - ALWAYS check the propeller nut is secure.
 - ALWAYS check your propeller for nicks or damage.
- A disintegrating propeller could cause serious injury and damage.
- MODEL FUEL IS POISONOUS - Do not swallow or allow it to come into contact with the eyes.
- MODEL FUEL IS HIGHLY FLAMMABLE - Store in cool area. DO NOT allow it to come into contact with a naked flame.
- NEVER operate your engine in an enclosed space. Model engines produce carbon monoxide which is highly dangerous.
- DO NOT touch any part of the engine until it has cooled. Model engines generate tremendous heat. Contact with the silencer, cylinder head or any other part of the engine may result in a serious burn.

READ THESE INSTRUCTIONS END TO END BEFORE OPERATION

If you are in any doubt with regard to any point in these instructions or with the operation of your engine contact Ripmax Plc or your local distributor.

IMPORTANT NOTICE:

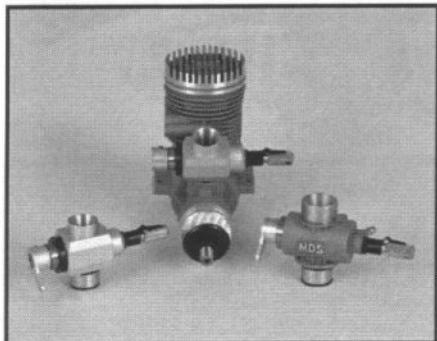
Ripmax Plc or its distributors do not accept any responsibility for injury, damage or loss that may arise from the use or misuse of this engine or any part of it. Neither do they accept any responsibility for damage or injury arising as a consequence of non observance of the instructions and procedures laid out in these instructions or any supplementary instructions supplied. The owner or user of the engine is totally responsible for its safe operation and maintenance.

To Install your new engine, please follow these simple steps using the Key Numbers () on the exploded diagram to identify the parts: Inside the MDS box, you will find the various components of your MDS engine. These will vary depending on the motor specification.

- 1 x Engine with 'C2' or 'Pro 2' carburettor
- 1 x Silencer / Muffler (Key No. 1 or 2) (depending on motor specification - some motors are NOT supplied with silencers)
- 1 x Tool set (contents will vary depending on engine purchased)
- 1 x Remote Needle Valve Unit (only supplied with certain motors - also available as an option)

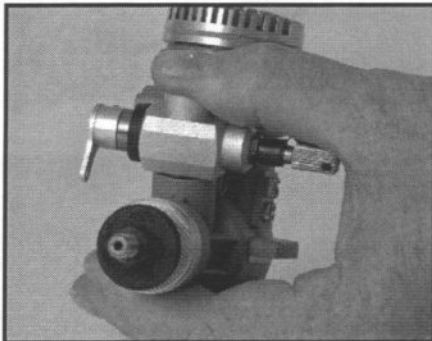
Additional basic items required for operation but NOT supplied are: Propeller, Glowplug, Glowstart or 2v Battery and Glowplug clip, Chicken finger or Electric starter and Fuel. Other items such as a silencer may be required depending on the type of motor. Please consult your retailer or contact Ripmax Plc if in any doubt.

1. Installation

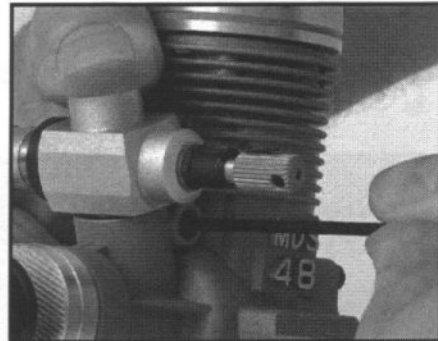


1.1 'C2' or 'Pro 2' Carburettor with Integrated Needle Valve.

Undo the carb pinch-bolt retainer (3) using the Allen wrench (supplied) and carefully rotate the carburettor until it is at right angles to the engine.



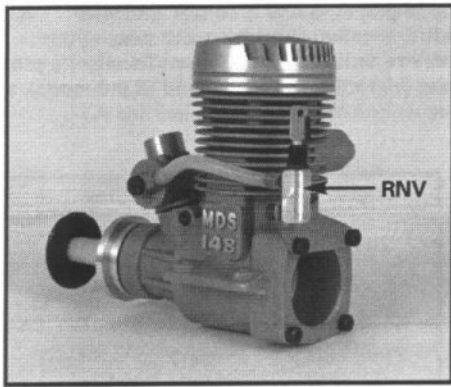
1.2 Next push down firmly on the carb to seat the carburettor and compress the O-ring. A gap will allow excess air to leak in and affect the operation of your engine.



1.3 Once the carburettor is seated and aligned correctly, keeping pressure on the carb to hold it in place, tighten the pinch-bolt securely. Do not over tighten.

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2. Remote Needle Valve (RVN).

Some motors come with a remote needle valve unit (4). This is also an optional part.

The RVN allows the adjustment of the high speed (main) needle at the back of the motor or in a remote, easily accessible, location on the fuselage. When the RVN is fitted to the fuselage ensure the mounting is secure and transmits the minimum of vibration to the RVN.

3. Engine Installation

The safe installation of any engine is critical for both operation and safety. Whether in a model or on a stand only use hardened steel bolts and locking nuts to attach the engine. These will protect against potential metal fatigue and the possibility of the engine coming loose due to vibration during operation. Regularly check for tightness - a loose engine is extremely dangerous.

4. Fuel Tank Location

The location of the fuel tank can affect the operation of your engine. We suggest that you position it as close to the engine as possible - whether you are running the engine in a test stand or fitted in your model. The centreline of the fuel tank should be slightly lower than the fuel spray nozzle located in the center of the carburettor. Always check all fuel line connections for leaks, prior to use, to ensure consistent engine operation.

5. Silencer Installation

Locate the silencer mounting bolts (7) from the tool set and attach the silencer (1 or 2), as shown in the exploded parts diagram, using the Allen wrench. Tighten the mounting bolts securely. When tightened the machined faces should seal perfectly. However, to ensure a perfect seal or if a leak does occur, place a doubled piece of PTFE pipe sealing tape (available from any DIY store and some model shops) over the exhaust port and refit the silencer. There is no need to cut out a hole for the exhaust as the gases escaping from the engine will blow a hole through the tape the first time the motor is run. After the initial engine run check the bolts for tightness. If, due to vibration, the silencer bolts come loose, a small amount of threadlock can be used to secure them. Use Threadlock NOT Studlock (Grip Thread-Lock Item No. S-RA20). Your MDS engine is now ready to be run.

6. Glow Plug Selection

Your MDS engine is supplied without a glow plug. For best results, choose a long reach plug that has a medium heat range, such as an Enya No. 3 (Item No: L-EP03) or FirePower No. 5. (Item No: L-FP05). These plugs are designed for general use (both ABC & Ringed engines) and should provide you with a quick start, reliable idle and a smooth pick up.

Note: NEVER use a cheap, low quality glow plug on any engine as this will not give a reliable idle and smooth operation - this is a false economy.

Always ensure before starting that the glowplug power supply has sufficient power to light the plug otherwise starting will become very difficult.

To install the plug, fit the washer provided (this is important otherwise damage could be done to the piston) and screw into the head of the motor. Tighten firmly. Do not over-tighten otherwise you may strip the thread in the head.

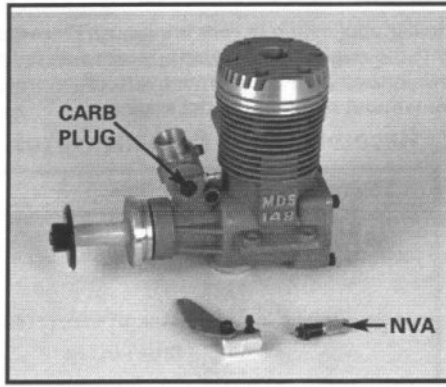
7. Fuel

IMPORTANT - Model engine fuel is poisonous and flammable. DO NOT allow it to come into contact with the mouth or eyes. Store in a clearly marked container with a childproof safety top. Store out of the reach of children. Keep away from naked flames, excessive heat or anyone smoking.

Always use clean, fresh, high quality fuel. Because dirt is the number one enemy of any engine, we highly recommend the use of a fuel filter between your fuel pump and the tank filler line. Also install one between the tank and the carburettor (Item No: L-IP176).

A fuel containing 5%~15% nitromethane and 20% castor oil or castor/synthetic oil, is the ideal choice for all MDS engines. If castor oil or castor/synthetic blend fuels are unavailable you may use a fuel that only contains a synthetic oil for its lubricant. We suggest however, that you always run the engine at a slightly richer setting to prevent overheating damage caused by running too lean.

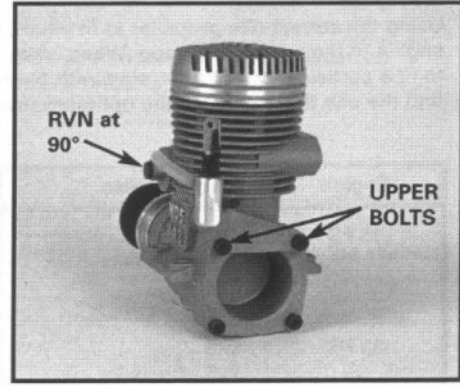
Note: DO NOT use cheap non branded type fuels in any engine - this is a false economy. These will not give a reliable idle, smooth operation and good top end. Cheap fuel can also increase the possibility of internal corrosion damage in the engine (see section 16).



2.1 Fitting.

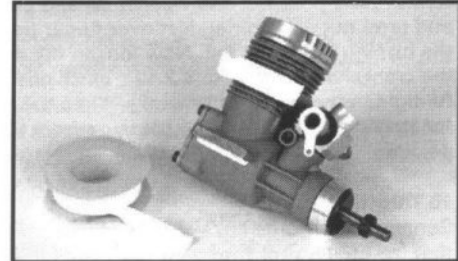
Carry out steps 1.1~1.3 as per the standard carb. Next carefully remove the Needle Valve Assembly (NVA) (5) from the carb using an 8mm wrench (not supplied).

Take the carb plug bolt (6), fit the washer and screw into the hole in the carb left by the NVA. Tighten firmly. Take the NVA and, checking the washer is in place, install it into the RVN body. Tighten firmly.



2.2.

Remove the two upper bolts from the back plate and attach the completed RVN to the engine using the back plate bolts. The aluminium valve body should be on the left of the motor (see photo). Connect the silicone tubing supplied between the carburettor fuel nipple and the RVN supply nipple. The Aluminium RVN body can be rotated to the position required (see above). Once-in position tighten the retaining bolt firmly.



8. Propeller Selection

Using the correct size propeller to fit your particular application is very important. Please use the selection chart below to match your engine to the correct size prop. When breaking-in the engine, please use a recommended prop size as listed on the chart. To select a prop to fit a particular application, start with the break-in prop, then experiment with other prop sizes when the engine is fitted to the model, to find the one that produces the optimum results, without overloading the engine.

Recommended Propeller Sizes

Engine	Propeller Size
.18 FS	7x4
	7x6 - Break-in
	8x4
	8x5
.28 FS	9x5
	9x6 - Break-in
	10x5
.38 FS	9x6.5
	10x6 - Break-in
	10x6
.40 FS	9x6.5
	10x5
	10x6 - Break-in

Engine	Propeller Size
.48 FS	10x6
	10x7 - Break-in
	11x7
.58 FS	10x8
	11x7 - Break-in
	11x8
	12x6
.68 FS	11x7
	11x8 - Break-in
	12x6
	12x7

Engine	Propeller Size
.78 FSR	12x6
	12x7 - Break-in
	12x8
	13x6
1.48 FSR	15x10
	16x8 - Break-in
	16x10
	17x8
2.18 FSR	18x6
	18x10 - Break-in
	20x6

Helicopter motors can be broken in on the bench using the same propeller sizing as the equivalent Aero version above or installed in the helicopter. **IMPORTANT:** Breaking-in a heli engine in a helicopter must be done with the main rotor blades attached. Ask your dealer or a local heli club/flyer for assistance. If in any doubt ring Ripmax Technical department for assistance.

IMPORTANT: Prior to installation, it is extremely important to make sure the propeller is balanced. Unbalanced props are not only dangerous to operate, but can lead to premature failure of both the engine and prop. Prop balancers can be purchased from any model shop and are a worthwhile investment. Always secure the propeller tightly, but do not crush the wood or composite material of the prop. Remember to inspect the prop thoroughly before use for any nicks or signs of fatigue which may lead to prop failure at a critical time. The results could be very dangerous for you or any by-standers. Whenever possible, we recommend that you use high quality Glass Filled Nylon or Wooden propellers as they are less likely to break under the strain of high RPM.

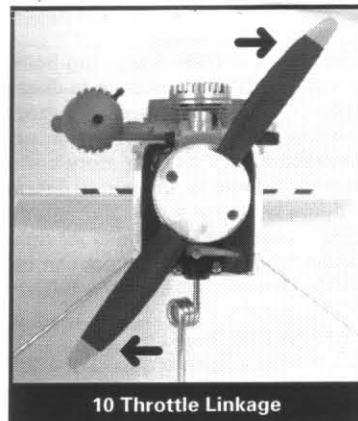
Spinners: If you are using a spinner, make sure the cut-outs for the blades are deep enough to prevent any contact between the spinner and the prop blades. This will prevent any possibility of the spinner cutting into the propeller blade and weakening it.

9. Propeller Installation

Remove the prop nut and washer (8) and place the propeller on the motor. Next replace the washer and prop nut and tighten just over finger tight. Rotate the propeller anti-clockwise until resistance to the turning motion is felt. Now loosen the prop nut and rotate the propeller anti-clockwise, without the crankshaft turning, to a 2.40 o'clock position, as if the propeller were the hands on a clock face. Re-tighten the prop nut securely. When the motor is turned over 'anti-clockwise' - the correct rotation for starting the engine - the pressure from the cylinder compression should be felt at the 2 o'clock position.

10 Throttle Linkage

Connect the throttle linkage to the throttle arm (9). Make sure the movement is friction free. Check that the carburettor throttle arm travel, fully open to fully closed, matches the transmitter stick movement. The carburettor should be fully closed with the stick trim in the fully down position, so the motor can be cut dead. The trim is moved upward for starting and operation. Some mechanical adjustment may be needed with non-computer transmitters to set the idle. On computer transmitters the ATV/EPA can be adjusted to set the idle position.



11. Break-in Procedures

Prior to running your new MDS ringed or ABC engine for the first time, it is important you understand the break-in procedure for your type of engine. The purpose of "break-in" is to achieve the proper seating between the cylinder sleeve and the piston or piston/ring. Most modellers prefer to break-in their motors with the engine installed in the model. Alternatively you can mount your engine securely in a test stand. This allows you safe and easy access to all parts of the engine during the break-in period. Good ventilation is critical.

ABC or Ringed - If you're not sure if your engine is 'ringed' or 'ABC' look through the exhaust port and rotate the crankshaft until you can see the top of the piston. If it is ringed you will see one or two dark metal rings about 3mm from the top. If it is ABC the piston will be one piece and all the same colour.

NOTE: When turning over an ABC engine it will be very tight at the top dead Centre (TDC). It may even click/squeak as it goes over centre. This is normal. The tightness creates a good seal between the piston and liner and is necessary for correct operation.

11.1 Ringed Engine Break-in

Excessive heat build up during the first few runs can damage the ring and cylinder. A very rich needle setting, more fuel than air in the mixture, is required to keep the engine cool while the ring seats. While running rich, the engine will create quite a bit of smoke and the exhaust will be very oily. After 2-3 tank fulls at a rich setting the high speed needle can be leaned out a few clicks at a time for best performance, remembering that too lean a setting at any time will damage the ring and cylinder.

11.2 ABC Engine Break-in

The break-in of an ABC engine requires the same basic procedures as a ringed engine, except for a couple of minor differences. The first few runs should be at a slightly rich setting, but not as rich as a ringed engine, close to normal operating temperatures. Heat helps the piston seat in the liner. Also the time involved is shorter. ABC break-in procedure is fully detailed in Section 12.



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- 12. Starting, Running and Breaking-in an ABC Engine**
To start the engine, you will need the following items:
- Fuel - good quality, preferably with 5% nitromethane and 20% castor or synthetic oil (Ask your model shop for assistance).
 - A 1.2~1.5 volt glow plug battery with connector or a glowstart. Check to make sure power source is fully charged.
 - A chicken stick or electric engine starter.
- Starting Procedure**
- 12.1** Install the plug of your choice (with it's washer). Fill the fuel tank with the recommended fuel via the carburettor fuel line.
- 12.2** Connect the fuel line from the tank to the carburettor inlet nipple. Do not connect the pressure line (see section 14) to the silencer pressure nipple at this time.
- 12.3** Turn the Main/High-speed needle valve (5) clockwise until you feel a slight resistance. This closes the needle valve completely. Do Not force the needle tightly closed.
- 12.4** Next open the main needle (5), anti-clockwise, a total of 2~2.5 turns. This will allow the motor to start and run.
- 12.5** Push the throttle arm to the fully open position or open the throttle on the transmitter.
- 12.6** Making sure glow plug battery is Not connected, place your finger over the carburettor air intake, to 'Choke' it and slowly rotate the propeller anti-clockwise 2~3 times, until you see fuel flowing up through the fuel line into the carburettor. Now close the throttle to just above idle (carb throat hole open approximately 3mm).
Do Not choke the carburettor if an electric starter is used. Apply the starter briefly until fuel is drawn into the carburettor.
- 12.7** Connect the glow plug power supply or attach the glowstart.
- 12.8** Next holding the prop 'firmly' in your hand slowly turn the propeller anti-clockwise through the compression stroke of the engine. If the engine has fuel, air and a good glow from the plug, you should feel a pronounced bump (ignition) against this movement, which means the engine is ready for starting. Now, using the chicken stick, give the propeller a quick anti-clockwise flick and the engine will start. If it doesn't, flick repeatedly until it starts. DO NOT FORGET: If you are using a model for running in, ensure the model is held securely when starting.
- During the engine start procedure, there is always the danger of flooding the engine with too much fuel. Should this occur, disconnect the glow plug battery, disconnect the fuel line, remove the glow plug and turn the engine upside down to remove the excess fuel. Replace the glow plug, reconnect the fuel line and continue with the engine starting procedure.
- Note: When using an electric starter, before starting, pull through a complete compression cycle by hand (without glow plug power supply attached) to check that the engine has not been flooded with fuel. Only then should you attempt to start the engine with the electric starter. Failure to do so may result in a hydraulic lock causing damage to your engine that is NOT covered under the warranty.
- 12.9 TAKE CARE:** Once the engine has started be extra careful to avoid the rotating propeller especially when tuning the engine in the next section.
- Allow the running engine to warm up for about 1 minute, then smoothly open the throttle to full power - it may cough, splutter and run roughly. If the motor keeps on dying when the throttle is opened 'close' the main needle (turn clockwise) 1/4 turn.
- When running, slowly turn the main needle "clockwise" until you notice an audible increase in the RPM (Revolutions Per Minute). The clockwise rotation "Leans out" the motor fuel mixture - less fuel, more air. Continue to lean out and increase the RPM until you have the engine running at a slightly rich setting - a light grey smoke will still be coming from the exhaust. When the engine is running smoothly, disconnect the glow plug battery. Allow the engine to run 1~2 minutes at this richer setting.
- 12.10** Now, slowly turn the main needle clockwise again to continue leaning out the engine, and increasing the RPM, until you reach it's maximum RPM. You'll know when you've reached maximum RPM as the engine will begin to die if the main needle is screwed in further. Allow the engine to run at peak RPM for 30 seconds.
- After 30 seconds, 'open' the main needle anti-clockwise to the richer mixture setting. Run the engine at this setting for 2~3 minutes or until the tank is empty.
- The motor can now be flown and continuous full power used. It is suggested, however that you run a rich mixture for the first two or three flights just to allow the motor to bed in, in the air. It is unnecessary to run the motor on the ground for an extended running in period, flying the model runs the engine in more quickly and efficiently, but do ensure that the engine is not run with a lean setting whilst running in.
- 13. Starting, Running and Breaking in a Ringed Engine Engine**
The starting procedure for a ringed engine is exactly the same as for an ABC motor so follow steps 12.1~12.9. Once running at a rich setting turn the needle clockwise and lean the motor out until it is running at maximum rpm and then richen the mixture approximately a full turn. This will produce a good rich setting with lots of oily smoke.
- If in doubt run the motor richer than you think is necessary to be safe. Run the motor at this rich setting for a least 2 tank fulls. After this the motor can be leaned out progressively each tank full, a few clicks at a time, until maximum power is achieved. Keep in mind at all times that a very lean setting can damage the ring and cylinder. A ringed motor will not reach it's maximum potential until it is well run in.
- 14. Pressurisation**
When installed in an aircraft it is advisable to run the engine fuel system under pressure. Pressurisation of the fuel tank prevents fuel starvation during aerobatics, by supplying a constant flow of fuel under pressure. In order to pressurise the tank a piece of fuel tubing is connected between the pressure nipple on the silencer and the other inlet into the fuel tank. If pressurisation is used the main and mid needle may need adjusting (see section 15) to compensate for the increased fuel flow under pressure.

15. Carburettor Adjustment/Settings

The mid range needle (10), which controls throttle response & pick up, has been preset at the factory and should not need much in the way of adjustment. However, you may find it necessary to make minor mid range adjustments for your particular application. You should not find it necessary to rotate the screw more than 1/4 turn in either direction from the factory setting. The mid range needle is located inside the throttle arm and requires a small screwdriver to make adjustments.

15.1 Mid needle adjustment - close the throttle to idle and wait for 2~3 seconds then go to full throttle instantly. Do this 2~3 times to see the result. If the engine dies when the throttle is opened, the midrange is "too lean", so stop the motor and open (turn anti-clockwise) the mid needle a 1/4 turn. Small adjustments give the best results. Keep adjusting until you get an instant pick up and constant, smooth power at the top end. **Do not** adjust the mid needle with the motor running.

Should the factory needle settings be altered during installation, the standard settings for initial starting are:

Main needle: Open 2.0~2.5 turns. **Mid needle:** Open 1.5~2 turns.

To initially set the mid needle, 'close' the throttle barrel, then gently screw in the mid needle clockwise until the needle seats. **DO NOT** tighten. Now unscrew 1.5~2 turns.

15.2 Slow Running - adjustment to the slow running, if the motor is idling too fast or won't shut down, is done by adjusting the throttle linkage relative to the transmitter (Tx) trim position. The carburettor should be set up so that the carburettor is fully closed (motor cut) with the Tx stick and trim fully down (closed). The idle should then be set with the transmitter stick fully down and the trim fully up (open). Further adjustments may also need to be made if the motor is run under pressure.

If the idle is too slow or too fast, stop the motor, adjust the linkage and start again. Continue until a good idle and throttle cut are found.

16. Engine Care

After-run oil - because model fuel contains methanol, it has the property of drawing moisture from the atmosphere. Cheap methanol, and therefore cheap fuel, contains more moisture. Prolonged exposure to moisture can cause damage to vital parts such as the bearings and crankshaft. Therefore, we strongly urge that you a) use good quality fuel, b) after every flying session drain all the fuel from the tank and engine, and put 4~5 drops of a good after-run oil into the carburettor. Turn the prop by hand several times to ensure that the after-run oil is distributed throughout the engine.

CAUTION

Do Not dismantle your MDS engine unnecessarily. Doing so may cause damage to the precision fit of parts such as the piston, liner and carb. If it is necessary to clean the interior of the engine (such as after a crash), only remove the silencer, carburettor, cylinder head and backplate. You should be able to clean all foreign matter from the engine without disturbing the fit of the precision parts. Any further disassembly could result in voiding the manufacturer's warranty.

Periodically remove the silencer and inspect the piston through the exhaust port. If there are any dark brown stains on the piston, it is a good indication that you are running the engine too lean. The dark stain is caused by excessive heat breaking down the lubricant in the fuel. Set the main needle to a richer setting.

Also, make sure the engine has adequate ventilation for proper cooling. Scale aircraft cowlings may look good, but if they restrict airflow around the engine they can do a great deal of harm. You need three times as much exhaust area as intake area to provide the proper airflow for an enclosed engine.

Finally, your MDS engine is a superb piece of engineering technology which will give you many many years of good service. However, should you experience any problems whatsoever please do not hesitate to contact Ripmax's Technical department or your local Distributor who will be only too pleased to assist.

Spare Parts & Service

UK- MDS Spare parts are available from your local model shop. In case of difficulty, please contact the Ripmax ESD (Express Service Delivery) on 020 8282 7515 for direct delivery (Spare parts only).

For Engine Service or Repair please return to Ripmax Plc at the UK address below.

International - Please contact your local model shop or MDS distributor. In case of difficulty phone, fax or email Ripmax Plc.

MDS Distribution U.K, Germany, Greece, Portugal:

Sales Office: UK, Greece, Portugal:

Ripmax Plc,
Ripmax Corner,
Green Street,
Enfield,
EN3 7SJ

Tel: 020 8282 7500

Fax: 020 8282 7501

Email:
MDSmail@Ripmax.com
www.ripmax.com

Sales Office: Germany, Austria:

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JSB Marketing GMBH
Am Park 28
25336 Klein Nordende
Nr. Hamburg

04121 9577025
04121 9577026
www.ripmax@jsb-gmbh.de

MDS International Distributors:

Country	Company	Phone	Fax
Australia:	Dawn Trading	00 61 296664999	00 61 296663404
France:	Avio Tiger	00 33 490345906	00 33 490349410
Italy:	Scorpio	00 39 461823099	00 39 461824116
Poland:	Riku Models	00 48 228453521	00 48 228453521
Sweden:	Minicars	00 46 18132115	00 46 18108545
Spain:	Model Import	00 34 916774720	00 34 916779860
S/Africa:	Parker Craft	00 27 114556810	00 27 114555341
USA:	Horizon Hobby	001 217 3521913	001 217 3550058

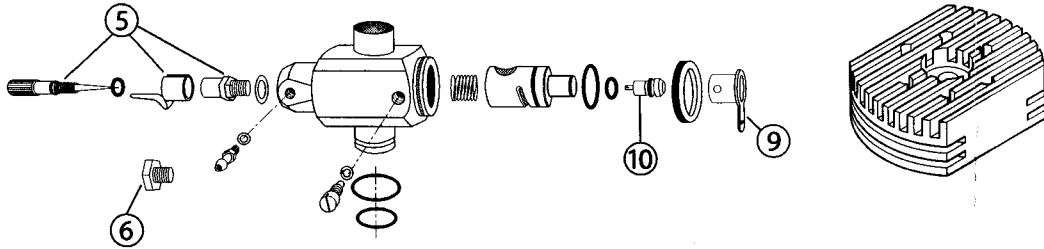
For other internation enquires contact Ripmax Plc UK

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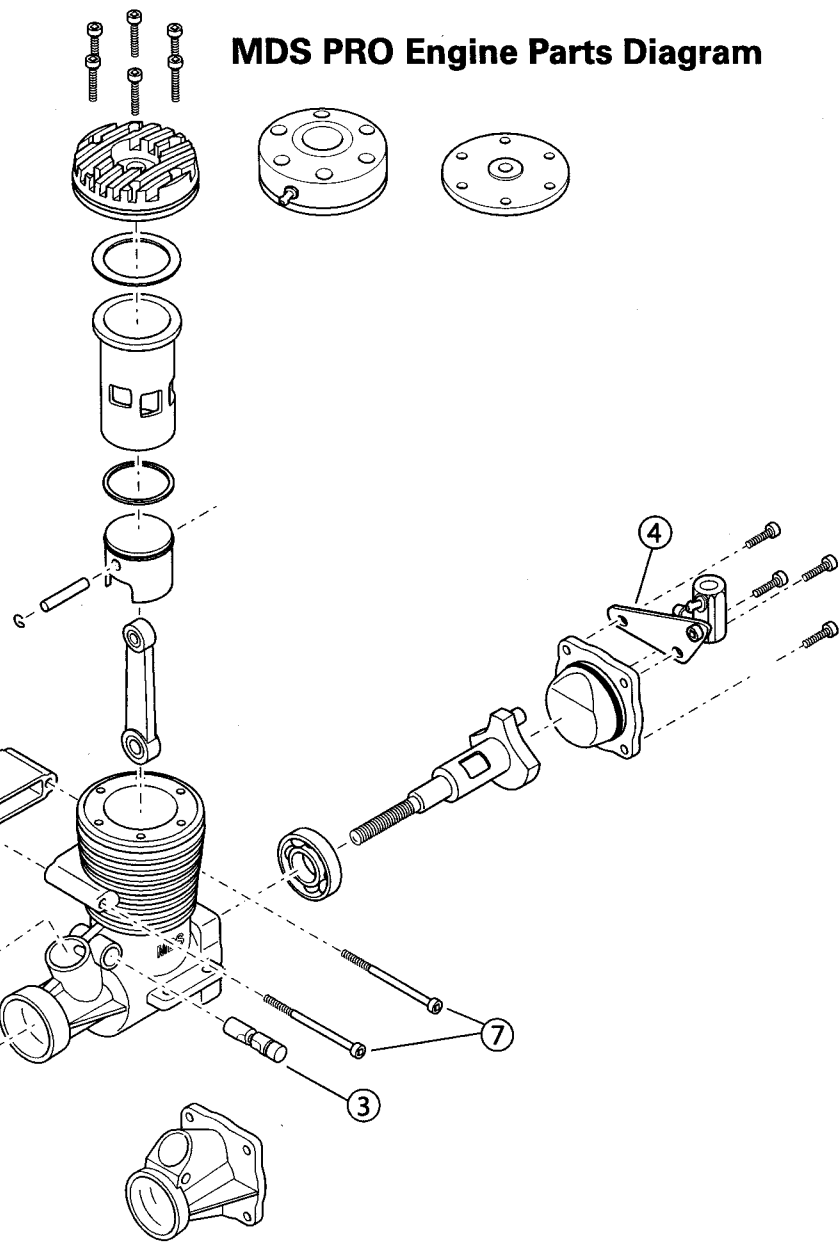
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"C2" Carburettor Parts Diagram



MDS PRO Engine Parts Diagram



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Key No.	Description	18 FS Pro Aero	28 FS Pro Aero	38 FS Pro Aero	38 FSH Pro Hell	40 FS Pro Aero	48 FS Pro Aero (Twin Bush)	48 FSH Pro Hell (Twin Bush)	58 FS Pro Aero	68 FS Pro Aero	68 FSH Pro Hell	78 FSR Pro Aero (Ring)	148 FSR Pro Aero (Ring) Pro Carb	218 FSR Pro Aero (Ring) Pro Carb
	Engine Complete	L-MDS-01802	L-MDS-02802	L-MDS-03802	L-MDS-03832	L-MDS-04002	L-MDS-04802	L-MDS-04832	L-MDS-05802	L-MDS-06802	L-MDS-06832	L-MDS-07802	L-MDS-14801	L-MDS-21800
1.	Prop Nut & Washer	X-MDS-01700-002	X-MDS-03800-002	<<<	X-MDS-03830-002	X-MDS-03800-002	<<<	X-MDS-03830-002	X-MDS-03800-002	X-MDS-06800-002	X-MDS-06830-002	X-MDS-06830-002	X-MDS-14830-002	X-MDS-21830-002
2.	Tophat, Sleeve or Spacer				X-MDS-03830-008			X-MDS-04830-008			X-MDS-06830-011			
3.	Prop Driver & Taper collet	X-MDS-01700-006	X-MDS-04001-006	<<<	X-MDS-03830-006	X-MDS-04001-006	<<<	X-MDS-04830-006	X-MDS-04001-006	X-MDS-06800-006		X-MDS-06800-006	X-MDS-14800-006	X-MDS-21800-006
4.	Ball Bearing - Front	X-MDS-01525-021	X-MDS-03800-021	<<<	<<<	X-MDS-03800-021	<<<	<<<	<<<	X-MDS-06800-021	<<<	<<<	X-MDS-14800-021	X-MDS-21800-021
5.	Ball Bearing - Rear	X-MDS-03800-021	X-MDS-04000-022	<<<	<<<	X-MDS-06100-022	<<<	<<<	<<<	X-MDS-06800-022	<<<	<<<	X-MDS-14800-022	X-MDS-21800-022
7.	Crankcase	X-MDS-01800-060	X-MDS-02800-060	X-MDS-03800-060	<<<	X-MDS-04001-060	X-MDS-04800-060	X-MDS-04830-060	X-MDS-05800-060	X-MDS-06800-060	<<<	X-MDS-07800-060	X-MDS-14800-060	X-MDS-21800-060
8.	Carburettor Retaining Bolt	X-MDS-01700-090	X-MDS-04600-090	<<<	<<<	X-MDS-04600-090	<<<	<<<	<<<	<<<	<<<	<<<	X-MDS-14800-090	X-MDS-21800-090
10.	Crankshaft	X-MDS-01700-030	X-MDS-02800-030	X-MDS-03800-030	<<<	X-MDS-04001-030	X-MDS-04800-030	X-MDS-04830-030	X-MDS-05800-030	X-MDS-06800-030	X-MDS-06830-030	X-MDS-07800-030	X-MDS-14800-030	X-MDS-21800-030
11.	Back Plate	X-MDS-01700-061	X-MDS-02800-061	X-MDS-03800-061	<<<	X-MDS-04001-061	<<<	<<<	X-MDS-05800-061	X-MDS-06800-061	<<<	<<<	X-MDS-14800-061	X-MDS-21800-061
12.	Back Plate 'O'-ring	X-MDS-01700-062	X-MDS-03800-062	<<<	<<<	X-MDS-04600-062	<<<	<<<	<<<	X-MDS-06800-02	<<<	<<<	X-MDS-14800-062	X-MDS-21800-062
15.	Connecting Rod	X-MDS-01700-031	X-MDS-02800-031	X-MDS-03800-031	<<<	X-MDS-04000-031	X-MDS-04000-031	X-MDS-04801-031	X-MDS-05800-031	X-MDS-06800-031	<<<	<<<	X-MDS-14800-031	X-MDS-21800-031
16.	Piston Pin & Circlips	X-MDS-01700-032	X-MDS-02800-032	X-MDS-03800-032	<<<	X-MDS-04001-032	X-MDS-04001-032	X-MDS-04001-032	X-MDS-05800-032	X-MDS-06800-032	<<<	<<<	X-MDS-14800-032	X-MDS-21800-032
17.	Piston Pin Circlips (2pcs)	X-MDS-01700-034	X-MDS-02800-034	X-MDS-03800-034	<<<	X-MDS-04000-034	X-MDS-04000-034	X-MDS-04000-034	<<<	<<<	<<<	<<<	X-MDS-14800-034	X-MDS-21800-034
20.	Piston & Liner Assembly	X-MDS-01800-040	X-MDS-02800-040	X-MDS-03800-040	<<<	X-MDS-04001-040	X-MDS-04801-040	X-MDS-04801-040	X-MDS-05800-040	X-MDS-06800-040	X-MDS-06830-040	X-MDS-07800-040	X-MDS-14800-040	X-MDS-21800-040
22.	Piston Ring											X-MDS-07800-042	X-MDS-14800-042	X-MDS-21800-042
24.	Head Gasket	X-MDS-01800-058	X-MDS-02800-058	X-MDS-03800-058	<<<	X-MDS-04000-053	<<<	<<<	X-MDS-05800-053	X-MDS-06800-058	<<<	X-MDS-07800-053	X-MDS-14800-053	X-MDS-21800-053
25.	Cylinder Head	X-MDS-01800-050	X-MDS-02800-050	X-MDS-03800-050	X-MDS-03830-050	X-MDS-04001-050	X-MDS-04800-050	X-MDS-04830-050	X-MDS-05800-050	X-MDS-06800-050	X-MDS-06830-050	X-MDS-07800-050	X-MDS-14800-050	X-MDS-21800-050
27.	Shims												X-MDS-14800-052	X-MDS-21800-052
29.	Screw set	X-MDS-01700-091	X-MDS-02800-091	X-MDS-03800-091	<<<	X-MDS-04001-091	<<<	<<<	<<<	X-MDS-06800-091	<<<	<<<	X-MDS-14800-090	X-MDS-21800-090
30.	Carb Complete	X-MDS-01800-500	X-MDS-02800-500	X-MDS-03800-500	X-MDS-03830-500	X-MDS-03800-500	X-MDS-04800-500	X-MDS-04830-500	X-MDS-05800-500	X-MDS-06800-500	X-MDS-06830-500	X-MDS-06800-500	X-MDS-14801-200	X-MDS-21800-200
32.	Needle Valve Assembly (NVA)	X-MDS-01800-550	X-MDS-02800-550	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	X-MDS-14801-250	X-MDS-21800-250
33.	NVA Plug		X-MDS-02800-259	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<
35.	Fuel/Exhaust Nipple	X-MDS-02800-530	X-MDS-02800-530	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<
36.	Idle Screw Assembly												<<<	<<<
37.	Carb Barrel Retaining Screw	X-MDS-01800-512	X-MDS-04600-212	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	X-MDS-14801-211	<<<
38.	Carb Barrel Spring	X-MDS-01700-211	X-MDS-02800-511	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<
39.	Mid Needle	X-MDS-01800-515	X-MDS-02800-515	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	X-MDS-14801-215	X-MDS-21800-215
41.	Barrel Seal	X-MDS-01700-219	X-MDS-02800-519	<<<	<<<	<<<	<<<	<<<	<<<	X-MDS-06800-519	<<<	<<<		
46.	Carb Lever - All (ID Ø7mm)	X-MDS-02802-520	X-MDS-02802-520	<<<	X-MDS-03830-520	X-MDS-02800-520	<<<	<<<	<<<	<<<	X-MDS-06830-520	X-MDS-02800-520	X-MDS-02800-520	X-MDS-02800-220
50.	Carb 'O'-ring Set	X-MDS-01800-590	X-MDS-02800-590	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<	<<<		X-MDS-21800-290
55.	Remote Needle Adapter		X-MDS-02800-260	<<<	<<<	X-MDS-04001-260	<<<	<<<	<<<	X-MDS-06800-590	<<<	<<<	X-MDS-14830-260	X-MDS-21830-260
60.	Silencer - Standard	X-MDS-01700-300	X-MDS-02800-370	<<<	<<<	X-MDS-04001-370	<<<	<<<	X-MDS-05800-370	X-MDS-06800-370	<<<	X-MDS-06800-370	<<<	<<<
60.6.	Silencer Rod		X-MDS-02800-376	<<<	<<<				X-MDS-05800-376	X-MDS-06800-376				
60.7.	Expansion Set - SQ		X-MDS-02800-389	<<<	<<<	X-MDS-04001-389	<<<	<<<	X-MDS-05800-389	X-MDS-06800-389		X-MDS-06800-389		
61.	Silencer - Super Quiet	X-MDS-02800-380	<<<	<<<	<<<	X-MDS-04001-380	<<<	<<<	X-MDS-05800-380	X-MDS-06800-380	<<<	X-MDS-06800-380	<<<	<<<
61.6.	Silencer Rod		X-MDS-02800-386	<<<	<<<	X-MDS-04001-386	<<<	<<<	X-MDS-05800-386	X-MDS-06800-386				
62.	Silencer Bolts (Pk2)	X-MDS-04600-304	X-MDS-03800-304	<<<	<<<	X-MDS-04600-304	<<<	<<<	<<<	X-MDS-06800-304	<<<	<<<		
63.	Silencer Spacer 3mm					X-MDS-04001-310	<<<	<<<	<<<	<<<				
64.	Silencer Extension 15mm					X-MDS-04001-320	<<<	<<<	<<<	<<<				
65.	Silencer Extension Bolts (Pk2)					X-MDS-04001-325	<<<	<<<	<<<	<<<				