PARTS LIST

Code number	Description
77100	Crankcase
77120	Cam gear housing
77130	Cam gear cover
77200	Crankshaft front
77210	Crankshaft rear
77220	Crankshaft center assembly
77300	Cylinder jacket
77310	Cylinder liner
77320	Cylinder head
77400	Piston
77410	Piston ring
77420	Piston pin
77430	Piston pin retainer
77500	Cam shaft
77510	Cam follower
77520	Push rod
77530	Rocker arm assembly
77540	Valve assembly
77550	Cam gear assembly
77600	Propeller shaft
77610	Propeller drive washer
77620	Propeller washer
77630	Propeller nut
77700	Connecting rod
77800	Inlet manifold right
77810	Inlet manifold left
77900	Exhaust pipe
771000	Carburettor
771100	Ball bearing crankshaft
771110	Distance piece crankshaft
771200	Needle bearing camshaft
771210	Teflon washer camshaft
771300	Needle bearing connecting rod
771400	Cylinder head studs
771410	Cylinder head bolts
771500	Retaining nut for manifolds
771600	Screws, circlips and washers set

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Hagvägen 63
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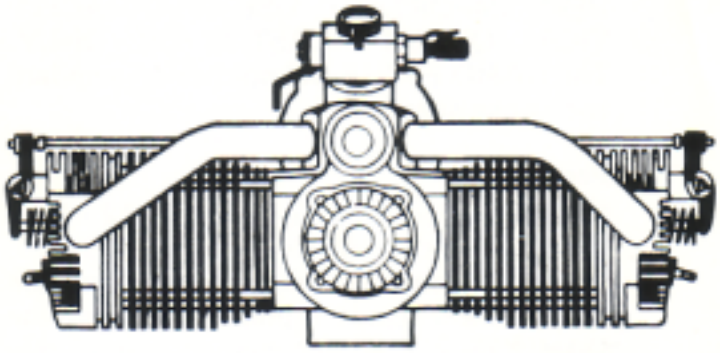
DAMO FS 218



Running instructions

Specification:

Displacement ...	18.08 cm^3 /1.10 cu.in./
Bore	24 mm /0.9449''/
Stroke	20 mm /0.7874''/
Practical rpm	1.800—11.000
Weight	650 grams /22.0 oz./

Fuel:

Methanol 94%, pharmaceutical castor oil 1%, nitro 5%.
VERY IMPORTANT: USE PHARMACEUTICAL QUALITY CASTOR OIL ONLY. The DAMO FS 218 will not run on standard two-stroke glow fuel.

Propeller:

Recommended propeller sizes are 12×8 — 14×6 — 14×8 — 16×4 — 16×6 — 16×8. As a four-stroke is delivering its maximum torque at low rpm, it is impractical to run the DAMO FS 218 at high rpm on a small diameter propeller. Be sure to balance propellers carefully to take further advantage of this powerplant's almost vibrationless running.

Glow plug:

Use ordinary two-stroke glow plugs of long reach, hot to medium range and without idle bar.

Starting procedure:

Position the propeller in such a way that the blades are at the 8 o'clock—2 o'clock stations when compression is first felt during turning of the propeller counter-clockwise. Tighten the propeller nut securely. Open the needle 2 turns from closed position and set the air control disc to full minus. Block the air intake and draw fuel into the cylinders by turning the propeller over a few times. Connect the starting batteries and turn the propeller slowly until a slight resistance is felt going over the compression stroke, indicating that the engine is ready to fire. Now flip smartly and keep the engine running by adjusting the needle as required. Disconnect the starting batteries.

Break in procedure:

To ensure high power and long life, your DAMO FS 218 must be carefully broken in. Mounted on a bench mount and using a 14×6 propeller, allow the engine to run on the richest setting possible in sequences of 1—2 minutes, using a throttle opening of a quarter to a half. Be sure to allow the engine to cool off between runs. Between runs check the cylinder head nuts for thightness and retighten as required. After about 30 minutes running time, allow the engine a couple of 10 minutes runs, leaning out the mixture slightly. From now on the engine can be installed in your aircraft to be run for approximately 1 more hour on a rich mixture. After that, adjust the carburettor for best idle, intermediate and top performance. To obtain best results, adjustments should be performed with the engine installed in your model.

Maintenance:

The DAMO FS 218 was designed to operate with a minimum of maintenance. Now and then put a small amount of grease at both ends of the push-rods and a few drops of machine oil to the rocker bearing points. Valve clearences should be checked when the engine is cold, clearences to be maintained at 0.05 mm. With the valve to be checked set fully closed, you should just be able to rotate the pushrod with your finger. If binding or if too much free-play, adjust to correct clearence by loosening the locknut and screwing the set-screw in or out as required. Do not forget to tighten the locknut and recheck for correct clearence. After break in, check all bolts and nuts for tightness and retighten as required. Be careful not to overtighten. Make it a habit to check the valve clearences and the cylinder head nuts before each flying session. In case of serious trouble with your engine, do not attempt to dismantle it. Contact your dealer or the distributor for further advice.

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INTRODUCING THE
DAMO FS 218—FOUR-CYCLE TWIN CYLINDER MODEL ENGINE

Until recently production four-cycle model engines have been almost non-existent. That is true especially with regard to multi-cylinder types, designed and built for practical field operation.

MCC is now changing that scene.

After a prolonged period of testing and development, we are happy to announce the availability of the DAMO FS 218, knowing it to be close to the ultimate in four-cycle model engines. Now, that is a somewhat bold statement. However, we base it on experience, earned the hard way. We have spared nothing in terms of time, hard work and costs, developing the DAMO into a rugged yet sofisticated model power plant, built to give the utmost of satisfaction, dependability and quality.

The DAMO FS 218 was designed having two main aspects in mind. The first one, quiet operation, is of utmost importance these days. The second one was to have a scale-like power plant available for big 1/4 scale models, now catching on rapidly in popularity.

July 1977

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P.O. Box 240 11
S-750 24 UPPSALA Sweden
Telephone [redacted]

Being a four-cycle, the DAMO FS 218 is very subdued in an unmuffled state, utilizing mufflers, it is just about audible at a short distance. That feature alone makes it the ideal power plant, besides scale applications, for sport models, helicopters and power boats, all of which can be operated without fear of generating too much noise.

A whole new dimension has been brought into flying of big scale models by the appearance of the DAMO FS 218. It has the power and torque to swing really big propellers and, in doing so, produces the most satisfying scale exhaust note. Watch that 1/4 scale J-3 coming in low and slow, the DAMO on a fast idle. Listen to the sound of air rushing past the airframe. One can not come closer to the real thing. Hear the throbbing of four cylinders in that big DC-3, just going to full power, changing the exhaust note for a low-pitched drone when climbing for altitude. That is realism one has been just dreaming about.

Besides being quiet in operation, scale-like in appearance and full-scale in the exhaust note department, the Damo FS 218 has a few more advantages. As a multi-cylinder four-cycle, it produces very little in the way of vibration. It operates on straight methanol, making use of the very slight lubricating properties of the methanol itself. That makes for very clean operation, leaving model and pilot clean and tidy after a day out flying.

Operation with nil oil content in the fuel is made possible by using the very highest quality metals and hardening processes, utilizing the very best available in ball- and needle bearings, keeping a super close watch on tolerances and taking the highest possible care in the hand fitting of each engine. The result is a precision piece of machinery, built for trouble-free operation and a minimum of maintenance.

In the event of a DAMO engine becoming un-servicable, MCC stocks all spares. These will be shipped by air-freight to cut on time on the ground. In extreme cases an engine can be sent to MCC for factory repairs and shipped back by air-freight. Prices on spares and repairs are based on a break-even basis only.

Production deliveries are scheduled to commence December 1977.

All engines will carry a serial number and comes packed in a sturdy shipping box with comprehensive instruction and maintemance sheets and parts list.

Price of The Damo FS 218 is US $ 495.—.

On our drawing board are at present a fan-cooled version of the DAMO FS 218 including drive unit for helicopter application and a water-cooled version for marine use as well as various scale exhaust systems. These items will be available well into 1978. Our »top secret» department is appearently not asleep either, now and then there are rumours of one or two really exiting new engine projects flowing. We will let you know first hand when the time comes.

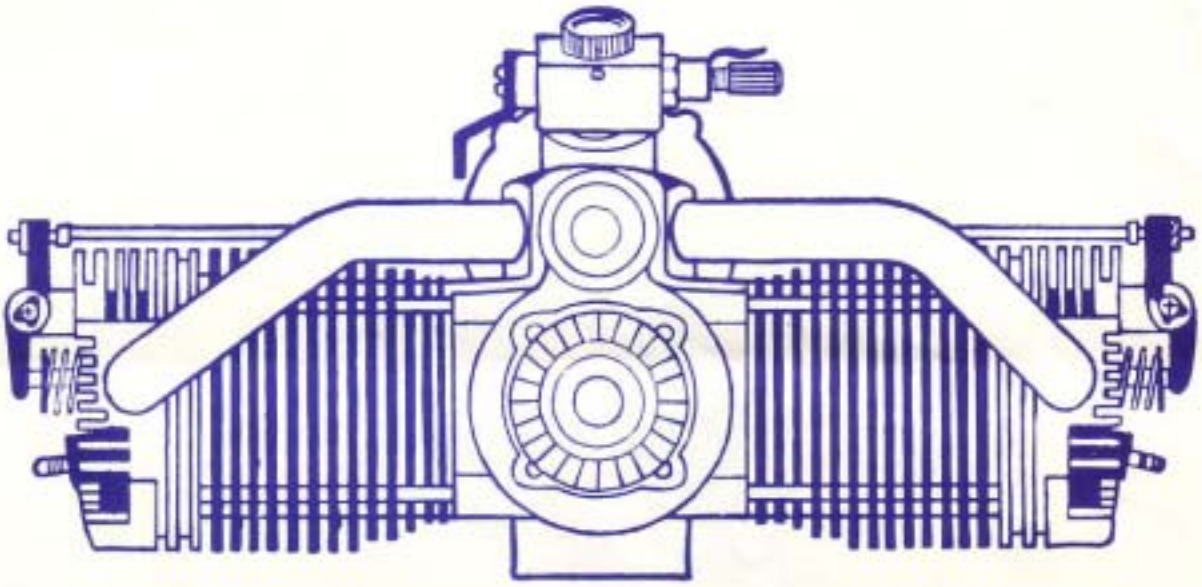
Our aim is to put our customer and fellow modeler first hand, thus we have coined our little sentence;

We do SELL & SERVICE
we do not FORWARD & FORGET

July 1977

[redacted]

DAMO FS 218—SPECIFICATION



Actual size — **Length over all: 12 cm (4½")**

Weight	550 grams	(19.0 oz.) approx.
Displacement	18.08 cm³	(1.10 cu.in.)
Bore	24 mm	(0.9449")
Stroke	20 mm	(0.7874")
Compression ratio	8.5:1	
Calculated output	1.25 hp	
RPM	11.000	maximum
RPM idle	1.200	minimum

DESCRIPTION

Opposed twin cylinder—four-cycle—pushrod operated overhead valves—aircooled—glow ignition.

Crankcase, cooling fins, pistons, conrods and cylinder heads are cast or machined aluminium. Cylinder liners, valve train, camshaft, crankshaft and timing gears are hardened steel. Valve guides and seats are bronze. Pistons rings are cast iron.

The crankshaft is supported by 4 ball bearings, the camshaft by 2 needle bearings. The conrods have needle bearings in both ends.

The carburettor is modified Perry or OS.

Four mounting lugs are provided at bottom of crankcase.

Fuel requirement is for straight methanol with a 10% nitro content. No oil is required in normal operation. If tightly cowled installations or a nitro content over 10%, use 5% oil.

Recommended propeller sizes, depending on type of aircraft, are 12×6—14×4—14×6—16×4—16×6—18×4—18×6.

July 1977