This is your DOONSIDE MILLS.
We believe it is the best diesel value for money in the world. Every motor has been hand started using an 8 x 4 nylon propeller, but will probably be tight for some time.
We have faithfully copied the classic side-port layout by taking an average mesurement of meny motors. Every cylinder-piston contra-piston unit has been individually hand honed and fitted to give the best possible fit within the tolerance limits of .00005in.
Further, these units have been hardened and will outlast eny other small diesel currently sold.
The crank-case is gravity die-cast, a method which inevitably results in some porosity. If you dismantle your motor you may have a crank-case with some quite alarming-looking porosity. We assure you that we will replace eny crank-case irrespective of age which leaks or structurally fails because of this porosity.

DISMANTLING.
If you insist on pulling your motor apart do so, but check as you go. To undo the hed, use a soft lether strip wrapped around the fins, and a pair of multi-grips. That isn't a striped-apron method, it's practical and safe. A penny or similar disc or washer gripped in a vise is the best tool to remove and replace the back-plate. Align the gasket when replacing. The piston has a transfer-step. It goes to the transfer (front) side. The con-rod is asymmetrical and therefore not correctly reversible because of the chamfer on one side of the big-end. It goes agenst the crank-shaft web. The liner has a vee slot which engages the .020 pin in the top front of the crank-case, put there to stop the liner rotating. As you are probably reading this AFTER you dismantled your motor, this pin is now on the floor somewhere. If you can't find it make another out of control-line wire. Eny size from .018 to .022 should do. Why you'd want to remove the contra piston we can't think, but if you do, tap it DOWN the bore with a ¼ brass or copper rod. Replace it from the bottom up.
If by mischance you lose your compression lever you can temporarily (or permanently if you're broke) use a 4BA screw but don't afterwards try to remove it the same way because unless it is hardened it will become spred by being hit by the contra-piston. To remove it, saw the hed off, file the burr, and thred it DOWN and thru the cylinder hed. If you lose the venturi locking nut the venturi can then be screwed in until it distorts the liner. If you lose the liner locking pin you are certain to fang the con-rod. If you run the motor upright gripped by both lugs in a vise or grip it by one lug mounted sideways you will have made your first $4 investment in the scrap-metal business. If you flood the motor and give it a healthy Glo-plug type flick you will need a new rod, new crankshaft, gudgeon-pin, or all three. This is one reason why you can't buy a DOONSIDE MILLS in a shop. Small bore long-stroke diesels and the ham-fisted are not a good bet. Don't over-bore the bearer holes to take 1/8" screws. Use brass 6BA for mounting. In a hevy arrival they should yield before the engine lugs do.
DONT use more than 1½% amyl nitrate (or nitrite)
FUEL. Try not less than 25% oil, at least 35% solvent ether, and the balance kerosene, lighting, not power.
PROPELLER. Don't go smaller than 7 x 3. Most motors seem happiest with about 7x4, 7x5, 8x3, 8x4. You can make up 9x2 or 9x3 for scale work. This will chew rods, but that's cheaper than using a 6x3 and replacing the cylinder piston unit.
DONT remove the hed and then flick the prop. Hunt the contra-piston may result.
That's it. As a psychologist and an engineer we've tried to warn you of most of the traps. Human natures being what they are we know you'll come up with some we never dreamed possible.

SPARE PARTS PRICE LIST.
(Wounded bull type.)
All prices are in Australian $.

Cylinder, piston, contra-piston.....	£3.25
Contra-piston (your risk re fit)..	.27½p
Crankshaft	£2.25
Connecting rod	.82½p
Cylinder hed (state color)	.82½p
Crankcase MkII only, with bush.....	£2.25
natural or black	
Carburettor unit complete with venturi, tank, etc..	£2.25
Compression screw and lever....	.27½p
Needle valve and spring	.35p
Fuel tank	.27½p
Fuel tank cover	.27½p
Needle-valve seat	.40p
Venturi (choke tube)	.82½p
Venturi locking nut	.08p
Tank circlip	.06p
Tank gasket	.06p
Backplate	.35p
Backplate gasket	.06p
Hardened thrust washer	.35p
Propeller nut	.25p
Propeller washer	.06p
Needle valve spring ground at both ends	.06p
Gudgeon (wrist) pin hardened and ground.	.15p
Box and label (very limited).....	.20p

Minimum spares order. 60p. Add 5p postage and packing, 35p overseas Airmail. Airmail.

All enquiries re spares, service or advice (please send S.A.E.) to:
DOONSIDE MILLS OR Modellers Den Ltd., Dept's
Box 11 2 Lower Borough
DOONSIDE NSW Walls,
AUSTRA 2767 Bath BA1 1QR
Good flying! ENGLAND

Yours F. and Gordon F

POST SCRIPT (AFTER HAND STARTING 430 MOTORS AND DISMANTLING SOME.) 680 (NEXT DAYS PP 3)

Con-rods. Some few rods now have a chamfer on both sides. If you dismantle your motor, mark carefully which way the rod must go. After the first 430 we gave up fiddling with the con-rods and worked out what was wrong. The rods were .004 too thick and one in every three would bind on the piston. In the early stages we altered the rods. After that we left the rods alone and put a slight chamfer on the inside step of the piston. End of trouble, but if you have MkI or earlier assembled MkII and you replace a rod it may bind on one side just before coming on to compression. You can cure this by using a fine file just below the little end of the rod. If you're not sure where, put Texta-color or similar on the neck of the rod near the top, assemble the motor, and roll it over several times. The high spot will be visible when you remove the rod.

Tanks: When we assembled these some were very rattly so we cut some gaskets and packed them under the tanks. Some very few tanks were tight without the gasket and don't have one. A replacement tank may be slightly smaller and may need one. To pull the tank out get a large darning needle or similar and pry one end of the circlip loose. The circlip can then be removed by chasing it around the tank-top. The internal feed tube may have grown slightly. Trim it with scissors if it seems to be contacting the bottom of the tank. To replace, omit the gasket if you like, or make a thinner one. Pull the circlip open a little so that there is a 3/16" or so gap. If you open it too wide it is difficult to put in. If the gap is too small the circlip may work loose.

Starting: We machine-started the first hundred and then transferred them to another test stand and hand-started them. Then the starting device became unusable and we had to hand start the remainder. Unbelievable as it sounds, we could now do more than double. In one glorious ~~three~~ two hours we hand-started 150+ ~~140~~ brand new motors. This must be some sort of a record. Only one motor in 141 was too difficult. This is a fair indication of the quality control of the product. The technique was the same in all cases. Close needle right off, hand file a line on the needle (sorry if the hand shook a little on your needle,) open needle 4 turns exactly, give one choke flick, and flick hard. Your motor was delivered with the needle and comp lever in the happy running position here, but your climate and your fuel may play havoc with this. If you can't find the compression setting and you're desperate, unscrew the hed, remove the liner, stand it on a wooden surface and with your ¼" brass rod, tap the contra piston down until it is exactly flush with the block of wood you're tapping on. Now re-assemble and wind the lever ½ turn after you feel it touch the contra piston. This should be the starting setting within ¼ turn.

Locking pins.: Some few crankcases were drilled slightly inboard and assembly is difficult, but not impossible. Pry the pin outwards a little with your darning needle.

Hed colours available: Natural, gold, blue, green, red, black.

Crankcase colours MkII only natural, black.

If you dispose of your DOONSIDE MILLS we would be grateful for the name and address of the new owner FROM YOU. This is a protection for you and us.

Please return parts when ordering replacements. It helps.

LAST REMINDER: DOONSIDE MILLS SERVICE, SALES AND ENQUIRIES ONLY FROM BOX 11

[illegible] MO TATRAN OR ELSEWHERE WILL NOT BE ANSWERED.