

DANARM

MODEL 1-71-SS

CHAIN SAW

INSTRUCTION BOOK

Date of Issue December, 1978

Designed and manufactured by:—
Danarm Limited, Stafford Mill Estate, London Road, Stroud, Glos GL5 2PB England
Tel: Stroud (045-36) 2451 (4 lines) Telex: 437161
A Silverthorne Group Company

CODE OF PRACTICE FOR ONE MAN CHAIN SAWS

The chain saw is essentially a tool for cutting through timber quickly. The cutting action is provided by a toothed chain travelling at high speed round a grooved bar. The cutter chain is almost completely unguarded; in inexperienced hands this can make the chain saw a dangerous tool.

Experience comes only with use, but if note is taken of the following important points, some of the dangers will be lessened.

1. Before using the saw, read the manufacturer's handbook.
2. **MAINTENANCE**—A blunt or badly sharpened chain will increase the vibration and cause the saw to kick and jump. Keep the chain sharp and at the correct tension. Never allow the saw to be used with worn, broken or defective parts. Do not touch the chain unless the engine is stopped.
 - a) **Chain Tension:** Correct chain tension is essential to proper maintenance and efficiency. Too tight a chain will result in excessive wear, shortening the life of the bar and chain. Too loose a chain will have a tendency to jump off the bar and result in damage to the sprocket teeth. The following instructions are important and will add to the life of your chain.
 - (i) Soak the chain in oil before use.
 - (ii) Install chain properly with recommended tension.
 - (iii) Run chain at slow speed for five minutes, giving plenty of oil.
 - (iv) Re-check tension until chain is fully run in.
 - (v) Keep chain well lubricated when in use.
 - (vi) Keep chain sharp. Always use a new file on a new chain.
 - b) **Sharpening:** Saws in daily use should be lightly filed at least three times a day, and sharpened to regain angles once a week. Saws used for limited periods only should be lightly filed before use and sharpened when necessary.
3. **CLOTHING**—Close fitting overalls are ideal, but in any case avoid unbuttoned jackets, loose trouser bottoms, scarves and ties, as these can easily catch in the chain, or on other parts of the saw. Boots with steel toe caps are advisable, or other footwear giving protection to the lower leg. A safety helmet is essential if there is danger of falling trees or dead limbs.
4. **WORKING**—Contact with twigs and undergrowth can cause the saw to jump and kick. A clear place to work and a firm foothold is essential. The saw must be held firmly, but not too tightly, in both hands and pivoted on the dogs whenever possible. Do not allow a second man near the saw to push over the tree when felling, or lift the tree close to the saw when cross cutting. If the saw jams in the cut, STOP THE ENGINE, and use a wooden or plastic wedge to free it.
5. **SAFETY**—During operation keep bystanders clear at all times. Before starting the motor, examine the lean of the tree. Look up for loose limbs, bark or intertwined branches.

Whenever possible, place the pivot grip against the tree or log before starting to cut. Before you start the motor, make sure the chain is not touching anything. Release throttle and ensure chain is stopped before removing the saw from a cut. When operating a chain saw, be relaxed but in full control at all times. Keep saw free of saw dust. Cut away from the body at all times, changing your position if necessary to work safely. Never carry your saw with the motor running when walking through a bushy area, and always carry it by the handle bar.

Continued on page 16

DANARM

MODEL 1-71-SS

CHAIN SAW

INSTRUCTION BOOK

Designed and manufactured by :—
Danarm Limited, Stafford Mill Estate, London Road, Stroud, Glos GL5 2PB, England
Tel : Stroud (045-36) 2451 (4 lines) Telex : 437161

A Silverthorne Group Company



THE DANARM 1-71-SS CHAIN SAW

DANARM 1-71-SS CHAIN SAW

SPECIFICATION

Engine:	Danarm design 71 cc. 4.33 cu. ins.
Bore:	2" (50.8mm.) Stroke: 1.38" (35mm.)
Compression ratio:	10 : 1
Suspension:	Danarm Spring Suspension for minimum vibration
Weight:	Engine only (dry) 16.75 lbs. (7.5 kg.)
Cutter-bar:	Slimline, solid nose 16" (400mm.), 21" (540mm.), 25" (640mm.)
Carburettor:	Tillotson H.S. type Governed
Sprocket:	7 tooth Spur type. $\frac{3}{8}$ pitch
Cylinder head:	Detachable
Cylinder:	Aluminium with reborable cast iron liner.
Fuel tank capacity:	1.75 pints (1.00 litre)
Fuel mixture:	20 parts petrol : 1 part oil
Oil tank capacity:	0.75 pints (0.425 litres)
Spark plug:	Champion CJ6 Bantam
Spark plug gap:	.020in. (0.50mm.)
Contact Breaker gap:	.018in. (0.45mm.)
Chain Lubrication:	Automatic adjustable pump. Cam operated.
Finish:	Stove enamel. Acrylic.

Danarm Limited reserve the right to make changes in design, specification and price without prior notice and without obligation in respect of machines sold or in course of construction.

LIST OF CONTENTS

Unpacking and Assembling	6
Fuel and Lubrication	7
Starting	8
Running In	9
Operating Instructions	9
Carburettor Adjustment	10
Magneto Settings	11
Chain Maintenance	12
Routine Maintenance	12
Accident Prevention	13
Engine Trouble Chart	14

THE DANARM 1-71-SS CHAIN SAW

The 1-71-SS is an addition to the world famous range of chain saws manufactured and designed by Danarm Limited.

This chain saw is equipped with the unique Danarm Spring Suspension to provide the maximum protection against vibration. The springs are scientifically matched and must not be replaced by any other type of spring.

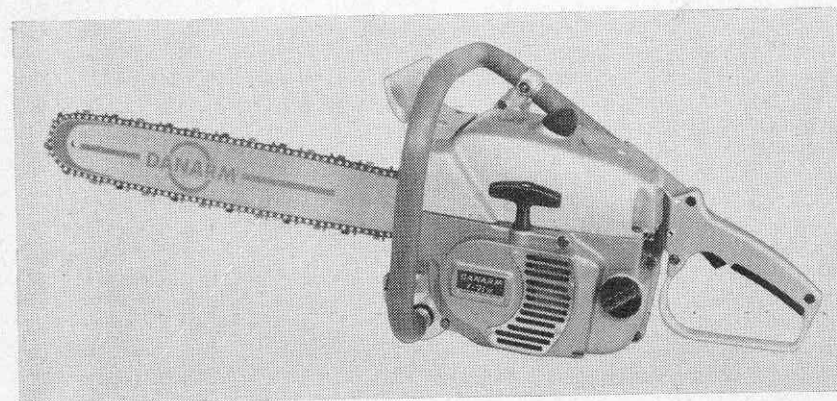
The 1-71-SS is fitted with a Tillotson Series HS carburettor incorporating a governor designed to operate at approximately 9500 r.p.m. The change of engine note at this speed confirms the correct functioning of the governor.

WARNING: On no account should any attempt be made to override the governor.

The carburettor has been accurately set during bench testing but if for any reason re-adjustment is considered necessary the Carburettor Adjustment instructions on Page 10 must be followed.

Danarm chain saws are guaranteed for a period of six months from the date of purchase against faulty workmanship and defective materials. For this guarantee to be valid the "Guarantee Card" supplied with each saw must be completed and returned to Danarm Limited.

Danarm Chain Saws are equipped with certain safety features. The 1-71-SS is available with a chain brake as an optional extra. For details of operation and parts list see page 15 and leaflet.



UNPACKING AND ASSEMBLING

The cutter bar and chain should be fitted to the saw as follows:— (Refer to Fig. 1)

Remove sprocket guard and outer side plate.

Fit cutter bar over the two studs and slide it backwards. Loop the chain over the sprocket ensuring that the cutters face forward.

Carefully fit the drive tangs of the chain into the groove of the cutter bar.

Pull the cutter bar gently forward and fit the outer side plate.

Install the sprocket guard taking care that the spigot on the guard engages the hole provided in the cutter bar. To obtain correct engagement of the spigot it may be necessary to operate the tensioning screw (See Fig. 1).

When the spigot has entered and the sprocket guard is seated on the cutter bar, fit the two washers and nuts to the bar attachment bolts, and tighten sufficient only to lightly pinch the bar.

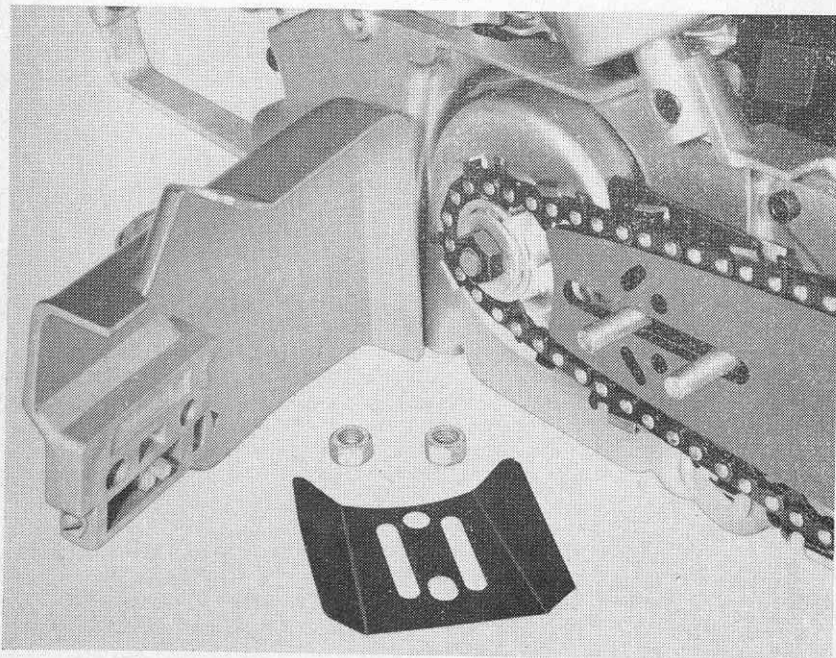
Lift the end of the cutter bar and at the same time adjust the tensioning screw until the chain can just be pulled around the bar by hand.

With the nose of the bar still held up tighten the two nuts firmly.

Re-check that the chain can still be pulled around the bar.

IF IN DOUBT CONSULT YOUR DANARM DEALER

FIGURE 1



FUEL AND LUBRICATION

Engine

The only source of lubrication for this engine is the oil that is mixed with the petrol PRIOR to filling the fuel tank. It is important that the correct petrol/oil ratio is observed, i.e. 20 petrol to 1 oil. On no account must petrol alone be used.

Any brand of regular grade petrol may be used, mixed with good quality SAE 30 oil, or preferably a good quality two-stroke oil. Do not use multi-grade oil.

The fuel mixture must be well shaken immediately before filling the saw fuel tank. Before removing the tank filler cap clean off all dust and use a funnel with a fine mesh filter.

Chain Lubrication

Before filling the chain oil tank clean off all dust from the filler cap area.

The tank should be filled with good quality oil of SAE 30 grade or with the specially prepared saw chain oil.

NEVER USE OLD OR DIRTY OIL

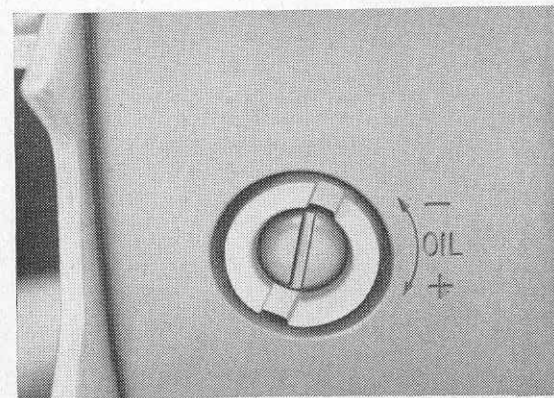
The automatic chain lubricating pump is factory adjusted for average cutting conditions. Increased oil delivery can be achieved by turning the adjusting screw in the right-hand crankcase VERY SLIGHTLY in a clockwise direction, and vice versa.

Sprocket Nose Guide Bar.

The Sprocket bearing in the guide bar should be greased regularly. [Suitable grease guns are available from chain saw dealers or Danarm Ltd.]

IF IN DOUBT CONSULT YOUR DANARM DEALER

FIGURE 2



STARTING

When starting from cold and particularly during winter it is advantageous to adopt the following procedure :-

- (1) Place the saw on the ground where it will sit firmly.
- (2) Put ignition switch to OFF. (See Fig. 3)
- (3) Apply choke by pulling knob out. (See Fig. 3)
- (4) Hold the saw down firmly, pull starter rope gently to rotate engine several times.
- (5) Put ignition switch to ON.
- (6) Open throttle fully, depress throttle stop button, release throttle trigger. Throttle should now be held partially open by stop button.
- (7) Still holding the saw down firmly, with the left hand on the handlebar, pull the starter rope until the starter engages and then pull sharply.
- (8) Repeat until the engine fires and then press the choke knob in. When the engine is running the throttle stop should be disengaged by momentarily opening the throttle.
- (9) Run the engine just fast enough to turn the chain ensuring that it is thoroughly lubricated.

IF IN DOUBT CONSULT YOUR DANARM DEALER

When starting a hot engine the choke may not be necessary. If, however, three pulls will not start the engine then apply the choke. (If the engine has stopped through running out of fuel, the choke will definitely be needed after refuelling to prime the system).

Note : If it is suspected that the engine will not start due to over-choking, set the choke at RUN position, and with the throttle wide open, pull the engine over several times. It should start in two or three pulls.

FIGURE 3



RUNNING IN

Your Danarm 1-71-SS has been fully tested in the Danarm factory, however, a further running in period is recommended.

Run the engine for several minutes at about one-third throttle, increasing gradually to half and then full throttle.

Check that the chain is receiving enough oil. Make a few small cuts. Stop the engine and allow chain to cool, and then retension the chain.

The chain is correctly tensioned when the side links touch the bottom edge of the cutter bar and can be pulled freely around the bar with finger and thumb. It may be necessary to retension the chain several times during the first few hours of use.

Your chain saw is a precision machine and your treatment of it during the first few days of operation will determine to a considerable extent its long term life and performance.

IF IN DOUBT CONSULT YOUR DANARM DEALER

OPERATING INSTRUCTIONS

If you have not used a chain saw previously it would be wise for you to obtain instruction from your dealer or an experienced user.

ALWAYS ensure that you have a good clear working area.

ALWAYS examine the log for stones, sand, nails or wire embedded in the bark which may damage the chain.

ALWAYS be careful not to allow the chain to contact the ground.

ALWAYS ensure that the chain is being adequately lubricated.

With the machine held firmly on the log, fully open the throttle and proceed to cut by slight forward and downward pressure on the front handlebar.

DO NOT allow the engine speed to fall too low. If the clutch slips ease the pressure and allow the speed to increase.

DO NOT keep the throttle open when the clutch is slipping, otherwise it will overheat and cause damage.

DO NOT pull violently on the saw handles.

The carburettor is set by the manufacturer. Should some slight additional adjustment of the High Speed screw (H) be necessary instructions are given on Page 10 for the complete adjustment procedure.

CARBURETTOR ADJUSTMENT

Should the carburettor need adjusting, start again from the basic settings. There are three adjusting screws:—

1. The Idle Speed throttle screw (Marked I).
2. The High Speed mixture screw (Marked H).
3. The Low Speed mixture screw (Marked L).

The basic settings are obtained as follows:—

- (a) Unscrew the Idle Speed screw (I) until it no longer touches the lever, then screw in until it just touches the lever, and give it a further one turn. This will cause the engine to run too fast and provide for final adjustment.
- (b) Turn the Low Speed Mixture screw (L) in fully (clockwise) without forcing (forcing will damage its aluminium seat), then unscrew it about $\frac{7}{8}$ of a turn.
- (c) Turn the High Speed Mixture screw (H) in fully and unscrew it about $\frac{7}{8}$ of a turn.

Start the engine and, when it is warm, it should accelerate smoothly. If the engine falters unscrew the Low Mixture screw (L) very slightly. It should never be more than one turn open.

If the engine smokes, is slow to accelerate, or fires irregularly after cutting has started, the adjustment should be corrected by slightly rotating the High Speed screw (H) clockwise—not more than $\frac{1}{8}$ of a turn.

If the engine tends to stall, although the speed increases smoothly and it fires evenly then the adjustment should be corrected by rotating the High Speed screw (H) anti-clockwise.

Lastly, adjust the Idle Speed (I) until the engine runs smoothly and the chain is not moving.

The final adjustments to the carburettor must be made under working conditions.

IF IN DOUBT CONSULT YOUR DANARM DEALER

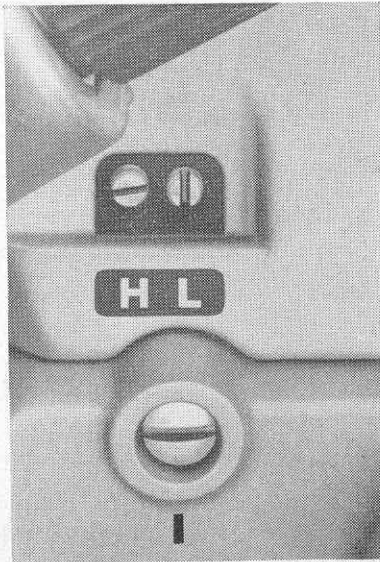


FIGURE 4

MAGNETO SETTINGS

The following settings should be maintained to give maximum performance:—

Spark Plug Points Gap .018/.020in. (0.45/0.50mm.)

Contact Breaker Points Gap .018/.020in. (0.45/.050mm.)

Air Gap between Core Arm and Flywheel .010/.012in. (0.26/0.31mm.)

The magneto should not be inspected or adjusted unless absolutely necessary. If this is necessary the breaker point gap may be checked as follows:—

Remove flywheel and breaker box cover, slowly turn engine over until the points are fully opened by the cam, then with a feeler gauge check to .018/.020in. (0.45/0.50mm.), adjust if necessary.

It is advisable for most magneto servicing to be performed by your dealer who has special equipment for this purpose.

IF IN DOUBT CONSULT YOUR DANARM DEALER

CHAIN MAINTENANCE

Full instructions for chain sharpening are given with the chain carton. The chain should be sharpened regularly using the correct file and holder supplied with the machine. An incorrect file may ruin the chain.

A $\frac{3}{8}$ in. diameter parallel file is correct for the $\frac{3}{8}$ in. pitch chain fitted to the saw. Maintain the angles and measurements on both sides of the chain otherwise the saw will not cut straight.

After a chain has been sharpened several times the depth gauges must be filed to suit. The factory setting for the depth gauge is .025in. (0.64mm.) below the cutter level. At regular intervals ask your Dealer to grind and sharpen the chain on the precision chain grinder retained for this purpose. This will correct any small errors that may have occurred during sharpening by hand.

ROUTINE MAINTENANCE

Regular maintenance is important, it will ensure the best performance of your saw and prove economic.

DAILY

Clean the machine thoroughly and tighten any nuts that may be found loose. Clean the air filter if necessary. Sharpen the chain as instructed above.

WEEKLY

Remove the cowling and clean out all dust, etc. Check and tighten all screws and nuts as necessary. Remove the air filter (making sure that no sawdust falls into the inlet manifold cavity), and clean by washing in clean petrol or petroleum solvent. Replace when the element is dry, ensuring that the filter is correctly located. Remove the chain and cutter bar, clean out the bar groove, turn the bar over and reassemble.

MONTHLY

Remove the spark plug, clean and set the points to a gap of .018/.020in. (0.45/0.50mm.). Bend the outside electrode only. (If the plug is dirty, the mixture may be too rich; there may be too much oil in the fuel mixture; or there may be a choked air filter). Check these points and rectify as necessary.

ACCIDENT PREVENTION

Never start cutting until you have a clear place to work, a firm footing, and a safe exit from falling timber or rolling logs.

Spilled fuel is dangerous. Refuel the saw well away from your working area.

Exhaust gases can easily start a fire, particularly in dry weather. Take the necessary precautions.

Do not carry the saw more than a step or two at the most with the engine running; make sure there is no danger of tripping.

Always give adequate warning to others in the vicinity when you are felling a tree.

Watch out for falling branches particularly from dead trees.

Wear protective clothing, including a safety helmet.

Some branches of felled trees may be dangerous. Check carefully before cutting.

Never operate the saw in an enclosed space; the exhaust gases are poisonous.

TO AVOID KICK-BACK

(see note page 15)

- 1 DO NOT cut with the nose of the guide bar.
- 2 DO NOT cut small branches, brush or saplings.
- 3 DO NOT allow the nose of the guide bar to contact the ground, another log or any other obstruction.
- 4 ALWAYS release throttle and ensure that the chain is stopped before removing the saw from a cut.
- 5 Always hold the saw firmly with both hands and maintain a balanced stance.

ENGINE TROUBLE CHART

IF THE ENGINE WILL NOT START yet is free and easy, and has good compression, the cause is among the following:—

1. Shortage of fuel. Check the fuel tank.
2. Choke or ignition switch in wrong position.
3. Choke used too much. See starting instructions.
4. Carburettor incorrectly set (see carburettor instructions).
5. Plug or magneto faulty.

IF IN DOUBT CONSULT YOUR DANARM DEALER

IF THE ENGINE WILL NOT RUN AT FULL THROTTLE yet starts readily, one of the following will be the cause:—

1. Incorrect carburettor settings.
2. Air filter dirty.
3. Exhaust ports obstructed by carbon.
4. Plug or magneto faulty.

IF THE ENGINE WILL NOT IDLE yet runs at full speed properly, the following are the most likely causes:—

1. Incorrect carburettor settings.
2. Loose carburettor.

CHAIN BRAKE OPERATION

The purpose of the chain brake is to stop the chain in the event of a 'kick-back' (see below).

If kick-back occurs, the hand on the front handlebar will tend to strike the hand guard and cause it to move forward. This forward movement of the guard will trigger a mechanism causing the steel brake band firmly to grip the brake drum stopping the sprocket and chain from moving.

When the brake is on, the guard will be in its most forward position. To reset the brake, pull the guard fully towards the front handlebar until the guard stops or a click is heard and there is no tension on the guard. Move the guard slightly forward where it will rest in the correct position for sawing.

NOTE: Do not attempt to start the saw or accelerate the engine when the brake has been triggered and is in the on position.

“ KICK-BACK ”

The chain at the nose of the guide bar can sometimes contact the wood in such a way that the saw kicks back and up towards the operator. This condition can also be caused by twigs or brush getting caught in the chain or by the chain accidentally contacting an object during a cut.

WARNING: KICK-BACK OCCURS MOST OFTEN WHEN LIMBING.

Guard against the saw coming in contact with stones or dirt.
 Inspect the saw regularly for loose nuts or bolts.
 Never ask anyone to hold the saw while starting the motor.
 Never start cutting until you have a clear space, a secure stance, and a safe exit from a falling tree.
 Never operate a chain saw in a closed room, exhaust fumes can be deadly.
 Never touch or try to stop a moving chain.
 Never operate a saw with a dull chain or one in need of repair.
 Never attempt to sharpen or remove chain with the engine running.
 Do not leave the saw idling while unattended.

6. FIRE PREVENTION—Refuel your saw with the aid of a funnel on an area of bare ground and away from any naked lights.

If fuel is spilled on the motor, wipe it off, and move saw from any fuel before starting the motor.

- Let a hot saw cool before refuelling.
- Keep all electrical connections tight.
- Clean carbon from exhaust regularly.
- Never operate a chain saw without a silencer.
- Do not use a saw that is back firing.
- Do not wait for the engine to run out of fuel before refuelling.

7. GENERAL—Saws for use in Agriculture must be fitted with one or other of the guards specified in the "Agricultural (Field Machinery) Regulations 1962, Statutory Instrument 1962, No. 1472".

- 8. When transporting saw, fit chain cover.
- 9. Read the Forestry Safety Council Leaflet, FSC.10.
- 10. Wear ear defenders and eye protection when operating a chain saw.

ALL BEGINNERS SHOULD RECEIVE INSTRUCTION IN THE
 SAFE USE OF A CHAIN SAW BY A PROFESSIONAL OR
 EXPERIENCED OPERATOR BEFORE ATTEMPTING TO USE
 A SAW

ME	HW.
260	275
241	236
219	161
162	126
42	83
99	58
24	38
X1	19
	X2