



MODEL OMG

Chain Saw

ASSEMBLY No. 4600H - 4602H

**INSTRUCTION FOR CARE,
MAINTENANCE AND OPERATION**

PRICE 25 CENTS

MALL TOOL COMPANY

7740 South Chicago Avenue

CHICAGO 19, ILLINOIS

THE MALL TOOL COMPANY SERVICE ORGANIZATION

It is the aim of the MALL TOOL COMPANY SERVICE DEPARTMENT to provide prompt and efficient service on all MALL TOOL products. There are 40 Factory Service Warehouses throughout the United States and Canada which stock parts and maintain service repair departments prepared to serve MALL customers.

The Service Department is also represented by traveling servicemen who are assigned to territories covering the country to assist in unusual problems or train repair men maintained by large users of MALL TOOLS. These men also train dealer service personnel in order to provide the best service and coverage possible.

MANUFACTURER'S WARRANTY

It is expressly agreed that there are no warranties, expressed or implied, made either by the Dealer or the Manufacturer on Mall Tools except the Manufacturer's warranty against defective materials or workmanship as follows:

The Mall Tool Company warrants each new tool manufactured by it to be free from defects in material and workmanship under normal use and service, its obligation under warranty being limited to making good at its factory or at any of its district factory service warehouses, any part or parts thereof which shall, within 30 days after delivery of such tool to the original purchaser, be returned to it with transportation charges prepaid and which at its examination shall disclose to its satisfaction to have been thus defective; this warranty being expressly in lieu of all other warranties, expressed or implied and any other obligations or liabilities on its part, and it neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale of the tools.

This warranty shall not apply to any tool which shall have been repaired or altered nor to expendable parts nor to tools which have been subject to misuse, negligence or accident.

PACKING

The MALL Model OMG Gasoline Engine represents the latest and most advanced development in portable gasoline engine design manufactured by the MALL TOOL COMPANY today. Information collected over years of successful gasoline engine manufacturing has helped in the development of the OMG. It is powerful, light in weight and will deliver more service hours per dollar than any previous model on the market.

The instructions presented here are to assist the owner to obtain the most efficient and longest service with the least maintenance-cost-operation of his MALL MODEL OMG. The gasoline engine is built under precision methods. By carefully following the directions presented here you will be assured of long trouble-free service.

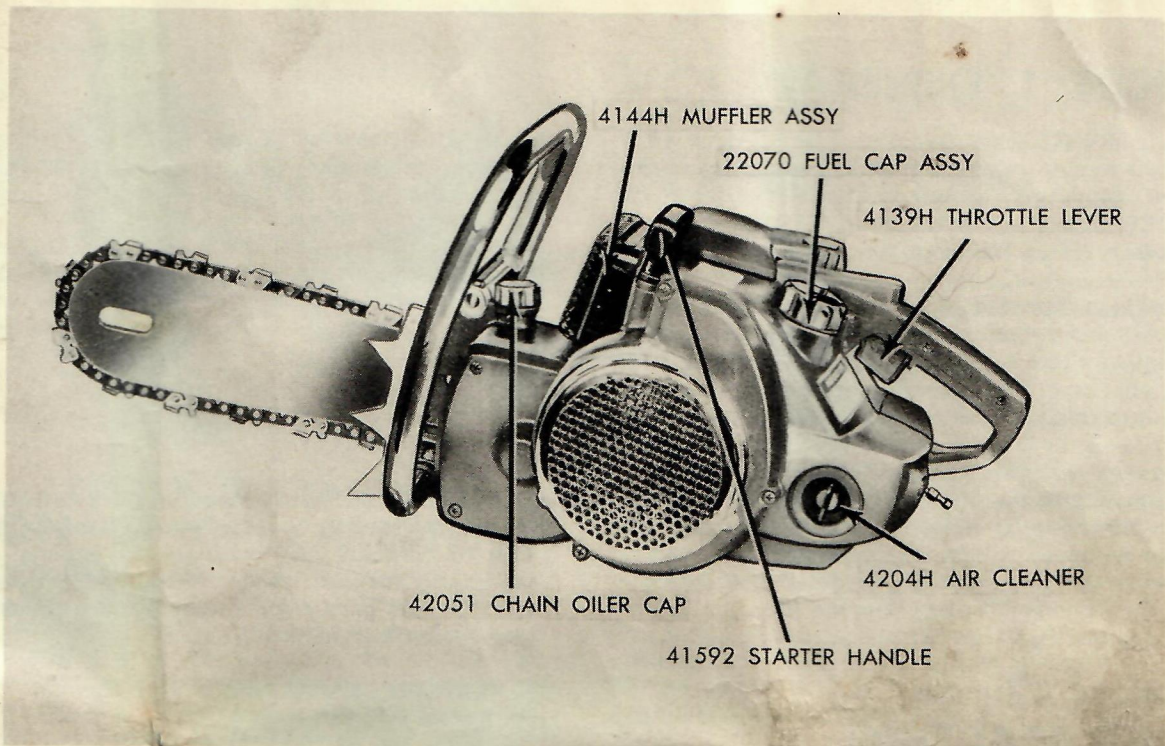


FIGURE 1. PHOTO OMG

SPECIFICATIONS

NUMBER OF CYLINDERS	ONE
TYPE OF COOLING	FORCED AIR CIRCULATION
TYPE OF CARBURETOR	FLOAT TYPE OR DIAPHRAGM
OPERATING SPEED	5000 RPM
CYCLE	TWO
VALVE	REED TYPE
MAGNETO	CRANKSHAFT TYPE
IGNITION TIMING	FIRE AT 38° B.T.D.C.
POINT SETTING018 TO .020 INCHES
SPARK PLUG GAP025 INCHES
TYPE OF SPARK PLUG	CHAMPION J 6
FUEL TANK CAPACITY	1-1/2 PINTS
FUEL RATIO	1/3 PINT OIL TO 1 GALLON GASOLINE
RECOMMENDED GASOLINE GRADE	(REGULAR) 72 TO 84 OCTANE RATING
RECOMMENDED OIL GRADE	MALL NUMBER 22715 SAE NO. 30 NON-DETERGENT
RATED POWER	3-1/2 BRAKE HORSEPOWER

SECTION 1. GENERAL

The MALL MODEL OMG Gasoline engine is a two-stroke cycle engine employing the "oil-mixed-gasoline" method of lubrication. Every down stroke of the piston is a POWER stroke and at the designed RPM a smooth flow of power drives the chain saw.

Precision high speed engines require the care and attention which a proud owner will want to give. It is sound business too, for doing things the right way, cleaning, checking, and operating your OMG engine as prescribed in this book, will REDUCE operating costs.

Carefully read the "Before Starting" procedures and adhere faithfully to the maintenance suggestions. Remember, there may be some types of repair jobs you may not be equipped to do. When in doubt, send your gas engine to the nearest authorized service store or direct to the Chicago **Factory Service Department**.

SECTION 2. BEFORE STARTING

RECEIVING PACKAGE After you have carefully uncrated your OMG gasoline engine, make sure that all the pieces are included. Do not attempt to start the engine until you are acquainted with this manual. Your engine has been test run at the factory before shipment and is in proper adjustment. If there are any parts missing from the container, report it to your carrier and to MALL TOOL COMPANY Traffic Department. Immediate steps will be taken to locate the missing parts.

PREPARING THE FUEL MIX Two stroke cycle engines are lubricated by oil which is mixed with the gasoline. The lubricating oil, if mixed in the recommended ratios, will not interfere with the combustion of the gasoline, and a cool running, well lubricated engine will result. Only if improper gasoline-to-oil ratios are used will there be any difficulty experienced with hot-running, burned-out bearings or scored cylinder walls. Too much oil in the oil-gasoline mix is not recommended since this will cause hard starting, stuck piston rings, carboned spark plugs and exhaust ports; therefore maximum power delivery will not be possible.

Select a clean container, preferably a five gallon safety type gasoline can with flexible spout. Use a good grade of regular gasoline. Avoid leaded gasoline or benzine; this engine is designed to use regular gasoline. Add MALL No. 22715 non-detergent oil or a good grade non-detergent S.A.E. No. 30 lubricating oil to your gasoline in the ratio of 1/3 pint of oil to 1 gallon of gasoline.

When oil is poured into the gasoline, mix well by shaking the container vigorously, or if the mix is in an open vessel, stir with a clean stick.

When filling the tank of your OMG, avoid spilling any fuel over the engine; this is not only dangerous as a fire hazard, but tends to collect dust and dirt.

Keep your gas tank full. Condensation inside the tank is a source of trouble which can be eliminated by keeping the tank full. Store your gasoline supply container in a safe place, and keep the spout and the filler hole capped.

LOCATION OF CONTROLS Before applying an OMG gasoline engine to a job, the operator should familiarize himself with the controls. All controls for normal operation are easily reached. Refer to Fig. 2 for illustrations. NOTE: This paragraph refers to the standard float-type carburetor installation.

1. **THROTTLE CONTROL.** The throttle control is located on the underside of the handle grip which is on top of the engine. When squeezed flush to the handle grip, the throttle is wide open. In a normal trigger position, the engine will idle.
2. **IDLE MIXTURE ADJUSTMENT.** The idle mixture adjustment screw is located on top of the carburetor. This screw was properly adjusted at the factory. For further adjustment see section under OPERATION.
3. **IDLE SPEED ADJUSTMENT SCREW.** The idle speed adjustment screw is at the upper right side of the carburetor. It has no effect on the mixture - merely increases or decreases idling speed.
4. **HIGH SPEED MIXTURE ADJUSTMENT SCREW.** This important adjustment screw, located at the lower part of the carburetor, must be checked at various intervals to assure highest power output, safe lubrication, and cool running. For proper adjustment see the section under OPERATION.
5. **CHOKE LEVER.** The choke lever on the carburetor is controlled by a wire which ends in a knob at the rear of the engine directly below the handle. Pulling the knob outward closes the choke; pushing it in opens the choke.
6. **IGNITION SWITCH.** This is a simple, rugged toggle switch. Push the lever to the left to start the engine and to the right to stop.
7. **REWIND STARTER HANDLE.** This handle is located toward the front of the engine on the left side.
8. **FUEL SHUT OFF VALVE.** This valve is situated on the right rear of the engine. It should be closed whenever the engine is stopped to prevent fuel from seeping through the carburetor into the crankshaft.

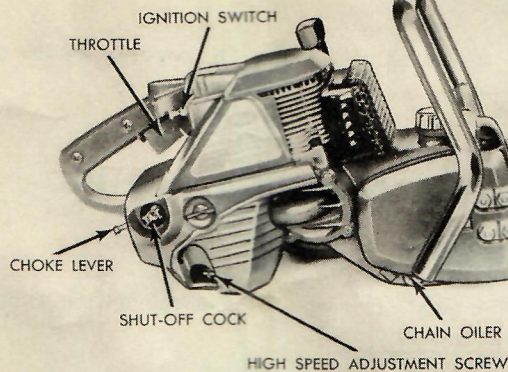


FIGURE 2. CONTROLS

SECTION 3. OPERATION

SAFETY PRECAUTION Before operating this engine be sure there is no liquid gasoline near or on engine. Wipe the engine dry and cover any containers of gasoline. Do not operate engine in a closed room. Be certain that plenty of ventilation is provided. Practice safety at all times during the operation of the engine to prevent injury to person or damage to the engine.

STARTING PROCEDURE The engine has been test run at the factory before shipment and is in proper operating adjustment.

With the gasoline tank filled with the proper mix of fuel, follow these steps to start the engine:

1. Open fuel line valve.
2. Pull choke knob out.
3. Open throttle wide open.
4. Open ignition switch by pushing lever to left.
5. Grasp starter rope handle firmly and pull out slowly until compression is felt. Then jerk sharply. Repeat until the engine fires. Then, push the choke knob in and repeat. As soon as the engine starts, release the throttle so the engine may idle for a moment.
6. **IMPORTANT** Before storing the engine for an extended period, close the shut off valve while the engine is idling and let the engine "run-out" of gasoline. This will prevent gumming in the fuel lines and carburetor due to evaporated gasoline.

BREAK-IN PERIOD The test run of the engine at the factory is not sufficient for a break-in period. For best performance and long life service, the OMG engine should be operated under a 20 hour break-in period. The following break-in regulations are considered sufficient:

1. Do not operate the engine for long periods of time at full speed under full load.

2. Do not permit the engine to run at full speed under no load.
3. Be sure the carburetor high-speed adjustment is correct. See section 5 for adjustment.

SECTION 4. CARE

The following suggestions for the care of your gasoline engine will assist in giving you many trouble-free hours of operation at the least possible maintenance cost. By observing these suggestions you always have a powerful engine ready for operation.

During operation, the operator should always be aware of any new or unfamiliar changes not normal to a properly running engine. These "warnings" may come as new sounds, odors, or actual performance differences in the engine. Immediately check the cause of these common changes. Costly repair or replacement of parts may be avoided by being alert.

When engine operation has been stopped for some period, such as after a day's work, it is advisable to check and fill the fuel tank. Also check lubricating points so the engine will be ready for operation at the start of a job.

It is advisable to clean the engine before storing. While wiping off various parts, a visual check can be made. Control linkage should be secure and external fasteners checked for tightness. Cooling fins around the cylinder and the air intake screen should be checked for possible clogging by leaves, or sawdust which would interfere with the cooling air circulation.

Occasionally check the automatic chain oiler to see that oil is being pumped into the chain at a rate to assure proper lubrication. The smoothness of running idle is also an indication of proper adjustment and condition. The engine should idle slowly enough so the clutch does not engage. Whenever you find it necessary to fill the gasoline tank, also check the oil level.

Read this manual from time to time, and follow closely the suggestions given herein. Pay close attention to the Trouble Shooting Chart which is in the MAINTENANCE Section.

SECTION 5. MAINTENANCE

To the owner or operator this term applies to the minor repairing, adjusting, checking and testing of the engine in order to maintain top operating efficiency. The owner or operator is not expected to do major overhaul work on this equipment, and the information contained herein is only that which falls within the scope of the average mechanically inclined user. There are authorized service repair men located at MALL Service Ware houses and many dealers throughout the country. Don't take the risk of permitting inferior work on your equipment. Shutdown time is lost time, and much of this can be prevented by following these directions on MAINTENANCE.

The complete unit is made up of several subassemblies. For convenience of presentation this section will be divided into five parts:

- A. Rewind Starter
- B. Ignition
- C. Fuel System
- D. Clutch
- E. Cylinder

REWIND STARTER

The OMG rewind starter is a simple, sturdy, positive-starting mechanism. DO NOT PULL OUT STARTER REWIND ROPE WHILE THE ENGINE IS RUNNING. This may cause serious damage to the mechanism. The exploded view below will provide all the necessary information to assist in the complete disassembly of this assembly. Parts should be ordered by the part number shown identifying that part.

TO REPLACE THE REWIND STARTER ROPE

REMOVAL

1. Withdraw the three Oval Sems (4187H) which attach the Fan Housing (4571H) to the engine and lift the fan housing and Screen Assembly (4224H) aside.
2. Remove the Fan (4172H) by turning out the Fan Screw (4239H) with a 9/16" wrench.
3. Remove the two Oval Sems (4312H) which hold the Starter Cover (4324H) and lift off the cover.
4. Pull out the Starter Handle (20294) about 1 foot.
5. Hold the Starter Pulley Assembly (4294H) with one hand to relieve spring tension on the Starter Rope (4378H) and feed the rope down into the pulley slot.
6. While holding the pulley firmly take two turns of the rope off the pulley. This will remove spring tension.
7. Remove the starter handle from the starter rope.
8. Pull the rope out and disconnect it from the starter pulley.

INSTALLATION

1. Tie a knot in one end of the new rope and thread the rope through the hole in the pulley.

CAUTION

The knot must be small enough so that it will be almost flush with the surface of the pulley. A large knot will strike against the cover and interfere with the action of the starter.

2. Thread the rope through the slot and attach the handle.

3. While holding the pulley firmly wrap the rope around the pulley clockwise until the spring tension brings the starter handle tightly against the outside of the bushing.
4. Replace the remaining parts in reverse order of disassembly.

TO REPLACE REWIND SPRING

REMOVAL

1. Repeat the first six steps of the above directions on rope replacement.
2. Lift off Cap (4335H).
3. Withdraw Soc-hd Cap Screw (117021) and Washer (4249H).
4. Lift out the Spring (4307H) and Pulley (4294H).
5. Lift the spring out of the pulley.

INSTALLATION

1. Place the new spring in position in the pulley.
2. Complete the reassembly by following the above steps in reverse order.

IGNITION SYSTEM Included as parts of the ignition system are the spark plug and high tension cable, ignition switch, ground wire, and magneto assembly. Malfunction of any of these parts will show up immediately as poor starting, lack of power, operation cutting out or poor idling. If the proper fuel mix is not followed, the spark plug may carbon very easily. The contact point gap in the magneto must be set within very close dimensions and should be checked from time to time.

CHECKING SPARK PLUG

1. Disconnect the Lead Assembly (4265H) from the Sparkplug (25671).
2. Unscrew the sparkplug and inspect for carbon. Clean away carbon using a dull tool.
3. Check the spark gap with a feeler gage and adjust to .025". If points are badly burnt the sparkplug must be replaced.

CHECKING CONTACT BREAKER POINTS

1. Remove the screen and fan housing by withdrawing the three Oval Sems (4214H).
2. Remove the fan by unscrewing the Fan Screw (4239H). This screw acts as a puller and draws the fan from its position exposing the magneto.
3. Remove the contact breaker cover by withdrawing two screws.
4. Turn the cam to its high position and check the gap between the points with a feeler gage. The gap should be .018 to .020 inches.
5. If the points are burned it is necessary to replace with a new unit.
6. Reassemble in reverse order of disassembly.

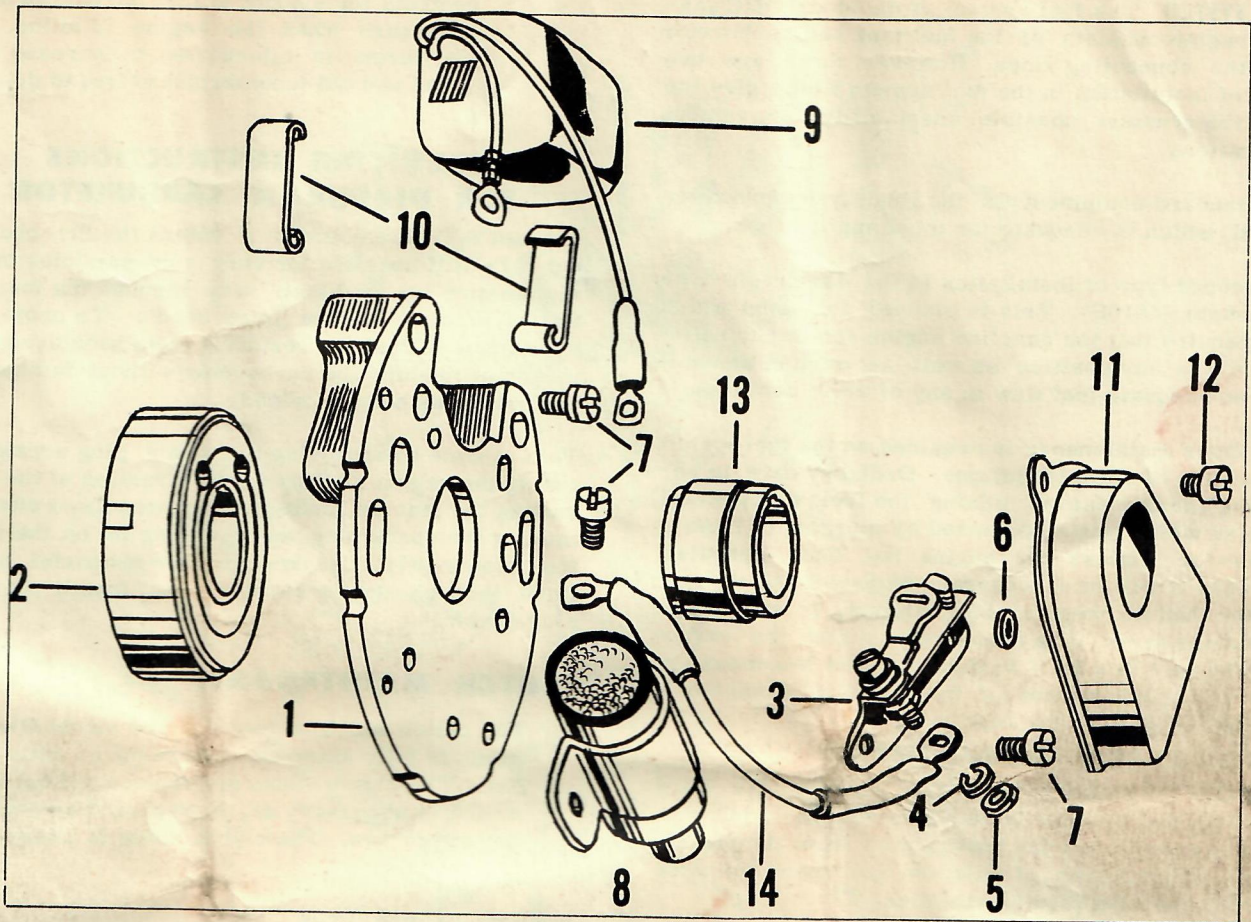


FIGURE 3. MAGNETO - EXPLODED VIEW

Ref. No.	Part Number	Description	Ref. No.	Part Number	Description
1	42400	Plate Assembly	8	42403	Condenser Assembly
2	4379H	Rotor	9	42399	Coil Assembly
3	41320	Contact Assembly	10	32481	Clamp
4	103217	Lockwasher	11	42401	Cover
5	103003	Nut	12	101101	Screw and Lockwasher
6	103604	Washer	13	42402	Cam
7	101102	Screw and Lockwasher	14	41317	Lead Assembly

REPLACING THE BELT

REMOVAL

Follow the eight steps detailed in the removal of the starter rope.

9. Take the Cap (4335H) off the end of the Shaft (4380H) and remove the Cap Screw (117021) and Washers (4307H). The Starter Pulley Assembly (4294H) and Spring (4253H) can now be lifted off together.
10. Remove Fil-hd Screws (101168) and Lockwashers (103221). Pull off the stator plate of the Magneto Assembly (42247).
11. Remove the rotor of the magneto assembly with the special puller. Lift out the Key (41356).
12. Turn out the Screws (101420) and Washers (103221).

Pull the Magneto Cover (4174H) off the shaft with the special puller.

13. Remove the Sparkplug (25671) to relieve compression. Rotate the Clutch Assembly (43526) clockwise while pulling outward on the special puller. The Gilmer Belt (4196H) will come off.

INSTALLATION

1. Remove the carburetor and Reed Plate Assembly (4200H) by withdrawing the four Oval-hd Screws (4217H) and Lockwashers (103285).
2. Turn the engine over and place a suitable block of wood under the end of the Crankshaft (4457H).
3. Proceed with assembly in reverse order of disassembly.

FUEL SYSTEM The fuel system of the Model OMG gasoline engine consists of the fuel tank and carburetor with the connecting lines. However, there are two types of installation in the fuel system which give the OMG the greatest possible adaptability for various applications.

The standard equipment is the float-type carburetor (4240H) which is adequate for most applications.

The second type of installation is the diaphragm-type carburetor (4510H). This is planned for uses which may require that the gasoline engine can be run satisfactorily in any position as well as upright and will have an adequate fuel flow in any of these positions.

Very little maintenance is required on the fuel system with either of the installations. Ordinary care in observing cleanliness in mixing the fuel will prevent troubles which might be caused by clogging of lines or carburetor. Unless the engine has been operated for years it will be unnecessary to do more to the carburetor than an occasional adjustment. If any major difficulties arise, it is recommended that the carburetor be sent to a Mall Factory Service Warehouse or the Service Department of the Mall Tool Company at the Chicago factory for repair.

CARBURETOR ADJUSTMENT

1. **FLOAT TYPE CARBURETOR No. 4240HA.** Very little maintenance is required on this carburetor. However, to get the best results from the engine, the adjustments of mixture and speed must be watched with regular attention.
 - a. Keep the high speed adjustment screw (Fig. 4, 26) in proper position at all times. If the engine is not running smoothly under load or is overheating the high speed adjustment screw is probably out of its correct setting. To correct the position of the high speed adjustment screw No. 4492H, turn the screw in (clockwise) until it is in the "off" position - as far as it will go turned by hand. Then turn it back, (counterclockwise) one and 1/8 turns. Variations in altitude and humidity produce slight changes in correct setting of this control, consequently the operator must use his own judgment in turning the screw slowly until the engine is running smoothly.
 - b. The idle adjustment screw (Fig. 4, 18) is also important in maintaining full efficiency of the engine. Incorrect setting is indicated by rough running or dying of the engine when idling. Correct the adjustment by turning the idle adjustment screw in (clockwise) to the "off" position, then turning it out (counterclockwise) 3/4 of a turn. Further fine adjustment depends, as with the high speed adjustment screw, on variations of altitude and humidity. Here again the operator must depend on his own judgment in moving the screws slowly in or out until the engine is idling smoothly.
 - c. The idle speed adjustment screw (Fig. 4, 20) has no effect on the fuel-air ratio. It only

controls the amount of fuel introduced into the crankcase when the engine is idling. Turn the screw in (clockwise) to increase engine speed and out (counterclockwise) to decrease it.

SERVICING INSTRUCTIONS FOR DIAPHRAM CARBURETOR

All fuel is filtered before it enters the fuel chamber but it is still possible for very fine particles of foreign matter to find their way through the fuel lines and accumulate at the inlet needle. To protect the user from difficulties resulting from such deposits, a means of flushing the carburetor without further disassembly has been provided.

This is done by removing the drain plug screw (12); tilting the engine slightly in the direction of the drain; pulling the starter handle two or three times after removing the spark plug; and pressing in on the flushing plunger (54). Let three or four spoonful of fuel flush through the carburetor, then install the drain plug screw.

CLUTCH MAINTENANCE

1. The clutch which is used on the model OMG engines is fully automatic and requires little attention. The clutch shoes are replaceable but if such action is necessary all three should be replaced, not one or two. The clutch lining is integral with the shoe.

Replacing clutch shoes.

REMOVAL

(Follow the first six steps in removal of Rewind Starter Rope, page 6)

7. Draw the clutch assembly off the shaft, rotating it while withdrawing so that the belt will slide off.
8. Lift the clutch out of the housing with a pair of pliers.
9. Remove the three screws which hold the plate over the three clutch shoes. Remove the plate.
10. With a screwdriver compress and lift out the spring in each clutch shoe.
11. The shoes can now be lifted out.

INSTALLATION

1. Place the new clutch shoes in position.
2. Insert the clutch shoe springs.
3. Follow reverse order of disassembly in reassembly in reassembling the parts. A small amount of Mall 26361 bearing grease should be placed on all bearing surfaces.

CYLINDER

The two cycle engine is normally hot running, but caution should be observed to prevent excessive heat. Cylinder fins must be kept clear of dirt and saw dust. The exhaust ports must have periodic attention to remove carbon deposits.

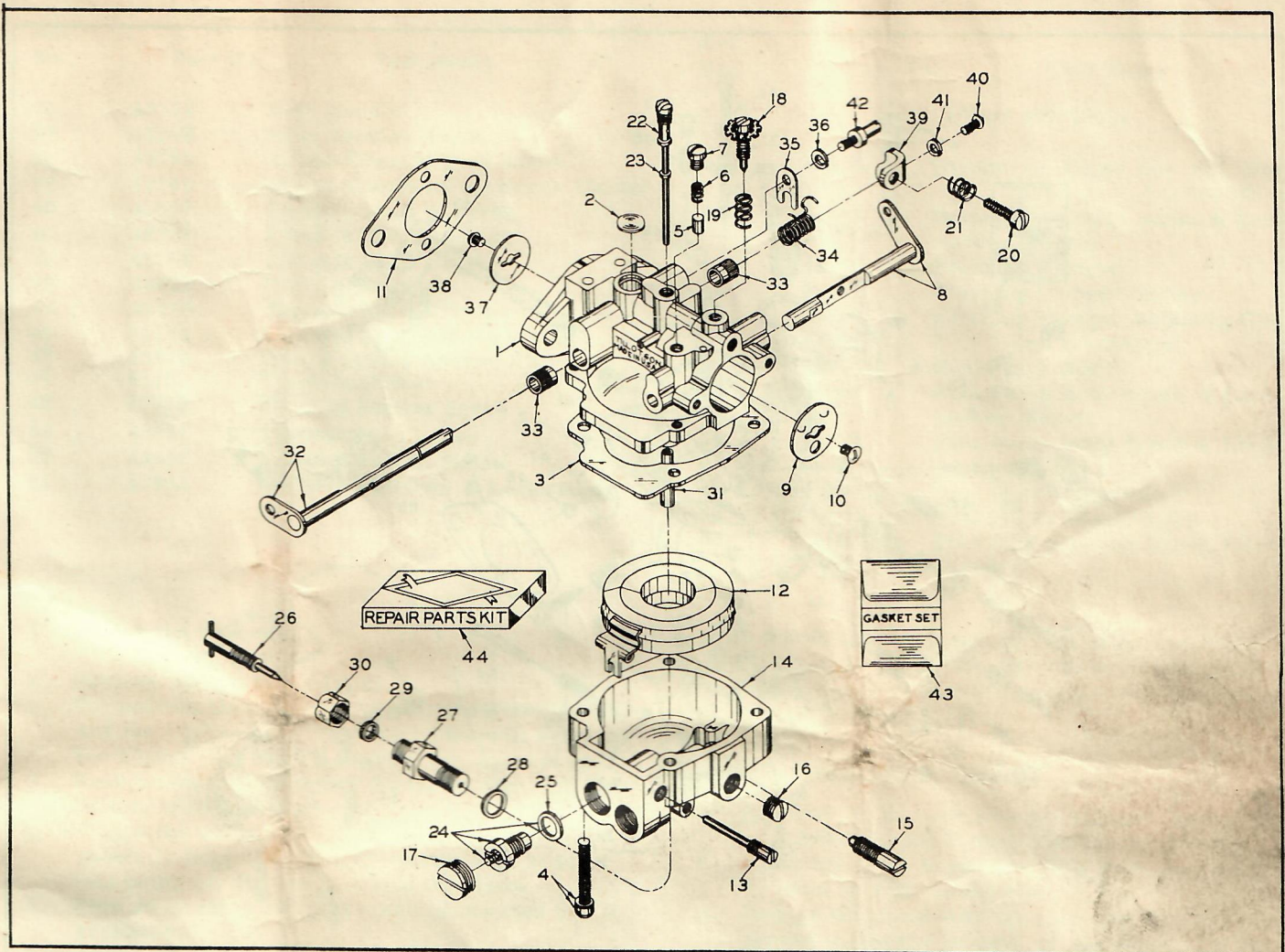


FIGURE 4. FLOAT TYPE CARBURETOR - EXPLODED VIEW

Ref. No.	Part No.	Part Name	Ref. No.	Part No.	Part Name
1	4494H	Body, Upper Half	24	4491H	Inlet Needle, Seat & Gasket
2	104982	Body Channel Welch Plug	25	20977	Inlet Seat Gasket
3	38118	Body Gasket	26	4492H	Main Adjustment Screw
4	101109A	Screw & Lockwasher	27	4489H	Main Adjustment Screw Gland
5	20939	Choke Friction Pin	28	20977	Main Adj. Gland Gasket
6	20942	Choke Friction Pin Spring	29	23416	Main Adjustment Screw Packing
7	20941	Choke Friction Pin Screw	30	23411	Main Adjustment Screw Pack.Nut
8	4400H	Choke Shaft & Lever	31	35193	Main Nozzle
9	4408H	Choke Shutter	32	4399H	Throttle Shaft & Lever
10	100081A	Choke Shutter Screw	33	4407H	Throttle Shaft Bushing
11	23379	Flange Gasket	34	4391H	Throttle Shaft Return Spring
12	4388H	Float	35	4389H	Throttle Shaft Clip
13	20947	Float Pinion Pin	36	38472	Shaft Clip Lockwasher
14	4488H	Fuel Bowl	37	4406H	Throttle Shutter
15	38120	Fuel Bowl Drain Valve	38	20959	Throttle Shutter Screw
16	4423H	Fuel Bowl Plug Screw (Small)	39	4398H	Throttle Stop Lever
17	23426	Fuel Bowl Plug Screw (Large)	40	19691	Lever Retaining Screw
18	4495H	Idle Adjustment Screw	41	103211	Lever Retaining Screw Lockwasher
19	35184	Idle Screw Spring	42	4390H	Throttle Stop Pin
20	20951	Idle Speed Regulating Screw	43	4412H	GASKET & PACKING SET
21	20952	Idle Speed Reg. Screw Spring	44	RK-147	REPAIR PARTS KIT
22	4490H	Idle Tube			
23	20953	Idle Tube Gasket			

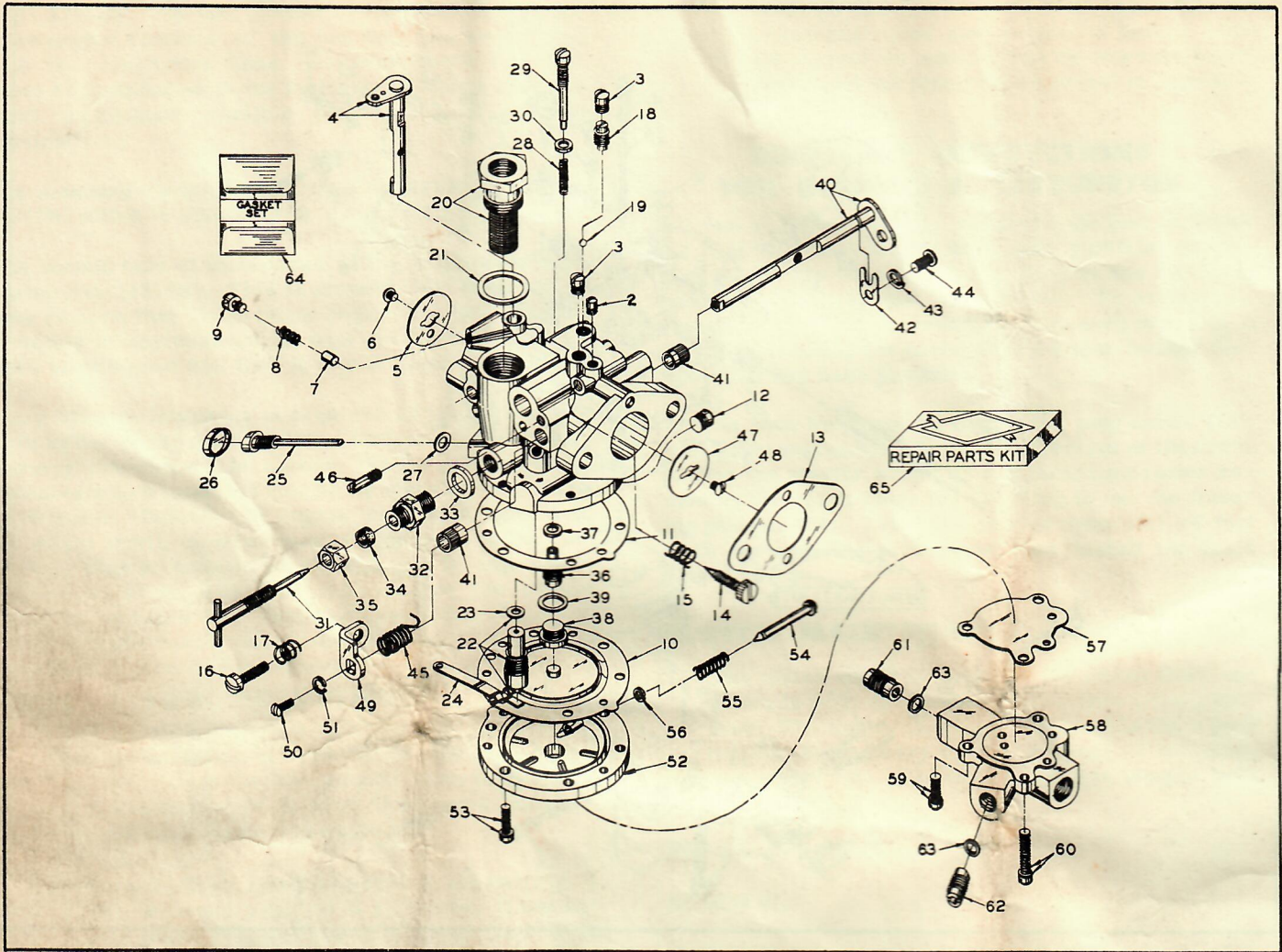


FIGURE 5. DIAPHRAGM CARBURETOR - EXPLODED

Ref. No.	Part No.	Part Name	Ref. No.	Part No.	Part Name
2	43147	Body Channel Plug Screw	19	29903	Idle Check Valve Seat Ball
3	43148	Body Channel Plug Screw	20	43136	Inlet Connection & Screen
4	43647	Choke Shaft & Lever	21	43156	Inlet Connection Gasket
5	42816	Choke Shutter	22	43139	Inlet Needle, Seat & Gasket
6	100082	Choke Shutter Screw	23	43649	Inlet Seat Gasket
7	20939	Choke Friction Pin	24	43160	Inlet Control Lever
8	45151	Choke Friction Spring	25	43142	Pinion Screw
9	43648	Choke Friction Screw	26	43176	Pinion Screw Cap
10	43140	Diaphragm	27	43175	Pinion Screw Gasket
11	43153	Diaphragm Cover Gasket	28	43157	Inlet Tension Spring
12	23419	Drain Plug Screw	29	43164	Retaining Screw
13	23379	Flange Gasket	30	43163	Spring Retaining Screw Washer
14	43159	Idle Adjustment Screw	31	43135	Main Adjustment Screw
15	43150	Idle Adjustment Screw Spring	32	23417	Main Adjustment Screw Gland
16	20951	Idle Speed Control Screw	33	23418	Main Adj. Screw Gland Gasket
17	20952	Speed Control Screw Spring	34	23416	Main Adj. Screw Packing
18	43162	Idle Check Valve Seat	35	23411	Main Adj. Screw Packing Nut

Ref. No.	Part No.	Part Name
36	43134	Main Nozzle
37	43149	Main Nozzle Gasket
38	43155	Nozzle Channel Plug Screw
39	43161	Nozzle Channel Plug Screw Gasket
40	43650	Throttle Shaft & Lever
41	42791	Throttle Shaft Bushing
42	43154	Throttle Shaft Clip
43	38472	Clip Lockwasher
44	42790	Throttle Shaft Clip Screw
45	35188	Throttle Shaft Return Spring
46	43172	Return Spring Anchor Pin
47	43152	Throttle Shutter
48	20959	Throttle Shutter Screw
49	43651	Throttle Stop Lever
50	43652	Stop Lever Ret. Screw
51	43653	Lever Ret. Screw & Lockwasher

Ref. No.	Part No.	Part Name
FUEL PUMP SECTION		
52	43173	Diaphragm Cover (Inc. Ref. Nos. 54, 55, 56)
53	43158	Diaphragm Cover Screw & Lockwasher (Short)
54	43168	Flushing Plunger
55	43167	Flushing Plunger Spring
56	43166	Flushing Plunger Retaining Clip
57	43165	Fuel Pump Diaphragm
58	43174	Fuel Pump Body
59	43158	Fuel Pump Body Screw & Lockwasher (Short)
60	43169	Fuel Pump Body Screw & Lockwasher (Long)
61	43141	Fuel Inlet Check Valve
62	43133	Fuel Outlet Check Valve
63	43149	Fuel Inlet & Outlet Check Valve Gasket

To remove the carbon:

1. Remove the Muffler (4144H).
2. Turn out the three Screws (102003) the Wire (18296) and the Lockwashers (22794). This will release the Flange (4287H) and expose the exhaust port.
3. Position the piston so that its top is even with the bottom of the exhaust port.
4. Scrape the carbon from the exhaust port and carefully from the top of the piston with a blunt tool being careful not to injure the piston.
5. Blow away chips and dust with compressed air if available.
6. Repeat if necessary, then replace flange and muffler.

AIR FILTER MAINTENANCE

The Air Filter should be removed and cleaned every day before putting the saw into operation. Remove the filter, wash it in gasoline, (not fuel mix), and let it dry before putting it back in place.

SECTION 6. CHAIN SAW

The Model OMG engine has been especially designed as the motive power of chain saws. Suitable chain guides and chains are available in a number of different sizes and types. Recommended variations are shown in the following chart.

Capacity	Standard Guide	Hard Face Guide	Chain	Wide Kerf Chain
12"	43330		42975C	43300
15"	43331		42976C	43301
18"	43332	42570	42780C	43302
24"	43333	42571	40781C	43303
30"	40522	42572	40782C	43304
36"	41792	42573	41795	43305

The size of guide and size and type of chain best suit-

ed to individual needs depend upon the diameter and character of timber to be cut. The wide kerf chain is needed in very soft woods. In most woods the regular chain cuts satisfactorily.

MOUNTING THE CHAIN

1. Remove the Bumper Bracket (4285H) by loosening the Nuts (42808) with their lockwashers.
2. Place the guide in position with the holes correctly lined up with the Screws.
3. Engage the chain over the Sprocket (40714) and thread it into the groove of the guide. Be sure that the cutting edge of the cutter teeth will be moving toward operator on the lower edge of the guide. Bring the two ends together and slip the connecting pin into the holes provided in the connecting links of the chain.
4. Tighten the chain by turning the Adjusting Screw (4472H) clockwise against the Adjusting Block (36921). This will move the guide out. Continue the tightening process until there is a clearance of 1/8" between the top of the groove and the bottom of the chain.
5. Tighten the five Nuts (42808).

CHAIN SAW OPERATION

Your Model OMG chain saw has been designed to give you completely satisfactory performance in felling, bucking and limbing of timber. As you gain experience in the operation of this tool you will acquire skill and judgement which will enable you to get the maximum efficiency from your saw. Remember that a good worker is a safe one. The hazards of cutting timber can be greatly reduced by a few simple rules.

1. Never operate your saw in a closed room. Be sure of ample ventilation.
2. Keep all parts of your body away from the chain when the clutch is engaged.

3. Always keep the tooth bracket against the log when cutting.
4. Always stop the engine before moving from one location to another.
5. Stop the engine before attempting to replace or sharpen the chain.
6. Be sure of a clear place to stand and a safe "get away" position when felling trees.
7. Observe fire precautions when mixing fuel or refueling the engine.

The importance of a properly sharpened chain cannot be over emphasized. Speed, efficiency, long life and low maintenance cannot be obtained from a chain saw unless it is kept sharp. Out-of-line cuts, jumping, binding and engine stalling are some of the indications of a saw that is dull or incorrectly sharpened.

Chains should be "touched-up" after approximately six hours cutting time. This can be done without removing the chain from the guide, with the proper hand file. Maintain the original angle on all cutting edges and remove as little metal as possible.

At any time a chain is showing signs of dullness which the "touch-up" fails to cure, it should be removed from the guide and carefully sharpened. The sharpening can be done by hand filing or power equipment, but in either case a means of checking dimensions and angles and some method of holding the chain firmly should be available.

The Mall Chain Clamp No. T18543 or two straight bars which can be held in a vise will answer. A straight edge and feeler gage are necessary. Be sure to maintain all original angles. Keep all teeth even in height. The 1/4 inch diameter round file (J) (40542) can be used successfully in hand filing or a file of similar type should be selected for the Mall Electric Hand Sharpener. Additional information is contained in Mall Chain Sharpening Manual available at the factory at 50 cents each.

FELLING TIMBER. Before felling a tree, survey the tree and decide how to proceed to the best advantage. At this point, observe the "lean" of the tree and decide where you want the tree for the most efficient bucking and limbing. In preparation for the undercut, clear a sufficient working area around the tree.

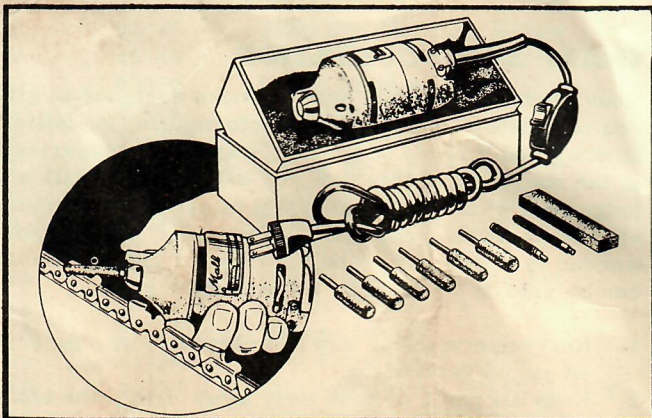


FIGURE 6.

Under cuts are made on the side toward which the tree must fall. The under cut provides a hinge point on which to tip the tree off the stump in the direction that is desired. Various cuts are used in various parts of the country. Illustrated below are a few types all of

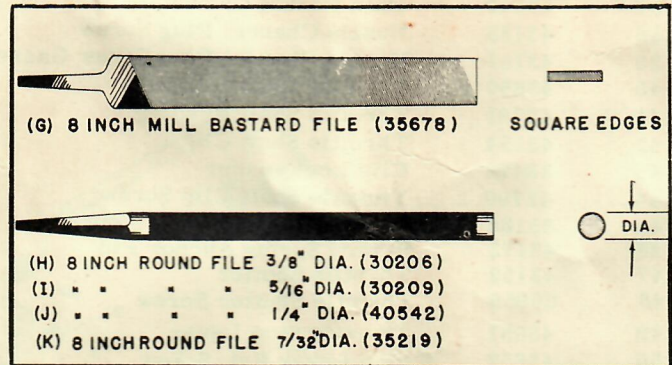


FIGURE 7.

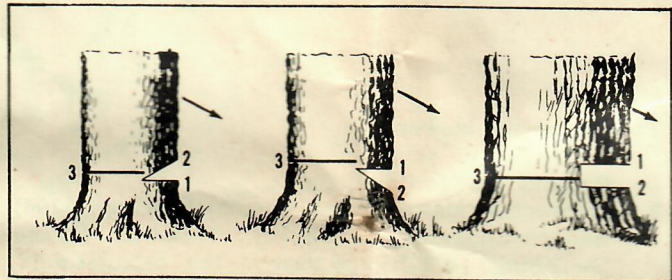


FIGURE 8.

which can be made with a Model OMG chain saw (Fig. 8). The cuts are numbered in the proper order of cutting. 1 and 2 are made first and to a depth of approximately 1/4 the diameter of the tree, except for leaning trees which require a deeper under cut.

The back cut is made about 2 inches higher than the bottom of the under cut. The cut should be parallel with the under cut. If all cutting is done properly, the tree will begin falling when only an inch or two of holding wood is left. As a safety measure, the operator should move to a predetermined safe place when the tree begins to fall. If at all possible, this move should be made with the clutch disengaged and the engine stopped. Do not depend on a tree falling similarly to one felled under similar conditions. Each tree has its own characteristics and will fall accordingly. Practice making bucking cuts before attempting to fell trees.

BUCKING TIMBER.

Make your bucking cut with the bumper against the log. Use the toothed bumper to obtain a "bite" in the log. If it is possible, support the log off the ground to prevent timber bind. Feed the saw into the timber slowly, the rate of feed will depend on the kind and size of the timber. When making a deep cut, the saw slot should be spread with a wedge. It will be found that faster cutting can sometimes be accomplished by rocking the saw forward and then back in the cut. It should be observed that in the interest of safety, the Model OMG chain saw has been designed so that the operator's hands do not have to be removed from the handles to operate the chain saw controls.

DEPTH GAUGE

The MALL TOOL COMPANY has available two Depth Gauges (43325 and 43326) whose purpose is to assist the filer in keeping the gauge links on the side planer saw chain in correct relation to the height of the cutter links. The two gauges are made in two different depths, the deeper one for soft wood allowing a deeper cut and the shallower one limiting the cutter link to a thinner cut for hard wood. Its use will greatly increase the

efficiency and long life of your chain.

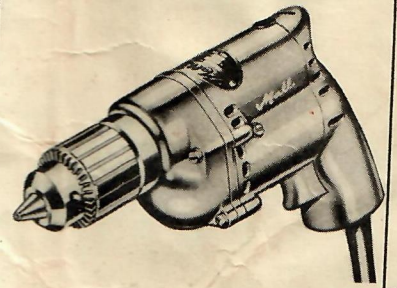
FILE GUIDE

After much experiment MALL has developed a simple, practical File Guide (43339) which enables even a person with no experience whatever to file a saw chain accurately and gives the practical filer an almost automatic angle measure. It is designed for the 1/4 inch round file which can be fitted into the guide in a matter of seconds.

OTHER NATIONALLY KNOWN MALL PRODUCTS

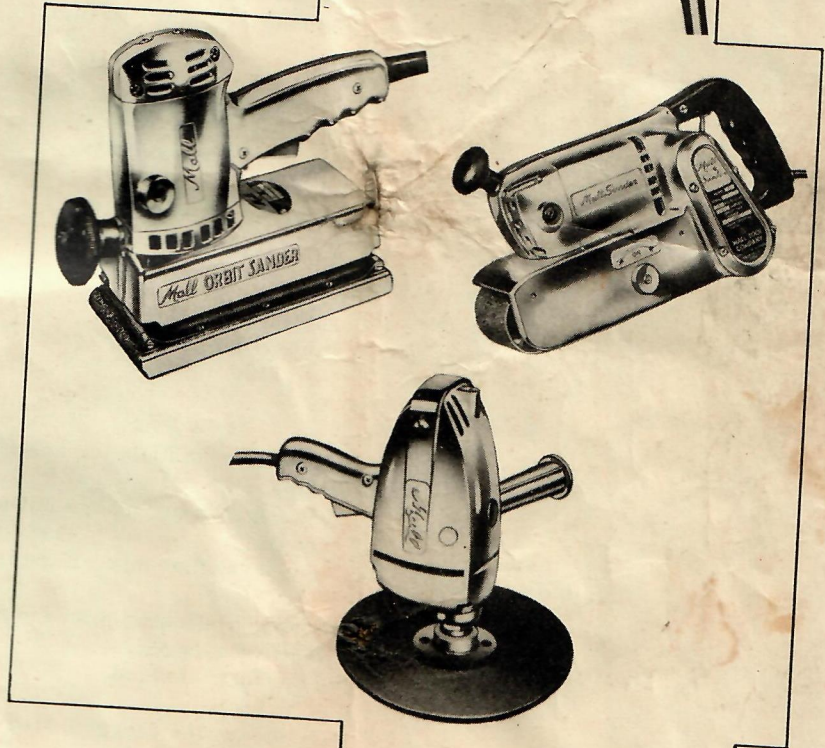
ELECTRIC DRILLS

From 1/4 inch to 1/2 inch capacity.
From light home workshop to heavy duty design.
Attachments - sanders, buffers, circular saws, grinders, hole saws, screw drivers, hedge trimmers, wire brushes, and paint stirrers.



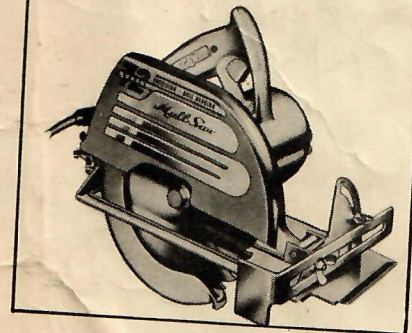
ELECTRIC SANDERS

Orbit type
Belt type
Disc type



CIRCULAR SAWS

From 4 inch to 8-1/2 inch diameter.



For information about these or any other electric, pneumatic or flexible shaft tools, see your MALL dealer or write

MALL TOOL COMPANY
7740 SOUTH CHICAGO AVE.
CHICAGO 19, ILLINOIS

SECTION 8. TROUBLE SHOOTING

TROUBLE	PROBABLE CAUSE	REMEDY
Engine fails to start.	No fuel.	Refill fuel tank with correct mixture.
	Fuel shut off valve closed.	Open valve.
	Water or dirt in fuel.	Drain and clean fuel tank, lines and carburetor.
	Fuel strainer dirty.	Remove spark plug for inspection, dry and clean and replace.
Engine hard to start.	Spark plug defective or wet.	Shut off fuel valve. Crank engine several times. Open fuel valve and start.
	Engine flooded.	Remove plate and clean.
	Foreign material in reed plate.	Inspect ignition wiring for loose or damaged wires and connections and replace or adjust points.
	Defective ignition system.	
Engine lacks power.	Spark plug defective or fouled.	Replace or clean spark plug.
	Carburetor out of adjustment.	Readjust carburetor.
	Improper mixture of fuel.	Drain fuel tank, fuel lines and carburetor. Replace with correct fuel mixture.
	Defective ignition system.	Inspect ignition system for loose connections or worn wires.
	Excessive carbon deposits in engine.	Clean out exhaust ports.
	Fuel lines obstructed.	Close fuel shut off valve. Disconnect fuel line at shut off valve and observe if fuel runs out freely. If not, remove fuel line and clean.
Engine overheats.	Air cleaner clogged.	Remove all material from screen. Inspect for defective or sticking piston rings. Loose spark plug.
	Poor compression.	Worn or scored cylinder.
	Defective or fouled spark plugs.	Remove and inspect. Replace or clean as required.
	Carburetor or linkage out of repair.	Readjust carburetor and repair linkage.
Engine overheats.	Incorrect fuel mix. Excess oil.	Drain and replace with correct fuel mix.
	Worn or sticking piston rings.	Remove and replace.
	Muffler clogged.	Remove and clean.
	Air filter clogged.	Remove and clean.
Engine overheats.	Cylinder fins clogged with sawdust and dirt.	Clean all surfaces.
	Fan screen clogged.	Remove all material from screen.
	Carburetor set too lean.	Readjust carburetor.
	Air flow obstructed.	Clean fan.
Engine overheats.	Incorrect fuel mix. Improper lubrication.	Drain and replace with correct fuel or lubrication.
	Cylinder ports or muffler clogged.	Inspect and clean if needed.

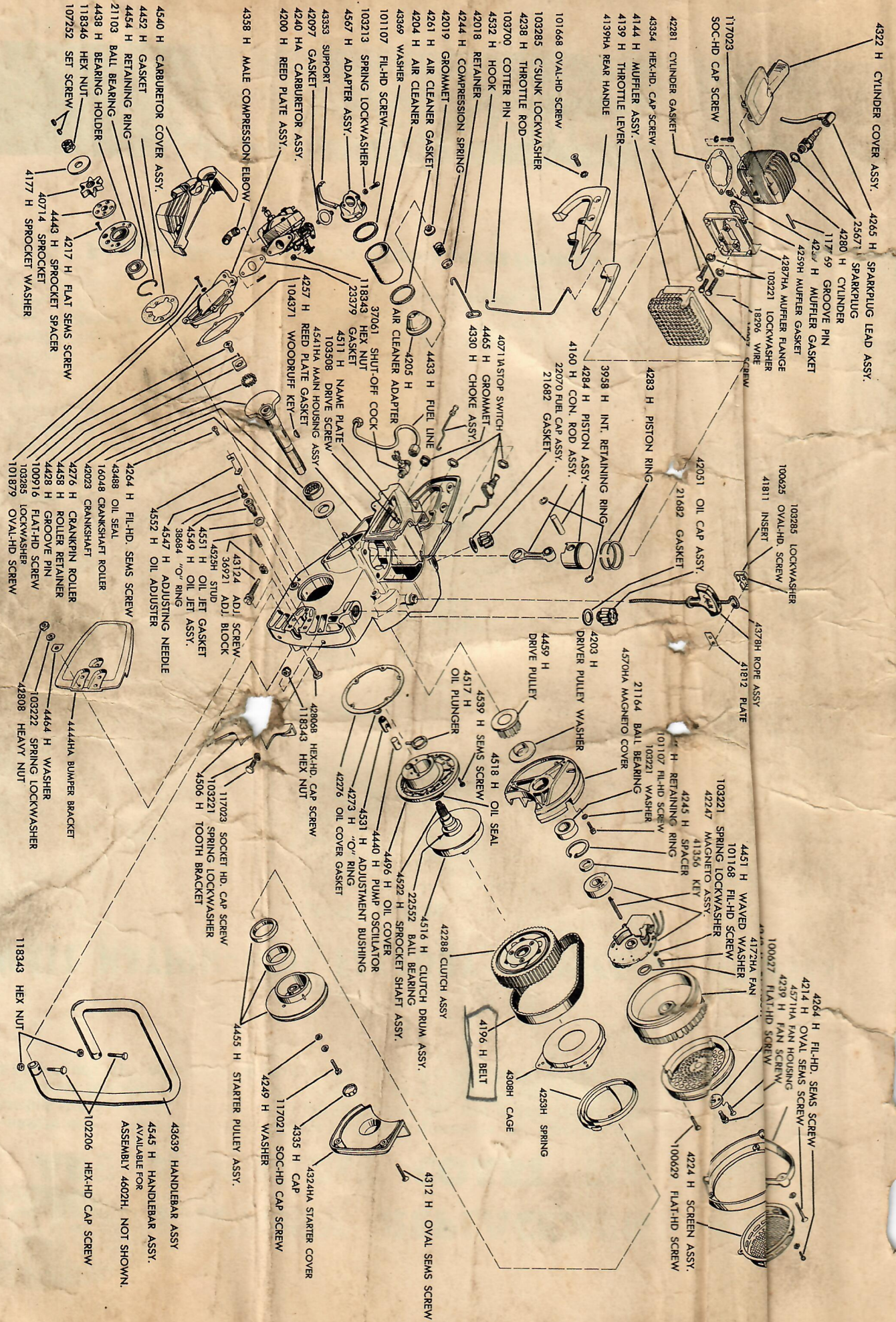


FIGURE 9. MODEL OMG, 4600H - EXPLODED.



FACTORY REPLACEMENT PARTS ARE AVAILABLE COAST TO COAST

To assure our customers prompt service on MALL products, we maintain a network of factory service branches throughout the country. Staffed by factory-trained personnel and stocked with genuine MALL parts, these branches are equipped to give you expert service on any Mall Tool in need of repair. You can save much time and shipping charges by using the Mall Service Warehouse nearest to you.

MALL NATION-WIDE FACTORY SERVICE WAREHOUSES

UNITED STATES

Atlanta 5, Georgia.....	1959 Pinont Circle
Berkeley 2, California.....	2735 San Pablo Avenue
Birmingham 5, Alabama.....	2516 Sixth Avenue South
Boston, Mass. (Medford).....	415 Mtic Avenue
Brooklyn 1, New York.....	85 Fogreen Place
Buffalo 25, New York.....	321 Union Road
Chicago 19, Illinois.....	7850 South Chicago Ave.
Chicago 51, Illinois.....	5420 Division St.
Cincinnati 7, Ohio.....	3351 Montgomery Rd.
Cleveland, Ohio (Wickliffe).....	286 Euclid Ave.
Crete, Illinois.....	55000 S Western Ave.
Dallas 12, Texas.....	311 W Commerce St.
Denver 5, Colorado.....	3601 Brighton Blvd.
Detroit 12, Michigan.....	861 Gratiot Ave.
Glendora, California.....	440 Alosta Ave.
Houston 3, Texas.....	3601 Nigation Blvd.
Kansas City 6E, Missouri.....	1401 Truman Rd.
Knoxville 17, Tennessee.....	443 N. Broadway
Los Angeles 58, California.....	5316 Santa Fe Ave.
Milwaukee 15, Wisconsin.....	2725 W. Oklahoma Ave.
Newark 2, New Jersey.....	920 McCarter Highway
New York 54, New York.....	220 Luckner Blvd.
Philadelphia 31, Pennsylvania.....	6025 Lancaster Ave.
Pittsburgh 10, Pennsylvania.....	1805 Sawmill Run Blvd.
Portland 20, Oregon.....	8811 N. Sandy Blvd.
Richmond 20, Virginia.....	914-916 Nth Boulevard
Seattle 4, Washington.....	2920 First Avenue South
Spokane 15, Washington.....	E. 7304 Frague Avenue
St. Louis 22, Missouri.....	104 Highway 66
St. Paul 4, Minnesota.....	1679 University Ave.
Syracuse 3, New York.....	2828 E Boulevard E.
Washington 2, D. C.....	2121 New York Ave. N. E.

OTHER PRODUCTS INCLUDE

Gasoline Engine, Electric and Pneumatic Power Timber Saws, Concrete Vibrators and Scaffolds, Railroad Equipment, Flexible Shaft Machines for Grinding, Buffing, Polishing, Flexible Shafts for Remote Control. Portable Electric Power Tools — Drills, Screw Drivers, Disc Sanders, Polishers, Planes.

CANADA

Moncton, New Brunswick.....	Victory Industrial Centre
Montreal, Quebec.....	210 Jean-Talon St. W.
Toronto, Ontario.....	36 Queen Elizabeth Blvd.
Vancouver, British Columbia.....	806 Kingsway

Factory-Owned Service Warehouses from Coast to Coast

MALL TOOL COMPANY

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