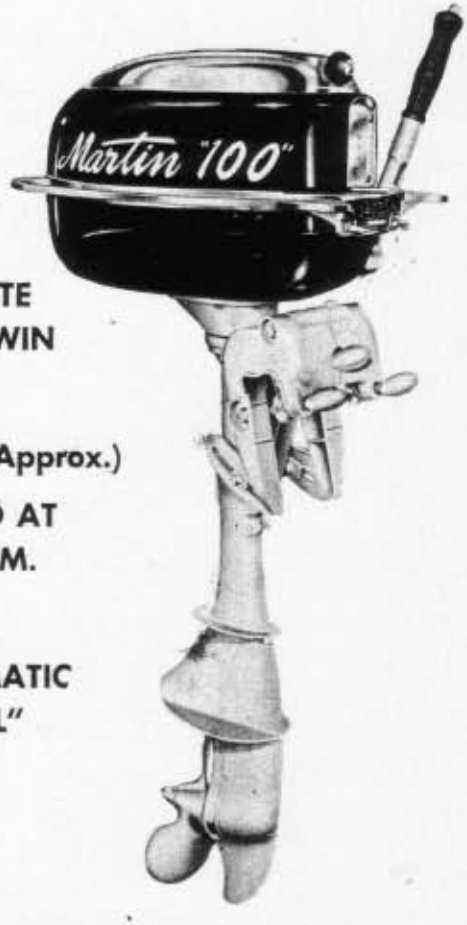
MARTIN "100"



ALTERNATE FIRING TWIN

10 H. P.

57 LBS. (Approx.)

CERTIFIED AT 4800 R.P.M.

Plus

"ACQUAMATIC CONTROL"

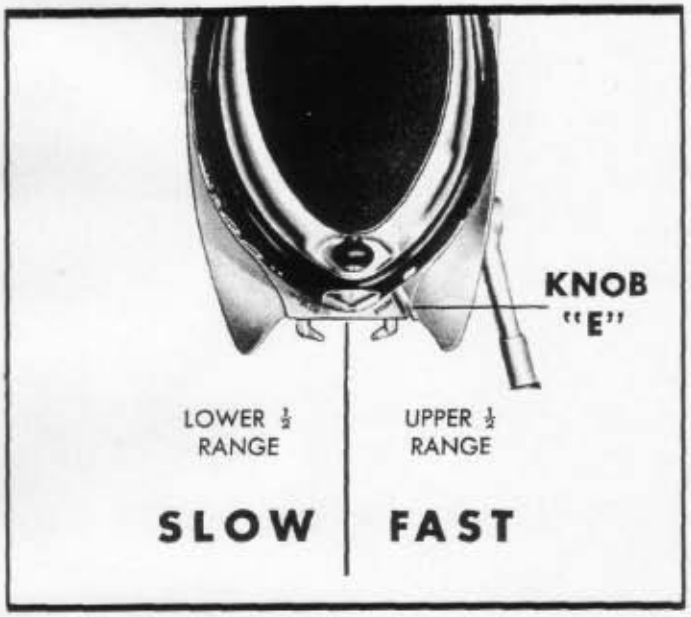
SPECIFICATIONS . . .

Power Head	Alternate Firing
Bore and Stroke	2⅛x1¾
No. of Cylinders	2
Certified Brake H. P. at 4800 R.P.M.	10 H. P.
Piston Displacement	13.15 cu. in.
Propeller Diameter Pitch	8x9¼
Fuel Tank Capacity	10 Pints
Starter	Improved Depend-A-Pull
Ignition	High Tension, Postive Action Magneto
Carburetor	Full Range, Dual Adjustment Concentric Bowl Type
Gear Ratio	13-20
Type of Exhaust	Pre-Cooled Underwater
Cooling System	Postive Displacement Paddle Type Water Pump
Steering	Full 360° Pivot
Stern Height	15"
Weight	(Approx.) 57 lbs.
Full Reverse	Yes

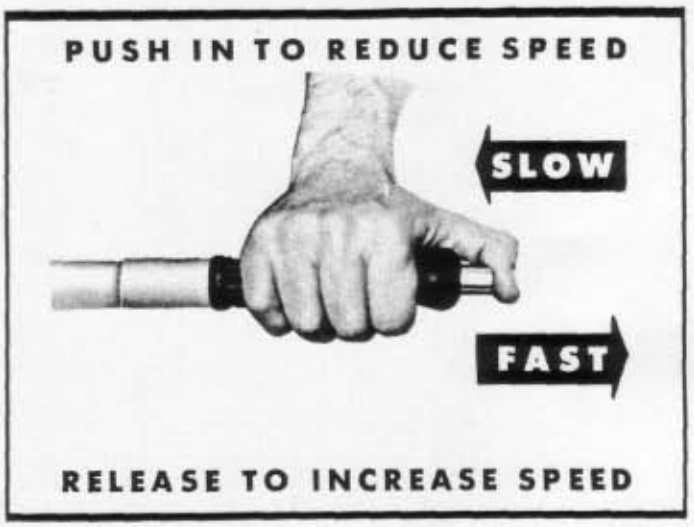
Martin "100" AQUAMATIC CONTROL

ITS OPERATION AND FUNCTION

Your MARTIN "100" has the EXCLUSIVE "AQUAMATIC CONTROL", which for the first time brings to outboarding the same type of simple, convenient speed control as found in today's modern car. "AQUAMATIC CONTROL" now brings to outboarding, "FINGER-TIP ACCELERATION"!



This ingenious device consists of a spring loaded push button located in the end of the rubber grip on the steering handle and works like the accelerator on a car. It controls speed by opening and closing the carburetor throttle of the MARTIN "100".



The regular speed control, Knob "E", is used to select the top motor operating speed desired. This lever in the lower half of its range, controls the spark timing only, and in the upper half range, it properly synchronizes BOTH SPARK AND FUEL. It is in the UPPER HALF OF THE RANGE, which corresponds to high idle and top speed, that the "Aquamatic Control" is effective.

As a concrete example, let's suppose that while you are running your MARTIN "100" at top speed, another boat suddenly starts across your bow or an exceptionally heavy wave or swell is encountered — you merely press the "Aquamatic Control" button and the boat immediately slows down, so that the engine turns down to about 1400 R.P.M.

Now, let's imagine that the danger of a crossing boat or a large wave has passed. The operator just releases the "Aquamatic Control" button and immediately the boat speed increases to full throttle or to that point in the upper range at which Knob "E" is set.

Let's take another example. Suppose the operator has to make a sudden turn, or in the normal course of operation desires to change course, he merely presses the "Aquamatic Control" button, slows down, turns the motor and when back on the desired course, straightens the motor out and releases the "Aquamatic Control" button, all the while having complete control of boat speed and direction without having to reach back to adjust the engine speed.

As you can readily see, all operations while maneuvering and controlling boat speed have been made while the operator faces forward with complete motor control at his fingertips.

For docking or if the operator contemplates stopping for any reason, Knob "E" should be used EXCLUSIVELY in controlling the motor speed.

Exclusive "Aquamatic Control" is a WONDERFUL feature — people who have used it really are EXCITED about it. "Greatest feature I ever saw in outboards", is what they say.

REMEMBER ONLY Martin HAS "AQUAMATIC CONTROL"

I.

TO DISASSEMBLE & ASSEMBLE STARTER COVER ASSEMBLY

(Refer Picture, Page 9-14)

TO DISASSEMBLE:

A. Remove 3 starter mounting screws from the starter housing, one screw is located underneath the starter handle knob and two screws are located underneath the access cover assembly (75).

B. Remove the two snap rings (50) from the pawls (49) and lift off the pawls.

C. Remove the three screws and washers (47) from the pawl friction plate (48) and lift off the plate and the pawl friction tabs (45).

D. Remove the center screw (46) in the starter and lift out the complete pulley assembly (56) and spring anchor plate (59).

E. Remove the two screws (55) in bottom side of pulley assembly to disconnect starter cord (62).

F. Starter rewind spring (60) should not be removed unless necessary. The starter pulley liner (57) is not accessible until the rewind spring has been removed.

TO REASSEMBLE:

A. If the starter pulley liner (57) has been removed, replace prior to the starter rewind spring (60).

B. If cord (62) has to be replaced insert into housing before assembly in pulley (56). Place cord in pulley so that loop is in position to be held in place by screw directly opposite opening of outer spring anchor. Partially wind cord and replace second screw, binding cord in proper position. Complete rewind of cord.

C. Install starter pivot bearing (52) in starter pulley (56).

D. Replace the rewind spring anchor plate (59) so that the long tab is engaged in the hook in the rewind spring and the short tab on the same side of the anchor is engaged in one of the holes in the pivot bearing (52).

E. Place the starter center screw (46) through the pivot bearing, pulley and rewind spring anchor plate in order to hold these parts in alignment.

F. Install small end of anchor plate spring (58) over boss in the center of the starter cover assembly.

G. Place the starter pulley assembly (56) over the anchor plate spring (58), and start center screw (46) approximately three turns.

H. Using a pair of long nose pliers in the two holes in the pivot bearing (52) turn the bearing clockwise approximately one-half turn and push down slightly until the tab on the bottom of the rewind spring anchor plate engages with one of the four holes in the starter cover. The center screw may then be tightened securely and staked into place.

I. Engage pawl friction tabs (45) with the pawl friction plate (48) and place the two friction tabs over the brass studs of the starter pulley assembly so that the single center blade of the friction tab is visible. Replace three screws holding friction plate in position.

J. Replace starter pawls (49) over brass studs of pulley assembly in the channel of the friction tabs. Anchor pawls with snap rings (50).

K. The position of the starter pawl spring (53) should be between the starter pivot bearing (52) and the starter pawl (49).

L. Replace starter assembly on motor with three mounting screws. NOTE-starter alignment is not necessary.

II.

TO REMOVE FUEL TANK & SHROUDS

(Refer Picture, Page 9-14)

A. The front shroud (4) may be removed by turning each of the two shroud screws one-half turn to the left. The rear shroud (3) may be removed in the same manner.

B. The gas tank (1) may be separated from the gas tank bracket assembly (2) by removing four screws located on the underside of the gas tank. Free one end of the gasoline feed line from the tank fitting. The tank may now be lifted upward over the magneto and off.

TO REASSEMBLE:

Reverse above procedure.

III.

WICO MAGNETO FW—1927

(Refer Picture, Page 9-16)

TO DISASSEMBLE & REASSEMBLE MAGNETO

Remove starter ratchet (36) that serves as a flywheel nut. The standard MARTIN Magneto Puller may be used to remove the flywheel but will require longer screws. CAUTION: Do not permit the screws to extend completely through the flywheel in such a manner as to damage the internal parts of the magneto. The magneto found on the MARTIN "100" will be very similar to the Wico Magnetos used on our

other models and full instructions on the magneto assembly and case may be referred to in the section covering MARTIN "60" Motor. In the stator plate of the "100" magneto there are two tension adjusting screws for the stator plate, rather than one as is found in our previous models.

IV.

TO DISASSEMBLE & REASSEMBLE GAS TANK MOUNTING BRACKET ASSEMBLY

(Refer Picture, Page 9-14)

TO DISASSEMBLE:

A. Loosen set screw in shut off knob B and unscrew the knob off the shaft.

B. Remove pivot screw (39) and separate control lever (40) and bracket.

C. Remove screw and clamp holding acquamatic cable to the tank bracket.

D. Remove screw, clamp and spacer holding air vent cable located near shaft of shut off cock (120).

E. Remove four bolts (5 & 8) that enter the bosses cast on the cylinder head and crankcase attaching the bracket to the powerhead.

F. By lifting bracket at rear you can disengage the control rod link (113) from between choke bracket and arm of choke stem.

G. The bracket may now be lifted over the magneto and off the motor.

TO REASSEMBLE:

A. Replace bracket over magneto. Before bracket can be set in place be sure you attach control rod link in proper position. Replace four screws. Balance of assembly may be completed by reversing above procedure.

V.

CARBURETOR (CARTER NO. N-754S)

(Refer Picture, Page 9-16)

Dimension: Flange size: ½ inch S.A.E. Main Venturi size 13/16 inch.

Float Level: Distance from top of float (at free end) opposite needle seat to lower edge of float chamber cover when needle is seated to be ⅛ inch plus or minus 1/64 inch.

Vents: Inside — none. Outside — No. 50 (.070") drill.

Gasoline Intake: Square vertical push-pull needle, seat size No. 38 (.1015") drill.

Low Speed Jet Tube: Jet size No. 65 (.035") drill. Auxiliary jets: (idle bleed) in side of tube, 2 No. 65 (.035") drill, (early production); (idle bleed) none, (late production).

Idle Port: Slot type, length .112 inch, width .030 inch. Idle port opening—bottom of port to be .060"-.064" below lower edge of valve. 3—.128" diameter holes in throttle valve. Idle adjustment screw seat, size No. 44 (.086") drill.

Set Idle Adjustment Screw: Approximately 1¼ turns open. For richer mixture turn screw in.

Main Nozzle: Accelerating jets 4—No. 62. (.038") drill in side of nozzle, (in nozzle well). Nozzle passage: (nozzle well to air horn) restriction size No. 35 (.110") drill.

High Speed Adjusting Needle: Seat (in base of nozzle) size: .076 inch diameter (early production). .082 inch diameter (late production). Setting, see adjustment.

Choke: Manual—butterfly type, with poppet valve.

HIGH SPEED ADJUSTING SCREW SETTING APPROX. ¾ to 1-½ TURNS OPEN

TO DISASSEMBLE:

1. Remove carburetor from engine.
2. Remove adjustable main metering screw, gasket and bowl.
3. Remove floatpin, float, needle and needle seat. Check float for dents, leaks, and wear on float lip or in float pin holes.
4. Remove bowl ring gasket.
5. Remove low speed jet and high speed needle assembly.
6. Remove idle adjustment screw and spring.
7. Remove nozzle.
8. Remove throttle valve screws, valve, and shaft and lever assembly.
9. Do not remove choke valve and shaft unless replacement of these parts is necessary. A spring loaded ball retains choke in wide open position. Be sure to use a new ball and spring when replacing choke shaft and lever assembly. CAUTION: Hold a screw driver handle or a small piece of wood over threaded hole in air horn (side opposite choke lever) to prevent the ball from flying out when shaft is removed.
10. Clean all parts in clean gasoline or solvent, making sure all carbon accumulation is removed from bore, especially where throttle valve seats in casting. Blow out all passages with compressed

air. Replace all worn and damaged parts. Always use new gaskets.

TO ASSEMBLE

11. Install throttle shaft and valve. Valve must be installed with trademark "c" on side toward idle port when viewing from flange side. Always use new screws. With valve screws loose and throttle lever set screw backed out, seat valve by tapping lightly with a small screw driver. Hold in place while tightening screws. NOTE: Throttle valve return spring opens throttle.
12. Install nozzle, making sure it seats in casting.
13. Install needle seat, needle, float and float pin.
14. Set float level. With carburetor casting inverted, float resting lightly against needle in its seat, there should be ⅛" (Plus or minus 1/64") clearance between machine surface of casting and free end of float (side opposite needle seat). Adjust by bending lip of float with small screw driver. CAUTION: A slight clearance must be left between lip of float and needle clip assembly to allow free float action.
15. Install bowl ring gasket, bowl, adjustable main metering screw and needle assembly. Before installing adjustable main metering screw and needle assembly back out adjusting screw needle, until tip of needle is flush with end of thread, then tighten securely after making certain bowl is centered in gasket. Turn adjusting screw needle in, until it seats, then back out ¾ turn. Make sure packing nut is tight.
16. Install low speed jet.
17. Then install idle adjusting screw. Turn inward until screw seats, then back out 1¼ turns.

NOTE: The opening of the carburetor throttle should take place when the speed control lever is ½" to the left of center position. If adjustments are necessary to accomplish this, it must be done by the carburetor control cam located on the underside of the magneto stator plate.

VI.

STEERING HANDLE AND BRACKET

(Refer Picture, Pages 9-9 & 9-10)

TO REMOVE:

A. Loosen set screw (76) found in crank case mounting flange directly below center of steering handle bracket.

B. Loosen friction shoe screw (81) found under the right hand side of handle bracket.

C. Remove pin (78) at top side-center of steering handle bracket.

D. Bracket may now be removed from motor.

TO REPLACE:

Reverse above procedure.

TO DISASSEMBLE STEERING HANDLE AND BRACKET ASSEMBLY:

(Refer Picture, Pages 9-9 & 9-10)

A. Remove 3 screws found on underneath side of handle and remove cover plate (127).

B. The internal parts of the Aquamatic Control can now be seen. It is recommended on reassembly that the adjustment of the Aquamatic Control be made after re-assembly of all component parts to the carburetor has been made. Adjust push rod so that when the Aquamatic Control button (124) is completely depressed, carburetor throttle is fully closed.

C. To disassemble steering handle from bracket, remove snap ring (95) and loosen set screw (82). Bracket may now be separated from steering handle.

D. Friction adjustment of the steering handle to handle bracket is controlled by loosening or tightening set screw (82).

TO REASSEMBLE:

Reverse above procedure.

VII.

MANIFOLD AND VALVE MECHANISM

(Refer Picture, Pages 9-9 & 9-10)

TO DISASSEMBLE:

A. CAUTION: One of the screws attaching the cylinder block and crank case assemblies is located inside the intake manifold, it is therefore necessary to remove the manifold and this block to case screw before an attempt is made to separate the cylinder block and crank case. The complete manifold assembly can be removed by taking out 3 screws on the outer rim of the manifold, part (107). The manifold and valve springs may now be removed. Before removing valves from manifold, identify the top valve by a mark or scratch indicating No. 1 and bottom valve two marks, indicating No. 2 valve. The valves may now be lifted from their respective positions.

POWERHEAD:

(Refer Picture, Pages 9-9 & 9-10)

TO DISASSEMBLE:

A. To disassemble Powerhead, remove the following parts: Starter cover assembly, front and rear shrouds, fuel tank, tank mounting bracket, flywheel, magneto, carburetor, steering handle bracket, manifold and valve assembly as previously explained.

B. Remove screws around the outer rim of crankcase and block assembly and the 2 allen screws located in the front center of the crankcase.

C. Remove spark plugs (1).

D. Remove the 10 cylinder head nuts (2) and detach cylinder head (5) from cylinder block.

E. If necessary to remove intake port covers (11) remove screws holding intake port covers to block. NOTE: In normal disassemblies it is usually not necessary to remove intake port covers.

F. Exhaust port cover (34) and plate (41) may be removed at this point if necessary.

G. Remove 8 Powerhead mounting screws and pry off powerhead from balance of lower unit.

H. Remove 4 screws (54) found on underneath side of powerhead and lift off lower main bearing cap (52).

I. Separate cylinder block from crank case assembly. NOTE: The above breakdown of powerhead permits inspection of the following parts: Cam follower, pin, bearings and crank shaft.

J. Remove allen screws and loose needles, keeping the 26 needles from the No. 1 rod separate from the needles from the No. 2 rod as these needles should go back in the respective crank pins. CAUTION: Mark top rod and cap as No. 1 and bottom rod and cap as No. 2. Mark rod caps so that they are replaced as originally fitted.

K. Lift out crank shaft along with both the upper and lower main bearings and seals.

L. Before removing pistons and rod assembly from cylinder block be sure to remove any carbon formation found on the inside top of the cylinder bore.

M. To remove piston from connecting rod take out two wrist pin lock springs (31) from holes on either side of piston at opposite ends of wrist pin. Carefully press or tamp out wrist pin from piston. We recommend use of special wrist pin punch, part No. 25492. If tamping is necessary support piston in palm of hand while doing so to prevent distortion to piston assembly. CAUTION: The cage needle assembly in the wrist pin end of the connecting rod should not be removed unless replacement is necessary.

N. If necessary to replace piston rings, remove by expanding top ring and work off over top end of piston, using care not to mar outer piston wall. Remove second and third ring in sequence and in the same manner.

O. It is rarely necessary to remove the excess fuel bleed system located at the bottom of the intake port side of the cylinder block. If for any reason this system is removed, care should be taken to see that the reeds are not damaged in any way as they do have some effect on the ability of the engine to idle.

TO REASSEMBLE:

A. Clean all gasket surfaces, preferably by using either ethyl acetate or lacquer thinner. Scraping of these surfaces may cause a leak.

B. Replace connecting rod on wrist pin in position. CAUTION: Be sure rod assembly and piston are properly identified so they are inserted into proper cylinder bore.

C. Install wrist pin lock springs.

D. Clamp assembly in padded vice gripping connecting rod. Rings may now be easily replaced around piston. CAUTION: Align gap with pins in piston grooves.

E. Before replacing piston and rod assembly in cylinder bore, coat both cylinder walls and piston and rod assembly with oil. CAUTION: Be sure piston ring slots and retaining pins are matched; otherwise rings cannot be compressed. Tapered side of piston deflectors should face the exhaust port.

F. Spread thin film of grease in needle bearing portion of the connecting rod. Place 13 needles in this half of the rod and their position will be retained by the grease film. Repeat this operation on the second connecting rod. Place film of grease in the needle bearing seat in the connecting rod caps and seat 13 needles in each cap. Carefully replace crankshaft in its position on the connecting rods, making sure the needles in the rod are not disturbed. Reinstall each connecting rod cap to its former position on the connecting rods. CAUTION: Make sure each connecting rod cap is returned to its original rod and that the caps are not turned end for end. Proceed to tighten connecting rod screws making sure that the caps fit properly and are in perfect alignment. Since the caps and rods have a fractured connection they will tend to seek their own alignment. After this is accomplished, securely tighten each connecting rod cap screw.

G. Replace the upper roller bearing on the crank shaft making sure the bearing retaining pin is engaged with the hole in the bearing. Replace the bottom needle set in like manner.

H. Cam followers can be removed if necessary by removing the small horseshoe snap ring and lifting the cam follower from the follower pin. Upon reassembly of the cam follower make sure that the cam follower spacer is installed on the follower pin, before the installation of the follower to the pin. Replace snap ring. Note cam followers are not interchangeable.

I. Spread thin film of 3-M sealer on parting faces of block and case assembly. When assembling case and block, lay assembly on side so cam followers do not drop out of position.

J. The first two screws attaching the crank case to the cylinder block should be the tapered dowel screws. These screws should be firmly tightened prior to adding any of the other screws or nuts that are a part of the block to case assembly. This will give perfect alignment.

K. Install the remainder of the block and case screws and the block to case nuts and secure tightly.

L. Replace oil seals on both upper and lower main bearings. NOTE: Use a very thin film of 3-M sealer on around outer band of oil seals.

M. Replace cap and gasket for the lower main bearing on underside of cylinder block and crank case assembly.

N. Replace Powerhead on lower unit. Make sure that the drive shaft and enclosure are properly inserted before tightening screws. Lockwashers are used on all powerhead mounting screws.

O. If removed, reassemble exhaust port cover and place with necessary gaskets.

P. Replace intake port covers and gaskets.

Q. Replace cylinder head and gasket.

R. NOTE: Replace cylinder head gasket with 3-M sealer between gasket and cylinder head surface. A light film of grease can be used between gasket and cylinder block surface. Tighten stud nuts securely.

VIII.

STEERING STABILIZER

(Refer Picture, Page 9-19)

TO DISASSEMBLE:

A. Reduce tension on 4 stabilizer adjusting screws (14) found on underneath side of motor support tube casing (10).

B. Remove two screws (34) from reverse lock (33) located at top on intermediate housing.

C. Loosen screw (44) located in front side of intermediate housing (45) which will permit the intermediate housing to be separated from motor support tube (40).

D. Motor support tube may now be lifted out of motor support tube casing (10) exposing steering stabilizer parts.

TO REASSEMBLE:

Reverse Procedure.

SERVICE HINTS: To adjust steering stabilizer, firmly tighten any one of 4 adjusting screws found on underneath side of casing. Adjust the other 3 screws until expansion is visible on the rubber compression blocks. Relieve tension on the first screw tightened until the compression on its rubber block is relative to the other 3 blocks. At this point you may test for firmness of steering action. If action is unsatisfactory, adjust tension of all 4 screws accordingly.

IX.

STERN BRACKET

(Refer Picture, Page 9-19)

TO DISASSEMBLE:

A. Remove nut (17) from end of tilt bolt (1). Pull stud from position which will free entire lower unit from stern bracket.

B. Remove nut (17) from stern bracket bolt (1) and withdraw bolt from center section of stern bracket assembly.

C. Remove nut (3) from thrust socket bolt (15) and withdraw bolt. The two halves of the stern bracket may now be separated. This will expose all internal parts of the stern bracket for inspection or replacement.

TO REASSEMBLE:

Reverse above procedure.

SERVICE HINTS: Disassembly at stern bracket can be simplified by attaching clamp screws to work bench.

X.

LOWER UNIT ASSEMBLY

(Refer Picture, Page 9-18)

TO DISASSEMBLE:

A. Remove cotter pin (15), and propeller nut (16).

B. Remove spring shield (14), clutch spring (17) and clutch plate (13). (NOTE: If more tension on friction clutch is desired, an addi-

tional clutch plate maybe added directly under the clutch friction spring.)

C. Remove propeller (11), multiple clutch plate and disc assembly (10) and centering disc (9).

D. Remove two screws (18) from water pump housing (7) and lift off housing. (NOTE: Beneath housing, you will find one of two nuts (61) that attaches gear case to intermediate housing.)

E. In order to disassemble driveshaft (2) it is necessary to remove powerhead from lower unit. (NOTE: Driveshaft seal enclosure (3) or water inlet tube (5) may be removed or replaced at any time powerhead is disassembled from lower unit.) Remove nut from leading edge of intermediate housing (45) below spray plate so that gear case (56) and driveshaft (2) may be separated from balance of lower unit.

F. Lock center section of driveshaft in a padded vise. Remove bolt (29) which attaches driveshaft (2) to bevel pinion gear (31). This will separate driveshaft pinion gear and pinion thrust washer (26).

G. Propeller shaft (63), bevel gear (59) and ball thrust bearing (58) may now be removed.

(NOTE: Ball thrust bearing may be removed from bevel gear by driving a thin wedge between the gear and the bearing.) Removal of the bearing will expose a pin that keys gear to propeller shaft.

H. The gear case bearings in the driveshaft section are replaceable. To remove these bearings, pry out oil seal then use special driver, P.N. 5828, which will be long enough to drive the bronze driveshaft bearing (49) to the lower side of its channel in the gear case. This action will drive the needle bearing set (51) out of the channel into the gear case. It will then be necessary to use another punch or screw driver to force the bronze bearing into the gear case. When re-installing bearings install the needle set first. Bearing must be driven or pressed into place using a special bearing driver, 5828. The needle bearing should be driven into the gear case as far as driver will permit. The bronze bearing is to be inserted in the same manner and pressed in as far as tool, 5829, will permit. The new oil seal may now be pressed into place with the part number down. It is well to place a small quantity of 3-M sealer around the outer surface of the oil seal (46) during installation.

TO REASSEMBLE:

A. First add the propeller shaft with the ball thrust bearing intact into its position in the gear case.

B. Add bronze thrust washer above bevel pinion gear so that the tab engages in the mating slot.

C. Place bolt (29) including lock washer (28) into the bevel pinion gear.

D. Install driveshaft through the upper side of the gear case engaging it in the splines of the pinion gear and making sure that the splines are properly engaged in the gear before securely tightening bolt (29). It will be necessary to tightly hold the upper end of the driveshaft while tightening bolt (29) in the gear case. Make sure splines on the upper end of the driveshaft are not damaged during this installation.

E. Install water seal tube. After driveshaft has been installed in gear case, place brass washer (27) over driveshaft and into well in the top of gear case.

F. Install water seal enclosure tube (3) over the driveshaft against brass washer (27).

G. Place rubber washer with raised bank upward over driveshaft seal enclosure. Then add brass washer (27) over top of the rubber washer. The gear case assembly is now ready to reengage with the intermediate housing by adding lock washers and nuts to both studs and secure tightly.

H. Balance of the gear case may be reassembled by installing these additional parts, propeller shaft bearing housing assembly and gasket, pump plate, pump rotor and pin and pump housing. (NOTE: The pump rotor can only be installed in one position due to the pin slot on the inside of the rotor.)

I. Replace centering disc on propeller shaft. The centering disc should be installed so that the side of the disc, with the undercut splines toward the gear case.

J. Replace clutch parts in the well of the propeller. Then complete assembly of clutch parts including 13 fiber disc and 12 steel plates. The first and last disc in the clutch assembly should be fiber.

K. Replace propeller and install the additional fiber disc and one steel plate in the outer recess of the propeller.

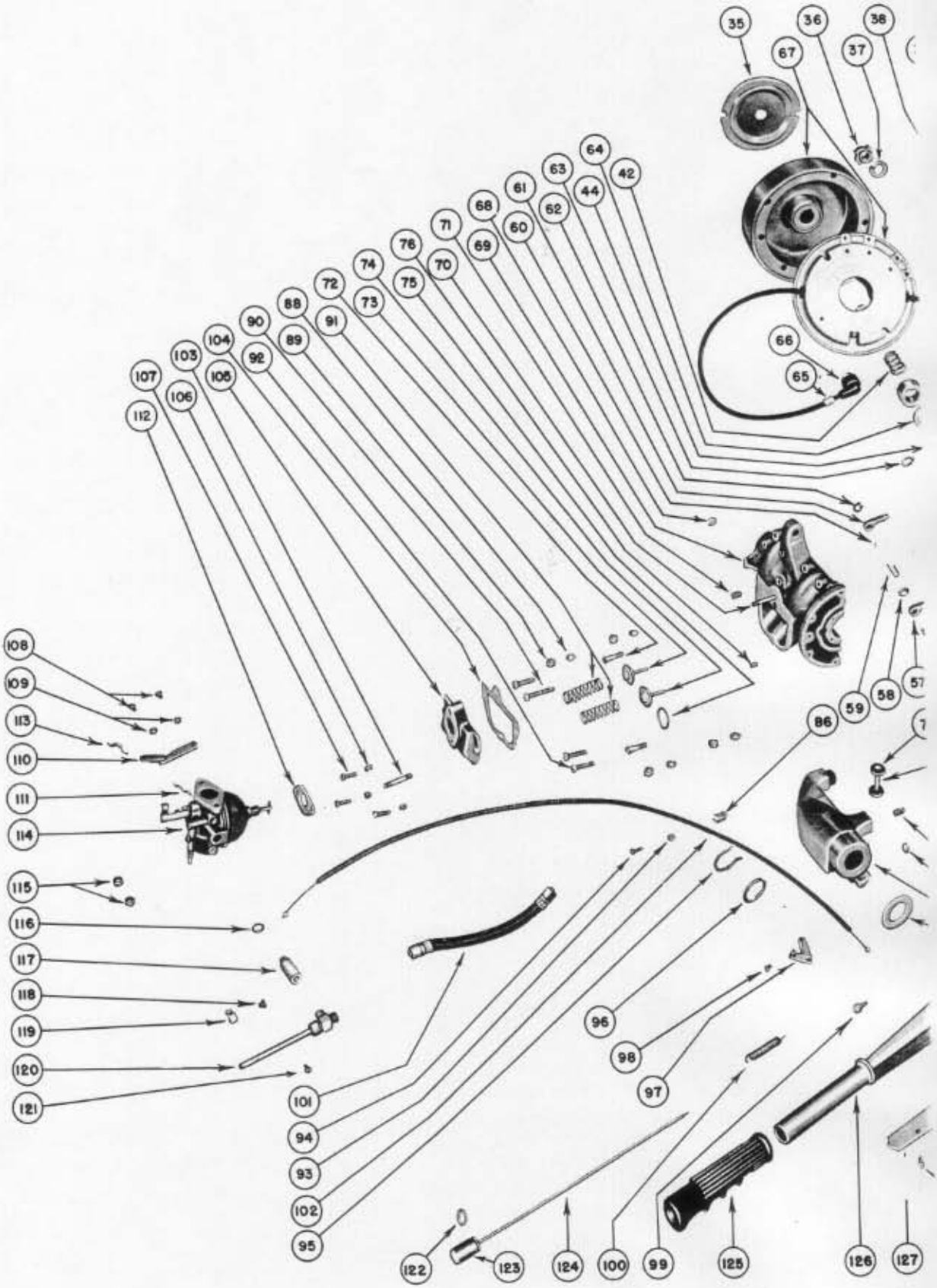
L. Replace clutch spring, shield and propeller nut.

M. Tighten propeller nut securely and add a cotter pin to retain its position. No clutch adjustment is necessary.

O. If additional clutch friction is desired add one extra steel friction plate immediately under the clutch tension spring.

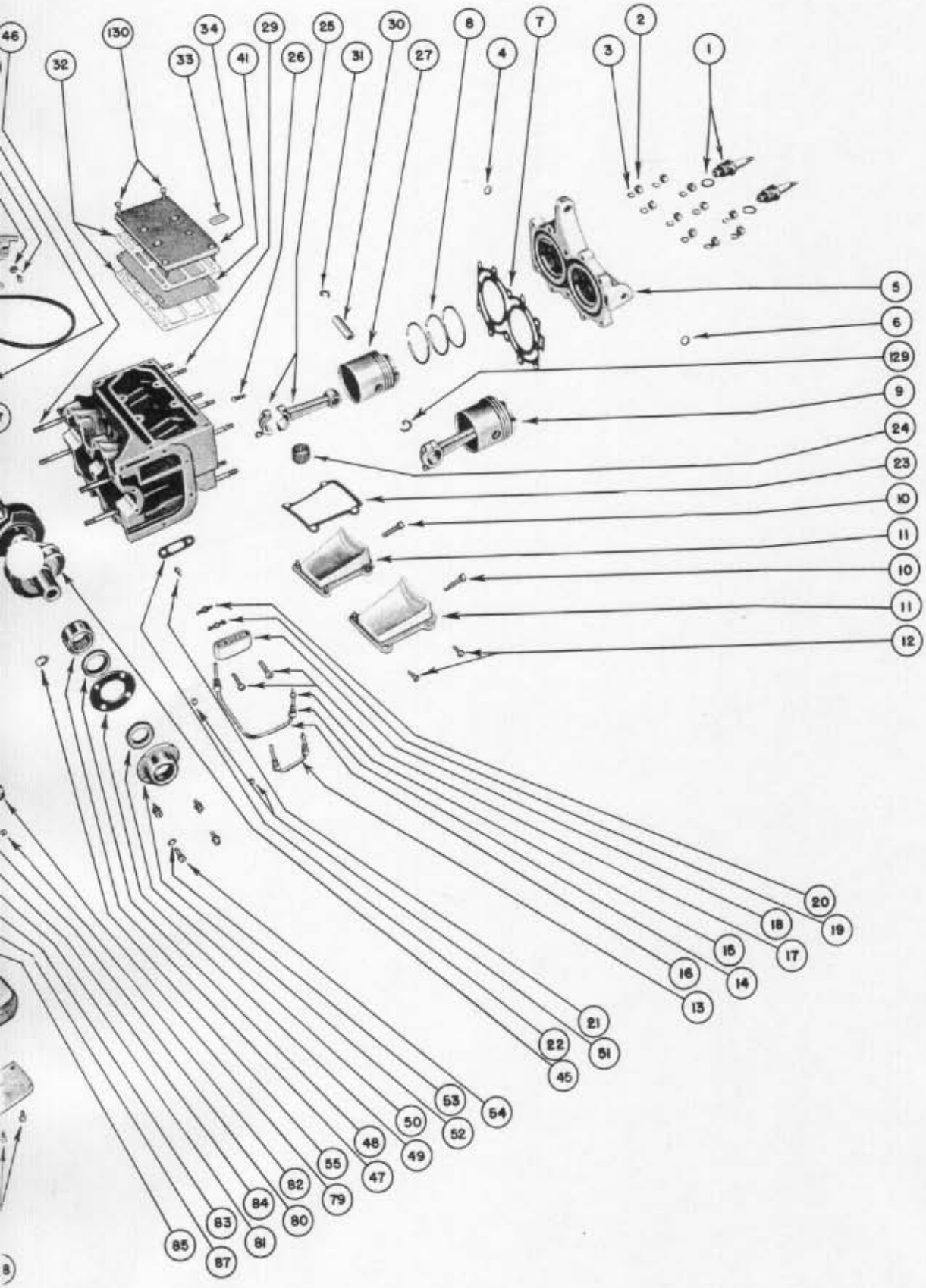
Martin "100"

POWERHEAD ASSEMBLY



Martin "100"

POWERHEAD ASSEMBLY



Martin "100"

POWERHEAD ASSEMBLY

Ref. No.	Part No.	Description
1	55028	Spark plug
2	20-S-4	Nut — regular
3	35-S-11	Washer — plain cylinder head
4	50-S-10	Plug — expansion
5	55003	Cylinder head
6	50-S-10	Plug — expansion
7	55004	Gasket — cylinder head
8	55011	Piston ring
9	55017	Piston — connecting rod and cap assembly
10	2-S-25	Screw — block to case (¼-20 Fil.)
11	55037	Cover — intake port
12	2-S-5	Screw — intake port cover (10-24 Fil.)
13	55212	Tube — lower cylinder bleed
14	55210	Nut — bleed system (brass)
15	55213	Sleeve — compression (brass)
16	55211	Tube — upper cylinder bleed
17	2-S-22	Screw — pad
18	55206	Pad — reed mounting
19	55207	Reed — bleed system (spring steel)
20	55208	Stop — bleed system reed
21	18-S-1	Screw — reed stop (5-40)
22	55209	Gasket — reed mounting
23	55036	Gasket — intake port cover
24	81-S-2	Screw — reed stop (5-40)
25	55015	Connecting rod
26	7-S-6	Screw — connecting rod
27	55010	Piston assembly
28	55006	Cylinder block assembly
29	55196	Stud — cylinder head (¼ dia.)
30	55012	Wristpin
31	25064	Lockspring — wristpin
32	55032	Gasket — exhaust port cover
33	15152	Clip — magneto wire
34	55035	Cover — exhaust port
35	55174	Starting pulley — emergency
36	55175	Ratchet — starter
37	36-S-12	Lockwasher — starter ratchet
38	55214	Cam — carburetor
39	36-S-4	Lockwasher
40	2-S-42	Screw — (12-24) Fillister
41	55033	Plate — exhaust port cover
42	55016	Spring — magneto cam
43	55215	Key — magneto
44	55020	Bearing — upper main
45	55018	Crankshaft
46	55195	Stud — crankcase to block
47	55021	Bearing — lower main
48	55029	Seal — main bearing
49	55038	Gasket — lower main cap
50	55266	Seal — upper driveshaft encl. tube
51	55213	Sleeve — compression (brass)
52	55039	Cap — lower main
53	36-S-10	Lockwasher — (10-24) steel
54	2-S-41	Screw — (10-24) Fillister
55	55022	Pin — bearing locating
56	82-S-4	Retaining ring — follower
57	55001	Cam follower — lower
58	55026	Spacer — cam follower
59	55031	Pin — cam follower
60	55026	Spacer — cam follower
61	55002	Cam follower — upper
62	82-S-4	Retaining ring — follower
63	55022	Pin — bearing locating
64	55029	Seal — main bearing
65	55216	Marker — lead wire

Always order by part number and name, giving serial number of your motor.

Martin "100"

POWERHEAD ASSEMBLY

Ref. No.	Part No.	Description
66	55027	Insulator — spark plug
67	55019	Magneto
68	50-S-9	Plug — expansion
69	55023	Crankcase assembly
70	55197	Stud — manifold to case (¼")
71	7-S-5	Screw — allen head (block to case)
72	55034	Screw — taper dowl (7/16)
73	55200	Valve and "O" ring assembly
74	55201	Valve assembly
75	55204	"O" ring — valve
76	6-S-2	Set Screw — (10-24)
77	25226	Grommet — handle bracket
78	55142	Pin — throttle control bracket
79	55149	Grommet — throttle control
80	55143	Disc — throttle control
81	13-S-2	Screw — friction shoe (5/16-24)
82	55145	Set screw
83	55143	Disc — throttle control
84	55141	Shoe spring — throttle control
85	55136	Outer washer — steering handle
86	55139	Clip — throttle control
87	55125	Bracket — steering handle
88	35-S-11	Washer — cylinder head
89	20-S-4	Nut — carburetor
90	2-S-25	Screw — block to case (¼-20 x 1⅝)
91	55205	Spring — valve
92	2-S-27	Screw — block to case (1¼-20 x 1⅛)
93	36-S-2	Lockwasher — (10-24)
94	2-S-33	Screw — (10-24 x ⅜ Fil.)
95	55134	Hair pin cotter — throttle control
96	55135	Inner washer — steering handle
97	55132	Lever assembly — throttle control
98	1-S-3	Screw — (6-32 x 3/16 R. H.)
99	55137	Screw — throttle control lever
100	55131	Spring — throttle control
101	55106	Gas line and fittings assembly
102	55138	Cable — throttle control
103	55198	Stud — carburetor
104	55024	Gasket — intake manifold
105	55025	Manifold — intake
106	36-S-2	Lockwasher — (10-24) steel
107	2-S-5	Screw — (10-24 x ⅝ Fil.)
108	2-S-39	Screw — (10-24 x 5/16 Fil.)
109	36-S-2	Lockwasher
110	55223	Choke bracket — assembly
111	55227	Link — carburetor
112	55199	Gasket — carburetor
113	55228	Link — control rod
114	55050	Carburetor — (Carter No. N-754-S)
115	20-S-4	Nut — carburetor
116	55233	Gasket — adapter fitting
117	55232	Adapter fitting — shut-off cock
118	55231	Seal — vent tube
119	55230	Spring — vent tube
120	55261	Shut-off cock
121	5-S-3	Drive screw (No. 0 x 3/16)
122	55144	Ring — throttle control button
123	55129	Button — throttle control
124	55130	Rod — throttle control
125	55128	Grip — steering handle
126	55126	Handle — steering
127	55146	Cover plate — steering handle
128	1-S-4	Screw — (10-24 x ¼ R. H.)
129	25064	Lockspring — wristpin
130	2-S-11	Screw — exhaust port cover (10-24 x ¾ Fil.)

Always order by part number and name, giving serial number of your motor.

Martin "100"

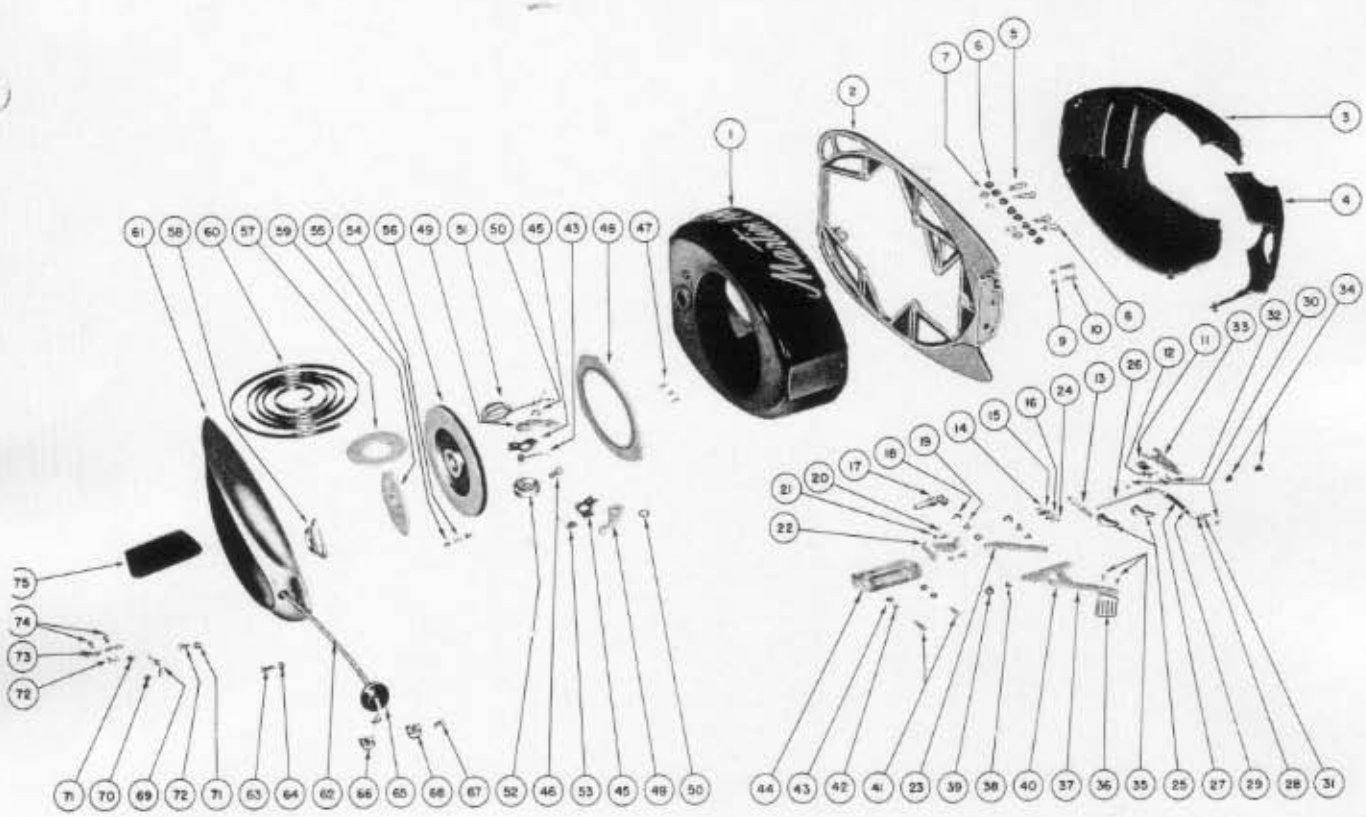
FUEL TANK, STARTER AND COVER ASSEMBLY

Ref. No.	Part No.	Description
1	55234	Fuel tank assembly
2	55088	Bracket assembly
3	55253	Rear shroud — sub assembly
4	55250	Front shroud — sub assembly
5	55091	Bolt — rear tank mounting
6	25226	Grommet — handle bracket
7	35-S-25	Washer — (25/32" x 11/32" x 1/16" plain steel)
8	55090	Bolt — bracket mounting
9	36-S-3	Lockwasher — bracket to tank (.093 x 3 7/16 wide)
10	2-S-7	Screw — bracket to tank (¼-20 x ¾ Fil.)
11	55241	Clip — wrench
12	36-S-2	Lockwasher — wrench clip
13	55220	Choke control rod
14	60-S-6	Cotter pin
15	55222	Lever — Choke rod
16	55221	Hair pin cotter
17	55105	Gas line fitting
18	82-S-5	Retaining Ring — speed control lever
19	55114	Hinge pin — speed control lever
20	2-S-10	Screw — (12-24 x ⅜ Fil.)
21	36-S-4	Lockwasher (No. 12-24)
22	55112	Stator lever
23	55111	Link — speed control
24	65-S-12	Drive — lock pin
25	25487	Carburetor control knob assembly
26	55118	Vent tube — upper
27	55119	Flexible vent tube
28	55117	Vent tube — lower
29	55120	Clamp — Flexible vent tube
30	55213	Compression sleeve
31	55210	Nut — bleed system
32	1-S-4	Screw — access cover (10-24 x ¼ O. H.)
33	55264	Wrench
34	25218	Screw — shroud mounting (¼-20 x ⅜ Rd.)
35	8-S-18	Screw — speed control knob (5/16" flat)
36	55116	Knob — speed control
37	55121	Sleeve — speed control lever
38	55115	Wave washer — speed control lever
39	55113	Pivot Screw — speed control lever
40	55110	Speed control lever
41	55237	Screw — fuel gauge (Brass)
42	55238	Gasket — fuel gauge (forward)
43	55239	Gasket — fuel gauge (Rear)
44	55236	Fuel gauge
45	55151	Tab — pawl friction
46	8-S-14	Screw — pivot bearing (5/16-18 x ¾ flat)
47	2-S-33	Screw — friction plate (10-24 x ⅜ Fil.)
48	55161	Plate — pawl friction
49	55153	Pawl — starter
50	55167	Snap ring
51	55242	Fuel cap assembly
52	55162	Bearing — starter pivot
53	55152	Spring — starter pawl
54	65-S-10	Drive — lock pin
55	8-S-13	Screw — Rope Anchor (5-40 x 7/16 flat)
56	55154	Starter pulley
57	55157	Starter pulley liner
58	55165	Spring — anchor plate
59	55163	Plate — rewind spring anchor
60	55156	Spring — starter rewind

FUEL TANK, STARTER AND COVER ASSEMBLY

Ref. No.	Part No.	Description
61	55176	Starter housing
62	55158	Starter rope assembly
63	8-S-8	Screw — housing to tank (10-24 x 5/8 Flat)
64	38-S-2	Lockwasher
65	25125	Starter handle
66	25148	Plug — starter handle
67	4-S-2	Screw — (10-24 x 5/8 oval)
68	25144	Plug — starter handle
69	55164	Spring — access cover
70	5-S-1	Drive screw
71	36-S-2	Lockwasher — housing to tank
72	2-S-5	Screw — housing to tank (10-24 x 5/8 Fil.)
73	55166	Pivot pin — access cover
74	1-S-4	Screw — access cover (10-24 x 1/4 R. H.)
75	55180	Access cover sub assembly
76	55179	Decal — Maintenance instructions (not shown)
77	55246	Gasket — fuel cap (not shown)
78	55248	Chain — fuel cap (See fuel cap assembly)

Always order by part number and name, giving serial number of your motor.



Martin "100"

MAGNETO SERIES FW-1927

Ref. No.	Part No.	Description
1	Y7224	Rotor
2	7218	Breaker cam
3	X5463	Condenser group
4	5431	Fixed contact clamp screw (Sems)
5	X7046	Breaker contact set
6	5486	Lead wire bushing
7	5446	Cam wiper felt
8	2965	Fixed contact clamp screw washer
9	X7345	Coil group
10	X7428	Stator plate repl. assembly (Includes plate and coil cores)
11	5445	Core screw
12	X5816	Friction shoe group
13	7041	Breaker slide
14	X7430	Lead wire group (Spark plug terminal not included)
15	5431	Condenser connection screw (Sems)
16	5431	Condenser clamp screw (Sems)
	X7238	Stator plate unit (Includes coils, condensers, breaker mechanisms and lead wires)

Always order by part number and name, giving serial number of your motor.

CARBURETOR MODEL N-754S

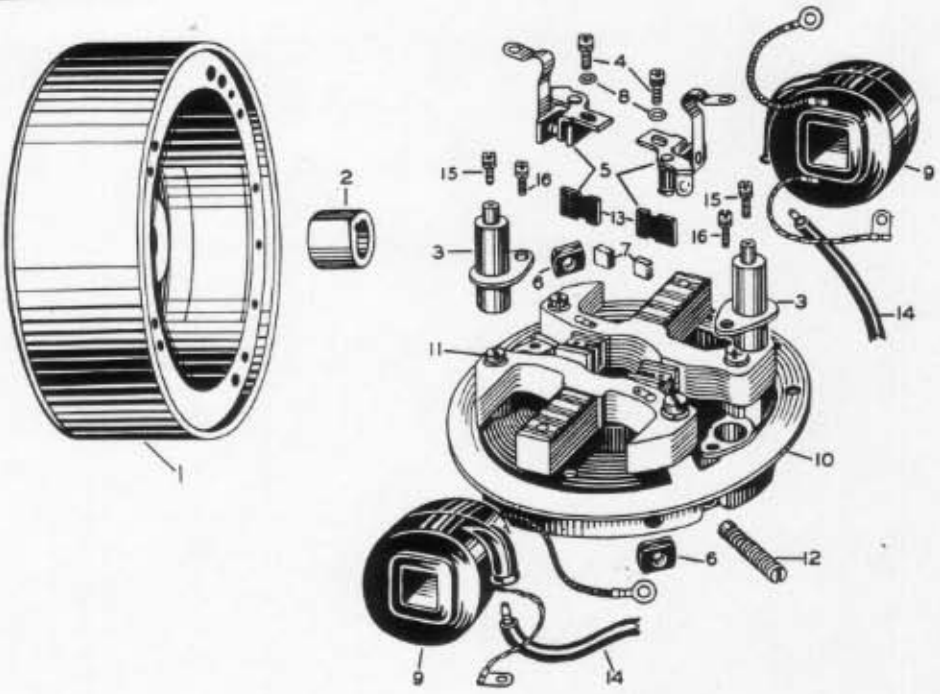
Part No.	Description
2-141	Throttle valve
3-701S	Throttle shaft and lever assembly
7-165S	Choke valve assembly
11-209S	Low speed jet assembly
12-337	Nozzle
14-408S	Choke lever and shaft assembly
20-22	*Needle seat gasket
20-110	Bowl nut gasket
21-105S	Float and lever assembly
23-37	Bowl
23A-19	Bowl ring gasket
24-23	Float lever pin
25-171S	Needle and seat assembly
30A-49	Idle adjustment screw
39-10	Valve attaching screw (4 required)
47-11	Welsh plug
61-302	Idle adjustment screw spring
61-369	Choke shaft spring
61-411	Throttle valve return spring
61-406	Needle pull clip
116-16	Choke shaft ball
159-138S	Adjustable main metering screw assembly

*Gaskets so marked must be soaked in 90 proof denatured alcohol for 15 minutes, installed on part and let dry before using.

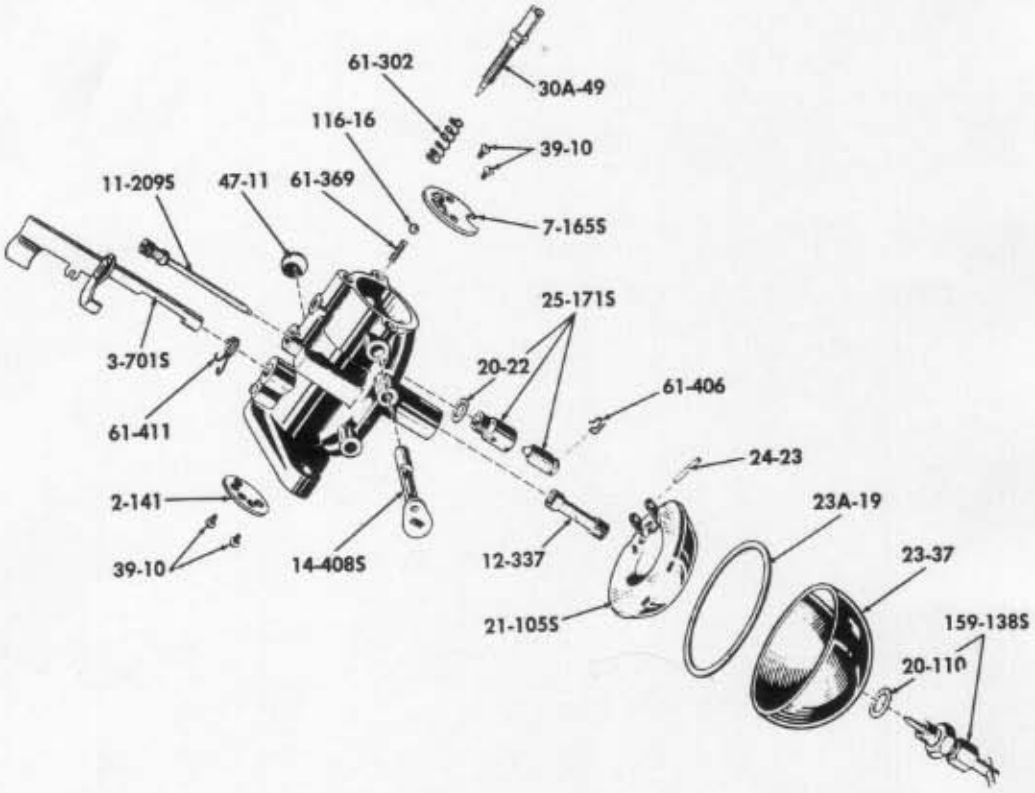
Always order by part number and name, giving serial number of your motor.

Martin "100"

MAGNETO SERIES FW-1927



CARBURETOR MODEL N-754S



Martin "100"

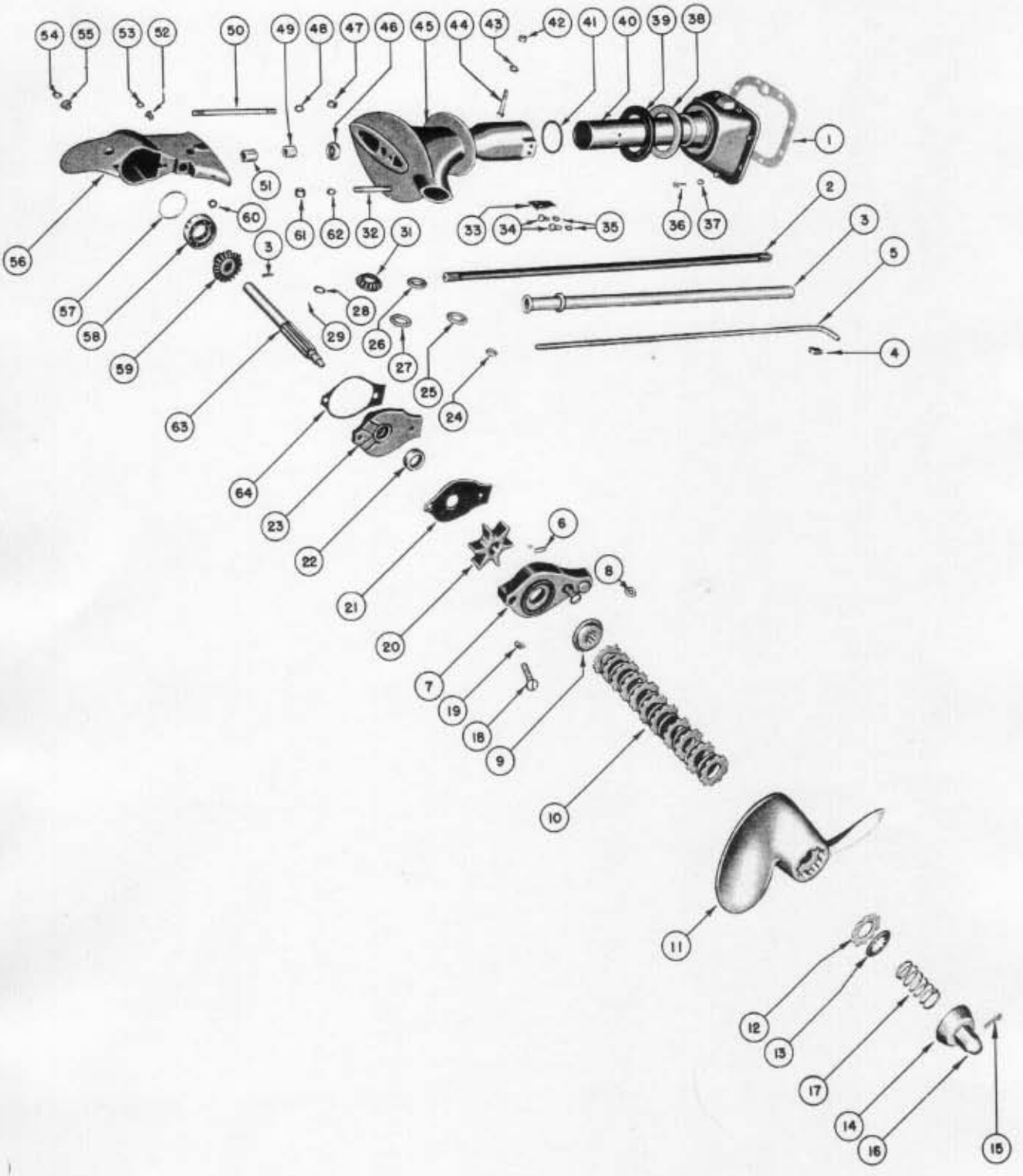
LOWER UNIT ASSEMBLY

Ref. No.	Part No.	Description
1	55045	Gasket — motor support tube
2	55078	Driveshaft
3	55076	Tube — driveshaft enclosure
4	55043	Upper seal — water tube
5	55062	Water inlet tube
6	55071	Pin — pump rotor
7	55064	Water pump housing assembly
8	50-S-8	Expansion plug
9	55254	Centering disc
10	55262	Clutch plate and disc assembly
11	55260	Propeller
12	55256	Clutch disc
13	55255	Clutch plate
14	55258	Propeller spring shield
15	60-S-7	Cotter Key
16	55259	Propeller nut
17	55257	Clutch spring
18	8-S-17	Screw — water pump housing (¼-20 — 1 5/16 Flat)
19	38-S-4	Washer — (0 ' SK Tooth)
20	55069	Water pump rotor
21	55188	Pump plate
22	55187	Oil seal — propeller shaft
23	55191	Propeller shaft bearing housing assembly
24	55081	Lower seal — water tube
25	55267	Lower seal — driveshaft encl. tube
26	55263	Pinion thrust washer
27	55190	Washer — driveshaft encl. tube seal
28	39-S-6	Lockwasher — steel (¼ x ⅜)
29	55193	Bolt — pinion to driveshaft
30	55063	Pin — gear and shaft
31	55074	Zerol bevel pinion
32	55068	Short stud — lower unit
33	55060	Reversing lock
34	2-S-40	Screw — reversing lock (¼-20 x ¾ Fil.)
35	37-S-4	Washer — shakeproof (¼ x .025)
36	2-S-5	Screw — housing to tank (10-24 x ⅝ Fil.)
37	36-S-5	Lockwasher — housing to tank (10-24)
38	25243	Stabilizer friction washer (Raybestos)
39	55046	Stabilizer friction ring (plastic)
40	55058	Motor support tube assembly
41	25046	Thrust washer
42	20-S-5	Nut — (5/16 x 19/32 x .03)
43	39-S-5	Washer — (steel)
44	10-S-11	Screw — hex. head (5/16 - 24 x 1⅜)
45	55057	Intermediate housing
46	40-S-7	Oil — water seal
47	20-S-5	Nut — steel (5/16 - 24)
48	39-S-5	Washer — (5/16 x .03) steel
49	55080	Bearing — driveshaft
50	55067	Long stud — lower unit
51	55082	Needle bearing — driveshaft
52	25245	Grease plug
53	25268	Gasket — grease plug
54	25379	Gasket — grease plug
55	25378	Grease plug
56	55192	Gearcase
57	55265	Shim — gear bearing
58	55061	Ball bearing propeller shaft
59	55073	Zerol bevel gear
60	55186	Water pump seal
61	20-S-5	Nut — steel (5/16 - 24)
62	39-S-5	Washer — (steel)
63	55072	Propeller shaft
64	55189	Gasket — propeller shaft bearing housing

Always order by part number and name, giving serial number of your motor.

Martin "100"

LOWER UNIT ASSEMBLY

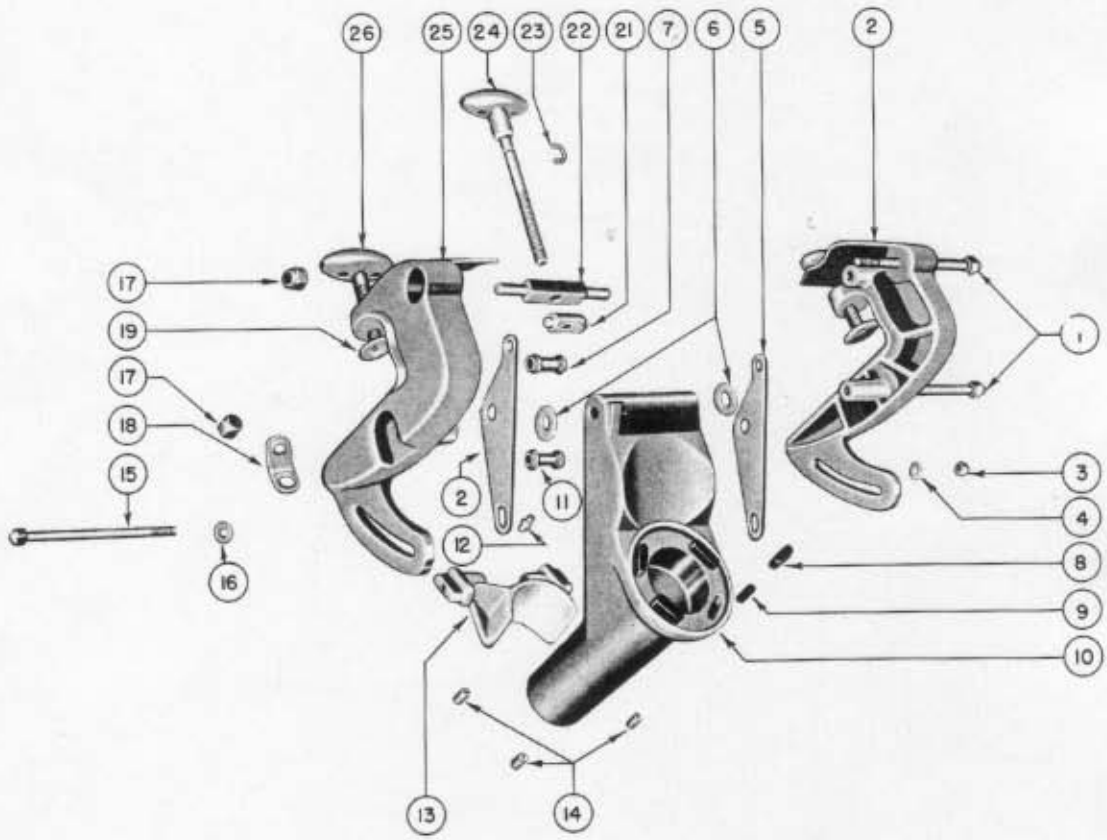


Martin "100"

STERN BRACKET ASSEMBLY

Ref. No.	Part No.	Description
1	55053	Bolt — stern bracket
2	55041	Stern bracket, L. H.
3	23-S-2	Nut — elastic stop
4	41-S-3	Washer — plain brass
5	55055	Tilt & adjusting lever
6	25286	Washer — tilting friction
7	25142	Spacer — tilting lever
8	25220	Stabilizer compression block
9	25221	Stabilizer compression plate
10	55047	Motor support tube casing
11	25045	Spacer — thrust socket
12	25337	Grease fitting
13	55056	Thrust socket
14	13-S-1	Screw (5/16-24) slotted headless set
15	55054	Bolt — thrust socket
16	41-S-3	Washer — plain brass
17	23-S-1	Nut — elastic stop
18	55052	Clip — safety cable
19	25061	Clamp screw pad
20	55055	Tilt adjusting lever
21	25023	Clevis pin — stern adjusting
22	55051	Pin — stern adjusting anchor
23	25033	Key — reverse check
24	55049	Stern adjusting screw and handle
25	55040	Stern bracket R. H.
26	25145	Clamp screw and handle assembly

Always order by part number and name, giving serial number of your motor.



MARTIN "100" AIR VENT SUPPLEMENT

IMPORTANT NOTICE

Please note the following changes in your MARTIN "100" Owner's Manual:

PAGE 5, paragraph B.

Fuel Shut-Off Knob "B" is now used only as a fuel valve and is NOT an air vent.

PAGE 7.

The serial number plate, page 7, has been revised and this plate on your motor appears as below:

PAGE 9.

Instructions on starting motor should read as follows:

1. **Be sure fuel gauge "D" indicates an ample supply of fuel before you start out.**
2. **Open fuel shut-off knob "B" by turning counter-clockwise approximately ¾ turn to wide open.**

2A. **Open air vent by turning air vent screw in fuel cap counter-clockwise approximately two full turns.**

Balance of instructions on starting motor are as indicated in your manual.

PAGE 10, paragraph 2.

In checking for possible non-start, add notation to be sure that the vent screw in fuel cap is open.

PAGES 17, 18, and 19

The following parts have been obsoleted:

Ref. No. 26	**55118**	**Vent Tube — Upper**
Ref. No. 27	**55119**	**Flexible Vent Tube**
Ref. No. 28	**55117**	**Vent Tube — Lower**
Ref. No. 29	**55120**	**Clamp — Flexible Vent Tube**
Ref. No. 30	**55213**	**Compression Sleeves**
Ref. No. 31	**55210**	**Nut — Bleed System**
Ref. No. 118	**55231**	**Seal — Vent Tube**
Ref. No. 119	**55230**	**Spring — Vent Tube**
Ref. No. 121	**5-S-3**	**Drive Screw (No. 0 x 3/16)**

The following part has been added to the listing:

35-S-35 Flat washer (for Gasket — Fuel Gauge — forward)

The following part numbers have been changed:

Ref. No. 42 — change part number from "55238" to "55341"
Ref. No. 43 — change part number from "55239" to "55238"
Ref. No. 44 — change part number from "55236" to "55290"
Ref. No. 51 — change part number from "55242" to "55431"
Ref. No. 75 — change part number from "55180" to "55433"
Ref. No. 77 — change part number from "55246" to "55272"
Ref. No. 78 — change part number from "55248" to "55359"
Ref. No. 95 — change part number from "55134" to "55182" and change description to read "Ring — Steering Handle Retaining"

MARTIN MOTORS
DIVISION NATIONAL PRESSURE COOKER COMPANY

EAU CLAIRE, WISCONSIN

Form MMS-AVS1 1-51