WISCONSIN

Air Cooled

HEAVY DUTY ENGINES

INSTRUCTION BOOK AND PARTS LIST

MODELS AF AG AH

ISSUE MM 240

WORLD'S LARGEST BUILDERS OF HEAVY DUTY AIR COOLED ENGINES

INSTRUCTIONS

WISCONSIN
SINGLE CYLINDER ENGINES

MODEL AF

3-1/4" BORE 4" STROKE
33 CU. IN. DISPLACEMENT

MODEL AG

3-1/2" BORE 4" STROKE
38 CU. IN. DISPLACEMENT

MODEL AH

3-5/8" BORE 4" STROKE
41 CU. IN. DISPLACEMENT

The builders of WISCONSIN Engines take pride in their accomplishment and believe that the user should never be satisfied until he has contributed his share of effort to permit an engine to function under the most favorable conditions of service. There should be the closest co-operation between builder and user and in order, therefore, to furnish a medium through which this co-operation can be enjoyed, primarily for the best interest of the users of our engines, this booklet has been prepared.

This booklet is to give the user information in reference to the operation and care of the WISCONSIN Engines. All points have been covered as carefully as possible, but if any further information is needed, inquiries sent to the Wisconsin Motor Corporation will receive prompt attention. In writing to the factory ALWAYS GIVE THE TYPE AND NUMBER of the engine referred to.

HORSE-POWER

R.P.M.	AF	AG	AH
1400	4.5	5.2	5.9
1600	5.0	5.8	6.7
1800	5.4	6.1	7.4
2000	5.4	6.1	7.7
2200	---	---	8

The horse-power given in the above chart is for an atmospheric temperature of 60° Fahrenheit at sea level, or at a Barometric pressure of 29.2 inches of mercury.

For each inch lower the Barometric pressure drops, there will be a loss in horse-power of 3-1/2%.

For each 10° temperature rise there will be a reduction in horse-power of 1%.

For each 1000 feet alitude above sea level there will be a reduction in horse-power of 3%.

All of these engines are of the four cycle type, in which each of the four operations of suction, compression, expansion and exhaust requires a complete stroke, or a total of two revolutions of the crankshaft.

The proper combustible mixture of gasoline and air is furnished by a carburetor.

The spark for ignition of the mixture is furnished by a high tension magneto fitted with an impulse coupling which makes starting very easy.

Lubrication is of the splash type, a plunger pump maintains the oil level in a trough under the connecting rod.

Cooling is accomplished by a flow of air circulated over the cylinder and heads by a combination fan-flywheel, encased in a sheet metal shroud, the air being directed by ducts and baffle plates to insure uniform cooling of all parts.

Condensed operating instructions may be found on the metal instruction plates on the engines.

STARTING AND OPERATING INSTRUCTIONS

Before starting the engine, first fill the base with good gas engine oil as f following paragraphs. Two filler plugs are provided on opposite sides of the engi likewise two drain plugs.

The base of the engine should be filled level with the filler hole, approximately 2-1/4 quarts of oil. Be sure the oil is clean.

THE OLD OIL SHOULD BE DRAINED AND FRESH OIL ADDED AFTER EVERY 50 HOURS OF OPERATION.

Too much emphasis cannot be given to the matter of oil selection. High grade oil of the body suited to the requirements of your engine is the most important single item in the economical operation of the unit, yet it is the cheapest item of operating cost. Select your oil solely on quality and suitability - never on price for no one thing is so sure to bring about unsatisfactory performance and unnecessa expense as incorrect lubrication.

High-grade, highly refined oils corresponding in body to the S.A.E. (Society Automotive Engineers) Viscosity Numbers listed below will prove economical and assu long engine life.

IMPORTANT: S.A.E. Viscosity Numbers classify oils in terms of body only, wit out consideration of quality or character, therefore we list certain grades of Mobi oil as typical examples of lubricants possessing the qualities we believe desirable in oils for Wisconsin engines. We plainly state that these grades of Mobiloils are listed because of their recognized quality and world-wide distribution. THERE ARE OTHER HIGH QUALITY OILS ON THE MARKET THAT ARE EQUALLY SATISFACTORY FOR WISCONSIN ENGINES.

GRADE OF OIL

Season or Temperature	Grade of Oil	Example
Spring, Summer, or Autumn +120° F to +40° F	SAE 30	Mobiloil "A"
Winter +40° F to +5° F	SAE 20	Mobiloil "Arctic"
+5° F to -20° F	SAE 10W	Mobiloil "Arctic Special"

Next fill the fuel tank with a good quality of gasoline free from dirt and water. Then open the shut-off valve in the gasoline pipe.

Next close the choke on the carburetor air inlet horn. The choke opens automatically after the engine starts.

The needle valve opening is approximately 3/4 turn. In cold weather startin is sometimes facilitated by opening the needle valve slightly more and then readju ing the needle after the engine has started to the position where the engine runs smoothest. The AH engines are fitted with carburetors with fixed jets. These carb retors have no needle valves.

If the engines are operated with too lean or too rich a mixture, they will h up unnecessarily. A lean mixture may also burn the valves.

Next, be sure the magneto switch is in the on or running position. The knurled button type of switch on the Wico magneto is in the on position when turned clockwise as far as it will go, and it is in the off position when turned anticlockwise. Some magnetos have push button type switches, which are always in the on or running position, except when depressed for stopping.

Spark advance of 25° is proper.

The engine is now ready to be cranked. If the engine is equipped with a starting crank, this should be engaged at the flywheel end of the engine crankshaft and the engine turned over briskly in a clockwise direction. As a matter of safety it is advisable to engage the starting crank so as to pull up on it in turning the engine over, instead of pushing down. In the latter case a back-fire from the engine might injure the operator's arm.

If the engine is equipped with a rope starter, insert the knot at the end of the rope in the notch in the starting sheave at the flywheel end of the engine, and wind the rope on the sheave in a clockwise direction. Then pull briskly on the rope to turn the crankshaft over.

If the engine does not start on the first application of the starting crank or the rope, the operation should be repeated.

If the choke on the carburetor accidently snaps open during hand cranking before the engine starts, the choke should again be closed. More choking of the carburetor is necessary in starting the engines in cold weather than in warm weather.

The governor, an air-flow type operated by the current of air from the fan flywheel, automatically controls the engine after it is started, varying the throttle opening to suit the load.

The air governor consists of a perforated blade located in the current of cooling air as it leaves the engine. When there is an increase in engine speed, the velocity of the air from the flywheel increases, exerting greater pressure on the governor blade, and moving same away from the engine, against the action of a spring. This motion of the governor blade closes the carburetor throttle valve through suitable linkage and reduces the engine speed. When the engine speed decreases due to the load going on, the air flow also decreases causing less pressure to be exerted on the governor blade, so that the spring pulls the blade back towards the engine, opening the throttle. Thus a uniform engine speed is maintained within very close limits. Care should be taken that the governor blade and shroud are not bent or damaged.

The governor spring is adjustable for various engine speeds, the greater the tension on the spring the higher the speed at which the engine will operate. On engines fitted with the air type governor, two holes are provided in the carburetor throttle lever for the governor spring. For engine speeds of 1500 R.P.M. or less, the spring should be hooked into the inner hole, nearest the throttle spindle. For speeds over 1500 R.P.M., the spring should be hooked into the outer hole.

AN AIR CLEANER MUST BE USED on the carburetor intake if there is any dust where the engine is operated, as otherwise this dust drawn into the engine through the carburetor will wear out the cylinders, pistons, rings and other parts of the engine in a few weeks' time.

The air cleaners must be cleaned periodically, depending on the type of service. If the plain screen type air cleaner is used, the screen should be washed thoroughly in gasoline to remove all collected dust, after which the screen should be dipped in light engine oil, drained and reassembled. If an oil bath air cleaner is used, the

oil in the cup together with the collected dust should be emptied, and the cup then refilled with oil to the level indicated on the cup.

Never operate the engine with any part of the air shroud removed as this will allow the engine to overheat, and score. The air shroud is absolutely necessary to direct the air flow so the engine may be properly cooled.

The magnetos are properly lubricated when they leave the factory and should n require further lubrication for a year's operation. Thereafter the lubrication in Wico magnetos should be replenished once a year by adding either Wico oil or "S.A.E 20" oil, through the filler hole in the base of the magneto, to the level of this hole.

The breaker point opening on the Wico magnetos should be .015 to .018 of an inch, and these points should be kept smooth and clean.

The spark plug gap should be .025 of an inch.

GENERAL CONSTRUCTION

The CAMSHAFT has the driving gear and the cams formed integral, the oil pump eccentric is also part of the camshaft. The shaft is bored throughout and runs on stationary pin fastened in the crankcase.

The EXHAUST VALVES are made of type XB Silchrome Steel and the INLET VALVES o: chrome nickel steel. Valve seat insert rings for both inlet and exhaust valves are made of Molybdenum Iron pressed into the cylinder blocks. Mushroom type valve tapp are employed and fitted with adjusting screws. The proper tapper clearance on thes engines is .008" to .010".

The CRANKSHAFT is carried on two Timken bearings. The cones are a tight pres: fit on the crankshaft. The outer race or cup of the Timken bearing, at the power takeoff end of the engine, is carried in a plate bolted to the crankcase. Under th: plate several shims are fitted for adjusting the bearings. The bearings are proper: fitted at the factory with .006 inch end play when the engine is cold. It is very seldom necessary to change this adjustment for wear, and then the work should only l done by an experienced man.

The CONNECTING ROD big end is direct babbitted and fitted with laminated shim: and the upper end of the rod is fitted with hard bronze bushings. A dipper on the connecting rod cap provides ample lubrication for all internal parts of the engine.

In case the connecting rod is burnt out it may be replaced on an exchange bas: at small cost if the old rod is returned to the factory in otherwise good condition.

The PISTON is heavy duty aluminum alloy casting. It is fitted with two compression and one oil regulating rings.

The PISTON PIN is a light press fit in the piston and steel wire snap rings i the piston bosses prevent end movement of the pin.

The OIL PUMP is of the plunger type formed integral with the splash trough. T plunger is held up against the driving eccentric on the camshaft by a spring. The or suction stroke of the pump is by this spring and the down or discharge stroke is the eccentric. Two ball check valves are used in the pump.

SPECIAL INSTRUCTIONS FOR LAYING UP ENGINE FOR WINTER

When the season's work is completed, the following instructions should be carried out very carefully to protect the engine over winter.

The outside of the engine, including the cooling fins on the cylinders and heads, should be thoroughly cleaned of all dirt and other deposits.

The air cleaner at the carburetor intake should be thoroughly cleaned of all oil and accumulated dust and sediment removed from the oil cup at the bottom of the cleaner.

To protect the cylinders, pistons, rings and valves and keep them from rusting and sticking, a half and half mixture of kerosene and good gas engine oil, (the same kind of oil as used in the crankcase of the engine), should be injected into the pet cock on the intake manifold while the engine is warm and running at moderate speed. About a quarter of a pint is necessary on a four cylinder engine, or enough so that a heavy bluish smoke will appear at the exhaust. The ignition switch should then be shut off and the engine stopped. This operation will give a coating of oil on the above mentioned parts, protecting them from the atmosphere.

On engines where there is no pet cock on the intake manifold, the kerosene and oil mixture may be injected into the air intake on the carburetor while the engine is running, so the mixture will be drawn into the engine. The air cleaner connection will of course have to be disconnected from the carburetor to do this.

All old used oil should be drained from the crankcase while the engine is warm, as the oil will then flow much more freely than when cold.

Drain fuel system, including gasoline lines, carburetor, fuel pump and tank of all gasoline to prevent lead and gum sediment interfering with future operation.

All exposed unpainted metal parts should be coated with grease or heavy oil.

IT IS HIGHLY RECOMMENDED THAT MACHINES BE STORED INSIDE A BUILDING THROUGH THE WINTER. IF THIS IS NOT POSSIBLE, THE ENGINE SHOULD BE PROTECTED FROM SNOW AND ICE BY A PROPER COVERING.

Before starting the engine again the next season, the crankcase drain plug should again be removed, so that any condensation, which may have collected during the winter, may be drained before new crankcase oil is added.

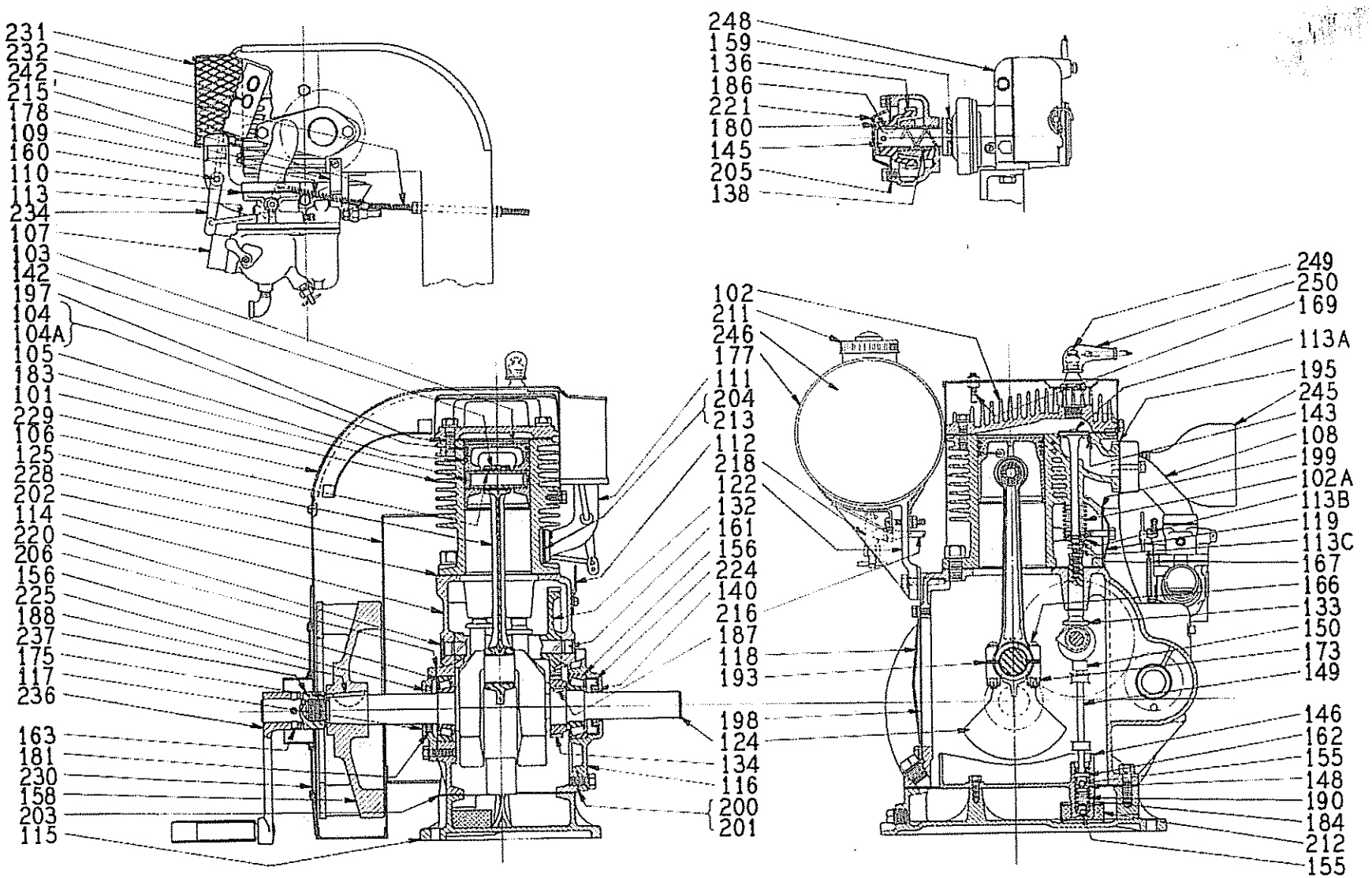
A good plan, and one that is recommended, is to remove the crankcase bottom cover or oil base in the spring before starting the engine for the new season, and scrubbing off all sediment which may have collected there.

When replacing the bottom cover, a new gasket should be used.

BE SURE TO FILL THE CRANKCASE WITH A GOOD QUALITY OF CRANKCASE OIL TO THE HIGH LEVEL POINT, BEFORE STARTING THE ENGINE. DO NOT USE ANY OIL HEAVIER THAN SAE NO. 30. ALSO BE SURE TO PUT OIL TO THE PROPER LEVEL IN THE AIR CLEANER.

It is also recommended to use new spark plugs at the beginning of the next season, especially if the engine has given considerable service.

Refuel engine and follow starting instructions as shown on preceeding pages of this manual.



MODELS AF-AG-AH

SINGLE CYLINDER AIR COOLED ENGINES

WISCONSIN MOTOR CORPORATION

MILWAUKEE, WISCONSIN

3-15-47

FORM ME-6-B (REPLACES FORM ME-6, 3-25-40)

REPAIR PARTS LIST

READ THESE INSTRUCTIONS BEFORE ORDERING PARTS

THE MODEL, SPEC AND SERIAL NUMBER OF YOUR ENGINE, SHOWN ON THE NAME PLATE ATTACHED TO THE AIR SHROUD, MUST BE GIVEN WHEN ORDERING PARTS

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TO INSURE PROMPT AND ACCURATE SERVICE, THE FOLLOWING INFORMATION MUST BE GIVEN.

1. State exactly quantity of each part and part number.
2. State definitely whether parts are to be shipped by express, freight or parcel post.

SERVICE FACILITIES

Approved engine service stations, located throughout the U. S. and foreign countries, have been carefully selected by the WISCONSIN MOTOR CORPORATION in order to assure complete and efficient repair and inspection service to owners of Wisconsin Air-Cooled Engines. These service stations, equipped and trained for complete engine repair, also stock parts to facilitate immediate delivery for all Wisconsin Air-Cooled Engines.

A DIRECTORY OF SERVICE STATIONS CAN BE FOUND IN THE BACK OF THIS MANUAL.

PARTS RETURNED FOR CREDIT

Before returning any parts, write a letter to the company from whom the parts were purchased, giving an exact list and description of the materials, why you wish to return them, whether for repairs, credit, or replacement, and also the model, specification and serial numbers of the engine from which the parts were taken. If authority is granted for their return, transportation charges must be prepaid and sender's name marked on the outside of the box or package.

MODEL AF PARTS LIST

REF. NO.	PART NUMBER	DESCRIPTION	NO. REQ.
101	AA-71C-1-S1	Cylinder Assembly complete with valves, tapper plate and inserts	1
	AA-71C-1-S2	Cylinder Assembly with inserts only	1
102	AB-62-A	Cylinder Head	1
102A	AF-42	Valve Springs	2
103	DB-160-D	Piston (4 ring grooves) Supersedes all previous pistons used Pistons are also furnished Semi-finished, .005", .010", .020" and .030" oversize	1
104	DC-125-A	Pistons Ring - compression	2
104A	DC-125A-1	Piston Ring - scraper	1
105	DC-112-A	Piston Ring - oil regulating On earlier engines with 3 ring groove pistons order same rings as above but only one compression ring. Piston rings are also furnished .005", .010", .020", and .030" oversize.	1
106	DE-59	Piston Pin Piston pins are also furnished .005", .010", .020" and .030" oversize.	1
107	L-16-43	Carburetor - Stromberg UR-3/4" beginning with engine #54154 L-16-2 Carburetor used to and including engine #54153 *For carburetor parts see nearest dealer listed in directory following this parts list.*	1
108	LD-196	Manifold	1
109	PM-61-2	Governor Spring	1
110	QC-53	Gasket - Carburetor flange	1
111	RB-67A-1	Breather Elbow	1
112	VB-41	Governor Vane Stop	1
113	VE-190	Governor Control Rod to carburetor	1
		(Continued on Page 6 - Parts Interchangeable on AF, AG, AH)	

Order parts from nearest *SERVICE STATION* shown in directory following parts list.

IMPORTANT: Always give model and serial numbers as shown on name plate of engine.

MODEL AG PARTS LIST

REF. NO.	PART NUMBER	DESCRIPTION
101	AA-73C-1-S1	Cylinder Assembly complete with valves, tapper plate and inserts
	AA-73C-1-S2	Cylinder Assembly with inserts only
102	AB-64	Cylinder Head
102A	AF-42	Valve Springs
103	DB-183-A	Piston (4 ring grooves) Supersedes all previous pistons used Pistons are also furnished Semi-finished, .005", .010", .020" and .030" oversize.
104	DC-126-A	Piston Rings - compression
105	DC-111	Piston Rings - oil regulating On earlier engines with 3 ring groove pistons order: 1 DC-126-A - compression 1 DC-126A-1 - scraper 1 DC-111 - oil regulating Piston rings are also furnished .005", .010", .020" and .030" oversize.
106	DE-59	Piston Pins Piston pins are also furnished .005", .010", .020" and .030" oversize.
107	L-16-43	Carburetor - Stromberg UR-3/4" beginning with engine #54154 L-16-2 Carburetor used to and including engine #54153 *For carburetor parts see nearest dealer listed in directory following this parts list.*
108	LD-196	Manifold
109	PM-61-2	Governor Spring
110	QC-53	Gasket - Carburetor flange
111	RB-67A-1	Breather Elbow
112	VB-41	Governor Vane Stop
113	VE-190	Governor Control Rod to carburetor
		(Continued on Page 6 - Parts Interchangeable on AF, AG, AH)

Order parts from nearest *SERVICE STATION* shown in directory following parts lis

IMPORTANT: Always give model and serial numbers as shown on name plate of engi

MODEL AH PARTS LIST

REF. NO.	PART NUMBER	DESCRIPTION	NO. REQ.
101	AA-79A-1-S1	Cylinder Assembly complete with valves, tapper plate and inserts	1
	AA-79A-1-S2	Cylinder Assembly with inserts only	1
102	AB-64	Cylinder Head	1
102A	AF-50	Valve Springs	2
103	DB-172-C	Piston (4 ring grooves) Supersedes all previous pistons used Pistons are also furnished Semi-finished, .005", .010", .020" and .030" oversize.	1
104	DC-141-A	Piston Rings - compression	3
105	DC-118-A	Piston Ring - oil regulating On earlier engines with 3 ring groove pistons order: 1 DC-141-A - compression 1 DC-141A-1 - scraper 1 DC-118-A - oil regulating Piston rings are also furnished .005", .010", .020" and .030" oversize.	1
106	DE-63	Piston Pin Piston pins are also furnished .005", .010", .020" and .030" oversize.	1
107	L-43	Carburetor - Zenith #62, Beginning with engine #78323 L-19 Carburetor - Zenith #124½TO used to and including engine #78322 *For carburetor parts see nearest dealer listed in directory following this parts list.*	1
108	LD-222	Manifold beginning with engine #78323 LD-221 Manifold beginning with engine #52261 to and including #78322 LD-210A-1 Manifold beginning with engine #1101 to and including #52260	1
109	PM-61-A	Governor Spring	1
110	QC-12	Gasket - Carburetor flange	1
111	RB-70	Breather Elbow complete with plug and breather tube	1
113	VE-438	Governor Control Rod to carburetor	1

(Continued on Page 6 - *Parts Interchangeable on AF, AG, All*)

Order parts from nearest *SERVICE STATION* shown in directory following parts list.

IMPORTANT: Always give model and serial numbers as shown on name plate of engine.

REF. NO.	PART NUMBER	DESCRIPTION	NO. REQ
113A	AE-76-C	Valve - Exhaust	1
	AE-76-N	Valve - Inlet	1
		AE-76-C and AE-76-N are new type valves which employ a split bushing for retaining. For earlier engines, equipped with the old type valve using a pin for retaining, the new type must be ordered. Also order 1 AG-26 and 1 pr. AH-9 split bushings for each valve. The old type valves are no longer available.	
		Valves are also furnished with .004" oversize valve stem.	
113B	AG-26	Seat - Valve Spring (for engine with split bushing for retaining valve)	2
		AG-19 (old type) for engine with pin for retaining valve	2
113C	AH-9	Lock - Valve spring seat (for engine beginning with #67139)	2
		PA-229 Pin, (1/8" x 19/32") - Valve spring seat (old type) For engine to and including #67138	2
114		Crankcase - (When ordering, type and serial numbers of engine must be shown)	1
115	BB-100-A	Engine Base	1
116	BG-105A-2-S1	Main Bearing Plate Assembly - take-off end Consisting of: 1 BG-105A-2 Plate 1 HF-236 Cork seal 1 SD-35 Cork retainer	1
117	BG-125	Main Bearing Plate - flywheel end	1
118	BH-101	Connecting Rod Inspection Plate	1
119	BH-103	Valve Tapper Inspection Plate	1
122	BI-170-C	Fuel Tank Support Bracket	1
124		Crankshaft complete with main bearings and gear (When ordering type and serial numbers must be shown)	1
125	DA-48A-S1	Connecting Rod Assembly Consisting of: 1 DA-48-A Connecting rod 1 HG-131 Bushing 2 PB-146-1 Bolts 2 PD-182 Palnuts 2 PD-11 Nuts 2 QA-112 Shims	1
132	EA-92-S1	Camshaft Assembly Consisting of: 1 EA-92 Camshaft with gear 1 PA-216 Support pin	1
133	FA-39	Valve Tapper	2

Order parts from nearest *SERVICE STATION* shown in directory following parts list.

IMPORTANT: Always give model and serial numbers as shown on name plate of engine

REF. NO.	PART NUMBER	DESCRIPTION	NO. REQ.
134	GA-30	Crankshaft Gear	1
136	GD-81	Magneto Gear	1
138	HC-43	Bushing for magneto drive shaft	1
140	HF-236	Main Bearing Cork Seat - take-off end	1
142	HG-131-A	Piston Pin Bushing	1
143	HG-150-A	Valve Seat Inserts beginning with engine #86536	2
		HG-150 Insert used on engines to and including #86535	
145	JD-335	Magneto Drive Shaft	1
146	KA-56	Oil Pump Body and Splash Trough	1
148	KF-14	Oil Pump Plunger	1
149	KF-18-1	Oil Pump Plunger Push Rod, beginning with engine #23823	1
		KF-18 old style rod used on engine to and including engine #23822	
150	KF-19-A	Oil Pump Push Rod Cap, beginning with engine #24177	1
155	ME-38	5/16" Steel Ball for oil pump	2
156	ME-66	Main Bearing (Timken #332-344)	2
158	NC-106E-3	Flywheel	1
159	OA-130-B	Magneto Coupling Disc	1
160	PA-259	Pin (3/32" x 5/8") for governor cross shaft lever	1
161	PA-216	Pin for camshaft support	1
162	PA-217	Pin (3/16" x 19/32") for oil pump plunger	1
163	PA-239	Starting Nut Pin beginning with engine #56150	1
		PA-221 Pin used to and including engine #56149	1
166	PB-146-S1	Connecting Rod Bolt with pal and plain nuts	2
167	PB-147	Valve Tapper Adjusting Screw	2
169	PC-314	Stud for air shroud cover	2
173	PD-181	Palnut for connecting rod bolt	2

Order parts from nearest *SERVICE STATION* shown in directory following parts list.

IMPORTANT: Always give model and serial numbers as shown on name plate of engine.

PARTS INTERCHANGEABLE ON MODELS AF, AG, AH

REF. NO.	PART NUMBER	DESCRIPTION	NO. REQ.
175	PE-58	Everlock Washer for starting nut beginning with engine #56150	1
		PE-39 Lockwasher (1") for flywheel nut used up to and including engine #56149	1
177	PG-84	Fuel Tank Support Strap - round tank	2
		PG-99 Strap - oval tank	2
	PG-315	Flywheel Screen Mounting Clips	4
178	PG-91	Governor Spring Damper	1
180	PH-191	Magneto Drive Shaft Spacer	1
181	PH-193-1	Main Bearing Cork Seal - flywheel end	1
183	PK-37	Piston Pin Retaining Ring	2
184	PK-50	Oil Pump Ball Retainer	1
186	PL-14	#5 Woodruff Key for magneto gear	1
187	PL-55	#6 Woodruff Key for crankshaft gear	1
188	PL-83	#23 Woodruff Key for flywheel	1
190	PM-58	Oil Pump Plunger Spring	1
193	QA-112	Connecting Rod Shim - with pal and plain nut	2
		QA-106 with slotted nut and cotter pin	2
195	QC-55	Gasket - manifold	1
197	QD-476-2	Gasket - cylinder head	1
198	QD-481	Gasket - connecting rod inspection plate	1
199	QD-482	Gasket - valve tapper inspection plate	1
200	QD-479-A	Gasket - main bearing plate - Take-off end (.006" thick)	9
201	QD-479-C	Gasket - main bearing plate - Take-off end (.003" thick)	1
202	QD-477	Gasket - cylinder base	1
203	QD-514-B	Gasket - engine base	1
204	QD-493	Gasket - breather elbow	2
205	QD-516	Gasket - magneto gear cover	2
206	QD-518	Gasket - main bearing plate - flywheel end	1
211	RC-77-3	Fuel Tank Cap for both round or oval tank	1
212	RD-107	Oil Strainer	1
213	RD-108	Breather Elbow Gauze	1
215	RF-269	Straight Fitting for fuel line - in carburetor	1

Order parts from nearest *SERVICE STATION* shown in directory following parts list.

IMPORTANT: Always give model and serial numbers as shown on name plate of engine.

PARTS INTERCHANGEABLE ON MODELS AF, AG, AH

REF. NO.	PART NUMBER	DESCRIPTION	NO. REQ.
216	RM-620	Fuel Line Assembly - tank to carburetor	1
218	RG-22	Fuel Shut-off Cork in fuel tank	1
220	SA-13	3/4" Welch Plug for camshaft pin hole	1
221	SA-50	Magneto Gear Cover	1
224	SD-35	Main Bearing Cork Seal Retainer - take-off end	1
225	SD-39-1	Main Bearing Cork Seal Retainer - flywheel end	1
228	SE-63-B	Air Shroud beginning with engine #76001	1
	SE-1-D	Shroud used to and including engine #76000	1
229	SE-64	Air Shroud Cover beginning with engine #76001	1
	SE-2-2	Cover used to and including engine #76000	1
230	SE-3	Flywheel Screen	1
231	SE-13-B	Governor Vane Guard	1
232	SE-16	Governor Vane	1
234	TC-247	Governor Shaft Lever	1
236	U-212	Starting Crank beginning with engine #56150	1
	U-181	Crank used to and including engines #56149	1
237	UC-75	Starting Crank Nut beginning with engine #56150	1
	UE-27-A	Cranking Flange used to and including engine #56149	1
242	VE-150-1	Governor Spring Rod	1
245	WD-34	Muffler	1
246	WE-14-A	Fuel Tank - round, 1-1/2 gal.	1
	WE-37-C	Fuel Tank - oval, 2-3/4 gal.	1
248	Y-14	Wico Model LD-1 Magneto	1
	Y-20	Wico Model A-1 Magneto	1
	Y-20-D	Wico Model C-1 Magneto	1
	Y-58	Wico Model XH-1 Magneto (Replaces Models LD-1, A-1 & C-1)	1
	Y-34	Fairbanks-Morse Model J1A7 (Interchangeable with Wico Models LD-1, A-1 and C-1)	1
		For magneto parts see nearest dealer listed in directory following this parts list.	
249		Spark Plug - Champion #8, 18mm.	1
250	YD-12	Spark Plug Safety Nipple	1
	YL-83	Ignition Cable for Wico LD-1, A-1, C-1 or XH-1 magnetos	1
	YL-120	Ignition Cable for Fairbanks-Morse magneto	1

Order parts from nearest *SERVICE STATION* shown in directory following parts list.

IMPORTANT: Always give model and serial numbers as shown on name plate of engine.

STANDARD HARDWARE FOR MODELS AF, AG, AH

The Following Nuts, Washers, Capscrews and Etc. Are of a Common Hardware Variety and Can be Purchased From Local Plumbing or Hardware Stores.

PART NUMBER	DESCRIPTION	NO. REQ.
PD-10	5/16"-24 plain Nut for connecting rod bolts	2
PD-77	1/4"-20 plain Nuts 4-for air shroud cover 2-for fuel tank strap	6
PD-115	#10-32 plain Nuts 4-for governor spring rod 1-for governor spring damper	5
PD-139	#12-24 plain Nut for butterfly valve stop	1
PD-141	5/16"-24 plain Nut for valve tapper adjusting screw	2
PE-3	1/4" lockwashers 4-for magneto gear cover 1-for air shroud to top cover 2-for air shroud to cyl. head/1-for air shroud to cylinder 2-for mounting magneto 2-for mounting carburetor on 2-for fuel tank support AF and AG engines	14
PE-4	5/16" lockwashers 4-for main bearing retainer plate 2-for oil trough 2-for mounting carburetor on AH engine	8
PE-5	3/8" lockwashers 4-for main bearing plate 6-for cylinder head on AF engine 2-for manifold 2-for fuel tank bracket	14
PE-7	1/2" lockwashers 4-for cylinder base 2-for fuel tank bracket 4-for crankcase base	10
PE-14	#10 lockwashers 2-for breather elbow 1-for governor spring damper	3
PE-17	#12 lockwasher for butterfly valve stop	1
PH-14	5/16" washer - copper - for valve tapper inspection plate	1
PH-22	3/8" plain Washer for cylinder head	6
PH-26	3/8" Washers - copper - for connecting rod inspection plate	6
PH-84	1/4" plain Washer for governor shaft	2
XA-7	#10-32 x 3/8" round head screw for governor spring damper	1
XA-10	#10-32 x 3/4" round head screw for breather body	2
XA-32	1/4-20 x 5/16" round head screws 4-for flywheel screen 1-for air shroud cover	5

Order parts from nearest *SERVICE STATION* shown in directory following parts li

IMPORTANT. Always give model and serial numbers as shown on name plate of eng

STANDARD HARDWARE FOR MODELS AF, AG, AH

PART NUMBER	DESCRIPTION	NO. REQ.
XA-52	1/4"-20 x 1-1/2" round head screw for fuel tank strap	2
XB-9	#12-24 x 5/8" fillister head screw for butterfly valve stop	1
XD-4	1/4"-20 x 1/4" hexagon head screws 4-for magneto gear cover 1-for air shroud to cylinder 2-for air shroud to cylinder head	7
XD-6	1/4"-20 x 3/4" hexagon head screws 2-for mounting magneto 2-for mounting carb. on AF & AG eng.	4
XD-15	5/16"-18 x 3/4" hexagon head screws 4-for bearing retainers 2-for oil trough	6
XD-17	5/16"-18 x 1" hexagon head screws for mounting carb. on AH eng.	2
XD-23	5/16"-18 x 2" hexagon head screw for valve tapper inspection plate	1
XD-27	3/8"-16 x 1" hexagon head screws for bearing plate	4
XD-42	1/2"-13 x 1-1/4" hexagon head screws 4-for engine base 2-for fuel tank bracket	6
XD-29	3/8"-16 x 1-1/4" hexagon head screws For manifold on AF and AG engines	2
XD-30	3/8"-16 x 1-1/2" hexagon head screws 3-for cylinder head 2-for manifold on AH engine	5
XD-31	3/8"-16 x 1-3/4" hexagon head screws for cylinder head	3
XD-135	1/2"-13 x 1-1/8" hexagon head screws for cylinder to crankcase	4
XD-114	3/8"-16 x 5/8" hexagon head screw for connecting rod inspection plate	6
XE-17	Set Screw for starting pin	1
XH-10	#2 x 1-3/8" taper pin for magneto gear	1
XI-1	1/16" x 1/2" cotter pins 2-for governor control rod 2-for governor shaft	4
XI-7	3/32" x 3/4" cotter pins for connecting rod bolt	2
XK-4	1/2" square head pipe plug for engine base	2
XK-38	1/8" street elbow for carburetor drip	1
XK-7	3/4" square head pipe plug for crankcase	2

Order parts from nearest *SERVICE STATION* shown in directory following parts list.