WISCONSIN

Air Cooled

HEAVY DUTY ENGINES

INSTRUCTION BOOK AND PARTS LIST

MODELS AD-AE-AES

ISSUE MM 239-A

WORLD'S LARGEST BUILDERS OF HEAVY DUTY AIR COOLED ENGINES

IMPORTANT

Since there is a right way, and many wrong ways to operate an engine, it is important that this manual be read carefully before you start your engine. This will avoid unnecessary delays and expense which might be caused by improper operation.

The various bearing surfaces in a new engine have not been glazed, as they will be with continued operation, and it is in this period of "running in", that special care must be exercised, otherwise the highly desired glaze will never be obtained. A new bearing surface that has once been damaged by carelessness will be ruined forever.

THEREFORE READ INSTRUCTIONS CAREFULLY

A copy of this manual is sent out with each engine. All points of operation and maintenance have been covered as carefully as possible but if further information is required, inquiries sent to the factory will receive prompt attention.

When writing the factory ALWAYS GIVE THE MODEL AND SERIAL NUMBER of engine referred to.

Extra copies of this manual are $1.00 each.

WISCONSIN MOTOR CORPORATION
MILWAUKEE 46. WISCONSIN

INSTRUCTIONS

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WISCONSIN
SINGLE CYLINDER ENGINES

MODEL AD

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

MODEL AE

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

MODEL AES

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

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INTRODUCTION

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.	AD	AE	AES
1400	2.5	3.0	3.0
1600	2.9	3.4	3.5
1800	3.2	3.7	4.0
2000	3.4	4.0	4.3
2200	3.6	4.1	4.6
2400	3.7	4.2	4.8
2600	---	---	5.0
2800	---	---	4.8
3000	---	---	4.6

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 ft. altitude 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 per following paragraphs. Two filler plugs are provided on opposite sides of the engine; likewise two drain plugs.

The base of the engine should be filled level with the filler hole, approximately 1-1/2 qts. 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 unnecessary expense as incorrect lubrication.

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

IMPORTANT: S.A.E. Viscosity Numbers classify oils in terms of body only, without consideration of quality or character, therefore we list certain grades of Mobiloil 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 3/8 turn. In cold weather starting is sometimes facilitated by opening the needle valve slightly more and then readjusting the needle after the engine has started to the position where the engine runs the smoothest.

If the engines are operated with too lean or too rich a mixture, they will heat 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 not require further lubrication for a year's operation. Thereafter the lubrication in the 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 a stationary pin fastened in the crankcase.

The EXHAUST VALVES are made of type XB Silchrome Steel and the INLET VALVES of 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 tappers are employed and fitted with adjusting screws. The proper tapper clearance on these engines is .008" to .010".

The CRANKSHAFT is carried on two Timken bearings. The cones are a tight press 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 this plate several shims are fitted for adjusting the bearings. The bearings are properly 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 be done by an experienced man.

The CONNECTING ROD big end is direct babbitted and fitted with laminated shims 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 basis 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 in the piston bosses prevent end movement of the pin.

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

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.

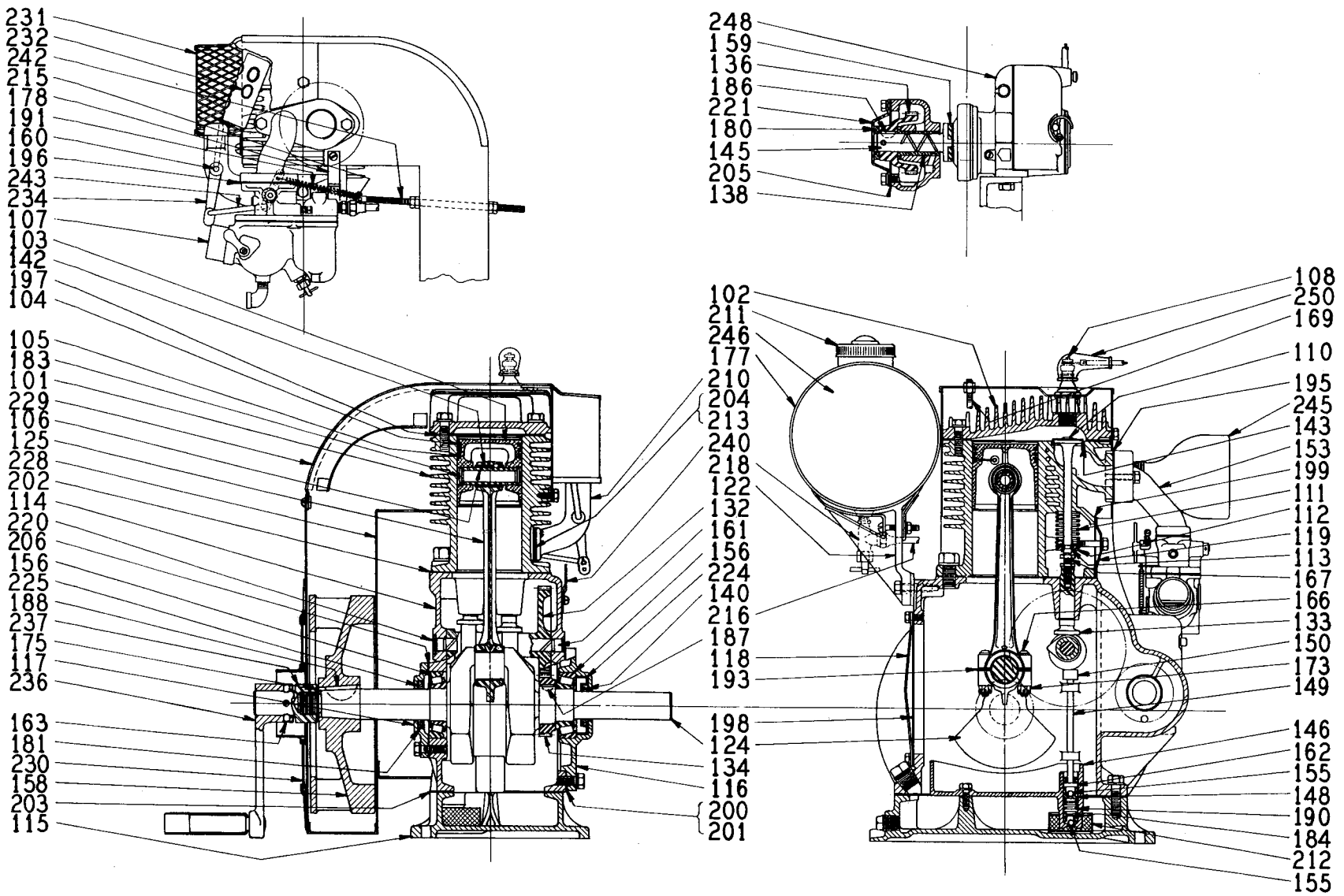
SERVICE FACILITIES

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.



SINGLE CYLINDER AIR COOLED ENGINES

WISCONSIN MOTOR CORPORATION

MILWAUKEE, WISCONSIN

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

1-24-47

MODEL AD

PARTS LIST

REF. NO.	PART NUMBER	DESCRIPTION	NO. REQ.
101	AA-72B-1-S1	CYLINDER ASSEMBLY Consisting of: 1 AA-72-B-1 Cylinder block 2 AE-75-B Valves 2 AF-49-A Springs 2 AG-26 Seats 2 AH-9 Locks 1 BH-105 Tapper plate 2 HG-201 Inserts 1 PH-30 Washer 1 QD-486 Gasket 1 XD-136 Screw	1
	AA-72B-1-S2	CYLINDER ASSEMBLY Consisting of: 1 AA-72-B-1 Cylinder block 2 HG-201 Inserts	1
102	AB-63-F	CYLINDER HEAD AB-63-C replaced by AB-63-F	1
103	DB-158-A	PISTON DB-158 replaced by DB-158-A Pistons are also furnished Semi-finished, .005", .010", .020" and .030" oversize.	1
104	DC-106-A	PISTON RING - Compression	2
105	DC-107	PISTON RING - Oil regulating Piston rings are also furnished .005", .010", .020" and .030" oversize.	1
106	DE-60	PISTON PIN Piston pins are also furnished .005", .010", .020" and .030" oversize.	1
107	L-16-41	CARBURETOR - STROMBERG UR-3/4" (Beginning with engine #64125) L-16 Carburetor used up to and including engine #64124 NOTE: For carburetor parts see nearest dealer listed in directory following this parts list.	1
108		SPARK PLUG - Champion #8, 18 mm.	1
		(Continued on Page 6 - Parts Interchangeable on AD, AE, AES)	

Order parts from nearest ***SERVICE STATION*** shown in directory following parts list.
IMPORTANT: Always give Model, Specification and Serial Numbers as shown on name plate.

MODEL AE

PARTS LIST

REF. NO.	PART NUMBER	DESCRIPTION	NO. REQ.
101	AA-74B-1-S1	CYLINDER ASSEMBLY Consisting of: 1 AA-74B-1 Cylinder block 2 AE-75-B Valves 2 AF-49-A Springs 2 AG-26 Seats 2 AH-9 Locks 1 BH-105 Tapper plate 2 HG-201 Inserts 1 PH-30 Washer 1 QD-486 Gasket 1 XD-136 Screw	1
	AA-74B-1-S2	CYLINDER ASSEMBLY Consisting of: 1 AA-74B-1 Cylinder block 2 HG-201 Inserts	1
102	AB-63-D	CYLINDER HEAD AB-63-C replaced by AB-63-D	1
103	DB-209	PISTON (4 ring grooves) DB-187B-1 replaced by DB-209 DB-159-1 (3 ring grooves) old type no longer available, order DB-209 Pistons are also furnished Semi-finished, .005", .010", .020" and .030" oversize	1
104	DC-163	PISTON RING - Compression (for 4 ring groove pistons) For 3 ring groove piston order: 1 DC-108-A Compression 1 DC-108A-1 Scraper	3
105	DC-109	PISTON RING - Oil regulating (for both 3 and 4 ring groove piston) Piston rings are also furnished .005", .010", .020" and .030" oversize.	1
106	DE-65	PISTON PIN Piston pins are also furnished .005", .010", .020" and .030" oversize.	1
107	L-16-42	CARBURETOR - STROMBERG UR-3/4" (Beginning with engine #52394) L-10-1 Carburetor used up to and including engine #52393 NOTE: For carburetor parts see nearest dealer listed in directory following this parts list.	1
108		SPARK PLUG - Champion #8, 18 mm.	1
		(Continued on Page 6 - Parts Interchangeable on AD, AE, AES)	

Order parts from nearest ***SERVICE STATION*** shown in directory following parts list.
IMPORTANT: Always give Model, Specification and Serial Numbers as shown on name plate.

MODEL AES

PARTS LIST

REF. NO.	PART NUMBER	DESCRIPTION	NO. REQ.
101	AA-74B-1-S1	CYLINDER ASSEMBLY Consisting of: 1 AA-74B-1 Cylinder block — 1 BH-105 Tapper plate 2 AE-75-B Valves — 2 HG-201 Inserts 2 AF-49-A Springs — 1 PH-30 Washer 2 AC-26 Seats — 1 QD-486 Gasket 2 AH-9 Locks — 1 XD-136 Screw	1
	AA-74B-1-S2	CYLINDER ASSEMBLY Consisting of: 1 AA-74B-1 Cylinder block — 1 HG-201 Insert	1
102	AB-63E-2	CYLINDER HEAD AB-63D-1 replaced by AB-63E-2	1
103	DB-209	PISTON (4 ring grooves) DB-187B-1 replaced by DB-209 DB-159-1 (3 ring grooves) old type no longer available, order DB-209 Pistons are also furnished Semi-finished, .005", .010", .020" and .030" oversize.	1
104	DC-163	PISTON RING - Compression (for 4 ring groove pistons) For 3 ring groove piston order: 1 DC-108-A Compression — 1 DC-108A-1 Scraper	
105	DC-109	PISTON RING - Oil regulating (for both 3 and 4 ring groove pistons) Piston rings are also furnished .005", .010", .020" and .030" oversize.	1
106	DE-65	PISTON PIN Piston pins are also furnished .005", .010", .020" and .030" oversize.	1
107	L-16-44	CARBURETOR - STROMBERG UR-3/4" (Beginning with engine #52123) L-16-13 Carburetor used up to and including engine #52122 NOTE: For carburetor parts see nearest dealer listed in directory following this parts list.	1
108		SPARK PLUG - Champion #6M, 18 mm.	1
		(Continued on Page 6 - Parts Interchangeable on AD, AE, AES	

Order parts from nearest ***SERVICE STATION*** shown in directory following parts list.
IMPORTANT: Always give Model, Specification and Serial Numbers as shown on name plate.

REF. NO.	PART NUMBER	DESCRIPTION	NO. REQ.
110	AE-75-B	VALVES - Inlet and Exhaust (for engines beginning with #70195 AE-75-B are new type valves which employ a split bushing for retaining. For engines to and including #70194, 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.	2
111	AF-49-A	VALVE SPRING	2
112	AG-26	SEAT - Valve spring (for engine beginning with #70195)	2
		AG-19 (old type) for engine to and including #70194)	2
113	AH-9	LOCK - Valve spring seat (for engine beginning with #70195)	2 pr.
		PA-229 Pin (1/8" x 19/32") - Valve spring seat (old type) for engine to and including #70194)	2
114		CRANKCASE - (When ordering, type and serial number of engine must be shown)	1
115	BB-101-A	ENGINE BASE	1
116	BG-106-7-S1	MAIN BEARING PLATE ASSEMBLY - Take-Off End - For engine beginning with #25983 Consisting of: 1 BG-106-7 Plate — 1 SD-31 Cork retainer 1 HF-238 Cork seal	1
		BG-106-3 Plate (old type) for engines previous to #25983	1
117	BG-126	MAIN BEARING PLATE - flywheel end	1
118	BH-104	CONNECTING ROD INSPECTION PLATE	1
119	BH-105	VALVE TAPPER INSPECTION PLATE	1
122	BI-170C-1	FUEL TANK SUPPORT BRACKET	1
124		CRANKSHAFT complete with main bearings and gear (When ordering type and serial number must be shown)	1
125	DA-49A-S1	CONNECTING ROD ASSEMBLY Consisting of: 1 DA-49-A Connecting rod — 2 PD-181 Palnuts 1 HG-133-A Bushing — 2 PD-10 Nuts 2 PB-148 Bolts — 2 QA-113 Shims DA-49-S1 replaced by DA-49A-S1	1

Order parts from nearest ***SERVICE STATION*** shown in directory following parts list.
IMPORTANT: Always give Model, Specification and Serial Numbers as shown on name plate.

PARTS INTERCHANGEABLE ON MODELS AD, AE, AES

REF. NO.	PART NUMBER	DESCRIPTION	NO. REQ.
132	EA-93-A-S1	CAMSHAFT ASSEMBLY Consisting of: 1 EA-93A Camshaft with gear 1 PA-218 Support pin EA-93-S1 replaced by EA-93A-S1	1
133	F-63	VALVE TAPPET with PB-169 lockscrew FA-40-C replaced by F-63	2
134	GA-31	CRANKSHAFT GEAR	1
136	GD-80	MAGNETO GEAR	1
138	HC-43	BUSHING for magneto drive shaft	1
140	HF-238	MAIN BEARING CORK SEAT - take-off end	1
142	HG-133-A-1	PISTON PIN BUSHING HG-133 and HG-133-A replaced by HG-133A-1	1
143	HG-201	VALVE SEAT INSERTS	2
145	JD-335	MAGNETO DRIVE SHAFT	1
146	KA-57	OIL PUMP BODY AND SPLASH TROUGH	1
148	KF-14	OIL PUMP PLUNGER	1
149	KF-26	OIL PUMP PLUNGER PUSH ROD, beginning with eng. #24177 KF-17 old style rod used on engines up to and including engine #24176 KF-17-1 replaced by KF-26	1
150	KF-19-A	OIL PUMP PUSH ROD CAP, beginning with engine #24177	1
153	LD-197-C	MANIFOLD	1
155	ME-38	5/16" STEEL BALL for oil pump	2
156	ME-84	MAIN BEARING (Timken #14276-14130) beginning with engine #25983 ME-67 BEARING (Timken #26274-26131) used up to and including engine #25982	2
158	NC-143	FLYWHEEL beginning with engine #56150 NC-108-D used up to and including engine #56149	1
159	OA-130-B	MAGNETO COUPLING DISC	1

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PARTS INTERCHANGEABLE ON MODELS AD, AE, AES

REF. NO.	PART NUMBER	DESCRIPTION	NO. REQ.
160	PA-152	PIN (3/32" x 21/32") for governor cross shaft lever	1
161	PA-218	PIN (9/16" x 5-5/16") 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 up to and including engine #56149	1
166	PB-148-S1	CONNECTING ROD BOLT with pal and plain nuts	2
167	PB-169	VALVE TAPPET ADJUSTING SCREW for F-63 tappet	2
		PB-147 with PD-141 nut for obsolete FA-40-C tappets	
169	PC-316	STUD for air shroud cover	2
173	PD-181	PALNUT for connecting rod bolt	2
		PD-148 Slotted nut with cotter pin replaced by PD-181 palnut and PD-10 hexagon nut	
175	PE-73	EVERLOCK WASHER for starting nut beginning with engine #56150	1
		PE-38 LOCKWASHER (7/8") for flywheel nut used up to and including engine #56149	1
177	PG-84	FUEL TANK SUPPORT STRAP - round tank	2
		PG-99 STRAP for 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	MAIN BEARING CORK SEAL - flywheel end	1
183	PK-52	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-87	#22 WOODRUFF KEY for flywheel	1
190	PM-58	OIL PUMP PLUNGER SPRING	1
191	PM-63	GOVERNOR SPRING	1

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PARTS INTERCHANGEABLE ON AD, AE, AES

REF. NO.	PART NUMBER	DESCRIPTION	NO. REQ.
193	QA-113	CONNECTING ROD SHIM - with pal and plain nut	2
		QA-107 with slotted nut and cotter pin	2
	Q-4	GASKET SET - Consisting of:	
195	QC-56-B	GASKET - manifold	1
196	QC-53	GASKET - carburetor flange	1
197	QD-484	GASKET - cylinder head	1
198	QD-485	GASKET - connecting rod inspection plate	1
199	QD-486	GASKET - valve tapper inspection plate	1
200	QD-487-A	GASKET - main bearing plate - Take-off end (.006" thick)	9
201	QD-487-B	GASKET - main bearing plate - Take-off end (.003" thick)	1
202	QD-488	GASKET - cylinder base	1
203	QD-489-B	GASKET - engine base	1
204	QD-493	GASKET - breather elbow	2
205	QD-515	GASKET - magneto gear cover	2
206	QD-518	GASKET - main bearing plate - flywheel end	1
210	RB-67A-1	BREATHER ELBOW	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
216	RM-846	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-49	MAGNETO GEAR COVER	1
224	SD-31	MAIN BEARING CORK SEAL RETAINER - Take-off end	1
225	SD-39	MAIN BEARING CORK SEAL RETAINER - Flywheel end	1
228	SE-70	AIR SHROUD beginning with engine #82981	1
		SE-4-D SHROUD used up to and including engine #82980	1
229	SE-72	AIR SHROUD COVER beginning with engine #82981	1
		SE-5-2 COVER used up to and including engine #82980	1

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IMPORTANT: Always give Model, Specification and Serial Numbers as shown on name plate.

PARTS INTERCHANGEABLE ON MODELS AD, AE, AES

REF. NO.	PART NUMBER	DESCRIPTION	NO. REQ.
230	SE-6-3	FLYWHEEL SCREEN beginning with engine #56150	1
		SE-6 SCREEN used up to and including engine #56149	1
231	SE-14-B	GOVERNOR VANE GUARD	1
232	SE-15	GOVERNOR VANE	1
234	TC-247-A	GOVERNOR SHAFT LEVER	1
236	U-212	STARTING CRANK beginning with engine #56150	1
		U-181 CRANK used up to and including engine #56149	1
237	UC-74-S1	STARTING CRANK NUT ASSEMBLY beginning with engine #56150	1
		UE-27-A CRANKING FLANGE used up to and including engine #56149	1
240	VB-41	BUTTERFLY VALVE STOP	1
242	VE-150-1	GOVERNOR SPRING ROD	1
243	VE-191	GOVERNOR CONTROL ROD TO CARBURETOR	1
245	WD-35	MUFFLER	1
246	WE-14-K	FUEL TANK - round, 1-1/2 gal. WE-14-A replaced by WE-14-K	1
	WE-37-F	FUEL TANK - oval, 2-3/4 gal. WE-37-C replaced by WE-37-F	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-72	FAIRBANKS-MORSE MODEL X1A7 (Interchangeable with Wico Models LD-1, A-1 and C-1) Y-34 FM-J1A-7 replaced by Y-72	1
		NOTE: For magneto parts see nearest dealer listed in directory following this parts list.	
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, Specification and Serial Numbers as shown on name plate.

STANDARD HARDWARE

FOR MODELS AD, AE, AES

NOTE: 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	PLAIN NUT, 5/16"-24, for connecting rod bolts	2
PD-77	PLAIN NUT, 1/4"-20 4-for air shroud cover 2-for fuel tank strap	6
PD-115	PLAIN NUT, #10-32 4-for governor spring rod 1-for governor spring damper	5
PD-139	PLAIN NUT, #12-24, for butterfly valve stop	1
PD-141	PLAIN NUT, 5/16"-24, for obsolete FA-40C valve tapper	2
PE-3	LOCKWASHER, 1/4" 4-for magneto gear cover 2-for fuel tank support 2-for oil trough 1-for air shroud to top cover 1-for air shroud to cyl. head 1-for air shroud to cylinder 2-for mounting magneto 2-for mounting carburetor	15
PE-4	LOCKWASHER, 5/16" 4-for main bearing retainer plate 2-for manifold	6
PE-5	LOCKWASHER, 3/8" 4-for main bearing plate 6-for cylinder head 4-for base to crankcase 2-for fuel tank bracket	16
PE-7	LOCKWASHER, 1/2", for cylinder base	4
PE-14	LOCKWASHER, #10 2-for breather elbow 1-for governor spring damper	3
PE-17	LOCKWASHER, #12, for butterfly valve stop	1
PH-30	WASHER, 1/4" 6-for connecting rod inspection plate 1-for valve tapper inspection	7
PH-84	PLAIN WASHER, 1/4", for governor shaft	2
XA-7	SCREW, #10-32 x 3/8" round head, for governor spring damper	1
XA-10	SCREW, #10-32 x 3/4" round head, for breather body	2
XA-32	SCREW, 1/4-20 x 1/4" round head 4-for flywheel screen 1-for air shroud cover	5

Order parts from nearest ***SERVICE STATION*** shown in directory following parts list.
IMPORTANT: Always give Model, Specification and Serial Numbers as shown on name plate.

STANDARD HARDWARE FOR MODELS AD, AE, AES

PART NUMBER	DESCRIPTION	NO. REQ.
XA-88	SCREW, 1/4"-20 x 1-5/8" round head, for fuel tank strap	2
XB-9	SCREW, #12-24 x 5/8" fillister head, for butterfly valve stop	1
XD-4	SCREW, 1/4"-20 x 1/4" hexagon head 4-for magneto gear cover 1-for air shroud to cylinder head 1-for air shroud to cylinder 6-for connecting rod inspection plate	12
XD-5	SCREW, 1/4"-20 x 5/8" hexagon head, for oil trough	2
XD-6	SCREW, 1/4"-20 x 3/4" hexagon head 2-for mounting magneto 2-for mounting carburetor	4
XD-15	SCREW, 5/16"-18 x 3/4" hexagon head, for bearing retainer	4
XD-21	SCREW, 5/16"-18 x 1-1/2" hexagon head, for mounting manifold	2
XD-26	SCREW, 3/8"-16 x 7/8" hexagon head, for bearing plate	4
XD-28	SCREW, 3/8"-16 x 1-1/8" hexagon head, for base to crankcase	4
XD-29	SCREW, 3/8"-16 x 1-1/4" hexagon head 3-for cylinder head 2-for gas tank bracket	5
XD-30	SCREW, 3/8"-16 x 1-1/2" hexagon head, for cylinder head	3
XD-135	SCREW, 1/2"-13 x 1-1/8" hexagon head, for cyl. to crankcase	4
XD-136	SCREW, 1/4"-20 x 2-1/8" hexagon head, for valve tapper inspection plate	1
XE-17	SET SCREW for starting pin	1
XH-10	TAPER PIN, #2 x 1-3/8", for magneto gear	1
XI-1	COTTER PINS, 1/16" x 1/2" 2-for connecting rod bolts 2-for governor shaft 2-for governor control rod	6
XK-4	PIPE PLUG, 1/2" square head, for crankcase	2
XK-3	PIPE PLUG, 3/8" square head, for engine base	2
XK-38	STREET ELBOW, 1/8", for carburetor drip	1

Order parts from nearest ***SERVICE STATION*** shown in directory following parts list.
IMPORTANT: Always give Model, Specification and Serial Numbers as shown on name plate.

WARRANTY

We guarantee each new engine sold by us to be free from defects in material and workmanship for six (6) months from date of shipment, but not to exceed ninety (90) days of service. The obligation under this Warranty, statutory or otherwise, is limited to the replacement or repair at our Milwaukee, Wisconsin factory, or at a point designated by us, of such part as shall appear to us, upon inspection at such point, to have been defective in material or workmanship.

This Warranty does not obligate us to bear the cost of labor or transportation charges in connection with the replacement or repair of defective parts, nor shall it apply to an engine upon which repairs or alterations have been made unless authorized by us.

We make no Warranty in respect to trade accessories, such being subject to the Warranties of their respective manufacturers.

We shall in no event be liable for consequential damages or contingent liabilities arising out of the failure of any engine or parts to operate properly.

No express, implied or statutory Warranty other than herein set forth is made or authorized to be made by us.

THIS MANUAL IS FOR MY WISCONSIN MODEL .... ENGINE

SPEC. No. .... SERIAL No. ....

THE ABOVE INFORMATION, WHICH WILL BE FOUND ON THE INSTRUCTION PLATE ATTACHED TO THE AIR SHROUD OF THE ENGINE, SHOULD BE FILLED IN. YOUR PROMPT ATTENTION TO THIS MATTER WILL MAKE IT CONVENIENT FOR YOU IN THE FUTURE, AS THIS INFORMATION MUST BE GIVEN WHEN ORDERING ENGINE REPAIR PARTS.

**For Your Own Record. Do Not Cut Out and Return to Factory.*

WISCONSIN MOTOR CORPORATION
MILWAUKEE 46, WISCONSIN

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