

and an engine would be thrown out of balance.

Under no circumstances should a cast iron piston and steel connecting rod be installed in place of the aluminum parts, for high compression would cause overheating, preignition and knocking.

## ALUMINUM ALLOY CONNECTING ROD

Aluminum alloy connecting rods are drop forged and heat treated for strength, before machining. Care must be used not to spring them, for even though straightened again they may go out of shape thereafter, and misalignment then results.

The bronze piston pin bushing is pressed in the connecting rod and afterward bored and reamed for .001" clearance on the hardened piston pin, to insure correct fit and alignment. These parts seldom require replacement, but when the old rod does wear it should be exchanged complete for a new one as explained in the next paragraph.

Bearing metal is spun in the crankpin end and broached to size, thereby securing a dense wear resisting bearing. Rebabbiting in the field is not practical, but connecting rods in perfect condition except for worn bearings, can be exchanged for new ones at a nominal charge. Write for details.

Because of the light reciprocating weight of the piston and connecting rod, there is little wear on the connecting rod bearings, and adjustment is seldom required. If after long service this bearing does wear until it pounds or knocks, it should be taken up. A

Piston pins on early engines were fitted tight, by heating the pistons in boiling water and inserting the pins cold. With late improvements in aluminum alloys and newer methods of finishing the parts to close dimensions, Aluminum Co. of America engineers now recommend looser fitting as explained following, and old instructions are void.

dull rattling sound in the crankcase as an engine slows down usually indicates a worn or loose connecting rod bearing.

The connecting rod must be fitted .002" to .003" loose on the crankpin to provide proper clearance for lubrication. To reach the connecting rod, first shut off fuel and take off carburetor. Remove lock wire and cap screws from connecting rod, and carefully lift off the cap and shims. Peel off one or more thin layers from each shim, according to the amount of looseness to be taken up.

Before replacing the parts, lay a 1¼" square piece of .003" paper or shim stock between the cap and crankpin, then carefully reassemble exactly as removed. When the two cap screws are tightly drawn to place, the bearing should be a snug (not tight) fit, permitting the engine to turn freely. If the bearing is still too loose, peel another layer from each shim and test again. After proper adjustment is secured, remove the test shim, reassemble tight, and lock cap screws with wire.

NOTE—Early engines had connecting rods without shims, and the caps must be carefully filed to make adjustment for wear.

## ALUMINUM ALLOY PISTON

Aluminum alloy pistons are accurately ground from heat treated castings made in permanent molds. This insures uniform thickness and expansion, and minimum weight. As aluminum expands more than cast iron when heated, pistons must be fitted in the cylinders with .008" to .010" clearance at the skirt end, at normal temperatures. This insures their fitting the cylinders without binding when engines are heated in operation.

When starting a cold engine the piston is sometimes noisy because of excessive clearance. Always idle the engine slowly for several minutes to warm up and expand the piston and cylinder evenly. Never operate with open throttle until warmed up, for the piston will expand faster than the cylinder and these parts are liable to seize and score.

To pull piston from cylinder, first shut off fuel and remove carburetor, then disconnect connecting rod as instructed in preceding section. Drain water jacket, remove cylinder head, and scrape carbon from cylinder walls after which piston and connecting rod can be pulled. When replacing piston be sure the deflector is in proper position (see cut on page 15). If piston is put in upside down the engine will start hard and lack power.

Narrow rings are used on aluminum pistons to prevent drag on the cylinder walls, and rapid wear in the grooves. The rings have no dowels, and they must be free in the grooves so they can expand and properly seal the cylinder and steady the piston in the bore. Stuck or broken rings are sometimes responsible for a noisy piston. Always replace rings with genuine

FAIRMONT rings having the interlocking joint, for ordinary step or diagonal cut rings catch in the ports. As heavy oils carbonize quickly and stick the rings it is important to use proper oil as explained on page 6.

The piston pin, and holes into which it fits in the piston and connecting rod, are finished to very close dimensions to insure proper assembly without fitting. At normal temperatures the pin should push tight into the piston by hand and the connecting rod should rock freely on it. Lock rings prevent the pin from working out of the piston. The holes in the piston must not be enlarged by reaming, as the pin would fit too loose after the parts became heated. Always order the A853 piston with rings, piston pin, and lock rings when a replacement piston is needed, so as to have a proper fitting assembly of parts.

After assembling a piston pin and applying lock rings, measure the diameter of the piston in several places to be sure it is round. Careful caliper measurements will suffice but a micrometer is better. If found out of shape lightly tap it with a soft mallet or wood block to bring it back round and true.

Aluminum pistons seldom require replacement until worn .006" to .008" looser in the bore, than originally fitted. A worn piston which is noisy when cold, or even after warmed up, may still be good for long service if there is no objection to slight noise while operating the car. Replacement in such cases must be decided by the operator or repairman. Often a noisy piston can be quieted by pulling it from the cylinder, and carefully tapping the sides with a soft mallet or block of wood until slightly out of round, with the vertical dimension a few thousandths larger than the horizontal one.

## FLYWHEELS

Flywheels are properly located on the crankshaft tapers by hardened keys, and tightly drawn to place by nuts. Don't try to drive flywheels off as spokes are liable to be cracked, the crankshaft sprung, or ball bearings damaged.

To remove a flywheel, first pull cotter and unscrew crankshaft nut. On the belt side also drive out pin which engages starting crank. With a brass or lead hammer weighing about 3 lbs. sharply strike the end of crankshaft, at the same time pulling outward on the flywheel rim. Flywheels which have been in place a long time may stick, in which case a jaw wheel puller should be used to remove them.

When replacing a flywheel wipe all parts clean and oil well, then draw

crankshaft nut fairly tight and insert cotter. If a new key, flywheel, or crankshaft is used in assembly be sure the key fits freely in the keyway, and the flywheel keyway does not bind on top of the key, otherwise flywheel will not go to proper place on the taper.

NOTE—Engines No. 45367 and higher use belt flywheel A706 and crankshaft A711, while earlier ones require belt flywheel A537 and crankshaft A527. The tapers are differently located in these two groups of parts, with respect to the engine pulley, hence they should not be interchanged separately. When a belt flywheel or crankshaft is required for engines below No. 45367, A706 and A711 should be ordered together.

## BALL BEARINGS

Ball bearing installations on FAIRMONT equipment have been thoroughly tested and approved by the ball bearing manufacturers' engineers. The bearings themselves must have proper load capacities and clearances to insure satisfactory service.

Many ball bearings which appear to be exactly like the approved ones installed at the factory, are designed for light loads and they do not stand up when used as substitutes. For the same reason "reground" bearings do not stand up in this service.

Use only genuine new ball bearings made to highest standards and as approved for FAIRMONT equipment when replacements become necessary.

Don't strike ball bearings with steel hammers. Always drive them off

evenly with a brass punch and strike against the inner races only, being careful not to spring or damage the ball retainers. A piece of clean tubing which just slips over the shaft is best to drive them back in place.

Never lay bearings on work benches where grit and metal particles will get in the races, and don't use torches to heat bearings when removing them, for the hardened balls and races will be ruined.

Wash in clean gasoline or hot soda bath as soon as removed. Don't use dirty gasoline or bath containing grit and metal particles, for once such foreign matter lodges in the races it cannot be thoroughly washed out.

As soon as a bearing is washed lubricate it with clean oil, and wrap in

clean paper or cloth. Corrosion and foreign matter quickly ruin the highly polished balls and races, hence it is

very important that bearings be protected as soon as removed, or while carried in stock.

## CRANKSHAFT AND BALL BEARINGS

Before doing any work on the crankshaft or ball bearings, carefully read the preceding section, "Ball Bearings."

The crankshaft and ball bearings are lubricated by oil which enters the crankcase mixed in the fuel. The outboard ball bearing next to the belt flywheel is packed with high grade acid free semi-fluid lubricant when assembled at the factory, and in service it receives a seepage of oil through the side bearing packing. Surplus lubricant sometimes oozes from this bearing on a new engine, but soon works itself out. Once a month remove the pipe plug in the belt side bearing casting and add a small quantity of clean oil to the outboard ball bearing, being careful no foreign matter enters.

If necessary to remove crankshaft, first disconnect connecting rod, (see page 19) then push piston and connecting rod assembly back in the cylinder. Next take off flywheels (see page 20).

Remove four nuts holding belt side bearing casting and carefully drive it off with outer ball bearing, using a block of wood. Remove timer side bearing casting the same way and unscrew two side bearing studs from top of crankcase on timer side.

Turn crankpin straight down in crankcase. Carefully lift out the crankshaft from the timer side of crankcase, working it upward so ball bearing clears the place where studs were removed. Do not use force. Two ball bearings are pressed on the crankshaft. If necessary to remove them drive off evenly with a brass punch against inner races only.

Next remove cover from belt side bearing casting and jar out the outboard ball bearing, bearing washer, and packing sleeve. Wash clean and immediately oil and protect the bearing.

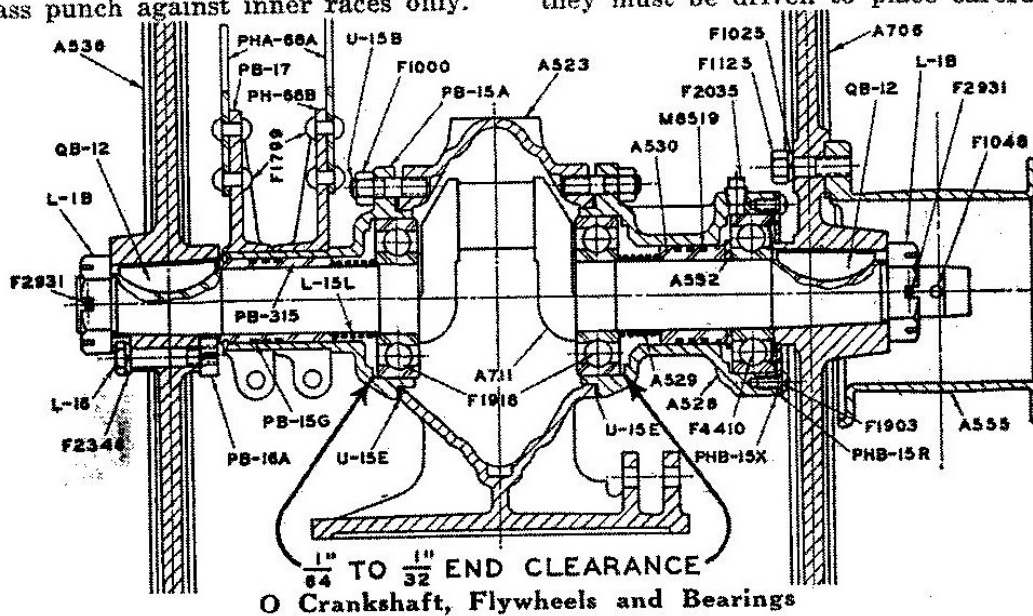
Before reassembling, smooth burrs and rough places on the crankshaft shoulders and fillets, then carefully drive the bearings to place until they "seat" against the shoulders. Be sure the "loading grooves" or notches in the bearing races, face away from the crankshaft shoulders.

Clean crankcase gasket joints, and oil ball bearings before reassembling the crankshaft in reverse order from the way it was removed. Screw in side bearing studs, apply a new gasket, and start the timer side bearing casting on the ball bearing squarely, then carefully drive to place.

When applying side bearing nuts first draw one up just snug, then draw the opposite one an equal amount. Set the remaining two the same way and finally tighten all four nuts evenly so as not to distort the casting or break the lugs.

Next "seat" the ball bearing to place in the timer side bearing casting by light blows on the opposite end of the crankshaft. Then apply the belt side bearing casting with a new gasket, having pipe plug up, and tighten as instructed for timer side. Be sure this side bearing is drawn evenly to place and concentric with the crankshaft, so as not to throw the outboard ball bearing out of alignment.

NOTE—Side bearing castings fit very closely on the ball bearings and they must be driven to place carefully.





Heating the side bearings in boiling water and wiping dry, will insure of easier assembly.

The crankshaft and ball bearing assembly must have  $\frac{1}{16}$ " to  $\frac{1}{8}$ " end clearance when side bearing castings are bolted in place. (See cut.) Check this by carefully striking the crankshaft on one end, then on the other, and measure to note the amount it shifts. An extra gasket may have to be added at one or both side bearings, to secure clearance. Be sure there is end play in the assembly so ball bearings are not pinched and overloaded.

On the belt side insert the spring

## RINGSEAL PACKING

Each side bearing is sealed against crankcase compression by Ringseal packing. This consists of three compression rings carried by a grooved sleeve closely fitting the crankshaft. Coil springs hold these sleeves in proper position and prevent their turning on the crankshaft.

The compression rings expand in the side bearing castings and remain stationary, while the sleeves rotate with the crankshaft. The parts are lubricated from the crankcase and provide an effective seal. Unless damaged the parts will wear indefinitely.

If packing leaks badly when an engine is running, rings may be broken

and packing sleeve with rings, being careful not to break rings. This sleeve can be held in place against spring pressure by a screw driver slipped through the pipe plug hole in side bearing casting.

Pack the outboard bearing with clean semi-fluid lubricant, then slip bearing washer over crankshaft and install the bearing with shielded side out. Drive it in flush with the side bearing face, apply cover with gasket, and screw in pipe plug.

After installing spring and packing on the timer side, flywheels and remaining parts can be reassembled.

or parts badly roughened. Slight leakage is sometimes noticeable when turning an engine slowly by hand, but this disappears when running. Condensation of low grade fuel inside a cold engine may cause seepage through the packing but as soon as the engine warms up this disappears.

The packing sleeve and rings can easily be removed from the timer side of the engine after taking off the flywheel. The belt side bearing must be removed from the crankcase to get at packing on that side.

When fitting new packing rings they must be free in the grooves and the gaps should have about .003" opening.

## THROTTLE

The throttle valve is a specially shaped tapered sleeve fitting in a tapered hole over the intake ports. Movement of the throttle lever rocks this valve varying the volume of fresh gas entering the cylinder and thereby controls the power of the engine. The design of this valve insures fresh gas reaching the spark plug, even when the throttle is nearly closed.

Leakage at the throttle stem is prevented by a felt packing inside a steel cup. The stop screw in the opposite cover controls the amount of valve travel. The throttle arm is held in place by a clamp screw which must be kept tight. If this arm slips the throttle valve may not open properly.

The throttle valve can be pulled out from the belt side of the engine after removing flywheel and valve cover.

## CARBON DEPOSITS

After an engine has seen long service the piston head, inside of cylinder head, and walls of the combustion chamber become coated with carbon. Knocking or "pinging," with overheating and loss of power then occur when the engine is warmed up, especially when pulling loads. Carbon can be carefully scraped out after draining water and removing the cylinder head.

Badly carbonized intake and exhaust ports cause an engine to start hard and lack power, therefore they should also be cleaned while the head is off. The throttle valve and muffler can be removed to get at the ports if necessary. Wipe or blow out all loose carbon before reassembling.

Carbon sometimes also accumulates inside of the piston head and deflector. These deposits must be cleaned out so fresh gases entering the crankcase can cool the piston head.

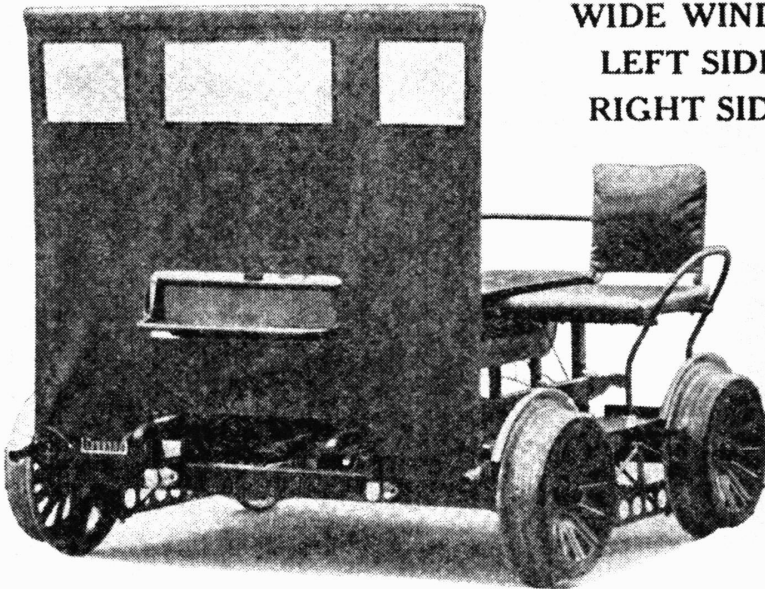
When replacing cylinder head be sure the gasket and joints are clean. First tighten every other cylinder head nut just snug, then set the remainder the same way. Next go over all of them, tightening to place evenly. After the engine has been run until heated up, tighten them once more.

Excessive quantities of oil mixed in the gasoline, or poor oil, result in heavy carbon deposits. Be sure to follow oil recommendations and mixing instructions on pages 5 and 6.



## EXTRA EQUIPMENT

The following extra equipment can be furnished for the FAIRMONT M19 Series C motor car:



**WIDE WINDSHIELD M16412**

**LEFT SIDE SEAT M16298**

**RIGHT SIDE SEAT M16314**

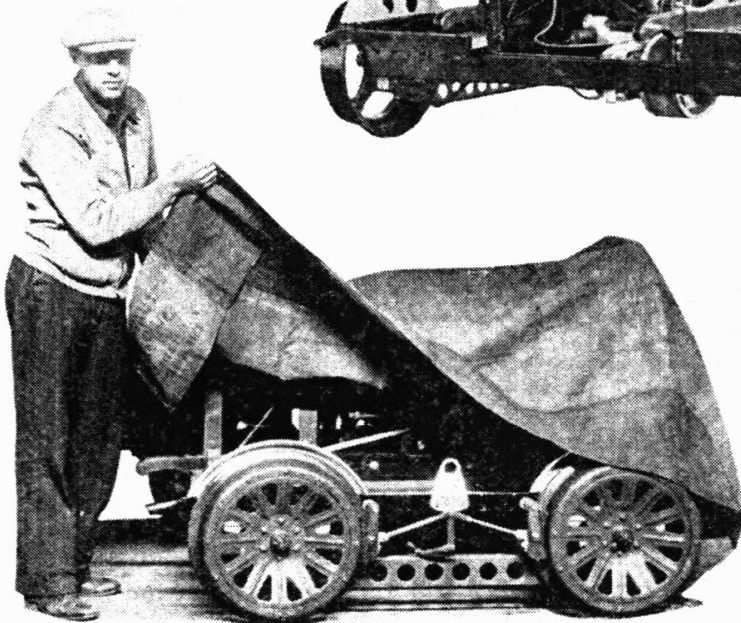
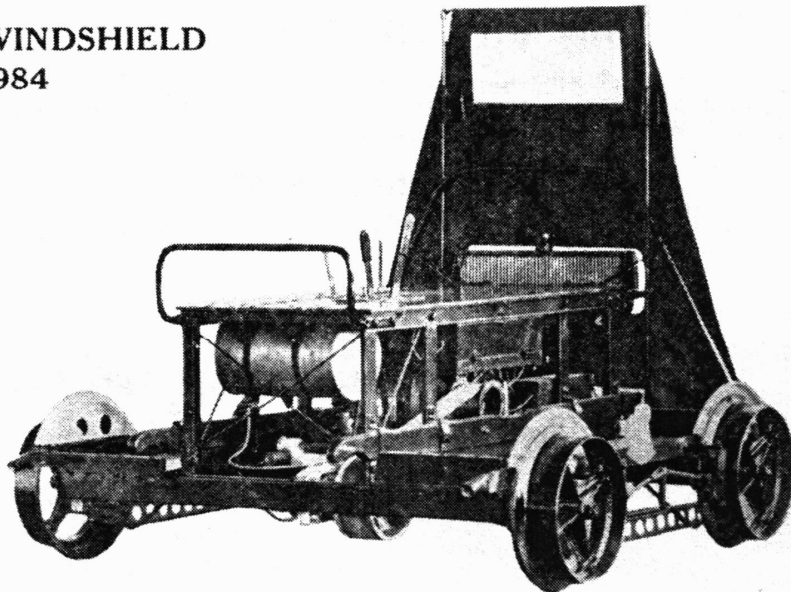
Similar to Standard windshield except wider to shelter projecting side seat shown.

Side seats, both back and seat are well padded and placed in the most comfortable position for efficient track inspection.

## STANDARD WINDSHIELD M15984

Easily applied in field, or removed and folded for carrying on car.

Heavy celluloid window. Khaki colored duck-to-drill with inner layer of gum rubber.



## CANVAS COVER M7951

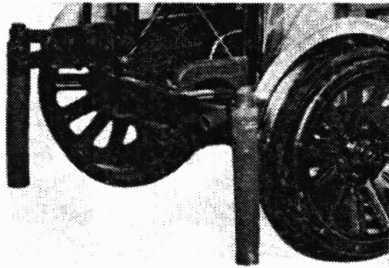
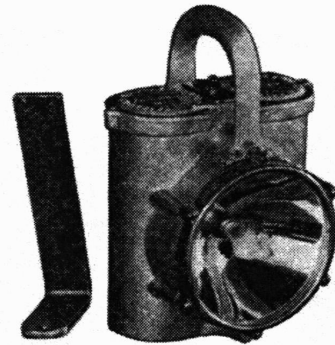
Good investment if car is left standing outside. No. 10 brown duck, 7x9 feet, fire proofed with "Preservo." Eyelets for tying.

### SEAT CUSHION F4871

Java Kapok fiber covered with brown Dupont Fabrikoid. Straps hold cushion in place. Size 13x16½x2", not illustrated.

### DRY CELL HEADLIGHT M8404

Adjustable from narrow 300-foot beam to wide spreading light for close work. Two 6" dry cells give 7 to 8 hours continuous light or last months if used intermittently. 4¾" silvered reflector; aluminum case; car bracket included. Safe to use around gasoline.



### RAIL SWEEPS M15171

Clear rails of stones or obstructions liable to derail car. Discarded air hose is held ahead of front wheels by spring hinged arms which raise automatically when car is set off. Hose not included.

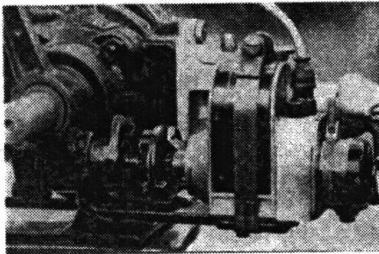
### 10-INCH GONG M16417

Good and loud. Durable clapper operated by pull wire on seat. Mounted out of way of load and passengers. Widely used as warning signal.



### 6-INCH GONG M9005

Provides warning signal if required, at minimum cost.

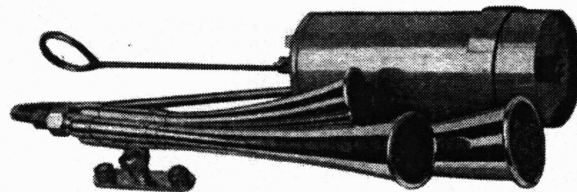


### HIGH TENSION MAGNETO

Choice of Robert Bosch, Eisemann or Wico. Improved long life ball bearing drive. Write for information if interested and give engine number. Can be furnished on new cars or applied to old ones.

### AIR HORN M17331

Three trumpets with pleasing tones give a warning signal which carries long distances. A quick pull on the rod operates it. No batteries, no valves, nothing to wear.



### MUFFLER M17308

Riders desiring exceptionally quiet operation will be pleased with this muffler, which was released only after long research and thorough testing on track. The power loss is very small. Not illustrated.

## INSTRUCTIONS FOR ORDERING PARTS

When this bulletin is received complete the following motor car record from the FAIRMONT name plates on the car, and on the engine water jacket. The engine number is also stamped on top of the crankcase. Always mention these factory serial numbers when writing about the car or ordering parts. Don't give us railroad numbers.

Factory Car No. .... Car Class .....

Factory Engine No. .... Engine Type ..... Engine H. P. ....

TO INSURE PROMPT AND CORRECT SHIPMENT of parts on order always give:

- (1) Quantity of each part wanted.
- (2) Symbol number of part as shown in this book.
- (3) Description of part as shown in this book.
- (4) Factory serial numbers recorded above.
- (5) Car gauge if other than 56 ½" standard.
- (6) State whether shipment is to be by mail, express, or freight.

All parts are shipped f. o. b. factory, transportation charges to be paid by customer. Terms are strictly cash with order.

Parts are listed by description, symbol, and quantity, and all important items illustrated. Quantities in right hand columns show the number of parts in each assembly or group.

Items printed in capitals are assemblies which include all parts listed immediately following and indented to the right. When assemblies can be used, always order them to save work of fitting separate parts.

When symbol is known, consult the index on pages 26 and 27 to locate standard parts or determine their weights. If car is magneto equipped see bulletin 202 for magneto parts. If in doubt as to any part wanted, send full description or sketch, or send old part with order.

Bolts, nuts, washers, etc., are listed following the parts with which they are used. A complete list of them by size is also given on page 52.

## CAR IDENTIFICATION

Standard cars are classed as M19 Series C when battery equipped, and as MM19 Series C when magneto equipped. When these cars have changes made from standard for customers they become special, and the designations are followed by figures.

For example the M19 Series C is known as M19 Series C4 when fitted with 14" torpedo proof wheels, the MM19 Series C becomes MM19 Series C11 when fitted with 14" torpedo proof wheels and certain housing parts of aluminum.

As printed, this bulletin covers standard Series C cars only but most of the parts illustrated and listed also fit the cars having special designations. When this bulletin is supplied for one of the special cars, a supplement accompanies it showing the special items or else their symbols are marked in the printed parts section.

If no supplement or marked bulletin is available, select special parts by illustration and printed symbol from the standard list as explained above and give serial numbers and car designation so proper material can be furnished from factory.



## WEIGHT AND NUMERICAL PART INDEX

Symbol (Approx)	Weight	Page	Symbol	Weight	Page	Symbol	Weight	Page
L-1B	5 oz.	31	EZ442	¼ oz.	33	A707	1 oz.	39
PN-8A	2 oz.	29	EZ447	¼ oz.	33	A711	8 lbs.	31
QB-12	2 oz.	31	EZ450	¼ oz.	33	A712	10 lbs.	31
PB-15A	2 lbs.	31	EZ451	½ oz.	33	A719	3 oz.	39
PHM-15B	2 oz.	39	EZ452	1 oz.	33	A726	12 oz.	39
U-15B	1 oz.	29, 31	EZ453	¼ oz.	33	A731	¼ oz.	38
U-15E	¼ oz.	31	EZ454	¼ oz.	33	A732	6 oz.	38
PB-15G	½ oz.	31-39	B455	½ oz.	29	A764	37 lbs.	29
L-15L	3 oz.	31	EZ455	1 oz.	33	A765	41 lbs.	29
PHB-15R	6 oz.	31	EZ456	¼ oz.	33	A794	¼ oz.	39
PHB-15X	¼ oz.	31	EZ457A	1 oz.	33	A795	12 oz.	39
L-16	3 oz.	35	EZ458	¼ oz.	33	A798	7 oz.	39
PB-16A	1 oz.	35	EZ492	¼ oz.	33	A799	¼ oz.	39
PB-17	10 oz.	35	A502A	1 lb.	33	A800	6 oz.	39
PB-17G	1 oz.	35	A503A	5 oz.	33	A801	¼ oz.	39
PB-17P	½ oz.	35	A504A	3 oz.	33	A803	7 lbs.	39
QB-17P	½ oz.	35	A505	1 oz.	33	A804	5 lbs.	39
PB-17T	½ oz.	35	A507	1 oz.	33	A805	8 oz.	39
PH-20	5 oz.	29	A508	1 oz.	33	A806	4 oz.	39
Q-21	5 oz.	29	EZ515	½ oz.	33	A807	7 oz.	39
QH-21A	3 oz.	29	A522	39 lbs.	29	A810	2 oz.	33
P-21D	½ oz.	29	A523	36 lbs.	29	A847	9 oz.	39
QB-21E	2 oz.	29	EZ523	½ oz.	33	A853	2 lbs.	28
QB-21F	1 oz.	29	A524	1 ½ oz.	29	A860	2 lbs.	28
D-47D	1 oz.	29, 33	A526	10 lbs.	31	A864	6 oz.	38
C-48	½ oz.	37	EZ526	¼ oz.	33	F1022	2 oz.	29
PHM-56C	3 oz.	39	A527	8 lbs.	31	F1023	5 oz.	29
PHM-56D	5 oz.	39	A528	3 ½ lbs.	31	F1081	2 lbs.	37
PHM-56H	1 oz.	38	EZ528	2 oz.	33	F1331	½ oz.	29
PHM-58F	10 oz.	39	A529	1 oz.	31	F1402	¾ oz. pr ft.	37
PHM-58G	2 oz.	39	EZ529	¼ oz.	33	F1421	1 ½ oz.	37
PHM-58H	8 oz.	39	A530	7 oz.	31	F1615	1 ½ oz.	43
PHM-58L	1 oz.	39	EZ530	1 oz.	33	1696	1 oz.	47
PHM-58O	¼ oz.	39	A532	1 oz.	31	F1709	½ oz.	32-33
D-65B	2 oz.	29	A534	¼ oz.	29	F1741	2 oz.	29
P-65B	1 oz.	41	A535	5 oz.	29	F1854	1 ½ oz.	29
PHA-68A	6 ½ oz.	35	A536	21 ½ lbs.	31	F1918	1 lb.	31
PH-68B	10 ½ oz.	35	A537	21 ½ lbs.	31	M2314	¼ oz.	37
PHM-68B	10 oz.	35	EZ537	¼ oz.	33	F2551	¼ oz.	39
PHA-68G	1 oz.	35	A538	3 lbs.	28	F2556	½ oz.	39
TF-68E	2 oz.	29	EZ538	¼ oz.	33	F2616	1 lb.	45
PH-90F	½ oz.	32	A539	1 ½ lbs.	28	F2625	5 oz. pr ft.	29
PHM-256	9 oz.	39	EZ539	¼ oz.	33	F2666	½ oz.	29
QHM-258	8 oz.	39	A540	1 ½ lbs.	28	F2676	¼ oz.	39
PHA-268	1 lb.	35	EZ540	¼ oz.	33	F2691	3 ½ oz.	29
PHMA-268	1 lb.	35	A541	1 lb.	28	F2707	4 oz.	43
TF-268-2	3 oz.	29	EZ541	¼ oz.	33	F2754	½ oz.	43
PH-293	6 oz.	38	EZ542A	6 oz.	33	F2764	4 oz.	32
LM-315	4 oz.	39	A544	½ oz.	28	F2945	12 oz.	37
PB-315	8 oz.	31	A545	1 oz.	28	F2946	8 oz.	37
A355	1 ¼ lbs.	35	A546	6 oz.	28	F2947	14 oz.	37
A388	¼ oz.	33	A547	1 oz.	28	F2948	2 oz.	37
F400	1 lb.	37	A548	1 ½ oz.	29	F2950	2 oz.	37
F401	½ oz.	37	A549	4 ½ lbs.	29	F2951	5 oz.	37
F402	2 ½ oz.	37	A550	7 ½ lbs.	29	F2952	10 oz.	37
F403	6 oz.	37	A551	7 ½ lbs.	29	F2958	¼ oz. pr ft.	37
F404	1 oz.	37	A554	1 oz.	29	F2966	3 oz.	37
F405	1 oz.	37	A555	3 ½ lbs.	41	F3000	1 ¼ lbs.	41
A406	1 oz.	29	A557	½ oz.	29	F3002	5 oz.	41
A411	1 ½ oz.	33	A593	3 oz.	35	F3006	¾ oz. pr ft.	29
A426	¼ oz.	39	A594	1 ½ oz.	35	F3007	½ oz.	51
EZ442	¼ oz.	33	A595	¼ oz.	35	F3029	¼ oz.	32
EZ447	¼ oz.	33	A598	1 oz.	35	F3030	¼ oz.	32
EZ450	¼ oz.	33	A607	½ oz.	39	F3032	¼ oz.	39
EZ451	½ oz.	33	A638	8 oz.	29	F3039	¼ oz.	51
EZ452	1 oz.	33	A642	2 ½ lbs.	33	F3054	½ oz. 28-35-41	
EZ453	¼ oz.	33	A646	¼ oz.	33	F3271	6 ½ lbs.	38
EZ454	¼ oz.	33	A662	1 lb.	35	F3300	½ oz.	37
B455	½ oz.	29	A706	22 lbs.	31	F3301	2 oz.	29
EZ455	1 oz.	33						
EZ456	¼ oz.	33						
EZ457A	1 oz.	33						
EZ458	¼ oz.	33						
EZ492	¼ oz.	33						
A502A	1 lb.	33						
A503A	5 oz.	33						
A504A	3 oz.	33						
A505	1 oz.	33						
A507	1 oz.	33						
A508	1 oz.	33						
EZ515	½ oz.	33						
A522	39 lbs.	29						
A523	36 lbs.	29						
EZ523	½ oz.	33						
A524	1 ½ oz.	29						
A526	10 lbs.	31						
EZ526	¼ oz.	33						
A527	8 lbs.	31						
A528	3 ½ lbs.	31						
EZ528	2 oz.	33						
A529	1 oz.	31						
EZ529	¼ oz.	33						
A530	7 oz.	31						
EZ530	1 oz.	33						
A532	1 oz.	31						
A534	¼ oz.	29						
A535	5 oz.	29						
A536	21 ½ lbs.	31						
A537	21 ½ lbs.	31						
EZ537	¼ oz.	33						
A538	3 lbs.	28						
EZ538	¼ oz.	33						
A539	1 ½ lbs.	28						
EZ539	¼ oz.	33						
A540	1 ½ lbs.	28						
EZ540	¼ oz.	33						
A541	1 lb.	28						
EZ541	¼ oz.	33						
EZ542A	6 oz.	33						
A544	½ oz.	28						
A545	1 oz.	28						
A546	6 oz.	28						
A547	1 oz.	28						
A548	1 ½ oz.	29						
A549	4 ½ lbs.	29						
A550	7 ½ lbs.	29						
A551	7 ½ lbs.	29						
A554	1 oz.	29						
A555	3 ½ lbs.	41						
A557	½ oz.	29						
A593	3 oz.	35						
A594	1 ½ oz.	35						
A595	¼ oz.	35						
A598	1 oz.	35						
A607	½ oz.	39						
A638	8 oz.	29						
A642	2 ½ lbs.	33						
A646	¼ oz.	33						
A662	1 lb.	35						
A706	22 lbs.	31						

## ESTIMATING PRICE LIST

This list covers all parts shown in M19 Series C car bulletin 294A effective December 1st, 1935.

The prices are for estimating purposes only in the United States. They are issued for convenience in preparing requisitions and estimating repair costs.

A reasonable amount has been added to these prices to cover transportation, so that they can be considered as approximate costs of the parts f. o. b. destination in the United States.

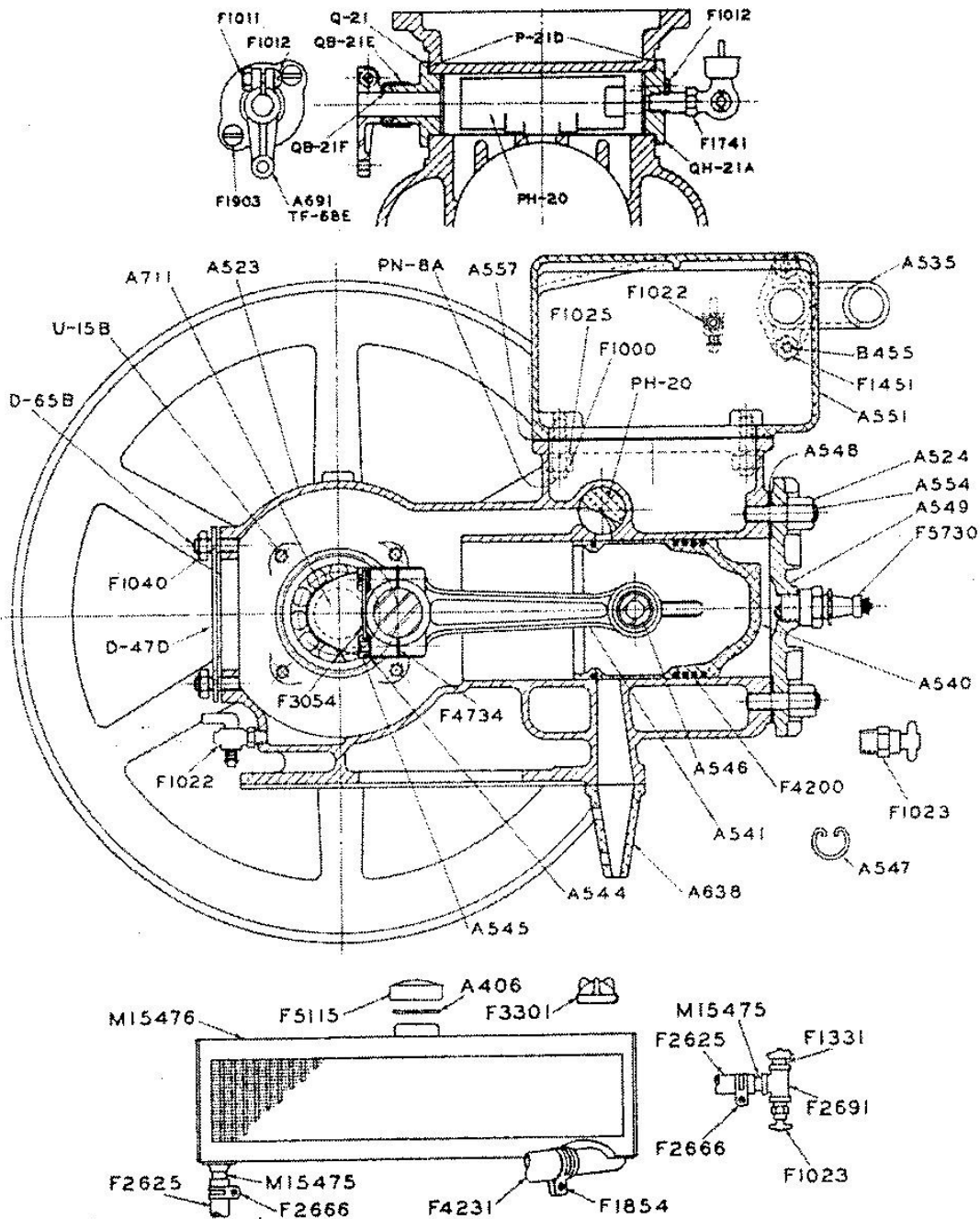
L-1B	.35	A355	5.45	A538	19.25	A810	1.35
PN-8A	.10	A388	.75	EZ538	.04	A847	4.95
QB-12	.25	F400	.45	A539	8.90	A853	9.15
PB-15A	3.30	F401	.45	EZ539	.03	A860	7.80
PHM-15B	.10	F402	1.40	A540	6.90	A864	1.50
U-15B	.05	F403	2.20	EZ540	.04	F1022	.45
U-15E	.04	F404	1.65	A541	9.35	F1023	.90
PB-15G	.18	F405	1.10	EZ541	.05	F1081	.50
L-15L	.30	A406	.50	EZ542A	2.75	F1331	.03
PHB-15R	.45	A411	.50	A544	.10	F1402	per ft. .20
PHB-15X	.05	A426	.25	A545	.25	F1421	.25
L-16	.20	EZ442	.25	A546	.70	F1615	.02
PB-16A	.35	EZ447	.70	A547	.10	1696	.15
PB-17	.85	EZ450	.45	A548	.55	F1709	.20
PB-17G	.30	EZ451	.25	A549	3.00	F1741	1.05
PB-17P	.20	EZ452	.75	A550	15.60	F1854	.20
QB-17P	.20	EZ453	.03	A551	11.00	F1918	3.90
PB-17T	.05	EZ454	.20	A554	.15	M2314	.15
PH-20	2.75	B455	.10	A555	5.35	F2551	.01
Q-21	1.05	EZ455	.95	A557	.15	F2556	.30
QH-21A	.80	EZ456	.25	A593	3.85	F2616	2.75
P-21D	.05	EZ457A	.90	A594	1.65	F2625	per ft. .35
QB-21E	.30	EZ458	.04	A595	.70	F2666	.05
QB-21F	.15	EZ492	.15	A598	.55	F2676	.10
D-47D	.15	A502A	7.55	A607	.10	F2691	.15
C-48	.15	A503A	4.40	A638	1.45	F2707	.07
PHM-56C	2.00	A504A	1.50	A642	15.40	F2754	7.00
PHM-56D	.85	A505	.90	A646	.10	F2764	.85
PHM-56H	.85	A507	.15	A662	1.15	F2945	.25
PHM-58F	2.50	A508	.75	A706	6.60	F2946	.45
PHM-58G	.50	EZ515	.15	A707	.03	F2947	.55
PHM-58H	2.30	A522	36.00	A711	21.50	F2948	.25
PHM-58L	5.50	A523	37.50	A712	29.25	F2950	.45
PHM-58D	.02	EZ523	.20	A719	3.00	F2951	.55
D-65B	.95	A524	.15	A726	1.00	F2952	.65
P-65B	.10	A526	31.30	A731	.17	F2958	per ft. .05
PHA-68A	.35	EZ526	.05	A732	2.15	F2966	.30
PH-68B	.90	A527	21.50	A764	30.15	F3000	3.30
PHM-68B	.96	A528	6.40	A765	38.40	F3002	1.40
PHA-68G	.35	EZ528	.80	A794	.08	F3006	per ft. .20
TF-68E	.40	A529	.25	A795	7.25	F3007	.30
PH-90F	.20	EZ529	.25	A798	1.45	F3009	6.90
PHM-256	3.50	A530	2.15	A799	.03	F3030	.03
QHM-258	3.35	EZ530	.40	A800	1.00	F3032	.15
PHA-268	1.90	A532	.25	A801	.03	F3039	.15
PHMA-268	1.90	A534	.15	A803	18.70	F3054	per ft. .05
TF-268-2	.50	A535	2.00	A804	7.70	F3271	35.75
PH-293	2.00	A536	7.70	A805	2.20	F3306	.65
LM-315	1.50	A537	6.60	A806	1.25	F3301	.55
PB-315	2.00	EZ537	.15	A807	4.30	F3357	.03

(continued on other side of sheet)

F3596	.25	M6572	1.80	M13545	3.30	M15983	1.40
F3607	.35	M6574	1.05	M13550	.30	M15984	8.80
F3613	.55	M6575	.70	M13551	.30	M15985	7.10
F3614	.35	M6577	.10	M13552	4.00	M16031	.50
F3620	4.10	M6582	1.20	M13553	4.15	M16054	.55
F3639	4.00	M6592	3.10	M13556	1.90	M16224	1.05
F3651	.25	M6594	1.10	M13557	.95	M16298	10.50
F3741	.45	M6596	2.00	M13558	3.55	M16314	10.50
F3853	.08	M6715	1.75	M13562	4.00	M16354	3.30
F3854	.25	M6738	.12	M13563	3.30	M16411	.90
F3855	.08	M6880	.70	M13564	2.75	M16412	10.50
F4166	.55	M6992	.20	M13566	.70	M16413	8.00
F4179	2.00	M6993	.30	M13567	3.85	M16414	1.00
F4180	1.10	M6994	.30	M13568	.30	M16415	.50
F4200	.30	M7013	1.40	M13569	7.30	M16417	7.70
F4231	per ft. .45	M7016	.20	M13570	9.70	M16420	4.00
F4410	4.20	M7021	.05	M13571	4.25	M16432	2.10
F4413	.40	M7032	1.90	M13581	.40	M16439	1.40
F4734	.05	M7035	2.00	M13595	.25	M16490	4.15
F4756	4.30	M7036	.30	M13610	2.15	M16491	.50
F4757	1.15	M7157	.45	M13666	1.05	M16492	.50
F4761	.06	M7187	.05	M13670	.40	M16493	.30
F4870	.03	M7256	.70	M14232	.80	M16495	.17
F4871	3.85	M7281	.35	M14238	.90	M16496	.65
F4937	17.60	M7285	.30	M14257	1.40	M16642	.25
F4938	1.15	M7289	.25	M14650	.90	M16675	3.85
M5027	.15	M7290	1.10	M14700	.90	M17112	.20
M5053	.55	M7469	.15	M14702	1.00	M17308	9.90
M5058	.25	M7503	.25	M14886	2.75	M17331	18.50
M5073	.80	M7666	13.75	M14924	.35	M18413	3.50
M5106	.65	M7951	16.85	M14940	1.55	M18801	.15
F5115	.70	M8403	1.10	M14949	1.35	M18930	.40
F5168	.50	M8404	12.50	M14950	.65	M18931	.20
F5324	26.95	M8519	.30	M14980	.30	M18963	1.35
M5445	.10	M8520	2.90	M14981	.45	M19104	1.10
F5730	.70	M8697	1.05	M14987	.50	M19105	.45
M6001	.05	M8705	1.60	M14988	1.50	M19402	9.10
M6023	5.80	M8742	5.75	M14990	.60	M19403	.40
M6334	.65	M9005	3.95	M15066	3.85	M19405	9.70
M6426	1.60	M9207	.30	M15068	.30	M19406	.45
M6427	.80	M9210	.15	M15069	.30	M19407	3.30
M6428	1.00	M9214	.25	M15070	.20	M19409	3.30
M6429	.20	M9245	.20	M15083	1.05	M19412	1.65
M6430	.70	M9877	.20	M15084	1.05	M19413	1.65
M6436	.95	M13464	.60	M15085	.45	M19835	1.05
M6438	.80	M13524	9.10	M15171	3.00	M19866	6.60
M6442	.45	M13525	6.00	M15183	.35	M19868	6.60
M6445	.30	M13527	.25	M15475	.20	M19874	.45
M6448	1.60	M13531	1.00	M15476	13.75	M20859A	3.85
M6472	.10	M13536	10.35	M15980	.55	M21138	2.20
M6540	.20	M13537	9.65	M15981	.80	M21273A	7.70
M6562	2.10	M13538	.35	M15982	.80	M21274A	3.85
M6566	.80						



F3357	1/2 oz.	43	M7021	4 oz.	51	M14981	2 3/4 oz.	47
F3596	1 oz.	43	M7032	3 1/4 lbs.	41	M14987	.5 oz.	47
F3607	1/2 oz.	29	M7035	5 1/2 lbs.	50	M14988	.9 oz.	47
F3613	4 oz.	32	M7036	.14 oz.	51	M14990	.6 oz.	47
F3614	2 oz.	32	M7157	.9 oz.	51	M15066	.4 lbs.	32
F3620	1 1/4 lbs.	45	M7187	1/2 oz.	51	M15068	.4 oz.	32
M3639	1 oz.	41	M7256	.3 oz.	47	M15069	.4 oz.	32
F3651	3 oz.	32	M7281	8 1/4 oz.	47	M15070	3/4 oz.	32
F3741	13 oz.	37	M7285	3 1/4 oz.	47	M15083	3 1/2 lbs.	51
F3853	1/4 oz.	35	M7289	1/2 oz.	51	M15084	3 3/4 lbs.	51
F3854	1 oz.	35	M7290	1 3/4 lbs.	51	M15085	.1 lb.	51
F3855	1/2 oz.	35	M7469	1/2 oz.	41	M15171	5 1/2 lbs.	24
F4166	1 oz.	37	M7503	1 1/2 oz.	41	M15183	.2 oz.	47
F4179	1 1/2 lbs.	37	M7666	3 1/2 lbs.	43	M15475	1 1/2 oz.	29
F4180	5 oz.	37	M7951	8 lbs.	23	M15476	10 lbs.	29
F4200	1 oz.	28	M8403	.14 oz.	37	M15980	2 3/4 lbs.	47
F4231	8 oz. pr ft.	29	M8404	.9 lbs.	37-24	M15981	.6 oz.	47
F4410	1 lb.	31	M8519	.1 oz.	31	M15982	.6 oz.	47
F4413	7 oz.	37	M8520	2 1/2 lbs.	51	M15983	.8 oz.	47
F4734	1/3 oz.	28	M8697	.1 lb.	43	M15984	11 1/2 lbs.	47-23
F4756	2 lbs.	37	M8705	1 1/2 lbs.	43	M15985	2 1/2 lbs.	47
F4757	1 oz.	39	M8742	12 1/2 lbs.	43	M16031	1 1/2 lbs.	47
F4761	1/3 oz.	35	M9005	.4 lbs.	24	M16054	4 1/4 oz.	47
F4870	1/4 oz.	33	M9207	1 1/2 oz.	47	M16224	.3 lbs.	51
F4871	2 1/2 lbs.	24	M9210	1/2 oz.	47	M16298	18 lbs.	23
F4937	4 1/2 lbs.	38	M9214	.2 oz.	47	M16314	18 lbs.	23
F4938	4 oz.	38	M9245	3/4 oz.	35	M16354	.3 lbs.	37
M5027	2 oz.	45	M9877	.1 oz.	35	M16411	.7 oz.	47
M5053	5 oz.	41	M13464	.1 lb.	41	M16412	12 lbs.	47-23
M5058	1 oz.	41	M13524	5 3/4 lbs.	45	M16413	.3 lbs.	47
M5073	3 oz.	32	M13525	2 1/2 lbs.	45	M16414	1 1/2 lbs.	47
M5106	2 1/2 oz.	51	M13527	2 1/2 oz.	51	M16415	.2 oz.	47
F5115	4 oz.	29	M13531	3 3/4 lbs.	49	M16417	.9 lbs.	24
F5168	1/2 oz.	39	M13536	4 1/2 lbs.	41	M16420	3 1/2 lbs.	31
F5324	7 lbs.	38	M13537	4 1/4 lbs.	41	M16432	1 1/4 lbs.	47
M5445	1 oz.	32	M13538	.6 oz.	49	M16489	.3 lbs.	37
F5730	5 oz.	37	M13545	2 1/2 lbs.	49	M16490	3 3/4 lbs.	37
M6001	1/2 oz.	43	M13550	1 1/2 lbs.	49	M16491	1 1/2 oz.	37
M6023	12 1/2 lbs.	43	M13551	.9 oz.	49	M16492	.1 oz.	37
M6334	3 oz.	43	M13552	.9 lbs.	49	M16493	.2 oz.	37
M6426	3 1/4 lbs.	51	M13553	.9 lbs.	49	M16495	.3 oz.	37
M6427	1 lb.	51	M13556	6 1/4 lbs.	49	M16496	10 oz.	37
M6428	1 3/4 lbs.	51	M13557	4 lbs.	49	M16642	1/4 oz.	37
M6429	.10 oz.	51	M13558	.6 lbs.	49	M16675	3 1/2 lbs.	49
M6430	1 lb.	51	M13562	20 1/2 lbs.	43	M17112	.1 oz.	37
M6436	.10 oz.	51	M13563	.19 lbs.	43	M17308	4 3/4 lbs.	24
M6438	1 lb.	51	M13564	2 1/4 lbs.	45	M17331	5 1/2 lbs.	24
M6442	8 oz.	51	M13566	.4 oz.	45	M18413	25 3/4 lbs.	43
M6445	1 lb.	51	M13567	1 1/4 lbs.	45	M18801	.1 oz.	45
M6448	4 1/2 lbs.	50	M13568	1 1/4 oz.	45	M18930	.1 oz.	47
M6472	2 oz.	50	M13569	2 3/4 lbs.	45	M18931	1/4 oz.	47
M6540	1 1/2 oz.	51	M13570	.6 lbs.	45	M18963	.6 oz.	32
M6562	1 1/2 lbs.	41	M13571	1 1/4 lbs.	45	M19104	1 1/2 oz.	35
M6566	.14 oz.	41	M13581	3 1/4 oz.	45	M19105	.1 oz.	35
M6572	1 1/2 lbs.	41	M13595	.4 oz.	45	M19402	5 3/4 lbs.	45
M6574	8 oz.	41	M13610	.5 lbs.	51	M19403	.5 oz.	45
M6575	1 1/2 lbs.	41	M13666	2 3/4 lbs.	51	M19405	6 1/4 lbs.	45
M6577	3/4 oz.	41	M13670	.2 oz.	35	M19406	1 1/4 oz.	49
M6582	3 1/2 lbs.	41	M14232	.1 lb.	47	M19407	7 3/4 lbs.	49
M6592	2 3/4 lbs.	51	M14238	.4 lbs.	49	M19409	7 3/4 lbs.	49
M6594	.2 lbs.	51	M14257	1 3/4 lbs.	51	M19412	4 3/4 lbs.	49
M6596	.12 oz.	51	M14650	.3 lbs.	47	M19413	4 3/4 lbs.	49
M6715	2 1/4 lbs.	49	M14700	.3 lbs.	47	M19835	.1 lb.	43
M6738	1 oz.	37	M14702	1 3/4 lbs.	47	M19866	38 1/4 lbs.	43
M6880	1 1/2 oz.	43	M14886	2 1/4 lbs.	29-51	M19868	38 1/4 lbs.	43
M6992	.6 oz.	51	M14924	.4 oz.	47	M19874	.9 oz.	43
M6993	.7 oz.	51	M14940	8 oz.	31-49	M20859A	2 1/2 lbs.	49
M6994	.7 oz.	51	M14949	.1 lb.	43	M21138	1 1/2 oz.	43
M7013	2 1/4 lbs.	41	M14950	15 oz.	43	M21273A	5 1/2 lbs.	49
M7016	1 1/2 oz.	51	M14980	.2 oz.	47	M21274A	2 1/2 lbs.	49



**PISTON AND CONNECTING ROD**

PISTON WITH RINGS, PISTON PIN AND LOCK RINGS .....	A853	1
PISTON WITH PISTON PIN AND LOCK RINGS .....	A860	1
PISTON, RINGS AND CONNECTING ROD (assembled) .....	A538	1
PISTON WITH RINGS .....	A539	1
Piston Ring .....	F4200	5
Piston .....	A540	1
CONNECTING ROD (complete) .....	A541	1
Shim (connecting rod) .....	F4734	2
Cap Screw (connecting rod) .....	A545	2
Cap Screw Washer (connecting rod).....	A544	2
Lock Wire (connecting rod) .....	F3054	7"
Piston Pin .....	A546	1
Lock Ring (piston pin) .....	A547	2

## CYLINDER AND CRANKCASE

CYLINDER AND CRANKCASE WITH STUDS .....	A764	1
CYLINDER AND CRANKCASE WITH THROTTLE VALVE .....	A522	1
CYL. AND CRANKCASE WITH STUDS AND THROTTLE VALVE .....	A765	1
Cylinder and Crankcase .....	A523	1
Stud (side bearing) .....	U-15B	8
Stud (cylinder head) .....	A554	6
Stud (carburetor) .....	D-65B	2
Throttle Valve .....	PH-20	1
Guide (throttle valve) .....	Q-21	1
Cover (throttle valve) .....	QH-21A	1
Screw (throttle guide and cover) .....	F1903	4
Screw (throttle stop) .....	F1012	1
Gasket (throttle guide and cover) .....	P-21D	2
Packing (throttle stem) .....	QB-21F	1
Packing Cup (throttle) .....	QB-21E	1
THROTTLE ARM, SCREW AND NUT .....	TF-268-2	1
Throttle Valve Arm .....	TF-68E	1
Screw (throttle valve arm) .....	F1012	1
Nut (throttle valve arm screw) .....	F1011	1
Priming Cup .....	F1741	1
Drain Cock (crankcase) .....	F1022	1
Cylinder Head .....	A549	1
Gasket (cylinder head) .....	A548	1
Nut (cylinder head stud) .....	A524	6
Gasket (carburetor to crankcase) .....	D-47D	1
Nut (carburetor stud) .....	F1040	2
Muffler .....	A638	1
Machine Bolt 3/8 x 1½ (muffler—not ill.) .....	F1024	2
Lock Washer 3/8 (muffler bolt—not ill.) .....	F1025	2
Nut 3/8 hex (muffler bolt—not ill.) .....	F1000	2

## WATER JACKET AND COOLING SYSTEM

WATER JACKET (with flanged elbow) .....	A550	1
Water Jacket (bare) .....	A551	1
Cock (water level) .....	F1022	1
Stud 5/16 x 1-1/8 .....	B455	2
Gasket (elbow—not ill.) .....	A534	1
Elbow (for condenser hose) .....	A535	1
Nut 5/16 .....	F1451	2
Lock Washer 5/16 .....	F1100	2
Stud 3/8 x 1-5/8 .....	PN-8A	4
Gasket (jacket to cylinder) .....	A557	1
Nut (water jacket stud) .....	F1000	4
Lock Washer (water jacket stud) .....	F1025	4
Name Plate (not ill.) .....	F3607	1
Pin (name plate—not ill.) .....	F1013	4
Guard Rail (for condenser—ill. with housing on page 50) .....	M14886	1

NOTE—Late cars have condenser filler caps of the bayonet type, while early ones were of the screw thread type. When ordering, select proper cap.

CONDENSER (with bayonet type cap) .....	M15476	1
FILLER CAP (bayonet type) .....	F5115	1
Gasket (filler cap) .....	A406	1
Filler Cap (screw thread type—for early cars) .....	F3301	1
Machine Bolt 5/16 x 3/4 .....	F1489	4
Lock Washer 5/16 .....	F1100	4
Pipe Nipple 3/8 .....	F1331	1
Pipe Tee 3/8 .....	F2691	1
Drain Cock (water jacket) .....	F1023	1
Hose Nipple 3/8 .....	M15475	2
Hose 1¼ (for steam) .....	F4231	19"
Hose Clamp 1¼ .....	F1854	2
Hose 5/8 (for return) .....	F2625	22"
Hose Clamp 5/8 .....	F2666	2
Overflow Hose (not ill.) .....	F3006	16"