

S2-E-4-54

Changes same as S2-E-4-18 and in addition:

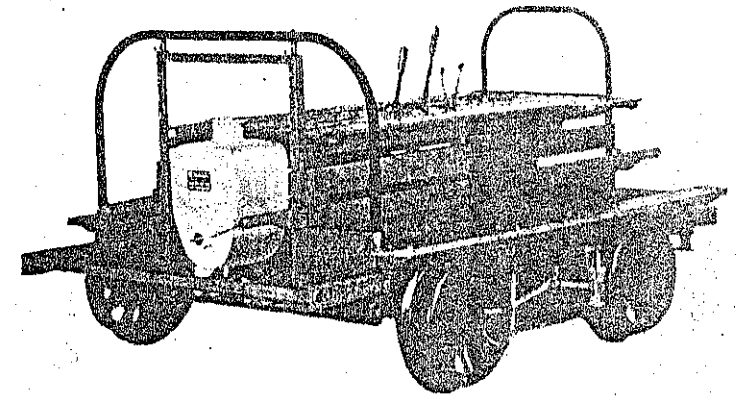
M26888	Safety Rail (rear)	Should read	66091
M27798	Seat Support (rear - angle iron)	" "	66029
Add	2 End Sheet Extension		66080
	2 Spacer (safety rail)		M30908

INSTRUCTIONS and SPARE PARTS

Fairmont

STANDARD SECTION CARS

Class S2 Series E



This bulletin contains complete instructions for the operation and care of standard S2 series E group 2 and later section cars with battery ignition and direct belt drive as illustrated above, and lists all spare parts for them. Cars of this designation have hinged seat tops, seat angle seat supports, and battery and tool boxes under the seat.

Before starting engine or car read pages 6 to 9.

Before ordering spare parts read page 21.

The table of contents on pages 2 and 3 permits of quickly locating any information desired. Use it and save time.

If car is magneto equipped, see bulletin 202 for starting instructions, and also for magneto and magneto drive parts.

For cars having a Fairmont Hy-Drive, see bulletin 432 for parts and drive and instructions on its care.

Cars with two speed transmissions are classed as ST2 series E. Instructions and parts of the two speed transmission and associated items consult bulletin

Service Division

FAIRMONT RAILWAY MOTORS, INC.
FAIRMONT, MINNESOTA, U. S. A.

DISTRICT OFFICES:

Chicago St. Louis Washington, D. C. San Francisco New York

Fairmont Railway Motors, Ltd., Toronto, Canada

TO OPERATORS OF FAIRMONT S2 SERIES E MOTOR CARS

This bulletin contains instructions and spare parts for standard S2 series B group 2 and later motor cars having battery ignition and direct belt drive. Accessories, their main parts, and some maintenance tools are found on pages 50 through 54. Items used on cars having figures in the space on the name plate marked "Special" and different from those used on standard cars, are listed under that special car designation, see page 55.

Upon receipt of this book promptly fill in the car and engine record on page 21, and always mention these factory numbers when writing about the car or ordering parts. Take good care of this book so it is available for reference when making adjustments and repairs, or ordering spare parts.

TABLE OF CONTENTS

Air Cleaner - Oil Bath Type (accessory)	52
Air Cleaner - Open Screen Type (accessory for group 3 cars)	58
Air Cleaner - Open Screen Type (maintenance)	35
Air Cleaner - Open Screen Type (spare parts)	35
Ammeters (accessory)	58
Axles and Axle Bearings (instructions)	9
Axles and Axle Bearings (spare parts)	41
Ball Bearings (instructions)	18
Ball Bearings (spare parts)	29
Battery Ignition (instructions)	13, 14
Battery Ignition (spare parts)	39
Belt Idler (instructions)	8
Belt Idler (spare parts)	42, 43
Brake (instructions)	11
Brake (spare parts)	45
Cab Top (accessory)	54
Canvas Cover (accessory)	52
Car Complete less Engine	47
Car Frame and Housing (instructions)	12
Car Identification	21
Carbon Deposits	20
Carburetor (instructions)	16, 17
Carburetor - Type C8 (spare parts)	31
Carburetor - Type F8 (spare parts)	32, 33
Carburetor (control parts)	34
Condenser (accessory)	54
Connecting Rod (instructions)	17
Connecting Rod (spare parts)	26
Cooling System (instructions)	12
Cooling System (spare parts)	27
Couplers (accessory)	51
Crankshaft and Ball Bearings (instructions)	18, 19
Crankshaft and Ball Bearings (spare parts)	29
Cylinder and Crankshaft (spare parts)	27
Differential Axle (instructions)	9
Differential Axle (spare parts)	41

Endless Cord Belt Drive (spare parts)	
Engine and Mounting (instructions)	
Engine and Mounting (spare parts)	
Extension Lift Handles	
Flywheels (instructions)	
Flywheels (spare parts)	
Frame and Deck (spare parts)	
Fuel System (instructions)	
Fuel System (spare parts)	
General Suggestions - Safety First	
Generator, Lights, and Storage Battery (accessory)	
Gongs (accessory)	
Headlight - Dry Cell (accessory)	
Housing (spare parts)	
How the Engine Operates	
How to Order	
<i>Blade Pulley</i>	
Insulation (instructions - see wheels)	
Insulation (spare parts)	
Lubrication	
Magneto (ignition - accessory)	
Mixing Oil and Gasoline	
Oil Recommendations	
Operating the Car	
Piston (instructions)	
Piston (spare parts)	
Preparing Car for Service	
Pulleys (instructions)	
Pulleys (spare parts)	
Rail Skids (spare parts)	
Rail Sweeps (accessory)	
Reversing Engine (battery ignition)	
Ringseal Packing (instructions)	
Ringseal Packing (spare parts)	
Safety First - General Suggestions	
Side Bearings (spare parts)	
Side Bearings (removal - see crankshaft and ball bearings)	
Spark Coil (instructions)	
Spark Coil (spare parts)	
Spark Plug (instructions)	
Spark Plug (see battery ignition equipment)	
Starting and Stopping Engine	
Starting Crank (parts)	
Throttle (instructions)	
Throttle (control parts)	
Throttle (spare parts)	
Thrust Collars (adjustment - see wheel alignment)	
Thrust Collars (spare parts)	
Timer - General (instructions)	
Timer - Fiber Block (instructions)	
Timer - Fiber Block (spare parts)	
Timer - Hy-Duty (instructions)	
Timer - Hy-Duty (spare parts)	
Timer Control (spare parts)	
Tool Box (spare parts)	
Tools (accessory)	
Tools (spare parts)	
Two Speed Transmission (accessory)	
Water Jacket (spare parts)	
Weight and Numerical Part Index	
Wheels (instructions)	
Wheels (spare parts)	
Wheel Alignment	

PREPARING CAR FOR SERVICE

Inspect everything for possible damage in transit. If in bad condition make a full report to supervising officials at once. Open switch on car seat, then attach high tension cable to spark plug and connect the loosened wire in battery box. If not sure where to attach this wire see diagram on page 14. Examine all bolts, nuts, and electrical connections for tightness. See that all cotter pins are spread open.

Fill the oil can with the same kind of oil as mixed in the gasoline. Squirt a few drops in each of the five axle bearing oilers. One is located on the drive axle center bearing, and the other four in main axle bearings.

Fill grease cup on differential axle with good cup grease and turn cup down until grease comes out at the ends of the sleeve.

Squirt about a teaspoonful of oil into the oil cup on idler arm. If car is classed as group 2 which did not have oiler in idler arm, remove plug from idler pulley cover, inject oil, and replace plug. Also oil the idler arm bearing on brake shaft, brake rigging, and various controls at working points.

Remove funnel plug from water jacket, open water level cock on left side, and pour in clean water up to this level. About seventeen quarts are required. Replace funnel plug. Use rust preventative regularly, except do not use with anti-freeze mixtures.

Remove gas tank filler cap at rear of car and fill tank with oil and gasoline mixed according to instructions on this page, then replace filler cap. When filling tank, strain fuel through a fine mesh screen funnel or clean cloth free from lint. Open shutoff valve in fuel line under gas tank. Open drain cock on bottom of carburetor and see that gasoline flows, then close it tight.

The spark and throttle levers stand vertically. The right hand one is the throttle, the left one the timer control. The carburetor control knob located at left front of lever guide plate, turns to open or close the needle valve, and pulls up to choke carburetor.

Finally set car on the track and operate the controls to become familiar with them. Release brake and idler levers, and see that car rolls freely. Be sure wheels and axles run true, and brake shoes do not drag.

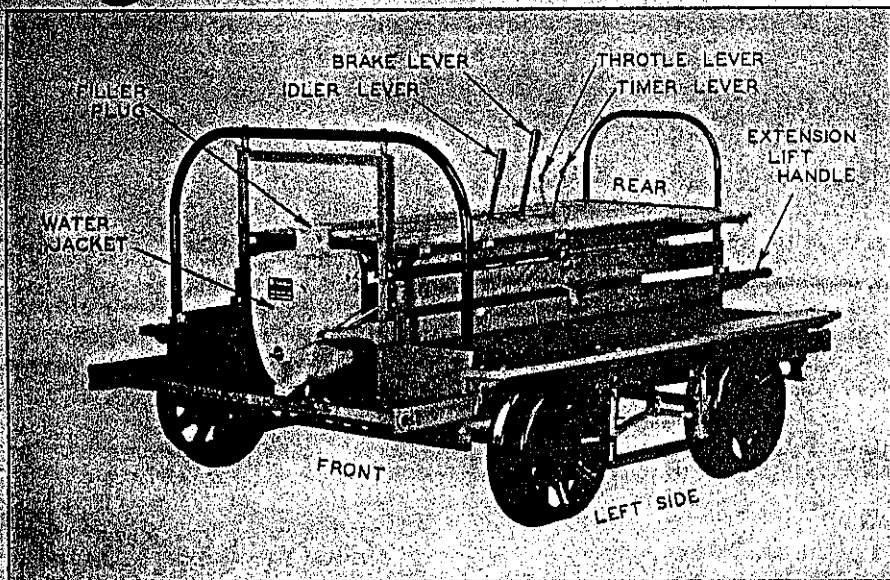
MIXING OIL AND GASOLINE

S. A. E. 30 gas engine or automobile cylinder oil will give good results all year 'round in nearly any climate. We do not recommend the use of an oil heavier than S. A. E. 40. Measure 3/4 pint of oil for each gallon of gasoline (1 part oil and 1 part gasoline by measure) and stir the mixture thoroughly. Best results are obtained by using gasoline with a minimum lead content. Don't use poor oil or reduce the proportions recommended. Never pour oil and gasoline in the tank separately -- they will not mix properly.

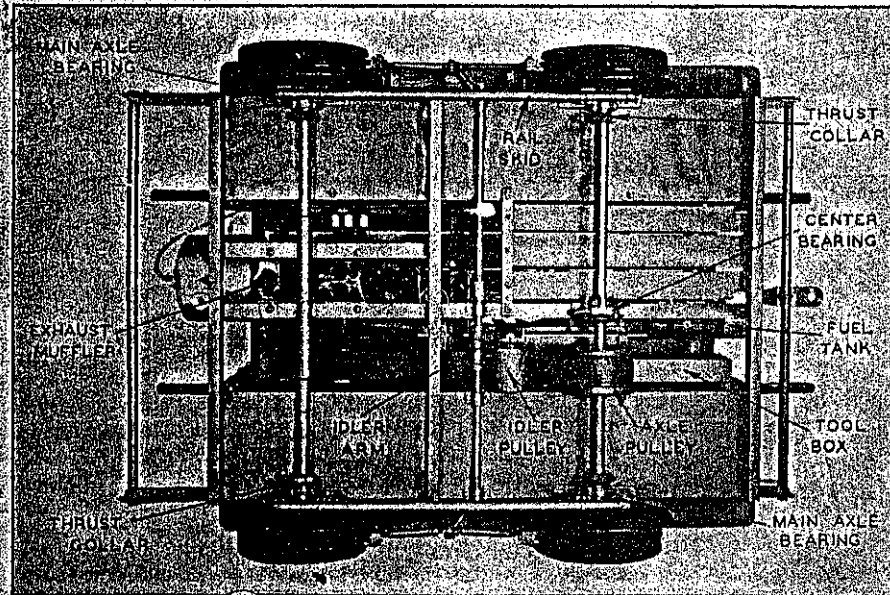
When "breaking in" new engines, add 1/4 pint more oil per gallon to the mixture during the first 500 miles of operation, so closely fitted parts wear in smoothly. If gasoline and oil are supplied mixed, add an extra 1/4 pint of oil to each gallon.

OIL RECOM-

Nondetergent, straight mineral oils properly refined from



These illustrations show a general view, and the underside of a standard S2-series E car, with the more important parts pointed out. Reference is frequently made to these parts throughout the bulletin, and the user should thoroughly familiarize himself with them and their functions before placing the car in service or making adjustment and repairs.



in injurious quantities. Detergent oils commonly sold for automotive use may cause excessive deposits of foreign matter on spark plugs and in combustion chamber and ports.

In general the lower viscosity oils give cleaner results, easier starting, and provide a higher factor of safety. Heavy oils have high viscosities and they form excessive carbon and do not flow freely in cold weather. Mixing heavy oil in the gasoline in smaller proportions than recommended reduces the lubricating value of the mixture, and lower engine efficiency and higher maintenance costs will result.

S. A. E. 80 oils of approximately the following viscosity characteristics are most satisfactory for year 'round use:

At 130° F. 185 to 255. At 210° F. 50 to 63.

Oils up to S. A. E. 40 as follows, may be used if S. A. E. 30 is not obtainable:

At 130° F. 255 to 450 At 210° F. 62 to 75.

All refiners and oil companies can supply oils conforming to these specifications.

STARTING BATTERY IGNITION ENGINES

These instructions apply to direct belt drive and Hy-Drive cars. Engines on two-speed transmission cars must be started counter-clockwise to drive forward (engine ahead), and clockwise to drive backward. See two-speed transmission bulletin 465.

The engine will run either forward or backward, but the timer control lever must be set differently for starting and operating in each direction, see instruction plate on car seat.

STARTING ENGINE FORWARD

Forward is with top of flywheels running clockwise or toward water jacket. Release idler lever, and set and lock the brake. Hook starting crank bearing to catch on right foot board, then slide crank through bearing and over end of crankshaft.

TO TEST IGNITION

Retard the spark by moving timer control lever toward the rear of car. Close switch and slowly crank the engine forward. The coil should buzz only while the timer contact points close. If it buzzes at any other time or does not buzz at all, there may be a short circuit or improperly connected wire, and a check should be made by following instructions on page 14. Finally open switch.

TO PRIME ENGINE

See that shutoff valve at gas tank is open and fuel flows to carburetor. Partly open the throttle by moving lever toward rear of car. Open carburetor needle valve 1-1/2 to 2 turns from the closed position by turning control knob to the left.

Be sure ignition switch is open, then spin the engine several times with the crank while pulling up control knob to choke carburetor. This fills the cylinder and crankcase with fresh gas. In cold weather it can also be primed by injecting some of the fuel mixture through the priming cup on throttle valve cover. Choking the carburetor or priming is usually only necessary when starting a new or cold engine.

CRANKING ENGINE

Next release choke control knob, be sure spark is retarded, close switch, and firmly holding the starting crank engaged, quickly pull it upward in a clockwise direction. If engine does not start the first time, continue these upward pulls on

IDLING ENGINE

As soon as engine starts move timer control lever toward front of the car to advance the spark, and slightly close throttle so engine runs slowly until it warms up, then set carburetor needle valve to the best running position, about 1 1/4 turns open. Never "race" a cold engine to warm it up, nor run it at high speed when the car is standing still.

STARTING ENGINE BACKWARD

Backward is with top of flywheels running anti-clockwise or away from water jacket. Retard the spark by moving timer lever toward the front of car.

Follow the preceding instructions for testing ignition, setting throttle, priming, and starting, but crank the engine anti-clockwise or backward. As soon as it starts, move the timer lever toward the rear of the car to advance the spark, and after warming up set needle valve to proper running position.

TO STOP ENGINE

Open the switch. Just before engine stops turning open throttle to fill the engine with fresh gas and make starting easier.

REVERSING BATTERY IGNITION ENGINES

To reverse a battery engine when running, without using starting crank, the belt must be free. Open ignition switch and leave timer advanced. Open throttle, and just before flywheel stop turning, close switch and engine will kick back and run the opposite direction. Then reset timer lever.

HANDLING THE CAR

Pull out extension lift handles when setting car on and off track. Be careful not to strike axle pulley on rails. Use care in setting off at crossings, switches, and frogs so axles are not sprung by pinching wheels in flangeways.

STARTING THE CAR

Always drive with the engine ahead in normal service. After starting and warming up the engine, seat passengers, operate facing ahead, and release brake. Gradually open the throttle and at the same time tighten the belt by slowly pushing idler lever ahead. This allows the belt to slip and act as a clutch.

DRIVING THE CAR

After car gets under way, tighten idler enough to prevent belt slippage, and latch the lever. Use throttle to regulate speed and for average conditions the spark should be well advanced.

Always drive a new car slowly and carefully until thoroughly familiar with the controls. A speed of 15 to 20 miles per hour for the first 500 miles is recommended.

If the car loses speed or the engine knocks on hard pulls, widen open throttle, partially retard the spark, and slip the belt a little if necessary. When coasting down light grades the belt can be released and throttle closed, thereby saving fuel. On descending heavy grades the engine can be used as a brake by leaving belt tight, closing throttle, and cutting off ignition. When coasting long distances, maintain slight throttle open to furnish lubrication for internal engine parts.

STOPPING THE CAR

First close the throttle, then retard the spark part way. Next release idler lever to slacken belt, and apply the brake. Shut off ignition to stop engine if car is to be removed from track.

REVERSING THE CAR

To reverse a battery ignition car without cranking, release belt and bring car to a full stop, allowing the engine to run slowly. Then reverse the engine as explained previously, after which the car can be driven in the other direction.

pint of oil with each gallon of gasoline. This mixture lubricates all internal moving parts of the engine.

Once a week apply a few drops of oil in the oilers on main axle bearings and on drive axle center bearing. Keep grease cup on differential axle filled, and give it a turn each day or two.

Once a month inject about one teaspoonful of oil into the oiler on idler arm. If car is classed as group 2 which did not have oiler in idler arm, remove plug from idler pulley cover, inject oil, and replace plug.

Occasionally oil idler arm pivot on brake shaft, controls, and brake rigging. Once a month unscrew the plug in belt side bearing on the engine, and oil the outboard ball bearing.

GENERAL SUGGESTIONS-- SAFETY FIRST

Inspect the car before starting out each day, and make sure it is in good operating condition. Once a week clean the entire car thoroughly, examining gasoline joints, electrical connections, bolts, screws, etc., and tighten all loose parts.

When making inspection see that:

- (1) Wheel hub bolts are tight.
- (2) Wheel tires are not worn dangerously thin.
- (3) Wheels and axles run true.
- (4) Axle end nuts are secured by cotters.
- (5) All wheels are tight on axles.
- (6) All pulleys are aligned and belt runs true.
- (7) Brake is in first class working condition.

Maximum capacity of car (not trailer load) is 1800 lbs. at ordinary speeds. Load baggage and tools carefully to prevent their working into moving parts or falling off the car.

Drive slowly with car under full control where there is not a clear view ahead, over road crossings, through gangs of workmen, through railroad yards, and over frogs and switches. Don't drive during rain or snow storms or foggy weather unless necessary, and then only with a lineup and extra precaution. When following other motor cars or trains remain 500 feet or more behind. Adhere strictly to local railroad motor car rules.

BELT IDLER

For ordinary driving, when the idler lever is latched in the first notch in the guide plate, the belt should be just tight enough to propel the car without slipping. The coiled spring under the nut on the threaded end of idler control rod, cushions the drive and protects all parts from excessive strains. To increase belt tension screw down the nut -- to reduce tension back it off. Adjust tension so the coiled spring does not compress solidly together when idler is in operating position.

The idler pulley runs on two Timken roller bearings packed in lubricant. Once a month inject about a teaspoonful of oil in through oiler in idler arm or through hole in pulley cover. On cars operating in cold weather, thin the lubricant in idler pulley with light oil. Once a year take the pulley apart, clean all parts, and repack bearings with very light grease.

To disassemble pulley, first remove it from the idler arm by taking out clamp screw. Remove cover, and lightly drive on opposite end of shaft, forcing out one outer race and both inner races. Inner races can be pressed or driven off the shaft. Reassemble in reverse order. To adjust idler bearings, remove

ENDLESS CORD BELT DRIVE

Always leave the belt slack when car is not in use. The endless cord belt is "endless" and it must not be cut or laced. Properly cared for it will give many thousands of miles service. Never use belt dressing on the belt. If the belt glaze over and slippage cannot be overcome by increasing idler tension, scrub the inner belt face with a rag saturated in gas line from the fuel tank. Also clean pulley faces, then dust little tire talc or powdered soapstone on belt and pulleys.

To change belts: release idler, take off housing lower right side board, and remove engine pulley, then run the belt over the axle pulley flange. Lift the rear of car about a foot and securely block up under the frame. Remove right rear brake shoe, unbolt right rear axle bearing, center bearing, and right hand rail skid. By lightly prying on the axle there will be sufficient clearance between axle bearing and sill to slip off old belt. Then install the new belt, being careful not to damage it on sharp corners. Reassemble in reverse order and tighten center bearing last. Adjust idler if necessary.

PULLEYS

The engine pulley is held on the flywheel by three cap screws which should be kept tight. Be sure lock washers are used under the heads. The axle pulley and bushing are clamped in place and driven by a key. Keep the clamp bolts tight. Pulley bushings supplied for repairs have the two halves fastened together; they should be cut apart before using. Keep pulleys in line so belt runs true and does not rub or climb the flanges.

AXLES AND BEARINGS

The axles run on a double row Timken bearing at each end, and a Timken steady bearing supports the drive axle next to the pulley. When axle bearings require adjustment, it is best to remove them from the car. Unbolt and remove wheel, axle, and bearing assemblies. Take off wheels, then jar the bearing assemblies off the axles. If but one bearing requires adjustment, block up end of car and take off brake shoe on wheel adjacent to the bearing, then unbolt and remove bearing.

Take bearings apart and clean with gasoline if the lubricant is dirty or old, then lubricate with light oil. To remove bearings from axle casing, take off the cover, and with a heavy punch drive against the inner race from the opposite end of the casing. If necessary, remove remaining outer race by jarring the casing against a heavy wood block. Reassemble in reverse order. Sufficient shims should be used under the cover to obtain .003" to .005" bearing end play with cover bolted tight.

When replacing drive axle on car be sure all three bearings are in line. If necessary shim under the low one. A slightly sprung axle can usually be straightened cold, but one badly bent should be replaced. Never heat axles when straightening.

Two thrust collars on each axle take-up end play. To adjust thrust collar, loosen set screw and clamp bolt, then tap collar snugly against axle bearing. When correctly set, tighten clamp bolt first, then set screw, and finally apply lock wire.

DIFFERENTIAL AXLE

S2 series E cars are equipped with the FAIRMONT differential axle M16098N. It accommodates two tight insulated wheels which turn independently of each other with their respective halves of the axle.

WHEELS

Standard S2 series E cars use 16" x 4" demountable steel wheels and are equipped with a differential axle and four insulated

outer face to provide electrical insulation. Each group is drawn tight by the axle end nut and a steel washer.

Each wheel tire is tightly held on the hub by eight alloy steel bolts. Removing these bolts and swinging the brake shoe clear, permits of quickly exchanging a tire without taking the complete wheel off the axle. Insulated 16" demountable wheels are easily removed from axles by using M19509 demountable wheel puller, or M8706 shock wheel puller.

Before applying insulation smooth all burrs in the wheel hub and wipe clean. Then carefully drive the insulating bushing in until flush with outer hub face; and tighten wheel on the axle with end nut and steel washer, being sure the fiber washer is next to outer hub face. If wheels come too close together (under gauge) tough paper can be wrapped around the axle taper. If too far apart (over gauge) slightly ream the bushing with M7667 taper reamer. Be sure insulated wheels are tight on the taper and all wheels run true.

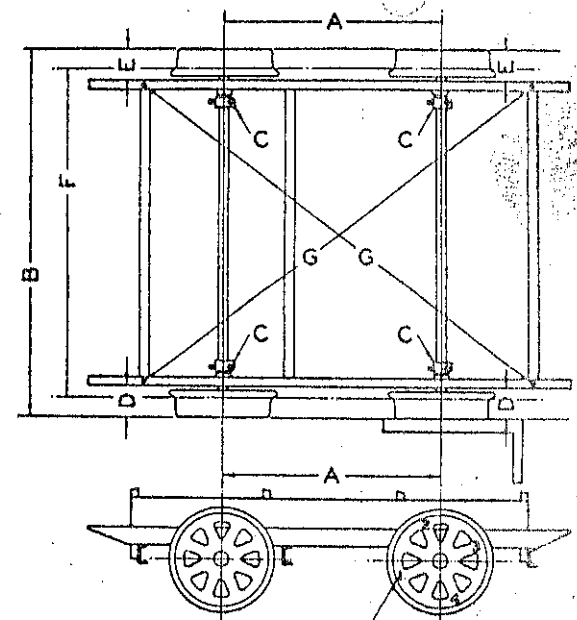
WHEEL ALIGNMENT

NOTE -- Sometimes a small difference in drive wheel circumferences causes a car to run to one side even though perfectly aligned. Again, another car will operate satisfactorily with drive wheels showing more variation. Track conditions, direction of wind, car loading, and windshield have some effect on a car, and it may tend to run to one side even when in alignment.

Careful observance of these instructions insures a safe running car. This diagram represents the running gear of any motor car, but the instructions apply to S2 series E cars with FAIRMONT 16" demountable wheels.

- (1) Replace bent or sprung frame members if any, and check frame for squareness. Measurements "G" across corners should be the same if frame is square. Tighten all frame bolts.
- (2) Carefully block up under the car frame so all wheels turn freely and frame is level.
- (3) Examine wheels and replace tires with badly worn flanges.
- (4) Drive wheel tires must be approximately the same size. Measure them with a steel tape around the tread, being careful to keep it equidistant from the flanges at all points.
- (5) (a) Rotate wheel and axle assembly, and hold a piece of chalk steady so it just touches outer face of each wheel. If wheel and axle run true chalk will mark evenly around wheel -- if wheel is sprung or axle is bent chalk will mark the high spot on wheel. Wheels or axles badly out of true usually must be replaced, though axles can sometimes be straightened. A maximum tolerance of 1/82" out of true is recommended on wheel tread, and up to 1/16" out of true on wheel face or flange.

(b) Another method of check is with a straight edge or two-foot carpenter's square across outer wheel faces (see diagram). Mark each wheel face in quarters and measure from the square to the side sill at each quarter turn of the wheel. The measurements should be the same for each wheel, if the wheel and axle run true.
- (6) The center distance "A" should be the same on both sides of car. Axle bearing bolts can be loosened to permit shifting



WHEEL MARKED AT EACH QUARTER FOR TRUE RUNNING TEST (5)

(7) Cars have the wheels assembled on the axles with a tolerance of 1/8" to 1/4" under standard 56 1/2" gauge. This enables them to operate on under gauge track or canted rail without change. The measurement over outside faces of wheels at "B" is 62-3/4" when S2 series E wheels are 3/16" under standard 56 1/2" gauge. It is preferable to have both axle assemblies drawn to the same gauge when aligning wheels.

(8) New insulating bushings are sometimes necessary to bring wheels to gauge. Fit them carefully so wheels run true.

(9) With frame approximately centered between the four wheels the outside faces of left wheels should be in line and parallel with axle bearing sill. Check with a straight edge, tight cord or carpenter's square, being sure distances "B" are both the same. If necessary loosen and shift thrust collars "C".

(10) Next check right side of car where distances "D" should also be equal and approximately the same as "B".

(11) Carefully set all thrust collars "C" against bearings. First tighten clamp bolts, then set screws and lock wires.

(12) After thrust collars are set, make another check on wheels to be sure alignment has not been disturbed.

BRAKE

To bring the car to a quick stop, apply the brake with firm steady pressure, yet allowing the wheels to revolve. Go over the brake when weekly car inspection is made, and tighten bolt and adjust shoes if necessary. Be sure cotter pins are spread.

To adjust brake, disconnect adjustable toggles on both sides of car, unscrew the eyebolt or yoke on each toggle 2 or 3 turns then reconnect parts. Try the brake and if necessary make further adjustment until all four shoes take hold equally. B

sure the lever can be latched in the first notch in the guide. Install replacement liners when steel faces of old ones wear through. Be sure liners and bolts holding them do not touch other metal brake parts as electric signals might be operated.

COOLING SYSTEM

Use clean soft water in the cooling system if it is available. Check the water regularly and keep it up to the water level cock. Capacity is approximately seventeen quarts. In service, water in the jacket boils and some steam is condensed on the jacket walls. Steam will also be given off thru the overflow pipe, particularly on long hard pulls. This is but the normal functioning of the system and is safe as long as there is ample water in the jacket.

Cars can stand in freezing weather without harm to the jacket, providing water is not carried above the proper level. Before operating a car with frozen water in the jacket, run the engine slowly for a few minutes to thaw ice around the cylinder. For easiest starting in cold weather, drain water at night and refill with hot water the next morning. Anti-freeze solutions containing alcohol are not practical for section cars, but equal parts of either radiator glycerine, "Prestone," or "Zerex" can be used in section cars if water is added to replace evaporation losses.

After long service, lime and scale deposits from the water may cause overheating. These can be scraped off the cylinder walls and head after removing water jacket.

FUEL SYSTEM

Inspect the fuel system regularly and see that the tank is securely held by the tank straps. At least once a year remove the tank from the car and thoroughly flush it out to remove sediment, water, and lint. The F3613 gas tank cap has an air vent to allow free flow of fuel to the carburetor. Never use F5115 condenser cap on the gas tank as it has no vent. Loops and bends in the fuel pipe sometimes cause "air locks" which prevent the flow of gasoline. Blowing in the tank will start the flow if fuel pipe is not clogged.

The carburetor strainer bowl should be taken off and cleaned at least once a month, oftener in winter. Be sure gaskets are in good condition when replacing bowl. This also applies to the strainer located below the fuel tank, standard on all but group 2 cars. Don't use heavy wrenches on fuel pipe couplings, float bowl, or strainer bowl.

Leaks at fuel pipe couplings can usually be stopped by tightening the brass nuts snugly. If this does not overcome leakage, cut off the ends of fuel pipe just back of the old sleeves, and apply new F3030 compression sleeves with the pipe extending about 1/8" through them. Then tighten coupling nuts firmly.

CAR FRAME AND HOUSING

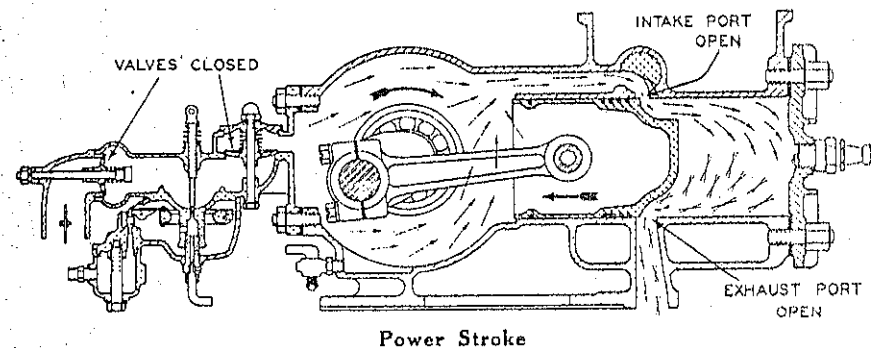
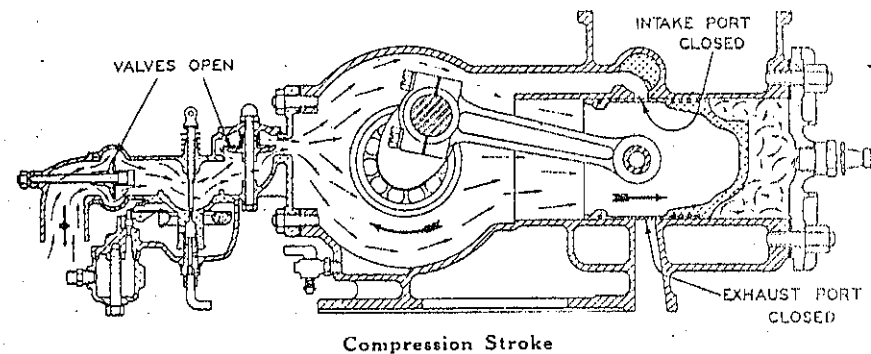
Keep all frame bolts tight. In case frame members become damaged, straighten them; or if badly out of shape, replace. Raising the hinged seat top permits inspections and adjustments to be quickly and easily made.

ENGINE MOUNTING

Engines used in S2 series E cars are designated as type QBA. They are secured to the engine sills by alloy steel SAE bolts with nuts and lock washers.

HOW ENGINE OPERATES

The upper illustration shows the piston passing over the exhaust and intake ports, as it moves toward the cylinder head and compresses fresh gases in the cylinder. At the same time it creates a partial vacuum in the crankcase, opening the carburetor check valve and air valve, through which fresh gases are drawn into the crankcase. When the piston reaches the end of this "compression stroke" the spark at the spark plug ignites the compressed gases, and expansion of the burning mixture forces the piston away from the cylinder head. As the piston moves away the carburetor valves close, and gases in the crankcase are compressed.



The lower illustration shows the piston nearing the end of this "power stroke" where it first uncovers the exhaust ports, and burnt gases start to escape. Immediately afterward the piston also uncovers the intake ports, and fresh compressed gases from the crankcase rush through them into the cylinder. The deflector on the piston sweeps these fresh gases toward the cylinder head and spark plug, forcing the remaining burnt gases out through the exhaust ports.

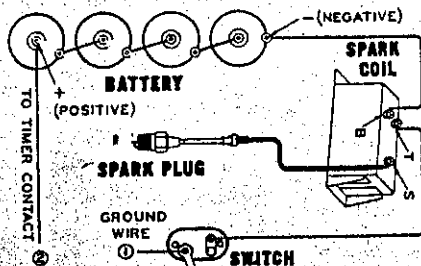
As the flywheels and crankshaft turn, the piston starts back toward the cylinder head on another "compression stroke" and again covers the ports. The fresh gases are again compressed, ignited, expanded, and exhausted. This same cycle of events is repeated over and over rapidly when the engine runs.

BATTERY IGNITION

The battery ignition system includes four dry cells and a coil, both carried in the battery box and wired to the t. on the engine which closes and opens the electrical circuit. A switch cuts off or turns on the ignition. This switch should always

An engine which misses when cold and first started, will usually fire regularly after being warmed up. Therefore, before changing ignition system adjustments, always drive the car until warmed up and try different carburetor adjustments. Then if ignition is suspected of causing the trouble, check all wiring, switch and connections. Tighten coil connections lightly to prevent twisting wires loose inside the coil.

New dry cells test 30 to 35 amperes each and a set is good for several months' service. Usually they furnish good ignition until exhausted to 8 or 10 amperes each, when the entire set should be replaced. Freezing reduces the efficiency of dry cells and they require replacement more often in cold weather. The inside of the battery box should be kept dry, and dry cells firmly clamped or wedged in place so they do not shift and permit connections to touch each other. Never remove cardboard cases from dry cells, or lay tools on them in the battery box.



The wiring of the S2 motor is shown in the diagram. The "ground" wire from the lower terminal of the timer connects to the switch blade. Late coils have the terminals located differently from that shown in the diagram, but they are similarly marked. Keep wiring free from oil, gasoline, and water.

NOTE -- Motor cars equipped with generator and storage battery usually have one side of the electrical system permanently grounded. The coil, switch, and timer all connect in the "live" side of the circuit. This brings the wire marked 1 from switch blade to insulated timer contact, and the other side of the timer is grounded by the mounting, and an additional wire. The battery terminal marked 2 in the diagram is then also grounded.

SPARK COIL

Keep the spark coil dry at all times and never connect more than four dry cells to it. When the ignition system is in good working condition a 1/4" to 5/16" spark should jump from the end of the high tension cable to the engine. If the coil will not deliver this spark the vibrator points may require attention, or a new coil may be necessary.

The tungsten alloy vibrator points should be dressed clean and smooth with a fine file, pocket stone, or emery cloth, when they become rough or pitted. After these points wear thin a complete new vibrator F4166 should be fitted on the coil. Always see that points match and seat together evenly after dressing them, or when fitting a new vibrator. The point opening should be 1/32", when setting use gauge furnished with car.

To check or adjust the current draw of the coil, an accurate low reading ammeter such as the Fairmont F7838 meter should be used. Either remove the spark plug and lay it on some metal

plug and hold it about 1/8" from some part of engine. Close the ignition switch and turn flywheels until timer points close and cause coil to buzz.

Open switch, and then press or hold ammeter leads firmly against the switch binding posts. Under such conditions, with good batteries, the current draw should be from .85 to .90 amps. Adjust the coil current draw by carefully bending the farthest end of the bridge that carries the vibrating point either up or down as required. Bending it down toward the coil box increases the current, bending it up reduces the current.

SPARK PLUG

To test the spark plug, remove it from the engine and lay on some metallic part of the car frame or engine, with high tension cable attached. Close switch and slowly turn engine until timer contacts close and the coil buzzes. If the spark at the plug gap is not steady while the coil buzzes, check the high tension cable for defects and clean the plug, then test again. If the spark plug porcelain is cracked or suspected of being defective, replace the plug with one known to be good.

Set plug points at 1/32" gap for battery ignition and 1/64" for magneto ignition. They should be checked and reset to these gaps whenever removed, to insure easy starting. Always carry a spare plug well protected, for emergency use on the line. Replacement spark plugs must be 1/2" pipe size, and they should duplicate the factory plug closely.

TIMER GENERAL

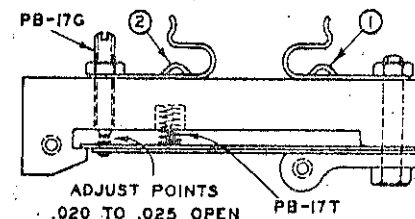
Keep timer connections clean and tight, and the contact points free from grit and oil. The timer casting should be adjusted closely on the side bearing, yet free to move when the spark is "advanced" or "retarded." If the points burn or wear unevenly, dress them with a fine file, pocket stone, or fine emery cloth. Be sure they match and seat together evenly when adjusted. When wiping block wears, loosen the bolt in flywheel hub and turn block to a new wearing position, then tighten bolt snugly.

The interval during which the timer points close the circuit to produce the spark should measure 6" to 5 1/2" on the outer face of flywheel rim. This length of contact is equivalent to 30° to 35° or about 1/12 of a crankshaft revolution.

Don't adjust the timer points to change the length of contact -- keep them set at the specified opening.

FIBER BLOCK CONTACT POINT TIMER

To obtain the best ignition, adjust the contact points from .020" to .025" opening. Following is an easy way to set them: -- turn flywheels so the wiping block clears timer blade, then loosen locknut on timer adjusting screw PB-17G. Turn this screw down until the two points just touch, then back screw out a full 1/4 turn and tighten the locknut. This gives .020" to .025" opening.

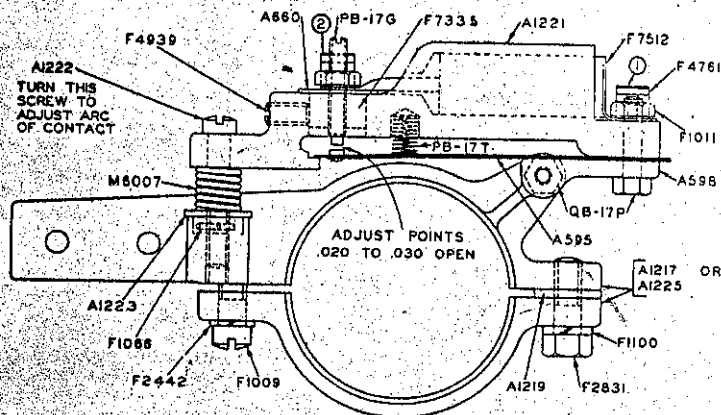


Adjustment of the interval during which the points close can be made by loosening the upper screw which mounts the timer fiber block on the casting, and shifting this block closer to, or further from the wiping block in flywheel hub.

To renew a timer blade, remove the fiber block assembly from the mounting casting. Take out the clamp screw which holds the ground block to the fiber block, remove old blade, and put new one in its place. Be careful not to lose the PB-17T spiral spring. Be sure the points match and the ground block is lined with the fiber block, then clamp blade snugly in place. Reassemble on mounting casting and adjust length of contact.

HY-DUTY TIMER

Best ignition is obtained with the contact points adjusted from .020" to .080" opening. Following is an easy way to set them -- with wiping block clear of timer blade, loosen lock nut on adjusting screw PB-17G. Turn this screw down until the two points just touch, then back screw out a scant one-half turn and tighten the lock nut. Check with a feeler gauge.



To adjust the interval during which the contact points close, slightly loosen the QB-17P mounting screw, then turn A1222 positioning screw to right to increase the interval or to the left to decrease it. When correctly set, tighten the mounting screw. Do not attempt to adjust timer when engine is running.

To renew a timer blade, remove body assembly from mounting-casting, or if desired, remove the complete timer from side bearing. Take out the clamp screw which holds the ground block to the body. Old blade can then be removed and a new one put in its place. Be careful not to lose the PB-17T spiral spring. Clamp new blade snugly in place, being sure the points match and ground block is lined with body. Reassemble on engine and adjust length of contact. Late timers with bakelite body do not require the insulating washer or rubber bushing.

CARBURETOR

The carburetor control knob on the car housing, turns to open or close the needle valve, and pulls up to choke the carburetor. If needle valve is opened too far, the mixture contains too much gasoline, and will be "rich." The engine will then have explosions, lack power, and waste fuel. Black smoke from the exhaust indicates a "rich" mixture.

fire easily and it gives a weak explosion, even when spark advanced. It also causes engine to run unevenly, missing a few explosions or back firing, then firing a few times before missing again.

The needle valve should always be set so the engine runs best with the least gasoline. The best adjustment for a warm engine is between 1 and 1 1/4 turns opening of needle valve. When starting engine in cold weather, needle valve should be opened at least a turn more than the regular adjustment, and choke used. After engine is running and warmed up needle valve should be closed to the regular adjustment. Don't close needle valve when stopping engine. Never screw it shut hard -- this ruins the fine pointed end and makes carburetor hard to adjust. Springs on the check valve and air valve are set with correct tension at the factory and they should not be changed.

Sometimes a hot engine will start hard after standing a short time. This is caused by "flooding," or a very rich mixture forming in the crankcase. A "flooded" engine can be cleared out by opening crankcase drain cock and rocking flywheels to blow out the rich mixture.

The small vent hole in body of carburetor should be kept open. If gasoline runs out of vent, or constantly drips from carburetor, float valve is not seating properly. To remedy, turn off and clean strainer bowl and drain carburetor, then replace parts. If float valve continues to leak, shut off gasoline, remove float bowl, and inspect float valve, float lever bearing and hinge pin. New parts should be applied if these are badly worn, screws holding float to lever should be tightened, and float level checked.

With cork float lifted to its high position and float valve tight on the seat, the top surface of float should be 3/8 to 7/16 inch below top rim of bowl. If the distance is less than this, the float valve and seat should be renewed on type carburetors. On type F6 carburetors the float lever can be carefully bent if it is necessary to change the float level. The strainer bowl should be taken off and cleaned regularly.

Two models of carburetors have been used on S2 series E models cars; the F6 were used on group 1 through group 3 cars, and the C8 on group 4 and later. The two different models interchange as complete carburetors and also some parts fit both, but most major parts are not interchangeable.

STEEL CONNECTING ROD

The piston pin bushing is pressed into the connecting rod, and reamed for .0015" to .002" clearance on the piston pin. A bronze backed babbitt bushing at the crankpin end wears slightly in service and needs occasional adjustment. A dull rattling sound in crankcase as engine slows down usually indicates worn or loose connecting rod bearing.

To adjust a loose connecting rod, first remove carburetor. Turn flywheels until connecting rod cap shows through opening and remove lock wire. Loosen both screws; take out top shim. Then unscrew lower one and remove cap, screw, and shim at same time. The upper shim is removed last.

Peel off layers from each shim, according to looseness; then replace cap and shims, drawing screws tight, and test adjustment. If still loose, remove one or more layers from each shim.

PISTON
AND RINGS

piston rebounds from compression the bearing is not too tight. Be sure screws are tight, then lock with a new wire.

The piston is made of semi-steel, accurately ground to size, and has a floating piston pin held in place by lock rings. Four piston rings prevent loss of compression. The three rings on the head end are doweled in place to prevent their turning, while the one on skirt end is free. When fitting new rings in cylinders, the ends should have an opening of .016" to .026".

Rings may be slipped on or off the piston by inserting thin strips of metal under them. They should always be replaced in the same grooves from which they were removed. When replacing piston in cylinder, have rings properly located on dowel pins.

To pull piston from cylinder, first shut off fuel and remove carburetor, then disconnect connecting rod. Drain and remove water jacket and take off cylinder head, after which piston and rod can be pulled. When replacing piston, be sure the deflector is in proper position (see cut on page 13). If piston is upside down the engine will start hard and lack power.

The piston pin and holes for it in the piston and connecting rod are finished to very close dimensions to insure assembly without fitting. Always use a new pin with a new piston.

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. 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, and a jaw wheel puller should be used. When replacing a flywheel, wipe all parts clean and oil well, then draw crankshaft nut fairly tight and insert cotter. If new key, flywheel, or crankshaft is used be sure the key fits freely in keyway, and flywheel does not bind on top of key.

BALL
BEARINGS

Ball bearing installations on FAIRMONT equipment have been thoroughly tested and approved by the ball bearing manufacturers' engineers. The bearings themselves 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 should not be used. Use only genuine new ball bearings as approved for FAIRMONT equipment.

Don't strike ball bearings with steel hammers. Always drive them off evenly with a brass punch held 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 or heat with a torch. Wash in clean gasoline or hot soda bath as soon as removed. Then 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 at all times.

CRANKSHAFT

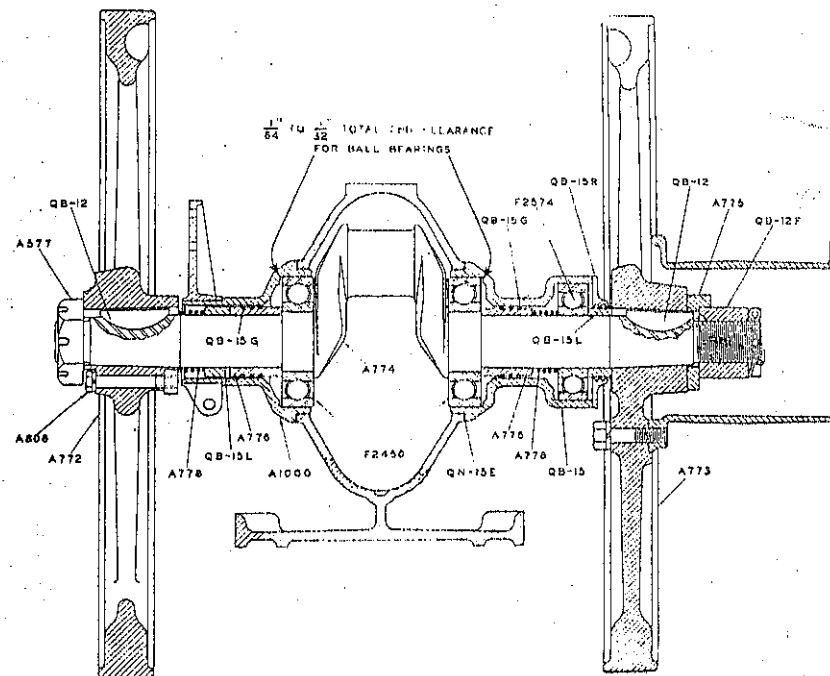
The crankshaft and ball bearings are lubricated by oil which

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.

If necessary to remove crankshaft, first disconnect connecting rod, then push piston and connecting rod assembly back in the cylinder. Next take off flywheels. 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. Then pull packing sleeves and ball bearings off crankshaft, after which it can be carefully slipped out of crankcase. Next remove the cover from belt side bearing casting and jar out the outboard ball bearing, washer, and packing sleeve. Wash, oil, and protect the bearing.

Before reassembling, smooth burrs and rough places on the crankshaft shoulders and fillets, clean crankcase gasket joints, and oil ball bearings. Place crankshaft in crankcase, 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 crankshaft shoulders.

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. Next "seat" the ball bearings to place in the timer side bearing casting by light blows on opposite end of crankshaft. Then apply the belt side bearing casting with a new gasket, having the pipe plug up, and tighten as instructed for timer side. Be sure this casting is drawn evenly



to place and concentric with the crankshaft, so as not to throw the outboard ball bearing out of alignment.

The crankshaft and ball bearing assembly must have 1/64" to 1/32" end clearance when side bearing castings are bolted in place. 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.

Install packing sleeves and rings next to inner ball bearings, grooved or notched ends of sleeves against the bearings. On belt side insert the spacer spring, then pack the outboard ball bearing with semi-fluid lubricant and slip it onto crankshaft and drive it in flush with side bearing casting face. Apply cover and gasket, and pipe plug. Slip spacing collar over end of crankshaft and up against ball bearing. After installing spacing collar and spring on timer side, flywheels and remaining parts can be reassembled.

RINGSEALD PACKING

Each side bearing is sealed against crankcase compression by Ringseald packing. This consists of three compression rings carried by a grooved sleeve closely fitting the crankshaft. Coil springs hold these sleeves in position. The 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 unless damaged will wear indefinitely.

If packing leaks badly when an engine is running, rings may be broken 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 but as soon as engine warms up this disappears. New packing rings should be free in the grooves and the gaps should have about .003" opening.

THROTTLE

Leakage at the throttle stem is prevented by a packing. 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 should 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. Since 1939 throttle valves have been machined to permit removal without disturbing the flywheel.

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 scraped out after draining water and removing water jacket and cylinder head.

Badly carbonized intake and exhaust ports cause an engine to start hard and lack power, hence they should be cleaned. The throttle valve and muffler can be removed to get at the ports. Wipe or blow out loose carbon before reassembling. Carbon inside of the piston head and deflector should also be removed.

When replacing cylinder head and water jacket 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.

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.

Factory Car No. _____ Class _____ Series _____

Group _____ Special _____

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

Group _____ Special _____

TO INSURE PROMPT AND CORRECT SHIPMENT of parts 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 1/2" 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. If in doubt as to any part wanted, send full description or sketch, or send old part with order.

Common bolts, nuts, and washers are not listed in this bulletin, as they can be obtained from any railroad store department.

The weight and numerical part list on pages 22 through 25 contains all items shown in the parts section covering standard direct belt drive battery ignition cars. Spare parts for accessories, and parts used on special cars only, are not listed in this index.

For descriptive purposes the engine end of car is named front, and right and left are determined by looking from rear to front.

Spare parts of accessory groups are given on pages 50 through 54. Items used only on cars having figures in the space on the name plate marked "Special" are listed according to car designation, starting on page 55.

CAR IDENTIFICATION

(Found on Car Name Plate)

To accurately identify cars, all units carry the designation "Class S2--Series E--Group____--Special____." The group number is always shown, and cars having changes to customers' specifications also have figures in the space marked "Special". Applying the two speed transmission changes the car class from "S2" to "ST2." When the letter "Z" appears in the designation, it indicates either broad or narrow gauge.

M27185	14 oz.	29	M28533	1 1/2 lb.	47	M35764A	9 lb.	48
M27267	10 oz.	47	M28534	2 lb.	47	M35765A	1 1/2 lb.	43
M27675	4 oz.	47	M28536	2 lb.	47	M35766	6 oz.	43
M27771	215 lb.	47	M28540	8 oz.	37	M36324A	1 1/2 lb.	35
M27772	21 lb.	47	M28541	6 oz.	37	M36325	2 1/2 lb.	35
M27773	21 lb.	47	M28542	2 oz.	39	M36398	4 lb.	39
M27775	15 lb.	47	M28544	10 oz.	49	M36406	1/2 oz.	39
M27776	12 lb.	47	M28761	1/2 oz.	45	M36601	1/2 oz.	45
M27777	10 1/2 lb.	47	M28762	13 oz.	45	M36637	5 lb.	29
M27778	1 1/2 lb.	47	M28763	13 oz.	45	M36639	7 oz.	29, 47
M27779	1 1/2 lb.	47	M28931	1 1/2 oz.	49	M36700	3 lb.	45
M27780	8 1/2 lb.	47	M29152	6 oz.	49	M36701	2 1/2 lb.	43
M27781	8 lb.	47	M29153	10 lb.	49	M36865	2 oz.	39
M27792	18 lb.	47	M29155	12 oz.	49	M36866	3 oz.	39
M27793	7 lb.	47	M29156	2 1/2 lb.	49	M36867	1 lb.	39
M27794	1 1/2 lb.	47	M29157	5 oz.	49	M36871	3 oz.	39
M27797	4 1/2 lb.	49	M29239	2 oz.	44	M37085	7 oz.	35
M27798	6 1/2 lb.	49	M29630A	5 oz.	43	37498	1/2 oz.	33
M27799	4 1/2 lb.	49	M29663	2 oz.	34	37502	1/2 oz.	31
M27800	4 1/2 lb.	49	M29829	1 1/2 oz.	34	37723	4 oz.	27
M27801	8 1/2 lb.	49	M30243	1 1/2 lb.	49	37724	1 oz.	27
M27802	8 1/2 lb.	49	M30244	1 1/2 lb.	49	38834	6 oz.	27
M27803	6 oz.	49	M30342	1/2 oz.	41	39489	3 1/2 oz.	28
M27804	2 1/2 lb.	49	M30343	1/2 oz.	41	39530	1 oz.	27, 29
M27805	2 1/2 lb.	49	M30344	1/2 oz.	41	39538	1 1/2 oz.	33
M27806	3 oz.	35	M30450	1/2 oz.	43	39627	56 lb.	27
M27807	3 oz.	35	M30451	1/2 oz.	43	39970	4 oz.	45
M27808	6 oz.	35	M30452	1/2 oz.	43	41039	9 oz.	27, 39
M27809	9 lb.	49	M30772A	9 lb.	43	43649	3 lb.	43
M27810	5 oz.	49	M30773A	1 1/2 lb.	43	43653	8 oz.	43
M27812	14 oz.	49	M32269	8 1/2 lb.	49	43654	2 oz.	43
M27813	10 lb.	49	M32617	1 oz.	47	43655	6 oz.	43
M27815	48 lb.	49	M32621	2 lb.	41	43656	2 oz.	43
M27817	6 1/2 lb.	49	M33435	6 oz.	43	44128	1 1/2 lb.	30
M27819	6 1/2 lb.	49	M33436	5 oz.	43	45234	16 1/2 lb.	29, 47
M27820	6 1/2 lb.	49	M33621	37 lb.	49	45235	8 1/2 oz.	29, 47
M27821	5 1/2 lb.	49	M33649	3 oz.	37	45236	1 1/2 oz.	29, 47
M27822	8 1/2 lb.	49	M34040	6 oz.	37	45686	1/2 oz.	41
M27823	4 1/2 lb.	49	M34410	6 oz.	35	45687	1/2 oz.	41
M27824	1 lb.	49	M34682	3 oz.	35	46268	17 1/2 lb.	47
M27825	4 oz.	39	M35062	1 1/2 oz.	35	46559	1/2 oz.	49
M27826	6 1/2 lb.	39	M35511	2 oz.	29, 49	51142	10 1/2 oz.	30
M28351	5 oz.	45	M35566	8 1/2 lb.	47	53342	1 oz.	27, 29
M28356	1 lb.	45	M35567	8 1/2 lb.	47	55627	1/2 oz.	27
M28532	1 1/2 lb.	47	M35746	16 lb.	47			

WEIGHT AND NUMERICAL PART INDEX

Symbol	Weight (Approx)	Page
QBA-B	222 lb.	47
QN-8D	oz.	27
Q-6	8 oz.	26
G-8C	1 oz.	27
QN-8D	2 oz.	27
QB-12	2 oz.	29
QB-12F	1 lb.	29
QB-18A	11 oz.	26
QB-18B	4 oz.	26
G-18C	6 oz.	26
G18D	1 oz.	26
Q-18E	2 oz.	26
QB-15	5 lb.	29
Q-15B	1 oz.	27, 29
QN-15E	oz.	29
QB-15G	oz.	29
QB-15L	5 oz.	29
QB-15R	10 oz.	29
QHB-15X	oz.	29
FB-16A	oz.	86
QB-17P	oz.	37
PB-17G	oz.	37
PB-17T	oz.	37
QH-20	6 oz.	27
QH-21A	3 oz.	27
P-21D	oz.	27
QB-21E	2 oz.	27
QB-37	2 1/2 lb.	27
QM-37A	1 lb.	27
PH-37C	4 oz.	27
PH-37E	oz.	27
PH-38	9 oz.	27
PH-38A	oz.	27
PH-39	18 oz.	27
P-48C	1 oz.	27
Q-47B	1 oz.	27
QN-47D	1 oz.	27, 81, 88
C-48	oz.	39
D-48	15 oz.	39
D-48A	8 oz.	39
TF-68F	oz.	37
QB-84	6 1/2 lb.	43
PH-90F	1 oz.	85
M102	1 oz.	48
QB-118	2 1/2 lb.	26
QB-208	24 1/2 lb.	27
QB-208-1	21 1/2 lb.	27
QH-208	6 1/2 lb.	27
QB-218	3 1/2 lb.	26
A411	1 1/2 oz.	88
EZ450	oz.	88
EZ451	oz.	88
EZ452	1 oz.	88
EZ453	oz.	81, 88
EZ454	oz.	81, 88
EZ456	oz.	81, 88
EZ468	3 oz.	82, 88
EZ472	2 1/2 oz.	81, 88

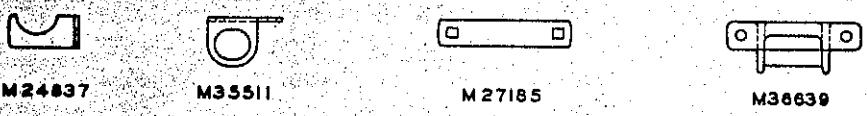
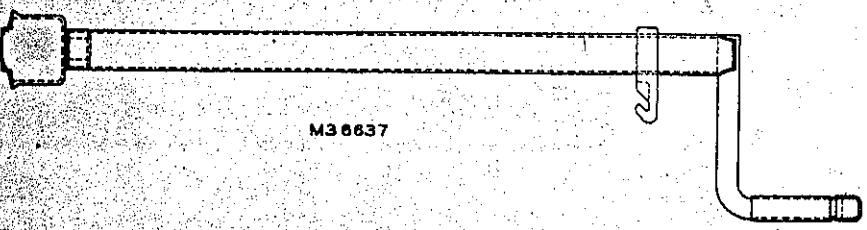
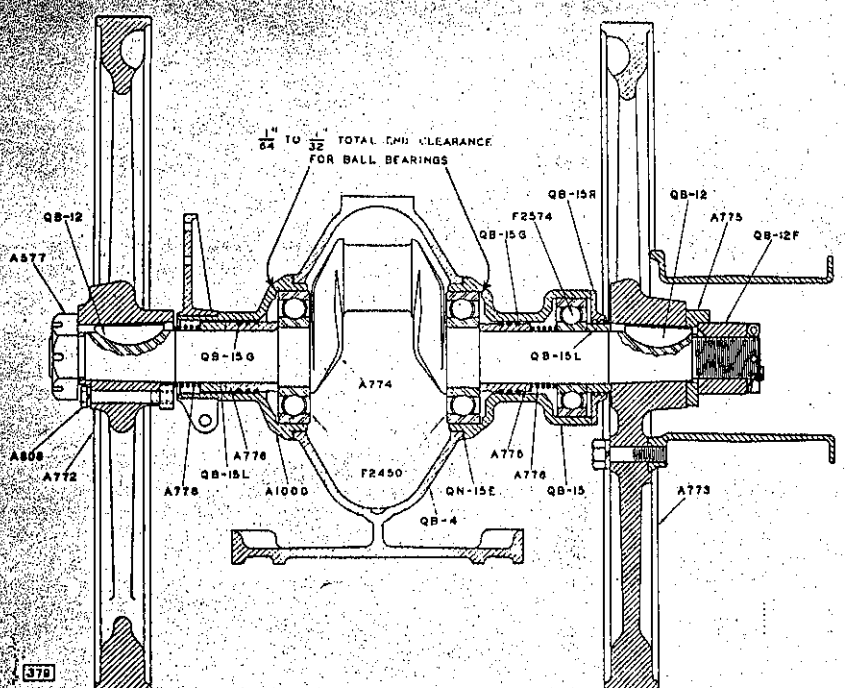
EZ474	3 1/2 oz.	88
EZ492	oz.	82
EZ506	1 1/4 oz.	32, 88
EZ510	1 1/4 oz.	82
EZ514	1 1/4 oz.	82
EZ515	oz.	88
EZ528	oz.	88
EZ529	oz.	88
EZ530	1 oz.	81, 88
EZ535	4 oz.	88
EZ537	oz.	88
EZ538	oz.	88
EZ539	oz.	88
EZ540	oz.	81, 88
EZ541	oz.	81, 88
EZ542	1 1/2 lb.	88
EZ548	3 lb.	88
A577	9 oz.	29
A598	3 oz.	87
A594	1 1/2 oz.	87
A595	oz.	87
A598	1 oz.	87
A646	oz.	81, 88
A660	oz.	87
A695	2 oz.	27
A757	55 lb.	27
A772	45 lb.	29
A778	46 lb.	29
A774	14 1/2 lb.	29
A775	8 oz.	29
A776	9 oz.	29
A778	1 oz.	29
A808	2 oz.	86
A868	7 1/2 lb.	26
A870	10 oz.	26
A871	oz.	26
A873	8 lb.	26
A874	11 1/2 lb.	26
A935	12 oz.	27
A1000	8 1/2 lb.	29
F1007	oz.	41
F1009	oz.	37
F1011	oz.	27, 37
F1017	oz.	27
A1019	1 1/2 lb.	88
F1023	4 oz.	27
F1029	oz.	27, 29
F1040	oz.	35, 48, 45
F1065	oz.	32, 88
F1066	oz.	32, 87
F1081	2 lb.	39
F1100	oz.	87
A1101	1 1/2 lb.	88
A1102A	6 oz.	88
A1103	2 oz.	88
F1108	oz.	41
A1105	oz.	88
A1127A	7 lb.	43
A1128	2 lb.	43
A1182	oz.	43

A1216	1 1/2 lb.	87
A1217	1 lb.	87
A1219	oz.	87
A1220	1 1/2 oz.	87
A1221	8 oz.	87
A1222	oz.	87
F1222	oz.	45
A1228	oz.	87
A1269	2 1/2 oz.	39
F1291	oz.	47
A1318	3 oz.	82, 88
A1316	3 1/2 lb.	81
A1319	1 1/2 lb.	81
A1321	oz.	81
A1322	1 1/2 oz.	81
A1324	oz.	81
A1325A	2 oz.	81
A1326	oz.	81
A1327	oz.	81
A1328	oz.	81
A1331	1 oz.	81
A1332	oz.	81
A1334	oz.	81
A1340	oz.	38
A1341	oz.	81
A1342	1 1/2 oz.	81
A1344	oz.	81
A1345	12 oz.	81
A1347	oz.	81
A1349	oz.	88, 81
A1350	oz.	81
A1366	oz.	81
A1367	oz.	81
A1368	1 1/2 oz.	81
A1369A	1 oz.	81
A1371	9 oz.	81
A1372	8 oz.	81
A1384	oz.	81
A1386	1 oz.	81
A1387	6 oz.	81
A1390	1 1/2 lb.	31
A1391	2 oz.	81
F1402	oz.	ft., 39
F1416	oz.	27
F1421	2 1/2 oz.	39
F1476	oz.	35
F1493	oz.	43
F1526	oz.	45
F1649	1 oz.	48
F1688	oz.	35
F1692	oz.	31
F1702	oz.	43
F1709	oz.	38
F1713	oz.	38
F1741	2 oz.	27
F1745	oz.	35
F1908	oz.	27, 29
F1969	oz.	81
F1971	oz.	81
M2814	oz.	89
F2326	oz.	43

F2368	oz.	32, 88
F2423	3 oz.	39
F2435	oz.	27
F2442	oz.	37
F2450	2 lb.	29
F2493	oz.	45
F2545	oz.	43
F2574	1 1/2 lb.	29
F2581	oz.	27
F2608	oz.	35
F2634	oz.	33
F2667	oz.	29
F2702	oz.	45
F2703	9 oz.	41
F2733	1 oz.	41
F2737	oz.	41
F2763	1 1/2 oz.	41
F2764	oz.	43
F2764	4 oz.	36
F2881	oz.	37
F2866	oz.	45
F2877	oz.	43
F2879	1 oz.	43
F2920	1 oz.	39
F2945	13 oz.	39
F2946	7 oz.	39
F2948	2 oz.	39
F2958	oz.	ft., 39
F3011	1 oz.	49
F3029	oz.	33, 35
F3030	oz.	33, 35
F3054	oz.	ft., 26, 34, 41, 45
F3079	oz.	47
F3083	oz.	31
F3096	7 oz.	39
F3132	1 oz.	49
F3148	1 oz.	47
M3226	5 oz.	43
F3366	oz.	35
F3495	1 oz.	47
F3515	1 oz.	49
M3550	oz.	45
F3570	oz.	33
F3598	oz.	45
F3613	oz.	35
F3614	2 oz.	35
F3651	1 oz.	35
F3718	oz.	41
F3853	oz.	34
F3854	1 oz.	34
F3855	oz.	34
F4026	14 oz.	ft., 35
F4109	1 1/2 oz.	47
F4166	1 oz.	39
F4216	10 oz.	43
F4334	2 oz.	47
M4442	2 oz.	41
M4447	oz.	41
M4528	4 oz.	39
F4635	oz.	41
F4726	oz.	29
F4761	oz.	37

F4770	oz.	43
F4870	oz.	32
F4939	oz.	37
F5193	1 oz.	35
F5235	2 oz.	41
F5484	2 1/2 oz.	41
F5493	1 1/2 lb.	41
F5574	2 oz.	39
F5855	3 oz.	47
M6007	oz.	37
F6470	oz.	31, 33
F6537	oz.	34
M6540	2 oz.	43
F6575	3 lb.	43
F6578	9 lb.	43
F6584	oz.	35
F6598	oz.	33
M6738	1 oz.	39
F7106	4 oz.	45
F7119	oz.	35, 39, 49
F7120	oz.	39, 45, 47, 49
F7121	oz.	37, 47, 49
M7220	2 lb.	45
F7244	oz.	49
F7273	2 oz.	47
F7349	3 oz.	39
M7365	12 oz.	45
F7370	oz.	31
F7506	oz.	35
F7512	1 oz.	37
M7556	2 1/2 lb.	43
F7608	oz.	27
M7677D	41 lb.	41
F7868	1 oz.	27
F7876	1 1/2 oz.	35
F7877	oz.	85
F7901	oz.	31
F7916	oz.	35
F7949	1 1/2 lb.	35
F7953	14 oz.	39
F7954	9 oz.	39
F7955	6 1/2 oz.	39
F7956	3 1/2 oz.	39
F7957	1 1/2 oz.	39
F7978	3 lb.	43
F7979	1 oz.	49
F7996	2 1/2 lb.	39
F8036	5 oz.	35
F8037	oz.	35
F8038	2 1/2 oz.	35
F8039	oz.	35
M8509	3 oz.	41
M8510	1 1/2 oz.	41
M8669N	29 lb.	41
F8692	oz.	35
F9182	oz.	39
10069	oz.	39
F10601	2 oz.	41
M11405	30 lb.	41
M11410	8 lb.	41

M11479	3 1/2 oz.	41
M12177	2 1/2 lb.	41
M12335	7 oz.	35
M12336	1 1/4 oz.	39
M12376	14 oz.	39
M15066	4 lb.	36
M15221	4 oz.	43
M15226	oz.	43
M15339A	7 lb.	43
M15340A	3 lb.	41
M15343A	5 oz.	43
M16098N	36 lb.	41
M16102	13 1/2 lb.	41
M16103	13 oz.	41
M16104	6 1/2 lb.	41
M16397	1 lb.	41
M16725	1 1/2 oz.	41
M16727	8 oz.	41
M16735	4 oz.	41
M17193	1 1/2 lb.	41
M17316	1 oz.	41
M17877	2 1/2 lb.	41
M18043	oz.	41
M18528	oz.	27
M18663	oz.	41
M18930	1 oz.	41
M18931	oz.	41
M19529	4 oz.	41
M21281	4 oz.	41
M21926	4 oz.	39
M21927	4 1/2 oz.	39
M21928	2 1/2 oz.	39
M22500	oz.	41
M22664	oz.	37
M22852	2 1/2 oz.	41
M24018	6 lb.	41
M24615	6 lb.	39
M24763A	4 1/2 lb.	41
M24764A	6 lb.	41
M24765A	3 1/2 lb.	41
M24766A	5 oz.	41
M24769A	2 1/2 lb.	41
M24770A	6 oz.	41
M24801	6 oz.	41
M24813A	oz.	41
M24814A	4 1/2 lb.	41
M24837	2 1/2 oz.	29, 41
M24926	16 lb.	41
M24939	5 1/2 lb.	41
M24965	7 oz.	41
M24985	5 oz.	41
M25496	3 lb.	41
M26278	oz.	41
M26804	2 lb.	41
M26820	7 1/2 lb.	41
M26827	12 oz.	41
M26830	2 1/2 oz.	41
M26831	4 oz.	43, 41
M26838	3 1/2 lb.	41
M26839	3 oz.	39
M26840	4 oz.	39
M27175	9 1/2 lb.	41
M27180	4 oz.	39



GASKET SET 39489

For a general engine overhaul, all gaskets and the throttle valve packing can be obtained under one symbol by specifying 39489 gasket set. This set includes items in this bulletin marked with an asterisk (*) and in the quantities shown.

FLYWHEELS - CRANKSHAFT - SIDE BEARINGS

Flywheel (timer side - taper bore)	A772
Flywheel (belt side - taper bore)	A773
Starting Crank Cam (two way)	A776
Key (flywheel)	QB-12
Crankshaft End Nut (belt side)	QB-12F
Nut (flywheel - timer side)	A577
Cotter 3/16 x 1-3/4"	F2657

Crankshaft only	A774
Ball Bearing (crankshaft inner)	F2450
Ball Bearing (outboard)	F2574

PACKING SLEEVE WITH RINGS	A776
Packing Ring only	QB-15G
Spacer Spring	A778
Spacing Collar (packing sleeves)	QB-15L

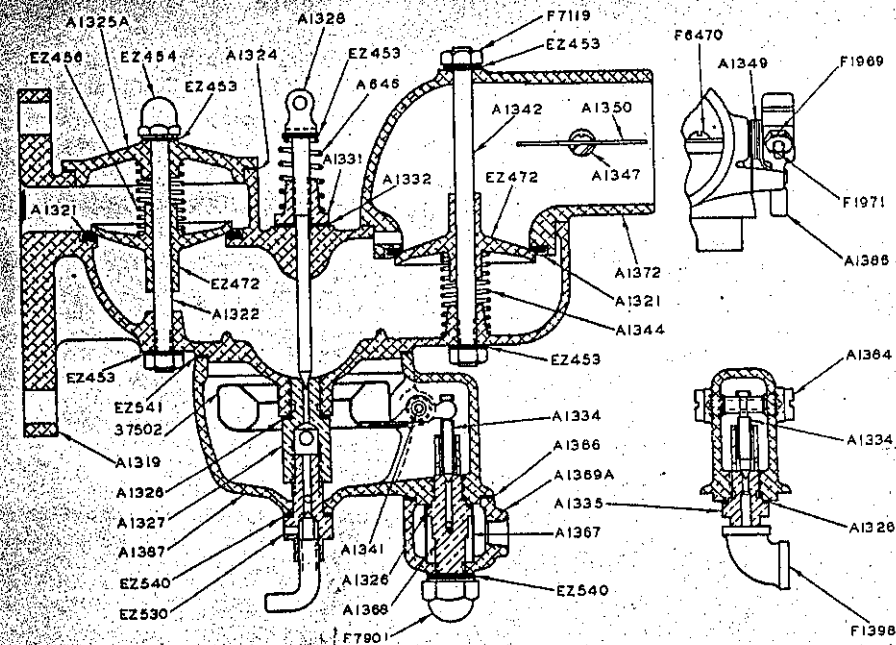
Side Bearing (accommodates timer lever only)	A1000
Side Bearing (belt side)	QB-15
*Gasket (side bearing)	QN-15R
Stud (side bearing - 1-7/16" - replaces Q-15B)	39530
Stud (side bearing - 1-7/8")	53342
Hex Nut 7/16" (side bearing)	F1029
Pipe Plug (belt side bearing - 1/8" slotted)	F4726
Cover (belt side bearing)	QB-15R
*Gasket (cover)	QHB-15X
Screw (cover)	F1903

STARTING CRANK

Starting Crank (with bearing - replaces M27176)	M36637
Wear Plate (on wood foot board)	M27185
Bearing Catch (on foot board - replaces M27184)	M36639
Spacer (thick - steel step plate)	45235
Spacer (thin - steel step plate)	45236
Holder (starting crank - with loop)	M35511
Holder (starting crank - plain)	M24837

NOTE--Group 4 and later cars have improved starting crank bearings and bearing catches. When ordering a new crank for earlier cars, also order on M36639 catch.

Cars No. 173687 and higher have steel step plates instead of wood foot boards. Wear plate M27185 is not required for the steel steps, but on spacer 45235 and five spacers 45236 are required to position the bearing catch.



NOTE--Assembly of cork float with lever A1336 is no longer available. It is replaced by metal float with lever 37502.

TOOL FOR INSTALLING VALVE SEATS

The installation of new valve seats in C5 and C8 carburetors is a relatively simple matter with valve seat tool supplied under symbol 44128. The tool may be used either with a vise to press in new seats, or by placing a block of wood over upper end of tool, and using valve stem as a guide, seats can be tapped into place.

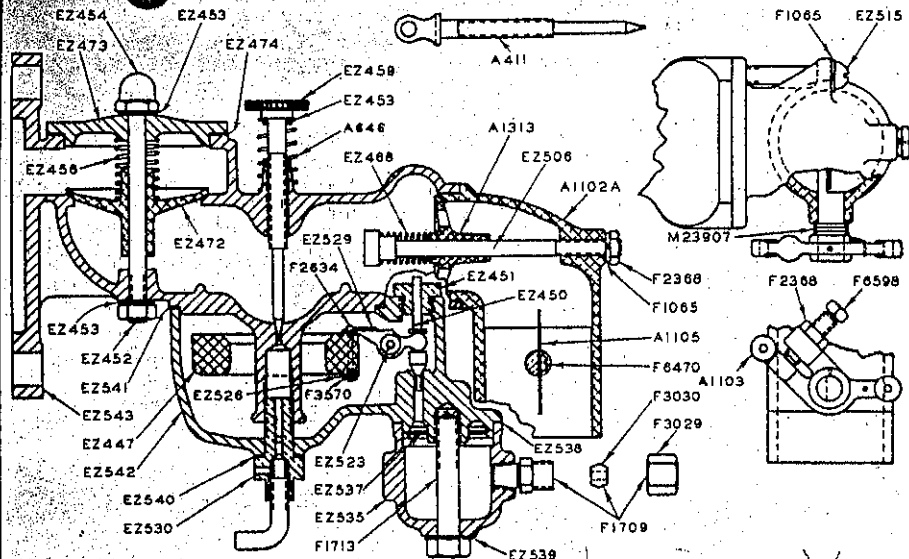
CARBURETOR SERVICE KIT 51142

For major carburetor repairs all gaskets, valves, seats, springs and hinge pin can be obtained under one symbol by specifying 51142 C8 carburetor service kit.

C8 CARBURETOR

NOTE--Group 4 and later cars have type C8 carburetors. They interchange as complete units with the type F6 used on group 2 and 3 cars. Parts marked * fit both types.

*Gasket (carburetor to crankcase -- inc. in gasket set)	QN-47D
Gasket Set (complete for C8 carburetor)	A1391
FAIRMONT C8 CARBURETOR Complete (yoke head needle valve) . . .	A1316
CARBURETOR BODY Complete (with needle valve guide, needle valve seat, and check valve seat)	A1390
CARBURETOR BODY (with check valve seat only)	A1319
Valve Seat (for either check or air valve)	A1321
Guide (needle valve)	A1331
Gasket (needle valve guide)	A1332
Cap Screw 1/4 x 1/2" (needle valve guide)	F7370
Seat (needle valve)	A1327
Gasket (needle valve seat)	A1326
Needle Valve (yoke head - length 3-5/8")	A1330
*Washer (or gasket - needle valve friction)	EZ453
*Lock Spring (under needle valve)	A646
*Check Valve (same as air valve)	EZ472
Check Valve Stem (with lower nut - length 3-1/4")	A1322
*Spring (check valve - 1-5/16" free length)	EZ466
Cover (check valve)	A1325A
Gasket (check valve cover)	A1324
Cap Nut (check valve stem upper)	EZ464
*Gasket (or washer - valve stem nuts)	EZ453
FLOAT BOWL Complete (with float and strainer)	A1371
FLOAT BOWL (with float valve seat)	A1387
Seat (float valve)	A1368
Gasket (float valve seat)	A1326
Float with Lever (metal - replaces A1336)	37502
Hinge Pin (float lever)	A1341
Bearing Screw (hinge pin)	A1384
Float Valve	A1334
Strainer Bowl only	A1369A
Screen (strainer)	A1367
Gasket (strainer bowl upper)	A1366
Cap Nut (strainer bowl)	F7901
Gasket (cap nut - strainer bowl lower)	EZ540
*Gasket (float bowl to carburetor body)	EZ641
*Drain Cock Complete (float bowl)	EZ530
*Gasket (drain cock)	EZ540
AIR VALVE CAGE (with choke but less air valve)	A1345
AIR VALVE CAGE (with valve seat only)	A1372
Valve Seat (for either air or check valve)	A1321
Choke Shaft	A1347
Choke Disc	A1350
*Screw (choke disc - self-tapping)	F6470
CHOKE ARM (with clamp screw)	A1386
Machine Screw (choke arm/clamp)	F1971
Hex Nut (clamp screw)	F1969
Lock Washer 3/16"	F1692
*Spring (choke arm)	A1349
Air Valve Stem (with lower nut - length 4-3/16")	A1342
Air Valve (same as check valve)	EZ472
Spring (air valve - 1-5/8" free length)	A1344
Hex Nut (air valve stem upper)	F7119
*Gasket (or washer - valve stem lower nut)	EZ453



EARLY AIR VALVE CAGE AND CHOKE PARTS

NOTE--Type F6 carburetors sold prior to June, 1939, had different air valve cages and chokes from those illustrated above. The air valve cage and choke assembly EZ505 for these carburetors has been replaced by assembly A1101. The air valves and associated parts interchange between the two assemblies, but the cages only and the choke parts do not. Early assemblies EZ505 and cages only EZ504 are no longer supplied; instead order the A1101 air valve cage and choke assembly. All other parts as listed below are available.

Air Valve Stem	EZ506	1
Air Valve Spring	EZ468	1
Air Valve only (replaces EZ505)	A1313	1
1/4" Lock Washer	F1065	1
1/4" Hex Half Nut U.S.S.	F2368	1
Choke Arm and Shaft	EZ510	1
Choke Spring	EZ492	1
Choke Disc only	EZ514	1
Cotter Key (1/16 x 1/2" - early carburetors)	F1066	2
No. 2 x 1/4" Self-tapping Screw (for choke disc)	F4870	2

F6 CARBURETOR

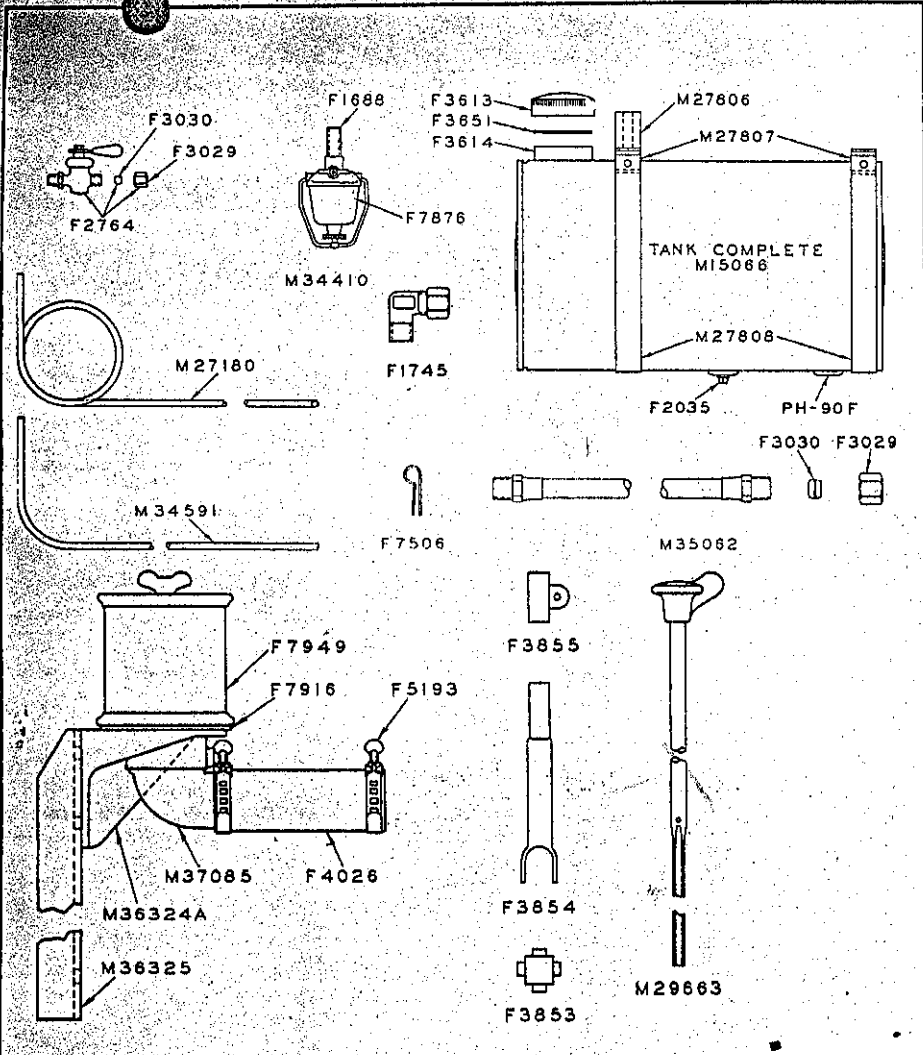
NOTE--Group 2 and 3 cars had type F6 carburetors. F6 carburetors sold after June, 1939, have air valve cages with improved chokes. These replace the air valve cage previously used, parts listed at bottom of page 32. The new assembly A1101 fits any F6 carburetor.

A1211 F6 CARBURETOR complete is no longer supplied. Order the A1316 CARBURETOR for replacement. F6 parts as listed below are still available.

Gasket (carburetor to crankcase - inc. in gasket set)	QN-47D
Gasket Set (complete for F6 carburetor)	39538
FAIRMONT F6 CARBURETOR (no longer available)	A1211
Carburetor Body only	EZ543
Check Valve Stem and Lower Nut	EZ452
Gasket or Washer	EZ453
Check Valve Stem Nut - Upper	EZ454
Check Valve only	EZ472
Check Valve Spring	EZ456
Check Valve Cover	EZ473
Check Valve Cover Gasket	EZ474
Needle Valve (yoke head)	A411
Lock Spring (under needle valve)	A646
Washer (or gasket - lock spring)	EZ453
BOWL, FLOAT, FLOAT VALVE & GUIDE (assembled)	A1019
Float Bowl only	EZ542
Float with Lever (metal - replaces EZ528)	37498
Float Lever Pin	EZ523
Float Valve	EZ450
Float Valve Guide	EZ451
Float Bowl Gasket	EZ541
Drain Cock Complete	EZ530
Drain Cock Gasket	EZ540
STRAINER BOWL Complete	EZ595
CONNECTOR Complete	F1709
Compression Nut	F3029
Compression Sleeve	F3030
Strainer Screen	EZ537
Strainer Bowl Gasket	EZ538
Cap Screw 5/16 x 1-3/4" (strainer bowl)	F1713
Strainer Bowl Cap Screw Gasket	EZ539
AIR VALVE CAGE WITH CHOKE (assembled - replaces EZ505)	A1101
Cage (air valve)	A1102A
Stem (air valve)	EZ506
Spring (air valve)	EZ468
Air Valve (replaces EZ509)	A1313
Lock Washer 1/4" (air valve stem)	F1065
Nut (air valve stem)	F2368
Choke Arm and Shaft	A1103
Choke Spring (replaces M23907)	A1349
Choke Disc	A1106
Screw (choke disc - self-tapping)	F6470
Set Screw (choke arm stop)	F6598
Nut (arm stop screw)	F2368
Air Valve Cage Screw	EZ515
Lock Washer 1/4"	F1065

NOTE ON CORK FLOAT--Assembly of cork float with lever EZ528 is no longer available, and is replaced by metal float with lever 37498. Parts for the cork float assembly, except for float only, are available as listed below.

Float Lever and Bearing (for cork float)	EZ529
Float Lever Bolt Washer (replaces EZ526)	A1340
Float Lever Clamp Screw	F2634



CARBURETOR CONTROL

CONTROL SERVICE GROUP (carburetor)	M29829	1
Universal Spider (carburetor control)	F8868	1
Adjusting Rod Sleeve	F8854	1
Choke Sleeve	F8856	1
Adjusting Rod (with knob)	M29668	1
Choke Wire (specify length)	F8054	9"
Wrot Washer (choke sleeve)	F6537	1

FUEL SYSTEM

NOTE--S2 series E group 3 and later cars have fuel strainers below the fuel tanks, metal fuel pipes without loops, and a short piece of flexible fuel line connected to the carburetor. Group 2 cars had a shut-off cock between the fuel tank, and metal fuel pipes with loops connected directly to the carburetor. Group 4 cars sold after about Jan. 1, 1942, have two shut-off valves on the flexible fuel lines; the second connects fuel pipe to strainer. Strainers and flexible lines can be applied to early cars; order one M34410, one F6584, and two M35062. Shorten both ends of fuel pipe.

FUEL TANK (with cap)	M15066
Threaded Bushing (solders in tank)	PH-90F
Bayonet Catch (neck for F3613)	F3614
FILLER CAP (bayonet type)	F3613
Gasket (filler cap)	F3651
Strap (fuel tank upper support)	M27807
Spacer Block (fuel tank rear)	M27806
Strap (fuel tank lower)	M27808
Cap Screw 1/4 x 1-1/2" hex head	F2608
Hex Nut 1/4" self locking	F7119
Clip (supports fuel line)	F7506
FUEL STRAINER WITH NIPPLE (group 3 cars and later)	M34410
Nipple 1/8 x 3/4" brass	F1688
Strainer Bowl (glass)	F7876
Gasket (strainer bowl)	F8692
Screen (strainer)	F8692
Street Elbow 1/8" (flexible line to strainer)	F6584
ELBOW CONNECTOR (with sleeve and nut - fuel pipe to strainer)	F1745
FLEXIBLE FUEL LINE - 7" (with sleeve and nut - group 3 cars)	M35062
Compression Nut	F3029
Compression Sleeve	F3030
Fuel Pipe (group 3 cars - one flexible line)	M34691
Fuel Pipe (group 4 cars - two flexible lines)	M34682
Shut-off Valve (group 2 cars)	F2764
Fuel Pipe (group 2 cars)	M27180

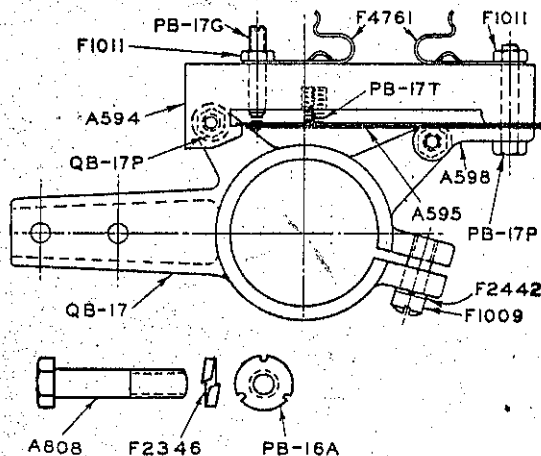
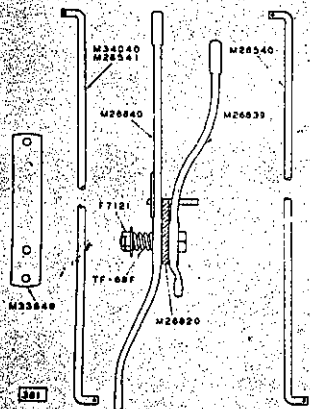
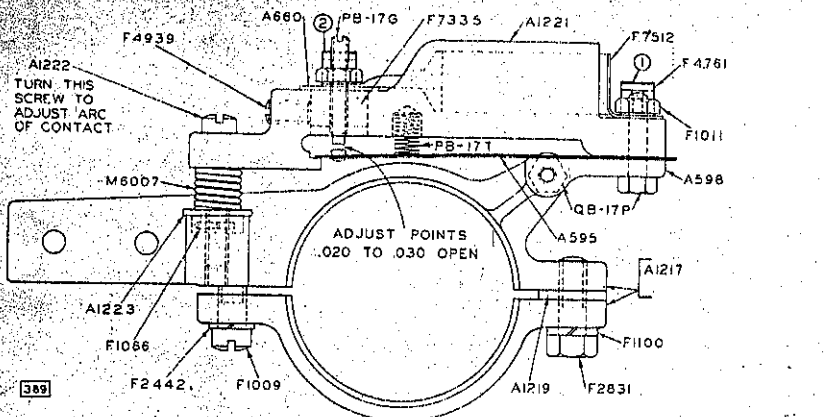
AIR CLEANER

NOTE--Group 4 cars are equipped with the open screen type of air cleaner standard, parts listed below, and are for use with the type C8 carburetor which have a different size and style of air intake from that on type F6 carburetors.

SCREEN ASSEMBLY WITH COVER (includes wing nut and stem)	F7949
Top only (cover)	F8036
Wing Nut only	F8037
Stem only (threaded)	F8038
Name Plate only (washer)	F8039
Mounting Bracket (screen assembly)	M36324A
Gasket (screen to bracket)	F7916
Support Angle (bracket)	M36325
ELBOW (below cleaner)	M37085
Set Screw 3/8 x 1-1/4" (dog point)	F3266
Hex Half Nut 3/8"	F1040
Hose - 2" diameter (specify length required)	F4026
Hose Clamp	F6193

AIR CLEANER MAINTENANCE

Clean the screen every two to four weeks, depending on conditions. Extreme conditions may necessitate other intervals. To clean, remove screen assembly and wash in gasoline or engine fuel mixture. Allow it to dry, then saturate with



TIMER WIPING BLOCK AND BOLT

Wiping Block	PB-16A	1
Bolt (wiping block)	A808	1
Lock Washer 3/8"	F2346	1

HY-DUTY TIMER

NOTE--Used on group 3 and later. Assembly A1216 can be applied to car engines, requires rod M34040 and extension M33649. Timers with late b lite body do not require A660 washer, F7335 bushing, or F4939 screw.

HY-DUTY TIMER COMPLETE (assembled - replaces A1077)	A1216
MOUNTING CASTING (complete - halves not sold separately)	A1217
Spacer (casting halves)	A1219
Cap Screw 5/16 x 7/8" hex head	F2881
Lock Washer 5/16"	F1100
Clamp Screw 5/16 x 3/4"	F1009
Lock Washer 5/16" special	F2442
Screw (timer mounting)	QB-17P
TIMER BODY Complete (with blade, points, & condenser)	A1220
Body only (replaces A1238)	A1221
Insulating Bushing (adj. screw - no longer supplied)	F2385
Set Screw 1/4 x 1/2" (headless, slotted)	F4989
Timer Blade (with point)	A696
Spring (timer blade - spiral)	PB-17T
Ground Block	A598
Screw (timer blade clamp)	QB-17P
Nut (timer screw)	F1011
Connector	F4761
Adjusting Screw (with point)	PB-17G
Insulating Washer (adjusting screw - iron body only)	A660
Condenser Complete	F7612
Screw 1/4 x 1-1/2" (positions timer body)	A1222
Spring (positioning screw)	M6007
Washer (spring retaining)	A1223
Cotter 1/16 x 1/2"	F1006

CONTACT POINT TIMER (FIBER BLOCK)

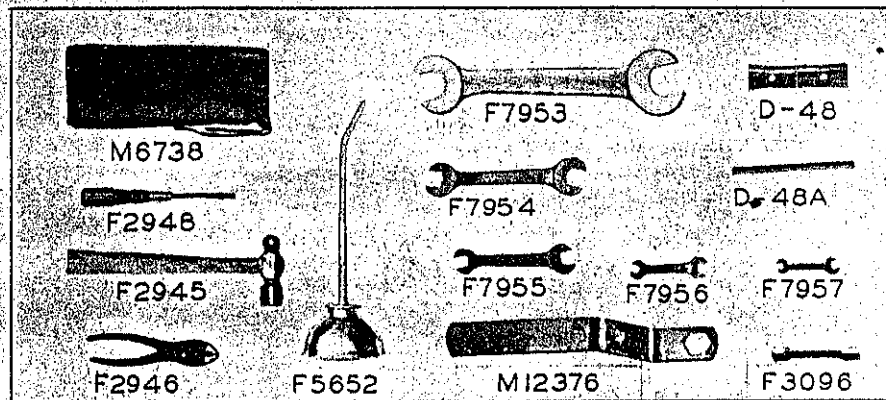
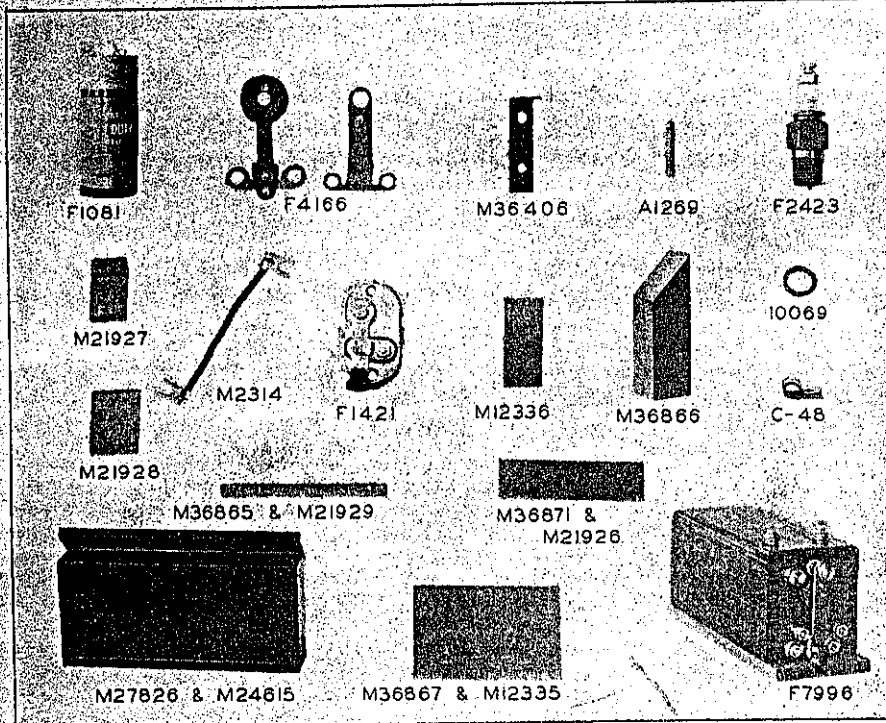
NOTE--Used on group 2 cars. A few had A992 timer casting now replace QB-17, extension M33649, and two F2355 bolts and F1065 washers. A1077 t complete is no longer available, being replaced by A1216 above. Such stallation require the rod be shortened or a new rod M34040 be ordered.

Timer Casting	QB-17
Clamp Screw	F1009
Lock Washer 5/16	F2442
Screw (timer mounting)	QB-17P
TIMER BLOCK WITH POINTS	A598
Timer Block (fiber)	A594
Timer Blade (with point)	A596
Spring (timer blade)	PB-17T
Ground Block	A598
Screw (timer blade)	QB-17P
Nut (timer screw)	F1011
Connector	F4761
Adjusting Screw (with point)	PB-17G

THROTTLE AND TIMER CONTROL

Throttle Lever	M26839
Timer Control Lever	M26840
Spring (throttle lever friction)	TF-68F
Hex Nut 3/8" self-locking	F7121
Throttle Rod	M28640
Timer Rod (group 2 cars - 27")	M28541
Timer Rod (group 3 and later cars - 26")	M34040
Timer Extension Strip	M33649

BATTERY IGNITION EQUIPMENT



NOTE--Cars shipped after July 1, 1941, have the new Fairmont coil F7996 which replaces coil F4756. When applying F7996 coil to early cars, refer to instruction sheet SD #80. Following 5 items are used with F7996 coil:

Spark Coil	(replaces F4756)	F7996
Insulating Liner (bottom - short - 10-1/4")		M36871
Insulating Liner (side - short - 10-1/4")		M36867
Spacer Block (coil)		M36866
Spacer (above batteries)		M36865

Following 4 items were used on cars having the F4756 coil:

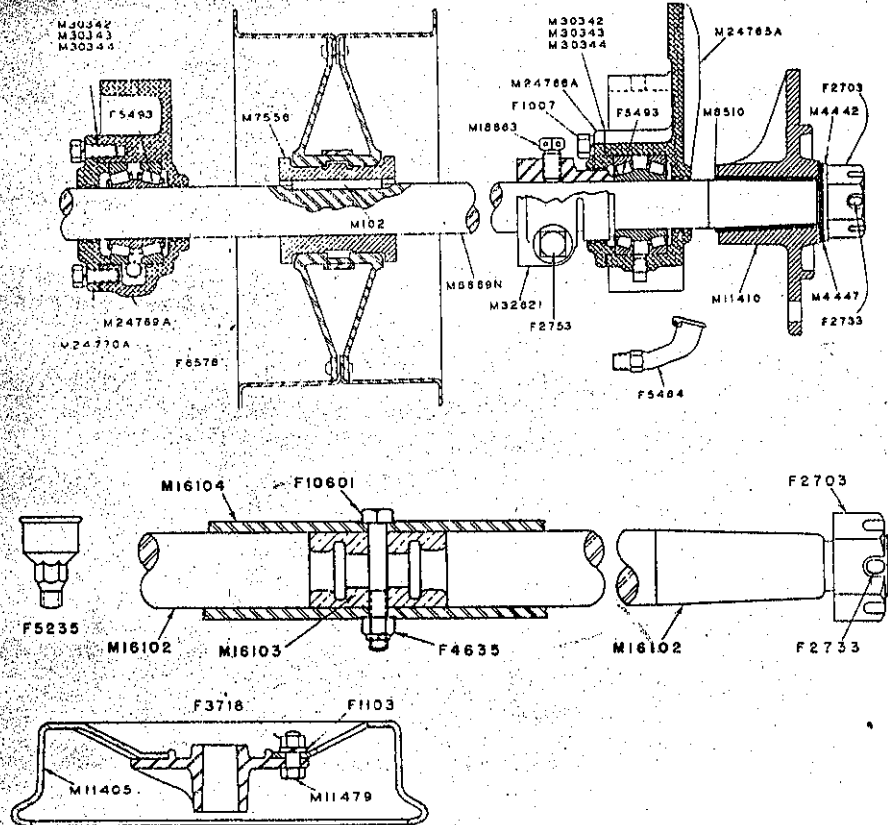
Insulating Liner (bottom - long - 15")	M21926
Support Block (below coil)	M21927
Spacer Block (beside coil)	M21928
Spacer (above batteries)	M21929

Following parts used on all cars:

Battery Box (steel)	M27826
Support Bracket (battery box)	M28542
Hex Nut 5/16" (self locking)	F7120
Hex Nut 1/4" (self locking)	F7119
Side Liner (battery box - use 2 with F4756 coil)	M12336
End Liner (battery box - use 2 with F4756 coil)	M12336
Rubber Bushing (protects wires)	10069
Dry Cell	F1081
Vibrator (fits either coil - both points included)	F4166
Connector (battery)	M3314
Spark Plug	F2423
Spark Plug Extension	A1269
SPARK PLUG WIRE (wire terminals)	M4628
Snap Terminal (spark plug wire)	F2920
Rubber Cap (high tension terminal - coil)	F9182
Switch	F1421
Wiring Assembly (in braided covering)	F7949
Wire (coil to battery - 11")	M2664
Support Clip (timer wires)	M36406
Cable Clip (fibre)	C-48
Hi Tension Wire (per foot - specify length required)	F1402
Primary Wire (per foot - specify length required)	F2958

TOOL BOX AND TOOLS

Tool Box (steel)	M24615
Spacer Block (tool box)	M27826
Hex Nut 1/4" (self locking)	F7119
Oil Can	F6662
Demountable Wheel Wrench	M12876
Spark Plug Wrench	D-48
Handle (spark plug wrench)	D-48A
TOOL KIT (in bag - replaces M6737)	M36398
Draw String Bag	M6738
Ball Peen Hammer	F2945
Pliers - 6"	F2946
Screw Driver - 3"	F2948
Connecting Rod Socket Wrench	F3096
End Wrench 7/16 & 3/8" openings	F7957
End Wrench 9/16 & 1/2" openings	F7956
End Wrench 3/4 & 5/8" openings	F7955
Rod Wrench 7/8 & 13/16" openings	F7954

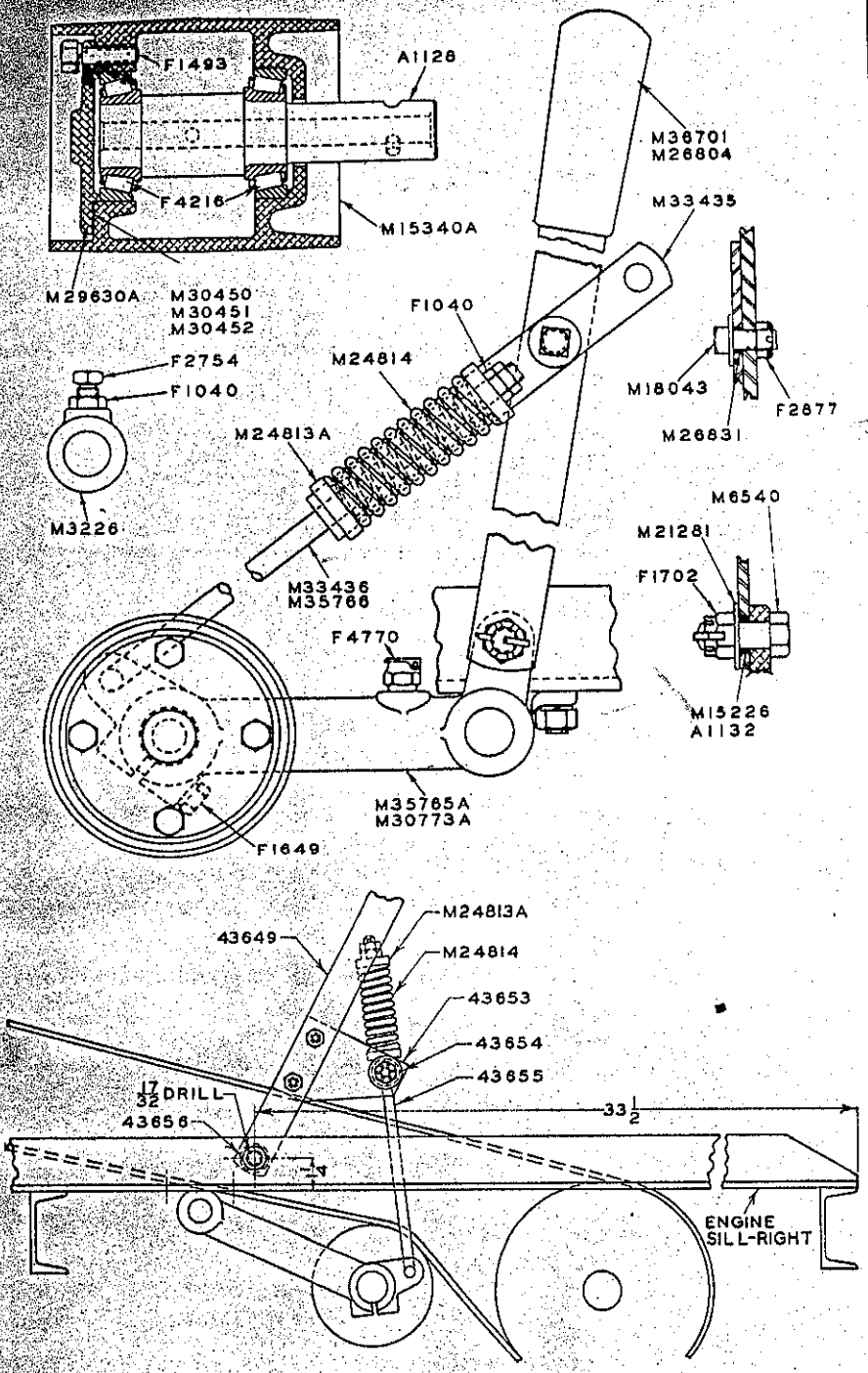


AXLES - AXLE BEARINGS - THRUST COLLARS

DRIVE AXLE 1-7/16" (with nuts and cotters)	M8669N
Axle End Nut	F2703
Cotter (axle end nut)	F2733
DIFFERENTIAL AXLE 1-7/16" (with nuts and cotters)	M16098N
Axle Half only	M16102
Split Bushing (both halves)	M16103
Axle Sleeve	M16104
Center Cap Screw (axle sleeve - 5/16 x 2-1/2")	F10601
Elastic Stop Nut 5/16" hex	F4635
Grease Cup	F5235
Axle End Nut	F2703
Cotter (axle end nut)	F2733
CENTER BEARING 1-7/16" (assembled)	M24763A
Bearing Casing only	M24769A
Bearing with Races	F6493
Casing Cover	M24770A
Cover Shim (.010 steel)	M30342
Cover Shim (.007 steel)	M30343
Cover Shim (.005 steel)	M30344
Cap Screw 3/8 x 1" hex head	F1007
Oiler	F5484
Shim (center bearing - 1/64")	46680
Shim (center bearing - 1/32")	46687
MAIN AXLE BEARING 1-7/16" (assembled)	M24764A
Bearing Casing only	M24765A
Bearing with Races	F6493
Casing Cover	M24766A
Cover Shim (.010 steel)	M30342
Cover Shim (.007 steel)	M30343
Cover Shim (.005 steel)	M30344
Cap Screw 3/8 x 1" hex head	F1007
Oiler	F5484
THRUST COLLAR 1-7/16" (assembled - repl. M27430 & M27432)	M32021
Clamp Bolt (thrust collar)	F2753
Hex Half Nut 1/2"	F2737
Set Screw (drilled head)	M18663
Lock Wire (per foot)	F3064

WHEELS - INSULATION

16" x 1/4" DEMOUNTABLE WHEEL (taper bored - repl. M7677DA)	M7677D
Hub only (taper bored - replaces M11410A)	M11410
16" x 1/4" Demountable Tire only	M11405
BOLT SET (8 each hub bolts; nuts, and lock washers)	M12177
Hub Bolt (alloy steel)	M11479
Hex Nut 5/8" S. A. E.	F8718
Lock Washer 5/8"	F1103
INSULATION SET 1-7/16" (8-piece)	M8509
Insulating Sleeve	M8510
Insulating Washer	M4447
Steel Washer	M4442

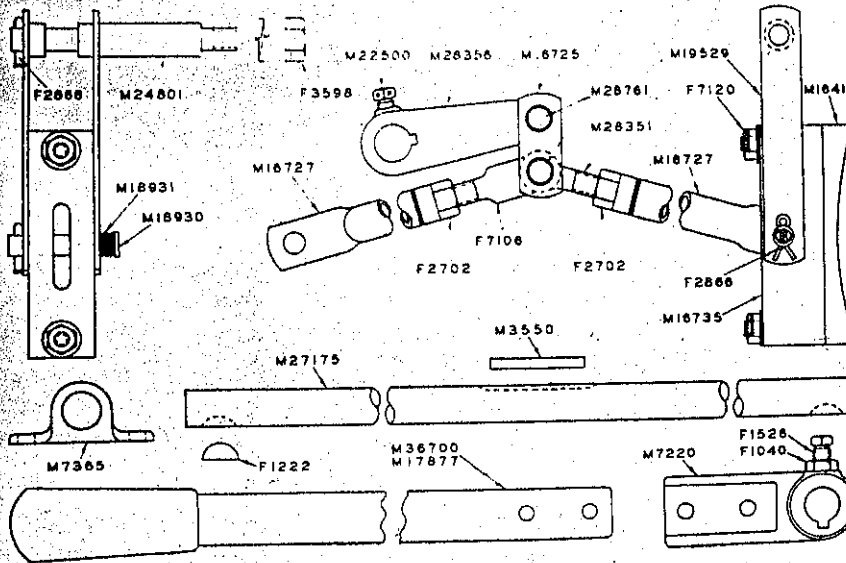


IDLER - BELTS - PULLEYS

NOTE--See page 44 for group 2 idler explanation. Group 3 and 4 car idlers are lubricated thru hollow arms and shafts. Arms, levers, and linkage differs between the two groups. Group 4 cars no. 166148 and higher have an improved control that may be applied to earlier group 4 cars, order 43648. The installation is pictured on page 42.

IDLER PULLEY AND ARM (group 4 cars)	M35764A	1
Idler Arm - 7" (group 4 cars)	M36701A	1
IDLER PULLEY AND ARM (group 3 cars - replaces M24986A)	M30772A	1
Idler Arm - 5" (group 3 cars - replaces M24936A)	M30773A	1
Cap Screw 3/8 x 2" hex head	F1649	1
Oil Cup (idler arm)	F4770	1
IDLER PULLEY AND SHAFT (assembled)	A1127A	1
Idler Pulley only	M15340A	1
Shaft (idler pulley - replaces M15841)	A1128	1
Bearing with Races	F4216	2
Pulley Cover (plain)	M29630A	1
Cover Shim (.005 paper)	M15221	1
Cover Shim (.010 steel)	M30460	1
Cover Shim (.007 steel)	M30451	2
Cover Shim (.005 steel)	M30462	2
Cap Screw 5/16 x 1" hex head	F1493	4
Collar (on brake shaft)	M3226	2
Set Screw 3/8 x 7/8" (use F1040 nut)	F2754	2
Pull Rod - 13" (group 4 cars above No. 166147)	43655	1
Pull Rod - 12-3/8" (group 4 cars below No. 166148)	M35766	1
Pull Rod - 11-3/8" (group 3 cars)	M33436	1
Support Plate (stud 43654 - group 4 above No. 166147)	43653	1
Stud (pull rod guide - group 4 above No. 166147)	43654	1
Bushing (stud)	A1132	1
Washer (stud)	M21281	1
Hex Slotted Nut - 1/2"	F2545	1
Strap (pull rod to spring - group 3 and early group 4 cars)	M33485	1
Bolt 3/8" (strap to lever - group 3 and early group 4 cars)	M18043	1
Hex Slotted Nut 3/8" (group 3 and early group 4 cars)	F2877	1
Spacer Bushing (strap bolt - group 3 and early group 4 cars)	M26831	1
Spring (pull rod)	M24814	1
Spring Seat	M24813A	2
Hex Half Nut 3/8"	F1040	3
Idler Lever (offset - group 4 cars above No. 166147)	43649	1
Stud (idler lever - group 4 cars above No. 166147)	43656	1
Hex Slotted Nut - 1/2"	F2545	1
Idler Lever - 31 1/2" (group 4 cars below No. 166148)	M36701	1
Bushing 17/64" (lever - group 4 cars)	A1132	1
Idler Lever - 28 1/2" (group 2 & 3 cars)	M26804	1
Bushing 13/64" (lever - group 2 & 3 cars)	M15226	1
Cap Screw (idler lever - group 2, 3 and early group 4)	M6540	1
Washer (cap screw and stud)	M21281	1
Castle Nut 1/2" SAB (cap screw only)	F1702	1
Endless Cord Belt 4 x 91 1/2" (group 4 cars)	F7978	1
Endless Cord Belt 4 x 90 1/2" (group 2 & 3 cars)	F6576	1
Axle Pulley (with bolts - 8" split steel)	F6578	1
Bushing (axle pulley)	M7556	1
Key (axle pulley bushing)	M102	1
Engine Pulley 5" - standard	QB-84	1
Cap Screw 7/16 x 1-3/4" hex head	F2879	3
Lock Washer 7/16"	F2326	3

BRAKE



IDLER - GROUP 2 CARS

FOR S2 SERIES E GROUP 2 CARS--These had idler pulleys lubricated through pipe plugs in the pulley covers. The new parts listed at right are now supplied to replace items of earlier design. Where separate parts do not interchange, complete assemblies, or enough items to convert the old group, should be used as explained.

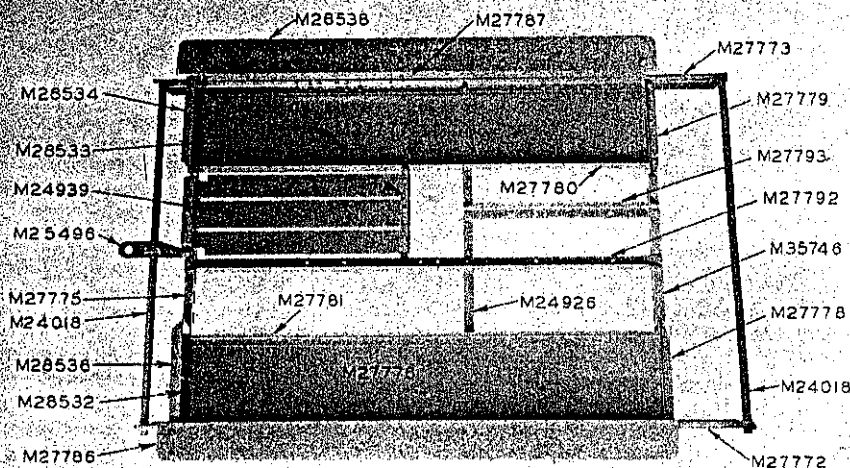
To use the new A1127A idler pulley having hollow shaft, with the early arm M24986A which was installed on these cars, drill and tap the new cover for a 1/2" pipe plug, or replace with a cover already tapped.

For an idler arm replacement only, the hollow arm M30778A and oiler F4770 can be installed in place of M24986A arm. If idler pulley with solid shaft is used with the new arm, lubrication will be through the pipe plug in pulley cover. If new A1127A idler pulley having hollow shaft is also applied, lubrication will be through the oiler on arm.

The following 4 items were used on S2 series E group 2 cars:

IDLER PULLEY & SHAFT (assembled)	M15389A
Pulley Cover (tapped for 1/2" pipe plug)	M15343A
Pull Rod (idler - long - 17")	M24965
Stud (pull rod guide)	M29289

Brake Lever - 34-1/2" (group 4 cars)	M36700
Brake Lever - 31-1/2" (group 2 and 3 cars)	M17877
Bolt 3/8 x 1-1/4" (brake lever to socket)	M36601
Hex Nut 3/8"	F2493
Socket (brake lever)	M7320
Key (brake lever socket)	M3560
Set Screw 3/8 x 5/8" (ill. F1526 - brake lever socket)	M22500
Lock Wire (specify length required)	F3054
Brake Shaft	M27175
Bearing (brake shaft)	M7965
Spacer (brake shaft brg. - cars with 10" axle pulley)	39970
End Arm (brake shaft)	M28356
Key (end arm)	F1222
Set Screw 3/8 x 5/8"	M22500
Toggle Link	M16725
Pin (toggle link - 1/2 x 1-1/2")	M28761
TOGGLE ARM (with yoke)	M28763
Body only (toggle arm)	M16727
Yoke (toggle arm)	F7106
Jam Nut 1/2" - 12 thread	F2702
TOGGLE ARM (with eye bolt)	M28762
Body only (toggle arm)	M16727
Eye Bolt (toggle arm)	M28951
Jam Nut 1/2" - 12 thread	F2702
BRAKE SHOE WITH LINER (assembled)	M17193
Brake Shoe (block only)	M16735
Liner	M16597
Hex Nut 5/16" self locking	F7120
Pivot Stud	M24801
Hex Nut 1/2"	F3598
Shoe Hanger	M19529
Hanger Pin (brake shoe)	M18930
Spring (hanger pin)	M18931
Cotter 3/16 x 1"	F2866



COMPLETE CAR LESS ENGINE

For cars that are in need of extensive repairs on account of damage or wear, we offer the S2 series E car complete less engine, coil, and batteries. Specify SF2 series E motor car frame complete to obtain this group.

FRAME AND DECK

Cars numbering 173687 and higher are equipped with nonskid steel step plates. Wood foot boards are being discontinued. Order group 46245 complete, to replace wood foot boards on all S2 and ST2 series E and F except group 1 of the E series.

FRAME AND DECK (assembled)	M27771
Axle Bearing Sill (right)	M27772
Axle Bearing Sill (left)	M27773
Cross Channel (front - replaces M27774)	M35746
Cross Channel (middle)	M24926
Cross Channel (rear)	M27775
Deck Board (right)	M27776
Deck Board (left)	M27777
Spacer Block (1/2" hole)	M26278
Deck Angle (longitudinal inner - right)	M27781
Deck Angle (longitudinal inner - left)	M27780
Engine Sill (right - long)	M27792
Engine Sill (left - short)	M27793
Cap Screw 1/2 x 1 1/4" (engine sill to cross channel)	F7273
Cap Screw 1/2 x 1 1/4" (heat treated)	F4334
Cap Screw 1/2 x 1 1/4" (heat treated)	F4109
Deck End Angle (right front lower)	M27778
Deck End Angle (left front lower)	M27779
End Plate (tool tray - right rear)	M28532
End Plate (tool tray - left rear)	M28533
Spacer (rear end plate)	M27675
STEP PLATE RIGHT (with crank catch and spacers)	46268
Bearing Catch	M36639
Spacer (bearing catch - thick)	45235
Spacer (bearing catch - thin)	45236
Step Plate (left)	45284
Support Angle (step plate or foot board - L.R.)	M28534
Support Angle (step plate or foot board - R.R.)	M28536
Bracket (step plate or foot board support)	M27267
Lift Pipe (with clip)	M24018
Draw Bar	M25496
Cap Screw 1/2 x 2 1/4" hex hd.	F5855
U-Bolt (draw bar)	M22852
Lunch Bucket Tray (complete)	M24939
Bevel Washer 1/2"	F3148
Bevel Washer 3/8"	F3495
Hex Nut 3/8" (self locking)	F7121
Hex Nut 5/16" (self locking)	F7120
Rail Skid (with brace - right - replaces M24797)	M35666
Rail Skid (with brace - left - replaces M24797)	M35667
Socket (tubular rail skid to bearing box)	M24985

ENGINE - MOUNTING

ENGINE Complete	QBA-B
Mounting Strip (engine)	M27794
Cap Screw 7/16 x 2-1/16" hex head SAE	M32617
Hex Nut 7/16" SAE	F3079
Lock Washer 7/16"	F1291

ACCESSORIES

The following standard accessories may be applied to S2 series E group 2 and later cars. When ordering for field installations, be sure to give factory car and engine serial numbers. Also shown are some tools that will simplify maintenance work.

WINDSHIELD WITH WINDOWS M29434

Adequate bad weather protection. Deflects wind away from operator. Windows allow full vision; easily applied in field.

- Curtain (with windows) . . . M30224
- Window (specify 9 x 12") . . . F4899
- Window (specify 9 x 19") . . . F4899
- Top Cross Bar M30196
- Top Socket M16415A
- Vertical Post M30194

RAIL SWEEPS 42597 BLADE TYPE

Heavy duty type, hinged. All parts are steel except blade proper. Adjustable for rail clearance. Gives full protection due to blade width. Long lived. Blade easily renewed.

- Rail Sweep-right 42622
- Rail Sweep-left 42625
- Blade (belting) M23956
- Clamp Strip M23957
- Rail Sweep Support 42621
- Rail Sweep Stop M34824
- Hinge Bolt 41725
- Spring QB-61C
- Spring Seat M30435A

WINDSHIELD PLAIN M29435

Full width of car, protects riders at minimum cost. Easily applied in field. Strong materials, withstands wintry gales.

- Curtain M30226
- Top Cross Bar M30196
- Top Socket M16415A
- Vertical Post M30197

RAIL SWEEPS 46364 HOSE TYPE

Late air hose type. Hinged to clear rail when car is set on or off the track. A good serviceable sweep for all conditions. Replaces M34822 Rail Sweeps.

- Hose Clamp Strap 46366
- Filler Block M8096
- Support 42621
- Stop Clip M34824
- Hinge Bolt 41725
- Spring QB-61C
- Spring Seat M30435A

RAIL SWEEPS M25465

Early hose type, mounts on axle bearing sill.

- Clamp Strap (hose) M22179
- Filler Block (hose) M8096
- Hinge Bolt M14669
- Spring M7160
- Spacer Sleeve (stop bolt) M17191

HAND GONG - 10 INCH M29431

Loud, durable warning signal. Mounted away from tools. Operated by pull wire.

- Gong only - 10" 1337
- Pull Wire M16419
- Support Strap M30167

HAND GONG - 6 INCH M29430

Meets minimum requirements. Safe mounting.

- Gong only - 6" F3444
- Pull Wire M16419
- Support Strap M32624

FOOT GONG - 10 INCH M29432

Loud warning signal operated 1 foot, leaves both hands free. Mounted out of way of tools, etc.

- Gong only - 10" F30
- Mounting Board M252

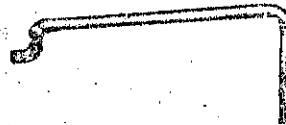
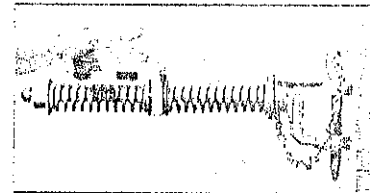
SAFETY COUPLER M11668

Provides maximum safety and efficiency in linking trailer to motor car. Hook of 7/8" rod with self closing malleable iron catch.



SPRING COUPLER M10953

Bolts to drawbar on motor car. Springs cushion bumps and jerks when towing trailers.

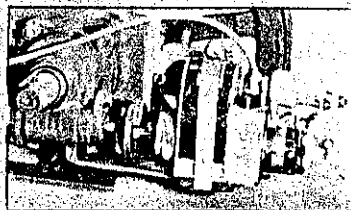


LINK COUPLER M6656

One piece, holds securely, easily detached by lifting one end a few inches.

CANVAS COVER M7951

Cars that are kept out of doors need this protection. Brown No. 10 duck, 7 x 9 feet, treated with "Preservo" for fireproofing. Eyelets for tying on car.



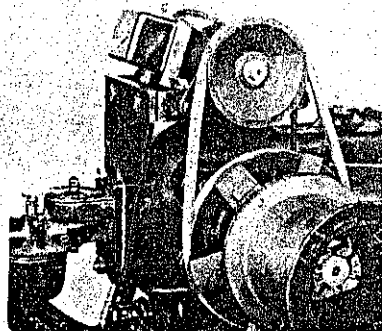
MAGNETO

Bisemann magneto, drive has long life ball bearing shaft. Can be furnished on new cars or applied to old ones. When writing for information mention engine number. Instructions and parts are covered in bulletin 202.

GENERATOR OUTFIT 39941

This electrical system consists of sealed beam headlight (swivel mounted on front safety rail), tail lights, storage battery, and generator. The generator is hinged above the engine crankcase, and is "V" belted to the pulley on the inner side of a standard "belt side" flywheel. This generator furnishes enough current for the ignition and all the lights. For instructions and complete parts list see bulletin 495.

- GENERATOR (less pulley) F6996
- Regulator & Cutout F7260
- Fuse F7331
- Brush Set F8040
- Pulley - 3-5/8" (generator) M36653
- Drive Pulley (on flywheel) M81040
- V-Belt - 32" outside F7448
- Storage Battery F7832
- Ammeter F8951
- Headlight (sealed beam) F8343
- Replacement Unit (light) F8372
- Bracket (casting) 39808
- Swivel Clip 39180
- Friction Washer F8363
- Tail Light Bulb - 3 C.P. F6820
- Tail Light Lens (red) F7363
- Snap Ring (F7363 lens) F7981
- Switch (tail lights) F5603



GENERATOR OUTFIT M36654

Replaced by 39941 above. Same except for headlight, which has separate lens, reflector, and bulb, and headlight mounting. See bulletin 455 for complete instructions and parts.

- Headlight Bulb - 21 C.P. F6986
- Headlight Lens F7127
- Gasket (lens) F7933
- Rim with Clip (F7127 lens) F7934

GENERATOR OUTFIT M32364

Replaced by M36654. Same as M36654 except for the following:

BLADE TYPE AXLE PULLEY M37040

Replaces standard drive axle pulley, for use particularly where deep snow and tall weeds are prevalent. Construction gives a positive grip without shortening belt life.



AIR CLEANER M36321

Oil bath type for group 4 cars only. Includes filter unit complete with shell, ready to be fitted on mounting bracket in place of open screen type of cleaner standard on these cars.

AIR CLEANER M33315

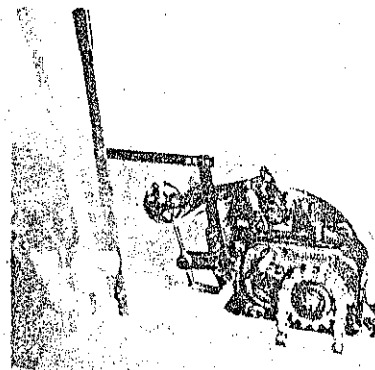
Open screen type used on a group 3 cars and with F6 carburetors. Mounted on plate clamp between carburetor and engine crankcase.

- AIR CLEANER ASSEMBLY F7665

- Screen Assembly F7665
- Bracket (screen) A12
- Hose (state length) F42
- Hose Clamp F53

TWO SPEED TRANSMISSION

When S2 series E cars are equipped with the Fairmont Two-Speed Transmission, the draw bar pull in gear is practically double that of the direct belt drive car. Durability is assured by the use of quality materials throughout; a piece case assures permanent correct alignment of shafts. Also applied to new cars at the factory but field installations can be made.

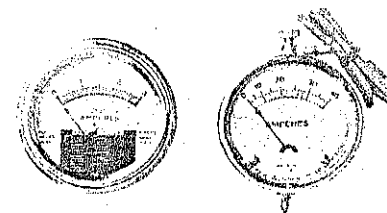


AMMETER F7838

Low reading ammeter is desirable when checking ignition systems to determine coil draw.

AMMETER 1230

Used to check condition of dry cell batteries. Good ignition means easy starting.



S2-E-2-5			
M28532	End Plate (tool tray - right rear)	Should read	M30899
M28533	End Plate (tool tray - left rear)	" "	M30900
M26838	Safety Rail (rear)	" "	M32404
M27809	Safety Rail (front)	" "	M32401
Add:	1 Support Angle (safety rail - right rear)		M30901
	1 Support Angle (safety rail - left rear)		M30902
	2 Spacer Sleeve		M30903
	2 Spacer		M17316
	1 Support (safety rail front)		M32400

S2-E-2-6			
M27180	Fuel Pipe - Omit		
F7506	Clip (supports fuel line)	Should read	M22863
Add:	1 Flexible Fuel Line - 40" (with fittings)		M29242

S2-E-2-7			
PH-39	Spark Plug Pipe	Should read	A995
QM-37A	Overflow Pipe (water jacket)	" "	A997
M28532	End Plate (tool tray - right rear)	" "	M30899
M28533	End Plate (tool tray - left rear)	" "	M30900
M26838	Safety Rail (rear)	" "	M30904
M27809	Safety Rail (front)	" "	M30907
M27810	Saddle (front safety rail)	" "	M26834
M28931	Windshield Post Holder - Omit		
Add:	1 Support Angle (safety rail - right rear)		M30901
	1 Support Angle (safety rail - left rear)		M30902
	2 Spacer Sleeve		M30903
	2 Spacer		M17316
	1 Center Safety Rail		M30908
	1 Gong - 8"		F3626
	1 Gong Mounting Board		M27453
	1 Windshield Curtain		M30909
	1 Frame (windshield curtain)		M27457
	4 Clamp (windshield frame)		M32376
	1 Brace (windshield frame)		M32375
	2 Brace Clamp (windshield frame)		M32372

S2-E-2-8			
M25496	Draw Bar - Omit		
M22852	U-Bolt (draw bar) - Omit		
Add:	1 Draw Bar Channel		M30159
	1 Draw Bar (rear)		M30160
	1 Draw Bar (front)		M30162
	1 Channel Spacer		M30161
	2 Drawbar Coupler		M10631
	2 Drawbar Pin (complete)		M30756

S2-E-2-9			
Add:	1 Shovel Rack		M32496
	2 U-Bolt (shovel rack)		M32497
	2 Straps		M32498

S2-E-2-10			
M27772	Axle Bearing Sill (right)	Should read	M32565
M27773	Axle Bearing Sill (left)	" "	M32566
M35746	Cross Channel (front)	" "	M32567
M24926	Cross Channel (middle)	" "	M28829
M27781	Deck Angle (longitudinal inner - right)	" "	M32568
M35567	Rail Skid (left)	" "	M32571
M35566	Rail Skid (right)	" "	M32569
M17877	Brake Lever Only	" "	M30943
F5575	End Plate (tool tray - right rear)	" "	M30899

F6578	Axle Pulley (split steel)	Should read - 10"	F2766
M27799	Side Board (lower right)	Should read	M32573
M27824	Brace (housing rear - diagonal) - Omit 1		
M32068	EXTENSION LIFT HANDLE (complete - right)	" "	M32575
M27813	EXTENSION LIFT HANDLE (complete - left)	" "	M32579
M6472	Handle Clip - Omit		
M26839	Throttle Lever	Should read	M30969
M26840	Timer Control Lever	" "	M30970
Add:	2 Reinforcing Strip (lift handle top)		M32577
	2 Reinforcing Strip (lift handle bottom)		M32578
	1 Brace (housing rear diagonal)		M32572

S2-E-2-11			
M26838	Safety Rail (rear)	Should read	M32670
Add:	1 Draw Bar		M32669
	1 U-Bolt (draw bar)		M22852
	4 Loops (windshield straps)		F3393

S2-E-2-12			
F6575	Endless Cord Belt	Should read 4x95"	F3045
F6578	Axle Pulley (split steel)	Should read - 10"	F2766

S2-E-2-13			
Changes same as S2-E-2-5, and in addition:			
M25496	Draw Bar - Omit		
M22852	U-Bolt (draw bar) - Omit		

S2-E-2-14			
Changes same as S2-E-2-7 except omit windshield parts, also:			
F5484	Oiler - Omit		
F5235	Grease Cup - Omit		
Add:	5 Grease Fitting		F5158
	1 Grease Fitting		F4252
	1 Grease Gun		F4125

S2-E-2-15			
Use idler parts as listed for group 3 cars. Other changes same as S2-E-2-3 except:			
Add:	1 Rubber Bushing		10069
	1 FUEL FILTER Complete		F6588
	1 Bowl (filter)		F7815
	1 Gasket (filter bowl)		F7875

S2-E-3-2			
PH-39	Spark Plug Pipe	Should read	A995
QM-37A	Overflow Pipe (water jacket)	Should read	A997
M7677D	16" x 1/4" DEMOUNTABLE WHEEL	" "	M34712D
M11410	Hub only (taper bored)	" "	M34713
M8509	INSULATION SET - Omit		
M8510	Insulating Sleeve	Should read	M34692
F5484	Oiler - Omit		
F5235	Grease Cup - Omit		
M28532	End Plate (tool tray - right rear)	Should read	M30899
M28533	End Plate (tool tray - left rear)	" "	M30900
M26838	Safety Rail (rear)	" "	M34715
M27809	Safety Rail (front)	" "	M34718
M27810	Saddle (front safety rail) - Omit		
M28931	Windshield Post Holder - Omit		
M27826	Battery Box	Should read	M35444

M28542	Support Strap - Omit	
Add:	1 Grease Fitting	F4252
	5 Grease Fitting	F5158
	1 Support Angle (safety rail - right rear)	M30901
	1 Support Angle (safety rail - left rear)	M30902
	2 Spacer Sleeve	M30903
	2 Spacer	M17316
	2 Cap Screw 3/8" x 1" SAE	M35540
	2 Castle Nut 3/8" SAE	F2493
	1 Center Safety Rail	M34722
	2 Spacer (battery box)	M35445
	1 Grease Gun	F4125
	1 Gong - 8"	F3626
	1 Mounting Board (gong)	M27453

S2-E-3-3

Changes same as S2-E-2-2 except use idler parts for group 3 cars. Rail sweeps changed to 46364, see accessory section for parts, also:

M4447	Insulating Washer - Omit 1	
Add:	1 Steel Washer	M4458

S2-E-3-5

Changes same as S2-E-2-5

S2-E-3-6

M34591	Fuel Pipe - Omit	
M35062	FLEXIBLE FUEL LINE (and parts) - Omit	
F7506	Clip (fuel line)	Should read M22863
Add:	1 Flexible Fuel Line - 40" (with fittings)	M29242
	1 Connector	F1709

S2-E-3-7

Changes same as S2-E-2-8

S2-E-3-8

F6575	Endless Cord Belt	Should read 4x95" F3645
F6578	Axle Pulley (8" split steel)	Should read - 10" F2766

S2-E-3-10

F1081	Dry Cell - Omit	
M2314	Connector (battery) - Omit	
Add:	1 Battery (hot shot)	F2512

S2-E-3-12

Changes same as S2-E-2-10 except:

QB-203	WATER JACKET COMPLETE (and parts) - Omit	
Add:	Condenser Equipment A1003, for parts see accessories section	

S2-E-3-13

Changes same as S2-E-2-9

S2-E-3-14

M26838	Safety Rail (rear)	Should read M32670
M27802	Side Board (upper left)	" " M35186
M27800	Side Board (lower left)	" " M35187
M27826	Battery Box	" " M35188
M21926	Bottom Liner (battery box)	" " M21932
M21835	Side Liner (battery box)	" " 21194
M12336	End Liner (battery box)	" " M11217
M12337	End Liner (battery box)	" " M11217

M21929	Spacer (above batteries) - Omit	
Add:	1 Draw Bar	M3266
	1 U-Bolt (draw bar)	M2285
	4 Loops (windshield straps)	F339
	1 Bottom Board (battery box)	M1121
	1 Partition (battery box)	M1122
	1 Clamp Bolt (dry cells)	M1122

S2-E-3-15

Penn. R. R. Special - Write for parts list

S2-E-3-16

United Fruit Special - Write for parts list

S2-E-4-1

Changes same as S2-E-2-2 except use idler parts for group 4 cars and rail sweeps 46364. See page 50 for rail sweep parts, also:

M4447	Insulating Washer - Omit 1	
Add:	1 Steel Washer	M445

S2-E-4-2

Changes same as S2-E-2-10 except:

QB-203	WATER JACKET COMPLETE (and parts) - Omit	
M36700	Brake Lever	Should read M3678
F7978	Endless Cord Belt	Should read 4x96" F3644
Add:	Condenser Equipment A1003, for parts see accessories section,	

S2-E-4-3

Changes same as S2-E-2-9 except:

F7979	Timer Lever Indicating Plate	Should read F925
-------	--	----------------------------

S2-E-4-5

F5484	Oiler - Omit	
F5235	Grease Cup - Omit	
Add:	5 Grease Fitting	F5154
	1 Grease Fitting	F4252
	1 Grease Gun	F4125

S2-E-4-6

Changes same as S2-E-2-5, and in addition:

M22269	Seat Support (front)	Should read 4207
M29157	Hook With Plate	" " 4088

S2-E-4-8

Changes same as S2-E-3-2 except omit changes to rear end plates and front safety rail. Also:

M26838	Safety Rail - rear	Should read M35081
M32068	EXTENSION LIFT HANDLE - R.	" " 44857
M27813	EXTENSION LIFT HANDLE - L.	" " 44858
F3434	Screw	" " F3511
F7760	Lock Nut	" " F4600
Add:	1 Center Safety Railing	M3422

S2-E-4-9

F7978	Endless Cord Belt	Should read 4x95" F3645
-------	-----------------------------	-----------------------------------

S2-E-4-11

Changes same as S2-E-2-8

S2-E-4-12

Changes same as S2-E-2-10 except omit change to throttle and timer levers, also:

M28532	Tool Tray End (rt. rear)	Should read	M30899
M28538	Tool Tray End (left rear)	" "	M30900
M36700	Brake Lever	" "	M36788
F7978	Endless Cord Belt	Should read 4x95"	F3645
M26838	Safety Rail (front)	Should read	M32401
M27809	Safety Rail (rear)	" "	M32404
M32269	Seat Support (front)	" "	42074
M29157	Hook With Plate	" "	40888

QB-203 WATER JACKET COMPLETE (and parts) - Omit
 Add: Condenser Equipment A1003, for parts see accessories section

1	Safety Rail Support (front)	M32400
1	" " (rt. rear)	M30901
1	" " (left rear)	M30902
2	Spacer Sleeve - 9/16"	M30903
2	Spacer - 1/4"	M17316

S2-E-4-13

F4726	Pipe Plug	Should read	F5235
M34410	FUEL STRAINER	Should read	F6583
F7876	Strainer Bowl	" "	F7815
F7877	Gasket (strainer bowl)	" "	F7875
F1745	ELBOW CONNECTOR - Omit		
M8669N	Drive Axle	Should read	M35672N
M16098N	DIFFERENTIAL AXLE (and parts) - Omit		
M7677D	16 x 4" DEMOUNTABLE WHEEL - Omit		
M11405	16 x 4" Demountable Tire only - Omit		
M27772	Axle Brg. Sill - rt.	Should read	38089
M27778	Axle Brg. Sill - left	" "	38090
M24018	Lift Pipe	" "	38091
M25496	Draw Bar	" "	38094
M22852	U-Bolt	" "	38095
M30243	Tool Tray End - rt. front	" "	38096
M30244	Tool Tray End - left front	" "	38098
M27812	End Plate Angle (front upper)	" "	38100
M27801	Side Board (upper right)	" "	37336
M27802	Side Board (upper left)	" "	37337
M29152	Guide (lift handle end) - Omit front 2		
M26838	Safety Rail - rear	Should read	38101
M27809	Safety Rail - front	Should read	38104

Add: M28587 Spacer - Omit

1	Shut-off Valve	F2764
1	Loose Axle (one piece)	M34772N
1	16 x 5/16" DEMOUNTABLE WHEEL (str. bored - loose)	M9689D
1	Wheel Hub only (str. bored loose - with oiler F3596)	M12322
1	Bronze Bushing (loose wheel)	M11809
1	Washer (loose wheel)	M34774
3	16 x 5/16" DEMOUNTABLE WHEEL (taper bored)	M9688D
4	16 x 5/16" Demountable Tire only	M11404
2	Spacer (side board)	37338
1	Guide (lift handle - rt. front)	37339
1	Guide (lift handle - left front)	37341
1	Side Panel (right)	37344
1	Side Panel (left)	37345
2	Side Panel Clip (front)	37342
2	Side Panel Clip (rear)	37343

S2-E-4-15

M26838	Safety Rail (rear)	Should read	M35089
Add:	2 Spacer Sleeve	" "	M30908

S2-E-4-16

M7677D	16 x 4" DEMOUNTABLE WHEEL	Should read (non-ins.)	M7678D
M11410	Wheel Hub only	Should read	M11411
M8509	INSULATION SET (and parts) - Omit		
F5235	Grease Cup	Should read Grease Fitting	F4252
F5484	Oiler	" " " "	F5158
Add:	1 Grease Gun	" "	F4125

S2-E-4-17

F6578	Axle Pulley - Omit		
M7556	Bushing (axle pulley) - Omit		
Add:	1 Axle Pulley - blade type		M37040

S2-E-4-18

M7677D	16 x 4" DEMOUNTABLE WHEEL	Should read 16 x 5/16"	M9688D
M11405	16 x 4" Demountable Tire	" " 16 x 5/16"	M11404
F7978	4 x 9 1/2" Endless Cord Belt	Should read 4 x 95"	F3645
F6578	8" Axle Pulley	Should read 10"	F2766

S2-E-4-19

M30243	Tool Tray End (right front)	Should read	37892
M30244	Tool Tray End (left front)	" "	37893
M27812	End Plate Angle - Omit		
M26838	Safety Rail (rear)	Should read	37898
M27809	Safety Rail (front)	" "	37899
M27810	Saddle (safety rail) - Omit		
Add:	1 End Plate Angle (left)		37895
	1 End Plate Angle (right)		37896
	2 Spacer (deck end)		37897
	1 Center Pipe (welded)		37902

S2-E-4-20

M26838	Safety Rail (rear)	Should read	M32670
M27802	Side Board (upper left)	" "	M35186
M27800	Side Board (upper right)	" "	M36187
M27826	Battery Box	" "	M35188
M36871	Insulating Liner (bottom)	" "	21195
M12335	Insulating Liner (side)	" "	21194
M36867	Insulating Liner (side)	" "	21194
M12336	Insulating Liner (end)	" "	M11217
F1081	Dry Cell - Omit		
M2814	Connector (battery) - Omit		
M36866	Spacer Block (coil)	Should read	39863
M36865	Spacer (batteries)	" "	39862
Add:	1 Draw Bar		M32669
	1 U-Bolt (draw bar)		M22852

S2-E-4-21

See Bulletin 202 for magneto parts, magneto drive parts, and magneto instructions. Omit sections of this Bulletin 441 referring to battery ignition, timers, timer control, and timer wiping block and bolt.

M7677D	16 x 4" DEMOUNTABLE WHEEL	Should read 16 x 5/16"	M9688D
M11405	16 x 4" Demountable Tire	" " 16 x 5/16"	M11404
A776	PACKING SLEEVE WITH RINGS	Should read	One
QB-15L	Spacing Collar	" "	One
Add:	1 PACKING SLEEVE WITH RINGS		A781
	1 Crankshaft Gear		A780

(Continued on next page)

1	SIDE BEARING & MAGNETO SHAFT ASSEM.	A792
1	Side Bearing (magneto side)	A793
1	Spark Plug Wire	M6011
1	Support Bracket (bell crank)	M27982
1	Bell Crank	M22991
1	Spacer	M27983
1	Control Rod (lever to bell crank)	M36651
1	Control Rod (magneto to bell crank)	M36652
1	Tape "FORWARD"	M11227
1	Tape "REVERSE"	M8304

S2-E-4-22

Changes same as S2-E-2-10 except omit change to throttle and timer levers, also:

QB-203	WATER JACKET COMPLETE (and parts) - Omit	
M36700	Brake Lever	Should read M36788
F7978	Endless Cord Belt	Should read 4x95" F3645
M26838	Safety Rail (rear)	Should read M35089
Add:	Condenser Equipment A1008, for parts see accessories section.	

S2-E-4-23

M7677D	16 x 4" DEMOUNTABLE WHEEL	Should read 16x5/16" M9688D
M11405	16 x 4" Demountable Tire only	Should read 16x5/16" M11404

S2-E-4-24

M35746	Cross Channel - front	Should read 41742
M24926	Cross Channel - middle	" " 41746
M27775	Cross Channel - rear	" " 41747
M28534	Support Angle (foot board - left rear)	" " 41749
M28536	Support Angle (foot board - rt. rear)	" " 41751
M27267	Bracket (foot board) - Omit	
46268	STEP PLATE - right - Omit	
45234	STEP PLATE - left - Omit	
M27792	Engine Sill - right	Should read M32367
M25496	Drawbar	" " M26294
M22852	U-Bolt - Omit	
M35566	Rail Skid - right	Should read M28530
M35567	Rail Skid - left	" " M28530
M24939	Lunch Bucket Tr	" " M26301
M36637	Starting Crank	" " M36851
QBA-B	ENGINE - Complete	" " QBA-B-7

QB-203	WATER JACKET COMPLETE (and parts) - Omit	
A935	Muffler Pipe	Should read - Exhaust Pipe 41766
F7978	Endless Cord Belt	Should read 4x95" F3645
F6578	Pulley - 8"	Should read - 10" F2766
M30243	Tool Tray End - Omit	
M30244	Tool Tray End - Omit	
M27812	End Plate Angle - Omit	
M28931	Windshield Post Holder - Omit	
M29157	Hook With Plate - Omit	
M26838	Safety Rail - rear - Omit	
M27809	Safety Rail - front - Omit	
M27810	Saddle (front safety rail) - Omit	
M23587	Spacer - Omit	
M15066	FUEL TANK	Should read M15921
M27808	Strap (fuel tank support)	" " 41795
M27807	Strap (fuel tank upper) - Omit	
M27825	Spacer (tool box)	Should read 41800

M4447	Insulating Washer - Omit 1	
Add:	1 CONDENSER EQUIPMENT (parts on p. 54)	A1003
1	Steel Washer	M4459
3	Bracket (foot board - right)	41753
3	Bracket (foot board - left)	41754
1	Spacer (drawbar)	M26295
1	Clamp (exhaust pipe)	41769
1	Rear Step Bracket (right)	41767
1	Rear Step Bracket (left)	41766
1	Rear Step Board (top)	41762
2	Rear Step Bottom Support	41763
1	Rear Step Board (bottom)	41764
1	Strap (bottom step)	41765
1	Board (housing rear extension)	41770
1	Extension Bracket (right)	41771
1	Extension Bracket (left)	41772
1	Side Seat Support Strip - long	42919
1	Side Seat Support Strip - short	42920
1	Side Seat Board	M26827
1	Side Step Center Support (right)	41773
1	Side Step Center Support (left)	41778
3	Side Step Bracket	41782
3	Side Step Bracket	41785
2	Side Step Board	41787
1	Wheel Guard Support Angle (right front)	41788
1	Wheel Guard Support Angle (left front)	41789
1	Wheel Guard Support Angle (right rear)	41790
1	Wheel Guard Support Angle (left rear)	41791
1	Wheel Guard (right)	41792
1	Wheel Guard (left)	41793
2	Side Step Hook	41794
1	Rail Sweep Body - right	41805
1	Rail Sweep Body - left	41809
2	Rail Sweep Blade (belting)	M23950
2	Rail Sweep Clamp Strap	M23957
2	Hinge Bolt (sweep)	M18502
2	Spring (sweep)	M13335
2	Slotted Nut	F2545
2	Spacer	M17302

S2-E-4-25

M36637	Starting Crank	Should read M36853
M26838	Safety Rail - rear	" " M35089
Add:	2 Spacer	" " M30903

S2-E-4-26

M24939	Lunch Bucket Tray - Omit	
A935	Muffler Pipe - Omit	
M27797	Seat Support - middle	Should read 42086
M27802	Side Board - upper left	" " 37440
F7349	Wiring Assembly	" " F7351
M4528	SPARK PLUG WIRE	" " 39078
F3613	FILLER CAP (fuel tank)	" " F8524
M36325	Support Angle	" " 39077
M37085	Elbow	" " 42087
F4025	Hose - 2" diameter - Omit	
Add:	1 Carburetor Back Fire Arrestor	F8684
2	Hose Clamp	F5193
6"	Hose - 2 1/2" diameter	F5205
1	Muffler Support - front	42078
1	Muffler Support - rear	42079
1	Flame Baffle Support	42080

1 Exhaust Pipe (with elbow)	42081
1 Elbow - 1½" x 45 degree	F3279
1 Nipple - 1½" x 3½"	F3176
1 Street Elbow - 1½" x 45 degree	F8685
1 Muffler	F5301
2 U-Bolt	42083
3" Flexible Tubing	F6653
1 Flame Baffle	F8522
2 U-Bolt	42084
1 Tubing	E41429
1 Spark Arrestor	F8523
1 U-Bolt	42085

S2-E-4-27

Changes same as S2-E-4-21 except omit wheel changes.

S2-E-4-28

QB-203 WATER JACKET COMPLETE (and parts) - Omit	
M27267 Bracket (step plate support). Should read . . .	M26797
45234 Step Plate (left) " "	45246
M25496 Draw Bar " "	M26294
M22852 U-Bolt (drawbar) - Omit 1	
M35567 Rail Skid (left) " "	M28530
M35566 Rail Skid (right) " "	M28530
M27792 Engine Sill (right - long) " "	M32367
M27775 Cross Channel (rear) " "	M32368
M24939 Lunch Bucket Tray (complete) " "	M26301
M4447 Insulating Washer - Omit 1	
F7978 Endless Cord Belt - 4 x 9½" Should read 4x95"	F3645
F6578 Axle Pulley - Should read - 10"	F2766
Add: 1 Steel Washer	M4458
2 Carrier Plate (water keg)	45247
1 Spacer (drawbar)	M26295
1 Water Keg Carrier	M26305
1 CONDENSER EQUIPMENT (parts on p. 54)	A1003
1 RAIL SWEEPS (parts on p. 50)	45364

S2-E-4-29

Changes same as S2-E-4-13, and in addition:

F7978 Endless Cord Belt - 4 x 9½" Should read 4x95"	F3645
F6578 Axle Pulley - 8" Should read - 10"	F2766
M8510 Insulating Sleeve " "	M32959
M29156 Seat Board " "	44001
M27804 Support Angle (left) " "	44000
M27805 Support Angle (right) " "	43999
M84682 Fuel Pipe " "	PH-91
Add: 2" Fuel Pipe (specify length)	F1689

S2-E-4-30

Changes same as S2-E-4-18, and in addition:

F5484 Oil Cup Should read-Grease Cup	F2325
--	-------

S2-E-4-31

Changes same as S2-E-2-10 except for timer and throttle levers and add the following:

QB-203 WATER JACKET COMPLETE (and parts) - Omit	
M36700 Brake Lever Should read	M36788
F7978 Endless Cord Belt Should read 4x95"	F3645
M26888 Safety Rail (rear) Should read	M36089

M29157 Hook with Plate Should read	40888
Add: 1 Center Safety Rail (front)	40891
1 Center Safety Rail (rear)	40894
1 CONDENSER EQUIPMENT (parts on p. 54)	A1003

S2-E-4-32

M27775 Cross Channel (rear) Should read	M32368
M27792 Engine Sill (right) " "	M32367
M25496 Drawbar " "	M26294
M24939 Lunch Bucket Tray " "	M26301
Add: 1 Spacer (drawbar)	M26295
1 Safety Rail (center)	43672
1 U-Bolt	M31906
1 U-Bolt	49071

S2-E-4-33

QB-203 WATER JACKET (and parts) - Omit	
Add: 1 CONDENSER GROUP (parts on page 54)	A1003

S2-E-4-34

Changes same as S2-E-4-19, and in addition:

M24939 Lunch Bucket Tray Should read	44522
M25496 Drawbar " "	44530
M22852 U-Bolt (drawbar) - Omit	
Add: 1 Support (drawbar - left)	44525
1 Support (drawbar - right)	44526
1 Support Angle	44527
2 Spacer 4"	44528
2 Bolt ½ x 2½"	44529
1 Bolt ½ x 1½"	44531

S2-E-4-35

Changes same as S2-E-4-19, and in addition:

M24939 Lunch Bucket Tray Should read	44984
M25496 Drawbar " "	44989
M22852 U-Bolt (drawbar) " "	44973
Add: 1 Saddle (drawbar to lift pipe)	M24974
1 Spacer 1/8" (saddle)	44972
2 Bolt ½ x 2" (use F2645 nut)	44989

S2-E-4-37

Changes same as S2-E-4-29 and S2-E-4-13 except:

M30243 Tool Tray End (rt. front) Should read	45654
M30244 Tool Tray End (left front) " "	45656
M26838 Safety Rail (rear) " "	45058
M27809 Safety Rail (front) " "	45660

S2-E-4-40

M27772 Axle Bearing Sill (right) Should read	46428
M27773 Axle Bearing Sill (left) " "	46429
46268 STEP PLATE RIGHT " " (only)	46430
45234 Step Plate (left) " "	46431
M28762 TOGGLE ARM (with yoke) " "	M29230
M16727 Body (only) " "	M33222
M28763 TOGGLE ARM (with eye bolt) " "	M29229
M16727 Body (only) " "	M33222
M17193 BRAKE SHOE WITH LINER - Omit	
M16397 Liner - Omit	
M16735 Brake Shoe (only) Should read	46432

(Continued on next page)

M24801	Pivot Stud	Should read	49228
M18930	Hanger Pin	" "	M25108
F7978	Endless Cord Belt	Should read 4x95"	F2645
F6578	Axle Pulley	Should read - 10"	F2766
41340	Belt Plate	Should read	41341
Add:	4 Strap (brake shoe)		39970

S2-E-4-41

M36637	Starting Crank	Should read	M27520
M35511	Holder - with loop	" "	M35571A
M24837	Holder - Plain	" "	M28348
M29663	Adjusting Rod	" "	M13873
M37085	Elbow (air cleaner)	" "	47977
F4026	Hose	Should read - 2"	F4026
M28540	Throttle Rod	Should read	M35213
M34040	Timer Rod	" "	89052
M7677D	16 x 4" DEM. WHEEL	Should read 20 x 5/16"	M9982D
M11405	16 x 4" Dem Tire (only)	Should read 20 x 5/16"	M11401
F6578	Axle Pulley	Should read - 10"	F2766
M28763	TOGGLE ARM	Should read	M34378
M16727	Body only	" "	M34376
M28762	TOGGLE ARM	" "	M34375
M16727	Body only	" "	M34376
M17193	BRAKE SHOE WITH LINER	" "	M17594
M16735	Brake Shoe (block only)	" "	M17595
M16397	Liner	" "	M16098
M24801	Pivot Stud	" "	M34379
M19529	Shoe Hanger	" "	M19255
M18930	Hanger Pin	" "	M25108
M27771	FRAME AND DECK - Omit Symbol		
M27772	Axle Bearing Sill (right)	Should read	M34346
M27773	Axle Bearing Sill (left)	" "	M34347
M27792	Engine Sill (long)	" "	47968
M27793	Engine Sill (short)	" "	47969
M28532	End Plate (right rear)	" "	M34351
M28533	End Plate (left rear)	" "	M34352
46268	STEP PLATE RIGHT	Omit	
M28534	Support Angle (left)	Should read 4	M34356
M28536	Support Angle (right)	Should read 4	M34355
45234	Step Plate (left) - Omit		
M27267	Bracket - Omit		
M35566	Rail Skid (right)	Should read	M34370
M35567	Rail Skid (left)	" "	M34374
M33621	HOUSING - Omit Symbol		
M27809	Safety Rail (front)	Should read	M34406
M27798	Seat Support (rear)	" "	47970
M27799	Side Board (lower right)	" "	47971
M26820	Lever Guide	" "	39079
M17316	Spacer	Should read 4	M17316
M32068	LIFT HANDLE (right)	Should read	M29153
M27815	SEAT TOP	" "	47972
M27817	Side Angle (right)	" "	M34709
M27819	Side Angle (left)	" "	M34710
M27820	Seat Board (right)	" "	47973
M27822	Seat Board (middle right front)	" "	47975
M27823	Seat Board (middle left)	" "	47976
M27821	Seat Board (left)	" "	47974
Add:	1 Deck End Angle R.R.		M34353
	1 Deck End Angle L.R.		M34354
	1 Support (starting crank bearing)		M34359
	1 Guard Board (right)		M34360
	1 Guard Board (left)		M34361
	9 Foot Board		M34362

S2-E-4-42

F5484	Oil Cup	Should read--Grease Fitting	F514
F6235	Grease Cup	Should read--Grease Fitting	F425
M36637	Starting Crank	Should read	M3684
F7979	Timer Lever Indicating Plate	" "	M3580
Add:	1 Instruction Plate - Run		M3580
	1 Grease Gun		F412

S2-E-4-43

See bulletin 559 for Eisemann magneto parts, magneto drive parts and instructions. Omit sections of this bulletin 441 referring to battery ignition, timers, timer control and timer wiping block and bolt, also:

M7677D	16 x 4" DEMOUNTABLE WHEEL	Should read 16x5/16"	M9688
M11405	16 x 4" Dem. Tire only	Should read 16x5/16"	M1140
M26820	Lever Guide	Should read	M305
A776	PACKING SLEEVE WITH RINGS	" "	On
QB-15L	Spacing Collar	" "	On

S2-E-4-44

Changes same as S2-E-4-41 except:

M7677D	16 x 4" DEMOUNTABLE WHEEL	Should read 20x4"	M4440
M11405	16 x 4" Dem. Tire only	Should read 20x4"	M1140

S2-E-4-45

Changes same as S2-E-4-42, and in addition:

M30243	Tool Tray End (right front)	Should read	M3206
M30244	Tool Tray End (left front)	" "	M3206
M27809	Safety Rail (front)	" "	M3206
Add:	1 Support Angle (left front)		M3228
	1 Support Angle (right front)		M3206

S2-E-4-46

Changes same as S2-E-4-1, and in addition:

M27776	Deck (right)	Should read	5019
M27777	Deck (left)	" "	5019

S2-E-4-47

Changes same as S2-E-4-40, and in addition:

M27794	Engine Base Strip	Should read	5013
M32617	Bolt (engine base)	Should read 7/16 x 2 3/16"	5013

S2-E-4-48

Changes same as S2-E-4-35 omitting reference to S2-E-4-19, also:

M30243	Tool Tray End (right front)	Should read	M3206
M30244	Tool Tray End (left front)	" "	M3206
M32269	Seat Support (front)	" "	5124
M27798	Seat Support (rear)	" "	5125
M27824	Brace	" "	5016
M28931	Windshield Post Holder - Omit		
M26838	Safety Rail (rear) - Omit		
M27809	Safety Rail (front) - Omit		
M27810	Saddle (safety rail) - Omit		
Add:	1 Cross Angle (rear)		5016
	1 Center Safety Railing		5017
	2 Spacer Strip		5125
	2 Spacer Tube		M3090

S2-E-4-49

Changes same as S2-E-4-40, and in addition:

M27794	Engine Base Strip	Should read . . .	50181
M32617	Bolt (engine base)	Should read - 7/16 x 2-1/2"	44543
M24763A	CENTER BEARING	Should read . . .	48716
F5484	Oiler	Should read - Grease Fitting	F5158
M24764A	AXLE BEARING	Should read . . .	48718
F5484	Oiler	Should read - Grease Fitting	F5158
M16098N	DIFFERENTIAL AXLE	Should read . . .	M35798N
F5235	Grease Cup	Should read - Grease Fitting	F4262

S2-E-4-50

See bulletin 559 for Bisemann magneto parts, magneto drive parts and instructions. Omit sections of this bulletin 441 referring to battery ignition, timers, timer control and timer wiping block and bolt, also:

M36637	Starting Crank	Should read . . .	M27520
M36639	Bearing Catch (on foot board)	" " . . .	M34359
45235	Spacer - Omit		
45236	Spacer - Omit		
M35511	Holder (starting crank - with loop)	Should read . . .	M35571A
M24837	Holder (starting crank - plain)	" " . . .	M28948
M29663	Adjusting Rod	" " . . .	M13373
M37086	Elbow (below air cleaner)	" " . . .	47977
M28540	Throttle Rod	" " . . .	M35213
M16098N	DIFFERENTIAL AXLE (and parts) - Omit		
M7677D	16 x 1/4" DEM. WHEEL	Should read - Three - 20 x 1/4"	M4440D
M11410	Hub only	Should read . . .	Three
M11405	16 x 1/4" Dem. Tire only	Should read - 20 x 1/4"	M11402
M8509	INSULATION SET (and parts)	Should read . . .	Three
F6578	Axle Pulley 8"	Should read - 10"	F2766
M28768	TOGGLE ARM	" " . . .	M34378
M16727	Body (toggle arm)	" " . . .	M34376
M28762	TOGGLE ARM	" " . . .	M34376
M16727	Body (toggle arm)	" " . . .	M34376
M17193	BRAKE SHOE WITH LINER	" " . . .	M17594
M16735	Brake Shoe (block only)	" " . . .	M17595
M16397	Liner	" " . . .	M16096
M24801	Pivot Stud	" " . . .	M34379
M19529	Shoe Hanger	" " . . .	M19255
M18930	Hanger Pin (brake shoe)	" " . . .	M25108
M27771	FRAME AND DECK - Omit Symbol		
M27772	Axle Bearing Sill (right)	Should read . . .	M34346
M27773	Axle Bearing Sill (left)	" " . . .	M34347
M27792	Engine Sill (right - long)	" " . . .	47988
M27793	Engine Sill (left - short)	" " . . .	47969
M28582	End Plate (tool tray - R.R.)	" " . . .	M34351
M28583	End Plate (tool tray - L.R.)	" " . . .	M34352
46268	STEP PLATE (right - and parts) - Omit		
45284	Step Plate - Omit		
M28584	Support Angle (step plate - L.R.)	Should read . . .	M34354
M28586	Support Angle (step plate - R.R.)	" " . . .	M34353
M27267	Bracket (step plate) - Omit		
M35566	Rail Skid (with brace - right)	Should read . . .	M34370
M35567	Rail Skid (with brace - left)	" " . . .	M34374
QBA-B	ENGINE Complete	" " . . .	QBA-C-3
M27809	Safety Rail (front)	" " . . .	M34406
M38621	HOUSING (assembled) - Omit Symbol		
M27798	Seat Support (rear - angle iron)	Should read . . .	47970
M27799	Side Board (lower right)	" " . . .	47971
M17316	Spacer (safety rail to frame)	Should read - Four	M28357

M32068	EXTENSION LIFT HANDLE	Should read . . .	M2915
M27815	SEAT TOP	" " . . .	4797
M27817	Side Angle (right)	" " . . .	M3470
M27819	Side Angle (left)	" " . . .	M3471
M27820	Seat Board (right)	" " . . .	4797
M27822	Seat Board (middle right - front)	" " . . .	4797
M27823	Seat Board (middle left)	" " . . .	4797
M27821	Seat Board (left)	" " . . .	4797
M35511	Holder (starting crank - loop)	" " . . .	M35571
M24837	Holder (starting crank - plain)	" " . . .	M28948

Add:	1 Loose Axle 1-7/16"		M3500
	1 20 x 1/4" DEM. WHEEL WITH LOOSE WHEEL HUB		65497
	1 HUB COMPLETE		M1140
	1 Casing		M1609
	1 Sleeve (bearing)		M1609
	2 Bearing		M324
	1 Cover		M1609
	1 Gasket (cover)		M1609
	6 Cap Screw 5/16 x 3/4"		F164
	4 Support Angle (foot board - right)		M3437
	4 Support Angle (foot board - left)		M3435
	2 Foot Board		M3437
	1 Guard Board - right		M3435
	1 Guard Board - left		M3435

S2-E-4-51

Changes same as S2-E-4-9 and S2-E-4-33.

S2-E-4-52

M8669N	DRIVE AXLE	Should read . . .	43114
M16098N	DIFFERENTIAL AXLE	" " . . .	42976
F2703	Axle End Nut	" " . . .	F882
M7677D	16 x 1/4" DEM. WHEEL	Should read - 16 x 5/16"	M3149
M11410	Hub only	Should read . . .	M1345
M11405	16 x 1/4 Dem. Tire only	Should read - 16 x 5/16"	M1140
M8509	INSULATION SET - Omit Symbol		
M8510	Insulating Sleeve	Should read . . .	4297
M27794	Engine Base Strip	Should read - Base Plate	5018
M32617	Cap Screw 7/16 x 2-1/16"	Should read - 7/16 x 2-3/16"	5013
F7978	Endless Cord Belt 4 x 91-1/2"	Should read - 4 x 95"	F964
F6578	Axle Pulley 8 x 5"	Should read - 10 x 5"	F276
41340	Belt Plate	Should read . . .	4134

S2-E-4-53

QH-208	CYLINDER HEAD WITH PIPE - Omit		
PH-39	Spark Plug Pipe	Should read . . .	A99
QH-208-1	WATER JACKET WITH OVERFLOW - Omit		
QM-37-A	Overflow Pipe	Should read . . .	A99
M24763A	CENTER BEARING 1-7/16"	" " . . .	6041
F5484	Oiler	Should read - Grease Fitting	F515
M24764A	MAIN AXLE BEARING 1-7/16"	Should read . . .	6041
F5484	Oiler	Should read - Grease Fitting	F515
M7677D	16 x 1/4 DEM. WHEEL	Should read - 16 x 5/16"	M34938
M11410	Hub only	Should read . . .	M3471
M11405	16 x 1/4 Dem. Tire	Should read - 16 x 5/16"	M1140
M26838	Safety Rail (rear)	Should read . . .	M3090
M27810	Saddle (front safety rail)	" " . . .	M2683
M28931	Windshield Post Holder - Omit		
M17316	Spacer (safety rail to frame)	Should read . . .	M3090
Add:	1 Center Pipe		M3422
	2 Spacer (center pipe)		4524
	1 8" Foot Gong		M3704
	1 Grease Gun		F412