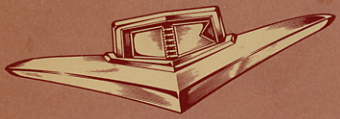
1952 and 1953
KAISER MODELS



SHOP MANUAL

supplement

KAISER-FRAZER EXPORT CORPORATION
WILLOW RUN, MICHIGAN, U.S.A.

KAISER
APPROVED
SERVICE
FRAZER

SHOP MANUAL SUPPLEMENT

for

1952 & 1953 KAISER

MODELS

K-521 • K-522

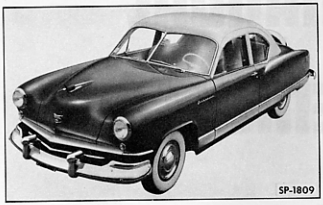
K-530 • K-531 • K-532

(FOR USE WITH THE 1951 KAISER AND FRAZER SHOP MANUAL)

KAISER-FRAZER EXPORT CORPORATION

WILLOW RUN, MICHIGAN, U.S.A.

2M—March, 1953 Litho in U.S.A. Form X-19534-E



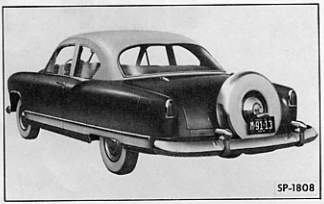


Fig. 1 and 2—The 1952 Kaiser Deluxe Virginian 2-Door Sedan Shown with "Continental" Spare Tire Mount

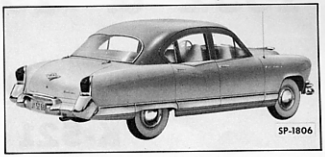


Fig. 3 and 4—The 1952 Kaiser Manhattan 4-Door Sedan

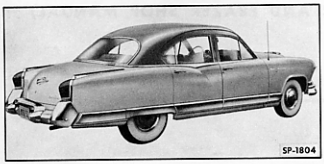


Fig. 5 and 6—The 1953 Kaiser Manhattan 4-Door Sedan

MODEL NUMBER DESIGNATION

YEAR	NAME	MODEL	SERIAL NUMBER
1952	Virginian	K-521	1,000,001 thru 1,199,999
	Virginian Deluxe	K-522	1,000,001 thru 1,199,999
	Deluxe	K-521	1,200,000 and up
	Manhattan	K-522	1,200,000 and up
1953	Deluxe	K-531	001,001 and up
	Manhattan	K-532	001,001 and up
	"Hardtop" Dragon	K-530	001,001 and up

INTRODUCTION

This supplement covers only those design features on 1952 and 1953 Kaiser models which differ from 1951 Kaiser models as described in the 1951 Kaiser and Frazer Shop Manual. These two manuals, when used together, provide complete information, data and procedures relative to vehicle maintenance, overhaul and repair for 1952 and 1953 Kaiser automobiles. In addition, service information is given on improvements incorporated in 1951 Kaiser models after the 1951 manual was published. For information applicable to the Hydra-Matic transmission, refer to the Hydra-Matic Shop Manual and Supplement.

TABLE OF CONTENTS

ENGINE TUNE-UP

Tune-up procedures for the 1952 and 1953 Kaiser models remain the same as those presented in the 1951 Shop Manual with the exception of the minor changes covered in this section.

SPARK PLUGS

The spark plugs specified for current production vehicles are Auto-Lite A-7 or equivalent. These plugs have the proper heat range for most areas and they give satisfactory performance with present day fuels.

The correct gap for either the Auto-Lite A-7 plug or the formerly specified A-5 spark plug (or their equivalent) should be .030 inch.

IGNITION COIL

The Delco-Remy high ratio ignition coil used on 1952 and 1953 Kaiser models has a current consumption (hot) of 5 amperes at 6.3 volts with the engine off and the distributor points closed. When the engine is idling, current draw should be 1.3 amperes. A coil with internal failure in either the primary of secondary winding cannot be repaired. A new coil should be installed.

VALVE TAPPET ADJUSTMENT

Following is the recommended order for adjusting tappets at room temperature. Tappets are counted consecutively starting from the front of the engine.

TAPPET ADJUSTMENT SEQUENCE

With Valves	No. 1 and 3 fully raised	–	Adjust Tappets	No. 10 and 12
With Valves	No. 8 and 9 fully raised	–	Adjust Tappets	No. 4 and 5
With Valves	No. 2 and 6 fully raised	–	Adjust Tappets	No. 7 and 11
With Valves	No. 10 and 12 fully raised	–	Adjust Tappets	No. 1 and 3
With Valves	No. 4 and 5 fully raised	–	Adjust Tappets	No. 8 and 9
With Valves	No. 7 and 11 fully raised	–	Adjust Tappets	No. 2 and 6

ENGINE REPAIR

Improved performance has been built into the 1953 Kaiser "Supersonic" engine (Fig. 8) by increasing the torque to 200 foot-pounds at 1800 R.P.M. and brake horsepower rating to 118 at 3650 R.P.M., without sacrificing fuel economy. This has been accomplished by a new manifold assembly, carburetor, and exhaust assembly, which improves the flow of fuel-air mixture to the combustion chambers, and minimizes back pressure in the elimination of exhaust gases. A more detailed explanation of the changes in the carburetor and the exhaust system will be found in their respective sections in this manual. The complete procedure for checking cylinder bores, fitting pistons and selecting rings is covered in this section to clarify information in previous manuals.

CYLINDER BORES

The cylinder bores may be reconditioned by honing or reboring. A special tool is used to determine the

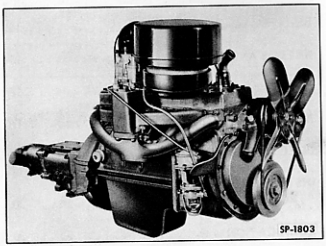


Fig. 7–1952 Engine

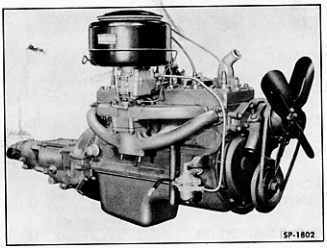


Fig. 8–1953 Engine

out-of-round or taper condition of the cylinder and necessity for reconditioning.

Both honing and reboring of the cylinders must be closely coordinated with fitting the pistons to maintain specified tolerances.

Reboring the cylinders may be accomplished only when adequate facilities and trained or experienced mechanics are available. The engine must be removed from the vehicle and mounted in a suitable level holding fixture.

The amount of material to be removed is determined from the original diameter of the cylinder bores (3.3125-3.3145 inches diameter) plus the amount of oversize in diameter of the oversize pistons to be fitted. Pistons are available in .010, .020, .025, .030, .040, .050 and .060 inch oversizes. The largest cylinder bore will determine the oversize to which all cylinders must be rebored, since the size and weight of all pistons must be uniform to maintain proper engine balance.

Measure the cylinder diameters by making measurements both parallel to and at right angles to crankshaft over entire piston travel and at bottom of cylinder using Cylinder Bore Checking Gauge C-119 (Fig. 9). Proceed as follows:

Fig. 9–Checking Cylinder Bore

1. If bores are scored; if out-of-round exceeds .005 of an inch; if diameters differ more than .005 of an inch; or if taper exceeds .015 of an inch on diameter, it is generally recommended that cylinders be reconditioned by reboring and honing to the next oversize using new pistons of the proper size. NOTE: If reboring is performed, all cylinders must be rebored to the same oversize allowing .0015 of an inch for final honing. All cylinder bore diameters must be within .002 of an inch after reconditioning.

2. If bore measurements are within the above limits, but indicate hollows or waviness, cylinders should be honed with 250 grit stones (Fig. 10). Pump hone up and down in cylinder while it is rotating to produce a satin-finish, diamond cross-hatched pattern approximately 30° with horizontal. Hone only enough to correct waviness.

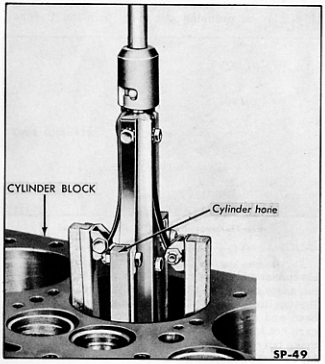


Fig. 10–Honing Cylinder Bore

3. If cylinder bore correction is unnecessary, break the glaze on cylinder walls with a hone with 250 grit stones or with a suitable deglazing tool. Operate the hone or deglazer to obtain diamond cross-hatched pattern same as above.

4. During all operations, protect crankshaft journals and other engine parts from abrasive dust with oil soaked rags. Regardless of type of correction on cylinder walls, wash out bores thoroughly afterwards, using warm water and soap and apply a light coat of clean engine oil. If cylinders have been rebored or honed heavily, measure cylinder diameters again to assure proper selection of piston size.

PISTONS, RINGS AND CONNECTING RODS

The pistons and connecting rods were removed from the engine as assemblies. If cylinders were rebored, new oversized pistons and rings will have to be installed as determined at the time cylinders were rebored.

Use standard size pistons in cylinder bores up to .009 inch oversize (measured at bottom of bore), .010

oversize in bores .010 to .019 oversize, .020 in bores .020 to .024 oversize, .025 in bores .025 to .029 oversize, .030 in bores .030 to .039 oversize, .040 in bores .040 to .049 oversize, .050 in bores .050 to .059 oversize and .060 in bores .060 inch oversize and up.

If cylinders were not rebored, disassemble pistons and rods by removing piston pin retaining rings (Fig. 11) and pressing out pin. Keep the parts of

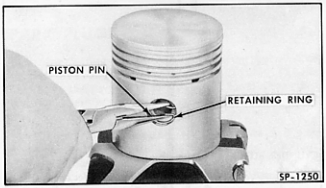


Fig. 11–Removing Piston Pin Retaining Rings

each assembly separate so they may be installed in the same cylinder. Remove rings from piston using Piston Ring Tool C-259. Clean carbon from piston head and clean ring grooves and drain holes. Use care not to scrape metal from side of grooves nor to make burrs on ring groove surfaces. Check pistons for broken lands, cracks, or worn grooves. Replace piston if necessary using same size as old piston. Proceed as follows:

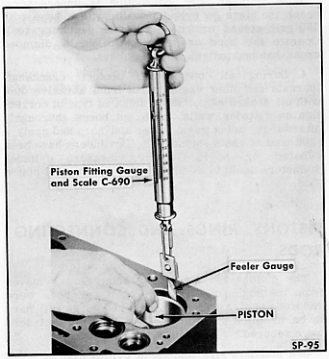


Fig. 12–Fitting Piston in Cylinder Bore

1. Check fit of each piston to cylinder bore, when block and pistons are clean and dry and at approximately 70° F, by using Piston Fitting Gauge and Scale C-690 as shown in Fig. 12. Use a .004 inch thickness gauge (1/2 inch wide) if old pistons are to be used. When fitting new pistons, use .0015 inch gauge. The piston is fitted upside down in the block to facilitate the operation, and the gauge must extend the full length of piston on the thrust side (side opposite slot in piston skirt). Scale should register 5-10 pounds pull to remove thickness gauge from between cylinder wall and piston. Excessive pull indicates need for a slightly smaller piston or additional honing of cylinder. Insufficient pull indicates need for fitting a larger piston.

2. Check piston pin fit. The piston pin should be a "push fit" in the piston after the piston has been heated in water to approximately 160° F. If the pin is loose, a new pin must be used. It may be necessary to use a .003 or a .005 inch oversize pin and ream the piston with Piston Pin Reamer DD-82-2 (Fig. 13) to obtain a push fit.

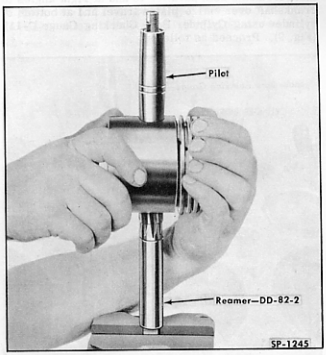


Fig. 13–Reaming Piston Pin Bore

3. After checking the piston pin fit in the piston, check its fit in the connecting rod bushing. This should be a light "press fit." If the pin is too tight, ream the inside diameter of the bushing with Piston Pin Reamer DD-82-2 (Fig. 14) to .8593-.8595 inch for a standard pin or, if an oversize pin is used, ream the bushing .003 to .005 inch oversize.

If the pin is too loose, install a new bushing and ream to proper size. The new bushing must be installed with the oil hole aligned to the oil hole in the connecting rod. The bushing must protrude 1/64 inch on each side of the connecting rod.

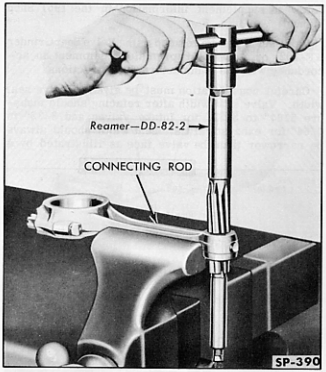


Fig. 14—Reaming Connecting Rod Bushing

4. Check and correct connecting rod alignment, using Connecting Rod Aligning Fixture C-841 in accordance with instructions furnished with the fixture (Fig. 15).

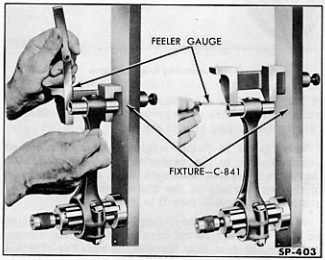


Fig. 15—Checking Connecting Rod Alignment

5. Assemble piston and rod by heating the piston to approximately 160° F. Place the connecting rod in the piston, making sure the oil spurt hole in the rod is on the opposite side from the T slot in the piston. Install the piston pin, pushing it in by hand, and install the pin retaining rings.

6. Place piston and rod assembly in Fixture C-841 and check alignment of the assembly as shown in Fig. 16. Follow instructions furnished with the fixture.

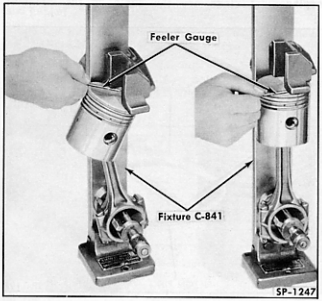


Fig. 16—Checking Piston and Connecting Rod Alignment

7. Check width of piston ring grooves using a new piston ring and a feeler gauge as shown in Fig. 17.

RING TO GROOVE CLEARANCES

Upper Compression Ring	.002" – .004"
Lower Compression Ring	.003" – .007"
Oil Control Rings	.006" – .010"

Insert feeler gauge between ring and piston to bottom of groove. Replace piston if ring grooves are not within allowable tolerances.

If a feeler gauge larger than .006 inch can be inserted 1/16 of an inch between piston and upper compression ring, groove is worn excessively bell-mouthed and piston should be replaced.

8. Check piston ring end gap by placing compression ring in cylinder bore below ring travel using head of a piston to push ring in squarely. Minimum end gap must be .007 inch for all rings. If less, place ring in a jig and file ends to obtain minimum gap. Excessive filing or ring gap over .045 inch indicates improper size rings were selected. Proper rings in cylinders rebored to usual oversizes should have a .007 to .020 inch end gap without filing.

The "Piston Ring Application Chart" below should be used to select piston rings of proper size for

installation in the oversize cylinder bores indicated.

9. Install new ring set using either production replacement rings or oil control rings. Production replacement rings are the same as the original

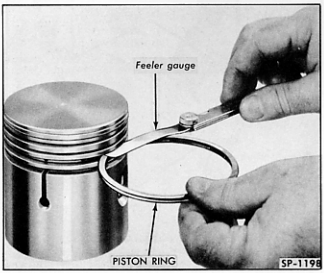


Fig. 17–Checking Piston Ring Side Clearance

factory installed rings while oil control ring sets have different components, notably the oil ring expander. Follow instructions on ring envelopes for

PISTON RING APPLICATION CHART

Actual Ring Size*	Ring Oversize Range*	For Best Fit Use in Cyl. Bore Oversize	Ring Gap Fitting
Std.	Std. to .009	Std. to .009	No fitting necessary
.020	.010 to .029	.010 to .019	File if necessary to min. .007 gap
		.020 to .024	No fitting necessary
.030	.030 to .039	.025 to .029	File if necessary to min. .007 gap
		.030 to .034	No fitting necessary
.040	.040 to .049	.035 to .039	File if necessary to min. .007 gap
		.040 to .049	No fitting necessary
.060	.050 to .069	.500 to .590	File if necessary to min. .007 gap
		.060 to .069	No fitting necessary

*Parts Lists indicate different size rings by one of these two methods.

proper installation. Use Piston Ring Tool C-259 to install rings on pistons (Fig. 18). Do not expand rings more than necessary to install, also be careful not to burr the piston with ends of rings. Make sure upper compression ring is installed in groove with correct side up. Position rings so gaps are staggered according to instructions on the envelope.

VALVE SEAT REFACING

The proper method of valve seat refacing when using Valve Seat Relief Counterboring Set KF-58 and 70° Valve Seat Narrowing Cutter KF-63 is outlined below to supplement information in the 1951 Shop Manual.

Valve seats can be refaced using Valve Seat Grinder KF-102, or equivalent precision equipment in accordance with the manufacturer's instructions.

Careful consideration must be given to valve seat width. Valve seat width after refacing should measure 5/64" to 3/32" for intake valves and 3/32" to 7/64" for exhaust valves. Seat width should always be narrower than the valve face as illustrated by A

Fig. 18–Installing Rings on Piston

in Fig. 19. Wide valve seats tend to collect carbon while narrow valve seats prevent the valve head from rapidly dissipating heat to the block.

Valve ports in Kaiser engines are not machined perpendicular to the centerline of the crankshaft, therefore the valve head sets at an angle in relation to the top surface of the block when properly assembled in its guide (see B in Fig. 19).

When a valve seat has been refaced several times or where it must be cut deeply for adequate reconditioning, the seat may become too wide for efficient operation and/or a high shoulder may be left in the block. In such cases, Valve Seat Relief Counterboring Set KF-58 must be used to recut the counterbore in the surface of the block and narrow the valve seat (shown at C in Fig. 19). This operation is performed only after the valve seats have been refaced and then only when necessary.

If the counterbore in the block is satisfactory and the valve is setting high on the valve seat, 70° Valve Seat Narrowing Cutter KF-63 may be used with KF-58 pilot to increase the inside diameter of the

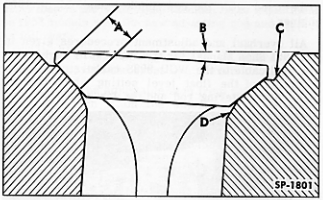


Fig. 19—Properly Refaced Valve Seat

valve port thereby reducing the seat width from the lower inside edge of the seat as shown by D in Fig. 19. In some cases, it is necessary to use this tool to obtain proper concentricity of the diameter at the lower inside edge of the seat, or to clean up any roughness in the valve port that is evident just below the valve seat.

If the seat width extends both above and below the valve face, both KF-58 and KF-63 may be used to obtain the specified seat width and properly seat the valve. CAUTION: When using any of the value seat cutting tools, care must be taken to remove only the minimum amount of metal necessary to satisfactorily accomplish that phase of the operation being performed. Excessive removal of material may damage the block beyond repair by factory approved methods, or nullify the reconditioning work that had been accomplished on the valve seat up to that point.

CYLINDER HEAD INSTALLATION

The following procedure should be used when installing a cylinder head and gasket to the engine block:

1. Check the cylinder head for distortion. If it is distorted more than 1/32 inch over its full length, replace the head.

2. Blow all dirt or carbon out of the blind tapped bolt holes in the cylinder block before cylinder head and gasket are installed.

3. Cut the hexagonal heads from two cylinder head bolts (Part No. 207354) and file a screw driver slot in the cut end.

4. Install the two modified bolts as guide pins in the cylinder block holes numbered 14 and 30 in Fig. 20.

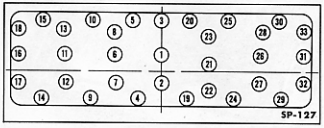


Fig. 20—Cylinder Head Bolt Tightening Sequence

5. Place the head gasket over the guide pins and on the cylinder block, then place the cylinder head over the guide pins.

6. Coat the threads of the cylinder head bolts with "KF Perfect Seal Gasket Paste."

7. Install the cylinder head bolts and tighten them down snugly in the sequence indicated in Fig. 20. Complete tightening of the head bolts by using a torque wrench to tighten the bolts in the proper sequence to the specified torque of 30-35 foot-pounds.

8. Start the engine and let it warm up to normal operating temperature, then tighten the head bolts to 30-35 foot-pounds torque in the proper sequence.

9. Check all head bolts and the head gasket for leaks.

10. It is advisable to check the tightness of the head bolts again after 500 to 600 miles of normal operation.

FUEL

FUEL TANK ASSEMBLY

The fuel tank gauge unit on the 1953 Kaiser is assembled to the fuel tank with a new copper washer and a polychlorprene gasket. The polychlorprene gasket can be replaced if a leak develops around the fuel tank gauge unit. The copper washer is assembled inside the tank and should never need to be replaced.

FUEL LINES

In early 1953 production, the front fuel line was moved from the front face of the number 1 frame crossmember to a position on the air scoop support as shown in Fig. 21. In this position, the air flow will have a greater cooling effect on the fuel in the line. A straight piece of tubing of the proper length is supplied for replacement purposes. The fuel line being removed should be used as a pattern to form the new line to be installed.

FUEL PUMP AND FILTER

A double diaphragm (vacuum booster) fuel pump was used on 1952 and 1953 Kaiser vehicles equipped with vacuum windshield wiper motors. All

others, which were equipped with electric wiper motors, use a single diaphragm fuel pump.

Carter fuel pump models M808SA (with vacuum booster) and M998S (without vacuum booster) were used on some 1952 models. The remainder of the 1952 models and the 1953 models use AC fuel pump

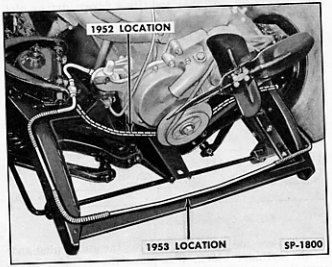


Fig. 21—Front Fuel Line Location

types 9616 (with vacuum booster) and 9617 (without vacuum booster).

The AC fuel pumps have an integral fuel filter which should be cleaned at regular intervals of 2,000 miles or more if necessary. The filter can be removed from the pump by removing the retaining bolt and bowl from the bottom of the pump. Wash the filter and bowl with clean kerosene or other suitable solvent. If the filter element is damaged or badly gummed, a new element can be installed. Make sure the gaskets around the bowl edge and the retaining bolt are in good condition before installing the filter to the pump.

The Carter fuel pumps do not have an internal filter, therefore a separate fuel filter is installed in the fuel line to the carburetor. At intervals of 2,000 miles or more often if necessary, this filter should be disassembled for cleaning by loosening the screw at the bottom of the bowl. Swing the bail wire to one side and remove the bowl and filter element. If the element cannot be washed clean in kerosene or other suitable solvent, it should be replaced by a new element. Make sure the gasket is in good condition before assembling the unit. Also make sure the spring between the bowl and element is in proper position.

CARBURETOR

The Carter dual downdraft WGD-781S carburetor which was used on 1951 models was also used on 1952 models. A new carburetor, Carter model WGD-999S is used on 1953 models (see Fig. 22). The WGD-999S is a single float, dual downdraft carburetor designed to be used with the new intake manifold on 1953 engines.

All overhaul and adjustment procedures given in the 1951 Shop Manual for the WGD-781S carburetor are applicable to the WGD-999S carburetor with the exception of the float level setting which is 9/32 inch. The metering rod and the low speed jet also

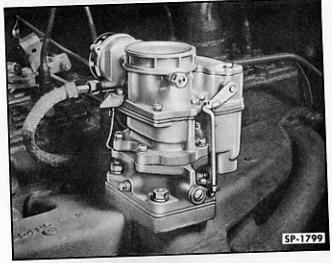


Fig. 22—WGD-999S Carburetor

differ from the WGD-781S carburetor, however this does not affect the repair procedures.

ACCELERATOR LINKAGE

The carburetor throttle extension shaft and the bracket mounted on the engine were changed for 1953 models due to the lower installed position of the carburetor.

During early 1953 production, another accelerator linkage change was made by replacing the turnbuckle type adjusting rod with a single rod and an adjustable stud at one end (Fig. 23). The accelerator linkage adjustment on 1952 and early 1953 models with the turnbuckle type adjusting rod remains the same as

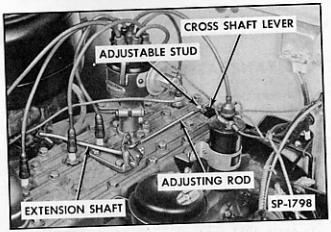


Fig. 23—1953 Accelerator Linkage

described in the 1951 Shop Manual. The adjustment on 1953 models with the new adjusting rod and stud is as follows:

1. Remove the spring clip that attaches the adjustable stud to the cross shaft lever.

2. Remove the adjustable stud from the cross shaft lever and turn it on the adjusting rod until the throttle valve will be fully open just before the accelerator pedal touches the floor mat or the overdrive kickdown switch. Install the stud and spring clip to the cross shaft lever.

3. Check the linkage action to make certain the throttle arm is in the fully closed position when pressure is removed from the accelerator pedal.

CARBURETOR AIR CLEANER

The oil bath type air cleaner used on 1953 vehicles is mounted directly over the carburetor. It is held on by a clamp which is tightened around the carburetor air horn.

The air cleaner should be removed, disassembled (as shown in Fig. 24), cleaned and refilled with SAE 40 or 50 engine oil in temperatures above +32° F., or SAE 20 engine oil in temperatures below +32° F.

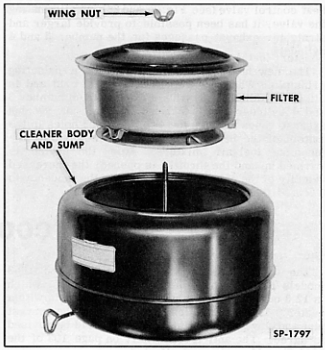


Fig. 24–1953 Kaiser Air Cleaner

EXHAUST

The exhaust system on 1953 models has been changed considerably through the use of the new manifolds and a larger tail pipe. These changes reduce the exhaust back pressure thereby contributing to better engine performance and increased power.

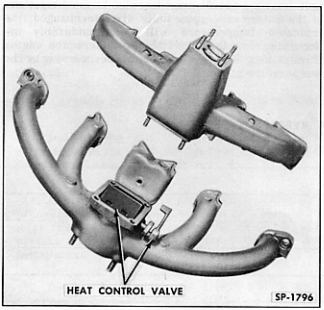


Fig. 25–1952 Intake and Exhaust Manifold

INTAKE AND EXHAUST MANIFOLDS

The intake and exhaust manifolds on 1953 engines are of a new design that eliminates the thermostatic

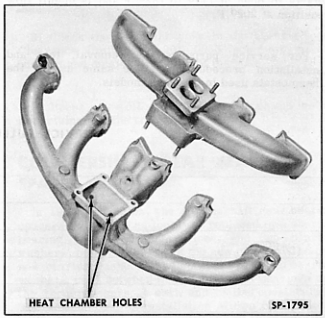


Fig. 26–1953 Intake and Exhaust Manifold

heat control valve (see Fig. 25 and 26). In eliminating the valve, it has been possible to provide larger and straighter exhaust passages for the number 3 and 4 cylinders.

The new heat chamber operates on a pulsating principle. When the engine is started cold and is allowed to idle, the rhythmic exhaust from number 3 and 4 cylinders will "pulse" a portion of the hot exhaust gases through the two machined holes in the bottom of the heat chamber to aid in warming the incoming fuel-air mixture. After the engine is warmed up and the throttle is opened, the increased velocity of the exhaust gases reduces the tendency to pulse, thereby reducing heat to the heat chamber.

Due to differences in the attachment, the 1953 manifolds are not interchangeable with manifolds on previous models.

MUFFLER AND TAIL PIPE

The diameter of the tail pipe has been increased to 2 inches on 1953 models. On previous models it was 1-3/4 inches diameter. The muffler and the attaching parts for the tail pipe have, likewise, been changed to accommodate the larger tail pipe.

COOLING

The cooling system capacity on 1952 and 1953 models remains the same as on 1951 models, which is 12.5 quarts without a heater and 13.5 quarts with a heater. These capacities are correct to the nearest pint and any previous information should be revised to agree. The anti-freeze chart on page 103 of the 1951 Shop Manual is not affected.

THERMOSTAT

A new butterfly valve type thermostat is installed as factory equipment on 1953 Kaiser models. This thermostat (stamped "160") starts to open at 157° to 162° F and provides full flow at 182° F.

A higher temperature thermostat (stamped "180") is available for use only with water or an ethylene glycol solution anti-freeze. The valve in this unit starts to open at 177° to 182° F and is in full flow position at 202° F.

For service purposes the removal, test and installation procedures are the same as for the thermostats used in previous models.

TEMPERATURE GAUGE

The temperature gauge consists of two units, a sending unit, mounted in the left rear side of the cylinder head and the gauge unit in the instrument cluster. Early 1953 and previous models were equipped with a 212° F engine unit and a gauge with white markings. Later 1953 models use a 240° F engine unit (stamped "240" on the hex machined surface) and a gauge with white and red markings.

When the engine is running at normal operating temperatures, the new gauge (together with the new engine unit) will indicate in the center portion of the dial. The temperature at which water boils in a 4 pound pressure system is indicated by the red-marking on the new gauge.

NOTE: It is very important that the old gauge (white markings only) and the old engine unit (not marked "240") always be used together. The new gauge (red and white markings) and the new engine unit (marked "240") must likewise be used together. If the gauges and engine units are interchanged, the indicated temperature will be considerably inaccurate, making it possible to damage the engine through loss of coolant without proper warning by the temperature gauge.

SERVICE BULLETIN REFERENCE

CLUTCH

The clutch on 1952 and 1953 DeLuxe and Manhattan models is the same type as used on previous models, however the clutch linkage has been modified to reduce rattles and to prevent dirt and moisture from entering the pedal shaft and cross shaft bearings.

The clutch pedal shaft has been increased in length slightly to provide clearance for the dust seals and retainers on each side of the two pedal shaft bearings (see Fig. 27). The inner seals are held in place by a spring on the pedal shaft while the outer seals are held in place by the clutch pedal and the bellcrank. NOTE: When assembling the clutch pedal shaft, apply a liberal coat of wheel bearing grease to the bearings.

Another new feature is the support for the outer end of the clutch cross shaft. This consists of a plate suspended from a bracket on the frame side rail (Fig. 27). The plate is manufactured with a nylon, self-lubricating bearing for the cross shaft. When damaged, the plate and nylon bearing must be replaced as an assembly. Dust seals are installed on the clutch cross shaft at each side of the nylon bearing.

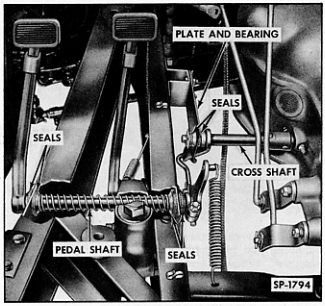


Fig. 27–Clutch Linkage

TRANSMISSION AND OVERDRIVE

MAINSHAFT BEARING RETAINER BUSHING

In addition to the information in the 1951 Shop Manual, the following steps must be given careful attention when replacing the bushing in the rear end of the mainshaft bearing retainer on standard transmissions:

1. Remove the bearing retainer assembly from the transmission, clean off all dirt and remove the rear oil seal.

2. Carefully press or drive out the old bushing.

3. Position the new bushing in the bore of the retainer with the split in the bushing at least 90° from the oil slot in the retainer.

4. Use a suitable driver sleeve and an arbor press to insert the bushing squarely into the retainer until it is flush with the outer end of the bore. Make certain that the bushing is not "cocked" during installation.

5. Ream the bushing to 1.4995-1.5005 inches diameter to correct the slight distortion which takes place in the bushing during installation.

6. Clean the bushing and bearing retainer thoroughly.

7. Inspect the outside diameter of the universal joint slip yoke which contacts the bushing for scoring or grooving. If either condition is evident, clean up the roughness with crocus cloth or replace the yoke.

8. Check the fit of the yoke in the bushing bore. Clearance limits are .001-.0035 inch between the bushing and outside diameter of the yoke.

9. Press a new oil seal into the retainer and install the retainer on the transmission.

COUNTERSHAFT GEAR BEARING SPACER

In 1952 production, the countershaft gear bearing spacer (5-7/32 inches long) was replaced by a shorter bearing spacer (5 inches long) and two bearing washers, one at each end of the new spacer. The two new bearing washers are identical to the two bearing washers used between the countershaft bearings and the thrustwashers at each end of the countershaft. The new method of installation allows both sets of roller bearings to operate with a washer at each end.

PROPELLER SHAFT AND UNIVERSAL JOINTS

The propeller shaft and universal joints on 1952 and 1953 Kaiser automobiles are the same as used on 1951 vehicles. The information contained in the 1951 Shop Manual therefore is applicable to the later models.

When attempting to discover the cause of propeller shaft vibration, the entire shaft should be cleaned and carefully looked over for any deposits of foreign material or dings. If it is in good condition, the shaft should be checked for run-out with a dial indicator. The propeller shaft run-out must not exceed .012 inch total indicator reading.

CHASSIS SUSPENSION

During 1953 production, the front suspension and shock absorbers were modified to improve front end stability of the vehicle.

The upper suspension arm, inner pivot, inner pivot bushings and inner pivot attaching bolts have been changed. Since the attaching bolts fasten into the frame, the frame likewise has different size holes for attaching the upper arm inner pivots.

The lower suspension arm remains the same except for the addition of a hole for attaching the new shock absorber lower mounting bracket.

The shock absorbers were improved during 1952 production by changing the valving to obtain a slower rebound. During 1953 production, the shock absorbers were again improved (identifiable by a smaller diameter) and the lower attachment on the front shock absorbers was changed. The lower end of the shock absorber is attached to a mounting bracket which is bolted to the lower suspension arm (see Fig. 28).

During 1952 production, a larger and softer rear spring bumper was installed to more effectively cushion spring bottoming that may occur when driving over "chuck holes" in the road.

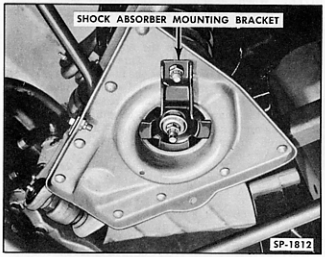


Fig. 28–Front Shock Absorber Lower Attachment

CHASSIS SUSPENSION REPAIRS

When repairing or replacing any of the front suspension components, it is important to check new parts with the old parts being replaced to make sure the proper part is being used. The smaller diameter shock absorbers used on 1953 models, however, can be installed on a vehicle which was originally equipped with early type provided they are installed in pairs (both front shocks or both rear shocks) or in complete seats (all four shocks).

The procedures for replacement of chassis suspension units is essentially the same as detailed in the 1951 Shop Manual. A new Upper Control Arm Gauge KF-122 is now specified for proper installation of the upper control arm inner pivot bushings. This gauge can also be used for Henry J models, therefore it replaces Gauge KF-7 previously recommended.

REAR AXLE

AXLE SHAFT END-PLAY

During 1952 model production, the rear axle was changed by leaving .060 inch additional material in the outer end of the left hand axle housing, thereby eliminating the need for shims on the left side to properly locate the left axle shaft and center the thrust block in the differential. (Absence of shims on left hand side when the axle is dissassembled will identify it as a later type axle.)

All end-play adjustments on the new axle must be made at the right side of the axle. This necessitates mounting Dial Indicator W-102 (part of Gauge Set W-99) on the right hand brake support plate instead of on the left side as previously suggested.

REAR AXLE GEAR RATIOS

The standard rear axle gear ratios used in Kaiser

automobiles are selected as a result of research and experimentation. They have proven to be satisfactory for all reasonable variations of normal operating conditions. Factory installation of the various rear axle gear ratios in 1952 and 1953 Kaiser models is given in the chart below.

REAR AXLE GEAR RATIOS

Model	3.31:1	3.54:1	3.91:1	4.09:1	4.27:1	4.55:1
K-521 & K-522 Virginians	–	HYD	STD	STD	–	OD
K-521 DeLuxe	HYD	HYD	STD	STD	–	OD
K-522 Manhattan	HYD	HYD	STD	STD	–	OD
K-530 "Hardtop" Dragon	HYD	–	–	–	–	–
K-531 DeLuxe	HYD	–	STD	–	OD	OD
K-532 Manhattan	HYD	–	STD	–	OD	OD

STD Standard OD Overdrive HYD Hydra-Matic

PINION SETTING PROCEDURE

After a rear axle is disassembled for repairs or overhaul, the drive pinion must be checked for proper setting when it is installed in the axle housing. This is essential to obtain proper gear mesh and provide satisfactory performance of the rear axle after repairs.

The procedure for setting the pinion is outlined below to clarify previous information:

1. Estimate the amount of shims needed for the drive pinion by changing the old shim pack an amount equal to the difference between the etched markings on the old and the new pinions. Then install the drive pinion, bearings and shims in the axle housing. (This procedure is fully covered in the 1951 Shop Manual.)

2. Assemble the Dial Indicator, Indicator Mount, and Adapter (parts of Pinion and Ring Gear Guage Set W-99). Place them on the Guage Block (also part of W-99) with the finished surface of the adapter resting on top of the guage block and the dial indicator contact point resting on the "E" face of the guage block (Fig. 29). Adjust the indicator so the contact arm is compressed to about 1/2 its full travel, then set the dial face to zero. NOTE: The "E" face of the guage block should be used for setting pinions on all model 44 axles used in 1952 and 1953 vehicles.

3. Carefully assemble the dial indicator and adapter to the "C" clamp and place them on the pinion. NOTE: It is recommended that the dial setting be checked with the gauge block at this time to make sure it did not change when fixture was placed on the pinion.

4. Raise dial contact point with finger and rotate adapter until dial contact point rests in differential side bearing bore. Swing dial back and forth across bearing bore to obtain lowest reading. If pinion is shimmed properly, this reading should be zero for a standard pinion (pinion with no + or - marking). If the pinion is marked +2, the indicator should register "2" on the right side of zero (+.002"); if the pinion is marked -1, indicator should show "1" on the left side of zero (-.001"), etc.

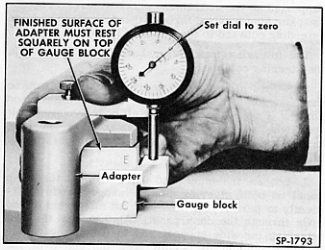


Fig. 29–Setting Pinion and Ring Gear Gauge

5. If dial indicator reading does not correspond with marking on pinion, the pinion shim packs must be changed the amount necessary to obtain a proper reading.

ASSEMBLE DIFFERENTIAL

When the rear axle differential is repaired, it should be carefully checked for proper clearances as it is being assembled. Proceed as follows:

1. Compare diameters of differential side gear hubs and bores in differential case. Difference should be .003-.006 inch. If clearance is excessive, replace both the case and the gears.

2. If clearance is correct, assemble differential gears, thrust washers, pinion shaft, thrust block, and lockpin in differential case. Position thrust block so ends face toward axle shafts.

3. If new differential parts (side gears, pinion gears and thrust washers) are used, there should be considerable drag on side gears after differential is assembled to allow for initial wear of new parts. If old parts are reinstalled, the clearance between side gear washer and differential case should not be over .008 inch.

4. Peen the case to hold the lockpin in place.

5. Continue with the assembly procedure in the 1951 Shop Manual.

STEERING

STEERING COLUMN ALIGNMENT

The 1952 and 1953 Kaiser steering column is supported at the instrument panel by three braces—two extending forward through the dash panel and one extending outward to the left hood hinge bolt.

The following procedure should be used to align the steering column:

1. Before aligning the steering column, examine the body for proper alignment on the chassis and correct if necessary. Inspect all body mounting bolt locations and replace any damaged or missing insulators. Tighten all body bolts to proper torque of 7 foot-pounds.

2. Loosen the inner and outer nuts at the dash panel on both steering column support rods sufficiently to permit free fore and aft movement of the rods through the dash panel. Also loosen the bolt attaching the side support rod to the clamp on the steering column to permit free movement of the column. While the steering column is being loosened notice any movement of the steering column at the instrument panel.

3. If the steering column is not centered in the instrument panel recess, loosen the bolts attaching the steering gear housing to the frame side rail and shift the steering gear housing to obtain vertical alignment of the steering column. Addition of steel washers or shims between the gear housing and the frame at either the forward or the rearward attaching bolts as necessary will cause the steering column to move sideways for alignment. Tighten the steering gear housing bolts to 30-40 foot-pounds torque.

4. After the steering column is in alignment with the instrument panel recess, tighten the two forward support rod nuts at the inner side of the dash panel finger tight against the panel, then tighten the nuts on the outer side of the dash panel.

5. Tighten the bolt attaching the side support rod to the clamp on the steering column, making sure the serrations in the parts interlock and hold the steering column in alignment.

STEERING GEAR

The steering gear was improved in 1953 production by the use of two needle bearings to support the pitman arm shaft and roller assembly in the housing. Two pressed in bushings were used on previous models. This change also necessitated slight changes in the steering gear housing and the pitman shaft and roller assembly.

BRAKES

The brake system on 1952 and 1953 models is essentially the same as on the previous models. Several minor changes have been made, however, such as the addition of a rear brake tube protective sleeve, new location of the rear tube, new attaching clips for the front brake tube, and improved guides for the hand brake rear cable.

None of these changes affect the service procedure as described in the 1951 Shop Manual.

WHEELS AND TIRES

TIRES

The 1952 and 1953 Kaisers are equipped with standard 6.70 x 15 tires or optional 7.10 x 15 tires except the K-530 "Hardtop" Dragons which all have 7.10 x 15 tires installed at the factory as special equipment. The tire pressure (cold) for all tires under normal load is 24 pounds, the same as specified for 1951 models.

WHEELS

Some K-530 "Hardtop" Dragon models are equipped with special wire wheels. The wheel and tire removal and installation procedures are the same as for the standard disc type wheels. The chrome finish on wire wheels should be cared for according to instructions in the "Body and Sheet Metal" section of this manual.

SPARE TIRE MOUNTING

The spare tire and wheel cover on 1953 models is held securely in place on the floor of the rear compartment by a bolt through the center of the cover (Fig. 30). The cover bolt is tightened into the end of the spare wheel hold down extension bolt. The wheel wrench can be used for removing both bolts.

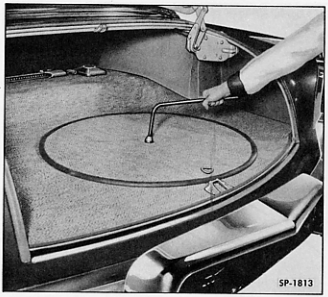


Fig. 30–Removing Spare Tire Cover

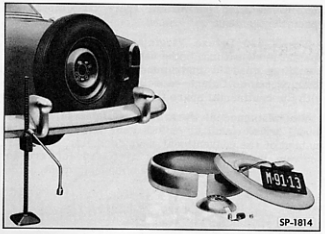


Fig. 31–Removing Continental Spare Tire

CONTINENTAL SPARE TIRE MOUNT

Some 1952 Kaiser "Virginians" were equipped with a factory installed spare tire and wheel assembly mounted outside the body, just forward of the rear bumper. The installation involves moving the rear bumper farther rearward by using bumper bracket extensions and installing new rear gravel deflectors, a tire support and tire carrier. A bracket and latch are installed on the deck lid and a new license plate and license lamp are installed on the tire carrier. The spare tire is mounted to the tire carrier and covered with a 2-piece metal cover. A latch allows the tire and carrier to swing to a horizontal position for access to the rear compartment. After the deck lid is closed, the tire is quickly latched into proper position. A lock is installed to assure against theft of the tire.

The continental spare tire is removed from the mounting as follows. (See Fig. 31.)

1. Remove the special hub cap by prying it off.
2. Remove the lock assembly attached to the lower tire carrier stud.
3. Remove the metal sidewall cover. NOTE: Do not strain or break the license lamp wire. If necessary, disconnect the wire from the body wiring harness at the connector provided.
4. Remove the metal outer tire cover.
5. Remove the nuts from the two upper tire carrier studs.
6. Remove the tire and wheel from the tire carrier.
7. To install the tire and wheel on the carrier, reverse the removal procedure.

FRAME

The 1952 and 1953 Kaiser vehicles use the same frame as the previous model with the exception of smaller attaching holes for the front suspension upper arms as described in the "Chassis Suspension" section of this manual. The attachment for the upper suspension arms was changed in early 1953 production, however, it may be necessary to use the newer frames as replacements for vehicles with the earlier type front suspension. In such cases, an adapter kit (Part No. 214337) must be used to attach the upper arm inner pivot to the frame. The kit consists of four spacers and four bolts.

BODY AND SHEET METAL

Many exterior and interior changes have been made in the 1952 and 1953 models. Only a few of the more prominent features are described in the paragraphs below. Any changes affecting the repair procedures given in the 1951 Shop Manual will be covered in this section.

1952 VIRGINIAN MODELS

The K-521 Special Virginian models featured a new black plastic and chrome hood ornament and the "Virginian" script chrome nameplate on the front fenders. The Virginians were available with a

factory installed continental spare tire mount as special equipment.

The K-522 Deluxe Virginian differed from the Special models through the use of wide rocker panel mouldings, padded instrument panel, and different interior trim. Deluxe models were also available with the continental spare tire mount.

Virginian models were also available in a utility model which features a lift gate and a tail gate instead of the conventional rear deck lid. The rear seat on these vehicles can be folded forward to increase the capacity of the rear compartment.

1952 DELUXE AND MANHATTAN MODELS

The K-521 Deluxe models differed from previous models through the use of an entirely new front bumper and grille (Fig. 32) as well as a new hood ornament, hood medallion, front fender nameplate, rear deck lid handle, deck lid lock, rear bumper and end caps, tail lights, one piece windshield and new interior and exterior trim and colors.

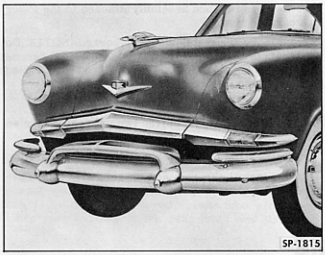


Fig. 32–1952 Deluxe and Manhattan Front End

The K-522 Manhattan models differ from the K-521 Deluxe models by the use of wide rocker panel mouldings, belt line mouldings, large wheel hub covers, padded instrument panel and different interior trim material and colors.

1953 MODELS

The K-531 Deluxe models are of the same basic body design as 1952 models, however, they feature a new hood ornament and headlight bezel (door) in the front. Crown mouldings have been added to the rear fenders and the deck lid hinges are the concealed type. New interior trim materials and colors are selected to harmonize with new exterior colors.

The K-532 Manhattan models are distinguished

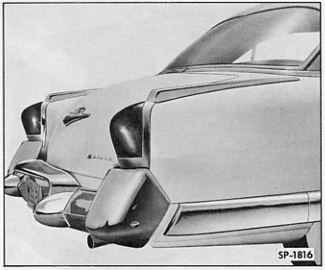


Fig. 33–1953 Manhattan Rear End

from the Deluxe models by the wider rocker panel mouldings, large wheel hub covers, belt mouldings (including the new rear belt moulding) and different interior trim materials (Fig. 34).

The K-530 "Hardtop" Dragon is identified by the vinyl sport topping and chrome drip rail mouldings. It also features gold plating on the hood ornament, hood medallion, deck lid handle, and name plates. A gold identification plate with the owners signature inscribed is available for installation on the glove box door after the selling dealer returns the Hardtop Kaiser Dragon Delivery Record to the factory. The interior of the "Hardtop" Dragon has all new trim materials and many distinctive features including

Fig. 34–1953 Manhattan Interior

center arm rests for both the front and rear seats which fold upward into the seat backs when desired.

A 4-door utility body style is built in both the Deluxe and Manhattan models. The utility vehicles

incorporate a lift gate and a tail gate which both open to provide access to the rear compartment of the vehicle. The rear seat can be folded forward to increase the capacity of the rear compartment.

WEATHERSEALING IMPROVEMENTS

During 1952 and 1953, several changes have been made to improve the weathersealing characteristics of the body. Only a few of the improvements are described below.

Hinge cover plates were installed over door hinges on the front body hinge pillar to provide a smooth surface for the door weatherstrip to seal against (Fig. 35).

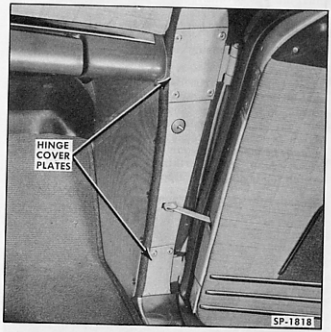


Fig. 35—Door Hinge Cover Plates

The front door ventilator installation was changed to improve mounting in the door. The vent division bar is attached at the belt to the door inner panel; at the top to the door window header; and at the lower end to a bracket between the inner and outer panel. The front end of the vent is also attached to the door inner panel. These changes increase the rigidity of the vent installation, and together with a modified vent weatherstrip, improve weathersealing at the vent window.

Door Weatherseal Replacement (2-Door Models)

To replace the one-piece door weatherseal on 2-door body styles, proceed as follows:

The door sealing has been improved on all doors by using a one-piece weatherseal which completely encircles the door. The procedures for installing new one-piece weatherseals on the doors of different models are given below.

1. Remove the old weatherseal and clean the surfaces on the door where the weatherseal was cemented.

2. Apply weatherstrip cement to the weatherseal and to the surfaces of the door where it is to be cemented. Follow the directions for using the weatherstrip cement.

3. Start installing the weatherseal at the door hinge pillar below the belt line as shown in Fig. 36.

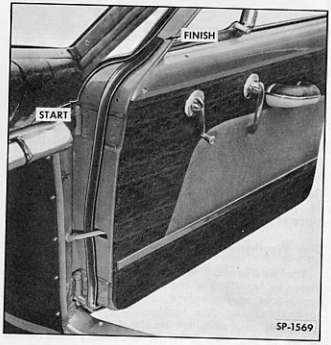


Fig. 36 Weatherseal Installation on Front Door Hinge Pillar

4. Install the seal upward, over the top of the door and against the outer panel flange. Do not stretch or pull the seal during installation.

5. Before installing the weatherseal down past the door lock, trim a portion off the cementing surface of the seal so it will fit the contour of the door (see Fig. 37). Apply cement to the weatherseal and press it into position.

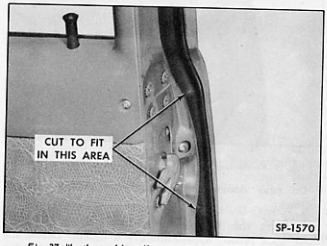


Fig. 37—Weatherseal Installation at Door Lock (2-Door Styles)

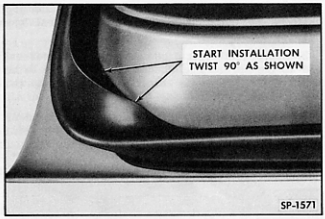


Fig. 38–Weatherseal at Corner of Door

6. At the lower front corner of the front door, the weatherseal must be twisted 90 degrees (Fig. 38) so the wide cementing surface of the seal will be flat against the door inner panel.

7. After the seal is twisted 90 degrees, route it to the outside of the door check strap as shown in Fig. 36. Make certain the end of the seal is positioned close to the other end where it overlaps.

Door Weatherseal Replacement (4-Door Models)

The weatherseal used on front doors of 4-door styles is installed in the same manner as described for 2-door styles except for the installation at the lock area. At this location, the weatherseal is cemented to a shoulder on the inner panel as shown in Fig. 39. It is not necessary to trim the seal.

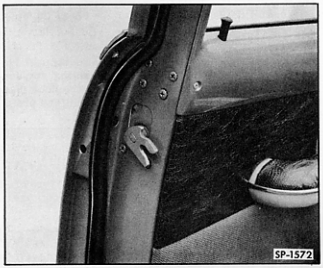


Fig. 39–Weatherseal Installed at Front Door Lock (4-Door Styles)

On rear doors, the weatherseal is installed as follows:

1. Start the installation of the seal at the rear door lock pillar approximately 8 inches below the lock (Fig. 40) and route the seal upward over the top

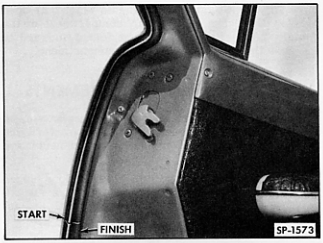


Fig. 40–Weatherseal Installation on Rear Door Lock Pillar

of the door, pressing it against the outer panel flange.

2. At the upper front corner of the door, twist the seal 90 degrees the same as done on the lower front corner on front doors (shown in Fig. 38). Then route the seal down the center of the door hinge pillar as shown in Fig. 41. Make certain that the seal is routed between the door check arm and the door panel. Also, make certain it misses the door jamb switch, on bodies so equipped.

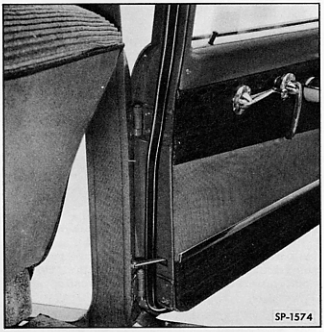


Fig. 41–Weatherseal Installation on Rear Door Hinge Pillar

3. At the lower front corner of the rear door, twist the seal 90 degrees (Fig. 38) so the seal may be cemented to both the bottom of the door and the outer panel flange. Route the seal along the bottom of the door and up along the lock pillar to meet the starting end of the seal. Make certain that both ends of the seal butt evenly and are cemented together.

WINDSHIELD REPLACEMENT

Whenever the windshield is broken and the cause is not known, the windshield opening must be checked before a new glass is installed and corrected if necessary. The procedure below outlines the steps involved for replacing the one-piece curved windshield used in 1952 and 1953 models.

Windshield Removal

The windshield glass, rubber channel and reveal mouldings are removed from the body as an assembly. Proceed as follows:

1. Remove windshield wiper arms and blades.

2. Mask off instrument panel and windshield frame to prevent scratching the finished surfaces.

3. Remove rear view mirror mounting bracket and inside garnish moulding.

4. Use a flat wooden paddle inserted between weatherstrip and body to loosen weatherstrip around inside and outside of windshield opening.

5. Press against inside surface of windshield to force glass and weatherstrip from body. Start at outer corners and work toward center.

6. Remove windshield assembly from body and remove glass from weatherstrip.

Check Windshield Opening

To check the windshield opening, it is necessary to make six 9/32 inch spacers (approximately 1/2 inch square), four 5/16 inch shims (approximately one inch square), and one 5/16 inch gauge (5/16 inch square and approximately 6 inches long). All of these pieces should be made out of hard wood or plastic. Use the pieces and a new windshield glass to check the windshield opening in the following manner:

1. Visually check pinch weld flange around the opening. If a wavy condition exists, straighten pinchweld flange by tapping it on one side while holding a block against the opposite side.

2. Use a thin quick drying cement to temporarily attach the six spacers to the pinchweld flange as shown in Fig. 42. These spacers are to hold the windshield glass in its normal position which is 9/32 inch away from pinchweld flange.

3. Place windshield glass in windshield opening with the four 5/16 inch shims positioned as shown in Fig. 42 to hold glass properly in opening.

NOTE: Make sure the shims are not resting on any high spots.

4. Slide the 5/16 inch gauge all the way round edges of glass. If gauge binds, windshield opening must be reworked to obtain sufficient clearance. Remove the spacers which were cemented to pinchweld flange.

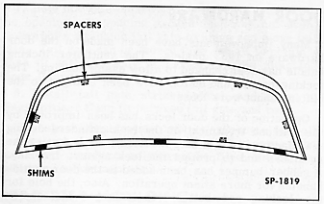


Fig. 42–Checking Windshield Opening

Windshield Installation

Install the windshield as follows:

1. Thoroughly clean weatherstrip channels and windshield opening in body. If weatherstrip is deteriorated or cracked, it should be replaced.

2. Install weatherstrip around edges of windshield. Apply weatherstrip cement between glass and weatherstrip to seal outside joint. Use an oiler gun if available to apply cement.

3. Install reveal mouldings to rubber weatherstrip. Use soap solution to slide mouldings in easily.

4. Fit a strong cord in the inner groove of weatherstrip, starting at bottom center and wrapping it completely around windshield assembly until cord ends overlap.

5. Brush soap solution around inner lip of weatherstrip.

6. Place windshield assembly on body and, with the aid of a helper pushing against the outside of the windshield, pull the cord ends slowly until entire inner lip is over pinchweld flange.

7. Apply body sealer between outer lip of weatherstrip and body completely around windshield. Clean off excess sealer.

8. Watertest windshield for leaks.

9. Install wiper arms and blades, garnish moulding and rear view mirror, and remove masking tape.

HOOD HINGE

A new hood hinge with a heavier spring was used during 1952 and 1953 production. The stronger spring provides more positive positioning of the hood in the opened position. In addition, a link modification on hinges used in 1953 allows the hood to open farther "over-center" to compensate for the heavier hood ornament.

Instructions for replacement of the hood hinge spring are in the 1951 Shop Manual. Always use Hood Spring Rewind Tool KF-112 or C-875 when replacing springs.

DOOR HARDWARE

Many improvements have been made on the door hardware on 1953 models. The ventilator locking handle has been changed to allow easier locking. The locking handle and button have been changed so the button cannot work loose.

Operation of the door locks has been improved by the silicone treatment of the lock cylinders during manufacture to eliminate the need for lubricating the cylinders and to protect the lock against freezing. A rubber bumper has been added to the door outside handles for more silent operation. Also, the hole for the locking rod button was enlarged for easier operation. The spring tension in the door lock remote control lever has been increased to assure full return of the inside door lock handles to the closed position.

A fiber washer installed on the inside door lock and window regulator handles assures quiet operation. New clips on the door window regulator guarantee more secure mounting of the door window.

GLOVE COMPARTMENT

The instrument panel glove compartment has been changed during 1952 and 1953 production by adding a spring washer to the glove box pivot and by changing the method of mounting the box to the instrument panel. These changes improve alignment of the glove box door and reduce rattles.

The striker plate for the glove box lock is mounted on a bracket at the top center of the opening. The striker is adjustable for proper locking of the glove box door.

REAR COMPARTMENT

The rear compartment on 1952 and 1953 Kaisers features a new pop-up type latch that unlocks when the key is turned and locks by itself when the lid is closed. The rear compartment medallion serves as handle to raise the lid after it is unlocked.

The rear compartment lock can be replaced as follows:

1. Open deck lid and remove cotter pin, flat washer and spring washer from end of lock cylinder shaft. Remove lock cylinder and shaft by lifting out of deck lid.

2. Remove three screws attaching lock to deck lid and remove lock.

3. To install, insert lock in deck lid and install three screws. Tighten two screws holding lock to bottom of lid before tightening screw holding it against lid inner panel.

4. Install lock cylinder, washers and cotter pin.

The rear compartment lock striker, mounted on the rear floor pan, has elongated holes which provide adjustment for easy locking and proper deck lid weatherstrip compression. Shims may be placed between the striker and floor pan when necessary to raise the striker for proper lock operation.

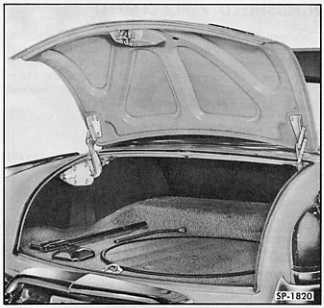


Fig. 43–Rear Compartment - 1953 Kaiser

The rear compartment lid hinges on 1953 models are concealed type hinges (Fig. 43) that are spring loaded to hold the deck lid in an open position. The hinge attaching holes are slotted to provide for complete adjustment of the deck lid. The lid can be moved fore and aft by loosening the hinge to lid attaching bolts slightly to make the adjustment. Up or down adjustments can be obtained after the hinge to body attaching bolts are loosened.

A small roller is mounted to the body at the upper center of the deck lid opening. The roller contacts the deck lid inner panel when it is in the closed position to add support and guide the lid flange to ensure proper lid to body clearance when opening. The roller is adjustable up and down for proper contact with the lid.

REAR COMPARTMENT - UTILITY MODELS

The rear compartment on 1953 utility models is similar to 1951 and 1952 Virginian utility models with several changes to improve weathersealing and reduce movement and rattles. All of the weatherstrips are made of a more resilient and durable material. A metal retainer (A in Fig. 44) supports the weatherstrip at the lower corners of the lift gate to reduce possibilities of waterleaks in this area. Reinforced rear quarter panels and a heavier tail gate latch (B in Fig. 44) hold the tail gate securely in position. The lift gate is held against side movement by forked supports (C in Fig. 44) which wedge into spring loaded pivots when the gate is lowered. A wing nut on each lift gate prop (D

in Fig. 44) can be tightened by hand to hold the lift gate in a raised position while driving if desired. On each side of the body, the rear compartment side trim behind the wheelhouse is arranged with a hinged trim panel (E in Fig. 44) which opens into a storage compartment. A toggle switch (F in Fig. 44) operates lights mounted in the trim panel on each side of the rear compartment.

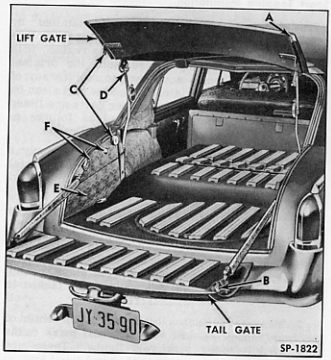


Fig.44–1953 Kaiser Utility Model

Lift Gate and Tail Gate Adjustments

The lift gate and tail gate can be adjusted for proper fit according to the following procedure:

1. Check all weatherstrips. If weatherstrips are deteriorated or cracked, they should be replaced. Make sure weatherstrips are cemented firmly in position.

2. Open tail gate, then open lift gate and loosen or remove forked supports on lift gate.

3. Close lift gate and check fit in body opening. Lift gate can be adjusted by loosening the hinge to lift gate attaching bolts and moving the lift gate until it rests in opening with equal spacing along sides and top.

4. If necessary, shim between hinge and body or hinge and lift gate to obtain a flush fit between body and lift gate at upper edges.

5. Install forked supports to lift gate and adjust until they contact spring loaded pivot and hold lift gate in proper position. Spring loaded pivots should be tightened down finger tight, then turned approximately one revolution with a wrench. Close lift gate.

6. Loosen or remove tail gate striker plates.

7. Hold tail gate closed and observe its location in the opening. If spacing around edges is not even, loosen bolts attaching tail gate to hinge and move tail gate. Tail gate can be moved fore and aft to obtain a flush fit with the body by loosening bolts attaching hinge to underbody.

8. Install tail gate striker plates and adjust to obtain proper flush fit between tail gate and body.

The above adjustments will be adequate for all normal misalignments. In exceptional cases, the holes for attaching bolts can be filed oblong for additional adjustment.

REAR BELT MOULDING

The rear belt moulding on 1953 Manhattan and "Hardtop" Dragon models is attached by spring type clips and bolt type clips. The moulding can be replaced as follows:

1. Remove rear seat back.

2. Loosen rear quarter trim.

3. From inside passenger compartment and trunk compartment, remove nuts, washers and seals from bolt type clips.

4. Remove moulding by prying spring type clips free from attaching holes in body.

5. To install, make sure all clips are in proper position in belt moulding.

6. Apply body caulking compound around each spring clip to seal hole in which clip will be inserted.

7. Install moulding to body. Press spring clips into proper holes.

8. Install seal, cup washer and nut to each bolt type clip.

9. Install rear quarter trim and rear seat back.

HEADLINING

The headlining on 1952 and 1953 models has been raised closer to the roof panel to gain more headroom in the rear passenger compartment. This was accomplished by changing the three rear bows which hold the headlining in place. Clips which are either snapped on or welded to the side rails are used to hold the three rear bows in place.

REAR FENDER CROWN MOULDING

The rear fender crown moulding on 1953 models has integral studs which extend through the rear fender and are fastened with nuts and washers. A gasket is installed between the fender and moulding.

GRILLE

The 1952 and 1953 radiator grille consists of a hood moulding which is attached to the forward edge

of the hood with screws. When the hood is in the closed position, this moulding is in line with two mouldings separated by a parking lamp on each front fender.

HEADLIGHT BEZEL

The "winged" style headlight bezels (doors) used on 1953 models were attached by a hook at the top and one screw at the bottom in early production. Two pins located on each side near the bottom of the headlamp body fit into holes in the headlamp door to aid in alignment. Later models have the bezel attached by the hook at the top and two screws, one below each "wing," thus eliminating the need for the aligning pins. When making replacements, the headlamp doors and headlamp bodies cannot be interchanged.

TAIL LAMP ASSEMBLY

The tail lamp assembly on 1952 and 1953 models consists of a lamp body, an inner (white) lens and an outer (red) lens. The bulb and socket are snapped in place from the rear compartment. To replace the lens, the tail lamp assembly must be removed from the rear fender before the lens can be removed from the tail lamp body.

SPORT TOPPING

The sport topping on 1953 "Hardtop" Dragon models is a vinyl plastic material which is waterproof. The topping does not require any type of dressing or preservative. In fact, some of the "protective" products may actually damage the material or cause it to deteriorate faster than normal. Whenever the top is soiled, it can be cleaned with lukewarm water and a mild soap such as castile or "Ivory" or a mild detergent and a brush.

Sport Topping Removal

If it becomes necessary to replace the sport topping on a "Hardtop" Dragon, proceed as follows to remove the topping:

1. Remove windshield, rear window glass, rear belt moulding and cap, and rear shelf panel. Refer to procedures in this manual and in the 1951 Shop Manual for removal of these units.

2. Remove chrome cap on drip mouldings by carefully prying off.

3. Remove drip moulding extension at the rear of each drip moulding by removing attaching screws.

4. Start at the rear and pull cord out of drip moulding gutter.

5. Pull out all metal drive nails used to attach top material at window openings and along rear quarter belt line.

6. Remove the vinyl top material.

7. If necessary, remove narrow vinyl strips at each windshield pillar and below rear window. These strips are cemented in place.

8. Remove the roof cover pads (one center, two side and two end) if necessary. Pads are cemented to top.

Sport Topping Installation

The original sport topping was installed by stretching it taut across the top, fastening it in place and then trimming all edges. For this reason, it is not practical to attempt to reinstall the original topping. If it becomes necessary to replace any of the cover pads or the gutter cord, new parts can be obtained on special order. All other parts are listed in the 1951 Parts Lists. Proceed as follows to install a new vinyl top on the "Hardtop" Dragon:

1. If necessary to install cover pads, apply a minimum amount of trim cement on the metal surface to hold pads in place while installing vinyl sport topping.

CAUTION: Excessive amounts of cement may bleed through sport topping and cause discoloration.

2. Place vinyl sport topping in its approximate position on the roof of the vehicle. Enough material should extend over windshield and rear glass opening so top can be stretched taut while being tacked in place.

3. Measure 20 inches out from the top center of the rear window toward each side and mark on the rear window upper pinchweld flange. These are locations for the two seams in the vinyl top.

4. Stretch the top material slightly until seams align with marks, then install a metal drive nail at each seam. Install nail through the outer panel just above the rear glass upper pinchweld. The head of the nail must be close enough to the pinchweld flange to be covered after installing the rear glass and weatherstrip. The drive nail will extend into the body between the roof panel and headlining.

IMPORTANT: A bead of body caulking compound must be applied to the roof panel around windshield, rear glass and rear quarter belt line at locations where drive nails are to be installed to prevent waterleaks. Drive nails are installed in steps 4, 6, 10, 11 and 12.

5. At the front of the vehicle, measure 6-1/2 inches in from the drip rail on each side and mark on the windshield upper pinchweld flange.

6. Stretch the top material slightly until seams align with marks and, at the same time, stretch the material taut from front to rear. Install a metal drive nail at each seam to hold top material to the roof panel at the windshield upper pinchweld flange.

7. Pull the excess top material at the sides and place the gutter cord on top of the top material directly over the drip rail.

8. Start at the center of the drip rail on either

side of the vehicle and, working toward the front, force the cord and top material into the drip rail gutter. Use a hard wood wedge narrow enough to fit into the drip rail gutter and approximately 3 inches wide to install cord. Alternate from one side of the body to the other, installing about one foot of the cord at a time on each side to prevent the top material from pulling off center.

9. Install the gutter cord and top material from the center of the drip rail rearward in the same manner as above. The cord should extend to the belt line at both front and rear of drip rail.

10. Nail the top material to the rear quarter along the belt line on both sides, removing all wrinkles and bulges. Space nails approximately 2 inches apart.

11. Pull top material around rear door opening (above lock) and fasten with nails, then install drip moulding extension with screws.

12. Fasten top material at windshield and rear window openings, using drive nails spaced approximately 2 inches apart. Install nails into roof panel next to pinchweld so nail heads will be completely covered by windshield and rear window weatherstrips.

13. Trim off excessive material at window openings, along drip rails and at read quarter belt line.

14. If removed, install strips of top material along sides of windshield opening and below rear window opening. Use a light application of trim cement to hold strips in place.

15. Install chrome drip moulding cap along drip rails by snapping in place.

16. Install rear belt moulding and moulding cap, rear window glass, windshield and rear shelf panel. Use ample body sealer under belt moulding and between body and outer lip of windshield and rear glass weatherstrips.

CAUTION: Do not allow excess sealer to remain on sport topping material as it may cause discoloration.

17. Check windshield, back glass and rear belt moulding for waterleaks.

CARE OF BRIGHT TRIM

Due to certain government restrictions, the bright trim (chrome) used on some parts of 1952 and 1953 vehicles requires special care to maintain its luster. The trim should be washed frequently and waxed if desired. Abrasives or harsh scrubbing will damage the protective coating on these parts. In cases where the bright trim is rusted or pitted, clean the trim by applying just enough "Kaiser-Frazer Chrome Polish" to remove the rust and no more. Clean the area and wipe dry, then apply an even coat of "Kaiser-Frazer Chrome Coating" over the area. NOTE: Colored type protective materials of any kind should never be used on bright trim.

CARE OF GOLD PLATED TRIM

The gold plated trim on "Hardtop" Dragon models is coated with a clear pyroxylin lacquer to provide durable and attractive protection. The clear lacquer is, however, susceptible to scratches, abrasives, cleaners and solvents of certain types. In cases where the protective coating is chipped or scratched, the part should be cleaned and allowed to dry. Then apply an even coat of "Kaiser-Frazer Chrome Coating" as directed on the label. In cases where desirable, the original protective coating may be removed from the gold plated part by using a lacquer thinner. Then apply a complete new coat of "Kaiser-Frazer Chrome Coating." Remove the part for refinishing or take necessary precautions to protect the finish on adjacent panels.

The protective coating on gold plated parts should be repaired as soon as possible whenever it becomes damaged. NOTE: Never apply any protective coating other than "Kaiser-Frazer Chrome Coating" for added protection of these parts.

ELECTRICAL

The electrical systems on 1952 and 1953 models have undergone several changes. Among the more notable changes are a higher output generator and regulator, a new starting motor drive unit, a combination ignition and starter switch, a mechanical stop light switch, and new courtesy lights on Manhattan and "Hardtop" Dragon models. In addition, 1953 models have a waterproof ignition system, waterproof dimmer switch, new direction signal plug connector, cigar lighter lamp, and trunk compartment lights.

The changes affecting service operations are covered in more detail in the following paragraphs in this section.

WIRING DIAGRAMS

The wiring diagrams (Figs. 45 and 46) are for the 1952 Manhattan and the 1953 Manhattan models. The 1952 Deluxe models use the same electrical equipment as 1952 Manhattan models except for the glove box lamp and switch, electric windshield wipers, courtesy lamps and switch, and door switches to operate pillar lights.

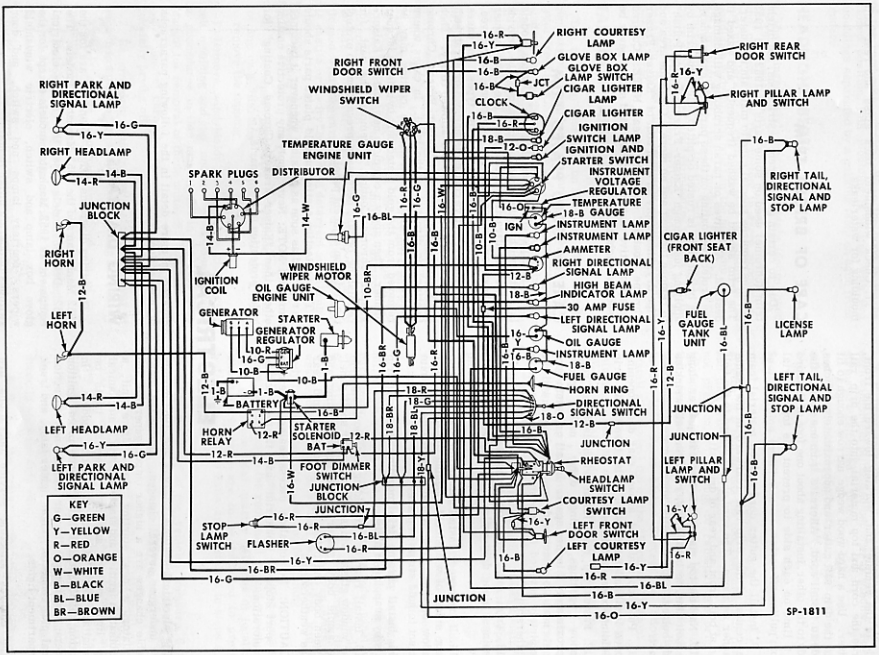


Fig. 45–1952 Kaiser Manhattan Wiring Diagram

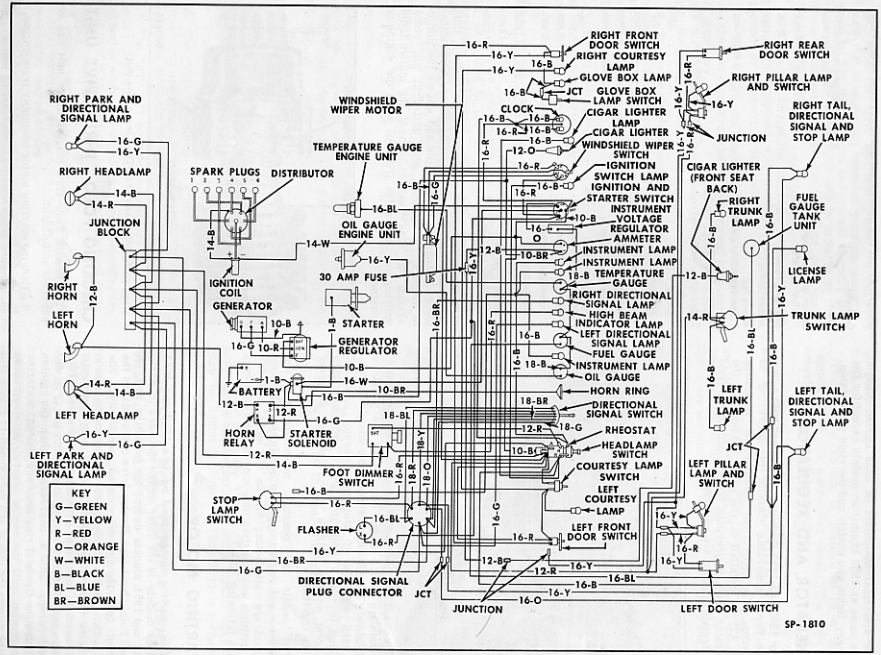


Fig. 46–1953 Kaiser Manhattan Wiring Diagram

The electrical equipment on 1953 Deluxe models is the same as 1953 Manhattan models except for the courtesy lights and switch and the right pillar lamp.

GENERATOR AND REGULATOR

The 1952 and 1953 models are equipped with a new Delco-Remy generator capable of delivering 40 amperes. The two-brush shunt-wound generator (Fig. 47) is installed in the same manner as the generator used on previous models except the field and armature posts are reversed.

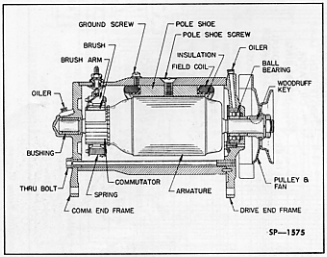


Fig. 47—Cross Section of 40 Ampere Generator

The regulator used with the new 40 amp generator is installed in the same manner as the previous regulator. The 40 ampere regulator should always be used with the 40 ampere generator. Do not attempt to use a generator and a regulator with different ampere ratings, or to use two different makes together.

The repair and overhaul procedure for the generator and regulator as outlined in the 1951 Shop Manual are satisfactory for the new units, however the settings and specifications are changed as shown in the following table.

SPECIFICATIONS FOR GENERATOR AND GENERATOR REGULATOR

Generator

Type	40 ampere Delco-Remy Model 1102782, 2 Brush, Shunt Wound
Maximum Controlled Charging Rate at 70°F, 2150 RPM	40 amps.
Brush Spring Tension	28 ozs.
Armature End-Play	.005" Max.
Motoring Test: Field Current Drawn @ 6 volts (80°F)	1.90-2.05 amps.

Generator Regulator

Type	40 ampere Delco-Remy Model 1118392
Cut-Out Relay: Air Gap	.020"
Point Opening	.020"
Closing Voltage Range	5.9-6.7 volts
Recommended Adjustment	6.4 volts
Opening Reverse Current	1 to 3.5 amps. at 12.5 volts
Current Regulator: Air Gap	.075"
Opening Current Range (70°F)	40-46 amps.
Recommended Adjustment	42 amps.
Voltage Regulator: Air Gap	.868"
Opening Voltage Range	7.2-7.6 volts
Recommended Adjustment	7.4 volts

STARTING MOTOR

The starting motor used on late 1952 and 1953 Kaiser models is the same as the one used on early 1952 and 1951 models except for the drive unit. A new "Folo-Thru" type Bendix drive unit replaces the barrel type Bendix drive used previously. The Folo-Thru drive is designed so the drive pinion remains in mesh with the flywheel ring gear until the engine is turning at a predetermined speed. This is accomplished by a spring loaded lock pin (Fig. 48) which drops into a depression when the pinion engages the flywheel ring gear and maintains starter engagement until the engine starts. An overruning clutch allows the pinion and screwshaft to rotate at a greater speed than the starting motor, thus preventing damage to the starting motor. Centrifugal force disengages the lock pin and allows the pinion to retract. A spring loaded anti-drift pin rides against the screwshaft to prevent the pinion from drifting out toward the flywheel when the engine is running.

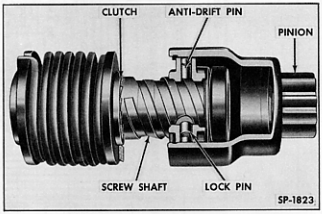


Fig. 48—Bendix "Folo-Thru" Starter Drive Unit

CHECKING FOLO - THRU DRIVE UNIT

The Bendix Folo-Thru starter drive unit can be serviced as follows:

1. Remove starting motor assembly from engine.
2. Remove drive housing from starting motor.

3. Check the drive unit and pinion but do not rotate the pinion to the extended position, since it would lock in this position and prevent cleaning the armature shaft. If the drive unit is damaged or the pinion teeth are chipped, the complete drive unit must be replaced.

4. Clean the end of the armature shaft, using a clean cloth dampened with kerosene. Do not use gasoline or commercial cleaners.

5. Now rotate the pinion to the fully extended position and wipe screwshaft with cloth and kerosene. If necessary, use a small brush to apply kerosene and tilt starting motor so a little kerosene will run into the pinion and barrel assembly.

6. Lubricate the drive unit with a thin film of light engine oil and assemble drive housing to starting motor. CAUTION: Excessive lubrication can cause clutch slippage on models with standard or overdrive transmissions.

7. Install starting motor to engine, being careful to mesh the pinion (now in extended position) with the flywheel ring gear.

IGNITION SYSTEM

The ignition system remains essentially the same as described in the 1951 Shop Manual with the exception of spark plug and ignition coil specifications. Auto-Lite A-7 spark plugs (or equivalent) are now specified and the plug gap is .030 inch. The new high ratio ignition coil has a current consumption (hot) of 5 amperes at 6.3 volts with the engine off and the distributor points closed. When the engine is idling, current draw should be 1.3 amperes.

The 1953 models are also equipped with rubber spark plug terminal caps that are moulded to the cable to give better ignition performance in wet weather.

IGNITION SWITCH

A combination ignition and starter switch used on 1952 and 1953 models eliminates the need for a separate starter button. The switch has four positions for the ignition key as follows:

1. The "OFF" position is with the key in the straight up and down position. This is the only position in which the key can be removed.

2. The "START" position is obtained by turning the key clockwise as far as possible (1/4 turn) until the engine starts. When the key is released after being held in the start position, it springs back to the "DRIVE" position.

3. The "DRIVE" position is 1/8 turn clockwise. In this position, the ignition system is on and accessories may be turned on.

4. The "ACCESSORY" position is counterclockwise from the off position. This is used when the engine is not running and it is desired to use the accessories.

The ignition switch is illuminated by a light located under the instrument panel. The light is operated by the headlamp switch.

REAR COMPARTMENT LIGHTS

On 1953 models, two rear compartment lights are installed, one on each side of the rear compartment, just forward of the deck lid hinges (Fig. 49). The lights are automatically turned on when the trunk lid

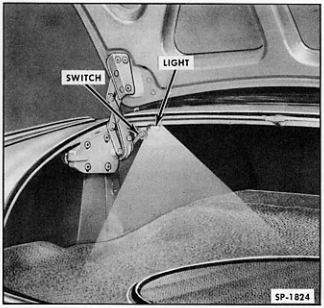


Fig. 49–Rear Compartment Light

is opened by the mechanical switch mounted near the left trunk lid hinge. A spring loaded arm on the switch rides against the hinge linkage to operate the switch.

CIGAR LIGHTER LAMP

On some 1952 and all 1953 models, a light has been added to illuminate the cigar lighter opening when the lighter is removed. The light is operated by the headlamp switch.

DOOR SWITCHES, COURTESY LIGHTS AND PILLAR LIGHTS

On 1952 Deluxe models, a switch mounted in the right front body hinge pillar (in the door opening) automatically turns on both pillar lamps when the right front door is opened. On 1952 Manhattan models, the switches at each front door operate two courtesy lamps mounted at each side below the instrument panel when either door is opened. A switch in the right rear door operates both pillar lamps.

Switches are located at all four doors on 1953 Kaisers. On Deluxe models, all switches operate the pillar lamp. On other models, the front door switches operate two courtesy lamps and the rear door switches operate two pillar lamps.

STOP LIGHT SWITCH

The mechanical stop light switch used on 1952 and 1953 Kaisers is mounted underneath the floor pan (Fig. 50). The spring loaded arm is moved to operate both stop lights whenever the brake pedal is depressed.

The switch is attached to the floor pan with two screws from inside the body. When installing a switch, it may be necessary to install shims between the switch and floor pan to obtain proper stop light operation.

DIRECTION SIGNAL CONNECTOR PLUG

On 1953 models, the direction signal wires from the switch are connected to the wiring harness under the instrument panel by a connector plug instead of the junction block used previously. This provides for faster and more reliable connection of wiring.

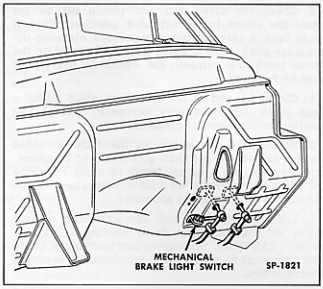


Fig. 50–Mechanical Stop Light Switch (Installed)

HEADLIGHTS AND TAIL LIGHTS

The headlights and tail lights have changed in external appearance and method of attachment only. These changes are covered in the "Body and Sheet Metal" section of this manual.

INSTRUMENTS AND ACCESSORIES

FRESH AIR INTAKE CONTROLS

On 1953 models, the controls for the fresh air intake have been changed to simplify operation. When the left vent control is pulled out, a damper on the right vent is also opened, allowing entrance of fresh air directly into the passenger compartment. When the left vent control is pushed in, fresh air from both ducts is shut off. Fresh air will then come through the heater when the right vent control is pulled out.

TEMPERATURE GAUGE

The temperature gauge engine unit and instrument panel unit have been changed on later 1953 models. Detailed information on these changes is found in the "Cooling" section of this manual.

LUBRICATION

A new system of classifying motor oils established by the American Petroleum Institute indicates by letter designation the service conditions for which an oil is recommended. This method of classification replaces the old method of identifying oils as "Regular," "Premium" or "Heavy Duty."

The new system provides three (3) oil classifications for use in passenger car engines which are as follows:

ML–For use under light or easy service conditions, such as moderate or low speed driving, and driving at normal engine temperatures, especially where the engine is relatively insensitive to deposit formations.

MM–For use under moderately severe service conditions involving higher speeds and temperatures, particularly when the higher temperatures tend to promote deposit formation and bearing corrosion.

MS–For use under the most severe service conditions such as start and stop operation that leads to emulsion sludge and corrosive wear, caused essentially by a low temperature condition which becomes increasingly worse with colder weather. It is also recommended for severe high temperature operation resulting from fast steady driving or constant hill climbing which tends to result in carbon, lacquer and sludge deposits in the engine.

The American Petroleum Institute does not

specify for which type of service individual oils are satisfactory. Refiners can make their individual oils for more than one type of service; therefore, a container might be marked "ML, MM" indicating it is suitable for both light service conditions and moderately severe service conditions. In the near future all containers for passenger car engine oil will be marked with one or more of the new letter classifications.

The new American Petroleum Institute system does not affect SAE grade numbers. SAE numbers will still be used to indicate the relative viscosity of individual oils.

It is the responsibility of the individual owner to determine which service conditions his driving requirements represent, and select the oil classification he desires to use accordingly. Kaiser "Supersonic" engines are designed to operate satisfactorily with any of the newly classified passenger car engine oils, as long as the oil selected is not subjected to more severe service conditions than those for which it is intended.

WARNING: Some owners may desire to change to an MM or MS oil after the prolonged usage of an ML oil. If the engine interior is dirty or badly coated with sludge, complete disassembly and thorough cleaning may be advisable before the MM or MS oil is used. If the engine is reasonably clean when the change to MM or MS oil is made, more frequent oil changes may be necessary until loosened dirt particles in the engine are eliminated.

HYPOID GEAR LUBRICANT

The recommended rear axle lubricant must be a passenger car type hypoid gear lubricant. This lubricant is a well refined mineral oil with lead soap and sulphur compound added to provide proper lubrication under the most severe conditions at high speed. This differs from truck type hypoid lubricant which is compounded to provide lubrication under severe conditions in low gear under heavy load. Do not use truck type hypoid lubricant.

Lubricants that meet the S.A.E. and A.P.I. standards for multi-purpose gear lubricant may also be used in the rear axle if desired.

GENERATOR LUBRICATION

The new generator used on most 1952 and 1953 models (distinguished by a step-down in the frame diameter near the commutator end) should be lubricated by filling each oil cup once with S.A.E. 20 engine oil every 2,000 miles.

If the oil reserve in either end of the generator becomes completely exhausted through failure to add oil at regular intervals, it will require more than a single filling to restore the reserve. In such a case, the oil cup should be filled three times allowing only enough time between fillings for the oil to soak into the wick.

DOOR LOCK CYLINDER LUBRICATION

Door lock cylinders on late 1952 and all 1953 models are treated with silicone at the time of manufacture and do not require additional lubrication. Likewise, it is not necessary to add materials to prevent lock freezing on silicone treated locks.

SERVICE BULLETIN REFERENCE

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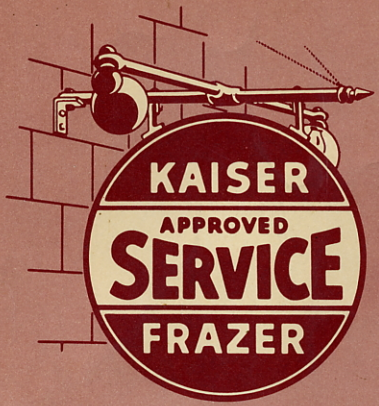

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