GROUP 11 - EXHAUST SYSTEM

A dual exhaust system is used on the Chrysler 300K, the Firepower 360 and the 390 engines. Balancing of the exhaust systems is accomplished by a cross-over pipe placed in the center of the exhaust system on the Firepower 390 Engine, (Fig. 9).

The removal of the access panel from under the front fenders on the Firepower 390 engine, will permit easy removal and installation of the exhaust manifold. The Firepower 360 engine is equipped with a Manifold Heat Control Valve and its purpose is to direct hot exhaust gases to a heat chamber in the intake manifold and pre-heat the fuel-air mixture. By piping exhaust gases directly to the base of the carburetor (Fig. 10) the heat control valve has been eliminated on the Firepower 390 engine.

The service procedures for removing and installing the mufflers, tail pipes and brackets are outlined in the 1964 Imperial and Chrysler Service Technical Manual.

GROUP 14 - FUEL SYSTEM

Two engines are available for the C-300K models; Firepower 360 and an optional Firepower 390 engine.

The Firepower 360 engine has a compression ration of 10.1 to 1 with one 4-barrel carburetor and uses premium fuel.

The optional Firepower 390 engine (Fig. 6) has a compression ration of 9.6 to 1 with two 4-barrel carburetors and also uses premium fuel.

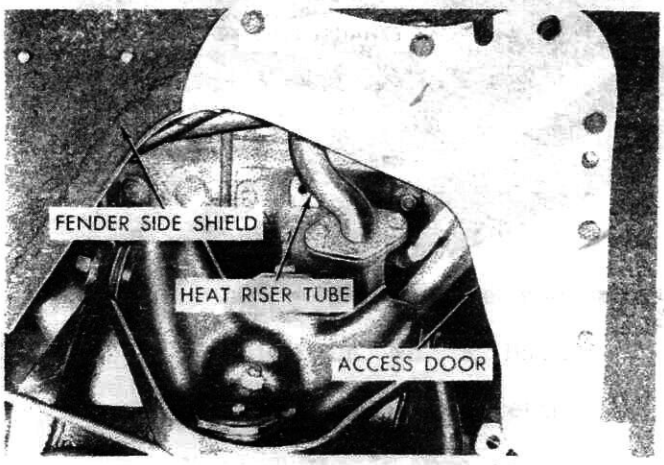

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Fig. 10 - Exhaust Heat Riser Tube on FirePower 390 Engine

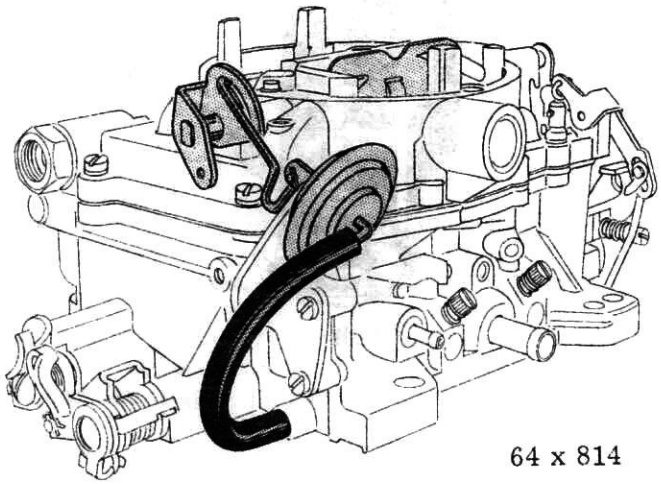

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Fig. 11 - AFB Carburetor with Diaphragm Choke Modulator (FirePower 360 Engine)

SERVICE BULLETIN

SERVICE DEPARTMENT... CHRYSLER-PLYMOUTH DIVISION
CHRYSLER MOTORS CORPORATION

TECHNICAL INFORMATION ON ☐ IMPERIAL ☒ CHRYSLER ☐ PLYMOUTH ☐ VALIANT

Jan. 15, 1964

No. 64-7A

MISCEL-
LANEOUS

DATA
AND
SPECIFICA-
TIONS

ALL
1964
CHRYSLER
300K
MODELS

This bulletin supplements Chrysler-Plymouth Service Bulletin No. 64-7, dated October 7, 1963.

Please make the following corrections on page 29 in your copy of bulletin No. 64-7.

Under "Idle Speed and Mixture Adjustment," step (2) should read:

(2) Set the idle bypass air screws 2 turns open and adjust the idle speed to 700 r.p.m., or if equipped with air conditioning, 700 r.p.m. with the compressor on.

Under "Fast Idle Adjustment (on Vehicle)", step (1) should read:

(1) The engine should be at normal operating temperature and have a curb idle speed of 700 r.p.m., or if equipped with air conditioning, 700 r.p.m. with the compressor on.

POLICY: INFORMATION ONLY.

J. W. Farley

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Manager-Service
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Service Mgr.	
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Parts Mgr.	
Partsmen	

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FUEL SYSTEM - Continued

The service procedures are the same as those outlined in the 1964 Imperial and Chrysler Service Manual with the following exceptions.

SPECIFICATIONS - AFB CARBURETORS

Make:	Carter	Carter
Carburetor Model:	AFB-3505S	AFB-3614S
Car Model Engine Application:	C-300K with Firepower 390 Engine	C-300K with Firepower 360 Engine
Type:	Two 4-Barrel Downdraft	One 4-Barrel Downdraft
Engine Displacement (Cu. In.)	413	413
Bore:		
Primary	1 7/16"	1 7/16"
Secondary	1 11/16"	1 9/16"
Main Venturi:		
Primary	1 3/16"	1 3/16"
Secondary	1 9/16"	1 5/16"
Main Metering Jet	.089"	.089"
Main Jet (Secondary):	.082"	.067"
Low Speed Jet (Primary)	No. 65-.035"	No. 65-.035"
Step Up Rod (2 Stages)		
Standard	16-118	16-217
(1 Size Lean)	16-119	16-165
(2 Sizes Lean)	16-50	16-159
Adjustments:		
Accelerator Pump (Top of Plunger to Air Horn)	7/16"	7/16"
Float Drop	1/2"	3/4"
Vacuum Kick (Drill Size)	- - -	1/8"
Choke Unloader	- - -	3/8"
Idle Mixture Screws (Turns Open)	1-2	1-2
Idle Speed RPM (Curb Idle)	700	500
Air Conditioning rpm	500	500
Fast Idle Speed RPM	1400	700
Fast Idle Cam Position Adjustment	- - -	13/64"
Secondary Throttle Lever Adjustment.	29/64"	21/64"
Secondary Throttle Lockout Adjustment	.020"	.020"
Velocity Valve	Free	- - -
Choke:		
Type	Hand	Well
Control	- - -	Thermostatic Coil Spring
Setting	- - -	On Index

FUEL PUMP (Firepower 360 and Firepower 390 Engines

Make	Carter
Model	M-3672S
Type	Diaphragm
Number of Valves	2
Driven by	Camshaft
Pump Pressure	3 1/2 to 5 psi.

Diaphragm Choke Modulator (Firepower 360 Engine)

The diaphragm choke modulator (Fig. 11) helps to overcome hard-starting due to improper fuel/air mixtures. Since the vacuum operated diaphragm is not exposed to the fuel/air mixture it is inherently free from gummy deposits left behind in the process of gasoline vaporization. This unit replaces the previous internal pull-off piston. In operation, a single external arm attached to the diaphragm rides freely within a slotted choke lever. The result is faster starting because the thermostatic coil spring has complete and unrestrained freedom in closing the choke blade to provide the required starting mixtures. After the engine starts the manifold vacuum enables the diaphragm

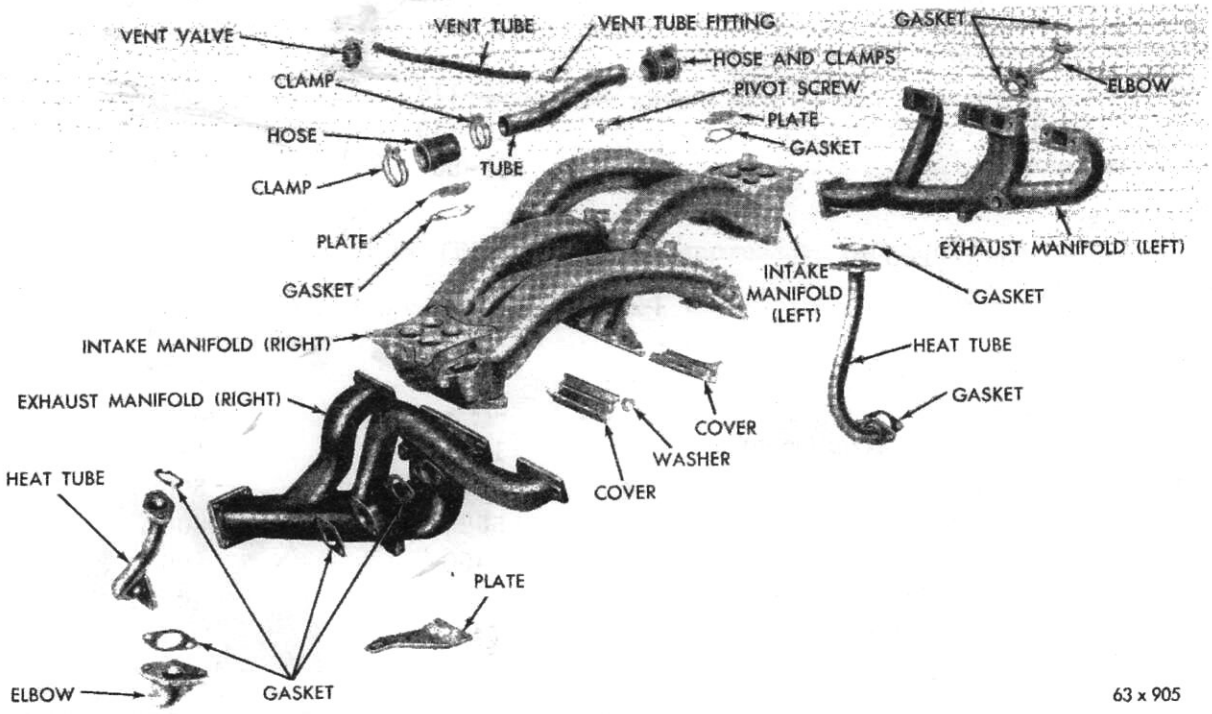

Fig. 12 - FirePower 390 Engine Intake and Exhaust Manifolds (Disassembled)

to gradually overcome the coil spring and automatically opens the choke blade to sustain engine operation. The automatic choke saves on maintenance because it requires no special care or regular attention to ensure repeated and reliable engine starting.

INTAKE MANIFOLDS - (Firepower 390 Engine)

Removal (Fig. 12)

(1) Remove the carburetor air cleaners.

(2) Disconnect the fuel line between the fuel pump and the left hand carburetor.

(3) Disconnect the fuel line between the left and right hand carburetor. Disconnect the choke control.

(4) Disconnect the vacuum line between the right hand carburetor and the distributor.

(5) Remove the high tension coil wire.

(6) Disconnect the throttle linkage at both carburetors and the bell crank, to the accelerator shaft.

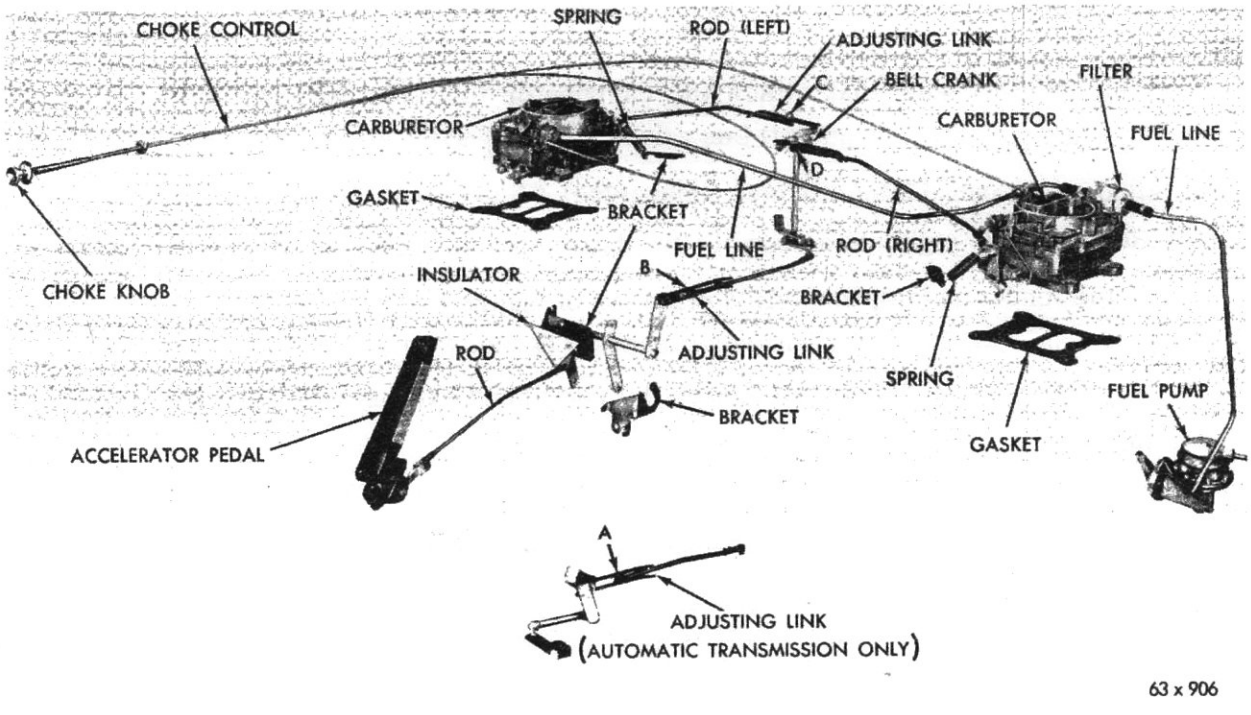

Fig. 13 - Accelerator Pedal Throttle Linkage
(FirePower 390 Engine)

(7) Loosen the clamps that attach the equalizer tube couplings to the manifolds, and to the equalizer tube. Slide either coupling inward on the tube far enough to clear the manifold tube opening. Lift the equalizer tube, couplings and clamps up and away from the engine.

(8) Disconnect the power steering hoses (if so equipped) at the pump and secure against the fire wall.

(9) Remove the air conditioning compressor and brackets, (if so equipped).

(10) Remove the eight attaching bolts that hold the left fender shield access plate to fender shield, then slide plate out of the engine compartment.

(11) Remove the two bolts that attach the left hand exhaust manifold elbow to the lower chamber. Discard the gaskets.

(12) Remove the four bolts that attach the intake manifold to the right bank cylinder head. Remove the exhaust passage crossover cover.

(13) Lift the intake manifold and carburetor from the engine as an assembly.

(14) Remove the nuts that attach the carburetor to the intake manifold. Remove the carburetor.

(15) Remove the eight attaching bolts that hold the right fender shield access plate to the fender shield, then slide plate out of engine compartment.

(16) Remove the two bolts that attach the right hand exhaust by-pass pipe to the lower chamber.

(17) Remove the two bolts that attach the right hand exhaust manifold elbow to the lower chamber. Discard the gaskets.

(18) Remove the four bolts that attach the intake manifold to the left bank cylinder head. Remove the exhaust passage crossover cover.

(19) Lift the manifold and carburetor from the engine as an assembly.

(20) Remove the nuts that attach the carburetor to the intake manifold, then disconnect the automatic choke rod from the lever. Remove the carburetor.

Installation (Fig. 12)

When installing the intake manifolds be sure and use new gaskets and be sure all mating surfaces are smooth and clean.

(1) Place the carburetor in position on the mounting pad of the intake manifold and engage the choke control. Install the carburetor mounting nuts and tighten.

(2) Place the intake manifold assembly in position on the right hand bank cylinder head. Place the exhaust crossover passage cover over the passage, then install the manifold attaching bolts finger tight.

(3) Slide a new gasket between the left hand exhaust manifold elbow and the lower chamber of the intake manifold. Install attaching bolts finger tight.

(4) Slide a new gasket between the left hand exhaust by-pass pipe and the manifold lower chamber. Install the attaching bolts and tighten to 10 foot-pounds. Tighten the elbow attaching bolts to 10 foot-pounds and the intake manifolds bolts to 50 foot-pounds.

(5) Slide the left fender shield access plate into position against fender shield. Install bolts and tighten.

(6) Place the carburetor in position on the mounting pad of the intake manifold and connect the choke control. Install the carburetor mounting nuts and tighten.

(7) Place the intake manifold assembly in position on the left hand bank cylinder head. Place the exhaust crossover passage cover over the passage, then install the manifold attaching bolts finger tight.

(8) Slide a new gasket between the right hand exhaust manifold elbow and the lower chamber of the intake manifold. Install attaching bolts finger tight.

(9) Slide a new gasket between the right hand exhaust by-pass pipe and the lower chamber. Install attaching bolts and tighten to 10 foot-pounds. Tighten the elbow attaching bolts to 10 foot-pounds and the intake manifold bolts to 50 foot-pounds.

(10) Slide the right hand fender shield access plate into position against fender shield. Install bolts and tighten.

(11) Place the air conditioning compressor and brackets in position (if so equipped) and install attaching bolts. Tighten securely.

(12) Reconnect the power steering hoses to the pump (if so equipped). (Refer to Power Steering Group 19 for method of bleeding air out of the system.)

(13) Slide the equalizer tube, clamps and couplings over the manifold tubes. Slide either coupling outward far enough to firmly engage the manifold. Tighten clamps securely.

(14) Reconnect the throttle linkage at both carburetor and bell crank to accelerator shaft.

(15) Reinstall the high tension coil wire.

(16) Reconnect the vacuum line between the carburetor and distributor.

(17) Reconnect the fuel line between the left and right hand carburetors.

(18) Reconnect the fuel line between the fuel pump and the left hand carburetor.

(19) Reinstall the right and left carburetor air cleaners.

(20) Refill the cooling system to required capacity. (Refer to specifications.)

After the intake manifolds have been installed it is very important that the next procedure of setting the throttle linkage be done in order to obtain peak engine performance.

SETTING THE THROTTLE LINKAGE

As mentioned previously, setting the throttle linkage is a very important step. Various conditions affecting car performance can be encountered, such as loss of performance, no wide open throttle response, delayed shifting of the transmission, no kickdown, delayed up shifts and etc.

Setting the throttle linkage is divided into three parts, namely; Positioning the accelerator shaft, positioning the accelerator pedal, setting the bell crank and synchronizing each carburetor. It is very important that the throttle linkage be set in this order.

Positioning the Accelerator Shaft

To position the accelerator shaft, (if equipped with automatic transmission) refer to Figure 13 then proceed as follows:

(1) Loosen the adjusting nuts "A" and "B" (accelerator shaft to transmission rod and accelerator shaft to throttle shaft lever rod).

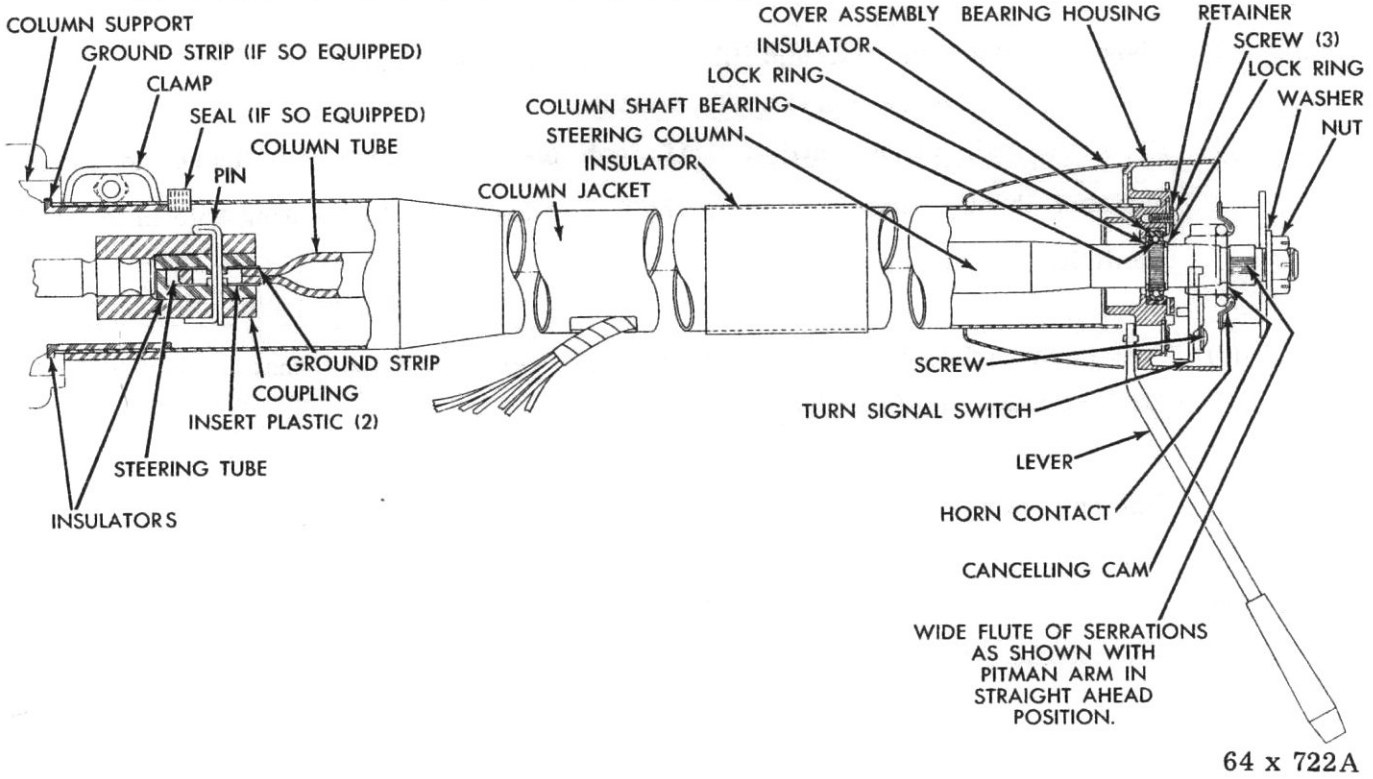

Fig. 14 - Steering Column Cross Section (Except adjustable steering wheel)

(2) Insert a piece of 3/16 inch welding rod, 10 inches long into the accelerator shaft bracket and through hole in lever.

(3) Now move the transmission throttle lever forward until it stops. Tighten the locknut "A" securely. This positions the accelerator shaft.

Positioning the Accelerator Pedal

(1) Unsnap the accelerator pedal from shaft rod.

(2) Turn the threaded end of rod either in or out until a measurement of 114 degrees is obtained between the floor of car and the flat face of the accelerator pedal.

(3) This measurement can be made with a spirit protractor.

(4) After correct measurement has been obtained, reconnect rod. Remove pin from accelerator shaft bracket.

Setting the Bellcrank

(1) Loosen locking nuts "C" and "D" (left and right bank carburetor rods).

(2) Pivot the ball crank until a 3/16 inch piece of welding rod 3 inches long can be inserted through the bell crank hole and down into the locating hole in the intake manifold.

(3) Test each carburetor to be sure the choke valves are open; that the fast idle cams are released and that the throttle valves are closed.

(4) Tighten locking nuts "C" and "D" securely. Remove pin from bell crank.

(5) Push rearward on the accelerator shaft to throttle shaft lever rod adjusting link, until stop is obtained. Tighten locking nut securely.