CHEVROLET

SERVICE NEWS

VOLUME 33 MAY, 1961 NUMBER 5

CONTENTS

1961 AIR CONDITIONING PERFORMANCE DATA REVISED

As the result of numerous field checks made on 1961 Passenger Cars, performance test specifications for both the "All Weather" and "Cool Pack" air conditioning systems have been revised. Also affecting the Cool Pack unit is a mid-year design change which altered system pressures developed, thus requiring use of a separate set of performance test specifications for those later production units incorporating the change.

The production change that modified system pressures in Cool Pack units of late manufacture was the introduction of a low pressure drop evaporator core, used in conjunction with a new expansion valve. At the same time the above changes entered production, the chrome finish previously used on the Cool Pack air outlet nozzles was replaced by a painted finish. Therefore, all Cool Pack units incorporating the low pressure drop evaporator will be identifiable by the painted air outlets.

In the new Cool Pack evaporator the refrigerant travels a relatively short distance in passing through the core; resulting in minimal line pressure differential between the evaporator inlet and the evaporator outlet. Due to system pressures being about equal at the evaporator inlet and the outlet, use of the equalizer line from the evaporator outlet to the expansion valve was discontinued.

Performance test specifications presented on the following page supersede information shown in charts on Page 15-11 of the 1961 Passenger Car Shop Manual.

1961 "All Weather" System—Revised

Grille Air Temperature	70°	80°	90°	100°	110°	120°
Engine RPM	← 1500 →					
Compressor Head Pressure*	135-150	145-170	160-190	200-225	240-260	270-290
Compressor Suction Pressure*	24	24	24	25	26	26
Discharge Air Temp. at R/H Outlet	35°-40°	35°-40°	36°-41°	38°-43°	39°-44°	40°-45°

1961 "Cool Pack"—Early Production—(Revised)

(UNITS HAVE CHROME AIR OUTLET NOZZLES)

Grille Air Temperature	70°	80°	90°	100°	110°	120°
Engine RPM	← 1500 →					
Compressor Head Pressure*	115-130	134-145	160-170	190-210	225-240	265-275
Compressor Suction Pressure*	12	15	16	17	18	18
Discharge Air Temp. at R/H Outlet	36-41	37-42	37-42	38-43	39-44	40-45

1961 "Cool Pack"—Late Production

(UNITS HAVE PAINTED AIR OUTLET NOZZLES)

Grille Air Temperature	70°	80°	90°	100°	110°	120°
Engine RPM	← 1500 →					
Compressor Head Pressure*	130-140	135-145	160-170	195-205	230-240	265-275
Compressor Suction Pressure*	13	14	15	15	17	17
Discharge Air Temp. at R/H Outlet	35-40	37-42	37-42	38-42	39-44	39-44

*When compressor clutch disengages.

Plants Ship Vehicles With Brake Fluid Level Low

When new vehicles are delivered to Chevrolet Dealers, the hydraulic fluid in the brake master cylinder reservoir is below the level recommended for Service fill. At Assembly Plants, the master cylinder reservoir is filled to a level below capacity to avoid damage to vehicle finish that could result from spillage of hydraulic fluid during vehicle shipment.

Prior to dealer delivery of a new vehicle to the customer, G. M. Hydraulic Brake Fluid, Super No. 11 should be added to the master cylinder reservoir to bring fluid to the recommended operating level of ½" below the reservoir filler opening.

Powerglide Flywheel Installation

Figure 1 clarifies installation of engine flywheels, part number 3781962 and 3781966, which are currently serviced for 1955-61 Powerglide equipped 235-6 cylinder and V-8 engines respectively.

Instances have been reported where parts damage has occurred due to these flywheels being installed backwards. In other cases where flywheels of older design were being replaced, crankshaft flange attaching bolts removed from the old flywheel were used to install a 3781962 or 3781966 flywheel, resulting in an interference condition existing between the flange bolts and the cylinder block.

A decrease in section thickness at the flange bolt circle of the flywheel web, due to elimination of an integral spacer ring effective with introduction of flywheels 3781962 and 3781966, makes it mandatory that flange attaching bolts no longer than .70" be used to install these later flywheels. Currently, bolts of the proper length, Part No. 3727207, are furnished with these replacement flywheels.

NOTE: *Flywheel 3781962 and several other Production and Service six-cylinder engine flywheels of late manufacture do not incorporate a steel timing ball. On these flywheels the timing ball was replaced by a .19 dia. circle stamped to indicate TDC.*

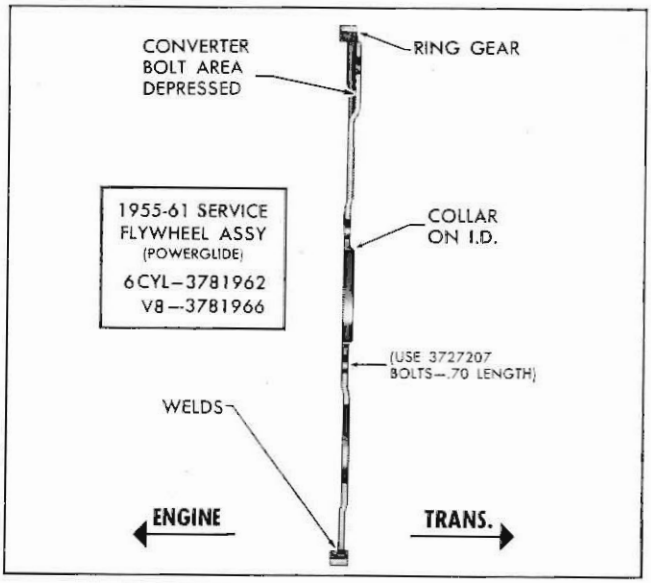

Fig. 1—Powerglide Flywheel

Corvair Choke Cable Seizure

Instances of choke control wire sticking on early 1961 Corvair and Corvair "95" vehicles in some cases will cause severe kinking and subsequent breakage of the control wire in the area just forward of the control knob. Numerous changes designed to eliminate control wire bind and ease choke operation have been incorporated in later production vehicles.

It is recommended that dealership sales personnel brief Corvair owners on carburetor choke operation, at time of new car delivery. The necessity of first depressing the accelerator half way and holding it in that position while pulling out the choke knob, should be emphasized to the owner. By holding the accelerator pedal down while the choke knob is being pulled out, the choke control wire will be relieved of loading that would otberwise be imposed on the wire for movement of the accelerator linkage.

If excessive effort is required to operate the choke, it can usually be traced to one or more of the following causes:

- Kinked front or rear cables.
- Galled or rusted wire in front cable conduit.
- Binding rear cable slider block (except on Corvair "95".
- Interference at rear cable wire ends.

The front cable may be visually checked for kinks and galling by detaching the front cable wire from the slider block of the rear cable assembly, then pulling the wire and knob assembly out of the conduit. If severe bends, hard kinks, galled spots, or evidence of corrosion are found, disconnect the conduit from the slider block bracket and replace the entire cable assembly. However, if only small bends or "bumps" are found, which can be straightened by hand, the wire and conduit assembly need not be replaced.

A dry, mottled appearance of the front control wire indicates corrosion. If any evidence of rust or corrosion is found, do not use the assembly. Whether installing a new cable assembly or reinstalling the original cable, always remove the control wire from the conduit and coat the wire with "Molycoat" or an equivalent molybdenum disulfide base lubricant. "Lubriplate" may also be used for this purpose.

The following changes in choke front cable installation procedures were adopted at assembly plants effective February 7, 1961. These new procedures should be used for service replacement or adjustment of the front cable on all 1961 vehicles:

- Move the slider block full forward to permit better alignment between the front cable conduit and slider block during the clamping operation of the front cable.
- At the slider attachment, adjust effective length of front cable so that the choke knob bottoms out on its bracket at the instrument panel. The previously recommended 1/8" cushion setting between the knob and bracket has been discontinued to prevent breaking of the control wire in the event of slider block binding.

Since the rear cable cannot be disassembled for internal inspection, cables suspected of being kinked, galled, or corroded should be replaced. Lubrication of the slide with "Molycoat" or "Lubriplate" is suggested to loosen the action of the rear cable assembly.

When the rear cable assembly (with slider block) is being installed, extreme care should be taken to insure that it is correctly assembled to the front control wire and firewall. First thread the front wire into the slider block, then anchor the slider bracket of the rear cable assembly to the firewall. Apply a small amount of "Molycoat" or "Lubriplate" to the inside of the slide. Use of the above procedure will minimize the chance of bending tbe exposed portion of the front wire.

On all early production vehicles, except Corvair "95"; if it is suspected that the rear cable slider block is binding due to foreign material being deposited on the slide, install a snap-on Choke Cable Dust Cover (Part No. 3813044). The 3813044 cover, now available for service, is being factory installed on late production vehicles.

Interference of the choke rear cable control wires at the carburetors may sometimes develop, particularly at the left carburetor. This can be prevented by trimming any excess wire from the cables after adjustment of the two carburetor choke valves. No more tban 1/4" of wire should protrude from the carburetor choke levers.

Corvair Oil Filter Mounting

Figure 2 sbows the engine oil filter installation used on 1961 Corvair passenger cars equipped with air conditioning. To avoid spillage of oil in the engine compartment when replacing the oil filter element; as a unit, remove the element and filter adapter from the filter mount. At the bench, disassemble the element from the adapter casting. When installing the new element assembly use new gaskets at all three locations.

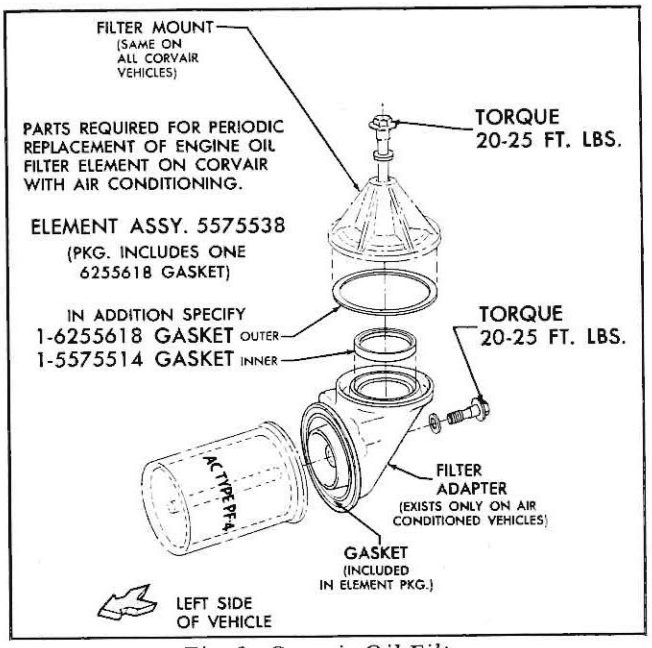

Fig. 2—Corvair Oil Filter

Corvair Valve Guide Wear

Valve Guide Reamer J-5830-5, shown in Figure 3, is designed for use in cases where extreme exhaust valve guide wear requires the installation of valves having a stem diameter .020″ oversize. Tool J-5830-5 is now available from Kent-Moore Organization.

It is recommended that valve stem to guide bore clearance now be checked only by means of a dial indicator. Clearance should be within the following revised specifications:

Intake valve stem to bore clearance should be .001″ to .0027″ (new), and .004″ (worn). Exhaust valve stem clearance should be .0014″ to .003″ (new), and .006″ (worn).

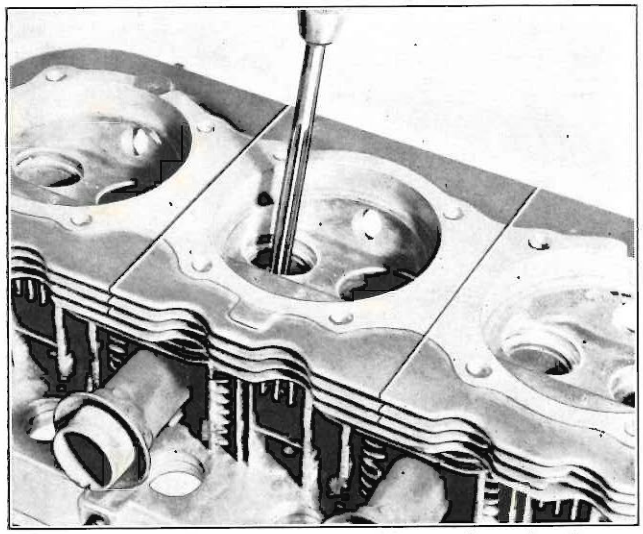

Fig. 3—J-5830-5 Reamer (.020 oversize valves)

To check clearance, clamp the dial indicator on the side of the cylinder head rocker cover rail, positioning the indicator so that movement of the valve stem from side to side (crosswise to the head) will cause a direct movement of the indicator stem. The indicator stem must contact the side of the valve stem just above the cylinder guide. With the valve head held about 1/16″ off the valve seat, exert light pressure to move the stem of the valve from side to side while checking clearance. By trying new valves in the old bores it can be determined whether the valves should be replaced, or the bores reamed and oversize valves installed.

Corvair Blower Belt Tensioning

Results of field tests show that retensioning of used Corvair engine blower belts to the presently specified 70 lbs. strand tension (equivalent to 3/8 inch belt deflection with 15 lb. load) will materially reduce the life of the belt. It is therefore recommended that used belts be retensioned to a 50 lb. strand tension. A used belt is defined as one that has been installed for more than 1,000 miles.

Adjustment of a new belt will continue to be made to the 70 lb. strand tension specification. It would, however, be impractical to expect the mechanic to detect, by scale measurement, the small difference in belt deflection that would exist between a belt at 50 lb. strand tension or at 70 lb. strand tension. Therefore all belt tension adjustments should be made with either a commercially

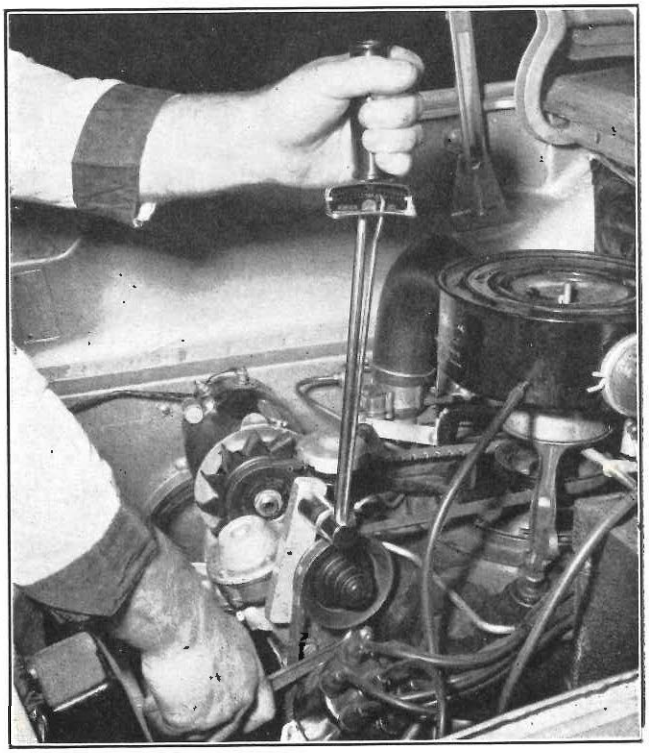

Fig. 4—Tensioning Belt with Torque Tool

available strand tension gauge, or by using a torque tool that can be made in the dealership. Belt tension checks performed with a torque tool (fig. 4), assembled as described later in this article, were found to provide very accurate strand tension settings.

When installing a new belt taken from stock, it is recommended that the belt be adjusted to the proper tension and the engine run at approximately 1500 rpm for about a minute, to seat the belt. The belt tension should then be reset to specification.

When checking an installed belt for excessive looseness, using strand tension gauge, it will not be necessary to increase tension unless gauge reading is less than 50 lbs.

Specifications Using Strand Tension Gauge

If belt is new or has operated for less than 1,000 miles, install at 70 lbs. strand tension. If belt is used, install at 50 lbs. strand tension.

Specifications Using Torque Tool

If belt is new or has operated less than 1,000 miles, install with 20 ft. lbs. torque applied. If belt is used, install with 15 ft. lbs. torque applied.

MAKING AND USING THE TORQUE TOOL

The blower belt tensioning tool that utilizes a torque wrench, can be made from two pieces of metal (fig. 5). The shank (part A) is made from a steel bar approximately 1/4" thick, 3/4" wide, 5" long. The hook (part B) has a 5" developed length and is fashioned from the slotted end of a generator brace (Part No. 3836330 or 3739845).

The square hole in part A, for the torque wrench, may be eliminated if a discarded socket or a thick nut is to be welded to the side of the shank. The dimensions (fig. 5) must be held to plus or minus 1/16". This will insure the correct amount of belt tension when the specified torque is applied.

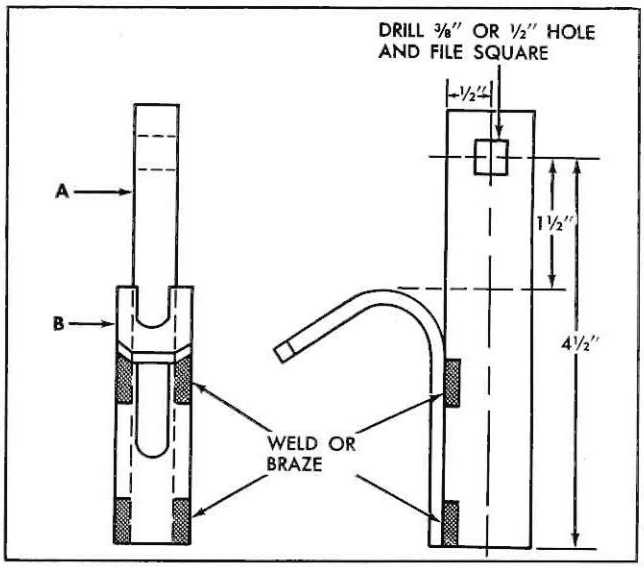

Fig. 5—Blower Belt Torque Tool

Bend part "A" around a one-inch pipe for initial forming of hook end. With the tool assembled, tap the hook of tool to fit the top of a discarded idler pulley bracket. When forming the hook, the reinforcing rib of the casting should be positioned in the slot of the hook, with the shank of the tool toward the rear (relative to pulley installed position). This will provide a close final fit of the tool to the pulley bracket.

Belt Adjustment with Torque Tool

1. Loosen idler pulley attaching bolt and nut to eliminate frictional drag between pulley bracket and engine mounting.
2. Pull the wrench toward rear of vehicle to apply 20 ft. lbs. torque for new belts, 15 ft. lbs. for old belts. Tighten the pulley mounting bolt and nut while maintaining constant torque load.

CAUTION: *Do not allow torque to even momentarily exceed specifications. Slight torque increases will produce excessive belt tension. If torque wrench is allowed to "wander" above the specified torque, the belt must be completely loosened and freed-up. Otherwise, the belt tends to pull into the pulley grooves, and the final running tension will be excessive.*

Corvair Door Weatherstrip

On Corvair two-door ("27" style) bodies, a new type door weatherstrip has been installed by some plants since March 15, 1961. This weatherstrip, made of a vinyl material, eliminates usage of the conventional sealing plugs and wire retaining clips. The vinyl weatherstrip is retained by integral hard core plugs which fit into pierced holes in the door panel. This weatherstrip does not require lubrication.

Installation of the vinyl weatherstrip requires use of Weatherstrip Installer J-9442, now available from Kent-Moore Organization. J-9442 is designed specifically for installation of this type weatherstrip; see view "A-A" of Figure 6. An attempt to install the weatherstrip without a properly-designed tool will probably result in damage to the retaining plugs.

Weatherstrip retaining plug holes in the door frame are spaced wider apart than are the retaining plugs in the weatherstrip. The stretching of the weatherstrip necessary to insert the retaining plugs in the door will provide a tight seal.

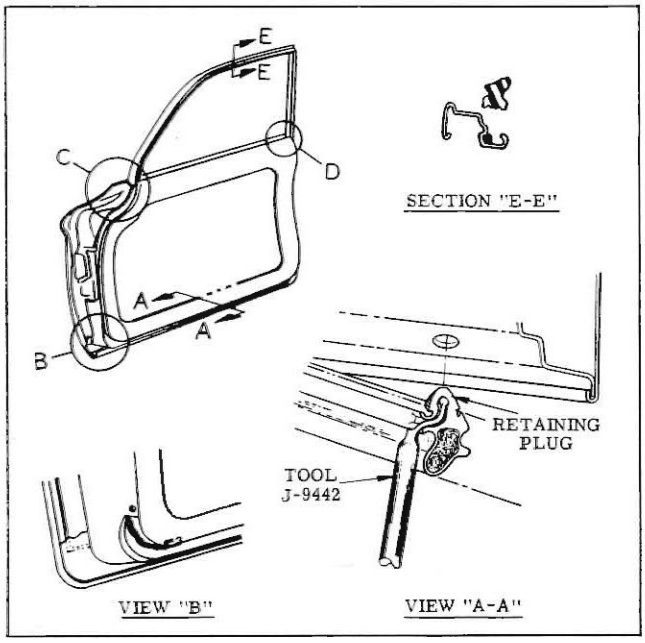

Fig. 6—Vinyl Weatherstrip Installation

The new vinyl weatherstrip also requires a special heavy mastic cement to effect a good cement bond between door panel and weatherstrip. At this time, the only known material commercially available is "Vinyl Weatherstrip Adhesive" marketed by Minnesota Mining and Mfg. ("3M").

VINYL WEATHERSTRIP REMOVAL

1. With a flat-bladed tool, carefully break cement bond along door window frame assembly, at belt line and at lower front radius of door.
2. After all cement bonds have been broken, remove weatherstrip from door by carefully prying the weatherstrip retaining plugs loose with aid of a putty knife, or other suitable flat-bladed tool.

VINYL WEATHERSTRIP INSTALLATION

1. Clean off old cement from door to insure a clean cementing surface. A volatile cleaner is recommended for this operation.
2. Apply a continuous bead of "Vinyl Weatherstrip Adhesive" along entire length of channel in door upper frame. Also apply a bead of cement for a minimum length of eight inches on door hinge pillar (cove area, see area "C" in Figure 6) and a minimum length of one inch on door lock pillar (see area "D" in Figure 6) and between retaining plugs at lower front radius of door (see view "B" of Figure 6).
3. Using a putty knife, or other suitable flat-bladed tool, install door weatherstrip into door window frame assembly.
4. Using Weatherstrip Installer J-9442, install weatherstrip retaining plugs into door weatherstrip holes.

   CAUTION: *To prevent paint damage, immediately remove any excess cement, using a volatile cleaner.*
5. If a weatherstrip retaining plug becomes damaged and will not retain weatherstrip on the door; trim off plug shoulders with a sharp knife so that plug can be installed by hand, after application of cement to weatherstrip surface around plug. If a plug is missing, run a bead of cement on door panel for a distance of one inch from sides of attaching hole, then firmly press weatherstrip into place.

Folding Top Zipper Lubrication

The back curtain zipper on a Convertible may become difficult to operate due to an accumulation of dirt, sealer or cement on the zipper scoops, or simply because the zipper requires lubrication. To assure ease of operation, the back curtain zipper should be cleaned and lubricated approximately every six months; as described below:

1. Operate (open) zipper slide fastener completely around opening; then lower back curtain into top compartment well.
2. Dampen a cloth with a liquid detergent; and, using medium pressure, clean zipper tracks on back curtain and back curtain valance. Change to a clean portion of the cloth every few strokes. Cleaning should continue until residue is no longer deposited on cloth.

   CAUTION: *Do not touch cloth to back curtain vinyl as damage to vinyl portion of back curtain may occur.*
4. Inspect zipper assembly. Where deposits of dried sealer are present, use a knife, or other suitable tool; scrape off sealer accumulation.
5. After zipper scoops are thoroughly clean, lightly lubricate all scoops with a grease stick, beeswax or silicone.
6. Operate slide fastener several times through its complete cycle.
7. Lower curtain, then using a clean cloth, wipe excess lubricant off of zipper.
8. Raise curtain and return slide fastener to closed position.

Passenger Body Water Drain Locations

Figure 7 illustrates water drains provided in 1961 Passenger Car and Corvair bodies. In most cases where evidence of water accumulation is detected on inner or unexposed surfaces of body metal, one of the prime suspects should be a clogged body drain. To minimize water damage to the body interior, body drains should be kept free of debris, and drain hoses that show signs of deterioratiou should be replaced. Periodic application of silicone lubricant in the lips of the body drains will prevent the drains from sticking closed.

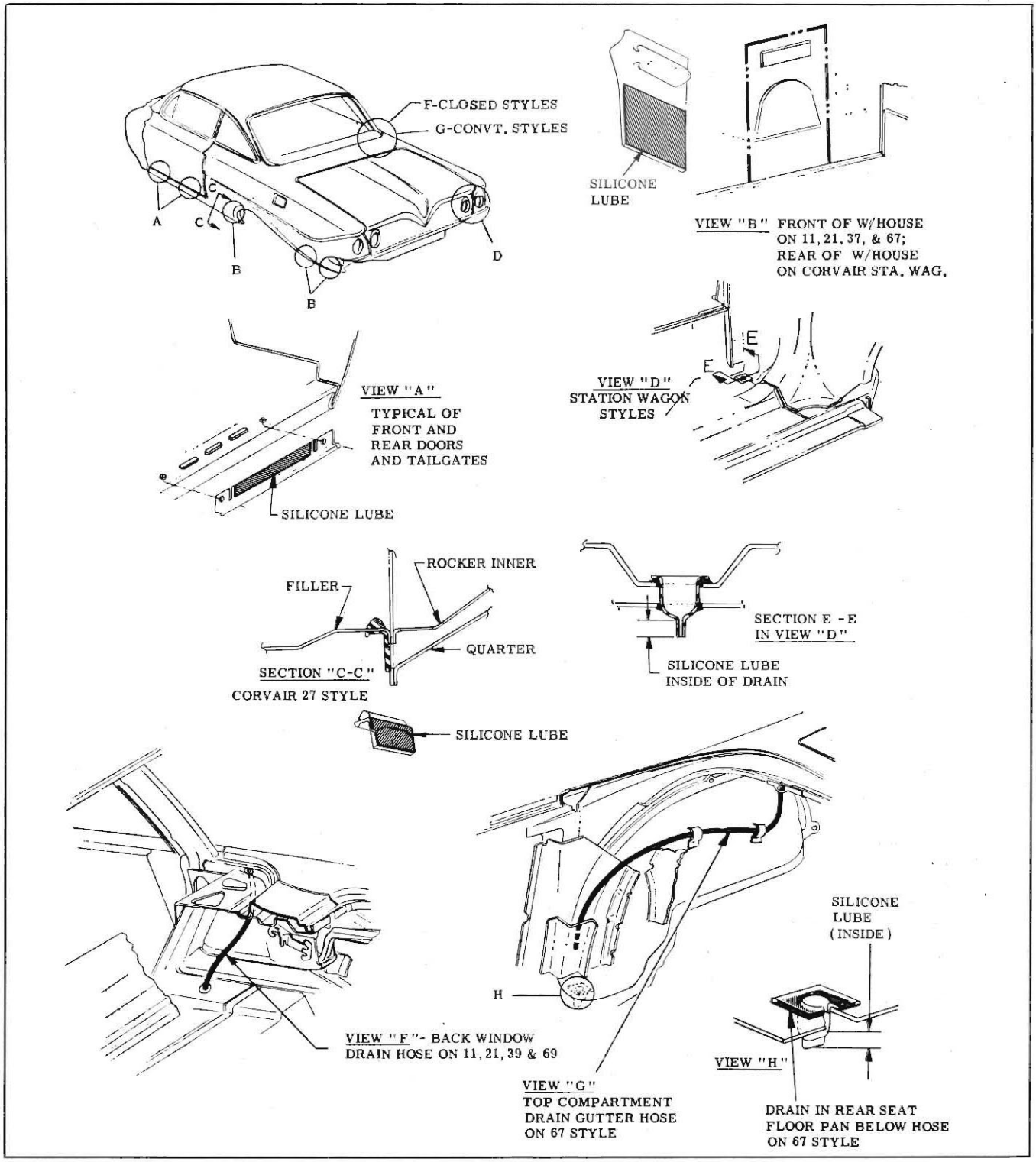

Fig. 7—Location of Body Water Drains

REVISED 1961 CHEVROLET FRONT END ALIGNMENT SPECIFICATIONS
(ALSO INCLUDES 1960 TRUCKS, 50 THRU 80 SERIES)

Vehicle Type	Caster (Degrees)	Camber (Degrees)	Toe-in Total Both Wheels (Inches)	Cornering Wheel Relationship (Degrees) Inner	Outer	Ball Joint or King Pin Inclination (Degrees)
Passenger Car	0 ± ½	½ ± ½	⅛ to ¼	20	18	7¼ ± ½
Corvair (including Lakewood)	Ⓐ 1½ to 2	Ⓐ Frt. ½ ± ½	Frt. ¼ to ⅜ Rear 0 to ⅛	20	18	7 ± ½
Corvair "95" Trucks (including Greenbrier)	Ⓑ 2½ ± ¼	Ⓑ Frt. ¼ ± ¼	Frt. 1/16 to 3/16 Rear ¼ to ½	23	20	7¼ ± ½
Corvette	2 ± ½	0 ± ½	⅛ to ⅜	20	17	4 ± ⅜
10 thru 40 Series Trucks (except P & K Models)	1 ± ½	½ ± ½	3/16 to ¼	21¾	20	8½ ± ½
P-20, P-30 Trucks	2 ± ½	1½ ± ½	¼ to 5/16	23½	20	7½ ± ½
K-10, K-20 Trucks	3 ± ½	1½ ± ¼	⅛ to ⅜	21¾	20	7½ ± ½
50 thru 80 Series Trucks†	Ⓒ L.H. −1 to 0 R.H. 0 to +1	0 ± ⅓	See Chart Below	23	20	7 ± ½

Ⓐ Left and right side should be equal within ¼°. Ⓑ Left and right side should be equal within ½°.
Ⓒ Preferred caster setting is negative ½° on the left side, and positive ½° on the right side. If there is insufficient adjustment to obtain the negative ½° caster on the left side, set the left side as close as possible to this desired negative angle. Caster on the right side should then be set 1° greater than caster at the left side, without exceeding right caster limits. In any event, right wheel caster should be **at least** ½° more positive than left wheel caster.
† These revised settings entered Production March 1, 1961 and should be used for all 1960-61 model trucks.

50 THRU 80 SERIES TRUCK TOE-TRIM HEIGHT RELATIONSHIP

As shown in the following chart, "toe" varies in direct relation to trim height, with "toe" and trim height being reduced as weight is added to the vehicle. Figure 1 illustrates the location at which the suspension trim height dimension should be scaled.

REVISED 1960-61 TOE-TRIM HEIGHT SPECIFICATIONS
(50-80 SERIES TRUCKS)

TRIM HEIGHT	TOE SETTING—TOTAL BOTH WHEELS* (TRAM BAR METHOD)
7½" to 6½"	¼" Toe-out
6½" to 5½"	3/16" Toe-out
5½" to 3"	1/16" Toe-out
3" or less**	Overload Condition

*To insure maximum tire life total toe must be held to ± 1/16" variation from applicable specification in chart.
**To alleviate this condition, either vehicle front suspension loading should be reduced, or heavier torsion bars installed.

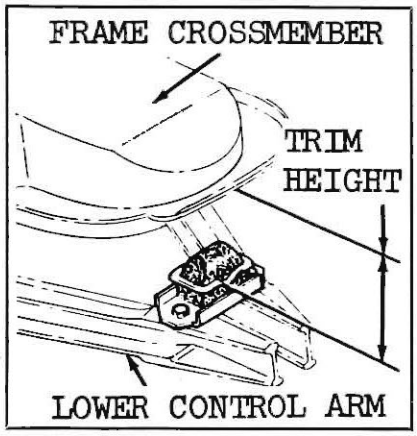

Fig. 8—Measuring Trim Height

To promote best possible front tire life the following procedures are recommended:

- "Toe" adjustment should be checked with a tram bar, as this measures total toe (both wheels). However, if alignment equipment is used which measures toe of each wheel individually, *one-half* of the toe specified in the chart should be set at each wheel.
- All toe measurements should be made at spindle height. Compensate for wheel runout when checking toe, by spin-scribing the tire tread perimeters and measuring toe from the scribed lines.
- After dealer installation of a body or other heavy weight equipment toe should be measured and readjusted to the specifications shown above, prior to delivery of the new truck to the customer.
- Toe adjustment should be checked and corrected as necessary at 10,000 to 20,000 mile intervals.