

SHOP TIPS

VOL. 7 NO. 9

MAY, 1969

FROM

Autolite



1970

MAVERICK



**FEATURES AND
SPECIFICATIONS**

Technical parts and service information published by the Autolite-Ford Parts Division and distributed by Ford and Lincoln-Mercury dealers to assist servicemen in Service Stations, Independent Garages and Fleets.

The inside story on Ford's independent stand in the compact car field! Complete service information!

PLUS:

Twin-I-Beam New Alignment Specifications (see index copy) and other service tips!

SEE SPECIAL INSERT New Tune-Up Kit & Free PCV Valve Offer !

1970 MAVERICK

...an exciting new dimension
in travel!

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Be sure and file this and future bulletins for ready reference. If you have any suggestions for additional information that you would like to see included in this publication, please write to: Autolite-Ford Parts Division of Ford Motor Company, Merchandising Services Dept., P.O. Box 3000, Livonia, Michigan 48151.

The descriptions and specifications contained in this book were in effect at the time the publication was approved for printing. The Ford Motor Company, whose policy is one of continuous improvement, reserves the right to discontinue models at any time, or to change specifications or design without notice and without incurring obligation.



INTRODUCTION

The Maverick, an exciting new dimension in travel, and a new concept in comfortable, convenient, and economical transportation, is Ford Division's independent stand between the sub-compact import cars and the domestic compacts.

Introduced in April of this year, Maverick is the greatest automotive value ever offered in terms of price, reliability, and features.

Maverick has all the things Americans want in a small car—economy, low purchase price, durability, a solid warranty, high quality workmanship, and outstanding performance—plus a lot more.

Maverick will mean an increase in your parts and service business . . . many new customers coming your way for their automotive needs.

So that you'll be ready for these new Maverick owners, the information contained in this article is designed to help you offer the best possible service to your Maverick customers . . . and to simplify your service efforts.

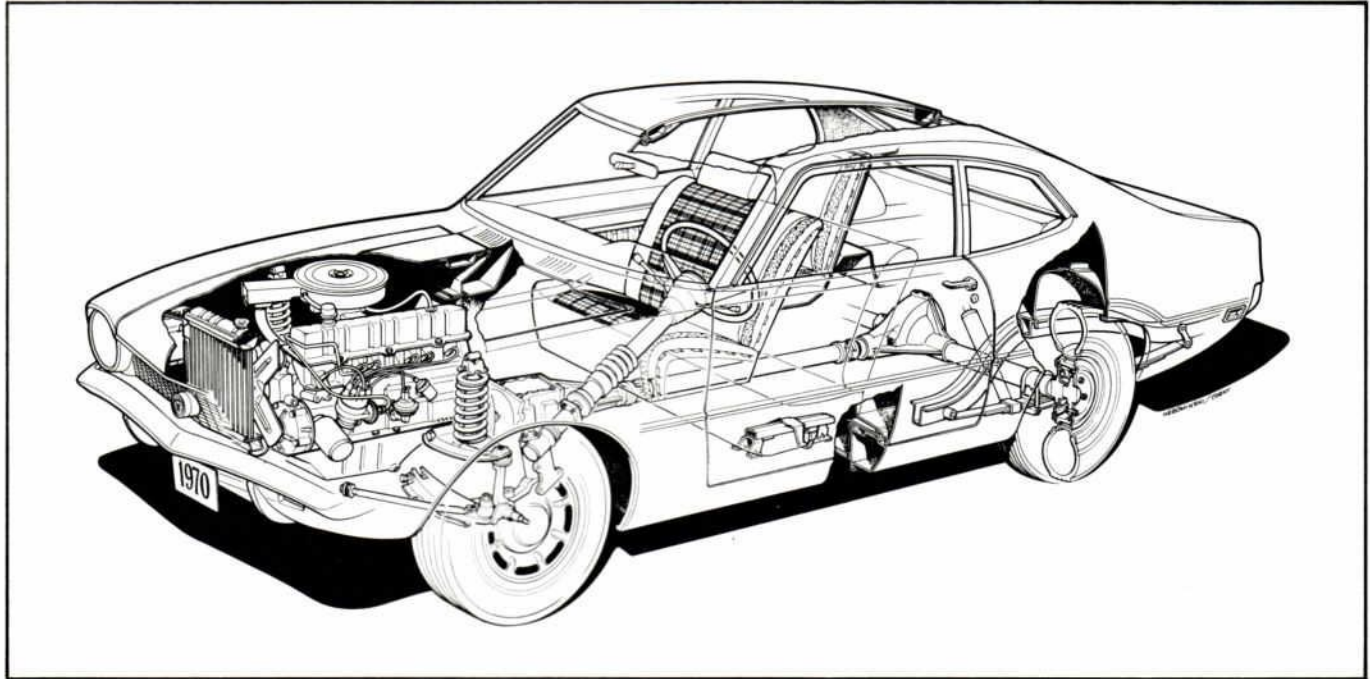
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DEARBORN, MICHIGAN

FEATURES and SPECIFICATIONS



MAVERICK DESIGN FEATURES



GENERAL

As shown in the cutaway drawing of the 1970 Maverick (above), several innovations have been incorporated in its design. A number of these are developments of proven design features of the 1969 Ford cars, while some of the new features are exclusive to Maverick.

Ventless Side Glass

Maverick's curved ventless window eliminates the usual vent window division bar and control crank, and provides increased driver/passenger visibility. The side glass is mounted on a smooth-operating front and rear channel system for more positive, quiet window operation.

Flipper-Type Rear Quarter Window

The rear quarter window on Maverick is a flipper-type design to provide ease of operation and increased rear passenger visibility plus excellent air exhaust.

Convenient Package Tray

Maverick drivers will appreciate the added convenient full-width package tray beneath the instrument panel.

Suspension

Maverick features a short- and long-arm ball joint front suspension with springs and shock absorbers calibrated to match the weight/ride requirements of the car. The drag strut is anchored in a rubber bushing which allows the wheels to move toward the rear when driving over a bump. This controlled rear movement soaks up part of the initial road shock before it reaches the passenger area. Other components of the front suspension also are rubber-bushed to eliminate metal-to-metal contact. Maverick has Hotchkiss type rear suspension with long multi-leaf-type springs to smooth out driving and braking forces, thereby providing a comfortable, cushioned ride. As in the front suspension, rubber bushings are used at connection points eliminating metal-to-metal contact.

Turning Radius

Maverick's small, 35.6-foot turning radius makes Maverick an exceptionally easy car to drive and park.

Heating and Ventilation

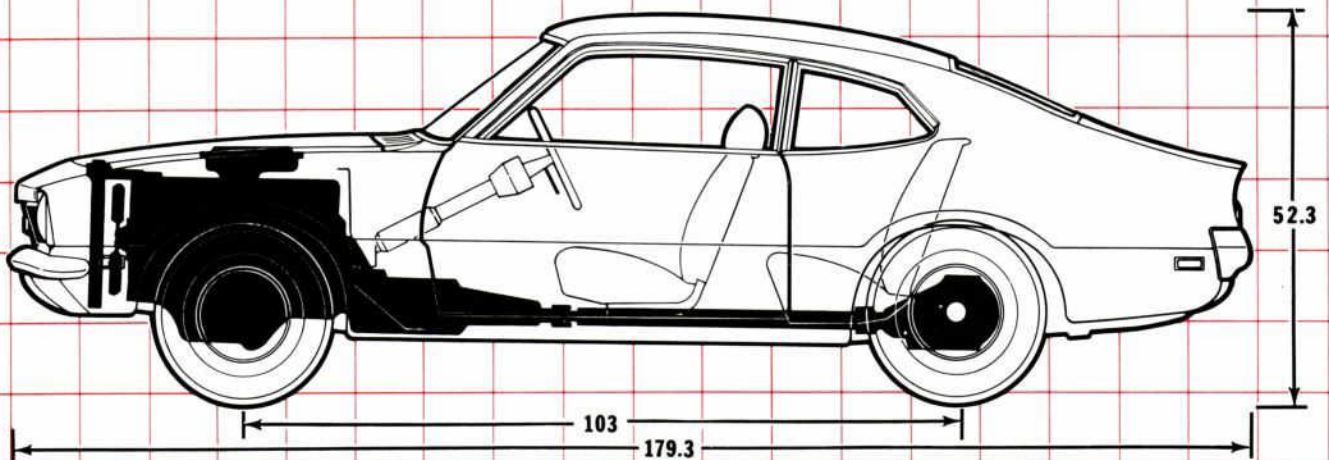
Maverick's heating system features a three-speed blower to provide excellent heating and defrosting power ranges.

Fresh air ventilation is provided by ducts with openings located behind the instrument panel package with the control knob at the left of the steering column.

1970 MAVERICK



DESIGN FEATURES CONTINUED



In size—103-inch wheelbase, 179.3-inch overall length, and 70.6-inch overall width—the 1970 Maverick has an important position in the United States automotive market between the sub-compact imports and the domestic compacts. Maverick's roomy interior provides nine inches more width than most imported compacts.

BODY DIMENSIONS

All dimensions are in inches unless otherwise specified	Two-Door Sedan
GENERAL	
Wheelbase	103.0
Tread—Front	55.5
—Rear	55.5
Height—Overall	52.3
Length—Overall	179.3
Width—Overall	70.6
—At center pillar	69.7
LUGGAGE COMPARTMENT	
Usable luggage capacity (cu. ft.)	11.3
Lift-over height	29.8
CURB WEIGHT (Pounds)	
170 CID Six Cylinder Manual	2501
CHASSIS SPECIFICATIONS	
Steering gear ratio	29.4 to 1
Steering wheel turns (lock to lock)	5.2
Weight distribution—Front	55%
—Rear	45%
Brake lining area (total gross)	131 sq. in.

New Semi-Automatic Transmission

Ford's new semi-automatic transmission option is available with the 170 CID engine, and provides smooth shifting at the flip of a lever.

Without the use of a clutch pedal, the column-mounted shift lever can be placed in the desired gear and up- or down-shifted as the situation dictates.

This new concept in transmissions, gives Maverick drivers the versatility and economy of a manual transmission, with most of the convenience of an automatic, at a lower cost. The semi-automatic is comparable to the standard manual transmission in fuel economy. The installation is similar in appearance to the fully-automatic version in that there is no



FEATURES and SPECIFICATIONS

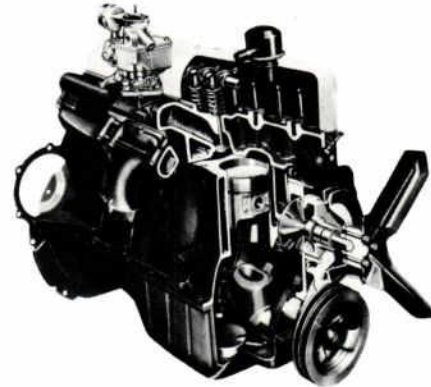


DESIGN FEATURES CONTINUED

clutch pedal, and has a column-mounted gear indicator which reads P R N HI 2 1. Three forward gears are provided, and the driver may start in first or second gear depending on load conditions.

Two Engine Choices

Maverick is available with either of Ford's proven engines; the 170 CID and the 200 CID 6-cylinder engines. Both the 170 and the 200 engines have been proven by millions of owner-driven miles in Falcons, Mustangs, and Fairlanes . . . and have been further developed for Maverick to give maximum economy and improved performance. Maverick engines have undergone an extensive testing program utilizing the most modern facilities and techniques available.



ENGINE SPECIFICATIONS	170 CID	200 CID
Displacement (cubic inches)	170	200
No. of Cylinders	6	6
Bore (inches)	3.50	3.68
Stroke (inches)	2.94	3.13
Compression Ratio	9.1:1	9.2:1
Brake Horsepower	105 @ 4200 rpm	120 @ 4000 rpm
Maximum Torque (lb. ft.)	156 @ 2200 rpm	190 @ 2200 rpm
Fuel	Regular	Regular
Carburetor	1 V auto. chk.	1 V auto. chk.
Valve Lifters	Hydraulic	Hydraulic
No. of Main Bearings	4	7
Distributor Point Gap (inches)	0.027	0.027
Dwell Angle at Idle Speed	35°-40°	35°-40°
Ignition Timing* (BTC)	6°	6°
Spark Plug (Autolite)	BF-82	BF-82
Spark Plug Gap (inches)	0.032-0.036	0.032-0.036
Firing Order	1-5-3-6-2-4	1-5-3-6-2-4
Idle Speed (rpm)**		
Standard Transmission	750/500	750/500
Automatic Transmission	550/475	550/475
Anti-Stall Dashpot Clearance	0.100 inch	0.100 inch
Choke Housing Setting	1-Rich	Index Mark
Drive Belt Tension		
New Belt	140	140
Used Belt	110	110

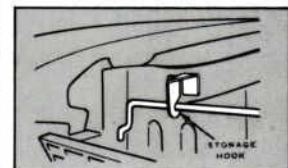
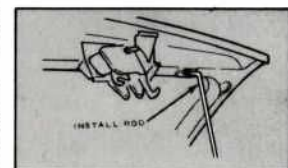
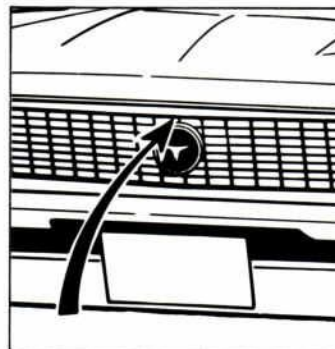
*If the individual requirements of the vehicle and/or the use of sub-standard fuels dictate, the initial timing may have to be retarded to eliminate detonation (spark knock). If retarding is necessary, it should be done progressively and not to exceed 2° BTC.

**Higher idle speed is for vehicles without Air Conditioning. Lower idle speed is for air conditioned vehicles with A/C operating (except 200 CID engine with automatic transmission) and the throttle solenoid de-energized. To de-energize the throttle solenoid, disconnect the in-line wire connector.

SERVICE FEATURES

Hood Latch

To open the hood press *up* on the hood release lever on the underside of the hood edge, and raise the hood. Engage the hood rod to hold the raised hood in place. Place the hood rod in its stowage hook before lowering the hood.



Gas Filler Cap

The gas filler cap is located in the rear center, just below the deck lid. Turn counterclockwise to remove. Gas tank capacity is 16 gallons.



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MAVERICK



SERVICE FEATURES CONTINUED

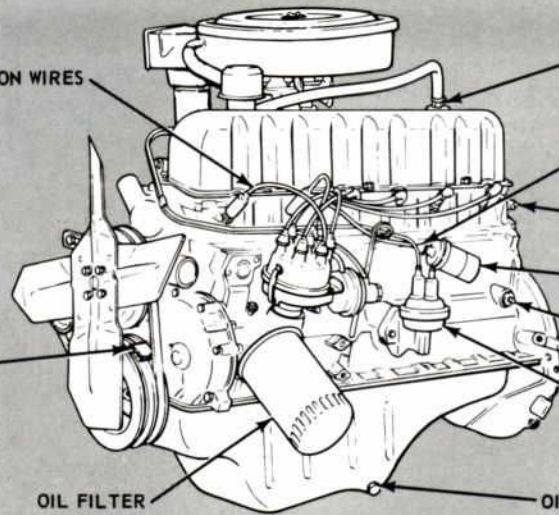
MAINTENANCE LOCATIONS

ENGINE—LEFT SIDE VIEW

SECONDARY (SPARK PLUG) IGNITION WIRES

IGNITION TIMING MARKS

OIL FILTER



CRANKCASE VENTILATION
REGULATOR VALVE

PRIMARY IGNITION WIRE

TEMPERATURE SENDING UNIT

IGNITION COIL

OIL PRESSURE SENDING UNIT

FUEL PUMP

OIL PAN DRAIN PLUG

MAINTENANCE LOCATIONS

ENGINE—RIGHT SIDE VIEW

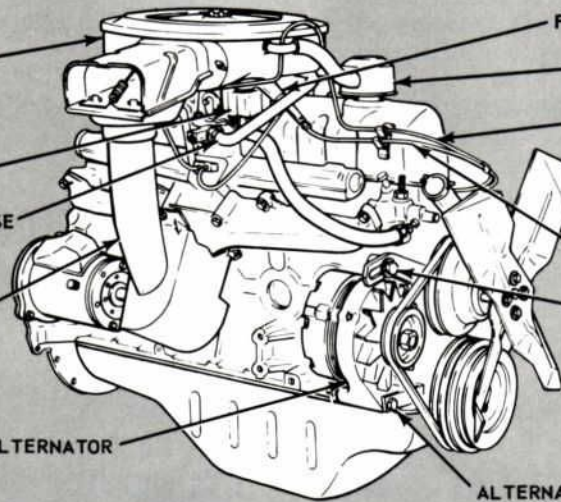
CARBURETOR AIR CLEANER

CARBURETOR

CRANKCASE VENTILATION SYSTEM HOSE

HEAT STOVE

ALTERNATOR



FUEL FILTER

OIL FILLER CAP

VACUUM LINE

FUEL LINE

ALTERNATOR ADJUSTING ARM BOLT

ALTERNATOR MOUNTING BOLT

FEATURES and SPECIFICATIONS



SERVICE FEATURES CONTINUED

Air Cleaner

The air cleaner filter element should be replaced at specified mileage intervals. Cleaning the filter is not recommended. Clean the air cleaner body with a damp cloth.

Oil Filler Cap

The oil filler cap is on the forward top of the rocker arm cover. When changing or adding oil, engine protection is assured with motor oils meeting Ford Specification ESE-M2C-101B. These oils also contain additives which inhibit the formation of corrosive acids generated in all gasoline burning engines. The charts below specify the outside temperature range/oil recommendations.

Oil Filter

Oil filter should be changed every 6 months or 6,000 miles whichever comes first. The filter is easily removed by turning counterclockwise with an oil filter wrench to loosen, then turn filter off the adapter. When replacing, coat filter gasket with engine oil.

MULTI-VISCOSITY OILS	
Consistent Outside Temperature	Use Ford Motor Oil SAE Viscosity No.
Below +32° F.	5W-30
-10° F to +90° F.	10W-30 or 10W-40
+32° to above +90° F.	20W-40

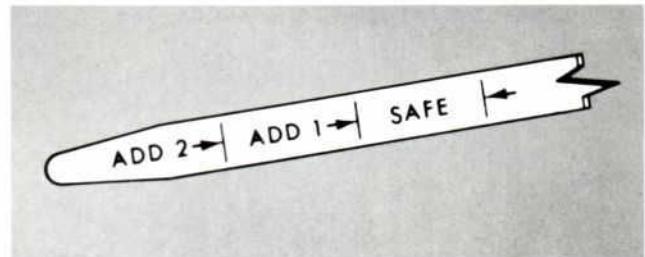
SINGLE VISCOSITY OILS	
Consistent Outside Temperature	Use Ford Motor Oil SAE Viscosity No.
-10° F to +10° F.	10W
+10° F to +32° F.	20W-20
+32° F to +90° F.	30
Above +90° F.	40

Crankcase Ventilation Regulator Valve

As shown in the illustration, the regulator valve is at the rear of the rocker arm cover. The system should be checked regularly following the instructions as set by the PCV valve tester manufacturer.

Dip Stick

The oil level dip stick is just behind the distributor on the left side of the engine. Oil level should be maintained between SAFE marks, as shown in this illustration.

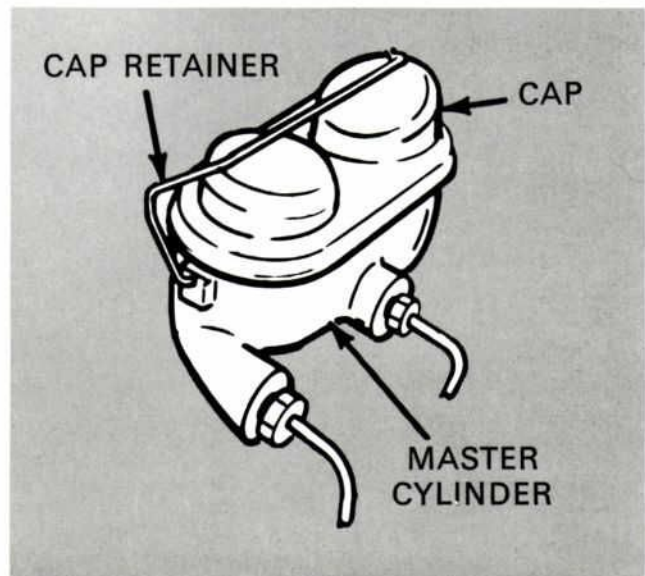


Windshield Washer Reservoir

The windshield washer reservoir should be filled with the recommended proportion of Ford Windshield Washer Solution and water.

Brake Fluid Reservoir

Check fluid level by pushing the master cylinder cap retainer to one side and lift the cap. Reservoir should be filled to within 1/4 inch from top.



1970

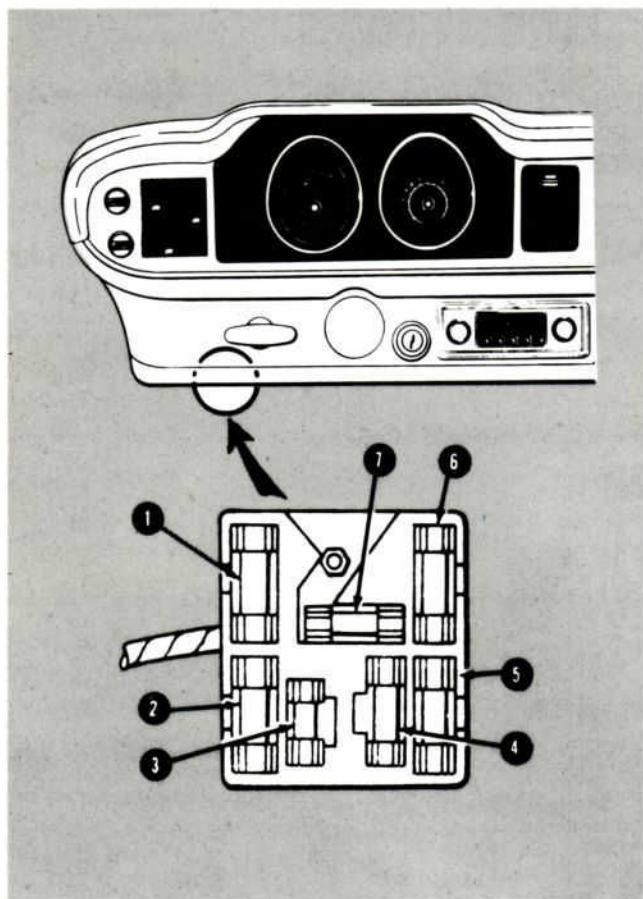
MAVERICK



SERVICE FEATURES CONTINUED

Fuse Panel

The fuse panel is located on dash panel to the lower left of the steering column, above the pedals.



FUSE LOCATIONS

(1)	20 amp—emergency flasher, cigar lighter & clock feed
(2)	14 amp—courtesy, dome, and luggage compartment lamps
(3)	4 amp—instruments, shift indicator, ash tray and radio lamps
(4)	SPARE FUSE
(5)	14 amp—heater (NOTE: 30 amp for air cond.)
(6)	20 amp—back-up lamps, radio & windshield washer
(7)	20 amp—accessory feed, seat belt lt. (opt)
FUSE NOT IN PANEL—7.5 amp—spot lamp, cartridge in feed line	

Circuit Breakers

Circuit breaker protection is provided for the headlamp switch with two CBs integral with switch. A 15 amp CB protects the horn, stop lamp, front and rear marker lamps, front parking lamps, rear and license lamps. An 18 amp CB protects headlamps. A 6 amp CB protects the windshield wiper circuit integral with wiper switch. Windshield wiper electric motors are protected by integral CBs.

LIGHT BULB CHART

LAMP DESCRIPTION	NUMBER OF BULBS REQUIRED	CANDLE POWER OR WATTAGE	TRADE NUMBER
STANDARD EQUIPMENT			
Headlamps	2	50-40 W.	6012
Front Park/Turn Sig.	2	3-32 C.P.	1157A
Rear Tail/Stop/Turn	2	3-32 C.P.	1157
Back-up Lamp	2	32 C.P.	1156
License Plate Lamp	1	4 C.P.	97
Dome Lamp	1	12 C.P.	105
F. & R. Side Marker	4	2 C.P.	194
INSTRUMENT PANEL			
Hi-Beam Indicator	1	2 C.P.	194
Turn Sig. Indicators	2	2 C.P.	194
Warn Lights (Oil, Alt., Hot., Brakes)	4	2 C.P.	194
Speedometer & Fuel G.	2	2 C.P.	194
Heater Controls	1	2 C.P.	1895
Ash Tray Light	1	0.7 C.P.	1445
OPTIONAL EQUIPMENT			
Spotlight—4.4" Dia.	1	30 W.	4405
Air Cond. Controls	1	2 C.P.	1895
Radio Pilot Light	1	1.9 C.P.	1893
Auto. Trans. Quadrant	1	0.7 C.P.	1445
Tachometer Light	1	2 C.P.	1895
Clock Light	1	3 C.P.	1816
Luggage Comp. Light	1	12 C.P.	105
Seat Belt Warning	1	2 C.P.	1895

Cooling System

The cooling system is filled with Ford Permanent Anti-freeze and Coolant and water to prevent corrosion and to protect against freezing to -20° F. Mixture will last for two years if recommended anti-freeze and water mixture is maintained. When adding coolant, Ford Permanent Anti-Freeze and

Continued on page 9

NOW! THE LID'S OFF

EVERYTHING YOU'LL NEED FOR AN IGNITION
TUNE-UP IN ONE EASY TO STOCK UNIT!



**AUTOLITE
IGNITION
TUNE-UP KIT
SAVES TIME
...OFFERS
CONVENIENCE!**



**NEW
CONCEPT**

**IN PARTS PACKAGING INCLUDES EVERYTHING
NEEDED FOR FAST, MONEY-MAKING TUNE-UPS . . .
FOR A PROFESSIONAL TUNE-UP JOB!**

**ASK US HOW YOU CAN GET A COLORFUL
MERCHANTISER TO HELP YOU SELL
MORE TUNE-UPS!**



AUTOLITE ELECTRICAL TUNE-UP KITS...

- **ELIMINATE** the need to research three separate application charts for plugs, point sets and condensers or to search through bins for three individual parts!
- **CUT** reordering time by two-thirds!
- **ELIMINATE** the misapplication of individual parts!
- **REDUCE** the possibility of misplaced, lost or pilfered ignition parts!
- **ELIMINATE** the problem of inventorying loose parts!
- **CAN BE** attractively displayed in handy merchandisers that not only provide convenient storage, but help you sell!
- **COME** in reusable containers that can be utilized for small parts storage!

PLUS! When you buy the ATK-1000 Assortment you get the popular G.M. TKG-1 Tune-Up Kit FREE!

Order this all-make application assortment of Autolite Tune-Up Kits, pay for only 11 kits and get the 12th kit AT NO CHARGE! This assortment provides about 64% coverage of all American cars on the road including Ford, GM, and Chrysler . . . the broadest possible coverage with the smallest possible inventory! This outstanding 12-pack assortment comes attractively packaged in a colorful countertop display carton that contains an application chart!

AND YOU PAY NO MORE FOR AUTOLITE'S TUNE-UP KITS THAN IF YOU BOUGHT PLUGS, POINTS AND CONDENSERS INDIVIDUALLY!

PLUS! PACEMAKER BONUS! A bonus of 1/2 Pacemaker Prize Point Certificate comes in every Autolite Tune-Up Kit! Pacemaker Prize Points are your ticket to an exciting selection of over 1800 merchandise awards.



USE THESE SUGGESTED STOCK ASSORTMENTS FOR MAXIMUM COVERAGE!

TUNE-UP KIT NO.	Contents			12 KITS (ATK-1000 Assortment)	24 KITS	48 KITS
	Plugs	Points	Condensers			
TKF-1	BF42 (8)	DP12	DC13	2	3	8
TKF-2	BF82 (6)	DP3	DC6	1	2	2
TKF-3	BF82 (8)	DP12	DC12	—	1	1
TKF-4	BF82 (8)	DP12	DC13	1	1	1
TKF-5	BTF6 (6)	DP3	DC6	—	1	2
TKF-6	BF82 (6)	DP3	DC13	—	1	1
TKF-7	BF32 (8)	DP12	DC13	—	1	1
TKG-1	A-42 (8)	1-210	2-206	3	3	10
TKG-2	A-52 (8)	1-210	2-206	1	2	5
TKG-3	A-42 (6)	1-207	2-207	1	1	2
TKG-4	AT-42 (8)	1-210	2-206	—	1	2
TKG-5	AG-52 (6)	1-212	2-207	1	2	3
TKG-6	AG-3 (8)	1-210	2-206	—	1	1
TKG-7	AE-82 (6)	1-212	2-207	—	1	1
TKC-1	A-42 (8)	1-303	2-300	1	1	3
TKC-2	AG-52 (6)	1-303	2-300	1	1	2
TKC-3	AG-52 (8)	1-303	2-300	—	1	2
TKX-1	AG-42 (8)	1-210	2-207	—	—	1
				64% Market Coverage	75% Market Coverage	75% Market Coverage

ORDER TODAY FROM OUR PARTS COUNTER!

EXTRA PROFITS WITH FREE PCV VALVES!

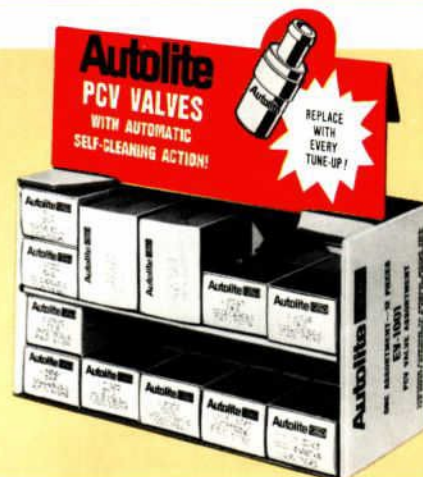


18 for the price of **16!**

The Autolite "All-Car" Assortment gives you broad market coverage. "Clean Air" Special display carton promotes fast turnover!
(Part No. EV-1000)

12 for the price of **11!**

The Autolite "Ford" Assortment covers all popular Ford-built engines. "Clean Air" Special display carton for fast, easy sales!
(Part No. EV-1001)



AUTOLITE PCV VALVES GIVE YOUR CUSTOMERS

- BETTER RUNNING ENGINES
- MORE ECONOMICAL ENGINE OPERATION
- REDUCED OIL CONTAMINATION FOR LONGER ENGINE LIFE
- COMPLIANCE WITH ORIGINAL EQUIPMENT SPECIFICATIONS AND STATE AND FEDERAL REQUIREMENTS

INCREASE YOUR SALES AND PROFITS BY CHECKING PCV SYSTEMS WITH EVERY TUNE-UP AND OIL CHANGE

Autolite PCV Valve Tester lets you show your customers the condition of their PCV systems under actual operating conditions! Fits in your pocket! Order Part No. EV-44 at our parts counter!



GET YOUR FAST-MOVING AUTOLITE PCV VALVE ASSORTMENTS WITH THEIR FREE BONUS VALVES AT OUR PARTS COUNTER TODAY!

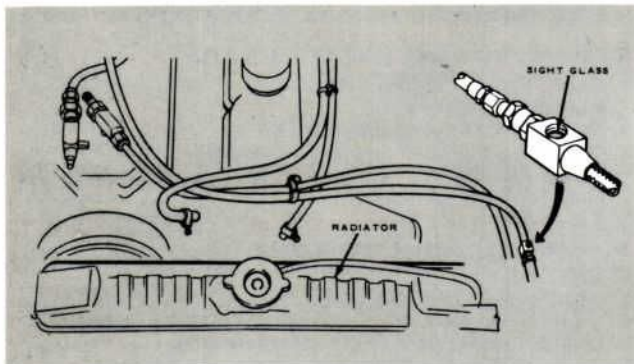
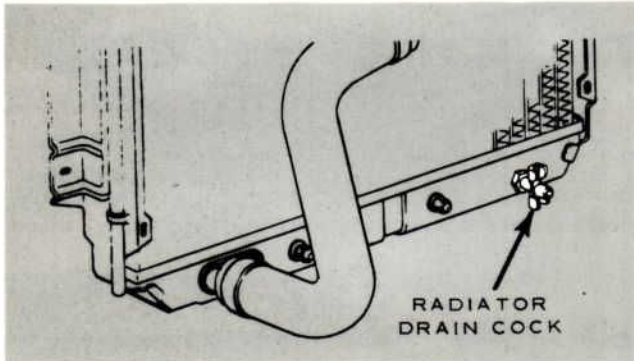
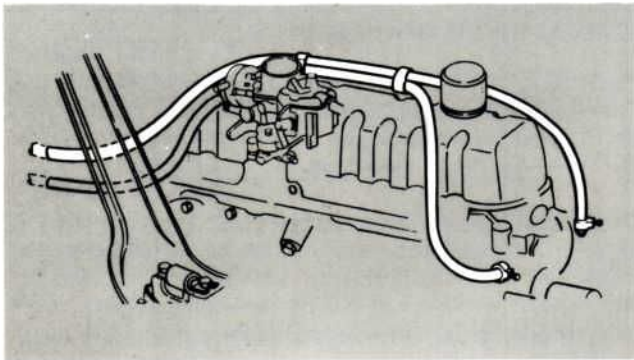
FEATURES and SPECIFICATIONS



SERVICE FEATURES CONTINUED

Continued from page 8

Coolant Part No. 8A-19549-B (or equivalent) is recommended. Do not mix different brands of anti-freeze or use other than a permanent anti-freeze that meets Ford Specification M97B18-C.



Air Conditioner System

Mavericks equipped with air conditioning should be checked for operation at an outside temperature of 80° F., and relative humidity of 50%. Clean the sight glass and observe glass for bubbles with engine running at 1500 RPM and A/C controls set at maximum.

Bubbles in glass indicate an undercharge of refrigerant. The unit should then be taken to a Ford Dealer for subsequent service.

No bubbles in glass can mean full charge or no refrigerant at all. To check, cycle the magnetic clutch off and on at 1500 engine RPM and if bubbles appear, system is in full charge provided bubbles disappear when clutch is off. No bubbles indicate no refrigerant in system, and the unit should be taken to a Ford Dealer. Under extremely high temperature conditions, occasional foam or bubbles may appear in the sight glass.

Ignition System

The ignition system for Maverick's engines is the same as for other Ford products using the 170 CID and 200 CID 6-cylinder engines.

Fuel System

Fuel systems for Maverick are the same as other Ford products using the 170 CID and 200 CID 6-cylinder engines.

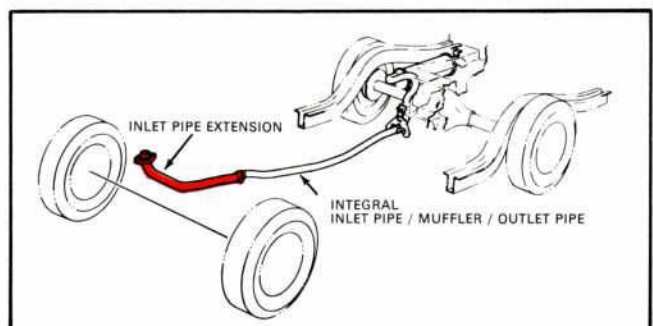
Tires

Tire pressure should be checked "cold" for accurate pressure reading. A warm tire will exceed the specified pressure, and should not be deflated to meet pressure specifications. Maverick has 6.00 x 13 tires as standard equipment, and as options, 6.45 x 14 and C-78 x 14. When replacing less than a full set of tires, be sure to replace with tires that have same load capacity and size as those tires on the car.

Exhaust System

Maverick sports a new two-piece exhaust system that consists of (1) an inlet pipe extension, and (2) an integral muffler inlet pipe, muffler, and outlet pipe. The inlet/muffler/outlet unit is serviced and replaced as one integral unit.

Two support hangers hold the exhaust system in position.



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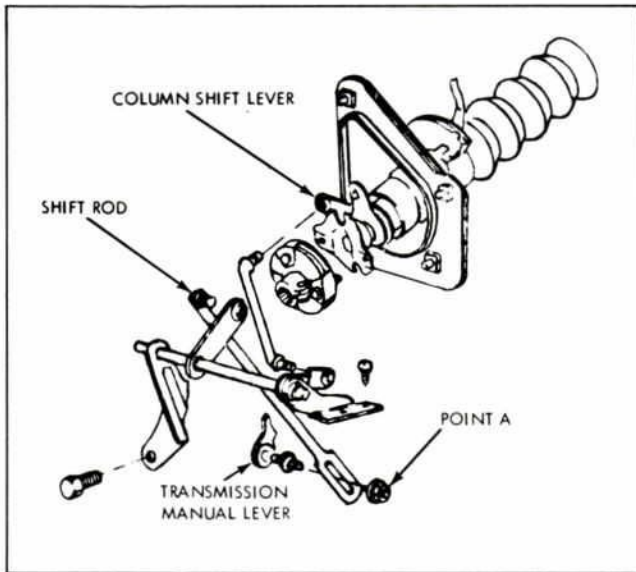


SERVICE FEATURES CONTINUED

TRANSMISSIONS

Manual and Cruise-O-Matic

Service and operating information for the 3-speed manual transmission and for the Cruise-O-Matic transmission are the same as for all Ford Products.

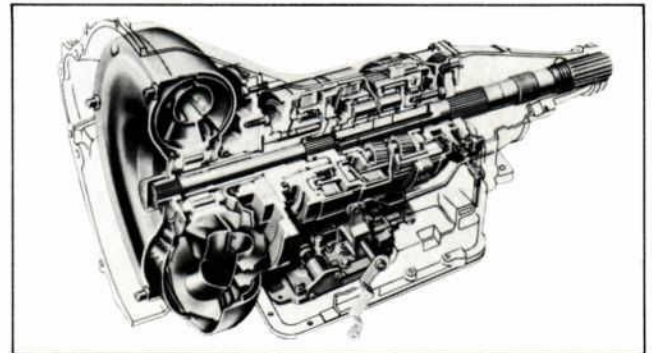


Semi-Automatic Transmission

Maverick's new semi-automatic transmission is essentially the same as the C-4 Cruise-O-Matic except that manual gear changing through a shift lever is required, but use of a clutch or clutch pedal has been eliminated.

The major differences between the semi-automatic and Cruise-O-Matic are the control valve body and manual linkage. The semi-automatic can be identified by *Model No. PEG-A* on the transmission tag.

The manual linkage adjustment procedures are the same as for other Ford products, however, the shift quadrant on the semi-automatic varies slightly. For adjustment purposes, the shift selector position of "HI" on the semi-automatic is the equivalent to "D" on the Cruise-O-Matic.



TRANSMISSION GEAR RATIOS

TRANSMISSION	GEAR	ENGINES	
		170	200
THREE-SPEED MANUAL	First	3.41	2.99
	Second	1.86	1.75
	Third	Direct	Direct
	Reverse	3.51	3.17
SEMI-AUTOMATIC	First	2.46	2.46
	Second	1.46	1.46
	Third	Direct	Direct
	Reverse	2.20	2.20
CRUISE-O-MATIC	First	2.46	2.46
	Second	1.46	1.46
	Third	Direct	Direct
	Reverse	2.20	2.20

POWER TEAM SELECTIONS

ENGINE	TRANSMISSION		
	3-Speed Manual	Semi-Automatic	Cruise-O-Matic
Std. 170 Six	Standard	Optional	Optional
Opt. 200 Six	Standard	Optional	Optional

SPECIFICATIONS AND SERVICE INFORMATION

CHASSIS AND DRIVE LINE SPECIFICATIONS

Clutch Pedal Free Play (at pedal)	1 inch
Brake Lining Wear Limit (from rivet head to top of lining)	1/32 inch
Wheel Bearing Adjusting Nut Torque To Seat Bearing	17-25-ft. lb.
Final Torque Specification	10-15-in. lb.

APPROXIMATE REFILL CAPACITIES

Fuel Tank	16 gals.
Except Calif. Reg. Vehicles	14 gals.
Calif. Reg. Vehicles	
Cooling System (includes 1 qt. for Heater)	
170 CID Engine—Standard	10 qts.
170 CID Engine—w/AC or Extra Cooling	10¼ qts.
200 CID Engine—Standard	9¾ qts.
200 CID Engine—w/AC or Extra Cooling	10 qts.
Engine Crankcase (includes 1 quart required for filter replacement)	4½ qts.
Automatic Transmission	8 qts.
Semi-Automatic Transmission	8 qts.
Standard Transmission	3½ pts.
Rear Axle	2½ pts.

FEATURES and SPECIFICATIONS



MAINTENANCE SCHEDULES

Non-Scheduled Maintenance

Following maintenance operations are not required at a definite mileage or time interval but should be performed as required.

MAINTENANCE OPERATION	WHEN PERFORMED
ENGINE Check engine coolant level	At least once a month, or if engine overheats.
TRANSMISSION Lubricate automatic and semi-automatic transmission shift linkage	Abnormal accelerator pressure is required to downshift transmission or transmission selector lever does not shift freely.
Lube manual transmission shift linkage	Hard shifting effort.
Check manual transmission clutch linkage adjustment	

MAINTENANCE OPERATION	WHEN PERFORMED
ENGINE Check engine coolant level	At least once a month, or if engine overheats.
CHASSIS Inspect and rotate wheels and tires	Tires show uneven wear pattern.
Check air conditioning system	At beginning of warm weather season.
Check front wheel alignment and steering linkage	Poor ride and handling characteristics—abnormal tire wear.
Balance wheels	
Check parking brake cable tension and adjust if required	Excessive control handle travel required to hold. Will not hold car.
Check headlamp alignment	Light beam appears too high or too low.
BODY Lube hood latch and auxiliary catch	For ease of operation.
Replace windshield wiper blades	Blades do not properly clean windshield.

Scheduled Maintenance Services

Following maintenance operations are required at the specified mileage and time intervals.

MAINTENANCE OPERATION	SERVICE INTERVAL					
	6	12	18	24	30	36
Number of months or thousands of miles, whichever comes first	6 / 42 / 78	12 / 48 / 84	18 / 54 / 90	24 / 60 / 96	30 / 66 / 102	36 / 72 / 108
Change Ford 6000 Mile Motor Oil and Autolite Filter ^①	X	X	X	X	X	X
Check transmission oil level ^②	X	X	X	X	X	X
Check rear axle fluid level ^②	X	X	X	X	X	X
Check brake master cylinder fluid level ^②	X	X	X	X	X	X
Clean crankcase oil filler breather cap ^③	X	X	X	X	X	X
Lube front suspension ball joints						X
Lube steering arm stops	X	X	X	X	X	X
Lube all body lock cylinders	X	X	X	X	X	X
Lube body hinges and door checks	X	X	X	X	X	X
Lube hood hinges	X	X	X	X	X	X
Replace fuel system filter & check for leaks		X		X		X
Replace Autolite carburetor air cleaner filter		X		X		X
Test crankcase emission system. Clean system and replace emission control valve if necessary	X		X		X	

MAINTENANCE OPERATION	SERVICE INTERVAL					
	6	12	18	24	30	36
Number of months or thousands of miles, whichever comes first	6 / 42 / 78	12 / 48 / 84	18 / 54 / 90	24 / 60 / 96	30 / 66 / 102	36 / 72 / 108
Clean crankcase emission system hoses, tubes, fittings, carburetor spacer, oil separator assembly, and replace as necessary. Replace emission control valve		X		X		X
Check and adjust carburetor—idle speed, fuel mixture		X		X		X
Clean choke external linkage		X		X		X
Check and adjust distributor points—replace as required		X		X		X
Check and adjust ignition timing—initial timing, mechanical and vacuum advances, and vacuum retard (if so equipped)		X		X		X
Inspect ignition wiring (secondary) for proper installation and good condition		X		X		X
Inspect, clean, adjust and test spark plugs—replace as required		X		X		X
Check drive belts for tension and wear. Adjust or replace as required	X	X	X	X	X	X
Inspect cooling system hoses for deterioration, leaks and loose hose clamps. Repair and/or replace as required		X		X		X
Replace engine coolant ^①	EVERY 24 MONTHS					
Clean and repack front wheel bearings					X	
Check brake lines and lining					X	
Adjust automatic and semi-automatic transmission front and rear bands	AT 12,000 MILES ONLY					
Adjust automatic transmission front and rear bands (when used in severe service)	② X		X			X
Check clutch pedal free play—Adjust linkage if required	X	X	X	X	X	X

① More frequent service intervals will be required if the vehicle is operated in extremely dusty areas or for extended periods of idling, trailer towing or short runs which prevent the engine from reaching normal operating temperature.
② Add fluid if required, additional cost.

① The cooling system should be inspected each 12000 miles or 12 months, if the coolant is dirty or rusty in appearance the system should be drained and flushed. The radiator cap should be cleaned and the system refilled with the specified solution of Rotunda coolant and water.
③ At first 6000 miles only—not at 42,000 or 78,000 miles.

REVISED TWIN I-BEAM ALIGNMENT SPECS...

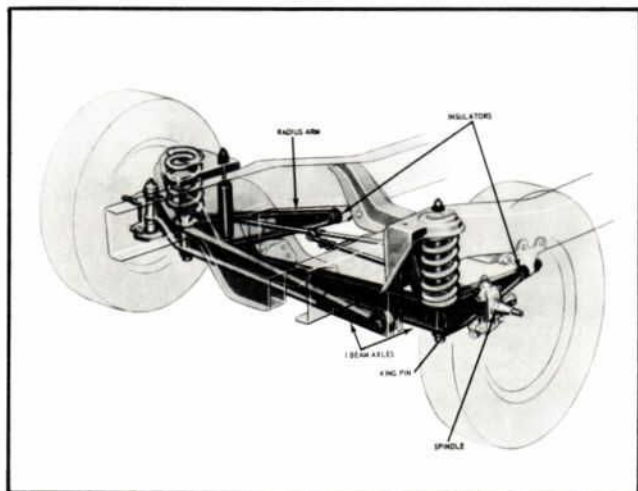


Figure 1—Twin I-Beam Suspension

“BLOCKS” NO LONGER NECESSARY

Wheel alignment specifications and the method of checking caster, camber and toe-in for Twin I-Beam vehicles has been changed. The current method of using spacer blocks to establish a ride height is no longer required. Alignment checks are now made with the vehicle at normal operating height and attitude. The only qualification is for the vehicle frame to be level—across the front side to side—when checking caster or camber. Check for toe-in with vehicle as equipped.

ABNORMAL TIRE WEAR

Wheel alignment is important because if incorrect it can cause tire wear. Abnormal or excessive tire wear can also be caused by wheel/tire imbalance or incorrect tire pressure. Typical tire wear patterns are shown in Figures 2 through 5. Use these examples only as a guide, because incorrect toe-in and extreme camber wear patterns resemble each other.



Figure 2—Underinflation

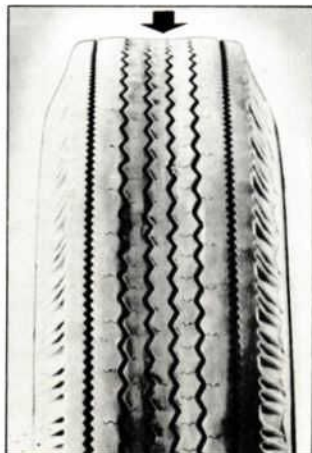


Figure 3—Overinflation



Figure 4—Incorrect Toe-In or Extreme Camber



Figure 5—Feathering Due To Misalignment or Severe Cornering

TOE-IN AFFECTS TIRE WEAR

Toe-in maladjustment is *by far* the leading cause of excessive or uneven tire wear on vehicles with Twin-I-Beam front suspension. Therefore, if excessive tire wear problems are encountered, they can usually be resolved by correcting toe-in. Seldom is it necessary to correct caster or camber. If the tire wear pattern indicates possible front end misalignment, correct with the following procedure.

CHECKING TOE-IN

The first 7 steps should be performed before taking alignment readings:

1. Inflate all tires to specified pressure.
2. Check front axle pivot bushings and radius arm to frame bushings for excessive wear or deterioration. Replace if necessary.
3. Check front wheel bearings for proper adjustment. Adjust, if necessary.
4. Check both front tires to assure they are the same size, ply rating, load range and rolling radius. This is required to level the axles and should be done by measuring spindle center to ground. If heights exceed 1/16 inch difference, add shims under tire on low side or deflate tire on high side.
BE SURE TO REINFLATE TO REQUIRED PRESSURE.
5. If alignment equipment being used attaches to wheels, check and adjust fixture for wheel runout.
6. Torque spindle pin lock pin to specification (40-50 lbs. ft.).
7. Check spindle pins and/or spindle bushings for evidence of excessive wear. Grasp each tire at the top and bottom and shake the wheel while watching the movement of the brake backing plate (or disc brake support). If the brake backing plate moves more than 1/32 inch, replace the spindle pins and bushings.
8. Check toe-in dimension.

1969 Econoline and 1965-69 F-100/350 Trucks

Check toe-in with the wheels in the straight ahead position. Measure the distance between the extreme front (A) and also between the extreme rear (B) of both front wheels (Fig. 6). Measure at an equal distance from the floor; approximately at the center of the spindle. The difference between these two measurements (B-A) is the amount the wheels toe-in or toe-out. If toe-in is not within specifications, do not attempt to adjust by bending suspension or steering linkage components.

If toe-in is not within the specified 1/16-3/16 inch dimension, loosen clamp bolts at each end of spindle connecting rod sleeve. Rotate the tube until the correct toe-in of 1/8 inch is obtained. Tighten clamp bolts. Recheck toe-in to make sure no changes occurred as bolts were tightened. Position the clamps 3/16 inch from the end of the rod. On F-100/350 models, tighten the clamps with the bolts vertical and forward of the rod, with the nuts facing downward.

It is re-emphasized that front wheel toe-in is specified at the vehicle's *normal operating ride height* or suspension position. Also remember excessive toe-in is the primary cause of excessive tire wear (unless vehicle is subjected to excessive cornering). Toe-in is the first thing to be checked (and adjusted) to correct for tire wear.

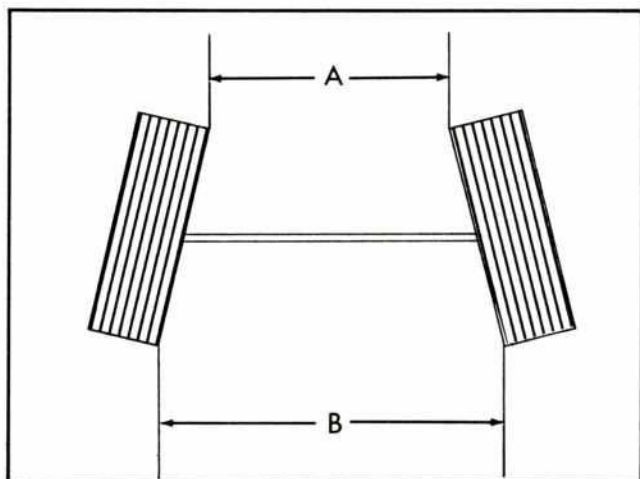


Figure 6—Measuring Toe-In

CHECKING CASTER AND CAMBER

Caster is the number of degrees of backward tilt (positive caster) of the spindle pin (Fig. 7). Camber is the number of degrees the top of the wheel tilts outward (positive camber) or inward (negative camber) from a vertical plane (Fig. 7). Before checking caster or camber, perform the following:

- A. Conduct steps 1 through 8 under "Checking Toe-In."
- B. Level the vehicle. Equal height blocks placed between axle and frame may be used for leveling with appropriate ballasting or clamping as required. Measure from a similar point on the right and left frame side rail to the axle I-beam top surface. Distances should be equal from side to side within 1/8 inch.

Figure 8 shows the vehicle ride height for F-100/350 trucks, measured between the axle and spring seat lower surface. Figure 9 shows vehicle ride height for Econolines, measured between the axle and crossmember flange.

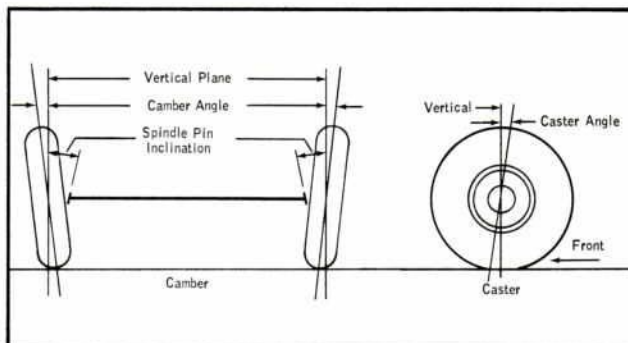


Figure 7—Caster and Camber

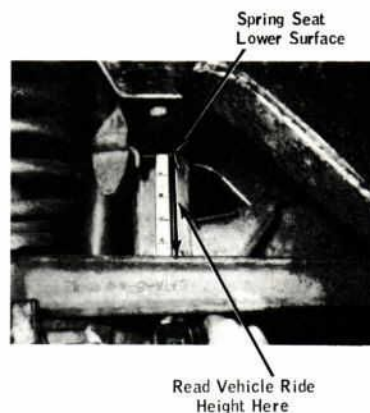


Figure 8—Ride Height Measurement F-100/350 Trucks

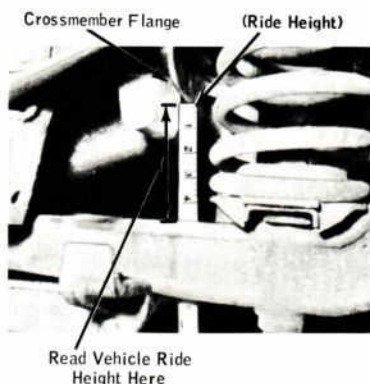


Figure 9—Ride Height Measurement Econoline

After performing preliminary checks A and B, measure caster and camber with appropriate equipment. Be sure and follow manufacturer's instructions. Specifications for Econoline and Light Trucks with Twin I-Beam suspension are shown in the following chart (Fig. 10).

REVISED TWIN I-BEAM ALIGNMENT SPECS...

1969 Econoline and 1965-69 F-100/350 Trucks

	Caster#	Camber#
	Stated in Degrees	
Econoline and Club Wagon	+½ to 5½	+½ to 3½
F-100/250	+½ to 5½	-½ to +2½
F-350	+½ to 5½	0 to 3
Max. variation between wheels when frame to axle is within ¼ inch side to side.	1½	⅝
# Encompasses all normal operating vehicle attitudes.		

Figure 10—Twin I-Beam Caster and Camber Specifications

DO NOT MAKE CASTER OR CAMBER ALIGNMENT CORRECTIONS UNTIL YOU ARE SURE THE MAJOR DIFFERENCE BETWEEN WHEELS IS NOT CAUSED BY: NON-LEVELED VEHICLE; WORN PIVOTS; BENT OR LOOSE SPINDLE, ETC. IF CAUSED BY ANY OF THESE, THE PROBLEM MUST BE CORRECTED BEFORE ADJUSTING CASTER OR CAMBER.

CASTER AND CAMBER VARIATION DIAGNOSIS PROCEDURE

To determine which wheel is truly out of specification, once an excessive variation side to side has been verified, the caster and camber charts in Figures 11 and 12 must be used. They illustrate a "band" of values acceptable for a given ride height.

Having determined the vehicle ride height, (Figures 8 & 9) the appropriate caster and camber readings can be determined from the charts by selecting the correct vehicle scale and using the ride height dimension to locate the acceptable "band" of values, Figures 11 and 12. Note that these ride heights must be approximately equal (within ¼") in order to relate L.H. to R.H. sides.

Caster is built into the I-beams. Alignment equipment only makes a true reading when the frame is horizontal, front to rear. If the frame is not level (due to tire, spring or load differences) the caster angle reading must be "modified."

If the front is higher than the rear, **SUBTRACT** the amount of angle from the reading. Likewise, if the front is lower

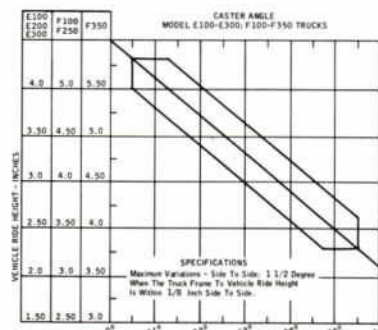


Figure 11—Caster "Band" Angle Values

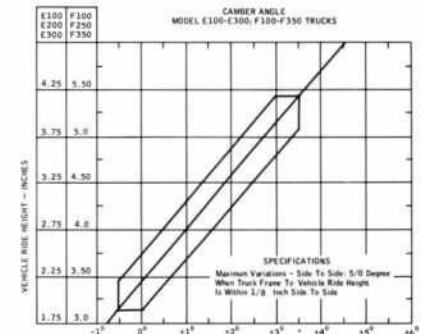


Figure 12—Camber "Band" Angle Values

than the rear **ADD** the angle. Measure the frame angle with a spirit level protractor on the lower frame flange at the flat area immediately adjacent to the rear spring front hanger on F-100/350 Trucks (Angle "B", Figure 13). On Econolines, take the measurement midway between the front and rear axles on the floor side member sill assembly (Angle "B", Figure 14).

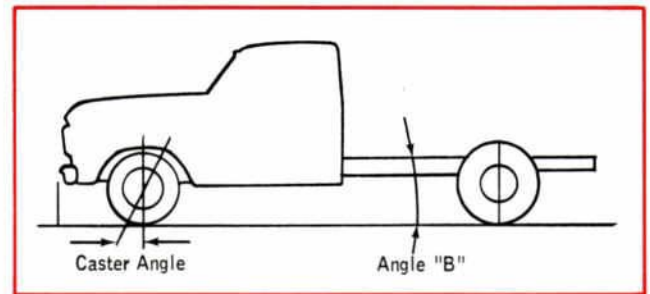


Figure 13—Frame Angle—F-100/350 Trucks

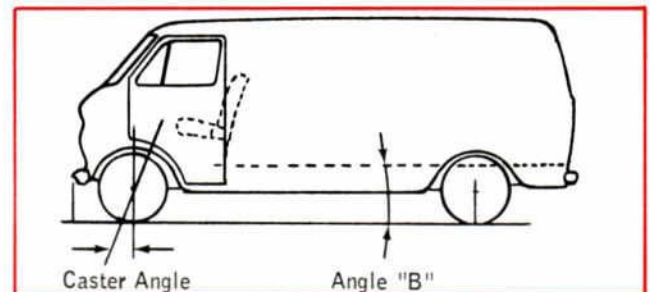


Figure 14—Frame Angle—Econolines

BENDING

Bending suspension components to obtain correct specifications should only be done after excessive side to side variation has been verified.

Using the acceptable "band" as a guide, bend the axle according to the procedures outlined in the 1969 Ford Truck Shop Manual until the axle once again conforms to the basic specifications, that is, has a value within the acceptable "band" and does not vary from one side to the other by more than 1½ degrees of caster and ⅝ degrees of camber.

TRANSMISSION IDENTIFICATION TAG

(Ford Design Three and Four Speed Manual Transmissions and C4, C6, MX and FMX Automatic Transmissions)

The model number *suffix* on the identification tag identifies running transmission changes and should always be used when ordering parts. Example: Basic Model PEA-A-revised—PEA-A1.

Occasionally a number appears on the identification tag just after the transmission model suffix. The intent of this article is to clarify that number.

The first line on the tag shows the transmission model prefix and suffix. A number appearing after the suffix (Figure 1) indicates that the internal parts in the transmission have been changed after initial production. For example, a PEA-A model transmission that has been changed internally would read PEA-A1. Both transmissions are basically the same, but some service parts in the PEA-A1 transmission are slightly different than the PEA-A transmission. Therefore, it is important that the codes on the transmission identification tag be checked when ordering parts or making inquiries about the transmission.

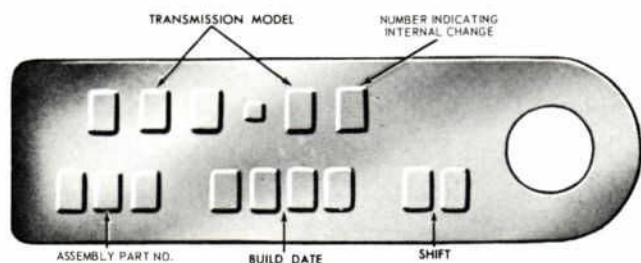


Figure 1—Transmission Identification Tag

IMPROVED INTAKE TO CYLINDER HEAD GASKETS AND END SEALS

330, 360, 361, 390, 427 and 428 CID Engines

Improved intake manifold to cylinder head gaskets are available to minimize the possibility of oil consumption and/or leakage. They are made of a new improved compound for improved sealability; and colored dull red for identification. An interlocking design (Figure 2) at the four corners of the gaskets and end seals will reduce the probability of mispositioning the end seals during intake manifold installation.

Police and Cobra Jet 429 CID engines utilize a restricted exhaust orifice in the intake manifold to cylinder head gasket. This restriction reduces heat in the intake manifold area, thereby increasing valve life and oil consumption protection during high speed driving conditions.

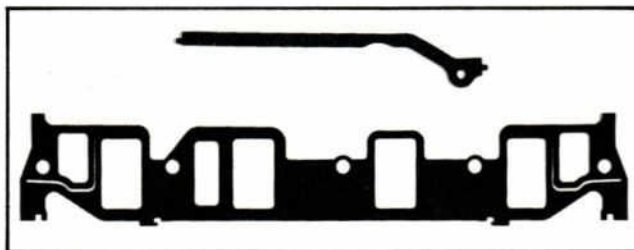


Figure 2—Intake Manifold Gasket

Autolite-Ford Part Number	Class	Identification Imprinted in Gasket	Engine Application
C8AZ-9441-B*	B	C8AE-9439-G	360/390 Truck 428 Police & CJ
C8AZ-9441-A**	A	C8AE-9439-C	390, 427 and 428 CID Passenger
C8TZ-9331-A	A	C8TE-9439-B	330, 361, 391 CID Truck
C8AZ-9A424-A	A	Rear Seal	All above
C8AZ-9A425-A	A	Front Seal	All above

*Kit including seals C6AZ-9433-D, Class A
**Kit including seals C3AZ-9433-G, Class A

CHANGES IN CARBURETOR DASHPOT REQUIREMENTS

During 1968, only units with an automatic transmission, required a dashpot on the carburetor. All 1969 vehicles, whether automatic or standard transmission, require carburetor dashpots with the following exceptions.

The engine, transmission type, carburetor number and application for which dashpots are *not* required are:

Engine	Trans.	Carburetor No.	Application
351-2V	Auto.	C90F-C C9ZF-B	Fairlane, Montego Mustang, Cougar
330-2V	Manual	C9TF-A	Truck
360-390-2V	Auto.	C8TF-AZ	Truck (Non-Exhaust Emission)
351-4V	Auto.	C90F-D C9ZF-D	Fairlane, Montego Mustang, Cougar
390-4V	Auto.	C9ZF-F C90F-E	Mustang, Cougar Montego
429-4V	Auto.	C9AF-R	Ford, Mercury*

*The C9AF-9510-R carburetor is released for the 429-4V Mercury engine. However, it was necessary to use the C8SF-9510-H carburetor (which is released for the 429-4V Thunderbird) on early built 429-4V Mercury engines. This carburetor has a dashpot, external bowl vent valve, and a hot idle compensator. After approximately November 1, 1968 the Mercury 429-4V engine is equipped with the C9AF-9510-R carburetor which does not have a dashpot, external bowl vent valve or hot idle compensation.

Prior to November 1, 1968, Fords with the 429-4V and automatic transmission used the C8SF-9510-H carburetor, which has a dashpot, external bowl vent and hot idle compensator. After November 1, 1968, Fords with the 429-4V and automatic use the C9AF-9510-R, which does not require a dashpot, nor does it have an external bowl vent or hot idle compensator.

COMPLIMENTS OF

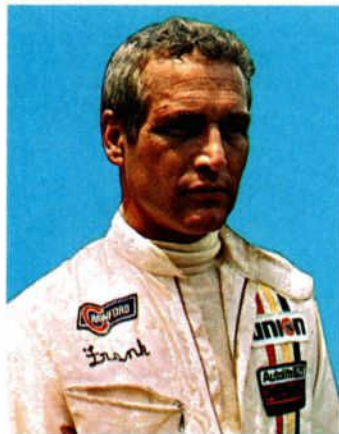
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