

Automobile Manufacturers Association Consolidated Specification Questionnaire For 1949 Models Mechanical Details

Make of Car FORD V8 Model 98BA

Name of Maker FORD MOTOR CO. Address DEARBORN, MICHIGAN

Date

NOTE: (1) Subject to Correction: It is understood that the following data are subject to correction in the case of cars not in production at the time this compilation was requested.

(2) Only standard equipment included in Factory Delivered price should be included in this questionnaire.

ENGINE

No. of cylinders 8
Valve arrangement V-L HEAD
Bore 3 3/16 Stroke 3 3/4
Cylinder head, cast iron or aluminum CAST IRON
Cylinder sleeves, Yes. No. NO
Piston displacement 239.4
Taxable horsepower 32.5
Horsepower rating—

To be based on actual performance corrected to 60°F. at sea level (barometric pressure 29.92 inches of mercury) with standard fuel. (Octane No. of fuel 71.)

—With Bare Engine— 3600
Maximum brake hp. 100 at 3000 R.P.M.

—With Standard Accessories—*

Maximum brake hp. at R.P.M.

*Those standard accessories needed for normal operation including fan, generator, starter, air cleaner, muffler, manifolds, fuel and water pumps.

Maximum torque—
With bare engine, lb. ft. 181 at 2000 R.P.M.
With standard accessories,* lb. ft. at R.P.M.

Compression Ratio—
Standard 6.8 Optional

Standard compression pressure—pounds—
At cranking speed 90-110 (HOT)
At what R.P.M. 95-110 (HOT)

PISTONS and RINGS

Piston
Make
Material ALUMINUM ALLOY
Features DOUBLE WING, OVAL, SPHERICAL HEAD,
etc. DOUBLE WING, OVAL, SPHERICAL HEAD,
Weight—ounces—without rings, pin or bushing 13.12
Length 2.98
Clearance—
Top land .023 to .027
Skirt, top .003-.004 bottom .0027-.0023

PISTONS and RINGS (cont'd)

Piston ring groove depth—LOWER .175
Oil UPPER .174/ Compression .178
No. of oil rings used per piston 2
Width of oil rings .1545-.1550
Width of oil ring gap .007-.015
No. of compression rings used per piston 2
Width of compression rings .0915-.0920
Width of compression ring gap .007-.017
Maximum wall thickness of oil rings .147
Maximum wall thickness of compression rings .147
Are ring expanders used, Yes. No. NO

RODS and PINS

Wristpin—
Material SEAMLESS STEEL TUBING, H.T.
Length 2.847 Diameter .7503
Locked in rod, piston or floating FULL FLOATING
Clearance in piston .0004 L. to .0002 T.
Clearance in rod .0005 L. to .0001 T.
*Connecting rod—
Length—center to center 7.0
Material HI-CARB. MANG.
Weight—ounces 18.7
Crankpin journal—
Diameter 2.1385 Length 1.755
Lower bearing—
Material COPPER LEAD ALLOY-STEEL BACK
Clearance .0005 to .0030
End play .006 to .020 (2 RODS)
Ship—solid, laminated or none NONE
Spun or separate SEPARATE
Rods and pistons removed from above or below ABOVE
CRANKSHAFT
Material CAST ALLOY STEEL
Weight—stripped 66
Vibration dampener used—yes or no NONE
Type

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CRANKSHAFT (cont'd)

Crankshaft counterweights used, number of... **6**
 Which main bearing takes thrust... **REAR MAIN**
 Crankshaft end play... **.002-.006**
 Main bearing--

Type: Cast-in or... Slip-in... **X**
 If slip-in: Removable from below... **YES**
 Necessary to align ream... **NO**

Material... **SPECIAL ALLOY**
 Clearance... **.0013**
 Shim—solid, laminated or none... **NONE**

Main bearing journal diameter x length--
 No. 1... **2.499 x 1.50**
 No. 2... **2.499 x 1.50**
 No. 3... **2.499 x 2.250**
 No. 4... **NONE**
 No. 5
 No. 6
 No. 7
 No. 8
 No. 9

Crankshaft gear or sprocket--
 Make... **FORD**
 Material... **G.I.**

CAMSHAFT

Camshaft gear or sprocket--
 Make... **FORD**
 Material... **ALUMINUM**

Timing chain--
 Make... **NONE**
 Number of links
 Width
 Pitch

VALVES

INTAKE VALVE--

Make... **FORD AND OTHERS**
 Material... **# 1 SILICON**
 Overall length... **4.819**
 Actual overall diameter of head... **1.515**
 Minimum port diameter... **1.340**
 Angle of seat... **45°**
 Is valve seat an insert?... **YES**
 Stem diameter... **3410**
 Stem to guide clearance... **.001** to **.003**
 Lift... **.296**
 Spring pressure and length--
 Outer--

VALVES (cont'd)

With valve closed--lb. **37-40** ins. **2.13**
 With valve open--lb. **76-84** ins. **1.88**
 Length out of engine--ins. **2.41**
 Inner--
 With valve closed--lb. ins.
 With valve open--lb. ins.
 Length out of engine--ins.

EXHAUST VALVE--

Make... **FORD**
 Material... **NI-CR. ALLOY**
 Overall length... **4.8190**
 Actual overall diameter of head... **1.515**
 Minimum port diameter... **1.340**
 Angle of seat... **45°**
 Is valve seat an insert?... **YES** Material... **MOLY-CR. ST**
 Stem diameter... **3410**
 Stem to guide clearance... **.0015** to **.0035**
 Lift... **.292**
 Spring pressure and length--

Outer--
 With valve closed--lb. **37-40** ins. **2.13**
 With valve open--lb. **76-84** ins. **1.81**
 Length out of engine--ins. **2.41**
 Inner--
 With valve closed--lb. ins.
 With valve open--lb. ins.
 Length out of engine--ins.

Operating tappet clearance (hot or cold)—intake... **.010 to .012**
 Tappet clearance for valve timing—intake... **.015**
 Operating tappet clearance (hot or cold)—exhaust... **.014 to .016**
 Tappet clearance for valve timing—exhaust... **.015**
 Hydraulic valve lifters—yes or no... **NO**

Valve timing--
 Intake opens... **0°** degrees BUDC piston travel... inches
 Intake closes... **44°** " ALDC " " inches
 Exhaust opens... **48°** " BLDC " " inches
 Exhaust closes... **6°** " AUDC " " inches

Valve Timing Marks—on Flywheel, Vibration Damper, None
CRANKSHAFT PULLEY

LUBRICATION

Lubricating system type—pressure or splash
 Oil pressure to--
 Main bearings—yes or no... **YES**
 Connecting rods—yes or no... **YES**
 Wristpins—yes or no... **NO**
 Camshaft bearings—yes or no... **YES**
 Tappets—yes or no... **NO**

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STARTING MOTOR

Make OWI Model TRA
 Normal engine cranking speed 110-150 @ 70° F
 Brush spring tension 27.0z.
 Lock test—
 Amperage draw 550
 Volts 3.75
 Torque in pounds feet 15
 N. at
 per amp draw 45-60
 its 5.8 R.P.M. 5000-8000
 Type of drive—Bendix
 Starting device—Solenoid
 Starter operation—check items required to start engine
 1. Turn on ignition X
 2. Depress starter pedal
 3. Depress accelerator pedal
 4. Depress clutch pedal
 5. Operate button on dash X
 6. Pull out throttle
 Starting motor pinion meshes 3rd gear
 No. of teeth in flywheel 112
 Face width of flywheel teeth 3/8
 Gear ratio between starter armature and flywheel 11.2:1

GENERATOR

Make OWI Model 8BA
 Type shunt, 30
 Brush spring tension 22.0z.
 Current regulator, voltage regulator or current and voltage control unit VOLT AND CURRENT REG.
 Maximum GENERATOR RATING
 Temperature 90° F.
 Amperes 30
 Voltage 7.1
 R.P.M. 1575
 Cutout relay—
 Voltage at closing 6.2-7.0
 Amperes to open, reverse current 8 MAX.
 Air gap .010
 Voltage regulator—
 Volts 7.2-7.6
 Temperature NORMAL OPERATING
 Air gap .035
 Current regulator—
 Amperes 30-34
 Temperature NORMAL OPERATING
 Air gap .035
 Car speed for maximum charging rate 20
 Ammeter or charge indicator make FORD

* 65-90 @ 0° F, 10W OIL

LAMPS

Lighting switch make
 Are tail and dash lights in series NO
 Headlights—
 Make FORD
 Location—in fender, 2 each
 Parking or fender light make FORD
 Tail and stop light make FORD
 Horn—
 Type—vibrator No. used 2
 Make
 Amperage draw of each 15

CLUTCH

Make LONG
 Drive type—
 Direct to flywheel face DIRECT
 Through fluid flywheel
 Semi-centrifugal YES
 Power operated unit—make NONE
 Vibration insulation or neutralizer—fabric,
rubber blocks or springs SPRINGS
 No. of clutch driving discs ONE
 No. of clutch driven discs ONE
 Clutch facing—
 Material—woven asbestos, 20K
 Inside diameter 6.0
 Outside diameter 9.2
 Thickness .125
 No. required 2

TRANSMISSION

Transmission—
 Make OWI Model
 No. of forward speeds 3
 Manual shift—yes
 Automatic or auxiliary shifting mechanism—yes X
 If yes, Make
 Type—centrifugal, vacuum, electric or hydraulic
 Automatic overdrive—
NO EXTRA COST
 Oil capacity—pints 4.5
 Oil grade recommended—S.A.E. viscosity
 Summer 80 Winter 80
 Gear ratio in high—standard 3-passenger
4-door sedan 3.73
 Transmission ratio—
 In overdrive 70 In second 1.604
 In third 1.00 In fourth
 In low 2.819 In reverse 3.625

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TRANSMISSION (Cont'd)

Constant mesh gears on second **YES**
 Spur or helical gears—
 For second speed
 For first speed
 For reverse speed
 For all speeds **HELICAL**
 Synchronous meshing and third gears **YES**
 Transmis
 Cas -pint. **4**
 Gre comm aded—S.A.E. viscosity
 Summer **80** Winter **80**
 Universal joints—
 Make
 Number used **2**
 Type—metal with anti-friction
 bearing or metal with plain bearing **NEEDLE ROLLERS**
 Lubricated with
 Drive taken through springs, ~~leaf springs~~
 SPRINGS
 Torque taken through springs, ~~leaf springs~~
 SPRINGS

REAR AXLE

Rear axle—
 Make **FORD** Model **8A**
 Type—Semi-~~floating~~ **SEMI FLOATING**
 Minimum road clearance under center of rear
 axle—tires inflated **8.2**
 Rear axle oil—
 Capacity—pints **3**
 Grade and type recommended—S.A.E. viscosity
 Summer **90 EP** Winter **90 EP**
 Type of gearing—~~hypoid~~
 Gear ratio—standard 5-passenger 4-door sedan **3.73 to 1**
 Optional gear ratios **4.10 to 1 (W/D. WITH QV DR)**
 Number of teeth—
 In ring gear **41** In pinion **11 ON 4.10**
 41 **11 ON 3.73**
 How is pinion adjusted—screw or shims **NOT ADJUSTABLE**
 How is pinion bearing adjusted—screw or shims **COLLAPSIBLE**
 Are pinion bearings carried in sleeve **NO** /SPACER
 Backlash between pinion and ring gear **.005** to **.008**

TIRES and WHEELS

Tires—
 Make **VARIOUS**
 Size **6.00 x 16** No. of plies **4**

TIRES and WHEELS (Cont'd)

Inflation pressure—Front **28** Rear **25**
 Rim—Diameter **15** Width **4.5 K**

SPRINGS

FRONT SPRING—

Independent or conventional suspension **INDEPENDENT**
 Type—coil, semi-elliptic, transverse, torsion **COIL**
 Make
 Material **SPECIAL ALLOY STEEL**
 Torsional stabilizer at front **YES**
 If leaf—
 Length Width
 Number of leaves—5-passenger, 4-door sedan
 Are radius rods used on axle
 If coil—
 Free length **13.9"**
 Length under curb weight **9.85**

REAR SPRING—

Independent or conventional suspension **CONVENTIONAL**
 Type—~~leaf~~ semi-elliptic, ~~transverse~~
 Make
 Material **ALLOY STEEL**
 Torsional stabilizer at rear **NO**
 If leaf—
 Length **50.0** Width **2.0**
 Number of leaves—5-passenger, 4-door sedan **7 LEAVES**
 Spring leaves lubricated with **NONE REQ.**
 Spring cover, Yes No **X**
 Spring shackles—
 Front—Type **RUBBER** Make **FORD**
 Rear—Type **RUBBER** Make **FORD**
 Spring bolts—
 Type **(FRONT) SHOULDER BOLT, OUTER END PLATES**
 If coil— **(REAR) SHOULDER BOLT, BOTH ENDS FIXED**
 Free length
 Length under curb weight
 Rate for above *pounds per inch*
 Shock absorbers—
 Make **VARIOUS**
 Type, one way with lever, two way with lever, or direct acting
 Front **DIRECT ACTING**
 Rear **DIRECT ACTING**
 Fluid capacity (oz.)—front **4.5 AVER.** rear **6.5 AVER.**

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STEERING

Steering gear—
 Type WORM & ROLLER
 Make OWB Model 8A
 Ratio 17.7 to 1
 Lubricant recommended SAE 140
 Steering wheel diameter 18
 Drive shaft lineal or transverse TRANSVERSE
 Tie rods one or two 2
 Is intermediate steering arm used IDLER ARM- YES
 Number of turns of steering wheel for full left
 to right swing of wheels 4
 Car turning radius—feet—right, left or both
 Caster—degrees 1 1/4° so - 3/4°
 Camber—degrees or 1/16° MINX so + 3/4°
 Toe-in—inches 1/16 so 1/8
 Crosswise inclination of kingpin—degrees 3 1/2
 Front axle—
 Make _____ Model _____
 Section type—I-beams, subular or none
 End type—Elliott or reverse Elliott
 Minimum road clearance—tires inflated 7.2"

BRAKES

Foot brakes—
 Make _____
 Type of mechanism, hydraulic or mechanical HYDRAULIC
 If vacuum booster is standard, state make _____
 Brake lining moulded, semi-moulded or woven—
 Primary shoe MOULDED
 Secondary shoe MOULDED
 Drum—
 Material C.I. Diameter 10"
 Lining—
 Length per wheel 218

BRAKES (cont'd)

Width 2.25 Thickness .187
 Clearance—toe .010 heel .010
 Total foot braking area 176
 Percent braking power on rear wheels 38%
 Hand lever operates on—transmission, separate rear brakes, rear service brakes or all four service brakes REAR SERVICE
 Hand brake, if separate from service brake—
 Internal or external _____
 Drum diameter _____
 Lining—
 Length per drum _____
 Width _____ Thickness _____
 Clearance _____

FRAME and OTHER GENERAL DATA

Frame—
 Depth—maximum 4"
 Thickness—maximum .09
 Flange width—maximum 3 3/4" BOX
 Wheelbase 114
 Tread—
 Front 56.0
 Rear 56.0
 Weight of standard 5-passenger, four-door sedan—
 Shipping 3030
 Curb 3173
 Price of standard 5-passenger, 4-door sedan _____
 First serial number, this series 98 BA-101
 Serial number location ON DASH PANEL
 Overall length of car—
 With bumpers and bumper guards 196.8
 Overall width of car 71.70
 Overall height, road to roof with no load 64.7

* MINIMUM CLEARANCE AT BELL HOUSING
 TAKEN AT DESIGN LOAD (3000+50)

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NOTE—In giving bearing dimensions, kindly use the following order: inside diameter, outside diameter and width. Where cup and cone bearings are used, give both cup and cone numbers.

BEARINGS

Water pump bearing— **SINGLE ROW SEALED BALL**
 Make or type **BRG. WITH COMP. BUSHING**
 Size or number **BRG. #1202ER, BUEN. 594x.783x.88**

Fan bearing— **DOUBLE ROW SEALED BALL**
 Make or type **BRG. AND SHAFT ASS'Y**
 Size or number

Starting motor commutator end bearing—
 Make or type **COMPRESSED BRONZE BUSHING**
 Size or number **11-11052**

Starting motor drive end bearing—
 Make or type **COMP. BRONZE BUSHING**
 Size or number **B-11135**

Starting motor outboard bearing—
 Make or type **NONE**
 Size or number

Generator commutator end bearing—
 Make or type **COMP. BRONZE BUSHING**
 Size or number **78-10228**

Generator drive end bearing—
 Make or type **BALL BEARING**
 Size or number **7RA-10094**

Transmission main drive gear front pilot bearing—
 Make or type **SINTERED BRONZE**
 Size or number **.6725 x 1.5753 x .505**

Clutch throwout bearing—
 Make or type **ARTNA-BALL**
 Size or number **ED 2588**

Transmission main drive gear rear bearing—
 Make or type **SINGLE ROW BALL**
 Size or number **SAE # 35 BC02**

Transmission main shaft front pilot bearing—
 Make or type **NEEDLE ROLLER**
 Size or number **.2182 DIA. X .538 LONG**

Transmission main shaft rear bearing—
 Make or type **SINGLE ROW BALL**
 Size or number **SAE # 35 BC02G**

Transmission countershaft front bearing—
 Make or type **NEEDLE ROLLER**
 Size or number **.1244 DIA. X .89 LONG**

Transmission countershaft rear bearing—
 Make or type **NEEDLE ROLLER**
 Size or number **.1244 DIA. X .89 LONG**

Transmission reverse idler bearing—
 Make or type **STRIP BRONZE**

BEARINGS (cont'd)

Size or number **.7525 x .884 x 1.180**

Overdrive shaft rear bearing—
 Make or type **STEEL BACKED RABBIT**
 Size or number **1.5005 x 1.6295 x 1.50**

Overdrive shaft pilot bearing—
 Make or type
 Size or number

Main shaft extension bearing—
 Make or type **STEEL BACKED RABBIT**
 Size or number **1.5005 x 1.6295 x 1.25**

Rear axle pinion shaft front bearing—
 Make or type **TAPERED ROLLER**
 Size or number **CUP 02820 CONE 02876**

Rear axle pinion shaft rear bearing—
 Make or type **TAPERED ROLLER**
 Size or number **CUP 31520 CONE 31597**

Differential right bearing—
 Make or type **TAPERED ROLLER**
 Size or number **CUP 24720 CONE 24780**

Differential left bearing—
 Make or type **TAPERED ROLLER**
 Size or number **CUP 24720 CONE 24780**

Rear wheel ~~inner~~ bearing—
 Make or type **DOUBLE SEAL SINGLE ROW BALL**
 Size or number **88107**

Rear wheel outer bearing—
 Make or type
 Size or number

Front wheel inner bearing—
 Make or type **TAPERED ROLLER**
 Size or number **CUP 15245 CONE ASS'Y 15124**

Front wheel outer bearing—
 Make or type **TAPERED ROLLER**
 Size or number **CUP 09195 CONE 09067**

Kingpin upper bearing—
 Make or type **BRONZE BUSHING**
 Size or number **13/16 DIA. x 1.3 LONG**

Kingpin lower bearing—
 Make or type **BRONZE BUSHING**
 Size or number **13/16 DIA. x 1.3 LONG**

Kingpin thrust bearing—
 Make or type **TAPERED ROLLER & BALL OPT.**
 Size or number **ARTNA T-83 OR .825 I.D. x 15 BALLS .25 DIA.**

1949 MODEL SPECIFICATIONS

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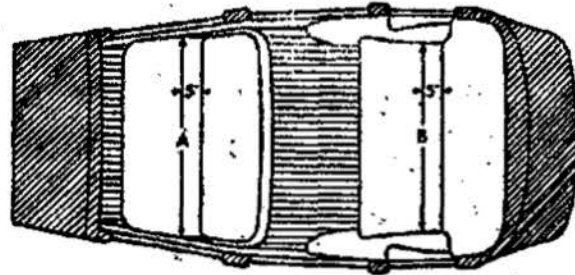
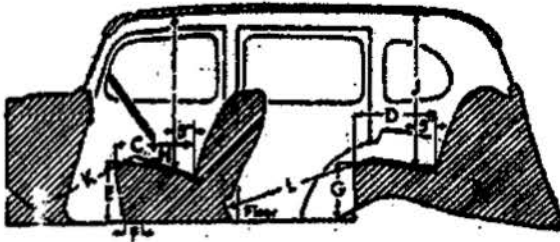
NOTE: (1) List only that equipment which is included in the factory delivered price. Special equipment which is fitted, but not included in the factory delivered price should be listed with its additional price.
 (2) Enter on top line your own model name, or series mark corresponding to the above Deluxe or Custom.

EQUIPMENT	Models		
	Standard	Deluxe	Custom
Factory Designation of Model	FORD		FORD CUSTOM
Lacquer make	NONE		NONE
Body finish, lacquer or synthetic enamel	BAKED ENAMEL		BAKED ENAMEL
Fender finish, lacquer or synthetic enamel	BAKED ENAMEL		BAKED ENAMEL
Hardware make			
Speedometer make			
Gasoline gauge make			
Thermometer make			
Car lock make			
Car lock operates on ignition or ignition and steering	IGNITION		IGNITION
Clock TYPE	* NONE		* MECHANICAL
Cigar lighter TYPE USAGE	STANDARD		STANDARD
Safety glass make	FORD & OTHERS		FORD & OTHERS
Safety glass type, laminated or tempered			
In windshield	LAMINATED		LAMINATED
In side windows	LAMINATED		LAMINATED
In rear window	TEMPERED		TEMPERED
Bumper make			
Bumper guard make			
Car-heater make	(FRESH AIR OR RECIRCULATING, OPTIONAL E.C.)		
Direction signal TYPE			
Front—yes or no YES .. Reer—yes or no YES ..	ACCESSORY		ACCESSORY
No. of tail lights included	2		2
No. of visors included	1		2
No. of horns included	2		2
No. of windshield wipers included	2		2
No. of spare tires included	1		1

* **ELECTRIC CLOCK: ACCESSORY**

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BODY DIMENSIONS (Five-Passenger, Four-Door Sedan)



INTERIOR

All interior body dimensions taken with front seat in its rear position

Width of front seat cushion, measured 5 inches from back (A)	56
Width of rear seat cushion, measured 5 inches from back (B)	60
Depth of front seat cushion (C)	18.1
Depth of rear seat cushion (D)	18.2
Height of front seat cushion measured 12½ inches from center line of body (E)	14.0
Front seat horizontal adjustment, inches (F)	4
Front seat vertical adjustment, inches	4
Height of rear cushion measured 12½ inches from center line of body (G)	13.5
Vertical distance steering wheel and seat-cushion (H)	5.6
Head room at front seat, measured 5 inches from back (I)	35.8
Head room at rear seat, measured 5 inches from back (J)	36.4
Leg room in front seat, measured from 6 inches up on toe board, following contour of seat cushion (K)	41.3
Leg room in rear seat, measured from center of foot rest, following contour of seat cushion (L)	40.0
Trunk capacity, cubic feet. (WITH SPARE) (WITHOUT SPARE)	18.8 21.4
Width of left front pillar on diagonal with door closed	4.38

