

1924 Gardner

Specifications

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Principal Chassis Specifications

Car Name and Model	Touring Price and Passenger Cap'y	Engine Make and Model	Engine Type	Number of Cylinders	Taxable H. P.	Average Mileage	Bore and Stroke	Cyls. Cast	Front End Drive	Cooling System Type	Cap'y Cooling Sys. Gals.	Make of Radiator	Type of Oiling System	Qt. Capacity Oil Sys.	Miles per Quart of Oil	Grades of Oil Recommended	Carburetor Make and Size	Main Tank Capacity in Gallons	Make or Type Fuel Feed	Ignition Make and Spark Control	Start'g and Light'g Make
Gardner, 5	995-5	Lyc-CE	L	4	21.76	20	3 1/16 x 5	Blk*	Hel	T	4 3/4	Fedd	Force	5	400	M	Zen-1	13	Stew	Wshsc-m	Wshse

NOTES AND ABBREVIATIONS. ENGINES: Cont, Continental; H-S, Herschell-Spillman; Lyc, Lycoming; North, Northway; Weid, Weidely. **ENGINE TYPE:** L, L-head; T, T-head; O, valves in head; O (x), overhead camshaft; F, intake valves in head, exhaust valves in side; K, Knight type. **HOW ARE CYLINDERS CAST?:** Blk, block; * means cylinders are not cast with upper half of crankcase; † means cylinder head is not detachable. **FRONT END DRIVE:** Hel, helical; VS, vertical shaft; Link, Link-Belt silent chain; Whit, Whitney silent chain; Morse, Morse silent chain. Figures denote width of silent chain. **COOLING SYSTEM TYPE:** P, pump; T, thermo-siphon; A, air; * means water thermostat is used. **MAKE OF RADIATOR:** G&O, G&O Mfg. Co.; H'son, Harrison; J'town, Jamestown; Fedd, Fedders; Mod, Modine; Mc, McCd, McCord; Nat'l, National; L, Long; Core, Corcoran; P'tex, Perfex; S-W, Sparks-Withington; * means radiator shutter used. **TYPE OF OILING SYSTEM:** F&S, Force and splash; F&Spr, force and spray; C-S, circulating splash. **GRADE OF OIL RECOMMENDED:** L, Light; M, Medium; H, heavy. **CARBURETER MAKE:** Ball, Ball & Ball; Cart, Carter; Holl, Holley; John, Johnson; Ray, Rayfield; Scheb, Schebler; Strom, Stromberg; Till, Tillotson; Zen, Zenith; Var, Various. **MAKE OR TYPE FUEL FEED:** Grav, gravity feed; Pres, pressure feed; Stew, Stewart Warner; OY, Olivac. **IGNITION MAKE AND SPARK CONTROL:** AL, Auto-Lite; A-K, Atwater Kent; N-East, Northeast; Ry, Remy; Wag, Wagner; Wshse, Westinghouse; King, Kingston; Conn, Connecticut; Eise, Eiseemann; a means automatic control; sa, semi-automatic; m, manual control. **STARTING & LIGHTING MAKE:** LN, Leece Neville; O-Dyn, Owen-Dyneto; see also abbreviations in ignition column.

of the 1924 Passenger Cars

Clutch Type and Diameter	Transmission Locat'n and No. of Speeds	Oil Cap'y Trans., Qts.	Gear Ratio Transmission		Final Gear Ratio	No. Prop. Sht. Univ.	Rear Axle Type	Oil Cap'y Rear Axle in Qts.	Brakes Location	Brakes Type	Drive and Torque Thr'gh	Wheel Base	Tire Size	Wheels, Type	Length Springs Front and Rear	Type of Rear Springs	Steering Type	Steering Reduction	Weight Touring Car	Car Name and Model
			First Speed	Sec'nd Speed																
Plate-10	M-3	3	3.04	1.75	4.80	2	3/4-Flt	1	RWT	Ext	Hotch	112	32x4	Wood/D	35/51 1/4	S	W & W	7.50	2550	.....Gardner, 5

NOTES AND ABBREVIATIONS: Disc, multiple disc wherein there are more than three plates; R-Cn, reverse cone. **TRANSMISSION LOCATION:** M, gear set in unit with motor; S, separate or amidship location for gear set; A, gear set on rear axle; T, gear set on forward end of torque tube. **GEAR RATIOS, FIRST AND SECOND SPEEDS:** The figures here given show the ratios between the driving and driven gears in the transmission; if multiplied by the final gear ratio, the motor to wheel ratio will be obtained. **FINAL GEAR RATIO:** The motor to wheel ratio on direct drive. **REAR AXLE TYPE:** Float, full floating; Semi, semi-floating; 3/4 Flt, three-quarters floating. **LOCATION OF BRAKES:** RW, rear wheels; RWT, rear wheels and transmission; RWP, rear wheels and propeller shaft; 4-W, brakes on all four wheels; * means four wheel brakes optional. **DRIVE AND TORQUE:** Hotch, Hotchkiss, in which torque reaction is taken by the springs; T-T, torque tube; T-A, torque arm. **TIRE TYPE:** Cord tires are standard equipment except on Chevrolet, Ford, Gray, and Star. **WHEELS TYPE:** Wd, W d; Wr, wire; D, Disc. **LENGTH OF SPRINGS:** In each case the first figure given refers to the length of the front springs, and the second to the rear springs. **REAR SPRINGS TYPE:** S, semi-elliptic; C, cantilever; 3/4, three-quarter elliptic; E, elliptic; P, platform; T, transverse; 1/4, one-quarter elliptic; M, modified cantilever. **STEERING TYPE:** W&W, worm and wheel; S, screw and nut; C&L, cam and lever; W&S, worm and sector; Plan, planetary; Bev, bevel gear, internal sector and pinion.

Equipment Used in 1924 Cars

Tire Carrier	Top Material	Upholstery	Shock Absorbers	Radiator Meter	Gasoline Gauge	Make and Type Car Lock	Bumper	Rear View Mirror	Windshield Cleaner	Cigar Lighter	Car Name and Model No.
Detroit	Drednaut	Leather	.....	Jarvis	Natl-D	.....	Stewart*	Pioneer	Outlook	.....	.....Gardner, 5

NOTES AND ABBREVIATIONS: TOP MATERIAL: Dred, Drednaut; Hodg, Hodgman; Bur, Burbank. RADIATOR METER: Radl, Radimeter. GASOLINE GAUGE: Roch, Rochester; Gaspe, Gas-O-Scope; Tasco, Akron-Selle Co.; King, King-Seeley; Trmph, Boston Auto Gauge Co.; Natl, National Gauge & Equipment Co.; Gsmtr, Gasometer; T, tank location; D, dash location. MAKE AND TYPE CAR LOCK: John, Johnson; Detr, Detroit; B&S, Briggs & Stratton; Sgt, Sargent; Cutler, Cutler Hammer; I, ignition; Sh, gear shift. WINDSHIELD CLEANER: Out, Outlook; Fol, Folberth; Tri, Trico; Per, Perfection. Throughout this table * means equipment on certain models only.

Car Name and Model No.	Fan Belt	Brake Lining	BRAKES Length & Width of Lining		Tires	Rims	Chassis Lubricator	Speedometer	Heater	Power Tire Pump	Clock
			Hand or Emergency	Service or Foot							
Gardner, 5.....	Various	Rus/Ther	20¾x1¾	34x2	US/Gdyr	Hys	Alemite	Stewart	Perfection*	Hand	.....

NOTES AND ABBREVIATIONS: FAN BELT: G&K, Graton & Knight; Rie Nie, Durkee-Atwood; M&S, Mitchel & Smith; U&G, United & Globe; HLB, Hide Leather Belting Co.; Gil, Gilmer. BRAKE LINING: Rus, Rusco; Ray, Raybestos; Ther, Thermoid; J-M, Johns-Manville; Multi, Multibestos. TIRES: Gdrh, Goodrich; Gdyr, Goodyear; Mill, Miller; Old, Oldfield. RIMS: Fire, Firestone; Kel, Kelsey; Hys, Hayes; Jax, Jaxon; Gdyr, Goodyear; Mich, Michigan; Buff, Buffalo; Stan, Stanweld. SPEEDOMETER: Stew, Stewart; N-East, North East; Van Siek, Van Sichten. HEATER: Tim, Timme; Linen, Linendoll. TIRE PUMP: Where no power pump is provided, a hand pump is regular equipment. CLOCK: Ph-W, Phinney-Walker. Throughout this table * means equipment on certain models only.

Chassis Units Employed in 1924 Cars

Car Name and Model No.	MAKE OF									FRAME			
	Engine	Clutch	Transmission	Universals	Axles	Differential	Springs	Steering Gear	Wheels	Make	Width of Side Rail	Thickness of Metal	No. Cross Mem.
Gardner, 5.....	Lyc	B & B	Mech	Thiemer	Flint	N P G	Champ	Ditwiler	Hys/Tuarc	Hyd	4 9/16	5/32	.....5

NOTES AND ABBREVIATIONS: **ENGINES:** H-S, Herschell-Spillman, Cont. Continental; Lyc, Lycoming; Weid, Weidely; North, Northway. **CLUTCH:** B & B, Borg & Beck; B-Lipe, Brown-Lipe; Mech, Mechanics; Rkford, Rockford; M & E, Merchant & Evans; War-Gr, Warner Gear; D G & M, Detroit Gear & Machine Co. **TRANSMISSION:** G-Lees, Grant Lees; other abbreviations same as in clutch column. **UNIVERSALS:** Htford, Hartford; Gdrch, Goodrich; M&E, Merchant & Evans; T-H, Thermoid-Hardy; Mech, Mechanics; *means fabric joint. **AXLES:** Colbia, Columbia; Salis, Salisbury; *means that Stutz uses own rear axle and Eaton front axle. **DIFFERENTIAL:** B-Lipe, Brown-Lipe; Colbia, Columbia; NPG, New Process Gear; Salis, Salisbury; War-Gr, Warner Gear. **SPRINGS:** DSP, Detroit Steel Products; Per, Perfection; Row, Rowland; Wms, Williams; Shel, Sheldon; S-Perch, Spring Perch; *means spring covers supplied. **STEERING GEAR:** Record'g, Recording Devices Co. **WHEELS:** Bim, Bimcl; Hys, Hayes; Kel, Kelsey; For, Forsyth; Dis, Distel; HB&D, Hoopes Brothers and Darlington; IWC, Indestructible Wheel Co.; MWC, Motor Wheel Co.; WWC, Wire Wheel Corp.; R-W, Rudge Whitworth. **FRAME MAKE:** Hyd, Hydraulic; DPS, Detroit Pressed Steel; P&B, Parish & Bingham.

Bearings—Makes and Sizes Used in 1924 Cars

Car Make and Model No.	Lighting Generator Starting Motor Ignition Unit	CLUTCH	TRANSMISSION			FRONT AXLE	REAR AXLE	DIFFERENTIAL	
		Pilot Throw out Thrust	Main Shaft, F Main Shaft, R	Counter Sh., F Counter Sh., R	Reverse Idler Stem or Pocket	Pivot Pin Inner Hub Outer Hub	Inner Hub Outer Hub	Right Side Left Side	Pinion Shaft, F Pinion Shaft, R Propeller Shaft
Gardner, 5.....	Plain Plain Plain	ND-1205 Ball Nice-4744-4703	ND-207 ND-306	Plain Plain	Plain	Plain Tim-2785 Tim-1751	Hy-17512†	Hy-26469 Hy-26469	Gill-319 Gill-348

NOTES AND ABBREVIATIONS: Faf, Fafnir Bearings Co.; Fed, Federal Bearings Co.; Gur, Gurney Ball Bearing Co.; Gill, Gilliam Mfg. Co.; HB, Hess-Bright Mfg. Co.; Hy, Hyatt Roller Bearing Co.; ND, New Departure Mfg. Co.; SKF, Skayef Ball Bearing Co.; SRB, Standard Steel & Bearings, Inc.; Strom, U. S. Ball Bearing Mfg. Co.; Tim, Timken Roller Bearing Co.; Sha, Shafer Bearing Corp.; Sch, Schatz Mfg. Co.; Bow, Bower Roller Bearing Co.; Nice, Nice Ball Bearing Co.; BB, Bound Brook Oilless Bearing Co.; Star, The Bearing Co. of America; B&B, Borg & Beck Co.; * means semi-floating type of axle; † means three-quarter floating type of axle. The numbers of Timken bearings refer to the cone, and the cup numbers are omitted.

Technical Details, Important Dimensions and Equip

Car Name and Model	Number of Cylinders	Bore and Stroke	Piston Displacement	B.H.P. and Curve Peak	Compression Ratio	Crankcase Material	Make of Cylinder Head Gasket where Head is Detachable	Cyl. Bore Finish	Lower Rod Bearings Length and Diam.	Rod Attachment	Make Bearing Shims	Valve Material		Valve Head Diameter	Valve Stem Diam and Length	Valve Spring Pressure		Valve Tappet Clearance		Piston Material	Piston Clearance		Are oil holes used
												Head	Stem			Int.	Exh.	Int.	Exh.		Top	Bot.	
Gardner, 5	4	3 1/8 x 5	213.6	44 at 2150	4.10	CI	McCord	Grind	1 1/8 x 2 1/8	F	None	CI	1020	1 3/8	3/8 x 6 1/8	50	50	.004	.004	Lyn	.017	.0025	No

NOTES AND ABBREVIATIONS: CRANKCASE MATERIAL: CI, cast iron; Alum, Aluminum; Brnz, bronze; Lyn, Lynite; * indicates cylinder block integral with crankcase. MAKE CYLINDER HEAD GASKET: Vjc, Victor; Mc, McCord; McK, McKim; Cont, Continental. CYLINDER BORE FINISH: * means cylinders are offset. ROD ATTACHMENT: L Rod Locked to wrist pin; F, floating. MAKE BEARING SHIMS: HS, Herschell-Spillman; Lam, Laminated Shim Co.; Cont, Continental. VALVE MATERIAL: CI, cast iron; Cr-V, chrome vanadium; Tung, tungsten; Sil, silchrome; Cbn-S, carbon steel; Stnl, stainless steel; SS, semi-steel; N-S, nickel steel; Cr-N, chrome nickel; 1020, 1025, 1030, carbon steel; 2320, 2330, nickel steel; 3140, nickel-chromium; 6150, chrome-vanadium. VALVE HEAD DIAMETER: Where two dimensions are given for any make of car, the upper refers to the inlet valve and the lower to the exhaust. PISTON MATERIAL: CI, cast iron; Alum, aluminum; SS, semi-steel; Lyn, Lynite; Mag, Magnalite. MAKE OF PISTON RINGS: Cont, Continental; Qua, Quality; HS, Herschell-Spillman; Eco, Eco Co.; Sup, Superior; Am-Ham, American Hammered; HP, Hete Prufe; P-C Perfect Circle; Ped, Pedrick; Rich, Richmond; Wass, Wasson; Vic, Victory; SO, Sav-Oil; Cleve, Cleveland; Pin, plain; Var, various; Musk, Muskegon; DS, Double Seal; Gen, General.

ment of the Engines in 1924 Passenger Cars—(Continued)

Number & Make of Piston Rings	Width and Depth of Piston Rings	Diameter and Length of Wrist Pin	Are Wrist Pin Bosses Offset	Crankshaft Material	Material of Timing Gears or Sprockets		Is Crankshaft Drilled for Oil	No. Crankshaft B'rgs	Main Bearing Sizes, Diameter and Length				Fan Belt		Water Hose Diam. and Length		Car Name and Model
					Crankshaft	Camshaft			First	Second	Third	Fourth	Type	Diam. and Length	Lower	Upper	
3-Falls 1-Tee	1/8 x .144	1 1/8 x 2 3/8	No*	1045	PR	CI	Yes*	5	2 1/8 x 2 5/8	2 1/8 x 1 5/8 (2)	2 1/8 x 1 1/8	2 1/8 x 2 5/8	F	1 1/4 x 35	2 1/4 x 8 1/2	2 3/4 x 15	.....Gardner, 5

NOTES AND ABBREVIATIONS: PISTON RINGS: See footnote opposite. ARE WRIST PINS OFFSET? * means wrist pin is bushed. CRANKSHAFT MATERIAL: Cbn-S, 1020, 1040, 1045, 1050 carbon steel; Cr-N, 3140, chrome nickel steel; NS, nickel steel; Moly, Molybdenum steel. MATERIAL OF TIMING GEARS OR SPROCKETS: CI, cast iron; S, steel; SS, semi-steel; CR-M, chrome-manganese; Cr-N, chrome-nickel; NS, nickel steel; MI, malleable iron; Fab, Fabrol; Cond, Condensite; Mic, Micarta; Text, Textoil; Test, Testolite; Moly, Molybdenum; PR, phenol-resin; Form, Formica; 1020, 1035, 1045, carbon steel; 1112, Bessemer screw stock. IS CRANKSHAFT DRILLED FOR OIL? Yes means drilled to main bearings only; * drilled to both main and rod bearings. NUMBER OF CRANKSHAFT BEARINGS: * means bearing shims are used; † means crankshaft is offset. MAIN BEARING SIZES: Where more than four bearings are used, the center bearing is indicated by (C) and the number of intermediate bearings is shown by a figure in parenthesis. The column headed "First" is the front bearing. FAN BELT TYPE: F, flat; V, vee; R, round; D, direct drive; C, Chain.

Complete Electrical Equipment of the 1924 Cars

Car Name and Model No.	Spark Plugs Make	Starting Lighting Make	Head Lamps Make	Side Lamps Make	Tail Lamp Make	Spot Light Make	Lens Make	Ammeter Make	Horn Make	Storage Battery Make	Storage Battery Volts & Capacity	CANDLEPOWER AND VOLTAGE			
												Head	Dash	Tail	Dimm'r or Side
Gardner, 5	Champ	Wshse	Corc	Hall†	Corc	.....	Monogram	Wshse	EA	Willard	6-94	21-6	2-6	2-6	2-6

NOTES AND ABBREVIATIONS: SPARK PLUGS: AC, A. C. Spark Plug Co. (Flint); Champ, Champion Spark Plug Co. (Toledo); Beth, Bethlehem. STARTING LIGHTING MAKE: At-Kent, Atwater Kent; Wshse, Westinghouse; AL, Auto-Lite; N-East, North East; O-Dyn, Owen Dyneto; LN, Leece Neville; Ry, Remy; Wag, Wagner. HEAD LAMPS MAKE: G&D, Gray & Davis; Ind, Indiana; E&J, Edmund & Jones; Corc, Corcoran; Adlake, Adams & Westlake. SIDE LAMPS: Stew, Stewart; * certain models only. TAIL LAMP: Culver, Culver Stearns. SPOT LIGHT MAKE: † certain models only; see head lamps column for abbreviations. LENS MAKE: B&L, Bausch & Lomb. AMMETER MAKE: Wshse, Westinghouse; Natl, National; Rolter, Roller Smith; Ste, Sterling. HORN MAKE: Stew, Stewart; Klax, Klaxon; Spar, Sparton; N-East, North East; EA, E. A. Laboratories; Schwz, Schwarz. STORAGE BATTERY MAKE: Will, Willard; Pres, Prest-O-Lite; Ex, Exide; Wshse, Westinghouse. CANDLEPOWER AND VOLTAGE: D, Double contact—all others single contact.