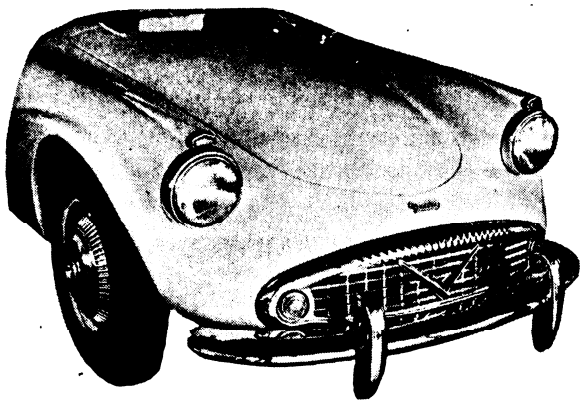
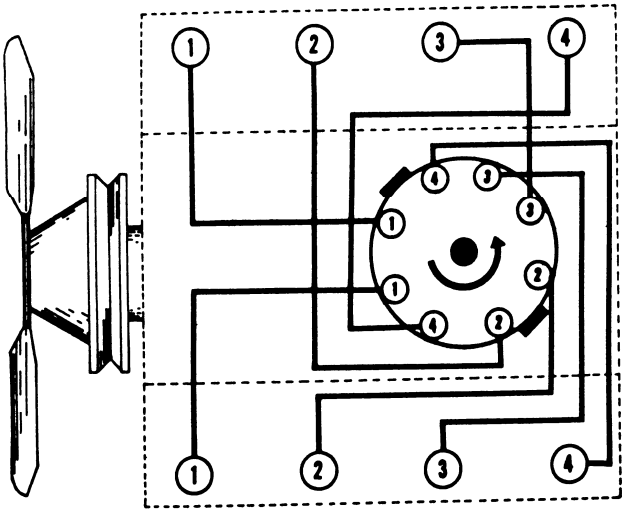
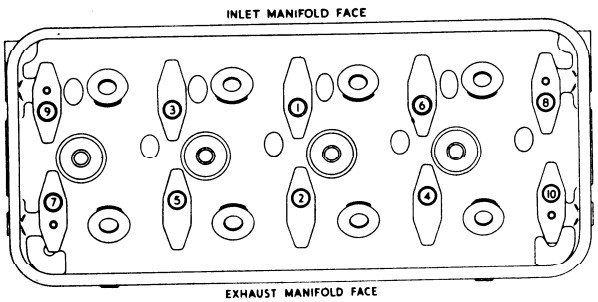


Daimler, SP 250, 1959–63.



Ignition wiring diagram, Daimler.



Cylinder head nut tightening sequence, Daimler, SP 250. Tighten to *40–50* ft. lbs. (*6.2–6.9* m.kg.) torque.

GENERAL INFORMATION—DAIMLER

DESCRIPTION

This V-8 engine is of conventional design. The centrally located camshaft operates the overhead valves by means of push rods and rocker arms. The spark plug is located centrally in the hemispherical combustion chamber.

ENGINE NOTES

CYLINDER NUMBERING SYSTEM

The cylinders are numbered from one to four on each bank. That is, there is a No. 1 L (left bank) and a No. 1 R (right bank) cylinder.

PISTON AND ROD ASSEMBLY

The pistons should be assembled to the rods so that the front sides of the pistons, for the left-hand bank, are on the same side as the large, big-end chamfer. Those of the right-hand bank should be assembled facing the side opposite the large, big-end chamfer.

IGNITION NOTES

DISTRIBUTOR DRIVE GEAR

The drive gear is pinned to an extension of the oil pump shaft. An offset coupling is pinned to the distributor shaft.

IGNITION TIMING

The distributor contains two sets of ignition contact points, connected in parallel so as to increase the overlap or dwell period. The crankshaft front pulley is marked at *10°* BTDC, which is the static setting. Connect a strobe light to No. 1 cylinder on the left bank and adjust the position of the distributor until the pulley mark lines up with the pointer on the timing case cover.

ELECTRICAL EQUIPMENT SERVICE NOTE

Servicing of the Lucas electrical equipment used on these cars is covered in the Lucas section of Chapter 3, page 71.

FUEL SYSTEM SERVICE NOTES

Servicing of the S.U. carburetors used on these cars is covered in the S.U. section of Chapter 2 page 17.

Servicing of the S.U. electric fuel pump used on these cars is covered in the S.U. fuel pump section of Chapter 2, page 9.

ENGINE REMOVAL

The engine, clutch, and transmission must be removed as a unit.

From Inside of the Engine Compartment. Remove the hood, air cleaner, carburetors, radiator, and fan assembly. Detach the heater connection hoses, remove the wires and pipe lines leading to the electrical units of the engine, and the rpm indicator cable at the distributor, and then lift out the distributor. Detach the exhaust pipe at the manifold and remove the front frame cross-bracing between the two suspension pillars.

From Inside of the Car. Remove the transmission cover, withdraw the speedometer cable, detach the top ends of the four engine mounts, remove the clutch slave cylinder and bracket from the right-hand side of the bell housing, and then detach the front end of the propeller shaft.

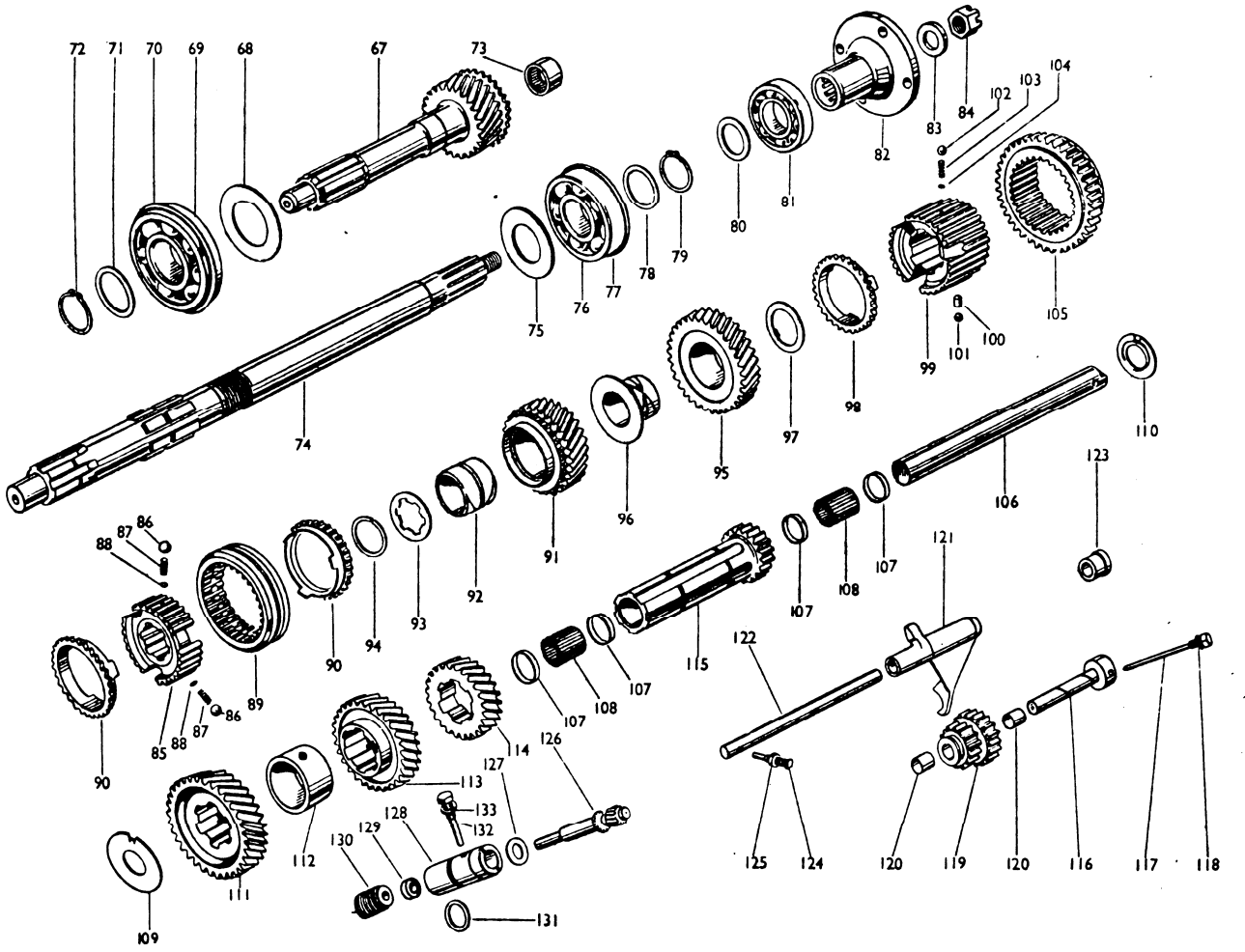
From Inside of the Engine Compartment. Attach a lifting fixture and support the weight of the engine. Raise the engine to clear it from the slotted holes in the front engine mounts and draw it forwards to clear the transmission support crossmember. Push the rear end of the power plant down as you hoist it from the engine compartment.

BRAKE MECHANISM SERVICE NOTE

Servicing the disc brakes used on these cars is covered in the disc brake section of Chapter 5, page 171.

DRIVE MECHANISM SERVICE NOTE

Servicing the transmission used on these cars is covered in the BMC section of Chapter 4, page 131.



Exploded view of the transmission used on the Daimler, SP 250.

COMMONLY USED SPECIFICATIONS—DAIMLER

MODEL	SPARK PLUGS			DISTRIBUTOR			TIMING (Deg.)	VALVE CLEARANCE		ENGINE IDLING SPEED IN NEUTRAL (RPM)	FRONT END ALIGNMENT			
	Make and type	Gap		Point gap		Cam angle (Deg.)		Int. and Exh. C—Cold H—Hot			Caster (Deg.)	Camber (Deg.)	Toe-in	
		In.	Mm.	In.	Mm.			In.	Mm.				In.	Mm.
SP250	ChN8	.025	.635	.014-.016	.356-.406	32	10B	.012C	.30C	500	P2	P2	.125	3.2

MECHANICAL ENGINE SPECIFICATIONS—DAIMLER

MODEL	BORE		CRANKSHAFT						PISTON PIN					
			Con. Rod Journal		Main Brg. Journal		End Play		Diameter		Fit in Rod F = Free P = Interference		Fit in Piston F = Free P = Interference	
	In.	Mm.	In.	Mm.	In.	Mm.	In.	Mm.	In.	Mm.	In.	Mm.	In.	Mm.
SP250	2.9997-3.0003	76.20-76.20762	1.7490-1.7495	44.4246-44.4373	2.0015-2.0025	50.8381-50.8635	.004-.009	.10-.23	.7507-.7510	19.06778-19.0754	.0006F	.015F	.0002F	.0051F

VALVE SPECIFICATIONS—DAIMLER

MODEL	FACE ANGLE (Degrees)	RUNNING CLEARANCE H = Hot C = Cold		VALVE TIMING						VALVE STEM					
		Intake and Exhaust		Intake opens before TDC	Clearance for checking valve timing		Lift Intake and Exhaust		Number of teeth between sprocket marks	Diameter Intake and Exhaust		Clearance Intake		Clearance Exhaust	
	Int. and Exh.	In.	Mm.		In.	Mm.	In.	Mm.		In.	Mm.	In.	Mm.	In.	Mm.
SP250	45	.012C	.30C	13°	.010	.254	.295	7.493	O.C.	.3113-.3119	7.90702-7.92226	.0008-.0016	.020-.040	.0017-.0025	.043-.064

CAPACITIES—DAIMLER

MODEL	FUEL TANK			RADIATOR			CRANKCASE			TRANSMISSION			DIFFERENTIAL			TIRE PRESSURE			
	Gallon			Pints			Pints			Pints			Pints			Front		Rear	
	U. S.	Imp.	Ltr.	U. S.	Imp.	Ltr.	U. S.	Imp.	Ltr.	U. S.	Imp.	Ltr.	U. S.	Imp.	Ltr.	Psi	Kg./cm.^{2}	Psi	Kg./cm.^{2}
SP250	14	12	54.5	26.5	22	12.5	14.5	12	6.8	1.8	1.5	.85	1.8	1.5	.85	22	1.5	24	1.7

DISTRIBUTOR SPECIFICATIONS—DAIMLER

MODEL	MANUF. PART NUMBER Lucas	ROTATION	BREAKER POINT GAP		CAM ANGLE (Degrees)	BREAKER ARM SPRING TENSION		CONDENSER CAPACITY (Mfds.)	CENTRIFUGAL ADVANCE (Dist. degrees @ RPM)			VACUUM ADVANCE (Dist. degrees @ RPM)			
			In.	Mm.		Ozs.	Grams		Start	Inter-mediate	Max.	Code No.	Start (In.)	Max. (In.)	Max. (Deg.)
SP250	40676D/E	CC	.014-.016	.356-.406	32	18-24	500-680	.18-.25	230	8 @ 900	11½ @ 2,500	5-17-9	4	22	9.0

STARTER AND BATTERY SPECIFICATIONS—DAIMLER

MODEL	STARTER														BATTERY					
	Part Number Lucas	Brush Spring Tension		Free Running Test			Resistance Test					Lock Test				Volts	Terminal Grounded	Capacity (Ampere hour @ 20 hour rate)	Group Number		
		Ounces	Grams	Max. Amps.	Min. Volts	Min. Rpm	Max. Amp.	Min. Volts	Torque		Rpm	Max. Amps.	Min. Volts	Torque					Lucas	S.A.E.	A.A.B.M.
									Ft. Lbs.	M. Kg.				Ft. Lbs.	M. Kg.						
SP250	M418G	32-40	900-1133	45	12	7,400	270	9.0	8.0	1.1	1000	460	7.0	17.0	2.3	12	P	58	BT9A		

GENERAL ENGINE SPECIFICATIONS—DAIMLER

MODEL	CYL.	BORE		STROKE		DISPLACEMENT		COMPRESSION RATIO	PERFORMANCE	TORQUE	
		In.	Mm.	In.	Mm.	Cu.In.	Cc.		SAE (Hp @ Rpm)	(Ft.Lbs. @ Rpm)	(Kg./m. @ Rpm)
SP250	V8	3.000	76.2	2.750	69.850	152.6	2,500	8.2/1.0	140 @ 5,800	155 @ 3,600	20.8 @ 3,600

S.U. CARBURETOR SPECIFICATIONS—DAIMLER

CAR MODEL	CARBURETOR MODEL		FUEL LEVEL SETTING		JET SIZE		NEEDLE TYPE	AIR VALVE SPRING
	Code	Size	In.	Mm.	In.	Mm.		
SP250	HD6(2)	1¾"	.437	11.1	.100	2.54	TS	Yellow

WHEEL ALIGNMENT SPECIFICATIONS—DAIMLER

MODEL	CASTER (Degrees)	CAMBER (Degrees)	STEERING AXIS INCLINATION (Degrees)	TOE-IN		TOE OUT ON TURNS (Degrees)	
				In.	Mm.	Inner Wheel	Outer Wheel
SP250	P2	P2	7	.125	3.2	24½	20

GENERATOR AND REGULATOR SPECIFICATIONS—DAIMLER

MODEL	GENERATOR				REGULATOR				
	Part Number Lucas	Brush Spring Tension		Field Resistance	Part Number Lucas	Cutout Relay		Current Regulator (Amperes @ 68°F.)	Voltage Regulator (Voltage @ 68°F.)
		Ounces	Grams			Cut-in Voltage	Cut-out Voltage		
SP250	C40	30	850	6.0	RB310	12.7-13.3	9.5-11.0	22 Max.	14.9-15.5

LIGHT BULBS—DAIMLER

MODEL	HEAD LAMPS		PARK-ING	TAIL	STOP	DIRECTION SIGNALS			LICENSE PLATE	INSTRU-MENT	IGNI-TION	BACK-UP	DOME	CLOCK	RADIO
	Outer	Indicator				Front	Rear	Indicator							
SP250 LUCAS—		987	989	380	380	382	382	987	989	987	987				
U. S.	6012	1446	57	1034	1034	1141	1141	1446	57	1446	1446				