

## Section E2

## Specification

<b>General</b>			
Type	Over square 90°Vee formation liquid cooled	Damper	Metalastik rubber vibration damper.
Number of cylinders	Eight - in two banks of four.	Direction of rotation	Clockwise.
Bore	10,41 cm. (4.10 in.)	End thrust	Taken on centre main bearing.
Stroke	9,91 cm. (3.90 in.)		
Cubic capacity	6,75 litres (411.9 cu.in.) nominal	<b>Main bearings</b>	
Compression ratio	9:1, 8:1 or 7.3:1 dependent upon the vehicles specification.	Material	Steel backed shells with a tin-aluminium lining.
Firing order	A1, B1, A4, B4, B2, A3, B3, A2.	Number	Five.
Mounting points	Front - one rubber mount located under the engine below the crankshaft damper and pulley assembly. Rear - two rubber mounts located one on either side of the adapter plate fitted between the engine and the transmission.	<b>Connecting rods</b>	
		Type	'H' section. Forged to size and balanced.
		Material	Chrome molybdenum steel.
		Big-end bearings	Steel backed shells with a tin-aluminium lining.
		Gudgeon pin bushes	Pressed into connecting rod small-end bosses.
		Material	Lead-bronze, steel backed.
		Gudgeon pins	Fully floating.
		Material	EN 32 B.
<b>Cylinder block</b>		<b>Pistons</b>	
Type	Monobloc casting	Type	Cam ground, full skirt design relieved for crankweb clearance. Recessed crown and offset gudgeon pin.
Material	Cast aluminium alloy.	Material	Aluminium alloy - Tin plated.
<b>Cylinder liners</b>		Rings	Three
Type	Detachable wet liners		a) Two compression - internal stepped and manufactured from cast iron.
Material	Centrifugally spun cast iron.		<b>Early engines and all 7.3:1 C.R. engines</b> - top ring has chromium plated periphery.
<b>Cylinders heads</b>			<b>Late engines except 7.3:1 C.R. engines</b> - top ring molybdenum sprayed on periphery.
Description	Two detachable heads, each having four separate inlet and exhaust ports.		b) One oil control (Scraper) - top and bottom steel rails have a chromium plated periphery. Equaliser (expander and centre spacer) is manufactured from carbon steel.
Material	Aluminium alloy, with phosphor-bronze exhaust valve guides and cast-iron inlet valve guides. Valve seat inserts of austenitic steel.		
<b>Crankshaft</b>		<b>Valve gear</b>	
Description	Dynamically balanced, five journal crankshaft with four crankpins (incorporating sludge traps). <b>Early engines</b> - bolted-on balance weights. <b>Late engines</b> - integral balance weights	Valves	Overhead push rod operated with seals to control valve stem lubrication. Seat angle 45°.
Material	Chrome molybdenum steel with nitride hardened journals and crankpins.		

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Material	
Inlet valve	EN24 with induction hardened tips.
Exhaust valve	KE 965. Stellite tips and valve seats. Valray deposit on top face.
Valve timing	Marks on gears.
Tappets	Self-adjusting hydraulic tappets with spherical base.
Material	Chill cast-iron.
Push rods	Ball-ended tubes.
Material	Copper plated Bundy tube.
<b>Camshaft</b>	
Material	Chill cast-iron.
Cams	5' to 7' longitudinal taper.
Number of journals	Four.
Bearings	Runs direct in crankcase.
Thrust taken	On front end.
Drive	Through helical tooth gears.
Material	Crankshaft gear - steel Camshaft gear - aluminium.
<b>Lubrication system</b>	
General	High pressure oil feed to crankshaft, connecting rods, camshaft bearings, tappets, push rods and rocker ball end seatings and camshaft timing gears. Intermittent oil feed through the front camshaft bearing to rocker shaft, rocker arms and valve tips. Splash feed to connecting rod small-ends, gudgeon pins and cylinder walls.
Type	Pressurised wet-sump system.
High pressure supply	2,81 kgf/sq.cm. (40 lbf/sq.in.) at 2000 r.p.m.
Relief valve	2,81 kgf/sq.cm. (40 lbf/sq.in.)
Sump capacity	8,4 litres (14.75 Imp pints, 17.75 U.S. pints) when not renewing oil filter. 9,4 litres (16.50 Imp pints, 20 U.S. pints) when renewing oil filter. <b>Always check the oil level by means of the dipstick.</b>
Oil pump	Helical gear type with fine mesh strainer pick-up.
Drive	By gears from crankshaft.
Oil filter	Full flow, disposable canister type.
<b>Associated systems</b>	
Fuel systems	Refer to Chapter K or Chapter U.
Cooling system	Refer to Chapter L.
Exhaust system	Refer to Chapter Q.
Ignition system	Refer to Chapter M or Chapter U.