

Rolls-Royce

Scammell Crusader 280 4 × 2



The main objectives of the design of the Crusader, have been to radically minimise service and maintenance periods and improve driver comfort and efficiency.

BASIC MODEL SPECIFICATION

ENGINE: Rolls-Royce Eagle diesel six cylinder in-line (turbo-charged). 280 bhp at 2100 rpm (max. gross).

785 lb. f.ft. at 1400 rpm (max. gross). (Both to BSAU 141a 1971 rating).

GEARBOX: Fuller twin countershaft range change type RTO 9509A. 9 forward speeds with overdrive ratio of 0.74:1. Two reverse ratios.

CLUTCH: Lipe Rollway 15 in. dia. twin plate.

REAR AXLE: Leyland double reduction with epicyclic reduction in hubs — ratio 6.06:1.

FRONT AXLE: I Beam type with spring base centre-line dimension of 36.5 in.

CAB: Fixed, high mounted forward control. All-steel construction.

CHASSIS: All-bolted construction with high tensile steel side-members to BS 4366 Grade 50B. High tensile steel short thread bolts with self locking nuts used throughout.

SUSPENSION: No lubrication. Slipper type used at front and rear. Spring pivot pins operate in rubber bushes mounted in split brackets. Spring lengths: Front, 5 ft., Rear 6 ft.

STEERING: Recirculating ball with integral ram power assistance. Ratio 25.2:1.

BRAKES: Full air cam with 3 line system. Spring type park brake. Schrader valve pressure check points throughout each system.

PRINCIPAL DIMENSIONS:
Wheelbase 11 ft. 0 in. Overall Length 17 ft. 6 in.
Overall Height (unladen) 10 ft. 9½ in. Overall Width 8 ft. 0 in.

WEIGHT DATA:
Plated Weights: Front Axle 6 tons, Rear Axle 10.2 tons,
GVW 16.2 tons, GCW 34 tons.

KERB WEIGHT (Approx.): 6 tons 7 cwt. 0 qts. (excluding driver and spare wheel).



T.S.D. 845/Scammell Crusader 280 Mk 2

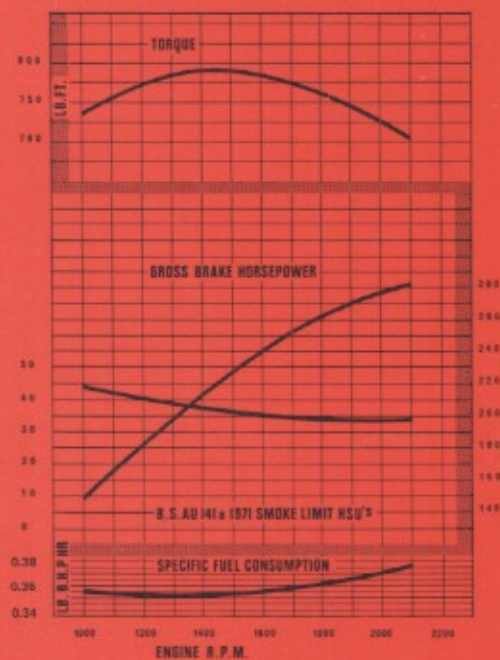
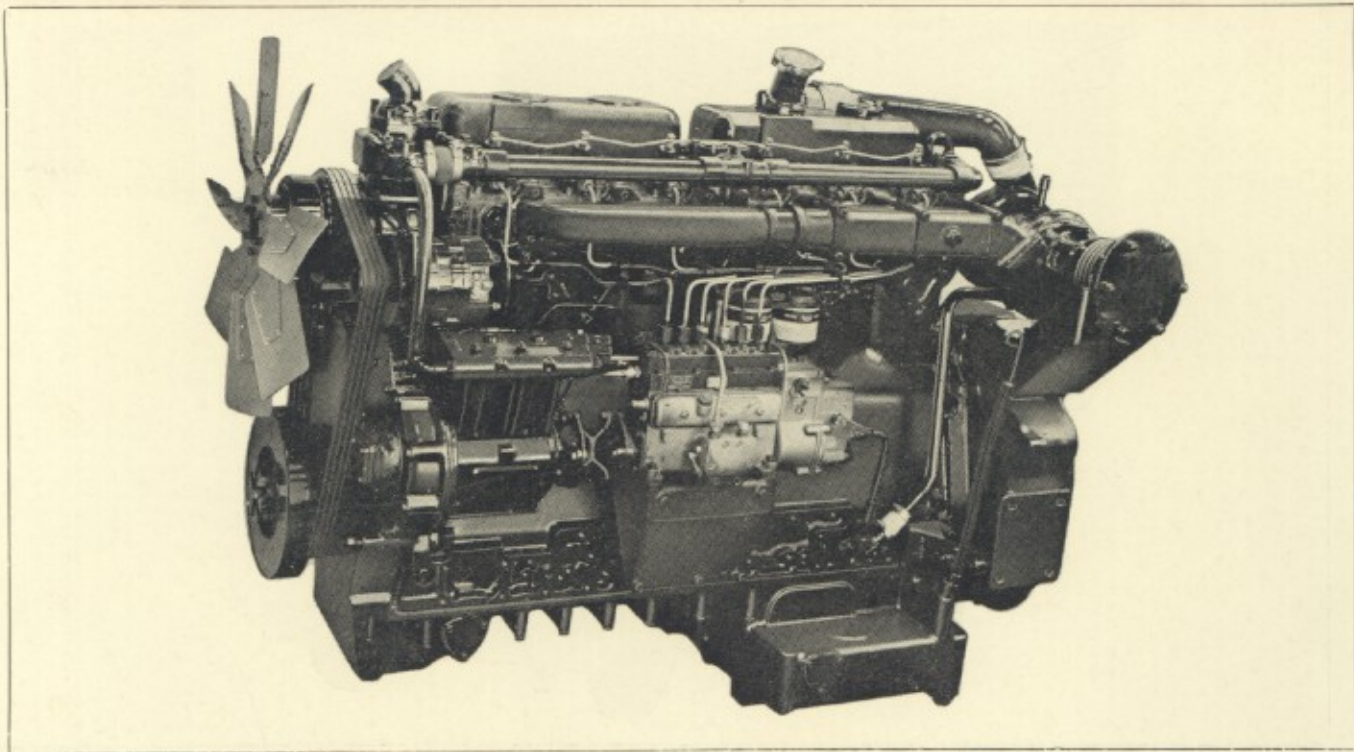
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November 1971

Rolls-Royce

Eagle 280 Mk 2 Engine



POWER CURVES

RATING

The curve illustrates the gross output of an Eagle 220 Mk. 2 when tested in accordance with BS. AU 141 a 1971.

The rating is for the following test conditions:

- Vehicle type air filter restriction 10 in. WG max.
- Exhaust system with back pressure 2 in. Hg. max.
- No fan.
- Alternator and compressor in unloaded condition.
- Barometric pressure 29.92 in. Hg.
- Air temperature 20°C.
- Fuel BS.2869 class A1.

ENGINE SPECIFICATION

TYPE. Turbocharged 4-stroke, direct injection, compression ignition engine.

CYLINDERS: 6 vertical in-line, liquid cooled.

BORE: 5.125 in. (130.175 mm.).

STROKE: 6 in. (152.4 mm.).

CAPACITY: 742.64 cu. in. (12.17 litres)

COMPRESSION RATIO: 14:1

RATING: BS. AU 141a: 1971. 280 h.p. gross at 2100 r.p.m.

(maximum torque 785 lb. ft. at 1400 r.p.m.)

DIN 70020. 275 h.p. (metric) at 2100 r.p.m.

ROTATION: Anti-clockwise, viewed on flywheel

FUEL SYSTEM: Injection equipment includes lift pump with hand priming lever. Jerk type injection pump, pressure lubricated with all-speed governor.

LUBRICATION SYSTEM: Wet sump with either front or rear pan. Oil and full flow filters.

COOLING SYSTEM: Centrifugal circulating pump with thermostatically controlled flow. Cab heater connections.

FLYWHEEL

FLYWHEEL HOUSING: No. 1 S.A.E.

TURBOCHARGER: Inward flow turbine, pressure lubricated.

EXHAUST SYSTEM: Air cooled manifold, rear horizontal outlet from turbocharger.

FAN: 26 in. (660 mm.) diameter, puller

STARTER: 24 volt, 5 in. diameter

ALTERNATOR: 24 volt, 5 in. diameter, 720 watt.

AIR COMPRESSOR: Gear driven, flange mounted 15 c.f.m. Nominal capacity

ROLLS-ROYCE MOTORS LIMITED DIESEL DIVISION SHREWSBURY, SY1 4DP ENGLAND

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ROLLS-ROYCE

AUTOMOTIVE DIESELS

STANDARD SPECIFICATION

TYPE Turbocharged 4-stroke, direct injection compression ignition engine

CYLINDERS 6 vertical in-line, liquid cooled

BORE 5.125 in. (130.175 mm.)

STROKE 6 in. (152.4 mm.)

CAPACITY 742.64 cu. in. (12.17 litres)

COMPRESSION RATIO 13.5:1

RATING

BS AU 141a: 1971, 305 h.p. (227.4 kw.) gross at 2100 r.p.m. (maximum torque 850 lbf.ft. (1156 Nm) at 1200 r.p.m. DIN 70020, 300 p.s. at 2100 r.p.m. (maximum torque 116.8 kgm. at 1200 rev/min.)

ROTATION Anti-clockwise, viewed on fly-wheel

FUEL SYSTEM Injection equipment includes feed pump with hand priming lever. Jerk-type injection pump, pressure lubricated with all speed governor, boost control device. Low inertia injectors

LUBRICATION SYSTEM Gear type oil pump. Oil cooler and full flow filters. Front or rear drop sump.

COOLING SYSTEM Centrifugal pump with thermostatically controlled flow. Cab heater connections

FLYWHEEL To suit automotive clutches

FLYWHEEL HOUSING No. 1 S.A.E.

TURBOCHARGER Inward flow turbine, pressure lubricated, rear or centre mounted

INDUCTION SYSTEM Manifold with tuned port length

EXHAUST Horizontal outlet from turbocharger

FAN 26 in. (660 mm.) diameter, puller

STARTER 24 volt electric

ALTERNATOR 24 volt, 720 watt

CONNECTIONS for lubricating oil pressure, coolant temperature and tachometer

AIR COMPRESSOR Gear driven, flange mounted 15 cu.ft./min. (0.42m³/min.) nominal capacity

NET DRY WEIGHT 2508 lb. (1137 kg.) approx.

OPTIONAL EQUIPMENT

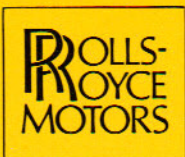
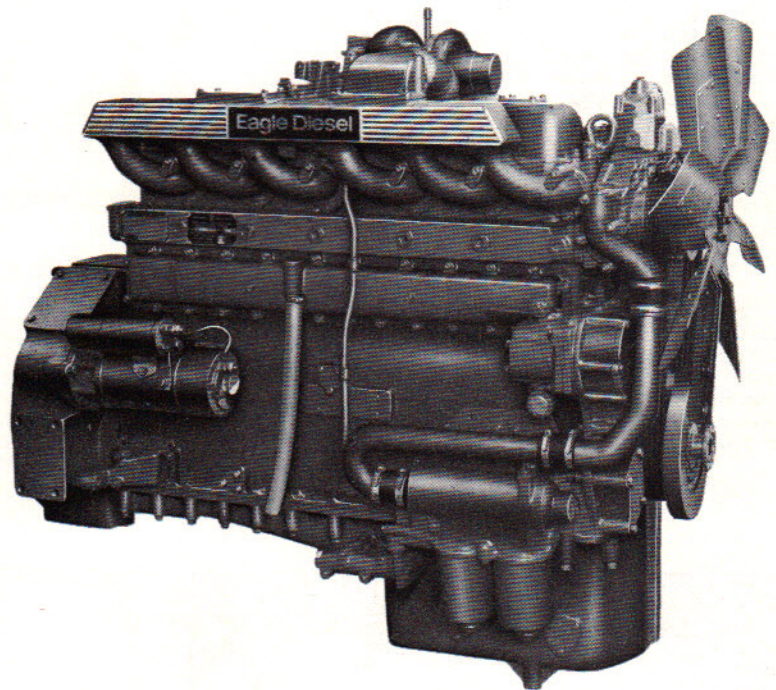
HYDRAULIC STEERING PUMP

ALTERNATOR CONTROL BOARD, supplied loose

EXHAUST BRAKES

CROSSOVER CONTROLS

Eagle 305 Mk III Diesel Engine



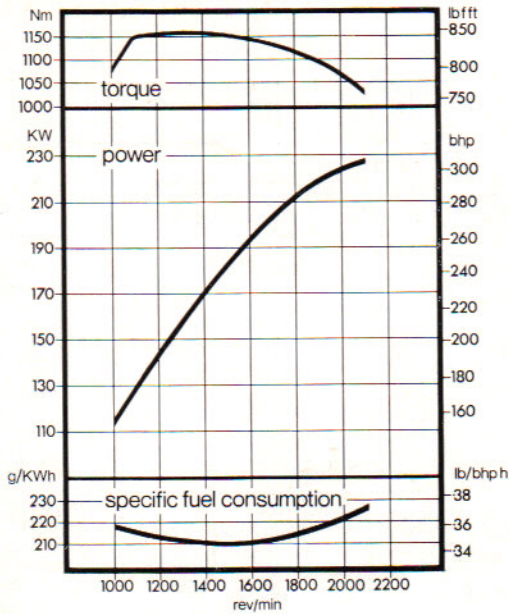
Diesel Division

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ROLLS-ROYCE

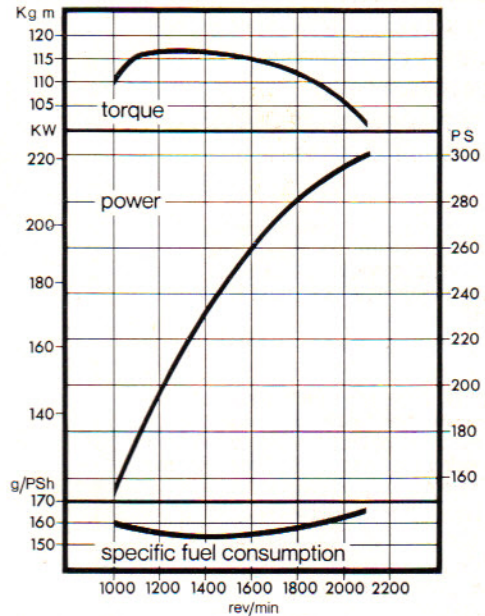
EAGLE 305 Mk III



BS AU 141a : 1971 POWER CURVE

Test Conditions :

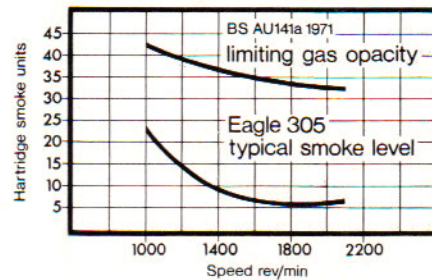
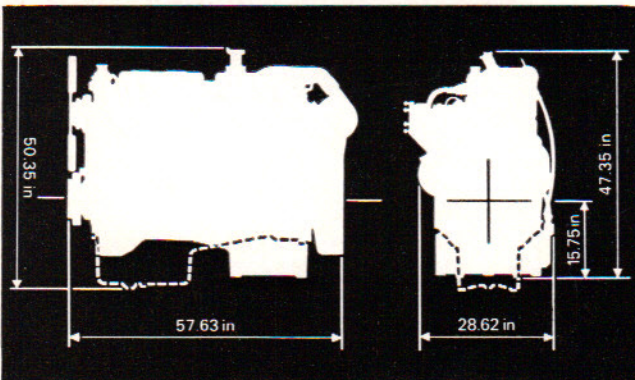
Air inlet restriction at maximum power 10" (254mm) H₂O
 Exhaust back pressure at maximum power 2" (51mm) Hg
 Barometric pressure 760mm Hg (101.5 kN/m²)
 Air temperature 20°C
 Alternator and air compressor in unloaded condition
 Fuel to BS.2869 Class A1



DIN 70020 POWER CURVE

Vehicle Installed Condition :

Air inlet restriction at maximum power 10" (254mm) H₂O
 Exhaust back pressure at maximum power 2" (51mm) Hg
 Barometric pressure 760mm Hg (101.5 kN/m²)
 Air temperature 20°C
 26" (660mm) fan at 1.07 x engine speed
 Alternator and air compressor in unloaded condition
 Fuel to BS.2869 Class A1



Diesel Division

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