STANDARDIZED DATA PAGES FOR RECIPROCATING ENGINES

Standardized data pages are used to present the specifications of the basic aircraft engines and airborne auxiliary units described and illustrated in the following section of the book. The arrangement of the data on the standardized data pages is as follows:

First, there is a concise description of the engine, its construction and the major accessories with which it is equipped. Then, in tabular form, there are items such as bore, stroke, displacement (swept volume), compression ratio, overall dimensions, frontal area, total weight and weight per maximum horsepower.

Fuel and lubricating oil consumptions at cruising output are given in units of weight. The fuel grade and the viscosity of the lubricating oil at 210° F. (100° C) also are specified.

Efficiency figures such as maximum power output per unit of displacement, maximum power output per unit of piston area, maximum piston speed and maximum brake mean effective pressure have been calculated for comparative purposes.

Finally, the various horsepower ratings of the engine are given, such as:

Take-off rating, or the maximum horsepower which it is permissible to use at sea level and at low altitudes.

Military (combat) rating, or the maximum horsepower which it is permissible to use for military purposes at various altitudes.

Normal rating, or the maximum horsepower which the engine can deliver continuously for climb without undue stress.

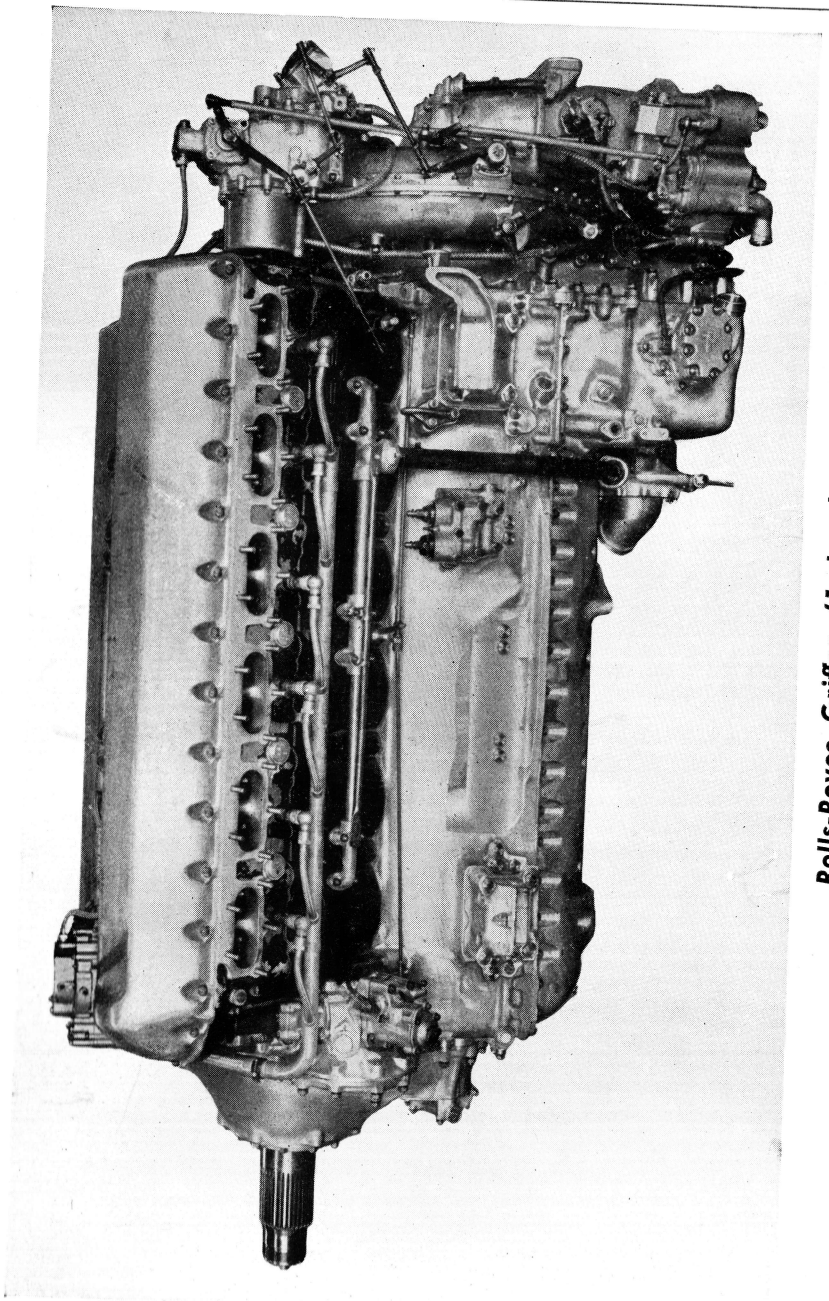
Cruising rating, or the maximum horsepower recommended for continuous operation consistent with reasonable fuel economy.

Emergency rating, or the maximum horsepower which it is permissible to use for a short period of time in an emergency.

Stand-by ratings, or the maximum horsepower which it is permissible to use continuously when one or more engines are out of operation, are given where available.

Ratings obtained with alcohol-water injection or methanol-water injection—commonly known as water injection—are indicated by the letters A.D.I. (Anti-Detonant Injection).

The status of the data on the standardized pages can be seen from the notation at the top of each page adjacent to the country of origin. *New* denotes completely new data. *Revised* indicates major revisions. Unmarked pages have only minor changes.



Rolls-Royce Griffon (1-stage)

Rolls-Royce Griffon (1-stage)

Model ..... **Griffon IV.**

Type ..... 12 cylinders, vee 60 degrees, pressure water cooled, geared drive, supercharged, 4-cycle.

Construction ..... 2-piece aluminum alloy crankcase. 2 aluminum alloy cylinder blocks with a detachable head for each block. Steel cylinder liners. 2 inlet valves and 2 exhaust valves (sodium cooled) per cylinder actuated by overhead camshaft. 6-throw 1-piece counterbalanced crankshaft supported in 7 plain bearings. Spur reduction gear, ratio 0.45:1. Rotol remote drive gear box for accessories.

Supercharger ..... Gear-driven 2-speed 1-stage supercharger, ratios 7.85:1 and 10.68:1. Automatic gear change at critical altitude.

Carburation ..... 1 S.U. AVT-44/203 2-barrel updraft carburetor with automatic mixture control and progressive boost control.

Ignition ..... 1 B.T.H. CSH12-12S/4 dual magneto. 2 14-mm short reach spark plugs per cylinder. Shielded ignition system.

Lubrication ..... Pressure feed, 45-60 lb./sq.in. (3,2 - 4,2 kg/cm^2). Direct feed to all crankshaft main bearings. Dry sump.

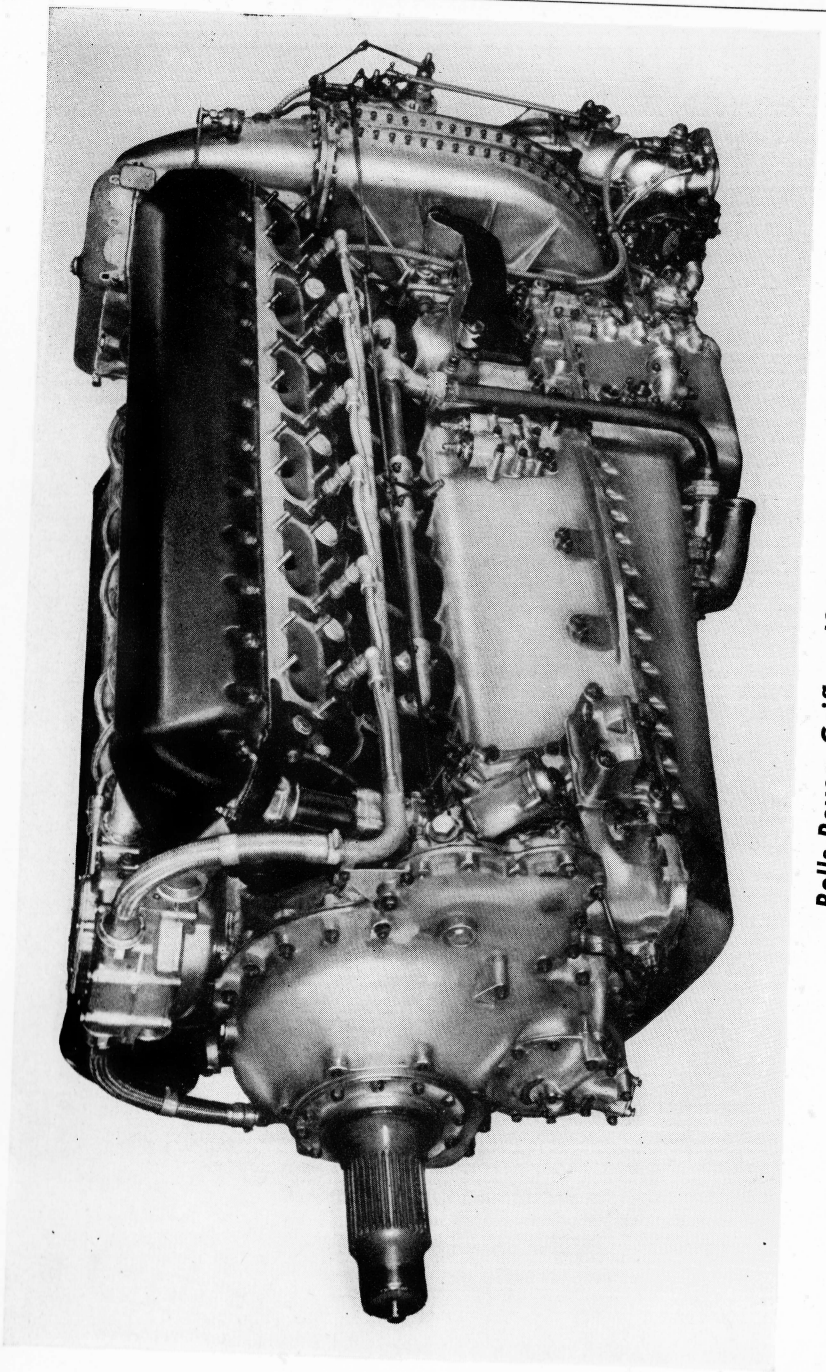
Starter ..... Plessy Coffman cartridge starter, or approved electric starter.

Bore	6.00 in.	152 mm
Stroke	6.60 in.	168 mm
Displacement	2,240 cu.in.	36,7 lit
Compression ratio	6.0:1	6,0:1
Width	30.3 in.	769 mm
Height	45.3 in.	1 150 mm
Length	71.1 in.	1 805 mm
Frontal area	6.5 sq.ft.	0,60 m^2
Weight	1,900 lb.	862 kg
Weight/horsepower	1.08 lb.	0,49 kg/hp
Fuel consumption (cr.)	0.50 lb./h.p./hr.	225 g/hp/hr
Oil consumption (cr.)	0.022 lb./h.p./hr.	10 g/hp/hr
Gasoline grade	100/130 (D.E.D. 2475)	100/130 grade
Oil grade (viscosity)	100 S.U. (D.T.D. 472-B)	20,5 cs
Output/displacement	0.78 h.p./cu.in.	47,7 hp/lit
Output/piston area	5.19 h.p./sq.in.	0,80 hp/cm^2
Piston speed (max.)	3,025 ft./min.	15,4 m/sec
B.m.e.p. (max.)	224 lb./sq.in.	15,7 kg/cm^2

Rating (maximum) ..... More than 1,750 h.p./2,750 r.p.m. All other data restricted, January, 1945.

Griffon II: Similar to Griffon IV.

Note: The Rolls-Royce Griffon has the same displacement as the Rolls-Royce R racing engine which won the Schneider Trophy outright in 1931. The R engine was rated at 2,600 h.p./3,000 r.p.m./sea level at 67.0 in. (1 702 mm) Hg. boost with a b.m.e.p. of 310 lb./sq.in. (21,8 kg/cm^2), using 92-octane gasoline.



Rolls-Royce Griffon (2-stage)

Rolls-Royce Griffon (2-stage)

Model ..... **Griffon 65.**

Type ..... 12 cylinders, vee 60 degrees, pressure water cooled, geared drive, supercharged, 4-cycle.

Construction ..... 2-piece aluminum alloy crankcase. 2 aluminum alloy cylinder blocks with a detachable head for each block. Steel cylinder liners. 2 inlet valves and 2 exhaust valves (sodium cooled) per cylinder actuated by overhead camshaft. 6-throw 1-piece counterbalanced crankshaft supported in 7 plain bearings. Spur reduction gear, ratio 0.45:1 or 0.51:1. Rotol remote drive gear box for accessories. Equipped for Rotol 5-blade constant speed variable pitch propeller.

Supercharger ..... Gear-driven 2-speed 2-stage supercharger, ratios 5.84:1 and 7.58:1. Automatic gear change at critical altitude. Water-cooled inter-stage passages. Water-cooled aftercooler.

Carburation ..... 1 S.U. AVT-140 2-barrel updraft carburetor with automatic mixture control and progressive boost control.

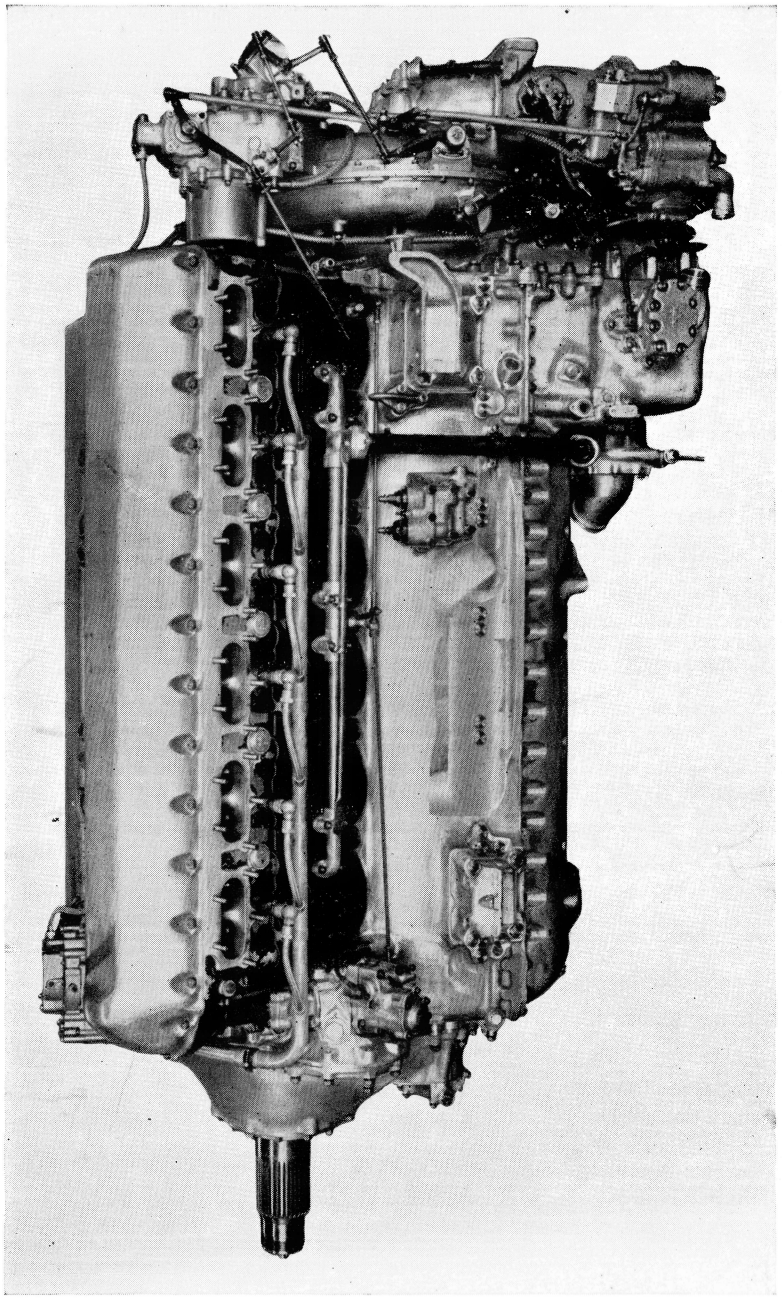
Ignition ..... 1 B.T.H. CSH12-12S/4 dual magneto. 2 14-mm short reach spark plugs per cylinder. Shielded ignition system.

Lubrication ..... Pressure feed, 45-60 lb./sq.in. (3,2 - 4,2 kg/cm^2). Direct feed to all crankshaft main bearings. Dry sump.

Starter ..... Plessy Coffman L3/1HT cartridge starter, or approved electric starter.

Bore	6.00 in.	152 mm
Stroke	6.60 in.	168 mm
Displacement	2,240 cu.in.	36,7 lit
Compression ratio	6.0:1	6,0:1
Width	29.5 in.	750 mm
Height	46.0 in.	1 168 mm
Length	81.0 in.	2 057 mm
Frontal area	6.6 sq.ft.	0,61 m^2
Weight	2,090 lb.	948 kg
Weight/horsepower	1.04 lb./h.p.	0,47 kg/hp
Fuel consumption (cr.)	0.50 lb./h.p./hr.	225 g/hp/hr
Oil consumption (cr.)	0.022 lb./h.p./hr.	10 g/hp/hr
Gasoline grade	100/130 (D.E.D. 2475)	100/130 grade
Oil grade (viscosity)	100 S.U. (D.T.D. 472-B)	20,5 cs
Output/displacement	0.89 h.p./cu.in.	54,5 hp/lit
Output/piston area	5.89 h.p./sq.in.	0.91 hp/cm^2
Piston speed (max.)	3,025 ft./min.	15,4 m/sec
B.m.e.p. (max.)	256 lb./sq.in.	18,0 kg/cm^2

Rating (maximum) ..... More than 2,000 h.p./2,750 r.p.m. All other data restricted, January, 1945.



Rolls-Royce Griffon VI (1-stage 2-speed)

Rolls-Royce Griffon (1-stage 2-speed)

Model ..... **Griffon VI (RG 14 SM).**

Type ..... 12 cylinders, vee 60 degrees, pressure liquid cooled, geared drive, supercharged, 4-cycle.

Construction ..... 2-piece aluminum alloy crankcase. 2 aluminum alloy cylinder blocks with a detachable head for each block. Steel cylinder liners. 2 inlet valves and 2 exhaust valves (sodium cooled) per cylinder actuated by overhead camshaft. 6-throw 1-piece counterbalanced crankshaft supported in 7 plain bearings. Spur reduction gear, ratio 0.51:1. Provision for Rotol remote drive accessory gear box.

Supercharger ..... Gear-driven 1-stage 2-speed supercharger, ratios 9.0:1 and 11.07:1. Automatic or manual gear change.

Carburetion ..... 1 S.U. AVT-44/203 2-barrel updraft injection type carburetor with automatic mixture control and progressive boost control.

Ignition ..... 1 B.T.H. CSH12-12S/4 dual magneto. 2 14-mm short reach spark plugs per cylinder. Shielded ignition system.

Lubrication ..... Pressure feed, 45-60 lb./sq.in. (3,4 - 4,2 kg/cm^2). Main bearings lubricated by crankshaft end-to-end system. Dry sump.

Starter ..... Plessey Coffman L3-1 cartridge starter.

Bore	6.00 in.	152 mm
Stroke	6.60 in.	168 mm
Displacement	2,240 cu.in.	36,7 lit
Compression ratio	6.0:1	6,0:1
Width	30.3 in.	769 mm
Height	45.3 in.	1 150 mm
Length	71.1 in.	1 805 mm
Frontal area	7.9 sq.ft.	0,73 m^2
Weight	1,790 lb.	812 kg
Weight/horsepower	0.96 lb./h.p.	0,43 kg/hp
Fuel consumption (cr.)	0.50 lb./h.p./hr.	225 g/hp/hr
Oil consumption (cr.)	0.016 lb./h.p./hr.	7 g/hp/hr
Gasoline grade	100/130 (D.E.D. 2475)	100/130 grade
Oil grade (viscosity)	100 S.U. (D.E.D. 2472B)	20,5 cs
Output/displacement	0.82 h.p./cu.in.	50,4 hp/lit
Output/piston area	5.45 h.p./sq.in.	0,84 hp/cm^2
Piston speed (max.)	3,025 ft./min.	15,4 m/sec
B.m.e.p. (max.)	236 lb./sq.in.	16,6 kg/cm^2

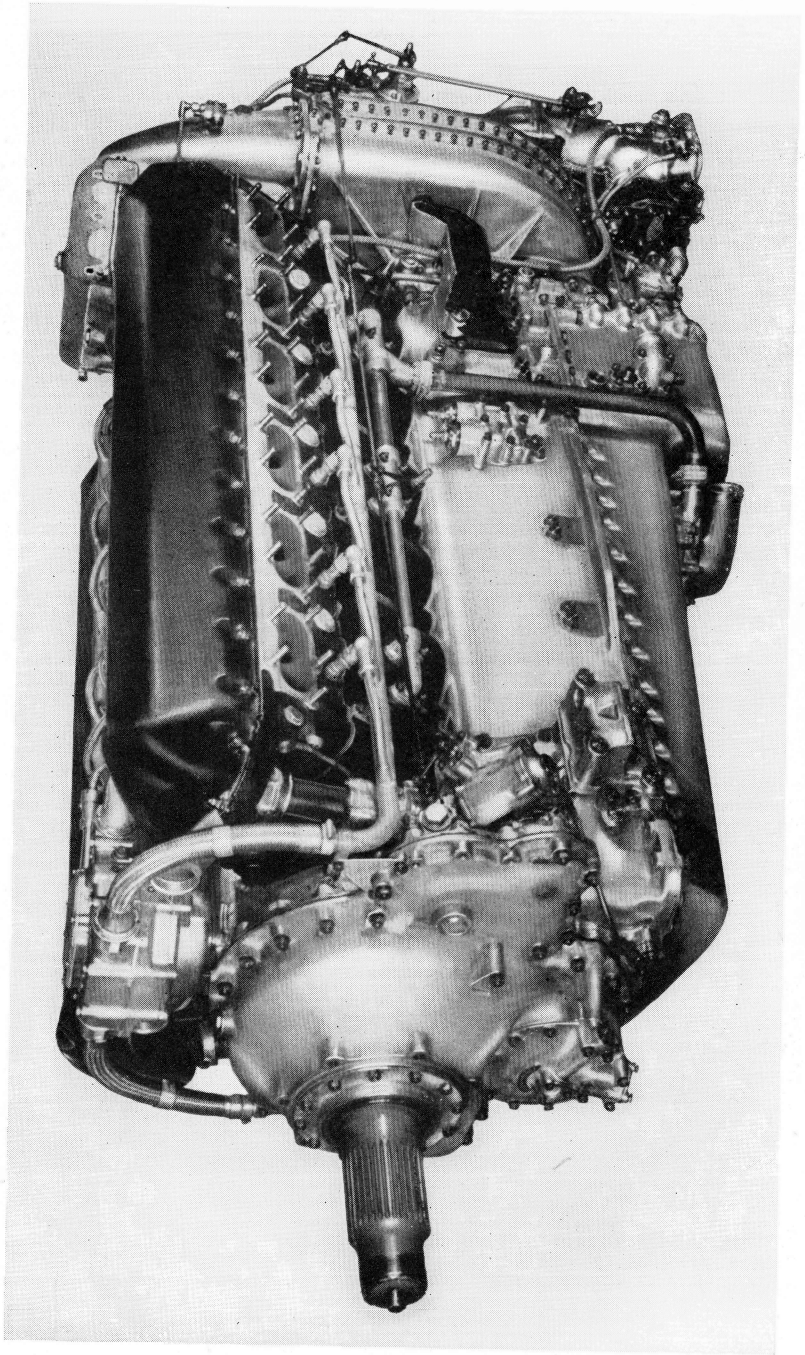
Rating (take-off) ..... 1,820 h.p./2,750 r.p.m./60.5 in. (1 537 mm) +15.0 lb.
Rating (military, low) ... 1,850 h.p./2,750 r.p.m./2,000 ft. (600 m)
Rating (military, high) .. 1,630 h.p./2,750 r.p.m./10,000 ft. (3 000 m)
Rating (normal, low) .... 1,475 h.p./2,600 r.p.m./6,500 ft. (2 000 m)
Rating (normal, high) ... 1,340 h.p./2,600 r.p.m./14,800 ft. (4 500 m)
Rating (cruising, low) ... 1,295 h.p./2,400 r.p.m./7,000 ft. (2 100 m)
Rating (cruising, high) ... 1,190 h.p./2,400 r.p.m./14,250 ft. (4 300 m)

Griffon II, III, IV (RG 2 SM): Similar to Griffon VI, but with supercharger ratios 7.85:1 and 10.68:1. Reduction gear ratio 0.451:1. 1,720 h.p./2,750 r.p.m./take-off; 1,735 h.p./2,750 r.p.m./1,000 ft. (300 m) and 1,495 h.p./2,750 r.p.m./14,500 ft. (4 400 m) military ratings; 1,520 h.p./2,600 r.p.m./3,250 ft. (1 000 m) and 1,330 h.p./2,600 r.p.m./15,750 ft. (4 800 m) normal ratings. 100/130 grade gasoline.

Griffon V (RG 14 SM): Similar to Griffon VI, but with gear ratio 0.451:1.

Griffon VII (RG 14 SM): Same as Griffon VI.

Griffon VIII (RG 14 SM): Same as Griffon VI. Fuel injection pump.



Rolls-Royce Griffon 69 (2-stage 2-speed)

Rolls-Royce Griffon (2-stage 2-speed)

Model ..... Griffon 69 (RG 4 SM).

Type ..... 12 cylinders, vee 60 degrees, pressure liquid cooled, geared drive, supercharged, 4-cycle.

Construction ..... 2-piece aluminum alloy crankcase. 2 aluminum alloy cylinder blocks with a detachable head for each block. Steel cylinder liners. 2 inlet valves and 2 exhaust valves (sodium cooled) per cylinder actuated by overhead camshaft. 6-throw 1-piece counterbalanced crankshaft supported in 7 plain bearings. Spur reduction gear, ratio 0.451:1. Provision for Rotol constant speed propeller, and Rotol remote drive accessory gear box.

Supercharger ..... Gear-driven 2-stage 2-speed supercharger, ratios 5.84:1 and 7.58:1. Automatic gear change. Air-cooled inter-stage passages. Liquid-cooled intercooler.

Carburetion ..... 1 Rolls-Royce Bendix-Stromberg 9T-40-1 3-barrel updraft injection type carburetor, with injection through 8 nozzles into eye of first-stage supercharger impeller. Automatic mixture control and progressive boost control.

Ignition ..... 1 B.T.H. CSH12-12S/4 dual magneto. 2 14-mm short reach spark plugs per cylinder. Shielded ignition system.

Lubrication ..... Pressure feed, 45-60 lb./sq.in. (3,2 - 4,2 kg/cm²). Main bearings lubricated by crankshaft end-to-end system. Dry sump.

Starter ..... Plessey Coffman L5 cartridge starter.

Bore	6.00 in.	152 mm
Stroke	6.60 in.	168 mm
Displacement	2,240 cu.in.	36,7 lit
Compression ratio	6.0:1	6,0:1
Width	29.5 in.	750 mm
Height	46.0 in.	1 168 mm
Length	81.0 in.	2 057 mm
Frontal area	7.9 sq.ft.	0,73 m²
Weight	2,075 lb.	941 kg
Weight/horsepower	1.03 lb./h.p.	0,47 kg/hp
Fuel consumption (cr.)	0.50 lb./h.p./hr.	225 g/hp/hr
Oil consumption (cr.)	0.016 lb./h.p./hr.	7 g/hp/hr
Gasoline grade	100/130 (D.E.D. 2475)	100/130 grade
Oil grade (viscosity)	100 S.U. (D.E.D. 2472B)	20,5 cs
Output/displacement	0.90 h.p./cu.in.	54,5 hp/lit
Output/piston area	5.89 h.p./sq.in.	0,91 hp/cm²
Piston speed (max.)	3,025 ft./min.	15,4 m/sec
B.m.e.p. (max.)	256 lb./sq.in.	18,0 kg/cm²

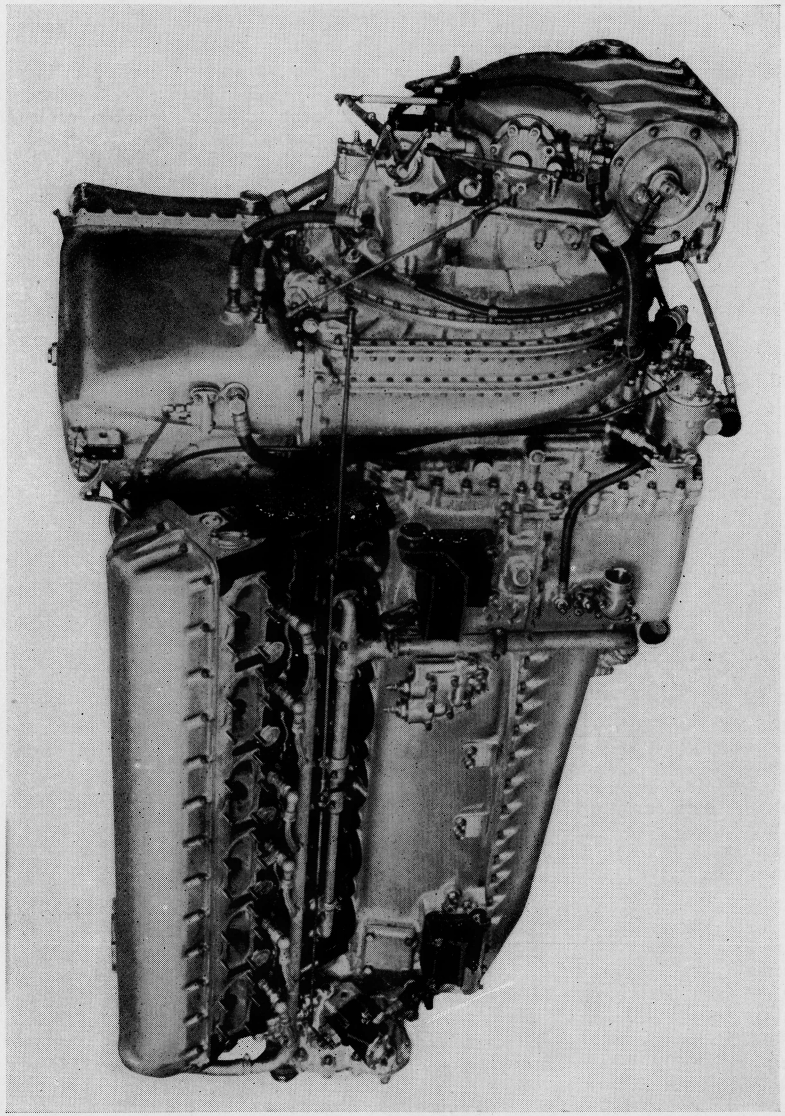
Rating (take-off) ..... 1,900 h.p./2,750 r.p.m./72.6 in. (1 844 mm) + 21.0 lb.
Rating (military, low) ... 2,000 h.p./2,750 r.p.m./6,750 ft. (2 100 m)
Rating (military, high) .. 1,810 h.p./2,750 r.p.m./21,000 ft. (6 400 m)
Rating (normal, low) .... 1,480 h.p./2,600 r.p.m./13,500 ft. (4 100 m)
Rating (normal, high) ... 1,350 h.p./2,600 r.p.m./26,000 ft. (7 900 m)
Rating (cruising, low) ... 1,305 h.p./2,400 r.p.m./12,250 ft. (3 700 m)
Rating (cruising, high) .. 1,215 h.p./2,400 r.p.m./25,000 ft. (7 600 m)

This engine also has military ratings of 2,300 h.p./2,750 r.p.m./500 ft. (150 m) and 2,060 h.p./2,750 r.p.m./15,750 ft. (4 800 m), with 80.8 in. (2 052 mm) + 25.0 lb. boost and 100/150 grade gasoline.

Griffon 64, 67 (RG 4 SM): Same as Griffon 69.

Griffon 81, 83, 87, 88, 89 (RG 4 SM): Similar to Griffon 69. Reduction gear ratio 0.442:1. 2 co-axial contra-rotating propeller shafts.

Other models of Rolls-Royce Griffon (2-stage) engines will be found on page 205.



Rolls-Royce Griffon 130 (2-stage 3-speed)

Rolls-Royce Griffon (2-stage 3-speed)

Model ..... **Griffon 130 (RG 3 SML).**

Type ..... 12 cylinders, vee 60 degrees, pressure liquid cooled, geared drive, supercharged, 4-cycle.

Construction ..... 2-piece aluminum alloy crankcase. 2 aluminum alloy cylinder blocks with a detachable head for each block. Steel cylinder liners. 2 inlet valves and 2 exhaust valves (sodium cooled) per cylinder actuated by overhead camshaft. 6-throw 1-piece counterbalanced crankshaft supported in 7 plain bearings. Spur reduction gear, ratio 0.442:1. 2 co-axial contra-rotating propeller shafts. Provision for Rotol remote drive accessory gear box.

Supercharger ..... Gear-driven 2-stage 3-speed supercharger, ratios 5.752:1, 6.735:1 and 7.703:1. Automatic gear change. Liquid-cooled interstage passages. Liquid-cooled intercooler.

Carburetion ..... 1 Rolls-Royce MkII-C combined transfer and injection pump, with injection through 1 nozzle into top of updraft air intake. Automatic boost control.

Ignition ..... 1 B.T.H. CSH12-12S/4 dual magneto. 2 14-mm short reach spark plugs per cylinder. Shielded ignition system.

Lubrication ..... Pressure feed, 45-60 lb./sq.in. (3,2 - 4,2 kg/cm²). Main bearings lubricated by hollow crankshaft end-to-end system. Dry sump.

Starter ..... Plessey Coffman L5 cartridge starter.

Bore	6.00 in.	152 mm
Stroke	6.60 in.	168 mm
Displacement	2,240 cu.in.	36,7 lit
Compression ratio	6.0:1	6,0:1
Width	29.5 in.	750 mm
Height	46.0 in.	1 168 mm
Length	82.5 in.	3 742 mm
Frontal area	7.9 sq.ft.	0,73 m²
Weight	2,165 lb.	982 kg
Weight/horsepower	0.90 lb./h.p.	0,41 kg/hp
Fuel consumption (cr.)	0.46 lb./h.p./hr.	210 g/hp/hr
Oil consumption (cr.)	0.007 lb./h.p./hr.	3 g/hp/hr
Gasoline grade	100/150 grade	100/150 grade
Oil grade (viscosity)	100 S.U. (D.E.D. 2472B)	20,5 cs
Output/displacement	1.08 h.p./cu.in.	65,9 hp/lit
Output/piston area	7.13 h.p./sq.in.	1,10 hp/cm²
Piston speed (max.)	3,025 ft./min.	15,4 m/sec
B.m.e.p. (max.)	311 lb./sq.in.	21,9 kg/cm²

Rating (take-off)	1,570 h.p./2,750 r.p.m./80.8 in. (2 052 mm) +25.0 lb.			
Rating (military, low)	2,420 h.p./2,750 r.p.m./5,000 ft. (1 500 m)			
Rating (military, medium)	2,250 h.p./2,750 r.p.m./14,500 ft. (4 400 m)			
Rating (military, high)	2,050 h.p./2,750 r.p.m./21,000 ft. (6 400 m)			
Rating (normal, low)	1,500 h.p./2,600 r.p.m./16,500 ft. (5 000 m)			
Rating (normal, medium)	1,410 h.p./2,600 r.p.m./25,000 ft. (7 600 m)			
Rating (normal, high)	1,280 h.p./2,600 r.p.m./32,000 ft. (9 800 m)			
Rating (cruising, low)	1,300 h.p./2,400 r.p.m./15,500 ft. (4 700 m)			
Rating (cruising, medium)	1,240 h.p./2,400 r.p.m./23,000 ft. (7 000 m)			
Rating (cruising, high)	1,150 h.p./2,400 r.p.m./31,500 ft. (9 600 m)			

The above military ratings are with 80.8 in. (2 052 mm) + 25.0 lb. boost.

Griffon 101 (RG 3 SML): Similar to Griffon 130, but with reduction gear ratio 0.451:1, and 1 propeller shaft.

Griffon 121 (RG 3 SML): Same as Griffon 130.

Other models of Rolls-Royce Griffon (2-stage) engines will be found on page 205.

Additional Models of Rolls-Royce Griffon (2-stage) Engines

(Continued from pages 201 and 203)

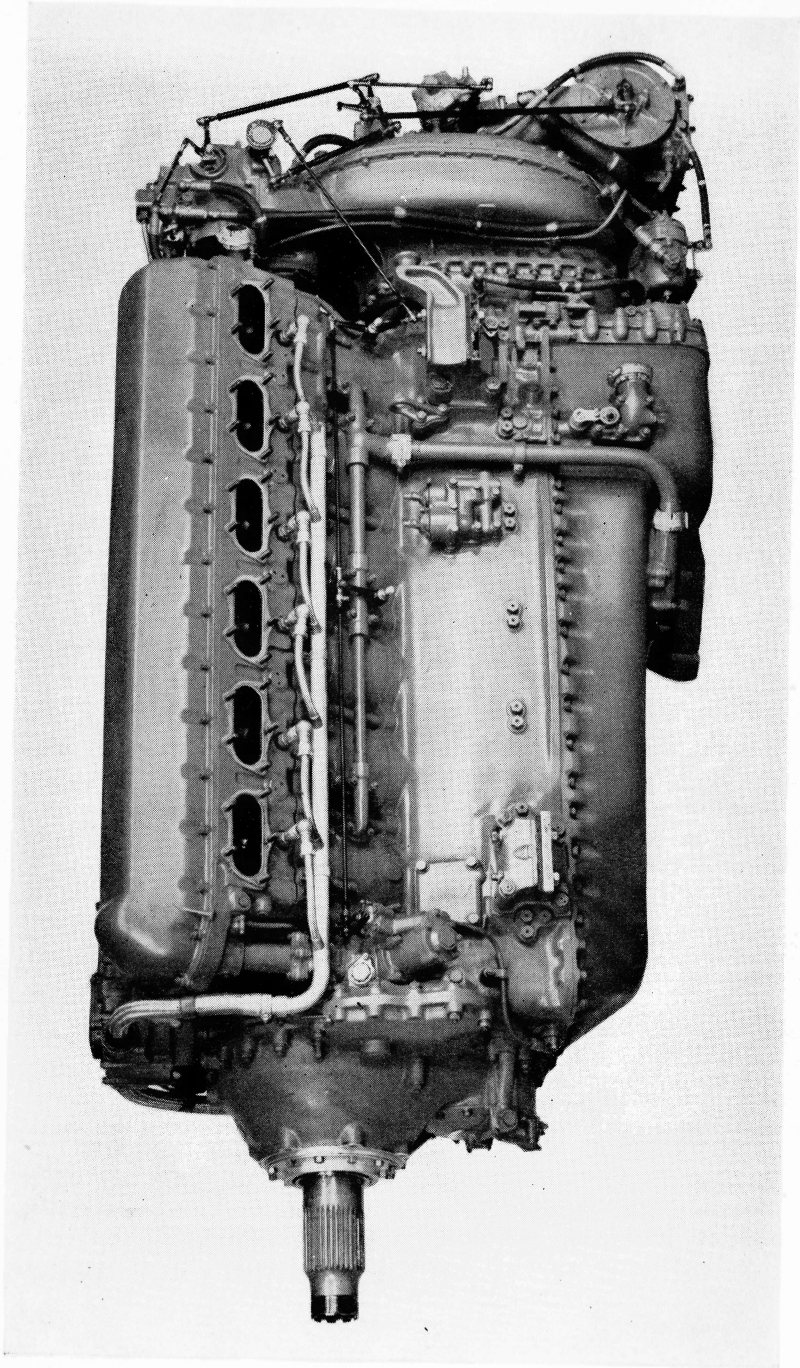
Griffon 61, 62, 63 (RG 4 SM): Similar to Griffon 69. Reduction gear ratio 0.451:1. 2-stage 2-speed supercharger, ratios 5.84:1 and 7.58:1. 1,540 h.p./2,750 r.p.m./take-off; 2,035 h.p./2,750 r.p.m./7,000 ft. (2 100 m) and 1,820 h.p./2,750 r.p.m./21,000 ft. (6 400 m) military ratings; 1,490 h.p./2,600 r.p.m./13,500 ft. (4 100 m) and 1,365 h.p./2,600 r.p.m./26,500 ft. (8 100 m) normal ratings.

Griffon 65, 66 (RG 4 SM): Same as Griffon 61, but with gear ratio 0.51:1.

Griffon 71, 72 (RG 10 SM): Similar to Griffon 69. Reduction gear ratio 0.451:1. 2-stage 2-speed supercharger, ratios 5.16:1 and 6.79:1. 1,940 h.p./2,750 r.p.m./take-off; 2,050 h.p./2,750 r.p.m./750 ft. (250 m) and 1,905 h.p./2,750 r.p.m./14,750 ft. (4 500 m) military ratings; 1,520 h.p./2,600 r.p.m./8,250 ft. (2 500 m) and 1,415 h.p./2,600 r.p.m./20,500 ft. (6 200 m) normal ratings; all with 100/130 grade gasoline. Also, 2,100 h.p./2,750 r.p.m./sea level and 2,190 h.p./2,750 r.p.m./9,500 ft. (2 900 m) with 70.6 in. (1 790 mm) + 25.0 lb. and 100/150 grade gasoline.

Griffon 85, 86: Similar to Griffon 61, but with reduction gear ratio 0.442:1, and 2 co-axial contra-rotating propeller shafts. See page 204.

Griffon 151: Similar to Griffon 85, but with reduction gear ratio 0.453:1, and 2-stage 2-speed supercharger, ratios 6.23:1 and 7.24:1.



Rolls-Royce Griffon 37

Rolls-Royce Griffon (1-stage 2-speed)

Model ..... Griffon 37.

Type ..... 12 cylinders, vee 60 degrees, pressure liquid cooled, geared drive, supercharged, 4-cycle.

Construction ..... 2-piece aluminum alloy crankcase. 2 aluminum alloy cylinder blocks with a detachable head for each block. Steel cylinder liners. 2 inlet valves and 2 exhaust valves (sodium cooled) per cylinder actuated by overhead camshaft. 6-throw 1-piece counterbalanced crankshaft supported in 7 plain bearings. Spur reduction gear, ratio 0.51:1.

Supercharger ..... Gear-driven 1-stage 2-speed supercharger, ratios 6.615:1 and 7.70:1. Automatic or manual gear change.

Fuel system ..... 1 Rolls-Royce Mk. IIC combined transfer and fuel injection pump, with injection through 1 nozzle into updraft air intake. Automatic boost control.

Ignition ..... 1 B.T.H. CSH12-12S/4 dual magneto. 2 14-mm short reach spark plugs per cylinder. Shielded ignition system.

Lubrication ..... Pressure feed, 45-60 lb./sq.in. (3,4 - 4,2 kg/cm²). Main bearings lubricated by crankshaft end-to-end system. Dry sump.

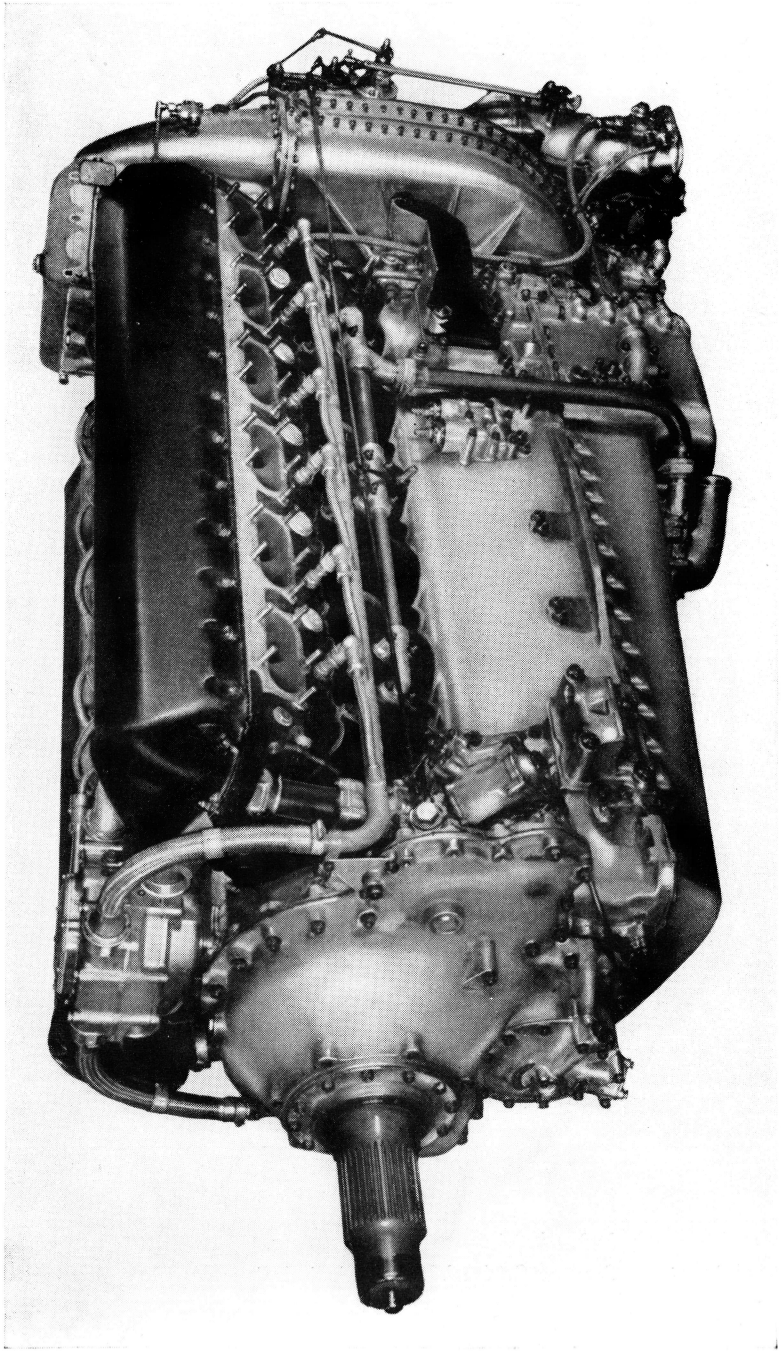
Starter ..... Plessey Coffman L-5 cartridge starter.

Bore	6.00 in.	152 mm
Stroke	6.60 in.	168 mm
Displacement	2,239 cu.in.	36,7 lit
Compression ratio	6.0:1	6,0:1
Width	30.3 in.	769 mm
Height	42.5 in.	1 080 mm
Length	71.1 in.	1 805 mm
Frontal area	7.9 sq.ft.	0,73 m²
Weight	1,930 lb.	875 kg
Weight/horsepower	0.97 lb./h.p.	0,44 kg/hp
Fuel consumption (cr.)	0.47 lb./h.p./hr.	215 g/hp/hr
Oil consumption (cr.)	0.016 lb./h.p./hr.	7 g/hp/hr
Gasoline grade	D. Eng./RD. 2475	100/130 grade
Oil viscosity	100 S.U. (D.E.D. 2472B)	20,5 cs
Output/displacement	0.89 h.p./cu.in.	54,2 hp/lit
Output/piston area	5.87 h.p./sq.in.	0,91 hp/cm²
Piston speed (max.)	3,025 ft./min.	15,4 m/sec
B.m.e.p. (max.)	256 lb./sq.in.	18,0 kg/cm²

Rating (take-off) ..... 1,960 h.p./2,750 r.p.m./66.4 in. (1 686 mm) +18.0 lb.
Rating (military, low) ... 1,990 h.p./2,750 r.p.m./2,000 ft. (600 m)
Rating (military, high) .. 1,820 h.p./2,750 r.p.m./10,000 ft. (3 000 m)
Rating (normal, low) .... 1,470 h.p./2,600 r.p.m./9,500 ft. (2 900 m)
Rating (normal, high) ... 1,365 h.p./2,600 r.p.m./16,500 ft. (5 000 m)
Rating (cruising, low) ... 1,285 h.p./2,400 r.p.m./8,750 ft. (2 700 m)
Rating (cruising, high) ... 1,210 h.p./2,400 r.p.m./15,250 ft. (4 600 m)

Griffon VI, VII: Similar to Griffon 37, but with S.U. AVT 44/203 injection type carburetor, and with supercharger ratios 9.00:1 and 11.07:1. 1,820 h.p./2,750 r.p.m./60.5 in. (1 537 mm) +15.0 lb. boost/take-off; 1,850 h.p./2,750 r.p.m./2,000 ft. (600 m) and 1,630 h.p./2,750 r.p.m./10,000 ft. (3 000 m) military ratings; 1,475 h.p./2,600 r.p.m./6,500 ft. (2 000 m) and 1,340 h.p./2,600 r.p.m./14,800 ft. (4 500 m) normal ratings.

Griffon VIII: Same as Griffon VI, but with Rolls-Royce fuel injection pump.



Rolls-Royce Griffon 74

Rolls-Royce Griffon (2-stage 2-speed)

Model ..... **Griffon 74.**

Type ..... 12 cylinders, vee 60 degrees, pressure liquid cooled, geared drive, supercharged, 4-cycle.

Construction ..... 2-piece aluminum alloy crankcase. 2 aluminum alloy cylinder blocks with a detachable head for each block. Steel cylinder liners. 2 inlet valves and 2 exhaust valves (sodium cooled) per cylinder actuated by overhead camshaft. 6-throw 1-piece counterbalanced crankshaft supported in 7 plain bearings. Spur reduction gear, ratio 0.451:1.

Supercharger ..... Gear-driven 2-stage 2-speed supercharger, ratios 5.16:1 and 6.79:1. Automatic gear change. Liquid-cooled intercooler.

Fuel system ..... 1 Rolls-Royce Mk.IIC combined fuel injection and transfer pump, with injection through 1 nozzle into updraft air intake. Automatic boost control.

Ignition ..... 1 B.T.H. CSH12-12S/4 dual magneto. 2 14-mm short reach spark plugs per cylinder. Shielded ignition system.

Lubrication ..... Pressure feed, 45-60 lb./sq.in. (3,2 - 4,2 kg/cm²). Main bearings lubricated by crankshaft end-to-end system. Dry sump.

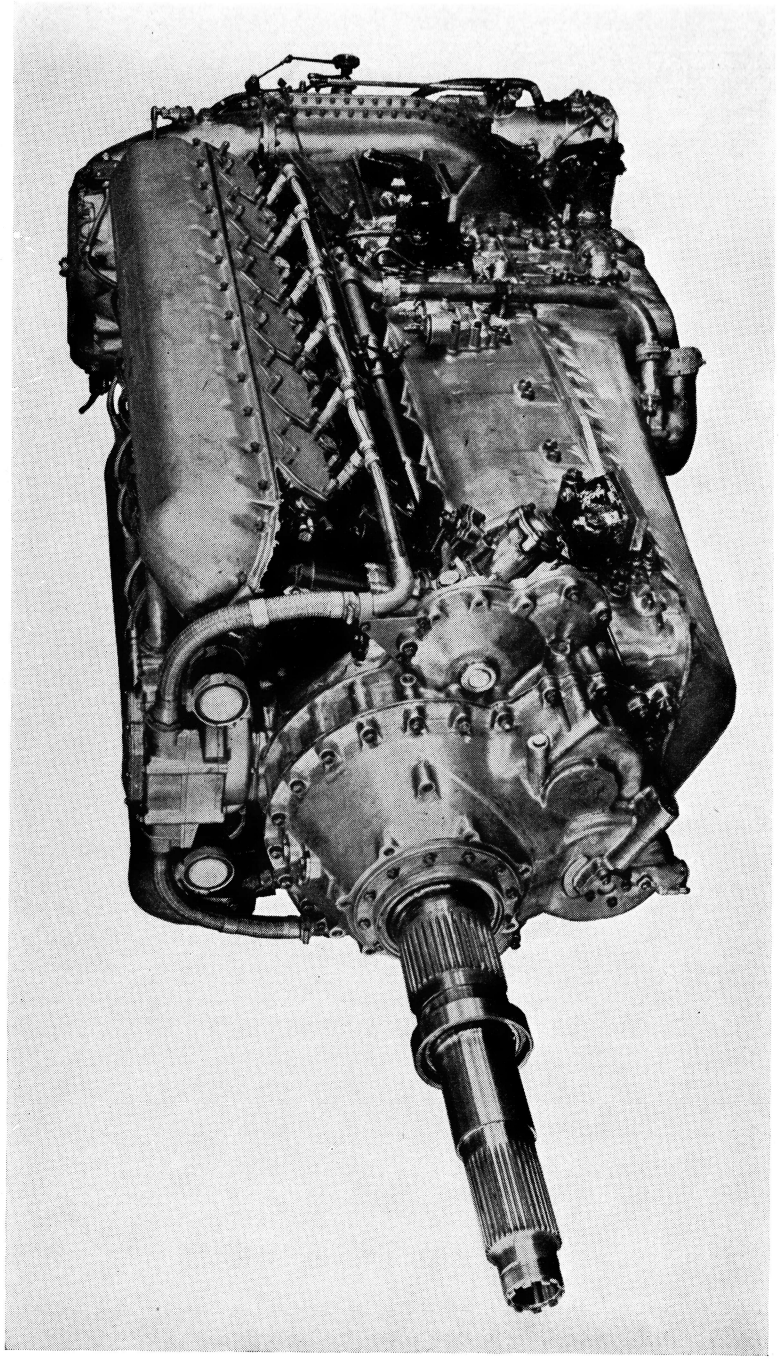
Starter ..... Plessey Coffman L5 cartridge starter.

Bore	6.00 in.	152 mm
Stroke	6.60 in.	168 mm
Displacement	2,239 cu.in.	36,7 lit
Compression ratio	6.0:1	6,0:1
Width	29.5 in.	750 mm
Height	46.0 in.	1 168 mm
Length	81.0 in.	2 057 mm
Frontal area	7.9 sq.ft.	0,73 m²
Weight	2,100 lb.	952 kg
Weight/horsepower	0.93 lb./h.p.	0,42 kg/hp
Fuel consumption (cr.)	0.50 lb./h.p./hr.	225 g/hp/hr
Oil consumption (cr.)	0.009 lb./h.p./hr.	4 g/hp/hr
Gasoline grade	D. Eng./RD. 2475	100/130 grade
Oil viscosity	100 S.U. (D.E.D. 2472B)	20,5 cs
Output/displacement	1.00 h.p./cu.in.	61,2 hp/lit
Output/piston area	6.61 h.p./sq.in.	1,02 hp/cm²
Piston speed (max.)	3,025 ft./min.	15,4 m/sec
B.m.e.p. (max.)	288 lb./sq.in.	20,2 kg/cm²

Rating (take-off) ..... 2,020 h.p./2,750 r.p.m./66.4 in. (1 686 mm) +18.0 lb.
Rating (military, low) ... 2,045 h.p./2,750 r.p.m./sea level
Rating (military, high) .. 2,245 h.p./2,750 r.p.m./9,250 ft. (2 800 m)
Rating (normal, low) .... 1,505 h.p./2,600 r.p.m./7,500 ft. (2 300 m)
Rating (normal, high) ... 1,420 h.p./2,600 r.p.m./20,500 ft. (6 200 m)
Rating (cruising, low) ... 1,310 h.p./2,400 r.p.m./7,500 ft. (2 300 m)
Rating (cruising, high) .. 1,250 h.p./2,400 r.p.m./19,000 ft. (5 800 m)

The above military rating in high supercharger gear is with 80.8 in. (2 052 mm) +25.0 lb. boost.

Griffon 72: Similar to Griffon 74, but with Bendix-Stromberg carburetor. 1,940 h.p./2,750 r.p.m./take-off; 2,050 h.p./2,750 r.p.m./750 ft. (250 m) and 1,905 h.p./2,750 r.p.m./14,750 ft. (4 500 m) military ratings; 1,520 h.p./2,600 r.p.m./8,250 ft. (2 500 m) and 1,415 h.p./2,600 r.p.m./20,500 ft. (6 200 m) normal ratings. 100/130 grade gasoline. Also: 2,100 h.p./2,750 r.p.m./sea level and 2,190 h.p./2,750 r.p.m./9,500 ft. (2 900 m) military ratings with 70.6 in. (1 790 mm) +25.0 lb. boost and 115/150 grade gasoline.



Rolls-Royce Griffon 88

Rolls-Royce Griffon (2-stage 2-speed)

Model ..... **Griffon 88.**

Type ..... 12 cylinders, vee 60 degrees, pressure liquid cooled, geared drive, supercharged, 4-cycle.

Construction ..... 2-piece aluminum alloy crankcase. 2 aluminum alloy cylinder blocks with a detachable head for each block. Steel cylinder liners. 2 inlet valves and 2 exhaust valves (sodium cooled) per cylinder actuated by overhead camshaft. 6-throw 1-piece counterbalanced crankshaft supported in 7 plain bearings. Spur reduction gear, ratio 0.4423:1. 2 co-axial contra-rotating propeller shafts.

Supercharger ..... Gear-driven 2-stage 2-speed supercharger, ratios 5.84:1 and 7.58:1. Automatic gear change. Liquid-cooled intercooler.

Fuel system ..... 1 Rolls-Royce Mk. IIC combined fuel injection and transfer pump, with injection through 1 nozzle into updraft air intake. Automatic boost control.

Ignition ..... 1 B.T.H. CSH12-12S/4 dual magneto. 2 14-mm short reach spark plugs per cylinder. Shielded ignition system.

Lubrication ..... Pressure feed, 45-60 lb./sq.in. (3,2 - 4,2 kg/cm²). Main bearings lubricated by crankshaft end-to-end system. Dry sump.

Starter ..... Plessey Coffman L5 cartridge starter.

Bore	6.00 in.	152 mm
Stroke	6.60 in.	168 mm
Displacement	2,239 cu.in.	36,7 lit
Compression ratio	6.0:1	6,0:1
Width	29.5 in.	750 mm
Height	46.0 in.	1 168 mm
Length	83.0 in.	2 108 mm
Frontal area	7.9 sq.ft.	0,73 m²
Weight	2,210 lb.	1 002 kg
Weight/horsepower	0.94 lb./h.p.	0,43 kg/hp
Fuel consumption (cr.)	0.50 lb./h.p./hr.	225 g/hp/hr
Oil consumption (cr.)	0.009 lb./h.p./hr.	4 g/hp/hr
Gasoline grade	D. Eng./RD. 2475	100/130 grade
Oil viscosity	100 S.U. (D.E.D. 2472B)	20,5 cs
Output/displacement	1.05 h.p./cu.in.	64,0 hp/lit
Output/piston area	6.92 h.p./sq.in.	1,07 hp/cm²
Piston speed (max.)	3,025 ft./min.	15,4 m/sec
B.m.e.p. (max.)	302 lb./sq.in.	21,2 kg/cm²

Rating (take-off)	1,935 h.p./2,750 r.p.m./66.4 in. (1 686 mm) +18.0 lb.
Rating (military, low)	2,350 h.p./2,750 r.p.m./1,250 ft. (400 m)
Rating (military, high)	2,120 h.p./2,750 r.p.m./15,750 ft. (4 800 m)
Rating (normal, low)	1,490 h.p./2,600 r.p.m./13,500 ft. (4 100 m)
Rating (normal, high)	1,365 h.p./2,600 r.p.m./26,500 ft. (8 100 m)
Rating (cruising, low)	1,305 h.p./2,400 r.p.m./12,250 ft. (3 700 m)
Rating (cruising, high)	1,215 h.p./2,400 r.p.m./25,000 ft. (7 600 m)

The above military ratings are with 80.8 in. (2 052 mm) +25 lb. boost.

Griffon 85, 87, 89: Similar to Griffon 88, but with Bendix-Stromberg 9T-40-1 injection type carburetor.