Rolls-Royce Phantom V1

From car serial number PGH 101

Electrical system
Torque tightening figures
The information in this document is correct at the time of going to print but in view of the Company's continuing efforts to develop and improve its products it may have become out of date by the time you read it and you should, therefore, refer to the Company's service bulletins.

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Introduction

This information has been compiled to assist Service Personnel responsible for the maintenance and overhaul of Rolls-Royce Phantom VI motor cars built from car serial number PGH 101.

Information relating to any subsequent modifications will be circulated by the issue of either amended pages or service bulletins.

An issue record sheet is enclosed showing the issue of sections and amended pages. When a section or amended page is issued it will be recorded together with the date of issue. This will provide an up-to-date record of sections and pages.

Service Personnel at Rolls-Royce Motors Limited are always prepared to answer queries or give advice on individual servicing problems. When making an enquiry it is essential that the full car serial number is quoted.
All communications should be addressed to one of the following depending upon the car's domicile.

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Telex: 36121
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B.C. V6X 2W8, Canada
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## Electrical system

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Printed in England
## Electrical System

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**September 1979**

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Electrical System

**Issue record sheet 2**
September 1979

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<td>48</td>
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</tr>
</tbody>
</table>
Introduction
The electrical system is negative earth. Separate system wiring diagrams and component location charts together with a theoretical wiring diagram are provided to aid fault finding.

Precautions
Whenever possible, the gear selector lever should be placed in the 'Park' position. Also the ignition key and gearbox isolator removed from the car. The battery must not be connected or disconnected when the engine is running.

General information
When fault finding, to prevent the occurrence of misleading faults ensure that the battery is in a fully charged condition.

Electrical System

Fuse Rating
No. 2 Fuse, 20 amp rating

Fuse Number

Coil
Relay - Contacts C2 and C3 made with coil unenergised

Contacts

Toggle or microswitch

Push, slide or rotary switch
Contacts 1 & 4 normally broken

Cable colour code
The cables are plastic-covered and are colour coded as follows:
B Black LG Light green
N Brown V Blue
R Red S Slate
O Orange P Purple
Y Yellow W White
G Green K Pink

Connector code
Each diagram contains a code to identify and locate plug and socket connections.
As a further aid to identification of components, the following information is provided.

Ladder diagram symbols:
- Diode
  - Current flow from left to right
- Earth Point
- Capacitor
- Radio suppressor
- Motor
- Locus connections
- Thermal cut-out
Section 1

Fuseboard layout

Schematic wiring diagram

Fig. 1 - 1
Section 2

Power distribution

Schematic wiring diagram

Fig. 2 - 1
Connector Code
S87 - Switchbox 7-way
S89 - Switchbox 9-way
FA - Fuseboard A'
FB - Fuseboard 'B'
RT - Right-hand Toeboard

Switchbox

Ignition Switch

Lighting Switch

Auxiliary Fuse

Rear compartment ACU 28RG
Headflash 28UG
Gauges & warning lamps 14G
Air conditioning 28GLG
Ignition, fuel pumps 9W
Windscreenwiper 9LG
Front foglamp 14UY
Front passengers window lift 28YP
Left-hand rear window lift 28YW
Front blowers 28Y
Cigar lighters & clock 14/28NP
Hazard warning flasher 28U
Bonnet, boot & interior lamps 28P
Division glass 28U
Section 3

Charging system

Component location

Fig. 3 - 1
1 Battery temperature sensors

2 Radio suppressors

3 Right-hand toeboard sockets (passenger compartment)

4 Ammeter shunt left-hand drive cars

5 Right-hand boot earth

4 Ammeter shunt right-hand drive cars

Left-hand drive location of 3 and 4

Right-hand drive location of 3 and 4

Engine compartment location of 2 and 3

Boot location of 1 and 5
Section 3

Charging system

Schematic wiring diagram

Fig. 3 - 2
Connector Code
TA - Toeboard socket 'A'
CLM - Chassis loom socket 'M'

120N

Battery cable

Ammeter

Ammeter shunt

65 NW

Switchbox

Ignition warning lamp

12 V

Battery

Starter solenoid and motor

Battery temperature sensors

35°C

Regulator

14 NW

14 NY

14 NY

Suppressor

14 NS

14 NS

14 NS

14 NS

14 NS

14 NG

14 NG

14 NG

Boot earth

14 N

14 N

14 N
Section 4

Starting system

Component location

Fig. 4 - 1
3 Right-hand toeboard sockets (engine compartment)
6 Starter relay
7 Right-hand valance earth
8 Engine loom socket
9 Left-hand toeboard sockets
11 Gear selector socket (on the steering column)
12 Column Neutral start switch

Right-hand drive location of 3, 8, 9, 11 and 12
Left-hand drive location of 3, 8, 9, 11 and 12
Engine compartment location of 3, 6, and 7
Section 4

Starting system

Schematic wiring diagram

Fig. 4 - 2
Connector Code
FA7 - Fuseboard A 7 way socket
SB - Switchbox
G - Gear selector socket
GC - Gear change plug (Pin 'S' & Pin 'K')
TL - Toeboard socket L
EL - Engine loom socket
RT - Right-hand toeboard connection

Starter switch

Column neutral start switch
Gearbox neutral start switch

Starter relay
(Relay shown)
de-energised

Right-hand valance earth

Ammeter shunt

Battery cable

12V

Starter motor

Solenoid contacts

120/28N

28N

28NB

Starter solenoid
Section 5

Ignition system

Component location

Fig. 5 - 1
Right-hand drive location of 8, 12, 13, 15 and 23

Left-hand drive location of 8, 12, 15, 23 and 32

Engine compartment location of 6, 7, 14, 16 to 20, 21, 24 and 25

Front underside location of 22
Section 5

Ignition system

Schematic wiring diagram
Right-hand drive cars

Fig. 5 - 2
Section 5

Ignition system

Schematic wiring diagram
Left-hand drive cars

Fig. 5 - 3
Section 5

Ignition system

Fault diagnosis

Fig. 5 - 4
Start

Is there complete engine failure or does the engine misfire?

Complete failure

Remove king lead from distributor and position end of lead 5 mm. from a good earth. Switch on ignition and briefly crank the engine. Is there a spark?

Inspect plugs and high-tension leads
Inspect distributor cap and rotor
Check the low-tension wiring and connections
Connect a dwell angle meter to coil negative and earth. With the engine running at 1000 r.p.m. dwell angle should be between 33° - 39°

Substitute coil
Substitute ballast resistor
Substitute distributor

* The information contained within this box is not applicable to distributors fitted with a sealed perspex anti-flash guard.

If the correct gap cannot be obtained replace the distributor.

Check rotor arm, distributor cover and high-tension leads.

Check rotor arm, distributor cover and high-tension leads.

Remove distributor and check the drive from engine. Fit a new distributor if necessary.

Remove distributor cover and briefly crank the engine. Does the shaft rotate?

Inspect distributor cap and rotor
Check the low-tension wiring and connections

If correct gap cannot be obtained replace distributor.

With ignition switched off, measure the pick-up gap at top and centre limb of 'E' core at various points, to ensure concentricity of the distributor shaft.

Is the gap between 0.254 mm. and 0.432 mm.? (0.010 in. and 0.017 in.)

Measure the supply voltage on ballast resistor.

Is it less than 11 volts?

Check the low-tension wiring, ignition switch etc.

Is the voltage on the coil positive terminal less than 4 volts?

Check ballast resistor

Is the voltage on the coil negative terminal less than 2 volts?

Remove coil negative lead.

Is the voltage on the coil negative terminal less than 3 volts?

Check high-tension king lead. If satisfactory, substitute coil and then substitute distributor.

If the distributor body is earthed, change distributor.

Substitute coil.

Use plastic feeler gauges if possible and do not force them into the gap
Section 6

Exterior lighting

Component location
Head, tail, side and number plate lamps

Fig. 6 - 1
Right-hand drive location of 3, 9, 15, 31 and 33

Left-hand drive location of 3, 9, 15, 30 and 33

Engine compartment location of 3, 24 and 34
Section 6

**Exterior lighting**

Schematic wiring diagram
Head, tail, side and number plate lamps
Right-hand drive cars

Fig. 6 - 2
Section 6

Exterior lighting

Schematic wiring diagram
Head, tail, side and number plate lamps

Left-hand drive cars

Fig. 6 - 3
Section 6

Exterior lighting

Component location
Hazard, direction, stop and reversing lamps

Fig. 6 - 4
Right-hand drive location of 3, 9 and 15

Left-hand drive location of 3, 9 and 15

Engine compartment location of 3, 7 and 34
3 Right-hand toeboard sockets (engine compartment)

35 Stoplamp failure relay

7 Right-hand valance earth

34 Left-hand valance earth

3 Right-hand toeboard sockets (passenger compartment)

5 Right-hand boot earth

36 Connecting blocks

26 Left-hand boot earth

9 Left-hand toeboard sockets

15 Chassis loom sockets

Boot location of 26

Boot location of 5, 35 and 36
Section 6

Exterior lighting

Schematic wiring diagram
Hazard, direction, stop
and reversing lamps

Fig. 6 - 5
Section 6

Exterior lighting

Component location
Foglamps

Fig 6 - 6
Right-hand drive location of 3, 15, 31, 33, 37 and 38

Left-hand drive location of 3, 15, 30, 33, 37 and 38

Engine compartment location of 3 and 7

Boot location of 5 and 39
38 Right-hand drive rear foglamp relay

31 Right-hand drive headlamp safety relay

3 Right-hand toeboard sockets (passenger compartment)

3 Right-hand toeboard sockets (engine compartment)

38 Left-hand drive rear foglamp relay

7 Right-hand valance earth

5 Right-hand boot earth

30 Left-hand drive headlamp safety relay

39 Petrol filler door solenoid

33 Left-hand instrument panel earth

37 Right-hand instrument panel earth

15 Chassis loom sockets
Section 6

Exterior lighting

Schematic wiring diagram
Foglamps

Fig. 6 - 7
Section 7

Interior lighting

Component location

Fig. 7-1
Section 7

Interior lighting

Schematic wiring diagram

Fig. 7-2
Section 8

Windscreen wipers and washers

Component location

Fig. 8 - 1
49 Left-hand drive wiper relay
50 Left-hand drive wash/wipe control box
52 Right-hand 'A' post earth
48 Wiper motor suppressors
49 Right-hand drive wiper relay
50 Right-hand drive wash/wipe control box
34 Left-hand valance earth
9 Left-hand toeboard sockets
3 Right-hand toeboard sockets (passenger compartment)
3 Right-hand toeboard sockets (engine compartment)
Engine compartment location of 3, 34, and 48
Left-hand drive location of 3, 9, 49, 50 and 52
Right-hand drive location of 3, 9, 49, 50 and 52
Section 8

Windscreen wipers and washers

Schematic wiring diagram
Wiper switch in OFF position

Fig. 8 - 2
Section 8

Windscreen wipers and washers

Schematic wiring diagram
Wiper switch in NORMAL position

Fig. 8 - 3
Section 8

Windscreen wipers and washers

Schematic wiring diagram
Wiper switch in FAST position

Fig. 8 - 4
Switch shown in OFF position

Connector code:
CA Coolant level amplifier
TH Toeboard socket 'H'
TD Toeboard socket 'D'
FK Toeboard socket 'K'
WM Wiper motor
D1 Direction indicator
FB Fuseboard 'B'

Fuse board diagram with various components and connections detailed.
Section 8

Windscreen wipers and washers

Schematic wiring diagram
Wiper switch in INTERMITTENT position

Fig. 8 - 5
Switch shown in OFF position

INT. 1-7, 11, 3-1, 6-9, 12-13
OFF 1-6, 2, 4, 12-13
NORMAL 8-10, 12-13
FAST 5-6-10

Connector code
CA Coolant level amplifier
TH Toeboard socket 'H'
TD Toeboard socket 'D'
TK Toeboard socket 'K'
WM Wiper motor
DI Direction indicator
FB Fuseboard 'B'

Wiper motor

Suppressor

Wiper control unit

Wash/wipe control unit

Right-hand dash earth

Left-hand valance earth

'Park on Screen' Switch

'Park off Screen' Switch

Suppressor

Wiper switch
Section 8

Windscreen wipers and washers

Schematic wiring diagram
Wash/wipe control

Fig. 8 - 6
Switch shown in OFF position
Section 9

Division lift

Component location

Fig. 9.1
Section 9

Division lift

Schematic wiring diagram

Fig. 9 - 2
Connector code
CLP - Chassis loom P
CLW - Chassis loom W
BL - Body loom plug
Section 10

Window lifts

Component location

Fig. 10 - 1
41 Left-hand door sockets

45 Rear door earth

52 'A' post earth

Right-hand drive location of 41 and 52

Left-hand drive location of 41 and 52
Section 10

Window lifts

Schematic wiring diagram

Fig. 10 - 2
Section 11

Horns

Schematic wiring diagram
and component location

Fig. 11 - 1
3 Right-hand toeboard sockets (engine compartment)
54 Horn relay

7 Right-hand valance earth

Right-hand drive location of 3

55 Horns

Left-hand drive location of 3

Front underside location of 55

Engine compartment location of 3, 7 and 54

Horn relay

Horn button

Horns

Right-hand valance earth

Connector code
FA - Fuseboard 'A'
FB - Fuseboard 'B'
TD - Toeboard 'D'
TH - Toeboard 'H'
Section 12

Centralised door locking

Component location

Fig. 12 - 1
56 Door locking solenoid

Right-hand drive location of 15 and 41

5 Right-hand boot earth
36 Connecting blocks

15 Chassis loom sockets

Boot location of 5, 36 and 56

43 Left-hand rear door socket

U372

41 Left-hand front door sockets

Rear compartment location of 43, 45 and 56

45 Heelboard loom sockets

Left-hand drive location of 15 and 41

56 Boot locking solenoid

56 Boot locking solenoid
Section 12

Centralised door locking

Schematic wiring diagram

Fig. 12 - 2
Connector code:
FA - Fuseboard 'A'
DU - Right-hand door 'U'
LD - Left-hand door
CLS - Chassis loom 'S'
HB - Heelboard
RRD - Right-hand rear door
LRD - Left-hand rear door
CB1 - Connector block '1'
CB2 - Connector block '2'
CB3 - Connector block '3'
Section 13

Gearchange actuator

Component location

Fig. 13 - 1
Section 13

Gearchange actuator

Schematic wiring diagram

Fig. 13 - 2
Section 14

Instruments and warning lamps

Component location
(instruments)

Fig. 14 - 1
Right-hand drive location of 3, 4, 9 and 27

Left-hand drive location of 3, 4, 9 and 27

Engine compartment location of 3, 34, 58 and 59

Underside location of 60 and 61
27 Right-hand "A" post earth
34 Left-hand valance earth
58 Coolant temperature transmitter
59 Oil pressure transmitter

3 Right-hand toeboard sockets (passenger compartment)
3 Right-hand toeboard sockets (engine compartment)
60 Oil sump unit
61 Fuel tank unit

9 Left-hand toeboard sockets
4 Right-hand drive ammeter shunt
4 Left-hand drive ammeter shunt
Section 14

Instruments and warning lamps

Schematic wiring diagram (instruments)

Fig. 14 - 2
Section 14

Instruments and warning lamps

Component location (warning lamps)

Fig. 14 - 3
Right-hand drive location of 51, 63, 64, 67 and 69

Left-hand drive location of 51, 62, 64, 67 and 69

Engine compartment location of 65, 68 and 70

Boot location of 35

Underside location of 66
Section 14

Instruments and warning lamps

Schematic wiring diagram (warning lamps)

Fig. 14 - 4
Connector code
FA - Fuseboard 'A'
FB - Fuseboard 'B'
TB - Toeboard 'B'
TK - Toeboard 'K'
TA - Toeboard 'A'
CA - Coolant amplifier
SR - Stoplamp relay
CLR - Chassis loom 'R'

Fuel warning lamp
dimming relay

Right-hand
dash earth

Diode block Brake pressure switch

Brake pressure switch

Handbrake switch

Right-hand
dash earth

Warning lamp test switch

Stoplamps

Stoplamp failure relay

Boot earth

Fuel tank unit

Coolant probe

Low fuel

High metal
temperature buzzer

Diode block

Right-hand dash earth

Coolant level amplifier

Low coolant

and/or

High metal temperature
Section 15

Theoretical wiring diagram

Fig. 15 - 1
Torque tightening figures

Section
1 Introduction
2 Standard parts
3 Special parts
Torque tightening figures

Issue record sheet 1

September 1979

The dates quoted below refer to the issue date of individual pages within this chapter.
Section 1

Introduction

Tighten all setscrews, full nuts and half nuts to the figures quoted in the 'Standard Parts' tables except those components listed in the 'Special Parts' tables. On these occasions, the special torque tightening figure is listed adjacent to the relevant component and description.

Setscrews should be tightened to the figures quoted for full or castellated nuts.

Plated parts should have all burrs and foreign matter (e.g. grit, grease and paint) removed from the abutment faces of the nuts, setscrews, washers, and components to ensure that the correct torque tightening figures are obtained.

The threads and abutment faces of Non-Plated parts should be smeared with engine oil before being fitted.

All unified nuts having an identification groove on one end, are to be fitted with the groove end away from the mating face.

Certain items should not be torque tightened and these are as follows.

Items not to be torque tightened
1. Nuts which are locked by riveting
2. Wood screws
3. Hub assembly retaining nuts (front and rear)
4. All threads less than 2 B.A. (except items listed in this Chapter)
5. Front door private lock nuts.
Section 2

Torque tightening figures for Standard Parts

### Full nut

<table>
<thead>
<tr>
<th>Size</th>
<th>kgf.m</th>
<th>lbf.ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 B.A.</td>
<td>0,5 - 0,7</td>
<td>48 - 60 lbf.in</td>
</tr>
<tr>
<td>1/4 in. dia. U.N.F.</td>
<td>1,1 - 1,4</td>
<td>8 - 10</td>
</tr>
<tr>
<td>1/8 in. A/F</td>
<td>2,2 - 2,5</td>
<td>16 - 18</td>
</tr>
<tr>
<td>1/8 in. dia. U.N.F.</td>
<td>4,0 - 4,4</td>
<td>29 - 32</td>
</tr>
<tr>
<td>1/4 in. A/F</td>
<td>5,8 - 6,2</td>
<td>42 - 45</td>
</tr>
<tr>
<td>5/16 in. dia. U.N.F.</td>
<td>8,3 - 9,0</td>
<td>60 - 65</td>
</tr>
<tr>
<td>3/8 in. and 1/2 in. A/F</td>
<td>11,7 - 12,4</td>
<td>85 - 90</td>
</tr>
</tbody>
</table>

### Half nut

<table>
<thead>
<tr>
<th>Size</th>
<th>kgf.m</th>
<th>lbf.ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 B.A.</td>
<td>0,3 - 0,4</td>
<td>30 - 36 lbf.in</td>
</tr>
<tr>
<td>1/4 in. dia. U.N.F.</td>
<td>0,7 - 1,0</td>
<td>5 - 7</td>
</tr>
<tr>
<td>1/8 in. A/F</td>
<td>1,8 - 2,0</td>
<td>13 - 15</td>
</tr>
<tr>
<td>1/8 in. dia. U.N.F.</td>
<td>3,0 - 3,4</td>
<td>22 - 25</td>
</tr>
<tr>
<td>3/16 in. A/F</td>
<td>4,5 - 5,0</td>
<td>33 - 36</td>
</tr>
<tr>
<td>5/32 in. and 1/16 in. A/F</td>
<td>6,6 - 7,2</td>
<td>48 - 52</td>
</tr>
<tr>
<td>1/4 in. dia. U.N.F.</td>
<td>10,0 - 10,8</td>
<td>73 - 78</td>
</tr>
<tr>
<td>1/4 in. A/F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/32 in. dia. U.N.F.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/4 in. A/F</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Section 3

**Torque tightening figures for Special Parts**

#### Engine

<table>
<thead>
<tr>
<th>Component</th>
<th>Size</th>
<th>Size</th>
<th>kgf.m.</th>
<th>lbf.ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main bearing cap - nut</td>
<td>⅛ in. dia U.N.F. ⅛ in. dia. A/F</td>
<td>⅛ in. dia U.N.F. ⅛ in. dia. A/F</td>
<td>6.2 - 6.9</td>
<td>45 - 50</td>
</tr>
<tr>
<td>Big-end - nut</td>
<td>⅛ in. dia U.N.F. ⅛ in. dia. A/F</td>
<td>⅛ in. dia U.N.F. ⅛ in. dia. A/F</td>
<td>5.5 - 6.2</td>
<td>40 - 45</td>
</tr>
<tr>
<td>Oil pump intake strainer - castellated nut</td>
<td>⅛ in. dia. U.N.F. ⅛ in. dia. A/F</td>
<td>⅛ in. dia. U.N.F. ⅛ in. dia. A/F</td>
<td>0.3</td>
<td>[24 - 30 lbf.in.]</td>
</tr>
<tr>
<td>Camshaft gear - setscrew</td>
<td>⅛ in. dia U.N.F. ⅛ in. dia. A/F</td>
<td>⅛ in. dia U.N.F. ⅛ in. dia. A/F</td>
<td>1.1 - 1.4</td>
<td>8 - 10</td>
</tr>
<tr>
<td>Crankshaft pinion - slotted nut (L.H.)</td>
<td>⅛ in. dia U.N.S.</td>
<td>⅛ in. dia U.N.F. ⅛ in. dia. A/F</td>
<td>38.7 - 44.2</td>
<td>280 - 320</td>
</tr>
<tr>
<td>Tappet block - setscrew</td>
<td>⅛ in. dia U.N.F. ⅛ in. dia. A/F</td>
<td>⅛ in. dia U.N.F. ⅛ in. dia. A/F</td>
<td>1.1 - 1.4</td>
<td>8 - 10</td>
</tr>
<tr>
<td>Drive plate to crankshaft - setscrew</td>
<td>⅛ in. dia U.N.F. ⅛ in. dia. A/F</td>
<td>⅛ in. dia U.N.F. ⅛ in. dia. A/F</td>
<td>4.0 - 4.4</td>
<td>29 - 32</td>
</tr>
<tr>
<td>Distributor clamp plate - bolt</td>
<td>⅛ in. dia U.N.F. ⅛ in. dia. A/F</td>
<td>⅛ in. dia U.N.F. ⅛ in. dia. A/F</td>
<td>0.8</td>
<td>[48 - 52 lbf.in.]</td>
</tr>
</tbody>
</table>

**Alternatives**

- Crankshaft damper drive flange - slotted nut: ⅛ in. dia U.N. 13.1 - 20.7 95 - 150
  
  Slotted nut to be initially tightened to 13.1 kgf.m. (95 lbf.ft.), further tightening of the nut to align the castellations with the lock-washer is permissible. However, the final torque figure must not exceed 20.7 kgf.m. (150 lbf.ft.).

- Viscous drive - socket head cap screw (Allen screw): ¾ in. dia U.N.F. 4.0 - 4.4 29 - 32
  
  ¾ in. dia U.N.F. 5.5 - 6.8 40 - 42

- Alternator pulley - lock nut: ¾ in. dia U.N.F. ⅛ in. dia. A/F 0.1 [10 - 12 lbf.in.]

- Rocker cover - cap nut: M14 ⅛ in. A/F 1.8 - 2.3 13 - 17

- Sparking plug: ¾ in. dia U.N.F. ⅛ in. dia. A/F 1.1 - 1.4 8 - 10

- Rocker shaft pedestal: ¾ in. dia U.N.F. ⅛ in. dia. A/F

- Cylinder head - nut:Stage 1: ⅛ in. dia U.N.F. 1⅛ in. dia. A/F 2.8 - 3.5 20 - 25

- Initial tightening: Stage 2: ⅛ in. dia U.N.F. ⅛ in. dia. A/F 6.9 - 7.6 50 - 55

- Final tightening: Stage 3: ½ in. dia U.N.F. ½ in. A/F 3.2 - 3.4 23 - 25

- Exhaust manifold: Oil level indicator - cheeseshead screw: 3.8.A. 0.25 [20 - 22 lbf.in.]

#### Propeller shaft

<table>
<thead>
<tr>
<th>Propeller shaft flange - nut</th>
<th>Size</th>
<th>Size</th>
<th>kgf.m.</th>
<th>lbf.ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propeller shaft flange - nut</td>
<td>⅛ in. dia U.N.F. ⅛ in. dia. A/F</td>
<td>⅛ in. dia U.N.F. ⅛ in. dia. A/F</td>
<td>6.2 - 6.9</td>
<td>45 - 50</td>
</tr>
</tbody>
</table>
# Rolls-Royce Phantom VI

## Component Size kgf.m. lbf.ft.

### Hydraulic systems

<table>
<thead>
<tr>
<th>Component</th>
<th>Size</th>
<th>kgf.m.</th>
<th>lbf.ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bobbin retainer - plug</td>
<td>1½ in. dia. U.N.S.</td>
<td>7.6 - 8.3</td>
<td>55 - 60</td>
</tr>
<tr>
<td>Inlet hose - adapter</td>
<td>¾ in. dia. U.N.F. ¾ in. A/F</td>
<td>1.7 - 2.1</td>
<td>12 - 15</td>
</tr>
<tr>
<td>Clamp - ring</td>
<td>4½ in. dia. Buttress</td>
<td>38.6 - 38.0</td>
<td>255 - 275</td>
</tr>
<tr>
<td>Charging valve - sealing cap</td>
<td>¾ in. dia. U.N.F. ¾ in. A/F</td>
<td>3.0 - 3.5</td>
<td>22 - 25</td>
</tr>
<tr>
<td>Sphere to valve body - sub-assembly</td>
<td>1½ in. dia. U.N.F. 1½ in. A/F</td>
<td>7.6 - 8.3</td>
<td>55 - 60</td>
</tr>
<tr>
<td>Bleed screw</td>
<td>½ in. dia. U.N.F. ½ in. A/F</td>
<td>1.1 - 1.4</td>
<td>8 - 10</td>
</tr>
<tr>
<td>Brake pump to accumulator</td>
<td>¾ in. dia. U.N.F.</td>
<td>2.8 - 3.4</td>
<td>20 - 25</td>
</tr>
<tr>
<td>Brake pump to engine - castellated nut</td>
<td>1¾ in. dia. U.N.F.</td>
<td>4.4 - 4.8</td>
<td>32 - 35</td>
</tr>
<tr>
<td>High pressure outlet - adapter</td>
<td>½ in. dia. U.N. ½ in. A/F</td>
<td>6.9 - 7.6</td>
<td>50 - 55</td>
</tr>
<tr>
<td>Brake pump to accumulator (accumulator end) - pipe nut</td>
<td>¾ in. dia. U.N.F. ¾ in. A/F</td>
<td>1.1 - 1.4</td>
<td>8 - 10</td>
</tr>
<tr>
<td>Brake pump inlet pipe - pipe nut</td>
<td>¾ in. dia. U.N.F. ¾ in. A/F</td>
<td>1.7 - 2.1</td>
<td>12 - 15</td>
</tr>
<tr>
<td>All brake pipe nuts</td>
<td>1 in. dia. U.N. 1½ in. A/F</td>
<td>3.3 - 9.0</td>
<td>60 - 65</td>
</tr>
<tr>
<td>Distribution valve - end plug</td>
<td>¼ in. dia. U.N. 1½ in. A/F</td>
<td>3.3 - 9.0</td>
<td>60 - 65</td>
</tr>
<tr>
<td>Distribution valve mounting - castellated nut</td>
<td>¾ in. dia. U.N.F. ¾ in. A/F</td>
<td>1.1 - 1.4</td>
<td>8 - 10</td>
</tr>
<tr>
<td>Brake line - restrictors</td>
<td>½ in. dia. U.N.F. ¾ in. A/F</td>
<td>1.7 - 2.1</td>
<td>12 - 15</td>
</tr>
<tr>
<td>Brake fluid filter - nut</td>
<td>½ in. dia. U.N.F. ¾ in. A/F</td>
<td>2.8 - 3.4</td>
<td>20 - 25</td>
</tr>
<tr>
<td>Pressure switch</td>
<td>¾ in. dia. U.N.F. 1 in. A/F</td>
<td>1.7 - 2.1</td>
<td>12 - 15</td>
</tr>
<tr>
<td>Front hubs</td>
<td>Drum - retaining screw</td>
<td>¼ in. dia. U.N.F.</td>
<td>0.35 - 0.4</td>
</tr>
</tbody>
</table>

### Sub-frames and suspension

<table>
<thead>
<tr>
<th>Component</th>
<th>Size</th>
<th>kgf.m.</th>
<th>lbf.ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fulcrum pin - upper</td>
<td>0.880 in. dia. U.N.C. 1½ in. A/F</td>
<td>20.7</td>
<td>150</td>
</tr>
<tr>
<td>Threaded bushes - lower triangle levers</td>
<td>1¼ in. dia. U.N.F. 1¼ in. A/F</td>
<td>34.6</td>
<td>250</td>
</tr>
<tr>
<td>Rear spring front anchorage - nut</td>
<td>¾ in. dia. U.N.S. 1¼ in. A/F</td>
<td>20.7 - 24.9</td>
<td>150 - 180</td>
</tr>
<tr>
<td>Front dampers</td>
<td>Piston actuating lever - nut</td>
<td>1¼ in. dia. U.N.F. 1¼ in. A/F</td>
<td>8.3 - 9.7</td>
</tr>
<tr>
<td>Filler plug</td>
<td>1¼ in. dia. U.N.F. 1½ in. A/F</td>
<td>1.6 - 2.1</td>
<td>12 - 15</td>
</tr>
<tr>
<td>Solenoid control plug</td>
<td>1¼ in. dia. U.N.F. 1½ in. A/F</td>
<td>1.4 - 1.6</td>
<td>10 - 12</td>
</tr>
<tr>
<td>Rear plug</td>
<td>¾ in. dia. U.N.F. 1½ in. A/F</td>
<td>4.1 - 6.2</td>
<td>30 - 45</td>
</tr>
<tr>
<td>Rear dampers</td>
<td>Piston actuating lever - nut</td>
<td>1¼ in. dia. U.N.F. 1¼ in. A/F</td>
<td>8.3 - 9.7</td>
</tr>
<tr>
<td>Filler plug</td>
<td>1¼ in. dia. U.N.F. 1½ in. A/F</td>
<td>1.6 - 2.1</td>
<td>12 - 15</td>
</tr>
<tr>
<td>Solenoid control plug</td>
<td>1¼ in. dia. U.N.F. 1½ in. A/F</td>
<td>1.4 - 1.6</td>
<td>10 - 12</td>
</tr>
<tr>
<td>Rear plug</td>
<td>¾ in. dia. U.N.F. 1½ in. A/F</td>
<td>4.1 - 6.2</td>
<td>30 - 45</td>
</tr>
<tr>
<td>Damper links - nut</td>
<td>½ in. dia. U.N.F. 1¼ in. A/F</td>
<td>6.2 - 6.9</td>
<td>45 - 50</td>
</tr>
</tbody>
</table>

### Final drive

<table>
<thead>
<tr>
<th>Component</th>
<th>Size</th>
<th>kgf.m.</th>
<th>lbf.ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rear axle</td>
<td>Ventilator plug</td>
<td>1 in. dia. U.N.S.</td>
<td>4.1 - 4.8</td>
</tr>
<tr>
<td>Filler and drain plug</td>
<td>1 in. dia. U.N.S.</td>
<td>5.2 - 6.9</td>
<td>45 - 50</td>
</tr>
<tr>
<td>Pinion flange - nut</td>
<td>1 in. dia. U.N.S. 1.478 in. A/F</td>
<td>26.9 - 29.7</td>
<td>195 - 215</td>
</tr>
<tr>
<td>Component</td>
<td>Size</td>
<td>kgr.m.</td>
<td>lbf.ft.</td>
</tr>
<tr>
<td>-----------</td>
<td>------</td>
<td>-------</td>
<td>---------</td>
</tr>
<tr>
<td>Pinion bearing - nut</td>
<td>1(\frac{1}{8}) in. dia. U.N.F.</td>
<td>20.7 - 24.9</td>
<td>150 - 180</td>
</tr>
<tr>
<td>Axle tube to end plate - setscrew</td>
<td>(\frac{3}{8}) in. dia. U.N.F. (\frac{1}{8}) in. A/F</td>
<td>3.0 - 3.3</td>
<td>22 - 24</td>
</tr>
<tr>
<td>Axle tube to wheel bearing housing - setscrew</td>
<td>(\frac{3}{8}) in. dia. U.N.F. (\frac{1}{8}) in. A/F</td>
<td>5.2 - 5.5</td>
<td>38 - 40</td>
</tr>
<tr>
<td>End plate to centre case - nut</td>
<td>(\frac{3}{8}) in. dia. U.N.F. (\frac{1}{8}) in. A/F</td>
<td>3.0 - 3.3</td>
<td>22 - 24</td>
</tr>
<tr>
<td>Crown wheel to differential casing - nut</td>
<td>(\frac{3}{8}) in. dia. U.N.F. (\frac{3}{8}) in. A/F</td>
<td>6.2 - 6.9</td>
<td>45 - 50</td>
</tr>
</tbody>
</table>

**Fuel system**

<table>
<thead>
<tr>
<th>Component</th>
<th>Size</th>
<th>kgr.m.</th>
<th>lbf.ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petrol tank Drain plug</td>
<td>1 in. dia. U.N.F.</td>
<td>4.8 - 5.5</td>
<td>35 - 40</td>
</tr>
</tbody>
</table>

**Steering system**

<table>
<thead>
<tr>
<th>Component</th>
<th>Size</th>
<th>kgr.m.</th>
<th>lbf.ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yoke and cross steering pivots</td>
<td>(\frac{3}{8}) in. U.N.F. to (\frac{1}{4}) in. B.S.P. 1.390 in. A/F</td>
<td>4.8 - 5.5</td>
<td>35 - 40</td>
</tr>
<tr>
<td>Reducing union</td>
<td>(\frac{1}{4}) in. U.N.F.</td>
<td>8.3 - 9.7</td>
<td>60 - 70</td>
</tr>
<tr>
<td>Rocking shaft - nut</td>
<td>(\frac{3}{4}) in. dia. U.N.F. 1(\frac{1}{8}) in. A/F</td>
<td>11.0 - 12.4</td>
<td>80 - 90</td>
</tr>
</tbody>
</table>

**Wheels and Tyres**

<table>
<thead>
<tr>
<th>Component</th>
<th>Size</th>
<th>kgr.m.</th>
<th>lbf.ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road wheel - nut</td>
<td>(\frac{3}{8}) in. dia. U.N.F. 0.82 in. A/F</td>
<td>6.2 - 6.9</td>
<td>45 - 50</td>
</tr>
</tbody>
</table>

**Body**

<table>
<thead>
<tr>
<th>Component</th>
<th>Size</th>
<th>kgr.m.</th>
<th>lbf.ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overrider - nut</td>
<td>(\frac{3}{8}) in. dia. U.N.F. (\frac{3}{8}) in. A/F</td>
<td>1.4 - 1.6</td>
<td>10 - 12</td>
</tr>
</tbody>
</table>

**Transmission**

<table>
<thead>
<tr>
<th>Component</th>
<th>Size</th>
<th>kgr.m.</th>
<th>lbf.ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solenoid to case - setscrew</td>
<td>(\frac{3}{4}) in. dia. U.N.C. (\frac{3}{8}) in. A/F</td>
<td>1.4</td>
<td>10</td>
</tr>
<tr>
<td>Control valve unit to case - setscrew</td>
<td>(\frac{3}{4}) in. dia. U.N.C. (\frac{3}{8}) in. A/F</td>
<td>1.1</td>
<td>8</td>
</tr>
<tr>
<td>Control valve unit to case - setscrew</td>
<td>(\frac{3}{8}) in. dia. U.N.C. (\frac{1}{8}) in. A/F</td>
<td>1.1</td>
<td>8</td>
</tr>
<tr>
<td>Rear servo cover to case - setscrew</td>
<td>(\frac{3}{8}) in. dia. U.N.C. (\frac{1}{8}) in. A/F</td>
<td>2.5</td>
<td>18</td>
</tr>
<tr>
<td>Parking pawl cover to case - setscrew</td>
<td>(\frac{3}{8}) in. dia. U.N.C. (\frac{1}{8}) in. A/F</td>
<td>2.5</td>
<td>18</td>
</tr>
<tr>
<td>Speedometer drive to case retainer - setscrew</td>
<td>(\frac{3}{8}) in. dia. U.N.C. 1 in. A/F</td>
<td>2.5</td>
<td>18</td>
</tr>
<tr>
<td>Rear extension to case - setscrew</td>
<td>(\frac{3}{8}) in. dia. U.N.C. (\frac{1}{8}) in. A/F</td>
<td>3.2</td>
<td>23</td>
</tr>
<tr>
<td>Engine flex plate to torque converter - setscrew</td>
<td>(\frac{3}{8}) in. dia. U.N.C. (\frac{1}{8}) in. A/F</td>
<td>4.1</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>(\dagger) M10 (\frac{3}{8}) in. A/F</td>
<td>4.1</td>
<td>30</td>
</tr>
<tr>
<td>Component</td>
<td>Size</td>
<td>kgf.m.</td>
<td>lbf.ft.</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>---------------------------</td>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td>Line pressure plug 3.2 mm.</td>
<td>3/16 in. dia N.P.T.F. 1/8 in. A/F</td>
<td>1.4</td>
<td>10</td>
</tr>
<tr>
<td>Sump to case-setscrew</td>
<td>5/32 in. dia. U.N.C. 5/32 in. A/F</td>
<td>1.7</td>
<td>12</td>
</tr>
<tr>
<td>Pump body to cover - setscrew</td>
<td>5/32 in. dia. U.N.C. 5/32 in. A/F</td>
<td>2.5</td>
<td>18</td>
</tr>
<tr>
<td>Governor cover to case - setscrew</td>
<td>5/32 in. dia. U.N.C. 5/32 in. A/F</td>
<td>2.5</td>
<td>18</td>
</tr>
<tr>
<td>Pump to case - setscrew</td>
<td>5/32 in. dia. U.N.C. 5/32 in. A/F</td>
<td>2.5</td>
<td>18</td>
</tr>
<tr>
<td>Vacuum modulator retainer to case - setscrew</td>
<td>5/32 in. dia. U.N.C. 5/32 in. A/F</td>
<td>2.5</td>
<td>18</td>
</tr>
<tr>
<td>Manual shaft to detent lever - nut</td>
<td>5/32 in. dia. U.N.F. 5/32 in. A/F</td>
<td>2.5</td>
<td>18</td>
</tr>
<tr>
<td>Gear change lever to manual shaft - nut</td>
<td>5/32 in. dia. U.N.C. 5/32 in. A/F</td>
<td>2.5</td>
<td>18</td>
</tr>
<tr>
<td>Case to centre support - setscrew</td>
<td>5/32 in. dia. U.N.C.</td>
<td>3.2</td>
<td>23</td>
</tr>
<tr>
<td>Actuator mounting bracket to rear extension - setscrew</td>
<td>5/32 in. dia. U.N.C. 5/32 in. A/F</td>
<td>5.3</td>
<td>38</td>
</tr>
</tbody>
</table>

*Fitted to 1979 and onwards Torque converter transmissions. These parts have metric threads and are not interchangeable with the equivalent parts fitted to pre-1979 transmissions. To determine the model year of a transmission, refer to the first two numbers of the 'Transmission serial number' (e.g. 78-1978, 79-1979).*