

OPERATORS MANUAL

SHORTS

SHORLAND SB.401

ARMoured PERSONNEL CARRIER



LONDON OFFICE
SHORT BROTHERS LIMITED
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SALES, WORKS AND SPARES
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SPECIFICATION**DIMENSIONS**

Height	...	...	...	85 in (2.16m)
Height (with spare wheel)	...	...	...	96.5 in (2.43m)
Length	...	...	...	169 in (4.29 m)
Width	...	...	...	70 in (1.78 m)
Wheel base	...	...	...	109 in (2.77 m)
Track (front)	...	...	...	53.5 in (1.36 m)
Track (rear)	...	...	...	53.5 in (1.36 m)
Operational Weight	...	...	...	7800 lb (3545 kg)

Defined as:

- | | |
|--|---|
| 1. 8 crew @ 200 lb each | 9 Windscreen wipers |
| 2. Crew seats | 10 Head & tail lamps protective grilles |
| 3. Safety harnesses | 11 Wing mirrors |
| 4. Trakmark trim & insulation | 12 Battery 60AH |
| 5. Interior light | 13 5 Dunlop RK 2A tyres & wheels |
| 6. Fibreglass floor with non-slip strips | 14 2 - 11 gal. fuel tanks (full) |
| 7. Roof mounted spotlight | 15 Tool kit |
| 8. Windscreen visors | |

PERFORMANCE

Speed (average max) — Road	...	65 m.p.h. (104.6 k.p.h.)
Speed (average max) — Cross country	...	30 m.p.h. (48 k.p.h.)
Range of action at average max speed	...	230 miles (368 km)
Gross Power/weight ratio	...	26.4 B.H.P./ton (23.8 CV/metric ton)
Max tractive effort, Lowgear	...	1172 lbs/ton (515 kg/metric ton)
Max climbing ability	...	1 in 1.7
Max gradient for stop and start	...	1 in 1.7

TECHNICAL DATA**POWER UNIT:**

Type	...	Rover V8
Displacement	...	3528 cc
Gross B.H.P.	...	91 BHP (68 Kw) at 3500 R.P.M.
Nett torque	...	166 lb/ft (225.6 NM) at 2000 R.P.M.
Ignition type	...	Coil, 12V negative earth
Petrol	...	Refer to Rover Owner's Manual
Air cleaner	...	Paper element type
Fuel capacity	...	22 gal. (100 litre)
Lubrication	...	Fuel pressure system
Cooling	...	Water cooled, pressurised with pump, fan and thermostat

SHORLAND SB401

WHEELS

Rims	...	...	...	6".50 x16"
Tyres	...	...	...	9".00 x16"

TRANSMISSION:

Clutch	...	...	...	Hydraulic single dry plate 10.5 in dia
Gearbox	...	...	...	Single helical constant mesh, synchromesh top and third.
Transfer box	...	...	...	Two speed reduction on main gearbox output.
Transfer box ratios	...	...	...	High 1.15:1 Low 2.35:1
Propeller shafts	...	...	...	Open type to both axles
Axle ratios	...	...	...	4.7 :1 front and rear
Differentials	...	...	...	Spiral bevel

BRAKES:

Foot	...	...	...	Hydraulic power assisted
Hand	...	...	...	Transmission mechanical

STEERING

System	...	...	...	Recirculating ball
Turning circle	...	...	...	58 ft 3 in (17, 75 m)

SUSPENSION:

Front	...	...	...	Heavy duty semi-elliptical leaf spring
Rear	...	...	...	Heavy duty semi-elliptical leaf spring
Shock absorber	...	...	...	Telescopic shock absorbers
				Anti roll bars front and rear.

TOWING ATTACHMENTS:

Twin hooks front and rear				
---------------------------	--	--	--	--

ELECTRICAL EQUIPMENT:

Generator	...	...	...	Alternator 18 ACR
Battery	...	...	...	12 Volt 60 AH
Suppression	...	...	...	Limited for V.H.F. standard, full suppression extra.

SECTION 1

GENERAL EQUIPMENT

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GENERAL EQUIPMENT

Description and Operation

1. Driving controls and instruments (Fig.1-1)

For operation and maintenance of engine transmission and chassis consult the LAND ROVER manual supplied with the vehicle.

The driving controls consists of the normal LAND ROVER vehicle controls plus additional operational controls.

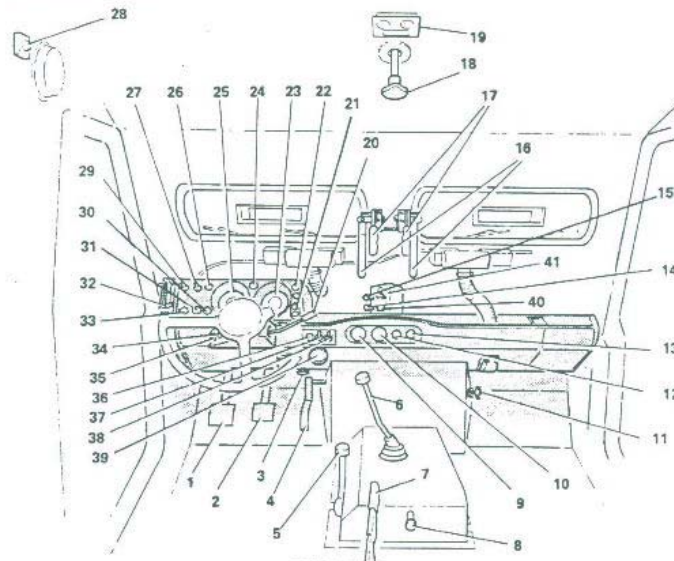


Fig.1-1 Driving controls and instruments

- | | |
|---|--|
| 1. CLUTCH PEDAL | 22. RIGHT INDICATOR LIGHT |
| 2. BRAKE PEDAL | 23. SPEEDOMETER |
| 3. BONNET RELEASE | 24. ODOMETER RESET |
| 4. ACCELERATOR PEDAL | 25. WATER TEMP. AND FUEL CONTENTS GAUGE |
| 5. TRANSFER GEAR LEVER | 26. LEFT INDICATOR LIGHT |
| 6. MAIN GEAR LEVER | 27. PANEL LIGHTING SWITCH |
| 7. HANDBRAKE | 28. CABIN HEATER THERMOSTAT |
| 8. GEARBOX DIFF. LOCK SWITCH | 29. EXTERNAL LIGHTS SWITCH |
| 9. OIL TEMP. GAUGE | 30. BEACON SWITCH |
| 10. OIL PRESSURE GAUGE | 31. EXTRACTION FAN SWITCH |
| 11. BATTERY MASTER SWITCH | 32. HEATER DEMISTER CONTROLS |
| 12. INTERIOR LIGHT SWITCH | 33. WINDSCREEN WIPER SWITCH |
| 13. SPOTLIGHT SWITCH | 34. COLD START CONTROL |
| 14. HAZARD WARNING SWITCH | 35. IGNITION/STARTER/AUXILIARY SERVICES SWITCH |
| 15. REAR GUARD LIGHT SWITCH | 36. CABIN HEATER SWITCH |
| 16. VISOR LOCKING LEVERS | 37. SIREN SWITCH |
| 17. VISOR HANDLES | 38. HEATER/DEMISTER SWITCH |
| 18. SPOTLIGHT HANDLE | 39. CABIN HEATER TIMER |
| 19. SMOKE DISCHARGER FIRING CONTROLS | 40. DIFF. LOCK LIGHT |
| 20. HORN/DIRECTION INDICATORS/HEADLIGHTS FLASH-DIP SWITCH | 41. BRAKE TEST LIGHT |
| 21. INSPECTION LAMP SOCKETS | |

2. Front seat adjustment (Fig. 1-2)

Front seats are adjustable both for height and leg length. The height is adjusted by turning a handle at the right hand side of the seat. Fore and aft movement is controlled by a lever located at the front of the seat and downward pressure on the lever releases the locking mechanism enabling the seat to be positioned to suit the occupant.

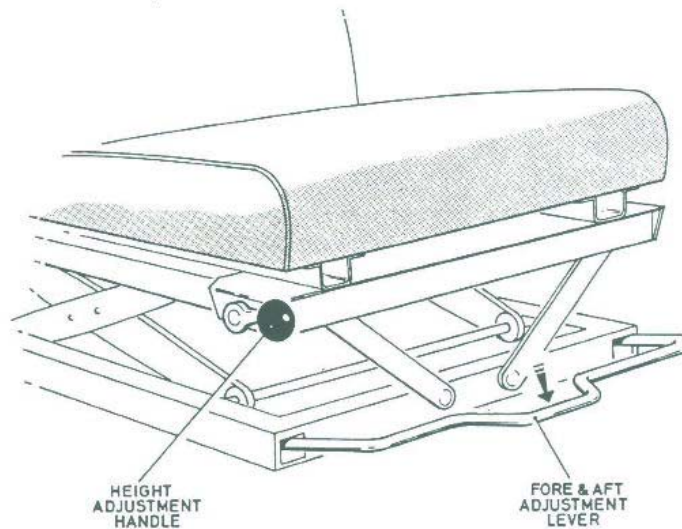


Fig.1-2 Front seat adjustment

3. Seat belts

All personnel are provided with quick release seat belts. The driver and front passenger having the diagonal/lap type and other personnel full harness type.

4. Door handles and locks (Figs. 1-3 and 1-4)

Both forward and rear doors are fitted with locking handles which can be locked externally with a key.

- (a) Unlike the conventional type, the handles must be lifted up to open the door.

This impedes unauthorised access if:-

- (i) The door was not locked externally by its key.
- or
- (ii) The internal locking lever was not engaged.

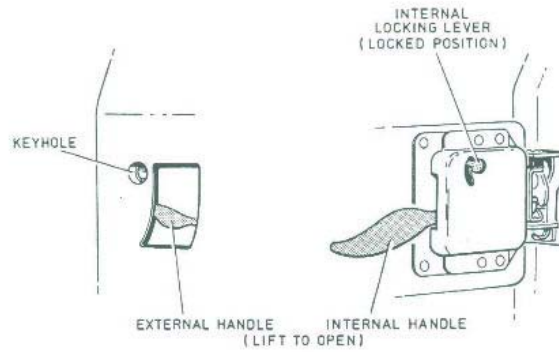


Fig.1-3 Forward door handles and locks

- (b) The forward door handles are effective for release mode only. To lock internally, lift the locking lever to the up position.
- (c) The rear doors are locked internally by rotating the stop bracket until it abuts the underside of the internal handle. Reverse this procedure to unlock.

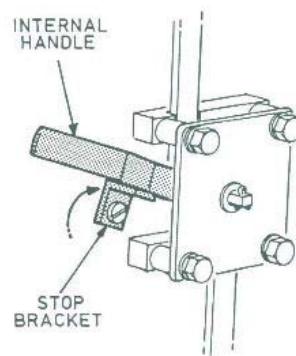


Fig.1-4 Internal locking — rear doors

5. Door and gun port hatches (Fig.1-5)

(a) Door hatches

Both forward doors have hatches which provide side vision or personnel protection when open or closed respectively. Each hatch has a spring loaded latch and an integral hatch retrieval lever.

(i) To open — Pull latch handle down and push hatch outwards.

(ii) To close — Pull hatch retrieval lever inboard. As the hatch closes the hatch will automatically engage.

CAUTION To prevent injury, personnel should keep clear of hatch and its retrieval lever.

(b) Gun port hatches

Gun ports provided in the rear doors and each side of the vehicle have protective hatches which are operated similarly to the forward door hatches.

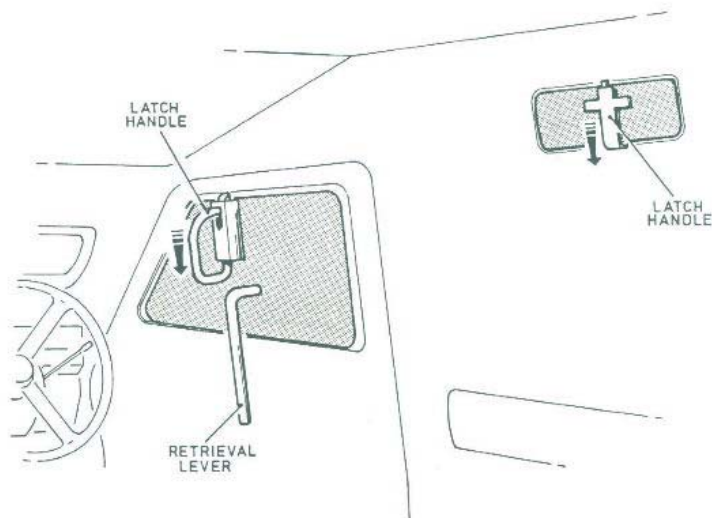


Fig.1-5 Door and gun port hatches

6. Windscreen visors (Figs. 1-6 and 1-7)

Under normal conditions, forward vision is through two windscreen panels fitted with wipers. In operational conditions the windscreens are each protected by manually operated visors constructed of armour plate having bullet-proof glass inserts. The operating mechanism is positioned centrally between the windscreens and is co-ordinated to operate the visors together or independently. The mechanism consists of two visor handles (having plastic hand grips) for raising or lowering the visors and two locking handles for engaging or releasing the locking mechanism.

- (a) To close — In an emergency, press the two locking handles together using one hand. This releases the locking mechanism and both visors will simultaneously fall into position re-engaging the locking mechanism. It is preferable however to manually lower each visor separately by gripping the visor handle with one hand and, after disengaging the locking mechanism via locking handle with the other, control the downward movement of the visor. When the visor is fully down, release the locking handle to lock the visor in position.

CAUTION: Ensure all personnel are clear of the vicinity of the visors and visor handles before releasing locking handles, as for example when cleaning windscreens or carrying out maintenance.

- (b) To open — Similar to that of closing, each visor should be operated separately. Grip the visor handle with one hand, disengage the locking handle with the other and push the visor handle forward as far as possible. Retain it in this position and release the locking handle to the locked position.

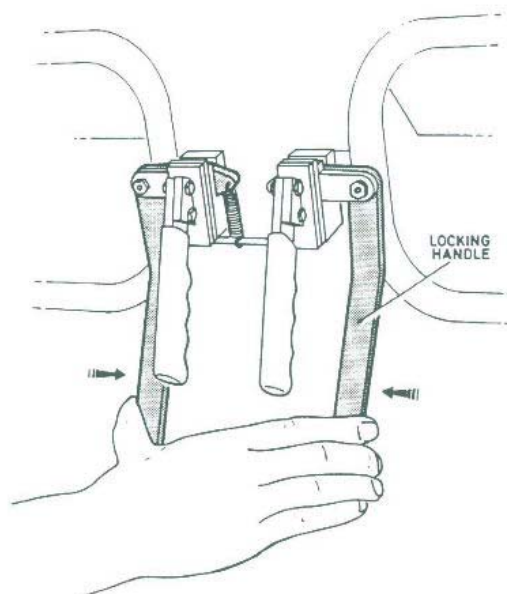


Fig.1-6 Windscreen visors — emergency closing

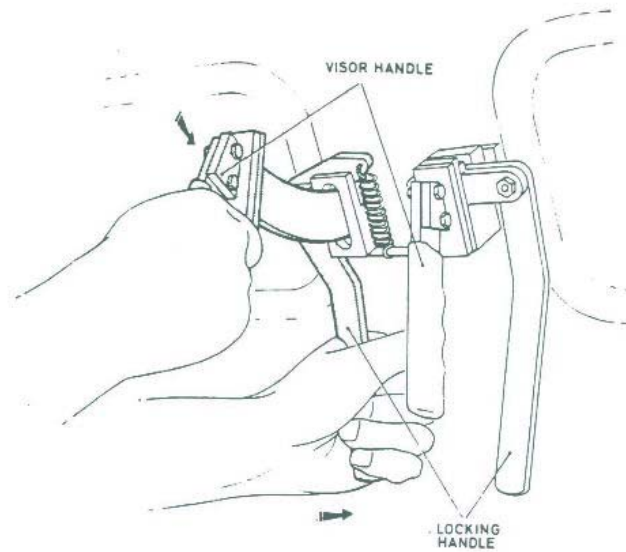


Fig.1-7 Windscreen visors — opening

7. Hand rail

A hand rail is centrally mounted to the interior roof to facilitate quick movement of personnel into and out of the vehicle.

8. Starting handle

A starting handle is provided with each vehicle and is supplied as part of the tool kit.

9. Tool stowage

A tool stowage bay is located at the aft end of the left hand bench seat and is accessible by lifting the seat.

10. Spare wheel mounting (except when fitted with a beacon)

Attachments are provided for mounting a spare wheel and are located on top of the ventilation cowl on the roof of the vehicle.

11. Fuel filler arrangement (Fig.1-8)

Each fuel tank is provided with a refuelling arrangement comprising a retractable filler tube incorporating a gauze filter, a screw cap and a hinged cover for external protection. The cover is secured internally by means of a pip-pin engaging an integral part of the cover.

Procedure when refuelling is as follows;

- (a) Withdraw the pip-pin to disengage the cover thus permitting access to the fuel filler.
- (b) Remove screw cap by turning in an anti-clockwise direction.

NOTE: If hand-refuelling, partially retract filler tube to employ as a funnel.

CAUTION: Ensure protective cover is properly secured after refuelling has been completed.

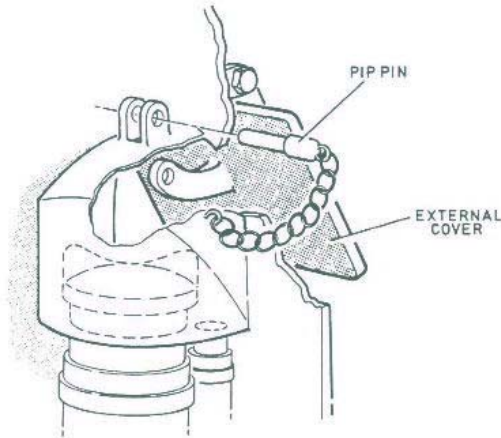


Fig.1-8 Refuelling arrangement

12. Extraction fan

An extraction fan is incorporated into the ventilator in the roof of the vehicle (refer to sect.4 fig. PC1), and is operated by a switch located at the right hand side of the dash panel (fig.1-1).

MAINTENANCE

The maintenance listed below is only suggested for vehicles operating in temperate climate. Under other conditions the vehicle should be maintained in accordance with local vehicle maintenance practice.

- (1) Upholstery and interior trim.
Clean with soap and warm water only as some detergents are detrimental when used on P.V.C. covering.
- (2) Windcreens and visors.
The windcreens and visors should only be cleaned with a wet chamois leather. Avoid using a dirty leather or any other material as this could scratch the surface of the glass.
To remove a damaged visor glass block simply remove the four retaining bolts.
- (3) Doors and hatches.
Doors are fitted with grease hinges and should be grease injected as required. All other hinges should be occasionally lubricated with a light oil.
Before operational duty, doors must be checked for free operation as this is essential for the safety of the crew and personnel.

CAUTION : If the vehicle is being operated in dusty or sandy locations, lubrication is not recommended.

- (4) Bonnet stop adjustment.
The engine is protected by armoured plating and care should be taken when raising or lowering the bonnet as it is much heavier than conventional bonnets. Adjustable bolts fitted to the front underside of the bonnet protects the radiator header tank. The bolt head locates a pad fixed to the top of the radiator armour. For correct adjustment maintain a $\frac{1}{4}$ in (6.35 m.m) gap between the bonnet plate and the top of the radiator armour.
- (5) Run flat wheels (see section 2).

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SECTION 2

OPTIONAL EQUIPMENT

The equipment listed below can be supplied to meet customers requirements and specifications.

1. Radio equipment
2. Additional battery (90 AH)
3. Siren
4. Fog lights
5. Recirculating air fans
 - Two variable speed recirculating air fans mounted on dashboard and individually controlled.
6. Smoke dischargers (Fig. 2-1)

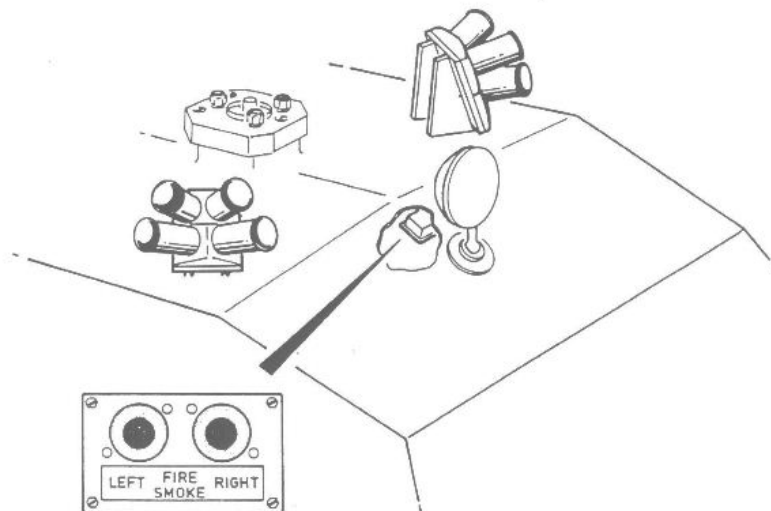


Fig.2-1 Smoke dischargers

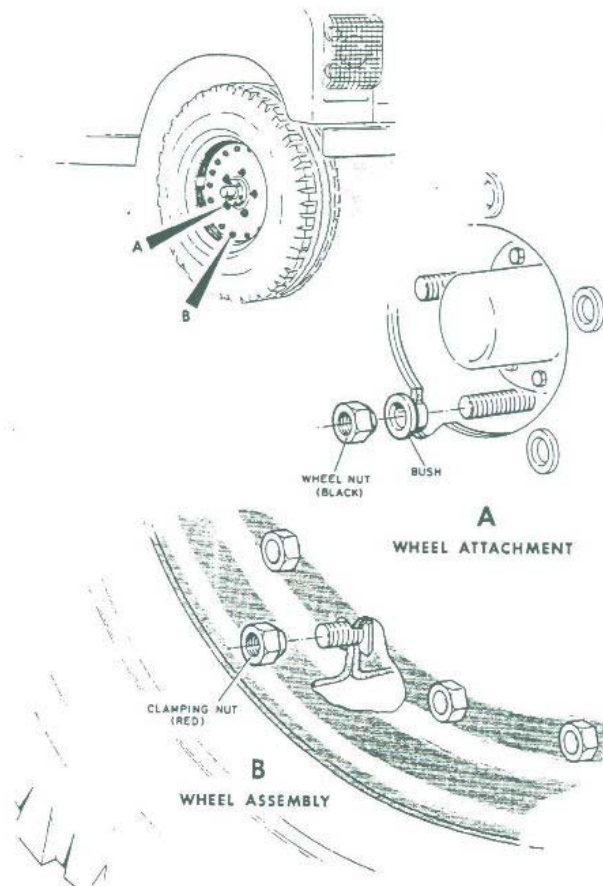


Fig.2-2 Installation of run flat wheels

7. Run flat wheels (Fig.2-2)

Vehicles fitted with run flat wheels require maintenance as defined below:—

- (1) After the first 100 miles (160 kilometers) all wheel nuts and clamping nuts must be checked and tightened to a torque of 85 lb ft and subsequently checked after 500 miles (kilometers) and 1,000 miles (1600kilometers) and thereafter each subsequent 1,000 miles.

- (2) Wheel nuts and clamping nuts must also be tightened to the required torque after each wheel change and during each maintenance inspection.

WARNING: DO NOT SLACKEN THE OUTER RING OF CLAMPING NUTS (RED) UNLESS THE WHEEL IS REMOVED AND THE TYRE FULLY DEFLATED OR SEVERE PERSONAL INJURY MAY RESULT.

- (3) At each wheel change, ensure that all bushes are inserted before attachment to hub and retightening of wheel nuts.
- (4) Wheel nuts and clamping nuts are of similar size but with different threads; for this reason they are respectively painted black and red to avoid error in fitting.

8. Heater/Demister (See Sect.4 Page 30)

9. Cabin heater (See Sect.4 Page 28)

A fuel operated, thermostatically controlled cabin heater system situated below the floor at the rear of the vehicle and accessible by removing a grilled cover in the floor panel.

The system also provides:—

- (a) Cold air
- (b) Selector timer to allow automatic operation at pre-selected times.

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SECTION 3

ELECTRICAL

Description and maintenance

1. Battery

The 60 AH battery is enclosed in a battery bay located in the aft end of the right hand bench seat and is accessible by lifting the hinged seat and is provided with its own ventilation and drainage. A master switch is positioned on the bulkhead below the dash panel (Sect.1 Fig.1-1).

2. Interior light

The cabin interior light is mounted on the left side panelling and is operated by a switch located on the dash panel (Fig.1-1). Access for unit or bulb replacement is obtained by removing the screw at the lower part of the rim and swinging the unit upwards on its hinge.

3. External lights

Remove protective grilles before carrying out the following maintenance:—

A. Headlamps

Access for unit or bulb replacement is obtained by pressing the outer rim of the headlamp inwards and rotating anti-clockwise. The complete unit can be pulled forward permitting the bulb connector to be detached.

B. Side, brake and indicator lights.

These are screw on type fitting. To gain access to replace bulb rotate anti-clockwise.

C. Number plate lights

Simply slacken cover screw to gain access for bulb replacement.

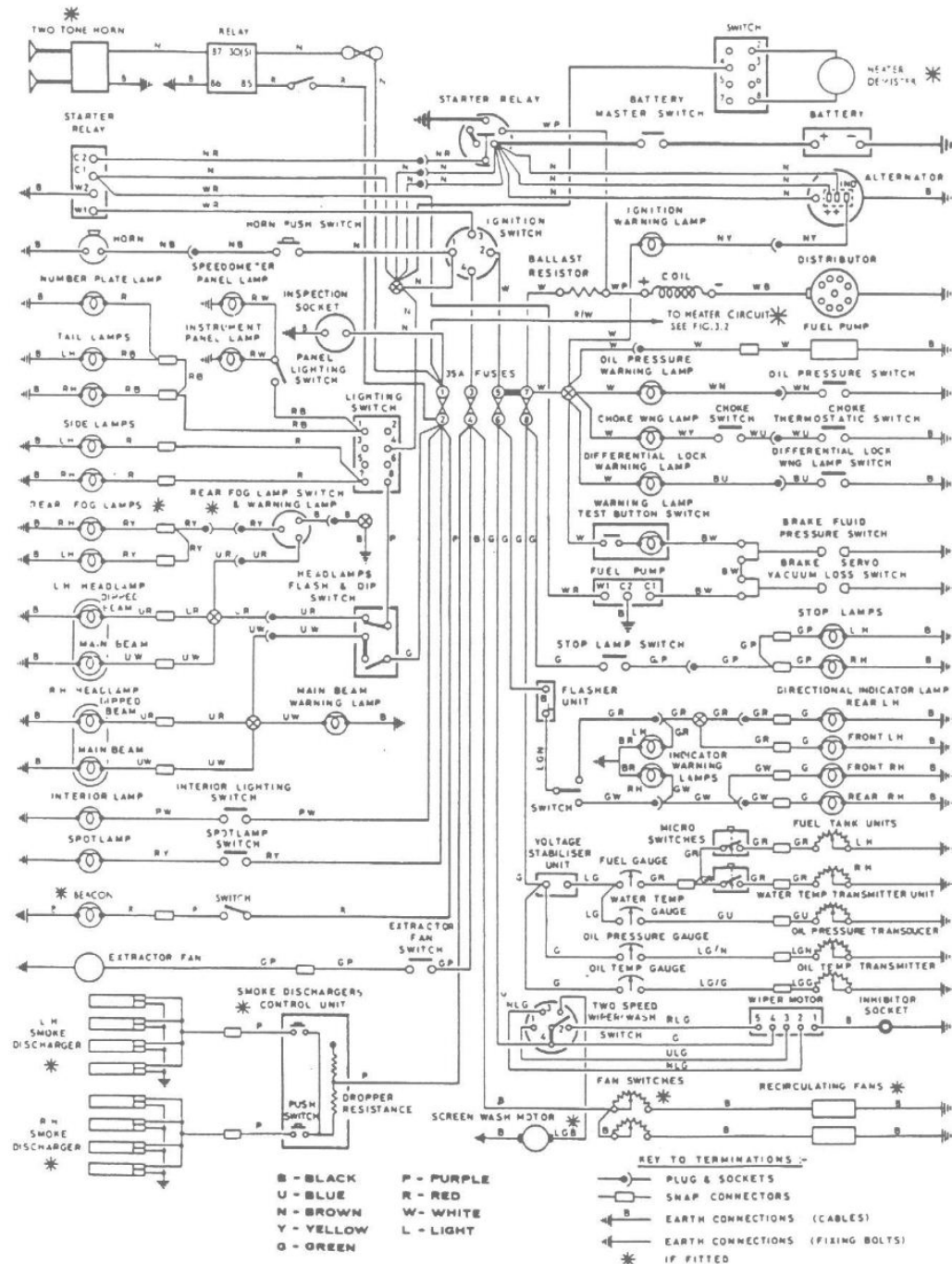


Fig. 3-1 Circuit diagram

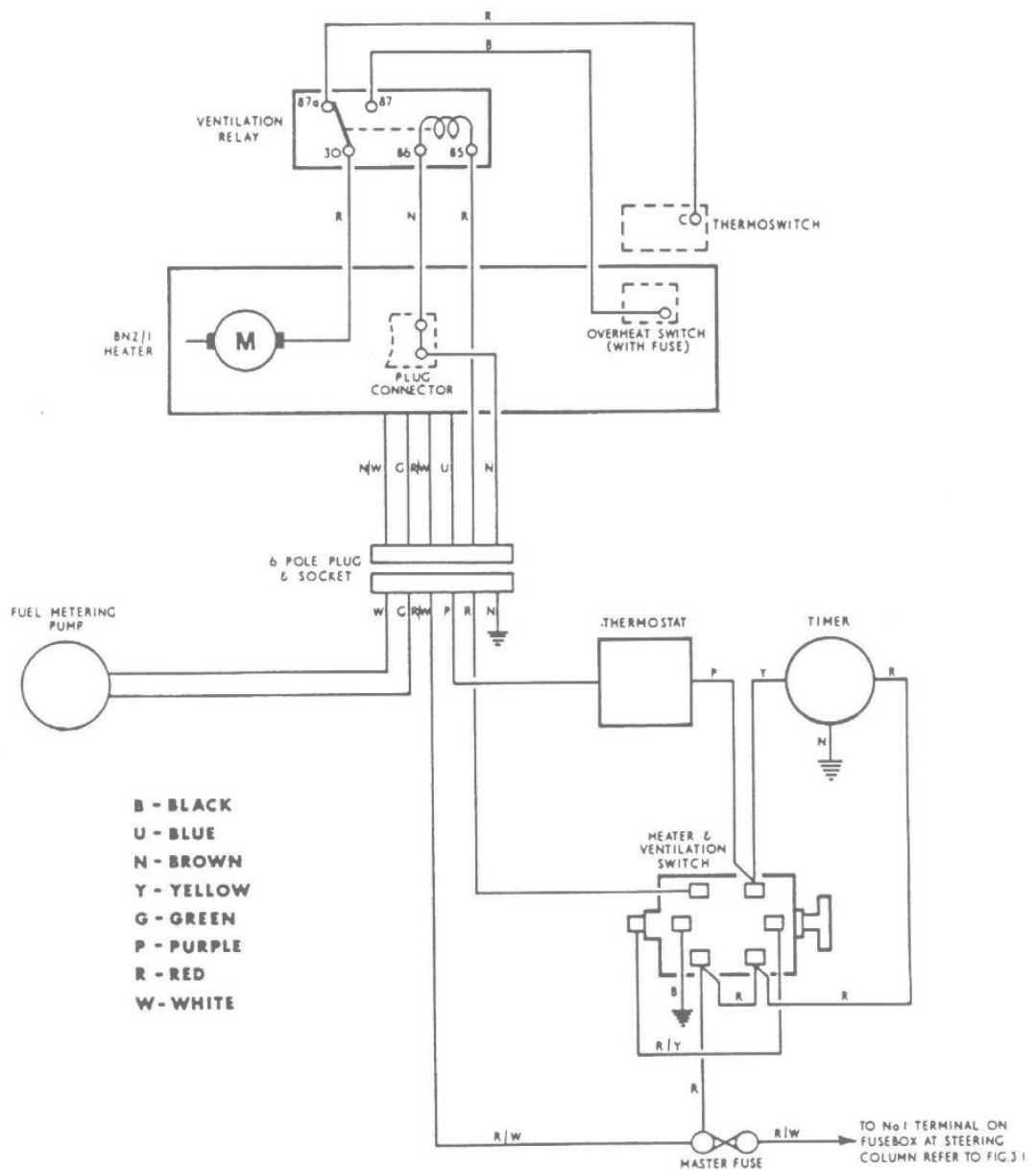


Fig. BN2/1 Heater circuit diagram

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IMPORTANT

When ordering spare parts
please quote PART No only
and quantity required.

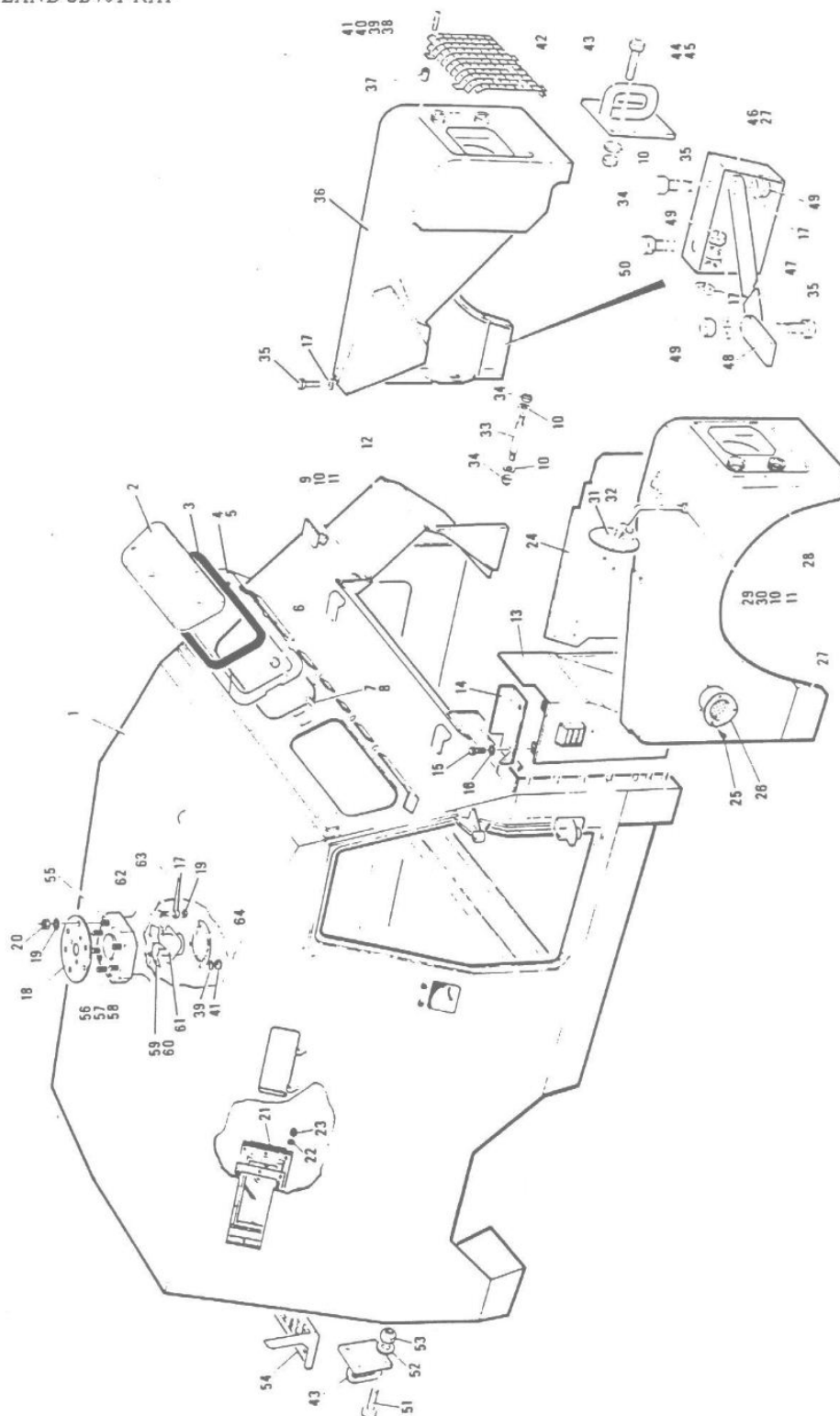


Fig. PC1 Bodywork

Parts list PC1

SHORLAND SB401-RAF

ITEM	DESCRIPTION	PART No.	QTY.	REFERENCE
1	Welded body assembly	4PC1-1	1	SB301-10-001 (1-5)
2	Triplex panel	4PC1-2	2	550002-1
3	Glazing strip	4PC1-3	2	651500-86
4	Windscreen surround R.H.	4PC1-4	1	550177-1
5	Windscreen surround L.H.	4PC1-5	1	550177-2
6	4BA self locking nut	4PC1-6	36	
7	4BA x 1/2" lg. stud or	4PC1-7	36	
8	4BA x 1/2" lg. R.H. bolt	4PC1-8		
9	3/8" UNF x 1" lg. hex bolt	4PC1-9	3	
10	3/8" plain washer	4PC1-10	14	
11	3/8" spring washer	4PC1-11	5	
12	Footbox assembly L.H.	4PC1-12	1	537099 (1)
13	Footbox assembly R.H.	4PC1-13	1	SB401-100-002 (1)
14	R.H. footbox cover	4PC1-14	1	SB401-100-002 (1)
15	5/16" UNF x 1" hex screw	4PC1-15	2	
16	5/16" washer	4PC1-16	2	
17	1/4" washer	4PC1-17	12	
18	Beacon mounting plate	4PC1-18	1	SB401-99-005
19	1/4" washer	4PC1-19	6	
20	1/4" UNC nut	4PC1-20	6	
21	Laminated glass side window assembly. Complete	4PC1-21	2	537114
22	5/16" washer	4PC1-22	12	
23	5/16" Nyloc Nut	4PC1-23	12	
24	Engine side plate R.H.	4PC1-24	1	SB401-100-002 (3)
25	No.8 x 1/2 drive screw	4PC1-25	3	
26	Wing trim	4PC1-26	1	
27	Mudwing valance R.H.	4PC1-27	1	559703-1
28	Mudwing assembly R.H.	4PC1-28	1	534900-1
29	3/8" BSF nut	4PC1-29	4	
30	3/8" washer large	4PC1-30	2	
31	Wing mirror complete	4PC1-31	2	ROVER 562912
32	Wing mirror head	4PC1-32	2	ROVER 606187
33	Body mounting bolt	4PC1-33	2	
34	3/8" UNF self locking nut	4PC1-34	8	
35	1/4" UNC x 3/4" hex bolt	4PC1-35	8	
36	Mudwing assembly L.H.	4PC1-36	1	534900-2
37	Rubber spacer	4PC1-37	8	
38	3/16" UNF x 1 1/2" R.H. screw	4PC1-38	8	
39	3/16" plain washer	4PC1-39	12	
40	3/16" spring washer	4PC1-40	8	
41	3/16" UNF nut	4PC1-41	12	
42	Headlamp protective grille	4PC1-42	1	ROVER 345985
43	Towing hook	4PC1-43	4	
44	3/8" UNF x 4 1/2" hex bolt	4PC1-44	4	
45	3/8" UNF x 1 1/2" hex bolt	4PC1-45	4	
46	Mudwing valance L.H.	4PC1-46	1	559703-2
47	Stay (long)	4PC1-47	2	559704-1
48	Stay (short)	4PC1-48	2	559705-1
49	1/4" UNC nut	4PC1-49	16	
50	1/4" UNC x 1/2" hex bolt	4PC1-50	2	
51	1/2" UNF x 1 1/2" hex bolt	4PC1-51	4	
52	1/2" spring washer	4PC1-52	4	
53	1/2" UNF nut	4PC1-53	4	
54	Rear entrance step	4PC1-54	1	SB301-10-001

Sect 4

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ITEM	DESCRIPTION	Part No.	Qty.	REFERENCE
55	Ventilator cowl	4PC1-55	1	SB301-99-004 (1-2)
56	3/8" UNF x 3" C'sk screw	4PC1-56	4	
57	3/8" single coil lock washer	4PC1-57	4	
58	3/8" UNF nut	4PC1-58	4	
59	Extraction fan assembly complete	4PC1-59	1	
60	Fan	4PC1-60	1	SB301-99-004 (1-2)
61	Fan motor	4PC1-61	1	
62	Grommet	4PC1-62	3	
63	1/4" UNF x 1" hex bolt	4PC1-63	3	
64	Ventilator grille	4PC1-64	1	

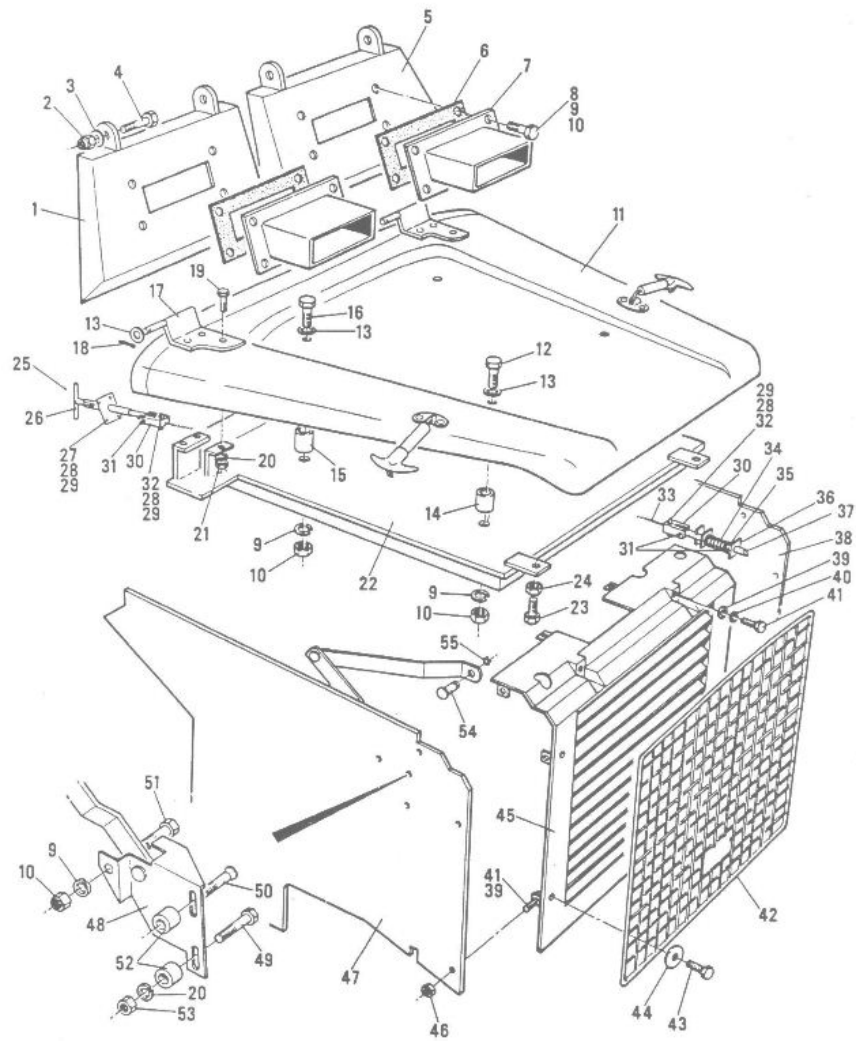


Fig. PC2 Forward armour

Parts list PC2

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ITEM	DESCRIPTION	PART No.	QTY	REFERENCE
1	Visor assembly R.H.	4PC2-1	1	530600-2
2	5/16" UNF self locking nut	4PC2-2	2	
3	5/16" plain washer brass	4PC2-3	2	
4	5/16" UNF x 2" lg. hex bolt	4PC2-3	2	
5	Visor assembly L.H.	4PC2-4	1	530600-1
6	Gasket	4PC2-6	2	553305-1
7	Glass block assembly	4PC2-7	2	553200-1
8	3/8" UNF x 1" lg. hex bolt	4PC2-8	27	
9	3/8" spring washer	4PC2-9	27	
10	3/8" UNF nut	4PC2-10	27	
11	Bonnet	4PC2-11	1	
12	3/8" UNF x 2 1/8" lg. hex bolt	4PC2-12	2	
13	3/8" plain washer	4PC2-13	8	
14	Spacer	4PC2-14	2	
15	Spacer	4PC2-15	2	
16	3/8" UNF x 3" lg. hex bolt	4PC2-16	2	
17	Bonnet hinge	4PC2-17	2	555500-1
18	3/32" x 1/4" lg. split pin	4PC2-18	2	
19	1/4" UNF x 3/4" lg. hex bolt	4PC2-19	6	
20	1/4" spring washer	4PC2-20	6	
21	1/4" UNF nut	4PC2-21	6	
22	Top plate assembly	4PC2-22	1	537089 (7)
23	1/2" UNF x 1 1/4" lg. hex bolt	4PC2-23	2	
24	1/2" UNF nut	4PC2-24	2	
25	Bonnet pull complete	4PC2-25	1	537066
26	Pull/lock handle	4PC2-26	1	537066 items 1, 2, 3, 6 & 7
27	10 UNF x 1/2" lg. hex bolt	4PC2-27	4	
28	3/16" plain washer	4PC2-28	4	
29	10 UNF locknut	4PC2-29	4	
30	Wire/bolt holder	4PC2-30	2	537066-5
31	1/8" x 3/4" lg. split pin	4PC2-31	3	
32	Special screw	4PC2-32	2	537066-14
33	5 cwt. cable	4PC2-33	1	537066-18
34	Spring	4PC2-34	1	MORRIS SPRINGS LTD. MSC170
35	1/2" plain, washer	4PC2-35	1	
36	Mounting block	4PC2-36	2	534101
37	Shoot bolt	4PC2-37	1	537066-4
38	Engine side plate L.H.	4PC2-38	1	537089 (6)
39	5/16" plain washer	4PC2-39	14	
40	5/16" spring washer	4PC2-40	2	
41	5/16" UNF x 3/4" lg. hex bolt	4PC2-41	14	
42	Radiator grille	4PC2-42	1	
43	1/4" UNF x 1/2" lg. hex bolt	4PC2-43	4	
44	1 1/4" plain washer	4PC2-44	4	
45	Radiator armour assembly	4PC2-45	1	537089 (3)
46	5/16" UNF nut	4PC2-46	12	
47	Engine side plate R.H.	4PC2-47	1	537089 (6)
48	Bonnet stay	4PC2-48	1	ROVER 330599
49	1/4" UNF x 1 3/8" lg. hex bolt	4PC2-49	1	

ITEM	DESCRIPTION	PART No.	QTY.	REFERENCE
50	1/4" UNF x 1 1/4" c'sk screw	4PC2-50	1	
51	3/8" UNF x 3/4" lg. hex bolt	4PC2-51	1	
52	Distance piece	4PC2-52	2	
53	1/4" UNF nut	4PC2-53	1	
54	Pivot pin	4PC2-54	1	
55	Circlip	4PC2-55	1	

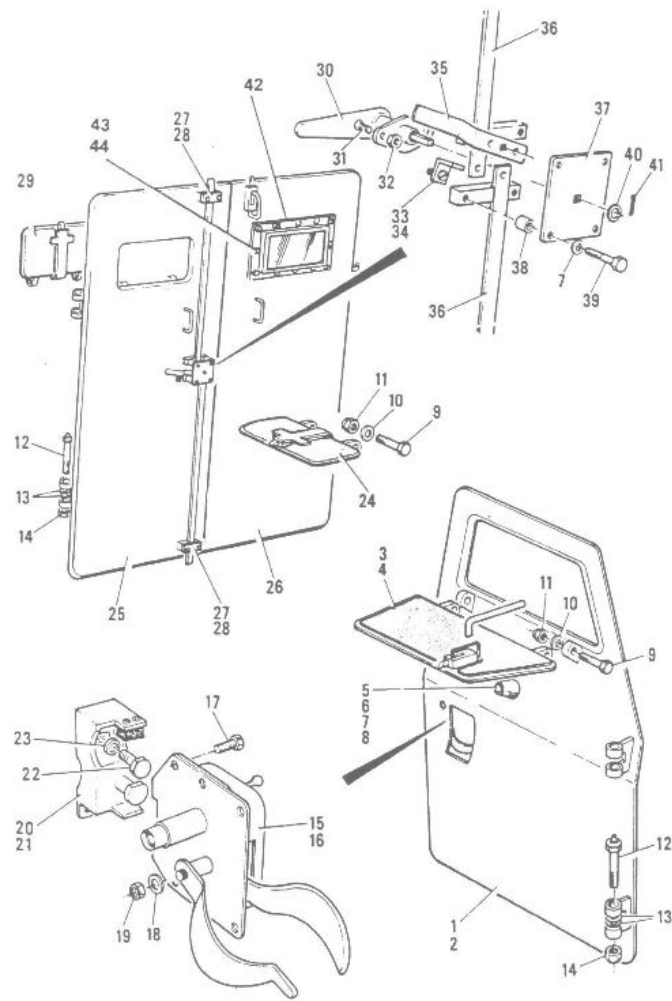


Fig. PC3 Doors and hatches

Parts list PC3

SHORLAND SB401-RAF

ITEM	DESCRIPTION	PART No.	QTY.	REFERENCE
1	Forward door assembly L.H.	4PC3-1	1	
2	Forward door assembly R.H.	4PC3-2	1	
3	Forward door hatch assembly L.H.	4PC3-3	1	531500-1
4	Forward door hatch assembly R.H.	4PC3-4	1	531500-2
5	Rubber buffer	4PC3-5	2	550600-15
6	1/4" UNF x 1 1/2" lg. hex bolt	4PC3-6	2	
7	1/4" plain washer	4PC3-7	7	
8	1/4" UNF nut	4PC3-8	3	
9	5/16" UNF x 2" lg. H.T. hex bolt	4PC3-9	6	
10	5/16" plain washer brass	4PC3-10	6	
11	5/16" UNF self locking nut	4PC3-11	6	
12	Hinge bolt with grease nipple	4PC3-12	4	SB303-99-002/4
13	1/2" plain washer brass	4PC3-13	8	
14	1/2" UNF self locking nut	4PC3-14	4	
15	Lock R.H. c/w keys (forward door)	4PC3-15	1	
16	Lock L.H. c/w keys (forward door)	4PC3-16	1	
17	1/4" UNC x 1/2" lg. hex screw	4PC3-17	4	
18	10 mm washer	4PC3-18	1	
19	10 mm nut	4PC3-19	1	
20	Lock keeper R.H.	4PC3-20	1	
21	Lock keeper L.H.	4PC3-21	1	
22	5/16" UNC x 1" hex bolt	4PC3-22	4	
23	5/16" plain washer	4PC3-23	4	
24	Gun port hatch	4PC3-24	2	SB301-10-001 (8) 26
25	Rear door assembly R.H.	4PC3-25	1	SB301-10-001 (5)
26	Rear door assembly L.H.	4PC3-26	1	SB301-10-001 (5)
27	Lock rod guide cover	4PC3-27	2	SB301-10-001 (6) 8
28	1/4" UNF x 1/2" lg. hex screw	4PC3-28	4	
29	Rear door hatch	4PC3-29	1	SB301-10-001 (8) 27
30	External lock/handle c/w keys (rear door)	4PC3-30	1	550140-1
31	1/4" UNF x 1" c/sk screw	4PC3-31	2	
32	1/4" UNF nut	4PC3-32	2	
33	Internal handle stop bracket	4PC3-33	1	SB301-10-001 (6) 15
34	Stop bracket swivel pin	4PC3-34	1	SB301-10-001 (6) 10
35	Internal handle (rear door)	4PC3-35	1	SB301-10-001 (6) 9
36	Lock rod	4PC3-36	2	SB301-10-001 (6) 12
37	Rear lock assembly cover plate	4PC3-37	1	SB301-10-001 (6) 14
38	Spacer	4PC3-38	4	SB301-10-001 (6) 11
39	1/4" UNF x 1" lg. hex screw	4PC3-39	4	
40	3/8" washer	4PC3-40	1	
41	Split pin 3/32" x 1/4" lg.	4PC3-41	1	
42	Laminated glass window (complete)	4PC3-42	1	537114
43	5/16" Washer	4PC3-43	12	
44	5/16" Nyloc nut	4PC3-44	12	

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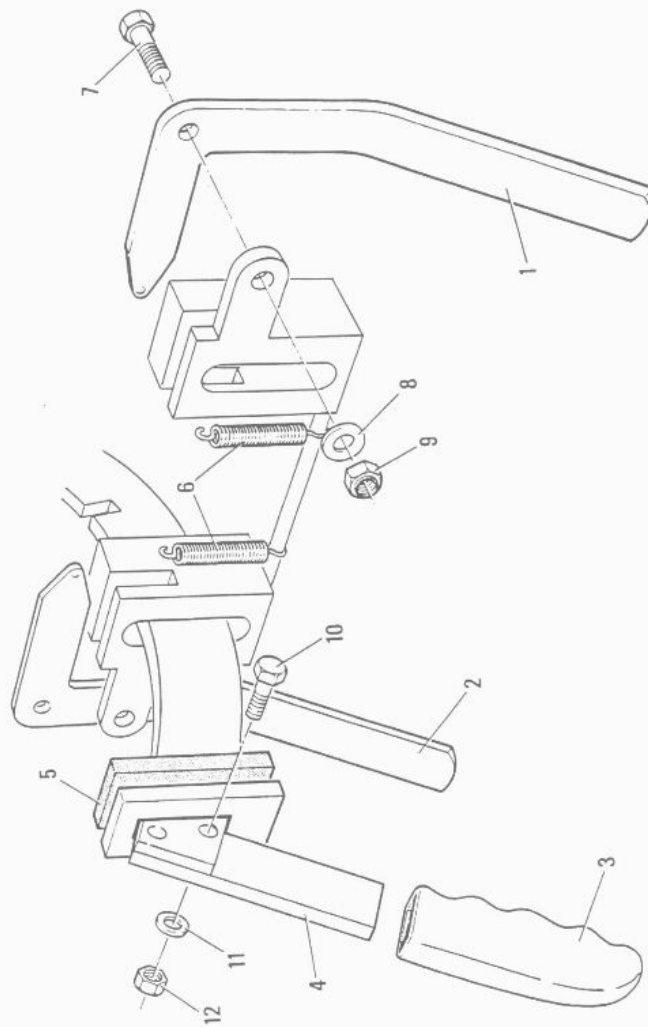


Fig. PC4 Visor mechanism

Parts list PC4

SHORLAND SB 401

ITEM	DESCRIPTION	PART No.	QTY.	REFERENCE
1	Locking handle R.H.	4PC4-1	1	558900-2
2	Locking handle L.H.	4PC4-2	1	558900-1
3	Vi-Grip handle	4PC4-3	2	558900-14
4	Visor handle	4PC4-4	2	559000-1
5	Seal	4PC4-5	2	558904-1
6	Spring	4PC4-6	2	558906-1
7	1/4" UNF x 1" lg. hex bolt	4PC4-7	2	
8	1/4" plain washer	4PC4-8	2	
9	1/4" UNF self locking nut	4PC4-9	2	
10	3/16" UNF x 7/8" lg. hex bolt	4PC4-10	4	
11	3/16" plain washer	4PC4-11	4	
12	3/16" UNF nut	4PC4-12	4	

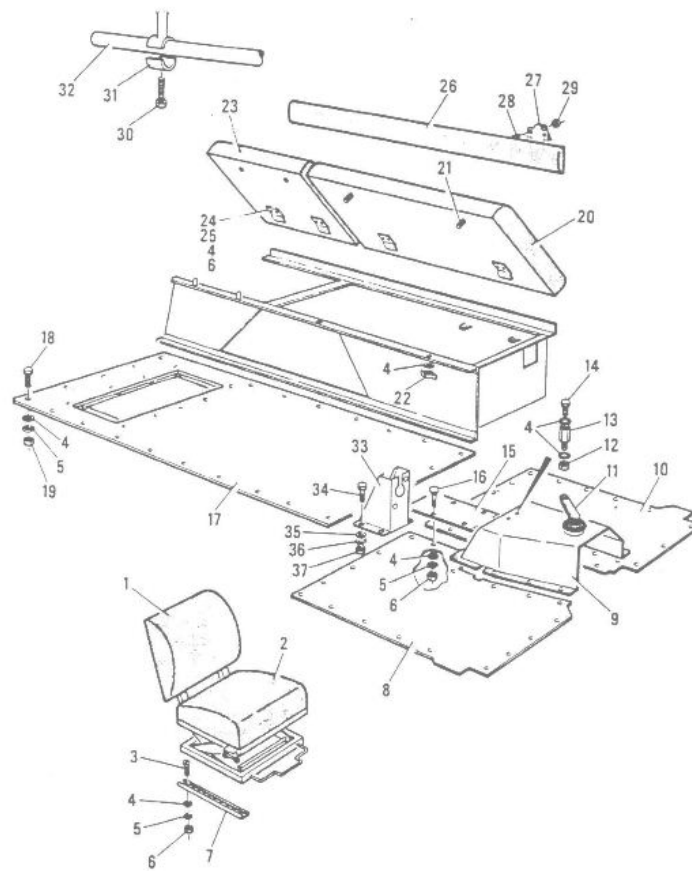


Fig. PC5 Floor assembly and seating

ITEM	DESCRIPTION	PART No.	QTY	REFERENCE
1	Seat back squab	4PC5-1	2	555030-11
2	Seat squab	4PC5-2	2	555030-12
3	1/4" UNC x 1" c'sk screw	4PC5-3	12	
4	1/4" plain washer	4PC5-4	96	
5	1/4" spring washer	4PC5-5	70	
6	1/4" UNC nut	4PC5-6	34	
7	Seat rail	4PC5-7	4	555030-6
8	Floor panel (right front)	4PC5-8	1	537089(4)-13
9	Gear box cover	4PC5-9	1	537089(4)-15
10	Floor panel (left front)	4PC5-10	1	537089(4)-14
11	Rubber seal	4PC5-11	1	
12	1/4" UNF 'nyloc' nut	4PC5-12	2	
13	Spacer	4PC5-13	2	
14	1/4" UNF x 1/2" hex bolt	4PC5-14	2	
15	Joint cover plate	4PC5-15	1	537089(4)-16
16	1/4" x 1" coachbolt	4PC5-16	6	
17	Floor panel (centre)	4PC5-17	1	SB305-30-001(2)
18	1/4" UNF x 1" hex bolt	4PC5-18	52	
19	1/4" UNF nut	4PC5-19	52	
20	Bench seat (forward)	4PC5-20	2	SB301-40-001-21,22,23
21	1/4" BSF x 1" c'sk screw	4PC5-21	6	
22	1/4" BSF wing nut	4PC5-22	6	
23	Bench seat (aft)	4PC5-23	2	SB301-40-001-23,24,25
24	Bench seat clip	4PC5-24	8	SB301-40-001-11
25	1/4" x 3/4" coach bolt	4PC5-25	16	
26	Back rest	4PC5-26	2	SB301-40-001-23,26,27
27	Back rest clip	4PC5-27	8	SB301-40-001-10
28	1/4" BSF x 3/4" c'sk screw	4PC5-28	32	
29	1/4" BSF nut	4PC5-29	32	
30	1/4" UNF x 1 1/4" hex bolt	4PC5-30	2	
31	Hand rail clamping sleeve	4PC6-31	2	SB301-10-001 (10) 4
32	Hand rail	4PC6-32	1	SB301-10-001 (10) 1
33	Handbrake bracket	4PC6-33	1	
34	5/16" UNF x 1" hex bolt	4PC6-34	6	
35	5/16" plain washer	4PC6-35	6	
36	5/16" spring washer	4PC6-36	6	
37	5/16" nut	4PC6-37	6	

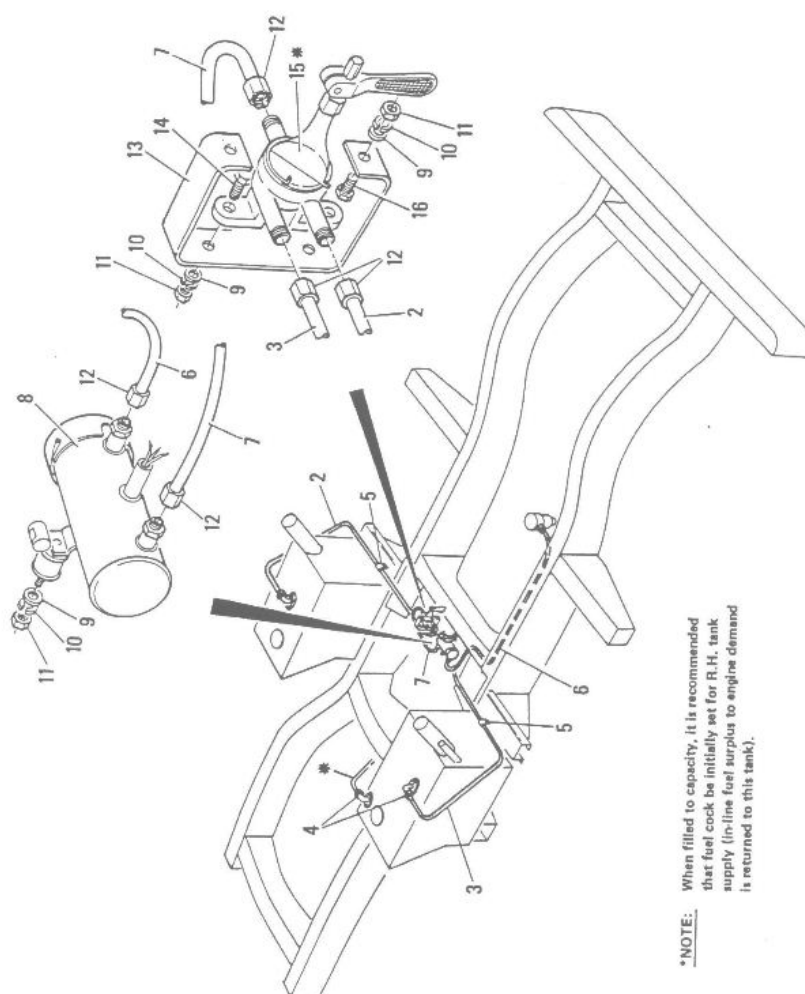


Fig. PC6 Fuel system

Parts list PC6

SHORLAND SB 401

ITEM	DESCRIPTION	Part No.	QTY.	REFERENCE
1	Set of fuel pipes complete	4PC6-1	1	
2	Fuel pipe at L.H. tank	4PC6-2	1	536703/T, U.
3	Fuel pipe at R.H. tank	4PC6-3	1	536703/R, S.
4	Union nut	4PC6-4	3	
5	Single pipe clip	4PC6-5	2	
6	Fuel pipe to filter	4PC6-6	1	536703/P
7	Fuel pipe from cock to pump	4PC6-7	1	536703/Q
8	Fuel pump	4PC6-8	1	
9	1/4" plain washer	4PC6-9	6	
10	1/4" spring washer	4PC6-10	6	
11	1/4" UNF nut	4PC6-11	6	
12	Union nut	4PC6-12	6	
13	Fuel cock bracket	4PC6-13	1	
14	1/2" UNF x 1 1/2" hex bolt	4PC6-14	2	
15	3-way fuel cock	4PC6-15	1	
16	1/4" UNF x 1" hex bolt	4PC6-16	2	

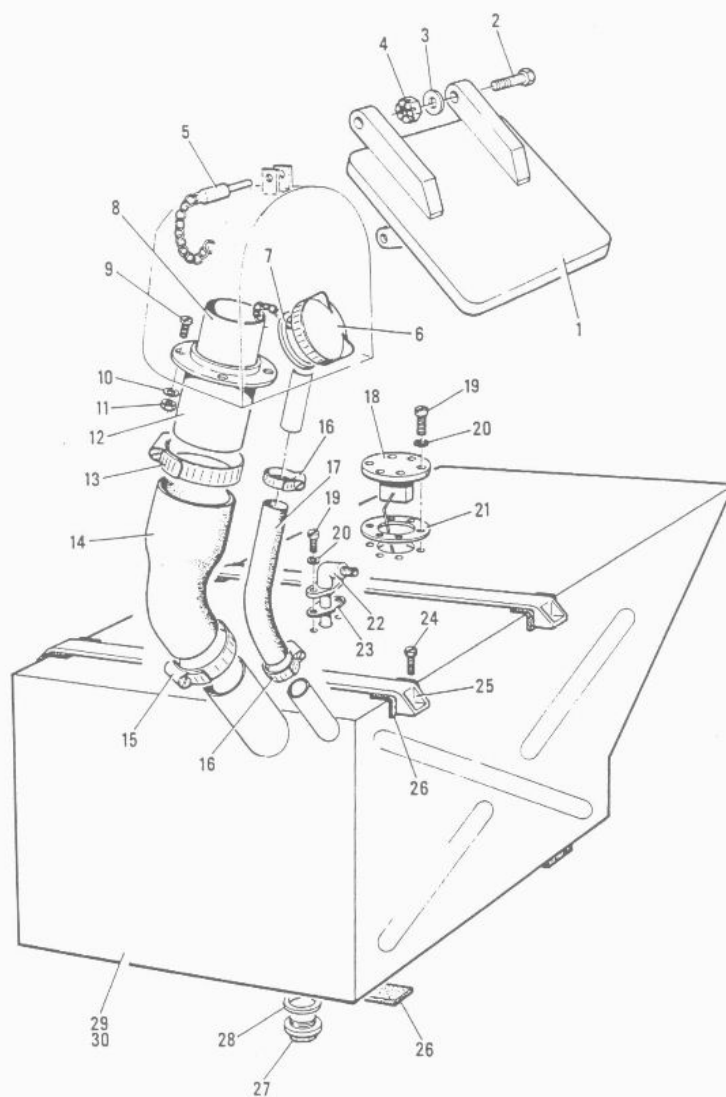


Fig. PC7 Fuel tank assembly

ITEM	DESCRIPTION	PART No.	QTY.	REFERENCE
1	Cover assembly	4PC7-1	1	SB301-10-001(5)
2	5/16" UNF x 1 3/4" hex bolt	4PC7-2	4	
3	5/16" plain washer	4PC7-3	4	
4	5/16" UNF slotted nut	4PC7-4	4	
5	Pip-pin 5/16"	4PC7-5	2	A508
6	Filler cap	4PC7-6	2	ROVER 277260
7	Filler cap washer	4PC7-7	2	ROVER 505244
8	Filler tube	4PC7-8	2	ROVER 277260
9	2BA x 3/8" screw	4PC7-9	8	
10	3/16" washer	4PC7-10	8	
11	2BA Nut	4PC7-11	8	
12	Flanged filler tube	4PC7-12	2	ROVER 277261
13	Jubilee clip 3 3/4" - 4 1/2"	4PC7-13	2	
14	Hose	4PC7-14	2	ROVER 543764
15	Jubilee clip 2" - 2 3/4"	4PC7-15	2	
16	Jubilee clip 3/4" - 1"	4PC7-16	4	
17	Hose 3/8" i/dia.	4PC7-17	2	
18	Gauge unit. 12V	4PC7-18	2	F. Smith & Son TB1114/001
19	3BA x 9/16" cheese hd screw	4PC7-19	16	
20	3BA spring washer	4PC7-20	16	
21	Gasket	4PC7-21	2	
22	Elbow and suction tube	4PC7-22	2	
23	Gasket	4PC7-23	2	
24	1/2" UNF x 1 1/2" set screw	4PC7-24	8	
25	Tank retaining strap	4PC7-25	4	SB301-50-001(2)-14
26	Rubber strip 2" x 1/2"	4PC7-26	as reqd.	
27	Drain plug	4PC7-27	2	Bailey Bros. 235592
28	Drain plug washer	4PC7-28	2	Copper & Asbestos Co. 230509
29	Fuel tank L.H.	4PC7-29	1	SB301-50-001(2) 1
30	Fuel tank R.H.	4PC7-30	1	

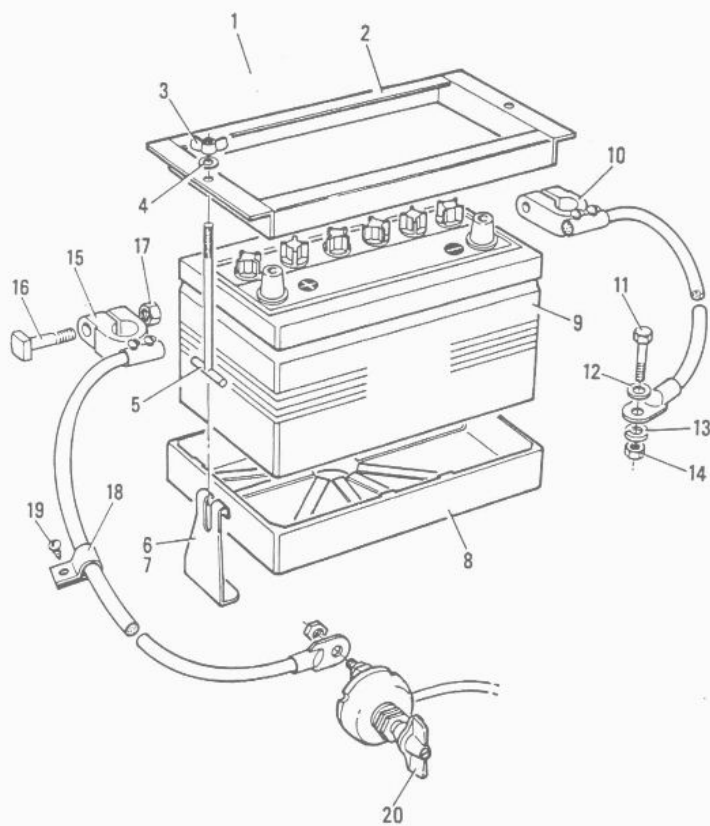


Fig.PC8 Battery assembly

Parts list PC 8

SHORLAND SB401

ITEM	DESCRIPTION	PART No.	QTY.	REFERENCE
1	Battery box assembly complete	4PC8-1	1	54300-1
2	Clamping frame	4PC8-2	1	ROVER 525276
3	1/4" UNF wing nut	4PC8-3	2	
4	1/4" plain washer	4PC8-4	2	
5	T bolt	4PC8-5	2	ROVER 542365
6	T bolt bracket (L.H.)	4PC8-6	1	ROVER 542365
7	T bolt bracket (R.H.)	4PC8-7	1	ROVER 542364
8	Battery tray	4PC8-8	1	ROVER 542366
9	Battery	4PC8-9	1	ROVER GBY225/GBY238
10	Negative connection	4PC8-10	1	60150092
11	1/4" UNF x 1 1/4" cd. plated hex bolt	4PC8-11	1	
12	1/4" plain washer cd. plated	4PC8-12	1	
13	1/4" spring washer cd. plated	4PC8-13	1	
14	1/4" UNF nut	4PC8-14	1	
15	Positive connection	4PC8-15	1	60150091
16	1/4" UNF x 1 1/4" sq. hd. bolt	4PC8-16	2	
17	1/4" UNF nut	4PC8-17	1	
18	Cable clip	4PC8-18	4	
19	10G x 3/8" self tapping screw	4PC8-19	4	
20	Master switch	4PC8-20	1	LUCAS 76606

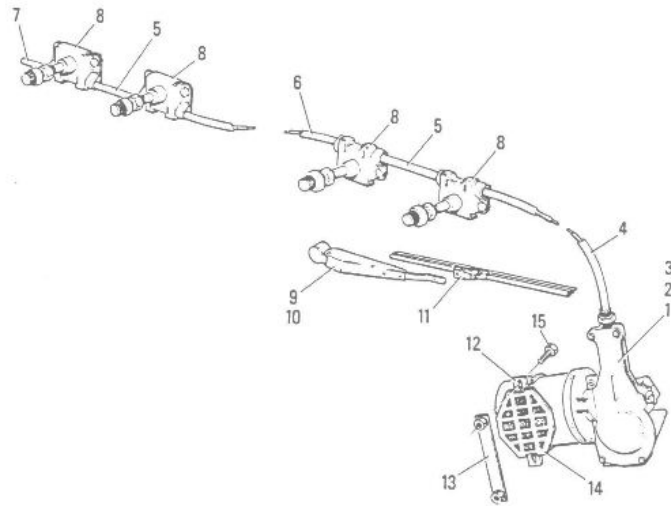


Fig.PC9 Windscreen wipers

ITEM	DESCRIPTION	PART No.	QTY	REFERENCE
1	Windscreen wiper motor	4PC9-1	1	ROVER GEU708
2	Wiper motor shaft and gear	4PC9-2	1	LUCAS 54702581
3	Wiper motor bush kit	4PC9-3	1	LUCAS 60600433
4	Conduit - interbox	4PC9-4	2	557002-1
5	Conduit - interbox	4PC9-5	2	557003-1
6	Conduit - centre	4PC9-6	1	557004-1
7	Conduit - end	4PC9-7	1	557005-1
8	Wheel box assembly	4PC9-8	4	LUCAS 72849
9	Wiper arm L.H.	4PC9-9	2	537110
10	Wiper arm R.H.	4PC9-10	2	537110
11	Wiper blade	4PC9-11	4	LUCAS 54700102
12	'U' strap	4PC9-12	1	ROVER 606929
13	Nut plate	4PC9-13	1	ROVER 560967
14	Mounting pad	4PC9-14	1	ROVER 606928
15	1/2" UNF x 5/8" hex screw	4PC9-15	2	

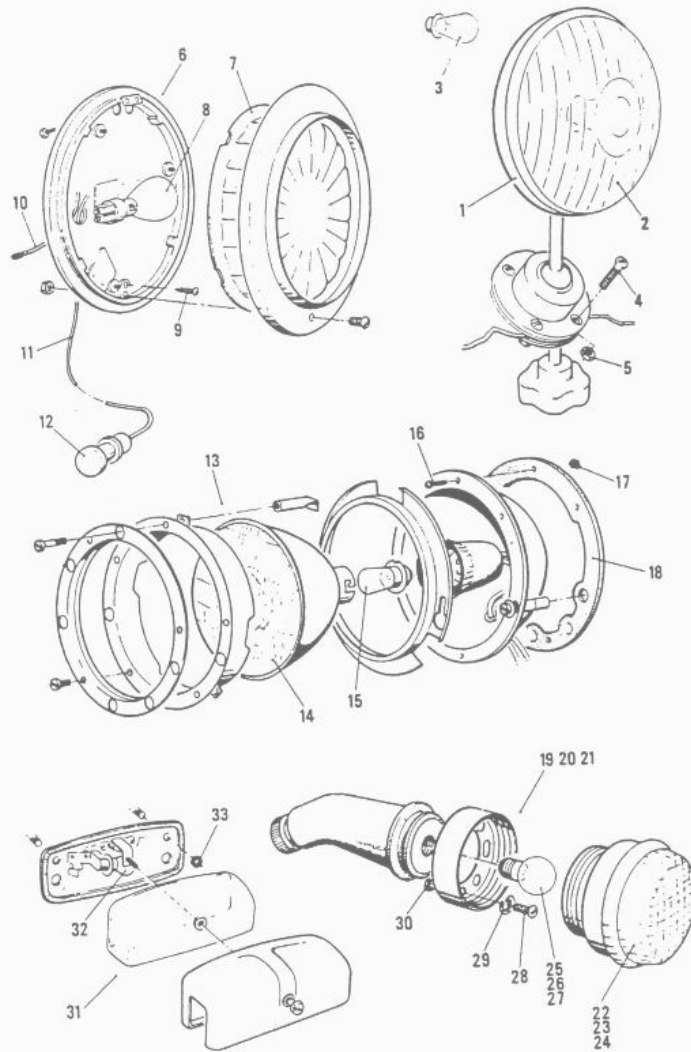


Fig.PC10 Lighting

Parts List PC10

SHORLAND SB401

ITEM	DESCRIPTION	PART NO.	QTY	REFERENCE
1	Spotlight assembly complete	4PC10-1	1	Bosch 0 306 506 002
2	Spotlight lens	4PC10-2	1	
3	Spotlight bulb	4PC10-3	1	Bosch 1 907 510 410
4	2 BAX 1" csk screw	4PC10-4	4	
5	2 BA nut	4PC10-5	4	
6	Interior light assembly complete	4PC10-6	1	Piller Eng. Supply Ltd. 212P (555004-7)
7	Lens - interior light	4PC10-7	1	
8	Bulb - interior light	4PC10-8	1	12V 21W
9	3/4" self tapping screws	4PC10-9	4	
10	Cable	4PC10-10	1	
11	Cable	4PC10-11	1	
12	Push/Pull switch	4PC10-12	1	Lucas 54033230
13	Headlamp assembly complete	4PC10-13	1	Lucas 264579
14	Light unit	4PC10-14	1	Lucas 554430
15	Headlamp bulb	4PC10-15	1	Lucas 446
16	2BA X 3/4" Rd. hd. screw	4PC10-16	5	
17	2BA plain nut	4PC10-17	5	
18	Gasket	4PC10-18	1	
19	Indicator light assembly complete	4PC10-19	1	
20	Side light assembly complete	4PC10-20	1	
21	Stop/rear light assembly complete	4PC10-21	1	
22	Lens - indicator light	4PC10-22	1	
23	Lens - side light	4PC10-23	1	
24	Lens - stop/rear light	4PC10-24	1	
25	Bulb - indicator light	4PC10-25	1	Lucas 382
26	Bulb - side light	4PC10-26	1	Lucas 207
27	Bulb - stop/rear light	4PC10-27	1	Lucas 380
28	2BA X 3/4" Rd. hd. screw	4PC10-28	12	
29	2BA spring washer	4PC10-29	12	
30	2BA nut	4PC10-30	12	
31	Number plate light assembly complete	4PC10-31	1	Lucas 53876
32	Bulb - number plate light	4PC10-32	1	Lucas 989
33	2BA plain nut	4PC10-33	2	

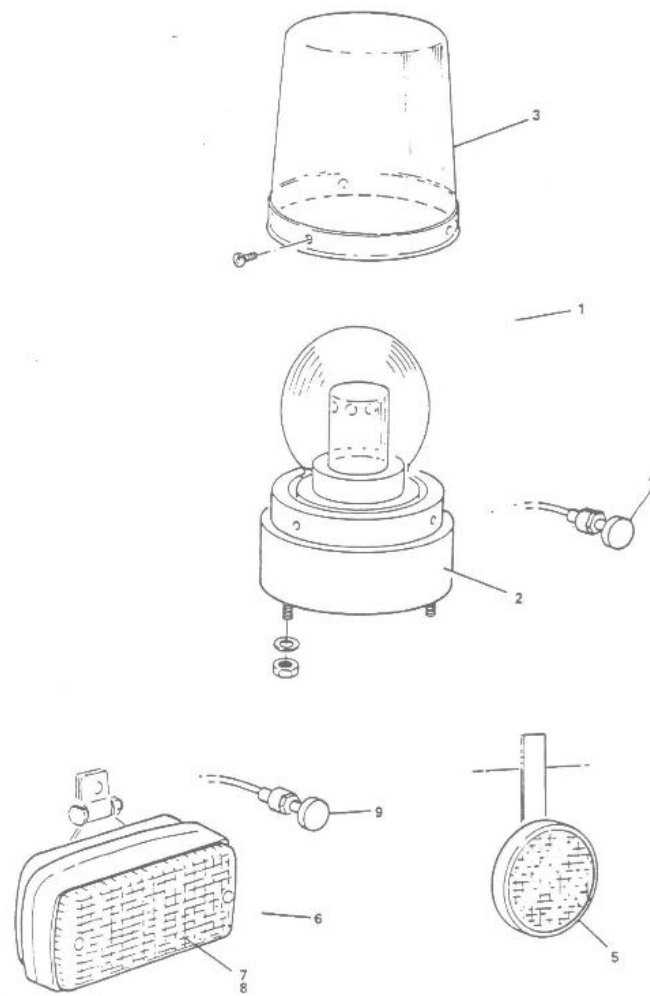


Fig. PC11 Beacon and rearguard lights

ITEM	DESCRIPTION	PART No.	QTY.	REFERENCE
1	Beacon (blue) Complete	4PC11-1		Britax-Lucas 370-25E
2	Motor unit and bulb	4PC11-2	1	Britax-Lucas 13096-07
3	Lens (blue)	4PC11-3	1	Britax-Lucas 10241-01
4	Beacon switch	4PC11-4	1	Lucas 31696
5	Reflector	4PC11-5	1	Lucas 575189
6	Rear Guard lamp, Complete	4PC11-6		Britax-Lucas 738-00
7	Lens (red)	4PC11-7	1	Britax-Lucas 10254-00
8	Bulb	4PC11-8	1	Lucas LLB382
9	Rear Guard switch	4PC11-9	1	Landrover PRC2627
—	Headlamps	4PC11		Lucas LUB319
	Headlamp bulb	4PC11		Lucas LLB410
	Headlamp connector socket	4PC11		Lucas 553738

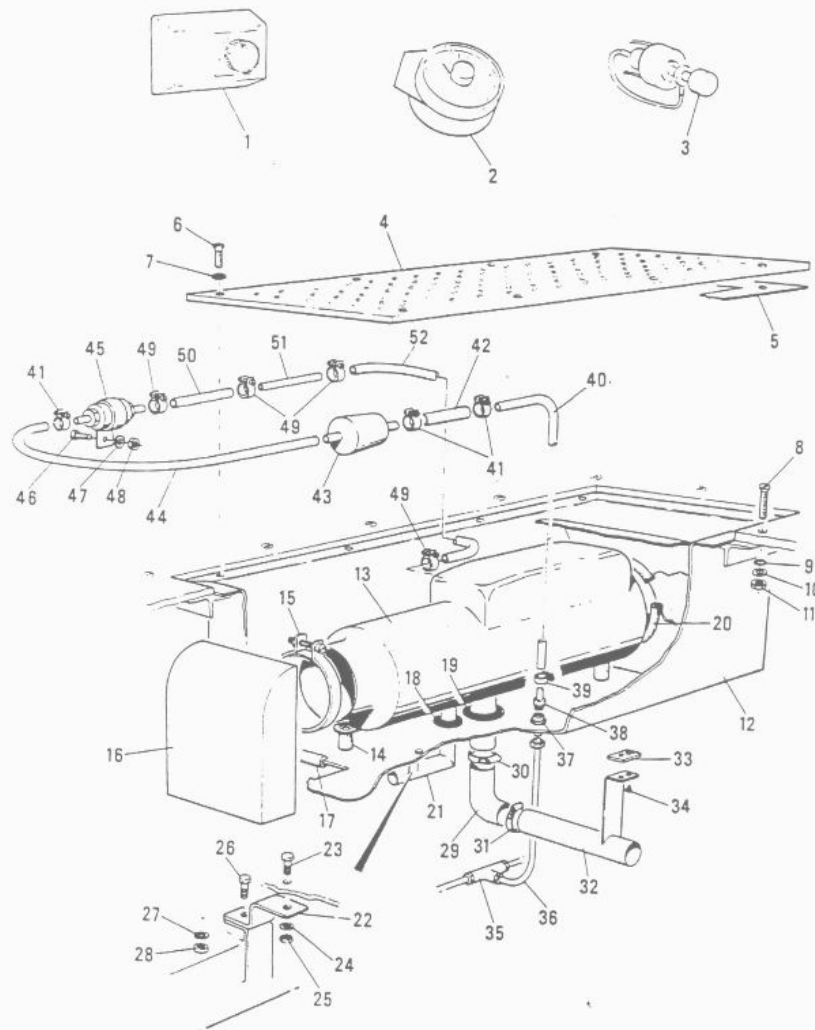


Fig. PC12 Cabin Heater BN2/1

ITEM	DESCRIPTION	PART No.	QTY	REFERENCE
1	Thermostat	4PC12-1	1	
2	Timer	4PC12-2	1	
3	Push/Pull switch	4PC12-3	1	
4	Heater Box cover		1	SB401-30-001
5	Cover seal		1	SB401-30-001
6	1/4" x 1" UNF C'sk screw		8	
7	1/4" washer		8	
8	1/4" x 1" UNF C'sk screw		12	
9	1/4" spring washer		12	
10	1/4" washer		12	
11	1/4" UNF nut		12	
12	Heater box		1	SB401-30-001
13	Heater BN2/1		1	Eberspacher
14	Rubber mounting (complete)		2	SB401-100-001 (1)
15	3.3/8" Dia. Clamp		1	SB401-100-001 (2)
16	Inlet duct		1	SB401-100-001 (2)
17	Inlet seal		1	SB401-100-001 (2)
18	Seal for combustion air pipe		1	SB401-100-001 (1)
19	Seal for exhaust pipe		1	SB401-100-001 (1)
20	Outlet seal		1	SB401-100-001 (2)
21	Combustion air pipe		1	SB401-100-001 (1)
22	Combustion air pipe support bracket		1	SB401-100-001 (1)
23	1/4" x 3/4" UNF hex set screw		1	
24	1/4" washer		1	
25	1/4" UNF nut		1	
26	2BA x 1/4" hex set screw		1	
27	3/16" washer		1	
28	2 BA nut		1	
29	Exhaust elbow bend		1	SB401-100-001 (1)
30	2 3/4" exhaust clamp		1	
31	3 1/4" exhaust clamp		1	
32	Exhaust pipe		1	SB401-100-001 (1)
33	Asbestos packing		1	
34	3/16" self tapping screw		2	
35	Tee piece		1	
36	1/4" O/D copper fuel pipe			SB401-50-002
37	Coupling (brass)		1	Wade Type 1043/L6
38	1/4" O /D Brass nozzle		1	SB401-50-002
39	1/4" hose clip		1	
40	1/4" O/D copper fuel pipe			SB401-50-002
41	10 mm hose clips		3	
42	10 mm flexible fuel pipe			
43	Fuel filter		1	
44	10 mm flexible fuel pipe			
45	Fuel metering pump		1	
46	1/4" x 1/2" UNF set screw		1	
47	1/4" spring washer		1	
48	1/4" UNF nut		1	
49	9 mm hose clip		4	
50	9 mm flexible hose pipe			
51	4 mm flexible clear plastic hose pipe			
52	9 mm flexible hose pipe			

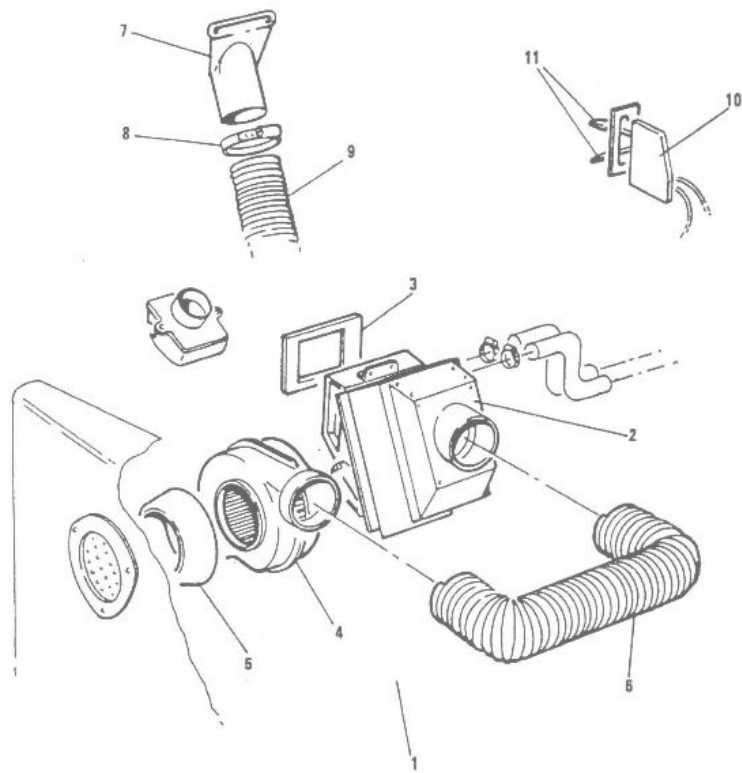


Fig. PC13 Heater/Demister

ITEM	DESCRIPTION	PART No.	QTY	REFERENCE
1	Heater/Demister (complete)	4PC13-1		SB401-100-003
2	Heater	4PC13-2	1	
3	Seal	4PC13-3	1	
4	Blower	4PC13-4	1	
5	Blower seal	4PC13-5	1	
6	Flexible hose	4PC13-6	1	
7	Outlet	4PC13-7	2	
8	1½" Jubilee Clip	4PC13-8	2	
9	Outlet flexible hose	4PC13-9	2	
10	Control	4PC13-10	1	
11	Control finger grip	4PC13-11	2	