

Section C5

Component removal
and assembly**Circular facia outlet - To remove**

1. Remove the facia panel (see Chapter S).
2. Remove the top roll (see Chapter S).
3. Remove the demister panel (see Chapter S).
4. Unscrew the screws retaining the illumination panel above the assembly: remove the illumination panel. (Camargue only).
5. Unscrew and remove the screws that retain the facia outlet assembly.
6. Withdraw the complete circular facia outlet (including the grille assembly) through the top roll aperture.

Circular facia outlet - To fit

Fit the assembly by reversing the procedure given for removal, noting the following points.

1. Ensure that the ducting and convoluted feed hose are correctly positioned relative to the distribution box and instrument panel.

Circular facia outlet grille - To remove

The circular facia outlet grille can be removed independently of the complete assembly as follows.

1. Remove the facia panel (see Chapter S).
2. Unscrew and remove the screws retaining the illumination panel above the circular facia outlet, remove the illumination panel.
3. Unscrew and remove the screws that secure the grille retaining swivel ring, collect the three tension adjusting springs.
4. Remove the ring and carefully withdraw the grille.

Circular facia outlet grille - To fit

Fit the grille by reversing the procedure given for removal, noting the following points.

1. Fit the tension adjusting spring between the lugs on the retainer and housing, hold in place with the three Pozidrive screws. Tighten the screws until the grille will just move under a torque of 0,18 kg. cm. to 0,36 kg. cm. (1 lb. in. to 2 lb. in.).

Demister outlet grille - To remove

The two demister outlet grilles are retained in position by eight small clips moulded as an integral part of each outlet grille.

1. Position a small thin tool (e.g. a steel rule) between the demister outlet grille and the demister body panel.
2. Prise the rear of the demister grille towards its centre in an upwards direction. This action will release the retaining clips.
3. Carefully work around the demister grille as described in Operation 2, until the grille can be lifted out of position.

Demister outlet grille - To fit

Fit the demister outlet grille by reversing the procedure given for removal, noting the following points.

1. Ensure that the outlet grille is fitted the correct way round (with the vanes sloping upwards towards the rear), otherwise windscreen demisting will be impaired.

Scuttle intake grille - To remove

1. Position the windscreen wiper blades in the vertical position. To achieve this, switch on the ignition and operate the wash/wipe system. Switch off the ignition when the wiper blades are passing the vertical position.
2. Unscrew the setscrews securing the intake grille panel in position: the setscrews are situated along the forward edge of the panel.
3. Pull the intake grille panel forward until it is clear of the retaining pins situated along the rear edge, lift up the panel.
4. Pull the windscreen washer tubes from the jet connectors and remove the intake panel from the car.
5. Unscrew and remove the wing nut securing the jet assemblies to the intake grille.
6. Remove the nuts securing the wire mesh grilles to the underside of the intake.
7. Withdraw the foam elements.

Condenser matrix - To remove (see Fig. C24)

When removing the condenser, care must be taken not to damage either the matrix or the sensor assembly fitted in front of the matrix.

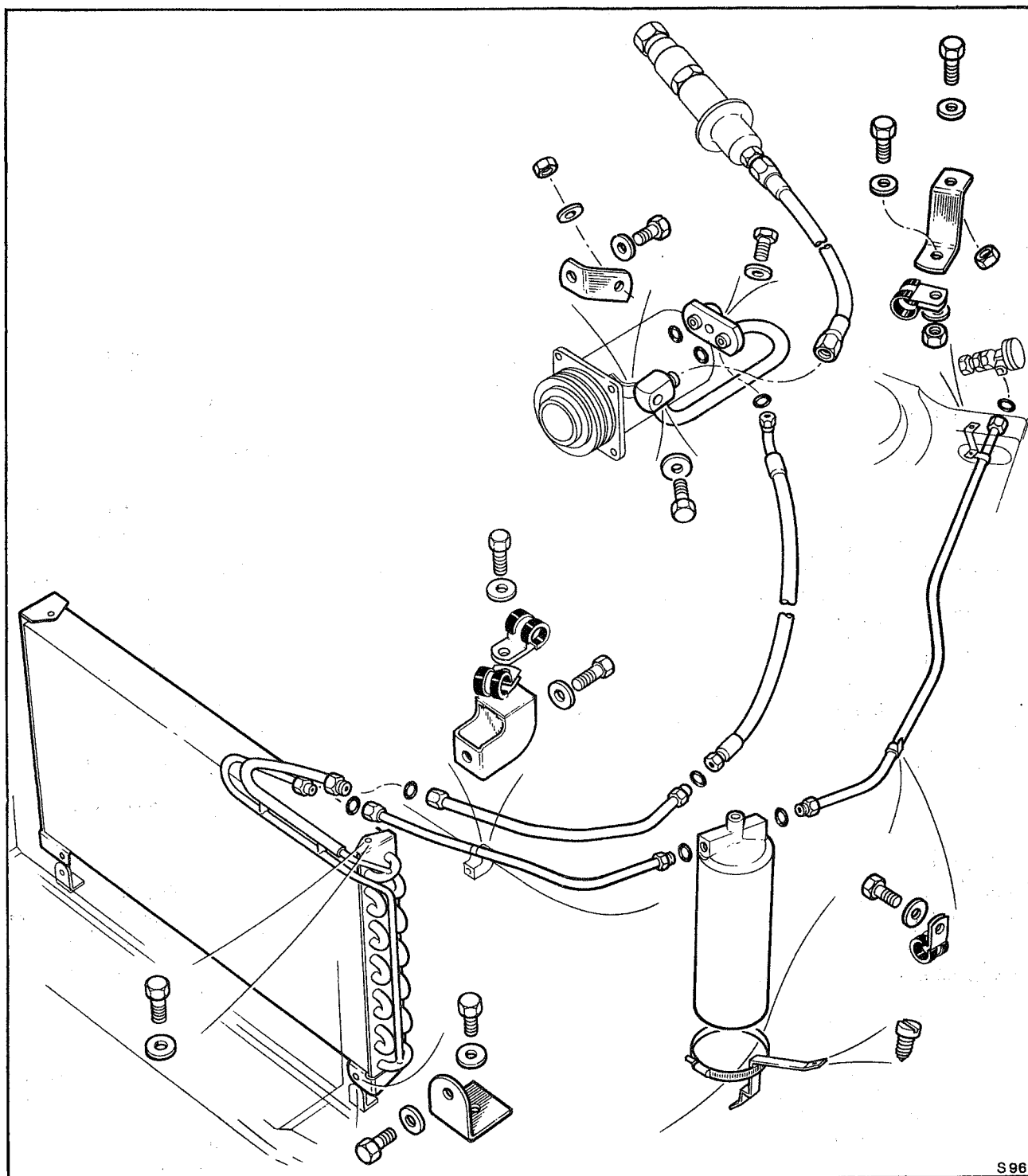
1. Discharge the refrigerant from the system.
2. Remove the radiator grille (see Chapter S).
3. Unscrew the nuts securing the air deflector panel that carries the outside temperature sensor. Ease the panel from its position, taking care not to damage the sensor. Access can now be gained to the two refrigeration pipe connections situated above the matrix.
4. Disconnect both these refrigeration pipe connections (the high pressure vapour line from the compressor to the condenser and the high pressure liquid line to the receiver/drier).
5. Unscrew and remove the two setscrews from the bottom mountings of the condenser matrix. Collect the washer from under the head of each setscrew.
6. Unscrew and remove the two setscrews from the condenser matrix top mountings, one on each side of the matrix. Collect the washer from under the head of each setscrew.

Note

Carefully support the condenser matrix before finally removing the setscrews from the top mountings.

7. Withdraw the matrix forwards.

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Fig. C24 Refrigeration components

Condenser matrix - To fit

Fit the condenser matrix by reversing the procedure given for removal, noting the following points.

1. When fitting the setscrews to the bottom

mountings it may be necessary to slacken the mountings securing setscrews to assist alignment. The setscrews should be tightened again after alignment.

Receiver/Drier - To remove

1. Discharge the refrigeration system.
2. Disconnect the high pressure liquid inlet and outlet pipes.
3. Slacken the worm drive clip securing the receiver/drier, withdraw the unit.

Coolant tap - To remove (see Fig. C26)

The coolant tap is situated beneath the hydraulic reservoir and is removed as follows.

1. Ensure that the lower servo is in the full cold position.
2. Drain the engine coolant (see Chapter L).
3. Unscrew the two worm drive clips from the two coolant hose clips. Withdraw the hoses.
4. Unscrew the two 7/16 in. A/F setscrews securing the tap assembly to the rear hydraulic reservoir bracket.
5. Turn the assembly over and slacken the clamping screw retaining the inner wire of the actuating cable to the tap.
6. Unscrew and remove the nut securing the outer cable to the tap bracket. Release the clamp assembly from the tap.
7. Withdraw the coolant tap assembly.

Coolant tap - To fit

Fit the coolant tap by reversing the procedure given for removal, noting the following point.

1. Ensure that the coolant tap actuating cable is set as described in Coolant tap cable - To fit.

Coolant tap actuating cable - To remove (see Fig. C25)

1. Ensure that the lower servo is set in the full cold position.
2. Release the servo end of the inner and outer cable, collect the distance piece from behind the outer cable clamp.
3. Remove the coolant tap and release the tap end of the cable.
4. Withdraw the actuating cable.

Coolant tap actuating cable - To fit

1. Ensure that the lower servo is set in the full cold position.
2. Fit the rubber sleeves to the outer cable.
3. Fit the cable assembly to the coolant tap as shown in fig. C25.
4. Feed the cable through the grommet to the inside of the car, the cable should pass over the right-hand coolant pipe (and the steering column on left-hand drive cars).
5. Fit the coolant tap.
6. Attach the servo end of the outer cable with the distance piece behind the clip.
7. Slide the crank lever onto the servo output shaft but do not tighten. Set the crank lever with the pinch bolt in the vertical position.
8. Fit inner cable through trunnion and pull tight to remove any slack in cable. Push the inner cable back into outer cable by 6.99 mm. (0.275 in.) and secure.

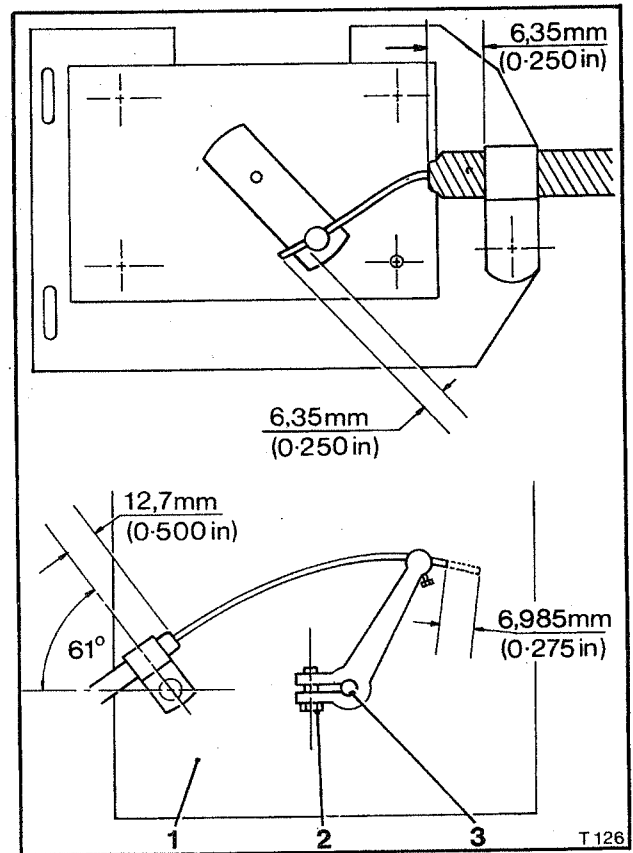


Fig. C25 Setting the water tap actuating cable

- 1 Lower servo
- 2 Pinch bolt
- 3 Servo output shaft

9. Move the crank lever by hand over the full travel range to ensure freedom of movement, adjust the angle of the outer cable retaining clips to obtain this movement.

10. Pull the crank lever fully back and tighten the pinch bolt.

Heater and control box - To remove

The heater and control box is removed from inside the car, the assembly basically comprises the heater matrix, heater box, flaps and control rods to operate these flaps.

1. Drain the engine coolant (see Chapter L).
2. Remove the facia panel (see Chapter S).
3. Remove the top roll (see Chapter S).
4. Remove the demister panel (see Chapter S).
5. Remove the knee roll panels (see Chapter S).
6. Remove the instrument panel (see Chapter S).
7. Remove the servo assembly.
8. Remove the demister outlet ducts.
9. Disconnect the mode flap linkage.
10. Unclip the rubber clip securing the electrical wiring looms to the heater and control box assembly.

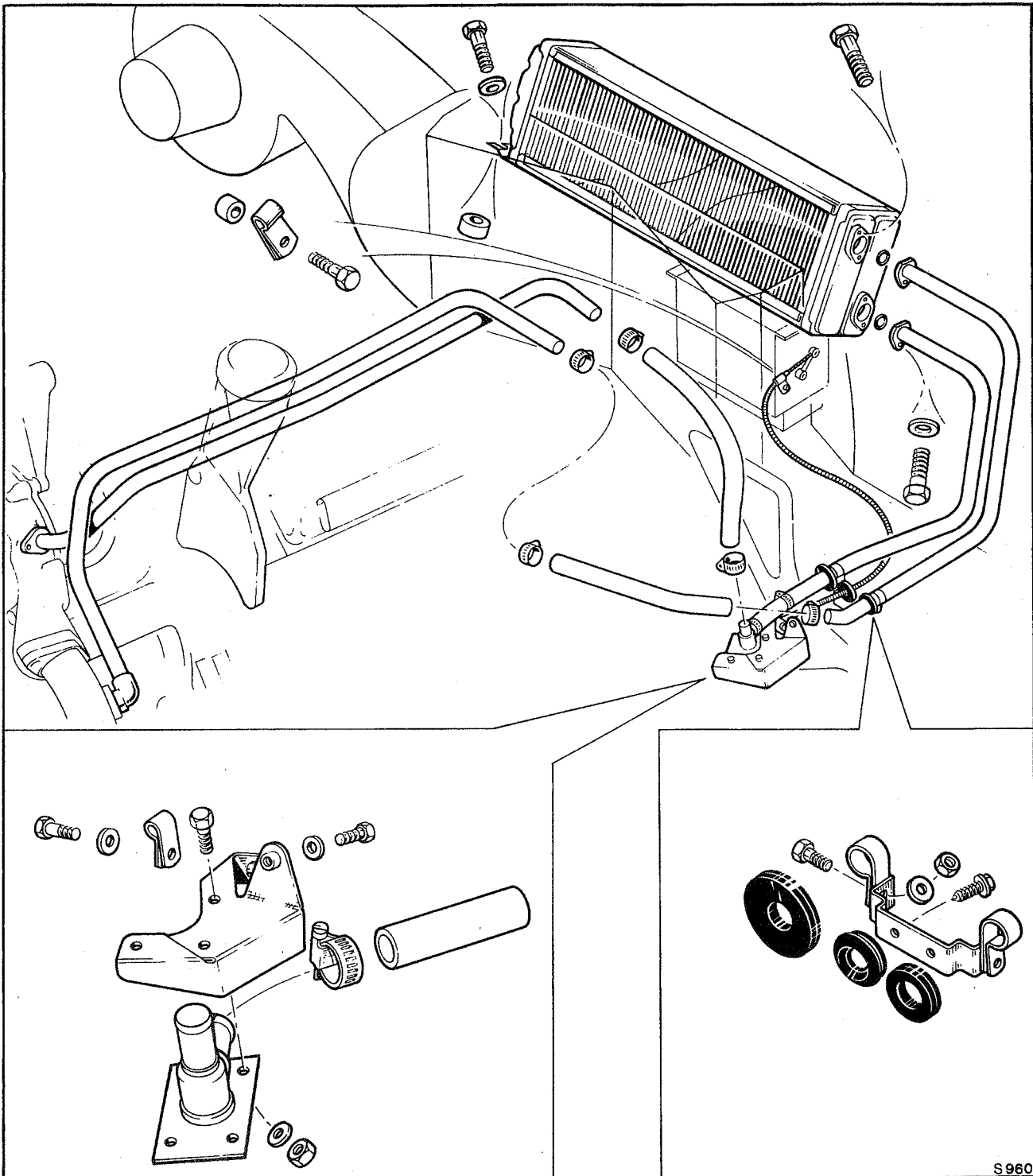


Fig. C26 Heater, water tap and pipes

11. Disconnect the coolant inlet and outlet pipes from the matrix.

12. Unscrew the small nuts and washers securing the heater and control box to the bulkhead, these nuts and washers are situated down either side of the assembly. Carefully withdraw the heater and control box assembly from the bulkhead aperture.

Heater and control box - To assemble

1. Apply sealer to all edges and spot weld flanges surrounding the drain channel and in the heater box

Fill the channel with water until the level reaches the flap apertures and check for leaks.

2. Ensure that the seals fitted into the seal retainers (through which the link rods pass) are in

a good condition.

3. Fit a seal retainer and seal at the rear of each of the three holes and fix each with two pop rivets
4. Slit the seal in each seal retainer with a sharp knife to allow a link rod to pass through.
5. Fit the two bearing bushes to the two upper system blanking plates with the pointed end of the bushes towards the same side as the small flange.
6. Fit the two bearing bushes to the two inner pivots of the upper temperature flap, pointed end of the bushes outwards.
7. Press a pivot bush into the lever and repeat for the other hand. Fit a pinch bolt to each lever.
8. Fit a grommet to the upper system link rod. Press the link pin through the grommet and place one washer on either side of the link pin. Press the lever into the position illustrated one on each end of the assembly.
9. Position the upper temperature flaps into the heater box, one from either end, long end of the spindle inwards locating in the inner bearing bushes
10. Slide the levers over the ends of the upper temperature flap spindles and fit the centre support bearing to the inner ends of the two spindles. The link rod for the upper temperature flaps should pass through the two seal retainers.
11. Fit the washer onto the short end of the spindle protruding from the flap.
12. Fit the upper system blanking plate together, with the appropriate seal, to each end of the heater box, in order to locate the upper temperature flap and to seal the end of the heater box. Secure the blanking plate with self tapping screws.
13. Fit the metering plates to each of the upper temperature flaps, use three self-tapping screws to secure each plate.
14. Set the upper temperature flaps by tensioning both flaps against the sealing face (hot air position). Tighten the locking screws of both levers using the setting piece to determine the relative position of the levers.
15. Fit the bearing bush to the lower system temperature flap pivot, pointed inwards, to the end opposite the blanking plate.
16. Fit the pivot bush into the bracket on the lower temperature flap.
17. Fit the lower temperature flap through the bearing bush.
18. Place the spindle of the lower temperature flap into its correct position and fit the remaining bearing bush.
19. Fit the blanking plate with its seal using the self tapping screws.
20. Position the link rod and snap into the pivot bush.
21. Ensure that the bottom seal and two side seals, situated at the base and either side of the heater matrix, are in a good condition and securely bonded to the matrix.
22. Insert the heater matrix into position through the aperture in the heater and control box.
23. Secure the heater matrix with the setscrews, washer and spacers.

24. Ensure that the flange seal around the heater matrix cover and the foam seal in the well of the cover, are both in a good condition and securely bonded into position.

25. Fit the matrix cover and secure in position with self-tapping screws.

Expansion valve - To remove (see Fig. C27)

1. Disconnect the battery.
2. Discharge the refrigeration system.
3. On the expansion valve unscrew the connection that secures the pipe from the receiver/drier.
4. Unscrew the equaliser line from the suction throttling valve.
5. Slacken the clamp which secures the expansion valve phial to the low pressure vapour line that runs from the evaporator matrix to the suction throttling valve. Withdraw the phial.
6. At the base of the expansion valve, unscrew the connection securing the pipe that runs to the evaporator matrix.
7. Remove the expansion valve.

Suction throttling valve - To remove (see Fig. C27)

1. Discharge the refrigerant.
2. Disconnect the low pressure vapour line to the compressor by unscrewing and disconnecting the pipe union situated at the front of the suction throttling valve.
3. Disconnect the low pressure vapour line from the evaporator matrix by unscrewing and disconnecting the pipe union situated at the rear end of the suction throttling valve.
4. Unscrew and disconnect the equalising pipe from the expansion valve.
5. Withdraw the suction throttling valve.

Suction throttling valve - To fit

Fit the suction throttling valve by reversing the procedure given for removal, noting the following points.

1. Fit new rubber 'O' rings.
2. After fitting the suction throttling valve the full procedure of evacuation and sweeping must be carried out before the system is charged.
3. The suction throttling valve pressure is pre-set and cannot be adjusted.

Evaporator box - To remove (see Fig. C27)

1. Disconnect the battery.
2. Discharge the refrigeration system.
3. Remove the bonnet release mechanism (see Chapter S).
4. Detach the straps securing the ducting to the evaporator box.
5. Peel back the rubber sleeve connecting the ducting to each fan motor assembly.

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6. Withdraw the ducting.
7. Detach the electrical leads from the refrigeration compressor ambient switch.
8. Unscrew and detach the two refrigeration pipes which pass into the evaporator box to the rear of 'B' bank cylinder head.
9. Remove the nuts and washers and the four self-tapping screws securing the evaporator box in position. The self tapping screws are situated on

either side of the evaporator at the bottom and are partially hidden from view, they can however be unscrewed with a long screwdriver.

10. Withdraw the evaporator assembly from the bulk-head.

Evaporator box - To assemble

1. Ensure that the seals are in a good condition and securely bonded to the flange wing.

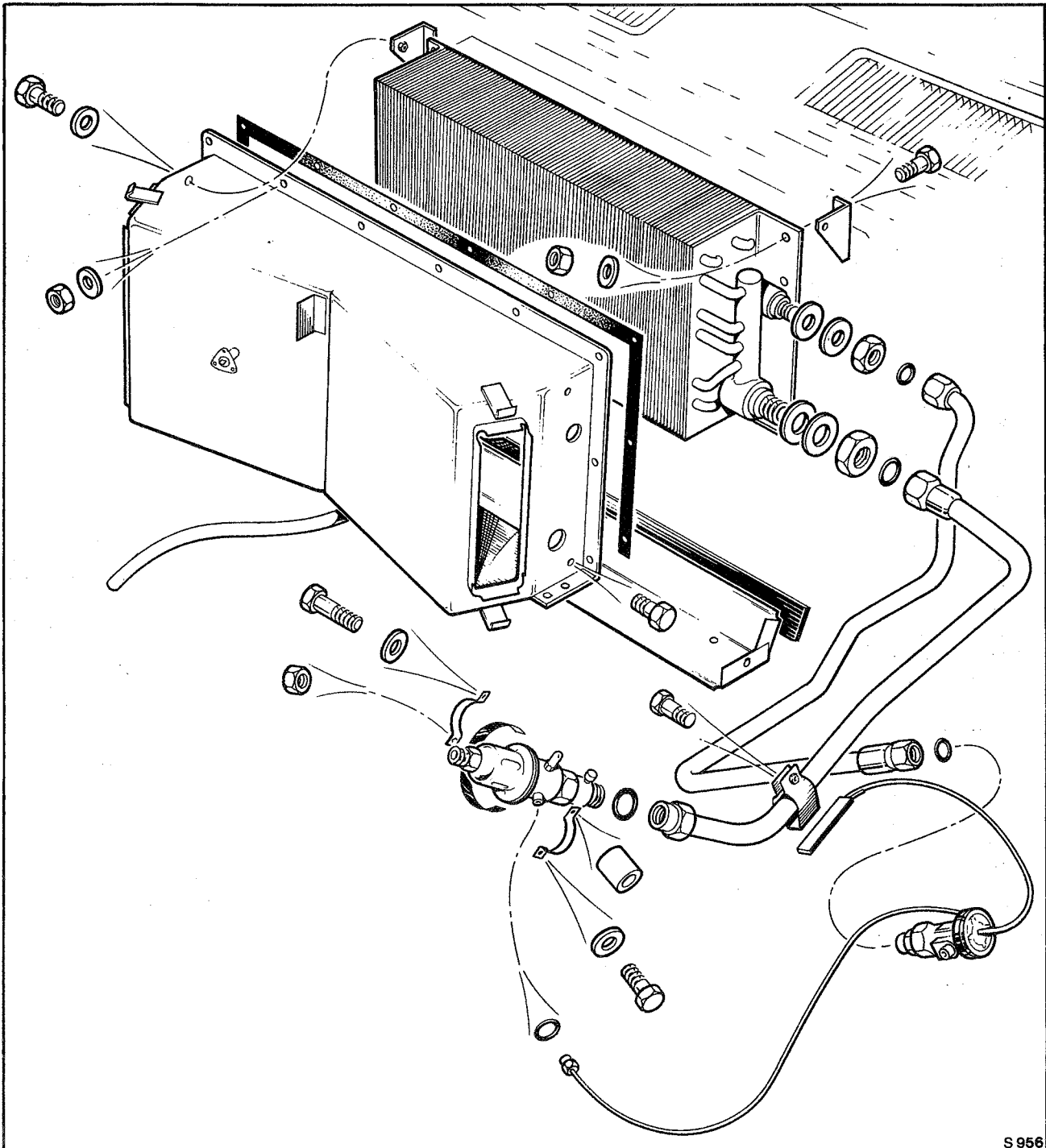


Fig. C27 Evaporator and pipes, suction throttling valve and expansion valve

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2. Fit the evaporator matrix loosely into the evaporator box by first passing the union connections through the holes in the evaporator box end plate.
3. Fit both upper mounting brackets into position and fix each with three 2 B.A. setscrews and washers. Do not tighten the setscrews.
4. Slide the evaporator tray into position.
5. Fix the evaporator tray to the evaporator matrix using two 2 B.A. setscrews and washers.
6. Fix the evaporator tray to the evaporator box using two 2 B.A. setscrews and washers.
7. Fit the sealing washers, washers and nuts to the vapour and suction line connectors.
8. Tighten all 2 B.A. setscrews.
9. Seal the evaporator tray to the evaporator box using Bostik 717 or similar and water test.

Distribution box assembly - To remove

The distribution box assembly carries the mode flap and the adapter duct (which in turn carries the facia outlet ducts). It is situated directly behind the centre of the instrument panel and forms the rear section of the automatic air conditioning control box.

The distribution box assembly can be removed

with the control box assembly either fitted to or removed from the car.

If the distribution box assembly is to be dismantled when removed from the vehicle it will be necessary to carry out the following operations.

1. Remove the facia panel (see Chapter S).
2. Remove the top roll (see Chapter S).
3. Remove the demister panel (see Chapter S).
4. Remove the knee roll panels (see Chapter S).
5. Remove the instrument panel (see Chapter S).
6. Disconnect the convoluted ducting to the circular facia outlets.
7. Remove the demister outlet ducts.
8. Unscrew and remove the Pozidrive screws surrounding the distribution box assembly.
9. Withdraw the assembly.

Distribution box assembly - To assemble (see Fig. C28)

1. Ensure that the heater and control box to distribution box seal is in good condition and securely bonded to the distribution box.
2. Assemble the mode flap into the distribution box by passing the long end of the mode flap through the

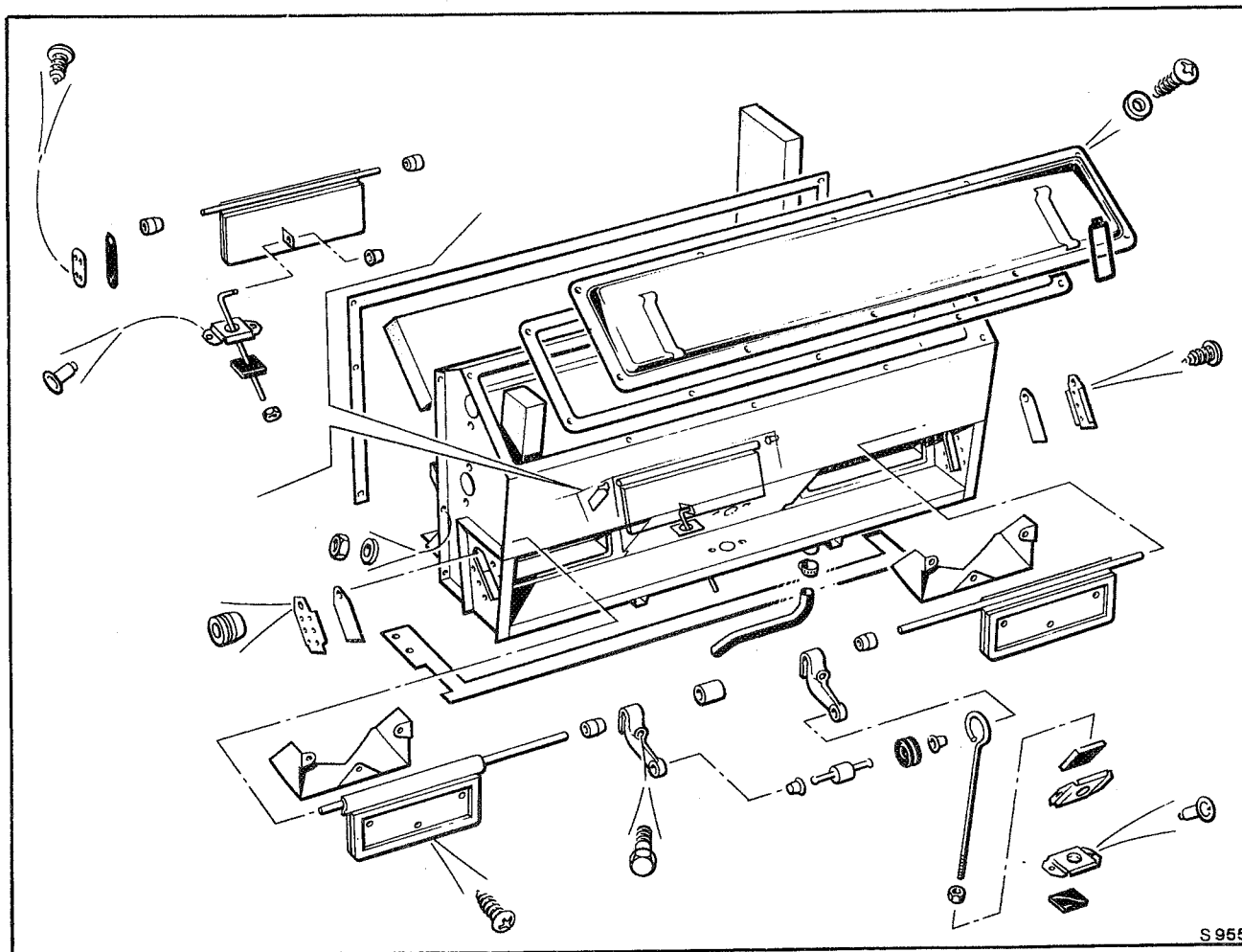


Fig. C28 Distribution box

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bearing hole in the end plate of the distribution box and sliding the other end into the bearing hole in the opposite end of the distribution box.

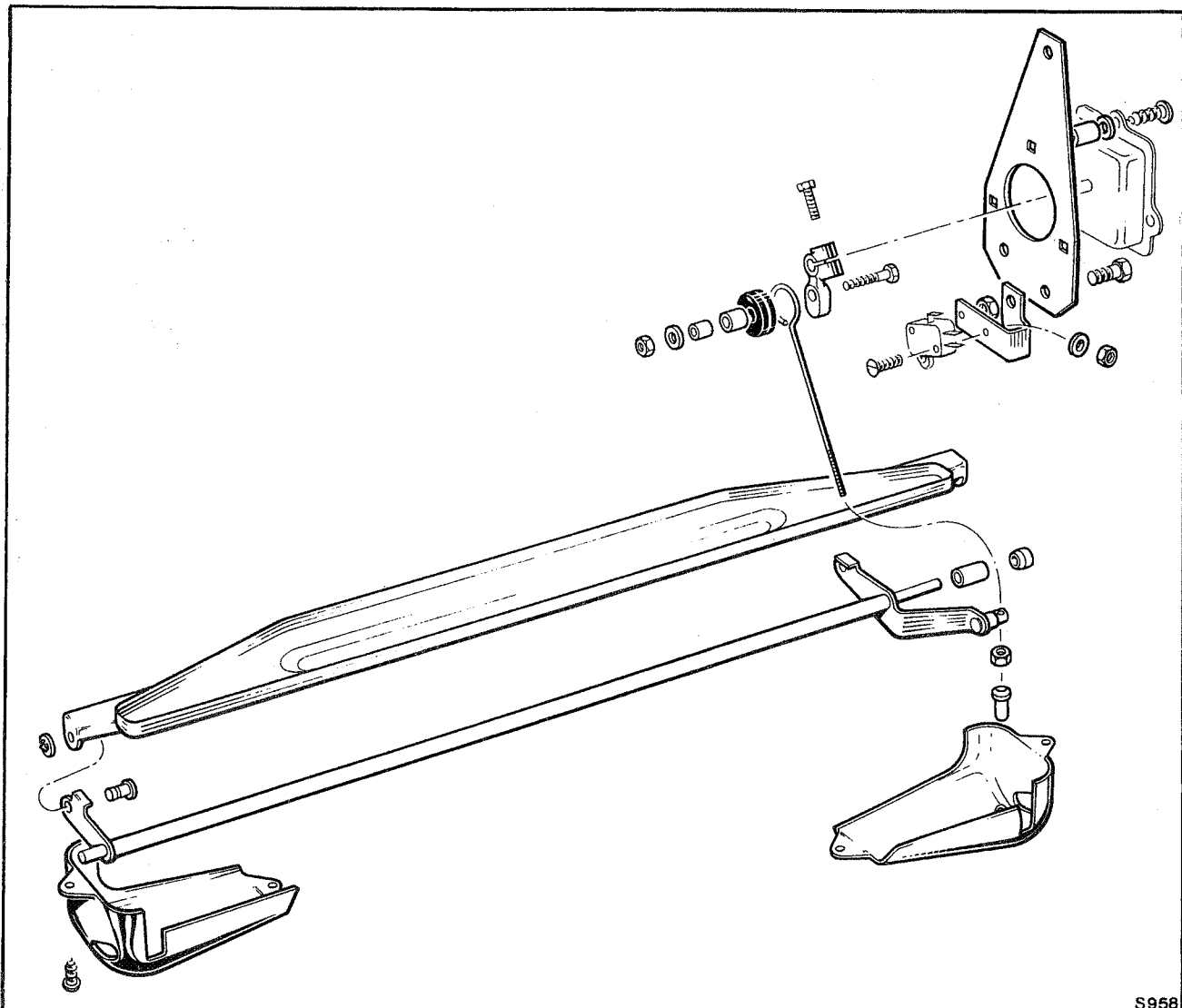
Note

The long end of the mode flap spindle should be positioned towards the right on right-hand drive cars and towards the left on left-hand drive cars.

3. Place a spacer over each end of the mode flap spindle and then press a bearing bush into position from either end of the spindle.
4. Locate the crank lever with the pinch bolt fitted onto the mode flap spindle. Position the crank lever in line with the mode flap and tighten the pinch bolt.
5. Position the adapter duct onto the distribution box and secure with two long thin self-tapping screws (positioned one either side of the centre duct) fitted with spring anchorages under their heads, four shorter thin self-tapping screws and five, short thick self-tapping screws.
6. Hold the rectangular outlet flap, insert the foam

washer under head of the pivot bush and fix the bush into the outlet flap bracket.

7. Hold the outlet flap link rod and screw on the lock-nut, screw the outlet flap link rod into the adjusting piece.
8. Snap the cross pin on the adjusting piece into the pivot bush on the rectangular outlet duct flap.
9. Hold the rectangular outlet housing and fit the flap assembly into position, inserting a lever and pivot assembly from each end and securing the flap assembly with one Allen screw at each end.
10. Ensure the flap housing to instrument panel seal is in good condition and is securely bonded into the seal holder.
11. Fasten the seal holder to the outlet duct flap housing using four self-tapping screws.
12. Apply a small amount of rubber lubricant to the tapered seal of the outlet flap housing. Press the housing into position on the adapter duct and fasten with six self-tapping screws. Fit the toggle spring between the spring anchorage and the toggle lever.



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Fig. C29 Lower quantity flap and actuator

Lower quantity flap - To fit (see Fig. C29)

The lower quantity flap can be fitted with the heater and control box either fitted to, or removed from, the car.

1. Assemble the torque tube into the bearing mounting bracket on the body by placing the spindle at the right-hand end of the torque tube, through the hole in the bearing bracket and then, swinging the assembly upwards so that the left-hand spindle can be pushed through the hole in the opposite bracket. When both ends are located, fit the spacer tube to the right-hand spindle and the bearing bushes to both ends by pushing them onto the spindles, tapered ends inwards, until the groove in each bearing bush locates in its bracket.
2. Locate the lower quantity flap assembly into position through either of the front heater apertures with the narrow side forward and the seal to the top.
3. Fit the pins through the holes in the end of the flap extension arms and also through the holes in the torque arm, taking care to ensure that the inward turned tags on the torque arm fit over the buffer rubbers and do not push them to one side.
4. Fit the retaining clips onto the pins, ensuring that the legs of the clips fit into the grooves on the pins.
5. If the heater and control box are already fitted to the car and the lower quantity flap has been fitted through the front compartment lower outlets, fit the outlet ducts.

Lower quantity flap linkage - To fit and set

1. Fit a grommet to the round eye of the straight link rod.
2. Fit the spacer and distance piece into the grommet and bolt to the actuator crank lever.
3. Fit the pinch bolt to the crank.
4. Fit one lock-nut to the link rod.
5. Fit the crank assembly to the lower quantity flap actuator. Position the crank on the actuator spindle and tighten the crank lever pinch bolt.
6. Fit the actuator to the centre support bracket.
7. The lower quantity flap extension arm should be pressed downwards ensuring that the link rod passes through the hole in the bridge plate and then through the extension arm pivot block.
8. Screw down the lock-nut on the link rod until it maintains the flap in the closed position.
9. Screw the second lock-nut onto the end of the link rod and tighten against the pivot block.
10. A protective cap should be fitted to the threaded end of the link rod.

Lower quantity flap actuator - To remove

1. The lower quantity flap actuator is removed and fitted in a similar manner to the mode flap actuator.

Note

On left-hand drive cars the actuator is fitted on the left-hand facia support bracket therefore the left-hand trim panel must be removed.

Mode flap linkage - To fit and set

1. Fit the mode flap actuator.

2. Assemble a grommet to the round eye of the shaped link rod.
3. Fit the spacer and distance piece into the grommet. Bolt the assembly to the crank lever.
4. Fit a pinch bolt to the crank lever.
5. Fit the crank lever assembly to the spindle of the mode flap actuator.
6. Set the position of the crank lever and link rod.
7. Tighten the pinch bolt on the crank lever.
8. Screw a lock-nut onto the link rod.
9. Carefully thread the link rod through the pivot block attached to the mode flap assembly.
10. Press the mode flap assembly so that the mode flap sits firmly against its seat on the front of the distribution box.
11. Screw the lock-nut down the link rod until it contacts the pivot block.
12. Screw a second lock-nut onto the end of the link rod and tighten against the pivot block.
13. Fit a protective cap to the threaded end of the link rod.

Mode flap actuator - To remove

1. Disconnect the battery.
2. Remove the right-hand knee roll trim panel (see Chapter S).
3. Slacken the pinch bolt securing the flap link lever to the actuator spindle and detach the lever from the spindle.
4. Disconnect the Lucar socket from the actuator.
5. Unscrew the three screws securing the actuator and remove the actuator.

Recirculation flap - To assemble

1. Hold the torque tube assembly and place with the inwards turned flange of the side plates downwards. The flap assembly should then be placed between the side plates with the bracket on the flap upwards.
2. Fasten the flap to the torque tube assembly by pushing the pin through the hole in the end plate (i.e. from the inside to the outside). Hold the pin in place with the retainer.

Note

It is essential that the legs of the retainer engage in the pin groove correctly. To ensure this, a pair of pliers with a 4,0 mm. (0.156 in.) diameter hole in one leg, is required.

3. Place the hinge bracket assembly flat so that the weld nuts face upwards and the end tags are towards you. Fit the flap assembly with the linkage bracket downwards between the hinge brackets.
4. Press the bearing bushes into place from the outer ends by sliding them along the spindle of the torque tube.
5. Take the link rod and fit the grommet into the circular end. Fit the swivel tube into the grommet and insert the distance piece.
6. Fit the assembly to the linkage bracket and secure with the bolt, washer and nut.

Recirculation flap - To fit

1. To fit the recirculation flap assembly to the car, place the assembly into the aperture from inside the car body with the hinge at the top and the link rod towards the inside of the car. The left-hand and right-hand flap assemblies are distinguished by the position of the link rod (the left-hand flap has the rod offset to the left and the right-hand flap to the right).

2. With the flap placed against its upper seat, the hinge brackets can be placed in line with the holes in the body and the retaining screws fitted.

3. Place the grille in position by threading the link rod through the outer slot in the grille. Secure the grille in position with the four self-tapping screws.

4. To fit the actuator onto its mounting bracket commence by fitting the square bifurcated end of

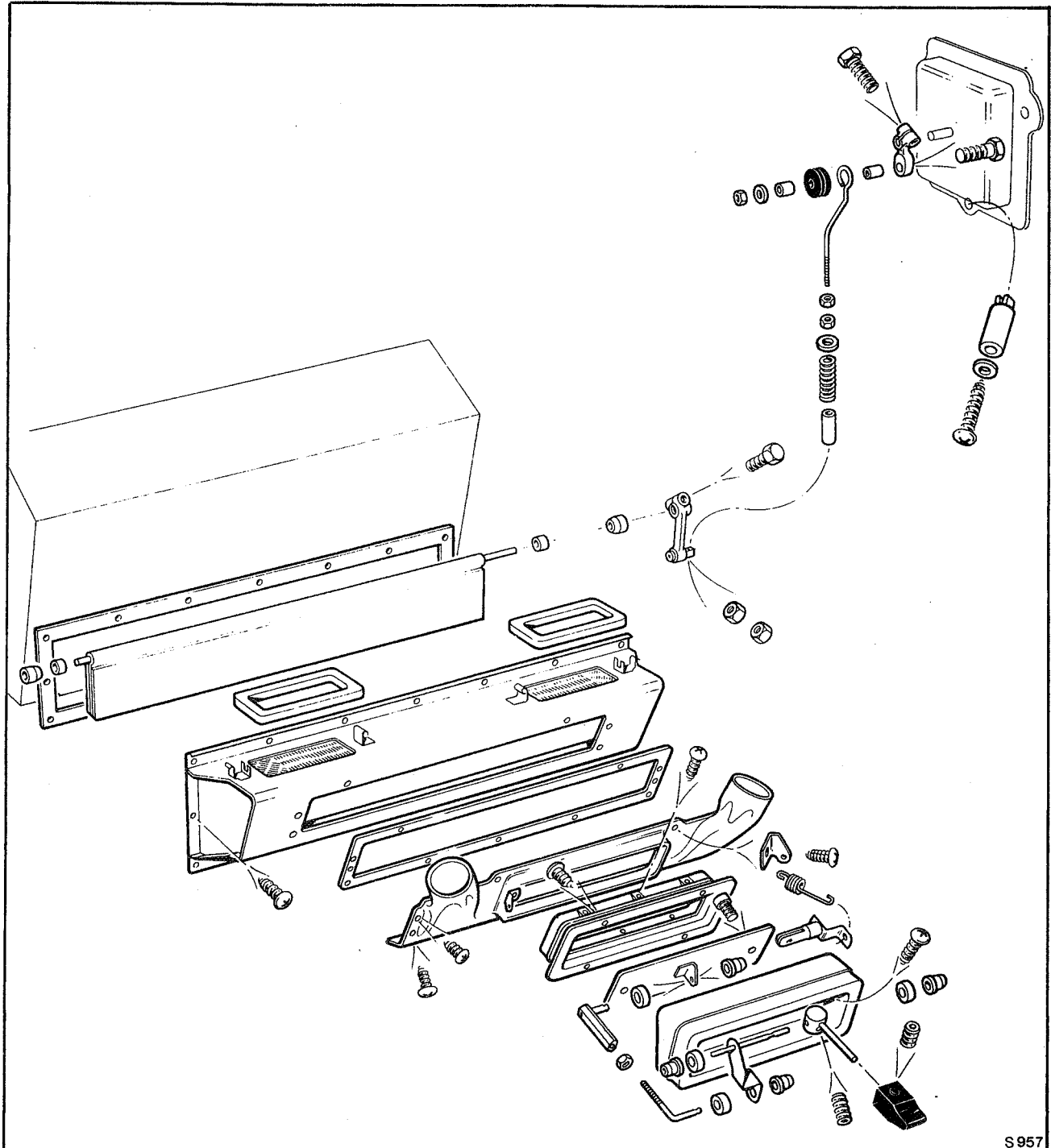


Fig. C30 Facia outlets, mode flap and actuator

the nuts through the square holes of the bracket from the raised side.

5. Position the piece of 12,7 mm. (0.5 in.) thick Hardura (the size of the flat portion of the bracket) over the nuts with the plastic side against the bracket.

6. The actuator should be mounted onto the nuts with the motor side of the actuator downwards (i.e.

the spindle away from the bracket) and secured in position with the cheese head self-tapping screws and washers.

7. Mount this complete actuator assembly onto the car body, using the tapping blocks provided.

8. Fit the lever assembly to the actuator spindle. Screw two nuts 5 cm. (2 in.) along the thread of the link rod, followed by one plain washer, one spring

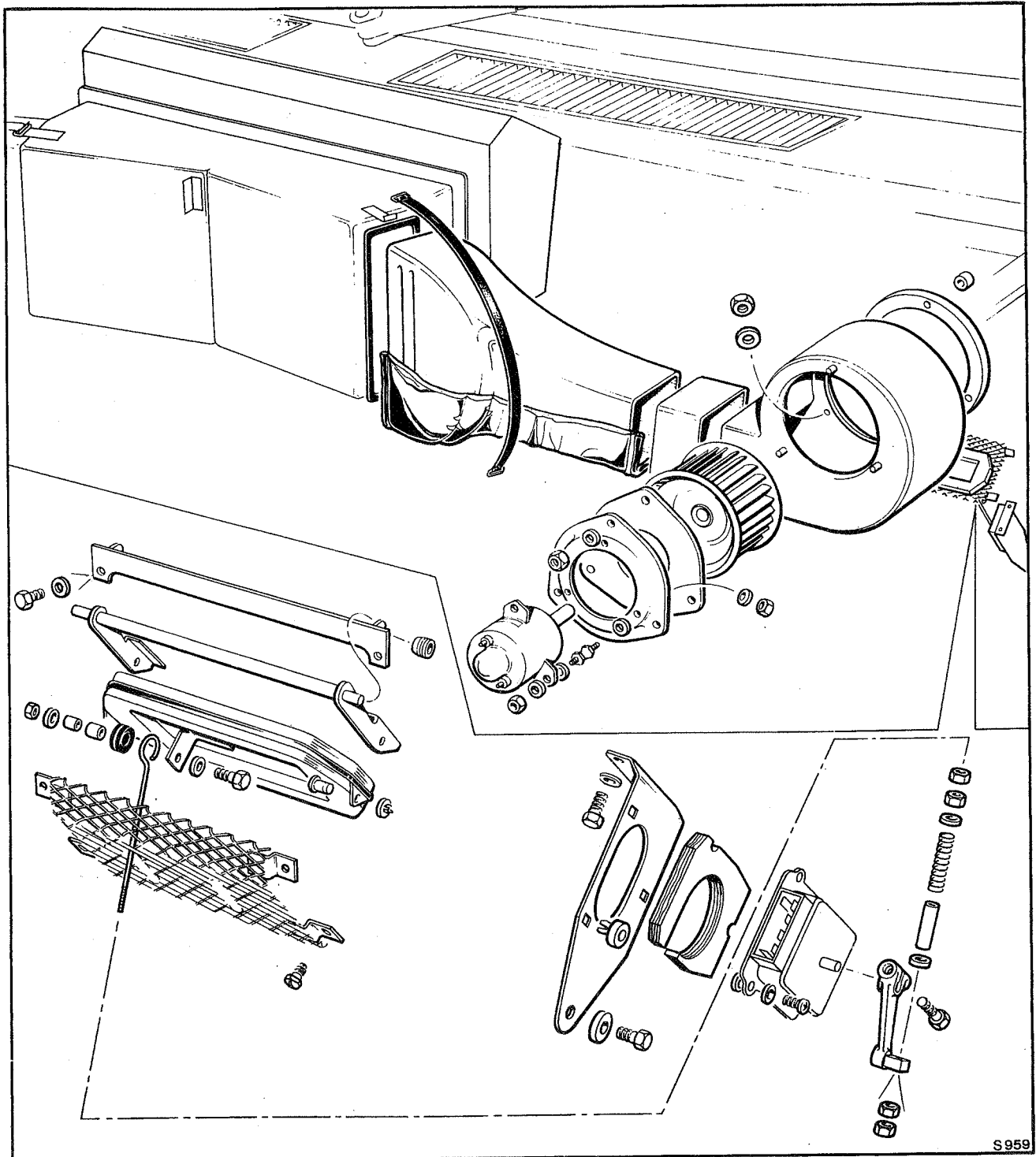


Fig. C31 Fans, recirculation flap and actuator

and a second plain washer. Place the rod through the hole in the swivel pin on the end of the lever and screw two nuts along the thread of the link rod to secure in position.

Recirculation flap - To set

1. Ensure that the pinch bolt retaining the lever to actuator shaft has been slackened.
2. Ensure that the actuator is set in the fresh air position.
3. Rotate the lever on the actuator shaft until the lever and the link rod are parallel to each other (i.e. the link rod is in line with the eye of the lever and the spindle).
4. Tighten the pinch bolt to secure the lever to the actuator spindle.
5. The two nuts on the end of the link rod should be tightened against the swivel pin until the flap is firmly seated on its lower seat, the two nuts on the end of the link rod should be locked together.
6. The two nuts threaded part way along the link rod should be set so that the spring is compressed to a length of 22 mm. to 25 mm. (0.875 in. to 1.0 in.), the nuts should be then locked together.

Recirculation flap - To check

1. Energise the actuator and set in the recirculation position and check that the flap seats on the upper seat.
2. When correctly seated, the spring should be compressed a further 3 mm. to 6 mm. (0.125 in. to 0.250 in.) as seen by the distance from the swivel pin to the lower lock-nuts.

Recirculation flap actuators - To remove

1. Disconnect the battery.
2. Remove the appropriate knee roll trim panel (see Chapter S).
3. Slacken the pinch-bolt securing the flap link lever to the actuator spindle and detach the lever from the spindle.
4. Disconnect the Lucar socket from the actuator.
5. Unscrew the screws securing the actuator to the mounting bracket and remove the actuator.

Servo assembly - To remove

1. Ensure that both flap levers are at bottom of travel
 2. Disconnect the battery.
 3. Remove the servo trim (see Chapter S).
 4. Unscrew and remove the setscrew and distance piece securing the water tap outer cable.
 5. Slacken the pinch bolt securing the water tap operating lever to the spindle and remove the lever from the spindle.
 6. Unscrew and remove the lower nut on each flap operating rod and detach rod from its trunnion.
- Do not move the upper nut.**
7. Disconnect the two Lucar sockets and two in-line Lucar connectors from the servo unit.
 8. Support the servo assembly and unscrew the four screws securing the assembly to the heater box.

9. Carefully withdraw the servo assembly from beneath the heater box ensuring that the two temperature flap operating rods pass between the two servos.

Servo module - To remove

1. The servo module can be disconnected from the edge connector without removing the servo assembly by unclipping the module from the support springs and gently easing the module from the edge connector.

Note

The two servo modules are interchangeable.

Voltage stabiliser and fan speed module - To remove

1. Disconnect the battery.
2. Remove the left-hand knee roll trim panel.
3. Detach the blue/black cable from terminal C1 of the fan switch-off relay.
4. Unscrew and remove the four screws and nuts securing the assembly.

Automatic air conditioning system diode board - To remove.

1. Disconnect the battery.
2. Remove the left-hand knee roll trim panel.
3. Remove the voltage stabiliser and fan speed module.
4. Remove the four Pozidrive screws securing the board.
5. Disconnect the three Lucar plugs and sockets and remove the board.

Lower quantity, fan switch-off and recirculation relays - To remove

1. Disconnect the battery.
2. Remove the left-hand knee roll trim panel.
3. Detach the cables from the relay terminals noting the colour of the cable and terminal identification.
4. Unscrew the two screws securing the relay body and remove the relay.

Fan delay, servo isolation and fan and compressor relays - To remove

1. Disconnect the battery.
2. Detach the cables from the relay terminals noting the colour of the cables and terminal identification.
3. Unscrew the two screws securing the relay body and remove the relay.

Rear window demister relay - To remove

The rear window demister relay is located in the luggage compartment and is removed in a similar manner to the other relays.

Compressor ambient thermostat - To remove

1. Disconnect the battery.
2. Detach the two Lucar connectors.
3. Remove the three securing screws and remove the thermostat.

Fan delay thermostat - To remove

1. Disconnect the battery.
2. Drain the coolant from the radiator into a clean container (Refer to Chapter L).
3. Detach the two Lucar connectors.
4. Unscrew the three screws securing the thermostat to the engine and remove the thermostat.

Fan motors - To remove

1. Disconnect the battery.
2. Peel back the ducting sealing strip.
3. Disconnect the two Lucar connectors.
4. Unscrew the three screws securing the fan and remove the fan.

Upper air saloon sensor (cantrail) - To remove

1. Disconnect the battery.
2. Remove the cantrail trim panel (Refer to Chapter S).
3. Detach the two Lucar connectors.
4. Unscrew the screws securing the sensor and remove the sensor.

Upper air solar sensor (top roll) - To remove

1. Disconnect the battery.
2. Remove the top roll (Refer to Chapter S).
3. Detach the two Lucar connectors.
4. Unscrew the self-tapping screws securing the sensor and remove the sensor.

Lower air saloon sensor (knee roll) - To remove

1. Disconnect the battery.
2. Remove the knee roll (Refer to Chapter S).
3. Detach the two Lucar connectors.
4. Unscrew the screws securing the sensor and remove the sensor.

Upper and lower ambient temperature sensors - To remove

1. Disconnect the battery.
2. Remove the trim from the right-hand side of the luggage compartment.
3. Detach the three Lucar connectors.
4. Remove the two setscrews securing the sensor and carefully withdraw the three leads through the rubber grommet.

Refrigeration compressor components**Refrigeration compressor - To remove**

1. Discharge the refrigerant.
2. Disconnect the battery.
3. Disconnect the two 'Lucar' terminals from the compressor clutch.
4. Unscrew and remove the setscrews that secures the clamp plate to the rear face of the compressor.
5. Withdraw the clamp plate and refrigeration pipes from the rear face of the compressor.
6. Slacken the compressor drive belts.
7. Remove the belts.

8. Unscrew and remove the three nuts securing the compressor rear mounting to the inlet manifold.
9. Unscrew and remove the nut from each of the two front mounting points. Withdraw the bolts from the mountings, collect a washer from between the compressor and mounting bracket on one side and a distance piece from the mounting on the other side.
10. Lift the compressor from the engine and lay it, sump downwards, on a bench.

Refrigeration compressor - To fit

To fit the compressor, reverse the procedure given for its removal noting the following points.

1. Fit new rubber 'O' rings between the rear face of the compressor and the unions of the refrigeration pipes.
2. After fitting the compressor the full procedure of evacuation and sweeping must be carried out before the system is charged.

Hub and drive assembly - To remove

1. Using the special clutch hub and holding tool RH 7798 (J-9403): remove and discard the compressor shaft lock-nut.
 2. Withdraw the hub and drive-plate assembly using the special puller RH 7800 (J-9401): retain the key.
- Note**
The puller must be screwed into its seat to prevent the hub and drive-plate assembly threads being damaged.
3. Remove the circlip and hub spacer washer.
 4. Examine the clutch friction face for signs of wear or overheating, and check further for the underlying cause of the damage, e.g. low coil voltage or binding of the compressor internal mechanism.

Hub and drive assembly - To fit

1. When the hub is ready for installation, clean its friction face with suitable solvent cleaner. Locate the key in the compressor shaft key-way allowing it to project approximately 4,76 mm. (0.187 in.) from the end of the key-way. Locate the hub assembly on the key-way and, using the special hub and drive-plate fitting tool RH 7799 (J-9480) and a suitable distance piece, draw the hub and drive assembly onto the shaft until there is approximately 2,38 mm. (0.094 in.) space between the frictional surfaces of the drive-plate and pulley.

Remove tool RH 7799 (J-9480) and distance piece.

Note

Do not hammer or force the assembly onto the shaft. Always use the correct tools when removing or replacing clutch parts or serious damage may result to the internal components of the compressor.

2. Fit the hub spacer washer and circlip with the convex side of the clip facing the washer.
3. Fit a new lock-nut and torque tighten to 2,07 kg.m. (15 lb.ft.). The air gap between the frictional faces should be between 0,558 mm. and 1,447 mm. (0.022 in. and 0.057 in.).

Note

The shoulder or circular projection on the lock-nut

must face toward the circlip.

4. To 'bed-in' the clutch parts, run the engine and cycle the clutch assembly by switching the refrigeration system off and on 20 times at approximately 1 second intervals.

Pulley and bearing assembly - To remove

1. Remove the hub and drive assembly.
2. Remove the circlip retaining the pulley bearing and centre shaft key.
3. Fit the special puller pilot RH 7792 (J-9395) over

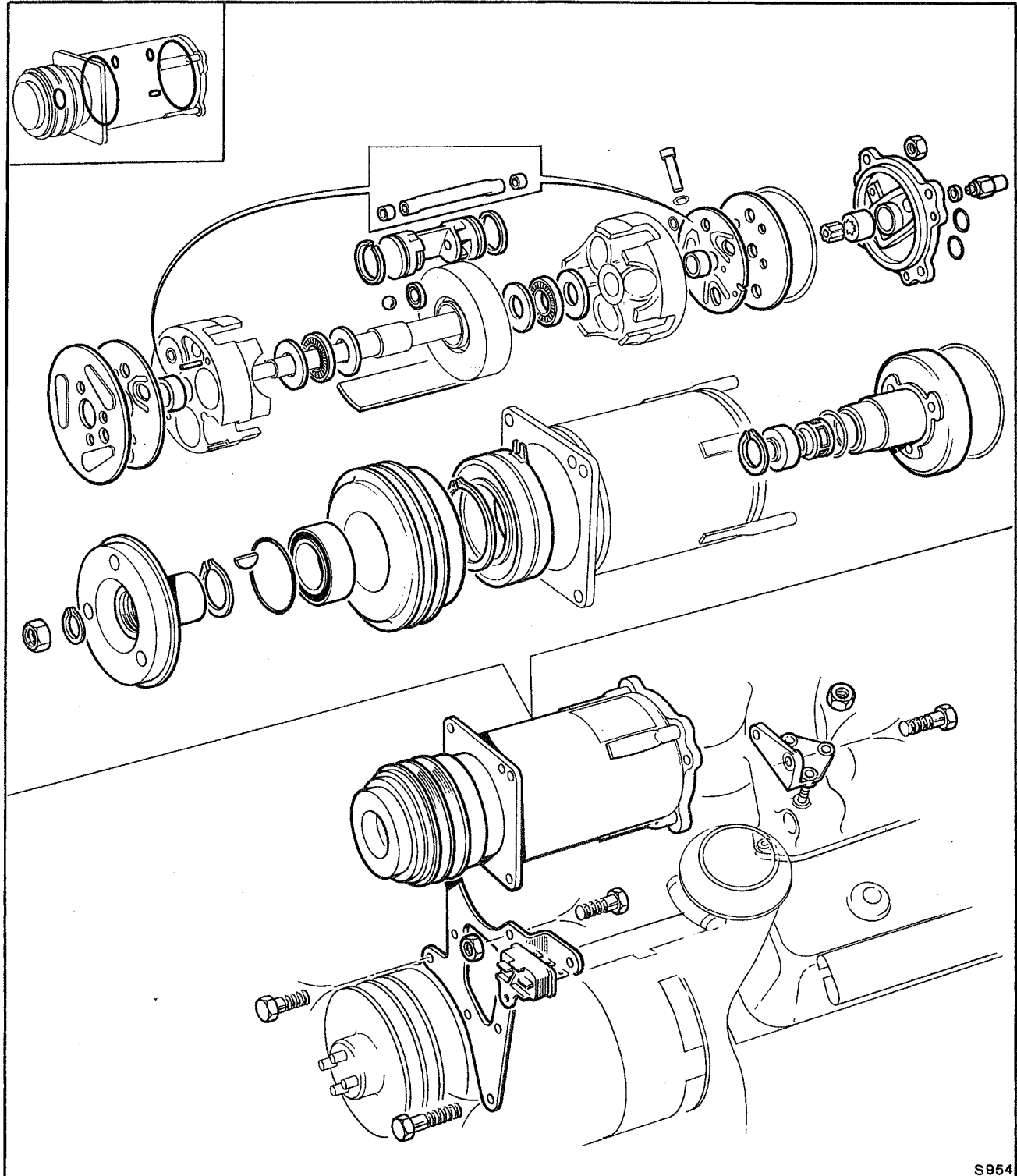


Fig. C32 Compressor and drive

the compressor shaft and using special puller RH 7791 (J-8433) withdraw the pulley assembly.

4. Check for excessive grooving in the clutch hub and drive-plate: fit new parts if necessary.

Bearing - To remove

1. With the pulley and bearing assembly removed from the compressor, use a sharp pointed instrument to remove the wire retainer ring.
2. Press the bearing out of the pulley housing using special bearing remover RH 7795 (J-9398) with handle RH 7794 (J-8092).

Bearing - To fit

1. Using the special tool RH 7796 (J-9481) and handle RH 7794 (J-8092), press the new bearing into the pulley.
2. Fit the bearing retainer ring.

Pulley and bearing assembly - To fit

1. Using special tools RH 7796 (J-9481) and RH 7794 (J-8092), press the pulley and bearing assembly onto the compressor shaft. Ensure that the pulley will rotate freely.
2. Fit the pulley retainer ring, the hub and drive-plate assembly and the retainer ring.

Coil housing - To remove

1. Following the removal of the hub and drive-plate assembly and the pulley bearing assembly, disconnect the two 'Lucar' terminals.
2. Scribe a mark on the coil housing and a corresponding mark on the compressor body.
3. Remove the circlip securing the coil to the compressor body.

Coil housing - To inspect

1. Examine the coil for loose terminals or cracked insulation.

Coil housing - To fit

1. Fit the coil housing in its correct position as indicated by the scribed marks.
2. Fit the circlip (flat face to coil housing).
3. Fit the hub and drive-plate assembly and the pulley bearing assembly.
4. Connect the 'Lucar' terminals and check the clutch for correct operation.

Compressor shaft seal assembly - To remove

1. Thoroughly clean the front head bore and fit a new 'O' ring in the bottom groove.
2. Immerse the shaft seal in clean compressor oil before fitting to prevent the shoulder from damaging the 'O' ring.
3. Using special seal installer RH 7793 (J-9392) fit the shaft seal over the flats on the compressor shaft with the carbon seal facing upwards: turn the seal installer anti-clockwise to release the seal.

4. Insert the seal seat into the front head bore taking care not to dislodge the 'O' ring: use tool RH 7802 (J-9393).

Note

The contact surface of the seal must be protected against any damage, such as scratches and nicks. Finger marks may cause surface damage.

5. Insert the retainer ring (flat side down) until the retainer rests on the seal seat. Using seal seat installer RH 7802 (J-9393), press the retainer ring until the spring pressure of the shaft seal is overcome and the retainer ring snaps into the groove in the casting bore.