

MK1 Golf Powerhood

PROBLEM: There was leaking of hydraulic fluid over the boot floor carpet. This problem firstly showed as a little leaking and no interruption in hood operation. Ultimately sufficient fluid leaked that the hood would not close and only raised 50%

It is caused by hairline cracks coming from bolts seats and travelling in the plastic casing over time.



SOLUTION: One reviewing many forums and many google searches the information was conflicting between failure in the hydraulic rams, impeller issues in the pump and leaking hydraulic fluid reservoir cap.

The Hydraulic rams are no longer available from VW UK, there is a VW UK pump repair kit available.

I checked ebay for these kits but they are on at approximately £40. VW UK genuine parts can supply these for £29.99.

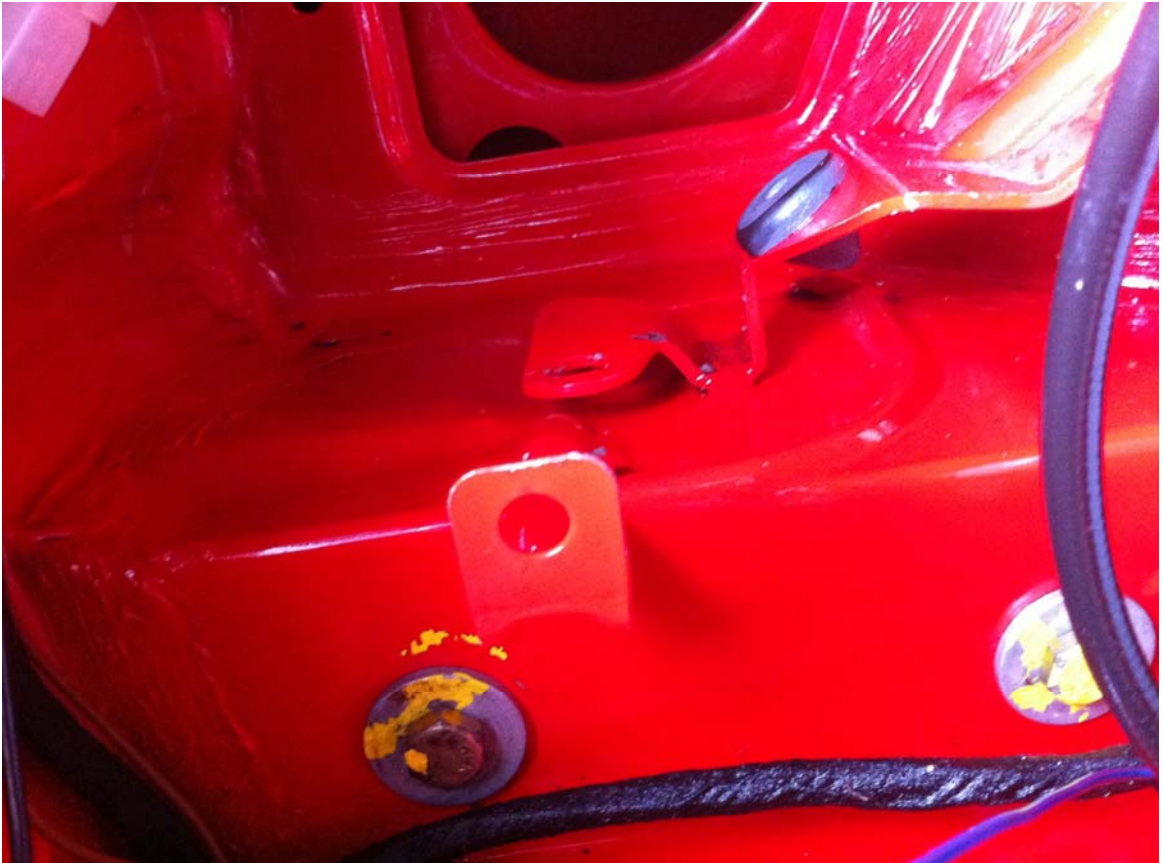
THE REPAIR:

- The kit is simply a new plastic reservoir, a rubber seal and 4no bolts
- Follow the car handbook the remove the trim piece
- Disconnect the power supply to the pump unit
- Using a10mm spanner loosen the 2no nuts which hold the pump to the inner arch bracket
- You will also need to remove some tape strapping that holds the hydraulic lines to the ram, this allows unit to site on boot floor for access and works.
- There is also a cable clip along rear panel at corner to inner arch which holds the hydraulic lines going to the drivers side ram, it gives more flexibility if you remove this also.
- Remove the filler bung using a 13mm socketand drain the white plastic reservoir of fluid, replace the bung loosely
- Turn the unit vertical so that the reservoir is upright and using a 7mm socket remove the 4no bolts which hold the plastic reservoir cover.
- Remove the cover and the existing rubber seal on the rim of brass pump housing

TOP TIPS: Take the new rubber seal wipe with new hydraulic fluid and install

Take the new plastic reservoir and heat gently with hair dryer and to allow some flexibility as it is very tight and impossible to get on with out this action.

- Push on the new reservoir cover, note the replacement is larger than the original unit, don't worry all sits fits and works perfectly
- Using the existing bolts, the replacements provided did not fit the pump unit installed on 1991 models, be very careful not to overtighten.
- Before reseating the pump you need to modify the lower rest stop so that the larger reservoir cap will fit. Remove the rubber stopper, cover bracket with a cloth and gently hammer so that the bracket sits horizontal. Replace the rubber stopper. See photo below.



- Reseat the pump housing into its original position and tighten bolts to retain, ensure that there is not too much pressure on the reservoir housing by resting it on the bottom rubber stop.
- Unscrew the filler bung and using Hydro oil spec: VW G 002 500 and a medicine syringe fill the reservoir to about 10mm below the 'min' mark. Loosely tighten the bung.
- Connect the power supply and lower the hood
- Unscrew the filler bung and using Hydro oil spec: VW G 002 500 and a medicine syringe fill the reservoir to about half way between 'min' and 'max' mark. Loosely tighten the bung.
- Raise and lower the roof 4 or 5 times and check the fluid level. Then tighten the bung firmly.



12. POWER CONVERTIBLE TOP

The electro-hydraulic power top system is shown in Fig. 12-1. A bi-directional electric motor and pump unit supplies pressure to two hydraulic cylinders that operate the top mechanism. A system control unit provides power and ground for the motor. The motor-pump unit, hydraulic cylinders and control unit are mounted in the luggage compartment.

Power is provided by the ignition switch's "SU" circuit. This means that the system is powered when the key is inserted in the ignition switch, but without switching on the ignition. Wires in the convertible top boot complete a ground circuit to inform the control unit when the boot is installed. Then the control unit interrupts power to the hydraulic pump motor. When the top is down, the boot should always be installed. For more electrical information see the wiring diagrams in **ELECTRICAL SYSTEM**.

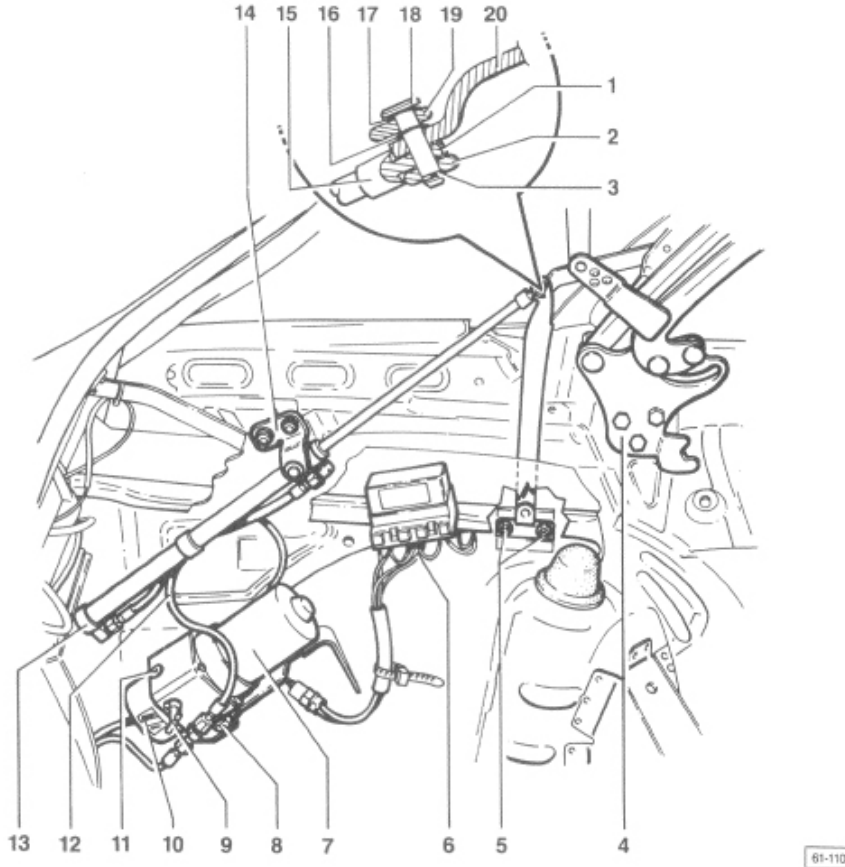


Fig. 12-1. Electro-hydraulic system to operate power top.

- | | |
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| <ul style="list-style-type: none"> 1 - Slide 2 - Guide rod 3 - Lock washer 4 - Spring washer 5 - Nuts 6 - Control unit 7 - Hydraulic pump 8 - Bonded rubber bushing 9 - Thumb-screw 10 - Hydraulic oil level indicator | <ul style="list-style-type: none"> 11 - Hydraulic oil filter plug
open/close with $\frac{3}{16}$ in. hex wrench 12 - High-pressure hydraulic hoses 13 - Hydraulic cylinder (one per side) 14 - Bracket for hydraulic cylinder 15 - Hydraulic cylinder piston rod 16 - Corrugated washer 17 - Corrugated washer 18 - Retaining bolt 19 - Guide rod 20 - Guide rod |
|--|---|

A circuit breaker above the main fuse/relay panel protects the circuit against over-load if, for example, someone trying to lower the top has neglected to unlock the front latches. It will interrupt power to the system, then cool and reset after another 30 to 35 seconds.

Emergency Operation

The boot must not be installed. To operate the top manually open the luggage compartment, find the access hole in the trim panel, and locate the T-shaped thumb-screw just inside the hole. See Fig. 12-2. The trim panel and the access hole are also visible in Fig. 12-3.

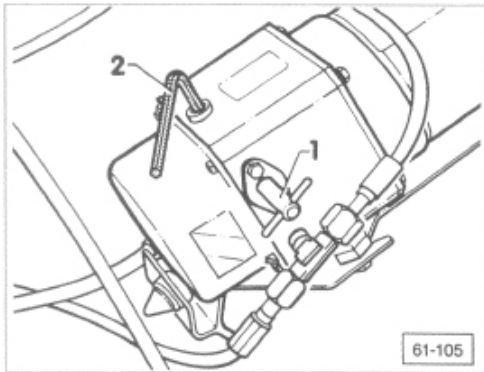


Fig. 12-2. Detail view of hydraulic pump unit, with trim panel removed, showing thumb-screw (1) and $\frac{3}{16}$ in. hex wrench (2) used to remove filler plug and check hydraulic oil level.

Turn the thumb-screw all the way to the left, counterclockwise until it stops. This opens a bypass port in the hydraulic system. The top can now be raised or lowered manually.

CAUTION —

- Take care to raise or lower both sides evenly.
- When raising the top, be sure to lock it at the front.

Bleeding the Hydraulic System

Bleeding may be required to purge air from the hydraulic system, if the top does not go up and down smoothly, or if lines have been disconnected. For access, unclip and remove the left side luggage compartment trim as shown in Fig. 12-3. The thumb-screw used to bleed the system is shown above in Fig. 12-2.

To bleed the system:

1. Turn the thumb-screw on the hydraulic pump housing all the way to the left, counterclockwise until it stops.
2. By hand, lower the convertible to its open position, raise it to its closed position, then lower it again.

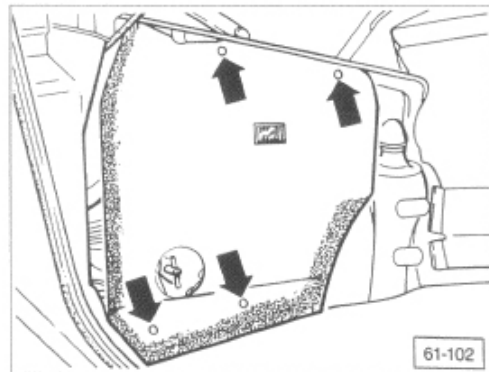


Fig. 12-3. Luggage compartment trim clips (arrows) to be removed for access to power top components. Notice location of thumb-screw access hole.

3. Turn the thumb-screw on the hydraulic pump housing all the way to the right, clockwise until it stops.
4. Check the hydraulic oil level and add oil as necessary, as described below.

CAUTION —

Hydraulic oil level must be checked with the top lowered, in the open position. Oil level is slightly lower with the top closed.

Checking and Correcting Hydraulic Oil Level

Check hydraulic oil level at the indicator on the side of the hydraulic pump housing, as shown in Fig. 12-4. The level should be between **MIN** and **MAX** marks. If the oil level is below the **MIN** mark, add oil according to the procedure that follows.

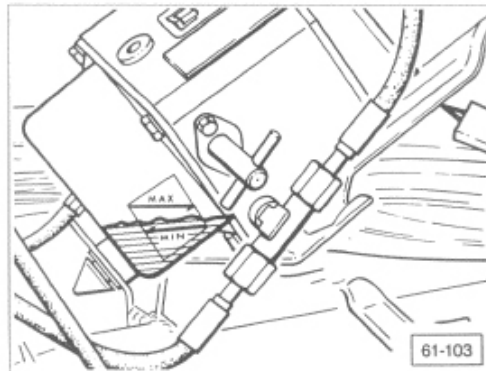


Fig. 12-4. Hydraulic oil level being checked at level indicator on pump housing. Check with top down (open).

12-44 BODY AND INTERIOR

To add hydraulic oil:

1. Use a hex wrench to open the oil filler plug, as shown earlier in Fig. 12-2.
2. Add oil through the filler hole as shown in Fig. 12-5 until the level indicated is between the **MIN** and **MAX** marks.

Hydraulic oil specification:

- Volkswagen part no. G 002 500 or equivalent

CAUTION —

• Hydraulic oil level must be checked with the top lowered, in the open position. Oil level is slightly lower with the top closed.

• Part numbers listed in this manual are provided for reference only. Always check with an authorized Volkswagen dealer Parts department for the most accurate and up-to-date information.

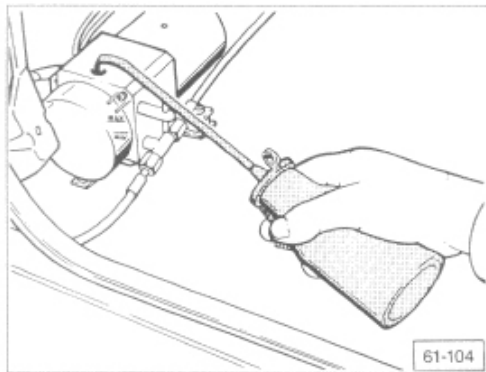


Fig. 12-5. Add hydraulic oil, Volkswagen part no. G 002 500 or equivalent, until level is between marks.

3. Reinstall the filler plug. Leave it slightly loose, just enough to allow air to slowly escape.
4. Insert the key into the ignition switch, but do not switch the ignition on.
5. Actuate the power top switch to raise and lower the top four or five times. End this step with the top lowered, in the open position.
6. Recheck the fluid level and correct it as necessary.
7. Tighten the oil filler plug.

Component Removal and Installation

There are three things to bear in mind any time the hydraulic system has to be opened. First, the system operates at very high pressure. It must be assumed that there is some residual pressure in the system at all times. Next, cleanliness is very important. Care must be taken to keep dirt or other contaminant from entering the system. Finally, it is necessary to check the hydraulic oil level and bleed the system of air any time it has been opened.

Before loosening any hydraulic fitting:

1. Disconnect the battery negative (-) terminal.
2. Slowly loosen the oil filler plug, just enough to allow air to slowly escape. There may be a hissing sound as air escapes.
3. Have a suitable container handy and be prepared to catch any oil that may escape as fittings are loosened.
4. Carefully note the location and routing of hoses before disconnecting any fittings.

CAUTION —

- Clean all connection points before loosening or removing components of the hydraulic system.
- Dirt and dust should not be allowed to enter the system.
- Cover parts that have been removed. Use plastic or paper. Do not use rags.

