

Handbrake Revival

By Bruce Smith

There isn't much in our old German cars that isn't well-engineered, especially when compared to many of the other cars made back in the day. So when something is just *sort of* doing its job, it's probably not a failure of design. And it might not even be worn out parts. Sometimes, a component could just be in need of a good cleaning.

A case in point is a sticky, crunchy, or non-locking handbrake, and fixing one can be fairly easy. A page from the 356B Catalog of Spare Parts is seen below to show what's involved, including a hexagonal brake rod and cable, the brake handle, a guide tube, and a set of locking parts. Unlike the ratcheted levers found in more common side-lift handbrakes, the 356 brake uses a spring and locking plates to capture a rod attached to a cable. It's quite a robust setup, so when it's not working right, it's probably because of decades of old grease and dirt that has accumulated.

This topic was posted a few years back on the online 356Talk Forum by Greg Scallon, Alan Kligen, and others. Coverage in the factory manuals is mostly limited to Figure 1, below. But the process of fixing the handbrake is relatively straightforward, and

many cars could benefit from the attention. If you decide to take it on, it's a task that will take just a few hours to complete, or maybe a little longer if you want to paint the parts. Afterward you'll most surely notice the improvement in function and appreciate how such a simple design is exactly right for its purpose.

Taking it Apart

To start, the entire assembly needs to be removed from the car. At the back end of the guide tube is the housing for the locking mechanism, and the hexagonal guide rod travels through it all. It's held to the bottom side of the trunk deck by two threaded studs and a pair of M6 nuts. These nuts are located in the trunk next to the fuel tank, as shown in Figure 2. The cable is attached at its end to the brake pivot crank, which is attached to the central brake cable, which in turn pulls the pair of cables going to each of the rear wheels. You'll find access to the cable attachment under the steering gear cover, in front of and to the left of the steering box. Four cheesehead screws should be securing the cover with a gasket beneath. The brake cable is attached to the pivot crank with a clevis and cotter pin. Pushing the brake lever backwards and blocking it with a small piece of wood simplifies removal and reassembly. At the bulkhead, you should also find the rubber grommet, or guide boot... if it hasn't been removed by someone in the past. This boot is there to keep out water and dirt, and it probably should be replaced with a new one. These are currently available; the part number is 644.24.216.

Once the assembly is free of the car, the handle, rod, and cable can be removed from the guide tube. The thin washer (5/1 in Figure 1), bent locking plate (5), pressure spring (6), and stop plate (7) will be left held in place only by the pressure from the spring and can be taken out of the housing. Once all of the parts are cleaned up they will look as pictured in Figure 5. Note that the locking plate has a bend at its center and the stop plate has a point. These will be used to orient the parts during assembly.

For painting the guide tube housing, I used Eastwood Chassis Black. Its epoxy formulation makes it tough as nails once cured.

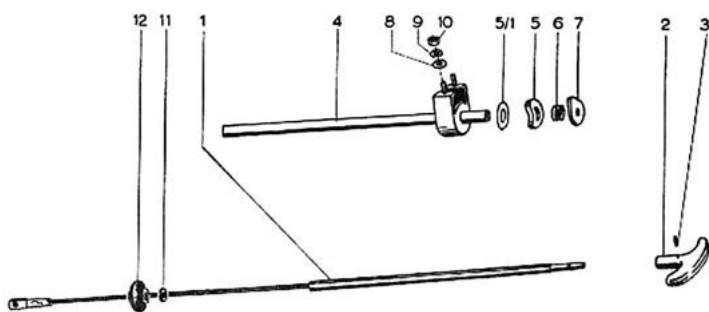


Fig. 1: A breakdown of the main handbrake parts: 1) the hexagonal rod or "brake stick" and cable, 2) the handle, 3) a roll pin, 4) the guide tube, 5) the locking plate, 5/1) the locking plate washer, 6) the pressure spring, 7) the stop plate, and 12) the rubber guide boot.



Fig. 2: The two M6 nuts holding the guide tube are found under the hood, next to the fuel tank.

Fig. 3: To the right side in the photo is the connection between the brake cable and the pivot crank. Take out the cotter and clevis pins and then the entire assembly can be removed.





Fig. 4: The handbrake assembly removed from the car. The handle with cable is simply removed from the housing. The orientations of the locking parts should be noted before they are removed.

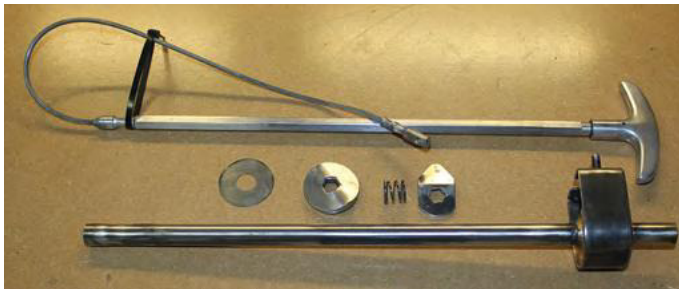


Fig. 5: All of the parts have been cleaned, and the guide tube housing has been stripped for painting. If locking replacement parts are needed, an entire kit is available as part number 644.242.31S. It may be a good idea to replace the pressure spring alone; it is part number 644.24.229.

It takes a bit longer to cure than spray enamel, but is less likely to get scratched or chipped with use.

Putting it Back Together

Having damaged or missing parts is probably unlikely, but if you do need to replace something the parts are available. The standard parts suppliers sell locking parts kits, springs, rods with cables, guide boots, and brake handles. Other used parts can be sourced if needed. Once everything is cleaned and painted, assembly can begin.

The order and orientation of the locking parts onto the rod is important. From the handle end, the order of the parts is shown in Figure 6. In use, the brake handle unlocks with about 90 degrees of rotation. The orientation of the bent locking plate is important to ensure this, and parts need to be lined up in the housing before inserting the hexagonal rod. I've used a pencil to align parts in the housing, which is then carefully removed to insert the cable and rod. It's easiest to put the other parts in before the spring, loading the spring into the stack. The correct orientation is achieved when the rod is inserted in its locked position, with the handle at about 2 and 8 o'clock (as viewed from the handle). The point of the stop plate should be fully to the right and the bend of the locking plate should be vertical. This is shown in the accompanying figures, together with photos of the assembly in unlocked and locked positions. The parts should be lightly lubricated during assembly. I've coated parts with a Teflon-silicone spray that PB Blaster makes for garage doors. It's designed to dry tack-free and reduce the accumulation of dust and dirt. A light coating of grease to the guide tube and parts would work fine as well, and is probably what the factory did.

Getting it into the Car

The assembled unit can now be put back into position in the car using M6 nuts and washers threaded onto the studs under the hood. Prior to reattaching the cable, the rubber guide boot (Figure 10)

Fig. 6: This shows the order of the washer, locking plate, spring, and stop plate on the hexagonal rod outside of the housing. To assemble, the locking parts should be placed in the housing before inserting the rod and cable.



Fig. 7: Parts are being lined up in the housing prior to inserting the rod, using a pencil to keep them in place. Put the spring in after the other parts. Remove the pencil and feed the guide rod in while carefully aligning the parts.

should be installed. The cable is threaded through the boot and it is pushed into the opening in the bulkhead. Pushing it firmly in place may require accessing it from beneath the car, which can be done after everything else. Once in place, the end of the cable is not in the same orientation as the receiver in the brake lever. This is because a

Fig. 8: Here is the orientation of the parts in the locked position, with the handle pointing at about 2 and 8 o'clock (facing the handle). The bend in the locking plate is vertical and the stop plate is pointing to the far right when facing the handle, or to the far left as pictured here from the backside.



Fig. 9: Here are the parts in the unlocking position. The stop plate is now pointing to the left facing the handle, or to the right from the back side, and the bend in the locking plate is nearly horizontal.



twist needs to be put into the cable prior to assembly, which will cause the handle to return to the clockwise or locked position. The cable should thus be twisted about a quarter turn clockwise to ensure this. To unlock, the handle is rotated counterclockwise about 90 degrees. It should then return on its own to the locked position as the brake is disengaged.

Fig. 10: This is the rubber cable guide boot that should be installed before attaching the cable to the brake lever.



Fig. 11: This is the end of the cable as it meets the brake pivot. It will only fit into the receiver with a twist.



Fig. 12: Here is the cable inserted after twisting it a bit more than a quarter turn clockwise (viewed from the handle), with clevis and cotter pins inserted. The wooden block I mentioned in the text is still in place to keep the brake lever within reach.



Fig. 13: With the block removed and the handbrake fully inserted, there should be some slack in the cable when it is disengaged. This allows for some pull of the handbrake handle before engaging the brake.



Fig. 14: Restored and repainted; reviving the handbrake assembly is a fairly easy job.

Job Done

When everything is together, it's pretty easy to confirm whether or not you've got it right. If you have, you'll learn how nicely a clean, working handbrake is supposed to operate. If it isn't engaging, locking, or unlocking as it should, it's pretty easy to remove things and retrace your steps. Once I finished this job for my '60 cabriolet, I regretted not doing it years ago for my '63 coupe. The problem was, I never knew that it wasn't working right—it was just a little finicky sometimes. Well, Porsche never did "finicky." So I repeated the job on the other car. Now, for a few bucks and a few hours' time, I've got smoothly functioning handbrakes in both cars that work just how they were designed to. ³⁵⁶

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