Maintaining and Repairing the Healey Throttle Linkage

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Our article in the previous issue on pre-season maintenance, listed the throttle linkage as one of the components to check and repair if it's not functioning properly. Here Norman Nock takes us through the points we need to check and recommends repairs and upgrades that can restore the effectiveness of the linkage.

The Healey throttle linkage relies on shafts and ball joints to transmit the movement of the accelerator to the carburetors to open and close the throttle butterfly discs. (Why the Healey, in all its years of being produced alongside the MGs at Abingdon, never was converted to the much simpler throttle cable system is beyond us.)

The general problem is that there is a whole series of points of wear, and over the years the result is that the accelerator pedal can move back and forth quite a distance before the flow of fuel into the engine is changed at all. A side consequence is that the car doesn't feel as responsive as it once did.

I'll first review the details of the throtttle linkage used on the six-cylinder cars from BN4 to BJ8 since it is more complicated, and then show how to do the same servicing on the system in the four-cylinder cars.

Six-cylinder Throttle Linkage

Start by having a person sit in the car and move the accelerator pedal while you watch the movement of the arm marked (1) in the diagram. If the pedal can be moved any distance at all without moving that arm, then you have wear in the linkage.

Start by watching the accelerator pedal shaft (8) and arm (2), and if the shaft is moving without moving the arm, tighten the nut and bolt at the end of the arm. This can be reached with a long 3/8 drive bar extension and socket.

The next most common wear problem is the 15-inch shaft that runs from footwell to footwell above the clutch housing, held in place by the bushings and mounting brackets (3). While your friend is still moving the accelerator pedal, look directly above the starter solenoid at the shaft where it goes into the felt bushing in the bracket on the right side of the car.

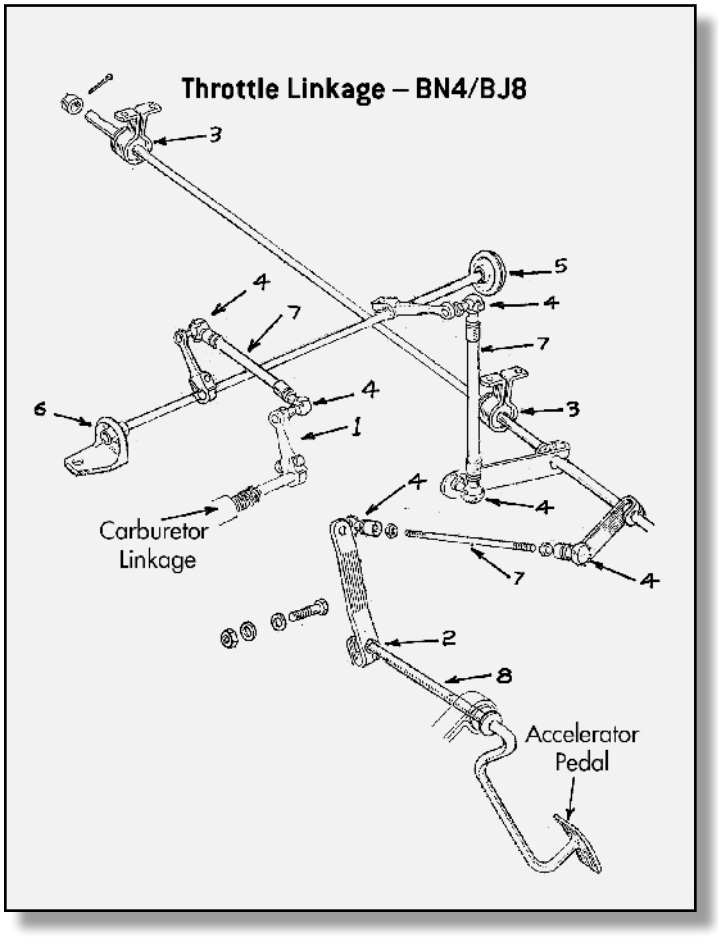
If the shaft moves up and down, then the bushings at each end of the shaft will need replacing. British Car Specialists has had these bushings made out of Teflon, which gives a very smooth movement.

Replacing the shaft bushings can be done most conveniently from under the bonnet on the right side, and from below the car on the left side. I recommend you remove the transmission tunnel cover to make this repair a little easier.

The pedal shaft (8) goes through the pedal box. At each end of the shaft is a mounting bracket that is the same as the ones on the 15-inch shaft. If this shaft is moving up and down, these felt bushings should also be replaced with the Teflon bushings.

Next, check the ball joints that connect the linkage. There are six ball joints in the system, labeled (4). The nuts that hold these ball joints in place can come loose and fall off. The joint should have a spring washer below this nut; if not, the nut will come loose. The ball inside the joint will wear and the ball joint will separate. Try to pop off the ball joint. If it comes apart, it should be replaced.

A shaft above the engine is held in place by two fixtures, (5) and (6). The accelerator shaft bushing (5) can come out of its



hole, or it can just fall apart with age. If it is old and worn, replace it. The other end of the shaft is a bracket made of plastic (6). The bracket and the bush can be damaged when the transmission is removed.

There are three threaded shafts (7) that make the connections between the ball joints. Make sure the nuts on the shafts are snugged up against the ball joints and the joints are aligned.

BN1/BN2 Throttle Linkage

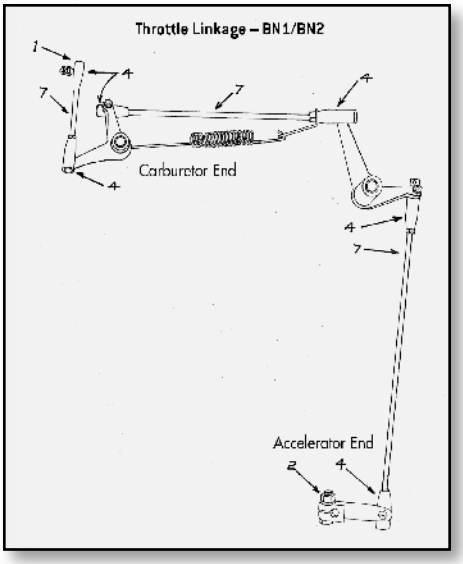
The diagram on the right illustrates the throttle linkage on the four-cylinder Austin-Healeys, the BN1 and BN2. This throttle linkage, being much less complex, is generally trouble-free, but some problems do show up.

Referring to the recommendations for the six-cylinder throttle linkage, the problem areas labeled (1), (2), (4), and (7) are the same and the repairs are much the same.

The ball joints at (1) and (4) can wear and separate, and the nut on the ball joint can come loose. If these problems exist, the ball joints need to be replaced.

The shaft at (2) can move inside the arm. This is repaired by tightening the nut and bolt holding the arm to the shaft.

The nuts on the threaded shafts at (7) can come loose and the connected components can get out of alignment. This is repaired by realigning the components and tightening the nuts. Fix the throttle linkage and it will feel as if you've found more horesepower.

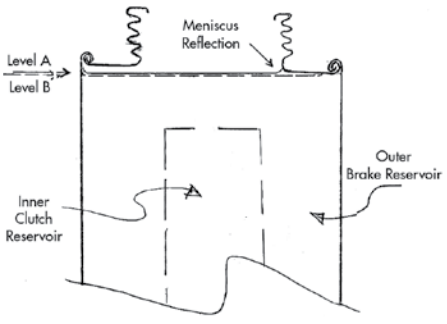


Tech Tips

by Roger Moment

Here is a slick way to tell if you are starting to lose fluid from your brake or brake/clutch reservoir. Typically you unscrew the top and look to see if the level is noticeably down. The Driver's Handbook says fluid should be topped up to just below the filler neck, but it might be down a quarter-inch or more to be obviously low. By then you could be losing brake fluid at a trickle, or the rate of loss could be accelerating, making the need to sort out the problem more urgent.

The drawing below shows a cross-section of the hydraulic reservoir. For 100s there is just the outer can, while for the 100-Six and 3000s with dual reservoirs the outer can is for the brake system and the inner one is for the clutch. In either case, the fluid has just a plain surface up near the base of the filler neck. With the dual reservoirs, after it drops down to the top edge of the inner can, further drop will occur in either the outer or inner reservoirs, depending on whether the leak is in the brake or clutch system. This is a good way to diagnose where the problem lies.

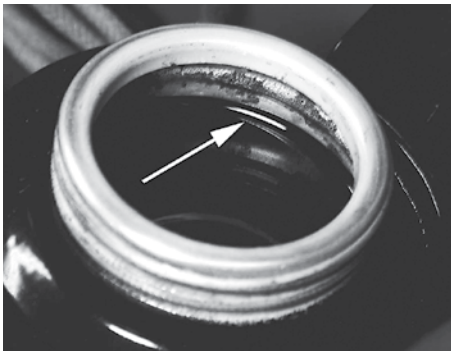


Cross-section of Brake or Brake/Clutch Reservoir

However, well before the fluid drops this far, it is important to know if you have a leak developing. What I do is fill the fluid just to level A as shown in the drawing. Because the reservoir is not perfectly vertical in the car, the liquid will contact one side of the edge at the base of the neck first, and this is shown by the arrow marked "Meniscus Reflection".

Because of the geometry, if the fluid drops only a few thousandths of an inch, to level B, this point of contact will move out from the neck towards the inside of the can wall. In doing so, the curved region of the meniscus moves outwards, and the reflection disappears. If you top off just to the point where you see a reflection at the neck base, then when you subsequently check fluid level, you should still see the reflection if no fluid has been lost, and lack of the reflection will tell you that the level has dropped. Some fluid will evaporate over time, so keep this in mind if you don't check the level very often.

The photos at right show the liquid both at the "topping-off" point and slightly lower. To create the second condition, I drew out only about 3cc of liquid using a syringe. Even less loss of liquid might be detectable, depending just how close to the bottom edge of the neck you initially filled to.



Arrow points to meniscus reflection, caused by liquid just contacting the base of the threaded filler neck.

Fluid level has dropped only a few thousandths of an inch and meniscus reflection has disappeared. Compare with photo just above.