OK so this may have been covered before, if so please can someone add references...

This all started with trying to get the air con working after a quarter century...ended up replacing the compressor by dropping the subframe and in the process replacing the subframe mounts. Accidentally hit the brake wear sensor cable with a hammer whilst trying to do something that probably didn't require a hammer, so decided to refurb the heavily deterioated brake wear and abs sensor cables. Tried removing the ABS sensor, big mistake.

First off, if you want to remove the front ABS sensors on the 107 the trick is to use the metal bracket (that screws over the top of the sensor connector) as a kind of spanner to turn the sensor head and twist it out (along with some penetrating oil). Do not under any circumstances try to get a flat head screwdriver under the sensor head, as this will almost certainly break the plastic head off the sensor leaving you with the fun job of drilling and chiseling out the sensor body and then trying to source a replacement. These seem to run to 100-250 US dollars/UK quids if you can find them, depending on if you source MB or Bosch or other aftermarket. This was a price I was not prepared to pay for a few thousand meters of copper hair wound around a magnet.

Previously I discovered that a W124 rear abs sensor will fit the 107 by simply removing the plug (R107 ABS Warning Light). I had also heard the W126 sensors are identical to the 107. This made me wonder if other ABS sensors of the same era are also interchangeable from different makes. It turns out they are, but with a bit of modification.

For reference, I believe the following part numbers are interchangeable for the front sensors:
MB: 1075400017 1265402517 1265402617
Bosch (OEM): 0265001012 0265001013

Searching ebay for ABS sensors, of those that are similar to the MB ones BMW/Porsche/Audi/Ford/Volvo, it turns out the Volvo sensors are the most similar and the cheapest. It looked as though the main cylindrical metal part was identical, only the tip was elongated. Since the tip is simply a soft metal magnet, there is no reason it can't be cut down and filed off. A quick call to bosch for their version of the volvo part confirmed the same resitance across the sensor as on my merc, meaning the length of the sensor coil is the same. So I ordered two Volvo 740 sensors at £20/each.

On arrival I checked the sensor would fit in the hole and found the diameter was identical. Then I checked the Bosch website for sensor dimensions (some of the bosch sensor product pages for the original part numbers above have engineering drawings, some photos, some nothing). I also measured the depth of the port to the toothed disc on the hub, and found it to be 46.2mm deep. Since the sensor head was 11.3mm thick this corresponded pretty well to the 57.3mm I found on one of the bosch pages.

I used a combination of dremel, hand files and hacksaw to cut the sensor tip down and shape it the same as the original MB sensor. This photo shows the new volvo sensor (right) and the modified version to fit the 107 (left).

I was careful to cut the groove in the tip to match the original *perpendicular* to the axis of the sensor head.

Once I was done fettling the tip I was able to get something looking like this. What's left of the original MB sensor is on the right, the modified Volvo sensor on the left.

Some close up pics of the modified Volvo/Lemark sensor tip:




And the MB/Bosch original:

I also had to cut down the plastic head of the sensor to twist the sensor head into place on the car. This photo shows the original MB/Bosch sensor head (top) and the modified Volvo/Lemark sensor head (bottom).

Once installed it works perfectly, with the ABS light coming on at ignition and staying off after. I haven't tested it on ice/emergency breaking yet(!), but understanding the physics of these sensors there is no reason it shouldn't work to engage the ABS, and in any case it must be outputting a reasonable wheel speed sine wave to the ABS computer otherwise the light would come on.

The Volvo sensor was made by Lemark (Standard Motor Products or SMP). These are the volvo and cross-reference part numbers:

VOLVO 3515092
VOLVO 9127410
Bosch 0265 001 231
Lemark LAB291
C.I. XABS531
FUELPARTS AB1462
INTERMOTOR 60074
LUCAS CAV ELABS126
MOTAQUIP LVAB585

I'm fairly sure the same trick will work on the back sensor (possibly even using the same volvo sensor). The key thing is the sensor resistance needs to be in the right range. Bosch quoted 0.9 - 1.8 kOhm for the volvo front sensor. From memory the MB rear is less (0.6 k?), but there will be a 1k range on any of the sensors. The volvo one I just installed

measured 1.1k. I have a feeling a sensor from a BMW 5 Series E39 525 tds 130mm sensor (e.g. https://www.ebay.co.uk/itm/Fits-BMW...e=STRK:MEBIDX:IT&_trksid=p2060353.m1438.l2649) will work (Intermotor part INTERA062718). I guess Bosch must have used the same ABS computer on all of these cars in the 80s and early 90s.

Now on to replacing the brake pipes that just exploded during the MOT test...