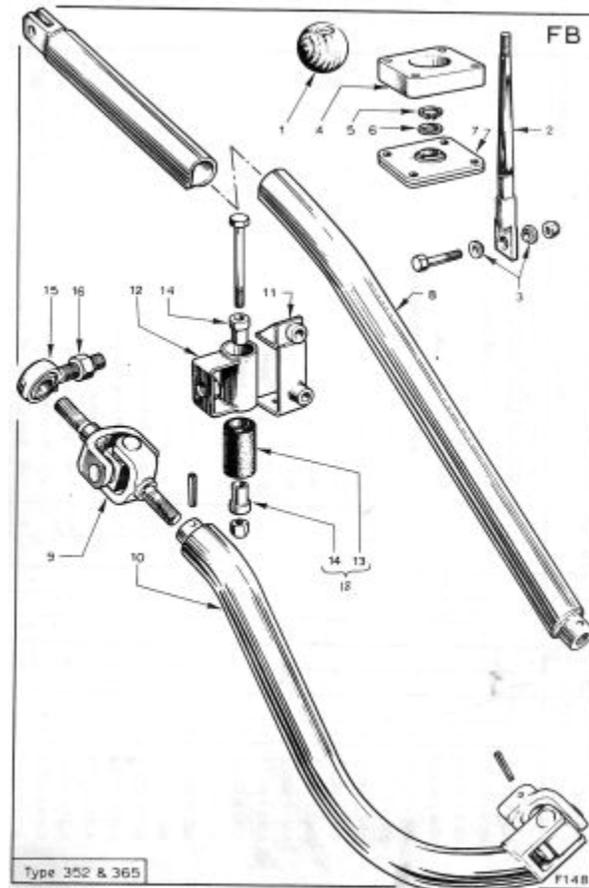


This may or may not be helpful to updating the shift linkage on a 365 transmission.

The Europa had been sitting for about 40 years. The shift linkage was sloppy and I could not engage 5th with the shifter, even though I could by rotating the rear U joint by hand. Theoretically, it meant the linkage was poor and the transmission was OK. The purchased part number references are from RD Enterprises.

I looked at the OEM parts list in the service manual:



I decided I needed parts #3 (RD # 46F6153BA Bolt w/bushes & nut \$26.00), #13 (50C6042 \$25.55 each) and it's bushes (74F0219 \$8.00 each (2 per car)) to get me going. If you're lucky enough to have the service manual it somewhat vaguely describes how to remove the shift linkage. There is additional help on line and I find this - [Lotus Europa Community - Index](#) to be a pretty good source. However, neither of those told me I needed very skinny arms and long fingers with the strength of 10 men but I suppose that is a given when working on a Lotus.

Couple of tips. String is useful. Tie it to the top of the shift lever before you remove it to assist with dropping, aligning and moving it about while it is in the center tunnel. Also, tie it to the forked end of the shift lever (front) tube before you pull that out.

The issue with not being able to get to 5th gear had to do with the clocking of the transmission to depress the 5th gear detent at the back of the transmission.

This is in reverse with the reverse detent depressed.

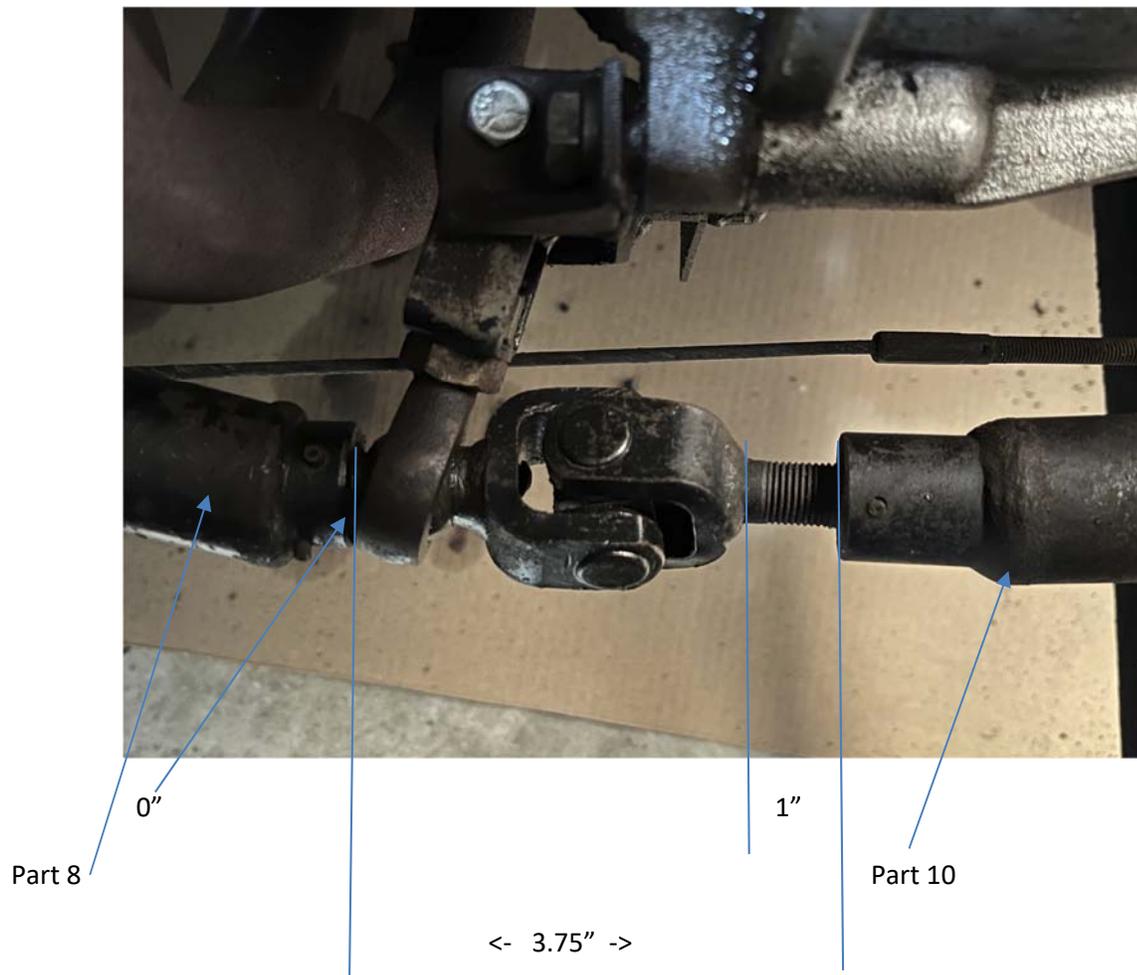
To get to 5th the transmission needs to be moved clockwise far enough to depress the lower detent



Something had either worn or moved to allow too much slop in the shift linkage.

As I knew I had reverse and gears 1 through 4 I knew I had the proper amount of fore/aft travel to (eventually) access all of the gears. Just not the rotation. I figured the new parts from RD would tidy things up and I would be shifting happily.

Generally before I take anything apart I take pictures and measurements to make sure I can get back at least to where I started.



It becomes important down the road.

I removed everything:

- Gearshift knob.
- Center console
- Unbolted and loosened parts 13 & 14, as well as 11
- Unbolted the gearshift housing (4) and let the gearshift (with string) drop in to the center console.
- Removed the 1/8th inch roller pin from the U joint on the transmission end of part #10
- Pulled the shift tubes back until part # 3 was visible through the hole in the top of the center tunnel. Undid the nut/bolt and separated the shift lever from the tube. The original bushes that were supposed to be there had deteriorated. I tied string to the forks on the front of the forward shift tube before removing it.

- Working alternately at the rear of the car and the center u joint I removed the shifter from the car. The string is important for me as it leaves a path of exactly the way it has to go back in, lest I forget.

I replaced the parts I had bought from RD and put everything back in, the reverse of the above. Some people say that you can accomplish all of that in 2-3 hours. It took me closer to 6-7 hours. The gear shift felt much tidier. A quick run up through the gears and..... no 5th. It still wouldn't clock far enough to press the detent down.

Now order part number 74F0194R \$229.00 from RD as there is too much pay in the center ujoint and there are already 2 sets of holes where prior owners had reset the tubes. I also ordered part #15 (which comes with 16) but I don't remember the part number and I don't think it shows on the RD site, though he has it. My old one had become permanently rusted to the old part.

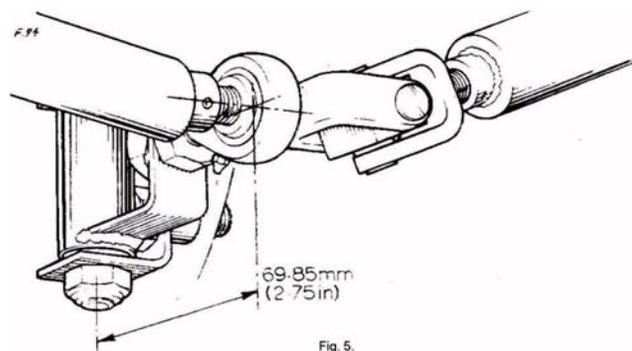
Revert to the prior removal process, do it again. Next, pound out the pins holding the center U joint to the tubes. Mine were a bit of work to get out and someone had put a half pin in that needed to be drilled out. When everything was apart I retapped the tubes to insure the threads were OK.

Get the part from RD. Uh oh, it's longer that the original U joint.



Each end of the above part is threaded to fit the proper tube. I test fit the pieces together and had about 4 1/8th, longer than the 3.75" I knew allowed the linkage to engage the gears. The end that fits in the forward tube (8) couldn't screw in all the way due to a bend in the tube, plus I needed part 15 to come up flush with the end of the forward tube (8). I took off about 1/4" of the threaded end to get it to fit.

Trial fitting part 15 was next. It needed to be against the forward tube and the service manual states it needs 2.75" of throw from the center of the bolt holding it to the bellhousing bracket to the centerline of the U joint. My old one had that dimension as well.



Here the threaded end of part 15 was about $\frac{1}{4}$ " long to allow that to happen. Remove $\frac{1}{4}$ ", refit, done.

The new U joint from RD has lock nuts at either end to fit it to the forward and rear tubes. I needed a total length of 3.75" and zero distance between part 15 and the forward tube. The forward locknut was discarded and I drilled through one of the existing holes in the forward tube and the new U joint from RD and fit a roll pin to hold that in place. I now had the dimensions for the forward tube and part 15 correct.

Measuring the so far completed assembly gave me about $3\frac{7}{8}$ " including the lock nut for the rear tube, a bit longer that I would like. I ground down the lock nut by $\frac{1}{8}$ " and had the proper dimensions.

Put it all back together. I have the center u joint in with about $\frac{1}{8}$ " of adjustment left.



This conveniently gave me 360 degrees of rotation to be able to clock the rear ujoint correctly. The forward and rear tubes are together with the center U joint. Feed the forward tube in to the tunnel with the string as a guide – pull the string a little, push the tube a little. When the end of the forward tube appears in the cutout in the tunnel it was time to put the gearshift on the end of the forward tube. Using the new bushes (part number 3) from RD proved to be nominally challenging as the fit snugly as they are supposed to – takes a bit of work to get them together. Once done I pulled the gearshift through the center tunnel but didn't bolt it in place yet. Next I went to the center u joint and moved that roughly in place without bolting it. I then fit the rear ujoint to the transmission with the roll pin.

Next, fit part 12 to part 11 with the bolt – snug but not tight. Next tighten the gearshift in place with the 4 bolts.

To get the clocking correct I set the gear shift in the approximate location of reverse. Remember the lock nut to the rear tube is still loose and allows that tube to rotate. Go to the ujoint at the back of the transmission and put it in reverse by hand moving that. Looked at from the back of the car the ujoint needs to be all the way in and all the way anticlockwise to depress the lockout.



I then tightened down the rear locknut. Got in the car. Shifted through the gears. Looked like I had them! Went for a ride and low and behold, all of the gears (including 5th) and it shifts crisply and smoothly!

The above is one persons trials and tribulations in fixing a shift linkage. Hope it's helpful, if not you can always hit delete.....