

## TRANSMISSION SERVICING - M/T

### Article Text

1987 Volkswagen Quantum/Quantum Syncro

For Volkswagen Technical Site

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Sunday, March 19, 2000 01:55AM

## ARTICLE BEGINNING

### MANUAL TRANSMISSION SERVICING

1987 Volkswagen

Cabriolet, Fox, Golf, GTI, Jetta, Quantum, Scirocco,  
Vanagon

## LUBRICATION SERVICE INTERVALS

No oil changes are required. Check oil every 15,000 miles.

## FLUID LEVEL

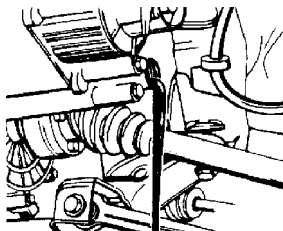
### FOX, QUANTUM, SCIROCCO, VANAGON

Check lubricant level at fill hole. Lubricant should be level with bottom of fill hole.

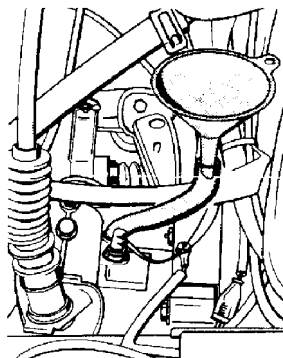
### CABRIOLET, GOLF, GTI & JETTA

1) Because of transaxle mounting angle, oil will run out of checking hole even though transaxle is filled to capacity. To check oil level, place vehicle on level surface.

2) Remove oil filler plug. Allow oil to drain off until level with edge of hole. See Fig. 1. Remove speedometer cable at transaxle. Pour in .5 qt. (.5L) of fluid.



CHECKING



ADDING

Fig. 1: Checking & Adding Fluid to Cabriolet, Golf, GTI & Jetta  
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## RECOMMENDED FLUID

Use API GL-4, SAE 80W or 80W-90.

## FLUID CAPACITY

### TRANSMISSION REFILL CAPACITIES TABLE

AA

Application	Qts. (L)
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Cabriolet, Golf, GTI, Jetta, Quantum & Scirocco	
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5-Speed .....	2.1 (2.0)
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Fox .....	1.8 (1.7)
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Vanagon	
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091/1 (2WD) .....	3.2 (3.0)
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094 (4WD) .....	4.7 (4.5)
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AA

## GEARSHIFT LINKAGE ADJUSTMENTS

### CABRIOLET, GOLF, GTI & JETTA

1) Place shift lever in Neutral. Loosen shifter rod clamp.  
See Fig. 2. Selector lever must move freely on shifter rod.

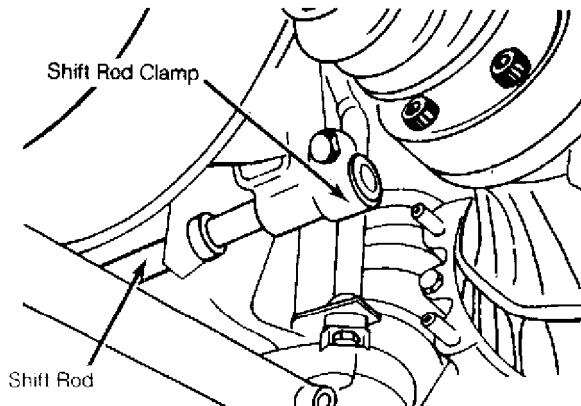


Fig. 2: Shift Rod Clamp Location (Cabriolet, Golf, GTI & Jetta  
Courtesy of Volkswagen United States, Inc.

2) Remove gearshift knob and boot. Position Adjustment Gauge (3104) over shift rod. See Fig. 3. With transaxle in Neutral, align shift rod with selector lever. Tighten shifter rod clamp to 19 ft. lbs. (26 N.m).

3) Move gearshift lever through entire range of gear selection, including Reverse. Gears must engage smoothly and without jamming. Reinstall gearshift knob and boot.

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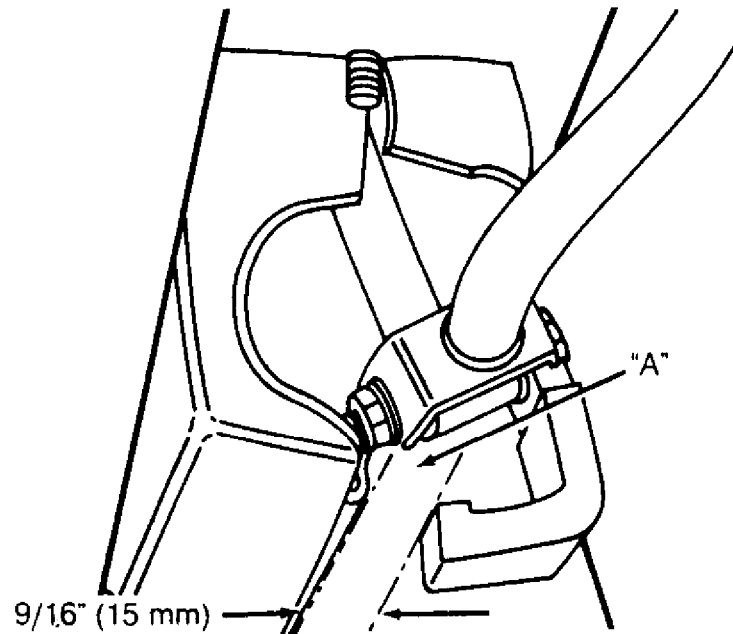


Fig. 3: Adjustment Gauge Location  
Courtesy of Volkswagen United States, Inc.

### FOX

1) Shift transaxle into 1st gear. Push gearshift lever to left stop. Release lever. If lever does not spring back 1/4-3/8" (5-10 mm) to right, move gearshift lever in slots. If adjustment does not correct hard shifting, go to step 2).

2) Place gearshift lever in Neutral. Remove gearshift lever and shift boot. Loosen shift rod clamp nut. See Fig. 4.

3) Ensure shift finger slides freely on shift rod. Move gearshift lever to right side, between 3rd and 4th gear positions. Gearshift lever should remain perpendicular to ball housing.

4) With inner shift lever in Neutral, and gearshift lever between 3rd and 4th gear, tighten clamp nut. Ensure transaxle shifts smoothly. If necessary, adjust gearshift lever bearing housing.

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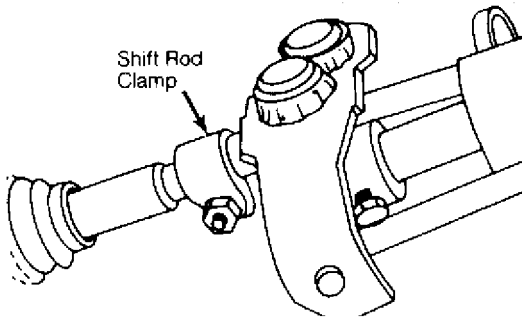


Fig. 4: Shift Rod Clamp Nut For Fox  
Courtesy of Volkswagen United States, Inc.

### SCIROCCO

1) Pull boot off housing. Loosen shift rod clamp bolt so lever moves freely on shift rod. Adjust shift finger in center of lock-out plate so that an equal distance is obtained on both sides of shift finger. See Fig. 5.

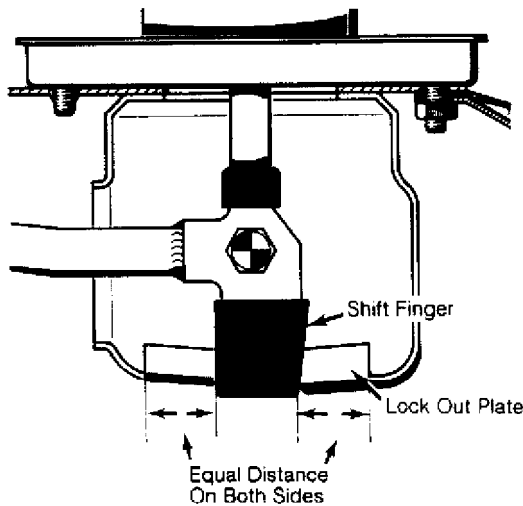


Fig. 5: Adjusting Scirocco Shift Finger  
Courtesy of Volkswagen United States, Inc.

2) Adjust shift rod end so distance "A" is 9/16" (15 mm). See Fig. 6. Tighten shift rod clamp to 14 ft. lbs. (20 N.m). If shift linkage is spongy or jamming after adjustment, change distance "A" to 1/2" (13 mm). If shift linkage will not stay adjusted, install a new clamp bolt and lock nut.

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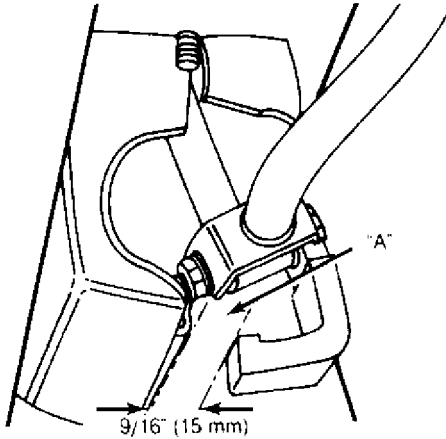


Fig. 6: Adjusting Scirocco Shift Rod End  
Courtesy of Volkswagen United States, Inc.

### QUANTUM

1) Shift transaxle into 1st gear. Push gearshift lever to left stop. Release lever. Lever must spring back 1/4-3/8" (5-10 mm) to right.

2) Shift into 5th gear. Push gearshift lever to right stop. Release lever. Lever must spring back 1/4-3/8" (5-10 mm) to left.

3) If lever does not react as described, remove center console. Loosen retaining bolts, move gearshift lever housing slightly sideways in slots. Tighten bolts. If this adjustment does not correct hard shifting, proceed to step 4).

4) Place gearshift lever in Neutral. From under vehicle, loosen shift rod clamp nut so shift finger slides freely on shift rod. See Fig. 4. Remove shift lever knob and rubber boot.

5) Loosen gearshift lever housing bolts, align round centering holes and tighten bolts. Install Linkage Adjustment Gauge (3057) with locating pin toward front. See Fig. 7. Push shift lever to "5/R" gear position of gauge. Tighten lower knurled knob on gauge.

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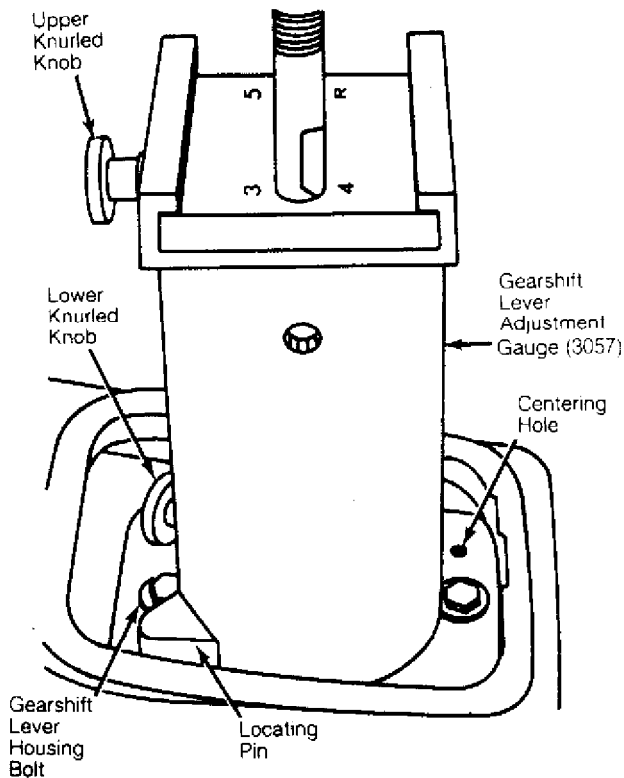


Fig. 7: Adjusting Quantum Gearshift Linkage  
Courtesy of Volkswagen United States, Inc.

6) Move shift lever and slide to right stop. Tighten upper knurled knob on gauge. Push shift lever into "3/4" gear position of gauge. Adjust shift rod and finger with transaxle in Neutral. Tighten shift rod clamp nut and remove gauge.

7) Place gearshift lever in 1st gear, press to left stop and release. Shift lever must spring back to right. Place lever in 5th gear, push shift lever to right stop and release. Shift lever must spring back to left.

8) If gearshift lever does not spring back as indicated, move gearshift lever housing slightly sideways in slots. Ensure all gears engage easily and without jamming, particularly reverse gear stop. Install shift boot and lever knob.

NOTE: All 4WD transaxle linkage adjustment should be performed only when gearshift lever adjustment cannot be corrected or after a repair which involved loosening shift rod clamp.

### QUANTUM SYNCRO

1) Shift transaxle into 1st gear. Push gearshift lever to left stop. Release lever. Lever should spring back 1/4-3/8" (5-10 mm) to right.

2) Shift transaxle into 5th gear. Push gearshift lever to right stop. Release lever. Lever should spring back 1/4-3/8" (5-10 mm) to left.

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3) If gearshift lever does not respond as described in steps 1) and 2), remove shift knob. Remove lower center console.

4) Loosen 4 housing retaining bolts. See Fig. 8. Move gearshift lever slightly in slots. Tighten bolts.

5) If still not adjusted, place transaxle in Neutral. Loosen 4 bolts. Align centering holes of stop plate and bearing support. Tighten bolts. Install Adjusting Gauge (3048).

6) Loosen clamp between front and rear shift rods under vehicle. Allow rear rod to center itself. Tighten clamp nut to 11 ft. lbs. (15 N.m). Remove adjusting gauge. Ensure transaxle shifts correctly. Install console and boot.

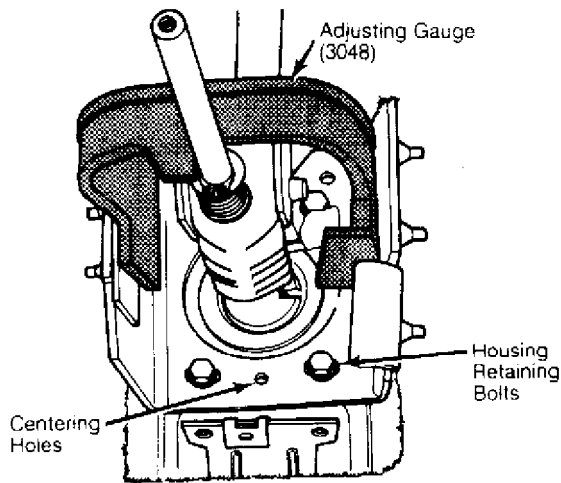


Fig. 8: Adjusting Quantum Syncro Gearshift Linkage  
Courtesy of Volkswagen United States, Inc.

### VANAGON

1) Place gearshift lever in Neutral position. Align round centering holes of upper gearshift lever housing plate with holes in lower lever bearing plate.

2) Loosen nut on clamp that connects front and rear shift rods. Ensure joints of shift rods slide freely. Remove spare tire. Set shift lever on transaxle in vertical (Neutral) position.

3) At gearshift lever end of front shift rod, ensure stop finger of front shift rod is in center of shift mechanism housing.

4) Adjust front shift rod end so there is 29/32" (23 mm) clearance between front shift rod end and stop plate. Tighten shift rod clamp.

5) Check for proper operation. Ensure shift lever does not rub against heater pipe insulation.

### VANAGON SYNCRO (4WD)

1) Place gearshift lever in Neutral position. Align round centering holes of upper gearshift lever housing plate with holes in lower lever bearing plate.

2) Loosen nut on clamp that connects front and rear shift

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rods. Ensure joints of shift rods slide freely. Remove spare tire. Set shift lever on transaxle in vertical (Neutral) position.

3) Push shift rod into transaxle until spring tension is felt (shift position for 2nd-3rd gear). Hold in this position.

4) Push shift rod to right (shift position for 1st-Reverse). Clearance between reverse gear lock and shift rod stop should be .12" (3 mm).

5) Allow shift to spring back to left to 2nd-3rd gear shift position. Push rod slightly to right. Boot must touch inside of shift mechanism housing.

6) Making sure transaxle and gearshift lever are in Neutral positions, tighten clamp nut between front and rear shift rods. Tighten to 18 ft. lbs. (25 N.m).

7) Place gearshift lever in 2nd gear position inside passenger compartment. Distance between gearshift lever and upper edge of gearshift lever opening in console must be at least 5/8" (15 mm). If not, adjust gearshift lever bearing by sliding back in slotted holes. Ensure all gears engage smoothly.

**END OF ARTICLE**