

## VOLKSWAGEN VANAGON RACK & PINION

### DESCRIPTION

Volkswagen Vanagon models use a rack and pinion steering gear. A transfer gear is used to connect steering shaft to steering gear. Tie rods are connected to rack and directly to steering knuckle, with ball joints. Both tie rods are adjustable for toe-in.

### ADJUSTMENT

#### STEERING GEAR

**NOTE** — Steering gear is not adjustable on these models. If gear is damaged or does not operate properly, complete unit must be replaced.

### REMOVAL & INSTALLATION

#### STEERING GEAR

**Removal** — Remove clamp bolt attaching connecting shaft coupling to steering gear pinion shaft. Disconnect tie rod ball joint from steering knuckles. Remove steering gear housing mounting bolts and remove steering gear from vehicle.

**Installation** — To install steering gear assembly, reverse removal procedure.

#### TRANSFER GEAR

**Removal** — Remove clamp bolt attaching connecting shaft coupling to transfer gear shaft. Remove clamp bolt attaching lower steering shaft flange to transfer gear shaft. Remove transfer gear attaching bolts and remove transfer gear.

**Installation** — To install transfer gear assembly, reverse removal procedure.

**NOTE** — During installation of steering gear and/or transfer gear, always replace rubber couplings in connecting shaft and steering shaft lower flange.

### OVERHAUL

**NOTE** — Steering gear and transfer gear cannot be repaired. Replace components if damaged. Steering gear rubber boots and tie rods can be replaced.

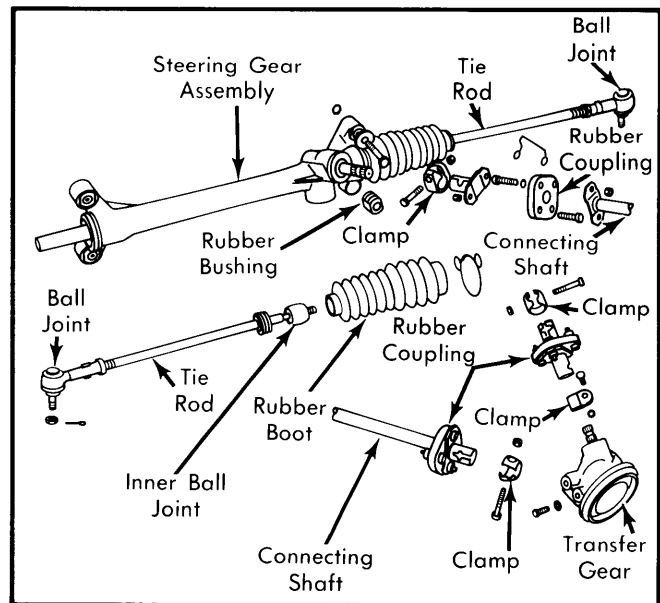


Fig. 1 Exploded View of Volkswagen Vanagon Steering Gear and Transfer Gear Assembly

#### TIE RODS AND RUBBER BOOTS

**Disassembly** — With steering gear assembly removed, remove clamps holding rubber boot to tie rod and steering gear housing. Using a punch, remove staking of tie rod inner ball joint washer to rack. Remove tie rods and rubber boots from steering gear assembly. Loosen tie rod ball joint lock nut and remove ball joints from tie rods. Press rubber bushing out of gear housing mounting.

**Reassembly** — To assemble tie rods and rubber boots, reverse disassembly procedure and note the following: After tightening tie rod inner ball joints, stake washer to groove in rack.

#### TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N·m)
Clamp Bolts .....	14 (19)
Housing Mounting Bolts .....	18 (24)
Tie Rod Inner Ball Joint Lock Nut .....	51 (69)
Tie Rod Outer Ball Joint Lock Nut .....	58 (79)