MG MIDGET RACK & PINION

Midget

DESCRIPTION

Steering gear is a rack and pinion type and is secured above front frame crossmember, immediately behind the radiator. Tie rods, operating swivel arms, arm attached to each end of rack by ball joint enclosed in rubber bellows. Steering column engages splined end of pinion. Pinion end play is eliminated by adjustment of shims beneath pinion lower bearing. A damper pad, inserted in rack, controls backlash between pinion and rack.

REMOVAL & INSTALLATION

Removal – 1) Remove radiator. Detach tie rod ball joints from swivel arms. Remove column-to-pinion pinch bolt. Unscrew six bolts securing rack assembly to body crossmember.

2) Move rack assembly forward as far as possible, collecting any shims between mounting bracket and body. Note location and number of these shims for reassembly reference. *NOTE – If these shims are lost or unmarked for reinstallation, steering rack and column must be realigned. See Alignment in MG Midget article under STEERING COLUMNS in this section.*

3) Unscrew three toe plate bolts. Slacken three upper column attaching bolts and pull column back sufficiently to disengage column sleeve from pinion. Remove front wheels and pull rack assembly from vehicle.

Installation – To install, reverse removal procedure, noting the following: Ensure shims are returned to original positions. When joining column to pinion, check that rack and column are both in straight-ahead position. If new rack is being installed, column and rack alignment is necessary. *See Alignment in MG Midget article under STEERING COLUMNS in this section.*

OVERHAUL

Disassembly – 1) Measure and record distance from spanner flats on tie rods to each ball joint lock nut. Slacken ball joint lock nuts and unscrew ball joint assemblies.

2) Hold rack housing over receptacle to catch oil, release bellows clips, and remove bellows. Remove hex cap adjacent to oil nipple on housing and withdraw cap with washer, pad, and spring.

3) Remove damper pad housing from pinion end of rack housing. Withdraw pad with plunger, spring, and shims. Extract bolts securing pinion lower bearing and remove bearing and shims. Withdraw pinion complete with bottom thrust washer. *NOTE – Top thrust washer is trapped behind rack teeth and may be removed after rack is withdrawn.*

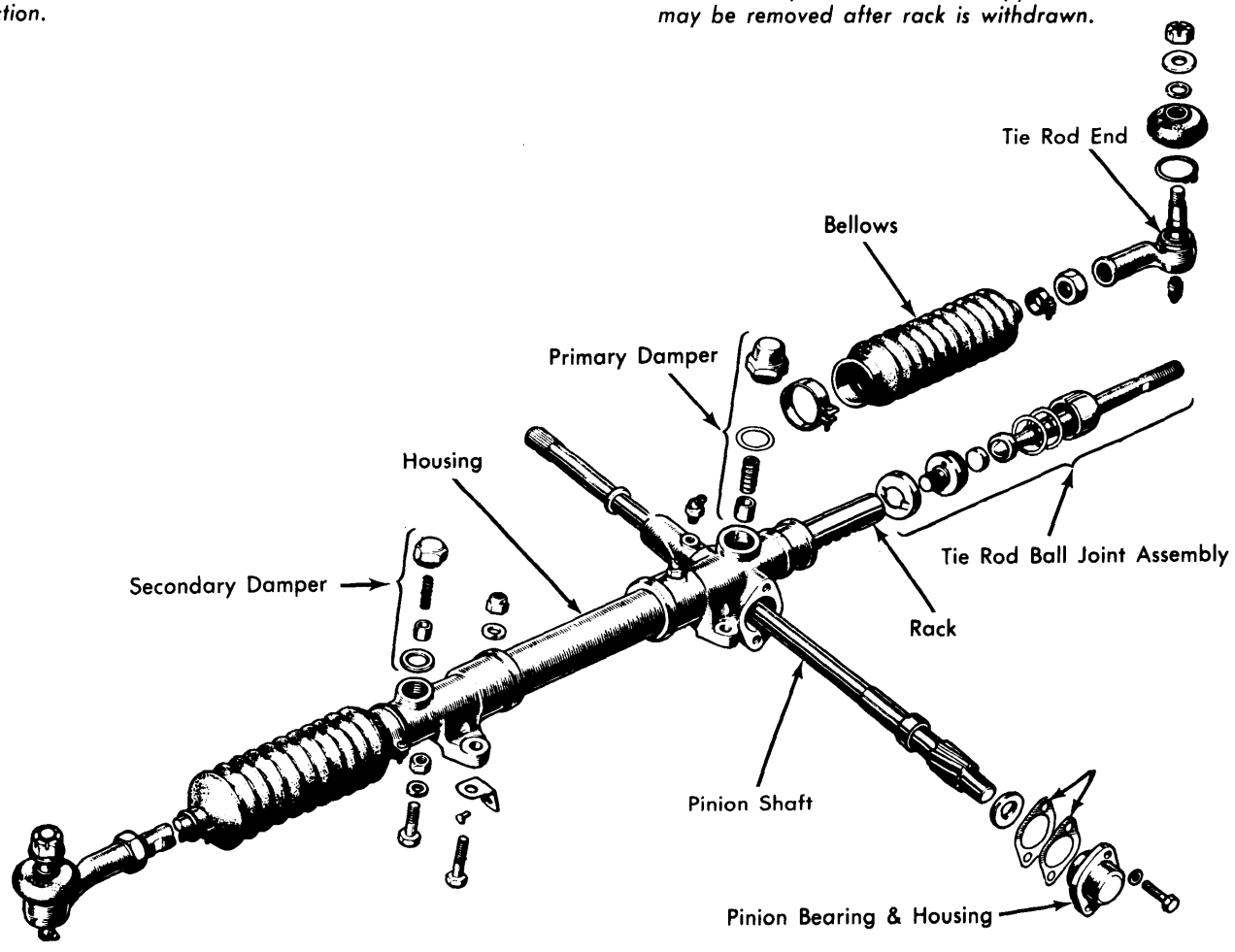

Fig. 1 MG Midget Rack and Pinion Assembly with Detail of Components

MG MIDGET RACK & PINION (Cont.)

4) Secure housing in padded vise and tap back lock washers from tie rod ball housing. Remove ball joint cap. *NOTE – In some cases this operation will release ball seat housing from ball joint cap; in this case, difficulty will be experienced in removing ball housing from rack. It is therefore essential to release ball housing from rack before ball seat housing and joint cap are separated.*

5) Remove lock washer and withdraw steering rack from housing. Remove ball seat housing from ball joint caps. Shims and ball seats are now free to be removed. Note position of shims and mark for replacement.

Reassembly – 1) Reassemble by reversing disassembly procedure and note the following: Ball joints linking tie rods to rack must be a fairly tight sliding fit without play. Adjustment of this play is made by varying thickness of shims fitted beneath ball joint cap seat. Install and lock new tab washers.

2) Place thickest of pinion thrust washers in position in rack housing with its chamfered edge toward rack. Replace smaller thrust washer on plain end of pinion shaft with chamfered edge toward pinion teeth. Ensure center tooth on rack is in line with mark on splined end of pinion when inserting pinion.

3) Excessive end play of pinion is corrected by fitting shims of proper thickness with lower bearing. To measure this, place a dial gauge at end of pinion shaft. End play should be .002-.005" (.05-.13 mm).

4) Replace ball joint lock nuts and joint assemblies in approximately original position (use measurement recorded during disassembly).

5) To replace and adjust rack damper, position plunger in cap and replace cap. Screw down cap until it is just possible to rotate pinion shaft by drawing rack through housing. With feeler gauge, measure clearance between hexagon of damper cap and its seating in rack housing. To this measurement, add .002-.005" (.05-.13 mm) to determine thickness of shims necessary to place beneath cap.

6) Remove damper cap and plunger. Insert spring beneath plunger; reassemble damper with shims. Install new pinion oil seal and fill housing with approximately 10 fl. oz. (.28 liter) of oil.

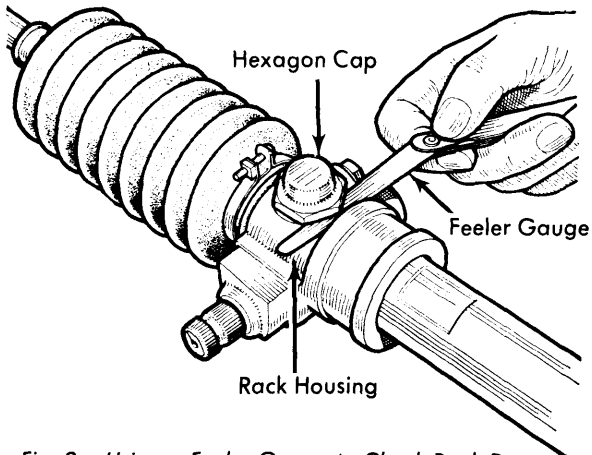

Fig. 2 Using a Feeler Gauge to Check Rack Damper Clearance