MAZDA GLC, 626 & RX7

DESCRIPTION

Independent hydraulic strut type suspension with coil springs. Strut assemblies mount between lower control arms and upper fender panels. Strut assemblies consist of: hydraulic shock absorbers (built into strut tube), coil springs around outside of strut tube housing, and a steering knuckle that is connected to both lower control arm and strut. Lower control arms pivot at crossmember and are connected by ball joints to steering knuckle. Rear wheel drive models are equipped with a stabilizer bar which is attached to the chassis and at each end to the lower control arms. On 626 and RX7 models, tension rods are installed to maintain alignment and stability.

ADJUSTMENT

WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

See Wheel Alignment Specifications & Procedures in WHEEL ALIGNMENT Section.

WHEEL BEARING ADJUSTMENT

Rear Wheel Drive Models (RWD) — 1) Raise and support vehicle. Remove wheel and tire. On RX7 models, tighten spindle nut until hub locks, then back off until hub rotates smoothly. On all other models, tighten spindle nut to 14-18 ft. lbs. (19-25 N•m).

2) Turn hub a few times to seat bearings. Loosen nut. Install one wheel bolt and attach spring scale. Gradually tighten spindle nut until a preload reading of 1.0-1.4 lbs. (4.5-6.2 N) on GLC and RX7, or .8-1.9 lbs. (3.6-8.5 N) on 626, is obtained.

Front Wheel Drive Models (FWD) — 1) With steering knuckle removed (see Wheel Bearing Removal) and outer bearing and spacer in place, attach spacer selector (49 B001 727) to knuckle.

2) Tighten selector nut to 145 ft. lbs. (197 N•m) by 35 ft. lb (48 N•m) increments, checking that knuckle turns smoothly at each step. Measure bearing preload at caliper mounting hole in knuckle. Preload should be .5-2.0 lbs (2.2-8.9 N). If not to specification, the spacer must be changed.

3) There are 21 spacers available from .2474" (6.285 mm) to .2794" (7.085 mm) in .0016" (.04 mm) increments. If preload is too high, increase spacer thickness. If it is too low, decrease thickness. Changing spacer thickness by one number will change preload by about .5-1.0 lbs. (2.2-4.5 N). Number is stamped on outer edge of spacer. Recheck preload after new spacer is installed.

BALL JOINT CHECKING

RWD Models — With strut assembly disconnected (GLC & 626) or control arm removed from vehicle (RX7), check ball joint dust boot for cracks or other damage. Rotate ball joint stud several times to settle joint. Attach knuckle arm and connect spring scale to tie rod hole in arm. Support knuckle with finger and measure starting force required to turn ball joint. If scale reading is less than .9 lbs. (4.0 N), replace ball joint and lower control arm as an assembly.

FWD Models — Raise and support vehicle. With control arm removed and ball joint assembly attached to knuckle arm, measure starting force required to turn ball joint. If scale reading is not 4.0-6.8 lbs. (17.8-30.3 N), replace ball joint assembly.

REMOVAL & INSTALLATION

LOWER CONTROL ARM

Removal (RWD Models) — 1) Raise and support vehicle. Remove wheel and tire.

2) Remove cotter pin from tie rod nut. Remove nut. Separate tie rod ball joint with puller.

3) Remove bolts mounting steering knuckle to strut tube. Disconnect stabilizer bar and tension rod (if equipped) from control arm.

Removal (FWD Models) — 1) Raise and support vehicle. Remove tire and wheel. Disconnect knuckle arm-to-control arm ball joint.

2) Remove control arm retaining bolts at frame and remove arm.

Installation – To install, reverse removal procedure.

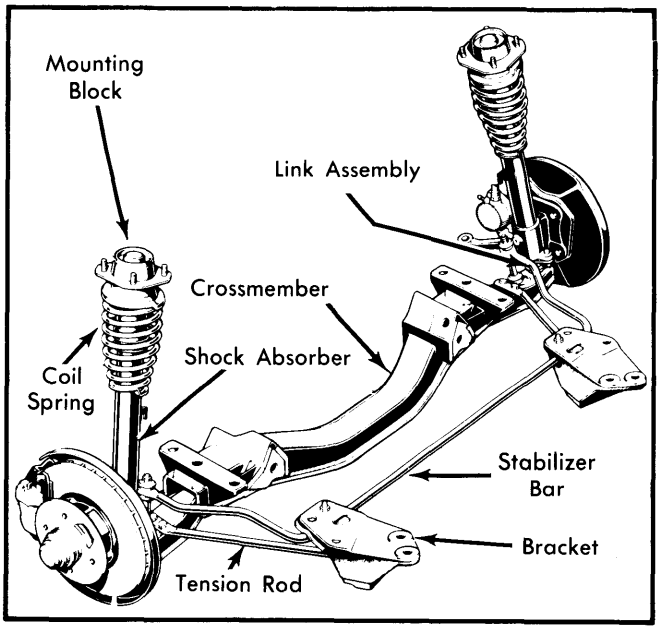

Fig. 1 626 & RX7 Front Suspension Assembly

STRUT ASSEMBLY (RWD Models)

Removal – **1)** Raise and support vehicle. Remove tire and wheel. Remove strut-to-fender panel nuts from inside engine compartment.

2) Remove brake hydraulic line mounting clip from strut housing. Remove brake caliper and wire out of way. Remove grease cap, cotter pin, nut lock and bearing from spindle. Pull off hub and brake assembly.

3) Remove backing plate. Remove strut-to-steering knuckle mounting bolts. Drop lower control arm down. Remove strut assembly and coil spring.

Disassembly – **1)** Clamp strut in vise. Use spring compressor to collapse coil spring. Remove locknut and washer from top of piston rod.

2) Remove shock absorber support, spring seat and thrust bearing. Remove coil spring, dust boot and damper stopper.

3) Place strut in a soft jawed vise. Remove cap nut and seal. Pry "O" ring from guide rod. Pull piston rod and pressure tube assembly out of strut (reservoir tube). Remove strut from vise and drain fluid.

NOTE – *Do not remove piston rod, guide or base valve from pressure tube. Service as a complete assembly only.*

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Inspection – Check reservoir tube for cracks or wear. Check all rubber parts for cracks or excessive damage. Inspect coil spring for signs of fatigue or damage. Replace parts as needed.

Reassembly & Installation – 1) Hold reservoir tube in vise. Insert pressure tube and piston rod assembly into tube. Pour hydraulic fluid into reservoir.

2) Install piston rod guide into pressure tube. Fit new "O" ring between rod guide and reservoir tube.

3) Fit a pilot (49 0259 590) over threads of piston rod. Apply grease to lip of oil seal and insert cap nut through pilot onto piston rod. Tighten cap nut and pull out piston rod. Seat piston and torque cap nut.

4) Install coil spring and remaining components in reverse of removal procedure.

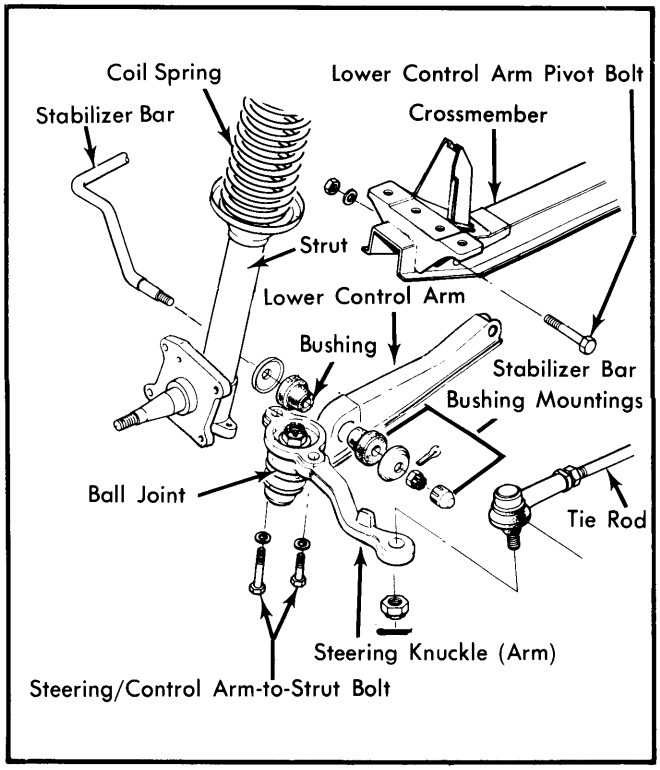

Fig. 2 Exploded View of GLC Front Suspension (RWD Models)

STRUT ASSEMBLY (FWD Models)

Removal – Raise and support vehicle. Remove tire and wheel. Remove brake line from bracket on strut. Remove retaining bolts from top and bottom of strut assembly and remove strut.

Disassembly – 1) Clamp strut in vise. Use spring compressor to collapse coil spring. Remove lock nut and washer from top of piston rod.

2) Remove shock absorber support and spring seat. Remove coil spring, dust boot and damper stopper. Disassembly is complete. Strut assembly is serviced as an assembly.

Inspection – Check all rubber parts for cracking or signs of wear. Inspect coil spring for signs of fatigue, cracks or other damage. Replace components as needed.

Reassembly & Installation – Reverse removal and disassembly procedures to assemble and install.

Strut Reservoir Volume

Application	Ounces
RX7	7.61
GLC	8.45
626	8.15

WHEEL BEARINGS

Removal (FWD Models) – 1) Raise and support vehicle. Remove wheel and tire. Remove drive shaft lock nut. Separate tie rod ball joint from knuckle

2) Disconnect brake line from clip on strut, remove brake caliper assembly and wire out of way. Remove knuckle-to-strut attaching bolts and ball joint-to-control arm bolts. Remove knuckle and ball joint as an assembly. Separate ball joint from knuckle.

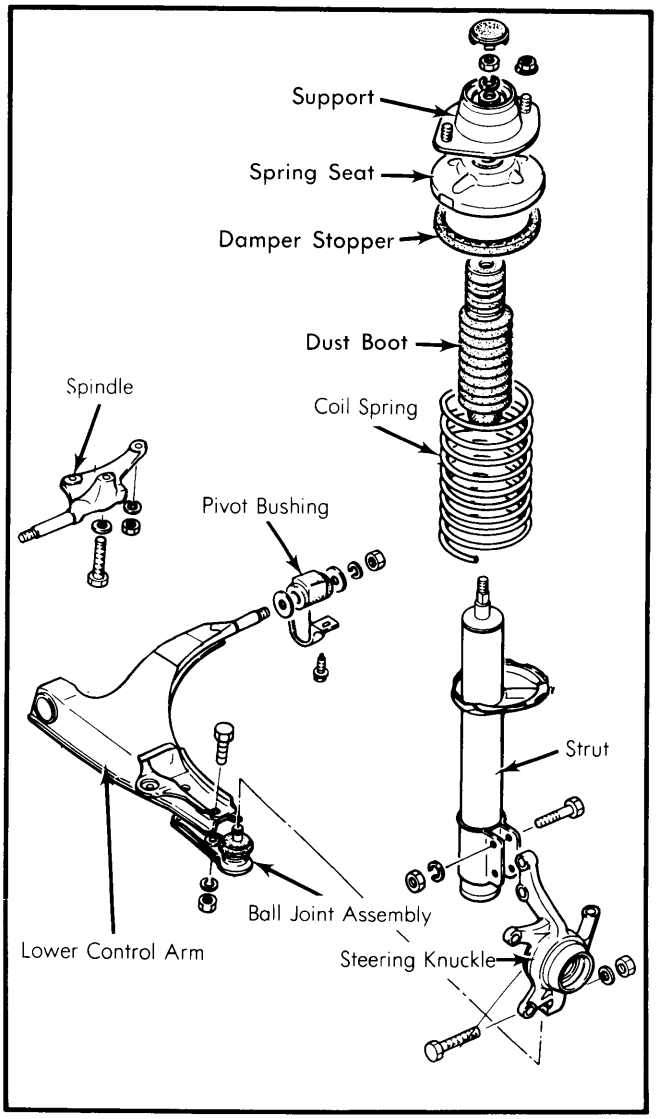

Fig. 3 Exploded View of GLC Front Suspension (FWD Models)

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3) With wheel hub in vise, remove knuckle with puller (49 B001 726). Remove hub-to-rotor retaining bolts and separate hub from rotor. Remove bearing spacer and press outer bearing from hub.

4) Remove inner and outer grease seals. Remove inner bearing and drive out bearing races with drift. Inspect bearings and races for excessive wear or damage and replace as needed. Always use a new race with a new bearing.

Installation (FWD Models) – Reverse removal procedures to install. Check bearing preload.

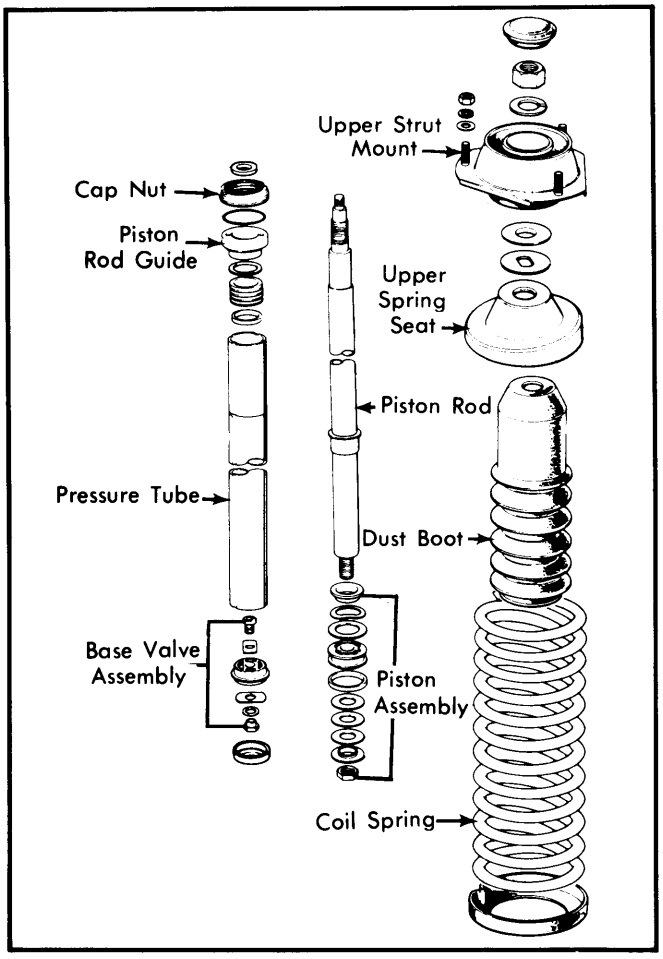

Fig. 4 Exploded View of Strut Asssembly (RWD Models Only)

Removal (RWD Models) – **1)** Raise and support vehicle. Remove wheel and tire. Remove brake caliper and wire out of way. Remove grease cap, cotter pin, nut lock, adjusting nut and bearing from spindle.

2) Remove rotor and hub assembly. Remove grease seal and inner bearing. Inspect bearing races for excessive wear or signs of damage. If replacement is required, drive out with drift.

Installation (RWD Models) – Reverse removal procedures to install. Check bearing preload.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N·m)
RWD Models	
Control Arm-to-Frame	29-40 (39-54)
Steering Knuckle-to-Strut	
GLC	69-85 (94-116)
RX7 & 626	43-51 (59-69)
Ball Joint-to-Knuckle	
GLC	43-58 (59-79)
RX7	43-51 (59-69)
626	46-69 (63-94)
Knuckle-to-Tie Rod Ball Joint	22-33 (30-45)
Tension Rod-to-Control Arm	
RX7	40-50 (54-68)
626	48-58 (65-79)
Tension Rod Lock Nut	80-108 (109-147)
Strut Cap Nut	
GLC	72-94 (98-128)
RX7 & 626	36-43 (49-59)
w/cartridge	58-108 (79-147)
FWD Models	
Control Arm Spindle Nut	55-69 (75-94)
Control Arm Spindle-to-Frame	69-86 (94-117)
Control Arm Pivot Bushing Nut	55-69 (75-94)
Control Arm Pivot Bushing Bracket	37-45 (50-61)
Ball Joint-to-Control Arm	69-86 (94-117)
Ball Joint-to-Knuckle (Pinch Bolt)	33-40 (45-54)
Knuckle-to-Tie Rod Ball Joint	22-33 (30-45)
Knuckle-to-Strut	58-86 (79-117)
Strut Cap Nut	55-69 (75-94)
Axle Nut	116-174 (158-237)