

Front Suspension

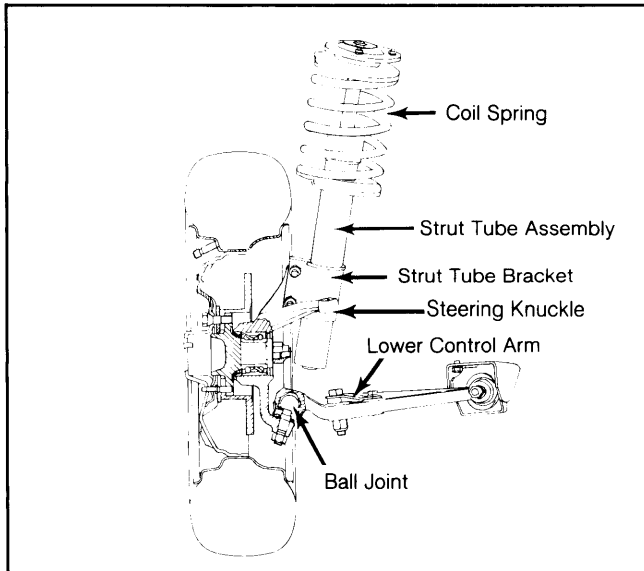
FIAT X 1/9

DESCRIPTION

Independent type front suspension, consisting of lower control arms and MacPherson strut type shock absorbers, is used on X 1/9 models. The steering knuckle is attached to the lower control arm by a sealed ball joint.

A MacPherson strut is attached to the steering knuckle at the bottom and to the fender panel at the top. The lower control arm pivots in rubber bushings, attached to crossmember. A stabilizer bar is mounted to the lower control arm and at front, to the frame.

Fig.1: Sectional View of Front Suspension Assembly



ADJUSTMENT

WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

See *Wheel Alignment Specifications and Procedures* in **WHEEL ALIGNMENT** section.

WHEEL BEARING

Spin hub to seat bearing while tightening spindle nut to 112 ft. lbs. (152 N.m). Stake collar of spindle nut into machined slot on spindle.

BALL JOINT CHECKING

1) Raise vehicle, and supported under lower control arms. Grasp wheel assembly at top and bottom, and try to shake. If excessive movement is noted, remove control arm.

2) Check ball joint for excessive play or damage to swivel and rubber boot. Control arm and ball joint are assembled as a unit. If ball joint is bad, replace lower control arm.

REMOVAL & INSTALLATION

WHEEL BEARING

Removal

1) Raise vehicle, and support with safety stands. Remove wheel assembly. Remove brake caliper

and bracket, and support out of the way. Remove rotor, plate retaining bolt, and centering stud.

2) Remove tie rod-to-knuckle nut, disconnect ball joint, and pull tie rod out of the way. Remove control arm-to-knuckle nut, and separate. Remove strut lower mounting bolts, and remove knuckle from vehicle.

3) Remove hub to knuckle retaining nut, and press hub from knuckle. Remove bearing retaining ring nut, and pull out bearing.

Installation

To install, reverse removal procedures, noting the following: Always use a new ring nut. Perform final tightening of suspension bolts with front end on floor.

BALL JOINT

To replace ball joints, lower control arm and ball joint must be replaced as a unit.

FRONT SUSPENSION ASSEMBLY

Removal

1) Raise and support vehicle with safety stands. Remove wheel assembly. Remove front disc brake caliper assembly, and support out of the way. Remove bolts and plate holding strut tube to steering knuckle.

2) Separate upper strut assembly at top by removing upper mounting nuts. Disconnect lower control arm from stabilizer bar bracket and ball joint. Remove tie rod nut, and force tie rod from steering knuckle. Maneuver assembly from vehicle.

Inspection

Check rubber bushings in control arm, and replace any that appear worn. Inspect ball joints for excessive play or damage, (replace as necessary).

Installation

To install suspension assembly, reverse removal procedures.

STRUT ASSEMBLY

Removal

Raise and support vehicle under chassis with safety stands. Disconnect upper strut assembly mount from inner fender panel. Remove bolts securing strut assembly to steering knuckle, and maneuver strut from vehicle.

Disassembly

1) Install strut assembly in spring compressor, and collapse coil. Remove nut from center of upper mount. Release spring compressor, and remove upper mount and coil spring.

2) Inspect springs for cracks or distortion. Springs are manufactured in 2 classes and are identified by paint markings. Class A springs are marked with a Yellow stripe on outside of center coils, and class B springs are marked with a Green stripe. If springs are replaced for any reason, use a spring of same class.

Reassembly

Using spring compressor, reverse disassembly procedure to assemble strut assembly.

Installation

To install strut assembly, reverse removal procedure. Do not tighten strut assembly lower mount until weight of vehicle is on floor.

FIAT X 1/9 (Cont.)

CONTROL ARM

Removal

Remove complete front suspension assembly as previously outlined. Remove ball joint stud nut, and separate ball joint from steering knuckle with a puller.

Disassembly

Inspect ball joint for wear or distortion. If ball joint is defective, complete control arm must be replaced. Inspect bearings for wear or damage. If defective, drill out metal sleeve from inside rubber bushing, and extract bushing.

Reassembly

Position outer washer, bushing, and sleeve on centering pin of bushing installation tool. Place control arm over bushing and washer from opposite side. Place control arm, components and tool into a press. Position remaining tool components in sleeve, and press into position.

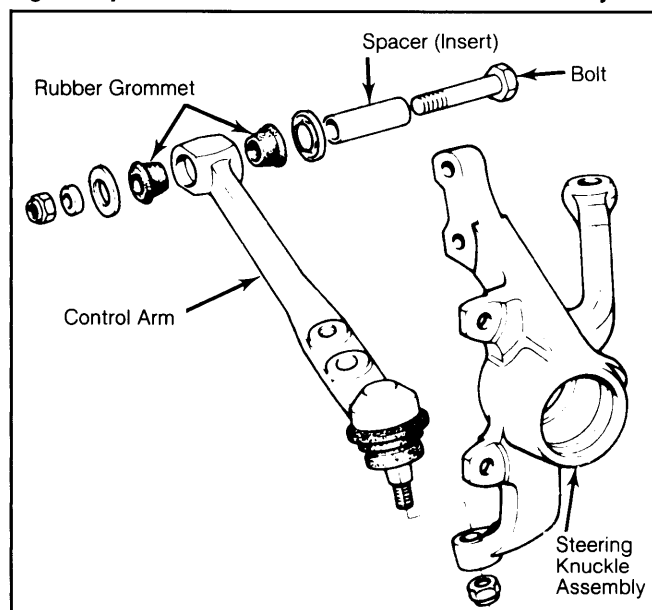
Installation

Attach control arm to steering knuckle, and tighten ball joint stud nut. Reverse removal procedure to complete installation.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Tie Rod Nut	58 (79)
Lower Control Arm-to-Crossmember	29 (39)
Stabilizer Bar-to-Lower Control Arm	51 (69)
Stabilizer Bar-to-Frame	51 (69)
Strut Mounting Nuts	
Upper and Lower	43 (58)
Wheel Bearing Ring Nut	43 (58)
Wheel Hub Nut	112 (152)

Fig 2: Exploded View of Lower Control Arm Assembly



STABILIZER BAR

Removal

Raise and support vehicle. Disconnect stabilizer mounting bolt from lower control arm. Remove stabilizer attaching hardware from front end of stabilizer, and maneuver bar from vehicle.

Installation

To install stabilizer bar, reverse removal procedure noting the following: Replace any rubber grommet that appears distorted or severely worn.