

# Front Suspension

## FIAT SPIDER 2000

### DESCRIPTION

Independent wishbone type suspension with coil springs and telescopic, hydraulic, double-acting shock absorbers. Shock absorbers are mounted inside coil springs between upper and lower control arms. Control arms are connected to steering knuckle with ball joints.

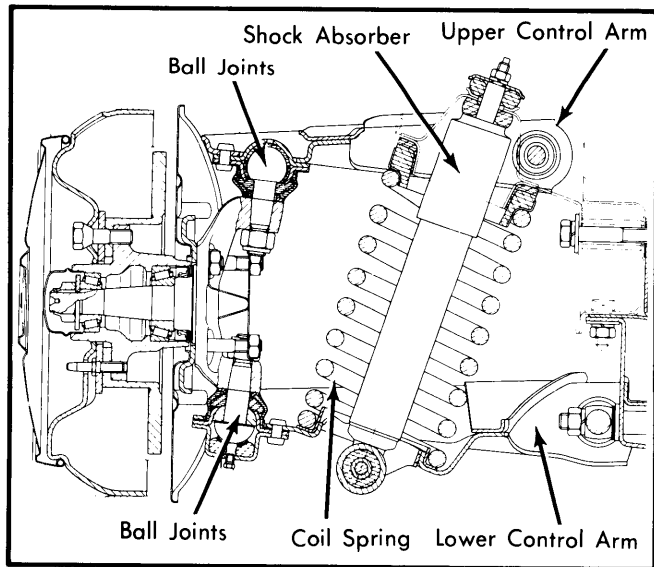


Fig. 1 Sectional View of Front Suspension Assembly

### ADJUSTMENTS

#### WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

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

#### WHEEL BEARING ADJUSTMENT

While rotating hub, tighten spindle nut to 14.5 ft. lbs. (20 N•m) to seat bearing. Loosen nut and retighten to 5 ft. lbs. (7 N•m). Loosen nut 30° and stake collar of spindle nut into machined slot on spindle. Check hub end play with dial indicator. Play should be .001-.004" (.025-.100 mm). If play exceeds this amount and wheel bearing is in good condition, repeat procedure until correct end play is obtained.

#### BALL JOINT CHECKING

With vehicle raised and supported under lower control arms, grasp wheel at top and bottom and try to shake wheel. If excessive movement is noted, remove control arm from vehicle and 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, the entire control arm must be replaced.

**NOTE** — Whenever spindle nut is removed, it **MUST** be replaced with a new one.

### REMOVAL & INSTALLATION

#### FRONT SUSPENSION ASSEMBLY

**Removal** — 1) Raise and support vehicle. Remove wheels and shock absorbers. Compress coil spring with spring compressor to relieve tension from lower control arm.

2) Disconnect and cap brake lines. Using a puller, disconnect tie rod from steering knuckle arm. Remove pivot bolt and detach upper control arm from body. Remove nuts and bolts securing lower control arm to crossmember and remove suspension.

**Installation** — To install, reverse removal procedure. Tighten all nuts and bolts, bleed brakes and check wheel alignment.

#### STEERING KNUCKLE

**Removal** — 1) Raise and support vehicle. Remove wheel, brake caliper, brake disc and plate. Using suitable puller, remove front grease cap. Remove hub using puller A.47015 (or equivalent). Remove inner race from inside hub bearing with a puller. Remove arm from steering knuckle.

2) Remove nut attaching lower control arm to steering knuckle and place suitable tool (A.47042) between control ball joints, then remove lower ball joint. Remove nut attaching upper ball joint to steering knuckle. Separate upper ball joint from steering knuckle.

**Installation** — Inspect all parts for signs of wear or damage. To install, reverse removal procedure and tighten all nuts and bolts.

#### WHEEL BEARINGS

**Removal** — 1) Raise and support vehicle. Remove tire, wheel and brake caliper and wire out of way. Remove two bolts fixing rotor to wheel hub and remove hub and plate. Remove grease cup and retaining nut.

2) Pull hub from spindle. Remove grease seal, snap ring and inner and outer bearings from hub.

**Installation** — Reverse removal procedures and note the following: Pack bearings and space between them in hub with grease before final assembly.

#### COIL SPRINGS

**Removal** — Raise and support vehicle so suspension hangs freely. Remove wheels and shock absorbers. Disconnect stabilizer bar from lower control arm. Support lower control arm with a jack and disconnect lower ball joint stud from steering knuckle. Install suitable spring compressor and rotate lower control arm down carefully. Coil spring may now be removed.

**Installation** — To install, reverse removal procedure.

#### STABILIZER BAR

**Removal** — Remove front stabilizer bar by removing nuts and bolts securing bar to crossmember. Remove nuts and bolts attaching ends of stabilizer bar to lower control arms and remove stabilizer bar.

**Installation** — To install, reverse removal procedure.

### TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N•m)
Lower Control Arm Pin-to-Crossmember	43 (59)
Lower Control Arm-to-Crossmember	72 (98)
Upper Control Arm	65 (88)
Lower Shock Absorber	43 (59)
Steering Arm-to-Steering Knuckle	43 (59)
Brake Caliper	36 (49)
Crossmember-to-Side Member	69 (94)