

SECTION 3

SUSPENSION

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SUSPENSION

CORVAIR 500, 600, 700 AND 900 SERIES

GENERAL DESCRIPTION

The 1964 Corvair 500, 600, 700 and 900 Series independent front and rear suspension design and service operations remain the same as outlined in the 1961 Corvair Shop Manual, Section 3-1 to 3-39, except for revised rear wheel alignment specifications and a steering knuckle service operation.

In addition all vehicles are now equipped with a front suspension stabilizer bar and a rear suspension

single leaf spring in addition to the coil springs.

The 1964 vehicle makes use of improved ball stud assemblies which allow the lubrication period to be extended. Wheel bearing lube periods have also been extended. See your 1961 Corvair Shop Manual for all service operations and specifications except those listed below.

MAINTENANCE AND ADJUSTMENTS

LUBRICATION

The control arm spherical joints (ball studs) used on the 1964 Corvair, while similar in appearance to those used in 1961, incorporate improvements which permit the lubrication interval to be increased. The new spherical joints may be identified by the large rubber boot on the stud end of the joint. Front wheel bearing lubrication intervals have been increased. See Section 2 of this manual for complete lubrication information.

Lube Fittings

Special self threading type lube fittings are used in the spherical joint assemblies. If it is necessary to replace a fitting a standard threaded type may be used. However, replacement spherical joint assemblies are supplied less the lube fitting. Therefore it will be nec-

essary to install a self threading type fitting into the untapped hole provided when replacing the entire assembly.

FRONT WHEEL BEARINGS—

Adjustment

Adjusting procedure is the same as listed in the 1961 Corvair Shop Manual, Section 3-2, Steps 1 through 8, except Step 2, adjusting torque, has been revised to 100 in. lbs. Wheel bearings should have zero preload and .001 to .007 end play when properly adjusted.

WHEEL ALIGNMENT

Rear

The 1964 toe-in adjustment specifications have been revised as indicated under Specifications at the end of this section.

SERVICE OPERATIONS

FRONT SUSPENSION

Front Suspension Stabilizer Bar

Located to the rear of the front wheels, the front stabilizer is a steel bar interconnecting each lower control arm. It is attached directly to the arms through rubber bushings held in place by stamped brackets. Rubber bushed links bolted to the front cross-member support the center portion of the bar. Figure 3-1, illustrating the points of attachment of the bar, may be used for reference during removal and installation procedures. The bar must be removed as necessary when performing other front suspension service procedures outlined in the 1961 Corvair Shop Manual.

Steering Knuckle

It is recommended that the vehicle be raised and supported on a twin post hoist so that the front coil spring remains compressed, yet the wheel and steering knuckle assembly remain accessible. If a frame hoist is used, support lower control arm with an adjustable jackstand to safely retain spring and lower control arm in their curb height position.

Removal

1. Raise vehicle and support lower control arm as noted above.
2. Remove hub cap, wheel hub dust cap, cotter pin, wheel bearing adjusting nut and washer, and remove wheel, tire and wheel hub and brake drum assembly from the spindle.
3. Disconnect brake shoe return springs, brake shoe retaining clip and remove brake shoes.

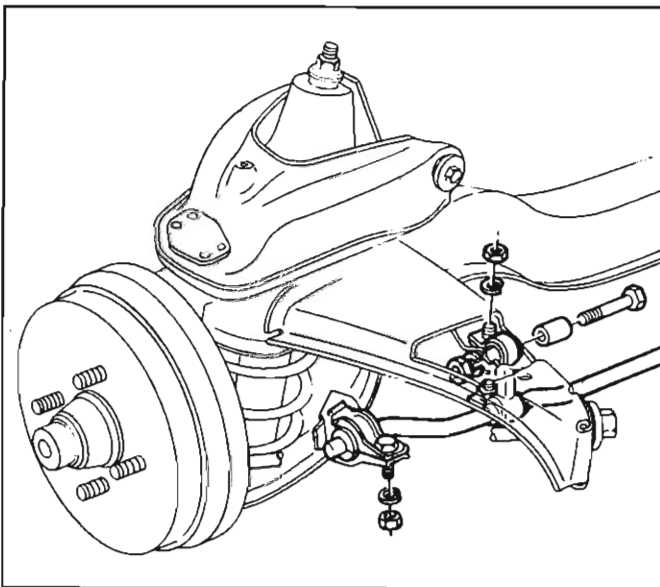


Fig. 3-1—Front Suspension Stabilizer Bar Attachment

CAUTION: Keep brake shoes clean and dry.

4. Remove brake anchor pin and two bolts securing brake backing plate and steering arm to steering knuckle.
5. Withdraw steering arm and brake backing plate from steering knuckle. Wire backing plate to sheet metal. Do not disconnect brake line.

NOTE: Refer to Section 4—Steering, Service Operations entitled Steering Linkage—Tie Rod, for further steering arm service operations.

6. Remove upper ball stud and cotter pin and nut. Strike steering knuckle upper boss, backing up with another hammer, to loosen ball stud.
7. Remove lower ball stud cotter pin and nut. Strike steering knuckle lower boss as in Step 6 above. Raise up and withdraw steering knuckle.

Installation

1. Place steering knuckle over lower ball stud, install nut and tighten 30-40 ft. lbs. Insert new cotter pin.
2. Drop upper control arm ball stud into steering knuckle upper boss, install nut and tighten 30-40 ft. lbs. Insert new cotter pin.
3. Assemble backing plate to steering knuckle with brake anchor bolt.
4. Assemble steering arm to steering knuckle and insert steering arm bolts and lock nuts through backing plate, steering knuckle and steering arm. Tighten nuts 40-50 ft. lbs.
5. Tighten brake anchor bolt 70-90 ft. lbs.
6. Install brake shoes to backing plate and wheel cylinder and install retaining clips. Engage brake return springs to anchor bolt pin.

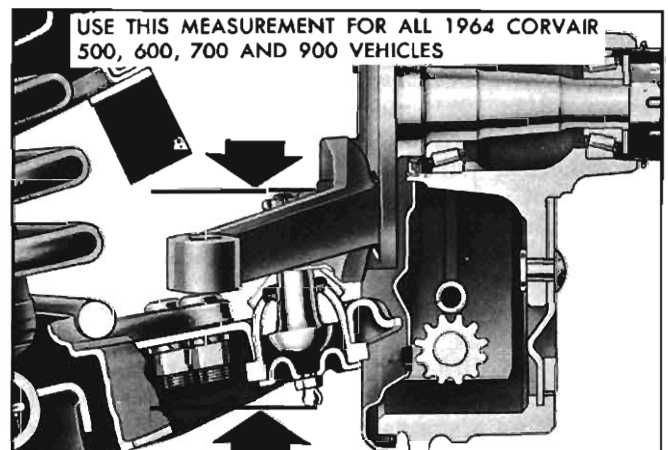


Fig. 3-2—Checking Lower Spherical Joint



Fig. 3-3—Removing Spring Link Nut

7. Install brake drum, wheel and tire and wheel hub assembly over steering arm spindle.
8. Install washer and wheel bearing adjusting nut and adjust bearings as outlined in the 1961 Shop Manual, Section 3-2. Insert new cotter pin, dust cover and hub cap.
9. Remove adjustable jackstand and lower vehicle.
10. Recheck and readjust front wheel alignment where necessary.

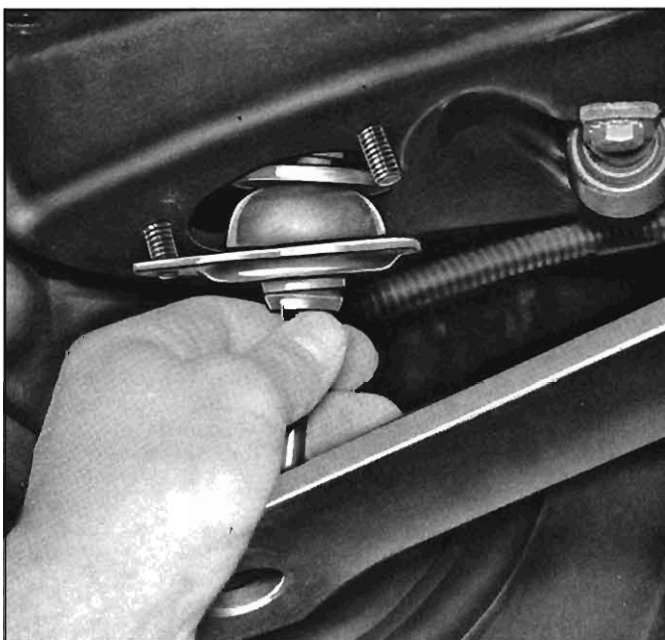


Fig. 3-4—Removing Link Assembly

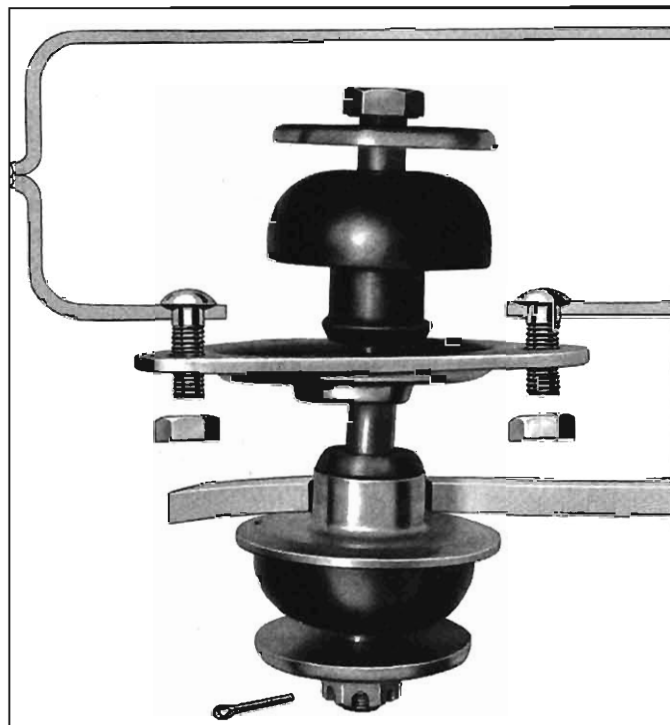


Fig. 3-5—Spring Link Components

Lower Spherical Joint Inspection

NOTE: The lower control arm spherical joint is a loose fit in the assembly when not under load. Inspect each lower joint for excessive wear as follows:

1. Support vehicle weight on wheels or wheel hubs.
2. With outside micrometer or caliper, measure distance from tip of lubrication fitting to upper surface of ball stud (fig. 3-2) and record the dimensions for each side.
3. Then support vehicle weight at outer end of each lower control arm, so that wheels or wheel hubs are free, then repeat step 2.
4. If the difference in dimensions on either side is greater than $\frac{1}{16}$ " (.060"), the joint is excessively worn and both lower joints should be replaced.

REAR SUSPENSION

Transverse Single Leaf Spring

The rear suspension remains the same as described in the 1961 Corvair Shop Manual with the exception of the single leaf spring and the control arm modifications made necessary by its use. Service procedures remain unchanged except for the necessity of first removing the leaf spring.

SUSPENSION 3-4

Removal

1. Using a jackstand, carefully lift the end of the spring enough to take the tension off the attaching nut. Then remove the cotter pin, attaching nut, cushion and cushion retainers (fig. 3-3).
2. Remove the jackstand. Then, if it is necessary to remove the link bolt, remove the spring link bolt bracket attaching nuts and remove the bracket, bolt, cushion and retainer (fig. 3-4). This operation, unless the link bolt is damaged, will seldom be necessary.

NOTE: Spring link components are illustrated in Fig. 3-5.

3. At the spring center attachment point remove the two bracket attaching screws and remove the bracket, spring and insulator.
4. Remove the spring from the second control arm as described previously.

Installation

1. If removed, install the spring link bolt brackets onto the control arm (bolt, upper cushion and retainer in place) and install nuts and lockwashers. Torque nuts to 14-22 lbs. ft.
2. Lift the spring into place, center insulator installed, and install the center attaching bracket and bolts. Torque to 15-24 lbs. ft.
3. Insert link bolt into the hole in the end of the spring and install the retainer, cushion, retainer

and nut. Turn the nut down as far as it will go and install the cotter pin.

4. Lift the other end of the spring with the jackstand so that the other link bolt passes through the spring hole. Install cushion, retainers, nut and cotter pin as outlined in the previous step.

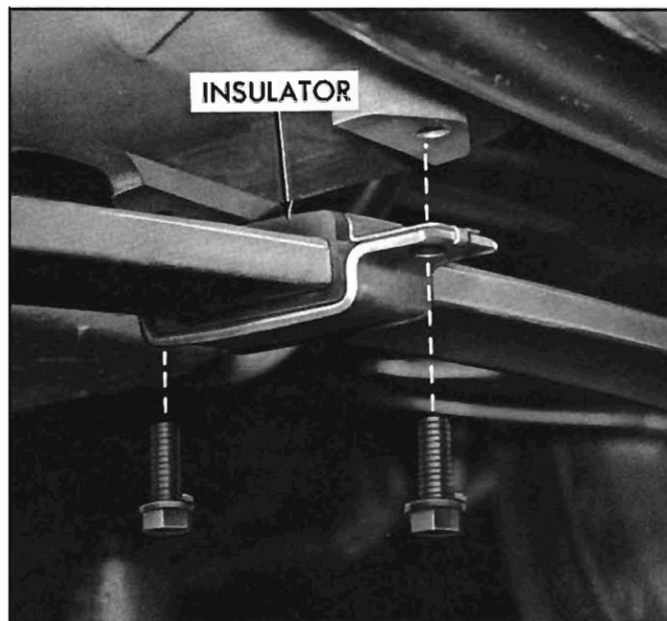


Fig. 3-6—Spring Center Attachment Bracket and Insulator

CORVAIR 95—1200 SERIES

GENERAL DESCRIPTION

The 1964 Corvair 95 independent front and rear suspension design and specifications remain the same as shown in the 1961 Corvair Shop Manual, Section 3. In addition, 1200 Series vehicles make use of extended lube period ball studs as described in the 500,

600, 700 and 900 portion of this section. Service operations are carryover with the exception of revised front wheel bearing adjustments and revised steering knuckle service procedure.

MAINTENANCE AND ADJUSTMENTS

LUBRICATION

The lubrication information covered under the 500, 600, 700 and 900 Series on page 3-1 applies to the 1200 Series. This includes the information on the new self-threading type lube fittings.

Front Wheel Bearings—

Adjustment

1. Jack up front end of vehicle. Remove hub cap and dust cap. Remove cotter pin from end of spindle.

2. Tighten spindle nut to 15 ft. lbs. (or 180 in. lbs.) torque while rotating wheel.
3. Back off adjusting nut one flat and insert cotter pin.
4. If slot and cotter pin hole do not align, back off adjusting nut an additional $\frac{1}{2}$ flat or less as required to insert cotter pin.
5. Spin the wheel to make sure that it rolls freely. Properly lock the cotter pin by spreading the end and bending it around.

NOTE: These tapered roller wheel bearings should have zero preload and .001" to .007" end movement when properly adjusted.

Install the dust cap and hub cap or wheel disc.

6. Remove jack.

Riding Height and Coil Spring Sag

The front riding height (fig. 3-7) is $12'' \pm \frac{1}{2}''$ in 1964 vehicles. Measure as follows:

1. Check tires and inflate to correct pressures.
2. Front height may be checked by measuring the distance from the center of lower control arm pivot bolt to floor (fig. 3-7). This distance should be $12'' \pm \frac{1}{2}''$ with vehicle at curb weight. Measure both sides of vehicle in this manner; the resulting measurements should be within $\frac{1}{2}''$ of each other.

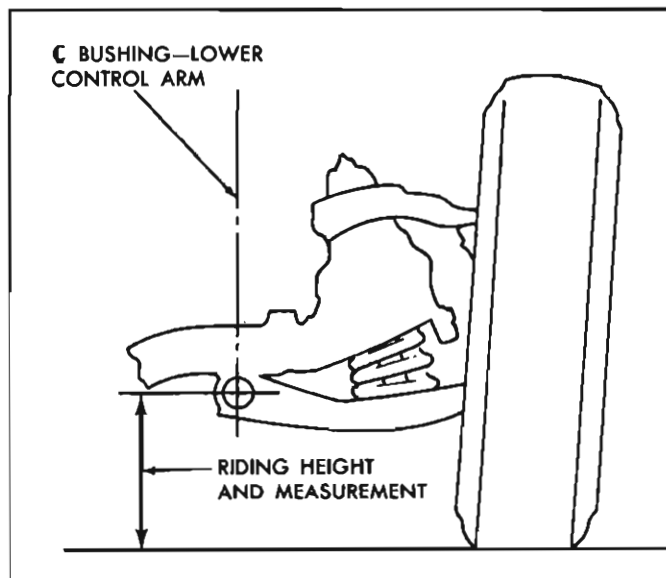


Fig. 3-7—Front Pivot Height

SERVICE OPERATIONS

Steering Knuckle (fig. 3-3)

It is recommended that the vehicle be raised and supported on a twin post hoist so that the front coil spring remains compressed, yet the wheel and steering knuckle assembly remain accessible. If a frame

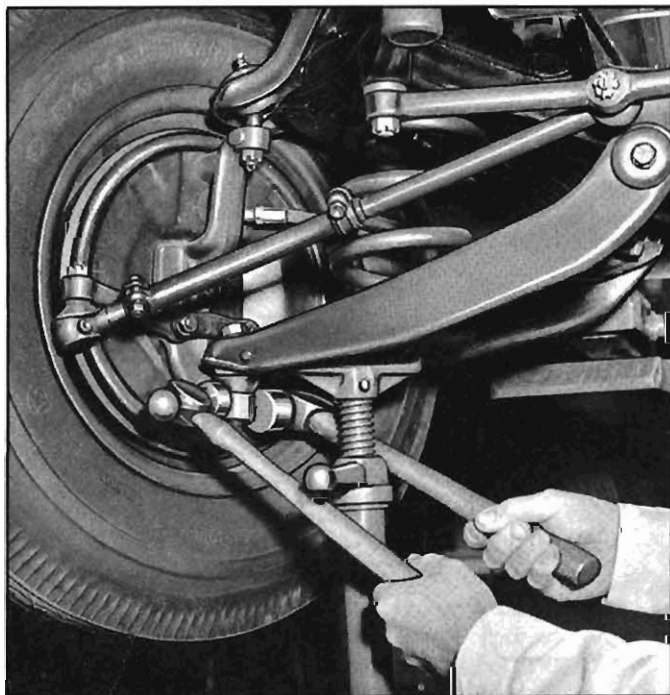


Fig. 3-8—Loosening Lower Ball Stud

hoist is used, support lower control arm with an adjustable jackstand to safely retain front coil spring and lower control arm in their curb height position.

Removal

1. Follow Steps 1-5 as outlined under Corvair 500, 700 and 900 Series Steering Knuckle—Removal in this section.
2. Remove lower ball stud cotter pin and nut. Strike steering knuckle boss backing up with another hammer (fig. 3-8).
3. Remove upper ball stud cotter pin and nut. Strike steering knuckle boss as above, and withdraw steering knuckle.

Installation

1. Insert steering knuckle into position over upper and lower ball studs. Install upper and lower ball stud nuts and torque nuts 42-47 ft. lbs. upper, and 60-94 ft. lbs. lower. Insert new cotter pins.
2. Follow Steps 3 through 10 as outlined under Corvair 500, 700 and 900 Service Operations, Steering Knuckle Installation in this section. Adjust front wheel bearings as shown under Front Wheel Bearings—Adjustment in this section.

WHEELS AND TIRES

CORVAIR 500, 600, 700 AND 900 SERIES

GENERAL DESCRIPTION

All 1964 models carry disc type wheels and 4-ply rating tubeless tires available in blackwall and thin-line whitewall. Tire size is 6.50 x 13-4 PR. Front and rear wheels pilot on redesigned and strengthened hub pilot diameters instead of wheel stud diameters as used in past models. Service Operations of the wheels and

tires remain the same as outlined in your 1961 Corvair Shop Manual, Section 3-20 to 3-28. It is important to note, however, when mounting Corvair tires that the **inner bead must be mounted first** and then the **outer bead**. Failure to follow this sequence can severely damage the tire.

CORVAIR 95-1200 SERIES

GENERAL DESCRIPTION

The Corvair 95 is equipped with tubeless 4-ply SP. as standard as well as 6-ply, 6-ply SP. and 8-ply SP. optional tires and five stud disc wheels which pilot on machined pilot diameters on the hubs and axle shafts. Service operations are the same as outlined in your 1961 Corvair Shop Manual, Section 3-36.

1964 front and rear starting tire pressures are as follows:

		COLD*		HOT**	
		Front	Rear	Front	Rear
7.00 x 14-4 ply SP		24	30	28	35
7.00 x 14-6 ply SP		24	34	28	39
7.00 x 14-6 ply	Light Truck Type	24	45	28	50
7.00 x 14-8 ply		24	60	28	65

*After car has been parked for five hours or more or driven less than one mile.

**Pressures can rise as much as 5 psi. above cold figures depending on loads carried, length of driving, and car speed prior to check.

SPECIFICATIONS

Corvair 500, 600, 700 and 900 Series

- Caster Positive $2^{\circ} + 0^{\circ} - \frac{1}{2}^{\circ}$
- Camber $0^{\circ} \pm \frac{1}{2}^{\circ}$
- Steering Axis Inclination $7^{\circ} \pm \frac{1}{2}^{\circ}$
- Toe-in (Total)
 - Front $\frac{1}{4}''$ to $\frac{3}{8}''$
 - Rear $\frac{1}{8}''$ to $\frac{3}{8}''$
- Wheel Nut Torque 55 to 65 lbs. ft.
- Wheel Bearing Endplay001'' to .007''

Riding Height:

Model	Dimension "A"	Dimension "B"
4 Door Sedan	$24.90'' \pm \frac{1}{2}''$	$19.95'' \pm \frac{1}{2}''$
Coupe	$25.00'' \pm \frac{1}{2}''$	$24.20'' \pm \frac{1}{2}''$
Convertible	$24.95'' \pm \frac{1}{2}''$	$24.20'' \pm \frac{1}{2}''$

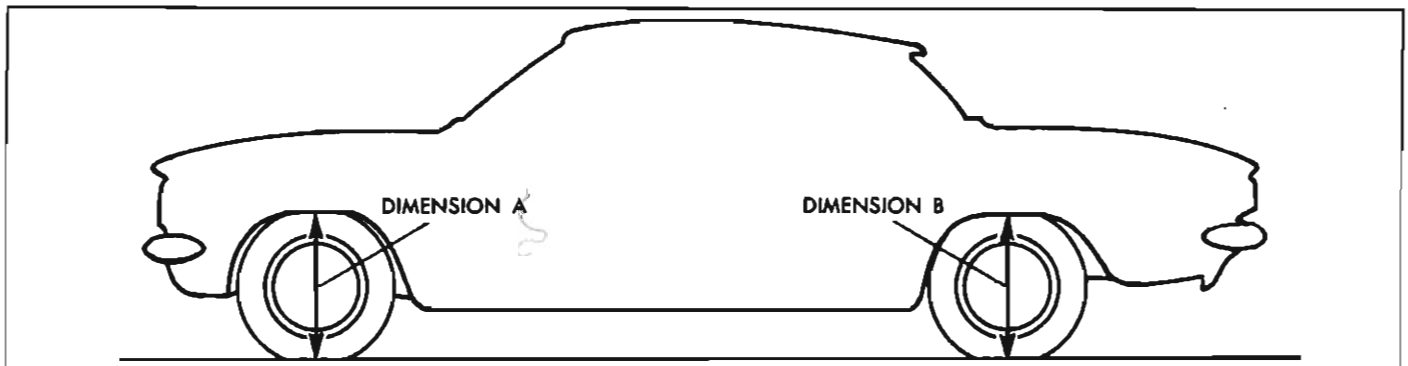


Fig. 3-9—Riding Height Measurement