SHOCK ABSORBERS AND REAR SPRINGS

CONTENTS

GENERAL INFORMATION

The rear springs are of the semi-elliptical type and are designed to have little or no camber under very light loads. When the load on the rear suspension is increased, a small amount of reverse spring camber is normal. A relatively flat rear spring gives better lateral stability and reduces side sway which contributes to a well controlled ride and superior handling and stability characteristics.

On Imperial models the mounting of the rear axle assembly to the spring is the same as the previous years model. All Chrysler models with the exception of station wagons and convertibles will also use the same mounting as the Imperial. The spring is sandwiched between two rubber isolators which are contained by two channel type retainers. The bottom retainer contains the lower shock absorber stud. The rubber isolators reduce the amount of axle and road noise transmitted to the body.

Rubber bushings inserted into the "eye" of each end of the main leaf are the means by which the springs are attached to the mounting brackets bolted to the body at the front and to spring shackles at the rear. The rubber bushings serve as isolators and reduce noise being transmitted to the body.

Heavy duty rear springs offered as part of the heavy duty suspension option, have a higher rate for a greater load carrying capacity (Trailer Towing). They are part of a complete engineered option which includes heavy-duty torsion bars, heavy-duty sway bar and heavy-duty shock absorbers.

Zinc interleaves are used between the leaves of all springs to reduce corrosion and improve spring life.

The double acting shock absorbers do not help support the load, but are a means used to control ride motion. The shock absorbers are matched to the particular suspension of the vehicle. It is not usually necessary to replace shock absorbers in pairs. Their action does NOT change with use. Slight fluid seepage during cold weather operation, resulting in a damp appearance, is normal and does not affect the performance or life of the shock absorber. Replace a shock absorber only if it is broken or leaking badly (not just damp) or has lost resistance in one or both directions, due to internal damage. Resistance in the rebound direction is usually greater than in the jounce direction. Be sure to use the same replacement part as the original equipment.

SERVICE DIAGNOSIS

Condition	Possible Cause	Correction
SPRINGS SAG OR BOTTOM	(a) Springs sagged or taken a set.	(a) Replace the spring.
	(b) Broken, bent or weak spring leaves.	(b) Replace the spring.
SPRING NOISE	(a) Loose "U" bolts.	(a) Tighten "U" bolt nuts to specifications.
	(b) Loose or worn eye bushings.	(b) Replace the bushings and tighten the shackle bolt nuts to specifications.
	(c) Worn or missing interliners.	(c) Install new interliners.
SPRING BREAKAGE	(a) Loose "U" bolts.	(a) Replace spring. Inspect "U" bolts for damage. Tighten "U" bolt nuts to specifications.
	(b) Shock absorber inoperative.	(b) Replace the spring and the shock absorber.
SHOCK ABSORBER NOISY	(a) Bushing excessively worn.	(a) Replace bushing.
	(b) Undercoating on shock absorber reservoir.	(b) Clean undercoating off shock absorber.
	(c) Loose bolt or stud.	(c) Tighten to specifications.
	(d) Air trapped in system.	(d) Purge shock absorber.
SHOCK ABSORBER DRIPPING OIL	(a) Worn seal.	(a) Replace shock absorber.
	(b) Damaged crimp or reservoir.	(b) Replace shock absorber.

SERVICE PROCEDURES

SHOCK ABSORBERS

Front—Removal (Figs. 1 and 2)

On Imperial models to remove the front shock absorbers you may find it necessary and also more convenient to remove the tire and wheel assembly and perform the removal from under the fender.

(1) Loosen and remove nut and retainer from upper end of shock absorber piston rod.

(2) Raise car so wheels are clear of floor and loosen and remove lower attachment bolt nut. Remove this bolt from lower shock absorber eye and lower control arm mounting bracket.

(3) Compress shock absorber by pushing upward and remove from vehicle by pulling down and out of upper shock absorber mounting bushing. (Imperial models you may find it necessary to remove the upper control arm bumper to obtain enough clearance to remove shock absorber and dust shield).

(4) Check appearance of upper shock absorber mounting bushing and if it appears worn, damaged, or deteriorated, remove bushing by first pressing out inner sleeve with a suitable tool then prying out or cutting out the rubber bushing. (This bushing will take some set after it has been in service and should be replaced once it has been removed.)

(5) If lower bushing requires replacement, remove it from shock absorber using Tool C-3553 by pressing on the outer sleeve of bushing (Fig. 3).

Pressing on inner sleeve of lower bushing will not remove outer sleeve from the shock absorber. **New shock absorbers are furnished with the lower bushing installed; however, bushings are furnished separately for service installation.** Test and expel air from shock absorber before installation.

Testing and Expelling Air

(1) With shock absorber removed, extend fully in an upright position.

(2) Inspect for evidence of fluid running from the upper end of reservoir. (Actual leakage will be a stream of fluid running down the side and dripping off lower end of unit. A slight amount of seepage is not unusual and does not affect performance.)

(3) Test for low fluid level or air trapped in cylinder, by holding shock absorber in its normal vertical position and alternately extending and compressing unit. There should be no lost motion in either direction.

(4) Should lost motion be evident hold shock

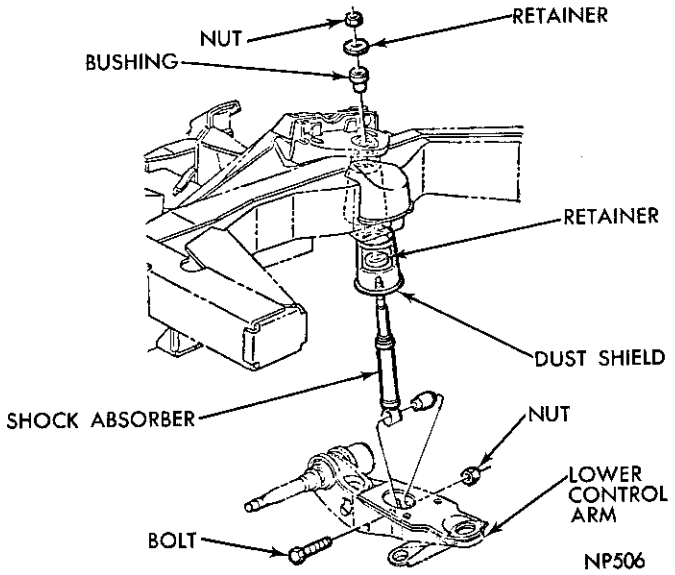

Fig. 2—Front Shock Absorber (Imperial)

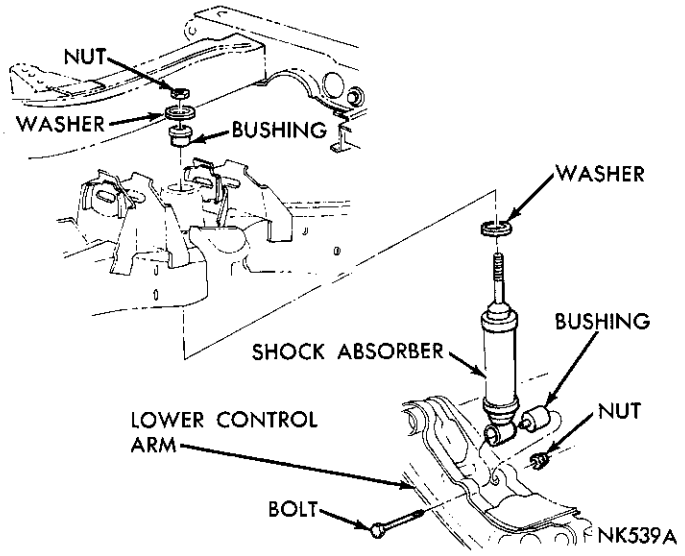

Fig. 1—Front Shock Absorber (Chrysler)

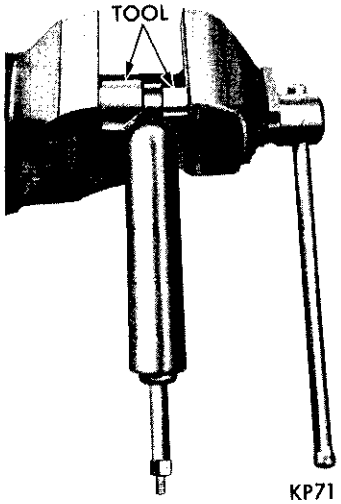

Fig. 3—Removing or Installing Shock Absorber Bushing

absorber in its normal vertical position and fully extend it.

(5) Invert unit and slowly compress it. **Do not extend unit while inverted.**

(6) Repeat steps 4 and 5 several times to expel any air trapped in cylinder.

(7) Should lost motion persist, replace shock absorber. Repeat operation 4 and 5 prior to installation of a new shock absorber. (New shock absorbers may have a greater resistance than an old one due to friction of new seal.)

Installation

(1) To install upper rubber bushing, remove inner steel sleeve and immerse bushing in water (DO NOT use oil or soap) and with a twisting motion, start bushing into hole of upper mounting bracket, then tap into position with a hammer. Reinstall steel inner sleeve in bushing.

(2) Install lower mounting bushing in eye of shock absorber using Tool C-3553 (Fig. 3).

(3) Test and expel air from shock absorber, then compress to its shortest length. **On Chrysler models** position retainer on upper rod of shock absorber and insert rod through upper bushing and install upper retainer and nut and tighten to 25 foot-pounds. **On Imperial models** position retainer on upper rod of shock absorber followed by dust shield. Insert rod through upper bushing and install upper retainer and nut and tighten to 25 foot-pounds.

In each case, install all retainers with the concave side in contact with the rubber.

(4) Position and align lower eye of shock absorber with that of lower control arm mounting holes. Install bolt and nut and tighten to 50 foot-pounds with the full weight of vehicle on the wheels.

Rear—Removal (Figs. 4 and 5)

(1) Raise vehicle on hoist to a comfortable working position.

(2) Using floor stands under axle assembly, raise axle to releave load on shock absorber.

(3) **On Chrysler** station wagon and convertible models, loosen and remove nut and retainer attaching shock absorbers to spring plate mounting stud and remove shock absorber from stud.

On all other Chrysler and Imperial models, loosen and remove nut and retainer attaching shock absorber to spring seat isolator retainer and remove shock absorber from stud.

(4) Loosen and remove nut and bolt from upper shock absorber mounting, and remove shock absorber.

(5) Inspect appearance of shock absorber mounting bushings and if they appear damaged or deteriorated, remove and replace.

(6) Test and expel air from shock absorber before installation, see "Testing and Expelling Air" procedure.

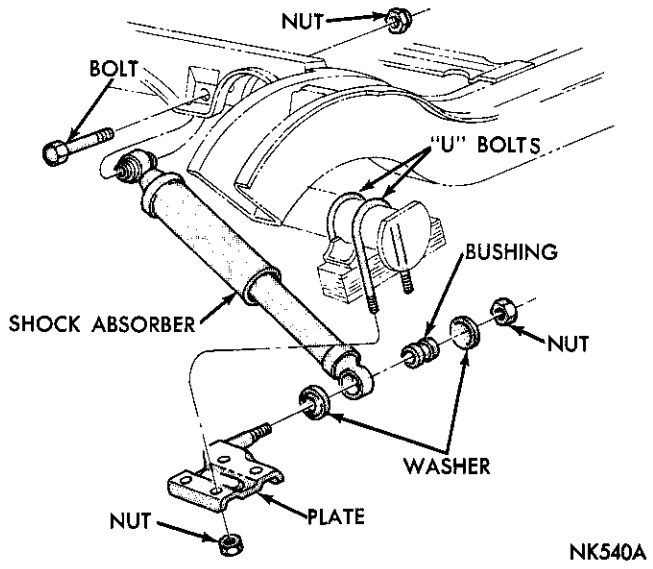

Fig. 4—Rear Shock Absorber (Station Wagon & Convertible)

Installation

(1) Position and align upper eye of shock absorber with mounting holes in crossmember and install bolt and nut. DO NOT fully tighten.

(2) Position washer on shock absorber mounting stud and install shock absorber on stud followed by remaining cupped washer and nut. DO NOT fully tighten.

(3) Lower vehicle until full weight of vehicle is on the wheels. Tighten upper nut 70 foot-pounds, lower stud nut to 50 foot-pounds.

REAR SPRINGS

Measuring Spring Height

When measuring rear spring heights, vehicle

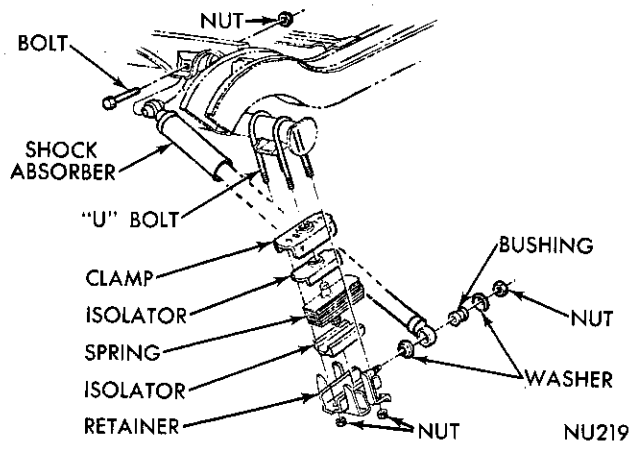

Fig. 5—Rear Shock Absorber (Chrysler-Imperial)

should be placed on a level floor, have correct front suspension height on both sides, correct tire pressures, no passenger or luggage compartment load and a full tank of fuel.

(1) Jounce car several times (front bumper first). Release bumpers at same point in each cycle.

(2) Measure shortest distance from highest point on underside of rear axle bumper strap (at rear of bumper) to top of axle housing.

(3) Measure both right and left sides.

If these measurements vary by more than 3/4 inch (side to side), it is an indication that one of the rear springs may need replacing.

It is normal for rear springs to show some reverse arch, even with no load, so appearance alone should not be reason for spring replacement.

REPLACEMENT

Removal—Chrysler Station Wagon and Convertible

(1) Raise vehicle on hoist to a comfortable working position.

(2) Using floor stands under axle assembly, raise axle assembly to relieve weight on rear spring.

(3) Disconnect rear shock absorber at spring plate lower mounting stud. Lower axle assembly, permitting rear springs to hang free.

(4) Loosen and remove "U" bolt nuts and remove "U" bolts and spring plate.

(5) Loosen and remove the nuts holding front spring hanger to body mounting bracket (Fig. 6).

(6) Loosen and remove rear spring hanger bolts and let spring drop far enough to pull front spring hanger bolts out of body mounting bracket holes.

(7) Loosen and remove front pivot bolt from front spring hanger.

(8) Loosen and remove shackle nuts and remove shackle from rear spring.

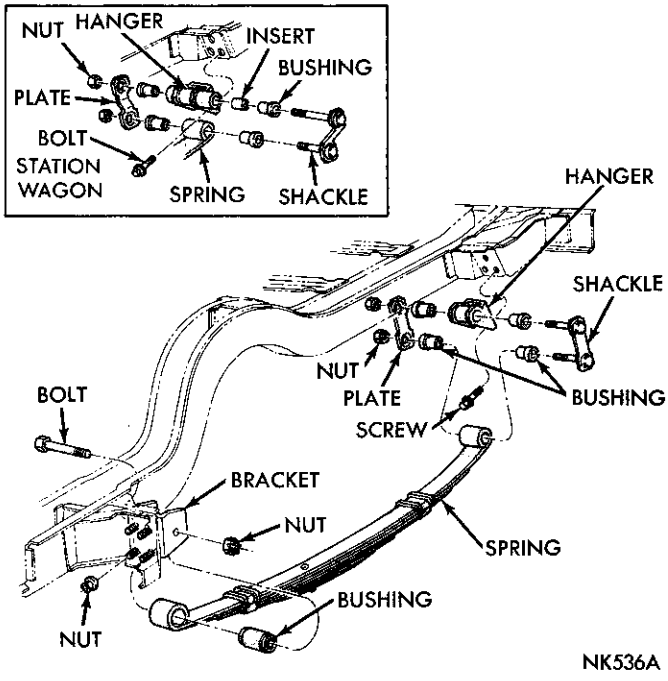

Fig. 6—Rear Spring (Station Wagon & Convertible)

Removal—Chrysler and Imperial

(1) Raise vehicle on hoist to a comfortable working position.

(2) Using floor stands under axle assembly, raise axle assembly to relieve weight on rear spring.

(3) Disconnect rear shock absorber at spring seat isolator retainer mounting stud.

(4) Lower axle assembly, permitting rear springs to hang free.

(5) Loosen and remove "U" bolt nuts and remove lower spring seat isolator retainer and isolator (Fig. 7).

(6) Remove "U" bolts and upper isolator and clamp.

(7) Loosen and remove bolts holding front spring hanger to body mounting bracket.

(8) Loosen and remove rear spring hanger bolts and let spring drop far enough to pull front spring hanger bolts out of body mounting bracket holes.

(9) Loosen and remove front pivot bolt from front spring hanger.

(10) Loosen and remove shackle nuts and remove shackle from rear spring.

Installation—Chrysler Station Wagon and Convertible

Inspect rear spring front pivot bolt bushing and if necessary, replace bushing, see "Pivot Bushing Replacement" procedure.

(1) Assemble shackle and bushings in rear of spring and rear spring hanger. **(Do not lubricate rubber bushings.)** Start shackle bolt nut. **Do not tighten.**

(2) Assemble front spring hanger to front spring eye and install pivot bolt and nut. **Do not tighten.**

(3) Position rear spring hanger to body bracket and

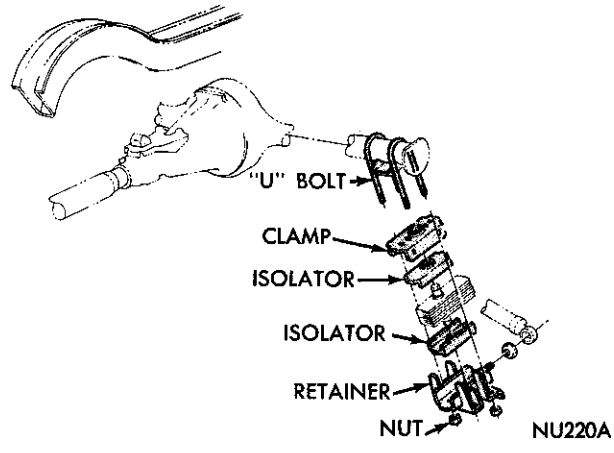

Fig. 7—Rear Spring (Chrysler-Imperial)

install bolts and tighten bolts to 30 foot-pounds.

(4) Raise the spring and start the spring hanger bolts in mounting bracket holes (light leverage such as mechanics shoulder under spring might be necessary to position spring hanger studs in mounting bracket holes. Install nuts and tighten to 30 foot-pounds.

(5) Lower axle assembly into correct position with axle centered over spring center bolt.

(6) Correctly position the lower spring plate and install "U" bolts and nuts and tighten nuts 45 foot-pounds. **DO NOT over tighten "U" bolt nuts.**

(7) Install shock absorber on stud and tighten nut 50 foot-pounds.

(8) Lower vehicle to floor and with full weight of vehicle on the wheels, tighten pivot bolts and/or nuts, 125 foot-pounds. Tighten shackle nuts 40 foot-pounds.

(9) It is recommended that after a rear spring has been replaced, that the vehicle be driven and the front suspension heights be remeasured and corrected if necessary.

Installation—Chrysler and Imperial

Inspect rear spring front pivot bolt bushing and if necessary, replace bushing, see "Pivot Bushing Replacement" procedure.

(1) Assemble shackle and bushings in rear of spring and rear spring hanger. **(Do not lubricate rubber bushings.)** Start shackle bolt nut. **DO NOT tighten.**

(2) Assemble front spring hanger to front spring eye and install pivot bolt and nut. **DO NOT tighten.**

(3) Position rear spring hanger to body bracket and install bolts and tighten to 30 foot-pounds.

(4) Raise spring and start front spring hanger bolts in mounting bracket holes (light leverage such as: mechanics shoulder under spring might be necessary to position spring hanger studs in mounting bracket holes). Install nuts and tighten to 30 foot-pounds.

(5) Correctly position upper isolator on rear spring over center bolt followed by upper clamp.

(6) Lower axle assembly into correct position with axle centered over spring center bolt and install "U" bolts.

(7) Correctly position bottom isolator and retainer over center bolt of spring with "U" bolts through retainer holes and install nuts, tighten 45 foot-pounds. **Do not over tighten "U" bolt nuts.**

(8) Install shock absorber on stud and tighten nut 50 foot-pounds.

(9) Lower vehicle to floor and with full weight of vehicle on the wheels, tighten pivot bolts and/or nuts, 125 foot-pounds. Tighten shackle nuts 40 foot-pounds.

(10) It is recommended that after a rear spring has been replaced, that the vehicle be driven and the front suspension heights be measured and corrected if necessary.

Pivot Bushing Replacement

The removal of old bushings and installation of the new bushings is performed in one operation, using Tool C-3709 (Fig. 8).

(1) Raise vehicle on hoist to a comfortable working position.

(2) Using floor stands under axle assembly, raise axle assembly to relieve weight on rear spring.

(3) Disconnect rear shock absorber at spring plate lower mounting stud. Lower axle assembly, permitting rear springs to hang free.

(4) To replace front pivot bushing, remove rear spring front hanger from body bracket. Remove pivot bolt and hanger from spring.

(5) Place new bushings on Tool C-3709 (Fig. 8). Arrange tool in spring eye, then press out old bushing while pressing new bushing in one operation.

(6) Assemble front hanger to spring but do not tighten pivot bolt nut until full weight of vehicle is on wheels.

(7) Attach spring hanger to body bracket and tighten mounting bolts to 30 foot-pounds.

(8) To replace rear spring shackle bushings remove rear spring hanger from body bracket. Remove shackle, then slide bushings out of spring and hanger.

(9) Insert new bushings in spring and hanger then assemble shackle and hanger on spring. Start shackle bolt nuts.

(10) Attach hanger to body bracket and tighten mounting bolt to 30 foot-pound.

(11) Lower vehicle and install shock absorber on spring plate stud and tighten nut 50 foot-pounds. With full weight of vehicle on the wheels, tighten rear spring front pivot bolt nut 125 foot-pounds and shackle nuts 40 foot-pounds.

Spring Interliner Replacement
Removal

(1) Raise vehicle on hoist to a comfortable working position.

(2) Using floor stands under axle assembly, raise axle assembly to relieve weight on rear spring.

(3) Disconnect rear shock absorber at spring plate

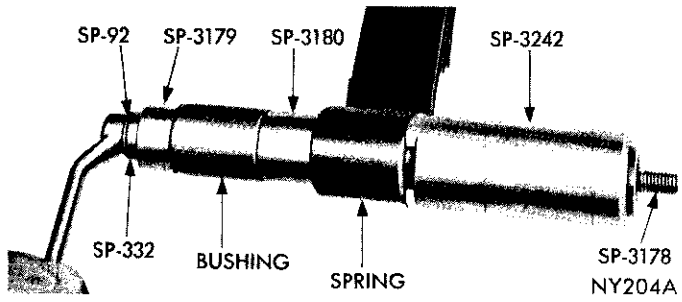

Fig. 8—Pivot Bushing Replacement

lower mounting stud. Lower axle assembly, permitting rear springs to hang free.

(4) Remove nut and washer from spring alignment clips; remove clips.

(5) Using a tapered pry bar or screwdriver, separate spring leaves and remove interliners.

(6) Keeping spring leaves separated, clean mating area of both spring leaves thoroughly. **If rust or corrosion is evident, wrap fine sandpaper around a flat file or putty knife and sand until area is smooth and clean.**

(7) With spring leaves still separated, insert new interliner with retaining buttons in alignment with locating holes.

(8) Press retaining buttons into retainer holes and remove pry bar or screwdriver from spring leaves.

(9) Repeat above procedure for balance of interliners. **DO NOT lubricate interliners.**

(10) Reinstall alignment clips.

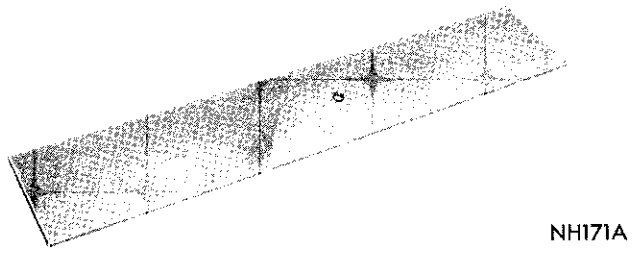

Fig. 9—Zinc Interleaf

(11) Reinstall shock absorber on spring plate stud and install washer and nut, tighten to 50 foot-pounds.

(12) Lower vehicle onto its wheels.

Zinc Interleaf

To remove or install zinc interleaves (Fig. 9) between spring leaves, it will be necessary to remove center bolt and disassemble spring leaves. Tighten spring center bolt nut 10 foot-pounds.

SPECIFICATIONS

	Newport	300	New Yorker	Imperial
REAR SPRINGS				
Type		Semi-Elliptical		
NUMBER OF LEAVES				
Std.	4-1/2	5-1/2	5-1/2	7
Heavy Duty	6-1/2	6-1/2	6-1/2	6-1/2
Station Wagon (Standard)	6-1/2			
(Heavy Duty)	6-1/2			
Police & Taxi	6-1/2	6-1/2	6-1/2	
WIDTH (inches)	2.50	2.50	2.50	2.50
LENGTH (inches)	62	62	62	62
MOUNTING				
Front		Rubber Bushing		
Rear		Shackle, Rubber Bushing		
SHOCK ABSORBERS				
Type		Double Acting		
Mounting		Rubber Bushing		

TIGHTENING REFERENCE

	Foot Pounds
REAR SPRINGS	
Center Bolt Nut	10
Front Hanger Nut	30
Pivot Bolt or Nut	125
Rear Hanger	30
Shackle Nut	40
"U" Bolt Nut	45
SHOCK ABSORBERS	
Front Lower Bolt Nut	50
Upper Shaft Nut	25
Rear Lower Stud Nut	50
Upper Bolt Nut	70