

## STEERING

7-1

### Contents

### Section 7

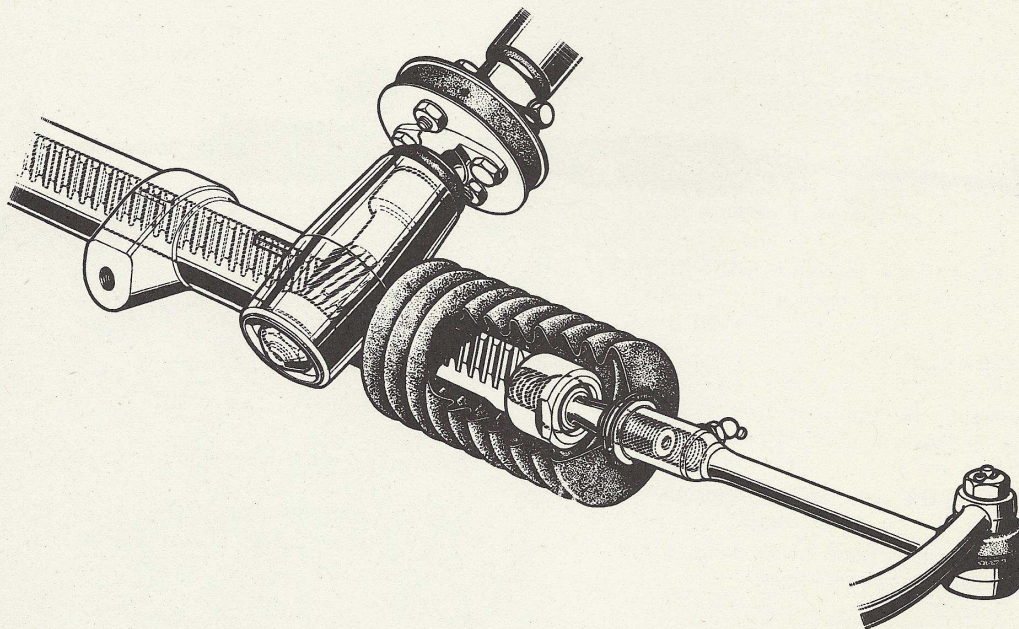
Description .....	7-1
Technical Data .....	7-2
Removal .....	7-2
Disassembly .....	7-2
Adjustment and Assembly .....	7-3
Installation .....	7-6
Tie Rod Ball Joint	
Disassembly .....	7-7
Reassembly .....	7-7
Tools .....	7-7

### DESCRIPTION

The Peugeot 404 is equipped with a rack and pinion type steering gear which features an automatic play take-up device.

The steering ratio of 18.6 to 1 provides a direct control of the wheels, without looseness, while giving an easy handling. The steering gear housing made of aluminum alloy is located behind the front cross-member. The steering column is connected to the pinion through a flexible rubber joint. The left tie rod is secured to the rack by a ball joint providing, through fractions of a turn, a very accurate adjustment of the toe-in.

7

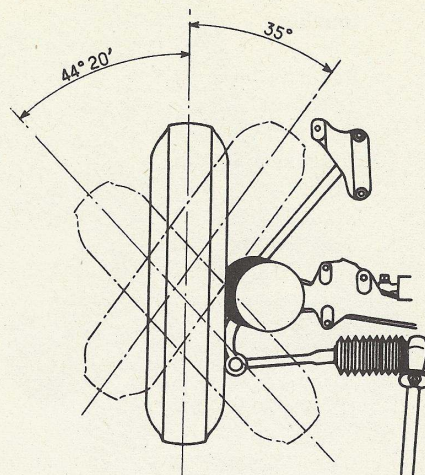




## STEERING

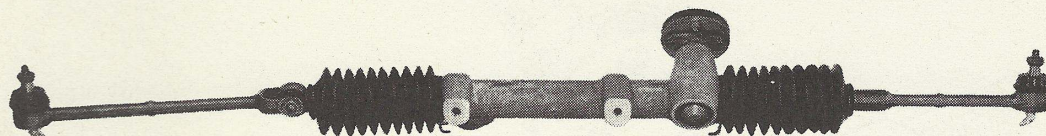
## TECHNICAL DATA

- Number of teeth on rack 30
- Number of teeth on pinion 8
- Ratio 18.6 to 1
- Turning circle 31 ft. 8 in.
- Lock to lock steering wheel turns 3-3/4
- Toe-in Adjustment 1/16" with 1/64" tolerance
- Toe-in Adjustment from ball joint 1 turn = 1/8" on wheels



## REMOVAL OF STEERING ASSEMBLY

- 1 - Disconnect the battery.
- 2 - Lift the car on a rack with the front wheels straight ahead.
- 3 - Disconnect the steering column from the flexible rubber joint by removing the lock bolt of the clamp.
- 4 - Disconnect both tie rods from the steering arms, using Puller 8.0703E.
- 5 - Remove the two bolts securing the steering gear housing to the cross-member.
- 6 - Remove steering gear assembly.



## DISASSEMBLY

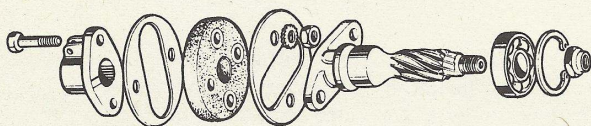
- 1 - Remove the pin bolt from the right tie rod yoke.
- 2 - Remove the outer bellows clamps.
- 3 - Loosen the right hand counter nut and remove the rack eye.
- 4 - Loosen the left hand ball joint counter nut and remove the tie rod.
- 5 - Remove the bellows.
- 6 - Remove the pinion cover.
- 7 - Loosen and remove the pinion nut.
- 8 - Remove both rack plungers. On the plunger located above the pinion, save the spacer and adjustment shims for further use.
- 9 - Remove the pinion.



10 - Remove the rack.

11 - Remove from the pinion  
 - the flexible joint  
 - the rubber stop  
 - the rubber ring

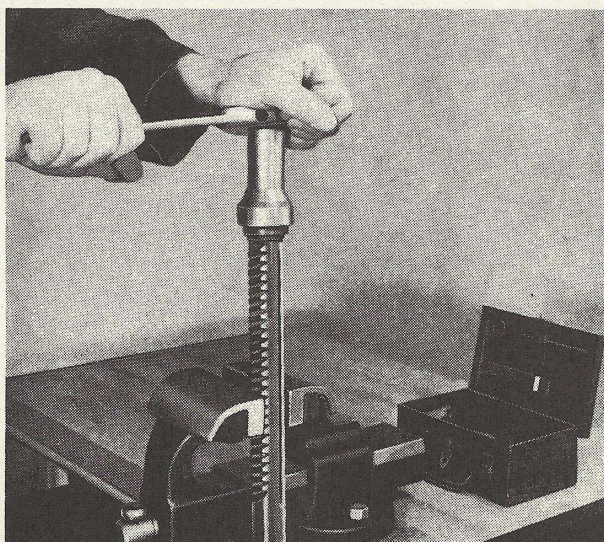
12 - Remove the snap ring and the bearing from the steering housing.



13 - Hold the rack in a vise fitted with lead jaws.

14 - Loosen and remove the ball joint cover nut using socket 8.0703 B.

15 - Remove the ball joint, the adjustment shims, the cup shaped washer and "Belleville" washers.



## ADJUSTMENT AND ASSEMBLY

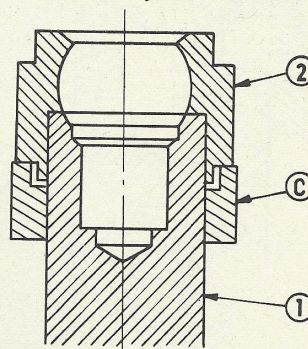
1 - Hold the rack vertically in a vise fitted with lead jaws.

2 - Install adjusting clamp 8.0703C on the rack (1).

3 - Install a new ball joint cover nut and torque to 30 ft. lbs.

4 - Seat the adjusting clamp against the ball joint cover nut (2) and tighten the lock bolt.

5 - Remove the ball joint cover nut only.



6 - Install cup shaped washer (4) in the rack.

7 - Using rod 8.0703D to center the cup shaped washer, install the ball joint (5) and cover nut (2).

8 - Remove the centering rod 8.0703D and tighten the cover nut until the ball joint is hard to swing.

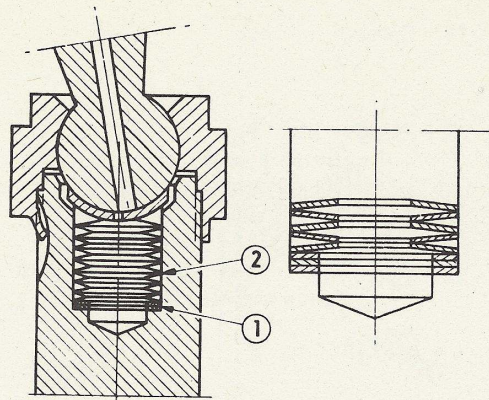
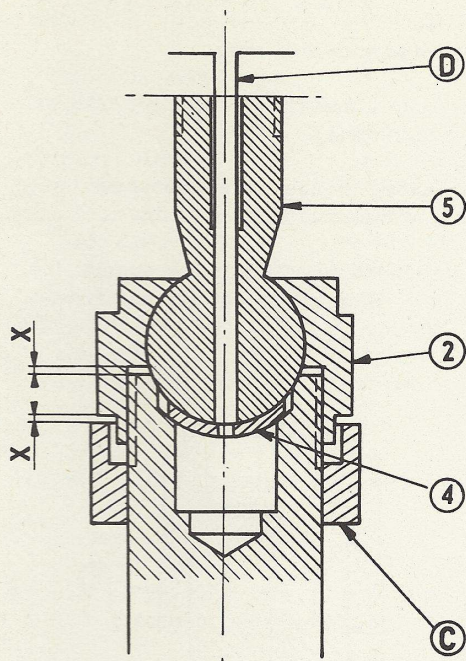
9 - With a feeler gauge, measure the distance (x) between the cover nut (2) and the adjusting clamp (c).

10 - Add .002 to this measurement, to determine the thickness of the shim to be inserted between the rack and the cover nut. This will leave a proper clearance of .002 after the ball joint is assembled.

Adjusting Shims	
Thickness	Part #
.004	3837.01
.006	3837.04
.008	3837.02
.010	3837.03



## STEERING



- 16 - Install a new cover nut and torque to 30 ft. lbs. using socket B.

- 11 - Remove the cover nut, the ball joint, the cup washer and the adjusting clamp.

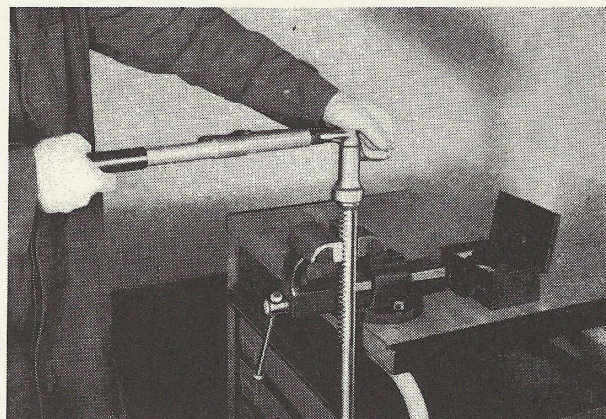
- 12 - Install .020" thick spacer in the bottom of the rack ball joint recess.

- 13 - From Belleville washer set (Part No. 3839.02) place shims (1) if any, over the spacer, then install 13 "Belleville" washers (2) positioned as shown.

*NOTE: Part #3839.02 is packaged with enough shims, predetermined to exert the proper force. Do not add or subtract shims.*

- 14 - Install the adjustment shim determined in Operation #10.

- 15 - Install the cup shaped washer, the ball joint together with the centering rod 8.0703D.



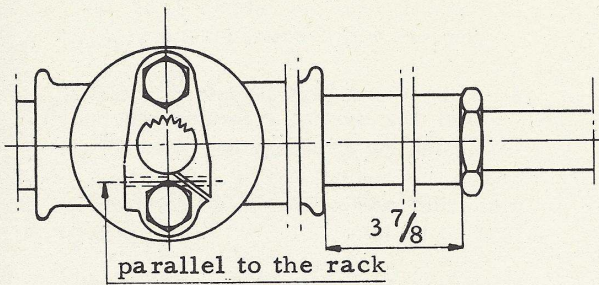
- 17 - Install the bearing and snap-ring into the steering housing.

- 18 - Install the flexible rubber joint and the clamp on the pinion using new bolts. Torque the bolts to 10 ft. lbs. and stake the threads. Install the rubber ring.

- 19 - Slide the rack into the housing letting the right side of the rack protrude from the housing by 3-7/8".

- 20 - Engage pinion so that clamp bolt hole is aligned parallel to the rack.



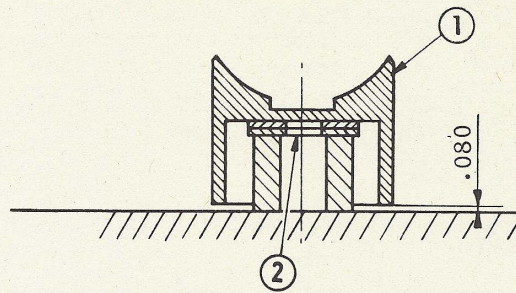


- 21 - Install a new nut on the pinion. Torque to 30 ft. lbs. and stake.
- 22 - Install pinion cover.
- 23 - Install the right hand plunger and torque the flange bolts to 10 ft. lbs.

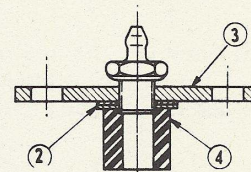
R.H. Side	L.H. Side

- 24 - Place the spacer of the left hand plunger on a plane surface and set the plunger (1) over it.
- 25 - Insert one or more shims (2) between the spacer and the bottom of the plunger until a clearance of .080 is obtained between the plunger and the plane surface.

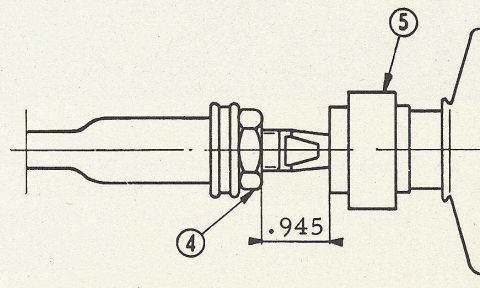
Adjustment Shims	
Thickness	Part #
.004	4063.06
.008	4063.07
.020	4063.08



- 26 - By means of the nylon spacer (4) secure adjustment shims (2) determined above, on the threaded portion of the grease nipple protruding from the flange (3).



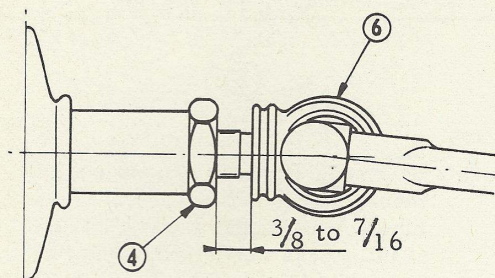
- 27 - Install the plunger in the housing and torque the flange bolts to 10 ft. lbs.
- 28 - Operate the steering gear in both directions to check for any stiff points.
- 29 - Clamp the bellows onto the housing.
- 30 - Install the left tie rod and its counter nut (4) on the ball joint. A distance of .945" (15/16") should be kept between the counter nut (4) and the cover nut (5). Do not torque the counter nut at this time.





## STEERING

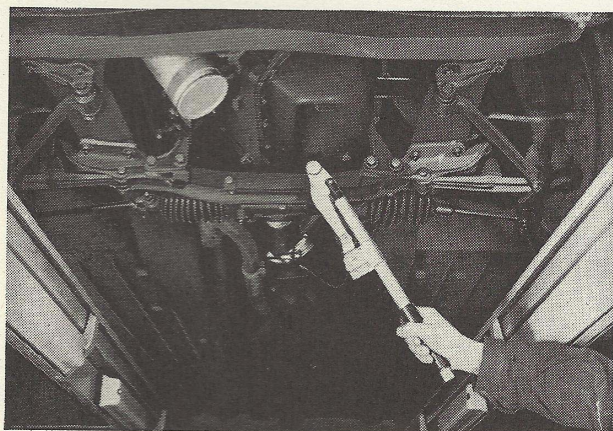
- 31 - Install the rack eye and its counter nut on the rack. Keep a distance of  $3/8''$  to  $7/16''$  between the counter nut (4) and the shoulder of the eye (6). Do not tighten the counter nut at this time.



- 32 - Install the right tie rod with the cone of the ball joint facing up. Do not torque the pin bolt.

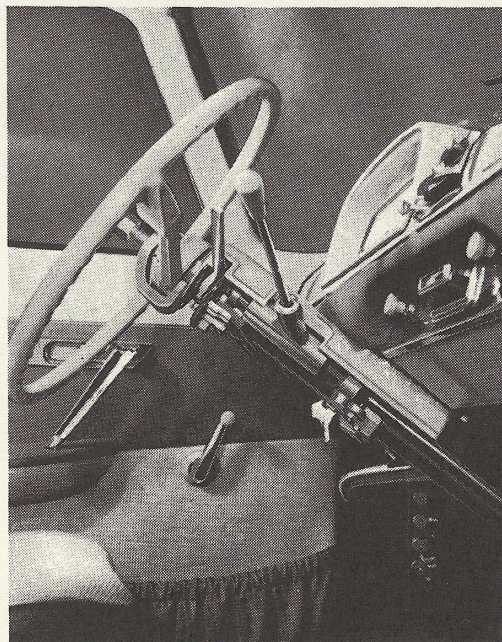
## INSTALLATION

- 1 - Secure the steering gear on cross-member and torque the two bolts to 30 ft. lbs.



- 2 - Using a new bolt, connect the steering column to the clamp of the flexible rubber joint. Torque the bolt to 7 ft. lbs. Stake the bolt on the threads.

- 3 - Connect the tie rods to the steering arms. Torque the nuts to 35 ft. lbs. and lock with 2 cotter pins.
- 4 - Align the yoke of the R.H. tie rod with the eye of steering rack and tighten the counter nut.
- 5 - Tighten yoke pin bolt and lock with a cotter pin.
- 6 - Adjust toe-in to  $1/16''$  with  $1/64''$  tolerance by screwing or unscrewing the ball joint of the left hand tie rod. Tighten the counter nut.
- 7 - Connect the rubber bellows.
- 8 - By turning the steering wheel from lock to lock, check that the wheels are not touching the frame.
- 9 - Grease steering assembly.
- 10 - Road test the car in order to check the alignment of the steering wheel. The alignment can be corrected by removing the steering wheel (using Puller A) and replacing it on the shaft in the proper position.

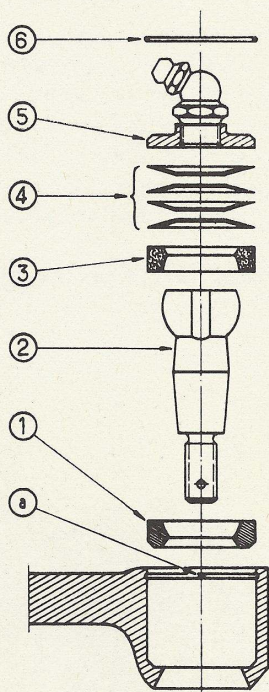




## TIE ROD BALL JOINT

## Disassembly

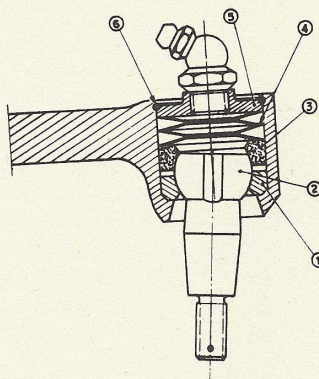
- 1 - Hold the tie rod in a vise.
- 2 - Remove the snap ring (6) with the use of a drift pin through the small hole (a) in the side of the ball joint housing.
- 3 - Catch the following:
  - ball joint cap (5)
  - four Belleville washers (4)
  - lower nylon half bearing (3)
  - ball joint (2)
  - upper steel half bearing (1)



## Assembly.

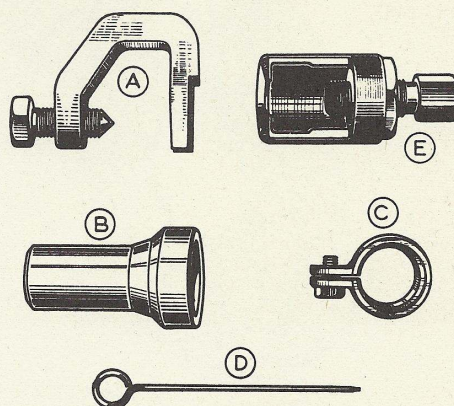
- 1 - Place the steel half bearing (1) in the bottom of the socket.
- 2 - Install the following:
  - ball joint (2)
  - nylon half bearing (3)
  - four Belleville washers (4) positioned as shown
  - ball joint cap (5)

- 3 - Apply pressure on Belleville washers and install a new snap ring (6).
- 4 - Position ball head so that the cotter pin hole makes a 90° angle with the tie rod.
- 5 - Grease ball joint housing.



## Tool Kit #8.0703

- A - Puller - Steering wheel
- B - Socket - Ball joint
- C - Clamp - Ball joint adjustment
- D - Rod - Cup washer centering
- E - Puller - Tie rod ball joint



NOTE: Tool Kit 8.0703 can be ordered from the distributor.



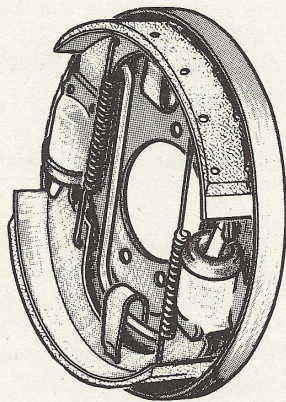
Contents .....	Section 8
Description .....	8-1
Master Cylinder .....	8-2
Stop Light Switch .....	8-2
Brake Fluid .....	8-2
Bleeding the Hydraulic System .....	8-2
Brake Drum .....	8-3
Rear Brake .....	8-3
Front Brake .....	8-4
Brake Shoes Adjustment .....	8-5
Hand Brake Adjustment .....	8-5
Notes on Maintenance .....	8-5

## DESCRIPTION

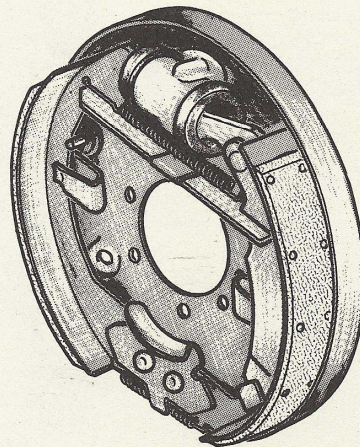
The braking system consists of a hydraulically operated circuit which applies the brake shoes simultaneously at all four wheels, and a mechanically operated parking brake that applies the brake shoes at the rear wheels. Each front wheel brake is equipped with two wheel cylinders of the single piston type, while each rear wheel brake is equipped with one wheel cylinder of the double piston type. To keep out dust and moisture and to prevent gumming of the brake fluid, each piston end of a wheel cylinder is sealed with a rubber boot.

The parking brake handle is located to the left side of the steering column.

8



Front Brake



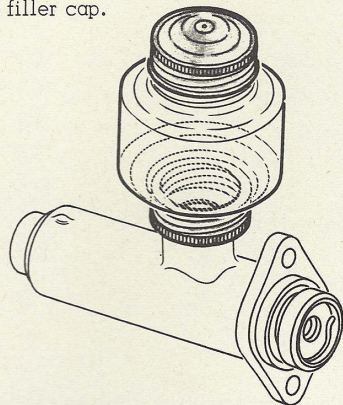
Rear Brake



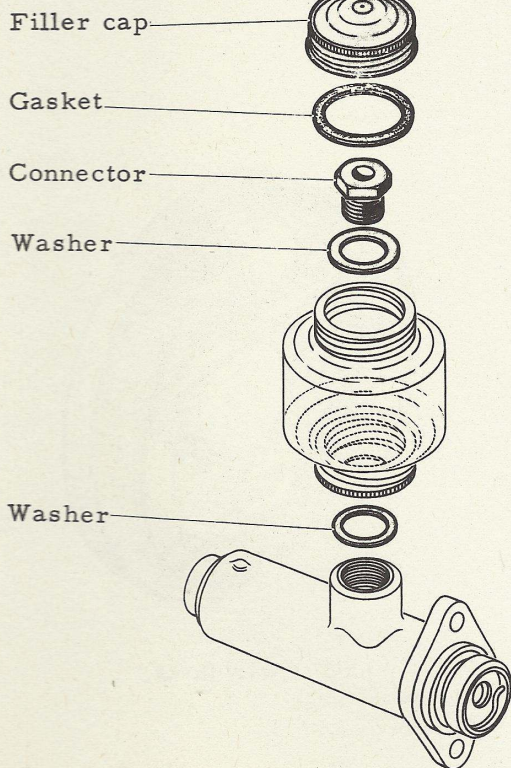
## BRAKES

Master Cylinder

The master cylinder is located in the engine compartment and secured on the fire wall. It is fitted with a glass reservoir which allows a quick check of the hydraulic fluid level without removing the filler cap.



The glass reservoir is fitted at the bottom by a metallic cap with a left hand thread. This cap secures the reservoir onto the master-cylinder body by means of a connector. When installing the reservoir onto the master cylinder, tighten only the connector with a socket. Do not turn the reservoir.

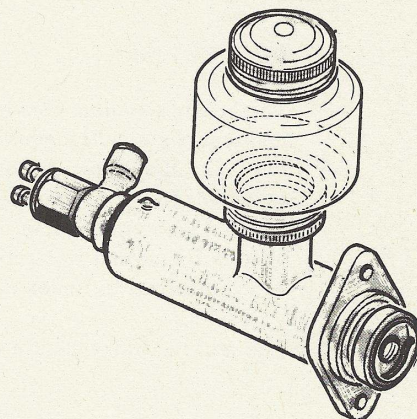


The clearance between the push rod and and the master-cylinder is .010" to .075". This clearance is factory adjusted and should not be altered.

When bleeding the brake system, refill reservoir to "maxi" level mark and check that the vent hole of filler cap is not clogged.

Stop Light Switch

The stop light switch is attached to the master cylinder. It is actuated by the pressure of the brake fluid when the pedal is depressed. Its calibration is 45 p.s.i.  $\pm$  15.

Brake Fluid

The hydraulic system is factory filled with "Lockheed HD31" or "Stop HD 36" brake fluid which are compatible with "Wagner Lockheed 21B" heavy duty (SAE 70R3 or 70R1). Either may be added to the system.

Bleeding the Hydraulic System

If the brake pedal feels spongy, or a line has been disconnected, it is necessary to bleed the brake lines manually or by using pressure bleeding equipment.

It is suggested that bleeding be done on the longest line first.

The manual bleeding procedure is as follows:

- 1 - Remove the filler cap of the master cylinder.



2 - Remove the rubber cap from the bleeder valve and install a hose onto the bleeder valve, placing the other end of hose in a jar containing sufficient fluid to cover its end.

3 - Open the bleeder valve at the wheel cylinder.

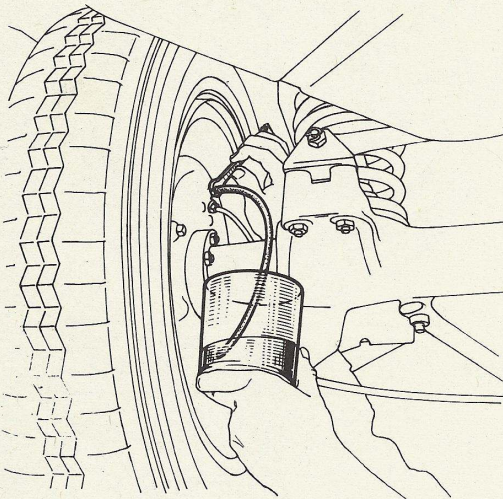
4 - Depress the brake pedal by hand, allowing it to return slowly. Continue this pumping action until bubbles stop and fluid flows in a solid stream.

5 - Close the bleeder valve.

**NOTE:** In order to avoid misshaping of the wheel cylinder, the bleeder valve should be tightened moderately (10 ft. lbs.).

6 - Remove the hose and replace the rubber cap on the bleeder valve.

7 - Repeat these operations at each wheel.



## Brake Drum

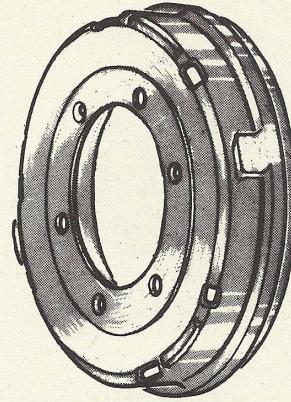
The front and rear brake drums are very rigid, and made of hard cast iron. They are secured onto the hubs by means of three bolts.

Whenever brake drums are removed, they should be thoroughly checked for cracks, scores, deep grooves and out-of-round.

Slight scores can be smoothed-up with a very fine emery cloth.

A drum that is more than .004" out-of-round should be rebored.

A drum should not be rebored more than .040" over the standard size.



## Rear Brake

The rear brakes are of the floating type, equipped with one wheel cylinder in each backing plate.

The length of the leading lining is: 10.511".

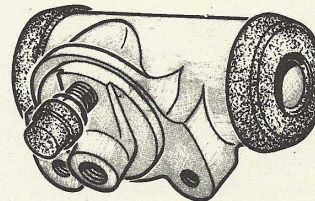
The length of the trailing lining is: 8.622".

*Note that the longer lining is installed at the front.*

The width of both linings is: 1.377".

The inside diameter of the drum is 10.039".

The diameter of the bore of the wheel cylinder is: 1".



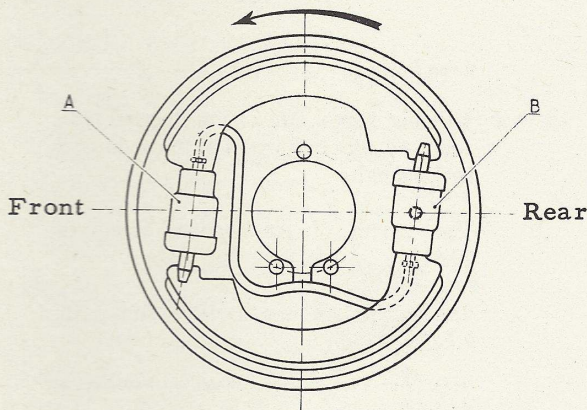
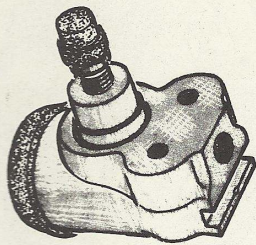
*Since the drums and shoes of a rear brake are smaller in width, they are not interchangeable with the drum or shoes of a front brake.*



## BRAKES

Front Brake

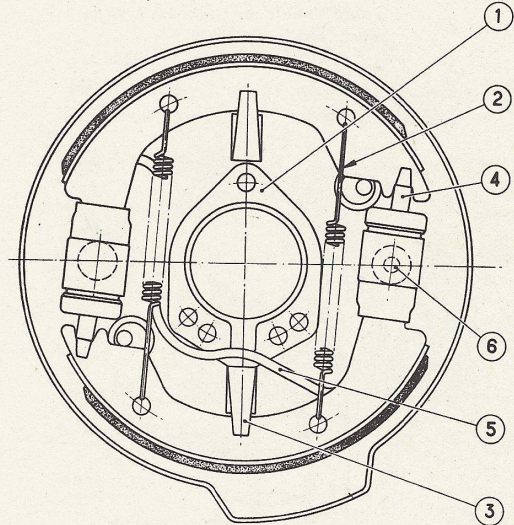
The front brakes are equipped with two wheel cylinders on each backing plate. Since Serial #4108665, some modifications have been performed on the front brakes.



Parts are not interchangeable between the early and late models. Complete assemblies (backing plates, wheel cylinders, shoes and drums) may be replaced on **both wheels**.

Only the parts listed below are interchangeable between an early and late model:

- 1 - Oil Retainer
- 2 - Shoe Return Spring
- 3 - Shoe Hold Down Spring
- 4 - Wheel Cylinder Push Rod
- 5 - Connecting Pipe
- 6 - Bleeder Valve (fitted on the rear cylinder)



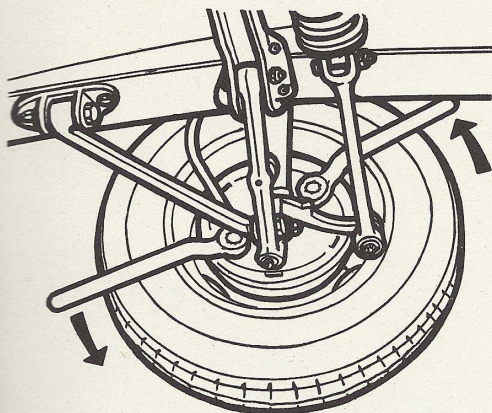
PARTS	EARLY MODEL Up to Serial #4108664	LATE MODEL From Serial #4108665
Front Cylinder (A)	Ø 1-1/8"	Ø 1.181" (30 mm.)
Rear Cylinder (B)	Ø 1-1/4"	Ø 1.181" (30 mm.)
Lining Length	10.511" (267 mm.)	10.511" (267 mm.)
Lining Width	1.968" (50 mm.)	2.362" (60 mm.)
Lining Thickness	.196" (5 mm.)	.196" (5 mm.)
Area of one Lining	19.362 sq. in. (125 cm 2)	23.235 sq. in. (150 cm 2)
Drum Inside Diameter	10.039" (255 mm.)	10.039" (255 mm.)
Drum Overall Width	2.755" (70 mm.)	3.346" (85 mm.)
Drum Inside Width	2.362" (60 mm.)	2.755" (70 mm.)



## Brake Shoes Adjustment

### FRONT:

- 1 - Jack wheels clear of floor.
- 2 - Using a wrench, rotate one of adjusting squares in the same direction the wheel rotates in forward motion until the drum is locked.
- 3 - Slightly rotate the adjusting square in the opposite direction until all interference between shoe and drum has disappeared.
- 4 - Proceed as above for the other adjusting square of the same wheel.
- 5 - Use the same procedure for the other front wheel.



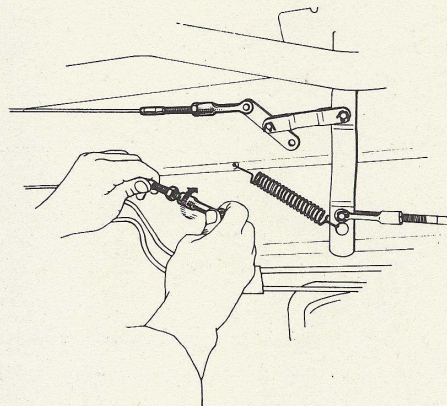
### REAR:

For the rear wheels, proceed as above for the front adjustment square. Rotate the rear adjustment square in the opposite direction; i.e., towards the rear.

## Hand Brake Adjustment

- 1 - Jack up both rear wheels.
- 2 - Loosen the lock nut of each rear brake cable yoke.
- 3 - Disconnect the yokes from the equalizing bar.
- 4 - Tighten each yoke a few turns over the threaded rod of each cable.
- 5 - Reconnect both yokes to the equalizer bar.

- 6 - After checking that the linings are not dragging against the drums, install the cotter pins and tighten the lock nuts.



## Notes on Maintenance

- 1 - Since the front wheels are dynamically and statically balanced on the car, it is advisable to mark the wheel and the drum according to the hub, before removal.
- 2 - Keep hands clean while handling brake shoes. Do not permit oil or grease to come in contact with linings.
- 3 - Keep brake parts, such as rubber cups, pistons, rubber boots, flexible hose, away from petroleum products (gasoline, oil, etc.).
- 4 - Clean all parts thoroughly with alcohol before installation. Before washing parts, hands must be cleaned with soap and water. (Do not wash hands in gasoline or oil.)
- 5 - Before installing new rubber cups in a wheel cylinder, check the bore carefully. Replace any scored cylinder bore.
- 6 - Before installing the brake shoes, check the adjusting squares for free rotation and lubricate.
- 7 - At the time of installation, lubricate new hydraulic parts with brake fluid.
- 8 - Lubricate hand brake cables before installing shoes.



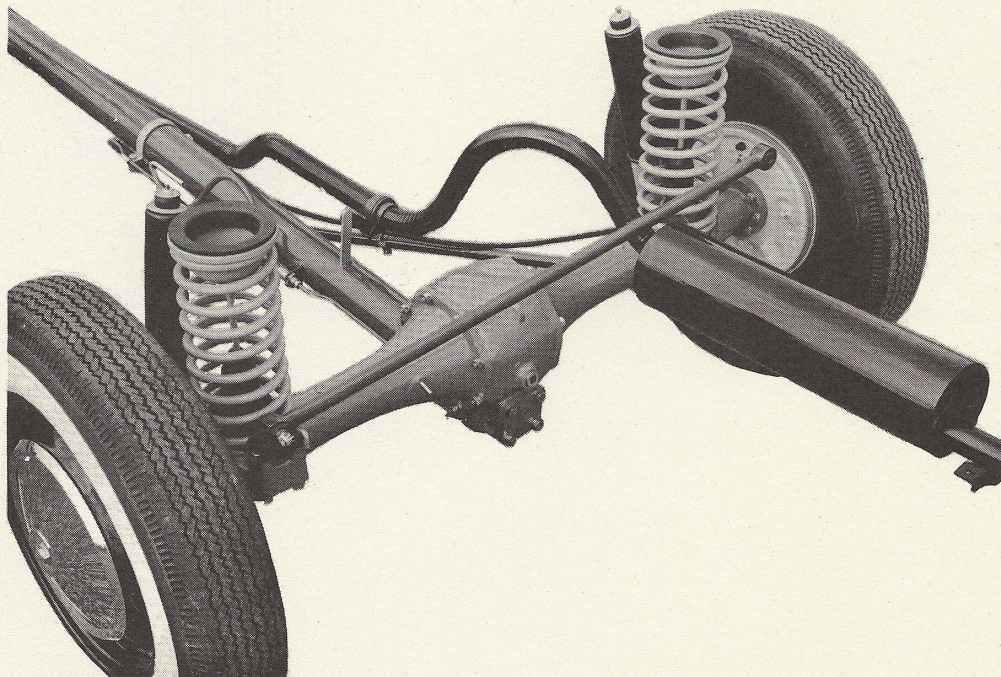
## REAR SUSPENSION

9-1

Contents .....	Section 9
Description .....	9-1
Rear Shock Absorber Removal .....	9-2
Rear Shock Absorber Installation .....	9-2
Rear Spring .....	9-3

### DESCRIPTION

The 404 is supported at the rear by coil springs and telescopic shock absorbers. The double-acting shock absorbers are sealed units which require no periodic maintenance. Lateral alignment is assured by a stabilizing bar hinged to the axle housing at the left and to the body shell at the right.





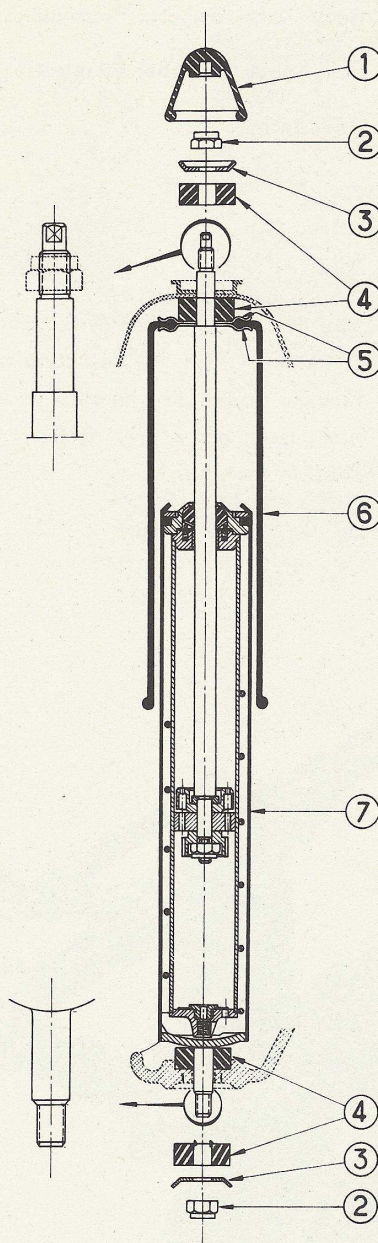
## REAR SUSPENSION

**Rear Shock Absorber Removal**

- 1 - From the floor of the rear deck, remove the dust cover (1).
- 2 - Hold the end of the rod by the flat portion on the end and loosen the self-locking nut (2).
- 3 - Remove the plate washer (3) and the rubber bushing (4).
- 4 - From the lower end at the rear axle tube remove the self-locking nut (2).
- 5 - Remove the plate washer (3) and rubber bushing (4).

**Rear Shock Absorber Installation**

- 1 - Place a rubber bushing (4) on each end of the shock absorber.
  - 2 - Insert the upper end into its position through the rear floor mount.
  - 3 - Install a rubber bushing (4) and plate washer (3).
  - 4 - Use a new self-locking nut (2) and torque to 15 ft. lbs. holding the rod by its flat portion.
- NOTE: The shaft should extend from the top of the nut 3/8 inch.*
- 5 - Extend the shock until the rubber bushing seats onto the rear axle tube mount.
  - 6 - Install a rubber bushing (4) and plate washer (3).
  - 7 - Use a new self-locking nut and torque to 15 ft. lbs.
  - 8 - Install the dust cover over the top mount.





## Rear Springs

The rear spring is produced in two tensions identified by one or two green dashes painted on the spring.

Spring with one green dash:

Free Height = 16-5/16"

Height under 700 lbs. =

9-7/16" to 9-11/16"

Spring with two green dashes:

Free Height = 16-5/16"

Height under 700 lbs. =

9-11/16 to 9-7/8"

**NOTE:** The left and right springs of a vehicle must bear the same marking.

Upon installation, the end of the bottom coil should be positioned toward the rear.

Two rubber rebound blocks secured to the axle housing limit spring compression and prevent bottoming.

