8 - BRAKES

TECHNICAL DESCRIPTION

Brakes : Bendix
Hydraulical control : Lockheed type
Linings : Ferodo 4 Z

CHARACTERISTICS

Type :

- Front brakes : "Twinplex"
- Rear brakes "H.C.S.F." (hydraulic, classical type with floating shoes).

Hand brake : Cable control on rear wheels.

Brake drums dia. : 255 mm

Front linings : Two on each wheel, 250 × 50 mm each

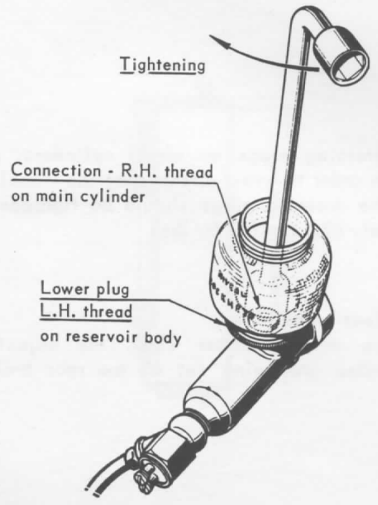
Rear lining :

- One : 250 × 35 mm
- One : 200 × 35 mm

on each wheel.

Stop light control : Lockheed hydraulical 3 + 1kg/cm2 (46 lbs p.s.i. + 14)

Total capacity of the system : 0,650 l (a little more than 1 pint).



Lockheed fluid supply tank

The glass lockheed reservoir is closed at the bottom by a metallic plug with L.H. thread.

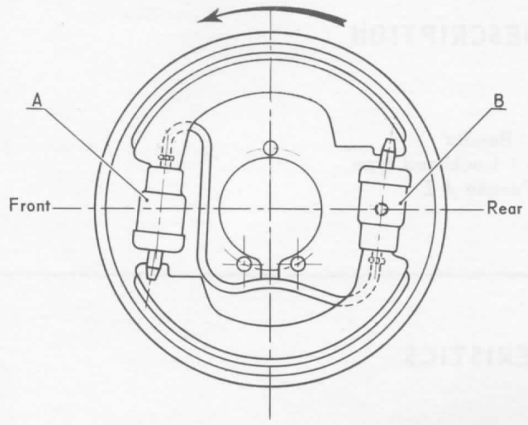
This plug permits to attach the bowl onto the master cylinder body, using a connection and a 21 mm wrench.

Do not tighten the bowl fixation by rotating the bowl : this might, either cause it to break, or cause a leak through the bottom plug

Only work on the connection.

Brake fluid

Only the HD 31 lockheed or the HD 65 stop fluids should be used. These may be mixed together, but do not use any other type of fluid.



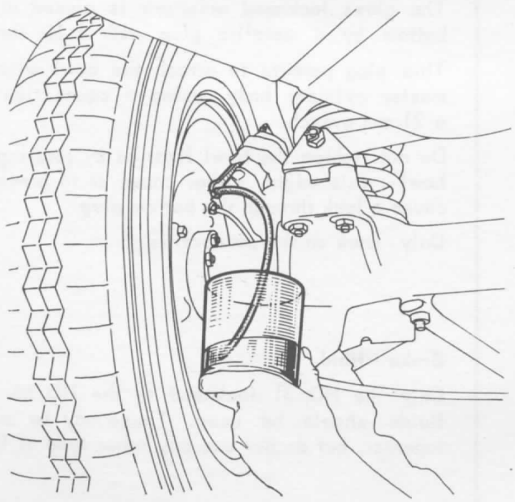
Front wheel cylinders

The rear cylinders on front wheels have been modified as from the following serial numbers.

404 LHD	4.012.424
404 RHD	4.011.831
404 J	4.500.313

FRONT WHEEL CYLINDERS CHARACTERISTICS

	Earlier fitting	Later fitting
Front cylinder	Ø 1'' 1/8 (28,575 mm)	Ø 1'' 1/8 (28,575 mm)
Rear cylinder, with draining plug	Ø 1'' 1/8 (28,575 mm)	Ø 1''1/4 (31,750 mm)



Draining plugs on wheel cylinders, all type : In order to avoid misshaping the wheel cylinders the draining plugs should be tightened moderately (9.4 to 10.8 ft/ lbs).

Rear brake plates

As per November 1960, the adjustment cam axles are being set on the rear brake plates.

REPAIR METHOD

BRAKE LININGS REPLACEMENT

Removing the brake jaws is of no difficulty when the operator uses special pliers for the return springs removal and refitting.

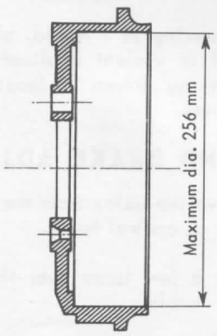
There is a standard exchange system working for replacement of the jaws with worn linings of the same characteristics as the original ones.

Caution

When exchanging the brakes linings, for whatever reason, this exchange should be carried out on both wheels simultaneously. On the other hand, no modification should be made to the genuine parts, particularly not smoothing off the edges of the linings.

Lining type :

Linings **FERODO 4Z** will compulsorily be used.



BRAKE DRUMS TRUING UP

The maximum permissible dia. of the brake drums after truing up is **256 mm** i.e. **1 mm** oversize.

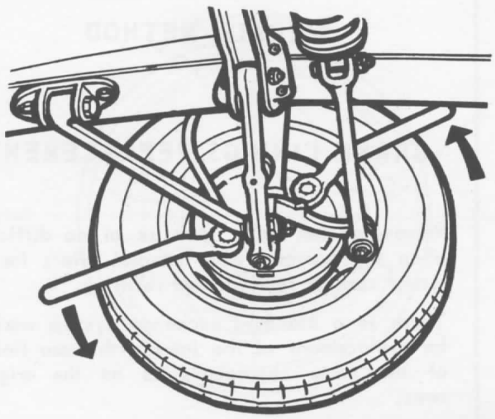
BRAKE JAWS ADJUSTMENT

This adjustment will be executed when there is an excess of free run at the pedal.

Front brakes :

1 - Raise the car, so that one wheel rotates freely.

2 - Using the wrench n° **8.0801,** rotate in the forward sense one of the adjustment bolts, until the jaw comes and locks the wheel.



3 - Slightly turn the adjustment bolt rearwards, to eliminate rubbing between lining and drum.

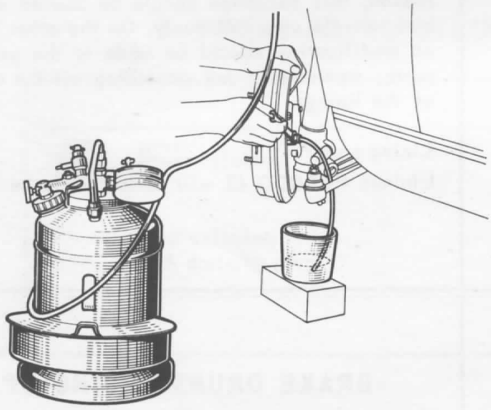
4 - Proceed in the same way, for the other bolt of the same wheel.

Rear brakes

5 - Rotate the front adjustment square headed bolt in the wheel rotation sense and the rear bolt in the reverse sense, with the same precautions as for the front wheels.

Master cylinder control

Never modify the adjustment of the master cylinder control, which is originally made by the manufacturer.



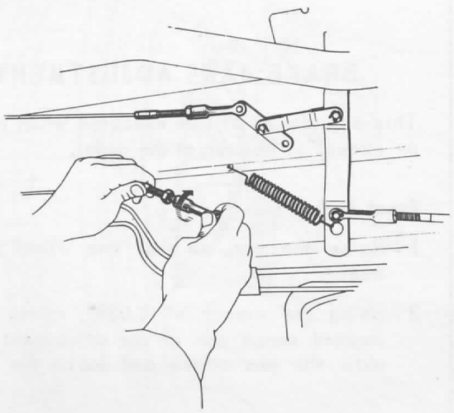
BRAKES CONTROL & DRAINING

1 - Bleed the braking system, to eliminate all the air in the lines.

2 - Check the fluid level in the tank, and the breather orifice on top.
Do not overcome the "maxi" level mark.

3 - Each time a job is done on the braking system, a road test should follow.

NOTE - After each brakes adjustment, the tires pressure should be checked on cold wheels.



Brakes running in : Avoid, as far as possible, prolonged or violent application of the brakes before having driven at least 1800 miles with new linings.

HAND BRAKE ADJUSTMENT

1 - Remove the axles from the rear brakes cable yokes on control lever.

2 - Screw a few turns over the threaded rod of each cable.

3 - Refit the yoke axles without pin.

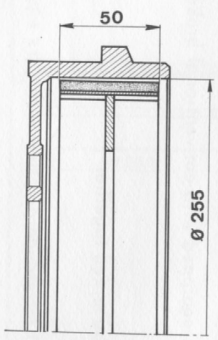
4 - Check that the linings are not rubbing against the brake drums.

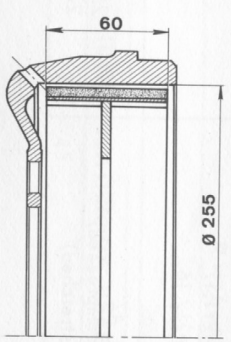
5 - Pin the yole axles.

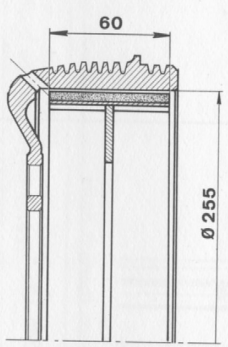
8 - BRAKES

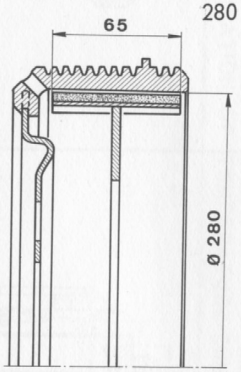
IDENTIFICATION OF "TWINPLEX" FRONT BRAKES - ALL TYPES OF 404s

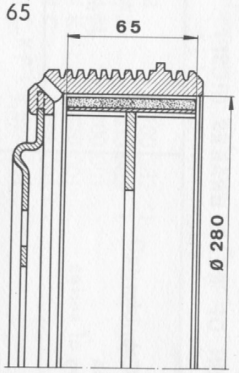
	Up to serial numbers :	From serial numbers :	From serial numbers :	As from serial numbers :	
Type of car	**404** - 4.108.664 **404 J** - 4.504.085	**404** - 4.108.665 to 4.315.776 **404 J** - 4.504.086 to 4.525.791	**404** - 4.315.777 to 4.388.565 **404 J** - 4.525.792 to 4.526.883 **404 DA** - 4.060.001 to 3.060.542	**404** - 4.388.566 **404 J** - 4.526.884 **404 DA** - 3.060.543 **404 D**, **404 KF**, **404 C**, **404 C.KF** } Beginning of series	All types of associated vehicles, from beginning of series
FRONT BRAKES	255 × 50	255 × 60		280 × 65	
BRAKE DRUMS P/N	4246.28	4246.29	4246.33	4246.30 - 4246.38*	4246.31
BRAKE PLATES P/N	L.H. front 4209.28 R.H. front 4210.19	L.H. front 4209.29 R.H. front 4210.20		L.H. front 4209.31 R.H. front 4210.22	
LININGS Size	FERODO 4Z 241 × 50 × 5	FERODO 4Z 241 × 60 × 5		FERODO 4Z 253 × 65 × 5 grooved	











Brake drums, P/N 4246.33 may be used to replace drums, P/N 4246.29, provided both drums are replaced.

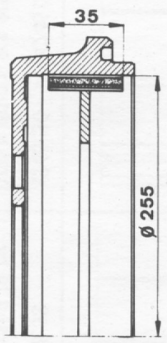
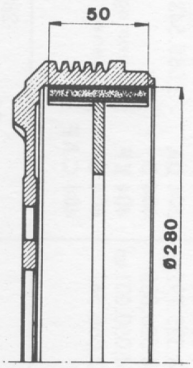
Brake drums are ground on their hubs ; therefore Spare Parts Department supplies the brake drum and hub assemblies.

* P/N 4246.38 : This brake drum is marked with an oval-shaped identification mark milled on the outer edge.

This brake drum is interchangeable with drum P/N 4246.30, provided both drums are replaced.

This brake drum must not be installed on cars equipped with temperature-compensated brakes.

IDENTIFICATION OF REAR BRAKES (HCSF)

Type of car	Saloon cars - Cabriolets - Coupés From beginning of series	Associated vehicles From beginning of series
REAR BRAKES	255 × 35 	280 × 50 
BRAKE DRUMS	P/N - 4246.15	P/N - 4246.32
BRAKE PLATES P/N	L.H. rear - 4211.17 R.H. rear - 4212.16	L.H. rear - 4211.20 R.H. rear - 4212.20
LININGS Useful dimensions	FERODO 4Z 250 × 35 × 5 (compressed) 200 × 35 × 5 (stretched)	FERODO 4Z 250 × 35 × 5 (compressed) 220 × 50 × 5 (stretched)

BRAKE FLUID

The hydraulic system of all cars equipped with conventional brakes may be filled using any one of the brake fluids listed below :

- STOP HD 65
- LOCKHEED HD 31

} may be mixed together

- LOCKHEED HD 43* (starred) for standardization with cars equipped with temperature-compensated brakes.

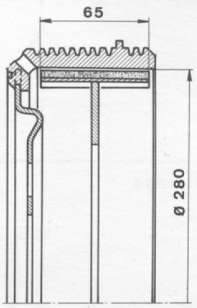
LOCKHEED HD 43* (starred) brake fluid must never be mixed with any other brake fluid.

As regards topping up or refilling, refer to page 83.

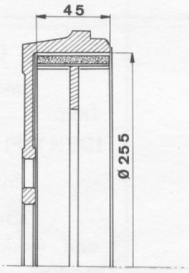
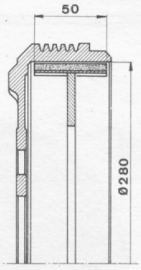
BRAKES WITH BRAKE ASSISTER

	Saloon cars - Cabriolets - Coupés As from serial numbers :	Associated vehicles As from serial numbers :
Type of car	**404** - 5.100.582 } Optional **404 J** - 4.535.003 } **404 SL** - 5.100.001 **404 KF** - 4.570.001 **404 C** - 4.498.001 **404 C.KF** - 4.594.001	**404 L** - 4.855.213 Optional **404 Break** - From beginning of series

IDENTIFICATION OF TEMPERATURE-COMPENSATED FRONT BRAKES

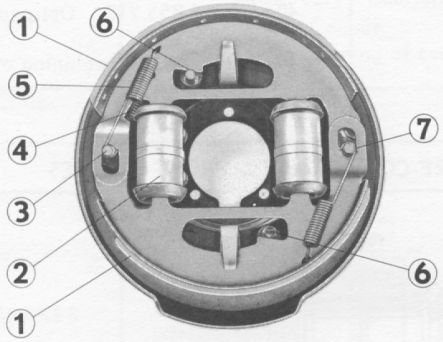
FRONT BRAKES	280 × 65  High thermal conductivity cast-iron brake drums	280 × 65
BRAKE DRUMS P/N	4246.35 (Brake drum and hub assemblies)	4246.36 (Brake drum and hub assemblies)
BRAKE PLATES P/N	L.H. front - 4209.33 R.H. front - 4210.24	
LININGS Useful dimensions	FERODO 762 269 × 65 × 7	

IDENTIFICATION OF REAR BRAKES (HCSF)

REAR BRAKES	255 × 45 	280 × 50 
BRAKE DRUMS, P/N	4247.10	4246.32 *
BRAKE PLATES, P/N	L.H. rear - 4211.22 R.H. rear - 4212.22	L.H. rear - 4211.20 * R.H. rear - 4212.20 *
LININGS Useful dimensions	MINTEX M35 P 240 × 45 × 5 (compressed) 192 × 45 × 5 (stretched)	MINTEX M35 P 254 × 50 × 5 (compressed) 220 × 50 × 5 (stretched)

* Same as for cars with conventional brakes

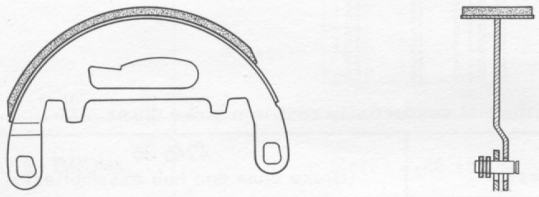
DESCRIPTION OF FRONT BRAKES (Same for saloon cars & associated vehicles)



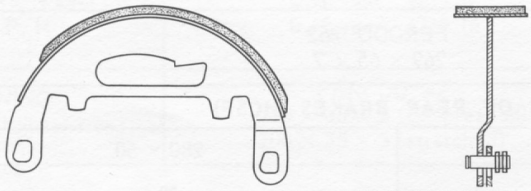
BRAKE PLATE ASSEMBLIES

1 - Upper & lower brake shoes.
2 - Double-acting brake cylinder, 1 3/8" dia.
3 - Fixed point for upper brake shoe in reverse motion and for lower brake shoe in forward motion.
4 - Brake shoe inner return spring.
5 - Brake shoe outer return spring.
6 - Adjusting eccentrics.
7 - Fixed point for upper brake shoe in forward motion and for lower brake shoe in reverse motion.

L.H. front brake linings



R.H. front brake linings



BRAKE SHOES

All brake shoes used with any given brake plate are identical.

Brake shoes used with R.H. and L.H. brake plates are not identical and are not interchangeable.

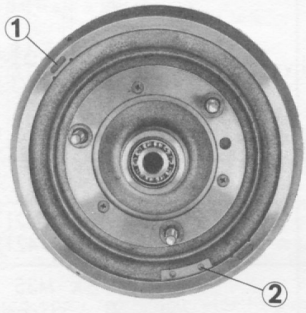
The following directions of installation must be respected :

The offset end of the brake shoe should be installed at the outside of the brake plate and located as follows :

- Towards the front for the upper brake shoe
- Towards the rear for the lower brake shoe

Linings are made of FERODO 762.

Never install any other type of lining.



BRAKE DRUMS

Made of high thermal conductivity cast iron.

IDENTIFICATION

Integral oval-shaped mark 1.

Brake drums used for Twinplex brakes and marked with a half-milled mark, or unmarked, must not be used for temperature-compensated brakes.

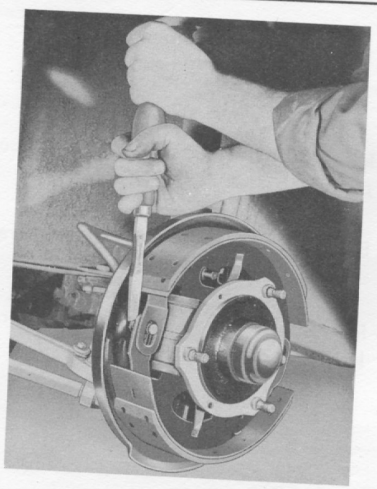
NOTE. - *These drums are balanced by installation of counterweight 2 on the disc.*
(The above method has also been used for Twinplex brake drums as from November, 1964, for standardization purposes). This counterweight may prevent installation of spider wheels.

R.H. FRONT BRAKE

- Mark brake drum position with respect to hub.

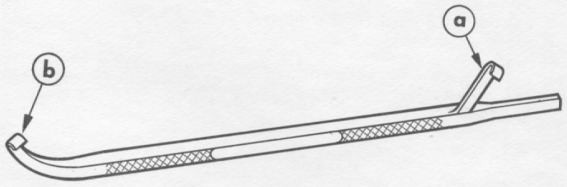
- Remove :

  - Brake drum,
  - Both outer springs, using pliers.



- Remove both inner springs by placing the blade of a screwdriver on the end of the spring hook, and tapping the screwdriver handle.

- Remove lateral springs and brake shoes.

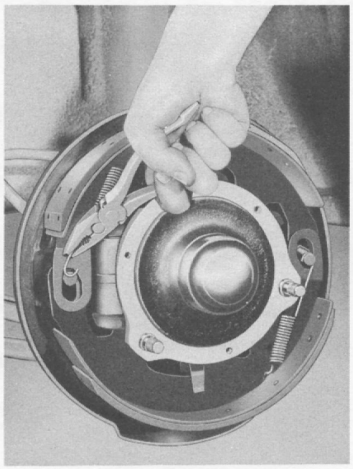


- Removing and re-installing the inner return springs of the front brake shoes require use of tool **8.0802.**

This tool also facilitates
- re-installation of the outer springs.

NOTE. - *Tool* **8.0802** *should be ordered from T.U.P.A.C. or from Société FENWICK.*

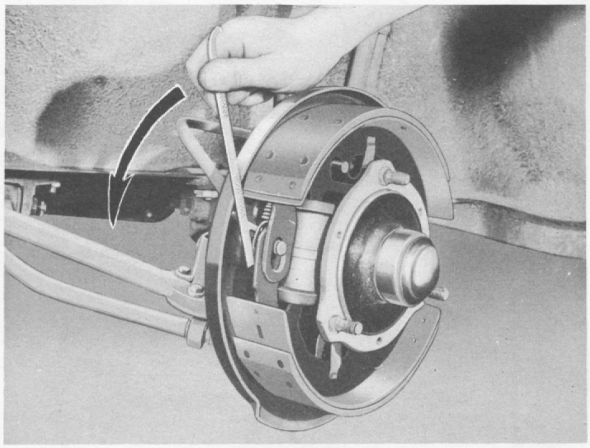
TEMPERATURE COMPENSATED BRAKES
FRONT BRAKE SHOE REMOVAL



L.H. FRONT BRAKE

- Mark brake drum position with respect to hub.

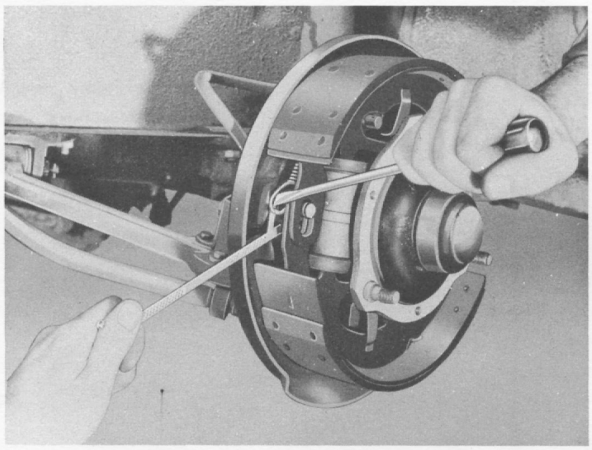
- Remove :
  - Brake drum,
  - Both outer springs, using pliers.



- Remove both inner springs, using tool **8.0802** ; proceed as follows :

- Engage tool hook a under spring wire.

- Rotate tool gently in the direction indicated by the arrow.

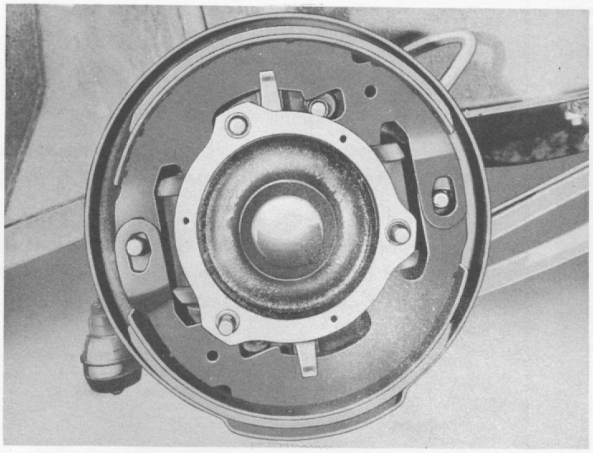


- Spring hook then disengages from fixed point.

- Hold tool in the above position.

- Insert a screwdriver between spring hook and fixed point, and remove spring.

- Remove lateral springs and brake shoes.

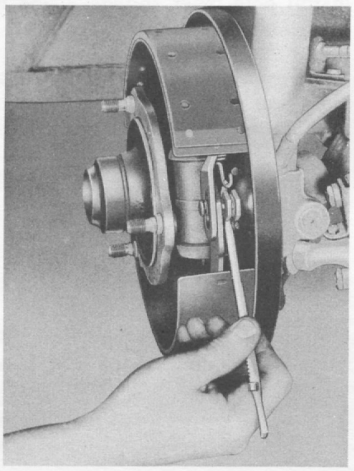


R.H. FRONT BRAKE

- Position both brake shoes against brake plate and secure with lateral springs.

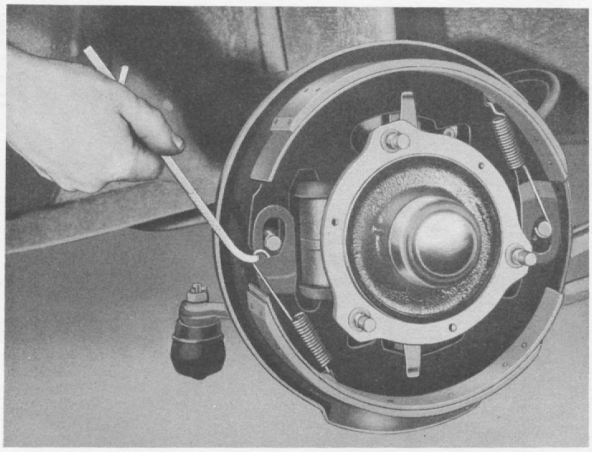
The offset end of the brake shoe should be located outside the brake plate and turned as follows :

- Towards the front for the upper brake shoe
- Towards the rear for the lower brake shoe.



- Install both inner springs ; use tool **8.0802** and proceed as follows :
- Position springs between brake shoes and brake plate and engage the small hook of each spring in the corresponding holes of the brake shoes.
- Engage tool hook b under the fixed point and catch the spring hook with the hook of the tool.
- Rotate tool around fixed point while pulling to secure spring.
- Remove tool.

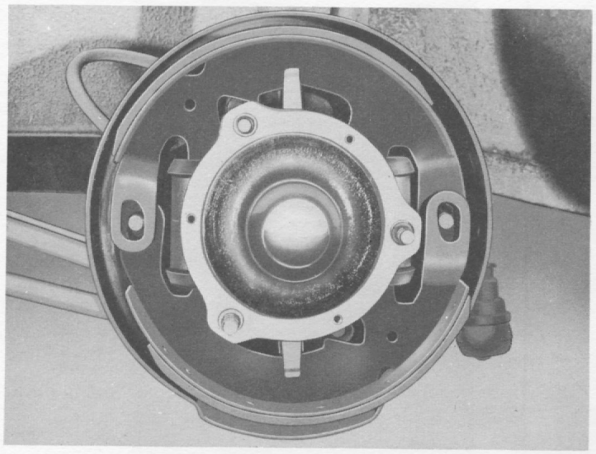
NOTE. - *The larger hooks of the inner springs may be closed slightly if necessary.*



- Install both outer springs, using tool **8.0802** ; engage tool hook b in spring hook and pull.

TEMPERATURE COMPENSATED BRAKES

INSTALLATION OF FRONT BRAKE SHOES

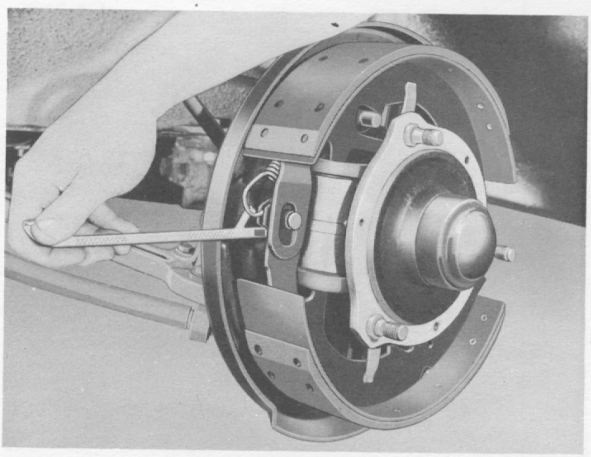


L.H. FRONT BRAKE

- Position both brake shoes against brake plate and secure with lateral springs,

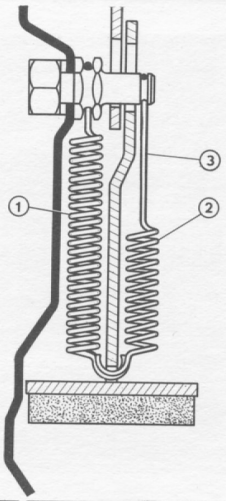
The offset end of the brake shoes should be located outside the brake plate, as indicated for the R.H. brake, and turned as follows :

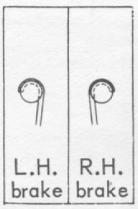
- Towards the front for the upper brake shoe ;
- Towards the rear for the lower brake shoes.



- Install both inner springs, using tool **8.0802** ; proceed as follows :
- Position springs between brake shoes and brake plate and engage the small hook of each spring in the corresponding holes in the brake shoes.
- Engage tool hook a in spring hook and rotate tool around fixed point while pulling to secure spring.
- Remove tool.
- Install outer springs using tool **8.0802** ; proceed as indicated for the R.H. brake.

NOTE. - *The larger hooks of the inner springs may be closed slightly if necessary.*





Both brake shoe inner return springs 1 differ from outer springs 2 : outer springs incorporate 17 working turns, against 26 turns for the inner springs.

All inner springs 1 are identical.

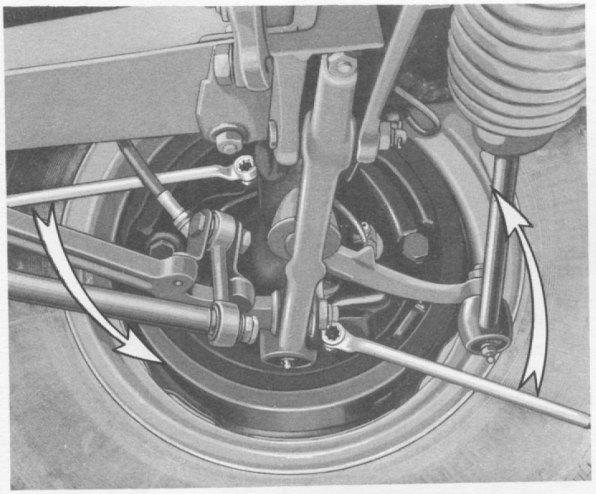
Outer springs 2 used for L.H. and R.H. front brakes differ, as the position of the spring hook on the fixed point is different.

Chafing of spring wire 3 against brake cylinder boot is thus avoided.

CHECKING BRAKE PEDAL TRAVEL

The travel of the brake pedal must be checked imperatively every 6,000 km ; proceed as follows :

- Start the engine and accelerate two or three times in succession to obtain maximum vacuum in the Hydrovac unit ; then operate the engine at idle speed.
- Measure the height of the brake pedal at rest.
- Depress the brake pedal until the saturation point for the Hydrovac is reached ; the pressure required to depress the pedal then increases suddenly from about 20 kg to about 80 kg.
- Hold the pedal in the above position and measure the height of the pedal.
- Compute the travel of the pedal ; this should not exceed 60 mm.
- Adjust the brakes if the measured travel exceeds 60 mm. The hydraulic system should be bled using equipment ARC 50 if brake pedal travel still exceeds 60 mm after the brakes have been adjusted.



ADJUSTING THE FRONT BRAKES (TEMPERATURE-COMPENSATED BRAKES)

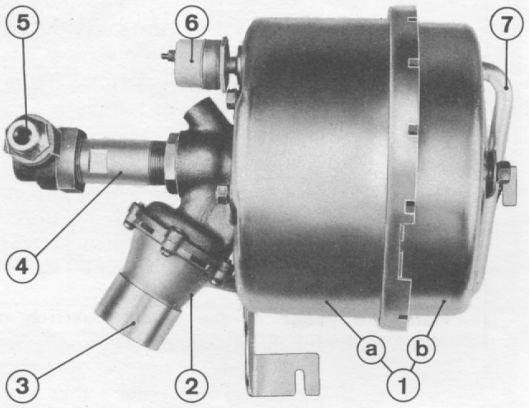
The drive squares of the adjusting eccentrics must imperatively beturned in the direction of rotation of the wheel for forwards motion of the car.

Never rotate the front wheels in their direction of rotation for reverse motion of the car when adjusting the brakes.

ADJUSTING THE REAR BRAKES (H.C.S.F.)

Adjustment of the rear brake shoes is carried out in the same manner as for cars equipped with conventional brakes.

HYDRAULIC EQUIPMENT



HYDROVAC VACUUM-CONTROLLED POWER BRAKE

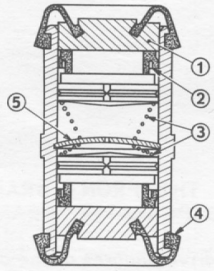
DESCRIPTION

1 - Vacuum cylinder
  a) Vacuum reservoir
  b) Reservoir vented to atmosphere through control valve 2
2 - Control valve
3 - Air intake filter
4 - Slaved hydraulic cylinder
5 - Residual pressure valve fitting
6 - Vacuum-operated pressure switch used to indicate possible failure of the brake assister system by illumination of the fascia-board warning light when the vacuum in reservoir a of the hydrovac unit is less than .350 kg/sq. cm or bar (5 psi).

NOTE. - *The car should in no case be used with the engine stopped or with the transmission disconnected from the engine.*

MAINTENANCE

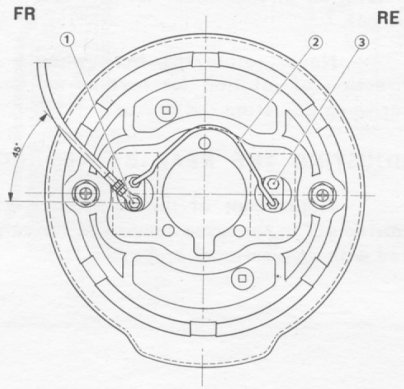
The filter element in filter 3 should be replaced every 18,000 km. Never oil or clean this filter element.



MASTER CYLINDER : 1 1/4" dia.
w/o residual pressure valve

FRONT BRAKE CYLINDERS
One type : 1 3/8" dia.

1 - Piston with rubber cup
2 - Cup
3 - Spring
4 - Boot
5 - Drilled metal disc permanently attached to cylinder body.



HYDRAULIC SYSTEM

ARMCO-type small dia. pipe.

Front brake hoses are connected to front brake cylinders by means of swivel connector 1.

The following installation instructions must imperatively be complied with :

1 - Hose connector should be at the lower part of the front cylinder, and slanted about 45 deg. with respect to the horizontal.
2 - Connecting tube should be installed as shown on drawing opposite.
3 - Bleed screw should be at the top of the rear cylinder.

FRONT WHEEL BRAKE CYLINDERS
All types of 404s

CONVENTIONAL BRAKES	404 - Up to serial number 4.012.423 and from serial number 4.388.566 404 J - Up to serial number 4.500.312 and from serial number 4.526.884 404 KF - Up to serial number 4.567.442 404 C - Up to serial number 4,497.655 404 C.KF - Up to serial number 4.593.585 404 D - As from serial number 4.600.052 404 DA - As from serial number 3.060.543	2 wheel brake cylinders per brake plate 1 1/8" (28.57 mm) dia. P/N 4401.14
	From serial numbers : 404 - 4.012.424 to 4.108.664 404 J - 4.500.313 to 4.504.085	2 wheel brake cylinders per brake plate Front : 1 1/8" (28.57 mm) dia. Rear : 1 1/4" (31.75 mm) dia. P/N 4401.19
	404 - From serial number 4.108.665 to 4.388.565 404 J - From serial number 4.504.086 to 4.526.883 404 DA - Up to serial number 3.060.542 404 D - Up to serial number 4.600.051 404 L, 404 LD, 404 U6, 404 U6D } Beginning of series	2 wheel brake cylinders per brake plate 30-mm dia. P/N 4401.20
	As from serial numbers : 404 - 5.100.001 } Optional 404 J - 4.535.001 } 404 SL - 5.100.001 404 KF - 4.570.001 404 C - 4.498.001 404 C.KF - 4.494.001 404 L - 4.855.001 404 Break - Beginning of series	2 wheel brake cylinders per brake plate 1 3/8" (34.9 mm) dia. P/N 4401.25

REAR WHEEL BRAKE CYLINDERS
All types of 404s

CONVENTIONAL BRAKES	404 Saloon cars 404 C, 404 C.KF — Beginning of series	1 wheel brake cylinder per brake plate 1" (25.4 mm) dia. P/N 4402.09
	404 L, 404 LD, 404 U6, 404 U6D — Beginning of series	1 wheel brake cylinder per brake plate 1 1/8" (28.57 mm) dia. P/N L.H. rear - 4402.11 P/N R.H. rear - 4402.10
TEMPERATURE-COMPENSATED BRAKES WITH BRAKE ASSISTER	404 - 5.100.582 404 J - 4.535.003 404 SL - 5.100.001 404 KF - 4.570.001 404 C - 4.498.001 404 C.KF - 4.594.001	1 wheel brake cylinder per brake plate 16-mm dia. P/N 4402.14
	404 L - 4.855.213 Optional installation 404 Break - Beginning of series	1 wheel brake cylinder per brake plate 17.5mm dia. P/N L.H. rear - 4402.19 P/N R.H. rear - 4402.20

MASTER CYLINDER - All types of 404s

CONVENTIONAL BRAKES	404 L, 404 U6 — R.H.D. & L.H.D. 404 LD, 404 U6D — R.H.D.	1" (25.4 mm) dia. P/N 4601.11
	404 LD, 404 U6D — L.H.D.	1" (25.4 mm) dia. P/N 4601.17
	404 Saloon cars 404 C - C.KF 404 D - DA (R.H.D.)	22 mm dia. P/N 4601.12
	404 D, 404 DA — L.H.D.	22 mm dia. P/N 4601.16
TEMPERATURE-COMPENSATED BRAKES WITH BRAKE ASSISTER	404 Saloon cars 404 C - C.KF 404 L 404 Break	1 1/4" (31.75 mm) dia. P/N 4601.20

HYDRAULIC SYSTEM - ALL TYPES OF BRAKES

BRAKE FLUID

As from serial numbers :

404	- 5.040.512	**404 D**	- 4.604.646	**404 U6**	- 4.736.910
404 SL	- 5.037.909	**404 C**	- 4.497.596	**404 LD**	- 4.978.949
404 J	- 4.529.766	**404 C.KF**	- 4.593.523	**404 U6D**	- 4.908.071
404 KF	- 4.567.162	**404 L**	- 4.850.673	**404 Break**	- Beginning of series

Lockheed HD 43* (starred) fluid is used for the hydraulic systems.

NEVER MIX THIS BRAKE FLUID WITH ANOTHER BRAKE FLUID

Lockheed HD 43* (starred) brake fluid must compulsorily be used for all cars equipped with **TEMPERATURE-COMPENSATED BRAKES.**

Cars where Lockheed HD 43a brake fluid is used for filling the hydraulic system can be identified easily by means of a sticker affixed on the left wing valance.

THE BRAKE SYSTEM CONTAINS

LOCKHEED HD 43★

(starred)

BRAKE FLUID

DO NOT MIX

A sticker similar to the one described above should be affixed to the left wing valance when a brake system previously filled with HD 65 or HD 31 fluid is drained, and then refilled with HD 43* (starred) fluid.

Stickers should be required from the Regional Peugeot Office.

MAINTENANCE

The brake system must imperatively be drained and refilled every 24,000 km or every 18 months, whichever comes first.

CHECKING THE BRAKE SYSTEM FOR LEAKS

The master cylinder, flexible hoses and wheel brake cylinders must be checked visually each time work is performed on the brake system; disengage the brake cylinder rubber boots or remove the wheel brake cylinders to check them.

Clean brake fluid exclusively must ne used for cleaning cylinders, pistons and cups.

The residual pressure in the brake system should be checked each time work is performed on the brake system ; if air has entered the system, bleed the brake system using the bleed screw of one of the rear cylinders, as these can be reached more easily.

Use of Testmeter M2 ARC 50 facilitates the above operation ; the testmeter should be equipped with :
- Connector screw No. 1 for conventional brakes,
- Connector screw No. 8 for temperature-compensated brakes.

The car must be submitted to a road test after the above-described operations have been performed.