PEUGEOT

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404 Workshop Manual

	W.M.	W.F.	W.F.	W.S.	W.S.	Rec.	Rec.	S.S.	Parts
Date									
Sign.									

1

124 a

October 1978

SERVICE BULLETIN

1 - ENGINE

4 cylinder petrol engines - 504, 404 and J7

A - Liner seals
B - Cylinder heads

On Export 504s equipped with air conditioning refrigeration, the introduction of the SANKYO compressor has involved carrying out modifications on the cooling system and the engine to provide system pressurisation of 1 bar instead of the former 0.28 bars (see Service Bulletin No.... Class 15).

To standardise products, the engine modifications have been extended to all 404, 504 and J7 petrol engines as follows :

A - Liner seals

From serial numbers :

504 . . . : 2 889 629
404 U10 : 9 497 175

and engine number :

J7 (XC7P) : 30.099 F
(XM7P) : 30.099 Q

- thicker synthetic paper liner seals have been fitted in place of the polythene teraphtalate seals.
- liners sealing shoulder which is reduced in height by 0.025 mm have been fitted in line with the fitting of these new seals.

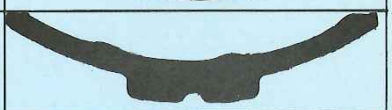
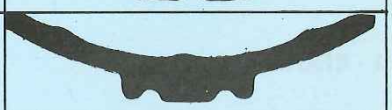
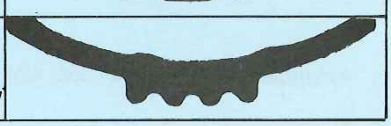
Interchangeability

– The new seals can be fitted in place of the old type seals **but the reverse is not possible.**

– The new piston and liner assemblies are interchangeable with the old ones on condition that the new seals are also fitted.

E.

LINER SEAL ARRANGEMENT

OLD SEALS (colourless)		NEW SEALS (white paper)		
LINER SEAL TO BE FITTED	LINER PROTRUSION highest point before seals are fitted : Old liner	Old liner	new liner	LINER SEAL TO BE FITTED
	from + 0.036 to + 0.040	from + 0.009 to + 0.040	from + 0.009 to + 0.015	
	from + 0.011 to + 0.035	from − 0.011 to + 0.008		
	from − 0.014 to + 0.010	from − 0.036 to − 0.012		
	from − 0.070 to − 0.015	from − 0.070 to − 0.037	from − 0.095 to − 0.037	

– As replacement parts, as soon as stocks of parts for the old type arrangement have been exhausted, the Spare Parts Division will only supply the new type seals and the new type piston and liner assemblies.

B - CYLINDER HEADS

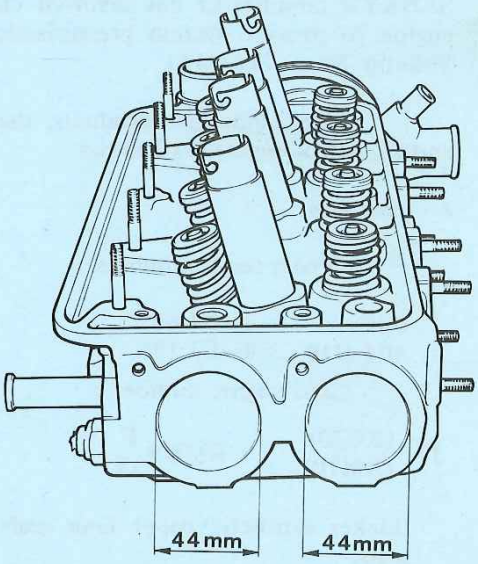
From serial numbers :

504	XM7	: 2 919 976
	XN1	: 2 942 043
	XN2	: 2 913 306
	XNA	: 2 914 043
404 U10		: 9 497 175

and engine number :

J7 ...	XC7P :	30.099	F
	XM7P :		Q

– New cylinder heads are fitted with smaller diameter core hole plugs at the rear :
Dia. 44 mm instead of the former 60 mm.



Interchangeability

– The new cylinder head can be fitted in place of the former arrangement **but the reverse is not applicable** to 504s likely to have air conditioning refrigeration fitted to them. Consequently, after stocks are exhausted, the Spare Parts Division will only supply the new type cylinder heads.

Printed in France

ENGINE

SUMMARY

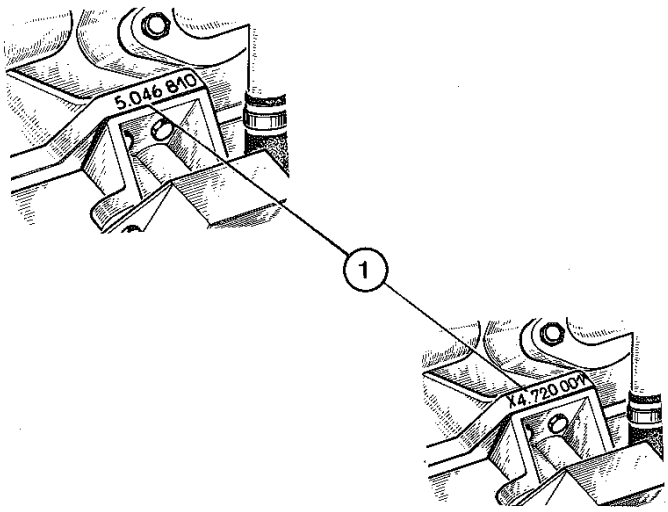
1

1 ENGINE

SUMMARY

ENGINE

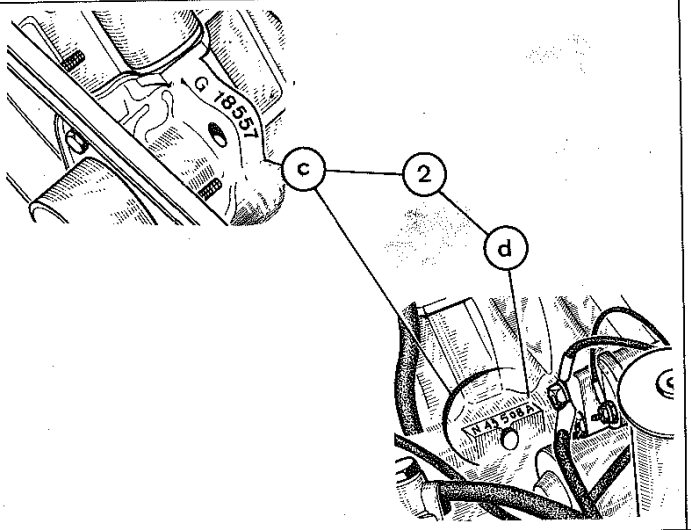
IDENTIFICATION



SERIAL NUMBER (1)

The serial number stamped on the pad for the front LH engine mounting is the same as the serial number stamped on the maker's plate and on the front RH wing valance.

IMPORTANT - If the cylinder block or engine are replaced, stamp the serial number, in 8 mm letters and numbers, as defined below and at the place provided **(1)**.



STAMPING OF ENGINE SERIAL NUMBER (2) :

- up to September 1965, on the boss of the front lifting eye
- as from September 1963, on the boss on the camshaft tunnel, it consists of :
  - manufacturing serial number **(c)**, (letter prefix followed by 5 numbers),
  - an **identification letter (d)** **(see table below).**

IMPORTANT - If the cylinder block is replaced, stamp the engine number at the place provided **(2)**.

Identification LETTER	ENGINES Type	Displacement (in cm^3)	POWER fiscal	SAE	Compression ratio	Main bearings	Plugs*
	XC	1618	9	72 hp	7,2 - 7,4/1	3	SR
A	XC5	1618	9	72 hp	7,4/1	5	LR
K	XC5ZF	1618	9	76 hp	7,6/1	5	LR
L	XC6	1618	9	80 hp	8,3/1	5	LR
M	XC6ZF						
D *	XC7/70	1618	9	73 hp	7,6/1	5	LR
I *	XC7ZF	1618	9	76 hp	7,6/1	5	LR
D **	XC7/75	1618	9	73 hp	7,6/1	5	LR
	XB2	1468	8	66 hp	7,4/1	3	SR
C	XB5	1468	8	66 hp	7,6 - 7,75	5	LR

Exhaust emission control : (*) "EUROPE CYCLE"
(**) "EUROPE CYCLE II"

* SR = short reach
LR = long reach

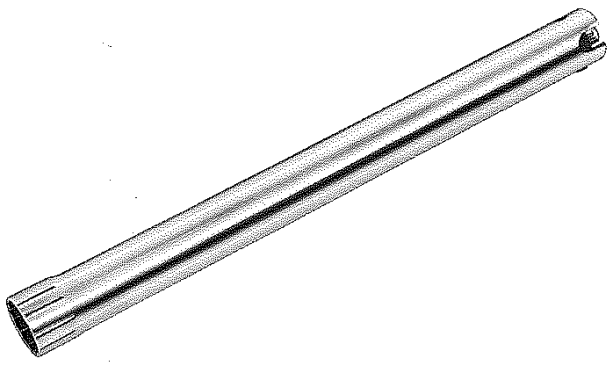
PEUGEOT

ENGINE

IDENTIFICATION

Engine type	Main bearings	Fiscal power (France)	Vehicle type
XC	3	9 CV	404 Carburettor Saloons, Convertibles, Coupés 404 Family Estate and USA Station Wagon Up to serial numbers : **404** - 4 399 562 **404 J** - 4 527 038 **404 C** - 4 496 235 **404 L** - 4 837 402 **404 U6A (USA)** - 1 920 144
XC5 Series I (72 SAE)	5	9 CV	404 Carburettor Saloons, Convertibles, Coupes 404 USA Family Estate and Station Wagon **404** from n° 4 400 001 to n° 4 495 000 and from n° 5 000 001 to n° 5 046 809 **404 J** from n° 4 528 001 to n° 4 529 913 **404 C** from n° 4 497 001 to n° 4 497 655 **404 L** from n° 4 838 001 to n° 4 851 695 **404 U6A (USA)** from n° 1 921 001 to n° 1 923 369
XC5 Series II (76 SAE)	5	9 CV	404 Carburettor Saloons, Convertibles, Coupes 404 Family Estate and Estate, 404 USA Station Wagon **404 (TW)** from n° 5 046 810 to n° 5 075 000 **404 (TH)** from n° 5 100 001 to n° 5 311 000 **404 J** from n° 4 529 914 to n° 4 537 191 **404 ZF** from n° 8 250 001 to n° 8 251 300 **404 C** from n° 4 498 001 to n° 4 499 500 **404 L (TW)** from n° 4 851 596 to n° 4 855 000 and from n° 4 895 001 to n° 4 900 000 and from n° 7 000 001 to n° 7 001 384 **404 L (TH) and Break** from n° 4 855 001 to n° 4 884 000 and from n° 7 120 001 to n° 7 120 984 **404 U6A** from n° 1 923 370 to n° 1 925 000 and from n° 1 930 001 to n° 1 931 000 **404 U10** from n° 7 060 001 to n° 7 080 000 and from n° 7 130 001 to n° 7 145 500
XC6	5	9 CV	404 Carburettor Saloons, Convertibles, Coupes 404 Family Estate, Estates, USA Station Wagon **404 (TW)** from n° 5 075 001 to n° 5 095 559 **404 (TH)** from n° 5 311 001 to n° 5 612 500 **404 ZF** from n° 8 251 301 to n° 8 267 500 **404 C** from n° 4 499 501 to n° 4 500 000 and from n° 4 670 001 to n° 4 671 041 **404 L (TW)** from n° 4 940 001 to n° 4 943 200 **404 L (TH) and Estate** from n° 4 884 001 to n° 4 895 000 and from n° 6 820 001 to n° 6 879 500 **404 U6A (TW)** from n° 1 931 001 to n° 1 940 061 **404 U6A (TH)** from n° 1 928 001 to n° 1 930 000 and from n° 4 680 001 to n° 4 680 040 **404 U6A - ZF** from n° 7 100 001 to n° 7 102 015

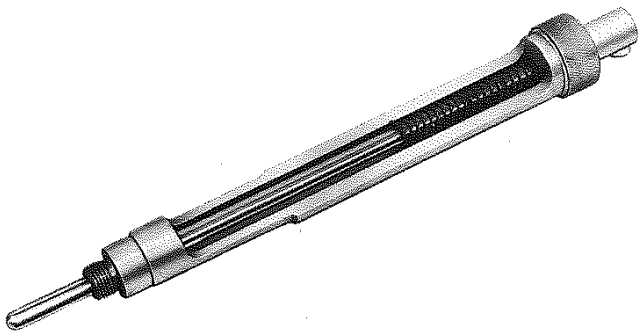
Engine type	Main bearings	Fiscal power (France)	Vehicle type
XC7	5	9 CV	404 Carburettor, Family Estate, Estates, Station Wagon (except USA) and 404 Light van From serial numbers : **404** - 5 612 501 **404 L (TW)** - 4 944 201 **404 ZF** - 8 267 501 **404 U6B** - 7 240 001 **404 L (TH) and Estate** } 6 879 501 **404 U6A** - 7 270 001 **404 U10** - 7 145 501
XC7	5	9 CV	**404 U10** - 8 506 182 (Europe I Cycle II)
XB2	3	8 CV	404 Station Wagons (except USA) **404 U6** up to n° 4 720 000
XB5	5	8 CV	404/8 Saloons - 404 Station Wagons (except USA) 404/8 CV Van **404/8** from n° 6 900 001 to n° 6 910 200 **404 U6** from n° 4 720 001 to n° 4 793 554 **404 U8** from n° 7 010 001 to n° 7 026 185



8.0106 Z

Plug spanner for petrol engines.

404 and 504 (4-cylinder) - **J7**



8.0126

TDC probe for petrol engines.

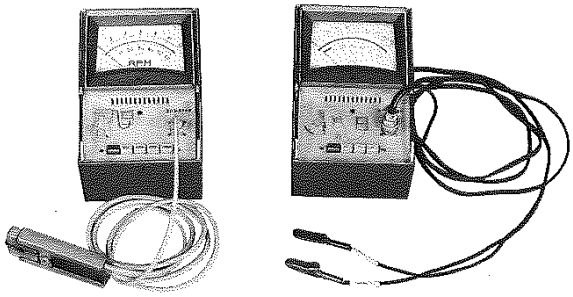
404 - 504 (4 cylinder) - **J7**

FACOM open ended spanner adapter, ref. 20-35, for crankshaft pulley nut

(used with a FACOM SJ 214 extension).

ENGINE

TUNING - CHECKING



APPROVED TOOLING

– SOURIAU 1494 Tachometer.

– Hand-held stroboscope.

- BOSCH EFaw 169 A

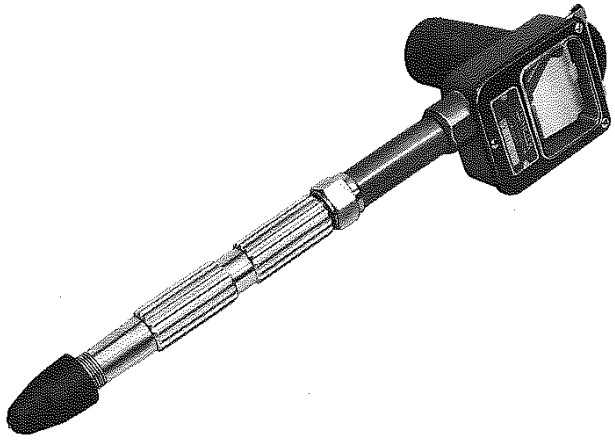
or

- BLACKHAWK TE 615

or

- SOURIAU 1429

– Dwell meter, SOURIAU 1498.



Compression tester

Motometer ref : 623 000 1004.

ENGINE

TUNING - CHECKING

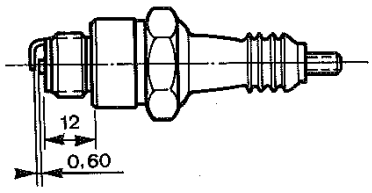
THERE ARE TWO STAGES

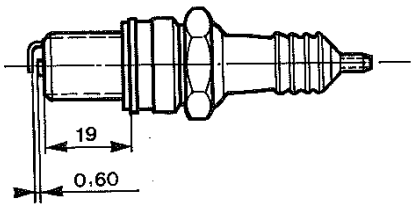
1 - Checks :

Routine service maintenance, without dismantling, on a normally functioning engine.

2 - Adjustments :

Including checking, fault finding and removal of the component requiring adjustment (refer to relevant section).





PLUGS

Series 1

SHORT REACH

404 Saloons and Family Estates
3 bearing engine (XC-XB2)

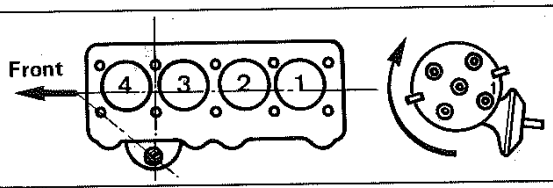
Series 2

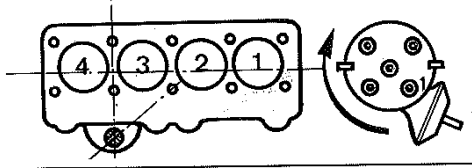
LONG REACH

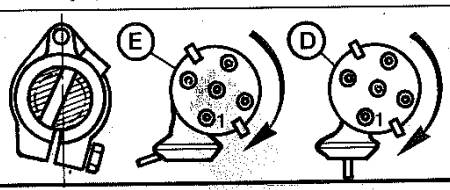
all types of 404
5 bearing engine (XB5-XC5-XC6-XC7)

MAKE OF PLUG			ENGINES
CHAMPION	AC.	MARCHAL	
	44 F (C.C.)	36 P (C.C.)	XC (3 bearing)
	44 F (C.C.)	35 P (C.C.)	XB2 (5 bearing)
	C 44 XL	36 HS	XC5
	C 44 XL	36 HS	XB5
N9Y	C 44 XL	35 HS	XC6
N9Y	C 44 XL	35 HS	XC7*
N9Y	C 44 XL	35 HS	XC7Δ

POSITIONS OF DISTRIBUTORS AND THEIR DRIVE SHAFTS
with n° 1 piston at TDC (firing)



* 

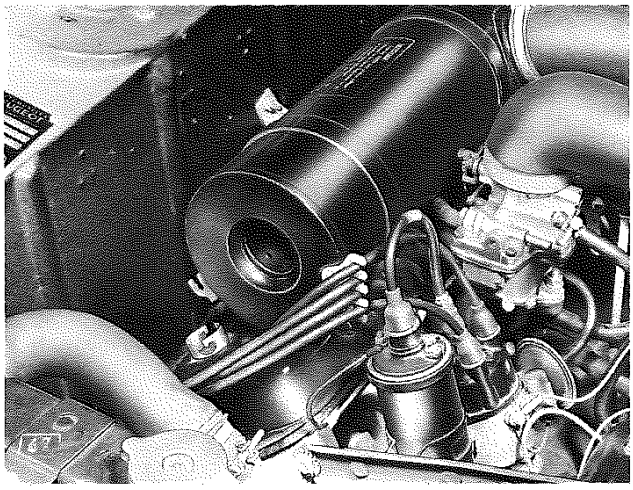
Δ 

* - "EUROPE-CYCLE" Salon 1970
Δ - "EUROPE-CYCLE II" Salon 1975
D - Ducellier distributor
E - Paris-Rhône distributor

Leads connection :
- Firing order **1 - 3 - 4 - 2**
- Marked on the distributor cap in clockwise order. Cylinder n° **1** is marked on the diagrams opposite.

ENGINE

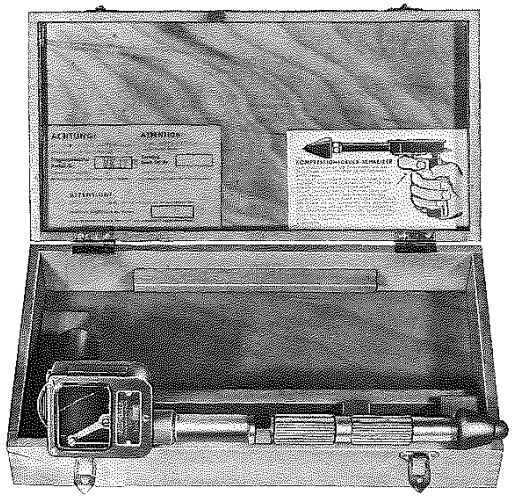
CHECKING - ADJUSTING



CHECKING THE PRESSURES AT THE TOP OF THE COMPRESSION STROKE

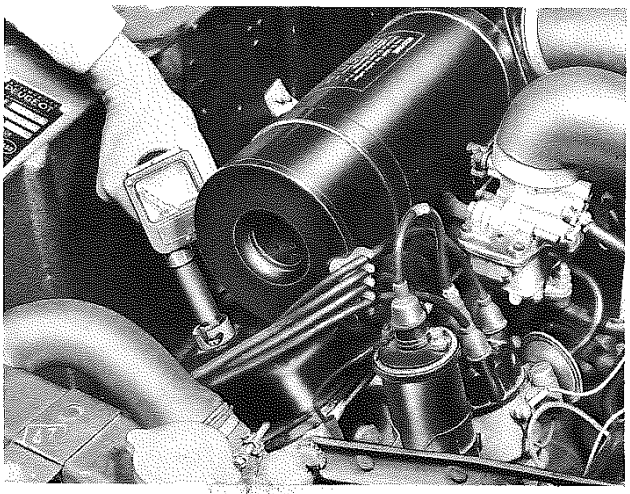
It is essential that the engine be at its normal operational temperature (app. 80° C).

- Disconnect the petrol feed pipe from the carburettor and block it.
- Drain the carburettor float bowl by removing the choke jet.
- Open the throttle fully and secure it in this position.
- Remove the spark plugs.
- Disconnect the n° 3 lead from the ignition coil and insulate it.



USE OF THE MOTOMETER N° 290 COMPRESSION METER

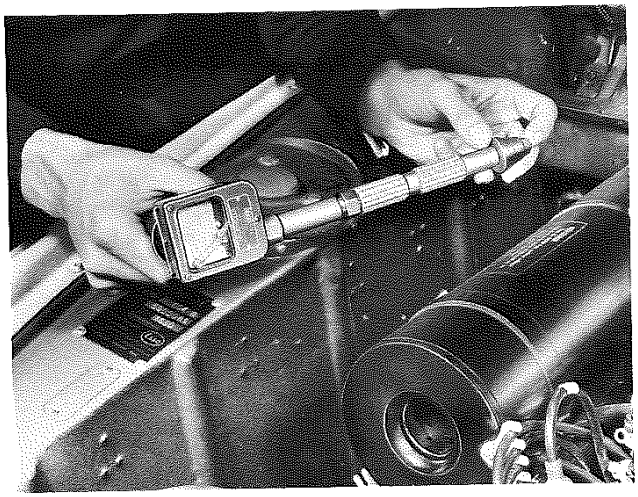
- Prepare the compression meter with the special Peugeot union.
- Place a «chart» in the chart holder and mount this on the apparatus. The tracer point should be situated on the left hand side of the «dial».



- Hold the apparatus like a pistol and force the rubber cone into the sparking plug hole of n° 1 cylinder.
- Press down firmly without turning the apparatus.
- Have an assistant actuate the starter for 4 seconds.
- (The crankshaft should be turned at an approximate speed of 380 r.p.m. Check with a tachometer if necessary).

ENGINE

CHECKING - ADJUSTING



– Withdraw the compression meter and decompress the apparatus by pressing lightly on the point on the end of the rubber.

– Press the trigger on the casing to raise the chart holder to the n° 2 position (Cylinder n° 2).

– Carry out the same operation for all the cylinders.

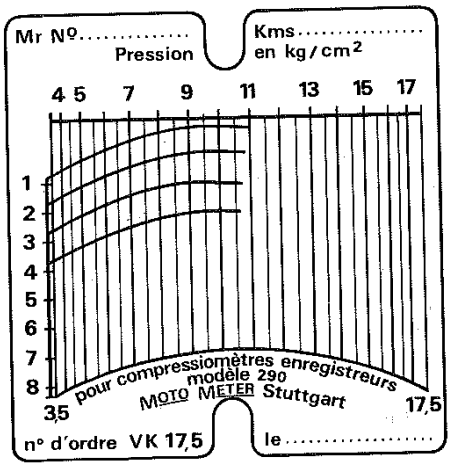
– Remove the chart and check the pressure readings obtained.

– Refit the different components in the reverse order of removal.

PRESSURE AT THE END OF COMPRESSION

404/9CV	XC - XC5 - XC7	142.2 lbs.sq.in. (10 kg/cm²) approximately
	XC6	156.2 lbs.sq.in. (11 kg/cm²) approximately
404/8 CV -	XB2 - XB5	142.2 lbs.sq.in. (10 kg/cm²) approximately

Maximum difference between cylinders : 14.2 lbs.sq.in. (1 kg/cm²) approximately

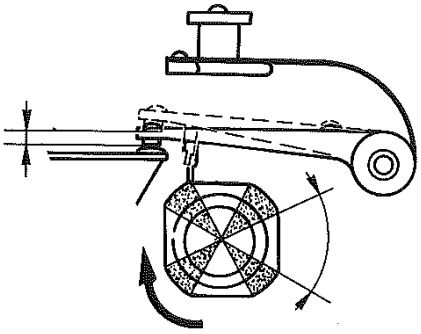


IMPORTANT - The markings on the chart give the pressure at the top of the compression stroke but it is important that this reading be interpreted whilst taking into consideration the condition of the engine (cylinder head gasket deterioration, valve adjustment, oil consumption, mileage of the vehicle) to avoid an unnecessary intervention concerning the valves.

It is preferable to obtain average but similar readings on all the cylinders rather than high and varied as the good operation of the engine depends on the evenness of the compression.

ENGINE

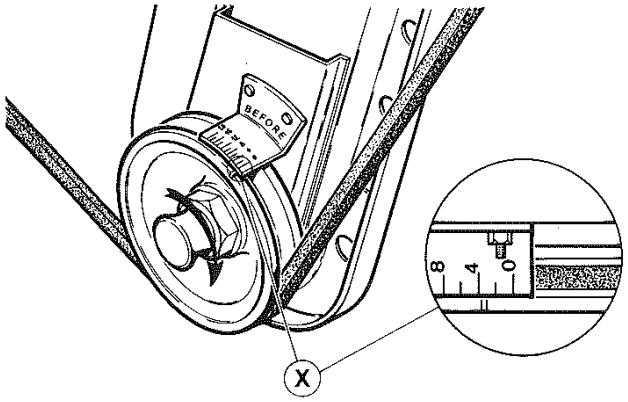
TUNING - CHECKS



CHECKING DISTRIBUTOR ON VEHICLE

– **Contacts resistance** : this must not exceed 0,2 0,3 Ω.

– **Dwell (angle)** : 57° ± 2°
or, 63 % ± 3 % dwell, corresponding to approx. 0.40 mm contacts gap.

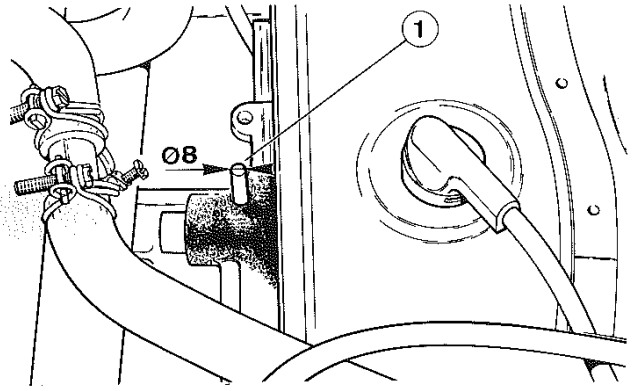


METHOD OF SETTING STATIC ADVANCE

1 - Engine with graduated timing plate.

– **Rotate the engine in a clockwise direction (direction of normal running) until the notch in the pulley is opposite the graduation (X) on the timing plate** (before TDC).

(X) = 10° for XC7 engines ⇥ Salon 75
(X) = 8° for XC7 engines ↦ Salon 75



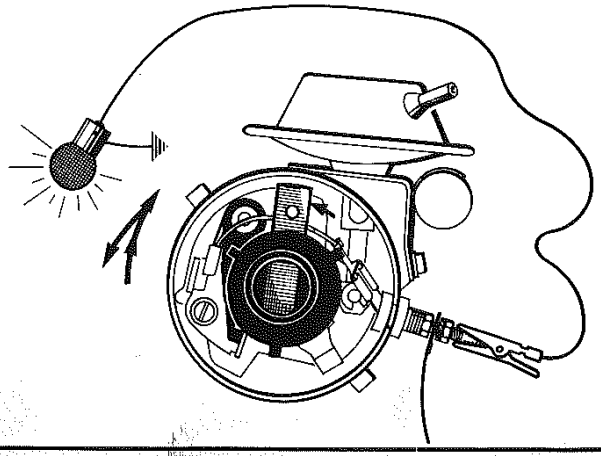
2 - Engines without a timing plate.

– **Rotate the engine in a clockwise direction, until the 8 mm ϕtiming pin (1) engages in the flywheel.**

– Connect a test lamp.

– Switch-on ignition.

– **Rotate the distributor :**
- **clockwise**
- **anti-clockwise, whilst «restraining» the motor arm, until the test lamp lights up.**

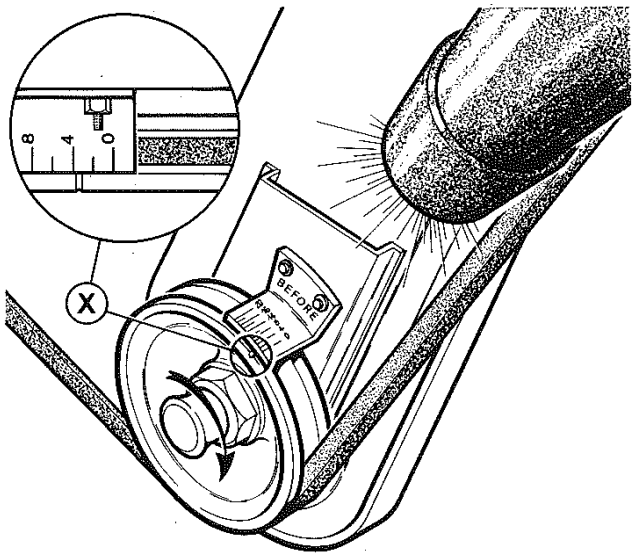


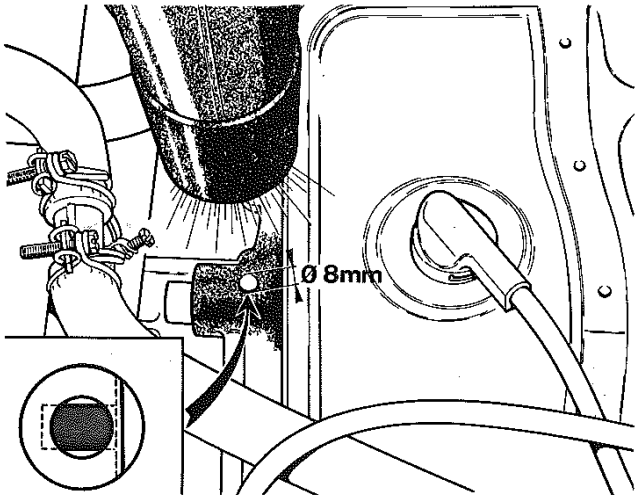
– Clamp the distributor.

– **Check whilst rotating the crankshaft clockwise :**
- the test lamp should light-up at the precise moment when :
1 - the pulley notch is immediately opposite the graduation **(X)** on the timing plate.
2 - the timing pin engages in the flywheel.

– **Remove timing pin** and lamp.

– Fit the distributor cap and connect the HT leads.





METHOD OF CHECKING STATIC ADVANCE USING A STROBOSCOPE

– Disconnect and plug the vacuum hose.

– Connect :

- a stroboscope, **with the induction clip on the coil HT lead.**

- a tachometer.

– Start the engine.

During checking, engine speed must not exceed 900 r.p.m.

– Put the stroboscope dephaser out of circuit (needle pointing to zero).

– Direct the stroboscope rays perpendicular to the timing plate.

– If necessary, adjust the distributor so that the (X) graduation (before TDC) and the notch in the pulley are opposite each other :

(X) = 10° on XC7 engine ⇥ Salon 75
(X) = 8° on XC7 engine ↦ Salon 75

- or on engines which do not have a timing plate, until the notch in the flywheel is visible through the 8 mm ϕ hole in the clutch housing.

– Retighten the distributor clamp.

– Check :

- engine speed,

- dephaser (out of circuit),

- agreement of the timing marks.

– Reconnect the hose to the vacuum capsule.

PEUGEOT

ENGINE

TUNING - CHECKING

XC7 ENGINE → **Salon 72**
M48 curve distributor

Main advance

rpm engine	1200	2000*	3000	4000	5000 +
degrees at flywheel	10° to 12°	16° 45′ to 20° 45′	27° 30′ to 31°30′	32° to 36°	37° to 41°

VACUUM ADVANCE

mm Hg of vacuum	110	230	300 +
degrees at flywheel	0° to 2°	5° to 9°	9° to 13°

XC7 ENGINE → **Salon 75**
M85 Curve distributor

MAIN ADVANCE

rpm engine	1000	2000*	2400	3300	4000 +
degrees at flywheel	8° to 10°	17° 30′ to 21° 30′	22° to 26°	28° to 32°	33° to 37°

VACUUM ADVANCE

mm Hg of vacuum	100	210	290 +
degrees at flywheel	0° to 2°	6° to 10°	12° to 16°

CHECKING ADVANCE CURVES

– Engine at about **80° C**.

– Idling at **900** rpm.

MAIN ADVANCE

(Static advance + centrifugal advance)

– Disconnect vacuum hose.

– Connect a stroboscope to N° **1** cylinder plug lead.

– Use **zero** on the timing place **as a reference.**

– Check the **advance curve** in relation **to the table** opposite.

VACUUM ADVANCE

– Connect a **vacuum pump** to the vacuum capsule.

– Stabilize engine speed at **2000** rpm, vacuum capsule at atmosphere pressure.

– Use **zero** on the timing place **as a reference.**

– Take note of **main advance*.**

– Etablish **vacuum** in the capsule.

– Restabilize engine speed at **2000** rpm.

– Take note of the **total advance.**

– The difference between total advance
– The difference between total advance and main advance **gives the amount of vacuum advance.**

– Example : (M48 curve)

- Main advance noted at **2000** rpm : **20°**. Under a **vacuum** of **300** mm/Hg, the **total advance should then be :**

$20° + 9° = \mathbf{29°}$ **and** $20° + 13° = \mathbf{33°}$

ADJUSTMENT OF IDLING

– Carburettors without a constant CO idling circuit

To be done with engine warm, electro-magnetic fan having engaged, ignition system in good order and air filter in position.

– ADJUSTMENT WITHOUT USING A GAS ANALYSER

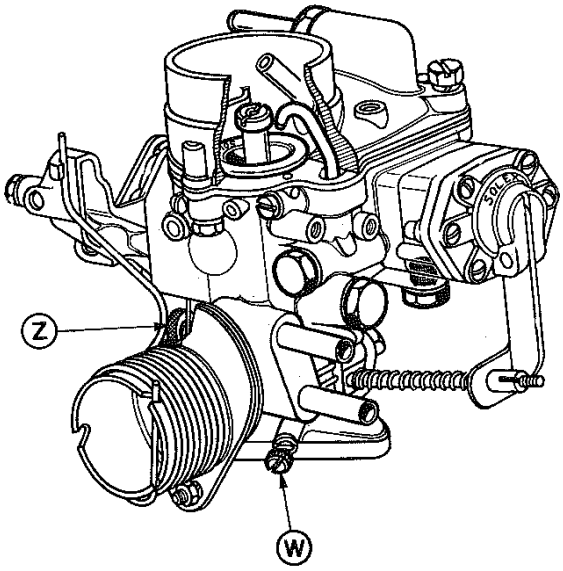
1 - Act on the idling screw **Z** to obtain a speed of **950** rpm

2 - Find the **maximum** speed obtainable by acting on the mixture screw **W**

3 - Reduce speed to **950** rpm by unscrewing the screw **Z**

4 - Repeat operations **2** and **3** until the maximum speed obtainable by acting on the screw **W** is, **950** rpm

5 - Complete the adjustment by tightening the screw **W** until idling speed falls to **900** rpm.



– ADJUSTMENT USING A GAS ANALYSER

1 - Act on the screw **Z** to obtain a speed of **900** rpm

2 - Act on the mixture screw **W** to give a concentration of **CO** in the exhaust of **2 to 3 %**

3 - Act on the screw **Z** to give and idling speed of **900** rpm

4 - Check that the **CO** concentration is not in excess of **2 to 3 %**, if necessary, repeat operations **2** and **3.**

WARNING - The concentration of **CO2** must **not be less than 10 %**, if it is, check engine performance and the exhaust system for leaks.

PEUGEOT

ENGINE

TUNING - CHECKING

ADJUSTMENT OF IDLING

– Carburettors with a constant CO idling circuit

To be done with engine warm, electro-magnetic fan engaged, ignition system in good order and air filter in position.

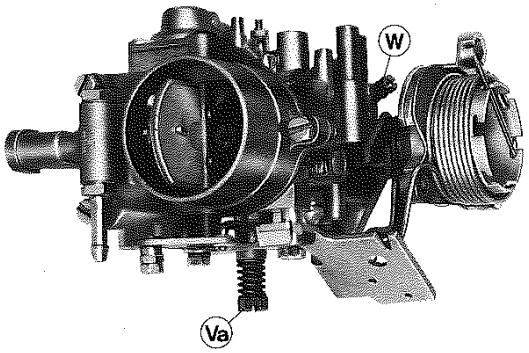
– NORMAL ADJUSTMENT

1 - Act on the pilot screw **Va** only, to obtain an idling speed of **900** rpm
2 - The concentration of **CO** should be **1.5 to 3.5 %**

– ADJUSTMENT
after a repair, readjustment or replacement of the carburettor

WITHOUT A GAS ANALYSER

1 - Act the pilot screw **Va**, to obtain a speed of **950** rpm
2 - Find the **maximum** speed obtainable by adjustment of the mixture screw **W**
3 - Repeat operations **1** and **2** until the maximum speed obtainable by adjustment of the screw **W** is **950** rpm
4 - Tighten the screw **W** until idling speed stabilizes at **900** rpm.



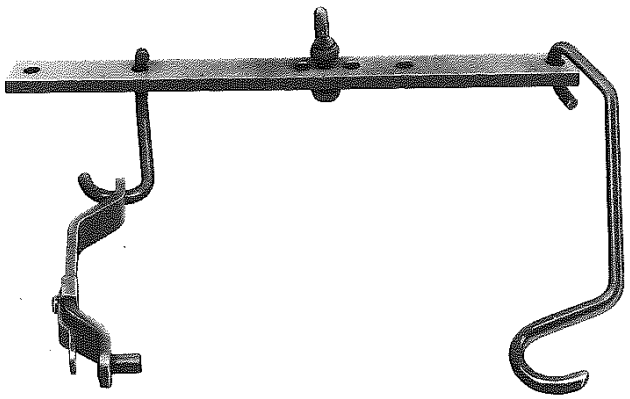
WITH A GAS ANALYSER

1 - Act on the screw **Va** to obtain an idling speed of **900** rpm
2 - Act on the mixture screw **W** to give a concentration of **CO** in the exhaust of **2 to 3 %**
3 - Act on the screw **Va** until idling speed stabilizes at **900** rpm
4 - Check that **CO** concentration is between **2** and **3** %. If necessary, repeat operations **2** and **3.**

WARNING - If the concentration of **CO2** is less than 10 %, check engine performance and the exhaust system for leaks.

ENGINE

REMOVE - REFIT



TOOLING REQUIRED

8.0102 X

Lifting tackle for petrol and Diesel engines.

404 - 204 - 504 - 304 and derivatives - 104

Comprising :

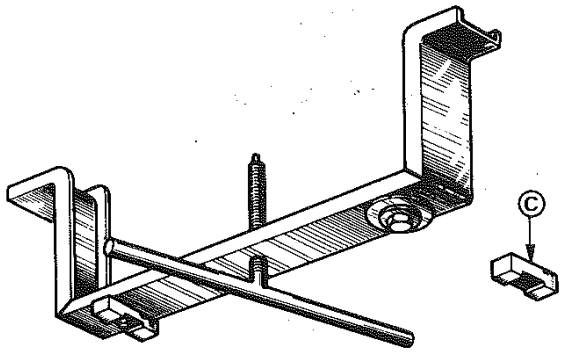
D - Swingle-bar

E - Front hook

F - Rear hook

G - Short front hook

This new tackle replaces both **8.0102 Y** and **8.0121,** which are no longer made.



8.0103 Z

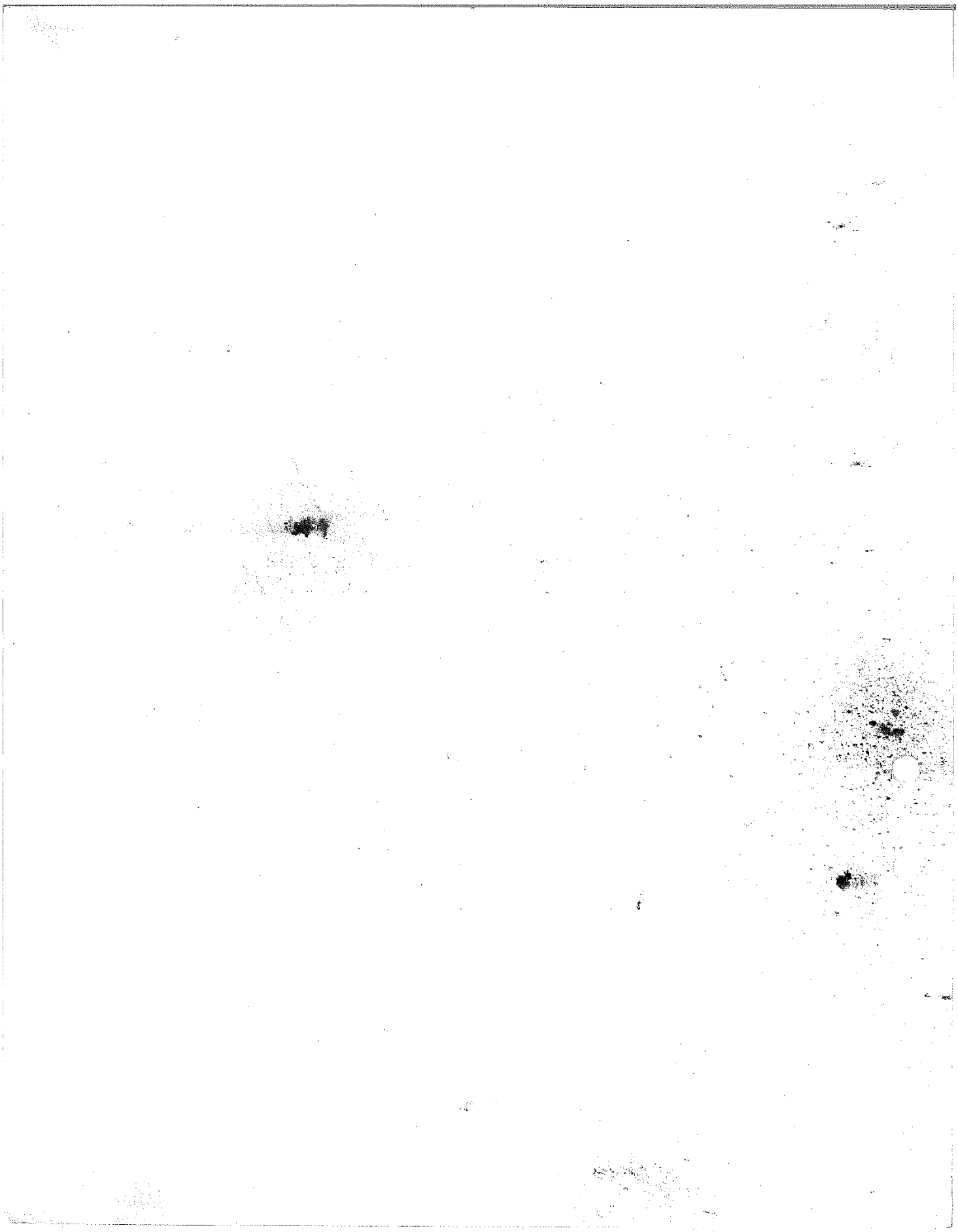
Retaining bracket, for engine or gearbox.

C - Distance piece for fixing to clutch housing.

8.0208

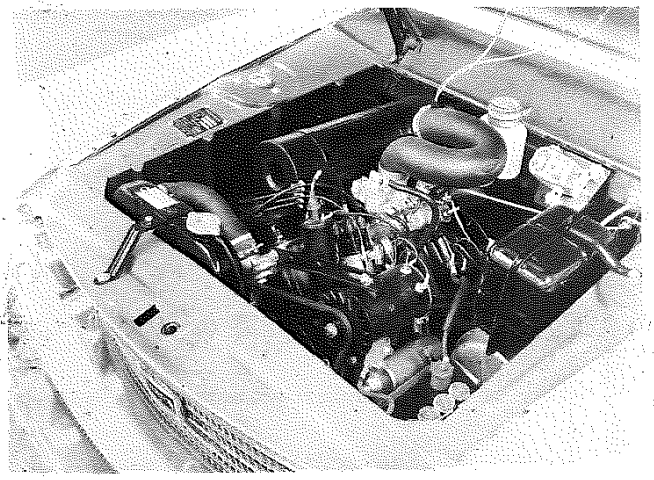
Socket for engine/clutch housing securing bolts.

PEUGEOT



ENGINE

REMOVE



WARNING - With 6 selector positions automatic transmission :

- Drain the unit.

— Remove :

- battery and tray
- bonnet
- vacuum reservoir, if necessary
- starter motor
- radiator
- screen washer reservoir
- ignition coil.

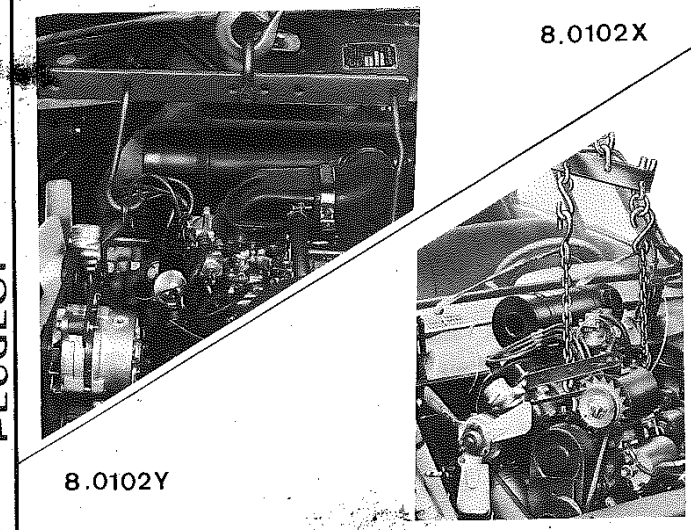
— Disconnect :

- car heater hoses
- fuel feed pipe
- throttle linkage
- Master-Vac union, if necessary
- wiring to electrical equipment.

— On 404 with automatic transmission

— Remove :

- the air filter
- the fluid filler fixing.



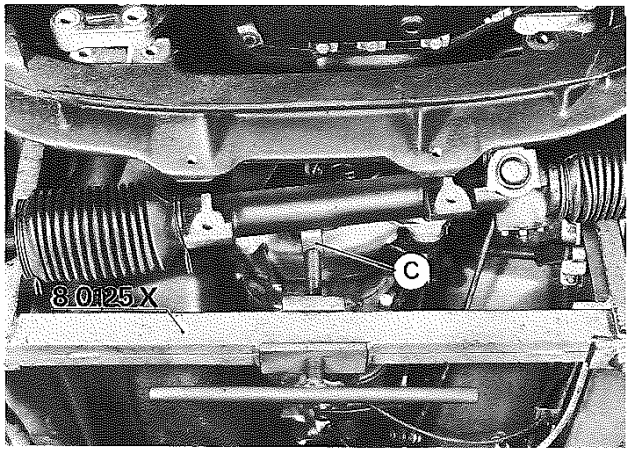
— Install the lifting tackle **8.0102 X** as shown opposite (insert the hook ends in the holes marked 404).

— Remove the nuts from the front engine mountings.

NOTE - *The lifting tackle* **8.0102 Y** *can also be used provided that the union between carburettor and air filter is first removed.*

ENGINE

REMOVE



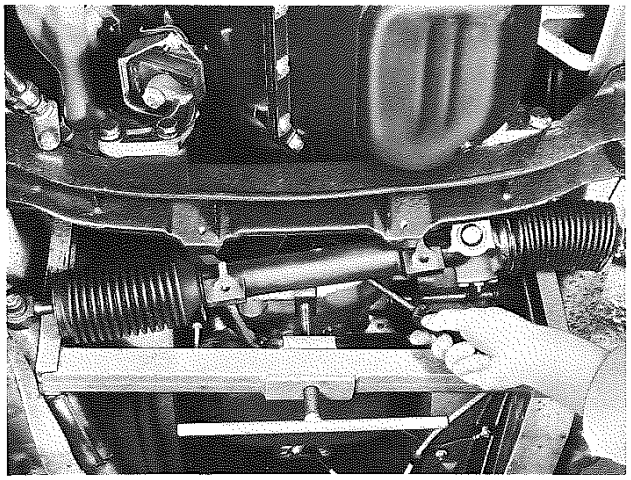
– Remove flywheel coverplates.

– Lower the exhaust pipe.

– Lift the engine until it abuts the tunnel.

– Install the retaining bracket **8.0103 Z** (with distance piece **8.0103 C**).

– Remove the 3 hollow head bolts securing the clutch housing (socket **8.0202**).



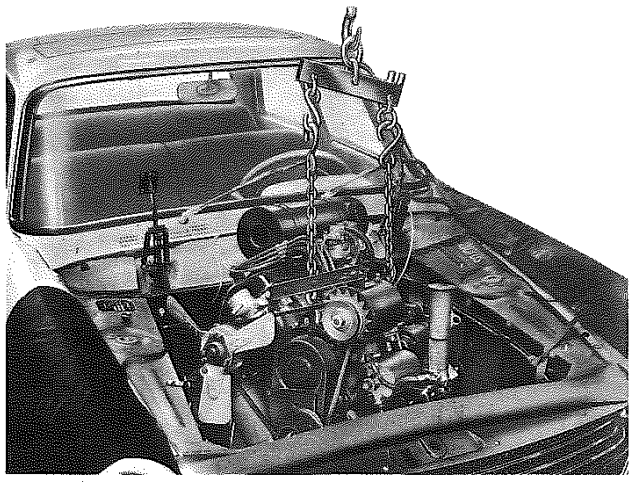
On 404 with automatic transmission

– Remove :

- the 4 bolts securing the convertor to the flywheel.

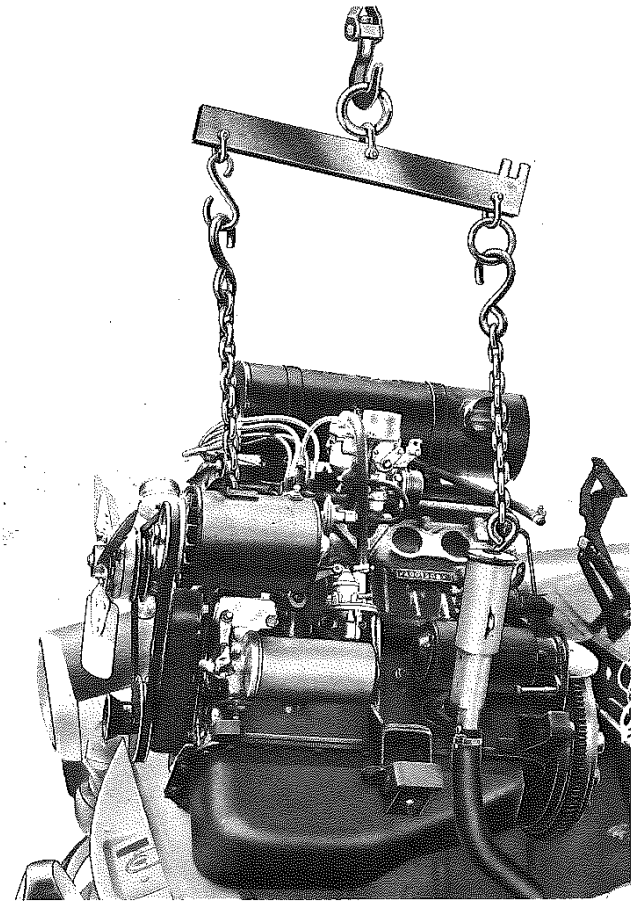
– Separate the convertor, use a large screwdriver.

WARNING - Never remove the engine together with the convertor. The convertor must remain with the transmission unit.



– Separate engine and gearbox, **do not alter positionning of lifting tackle.**

– Tilt and remove the engine.



– Tilt and position the engine as for removal.

– **Repeat in reverse** the operations for removal.

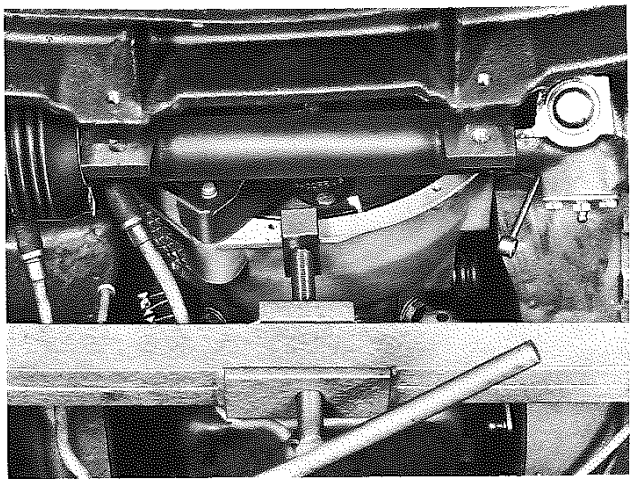
Special points

– on 404 with BA7 gearbox, engage a gear

– couple engine/gearbox whilst rotating the crankshaft and watching alignment.

– Refit all components in the reverse order to removal. Use new washers and nut lock washers.

– Replace any hoses which show signs of wear.



404 with automatic transmission

– Secure the convertor housing to the engine block.

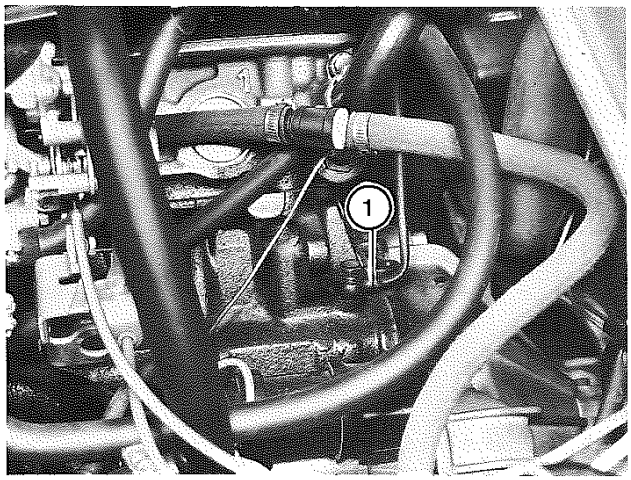
– Position one of the 4 inspection holes in the flywheel pointing downwards.

– Act on the convertor cooling ribs with a screwdriver so as to bring the tapped holes in the convertor opposite the crankshaft coupling plate.

– Tighten the 4 bolts to **2.25 m.kg.**

ENGINE

REFIT

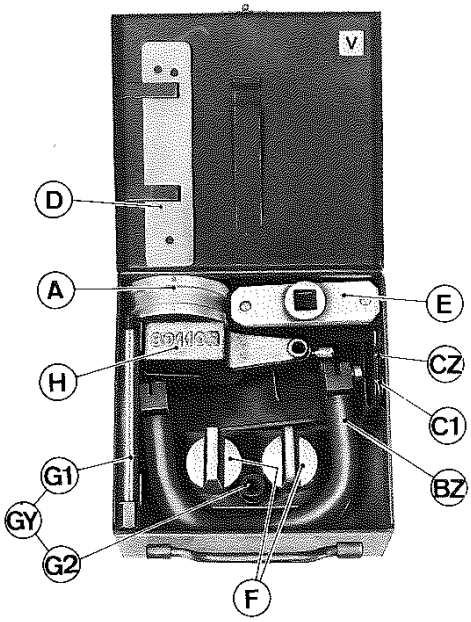


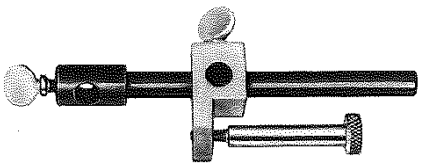
— Before starting the engine :

- check oil level, top-up if necessary.
- unfasten the oil pipe **(1)**,
- ensure that the oil is circulating by turning-over the engine with the starter.

On 404 with 6 selector position automatic transmission and heat exchanger :

— Check, and if necessary, top-up fluid level.





Tool kit for 404-504 and derivatives and J7 petrol and Diesel engines.

8.0110 V

Comprising :

A - Dolly for installing rear bearing seal on Diesel engine

BZ - Tool for installing rear bearing lateral seals

CZ - Set of shims for Diesel engine

C1 - Set of replacement shims, for 404 petrol

D - 0.5 mm shim for the level cutting of the lateral seals

E - Key for checking the resistance to rotation of the crankshaft on Diesel engines

F - Pair of special screws for retaining Diesel engine liners (33 ϕ ⊢ XD4.88)

GY - Dial indicator mounting comprising :

G1 - Arm

G2 - Adaptor

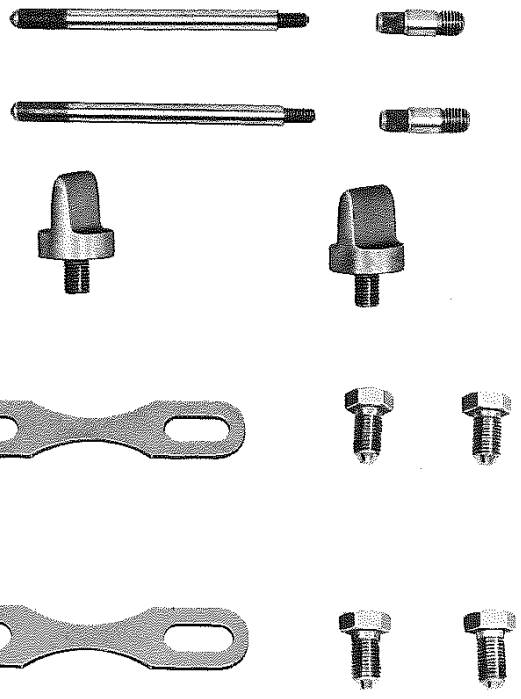
H - Dial indicator support

NOTE - in order to modify **8.0110 C** shims to **CZ**, it is only necessary to shorten them by 15 mm, as shown opposite.

8.0504 Z - Dial indicator holder

A1 - Support arm

A2 - Adaptor



8.0115 Y

Alignment rods for petrol engine cylinder head

Comprising :

A - pair or rods

BZ - threaded adaptors

8.0104 D

Pair of special screws for retaining petrol engine liners*

or (advisable for compressed type liners),

8.0132 A

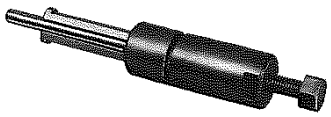
Comprising :

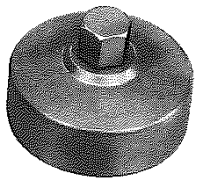
A1 - pair of straps

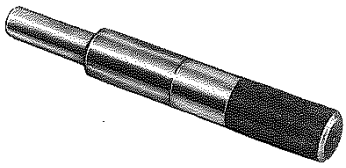
A3 - set of 4 bolts, M12 x 1.5 x 23
n° PN 6915.75

* Head ϕ of ; 40 mm

ENGINE
OVERHAUL
DISMANTLE - REASSEMBLE





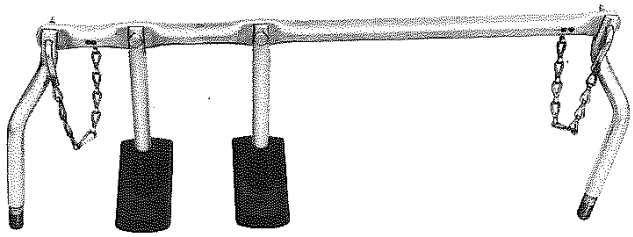


TOOLING REQUIRED

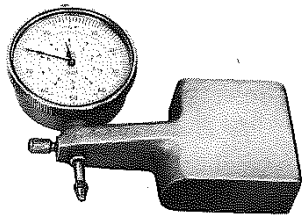
8.1403
Oil filter cartridge key

8.0132 K
Flywheel spigot extractor, comprising :

K1 - Body
K4 - Claws
K5 - Extraction bolt



8.0207
Alignment spigot for 215 D cluchplate

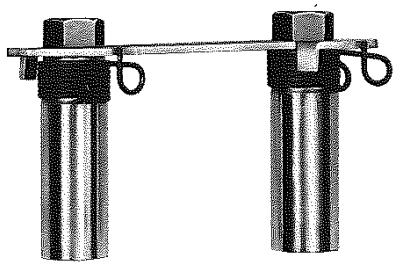


8.0128
Cylinder liner compressor,

404 - 504 - J7

Kit **8.0110 V :**

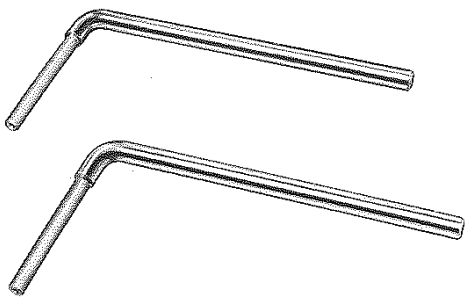
H - Dial indicator holder



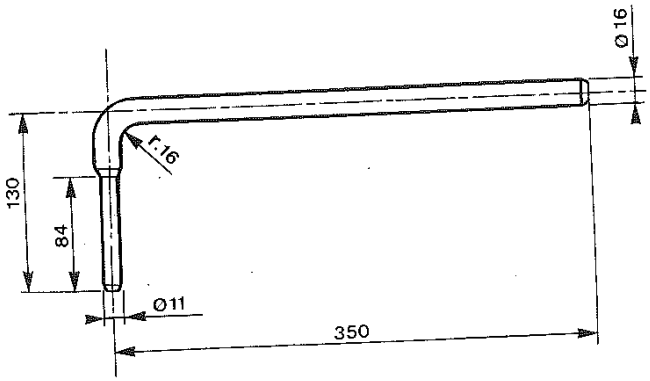
8.1505
Dial indicator without fixing lug

8.0129
Cylinder head tightening tool

404 - 504 - J7



TOOLING TO BE MADE

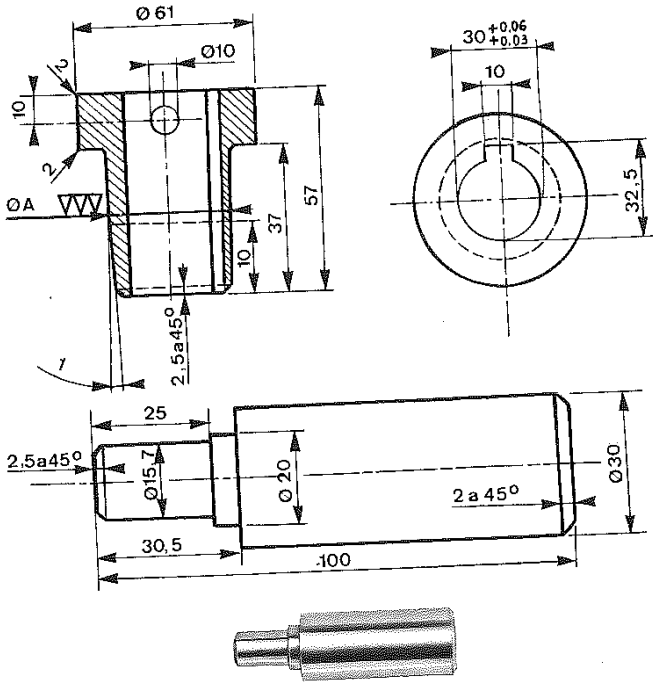


0.0149

2 levers for separating the cylinder head

MATERIAL : 16 mm ϕ silver steel

0.0104 :



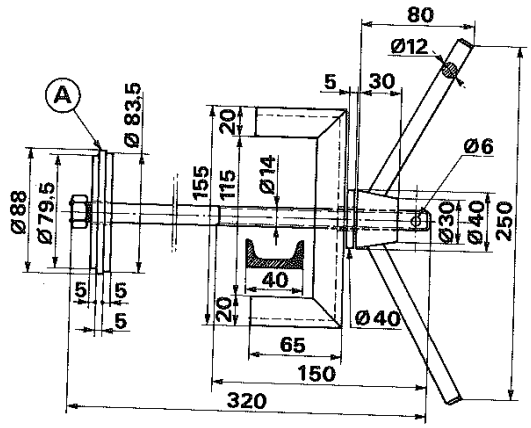
Bush for alignment of timing case, diameter of A :

→| Salon 68, 41.97 ± 0.015
|→ Salon 68, 45.97 ± 0.015

0.0202

Drift for fitting the input shaft alignment bush.

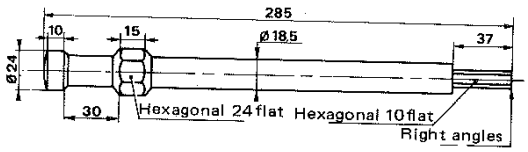
ENGINE
OVERHAUL
DISMANTLE - REASSEMBLE

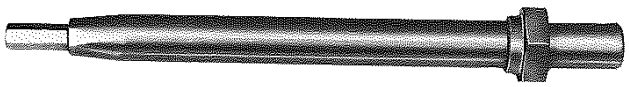


TOOLING TO BE MADE

0.0101

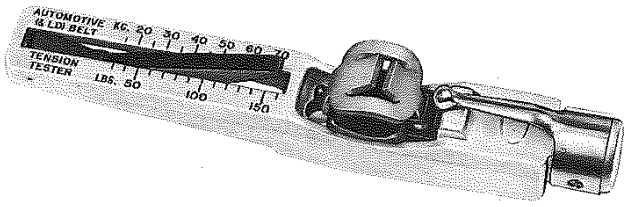
Liner extractor with pressure plate **(A)**.





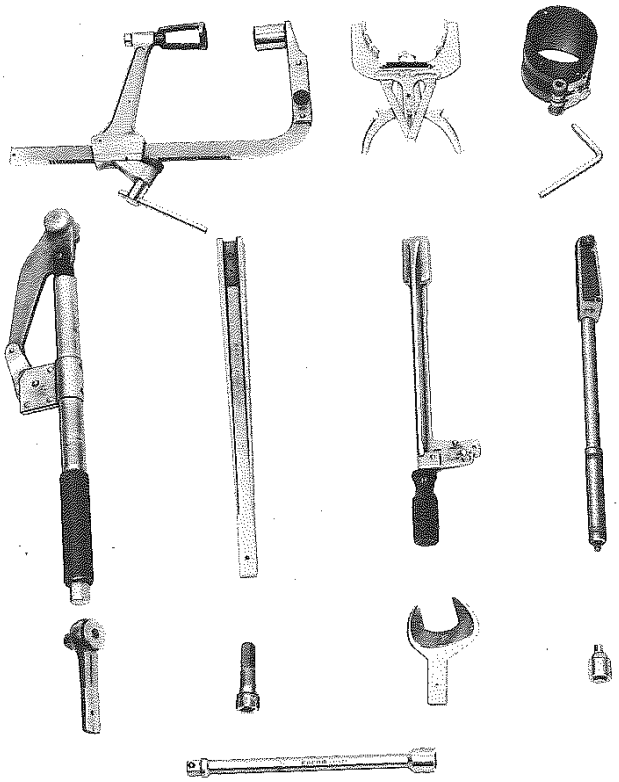
0.0131

Tool for remove-refit M20 and M22 crankshaft plugs.



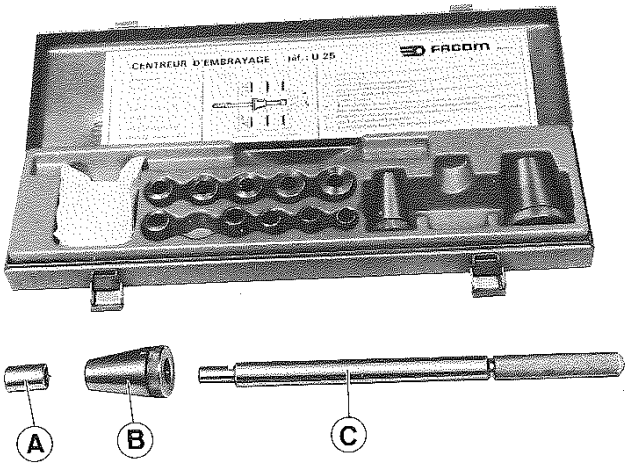
APPROVED TOOLS

"KRIKIT" : tensometer for V-shaped belts.



APPROVED TOOLING

- Valve lifter Facom U13L
- Piston ring pliers Facom 751T
- Piston rings compressor Facom 750T
- Torque spanner Britool AVT 280
- Torque spanner Facom S203
- Extension Facom SJ 214
- Torque spanner Sunnen PN50
- 8 mm sq. male key Facom D43
- Spanner end Facom 20-35
- 14 mm hex. hd. screwdriver attachement Facom ST14
- Ratchet adaptor Facom S 152
- Long extension Facom S 215



FACOM «U 25» CLUTCHPLATE ALIGNMENT TOOL KIT

Including :

A - n° 16 bush

B - n° 3 cone

C - Sleeve

ENGINE

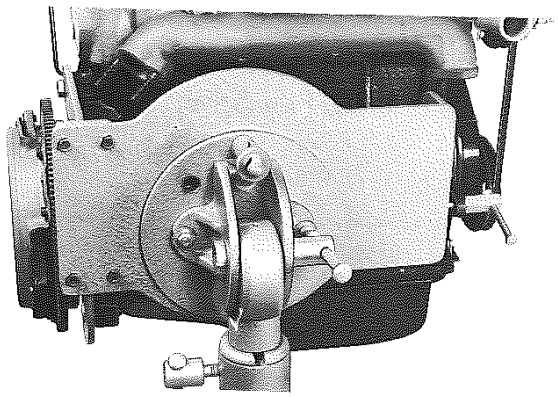
OVERHAUL

DISMANTLE - REASSEMBLE

APPROVED TOOLING

DESVIL HOLDING EQUIPMENT

MOBILE STAND, ref. 125.

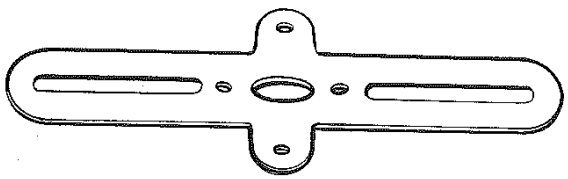


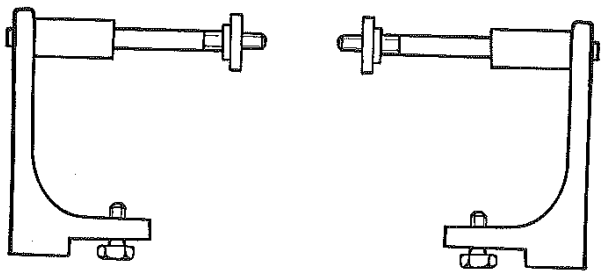
ENGINE SUPPORT, ref. 139-64

For 203 - 403 - 404 - 504 petrol engines.

This support has two interchangeable mounting plates.

Use one or the other according to the power unit to be held.





CYLINDER HEAD ASSEMBLY

Comprising :

— Support, ref. 51.

— Pair of brackets, ref. 57 bis, together with :
- pair of 12 mm ϕ rods for petrol engines,
- pair of 10 mm ϕ rods for Diesel engines.

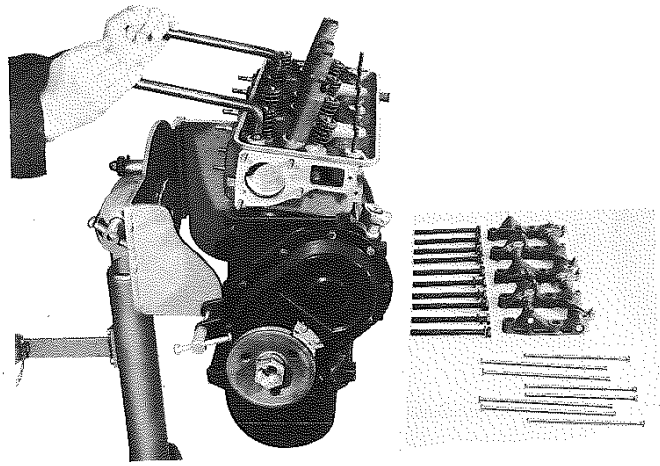
Accepts cylinder heads of : 403 - 404 - 204 - 304 - 504 petrol and Diesel.

– Drain :

- engine block
- oil sump

– Remove :

- the components shown opposite.

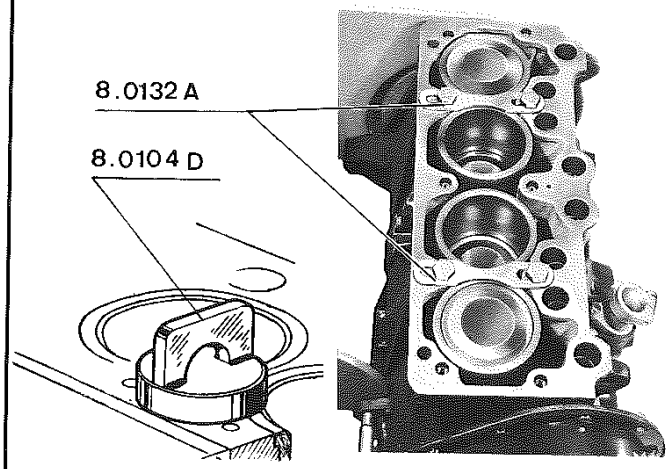


– Remove :

- the cylinder head bolts
- rocker assembly
- push rods, marking the order of their removal.

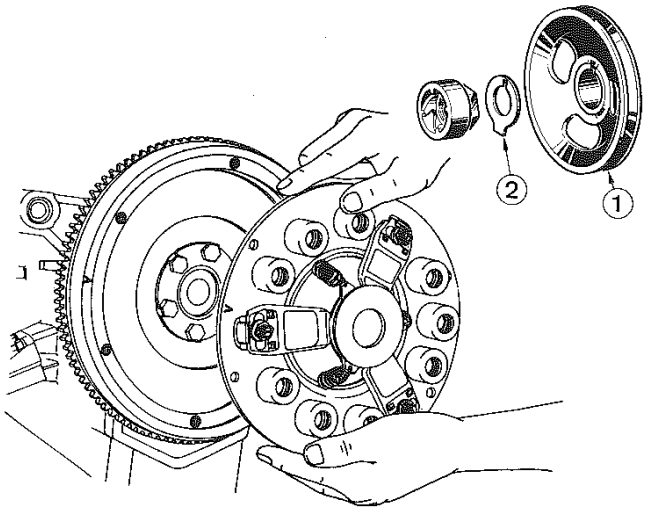
– Unstick the head by «rocking» it with the levers **0.0149**, and then remove it.

ENGINE
OVERHAUL
DISMANTLE



– Remove the head gasket.

– Immobilise the liners.
(use the straps and special screws **8.0132 A** or the special screws **8.0104 D**)

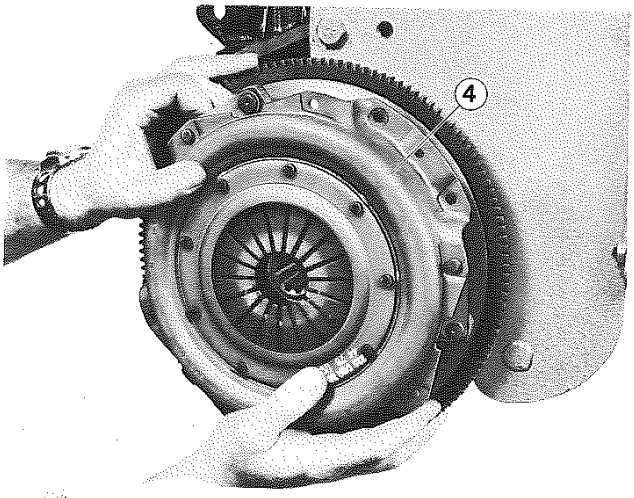


– Ensure that the markings **(a)** are present on the clutchplate and flywheel ; if not, mark these two parts.

REMOVE

- the crankshaft pulley **(1)**
locking tab washer **(2)** Salon 1969

- clutch mechanism

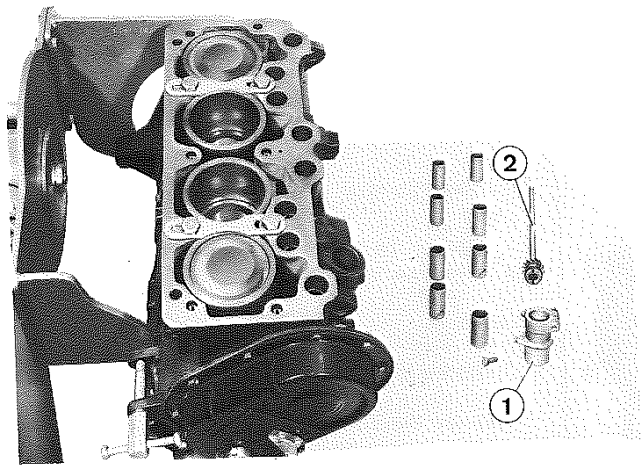


(3) FERODO PKSC 14

or

(4) FERODO 215 D diaphram type

- the flywheel.

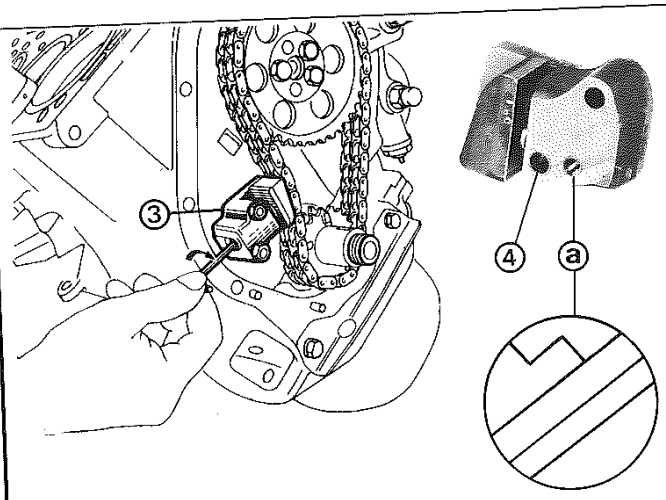


– Remove the tappets and stow them in the order removed.

5 main bearings engine :

- the distributor mounting **(1)**.

- drive shaft **(2)**.



– Remove the timing cover and the oil thrower.

– RENOLD tensioner **(3)**.

– Remove the tensioner screwed plug.

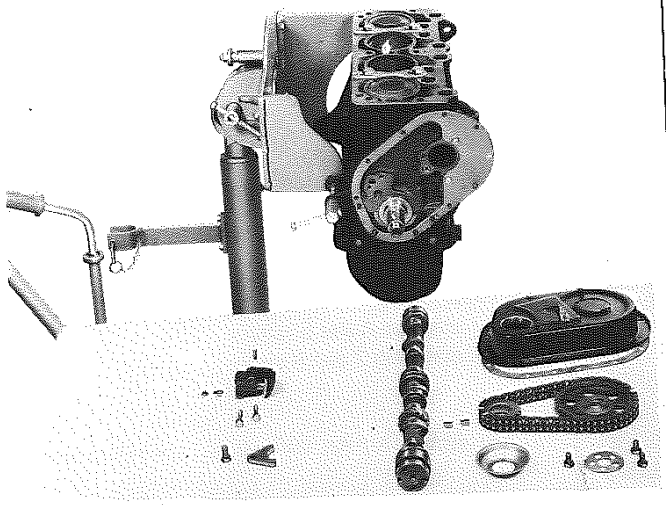
– Insert a 3 mm hex.key in the piston.

– Turn the key clockwise to release the tensioner pad from the action of the spring.

– Remove tensioner and strainer.

SEDIS TENSIONER (4)

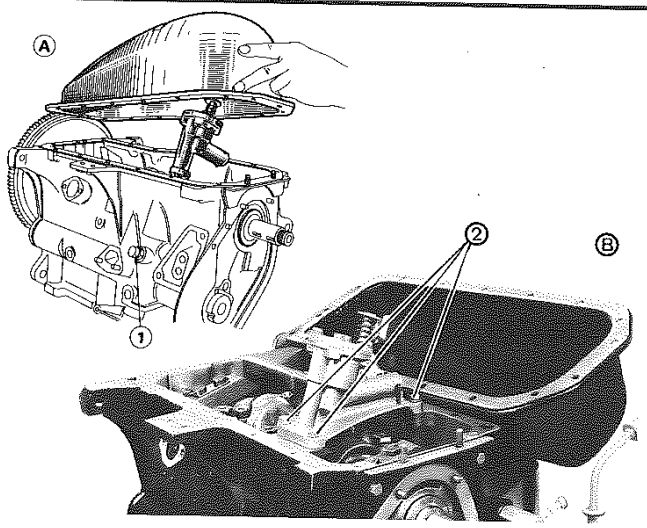
– Position the ratchet **(a)** as shown opposite.



– Remove timing components (as shown opposite).

A 5.014 — 1

ENGINE
OVERHAUL
DISMANTLE



— Remove :

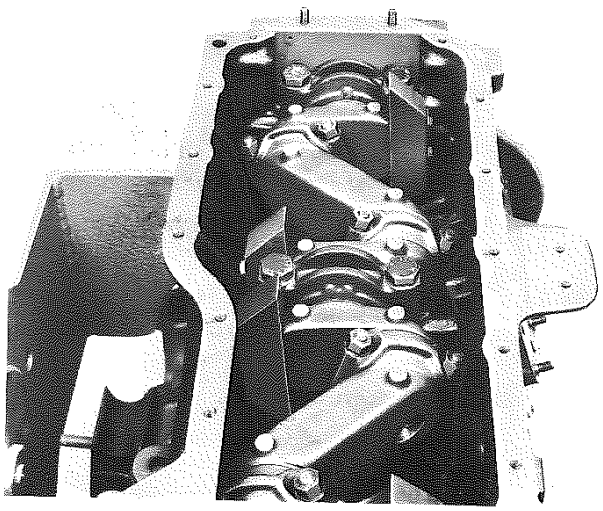
- the oil sump,
- oil pump.

A - 3 bearing engine

a - Slacken the cap nut **(1).**
b - Withdraw the pointed set-screw.

B - 5 bearing engine

- Remove the 3 bolts securing the pump **(2).**



— Check that the bearing caps are marked :

A - 3 bearing engine

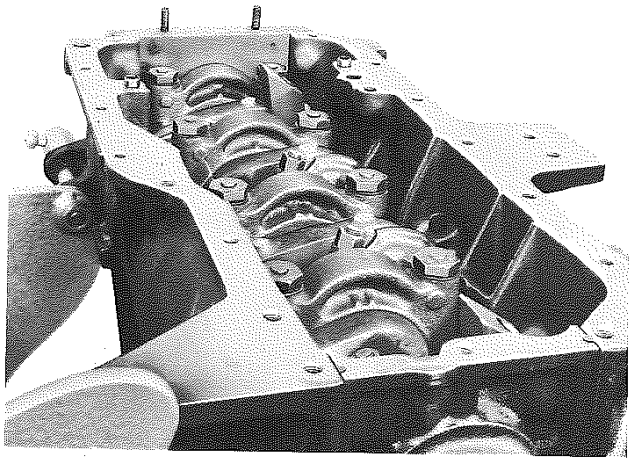
- 1 cast dot on front cap
- 2 cast dots on centre cap

AS VIEWED FROM FLYWHEEL.

B - 5 bearing engine

a - «flash» of paint as per the table below :

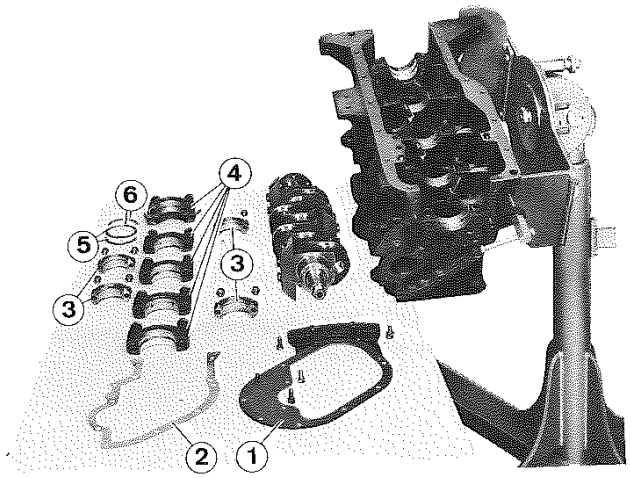
BEARING CAP	N°	COLOUR
REAR	1	Without
INNER REAR	2	Red
CENTRE	3	Green
INNER FRONT	4	White
FRONT	5	Blue



b - Foundry markings, flywheel side :

- 1 mark on 4 and 5 caps
- 2 marks on 2 and 3 caps

In default, MARK the bearing caps before removal.



REMOVE :

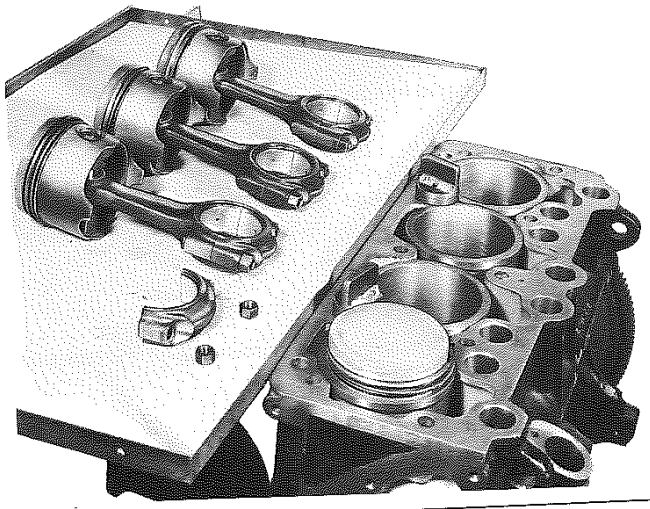
– timing case backplate **(1)** and gasket **(2)**,

– con. rod big en caps **(3)**,

– main bearing caps **(4)**,

– the lower half thrust washers **(5)**,

– the upper half thrust washers **(6)**.

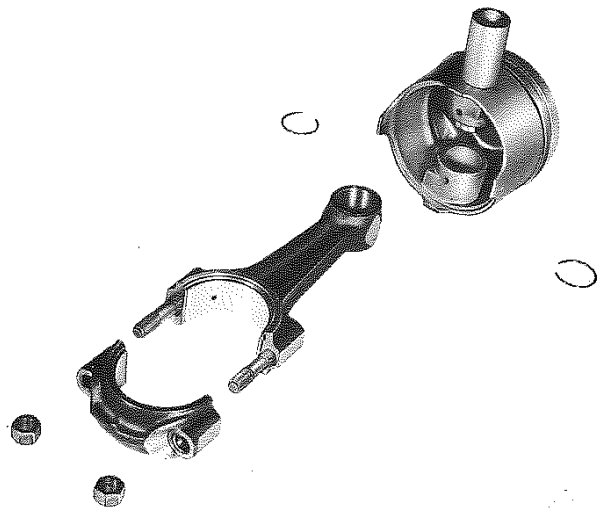


– Withdraw pistons and con. rods.

– Recover the con. rod bearing half-shells.

– Refit the con. rod big end caps, observing the correct order.

– **Mark the con. rods 1 to 4.**

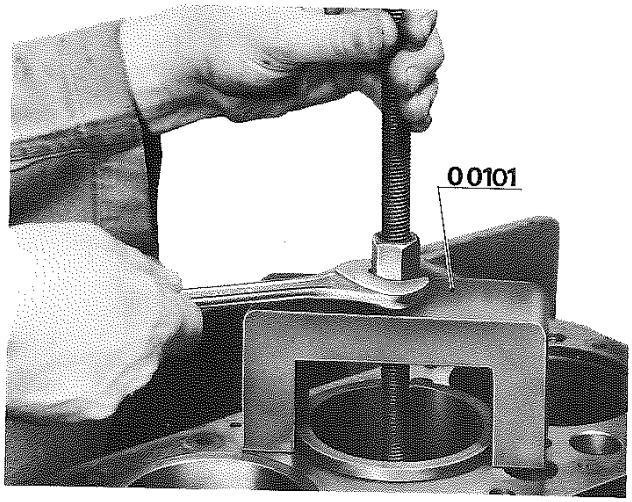


Con. rods - pistons.

– Remove :
- the retaining spring clips,
- the gudgeon pins.

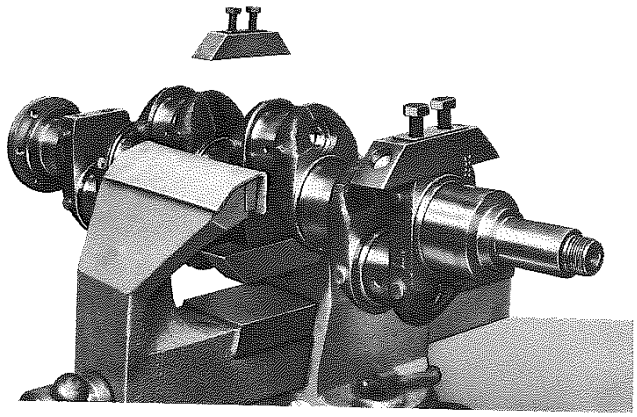
– Check condition of con. rods :
- twisting, distortion (use a Muller 519 T test jig).

ENGINE
OVERHAUL
DISMANTLE



– Remove the liners by hand, or if necessary use the extractor.

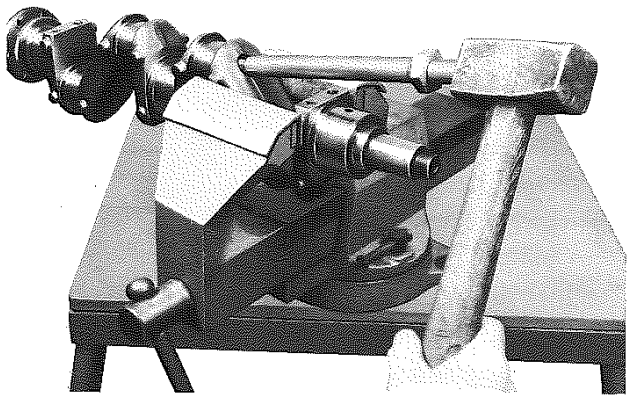
IMPORTANT - It is not permissable to resurface the face of the engine block.



– Mark and remove the counterweights.

– Check condition of con. rod and main bearing surfaces.

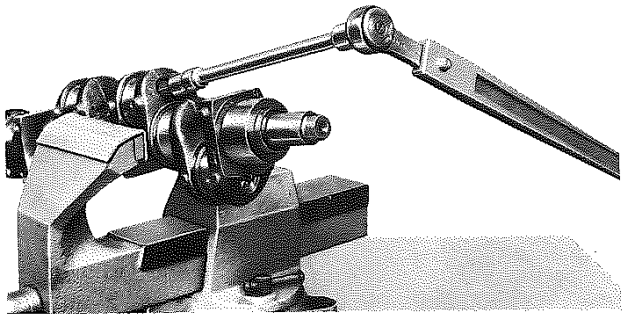
– Check dimensions in accordance with the tables on pages C1 011 and C1 012.



CRANKSHAFT

A - With sludge trap plugs, (M20 or M22φ x 1.50 pitch).

– Free the plugs by punching with the tool **0.0131.**

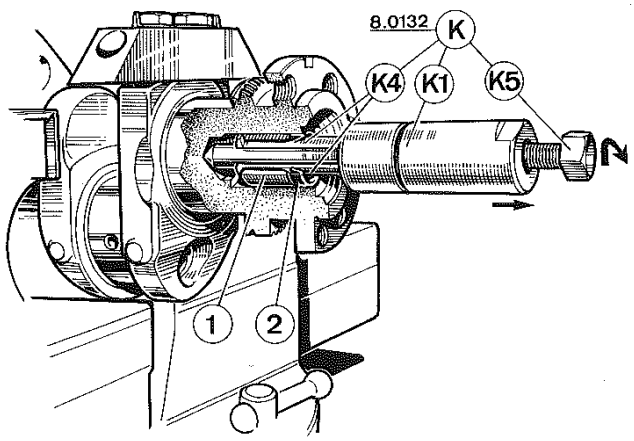


B - Sludge trap plugs, M24 dia x 1.5.

– Remove plugs using :

- 1 screwdriver attachment, Facom ST14
- 1 long extension, Facom S215
- 1 extension, SJ214 with rachet S152

– Clean out sludge traps and oilways.



REMOVAL OF CRANKSHAFT SPIGOT BUSH AND SEAL

– Remove simultaneously both bush **(1)** and seal **(2)**.

PRELIMINARY REQUIREMENTS

– Use only parts which are clean and free from defects.

– Observe matching, direction of fitting, relative position of parts which are reused, as marked when dismantling.

– Observe the matching of new parts as supplied by Parts Department.

– Systematically replace :

- gaskets and seals,
- locking washers.

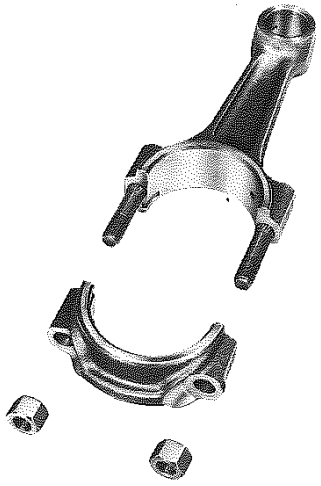
Cleaning of mating surfaces.

– Never use an abrasive or a sharp edged tool : all mating surfaces must be free from any trace of bruising, scoring or burrs.

– Use :

– Magstrip PN 9730.58, for cleaning cylinder block and head faces.
- wear protective gloves,
- spread with a brush,
- allow to «work» for 10 minutes,
- remove with a wooden or plastic spatula,
- use a cloth saturated with cleaning fluid for the other mating surfaces.

– Oil the surfaces of moving parts as they are assembled, with UNIFLO.



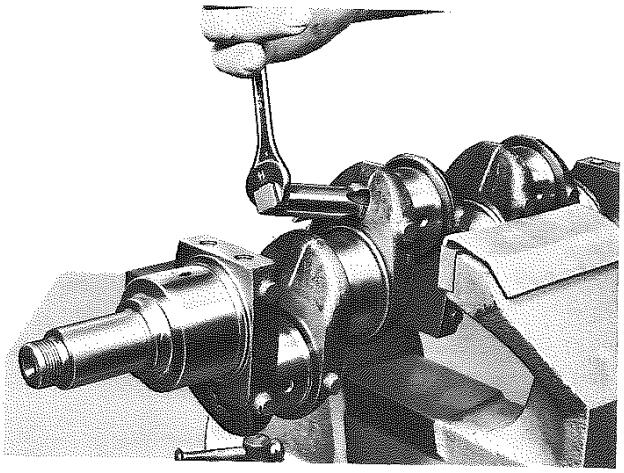
CHECKING CONNECTING RODS

– Con. rod bolts must be free from any defect.

– No traces of overheating.

– No traces of scoring in either big or **little end bores.**

ENGINE
OVERHAUL
REASSEMBLE

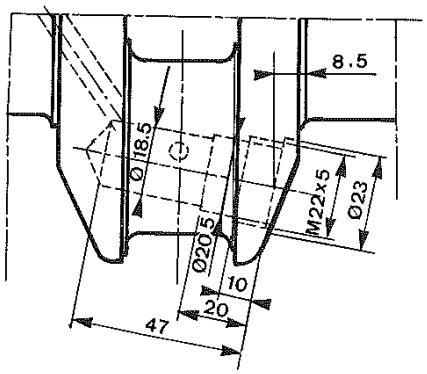


Reconditioning the tapped hole for sludge trap plugs.

All types of engine →| Salon 1967 :

a) original plugs, hollow hex. head 10 mm A/F M20 ϕ x 1.5 PN 0507.03

– Run an M20 x 1.5 taper tap in the plug holes (10 mm of thread maximum).



b) Replacement plugs, hollow hex. hd. 10 mm A/F M22 x 1.5 PN 0507.04 :

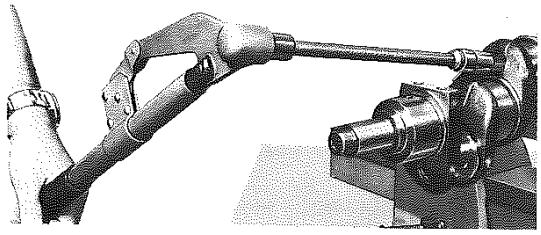
– Open up the plug holes to 20.5 x 20 mm deep maximum.

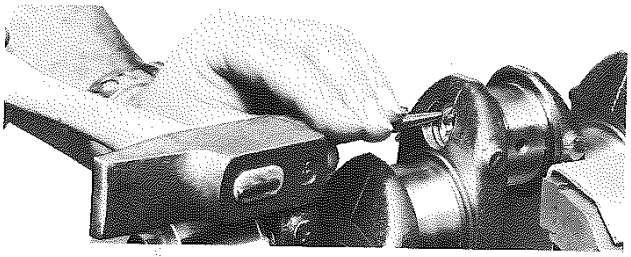
– Tap M22 x 1.5 for a depth of 10 mm.

Engines |→ Salon 1967 :

c) plugs, hollow hex. hd. 14 mm A/F M24 x 1.5, PN 0507.06.

– Retap M24 x 1.5 for a depth of 10 mm with a taper tap.

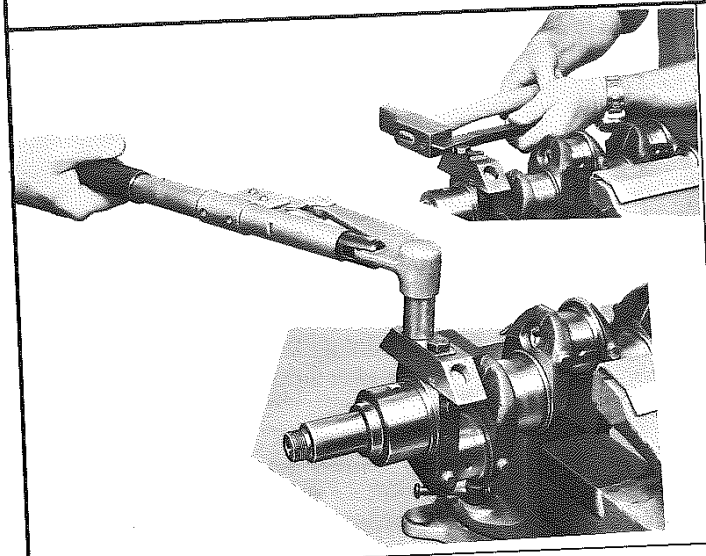




Fitting of all sizes of sludge trap plugs.

– Coat new plugs with FESTINOL.

– Tighten to **5.5 mkg** and stake.

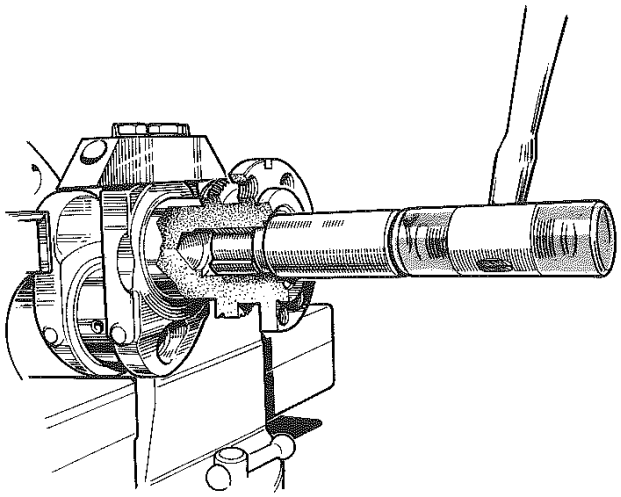


CRANKSHAFT

– Refit the counterweights in the same order as dismantled.

– Tighten bolts to **0.75 m.kg.**

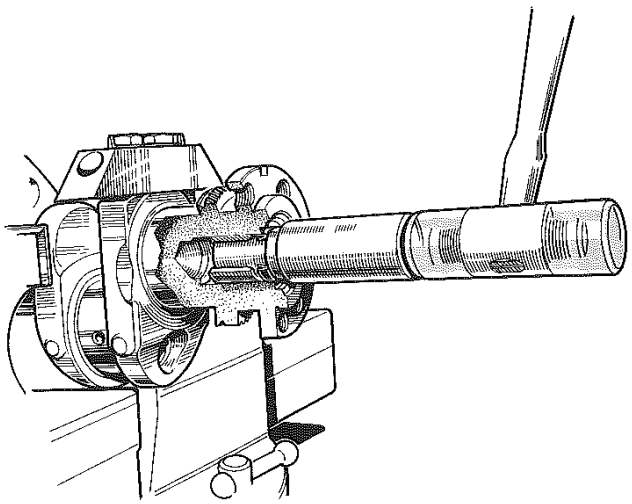
– Bend up the locking tabs.



FITTING OF CRANKSHAFT SPIGOT BUSH

– Insert a **new bush : chamfer (a)** facing outwards, **tap with a mallet until it abuts.**

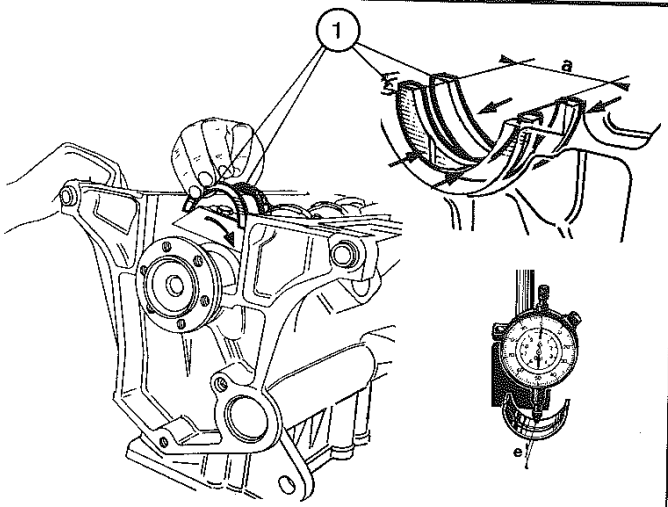
NOTE - *This spigot bush must never be degreased, it is self-lubricating.*



– Insert the oil seal with the «thin» lip **(b)** inwards **(tap gently until it abuts the bush), but is not pushed to the bottom of the seating.**

– Oil **lightly** :
(avoil oil on clutch plate).

ENGINE
OVERHAUL
REASSEMBLE



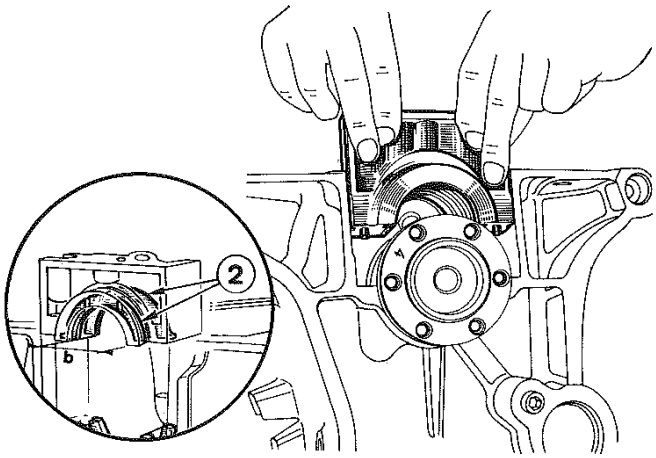
– Place the main bearings half-shells in position.
(For selecting shells see pages C1.021 or C1.023).

– Place the crankshaft in position, with due care.

– Fit half-thrust washer **(1)** of the original dimension : 2.30 mm.
- oil grooves facing crankshaft.

WARNING

On XC7 and XM7 the diameter of the rear main bearing is 54.92 in place of 51.18 mm. Hence, it is necessary to fit :
- the appropriate bearing shells,
- 61.5 mm thrust washers **(a)** *instead of 58 mm.*
*On engines with ZF transmission, and on XC7, fit a half thrust washer** **(2)**, *of the original dimension of 2.30 mm,* **to each side of the rear bearing, oil grooves facing crankshaft.**



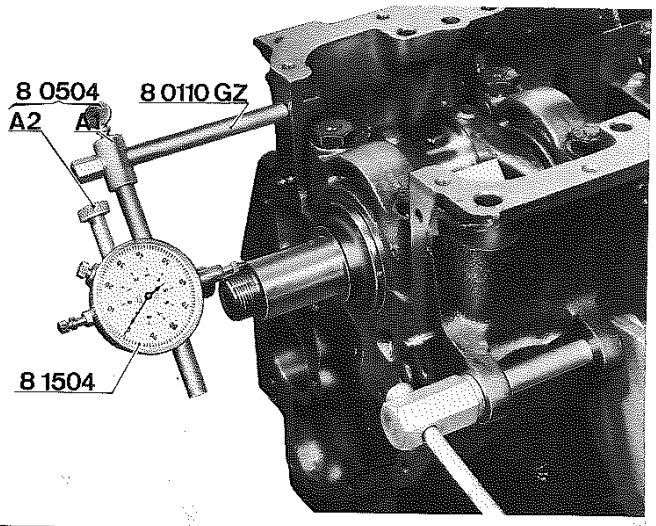
– Fit :
- the main bearing caps, together with their half-shells, as shown opposite.
- the rear bearing cap without the lateral seals.

3 - Bearing engines
centre bearing cap (2 bosses to the rear)
front bearing cap (1 boss to the rear).

5 - Bearing engines
centre bearing cap (2 bosses to the rear)
front bearing cap (1 boss to the rear)
intermediate rear bearing cap (2 bosses to the rear)
intermediate front bearing cap (1 boss to the rear)

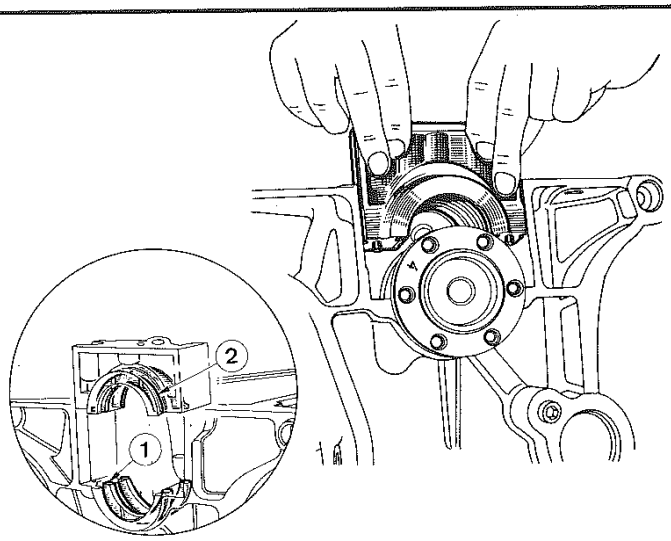
– Tighten the 10 bolts, fitted with new wavy (Onduflex) washers, to 7.5 m.kg.

– Ensure that the crankshaft turns freely.



– Set up the end float dial indicator assembly, as shown opposite.

– Note the amount of end float, which should be between 0.08 and 0.20 mm.



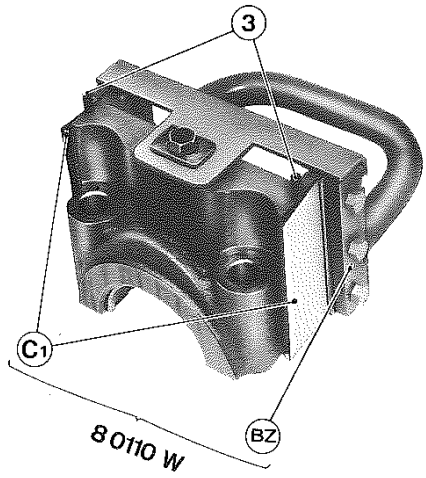
– Remove the rear bearing cap.

– If end float is in excess of 0.20 mm replace :

- on engines with manual gearbox prior to Salon 1970, the split thrust washers **(1)**.

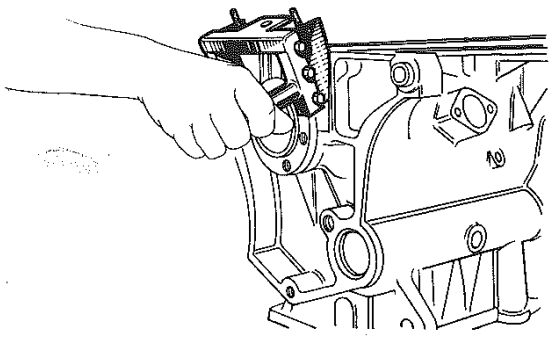
- on engines with automatic transmission and on XC7, replace the split thrust washers **(1)** and **(2)**, at **the rear of the bearing,** with repair grade washers selected from the table on page C1.023.

– If end float is less than 0.08 mm, find the reason, e.g. foreign body between cap and bearing block, split thrust washers with burrs or bruising.



– Place the shims C1 on the tool **8.0110 BZ** in the position of minimum width, (shim heels are thicker one side than the other).

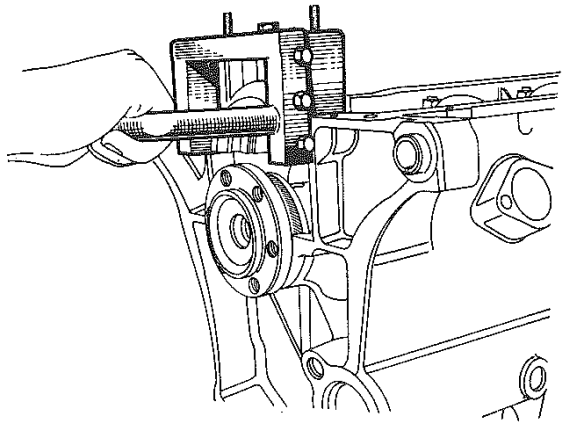
– Install new lateral seals **(3)** on the bearing cap and hold them in position with the tool as shown opposite.



– After lubricating, tighten the shim plates by hand and engage the assembly in the cylinder block at an angle.

– Straighten up the cap and position correctly.

ENGINE
OVERHAUL
REASSEMBLE

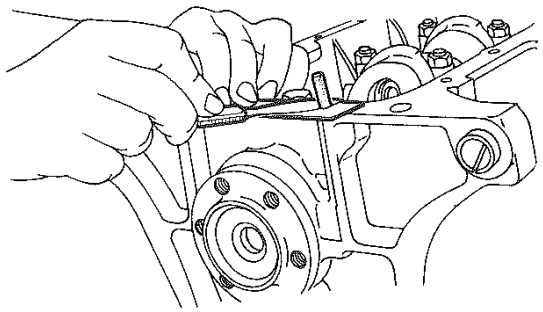


– Fit the bolts (using new wavy (Onduflex washers).

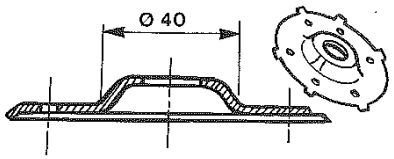
– Withdraw the tool.

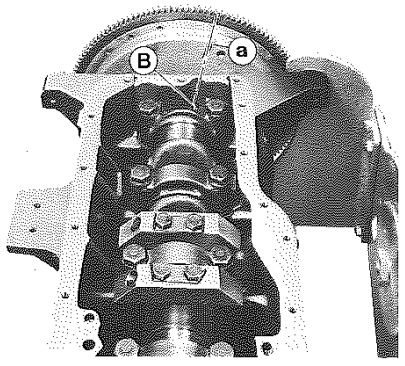
– Tighten the two bolts to, **7.5 m.kg.**

– Use an 0.05 mm feeler gauge to check that the cap is bearing on the block.



– Trim the lateral seals flush with the 0.5 mm thick shimplate.



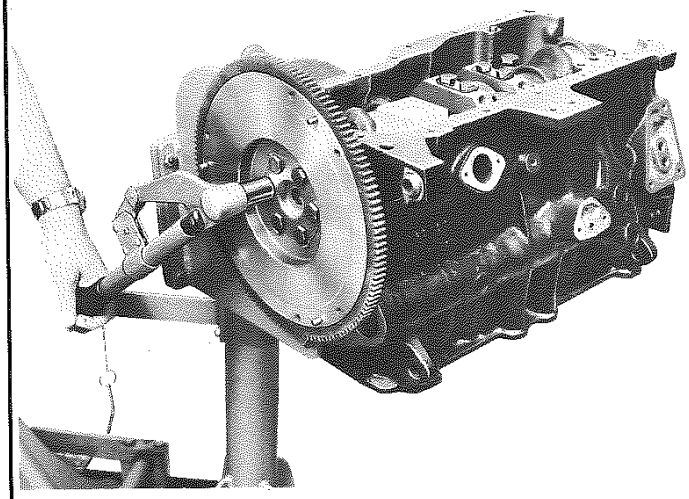


Fitting the flywheel

– On all types use a new **series 2** locking plate (see opposite and page C1.052 for identification).

– Place crankpins of Nos 1 and 4 cylinders in the position of BDC.

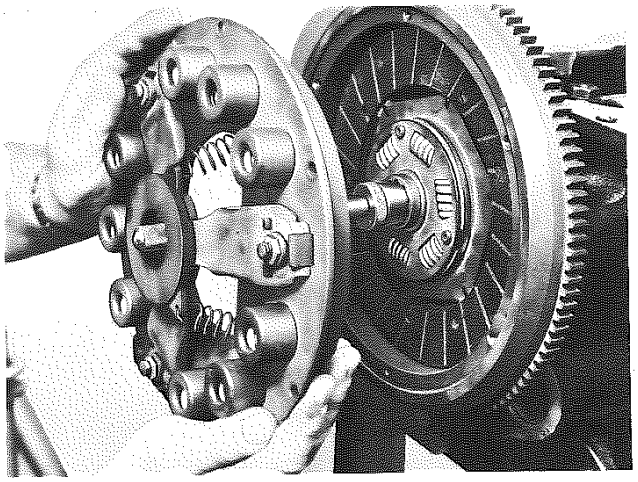
– Align the timing notch **(a)** with the oil return orifice **(b)** of the rear bearing.



FLYWHEEL

– Fit and tighten the bolts to **6.75 m.kg.**

– Bend up the locking plate tabs.

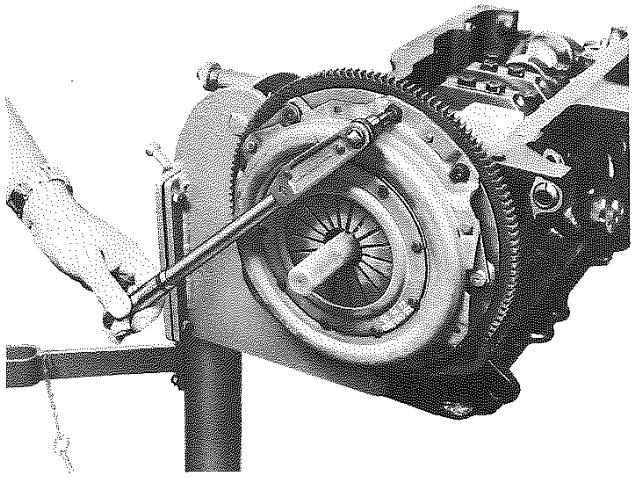


FITTING OF CLUTCHPLATE AND MECHANISM

– Position the clutchplate with the damper hub facing the gearbox.

A - PKSC 14 mechanism

– Align the clutchplate, using either an input shaft, or a universal clutch alignment tool such as, Facom U25.



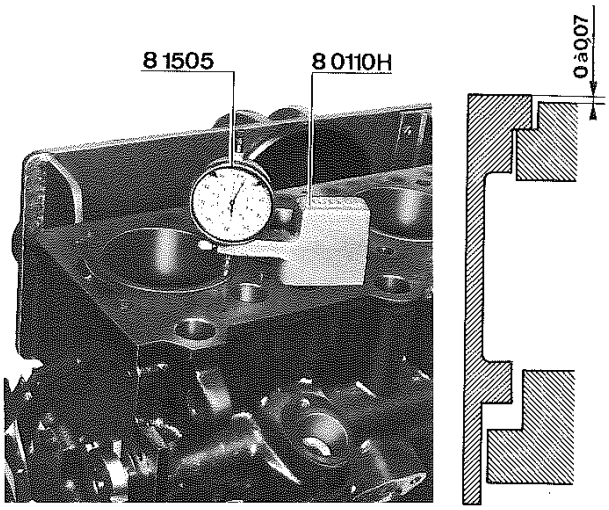
B - 215 D mechanism

– Align the clutchplate using the **8.0207** tool.

– Secure the mechanism, observing the markings made when dismantling.

– Tighten the bolts, fitted with new Onduflex washers to **1.25 m.kg.**

ENGINE
OVERHAUL
REASSEMBLE



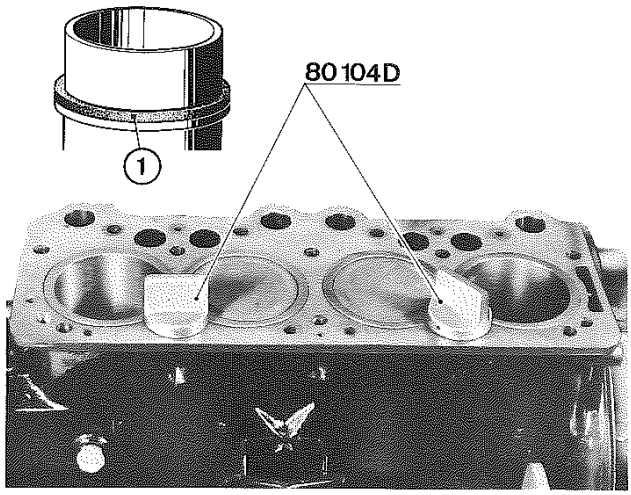
NON-COMPRESSED LINERS ON ENGINES PRIOR TO «SALON 1970»

Parts must be clean and free from any defects.

WARNING - Do not alter the matching of liners/pistons.

– Fit liners without seals.

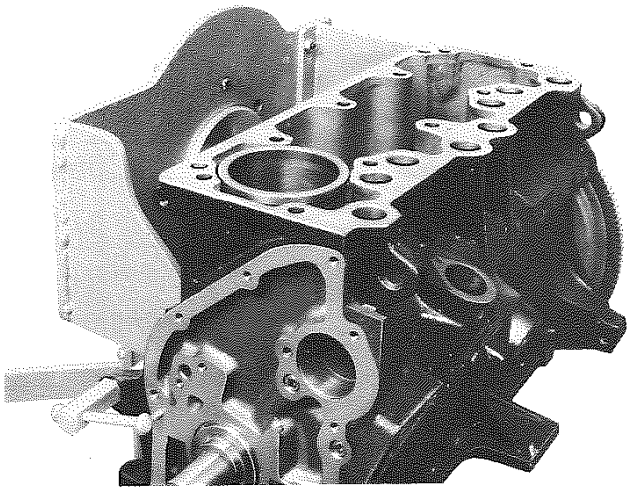
– Check liner protrusion, which should be between 0 and 0.07 mm.



– Fit a new «rubber» seal **(1)** to each liner.

– Install the liners.

– Fit the special retaining screws.



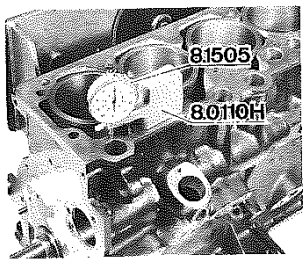
COMPRESSED LINERS ON XC7 ENGINE

WARNING - Do not alter the matching of liners/pistons.

– Parts must be clean and free from any defects.

– Ensure that the profiles of the cylinder block are free from burrs or traces of bruising.

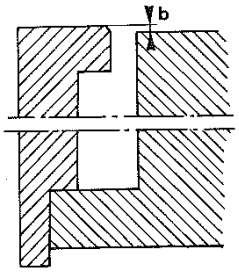
– Fit liners without seals.

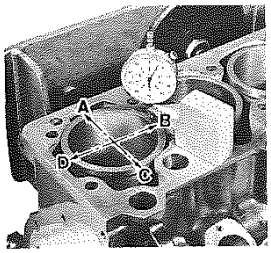


– Position the dial indicator and base on the face of the cylinder block.

– Set the indicator to zero and 5.

– Take readings of each liner at points (A) (C) (B) and (D) and take note of the highest reading (dimension **b**).





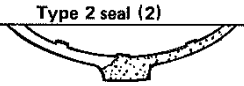
– The maximum difference between two diametrically opposed points (A-C and B-D) must be less than 0.07 mm.

– If in excess of 0.07 mm, find the cause (burrs, foreign bodies).

ENGINE
OVERHAUL
REASSEMBLE

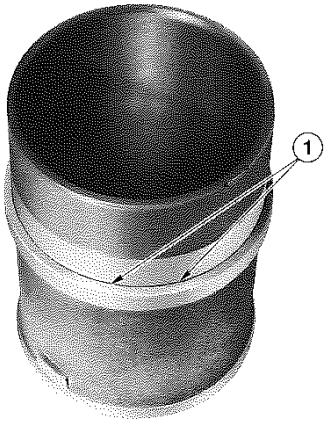
Select a seal which will give a liner protrusion (with seal) at the highest point, between 0.04 and 0.11 mm, and preferably as near to 0.11 as possible.

WARNING - Do not fit more than ONE SEAL to any one liner.

HIGH POINT OF LINER (without seal)	SEAL TO BE FITTED		
	Type 1 seal (1)	Type 2 seal (2)	Thickness
from 0.036 to 0.060			0.05
from 0.011 to 0.035			0.075
from 0 to 0.1010			0.100
Minus			0.125

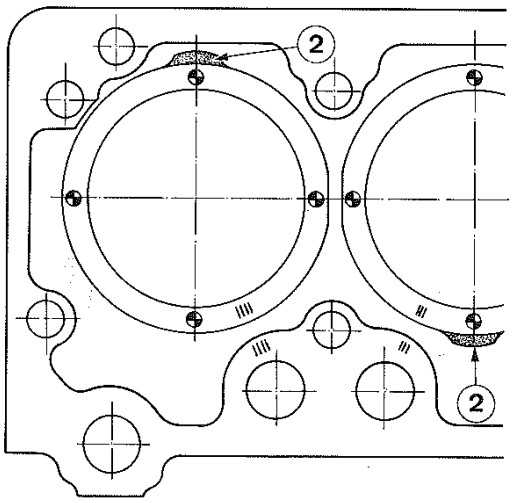
Type 1 : self-colour

Type 2 : self-colour, but with fluorescent yellow tabs.

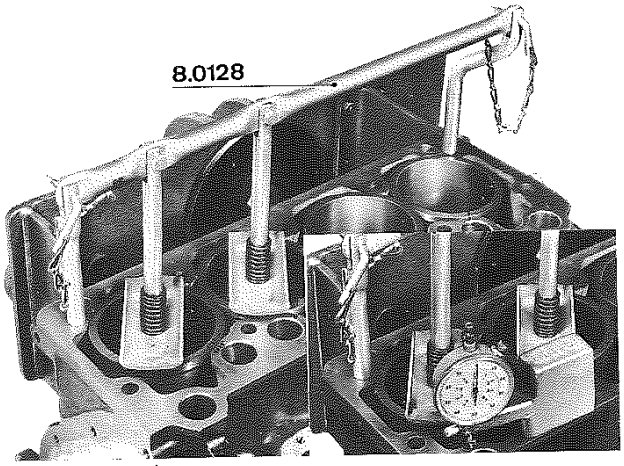


– Hand fit to the liners carefully the preselected seals. Fit them dry.

– Carefully tuck the inner tabs **(1)** into the liner groove.



– Fit the liners in their respective bores, positioning the outer tabs **(2)** as shown opposite.



– Install the liner compressing tool as shown opposite.

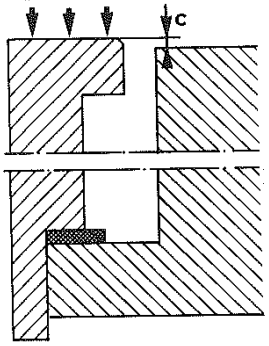
– Check the setting of the dial gauge at 5 and 0 on the block.

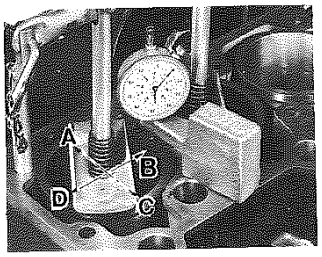
– Check the protrusion at **(A), (B), (C)** and **(D).**

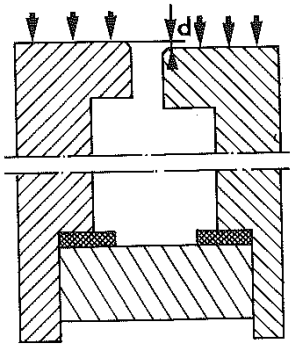
– The protrusion at the highest point should be as close as possible to 0.11 mm (point **c**)..

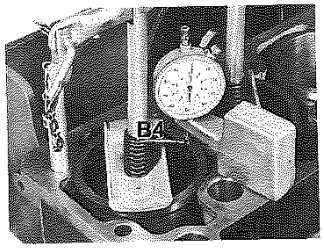
– The maximum difference between the diametrically opposed points **(A), (C)** and **(B), (D)** must be less than 0.07 mm.

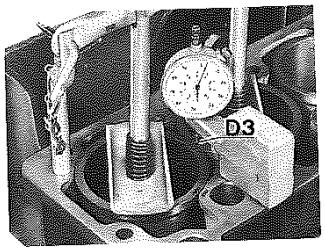
– If it is more, find the reason (foreign body).









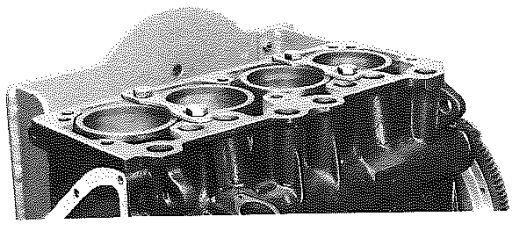


– Set the dial gauge at 0 on point B4 (liner n° 4).

– Place the dial gauge on point D3 (liner n° 3).

– The difference in protrusion between the two liners must not exceed 0.04 mm (point **d**).

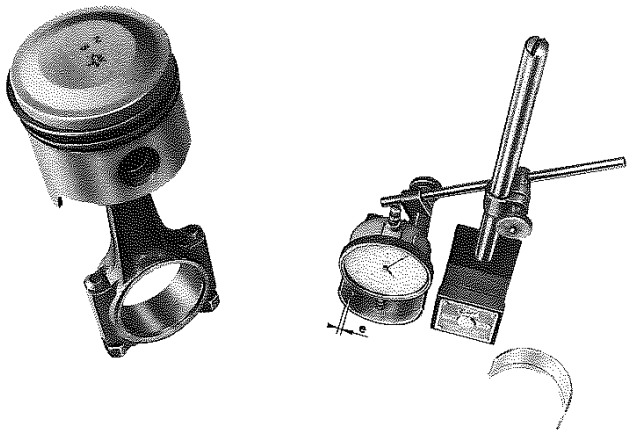
– If it does, change the gasket on the liner which protrudes the most and fit a gasket on size smaller.



– Turn the compressor round and check the liners 1 and 2.

– Remove the compressor and fit the retaining screws.

ENGINE
OVERHAUL
REASSEMBLE



CONNECTING RODS

– Shells
  - **(e)** "original" : 1.812 to 1.818
  - **(e)** "repair"* : see table Page C1.021.

* For fitting after regrinding the crankpins.

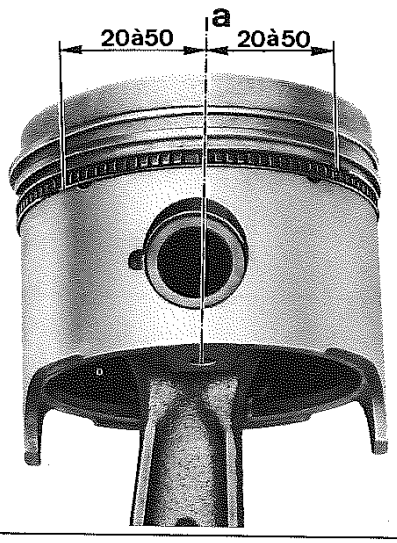
WARNING - **If liners/pistons are replaced, do not alter their matching :**
- **liners/pistons**
- **pistons/gudgeon pins.**

– Position the piston with the **(AV)** front mark in relation to the oil hole in the con. rod, as shown opposite.

– Hand assemble pistons/con.rods.

NOTA - ***Due to manufacturing tolerances, it may sometimes be necessary to heat (expand) the pistons by immersion in boiling water for a few minutes.***

– When fitting the clips **(4)** ensure that they seat in their respective grooves.



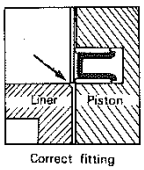
RINGS

– Perfect-Circle scraper ring.

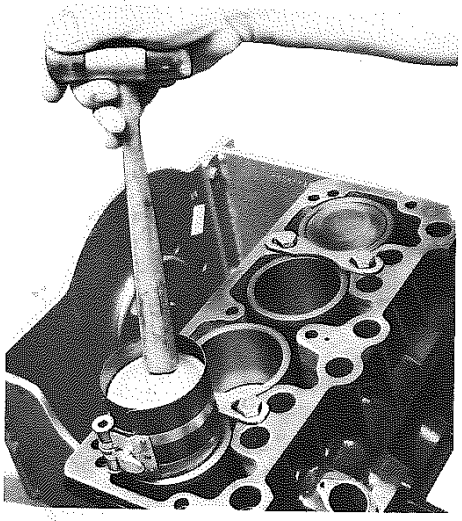
– Offset the scraper rings in relation to the expander joint **(a)** as shown opposite.

NOTE - *Never alter the length of the expander.*

– *The engraved mark on the rings should be towards the piston crown.*



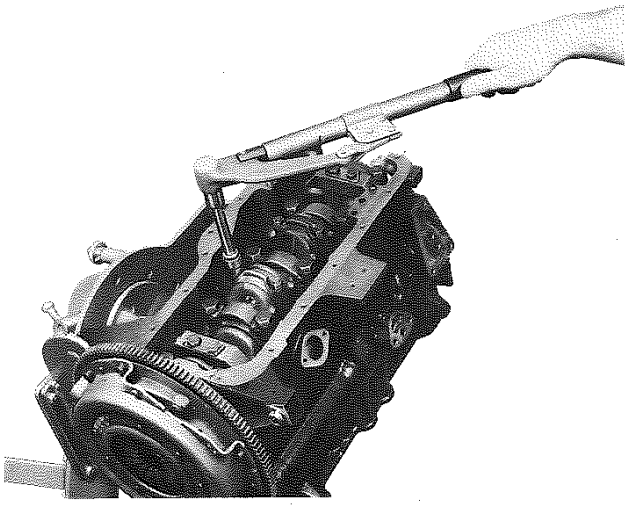
Correct fitting



– Compress the rings with a 750T compressor.

– Install the con. rod/piston assembly without rotating and observing :

- arrow markings on pistons pointing forwards,
- the 1-2-3-4 order of fitting of the con.rods as marked when dismantling.

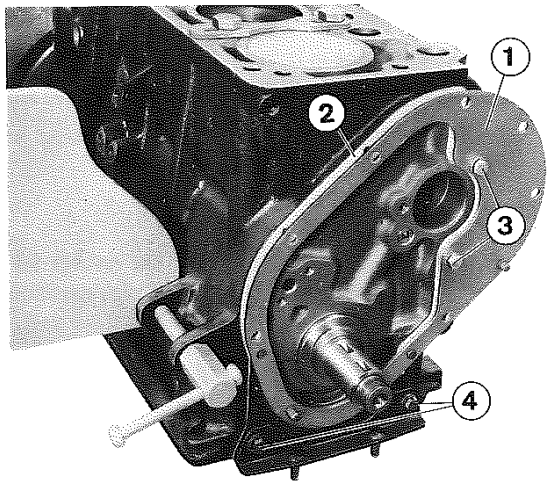


– Whilst installing the piston, guide the con. rod onto its crankpin.

– Fit each con. rod, one at a time, with its corresponding big end caps.

– Tighten the nuts to **4 m.kg.**

NOTE - *The markings on rod and cap must be on the same side.*

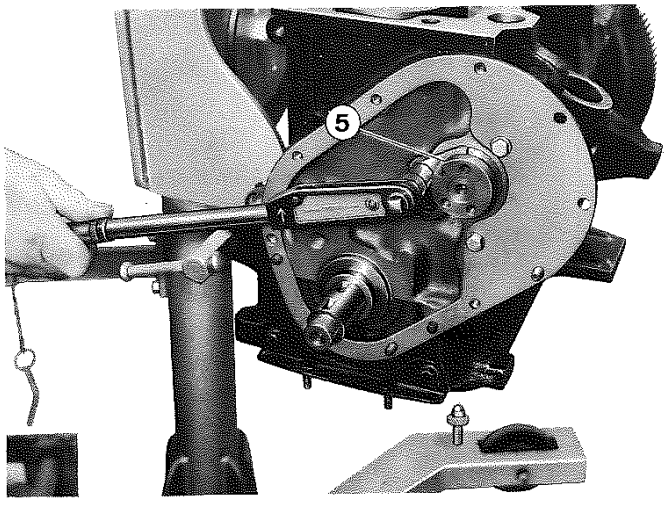


TIMING

– Fit the timing case backplate **(1)** together with its gasket **(2).**

– Tighten the M7 x 100 x 16 bolts **(3)** and the M7 x 100 x 20 bolts to **1 m.kg.**

(using new BLOCFOR washers).

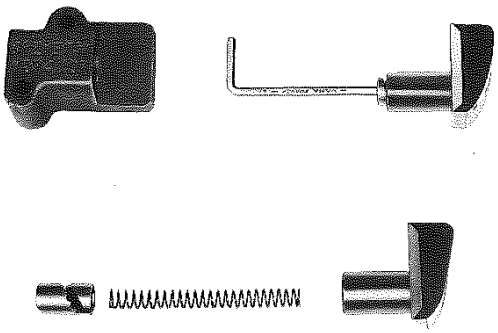


– Install the camshaft (for identification see pages E1.001 and 003).

– Secure the camshaft thrust plate **(5)** with an M8 x 20 thin-head bolt, and new Blocfor washer.

– Tighten the thrustplate **(5)** to **1.7 m.kg.**

ENGINE
OVERHAUL
REASSEMBLE



TIMING

TENSIONER : DISMANTLE - REASSEMBLE

IMPORTANT - When reassembling ensure that all moving parts slide freely, and that the oil passages are clear.

Renold tensioner

– Insert and turn an Allen key clockwise whilst restraining the plunger in order to release the spring.

– Recover, shoe, spring and plunger.

– Reassemble in the reverse order to removal.

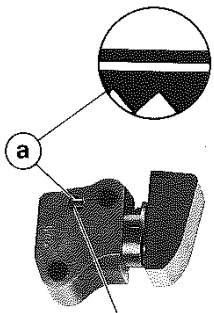


Fig. I

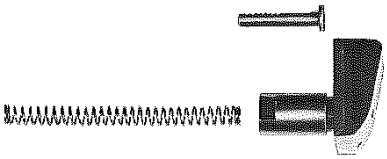


Fig. II

Sedis tensioner

– Hold the shoe in its seating and position the ratchet **(a)** as shown opposite in fig. 1.

– Then remove together, shoe, rack and spring.

WARNING

Never attempt to remove the ratchet **(a)** *(Its method of return makes it impossible to reposition it).*

– Reassemble in the reverse order to dismantling.

– Rearm the tensioner by positioning the ratchet, as shown in fig. 2 opposite.

Fig. I

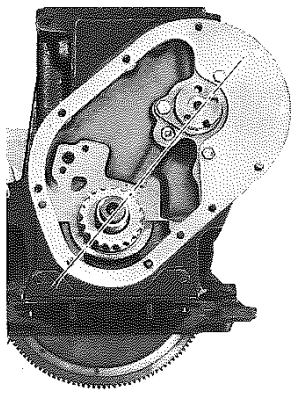
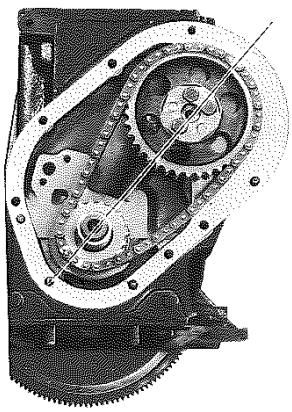


Fig. II



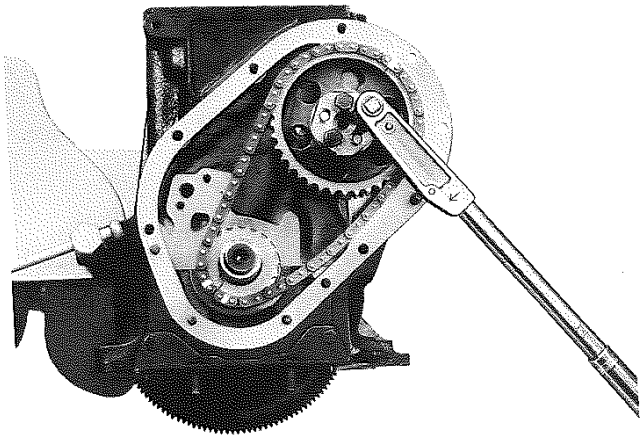
SETTING TIMING

– Fit the crankshaft with :
- key
- sprocket.

– Assemble in accordance with the positioning as shown in fig. 1 opposite, and in the following order :
1 - the camshaft
2 - crankshaft sprocket.

– Assemble in accordance with the positioning as shown in fig. 2 and in the following order :
- the chain to the camshaft sprocket,
- likewise to the crankshaft sprocket.

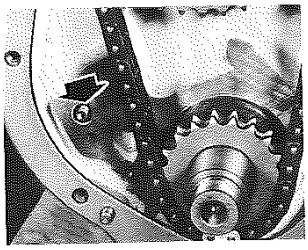
IMPORTANT - The sprocket and chain markings must be in line with the axis crankshaft/camshaft.

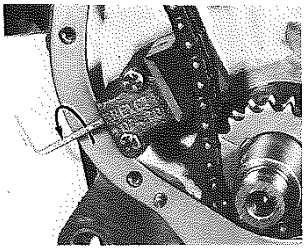


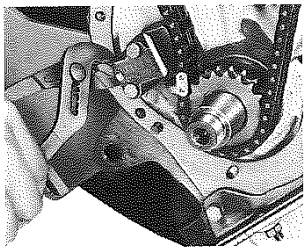
– Fit a new tab washer to the camshaft sprocket.

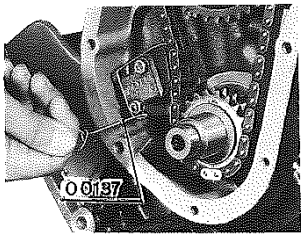
– Tighten the bolt to **2.25 m.kg.**

– Fold the lock washer tabs against the sides of the bolt head.









Renold tensioner

– Install the strainer.

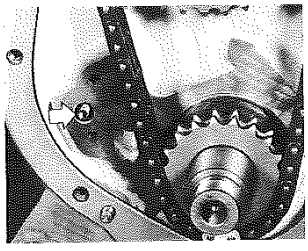
– Fil the tensioner.

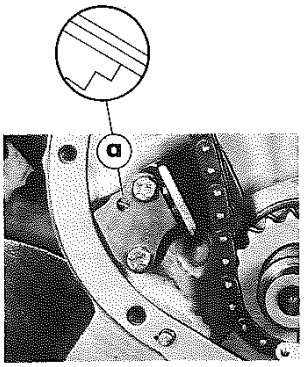
– Arm the tensioner, by turning the Allen key clockwise.

– Fit a new tab washer to the plug, and tighten.

– Fold the tabs around the head.

WARNING - Never attempt to assist the action of a tensioner.





Sedis tensioner

– Insert the strainer.

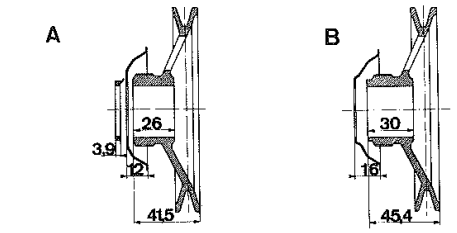
– Fit the plate and the tensioner.

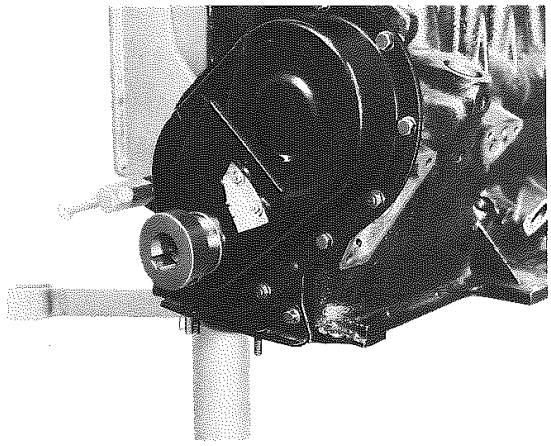
– Load the tensioner by turning the screw **(a)** clockwise.

WARNING - Never assist the tensioner action.

NOTE - *The Renold and Sedis tensioners are interchangeable as a unit.*

ENGINE
OVERHAUL
REASSEMBLE





WARNING

Two different types of crankshaft pulley assembly which are not interchangeable : Type **(A)** *→ Salon 1969.*

– Type **(B)** without spacer washer, longer pulley boss.

– Fit :

- the spacer washer if necessary (type **(A)** assembly).
- the oil thrower.
- a new timing case gasket.

– Align the timing case by means of the bush, fit the bolts and tighten to **1 m.kg.** (use new Blocfor washers).

– Fit :

- the key,
- the crankshaft pulley.

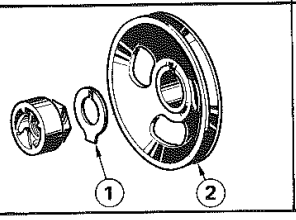
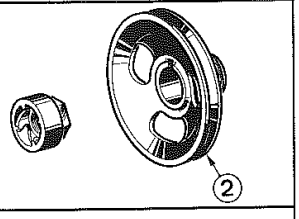
IMPORTANT - use a new tab washer **(1)***.

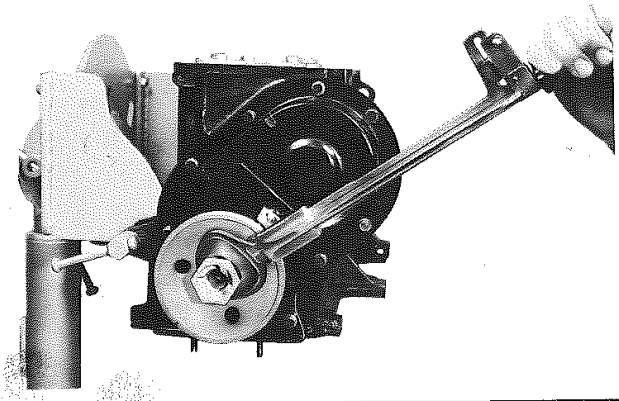
– Fit the nut, threaded end towards pulley.

– Tighten the nut.

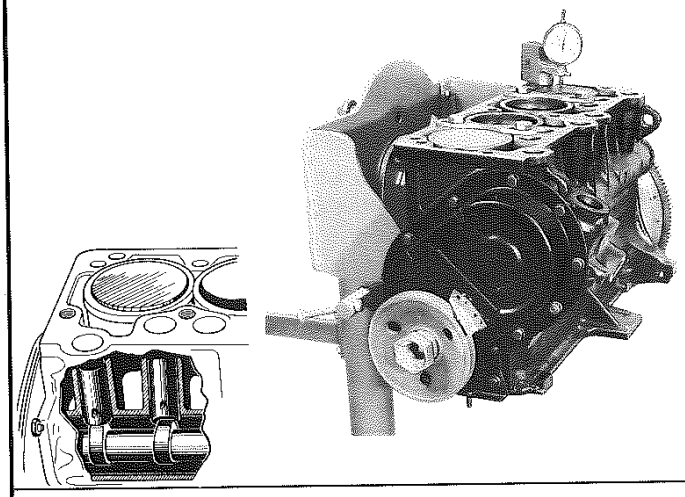
- in aluminium (9CV engine) to **11. m.kg.**
- in steel (XM7) to **17 m.kg.**

– Fold the tab against the nut.

1st FITTING	2nd FITTING
	



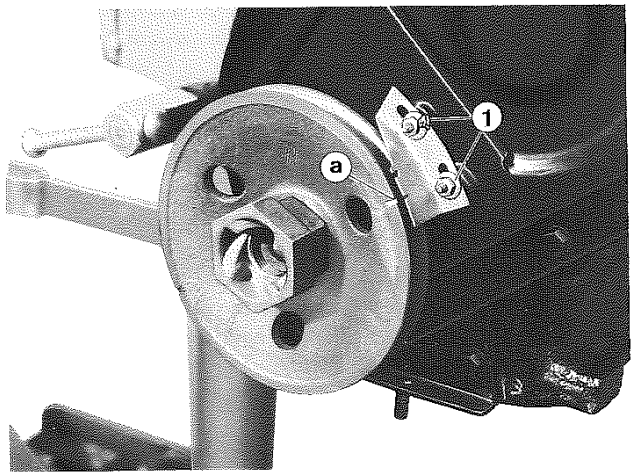
* The type B assembly (↦ Salon 69) did not originally have a tab washer **(1)**, however after a repair it is advisable to fit a tab washer in every case.



ADJUSTMENT OF TIMING PLACE

– Set up a dial indicator, stem on crown of n° 1 cylinder piston.

– Bring the piston to the position of TDC (ignition) and place the camshaft lobes for n° 4 cylinder valves in the position of «balance».

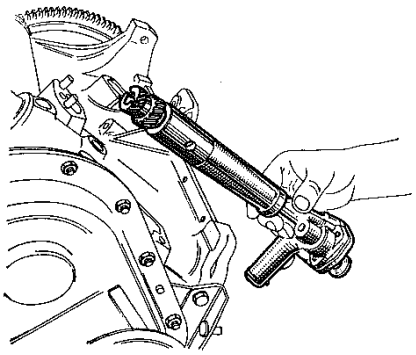


– Adjust the position of the timing place so that the «zero» notch is opposite the mark **(a)** on the pulley.

– Tighten the two nuts **(1)** of the timing plate.

– Put a dab of paint on one of the nuts **(1).**

ENGINE
OVERHAUL
REASSEMBLE



DISTRIBUTION DRIVE - OIL PUMP

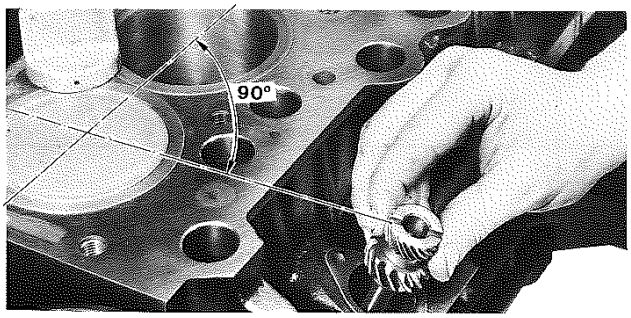
To correctly position the distributor :

– Set n° 1 piston to TDC «ignition»

3 bearing engine

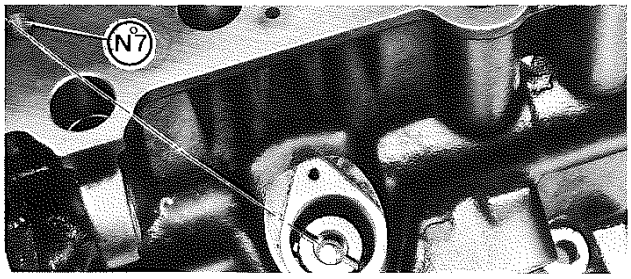
– Offer up the pump with the smaller offset of the distributor shaft drive slots outwards in relation to the cylinder block.

– Engage and secure the pump.



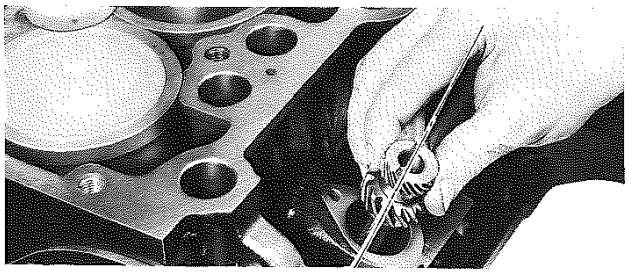
5 bearing engines →| **Salon 70**

– Offer up the drive shaft as shown opposite (larger offset of drive slots towards the flywheel and perpendicular to the longitudinal axis of the engine).



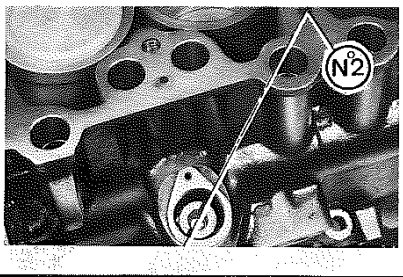
3 and 5 bearing engines →| **Salon 70**

– After full engagement of the drive shaft the drive slots should be in line with the tapped hole for cylinder head n° 7 bolt.

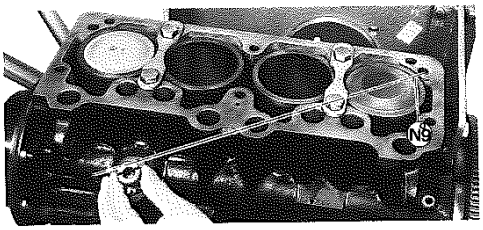


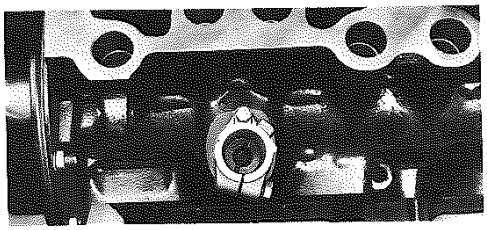
XC7 engine →| **Salon 75**

– Offer up the drive shaft as shown opposite (smaller offset of drive slots towards the cylinder block and parallel with the longitudinal axis of the engine).



– After full engagement of the shaft, the drive slots should be in line with the tapped hole for the cylinder head n° 2 bolt.



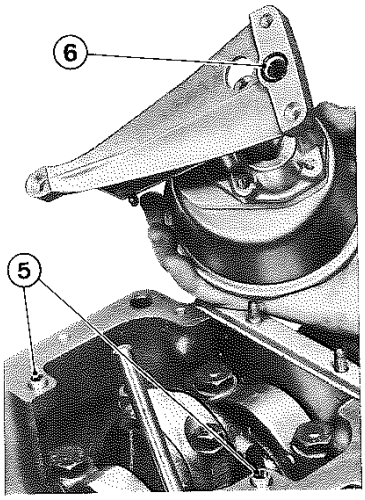


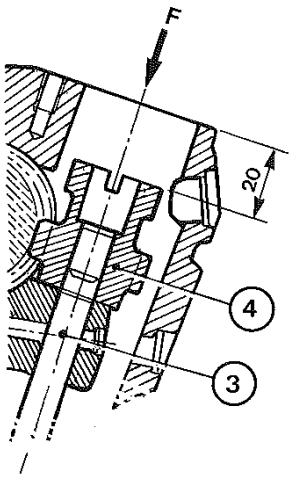
XC7 engine - «EUROPE II» : ↦ Salon 75

– Offer up the drive shaft with the larger offset of the slots outwards, and aligned as shown opposite.

– After full engagement of the shaft, and fitting of the distributor clamp, the slots must be in the position shown opposite.

– When fitting the distributor clamp coat the mating surface with Festinol.





FITTING THE OIL PUMP

5 bearing engine

– Fit :

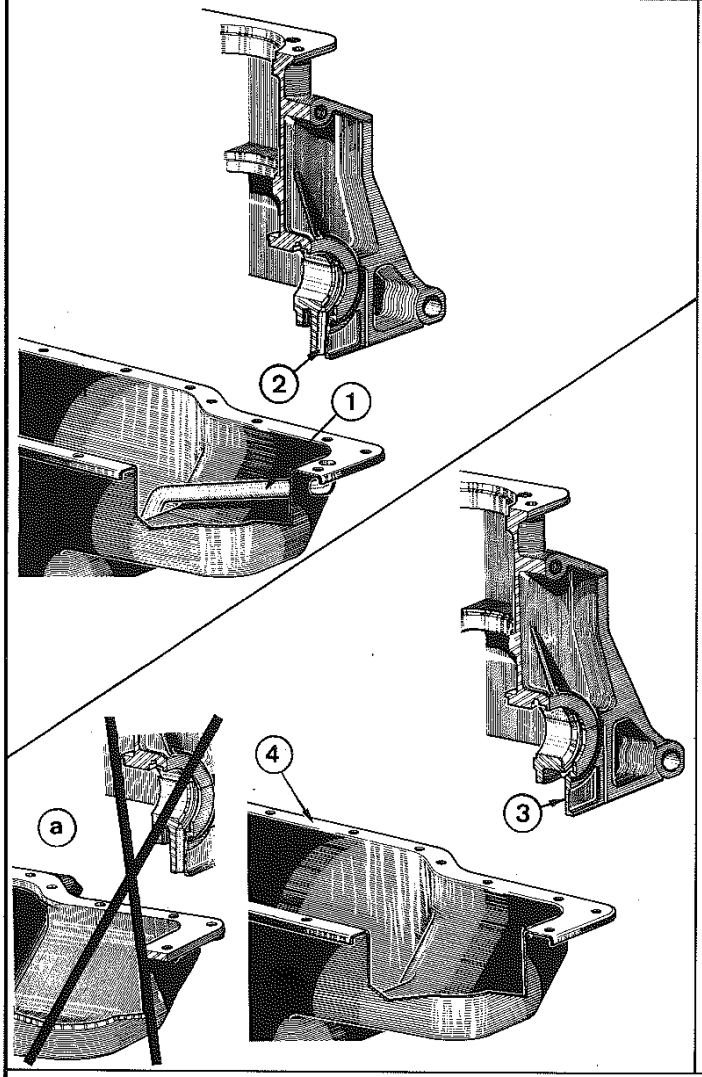
- the locating rollpins **(5)** to the block,
- a **new** O-ring seal **(6)** to the pump.

– Fit the pump, engaging its drive.

– Distance between pinion face **(4)** and surface **(F)** : 20 minimum.

– Tighten the bolt to **1 m.kg.**

ENGINE
OVERHAUL
REASSEMBLE



CYLINDER BLOCK AND SUMP

WARNING : *2 different blocks.*

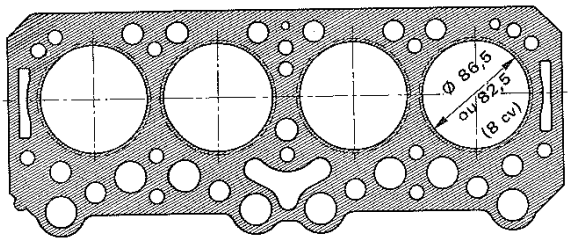
– *type 1 : with an oil return pipe* **(1)** *fixed to the sump and a rear bearing block* **(2)** *with an oil return duct.*

– *type II : oil sump* **(4)** *without an oil return pipe. n°* **(3)** *bearing cap has an orifice but no oil return duct.*

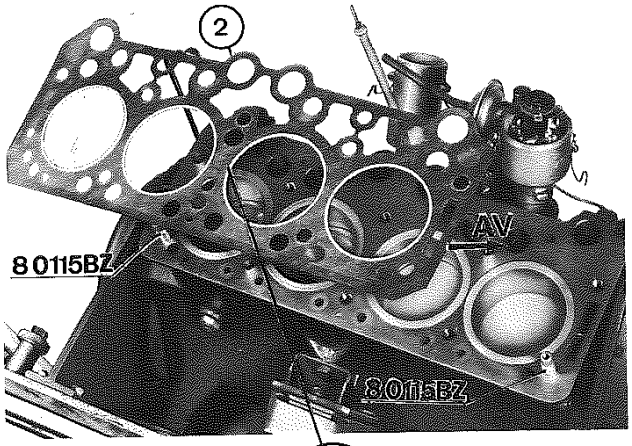
– NEVER FIT AN OIL SUMP WITHOUT AN OIL RETURN PIPE **(4)** TO A CYLINDER BLOCK WHICH HAS A BEARING WITH RETURN DUCT.

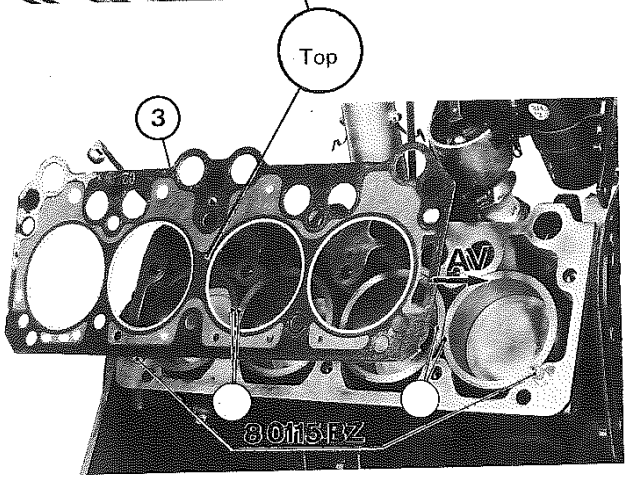
– Refit the oil sump with a cork gasket and **new** locking plates.

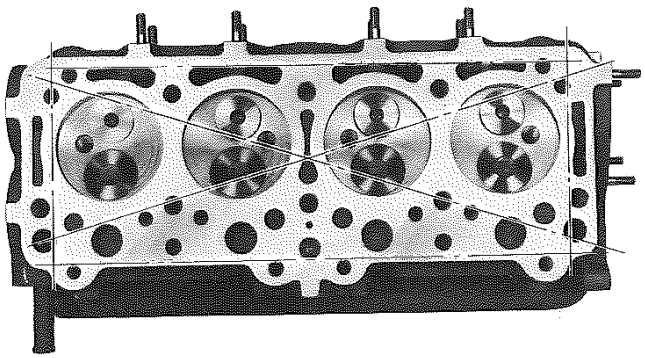
– Tighten oil sump retaining bolts to : **1 m.kg.**



(1)







FITTING A CYLINDER HEAD GASKET

– Install the tappets in their seatings (for tappet identification see pages E1 001 to 003).

– Remove the liner retaining straps.

– Fit :

- the head alignment pins **8.0115 BZ** at the points shown opposite.

- a new head gasket :
  - composite gasket **(1)** coated both sides with boiled linseed oil.

  - REINZ gasket **(2)** or **(3)** :

Do not remove the gasket from its wrapping until the last moment. Wash hands before handling.

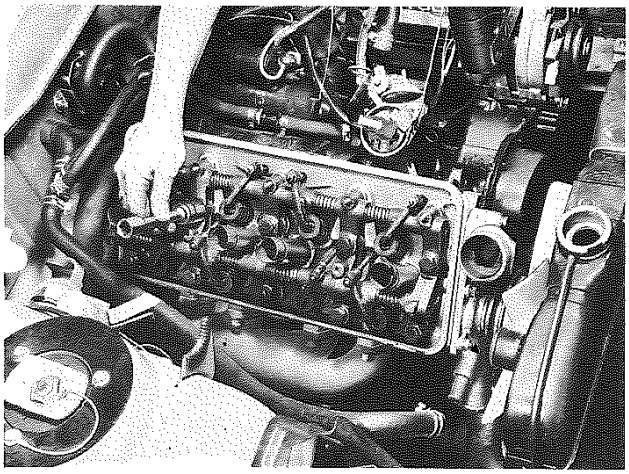
– Fit the gasket «dry» with the inscription «dessus» uppermost and the rectangular «cut-out» to the front, as shown opposite :

Check inspect the head

– The face must be entirely free of any signs of bruising or scoring.

– Maximum amount of distortion : 0.05 mm (ground straight edge, set of feelers).

ENGINE
OVERHAUL
REASSEMBLE



FITTING CYLINDER HEAD

– Fit the head.

– Fit :

- the push rods, in the order **in which they were removed,**
- the rocker shaft assembly.

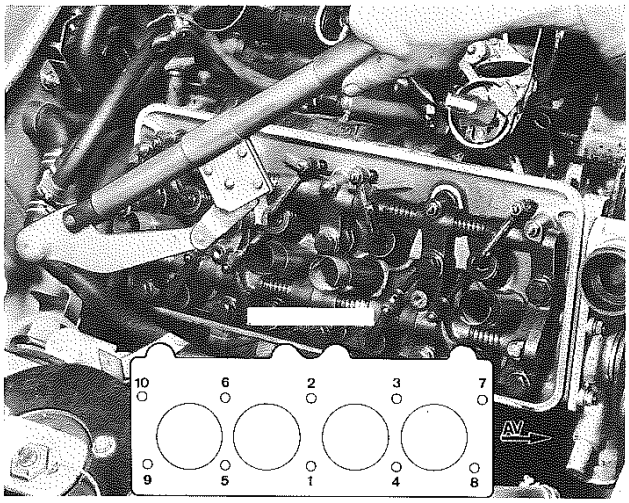
– Smear the 8 cylinder head bolts with grease, **fit plain washers, tighten lightly.**

WARNING - These bolts must turn freely.

- the rocker assembly retaining nuts, using new Blocfor washers.

– Remove the 2 guide pins **8.0115 BZ.**

– Fit the remaining 2 bolts.



TIGHTENING CYLINDER HEAD

WARNING

There are two methods of tightening the head which must be complied with according to the type of engine.

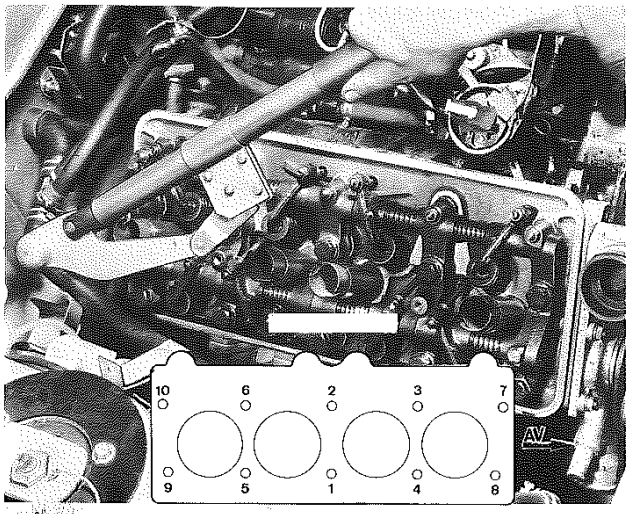
On engine with non-compressed liners.
(→ Salon 70).

Follow the order of tightening given opposite :

– **Pretighten the 10 bolts to 6 m.kg.**
– **Final tighten to 8.25 m.kg.** } *

– *Tighten rocker assembly bolts to* **1.5 m.kg.**

* On engines prior to March 1968 : replace the 10 cylinder head bolts with bolts for series II, PN 0204.20.

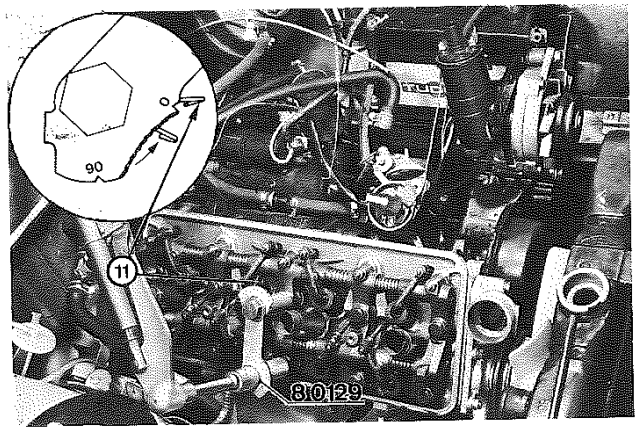


On XC7 engines, with compressed liners.

Follow the order of tightening given opposite :

– **Pretighten the 10 bolts to 5 m.kg.**

– *Tighten the rocker assembly nuts to* **1.5 m.kg.**

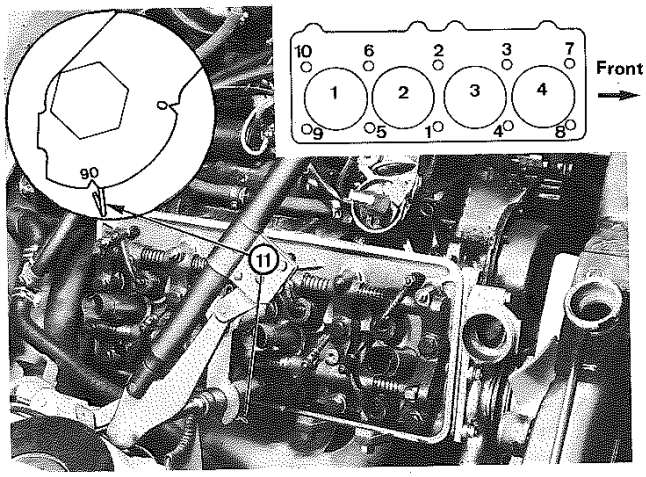


– Place the double socket on the two central bolts.

– Slacken off n° 1 bolt completely and retighten it to **2 m.kg** using the Sunnen P.N. 50 wrench.

– Hold the wrench under tension.

– Place the pointer **(11)** opposite the notch "0" on the quadrant of the double socket, by pushing on the lower prong of the spring.



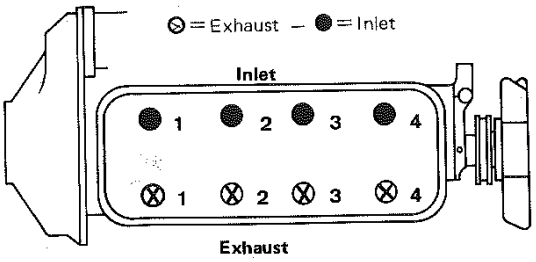
– Continue tightening until the pointer **(11)** is in line with notch "90" on the quadrant.

– Repeat this operation on n° 2 bolt.

– Place the double socket on the other bolts in the order shown opposite (i.e. bolts 3-4, 5-6, etc.) and tighten them as indicated above.

NOTE - *If in doubt about the tightening of any one bolt, slacken it off completely and repeat ALL THE ABOVE OPERATIONS.*

Set fully open	to adjust	
⊗1	●3	⊗4
⊗3	●4	⊗2
⊗4	●2	⊗1
⊗2	●1	⊗3



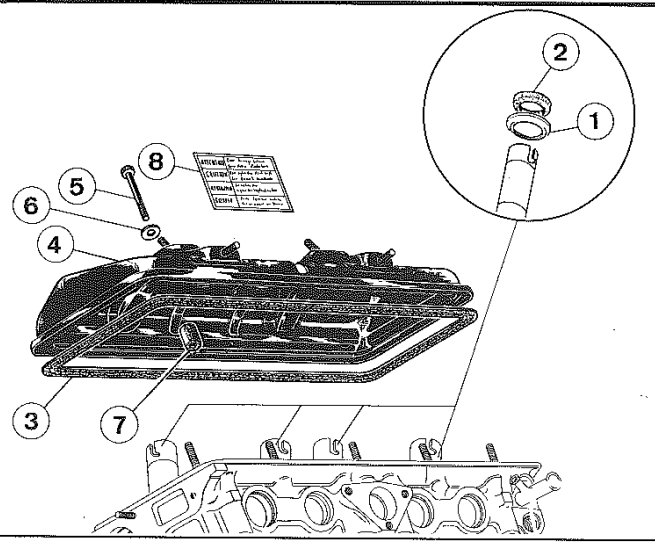
ADJUSTING THE VALVE CLEARANCES

– Follow the order shown opposite.

– Gap to be obtained with the engine cold, after refitting the head.

- Inlet : 0.15 mm (0.006")
- Exhaust : 0.30 mm (0.012")

ENGINE
OVERHAUL
REASSEMBLE



– Fit

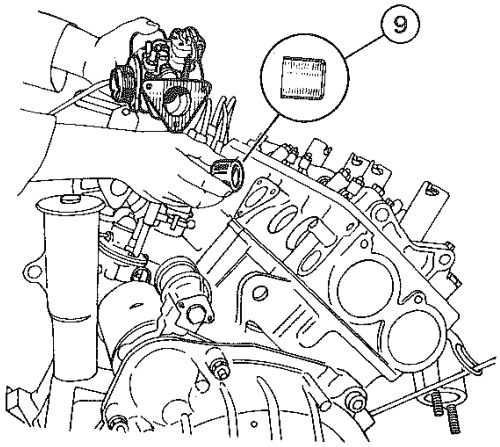
- a cup **(1)**,
- a rubber seal **(2)** to each of the plug tubes.

– Stick (Dynadhere) a **new** rubber seal **(3)** to the cover **(4)**.

– Secure the cover **(4)** by the 2 bolts **(5)** (use plain 7 x 20 washers, the rubber tube **(7)** inside the cover.

– Tighten the cover bolts **(5)** to **1 m.kg.**

– With engines which have compressed liners, check that the label **(8)** is present.



– Fit :

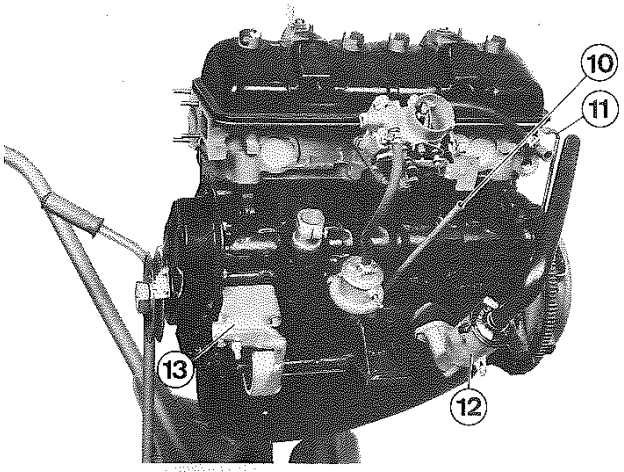
- the venturi sleeve **(9)** (smaller ϕtowards cylinder head) or a plain alignment bush, as required. For identification see page F1.011.
- the inlet manifold, together with a new gasket.

  Tighten to : **1 m.kg.**

- the rocker assembly lubrication pipe **(11)**.

  Tighten : union nut to **1.75 m.kg.**

– The dipstick tube **(10)**, if required.

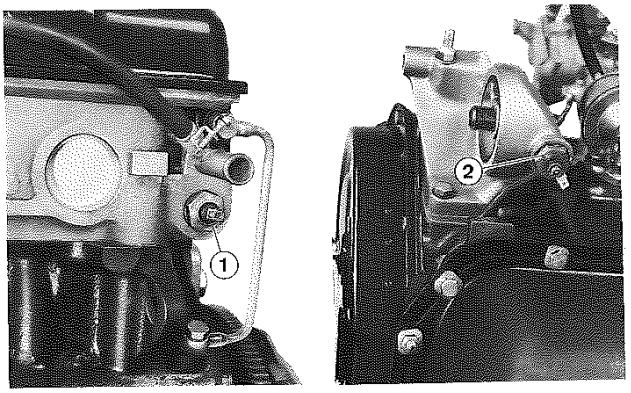


– Fit :

- the carburettor,
- fuel pump and plunger,
- oil filler tube **(12)**,
- oil filter bracket **(13)**,

  (see relevant sections for identification).

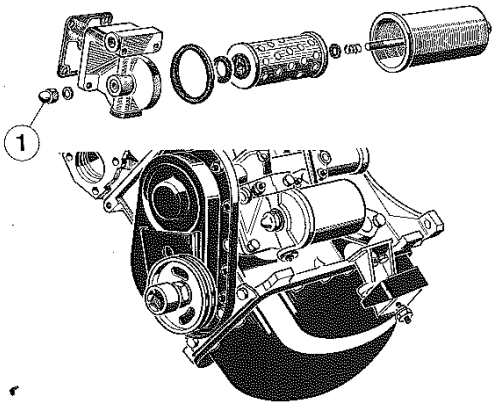
- new paper or cork gaskets.



– Fit

- the temperature transmittor **(1)**
- the oil pressure switch **(2)** (using new composite sealing washers).

– Tighten to **4 m.kg.**



FITTING OF OIL FILTERS

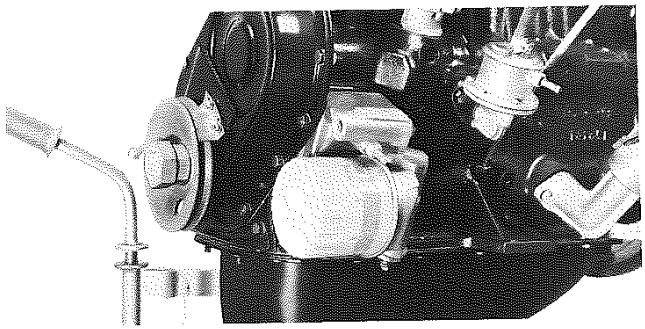
A - Demountable type filter with aluminium «cap» :

– Use an «oil change kit» (cartridge + seals).

– Make-up the assembly as shown opposite*.

– Tighten the cap nut to **1.75 m.kg** maximum.

* The mesh type cartridge is no longer supplied, use a paper cartridge (observe maintenance intervals).



B - «EASY CHANGE» CARTRIDGES :

Purflux LS 152 A or
Lockeed DBA FC 109

– Oil the contacting faces of seal and cartridge.
– Degrease the contacting faces of seal and block.
– Handtighten cartridge until it makes contact with the block.
– Tighten 3/4 of a turn (make a mark **(a)** opposite a number on line **(A)**, tighten until this number is opposite the same number on line **(B)**).

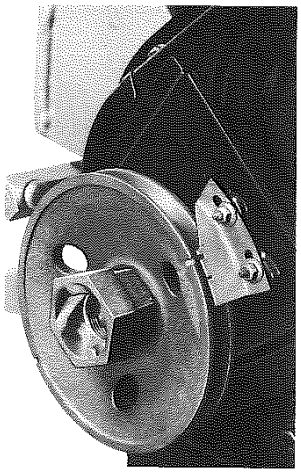
WARNING - The 5 to 8 micron cartridge (inscription in red) fitted to new or exchange/sale engines, and also supplied with relining kits, must be replaced with a 10 to 15 micron cartridge (Purflux LS 152A or DBAFC109) at the first 1000 km service.

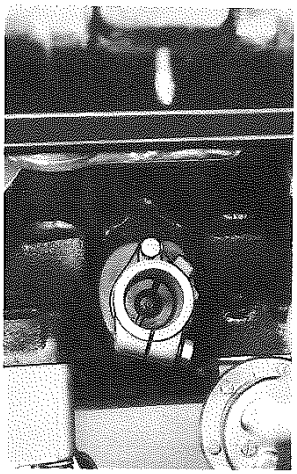
→ ⑧ CONTACT "A"
2 THIGHTENING "B"
LS 152 A
CONTACT

6
→ ⑧
LS 152 A Oil
TIGHTENNING

PEUGEOT

ENGINE
OVERHAUL
REASSEMBLY





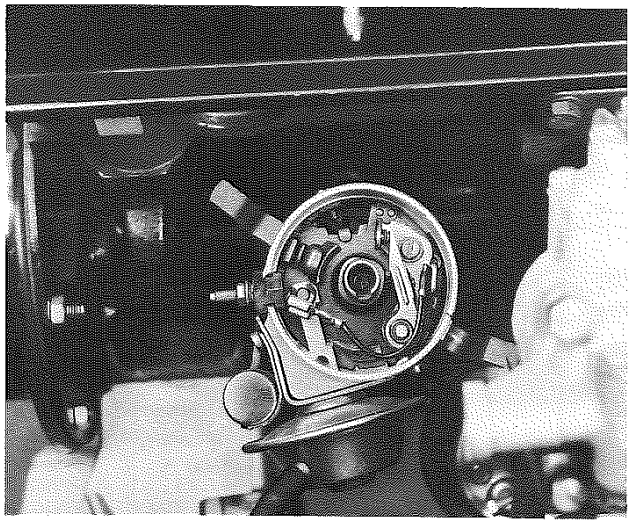
DISTRIBUTOR SETTING

– Set the notch in the pulley opposite the mark on the timing plate.

- the **larger** offset of the drive slots towards the rear of the engine (cylinder n° 1 «ignition»).

Engines → Salon 75

see setting table, page A2 011.

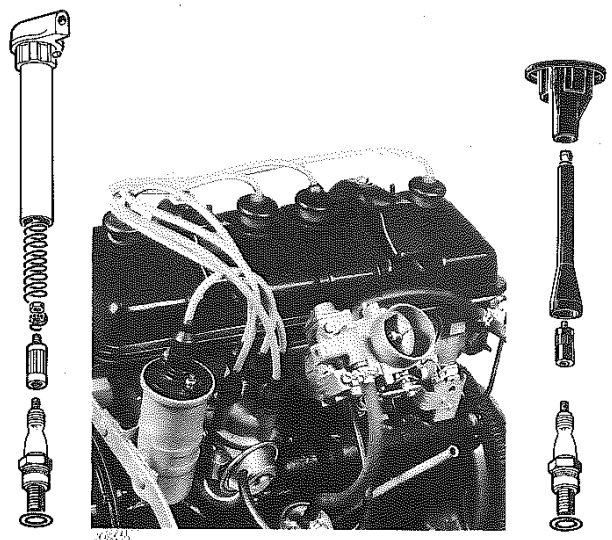


– Position the vacuum capsule as shown opposite.

– Fully engage the distributor drive.

– Find the point at which the contact breaker points open in position «cylinder n° 1».

– Clamp the distributor in this position.



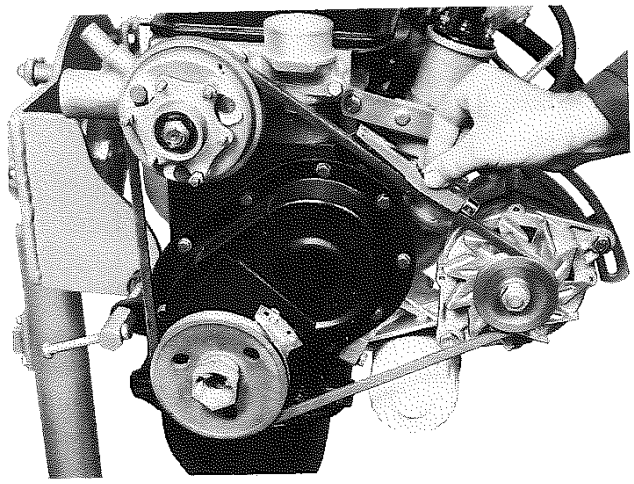
NOTE - *The final adjustment of advance must be done using a stroboscope (Tuning - Checking).*

– Fit :

- the distributor cap,

- ignition coil,

– Connect the high tension leads.



— Fit :

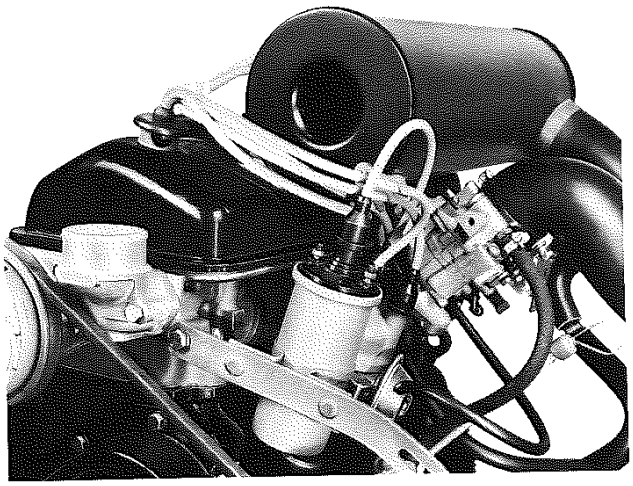
- the water pump,
- alternator (or dynamo),
- drive belt.

TENSIONING :

- 2 to 3 % stretch, or use a «KRIKIT» tensometer.
- new belt

  40 to 50 kg/strand

- after repair work : 25 to 35 kg/strand.

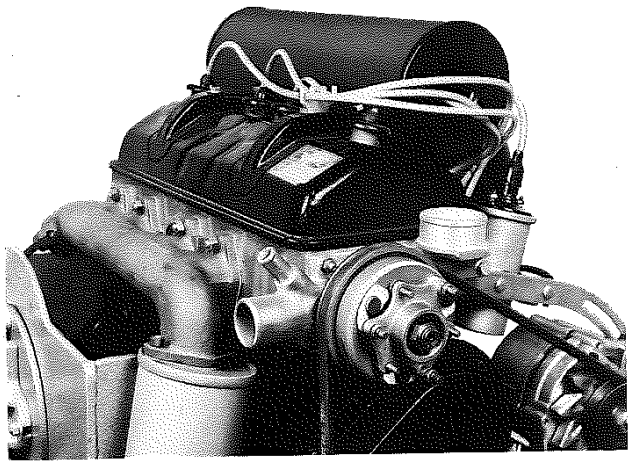


FIT :

- the air filter and union.

— Connect the hoses

- fuel feed,
- carburettor preheat,
- oil vapour breather,
- vacuum.



— Fit :

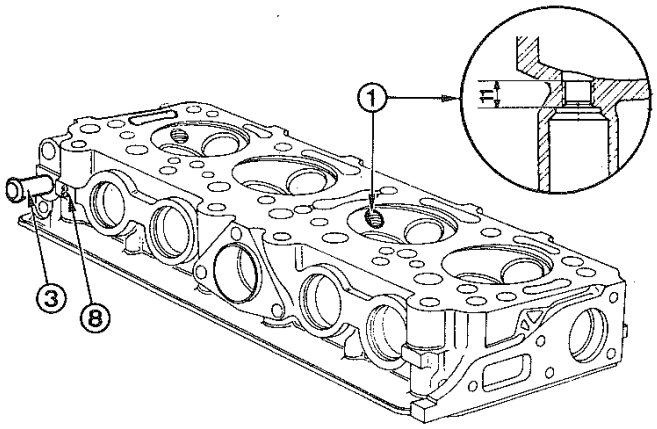
- the exhaust manifold,
- front silencer (or muffle) if required.

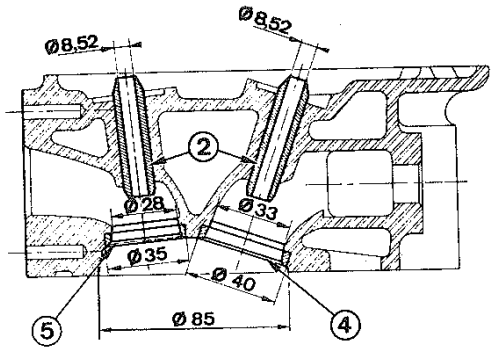
Final TUNING operations are performed on vehicle : see section TUNING-CHECKING.

CYLINDER HEADS 404 9CV (1618 cc) and 8CV (1468 cc)

IDENTIFICATION

1 Bl. 001.





I - Series 1 404 9CV and 8CV

- without supplementary water passage orifice in the rear part of the cylinder head face.
- depth of tapped hole **(1)** fort short reach plugs : 11 mm.
- colour of plug tube : black.

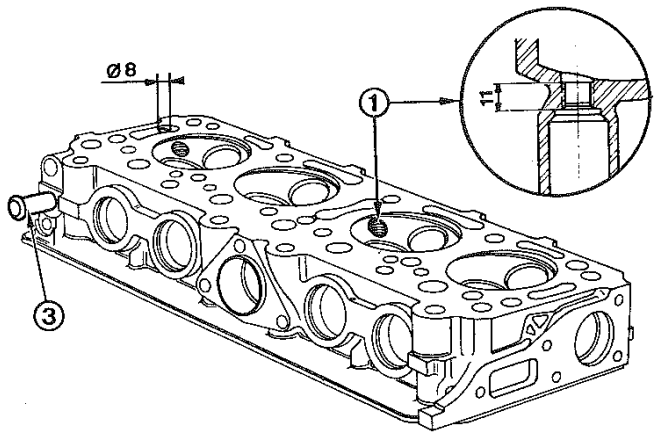
Fitted with :

- plain valve guides **(2)** with 8.52 ϕ bore for valves with 8.50 ϕ stems.
- outlet tube **(3)** for car heater.
- inlet valve seats **(4)** of 40 mm ϕ for 39 mm ϕ valves.
- exhaust valve seats **(5)** of 35 mm ϕ for 33.5 mm ϕ valves.

DETAILS OF 8 CV CYLINDER HEAD

81 mm ϕ compression chamber in place of 85 mm. Volume 57.58 cm^3 in place of 61.28 cm^3.

Identification markings on rear LH pad.



II - As from serial numbers :

404	- 4 282 150	9 CV
404 J	- 4 525 328	
404 C	- 4 495 678	
404 L	- 4 825 617	
404 U6A	- 1 929 001 (start of series)	

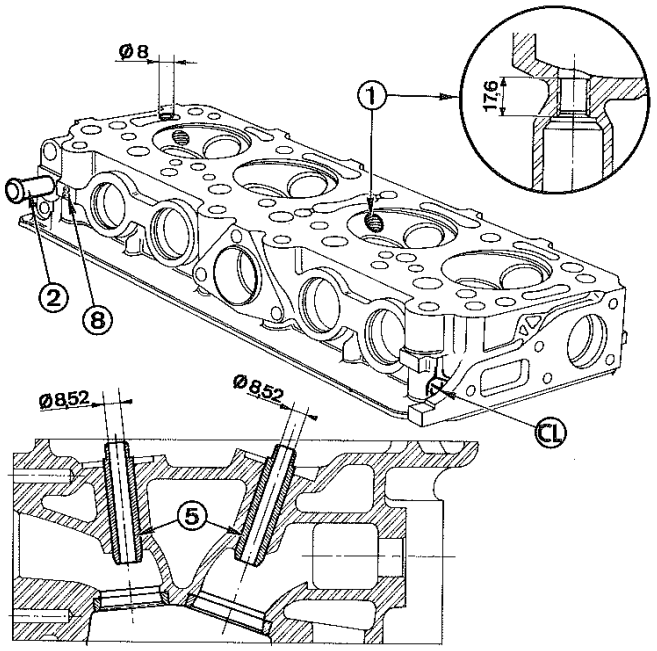
404 U6 8CV - 4 702 115

- the 8 mm orifice at the rear for the additionnal passage of water between head and block is modified.

PEUGEOT

CULASSES 404 - 9 and 8CV (1468 cc)

IDENTIFICATION



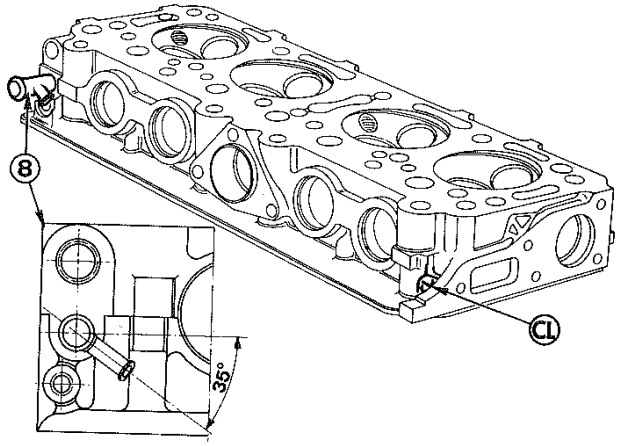
Series III

As from serial numbers :

9CV { **404** - 4 400 001 ; **404 J** - 4 528 001 ; **404 C** - 4 497 001 ; **404 L** - 4 838 001 ; **404 U6A** - 1 921 001 } since start of XC5 5 bearing engine (72 bhp)

404 U6 8 CV - 4 720 001 (since start of XB5 5 bearing engine)

- depth of tapped hole **(1)** for long reach plugs, 17.6 mm in place of 11 mm.
- colour of plug tube : brown.
- **«CL»** identification marking behind the front LH pad. Only long reach plugs can be used with this type of cylinder head.
- shouldered valve guides **(5)** for taking Perfect Circle seals.

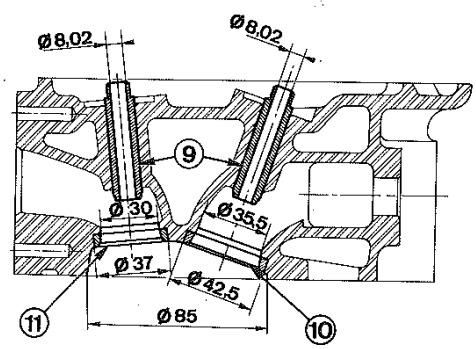


IV - As from serial numbers :

9 CV { **404** - 4 483 757 ; **404 J** - 4 529 194 ; **404 C** - 4 497 402 ; **404 L** - 4 846 196 ; **404 U6A** - 1 922 335

404 U6 - 8CV - 4 731 747

- two-way union **(3)** for connecting carburettor heating hoses.



V - As from serial numbers :

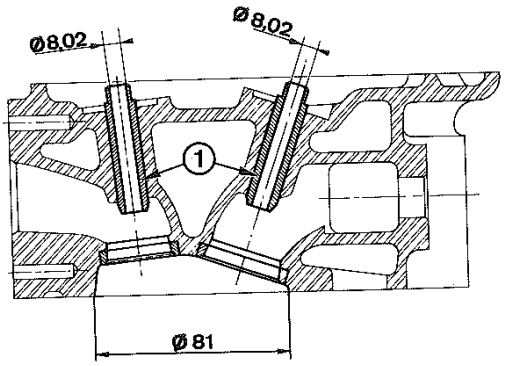
404 - 5 046 810 ; **404 SL** - 5 100 001 ; **404 J** - 4 529 914 ; **404 C** - 4 498 001 ; **404 L** - 4 851 596 ; **404 U6A** - 1 923 370 } 9 CV since start of XC5 engine (76 bhp)

404 U10 - 7 060 001 (start of series)

- shouldered valve guides **(9)** 8.02 mm bore for taking 8 mm ϕ valve stems.
- inlet valve seats **(10)** 42.5 mm ϕ for 41.5 mm ϕ valves.
- exhaust valve seats **(11)** 37 mm ϕ for 35.5 mm ϕ valves

CYLINDER HEADS 404 9CV (1618 cc) and 8CV (1468 cc)

IDENTIFICATION

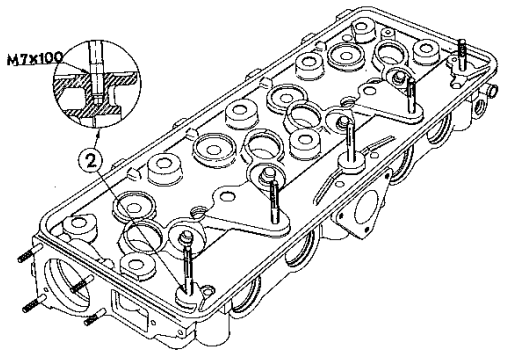


V - 404 8CV FITTINGS

As from serial numbers :

404 U6 - 4 766 576
404 U8 - 7 010 001
404/8 - 6 900 001
} start of series

- shouldered valve guides **(1)** with 8.02 mm ϕ bore inplace 8.52 mm ϕ .



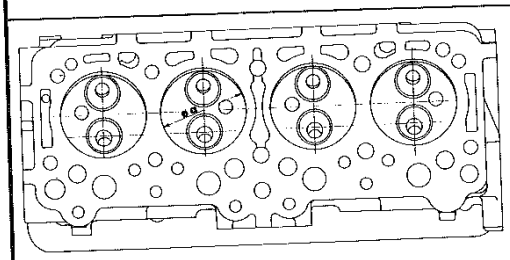
VI - 9CV as from serial numbers :

404 (TW)	- 5 086 724	**404 L (TW)**	- 4 941 706
404 (TH)	- 5 427 045	**404 L (TH)**	- 6 828 148
404 USA	- 8 325 555	**404 U6A**	- 1 932 741
404 C	- 4 670 289	**404 U10**	- 7 062 037
404 ZF	- 8 256 941	**404 ZF USA**	- 8 328 073

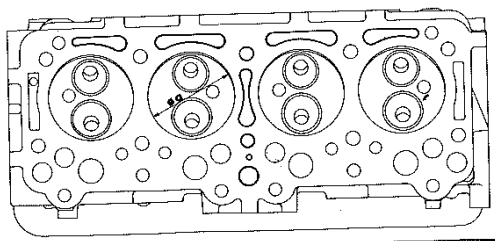
- 8 CV - as from serial numbers :

404 U6 - 4 775 150
404 U8 - 7 011 725
404/8 - 6 900 832

- studs for securing rocker shaft assembly **(2)** : 7 mm ϕ x 1.00 pitch in place of 8 mm ϕ x 1.25 pitch.



ENGINES
"Salon 1969"
→| July 1970



ENGINES
"Salon 1970
|→ 15.07.70

VII - 404 XC7 engine with compressed liners

As from serial numbers :

404	- 5 612 501
404 ZF	- 8 267 501
404 L (TW)	- 4 944 201
404 L (TH)	- 6 879 501
404 L (estate)	
***404 U 6 B**	- 7 240 001
***404 U 8 A**	- 7 270 001
404 U 10	- 7 145 501

* Modified "Mines" type (increased displacement).

- Water passage between head and block and water galleries modified.

NOT INTERCHANGEABLE WITH PRECEDING COMPONENTS.

PEUGEOT

CYLINDER HEADS 404 8CV (1468 cc)

INTERCHANGEABILITY

After current stocks of cylinder heads have been exhausted for :

- series 1 and 2.

- series 3

- series 4

and series 5

these types of head will no longer be available.

Replacement heads will be type series 6.

1) - On 404 U6 prior to serial N° 4 720 001, replace :

A - The short reach plugs and their tubes (coloured black) with 4 long reach plugs, AC 44 XL or MARCHAL 36 HS and 4 tubes, coloured brown or an "ELECTRIFIL BOUGICORD 420" HT lead.

B - The valves and their seals (8 mm ϕ stems).

C - The valve springs cottors and cups (TEVES).

D - Plug the water outlet union for the carburettor preheat hose with a rubber plug and hose clip.

E - Replace the rocker shaft assembly M8 x 1.25 studs with 5 TWO DIAMETER **STUDS, one end M7 x 1.00, the other M8 x 1.25.**

2) - 404 U6 - Group of serial N° 4 731 747 to 4 766 575 :

Perform operations B - C and E.

3) - Groups of serial numbers :

- **404 U6** 4 766 576 to 4 775 149
- **404 U8** 7 010 001 to 7 011 724
- **404 U8** 6 900 001 to 6 900 831,

perform operation E.

— SALON 1970 : END OF 8 CV ENGINE SERIES.

CYLINDER HEADS 404 9CV (1618 cc)

IDENTIFICATION

1 Bl. 005

– For the replacement of ALL 9CV CYLINDER HEADS since the start of the series and up to Salon 1970, **ONLY THE «SERIES 6» TYPE OF HEAD** is obtainable.

– Fitting one of these heads to an engine prior to this distinction entails the following operations :

1) - 404 prior to the following serial numbers :

404 - 4 400 001
404 C - 4 497 001
404 U6A - 1 921 001
404 J - 4 528 001
404 L - 4 838 001

A - Replace the short reach plugs and their cap-tubes, coloured black, with 4 long reach plugs AC P44XL or Marchal 36 HS, and 4 cap-tubes coloured brown, or "ELECTRIFIL BOUGICORD 420" HT leads.

B - Replace the valves and seals (8 mm stems).

C - Replace the valve spring cups and cottors (TEVES).

D - Plug the union for the carburettor preheat hose with a rubber plug and hose clip.

E - Fit 5 two diameter studs (M7 x 1.00/M8 x 1.25) in order to obtain correct alignment of the rocker shaft assembly.

2) - On a 404 within the following groups of serial numbers :

404 - 4 400 001 to 4 463 894
404 J - 4 528 001 to 4 528 948
404 C - 4 497 001 to 4 497 328
404 L - - 4 838 001 to 4 844 292
404 U6A - 1 921 001 to 1 922 056

Perform operations B, C, D and E.

3) - On a 404 within the following groups of serial numbers :

404 - 4 463 895 to 4 483 756
404 J - 4 528 949 to 4 529 193
404 C - 4 497 329 to 4 497 401
404 L - 4 844 293 to 4 846 195
404 U6A - 1 922 057 to 1 922 334

Perform operations B, D and E.

4) - On a 404 within the following groups of serial numbers :

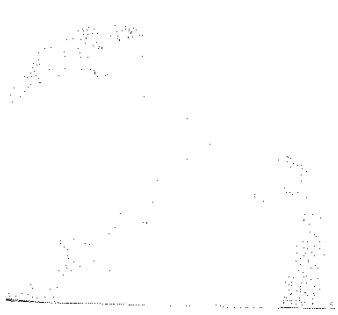
404 - 4 483 757 to 5 046 809
404 J - 4 529 194 to 4 529 913
404 C 4 497 402 to 4 498 000
404 L - 4 846 196 to 4 851 595
404 U6A - 1 922 335 to 1 922 369

Perform operations B, and E.

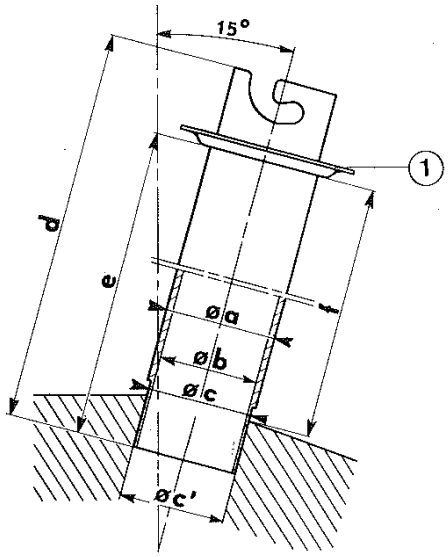
5) - On a 404 prior to the following groups of serial numbers :

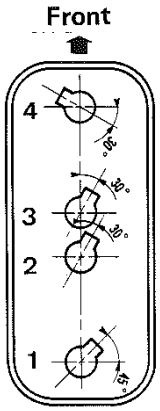
404 (TW) - 5 086 723
404 (TH) - 5 427 044
404 USA - 8 325 554
404 C - 4 670 288
404 ZF - 8 256 940
404 ZF USA - 8 328 072
404 L (TW) - 4 941 705
404 L (TH) - 6 828 147
404 U6A - 1 932 740
404 U10 - 7 062 036

Perform operation E.



CYLINDER HEAD



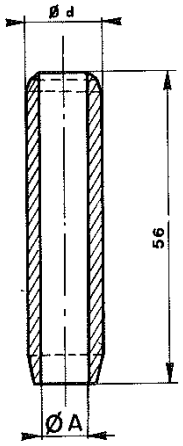


PLUG PROTECTION TUBES

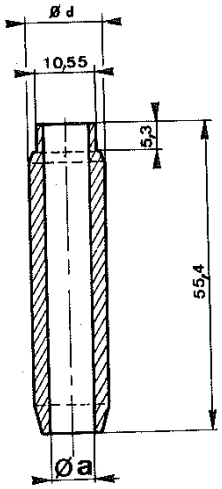
Dimensions in mm :

a - outside diameter of tube	31
b - inside diameter of tube	28
c - shoulder diameter	$30{,}81^{+0{,}02}_{+0}$ | $31{,}01^{+0{,}02}_{+0}$
c' - diameter of guide hole in head	$30{,}70^{+0{,}02}_{+0}$ | $30{,}90^{+0{,}02}_{+0}$
d - overall length of tube	114
e - distance under shoulder **(1)**	90,5
f - length of press fit	72 ± 0,25

1st Fitting



2nd an 3rd Fittings



VALVE GUIDES
MAIN DIMENSIONS :

	Original	Ist repair	2nd repair
Ø **d**	$14.06^{+0}_{-0.01}$	$14.29^{+0}_{-0.01}$	$14.59^{+0}_{-0.01}$
Ø head	$13.97^{+0.025}_{-0}$	$14.2^{+0.025}_{-0}$	$14.5^{+0.025}_{-0}$

1st fitting guides on carburettor engines
↠ Salon 63 ; A ϕ = 8.52

2nd fitting guides with 10.55 shoulder for PERFECT CIRCLE seals, **a** ϕ = 8.52 XB5-XC5 ↦ engines Salon 63 ↠ Salon 64.

3rd fitting guides with P.C. seals and **a** ϕ = 8.02 ↦ Salon 64.

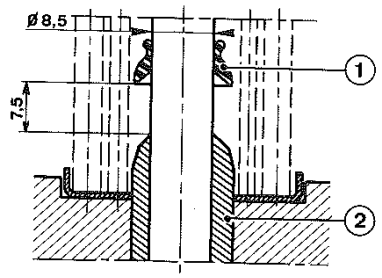
Clearance between valve and guide :

– INLET : 0.02 to 0.06 mm
– EXHAUST: 0.04 to 0.08 mm

Bore diameters of guides supplied by Parts Department are 8.50 and 8.00 respectively. Ream the bore after fitting.

PEUGEOT

CYLINDER HEAD



1 - «Moving» rubber seal
2 - Guide without a shoulder

VALVE STEM SEALS

404 - CARBURETTOR

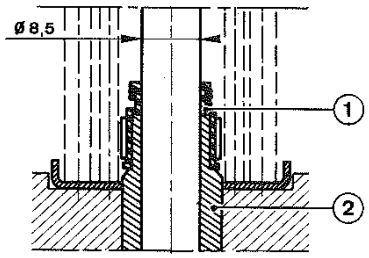
Up to serial numbers :

404 (TW)	- 4 399 562	End of 3 bearing XC and XB2 engines
404 J	- 4 527 038	
404 C	- 4 496 235	
404 L	- 4 837 402	
404 U6	- 4 719 903	

When grinding-in valves fit «moving» seals **(1)** to 404 and 404 J prior to the following serial numbers which did not have valve stem seals.

404	- 4 105 508
404 J	- 4 503 983

When fitting, observe the 7.5 mm dim.

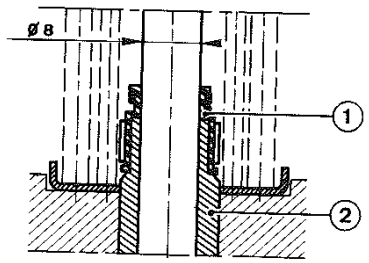


1 - «Fixed» Perfect Circle seal, 10.7 x 8.30 for valves with 8.5 mm ϕ stems
2 - Guide with a shoulder

404 A CARBURETTOR

404 (TW)	from n° 4 400 001 to n° 5 046 809
404 J	from n° 4 528 001 to n° 4 529 913
404 C	from n° 4 497 001 to n° 4 498 000
404 L	from n° 4 838 001 to n° 4 851 595
404 U6A	from n° 1 921 001 to n° 1 923 369
J7 B	from n° 8 000 001 to n° 8 006 853

Perfect Circle seals cannot be fitted to 404 3-bearing engines which have valve guides without a shoulder.



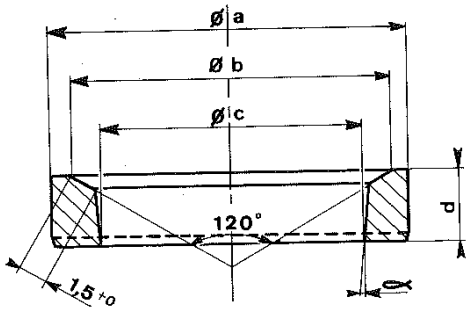
1 - «Fixed» Perfect Circle seal, 10.7 x 7.80 for valves with 8 mm ϕ stems
2 - Guide with a shoulder.

ALL 404 PETROL VERSIONS

As from serial numbers :

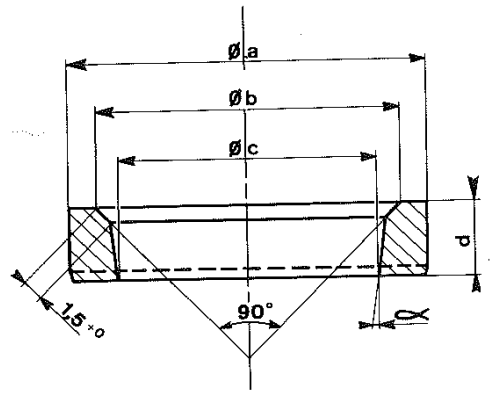
***404 (TW)**	- 5 046 810	***404 L**	- 4 851 596
***404 J**	- 4 529 914	**404 U6**	- 4 766 576
404 KF	- 8 249 880	***404 U6A**	- 1 923 370
***404 C**	- 4 498 001		
404 CKF	- 6 802 336		
404 (TH)	- 404 ZF		since start of series
404/8 - 404 U8 and U10			

* Since start of XC5 (76 bhp) engine series.



INLET VALVE SEATS

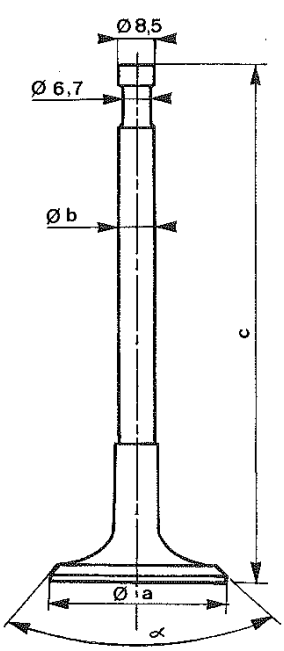
Engines	Dims.	Original	1st repair	2nd repair
XC and XC5/72 bhp - XB2 - XB5	ϕ a	$40.14^{+0.02}_{+0}$	$40.34^{+0.02}_{+0}$	$40.64^{+0.02}_{+0}$
	ϕ cyl. hd.	40 ± 0.02	40.20 ± 0.02	40.50 ± 0.02
	ϕ b	38.5		
	ϕ c	33.8 to suit cylinder head counter bores		
	d	6.4^{+0}_{+0}		
	α	8° 20′		
XC5/76 bhp - XC6 - XC7	ϕ a	$42.64^{+0.02}_{+0}$	$42.84^{+0.02}_{+0}$	$43.14^{+0.02}_{+0}$
	ϕ cyl. hd.	42.50 ± 0.02	42.70 ± 0.02	43 ± 0.02
	ϕ b	41		
	ϕ c	35.5 to suit cylinder head counter bores		
	d	$6.64^{+0.1}_{+0}$		
	α	7° 30′		

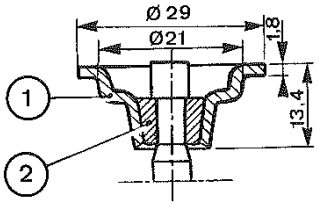


EXHAUST VALVE SEATS

Engines	Dims	Original	1st repair	2nd repair
XC - XC5/72 bhp - XB2 - XB5	ϕ a	$35.12^{+0.02}_{+0}$	$35.32^{+0.02}_{+0}$	$35.62^{+0.02}_{+0}$
	ϕ cyl. hd.	35 ± 0.02	35.20 ± 0.02	35.50 ± 0.02
	ϕ b	33		
	ϕ c	28.7 to suit cylinder head counter bores		
	d	$6.3^{+0.1}_{+0}$		
	α	7° 30′		
XC5/76 bhp - XC6 - XC7	ϕ a	$35.12^{+0.02}_{+0}$	$37.32^{+0.02}_{+0}$	$35.62^{+0.02}_{+0}$
	ϕ cyl. hd.	37 ± 0.02	37.20 ± 0.02	37.50 ± 0.02
	ϕ b	35		
	ϕ c	30 to suit cylinder head counter bores		
	d	$6.46^{+0.1}_{+0}$		
	α	7° 30′		

CYLINDER HEAD





VALVES WITH NORMAL KEYING

All types of 404 Petrol (8 and 9CV) up to serial numbers :

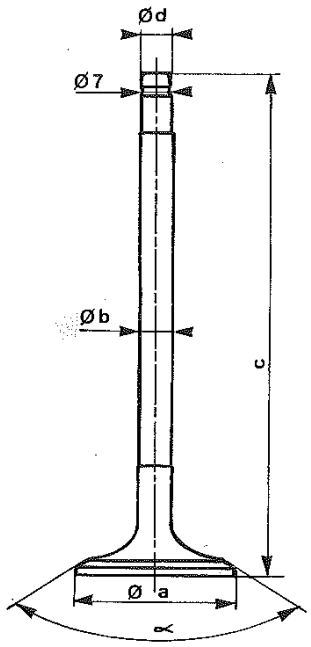
404	- 4 463 894
404 J	- 4 528 948
404 KF	- 4 560 831
404 C	- 4 497 328
404 C.KF	- 4 592 678
404 L	- 4 844 293
404 U6	- 4 728 792
404 U6A	- 1 922 056

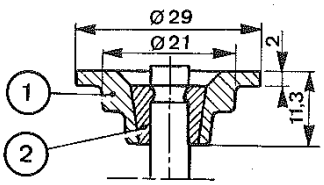
(1) - Pressed sheet metal cup
(2) - Plain half-cones

VALVE	INLET	EXHAUST
ϕ **a**	39	33.5
ϕ **b**	8.52	8.50
c	119.36	112.03
α	120°	90°

These valves are no longer supplied.

For replacements, use corresponding TEVES keying (see following section).





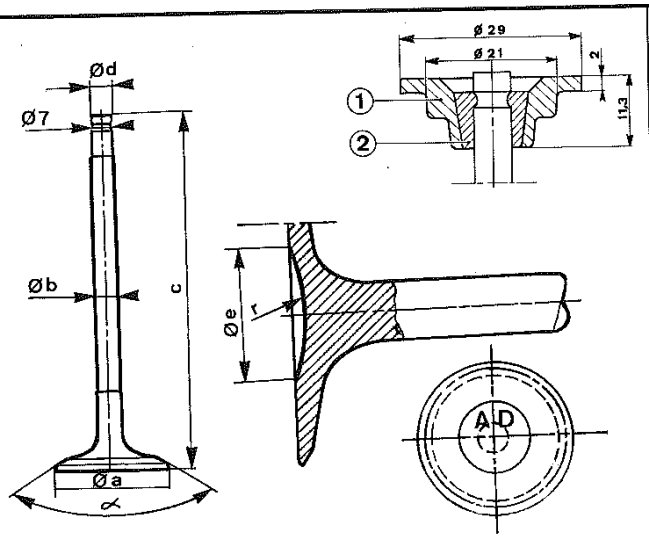
ORIGINAL EQUIPMENT OF «TEVES» VALVE KEYING ON ALL TYPES OF 404 8 and 9 CV SUBSEQUENT to the above serial numbers.

REPLACEMENT , since START OF SERIES

(1) Cold rolled heat treated cup.
(2) Half-cones with «raised» key.

Engine TYPE	DIMS.	VALVES Inlet	VALVES Exhaust
XC - XB2	ϕ **a**	39	33.5
XC5	ϕ **b**	8.52	8.50
⇥ Salon 64	**c**	119.36	112.03
XB5	ϕ **d**	7.95	7.95
⇥ 12/65	α	120°	90°
XB5	ϕ **a**	39	33.5
↦ **01/66**	ϕ **b**	7.99	▱ from 7.97 to 7.95
	c	119.36	112.03
	ϕ **d**	7.95	7.95
	α	120°	90°
XC5 - 76 bhp	ϕ **a**	41.5	35.5
	ϕ **b**	7.99	▱ from 7.97 to 7.95
	c	118.65	112
XC6	ϕ **d**	7.99	7.95
	α	120°	90°

CYLINDER HEAD



VALVES WITH "TEVES" KEYING

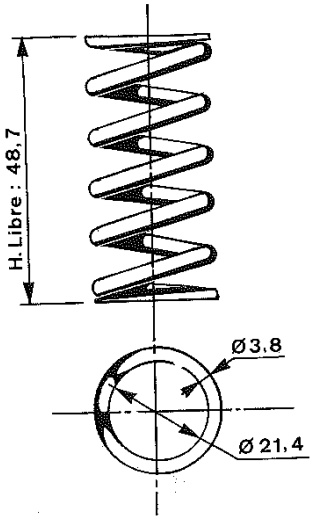
(1) Cold rolled heat treated cup

(2) Half-cones with "raised" key.

ENGINES	DIMS.	VALVES	
		Inlet	Exhaust (3)
XC7 ↔ Salon 70	ϕ a	41.5	35.5
	ϕ b	7.99	□from 7.97 to 7.95
	C	118.15	112
	ϕ d	7.99	7.95
	ϕ e	18.6	17
	Mk.	AD*	EG*
	α	120°	90°

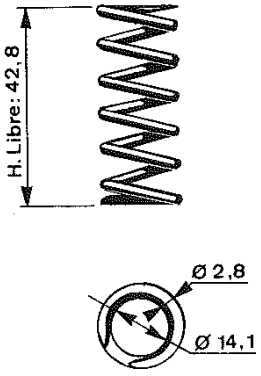
* Follow makers marking

(3) AUSTENITIC Steel



VALVE SPRINGS OUTER

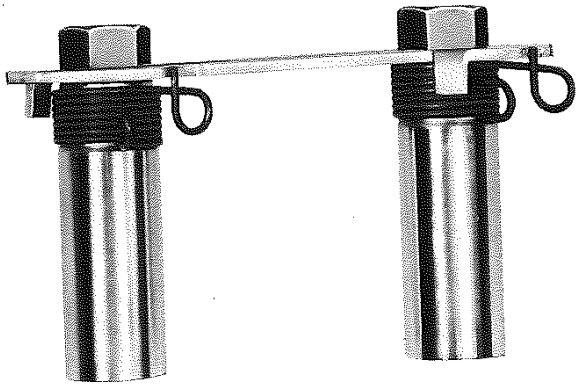
- Right hand spiral
- Number of useful coils : 5.5
- Length, valve open : 33.7
- Under a load of : 37.1 Kg ± 2.1
- Length, valve closed : 41
- Under a load of : 17.4 Kg ± 1.2
- Direction of fitting : Flattened coil towards cylinder head
- Identification : Painted brown-red or clear varnished.



INNER

- Left hand spiral
- Number of useful coils : 7.5
- Length, valve open : 29.7
- Under a load of : 22.7 Kg ± 1.4
- Length, valve closed : 37
- Under a load of : 8.9 Kg ± 0.75
- Direction of fitting : Flattened coil towards cylinder head
- Identification : Painted brown-red or clear varnished.

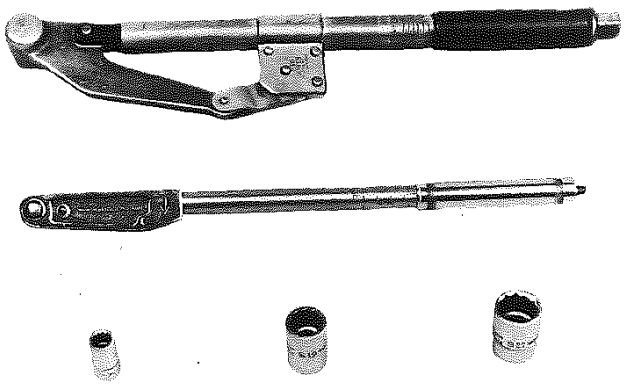
RETIGHTENING CYLINDER HEAD



TOOLING REQUIRED

8.0129 - P.N. 9760.75

– Tool for tightening cylinder head bolts through a given angle.



APPROVED TOOLING :

– SUNNEN P.N. 50 torque spanner.

– BRITOOL AVT 280 torque spanner.

– J11 socket.

– S19 socket.

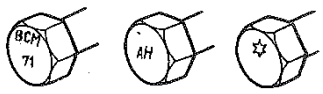
– S21 socket.

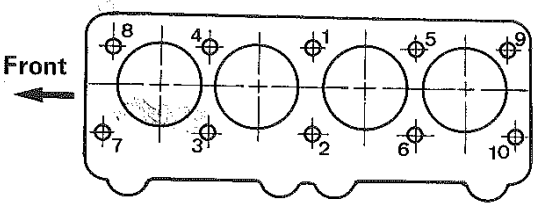
PEUGEOT

ENGINE

"NON-COMPRESSED LINERS"

RETIGHTENING CYLINDER HEAD





4 3 2 1

XC - XC6 - XB2 - XB5 ENGINES ⇥ march 1968 with COMPOSITE head gasket and with BOLTS marked in accordance with the table opposite*.

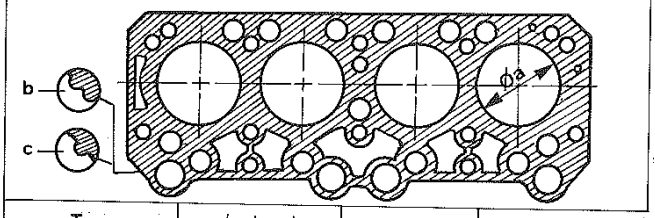
RETIGHTENING CYLINDER HEAD :

– Slacken, then retighten the 10 bolts one by one, in the order shown to **7 m.kg.**

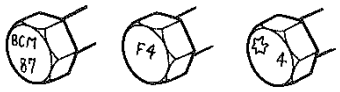
– If the gasket is REPLACED, proceed as follows :

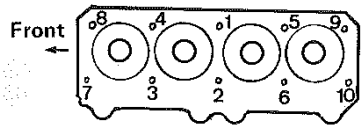
- Pretighten to **4 m.kg.**
- Final tighten to **7 m.kg.**
- Tighten the nuts securing the rocker shaft assembly to **2 m.kg.**

NOTE - *It is advisable to use a swivel extension when tightening bolts* **(6)** *and* **(7)**, *for the other bolts a short swivel is sufficient.*



Types	ϕ a (mm)	Markings
XB5	82,5	b
XC5 - XC6	86,5	c





XC5 - XC6 and XB5 ENGINES ↦ march 1968 ⇥ july 1970, with REINTZ head gasket and 10 bolts M12 x 1.5 x 136.5, according to the table opposite.

RETIGHTENING CYLINDER HEAD :

– Slacken, then retighten the 10 bolts, one by one, in the order shown to, **8.25 m.kg.**

– If the gasket is replaced, proceed as follows :

- Pretighten to **6 m.kg.**
- Final tighten to, **8.25 m.kg.**
- Tighten the nuts securing the rocker shaft assembly to **1.5 m.kg.**

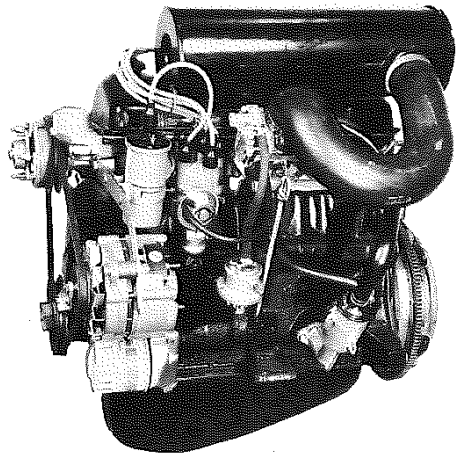
NOTE - *See preceding section.*

* These bolts are no longer available, use the bolts from series 2 assembly, as shown opposite.

XC7 ENGINE
WITH "COMPRESSED" LINERS
RETIGHTENING CYLINDER HEAD

1 B2.003

XC7 "COMPRESSED LINERS" ENGINES, as from Salon 1970

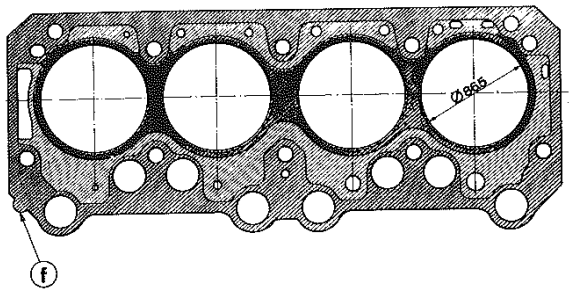


REMINDER :

IDENTIFICATION : - Letter "D" with manual gearbox
- Letter "I" with automatic transmission

stamped as a suffix to the "ENGINE" serial number.

ATTENTION	Pour serrage culasse : voir Notice d'entretien
CAUTION	For Cylinder head tightening : See owner's handbook
ACHTUNG	Anziehen der Zylinderkopfschrauben Siehe Betriebsanleitung
CUIDADO	Para Apretar Culata : Ver manual de mantenimiento.



– These engines have a silver-grey SELF-ADHESIVE LABEL affixed to the rocker cover. This is illustrated opposite.

– If the rocker is replaced, a NEW label must be fixed to the front part of the cover.

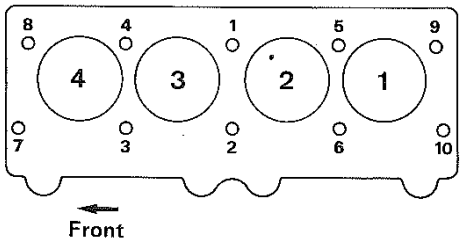
– These engines are fitted with the new REINTZ head gasket illustrated opposite, and 10 head bolts M12 x 1.5 x 144.

with tab **(f)** to distinguish it from 504.

PEUGEOT

B2.004 1

XC7 ENGINE
WITH "COMPRESSED LINERS"
RETIGHTENING CYLINDER HEAD



TOOLS REQUIRED

- **8.0129** : cylinder head tightening attachment.
- torque spanner : preferably Sunnen PN 50.
- socket : S23.

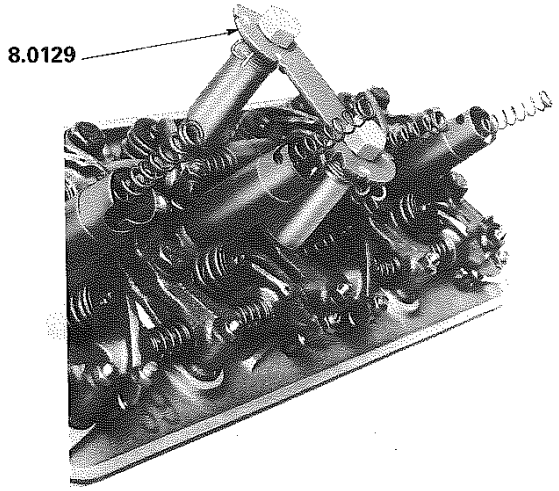
TIGHTENING OF THE HEAD AFTER FITTING

– In the order shown opposite :

pretighten the 10 bolts to, **5 m.kg.**

– Tighten the rocker shaft assembly retaining nuts to **1.5 m.kg.**

– Continue with tightening of the head as follows.

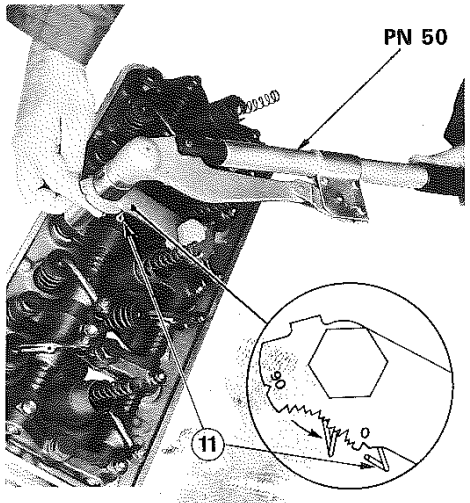


RETIGHTENING OF CYLINDER HEAD :

AT THE FIRST 1000 KM. SERVICE OF FIRST 1000 KM AFTER A REPAIR

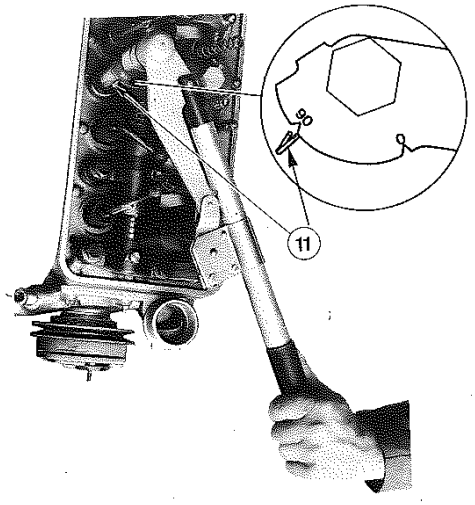
– Position the attachment **8.0129** as illustrated opposite.

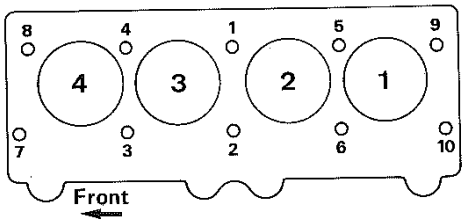
– With the torque wrench **(set at 2 m.kg)** and a 23 socket, **fully slacken the bolt n° 1 and then retighten to 2 m.kg.**



– Keep the torque spanner **under pressure and stationary.**

– Place the pointer **(11)** opposite the **"0"** notch in the quadrant, by depressing the lower leg of the spring.





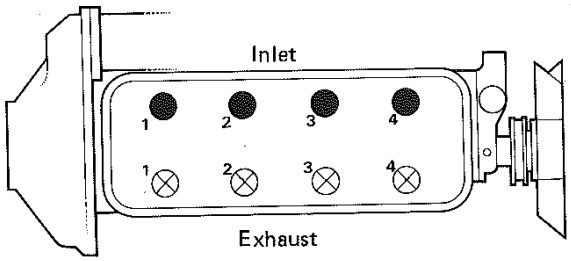
– **Continue tightening until the pointer (11) is in line with the "90" notch.**

– Repeat the foregoing operations on bolt n° 2.

– Tighten the remaining bolts, using attachment **8.0129,** and repeating this sequence of operations on each bolt **in order shown opposite.**

NOTE - *If in doubt about the tightening of any one bolt, fully slacken and then retighten, using the FULL SEQUENCE of operations as described.*

Fully open the valve	For adjustment of rockers	
⊗ 1	● 3	⊗ 4
⊗ 3	● 4	⊗ 2
⊗ 4	● 2	⊗ 1
⊗ 2	● 1	⊗ 3



ADJUSTMENT OF VALVE CLEARANCES (Reminder) :

– Observe the order of adjustment as shown opposite.

– Clearance (engine cold) :

- after refitting and tightening of head :

● Inlet : 0.15 mm
⊗ Exhaust : 0.30 mm

- after the first 1000 km and retightening of the head :

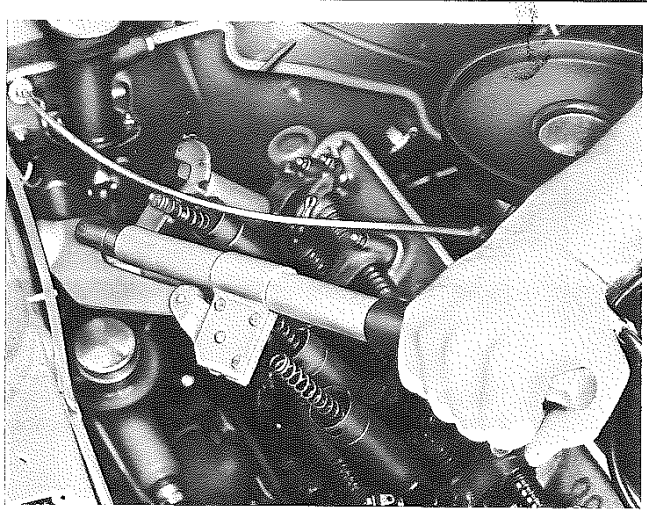
● Inlet : 0.10 mm
⊗ Exhaust : 0.25 mm

PEUGEOT

XC7 ENGINE

WITH "COMPRESSED" LINERS

RETIGHTENING HEAD ON R.H.D. VEHICLES

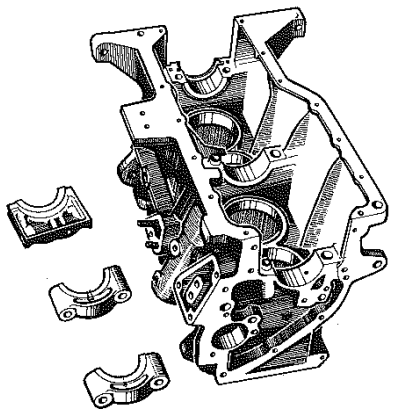


SPECIAL OPERATION APPLICABLE TO RIGHT-HAND DRIVE VEHICLES

– In order to gain access to the rear right-hand bolt n° 9 for tightening, proceed as follows :

- remove the master cylinder retaining bolts lower the cylinder, without disconnecting the lines.

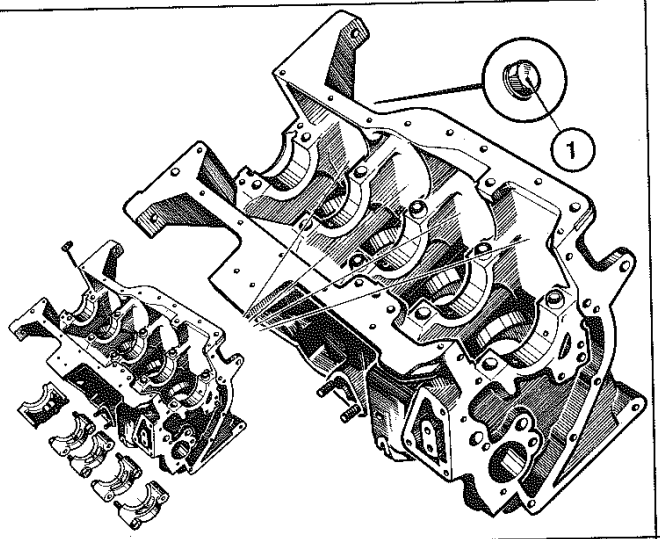
WARNING - After refitting the Master-Vac/master cylinder assembly, check and if necessary, top-up the fluid level to the correct level.



"3-BEARING" BLOCK :

– Series I, non longer available in its original form.

– For replacement, see page 003.



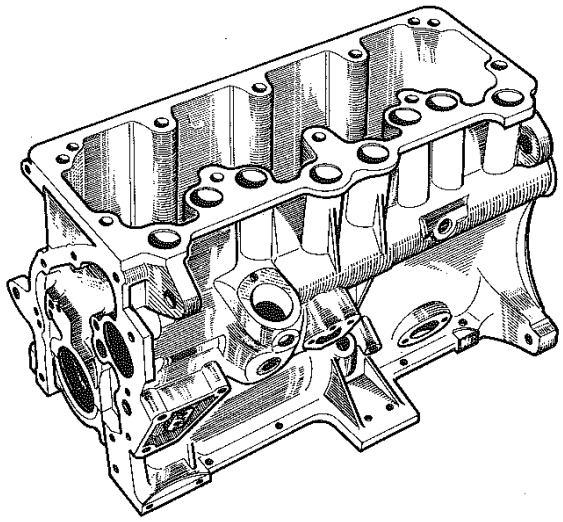
5-BEARING BLOCK with "COMPRESSED" LINERS :

– **Series 1** : with remote operation drain cock with rubber seal.

– **Sump with 14 BOLT HOLES.**

– **Series 2** : with THREADED DRAIN PLUG and copper sealing washer.

– Sump with **15 BOLT HOLES.**



"COMPRESSED" LINER CYLINDER BLOCK :

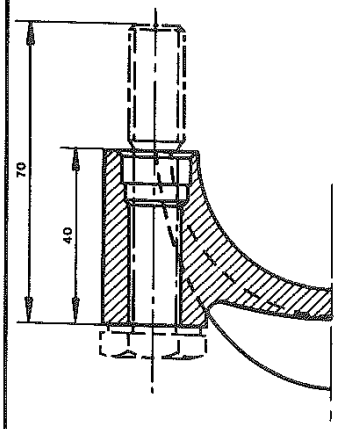
As from serial numbers :

404	- 5 612 501
404 ZF	- 8 267 501
404 L (TW)	- 4 944 201
404 L (TH)	- 6 879 501
404 LB	
404 U6B	- 7 240 001
404 U8A	- 7 270 001
404 U10	- 7 145 501

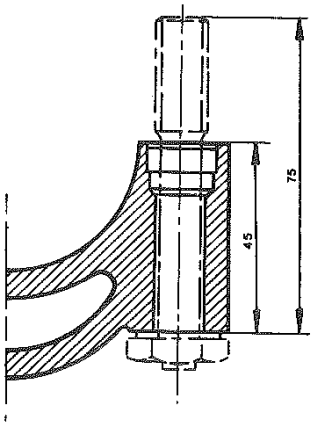
Can be identified by the 4 external ribs (2 each side of the block).

CYLINDER BLOCK - SUMP
REMOVEABLE COMPONENTS
FLYWHEEL

Series I



Series II



BEARING CAPS

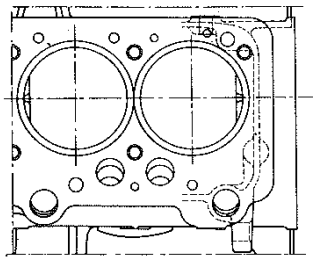
As from serial numbers :

404 - 4 114 273
404 J - 4 504 240

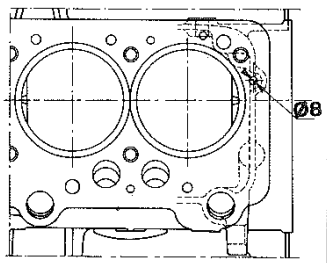
the bearing caps are 5 mm higher, hence, the cap bolts are 75 mm long in place of 70 mm.

– Series 1 and 2 bearing cap bolts are not interchangeable.

Series I*



Series II



CYLINDER BLOCK FACE

As from serial numbers :

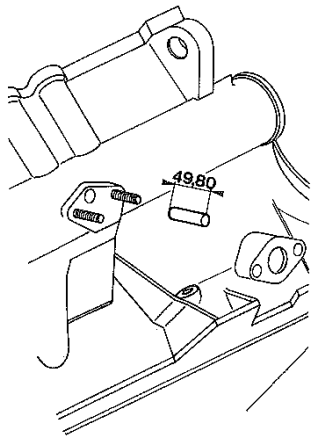
404 - 4 282 150
404 J - 4 525 328
404 C - 4 495 678
404 L - 4 825 617
404 U6 - 4 702 115

the upper face of the block has a modified 8 mm orifice towards the rear for supplementary passage of water between block and head.

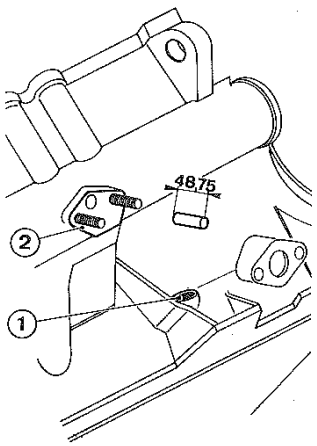
– On vehicles prior to the above serial numbers, it is essential to fit cylinder head gaskets which have no joggle at the rear. (see opposite).

* The cylinder blocks are no longer supplied by the Parts Department.

Series I



Series II



MOUNTING PADS FOR FUEL PUMP AND DIPSTICK TUBE

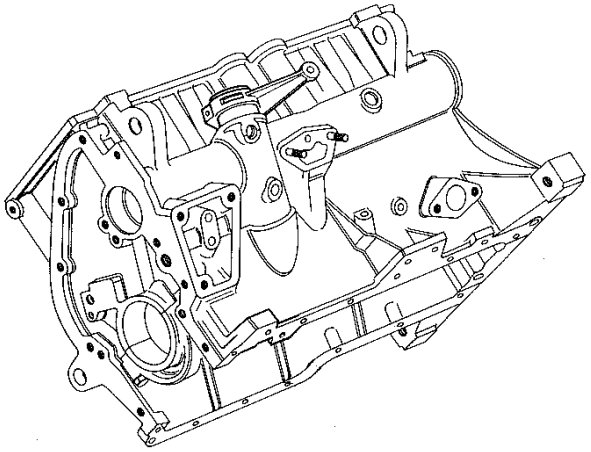
As from the following serial numbers :

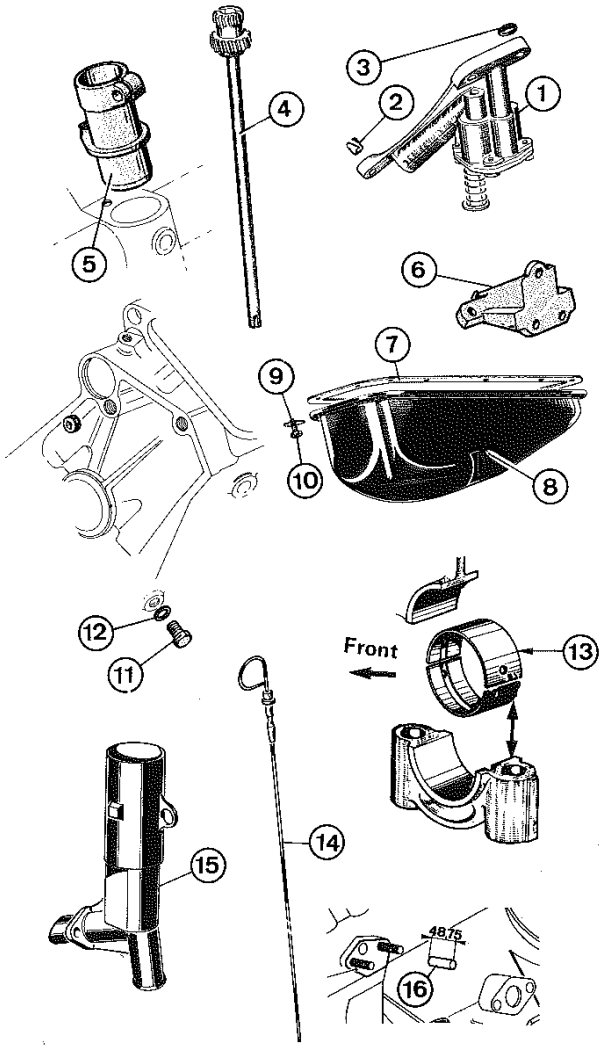
404 (TW)	- 5 067 664	**404 L (TW)**	- 4 898 130
404 (TH)	- 5 288 534	**404 L (TH)**	- 4 878 875
404 SL	- 5 286 961	**404 L (Estate)**	- 4 878 770
404 C	- 4 499 222	**404 U6**	- 4 760 800
404 ZF	- 8 250 479	**404 U6A (USA)**	1 927 753

1 - 14 mm x 1.50 tapped hole in place of a plain 6.5 mm hole for taking the dipstick tube or the J7 dipstick guide union.

2 - Pad for mounting the fuel pump reduced in height by 1.05 mm requiring the fitting of a 48.75 mm plunger. (common to 204).

CYLINDER BLOCK - SUMP
REMOVEABLE COMPONENTS
FLYWHEEL

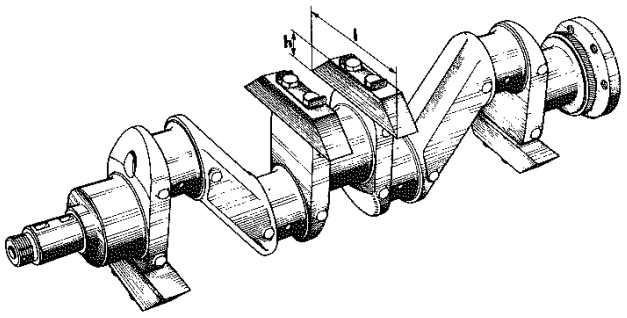


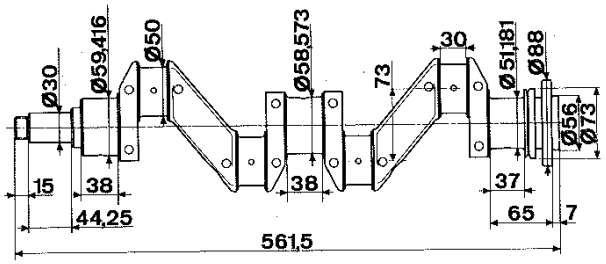


"3-BEARING CYLINDER BLOCKS" Series 1 blocks are no longer supplied, they can be replaced with a Series 2 type block.

Such a replacement also requires the fitting of :

- 1 oil pump **(1)**.
- 2 rollpins **(2)**.
- 1 O ring **(3)**.
- 1 oil pump drive shaft **(4)**.
- 1 distributor mounting bracket **(5)**.
- 1 engine mounting **(6)**.
- 1 sump gasket **(7)**.
- 1 sump **(8)**.
- 1 rectangular washer **(9)**.
- 1 bolt **(10)**.
- 1 drain plug **(11)**.
- 1 copper sealing washer **(12)**.
- 1 pair of 1/2 shells **(13)** with the lugs reversed for the centre bearing, (↦ serial numbers 4 036 260 and 4 501 689).
- 1 guided type dipstick **(14)**.
- 1 oil filter tube **(15)**.
- 1 SHORTENED fuel pump plunger **(16)**. (L = 48.75 in lieu of 49.8).



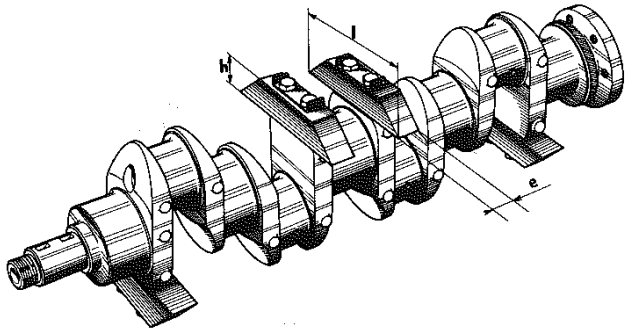


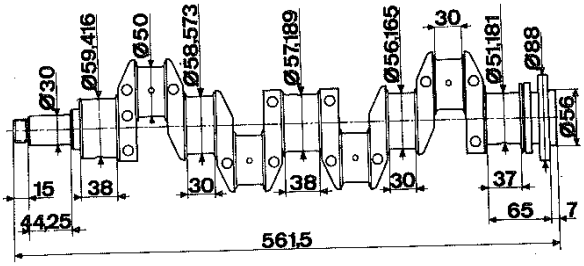
3-BEARING CRANKSHAFT

XC - XB2 Engines

COUNTERWEIGHTS		
TYPE	**LENGTH**	**HEIGHT**
XC	130 mm	29 mm
XB2	128.2 mm	25 mm

These counterweights are not interchangeable.





5-BEARING CRANKSHAFT

XC5 - XC6 - XB5 Engines

As fitted to series :

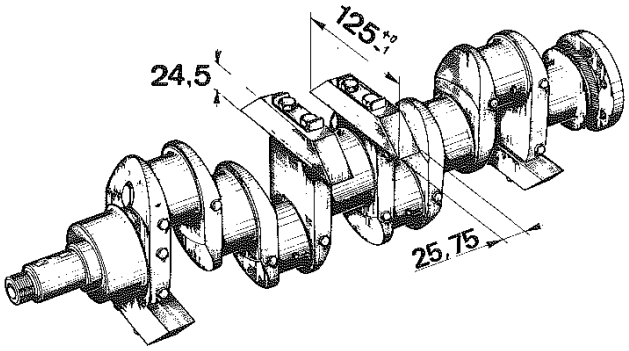
404 - from 4 400 001 to 5 612 500
404 J - from 4 528 001 to end of series
404 C - from 4 497 001
404 L (TW) - from 4 838 001 to 4 944 200
404 L (TH) - upto 6 879 500
404 KF - from 4 557 001 to end of series
404 CKF - from 4 592 001
404 U6 - from 4 720 001 to 7 240 000

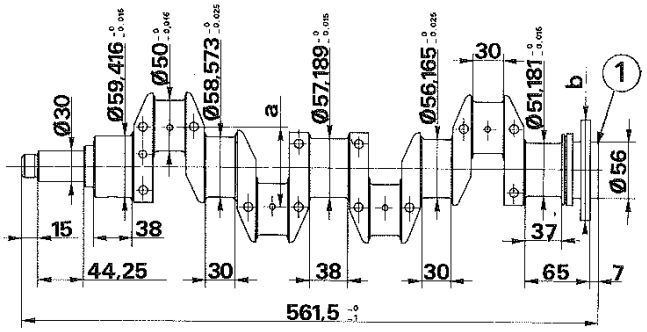
404 U6 up to number 4 746 749	Crankshaft with counterweights 128.2 x 25 mm (IXh)
404/9 CV 404 U6 as from number 4 746 750	Crankshaft with counterweights 130 x 29 x 23.4 mm (IXhXe)
404 All types since September 1969	Crankshaft with counterweights as for 504 127 x 26 x 25.75 mm (IXhXe)

CYLINDER BLOCK - SUMP

REMOVEABLE COMPONENTS

FLYWHEEL





5-BEARING CRANKSHAFT

XC7 Engine

DIFFERENCES AS COMPARED WITH PRECEDING VERSION

– Rear bearing is 54.92 mm ϕ instead of 51.181 mm

– Counterweights { height 24.5 in place 26
length 125 in place 127

IDENTIFICATION

Dim. **(a)**, throw : 73 mm
Dim. **(b)**, : 78 mm
Number of flywheel securing bolts : 6.

CRANKSHAFT REGRIND DIMENSIONS

ENGINES	JOURNALS	STANDARD	1st REGRIND	2nd REGRIND	3rd REGRIND
XC - XB2 3 - bearings carburettor →| Salon 1963	REAR ϕ	$51,175^{-0}_{-0,015}$	$50,875^{-0}_{-0,015}$	$50.675^{-0}_{-0.015}$	$50.375^{-0}_{-0.015}$
	CENTRE ϕ	$58.573^{-0}_{-0.015}$	$58.273^{-0}_{-0.015}$	$58.073^{-0}_{-0.015}$	$57.773^{-0}_{-0.015}$
	FRONT ϕ	$59.410^{-0}_{-0.015}$	$59.110^{-0}_{-0.015}$	$58.910^{-0}_{-0.015}$	$58.610^{-0}_{-0.015}$

ENGINES	JOURNALS	STANDARD	1st REGRIND	2nd REGRIND	3rd REGRIND
XC5 - XC6 - XB5 5 - bearings →| Salon 1970	REAR ϕ	$51.181^{-0}_{-0.015}$	$50.881^{-0}_{-0.015}$	$50.681^{-0}_{-0.015}$	$50.381^{-0}_{-0.015}$
	CENTRE ϕ	$57.189^{-0}_{-0.015}$	$56.889^{-0}_{-0.015}$	$56.689^{-0}_{-0.015}$	$56.389^{-0}_{-0.015}$
	FRONT ϕ	$59.416^{-0}_{-0.015}$	$59.116^{-0}_{-0.015}$	$58.916^{-0}_{-0.015}$	$58.616^{-0}_{-0.015}$
	INTER.FRONT ϕ	$58.573^{-0}_{-0.025}$	$58.273^{-0}_{-0.025}$	$58.073^{-0}_{-0.025}$	$57.773^{-0}_{-0.025}$
	INTER. REAR ϕ	$56.165^{-0}_{-0.025}$	$55.865^{-0}_{-0.025}$	$55.665^{-0}_{-0.025}$	$55.365^{-0}_{-0.025}$

* Not permissable on XC6 ("L" marking) and XC6 ZF ("M" marking) } 8.3/1 C/R

ENGINES	CRANKPINS	STANDARD	1st REGRIND	2nd REGRIND	3rd REGRIND
XC - XB2 XC5 - XB5		$50^{-0,009}_{-0.025}$	$49.7^{-0.009}_{-0.025}$	$49.5^{-0,009}_{-0.025}$	$49.2^{-0,009}_{-0.025}$
XC6 (8.3/1 C/R) XC7		$50^{-0}_{-0.016}$	$49.7^{-0}_{-0.016}$	$49.5^{-0}_{-0.016}$	

MAX. OVALITY of journals and crankpins : 0.007 mm

MAX. TAPER " " " " : 0.010 mm

	JOURNALS	STANDARD	1st REGRIND	2nd REGRIND	3rd REGRIND
ENGINE XC7 ⊢→ Salon 1970	REAR ϕ	$54.92^{-0}_{-0.015}$	$54.62^{-0}_{-0.015}$	$54.42^{-0}_{-0.015}$	
	CENTRE ϕ	$57.189^{-0}_{-0.015}$	$56,889^{-0}_{-0.015}$	$56.689^{-0}_{-0.015}$	
	FRONT ϕ	$59.416^{-0}_{-0.015}$	$59.116^{-0}_{-0.015}$	$58.916^{-0}_{-0.015}$	
	INTER. FRONT ϕ	$58.573^{-0}_{-0.25}$	$58.273^{-0}_{-0.025}$	$58.073^{-0}_{-0.25}$	
	INTER. REAR ϕ	$56.165^{-0}_{-0.025}$	$55.865^{-0}_{-0.025}$	$55.665^{-0}_{-0.025}$	
WIDTH OF REAR JOURNAL : ALL VERSIONS		$37.02^{+0.05}_{0}$	$37.12^{+0.05}_{0}$	$37.17^{+0.05}_{0}$	$37.22^{+0.0}_{0}$

CRANKSHAFT REGRIND DIMENSIONS

ENGINES	JOURNALS	STANDARD	1st REGRIND	2nd REGRIND	3rd REGRIND
XC - XB2 3 - bearings carburettor →| Salon 1963	REAR ϕ	51,175 $^{-0}_{-0,015}$	50,875 $^{-0}_{-0,015}$	50.675 $^{-0}_{-0.015}$	50.375 $^{-0}_{-0.015}$
	CENTRE ϕ	58.573 $^{-0}_{-0.015}$	58.273 $^{-0}_{-0.015}$	58.073 $^{-0}_{-0.015}$	57.773 $^{-0}_{-0.015}$
	FRONT ϕ	59.410 $^{-0}_{-0.015}$	59.110 $^{-0}_{-0.015}$	58.910 $^{-0}_{-0.015}$	58.610 $^{-0}_{-0.015}$

ENGINES	JOURNALS	STANDARD	1st REGRIND	2nd REGRIND	3rd REGRIND
XC5 - XC6 - XB5 5 - bearings →| Salon 1970	REAR ϕ	51.181 $^{-0}_{-0.015}$	50.881 $^{-0}_{-0.015}$	50.681 $^{-0}_{-0.015}$	50.381 $^{-0}_{-0.015}$
	CENTRE ϕ	57.189 $^{-0}_{-0.015}$	56.889 $^{-0}_{-0.015}$	56.689 $^{-0}_{-0.015}$	56.389 $^{-0}_{-0.015}$
	FRONT ϕ	59.416 $^{-0}_{-0.015}$	59.116 $^{-0}_{-0.015}$	58.916 $^{-0}_{-0.015}$	58.616 $^{-0}_{-0.015}$
	INTER.FRONT ϕ	58.573 $^{-0}_{-0.025}$	58.273 $^{-0}_{-0.025}$	58.073 $^{-0}_{-0.025}$	57.773 $^{-0}_{-0.025}$
	INTER. REAR ϕ	56.165 $^{-0}_{-0.025}$	55.865 $^{-0}_{-0.025}$	55.665 $^{-0}_{-0.025}$	55.365 $^{-0}_{-0.025}$

* Not permissable on XC6 ("L" marking) and XC6 ZF ("M" marking) } 8.3/1 C/R

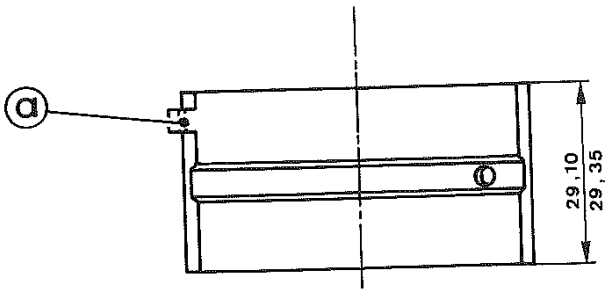
ENGINES	CRANKPINS	STANDARD	1st REGRIND	2nd REGRIND	3rd REGRIND
XC - XB2 XC5 - XB5		50 $^{-0,009}_{-0.025}$	49.7 $^{-0.009}_{-0.025}$	49.5 $^{-0,009}_{-0.025}$	49.2 $^{-0,009}_{-0.025}$
XC6 (8.3/1 C/R) XC7		50 $^{-0}_{-0.016}$	49.7 $^{-0}_{-0.016}$	49.5 $^{-0}_{-0.016}$	

MAX. OVALITY of journals and crankpins : 0.007 mm

MAX. TAPER " " " " : 0.010 mm

	JOURNALS	STANDARD	1st REGRIND	2nd REGRIND	3rd REGRIND
ENGINE XC7 ↦ Salon 1970	REAR ϕ	54.92 $^{-0}_{-0.015}$	54.62 $^{-0}_{-0.015}$	54.42 $^{-0}_{-0.015}$	
	CENTRE ϕ	57.189 $^{-0}_{-0.015}$	56,889 $^{-0}_{-0.015}$	56.689 $^{-0}_{-0.015}$	
	FRONT ϕ	59.416 $^{-0}_{-0.015}$	59.116 $^{-0}_{-0.015}$	58.916 $^{-0}_{-0.015}$	
	INTER. FRONT ϕ	58.573 $^{-0}_{-0.25}$	58.273 $^{-0}_{-0.025}$	58.073 $^{-0}_{-0.25}$	
	INTER. REAR ϕ	56.165 $^{-0}_{-0.025}$	55.865 $^{-0}_{-0.025}$	55.665 $^{-0}_{-0.025}$	
WIDTH OF REAR JOURNAL : ALL VERSIONS		37.02 $^{+0.05}_{0}$	37.12 $^{+0.05}_{0}$	37.17 $^{+0.05}_{0}$	37.22 $^{+0.05}_{0}$

PEUGEOT



Ensure correct positioning of lug **(a)** in relation to bearing block and cap.

BEARING SHELLS

XC - XB2 3-bearing engines

Steel shells :

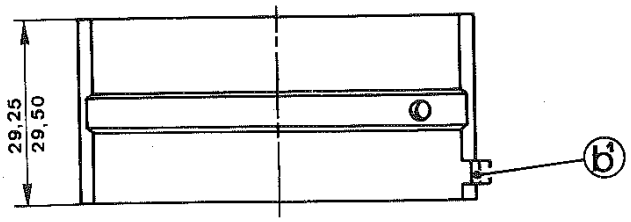
- white metal bearing surface for 404 carburettor,
- lead/indium bearing surface for 404 petrol injection.

404 carburettor engine bearing shells must not be fitted to a 404 petrol injection engine.

REAR BEARING SHELLS - 1

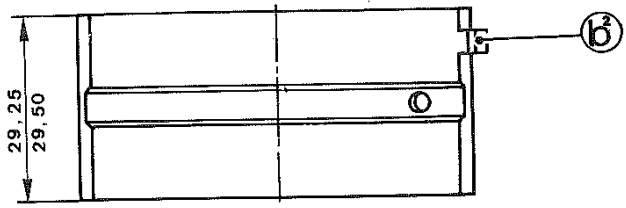
Dims.	Thickness (mm)
Standard	1.894 to 1.900
1st repair	2.044 to 2.050
2nd repair	2.144 to 2.150
3rd repair	2.294 to 2.300

TYPE 1



Ensure correct positioning of lug **(b1)** in relation to bearing block and cap.

TYPE 2



Ensure correct positioning of lug **(b2)** in relation to bearing block and cap.

CENTRE BEARING SHELLS - 2

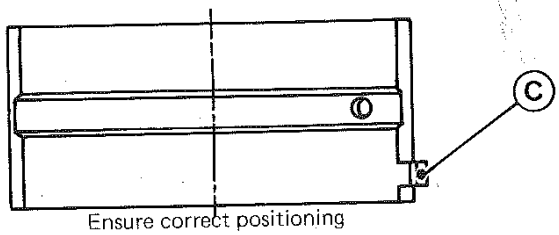
Since December 1960, as from serial numbers :

404 - 4 036 261
404 J - 4 501 690

the lugs of the bearing shells have been offset in order to prevent the fitting of a front bearing shell to the centre, or the converse. Hence, the cylinder block and centre bearing cap are modified accordingly (see page C1 003).

Dims.	Thickness (mm)
Standard	1.894 to 1.900
1st repair	2.044 to 2.050
2nd repair	2.144 to 2.150
3rd repair	2.294 to 2.300

INTERCHANGEABILITY - Types 1 and 2 bearing shells are not interchangeable.



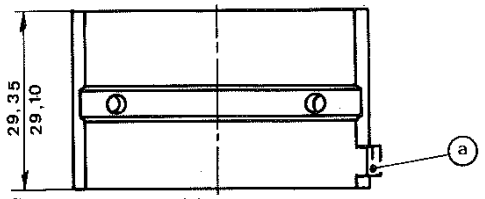
Ensure correct positioning of lug **(c)** in relation to bearing block and cap.

CENTRE BEARING SHELLS - 3

Dims	Thickness (mm)
Standard	1.984 to 1.900
1st repair	2.044 to 2.050
2nd repair	2.144 to 2.150
3rd repair	2.294 to 2.300

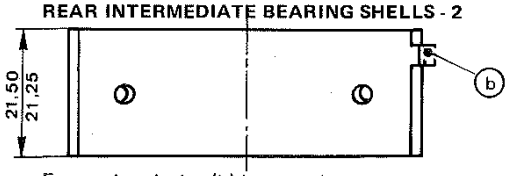
CYLINDER-BLOCK
REMOVEABLE COMPONENTS
FLYWHEEL

REAR BEARING SHELLS - 1



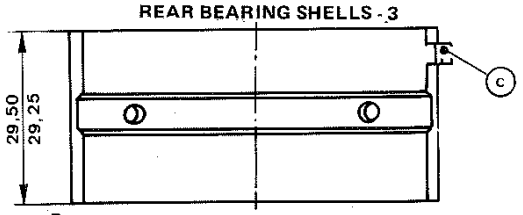
Ensure that the lug (a) is correctly positioned in relation to bearing block and cap.

REAR INTERMEDIATE BEARING SHELLS - 2



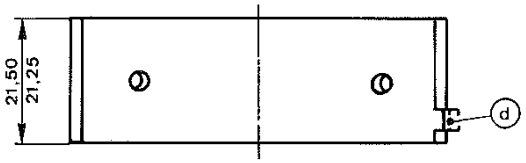
Ensure that the lug (b) is correctly positioned in relation to bearing block and cap.

REAR BEARING SHELLS - 3



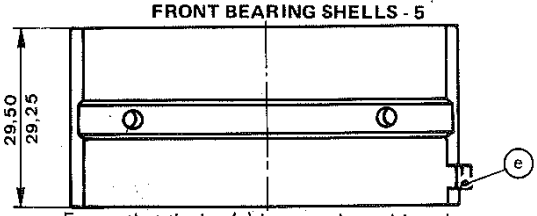
Ensure that the lug (c) is correctly positioned in relation to bearing block and cap.

FRONT INTERMEDIATE BEARING SHELLS - 4



Ensure that the lug (d) is correctly positioned in relation to bearing block and cap.

FRONT BEARING SHELLS - 5



Ensure that the lug (e) is correctly positioned in relation to bearing block and cap.

BEARING SHELLS

5-bearing engine

in steel, faced with various anti-friction alloys and with special running tolerances.

I - faced with whitemetal on :
XC5 - XC5P - XB5 and XB5P.

II - faced with cupro-lead alloy on :
XC6 up to April 1968.

III - faced with tin-aluminium alloy on :
XC6 since April 1968.

IV - faced with tin-aluminium alloy on engines with «compressed» liners.

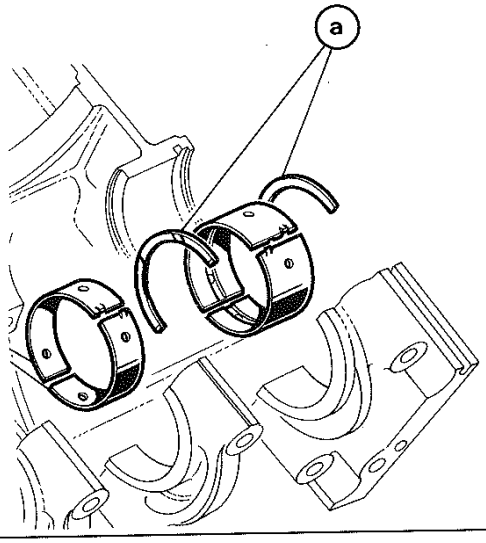
DIMS.	THICKNESS		
	I	II	III and IV
Standard	1.894 to 1.900	1.870 to 1.879	1.882 to 1.888
1st repair	2.044 to 2.050	2.020 to 2.029	2.032 to 2.038
2nd repair	2.144 to 2.150	2.120 to 2.129	2.132 to 2.138
3rd repair	2.294 to 2.300		

SHELLS	RUNNING CLEARANCE (mm)		
N°	I	II*	III and IV*
1 - 3 - 5	0.011 to 0.057	0.053 to 0.105	0.035 to 0.081
2 - 4	0.011 to 0.067	0.053 to 0.115	0.035 to 0.091

*** General rules in respect of repairs and interchangeability :**

1) The 3rd repair dimensions must not be applied to XC6 and XC7 engines.
2) Type III bearing shells for 1st and 2nd repairs are not valid for XC6 engines.
3) Type I shells (whitemetal) must not be fitted to an XC6 engine.
4) Type II shells (cupro-lead) can, if required, be fitted to all versions of XC5 and XB5.
5) Type III shells (aluminium/tin) MUST be fitted to all engines which have an oil filter with paper or EASY CHANGE cartridge. In the event REPLACE a mesh cartridge with a paper cartridge.

Hence, Parts Department supplies an IDENTICAL SET OF MAIN BEARINGS with TIN/ALU facing, for shells, I, II and III, provided that a paper cartridge is fitted.

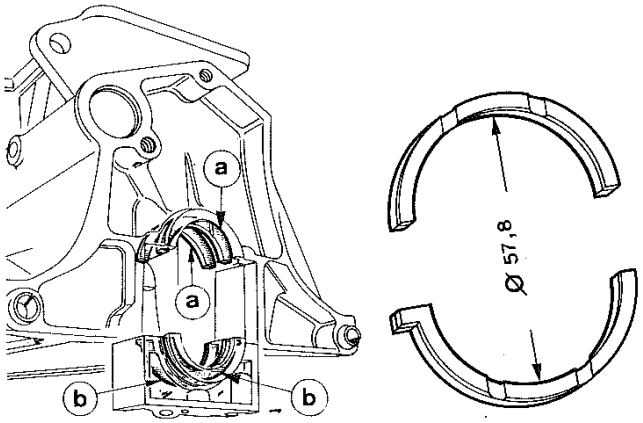


CRANKSHAFT THRUST WASHERS

Standard thickness : 2.30 mm
1st repair : 2.40 mm
2nd repair : 2.45 mm
3rd repair : 2.50 mm

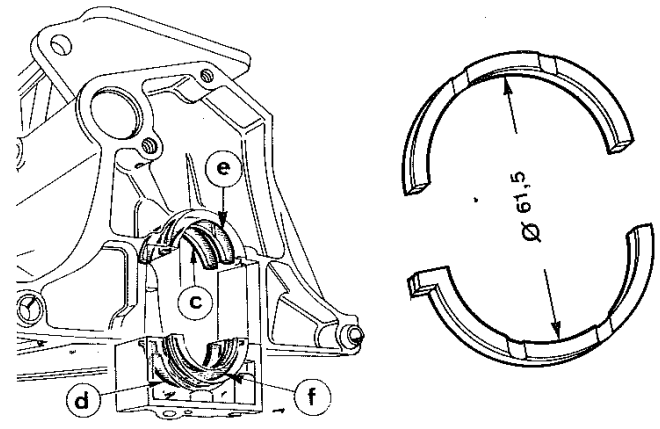
All engines with manual gearbox
→| Salon 1970 :

UPPER HALF-WASHERS
(a) only.



All engines with automatic transmission
→| Salon 1970 :

\+ 2 UPPER half-washers **(a)**
2 LOWER half-washers **(b)** ϕ 57.8 mm



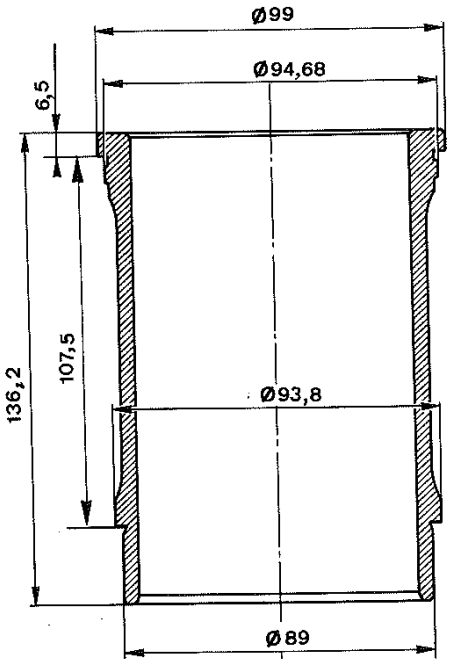
XC7 ENGINE

↦ Salon 70 :

set of 4 half-washers,
inside diameter, 61.5 mm inplace of 57.8.

IMPORTANT - *Fit only thrust washers* **(e)** *and* **(d)** *of the ORIGINAL DIMENSIONS to the FRONT face of the thrust bearing block.*

Take-up of end float is by means of thrust washers **(e)** and **(f)**, to the required REPAIR dimensions, fitted to the REAR face of the thrust bearing block.



NON-COMPRESSED LINERS

→ Salon 1970 :

– Bore : 8 CV = 80
9 CV = 84

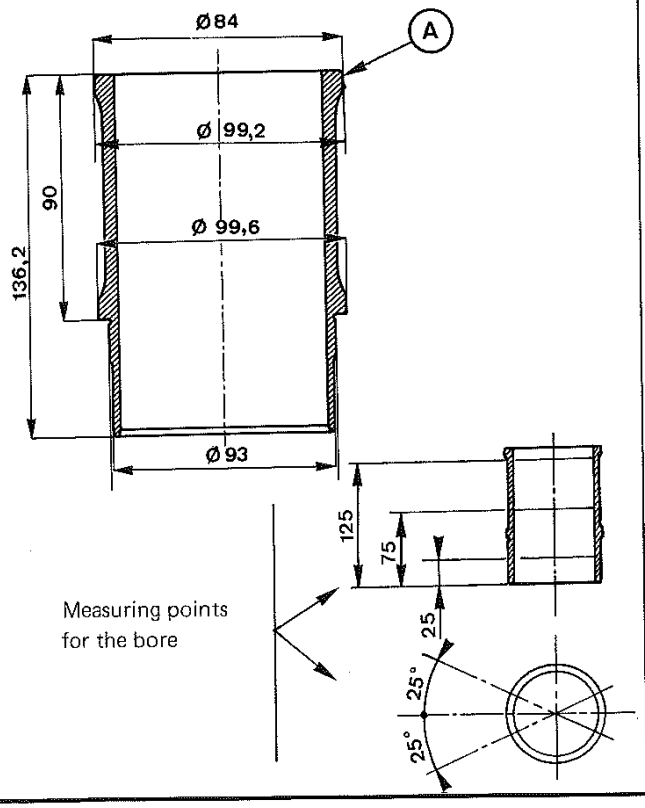
– Ovality and taper : 0.02 max.

– Markings :

Liners are classified in 4 grades, and are marked with 1, 2, 3 or 4 file marks at the lower part, in accordance with the following table :

TYPE	N°. marks	BORE dia.	PISTONS	
			Grade	Play
XB2 XB5	1	80.000 to 80.011	A	from 0.05 to 0.07
	2	80.012 to 80.022	B	
	3	80.023 to 80.033	C	
	4	80.034 to 80.044	D	
XC XC5 XC6	1	84.000 to 84.011	A	from 0.04 to 0.06
	2	84.912 to 84.022	B	
	3	84.023 to 84.033	C	
	4	84.034 to 84.044	D	

Direction of fitting :
– Marking TOWARDS camshaft.



COMPRESSED LINERS

→ Salon 1970 :

WITHOUT an upper retaining collar but CENTRED IN THE CYLINDER BLOCK by the 93 mm ϕ at the LOWER part.

– Ovality and taper : 0.03 max.

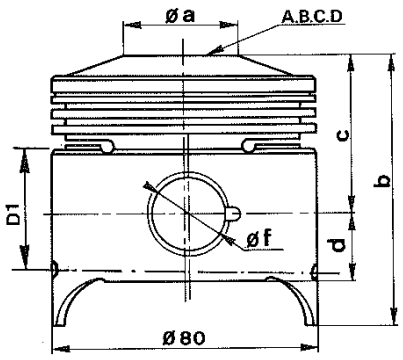
– Markings :

1, 2, 3 or 4 file marks on the UPPER collar at **"A"** in accordance with the table below :

TYPE	N°. marks	BORE dia.	PISTONS	
			Grade	Play
XC7	1	84.000 to 84.011	A	from 0.06 to 0.08
	2	84.012 to 84.022	B	
	3	84.023 to 84.033	C	
	4	84.034 to 84.034	D	

Direction of fitting : NO SPECIFIC POSITION for the liner/piston matching markings.

PEUGEOT



PISTONS XB2 - XB5 / 8 CV

DIRECTION OF FITTING :

arrow pointing towards front of engine

D1 = indicates ϕ checking position

MEASURING : VERTICAL to gudgen pin bore.

	Marking	ϕ
MATCHING GRADES (with liners)	A	79.940 to 79.951
	B	79.951 to 79.962
	C	79.963 to 79.973
	D	79.974 to 79.984

TYPE		DIMENSIONS (IN MM)						HEAD GASKET
		ϕ a	b	c	d	D1	ϕ f	
Series I c/r 7.4	Up to serial n° : **404 U6** - 4 739 299	44.5	82.9	45.9	24	37	22	COMPOSITE ("metallo-plastique") Thickness E = 1.55 mm
Series II c/r 7.5	As from serial n° : **404 U6** - 4 739 300	34.6	81.6	47.6	20.2	34	22	
Series III c/r 7.75	As from numbers : **404 U6** - 4 747 070 **404/8** - 6 900 001 start of serie **404 U8** - 7 010 001	23.6	83.5	49.5	20.2	34	22	
Series IV c/r 7.75	As from numbers : **404 U6** - 4 780 653 **404 U8** - 7 015 813 **404 U10** - 7 069 871	31.7	81.75	47.75	20.2	34	23	REINZ E = 1.15

INTERCHANGEABILITY

Series II and III pistons are interchangeable and can, if desired, be used as replacements for Series I, provided that 4 identical pistons are fitted.

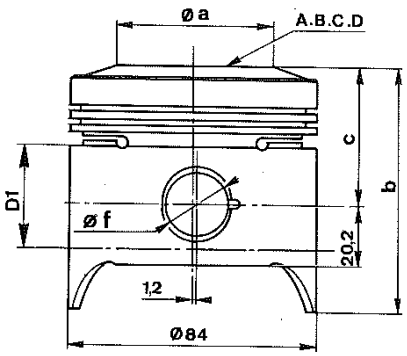
The distance from the bore centre to the bottom of the skirt (dim. **d**) on Series I pistons is 24 mm in lieu of 20.2, hence, they cannot be fitted to a **404 U6** subsequent to serial number 4 746 749 since these are fitted with a crankshaft common to the **404/9 CV**, which has counterweights 29 mm high, in lieu of 25 mm.

The Series IV pistons, con. rods, gudgeon pins and con. rod little end bushes are not separately interchangeable with those of the preceding 3 Series.

The piston/con. rod assembly - REINZ type gasket can be used on an earlier engine, PROVIDED that the head bolts are replaced with Series II bolts. (TIGHTENING TORQUE : **8.25 m.kg**. in place of **7 m.kg**).

The REINZ gasket alone must not be fitted as replacement for a composite (metallo-plastique) gasket. (INCREASES COMPRESSION RATIO).

CYLINDER-BLOCK
REMOVEABLE COMPONENTS
FLYWHEEL



PISTONS for XC - XC5 - XC6 - XC7/9 CV

DIRECTION OF FITTING :

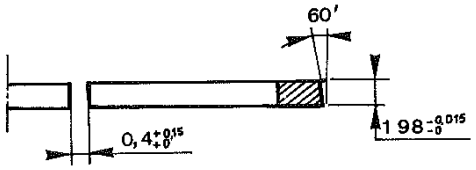
arrow pointing toward FRONT of engine

D1 = diameter checking positions

MEASUREMENT : VERTICAL to gudgeon pin bore.

	Mark	ϕ
MATCHING GRADES with liners	A	83.930 to 83.941
	B	83.941 to 83.952
	C	83.952 to 83.963
	D	83.963 to 83.974

TYPES			DIMENSIONS (IN MM) ϕa	b	c	D1	ϕf	HEAD GASKET
404/9 CV with XC & XC5 engines	Series I c/r7.2	Up to serial numbers : **404** - 4 082 648 **404 J** - 4 503 159	67	77	43	34	22	
	Series II c/r7.4	From serial numbers : **404** - 4 082 649 **404 J** - 4 503 160	63.2	77.6	43.7	34	22	COMPOSITE (metallo-plastique) 1.55 mm thick
	Series III c/r7.5	From serial numbers : **404** - 5 046 810 **404 J** - 4 529 914 **404 L** - 4 851 596 **404 C** - 4 498 001 **404 U6A** - 1 923 370	56.3	78.8	44.9	34	22	
	Series IV c/r7.6	From serial numbers **404 TW** - 5 058 784 **404 TH** - 5 167 490 **404 L** - 4 860 980 **404 J** - 4 535 678 **404 U6A** - 1 925.332 **404 C** - 4 498 556	54	79,25	45.3	34	22	
404/9 CV with XC6 engine		From serial numbers : **404 TW** - 5 075 001 **404 C** - 4 499 501 **404 TH** - 5 311 001 **404 L** - 4 884 001 **404 ZF** - 8 251 301 **404 U6A** - 1 928 101	54	82.30	46.35	34	22	
404/9 CV engines		From serial numbers : **404 TW** - 5 092 741 **404 US** - 8 327 055 **404 TH** - 5 487 674 **404 LTW** - 4 942 249 **404 ZF** - 8 259 345 **404 LTH** - 6 837 771 **404 C** - 4 670 742	52.2 52.2	80.85 81.9	44.9 45.95	34 34	23 23	
404/9CV - XC7 Compressed type liners		From serial numbers : **404** - 5 612 501 **404 U6B** - 7 240 001 **404 ZF** - 8 267 501 **404 U8A** - 7 270 001 **404 LTW** - 4 944 201 **404 U10** - 7 145 501 **404 LTH** - 6 879 501	50.2	81.2	45.25	36	23	REINZ 1.15 mm thick



PISTON RINGS

I - UPPER COMPRESSION RING

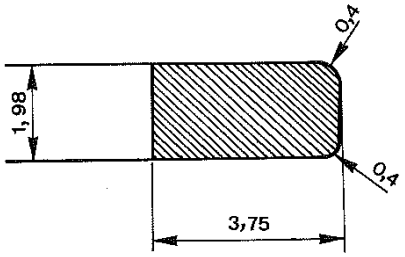
Series 1 :

in chrome plated iron alloy XB2 - XB5 - XC - XC5 - XC6 engines :

- taper : 60'
- width : 1.98 mm
- gap : 0.4 to 0.55 mm

DIRECTION OF FITTING

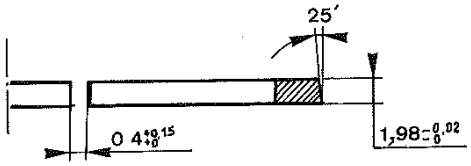
marking adjacent to gap towards piston crown.

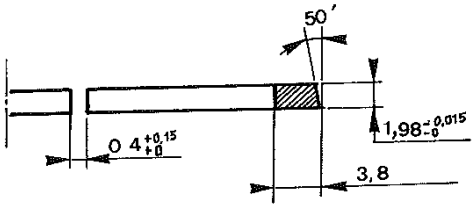


Series 2

for XB5 - XC5 - XC6 and XC7 engines : dome faced ring, chromed and lapped.

NO SPECIFIC DIRECTION OF FITTING





II - COMPRESSION RING, all types

in iron alloy

Series 1 :
— taper 25'

Series 2 :
— taper 50' 20'

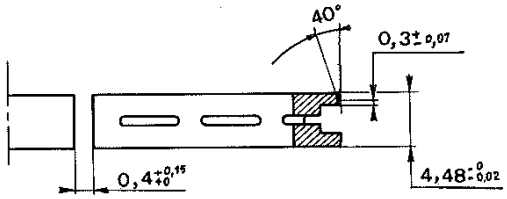
width : 1.98

gap : 0.4 to 0.55 mm

DIRECTION OF FITTING

engraved marking near split towards piston crown.

CYLINDER-BLOCK
REMOVEABLE COMPONENTS
FLYWHEEL



III - SCRAPER RING

Series 1 :

Standard scraper ring : iron

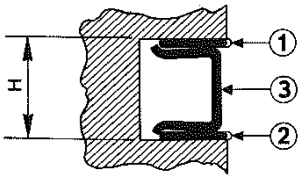
Specification

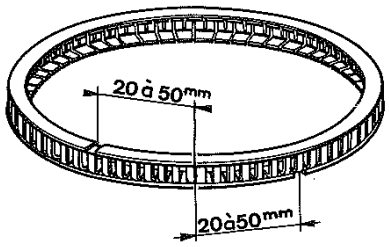
— ring width : $4.48^{-0}_{-0.02}$ mm

— gap : 0.4 to 0.55 mm

— lip width : 0.3 mm*

— no specific direction of fitting





Series 2

As from serial numbers :

404	- 5 163 735	**404 L**	- 4 860 500
404 SL	- 5 164 137	**404 L (Estate)**	- 4 860 378
404 J	- 4 535 627	**404 U6A**	- 1 925 248
404 C	- 4 498 535	**404 U6**	- 4 746 493

Perfect Circle three part scraper ring consisting of :

— two chromed flexible scraper rings, **(1)** and **(2).**

— an expander **(3)**, in steel (**never reduce** the length of the expander ring).

The scraper rings are not "marked" and have no order of fitting, they are reversible.

RING GAPS :

offset the gaps in the scraper rings 20 to 50 mm either side of the join in the expander.

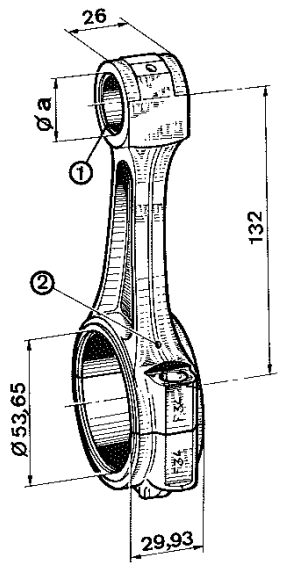
INTERCHANGEABILITY

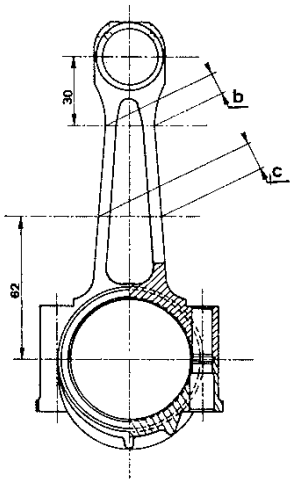
— The 2 compression rings for Series 1 can be replaced with 2 corresponding Series 2 rings. The converse is not advisable.

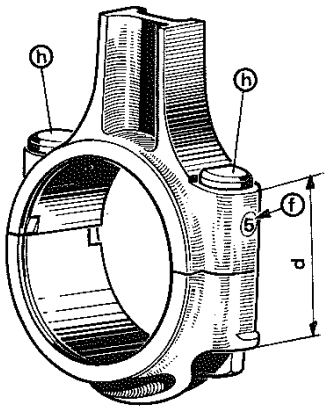
— Series 1 **scrapers** must **always** be replaced with a Perfect Circle scraper.

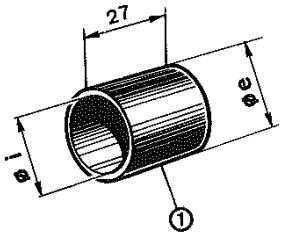
WARNING

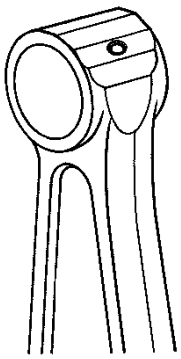
Perfect circle scraper for 9 CV – all types : Width 4.5 mm (Expander : 3.188 ± 0.05).











CONNECTING RODS consisting of :

– a press-fit plain bush **(1)**,
– an oil hole **(2)**.

Con. rods are graded in sets of 4, according to weight.

They are graded into 6 categories, and are marked to 6 at **(f)** accordingly.

Grade	Wt. in gr. Series 1 March 1968	Wt. in gr. series 2 and 3
1	591 to 610	621 to 640
2	611 to 630	641 to 660
3	631 to 650	661 to 680
4	651 to 670	681 to 700
5	671 to 690	701 to 720
6	691 to 710	721 to 740

MAXIMUM permissable difference in weight as between any one of a set of 4 con. rods : **20 gr.**

BARE CON. RODS :

Series I :

dim. **b** = 20.5 mm } →
dim. **c** = 26 mm } March
dim. **d** = 44.5 mm } 1968

big end bore **a** = $24 \pm \begin{matrix}0.03\\0\end{matrix}$

Series II* :

dim. **b** = 20.5 mm } ↦
dim. **c** = 26 mm } april 68
dim. **d** = 47.5 mm } to Salon 70

big end bore **a** = $24.35 \pm \begin{matrix}0.03\\0\end{matrix}$

Series III :

dim. **b** = 22.5 mm }
dim. **c** = 28 mm } XC7
dim. **d** = 47.5 mm }

big end bore **a** = 24.35

* Series II con. rods are no longer available, use a set of 4 series III rods.

CON. RODS BOLTS (h) :

Series I : M9 x 100 x 56.

Series II and III : M9 x 100 x 58, fitted without Blocfor washer since March 1966.

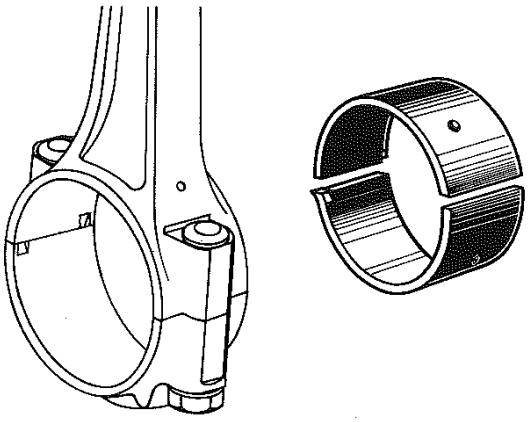
– Replace the bolts IN THE EVENT OF accidental DAMAGE to the threads.
– On engines prior to March 1976, refit NEW Blocfor washers.

CON. ROD LITTLE END BUSHES (1)

Supplied with undersize bores **(i)** (in relation to gudgeon pins). REAM TO SIZE AFTER FITTING.

	Dim. e original	Dim. e Repair	Bore Ø
Series I	24	24.3	$22{:}005 \begin{matrix}+0.015\\-0\end{matrix}$
Series II	24.4	24.7	$23{:}005 \begin{matrix}+0.013\\-0\end{matrix}$

CYLINDER-BLOCK
REMOVEABLE COMPONENTS
FLYWHEEL



CONNECTING ROD SHELLS

Steel, bearing face coated with anti-friction material.

When checking thickness, measure at middle, using a dial indicator or knife-edged vernier caliper.

There are three sets of dimensions, for regrinding the crankshaft, according to type.

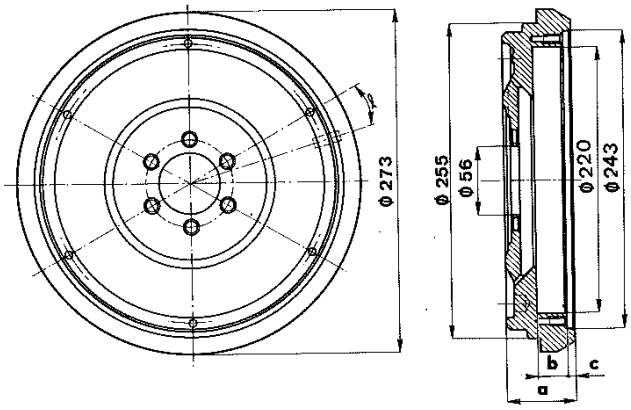
TYPES	Anti-friction surface	Width (in mm)	Dimensions	Tickness (in mm)	Equivalent crankpin ϕ	PN (in pairs)	Clearance
all 404 carburettor versions (except XC6)	Whitemetal	23.15 to 23.40	Nominal 1 st Rep (0.30) 2 nd Rep (0.50) 3 rd Rep (0.80)	1.819 to 1.825 1.969 to 1.975 2.069 to 2.075 2.219 to 2.225	49.975 to 49.991 49.675 to 49.691 49.475 to 49.491 49.175 to 49.191	0606.09 0606.10 0606.11 0606.12	0.014 0.061
404 petrol injection 404 - XC6 engine up to March 1968	Cupro lead and Lead indium	23.15 23.40	Nominal Ist Rep. (0.30) 2 nd Rep. (0.50)	1.810 to 1.819 1.960 to 1.969 2.060 to 2.069	49.975 to 49.991 49.675 to 49.691 49.475 to 49.491	0606.13 0606.27 0606.18	0.026 0.079
404 petrol injection 404 - XC6 engine Since April 1968 404 - XC7 engine	Tin/ aluminium (20 % tin)	23.15 to 23.40	Nominal 1 st Rep. (0,30) 2 nd Rep. (0.50)	1.812 to 1.818 1.962 to 1.968 2.062 to 2.068	49.975 to 49.991 49.675 to 49.691 49.475 to 49.491	0606.28 0606.29 0606.30	0.028 0.075

INTERCHANGEABILITY

1 - The whitemetal faced shells, fitted to 404 and J7, must not be fitted to a 404 with XC6 engine, 404 petrol injection or 504.

2 - The tin/aluminium faced shells can be fitted to all petrol versions of 404 not fitted with this type of shell as original equipment, PROVIDED that the mesh type of filter element is replaced with a paper element (PN 1109.10).

When stocks of 204 and 404 whitemetal faced shells are exhausted, Parts Department will only supply equivalent shells with tin/aluminium facing.



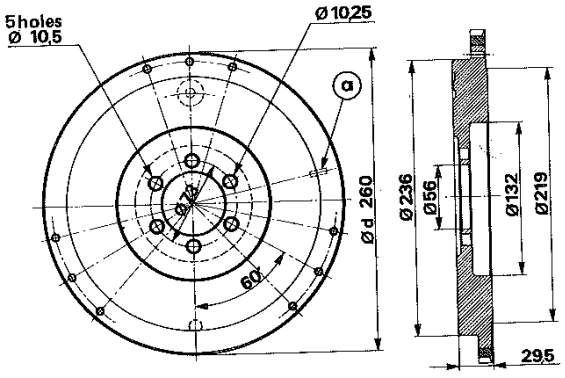
FLYWHEELS

All 404 carburettor versions with C3 gearbox :

flywheel has a notch for taking an 8 mm ϕ rod for setting static advance. The angle of location varies according to type of vehicle.

NOTE - *Parts Department will only supply a* **Series III** *flywheel with which it is ESSENTIAL to also fit a 10/10 ths thick clutchplate disc.*

	TYPE	a	b	c	α	Thickness of clutchplate disc
404 Carburettor B.V.C3	Series I	50.7	25.9	4	15°	13/10 ths
	Series II - As from : **404** - 4 014 470	50.2	25.9	3.5	12°30′	
	Series III - As from : **404**, **404 C**, **404 L**, **404 U6** } 4 104 576 since start of series	50.2	25.5	3.5	12°30′	10/10 ths



ALL VERSIONS 9CV with BA7 box :

as from serial numbers :

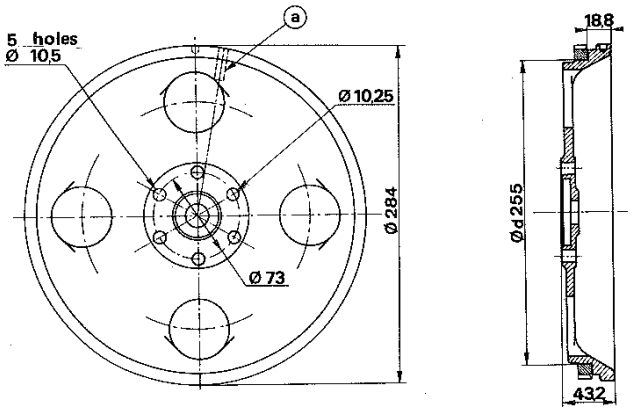
404 (TW)	- 5 085 001	**404 L (TW)**	- 4 941 601
404 (TH)	- 5 415 001	**404 L (TH)**	- 6 826 001
404/8	- 6 900 001	**404 U6**	- 4 774 001
404 KF	- 8 243 001	**404 U8**	- 7 010 001
404 C	- 4 670 201	**404 U10**	- 7 060 001
404 CKF	- 6 801 501		

a) timing notch.

CYLINDER-BLOCK

REMOVEABLE COMPONENTS

FLYWHEEL

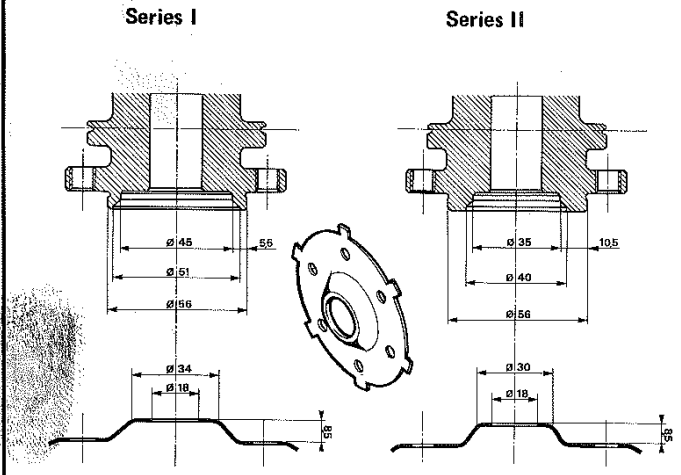


FLYWHEEL for JAEGAR type ELECTRO-MAGNETIC CLUTCH system :

– Secured to the crankshaft with the convertor support plate.

– The bolts are secured with a tab type locking disc.

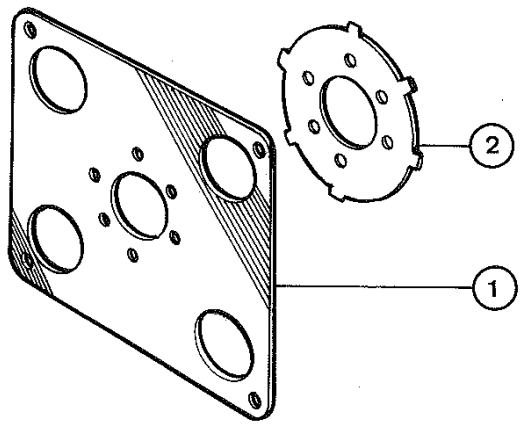
a) notch for setting static advance.



FLYWHEEL BOLT LOCKING PLATES :

A) MANUAL GEARBOX :

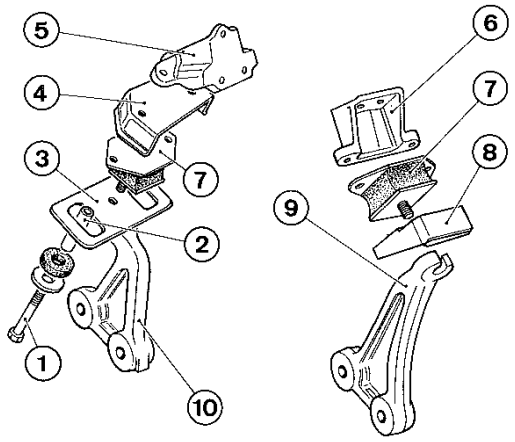
– use in EVERY CASE a **Series II** locking plate (the reverse is not permissable).



B) AUTOMATIC TRANSMISSION :

(1) convertor support plate.

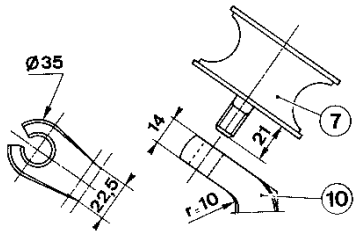
(2) bolt locking plate.

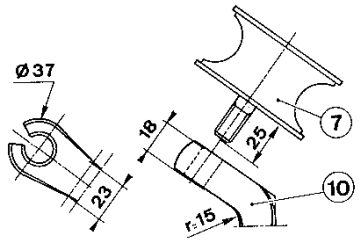


ENGINE FRONT MOUNTING

Description
1 - Bolt, 8 x 75 mm.
2 - Spacer, 8.5 x 12 x 42.5 mm.
3 - Stop plate.
4 - Heat deflector.
5 - RH intermediate bracket
6 - LH intermediate bracket { Series I / Series II
7 - Flexible pad.
8 - Stop plate to LH side.
9 - Front LH bracket.
10 - Front RH bracket.

* The replacement of a "Series I" LH intermediate bracket by a "Series II" bracket requires the use of an 8 x 25 in place of an 8 x 20 mm bolt (thickness of soleplate, engine side, 10.8 in place of 8 mm).





FLEXIBLE PADS AND MOUNTING BRACKETS

Series I - Up to serial numbers :

404 - **4 149 980**
404 J - 4 505 163

7 - Front flexible pad
- compressibility : 38 kg/mm
- stud length : 21 mm

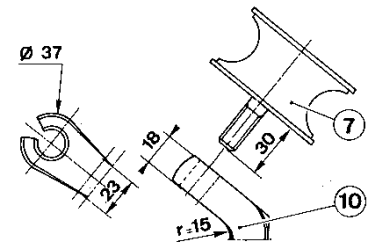
9 - Front LH bracket -
10 - Front RH bracket -
- thickness of each bracket : 14 mm.

Series II

404 - from 4 149 981 to 4 232 416
404 J - from 4 505 164 to 4 506 674
404 U6 - up to 4 700 608

7 - Front flexible pad
- compressibility : 38 kg/mm
- stud length : 25 mm

9 - Front LH bracket -
10 - Front RH bracket -
- thickness of each bracket : 18 mm.



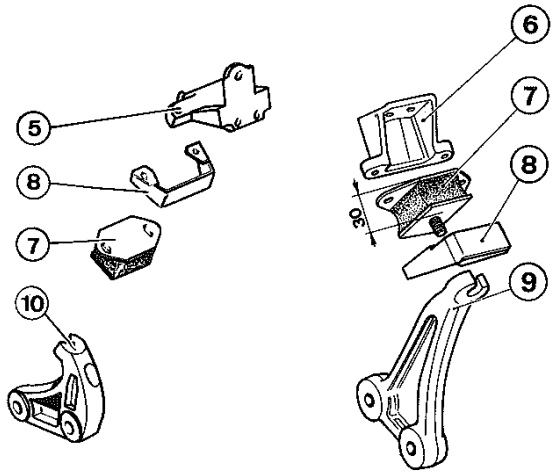
Series III

404 - from 4 232 417 to 5 604 883
404 J - from 4 506 675 to 4 537 191
404 U6 - from 4 700 609 to 4 792 947
up to numbers :
404 ZF - 8 226 769
404 L (TW) - 4 943 876
404 L (TH) - 6 876 640
404 U8 - 7 025 547
404 U10 - 7 143 736
404 KF, **404/8**, **404 C**, **404 CKF** - from start to finish of the series.

7 - Front flexible pad
- compressibility : 45 kg/mm
- stud length : 30 mm

10 - Front brackets as for Series II.

CYLINDER-BLOCK
REMOVEABLE COMPONENTS
FLYWHEEL



Series IV -

As from serial numbers :

404	- 5 604 884
404 ZF	- 8 226 770
404 L (TW)	- 4 943 877
404 L (TH)	- 6 876 641
404 U6	- 4 792 948
404 U8	- 7 025 548
404 U10	- 7 143 737

5 - RH intermediate bracket, see page C1.019.

6 - LH intermediate bracket, see page C1.019

7 - Front flexible pad :

- compressibility	: 58 kg/mm
- stud length	: 31 mm
- height	: 30 mm instead of 36 mm

8 - Safety stop

9 - Front LH bracket : (unchanged)

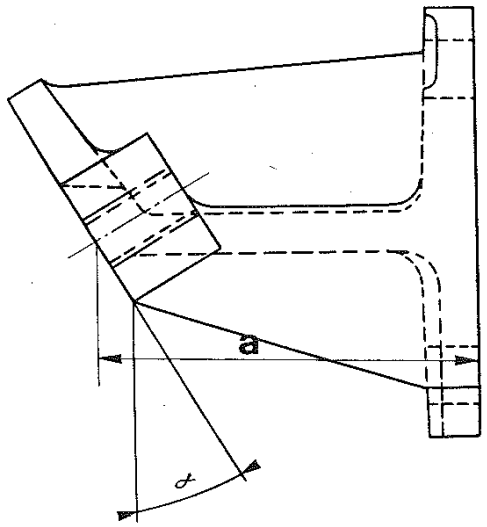
10 - Front RH bracket : (unchanged)

INTERCHANGEABILITY

The Series I flexible pads can be replaced by either Series II or III pads, provided that pads with the same index of compressibility are fitted to each side of the engine.

Likewise, the Series I front bracket **(10)** can be replaced by a Series II provided that 2 brackets of the same thickness are fitted to each side of the engine.

The Series II brackets are not interchangeable with the preceding brackets.

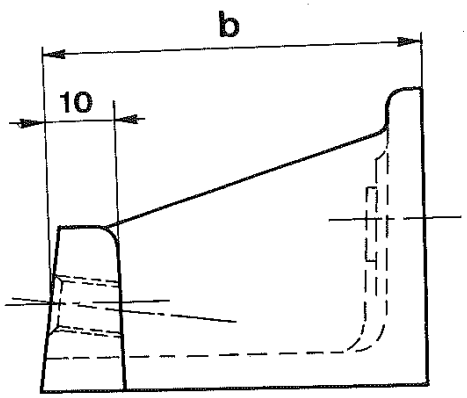


RH INTERMEDIATE BRACKET

SERIES	Dim. a	α
I →| August 1967	54	31°
II ↦ →| September 67 May 1970	57	20°30'
III June 1970	66.5	20°30'

α = angle formed by the 2 pressure faces.

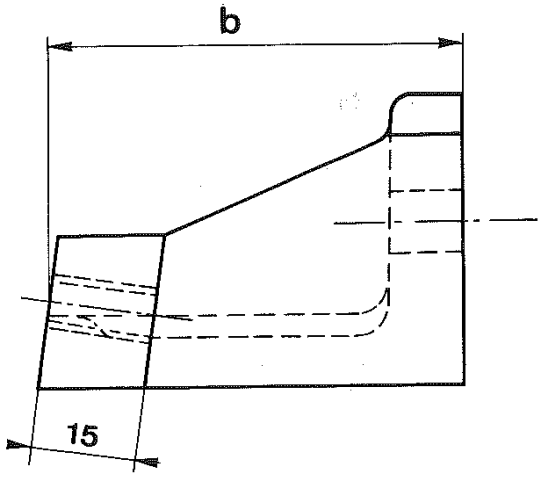
INTERCHANGEABILITY - The 3 different brackets are not interchangeable.



LH INTERMEDIATE BRACKET

Series I →| December 1969.

Dim. **b** = 55 mm.



Series II :

↦ January 1970 →| May 1971

dim. **b** = 55 mm.

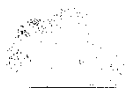
Series III :

↦ June 1971

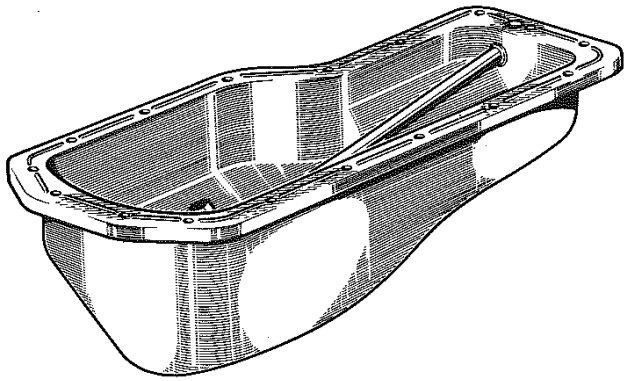
dim. **b** = 60 mm.

INTERCHANGEABILITY - A series I bracket can be replaced with a Series II by using 8 x 25 bolts in place of 8 x 20.

– The series III bracket is NOT interchangeable with the preceding brackets.



SUMP
IDENTIFICATION

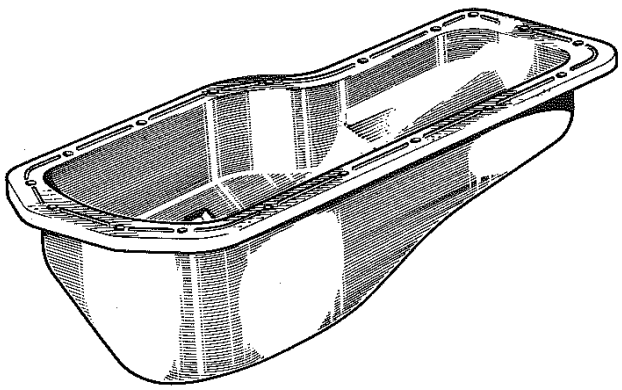


Series I - All versions

Up to serial numbers :

404 (TW)	- 5 086 723	**404 U6**	- 4 775 149
404 (TH)	- 5 427 044	**404 U6A(USA)**	- 1 932 740
404 USA	- 8 325 554	**404 U8**	- 7 011 724
404 ZF	- 8 256 940	**404 U10**	- 7 062 036
404 ZF USA	- 8 328 072		
404 C	- 4 670 288		
404/8	- 4 670 288		
404 L (TW)	- 4 941 705		
404 L (TH)	- 6 828 147		

— Sump secured by 17 bolts and nuts.



Series II - All versions

From and up to the following serial numbers :

404	- 5 593 406	**404 U6**	- 4 791 803
404 ZF	- 8 265 752	**404 U8**	- 7 024 499
404 L (TW)	- 4 943 660		
404 L (TH)	- 6 871 596	**404 U10**	- 7 139 206

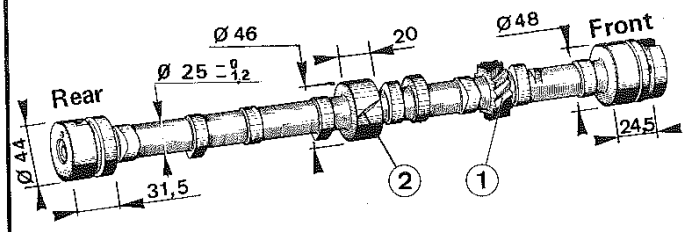
404 (TW) - 404 USA - 404 ZF USA - 404/8 - 404 U6A - 404 U6A ZF - up to end of series.

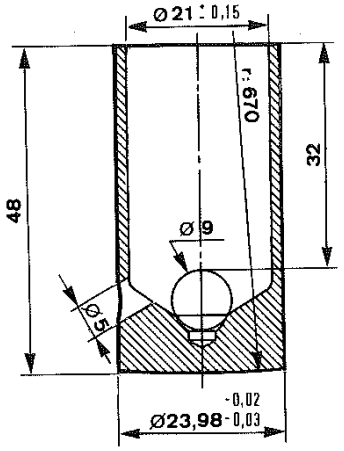
— Oil sump, without oil return pipe, has 1 additional fixing hole.

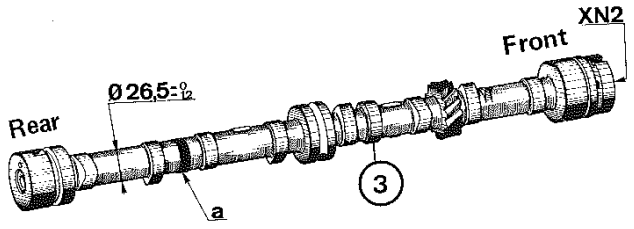
INTERCHANGEABILITY

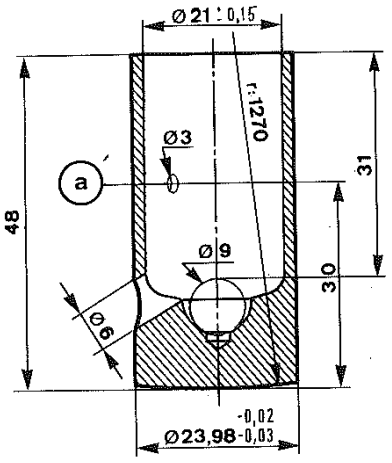
A series II sump is not interchangeable with a series I.

PEUGEOT









CAMSHAFTS

Series 1 : → 01 - 1968 :

- Cam width : 10 mm
- Cam lift :

  INLET : 34.86

  EXHAUST : 34.92

- Oil pump drive pinion **(1)** : 14 tooth
- 3 diagonal oil grooves **(2)** in centre journal
- LATERAL CLERANCE : from 0.05 to 0.011 mm.

TAPPET	Standard	Repair
Bore Ø in block	24 to 24.03 mm	24.20 to 24.23
Outside diameter of tappet	23.95 to 23.96 mm	24.15 to 24.16

This component is no longer supplied by Parts Department. For replacement, use a special camshaft marked «XN2» which incorporates an excentric for driving the fuel pump, machined to 34.6 Ø.

REPLACE THE 8 TAPPETS with those from **SERIES 3** :

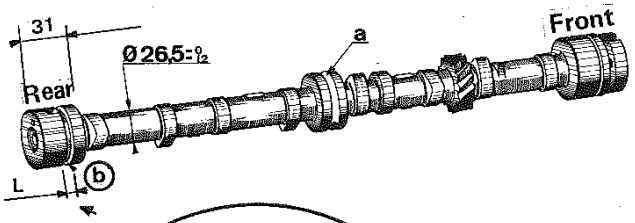
- oil return orifice : 6 mm Ø inplace of 5
- vent hole **(a)** 3 mm Ø.

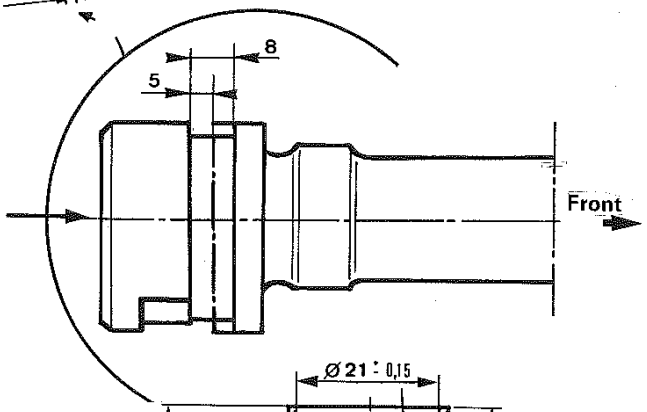
N.B. - *If the CYLINDER HEAD FACE IS RE-GROUND, use series 1 tappets, so as to increase the margin of adjustement for the rocker screws.*

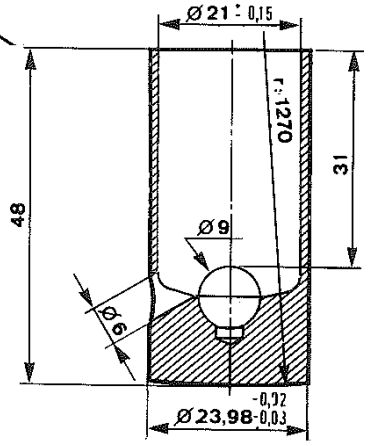
PEUGEOT

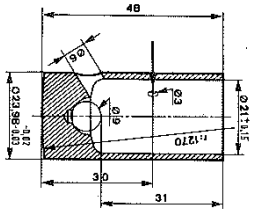
TIMING

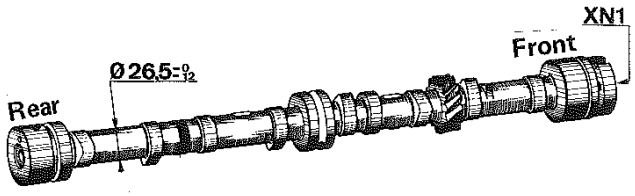
IDENTIFICATION - DÉTAILS











CAMSHAFT

Series 2 : ↦ 09/67 ↤ 07/70

- diameter of journals REDUCED by 0.02 mm
- RUNNING CLEARANCE, 0.07 to 0.013 mm
- CAM PROFILE MODIFIED, cam moved rearwards 1.4 mm.
- Cam lift
  INLET : 35.76
  EXHAUST : 35.69

(a)↦07/69 : circular GROOVE in place of 3 diagonal grooves

(b) STANDARD width of groove : 5 mm to be CHECKED after dismantling ; if dimension L = 8, INCREASE the width of the groove in the NEW CAMSHAFT, by machining the FRONT side of the groove : ENSURE that any burrs are carefully removed.

DETAILS OF CORRESPONDING TAPPETS :
Tappets similar to the preceding, except for :

- radius at base of cavity, 1270 mm in place of 670.
- diameter of lubrication hole : 6 mm in place of 5 mm.
- dimension for checking with à 9 mm Ø ball : 31 mm in place of 32 mm.
- fit to cylinder block : **same as for Series 1.**

INTERCHANGEABILITY - This component is NO LONGER supplied by Parts Department.

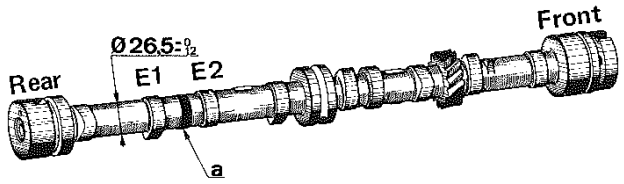
On vehicles subsequent to the following serial numbers :

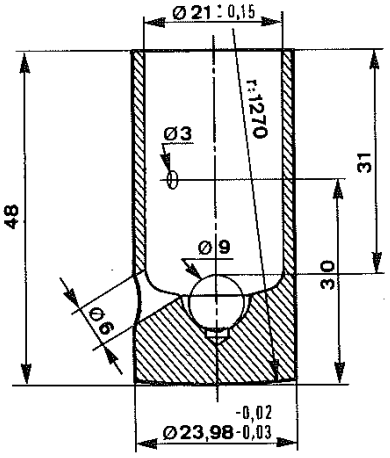
XC5 TW	- 5 071 767	**404 LTH**	- 4 882 647
XC5 TH	- 5 308 610	**L XC6 TW**	- 4 941 706
XC6 TW	- 5 086 724	**LTH**	- 6 828 148
XC6 TH	- 5 427 045	**U6**	- 4 775 150
	- 8 256 941	**U6A**	- 1 932 741
US	- 8 325 555		- 7 100 377
	- 8 328 073	**U8**	- 7 011 725
404 8	- 6 900 832	**U10**	- 7 062 037
404 C	- 4 670 289		
L XC5 TW	7 000 219		

For **replacement** use a «Series 3» **camshaft and corresponding tappets**. (If the cylinder head face is reground, see special conditions, page E1.001).

IDENTIFICATION

Originally camshafts were marked «XN1», this was later superceded by a «flash» of green paint.





CAMSHAFT

Serie 3 : XC7 → Salon 75

with «slow lift» profile and annular groove **(a)** between «EXHAUST» cams **1** and **2**.

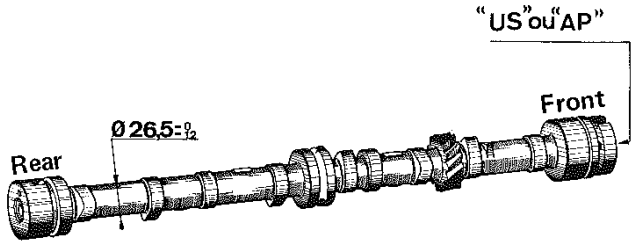
– CAM LIFT : 36.26.

– NO marking stamped on front end.

– «Flash» of GREEN paint as identification.

TAPPETS : Similar to the preceding tappets but of higher grade material.

This sub-assembly must be used for ALL replacements on 404 carburettor versions produced since January 1968. (for commencing serial numbers, see preceding section).



404 USA Station Wagon (with XM engine).

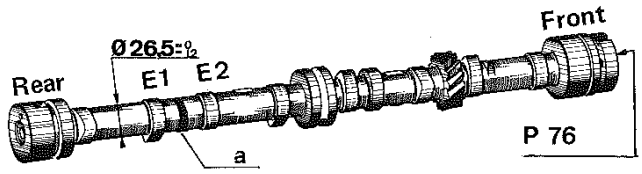
As from serial numbers :

404 U6S : 7 160 001 **404 U6S-ZF** : 7 162 001

IDENTIFICATION

Marked («US» with 3 mm letters.

N.B. - *Since nomvember 1970, cam width of 11.4 mm in place of 10 mm.*



CAM LIFT

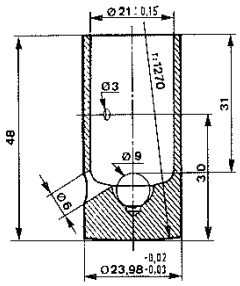
INLET - EXHAUST = 36.85 mm

XC7 «EUROPE II» CAMSHAFT → Salon 75.

STAMPED «P76».

– "flash" of PINK paint ; «OPTIMUM» cam profile ; annular groove **(a)** between 1 and 2 «EXHAUST» cams.

THESE TWO CAMSHAFTS ARE NOT INTERCHANGEABLE WITH EACH OTHER, OR WITH PRECEDING CAMSHAFTS.

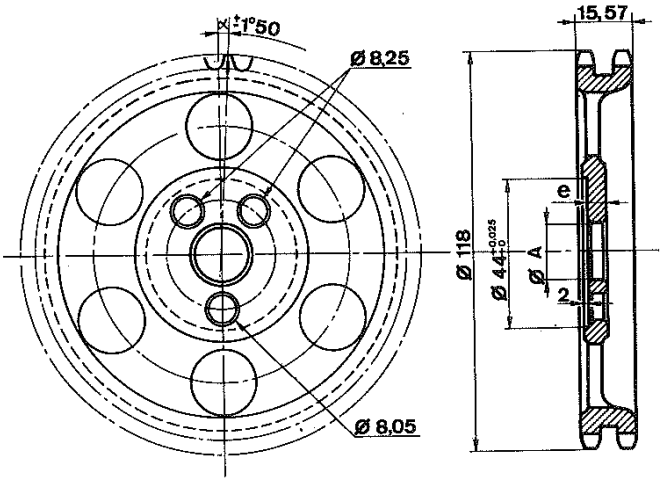


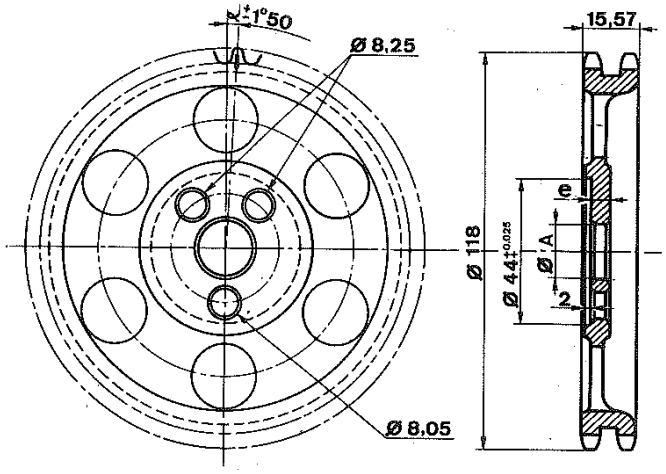
TAPPETS : USE SERIES 3 TAPPETS IN EVERY CASE.

PEUGEOT

TIMING

IDENTIFICATION - DETAILS





CAMSHAFT DRIVE SPROCKET :

ASSIGNMENT TABLE

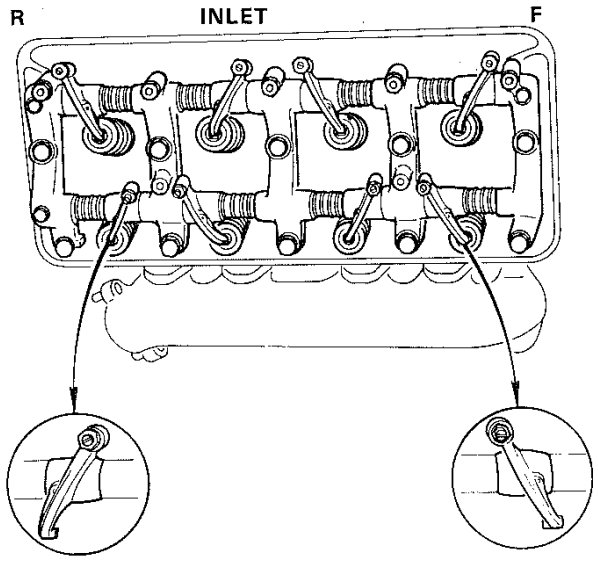
SPROCKET	α	e	Ø A	Engines
ORIGINAL FITMENT	1°50′	5	16.25	All 8 and 9 CV versions
				Marking : YELLOW
	3°20′	5	17	XC7 ↦ Salon 70 ⇥ Salon 75
				Marking : WHITE
FIT IN REPLACEMENT	3°05′	4.8	17	All 8 and 9 CV versions ⇥ Salon 75
				Marking : BLUE :
	3°54′	5	17	On XC7* ↦ Salon 75
				Marking : BLACK

α = marking of offset in relation to the axis of the 3 fixing holes.

e = thickness of sprocket hub.

Ø A = size of centre bore

* = use either an original or remplacement sprocket.



Rocker assembly common to all types of 404, consisting of :

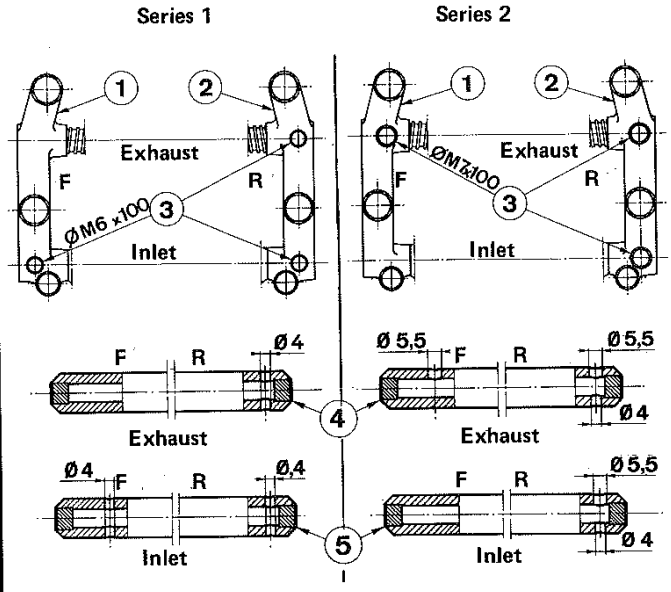
- 5 cast iron mounting brackets, the centre bracket is unique, the 2 intermediate brackets are identical, whilst the 2 outer brackets differ due to the position of the fixing bolts for the rocker shafts.
- 2 16 mm Ø x 442 mm long rocker shafts, which also act as lubrication tubes for the rockers. These 2 shafts differ due to the position ot the lubrication holes.
- 8 drop-forged steel rockers, with slight hardening of the rocker faces. There are 2 kinds of identical rockers,
  - Inlet 1 - 3 and Exhaust 2 - 4 identical
  - Inlet 2 - 4 and Exhaust 1 - 3 identical
- 8 identical valve springs (2 versions - 1 - free length L : 46 mm. 2 - free length L : 51 mm.
- Mounting with the 10 cylinder head screws and 5 bolts on inlet side.

FRONT AND REAR BRACKETS - ROCKER SHAFTS

Since april 1961, as from serial numbers :

404 (LHD) - 4 072 800
404 (RHD) - 4 071 625
404 J - 4 502 800
404 USA - 4 071 515

and since the start of other 404 models : the front and rear brackets and the shafts have been modified with the object of preventing incorrect assembly of the shafts, which MUST be fitted with the lubrification holes pointing towards the centre line of the cylinder head.



(1) FRONT BRACKET
(2) REAR BRACKET
(3) BOLT FOR POSITIONING SHAFT
(4) SHAFT, exhaust side
(5) SHAFT, inlet side

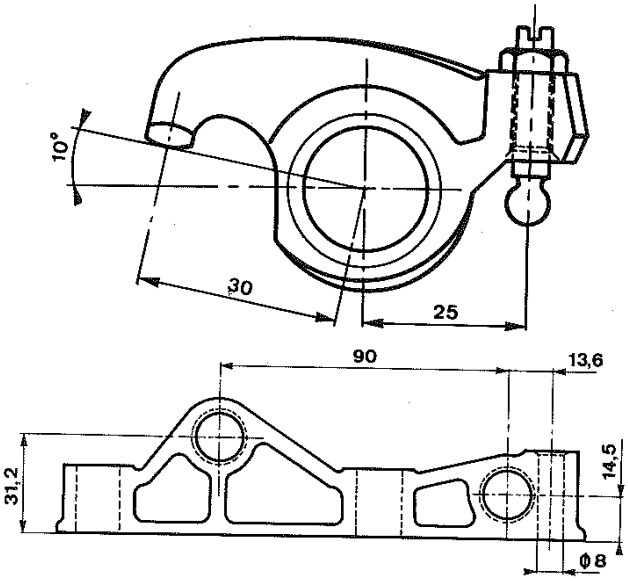
INTERCHANGEABILITY

Series 1 and 2 parts are not separately interchangeable, but the rocker assembly complete with Series 2 shafts and brackets can be fitted to 404 engines produced prior to the foregoing modification.

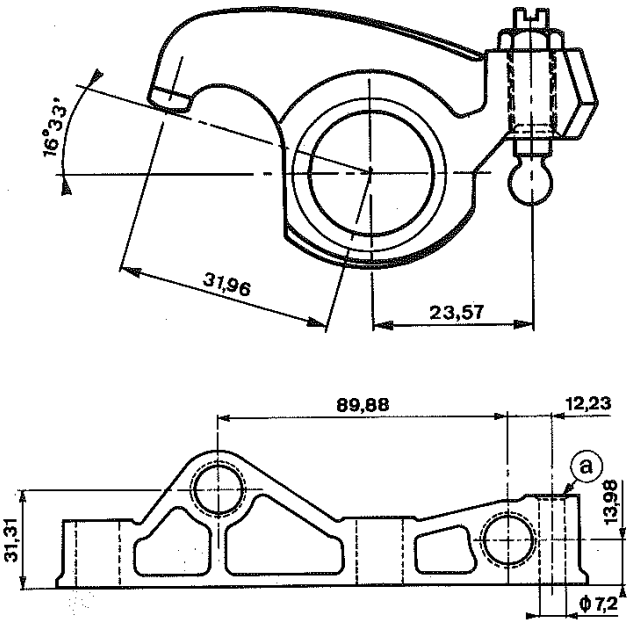
TIMING

IDENTIFICATION - DETAILS

404 Series 1 and 2 rocker Assembly).



404 Series 3 rocker assembly (standardised with 504).



ROCKERS

— **404 - Series 3**

↦ September 1967

As from serial numbers :

XC5	- K 58 708 A	**XC5P**	- K 54 455 J
XC-KF2	- K 62 172 B	**XC6**	- K 44 181 L
XB5	- K 62 355 C	**XC6-ZF**	- K 38 774 M
XB5P	- K 62 109 H		

the 404 petrol versions rockers assembly is standardized with that of the 504, all versions, hence the rockers and brackets are modified :

— Rockers : axial ratio of 1.33/1 in place of 1.20/1.

— Brackets : shaft bores repositioned due to modification of the rockers.

In addition, the dowel pin hole on the inlet side, **(a)** is 7.2 mm Ø in place of 8 mm.

INTERCHANGEABILITY

Neither the rocker assemblies complete or the rockers and brackets are interchangeable.

SOLEX CARBURETTORS

SOLEX carburettors have a number marked on the choke control lever or on the choke flap, or a metal tag secured to the underneath of the float chamber by one of the assembly screws.

FITTING TABLE	MARK	TYPE DE CARBURETTOR	TYPE OF VEHICLE	STEERING
32 PBICA **404/9 CV (XC and XC5/72 hp engines)** Up to july 1974. **404/8 CV (XB2 and XB5 engines)** Since start of series (jointly with ZENITH 34 WIM carburettor).	**3**	32 PBICA	404/9 CV - 72 hp	LH
	4	32 PBICA	404/9 CV - 72 hp	RH
	7	32 PBICA	404/8 CV - U6 and U8	LH
	8	32 PBICA	404/8 CV - U6	RH
34 PBICA **404/9 CV (XC5/76 hp engine)** From july 1974 to september 1965	**13**	34 PBICA and CA2	404/9 CV - 76 hp and U10	LH
	14	34 PBICA and CA2	404/9 CV - 76 hp and U 10	RH
34 PBICA-2 **404/9 CV (XC5/76 hp engine)** From september 1965 to july 1967	**19**	34 PBICA3	404/9 CV (XC6)	LH
	20	34 PBICA3	404/9 CV (XC6)	RH
	21	34 PBICA3	404 ZF	LH
	22	34 PBICA3	404 ZF	RH
34 PBICA-3 **404/9 CV (XC6/80 hp engine)** From july 1967 to july 1970	**31**	34 PBICA4	404 A U6A	LH
	32	34 PBICA4	404 A.ZF	LH
34 PBICA-4 Econostat type **404/9 CV USA (XC6/80 hp engine)** Since july 1967	**55**	34 PBICA9	404/9 CV (XC7) F + AS	L or RH
	64	34 PBICA9	404 ZF/9 CV (XC7)	L or RH
34 PBICA-9 **404/9 CV (XC7 engine)** Since july 1970	**75**	34 PBICA9	404/9 CV XC7/8,3 - AS	
	155	34 BICSA3	404/U10 9 CV - F	
34 BICSA-3 - EUROPE II **404 U10/9 CV (XC7/F engine)** Since july 1975	**174**	34 PBICA9	404 XC7 - AS76	

F = «FRANCE» → Salon 75

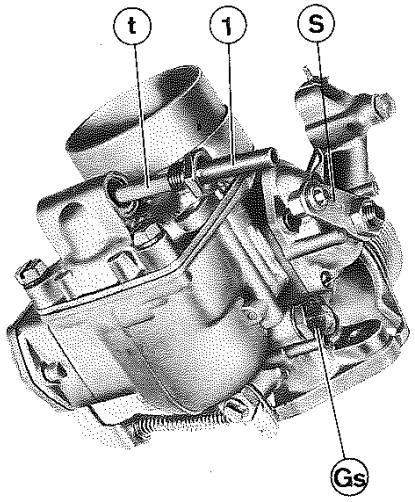
AS = 404 U10 «SOUTH AFRICA» ⟶ Salon 75

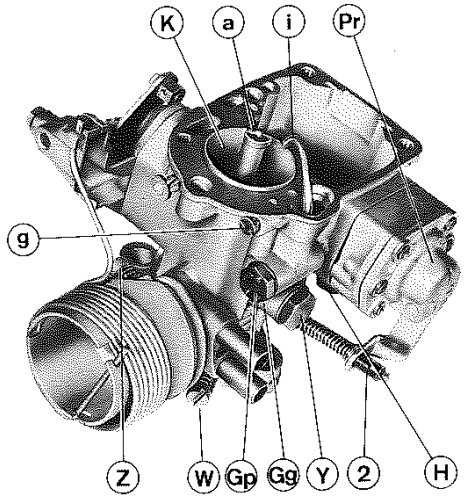
AS76 = 404 U10 «SOUTH AFRICA» ⟼ Salon 75

PEUGEOT

CARBURATION

CARBURETTORS - IDENTIFICATION





SOLEX 34 PBICA ..... CARBURETTOR

DETAILS

1 - Fuel intake union

2 - Accelerating pump adjustment nut.

a - Correction jet

Gg - Maintjet, screwed into holder **(Y)**

Gp - Pump jet

Gs - Choke fuel jet

g - Pilot jet

H - Accelerating pump valve and filter

i - Pump injector, with paper gasket

K - Venturi

Pr - Accelerating pump

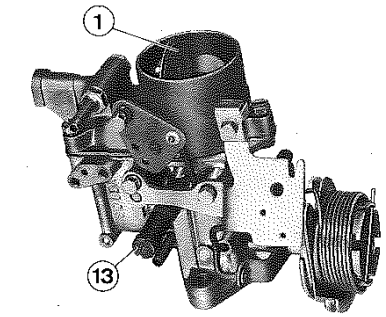
S - Choke flap lever

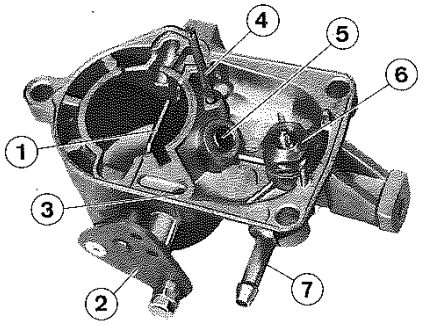
t - Prefilter

W - Mixture screw

Y - Main jet **(Gg)** holder

Z - Throttle stop screw





SOLEX 34 BISCA 3 CARBURETTOR

DESCRIPTION

A) FLOAT CHAMBER COVER :

1 - Choke

2 - Throttle lever, comprising :
- **a** - fixing point for throttle link
- **b** - holes for positionning of flap
- **c** - cable clamp

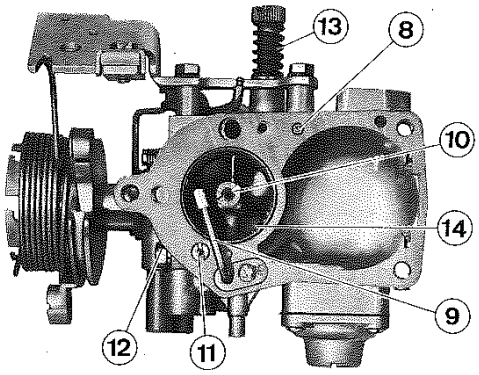
3 - Constant CO circuit air jet

4 - Econostat

5 - Float chamber vent

6 - Ball type needle valve

7 - Fuel intake union



B) THROTTLE BODY

8 - Constant CO fuel jet

9 - Pump injector

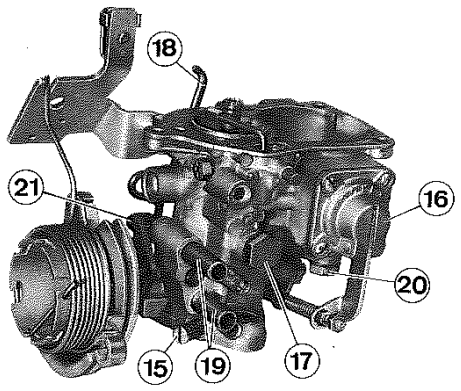
10 - Correction jet

11 - Idling circuit bleed jet

12 - Idling jet

13 - Constant CO circuit pilot screw

14 - Removeable ventury



15 - Mixture screw

16 - Diaphram type accelerating pump

17 - Main jet holder

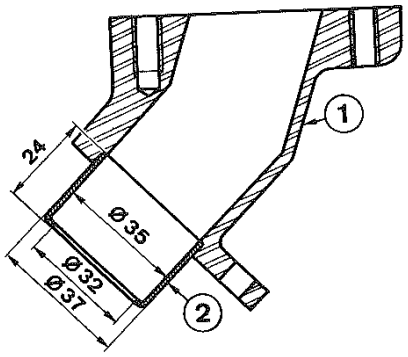
18 - Connecting link choke/throttle

19 - Preheat water union

20 - Ball seat of accelerating circuit

21 - Throttle stop screw

CARBURATION
INLET MANIFOLD IDENTIFICATION



1 - Manifold
2 - Diffuser

Series 1

404/8 CV XB5 or XB2 engine.

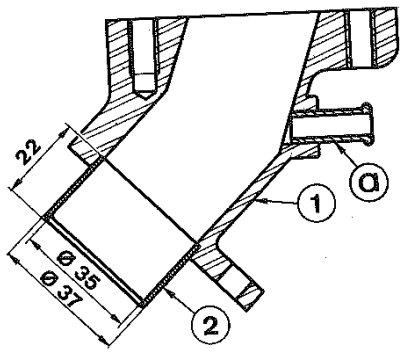
404/9 CV XC or XC5 (72 bhp) engine

Up to serial numbers :

404	- 5 046 809	**404 L**	- 4 851 595
404 J	- 4 529 913	**404 U6**	- 4 754 946
404 C	- 4 497 655		

– Light alloy inlet manifold

– Diffuser as specified for type 32 carburettors.



1 - Manifold
2 - Alignment collar

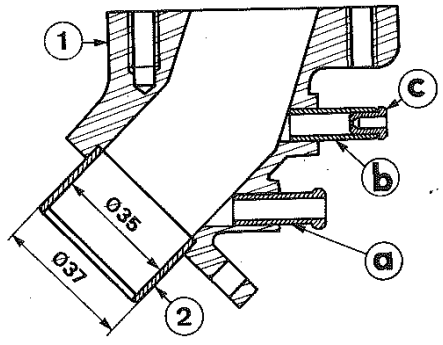
Series 2

404/9 CV XC5 (76 bhp) engine

404 TW	- from 5 046 810 to 5 064 050
404 TH	- from 5 100 001 to 5 233 668
404 J	- from 4 529 914 to 4 536 573
404 C	- from 4 498 001 to 4 498 875
404 L (TW)	- from 4 851 595 to 4 896 959
404 L (TH)	- from 4 855 213 to 4 870 396
404 Estate	- from 4 855 001 to 4 870 536

– Inlet manifold with vacuum tapping **(a)** for vehicles equipped with servo brakes.

– Alignment collar for type 34 carburettor.



1 { - Manifold with jet **(c)**
- Lanifold without jet

2 { - 404/8 CV : diffuser
- 404/9 CV : alignment collar

Series 3

404/8 and 9 CV with crankcase rebreathing

As from serial numbers :

404 (TW)	- 5 064 051	**404 L (TW)**	- 4 896 960
404 (TH)	- 5 233 669	**404 L (TH)**	- 4 870 397
404/8	- 6 900 001	**404 Estate**	- 4 870 537
404 J	- 4 536 574	**404 U6**	- 4 754 947
404 ZF	- 8 250 001	**404 U8**	- 7 010 001
404 C	- 4 498 876	**404 U10**	- 7 060 001

Inlet manifold with :

– vacuum tapping **(a)**

– tapping for crankcase rebreathing hose **(b)**

*– rebreating jet **(c)** 1.5

* except engines which have an oil bath type air filter

PEUGEOT

PEUGEOT

TYPES	404/8 CV and Derives	404/9 CV and Derivatives										
ENGINES	XB2 XB5	XC (start of series)	XC (1) XC5/72 CV	XC5/76 bhp		XC6/80 bhp		XC7	XC7-ZF	XC7/ c/r 8,3	XC7 - AS	XC7 - 76
CARBURETTORS	32 PBICA	32 PBICA	32 PBICA	34 PBICA (2)	34 PBICA2 (3)	34 PBICA3 (4)	34 PBICA4 (5)	34 PBICA9 (6)	34 PBICA9 (7)	34 PBICA9 (8)	34 PBICA9 (9)	34 BICSA3 (10)
– Venturi	24	25		26		26		26		26	26	26
– Main jet	122.5	130		137.5		137.5	135	135	132.5	137.5	132.5±2.5	137.5
– Correction jet	175	160	170	170		160	205	150		160	160±5	170
– Emulsion tube	19	19		28		28	17	28	130	28	130	S138
– Idling jet	50	55	50	45		45	50	45		45	45±5	45
– Idling bleed jet	210* (10)	150*	220*	210*		210*		210 inside venturi		210 under boul	Ø 2.1	
– Pump jet	45	45		45		45		50		45		
– Pump injector	50	50		50		50	40	50		50	50	50 ± 10
– Throttle opening at end of pump stroke	3 mm	3 mm		3 mm		3 mm		3,5 mm		3 mm holes	3 mm holes	4 mm holes
– By-pass								2 holes, 130 and 120 Ø		1.3 and 1.2	1.3 and 1.2	1.1 Ø
– Econostat							90					
– Enricher												
– Choke fuel jet	105	110		110	160	160		160		160		
– Choke air jet	5.5	6.5		6.5								
– Vacuum jet							45					
– Needle (attached, except (10)	1.70	1.70		1.70		1.70		1.70		1.70	1.7	1.7 (ball type)
– Float (weight)	5.7 g	5.7 g		5.7 g		5.7 g		5.7 g		5.7 g	5.7 g	5.7 g
– Float chamber air vent												Ø 8
– Constant CO jet												30
– Constant CO air bleed												210 ± 10
– Idling bleed jet												190 ± 10

* Under the venturi

1) - Setting altered for XC engine in july 1960

2) - 34 PBICA, on XC5/76 bhp engine as from july 1964

3) - 34 PBICA-2, since september 1965

4) - 34 PBICA-3 for XC6 engine since july 1966

5) - 34 PBICA-4 «econostat» model on XC6 antipollution engine for 404 USA, since july 1967

6) - 34 PBICA-9 on XC7 engine since july 1970

7) - 34 PBICA-9 which differs by the addition of a ball type needle for manual-transmission vehicles.

8) - 34 PBICA-9, marked 75, on 404 «SOUTH AFRICA» → Salon 75

9) - 34 PBICA-9, marked 174, on XC7 c/r 8.8 and 7.6, «SOUTH AFRICA» → Salon 75, manual gearbox

10) - 34 BICSA3, marked 155 on XC7 → Salon 75

CARBURATION

SOLEX CARBURETTOR SETTINGS

F 1 001

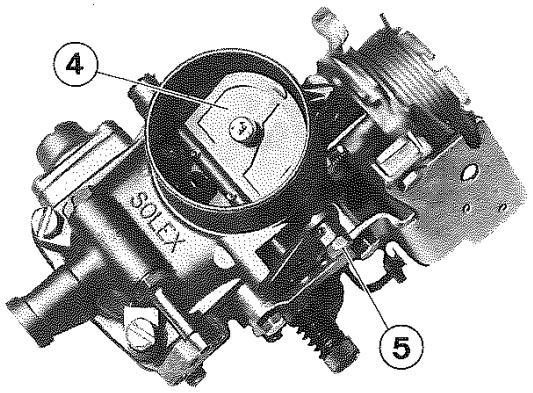
CARBURATION

ZENITH 34 WIM CARBURETTOR SETTING

SETTINGS	
Venturi	26
Main jet	135
Emulsion air	100
Idling mixture jet	65
Idling air bleed jet	150
Accelerating pump jet	50
Needle valve	1.75

ZENITH 34 WIM CARBURETTOR

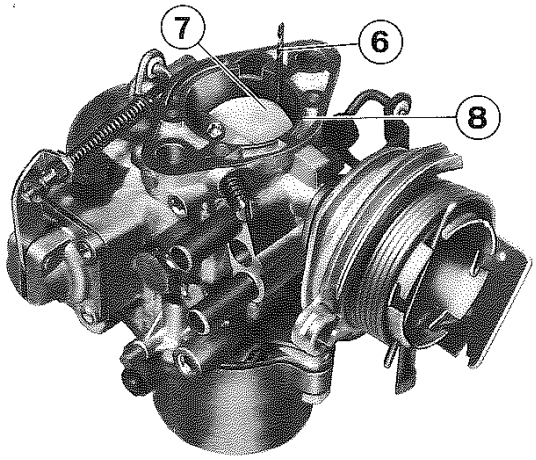
This carburettor is fitted to the 8 CV engines (XB2 and B5) in addition to the SOLEX 32 PBICA.



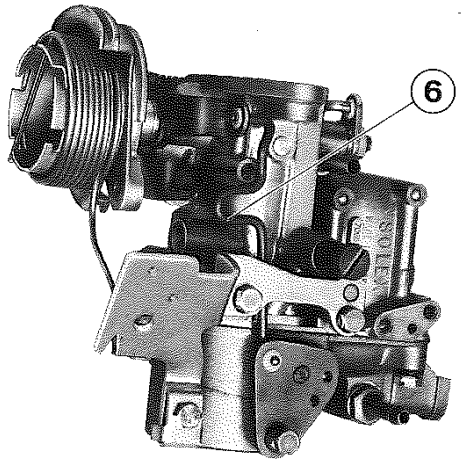
CHOKE :

– ADJUSTMENT OF POSITIVE OPENING POSITION OF THROTTLE

– Completely shut the choke flap **(4)** by acting on the control **(5)**



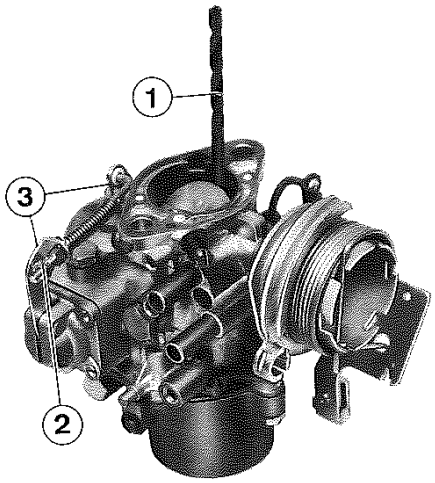
– In this position the throttle flap **(7)** should be sufficiently open to accept a 1.1 ± 0.1 Ø rod **(6)** – between one side of the throttle flap **(7)** and barrel **(8).**



If necessary, adjust the throttle flap opening **(6)** by BENDING the link **(9).**

CARBURATION

CARBURETTOR OVERHAUL



ACCELERATING PUMP STROKE ADJUSTMENT

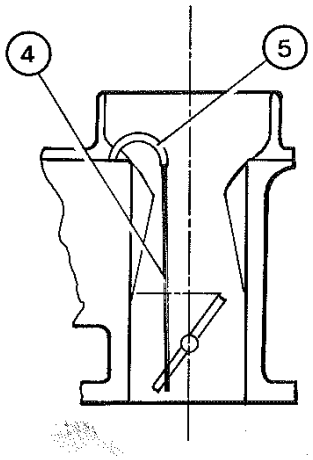
– Introduce a rod **(1)** (silver steel or twist drill shank), of a given diameter, as shown opposite :

3 mm for : 32 PBICA 2, 3 and 4
Marked - 3 - 4 - 7 - 8 - 13 - 14 - 19 - 20 - 21 - 22 - 31 and 32.

3.5 mm for : 34 PBICA 9
Marked : 55 - 64 - 75 - 174

4 mm for : 34 BICSA 3
Marked : 155

– Unscrew the nut **(2)** several turns and then screw down until it just makes contact with the lever **(3)**.

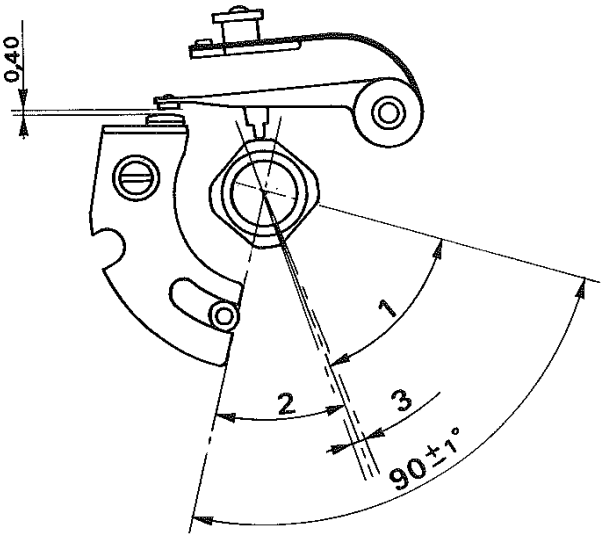


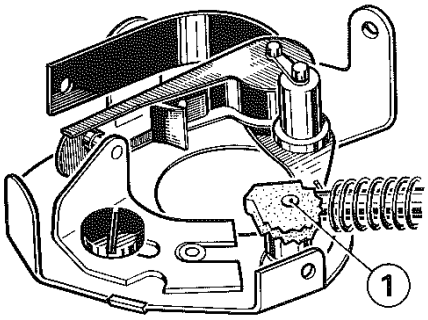
ACCELERATING PUMP INJECTOR

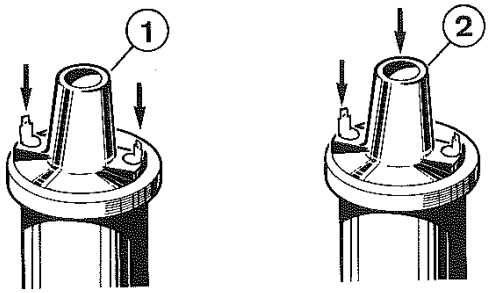
– Check direction of spray :

- Ensure that the direction of spraying **(4)** is parallel with the axis of the venturi bore
- If necessary, correct by slightly bending the injector nozzle **(5)**.

(If badly out of position or loose REPLACE the injector).







DISTRIBUTOR

DWELL (angle) 57° ± 2° (corresponding to a contact breaker gap of, 0.40 mm.

(total dwell = 63 % ± 3 % of one complete revolution)

Capacitor : 0.2 to 0.3 mfd.

1 - Angle of closure (dwell)

2 - Angle during opening

3 - Tolerance

N.B - *With distributors which have vacuum correction, check the dwell.*

1 - with capsule at atmospheric pressure.

2 - with capsule at a vacuum of 300 m/Hg.

The dwell (angle) in both cases should be the same. If necessary, adjust by means of the click wheel **(1)**.

COIL (Check)

— **Check :**

- if the coil is correctly connected
  - wire n° 2 to connection «BOB» or + wire 2,
  - connection «RUP» or-terminal to distributor.
- free from bruises and/or leaks.
- primary resistance : approx. 3 Ω **(1)**.
- continuity of secondary, by ohmeter **(2)**.

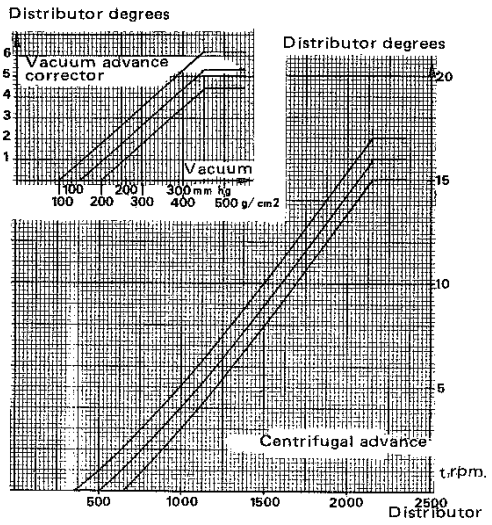
— **Check :**

- If necessary, check functioning of the coil with a spark tester,
  spark gap : 9 ± 1 mm (take care not to exceed this measurement : risk of damaging the coil) correctly adjusted, check sparking for continuity.

A defective coil produces irregular sparking.

PEUGEOT

ENGINE
IGNITION
CHECKING - ADJUSTING



ADVANCE CURVES

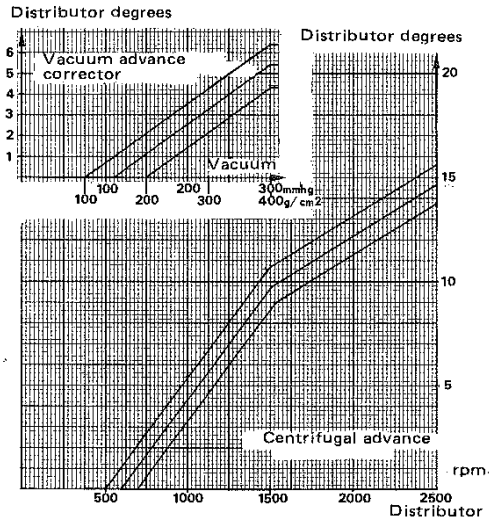
DISTRIBUTOR :

Make : SEV or Ducellier
Type : XC1

Up to serial numbers :

404 (TW)	- 5 059 198	**404 L (TH)**	- 4 861 692
404 (TH)	- 5 172 938	**404 U6**	- 4 747 721
404 J	- 4 535 724	**404 L Estate**	- 4 861 962
404 L (TW)	- 4 895 262	**404 C**	- 4 498 566

If replacing, fit a type M48 distributor.



DISTRIBUTOR

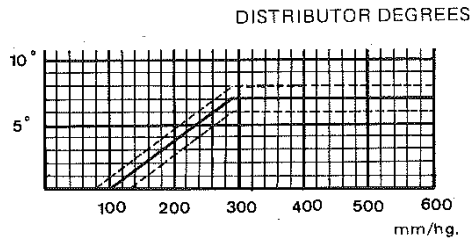
Make : SEV or Ducellier
Type : M48

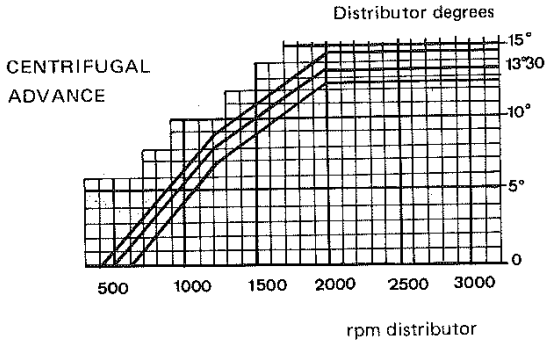
From serial numbers :

404 (TW)	- 5 059 199	**404 L (TH)**	- 4 861 693
404 (TH)	- 5 172 939	**404 U6**	- 4 747 722
404 J	- 4 535 725	**404 Estate**	- 4 861 963
404 L (TW)	- 4 895 263	**404 C**	- 4 498 567

From start of series :

404/8 - 6 900 001
404 U8 - 7 010 001
404 U10 - 7 060 001



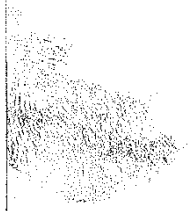


DISTRIBUTOR

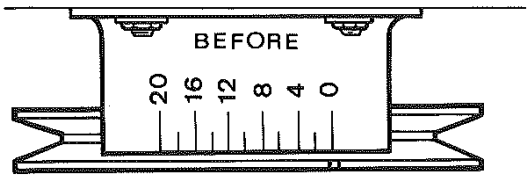
Make : Duccelier or Paris-Rhône
Type : M85

As from serial number :

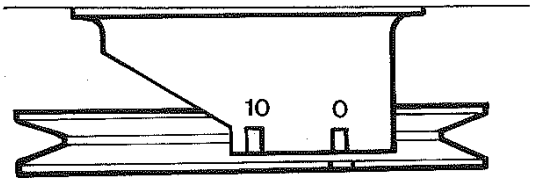
404 U10 - 8 506 182



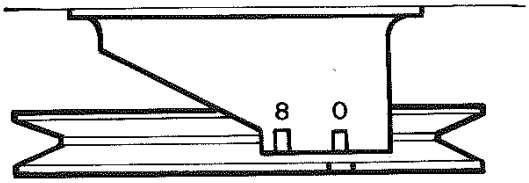
Series I → Salon 72



Series II → December 74



Series III → Salon 75

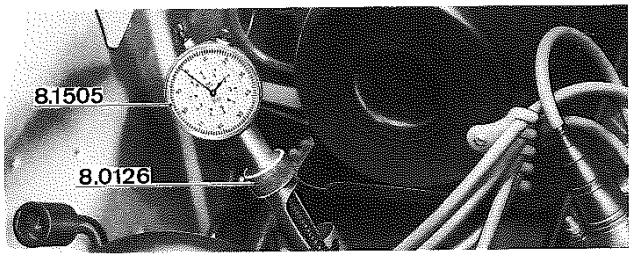


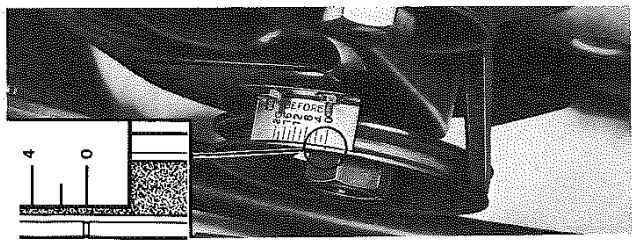
SETTING DISTRIBUTOR

GRADUATED TIMING PLATE

IMPORTANT - Check that the position of the timing place has not been altered.

If in doubt, readjust (as follows).





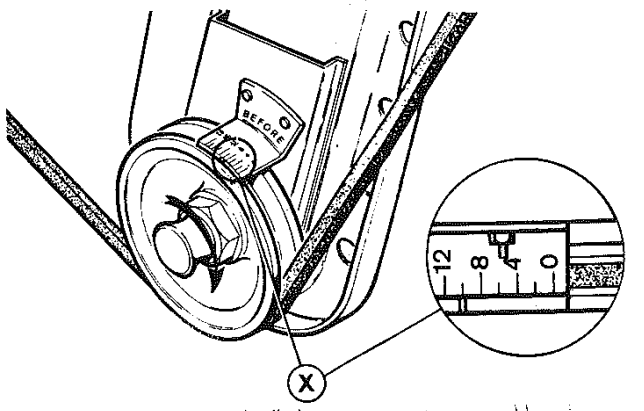
ADJUSTMENT OF TIMING PLACE

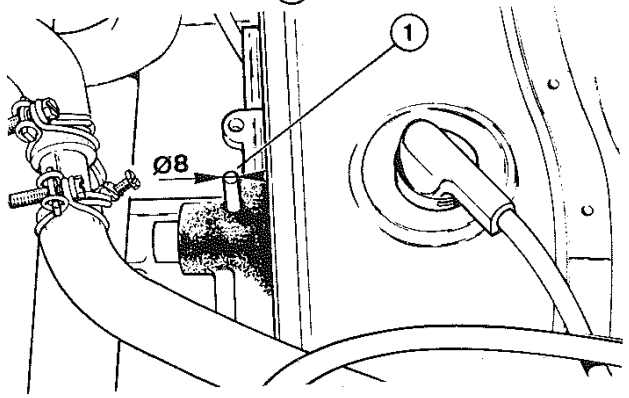
– Set n° 4 cylinder piston to TDC.

– Move the timing plate so that the "0" graduation is opposite the timing notch in the pulley.

– Mark one of the plate fixing nuts with a dab of paint.

PEUGEOT





DISTRIBUTOR SETTING

STATIC SETTING

— Correct dwell (angle).

— Timing plate correctly set.

1 - Engine with graduated timing plate.

— Rotate the engine in a clockwise direction (direction of normal running) until the timing notch in the pulley is opposite the graduation **(X)** on the timing plate (before TDC).
(X) = 10° for XC7 engine →| Salon 75.
(X) = 8° for XC7 engine |→ Salon 75.

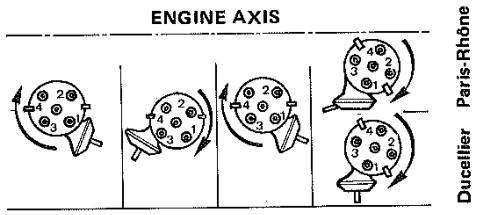
2 - Engine without a timing plate.

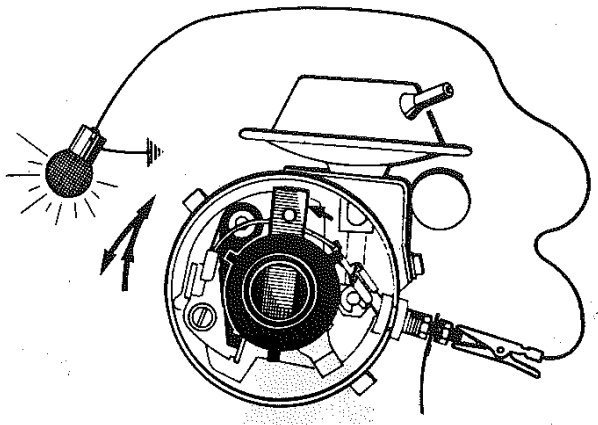
— Rotate the engine in a clockwise direction until the 8 mm ϕ tommy bar **(1)** engages in the flywheel.

— Refit the distributor :
- Rotate the rotor arm, whilst holding the distributor body, until the drive shaft engages.

POSITIONS OF DISTRIBUTOR IN RELATION TO ENGINE AXIS

Carb. engines →| Salon 70	Petrol injection engines	XC7 Engines →| Salon 75 →| Salon 75





— Position the distributor as shown in the diagram opposite.

— Connect :
- lead n° **3**
- a test lamp (5W max.)

— Switch-on ignition.

— Rotate the distributor :
- clockwise to close points.
- anti-clockwise, whilst restraining the rotor arm, until the test lamp lights-up.

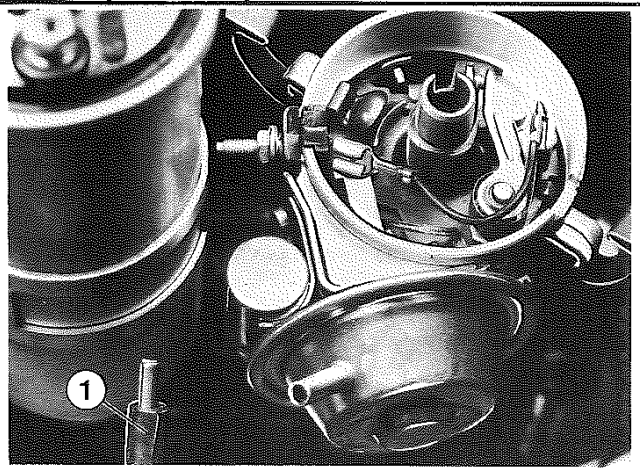
— Clamp the distributor.

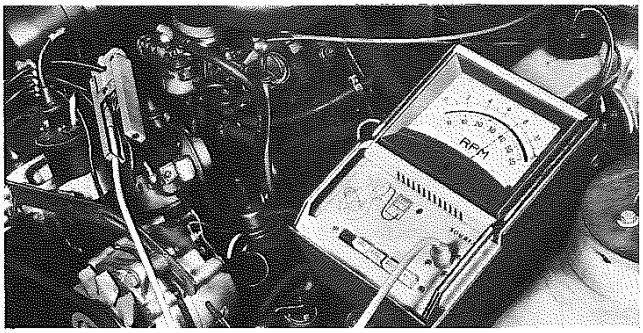
— Recheck with engine rotating in direction of normal running (clockwise).
- the test lamp should light at the precise moment when :
  1 - the timing notch in the pulley is opposite the graduation **(X)** in the timing plate.
  2 - the tommy bar engages in the flywheel.

— Remove tommy bar and disconnect test lamp.

— Fit distributor cap and connect HT leads.

ENGINE
IGNITION
CHECKING - ADJUSTING





DISTRIBUTOR SETTING

DYNAMIC SETTING

– Correct dwell (angle).

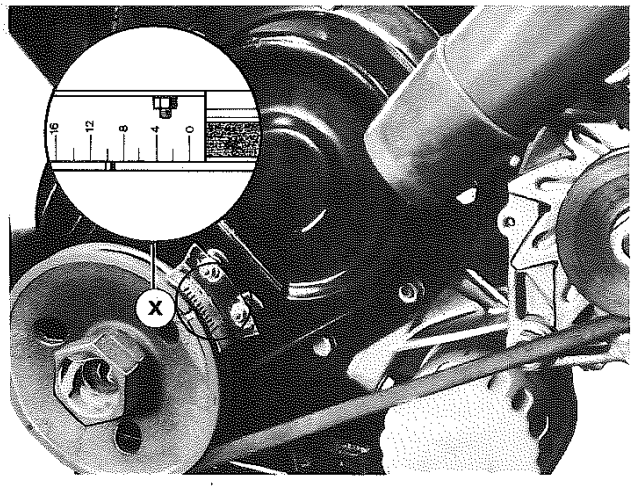
– Timing plate correctly set.

– Position the distributor, in accordance with the diagram on page
- connect the input lead.
- switch on ignition.
- rotate the distributor
  - clockwise (points close)
  - anti-clockwise until the points start to open (sparking).
- lightly clamp the distributor.

– Fit distributor cap and connect the HT leads.

– The vacuum capsule hose **(1)** should be disconnected and plugged.

– Connect :
- a hand-held stroboscope, induction clip on HT lead of cylinders 1 or 4.
- a tachometer.



– Start the engine.

– During setting, engine speed must not exceed 900 rpm max.

– Keep the stroboscope dephaser on "zero" **(2).**

– Direct the light rays vertical to the timing marks.

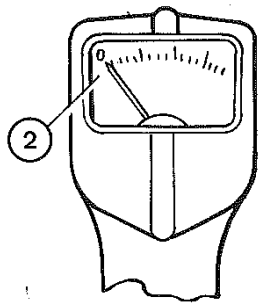
– Rotate the distributor until the notch in the pulley and the timing plate graduation **(X)** are in agreement (before TDC).

– Clamp the distributor.

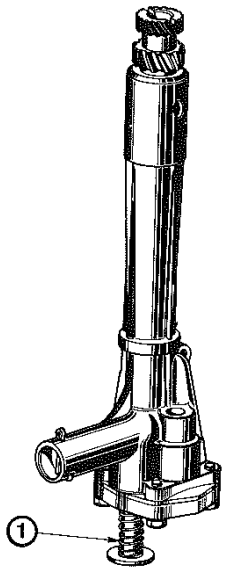
– Check :
- engine speed,
- dephaser at "zero".
- agreement of the timing marks.

– Reconnect vacuum hose to capsule.

(X) = 10° on XC7 distributor M48
(X) = 8° on XC7 distributor M85



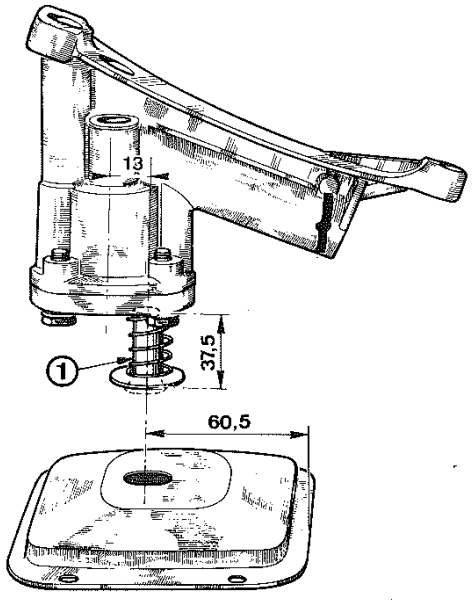
LUBRICATION
OIL PUMP
IDENTIFICATION



3-BEARING ENGINES :
XC - XB2

SINGLE GEAR TYPE OIL PUMP : 11 tooth

- Driven from camshaft.
- Helical 14 tooth cast iron drive pinion.
- Drive shaft in heat treated steel :
  - 10 mm ϕ x 280 mm long.
- Cast iron "impellor" gear.
  - 11 tooth - module 2.
  - thickness : from 24.90 to 24.94 mm.
- Zinc base die cast body (Alpax) with integral discharge piston.
  - depth of gears housing : from 24.95 to 24.98 mm.
  - lateral clearance of gears : 0.01 to 0.08 mm.
- Aluminium cover in place of cast iron since February 1961.
- Oil suction tube **(1)** :
  - 11 mm ϕ x 37.5 mm long.



5-BEARING ENGINES : XB5 - XC5 - XC6 - XC7

DOUBLE GEAR TYPE OIL PUMP : 8 x 8 tooth.

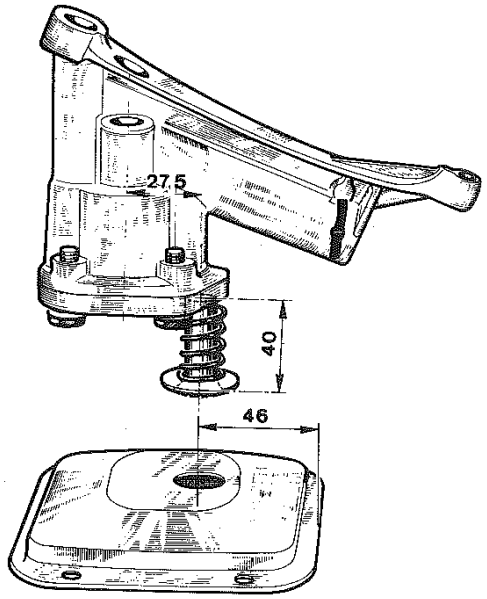
Series I

- Secured to the lower face of the cylinder block by 3 bolts and alignment dowels, and O-ring seal to the oil passage.
- Removeable drive shaft :
  - 10 mm ϕ x 282.5 mm long.
- Gears :
  - 8 x 8 tooth - 2.5 module
  - thickness from 33.90 to 33.94 mm.
  - depth of gear housing : from 33.95 to 33.98 mm.
  - lateral clearance, from 0.01 to 0.08 mm.
- Cover and suction tube **(1)** common to the 3 bearing engine pump.
- Strainer : not the same as for the 3 bearing engine.

INTERCHANGEABILITY - The "3-bearing" and "5-bearing" engine oil pump are not interchangeable.

PEUGEOT

LUBRICATION
OIL PUMP
IDENTIFICATION



5-BEARING ENGINES : XB5 - XC5 - XC6 - XC7

DOUBLE GEAR TYPE PUMP : 8 x 8 tooth.

Series II

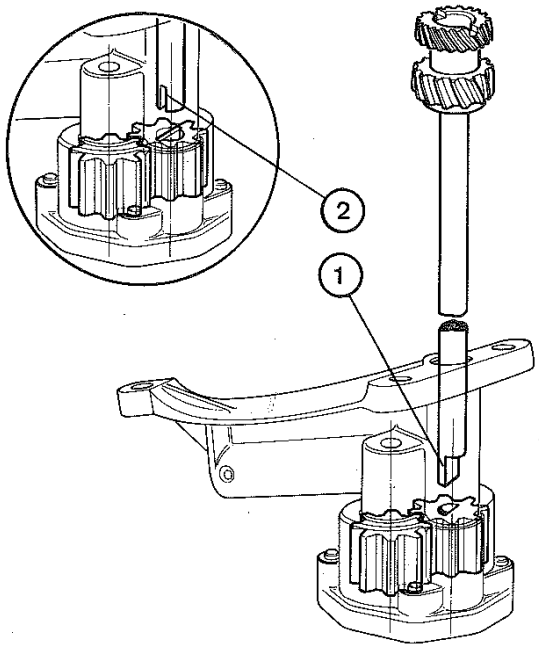
From serial numbers :

404 - carburettor and J7

404 (TW)	- 5 077 409	**404/8**	Since
404 (TH)	- 5 338 144	**404 U8**	start of
404 C	- 4 499 687	**404 U10**	series
404 ZF	- 8 252 791	**J7 B**	- 8 006 655
404 L (TW)	- 4 940 445	**J7 C**	- 8 102 847
404 L (TH)	- 4 888 506	**J7 CP**	- 8 195 296
404 Break	- 4 888 285	**J7 CS**	- 8 190 293
404 U6	- 4 766 253	**J7 CT**	- 8 185 083
404 U6A	- 1 928 867		

– 40 mm long **suction pipe** offset 14.5 mm to the right to avoid risk of loss of suction when taking tight left hand bends.

– **Strainer** common to 3-bearing engine.



DOUBLE GEAR TYPE PUMP : 8 x 8 tooth

Series III

As from November 1975 :

– Drive taken-up by a flat **(1)** in place of a slot **(2)**.

– Gears in heat treated steel.

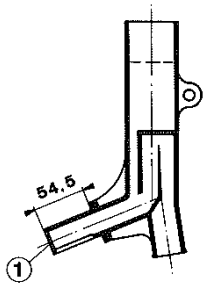
INTERCHANGEABILITY :

– Pumps and oil strainers from Series I and II assemblies are not separately interchangeable.

– The Series III pumps and drive shafts are not interchangeable with those of Series I and II.

LUBRICATION
CRANKCASE BREATHER
IDENTIFICATION

1 | 1.003

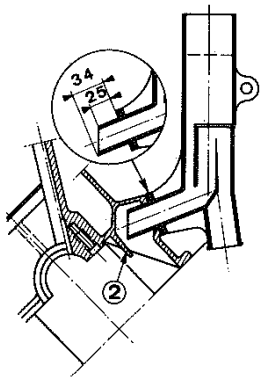


Series I - "3-bearing" engines

Up to serial numbers :

404	- 4 399 562	**404 L**	- 4 837 402
404 J	- 4 527 038	**404 U6**	- 4 719 903
404 C	- 4 496 235	**404 U6A**	- 1 920 144

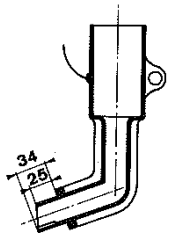
Oil vapours and filler pipe with deflector **(1).**



Series II - "5-bearing" engines

404	- 4 400 001 to 5 233 668
404 USA	- 4 400 001 to 4 471 431
404 J	- 4 528 001 to 4 536 573
404 C	- 4 497 001 to 4 498 875
404 L	- 4 838 001 to 4 870 396
404 U6	- 4 720 001 to 4 754 946
404 U6A	- 1 921 001 to 1 922 207

— The "5-bearing" engine cylinder block incorporates an internal rib **(2)** for fitting a breather pipe without deflector.



Series III - "5-bearing" engines with oil vapour recirculation.

As from serial numbers :

404	- 5 233 669
404 USA	- 4 471 432
404 J	- 4 536 574
404 C	- 4 498 876
404 L	- 4 870 397
404 U6	- 4 754 947
404 U6A	- 1 922 208

Oil vapour recirculation pipe without external venting.

INTERCHANGEABILITY - The oil vapour pipes are not interchangeable.

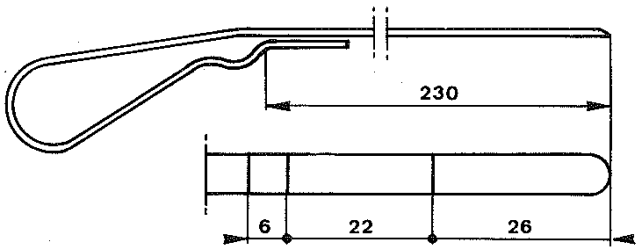
IMPORTANT - The pipe for the "5-bearing" engines must NOT be fitted to a "3-bearing" engine since this would result in oil leakage via the breather.

NOTE - *The fixing flange gasket is common to all three assemblies.*

PEUGEOT

LUBRICATION

DIPSTICK IDENTIFICATION



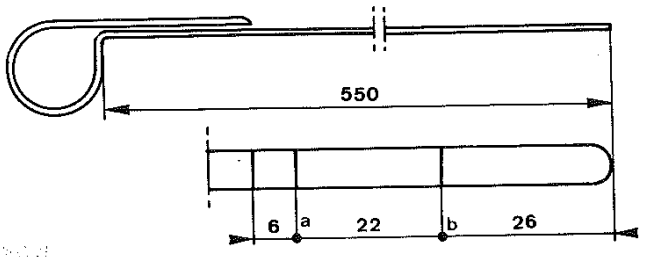
Yellow handle

404 CARBURETTOR

1st Fitment

Upto the following serial numbers :

404 (TW)	- 5 067 663	**404 L (TW)**	- 4 498 129
404 (TH)	- 5 288 533	**404 L (TH)**	- 4 878 874
404 SL	- 5 286 960	**404 L (Break)**	- 4 878 769
404 ZF	- 8 250 478	**404 U6**	- 4 760 799
404 C	- 4 499 221	**404 U6A**	- 1 927 752



Yellow handle
Common with 404 injection 3rd fitment

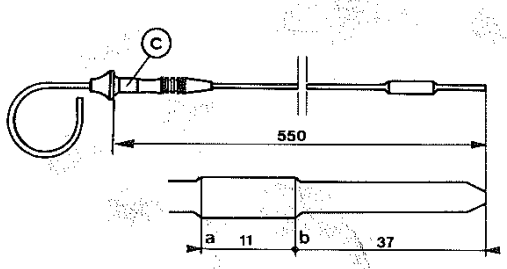
2nd Fitment - Guided dipstick

As from the following serial numbers :

404 (TW)	- 5 067 664	**404 L (TW)**	- 4 898 130
404 (TH)	- 5 288 534	**404 L (TH)**	- 4 878 875
404 SL	- 5 286 961	**404 L (Break)**	- 4 878 770
404 ZF	- 8 250 479	**404 U6**	- 4 760 800
404 C	- 4 499 222	**404 U6A**	- 1 927 753

— **Dipstick tube :**

- Overall length : 345 mm



Yellow handle

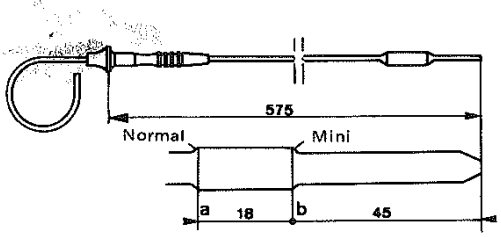
3rd Fitment - Guided dipstick

Since February 1967 :

— Cylindrical section stick, with minimum level raised by 11 mm (2.5 l instead of 2 l).

Upto September 1967, the stick was not encased in plastic below the handle **(C).**

— **Guidetube** common to 2nd fitment.



Yellow handle

4th Fitment

As from serial numbers :

404 U6S - 7 160 001
404 U6SZF - 7 162 001

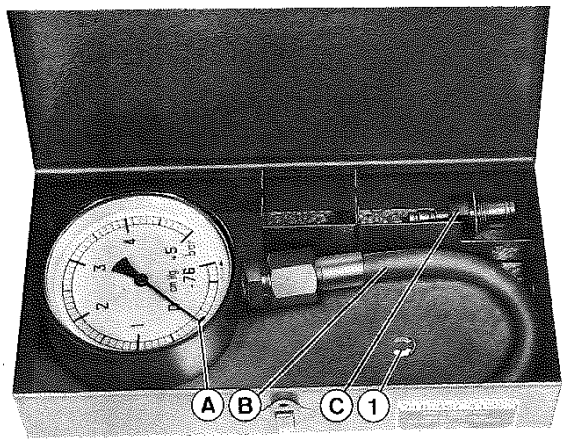
— cylindrical section stick longer by 25 mm as a result of fitting an oil sump identical to the sump fitted to 404 injection.

— Guide tube common to the preceeding two fitments.

INTERCHANGEABILITY

2nd and 3rd fitment 404 dipsticks are interchangeable with each other, but not with the 1st fitment dipstick.

The 4th fitment dipstick is not interchangeable with any of the preceeding 3 fitments.



CHECKING OIL PRESSURE

TOOLING REQUIRED

8.1503

Kit for checking positive and negative pressures.

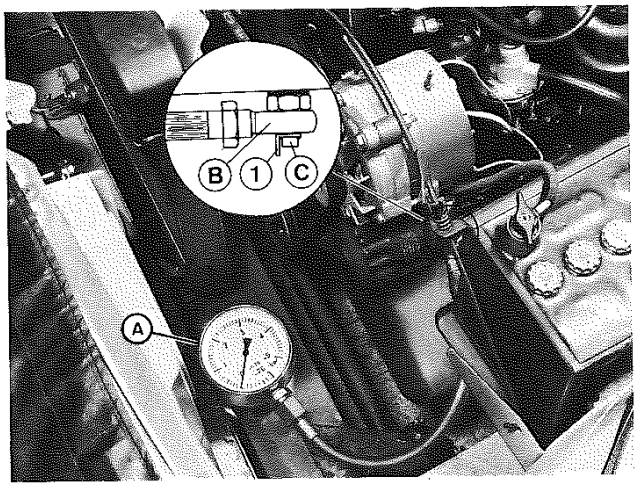
Comprising :

A - Dual scale pressure guage : 76 cm/Hg to 0 and 0 to 5 bars.

B - Flexible hose, for checking engine oil pressure.

C - Union, for checking engine oil pressure.

1 - Safety clip.

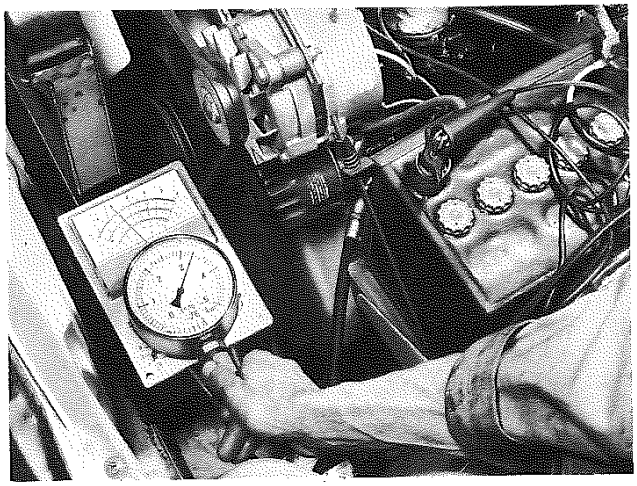


CHECKING

– Replace the oil pressure switch with the pressure guage **(A)**.

– **The temperature of the oil in the sump should be approximately 90°C.**

- with a "cold" engine (and on ambient temperature of 20 ° C), run the engine at 3500 rpm and stard the check 5 minutes after the first engagement of the electro-magnetic fan.

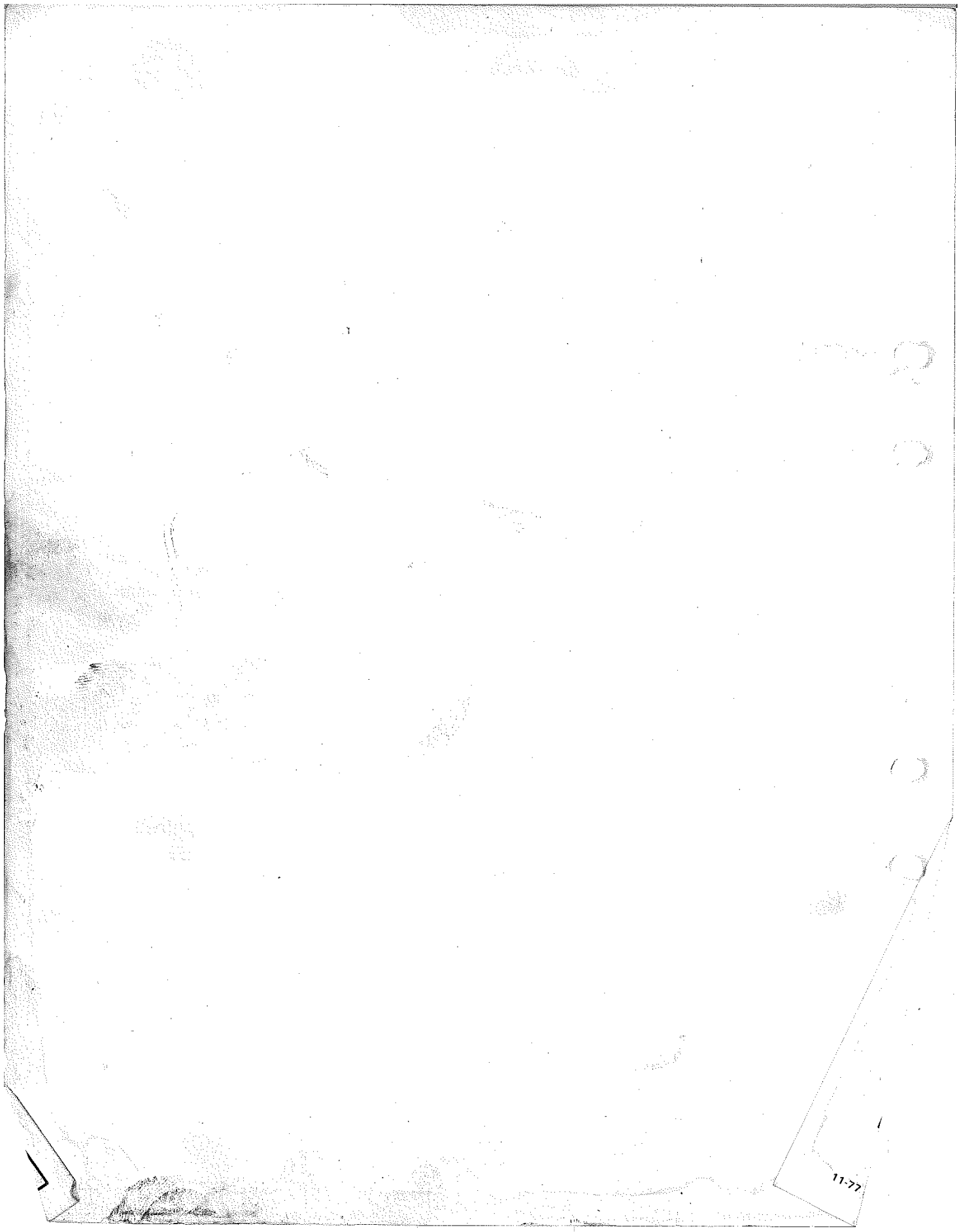


– **Pressures, with oil temperature of approximately 90° C.**

- at 850 rpm : 2.7 to 0.8 bars.
- at 2000 rpm : 3.3 to 0.7 bars
- at 4000 rpm : 3.8 to 0.8 bars.

NOTE - *These values can be decreased by 0.2 to 0.4 bars according to the vehicles mileage.*

PEUGEOT

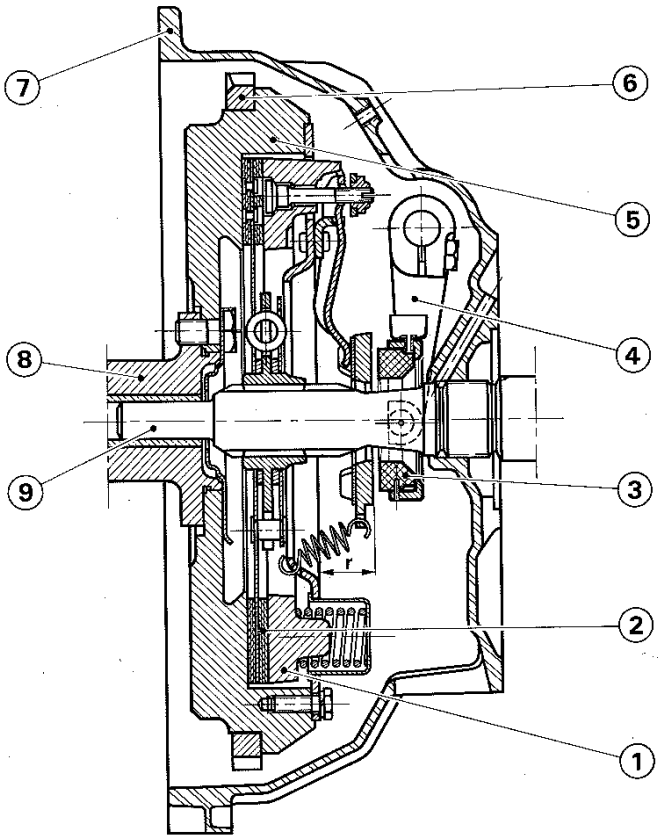

11-77

CLUTCH

2

MANUAL CLUTCH

IDENTIFICATION - CHARACTERISTICS



CONVENTIONAL CLUTCH

Make	Ferodo
Type	P.K.S.C.
Number of Springs	9
Dimensions of Clutch Plate	215 × 145 mm
Mechanism adjustment : dimension (r) =	22.7 + 0.7 mm - 0 mm

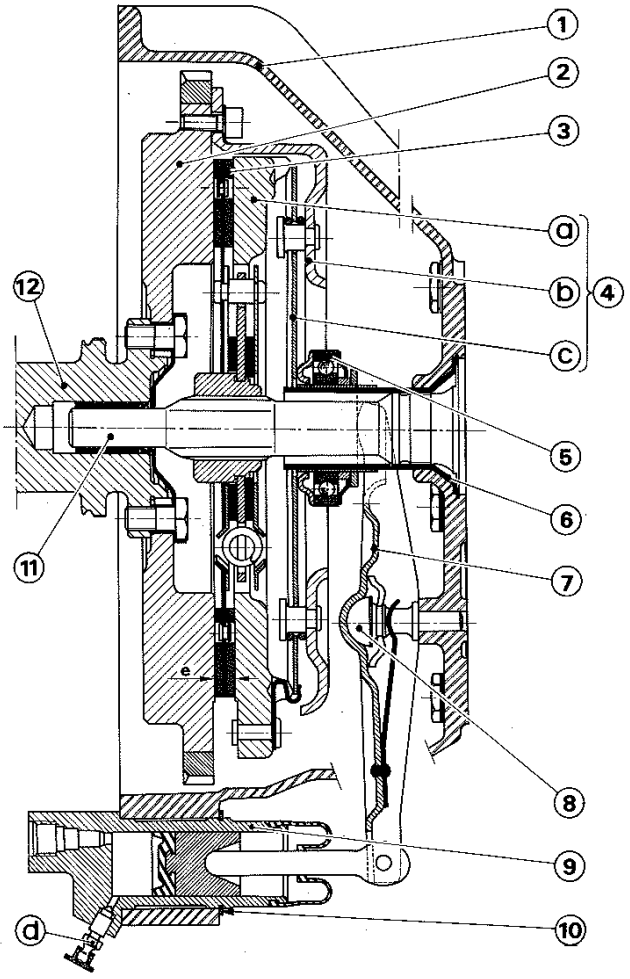
1 - Mechanism
2 - Clutch Plate
3 - Clutch thrust bearing
4 - Fork
5 - Flywheel
6 - Starter Ring Gear
7 - Clutch housing
8 - Crankshaft
9 - Drive shaft

P.K.S.C. 12	P.K.S.C. 14	P.K.S.C. 15
404 DA all types **404 U6D** up to serial N° 4 909 500 **404 LD** up to serial N° 4 980 000	**404**, **404 D**, **404 C**, **404 L**, **404 U6** beginning of series **404 KF** up to serial N° 4 570 000 **404 CKF** up to serial N° 4 594 000 **404 U6D** as from serial N° 4 909 501 **404 LD** as from serial N° 4 980 001	**404 KF** as from serial N° 4 570 001 **404 CKF** as from serial N° 4 594 001

PEUGEOT

MANUAL CLUTCH

IDENTIFICATION - CHARACTERISTICS



DIAPHRAGM CLUTCH

Mechanism

Make	Ferodo
Type	215 D

Clutch Plate

with disc - Dentel

dimensions : 215 × 145 mm

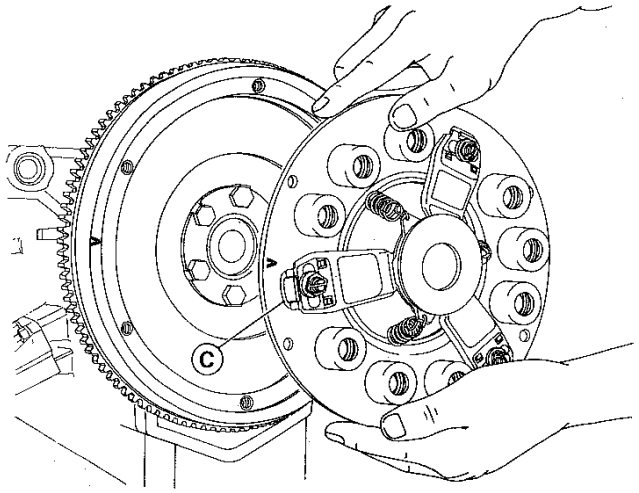
1 - Clutch housing
2 - Flywheel
3 - Clutch plate
4 - Mechanism { a - pressure plate; b - cover; c - diaphragm }
5 - Guided thrust ball bearing
6 - Thrust bearing guiding bush
7 - Clutch fork
8 - Fork thrust ball
9 - Clutch release cylinder with bleed screw d
10 - Retaining clip securing the clutch release cylinder into the clutch housing.
11 - Drive shaft
12 - Crankshaft

As from serial numbers :

404 (TW)	- 5 085 001	
404 (TH)	- 5 415 001	
404 KF	- 8 243 001	
404 C	- 4 670 201	
404 C.KF	- 6 801 501	
404 D	- 4 629 001	
404 8	- 6 900 001	(beginning of series)
404 L (TW)	- 4 941 601	
404 L (TH)	- 6 829 001	
404 LD	- 4 986 701	
404 U6	- 4 774 001	
404 U6D	- 4 917 501	
404 U8	- 7 010 001	beginning of series
404 U8D	- 7 040 001	
404 U10	- 7 060 001	
404 U10D	- 7 080 001	

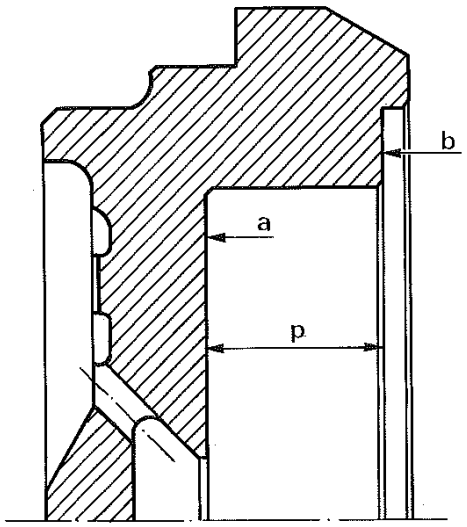
MANUAL CLUTCH

REMOVAL - REFITTING



REMOVAL

- Remove the gearbox by pushing the differential rearwards (refer to Class 3, Page 02 01).
- Mark the mechanism in relation with the flywheel.
- Unscrew the six screws securing the clutch mechanism.
- Remove the mechanism and the clutch plate.
- Clean, check and replace used parts.



RE-INSTALLATION

- Check the bearing surface of the clutch plate on the flywheel, if necessary remove and trim up the bearing surface **a** on a lathe. It is also necessary that the same metal thickness be removed on part **b** of the flywheel receiving the mechanism in order not to alter the springs tension.

Depth p of flywheel for a conventional mechanism

1st Fitting 25.9 mm up to serial Nos :

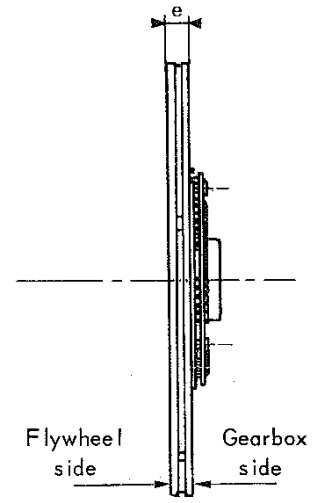
404 : 4 104 575 **404 DA** : 3 060 262
404 LD : 4 976 443 **404 U6D** : 4 902 930

2nd Fitting 25.5 mm as from serial Nos :

404 : 4 104 576 **404 DA** : 3 060 263
404 LD : 4 976 444 **404 U6D** : 4 902 931

and all other types of 404.

N.B. *- No rectification work should be carried out on cars equipped with a mechanism with diaphragm.*



- Centre the clutch plate using the drive shaft.
- Having removed the Blocfor washers, fit the mechanism and tighten to 9 ft.lbs (1.25 m.kg). Remove the three anti vibration springs **c** to be found on a conventional mechanism.

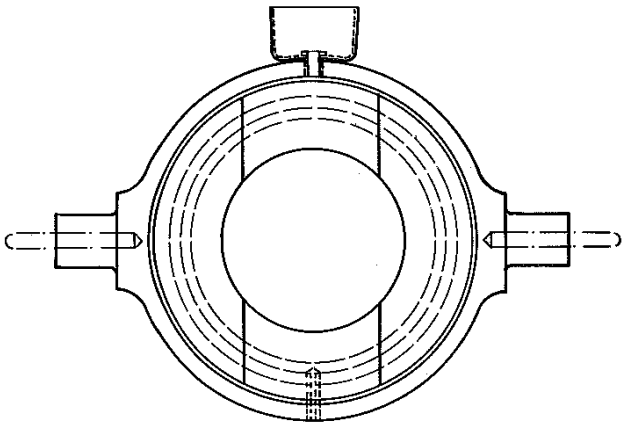
N.B. *- Only new clutch plates P.N. 2054.15 or service exchange ones P.N. 2054.19, of which the free thickness e of the linings is 9 mm, should be fitted with the flywheels of the first fitting.*

Thickness e of the Clutch Plate

1st. Fitting : 9 ± 0.1 mm
2nd. Fitting : 8.4 ± 0.1 mm

- Replace the thrust bearing and the fork if necessary (refer to class 2, page 04 02)
- Sparingly grease the splines and the drive shaft front part using «Molykote».
- Refit the gearbox (refer to class 3, page 02 03)

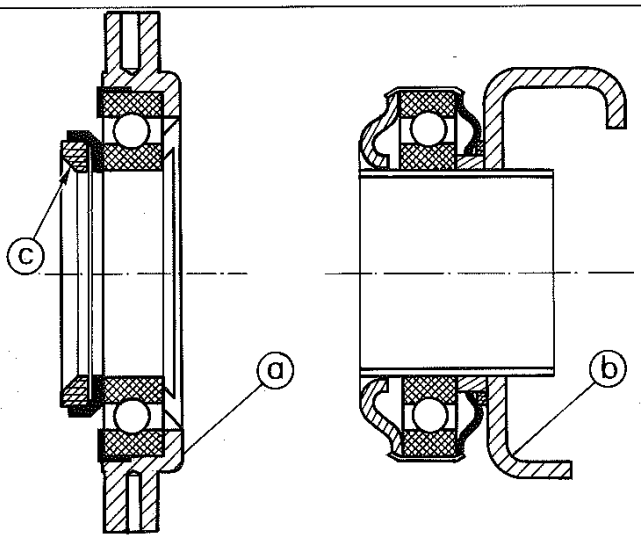
PEUGEOT



1 - CLUTCH THRUST BEARING

1 - **Graphite or Carbon bearing** on 404 petrol engine.
- with aluminium alloy support
- with cast iron support as from 404 serial N° : 4 069 051.

This bearing incorporates a scoop which should be lubricated with engine oil every 3,000 miles (5,000 km) or every week if the vehicle is mainly driven in town.

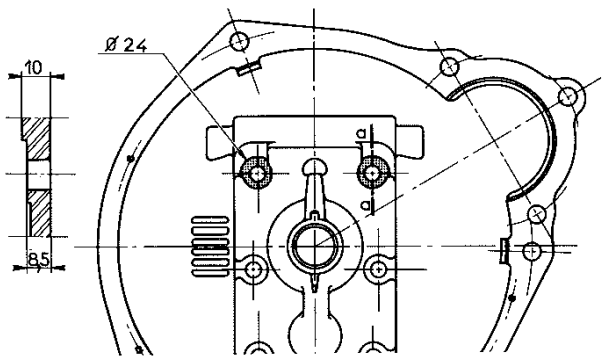


2 - BALL BEARING

a - **For C3 Gearbox** fitted on 404 Diesel engine this bearing incorporates a chamfer **c** on the carbon face.
Only the 404 associated vehicles with Diesel engines and manufactured prior to serial numbers :
404 U6D 4 900 850 and **404 LD** 4 975 287
are fitted with a ball thrust bearing without a chamfer.

b - **For BA7 Gearbox** and diaphragm clutch fitted on 404.
This bush mounted ball bearing is secured by a retaining clip onto the clutch housing.

The thrust ball bearings cannot be dismantled and they do not require any particular maintenance.



Fitting of the thrust ball bearing

The thrust ball bearing may be fitted on 404 associated vehicles with Diesel engines equipped originally with a carbon bearing on condition that :

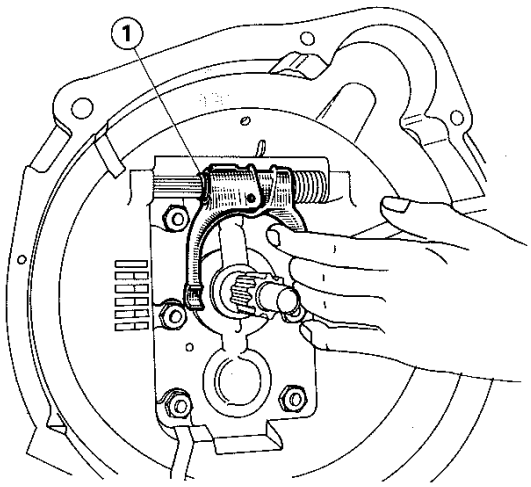
- The clutch housing is altered according to the drawing opposite (24 mm dia, countersinking and 1.15 mm depth) or that a housing P.N. 2102.49 is fitted.
- A Fork of 79 mm centre to centre distance P.N. 2117.11 is installed.
- A Chamfer thrust ball bearing P.N. 2034.10 is fitted.

***N.B.** - In order to fit a ball bearing it is mandatory that the clutch housing be countersunk so that the clutch fork clearance remains sufficient enough.*

PEUGEOT

MANUAL CLUTCH

CONTROLS



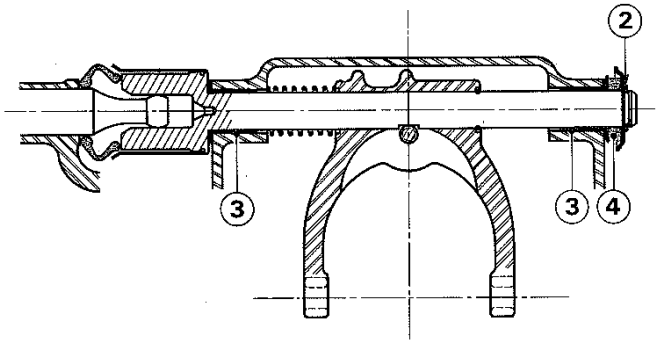
II - C3 GEARBOX CLUTCH FORK

Removal

- Remove the fork locking pin
- To remove retaining cap **1** compress the thrust spring while displacing the fork as shown opposite.
- Remove the clip and let the fork resume its original position.
- Remove the shaft.

Refitting

- Refitting is a reversal of the removal procedure.



III - CLUTCH SHAFT FOR C3 GEARBOX

Removal

Up to **404** serial N° : 4 157 274

- Withdraw the shaft after having removed the locking pin and the retaining clip.

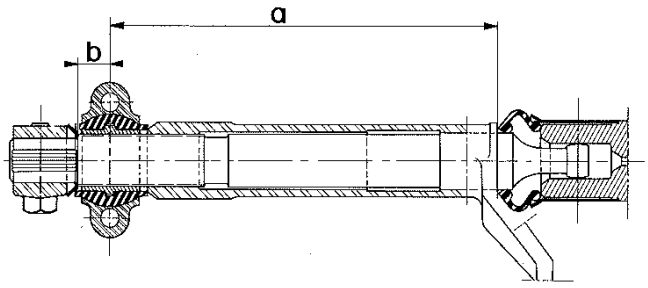
As from **404** serial N° : 4 157 275 :

- In addition, remove ring **2** and the various washers located on the side opposite the clutch control.

Refitting

- Proceed in the reverse order of removal after having replaced the Rilsan bushes **3**, rubber washer **4** and ring **2** as fitted on the 404s of the second fitting.

***N.B.** - The Spare Parts Department no longer supplies clutch shafts of the first fitting and it is therefore necessary to fit a shaft of the second fitting (kit available under P.N. 2125.01) by increasing the bore size of the clutch control bush housing to 18 mm dia.*



IV - CLUTCH CONTROL FOR C3 GEARBOX

Removal

- Disconnect the clutch and gearbox control rods.
- Remove both screws securing the bush onto its support.
- Withdraw the control.

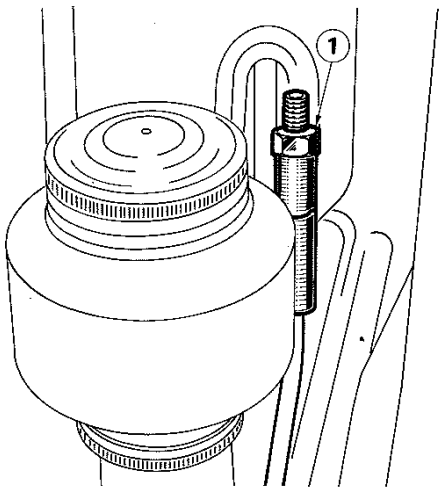
Adjustment

1st. Fitting = Outer Diameter : 26 mm
a : 161 mm
b : 17 mm

2nd. Fitting = Reinforced Control
Outer Diameter : 29 mm
a : 162 mm
b : 14 mm

Refitting

- Refitting is the reversal of the removal procedure.



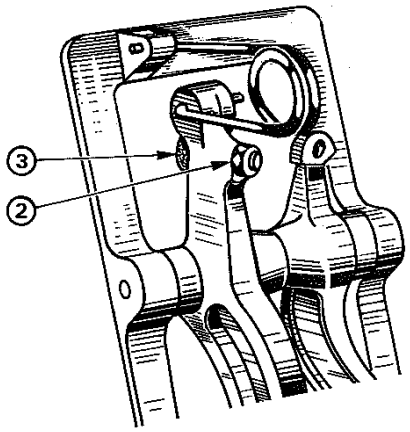
V - CLUTCH RODS FOR C3 GEARBOX

Clearance Adjustment

- The clutch pedal free travel should be of 20 to 30 mm.

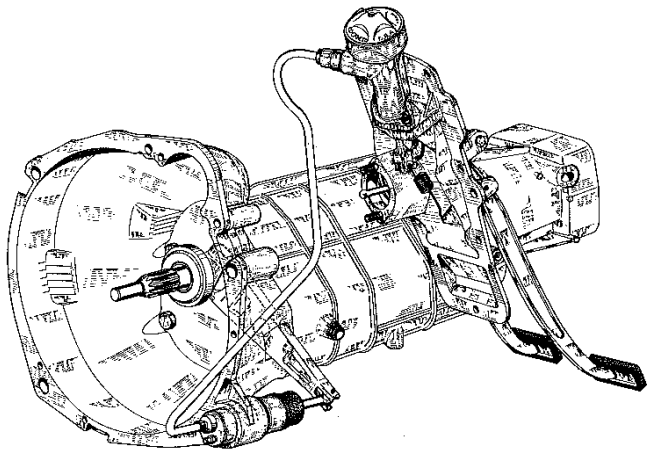
To adjust this clearance proceed as follows :

- Turn nut 1 of the clutch control rod in the required direction in order to obtain a clearance of 3 to 4.5 mm between the nut and the securing socket.



N.B. *- On cars with uncut mats it is necessary to adjust the pedal upper stop in order to maintain the minimum useful travel.*

- Remove the left hand sound proofing cardboards.
- Slacken the clutch pedal lock nut **2.**
- Tighten rubber stop **3** to raise the pedal to the mat height.
- Re-tighten the lock nut **2** and refit the sound proofing cardboards.
- Adjust the clutch free travel.



CLUTCH MASTER CYLINDER

Of 19 mm diameter with built-in reservoir it is vertically secured to the pedal board.

It comprises a residual pressure valve which maintains pressure in the system (clutch engaged). This pressure holds the thrust ball bearing against the diaphragm thereby **eliminating the clutch free travel.**

Residual pressure value 0.8 to 1.2 kg/cm2 (bars).

Removal, refitting and reconditioning of the master cylinder do not necessitate any particular precaution apart from normal care and cleanliness.

CLUTCH RELEASE CONTROL CYLINDER

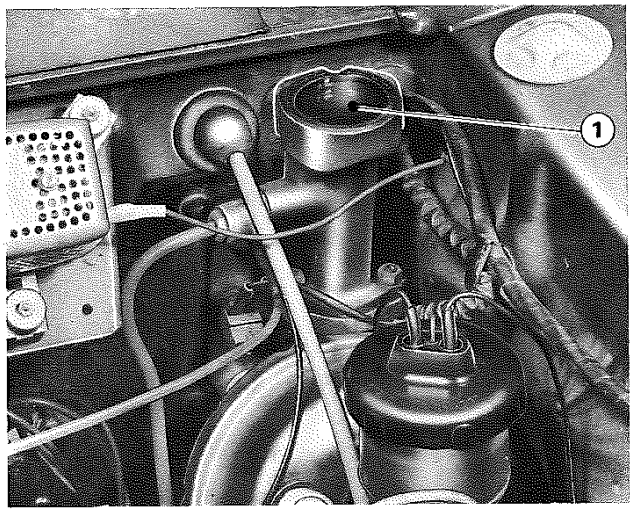
Of 28.6 mm diameter it incorporates a bleed screw. It is connected to the clutch master cylinder by means of a plastic pipe and held in place in the clutch housing by a retaining ring.

Removal

- Unscrew both screws securing the steering gear to the front cross member.
- Turn the steering wheel to move the steering flector to the left.
- Disconnect the hydraulic pipe.
- Remove the rear securing clip and move the cylinder towards the front.

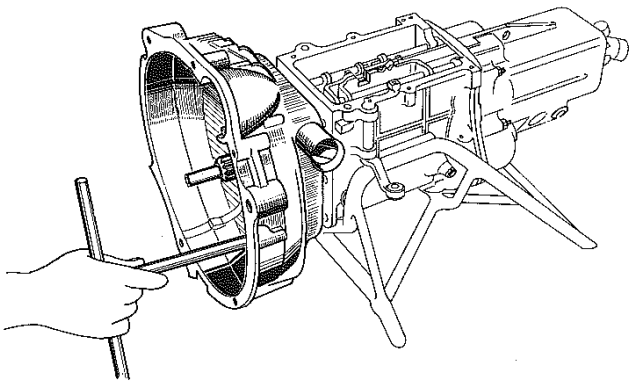
Refitting

- Proceed in the reverse order of removal by positioning the cylinder, **so that the bleed screw comes at the lower part.**
- Tighten the steering bolts to 29 Ft lbs (4 m.kg)



Bleeding

- Bleeding is normally carried out by means of the pedal.
- To remove trapped air within the system depress the recirculating valve 1.
- Top the level up to 3 mm of the upper bearing surface using Lockheed 55.
- **Drain the system every 12,000 miles** (20,000 km)
- **Capacity** : 55 cm3



CLUTCH HOUSING FOR C3 GEARBOX

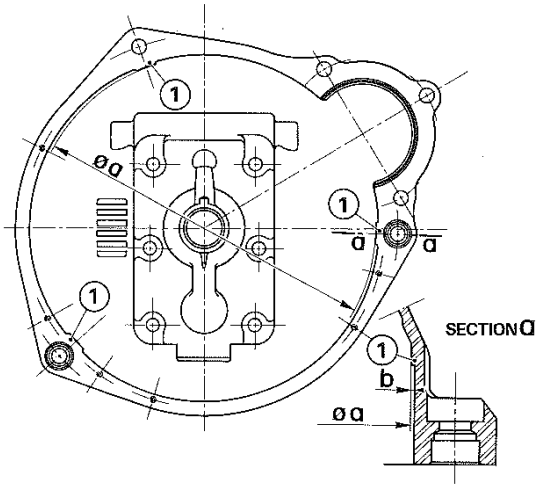
Removal

See Gearbox dismantling (class 3, page 03 03)

Replacement

a) 404 Petrol Engine

Since the Spare Parts Department only deliver clutch housings of the 2nd. Fitting P.N. 2102.43, in the event of replacing a clutch housing on a 404 manufactured prior to serial N° : 4 157 275, the clutch fork control shaft should also be replaced (kit available under P.N. 2125.01).



b) 404 Diesel Engine

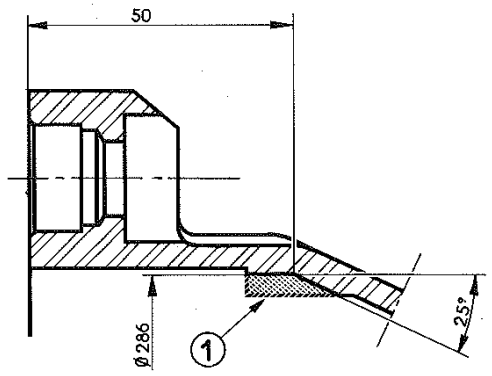
Up to serial N° : **404 U6D** - 4 900 891
404 LD - 4 975 301

the housing incorporates three bosses 1 of 4.5 mm in height and should be fitted with a flywheel PN 0533.24 of 14 kg.

As from serial Nos : **404 U6D** - 4 900 892
404 LD - 4 975 302

the three bosses 1 of the housing have a height of 1 mm. This housing sold under P.N. 2102.48 or 2102.49 can be fitted with a flywheel P.N. 0533.24 of 14 kg or with a heavier flywheel of 14.830 kg available under P.N. 0533.25 or 0533.27

	1st. Fitting	2nd. Fitting
Ø a	279 mm	286 mm
b	4.5 mm	1 mm



Adaption

The Spare Parts Department only deliver housing P.N. 2102.49 of the 2nd Fitting, however, the housing of the 1st Fitting can be used with a heavier flywheel on condition that :

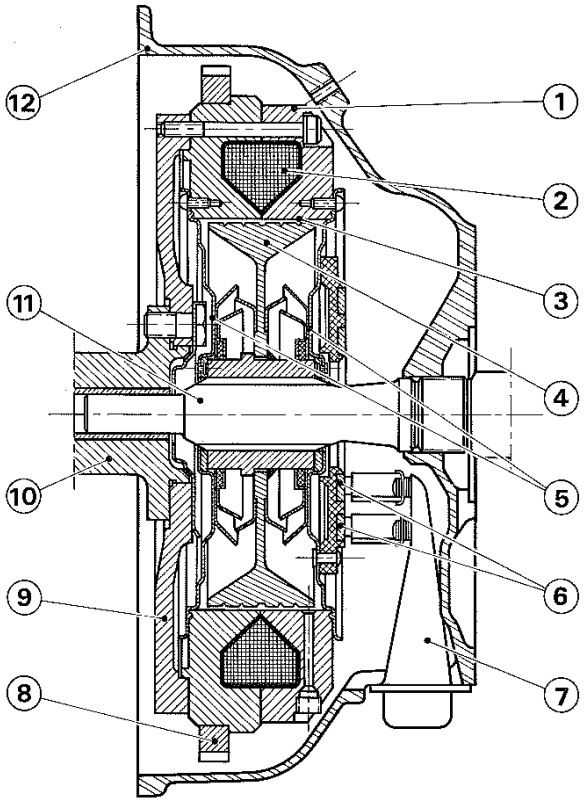
- the inner bosses 1 of the housing are reamed to obtain a diameter of 286 mm in place of 279 mm on a depth of 50 mm.
- the bosses are machined according to a slant of 25° as shown on the drawing opposite.

Both these operations should be carried out on a lathe or with a grind stone.

PEUGEOT

ELECTRO MAGNETIC CLUTCH

IDENTIFICATION - CHARACTERISTICS



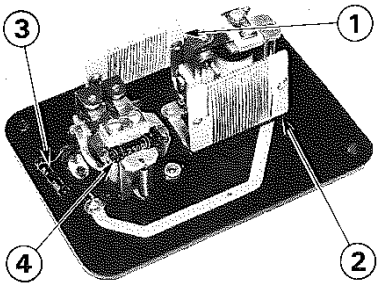
COUPLER

Make - Jaeger

Type - IX B

Magnetic powder - bag of 115 gr; powder red in colour.

1 - Electro Magnet
2 - Coil
3 - Magnetic Powder
4 - Moving Armature
5 - Cover
6 - Commutators
7 - Brush holder (Subal)
8 - Starter Ring Gear
9 - Clutch securing plate
10 - Crankshaft
11 - Drive shaft
12 - Clutch housing

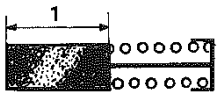


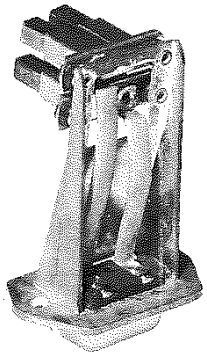
COREL

- Reference S on cover

1 - 7.5 ohm idling speed resistor.
2 - 2.5 ohm economy resistor.
3 - 170 ohm demagnetisation resistor.
4 - 250 ohm resistor, protecting the condenser.

0.25 Microfarad condenser.





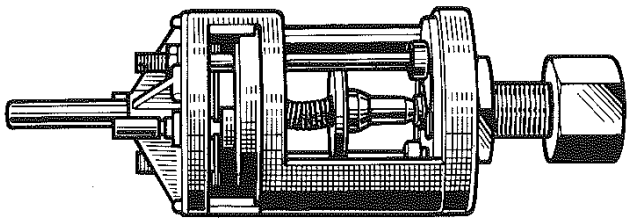
SUBAL

- The support incorporates 4 brushes which should be replaced when length 1 reaches 9 mm or every 18,000 miles (30,000 km).
- The length of a new brush is : 14 mm.

PEUGEOT

ELECTRO MAGNETIC CLUTCH

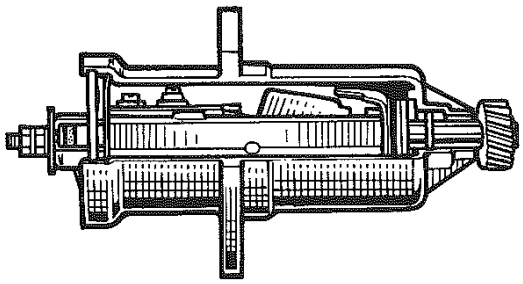
IDENTIFICATION - CHARACTERISTICS



CONAC

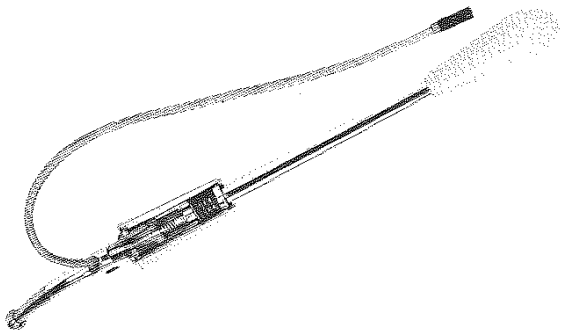
- The Conac is a double switch secured on the apron panel and mounted on the accelerator cable. This double switch controls the idling resistor and the economy resistor according to the position of the accelerator pedal.

  This part does not need any adjustment.



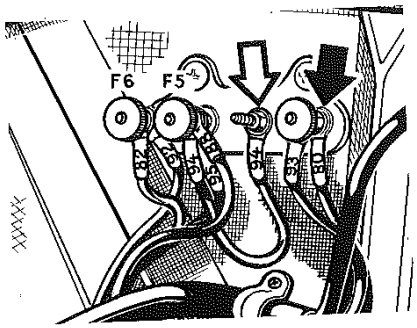
GOVERNOR

- The Governor is a centrifugal switch attached to the gearbox and driven by the main shaft.
- It opens at 25 km/h with speed increasing and closes at 20 km/h with speed decreasing there by controlling the internal switch connected to relay R1 in the Corel, thus ensuring power supply either from the dynamo or the battery.



POGEL

- Gear change lever with a switch type handle incorporating a switch which activates relay R2 in the Corel, thus allowing for disengagement of the coupler at time of gear change.



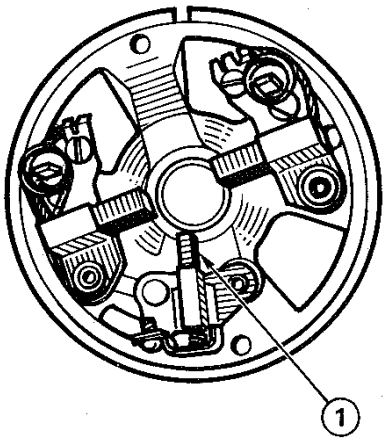
TERMINAL PLATE

- Secured to the left hand wing valance it incorporates two fuses **F5** and **F6.**
- In the event of a power supply failure it is possible to provide direct power from the battery to the coupler. To achieve this proceed as follows :

  Disconnect lead N° : **93** from the terminal (black arrow) and connect it to the terminal (white arrow, drawing opposite) to which lead N° : **94** is already connected.

ELECTRO MAGNETIC CLUTCH

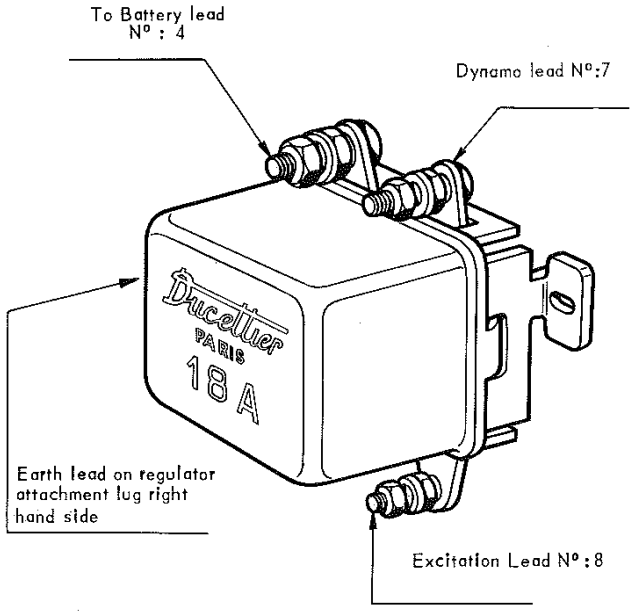
IDENTIFICATION - CHARACTERISTICS



DYNAMO

Make	:	Ducellier
Reference	:	7 229
Power	:	300 W
Cut-out Speed	:	1,200 to 1,300 r.p.m.
Diameter	:	118 mm

- The third brush **1** is used to supply power to the coupler in increasing speed 0 to 25 km/h and in decreasing speed 20 to 0 km/h.
- The third brush should be replaced when its length is less than 12 mm or every 12,000 miles (20,000 km).



REGULATOR

- Two element regulator.

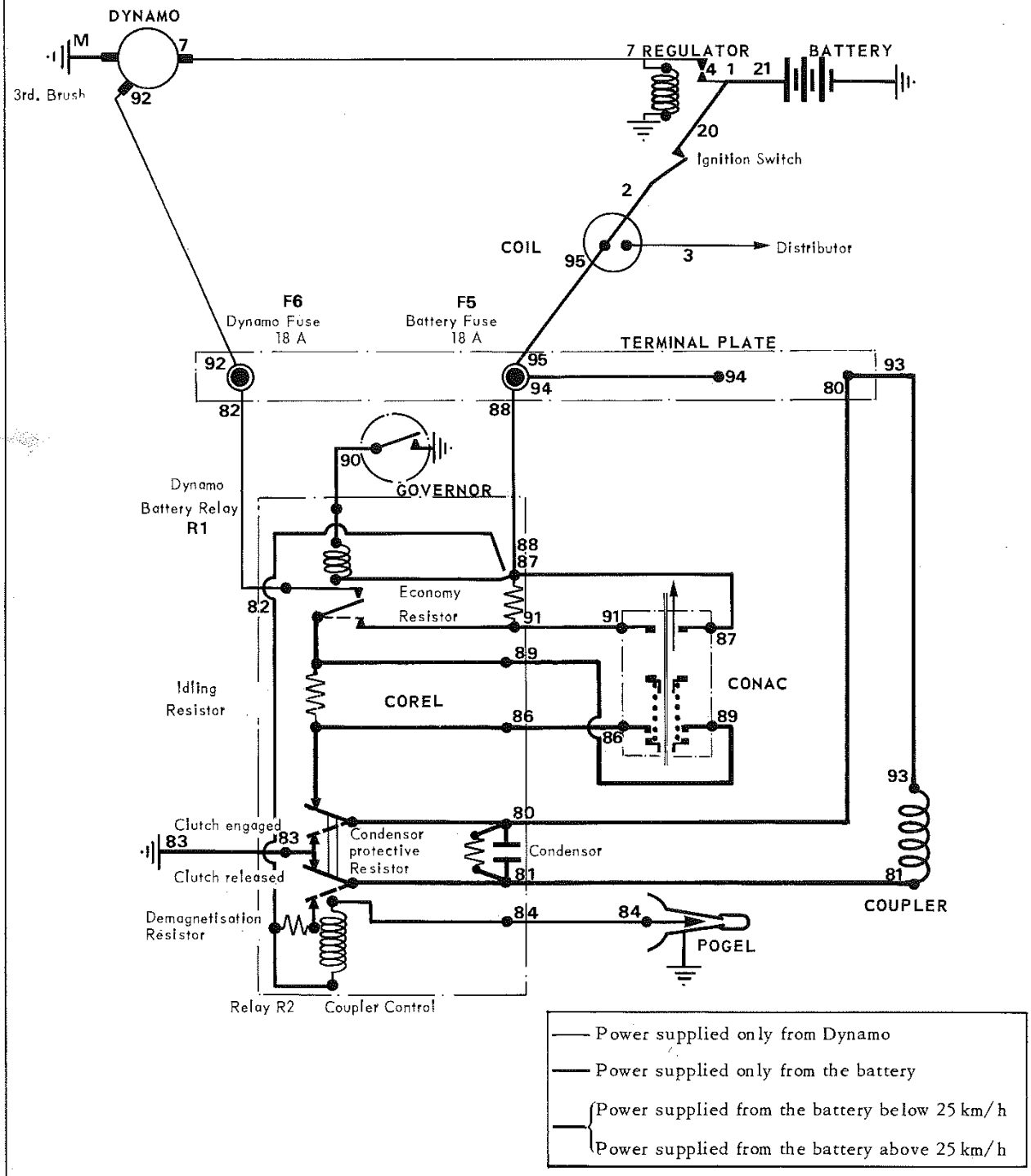
	Up to serial N° : 404 J 4 537 084	As from serial N° : 404 J 4 537 085
Make	Ducellier	Ducellier
Reference	8198	8324 or 8343
Intensity	18A	20-22A

PEUGEOT

ELECTRO MAGNETIC CLUTCH

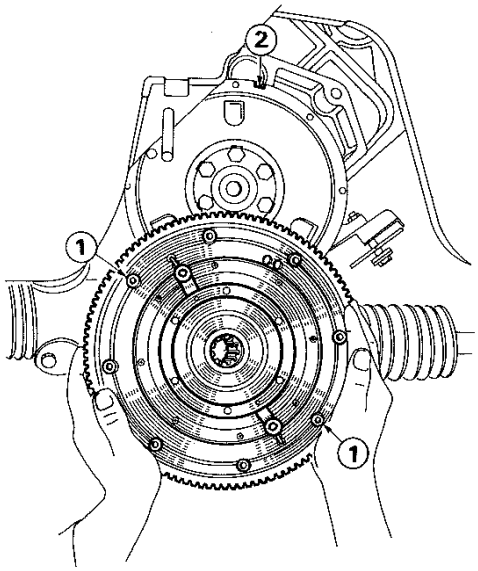
IDENTIFICATION - CHARACTERISTICS

WIRING DIAGRAM



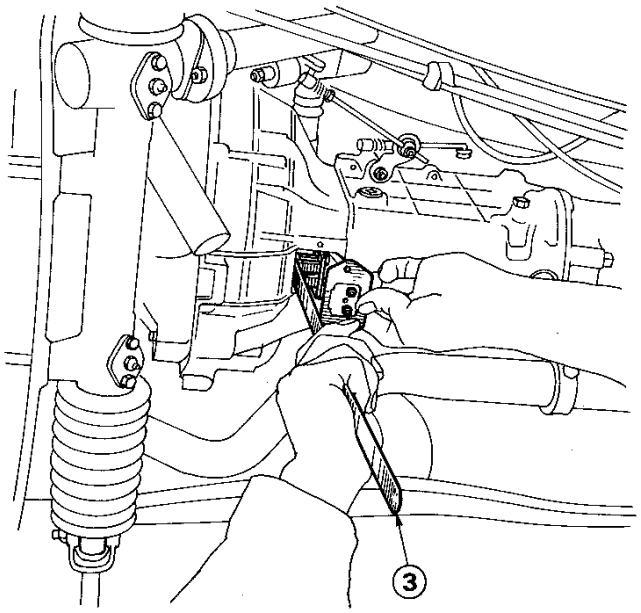
ELECTRO MAGNETIC CLUTCH

REMOVAL - REFITTING



REMOVAL

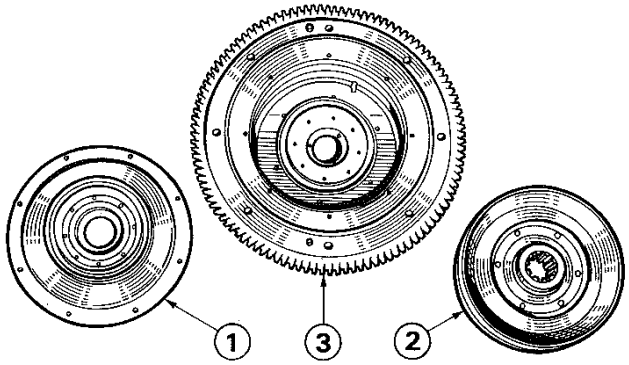
- Disconnect and remove the brush holder.
- Remove the gearbox by moving the rear axle rearwards (See class 3, page 02 01).
- Remove the six Allen screws (Do not remove the two screws 1 diametrically opposed and marked with yellow paint).
- Remove the coupler by hand by gently tapping around with a mallet.
- Mark on the crankshaft the distributor setting notch 2.
- Remove the six bolts securing the flywheel.
- Remove the flywheel matched with the coupler.



REFITTING

- Fill the coupler with powder (see Class 2, page 13 01).
- Install the flywheel according to the marks made at the time of removal.
- Replace the locking plate and tighten the bolts to 42 Ft lbs (5.75 mkg).
- Lock the bolts.
- Install the coupler onto the flywheel ensuring proper positioning by means of the two centering studs.
- Replace the 7 mm Blocfor washers and tighten the bolts to 7.2 Ft lbs (1 m.kg) using a 6 mm Allen key.
- Coat the splines and the drive shaft front part with Molykote.
- Refit the gearbox (see Class 3, page 02 03).
- Install the Subal using a thin blade or a carpenter's rule 3 to hold the four brushes in their housing.
- Connect the Subal leads (this can be carried out in any position).

PEUGEOT



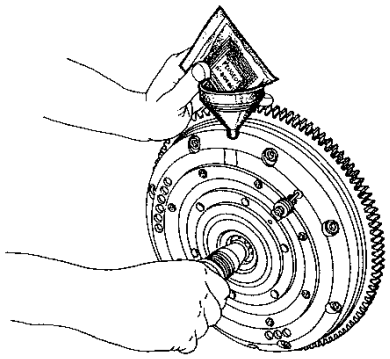
COUPLER

Dismantling

- From the flywheel side, unscrew the 8 bolts securing the cover.
- Remove cover **1**.
- Withdraw the inner armature 2 (moving armature) and sweep **all** the powder out by cleaning the inside part of the coupler **3** and the covers using a dry, clean brush.

Reassembly

- Re-install the moving armature **2** and the cover **1**.
- Replace the seal ring P.N. 2007.02 if necessary.
- Tighten the 8 securing bolts of the cover.



INTRODUCTION OF THE POWDER INTO THE COUPLER

On a new or cleaned coupler.

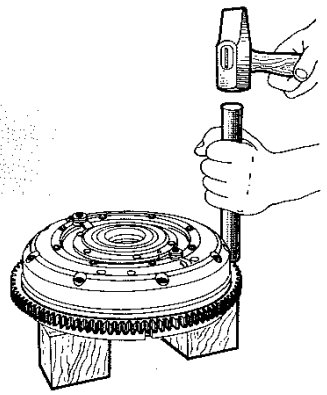
- Using a 5 mm Allen key unscrew the unpainted plug screw.
- Hold the coupler vertically.
- Pour a full bag of powder using a **non-metallic funnel.** In order to evenly distribute the powder, while pouring, rotate the moving armature by means of the drive shaft.
- Re-install the plug screw after having cleaned the threading.

IMPORTANT

A coupler filled up with powder should always be kept vertical.

ELECTRO MAGNETIC CLUTCH

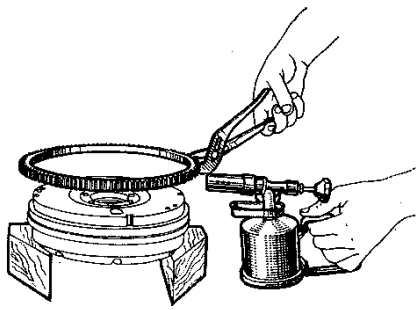
DISMANTLING - REASSEMBLY



STARTER RING GEAR

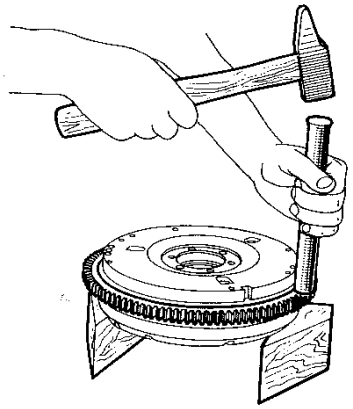
Removal

- Place the Coupler on two wooden blocks.
- Using a bronze bar and a mallet gently tap around the crown wheel until the ring gear is completely removed.

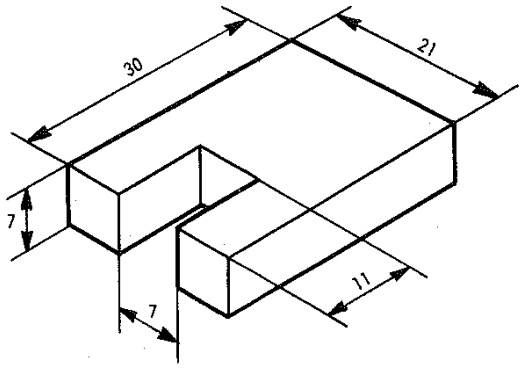


Refitting

- Turn the coupler upside down.
- Place the wooden blocks so as not to damage the terminals and the collector rings.
- Heat the ring gear using a soldering lamp.



- Place the starter ring gear over the coupler (teeth extremity facing upwards).
- Using a bronze bar or a mallet gradually drive in the ring gear onto the coupler.
- **Replace the magnetic powder before final installation of the coupler on the engine.**



TOOL TO BE USED

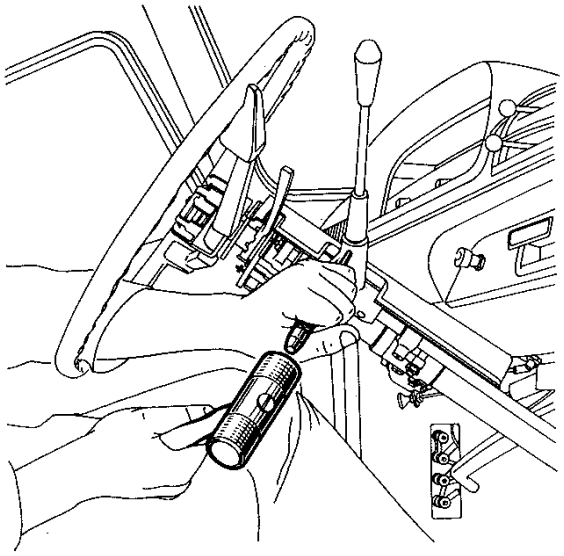
This tool should be made in the workshop.

0.0203

Adjusting spacer for checking accelerator cable proper positioning on a Jaeger electro magnetic clutch.

ELECTRO MAGNETIC CLUTCH

ACCESSORIES



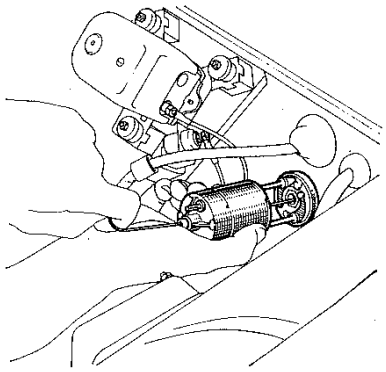
POGEL

Removal

- Remove the horn push, the steering column shells retaining rings and the lower shell.
- Engage reverse gear
- Using a drill with a 6.5 mm bit, erase the riveting from the lower joint pin of the lever.
- Remove the pin using a 6 mm diameter drift.
- Disconnect the «clips» connection from the Pogel.
- Disconnect the lead and remove the plastic clamp.
- Remove the Pogel and its anti-rattle ring.

Refitting

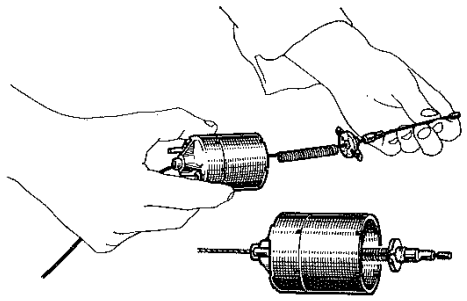
- Coat the Pogel ball joint with thick grease.
- Refit the Pogel with its anti-rattle ring.
- The lever joint pin should systematically be replaced (6 × 25 mm).
- Clench this pin using a big centre punch.
- Refit the various accessories in the reverse order to that of removal.



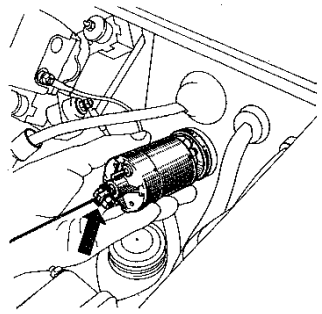
CONAC

Replacement of the Accelerator Cable

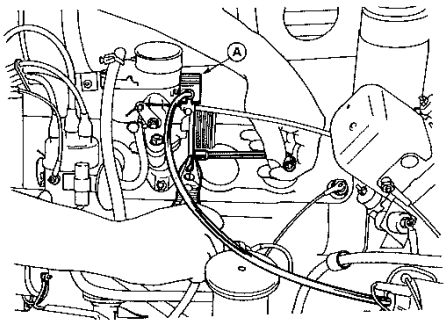
- Remove the centre cardboard under the dashboard.
- Disconnect :
  - the accelerator cable end from the accelerator pedal.
  - the accelerator cable
  - the carburettor cable and remove the sheath.
  - the Conac leads.
- Remove the assembling nuts which also serve as terminals. Do not remove the rubber washers.
- Holding the central part, remove the Conac and the cable.



- Install the new cable, the spring and the contact, as shown on the drawing opposite.
- Pull the cable until the contact comes into its positioning grooves, making sure that the contact thrust spring is properly centered into its housings.



- Bring the contact in the bottom of the housing and hold it by means of a cable clamp backed against the sheath stop (ensure that the clamp does not damage the cable).
- In this position install the whole assembly onto the Conac base engaging the cable stop through the centre of the base.
- Refit the washers and tighten the assembly nuts.
- Remove the cable clamp.



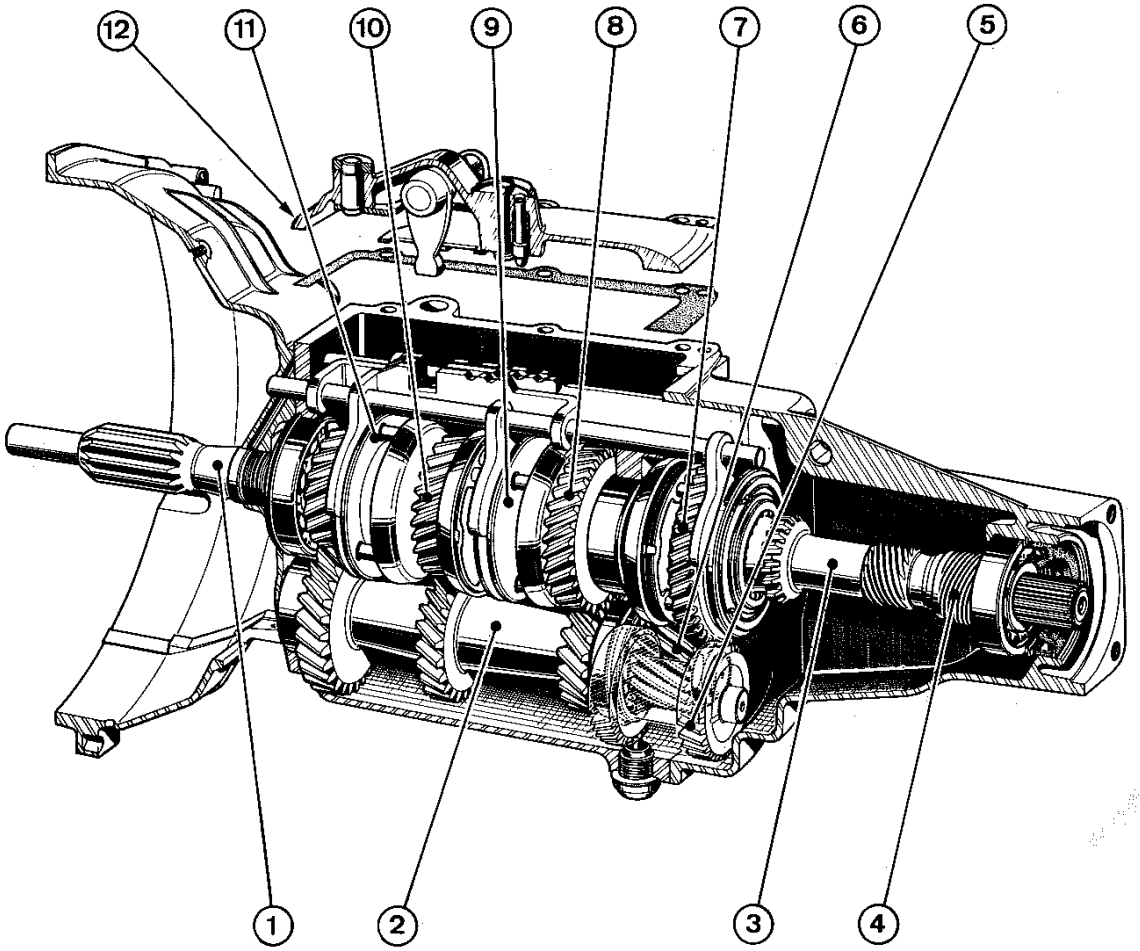
- Reconnect
  - the leads.
  - the cable stop on the accelerator pedal.
  - Install a new sheath after having oiled it sparingly.
  - Install the adjustment shim **A 0.0203** between the sheath stop and the carburettor.
  - Secure the cable onto the accelerator control drum.

GEARBOX

3

PEUGEOT

C3 GEARBOX



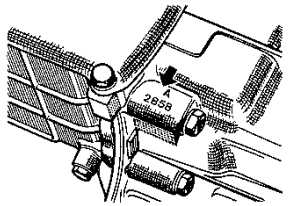
1 - Drive shaft
2 - Lay shaft
3 - Main shaft
4 - Speedometer drive worm
5 - Reverse gear pinion
6 - 1st Gear pinion
7 - Idler pinion of first and reverse gear.
8 - 2nd Gear pinion
9 - 2nd and 3rd Gear synchroniser
10 - 3rd Gear pinion
11 - 4th gear synchroniser
12 - Gear selector and control cover plate

C3 GEARBOX

C3 GEARBOX IDENTIFICATION - CHARACTERISTICS

Up to serial Nos :

404 : 4 036 782
404 J : 4 501 762



Letter **A** in prefix to the Gearbox number

Reduction Ratio

1st. $\frac{19 \times 16}{27 \times 46} = 0.245$

2nd. $\frac{19 \times 18}{27 \times 28} = 0.452$

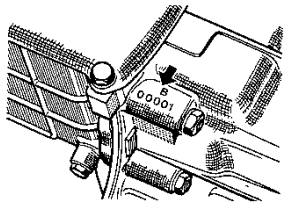
3rd. $\frac{19 \times 23}{27 \times 23} = 0.704$

4th. Direct Drive = 1

Reverse $\frac{19 \times 16 \times 25}{27 \times 27 \times 46} = 0.227$

As from serial Nos :

404 : 4 036 783
404 J : 4 501 763



Letter **B** in prefix to the Gearbox number

Reduction Ratio

1st. $\frac{23 \times 16}{32 \times 46} = 0.250$

2nd. $\frac{23 \times 18}{32 \times 29} = 0.446$

3rd. $\frac{23 \times 27}{32 \times 28} = 0.693$

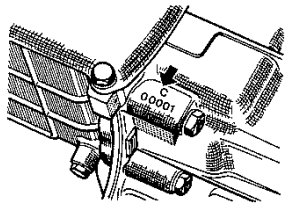
4th. Direct Drive = 1

Reverse : $\frac{23 \times 16 \times 25}{32 \times 27 \times 46} = 0.231$

Long toothed pinions with modified pressure angle of the teeth.

As from serial Nos :

404 : 4 087 020
404 J : 4 503 357

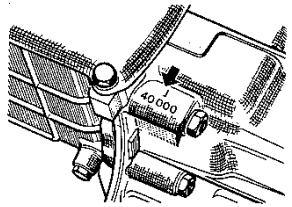


Letter **C** in prefix to the Gearbox number.

One piece layshaft and front bearing secured in place by a circlip.

As from serial Nos :

404	: 4 449 375
404 J	: 4 528 712
404 KF	: 4 560 009
404 D	: 4 600 732
404 C	: 4 497 277
404 C.KF	: 4 592 537
404 L	: 4 842 932
404 LD	: 4 977 972
404 U6	: 4 726 615
404 U6D	: 4 905 912

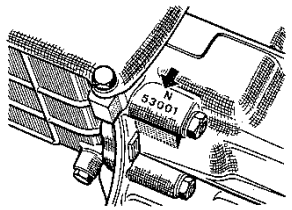


As from Gearbox number : J. 40000.

1st. and reverse idler gear, the intermediate pinion and the reverse gear pinion incorporate teeth which have the height increased by 0.43 mm and the width by 1 mm. Consequently the rear housing as well as the 1st./reverse gear fork and the fork shafts have been altered.

As from serial Nos :

404 (TW)	: 5 061 838
404 (TH)	: 5 198 481
404 J	: 4 536 093
404 KF	: 4 589 316
404 D	: 4 611 940
404 C	: 4 498 685
404 C.KF	: 4 596 772
404 L (TW)	: 4 896 007
404 L (TH)	: 4 865 964
404 L (Break)	: 4 865 684
404 LD	: 4 981 753
404 U6	: 4 750 937
404 U6D	: 4 911 210
404 U6A	: 1 925 994

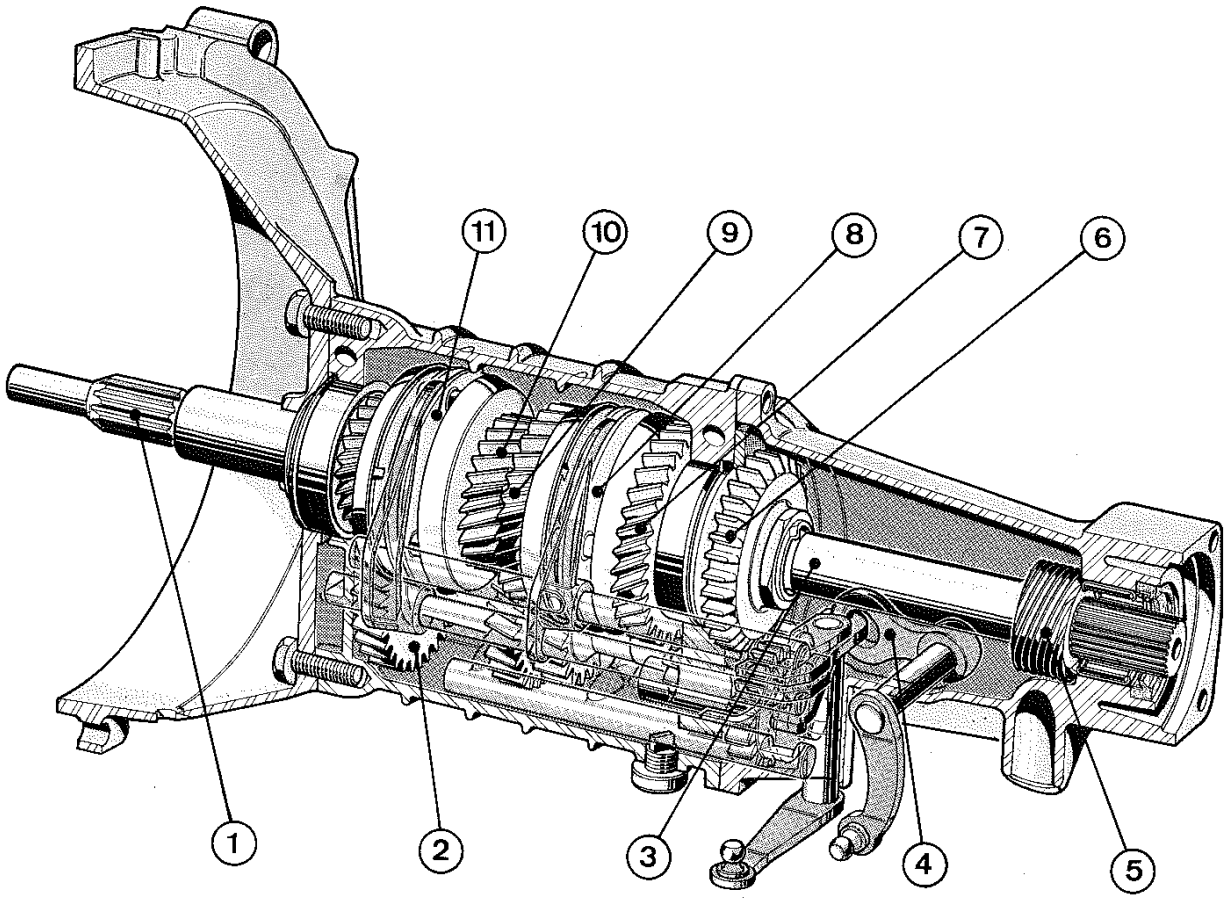


As from Gearbox number : 53 001.

2nd. and 3rd. Gear synchroniser with diameter increased by 8.5 mm.

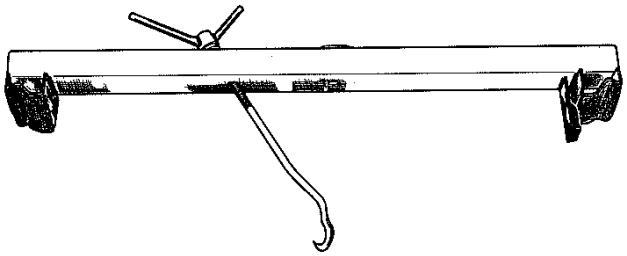
The fitting of this new synchroniser made it necessary to replace the 2nd./3rd. gear pinions of the lay shaft and the 2nd./3rd. gear fork.

BA 7 GEARBOX
IDENTIFICATION - CHARACTERISTICS



1 - Drive Shaft
2 - Lay shaft
3 - Main shaft
4 - Gear Selector control
5 - Speedometer drive worm nothread
6 - Reverse gear pinion - 31 teeth
7 - 1st. gear pinion - 35 teeth
8 - 1st./2nd gear synchroniser
9 - 2nd. gear pinion - 29 teeth
10 - 3rd. gear pinion - 26 teeth
11 - 3rd./4th. gear synchroniser.

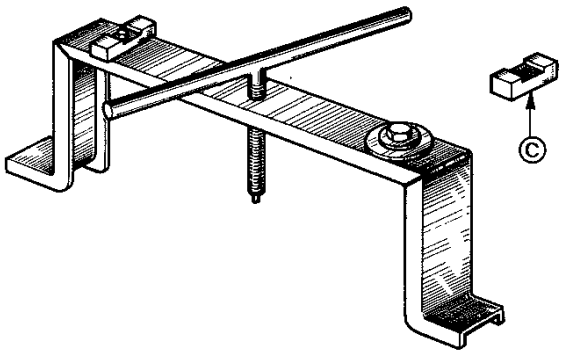
Gears	Reduction ratios	Ratios
1st	$\frac{21 \times 15}{33 \times 35}$	0.2727
2nd	$\frac{21 \times 21}{33 \times 29}$	0.4608
3rd	$\frac{21 \times 29}{33 \times 26}$	0.7098
4th	Direct drive	1
Reverse	$\frac{21 \times 19 \times 13}{33 \times 31 \times 19}$	0.2669



TOOLS TO BE USED

8.0116 Y

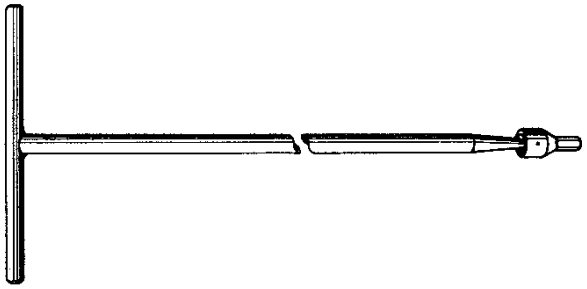
Engine support base



8.0103 Z

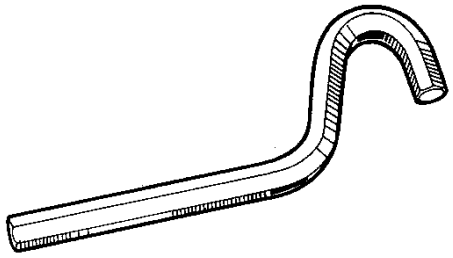
Engine or gearbox support base

C - Clutch housing block



8.0406

Torque tube ball joint nut wrench

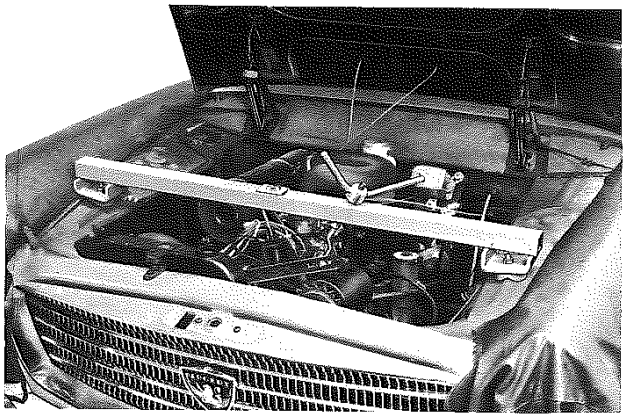


8.0202

Key for the Allen screws securing the clutch housing.

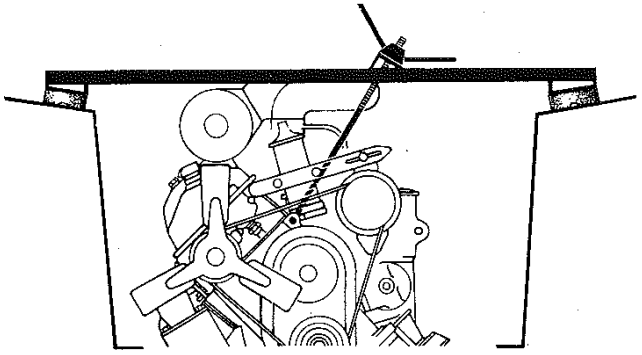
GEARBOX

REMOVAL - REFITTING



REMOVAL

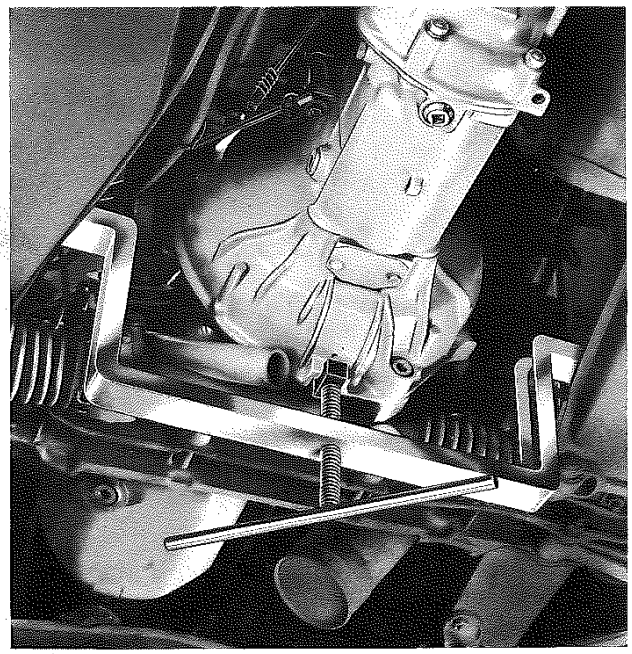
- Install wing and seat protective covers
- Disconnect the battery.
- Install support base **8.0116 Y** equipped with its rod.
- Attach the chain hook to the two lifting eyes of the engine block, below the coil.



- Tighten by a few turns to support the engine.
- Remove the starter motor.

On 404 cars equipped with a C3 gearbox
- Disconnect the clutch jack shaft.
- Remove the clutch thrust bearing lubricating pipe.

On 404 cars equipped with a BA7 gearbox
- Remove the gear change jack shaft.
- Separate the steering box from the cross member and turn the steering wheel in order to move the steering column to the left hand side.



- Remove :
  - the clutch housing closure plates.
  - the exhaust pipe. (hold it at the front and let it rest on the rear axle tube at the rear.
- Withdraw the gear change control rods from the ball joints.
- Disconnect :
  - the speedometer drive
  - the brake control cables from the equaliser and the floor connections.
  - the flexible hose from its attachment ring and remove the petrol and brake pipes securing clamp

On 404 J : Disconnect the "subal" and the "Governor".

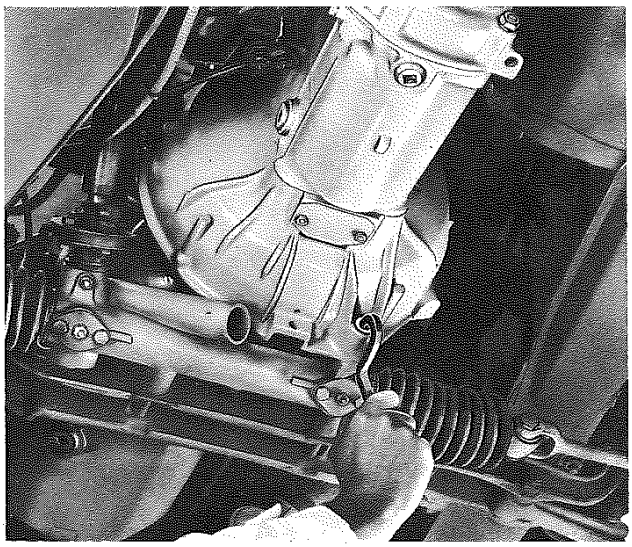
On BA7 Gearbox : Remove the clutch release cylinder rear retaining ring.

- Position the support base **8.0103 Z** with block **C.**

GEARBOX

REMOVAL - REFITTING

3 0203



- Remove the engine rear securing bolts.
- Withdraw :
  - the shock absorbers from the axle tubes
  - the stabiliser rod from the rear axle left hand tube.

On 404 cars with thermostable brakes

- Remove the braking compensator spring from the stabiliser rod.

IMPORTANT

One must never slacken the clamp spring assembly securing nut on the spring rod in order not to alter the spring tension.

- Disconnect the rear anti-roll bar from the connecting links. (as from the 1967 model).
- Using wrench **8.0406** remove the four bolts securing the torque tube ball joint (free the body to get at the two upper bolts).

- Raise the car from the rear to remove the rear springs.
- Move the differential rearwards.
- Remove the engine rear mounting.
- Remove the support base **8.0103 Z.**
- Tighten the support base rod to withdraw the clutch housing from the steering column.
- Remove the clutch counter rod.
- Remove the three Allen screws securing the clutch housing using wrench **8.0202.**
- Withdraw the gearbox.
- On BA7 gearboxes the clutch release cylinder should be removed working from the front of the gearbox (do not slacken the connection).

REFITTING

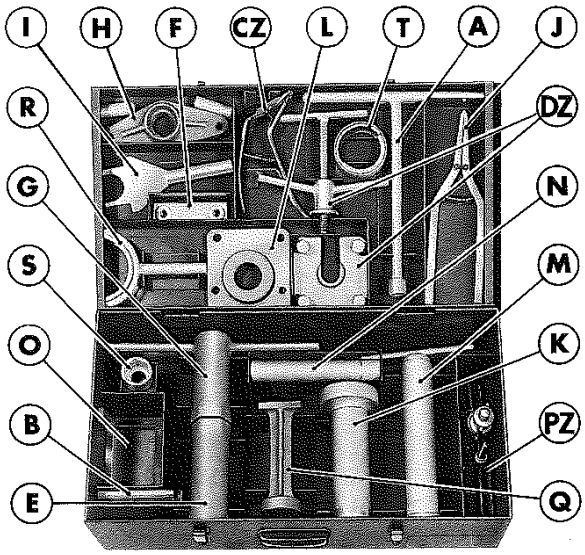
Refitting is a reversal of the removal procedure.

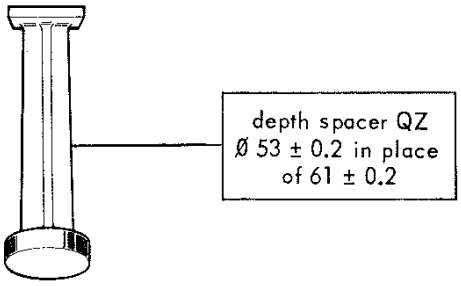
PARTICULAR PRECAUTIONS

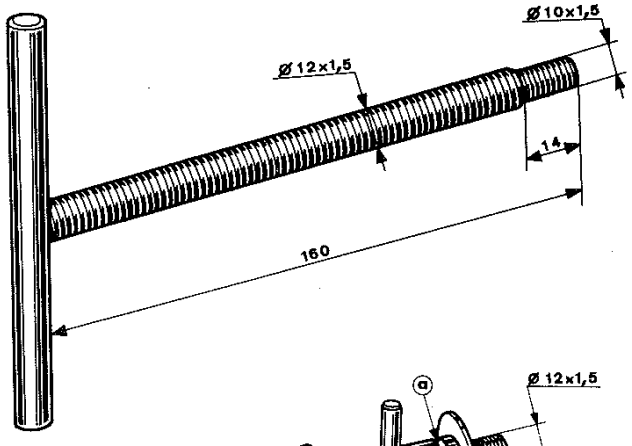
- Before coupling the differential, slacken the front cross piece support to allow for alignment of the gearbox.
- Place support base under the clutch housing to facilitate refitting of the rear support.
- Replace the Nylstop nuts securing the rear shock absorbers.

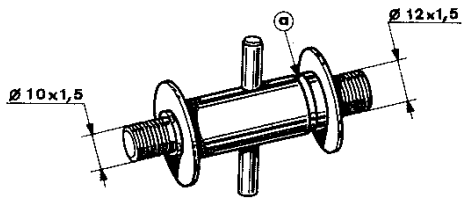
***N.B.** On 404 Diesel, to remove the gearbox the engine should first be taken out (See Workshop Manual of the Diesel Indenor XD88 - XDP88 class 1, page 02 01).*

PEUGEOT









TOOLS TO BE USED

8.0301 W

Tool chest for C2 and C3 Gearbox

203 C - 403 - 404 and associated vehicles

- *A - Clutch housing wrench
- *B - Universal joint wrench socket
- *CZ - Speedometer drive puller (pliers)
- *DZ - Rear housing puller
- E - Wrench, 4th. Gear pinion nut
- F - Drive shaft bearing backing plate
- *G - Wrench, drive shaft nut
- H - Centre bearing backing plate
- I - Fork (3,5 mm thick)
- *J - Circlip or retaining ring pliers
- *K - Drive shaft bearing puller
- *L - Drive shaft centering plate
- *M - Centre bearing puller (with protecting tube)
- *N - Rear intermediate bearing spacer
- O - Drive shaft bearing gauge
- *PZ - Rear bearing depth gauge
- *QZ - Rear bearing depth spacer (diameter 53 mm)
- R - 2nd and 3rd Gear synchroniser gauge (35.6 mm)
- S - Special socket or adapter fitting (32 mm across flats)
- T - 4th Gear pinion puller shells

*N.B. - Pliers **8.0301 CZ** may be supplied to replace puller **8.0301 C***

DZ Puller screw

The threaded section of this screw includes a 10 mm diameter end section and may be used for all types of gearboxes (C2 and C3).

PZ Gauge attachment screw

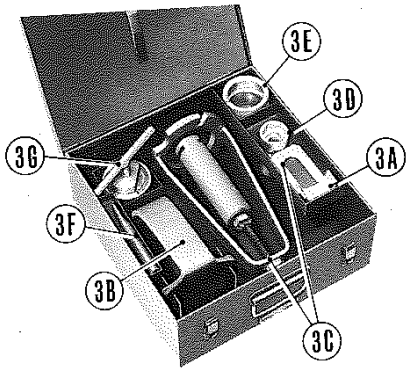
This twin-threaded screw may be used to secure the depth gauge on lay shafts with 10 mm or 12 mm diameter internal threads and may therefore be used with type C2 and C3 gearboxes

This screw incorporates groove **a** used for attachment to the chain of the gauge.

* Tools used for both C2 and C3 gearboxes.

PEUGEOT

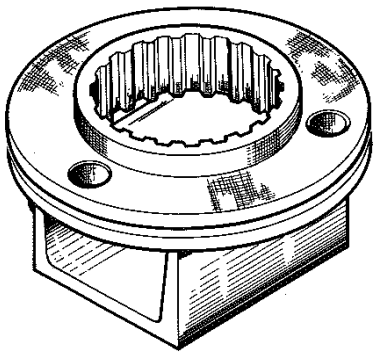
C3 GEARBOX
DISMANTLING - REMOUNTING



TOOLS TO BE USED

8.0302 Z
Additional Tool Kit used with Kit 8.0301 W for C3 Gearbox.
403 B - 404 AND ASSOCIATED VEHICLES

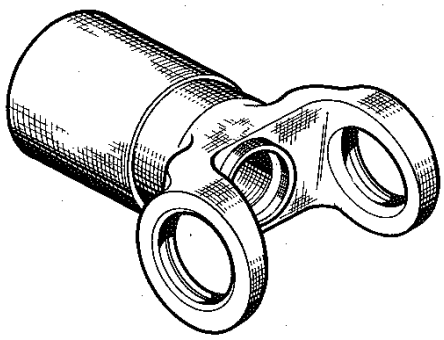
3 A - Locking Fork 1st Gear synchroniser
3 B - 2nd Gear synchroniser gauge
3 C - Drive shaft puller
3 D - 32 mm across flats socket wrench
3 E - Centre bearing puller shells
3 F - Nut staking tool
3 G - Lay shaft front bearing puller



These Tools will have to be made in the Workshop

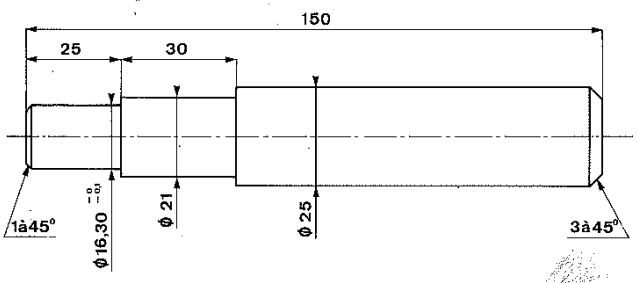
0.0309

4th Gear dog gear sleeve welded to a **U** support to hold the drive shaft in the vice.



0.0310

universal joint fork to hold the main shaft.

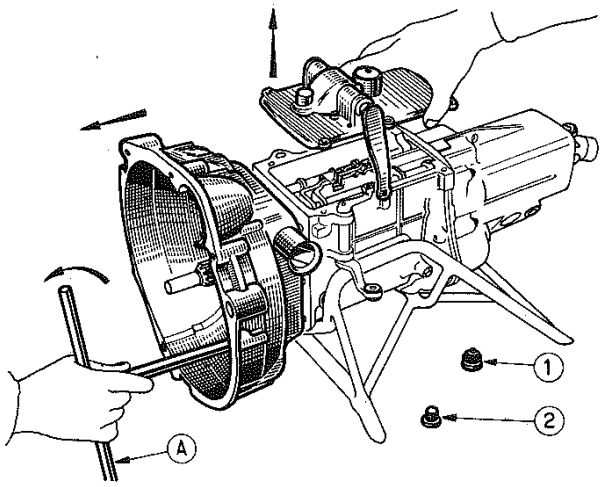


0.0311

drift for installing the main shaft front bearing and outer retaining ring into the drive shaft.

C3 GEARBOX

DISMANTLING

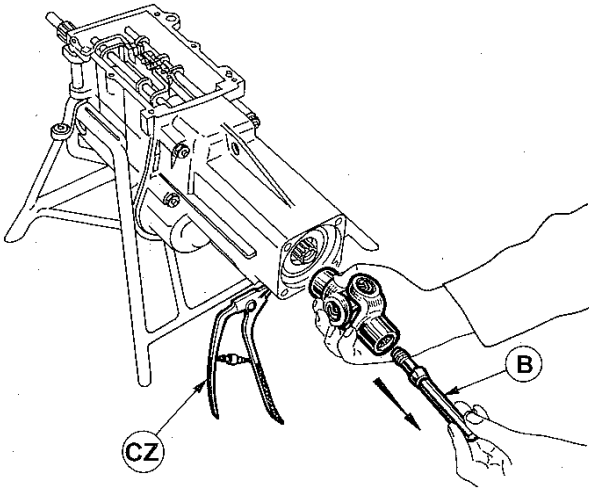


PRELIMINARY OPERATIONS

- Remove :
  - the clutch thrust bearing
  - drain plug 1 and oil level plug 2 then drain completely
- Clean the gearbox

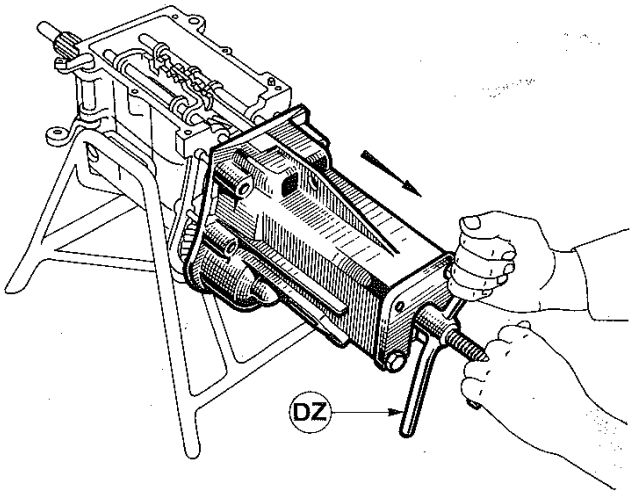
DISMANTLING

- Remove
  - the clutch housing using wrench **A**
  - the gearbox cover



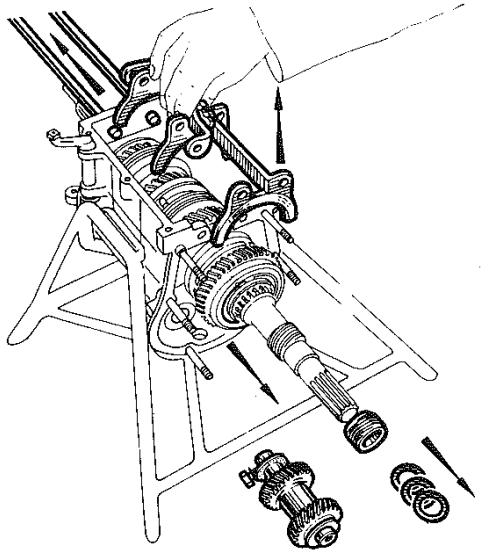
- Engage 2 gears, 4th and reverse.
- Using wrench socket **B** remove universal joint Allen screw.
- Remove the universal joint
- Remove the speedometer drive bush securing screw.
- Remove the speedometer drive using pliers **CZ**

On 404 J : remove the governor.

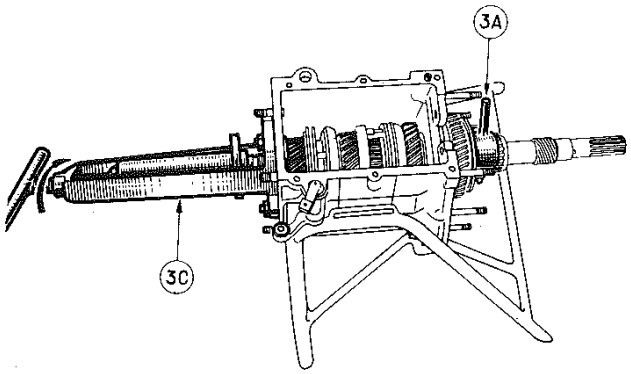


- Remove the six washers and nuts from the rear housing.
- Using the puller **DZ** remove the rear housing.
- Remove the bronze washer located between the bearing and rear seal ring.

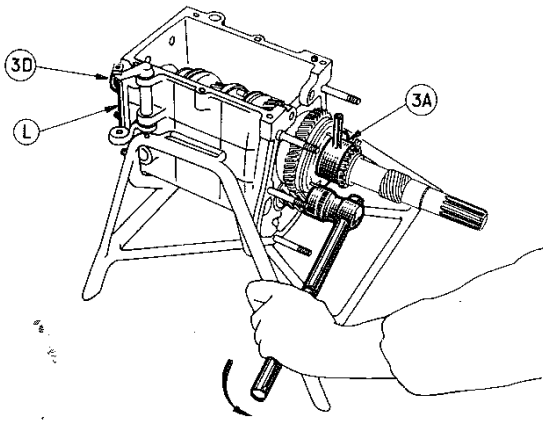
C3 GEARBOX
DISMANTLING



- Remove the adjusting shims and the speedometer drive worm from the main shaft.
- Remove the reverse gear counter shaft securing screw.
- Remove the shaft, the reverse gear pinion and its washers.
- Remove the fork shafts and the forks assembly.

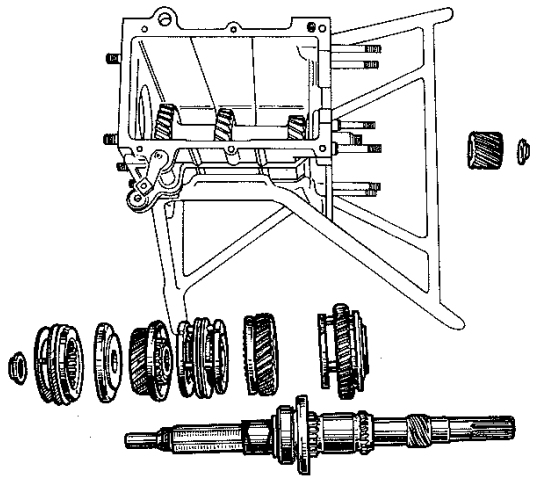


- Install fork **3A** to keep the 1st gear engaged.
- Ensure that the 4th gear remains engaged.
- Using apparatus **3C** remove the drive shaft and its bearing, the safety washer, the retaining clip and nut.
- Remove puller **3C**.



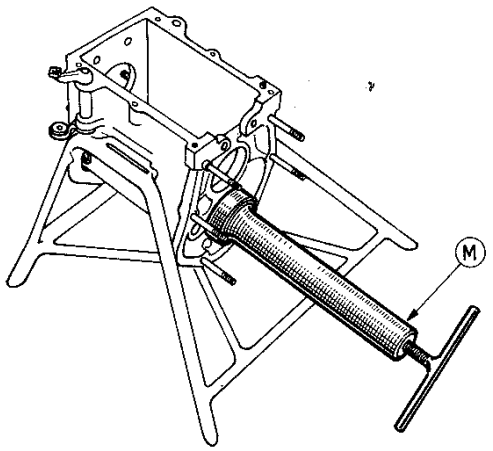
- Install plate **L** equipped with wrench **3D** while keeping 4th gear dog engaged.
- Also engage 2nd gear.
- Using wrench **3D** slacken the pinions tightening nut on the main shaft.
- Slacken and remove the 1st gear pinion tightening nut on the lay shaft.
- Remove :
  - plate **L.**
  - wrench **3D**
  - the main shaft nut.
  - fork **3A**

C3 GEARBOX
DISMANTLING

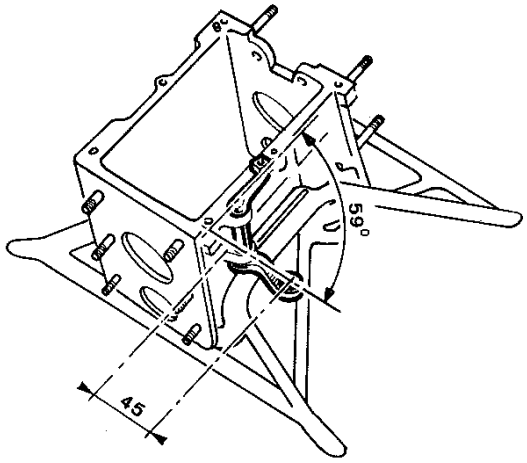


- Remove the 1st gear pinion and its synchroniser
- Using a mallet drive the mainshaft in, while maintaining the 4th dog gear engaged.
- Set aside the parts progressively as they are removed.
  - the 4th gear synchroniser and its cone.
  - the 3rd gear pinion and its ring.
  - the 2nd/3rd gear synchroniser and its hub.
  - the 2nd gear pinion.

The shaft comes out equipped with :
- the 2nd gear pinion shouldered bushing.
- the centre bearing.
- the 1st gear synchroniser cone.



- Using pliers **J** remove the lay shaft rear bearing retaining ring.
- Push the layshaft towards the rear until the bearing groove is freed.
- Remove the rear bearing using puller **M** and spacer **N**.
- Push layshaft towards the rear in order to remove the front bearing from its recess and withdraw the assembly from inside the housing.



SELECTOR CONTROL

In the event of removing this control it is necessary to mark the lever position on the splines.

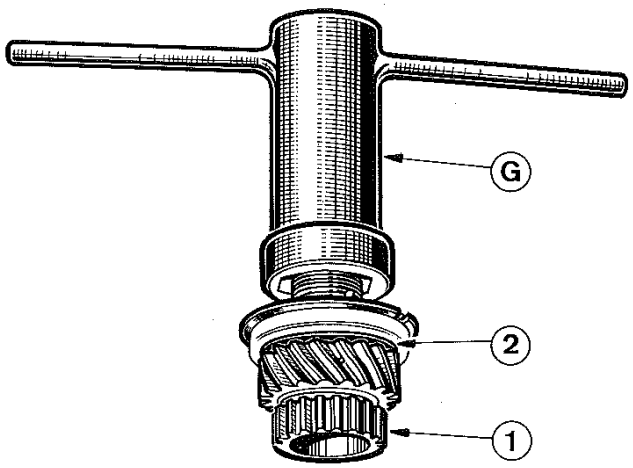
ADJUSTMENT

A bad angular position may be detrimental to gear change.

The angle between both lower and upper lever should be of 59° approximately.

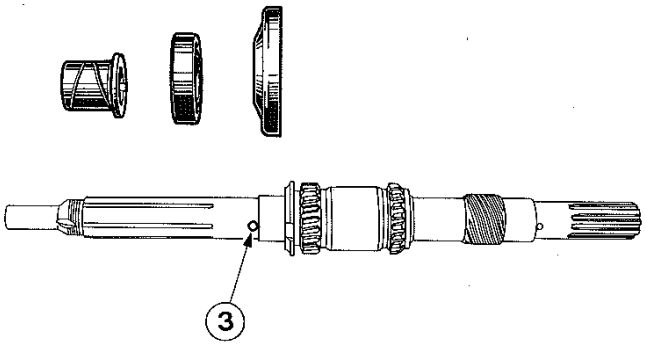
With the gearbox installed and 1st gear engaged the dimension between the housing reinforcement groove and the lower lever shaft should be 45 mm.

C3 GEARBOX
DISMANTLING



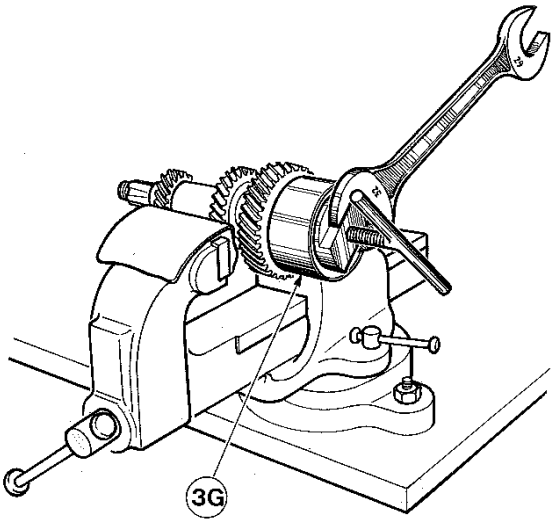
DRIVE SHAFT

- Hold the drive shaft by means of 4th speed dog gear **1** using tool **0.0309.**
- Slacken and remove bearing securing nut (left hand thread), using wrench **G**
- Remove the retaining ring.
- Using puller **K** remove the bearing.
- Remove the safety washer **2.**
- Remove the main shaft front bearing if necessary. To achieve this, break the outer retaining ring using a chisel.
- Check the inner retaining ring for condition and replace it if necessary.



MAIN SHAFT

- Remove the shouldered bush from the 2nd gear pinion.
- Remove its retaining pin **3.**
- Remove the bearing using puller **M** equipped with shells **3E.**
- Remove the 1st gear synchroniser cone.



LAY SHAFT

- Hold the lay shaft in a vice fitted with lead jaws.

Gearboxes marked A and B

- Slacken and remove the front nut.
- Remove the 3rd gear bearing and idler pinion by driving out the 2nd gear idler shaft using a press.

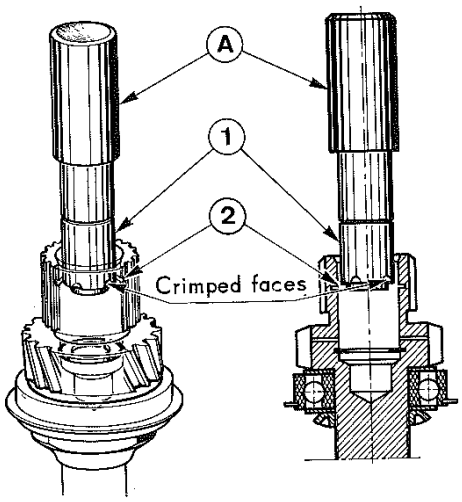
Gearboxes manufactured after reference mark C

- Remove the retaining ring and the thrust washer.
- Remove the front bearing using puller **3G.**

C3 GEARBOX
RE-ASSEMBLY

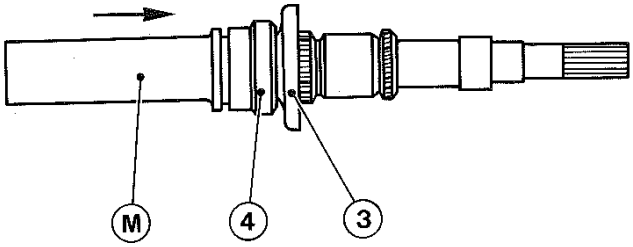
PRELIMINARY CONDITIONS

- All the parts must be perfectly clean.
- All components should be smeared with Esso Extra Motor Oil 20W/30/40 before installing them.
- On all nuts which are locked : the retaining rings and circlips must be replaced.



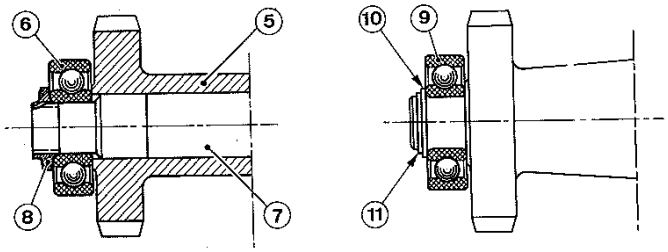
DRIVE SHAFT

- Install the safety washer and the bearing (outer groove) using puller body **K.**
- Install and tighten the nut to **65 ft.lbs** (9 m.kg).
- Lock the nut in the countersunk.
- Fit the retaining ring into the bearing groove.
- Fit the main shaft bearing.
  - position the needle cartridge **1** on drift **A 0.0311** with the four notches facing the shaft.
  - position the needles and retaining clip by tapping on the drift with the hand.
  - ensure correct positioning of the upper retaining ring **2.**



MAIN SHAFT

- Fit the 1st gear synchroniser cone **3.**
- Install the centre bearing **4** backed against synchroniser cone using puller **M.**
- Ensure that the securing pin hole of the shouldered bush is cleared completely.
- Install the securing pin
- Fit the shouldered bush **and engage the pin into its recess.**



LAY SHAFT

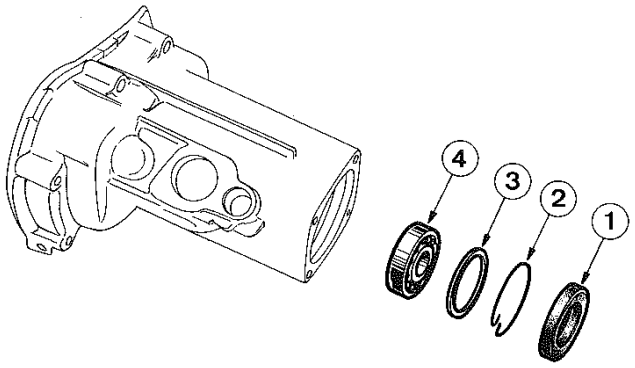
Gearboxes marked A and B

- Using the press fit the 3rd gear idler pinion **5** and the front bearing **6** on the 2nd gear idler shaft **7.**
- Tighten nut **8** to **47 ft.lbs** (6.5 m.kg) and then lock it.

Gearboxes manufactured after reference Mark C

- Install front bearing **9** using the press.
- Fit thrust washer **10** and retaining ring **11.**

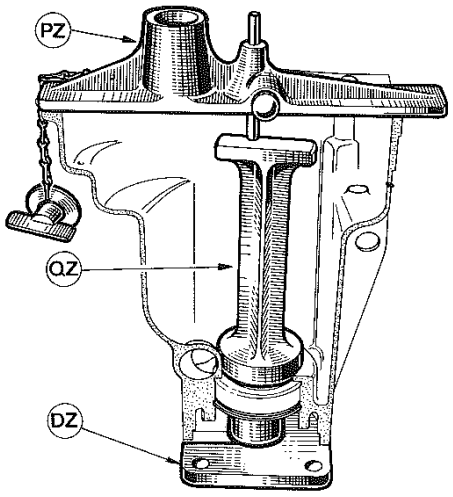
C3 GEARBOX
RE-ASSEMBLY



REPLACEMENT OF REAR BEARING IN REAR HOUSING

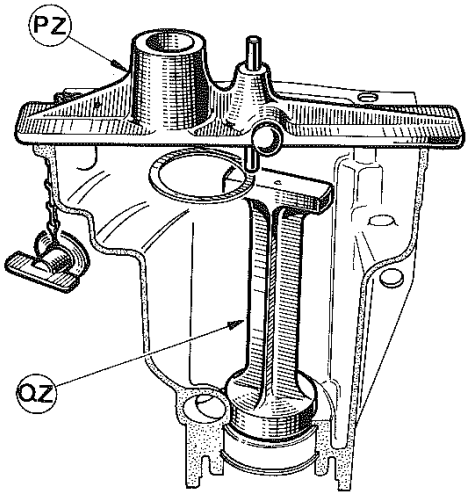
Remove :

- Seal ring 1
- Bearing retaining ring 2
- Shim 3
- Bearing 4 using a drift.

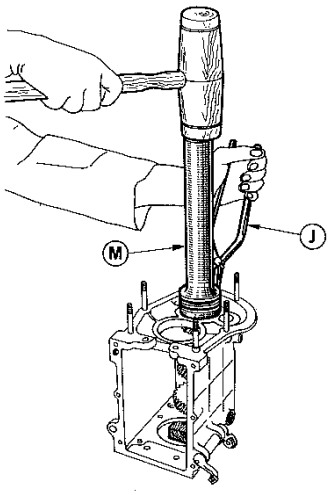


At re-assembly a shim with the correct thickness should be fitted in order to hold the rear bearing in its recess without side play.
This shim should be placed between the bearing and the retaining ring.
It is available in 5 thicknesses :
1.90 - 1.94 - 2 - 2.04 - 2.10 mm.
To carry out this operation proceed as follows :

- Fit the bearing without a shim but equipped with a new retaining ring.
- Install puller **DZ** and its spacer to hold the bearing against the housing shoulder.
- Place spacer **QZ** on the bearing and gauge **PZ** on the upper face of the housing.
- Bring the feeler into contact with the shim and then lock.

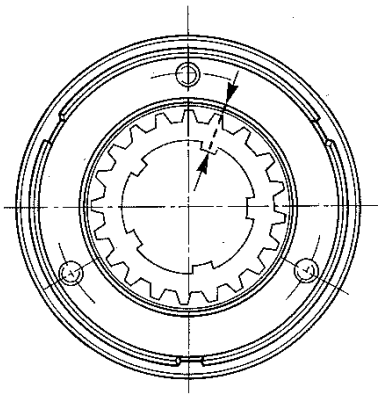


- Remove gauge **PZ**, spacer **QZ**, puller **DZ** and the spacer. Using a drift bring the bearing to its lowest position against the retaining ring.
- Refit spacer **QZ** and gauge **PZ** without altering the position of the feeler. The clearance obtained is the thickness of the shim to be installed.
- Proceed with final installation of the shim between the bearing and the retaining ring.
- Fit a new seal ring.



- Insert the layshaft through the interior of the housing.
- Using a mallet position the front bearing in its housing.

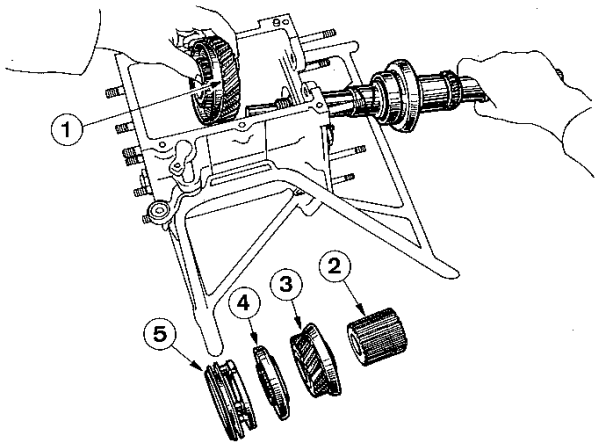
- Using pliers **J**, remove the rear bearing retaining ring and fit the bearing with its groove facing outwards.
  With the lay shaft pressed against a wooden block, remove the bearing using the puller or extractor body **M**.



ADJUSTMENT PROCEDURE OF THE MAIN SHAFT

- Insert the mainshaft into the housing.

- Mark the angular position of 2nd and 3rd gear synchroniser and that of its dog gear sleeve equipped with the synchroniser cones and then take them apart.



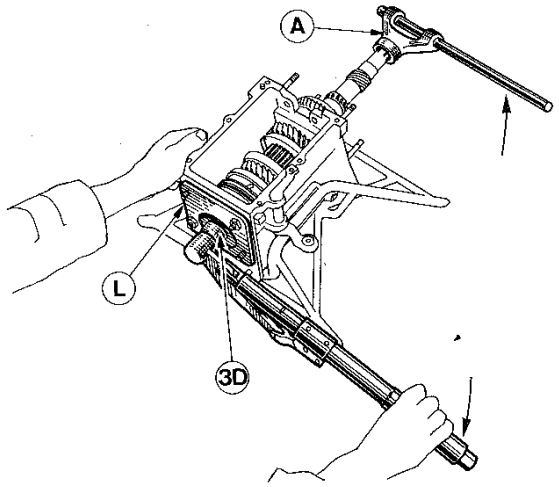
- Observing the order given below, fit the following parts on the main shaft :

  - the 2nd gear pinion **1**
  - the 2nd/3rd gear synchroniser hub **2** (without its sleeve)
  - the 3rd gear pinion bush
  - the 3rd gear pinion **3**
  - cone **4** and the 4th gear synchroniser **5**

- Engage the main shaft as far down in the housing as possible.

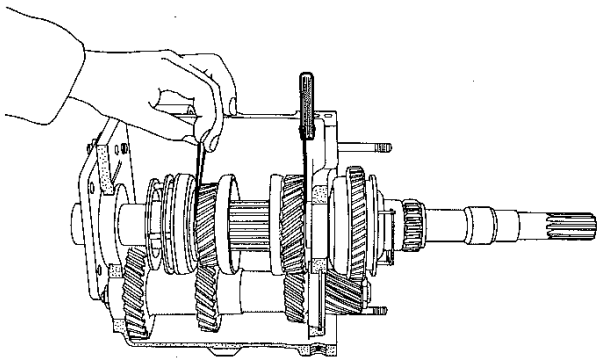
- Hold the assembly by means of a **new** nut tightened temporarily at the shaft end.

C3 GEARBOX
RE-ASSEMBLY



- Fit plate **L** and wrench **3D.**

- **T**ighten the assembly nut to **22 ft.lbs** (3 m.kg) while holding the main shaft using the universal joint fork A. 0.0310 and a bar.

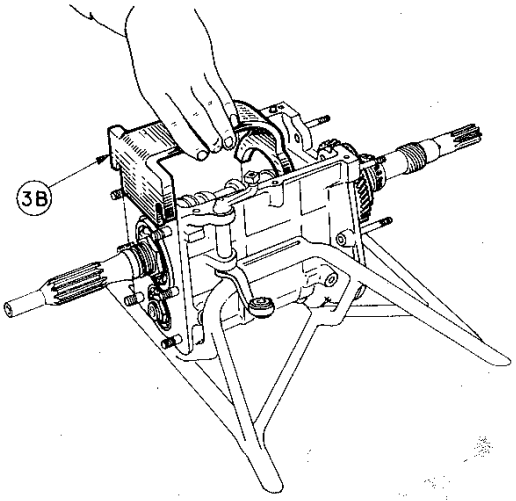


- Check the following clearances using a set of feeler gauges :

  - the clearance between the 2nd gear pinion and the bush shoulder.
  - the clearance between the 3rd gear pinion and the 4th gear synchroniser cone.

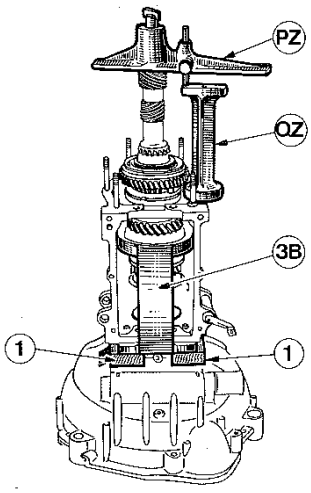
These clearances should be between 0.3 and 0.6 mm
If not, check the condition of the 2nd and 3rd gear pinion bush and replace them if necessary.

- The clearances being correct the plate **L** and wrench **3D** can now be removed.

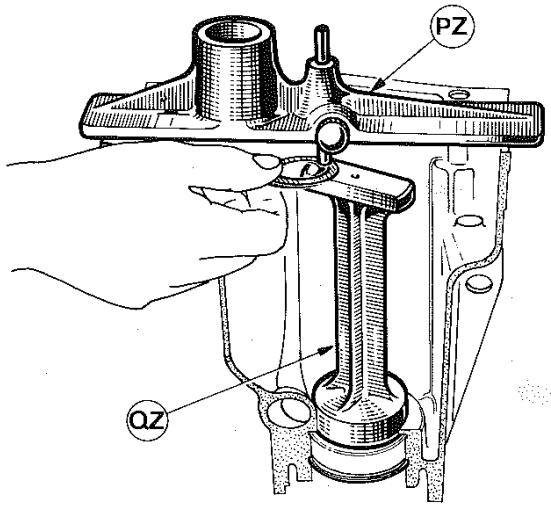


- Install the drive shaft as previously equipped and drive it in with a mallet until it abuts.

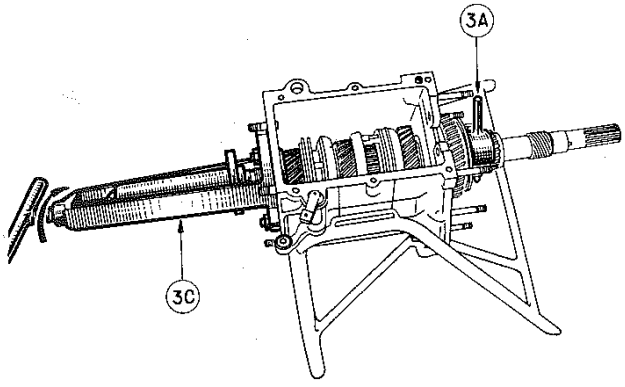
- Position gauge **3B** and secure it on the gearbox front face using two nuts.



- Lay the clutch housing flat on the bench and place the gearbox upright on the housing inserting a 20 mm wooden block 1 on either side of the drive shaft.
- Make sure the 2nd gear synchroniser is firmly seated against gauge **3B**.
- Insert the speedometer drive worm on the main shaft.
- Position the depth gauge **PZ** and hold it firmly by means of its securing screw.
- Place gauge **QZ** on the gearbox rear face and bring the feeler of depth gauge **PZ** into contact with gauge **QZ**.

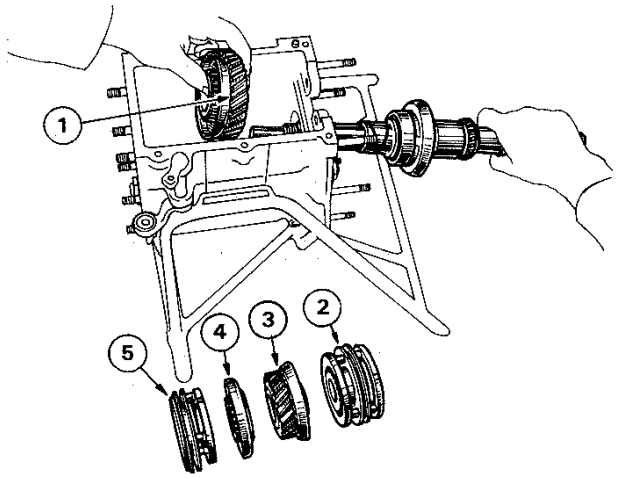


- With the gearbox rear housing resting on its rear face, place the gauge **QZ** on the bearing and the depth gauge **PZ** on the upper bearing surface.
- The clearance between the feeler and gauge **QZ** indicates the thickness of the shim to be inserted between the rear bearing and the speedometer worm gear in order to obtain a correct adjustment.
- Set aside the shims determined which should be used at the time of final installation.



- Proceed in the order of dismantling to remove the drive shaft and the main shaft.
- Re-assemble the synchroniser hub with its dog sleeve by observing the reference marks made at dismantling.

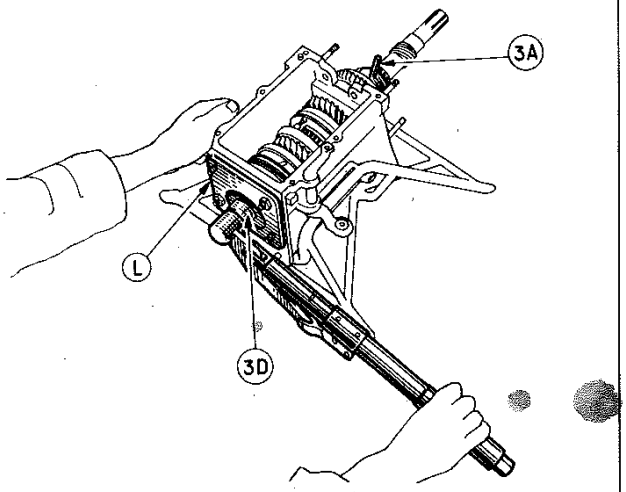
C3 GEARBOX
RE-ASSEMBLY



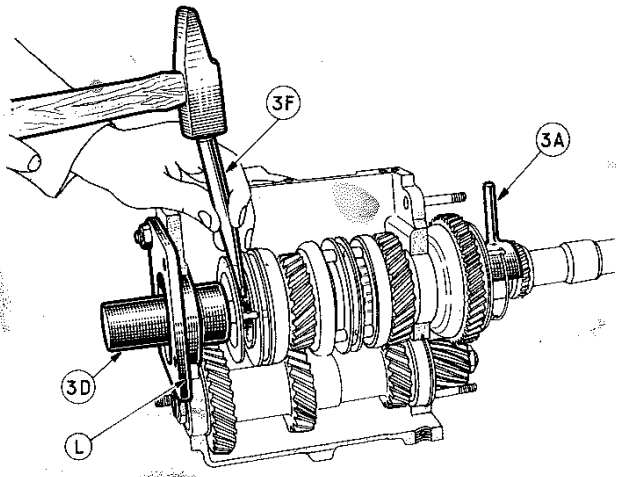
FINAL RE-ASSEMBLY.

Install the 1st gear pinion on the lay shaft splines and hold it in position by means of a new nut temporarily screwed in hand tight.

- Bring main shaft in position rear end first.
- Install the following in the order given below :
  - the 2nd gear pinion **1**
  - 2nd/3rd gear synchroniser and its hub **2**
  - 3rd gear pinion **3** and its bush
  - the cone **4** and the 4th gear synchroniser **5.**
- Engage the shaft until the centre bearing has fully entered the housing.
- Hold the assembly using a new nut temporarily screwed in hand tight on the main shaft.

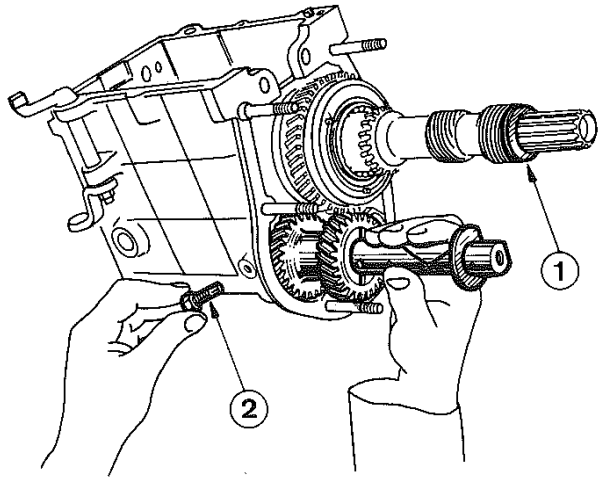


- Install plate **L** and wrench **3D.**
- Install the 1st gear/reverse gear sliding pinion.
- Install the fork in the clamp **3A** to keep the 1st gear engaged.
- Engage 2nd gear.
- Tighten the 1st gear pinion nut on the lay shaft to **40 ft.lbs** (5.5 m.kg) and lock into both countersunk sections.
- Tighten the main shaft nut to **22 ft.lbs** (3 m.kg).

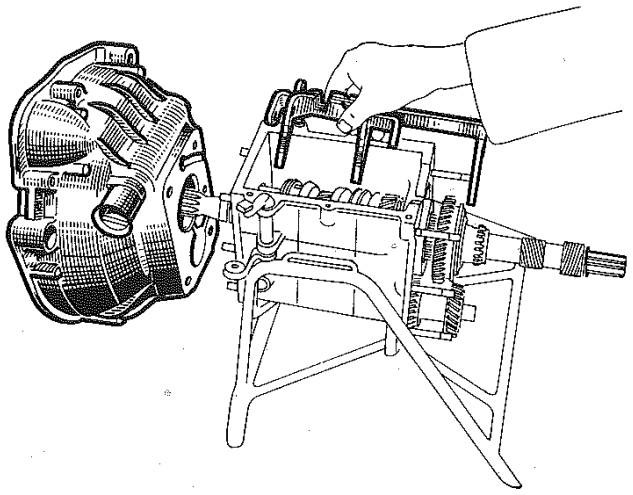


- Remove wrench **3D** until the nut is completely freed from the main shaft and carefully lock into both countersunk sections using punch tool **3F.**
- Remove plate **L,** wrench **3D** and fork **3A.**
- Install the drive shaft assembled with all its parts. Tap with a mallet until the lock ring abuts in its recess.

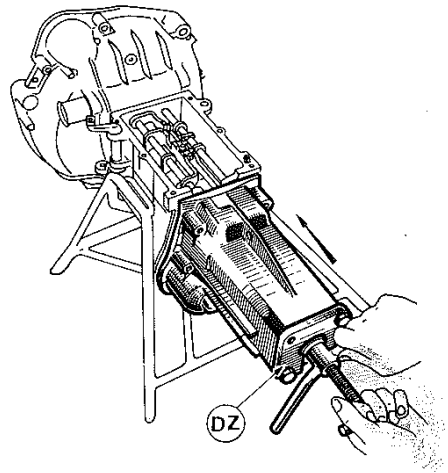
C3 GEARBOX
RE-ASSEMBLY



- Install adjusting shims **1** as determined by the use of gauge **QZ** at the time of the main shaft adjustment.
- Install reverse idler pinion, the dimpled washers (dimpled face pointing towards the pinion) and the shaft.
- Secure the shaft by means of locking screw **2** smeared with Hermetite.



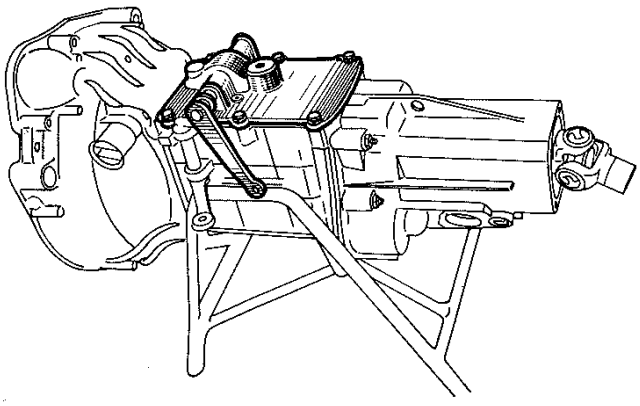
- Ensure that the shafts rotate freely when turned by hand.
- Install the selector forks and fork shafts.
- Install the clutch housing with an oiled paper gasket.
- Check centre pins for proper positioning on the gearbox rear face.



- Install the rear housing with Hermetite using puller **DZ** equipped with its spacer. Tighten the nuts to **25 ft.lbs** (3.5 m.kg).
- Remove the puller.
- Install the universal joint making sure not to forget the bronze washer smeared with Molykote.
- Engage two gears and pre-tighten the universal joint nut to :
  - Diameter 12 : **51 ft.lbs** (7 m.kg)
  - Diameter 10 : **43.5 ft.lbs** (6 m.kg)
  - The final torque to be applied is **7.25 ft.lbs** (1 m.kg).
- Carefully stake the screw.

C3 GEARBOX

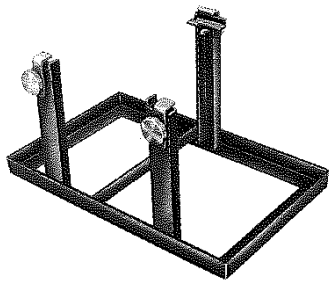
RE-ASSEMBLY



- Install the speedometer drive.

PRECAUTIONS

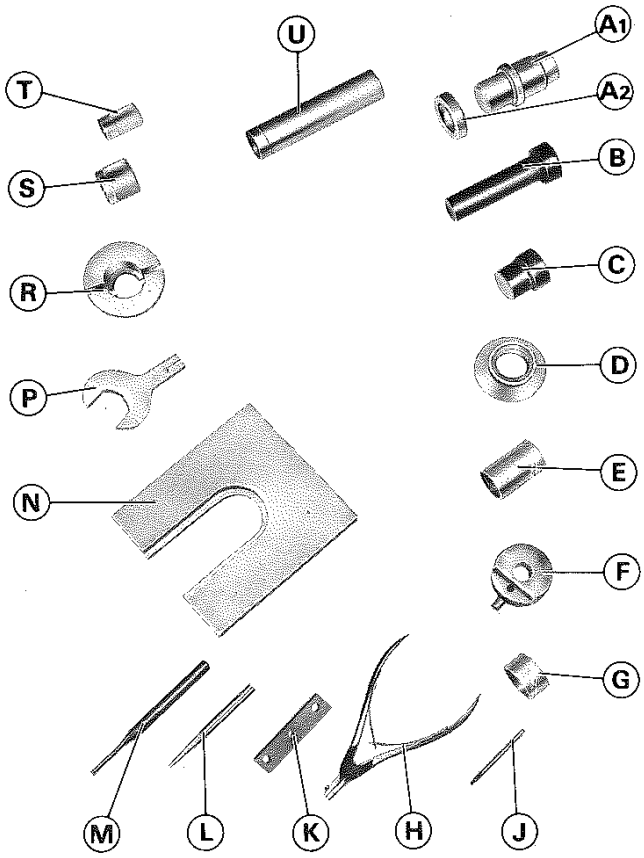
- Place gear change in neutral.
- Using pliers **CZ** fit the speedometer drive to 180° representing its final position when installed. Rotate one time to align the hole with the attachment screw.
- Ensure that the speedometer drive pinion rotates freely.
- Install the gearbox cover with its seal, using Hermetite.
- Before proceeding with the final installation of the gearbox engage all gears. They should all operate freely.
- Fill with Esso Extra Motor Oil 20W/30/40. Capacity : 2.15 pints (1.25 litres).



TOOLS TO BE USED

8.0311

Gearbox support base.

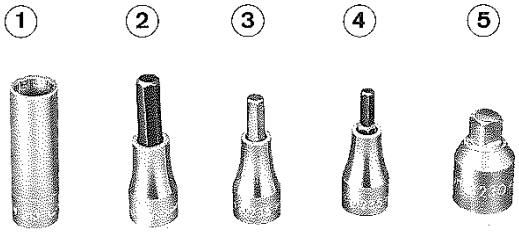


8.0310

BA7 Tool chest.

A - Tool set, rear housing bearing and "Spi" seal installing and removing : comprising :
- **A1** - Drift, Nadella bearing installing and removing.
- **A2** - Ring, "Spi" seal installing

B - Gauge, 2nd gear pinion
C - Gauge, 4th gear synchronizer cone
D - Ring, installing
E - Drift, mainshaft lock ring installing
F - Support, dial indicator mounting (micrometer)
G - Spacer
H - Pliers, speedometer drive socket removing and snap ring installing.
J - Extension, dial indicator
K - Bar, safety
L - Tool, staking
M - Drift, plastic-coated
N - Plate, backing, hydraulic press
P - Wrench end, mainshaft nut
R - Shells, intermediate gearshaft bearing removing
S - Drift, intermediate gearshaft bearing installing.
T - Drift, intermediate gearshaft snap ring installing.
U - Drift, drive shaft bearing and snap ring installing.



RECOMMENDED TOOLS

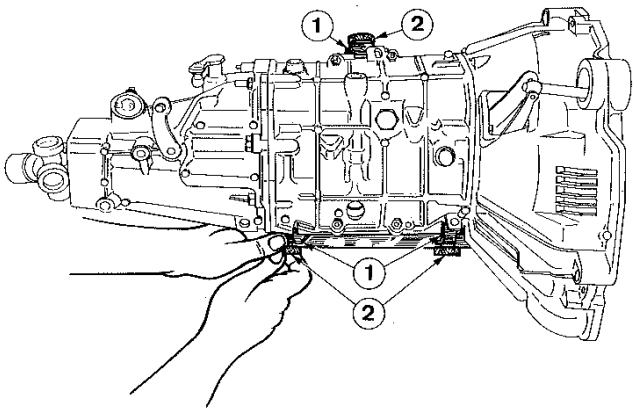
Facom Standard Tools

1 - Socket, "long", 13 mm (J 13 L)
2 - Socket, external hexagonal (J 236/ET 8)
3 - Socket, external hexagonal (J 235/ET 6)
4 - Socket, external hexagonal (J 235/ET 5)
5 - Socket, reductor, 1/2" - 3/8" (J 230)

The above tools are not supplied with the tool kit, but the tool chest incorporates compartments for storing them.

BA7 GEARBOX

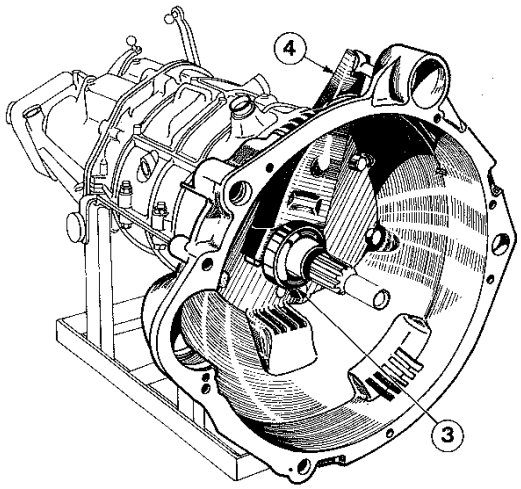
DISMANTLING



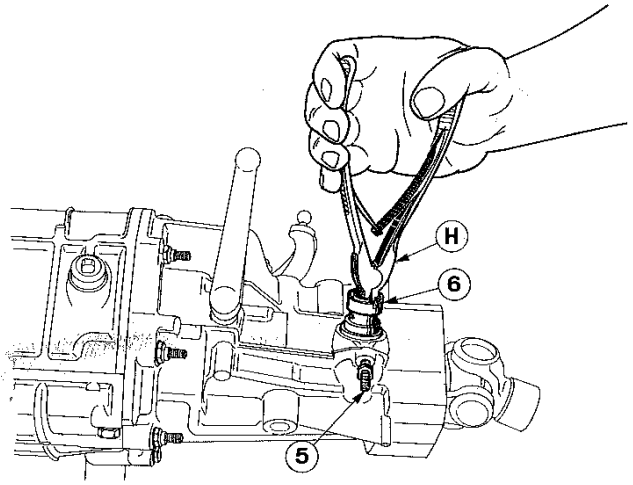
- **Care should be taken to avoid carrying the gearbox by the universal joint, or to hit the universal joint during handling.**

- Drain oil from gearbox and firmly secure gearbox to support base **8.0311** as indicated on drawing opposite, by pressing support brackets **1** against the corresponding bosses on the housing.

- Firmly tighten screws **2.**



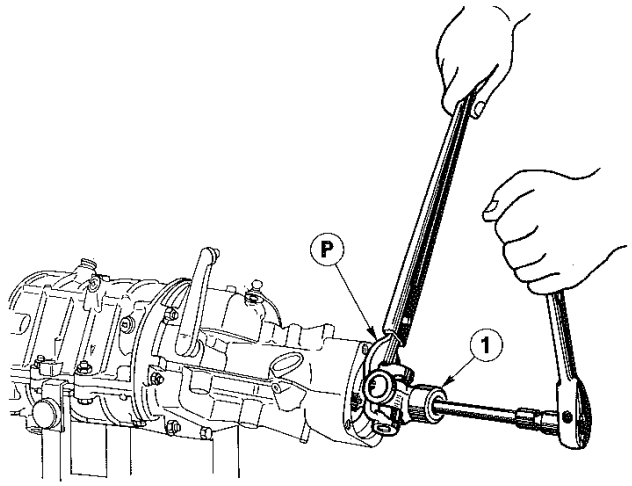
- Remove :
  - Thrust ball bearing **3**
  - Clutch release fork **4**
  - Clutch housing.



- Remove :
  - Stop screw **5**
  - Speedometer drive socket **6,** using pliers **H.**

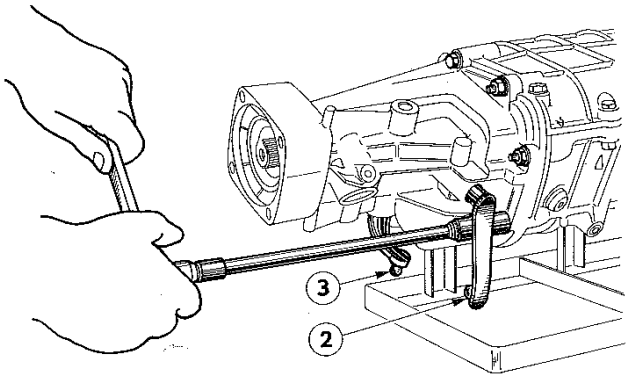
BA7 GEARBOX

DISMANTLING



- Hold universal joint 1 using wrench **P** fitted with Facom SJ 214 extension, and unlock attachment screw using an 8-mm a/c flat ext. hex. socket.

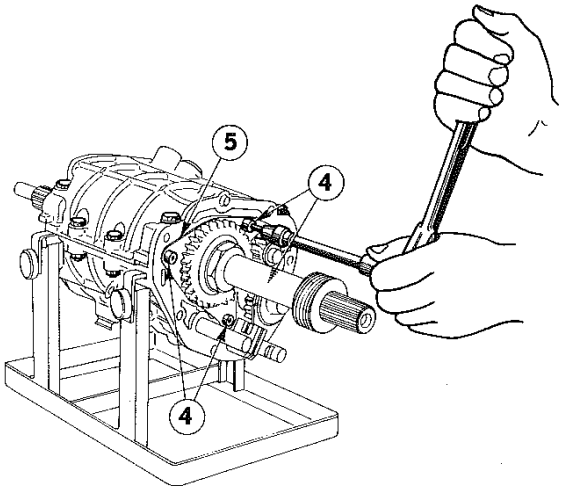
- Remove the universal joint.



- Reverse the position of the gearbox on the support base, and firmly tighten all three knurled head screws.

- Set control lever **2** to neutral and pull selector lever **3** fully to the rear.

- Remove all 7 housing attaching screws using a wrench equipped with a 13-mm long socket Facom J 13 L or similar.



- Remove the rear housing, using a mallet if required

- Remove :

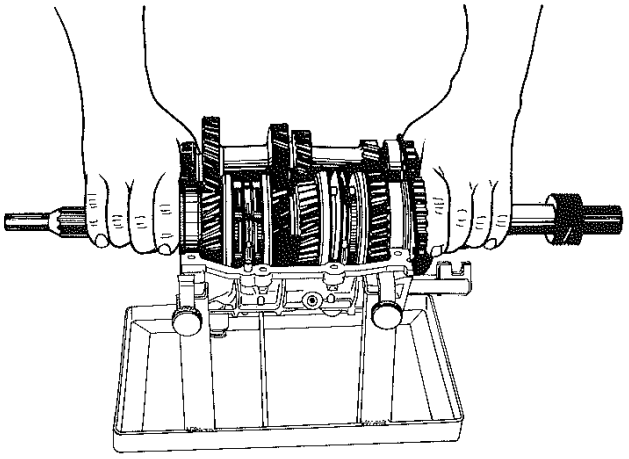
  - Four Allen head screws **4** on bearing lock plate **5** (use a 6-mm Allen wrench, Facom J 235/ET 6 or similar).

  - Eight half housings assembling screws.

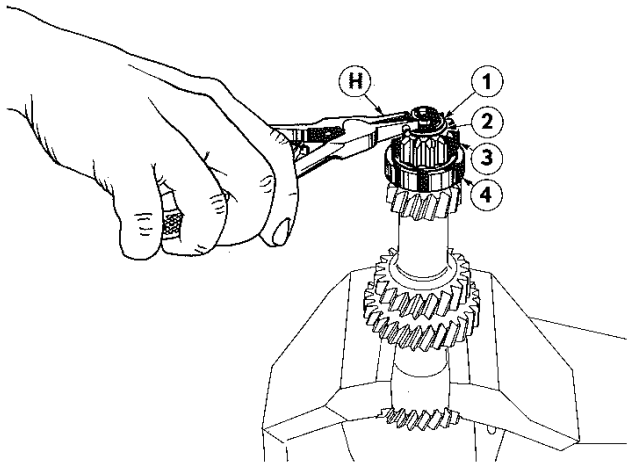
  - Upper housing.

BA7 GEARBOX

DISMANTLING



- Lift off and remove gear and pinion assembly.

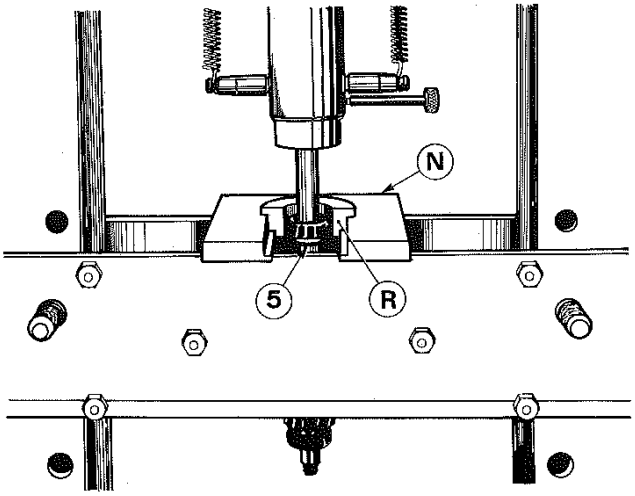


INTERMEDIATE GEARSHAFT

- Remove snap ring **1** from intermediate gearshaft reverse pinion, using pliers **H.**

- Remove and recover :

  - spring washer **2**
  - intermediate gearshaft reverse pinion **3**
  - rear bearing outer race **4.**

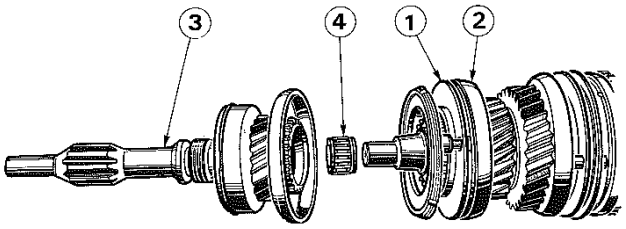


- Remove front bearing, using :

  - plate **N**
  - half shells **R**

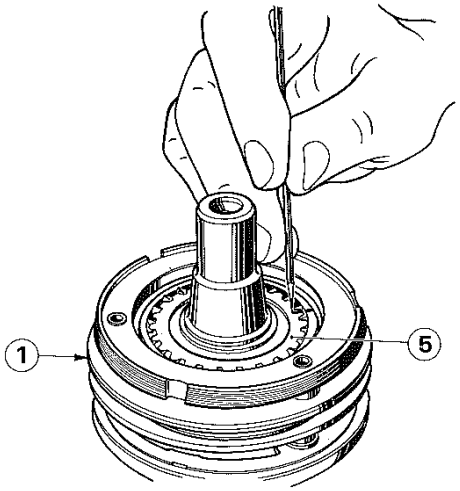
- Remove and recover front bearing and calibrated adjusting washer **5.**

- Remove rear bearing, using the same procedure.



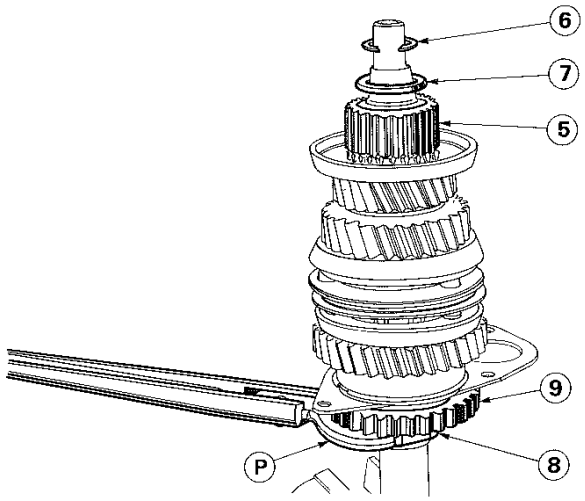
DRIVE SHAFT AND MAIN SHAFT

- Engage 3rd/4th gear sliding gear 1 into 3rd speed synchronizer cone 2 and **hold it in this position.**
- Disassemble drive shaft 3 from main shaft.
- Remove needle bearing cage 4 from inside of drive shaft.



Main shaft

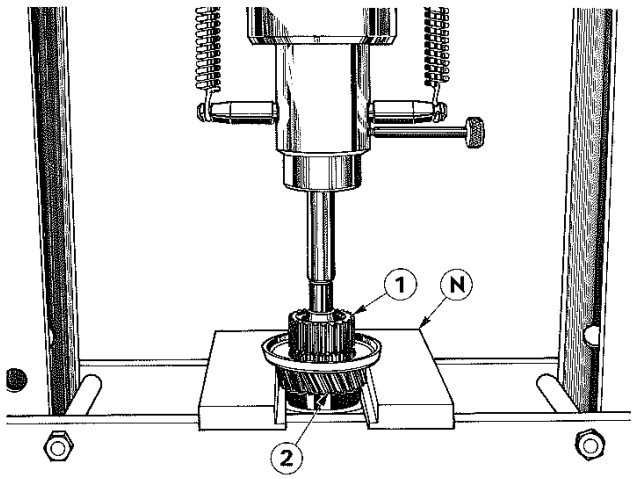
- Remove grease from 3rd/4th gear synchronizer cone **without disengaging the sliding dog gear.**
- Hold main shaft in a vice without lead jaws.
- Mark the position and direction of rotation of 3rd/4th speed sliding gear with respect to its hub 5 using a brass rod.
- Remove sliding gear 1.



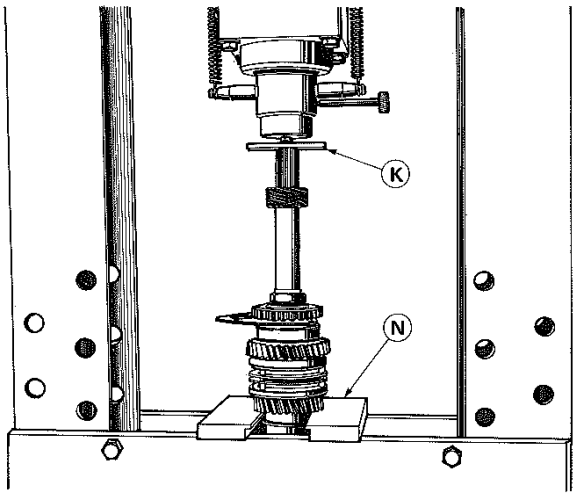
- Remove snap ring 6 and spring washer 7 from 3rd/4th gear synchronizer hub 5.
- Fully unscrew nut 8 while holding main shaft reverse pinion 9 with wrench P equipped with Facom SJ 214 extension.

BA7 GEARBOX

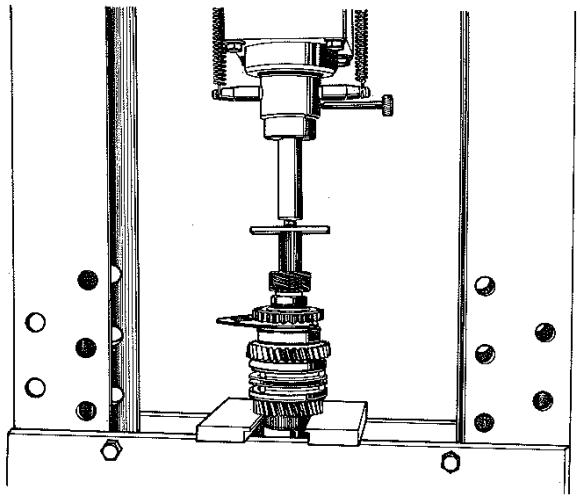
DISMANTLING



- Remove synchronizer hub **1** and 3rd gear main shaft pinion **2**, using the press if required.
- In such a case, install backing plate **N** on press table with wider side turned upwards.

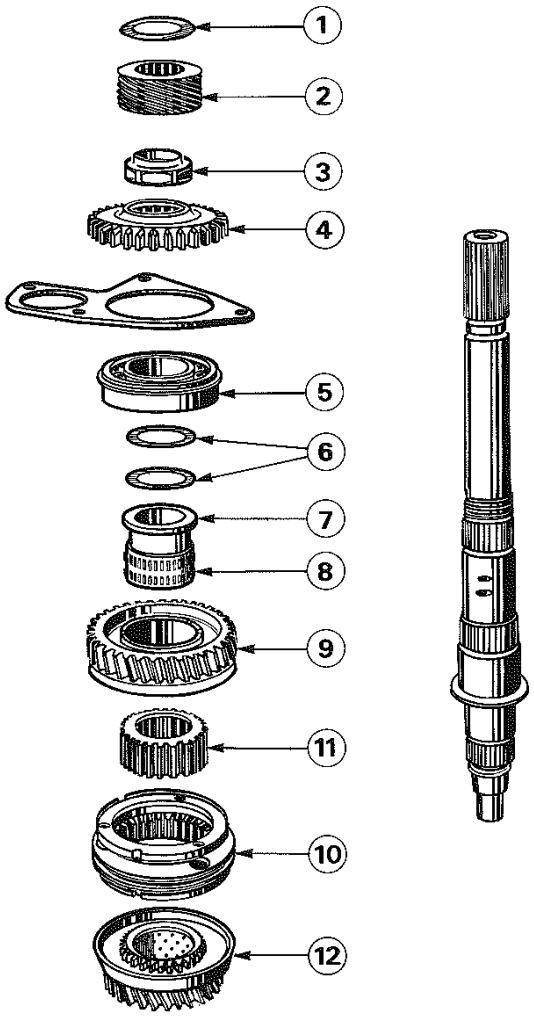


- Turn plate **N** upside down (narrow side turned upwards).
- Secure safety bar **K** to shaft end, using one of the rear housing attachment screws inserted into the center hole of the safety bar.
- Tightening torque : **7,25 ft.lbs** (1 m.kg)
- Install mainshaft on backing plate, with 2nd gear pinion resting on plate.
- Press main shaft downwards to free rear bearing.



- Continue pressing main shaft downwards to free speedometer drive worm.

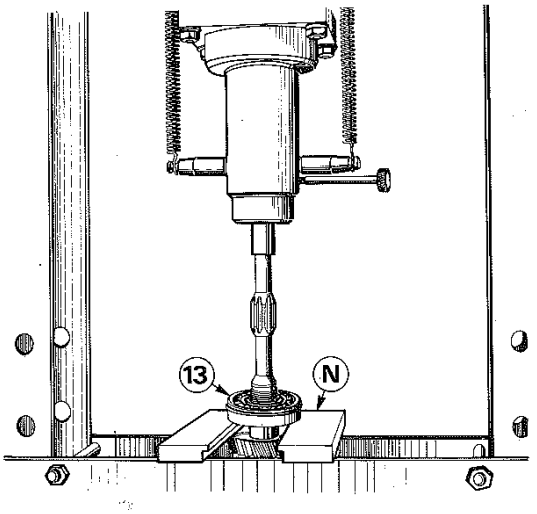
BA7 GEARBOX
DISMANTLING



- Remove safety bar **K.**

- Remove the following parts in the indicated order :
  - bronze washer **1**
  - speedometer control worm **2**
  - nut **3**
  - reverse pinion **4**
  - rear bearings backing plate
  - rear bearing **5**
  - adjustment shim assembly **6**
  - 1st gear spacer bushing **7**
  - needle bearing cage **8**
  - main shaft 1st gear pinion **9**
    1st/2nd gear synchronizer, WITHOUT REMOVING SLIDING GEAR **10** FROM HUB **11.**
  - main shaft 2nd speed pinion **12.**

- Remove grease from parts **10** and **11** and **mark their respective positions, using a pointed brass welded rod.**



On drive shaft :

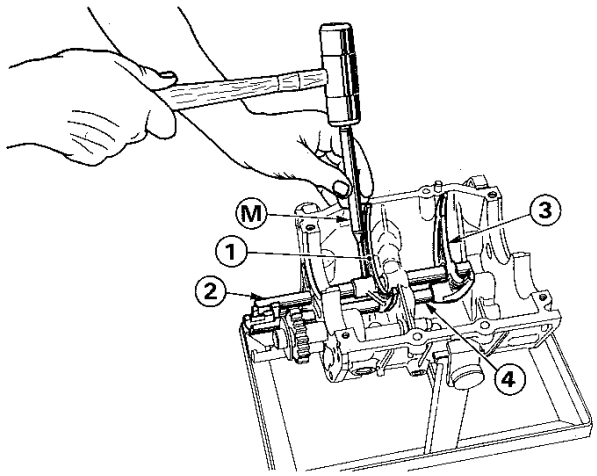
- Remove snap ring, using pliers **H.**

- Recover the spring washer.

- Remove bearing **13,** using plate **N** with narrow side turned upwards.

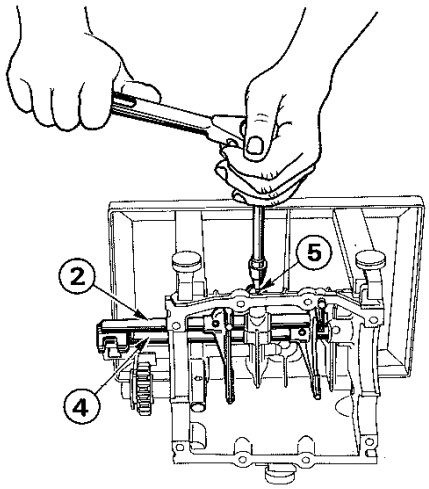
- Remove and recover :
  - bearing **13**
  - deflector washer
  - adjustment shims

BA7 GEARBOX
DISMANTLING

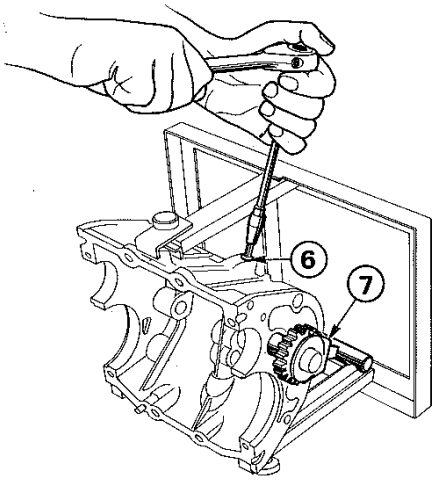


SHIFTING FORKS AND LOCKING DEVICES

- Engage 2nd gear.
- Remove Mecanindus pin from 1st/2nd gear shifting fork **1**, using drift **M**.
- Return shifting fork shaft **2** to Neutral.
- Engage 4th gear
- Remove Mecanindus pin from 3rd/4th gear shifting fork **3**.
- Return shifting fork shaft **4** to Neutral.

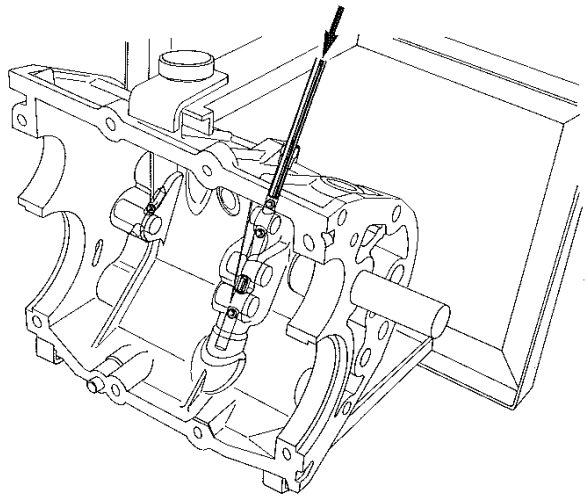


- Remove :
  - locking plug **5** (use a 5-mm Allen wrench type Facom J 235/ET 5).
  - 1st/2nd gear fork shaft **2**.
  - 3rd/4th gear fork shaft **4**.



- **Turn gearbox support base on its side.**
- Remove :
  - locking plug **6** for reverse shifting fork.
  - reverse shifting fork **7** with countershaft pinion.

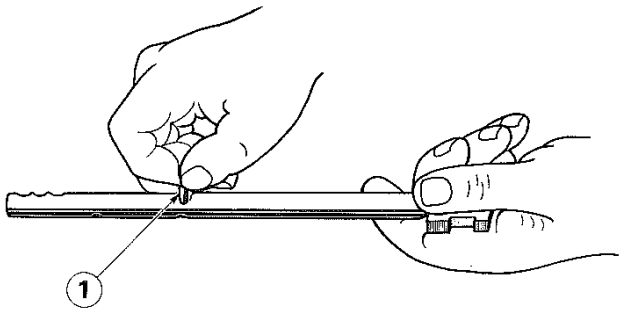
BA7 GEARBOX
DISMANTLING



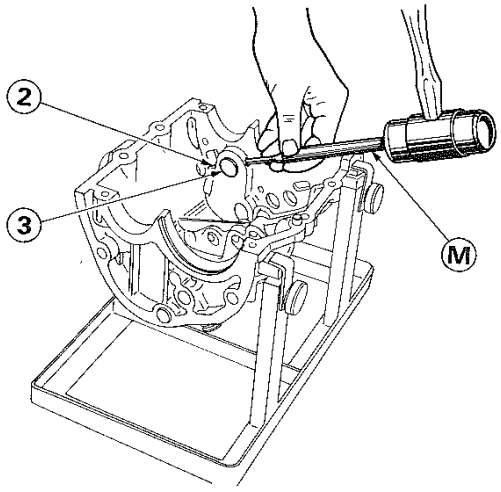
- Remove and recover :

  - 3 locking springs
  - 4 balls
  - 1 locking finger

(If the balls are «stuck» in the passage, use a 7-mm dia., 230-mm long rod to free them).



- Remove locking needle **1** from 3rd/4th gear fork shaft.



- Use drift **M** to dislodge «SPIRAL» pin **2** from reverse pinion shaft **3**, and to force this shaft towards the inside of the housing.

BA7 GEARBOX
RE-ASSEMBLY

Preliminary conditions :

- All parts must be perfectly clean.

- Mating surfaces smeared with Perfect Seal sealing compound should be cleaned using lintless cloth moistened with industrial grade methylated spirit **exclusively.** NEVER USE EMERY CLOTH or CUTTING TOOLS.

- The following parts must be replaced systematically after each disassembly :

  - snap rings used on shafts,

  - spring washers,

  - Mecanindus pins,

  - Spiral pin (reverse gear shaft),

  - main shaft nut,

  - main shaft rear oil seal,

  - speedometer drive socket «O» seal ring,

  - all Onduflex and Blocfor washers

- All components should be smeared with ESSO EXTRA MOTOR OIL 20W/30/40 immediately before installing them.

IMPORTANT

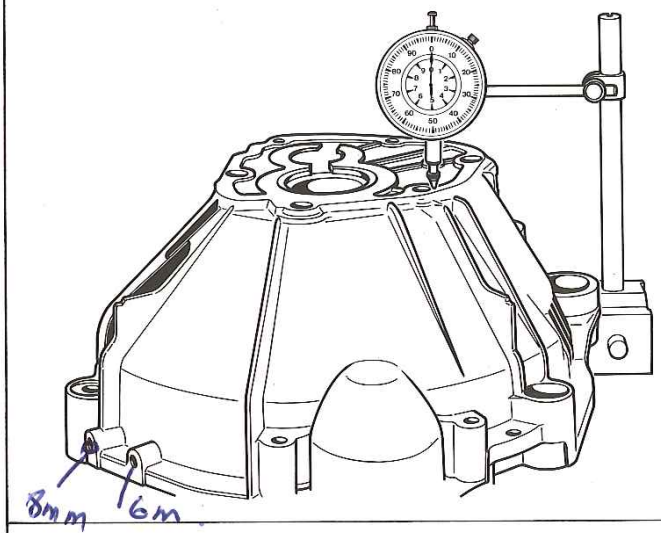
A number of earlier production gearboxes use a mainshaft 1st gear pinion equipped with a honeycombed bushing rotating on the pinion spacer bushing.

When repairing a gearbox of this type, THE PARTS DESCRIBED ABOVE MUST SYSTEMATICALLY BE REPLACED by the following :

- *1 mainshaft 1st gear pinion*
- *1 needle bearing cage*
- *1 spacer bushing*

} *MATCHED ASSEMBLY*

The complete assemblies are interchangeable ; installation and adjustment procedures are the same in both cases.

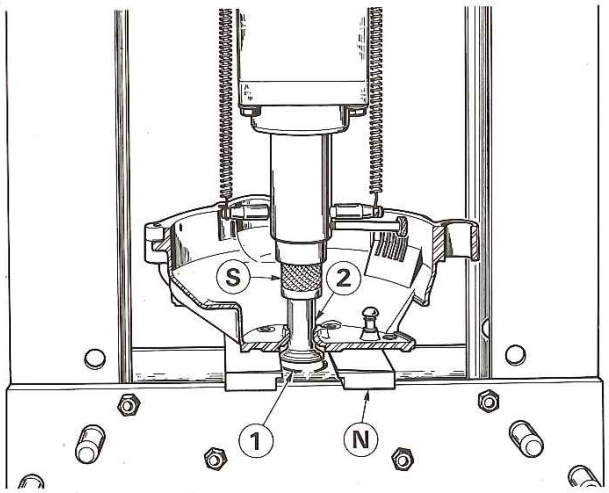


PREPARING THE HOUSINGS

CLUTCH HOUSING

- Use a flat surface to check the parallelism of the front and rear faces of the clutch housing ; proceed as indicated on drawing opposite.

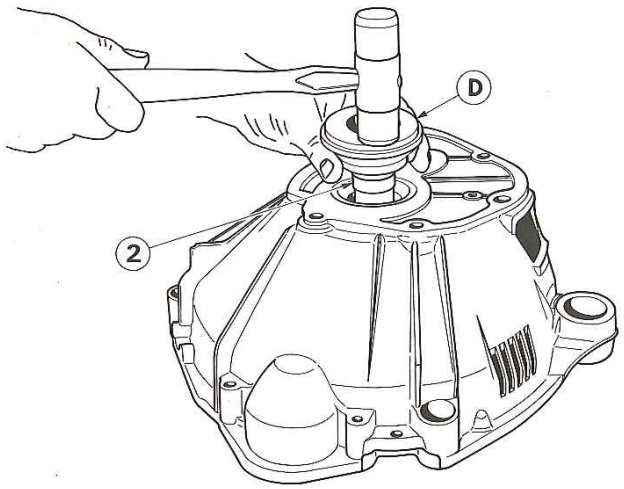
The housing must be replaced if the lack of parallelism exceeds 0.10 mm.



Replacing the guide sleeve

DISASSEMBLY

- Remove snap ring **1** from guide sleeve **2** using a small screwdriver.
- Remove guide **2** by forcing it out with a press if required ; use :
- plate **N**, covered with a sheet of cardboard.
- drift **S**.



RE-ASSEMBLY

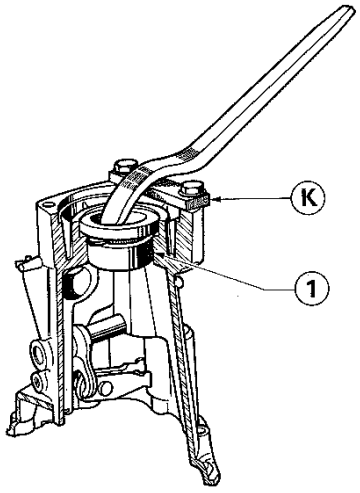
- Rest the housing on the bench.

Insert guide sleeve **2** and force it in place using installing ring **D** and a mallet.

- Install a new snap ring.

BA7 GEARBOX

RE-ASSEMBLY



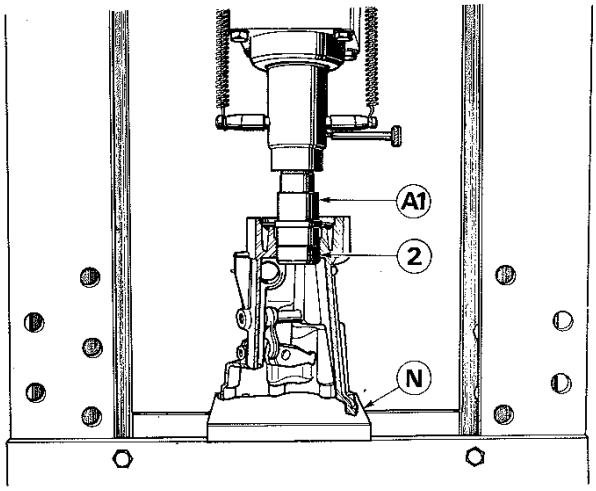
REAR HOUSING

Removing the oil seal.

- Secure safety bar **K** with two 10×25 mm screws.

  Tightening torque : **7.23 ft.lbs** 1 m.kg.

- Remove oil seal **1** using a tyre lever resting on bar **K.**

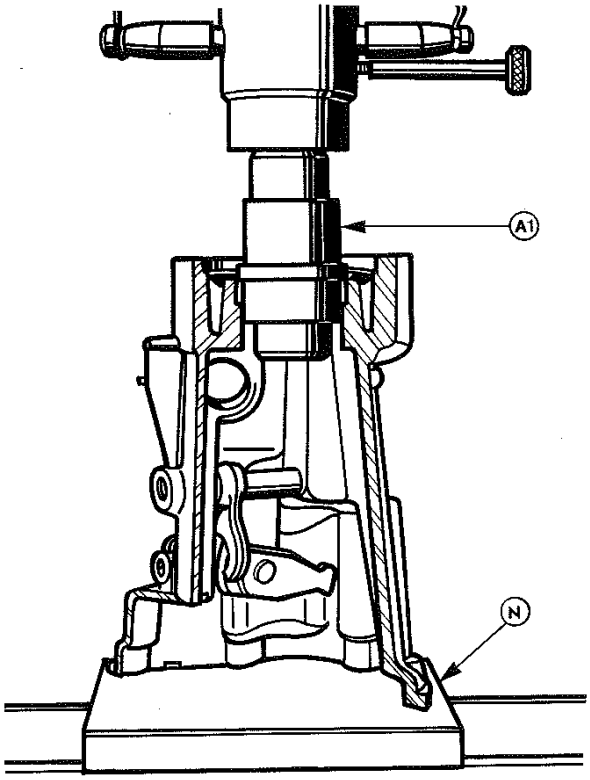


Removing the needle bearing

- Insert plug **A1** into bearing **2.**

- Press out the NADELLA bearing, using a press and resting the housing on plate **N covered with a sheet of cardboard.**

- The rear housing assembly must be replaced if the gear selection controls are defective, since these controls cannot be disassembled.



Installing the rear bearing

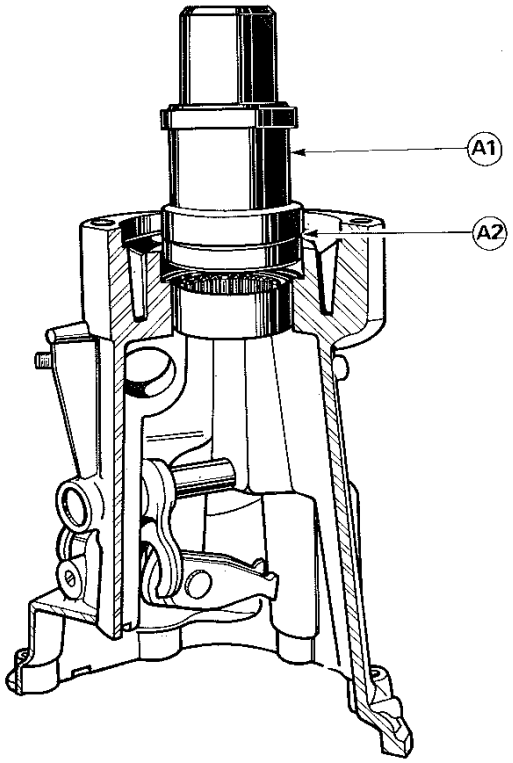
- Position the bearing inside the housing, with **the written face turned outwards,** and install using the following :

  - plate **N covered with a sheet of cardboard,**

  - drift **A1 positioned as indicated on drawing opposite.**

NOTE :

The rear bearing and oil seal must be replaced after each dismantling.



Installing the rear oil seal

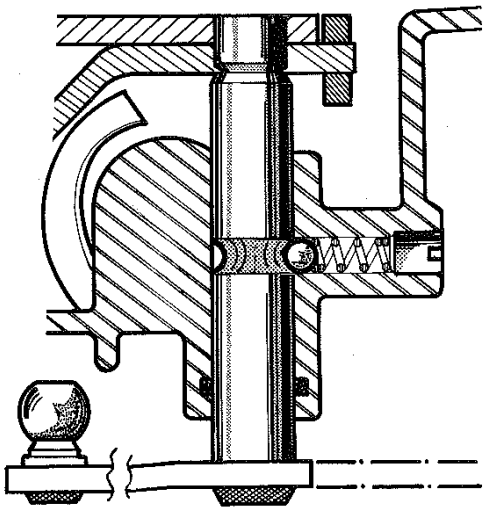
- Use drift **A1** equipped with ring **A2 positioned as indicated on drawing opposite.**

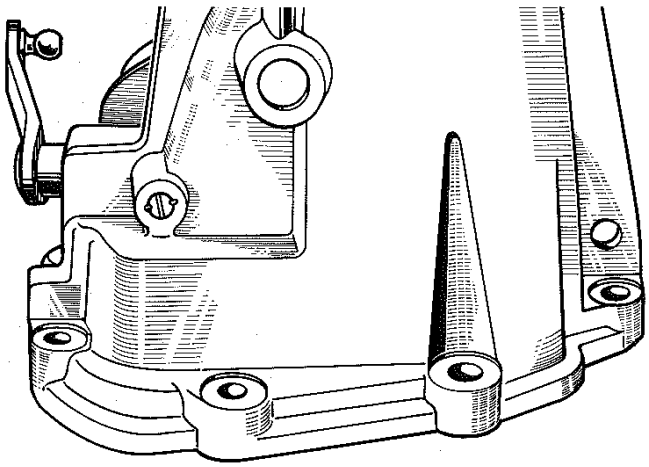
Press the oil seal into position until it bottoms

PEUGEOT

BA7 GEARBOX

RE-ASSEMBLY





Neutral ball lock

- **Check** the Neutral ball lock for positive action by moving the selector lever in both directions.

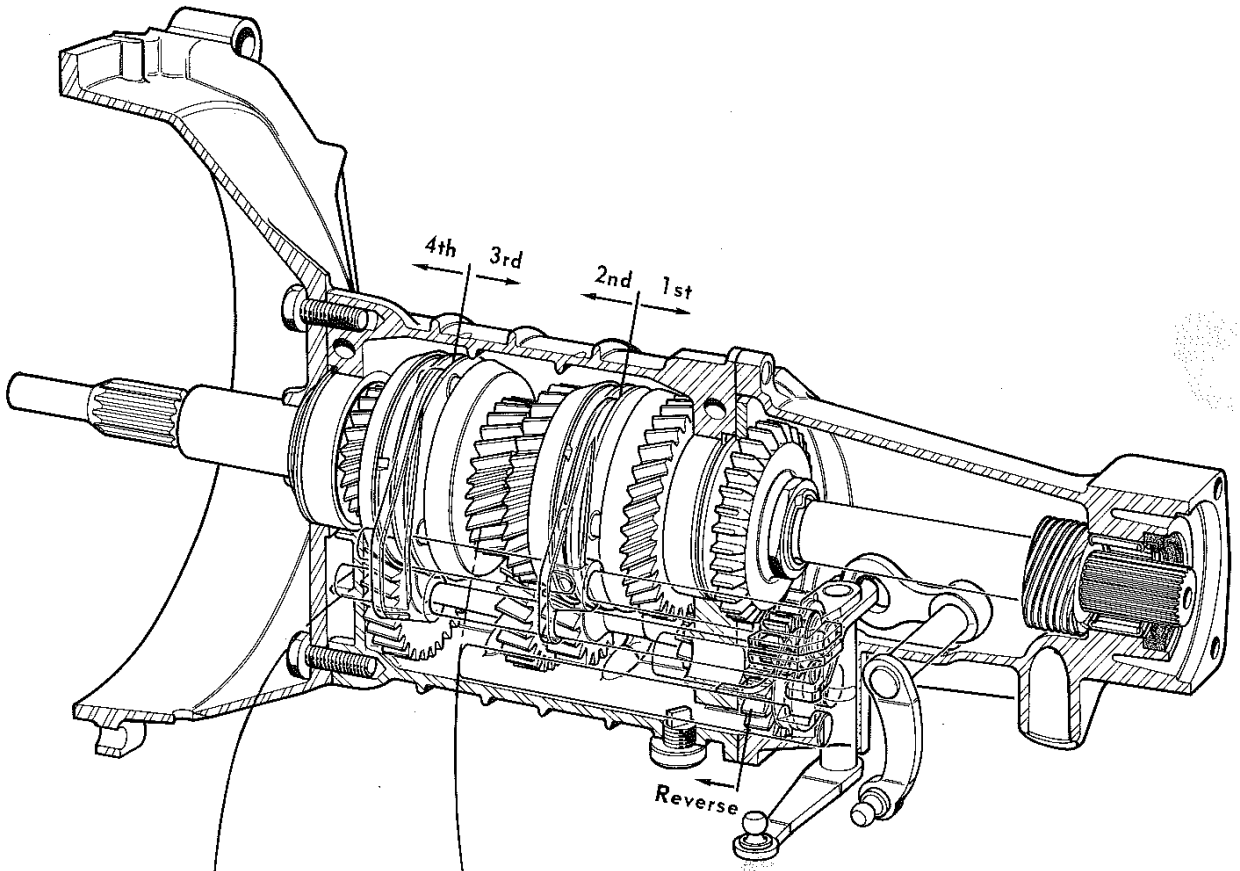
- Check that the plug for the Neutral ball lock is flush with the housing if the lever is hard to actuate ; this plug should be moved if necessary until it is flush with the housing, and locked in this position by two punch marks.

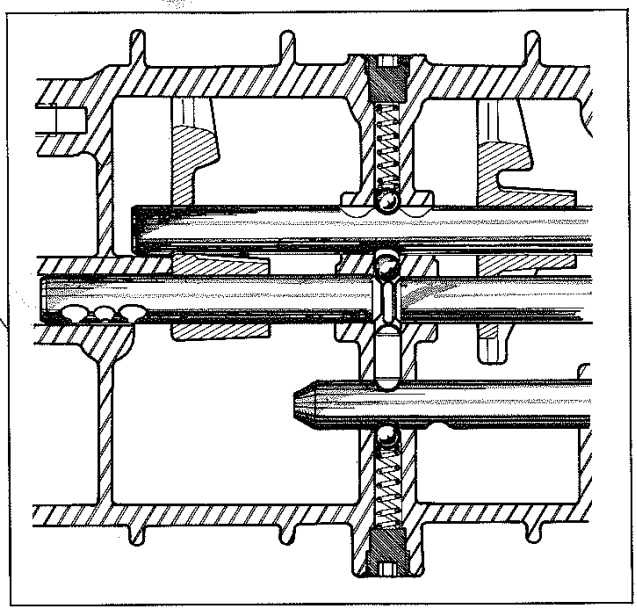
- Remove the plug, and check the spring and ball for proper condition if the ball lock is inoperative.

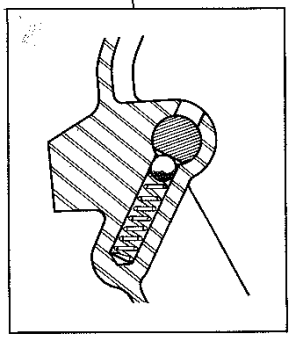
- Replace all defective parts.

Smear the plug with Perfect Seal n° 4 sealing compound and install it at indicated above.

SCHEMATIC DIAGRAM OF CHANGE SPEED BALL LOCKS AND LOCKING PLUNGERS



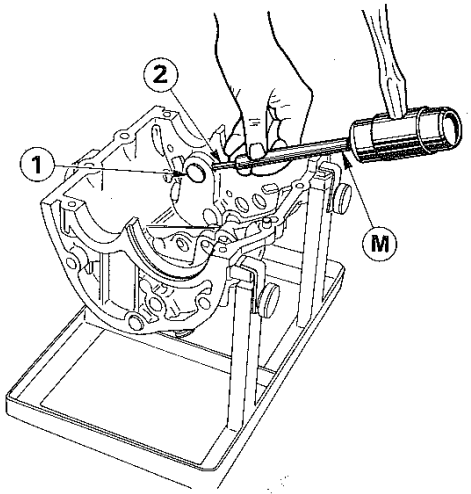




PEUGEOT

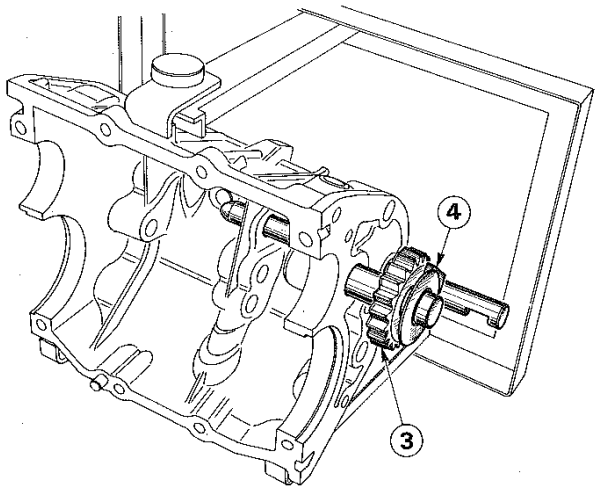
BA7 GEARBOX

RE-ASSEMBLY



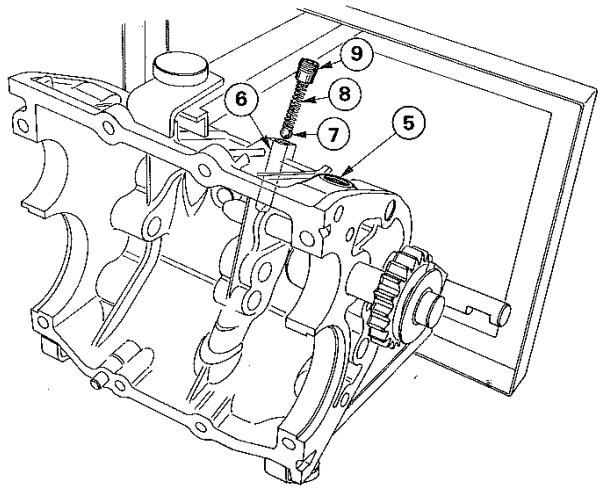
SHIFTING FORKS AND LOCKING DEVICES

- Secure the L.H. housing to support base **8.0311**
- Install :
  - reverse pinion shaft **1**, using a mallet and taking care to align pin holes.
  - a new Spiral pin **2**, smeared **with tallow** ; using drift **M.**



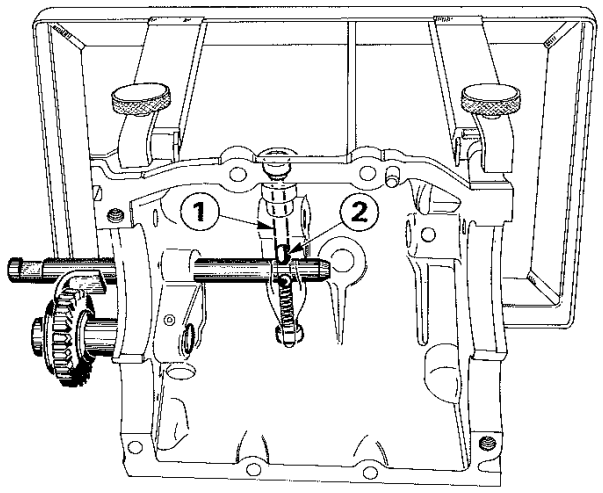
- Install reverse pinion **3** together with shifting fork **4.**

  (direction of fitment is shown on drawing opposite).



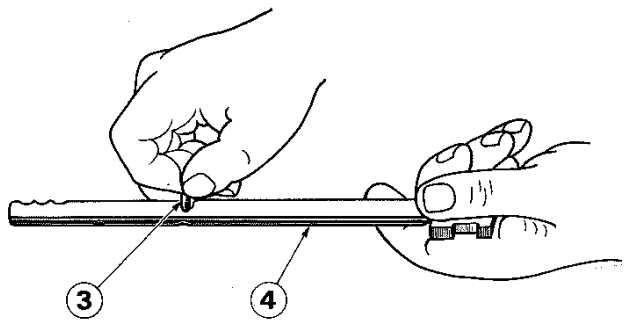
- Turn the support base on its side, so that drain hole **5** is upwards.
- Insert the following into locking passage **6.**
  - 1 ball **7,**
  - 1 spring **8.**
- Smear the threads of plug **9** with Perfect Seal n° 4 sealing compound.
- Tighten plug.
- Torque to : **5,5 ft.lbs** (0.75 m.kg).
- Bring the reverse shifting fork shaft to Neutral

BA7 GEARBOX
RE-ASSEMBLY

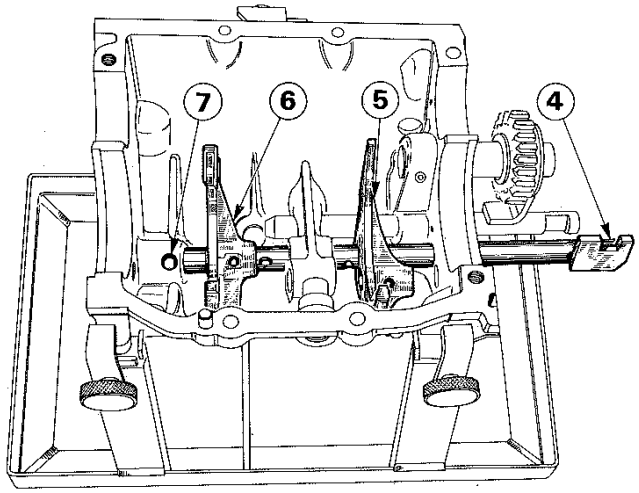


- Rest the housing on the opposite side, so that locking passage **1** is in a vertical position.

- Install 3rd/4th and Reverse locking finger **2.**



- Smear locking needle **3** with tallow and insert it in the corresponding housing in 3rd/4th gear shifting fork shaft **4.**



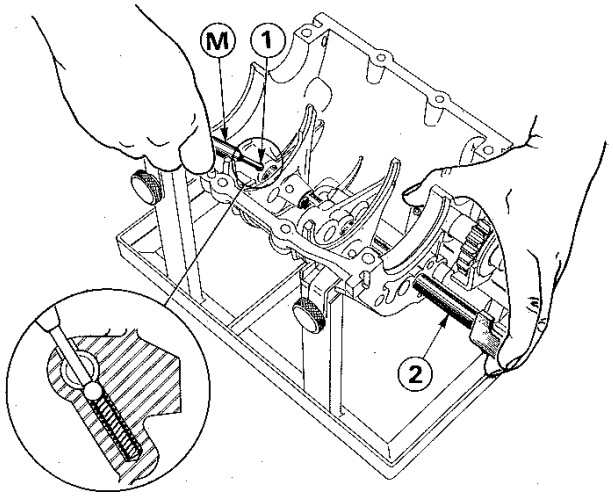
- Re-install the gearbox support base in an upright position.

- Install the following inside the housing : 1st/2nd gear shifting fork **5** (larger one), and 3rd/4th gear shifting fork **6.**

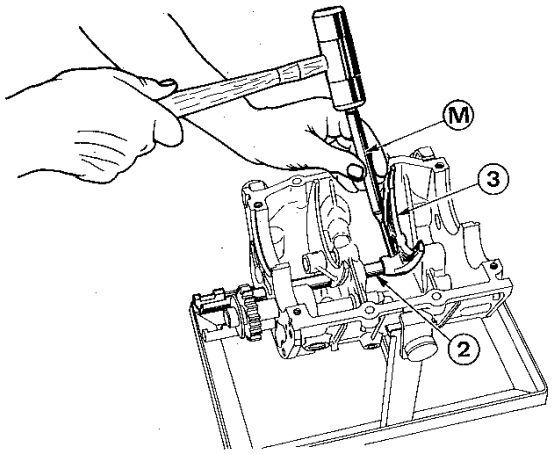
- Insert shifting fork shaft **4** until it is flush with ball lock hole **7.**

0368 3

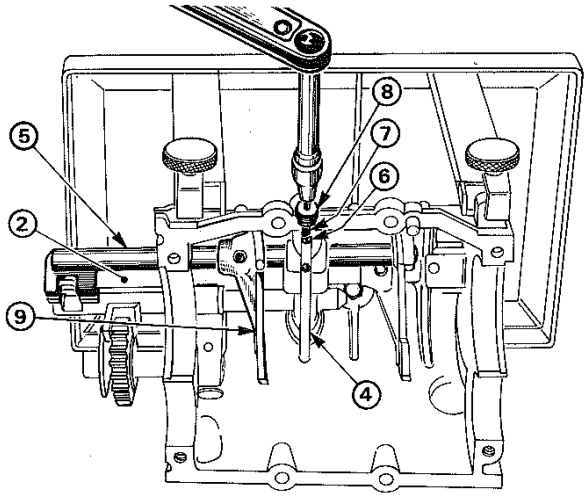
BA7 GEARBOX
RE-ASSEMBLY



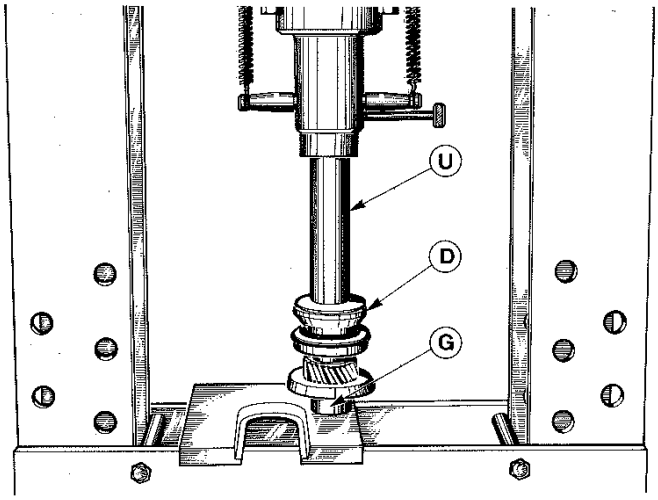
- Insert one spring and one locking ball into passage **1.**
- Press ball against spring using drift **M.**
- Push shaft **2** against the drift and remove the drift while maintaining pressure on the shaft.



- Set shaft **2** to Neutral
- Secure 3rd/4th gear shifting fork **3** with a new Mecanindus pin using drift **M.**



- Rest the housing on its R.H. side.
- Insert a locking ball into passage **4** ; this ball must rest against 3rd/4th gear shaft **2.**
- Insert 1st/2nd gear shaft **5** until the Neutral position is reached.
- Insert 1st/2nd gear locking ball **6** and spring **7** into passage **4.**
- Smear plug **8** with Perfect Seal compound n° 4 and tighten to **5,5 ft.lbs** (0.75 m.kg).
- Secure 1st/2nd gear shifting fork **9** using a new Mecanindus pin.

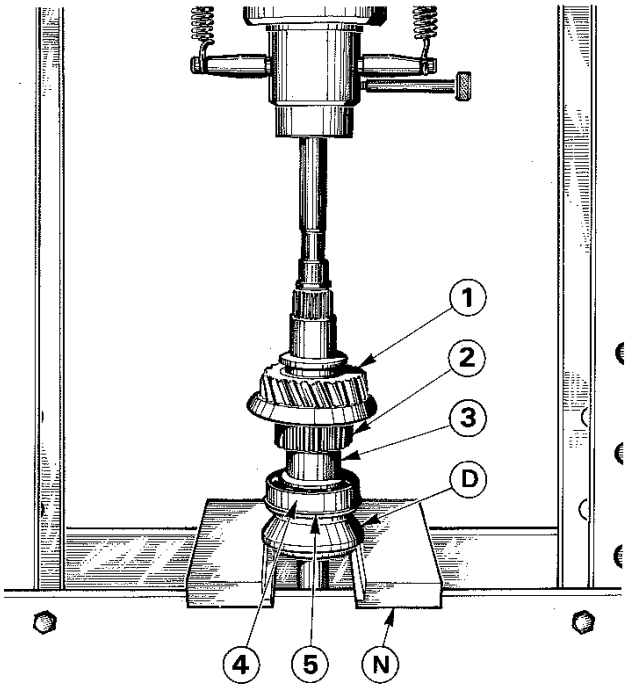


PREPARING THE SHAFTS FOR ADJUSTMENT

DRIVE SHAFT

- Install the following parts on the press table in the indicated order :
  - spacer **G**,
  - drive pinion,
  - one bearing with a **new** snap ring on the upper surface,
  - ring **D**,
  - drift **U**

- Press the bearing onto the shaft until it bottoms



MAIN SHAFT

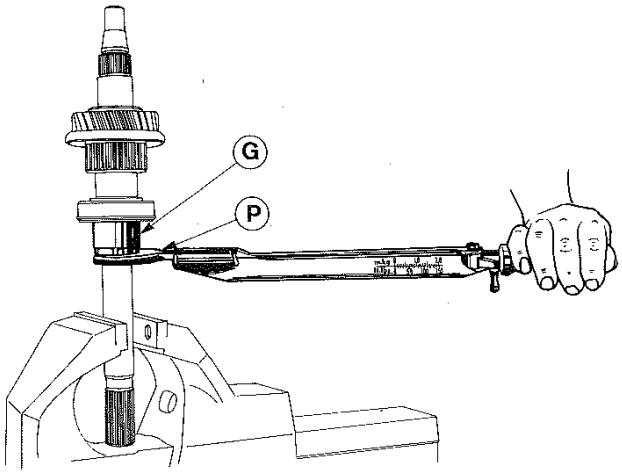
- Install the following on the main shaft in the indicated order :
  - main shaft 2nd gear pinion **1**,
  - 1st/2nd gear synchronizer hub **2**,
  - 1st speed pinion spacer **3**,
  - bearing **4** equipped with a **new** snap ring **5** on its rear face.

- Press the bearing into position, using :
  - plate **N**,
  - ring **D**.

CAUTION - Do not exert a force greater than 3 tons when the bearing is bottomed.

BA7 GEARBOX

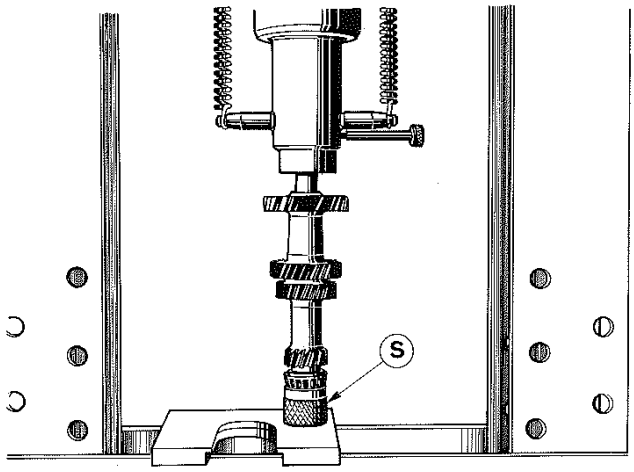
RE-ASSEMBLY

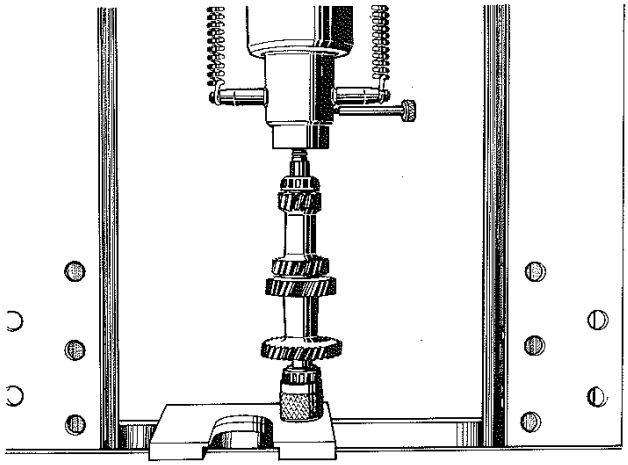


- Install :

  - Spacer **G,**
  - A **new** nut, using wrench **P.**

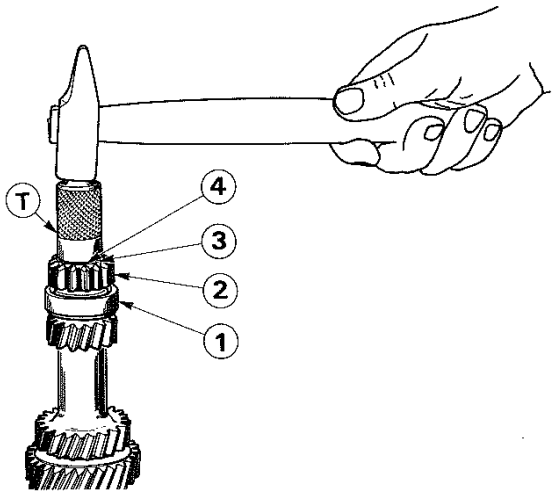
  Tightening torque : **40 ft.lbs** (5.5 m.kg).





INTERMEDIATE GEARSHAFT OR LAY SHAFT

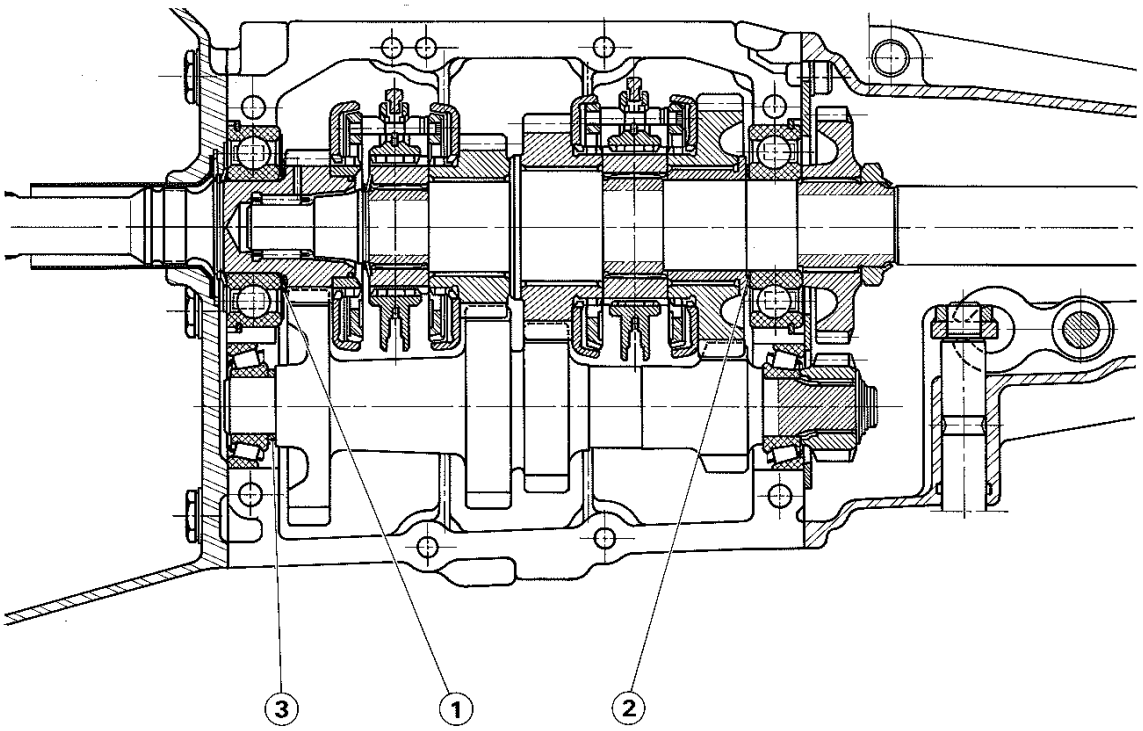
- Install the front and rear bearings, using drift **S.**



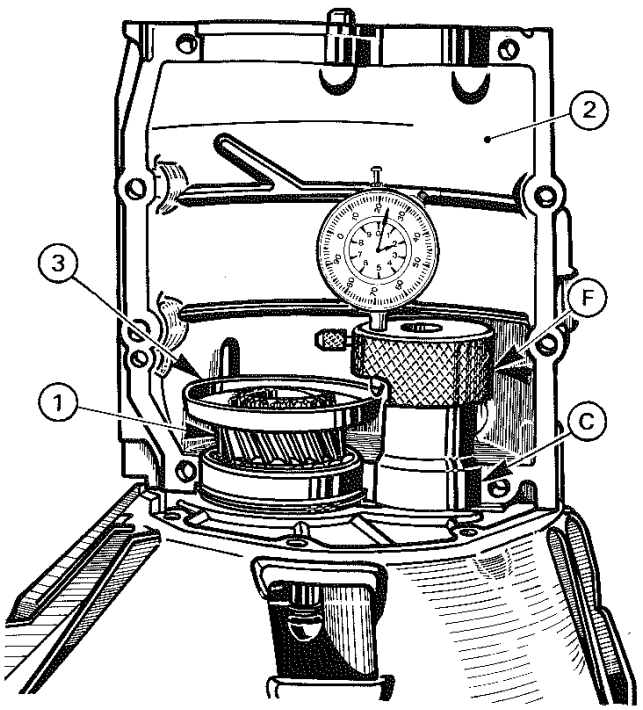
- Position the following parts :
  - rear bearing outer race **1**,
  - reverse gear pinion **2**,
  - a **new** spring washer **(3)**,
  - a **new** snap ring **(4)**.
- Engage the snap ring into its mounting groove, using drift **T**.
- Check the snap ring for proper engagement, using combination pliers.

BA7 GEARBOX
RE-ASSEMBLY

ADJUSTMENTS TO BE CARRIED OUT



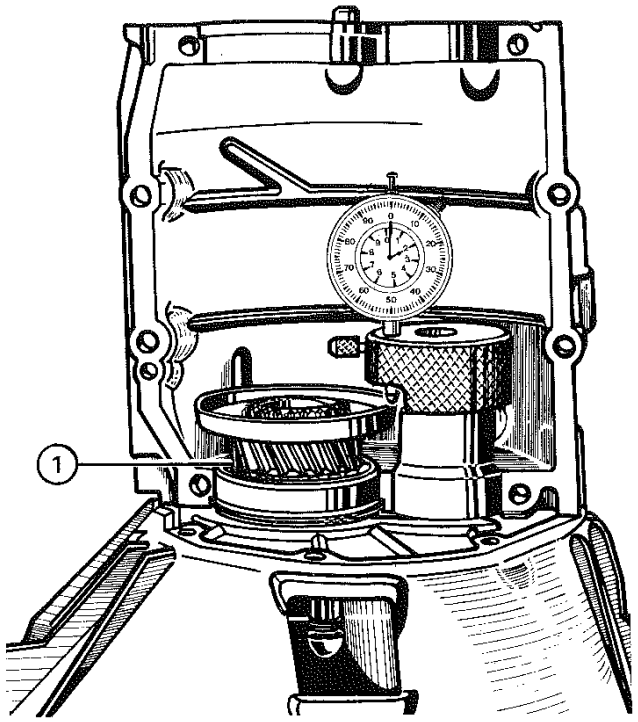
1 - 4th gear synchronizer cone position,
2 - 2nd gear synchronizer cone position,
3 - Pre-loading of intermediate gearshaft conical roller bearings



ADJUSTMENT N° 1

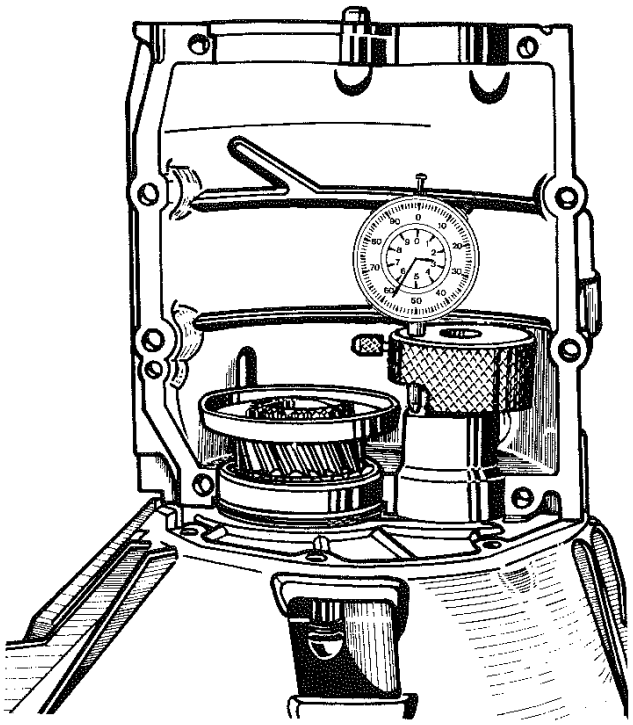
- Install the clutch housing on support base **8.0311** turned upside down.
- Engage drive shaft **1** into the corresponding hole.
- Secure R.H. housing **2** on the clutch housing, using the assembling screws.

  Tightening torque : **14.5 ft.lbs** (2 m.kg).
- Position gauge **C** equipped with dial indicator support **F** in the mounting hole for the intermediate gearshaft front bearing.
- Align dial indicator finger with the upper edge of synchronizer cone **3**.



- Rotate drive shaft **1.**

- Bring dial indicator face to zero at the average clearance point obtained for one revolution of the drive shaft.



- Move the dial indicator support until the indicator finger rests on the surface of the gauge.

- The clearance found represents the value of the shims to be inserted between driving pinion and front bearing.

- The measured value should be rounded to the nearest 0.05 mm.

Example :

Dial indicator reading = 0.58 mm

- Prepare a stack consisting of the following :
  - 1 deflector washer - Thickness = 0.15 mm *
  - 1 shim - Thickness = 0.20 mm
  - 1 shim - Thickness = 0.25 mm

  0.60 mm

- Store this stack in the location provided in the cover of chest **8.0310** (Adjustment N° 1).

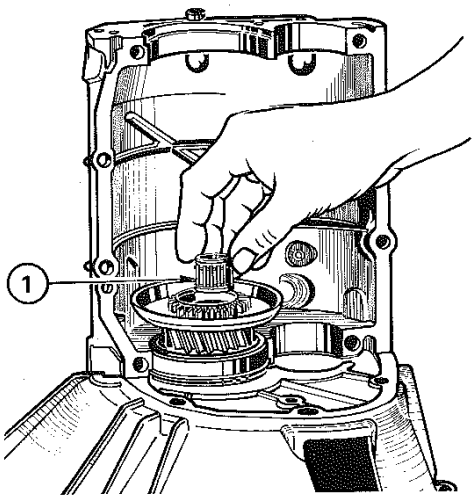
* The thickness of the deflector washer is always 0.15 mm. Shims are available in the following thicknesses :

0.15 mm	0.30 mm
0.20 mm	
0.25 mm	0.35 mm

PEUGEOT

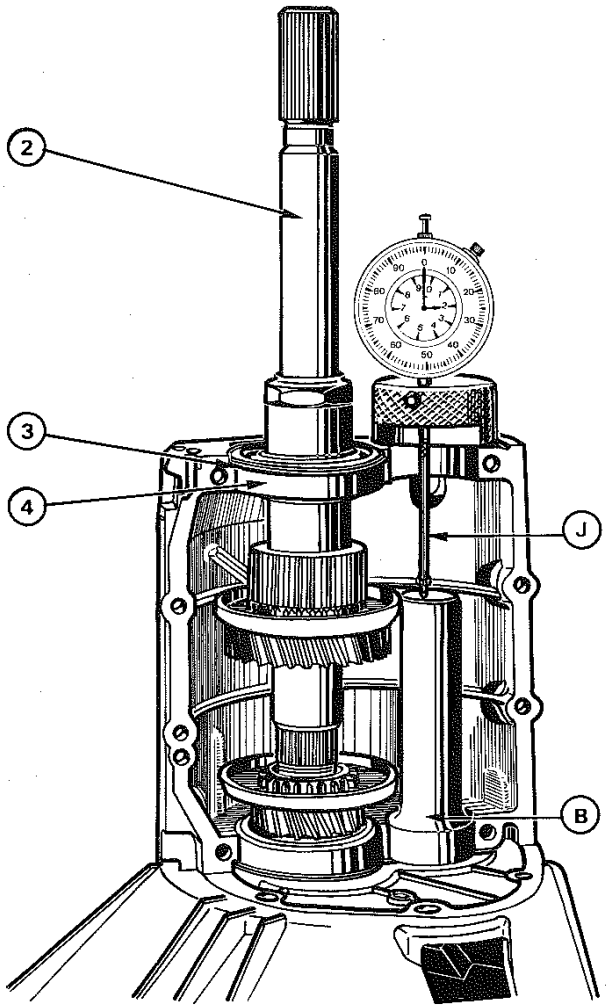
BA7 GEARBOX

RE-ASSEMBLY



ADJUSTMENT N° 2

- Position needle cage **1** into the drive shaft.



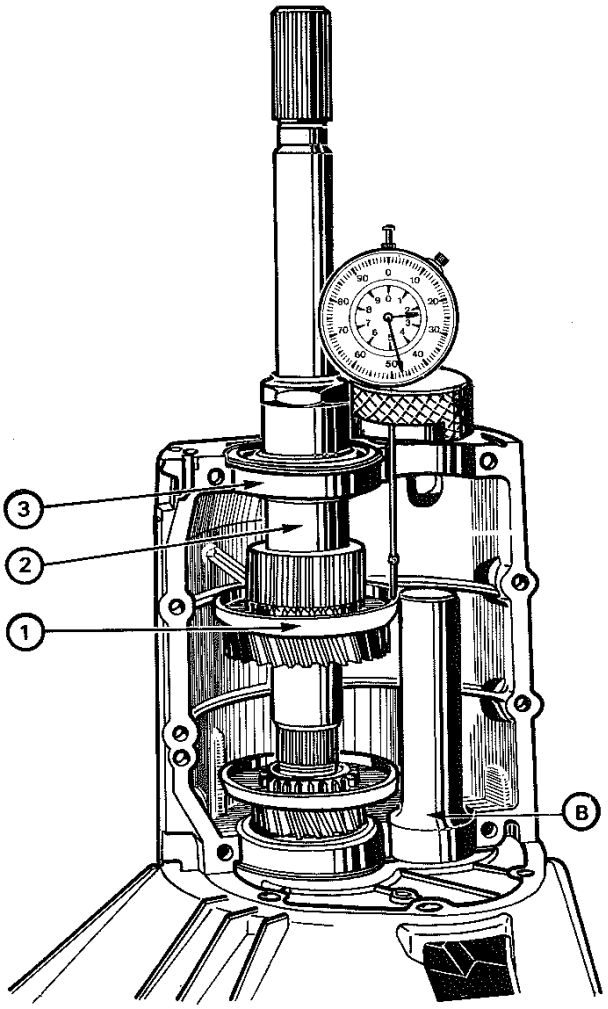
- Position main shaft **2** so that snap ring **3** of rear bearing **4** is bottomed in its recess in the housing.

- Install gauge **B** at the mounting location of the intermediate gearshaft front bearing.

- Install the dial indicator finger on finger extension **J**, and secure the finger extension to the dial indicator.

- Position the indicator support on the rear face of the housing, with the dial indicator finger resting on the upper surface of gauge **B**.

- Set the dial indicator face to **0**.



- Turn the dial indicator support until the indicator finger is in contact with the upper edge of 2nd gear synchronizer cone **1**.

  The clearance obtained indicates the thickness of the shim stack to be inserted between the 1st gear pinion bushing 2 and rear bearing **3**.

- The above value should be rounded to the nearest 0.05 mm.

Example :

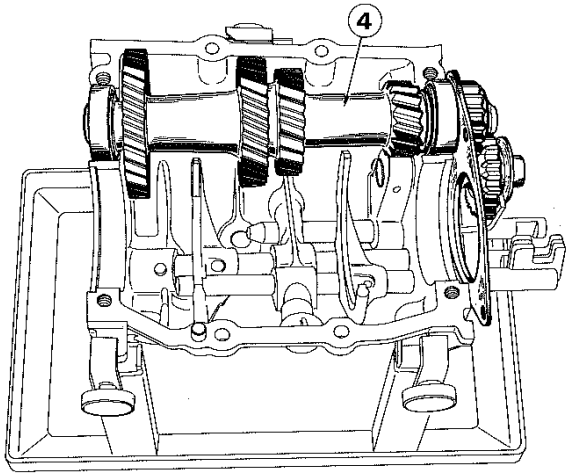
Indicator reading : 0.47 mm.

- Prepare a 0.45 mm stack of shims and store it in the location provided in the cover of the chest (adjustment 2).

- Shims are available in the following thicknesses :

  0.15 mm 0.25 mm
  0.20 mm 0.50 mm

- Remove :
  - main shaft and gauge **B**,
  - R.H. half housing,
  - drive shaft.



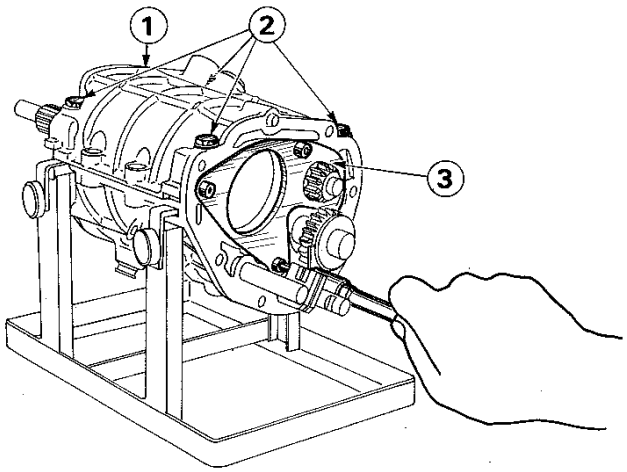
ADJUSTMENT N° 3

- Secure the L.H. housing on support base **8.0311**

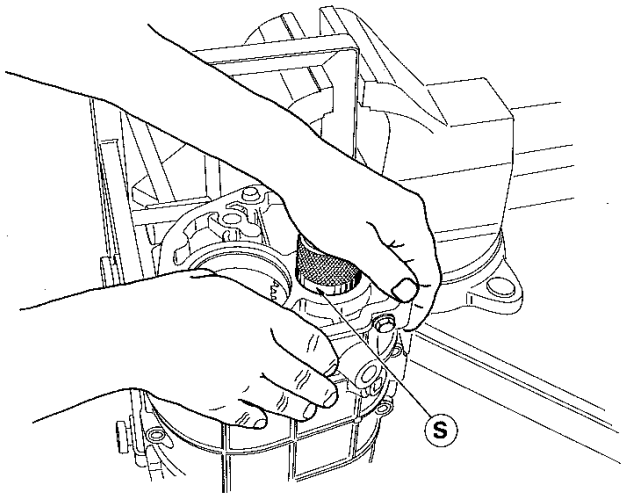
- Install intermediate gearshaft **4** equipped with its bearings and rear plate in the housing.

BA7 GEARBOX

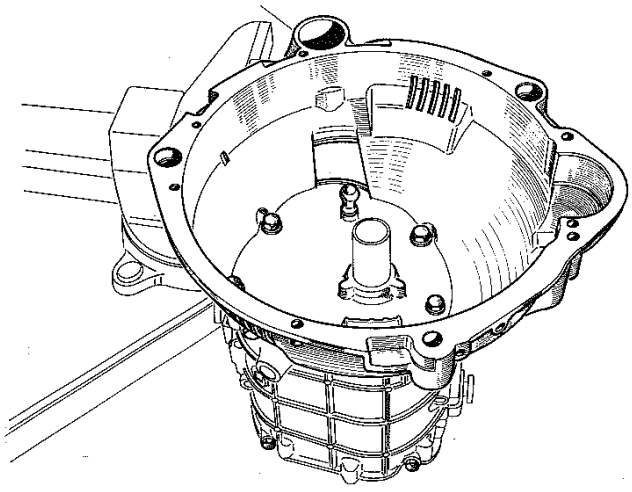
RE-ASSEMBLY



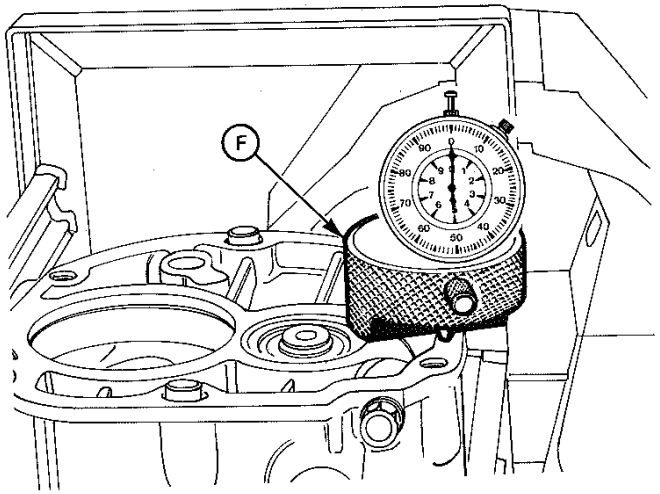
- Install R.H. housing 1 and secure with the four bearing screws 2; tighten screws by hand.
- Secure rear plate 3 using the 4 Allen-head screws ; tighten screws by hand.



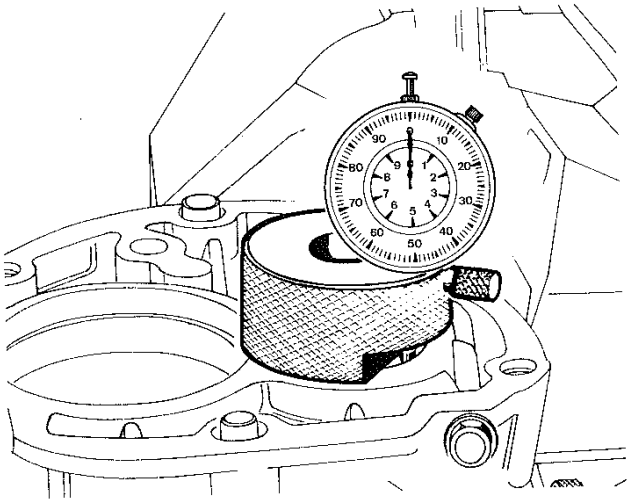
- Make sure the knurled head screws are tightened on support base **8.0311** and clamp base vertically in a vice, with the front part of the gearbox turned upwards.
- Place installing drift **S** on intermediate gearshaft front bearing and press drift downwards while rotating the shaft to properly position the bearings.



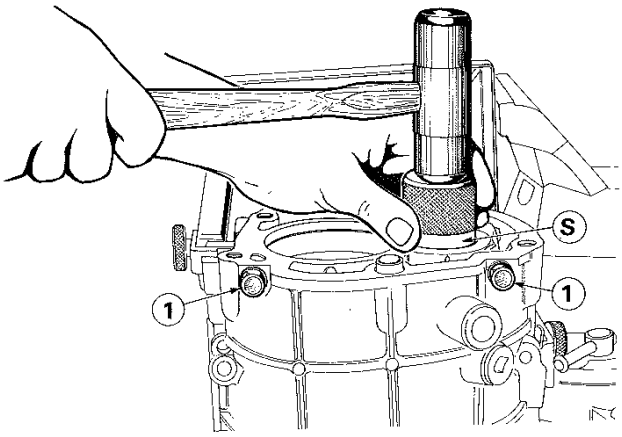
- Install the clutch housing and secure with four screws installed either side of the gearbox half housings mating surfaces.
- Tighten the following screws :
  - Clutch housing screws,
  - Bearing screws,
  - Rear plate screws.
- Tightening torque : **7.25 ft.lbs** (1 m.kg)
- Remove the clutch housing.



- Using dial indicator support **F**, make sure that the half housings are not out of flush by more than 0.02 mm.



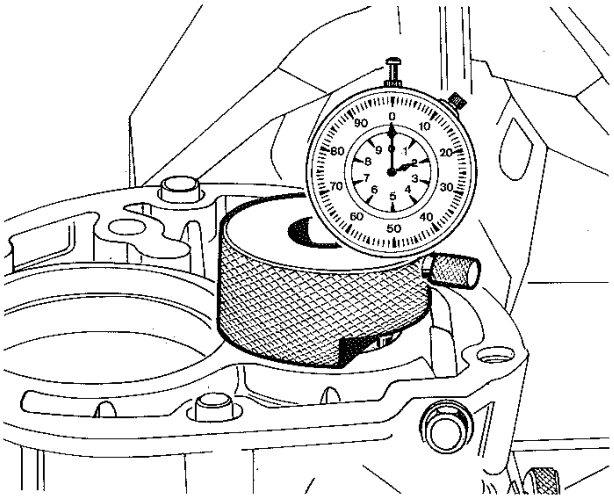
- Locate the indicator support on the intermediate gearshaft end face, and engage it in the intermediate gearshaft bore.
- Rotate the dial indicator one complete revolution on the outer race of the front bearing.
- The race false parallelism in relation to the halt housing front face should not exceed .02 mm.

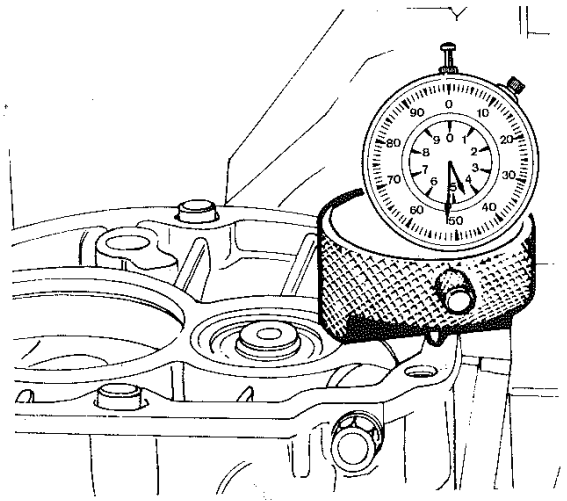


- If the above value is exceeded, the race should be straigtened by striking it lightly with a mallet through drift **S**.
- Make sure the above operation does not increase the rotating torque of the intermediate gearshaft.
- Both screws **1** used to secure the front bearing bushings should be loosened, and then retightened if a torque increase is noted.
- Repeat the check for parallelism.

PEUGEOT

BA7 GEARBOX
RE-ASSEMBLY





- Set the dial indicator to **2** and to **0.**

- Turn the indicator support outwards so that the indicator finger rests on the front face of the housing.

- Note the indicator reading.

- ADD 0.10 mm to this reading, to take into account the pre-load of the bearings.

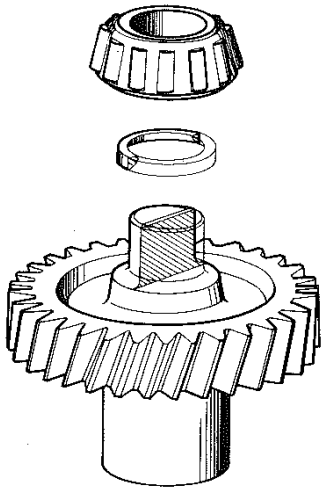
- The result should be rounded to the nearest 0.05 mm.

Example :

	reading on housing	4.52 mm
−	reading on bearing	2.00 mm
		2.52 mm
+	pre-load	0.10 mm
		2.62 mm

- ROUND to **2.60 mm.**

- Put the shim in the location provided in the cover of tool kit **8.0310** (Adjustment 3).



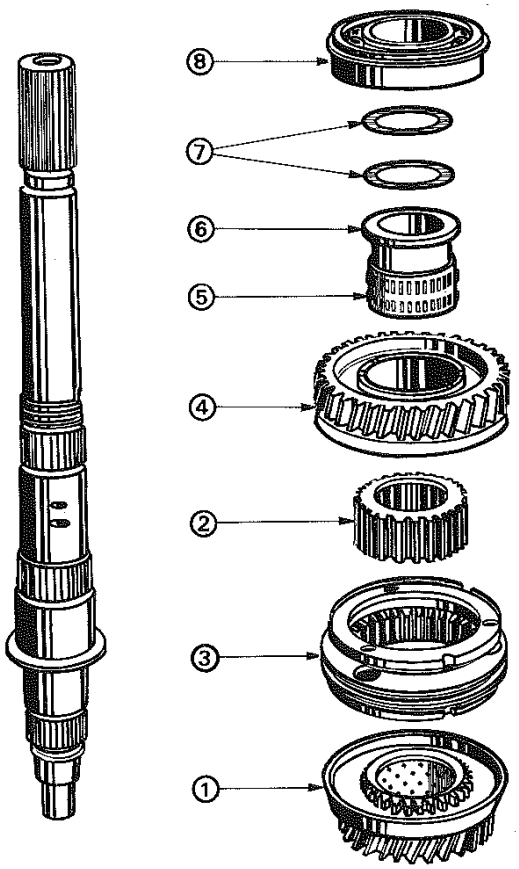
- Calibrated adjustment shims are available in different thicknesses from 0.05 mm to 0.05 mm increments and from 2.25 mm to 3.25 mm.

- Remove intermediate gearshaft.

- Remove front bearing, using the press.

- Install the shim previously determined ; **chamfered side of the shim should be towards the pinion.**

- Re-install the bearing, using the press (see class 3, page 03 70).



FINAL ASSEMBLY

MAIN SHAFT

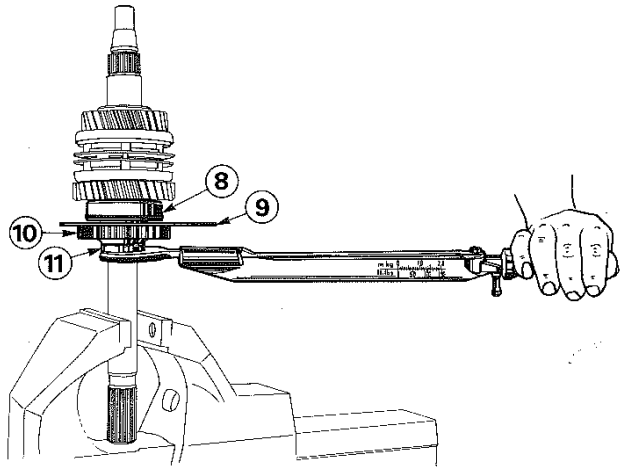
- Remove the rear bearing together with the shim stack (see class 3, page 03 56).

- Install the following in the indicated order, taking care to align reference marks made during disassembly :

  - 2nd gear pinion **1**,
  - synchronizer hub **2** together with sliding gear **3**,
  - 1st gear pinion **4**,
  - needle cage **5**,
  - spacer bushing **6**,
  - ADJUSTMENT SHIM STACK **7** (Adjustment N° 2).
  - Rear bearing **8**, with its snap ring towards the rear.

- Bearing **8** should be installed using the press and plate **N**.

CAUTION - Do not exceed a force of 3 tons with the parts bottomed.



- Engage the main shaft in the larger hole of backing plate **9** ; the trued up surface of this plate must contact bearing **8**.

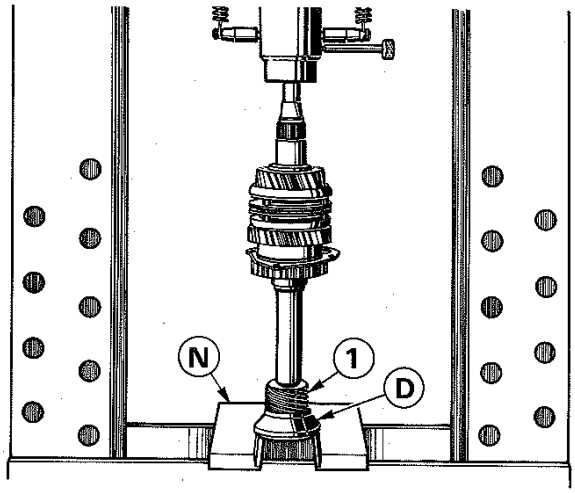
- Engage Reverse pinion **10** with the chamfered end of the teeth turned towards the rear.

- Install a **new** nut **(11)**.

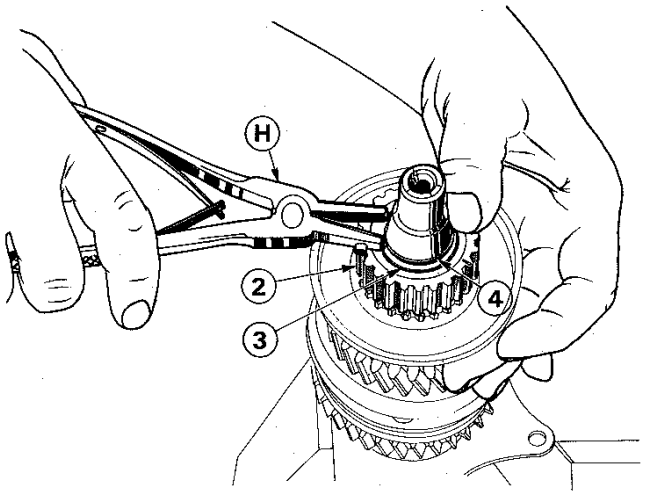
  Tightening torque : **40 ft.lbs** (5.5 m.kg)

- Stake the nut.

BA7 GEARBOX
RE-ASSEMBLY



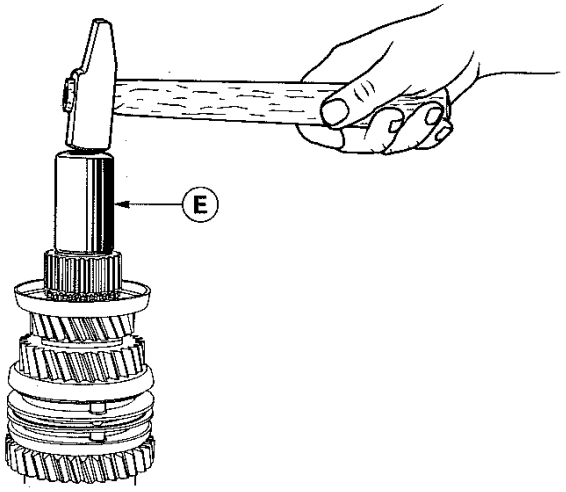
- Install speedometer drive worm **1** on main shaft, using :
  - plate **N**,
  - installing ring **D**,

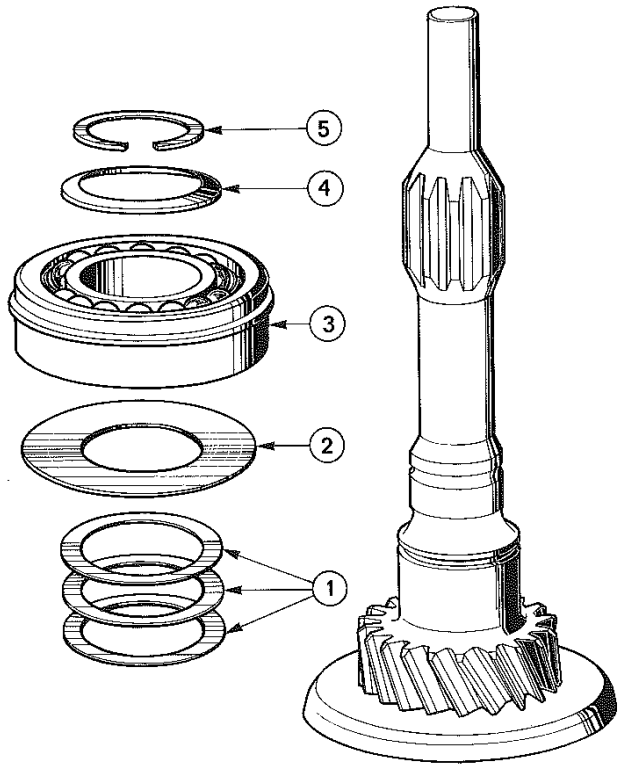


- Install :
  - 3rd gear main shaft pinion,
  - 3rd/4th gear synchronizer hub **2**,

  using the press as for the previous operation, if required.
- Clamp this assembly vertically in a vice.
- Install :
  - one new spring washer **(3)**,
  - a new snap ring **4**,

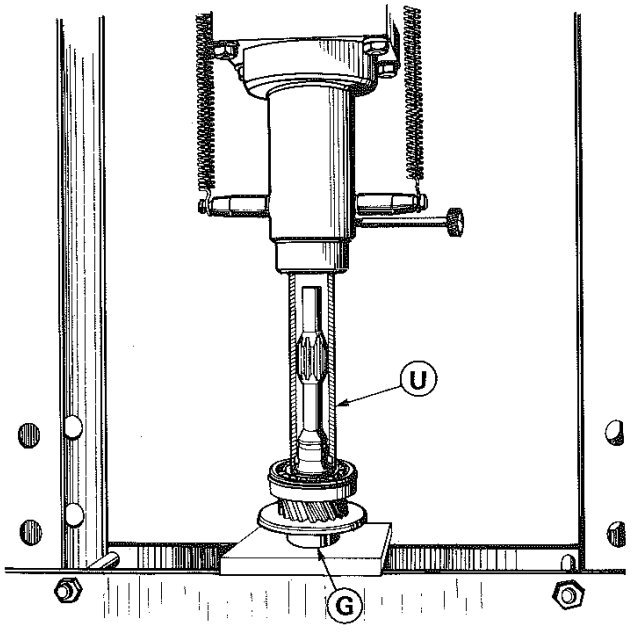
  using pliers **H** and then drift **E**.
- Squeeze the snap ring, using combination pliers
- Install the 3rd/4th gear sliding gear, respecting the reference marks.
- Engage 3rd gear.





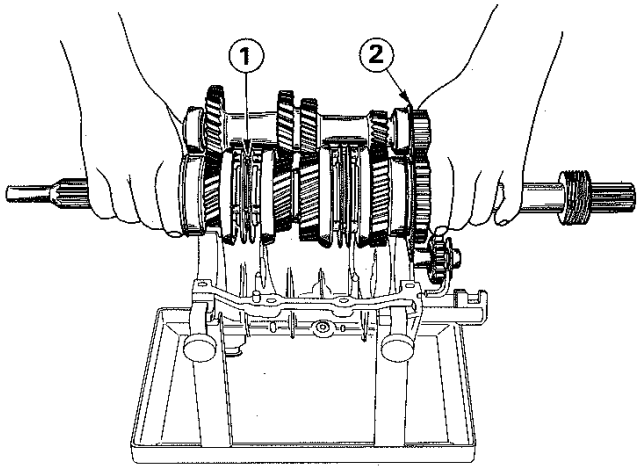
DRIVE SHAFT

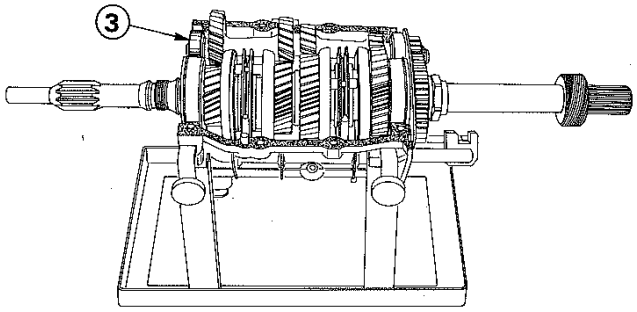
- Remove the bearing (see class 3, page 03 57).
- Place the following on the shaft, respecting the indicated order :
  - adjustment shims **1** previously determined (adjustment n° 1),
  - deflector washer **2.**
- Re-install bearing **3** (see class 3, page 03 69).
- Install spring washer **4** and snap ring **5.**



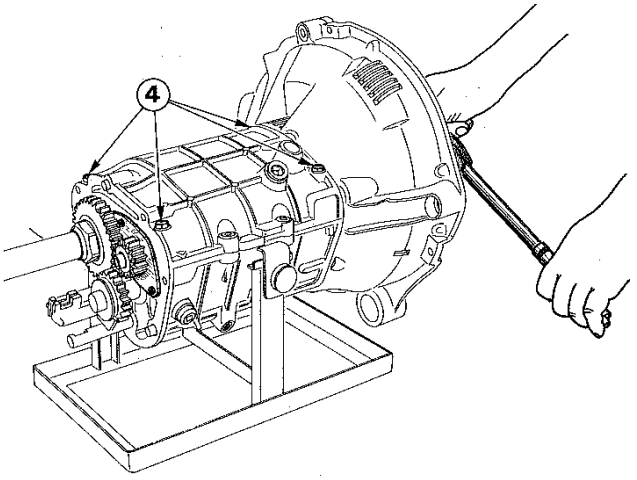
- Place this assembly on the table of the press and rest it on spacer **G.**
- Slide installing drift **U** over the drive shaft with the hollow section of the drift downwards.
- Exert a slight force with the press to compress the spring washer and align the snap ring with its groove.
- Use combination pliers to squeeze the snap ring until its outside diameter is the same as that of drift **U.**

BA7 GEARBOX
RE-ASSEMBLY





- Secure the housing equipped with the shifting forks on support base **8.0311.**
- Install the needle cage inside the drive pinion.
- Assemble drive shaft and main shaft.
- Bring back 3rd/4th gear sliding gear **1** to the Neutral position.
- Install the intermediate gearshaft on this assembly by engaging intermediate gearshaft. Reverse pinion into backing plate **2.**
- Mesh the pinions.
- Install the assembly inside the L.H. housing, taking care that the shifting forks correctly engage the synchronizer rings.
- Install intermediate gearshaft front bearing outer race **3.**
- Lightly smear the mating surfaces of the half housings with Perfect Seal N° 4 compound.
- Install the R.H. half housing.



- Install the four bearing screws (4).

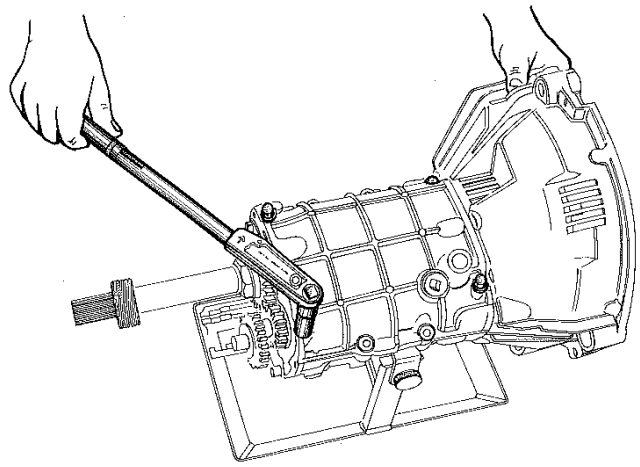
  Tightening torque : **3,5 ft.lbs** (0.5 m.kg).

- Lightly smear the rear face of the clutch housing with Perfect Seal N° 4 compound and secure this housing with six crews.

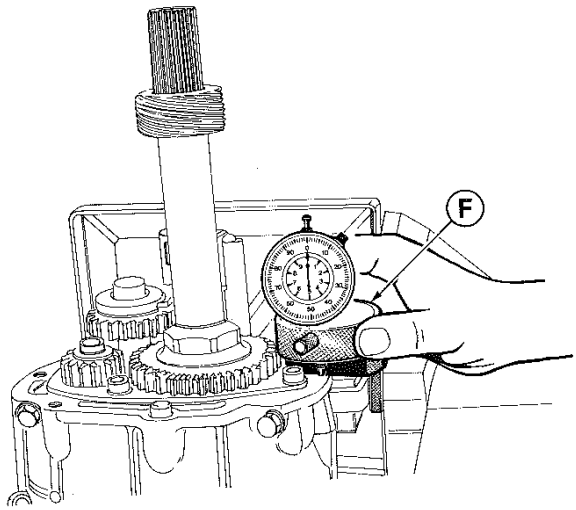
  Tightening torque : **20 ft.lbs** (2.75 m.kg).

- Secure the rear backing plate using four Allen head screws.

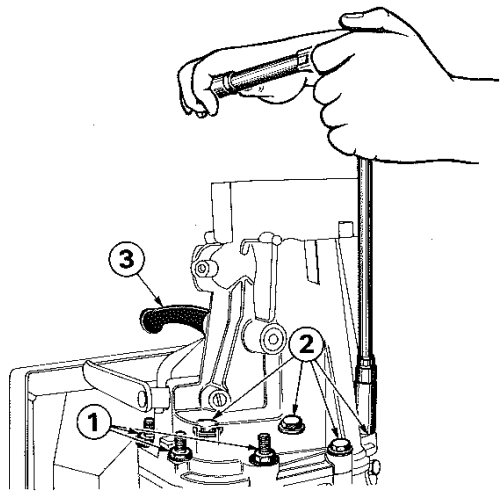
  Tightening torque : **7.25 ft.lbs** (1 m.kg).



- Loosen the four bearing screws.
- Strike the half housings with a mallet while rotating the drive shaft.
- Re-tighten the four bearing screws.
  Tightening torque : **11 ft.lbs** (1.5 m.kg).



- Use dial indicator support **F** to check the out-of-flush value for the half housings at their rear mating surface. The housings must not be out-of-flush by more than 0.02 mm.

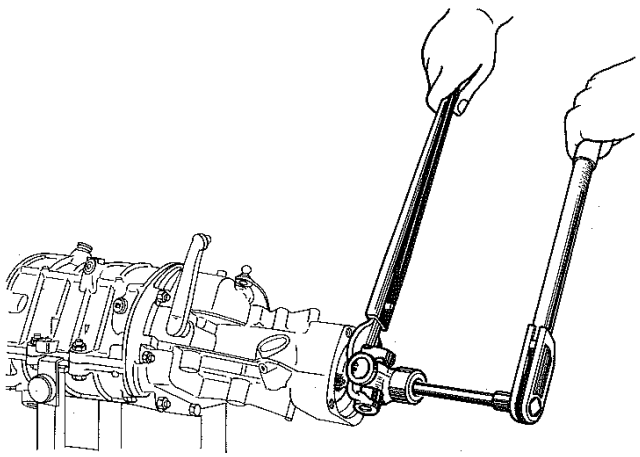


- Smear the mating surface of the rear housing with Perfect Seal N° 4 compound.
- Install the rear housing.
- Engage :
  - three double-thread studs 1,
  - four attaching screws 2.
- Pull selector lever 3 fully backwards.
- Tighten the seven screws and studs.

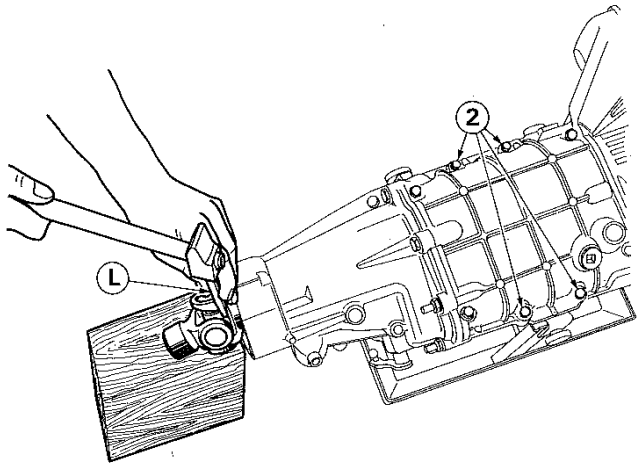
  Tightening torque : **11 ft.lbs** (1.5 m.kg)

BA7 GEARBOX

RE-ASSEMBLY

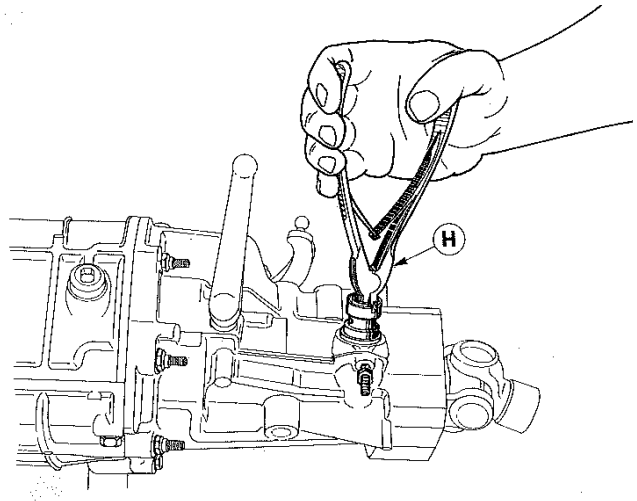


- Lubricate the Nadella bearing abundantly with oil.
- Smear both faces of the bronze washer with graphite grease.
- Install the following on the main shaft :
  - bronze washer
  - universal joint secured by its Allen head screw.
    Tightening torque : **9 ft.lbs** (1.25 m.kg).

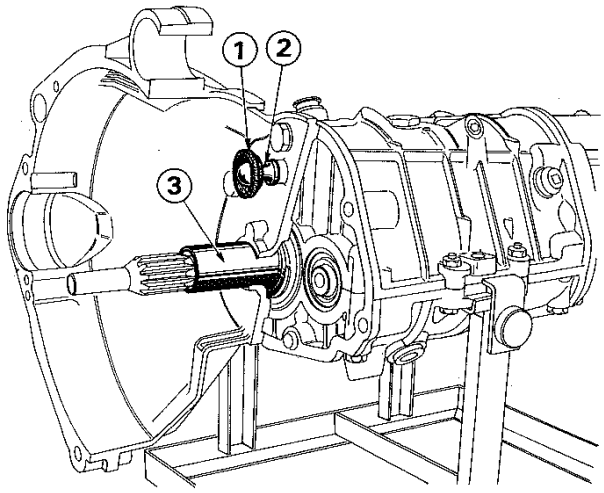


IMPORTANT

- **Rest the universal joint on a wooden block.**
- Stake the Allen head screw using staking tool **L.**
- Install the four assembling screws and nuts **(2)** for the half housings.
  Tightening torque : **7.25 ft.lbs** (1 m.kg).

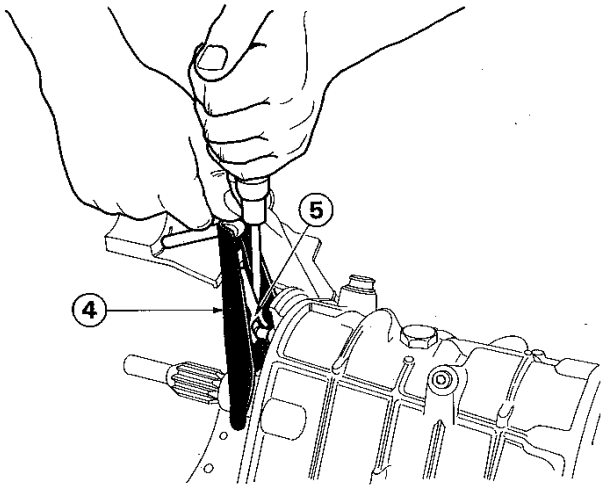


- Install the speedometer drive socket with a **new** O seal ring smeared with tallow ; use pliers **H** and position the parts by rotating them.
- Install the drive socket stop screw together with its lock nut.

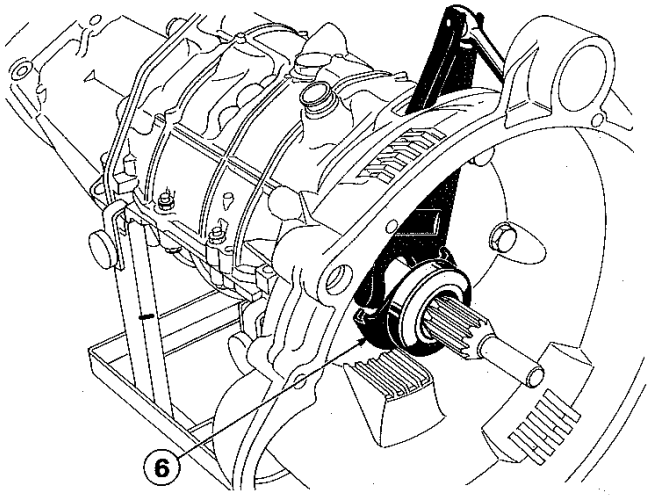


Working inside the clutch housing, proceed as follows :

- Insert rubber cup 1 in the groove behind the ball head thrust 2 and fill with grease.
- Coat guide sleeve 3 sparingly with Molykote grease.

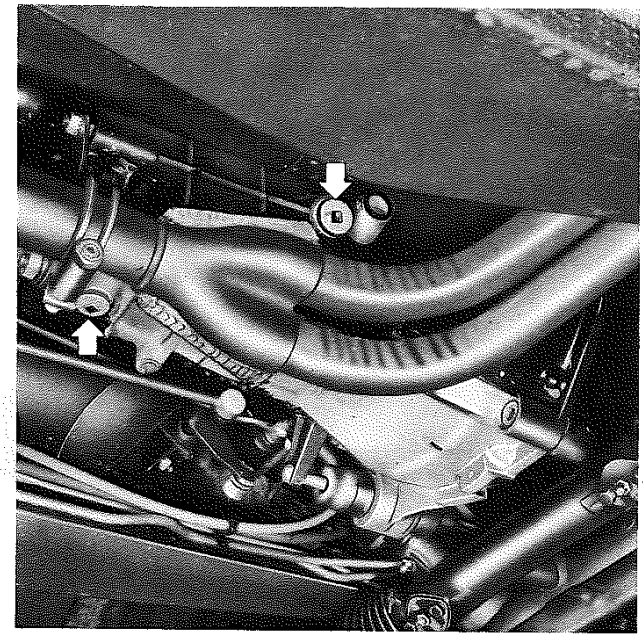


- Slide clutch release fork 4 from the inside towards the outside of the housing.
- Use a screwdriver to raise clutch release fork backing spring 5 and engage fork on the ball head thrust.



- Engage thrust ball bearing on guide sleeve **with holding claw 6 turned towards starter motor housing.**
- Engage thrust bearing with clutch release fork by rotating the bearing clockwise.

BA7 GEARBOX
RE-ASSEMBLY



OIL REFILLING

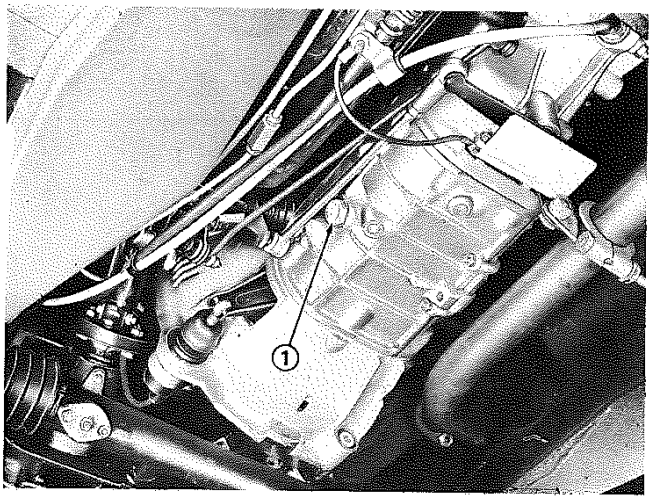
- Pour **2.60 pints** (1.150 dm³) of Esso Extra Motor Oil 20W/30/40.

- Tighten the oil drain and the oil level plugs.

  Tightening torque : **20 ft.lbs** (2.75 m.kg)

NOTE - The first oil change should be made after 600 miles (1.000 km).

Subsequent refillings of the gearbox should be carried out as indicated in the Instruction Book.



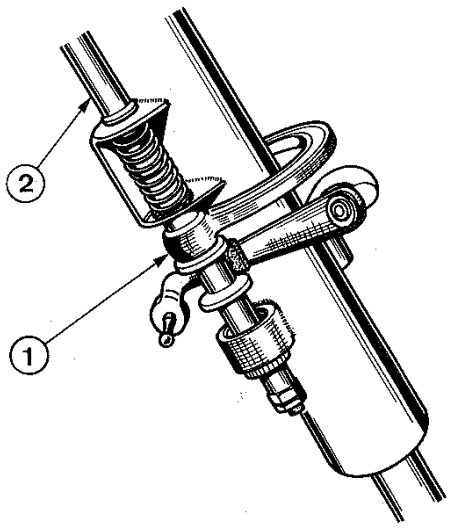
VERY IMPORTANT

- **The 22 mm a/c flats ext. hex. plug 1** located on the **left** hand side of the gearbox must **never** be used to check the correct oil level.

- The appropriate oil level must be determined by using the plug located on the **right** hand side of the housing if the left hand side plug has been accidentally removed.

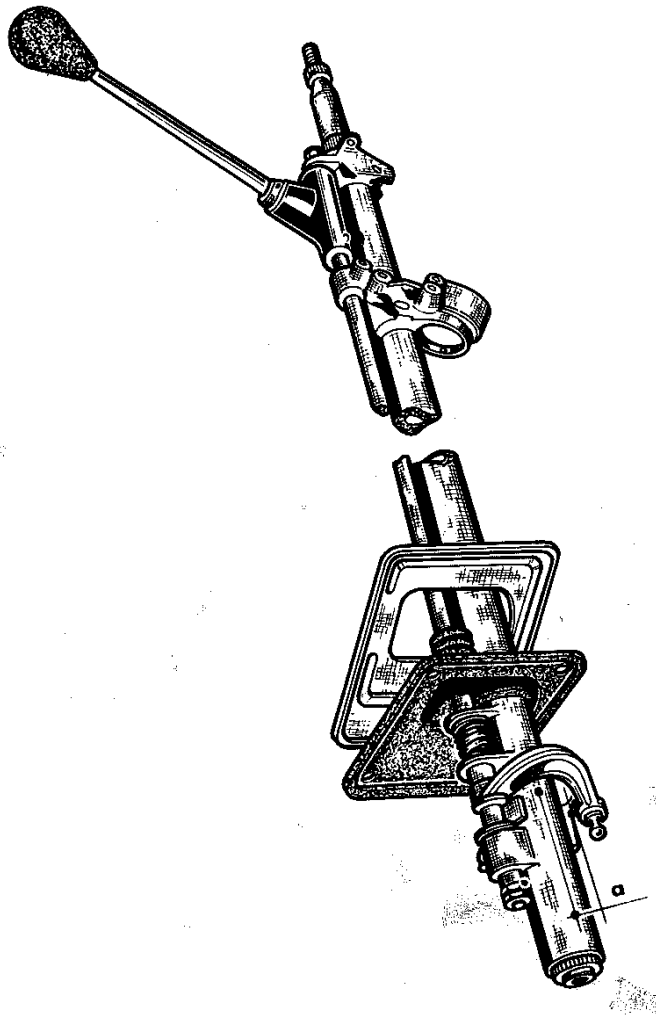
  Tightening torque for plug 1 : **20 ft.lbs** (2.75m.kg)

- Should the reversing light be fitted in place of this plug, the tightening torque to be applied is **9 ft.lbs** (1.25 m.kg).



STEERING COLUMN GEAR CHANGE LEVER

- In order to overhaul this control it is necessary to remove the steering column.
- Prior to removal, the position of the lower lever 1 on the splines of the control rod 2 should be marked.
- An incorrect angular position of the lower lever in relation to the control rod could effect gear selection adversely.



ADJUSTMENT

Lower lever on control rod

1st FITTING

Lower lever centre to centre distance : **95 mm.**

2nd FITTING

As from serial numbers :

404	- 4 300 584	**404 L**	- 4 826 916
404 J	- 4 525 732	**404 LD**	- 4 975 293
404 KF	- 4 550 907	**404 U6**	- 4 704 340
404 C	- 4 495 785	**404 U6D**	- 4 900 883
404 C.KF	- 4 590 815		

Lower lever centre to centre distance : **80 mm.**

- Keep the gear change lever in neutral with its **axis aligned with the centre of the steering column.**
- Place the lower lever on the control rod to obtain dimension **a**, as indicated in the drawing opposite.

18 ± 2 mm for the 1st fitting
22 ± 2 mm for the 2nd fitting
22 ± 2 mm when the car is equipped with a BA 7 gearbox.

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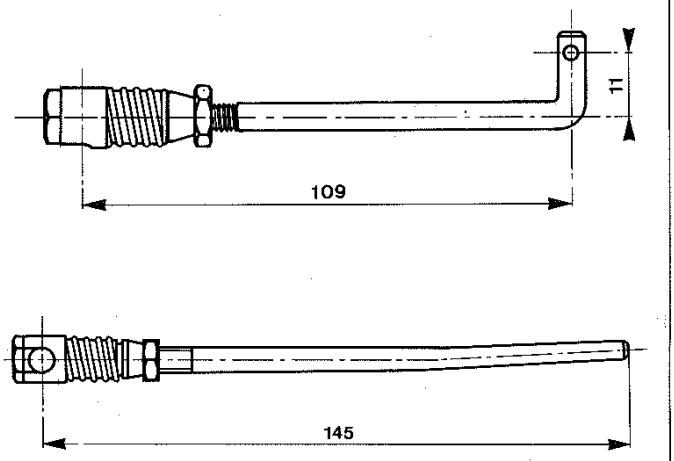
BA7 GEARBOX
GEAR CHANGE CONTROLS



ADJUSTMENT OF CONTROL RODS

Gear change control rod

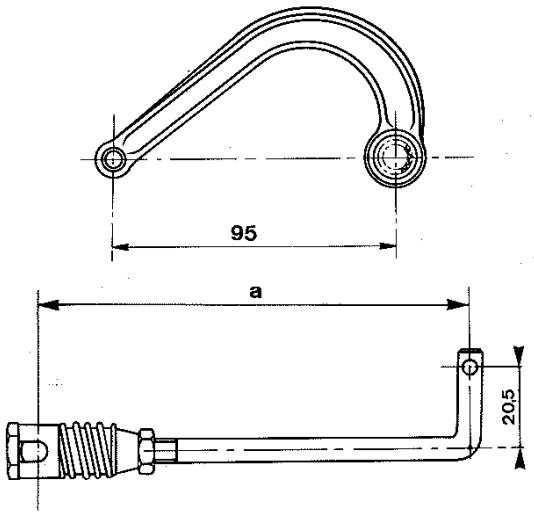
Part N° 2452.11

Length : 109 ± 1 mm

Gear selector rod

Part N° 2454.11

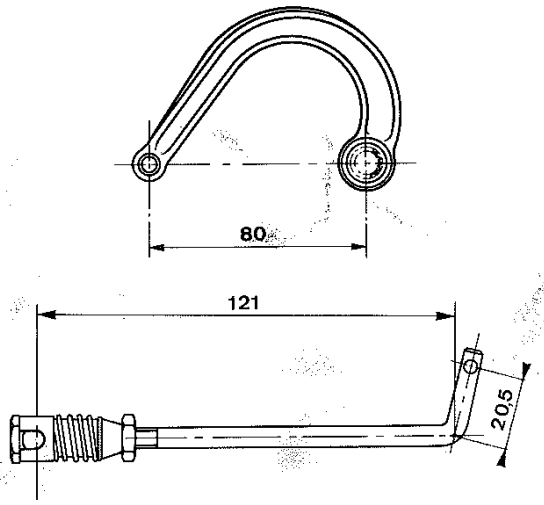
Length : 145 ± 5 mm.



Lower lever counter arm

1st FITTING

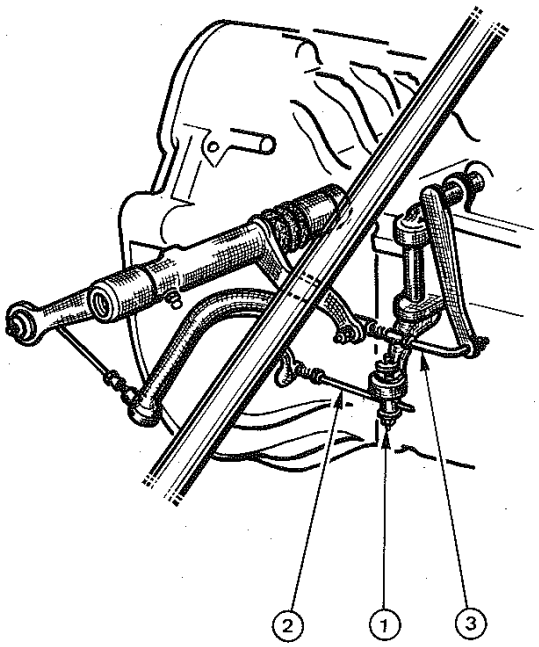
- Lower lever part N° 2416.05
  Centre to centre distance : 95 mm
- Counter arm part N° 2444.16
  Length a = 100 mm
- Counter arm part N° 2444.17
  Length a = 105 mm
  (with an 18 mm spacer between the dashboard and the steering column).



2nd FITTING

As from serial numbers :
Refer to preceeding page.

- Lower lever part N° 2416.07
  Centre to centre distance 80 mm
- Counter arm part N° 2444.18
  Length = 121 mm.



ADJUSTMENT OF THE CONTROLS

Cover without locking device in the neutral position.

- Inside the car :
  - place gear change lever in 2nd gear.

- Under the car :
  - slacken pin nut **1**
  - mark the maximum play positions permitted by the selector lever.
  - place the selector lever in its medium position and tighten the selector rod **2** through the intermediary of pin nut **1**.

- Check the gear movement in all gears.

Cover with locking device in the neutral position.

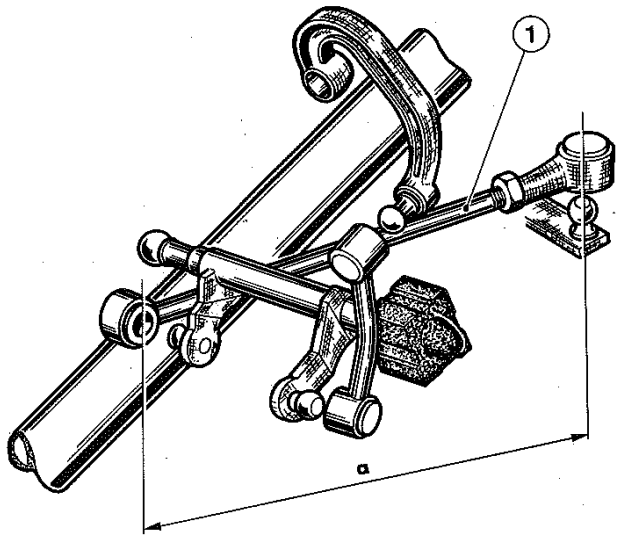
As from serial numbers :

404	- 4 348 100	**404 DA**	- 3 060 193
404 J	- 4 526 366	**404 L**	- 4 832 251
404 KF	- 4 553 388	**404 LD**	- 4 976 296
404 C	- 4 495 981	**404 U6**	- 4 713 297
404 C.KF	- 4 591 234	**404 U6D**	- 4 902 720

- Inside the car :
  - Place gear change lever in neutral.

- Under the car :
  - slacken pin nut **1**
  - ensure that the selector lever **3** is on the neutral ball lock position.
  - continue with the adjustment as before.

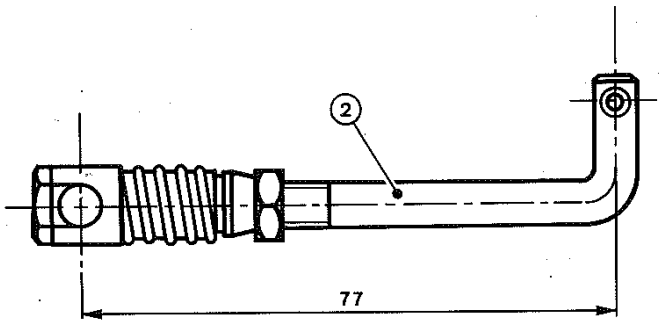
***NOTE** - In the event of wear resulting from particular conditions of use, gearboxes with ball joint part N° 2445.05 may be replaced with Vulkollan casings part N° 2455.04.*



ADJUSTMENT OF THE CONTROLS

404 Left Hand Drive

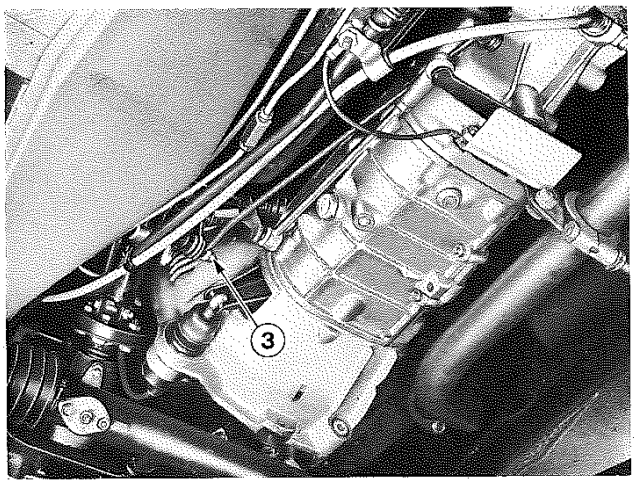
Gear change control rod 1
a = 250 mm



404 Right Hand Drive

Gear change control rod
length = 244 mm

Gear change upper control rod
a = 77 mm



Adjustment on the car

- Fit control rod which should be set at the length indicated above

Inside the car :
- Place the gear change lever in the neutral position.

Under the car :
- slacken pin nut 3
- ensure that the selector lever is on the neutral ball lock position.

- Continue with the adjustment as indicated on the previous page.

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