

ENGINE

GENERAL CHARACTERISTICS

Supplements:-
1. included
2. included
3. included

USING THE MANUAL

PRESENTATION

For easy reference, we have arranged the instructions in five volumes, less heavy and bulky than a single volume and therefore much easier to use.

- Volume No. 1 includes:-
 - general information on the vehicle itself.
 - operation procedures relating to repair of the engine and its parts.

- Volume No. 2 includes operations relating to the transmission:-
 - clutch,
 - gearbox,
 - transmission.

- Volume No. 3 deals with operations on the undercarriage:-
 - front and rear axles,
 - suspension,
 - steering,
 - brakes.

- Volume No. 4 deals with operations relating to:
 - electrical system,
 - heating.

- Volume No. 5 covers procedures relating to the bodywork.
 - panelling,
 - bodywork,
 - upholstery,
 - painting.

Each of these volumes is sold separately. This means that for any special section, the exact number of copies can be obtained to meet the requirements of the Workshop.

COMPOSITION

Each volume (except Volume No. 5), includes:-

- a list of the operations appearing in the volume.
- a list of operations figuring in the other volumes, dealing with the mechanical part of the vehicle.
- the operational procedures (they are arranged in numerical order).
- at the end of the volume, a list of the tools mentioned in the operations and drawings of any special tools which can be made by the Repairer.

OPERATIONS

The order of dismantling and assembly has been studied to obtain the highest quality workmanship in the shortest possible time.

The operations relating vehicle AMI 8 are numbered:

- AM3 : indicating the vehicle,
- a three figure number denotes the unit or part of the unit,
- one figure denotes the nature of the repair:
 - The figure 0. indicates checks and adjustments.
 - The figures 1.4.7. indicate unit replacements (remove and fit)
 - The figures 2.5.8. indicate stripping and assembling
 - The figures 3.6.9. indicate overhauls (dismantle and assemble)

KEEPING UP-TO-DATE

We shall send you, as and when available, the supplements necessary to keep this manual up-to-date.

TOOLS

We recommend the use of tubular box-spanners in preference to plain spanners and infinitely better than adjustable spanners.

Special tools are given in the text by a number followed by the letter T (1).

The special tooling which should be kept in all repair shops is also given in the text. These tools have a number preceded by the letters MR (2).

TIGHTENING TORQUES

These torques are expressed:

- in metre-kilogrammes (m.kg). The majority of torque spanners now available are graduated in m.kg.
- in metre-Newtons (m \wedge N). This is now the legal unit for measuring torque.
1 m.kg = 9.81 m \wedge N (which may also be written m \wedge N or m.N)
- in foot pounds (ft.lbs) converted at 7.22 ft.lbs = 1 m.kg

In the manual we give torque figures using the three unit systems.

In this case the numbers corresponding to the torques are "rounded-off".

Examples: 2 m \wedge N = 0.2 m.kg
 60 m \wedge N = 6 m.kg

IMPORTANT NOTE

For all technical information concerning these vehicles, kindly contact the :-

SERVICE DEPARTMENT, CITROEN CARS LTD., TRADING ESTATE,
SLOUGH, BUCKS SL1 4QA. Telephone Slough 23811

- (1) Tools sold by Etablissements FENWICK 15, rue Fénélon PARIS 10°
- (2) Drawings for making these tools are at the end of the volume. They are in numerical order.

**LIST OF OPERATIONS FIGURING IN VOLUME 1
OF MANUAL No. 559**

◆ *Saloon "AMI 8" (AM3) and Estate "AMI 8" (Break) (AMF3-AMC3)*

Operation No.	Remarks	Description
		CHARACTERISTICS
AM3.000		Characteristics and adjustments (<i>vehicles with drum brakes</i>)
AM3.000a		Characteristics and adjustments (<i>vehicles with disc brakes</i>)
AMB3.000		Characteristics and adjustments (<i>Estate, Safari "AMI 8"</i>)
AM3.00		Principal contents
		ENGINE
AM3.100-00		Engine characteristics
AM3.100-1		Replacing an engine-gearbox assembly
AM3.100-1a		Replacing an engine only
AM3.100-2		Stripping and assembling an engine
AM3.100-3		Overhauling an engine
◆ AM3.111-4		Work on the cylinders and pistons Replacing an assembly cylinder-pistons (or the piston rings)
AM3.111-5		Fitting "heli-coil" inserts
AM3.112-0		Adjusting the rockers.
AM3.112-1		Replacing one or the two cylinder heads
AM3.112-3		Overhauling a cylinder head
◆ AM3.112-4		Work on the cylinder head Replacing a rocker spindle or a rocker or a rocker pushrod stem
AM3.120-0		Checking the valve timing
AM3.120-1	See Op.AM3.112-1	Replacing the pushrods
AM3.120-4		Eliminating leaks in the engine bearings Eliminating a leak in the front bearing Eliminating a leak in the rear bearing
AM3.133-1		Work on the engine suspension Replacing the engine front flexible mountings Replacing an engine rear mounting bracket
AM3.133-4		Work on the engine suspension
AM3.141-1		Replacing a manifold or a gasket
◆ AM3.142-0		Adjustments on the idling Adjusting the slow running Adjusting the idling damper
AM3.142-1		Replacing a carburettor
AM3.142-3		Work on the carburettor Overhauling a carburettor Adjustments on the carburettor

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◆ *Saloon "AMI 8" (AM3) and Estate "AMI 8" (Break) (AMF3-AMC3)*

Operation No.	Remarks	Description
AM3.142-4		Work on the carburettor controls Replacing an accelerator control cable Replacing a choke "pull"
AM3.171-1		Replacing an inlet silencer
AM3.173-1		Replacing a petrol pump
◆ AM3.173-3		Overhauling a petrol pump Checking for leaks. Checking the pressure.
AM3.175-1		Work on the petrol tank Replacing a petrol tank Cleaning a filter
AM3.180-1		Work on the exhaust Replacing an expansion chamber Replacing a connecting tube Replacing an exhaust silencer
AM3.211-0		Adjustments on the contact breaker Checking the static ignition timing Adjusting the static ignition timing Checking the contact breaker gap Adjusting the contact breaker gap Checking the centrifugal advance Checking and adjusting the maximum centrifugal advance
AM3.211-1		Work on the contact breaker Replacing a contact breaker Replacing a condensor Replacing a contact breaker arm Replacing a cam or advance weights
AM3.211-3		Overhauling a contact breaker
AM3.212-0		Checking the coil
◆ AM3.220-0		Checking the oil pressure (on the vehicle) Checking the pressure in the crankcase.
◆ AM3.220-1		Work on the oil circulation. Replacing an oil cooler. Replacing an external filter cartridge. <i>(Vehicles produced since November 1970)</i>
◆ AM3.220-2		Adapting an oil strainer to integral type cartridge filter.
AM3.241-1		Work on the cooling system. Replacing a fan. Replacing a fan cowl.
AM3.300-0		Checking the alignment of the engine-gearbox assembly.

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◆ Saloon "AMI 8" (AM3) and Estate (Break) "AMI 8" (AMF3-AMC3)

Operation No.	Remarks	Description
AM3.100-1 AM3.100-1a AM3.300-0		<p>VOLUME No. 2 - TRANSMISSION</p> <p>Replacement of an engine-gearbox assembly</p> <p>Replacement of an engine only</p> <p>Checking the alignment of an engine-gearbox assembly</p>
AM3.312-00 AM3.312-0a AM3.312-1 AM3.312-1a AM3.312-3 AM3.314-0 AM3.314-1		<p>CLUTCH</p> <p>Characteristics and adjustments</p> <p>Adjustments on a centrifugal clutch</p> <p>Work on a conventional clutch</p> <p>Work on a centrifugal clutch</p> <p>Overhauling a clutch</p> <p>Adjusting the clutch clearance</p> <p>Work on the clutch control</p>
AM3.330-00 AM3.330-1 AM3.330-3 AM3.330-4 AM3.330-6 AM3.334-0 AM3.334-1 AM3.334-3 AM3.343-1 AM3.343-4	See Op.AM3.100-1	<p>GEARBOX</p> <p>Characteristics and adjustments</p> <p>Replacing a gearbox</p> <p>Overhauling a gearbox (<i>drum brakes</i>)</p> <p>Work on the gearbox</p> <p>Overhauling a gearbox (<i>disc brakes</i>)</p> <p>Adjusting the gear change control forks</p> <p>Work on the gearbox controls</p> <p>Overhauling a fork control lever</p> <p>Replacing a differential shaft (<i>drum brakes</i>)</p> <p>Replacing a differential shaft (<i>disc brakes</i>)</p>
◆ AM3.372-00 AM3.372-1		<p>TRANSMISSIONS</p> <p>Characteristics and adjustments</p> <p>Work on the transmission</p>
AM3.410-00 ◆ AM3.410-0 AM3.410-1 AM3.410-3 AM3.412-0 AM3.412-1 AM3.412-3		<p>VOLUME No. 3 - UNDERCARRIAGE PARTS</p> <p>FRONT AXLE</p> <p>Characteristics and adjustments</p> <p>Checks and adjustments on the axle</p> <p>Replacing a front axle (steering)</p> <p>Overhauling a front axle</p> <p>Checking an axle arm, removed</p> <p>Replacing a front axle arm</p> <p>Overhauling a front axle arm</p>

**LIST OF OPERATIONS FIGURING IN VOLUME 1
OF MANUAL No. 559**

♦ *Saloon "AMI 8" (AM3) and Estate (Break) "AMI 8" (AMF3-AMC3)*

Operation No.	Remarks	Description
AM3.413-1		Work on the front axle pivot or pivot pin (<i>on the vehicle</i>)
		REAR AXLE
AM3.420-00		Characteristics and adjustments (<i>drum brakes</i>)
AM3.420-00a		Characteristics and adjustments (<i>disc brakes</i>)
AM3.420-0		Checks on the rear axle
AM3.422-0		Checking a rear axle arm, removed
AM3.422-1		Replacing a rear axle arm (<i>drum brakes</i>)
AM3.422-3		Overhauling a rear axle arm
AM3.422-4		Replacing a rear axle arm (<i>car with disc brakes</i>)
AM3.424-0		Checking a rear crossmember
AM3.424-1		Replacing a rear crossmember
		SUSPENSION
AM3.430-00		Characteristics and adjustments
AM3.430-0		Checking and adjusting the heights
AM3.434-1		Replacement of a suspension unit
AM3.434-3		Overhauling a suspension unit
AM3.435-1		Work on the dampers
AM3.435-4		Work on the anti-roll bar
AM3.436-1		Replacing a shock absorber
		STEERING
AM3.440-00		Characteristics and adjustments
♦ AM3.440-0		Adjustments on the steering
AM3.441-1		Work on the steering
♦ AM3.442-1	See Op. AM3.410-1	Replacing a steering unit
AM3.442-3		Overhauling a steering unit
AM3.443-1		Replacing a steering rod (<i>on the vehicle</i>)
		BRAKES
AM3.450-00		Characteristics and adjustments (<i>drum brakes</i>)
AM3.450-00a		Characteristics and adjustments (<i>disc brakes</i>)
AM3.450-0		Adjustments on the brakes
AM3.451-1		Work on the front brakes (<i>drum brakes</i>)
AM3.451-1a		Work on the front brakes (<i>disc brakes</i>)
AM3.451-4		Work on the rear brakes
♦ AM3.453-0		Checking and adjustment of brake control
AM3.453-1		Work on the brake controls
AM3.453-3		Overhauling the hydraulic brake unit (<i>drum brakes</i>)
AM3.453-6		Overhauling the hydraulic brake unit (<i>disc brakes</i>)
AM3.454-0		Adjusting the parking brake (<i>drum brakes</i>)
AM3.454-0a		Adjusting the parking brake (<i>disc brakes</i>)

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OF MANUAL No. 559**

◆ Saloon "AMI 8" (AM3) and Estate (Break) "AMI 8" (AMF3-AMC3)

Operation No.	Remarks	Description
AM3.454-1 AM3.454-4		Work on the handbrake control (<i>drum brakes</i>) Work on the parking brake control (<i>disc brakes</i>)
VOLUME No. 4 – ELECTRICAL SYSTEM AND HEATING		
AM3.211-0		Adjustments on the contact breaker
AM3.211-1		Work on the contact breaker
AM3.211-3		Overhauling a contact breaker
AM3.212-0		Checking the ignition coil
AM3.510-1		Installation of electrical system
		List of bulbs
		Wiring diagram
◆ AM3.521-1		Work on the instrument panel
AM3.532-0		Checking an alternator on the vehicle
AM3.532-3		Overhauling an alternator
AM3.533-0		Checking and adjusting a starter motor
AM3.533-1		Work on a starter motor
AM3.533-3		Overhauling a starter motor
AM3.535-0		Checking a regulator on the vehicle
AM3.540-0		Adjusting the headlamps
AM3.560-1		Work on the windscreen wiper
HEATING		
AM3.640-1		Work on the heating system
AM3.640-4		Work on the heating-demisting control
VOLUME No. 5 – BODYWORK		

I – GENERAL CHARACTERISTICS

Vehicle type	AM3
Commercial name	AMI 8
Works symbol	AM - AM.PA
Date of production	March 1969
Number of seats	4
Tyres 125 – 380X	Pressure front 26 psi (1.800 bar) rear 26 psi (1.800 bar)
135 – 380X	Pressure front 20 psi (1.400 bar) rear 25 psi (1.700 bar)

II – GENERAL DIMENSIONS

Wheel base	7 ft 10½ ins (2.400 m)
Track, front	4 ft 1.5/8 ins (1.260 m)
Track, rear	4 ft (1.220 m)
Length overall	13 ft 1 in. (3.991 m)
Width, overall	AM = 5 ft 0 ins (1.524 m) AM.PA = 5 ft 1 in. (1.554 m)
Height overall (unladen)	4 ft 11 ins (1.494 m)
Ground clearance (laden)	5.1/8 ins (0.130 m)
Turning radius	18 ft 8½ ins (5.700 m)
Unladen weight (without special heating)	AM = 1598 lbs (725 kg) AM.PA = 1609 lbs (730 kg)
Load (without special heating)	AM = 720 lbs (325 kg) AM.PA = 705 lbs (320 kg)
Total laden weight	20 cwt 60 lbs (1050 kg)

III – ENGINE

General characteristics of the engine

Fiscal rating	3 CV (In France)	Cubic capacity	602 cm ³
Number of cylinders	2	Compression ratio	9:1
Bore	74 mm	Effective h.p.	35 HP SAE at 5750 r.p.m.
Stroke	70 mm	Maximum torque	4.7 m.kg (33 ft/lbs) SAE @ 4750 r.p.m.

Valve timing

Inlet opens B.T.D.C.	0° 5'
Inlet closed A.B.D.C.	49° 15'
Exhaust opens B.T.D.C.	35° 55'
Exhaust closes A.T.D.C.	3° 30'

Valve rocker clearances

◆ A) Practical (engine cold)	B) Theoretical (for checking the timing)
Inlet = .006" – .008" (0.15 to 0.20 mm)	Inlet = .040" (1 mm)
Exhaust = .006" – .008" (0.15 to 0.20 mm)	Exhaust = .040" (1 mm)

Adjust one valve when the corresponding opposed valve is at maximum open position.

Cylinder head :

- 1st tightening: 1.4 to 2.9 ft.lbs (2 to 4 m \wedge N, 0.2 to 0.4 m.kg)
- 2nd tightening: 14.5 to 16.5 ft.lbs (20 to 23 m \wedge N, 2 to 2.3 m.kg)
- Tightening order: upper front nut, upper rear nut, lower nut.

Valves

	Angle	Dia. of head (mm)	Dia. of stem (mm) (under head)	Length (mm)
Inlet	120 ^o	40	7.980 to 7.965	88.95 to 88.25
Exhaust	90 ^o	34	8.465 to 8.450	87.45 to 86.70

Valve springs

	Length under load	Load in kg	Length under load	Load in kg	Direction of coil
Outer	31.4 mm	29.5 to 26.5	24.15 mm	44.5 to 40.5	right-hand
Inner	24.4 mm	13 to 11	17.15 mm	26.5 to 23.5	left-hand

Carburettors

"SOLEX" CARBURETTOR

Markings

(engraved on a plate secured by one of the securing screws of the carburettor cover)

- TYPE: *Vehicles with conventional clutch* : SOLEX 26/35 CSIC
Vehicles with centrifugal clutch : SOLEX 26/35 SCIC

MARKING :

1. *Vehicles produced until June 1969* :
 - with conventional clutch : 1101
 - with centrifugal clutch : 1111
2. *Vehicles produced since July 1969* :
 - with conventional clutch : 1102
 - with centrifugal clutch : 1112
- ◆ 3. *Vehicles produced since June 1970* :
 - with conventional clutch : 1103
 - with centrifugal clutch : 1113

Adjustments

1. *Vehicles produced until July 1969* :

- Venturi bore
- Main jet
- Calibrated tube holder, with emulsion tube
- Correction jet
- Slow running jet
- Pump jet (inlet)
- Needle seating

Primary choke	Secondary choke
21	24
125	70
1F1	2AA
50	
40	1.7
	75

2. *Vehicles produced since July 1969* :

The adjustments are identical, with the exception of:
 Main jet of secondary choke

NOTE: The progression holes (machined) are also modified.

- ◆ 3. *Vehicles produced since June 1970* :

The adjustments are identical.

Ignition

Contact breaker gap	0.40 to 0.45 mm — .016" — .018"
Static ignition timing	8° flywheel, B.T.D.C.
Automatic advance (in flywheel degrees)	10° to 15° between 1430 and 1480 r.p.m. of contact breaker
Plugs	Marchal — SEV 34 S or AC.42.FF. BOSCH W 225 T 1
Plug gaps	0.6 to 0.7 mm — .024" - .028"

◆ Oil circulation

Oil grade	TOTAL <i>Altigrade</i> GT 20 W 40 or 20 W 50 Multigrade hot climates.
Capacity engine sump (after removing cylinder heads)	4.7 pints (2.7 litres)
(after draining)	3.9 pints (2.2 litres)
Oil pressure	80 to 95 p.s.i. (5.5 - 6.5 bars) at 6000 r.p.m., with oil temperature 80°C

NOTE: *Vehicles produced since November 1970* : These vehicles are equipped with external cartridge filter with by-pass valve incorporated, "PURFLEX" type.

IV – CLUTCH**Adjusting the toggles**

H : Distance between ends of toggles and pressure plates = 25.6 to 26.3 mm

h : Dimension between toggle carrier plate and pressure plate = 12 mm.

Clutch springs

Number of springs	Marking	Length under load	Load in kg	Outside diameter
6	Ruby	25 mm	34 to 40	17.75 mm

V – GEARBOX

Oil capacity = 1.6 pints approx. (0.9 litre) of SAE 80 EP oil

Crown wheel and pinion

On AM3 all types = 8 x 31.

Gear ratios

	Gearbox Ratio	Crown wheel and pinion	Total reduction
1	0.1739	8 x 31	0.0448
2	0.3407		0.0879
3	0.520		0.1341
4	0.7407		0.1911
REVERSE	0.1739		0.0448

VII - FRONT AXLE

Camber } Wheel in "straight ahead" position $1^{\circ} + 45'$
 $- 25'$
 } Wheels "full lock" $9^{\circ} 30' \pm 1^{\circ} 20'$

Castor angle Cannot be checked on the vehicle 15°

VIII - REAR AXLE

Wheel toe-in or toe-out ± 4 mm

Camber 0° to $0^{\circ} 30'$

IX - SUSPENSION

Adjusting the heights

NOTE: The heights are measured between the ground and the underside of the chassis between the two heads of the bolts securing the crossmember and at equal distance between the bolt head and the side of the stop.

Vehicle	Tyre dimension	Front height	Rear height
♦ Saloon	125 – 380 X	192.5 to 187.5	282.5 to 277.5

X - STEERING

Front wheel toe-out 1 to 3 mm

Steering lock $35^{\circ} 0'$
 $- 1^{\circ}$

(clearance of 5 mm between the tyre and the arm on the lock side and 1 mm between the inertia damper and the arm on the opposite side).

◆ XI – BRAKES

Dimensions of the drums:

Front = 220 mm

Rear = 180 mm

Maximum machining = 2 mm on the diameter.

XII – ELECTRICAL SYSTEM**Alternator 12 volt**

Make : DUCELLIER 7532-B or PARIS-RHONE A.11.M6

Regulator 12 volt

Make : DUCELLIER 8347-B or PARIS-RHONE AYA.213

Starter motor

Make: DUCELLIER 6202-A or PARIS-RHONE D8.E99

**Main products recommended in the
Repair Manual**

MASTIJOINT HD 37

Sold by Société REXON,
33 Avenue du Général Michel Bizot – PARIS XII^e,
Tél. DOR.79-56.

LOCTITE

Sold in jars 10 cm³ by Etablissements COMET,
12 rue de Lorraine – 92 LEVALLOIS
Tél. 737-79-69.

METALIT

WHITZ DISTRIBUTION,
102 à 106, Avenue Philippe Auguste – PARIS XI^e,
Tél. ROQ.19-42.

PATE LOWAC

Société d'Exportation de Brevets Industriels Spécialisés,
3 à 5 rue de Metz – PARIS X^e
Tél. PRO.13-08.

SILICON GREASE
(G.S.I. 160)

S.P.C.A.
61 rue du Dessous des Berges – PARIS XIII^e

SALOON "AMI-8"
fitted with front disc brakes

These vehicles are identical with those produced previously (see Op. AM3.000) with the exception of the following points:

I – GENERAL CHARACTERISTICS

- Vehicle type AM series JA
- Works symbol AM3 – AM3.PA
- Date of production September 1969

XI – BRAKES**Brake fluid:**

NOTE: *On this type of vehicle, mineral based fluid LHM must be used exclusively.*

Master cylinder:

Diameter = 17.5 mm (11/16 sq. ins) – No residual pressure valve

Front disc brakes

Diameter of disc = 244 mm (maximum run out = 0.20 mm)
 Thickness of disc = 7 mm (minimum thickness after wear = 4 mm)
 Piston diameter = 42 mm (two pistons per unit)
 Area of brake pad = 22 cm² (3.41 sq.ins) (Two pads per brake unit)

Rear drum brakes

Diameter of drum = 180 mm (7.08 ins) (Maximum machining on diameter = 2 mm)
 Piston diameter = 16 mm (5/8 ins) (Ring seals used)
 Brake lining area = 112 cm² (17.36 sq. ins)

Parking brakes

- independent of main brake.
- operates two pads acting on each front brake disc
- area of one pad = 7 cm² (1.085 sq. ins)

Braking area:

Main brake = 308 cm² (47.74 sq. ins)
 Parking brake = 28 cm² (4.34 sq. ins)