

**General**

Special tools play an important part in the maintenance of cars, since it is essential to ensure accurate, reliable and quick service.

It should be noted that the times scheduled for the various operations have been calculated assuming the use of these tools.

This manual lists and illustrates the special tools made expressly by the Manufacturer of overhauling, maintenance and repair operations on the car.

The tool identification code is formed of a new number with 10 figures and an old number with 1 letter and 5 figures:

Ex: 1.820.088.000  
(A.2.0461)

Tools made recently only have the new number. The service network will be able to supply particular special tools, following the procedure already used c/o single Alfa Romeo Dealers.

Below we are listing the special tools used.

**Group 00 - Boxer engines maintenance**

1.822.103.000	Ratchet wrench for removing/refitting spark plugs
1.822.107.000	Box wrench for removing/refitting spark plugs
1.824.018.000 (C.2.0131)	Tool for checking belt tension

**Group 00 - 1929 Turbodiesel engine maintenance**

1.820.095.000 (A.2.0468)	Flywheel stopper (to be used in the car)
1.820.261.000	Tappet cup retainer tool
1.820.262.000	Lever for changing tappet plates
1.824.015.000 (C.2.0128)	Tool for checking belt tension
1.824.016.000 (C.2.0129)	Rod for tightening timing gear belts
1.824.017.000 (C.2.0130)	End piece for tensioning timing gear belt
1.824.018.000 (C.2.0131)	Tool for checking belt tension
1.860.931.000	Tool for timing camshaft (from engine no. 1762798)
1.860.933.000	Tool for positioning 1st cylinder at T.D.C. (from engine n° 1762798)

**Group 00 - T. Spark 16V engines maintenance**

1.825.013.000 (C.6.0183)	Tool for checking T.D.C.
1.825.041.000	Templates for timing camshafts (for 1970 - 1747 engines)
1.825.042.000	Templates for timing camshafts (for 1370 - 1598 engines)

**Group 10 - 8 Valve Boxer engines**

1.820.012.000 (A.2.0195)	Support for overhauling cylinder heads
1.820.016.000 (A.2.0226)	Support fork for overhauling cylinder heads
1.820.059.000 (A.2.0378)	Flywheel stopper
1.820.609.000 (R.4.0145)	Engine supports for overhauling on stand
1.820.611.000 (R.4.0156)	Tool for removing/refitting power unit

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1.821.001.000 (A.3.0103)	Support for disassembling/reassembling valves
1.821.053.000 (A.3.0311)	Puller tool for valve guide
1.821.054.000 (A.3.0312)	Installing tool for valve guide
1.821.055.000 (A.3.0314)	Installing tool for camshaft oil seal
1.821.056.000 (A.3.0321)	Support for disassembling/reassembling valves
1.821.058.000 (A.3.0324)	Lever for disassembling/reassembling valves
1.821.063.000 (A.3.0337)	Installing tool for rear crankshaft oil seal
1.821.064.000 (A.3.0338)	Installing tool for front crankshaft oil seal
1.821.087.000 (A.3.0402)	Puller tool for crankshaft bush
1.821.110.000 (A.3.0469)	Installing tool for valve guide oil seal
1.822.008.000 (A.5.0195)	Counter-torque for camshaft pulleys
1.822.010.000 (A.5.0198)	Wrench for cylinder head fastening screws

**Group 10 - 16 Valve Boxer engine**

1.820.012.000 (A.2.0195)	Support for overhauling cylinder heads
1.820.016.000 (A.2.0226)	Support fork for overhauling cylinder heads
1.820.059.000 (A.2.0378)	Flywheel stopper
1.820.206.000	Counter-torque for removing/refitting camshaft pulleys
1.820.207.000	Reaction plate for disassembling cylinder head valves
1.820.609.000 (R.4.0145)	Engine supports for overhauling on stand
1.820.611.000 (R.4.0156)	Tool for removing/refitting power unit
1.821.001.000 (A.3.0103)	Support for disassembling/reassembling valves
1.821.058.000 (A.3.0324)	Lever for disassembling/reassembling valves
1.821.063.000 (A.3.0337)	Installing tool for rear crankshaft oil seal
1.821.064.000 (A.3.0338)	Installing tool for front crankshaft oil seal
1.821.104.000 (A.3.0450)	Installing tool for crankshaft bush

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1.821.176.000 (A.3.0641)	Puller tool for valve guide
1.821.204.000	Installing tool for front camshaft oil seals
1.821.205.000	Cage for disassembling/reassembling valves
1.821.206.000	Installing tool for valve guide oil seal
1.821.207.000	Installing tool for valve guide
1.821.208.000	Puller tool for valve guide oil seal
1.822.101.000	Extension wrench for slackening/screwing cylinder head fastening screws

**Group 10 - 1929 Turbodiesel engine**

1.820.012.000 (A.2.0195)	Base for cylinder head support tool
1.820.145.000 (R.4.0178)	Engine support brackets
1.820.225.000	Support for removing/refitting power unit
1.820.228.000	Flywheel stopper (to be used on the bench)
1.820.229.000	Flange for removing timing gear drive pulley
1.820.233.000	Bracket for removing/refitting power unit
1.820.253.000	Support base for dial gauge for measuring precombustion chamber protrusions/recesses
1.820.257.000	Support for disassembling/reassembling valves
1.820.258.000	Cylinder head support tool
1.820.261.000	Retainer tool for tappet cups
1.820.262.000	Levers for changing tappet plates
1.820.267.000	Tool for disassembling valves
1.820.277.000	Graduated disk for angle torque tightening
1.820.283.000	Support (camshaft side) for removing/refitting power unit
1.820.284.000	Support for disassembling/reassembling valves
1.820.286.000	Retainer tool for injection pump pulley for slackening or tightening fastening nut
1.820.287.000	Retainer tool for camshaft during disassembly or reassembly of side supports
1.821.058.000 (A.3.0324)	Lever for disassembling/reassembling valves
1.821.122.000 (A.3.0520)	Cage for disassembling/reassembling valves
1.821.161.000 (A.3.0617)	Mallet for removing timing gear drive pulley
1.821.169.000 (A.3.0633)	Puller tool for track rod pins
1.821.171.000 (A.3.0635)	Oil seal tool support grip
1.821.176.000 (A.3.0641)	Puller tool for valve guide
1.821.177.000 (A.3.0642)	Installing tool for valve guide

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1.821.203.000	Installing tool for front crankshaft oil seal
1.821.206.000	Installing tool for valve guide seal cap
1.821.208.000	Puller tool for valve guide seal cap
1.821.227.000	Installing tool for rear crankshaft oil seal
1.821.232.000	Puller tool for injection pump drive pulley
1.822.127.000	Wrench for disassembling/reassembling injectors
1.822.128.000	Wrench for disassembling/reassembling precombustion chamber fastening bushes
1.824.016.000 (C.2.0129)	Rod for tensioning timing gear belt
1.824.017.000 (C.2.0130)	End piece for tensioning timing gear belt
1.825.022.000 (C.6.0201)	Support tool for dial gauge for checking injection pump timing
1.828.004.000	Valve guide alesator

**Group 10 - T. Spark 16V engines**

1.820.011.000 (A.2.0192)	Valve supporting tool
1.820.012.000 (A.2.0195)	Cylinder head supporting tool
1.820.049.000 (A.2.0359)	Valve supporting tool nut
1.820.145.000 (R.4.0178)	Engine bench brackets
1.820.225.000	Engine removal/refitting support
1.820.258.000	Cylinder head support
1.820.267.000	Valve removal/refitting shim
1.820.277.000	Scaled disc for angle tightening torque
1.820.286.000	Counter-torque pulleys for counter-rotating shafts
1.820.617.000	Crankshaft counter-torque pulley (for pre-modification engines)
1.820.618.000	Crankshaft rotating adapter
1.820.619.000	Crankshaft rear oil seal centring disc
1.820.623.000	Engine removal/refitting supports
1.820.624.000	Flywheel lock (for use on bench)
1.820.626.000	Ram fitting
1.820.630.000	Flywheel lock (for post-modification engine)
1.821.058.000 (A.3.0324)	Valve removal/refitting lever
1.821.124.000 (A.3.0522)	Valve removal/refitting support
1.821.175.000 (A.3.0640)	Engine silent-block damper connecting rod extractor/taker-in

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1.821.176.000 (A.3.0641)	Valve guide extractor
1.821.205.000	Valve removal/refitting rack
1.821.206.000	Valve guide oil seal taker-in
1.821.208.000	Valve guide oil seal extractor
1.821.228.000	Camshaft oil seal taker-in on exhaust side
1.821.247.000	Crankshaft front oil seal and counter-rotating shaft oil seals taker-in
1.821.251.000	Counter-rotating shaft oil seal taker-in
1.821.252.000	Camshaft oil seal taker-in on intake side
1.821.254.000	Valve guide taker-in
1.822.144.000	Six-groove tool for oil sump removal/refitting
1.822.145.000	Six-groove tool for oil sump removal/refitting
1.822.146.000	Pulley support tool
1.822.147.000	Timing variator tool
1.822.149.000	Timing belt tension tool
1.822.154.000	Counter-rotating shaft belt tension tool
1.822.155.000	Timing pulley tool on intake side
1.822.156.000	Timing pulley tool on exhaust side
1.825.013.000 (C.6.0183)	TDC check tool
1.825.041.000	Camshaft timing template (for 1970 - 1747 engines)
1.825.042.000	Camshaft timing template (for 1370 - 1598 engines)
1.840.206.000	Ram

**Group 10 - 1910 JTD engine**

1.820.012.000	Cylinder head overhaul support
1.820.253.000	Comparator support
1.820.257.000	Valve removal/refitting support
1.820.258.000	Cylinder head overhaul support
1.820.262.000	Tappet lowering lever
1.820.267.000	Valve removal/refitting shim
1.820.503.000	Comparator support
1.820.618.000	Crankshaft rotation flange
1.820.619.000	Crankshaft rear oil seal centring taker-in
1.821.053.000	Valve guide taker-in
1.821.058.000	Valve removal/refitting lever
1.821.178.000	Valve guide oil seal taker-in
1.821.205.000	Valve removal/refitting rack
1.821.208.000	Valve guide oil seal taker-in
1.821.228.000	Camshaft front oil seal taker-in
1.821.247.000	Crankshaft front oil seal taker-in

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1.821.254.000	Valve guide taker-in
1.822.144.000	Crankcase sump front and rear screw driver
1.822.145.000	Crankcase sump side screw driver
1.822.146.000	Driven toothed pulley anti-torque
1.822.156.000	Driven toothed pulley anti-torque
1.860.846.000	Flywheel lock tool
1.860.905.000	Engine timing template
1.860.942.000	Angle tightening goniometer
1.860.724.001	Lever to keep tappets down
1.860.814.001	Valve guide oil seal fastener
1.860.821.001	Connecting rod small end extractor/taker-in
1.861.001.139	Overhaul bench engine brackets
1.870.671.000	Diesel fuel feed pipe wrench
1.870.672.000	Diesel injector fitting wrench

**Group 10 - Engine supply (Boxer 8 Valve engines)**

1.822.135.000	Tool for slackening fuel pump cover lockring
1.824.110.000 (C.2.0056)	Plug for fluxing test

**Group 10 - Engine supply (Boxer 16V engine)**

1.822.135.000	Tool for slackening fuel pump cover lockring
1.824.002.000 (C.2.0014)	Four column vacuum meter for aligning and synchronising intake bodies
1.824.110.000 (C.2.0056)	Plug for fluxing test

**Group 10 - Engine supply (1929 Turbodiesel engine)**

1.820.098.000 (A.2.0471)	Tool for checking "WASTE-GATE" overpressure valve
1.820.286.000	Retainer tool for injection pump pulley for slackening or tightening fastening nut
1.821.167.000 (A.3.0631)	Wrench for slackening/tightening fuel suction device fastening lockring on tank
1.821.232.000	Puller tool for injection pump pulley
1.822.127.000	Wrench for disassembling/reassembling injectors
1.824.016.000 (C.2.0129)	Rod for tensioning timing gear belt
1.824.017.000 (C.2.0130)	End piece for tensioning timing gear belt
1.825.022.000 (C.6.0201)	Support tool for dial gauge for checking injection pump timing

**Group 10 - Feed engine (T. Spark 16V engines)**

1.820.079.000	Tool for entrefer
1.821.167.000	Tool to unscrew the locking ring of the fuel pump cover (Specific for engines with injection - ignition system M1.5.5)
1.822.135.000	Tool to unscrew the locking ring of the fuel pump cover (Specific for engines with injection - ignition system M2.10.4)
1.822.146.000	Support for pulleys' wrenches
1.822.156.000	Pulley wrench for distribution
1.822.161.000	Wrench to remove tachimetric sensor
1.860.955.000	Gauge
1.860.955.001	Kit to check fuel pressure
1.860.955.003	Kit to check fuel pressure
1.870.684.000	Connector to release fuel system pressure

**Group 18 - Clutch (Boxer versions)**

1.820.059.000	Flywheel stop
1.820.108.000	Centering tool of clutch disc

**Group 18 - Clutch (1929 Turbodiesel version)**

1.820.126.000	Centering tool of clutch disc
1.820.228.000	Flywheel stop

**Group 18 - Clutch (T. Spark 16V versions)**

1.820.124.000	Centering tool of clutch disc (Specific for 1370 T. SPARK 16V with gearbox C.513.5 from the chassis nu° .....)
1.820.126.000	Centering tool of clutch disc
1.820.624.000	Flywheel stop

**Group 21 - Gearbox - Differential (Boxer version)**

1.820.017.000	Half rings to extract the internal guide of the pinion's rear bearing
1.820.020.000	Checking support of preload of the pinion's bearing
1.820.021.000	Tool to block the pinion
1.820.024.000	Extracting plate of spacer and internal guide of the pinion's bearing
1.820.030.000	Spacer to check preload of the pinion's bearings
1.820.037.000	Countertorque to join/disjoin the clamping screw of the primary shaft
1.820.106.000	Support to compare and determine the pinion's position
1.820.107.000	Pinion to determine the generator

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1.820.146.000 (R.4.0189)	Support of gearbox - differential group for overhauling
1.820.152.000 (C.5.0125)	Disc to check the bearings' preload
1.820.208.000	Support to join/disjoin gearbox-differential from the car
1.820.226.000	Support to join/disjoin gearbox-differential
1.820.239.000	Crosspiece supports to join/disjoin gearbox-differential
1.820.581.000	Crosspiece supports for the engine to join/disjoin gearbox-differential
1.820.607.000	Brackets couple to join/disjoin the gearbox
1.821.034.000 (A.3.0290)	Mobile extractor of internal guides of the bearings in the differential box
1.821.035.000 (A.3.0291)	Extractor of bushing and splash oil guard of the primary shaft
1.821.036.000 (A.3.0292)	Introducing tool of the bearings' external guides
1.821.037.000 (A.3.0293)	Extracting/introducing tool of the bearing's locking ring and ring odometer onto the differential shaft
1.821.038.000 (A.3.0294)	Introducing tool of splash oil guard onto gearshifts control lever
1.821.039.000 (A.3.0295)	Extracting plate of the differential shaft from its support
1.821.040.000 (A.3.0296)	Extracting/introducing tool of external guide of the pinion's rear bearing and extractor of pinion/primary shaft
1.821.041.000 (A.3.0297)	Extracting/introducing tool of the external guide of the pinion's front bearing
1.821.042.000 (A.3.0298)	Extractor of the bearing locking ring of the differential shaft and odometer
1.821.043.000 (A.3.0299)	Extractor of the bearing internal guide of the differential support
1.821.044.000 (A.3.0300)	Introducing tool of the primary shaft and gear of the 5 <sup>th</sup> speed
1.821.045.000 (A.3.0302)	Extracting/introducing tool of the bearing from the half axle hub
1.821.046.000 (A.3.0303)	Guide to mount control lever pawls of 3 <sup>rd</sup> - 4 <sup>th</sup> and R.M. shifts
1.821.047.000 (A.3.0304)	Guide to mount control lever pawls of 1 <sup>st</sup> - 2 <sup>nd</sup> and R.M. shifts
1.821.048.000 (A.3.0305)	Introducing tool of internal guides of bearings onto the hubs of the differential box
1.821.050.000 (A.3.0307)	Introducing tool of the bearing onto the primary shaft and the phonic wheel onto the primary shaft
1.821.051.000 (A.3.0308)	Introducing tool of the shaft bushing
1.821.052.000 (A.3.0309)	Introducing tool of the gearshift control lever pawls
1.821.057.000 (A.3.0322)	Extracting/introducing tool of the flexible pins of the gearshift control lever

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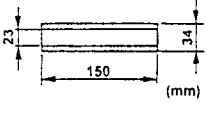
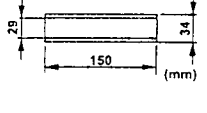
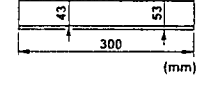
1.821.098.000 (A.3.0429)	Puller tool for gearshift control and selection rod oil seal
1.821.099.000 (A.3.0430)	Installing tool for differential axle shaft cover oil seal
1.821.107.000 (A.3.0452)	Puller tool for PTO shaft oil seal
1.821.108.000 (A.3.0453)	Installing tool for PTO shaft oil seal
1.821.114.000 (A.3.0490)	Puller tool for removing 4th speed gear from main shaft
1.821.115.000 (A.3.0491)	Puller/installing tool for main shaft rear bearing
1.821.116.000 (A.3.0492)	Puller tool for removing 4th speed gear from main shaft
1.821.117.000 (A.3.0495)	Puller tool for 5th speed driving gear
1.821.118.000 (A.3.0500)	Puller tool for main shaft rear bearing
1.824.006.001 ÷ 006 (C.2.0037)	Weight for checking bearing preload (100gr - 150 gr - 200 gr - 300 gr - 1000 gr - 2000 gr)
1.825.005.000 (C.6.0161)	Reference for defining pinion position dimension
1.825.006.000 (C.6.0162)	Tool for checking pinion position

### Group 21 - Gearbox - Differential (1929 Turbodiesel and T. Spark 16V versions)

1.820.017.000	Half rings for: - removing main shaft 4th speed driven gear - main shaft disassembly
1.820.019.000	Plate for removing transmission shaft 2nd and 3rd speed driven gears
1.820.022.000	Half plates for inserting main shaft front bearing inner race
1.820.024.000	Plate for supporting half rings and removing transmission shaft 1st speed driven gear
1.820.085.000	Tool for defining differential bearing shims
1.820.146.000	Gearbox support plate on rotary stand
1.820.208.000	Support for removing/refitting gearbox (Specific for Turbodiesel version)
1.820.226.000	Engine support
1.820.227.000	Brackets for removing/refitting gearbox
1.820.229.000	Flange for removing differential flange
1.820.239.000	Support for engine gearbox
1.820.581.000	Engine support crossrail
1.820.623.001	Support for removing/refitting gearbox (Specific for T. Spark 16V engines)
1.821.003.000	Drift for removing differential support bearing outer race
1.821.028.000	Installing tool for differential support bearing outer race

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1.821.034.000	Puller tool for differential bearings
1.821.047.000	Installing tool for 1st - 3rd - 5th speed control rod safety pawls
1.821.049.000	Half plates for installing main shaft rear bearing
1.821.050.000	Installing tool for 4th speed driven gear
1.821.062.000	Installing tool for differential bearings
1.821.092.000	Installing tool for 1st speed driven gear
1.821.117.000	Puller tool for removing main and transmission shaft front bearing inner race
1.821.161.000	Mallet for removing differential flange
1.821.170.000	Installing tool for differential carrier oil seal gearbox side
1.821.171.000	Grip for installing tools
1.821.225.000	Installing tool for differential carrier oil seal engine side
	Installing tool for: main shaft front bearing inner race
	Installing tool for: transmission and main shaft rear bearing
	Installing tool for: synchroniser hub and transmission shaft 2nd and 3rd speed gears

**Group 21 - Gearbox - Differential (1370 T. Spark 16V version with gearbox C.513.5 from chassis no. ....)**

1.820.019.000 (A.2.0240)	Half plates for disassembling main and transmission shafts
1.820.022.000 (A.2.0247)	Half plates for reassembling main shaft
1.820.047.000 (A.2.0349)	Plate for disassembling main and transmission shafts
1.820.085.000 (A.2.0458)	Tool for defining differential bearing shims
1.820.146.000 (R.4.0189)	Gearbox support tool for disassembly on overhauling stand
1.820.226.000	Power unit support
1.820.239.000	Support for power unit
1.820.581.000	Power unit support crossrail
1.820.605.000	Half rings for disassembling main and transmission shafts
1.820.623.000	Support bracket for removing/refitting gearbox

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1.821.034.000 (A.3.0287)	Puller tool for differential support roller bearing outer race - gearbox cover side
1.821.037.000 (A.3.0293)	Installing tool for components on transmission shaft
1.821.049.000 (A.3.0306)	Half plates for disassembling main and transmission shafts
1.821.092.000 (A.3.0412)	Installing tool for components on main shaft
1.821.117.000 (A.3.0495)	Puller tool for transmission shaft front bearing inner race
1.837.432.100	Installing tool for components on transmission shaft
1.860.917.000	Puller/installing tool for differential support bearings
1.860.978.000	Support for removing/refitting front suspension crossmember
1.870.007.000	Grip for installing/puller tools
1.875.017.000	Tool for disassembling differential bearings
1.875.018.000	Tool for assembling differential bearings

**Group 27 - Axle shafts**

1.820.082.000	Pliers for installing joint boot fastening clamps
1.820.084.000	Pliers for installing joint boot fastening clamps
1.821.161.000	Mallet
1.821.165.000	Puller tool for CV joint
1.860.996.000	Installing tool for bearing on axle shaft (Specific for 1370 T. SPARK 16V with gearbox C.513.5 from chassis no. ....)
(*)	Half plates for removing axle shaft bearing (Specific for 1370 T. SPARK 16V with gearbox C.513.5 from chassis no. ....)

(\*) : Not available at time of going to press.

**Group 33 - Brakes**

1.820.610.000	Tool for retaining rear drum brake cylinder piston
1.821.034.000	Tool for adjusting position of front brake caliper piston
1.822.108.000	Tool for moving back rear brake caliper piston

**Group 41 - Steering system**

1.821.169.000 (A.3.0633)	Puller tool for steering side rod pin
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**Group 44 - Front suspension (Boxer versions)**

1.820.047.002	Plate for removing bearing inner race from wheel hub
1.820.089.000	Tool for front suspension spring compression

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1.820.223.000	Half rings for removing bearing inner race from wheel hub
1.820.226.000	Engine support
1.820.238.000	Plate for front suspension spring compression
1.820.239.000	Supports for engine support crossrail
1.820.247.000	Tool for retaining front shock absorber stem
1.820.581.000	Engine support crossrail
1.820.608.000	Blocks for front suspension spring compression
1.820.622.000	Tool for angle torque tightenings
1.821.045.000	Tool for removing bearing outer race from wheel upright
1.821.051.000	Tool for: - removing wheel hub from upright - removing bearing inner race from wheel hub
1.821.149.000	Support for removing bearing outer race from wheel upright
1.821.169.000 (A.3.0633)	Tool for disconnecting steering rod ball joint from wheel upright
1.821.209.000	Tool for: - inserting bearing in wheel upright - inserting hub in wheel upright
1.822.134.000	Wrench for slackening and tightening front shock absorber fastening nut

#### Group 44 - Front suspension (1929 Turbodiesel and T. Spark 16V versions)

1.820.047.002	Plate for removing bearing inner race from wheel hub
1.820.089.000	Tool for front suspension spring compression
1.820.223.000	Half rings for removing bearing inner race from wheel hub
1.820.238.000	Plate for front suspension spring compression
1.820.247.000	Retainer ring for front shock absorber stem
1.820.608.000	Blocks for front suspension spring compression
1.821.045.000	Tool for removing bearing outer race on wheel upright
1.821.051.000	Tool for: - removing wheel hub from upright - removing bearing inner race from wheel hub
1.821.149.000	Support for removing bearing outer race from wheel upright
1.821.169.000 (A.3.0633)	Tool for disconnecting steering rod ball joint from wheel upright
1.821.209.000	Tool for: - inserting bearing in wheel upright - inserting hub in wheel upright
1.822.134.000	Wrench for slackening and tightening front shock absorber fastening nut

#### Group 44 - Rear suspension

1.822.003.000	Tool for removing/refitting rear stiff axle
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**Group 50 - Air-conditioning**

1.822.111.000	Socket wrench for pipe joints of cooling fluid
1.822.112.000	Box wrench for pipe joints of cooling fluid
1.822.113.000	Wrench for pipe joints of cooling fluid
1.822.115.000	Pin wrench for pipe joints of cooling fluid
1.822.132.000	Ratchet wrench to join/disjoin control motor of outer air door/ blow-by
1.822.136.000	Inserts to join/disjoin control motor of outer air door/blow-by

**Group 55 - Electrical system**

1.822.103.000	Ratchet wrench to join/disjoin spark plugs (Specific for Boxer 16V engine)
1.822.107.000	Socket wrench to join/disjoin spark plugs (Specific for Boxer 16V engine)
1.822.138.000	Wrench for locking nut of pulley alternator

**Group 70 - Bodywork**

1.822.120.000	Wrench for hinges' locking screws
1.822.137.000	Wrench to adjust side mobile glass
1.832.010.000	Blade to seal-cut glasses
1.823.014.000	Shaving knife for plastic elements
1.823.015.000	Shaving knife for plastic buttons
1.823.019.000	Blade to seal-cut glasses
1.823.020.001	6-mm diameter pin for roof mounting
1.823.020.002	8-mm pins for roof-mounting
1.823.021.000	Blade to seal-cut glasses
1.823.022.000	Blade to seal-cut glasses
1.823.023.000	Blade to seal-cut glasses
1.823.025.000	Inserts to remove plastic buttons
1.823.027.000	Bodywork protection plate from sealing cut of glasses

THE FOLLOWING TOOLS REFER TO JOINING/DISJOINING OPERATIONS OF THE 1910 JTD VERSION, AS TO THE TOOLS FOR "ENGINE OVERHAULING" REFER TO PAGE 57

### Group 00 - Engine maintenance

1.820.262.000	Lever to lower the tappets
1.820.630.000	Flywheel stop
1.860.724.001	Lever to hold the tappets lowered
1.860.905.000	Template for engine timing
1.860.905.010	Calibrated screw for engine timing

### Group 10 - Engine

1.820.225.000	Base to join/disjoin boost engine
1.820.630.000	Flywheel stop
1.822.144.000	Spanner to unscrew/crew front and rear screws of the block sump
1.822.145.000	Spanner to unscrew/screw side screws of the block sump
1.822.156.000	Countertorque of the toothed pulley of the pipe
1.825.215.000	Thrust bearing extractor
1.860.910.002	Support to join/disjoin the boost engine
1.860.942.000	Goniometer for angle tightening of the cylinder head screws
1.870.671.000	Hexagon ring wrench for Diesel fuel feeding joints
1.870.644.000	Support to join/disjoin the boost engine
1.870.644.001	Support to join/disjoin the boost engine

### Group 10 - Feed engine

1.820.630.000	Flywheel stop
1.822.135.000	Tool to remove the locking ring of the pump with level indicator control
1.822.138.000	Wrench to tighten the nut of the control pulley of the pressure pump
1.860.954.002	Extractor of the control pulley of the pressure pump
1.870.671.000	Hexagon ring wrench for Diesel fuel feeding joints

## Group 21 - Gearbox - Differential

1.820.124.000	Centering to mount the clutch disc
1.820.226.000	Support of the boost engine group
1.820.229.000	Flange to extract differential flange
1.820.239.000	Small blocks to support the boost engine group
1.820.581.000	Crosspiece to support the boost engine group
1.820.624.000	Flywheel stop
1.821.161.000	Beater to extract the differential flange
1.821.170.000	Tool to introduce oil splash guard on the differential flange
1.821.171.000	Handgrip to introduce oil splash guard on the differential flange
1.860.978.000	Support to join/disjoin the crosspiece of front suspensions
1.870.644.000	Support to join/disjoin the gearbox
1.870.644.001	Support to join/disjoin the gearbox
1.870.651.000	Support brackets of the boost engine group
1.870.668.000	Extractor of the handgrip of the gearbox control lever
1.870.974.000	Spacer for bowden adjustment of the gearbox control

## MAINTENANCE OPERATIONS

Maintenance operations consist of checking and maintaining the efficiency of some parts of the vehicle which are believed to undergo wear and tear following their normal utilisation. Here follows the table showing the maintenance operations to be performed at given km intervals.



### WARNINGS:

Precautions to be respected before the operations. The engine bay contains many moving parts, high temperature elements and high voltage wires which could be dangerous.

Carefully stick to the following indications:

- Switch the engine off and let it cool down.

Do not smoke or use unprotected flames. The presence of fuel may cause fire.

- Check the presence of fire extinguishers.



### ATTENTION:

THE FOLLOWING MAINTENANCE GRID IS VALID TILL JUNE 1996.

Operations to be performed at the km shown		Km x 1.000									
		20	40	60	80	100	120	140	160	180	200
Replace engine oil and Filter (each year) check the lubricating circuit	Petrol versions	•	•	•	•	•	•	•	•	•	•
	Turbodiesel versions	EVERY 10.000 km									
Check the valves' play (not for engines with hydraulic tappets)			•		•		•		•		•
Replace control transmission belts							•				
Check conditions of trapezoidal belts			•		•		•		•		•
Check conditions of Poly V belts					•				•		
Replace air filter cartridge			•		•		•		•		•
Replace fuel filter cartridge (turbodiesel versions)			•		•		•		•		•
Replace fuel filter cartridge (petrol version)					•				•		
Check functioning of oxygen sensor of exhaust Gases (lambda probe)					•				•		
Replace spark plugs (petrol version)	Boxer 8V		•		•		•		•		•
	Boxer 16V						•				•
	T. Spark 16V						•				•
Replace antifreezing mixture					•				•		
Check oil level of gearbox/differential					•				•		
Check integrity of protecting bellows of half shafts, power steering and steering joints' caps			•		•		•		•		•
Check fuel and braking system's seal			•		•		•		•		•
Check parking brake stroke			•		•		•		•		•
Check oil level of the hydraulic torque converter			•		•		•		•		•