PUMAKIT

A big THANK YOU to FELIPE NICOLIELLO,
the operator of the website www.pumaclassic.com.br

USER MANUAL

Translated with ChatGPT

Twin carburador 32
for VW - 1300 and 1500

TECHNICAL SPECIFICATIONS

	1,300	1,300 with twin carburadors	1,500	1,500 with twin carburadors
Acceleration:				
0–40 km/h	5.5 s	5.1 s	5.0 s	4.6 s
0–60 km/h	9.5 s	8.5 s	9.0 s	7.8 s
0–80 km/h	15.2 s	13.4 s	13.6 s	12.7 s
0–100 km/h	29.4 s	23.8 s	23.7 s	19.6 s
Top speed:	115 km/h	127 km/h	128 km/h	131 km/h
Fuel consumption at 80 km/h (measured at sea level):	12 km/l	13.5 km/l	10 km/l	12 km/l
Power (SAE hp):	46/4600	52/4650	52/4600	58/4650
Maximum torque (mkg):	9.0/2600	9.7/2600	9.8/2600	10.3/2600

Twin 32 mm carburators – fitted to the 1300 engine
(Fig. 1)

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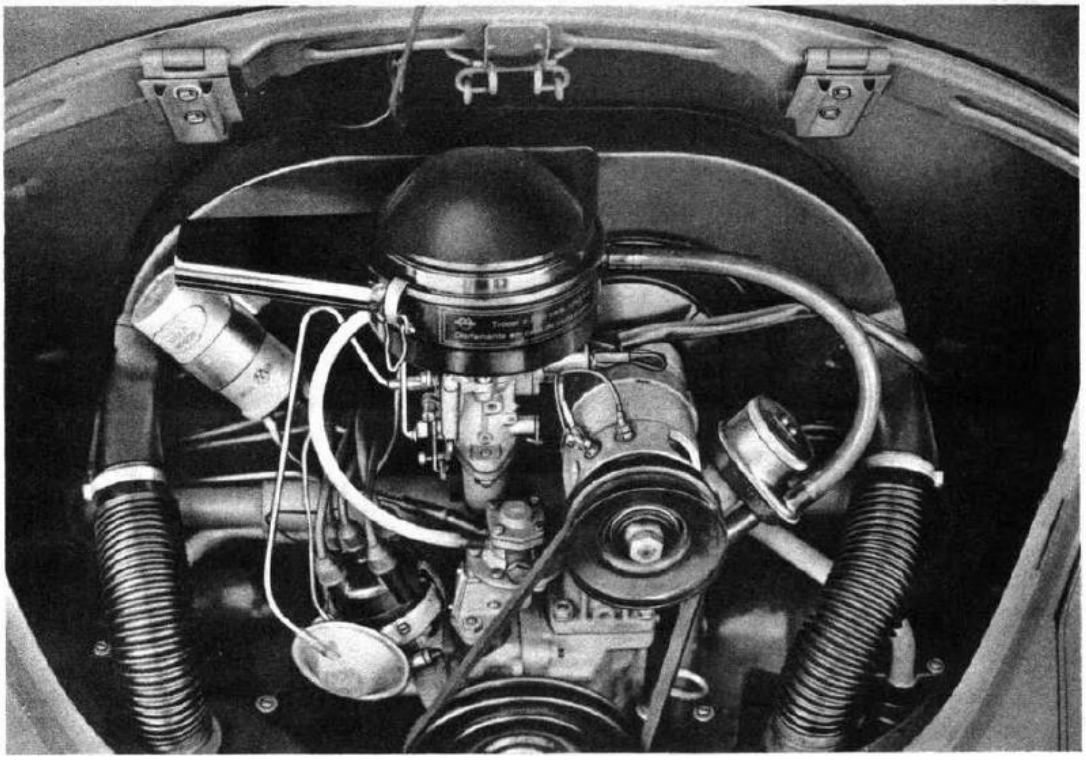
Engine 1500



Engine 1300 (Fig. 2)

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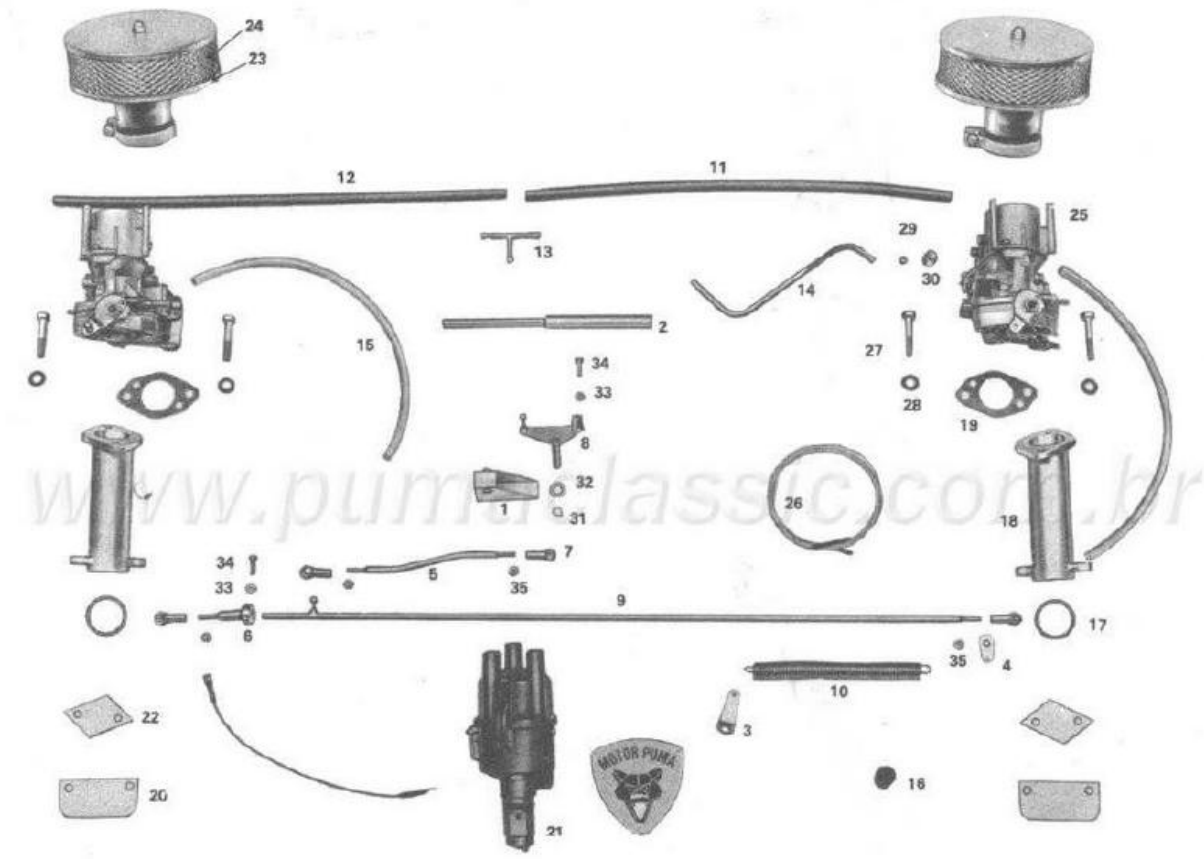

Parts list – Twin carburator 32 (1,300 / 1,500)

1.	Articulated bracket	002.119.031	19.	carburator manifold gasket ...	002.129.033
2.	Tube for throttle cable	002.119.041	20.	Gasket plate	002.129.039
3.	Spring mounting plate	002.119.063	21.	Bosch distributor VJR-4BR25 .	211,905,205 F
4.	Spring holder	002.129.095	22.	Cover	302.119.025
5.	Connecting rod	002.129.097	23.	Air filter housing	302.129.203
6.	Spacer	002.129.135	24.	Filter element	302.129.231
7.	Joint head / ball joint	002.129.099	25.	Solex carburator	002.129.311/312
8.	Joint set	002.129.111	26.	Throttle cable	302,721,555
9.	Main rod	002.129.131	27.	Hexagon bolt M8 x 40	Nº 10,280
10.	Return spring	002.129.121	28.	Threaded sleeve	Nº 22,080
11.	Main hose	005.127.049	29.	Brass sleeve	002.129.487
12.	Left carburator hose	005 127 057	30.	Coupling nut	002.129.485
13.	T-joint	005127.561	31.	Screw	NP 40,580
14.	Bent tube	005.127.059	32.	Washer	NP 20,081
15.	Plastic hose	005.127.053	33.	Nut M5 x 0.8	NP 30,050
16.	Crankcase breather plug	002.119.065	34.	Screw M5 x 15 x 0.8	NP 10,051
17.	Copper gasket	002 129 015	35.	Nut M5 x 0.9	NP 30,051
18.	Intake manifold.....	002.129.025			

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Installation instructions for Puma Kit-32 twin carburator for VW 1300 and VW 1500 engines

It is not necessary to remove the engine from the vehicle to fit this kit correctly. Simply follow the step-by-step instructions below and use the tools specified.

Start by removing a few components (see Fig. 2):

1. Open the bonnet (rear bonnet).
2. Mark the hexagon bolts (M6) that secure the bonnet to the hinges with paint or nail varnish. These marks will make it easier to align the bonnet precisely during reassembly.
3. Loosen the fixing screw on the air filter, located below the carburator, using a 10 mm spanner.
4. Remove the plastic hose connecting the crankcase ventilation to the air filter.
5. Remove the air filter from the carburator.
6. Remove the two flexible hoses for the warm air supply, which run between the air ducts and the intake manifolds on the bonnet. Depending on the vehicle, these are either secured with clamps or simply plugged in.
7. Remove the two metal plates surrounding the intake manifold's heating pipes. To do this, loosen the three M6 bolts (cylinder head) using a 10 mm spanner. Take care not to damage the gasket.
8. Remove the rear engine guard by loosening the remaining six M6 bolts with a 10 mm spanner.
9. Loosen the nut securing the pulley to the alternator shaft. Use a 21 mm spanner or a spark plug wrench together with a 10 mm spanner. Hold the pulley in place and loosen the nut slightly without removing it completely – just enough to allow the belt to be removed.
10. Loosen the alternator tensioner belt. Use a 13 mm spanner or socket wrench for this.

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Next, loosen the M8 hexagon bolt that tensions the belt, without removing it completely. Press the now loosened belt against the fan cover.

11. Loosen the cables from the wiring harness connected to the alternator using an 8 mm spanner. It is advisable to mark the cables: Green cable → Terminal D/F; Red cable with black stripes → D+; Brown cable → D– (ground)
12. Disconnect the cable from the carburator's solenoid valve.
13. Remove the solenoid valve using an 8 mm spanner.
14. Disconnect the cable from the left-hand terminal of the ignition coil (positive).
15. Disconnect the cable from the oil pressure switch terminal. This is located on the left behind the distributor.
16. Open the clip securing the wiring harness to the fan cowl (right-hand side).
17. Release the wiring harness from the clip and route it behind the fan cowl.
18. Disconnect the cable from the distributor to the ignition coil (negative, green cable).
19. Remove the high-voltage cables from the spark plugs and ignition coil. Mark them for later identification.
20. Remove the high-voltage cables from the plastic holders on the fan cowl.
21. Loosen the distributor's fixing screw. Use a 10 mm spanner.
22. Disconnect the vacuum hose between the distributor and the carburator.
23. Remove the distributor upwards. Seal the opening in the engine casing with paper or a cloth to prevent dirt from entering.
24. Loosen the screw securing the accelerator cable to the carburator using an 8 mm spanner and a pair of pliers. Hold the cable firmly whilst loosening the screw.

25. Remove the accelerator cable from the mounting socket on the lever at the carburator.
26. Loosen the nut securing the choke cable to the carburator's choke lever using an 8 mm spanner and a pair of pliers. Hold the end of the cable firmly with the pliers whilst loosening the nut with the spanner.
27. Loosen the screw securing the choke cable cover to the carburator using an 8 mm spanner.
28. Remove the choke cable from the carburator's mounting bushing. If the end of the cable is bent, straighten it with pliers.
29. Remove the two screws securing the number plate light (in the bonnet) using a No. 1 Phillips screwdriver, and loosen the clip securing the cable to the bonnet.
30. Remove the entire number plate light by disconnecting the cable connector attached to it.
31. Remove the cable from the bonnet, strip the insulation from the connector and route it behind the fan housing.
32. Remove the water collection assembly (VW-1500 Saloon only), which is attached to the inside of the bonnet, by loosening two screws with a No. 1 Phillips screwdriver.
33. Loosen the four M6 hexagon bolts securing the bonnet to the two hinges using a 10 mm socket wrench.
34. Remove the bonnet by releasing the spring. To do this, the bonnet must be pushed upwards.
35. Loosen the six M6 hexagon bolts (three on each side) securing the two hinge brackets to the body using a 10 mm socket or ring spanner.
36. Loosen only the four rear hexagon bolts (two on each side) that were loosened in step 35.
37. Push the left hinge bracket to the left and the right one to the right.
38. Pull the accelerator cable and choke cable sheaths forwards, guiding your left hand behind the blower housing.
39. Remove the accelerator cable guide tube, which is attached to the blower housing, using a screwdriver.

40. Loosen the cylinder bolts securing the fan housing to the engine. There is one bolt on the right and one on the left, which can be loosened using a short 8 mm flat-bladed screwdriver.
41. Thoroughly clean the contours of the intake manifold on the cylinder heads (right and left) using a brush or cloth.
42. Loosen the four M6 nuts (two on each side) securing the intake manifold to the cylinder heads, as well as the four bolts (two on each side) securing the heater pipe flanges to the exhaust, using a 10 mm T- or L-wrench.
43. Disconnect the two fuel pump inlet and outlet hoses by pulling them off.
44. Remove the intake manifold with the carburator fitted by pulling it upwards.
45. Place a piece of paper or a cloth in the intake ports of the cylinder heads (one on each side) to prevent dirt from entering.
46. Remove the fan housing by pulling it upwards. Take care with the oil cooler, which is located in the lower part of the fan housing.
47. Remove the complete alternator and fan unit from the housing by loosening the four M6 bolts with a 10 mm socket wrench.
48. Remove the accelerator cable. To do this, release the accelerator pedal return spring. Loosen the fastening of the cable end hooked into the throttle lever. Pull the cable out.

AT THIS POINT, YOU HAVE COMPLETED ALL DISASSEMBLY WORK AND CAN NOW BEGIN ASSEMBLING THE PUMA/KIT.

49. Fit the new (shorter) accelerator cable from the Puma/Kit (part no. 302.721.555). Feed it through the opening next to the pedal, lubricate it with grease beforehand, and push it until the free end emerges at the rear of the front engine cover. Feed the cable through the opening in the front engine cover. Secure the cable end to the accelerator pedal lever and reattach the return spring.
50. Drill a 1/2-inch diameter hole in the blower housing at the position shown in Figure 3, ensuring the drill bit passes through both the front and rear plates (through-hole).

51. Enlarge the holes with a round file (rasp) until the new guide tube for the accelerator cable (part no. 002.119.041) fits perfectly but tightly.
52. Mark the position of the joint bracket (part no. 002.119.031) on the fan housing in accordance with the dimensions shown in Fig. 3.
53. Solder the joint bracket to the position marked in point 52 on the housing using brass solder (oxy-acetylene welding).
54. Insert the cable entry tube into the hole drilled in the housing (Fig. 3).
55. Paint the surfaces damaged by welding. Sand them down thoroughly beforehand until the bare metal is exposed.
56. Lubricate the guide bore of the joint bracket with a little grease or oil.
57. Fit the joint unit (part no. 002.129.111) to the previously welded bracket on the fan housing by inserting the pin from the bottom upwards into the guide bore (Fig. 3).
58. Fit the flat washer (part no. 20.060) and then the retaining ring (part no. 40.580). The retaining ring is fitted using pliers.
59. Fit the alternator-fan unit to the fan housing so that the alternator terminals face upwards. Tighten the 4 bolts, 4 flat washers and 4 spring washers using a 10 mm ring spanner.
60. Wrap up the choke cable, which is not used in twin-carburator operation, and secure it with insulating tape behind the front engine mudguard.
61. Connect the fuel line to the fuel pump by inserting the plastic hose into the left-hand connection (pump inlet).
62. Place the fan housing onto the engine from top to bottom, without the feed-through tube.
63. Align the edge of the fan housing flush with the cylinder covers all round. The edges of the covers must lie against the outer edge of the housing.
64. Insert the two M6 cylinder bolts with flat washers and tighten them on the left and right using a short 8 mm screwdriver.
65. Insert the guide tube for the accelerator cable into the fan housing (opening from step 50), with the curved tip pointing downwards.

At the same time, insert the accelerator cable and push the tube forwards until the curved tip is inserted into the plastic hose that guides the cable to the engine (Fig. 4).

66. Pull the strap holding the alternator forwards. Tighten the M8 hexagon bolt using a 13 mm ring spanner (left) and a T- or L-wrench (right).
67. Fit the V-belt so that it runs over the engine and alternator pulleys. Then tighten the nut on the alternator pulley (see point 9) by inserting a screwdriver into the pulley's opening and using a 21 mm spanner. Ensure that the spacers are correctly fitted onto the shaft.
68. Remove the paper or fabric plugs sealing the intake ports of the cylinder heads and clean the areas beforehand.
69. Remove the existing gaskets from the intake ports of the cylinder heads and replace them with new ones from the Puma kit (part no. 002.129.015).
70. Fit the intake manifolds (part no. 002.129.025) included in the Puma kit to the cylinder heads. Ensure that the stud bolts are passed through both openings.
71. Fit spring washers and M6 nuts onto the stud bolts of the intake manifolds and tighten them using a T-wrench or socket wrench (10 mm).
72. Select the right and left carburators from the Puma kit. The left carburator is the one with the spherical actuator pin facing the fitter.
73. Fit both carburators to the corresponding intake manifolds. Place a gasket (part no. 002.129.033) between the flanges. Secure them with 2 M8 × 40 bolts (part no. 10.280) and spring washers (part no. NP 22.080) using a 13 mm spanner and an offset ring spanner.
74. Place a piece of paper or cloth in the opening of both carburators to prevent dirt from entering.
75. Connect the fuel lines. The Puma kit contains the following parts:

• Main fuel hose	005.127.049	(1 piece)
• Hose to the left carburator	005.127.057	(1 piece)
• T-joint	005.127.561	(1 piece)
• Curved pipe to the right carburator	005.127.059	(1 piece)
• Brass jet	002.127.487	(1 piece)

• Connecting nut	002.129.485	1 piece
• Plastic vent hose	005.127.053	2 pieces
• Hose clamp	002.973.011	1 piece

76. Fit a union nut and a brass nozzle to the shorter end of the bent pipe. Position the pipe between the fan housing and the right-hand carburator, and screw the nut into the fuel inlet of the right-hand carburator. Tighten using a 13 mm spanner.
77. Slip the main fuel hose about 50 mm onto the other end of the bent pipe and connect the other end of the hose to the T-joint (side B).
78. Fit the hose from the left-hand carburator onto the fuel inlet of the left-hand carburator and connect the other end to side A of the T-joint (Fig. 5A).
79. Fit the plastic hose from the fuel pump (from step 43) to side C of the T-joint.
80. Fit the other end of this plastic hose to the outlet of the fuel pump.
81. Fasten a hose clamp behind the upper M6 bolt that secures the ignition coil holder to the fan housing (using a 13 mm spanner), and then secure the hose from the left-hand carburator to it.
82. Fit a plastic hose to the brass vent pipe of the right-hand carburator and route the other end behind the fan housing.
83. Repeat the procedure for the left carburator (second vent hose).
84. Fit the carburator linkage. Included in the Puma kit:

• Ball joints	002.129.099	4 pieces
• Spacer	002.129.135	1 piece
• Main rod	002.129.131	1 piece
• Spring retainer	002.129.095	1 piece
• Return spring	002.129.121	1 piece
• Spring retaining plate on engine block	002.119.063	1 piece
• Connecting rod	002.129.097	1 piece
• Hexagon bolt M5 × 15	NP 10.051	1 piece
• Nut M5 × 0.9	NP 30.051	4 pieces
• Nut M5 × 0.8	NP 30.050	1 piece

85. Clamp the main rod in a vice so that the ball joint faces left and is pointing upwards.
86. Screw an M5 nut onto the right-hand end of the rod, if not already fitted.
87. Place the spring holder onto the rod and then screw on a ball joint.
88. Once the ball joint is fully screwed on, tighten the M5 nut using an 8 mm spanner. Ensure that the spring holder is positioned so that the opening remains clear and the opening of the ball joint faces the assembly side.
89. Screw an M5 nut onto the thread of the spacer and then screw a ball joint onto it.
90. Screw an M5 nut onto the M5×15 fixing screw and screw this into the thread of the spacer.
91. Tighten the M5 nut on the ball joint using an 8 mm spanner. Ensure that the screw remains horizontal and that the opening of the ball joint faces the opposite side of the fitter.
92. Screw an M5 nut and a ball joint onto each side of the connecting rod, as far as they will go. The openings of the ball joints must face in opposite directions (see Fig. 1).
93. Apply a little grease to the 4 ball joints.
94. Remove the lock from the right-hand ball joint on the main rod, fit it onto the ball stud of the right-hand carburator and secure it again.
95. Remove the lock on the ball joint of the spacer, attach the other end to the main rod and place the ball joint onto the ball stud of the left carburator. Reinsert the lock.
96. Remove the retaining pins from the ball joints of the connecting rod and attach one end to the ball stud on the main rod and the other to the ball stud on the joint assembly. For now, reinsert only one retaining pin (the other follows in step 100).
97. Fit the spring retainer plate to the engine block. To do this, loosen the M8 nut on the left-hand inner side of the alternator bracket (13 mm spanner). Place the retainer plate onto the stud bolt, fit the domed washer and retighten the nut. Ensure that the spring retainer is aligned upwards and forwards.

98. Attach one end of the spring to the spring retainer on the main rod and the other end to the spring mounting plate on the housing.

99. Adjust the length of the connecting rod by loosening or tightening the ball joints until the larger part of the joint assembly is almost parallel to the main rod.

100. Insert the lock washer omitted in step 96 and then tighten the M5 nuts with an 8 mm spanner. If the adjustment range is insufficient, the ball joint on the main rod (at the right-hand carburator) can also be readjusted.

101. Insert the distributor included in the Puma kit into the opening. Remove the protective cover (paper or fabric) beforehand. Ensure that the coupling at the lower end of the shaft is correctly aligned with the groove. If necessary, remove the distributor cap and turn the rotor. The correct position is achieved when the mark faces the mounting side or the green cable points towards the ignition coil. Refit the cover and ensure it is correctly seated. Tighten the distributor fixing bolt slightly with a 10 mm spanner – just enough so that the distributor can still be turned.

102. Connect the green cable to the negative terminal of the ignition coil (right-hand side). As the cable is slightly long, roll it up slightly (e.g. around a screwdriver) to shorten it.

103. Remove the 5 ignition cables from the original distributor and fit them into the new distributor in the same order.

NOTE: THE IGNITION SEQUENCE FOR THE VW ENGINE IS 1–4–3–2. THE CABLES MUST BE CONNECTED TO THE DISTRIBUTOR IN THIS ORDER IN A CLOCKWISE DIRECTION (see Fig. 5).

104. Route the spark plug wires for cylinders 1 and 2 through the right-hand plastic bracket on the fan housing and connect them to the corresponding spark plugs. Do the same with the wires for cylinders 3 and 4 on the left-hand side.

105. Connect the central high-voltage cable – one end to the centre of the distributor, the other to the centre of the ignition coil.

106. Route the cable harness from the rear of the fan housing to the front, first passing it under the main fuel hose. Secure it to the existing bracket on the right-hand side of the fan housing.

107. Connect the green cable to terminal D– on the alternator; connect the red-and-black striped cable to terminal D+ (together with the capacitor, if fitted).

98. Connect the brown cable to terminal D– (ground) together with the capacitor housing and tighten with an 8 mm spanner.

99. Connect the black cable to the left terminal of the ignition coil (positive) and the blue cable to the oil pressure switch.

108. The remaining cable is not used in twin-carburator operation and must be insulated and secured within the wiring harness.

109. Seal the connections for the warm air supply on the original intake manifold (not required with twin carburators) using the cover plates included in the Puma kit (part no. 302.119.025). Tighten using the original bolts and serrated washers with a 10 mm spanner.

110. Fit the rear engine guard plate. Ensure that the gasket is correctly positioned between the plates. Secure it with 4 bolts and washers next to the pulley (right and left) using a 10 mm spanner.

111. Insert the galvanised sealing plates from the Puma kit (part no. 002.129.039) between the mudguards and the insulation of the heating pipes.

112. Tighten the remaining 8 screws with washers using a 10 mm spanner.

113. Reconnect the hot air hoses removed in step 6. These simply clip into place.

114. Insert the rubber plug from the Puma kit (part no. 002.119.065) into the upper crankcase vent pipe (next to the oil filler pipe) and remove the valve from the lower vent pipe.

115. Fit the throttle cable to the carburator linkage assembly and route it through the guide. Do not tighten the fixing screw yet.

    Note (OBS): Check all assembly steps from point 50 to 116 again to ensure that nothing has been overlooked. Take this opportunity to retighten all bolts and nuts.

    AT THIS POINT, YOU HAVE COMPLETED THE BASIC ASSEMBLY OF THE TWIN CARBURATOR SYSTEM AND CAN NOW BEGIN WITH THE FINE-TUNING.

108. Loosen the idle adjustment screws on both carburators using a short flat-bladed screwdriver (8 mm).

109. Loosen the screw securing the spacer to the main rod. Adjust the position of the spacer so that the throttle valve closes completely on both carburators. Then tighten the screw and the lock nut using a 10 mm spanner.

110. Adjust the idle mixture adjustment screws as follows (on each carburator): Carefully turn the screw clockwise as far as it will go. Make a note of this position (there is a mark on the screw head). Then turn each screw out by exactly one and a half turns.

111. Tighten the idle screws on each carburator that were loosened in step 117 until they are slightly tight, without adjusting them. Then turn each screw in exactly one turn.

112. Using a spark plug wrench or a 21 mm spanner, turn the alternator pulley until the mark (a V-shaped notch on the right) aligns with the dividing line between the two halves of the engine casing (see Fig. 7).

113. Check that the metal contact on the rotor (distributor finger) is pointing approximately at the ‘4 o’clock’ position. If not, turn the engine pulley a full turn further, as in step 121, until the markings line up again. Refit the distributor cap, ensuring that both retaining clips click into place correctly.

114. Connect a test lamp between the distributor’s input (green cable) and earth. You can use one of the screws on the rear engine cover for this.

    NOTE: You can make your own test lamp using a 12V bulb, a socket and two cables approximately 30 cm long.

108. Switch on the ignition without starting the engine. Turn the distributor clockwise by about 10°. Then slowly turn it back anti-clockwise. The bulb will light up – this position corresponds to the correct ignition timing. If it doesn’t work straight away, repeat the process more slowly.

109. Switch off the ignition and remove the test lamp. Tighten the distributor fixing bolt using a 10 mm spanner.

110. Attach the accelerator cable to the actuator mechanism, tighten it with pliers and secure it with an M5 hexagon bolt

127. Check that the throttle cable is correctly aligned. When the accelerator pedal is fully depressed, the throttle valves on both carburators must be vertical. Then tighten the lock nut on the M5 bolt using a 10 mm spanner.
128. Remove the paper plugs from the carburator openings.
129. Using a spray bottle or syringe, pour a little petrol into the carburator float chambers via the vent pipes.
130. Start the engine by pressing the accelerator pedal lightly. The engine should start. Keep it at about ¼ throttle until it stabilises (approx. 4–5 minutes).
131. Take your foot off the accelerator pedal – the engine should now be idling. If the idle speed is too low and the engine cuts out, turn the idle screws on both carburators inwards by a quarter turn each.
132. Start the engine again and observe the idle. If the engine runs roughly, the mixture is too rich. In this case, slowly turn the mixture screws inwards until the engine runs smoothly.
133. If the engine does not stay at idle when starting and cuts out, the mixture is too lean. In this case, turn the mixture screws on both carburators out by a quarter turn each.

    NOTE: For a more precise idle adjustment, a synchronisation tool is required, which is available from any Puma dealer or authorised service centre.
134. Fit the air filters from the Puma kit to the carburators. The filters are marked ‘E’ and ‘D’ on the right and left respectively. Tighten the fixing screws using a 10 mm spanner. Ensure the best possible position so that there is sufficient clearance from the bodywork and the bonnet.
135. Return the bonnet brackets to their original position and secure them using the 6 M6 bolts and washers (3 on each side) with a 10 mm socket wrench.
136. Refit the bonnet by first hooking in the upper spring. Refit the 4 M6 bolts from step 2. Align the bonnet with the markings and tighten the bolts. Check that the bonnet closes correctly.

137. Fit the water collection unit to the bonnet (VW Sedan 1500 only) and tighten the two screws using a size 1 Phillips screwdriver.
138. Feed the rear light cable through the retaining clip and the opening in the bonnet.
139. Fit the rear light by first connecting the cable to the appropriate terminal and then tightening the two screws using a size 1 Phillips screwdriver.

“ADDITIONAL RECOMMENDATIONS”

To achieve the maximum performance of the Puma/Kit twin carburator system, please note the following points:

1. The spark plugs must be in good condition and have an electrode gap of 0.6–0.7 mm.
   If they have already been in use for around 10,000 km, they should be replaced with new ones (with the heat rating recommended for the Puma/Kit).
2. Check that the valve clearance is **0.10 mm** when the engine is cold.
3. The engine oil level must be correct. An oil change should be carried out after more than **2,000 km**.
4. Clean the air filters regularly:
   For dry filters: clean every **2,500 km** using compressed air, blowing from the inside out. Replace after **15,000 km**.
   For oil filters: remove every **1,250 to 1,500 km**, clean thoroughly with petrol and then refill with oil to the correct level

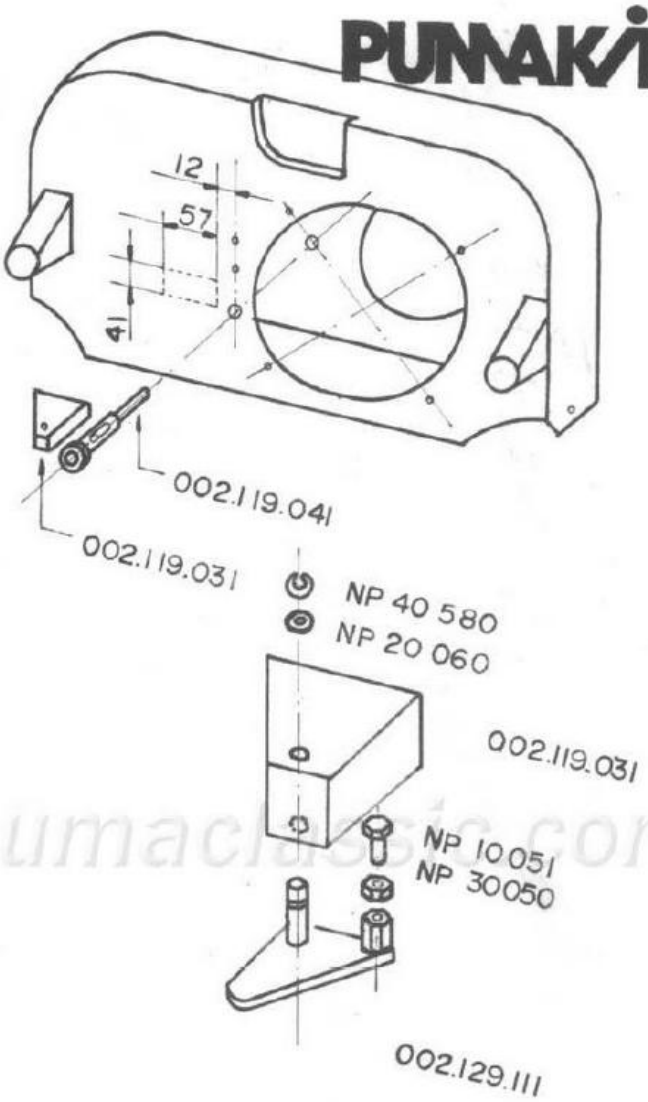
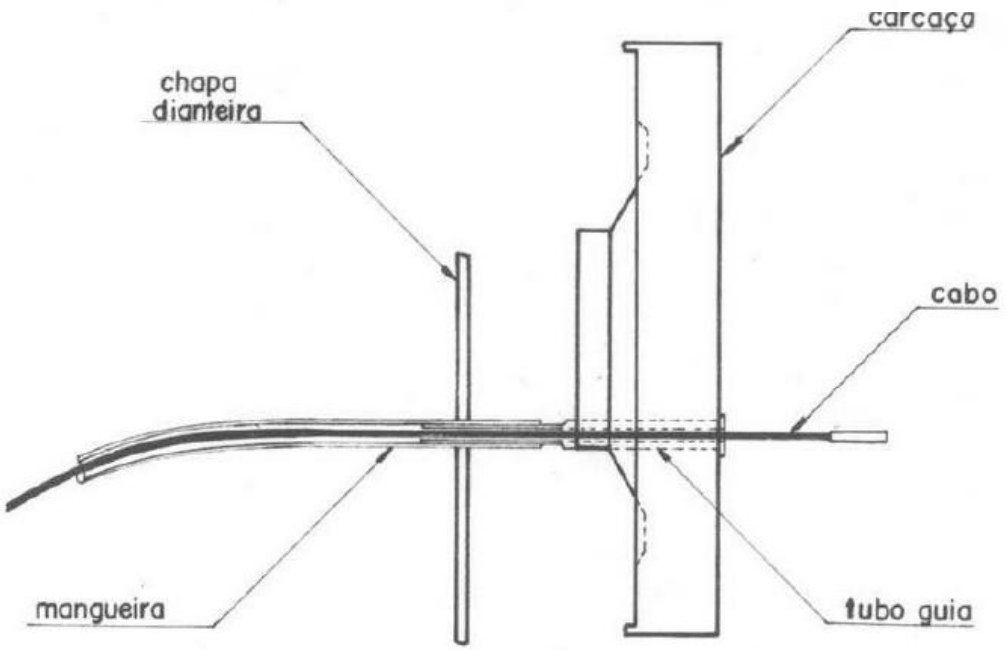
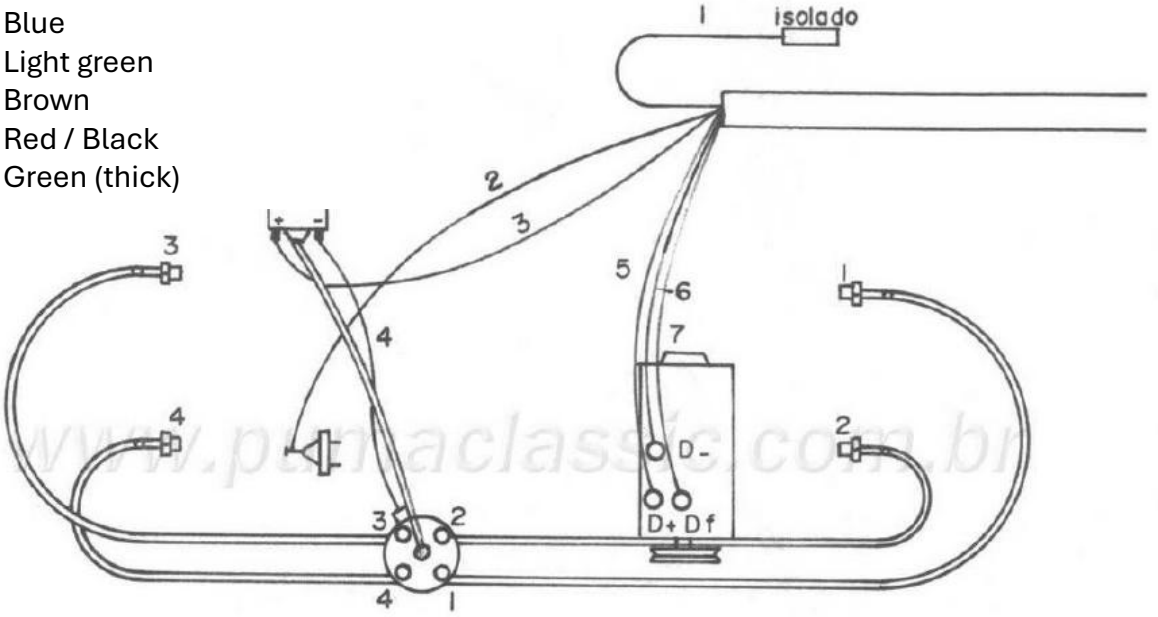


FIG. 3



Wire colours / Assignment

1. Black (ignition circuit)
2. Black
3. Blue
4. Light green
5. Brown
6. Red / Black
7. Green (thick)



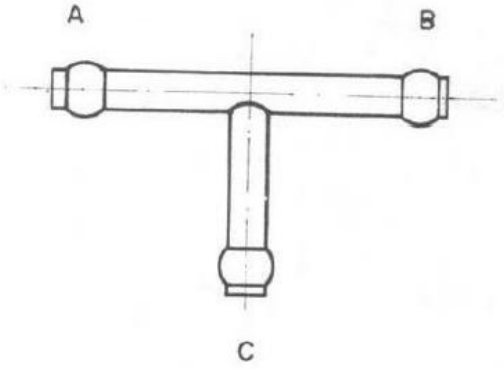


FIG. 6

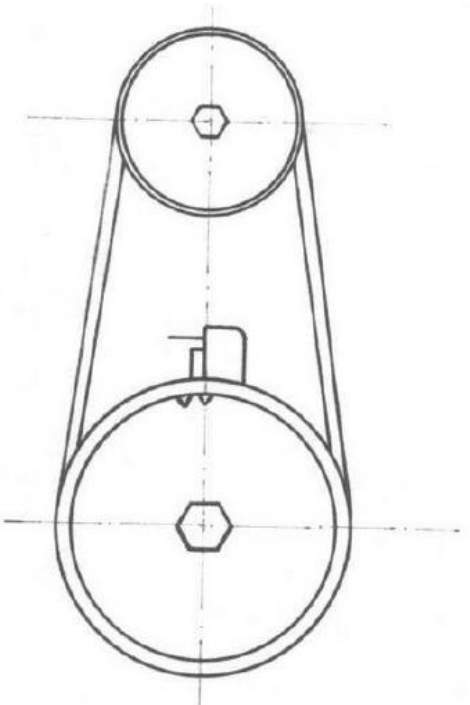
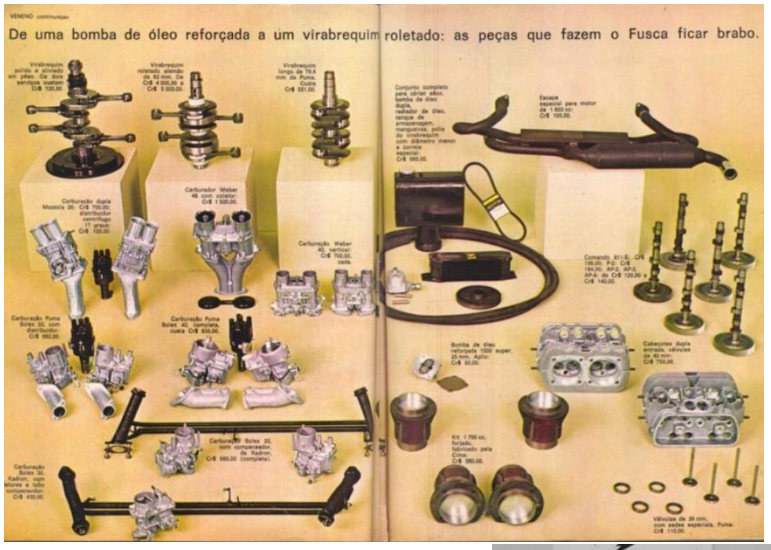


FIG. 7

Community of Interest Europe
Est. 2003
Puma do Brasil

PUMAKIT



Pictures of the PUMAKIT