

DELLORTO CARBURATORI

MANUAL 35.1

Technical features of
car carburetors





DELORTO

CARBURETTOR TECHNICAL MANUAL

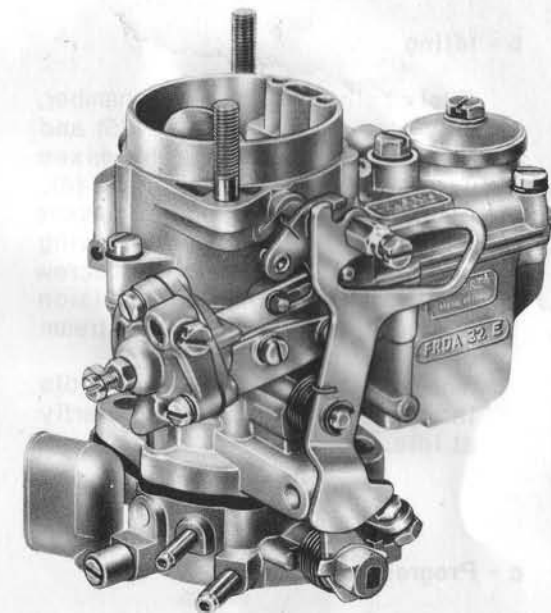
CARS

Type

FRDA 32 E

Applications

ALFA SUD 1200 Saloon



1) FEATURES

- Single choke downdraft with 32 mm diameter barrel size
- Interchangeable chokes available in sizes from 23 mm to 28 mm inclusive
- Butterfly throttle valve
- Constant-level float chamber with double float
- Main circuit with jet and emulsion tube
- Dependent idle circuit with centrally-placed jet drawing fuel from the main circuit
- Starting device with strangler valve and mixture-weakening mechanism
- Mechanically-operated diaphragm accelerator pump with inlet valve, delivery valve and pump jet
- Automatic powerjet enrichment system at high speed

2) OPERATION

a - Starting

Fuel arrives at the fuel inlet (12) and passes through the filter (11) reaching the valve seat (13) where the valve needle(14), attached to the float (15), regulates the fuel flow into the float chamber thereby maintaining a constant float level.

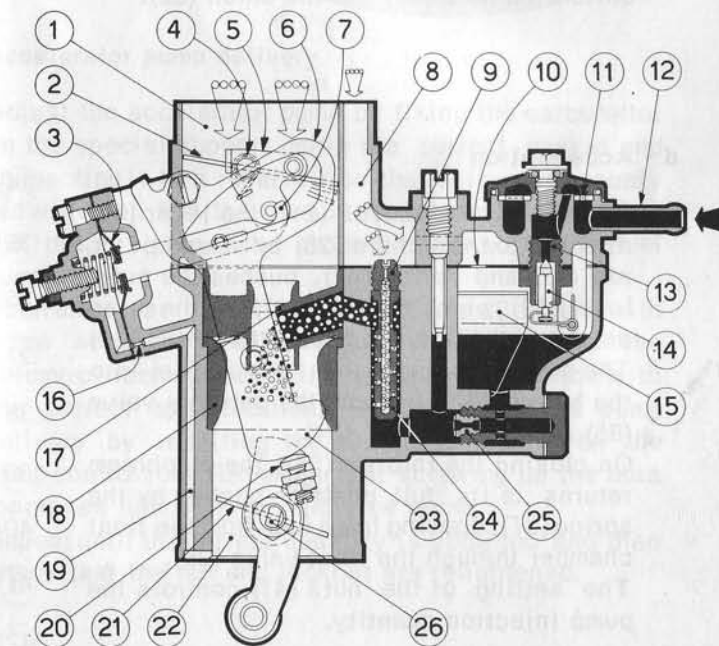
The float chamber is vented by the air intake (8) through the hole (10).

When operating the starting device, the lever (6) is pulled to the position shown and this lever then releases lever (5) and enables the choke flap (2) to close against the spring (4). Simultaneously, the cam (23) on the lever presses on the peg (20) and rotates the spindle (26) slightly opening the throttle (21).

The partial vacuum produced in the venturi (18) by the engine suction partially opens the choke valve(2) causing fuel to flow from the float chamber, which is metered by the main jet (25) and passes into the emulsion tube (24), mixing with the air coming through the air corrector jet (9) and passing through the auxilliary venturi (17). It then enters the main venturi (18) and further mixes with air from the intake (1).

The vacuum present in the barrel (22) downstream of the throttle (21), through the channel (19) and the calibrated passage (16), acts on the diaphragm mechanism (3). This controls the lever (5) by means of the hook (7) which then opens the choke valve (2) with consequent increase in the air supply and thereby weakens the mixture strength.

When the starting device is off, the choke valve (2) is kept completely open by the lever (6), while the throttle (21) returns to its normal idling position as there is no longer any contact between the cam (23) and the screw (20).



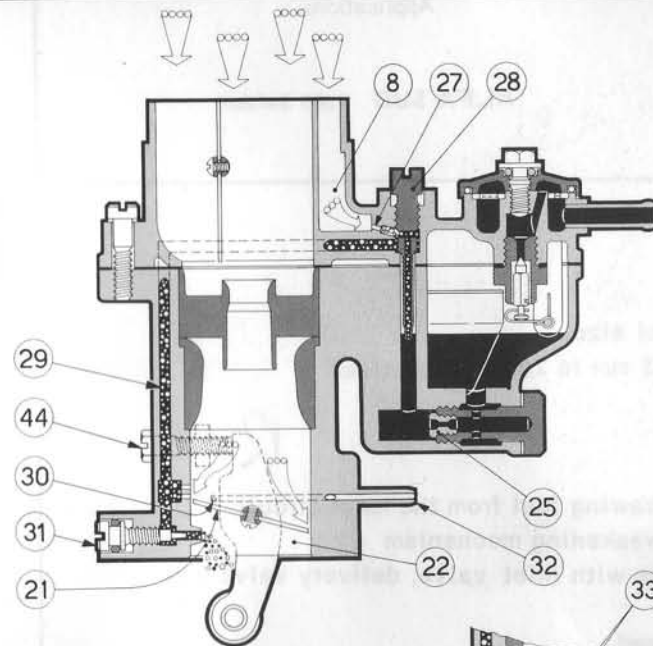
Azienda della Dell'Orto S.p.A. • Via S. Rocco N. 5 • 20038 Seregno (Milano) • Telefono (0362) 224001
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DELORTO CARBURATORI

b - Idling

Fuel coming from the float chamber, regulated by the main jet (25) and metered by the idle jet (28), mixes with air coming from intake (8), regulated by the hole (27) and passes through the channel (29) arriving at the idle mixture adjustment screw (31). From here, the metered emulsion reaches the barrel (22) downstream of the throttle (21).

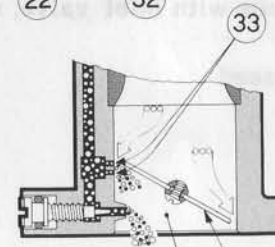
The idle speed screw (44) controls the opening of the throttle butterfly at idle.



c - Progression

On first opening the throttle (21), that is, in passing from idle to full throttle, mixture also reaches the barrel (22) through the progression holes (33).

The ignition vacuum advance is connected through the calibrated hole (30) via the union (32).

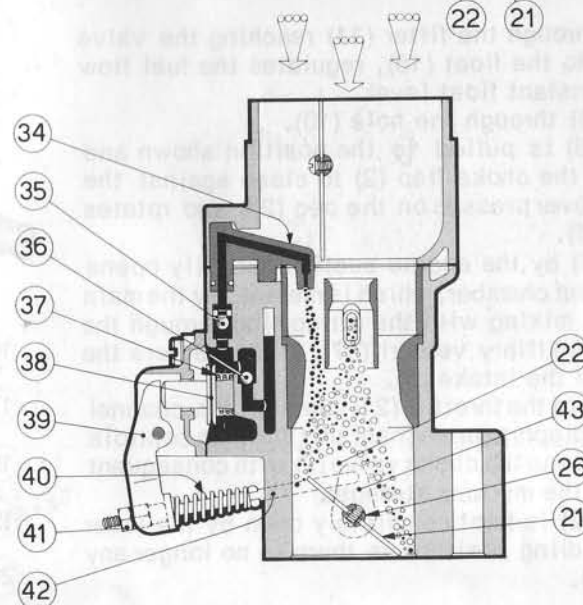


d - Acceleration

On opening the throttle (21), the lever (43) attached to the spindle (26) by means of the rod (42) and spring (40), pushes the pump lever (39) which acts directly on the pump diaphragm (38), held out by the spring (37). The pump diaphragm then pumps fuel into the barrel (22) through the delivery valve (35) and the pump jet (34).

On closing the throttle (21), the diaphragm returns to its full position pushed by the spring (37), drawing fresh fuel from the float chamber through the inlet valve (36).

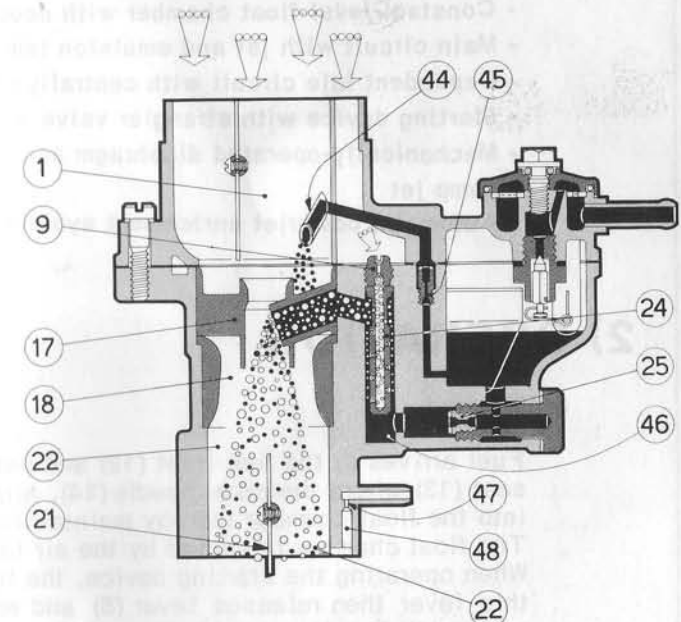
The setting of the nuts (41) controls the pump injection quantity.



e - Full throttle running

On full throttle, fuel from the float chamber is metered by the main jet (25), enters the well (46) and mixes with air metered by the air corrector jet (9), in the emulsion tube (24).

This mixture then passes through the auxiliary venturi (17) where it further mixes with air drawn into the main barrel (1), flowing into the venturi (18) and then into barrel (22).



f - Powerjet operation

At high engine speeds, an additional amount of fuel from the float chamber, metered through the power jet (45), flows upstream of the auxiliary venturi (17) through the calibrated tube (44) and combines with the emulsion mixture already supplied through the auxiliary venturi (17).

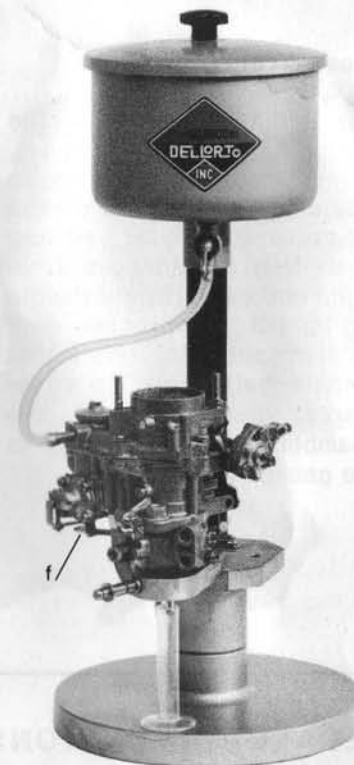
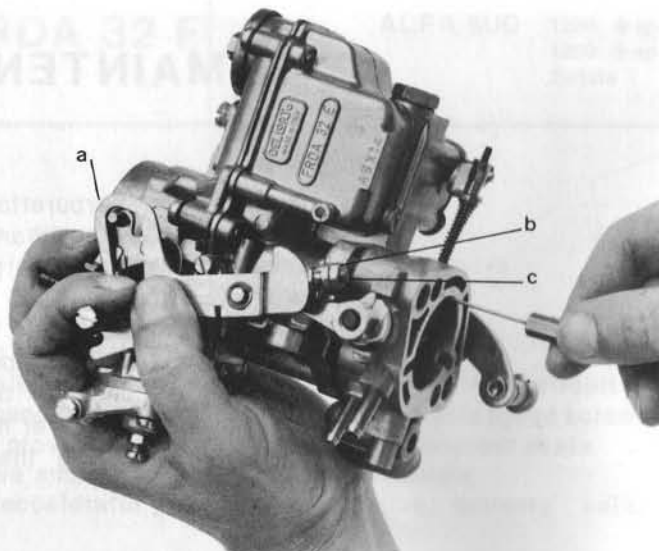
Oil vapour from the engine crankcase is drawn through channel (48) and calibrated passage (47) into the barrel (22) downstream of the throttle valve (21).

3) ADJUSTMENT

a - Starting

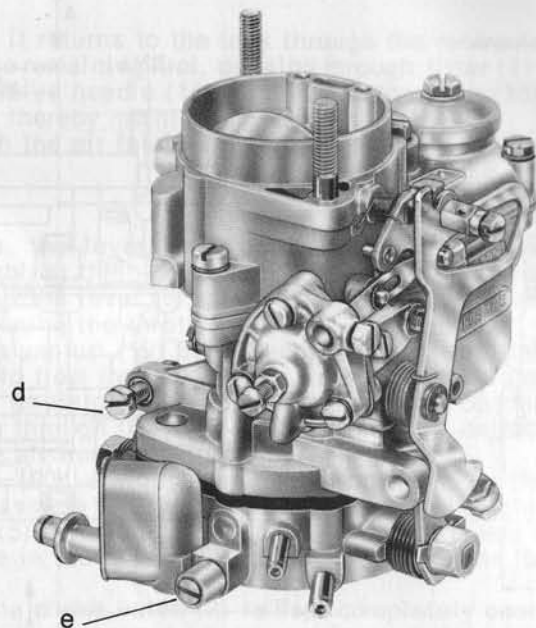
Adjust the throttle opening for starting, with the starting device completely on and the lever (a) in the position shown in the picture.

Then loosen nut (b) and adjust the screw (c) in such a way that a special gauge of prescribed size can just be inserted between the edge of the throttle butterfly and the side of the main barrel. Then lock the nut (b).



b - Idling

Only adjust the idle with the engine hot, screwing in the idle speed screw (d) to obtain a slightly higher-than-normal idling speed. Then adjust the idle mixture screw (e) until you obtain the most even running. Remember that by unscrewing you get a richer mixture and vice versa. Then progressively unscrew the idle speed screw (d) until the normal idle speed is reached again.



c - Accelerator pump delivery

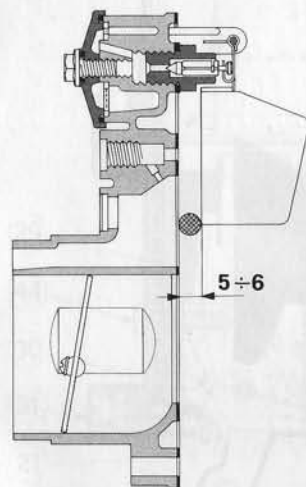
Adjust the accelerator pump by fixing the carburetor on the special support using the correct gasket and connecting it to a reservoir so that it is continuously fed with fuel. Put the graduated measuring tube under the drain pipe on the support to collect all the fuel pumped out.

Open and close the throttle completely 20 times, with a few seconds' break in between, and check if the volume of fuel collected in the tube corresponds with the correct specification. If not, adjust the pump delivery by resetting the nut and locknut (f) on the pump control rod. Remember that screwing up the nuts increases fuel delivery and vice versa.

Repeat until the correct quantity is obtained and then check that the nut and locknut are retightened.

d - Float level

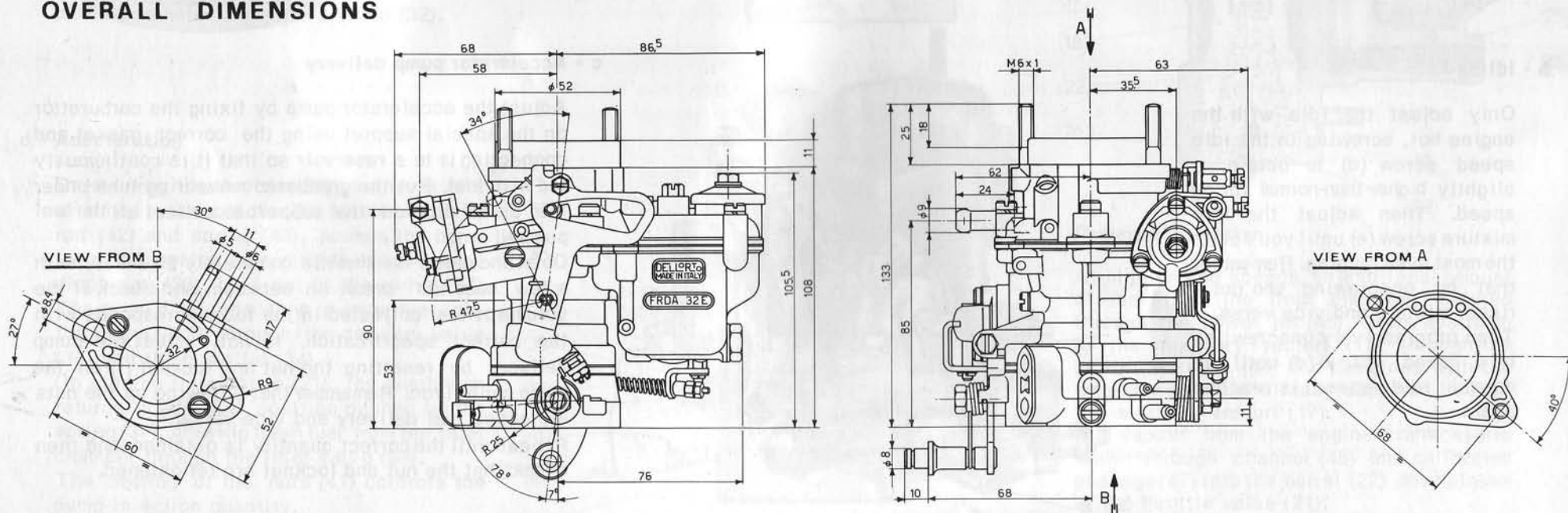
Check that the float has the actual weight as marked on it, is not damaged and is free to rotate on its pivot pin. Hold the carburettor cover vertically so that the float arm is in light contact with the needle spring not compressed and, in this position, check that both the half-floats are at the correct distance from the chamber cover measured to the gasket fitted to it.



4) MAINTENANCE

To keep the carburettor in good working order, especially after operating faults are found, proceed as follows: Dismantle all carburettor components, wash them with fuel, check for blockages and dry. Take special care with the jets, the emulsion tube and needle-valve seat, fuel filter and all the drillings in the carburettor body. Check the condition of all parts before reassembling and replace them wherever necessary with new parts. When reassembling the carburettor, renew all gaskets and O-rings.

OVERALL DIMENSIONS





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DELORTO CARBURATORI

DELORTO

CARBURETTOR TECHNICAL MANUAL

CARS

Type

FRDA 32 F

Applications

ALFA SUD 1200 4-speed
1200 5-speed
Estate

1) FEATURES

- Single choke downdraft with 32mm diameter barrel size
- Interchangeable chokes available in sizes from 23mm to 28mm inclusive
- Butterfly throttle valve
- Constant-level float chamber with double float
- Main circuit with jet and emulsion tube
- Dependent idle circuit with centrally-placed jet drawing fuel from the main circuit
- Auxiliary screw for engine idle speed adjustment. Idle mixture and idle speed screws mounted in special housings with provision for plugging with tamper-proof seals
- Starting device with strangler valve and mixture-weakening mechanism
- Mechanically-operated diaphragm accelerator pump with inlet valve, delivery valve and pump jet
- Automatic powerjet enrichment system at high speed
- Fuel recirculation connection

2) OPERATION

a - Fuel supply

Fuel reaches union (12) and part of it returns to the tank through the recirculation pipe and the calibrated restrictor (13). The remaining fuel, passing through filter (11), reaches the needle valve seat (14) where the valve needle (15) attached to the float (16) controls the fuel flow into the float chamber thereby maintaining a constant level. The float chamber is connected with the air intake (8) through the hole (10).

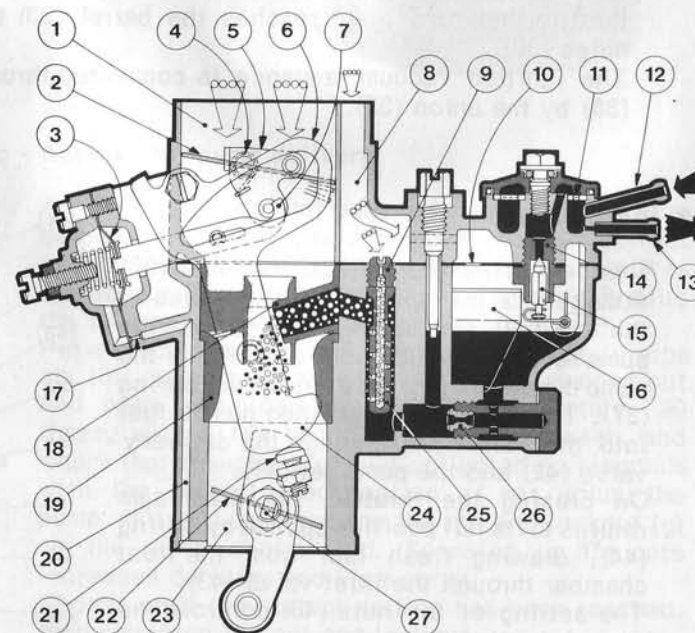
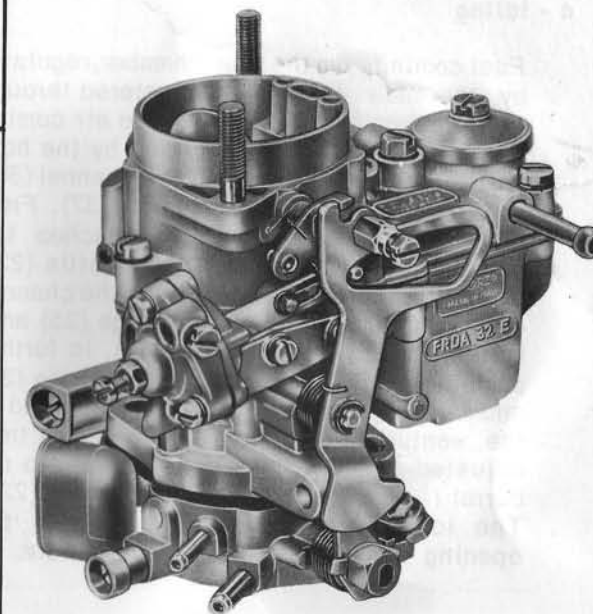
b - Starting

When operating the starting device, the lever (6) is pulled to the position shown and this lever then releases lever (5) enabling the choke flap (2) to close against the spring (4). At the same time, the cam (24) on the lever (6), presses on the peg (21) and rotates the throttle spindle (27) slightly opening the throttle (22).

The partial vacuum produced in the venturi (19) by the engine suction partially opens the choke valve (2), causing fuel to flow from the float chamber, which is metered by the main jet (26) and passes into the emulsion tube (25), mixing with air coming through the air corrector jet (9) and passing through the auxiliary venturi (18), enters the main venturi (19), further mixing with the air from the intake (1).

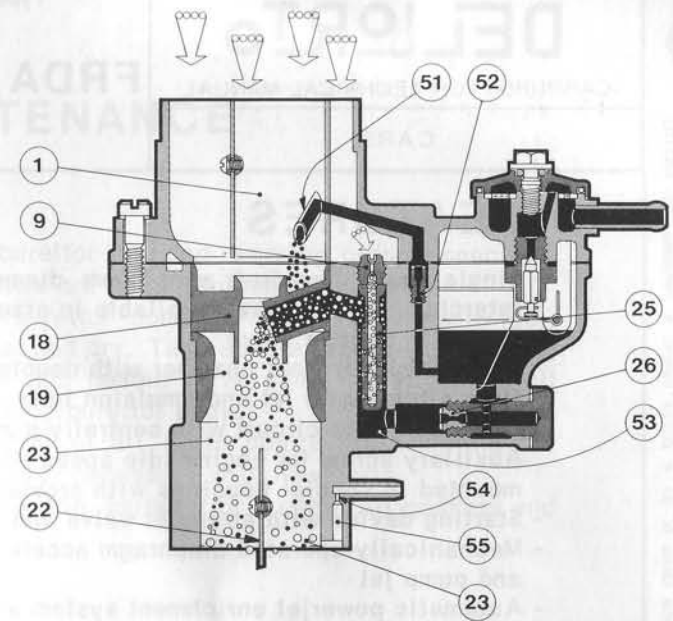
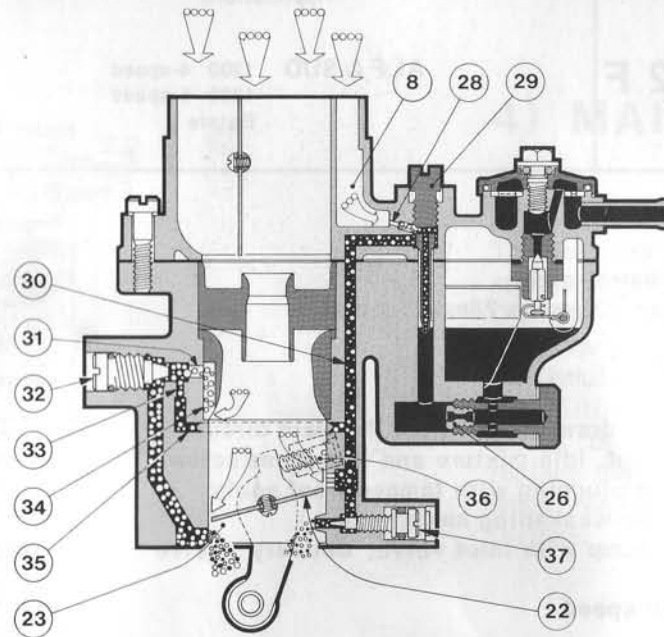
The vacuum present in the barrel (23), downstream of the throttle (22), through the channel (20) and the calibrated passage (17), acts on the diaphragm mechanism (3). This mechanism controls the lever (5) by means of the hook (7) which opens the choke valve (2) with consequent increase in the air supply and thereby weakens the mixture strength.

When the starting device is off, the choke valve (2) is kept completely open by lever (6), while the throttle (22) returns to its normal idling position, as there is no longer any contact between the cam (24) and the screw (21).



c - Idling

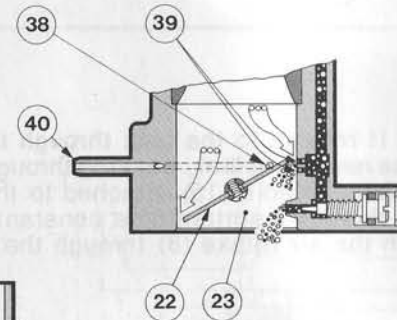
Fuel coming from the float chamber, regulated by the main jet (26) and metered through the idle jet (29), mixes with the air coming from the air intake (8) regulated by the hole (28), and passing through the channel (30), arrives at the idle mixture screw (37). From here, the metered emulsion reaches the barrel (23) downstream of the throttle (22). In addition, some mixture from the channel (30) is drawn along the passage (35) and, metered by the air corrector (33), is further combined with air metered through hole (31) and coming from the channel machined in the venturi. The mixture obtained is then adjusted by screw (32) and flows into the barrel (23) downstream of the throttle (22). The idlespeed screw (36) controls the opening of the throttle butterfly at idle.



d - Progression

On first opening the throttle (22), that is, when passing from idle to full throttle, mixture also reaches the barrel (23) through the progression holes (39).

The ignition vacuum advance is connected through the calibrated hole (38) by the union (32).



f - Full throttle running

On full throttle, fuel from the float chamber is metered by the main jet (26), enters the well (53) and mixes with air metered through the air corrector jet (9) in the emulsion tube (25).

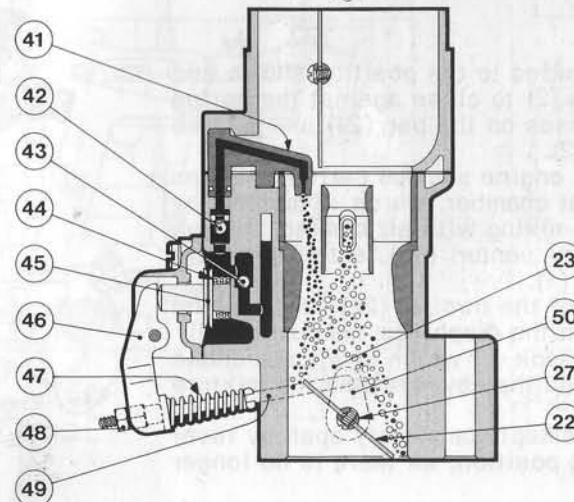
The resulting mixture passes through the auxiliary venturi (18) where it further mixes with the air drawn into the main intake (1), flowing into the venturi (19) and then into barrel (23).

e - Acceleration

On opening the throttle (22), the lever (50) attached to the spindle (27) by means of the rod (49) and spring (47), pushes the pump lever (46) which acts directly on the pump diaphragm (45) held out by the spring (37). The pump diaphragm then pumps fuel into the barrel (23) through the delivery valve (42) and the pump jet (41).

On closing the throttle, the diaphragm returns to its full position pushed by spring (44), drawing fresh fuel from the float chamber through the inlet valve (43).

The setting of the nuts (48) controls the pump injection quantity.



g - Power jet operation

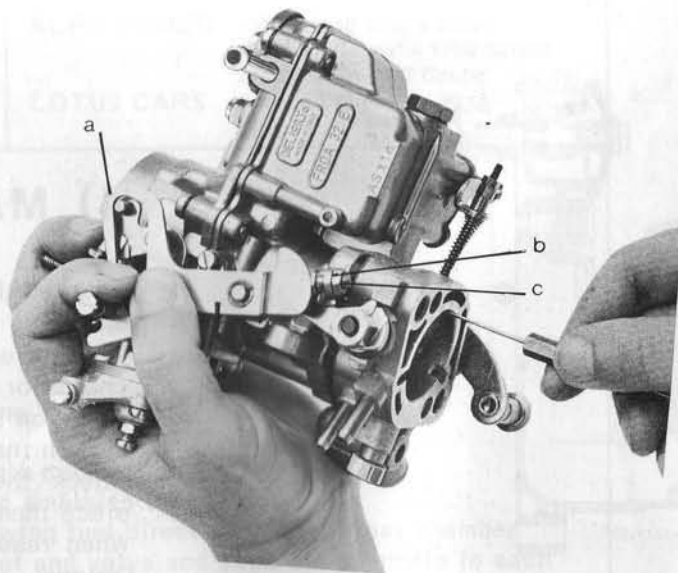
At high engine speeds, an additional amount of fuel from the float chamber, metered by the power jet (52), flows upstream of the auxiliary venturi (18) through the calibrated tube (51) and combines with mixture already supplied through the auxiliary venturi (18). Oil vapour from the engine crankcase is drawn through channel (55) and calibrated passage (54) into the barrel (23) downstream of the throttle valve (22).

3) ADJUSTMENT

a - Starting

Adjust the throttle opening for starting with the starting device completely on and the lever (a) in the position shown in the picture.

Then loosen the nut (b) and adjust screw (c) in such a way that a special gauge of prescribed size can just be inserted between the edge of the throttle butterfly and the side of the main barrel. Then lock the nut (b).



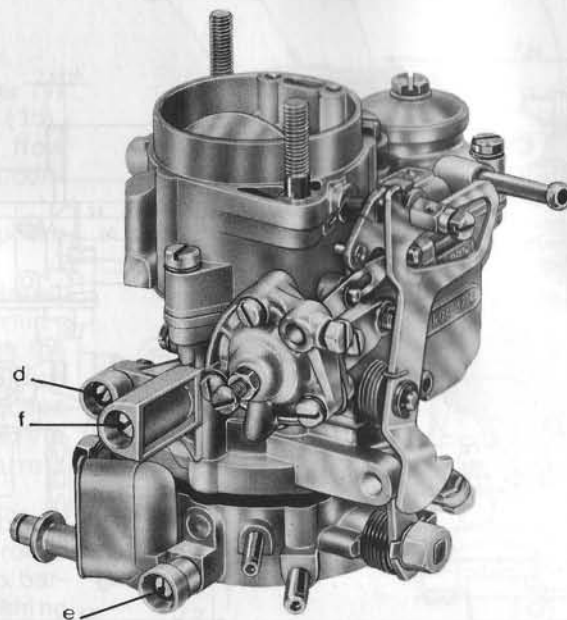
b - Idling

Proper idle adjustment is only possible if carried out with a revcounter and exhaust gas tester.

Remove the anti-tamper seals to adjust the idle mixture screws. The carburettor should have been set with the idle adjusting screw (f) fully closed and the mixture adjusting screw (e) opened five full turns from the fully-closed position.

Always adjust the idle with the engine hot, acting on the idlespeed screw (d) to set a speed of 700rpm. Then unscrew the screw (f) until the desired idle speed has been reached. Now try to get the most even running by adjusting the mixture screw (e), keeping the exhaust emission level well under 4,5% CO. Remember that when unscrewing you increase the CO level and vice-versa.

Refit the mixture adjusting screw and idle speed screw anti-tamper seals, renewing them if necessary.



c - Accelerator pump delivery

Adjust the accelerator pump delivery by fitting the carburettor on the special support with the correct gasket and connecting it to a reservoir so that it is continuously supplied with fuel. Temporarily plug the fuel recirculation pipe outlet.

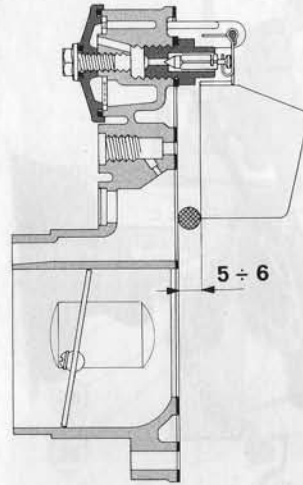
Put a graduated measuring tube under the drain pipe on the support to collect all the fuel pumped out and open and close the throttle completely 20 times, with a few seconds' break in between, and check that the volume of fuel collected corresponds with the correct specification. If not, adjust the pump delivery by resetting the nut and locknut (g) on the pump control rod. Screwing up the nuts increases delivery and vice versa.

Repeat until the correct setting has been reached, then retighten the nut and locknut.

d - Float level

Check that the float has the actual weight marked on it, is not damaged and is free to rotate on its pivot pin.

Hold the carburettor cover vertically so that the float arm is in light contact with the needle and with the needle spring not compressed. In this position, check that both the half-floats are at the correct distance from the float chamber cover measured to the gasket mounted on it.



4) MAINTENANCE

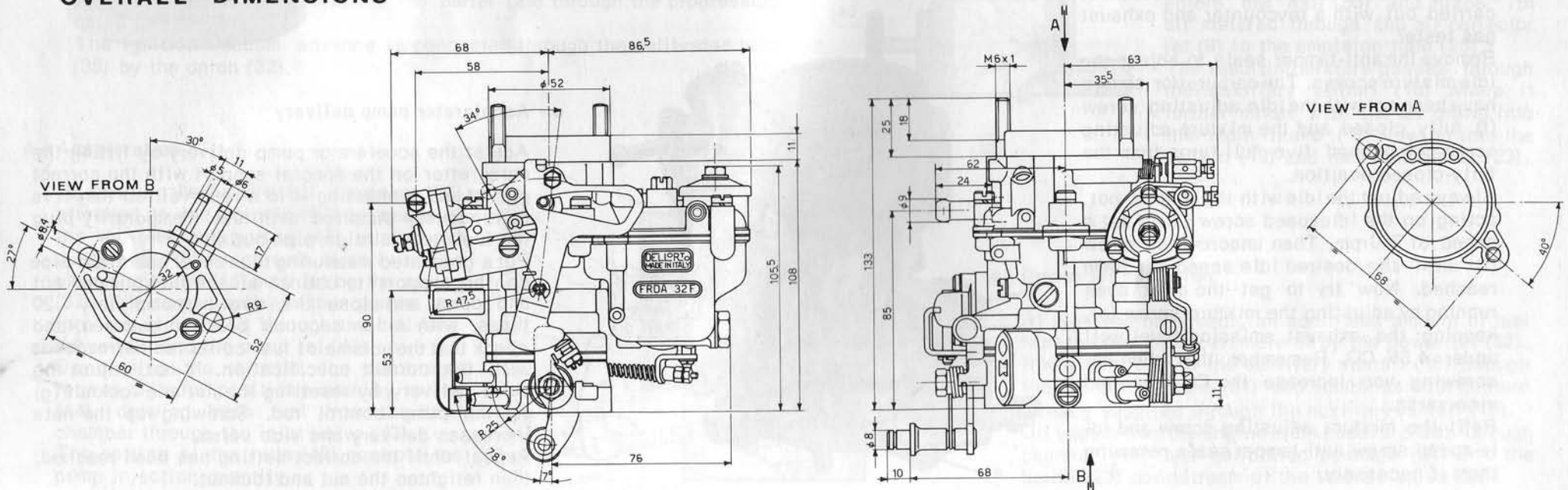
To keep the carburettor in good working order, especially after operating faults are found, proceed as follows.

Dismantle all carburettor components, wash them with fuel, check for blockages and dry. Take special care with the jets, emulsion tube, needle-valve seat, fuel filter and all the drillings in the carburettor body.

Check the condition of all parts before reassembling and replace them wherever necessary with new parts.

When reassembling the carburettor, renew all the gaskets and O-rings.

OVERALL DIMENSIONS





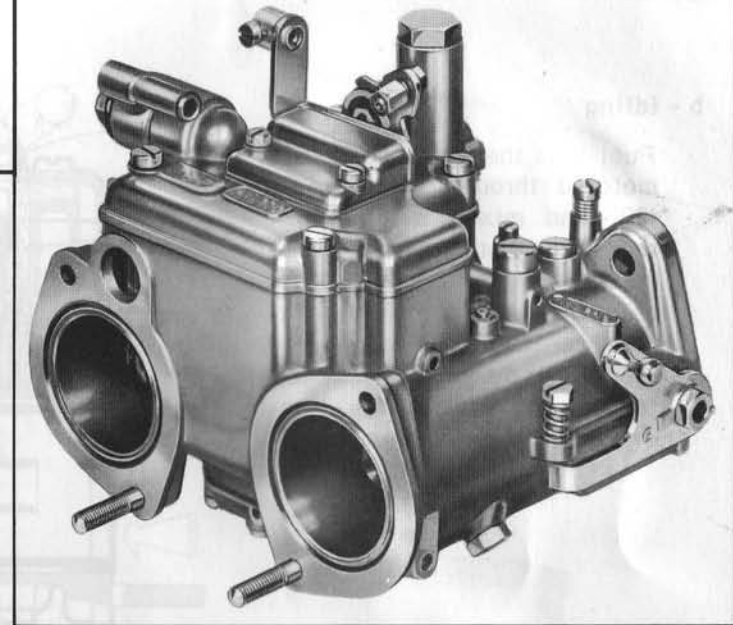
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DELLORTO CARBURATORI

DELLORTO
 CARBURETTOR TECHNICAL MANUAL
 CARS

Type
DHLA
40-45-48

Applications
ALFA ROMEO 1300 - 1600 Giulia Super
 1600 GT Coupe' - 1750 Saloon
 2000 Saloon - GT Coupe' - Spider
LOTUS CARS Europa Twin-cam - Elan -
 Elan Plus - 2S



1) FEATURES

- Twin-choke sidedraft body
- Barrel sizes, 40 - 45 - 48 mm
- Interchangeable chokes available in sizes ranging from 25 mm. to 43 mm. inclusive
- Butterfly throttle valves
- Centrally-placed constant-level float chamber with double float
- Main circuit using centrally-placed main jets and emulsion tubes
- Idling circuit with centrally-placed idle jets drawing fuel directly from the float chamber
- Independent starting circuit with single starter jet and valve and separate channels to each barrel
- Diaphragm accelerator pump, mechanically-operated, with single inlet valve, two delivery channels and individual valves and pump jets

2) OPERATION

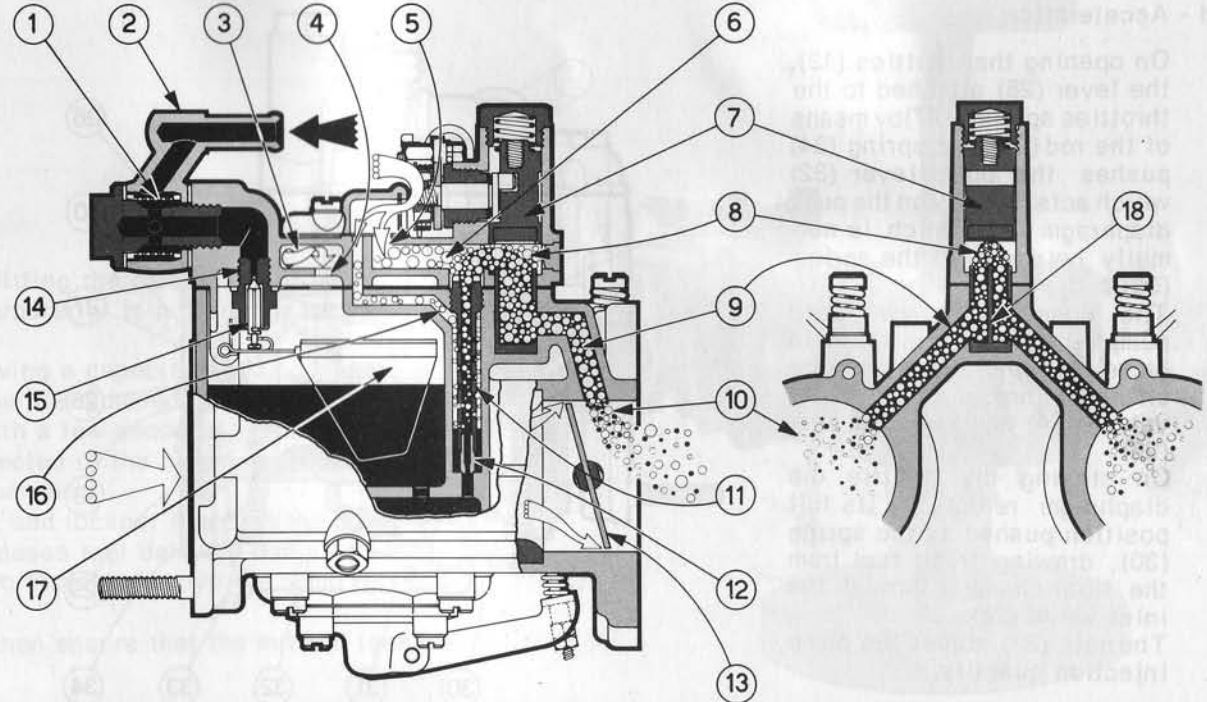
a - Starting

Fuel at the union (2) passes through the filter (1) and reaches the seat (14) where the needle (15), attached to the float (17), controls the fuel flow into the float chamber thereby maintaining a constant level.

The float chamber is vented to the atmosphere through the vent (4) in the chamber.

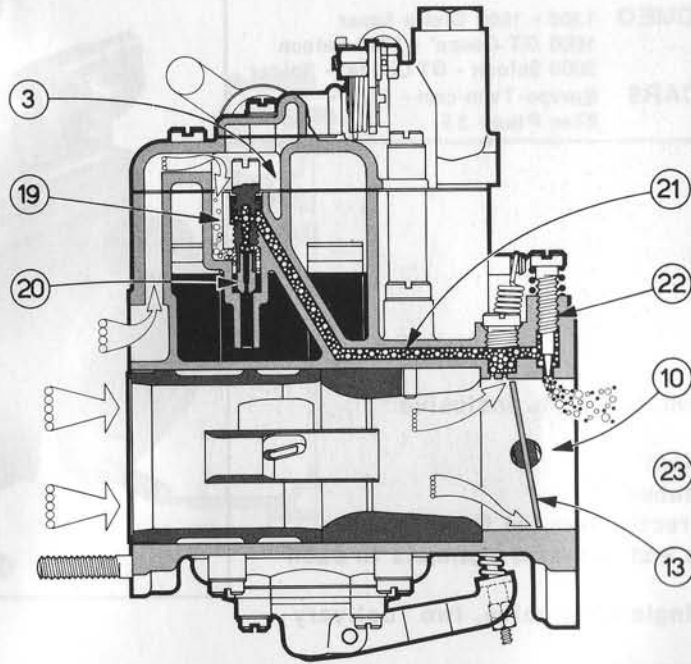
On opening the choke valve (7), fuel metered through the starter jet (12) passes into the emulsion tube (11) where it is mixed with air from the channel (16) and then enters the passage (6) further mixing with air from the vent (5) and reaches the valve chamber. From here, it is distributed via the two ducts (9) which lead into the main barrels (10) downstream of the throttles.

On closing the choke valve, communication between the main barrels and the starting circuit is broken as well as communication between the two barrels due to the sealing action of the split bushing (18).



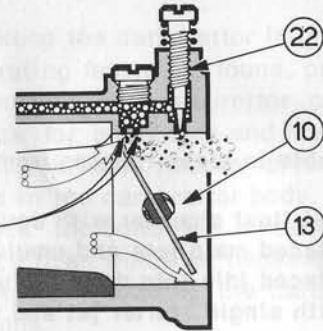
b - Idling

Fuel from the float chamber is metered through the idle jets (20) and mixes with air from the well (3) through the channels (19). Mixture through channels (21) reaches the idle mixture screws (22) and, when regulated by them, reaches the main barrels (10) downstream of the throttles (13).



c - Progression

On first opening the throttles (13), that is, when passing from idling to full throttle, mixture also reaches the two barrels (10) through the progression holes (23).



e - Full throttle

At full throttle, fuel from the float chamber is metered through the main jets (37) entering the wells (36) and mixing with air metered through the air corrector jets (9). This mixture then passes through the channels (39) to reach the auxiliary venturis (38) where it is further mixed with air drawn into the main intake and finally flows into the venturis (40) to reach the barrels (10).

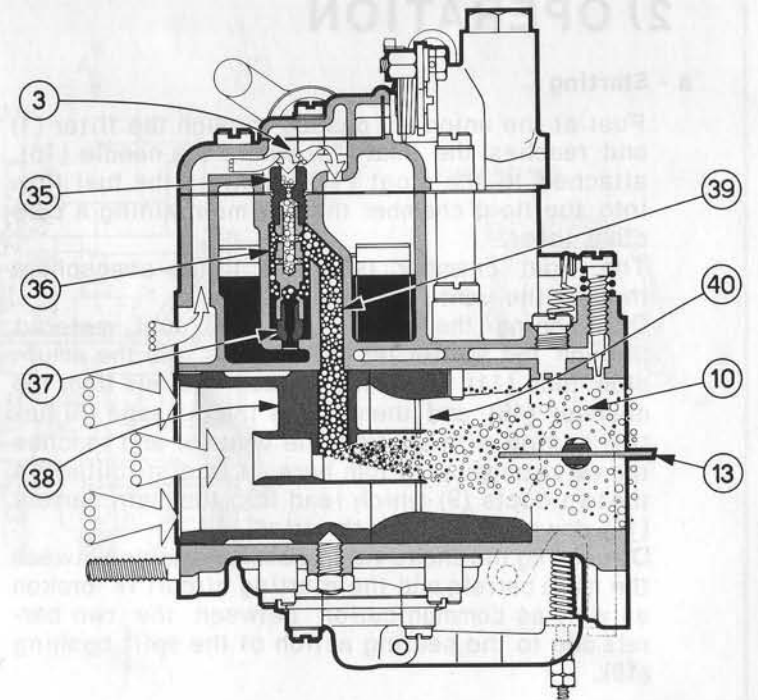
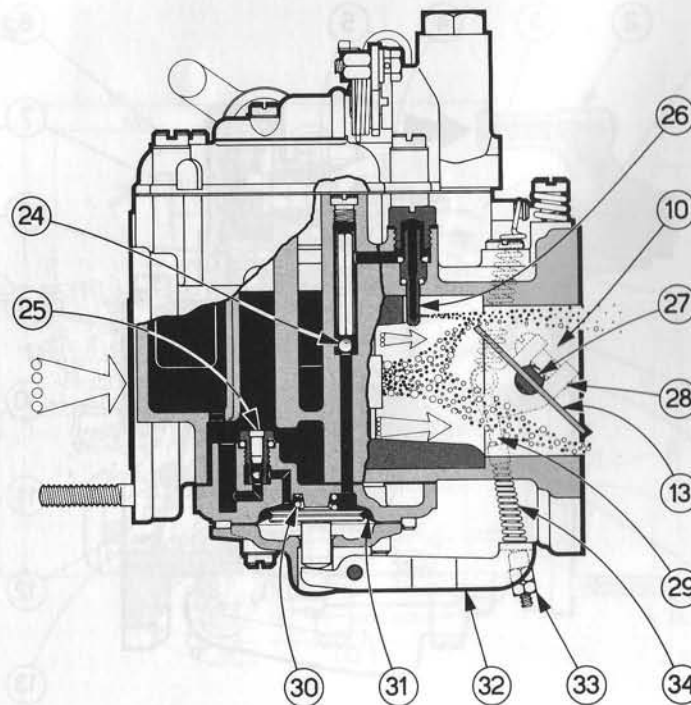
d - Acceleration

On opening the throttles (13), the lever (28) attached to the throttles spindle (27) by means of the rod (29) and spring (34) pushes the pump lever (32) which acts directly on the pump diaphragm (31) which is normally held out by the spring (30).

The pump diaphragm then pumps fuel into the two main barrels (10) via two separate channels through the delivery valves (24) and the pump jets (26).

On closing the throttle, the diaphragm returns to its full position pushed by the spring (30), drawing fresh fuel from the float chamber through the inlet valve (25).

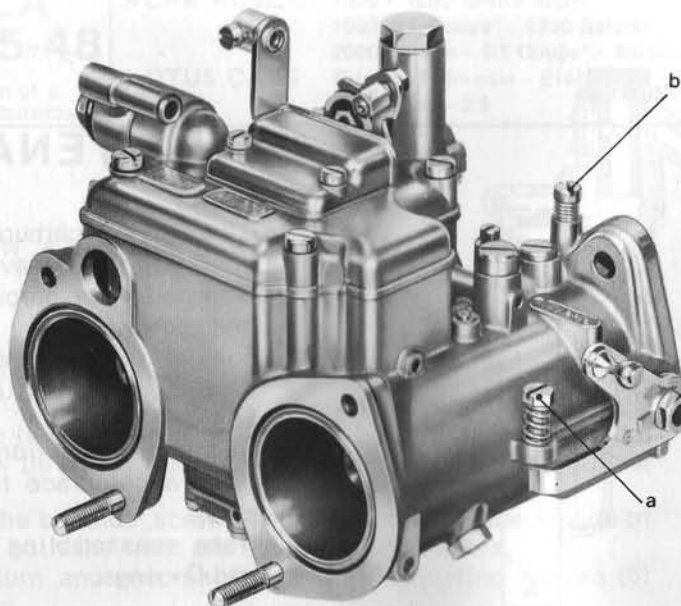
The nuts (33) adjust the pump injection quantity.



3) ADJUSTMENT

a - Idling

Always adjust the idle with the engine hot, screwing in the idle speed screw (a) to obtain a slightly higher idle speed than normal. Then adjust the mixture adjusting screws (b) until you find the most even running; remember that unscrewing them results in a richer mixture and vice versa. Then steadily unscrew the idle speed screw again until the normal idle speed is reached.



b - Accelerator pump

Adjust the accelerator pump injection quantity by fitting the carburettor to the special support with the proper gasket and connect the carburettor to a reservoir so that it is continuously supplied with fuel.

Put the two graduated measuring tubes, each having a capacity of 10 cc, under the drain pipes on the support in order to collect all the fuel pumped out.

Open and close the throttle completely 20 times, with a few seconds' break in between each time, and check that the amount of fuel collected in the tubes corresponds with the correct specification and is the same for both barrels.

If not, adjust the pump delivery by resetting the nut and locknut fitted on the pump operating rod; remember that screwing the nuts up increases fuel delivery and vice versa. If there is any difference in volume between the two barrels, remove the pump jets and blow through them vigorously to correct this.

Recheck until the correct setting is obtained and then ensure that the nut and locknut are retightened.

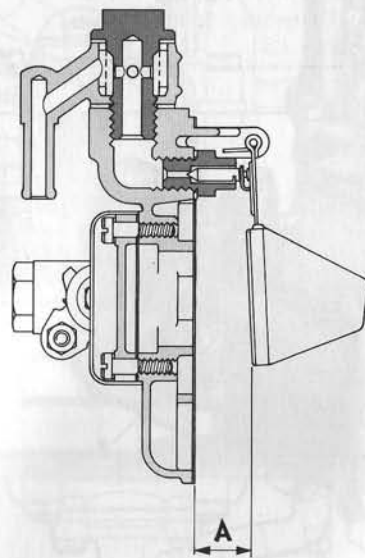


c - Float level

Check that the float has the actual weight which is marked on it, is undamaged and also free to rotate on its pivot pin.

Hold the carburettor cover vertically so that the float arm is in light contact with the needle and with the spring in the needle not compressed.

In this position, check that both half-floats are at the correct distance from the float chamber cover measured to the topcover gasket fitted to it.



float	A
7298.1	14,5 ÷ 15
7298.2	16,5 ÷ 17

4) MAINTENANCE

To keep the carburettor in good condition, especially after operating faults have occurred, proceed as follows.

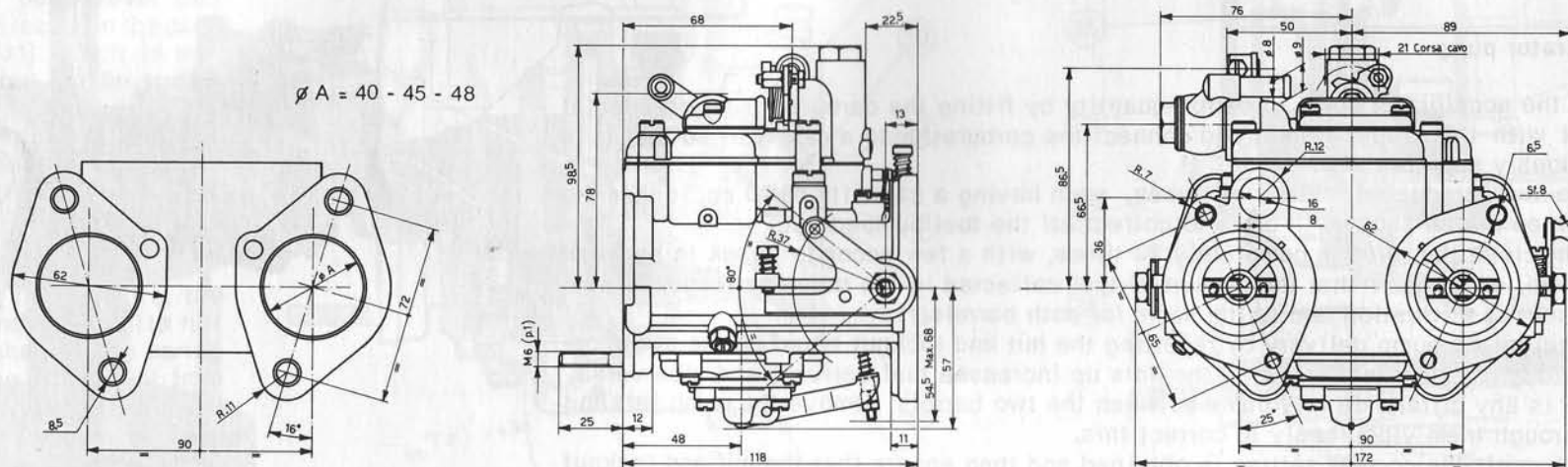
Dismantle the carburettor, washing the components in fuel and blowing dry.

Special care is needed with the jets, emulsion tubes, needle valve seat, fuel filter and all the drillings in the carburettor body.

Check the condition of all the components before reassembling and replace them wherever necessary only with new parts.

When reassembling the carburettor, renew all the gaskets and O-rings.

OVERALL DIMENSIONS





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CARS

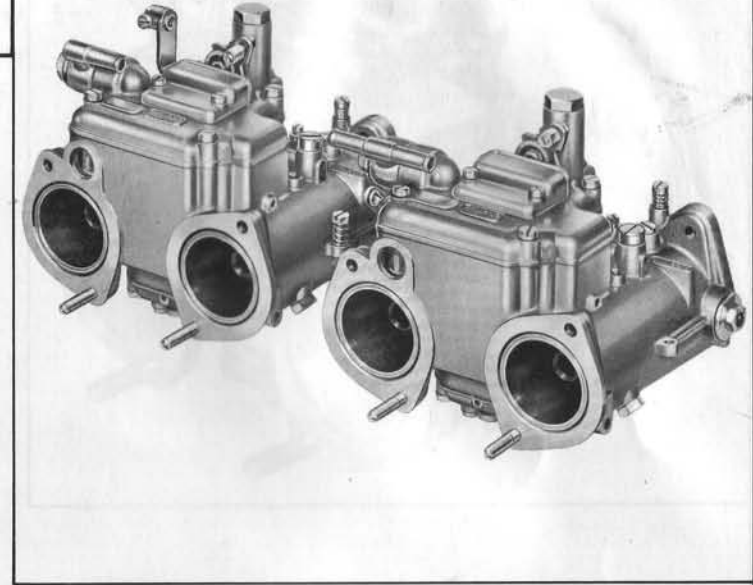
Type

**DHLA
40-45-48**

installation of a
pair of carburettors

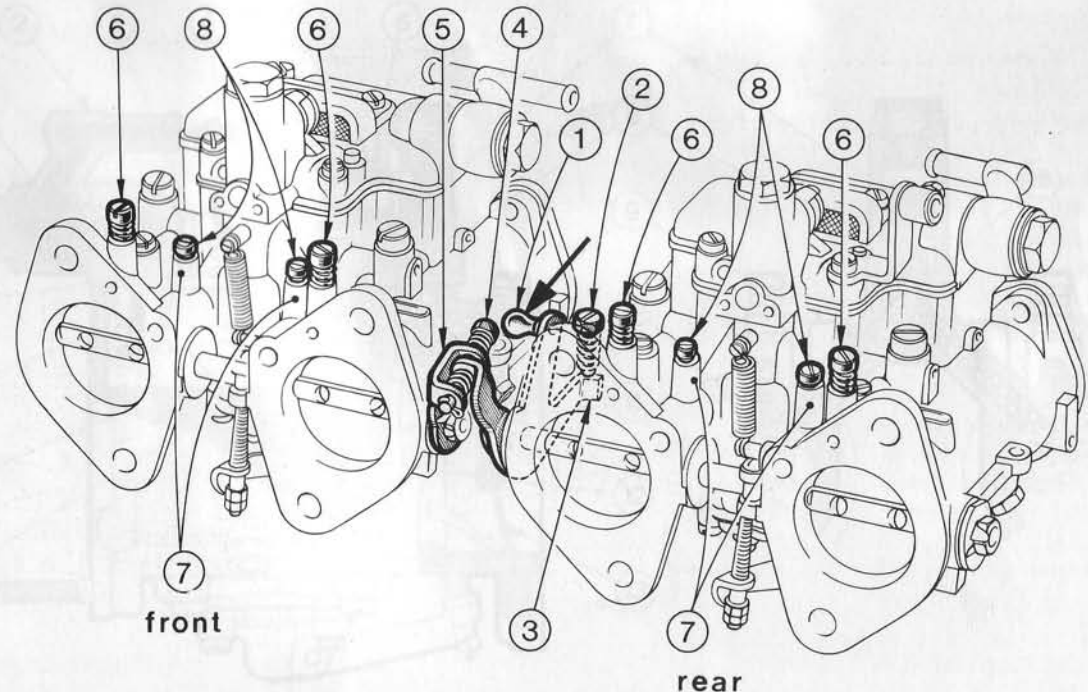
Applications

ALFA ROMEO 1300 - 1600 Giulia Super
1600 GT Coupe' - 1750 Saloon
2000 Saloon - GT Coupe' - Spider
LOTUS CARS Europa Twin-cam - Elan -
Elan Plus - 2S



CARBURETTOR SYNCHRONISATION AND IDLE ADJUSTMENT

- Disconnect the throttle operating rod and lever (1) of the rear carburettor.
- Unscrew the idle speed adjusting screw (2) out of contact with the central lever extension (3).
- Unscrew the screw (4) of the central balance lever (5) until the throttle butterflies of both front and rear carburetors are fully closed. Check this with light upward pressure on the main lever (3).
- While maintaining this pressure, screw in the balance screw (4) until it contacts the tongue of lever (1) so as to fully close the throttles of both the front and the rear carburetors.
- Screw in the idle speed screw (2) one full turn and unscrew the mixture adjusting screws (6) two full turns from their fully-closed position.
- Reconnect the throttle operating rod and main lever (1).
- Start the engine and let it run until normal operating temperature has been reached.
- Adjust the idle speed screw again to set the correct idle speed and, if the engine runs irregularly, adjust the mixture adjusting screws (6) on each cylinder in turn in order to obtain the smoothest running, remembering that screwing in results in a leaner idle mixture and vice versa.
- Now readjust the idle speed to the desired level with screw (2).
- For better synchronisation using a four-column mercury manometer, proceed as follows:
 - The engine should be at its normal operating temperature.
 - Remove the vacuum blanking plugs (8) on each barrel and fit in their place the four connectors of the mercury manometer.
 - Ensure that the mercury columns are free of bubbles as these will cause inaccurate readings and poor results.
 - Align the mercury column levels between the front and rear carburettor using the balance screw (4).
- Check the running of each cylinder by turning the mixture screws (6) in turn, remembering again that screwing them in weakens the idle mixture and vice versa.
- If necessary, recheck the mercury levels and then reset the idling speed as desired with the idle speed screw (2).
- Remove the four vacuum connectors and refit the blanking plugs.



40-45-48
DHLA
Installation of a
carburettor

MAINTENANCE

CARBURETTOR TUNING AND JOLE ADJUSTMENT

Remove the four vacuum connectors and turn the timing idling speed as detailed with the 1500 rpm screw (2).

Reconnect the four vacuum connectors and turn the timing two full turns from their fully-closed position.

Screw in the idle speed screw (2) one full turn clockwise from its fully-closed position.

With maintaining this balance screw in the balance screw (2) in its fully-closed position, the mixture ratio will be rich (2) and the idle speed will be low (2).

Adjust the idle speed screw again to set the correct idle speed and, if the engine runs irregularly, adjust the mixture adjusting screws for on each cylinder in turn in order to obtain the smoothest running, remembering that leaning in results in a lower idle mixture and vice versa.

For better synchronization of the four carburettor jets, the mixture should be adjusted as follows:

- The engine should be at 1500 rpm, idling, and the temperature should be 80°C.
- Remove the vacuum adjusting pipes (1) on each carburettor and fill in their place the four connectors of the jet-vacuum manifold.
- Remove the four vacuum connectors and then read the jet-vacuum indicator (1) in turn, remembering that leaning them in weakens the idle mixture and vice versa.
- After the mixture ratios have been adjusted, the front and rear carburettor should be balanced again.

Check the mixture ratio on each cylinder by leaning the mixture adjusting screws (2) in turn, remembering that leaning them in weakens the idle mixture and vice versa.

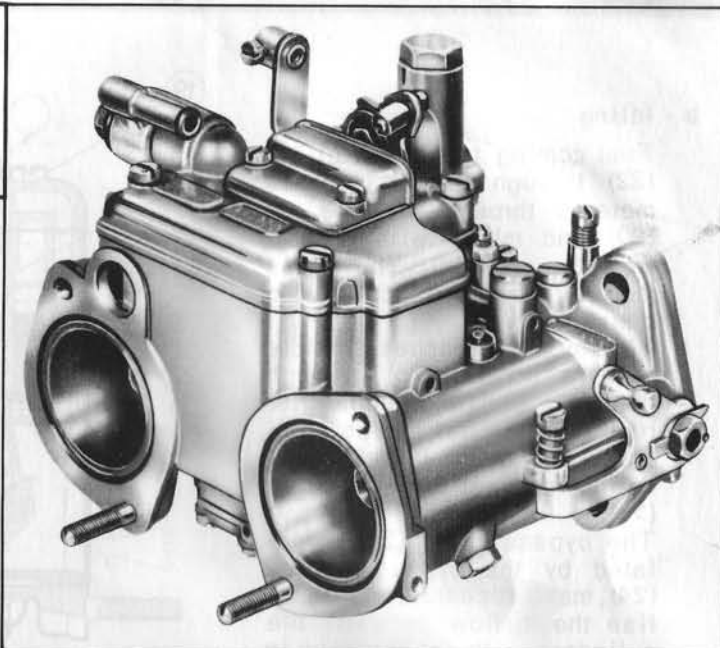
Those will cause the engine to run irregularly and the mixture ratio will be rich (2) and the idle speed will be low (2).

Remove the four vacuum connectors and turn the timing idling speed as detailed with the 1500 rpm screw (2).

ALFA ROMEO
LOTUS CARS
1500 - 1600 (single carburettor)
1500 D3 Cooper - 1700 Cooper
2000 Cooper - 2100 Cooper - 2100
2000 Cooper - 2100 Cooper - 2100
2000 Cooper - 2100 Cooper - 2100



DELLOORTO CARBURETTOR TECHNICAL MANUAL CARS	Type	Applications
	DHLA ... F 40	ALFA ROMEO Alfetta Saloon Alfetta GT



1) FEATURES

- Twin-choke sidedraft body
- Barrel size 40 mm.
- Interchangeable chokes available in sizes ranging from 25 mm. to 36 mm. inclusive
- Butterfly throttle valves
- Centrally-placed constant-level float chamber with double float
- Main circuit using centrally-placed jets and emulsion tubes
- Dependent idle circuit with centrally-placed jets drawing fuel from the main jets
- Independent starting circuit with single starter jet and piston valve and separate channels to each barrel
- Mechanically-operated diaphragm accelerator pump with single inlet valve and two delivery channels with individual valves and pump jets
- Air bypass screw in each barrel to equalise the airflow and throttle positions at idle

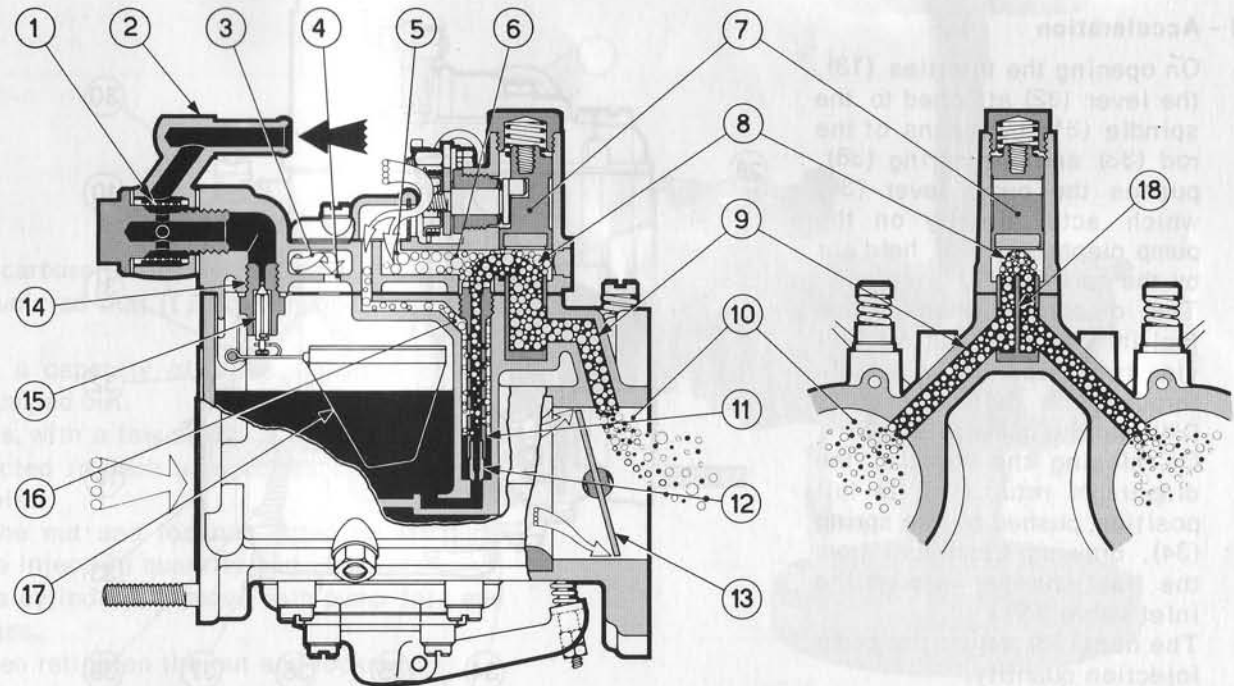
2) OPERATION

a - Starting

Fuel at the union (2) passes through the filter (1) and reaches the seat (14) where the needle (15) attached to the float (17) controls the fuel flow into the float chamber thereby maintaining a constant float level.

The float chamber is vented to the atmosphere through the vent (4) in the chamber.

On opening the choke valve (7), fuel metered through the starter jet (12) passes into the emulsion tube (11) where it is mixed with air from the channel (16) and then enters the passage (8) further mixing with air from the vent (5) and reaches the valve chamber (8) where it is distributed via the two ducts which lead into the main barrels (10) downstream of the throttles (13). On closing the choke valve (7), communication between the main barrels and the starting circuit is broken as well as communication between the two barrels by the sealing action of the split bushing (18).

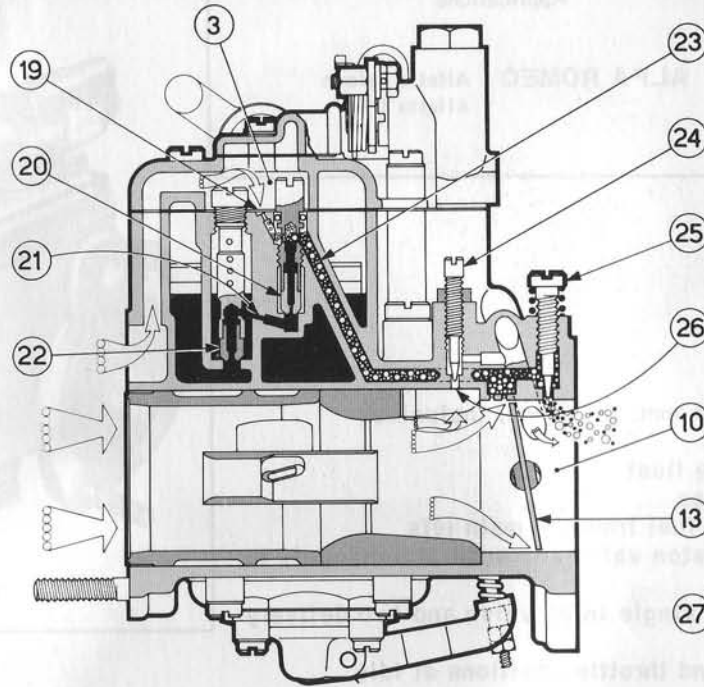


b - Idling

Fuel coming from the main jet (22) through channel (21) is metered through the idle jet (20) and mixes with the air from the well (3). The air is metered by the calibrated passage (19).

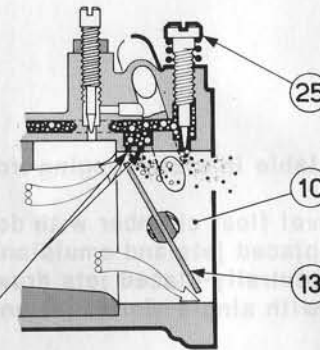
This mixture reaches the idle mixture screws (25) through channels (23) and then, after regulation by the screws, reaches the main barrels (10) downstream of the throttles (13).

The bypass holes (26), regulated by the bypass screws (24), make it possible to equalise the airflow between the cylinders with the throttles in the idling position.



c - Progression

On first opening the throttles (13), that is, when passing from idle to full throttle, mixture also reaches the two barrels (10) through the progression holes (27),



e - Full throttle

At full throttle, fuel from the float chamber is metered through the main jets (32), entering the wells (40) and mixing with the air metered by the air corrector jets (39).

This mixture then passes through the channels (42) to reach the auxiliary venturis (41) where it is further mixed with air drawn into the main intake, and finally flows into the venturis (43) to reach the barrels (10).

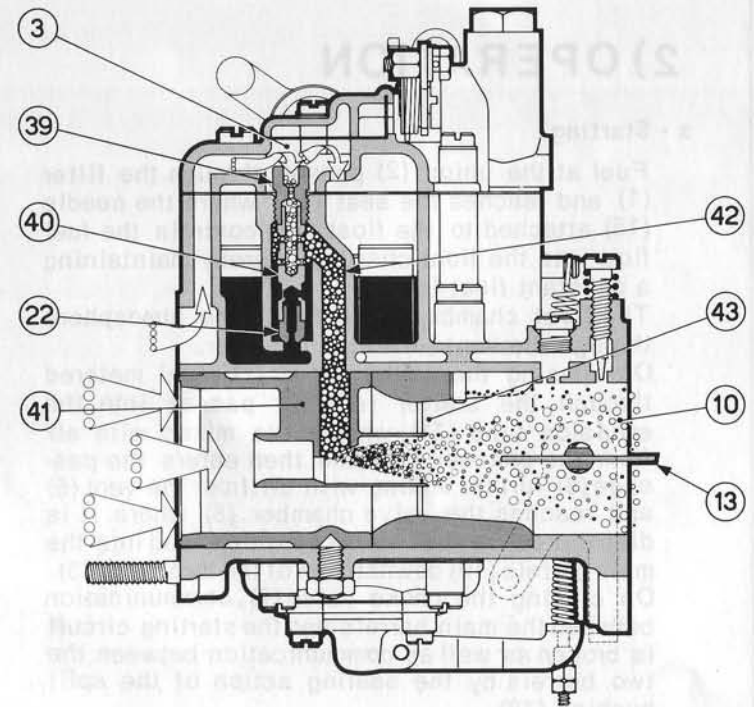
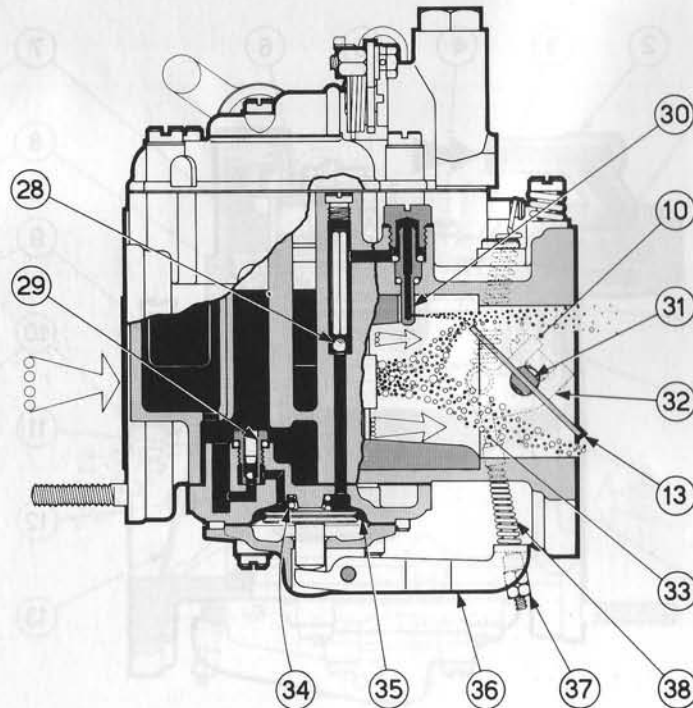
d - Acceleration

On opening the throttles (13), the lever (32) attached to the spindle (31) by means of the rod (33) and the spring (38), pushes the pump lever (36) which acts directly on the pump diaphragm (35) held out by the spring (34).

The diaphragm then pumps fuel into the main barrels (10) via two separate channels through the delivery valves (28) and the pump jets (30).

On closing the throttle, the diaphragm returns to its full position, pushed by the spring (34), drawing fresh fuel from the float chamber through the inlet valve (29).

The nuts (33) adjust the pump injection quantity.



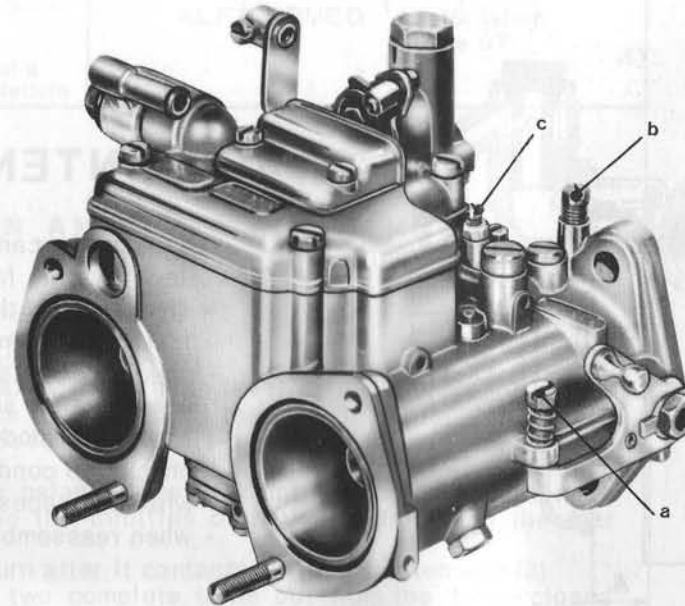
3) ADJUSTMENT

a - Idling

Always adjust the idle with the engine hot and with the air bypass screws (6) fully closed, screwing in the idle speed screw (a) to obtain a slightly higher idle speed than normal.

Then adjust the idle mixture screws (b) until you obtain the most even running; remember that screwing these screws in results in a weaker mixture and vice versa.

Then steadily unscrew the idle speed screw (a) until the normal engine idle speed has been reached again.



b - Accelerator pump

Adjust the accelerator pump delivery by fixing the carburettor to the special support using the proper gasket and connecting it to a fuel reservoir so that it is continuously supplied with fuel.

Put two calibrated measuring tubes, each having a capacity of 10 cc, under the drain pipes on the support so as to collect all the fuel pumped out.

Open and close the throttle completely twenty times, with a few seconds' break in between each time, and check that the volume of fuel collected in each tube corresponds with the correct specification and is the same for both barrels.

If not, adjust the pump delivery by resetting the nut and locknut fitted on the pump operating rod. Screwing these nuts up increases the injection quantity and vice versa.

If there are any differences in volume between the cylinders, remove both pump jets and blow through them vigorously to clear any blockages.

Recheck until the correct setting is reached and then retighten the nut and locknut.

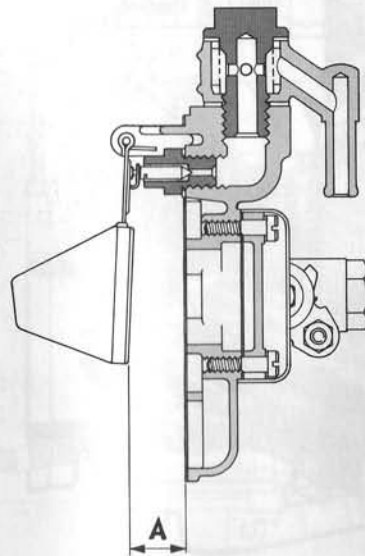


c - Float level

Check that the float has the actual weight marked on it, is not damaged and is also free to swivel on its pivot pin.

Hold the carburettor cover vertically so that the float arm is in light contact with the needle and with the spring in the needle not compressed.

In this position, check that both the half-floats are at the correct distance from the float chamber cover, measured to the gasket fitted to it.



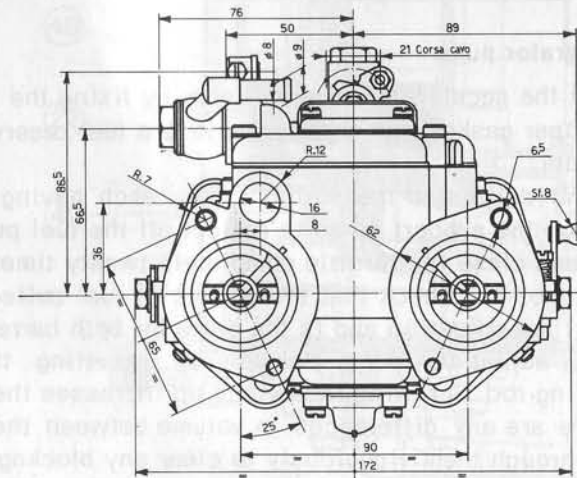
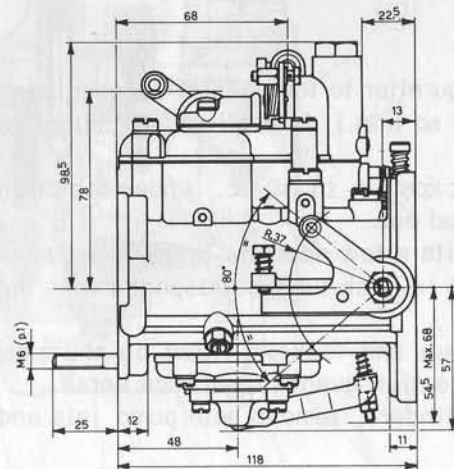
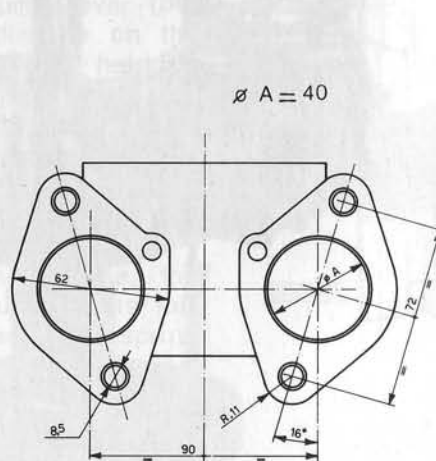
Float	A
7298.1	14,5 ÷ 15
7298.2	16,5 ÷ 17

4) MAINTENANCE

To keep the carburettor in good working order, especially after operating faults have occurred, proceed as follows:

- dismantle all the carburettor components, washing them in fuel and blowing dry
- special care is needed with the jets, emulsion tubes, the needle-valve seat, fuel filter and all the drillings in the carburettor body
- check the condition of all parts before reassembling and, wherever necessary replace them only with new parts
- when reassembling, renew all the gaskets and O-rings

OVERALL DIMENSIONS





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DELORIO CARBURATORI

DELORIO

CARBURETTOR TECHNICAL MANUAL

CARS

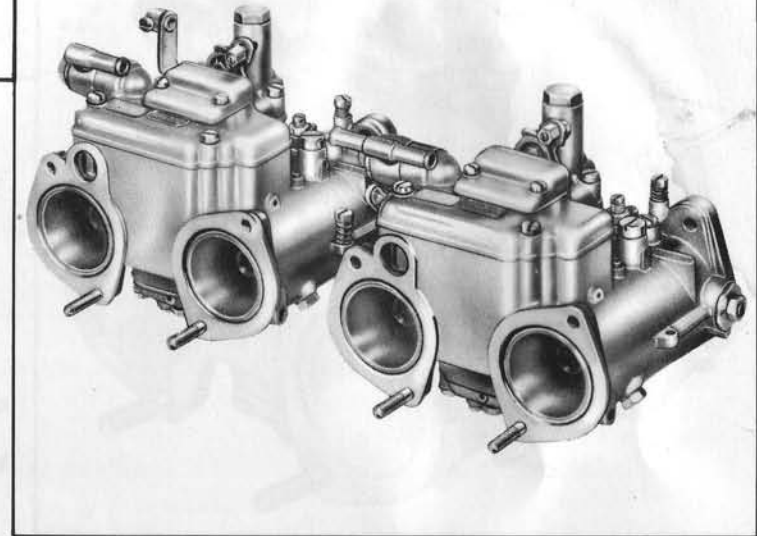
Type

DHLA...F 40

Installation of a pair of carburettors

Applications

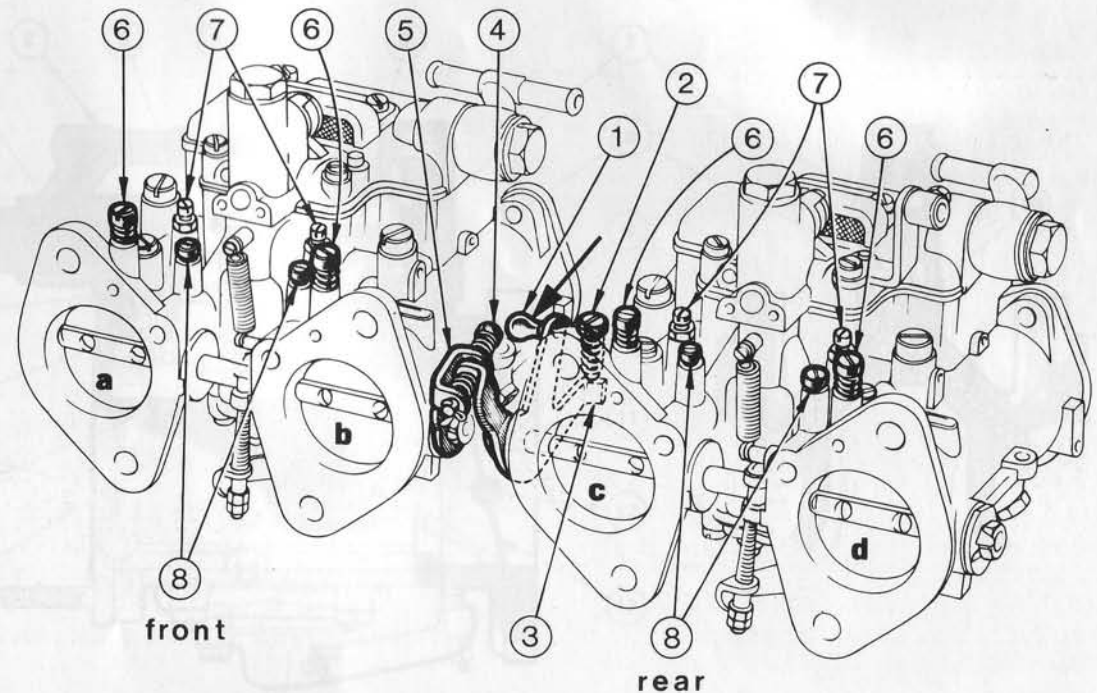
ALFA ROMEO Alfetta Saloon
Alfetta GT



1) FEATURES

CARBURETTOR SYNCHRONISATION AND IDLE ADJUSTMENT

- Disconnect the throttle operating rod and the central lever (1)
- Unscrew the idle speed screw (2) out of contact with the main lever extension (3)
- Unscrew the balance screw (4) of the balance lever (5) until the throttle butterflies of both front and rear carburetors are completely closed. Check this with light upward pressure on the main lever
- While maintaining this pressure, screw in the balance screw (4) until it contacts the tongue of the main lever so as to completely close the throttles of both the front and the rear carburettor
- Screw in the idle speed screw one complete turn after it contacts the lever extension (3)
- Unscrew all the mixture adjusting screw (6) two complete turns out from the fully-closed position
- Check that the idle air bypass screws are screwed fully closed
- Connect the barrels to a four-column mercury manometer by fitting adaptors in place of the blanking plugs (8) on each cylinder
- Take care to clear all the mercury columns of airlocks as these will lead to inaccurate readings
- Reconnect the throttle operating rod to the main lever (1)
- Start the engine and let it run to attain normal running temperature
- With the blowby pipe on barrel (a) temporarily clamped shut, align the lower of the two mercury levels on the front carburettor with the lower of the two mercury levels on the rear carburettor by adjusting the balance with the balance screw (4)
- Then, if necessary, align the other two cylinders' mercury levels with the first pair by means of the air bypass screws (7) on these cylinders
- Check the running of each cylinder in turn by adjusting the idle mixture screws (6) remembering that screwing them in weakens the idle mixture and vice versa
- With the blowby hole unblocked, the mixture adjusting screw of barrel (a) will usually need to be screwed out more than the others
- If necessary, reset the alignments of the mercury indices and adjust the idle speed by means of the central screw (2)
- Remove the four vacuum adaptors, refit the blanking plugs in their place and lock the bypass screw locknuts



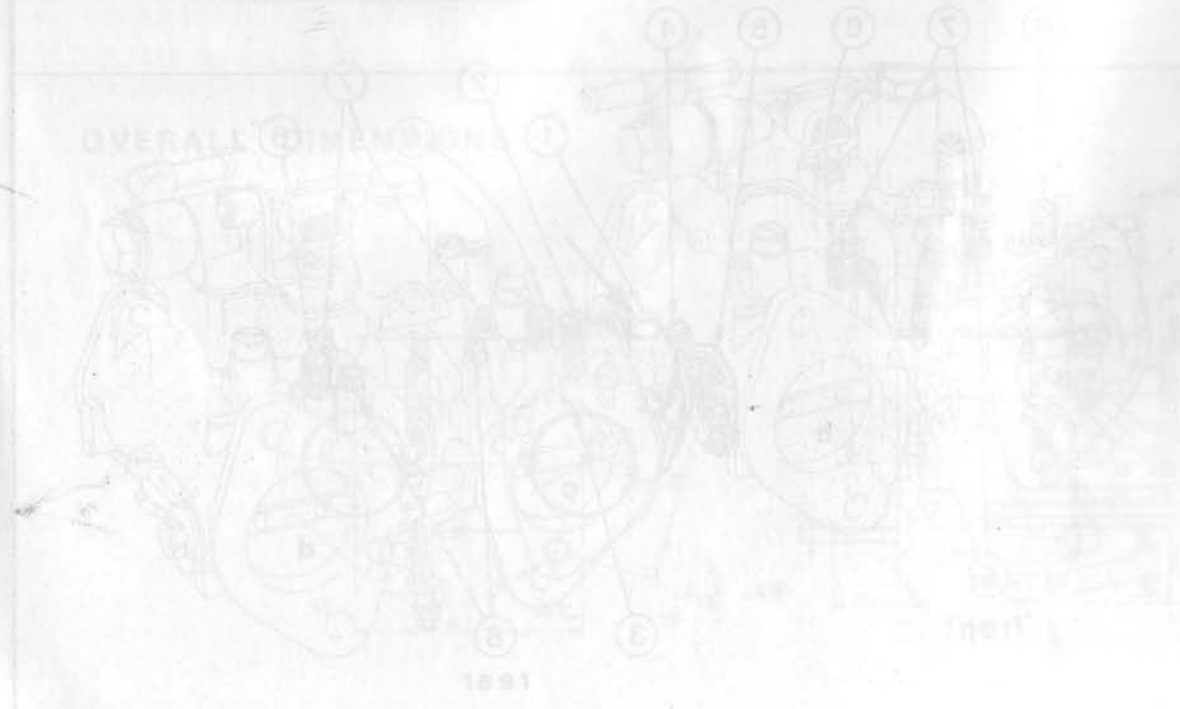
MAINTENANCE

CARBURETTOR SYNCHRONIZATION AND TUNE-UP

Disconnect the lead cable from the carburettor. Turn the lead cable (2) out of contact with the distributor and remove it. The carburettor and distributor are completely disconnected. The carburettor is now ready for adjustment. While maintaining this position, screw in the adjusting screw of the main jet (1) to the desired level. Turn the carburettor clockwise one complete turn after it contacts the idle air bypass screw (8) two complete turns from the fully-closed position. Check that the idle air bypass screws are screwed fully closed. Connect the battery to a four-column mercury manometer by fitting adaptors in place of the planning plugs (6) on each cylinder. Take care to test all the mercury columns of airlocks as these will lead to inaccurate readings. Reconnect the throttle operating rod to the main lever (1). Start the engine and let it run to attain normal running temperature. With the blowby pipe or carburettor temporarily clamped shut, align the lower of the two mercury levels on the front carburettor with the lower of the two mercury levels on the rear carburettor by adjusting the screws which balance the carburettor. Then, it is necessary to tune the carburettor cylinders; mercury levels will be the first part of the idle air bypass screws (7) on the top of the carburettor. Check the running of each cylinder in turn by adjusting the idle air lock (5). This work should be carried out in the order: front left, front right, rear left, rear right. With the blowby pipe unclamped, the adjusting screws of the main jets (1) should be screwed out one turn from the fully-closed position. If necessary, read the air-fuel ratio of the mercury columns and adjust the screws by means of the control screw (2). Remove the four-column mercury carburettor, lift the planning plugs in their place and lock the bypass screw locknuts.



Part	A
1	14.5 x 1.5
2	11.5 x 2.5

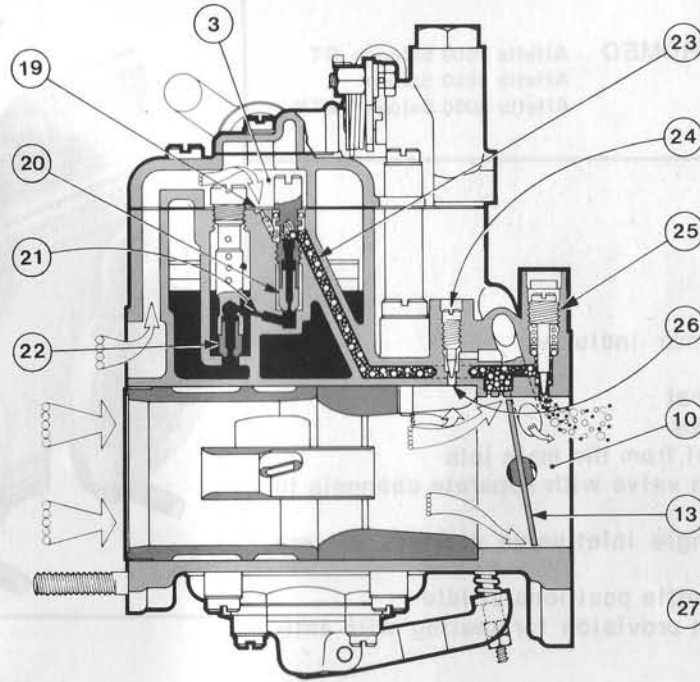


c - Idling

Fuel coming through the main jet (22) along channel (21) is then metered through the idle jets (20) and mixes with the air from the chamber well (3), regulated by the calibrated channel (19).

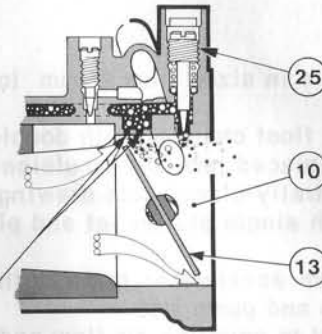
This emulsion mixture, travelling through channels (23), reaches the adjustment screws (25) for regulation and finally reaches the main barrels (10) downstream of the throttles (13).

It is possible to equalise the air flow into the cylinders when the throttle butterflies are in the idle position by regulating the bypass screws (24) in the airbled holes (26).



d - Progression

On first opening the throttles (13), ie when passing from idle to full throttle, mixture also reaches the main barrels (10) through the progression holes (27).



f - Full throttle running

At full throttle, fuel from the float chamber is metered through the main jets (22) and enters the emulsion wells (40) mixing with air metered by the air corrector jets (39).

This mixture then passes down the channels (42) to reach the auxiliary venturis (41) where it mixes again with air drawn into the main intake and flows into the venturis and on into the cylinders.

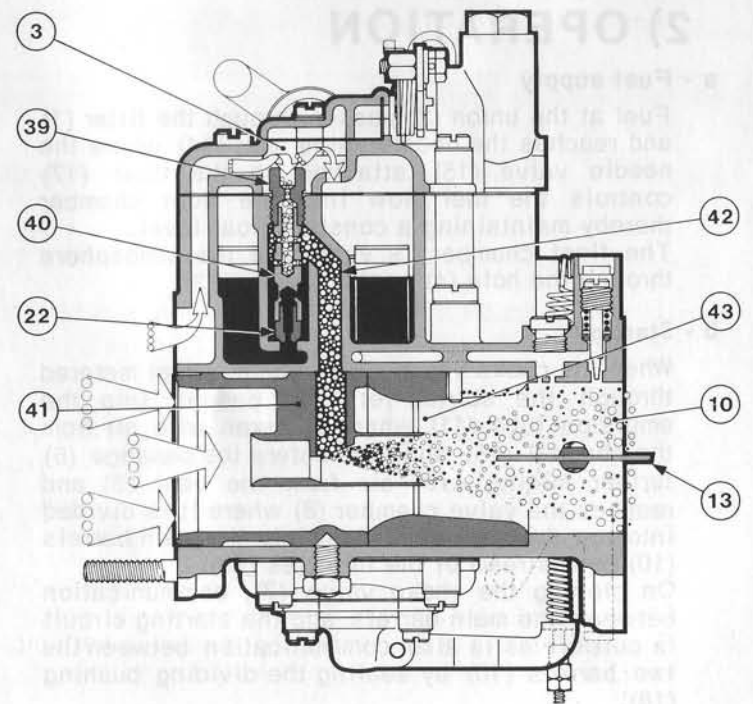
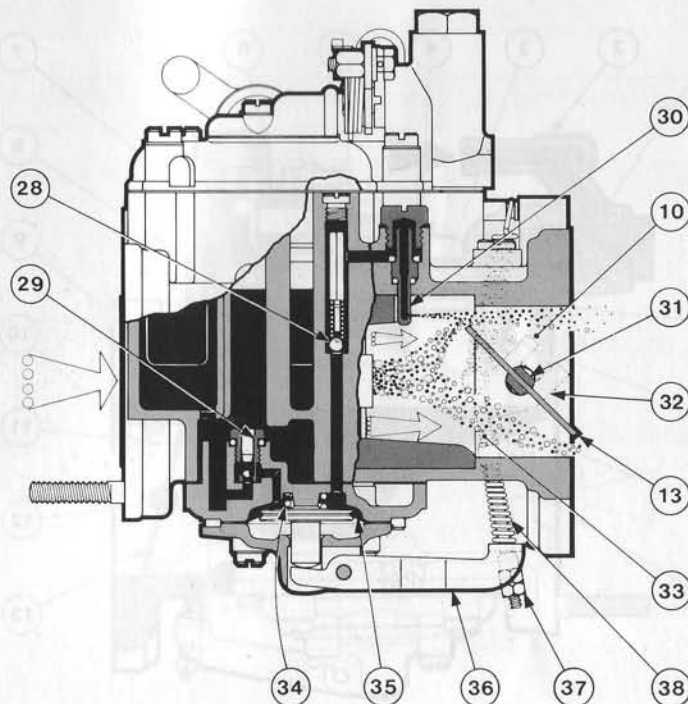
e - Acceleration

On opening the throttles (13), the lever (32) attached to the spindle (31) by means of the rod (33) and spring (38), pushes the pump arm (36) which acts directly on the pump diaphragm (35) held out by the spring (34).

The diaphragm then pumps fuel into the main barrels (10) via two separate channels through the delivery valves (28) and the pump jets (30).

On closing the throttle, the pump diaphragm returns to its full position pushed by spring (34) drawing fresh fuel from the float chamber through the inlet valve (29).

The setting of the nuts (37) controls the pump injection quantity.



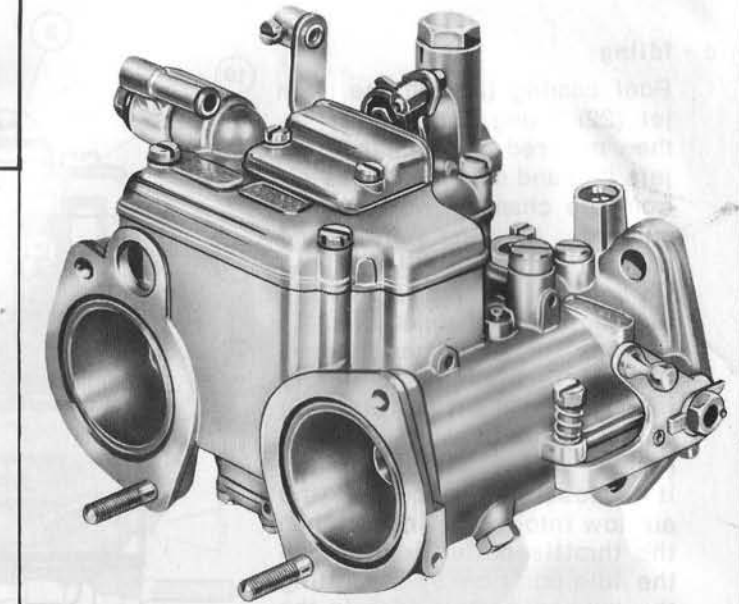


DELLORTO
CARBURETTOR TECHNICAL MANUAL

CARS

Type
**DHLA...G
40**

Applications
ALFA ROMEO Alfetta 1600 Saloon - GT
Alfetta 1800 Saloon
Alfetta 2000 Saloon - GTV



1) FEATURES

- Twin-choke sidedraft body
- 40 mm barrel size
- Interchangeable chokes available in sizes from 25 mm to 36 mm inclusive
- Butterfly throttle valves
- Centrally-placed constant-level float chamber with double float
- Main jet circuit using centrally-placed jets and emulsion tubes
- Dependent idle circuit with centrally-placed jets drawing fuel from the main jets
- Independent starting device with single starter jet and piston valve with separate channels to each barrel
- Mechanically-operated diaphragm accelerator pump with single inlet valve and two delivery channels with individual valves and pump jets
- Air by-pass screw in each barrel to equalise air flow and throttle positions at idle
- Mixture adjusting screws mounted in special housings with provision for sealing with anti-tamper seals

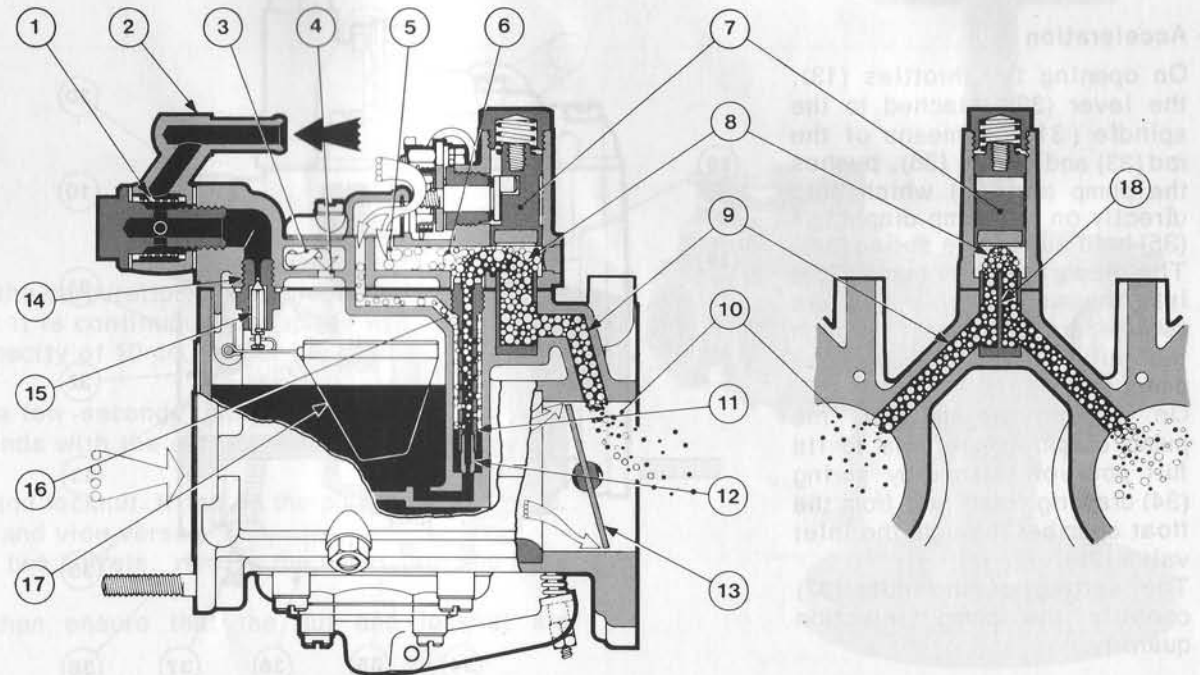
2) OPERATION

a - Fuel supply

Fuel at the union (2) passes through the filter (1) and reaches the needle-valve seat (14) where the needle valve (15) attached to the float (17) controls the fuel flow into the float chamber thereby maintaining a constant float level. The float chamber is vented to the atmosphere through the hole (4) in the chamber (3).

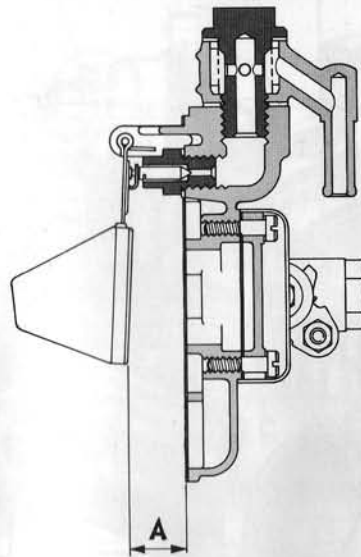
b - Starting

When the choke valve (7) is opened, fuel metered through the starter jet (12) passes into the emulsion tube (11) where it mixes with air from the channel (16) and then enters the passage (6) further mixing with air from the vent (5) and reaches the valve chamber (8) where it is divided into two ducts (9) which lead into the main barrels (10) downstream of the throttles (13). On closing the choke valve (7), communication between the main barrels and the starting circuit is cut off as is also communication between the two barrels (10) by sealing the dividing bushing (18).



c - Float level

Check that the float has the same weight as it has marked on it, is undamaged and is also completely free to swivel on its pivot pin. Hold the carburettor cover vertically so that the float arm is in light contact with the needle but with the spring in the needle remaining uncompressed. In this position, check that both the half-floats are the correct distance from the chamber cover measured to the topcover gasket.

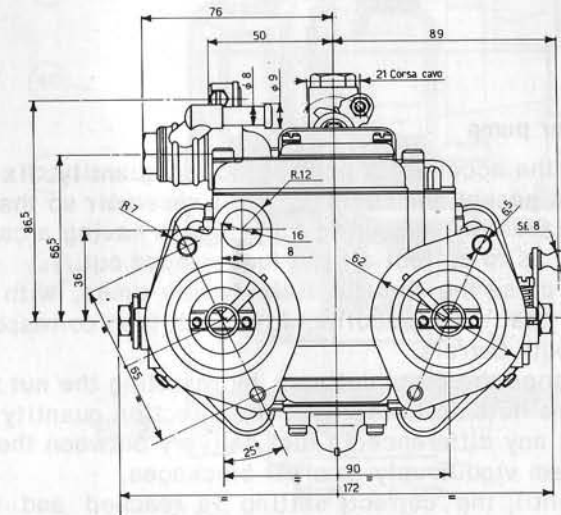
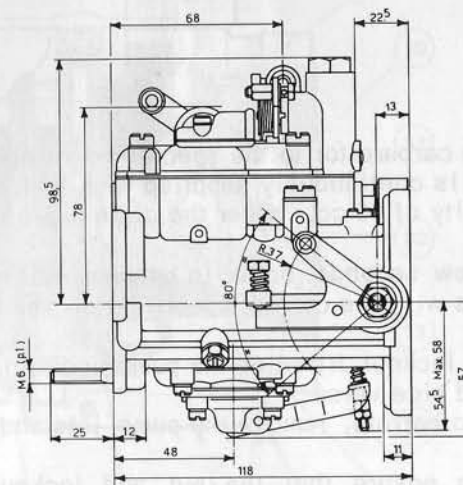
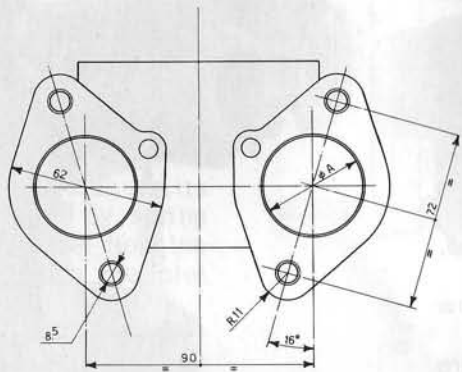


4) MAINTENANCE

To keep the carburettor in perfect working condition, especially after operating faults have occurred, proceed as follows:

- dismantle all the carburettor components, wash them carefully in petrol and then blow dry
- special care is needed with the jets, emulsion tubes, the needle valve seat, fuel filter and all the drillings in the carburettor body
- check the condition of all components before reassembling and replace wherever necessary with new parts
- when reassembling the carburettor, renew all the gaskets and O-rings.

OVERALL DIMENSIONS





DELL'ORTO

CARBURETTOR TECHNICAL MANUAL

CARS

Type

DHLA...G 40

installation of a
pair of carburettors

Applications

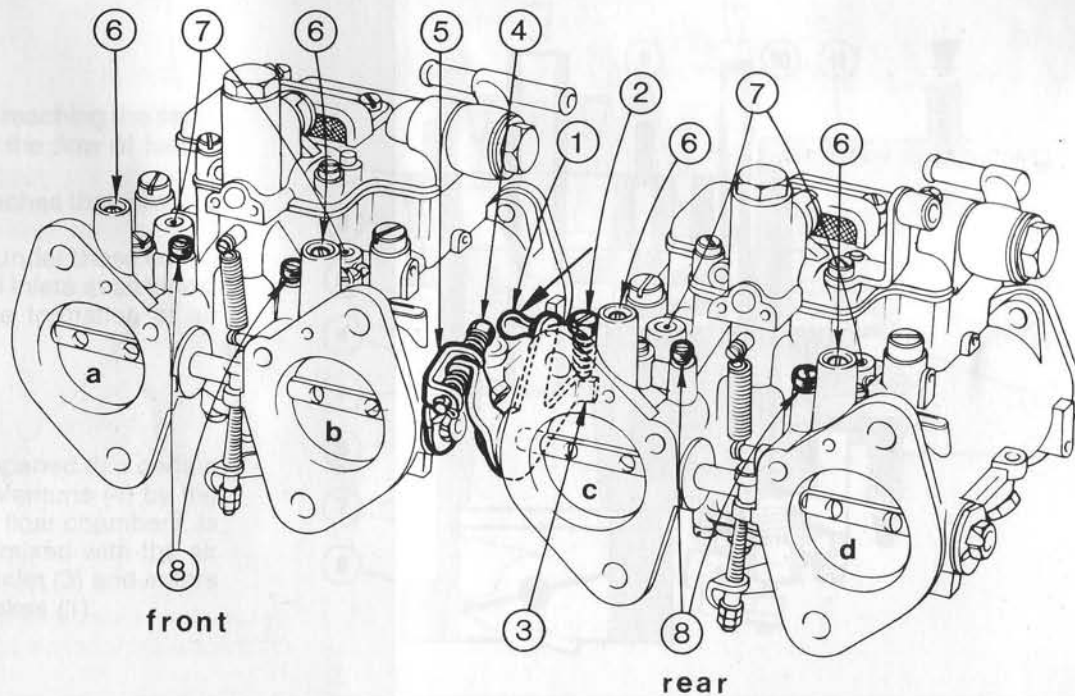
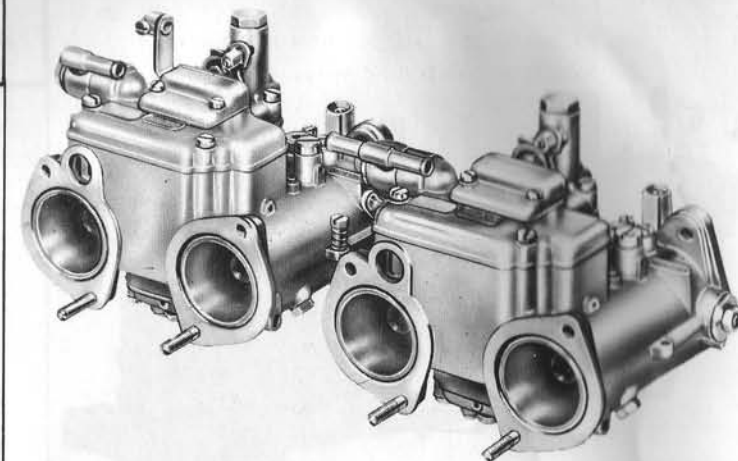
ALFA ROMEO Alfetta 1600 Saloon - GT
Alfetta 1800 Saloon
Alfetta 2000 Saloon - GTV

CARBURETTOR SYNCHRONISATION AND IDLE ADJUSTMENT

Proper carburettor synchronisation and idle adjustment requires an exhaust gas CO meter, a rev-counter and a four-column mercury manometer. Proceed as follows:

- Disconnect the throttle control rod and lever (1)
- Unscrew the idle speed screw (2) out of contact with lever extension (3)
- Unscrew the screw (4) of the balance lever (5) until the throttles of both front and rear carburettors are fully closed. Check they are with light upward pressure on lever (1) While maintaining pressure on lever (1), tighten screw (4) until it contacts the tongue of lever (1), thus fully closing the throttles of both front and rear carburettors
- Tighten the screw (2) one more turn after it first contacts the extension (3) of lever (1)
- Remove the anti-tamper seals from the mixture screw housing (6) and unscrew each screw five turns from the fully-closed position
- Check that the idle air bypass screws, to which anti-tamper paint has been applied, are completely closed
- Remove the depression blanking plugs (8) and connect each barrel to the four-column mercury monometer using the screw-in adaptors
- Reconnect the throttle operating rod to lever (1)
- Start the engine and leave it running to attain normal operating temperature
- First ensure that any airlocks are removed from the mercury columns which will otherwise result in inaccurate readings
- Align the lower mercury column of the front carburettor with the lower one of the rear carburettor using balance screw (4)
- Then, if necessary, adjust the levels of the other two cylinders to match those of the lowest pair using the bypass screws on these barrels
- With the No 1 cylinder blow-by pipe temporarily clamped shut, all readings should be brought to the same level. Unclamped for normal running, No 1 cylinder's mercury level will always be lower than the other three cylinder levels
- Insert the CO tester probe and connect the revcounter
- Preferably only by using the special Dell'Orto screwdriver, adjust the running of each cylinder by turning the mixture screw (6) to get the most even running with the engine idle speed at the correct level and holding the exhaust CO level well below 4,5%. Remember that by unscrewing these screws you increase the CO level and vice versa
- The mixture screw of barrel (1) will need to be opened more than the others due to the effect of the blowby hole on that cylinder
- Remove the vacuum adaptor plugs and refit the blanking plugs in their place
- Fit new anti-tamper seals on the mixture screw housings (6)

If all the above-mentioned equipment is not available, it is still possible to obtain the correct idle setting by simply resetting the idlespeed screw (2) at the balance adjusting screw (4).

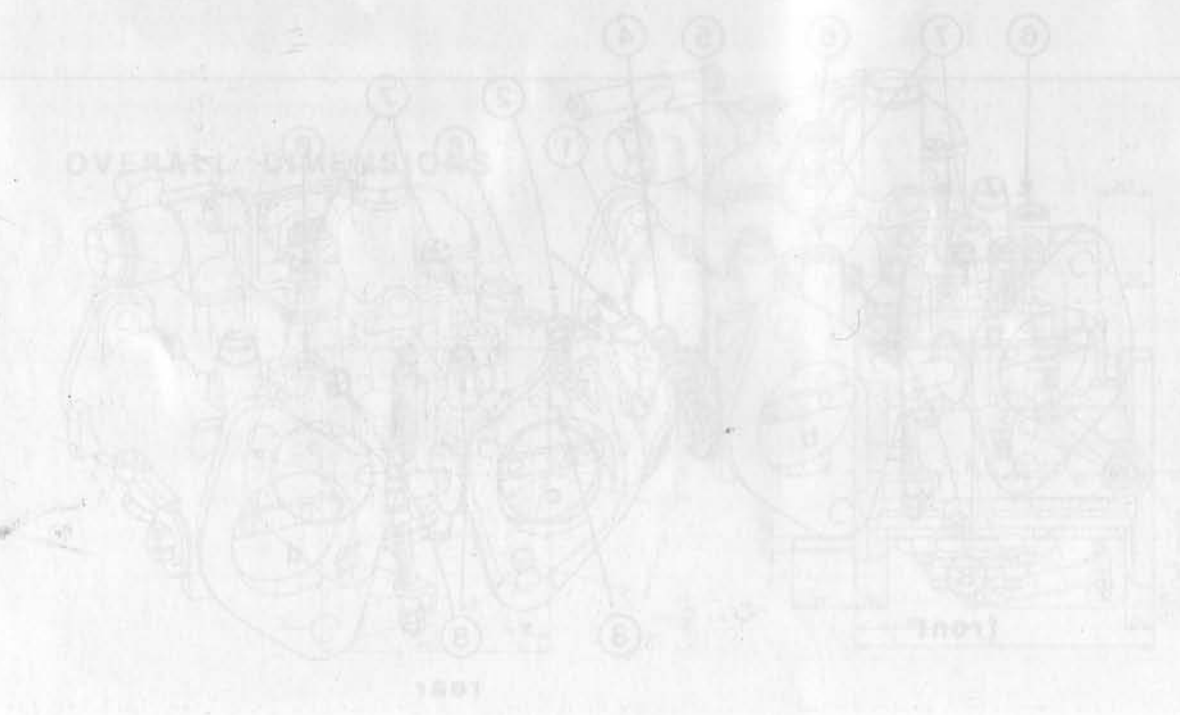


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DELL'ORTO CARBURATORI

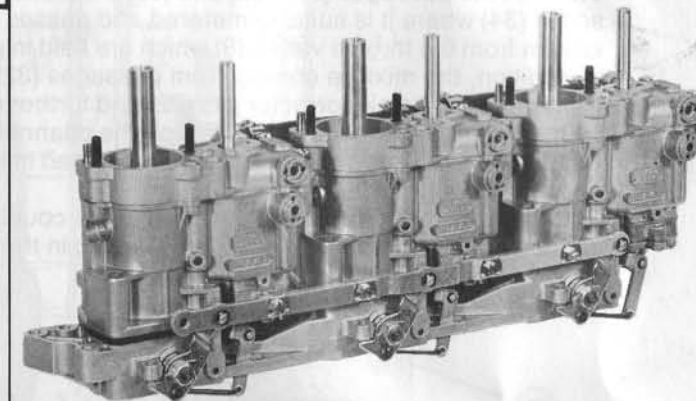
ADJUSTMENT OF THE CARBURETTOR

From carburetor, adjustment and the adjustment screws an adjust gas CO level...
 Proceed as follows:
 - Disconnect the electrical lead and leave the...
 - Unscrew the top cover (A) out of contact with the...
 - Unscrew the...
 - Adjust the...
 - Tighten the...
 - Fasten the...
 - Check that the...
 - Have the...
 - Reconnect the...
 - Start the engine and leave it running to allow...
 - First ensure that any...
 - mercury columns which will otherwise result in...
 - Align the...
 - with the...
 - Then, if necessary, adjust the level of the other two...
 - cylinders to match those of the lowest (a) using the...
 - gear screws on these parts.
 - With the No. 1 cylinder slow by one temporarily clamped...
 - and all readings should be taken at the 1.5 level.
 - Unclamped for total running, the 1 cylinder's mercury...
 - level will always be higher than the other two cylinders...
 - level.
 - Insert the CO tester...
 - Adjust the...
 - screw down for...
 - engine...
 - extend...
 - screwing...
 - this level.
 - The...
 - more than...
 - on that...
 - remove the...
 - place in their...
 - a new...
 - If the...
 - still...
 - insert...
 - screw...



1) FEATURES

- Triple choke downdraft body with 40 mm diameter barrel size, with single base
- Interchangeable chokes from 26 to 34 mm
- Butterfly throttle valve
- Constant level float chamber with double float
- Dependent idle circuit with centrally-placed jets drawing fuel from the main circuit, with auxiliary device for adjusting engine rpm's. Screws for adjusting the air-fuel mixture with means for sealing them so as to make them tamper-proof.
- Main circuit with jet and centrally placed emulsion tubes.
- Mechanically operated diaphragm accelerator pump with inlet valve, delivery valve and pump jets.
- By-pass screws to equalize the air flow in the idle position
- Fuel recycling for cooling of float chamber and pump
- The butterfly valve starting device is fitted on the air filter.



2) OPERATION

a - Fuel supply

Fuel arrives at the fuel inlet (12) and passes through the filter (13) reaching the seats (14) where the needles (15), anchored to the floats (16), adjust the flow of fuel to the float chamber, thereby maintaining a constant level.

Any excess fuel flows through the passages (10) and (11) and reaches the coils (18) in the bottom of the float chambers.

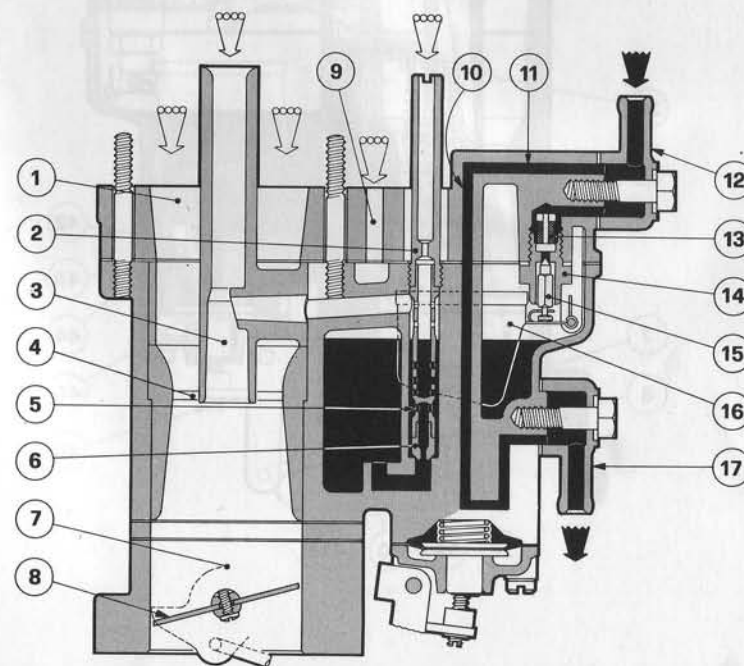
From here it returns to the fuel tank through the passages (17). Under these conditions it is thus possible to have "fresh" fuel circulating in the fuel inlets at all times. Thus the chambers and the pump are always cooled and the formation of air bubbles is thus avoided.

The float chambers are vented by means of the passages (9).

b - Starting

When the starting device is operated the throttle valves (8) are opened to a certain degree; under these conditions the depression exerted in the Venturis (4) by the engine suction determines a flow of fuel which arrives from the float chambers, is metered by the jets (6), passes into the emulsion tubes (5), is mixed with the air coming from the corrector jet (2), passes through the centering inlet (3) and enters the Venturis (4), where it is further mixed with air from the intakes (1).

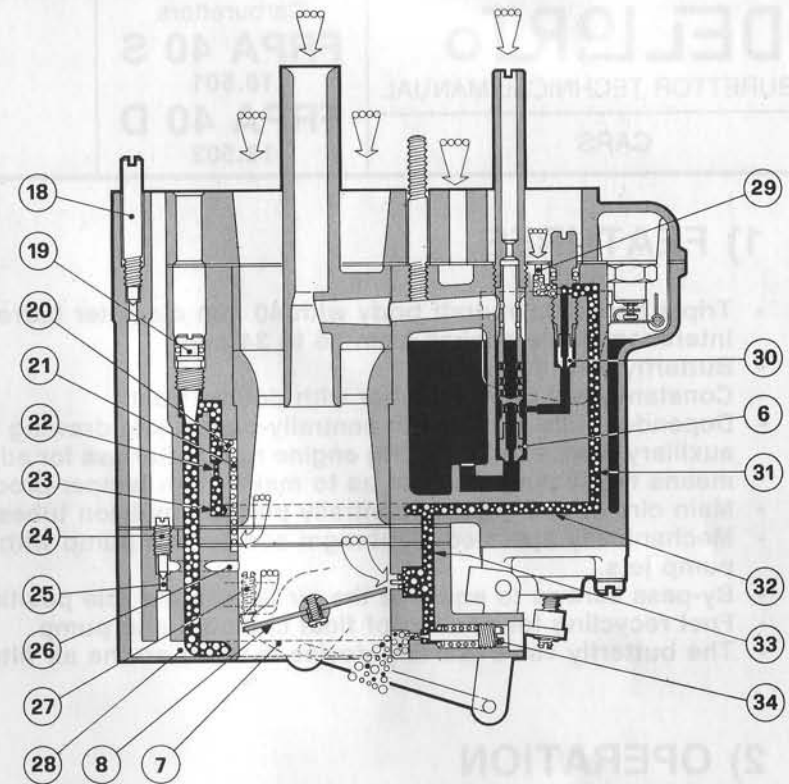
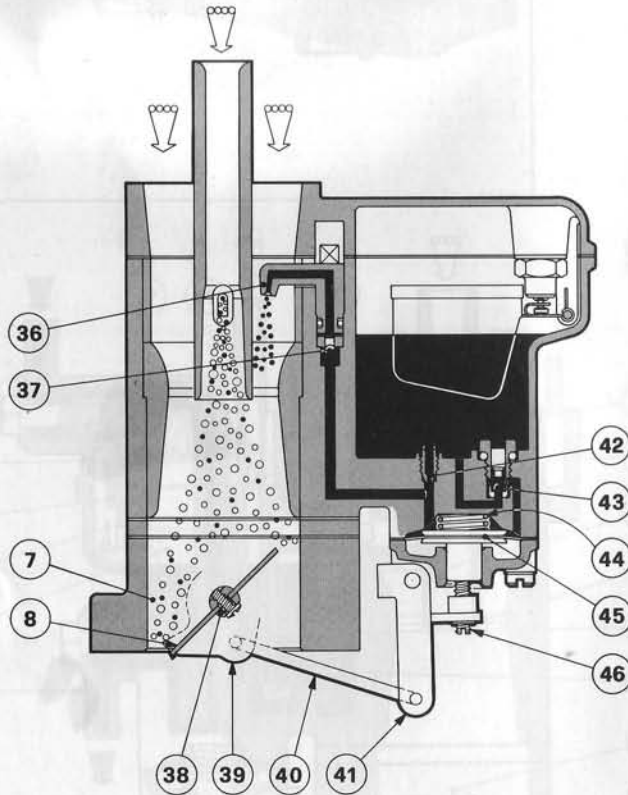
From here it reaches the barrels (7).



c - Idling

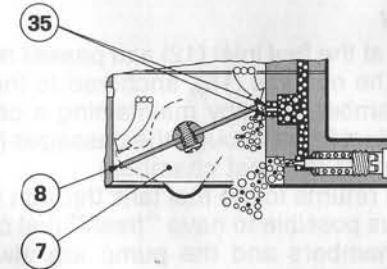
The fuel coming from the floats, regulated by the main jets (6) and metered by the idling jets (30), mixes with air coming from the air corrector jets (29). Through the passages (31), (32) and (33) the mixture reaches the adjustments screw (34) where it is suitably metered and passes on to the barrels (7) downstream from the throttle valves (8) which are held in position by the screws (27). In addition, the mixture coming from passages (32) by way of passages (23), is metered by the air corrector jets (22) and further combines with air metered by the holes (20) and supplied through the channels (21); this mixture is then adjusted by the screws (19) and is then diffused in the barrels (7) downstream from the throttle valves (8).

If the screws (18) are replaced by a suitable coupling, it is possible, through channels (28), to obtain the pressure existing in the barrels (7) with the throttle valves in the idle position.



d - Progression

On first opening the throttle (8), that is, in passing from idle to full throttle, the mixture also reaches the barrels (7) through the progression holes (35).



e - Acceleration

When the throttle valves (8) are opened the levers (39) attached to the spindles (38) push the pump levers (41) by means of the rods (40). These act directly on the pump diaphragm (45) against the springs (44).

The diaphragm (45) will then pump fuel into the barrels (7) by means of the delivery valves (37) and the jets (36), at the same time delivering any excess fuel into the float chambers, if that is the setting of the adjustment, through the hole (42).

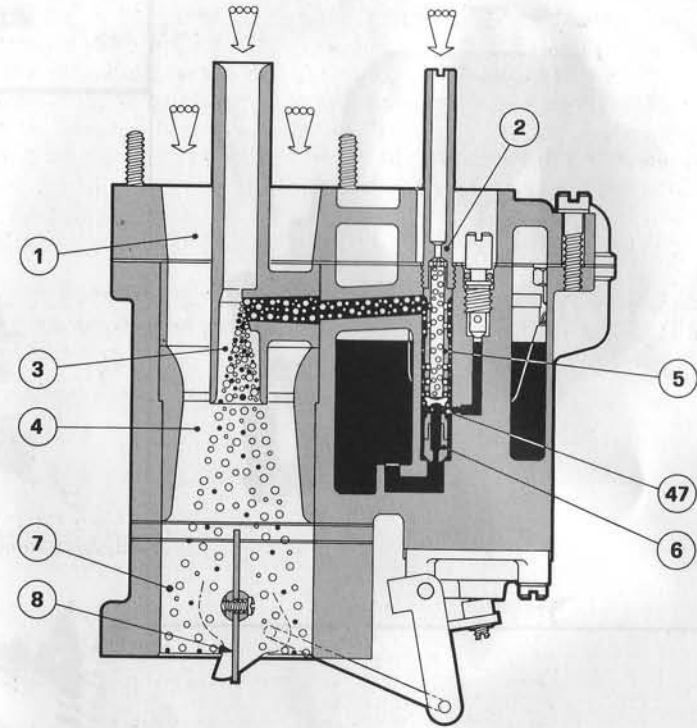
When the throttle valves (8) are closed the diaphragms (45) will return to their original position under the action of the springs (44) and will therefore draw additional fuel from the float chambers through the intake valves (46).

The delivery of the pumps can be changed by means of the adjustment screws (46).

f - Full Throttle Running

When the throttle valves (8) are open, fuel from the float chambers is metered by the jets (6), enters the wells (47) and is mixed with air metered by the air corrector jets (2) through the emulsion tubes (5).

The mixture thus formed passes through the centering inlets (3) where it is further mixed with air drawn from the intakes (1), flowing into the Venturis (4) and thence into the barrels (7).



1) FEATURES

- Air choke (baffle valve)
- Automatic depression mixture leaner
- Automatic depression dogging

2) OPERATION

When the starting device is operated, the lever (10) brings lever (6), by means of the rod (11) and the roller (12), into the position shown; this releases lever (2) which permits the throttle to attain the "closed" position through the action of the spring (7). Under these conditions, as a result of the depression created by the engine's suction down-draft from the starting device, the starting operation occurs as described in the carburetor text.

Once the engine is running, the depression existing down-draft from the throttle valve to the carburetor barrel connected with the intake (1), through the passage (12) and the hole (13), will act on lever (12); this will operate lever (13) through the rod (11) which will return open valve (4) and thus obtain a lean mixture.

The above depression will also act valve (4) against the action of spring (7) up to the end of stroke of lever (2). This will permit sufficient air to flow through to keep the engine running. Air for the float chamber is supplied through the holes (8) and the passage (9), connected to the carburetor through the air filter.

The higher intake speed which is obtained when the gear edge of the valve (4) is in the proximity of the holes (8), will produce a depression through them which will alter the normal pressure in the float chamber and thus regulate the fuel supply through the main jets. This in turn, will cause a leaner mixture to reach the engine and the engine itself will have a smoother operation.

When the starting device is not operating, the choke valve (4) is kept completely open by lever (6).

The first stage of the process is the mixing of the concrete. This is done in a separate chamber where the concrete is mixed with water and other additives. The mixture is then pumped into the main chamber where it is laid down in a thin layer. The concrete is then finished with a trowel and a screed. The final stage is the curing of the concrete, which is done by covering it with a plastic sheet to prevent it from drying out too quickly.



d - Progression

On start raising the drill bit (6), the concrete is pushed from the hopper (1) through the rollers (3, 4, 5, 6) and the delivery valve (7) through the pump (9) into the chamber (10).

e - Activation

When the concrete (10) is laid down the delivery valve (7) is closed by means of the delivery valve (7) and the rollers (3, 4, 5, 6) are pushed up the shaft (8) by means of the pump (9). The concrete (10) is then finished with a trowel (11) and a screed (12). The final stage is the curing of the concrete, which is done by covering it with a plastic sheet (13). The delivery of the pump can be changed by means of the adjustment screws (14).

1.4. Throttle Running

When the throttle lever (1) is moved from the 'stop' position to the 'run' position, the engine starts to run. The throttle lever (1) is connected to the throttle cable (2) which in turn is connected to the throttle valve (3). The throttle valve (3) is connected to the carburetor (4) which in turn is connected to the intake manifold (5). The intake manifold (5) is connected to the cylinders (6) where the fuel is ignited. The exhaust gases from the cylinders (6) pass through the exhaust manifold (7) and out through the exhaust pipe (8).



1) FEATURES

- Air choke throttle valve
- Automatic depression mixture leaner
- Automatic depression correction

2) OPERATION

When the starting device is operated, the lever (2) brings lever (6), by means of the rod (3) and the tie (1), into the position shown; this releases lever (5) which permits the throttle (4) to attain the "closed" position through the action of the spring (7).

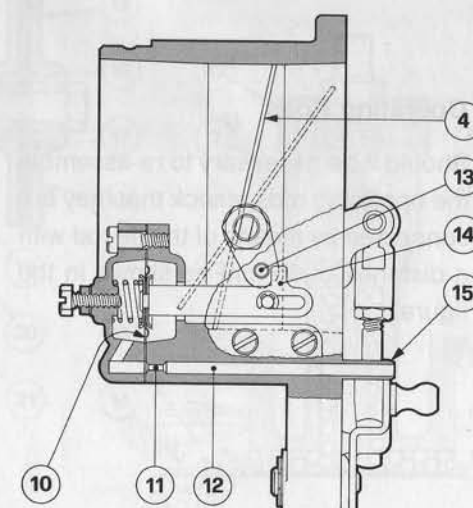
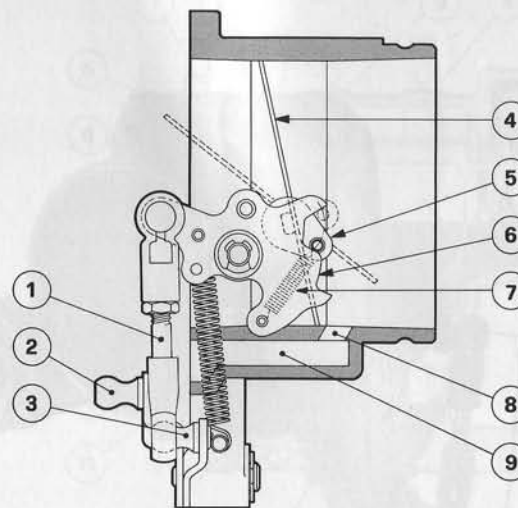
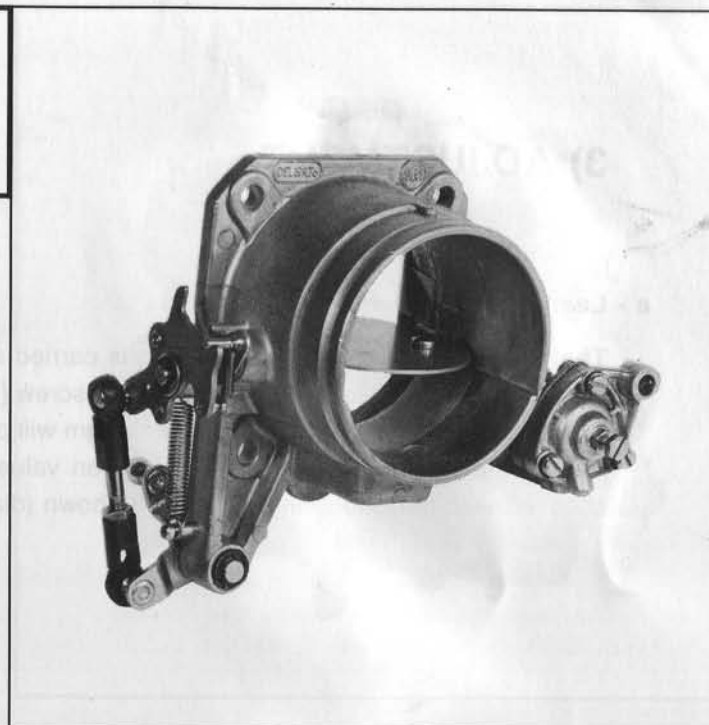
Under these conditions, as a result of the depression exerted by the engine suction downstream from the starting device, the starting operation occurs as described in the carburettor section.

Once the engine is running, the depression existing downstream from the throttle valve in the carburettor barrel connected with the intake (15) by means of the passage (12) and the hole (11), will act on the diaphragm (10); this will operate lever (13) through the rod (14) which will in turn open valve (4) and thus obtain a leaner mixture.

The above depression will also open valve (4) against the action of spring (7) up to the end-of-stroke of lever (6). This will permit sufficient air to flow through to keep the engine running. Air for the float chambers is supplied through the holes (8) and the passage (9), connected to the carburettors through the air filter.

The higher intake speed which is determined when the lower edge of the valve (4) is in the proximity of the holes (8), will produce a depression through them which will alter the normal pressure in the float chamber and thus reduce the fuel supply through the main jets. This, in turn, will cause a leaner mixture to reach the engine and the engine itself will have a smoother operation.

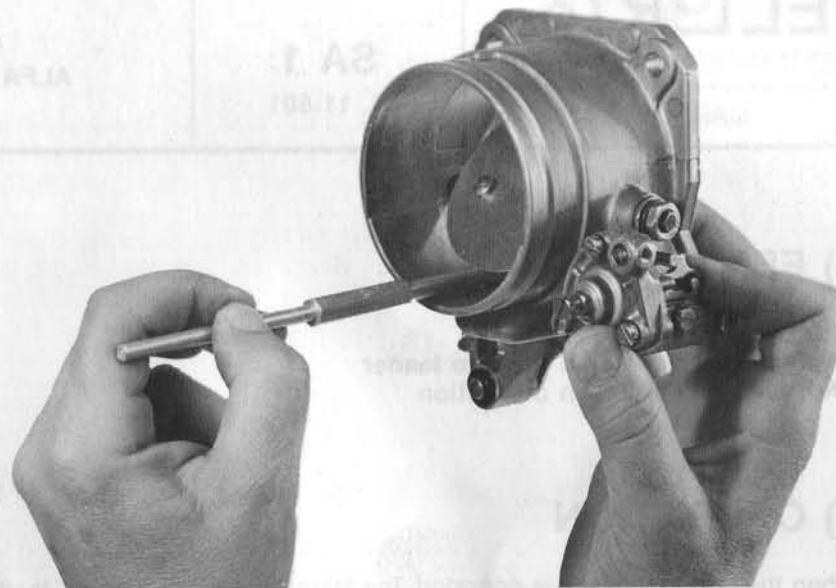
When the starting device is not operating, the throttle valve (4) is kept completely open by lever (6).



3) ADJUSTMENT

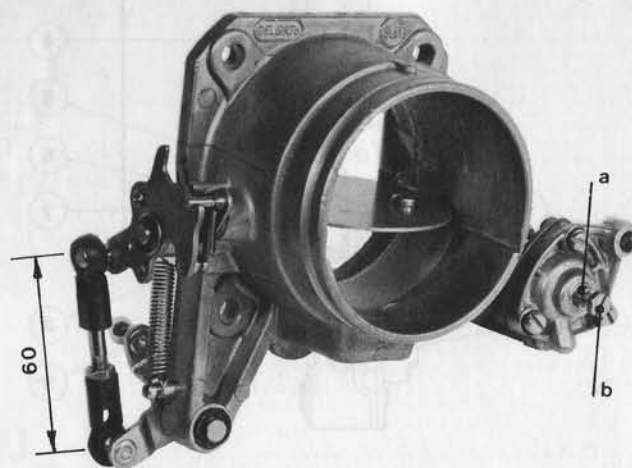
a - Leaner Device

The adjustment of the throttle opening is carried out with the starting device in operation; loosen nut (a) and turn screw (b) so that the stroke of the rod connected to the leaner diaphragm will permit an opening of the throttle which corresponds to the given value and which can be checked with the gauge in the position shown (diam. 5.2 mm).



b - Operating Rods

Should it be necessary to re-assemble the operating rods, check that they are connected by means of the tie rod with a distance of 60 mm as shown in the figure.



4) MAINTENANCE

In order to keep the starting device in top operating condition it is necessary to clean it thoroughly at regular intervals, especially the outer levers. In particular, make sure that the shaft runs freely in its seat and that the diaphragm is in good condition as well as the gasket of the leaner device.

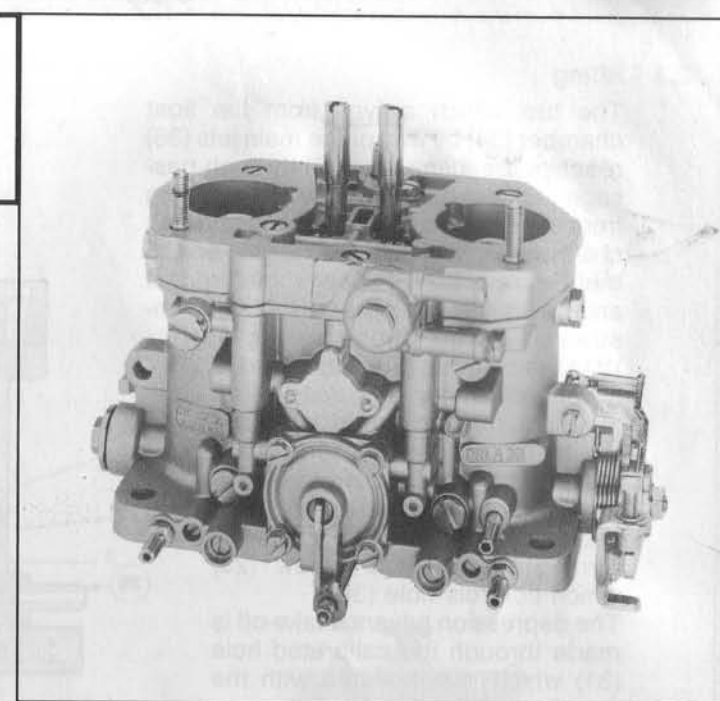
In case of any defect, replace the damaged parts with new original equipment.



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DELLORTO CARBURATORI

DELLORTO CARBURETTOR TECHNICAL MANUAL CARS	Carburettor	Applications
	DRLA 36 - 40 - 45	ALFA SUD 1.3 - 1.5 TI SALOON 1.3 - 1.5 SPRINT VELOCE AND DERIVATIVES



1) FEATURES

- Twin choke downdraft with 36-40-45 mm diameter barrels
- Interchangeable chokes from 28 to 38 mm
- Butterfly throttle valves
- Constant-level float chamber with double float
- Starting device with independent circuit
- Idle circuit with centrally placed jets and Venturis supplied from the main jets; mixture adjustment screws with means for sealing them so as to make them tamper-proof
- Main circuit with centrally placed jets and emulsion tubes
- Accelerator pump with mechanically-operated diaphragm with single inlet valve and two delivery valves upstream from the jets
- By-pass screw in each barrel to equalize the air flow to the throttle valves in the idle position
- Special design for use on turbocharged engines with pressurized (blown) carburettor

2) OPERATION

2.1 - Fuel Supply

Fuel arrives at the fuel inlet (15) through the filter (16) and reaches the seat (19) where the needle (20), anchored to the float (21), adjusts the flow of fuel into the chamber thus ensuring a constant level of fuel.

The float chamber is vented through the hole (4).

Any excess fuel sent by the pump to the carburettor is returned to the fuel tank by the air corrector jet (17) of the fuel inlet (18).

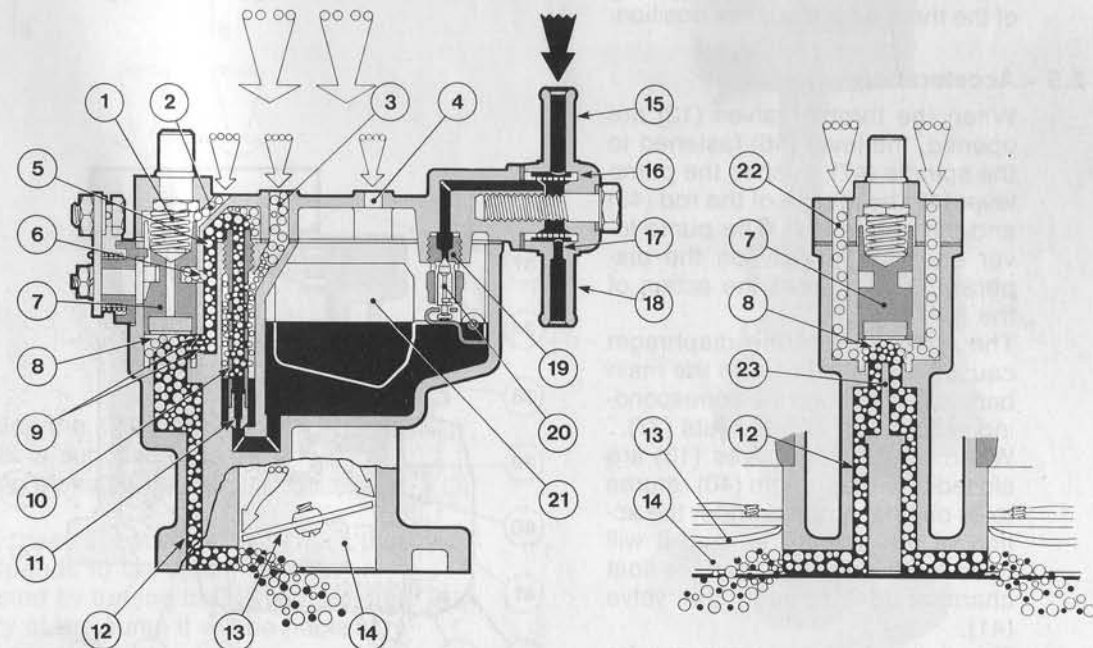
2.2 - Starting

When the starting throttle (7) is completely open, the fuel, metered by the jet (11), passes into the emulsion tube (10) where it is mixed with the air coming from the passage (3) and is then made to pass through passage (5).

Through the two holes (9), the mixture thus formed arrives in chamber (8) where it is further mixed with air coming from passages (22). It is then distributed into the two channels (12) which reach the main barrels (14) downstream from the throttle valves (13).

When the valve is partly open, i.e. when it is desirable to have a leaner mixture, the fuel is further mixed with air coming from the hole (6) which is connected with the valve chamber (1) which, in turn, is connected to the atmosphere through hole (2).

When the starting valve (7) is closed the passage between the barrels and the starting device is also closed. In addition, the separator (23) will close off the two barrels (14).



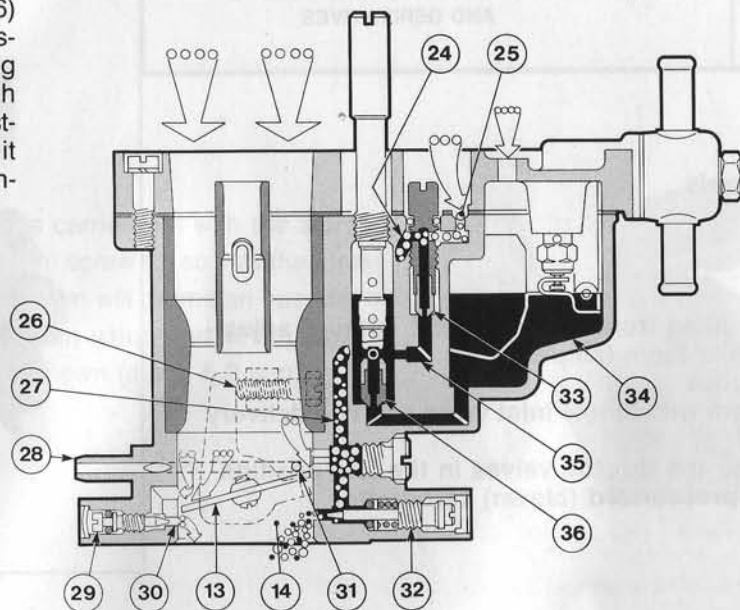
2.3 - Idling

The fuel which arrives from the float chamber (34) by way of the main jets (36) reaches the idling key (33) through passage (35); it is here mixed with air coming from the air corrector jet (25) and, through channels (24) and (27), reaches the adjustment screw (32). Properly metered, it arrives in the main barrels (14) downstream from the throttle valves (13).

With the coupling (50) connected to a vacuum meter it is possible to measure, through channel (51) and the hole (49), the pressure in the barrels (14) with the throttle valve (13) in the idling position and consequently to equalize the air flow by turning the by-pass screw (29) which controls hole (30).

The depression advance take-off is made through the calibrated hole (31) which is connected with the coupling (28).

The screw (26) adjusts the opening of the throttles in the idling position.

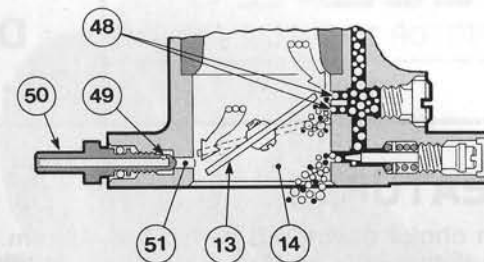
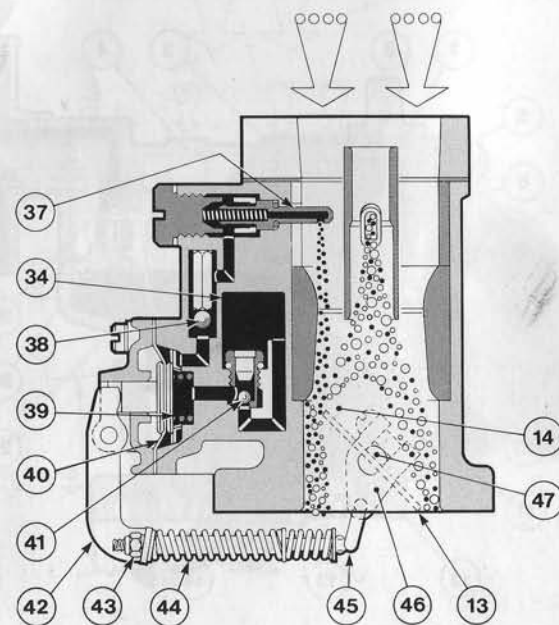


2.5 - Acceleration

When the throttle valves (13) are opened, the lever (46) fastened to the spindle (47), pushes the pump lever (42) by means of the rod (45) and the spring (44). The pump lever operates directly on the diaphragm (40) against the action of the spring (39).

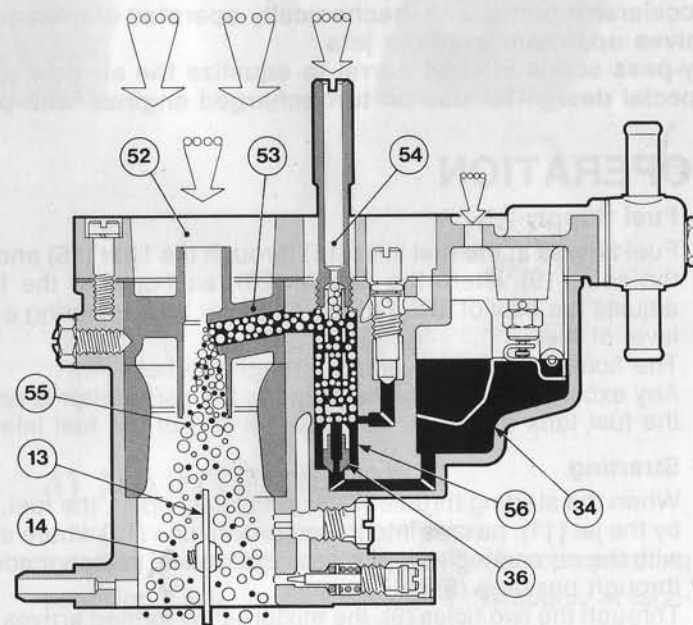
The movement of the diaphragm causes fuel to be sent to the main barrels (14) through the corresponding valves (38) and the jets (37). When the throttle valves (13) are closed, the diaphragm (40) returns to its original position under the action of the spring (39) and it will once again draw fuel from the float chamber (34) through the valve (41).

The delivery of the pump can be adjusted by turning the nut (43).



2.4 - Progression

On first opening the throttle valve (13), that is, in passing from idle to top speed, the mixture will also reach the barrels (14) through the progression holes (48).



2.6 - Full Throttle Running

When the throttle valves (13) are fully open, the fuel arriving from the float chamber (34) and calibrated by the jets (36) enters the wells (56) and is mixed with the air metered by the air corrector jet (54). The mixture thus formed passes through the centering inlet (53) where it is further mixed with the air taken in through the main carburettor inlet, arrives in the Venturis (55) and, subsequently, reaches the engine through the main barrels (14).

3) ADJUSTMENT

3.1 - Idling

Any idling speed adjustment may only be carried out if it is possible to use an appropriate CO meter to measure engine emissions.

Only under these conditions is it possible to break the seals and subsequently to carry out the required adjustments to obtain a correct idling speed. The bypass screws (c) on the carburettor must be completely closed while the mixture adjustment screws must be opened through 5 turns from their completely closed position.

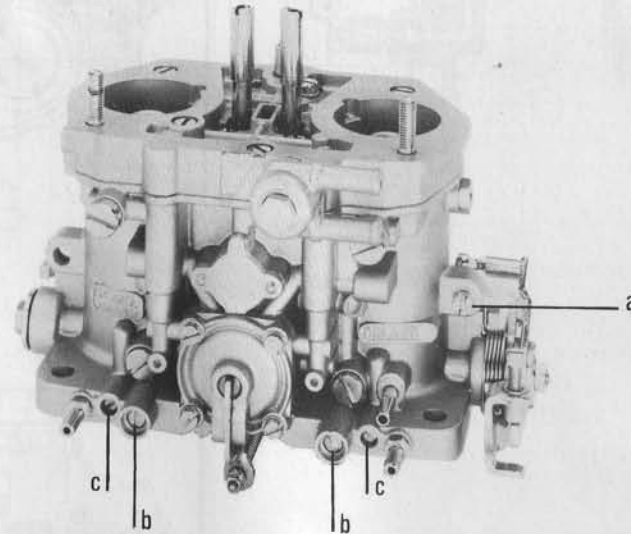
Any adjustment must always be made with a hot engine and the throttle screws (a) turned until the required rpm's are reached.

To equalize the air flow in the two barrels, please consult the instructions "Carburettor Synchronisation and Idle Adjustment".

Now proceed to obtain an engine operation which is as smooth as possible by turning the mixture screws (b), while still keeping within the prescribed values for engine emissions.

Bear in mind that the percentage of CO is increased when the screw is turned up whereas it is decreased when it is turned down.

If a CO meter is not available it is only possible to operate on the throttle adjustment screw (a) so as to obtain the best idling speed.



3.2 - Accelerator Pump

The adjustment of the accelerator pump must be carried out by placing the carburettor on the bracket with its gasket in place, connecting it up to the fuel tank so that fuel is supplied properly.

Put the two 10 cc graduated measuring tubes under the support drain pipes so that all the fuel that is pumped is collected.

Open and close the throttle completely 20 times, with a few seconds' break in between, and check that the volume of fuel collected in the two tubes is identical and corresponds to the specifications.

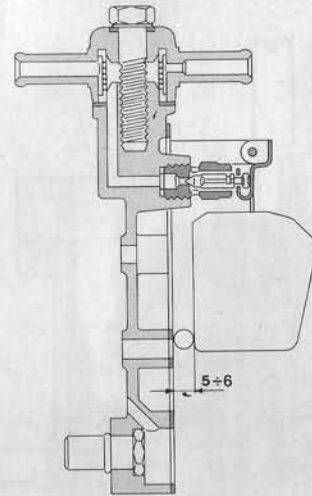
Should this not be the case, the delivery of the pump should be adjusted by turning the adjustment nut on the pump control rod, bearing in mind that to increase the delivery of the pump it will be necessary to turn the nut down, while to decrease it, the nut will have to be turned up.

At this point repeat the checking operation until the exact adjustment is reached.

3.3 - Float level

Check that the weight of the float corresponds to specifications as shown on its body. Check also that it is not damaged and that it rotates freely on its pins. Hold the lid in the vertical position so that the float arm is in light contact with the needle.

In this position check that the two half-floats are at the specified height in relation to the float chamber lid with the gasket fitted in the normal position.

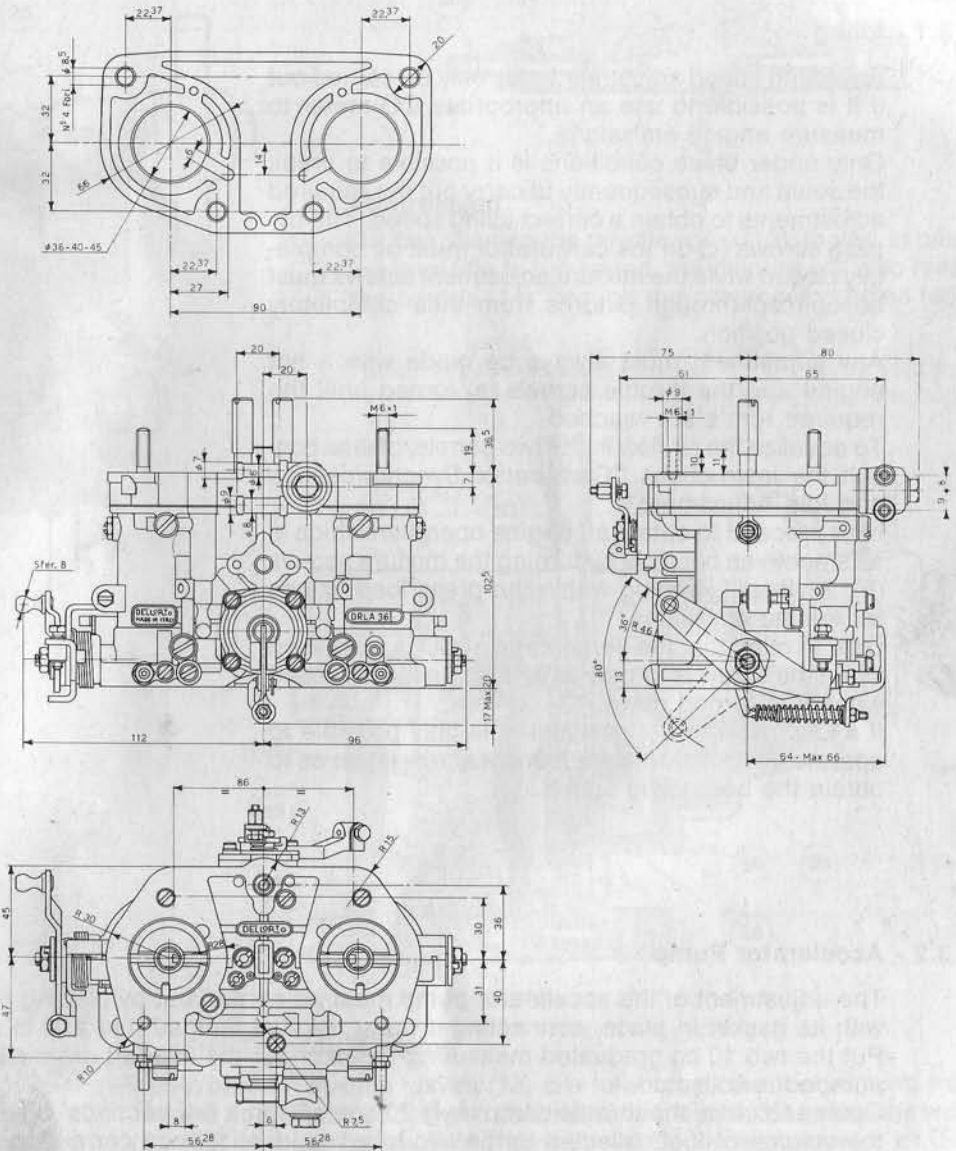


4) MAINTENANCE

To keep the carburettor in its best operating condition it is necessary, particularly when any defect is found, to clean it very thoroughly. It should be completely dismantled, its parts carefully washed in petrol and blown strongly, special care should be taken with the jets, the emulsion tubes, the air corrector jets, the valve which closes off petrol, the petrol filter, the seats of the pump valves and all the passages in the carburettor body.

Carefully examine all parts before assembling them again, check their proper operation and, should any defect be found, replace them with new original equipment. When assembling the carburettor it is advisable to replace all gaskets.

DIMENSIONS





DELL'ORTO CARBURATORI



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