CONTENTS

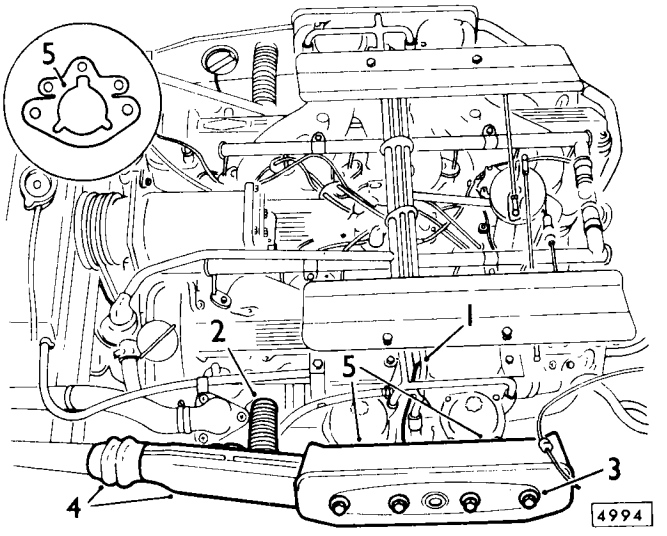
CAUTION: Cars fitted with exhaust emission control. Unless otherwise stated, an exhaust emission check must be carried out upon completing any of the operations contained within this group.

NOTE: To improve engine accessibility it is advantageous to place both front wheels on blocks of wood and disconnect bonnet stay; this allows bonnet to hinge further forward. The blocks should be approximately 30.5 cm (12 in.) long, 25.4 cm (10 in.) wide and 15 cm (6 in.) high. Ensure bonnet is adequately supported after disconnecting stay.

AIR CLEANER

Remove and refit — 19.10.01

Left or right hand – Cars not fitted with exhaust emission control.
Left hand only – Cars fitted with exhaust emission control.



Removing

1. Disconnect vacuum pipe from inlet manifold.

   CAUTION: Vacuum pipe runs to rear inlet manifold from left hand air cleaner and to front inlet manifold from right hand air cleaner.

2. Disconnect flexible pipe from air cleaner.
3. Remove bolts, plain and rubber washers securing air cleaner to carburetters.
4. Lift off air cleaner assembly and withdraw from flexible rubber pipe.
5. Remove and discard gaskets.

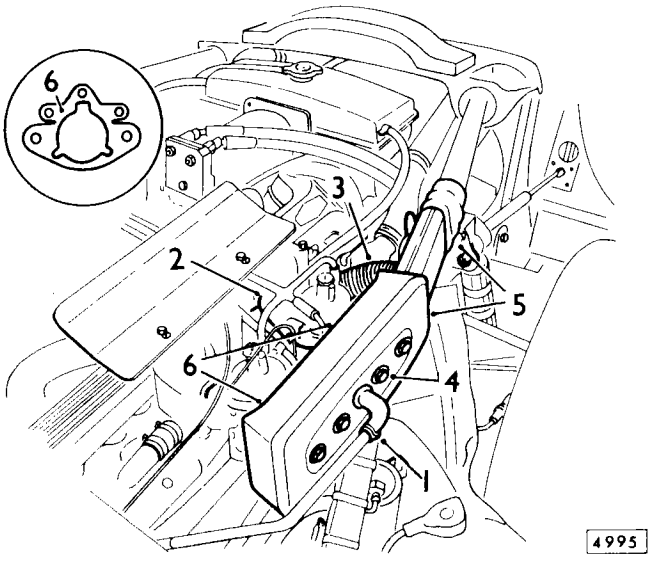
Refitting

Reverse operations 1 to 5; use new gaskets between air cleaner and carburetters.

AIR CLEANER

Remove and refit — 19.10.01/1

Right hand only – Cars fitted with exhaust emission control.



Removing

1. Remove clip securing air pipe to rubber elbow; withdraw pipe.
2. Disconnect vacuum pipe from front inlet manifold.
3. Disconnect flexible pipe from air cleaner.
4. Remove bolts, plain and rubber washers securing air cleaner to carburetters.
5. Lift off air cleaner assembly and withdraw from flexible rubber pipe.
6. Remove and discard gaskets.

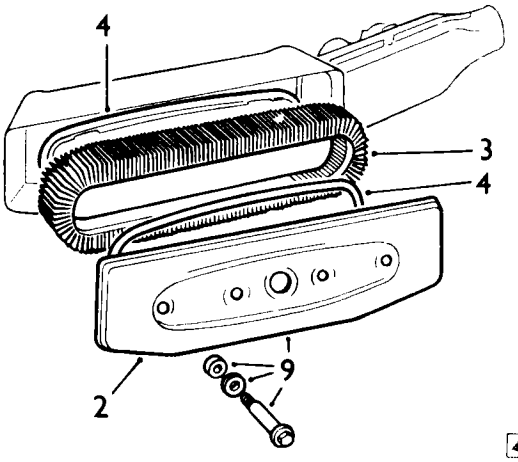
Refitting

Reverse operations 1 to 6; use new gaskets between air cleaner and carburetters; also new clip on air pipe elbow.

AIR CLEANER

Renew element **19.10.08**

1. Remove air cleaner – 19.10.01 or 19.10.01/1.
2. Lift cover off air cleaner.
3. Remove filter element and discard.
4. Remove sealing rings and discard.
5. Remove all traces of adhesive from cover and backplate.
6. Smear sealing rings with a petroleum based adhesive; fit rings to cover and backplate.
7. Position new filter element in air cleaner.
8. Refit cover, ensure that it is correctly seated.
9. Refit air cleaner.



RAM TUBE

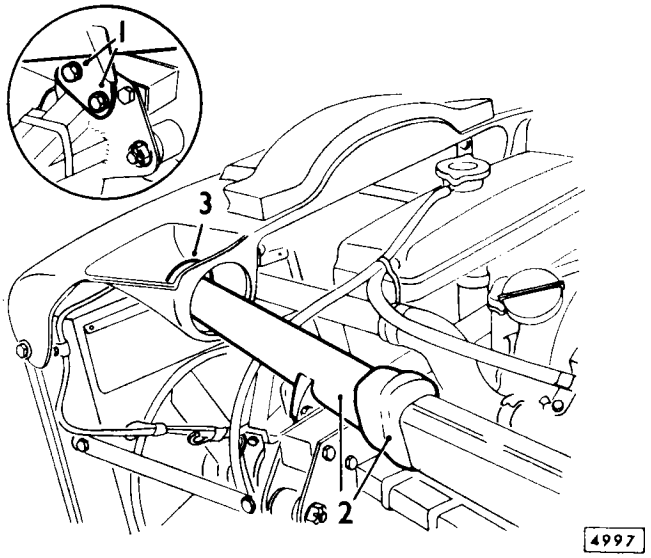
Remove and refit **19.10.21**

Removing

1. Remove bolts and washers securing ram tube to mounting bracket.
2. Disconnect ram tube from flexible pipe.
3. Withdraw ram tube from radiator cowl.

Refitting

Reverse operations 1 to 3.



CARBURETTERS

Tune and adjust **Car set only 19.15.02**

CAUTION: It is impossible to tune carburetters successfully unless engine timing, spark plug gaps and tappet clearances are correctly set.

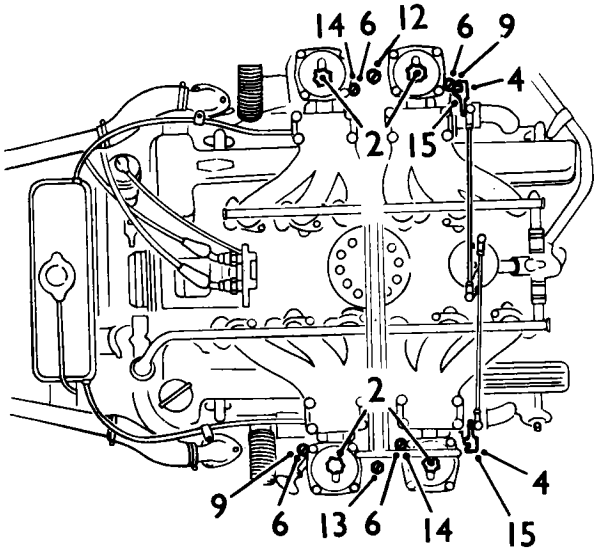
NOTE: Terms left and right hand refer to left and right hand side of engine.

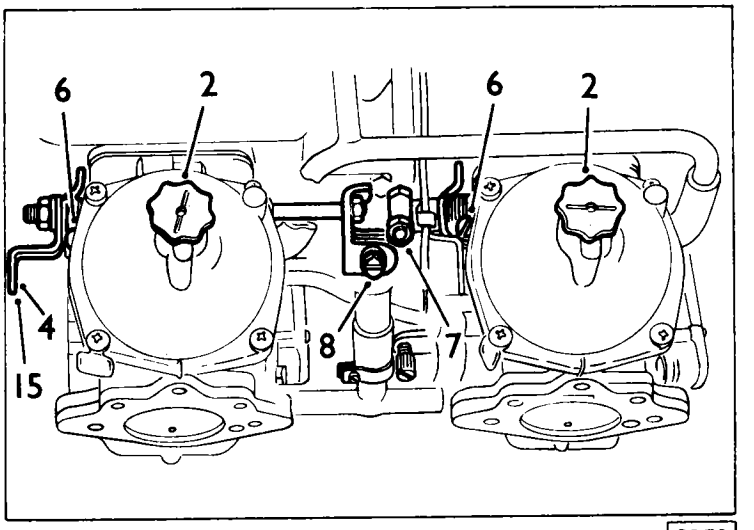
Slow Idle Setting

1. Remove air cleaners – 19.10.01 and 19.10.01/1.
2. Top up carburetter piston dampers with clean engine oil.
3. Run engine until it reaches normal operating temperature.
4. Disconnect throttle linkage.
5. Ensure that choke control is fully closed.
6. Slacken off idle trim screw on each carburetter until it no longer contacts throttle lever.
7. Slacken throttle spindle clamping bolts; ensure throttles are fully closed; tighten clamping bolts.
8. Slacken throttle balancing screws until they no longer contact connecting links.
9. Screw in idle trim screw on rear right hand and front left hand carburetters until contact is made with throttle lever.
10. Start engine and adjust idle trim screw on rear right hand and front left hand carburetters until idling speed is 650 to 750 rev/min.
11. Compare intake hiss on rear right hand and front left hand carburetters and adjust idle trim screws until intake hiss on both carburetters is identical.
12. Screw in right hand throttle balancing screw until intake hiss on front carburetter is identical with that of rear.
13. Screw in left hand throttle balancing screw until intake hiss on rear carburetter is identical with that of front.
14. Screw in idle trim screw on front right hand and rear left hand carburetters until contact is **JUST** made with throttle levers.
15. Reconnect throttle linkage.

    CAUTION: It is essential to ensure that linkage can be reconnected without disturbing throttle settings; if necessary, linkage must be adjusted see operation 19.20.05.

16. Refit air cleaners.





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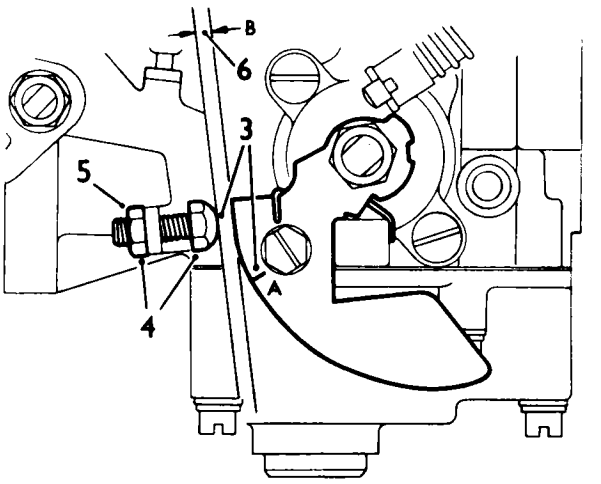
Fast Idle Setting

1. Remove air cleaners – 19.10.01 and 19.10.01/1.
2. Run engine until it reaches normal operating temperature.
3. Operate choke control until mark 'A' on front right hand carburetter choke cam is opposite centre of dome headed screw.
4. Start engine, slacken locknut and adjust screw until idling speed is 1600 to 1700 rev/min.
5. Tighten locknut.
6. Push choke control closed and measure gap 'B' between screw head and cam.
7. Check that gap between screw and cam on rear left hand carburetter is the same as that for right hand and adjust if necessary.
8. Refit air cleaners.



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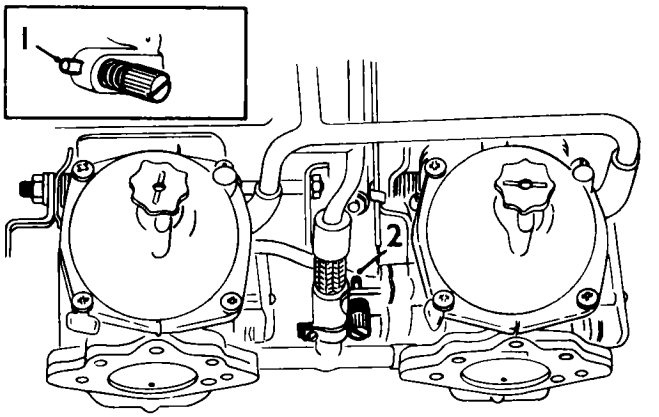
NOTE: A control on the front right hand and rear left hand carburetters enables the choke to be varied for summer and winter operation.

To Adjust for Summer or Winter Operation

1. Note position of pin; if lying in horizontal slot in casting, choke is set for winter setting.
2. Depress plunger and turn through 90° for summer operation.
3. Repeat operations 1 and 2 on other carburetter.



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CARBURETTERS

Remove and refit **Left hand pair 19.15.12**

Removing

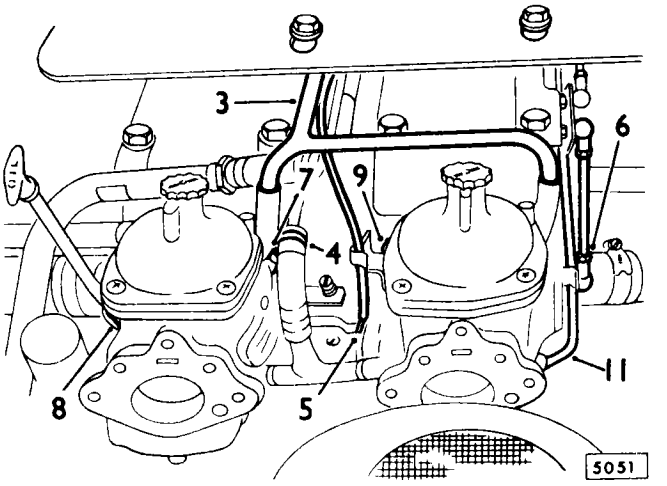
1. Disconnect battery earth lead – 86.15.19
2. Remove air cleaner – 19.10.01.
3. Disconnect balance pipes from carburetters.
4. Remove clip securing fuel inlet pipe to tee-piece.
5. Disconnect choke cable from rear carburetter.
6. Disconnect throttle linkage.
7. Remove nuts and spring washers securing front carburetter to induction housing.
8. Disengage dip stick tube clip from stud.

   CAUTION: Do not slacken nut and bolt securing clip to tube; do not attempt to alter position of tube. False oil level readings will be obtained if the aforementioned points are not observed.

9. Remove nuts and spring washers securing rear carburetter to induction housing.
10. Slide carburetters off mounting studs.
11. Disconnect vacuum pipe from rear carburetter mounting flange.
12. Remove and discard gaskets and insulators.

Refitting

13. Reverse operations 1 to 12; use new gaskets, insulators and pipe clip.
14. Check carburetter tuning – 19.15.02.



CARBURETTERS

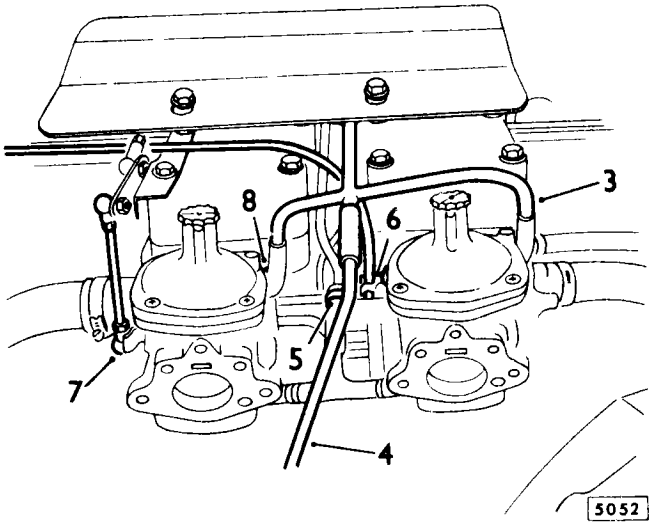
Remove and refit **Right hand pair 19.15.13**

Removing

1. Disconnect battery earth lead – 86.15.19.
2. Remove air cleaner – 19.10.01 or 19.10.01/1.
3. Disconnect balance pipes from carburetters.
4. Disconnect carbon canister pipe from breather pipe – Cars fitted with exhaust emission control only.
5. Remove clip securing fuel inlet pipe to tee-piece.
6. Disconnect choke cable from front carburetter.
7. Disconnect throttle linkage.
8. Remove nuts and spring washers securing carburetters to induction housing.
9. Slide carburetters off mounting studs.
10. Remove and discard gaskets and insulators.

Refitting

11. Reverse operations 1 to 10; use new gaskets, insulators and pipe clip.
12. Check carburetter tuning – 19.15.02.



CARBURETTERS

Overhaul and adjust **Car set only 19.15.18**

To overhaul carburetters, proceed as detailed under operation 17.20.07.
To tune and adjust carburetters, proceed as detailed under operation 19.15.02.

CARBURETTER BALANCE PIPE

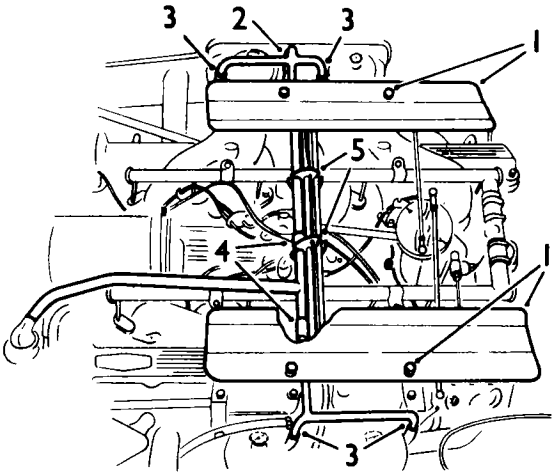
Remove and refit **19.15.22**

Removing

1. Remove bolts and washers securing heat shields to inlet manifolds; lift off heat shields.
2. Disconnect carbon canister pipe from balance pipe – Cars fitted with exhaust emission control only.
3. Disconnect balance pipes from carburetters.
4. Disconnect balance pipes from crankcase breather pipe.
5. Release clips retaining pipes; withdraw pipes.
6. Examine rubber connecting hoses for cracks, splits etc., renew any showing signs of damage.

Refitting

Reverse operations 1 to 5



THROTTLE PEDAL

Remove and refit **19.20.01**

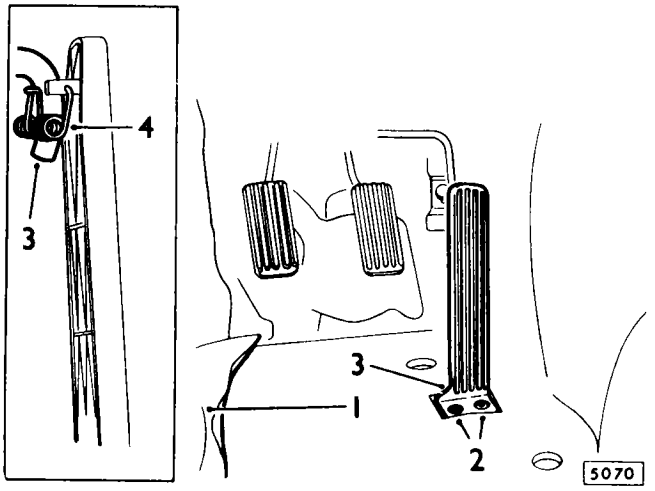
CAUTION: It will not be necessary to carry out an exhaust emission check after completing this operation.

Removing

1. Fold carpet away from base of accelerator pedal.
2. Remove nuts and washers securing base of pedal to mounting plate.
3. Pull base of pedal away from mounting plate; this will disengage rod from spring.
4. Examine spring for wear and renew if necessary.

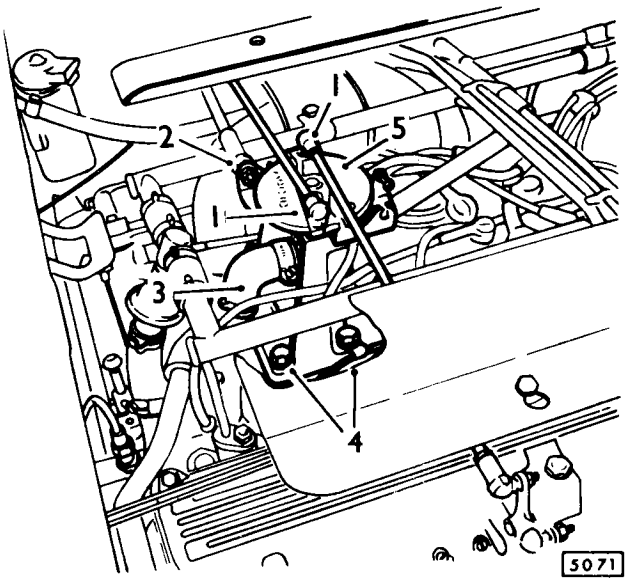
Refitting

5. Position spring on pedal.
6. Engage rod with spring.
7. Push base of pedal towards bulkhead and locate on mounting studs.
8. Reverse operations 1 and 2.



THROTTLE PEDESTAL

Remove and refit 19.20.02



Removing

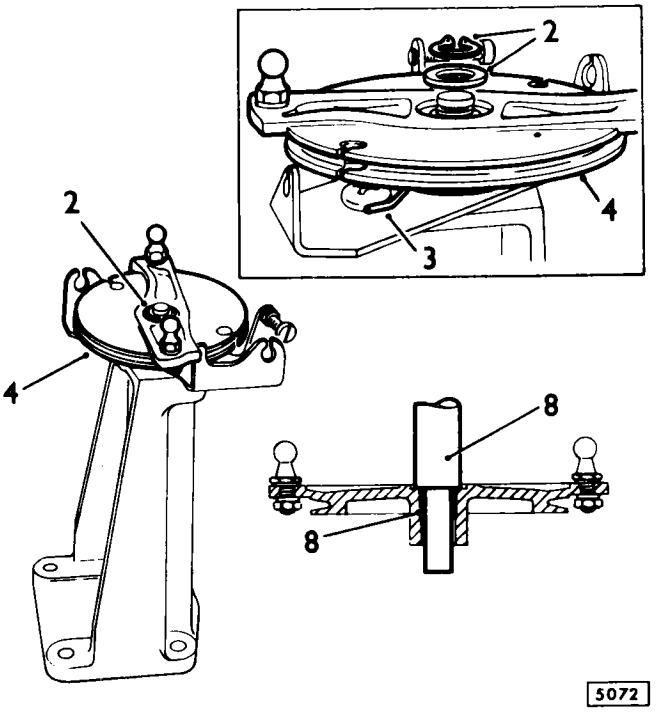
1. Disconnect throttle linkage.
2. Slacken locknut and disconnect throttle cable.
3. Remove gulp valve – 17.25.30 – Cars fitted with exhaust emission control only.
4. Note position of vacuum pipe clip and remove bolts and serrated washers securing throttle pedestal to jackshaft cover.
5. Lift off pedestal; remove and discard gasket.
6. Plug hole in jackshaft cover to prevent ingress of dirt etc.

Refitting

7. Reverse operations 1 to 6; use new gasket between pedestal and jackshaft cover.
8. Check throttle linkage adjustment – 19.20.05.
9. Check kickdown switch adjustment – 44.30.12 – Cars fitted with automatic transmission only.

THROTTLE PEDESTAL

Overhaul 19.20.03



Dismantling

1. Remove throttle pedestal – 19.20.02.
2. Remove circlip and plain washer.
3. Note position of return spring and disengage free end from screw head.
4. Lift off platform together with spring.

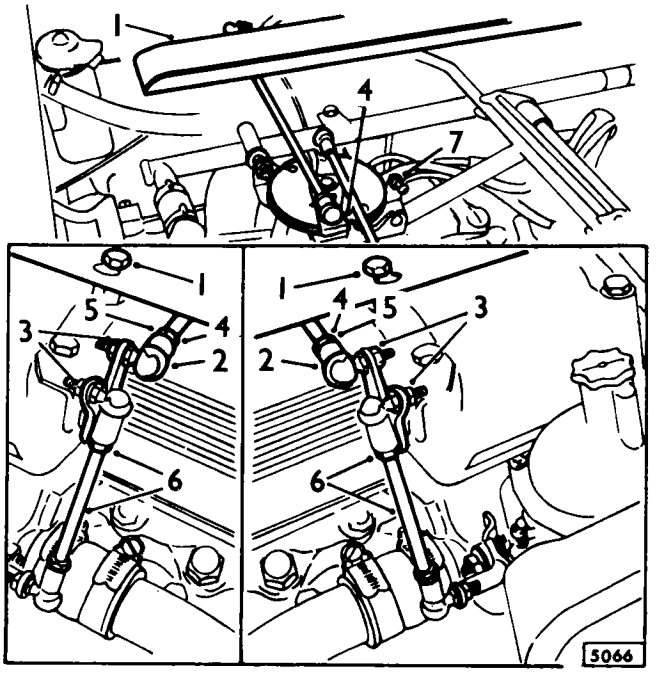
Reassembling

5. Check spindle for wear, or signs of ovality. Should spindle be worn, complete plate and spindle assembly must be replaced.
6. Check bush in platform for wear or signs of ovality. Should bush be worn, carry out operations 7 and 8.
7. Using a suitable drift; drive bush out of platform.
8. Press new bush into platform until end of bush is level with recessed face.
9. Fit spring to platform.
10. Position platform and spring on spindle.
11. Relocate free end of spring behind screw head.
12. Fit plain washer followed by circlip; ensure circlip is correctly located in groove.
13. Refit throttle pedestal.

THROTTLE LINKAGE

Check and adjust **19.20.05**

1. Slacken bolts securing heat shields to inlet manifolds; lift off shields.
2. Disconnect throttle linkage from throttle levers.
3. Check that angle across top of left hand bellcrank equals that of right hand bellcrank; if not, proceed as follows.
4. Slacken locknuts and keeping platform in "throttle closed" position, turn rod clockwise to increase angle, anti-clockwise to decrease.
5. When correct angle is obtained, tighten locknuts.
6. Slacken locknuts and adjust length of vertical links until they can be connected to throttle levers without throttle being disturbed; tighten locknuts.
7. Slacken locknut and unscrew throttle stop.
8. Open throttle fully and screw throttle stop in until contact is made with platform; tighten locknut.
9. Check kickdown switch adjustment – 44.30.12. Cars fitted with automatic transmission only.



CHOKE CABLE ASSEMBLY

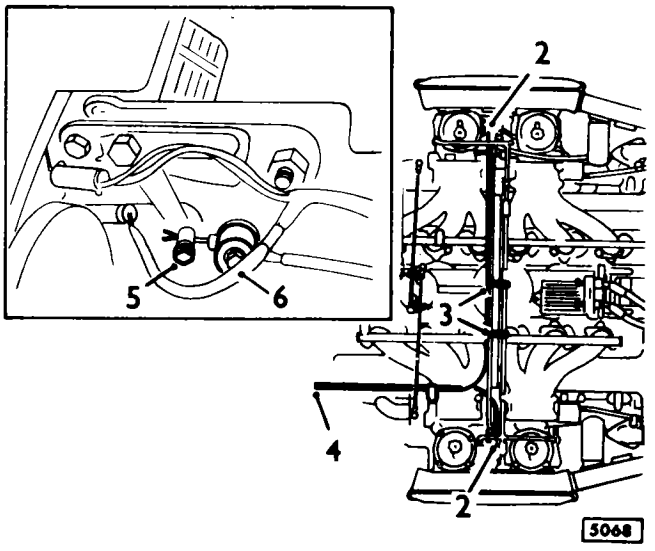
Remove and refit **19.20.13**

Removing

1. Remove facia – 76.46.01.
2. Disconnect choke cable from front right hand and rear left hand carburetters.
3. Withdraw left hand cable assembly from nylon clips.
4. Withdraw both cable assemblies from grommet.
5. Slacken pinch bolt securing inner cables to operating lever.
6. Slacken pinch bolt retaining outer cable ferrule in pivot block.
7. Withdraw cable assemblies rearward through bulkhead.

Refitting

8. Examine grommets for damage and renew if necessary.
9. Reverse operations 1 to 7.
10. Check choke control for smoothness of operation, re-route cable assemblies if control feels stiff.
11. Check fast idle setting see operation – 19.15.02.



CHOKE CABLE – INNER

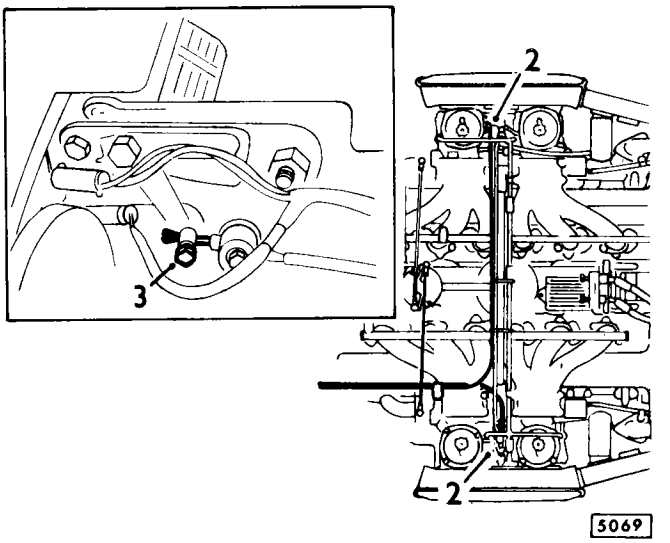
Remove and refit 19.20.14

Removing

1. Remove facia crash roll – 76.46.04.
2. Disconnect choke cable from front right hand and rear left hand carburetters.
3. Slacken pinch bolt securing inner cables to operating lever; withdraw cables.

Refitting

4. Reverse operations 1 to 3.
5. Check fast idle setting see operation – 19.15.02.



FUEL MAIN FILTER

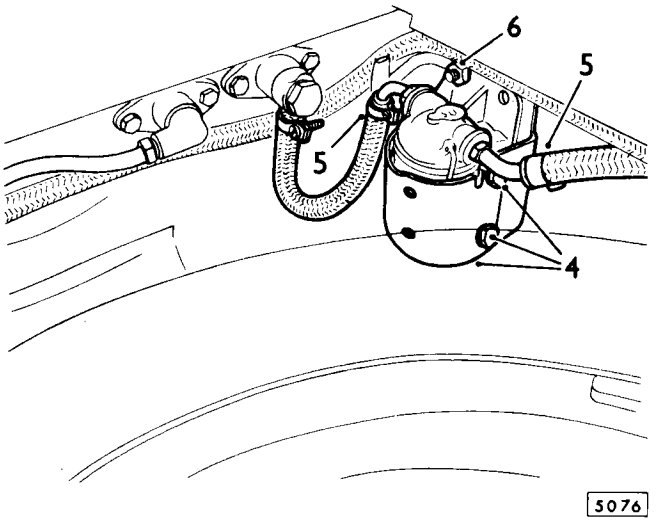
Remove and refit 19.25.02

Removing

1. Disconnect battery earth lead – 86.15.19.
2. Lift out luggage compartment/boot floor.
3. Remove spare wheel.
4. Remove bolts and washers securing filter shield to mounting bracket; lift off shield.
5. Slacken clips and disconnect fuel inlet and outlet pipes; plug pipes to prevent petrol loss and ingress of dirt.
6. Remove nuts and washers securing filter to mounting studs; withdraw filter.

Refitting

7. Reverse operations 1 to 6.
8. Run engine and check pipe connections for leaks.



FUEL MAIN FILTER ELEMENT

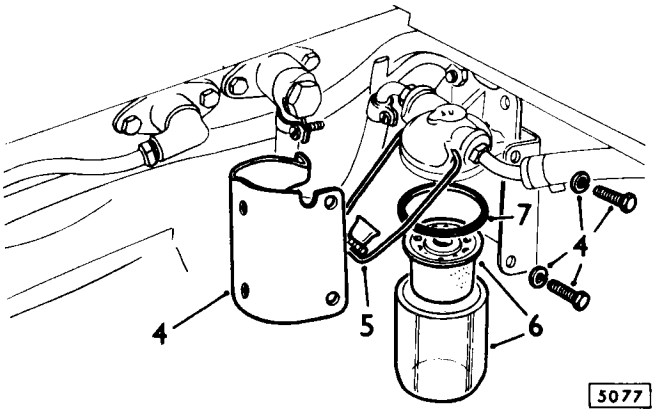
Remove and refit 19.25.07

Removing

1. Disconnect battery earth lead – 86.15.19.
   Lift out luggage compartment/boot floor.
3. Remove spare wheel.
4. Remove bolts and washers securing filter shield to mounting bracket, lift off shield.
5. Unscrew knurled ring, swing securing strap away from filter bowl.
6. Remove filter bowl followed by element.

Refitting

7. Examine filter bowl sealing ring and renew if damaged.
8. Reverse operations 1 to 6; do not overtighten knurled ring.
9. Run engine and check for fuel leaks around filter bowl.



NON-RETURN VALVE

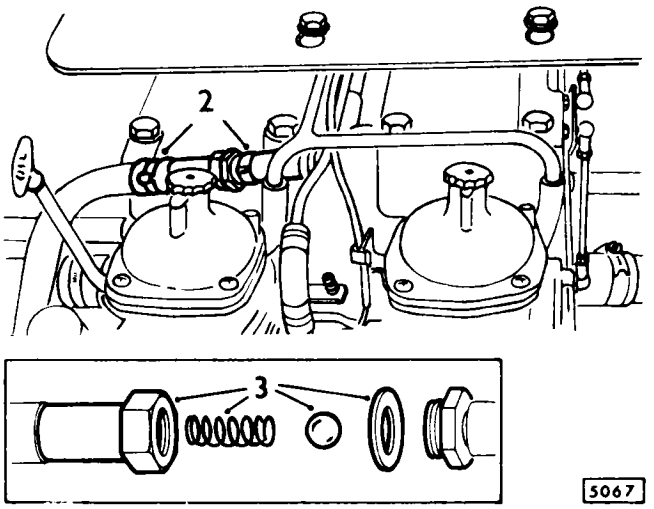
Remove and refit (includes clean) **19.40.28**

Removing

1. Disconnect battery earth lead – 86.15.19.
2. Remove clips and withdraw valve from petrol pipes.
3. Separate both halves of valve, withdraw ball and spring.
4. Wash all parts thoroughly in petrol and dry with compressed air.
5. Examine spring and ball for signs of damage or wear and renew if necessary.

Refitting

7. Reverse operations 1 to 3.
8. Run engine and test for leaks.



FUEL LIFT PUMPS

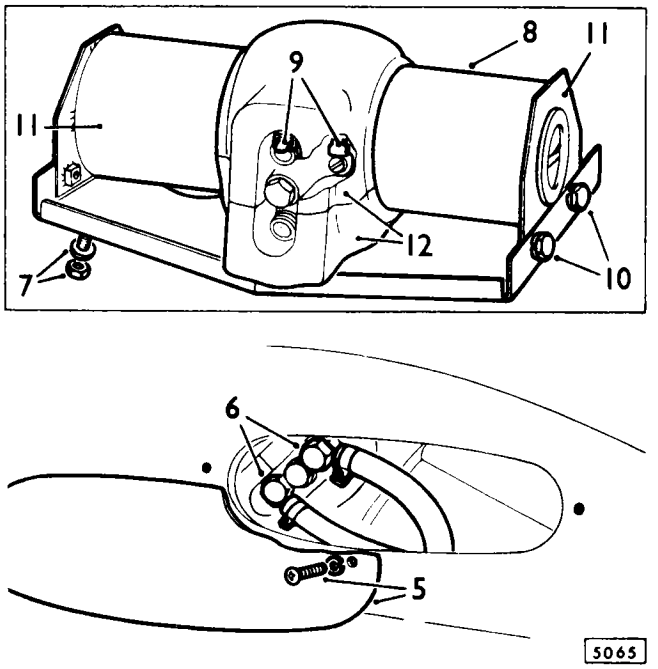
Remove and refit **19.45.09.**

Removing

1. Disconnect battery earth lead – 86.15.19.
2. Remove right hand rear road wheel.
3. Remove luggage compartment/boot floor.
4. Remove spare wheel.
5. Remove screws securing trimmed access panel to trim; withdraw panel.
6. Slacken clips and disconnect inlet and outlet pipes; plug pipes to prevent ingress of dirt.
7. Remove three nuts and washers (accessible at rear of wheel arch).
8. Lower pumps together with mounting brackets into well of boot.
9. Disconnect feed and earth wires from pumps; lift pumps out of boot.
10. Remove bolts and washers securing pump cover to mounting bracket.
11. Pull pump covers off foam surround.
12. Separate both halves of surround, lift out pumps.

Refitting

13. Reverse operations 6 to 12.
14. Run engine and check for fuel leaks.
15. Reverse operations 1 to 5.



FUEL LIFT PUMP

Overhaul **pair only 19.45.16**

Dismantling

1. Remove fuel pumps – 19.45.09.
2. Note relative positions of terminals, disconnect harness from pumps.
3. Mark relative positions of coil housing and pump body.
4. Remove screws securing coil housing to pump body; lift off housing, remove and discard gasket.
5. Remove tape and sealing ring from cover.
6. Remove polythene sleeve from terminal stud.
7. Remove nut, terminal tag and lockwasher.
8. Lift off cover.
9. Unscrew diaphragm assembly and withdraw from coil housing.

CAUTION: Diaphragm and spindle are serviced as a complete assembly and no attempt should be made to separate them.

10. Remove armature spring and rubber impact washer from spindle.
11. Remove nylon centralising guide.
12. Remove screw securing terminals and contact blade to pedestal; lift off contact blade.
13. Remove screw securing condenser terminal, earth terminal and pedestal to coil housing.
14. Remove remaining pedestal securing screw and lockwasher.
15. Move pedestal away from coil housing.

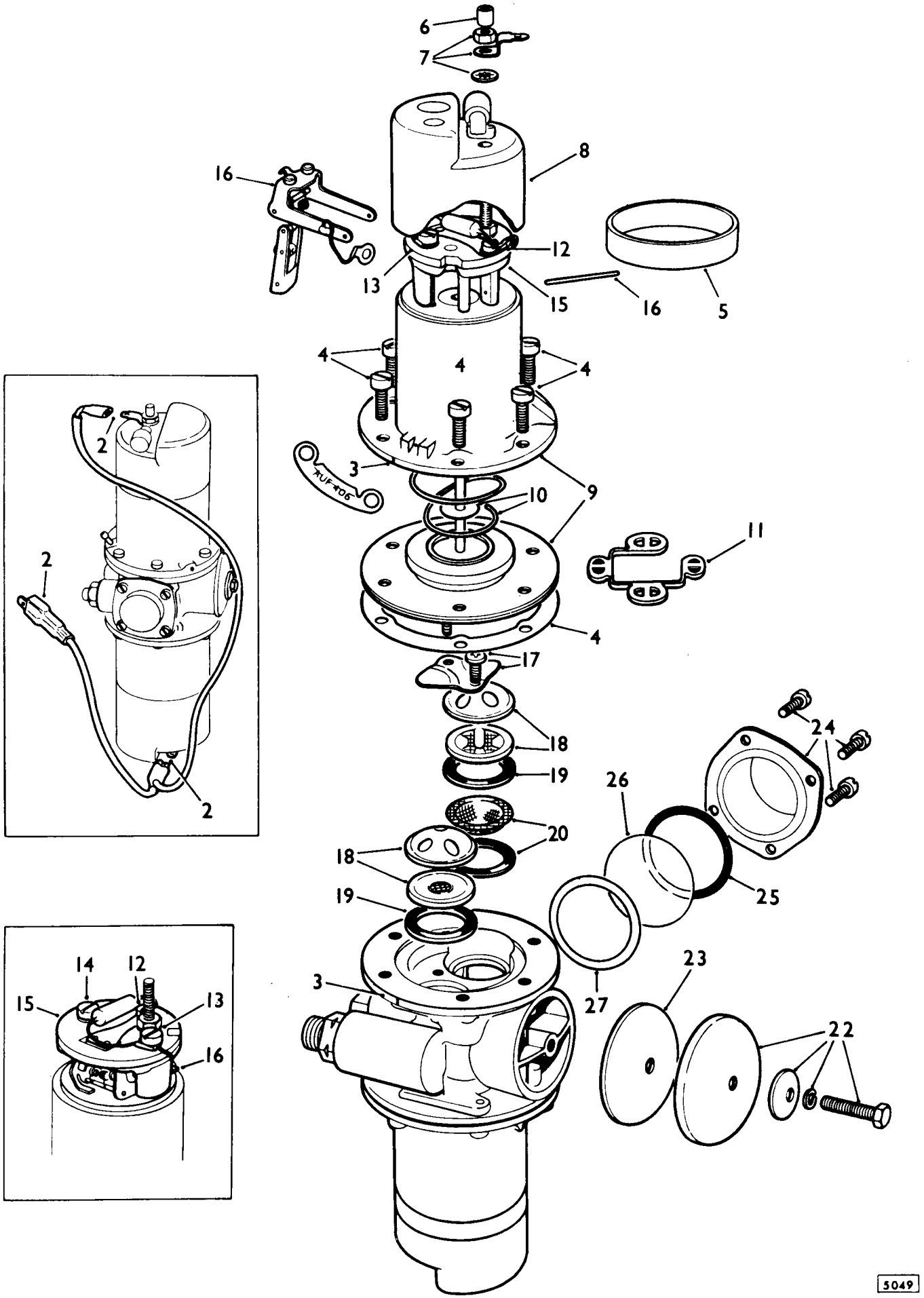
CAUTION: Unless pedestal is to be renewed, it is not advisable to remove terminal from terminal stud.

16. Withdraw rocker assembly pivot pin; remove rocker assembly.
17. Remove screws securing valve clamping plate to body; lift out clamping plate.
18. Note which way valves face, remove valve caps and withdraw valves.
19. Remove and discard neoprene sealing rings.
20. Remove filter gauze from inlet valve seat, remove and discard neoprene sealing ring.
21. Repeat operations 3 to 20 on remaining pump.
22. Remove bolt, spring and plain washers securing air bottle cover to body.
23. Prise cork seal out of cover; discard seal.
24. Remove screws securing flow smoothing valve cover to body; lift off cover.
25. Remove and discard 'O' ring.
26. Remove diaphragm.
27. Remove and discard sealing washer.

Inspecting components

CAUTION: If gum formation has occurred in fuel, pump components which have been in contact with this fuel will have become coated with a varnish like substance. Metal components which have become contaminated can be cleaned by boiling in a 20 per cent solution of caustic soda, dipped in a strong nitric acid solution and finally washed in boiling water. Light alloy components must be cleaned by soaking in denatured alcohol (methylated spirits).

28. Clean pump body and inspect for cracks and damage.
29. Examine valves for damage, check operation by blowing and sucking with the mouth.
30. Check that tongue on each valve cage is not distorted and allows a valve lift of approximately 1.6 mm (0.062 in.). Tongues may be bent slightly to achieve this dimension.
31. Examine flow smoothing valve diaphragm for damage; renew if necessary.
32. Examine valve recesses in body for pitting, corrosion or damage; if excessive, body must be renewed.
33. Examine contact breaker points for signs of burning or pitting, if this is evident, rocker assembly and contact blade must be renewed.
34. Examine pedestal for cracks or damage, particular attention should be paid to the narrow ridge on which contact blade rests. Renew pedestal if damaged.
35. Check that ball in non-return vent is free to move.
36. Examine diaphragm for splits or distortion. If damaged, diaphragm and spindle must be renewed as a complete assembly.
37. Check that nylon centralising guide is not split or distorted, renew if damaged.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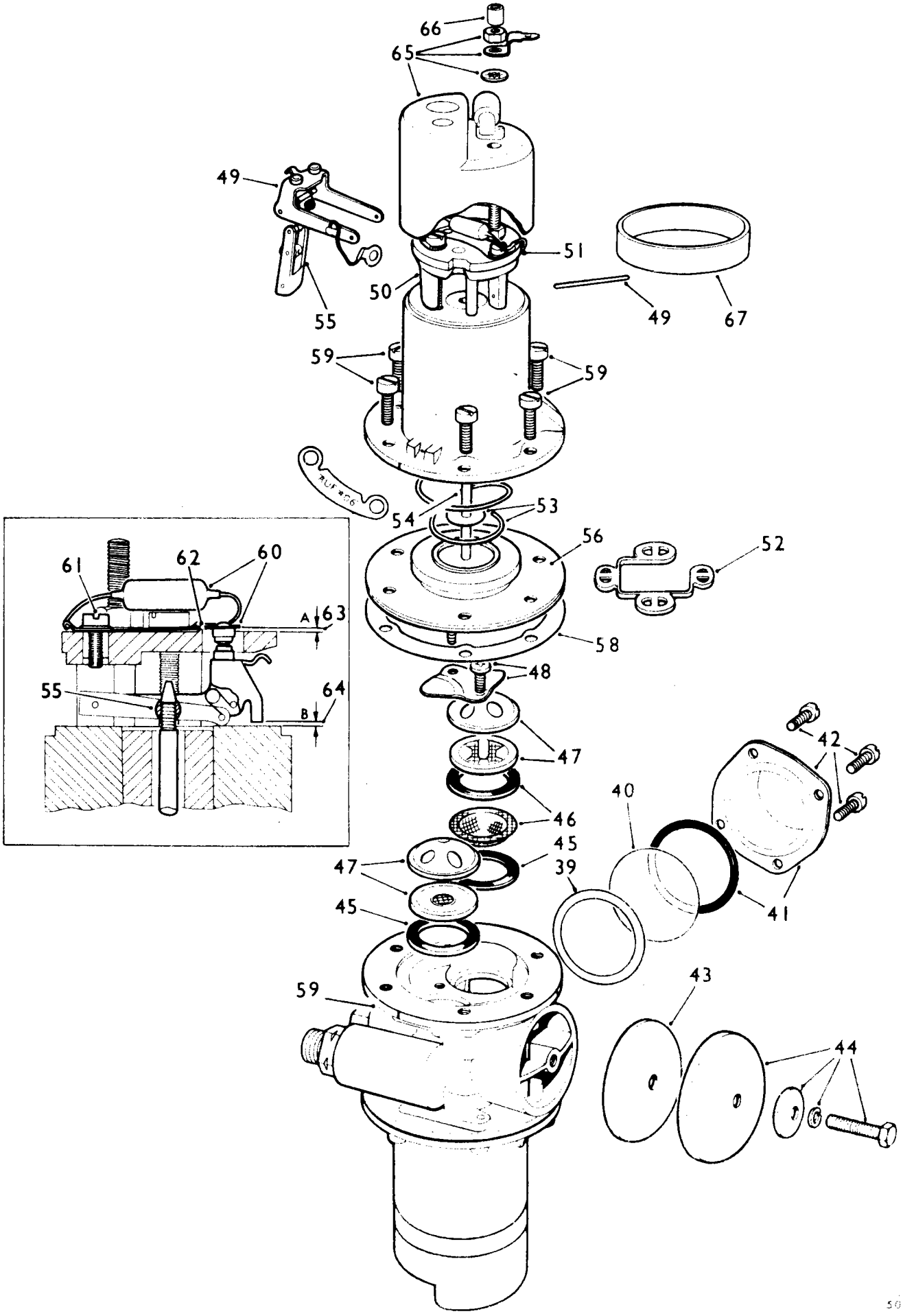
Reassembling

38. Ensure all components are thoroughly clean.
39. Fit new sealing washer in body.
40. Position diaphragm in body; concave side must face inwards.
41. Fit new 'O' ring followed by flow smoothing valve cover.
42. Tighten securing screws by diagonal selection to avoid distorting cover.
43. Position new cork seal in air bottle cover.
44. Fit air bottle cover, do not overtighten securing bolt.
45. Fit new neoprene sealing rings in valve recesses.
46. Fit filter gauze in inlet valve recess.
47. Fit inlet and outlet valves followed by valve caps.
48. Fit valve clamp plate; do not overtighten securing screws.
49. Position rocker assembly in pedestal, insert pivot pin.
50. Position pedestal on coil housing, fit pedestal retaining screw and lockwasher; do not tighten screw at this stage.
51. Position condenser and earth terminals on remaining pedestal retaining screw; tighten both retaining screws.
52. Fit nylon centralising guide to diaphragm assembly.
53. Fit rubber impact washer followed by spring.
54. Insert spindle in coil housing.
55. Screw threaded end of spindle into rocker assembly trunnion.
56. Screw in diaphragm until rocker no longer "throws over".
57. Unscrew diaphragm until rocker just "throws over", continue unscrewing until holes are in alignment then unscrew a further two thirds of a turn (four holes).
58. Position new gasket on body.

    CAUTION: Gasket must be fitted dry; do not use jointing compound or grease.

59. Fit coil housing to body ensuring reference marks made during dismantling are in alignment. Tighten securing screws by diagonal selection to avoid distorting flange.
60. Fit contact blade, condenser and coil leads to screw; do not fully tighten screws at this stage.
61. Manoeuvre contact blade until contact points on blade and rocker assembly are in alignment; tighten securing screw.
62. Check that with points in open position, contact blade rests on narrow ridge on pedestal; contact blade may be bent slightly to achieve this.
63. Hold points in closed position and check that gap 'A' = .9 mm (.035 in.). If necessary, bend stop finger on rocker assembly until correct dimension is obtained.
64. With rocker assembly stop finger resting on coil housing check that gap 'B' = 1.8 mm. (.070 in.). If necessary bend stop finger until correct dimension is obtained.
65. Fit end cover, lockwashers, terminal tag and nut.
66. Fit polythene sleeve to stud.
67. Fit sealing ring and tape.
68. Carry out operations 45 to 67 on remaining pump.
69. Reverse operations 1 and 2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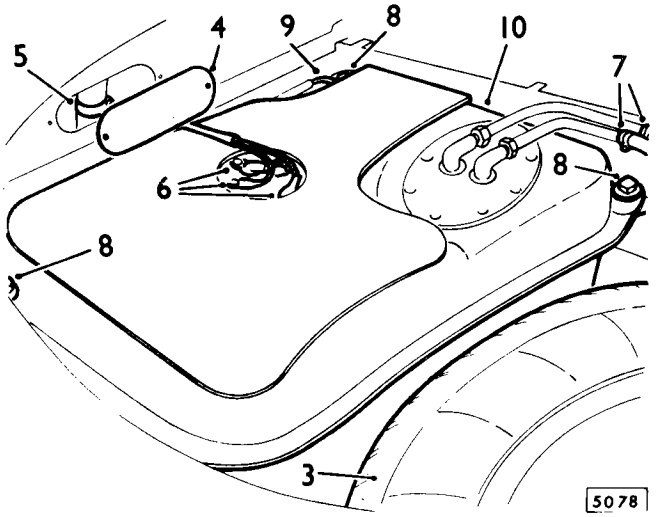
FUEL TANK

Remove and refit **19.55.01**



Removing

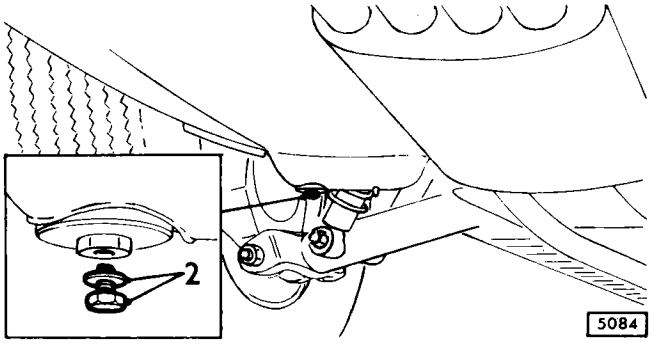
1. Drain fuel tank – 19.55.02.
2. Remove luggage compartment/boot floor.
3. Remove spare wheel.
4. Remove screws securing trimmed access panel to trim.
5. Slacken off clip securing hose to filler neck.
6. Note relative positions of harness terminals and disconnect from tank sender unit.
7. Slacken clips and disconnect hoses from outlet and return pipes.
8. Remove bolts and washers securing fuel tank to mountings.
9. Slide fuel tank towards centre of boot well and disconnect breather pipes.
10. Lift fuel tank out of boot well.

Refitting

11. Reverse operations 1 to 10.
12. Run engine and check pipe connections for leaks.

FUEL TANK

Drain **19.55.02**



Draining

1. Disconnect battery earth lead – 86.15.19.
2. Remove drain plug and drain petrol into suitable container.

Refitting

3. Refit drain plug; do not overtighten.
4. Open fuel filler flap; remove filler cap.
5. Refill tank, refit cap; close filler flap.
6. Reconnect battery.
7. Check for leaks from drain plug.