

#### IV. Compound Cross-Draft Carburetor for Model 190 SL

The design of the Solex compound cross-draft carburetor Type 44 PHH differs considerably from that of the compound downdraft carburetor. The arrangement of the jets is shown in Figs. 07-3/10, 07-3/11, and 07-3/12 for the die-cast carburetor and in Fig. 07-3/13 for the sand-cast carburetor.

Die-cast carburetor

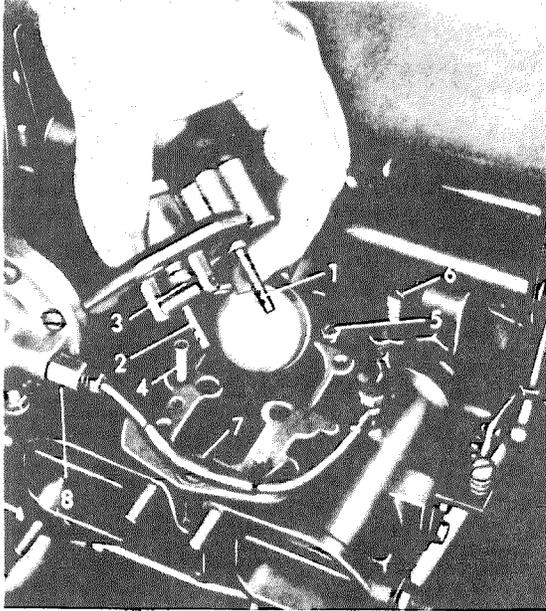


Fig. 07-3/10

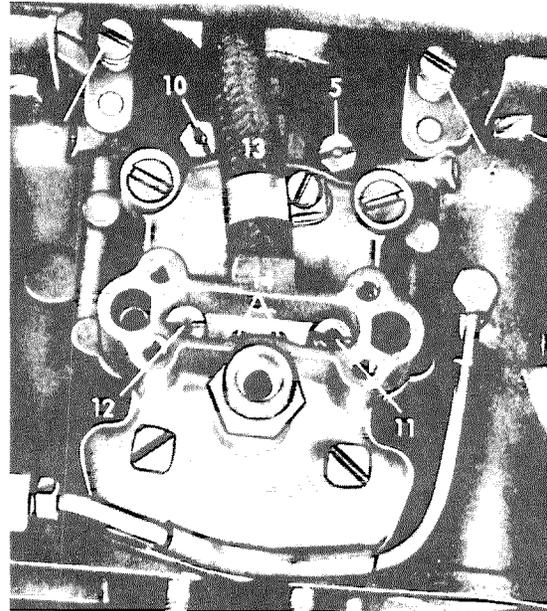


Fig. 07-3/11

- 1 Mixing tube of stage 1
- 2 Mixing tube of stage 2
- 3 Float needle valve
- 4 Overflow control tube
- 5 Idle fuel jet of stage 1
- 6 Idle mixture adjustment screw of stage 1
- 7 Pump jet with injection tube
- 8 Ball valve (delay valve on vacuum side)
- 9 Idle mixture adjustment screw of stage 2

- 10 Idle fuel jet of stage 2
- 11 Air correction jet of stage 1
- 12 Air correction jet of stage 2
- 13 Fuel overflow line
- 14 Float chamber vent bores
- 15 Main jet plug with main jet of stage 2
- 16 Main jet plug with main jet of stage 1
- 18 Fuel outlet line of stage 1

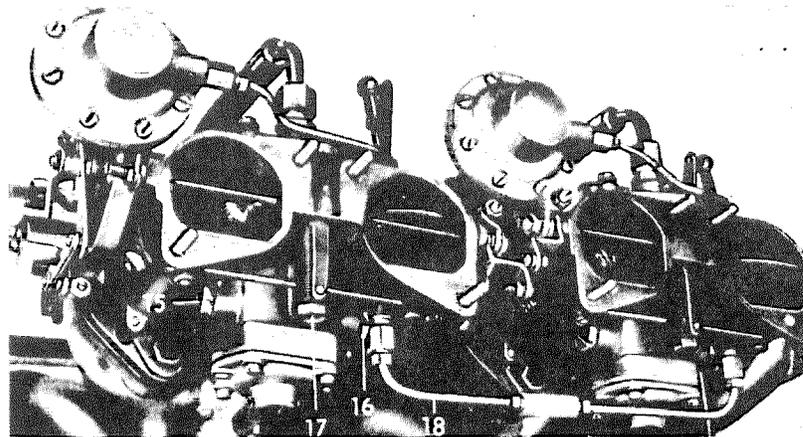


Fig. 07-3/12

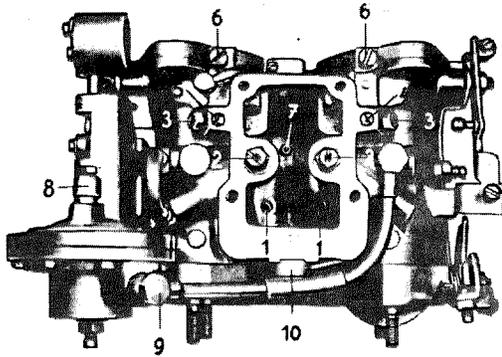


Fig. 07-3/13

Sand-cast carburetor

- 1 Main jet plug with main jet
- 2 Air correction jet with mixing tube
- 3 Idle fuel jet
- 4 Idle air jet of stage 1
- 5 Grub screw
- 6 Idle mixture adjustment screw
- 7 Ball valve for accelerating pump
- 8 Ball valve (delay valve on atmosphere side)
- 9 Ball valve (delay valve on vacuum side)
- 10 Pump jet with injection tube

Figs. 07-3/14, 07-3/15, 07-3/16, and 07-3/17 show the arrangement of the levers for operating stage 2, the starter mechanism, the carburetor cover and the accelerating pump for the die-cast carburetor.

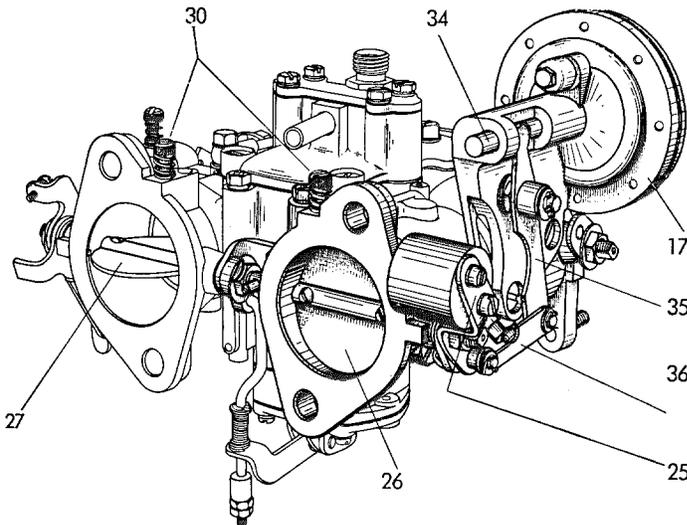


Fig. 07-3/14

Lever arrangement for operating stage 2

- 17 Vacuum box
- 25 Throttle valve lever with counterweight
- 26 Throttle valve of stage 2
- 27 Throttle valve of stage 1
- 30 Idle mixture adjustment screw
- 34 Diaphragm rod
- 35 Relay lever
- 36 Transmission lever

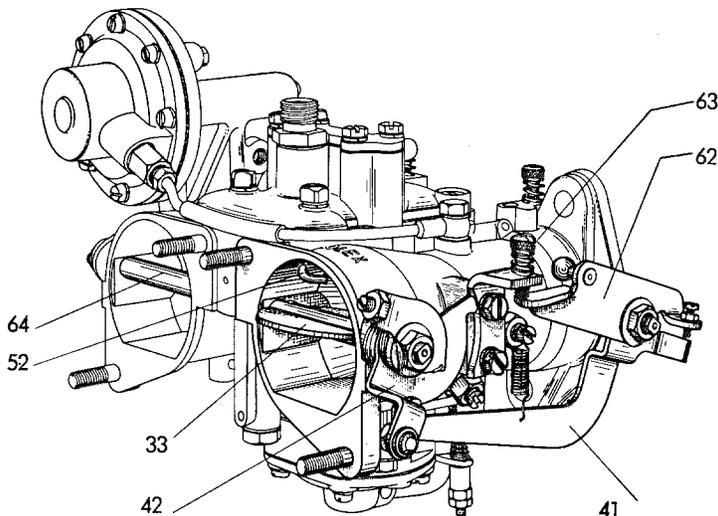


Fig. 07-3/15

Lever arrangement for operating starter mechanism

- 33 Choke valve
- 41 Relay lever
- 42 Choke valve lever with cam plate
- 52 Injection tube
- 62 Throttle valve lever
- 63 Idle adjustment screw
- 64 Choke valve shaft

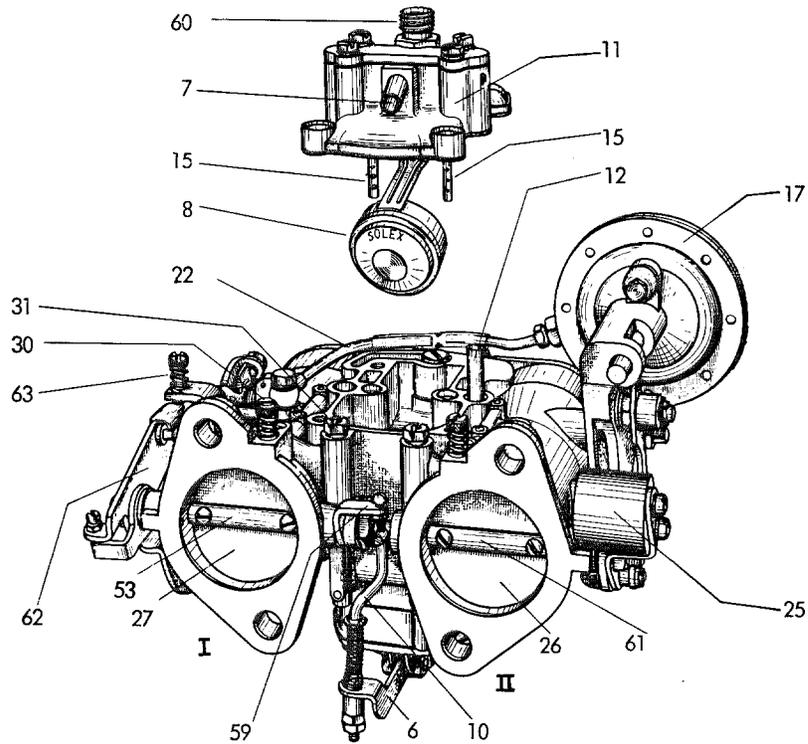


Fig. 07-3/16

Carburetor cover arrangement

- |   |  |
|---|--|
| 6 Pump arm  | 26 Throttle valve of stage 2                             |
| 7 Connection for fuel overflow line and float chamber ventilation | 27 Throttle valve of stage 1                             |
| 8 Float   | 30 Idle mixture adjustment screw                         |
| 10 Connecting rod with pressure spring and adjusting nuts         | 31 Idle fuel jet of stage 1                              |
| 11 Carburetor cover   | 53 Throttle valve shaft of stage 1                       |
| 12 Overflow control tube  | 59 Relay lever for automatic return mechanism of stage 2 |
| 15 Mixing tube  | 60 Threaded union for connection of fuel line            |
| 17 Vacuum box   | 61 Throttle valve shaft of stage 2                       |
| 22 Vacuum line  | 62 Throttle valve lever with counterweight               |
| 25 Throttle valve lever with counterweight                        | 63 Idle adjustment screw                                 |

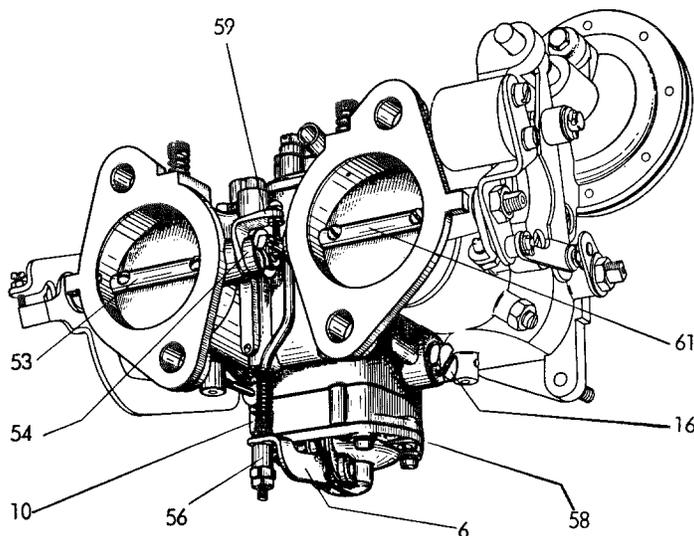


Fig. 07-3/17

Accelerating pump arrangement

- |  |
|--|
| 6 Pump arm   |
| 10 Connecting rod with pressure spring                   |
| 16 Main jet  |
| 53 Throttle valve shaft of stage 1                       |
| 54 Relay lever   |
| 56 Adjusting nuts  |
| 58 Accelerating pump                                     |
| 59 Relay lever for automatic return mechanism of stage 2 |
| 61 Throttle valve shaft of stage 2                       |

**Note:** a) When disassembling the carburetor remember that the gasket for the carburetor cover can only be removed after the float shaft has been pushed out. The float shaft must be pushed out very carefully, so that the float mounting in the carburetor cover is not damaged.

b) Replace the gaskets for the carburetor cover and the cover plate as well as the gaskets for the needle valve (in the sand-cast carburetor).

c) Check whether the diaphragm of the vacuum box is still serviceable and replace if necessary. Check whether the ball valve (delay valve on the atmosphere side) in the vacuum box is properly seated. Carefully clean and check the threaded union and ball valve (delay valve on the vacuum side in the die-cast carburetor) and the hollow screw and ball valve (in the sand-cast carburetor). If necessary, replace the ball valves and the connecting hose for the vacuum line.

d) The strainers for the compensating air (in the sand-cast carburetor) must be cleaned.

When reassembling the carburetor watch the following points carefully: The diffusers for stages 1 and 2 must be parallel to the axis of the suction canals. The retaining screws of the diffusers and the air horn of stage 1 should be well tightened and locked.

e) When reassembling the vacuum box, coat the two separating surfaces and the push rod with grease. When attaching the vacuum box, coat the thread of the fixing screws with sealing compound. Use only hexagon socket screws M 6×15 DIN 912-8 G instead of the cheese head screws used previously.

Grease the lever linkage for stage 2 at the diaphragm rod of the vacuum box, at the relay arm (see Fig. 07-3/14).

f) It is advisable to use grease to retain the gaskets in place when screwing on the choke valve section of the sand-cast carburetor.

After reassembling the carburetor, check the starter mechanism and all levers for correct position and ease of movement (see Figs. 07-3/14 and 07-3/15).

g) In the die-cast carburetor as from Engine End No. 015676 (Solex Carburetor No. 39 465) the throttle valve shaft of stage 2 is carried in bronze bushings and is sealed on the outside by plastic rings.

# Component Parts of Solex Compound Cross-Draft Carburetor Type 44 PHH (Die-Cast Carburetor)

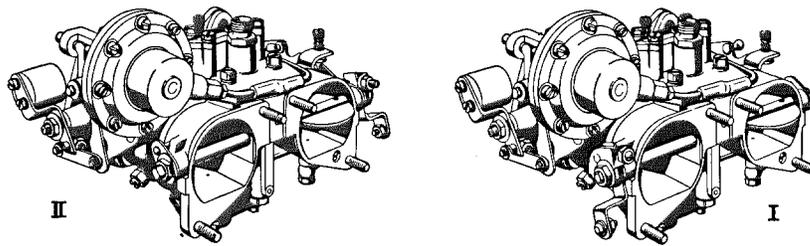
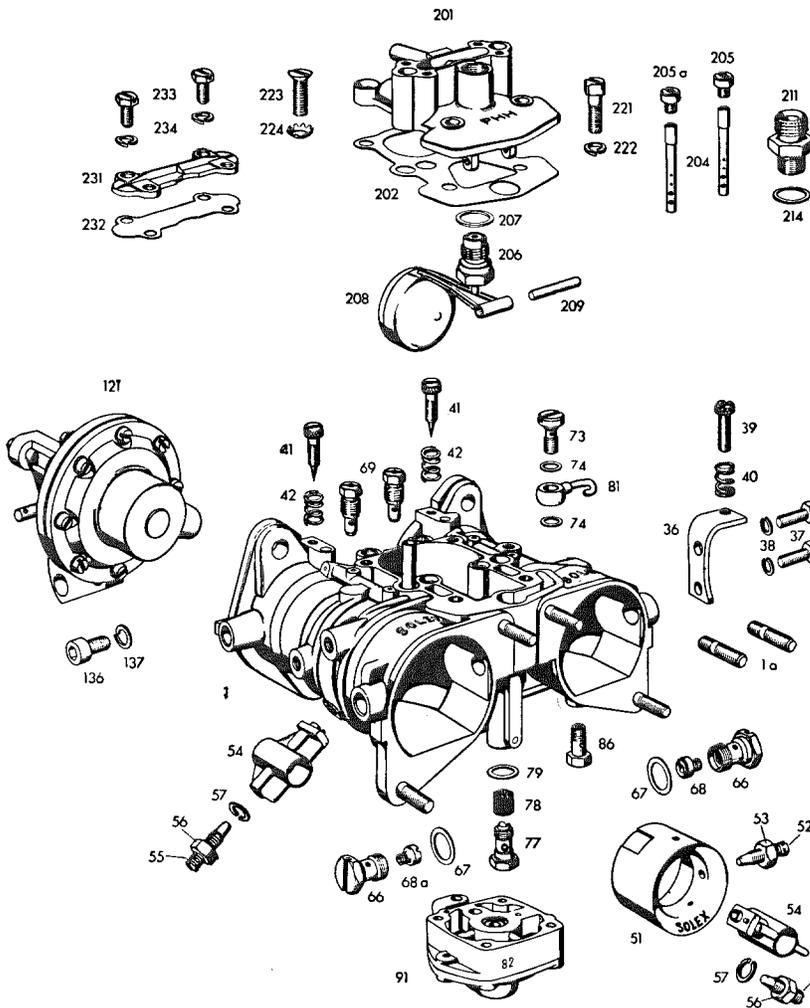


Fig. 07-3/18

- I Front carburetor
- II Rear carburetor

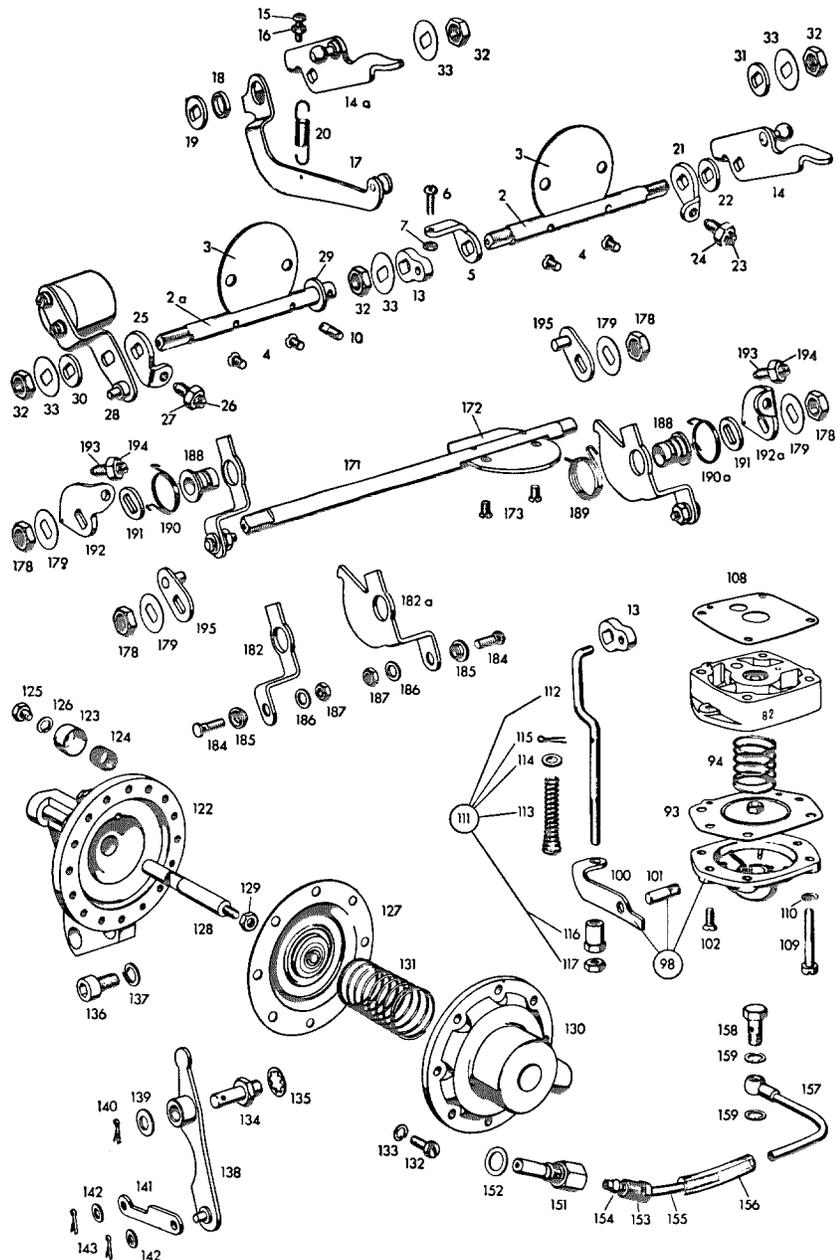


- 1 Carburetor housing
- 1a Stud bolt
- 36 Bracket
- 37 Hexagon screw
- 38 Lock washer
- 39 Idle adjustment screw
- 40 Pressure spring
- 41 Idle mixture adjustment screw
- 42 Pressure spring
- 51 Air horn
- 52 Retaining screw for air horn
- 53 Hexagon nut
- 54 Diffuser
- 55 Retaining screw for diffuser
- 56 Hexagon nut
- 57 Lock washer
- 66 Main jet plug
- 67 Fiber sealing ring
- 68 Main jet
- 68a Main jet
- 69 Idle fuel jet
- 73 Pump jet
- 74 Fiber sealing ring
- 77 Ball valve
- 78 Strainer for ball valve
- 79 Fiber sealing ring
- 81 Injection tube
- 86 Hollow screw
- 91 Accelerating pump
- 121 Vacuum box (complete)
- 201 Carburetor cover
- 202 Carburetor cover gasket
- 204 Mixing tube
- 205 Air correction jet of stage 1
- 205a Air correction jet of stage 2
- 206 Float needle valve
- 207 Copper sealing ring
- 208 Float
- 209 Float shaft
- 211 Threaded union
- 214 Fiber sealing ring
- 221 Square screw
- 222 Lock washer
- 223 Countersunk screw
- 224 Toothed washer
- 231 Cover plate
- 232 Cover plate gasket
- 233 Hexagon screw
- 234 Lock washer

# Component Parts of Solex Compound Cross-Draft Carburetor Type 44 PHH (Die-Cast Carburetor)

Fig. 07-3/19

- 2 Throttle valve shaft of stage 1
- 2a Throttle valve shaft of stage 2
- 3 Throttle valve
- 4 Oval head countersunk screw
- 5 Relay lever for throttle valve shaft of stage 1 (1st Version)
- 5a Relay lever for throttle valve shaft of stage 2 (2nd Version)
- 6 Button-head screw
- 7 Hexagon nut
- 8 Button-head screw (clamping screw)
- 9 Clamping strap
- 10 Abutment screw for throttle valve shaft of stage 2
- 13 Transmission lever
- 14 Throttle valve lever for front carburetor
- 14a Throttle valve lever for rear carburetor
- 15 Cheese head screw
- 16 Hexagon nut
- 17 Relay lever for rear carburetor
- 18 Spacer sleeve for rear carburetor
- 19 Spacer washer
- 20 Tension spring for rear carburetor
- 21 Stop lever for rear carburetor
- 22 Spacer washer
- 23 Aperture limiting screw for throttle valve of stage 2
- 24 Hexagon nut
- 25 Stop lever
- 26 Aperture limiting screw for throttle valve of stage 1
- 27 Hexagon nut
- 28 Lever with counterweight
- 29 Washer
- 30 Washer
- 31 Washer
- 32 Hexagon nut
- 33 Retaining Washer
- 93 Pump Diaphragm
- 94 Diaphragm spring
- 98 Cover and pump arm
- 99 Cover
- 100 Pump arm
- 101 Shaft
- 102 Oval head countersunk screw
- 108 Rubberised fabric gasket
- 109 Cheese head screw
- 110 Lock washer
- 111 Connecting rod (complete)
- 112 Connecting rod
- 113 Pressure spring
- 114 Washer
- 115 Cotter pin
- 116 Shoulder nut (adjusting nut)
- 117 Hexagon nut (lock nut)
- 122 Lower section with ball valve (delay valve on atmosphere side)
- 123 Cap
- 124 Strainer
- 125 Hexagon screw
- 126 Lock washer
- 127 Diaphragm
- 128 Diaphragm rod
- 129 Hexagon nut
- 130 Upper section
- 131 Diaphragm spring
- 132 Hexagon socket cheese-head screw
- 133 Lock washer
- 134 Pivot pin



- 135 Toothed washer
- 136 Hexagon socket screw
- 137 Lock washer
- 138 Relay lever
- 139 Washer
- 140 Cotter pin
- 141 Relay arm
- 142 Washer
- 143 Cotter pin
- 151 Threaded union with ball valve (delay valve on vacuum side)
- 152 Fiber sealing ring
- 153 Union nut
- 154 Sealing cone
- 155 Vacuum line
- 156 Connecting hose
- 157 Vacuum line
- 158 Hollow screw

- 159 Fiber sealing ring
- 171 Choke valve shaft for front carburetor
- 171a Choke valve shaft for rear carburetor
- 173 Oval head countersunk screw
- 178 Hexagon nut
- 179 Retaining washer
- 182 Choke valve lever for front carburetor
- 184 Clamping screw
- 185 Bushing
- 186 Washer
- 187 Hexagon nut
- 188 Spacer sleeve
- 190 Torsion return spring for front carburetor
- 191 Washer
- 192 Abutment for front carburetor

# Component Parts of Solex Compound Cross-Draft Carburetor Type 44 PHH (Sand-Cast Carburetor)

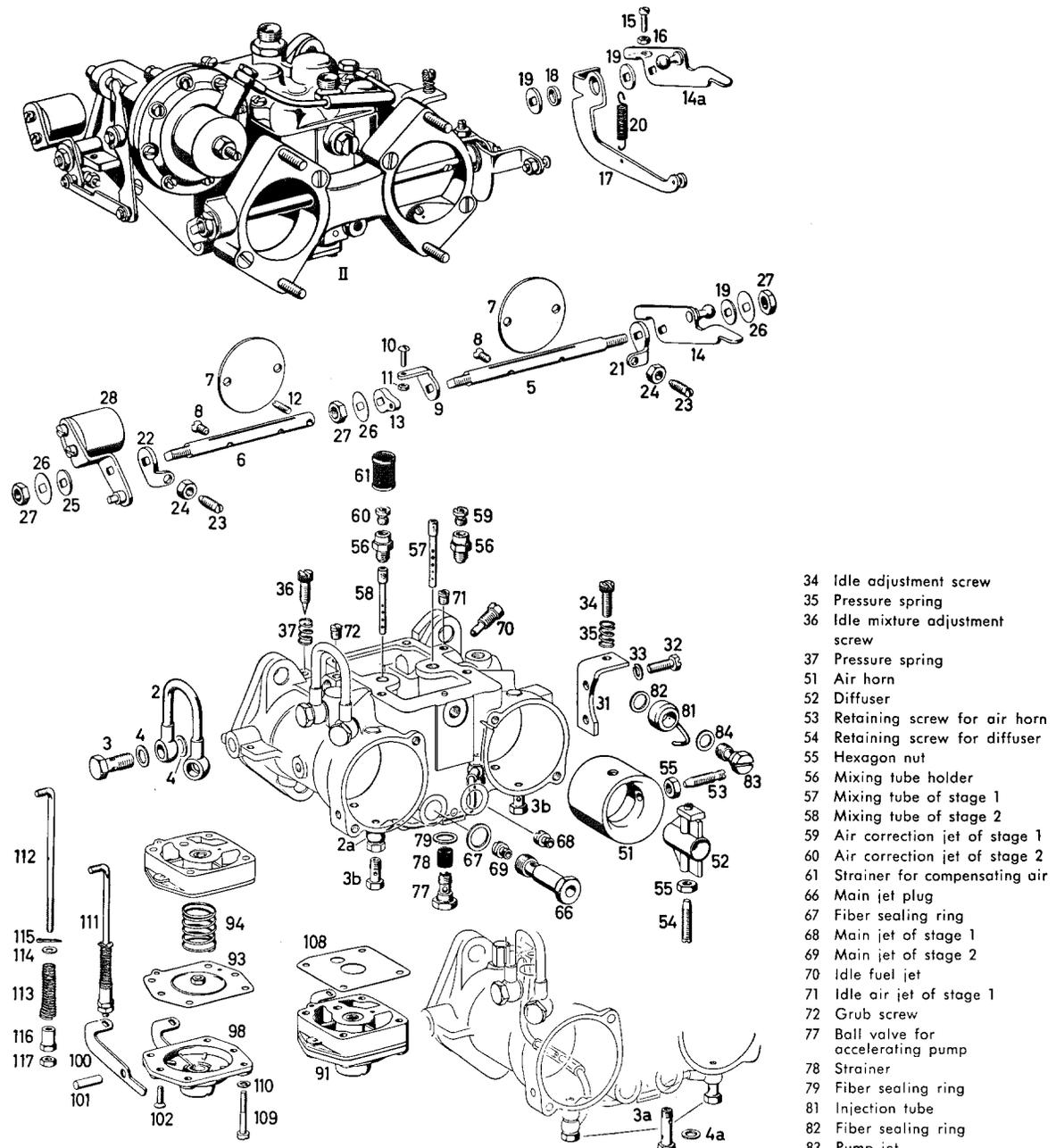


Fig. 07-3/20

I Front carburetor

II Rear carburetor

- |  |   |                                     |
|--|---|-------------------------------------|
| 2 Overflow control line                        | 8 Oval head countersunk screw                     | 18 Spacer sleeve                    |
| 2a Fuel suction line                           | 9 Relay lever for throttle valve shaft of stage 1 | 19 Washer                           |
| 3 Hollow screw                                 | 10 Button-head screw                              | 20 Tension spring                   |
| 3a Hollow screw (for 1st version suction line) | 11 Hexagon nut                                    | 21 Stop lever                       |
| 3b Hollow screw                                | 12 Abutment screw                                 | 22 Stop lever                       |
| 4 Fiber sealing ring                           | 13 Transmission lever                             | 23 Aperture limiting screw          |
| 4a Fiber sealing ring                          | 14 Throttle valve lever for front carburetor      | 24 Hexagon nut                      |
| 5 Throttle valve shaft of stage 1              | 14a Throttle valve lever for rear carburetor      | 25 Washer                           |
| 6 Throttle valve shaft of stage 2              | 15 Adjusting screw                                | 26 Retaining washer                 |
| 7 Throttle valve                               | 16 Hexagon nut                                    | 27 Hexagon nut                      |
|  | 17 Relay lever                                    | 28 Lever with counterweight         |
|  |   | 31 Bracket                          |
|  |   | 32 Hexagon screw                    |
|  |   | 33 Lock washer                      |
|  |   | 34 Idle adjustment screw            |
|  |   | 35 Pressure spring                  |
|  |   | 36 Idle mixture adjustment screw    |
|  |   | 37 Pressure spring                  |
|  |   | 51 Air horn                         |
|  |   | 52 Diffuser                         |
|  |   | 53 Retaining screw for air horn     |
|  |   | 54 Retaining screw for diffuser     |
|  |   | 55 Hexagon nut                      |
|  |   | 56 Mixing tube holder               |
|  |   | 57 Mixing tube of stage 1           |
|  |   | 58 Mixing tube of stage 2           |
|  |   | 59 Air correction jet of stage 1    |
|  |   | 60 Air correction jet of stage 2    |
|  |   | 61 Strainer for compensating air    |
|  |   | 66 Main jet plug                    |
|  |   | 67 Fiber sealing ring               |
|  |   | 68 Main jet of stage 1              |
|  |   | 69 Main jet of stage 2              |
|  |   | 70 Idle fuel jet                    |
|  |   | 71 Idle air jet of stage 1          |
|  |   | 72 Grub screw                       |
|  |   | 77 Ball valve for accelerating pump |
|  |   | 78 Strainer                         |
|  |   | 79 Fiber sealing ring               |
|  |   | 81 Injection tube                   |
|  |   | 82 Fiber sealing ring               |
|  |   | 83 Pump jet                         |
|  |   | 84 Fiber sealing ring               |
|  |   | 91 Accelerating pump                |
|  |   | 93 Pump diaphragm                   |
|  |   | 94 Diaphragm spring                 |
|  |   | 98 Cover with pump arm              |
|  |   | 100 Pump arm                        |
|  |   | 101 Shaft for pump arm              |
|  |   | 102 Oval head countersunk screw     |
|  |   | 108 Rubberised fabric gasket        |
|  |   | 109 Cheese head screw               |
|  |   | 110 Lock washer                     |
|  |   | 111 Connecting rod (complete)       |
|  |   | 112 Connecting rod                  |
|  |   | 113 Pressure spring                 |
|  |   | 114 Washer                          |
|  |   | 115 Cotter pin                      |
|  |   | 116 Shoulder nut (adjusting nut)    |
|  |   | 117 Hexagon nut (lock nut)          |

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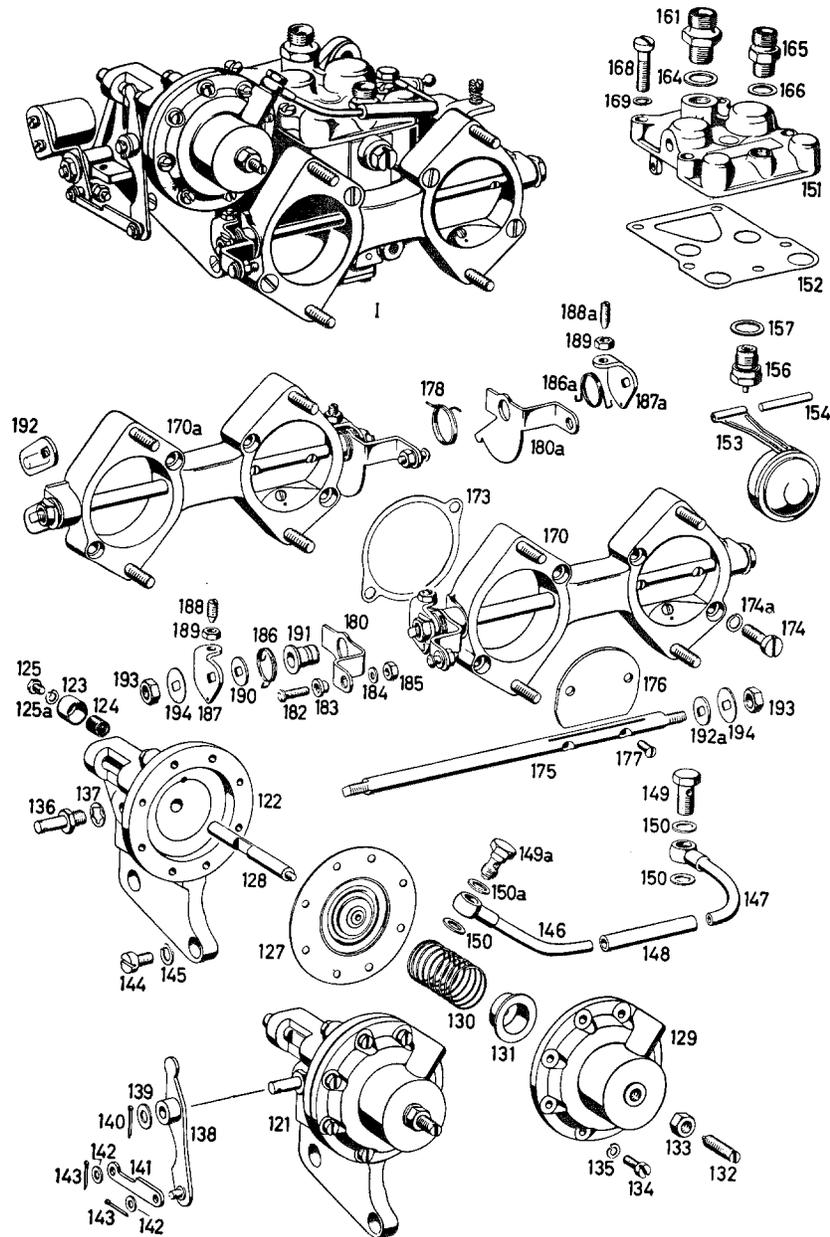


Fig. 07-3/21

- |  |   |  |
|--|---|--|
| 121 Vacuum box (complete)  | 145 Lock Washer                                 | 173 Gasket                                 |
| 122 Lower section with ball valve<br>(delay valve on atmosphere side)                | 146 Vacuum line                                 | 174a Lock washer                           |
| 123 Cap for ball valve   | 147 Vacuum line                                 | 175 Choke valve shaft                      |
| 124 Strainer   | 148 Connecting hose                             | 176 Choke valve                            |
| 125 Hexagon screw  | 149 Hollow screw                                | 177 Oval head countersunk screw            |
| 125a Lock washer   | 149a Ball valve (delay valve on<br>vacuum side) | 178 Torsion return spring                  |
| 127 Diaphragm  | 150 Fiber sealing ring                          | 180 Choke valve lever for front carburetor |
| 128 Diaphragm rod  | 150a Fiber sealing ring                         | 180a Choke valve lever for rear carburetor |
| 129 Upper section  | 151 Carburetor cover                            | 182 Clamping screw                         |
| 130 Diaphragm spring   | 152 Carburetor cover gasket                     | 183 Bushing                                |
| 131 Retainer cap   | 153 Float                                       | 184 Washer                                 |
| 132 Set screw  | 154 Float shaft                                 | 185 Hexagon nut                            |
| 133 Hexagon nut  | 155 Float needle valve                          | 186 Torsion return spring                  |
| 134 Cheese head screw  | 156 Copper sealing ring                         | 186a Torsion return spring                 |
| 135 Lock washer  | 161 Threaded union                              | 187 Abutment for front carburetor          |
| 136 Pivot pin  | 164 Fiber sealing ring                          | 187a Abutment for rear carburetor          |
| 137 Toothed washer   | 165 Threaded union                              | 188 Adjusting screw for front carburetor   |
| 138 Relay lever  | 166 Copper sealing ring                         | 188a Adjusting screw for rear carburetor   |
| 139 Washer   | 168 Cheese head screw                           | 189 Hexagon nut                            |
| 140 Cotter pin   | 169 Lock washer                                 | 190 Washer                                 |
| 141 Transmission lever   | 170 Choke valve section for front<br>carburetor | 191 Spacer sleeve                          |
| 142 Washer   | 170a Choke valve section for rear<br>carburetor | 192 Stop lever                             |
| 143 Cotter pin   |   | 192a Washer                                |
| 144 Cheese head screw<br>(1st version with slot,<br>2nd version with hexagon socket) |   | 193 Hexagon nut                            |
|  |   | 194 Retaining washer                       |