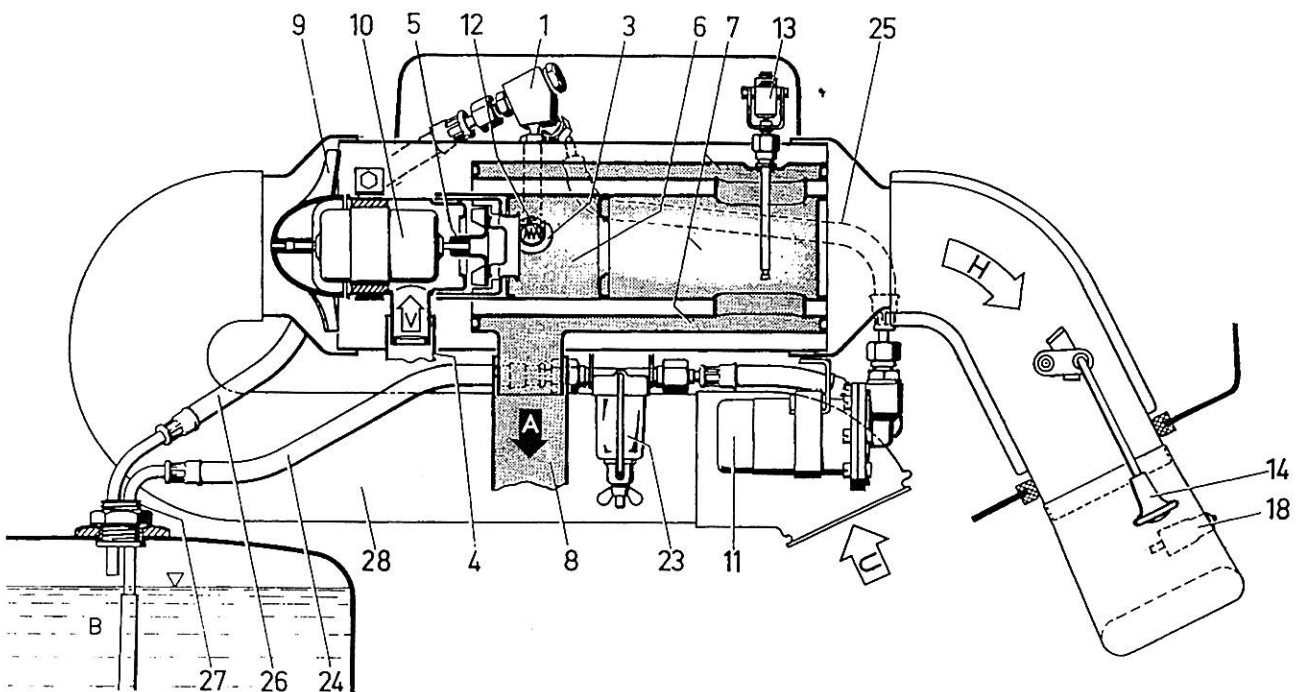


Gas Heater Installation Guide: Type 3 (Models 311-368) Eberspacher BN 2



!!WARNING!! ACHTUNG!!

If you do not understand or have any knowledge of gas heaters, DO NOT ATTEMPT TO REPAIR OR ADJUST. Take manual and vehicle to a qualified mechanic to do the installation of your gas heater.

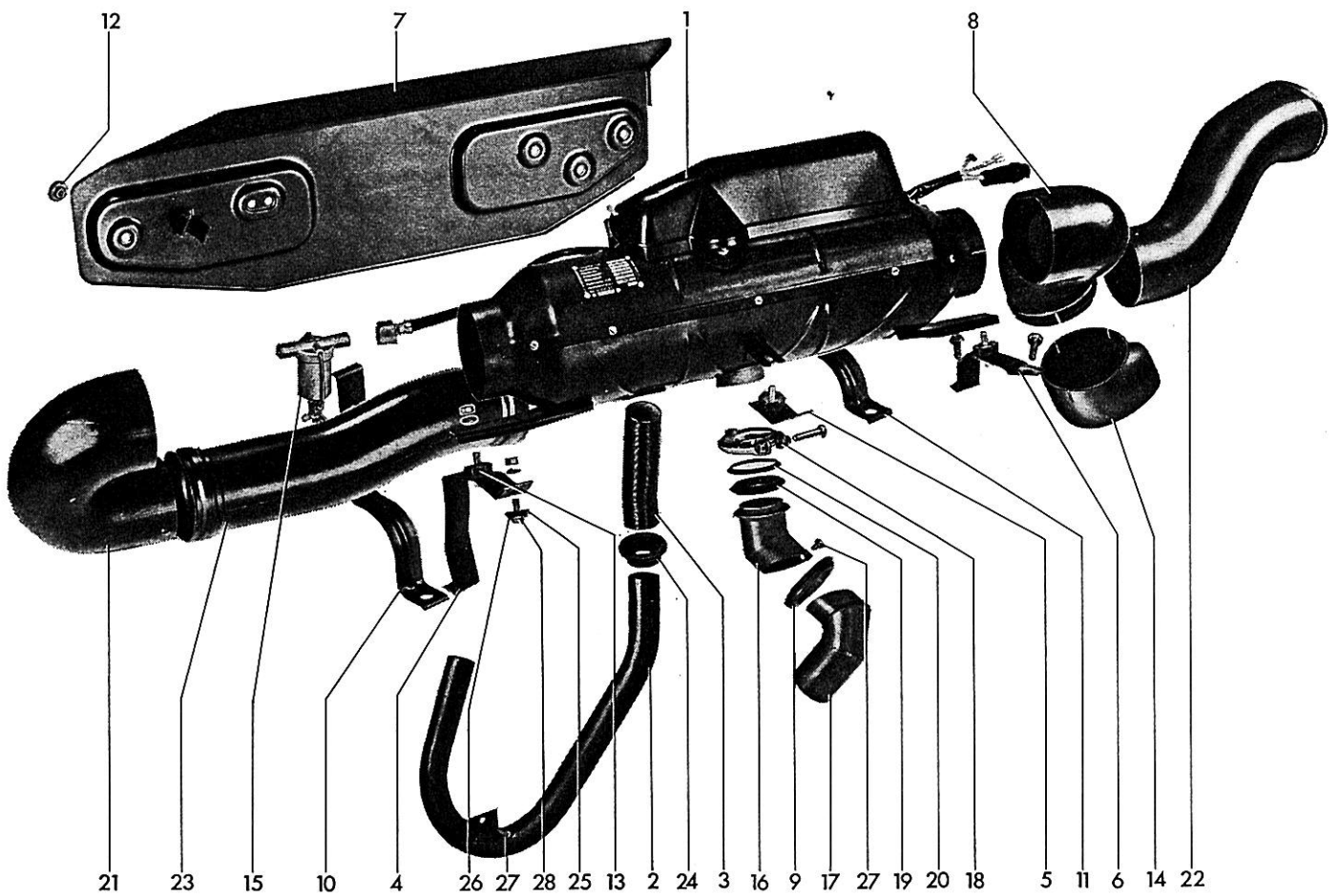
During installation make sure there is absolutely no gas in heater, all electricals are disconnected, and use proper tools only.

California Import Parts Ltd. is in no way liable for damage, injury or death caused by operator negligence and/or improper installation of gas heater.



Installing instructions for Type 3 (Models 311–368)

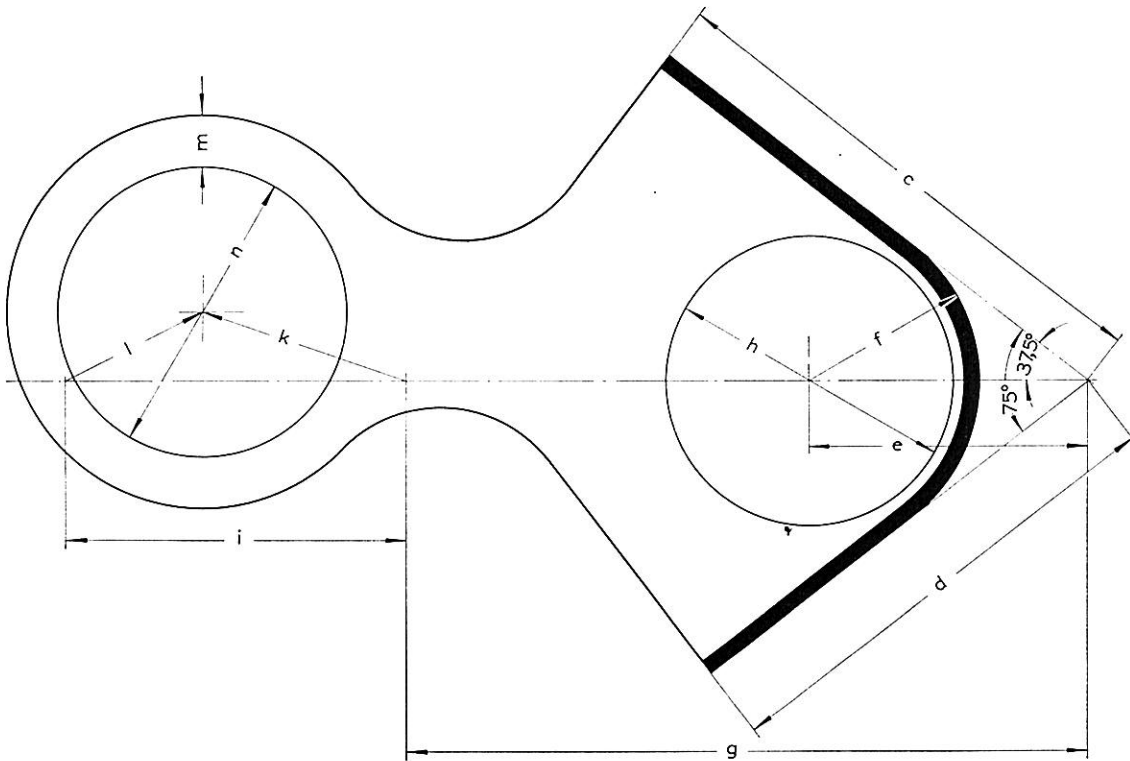
The Eberspächer BN 2 heater is installed in the front luggage compartment on the left side.



F 4.20 Service Installation

The kit consists of:

No.	Designation	Qty.	Note when assembling	See page
	Hose clip	1		
	Hose clip	4		
1	Heater	1		
2	Combustion air pipe	1		F 4.20/3-7
3	Hose for combustion air pipe	1	check security	F 4.20/3-10
4	Front bracket	1		
5	Center bracket	1		
6	Rear bracket	1		
7	Cover plate	1		
8	Warm air elbow	1		
9	Seal for exhaust pipe	1	install from wheel housing	
10	Front bracket for cover plate	1	secure under tank bolt	
11	Rear bracket for cover plate	1	secure under tank bolt	
	Branch piece	1		F 4.20/3-8
12	Knurled nut	2	secures cover plate	
13	Bonded rubber mounting	3	for brackets No. 4, 5 and 6	
14	Warm air outlet	1		
	Suction line from T piece to fuel filter	1		F 4.20/3-7
15	Fuel filter up to July 1971	1	arrow = flow direction	F 4.20/3-10
	Suction line from filter to pump	1		
16	Exhaust pipe upper	1		
17	Exhaust pipe lower	1		
18	Clamp	1		
19	Seal for clamp	1		
20	Tapered ring for clamp	1		
21	Air circulation pipe, front	1		
22	Air circulation pipe, rear	1		
23	Air circulation pipe, center	1		
	Sticker	1	for tank cap	
24	Grommet for combustion air pipe	1		
25	Rubber washer	2	in wheel housing	
	Cable grommet	1		F 4.20/3-5
	Cable harness	1	connect as shown in wiring diagram	F 4.20/3-3
	Switch spindle	1		
	Cap	1		
	Escutcheon	1		
	Switch	1		
	Cable grommet	1	for fuel hose	
	Bolt M 6×35	1	for part 18	
	Nut M 6	8	for parts 13 and 28	
26	Washer A 6.4	2	for part 28	
	Washer 6.1	8	for part 13 and 28	
	Spring washer B 6	2	for part 28	
	Washer A 8×11.5	2	for union	
	Hex. hd. tapping screw B 6.3×19	2	for part 6	
27	Tapping screw B 4.8×13	2	for parts 2, 16 and 17	
	Fuse	1	16 amp	
	Plug	1		
	Connector	1		
	Union A 2/3	1	for fuel pump	
28	Bolt M 6×15	2	for parts 4 and 5	



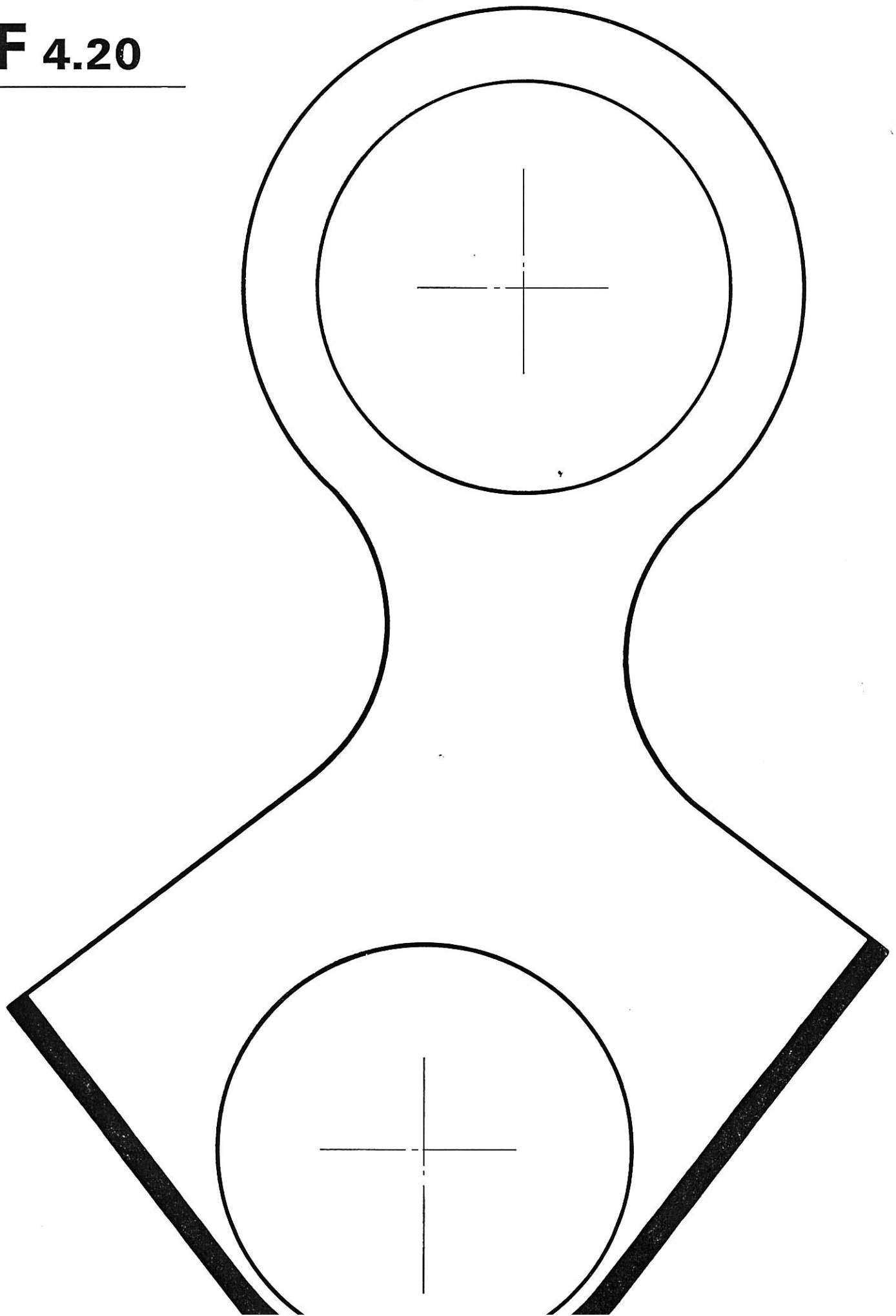
c = 155 mm	i = 100 mm
d = 140 mm	k = 63 mm
e = 82 mm	l = 45 mm
f = 50 mm	m = 15 mm
g = 200 mm	n = 55 mm dia.
h = 85 mm dia.	

Note:

Dealers who install a lot of heaters are advised to make templates of durable material. The drawing contains all the dimensions required. (in mm)

The reference edges of the templates supplied are marked with a wide black strip.

F 4.20



Installing:

- 1 – Disconnect battery ground cable.
- 2 – Take luggage compartment lining out.
- 3 – Drill 16 mm hole (b) for the cable harness and fit grommet in hole (Fig. 1).

Route cable through grommet (Fig. 1).

a = 50 mm
b = 16 mm dia.

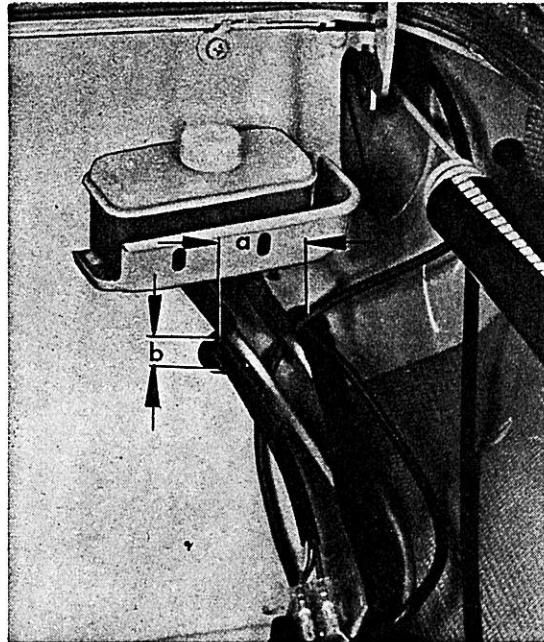


Fig. 1

- 4 – Drill a 16 mm hole (a) through the cross member for the fuel hose (Fig. 2).

a = 16 mm dia.
l = 250 mm
U = overflow hose

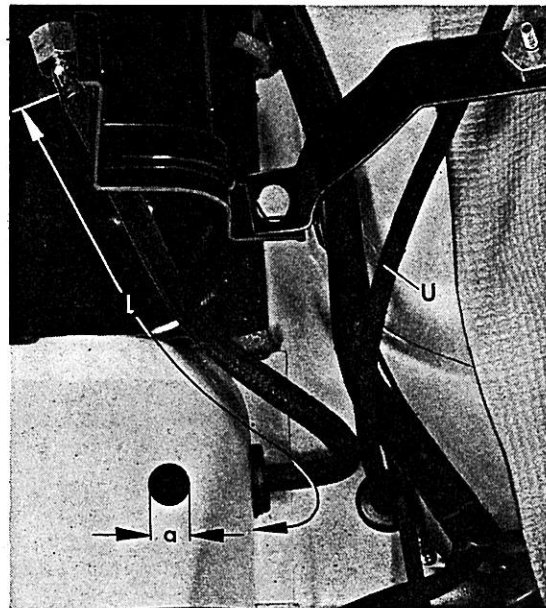
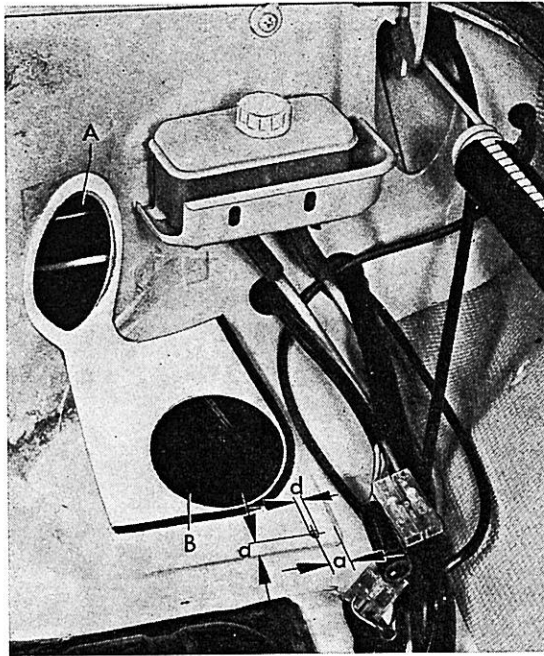


Fig. 2

Note:

In Fig. 2, the hole for the fuel hose is in the side of the cross member (factory installation). When subsequently installing the heater, the hole must be made in the top part of the cross member (Fig. 2, dimensioned hole a).

F 4.20 Service Installation



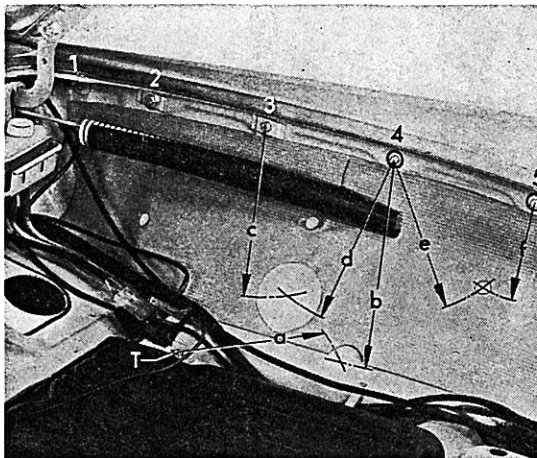
5 – Place template against upper edge of rib, mark off the hole and cut them out (Fig. 3).

A – Hole for rear part of an circulation pipe
 B – Hole for warm air elbow
 a = 10 mm d = 5.1 mm dia.

Note:
Take care when cutting hole A because the fresh air blower box is directly behind the panel.

6 – Drill hole d (5.1 mm) in the rib (Fig. 3).

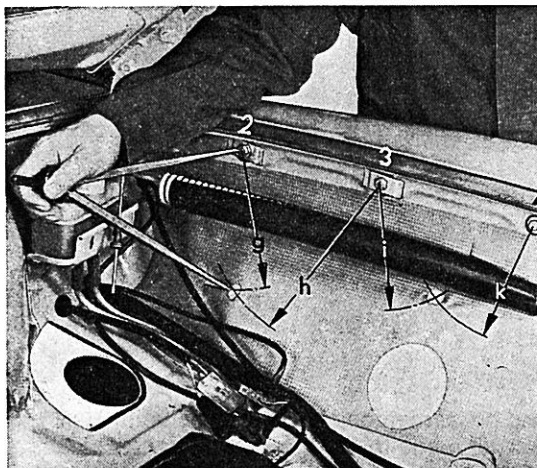
Fig. 3



7 – The centers of the holes (Figs. 4, 5 and 6) are marked with dividers from the centers of the fender bolts 2, 3, 4, 5 and tank securing bolt T.

T = Tank bolt
 a = 200 mm d = 213 mm
 b = 253 mm e = 193 mm
 c = 220 mm f = 123 mm

Fig. 4



Note:
Bolt 1 shown in Fig. 4 is not visible (the body shown is a prototype). The bolt number 4 in Fig. 4 is thus actually bolt number 3.

g = 162 mm
 h = 218 mm
 i = 136 mm
 k = 145 mm

Fig. 5

8 – Cut and drill holes (Fig. 6).

e = 7 mm dia. n = 49.8 mm dia.
m = 100 mm dia. o = 36 mm dia.

9 – The luggage compartment lining must be cut to provide a 100 mm hole (m) for the exhaust pipe (Fig. 6).

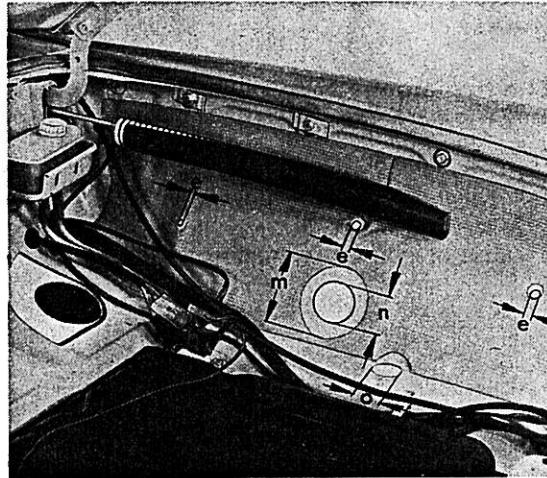


Fig. 6

10 – Install a grommet for the combustion air pipe (Fig. 10).

11 – Drill a 4 mm hole (p) for the tapping screw (Fig. 7).

p = 4 mm dia.
r = 20 mm

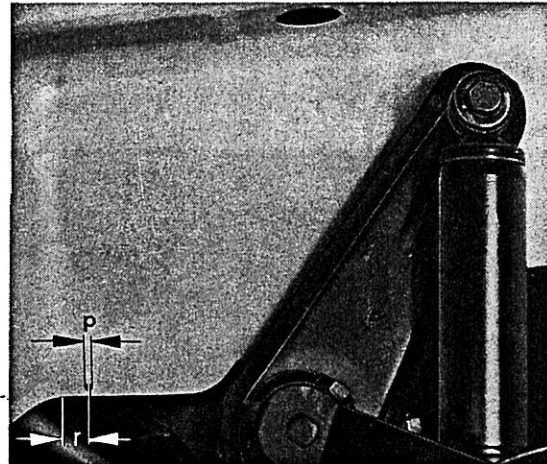


Fig. 7

12 – Install grommet in hole for fuel line and pull hose through from luggage compartment, leaving the last 250 mm (1) in compartment (see Fig. 2).

13 – Install a piece of protective sleeving over the hose below the luggage compartment (Fig. 8).

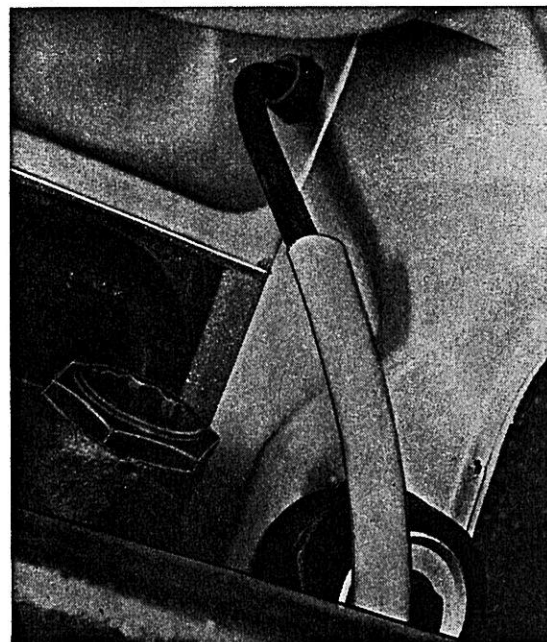


Fig. 8

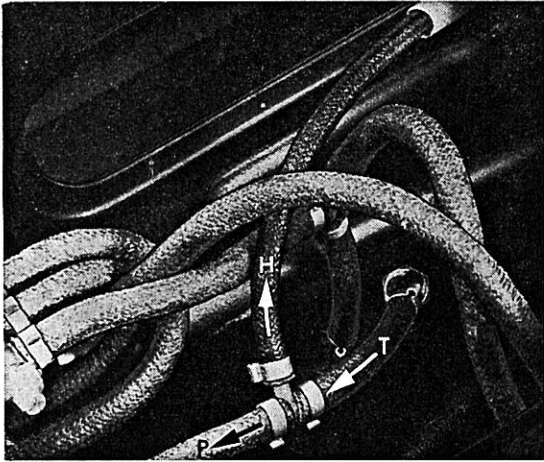
F 4.20 Service Installation

Note:

The fuel supply for the heater may only be taken from the hose between tank and the fuel pump of the fuel injection system (Fig. 9).

The heater will go out if the fuel is taken from the return line of the fuel injection system because of the vapour bubbles in this line.

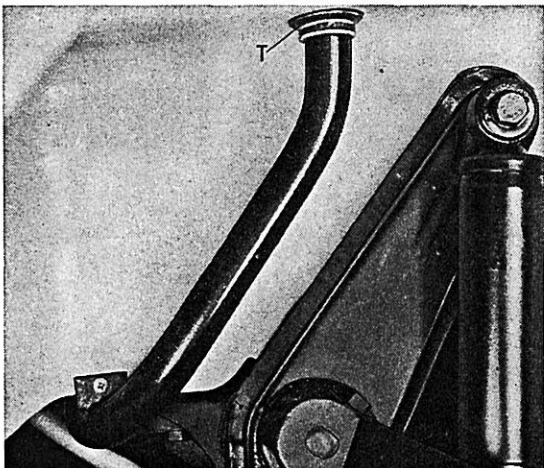
The heater will smoke if the fuel is taken from the pressure line of the fuel injection system because of excessive fuel consumption.



14 – Clip hose between tank and fuel pump (engine) and cut it (Fig. 9).

T = from tank
P = to pump of fuel injection engine
H = to heater

Fig. 9



15 – Install T piece and secure the three hoses with hose clips as shown (Fig. 9).

16 – Install combustion air pipe (Fig. 10).

Fig. 10

17 – Install exhaust pipe and seal.
(Figs. 11 and 12)

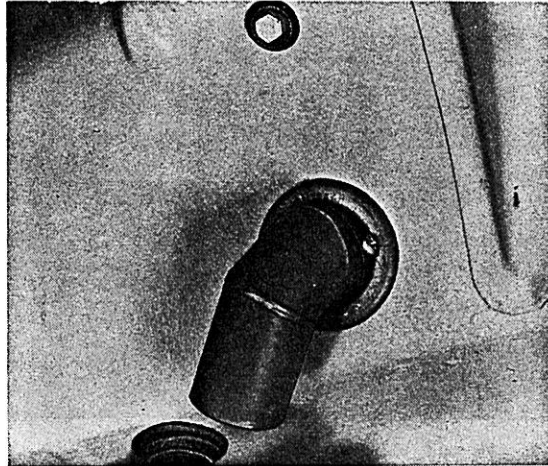


Fig. 11

18 – Install three brackets for heater (Fig. 12
and page F 4.20/3-1).

- H = Rear bracket
- M = Center bracket
- V = Front bracket
- A = Front bracket for cover plate
- B = Rear bracket for cover plate
- G = Exhaust pipe, upper part

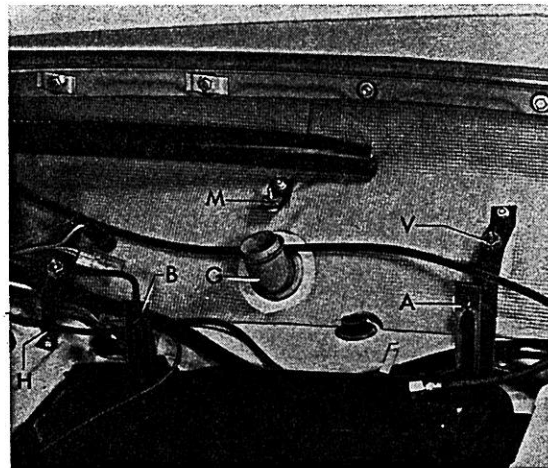


Fig. 12

19 – The cover plate brackets A and B and
front heater bracket V are secured with
the tank bolts (Figs. 12, 13 and page
F 4.20/3-1).

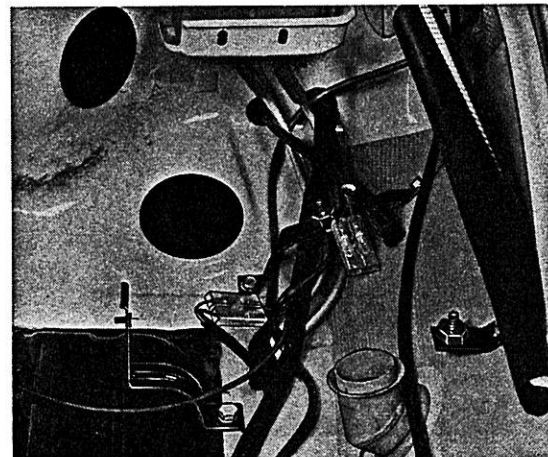


Fig. 13

F 4.20 Service Installation

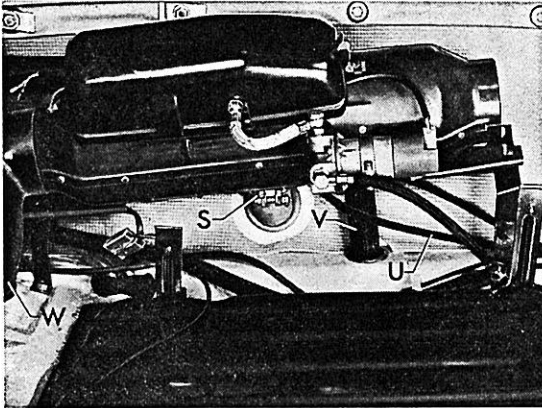


Fig. 14

U = Overflow hose
W = Warm air elbow
V = Combustion air hose
S = Clamp for exhaust pipe

- 20 – Press warm air elbow into hole until it clicks (Fig. 14).
- 21 – Secure heater to the three brackets after installing hose V for combustion air (must fit tightly). (Fig. 14)
- 22 – Secure exhaust pipe with clamp S (Fig. 14).
- 23 – Push overflow hose on to overflow pipe (see F 4.1/2-1 and Fig. 14).
See also the routing of hose in Fig. 2

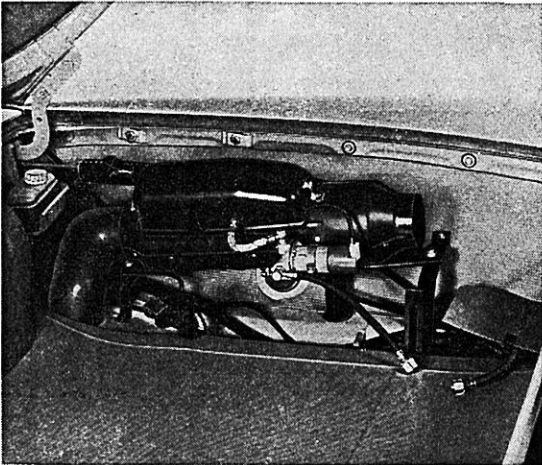


Fig. 15

- 24 – Cut luggage compartment cardboard to fit and install it (Fig. 15).

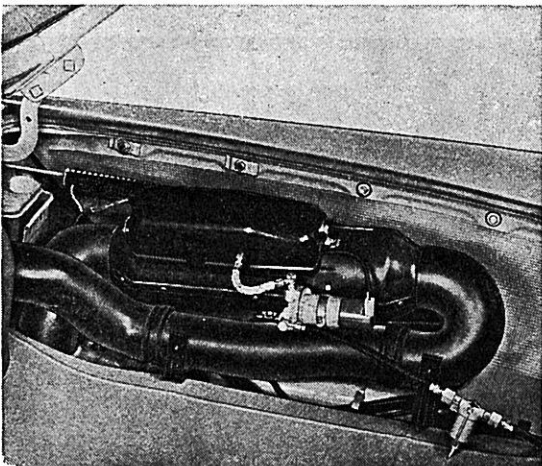


Fig. 16

- 25 – Install air circulation pipe and warm air elbow (page F 4.20/3-1 and Fig. 16).
- 26 – Install fuel filter (Fig. 17).

Note:
The arrow shows direction of flow.

- 27 – Connect switch wires as shown in wiring diagram on page F 4.1/6-5.

- 28 – Secure switch in one of the holes provided (Fig. 17).
- 29 – Connect cables to fuse box as shown by wiring diagram on page F 4.1/6–5.

Note:
There are two cables attached to terminal 30 on the bridged side of the 16 amp. fuse (feed side).

- Cable to lighting switch – 1.5 mm² red
- Cable to ignition switch – 4 mm² red

- 30 – Pull off cables to lighting switch and starter-ignition switch and then connect them to the connectors provided in the heater cable harness (see wiring diagram F 4.1/6–5).

- 31 – The red 2.5 mm² cable of the heater cable harness is connected to the 16 amp. fuse at terminal 30. (See wiring diagram on page F 4.1/6–5).

- 32 – Install cover plate and press filter into clip on plate (page F 4.20/3–1).

- 33 – Connect battery ground cable and check heater operation.

- 34 – Install sticker on tank filler flap.

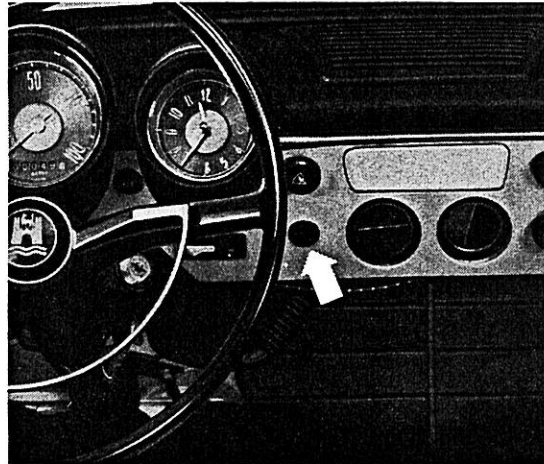


Fig. 17

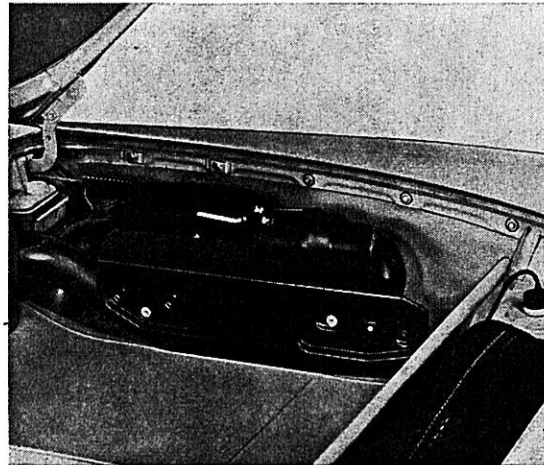


Fig. 18

