

Fitting an electric fuel pump E1F as a replacement for a mechanical fuel pump

si 0062 GB

MSI-PG 09.02

Vehicle:

Various with mechanical fuel pump

Product:

Electric fuel pump E1F

Pierburg-No.:

7.21440.51.0/.53.0/.63.0/.78.0/.68.0

Application

Mechanical fuel pumps are used

- in vehicles with carburettor engines
- diesel vehicles as feed pump for supplying fuel to the injection pump.

They are usually diaphragm pumps and are seated directly on the engine – the drive takes place via cams and tappets or via a lever.

Mechanical fuel pumps are designed for long operating times. However, malfunctions can occur due to dirt, wear or hardening of membranes and seals, leaks or failures. If necessary, a faulty pump can only be replaced completely.

If original pumps are not available, an E1F series electric fuel pump is a practical and cost-effective solution.



This applies similarly to

- applications in the old-timer sector or
- if a mechanical drive is no longer possible (e.g. due to cam wear).

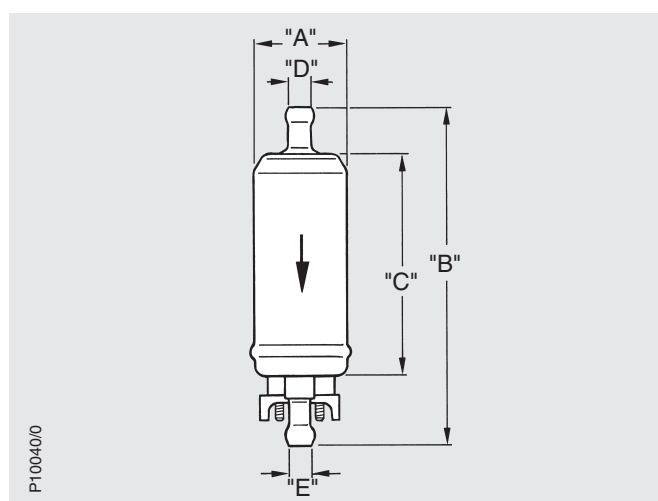
E1F series electric fuel pumps are available with various delivery capacities and pressures for operation with 12 or 24 V.



See → Product Information "pi 0013"



View of E1F



Dimensions of E1F

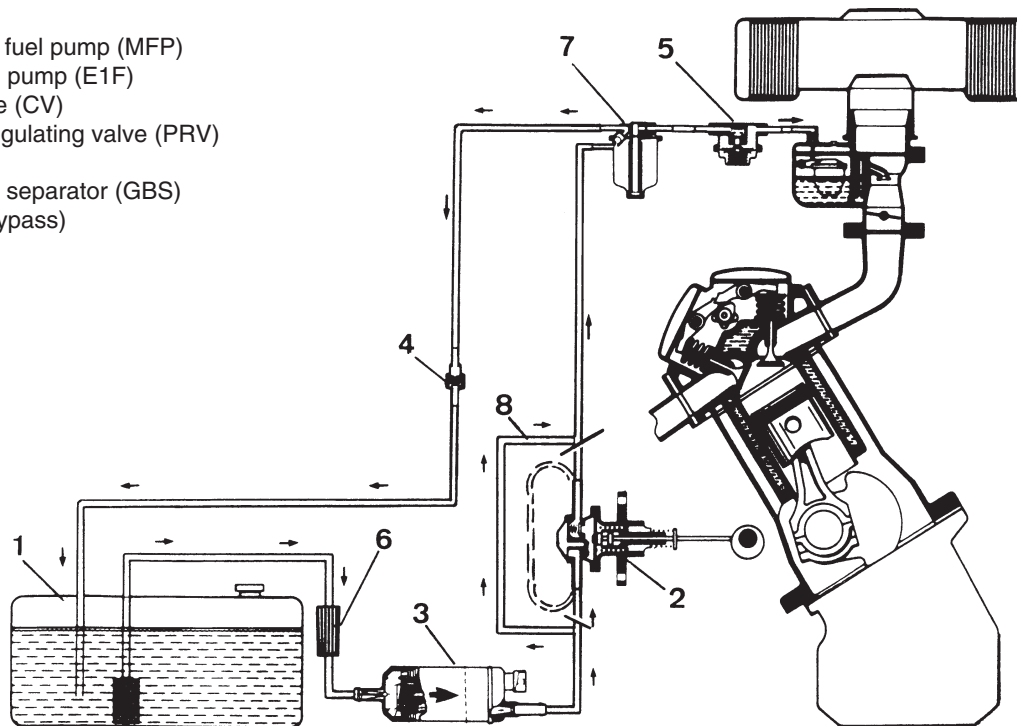
Technical data of E1F universal pumps

Pierburg-No.	Rated voltage [V]	Static pressure at Q=0l/h [bar]	Volume flow [l/h]	System pressure at [bar]	Fitting and connection dimensions (see → Fig.) [mm]					Current consumption [A]
					"A"	"B"	"C"	"D"	"E"	
7.21440.51.0	12	0,27-0,38	95	0,10	Ø 38	133,5	84,5	Ø 8	Ø 8	≤ 2,00
7.21440.53.0	12	0,44-0,57	100	0,15	Ø 38	133,5	84,5	Ø 8	Ø 8	≤ 2,05
7.21440.63.0	24	0,44-0,57	100	0,15	Ø 38	134,2	84,5	Ø 8	Ø 8	≤ 1,35
7.21440.78.0	12	> 1,85	95	1,00	Ø 38	141,5	91,0	Ø12	Ø 8	≤ 4,30
7.21440.68.0	24	> 1,85	95	1,00	Ø 38	139,5	90,5	Ø 8	Ø 8	≤ 3,00

Assignment and replacement, refer to → respectively valid catalogues, TecDoc-CD data based systems.

Subject to change of illustrations and text.

- 1 Fuel tank
- 2 Mechanical fuel pump (MFP)
- 3 Electric fuel pump (E1F)
- 4 Check valve (CV)
- 5 Pressure regulating valve (PRV)
- 6 Fuel filter
- 7 Gas bubble separator (GBS)
- 8 Fuel line (bypass)



The following points should be noted when fitting an E1F:

- The E1F (3) must be fitted low ("wet", below liquid level) in the vicinity of the tank (1).
- High suction heads and long fuel lines must be avoided.
- A filter (6) must be provided in the fuel line upstream of the pump (3).
The upstream fuel filter (6) should have a mesh width of 60 – 100 µm ("micron").
Paper filters are unsuitable.
- For **use in diesel vehicles** the **strainer in the pump inlet must be removed**.
- For trouble-free operation, particularly in the case of old-timers, a fuel return line is recommended.
The return line must be dimensioned depending on the fuel load consumption (1 – 3 mm Ø).
- A check valve (4) (7.20469.51.0, 7.20234.50.0, 7.20234.52.0) should be provided in the return line.
For application examples and further information, see → Service Information "si 0044"
- Temperature problems can be eliminated to a large extent by fitting a gas bubble separator (7) with variable return, e.g. 4.05284.50.0 or 7.20925.51.0.



When using a gas bubble separator (7), **only pressure regulating valves (5) without return** must be used!

The existing mechanical fuel pump (MFP) (2) should either be removed or bypassed with a fuel bypass line (8).

If the MFP remains on the engine, the inlet and outlet of the MFP should be connected with a hose to prevent the ingress of dirt.

The MFP must be sealed oil and fuel-sided.

- With a weakly dimensioned float arrangement, it is recommended for pressure limitation to fit a pressure regulating valve (5) upstream of the carburettor to prevent the float needle valve being subjected to excessive pressure.

The pressure regulating valve (5) must be selected according to the delivery capacity of the pump and the full load consumption:

7.20726.50.0 without return

7.20726.51.0 with return 1.1 mm Ø

7.20726.52.0 with return 0.4 mm Ø



The pump supplies fuel as long as the ignition is switched on.

To prevent the carburettor overflowing in case of a stationary engine with the ignition switched on (engine stalled, accident), it is recommended to install the safety shut-off 4.05288.50.0!

See → Service Information "si 0016"

General safety information

- In the interest of safety, electric fuel pumps must only be removed and fitted by qualified workshops.
- Only fit clean parts.
- Remove packaging and transport sealing elements, e.g. only remove plugs in new fuel pumps directly before fitting.
- When working on the fuel system, observe the information of the vehicle manufacturer.



Observe the safety regulations concerning the handling of fuel and fuel vapours.

The safety regulations applicable in the country concerned must also be observed.