

Fitting an electric fuel pump E1F as additional pump

si 0063 GB

MSI-PG 09.02

Vehicle:
Various

Product: Electric fuel pump E1F
Pierburg-Nro.: 7.21440.51.0/.53.0/.63.0/.78.0/.68.0

Application

Various applications make it necessary to fit a second fuel pump parallel to an existing mechanical or electric fuel pump:

- As an additional pump, specially for diesel engines in utility vehicles, agricultural machinery or construction machinery.
- As an additional second pump for use in extreme situations (expedition vehicles)
- As an emergency or additional pump in ultra-lightweight aircraft

An approval of the german Federal Aviation Office (LBA) is not yet available for the pump and is not required in this case.

- For
- applications in the old-timer sector or
 - if operation with an existing mechanical fuel pump is no longer possible (e.g. due to cam wear)

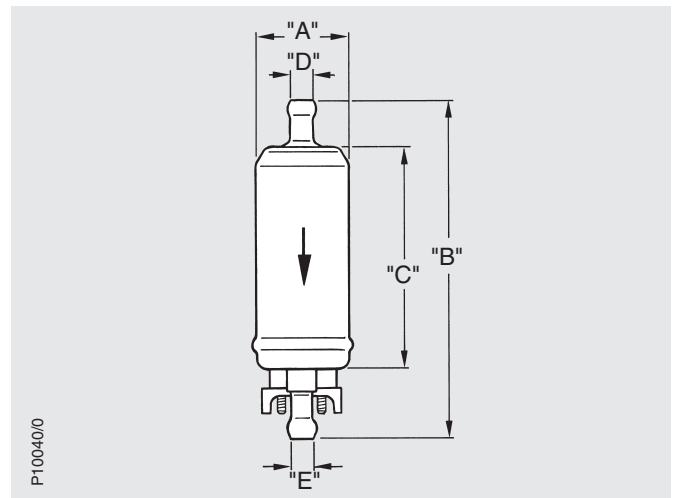
see → Service Information SI 0062 "Fitting an E1F as a replacement for a mechanical fuel pump".

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



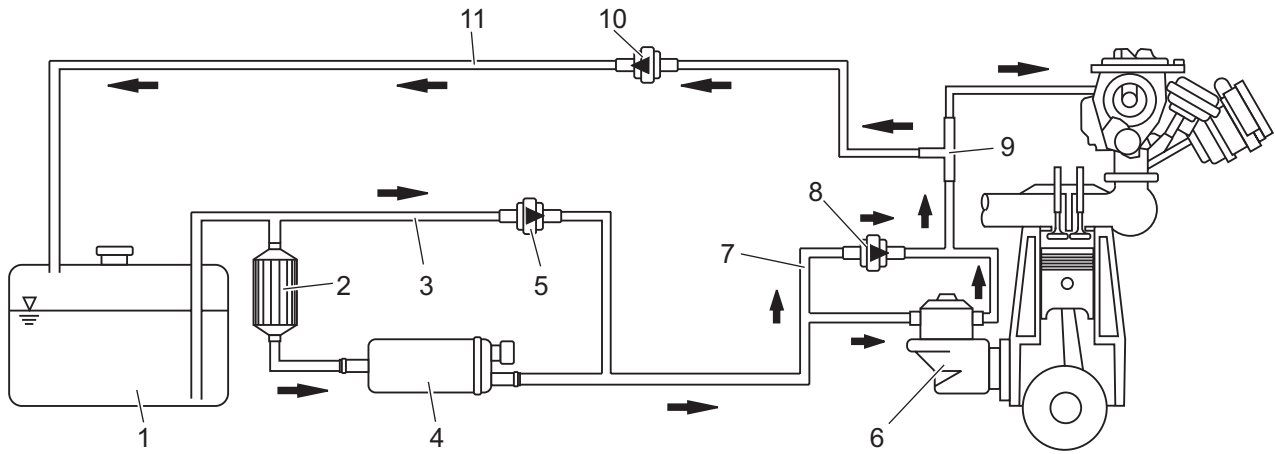
Dimensions of E1F

Technical data of E1F universal pumps

Pierburg-No.	Rated voltage [V]	Static pressure at Q=0 l/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.



Installation arrangement

- | | | |
|----------------------------|-----------------------------------|---------------------------------------|
| 1 Fuel tank | 5 Check valve (CV) in intake pipe | 9 Pressure regulating valve (PRV) |
| 2 Fuel filter | 6 Existing fuel pump (FP) | 10 Check valve (CV) in fuelreturnline |
| 3 Intake pipe | 7 Bypass FP | 11 Fuel return line |
| 4 Electric fuel pump (E1F) | 8 Check valve (CV) in bypass FP | |

The following points should be noted when fitting an E1F:

- The E1F (4) must be fitted low ("wet", below liquid level) in the vicinity of the tank (1).
- High suction heads and long fuel lines on the suction side must be avoided.
- A fuel filter (2) must be provided in the fuel line upstream of the pump (4).
The upstream fuel filter (2) 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.

- The existing fuel pump (FP) (6) should be bypassed with a fuel bypass line (7).
- To enable the existing fuel pump (FP) (6) to suck freely, a further fuel bypass line (3) ("suction pipe") must be arranged around the E1F (4).
- To prevent the fuel from flowing back, a check valve (5) and (8) (7.20469.51.0, 7.20234.50.0, 7.20234.52.0) must each be installed in the two bypass lines (3) and (7).

Application examples and further details, see → Service Information "si 0044"

In the case of carburettors with weakly dimensioned float arrangement, it is recommended for pressure limitation to fit a pressure regulating valve (9) upstream of the carburettor to prevent the float needle valve being subjected to excessive pressure. The pressure regulating valve (9) 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

- For trouble-free operation, a fuel return line (11) is recommended.
The return line must be dimensioned depending on the full load consumption (1 – 3 mm Ø).
- Depending on the mounting position of the fuel tank (1), a check valve (10) should also be installed in the return pipe (11) for leakage protection.
- The pump (4) can be electrically wired so that it operates continuously or can be started manually via a switch.
However, it must be connected to the ignition.



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.