T1 Pump

The T1 fixed displacement pump is a further development of series T1, which was specifically designed to meet the requirements of light duty truck applications with short, non-frequent operating cycles such as tippers, and small loaders.

The design is very similar to that of the F1 series pumps but is even more compact. It utilises our well proven 45° concepts with spherical pistons and laminated piston rings, offering high volumetric and mechanical efficiencies and, thanks also to the small number of parts, unprecedented reliability.

- Shaft speed to 2300 rpm
- Operating pressure up to 350 bar
- High overall efficiency
- Low weight
- Small installation dimensions
- Robust construction

The T1, with shaft and mounting flange configuration conforming to the European standard, can be installed on most European truck gearboxes. Suitable power-take-offs are also available from Parker Hannifin.

See page 34

Find more information on the T1 product page.

Typical T1 applications

- Front end tippers
- Under body tippers
- Hydraulic system infrequently used and with short cycle times.

T1 Pump

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Specifications

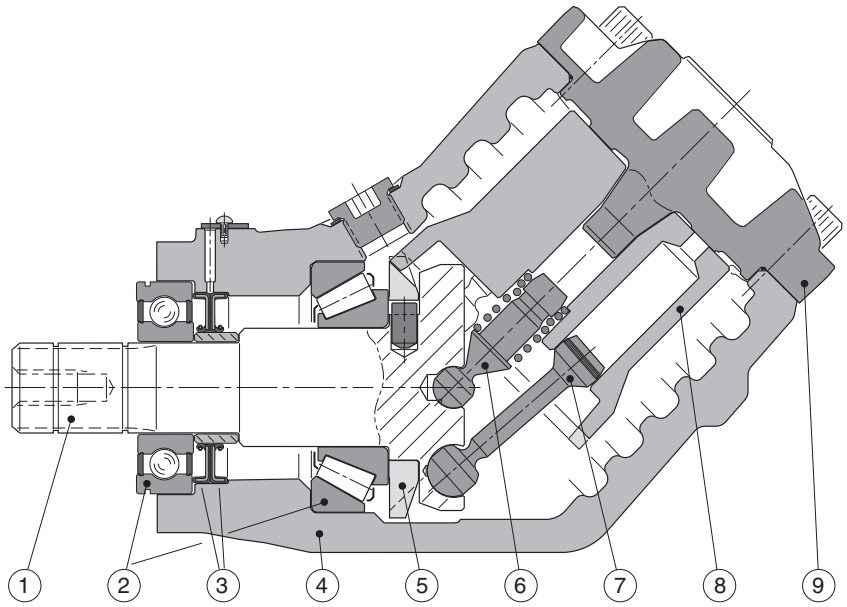
Frame size T1-	81	121
Displacement [cm^3/rev]	81.5	118.5
Max flow [1] [l/min]	163	190
Max operating pressure [bar]		
continuous	250	250
intermittent [3]	350	350
Shaft speed [rpm]		
- short circuited pump (low press.)	2300	2300
max speed [2]	2000	1600
Torque [1] [Nm]		
at 200 bar	258	376
at 350 bar	453	658
Max input power [3] [kW]	95	111
Weight [kg]	8.5	12.5

[1] Theoretical values
[2] Valid at an inlet pressure of 1.0 bar (abs.) when operating on mineral oil at a viscosity of 30 mm^2/s (cSt).
[3] Max 6 seconds in any one minute.

NOTE: For noise level information, contact Parker Hannifin.

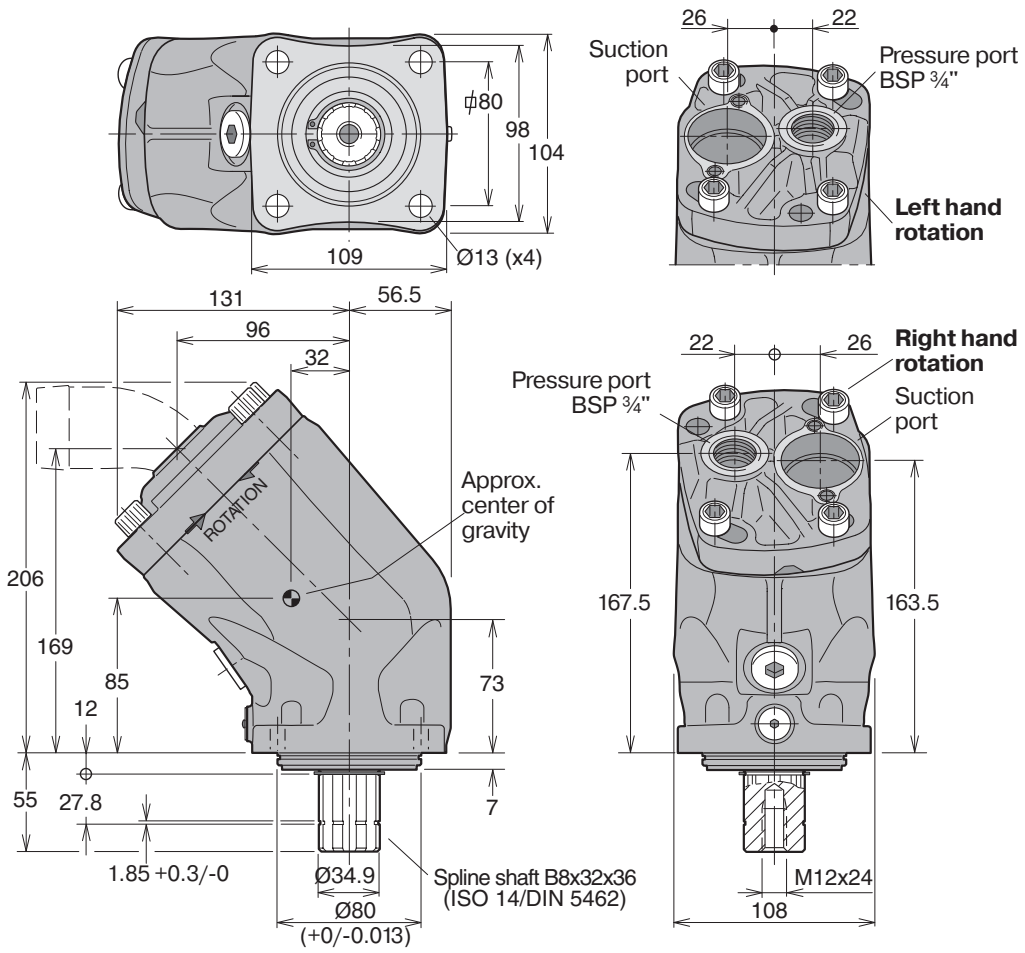
Pump cross section

(T1-121 shown)



1. Input shaft
2. Bearings
3. Shaft seals
4. Housing
5. Timing gear
6. Barrel support
7. Piston with piston ring
8. Cylinder barrel
9. End cap

T1-81



Ordering code

Example: **T1 - 81 - R**

T1 frame size
81 or **121**

Shaft rotation
R Right hand
L Left hand

NOTE: The pump **does not** include a suction fitting; it must be ordered separately. See page 63ff.

Port size

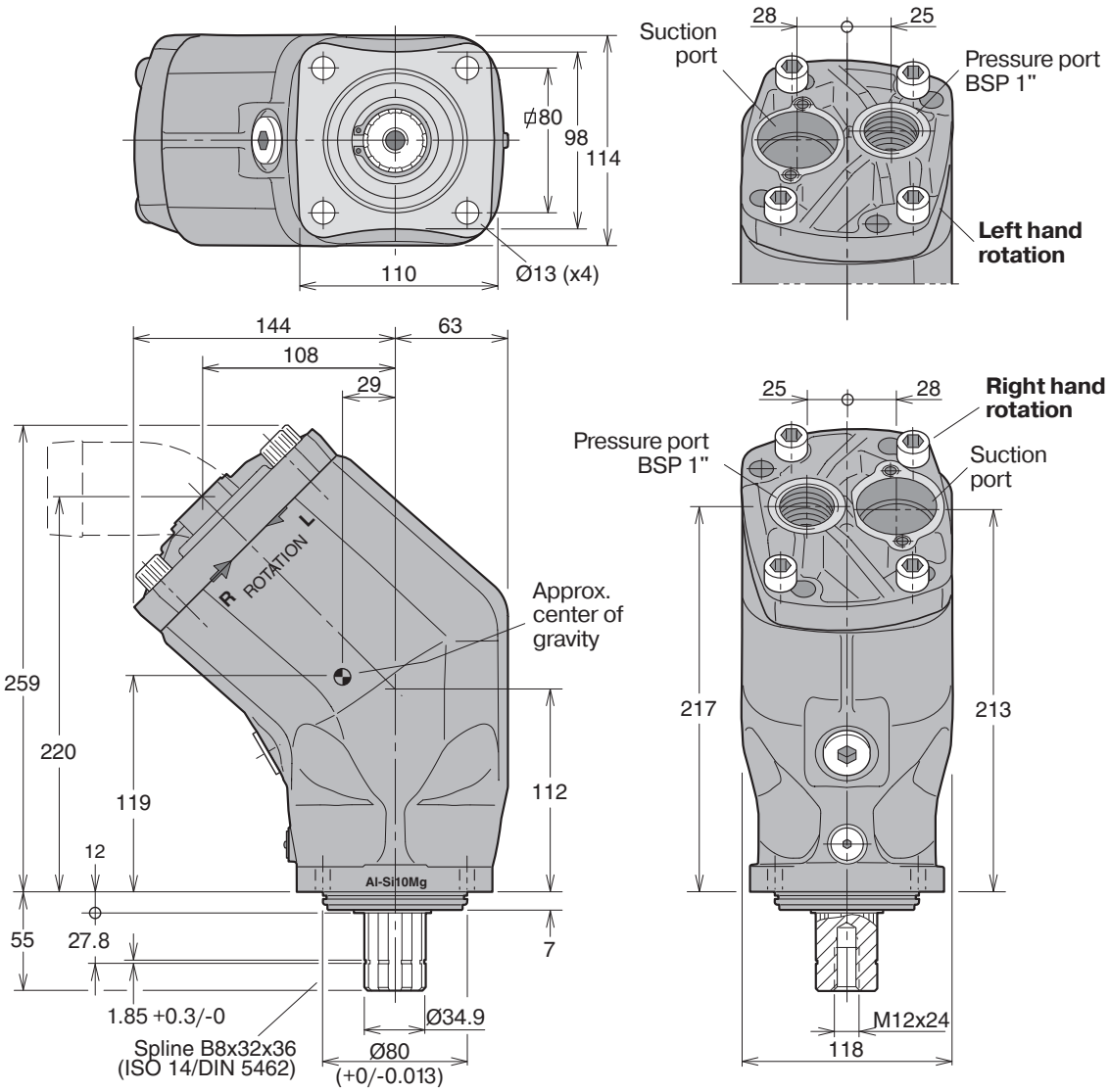
T1 frame size	Pressure port [1]
-81	$^3/_4$"
-121	1"

[1] BSP thread (fitting not included).

Standard versions

Designation	Ordering no.
T1-81-R	378 2180
T1-81-L	378 2181
T1-121-R	378 2120
T1-121-L	378 2121

T1-121


Ø80
98
114
110
Ø13 (x4)
28
25
Suction port
Pressure port BSP 1"
Left hand rotation
144
63
108
29
R
L
ROTATION
Approx. center of gravity
259
220
119
112
12
55
27.8
7
1.85 +0.3/-0
Spline B8x32x36 (ISO 14/DIN 5462)
Ø34.9
Ø80 (+0/-0.013)
Al-Si10Mg
25
28
Right hand rotation
Pressure port BSP 1"
Suction port
217
213
M12x24
118

Basic formulas for hydraulic pumps

Flow (q)

$$q = \frac{D \times n \times \eta_v}{1000} \text{ [l/min]}$$

Torque (M)

$$M = \frac{D \times \Delta p}{63 \times \eta_{hm}} \text{ [Nm]}$$

Power (P)

$$P = \frac{q \times \Delta p}{600 \times \eta_t} \text{ [kW]}$$

D – displacement [cm^3/rev]

n – shaft speed [rpm]

η_v – volumetric efficiency

Δp – differential pressure [bar] (between inlet and outlet)

η_{hm} – mechanical efficiency

η_t – overall efficiency ($\eta_t = \eta_v \times \eta_{hm}$)

Conversion factors

1 kg	2.20 lb
1 N	0.225 lbf
1 Nm	0.738 lbf ft
1 bar	14.5 psi
1 l	0.264 US gallon
1 cm^3	0.061 cu in
1 mm	0.039 in
$^9/_5$ °C + 32	1°F
1 kW	1.34 hp

On our website, www. parker.com/pmde, you can find:
2D & 3D drawings,
Installation Manuals,
Service Manuals,
Spare Parts Lists