

Parker Series 2F1C 2-Way Variable Flow Control Valve Service Manual

2-way flow control valves series 2F1C provide pressure and viscosity compensated flow from port A to port B. The counter direction is blocked (standard) or can be open via an integral reverse flow check valve (optional).

Function

The compensator spool is located in front of the metering spool. The metering spool is closed in the neutral position to avoid undesired initial actuator motion. The oil flow to open the metering spool has to pass a needle valve (not shown in the sectional drawing). The needle valve can be adjusted from the front panel to set the response time of the 2F1C.

The metering spool is adjusted by the main control knob. The key lock has three positions:

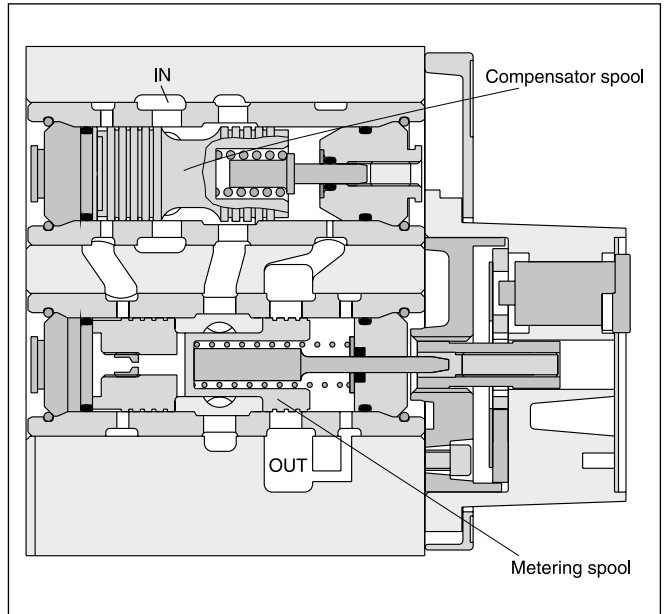
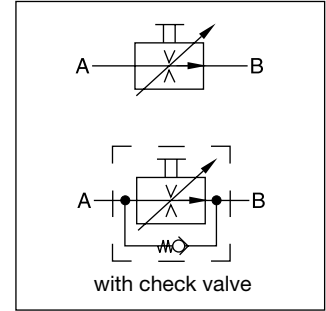
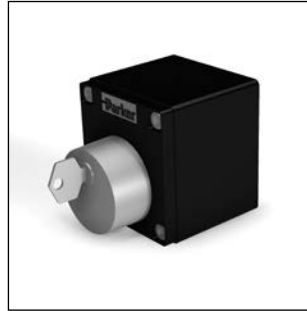
Lock: Adjustment is locked.

Adjust: Full adjustment is permitted.

Trim: Fine adjustment of $\pm 5\%$ is possible.

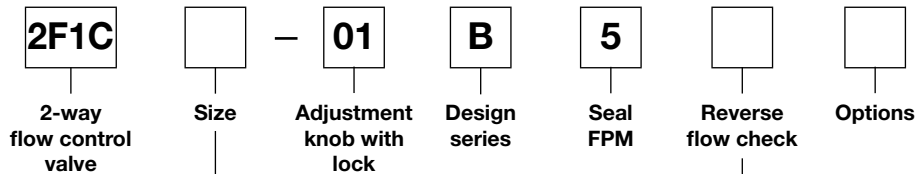
Features

- 2-way flow control valve
- Subplate mounting according to ISO 6263
- Excellent fine adjustment
- Adjustable response time
- Closed in neutral position
- Optional reverse flow check valve
- 2 sizes, NG10 (3/8"), NG16 (3/4")



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Ordering code



| Code | Size |
|------|-------------|
| 02 | NG10 (3/8") |
| 03 | NG16 (3/4") |

| Code | Check valve |
|------|---------------|
| 0 | without check |
| C | with check |

Technical Data

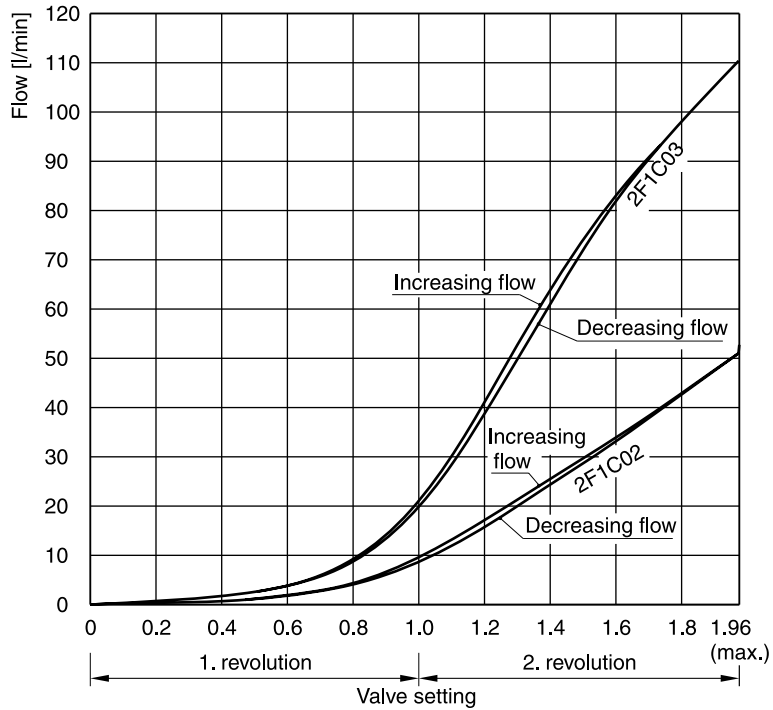
| General | | | |
|----------------------------------|--|---|---------------|
| Design | Orifice, infinitely variable, pressure-compensated | | |
| Actuator | Manual flow rate adjustment | | |
| Mounting type | ISO 6263 | | |
| Mounting position | unrestricted | | |
| MTTF _D value | [years] | 150 | |
| Weight | [kg] | 6.0 (2F1C02), 9.0 (2F1C03) | |
| Ambient temperature | [°C] | -20...+60 | |
| Fluid | Hydraulic oil according to DIN 51524 | | |
| Fluid temperature | [°C] | -20...+70 | |
| Viscosity, permitted recommended | [cSt] / [mm ² /s] | 20 ... 400 | |
| | [cSt] / [mm ² /s] | 30 ... 80 | |
| Filtering | ISO 4406 (1999); 18/16/13 | | |
| Min. pressure difference | [bar] | see diagram | |
| Max. operating pressure | | 2F1C02 | 2F1C03 |
| | Port A | [bar] 14...280 | 14...350 |
| | Port B | [bar] 0...270 | 0...340 |
| Flow direction | A → B | Flow control function blocked or free flow through check valve | |
| | B → A | | |

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Characteristic Curves

Performance curves

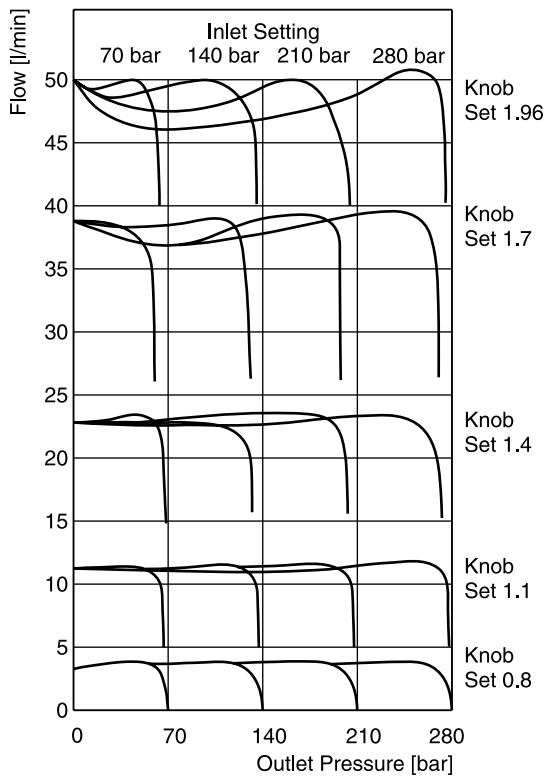
Flow / knob adjustment characteristics at 210 bar



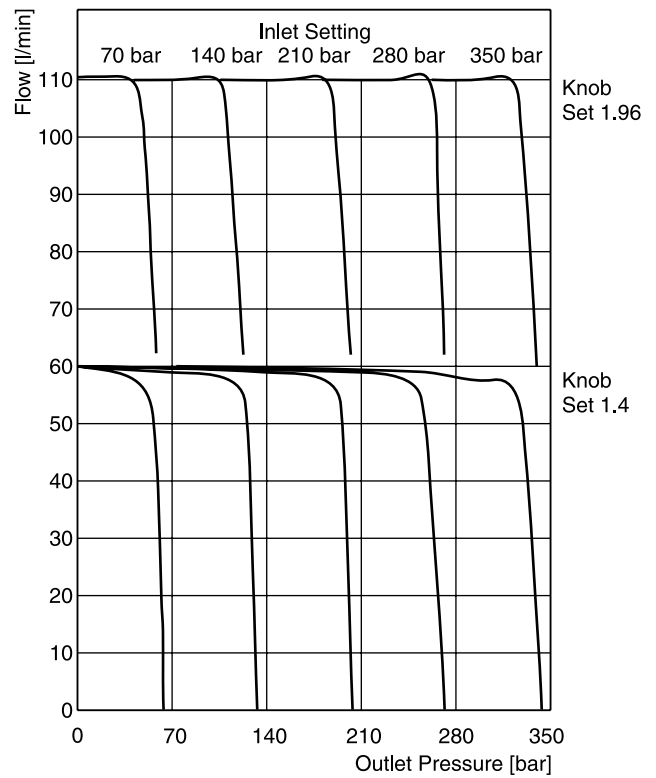
Flow / pressure drop curves

Constant inlet pressure – variable outlet pressure

2F1C02



2F1C03

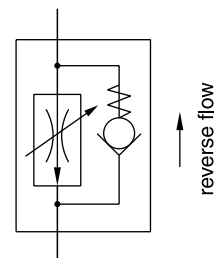
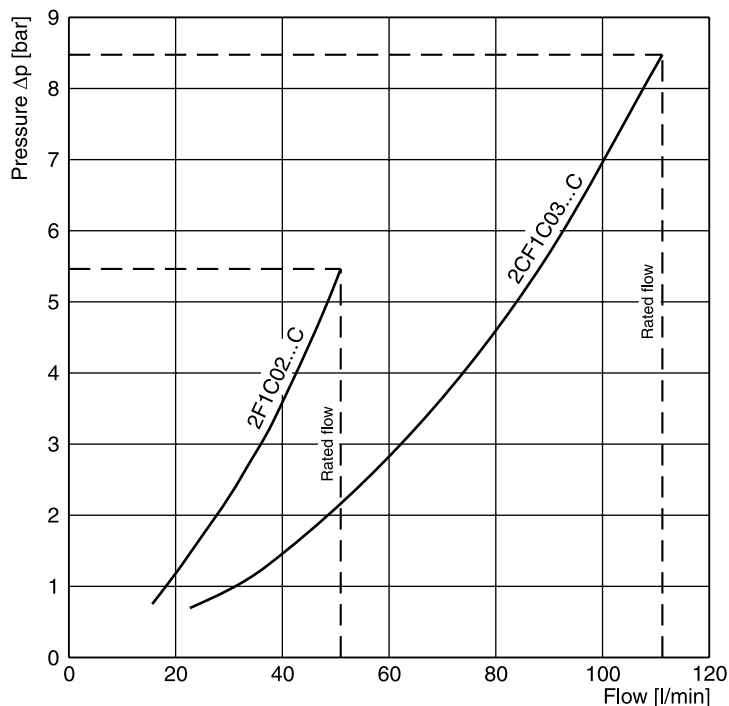


All characteristic curves measured with HLP46 at 50 °C.

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$\Delta p/Q$ performance curves

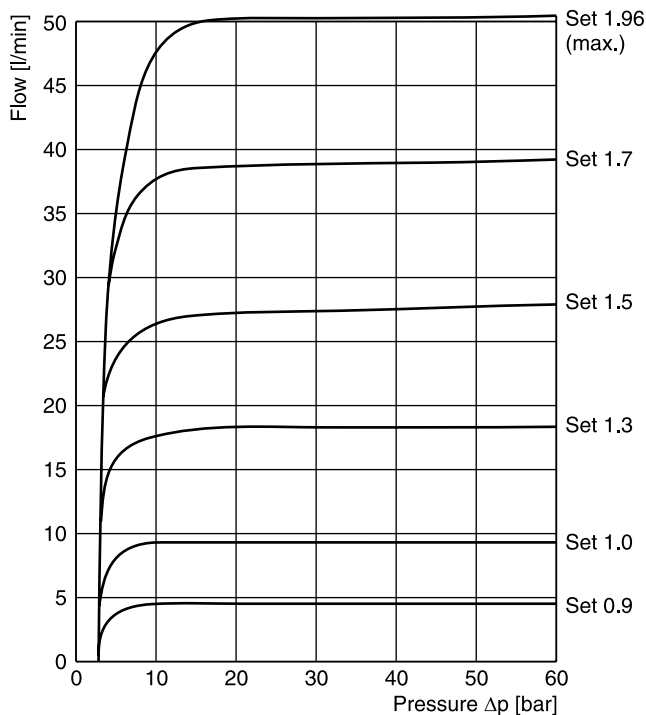
for reverse flow direction
 2F1C02 at 280 bar
 2F1C03 at 350 bar



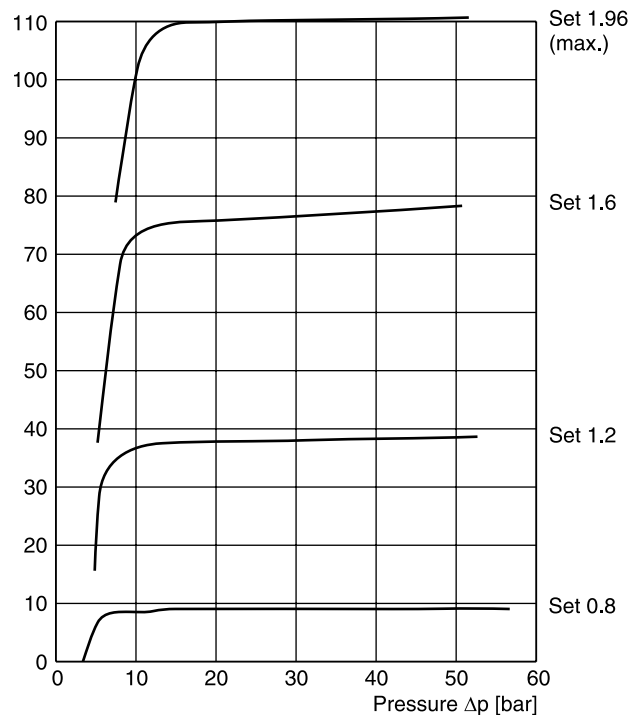
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Minimum pressure difference curves

2F1C02



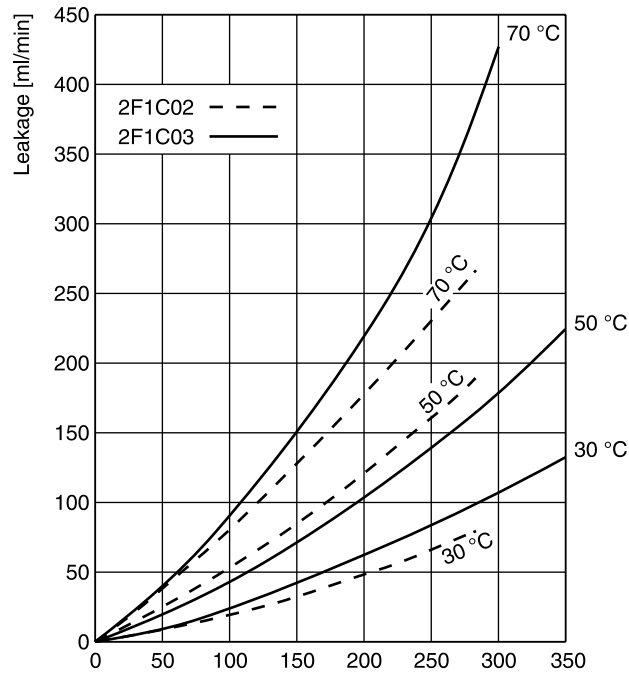
2F1C03



All characteristic curves measured with HLP46 at 50 °C.

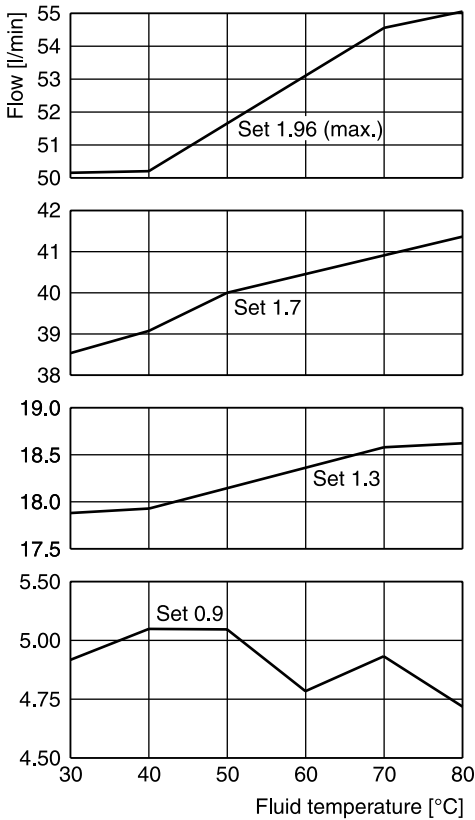
Characteristic Curves

Leakage / pressure curves

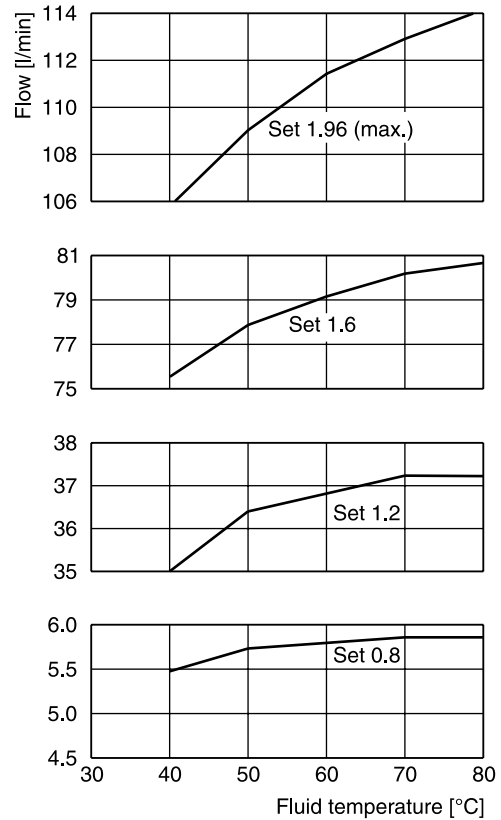


Flow / temperature curves at 210 bar

2F1C02

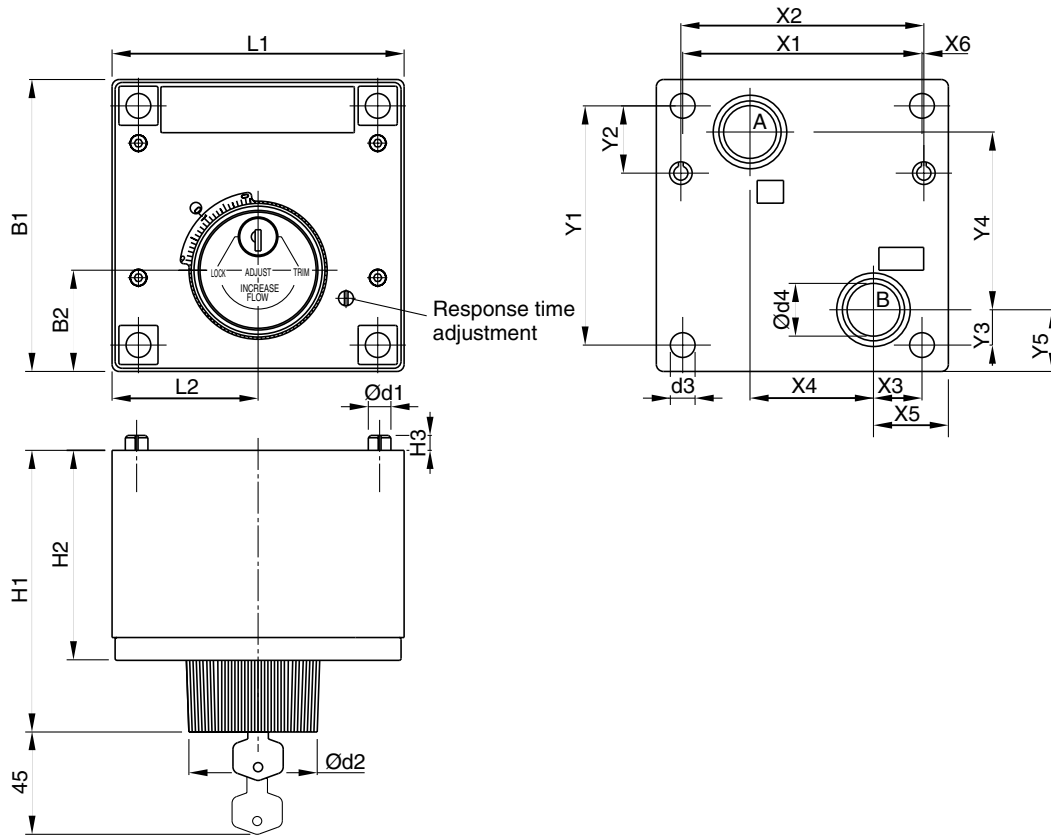


2F1C03



All characteristic curves measured with HLP46 at 50 °C.





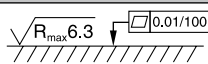
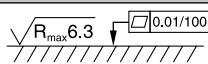
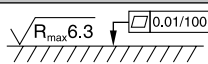
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| Size | ISO-code | x1 | x2 | x3 | x4 | x5 | x6 | y1 | y2 | y3 | y4 | y5 |
|------|----------------|-------|-------|------|------|------|-----|-------|------|------|------|------|
| 02 | 6263-AM-07-2-A | 76.2 | 79.4 | 9.5 | 44.5 | 19 | - | 82.5 | 23.8 | 30.2 | 41.3 | 39.7 |
| 03 | 6263-AK-06-2-A | 101.6 | 103.2 | 20.6 | 52.4 | 31.8 | 0.8 | 101.6 | 28.6 | 15.1 | 75.4 | 26.2 |

| Size | ISO-code | B1 | B2 | H1 | H2 | H3 | L1 | L2 | d1 | d2 | d3 | d4 |
|------|----------------|-------|------|-------|------|-----|------|------|-----|------|------|------|
| 02 | 6263-AM-07-2-A | 101.6 | 38.1 | 119.6 | 87.4 | 6.4 | 95.2 | 47.6 | 6.4 | 57.2 | 8.7 | 14.2 |
| 03 | 6263-AK-06-2-A | 124 | 42.9 | 121.4 | 89.2 | 6.4 | 124 | 62 | 9.5 | 57.2 | 10.5 | 22.4 |

| NG | ISO-code | Bolt kit -  ISO 4762-12.9  |  |  Kit | Surface finish  |
|----|----------------|--|---|---|---|
| 02 | 6263-AM-07-2-A | BK538 4x M8x95 | 31.8 Nm ±15 % | on request | $\sqrt{R_{max}6.3}$  |
| 03 | 6263-AK-06-2-A | BK539 4x M10x95 | 63 Nm ±15 % | on request | $\sqrt{R_{max}6.3}$  |