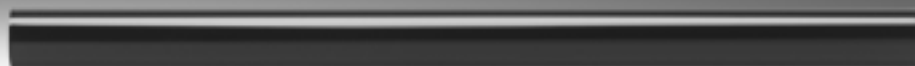


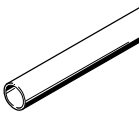
Piping

FESTO



Piping

Product range overview and type codes

| Product range overview | | | | | | |
|---|---|--------------|--------------|--------|-------|---------------------|
| Version | Type | O.D. [mm] | I.D. [mm] | Colour | | → Page/ Internet |
| | | | | Silver | Black | |
|  | PQ-AL Wrought aluminium alloy | 12 | 10 | ■ | – | 3 |
| | | 15 | 13 | ■ | – | |
| | | 18 | 16 | ■ | – | |
| | | 22 | 20 | ■ | – | |
| | | 28 | 25 | ■ | – | |
| | PQ-PA PA | 12 | 9 | – | ■ | 4 |
| | | 15 | 12 | – | ■ | |
| | | 18 | 14 | – | ■ | |
| | | 22 | 18 | – | ■ | |
| | | 28 | 23 | – | ■ | |
| | PM Wrought aluminium alloy, PE | 6 | 3.92 | – | ■ | 6 |
| | | 8 | 5.2 | – | ■ | |

Type codes PQ-AL/PQ-PA

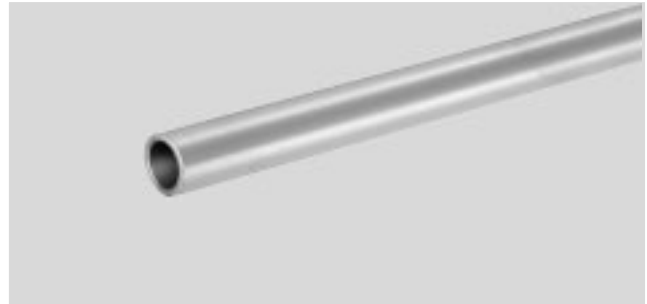
| | | | | | | | |
|-------------------------------------|------------------------------------|---|----|---|------|---|------|
| PQ | | – | AL | – | 18x1 | x | 3000 |
| Series | | | | | | | |
| PQ | Pipe | | | | | | |
| Material | | | | | | | |
| AL | Wrought aluminium alloy | | | | | | |
| PA | Polyamide | | | | | | |
| O.D. and wall thickness [mm] | | | | | | | |
| PQ-AL | | | | | | | |
| | 12x1; 15x1; 18x1; 22x1; 28x1.5 | | | | | | |
| PQ-PA | | | | | | | |
| | 12x1.5; 15x1.5; 18x2; 22x2; 28x2.5 | | | | | | |
| Length [mm] | | | | | | | |
| 3000 | 3000 mm | | | | | | |

Piping PQ

Technical data

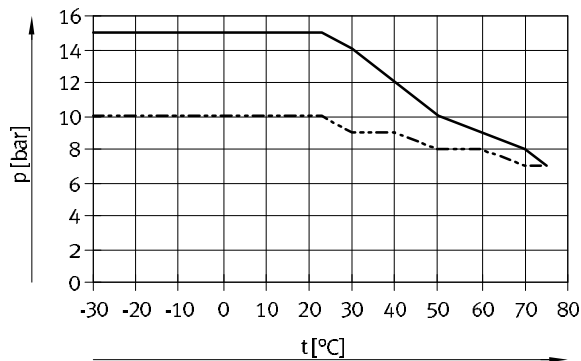
Pipe PQ-AL

- Rigid, corrosion resistant aluminium pipe
- Smooth inside wall ensures optimum flow conditions



| Operating and environmental conditions | | | | | |
|--|-----------------------|----------|----------|----------|-----------------------|
| Type | PQ-AL-12 | PQ-AL-15 | PQ-AL-18 | PQ-AL-22 | PQ-AL-28 |
| Temperature-dependent operating pressure [bar] | -0.95 ... +15 → graph | | | | -0.95 ... +10 → graph |
| Ambient temperature [°C] | -30 ... +75 | | | | |
| Temperature of medium [°C] | -25 ... +75 | | | | |

Operating pressure p as a function of temperature t



— PQ-AL-12/15/18/22
 - - - - PQ-AL-28

Possible fittings



Push-in fitting CQ
 → Internet: cq

| Materials | |
|-------------------|-------------------------|
| Tube | Wrought aluminium alloy |
| Note on materials | RoHS-compliant |

| Dimensions and ordering data | | | | | | |
|------------------------------|-----------|---------------------------------|--------|----------|-------------------|-----------------------|
| O.D. [mm] | I.D. [mm] | Product weight by length [kg/m] | Colour | Part No. | Type | PU ¹⁾ [mm] |
| 12 | 10 | 0.093 | Silver | 177732 | PQ-AL-12x1x3000 | 3000 |
| 15 | 13 | 0.119 | | 177733 | PQ-AL-15x1x3000 | 3000 |
| 18 | 16 | 0.144 | | 177734 | PQ-AL-18x1x3000 | 3000 |
| 22 | 20 | 0.178 | | 177735 | PQ-AL-22x1x3000 | 3000 |
| 28 | 25 | 0.337 | | 194593 | PQ-AL-28x1,5x3000 | 3000 |

1) Packaging unit

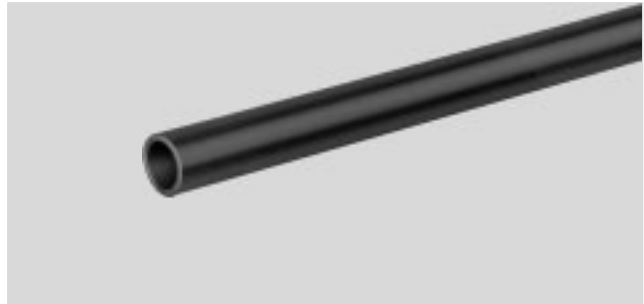
Piping PQ

Technical data

FESTO

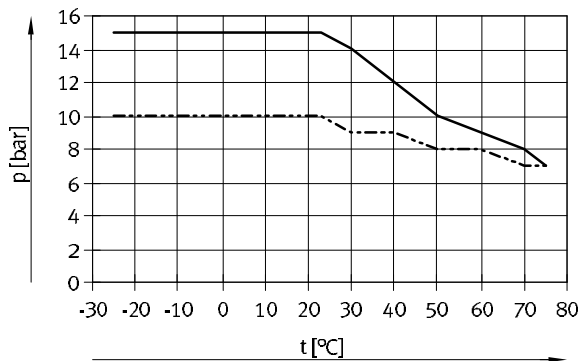
Plastic pipe PQ-PA

- Rigid pipe made from high quality polyamide; corrosion resistant, flexible and maintenance-free
- Smooth inside wall ensures optimum flow conditions



| Operating and environmental conditions | | | | | |
|--|-----------------------|----------|----------|----------|-----------------------|
| Type | PQ-PA-12 | PQ-PA-15 | PQ-PA-18 | PQ-PA-22 | PQ-PA-28 |
| Temperature-dependent operating pressure [bar] | -0.95 ... +15 → graph | | | | -0.95 ... +10 → graph |
| Ambient temperature [°C] | -25 ... +75 | | | | |
| Temperature of medium [°C] | -25 ... +75 | | | | |

Operating pressure p as a function of temperature t



— PQ-PA-12/15/18/22
 - - - - PQ-PA-28

Possible fittings



Push-in fitting CQ
 → Internet: cq

Materials

| | |
|------|----|
| Tube | PA |
|------|----|

Dimensions and ordering data

| O.D. [mm] | I.D. [mm] | Product weight by length [kg/m] | Colour | Part No. | Type | PU ¹⁾ [mm] |
|-----------|-----------|---------------------------------|--------|----------|-------------------|-----------------------|
| 12 | 9 | 0.051 | Black | 177728 | PQ-PA-12x1,5x3000 | 3000 |
| 15 | 12 | 0.065 | | 177729 | PQ-PA-15x1,5x3000 | 3000 |
| 18 | 14 | 0.103 | | 177730 | PQ-PA-18x2x3000 | 3000 |
| 22 | 18 | 0.13 | | 177731 | PQ-PA-22x2x3000 | 3000 |
| 28 | 23 | 0.204 | | 194594 | PQ-PA-28x2,5x3000 | 3000 |

1) Packaging unit

Piping PQ

Accessories

Pipe clamp PQ-RK-...-B

Suitable for retaining pipes with O.D. of 12, 15, 18, 22 and 28 mm.

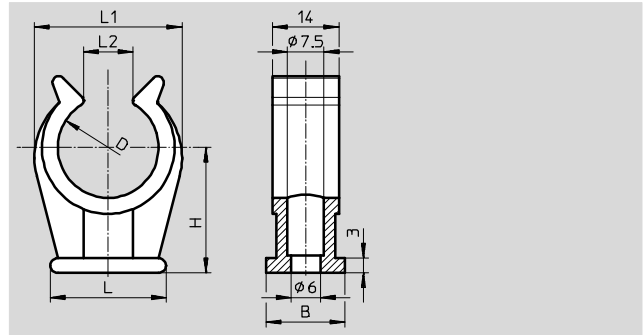
Material: PP

Note on materials:

RoHS-compliant

Ambient temperature:

-25 ... +85 °C



| Dimensions and ordering data | | | | | | | | | | |
|------------------------------|------|------|------|------|----|----|-------------------------|----------|------------|------------------|
| Nominal width [mm] | D | B | H | L | L1 | L2 | Weight/ piece [g] | Part No. | Type | PU ¹⁾ |
| 12 | 11.5 | 16.5 | 17.8 | 17.5 | 20 | 9 | 2.4 | 550595 | PQ-RK-12-B | 10 |
| 15 | 15 | 16 | 17.5 | 22.5 | 23 | 10 | 3.2 | 550596 | PQ-RK-15-B | 10 |
| 18 | 17 | 16 | 23.5 | 22.5 | 25 | 10 | 4.0 | 550597 | PQ-RK-18-B | 10 |
| 22 | 20.5 | 16 | 25.2 | 23.5 | 30 | 10 | 5.1 | 550598 | PQ-RK-22-B | 10 |
| 28 | 27.8 | 16 | 32.5 | 26 | 39 | 15 | 8.4 | 550599 | PQ-RK-28-B | 1 |

1) Packaging unit

Pipe cutter ZR

The pipe cutter ZR is used for cutting to length plastic piping PQ-PA with outside diameters of up to 28 mm. It is not suitable for tubing with metal casing.



| Ordering data | | |
|---------------|----------|------|
| | Part No. | Type |
| Pipe cutter | 194592 | ZR |

Plastic-coated metal tubes PM

Technical data



Plastic-coated metal tube PM

The tube PM has the corrosion resistance of plastic and the deformation resistance of metal. It can be bent, straightened and reshaped several times without pipe-bending equipment and without being damaged.



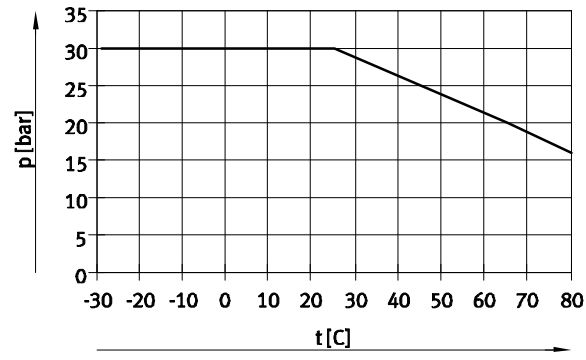
| Operating and environmental conditions | | |
|--|-------|---|
| Temperature-dependent operating pressure | [bar] | -0.95 ... +30 → graph |
| Operating medium | | Compressed air according to ISO 8573-1:2010 [7:-:-] |
| Ambient temperature | [°C] | -29 ... +65 |

Note

The plastic-coated metal tube PM is printed with "10 bar at RT". This specification of the maximum operating pressure at room temperature (RT) is based on using the tube in combination with a push-in fitting from Festo.

When using a push-in fitting, the bending radius must be followed by a straight piece of tube with a length of approx. 20 mm.

Operating pressure p as a function of temperature t



Possible fittings

Push-in fitting QS, Quick Star¹⁾
 → Internet: qs

Accessories

Pipe and tubing cutter ZRS
 → Internet: tools

1) Note the operating range of the push-in fittings

Materials

| | |
|-------------------|-----------------------------|
| Tube | Wrought aluminium alloy, PE |
| Note on materials | RoHS-compliant |
| | Free of copper and PTFE |

Dimensions and ordering data

| O.D. [mm] | I.D. [mm] | Bending radius relevant for flow rate [mm] | Product weight by length [kg/m] | Colour | Part No. | Type | PU ¹⁾ [m] |
|--------------|--------------|---|------------------------------------|--------|----------|------|-------------------------|
| 6 | 3.92 | 19 | 0.024 | Black | 9084 | PM-4 | 50 |
| 8 | 5.2 | 25 | 0.032 | | 9087 | PM-6 | 50 |

1) Packaging unit