

# Push-in fittings CQ, for push-fit piping systems

Key features

FESTO



## General information

- Suitable for polyamide pipes PQ-PA and aluminium pipes PQ-AL  
Outer  $\varnothing$  12, 15, 18, 22 and 28 mm  
→ Internet: pq
- Suitable for polyamide tubing PAN, PAN-L and polyurethane tubing PUN  
Outer  $\varnothing$  12 mm  
→ Internet: pan, pun
- For compressed air, vacuum or liquids.
- The pipes/tubes are held externally. This ensures that there is no reduction of nominal size.
- Simple, fast installation:
  - cut to length
  - insert
  - and you're done!
- The pipes/tubes can be assembled and dismantled without tools.
- Quick release connection.
- Can be re-used a number of times.
- The releasing tool CQO for size 12 ... 22 is provided for applications requiring frequent dismantling or where the push-in fittings are difficult to access.
- The retaining ring CQSR available as an accessory prevents inadvertent disconnection of the tubing or pipe. Size 28 features an integrated retaining device.
- Screw-in thread cylindrical to DIN ISO 228/1, sealed with chamfered O-ring, size 28 with PVC flat seal.
- No additional thread sealing compound required.
- Plug connector materials approved for use by the FDA (Food and Drug Administration).  
Exception: Push-in fitting CQ-1-28-H
- Minimal weight as opposed to steel pipe and die-cast fittings.

# Push-in fittings CQ, for push-fit piping systems

Technical data

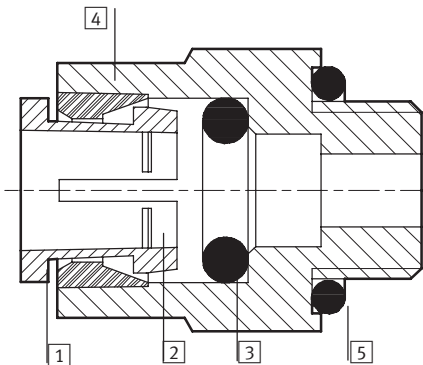
| Operating and environmental conditions       |  | Push-in fitting    | Push-in connector | Water separator | Distributor |
|--|--|--------------------|-------------------|-----------------|-------------|
| Operating pressure [bar]                     |  | -0.95 ... +15      |                   |                 |             |
| Room temperature [°C]                        |  | -25 ... +75        |                   |                 |             |
| Temperature of medium [°C]                   |  |                    |                   | -25 ... +75     |             |
| Corrosion resistance class CRC <sup>1)</sup> |  | 2                  |                   |                 |             |
| Food industry approval                       |  | FDA                |                   |                 |             |
| Approval                                     |  | Germanischer Lloyd |                   |                 |             |

1) Corrosion resistance class 2 to Festo standard 940 070  
 Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents

| Operating pressure [bar]   | Push-in fitting |          |          |          |              | Water separator |              |
|----------------------------|-----------------|----------|----------|----------|--------------|-----------------|--------------|
|                            | CQ...-12        | CQ...-15 | CQ...-18 | CQ...-22 | CQ...-28     | CQA-22          | CQA-28       |
| Room temperature [°C]      |                 |          |          |          |              |                 |              |
| -20                        | -0.95 ... 15    |          |          |          | -0.95 ... 10 | -0.95 ... 15    | -0.95 ... 10 |
| +23                        | -0.95 ... 15    |          |          |          | -0.95 ... 10 | -0.95 ... 15    | -0.95 ... 10 |
| +70                        | -0.95 ... 7     |          |          |          |              | -0.95 ... 7     | -            |
| Temperature of medium [°C] |                 |          |          |          |              |                 |              |
| 1 ... 23                   | 10              |          |          |          | 10           | -               | -            |
| 1 ... 65                   | 10              |          |          |          | 7            | -               | -            |

## Materials

Sectional view












|                         | CQ...  | CQ-1-28H                   |
|-------------------------|--|----------------------------|
| 1 Release ring          | Polyacetal                                   | Polyacetal                 |
| 2 Tube retaining claw   | High-alloy stainless steel                   | High-alloy stainless steel |
| 3 O-ring                | Nitrile rubber                               | Nitrile rubber             |
| 4 Housing               | Polyacetal                                   | Polyacetal                 |
| 5 Connector thread seal | Nitrile rubber                               | Polyvinyl chloride         |
| Material note           | Contains paint wetting impairment substances |                            |

# Push-in fittings CQ, for push-fit piping systems





Product range overview

FESTO

| Design  | Version   | Type         | Connection D1 |                  |                  | Connection D2    |                  | → Page/<br>Internet |
|---|---|--------------|---------------|------------------|------------------|------------------|------------------|---------------------|
|   |   |              | G thread      | Tube/piping O.D. | Push-in sleeve Ø | Tube/piping O.D. | Push-in sleeve Ø |                     |
| Straight design   | <b>Push-in fitting – Male thread</b>  |              |               |                  |                  |                  |                  |                     |
|   |    | CQ           | G3/8          | -                | -                | 12               | -                | 5                   |
|   |   |              | G1/2          |                  |                  | 12, 15, 18       |                  |                     |
|   |   |              | G3/4          |                  |                  | 22               |                  |                     |
|   | <b>Push-in fitting with sleeve</b>  |              |               |                  |                  |                  |                  |                     |
|   |    | CQ-...H      | G3/8          | -                | -                | 12, 15           | -                | 5                   |
|   |   |              | G1/2          |                  |                  | 12, 15, 18, 22   |                  |                     |
|   |   |              | G3/4          |                  |                  | 22               |                  |                     |
|   |   |              | G1            |                  |                  | 28               |                  |                     |
|   | <b>Push-in connector</b>  |              |               |                  |                  |                  |                  |                     |
|    | CQ  | -            | 12            | -                | -                | -                | 6                |                     |
|   |   |              | 15            |                  |                  |                  |                  |                     |
|   |   |              | 18            |                  |                  |                  |                  |                     |
|   |   |              | 22            |                  |                  |                  |                  |                     |
|   |   |              | 28            |                  |                  |                  |                  |                     |
| <b>Push-in connector with sleeve</b>  |   |              |               |                  |                  |                  |                  |                     |
|   | CQ-...H   | -            | 12            | -                | -                | 15               | 6                |                     |
|   |   |              | 15            |                  |                  | 18               |                  |                     |
|   |   |              | 18            |                  |                  | 22               |                  |                     |
|   |   |              | 22            |                  |                  | 28               |                  |                     |
|   |   |              | 28            |                  |                  |                  |                  |                     |
| <b>Push-in sleeve</b>   |   |              |               |                  |                  |                  |                  |                     |
|  | CQH-...-QS  | -            | -             | 15               | -                | 12               | 7                |                     |
|   |   |              |               | 18               |                  | 16               |                  |                     |
|   |   |              |               | 22               |                  | 16               |                  |                     |
| <b>Blanking plug</b>  |   |              |               |                  |                  |                  |                  |                     |
|  | CQC-...H  | -            | -             | 12               | -                | -                | 7                |                     |
|   |   |              |               | 15               |                  |                  |                  |                     |
|   |   |              |               | 18               |                  |                  |                  |                     |
|   |   |              |               | 22               |                  |                  |                  |                     |
|   |   |              |               | 28               |                  |                  |                  |                     |
| L-shape   | <b>Push-in L-connector</b>  |              |               |                  |                  |                  |                  |                     |
|   |  | CQL          | -             | 12               | -                | -                | -                | 8                   |
|   |   |              | 15            |                  |                  |                  |                  |                     |
|   |   |              | 18            |                  |                  |                  |                  |                     |
|   |   |              | 22            |                  |                  |                  |                  |                     |
|   |   |              | 28            |                  |                  |                  |                  |                     |
| T-shape   | <b>Push-in T-connector</b>  |              |               |                  |                  |                  |                  |                     |
|   |  | CQT          | -             | 12               | -                | -                | -                | 8                   |
|   |   |              | 15            |                  |                  |                  |                  |                     |
|   |   |              | 18            |                  |                  |                  |                  |                     |
|   |   |              | 22            |                  |                  |                  |                  |                     |
|   |   |              | 28            |                  |                  |                  |                  |                     |
|   |  | CQT Reducing | -             | 18               | -                | 15               | 8                |                     |
|   |   |              |               | 22               |                  | 15               |                  |                     |

# Push-in fittings CQ, for push-fit piping systems

Product range overview

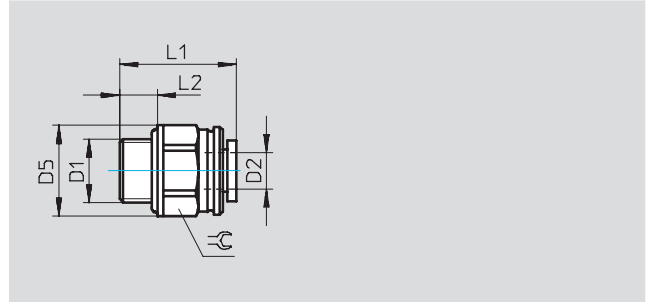
| Design  | Version   | Type | Connection D1 |                  |                  | Connection D2    |                  | → Page/<br>Internet |
|---|---|------|---------------|------------------|------------------|------------------|------------------|---------------------|
|   |   |      | G thread      | Tube/piping O.D. | Push-in sleeve Ø | Tube/piping O.D. | Push-in sleeve Ø |                     |
| Straight design   | <b>Distributor</b>  |      |               |                  |                  |                  |                  |                     |
|   |  | CQD  | -             |                  |                  |                  |                  | 9                   |
|   | <b>Water separator</b>  |      |               |                  |                  |                  |                  |                     |
|   |  | CQA  | -             | 22<br>28         | -                | -                | -                | 9                   |
|   | <b>Retaining ring</b>   |      |               |                  |                  |                  |                  |                     |
|   |  | CQSR | -             |                  |                  |                  |                  | 10                  |
| <b>Releasing tool</b>   |   |      |               |                  |                  |                  |                  |                     |
|  | CQO   | -    |               |                  |                  |                  | 10               |                     |

# Push-in fittings CQ, for push-fit piping systems

Technical data

**Push-in fitting CQ**  
with sealing ring

Material:  
Polyacetal

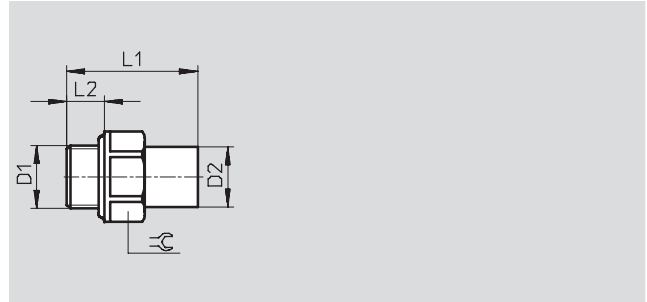


| Dimensions and ordering data |              |                  |      |      |      |    |              |          |                       |     |
|------------------------------|--------------|------------------|------|------|------|----|--------------|----------|-----------------------|-----|
| Connection                   | Nominal size | Pipe/tubing O.D. | D5   | L1   | L2   | ⌀  | Weight/piece | Part No. | Type                  | PU* |
| D1                           | [mm]         | D2               |      |      |      |    | [g]          |          |                       |     |
| G $\frac{3}{8}$              | 8.65         | 12               | 26.4 | 30.6 | 9.3  | 24 | 8            | 177 682  | CQ- $\frac{3}{8}$ -12 | 1   |
| G $\frac{1}{2}$              | 8.65         | 12               | 29.8 | 34   | 12.5 | 27 | 12           | 177 683  | CQ- $\frac{1}{2}$ -12 | 1   |
|                              | 12           | 15               | 29.7 | 38   | 12.5 | 27 | 14           | 177 684  | CQ- $\frac{1}{2}$ -15 | 1   |
|                              | 12.7         | 18               | 34   | 54.8 | 12.5 | -  | 24           | 177 685  | CQ- $\frac{1}{2}$ -18 | 1   |
| G $\frac{3}{4}$              | 17           | 22               | 40   | 60.7 | 13.4 | -  | 36           | 177 686  | CQ- $\frac{3}{4}$ -22 | 1   |

\* Packaging unit quantity

**Push-in fitting CQ-...H**  
with push-in sleeve and sealing ring

Material:  
Polyacetal  
(G1 connection: Brass)



| Dimensions and ordering data |              |                  |      |      |    |              |          |                        |     |  |
|------------------------------|--------------|------------------|------|------|----|--------------|----------|------------------------|-----|--|
| Connection                   | Nominal size | Push-in sleeve ⌀ | L1   | L2   | ⌀  | Weight/piece | Part No. | Type                   | PU* |  |
| D1                           | [mm]         | D2               |      |      |    | [g]          |          |                        |     |  |
| G $\frac{3}{8}$              | 8.65         | 12               | 39.8 | 9.3  | 24 | 4            | 177 705  | CQ- $\frac{3}{8}$ -12H | 1   |  |
|                              | 9.4          | 15               | 43.3 | 12.5 | 27 | 10           | 177 707  | CQ- $\frac{3}{8}$ -15H | 1   |  |
| G $\frac{1}{2}$              | 8.65         | 12               | 54.4 | 11.3 | 22 | 8            | 177 706  | CQ- $\frac{1}{2}$ -12H | 1   |  |
|                              | 10           | 15               | 57.9 | 14.5 | 27 | 14           | 177 708  | CQ- $\frac{1}{2}$ -15H | 1   |  |
|                              | 12.7         | 18               | 62.9 | 14.5 | 27 | 18           | 177 709  | CQ- $\frac{1}{2}$ -18H | 1   |  |
|                              | 12.15        | 22               | 64.9 | 14.5 | 27 | 18           | 177 710  | CQ- $\frac{1}{2}$ -22H | 1   |  |
| G $\frac{3}{4}$              | 17           | 22               | 69   | 17   | 37 | 28           | 177 711  | CQ- $\frac{3}{4}$ -22H | 1   |  |
| G1                           | 23           | 28               | 80   | 15   | 36 | 200          | 194 589  | CQ-1-28H               | 1   |  |

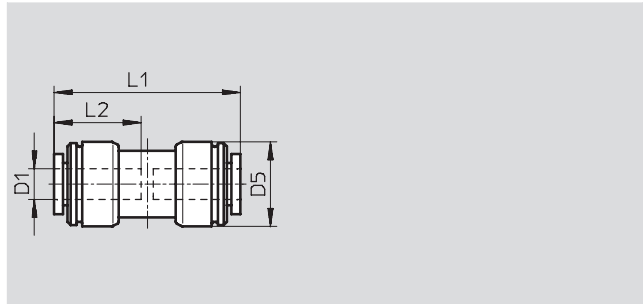
\* Packaging unit quantity

# Push-in fittings CQ, for push-fit piping systems

Technical data

## Push-in connector CQ

Material:  
Polyacetal



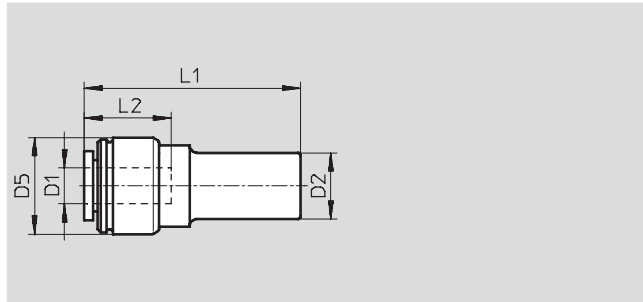
| Dimensions and ordering data |              |        |           |      |              |          |       |     |
|------------------------------|--------------|--------|-----------|------|--------------|----------|-------|-----|
| Pipe/tubing O.D.             | Nominal size | D5     | L1        | L2   | Weight/piece | Part No. | Type  | PU* |
| D1                           | [mm]         | ∅ ±0.5 |           | ±1   | [g]          |          |       |     |
| 12                           | 8.65         | 23     | 54.4 ±0.5 | 25   | 16           | 177 695  | CQ-12 | 1   |
| 15                           | 12           | 26.8   | 57.8 ±0.5 | 27.5 | 18           | 177 696  | CQ-15 | 1   |
| 18                           | 16           | 31.1   | 64.1 ±0.5 | 30.5 | 26           | 177 697  | CQ-18 | 1   |
| 22                           | 19.2         | 35.5   | 69.6 ±0.5 | 33   | 36           | 177 698  | CQ-22 | 1   |
| 28                           | 24.9         | 49.5   | 91 ±1     | 44   | 90           | 194 586  | CQ-28 | 1   |

\* Packaging unit quantity

## Push-in connector CQ...H

with push-in sleeve

Material:  
Polyacetal



| Dimensions and ordering data |              |                |        |           |      |              |          |           |   |
|------------------------------|--------------|----------------|--------|-----------|------|--------------|----------|-----------|---|
| Pipe/tubing O.D.             | Nominal size | Push-in sleeve | D5     | L1        | L2   | Weight/piece | Part No. | Type      |   |
| D1                           | [mm]         | ∅ D2           | ∅ ±0.5 |           | ±1   | [g]          |          | PU*       |   |
| 12                           | 9.15         | 15             | 27.5   | 60.2 ±0.5 | 25   | 12           | 177 701  | CQ-15H-12 | 1 |
| 15                           | 12.15        | 18             | 26.8   | 70.5 ±0.5 | 27.5 | 16           | 177 702  | CQ-18H-15 | 1 |
| 15                           | 12.15        | 22             | 26.8   | 71.5 ±0.5 | 27.5 | 16           | 177 703  | CQ-22H-15 | 1 |
| 18                           | 17.3         | 22             | 31.1   | 70.7 ±0.5 | 30.5 | 22           | 177 704  | CQ-22H-18 | 1 |
| 22                           | 19.2         | 28             | 35.5   | 81.8 ±1   | 33   | 34           | 196 231  | CQ-28H-22 | 1 |

\* Packaging unit quantity

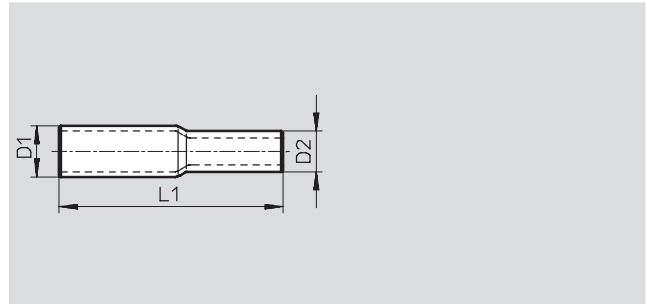
# Push-in fittings CQ, for push-fit piping systems

Technical data

**Push-in sleeve CQH-...-QS**  
reducer for connecting CQ to QS

Material:  
Polyacetal  
Contains paint wetting impairment substances

Approval:  
Germanischer Lloyd



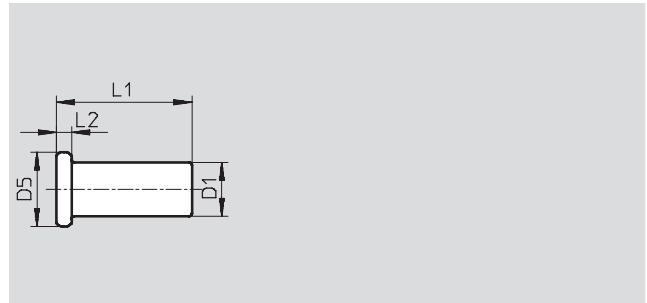
| Dimensions and ordering data       |                                    |                      |      |                     |          |              |     |
|------------------------------------|------------------------------------|----------------------|------|---------------------|----------|--------------|-----|
| Push-in sleeve $\varnothing$<br>D1 | Push-in sleeve $\varnothing$<br>D2 | Nominal size<br>[mm] | L1   | Weight/piece<br>[g] | Part No. | Type         | PU* |
| 15                                 | 12                                 | 8                    | 66.5 | 4                   | 177 721  | CQH-15-QS-12 | 1   |
| 18                                 | 16                                 | 11                   | 71.5 | 8                   | 177 722  | CQH-18-QS-16 | 1   |
| 22                                 | 16                                 | 11                   | 80   | 10                  | 177 723  | CQH-22-QS-16 | 1   |

\* Packaging unit quantity

**Blanking plug CQC-...H**

Material:  
Polyacetal  
Contains paint wetting impairment substances

Approval:  
Germanischer Lloyd



| Dimensions and ordering data       |                     |                |     |                     |          |         |     |
|------------------------------------|---------------------|----------------|-----|---------------------|----------|---------|-----|
| Push-in sleeve $\varnothing$<br>D1 | D5<br>$\varnothing$ | L1             | L2  | Weight/piece<br>[g] | Part No. | Type    | PU* |
| 12 $\pm 0.15$                      | 21.6                | 38.8 $\pm 0.5$ | 4.7 | 4                   | 177 712  | CQC-12H | 1   |
| 15 $\pm 0.15$                      | 25                  | 45 $\pm 0.3$   | 5   | 6                   | 177 713  | CQC-15H | 1   |
| 18 $\pm 0.15$                      | 30                  | 41.5 $\pm 0.3$ | 4   | 8                   | 177 714  | CQC-18H | 1   |
| 22 $\pm 0.15$                      | 32                  | 45 $\pm 0.3$   | 4.7 | 10                  | 177 715  | CQC-22H | 1   |
| 28 $\pm 0.15$                      | 40                  | 56             | 4   | 22                  | 194 590  | CQC-28H | 1   |

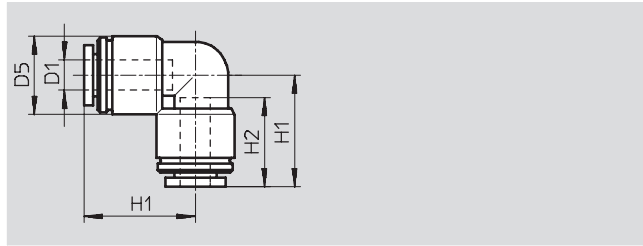
\* Packaging unit quantity

# Push-in fittings CQ, for push-fit piping systems

Technical data

## Push-in L-connector CQL

Material:  
Polyacetal



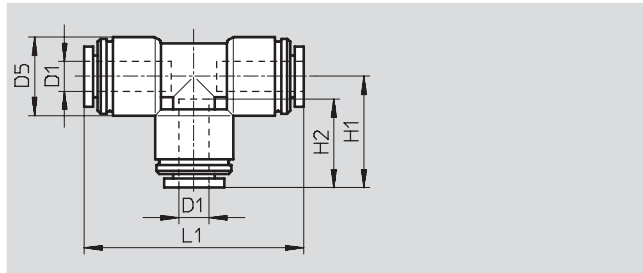
| Dimensions and ordering data |              |      |           |      |              |          |        |     |
|------------------------------|--------------|------|-----------|------|--------------|----------|--------|-----|
| Pipe/tubing O.D.             | Nominal size | D5   | H1        | H2   | Weight/piece | Part No. | Type   | PU* |
| D1                           | [mm]         | ∅    |           | ±1   | [g]          |          |        |     |
| 12                           | 8.65         | 23   | 32.2 ±0.5 | 25   | 16           | 177 691  | CQL-12 | 1   |
| 15                           | 12           | 26.8 | 37.2 ±0.5 | 27.5 | 20           | 177 692  | CQL-15 | 1   |
| 18                           | 16           | 31.1 | 44.1 ±0.5 | 30.5 | 32           | 177 693  | CQL-18 | 1   |
| 22                           | 19.2         | 35.5 | 48.3 ±0.5 | 33   | 46           | 177 694  | CQL-22 | 1   |
| 28                           | 24.9         | 49.2 | 61.4 ±1   | 44   | 106          | 194 587  | CQL-28 | 1   |

\* Packaging unit quantity

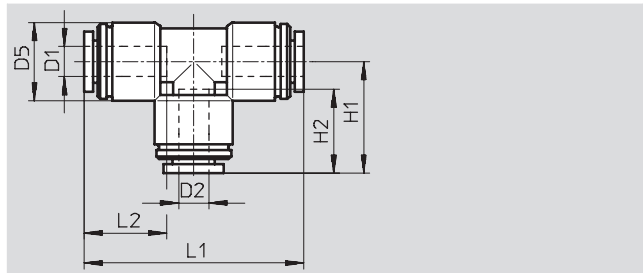
## Push-in T-connector CQT

Outlets: 2  
Supply lines: 1

Material:  
Polyacetal



Reducing



| Dimensions and ordering data |              |                  |      |           |      |           |      |              |          |           |     |
|------------------------------|--------------|------------------|------|-----------|------|-----------|------|--------------|----------|-----------|-----|
| Pipe/tubing O.D.             | Nominal size | Pipe/tubing O.D. | D5   | H1        | H2   | L1        | L2   | Weight/piece | Part No. | Type      | PU* |
| D1                           | [mm]         | D2               | ∅    |           | ±1   |           |      | [g]          |          |           |     |
| 12                           | 8.65         | -                | 23   | 32.2 ±0.5 | 25   | 64.4 ±0.5 | -    | 26           | 177 687  | CQT-12    | 1   |
| 15                           | 12           | -                | 26.8 | 37.2 ±0.5 | 27.5 | 74.4 ±0.5 | -    | 30           | 177 688  | CQT-15    | 1   |
| 18                           | 16           | -                | 31.1 | 44.1 ±0.5 | 30.5 | 88.2 ±0.5 | -    | 46           | 177 689  | CQT-18    | 1   |
| 22                           | 19.2         | -                | 35.5 | 48.3 ±0.5 | 33   | 96.6 ±0.5 | -    | 66           | 177 690  | CQT-22    | 1   |
| 28                           | 24.9         | -                | 49.2 | 61.4 ±1   | 44   | 121 ±1    | -    | 152          | 194 588  | CQT-28    | 1   |
| <b>Reducing</b>              |              |                  |      |           |      |           |      |              |          |           |     |
| 18                           | 12           | 15               | 31.1 | 37.9      | 27.5 | 84.5      | 30.5 | 42           | 177 699  | CQT-18-15 | 1   |
| 22                           | 12,15        | 15               | 35.5 | 41.6      | 27.5 | 89.6      | 33   | 56           | 177 700  | CQT-22-15 | 1   |

\* Packaging unit quantity



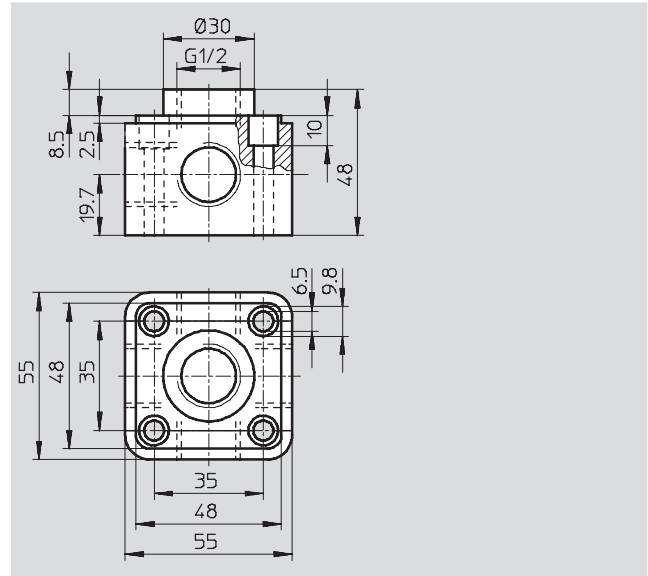
# Push-in fittings CQ, for push-fit piping systems

Technical data

**Distributor CQD**  
with 3 blanking plugs

Outlets: 2  
Supply lines: 1

Material:  
Polyacetal  
Contains paint wetting impairment substances



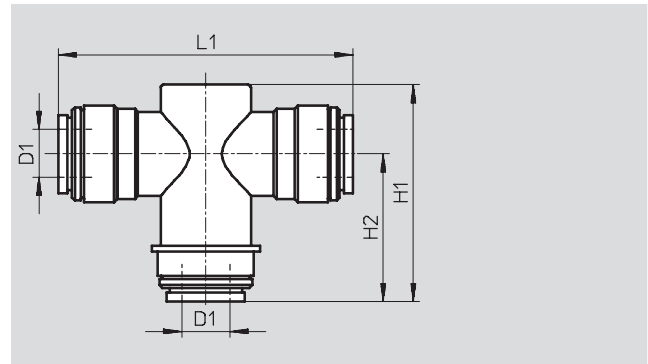
| Dimensions and ordering data |              |          |                 |     |
|------------------------------|--------------|----------|-----------------|-----|
| Connection                   | Weight/piece | Part No. | Type            | PU* |
| D1                           | [g]          |          |                 |     |
| G1/2                         | 181          | 177 717  | CQD-12/15/18/22 | 1   |

\* Packaging unit quantity

## Water separator CQA

The water separator has been designed for air flows up to 300 l/min. The condensate remains in the ring line and does not enter the branch line vertically downwards.

Material:  
Polyacetal  
Contains paint wetting impairment substances



| Dimensions and ordering data |              |      |      |      |              |          |        |     |
|------------------------------|--------------|------|------|------|--------------|----------|--------|-----|
| Pipe/tubing                  | Nominal size | H1   | H2   | L1   | Weight/piece | Part No. | Type   | PU* |
| O.D.                         |              |      |      |      |              |          |        |     |
| D1                           | [mm]         |      |      |      | [g]          |          |        |     |
| 22                           | 12           | 71.8 | 48.3 | 97.8 | 76           | 177 716  | CQA-22 | 1   |

\* Packaging unit quantity

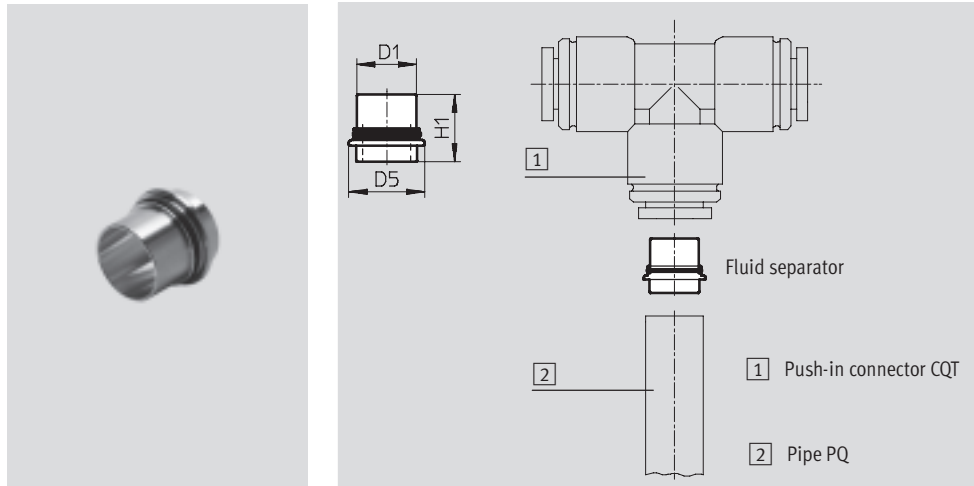
# Push-in fittings CQ, for push-fit piping systems

Technical data

## Water separator CQA

A water separator is created through the introduction of a fluid separator CQA-28 into a standard push-in T-connector. The fluid separator consists of a brass insert with an O-ring. The short section of the brass insert is pushed into the PA or aluminium pipe. This assembly is then joined to the push-in T-connector.

Material:  
Brass  
Contains paint wetting impairment substances



| Dimensions and ordering data |              |    |      |              |          |        |     |
|------------------------------|--------------|----|------|--------------|----------|--------|-----|
| Pipe/tubing O.D.             | Nominal size | D5 | H1   | Weight/piece | Part No. | Type   | PU* |
| D1                           | [mm]         |    |      | [g]          |          |        |     |
| 22                           | 20           | 28 | 24.8 | 18           | 196 984  | CQA-28 | 1   |

\* Packaging unit quantity

## Retaining ring CQSR

The retaining ring prevents inadvertent disconnection of the tubing or pipe.

Material:  
Polyacetal  
Contains paint wetting impairment substances

Approval:  
Germanischer Lloyd



| Dimensions and ordering data |              |          |         |     |
|------------------------------|--------------|----------|---------|-----|
| Pipe/tubing O.D.             | Weight/piece | Part No. | Type    | PU* |
| D1                           | [g]          |          |         |     |
| 12                           | 1            | 175 727  | CQSR-12 | 10  |
| 15                           | 0.5          | 175 728  | CQSR-15 | 10  |
| 18                           | 0.5          | 175 729  | CQSR-18 | 10  |
| 22                           | 0.4          | 175 730  | CQSR-22 | 10  |

\* Packaging unit quantity

# Push-in fittings CQ, for push-fit piping systems

Technical data

FESTO

## Releasing tool CQO

Material:  
Polyacetal  
Contains paint wetting impairment  
substances

Approval:  
Germanischer Lloyd



| Dimensions and ordering data |                     |          |        |     |
|------------------------------|---------------------|----------|--------|-----|
| Pipe/tubing O.D.<br>D1       | Weight/piece<br>[g] | Part No. | Type   | PU* |
| 15                           | 2                   | 175 725  | CQO-15 | 1   |
| 22                           | 4                   | 175 726  | CQO-22 | 1   |

\* Packaging unit quantity