# oventrop

# "Multiflex" Fittings

Technical information

#### Tender specification: (examples)

Oventrop connection fittings made of nickel plated brass, for the connection of radiators with integrated distributor G <sup>3</sup>/<sub>4</sub> male thread according to DIN EN 16313 (cone "Euro").

ZB preset isolating fitting for two pipe systems for filling and draining

G ¾ collar nut x G ¾ male thread

Oventrop connection fittings male of nickel plated brass, for the connection of radiators with integrated distributor G  $\!$  female thread.

 ${\sf ZB}$  preset isolating fitting for two pipe systems for filling and draining

G 1/2 male thread x G 3/4 male thread

# Technical data:

Operating temperature ts:	2 °C up to 120 °C (for short
	periods up to 130 °C)
Max. operating pressure ps:	10 bar
Fluid:	Water or suitable ethylene/
	propylene glycol water mixtures
	according to VDI 2035/ÖNORM
	5195 (max. glycol proportion 50 %,
	ph value 6.5-10).
	Not suitable for steam, oily and
	aggressive fluids.

#### Function:

The Oventrop fittings "Multiflex" are designed for the connection of radiators with integrated distributor.

The extensive programme fulfils the following functions:

- Connecting
- Isolating
- One pipe operation
- Draining
- Filling
- Presetting
- Re-directing
- Bridging

#### Application:

The Oventrop fittings "Multiflex" for radiators with integrated distributor are suitable for use in two or one pipe central heating and cooling systems with closed circuits for operation with non-aggressive, harmless fluids.

For use of radiators with integrated distributor in one pipe systems, special ZBU fittings (two pipe block, convertible) are available. In addition, Oventrop offers inversion fittings to achieve the correct direction of flow if the supply and return pipe were mixed up and bridging fittings to fix the pipework and to bridge over the supply and return pipe in case of subsequent installation of radiators.

#### "Multiflex F" - soft sealing

The connection of the fitting to the radiator is soft sealing.

# Advantages of the "Multiflex F" fittings:

- all connection problems of radiators with integrated distributor can be solved
- easy to use
- suitable for one or two pipe systems (ZBU)
- increased leakage proofing due to soft sealing connection
- exact setting of the radiator shares via the bypass screw (ZBU) in lengthwise direction
- excellent flow rates of the ZBU fittings when used with Oventrop thermostats (see chart)



"Multiflex"

#### "Multiflex V" - metal to metal tapered sealing

The connection of the fitting to the radiator has a metal to metal tapered seal.

#### Advantages of the "Multiflex V" fittings:

- all connection problems of radiators with integrated distributor can be solved
- fittings with facilities for:
- isolating presetting
- draining filling
- easy to use
- suitable for one or two pipe systems
- tolerances in the connection dimensions of the supply and return nipples are technically perfectly balanced (patented solution) which means that there is no cross tension (see illustration)
- increased leakage proofing due to metal to metal tapered seal to the radiator
- no inner parts necessary to take elastic seals, therefore two points less where leakage could occur
- technical top performance regarding flow rates
- exact setting of the radiator shares via the bypass screw in lengthwise direction (CE fitting)





Advantage: Adjustable distance of axis

Advantage: Adjustable angled position

#### Fittings "Multiflex V" metal to metal tapered sealing for two pipe heating systems:

Fittings made of nickel plated brass for radiators with integrated distributor

# ZB fittings (ZB = two pipe block)

The ZB fittings (two pipe block) are used on radiators with two pipe distributors.

Balanced tolerance of the radiator connection due to patented body/shell connection.

Distance between pipe centres: 50 mm

#### G <sup>3</sup>/<sub>4</sub> male thread (distributor)

The connection of the fitting to the radiator has a metal to metal tapered seal.



For radiators with G <sup>3</sup>/<sub>4</sub> male thread according to DIN EN 16313 (cone "Euro")



ZB preset isolating fitting for filling and draining G 3/4 c/nut x G 3/4 male Item no. 1016241



ZB angle pattern preset isolating fitting for filling and draining G 3/4 c/nut x G 3/4 male Item no. 1016242

### G 1/2 female thread (distributor)

The connection of the fitting to the radiator has a metal to metal tapered seal. Self sealing nipples are supplied with each fitting.







For radiators with G 1/2 female thread

ZB preset isolating fitting for filling and draining G 1/2 male x G 3/4 male Item no. 1016291

ZB angle pattern preset isolating fitting for filling and draining G 1/2 male x G 3/4 male Item no. 1016292



Single fitting

The single fitting is used on radiators with two pipe distributor.



Fittings with Rp 1/2 female thread are not suitable for compression fittings (only for threaded pipes).

Fitting G <sup>3</sup>/<sub>4</sub> c/nut x Rp <sup>1</sup>/<sub>2</sub> F Item no. 1016304

#### Fittings "Multiflex V" metal to metal tapered sealing for one pipe heating systems:

Fittings made of nickel plated brass for radiators with integrated distributor.

#### CE fittings (Combi one pipe)

The CE fittings (Combi one pipe) are necessary to use radiators with two pipe distributors in **one pipe systems**.

Preset radiator flow share: about 35 %\*

Balanced tolerance of the radiator connection due to patented body/shell connection.

Distance between pipe centres: 50 mm

# G 3/4 male thread (distributor)

The connection of the fitting to the radiator has a metal to metal tapered seal.



For radiators with G <sup>3</sup>/<sub>4</sub> male thread according to DIN EN 16313 (cone "Euro")



CE preset isolating fitting for filling and draining G <sup>3</sup>/<sub>4</sub> c/nut x G <sup>3</sup>/<sub>4</sub> male Item no. 1016341



CE angle pattern preset isolating fitting for filling and draining G  $\frac{3}{4}$  c/nut x G  $\frac{3}{4}$  male Item no. 1016342

# G 1/2 female thread (distributor)

The connection of the fitting to the radiator has a metal to metal tapered seal. Self sealing nipples are supplied with each fitting.



For radiators with G  $^{1\!\!/_2}$  female thread

CE preset isolating fitting for filling and draining G ½ male x G ¾ male Item no. 1016391



CE angle pattern preset isolating fitting for filling and draining G  $\frac{1}{2}$  male x G  $\frac{3}{4}$  male Item no. 1016392

\* If the bypass screw is turned clockwise until stop, then the bypass is closed (two pipe operation).

### Fittings "Multiflex F" soft sealing for two pipe systems or heating systems in one pipe operation

Fittings made of nickel plated brass for radiators with integrated distributor

## ZB fittings (ZB = two pipe block)

The ZB fittings (two pipe block) are used on radiators with two pipe distributors.

Distance between pipe centres: 50 mm

# G 3/4 male thread (distributor)

The connection of the fitting to the radiator is soft sealing. Soft sealing inserts are supplied with each fitting.



For radiators with G  $^{3}\!\!\!/_{4}$  male thread according to DIN EN 16313 (cone "Euro")



-(A)

G 3/4

Æ

ZB isolating fitting G <sup>3</sup>/<sub>4</sub> c/nut x G <sup>3</sup>/<sub>4</sub> male Item no. 1015813

ZB angle pattern

isolating fitting G <sup>3</sup>/<sub>4</sub> c/nut x G <sup>3</sup>/<sub>4</sub> male Item no. 1015814



G 1/2 female thread (distributor)

50

**A** 

sealing nipples are supplied with each fitting.

The connection of the fitting to the radiator is soft sealing. Soft

ZB isolating fitting G ½ male x G ¾ male Item no. 1015883

For radiators with G 1/2 female thread



OV-



ZB isolating fitting, pivoting G <sup>3</sup>/<sub>4</sub> c/nut x G <sup>3</sup>/<sub>4</sub> male Item no. 1015711

# Design cover, white

for ZB isolating fittings and angle pattern isolating fittings item no. 1015813/14/83/84 Item no. 1015896



ZB isolating fitting, pivoting G ½ male x G ¾ male Item no. 1015781

#### Fittings "Multiflex F" soft sealing for two pipe systems or heating systems in one pipe operation

Fittings made of nickel plated brass for radiators with integrated distributor

## ZBU fittings (ZBU = two pipe block, convertible)

The ZBU fittings (two pipe block, convertible) can be used in both, two pipe systems (as delivered) or in systems in one pipe operation.

When used in one pipe systems, the bypass screw has to be set according to the installation instructions supplied with the fittings. CEW fitting as ZBU but preset to one pipe operation with a radiator share of 35 %.

Distance between pipe centres: 50 mm

# G 3/4 male thread (distributor)

The connection of the fitting to the radiator is soft sealing. Soft sealing inserts are supplied with each fitting.



For radiators with G <sup>3</sup>/<sub>4</sub> male thread according to DIN EN 16313 (cone "Euro")



ZBU preset isolating fitting for filling and draining G <sup>3</sup>/<sub>4</sub> c/nut x G <sup>3</sup>/<sub>4</sub> male Item no. 1015943



ZBU angle pattern preset isolating fitting for filling and draining G <sup>3</sup>/<sub>4</sub> c/nut x G <sup>3</sup>/<sub>4</sub> male Item no. 1015944

# Single fittings

The single fittings are used in radiators with two pipe distributors.





Preset isolating fitting for filling and draining G  $\frac{3}{4}$  c/nut x Rp  $\frac{1}{2}$  female Item no. 1016166 G  $\frac{3}{4}$  c/nut x G  $\frac{3}{4}$  male Item no. 1016168

Angle pattern preset isolating fitting for filling and draining G  $\frac{3}{4}$  c/nut x Rp  $\frac{1}{2}$  female Item no. 1016567 G  $\frac{3}{4}$  c/nut x G  $\frac{3}{4}$  male Item no. 1016569





Fitting with Rp  $\frac{1}{2}$  female thread are not suitable for compression fittings (only for threaded pipes). The Oventrop compression fittings are to be used (see Oventrop catalogue "Products").

# G 1/2 female thread (distributor)

The connection of the fitting to the radiator is soft sealing. Soft sealing nipples are supplied with each fitting.







For radiators with G  $^{1\!\!/_2}$  female thread

ZBU/CEW preset isolating fitting for filling and draining G <sup>1</sup>/<sub>2</sub> male x G <sup>3</sup>/<sub>4</sub> male Item no. 1015993 Item no. 1015933\*

ZBU/CEW angle pattern preset isolating fitting for filling and draining G ½ male x G ¾ male Item no. 1015994 Item no. 1015934\*

 preset to one pipe operation

Preset isolating fitting for filling and draining G  $\frac{1}{2}$  male x Rp  $\frac{1}{2}$  female Item no. 1016175

G <sup>1</sup>/<sub>2</sub> male x G <sup>3</sup>/<sub>4</sub> male Item no. 1016177

Angle pattern preset isolating fitting for filling and draining G ½ male x Rp ½ female Item no. 1016575

G ½ male x G ¾ male Item no. 1016577

2018

# **Fittings** Brass

Inversion fitting, nickel plated For reversed supply and return pipe.











### Bridging fitting





with isolating facility distance between pipe centres 50 mm G  $\frac{1}{2}$  male x G  $\frac{3}{4}$  male Item no. 1016363

angle pattern, with isolating facility distance between pipe centres 50 mm G <sup>1</sup>/<sub>2</sub> male x G <sup>3</sup>/<sub>4</sub> male Item no. 1016463

with isolating facility distance between pipe centres 50 mm G  $\frac{3}{4}$  c/nut x G  $\frac{3}{4}$  male Item no. 1016362

with isolating facility upper distance between pipe centres 50 mm, lower distance between pipe centres 40 mm G <sup>3</sup>/<sub>4</sub> c/nut x G <sup>3</sup>/<sub>4</sub> male Item no. 1016372

angle pattern, with isolating facility distance between pipe centres 50 mm G  $\frac{3}{4}$  c/nut x G  $\frac{3}{4}$  male Item no. 1016462

For bridging-over the supply and the return pipe in case of subsequent installation of radiators. Distance between pipe centres 50 mm Item no. 1016452

#### Plastic rosette cover, white flat, distance between pipe centres 50 mm

Perforation

12 mm

14 mm

15 mm

16 mm

18 mm

Item no.: 1016671 1016672 1016673 1016674 1016674

for pipe dimensions 10, 12, 15, 16, 18, 20 mm Distance between pipe centres 50 mm

Item no. 1016662

Connection fittings Brass











Distance piece For "Multiflex V" fittings Set = 2 pieces G  $\frac{3}{4}$  female x G  $\frac{3}{4}$  male Effective length: 15.5 mm Item no. 1681650

Nipple, unplated For "Multiflex F and FQ", "Multiblock T, TU, TFU, TQ, T-RTL and TQ-RTL" Port G  $\frac{1}{2}$ : self sealing G  $\frac{1}{2}$  male x G  $\frac{3}{4}$  male Item no. 1028252 For "Multiflex V" Port G  $\frac{3}{4}$ : with tapered sealing according to DIN EN 16313 (cone "Euro") G  $\frac{1}{2}$  male x G  $\frac{3}{4}$  male Item no. 1028253

Insert Set = 2 pieces for cone according to DIN EN 16313 (cone "Euro") For "Multiflex F and FQ", "Multiblock T, TU, TFU, TQ, T-RTL and TQ-RTL" Item no. 1661100

Nipple, nickel plated Port G ½: self sealing Port G ¾: with tapered sealing according to DIN EN 16313 (cone "Euro") G ½ male x G ¾ male Item no. 1028161

Double nipple, nickel plated G  $\frac{3}{4}$  with tapered sealing according to DIN EN 16313 (cone "Euro") G  $\frac{3}{4}$  male x G  $\frac{3}{4}$  male ltem no. 1028263

#### Connection systems and accessories

Compression fittings for G <sup>3</sup>/<sub>4</sub> male thread according to DIN EN 16313(cone "Euro")



#### "Ofix CEP"-Snap & Seal

2-fold for copper pipes according to DIN EN 1057, precision steel pipes according to DIN EN 10305-1/2 and stainless steel pipes Collar nut nickel plated, with double

oonal marine platea, mar		•
compression ring function, or	ne-pied	ce pre-
assembled, soft sealing, max.	95 °C	;
10 mm	1016	840
12 mm	1016	841
14 mm	1016	842
15 mm	1016	843
16 mm	1016	844
18 mm	1016	845
	<b>a</b> • <b>a</b>	05.00

Operating temperature t<sub>s</sub>: 2°C - 95°C Max. operating pressure ps: 10 bar

#### "Ofix CEP"

2-fold for copper pipes according to DIN EN 1057

Collar nut nickel plated,	
metal to metal sealing	
10 mm	1016860
12 mm	1016861
14 mm	1016862
15 mm	1016863
16 mm	1016864
18 mm	1016865
Operating temperature t <sub>s</sub> :	2°C - 120°C

Max. operating pressure ps: 10 bar



"Ofix K"

2-fold for plastic pipes according to DIN 4726, PE-X according to DIN 16892/16893, PB according to DIN 16968, PP according to DIN 8078 A1 Collar nut nickel plated, metal to metal sealing plus O-Ring 1016883 12 x 1.1 mm

12 x 2	mm	1016870
14 x 2	mm	1016873
15 x 2.5	mm	1016885
16 x 1.5	mm	1016882
16 x 2	mm	1016874
17 x 2	mm	1016876
18 x 2	mm	1016877
20 x 2	mm	1016879



"Cofit S" for G 3/4 male thread according to DIN EN 16313 (cone "Euro") universal application for composition pipe "Copipe" and, provided similar preparation us used, for plastic pipes (PE-X pipes) 2-fold, metal to metal sealing plus O-ring, outlet made of bronze, compression ring and collar nut made of brass, collar nut nickel plated

collar nut nickel plated	
14 x 2.0 mm x G ¾ c/nut	1507934
16 x 2.0 mm x G ¾ c/nut	1507935
17 x 2.0 mm x G ¾ c/nut	1507937
18 x 2.0 mm x G ¾ c/nut	1507938
20 x 2.0 mm x G ¾ c/nut	1507939
20 x 2.5 mm x G ¾ c/nut	1507940



Service tool with bag

1090551

Attention: When installing copper pipes with a wall thickness of  $\leq$  1 mm, it is necessary to use reinforcing sleeves for the additional stabilisation of the pipe. Should the wall thickness exceed 1 mm, please contact the pipe manufacturer. Reinforcing sleeves for a wall thickness of 1 mm can be found in the catalogue "Products". Exception: Reinforcing sleeves are not required for soft sealing compression fittings. Note: The pipes are not held by the soft sealing fitting, they have to be fixed additionally. Regarding stretching of the pipe ends, the instructions of the pipe manufacturer have

to be observed.

PE-X, DIN EN ISO 15875).

permissible operating pressures and operating The temperatures depend on the application classes of the respective standards of the plastic pipework systems (e.g.

The permissible operating pressures and operating temperatures depend on the application classes of the respective standards of the plastic pipework systems (e.g. PE-X, DIN EN ISO 15875).

Alternatively, the compression fittings for connection to G 3/4 male thread according to DIN EN 16313 (cone "Euro") of other manufacturers may also be used - except for composition pipe "Copipe".

For filling and draining of the radiators via the isolating fittings: 1016241, 1016242, 1016341/42, 1016291, 1016292, 1016391/92, 1015993/94, 1015933/34, 1015943/44, 1016175/77, 1016575/77, 1016166/68, 1016567/69

# Fittings "Multiflex V" metal to metal sealing

# Sectional view of a two pipe fitting:



ZB angle pattern preset isolating fitting for filling and draining Item no. 1016242

#### Sectional view of a one pipe fitting:



CE preset isolating fitting (Combi one pipe) for filling and draining Item no. 1016341

When using CE fittings in two pipe systems, the bypass screw has to be closed (turn clockwise until stop).

#### **Operating instructions:**

For ZB preset isolating fittings for filling and draining. Item no. 1016241/42 Item no. 1016291/92

Setting for one pipe operation:

The CE fittings are preset at works to a radiator share of about 35% of the circulated water quantity.

Different radiator shares must be set according to the flow charts.

Close the bypass stem (turn fully clockwise) and open the stem according to the number of turns taken from the chart. Item no. 1016341/42 Item no. 1016391/92

- 1 Isolating:
- 1.1 Unscrew the protection caps.
- 1.2 Close the valve disc by turning a 4 mm spanner clockwise.

#### 2 Draining:

- 2.1 Isolate the fitting as described in point 1.
- 2.2 Loosen the valve insert of the return pipe connection by turning a 10 mm spanner anticlockwise (max. <sup>1</sup>/<sub>4</sub> thread).
- 2.3 Fit the service tool to the return pipe connection of the fitting and connect a hose.
- 2.4 Fit the 10 mm spanner to the service tool and drain the radiator by turning anticlockwise.

# The venting screw at the radiator has to be opened.

#### 3 Filling:

- 3.1 Via the service tool:
- 3.1.1 If the radiator was just drained via the service tool, no modifications to the tool or the fitting are required. The radiator can now be filled via the connected hose (now the radiator has to be bled).
- 3.1.2 With the filling operation completed, fit the 10 mm spanner to the service tool again and close the insert by turning clockwise.
- 3.1.3 Remove the service tool and tighten the insert with the 10 mm spanner (max. 10 Nm).
- 3.2 Via the heating system:
- 3.2.1 Close the fitting by turning a 10 mm spanner clockwise and tighten it (max. 10 Nm).
- 3.2.2 Open the valve disc by turning a 4 mm spanner anticlockwise until stop. Bleed the radiator.
- 3.2.3 Refit the protection caps.

Filling and draining of the radiator with the help of the service tool, item no. 1090551.

- 4 Presetting:
- 4.1 Unscrew the protection cap.
- 4.2 Close the valve disc by turning a 4 mm spanner clockwise.
- 4.3 Then preset the valve disc by turning the 4 mm spanner anticlockwise according to the number of turns selected from the flow chart.

# Fittings "Multiflex F" soft sealing

# Sectional view of the two pipe fittings ZBU and CEW:



ZBU preset isolating fitting for filling and draining Item no. 1015943



ZBU angle pattern preset isolating fitting for filling and draining Item no. 1015944

The bypass stem of the CEW fitting is opened according to the radiator share (35 %).

#### Operating instructions:

For ZBU/CEW preset isolating fittings for filling and draining Item no. 10159 43/44  $\,$  ZBU

1015993/94 ZBU 1015933/34 CEW

For single fittings Item no. 1016166/68

- 10165 67/69 10161 75/77
- 1016575/77
- 1 Isolating:
- 1.1 Unscrew the protection caps.
- 1.2 Close the valve disc by turning a 4 mm spanner clockwise.
- 2 Draining:
- 2.1 Isolate the fitting as described in point 1.
- 2.2 Loosen the valve insert of the return pipe connection by turning a 10 mm spanner anticlockwise (max. <sup>1</sup>/<sub>4</sub> thread).
- 2.3 Fit the service tool to the return pipe connection and connect a hose.
- 2.4 Fit the 10 mm spanner to the service tool and drain the radiator by turning anticlockwise.

The venting screw at the radiator has to be opened.

- 3 Filling:
- 3.1 Via the service tool:
- 3.1.1 If the radiator was just drained via the service tool, no modifications to the tool or the fitting are required. The radiator can now be filled via the connected hose (now the radiator has to be bled).
- 3.1.2 With the filling operation completed, fit the 10 mm spanner to the service tool again and close the insert by turning clockwise.
- 3.1.3 Remove the service tool and tighten the insert with the 10 mm spanner (max. 10 Nm).
- 3.2 Via the heating system:
- 3.2.1 Close the fitting by turning a 10 mm spanner clockwise and tighten it (max. 10 Nm).
- 3.2.2 Open the valve disc by turning a 4 mm spanner anticlockwise until stop. Bleed the radiator.
- 3.2.3 Refit the protection caps.

Filling and draining of the radiator with the help of the service tool, item no. 1090551.

#### 4 Presetting:

- 4.1 Unscrew the protection cap.
- 4.2 Close the valve disc by turning a 4 mm spanner clockwise.
- 4.3 Then preset the valve disc by turning the 4 mm spanner anticlockwise according to the number of turns selected from the flow chart.

# Fittings "Multiflex V" metal to metal sealing



Item no. 1016341/42 1016391/92



1016291/92

F	Presetting	0.25	0.5	0.75	1	1,5	2	3	4
	k <sub>v</sub> value	0.060	0.126	0.190	0.250	0.420	0.819	1.236	1.700

# Fittings "Multiflex F" soft sealing





ZBU and CEW fittings in one pipe operation



ZB fittings, pivoting Item no. 1015711/81



ZBU fittings and single fittings in two pipe operation

Presetting	0.25	0.5	0.75	1	1,5	2	3	4
k <sub>v</sub> value	0.060	0.126	0.190	0.250	0.420	0.819	1.236	1.700

#### Fittings "Multiflex"



Radiator manufacturers: Baufa Brötje Brugman Buderus De'Longhi Kermi Radel Ribe Vogel + Noot (subject to modifications)



Radiator manufacturers: Agis, Alarko, Arbonia, Baykan, Bemm, Biasi, Borer, Bremo, Caradon-Stelrad, Celikpan, Concept, Cöskünöz, DEF, Delta, Demrad, DiaNorm, Dia-therm, Dunaferr, DURA, Ferroli, HM-Galant, Henrad, Hoval, Hudevad, IMAS, Itemar, Korado, Manaut, Quinn, Purmo, Radson, Runtal, Schäfer, Starpan, Stelrad, Superia, TermoTeknik, Thor, US-Steel, Vasco, VEHA, Zehnder, Zenith. (Subject to modifications).

Radiator with integrated distributor G  $^{1\!\!/}_{2}$  female thread, distance between pipe centres 50 mm

Radiator with integrated distributor G  $^{3\!\!/}_4$  male thread, distance between pipe centres 50 mm

Subject to technical modifications. Product range 1 ti 107-EN/10/MW Edition 2018