

# TWORETT, TA-UNI



**Thermostatic valves with  
radiator connection system**

Two-pipe



*Engineering  
GREAT Solutions*

# TWORETT, TA-UNI

Compatible with most radiators on the market, this pre-assembled manifold for two-pipe radiator systems delivers balancing and room temperature control functionality.

## Key features

- > **Calypso TRV-3 valve**  
For accurate balancing, trouble-free operation and better comfort.
- > **Bottom or side connection**  
Ensures smoother installation.
- > **Low flow characteristics**  
Flow range from a very low flow up to standard level.



## Technical description

### Application:

Heating systems

### Functions:

Regulating  
Presetting  
Shut-off

### Dimensions:

DN 10

### Pressure classe:

PN 10

### Max. differential pressure:

The max. pressure difference allowed for the valve not to open against a closed thermostat: 100 kPa.

### Temperature:

Max. working temperature: 120°C, with protection cap or actuator 100°C.  
Min. working temperature: -10°C.

### Material:

#### Diverters:

Valve body: Hot stamped brass  
Valve stem: Brass  
O-rings: EPDM rubber

#### Radiator valves:

Valve body: Brass  
O-rings: EPDM rubber  
Valve disc: EPDM rubber  
Return spring: Stainless steel

#### Calypso TRV-3:

Valve insert: Brass, PPS (polyphenylsulphide). (The complete thermostatic insert can be replaced using the fitting tool without draining the system.)

Spindle: Niro-steel spindle with double O-ring sealing.

#### RVO:

Valve insert: Brass. (The complete thermostatic insert can be replaced using the fitting tool without draining the system.)

Spindle: Niro-steel spindle with double O-ring sealing. (The outer O-ring can be replaced under pressure.)

#### Others:

Connection pipes: Steel  
Radiator connections: AMETAL®

AMETAL® is the dezincification resistant alloy of IMI Hydronic Engineering.

### Surface treatment:

Nickel-plated

### Identification:

The distributors are marked with TA and a flow direction arrow on the valve body.

#### TWORETT:

The **RSD 802** is marked on its cap with RSD 802, 2-pipe.

#### TA-UNI:

The cap is marked with 1 or 2 to indicate whether it is set for one- or two-pipe application.

#### Radiator valves:

All radiator valves are marked with TA, country code, flow direction arrow, DN and KEYMARK-Designation on the valve body.

Calypso TRV-3: Red protection cap.

Upper part of valve insert: Red.

RVO: White handwheel. Stuffing box with black label.

### Connection to thermostatic head:

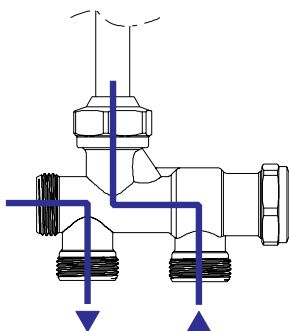
M30x1.5

## General

### Diverter

TWORETT/RSD 802, two-pipe, which can be mounted to suit connection from below or from the side, with built in shut-off.  
TA-UNI, which can be mounted to suit connection from below or from the side, convertible for one- or two-pipe application.

### Two-pipe



### Radiator valves

Calypso TRV-3: Can be fitted with a thermostat, but is supplied with a red protection cap and KOMBI connection. Using straight valve, the valve body can be arranged parallel or perpendicular to the radiator.

Calypso TRV-3 has stepless presetting and is delivered with presetting of 8, i.e. fully open valve. Presetting tool Article No 4360-00.142. For further information on Calypso TRV-3, see separate leaflet.

RVO: Hand controlled with KOMBI connection.

### Connection pipes

Nickel-plated steel. 12 mm external diameter, standard length 1100 mm.

Subtract 80 mm from the radiator c/c distance for a **straight** radiator valve and elbow.

When using the reversed **angle** valve, obtain the distance by subtracting 43 mm from the radiator c/c distance.

### Accessories

Radiator connections.

Pipe connections: Steel, copper or PEX pipes can be connected to the diverter using IMI TA couplings: See catalogue leaflets FPL and FPL-PX.

Thermostats: See catalogue leaflet TRV 300 or TRV Nordic.

Actuator: See catalogue leaflet EMO T.

## Noise

The following conditions must be fulfilled in order to avoid noise in the heating system:

- 1 Flows correctly balanced.
- 2 The water in the system must have been de-aerated.
- 3 Circulation pumps which do not give too high differential pressure.

The maximum recommended pressure drop in order to avoid noise: 30 kPa.

## Kv values

### TWORETT with radiator valve Calypso TRV-3

Kvs complete set: 0,513

KvΔT2K complete set: 0,493

### Manifold assembly with diverter TA-UNI

Two-pipe system with radiator valve RVO Kvs = 0.790

Two-pipe system with radiator valve Calypso TRV-3 Kvs = 0.478

## Setting

### Presetting, TWORETT

Preset the TWORETT two-pipe manifold fitted with Calypso TRV-3 (presetting tool, Article No 4360-00.142).

The Kv values are given for the entire set. When the unit is set to higher Kv values, there will be a slight difference relative to the Calypso TRV-3. The Kv values will therefore be slightly lower, as the pressure drop in the diverter, connections and pipes are included in the measurement.

IMI Hydronic Engineering's method of balancing heating systems results in uniform temperature distribution and energy saving.

Some important features:

- Recommended pressure drop over the radiator valve, 8-10 kPa.
- Low pressure drop in the piping system.
- Correct flow to the radiator.
- The thermostat is adjusted (i.e. max. flow is restricted) so that it stops the energy supply to the radiator when the room temperature rises by 2K.

#### Shut-off:

The TWORETT (bottom- and side-connected) can be shut off by screwing in the presetting stem on the distributor fully home, using a 6 mm Allen key. After which the radiator can be removed without having to drain the system.

### Presetting, TA-UNI

#### Converting one-/two-pipe:

To convert a valve to a two-pipe arrangement, remove the valve cover and use a 2,5 mm Allen key to close the innerspindle fully (= turn clockwise).

Screwing the innerspindle fully anti-clockwise will make the valve operate as a one-pipe valve.

This changeover can be carried out with the valve in operation.

#### Presetting, one-pipe:

Delivery setting 50% flow to radiator. Can be varied between 10-50% by resetting the outer spindle.

#### Presetting, two-pipe:

Presetting is carried out at the valve. To do this right, see the valve in question.

#### Shut-off:

The TA-UNI (bottom- and side-connected) can be shut off by screwing in the presetting stem on the distributor fully home, using a 4 mm Allen key. After which the radiator can be removed without having to drain the system.

#### Tool for shut-off, converting and presetting:

Inner spindle: Allen key 2,5 mm

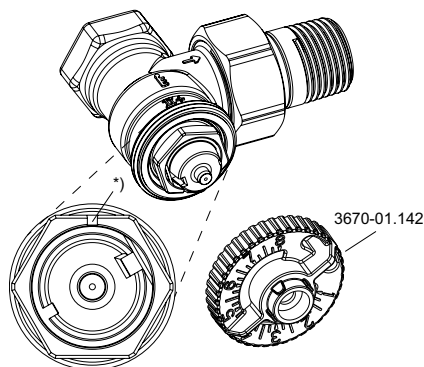
Outer spindle: Allen key 4 mm.

### Setting Calypso TRV-3

The valve has stepless presetting which can be adjusted by the presetting tool (Article No. 3670-01.142).

The valve is delivered fully open valve (presetting 8).

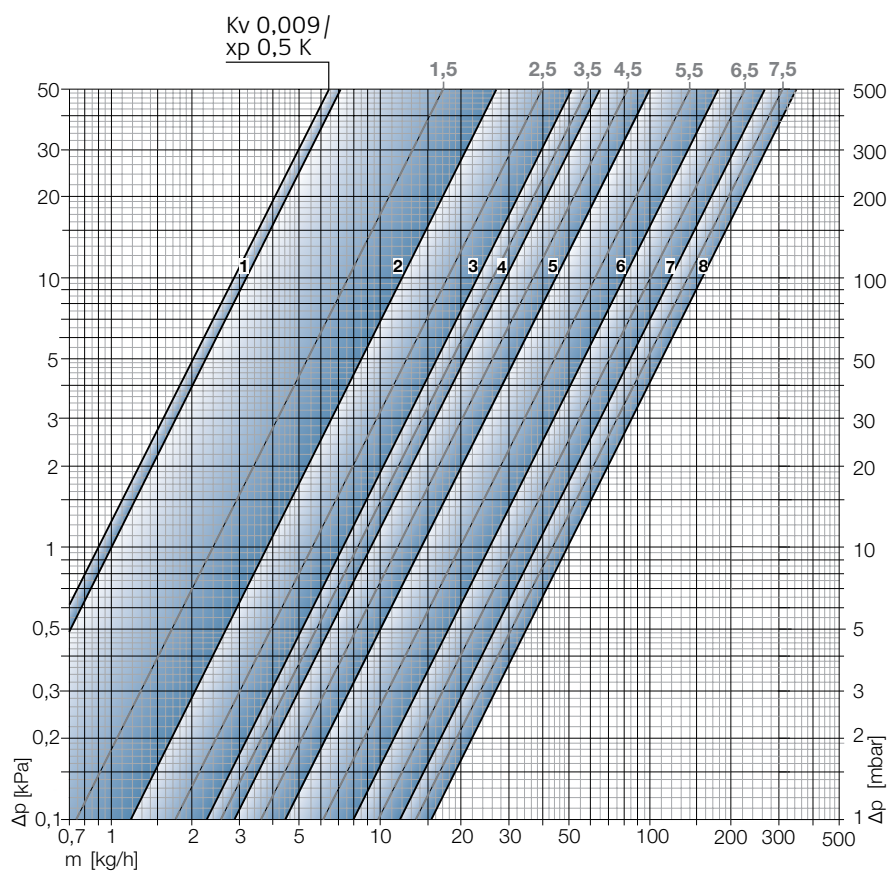
1. Remove the protective cap.
2. Set the required value using the presetting tool.
3. Refit the protective cap alternatively fit the thermostat head.



\*) Index

## Diagram TWORETT with radiator valve Calypso TRV-3, two-pipe

3-156 l/h (at 10 kPa)



Presetting value	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8
<b>KvΔT2K**</b>	0,010	0,024	0,038	0,056	0,073	0,083	0,092	0,117	0,141	0,199	0,255	0,317	0,377	0,436	0,493
<b>l/h at 10 kPa</b>	3	8	12	18	23	26	29	37	45	63	81	100	119	138	156
<b>Kv, fully open valve disc***</b>	0,010	0,024	0,038	0,056	0,073	0,083	0,092	0,117	0,141	0,222	0,257	0,337	0,385	0,463	0,513

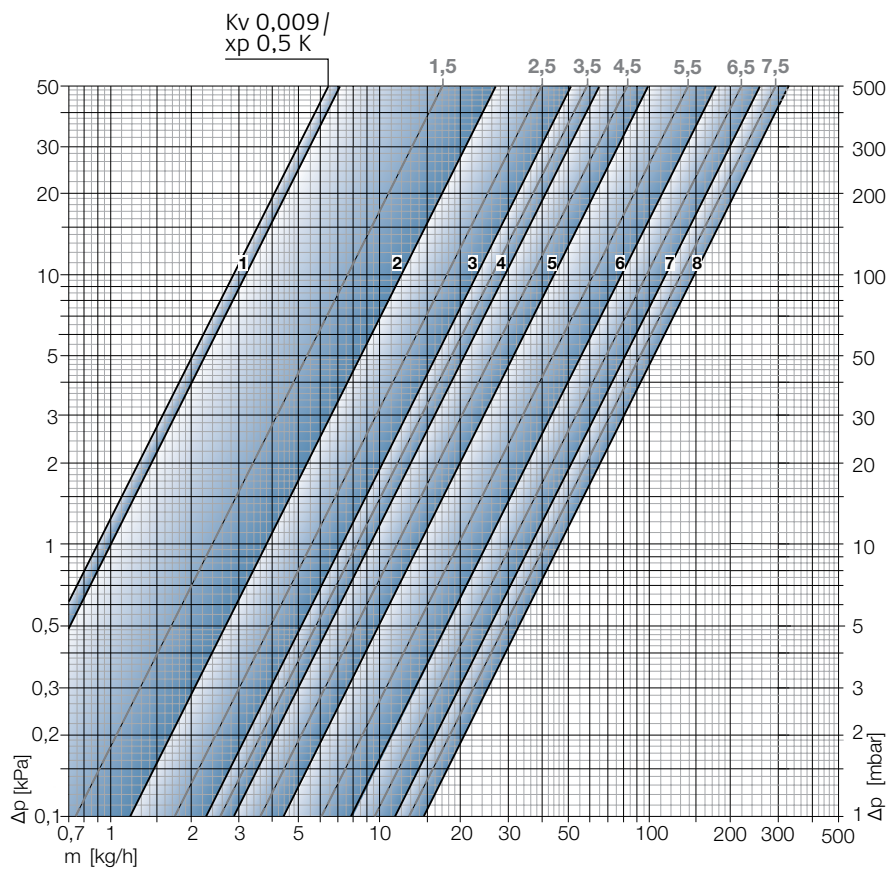
\*) Fully open valve.

\*\*) The values are valid when used together with thermostic head TRV 300 or TRV Nordic.

\*\*\*) The values are valid for on/off regulation with, for example, thermo actuator EMO T.

Diagram TA-UNI with radiator valve Calypso TRV-3, two-pipe

3-146 l/h (at 10 kPa)

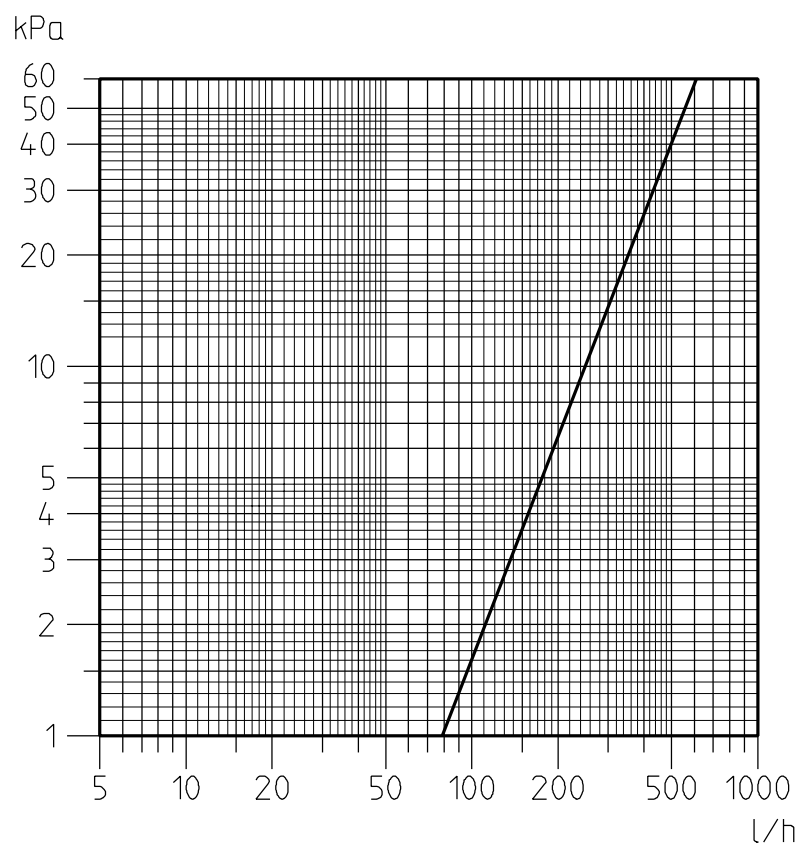


Presetting value	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8
$K_v \Delta T 2K^{**}$	0,010	0,024	0,038	0,056	0,073	0,083	0,092	0,116	0,140	0,197	0,251	0,308	0,363	0,414	0,461
$l/h$ at 10 kPa	3	8	12	18	23	26	29	37	44	62	79	97	115	131	146
$K_v$ , fully open valve disc <sup>***</sup>	0,010	0,024	0,038	0,056	0,073	0,083	0,092	0,116	0,141	0,219	0,253	0,326	0,370	0,437	0,478

\*) Fully open valve.  
\*\*) The values are valid when used together with thermostic head TRV 300 or TRV Nordic.  
\*\*\*) The values are valid for on/off regulation with, for example, thermo actuator EMO T.

## Diagram TA-UNI with radiator valve RVO, two-pipe

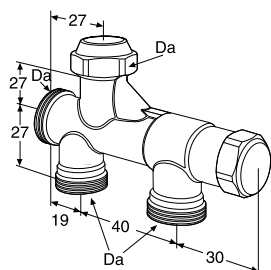
Kv 0,79 fully open.



## Ordering

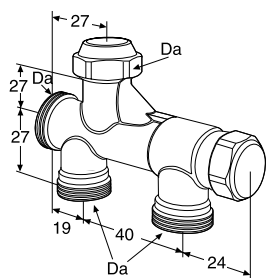
Complete manifold assembly is ordered by required diverter, valve, connection pipe, if any elbow and radiator connections.

## Diverter



### TWORETT/RSD 802

	DN	Da	Kvs*	EAN	Article No
<b>RSD 802 2-pipe</b>	10	M22x1,5	1,54	7318792694400	50 802-100



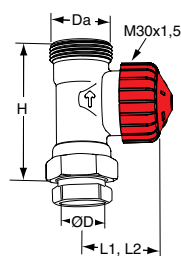
### TA-UNI

	DN	Da	Kvs*	EAN	Article No
<b>2-pipe</b> (convertable to 1-pipe)	10	M22x1,5	1,0	7318792642906	50 600-200

\*) Whole manifold assembly.

Kvs = m³/h at a pressure drop of 1 bar and fully open valve.

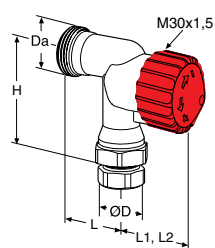
## Valves with presetting



### Calypso TRV-3 Straight

Thermostatic controlled

DN	D	Da	L1	L2**	H	KvΔT2K	EAN	Article No
10	12	M22x1,5	22,5	110	50	0,010-0,520	4024052947010	50 820-012



### Calypso TRV-3 Reversed angle

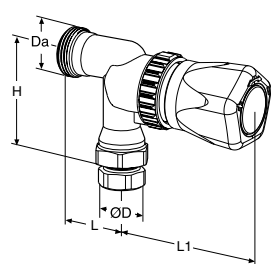
Thermostatic controlled

DN	D	Da	L	L1	L2**	H	KvΔT2K	EAN	Article No
10	12	M22x1,5	27	37	125	46,5	0,010-0,520	4024052946914	50 824-012

\*\*) Valve with fitted thermostatic head TRV 300.

KvΔT2K = The values are valid when used together with thermostic head TRV 300 (without diverter).

## Valves without presetting



### RVO Angle

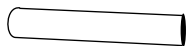
Hand controlled

DN	D	Da	L	L1	H	Kvs	EAN	Article No
10	12	M22x1,5	27	68,5	46,5	1,00	7318794030503	50 610-312

Kvs = m³/h at a pressure drop of 1 bar and fully open valve.

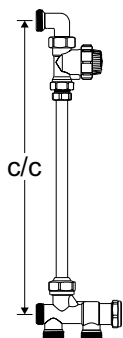


## Connection pipe



### Pipe – standard length

L	ØD	EAN	Article No
1100	12	7318793923103	50 630-001



### For straight valve

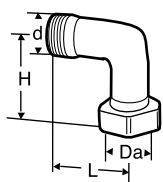
c/c	EAN	Article No *
145	7318793912503	50 630-064
149-150	7318793912701	50 630-069
240	7318793914408	50 630-160
248-250	7318793914705	50 630-168
340	7318793915900	50 630-260
348-350	7318793916105	50 630-268
385-387	7318793916709	50 630-305
398-400	7318793917003	50 630-318
440	7318793917409	50 630-360
446	7318793917607	50 630-365
448-450	7318793917706	50 630-368
485	7318793918307	50 630-405
505	7318793945709	50 630-425
540	7318793919106	50 630-460
546	7318793919304	50 630-465
548-550	7318793919403	50 630-468
600	7318793920201	50 630-520
845-846	7318793921505	50 630-765

### For reversed angle valve

c/c	EAN	Article No *
245-246	7318793915306	50 630-202
248-250	7318793915504	50 630-205
345-346	7318793916501	50 630-302
348-350	7318793916709	50 630-305
355	7318793916907	50 630-312
446	7318793918109	50 630-402
448-450	7318793918307	50 630-405
546	7318793919700	50 630-502
548-550	7318793919908	50 630-505

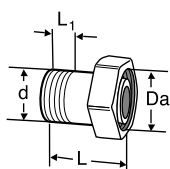
\*) The last three digits of the article number represents to the pipe length, e.g. 50 630-305 = 305 mm.

## Radiator connections



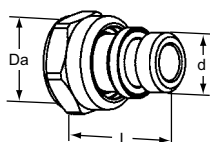
### Elbow

d	Da	L	H	EAN	Article No
M22x1,5	M22x1,5	27	26,5	7318792689802	50 702-510



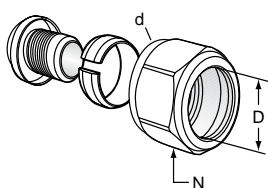
### Straight

d	Da	L	L1	EAN	Article No
R3/8	M22x1,5	25	8	7318792687402	50 701-510
R1/2	M22x1,5	25	10	7318792687600	50 701-516



### Straight with O-ring

d	Da	L	EAN	Article No
G3/8	M22x1,5	33	7318793825704	50 707-610
G1/2	M22x1,5	33	7318793825803	50 707-616



### Connection set FPL-MT with O-ring

For ALU/PEX pipe.

d	L <sup>1</sup>	For MT-pipe D	N		EAN	Article No
M22x1,5	14	16x2,0	25	2 sets/package	7318793976208	53 693-816

1) Over all length.

## Accessories



### Setting key

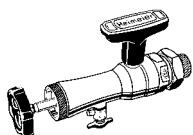
For V-exact II **from 2012**, Calypso *exact*, Calypso TRV-3 and Vekolux.  
Color grey.

#### EAN

#### Article No

4024052035823

3670-01.142



### Fitting tool

complete with case, box spanner and replacement seals, for replacing thermostatic inserts without draining off the heating system (for DN 10 to DN 20).

#### EAN

#### Article No

Fitting tool

4024052298914

9721-00.000

Replacement seals

4024052299010

9721-00.514

Thermostatic head - see catalogue leaflet TRV 300.

Thermoelectric actuator - see catalogue leaflet EMO T.

Other accessories - see catalogue leaflet ACCESSORIES.

Couplings - see catalogue leaflet FPL.

## Spare parts



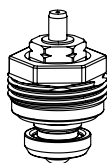
### Valve insert

Calypso TRV-3

#### EAN

#### Article No

3670-00.300



### Valve insert

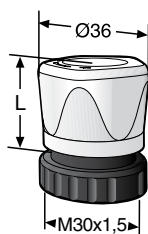
RVT, RVO

#### EAN

#### Article No

4024052132614

1302-02.300



### Handwheel

#### L

#### EAN

#### Article No

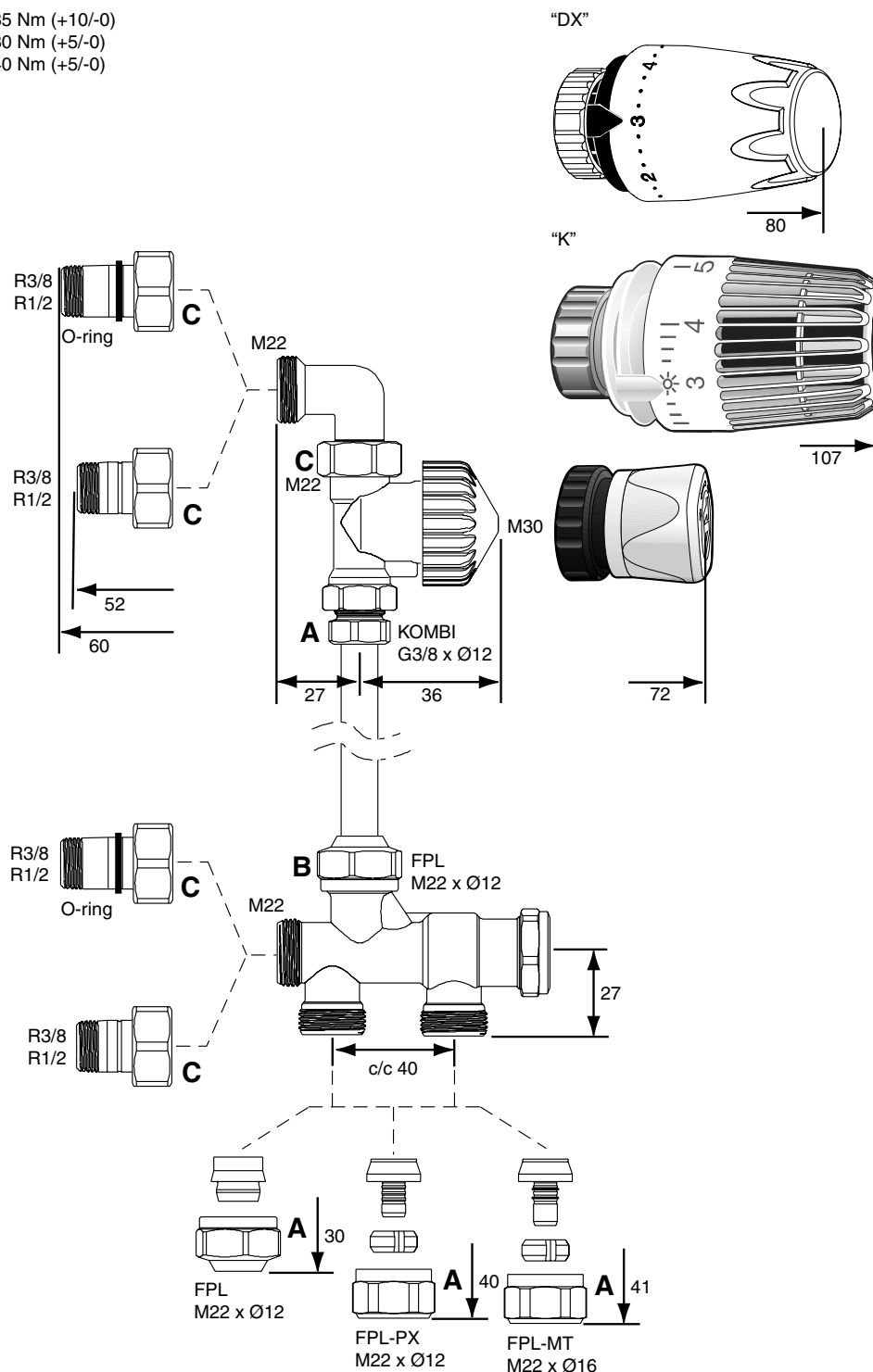
36

4024052323494

1303-01.325

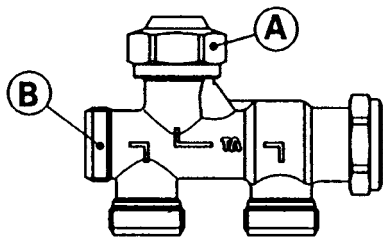
## Dimensions

<b>A (KOMBI)</b>	35 Nm (+10/-0)
<b>B</b>	30 Nm (+5/-0)
<b>C</b>	40 Nm (+5/-0)



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**Rörlängd:** Radiatorns c-c avstånd minus ventildelar enligt tabell.  
**Rörlängde:** Radiatorens cc avstånd minus ventildelen iht. tabell.  
**Putken pituus:** Patterin c-c mitta vähennettynä taulukon venttiilimitoilla.  
**Rörlängde:** Radiatorens c-c afstand minus ventildele i henhold til tabel.  
**Length of pipe:** The radiator c-c distance less valve units according to table.  
**Länge des Verbindungsrohr:** Nabenabstand minus Ventillänge entsprechend der untenstehenden Tabelle.  
**Longueur du tube de liaison:** Distance entre axes (entrée-sortie) du radiateur moins l'encombrement du robinet indiqué dans le tableau ci-dessous.

DN 10	Rak/Rett/Suora/ Lige/Straight/ Durchgang/Droit	Vinkel/Kulma/ Angle/Axial- ventil/Equerre	Förinställning/ Esisäätö/ Forindstilling/ Pre-setting/ Préréglage
Calypso TRV-3	-80 mm	-43 mm	√
RVT, RVO	–	-36 mm	–

## Svenska

### Fördelare för 2-rörssystem

#### Funktion

- Mutter och kona (A) flyttas till (B) om sidokopplad fördelare önskas.
- För avstängning används insexnyckel 6 mm (under locket).

#### Färdigmonterade koppel

Färdigmonterade koppel med R3/8 eller R1/2 gänga levereras med röret monterat och tätt draget i anslutningen **mot radiatorventilen**. **OBS!** Vid transport kan det hända att förbandet lossnar något. Kontroll av täthet skall alltså ske vid idrifttagning. Fördelaren levereras lös och monteras enligt nedan.

#### Montering

- Röret skjuts i botten av ventildelen och dras åt 35 Nm (+10/-0) dvs 1 - 1 3/4 varv.
- I fördelaren dras röret åt med 30 Nm (+5/-0) dvs 1 - 1 3/4 varv.
- Radiatoranslutningar (inkl banjo för Thermopanel) dras åt 40 Nm (+5/-0).

#### Förinställning

Förinställning görs på radiatorventilen. För att utföra detta rätt, se aktuell ventil. För Calypso TRV-3, se tabell nästa sida.

#### Avstängning

TWORETT (under- och sidokopplad) kan stängas av genom att skruva in förinställningsspindeln på fördelaren helt i botten med insexnyckel (6 mm). Demontering av radiatorn kan därmed göras utan nedtappning av systemet.

## Norsk

### Fordeler for 2-rørssystem

#### Funksjon

- Mutter og kon A flyttes til B om sidekoblet fordeler ønskes.
- For avstenging benyttes 6 mm umbraco nøkkel (under lokket)

#### Ferdigmontert radiatorkobbelt

Ferdigmonterte radiatorkoppel med 3/8" eller 1/2" gjenge leveres med røret montert i anslutningen **mot radiatorventilen**.

**OBS!** Vedtransport kan det hende at forbindingen løsner. Kontroller derfor at alle forbindinger er tette ved idriftsetting. Fordeleren leveres løs, og monteres som beskrevet under.

#### Montering

- Røret skyves i bunn av ventilen og trekkes til med 35 Nm (+10/-0) dvs. 1-1 3/4 omdreining.
- I fordeleren trekkes til med 30 Nm (+5/-0) dvs. 1- 1 3/4 omdreining.
- Radiatoranslutninger trekkes til med 40 Nm (+5/-0).

#### Forinnstilling

Forinnstilling gjøres på radiatorventilen. Se katalogblad for Calypso TRV-3 eller tabell på neste side.

#### Avstenging

Fordeleren (underforbinding og sideforbinding) kan stenges ved å skru avstengingsspindelen helt inn med umbracnøkkel (6 mm). Demontering av radiatoren kan dermed gjøres uten nedtapping av systemet.

## Suomi

### 2-putkijärjestelmän jakokappale.

#### Toiminta

- Mutteri ja puserrushelmi siirretään (A:sta) (B:hen) mikäli halutaan sivukytkentä.
- Sulkemiseen käytetään kannen alla olevaa kuusiokoloruuvia.

#### Asennus

- Putki työnnetään venttiiliin (pohjaan ) ja kiristetään 35 Nm (+10/-0) ts 1 - 1 3/4 kierrosta.
- Putki kiristetään jakokappaleeseen 30 Nm (+5/-0) ts 1 - 1 3/4 kierrosta.
- Patteriliittimet (myös Thermopanelin banjoliitin) kiristetään 40 Nm (+5/-0).

#### Esisäätö

Esisäätö suoritetaan patteriventtiillä. katso ao. venttiilin tiedot. Calypso TRV-3, katso taulukko seuraavalla sivulla.

#### Sulkeminen

TWORETT (alta- ja sivultakytketty) voidaan sulkea kiertämällä jakokappaleen säätökara kuusiokoloavaimella (6 mm) täysin pohjaan. Patteri voidaan nyt irrottaa tyhjentämättä järjestelmää vedestä.

## Dansk

### Fordeler til 2-strengsanlæg

#### Funktion

- Omløber og konusring (A) flyttes til (B), hvis sidemontering ønskes.
- Til afspærring anvendes unbraco 6 mm (under slutmuffen).

#### Montering

- Røret helt i bund i ventildelen og spændes med 35 Nm (+10/-0) dvs 1 - 1 3/4 omgang.
- I fordeleren spændes røret med 30 Nm (+5/-0) dvs 1 - 1 3/4 omgang.
- Radiatortilslutningr (incl banjo til Thermopanel) spændes med 40 Nm (+5/-0).

#### Forindstilling

Forindstilling udføres på radiatorventilen. For korrekt indstilling, se aktuel ventil. For Calypso TRV-3, se tabel næste side.

#### Afspærring

TWORETT (underkobling og sidekobling) kan afspærres mod radiator ved at skrue fordelerens spindel helt i bund med unbraco nøgle (6 mm). Demontering af radiator kan derfor ske uden aftapning af anlægget.

## English

### Diverter for 2-pipe system

#### Function

- Transfer the nut and olive from (A) to (B) if the connection to the diverter is to be from the side.
- Use a 6 mm Allen key for shut-off. (Remove the cover to provide access for the key).

#### Installation

- Insert the pipe into the bottom of the valve and tighten to a torque of 35 Nm (+10/-0), i. e. through 1 - 1 3/4 turns.
- Tighten the pipe to the diverter to a torque of 30 Nm (+5/-0), i.e. 1 - 1 3/4 turns.

#### Presetting

Presetting is carried out at the valve. To do this right, see the valve in question or see table for Calypso TRV-3 on next page.

#### Shut-off

The TWORETT (bottom- and side-connected) can be shut off by screwing in the presetting stem on the distributor fully home, using a 6 mm Allen key. After which the radiator can be removed without having to drain the system.

Radiator manifold of universal type

Operation

- NOTE!** The return pipe (E) should be fitted to the distributor for one-pipe systems in order to prevent double circulation (not possible on all types of radiators).
- The nut and cone at (A) should be moved to (D) for side connection.
  - Cap marked UNI 1/UNI 2 (indicates setting at delivery, one/two-pipe) can also be used to test pressure at (A) or (D).
  - A two-pipe distributor is obtained by fully screwing in the inner spindle (B). To re-set to one-pipe distributor, screw the setting spindle fully out. (Use a 2.5 mm Allen key). This changeover can be carried out with the valve in operation.
  - Outer spindle (C) is used to shut off the radiator connection (4 mm Allen key).

Assembly

- Push pipe to bottom of valve unit\* and tighten with 35 Nm (+10/-0).  
Alternatively: tighten by hand, then 1 - 1 3/4 revs with an openended spanner. Any length tolerance will be taken up by the cone (A) in the distributor.
- Tighten the pipe with a torque of 30 Nm (+5/-0) in the distributor.  
Alternatively: tighten by hand, then 1 - 1 3/4 revs with an openended spanner.

Presetting, one-pipe:

Delivery setting 50% flow to radiator. Can be varied between 10-50% by resetting the outer spindle (4 mm Allen key).

Presetting, two-pipe:

Presetting is carried out at the valve. To do this right, see the valve in question or see table for Calypso TRV-3 on next page.

Shut-off

The TA-UNI (bottom- and side-connected) can be shut off by screwing in the presetting stem on the distributor fully home, using a 4 mm Allen key. After which the radiator can be removed without having to drain the system.

Français

Robinetterie de radiateur à distributeur universel

Fonction

**REMARQUE:** Les installations monotube nécessitent l'usage d'une canne d'injection (E) dans le distributeur (qui n'est pas adaptée à tous les types de radiateurs).

- L'écrou et le cône (A) doivent être placés en (D) pour obtenir un raccordement des tuyaux en plinthe.
- Le bouchon marqué UNI 1/UNI 2 indique que le distributeur est livré en version monotube/bitube. (Il peut être aussi utilisé lors des tests de mise en pression de l'installation (A) ou (D)).
- On obtient un distributeur bitube en vissant la tige de réglage à fond. Pour revenir à un distributeur monotube, dévisser complètement la tige de intérieure (B) (à l'aide d'une clé Allen de 2,5 mm). Cette opération peut se faire en service.
- La tige de extérieure (C) sert à isoler le radiateur (clé Allen de 4 mm).

Montage

- Enfoncer jusqu'au bout le tuyau dans le robinet\* et le serrer à 35 Nm (+10/-0) ou bien à la main puis avec une clé fixe de 1 à 1 3/4 tour.  
Une éventuelle tolérance longitudinale serait rattrapée par le cône (A) du distributeur.
- Serrer le tube de 30 Nm (+5/-0) dans le distributeur ou bien à la main puis à l'aide d'une clé fixe de 1 à 1 3/4 tour.

Préréglage, monotube:

Livré préréglé à 50 % du débit vers le radiateur. La tige extérieure (clé Allen de 4 mm) permet de régler la distribution entre 10 et 50 %.

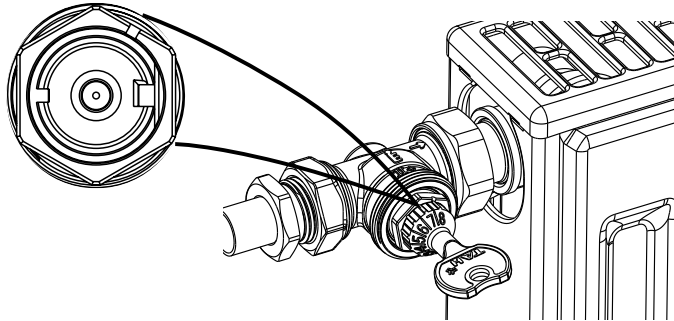
Préréglage, bitube:

Le préréglage s'effectue sur le robinet en partie supérieure. Se référer à la documentation technique du robinet utilisé. Pour Calypso TRV-3, voir tableau à droite.

Isolement du radiateur

Le TA-UNI (raccordé par le bas ou le côté) peut être fermé en vissant à fond la tige située dans le distributeur au moyen d'une clé Allen de 4 mm. Le démontage du radiateur peut ensuite s'effectuer sans qu'il soit nécessaire de vidanger l'installation.

Calypso TRV-3

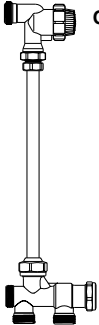
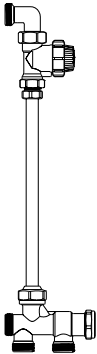


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			10 kPa ≅ 100 mbar ≅ 1 mW/S																																			



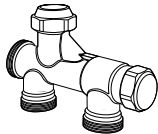
We reserve the right to introduce technical alterations without previous notice.

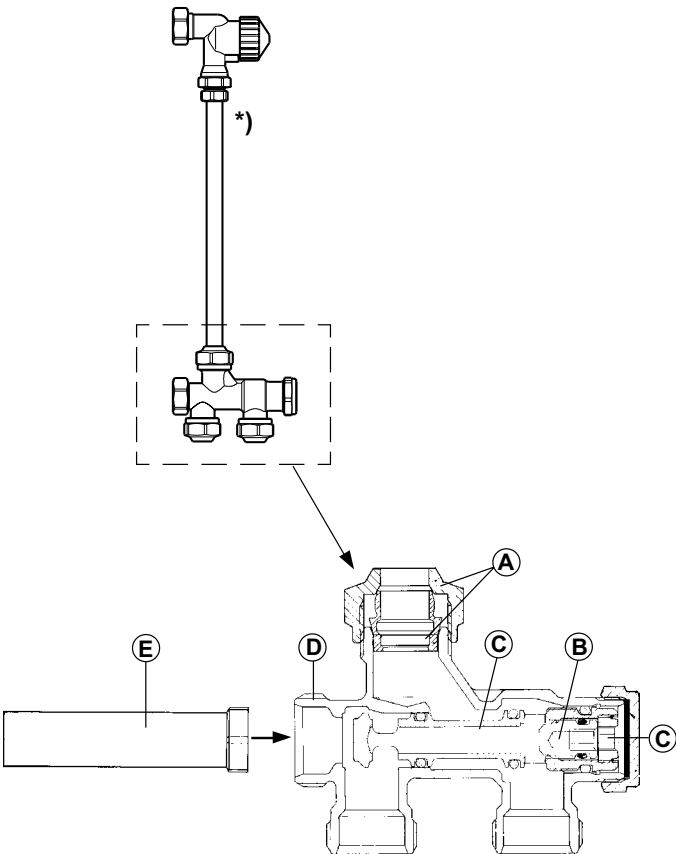
TA-UNI



Calypso TRV-3

TA-UNI





**Rörlängd:** Radiatorns c-c avstånd minus ventildelar enligt tabell.  
**Rørlengde:** Radiatorens c-c avstand minus ventildelen iht. tabell.  
**Putken pituus:** Patterin c/c keskiöetäisyys ilman venttiiliä taulukon mukaan.  
**Rørlængde:** Radiatorens c-c afstand minus ventildele i henhold til tabel.  
**Length of pipe:** The radiator c-c distance less valve units according to table.  
**Longueur du tube de liaison:** Distance entre axes (entrée-sortie) du radiateur moins l'encombrement du robinet indiqué dans le tableau ci-dessous.

DN 10	Rak/Rett/Suora/ Lige/Straight/ Durchgang/Droit	Vinkel/Kulma/ Angle/Axial- ventil/Equerre	Förinställning/ Eisäätö/ Forindstilling/ Pre-setting/ Préréglage
Calypso TRV-3	-80 mm	-43 mm	✓
RVT, RVO	–	-36 mm	–

## Svensk

### Radiatorkoppel med universalfördelare TA-UNI

#### Funktion

- OBS!** Returrör (E) bör monteras i fördelaren vid 1-rörssystem för att förhindra dubbelcirkulation (går ej på alla typer av radiatorer).
- Mutter och kona (A) flyttas till (D) om sidokopplad fördelare önskas.
  - Lock märkt UNI 1/UNI 2 anger leveransinställning 1-rör/2-rör. (Kan även användas som provtryckningslock vid (A) eller (D).)
  - Innerspindel (B) utskruvat låge (insex 2,5 mm) ger 1-rörsfördelare. Omställning till 2-rör sker genom att skruva in spindeln. Denna omställning kan göras under drift.
  - Ytterspindel (C) används för att stänga av mot radiator (insex 4 mm).

#### Färdigmonterade koppel

Färdigmonterade koppel med G3/8 eller G1/2 gänga levereras med røret monterat och tätt draget i anslutningen **mot radiatorventilen**. **OBS!** Vid transport kan det hända att förbandet lossnar något. Kontroll av täthet skall alltså ske vid idrifttagning. Fördelaren levereras lös och monteras enligt nedan.

#### Montering

- Røret skjuts i botten av ventildel\* och dras åt 35 Nm (+10/-0). Alternativt: Drag åt för hand, sedan 1 - 1 3/4 varv med fast nyckel. Eventuell längdtolerans tas upp av konan (A) i fördelaren.
- Røret dras med ett moment av 30 Nm (+5/-0) i fördelaren. Alternativt: Drag åt för hand, sedan 1 - 1 3/4 varv med fast nyckel.
- Radiatoranslutningar (inkl banjo för Thermopanel) dras åt 40 Nm (+5/-0).

#### Förinställning 1-rör:

Leveransinställning: 50% flöde till radiatorn. Kan varieras mellan 10-50% genom att justera fördelarens ytterspindel (insex 4 mm).

#### Förinställning 2-rör:

Förinställning görs på radiatorventilen. För att utföra detta rätt, se aktuell ventil. För Calypso TRV-3, se tabell nästa sida.

#### Avstängning

TA-UNI (under- och sidokopplad) kan stängas av genom att skruva in förinställningsspindeln på fördelaren helt i botten med insexnyckel (4 mm). Demontering av radiatorn kan därmed göras utan nedtapning av systemet.

## Suomi

### Yleisjakokappaleella varustetulle patteriventtiilyhdistelmälle

#### Toiminta

**HUOM!** Yksiputkijärjestelmään on aina asennettava paluuputki (E), jotta vältytään kaksoiskierrolta (ei sovi kaikkiin patterityyppeihin).

- Mutteri ja kartio (A) siirretään kohtaan (D). Mikäli jakajaan halutaan sivukytkentä.
- Kannen merkintä UNI1/UNI2 kertoo onko toimitustila yksi- vai kaksiputkinen. Kantta voi käyttää myös koeponnistustulppana kohdassa (A) tai (D).
- Kun sisäkara (B) on ulosruuvatussa asennossa (kuusiokolo 2,5 mm), laite toimii 1-putkijakajana. Muutos 2-putkijakajaksi tehdään ruuvaamalla karaan sisään. Asettelu voidaan suorittaa käytön aikana.
- Ulkokara (C) käytetään patterin sulkemiseen (kuusiokolo 4 mm).

#### Asennus

- Putki työnnetään venttiiliönsä\* pohjaan ja kiristetään tiukkuuteen 35 Nm (+10/-0). Vaihtoehto: Kiristä ensin käsin ja sen jälkeen 1 - 1 3/4 kierrosta kiintoavaimella. Mahdollinen pituustoleranssi tasoitetaan jakajan kartiolla (A).
- Putki kiristetään jakajaan momentilla 30 Nm (+5/-0). Vaihtoehto: Kiristä ensin käsin ja sen jälkeen 1 - 1 3/4 kierrosta kiintoavaimella.
- Patteriyhdistäjät ( mukaanlukien Thermopanelin banjoliitin) kiristetään 40 Nm (+5/-0).

#### Kytkenällä 1-putki:

Toimitusasento: 50% virtaus patteriin. Virtaamavaihtoehdot 10-50% voidaan asettaa ulommalla akselilla jakokappaleesta (kuusiokolo 4 mm).

#### Kytkenällä 2-putki:

Eisäätö venttiiliönsästä. Tarkista, että venttiiliönsä on eisäädettävä. Calypso TRV-3, katso taulukko seuraavalla sivulla.

#### Sulkeminen

TA-UNI (alta- ja sivultakytketty) voidaan sulkea kiertämällä jakokappaleen säätökara kuusiokoloavaimella (4 mm) täysin pohjaan. Patteri voidaan nyt irrottaa tyhjentämättä järjestelmää vedestä.

## Norsk

### Ventilsett med universalfordelere TA-UNI

#### Funksjon

- OBS!** Returrør (E) bør installeres i fordeleren i 1-rørssystem for å hindre dobbel-sirkulasjon. (Går ikke på alle typer radiatorer).
- Mutter og konus (A) flyttes til (D) hvis sideforbundet fordeler ønskes.
  - Løkk merket UNI 1/UNI 2 angir leveringsinnstilling 1-rør/2-rør. (Kan også anvendes som prøvetrykksløkk ved (A) eller (D)).
  - Innerspindelen (B) i utskruet stilling (umbraco 2,5 mm) gir 1-rørsfordeler. Omstilling til 2-rør skjer ved at man skruer inn spindelen. Omstilling kan gjøres under drift.
  - Ytterspindel (C) anvendes for å stenge mot radiatoren (umbraco 4 mm).

#### Ferdigmontert ventilsett

Ferdigmontert ventilsett med G3/8 eller G1/2 gjenge leveres med forbindelsesrøret monteret og dratt til **mot radiatorventilen**. **OBS!** Anslutninger kan løses under transport. Fordelelen leveres løs og monteres etter anvisning under.

#### Montering

- Røret stikkes inn til bunn av ventildelen\* og trekk til med 35 Nm (+10/-0). Alternativt: Trekk til for hånd, deretter 1-1 3/4 omdreining med fastnøkkel. Eventuell lengdetoleranse tas opp av konusen (A) i fordeleren.
- Røret trekkes til med et moment på 30 Nm (+5/-0) i fordeleren. Alternativt: Trekk til for hånd, deretter 1-1 3/4 omdreining med fastnøkkel.
- Anslutninger (inkl banjo for Thermopanel) trekkes til med 40 Nm (+5/-0).

#### Forinnstilling 1-rør:

Leveres forinnstilt for maks. vannmengde til radiatoren. Forinnstillingen endres ved å justere på ytterspindelen i fordeleren (gjøres med 4 mm umbracønøkkel).

#### Forinnstilling 2-rør:

Forinnstillingen gjøres på ventilen. Se katalogblad for Calypso TRV-3 eller tabell på neste side.

#### Avstenging

TA-UNI (underforbinding og sideforbinding) kan stenges ved å skru forinnstillingsspindelen i fordeleren inn med 4 mm umbracønøkkel. Demontering av radiatoren kan dermed gjøres uten nedtapping av systemet.

## Dansk

### Ventilsystem med universalfordelere TA-UNI

#### Funktion

**OBS!** Der skal altid installeres returrør (E) ved 1-strengsfordeler for at forhindre dobbelcirkulation (passer ikke på alle typer radiatorer).

- Møtrik og konus (A) flyttes til (D), hvis der ønskes sidekoblet fordeler.
- Dæksel mærket UNI 1/UNI 2 angiver leveringsindstilling 1-strengs/2-strengs. Kan ligeledes anvendes som prøvetrykksprop ved (A) eller (D).
- Inderspindelen (B) i udskruet stilling (unbrako 2,5 mm) giver 1-strengsfordeler. (Omstilling til 2-strengsfordeler sker ved at keglen skrues ind). Denne omstilling kan gøres under drift.
- Yderspindel (C) anvendes til at afspærre mod radiator (unbrako 4 mm).

#### Montering

- Skub røret i bund på ventildelen\* og stram til 35 Nm (+10/-0). Alternativt: stram først med håndkraft, derefter 1 - 1 3/4 omdrejning med en topnøgle. Eventuel længdetolerans optages af konus (A) i fordeleren.
- Røret strammes til 30 Nm (+5/-0) i fordeleren. Alternativt: stram først med håndkraft, derefter 1 - 1 3/4 omdrejning med en topnøgle.
- Tilslutninger (inkl banjo til Thermopanel) strammes til 40 Nm (+5/-0).

#### Forindstilling 1-strengs:

Leveringsindstilling: 50% flow til radiator. Kan varieres mellem 10-50% ved at justere fordelere ns yderspindel (unbrako 4 mm).

#### Forindstilling 2-strengs:

Forindstilling udføres på ventildelen. For at udføre dette korrekt se aktuel ventil. For Calypso TRV-3, se tabel næste side.

#### Afspærring

TA-UNI (underkobling og sidekobling) kan afspærres mod radiator ved at skru fordelere ns spindel helt i bund med unbraco nøgle (4 mm). Demontering af radiator kan derfor ske uden aftapning af anlægget.