



Baths and Thermoregulators

For over 50 years, Techne® has been the leader in developing and offering clip-on Thermoregulators for water baths used in both laboratory and calibration environments. Our latest ranges, the TE and TU series continue in our proud tradition. Our thermoregulators, baths, dip and flow coolers and refrigerated systems allow for precise temperature control from -40°C to +250°C, integrating the latest in technology to assure excellence in your laboratory.

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Baths and Thermoregulators

Water Baths

A comprehensive range of temperature controlled water baths are available from Techne®. Twenty different water bath combinations allow the use of accurate temperatures from -40°C up to 200°C; ensuring a solution for most laboratory applications.

First select the unheated stainless steel bath (see page 29) which has the appropriate volume for the application, for example B-26 which has a volume of 26 litres.

Then add a thermoregulator (see pages 30 and 31) which is suitable for the required temperature range, for example the TE-10D Tempette is a digital thermoregulator for temperatures between -40°C and 120°C

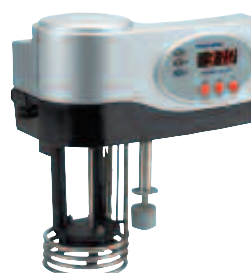
Select any accessories that are required, for example, both gabled and flat lids are available for all bath sizes. Gabled lids allow particularly tall tubes to be accommodated.

If sub-ambient temperatures are required it is necessary to add a cooling mechanism to the bath. Techne® recommends the use of a dip or flow cooler for temperatures down to -35°C. For example the RU-200 can lower temperatures down to -20°C. It is also possible to use the cooling coil with a water supply for temperatures from 5°C above the water temperature to ambient.

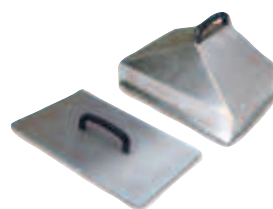
To assemble the complete system shown opposite the following products are required:



B-26



TE-10D



Bath Lids



RU-200



Product Code

Description

FBATH26	B-26 stainless steel bath, 26 litre capacity
FTE10DDC	TE-10D, digital thermoregulator
FFLAT18	Flat lid for 18 or 26 litre bath
FRU2D	RU-200 dip cooler

Unheated Baths

Designed to be used with a clip-on Tempette or Tempunit® thermoregulator, these baths incorporate carrying handles for added safety. All baths have stoved enameled steel outer cases and are supplied with bridge mounting plate to hold the thermoregulator.

Four bath capacities – 8, 12, 18 and 26 litre

- Stainless steel construction
- Seam-free and corrosion resistant stainless steel inners for easy cleaning
- Rugged splash-proof case
- Integrated carrying handle
- Maximum working temperature of 200°C
- All models come with a 3 year warranty as standard

48 litre

- 48 litre capacity
- Welded construction
- All submerged parts are made from stainless steel
- Rugged splash-proof case
- Maximum working temperature of 200°C



B-8



B-12



B-18



B-48

Technical Specifications

Capacity litres		8	12	18	26	48
Dimensions (mm)	Length	265	354	530	530	594
	Width	325	325	325	325	365
	Height	172	172	172	222	298
Internal Dimensions (mm)	Length	240	329	505	505	559
	Width	300	300	300	300	330
	Height	150	150	150	200	274
Top of bath to liquid level max depth (mm)		65	65	65	65	65
Working length to thermoregulator (mm)		115	205	380	380	430
Working depth - max/min (mm)		130/100	130/100	130/100	180/150	255/224
Working capacity - max/min (litres)		8.0/6.0	11.6/8.4	18.0/13.2	26.0/20.5	8.5/42.5
Shipping Weight		5.5kg	6.1kg	7.5kg	9.5kg	14.6kg

For temperatures up to 250°C we recommend the use of the LCB range of baths.

Ordering Information

Product Code	Description
FBATH08	B-8 stainless steel bath, 8 litre capacity
FBATH12	B-12 stainless steel bath, 12 litre capacity
FBATH18	B-18 stainless steel bath, 18 litre capacity
FBATH26	B-26 stainless steel bath, 26 litre capacity
FBATH48	B-48 stainless steel bath, 48 litre capacity

Baths and Thermoregulators

Techne® invented the "Clip On" thermoregulator in 1948 and now offer four "Clip On" units. Thermoregulators are designed to be used with the Techne® unheated water baths or any other suitable laboratory vessels. They will heat, circulate and safely control the temperature of the liquid in the bath within precise limits.

TE-10A Tempette

- Temperature range of -20°C* to 95°C
- Excellent temperature stability: $\pm 0.01^\circ\text{C}$ at 40°C
- Simple to use analogue control
- Suitable for most routine laboratory applications
- User adjustable over-temperature cut-out for unbeatable safety

TE-10D Tempette

- Temperature range of -40°C* to 120°C
- Excellent temperature stability: $\pm 0.01^\circ\text{C}$ at 40°C
- 4 digit setting with a bright LED digital temperature display
- Suitable for most routine laboratory applications
- User adjustable over-temperature cut-out
- Low liquid level cut-out as standard

Technical Specification

Specifications to DIN 12876	TE-10A	TE-10D
Temperature range*	-20°C to +95°C	-40°C to +120°C
Temperature selection	Analogue	Digital
Temperature stability using water @ 40°C	$\pm 0.01^\circ\text{C}$	$\pm 0.01^\circ\text{C}$
Method of control	Proportional	PID
Temperature sensor	Thermistor	PRT
Adjustable over-temperature cut-out	Yes	Yes
Low liquid level cut-out	Yes	Yes
Heating/Pumping		
Pump capacity litres/minute	10	10
Pump capacity (mbar)	145	145
Nominal heater power at 120V (W)	1000	1000
Nominal heater power at 240V (W)	1000	1000
Extension below base (mm)	145	145
Dimensions L x W x H (mm)	237 x 124 x 260	237 x 124 x 260
Shipping Weight	3.7kg	3.9kg

* Refrigeration or cooling coil required for below ambient cooling (see Techne Flow and Dip Coolers and the cooling coil).

Ordering information

Product Code	Description
FTE10ADC	TE-10A, analogue thermoregulator, -20°C to 95°C, (supplied with clamp)
FTE10DDC	TE-10D, digital thermoregulator, -40°C to 120°C, (supplied with clamp)



TE-10A



TE-10D

Stability
±0.005°C



TU-20D

Stability
±0.005°C



TU-20HT

TU-20D Tempunit®

- A wider temperature range of -40°C* to 200°C
- Excellent temperature stability: ±0.005°C at 40°C
- 1.8kW heater power for fast heat up
- 4 digit setting with a bright LED digital temperature display
- This unit incorporates an RS232 connection
- User adjustable over-temperature cut-out
- Low liquid level cut-out as standard

TU-20HT Tempunit®

- This sophisticated Tempunit® covers a wide temperature range of -40°C* to 250°C
- Excellent temperature stability: ±0.005°C at 40°C
- 1.8kW heater power for fast heat up
- 4 digit setting with a bright LED digital temperature display
- RS232 connection supplied with TechneWorks software package and connecting lead as standard
- User adjustable over-temperature cut-out with an audible alarm fitted
- Low liquid level cut-out as standard

Technical Specification

Specifications to DIN 12876	TU-20D	TU-20HT
Temperature range*	-40°C to +200°C	-40°C to +250°C
Temperature selection	Digital	Digital
Temperature stability using water @ 40°C	±0.005°C	±0.005°C
Method of control	PID	PID
Temperature sensor	PRT	PRT
Adjustable over-temperature cut-out	Yes	Yes
Low liquid level cut-out	Yes	Yes
PC Interface	Yes RS232	Yes RS232
Heating/Pumping		
Pump capacity litres/minute	10	Internal circulation only
Pump capacity (mbar)	145	-
Nominal heater power at 120V (W)	1500	1500
Nominal heater power at 240V (W)	1800	1800
Cooling coil	No	Option
Extension below base (mm)	145	145
Dimensions L x W x H (mm)	237 x 124 x 260	237 x 124 x 260
Shipping Weight	4.0kg	4.0kg

* Refrigeration or cooling coil required for below ambient cooling (see Techne Flow and Dip Coolers and the cooling coil). The TU-20HT can only be used with the Dip Coolers

* Downloadable free of charge from www.techne.com

Ordering Information

Product Code	Description
FTU20DDC	TU-20D, advanced thermoregulator with RS232, -40°C to 200°C, (supplied with clamp)
FTU20HDC	TU-20HT, advanced high temperature thermoregulator with RS232 and TechneWorks software, -40°C to 250°C, (supplied with clamp)

Baths and Thermoregulators

Liquid Bath Accessories

Cooling coil

Connects to the mains water supply; the water being circulated through the coil should be at least 5°C cooler than the set temperature of the bath. The cooling coil fits on to all the thermoregulators.

Flat and gabled lids

Manufactured of stainless steel and available to fit all sizes of baths to help prevent evaporation losses. Gabled lids provide extra working headroom within the bath.

Adjustable trays

Supported by a ball chain and clip the stainless steel trays can be used to alter the depth of the bath.

Polypropylene spheres

A ball blanket is an effective way of reducing evaporation and loss of heat from a water bath. It acts as effectively as a lid, whilst providing instant access to the bath. The 25mm diameter spheres are supplied in packs of 250.



Bath Lids

Ordering Information

Flat Lids	Description
FFLAT08	8 litre size
FFLAT12	12 litre size
FFLAT18	18 and 26 litre size
FFLAT48	48 litre size

Gabled Lids	Description
FGABLE08	8 litre size
FGABLE12	12 litre size
FGABLE18	18 and 26 litre size
FGABLE48	48 litre size

Adjustable Trays	Description
FADJ08	8 litre size
FADJ12	12 litre size
FADJ18	18 litre size
FADJ26	26 litre size
FADJ48	48 litre size

Polypropylene Spheres	Description
F840D	250 x 25mm diameter polypropylene spheres

TechneWorks software	Description
FTWORKS	TechneWorks software CD

TechneWorks

Techne are pleased to announce the introduction of our FREE OF CHARGE, easy to use control software for many of our RS232 compatible products. This software has been designed to supersede the existing Calsoft and Thermssoft software packages.

It will allow customers to carry out all the tasks previously available on Calsoft and Thermssoft plus many new options on one new package. It is fully compatible with all Techne RS232 calibration products including all current models and older discontinued models such as the TU-20C.

Compatible units are as follows:-

Dri-Block Calibrators - Tecal H, S and F models

- New Tecal 1200S High temperature furnace

Thermoregulators - TU-20D and TU-20HT (and TU-20C)

Precision Digital Thermometer - Accu-Temp with RS232 communication option

Fluidised Baths - FB-08C and TC-8D with RS232 communication option

TechneWorks software allows connection to a range of Precision Thermometers such as the Techne Accu-Temp, ASL model F250, Accu-TempII and the Cropico 3000 series. TechneWorks software enables you to calibrate thermometers and sensors and to then generate calibration certificates using a Techne Liquid bath or Dri-Block as a temperature source. The Calibration bath or Dri-Block's display can act as the reference temperature or connect to a range of external thermometers.

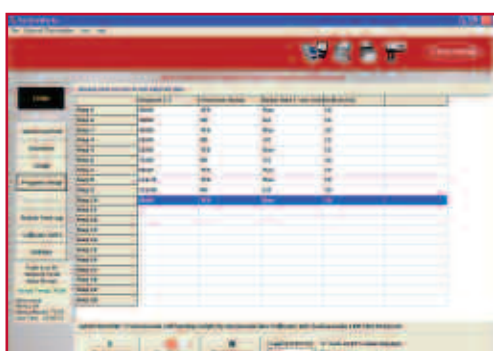
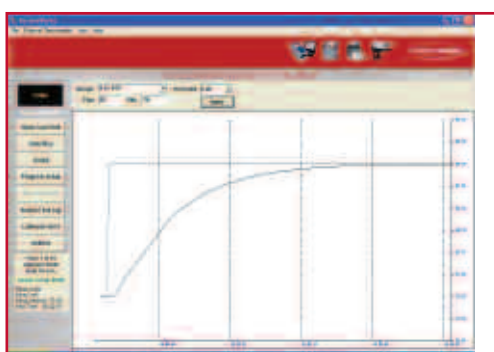
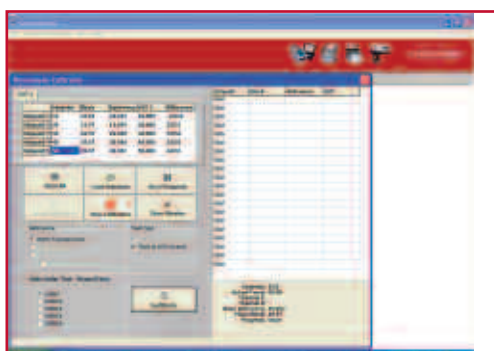
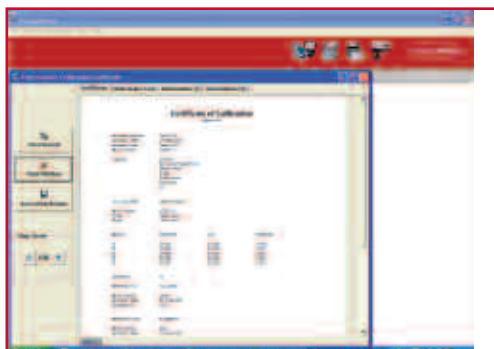
Software Features

ALL MODELS

- Create, open and save programs with up to 20 set points.
- Specify either °C or °F.
- Specify ramp rates and hold times.
- Log data from the instrument while connected to the computer and export the data to an Excel spreadsheet.
- Open, save, view and print logged data.
- Perform a calibration where temperature of the probe is manually entered.
- Perform an automatic calibration routine where the temperature reference probes data is added automatically.
- Run a program in real-time mode.
- Specifying the logging interval from every 5 seconds to 60 seconds

TechneWorks is downloadable free of charge from www.techne.com and www.techneusa.com

Note: CD with software included with Tecal H and TU-20HT models



Baths and Thermoregulators

Dip and Flow Coolers

The Techne® Flow Coolers work in conjunction with a Techne® thermoregulator. The bath liquid flows through the unit which continually extracts heat from the bath fluid by means of the heat exchanger which is built into the unit. The cooling head of the Techne® Dip Cooler fits neatly and unobtrusively into the corner of the bath and can be secured with a specially designed mounting bracket (supplied). If cooling can be achieved by using cold tap water, a dip cooler is recommended as it conserves water and is easier and more convenient to use.

Techne® Dip and Flow coolers are designed for use when temperatures down to -35°C are required.

- Four models
- Compact refrigeration units for achieving temperatures down to -35°C*
- Cooling head of the Dip Cooler fits neatly into the corner of a Techne® liquid bath (RU series of Dip Coolers)
- Designed for use with Techne liquid baths

Technical Specification

Cooling (at 20°C ambient)		FC-200	FC-500	RU-200	RU-500
Minimum achievable temperature		-20°C	-35°C	-20°C	-35°C
Cooling capacity: 20°C		140W	210W	145W	240W
Cooling capacity: 0°C		140W	210W	145W	240W
Cooling capacity: -10°C		110W	200W	110W	230W
Internal capacity		200ml	200ml	–	–
Nominal dimensions (excluding handles/coil)					
Overall (mm)	width	235	370	235	370
	length	420	430	420	430
	height	300	325	300	325
Coil dimensions (mm)	length	–	–	85	85
	diameter	–	–	75	75
Hose length to coil (mm)		–	–	1250	1250

*At an ambient of 20°C, using a mixture of 40% water, 40% antifreeze and 20% ethanol

Ordering Information

Product Code	Description
FRU2D	RU-200 dip cooler, -20°C
FRU5D	RU-500 dip cooler, -35°C
FFC2D	FC-200 flow cooler, -20°C
FFC5D	FC-500 flow cooler, -35°C
FCC01	Cooling coil



RU-200 and FC-500



FC-200



RB-12A



RB-5A

Refrigerated Baths

These baths are a complete refrigerated circulating system for open or closed applications for temperature ranges from -35°C to 100°C. Each bath is supplied with a lid and bridging plate.

There are three bath capacities: 7 litre (RB-5A), 12 litre (RB-12A) and 22 litre (RB-22A). Temperature control is via one of the four thermoregulators and together they offer a choice of 12 different bath combinations.

- Circulating bath with built in refrigeration
- Temperature range from -35°C to 100°C
- Three different capacities of refrigerated bath; 7, 12 or 22 litre
- The combination of 3 circulating baths and 4 thermoregulators provides 12 options

Technical Specification

Cooling (at 20°C ambient)	RB-5A	RB-12A	RB-22A
Minimum achievable temperature ¹	-20°C	-35°C	-30°C
Cooling capacity at 20°C	145W	240W	240W
Cooling capacity at 0°C	145W	240W	240W
Cooling capacity at -10°C	110W	230W	220W

Dimensions

	RB-5A	RB-12A	RB-22A
Dimensions - L x W x H (mm) ²	430 x 250 x 566	430 x 370 x 610	430 x 395 x 565
Liquid surface to top of bath - max (mm)	65	65	65
Internal dimensions - L x W x H (mm)	192 x 151 x 200	208 x 300 x 150	360 x 295 x 220
Working length to thermoregulator (mm)	224	224	250
Working depth - max/min (mm)	180/135	130/85	200/160
Working capacity max/min (litres)	7.0/5.5	11.6/9.6	22/18
Shipping weight kg ³	31	53	61

¹ Using a mixture of 50% water and 50% antifreeze to achieve -20°C or 40% water, 40% antifreeze, 20% ethanol to achieve -35°C.

² Overall size with thermoregulator

³ Add thermoregulator and bath shipping weight to get shipping weight of complete bath system.

Ordering Information

Product Code	Description
FRB5D	RB-5A bath, 7 litre capacity with built in refrigeration unit, -20°C to 100°C
FRB2D	RB-12A bath, 12 litre capacity with built in refrigeration unit, -35°C to 100°C
FRB22D	RB-22A bath, 22 litre capacity with built in refrigeration unit, -30°C to 100°C

Baths and Thermoregulators

Liquid Calibration Baths

The Techne® liquid calibration bath (LCB) series offer compact, accurate and reliable liquid baths which can be used for external circulation or temperature calibration of thermal sensors.

- -35°C to 250°C
- Three different capacities available; 5, 7 or 12 litres
- Temperature stability; $\pm 0.005^\circ\text{C}$ depending on choice of control unit
- Fully insulated bath for excellent heat retention
- Analogue or digital temperature selection, depending on choice of control unit
- Includes cover, lid and bridging plate

When temperature calibration is required the compact liquid baths offer excellent stability over the entire temperature range. The LCBs can be also be used for external circulation to maintain temperatures of samples in viscometers, photometers, refractometers, fermenters and other reaction vessels.

All models of LCB offer high pump performance and exceptional thermal stability from -35°C to 250°C . The baths are fully insulated on all sides and base and are fitted with a cooling coil for connection to a cold water supply for use at temperatures around ambient. The minimum temperature achievable is -35°C when a Dip or Flow Cooler is added to the system.*

Each bath is supplied complete with lid, drain tap, carry handles, a cooling coil (with bung) and hole to position a certified sensor. The TechneWorks software package is available for the TU-20 thermoregulators free of charge from www.techne.com.

Technical Specification

	5 litre	7 litre	12 litre
Dimensions L x W x H (mm)	351 x 260 x 183	351 x 260 x 233	351 x 260 x 358
Bath opening (mm)	140 x 140	140 x 140	140 x 140
Working depth (mm)	125	175	300
Shipping Weight	5kg	6kg	9kg

Ordering Information

Product Code	Description
FBCAL05D	LCB insulated liquid calibration bath with cooling coil, 5 litre capacity
FBCAL07D	LCB insulated liquid calibration bath with cooling coil, 7 litre capacity
FBCAL12D	LCB insulated liquid calibration bath with cooling coil, 12 litre capacity

*LCB baths fitted with a TU-20HT thermoregulator are not suitable for use with a Flow Cooler.

Choice of liquids

Some liquids can be hazardous when used in thermostatic baths. The user should ensure that due regard is paid to the flash-point and other characteristics of the chosen liquid. This table does not represent the recommendations of Techne but may be of assistance to the user in making an initial selection.

