Selecting the required setup

Baths and Thermoregulators

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 42) 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 44 to 47) 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, a gabled or flat lid (see page 48) are available. 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 (see page 50) 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:

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

Baths and Thermoregulators

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

Seam-Free Stainless Steel Construction

- Four bath capacities: 8, 12, 18, & 26 litre
- 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

Welded Stainless Steel Construction

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

Technical Specification

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	300
	Height	150	150	150	200	274
Top of bath to liquid level maximum 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, kg		5.5	6.1	7.5	9.5	14.6

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

Ordering Information

Product codes	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

Techne Catalogue

Routine Laboratory Thermoregulators

Baths and Thermoregulators

The Techne® Tempette clip-on thermoregulators are designed for use in combination 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 suitable for routine laboratory applications.

TE-10A Tempette

- Temperature range of -20°C* to 95°C
- Excellent temperature stability: ±0.01°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-10A

TE-10D Tempette

- Temperature range of -40°C* to 120°C
- Excellent temperature stability: ±0.01°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

TE-10D

Baths and Thermoregulators

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	±0.01°C	±0.01°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, kg	3.7	3.9

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

Ordering Information

	Product codes		
Description	**230V**	**120V**	**100V**
TE-10A, analogue thermoregulator, -20°C to 95°C, (supplied with clamp)	FTE10ADC	FTE10APC	FTE10AYC
TE-10D, digital thermoregulator, -40°C to 120°C, (supplied with clamp)	FTE10DDC	FTE10DPC	FTE10DYC

High Powered Thermoregulators

Baths and Thermoregulators

The Tempunit® offers increased heater power to enable accurate control over a wider temperature range, designed for applications requiring temperatures above 100°C. Techne also recommends the Tempunit® in conjunction with the larger 26 & 48 litre baths when temperature control above 50°C is required. Controlled heating rates and hold times can be achieved by linking the Tempunit® to the free TechneWorks software#.

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-20D

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

TU-20HT

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

Technical Specification

Specifications to DIN 12876	TE-20D	TE-20HT
Temperature range*	-20°C to +95°C	-40°C to +120°C
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	RS232	RS232
Heating/Pumping		
Pump capacity litres/minute	10	Internal circulation
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, kg	4.0	4.0

* 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

Ordering Information

	Product codes			
Description	**230V**	**120V**	**115V**	**100V**
TU-20D, advanced thermoregulator with RS232, -40°C to 200°C, (supplied with clamp)	FTU20DDC	n/a	FTU20DPC	n/a
TU-20HT, advanced high temperature thermoregulator with RS232, -40°C to 250°C, (supplied with clamp)	FTU20HDC	FTU20HPC	n/a	FTU20HYC

Liquid Bath Accessories

Baths and Thermoregulators

High Temperature Cooling Coil

Accessory designed for assisting in cooling a hot bath more rapidly by flowing tap water or chilled liquid through it, this simple coiled tube attaches to the base of all Techne thermoregulators with ease. This cooling coil can be used to cool a bath to 5°C above the cooling liquid supply temperature.

Cooling Coil

Ordering Information

Part Code	Description
FCC01	High Temperature Cooling coil

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.

Ordering Information

Part Code	Description
FFLAT08	8 litre size Flat Lid
FFLAT12	12 litre size Flat Lid
FFLAT18	18 and 26 litre size Flat Lid
FFLAT48	48 litre size Flat Lid
FGABLE18	18 and 26 litre size Gabled Lid

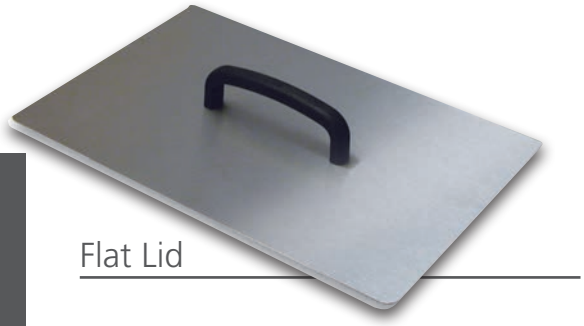
Gabled Lid

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.

Ordering Information

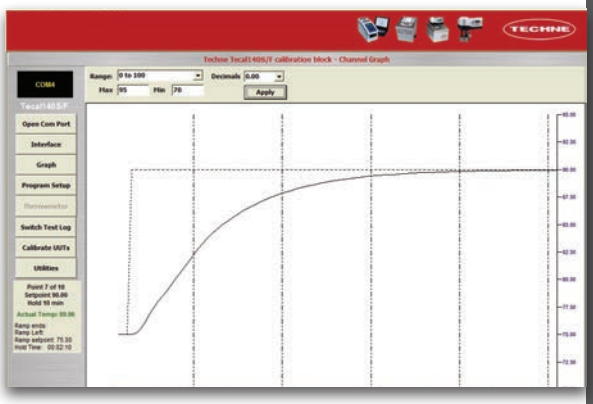
Part Code	Description
F840D	250 x 25mm diameter polypropylene spheres



Flat Lid

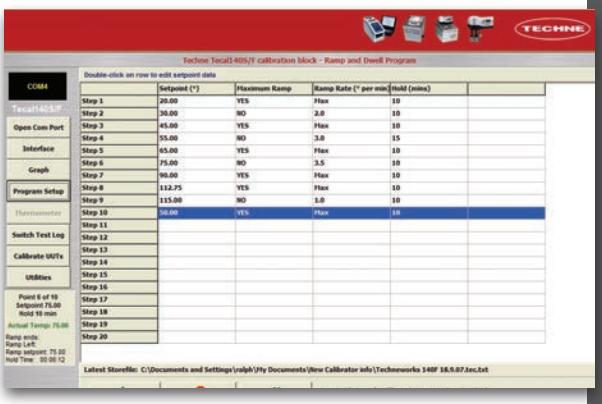
TechneWorks Software

Baths and Thermoregulators



Compatible units are as follows:-
Thermoregulators - TU-20D and TU-20HT

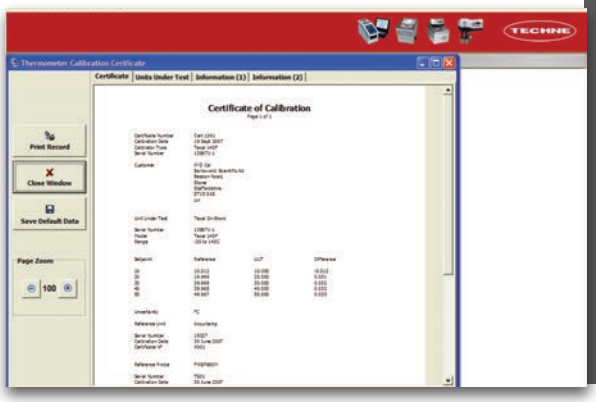
TechneWorks software enables you to specify ramp rates and hold times for your applications. It can be used to calibrate thermometers and sensors and then generate calibration certificates using a Techne Liquid bath. The Calibration bath can act as the reference temperature or connect to a range of external thermometers.



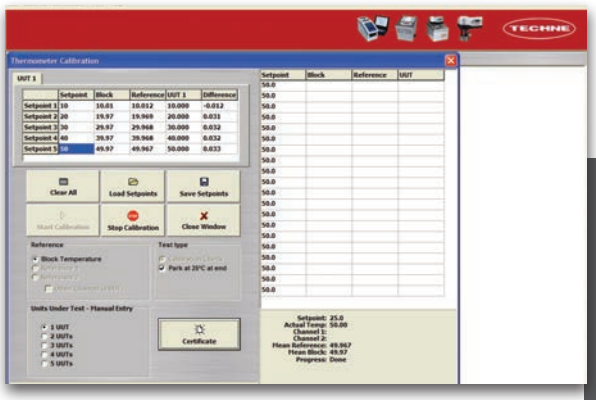
Software Features

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 also downloadable free of charge from www.techne.com and www.techneusa.com



Ordering Information

Part Code	Description
FTWORKS	TechneWorks software CD

Dip and Flow Coolers

Baths and Thermoregulators

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)	width	235	370	235	370
Overall, mm	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 codes		
Description	**230V**	**115V**	**120V**
RU-200 dip cooler, -20°C	FRU2D	FRU2P	-
RU-500 dip cooler, -35°C	FRU5D	FRU5P	-
FC-200 flow cooler, -20°C	FFC2D	FFC2P	-
FC-500 flow cooler, -35°C	FFC5D	FFC5P	-
Cooling water control pack	-	-	FCP2P

Refrigerated Baths

Baths and Thermoregulators

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			
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 codes	
Description	**230V**	**115V**
RB-5A bath, 7 litre capacity with built in refrigeration unit, -20°C to 100°C	FRB5D	FRB5P
RB-12A bath, 12 litre capacity with built in refrigeration unit, -35°C to 100°C	FRB2D	FRB2P
RB-22A bath, 22 litre capacity with built in refrigeration unit, -30°C to 100°C	FRB22D	FRB22P

Liquid Calibration Baths

Baths and Thermoregulators

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; ±0.005°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, kg	5	6	9

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

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

Ordering Information

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

Choice in Liquids

Baths and Thermoregulators

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.