HOT BATHS

Hot Baths **Models 6020, 6022, and 6024**

- Large-capacity tanks for higher productivity
- Calibrations up to 300°C
- Built-in cooling coils for extended low range
- Stability to ±0.001°C

Comparison calibrations require a heat source that's stable and uniform, and for moderately high temperatures nothing provides a better heat source than a Hart oil bath.

Hart oil baths are stable to ±0.001°C and do not require calibration blocks or use of special calibration techniques to achieve that stability. The specifications of all Hart baths are "true" specifications representing the performance you can expect to achieve in your lab under your operating conditions. Other companies advertise specs that they know you will never see in your lab. When their baths fail to perform, they blame it on you.

Hart baths are built using a unique tank design that guarantees the best uniformity possible in a liquid bath. This, coupled with the industry's best-selling digital bath controller, achieves uncompromised performance and ease of use.

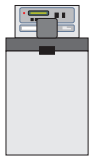
Not only does Hart's digital controller have features like its "Super-Tweak" high-resolution mode so you can dial in the exact temperatures you want, it also lets you completely automate the calibration process using your PC and Hart's 9938 MET/TEMP II software (see page 75).

You'll love these baths, and once you've got one you'll never buy anything else. There's a bath to match any temperature range, depth, price, and performance you need.

See our selection of bath fluids on page 104.

See our calibration and data acquisition software packages on page 74.

Ranges from 20°C to 300°C

Specifications	6020	6022	6024
			
Range	20°C to 300°C†		
Stability	±0.001°C at 40°C (water) ±0.003°C at 100°C (oil 5012) ±0.005°C at 300°C (oil 5017)		
Uniformity	±0.002°C at 40°C (water) ±0.004°C at 100°C (oil 5012) ±0.012°C at 300°C (oil 5017)		
Temperature Setting	Digital display with push-button data entry		
Set-Point Resolution	0.01°C; high-resolution mode, 0.00018°C		
Display Temperature Resolution	0.01°C		
Digital Setting Accuracy	±1°C		
Digital Setting Repeatability	±0.02°C		
Heaters	350 and 1050 watts		
Access Opening (call for custom openings)	5" x 10" (127 x 254 mm)		7.25" x 12.75" (184 x 324 mm)
Depth	12" (305 mm)	18.25" (464 mm)	13.25" (337 mm)
Wetted Parts	304 stainless steel		
Power	115 VAC (±10%), 50/60 Hz, 10 A or 230 VAC (±10%), 50/60 Hz, 5 A, specify		
Volume	7.2 gallons (27 liters)	11.2 gallons (42 liters)	
Weight	70 lb. (32 kg)	80 lb. (36 kg)	
Size	25.5" H x 16" W x 20" D (648 x 406 x 508 mm)	32" H x 16" W x 20" D (813 x 406 x 508 mm)	27.5" H x 19" W x 23" D (699 x 483 x 584 mm)
Automation Package	Interface-*it* software and RS-232 computer interface are available for setting bath temperature via remote computer. For IEEE-488, add the 2001-IEEE to the automation package.		

†External cooling required for operation below 40°C. Cooling coils are built into the bath walls. Tubing ports are accessible at the back of the bath for circulating chilled fluid or shop air to boost cooling.

Ordering Information

6020	Standard Bath, 20°C to 300°C
6022	Standard Bath, 20°C to 300°C, deep
6024	Standard Bath, 20°C to 300°C, high capacity
2001-6020	Automation Package for 6020
2001-6022	Automation Package for 6022
2001-6024	Automation Package for 6024
2001-IEEE	Add for IEEE-488 (requires Automation Package)
2007	Access Cover, 5" x 10", SST (6020, 6022)
2009	Access Cover, 7.25" x 12.75", SST (6024)
2016-6020	Fluid Level Adapter, 6020 (page 106)
2016-6022	Fluid Level Adapter, 6022 (page 106)
2016-6024	Fluid Level Adapter, 6024 (page 106)
2070	Bath Cart, 6020, 6022 (12.3" H)
2072	Bath Cart, 6024 (8.5" H)
2023	Fast-Start Heater, 16.5" (6022)
2024	Fast-Start Heater, 13.5" (6020, 6024)
2069	8X Magnifier Scope, with mounts (page 106)

Technical Tip

Uncertainty Evaluation and SPC with a Bath

Considerable emphasis is placed on uncertainty analysis and statistical process control (SPC) in the calibration lab. If you're using a calibration bath in your process, you may be wondering how to include the bath in the process evaluation. Basically, there are three approaches.

The first is to "calibrate" the bath to ensure that it meets published specifications and include the published specifications with the "type B" uncertainties in your evaluation just as you might do with any other instrument.

The second approach is to thoroughly test the bath stability and uniformity, perform statistical analysis of the results' uncertainties, and include the results with the "type A" uncertainties in your evaluation. This is often a better method and will provide more realistic results.

The third avenue is to use a "check standard" instrument in the process in such a way that the bath characteristics are included in the check-standard data, which is evaluated statistically and included with the "type A" evaluation. This approach is somewhat more time-consuming but will provide realistic results. When used in conjunction with the second method above, the best results will be obtained.