

'VISCOUSITY BATHS'

Precision Controlled Viscosity Baths

Townson
+Mercer

'POS TEMP' E270 Viscosity Bath

- ◆ Precision controlled, better than $\pm 0.01^{\circ}\text{C}$
- ◆ Temperatures from $+10^{\circ}\text{C}$ up to 120°C
- ◆ Essential for accurate determination of kinematic viscosity
- ◆ Meets the requirements of the "Institute of Petroleum" & "American Society for Testing and Materials"
- ◆ High visibility viewing windows allow clear observation of upto 8 viscometers

The 'POS TEMP' Viscosity bath is designed for Kinematic Viscosity determinations to the stringent requirements of IP & ASTM standards. A specially designed stainless steel support lid holds up to 8 viscometer holders, each one can be independently levelled and checked using the circular spirit level.

For temperatures less than 10°C above ambient a simple water cooling coil or small refrigeration unit can be used. There is a full range of accessories available to make the 'POS TEMP' Viscosity bath simple to use, including a full range of IP/ASTM thermometers, viscometers and calibrated oil standards in 500ml sealed containers. Please see separate leaflet for full details of all accessories.



'NEG TEMP' -70 Viscosity Bath

- ◆ Precision controlled, better than $\pm 0.03^{\circ}\text{C}$
- ◆ Temperatures down to -70°C
- ◆ Essential for accurate determination of kinematic viscosity at low temperatures, conforming to IP71/ASTM D445
- ◆ Cooling of the heat exchanger can be achieved using solid CO_2 or one of the Townson + Mercer 'COOL IT' refrigeration units
- ◆ Double glazed viewing windows allow good visibility even at these low temperatures

The 'NEG TEMP' Viscosity bath is designed for Kinematic Viscosity determinations at temperatures down to -70°C . This bath comprises two large cylindrical Dewar vessels insulated to a high thermal standard and housed in a steel cabinet. One of the vessels is the working bath fitted with two clear viewing strips on opposite sides, enabling the contents to be observed. The second vessel holds the heat exchanger and coolants.



'COOL IT' Refrigeration Units

- ◆ Five standard refrigeration units, with special units available on request
- ◆ Suitable for both 'POS TEMP' & 'NEG TEMP' Viscosity baths
- ◆ Can be used for other cooling applications

Detailed extraction rates are given in the specification table. However, as an aid the small unit will maintain a 40 litre insulated bath at 5°C to 10°C below ambient temperature, the medium size at 20°C to 30°C below ambient and the larger unit at 40°C to 50°C below ambient. These units can also be fitted with a control thermostat.



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'VISCOSITY BATHS'

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Specifications

	'POS TEMP' E270 Viscosity bath	'NEG TEMP' -70 Viscosity bath
Model	E270 Series IV	-70
Construction - Case	Powder Coated Steel	Powder Coated Steel
- Tank	Stainless Steel	Glass Dewar Flasks
External Dimensions	670 x 320 x 610mm (L x W x H)	610 x 390 x 880mm (L x W x H)
Height of main case	470mm	560mm
Working Space	390 x 255 x 390mm (L x W x H)	180dia x 280mm deep
Viewing Window	375 x 340mm	50 x 325mm
Heaters / Refrigeration	Two 1000 watt boost heaters which can be controlled manually or automatically. Permanent load up to 420 watts and a 600 watt thermostat controlled heater	Large refrigeration unit for use down to -30°C (Catalogue No 04800282) Duplex refrigeration unit for use down to -70°C (Catalogue No 04800488)
Power	Max 3100 watts	200 watts (excluding refrigeration)
Supply	220/240 Volts 50Hz Single Phase	220/240 Volts 50Hz Single Phase
Weight Nett (empty)	38 kg	34 kg (excluding refrigeration)
Weight Packed	48 kg	50 kg (excluding refrigeration)
Packed Dimension	860 x 460 x 800mm (L x W x H)	740 x 480 x 1000mm (L x W x H)

Performance

	'POS TEMP' E270 Viscosity bath	'NEG TEMP' -70 Viscosity bath
Complies with the relevant requirements of	BS 188, BS 2000, ASTM D445, IP 71, ISO 3104, DIN 51550, PT 71, FTM 791-305	BS 188, BS 2000, ASTM D445, IP 71, ISO 3104, DIN 51550, PT 71, FTM 791-305
Temp Range	120°C Maximum, minimum temperature dependent on coolant system used	Down to -30°C with large refrigeration unit Down to -70°C with Duplex refrigeration unit
Heating / Cooling time	40°C - Water filled 1 hour 100°C - Oil filled 1.25 hours	Depends on fridge used
Temperature control	Better than ±0.01°C throughout the range	Better than ±0.03°C throughout the range

Ordering Details

	Catalogue No.		Catalogue No.	Viscometer & Thermometer Accessories	Catalogue No.
'POS TEMP' E270	04400424	'NEG TEMP' -70	04400259	Universal viscometer holder	04400149
ACCESSORIES FOR 'POS TEMP'		ACCESSORIES FOR 'NEG TEMP'		Adaptor ring for 50mm viscometer holder	04005245
Small Refrigeration Unit	04800220	Large refrigeration unit	04800282	Circular spirit level	04400156
Plain metal lid	04400077	Duplex refrigeration unit	04800488	Rubber caps for viscometer holders	04400170
Viscometer lid with 8 holes	04400091	2 Hole viscometer lid	04400266	Bench viscometer stand	04400187
Opal glass diffuser screen	04400132	Fluorescent lighting unit	04400273	Townson + Mercer Thermometer holder	04900144
Fluorescent lighting unit with 2 tubes for attachment to the back of the bath	04400118			Plastic covers with insulation handle for vacant viscometer openings	04400163
Cooling coil to use with water	04400101			Pump for external circulation and emptying bath up to 100°C	09000970

'COOL IT' Refrigeration Units

Specification, Performance and Ordering Details

	Small	Medium	Large	Large	Duplex
External Dimensions	410 x 280 x 250mm	410 x 280 x 250mm	500 x 360 x 330mm	500 x 360 x 330mm	610 x 610 x 610mm
Evaporator Coil (Type)	Flat	Triple helix	Triple helix	Helix	Helix
Evaporator Coil (Size)	180 x 180 x 25mm	205 x 205 x 65mm	205 x 205 x 65mm	130mmØ x 21mm long	130mmØ x 21mm long
Weight Nett	18kg	21kg	43kg	43kg	57kg
Catalogue No	04800220	04800244	04800275	04800282	04800488

	Small	Medium	Large	Large	Duplex	
Temp	Extraction Rates J/s or Watts				Temp	Extraction Rates J/s or Watts
+20°C	146	161	440	440	-40	250
+10°C	124	146	426	426	-50	195
0	88	117	410	410	-60	150
-10°C	73	95	380	380	-70	115
-20°C	-	73	300	300	-80	100
-40°C	-	-	75	75		

In accordance with our policy of continual improvement in design we reserve the right to depart from details in this publication without prior notice.

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