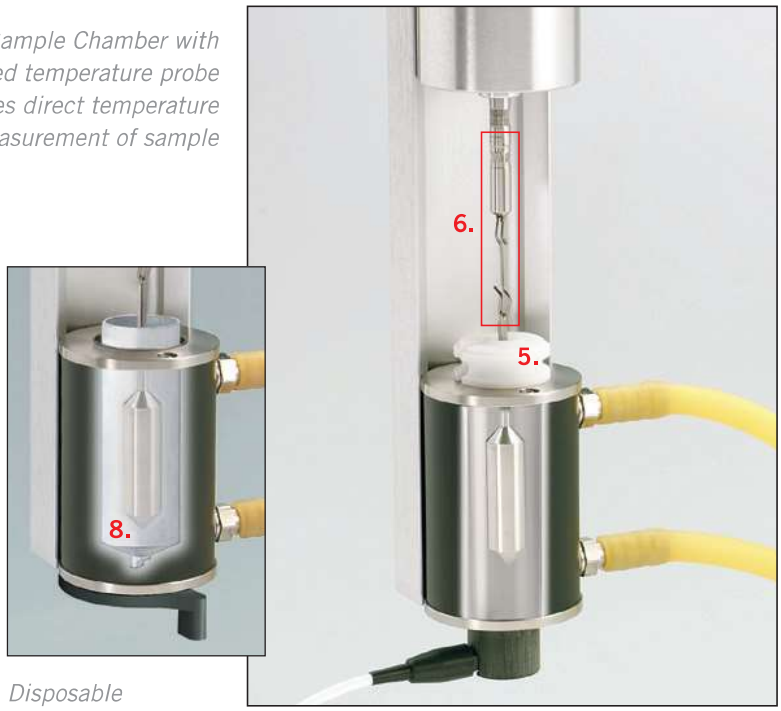
Small Sample Adapter™

for rheological evaluation where sample volume is limited

Standard Sample Chamber with embedded temperature probe provides direct temperature measurement of sample



Disposable Sample Chamber
(Requires SSA-DCU Water Jacket)

Complete system shows the DV2T Viscometer and Small Sample Adapter with Circulating Water Bath for temperature control.

What's Included?

1. Water Jacket
2. Locating Channel Assembly
3. Choice of one SC4 Spindle*
4. Choice of one SC4 Sample Chamber*
5. Insulating Cap
6. Extension Link with Coupling Nut

Storage Case (not shown)

*Specify when ordering

Optional Accessories

7. Embedded RTD temperature Probe in Chamber
8. SC4-13RD-100 (100/box)
   Disposable Sample Chambers (p48)
   Requires special water jacket
9. SC4-27D-100 (100/box)
   Disposable Spindles (p48)
10. SSA-DCU
    Special Water Jacket and
    SC4-13RD Disposable Chambers (100/box)
11. SSA27D-13RD-100
    Includes SSA-DCU items (above) plus
    SC4-27D Disposable Spindles (100/box)
12. Temperature Bath (p33-35)
13. EZ-Lock Spindle Coupling (p50)

For more info on Small Sample Adapter Accessory Kits visit our website.

The Small Sample Adapter provides a defined geometry system for accurate viscosity measurements at precise shear rates. Consisting of a cylindrical sample chamber and spindle, the Small Sample Adapter is designed to measure small sample volumes of 2 to 16 mL, and easily attaches to all standard AMETEK Brookfield Viscometers/ Rheometers.

TEL 800-628-8139 or 508-946-6200 FAX 508-946-6262 www.brookfieldengineering.com

Small Sample Adapter Viscosity Ranges cP(mPa•s)

MODEL	Spindle: SC4-18 Sample Chamber:* SC4-13R(P) Sample Volume: 6.7mL Shear Rate (sec⁻¹): 1.32N	Spindle: SC4-31 Sample Chamber:* SC4-13R(P) Sample Volume: 9.0mL Shear Rate (sec⁻¹): .34N	Spindle: SC4-34 Sample Chamber:* SC4-13R(P) Sample Volume: 9.4mL Shear Rate (sec⁻¹): .28N	Spindle: SC4-16 Sample Chamber:* SC4-8R(P) Sample Volume: 4.2mL Shear Rate (sec⁻¹): .29N	Spindle: SC4-25Z (316 s/s only) Sample Chamber:* SC4-13R(P) Sample Volume: 16.1mL Shear Rate: (sec⁻¹): .22N	Spindle: SC4-21 Sample Chamber:* SC4-13R(P) Sample Volume: 7.1mL Shear Rate (sec⁻¹): .93N	Spindle: SC4-27(D) Sample Chamber:* SC4-13R(P) Sample Volume: 10.4mL Shear Rate (sec⁻¹): .34N	Spindle: SC4-15 Sample Chamber:* SC4-7R(P) Sample Volume: 3.8mL Shear Rate (sec⁻¹): .48N	Spindle: SC4-28 Sample Chamber:* SC4-13R(P) Sample Volume: 11.0mL Shear Rate (sec⁻¹): .28N	Spindle: SC4-29 Sample Chamber:* SC4-13R(P) Sample Volume: 13.5mL Shear Rate (sec⁻¹): .25N	Spindle: SC4-14 Sample Chamber:* SC4-6R(P) Sample Volume: 2.1mL Shear Rate (sec⁻¹): .40N
DV3TLV	1.2-30K	12-300K	24-600K	48-1.2M	192-4.8M	Not applicable for historical reasons. However, it is possible					
DV2TLV	1.5-30K	15-300K	30-600K	60-1.2M	240-4.8M	to use the above spindles with any of these instruments.					
DV1LV	3-10K	30-100K	60-200K	120-400K	800-1.6M	Digital Viscometers/Rheometers will automatically calculate					
DVELV	3-10K	30-100K	60-200K	120-400K	800-1.6M	viscosity. Please contact Brookfield or an authorized dealer					
LVT	5-10K	50-100K	100-200K	200-400K	800-1.6M	if you require information on viscosity range.					
DV3TRV						20-500K	100-2.5M	200-5M	200-5M	400-10M	500-12.5M
DV2TRV						25-500K	125-2.5M	250-5M	250-5M	500-10M	625-12.5M
DV1RV						50-170K	250-830K	500-1.7M	500-1.7M	1K-3.3M	1.25K-4.2M
DVERV	Not applicable for historical reasons.					50-170K	250-830K	500-1.7M	500-1.7M	1K-3.3M	1.25K-4.2M
RVT	However, it is possible to use the above					50-100K	250-500K	500-1M	500-1M	1K-2M	1.25K-2.5M
DV3THA	spindles with any of these instruments.					40-1M	200-5M	400-10M	400-10M	800-20M	1K-25M
DV2THA	Digital Viscometers/Rheometers will					50-1M	250-5M	500-10M	500-10M	1K-20M	1.25K-25M
DV1HA	automatically calculate viscosity. Please					100-300K	500-1.7M	1K-3.3M	1K-3.3M	2K-6.7M	2.5K-8.3M
DVEHA	contact Ametek Brookfield or an authorized dealer					100-300K	500-1.7M	1K-3.3M	1K-3.3M	2K-6.7M	2.5K-8.3M
HAT	if you require information on viscosity range.					100-200K	500-1M	1K-2M	1K-2M	2K-4M	2.5K-5M
DV3THB						160-4M	800-20M	1.6K-40M	1.6K-40M	3.2K-80M	4K-100M
DV2THB						200-4M	1K-20M	2K-40M	2K-40M	4K-80M	5K-100M
DV1HB						400-1.3M	2K-6.7M	4K-13.3M	4K-13.3M	8K-26.7M	10K-33.3M
DVEHB						400-1.3M	2K-6.7M	4K-13.3M	4K-13.3M	8K-26.7M	10K-33.3M
HBT						400-800K	2K-4M	4K-8M	4K-8M	8K-16M	10K-20M

M = 1 million K = 1 thousand N = RPM e.g. Spindle SC4-18 1.32 x 10 (rpm) = 13.2 sec-1 cP = Centipoise mPa•s = Millipascal•seconds

N/A = Not applicable for historical reasons. However, it is possible to use any spindle/chamber combination with any torque range. Digital viscometers/rheometers will automatically calculate viscosity.

* Examples

SC4-13R Sample Chamber

SC4-13RPY Sample Chamber with RTD temperature probe and cable to viscometer/rheometer

SC4-27 Stainless Steel Spindle

† Disposable chamber available in 13R size and requires SC4-45YD water jacket

SC4-13RP Sample Chamber with RTD temperature probe

SC4-13RD-100 Disposable Sample Chamber available in packages of 100

SC4-27D Disposable Spindle

Note: Hastelloy C available for some spindles/chambers - call for details

Removable Sample Chamber

The design of the Small Sample Adapter allows the sample chamber to be easily changed and cleaned without disturbing the set-up of the viscometer or temperature bath. This means that successive measurements can be made under identical conditions.

Temperature Control

The sample chamber fits into a water jacket so that precise temperature control can be achieved when the AMETEK Brookfield circulating temperature bath is used. The stirring action of the rotating spindle, plus the small sample volume, reduces waiting time to achieve thermal equilibrium. Direct readout of sample temperature is provided using sample chambers with optional embedded RTD sensor connected to the DV1 and DV2T Viscometers and the DV3T Rheometer. Working temperature range for the Small Sample Adapter is from 1°C to 100°C.

Cylindrical Geometry

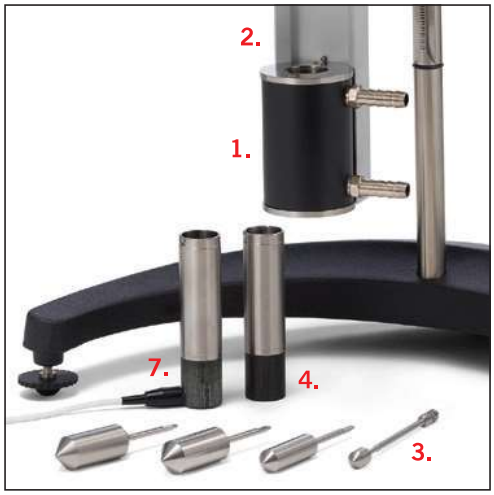
The Small Sample Adapter's coaxial cylinder geometry provides extremely accurate viscosity measurements at defined shear rates. Option: Solid shaft (p48)

Disposable Sample Chambers and SC4-27D Spindle

Disposable 13R chambers, for hard-to-clean materials, are available in a kit that comes complete with 100 chambers and special-sized water jacket (Part No. SSA-DCU). Additional disposable chambers can be purchased in quantities of 100 (Part No. SC4-13RD-100).

EZ-Lock Option

Small Sample Adapter is now available with special EZ-Lock spindle coupling for use on standard Viscometers/Rheometers already equipped with the EZ-Lock feature.



Water jacket allows rapid and precise temperature control of sample

Sample chamber easily changed - slides into water jacket and locks in place

Simultaneous sample temperature measurement is possible by ordering embedded temperature probe in sample chamber

Optional disposable chamber also available