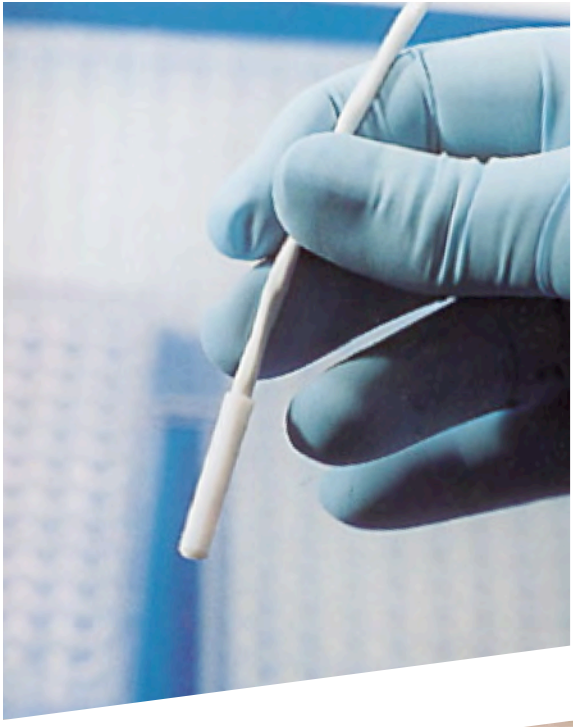
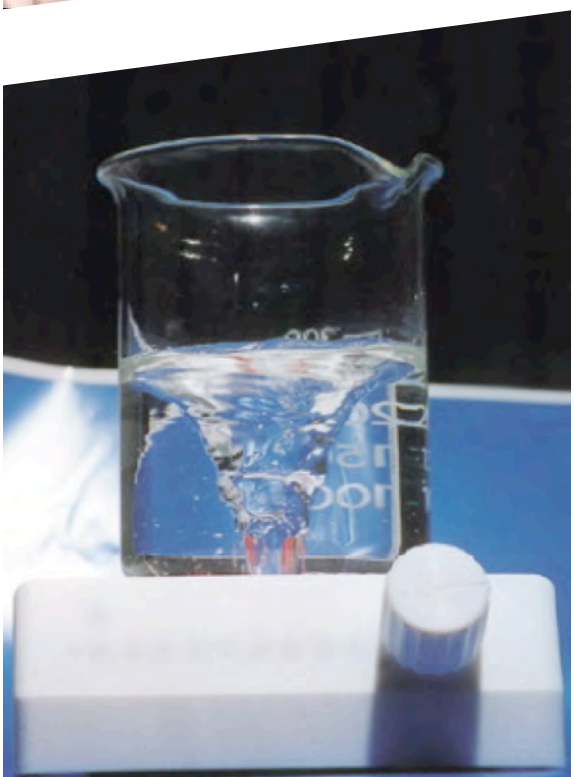
cowie®

PTFE
LABWARE & PROCESS CHEMISTRY EQUIPMENT





cowie®

The worlds leading specialist for the design and manufacture of:-

PTFE Labware

and **PTFE Process Chemistry Equipment**

PTFE is the material of choice for -

- **Chemical Resistance**
  The chemical resistance of PTFE is almost total over its working temperature range. Reaction is limited to some compounds with free electrons such as sodium in liquid ammonia and some fluorine compounds at high temperature and pressure. Halogens will penetrate PTFE but without apparent reaction.
- **Thermal Stability**
  The thermal stability of PTFE is outstanding. The material can be used to ca. 280˚C yet there is no embrittlement in liquid helium. Thermal degradation does not commence until about 400˚C. PTFE does not melt to form a liquid phase.
- **Insolubility & Purity**
  The PTFE we use conforms to USP Class VI and FDA requirements and is intrinsically pure and contains no additives. PTFE is insoluble in all known solvents except under extremes of pressure and temperature and will not contaminate media by dissolution.
- **Sterilisation**
  PTFE can be sterilised by all usual means except gamma radiation.

Our standard products are available throughout the world from major laboratory product distributors. If you have difficulty obtaining our products, require technical assistance or the manufacture of a custom item, please contact us.

Serving Europe, Africa, Asia & Australasia

Cowie Technology Group Ltd
Ridgeway, Coulby Newham
Middlesbrough, TS8 0TQ
England
Tel: + 44 (0) 1642 599190
Fax: + 44 (0) 1642 596810
Email: enquiries@cowie.com

Serving USA & Canada

Cowie Technology Corp
510 First State Boulevard
First State Industrial Park
Wilmington, DE 19804
USA
Toll Free: 800 233 5711
Tel: 001 302 998 7037
Fax: 001 302 998 7092
Email: inquiries@cowie.com

www.cowie.com

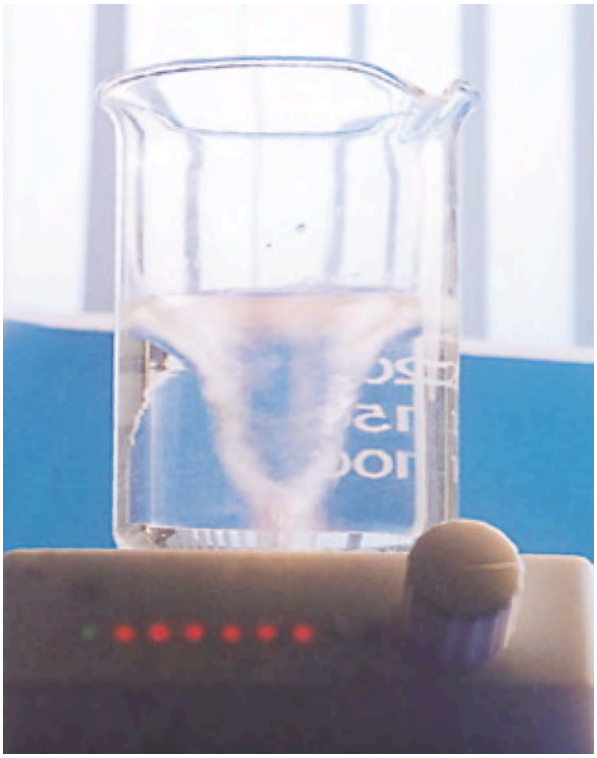
CONTENTS

Certificate number 4003393

Cowie Technology Group Ltd designs and manufactures under BS EN ISO9001:2000. Certified by Lloyds Register Quality Assurance.

STIRRER MAGNETS

The worlds largest range of stirrer magnets -



- Isostatic encapsulation to eliminate cracks and porosity
- FDA and USP Class VI approved PTFE
- Alnico V and Rare Earth magnet cores
- Polished finish to reduce pick-up and cross contamination

Magnetic stirring is a widely used and long established method for stirring and mixing in liquid media. The process is not only simple and inexpensive but extremely diverse in the range of application.
Examples include: synthetic procedures, drug delivery, chemical analysis, flow control, emulsification, milling and grinding and solid phase extraction.

Magnetic stirring can be used in open and closed systems, over a range of positive and negative pressure, over a broad temperature range and with virtually any chemical reagent. The use of bearings, glands, seals and complex drive mechanisms common to other mixing systems are not required.

Magnetic stirring - Key Points

Material:
PTFE is the material of choice for encapsulation because of its almost total chemical resistance and its wide range of working temperature -200˚C to +280˚C.

Shape:
It is difficult to quantify the most effective shape for a particular stirring application, some shapes are self-evident, for example, an oval or egg shape for round bottom containers or a flat and triangular shape where a scraping action is required, large containers generally require large stirring bars. For very viscous liquids a vaned stirrer at slow speed is required while for stirring in shallow dishes a long thin stirrer also at slow speed is effective. Often, however, selection is a matter of choice or trial with various shapes.

Particle Formation and Abrasion:
PTFE is a relatively soft material and the rubbing action against the surface of the container may generate small particles. In an application where the generation of such particles must be avoided the stirring system must be evaluated before actual use. Generation of particles is reduced by careful selection of the shape of stirrer, ensuring the contact surfaces are smooth and even, not using an over powerful stirring bar or use suspended stirring.

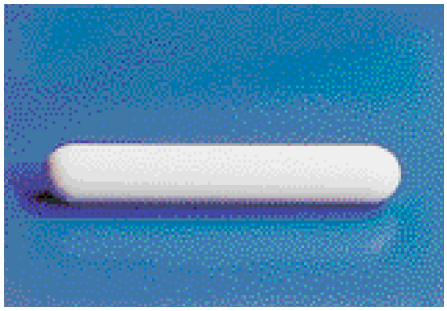
Coupling Effects:
De-coupling in the form of spin-out, tumbling or migration is generally due to weakness in the strength of the magnetic circuit, a mismatch in the sizes of drive magnet and stirrer bar or a stirring speed too high.
Rare Earth Magnets, because of their strength, are often found to behave in an erratic fashion and may migrate to one of the poles of the drive magnet or tumble with great ease and must, therefore, be selected with great care. Also, due to to the strength of Rare Earth Magnets, there may be an increase in abrasion between the container surface and stirrer which may lead to increased particle generation.

Sterilisation:
PTFE stirring bars can be sterilised by chemical or thermal means but not by gamma radiation.

STIRRER MAGNETS

CYLINDRICAL

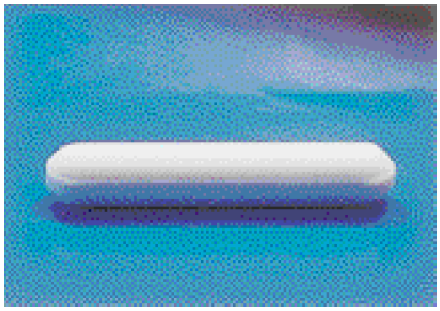
Smooth, round profile. A popular general purpose stirrer for a wide variety of applications.



Ref No.	L (mm)		Ø (mm)
001.106	6	x	3
.108	8	x	3
.110.6	10	x	6
.112	12	x	4.5
.113.6	13	x	6
.113.7	13	x	7
.113.8	13	x	8
.113.10	13	x	10
.115	15	x	4.5
.115.6	15	x	6
.120	20	x	6
.120.7	20	x	7
.120.8	20	x	8
.125.5	25	x	5
.125	25	x	6
.125.8	25	x	8
.125.10	25	x	10
.130	30	x	6
.130.7	30	x	7
.130.8	30	x	8
.135	35	x	6
.140.7	40	x	7
.140	40	x	8
.145	45	x	8
.150	50	x	8
.160	60	x	10
.170	70	x	10
.180	80	x	10

PLAIN

Similar action to cylindrical but give more turbulence at low speed.

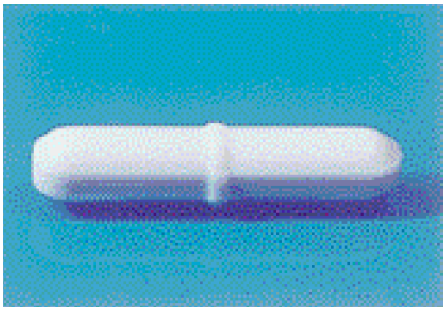


Ref No.	L (mm)		Ø (mm)
001.210.6	10	x	6
.212	12	x	4.5
.213.8	13	x	8
.215	15	x	4.5
.215.6	15	x	6
.215.8	15	x	8
.220	20	x	6
.220.7	20	x	7
.225	25	x	6
.225.7	25	x	7
.225.8	25	x	8
.225.10	25	x	10
.230	30	x	6
.230.7	30	x	7
.235	35	x	6
.235.7	35	x	7
.235.10	35	x	10
.240.7	40	x	7
.240	40	x	8
.245	45	x	8
.250.7	50	x	7
.250	50	x	8
.250.10	50	x	10
.257	57	x	27
.260.7	60	x	7
.260.8	60	x	8
.260	60	x	10
.265.13	65	x	13
.270	70	x	10
.275	75	x	13
.280	80	x	10
.2108	108	x	27
.2159	159	x	27

Stirrer Magnet Dimensions are NOMINAL and are approximately ±5% for Length and ±10% for Diameter of the stated values

STIRRER MAGNETS

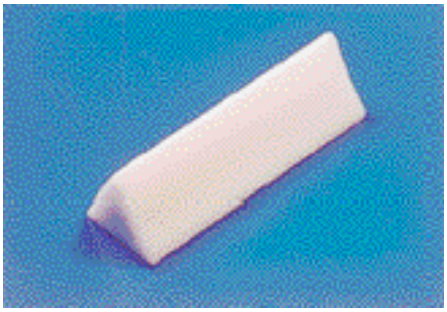
PIVOT RING



Use in containers with bases that are slightly curved or uneven - the pivot enables the stirrer to adopt the optimum position for stirring.

Ref No.	L (mm)	Ø (mm)
001.308	8	3
.312	12	4.5
.312.6	12	6
.313.8	13	8
.315	15	4.5
.315.8	15	8
.320	20	6
.325	25	6
.325.10	25	10
.330	30	6
.335	35	6
.335.10	35	10
.340	40	8
.345	45	8
.350	50	8
.350.10	50	10
.357	57	24
.360	60	10
.365.13	65	13
.370	70	10
.375.13	75	13
.3108	108	24
.3159	159	24

TRIANGULAR



Particularly effective for dissolving solids and mixing sediments because of the scraper-like action.

Ref No.	L (mm)	Ø (mm)
001.412	12	6
.420	20	8
.425	25	8
.425.14	25	14
.435	35	9
.440	40	14
.450	50	12
.455	55	14
.480	80	14
.4110	110	36
.4136	136	36

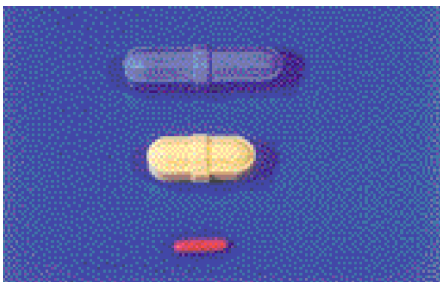
OCTAHEDRAL

Similar action to Pivot Ring type but with increased turbulence at low speeds.

Ref No.	L x Ø (in)	L x Ø (mm)
001.513.3	½ x ⅛	13 x 3
.513	½ x 5/16	13 x 8
.513.10	½ x ⅜	13 x 10
.515	⅝ x 5/16	15 x 8
.515.10	⅝ x ⅜	15 x 10
.522	⅞ x 5/16	22 x 8
.522.10	⅞ x ⅜	22 x 10
.525	1 x 5/16	25 x 8
.525.10	1 x ⅜	25 x 10
.528	1⅛ x 5/16	28 x 8
.535.10	1⅜ x ⅜	35 x 10
.538	1½ x 5/16	38 x 8
.538.10	1½ x ⅜	38 x 10
.538.13	1½ x ½	38 x 13
.541	1⅝ x 5/16	41 x 8
.548.10	1⅞ x ⅜	48 x 10
.551	2 x 5/16	51 x 8
.551.10	2 x ⅜	51 x 10
.564.8	2½ x 5/16	64 x 8
.564	2½ x ⅜	64 x 10
.575	3 x ½	75 x 13

STIRRER MAGNETS

COLORED OCTAHEDRAL



For use where identification is of prime importance.
Note: Colored PTFE coatings are not as inert as pure PTFE.
Suffix R=Red, B=Blue, Y=Yellow

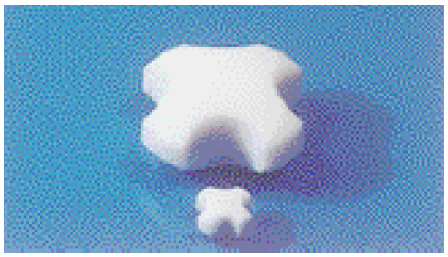
Ref No.	L x Ø (in)	L x Ø (mm)
001.513-R, B or Y	½ x 5/16	13 x 8
.515-R, B or Y	5/8 x 5/16	15 x 8
.522-R, B or Y	7/8 x 5/16	22 x 8
.525-R, B or Y	1 x 5/16	25 x 8
.538-R, B or Y	1½ x 5/16	38 x 8
.551-R, B or Y	2 x 5/16	51 x 8
.575-R, B or Y	3 x ½	75 x 13

OVAL

For use in round bottomed flasks.

Ref No.	L (mm)	Ø (mm)
001.610	10	5
.615	15	6
.620	20	10
.625.10	25	10
.625	25	12
.630.10	30	10
.630	30	16
.635.13	35	13
.635	35	16
.640.13	40	13
.640	40	20
.650.17	50	17
.650	50	20
.664	64	20
.670	70	20
.670.25	70	25
.670.27	70	27
.6100	100	30
.6150	150	40

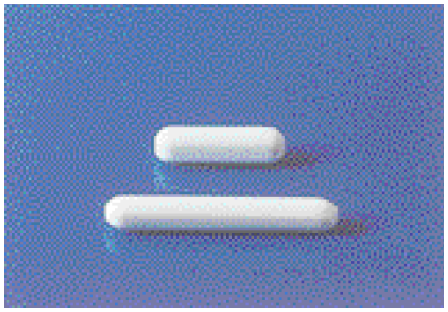
DISC



For use in tubes.

Ref No.	Ht (mm)	Ø (mm)
001.709	6	9
.710	6	10
.720	10	20
.730	12	30

MICRO

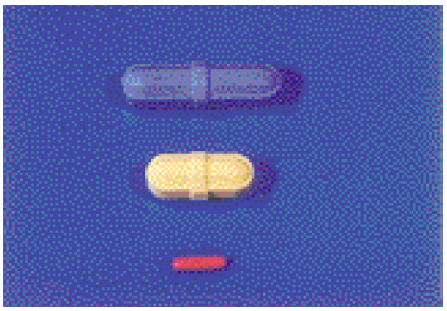


For the very smallest containers. Note: Always use the largest stirrer bar possible.

Ref No.	L (mm)	Ø (mm)
001.802	2	2
.803	3	3
.805	5	2
.806	6	3
.807	7	2
.808	8	1.5
.808.3	8	3
.810	10	3
.813	13	3
.815	15	1.5
.820	20	3
.830	30	3

STIRRER MAGNETS

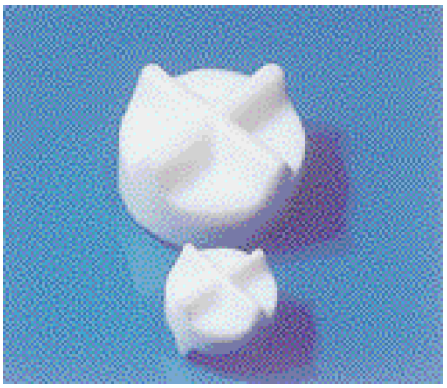
COLORED MICRO



For use where identification is of prime importance.
Note: Colored PTFE coatings are not as inert as pure PTFE.
Suffix R=Red, B=Blue, Y=Yellow

Ref No.	L (mm)		Ø (mm)
001.802-R, B or Y	2	x	2
.803-R, B or Y	3	x	3
.805-R, B or Y	5	x	2
.806-R, B or Y	6	x	3
.807-R, B or Y	7	x	2
.808-R, B or Y	8	x	1.5
.808.3-R, B or Y	8	x	3
.810-R, B or Y	10	x	3
.813-R, B or Y	13	x	3
.815-R, B or Y	15	x	1.5

CROSSHEAD



Designed for use with tube-like containers yet very effective as general stirrers.

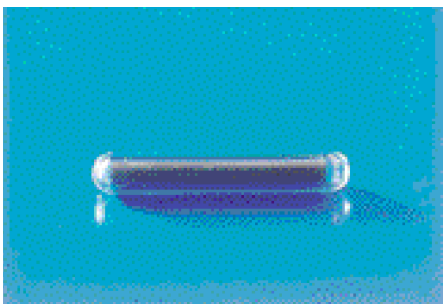
DOUBLE SIDED

Ref No.	Ht (mm)		Ø (mm)
001.1110	8	x	10
.1114	10	x	14
.1117	13	x	17
.1122	15	x	22
.1130	12	x	30
.1135	12	x	35
.1140	14	x	40
.1160	15	x	60

SINGLE SIDED

Ref No.	Ht (mm)		Ø (mm)
001.1110.1	8	x	10
.1114.1	12	x	14
.1117.1	13	x	17
.1125.1	15	x	25
.1140.1	17	x	40
.1160.1	17	x	60

GLASS COVERED

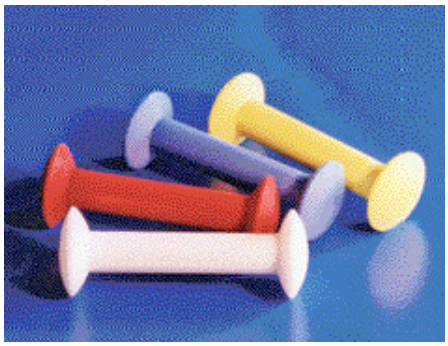


Ref No.	L (mm)		Ø (mm)
001.1206	6	x	5
.1212	12	x	5
.1213.10	13	x	10
.1219	19	x	6
.1222.6	22	x	6
.1225	25	x	6
.1225.10	25	x	10
.1238.10	38	x	10
.1245	45	x	8
.1250	50	x	8
.1260	60	x	8

STIRRER MAGNETS

DOUBLE ENDED

Double paddle action for efficient stirring plus high stability. Note: Colored PTFE coatings are not as inert as pure PTFE.



NATURAL

Ref No.	L (mm)		Ø (mm)
001.1335	35	x	8
.1355	55	x	8

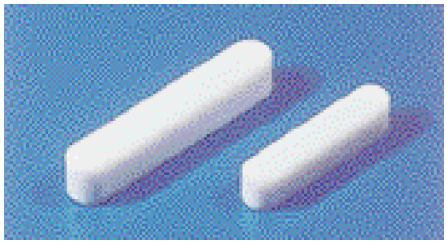
COLORED

Suffix R=Red, B=Blue, Y=Yellow

Ref No.	L (mm)		Ø (mm)
001.1335-R, B or Y	35	x	8
.1355-R, B or Y	55	x	8

SQUARE ECONOMY

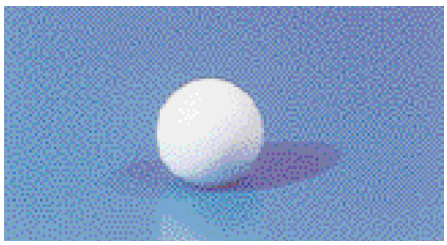
These stirrer magnets give highly effective mixing over a wide range of conditions and offer outstanding value.



Ref No.	L (mm)		Ht (mm)
001.1412	12	x	4
.1425	25	x	5.5
.1435	35	x	6
.1450	50	x	7.5

SPHERICAL

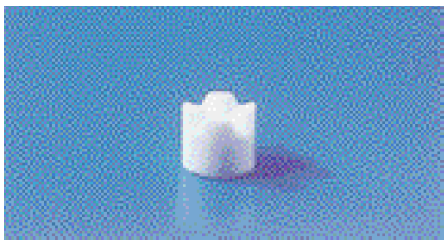
Of special interest for tubes and for eccentric stirring.



Ref No.	Ø (mm)
001.1512	12

TUBE

Designed for use with 10mm standard cuvettes.



Ref No.	Ht (mm)		Ø (mm)
001.1609	6	x	9

CUSTOM STIRRER MAGNETS

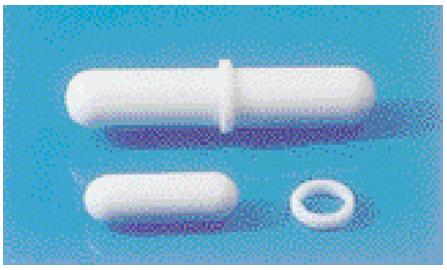
We manufacture custom stirrer magnets in any quantity to meet your exact requirements.

- Custom shapes and sizes
- Alnico and Rare Earth magnets
- Bespoke packaging service
- Traceability

For our offer - Please send us full details of your requirements.

STIRRER MAGNETS

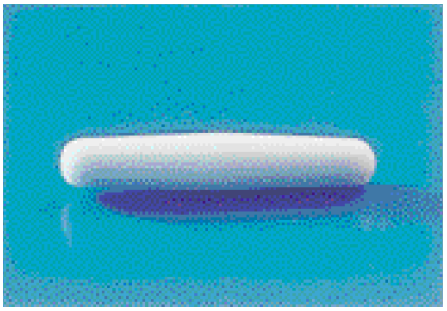
REMOVABLE RING



Use as Cylindrical or Pivot Ring type.

Ref No.	L (mm)		Ø (mm)
001.1712	12	x	8
.1713.10	13	x	10
.1725	25	x	8
.1725.10	25	x	10
.1732	32	x	8
.1732.10	32	x	10
.1738.8	38	x	8
.1738	38	x	10
.1742	42	x	10
.1745	45	x	8
.1751.8	51	x	8
.1751	51	x	10
.1764.16	64	x	16
.1775	75	x	12
.17102	102	x	16
.17127	127	x	16
.17150	150	x	19

TAPERED



An effective stirrer with action similar to Oval/Pivot Ring Types.

Ref No.	L (mm)		Ø (mm)
001.1910	10	x	4
.1915	15	x	5
.1920	20	x	7
.1925	25	x	8
.1930	30	x	8
.1935	35	x	8
.1940	40	x	8
.1945	45	x	8
.1950	50	x	8
.1955	55	x	8
.1960	60	x	8
.1970	70	x	10
.1980	80	x	10

GIANT

For use in very large containers.

PLAIN

Ref No.	L (mm)		Ø (mm)
001.257	57	x	27
.2108	108	x	27
.2159	159	x	27

PIVOT RING

Ref No.	L (mm)		Ø (mm)
001.357	57	x	24
.3108	108	x	24
.3159	159	x	24

TRIANGLE

Ref No.	L (mm)		Ø (mm)
001.480	80	x	14
.4110	110	x	36
.4136	136	x	36

Retrievers for giant stirrer magnets - see page 15

STIRRER MAGNETS

WING

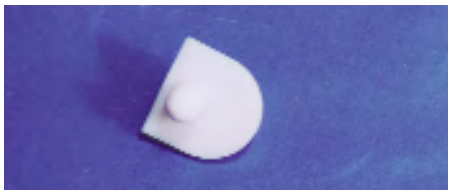
For effective stirring in small tapered and round bottom test, centrifuge and sample tubes.

Ref No.	Ht(mm)	Ø(mm)	Tube ID(mm)
001.2201.1	9 x	5.5	6 - 7

Ref No.	Ht(mm)	Ø(mm)	Tube ID(mm)
001.2201	11 x	8	9 - 10

Ref No.	Ht(mm)	Ø(mm)	Tube ID(mm)
001.2202	16 x	10	11 - 12

Ref No.	Ht(mm)	Ø(mm)	Tube ID(mm)
001.2203	10 x	13	14 - 15

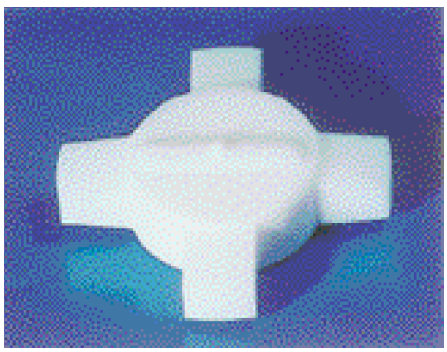


Ref No.	Ht(mm)	Ø(mm)	Tube ID(mm)
001.2204	20 x	13	14 - 15

HUB

Very stable stirrer, especially at low speeds.

Ref No.	L (mm)	Ø (mm)
001.2301	45 x	27
.2302	62 x	37
.2303	70 x	37



STIRRER MAGNETS

CROSS

A very stable general purpose stirrer.

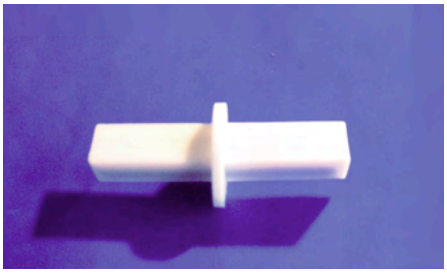
Ref No.	Ø	Ht (mm)
001.2401	⅜" / 10mm	5
.2402	¾" / 20mm	8
.2403	1" / 25mm	9
.2404	1¼" / 30mm	10
.2405	1½" / 38mm	11
.2406	2" / 50mm	15
.2407	2⅜" / 60mm	20

PLAIN ECONOMY

These stirrer magnets give highly effective mixing over a wide range of conditions and offer outstanding value.

Ref No.	L x Ø (mm)	L x Ø (in)
001.2912	12 x 3	½ x ⅛
.2925	25 x 8	1 x 5/16
.2940	40 x 8	1⅝ x 5/16
.2950	50 x 8	2 x 5/16

TRIANGLE WITH PIVOT RING



Very effective in round bottom containers.

Ref No.	L x Ring Ø (mm)
001.912	12 x 10
.925	25 x 14
.935	35 x 15
.950	50 x 20

OCTOVAL

An effective stirrer with action similar to Oval/Pivot Ring Types.

Ref No.	L x Ø (mm)	L x Ø (in)
001.3319	19 x 10	¾ x ⅜
.3325	25 x 13	1 x ½
.3338	38 x 16	1½ x ⅝
.3341	41 x 19	1⅝ x ¾
.3351	51 x 19	2 x ¾
.3364	64 x 19	2½ x ¾
.3376	76 x 19	3 x ¾

STIRRER MAGNETS

BOXED ASSORTMENTS

Boxed sets include an assortment of useful sizes of each type of stirrer magnet in a re-usable container.

CYLINDRICAL

Ref No.	No. of Bars	Dim: L (mm) Ø (mm)
001.3003	18	2 Each - 10x6, 15x6, 20x7, 25x8, 30x8, 40x8, 50x8, 60x10, 80x10
001.3019	18	2 Each - 10x6, 15x4.5, 20x6, 25x6, 30x6, 40x8, 50x8, 60x10, 70x10

PLAIN

001.3004	18	2 Each - 10x6, 15x6, 20x7, 25x8, 30x7, 40x8, 50x8, 60x7, 80x10

OCTAHEDRAL

001.3001	12	2 Each - 13x8, 15x8, 25x10, 38x10, 51x10, 64x10

COLORED OCTAHEDRAL

001.3017	24	1 Each of Blue, Red & Yellow - 13x3, 13x8, 15x8, 22x8, 25x8, 38x8, 51x8, 75x13

OVAL

001.3002	12	2 Each - 10x5, 15x6, 25x10, 30x10, 35x13
		1 Each - 50x17, 70x27
001.3015	13	2 Each - 20x10, 25x12, 30x16, 35x16, 40x20, 50x20
		1 Each - 70x20

COLORED MICRO

001.3006	12	1 Each of Blue, Red & Yellow - 8x1.5, 5x2, 7x2, 10x3

CROSS

001.3032	5	1 Each - 10x10, 20x20, 25x25, 30x30, 38x38

CYLINDRICAL & REMOVABLE RING

001.3020	6	2 Each (Cylindrical) - 13x10, 13x8, 20x8
	16	2 Each (Removable Ring) - 25x8, 25x10, 38x8, 42x10, 51x10, 51x8
		1 Each (Removable Ring) - 32x8, 32x10, 38x10, 45x8

OCTAHEDRAL & MICRO

001.3021	10	2 Each (Octahedral) - 13x8, 15x8, 25x10, 38x10, 51x10
	4	2 Each (Micro) - 7x2, 10x3

TAPERED & RETRIEVER

001.3033	20	2 Each (Tapered) - 10x4, 15x5, 20x7, 25x8, 30x8, 35x8, 40x8, 50x8, 60x8
		1 Each (Tapered) - 70x10, 80x10
	1	1 Each (Retriever) - 300x10

TURBO ELLIPTICAL

001.3035.RE	10	3 Each - 10x6, 15x10, 25x14
		1 Each - 50x24

TURBO CYLINDRICAL

001.3036.RE	14	2 Each - 8x3, 12x4.5, 20x6, 25x6, 30x6, 40x8
		1 Each - 50x8, 60x10

STIRRER MAGNETS

‘TURBO’ STIRRING MAGNETS

Extra power Samarium-Cobalt magnets

Stirring bars using rare earth magnets have significantly increased magnetic strength compared to those using Alnico magnets, but more importantly, they are almost **totally resistant to demagnetisation.** Stirring bars using rare earth magnets are identified by a **carbon black spot** which is chemically inert.

Note on using Rare Earth Stirrer Magnets:

The high magnetic coupling power of Rare Earth stirrer magnets can give rise to erratic stirring effects such as magnet migration and tumbling while the powerful attraction between the stirrer and the drive magnet system can give rise to the formation of PTFE particles caused by abrasion between stirrer magnet and the container base.

TURBO CYLINDRICAL

Ref No.	L (mm)		Ø (mm)
001.108.RE	8	x	3
.112.RE	12	x	4.5
.120.RE	20	x	6
.125.RE	25	x	6
.130.RE	30	x	6
.140.RE	40	x	8
.150.RE	50	x	8
.160.RE	60	x	10

TURBO TRIANGLE

Ref No.	L (mm)		Ø (mm)
001.412.RE	12	x	6
.425.RE	25	x	8
.440.RE	40	x	14
.450.RE	50	x	12

TURBO OCTAHEDRAL

Ref No.	L (mm)		Ø (mm)
001.513.3.RE	13	x	3
.513.RE	13	x	8
.515.RE	15	x	8
.525.RE	25	x	8
.538.RE	38	x	8
.551.RE	51	x	8
.564.8.RE	64	x	8

TURBO OVAL

Ref No.	L (mm)		Ø (mm)
001.610.RE	10	x	5
.615.RE	15	x	6
.620.RE	20	x	10
.625.RE	25	x	12
.635.RE	35	x	16
.640.RE	40	x	20
.650.RE	50	x	20
.664.RE	64	x	20

TURBO TAPERED

Ref No.	L (mm)		Ø (mm)
001.1910.RE	10	x	4
.1915.RE	15	x	5
.1925.RE	25	x	8
.1930.RE	30	x	8
.1940.RE	40	x	8
.1950.RE	50	x	8
.1960.RE	60	x	8

STIRRER MAGNETS

'TURBO' STIRRING MAGNETS

Extra power Samarium-Cobalt magnets

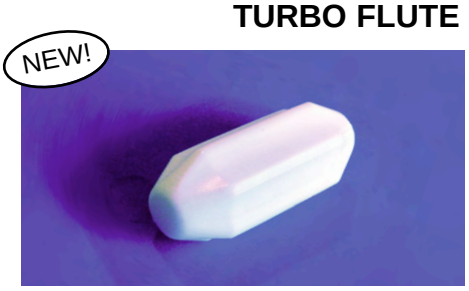
TURBO ELLIPTICAL

Ref No.	L (mm)	Ø (mm)
001.2610.RE	10 x	6
.2615.RE	15 x	10
.2625.RE	25 x	14
.2650.RE	50 x	24
.2670.RE	70 x	28

TURBO FLUTE

A high power multi-faceted stirrer for general use.

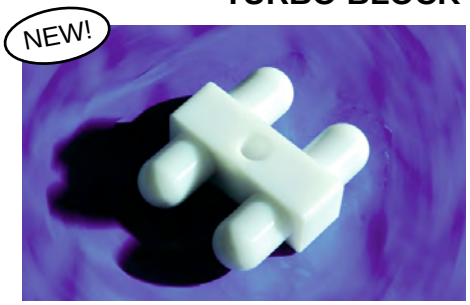
Ref No.	L (mm)	Ht (mm)
001.3450.RE	50 x	21



TURBO BLOCK

Twin TURBO magnets inserted in a solid body. Very effective stirring especially in viscous media.

Ref No.	Magnet L (mm)	Ø (mm)	Block W (mm)	Ht (mm)	D (mm)	Hole Ø (mm)
001.32040.RE	40 x	10	34 x	14 x	14	8
.32055.RE	55 x	12	44 x	18 x	14	8
.32090.RE	90 x	24	80 x	30 x	25	13



TURBO BOX SETS

TURBO ELLIPTICAL

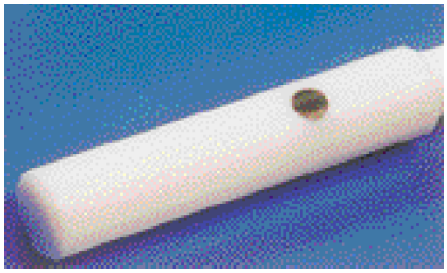
Ref No.	No. of Bars	Dim: L (mm) Ø (mm)
001.3035.RE	10	3 Each - 10x6, 15x10, 25x14 1 Each - 50x24

TURBO CYLINDRICAL

Ref No.	No. of Bars	Dim: L (mm) Ø (mm)
001.3036.RE	14	2 Each - 8x3, 12x4.5, 20x6, 25x6, 30x6, 40x8 1 Each - 50x8, 60x10

TURBO RETRIEVER

Ref No.	L (mm)	Ø (mm)
004.150.RE	150 x	10
.250.RE	250 x	10
.350.RE	350 x	10
.450.RE	450 x	10



PTFE MAGNETIC STIRRER

A New Concept in Magnetic Stirrers!

Unheated

All parts are fully encapsulated in a PTFE body to give a stirrer which is totally inert to the most aggressive laboratory conditions.

Plus

- Speed display
- Reversible spin mode
- No heat transfer to media.

Plus

- **BIO-VERSION**
- Controlled speed 10-160rpm
- Stutter free motion.

STANDARD VERSION 50-800 RPM

Ref No.	Complete with power module	
NC002.100UK	240 Vac	UK
.100EU	220 Vac	EU
.100US	110 Vac	USA (Jp)

BIO-VERSION 10-160 RPM

Ref No.	Complete with power module	
NC002.200UK	240 Vac	UK
.200EU	220 Vac	EU
.200US	110 Vac	USA (Jp)

Specification:

Max beaker capacity; 2 litre
Size; 130 x 130 x 50 mm
Power; 7 Watts CE Marked
Weight; 1.3 kg (Includes power unit)
24 volt stepper motor with controlled acceleration and deceleration and stall detection
Ambient temperature range 0 - 40˚C
PFA covered lead cable fused into body

MAGNET RETRIEVERS

For the removal of stirrer magnets from vessels of all kinds. The polypropylene version has a hanging ring. PTFE version available with Rare Earth Magnet.

PTFE

Ref No.	L (mm)		Ø (mm)
004.150	150	x	10
.250	250	x	10
.350	350	x	10
.450	450	x	10

PTFE RARE EARTH

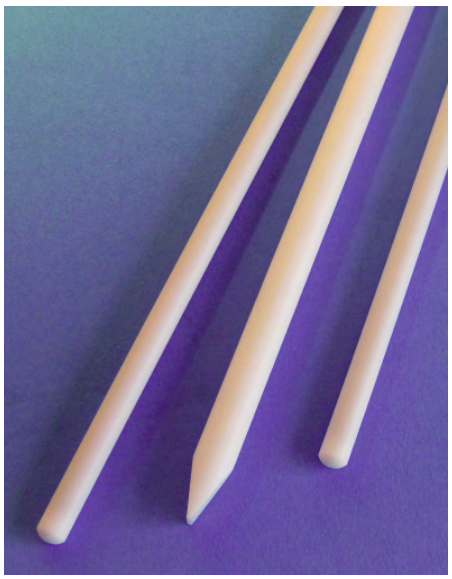
Ref No.	L (mm)		Ø (mm)	
004.150.RE	150	x	10	
.250.RE	250	x	10	
.350.RE	350	x	10	
.2350.RE	350	x	18	For giant stirrer magnet retrieval
.450.RE	450	x	10	
.2450.RE	450	x	18	For giant stirrer magnet retrieval

POLYPROPYLENE

Ref No.	L (mm)		Ø (mm)
004.1300	300	x	10
.1350	350	x	10
.1450	450	x	10

STIRRING RODS

Available in two versions: pure PTFE solid rod with tapered end and pure PTFE with mild steel core. The version with steel core can be bent into a permanent shape. Inert and will not scratch, use up to 280˚C.



STEEL CORE

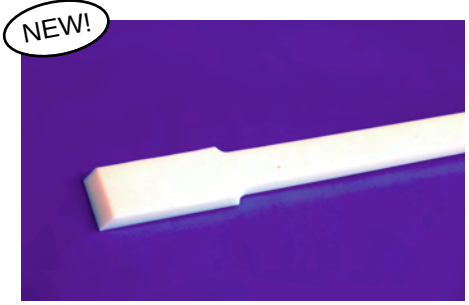
Ref No.	L (mm)		Ø (mm)
003.100	100	x	6
.150	150	x	6
.200	200	x	6
.250	250	x	6
.300	300	x	6
.350	350	x	6
.400	400	x	6

SOLID PTFE

Ref No.	L (mm)		Ø (mm)
003.1100	100	x	8
.1150	150	x	8
.1200	200	x	8
.1250	250	x	8
.1300	300	x	8

SPATULAS

Pure PTFE. All spatulas are 5mm thick.



Ref No.	L (mm)		W (mm)
043.120	120	x	12
.150	150	x	18
.180	180	x	20
.210	210	x	25
.240	240	x	30

TISSUE GRINDERS – HOMOGENISERS

Tissue grinders/homogenisers are used for the controlled reduction of particle size and homogenisation for a variety of substances, especially biological material. Size reduction/homogenisation is brought about by the shearing forces generated by the movement of a rotating plunger in a precision bore tube. Determining factors include clearance between plunger head and tube, speed of rotation and viscosity of medium.

The plunger head is pure PTFE and the plunger shaft stainless steel, 6.5 Ømm. The tube is precision borosilicate glass and the clearance between the plunger head and tube 0.15-0.25mm. Other clearances are readily available. Volumes stated are working volumes with the plunger in place.

GLASS VESSEL

Ref No.	ml	Bore (mm)	Ht. (mm)
011.102	2	8	120
.105	5	12	135
.110	10	15	150
.115	15	19	155
.130	30	25	175
.150	50	32	195

PLUNGER - PLAIN

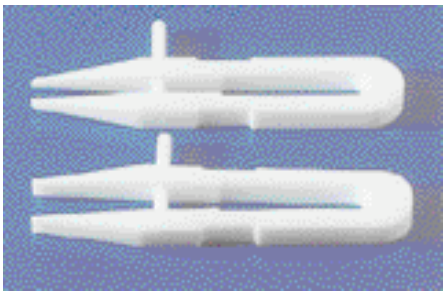
Ref No.	ml	Bore (mm)	Ht. (mm)
011.202	2		230
.205	5		235
.210	10		270
.215	15		270
.230	30		270
.250	50		270

PLUNGER - SERRATED TIP

Ref No.	ml	Bore (mm)	Ht. (mm)
011.302	2		230
.305	5		235
.310	10		270
.315	15		270
.330	30		270
.350	50		270

TWEEZERS - FORCEPS

Totally chemically inert and non-contaminating.

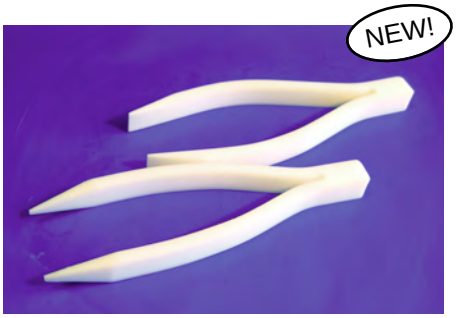


RIGID SHARP

Ref No.	Length (mm)
027.101	100
.151	150
.201	200

RIGID SQUARE

Ref No.	Length (mm)
027.100	100
.150	150
.200	200



FINE SHARP

Ref No.	Length (mm)
027.0101	100
.0151	150
.0201	200

FINE SQUARE

Ref No.	Length (mm)
027.0100	100
.0150	150
.0200	200

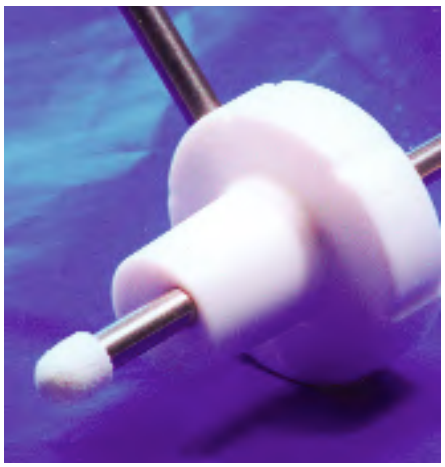
CUSTOM MANUFACTURE

We manufacture custom products in endless variety to meet the demands of all laboratory and process chemistry applications.

Our service covers the supply of Custom and OEM PTFE products ranging from a simple item through to original design, development, product testing and evaluation, packaging, and global supply and in quantities of one to thousands.

This facility is supported by the most up-to-date machining and molding capability backed by an experienced team of engineers and chemists dedicated solely to the technology of PTFE Processing and PTFE Product Application.

To receive our offer for Custom Manufacture please send all available details of the item in the form of drawings, sketches or samples and including the quantities required.



Gas filter

Analysis module

Separation head

Typical **Custom & OEM** Products -

Stopcock plugs	In-line filters
Stirrer magnets	Adapters
Sensors	Connectors
Seals	Pump bodies
Plungers	Encapsulated springs
Pistons	Flow meter bodies
Reaction vessels	Digestors
Low temperature storage	Ultra pure containers
Micro titre plates	Sample holders
Stoppers	Heat shields
Valves	Shaft stirrers
Micro reactors	Tamper proof fasteners
Gas spargers	Strainers

Agitator

Temperature probe

CONTAINERS

Our standard PTFE Containers are:

- **Chemically inert**
- **Non-Contaminating**
- **Thermally stable, -200˚C to +280˚C**
- **Super smooth finished**

We manufacture custom designed containers for specialist applications including:

- **Semi-Conductors**
- **Low temperature storage**
- **Archiving**
- **High performance packaging**
- **Combinatorial chemistry**
- **Diamond processing**

Send us your enquiry for custom designed containers to your exact requirements.

CONTAINERS

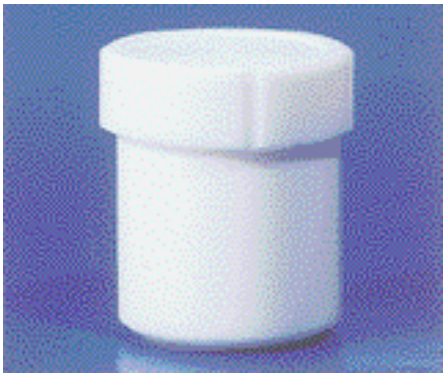
BOTTLES

PTFE Bottles with leak free performance. Suitable for low temperature applications. PTFE is FDA and USP Class VI approved. Isostatically molded and with smooth internal finish. Do **not use when sealed** for Chemical Reactions or Digestions. Loosen lid when thermally sterilising.

Ref No.	ml.	Ht. (mm)		OD (mm)		Ø Mouth (mm)
015.001.2	1	27	x	16	x	10
.003.2	3	34	x	20	x	10
.005.2	5	35	x	22	x	10
.010.2	10	50	x	26	x	12
.025.2	25	61	x	33	x	19
.050.2	50	76	x	43	x	25
.100.2	100	88	x	52	x	35
.150.2	150	90	x	60	x	35
.250.2	250	115	x	67	x	42
.500.2	500	150	x	80	x	52
.1000.2	1000	185	x	100	x	57
.2000.2	2000	240	x	120	x	60
.5000.2	5000	335	x	170	x	80

JARS

Isostatically molded from pure PTFE with thick wall construction, smooth internal finish and screw cap.
Stackable. 2.2L jar can be used for EPA Method 1311 TCLP.



Ref No.	ml.	Fl oz.		Ht (mm)		Cap Ø (mm)
038.015	15	0.5		34	x	34
.030	30	1		62	x	34
.060	60	2		46	x	60
.120	120	4		62	x	72
.240	240	8		100	x	72
.360	360	12		95	x	90
.480	480	16		125	x	90
.1000	1000	34		160	x	110
.2200	2200	120 Body Ø	x	260	x	134

DROPPERS - VIALS

PTFE dropping bottles are inert and leak free, flexible and with PTFE cap. Vials are for storage / shipping of valuable or aggressive materials and for small scale reactions at low pressure. Thick walled construction with tapered inner for ease of removal of contents.

DROPPING BOTTLES

Ref No.	ml	Ht (mm)		od (mm)
014.025	25	80	x	33
.050	50	100	x	43

VIALS

Ref No.	ml	Ht (mm)		od (mm)
014.125	25	64	x	33
.150	50	78	x	43

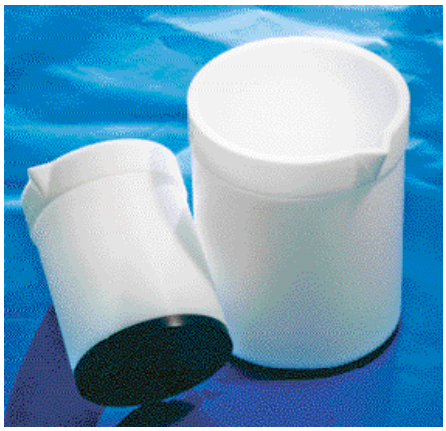
CONTAINERS

BEAKERS

Isostatically molded from pure PTFE. Inert with super smooth internal finish. Base machined flat for good heat transfer. With pouring spout.

Ref No.	ml.	Ht		OD (mm)
007.001	1	18	x	13
.005	5	26	x	20
.010	10	33	x	24
.025	25	47	x	32
.050	50	55	x	43
.100	100	68	x	54
.150	150	75	x	59
.250	250	97	x	66
.400	400	106	x	80
.500	500	125	x	80
.600	600	125	x	90
.1000	1000	155	x	100
.2000	2000	205	x	125
.5000	5000	280	x	170

THERMOTECH™ PTFE BEAKERS



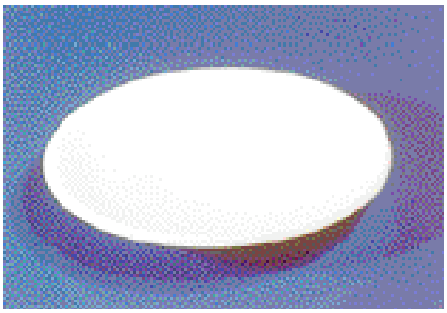
This product features a unique combination of a Pure PTFE Body with a specially formulated stabilised PTFE-Carbon base as a single molding to give:

- **Totally inert pure PTFE inner surface**
- **Heatable to 280˚C without distortion**
- **Improved heat transfer**

Ref No.	ml.(Nom)	Ht (mm)	OD (mm) (Body)
007.0100	100	74	56
.0250	250	94	75
.0400	400	112	85

A Cowie Registered Design

BEAKER COVERS- WATCH GLASSES

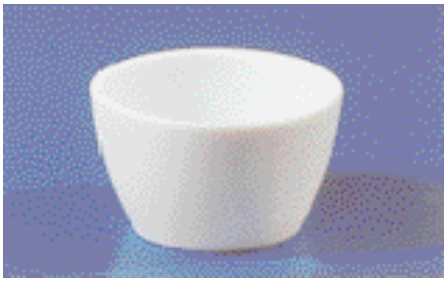


Molded from pure PTFE and used to cover beakers etc. during digestions and for spotting out.

Ref No.	Ø (mm)	Fits Beaker
013.020	20	1ml
.030	30	5-10
.040	40	25
.050	50	50
.065	65	100
.075	75	150
.080	80	250
.100	100	400-500
.125	125	600-1000
.150	150	2000
.200	200	5000

CONTAINERS

CRUCIBLES



Chemically inert and usable to ca. 280˚C.

Ref No.	ml	Ht		od (mm)
009.005	5	16	x	27
.025	25	26	x	44
.075	75	41	x	56
.100	100	45	x	60

EVAPORATING DISHES

Manufactured from pure PTFE. Inert and usable to ca. 280˚C. Smooth internal finish.

FLAT FORM WITH SPOUT

Ref No.	ml	Ht		Ø (mm)
006.1025.1	25	12	x	65
.1050.1	50	15	x	82
.1100.1	100	20	x	102
.1180.1	180	22	x	130
.1350.1	350	36	x	132
.1400.1	400	40	x	136

FLAT FORM

Ref No.	ml	Ht		Ø (mm)
006.1025	25	25	x	42
.1050	50	20	x	60
.1100	100	28	x	80
.1180	180	46	x	80
.1350	350	55	x	100

TALL FORM WITH SPOUT

Ref No.	ml	Ht		Ø (mm)
006.025	25	34	x	38
.050	50	50	x	40
.100	100	50	x	64
.150	150	43	x	78
.180	180	50	x	80
.250	250	50	x	97
.350	350	60	x	100

RB FLASKS

Machine finished, inert and usable to 280˚C. Tapers match standard ground glass joints. Without sealing rings. Other sizes on request.

FULL LENGTH 'A' TYPE

Ref No.	ml.	Joint	Ø(mm)
040.0010.19	10	19/38	32
.0025.24	25	24/40	42
.0050.24	50	24/40	52
.0050.29	50	29/42	52
.0100.29	100	29/42	64

MEDIUM LENGTH 'B' TYPE

Ref No.	ml.	Joint	Ø(mm)
040.010.14	10	14/23	32
.010.19	10	19/26	32
.025.19	25	19/26	42
.025.24	25	24/29	42
.050.24	50	24/29	52
.050.29	50	29/32	52
.100.29	100	29/32	64

CONTAINERS

CENTRIFUGE-TEST TUBES

Pure PTFE, smooth internal finish, usable to 280˚C. Screw cap versions. Special sizes on request.

ROUND BOTTOM & CAP

Ref No.	ml	Ht		od (mm)	Wall (mm)
012.1108	8	100	x	12	1.0
.1118	17	100	x	18	1.5
.1150	50	140	x	25	2.0

ROUND BOTTOM & LIP

Ref No.	ml	Ht		od (mm)	Wall (mm)
012.108	8	100	x	12	1.0
.113	13	100	x	16	1.5
.118	17	100	x	18	1.5
.150	50	145	x	25	2.0
.180	85	100	x	40	3.0

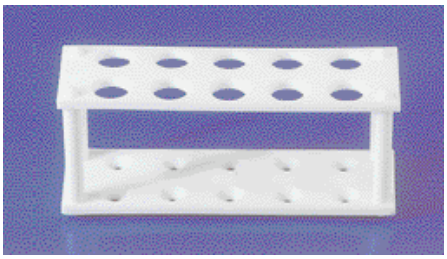
CONICAL BOTTOM & CAP

Ref No.	ml	Ht		od (mm)	Wall (mm)
012.1213	13	110	x	16	1.5
.1215	18	120	x	18	1.5
.1245	45	150	x	25	2.0

CONICAL BOTTOM & LIP

Ref No.	ml	Ht		od (mm)	Wall (mm)
012.213	13	110	x	16	1.5
.215	18	120	x	18	1.5
.245	45	150	x	25	1.5

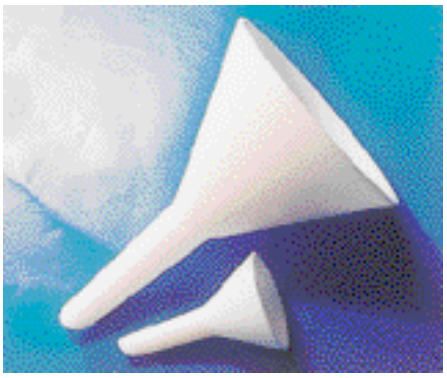
TEST TUBE RACKS



Totally inert and can be sterilised. Use over temperature range -200 to +280˚C. Standard footprint 180 x 60 mm. Tube sizes 8, 13, 19 & 30 mm diameter.

Ref No.	Holes	Ø (mm)	Ht (mm)
029.008	27	8	45
.013	21	13	60
.019	10	19	70
.030	4	30	80

FUNNELS



Totally chemically inert with super smooth non-stick internal finish.

Ref No.	Ø (mm)	Ø Stem (mm)	Ht (mm)
039.030	30	8	50
.050	50	10	85
.070	70	12	110
.100	100	14	170
.150	150	16	220

CONTAINERS

LADLE

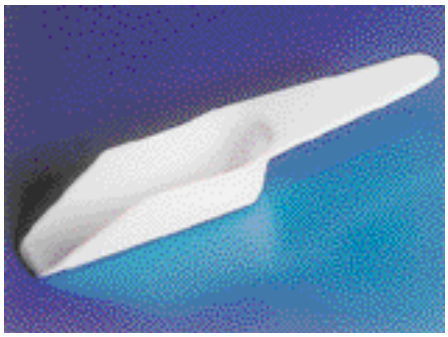
10ml capacity sampler ladle in pure PTFE. Totally inert.

Ref No.	Capacity (ml)
037.010	10

SCOOP

Chemically inert and non-contaminating. Overall Length 140mm.

Ref No.	Scoop D	W	L
041.001	20 mm	30 mm	80 mm



DIPPERS

Feature a basic container plus a 600mm (24in) long, encapsulated steel shaft. Supplied with one shaft. Extra shafts can be used to increase length.

Ref No.	ml.	Fl oz.	Body Ø(mm)
036.100	100	3	54
.250	250	8	66
.500	500	17	80
.1000	1000	34	100
036.001	Replacement shaft		

JOINTWARE

We manufacture a whole range of standard PTFE equipment to facilitate and improve the use of standard jointed **laboratory glassware.**

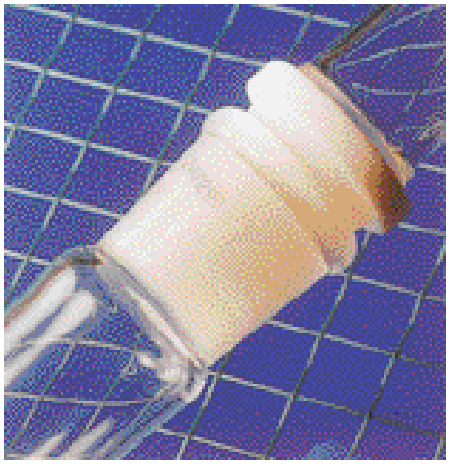
- **Chemically inert**
- **Prevent sticking**
- **Grease free**
- **Eliminate contamination**
- **High vacuum**
- **Safety**

Send us your enquiry for custom designed connectors and jointware to your exact requirements.

JOINTWARE

RIGID JOINT SLEEVES

Grease-free, high vacuum seals for standard glass joints, with substantial shoulder for ease of handling and repeated use. Rigid sleeves (wall 0.5mm ± 0.05mm) and adapters are inert and usable to ca. 280˚C high vacuum. The leakage rate is less than 1 x 10^{-4} torr, litre, $sec.^{-1}$. High vacuum performance is obtained using transverse sealing rings.



A Cowie Original Patent

FULL LENGTH 'A' TYPE

Ref No.	Joint
020.110	10/30
.114.1	14/20
.114	14/35
.119.1	19/22
.119	19/38
.124	24/40
.129	29/42
.134	34/45
.145	45/50
.155	55/50

MEDIUM LENGTH 'B' TYPE

Ref No.	Joint
020.010	10/19
.014	14/23
.019	19/26
.024	24/29
.029	29/32
.034	34/35
.040	40/38
.045	45/40
.050	50/42
.055	55/44
.060	60/46
.070	71/51
.085	85/55

ASK FOR SIZES NOT LISTED

ADAPTERS

FULL LENGTH 'A' TYPE

Ref No.	Socket	Cone
021.01014	10/30	14/35
.01019	10/30	19/38
.01419	14/35	19/38
.01424	14/35	24/40
.01924	19/38	24/40
.01929	19/38	29/42
.01934	19/38	34/45
.02429	24/40	29/42
.02434	24/40	34/45
.02445	24/40	45/50
.02934	29/42	34/45
.02945	29/42	45/50
.03445	34/45	45/50

MEDIUM LENGTH 'B' TYPE

Ref No.	Socket	Cone
021.1014	10/19	14/23
.1019	10/19	19/26
.1419	14/23	19/26
.1424	14/23	24/29
.1924	19/26	24/29
.1929	19/26	29/32
.1934	19/26	34/35
.2429	24/29	29/32
.2434	24/29	34/35
.2445	24/29	45/40
.2934	29/32	34/35
.2945	29/32	45/40
.3445	34/35	45/40

JOINTWARE

THIN WALL JOINT SLEEVES

PTFE sleeves are inserted between standard ground glass joints to eliminate the use of grease and prevent sticking. Sleeves have a wall thickness of about 0.05mm are inert, usable to ca. 280˚C and will withstand low to medium vacuum.

FULL LENGTH 'A' TYPE

Ref No.	Joint
019.007	7/25
.010	10/30
.012	12/30
.014.1	14/20
.014	14/35
.019.1	19/22
.019	19/38
.024	24/40
.029	29/42
.034	34/45
.040	40/50
.045	45/50
.050	50/50
.055	55/50
.060	60/50
.070	71/60

MEDIUM LENGTH 'B' TYPE

Ref No.	Joint
019.107	7/16
.110	10/19
.112	12/21
.114	14/23
.119	19/26
.124	24/29
.129	29/32
.134	34/35
.140	40/38
.145	45/40
.150	50/42
.155	55/44
.160	60/46
.170	71/51
.185	85/55

JOINT CLAMPS

A Cowie Original Design

Designed for:

• Safety • Reliability • Long Life • Exceptional Value

PTFE Joint Clamps are Chemically inert and totally unaffected by laboratory chemicals. Temperature resistant and maintain strength right up to 280˚C. Manufactured from pure PTFE with totally encapsulated steel springs. Can be adjusted simply by compressing by hand. Fit all standard ground glass joints

for Standard Glass Joints

Ref No.	Joint
030.010.1	10/-
.012.1	12/-
.014.1	14/-
.019.1	19/-
.024.1	24/-
.029.1	29/-
.034.1	34/-
.040.1	40/-
.045.1	45/-

JOINTWARE

STOPPERS

PENNY HEAD

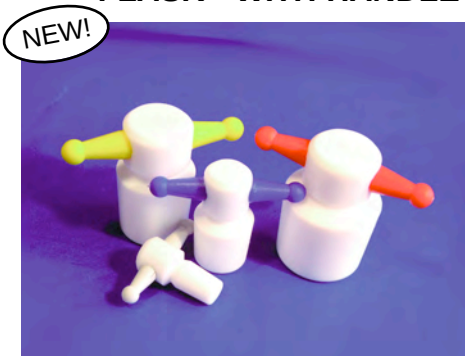
Hollow stopper for standard taper joints. No sealing rings.

Ref No.	Size (US)
010.3.09	9
.3.13	13
.3.16	16
.3.19	19
.3.22	22
.3.27	27
.3.32	32
.3.38	38

Ref No.	Full range of joint sizes
010.3.0710	7/10
.3.0716	7/16
.3.1019	10/19
.3.1030	10/30
.3.1221	12/21
.3.1230	12/30
.3.1420	14/20
.3.1423	14/23
.3.1435	14/35
.3.1922	19/22
.3.1926	19/26
.3.1938	19/38
.3.2425	24/25
.3.2429	24/29
.3.2440	24/40
.3.2926	29/26
.3.2942	29/42
.3.3435	34/35
.3.3445	34/45
.3.4038	40/38
.3.4050	40/50
.3.4540	45/40
.3.4550	45/50
.3.5042	50/42
.3.5050	50/50

FLASK - WITH HANDLE

For use with volumetric flasks and similar containers. Solid construction.



Ref No.	Size (US)	Handle Color
010.4.08	8	Grey
.4.09	9	Black
.4.13	13	Orange
.4.16	16	Blue
.4.19	19	Green
.4.22	22	Yellow
.4.27	27	Red
.4.32	32	Grey
.4.38	38	Black

JOINTWARE

STOPPERS

FLAT HEAD

Fit standard ground glass joints. Trapezoidal rings give high vacuum performance and reduce seizure.

FULL LENGTH 'A' TYPE

Ref No.	Joint	Ht. (mm)
010.110	10/30	40
.114	14/35	46
.119	19/38	50
.124	24/40	55
.129	29/42	57
.134	34/45	60

MEDIUM LENGTH 'B' TYPE

Ref No.	Joint	Ht. (mm)
010.210	10/19	31
.214	14/23	34
.219	19/26	38
.224	24/29	44
.229	29/32	47
.234	34/35	51

SELF RELEASING

Fit standard ground glass joints, with sealing rings and self releasing ring.

FULL LENGTH 'A' TYPE

Ref No.	Joint	Ht. (mm)
010.1119	19/38	62
.1124	24/40	65
.1134	34/45	70
.1145	45/50	75

MEDIUM LENGTH 'B' TYPE

Ref No.	Joint	Ht. (mm)
010.1219	19/26	50
.1224	24/29	55
.1229	29/32	60
.1234	34/35	62
.1245	45/40	65

FLEXIBLE BELLOWS

Flexible bellows connectors are machined from pure PTFE and are used to correct mis-alignment and relieve stress in glassware assemblies. Connect directly to standard ground glass joints where trapezoidal sealing rings give medium to high vacuum performance. Inert and usable to ca. 280˚C.

FULL LENGTH 'A' TYPE

Ref No.	Socket	Cone	Ht (mm)
008.1414	14/35	14/35	115
.1919.1	19/22	19/22	90
.1919	19/38	19/38	120
.2424	24/40	24/40	130
.2929	29/42	29/42	140
.3434	34/45	34/45	145
.4545	45/50	45/50	155

MEDIUM LENGTH 'B' TYPE

Ref No.	Socket	Cone	Ht (mm)
008.01414	14/23	14/23	90
.01429	14/23	29/32	110
.01919	19/26	19/26	100
.01924	19/26	24/29	105
.02424	24/29	24/29	110
.02929	29/32	29/32	115
.02934	29/32	34/35	120
.03434	34/35	34/35	120

JOINTWARE

SCREW THREAD CONNECTORS

For connection of flexible tubing to glass thread joints.
• Safe • Reliable • Inert Tube size: 6-8 / GL18 10-12mm

Ref No.	Glass	Color
016.3013	GL 13	Red
.3014	GL 14	Green
.3018	GL 18	Blue

PROBE/THERMOMETER HOLDER

Enables standard probes and thermometers to be assembled in standard taper laboratory glassware. Body is pure PTFE. Fully adjustable with replacement Viton® seal. Contact materials are glass and PTFE only.

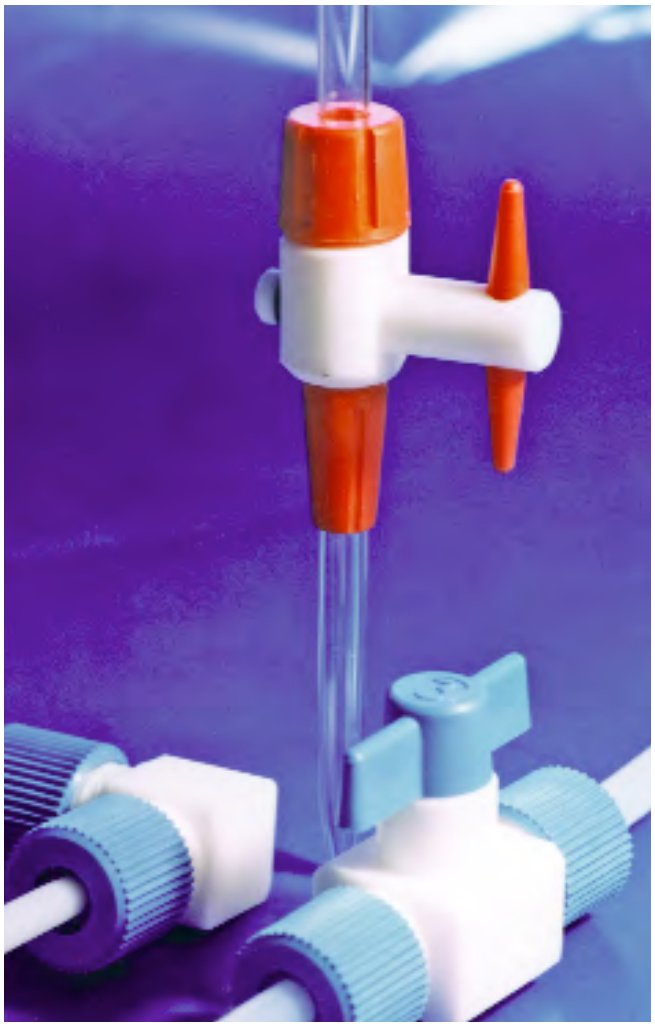
FULL LENGTH 'A' TYPE

Ref No.	Cone	Probe Ømm	Seal Ref No.
021.0143.1	14/35	3	021.03S
.0146.1	14/35	6	.06S
.0146.5.1	14/35	6.4	.065S
.0147.1	14/35	7	.07S
.0148.1	14/35	8	.08S
.0149.1	14/35	9	.09S
.0193.1	19/38	3	.03S
.0196.1	19/38	6	.06S
.0196.5.1	19/38	6.4	.065S
.0197.1	19/38	7	.07S
.0198.1	19/38	8	.08S
.0199.1	19/38	9	.09S
.0243.1	24/40	3	.03S
.0246.1	24/40	6	.06S
.0246.5.1	24/40	6.4	.065S
.0247.1	24/40	7	.07S
.0248.1	24/40	8	.08S
.0249.1	24/40	9	.09S

MEDIUM LENGTH 'B' TYPE

Ref No.	Cone	Probe Ømm	Seal Ref No.
021.143.1	14/23	3	021.03S
.146.1	14/23	6	.06S
.146.5.1	14/23	6.4	.065S
.147.1	14/23	7	.07S
.148.1	14/23	8	.08S
.149.1	14/23	9	.09S
.193.1	19/26	3	.03S
.196.1	19/26	6	.06S
.196.5.1	19/26	6.4	.065S
.197.1	19/26	7	.07S
.198.1	19/26	8	.08S
.199.1	19/26	9	.09S
.243.1	24/29	3	.03S
.246.1	24/29	6	.06S
.246.5.1	24/29	6.4	.065S
.247.1	24/29	7	.07S
.248.1	24/29	8	.08S
.249.1	24/29	9	.09S

VALVES AND STOPCOCKS



A full range of all PTFE Valves and Connectors **plus** all PTFE Stopcocks for Burets and general laboratory use -

- **Chemically inert**
- **Grease free**
- **Eliminates contamination**
- **Medium vacuum/Pressure performance**

We manufacture all types of valves, connectors and stopcocks to customers specification.
Please send us your enquiry.

VALVES AND STOPCOCKS

SCREW LOCKING SYSTEMS - CONNECTORS

RIGID TUBING

Our range of Valves and Connectors makes possible the assembly of a wide range of pipeline systems which are chemically inert and operate over a wide range of temperatures. Wetted parts are pure PTFE, lock nuts are filled polypropylene and grips are VITON.

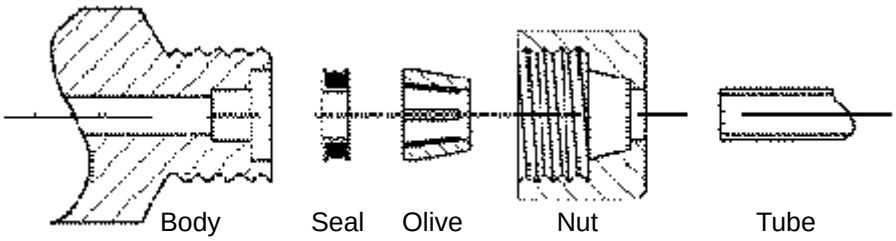
Connectors with **Screw Locking** are for use with rigid or semi-rigid tubing in Glass, PTFE or FEP.

Screw lock connectors will withstand 4 Bar at 100˚C and 1mm vacuum.

Can be sterilised at 135˚C.

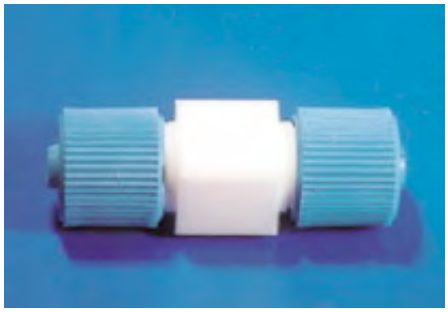
All dimensions in mm.

Screw Locking Connector System



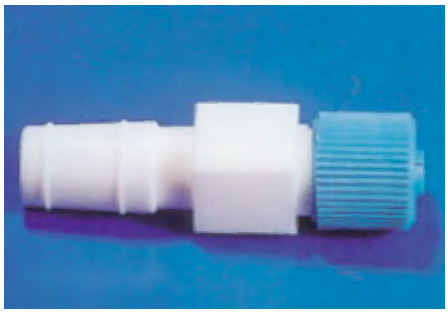
STRAIGHT THROUGH CONNECTOR

Ref No.	Tube O.D.	Bore
016.1402.6.2	6	2
.1403.2	8	3
.1404.2	8	4
.1406.12.2	12	6
.1408.2	14	8
.1410.2	14	10



JOINT CONNECTOR

Ref No.	Tube Ø	Joint
016.1901.2	8	NS14
.1902.2	8	NS19



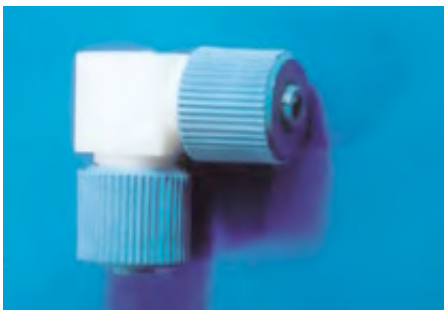
REDUCTION ADAPTER

Ref No.	Tube Ø ..... to ..... TubeØ	
016.1801.2	6	8
.1802.2	8	14

VALVES AND STOPCOCKS

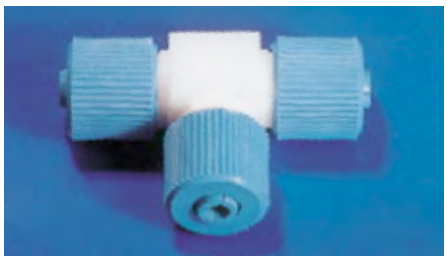
SCREW LOCKING SYSTEMS - CONNECTORS

RIGHT ANGLE CONNECTOR



Ref No.	Tube O.D.	Bore
016.1502.6.2	6	2
.1503.2	8	3
.1504.2	8	4
.1506.12.2	12	6
.1508.2	14	8
.1510.2	14	10

T-TYPE CONNECTOR



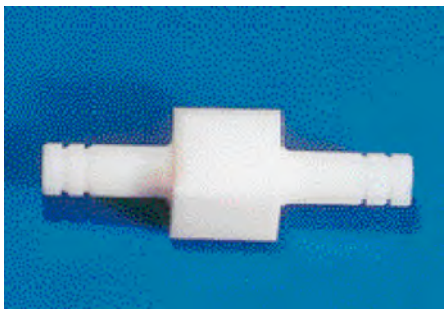
Ref No.	Tube O.D.	Bore
016.1602.6.2	6	2
.1603.2	8	3
.1604.2	8	4
.1606.12.2	12	6
.1608.2	14	8
.1610.2	14	10

BAYONET FITTING SYSTEMS - CONNECTORS

FLEXIBLE TUBING

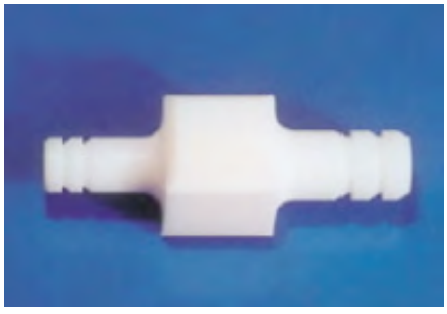
Connectors with **Bayonet** fittings are for use with flexible tubing in PTFE, VITON, silicone rubber or similar materials. The connectors are pure PTFE and may be sterilised at 135˚C.

STRAIGHT THROUGH CONNECTOR



Ref No.	Arm Ø	Bore
016.902.5.2	4.5	2
.902.2	6.0	2
.903.7.2	6.8	3
.903.2	8.0	3
.904.9.2	9.0	4
.904.2	10.0	4
.905.2	11.0	5

REDUCTION ADAPTER



Ref No.	Arm Ø ..... to ..... ArmØ	
016.2101.2	6	8
.2102.2	8	10

All dimensions in mm.

VALVES AND STOPCOCKS

BAYONET FITTING SYSTEMS - CONNECTORS

JOINT CONNECTOR

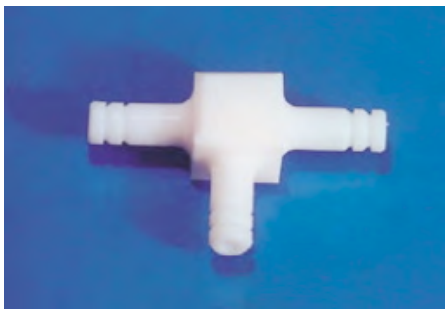
Ref No.	Tube Ø	Bore
016.2201.2	8	NS14
.2202.2	10	NS19

RIGHT ANGLE CONNECTOR

Ref No.	Arm Ø	Bore
016.1002.5.2	4.5	2
.1002.2	6.0	2
.1003.7.2	6.8	3
.1003.2	8.0	3
.1004.9.2	9.0	4
.1004.2	10.0	4
.1005.2	11.0	5

T-TYPE CONNECTOR

Ref No.	Arm Ø	Bore
016.1102.5.2	4.5	2
.1102.2	6.0	2
.1103.7.2	6.8	3
.1103.2	8.0	3
.1104.9.2	9.0	4
.1104.2	10.0	4
.1105.2	11.0	5



4-WAY CONNECTOR

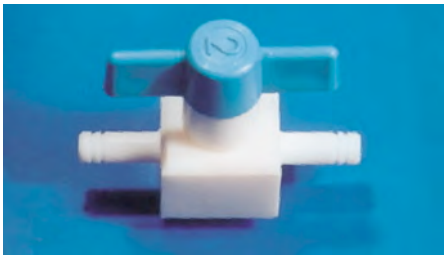
Ref No.	Arm Ø	Bore
016.1112.5.2	4.5	2
.1112.2	6.0	2
.1113.7.2	6.8	3
.1113.2	8.0	3
.1114.9.2	9.0	4
.1114.2	10.0	4
.1115.2	11.0	5

VALVES AND STOPCOCKS

GENERAL PURPOSE VALVES

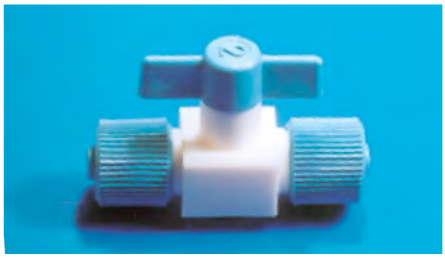
A range of plug valves for use with our connectors for less demanding pressure and temperature applications:
Max pressure 1 bar
Vacuum 5 mmHg
Note that rapid changes in temperature over a range of 25˚C may cause these valves to leak due to the expansion properties of PTFE. Can be sterilised at 135˚C.

STRAIGHT THROUGH BAYONET



Ref No.	Arm Ø	Bore
016.702.5.2	4.5	2
.702.2	6	2
.703.7.2	6.8	3
.703.2	8	3
.704.9.2	9	4
.704.2	10	4
.705.2	11	5

STRAIGHT THROUGH SCREW

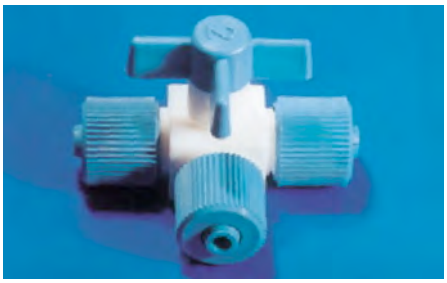


Ref No.	Tube O.D.	Bore
016.1202.6.2	6	2
.1203.2	8	3
.1204.2	8	4

T-TYPE BAYONET

Ref No.	Arm Ø	Bore
016.802.5.2	4.5	2
.802.2	6	2
.803.7.2	6.8	3
.803.2	8	3
.804.9.2	9	4
.804.2	10	4
.805.2	11	5

T-TYPE SCREW



Ref No.	Tube O.D.	Bore
016.1302.6.2	6	2
.1303.2	8	3
.1304.2	8	4

PTFE TUBING

Ref No.	O.D. (mm)	wall (mm)
016.1706	6	1
.1708	8	1
.1712	12	1
.1714	14	1

VALVES AND STOPCOCKS

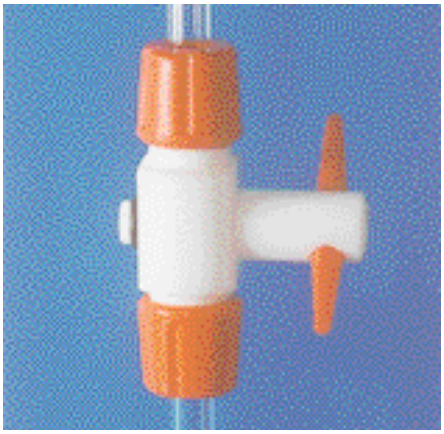
PTFE STOPCOCKS

This product features a pure PTFE body and plug and combines all the desirable properties of the **Ultimate Laboratory Stopcock**; Medium vacuum pressure performance, unbreakable, inert and grease free. Plug cannot be accidentally withdrawn and have easily connected sidearms in glass or PTFE to give inert vacuum and pressure tight seals. Stopcocks for use with burets have glass or unbreakable polypropylene tips.

STRAIGHT THROUGH STOPCOCK

Supplied with borosilicate glass sidearms.

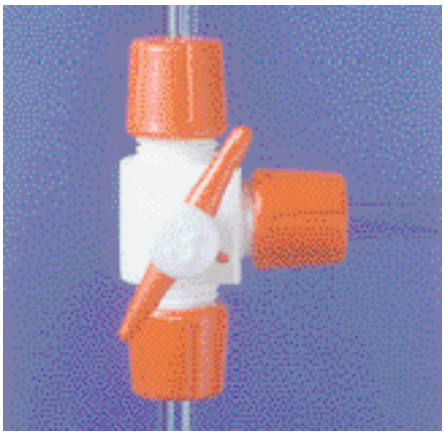
Ref No.	Bore (mm)	Arm Ø(mm)
016.002	2	x 8
.003	3	x 8
.004	4	x 10
.006	6	x 14
.008	8	x 14
.010	10	x 14



T-TYPE STOPCOCK

Supplied with borosilicate glass side arms.

Ref No.	Bore (mm)	Arm Ø(mm)
016.102	2	x 8
.103	3	x 8
.104	4	x 10

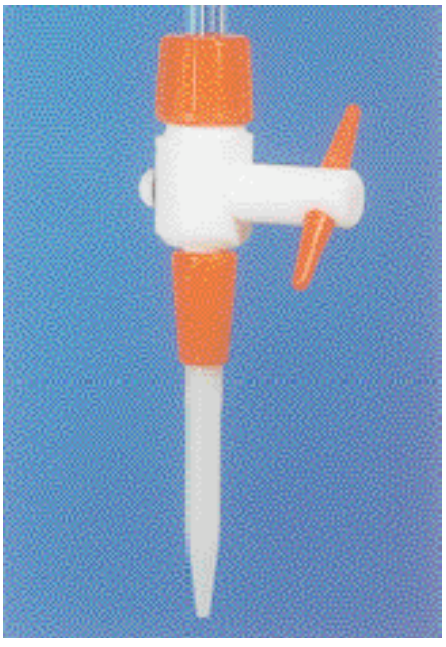


BURET STOPCOCK

Supplied with 8 Ømm sidearm in borosilicate -B, or soda glass -S. Use suffix-B or -S with numeric ref. Bore is 2mm. Push-lock tip is polypropylene or glass.

STRAIGHT THROUGH TYPE

Ref No.		
016.9202-B	Polypropylene Tip	Borosilicate Glass Sidearm
.9202-S	Polypropylene Tip	Soda Glass Sidearm
.9203-B	Glass Tip	Borosilicate Glass Sidearm
.9203-S	Glass Tip	Soda Glass Sidearm



ASK for the supply of Burets fitted with PTFE stopcocks

REPLACEMENT TIP

Ref No.	
016.9202.1	Polypropylene
016.9212.1	Glass

VALVES AND STOPCOCKS

PRECISION PTFE STOPCOCK PLUGS

Cowie is a leading manufacturer of high-performance PTFE stopcock plugs using state-of-the-art technology to give a product of unparalleled quality and value.

Isostatically Molded Approved PTFE

Only FDA and USP Class VI approved PTFE used.
Isostatic molding produces PTFE of the highest quality and performance. When used for stopcock plugs it minimises friction and enhances life.

Precision Machined Taper

The latest CNC technology is used to machine a precise taper. Angular tolerance = +/- 0.015°

Super-Smooth Surface Finish

The taper is machined to a super-smooth surface finish for a perfect glass / PTFE seal.
Taper finish < 40 μinches (1.02 μm)

Custom Manufacture

We manufacture stopcock keys to all specifications including:

- All-PTFE, Nut + Handle + Washer + Body
- Various colors
- Various handle shapes
- Screw-in needle types

Please send us a sample or drawing of your requirements to receive our offer.

VALVES AND STOPCOCKS

PRECISION PTFE STOPCOCK PLUGS

STRAIGHT THROUGH TYPE

Body: Pure PTFE to FDA and USP Class VI Approvals
Fittings: Handle, washer and nut in RED polypropylene. 'O' Ring in Viton.
Supplied unassembled.

Taper 1:10

Ref No	Size			Bore Ø
400.1012.1.5	12.5	x	27	1.5
.1012.2.5	12.5	x	27	2.5
.1014.2.5	14.5	x	29	2.5
.1014.4	14.5	x	29	4
.1018.2.5	18.8	x	37	2.5
.1018.4	18.8	x	37	4
.1018.6	18.8	x	37	6

Taper 1:5

Ref No	Size			Bore Ø
400.0511.1	11.0	x	25	1
.0511.1.5	11.0	x	25	1.5
.0511.2	11.0	x	25	2
.0515.3	15.2	x	30	3
.0515.4	15.2	x	30	4
.0516.5	16.0	x	35	5
.0516.6	16.0	x	35	6

PLEASE ASK for all other standard sizes of PTFE Stopcock Plugs -
1:10 and 1:5 tapers
Double Oblique and T-Types

LATERAL TYPE

Tip is clear FEP.

Reference	Size			Bore Ø
400.1112.1.5	12.5	x	27	1.5

PROCESS CHEMISTRY EQUIPMENT

NEW PRODUCT RANGE

- **Chemically inert**
- **Designed to reduce contamination and simplify cleaning**
- **Non-Scratch**
- **Reduced breakages**
- **Improved safety**

A complete range of High Performance Stirring Equipment to meet the needs of Laboratory and Small Scale manufacture.

PROCESS CHEMISTRY EQUIPMENT

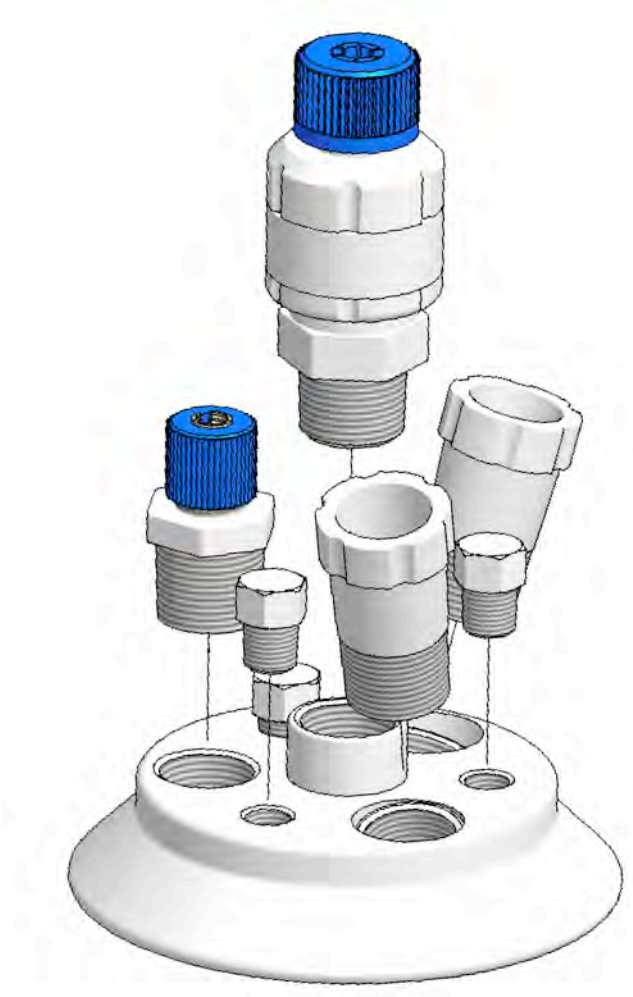
REACTOR LID SYSTEM

Many of today's process chemistry, pharmaceutical and biotech laboratories and manufacturing units face an increasing demand to use equipment which is **Pure, Chemically Resistant, Cleanable** and **Durable**.

The COWIE PTFE Reactor Lid System is designed to meet these demands and provide a **versatile** and **cost effective** means for the assembly of a whole range of components in flanged reactors and similar vessels and offers these **UNIQUE FEATURES -**

- Screw-in assembly of fittings to give flexibility, versatility and significant cost savings.
- All fittings are interchangeable for the same thread sizes.
- Can accommodate all usual ancillary equipment, condensers, probes, etc.
- Improved durability and safety compared to conventional glass lids.
- High mechanical strength to support large probes and other equipment.
- Improved thermal insulation.
- Reduced condensation.

Standard PTFE Reactor Lids fit vessels with 60, 100, 150 and 200mm Schott® type flanges. Additionally we manufacture Custom lids to meet your exact requirements - see page 44.



LID ASSEMBLY

1. Select the basic lid according to the flange size and number of ports required - pages 40 to 43.

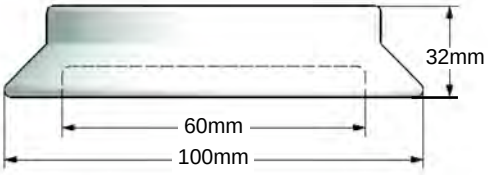
2. Select the fittings required from the various options on pages 45 to 48.

3. Screw the fittings into the ports to complete the assembly.

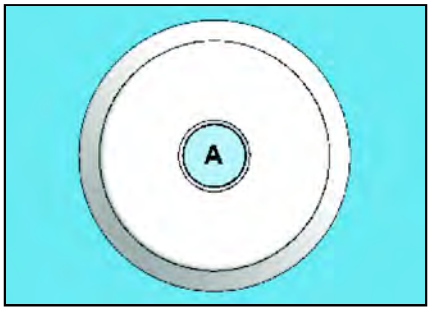
4. Fitting exchange - Unscrew the existing fitting and screw in its place the new fitting. Fittings can be purchased separately.

PROCESS CHEMISTRY EQUIPMENT

60mm PTFE REACTOR LIDS

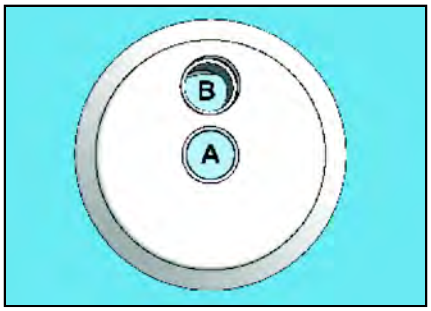


Reactor Lids in Pure or Glass Filled PTFE to fit 60mm ID Schott® type flanges, **supplied without fittings**. Order NPT Port Fittings separately to suit your specific requirements. The use of an extension adapter will provide extra space when using multiple ports - see page 48.



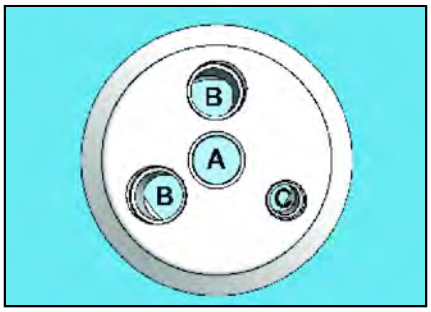
Ref. PC705.060.001 Pure PTFE Lid
Ref. PC705.060.001.GF Glass Filled PTFE Lid

Port	Qty	NPT Thread
A	1	¾" Vertical Centre Port



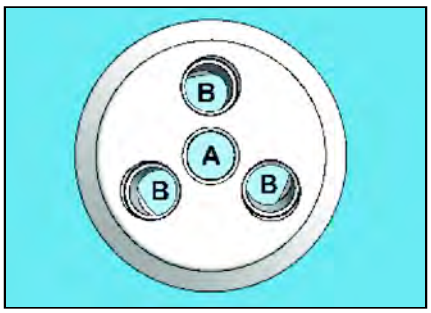
Ref. PC705.060.002 Pure PTFE Lid
Ref. PC705.060.002.GF Glass Filled PTFE Lid

Port	Qty	NPT Thread
A	1	½" Vertical Centre Port
B	1	½" 10˚ x 10˚ Compound Angle



Ref. PC705.060.003 Pure PTFE Lid
Ref. PC705.060.003.GF Glass Filled PTFE Lid

Port	Qty	NPT Thread
A	1	½" Vertical Centre Port
B	2	½" 10˚ x 10˚ Compound Angle
C	1	¼" Vertical



Ref. PC705.060.004 Pure PTFE Lid
Ref. PC705.060.004.GF Glass Filled PTFE Lid

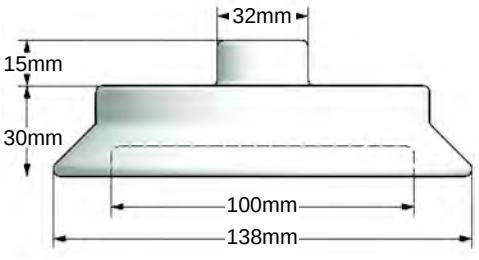
Port	Qty	NPT Thread
A	1	½" Vertical Centre Port
B	3	½" 10˚ x 10˚ Compound Angle

See Pages 45 - 48 for NPT Port Fittings Options

PROCESS CHEMISTRY EQUIPMENT

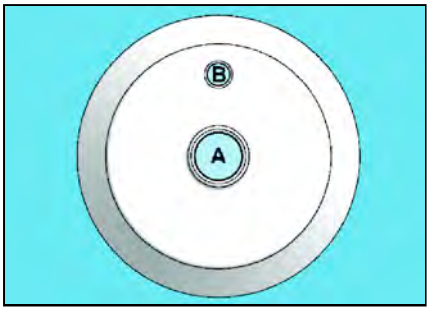
100mm PTFE REACTOR LIDS

Reactor Lids in Pure or Glass Filled PTFE to fit 100mm ID Schott® type flanges, **supplied without fittings**. Order NPT Port Fittings separately to suit your specific requirements - see pages 45 - 48.



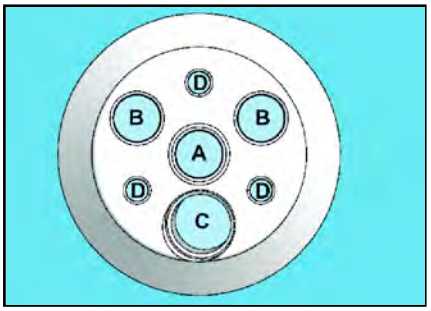
Ref. PC705.100.001 Pure PTFE Lid
Ref. PC705.100.001.GF Glass Filled PTFE Lid

Port	Qty	NPT Thread
A	1	¾" Vertical Raised Centre Port
B	1	¼" Vertical



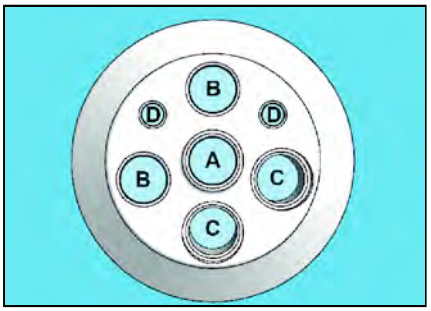
Ref. PC705.100.002 Pure PTFE Lid
Ref. PC705.100.002.GF Glass Filled PTFE Lid

Port	Qty	NPT Thread
A	1	¾" Vertical Raised Centre Port
B	2	¾" Vertical
C	1	1" 10˚ x 10˚ Compound Angle
D	3	¼" Vertical



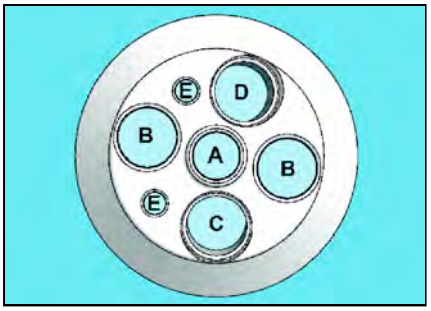
Ref. PC705.100.003 Pure PTFE Lid
Ref. PC705.100.003.GF Glass Filled PTFE Lid

Port	Qty	NPT Thread
A	1	¾" Vertical Raised Centre Port
B	2	¾" Vertical
C	2	¾" 10˚ Angle
D	2	¼" Vertical



Ref. PC705.100.004 Pure PTFE Lid
Ref. PC705.100.004.GF Glass Filled PTFE Lid

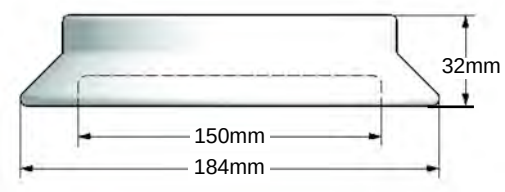
Port	Qty	NPT Thread
A	1	¾" Vertical Raised Centre Port
B	2	1" Vertical
C	1	1" 10˚ Angle
D	1	1" 10˚ x 10˚ Compound Angle
E	2	¼" Vertical



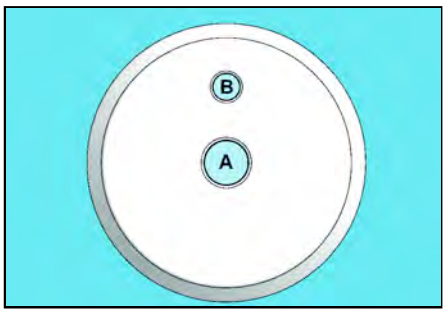
Custom Manufacture options available - see Page 44 for details.

PROCESS CHEMISTRY EQUIPMENT

150mm PTFE REACTOR LIDS

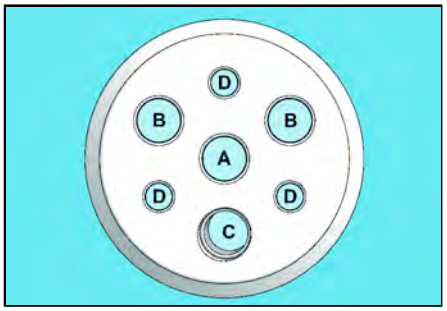


Reactor Lids in Pure or Glass Filled PTFE to fit 150mm ID Schott® type flanges, **supplied without fittings**. Order NPT Port Fittings separately to suit your specific requirements - see pages 45 - 48.



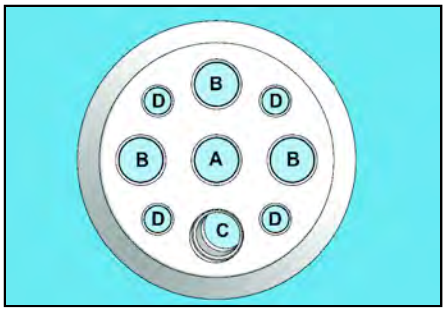
Ref. PC705.150.001 Pure PTFE Lid
Ref. PC705.150.001.GF Glass Filled PTFE Lid

Port	Qty	NPT Thread
A	1	1” Vertical Centre Port
B	1	½” Vertical



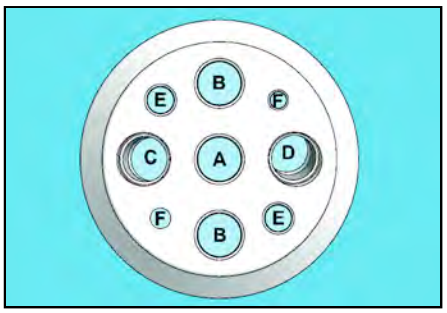
Ref. PC705.150.002 Pure PTFE Lid
Ref. PC705.150.002.GF Glass Filled PTFE Lid

Port	Qty	NPT Thread
A	1	1” Vertical Centre Port
B	2	1” Vertical
C	1	1” 10˚ x 10˚ Compound Angle
D	3	½” Vertical



Ref. PC705.150.003 Pure PTFE Lid
Ref. PC705.150.003.GF Glass Filled PTFE Lid

Port	Qty	NPT Thread
A	1	1” Vertical Centre Port
B	3	1” Vertical
C	1	1” 10˚ x 10˚ Compound Angle
D	4	½” Vertical



Ref. PC705.150.004 Pure PTFE Lid
Ref. PC705.150.004.GF Glass Filled PTFE Lid

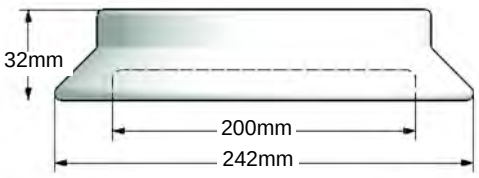
Port	Qty	NPT Thread
A	1	1” Vertical Centre Port
B	2	1” Vertical
C	1	1” 10˚ Angle
D	1	1” 10˚ x 10˚ Compound Angle
E	2	½” Vertical
F	2	¼” Vertical

See Page 45 - 48 for NPT Port Fittings Options

PROCESS CHEMISTRY EQUIPMENT

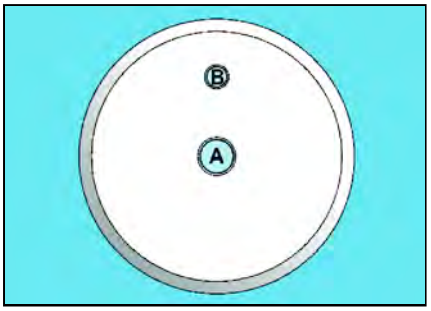
200mm PTFE REACTOR LIDS

Reactor Lids in Pure or Glass Filled PTFE to fit 200mm ID Schott® type flanges, **supplied without fittings**. Order NPT Port Fittings separately to suit your specific requirements - see pages 45 - 48.



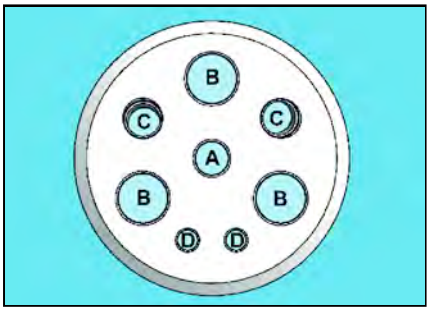
Ref. PC705.200.001 Pure PTFE Lid
Ref. PC705.200.001.GF Glass Filled PTFE Lid

Port	Qty	NPT Thread
A	1	1" Vertical Centre Port
B	1	½" Vertical



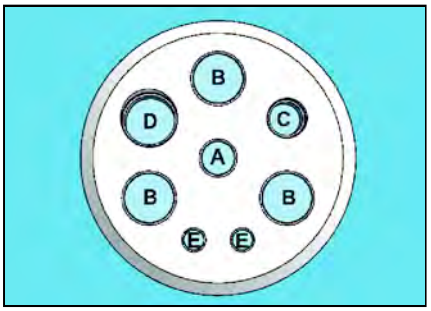
Ref. PC705.200.002 Pure PTFE Lid
Ref. PC705.200.002.GF Glass Filled PTFE Lid

Port	Qty	NPT Thread
A	1	1" Vertical Centre Port
B	3	1½" Vertical
C	2	1" 10˚ x 10˚ Compound Angle
D	2	½" Vertical



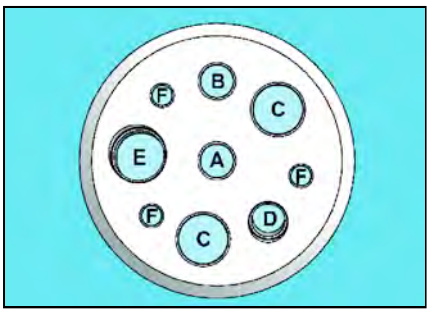
Ref. PC705.200.003 Pure PTFE Lid
Ref. PC705.200.003.GF Glass Filled PTFE Lid

Port	Qty	NPT Thread
A	1	1" Vertical Centre Port
B	3	1½" Vertical
C	1	1" 10˚ Angle
D	1	1½" 10˚ x 10˚ Compound Angle
E	2	½" Vertical



Ref. PC705.200.004 Pure PTFE Lid
Ref. PC705.200.004.GF Glass Filled PTFE Lid

Port	Qty	NPT Thread
A	1	1" Vertical Centre Port
B	1	1" Vertical
C	2	1½" 10˚ Angle
D	1	1" 10˚ x 10˚ Compound Angle
E	1	1½" 10˚ x 10˚ Compound Angle
F	3	½" Vertical



Custom Manufacture options available - see Page 44 for details.

PROCESS CHEMISTRY EQUIPMENT

CUSTOM OPTIONS

We manufacture a truly diverse range of Custom Process Chemistry Equipment to meet your specific requirements.

Whether you are a User requiring a single item or an Original Equipment Manufacturer (OEM) requiring high volume quantities we offer a service based on over 30 years experience in the manufacture of a broad range of PTFE products supported by a Technical Team of chemists and engineers specialising in the properties of PTFE and the use of PTFE products.

Examples of Custom Process Chemistry Equipment

- **Non-Listed Lid sizes and flange types**
  Fit all sizes and types of flange.
- **Lids with integral locating rings**
  An aid to the location and assembly of Lids in glass reaction vessels.
- **Solid lids with integral fittings**
  Fittings are an integral part of the lid and are of especial use in permanent fixtures.
- **Reaction vessels to 10 litre capacity**
  Almost any type of reactor with standard flanges or special lid fittings.
- **Baffles**
  An aid to improved mixing in stirred reactors.
- **Spargers**
  For the efficient distribution of inlet gases into reaction media.
- **Temperature Probes**
  PTFE temperature probes are a COWIE speciality and are produced with thermocouple and platinum resistance sensors in almost any shape or size.
- **Condensers**
  Of interest in systems using HF.
- **Shafts**
  Fittings for every description.
- **Filtration units**
  In-situ separation of reaction products.

To receive our offer for a Custom Product please send full details as a drawing, sketch or sample along with any specific performance requirements and quantities.....

PROCESS CHEMISTRY EQUIPMENT

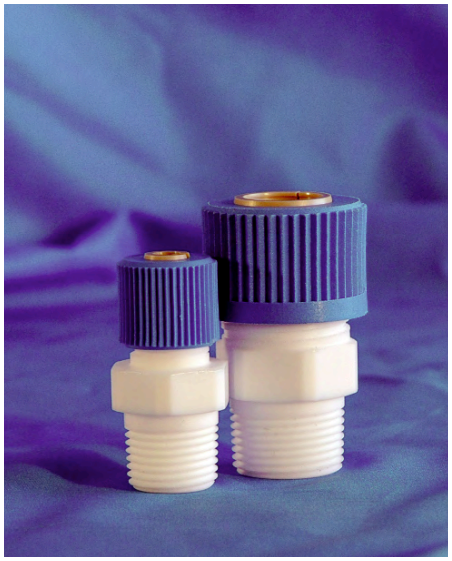
NPT - COMPRESSION SCREW FITTINGS

PTFE Compression Fittings are used with PTFE Reactor Lids to hold items such as temperature probes and sampling tubes securely in place.

Compression fittings are manufactured from pure PTFE and include a PEEK olive to give a secure grip.
PTFE PLUGS are used to seal compression fittings without removal from the reactor lid.

NPT - METRIC

Ref No.	NPT Size	Bore Size (mm)	Plug Ref No.
PC701.025.03	¼”	3	PC703.03
.025.06	¼”	6	.06
.050.06	½”	6	.06
.050.08	½”	8	.08
.050.12	½”	12	.12
.050.14	½”	14	.14
.075.08	¾”	8	.08
.075.12	¾”	12	.12
.075.14	¾”	14	.14
.075.16	¾”	16	.16
.075.19	¾”	19	.19
.100.08	1”	8	.08
.100.12	1”	12	.12
.100.14	1”	14	.14
.100.16	1”	16	.16
.100.19	1”	19	.19
.100.25	1”	25	.25



NPT - IMPERIAL

Ref No.	NPT Size	Bore Size	Plug Ref No.
PC701.025.125	¼”	⅛”	PC703.125
.025.250	¼”	¼”	.250
.050.250	½”	¼”	.250
.050.312	½”	5/16”	.312
.050.500	½”	½”	.500
.050.560	½”	9/16”	.560
.075.312	¾”	5/16”	.312
.075.500	¾”	½”	.500
.075.560	¾”	9/16”	.560
.075.625	¾”	⅝”	.625
.075.750	¾”	¾”	.750
.100.500	1”	½”	.500
.100.560	1”	9/16”	.560
.100.625	1”	⅝”	.625
.100.750	1”	¾”	.750
.100.1000	1”	1”	.1000

REPLACEMENT PARTS

METRIC

Replacement Parts		Bore
Seal Pack Ref No.	Olive (5/pk) Ref No.	Size (mm)
PC701.003	PC701.03	3
.006	.06	6
.008	.08	8
.012	.12	12
.014	.14	14
.016	.16	16
.019	.19	19
.025	.25	25

IMPERIAL

Replacement Parts		Bore
Seal Pack Ref No.	Olive (5/pk) Ref No.	Size
PC701.0125	PC701.125	⅛”
.0250	.250	¼”
.0312	.312	5/16”
.0500	.500	½”
.0560	.560	9/16”
.0625	.625	⅝”
.0750	.750	¾”
.01000	.1000	1”

PROCESS CHEMISTRY EQUIPMENT

COMPRESSION STANDARD TAPER FITTINGS

These PTFE Compression Fittings fit standard glass joints to hold items such as temperature probes and sampling tubes securely in place.

Compression fittings are manufactured from pure PTFE and include a PEEK olive to give a secure grip.
PTFE PLUGS are used to seal compression fittings without removal from the reactor lid.

STANDARD TAPER - METRIC

Full Length 'A' Type Ref No.	Taper	Medium Length 'B' Type Ref No.	Taper	Bore Size (mm)	Plug Ref No.
PC704.1938.03	19/38	PC704.1926.03	19/26	3	PC703.03
.1938.06	19/38	.1926.06	19/26	6	.06
.1938.08	19/38	.1926.08	19/26	8	.08
.1938.12	19/38	.1926.12	19/26	12	.12
.2440.06	24/40	.2429.06	24/29	6	.06
.2440.08	24/40	.2429.08	24/29	8	.08
.2440.12	24/40	.2429.12	24/29	12	.12
.2440.14	24/40	.2429.14	24/29	14	.14
.2440.16	24/40	.2429.16	24/29	16	.16
.2942.12	29/42	.2932.12	29/32	12	.12
.2942.14	29/42	.2932.14	29/32	14	.14
.2942.16	29/42	.2932.16	29/32	16	.16
.2942.19	29/42	.2932.19	29/32	19	.19
.3445.12	34/45	.3435.12	34/35	12	.12
.3445.14	34/45	.3435.14	34/35	14	.14
.3445.16	34/45	.3435.16	34/35	16	.16
.3445.19	34/45	.3435.19	34/35	19	.19
.3445.25	34/45	.3435.25	34/35	25	.25
.4550.12	45/50	.4540.12	45/40	12	.12
.4550.14	45/50	.4540.14	45/40	14	.14
.4550.16	45/50	.4540.16	45/40	16	.16
.4550.19	45/50	.4540.19	45/40	19	.19
.4550.25	45/50	.4540.25	45/40	25	.25

STANDARD TAPER - IMPERIAL

Full Length 'A' Type Ref No.	Taper	Medium Length 'B' Type Ref No.	Taper	Bore Size	Plug Ref No.
PC704.1938.125	19/38	PC704.1926.125	19/26	⅛"	PC703.125
.1938.250	19/38	.1926.250	19/26	¼"	.250
.1938.312	19/38	.1926.312	19/26	5/16"	.312
.1938.500	19/38	.1926.500	19/26	½"	.500
.2440.250	24/40	.2429.250	24/29	¼"	.250
.2440.312	24/40	.2429.312	24/29	5/16"	.312
.2440.500	24/40	.2429.500	24/29	½"	.500
.2440.560	24/40	.2429.560	24/29	9/16"	.560
.2440.625	24/40	.2429.625	24/29	⅝"	.625
.2942.500	29/42	.2932.500	29/32	½"	.500
.2942.560	29/42	.2932.560	29/32	9/16"	.560
.2942.625	29/42	.2932.625	29/32	⅝"	.625
.2942.750	29/42	.2932.750	29/32	¾"	.750
.3445.500	34/45	.3435.500	34/35	½"	.500
.3445.560	34/45	.3435.560	34/35	9/16"	.560
.3445.625	34/45	.3435.625	34/35	⅝"	.625
.3445.750	34/45	.3435.750	34/35	¾"	.750
.3445.1000	34/45	.3435.1000	34/35	1"	.1000
.4550.500	45/50	.4540.500	45/40	½"	.500
.4550.560	45/50	.4540.560	45/40	9/16"	.560
.4550.625	45/50	.4540.625	45/40	⅝"	.625
.4550.750	45/50	.4540.750	45/40	¾"	.750
.4550.1000	45/50	.4540.1000	45/40	1"	.1000

FOR REPLACMENT PARTS SEE PAGE 45

PROCESS CHEMISTRY EQUIPMENT

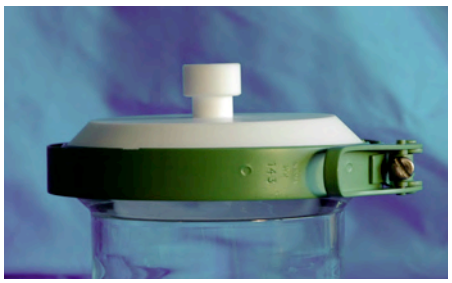
ADAPTERS FOR RODAVISS® JOINTS

A range of Pure and Glass Filled PTFE Tapered Adapters for use with PTFE Reactor Lids and Rodaviss® glass joints. Simply screw the tapered joint into the NPT port of the reactor lid.

Pure PTFE Fittings Ref No.	Glass Filled PTFE Fittings Ref No.	NPT Thread	Cone Taper	Dimensions H x Ø (mm)
PC712.1413	PC712.1413.GF	½"	14/-	45 x 21.5
.1913	.1913.GF	½"	19/-	50 x 27
.2413	.2413.GF	½"	24/-	67 x 34
.2913	.2913.GF	½"	29/-	68 x 40
.1919	.1919.GF	¾"	19/-	55 x 27
.2419	.2419.GF	¾"	24/-	55 x 34
.2919	.2919.GF	¾"	29/-	68 x 40
.3419	.3419.GF	¾"	34/-	75 x 47
.4519	.4519.GF	¾"	45/-	89 x 58
.2425	.2425.GF	1"	24/-	60 x 34
.2925	.2925.GF	1"	29/-	60 x 40
.3425	.3425.GF	1"	34/-	75 x 47
.4525	.4525.GF	1"	45/-	90 x 58
.2438	.2438.GF	1½"	24/-	55 x 48
.2938	.2938.GF	1½"	29/-	55 x 48
.3438	.3438.GF	1½"	34/-	55 x 48
.4538	.4538.GF	1½"	45/-	80 x 61

BLANKING LIDS

PTFE Blanking lids have no ports and are designed to provide a seal for reaction vessels. Lids fit 60mm, 100mm, 150mm, 200mm Schott® type flanges and have a central handle to facilitate easy handling. Available in Pure or Glass Filled PTFE.



Pure PTFE Lid Ref No.	Glass Filled PTFE Lid Ref No.	Flange ID (mm)	Ø OD (mm)	Height (mm)
PC706.060	PC706.060.GF	60	100	16
.100	.100.GF	100	138	20
.150	.150.GF	150	184	20
.200	.200.GF	200	242	20

ROD BAFFLES

Used to increase agitation and promote thorough mixing. Feature a stainless steel core fully encapsulated in PTFE to give a product which is chemically resistant and non-contaminating. Assemble with corresponding compression fitting.

Ref No.	Shaft Ø (mm)	Shaft L (mm)	Baffle WxDxL (mm)	Total L (mm)
PC708.008.150	8	150	16 x 12 x 150	300
.008.200	8	200	16 x 12 x 150	350
.008.250	8	250	16 x 12 x 150	400
.012.150	12	150	20 x 15 x 200	350
.012.200	12	200	20 x 15 x 200	400
.012.250	12	250	20 x 15 x 200	450
.016.150	16	150	35 x 22 x 250	400
.016.200	16	200	35 x 22 x 250	450
.016.250	16	250	35 x 22 x 250	500

PROCESS CHEMISTRY EQUIPMENT

STANDARD TAPER ADAPTER

Standard PTFE Tapered Port/Joint Fittings for use with PTFE Reactor Lids. Available in Pure and Glass Filled PTFE. Tapers are suitable for 'A' and 'B' length joints. Simply screw the tapered joint into the NPT port of the reactor lid.

Pure PTFE Fittings Ref No.	Glass Filled PTFE Fittings Ref No.	NPT Thread	Cone Taper	Dimensions H x Ø (mm)
PC711.1413	PC711.1413.GF	½"	14/-	45 x 21.5
.1913	.1913.GF	½"	19/-	50 x 27
.2413	.2413.GF	½"	24/-	67 x 34
.2913	.2913.GF	½"	29/-	68 x 40
.1919	.1919.GF	¾"	19/-	55 x 27
.2419	.2419.GF	¾"	24/-	55 x 34
.2919	.2919.GF	¾"	29/-	68 x 40
.3419	.3419.GF	¾"	34/-	75 x 47
.4519	.4519.GF	¾"	45/-	89 x 58
.2425	.2425.GF	1"	24/-	60 x 34
.2925	.2925.GF	1"	29/-	60 x 40
.3425	.3425.GF	1"	34/-	75 x 47
.4525	.4525.GF	1"	45/-	90 x 58
.2438	.2438.GF	1½"	24/-	55 x 48
.2938	.2938.GF	1½"	29/-	55 x 48
.3438	.3438.GF	1½"	34/-	55 x 48
.4538	.4538.GF	1½"	45/-	80 x 61

EXTENSION ADAPTERS

Male/Female NPT Extension Adapters optimise the use of NPT entry ports by the provision of additional port sizes and raising the height of the entry port from the lid. This gives even more flexibility of assembly and enables a greater range of fittings to be used - this is especially the case for 60mm lids with multiple ports where the use of an extension adapter allows the use of a central stirrer guide.

NPT Extension Adapters are manufactured in Glass Filled PTFE for improved mechanical strength.

Ref No.	Male NPT	Female NPT	Nominal Height (mm)	Fits Max Shaft Ø (mm)
PC713.025050.GF	¼"	½"	40	8.5
.050050.GF	½"	½"	36	14
.050075.GF	½"	¾"	46	14
.075075.GF	¾"	¾"	46	18
.075100.GF	¾"	1"	46	18
.100100.GF	1"	1"	43	24
.100150.GF	1"	1½"	43	24

BLANKING NUTS

NPT Blanking Nuts/Plugs are used to seal unused ports. Available in pure or Glass Filled PTFE.

Pure PTFE Ref No.	Glass Filled PTFE Ref No.	To fit Port Size
PC702.025	PC702.025.GF	¼" NPT
.050	.050.GF	½" NPT
.075	.075.GF	¾" NPT
.100	.100.GF	1" NPT
.150	.150.GF	1½" NPT

HIGH PERFORMANCE (HP) SHAFT GUIDE

FOR USE WITH GLASS AND METAL SHAFT STIRRERS

HP Shaft Guides provide an effective guide for use with **glass** and **metal** Shaft Stirrers over a wide range of temperature without shedding particles from the seal whilst maintaining vacuum.

The seal is made from a specially formulated PTFE-PEEK composite and this material is also used to provide a molded-in guide ring to aid alignment of the shaft.
Note: PEEK has reduced chemical resistance compared to PTFE and may be affected by acids, phenols and halogen based compounds.

The maximum recommended speeds are -
500rpm Continuous
800rpm Intermittent

HP Shaft Guides have an NPT thread for direct assembly into PTFE Reactor Lids.
OR
With Standard Tapers for use with glass joints.
The taper version is available without a PTFE/PEEK guide ring.

WITH NPT THREAD

Ref No.	Shaft Ø (mm)	NPT Thread	Height (mm) excl. joint	Hex (mm)
PC710.0819.PK	8	¾"	63	28 AF
.1019.PK	10	¾"	63	28 AF
.0825.PK	8	1"	67	40 AF
.1025.PK	10	1"	67	40 AF
.1225.PK	12	1"	67	40 AF
.1625.PK	16	1"	80	40 AF
.1925.PK	19	1"	80	40 AF

WITH STANDARD TAPER

For use with glass joints only

USE SUFFIX .PK FOR VERSION WITH PEEK GUIDE RING eg. 005.0.0819.PK

Ref No.	Shaft Ø (mm)	'A' Cone	Height (mm) excl. joint	Ring Ø (mm)
005.0.0619	6	19/22	60	42
.0.0624	6	24/40	60	42
.0.0819	8	19/38	60	42
.0.0824	8	24/40	60	42
.0.1024	10	24/40	60	42
.0.1029	10	29/42	60	50
.0.1034	10	34/45	60	50
.0.1045	10	45/50	60	58
.0.1229	12	29/42	70	50
.0.1634	16	34/45	70	50
.0.1945	19	45/50	70	58

USE SUFFIX .PK FOR VERSION WITH PEEK GUIDE RING eg. 005.0.0819.PK

Ref No.	Shaft Ø (mm)	'B' Cone	Height (mm) excl. joint	Ring Ø (mm)
005.00.0619	6	19/26	60	42
.00.0624	6	24/29	60	42
.00.0819	8	19/26	60	42
.00.0824	8	24/29	60	42
.00.1024	10	24/29	60	42
.00.1029	10	29/32	60	58
.00.1045	10	45/40	60	50
.00.1229	12	29/32	60	50
.00.1634	16	34/35	70	50
.00.1645	16	45/40	70	58
.00.1945	19	45/40	70	58

STIRRING EQUIPMENT

UNIVERSAL STIRRER GUIDE

Cowie Universal Stirrer Guides have an NPT Screw Thread Fitting for direct assembly into PTFE Reactor Lids or NPT Extension Adapters. Standard Taper Cone Fittings are for use in standard glass joints.

Unique features of the design are a permanently loaded Composite PTFE/PEEK Seal and a Glass Ball-Bearing for rigidity and smoothness of operation.

WITH NPT THREAD

- Exceptional chemical resistance
- Anti-whip and reduced vibration
- Vacuum (5mmHg) and pressure (3-5psi) performance
- No shedding
- Maximum recommended speeds; continuous 500rpm, intermittent 800rpm

Ref No.	Shaft Ø (mm)	NPT Thread	Height (mm) excl. joint	Guide Ø (mm)
PC709.0819	8	¾"	106	44
.1019	10	¾"	106	44
.1219	12	¾"	106	44
.0825	8	1"	110	44
.1025	10	1"	110	44
.1225	12	1"	112	54
.1625	16	1"	112	54

WITH STANDARD TAPER

For use with glass joints only

Ref No.	Shaft Ø (mm)	'A' Cone	Height (mm) excl. joint	Guide Ø (mm)
005.101.1.7	6	19/22	96	45
.102.7	6	24/40	96	45
.104.7	8	24/40	96	45
.105.7	10	24/40	96	45
.106.7	10	29/42	96	45
.108.7	12	29/42	110	55
.111.7	16	34/45	110	55
.112.7	16	45/50	110	55

Ref No.	Shaft Ø (mm)	'B' Cone	Height (mm) excl. joint	Guide Ø (mm)
005.201.7	6	19/26	96	45
.202.7	6	24/29	96	45
.203.7	8	19/26	96	45
.204.7	8	24/29	96	45
.205.7	10	24/29	96	45
.206.7	10	29/32	96	45
.207.7	10	34/35	96	45
.208.7	12	29/32	110	55
.209.7	12	34/35	110	55
.211.7	16	34/35	110	55
.212.7	16	45/40	110	55

STIRRING EQUIPMENT

SHAFT STIRRERS

Shaft stirrers have a unique, fully molded construction featuring a PTFE rotor molded to a fully PTFE encapsulated steel reinforced drive shaft.

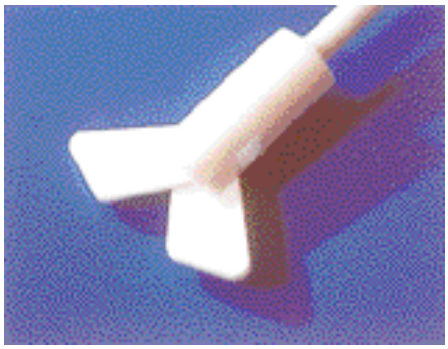
- **Chemically inert**
- **Easy to clean**
- **No cross contamination**
- **Unbreakable**
- **Non Scratch**
- **Use up to ca. 280˚C**

Plus

- **Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck**
- **Exposed length 50mm**

All dimensions are in mm.

CENTRIFUGAL



Ref No.	ShaftØ	Length	RotorØ
005.430.2	6	300	40
.440.2	6	400	40
.450.2	6	500	50
.430.8.2	8	300	40
.440.8.2	8	400	40
.450.8.2	8	500	50
.455.2	9.5	550	70
.465.2	9.5	650	70
.0465.2	9.5	650EX	70
.0475.2	9.5	750EX	70
.455.10.2	10	550	70
.0465.10.2	10	650EX	70
.0475.10.2	10	750EX	70
.0465.12.2	12	650EX	80
.0475.12.2	12	750EX	80
.04100.12.2	12	1000EX	80
.0475.16.2	16	750EX	80
.04100.16.2	16	1000EX	80
.0475.19.2	19	750EX	100
.04100.19.2	19	1000EX	100

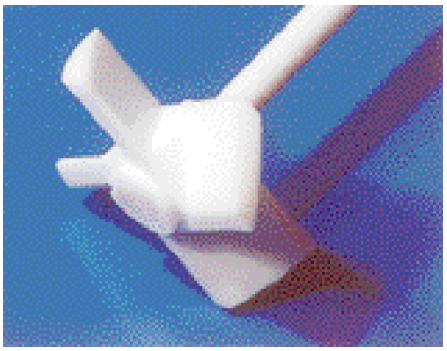
ANCHOR

Ref No.	ShaftØ	Length	RotorØ
005.330.2	6	300	80
.340.2	6	400	80
.350.2	6	500	80
.330.8.2	8	300	80
.340.8.2	8	400	80
.350.8.2	8	500	80
.355.2	9.5	550	100
.365.2	9.5	650	100
.355.1.2	9.5	550	140
.365.1.2	9.5	650	140
.0365.1.2	9.5	650EX	140
.0375.1.2	9.5	750EX	140
.355.10.2	10	550	100
.0365.10.2	10	650EX	140
.0375.10.2	10	750EX	140
.0365.12.2	12	650EX	140
.0375.12.2	12	750EX	140
.03100.12.2	12	1000EX	140
.0375.16.2	16	750EX	140
.0375.16.1.2	16	750EX	180
.03100.16.2	16	1000EX	140
.03100.16.1.2	16	1000EX	180
.0375.19.2	19	750EX	140
.0375.19.1.2	19	750EX	180
.03100.19.2	19	1000EX	180
.03100.19.1.2	19	1000EX	200

STIRRING EQUIPMENT

SHAFT STIRRERS

SCREW PROPELLER



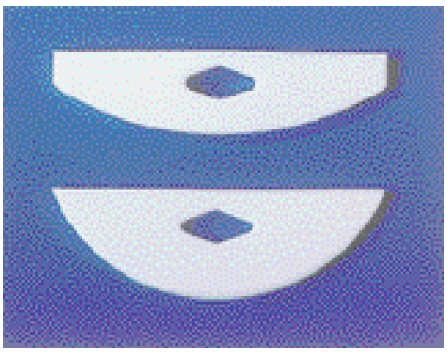
Ref No.	ShaftØ	Length	RotorØ
005.230.2	6	300	40
.240.2	6	400	40
.250.2	6	500	50
.230.8.2	8	300	40
.240.8.2	8	400	40
.250.8.2	8	500	50
.255.2	9.5	550	60
.265.2	9.5	650	60
.0265.2	9.5	650EX	60
.0275.2	9.5	750EX	60
.255.10.2	10	550	70
.0265.10.2	10	650EX	70
.0275.10.2	10	750EX	70
.0265.12.2	12	650EX	80
.0275.12.2	12	750EX	80
.02100.12.2	12	1000EX	80
.0275.16.2	16	750EX	80
.0275.16.1.2	16	750EX	100
.02100.16.2	16	1000EX	100
.02100.16.1.2	16	1000EX	120
.0275.19.2	19	750EX	80
.0275.19.1.2	19	750EX	100
.02100.19.2	19	1000EX	120
.02100.19.1.2	19	1000EX	150

SHAFTS FOR BLADES

Use these shafts with Blades 002.XXX

Ref No.	ShaftØ	Length
005.530.1	6 mm	300 mm
.540.1	6	400
.550.1	6	500
.530.8.1	8	300
.540.8.1	8	400
.550.8.1	8	500
.555.1	9.5	550
.565.1	9.5	650
.0565.1	9.5	650EX
.0575.1	9.5	750EX
.0565.10.1	10	650EX
.0575.10.1	10	750EX
.05100.10.1	10	1000EX
.0565.12.1	12	650EX
.0575.12.1	12	750EX
.05100.12.1	12	1000EX
.0575.16.1	16	750EX
.05100.16.1	16	1000EX

STIRRER BLADES



Fit all standard stirring shafts, pure PTFE, totally inert and non-scratch. Hole diam 6.5mm, 3.2mm thick, PTFE shafts for these blades are 005.500 Series.

SQUARE END

Ref No.	Width (mm)		Ht (mm)
002.052.1	52	x	14
.076.1	76	x	19
.090.1	90	x	28

PLAIN END

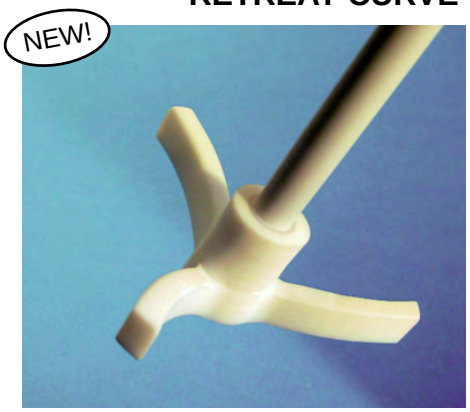
Ref No.	Width (mm)		Ht (mm)
002.1065.1	65	x	25
.1075.1	75	x	25
.1105.1	105	x	25
.1125.1	125	x	25
.1150.1	150	x	25

STIRRING EQUIPMENT

SHAFT STIRRERS
RETREAT CURVE

Fully molded product with a retreat angle of 30˚.

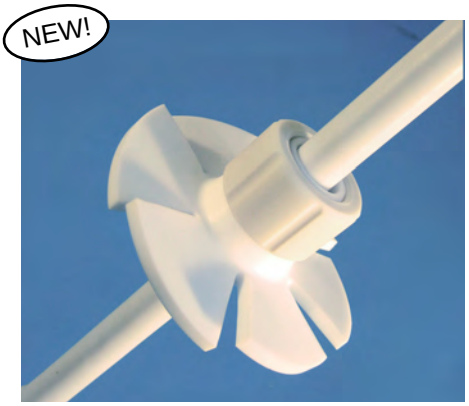
Ref No.	Shaft Ø (mm)	Length (mm)	Rotor Ø (mm)	Blade Ht (mm)
005.80850.300	8	300	50	10
.80875.300	8	300	75	15
.80850.400	8	400	50	10
.80875.400	8	400	75	15
.81050.400	10	400	50	10
.81075.400	10	400	75	15
.81050.500	10	500	50	10
.81075.500	10	500	75	15



ADJUSTABLE TURBINE

Use with plain glass, metal or PTFE shafts.

Ref No.	Shaft Ø (mm)	Rotor Ø (mm)
005.90850	8	50
.90875	8	75
.91075	10	75
.910100	10	100
.91275	12	75
.912100	12	100
.916100	16	100
.916150	16	150
.919100	19	100
.919150	19	150



PLAIN SHAFTS

PTFE encapsulated stainless steel core with exposed end.

Ref No.	Shaft Ø (mm)	End Ø (mm)	Length Ø (mm)
005.100830EX	8	5	300
.100850EX	8	5	500
.101030EX	10	6.35	300
.101050EX	10	6.35	500
.101065EX	10	6.35	650
.101250EX	12	6.35	500
.101265EX	12	6.35	650
.101275EX	12	6.35	750
.1016750EX	16	10	750
.1016100EX	16	10	1000
.1019750EX	19	14	750
.1019100EX	19	14	1000

Please ask for Plain Shafts not listed

STIRRING EQUIPMENT

ADJUSTABLE ROTORS

Rotor diameters are nominal.

These adjustable rotors slide over standard shafts and lock in place to give the most effective stirring patterns. All PTFE with glass filled PTFE lock nut.

4 BLADE ANGLED TYPE 45° METRIC

Ref No.	Shaft Ø(mm)	Rotor Ø(mm)
005.606040	6	40
.608040	8	40
.610060	10	60
.610090	10	90
.612070	12	70
.612090	12	90
.616100	16	100
.619100	19	100
.619125	19	125

4 BLADE ANGLED TYPE 45° IMPERIAL

Ref No.	Shaft Ø(in)	Rotor Ø(in)
005.6.250.15	1/4	1½
.6.313.15	5/16	1½
.6.375.25	3/8	2½
.6.500.35	1/2	3½
.6.625.40	5/8	4

FLAT TYPE METRIC

Ref No.	Shaft Ø(mm)	Rotor Ø(mm)
005.706070	6	70
.708070	8	70
.710070	10	70
.710100	10	100
.712100	12	100
.712150	12	150
.716100	16	100
.716150	16	150
.719150	19	150
.719200	19	200

FLAT TYPE IMPERIAL

Ref No.	Shaft Ø(in)	Rotor Ø(in)
005.7.250.3	1/4	3
.7.313.3	5/16	3
.7.375.3	3/8	3
.7.500.4	1/2	4
.7.625.6	5/8	6

CUSTOM STIRRER SHAFTS & ROTORS

Cowie offers a complete custom design and manufacture service allowing you to specify the exact PTFE Stirrer Shaft to meet your requirements … from one off manufacture to batch quantities.

Manufactured from PTFE with **FDA** and **USP Class VI approvals.**

Full traceability available.

For further information, please contact us.

PTFE TEMPERATURE PROBES

Combine the outstanding properties of PTFE with the reliability and accuracy of Platinum Resistance and Thermocouple thermometry.

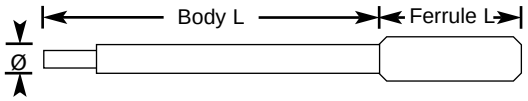
- **Inert and Non Contaminating**
- **-180˚C to +280˚C**
- **Pressure Resistant**

PLATINUM RESISTANCE PROBES

All components are fully encapsulated in pure PTFE.
The Body has a stainless steel core for rigidity but can be bent.
With push-on ferrule.

Sensor: PRT100 Class A. TCR = 3850 ppm/˚C.
Cable: 4 Wire; 2 Red, 2 White PTFE insulated, white PFA oversheath.
Cable fused to body.
Length 1 metre.
Response: 50%, 6-14 seconds.

Supplied **Without Plug.** Special plugs on request.



Ref No.	Body Ø(mm)	Body L(mm)	Ferrule L (mm)
500.106.1	6	100	35
.206.1	6	200	40
.100.1	7	100	35
.200.1	7	200	40
.307.1	7	300	40
.208.1	8	200	40
.300.1	8	300	40
.400.1	8	400	50
.500.1	9	500	60
.600.1	9	600	60
.700.1	9	700	45
.900.1	9	900	45

For extra cable put cable length in metres after Reference No.
e.g. 500.100.1.**5** for 5 metres.

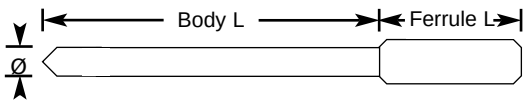
A Cowie Original Design

THERMOCOUPLE PROBES TYPE K

All components are fully encapsulated in pure PTFE.
The Body has a stainless steel core for rigidity but can be bent.
With push-on ferrule.

Sensor: Type K Thermocouple
Cable: PTFE insulated with PFA oversheath. Cable fused to body.
International Colors: Cover: Green, +ve Green, -ve White
Length 1 metre.
Response: 50%, 6-14 seconds.

Supplied **With Mini Plug**



Ref No.	Body Ø(mm)	Body L(mm)	Ferrule L (mm)
600.106.1	6	100	35
.206.1	6	200	40
.101.1	7	100	35
.201.1	7	200	40
.307.1	7	300	40
.208.1	8	200	40
.301.1	8	300	40
.401.1	8	400	50
.501.1	9	500	60
.601.1	9	600	60
.701.1	9	700	45
.901.1	9	900	45

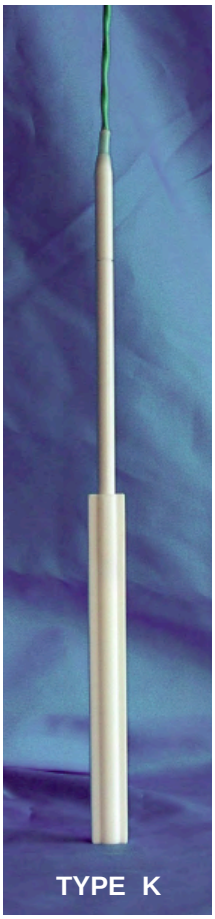
For extra cable put cable length in metres after Reference No.
e.g. 600.101.1.**5** for 5 metres.

A Cowie Original Design

PTFE TEMPERATURE PROBES

BAFFLE PROBES

The dual purpose PTFE Baffle Probe is for use in reaction systems to increase agitation and promote thorough mixing whilst also acting as a temperature probe. All components are fully encapsulated in PTFE to ensure purity and chemical resistance and have a stainless steel core for rigidity.



PLATINUM RESISTANCE BAFFLE PROBE - PRT100

Sensor PRT100 Class A

Cable Length 1 metre. 4 Wire; 2 Red, 2 White. PFA insulated, white PFA oversheath. Cable fused to body. Supplied **without** plug

Ref No.	Shaft Ø (mm)	Shaft L (mm)	Baffle WxDxL (mm)	Total L (mm)
PC707.508.150.1	8	150	16 x 12 x 150	300
.508.200.1	8	200	16 x 12 x 150	350
.508.250.1	8	250	16 x 12 x 150	400
.512.150.1	12	150	20 x 15 x 200	350
.512.200.1	12	200	20 x 15 x 200	400
.512.250.1	12	250	20 x 15 x 200	450
.516.150.1	16	150	35 x 22 x 250	400
.516.200.1	16	200	35 x 22 x 250	450
.516.250.1	16	250	35 x 22 x 250	500

THERMOCOUPLE BAFFLE PROBE - TYPE K

Sensor Type K Thermocouple

Cable Length 1 metre. PFA insulated with PFA oversheath. Cable fused to body. International colors: Cover Green; +ve Green; -ve White. Fitted **with miniplug**

Ref No.	Shaft Ø (mm)	Shaft L (mm)	Baffle WxDxL (mm)	Total L (mm)
PC707.608.150.1	8	150	16 x 12 x 150	300
.608.200.1	8	200	16 x 12 x 150	350
.608.250.1	8	250	16 x 12 x 150	400
.612.150.1	12	150	20 x 15 x 200	350
.612.200.1	12	200	20 x 15 x 200	400
.612.250.1	12	250	20 x 15 x 200	450
.616.150.1	16	150	35 x 22 x 250	400
.616.200.1	16	200	35 x 22 x 250	450
.616.250.1	16	250	35 x 22 x 250	500

TOTAL IMMERSION

Designed for total immersion, suitable for use in autoclaves and most corrosive liquids.

Sensor: PRT100 Class A

Cable: 4 Core PFA insulated with white PFA oversheath fused to body. Length 1m. Without Plug.

Ref No.	Body Ømm	Body Lmm
500.050.1	5	50

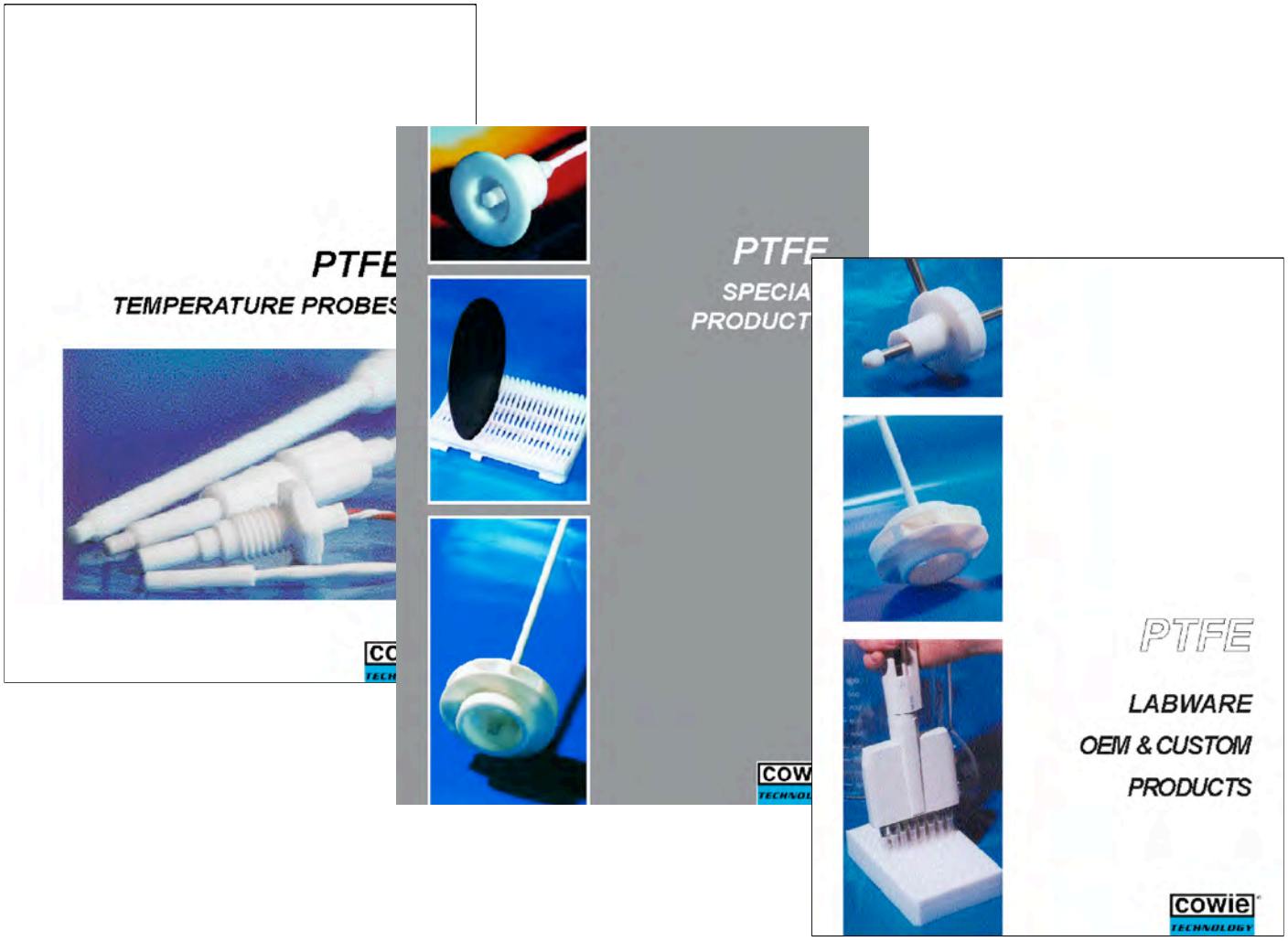
For extra cable put cable length in metres after Reference. e.g. 500.050.1.**6** for 6 metres.

CUSTOM PTFE TEMPERATURE PROBES

We manufacture PTFE Custom and OEM temperature probes of every description and in any quantity.

Please send us your probe details and quantity required for our offer.....

COMPLETING THE RANGE



HOW TO ORDER

Cowie products can be ordered directly from Cowie or from your local distributor.
Please contact us for details of your nearest distributor supplying Cowie products.

We accept Visa, Mastercard and American Express

Serving Europe, Africa, Asia & Australasia
Cowie Technology Group Ltd
Ridgeway, Coulby Newham
Middlesbrough, TS8 0TQ
England
Ph: +44 (0)1642 599190
Fx: +44 (0)1642 596810
Em: enquiries@cowie.com

Serving USA & Canada
Cowie Technology Corp.
510 First State Boulevard
Wilmington, DE 19804
USA
TF: +1 800 223 5711
Fx: +1 302 998 7092
Em: inquiries@cowie.com

www.cowie.com

Europe, Africa, Asia & Australsia

Cowie Technology Group Ltd
Ridgeway, Coulby Newham
Middlesbrough
TS8 0TQ
England

Tel: +44 (0)1642 599190
Fax: +44 (0)1642 596810

enquiries@cowie.com
www.cowie.com

USA & Canada

Cowie Technology Corp
510 First State Boulevard
First State Industrial Park
Wilmington, DE 19804
USA

Toll Free: 800 233 5711
Tel: 001 302 998 7037
Fax: 001 302 998 7092

inquiries@cowie.com
www.cowie.com