



ALL GLASS CONTAINER FINISHES MANUAL (TEC 3) HOLDERS

The last updates to the Glass Container Finishes Manual (TEC3) were issued in November 2013.

The current update brings TEC3 up to February 2020 (drawings are dated individually).

Included are 4 new CeTIE drawings, and an updated list of specifications. The Guala drawings were inadvertently omitted from the drawings supplied, and are included here. For that reason, they are listed in the amendments.

The manual continues to be available to British Glass members free of charge, either by download from the members' web site or on a memory stick. Non-members may purchase copies. Changes to the manual will be notified by e-mail.

If you currently operate a paper-based manual you will need to print copies of the industrial specifications which have been amended or which are new, together with a copy of the new Notes (February 2020) and List of Drawings to add to your manual.

If you have any questions, please contact Theresa Green or Mark Pudner.

(Issued February 2020)

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Tec3 February 2020: List of Amendments & Additions
since November 2008

Removed	Added	Amendments
	GF160*	Guala 1031 Closure Range
	GF161*	Guala 1039/35 Closure
	GF162*	Guala 1040 Closure
	GME 20-06 Exptl.	Vacuum Lug Finish 63, 66,70 Regular
	GME 20-07 Exptl.	Vacuum Lug Finish 63, 66,70 Deep
	GME 25-01	Press-on (PT) Finish 51, 63,70
	GME 28-01	Press-on (PT) Finish 51mm Tamper-Evident GF 910:2019

* These drawings were inadvertently omitted in November 2011 so have been listed here for completeness.

SPECIFICATIONS FOR GLASS CONTAINER FINISHES

The British Glass Design Standards Sub-Committee has produced the finish specifications described in this publication. The work has been carried out with the co-operation of closure manufacturers.

Over a period of time it is hoped to add additional specifications, so that a complete range of popular glass container finishes will be available.

GENERAL NOTES RELATING TO BRITISH GLASS FINISH SPECIFICATIONS

1 Drawings have been classified as follows:-

- 100 series – non-screw finishes
- 200 series – multi-start screw finishes
- 300 series – single-start screw finishes
- 900 series – supplementary information

(This series concerns supplementary finish information, for example, GF900 illustrates alternative transfer bead construction related to GF306. Individual specifications will indicate whenever such supplementary information is applicable).

2 All dimensions are in millimetres.

3 The method of expressing dimensions is in accordance with BS4602:1977(reconfirmed 2017).

An amendment was added in 1983 to bring the methods into line with European practice.

All drawings issued will have dimensions specified as follows:

- a) Maximum and minimum dimensions to 0.05, or if such accuracy is not necessary, to the first decimal place in mm.
- b) Pitch: to 0.05mm.
- c) Plane angles: to nearest degree.
- d) Helix Angles: to nearest minute.
- e) Geometric interpretation should be to ISO 1101: 2004
e.g.

Clause 11 - 'theoretically exact dimensions'

Dimensions shown as

R 0.35

 are tooling dimensions.

They are not intended to be glass specification values.

Clause 18.7 - 'profile tolerance of a surface' (ISO 1101)

"Form" may be controlled using 'profile tolerance of a surface' where the tolerance zone is limited by two surfaces enveloping spheres of diameter "t", the centres of which are situated on a surface having the theoretically exact geometric form.

"t" should not normally exceed 0.50mm

- 4** Closure manufacturers and packers are invited to co-operate by referring to British Glass any suggestions for additional specifications or amendments to existing specifications aimed at improving closure integrity.
- 5** Where there is more than one version of a finish, a supplementary identifying number has been added and the numbers are shown on the drawings, e.g. GF113, GF113/1. This may occasionally require an additional sheet e.g. GF315
- 6** Similar/Identical Neck Finishes with alternative Thread Profiles are designated with a relevant suffix, e.g. GF305D and GF305V
To avoid inconsistent closure application, it is strongly recommended that alternative thread profiles are not mixed in production by Packer/Fillers.
- 7** Closure integrity requires that all sealing surfaces be substantially smooth and free from features that prevent adequate sealing.
- 8** Unless stated to the contrary, all entrance bore diameters are effective for a depth of 1mm from the point of entry (point of entry is at the full depth of the 'lead in' radius or equivalent profile).
- 9** Any necessary bore requirements not shown on the specifications should be negotiated with the glass supplier.
- 10** Suitable gauges for the dimensional control of glass finishes are described in the British Glass publication, 'Quality Control in the Glass Container Industry'. (TEC 5)

Unless otherwise stated on individual drawings, all references to Parnaby gauges on British Glass finishes refer to 36° angles (ie the two engaging arcs of the gauges should each subtend an arc of 36°)
See GF904

"F" dimension on ROPP Finishes should be gauged at four equally spaced positions around the circumference, avoiding the seams – see GF910

- 11** Unless otherwise specified, maximum and minimum dimensions are based on a normal statistical qualification related to two standard deviations.
- 12** Nominal or untoleranced dimensions are included for tooling design and manufacture.
Implied accuracy is indicated as follows:

Dimensions shown 0.00mm imply a range of +/- 0.05mm

Dimensions shown 0.0mm imply a range of +/- 0.2mm

- 13** External screw finishes and Crown finishes based on BS1918 (1984) Parts 1 and 2, respectively, are included by permission of British Standards Institution.
- 14** The recommended specification for handheld crown openers is BS EN:14798 and for cork removal devices is BS EN:14887.
- 15** Any amendments to existing finishes must allow a reasonable time interval before they become effective to allow a run-out of existing mould equipment and bottle stocks.
- 16** From time to time, modifications to existing drawings or drawings for new bottles will be added to this compilation. Details of the latest amendments can be obtained from British Glass. This process will be automatic for registered holders.

The following list indicates the original drawings on which the relevant British Glass Specifications were based. It is not intended as a comprehensive list.

Note

Three Guala neck finish specifications have been added to this issue of Tec3, following negotiations with Guala.

List of Drawings - with date when first issued

The following list indicates the original drawings on which the relevant British Glass Specifications were based. It is not intended as a comprehensive list.

Drawing Issue Number		Title	Based on
<u>Non-screw finishes</u>			
GF 100	03-2005	Single Omnia 43 - 83	British Glass drawings TEC 253, issue E
GF 101	03-2005	Double Omnia 43 - 83	Thomas Hunter, Omnia TI
GF 102	03-2005	Jay or 'S' Cap 21 - 43	Johnsen & Jorgenson, A 17692
GF 103	03-2005	Corfield Mark 1	United Glass UGO-085
GF 104	03-2005	Jay or 's' Cap, 28 and 30 deep	Johnsen & Jorgenson, A 17693
GF 111	03-2005	35 Milk	
GF 113	03-2005	38 Milk	
GF 116	03-2005	20 Aerosol	
GF 119	03-2005	Corkmouth	United Glass UGO-061
GF 120	03-2005	Alka	United Glass UGO-050
GF 121	03-2005	Jay of 'S' Cap, 38	Johnsen & Jorgenson, A 17694
GF 124	03-2005	35 and 38 Shallow Milk Finish	UGO-056
GF 126	09-2005	Inverse Taper Corkmouth 31/23	
GF 130	03-2005	Standard Crown	BS 1918 part 2 - specification is withdrawn - see ref GME 13-01
GF 131	03-2005	Shallow Crown	BS 1918 part 2 - specification is withdrawn - see ref GME 13-02
GF 132	03-2005	42 mm Rip Cap	American Flange SK 860
GF 160	09-2011	1031 Closure Range	Guala
GF 161	09-2011	1039/35 Closure	Guala
GF 162	09-2011	1040 Closure	Guala
GF 163	01-2013	E-0437 ALUSNAP 47 & 59	Guala
<u>Multi-start screw finishes</u>			
GF 214	03-2005	5" Fourstart	
GF 222	03-2005	Crown Standard Twist-off	See also CETIE GME 14-01, 14-02
GF 223	03-2005	B9 Turnoff	
GF 230	09-2008	28/44, 30-31.5 / 60 2 Start PP	BV 110
<u>Single-start screw finishes</u>			
GF 300	03-2005	26 Flavlock	Metal Closures K 26904 and K 35855
GF 301	03-2005	28 Flavlock	Metal Closures K 19354 and K 26552
GF 302	03-2005	31 - 38 Flavlock	Metal Closures K 13764 and K 26551
GF 303	03-2005	18 - 24 Roll-on Pilferproof	Metal Closures K 15694, K 14953, K 17349, UGO-020 and K15371
GF 304	03-2005	25 - 53 Standard Roll-on Pilferproof	Metal Closures K 11733 and K 11741
GF 305 D	03-2005	30 Extra deep Pilferproof	Metal Closures K 12872 and K 22329
GF 305 V	03-2005	30 Extra deep Pilferproof	GF 305D
GF 306	03-2005	18 - 70 Roll-on	Metal Closures K 11533 and K 12764
GF 308	03-2005	38 - 70 Roll-on Flowed-in	Metal Closures K 15077 and K 103616

		compound	
GF 311	03-2005	28 x 15 Beverage finish – square bead (Non Pilferproof)	
GF 312	03-2005	38 - 46 Shallow Pilferproof	Metal Closures K 11733 and K 11741
GF 313	03-2005	28 – 31 ¹ / ₂ Deep Pilferproof	Metal Closures K 11733 and K 11741
GF 314	03-2005	28 - 31 ¹ / ₂ ROTL	Metal Closures K 29435, K 34077, K 32335, United Glass S 2780 and United Glass FR415
GF 315 to 315/3	09-2008	35 x 40 and 35 x 44 ROTL	Metal Closures K 32346
GF 315/4 to 315/6	03-2005	35 x 32 ROTL	
GF 316	03-2005	EST Coffee 43 – 90	United Glass UGO-092
GF 317	03-2005	Continuous semi-circular thread section finishes, shallow with concealed bead 18 - 28	GPI 410
GF 318	03-2005	Continuous semi-circular thread section finishes, deep with concealed bead 13 - 28	GPI 415
GF 320	03-2005	MCA 2	GME 320
GF 321	03-2005	Continuous semi-circular thread section finish, shallow 8 - 15	GPI 425
GF 323	03-2005	Shallow continuous thread finishes R3	BS 1918 part1
GF 324	03-2005	Tall continuous thread finishes R4	BS 1918 part1
GF 325	03-2005	Medium shallow continuous thread finishes R5	BS 1918 part1
GF 326	03-2005	Medium continuous thread finishes R6	BS 1918 part1
GF 330	03-2005	28 Shallow Beverage PP (MCA3)	Metal Closures XP 21599/S

Supplementary information - finishes

GF 900	03-2005	Alternative bead contour for rolled on closures	
GF 902	03-2005	Bead construction for GF 300, 301 and GF 302	
GF 903	03-2005	Depressed thread	
GF 904	03-2005	Parnaby gauge	
GF 905	03-2005	Entrance bores for 30 and 31.5 Pilferproof glass finishes and optic fitments	
GF 906	03-2005	Thread run out	
GF 907	03-2005	Position of alternative support bead for 28 mm Pilferproof finish	
GF 908	03-2005	Bore control for non-refillable inserts	
GF 909	03-2005	Typical neck ring / guide plate match	
GF 910	07-2019	ROPP “F” Neck Measurement	

CETIE finishes

Note (*)

“Experimental” in CETIE terms means that the Data Sheets are good to use, but CETIE ask for operational feedback from Glassmakers and Packer/Fillers)

GME 13-01	06-2007	26 H 180 crown finish	
GME 13-02	06-2007	26 H 126 crown finish	
GME 14-01	07-2003	26 H 180 Twist Crown Finish	
GME 14-02	07-2003	26 H 126 Twist Crown Finish	
GME 20-04	1995	Vacuum lug finish 53, 58 regular	
GME 20-06	2013	Vacuum lug finish 63, 66, 70 regular (Experimental *)	

GME 20-07	2013	Vacuum lug finish 63, 66, 70 deep (Experimental *)
GME 20-08	1995	Vacuum lug finish 77 regular
GME 25-01	12-2013	Press-On (PT) finish 51, 63, 70
GME 28-01	12-2013	Press-On (PT) finish 51mm Tamper-Evident

Additional Data Sheets

GC 600	03-2005	Engraving Detail
GC 710	03-2005	Radial Bar Stippling
GC 720	03-2005	Dot Stipple
GC 730	03-2005	Crescent Stipple
GC 810	03-2005	Recessed Spotting Bar
GC 811	03-2005	Recessed Spotting Bar