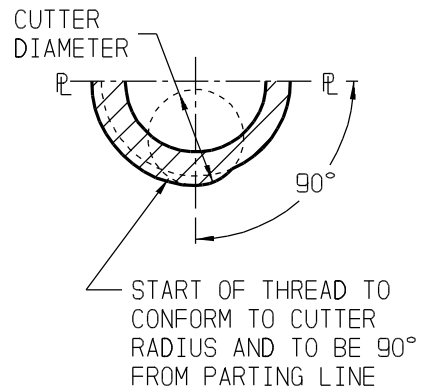
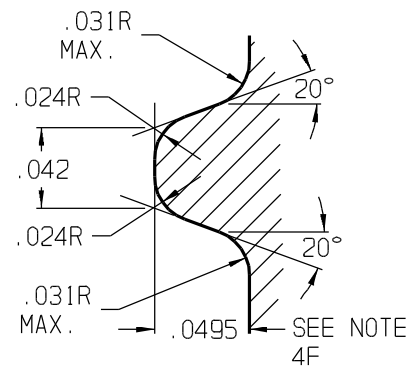
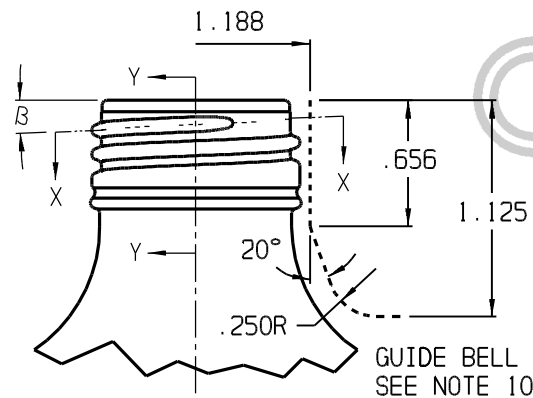


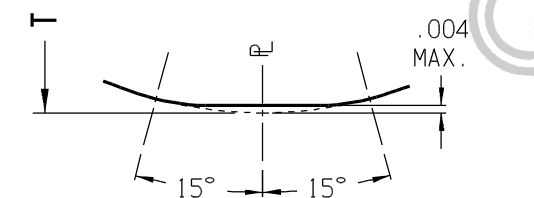
SECTION Y-Y



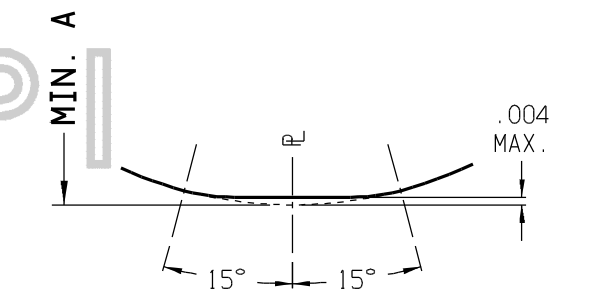
SECTION X-X



THREAD CROSS SECTION



OPTIONAL: DEPRESSED THREAD



BEAD RELIEF (AT "MIN. A" DIA.)

SIZE	T	E	A	S	H	D	F	I MIN.	B	CUT DIA.	T.P.I.
28	1.083 $\begin{smallmatrix} +.013 \\ -.012 \end{smallmatrix}$	0.984 $\begin{smallmatrix} +.013 \\ -.012 \end{smallmatrix}$	1.100 $\begin{smallmatrix} +.013 \\ -.012 \end{smallmatrix}$	0.085 $\begin{smallmatrix} +.008 \\ -.007 \end{smallmatrix}$	0.399 $\begin{smallmatrix} +.008 \\ -.007 \end{smallmatrix}$	0.563 $\begin{smallmatrix} +.008 \\ -.007 \end{smallmatrix}$	0.978 $\pm .010$	0.635	2° 12'	0.500	8

- THIS IS A TOP AND SIDE SEAL FINISH. SEALING SURFACE IS MARKED WITH A HEAVY LINE AND SHOULD BE SMOOTH AND FREE OF ANY IRREGULARITIES THAT WILL CONTRIBUTE TO A LOSS OF PRESSURE OR INTERFERE WITH THE ROTATION OF CLOSURE. THE SURFACE DIMENSIONED 'F' MAY HAVE A 0° TO 2° DOWNWARD AND OUTWARD TAPER AND SHOULD BE GAGED AT A POINT .039 DOWN FROM THE TOP OF THE FINISH. 'F' DIAMETER SHOULD NOT EXCEED 'E' DIAMETER. PROPER APPLICATION AND FUNCTION OF CLOSURE REQUIRES THAT VARIATIONS IN THE 'F' DIAMETER SHOULD FOLLOW THOSE OF THE 'E' SUBJECT TO NORMAL MANUFACTURING CONDITIONS. A .010 GUIDE RING SHIFT IS PERMISSIBLE WITH A .005 MAXIMUM OVERHANG ('F' TO 'E') ALLOWED ON ONE SIDE ONLY.
- 'H' DIMENSION REPRESENTS DISTANCE FROM TOP OF SEALING SURFACE DOWN TO HORIZONTAL LINE TANGENT TO THE BOTTOM SWING OF THE .031 MAXIMUM RADIUS AND IS REQUIRED FOR MOLD MAKERS GUIDANCE.
- PROPER CLOSURE APPLICATION REQUIRES:
 - A MINIMUM OF 510° OF FULL WIDTH AND DEPTH BETWEEN THREADS EXCEPT WHERE DEPRESSED AT MOLD SEAMS AS NOTED IN 4E. BEYOND THIS, THREAD IS TO RUN INTO BEAD.
 - WALL OR 'E' DIAMETER BEYOND MINIMUM FULL TURNS OF THREAD SHOULD BE INCREASED GRADUALLY TO FULL 'T' DIAMETER IN 90° TURN.
- REQUIREMENTS FOR GOOD CLOSURE APPLICATION AND REMOVAL:
 - .020 MAXIMUM OUT OF PARALLEL SEALING SURFACE WITH BOTTOM OF THE BOTTLE. THIS IS FOR COCKED NECKS AND SLANTED FINISHES.
 - .094 MAXIMUM OUT OF PERPENDICULAR WITH BASE OF BOTTLE.
 - IT IS PERMISSIBLE TO RELIEVE THREAD AND THE 'A' DIAMETER OF THE BEAD AT THE MOLD SEAM NOT TO EXCEED .008 ON DIAMETER IN AN ARC OF 30 DEGREES.
 - THE MINIMUM TOLERANCES OF THE THREAD AND THE 'A' DIAMETER OF THE BEAD DO NOT APPLY TO THE DEPRESSED OFFSET AREA.
 - VERTICAL MISMATCH OF THREAD NOT TO EXCEED .004 AT MOLD SEAM.
 - A .046 MINIMUM THREAD PROJECTION SHALL BE MAINTAINED OVER THE FULL LENGTH OF THE THREAD, EXCLUDING RANDOM DEPRESSIONS SUBJECT TO NORMAL MANUFACTURING VARIATIONS. DEGREE OF ROLLED THREAD IN CLOSURE APPLICATION DETERMINES ACTUAL SEAL SECURITY, AND BOTTLERS USE OF A TESTER FOR PROPER APPLICATION IS RECOMMENDED IN ASSURING THE TOTAL PACKAGE CONCEPT.
- MINIMUM 'I' DIMENSION IS FOR FILLING TUBE CLEARANCE AND EXTENDS THROUGH ENTIRE LENGTH OF THE FINISH AND THE BOTTLE NECK.
 - THE INNER LIP CONTOUR INDICATED BY THE DASH LINE IS SUBJECT TO NORMAL MANUFACTURING VARIATIONS AND PRACTICES.
- TANGENT B = $\frac{\text{PITCH}}{\pi (\text{MEAN BETWEEN MEAN 'T' AND MEAN 'E'})}$
- PROPER APPLICATION AND FUNCTION OF CLOSURE REQUIRES THAT VARIATIONS IN THE 'E' DIAMETER SHOULD FOLLOW THOSE OF THE 'T' SUBJECT TO NORMAL MANUFACTURING CONDITIONS INCLUDING THE THREAD PROFILE ILLUSTRATED.
- GROOVE TO BE VISIBLE BUT CONSTRUCTION IS OPTIONAL.
- IT IS THE RESPONSIBILITY OF THE GLASS CONTAINER PURCHASER TO CONSULT WITH ITS CLOSURE AND CONTAINER SUPPLIERS TO DETERMINE THE APPROPRIATE PRESSURE LIMITS FOR THE COMBINATION OF THE CONTAINER, ITS FINISH, AND THE CLOSURE CHOSEN, WHEN THE CONTAINER WILL BE SUBJECTED TO PRESSURE OR USED FOR CONTENTS UNDER PRESSURE.
- CERTAIN CAPPING MACHINE EQUIPMENT REQUIRES GUIDE BELL CLEARANCE AS SHOWN.

THIS OFFICIAL GLASS PACKAGING INSTITUTE PRINT CONSTITUTES ONE IN A SERIES OF VOLUNTARY STANDARDS INTENDED TO PROVIDE A BASIS FOR ACHIEVING COMPATIBILITY AND INTERCHANGEABILITY BETWEEN MANUFACTURERS AND USERS OF GLASS CONTAINERS AND CLOSURES THEREFOR. THE USER SHOULD BE AWARE THAT OTHER CONTAINER AND CLOSURE DESIGNS MAY DIFFER FROM THIS VOLUNTARY STANDARD, AND IT IS THE USER'S RESPONSIBILITY TO MAKE THE FINAL DETERMINATION AS TO DESIGN AND COMPATIBILITY. GPI ASSUMES NO RESPONSIBILITY FOR EITHER THE USE OR INTERPRETATION OF THE STANDARD, FOR IT BEING CURRENT, OR FOR THE DETERMINATION WHETHER ANY PARTICULAR MANUFACTURER'S PRODUCT CONFORMS TO THE STANDARD. THIS DRAWING CONTAINS INFORMATION TAKEN FROM ONE OR MORE PRINTS OF THE GLASS PACKAGING INSTITUTE (GPI). GPI OWNS ALL RIGHT, TITLE AND INTEREST IN THE COPYRIGHTS TO THIS DRAWING AND TO THESE PRINTS. GPI REQUIRES THAT YOU NOT REPRODUCE THIS DRAWING FOR OR DISTRIBUTE THIS DRAWING TO ANY THIRD PARTY WITHOUT GPI'S WRITTEN CONSENT. ANY INQUIRIES OR SUGGESTIONS CONCERNING THIS STANDARD CAN BE ADDRESSED TO THE GLASS PACKAGING INSTITUTE, WASHINGTON D.C. AT WWW.GPI.ORG.

PRINTED AND DISTRIBUTED AS A VOLUNTARY STANDARD BY GLASS PACKAGING INSTITUTE COMMITTEE ON DESIGN AND SPECIFICATIONS		APPROVED FOR PUBLICATION 01-15-99	SUPERSEDES DWG. NO. 16553
Edward A. Grant CHAIRMAN		GPI DWG. NO. 16554	
GLASS FINISH NUMBER 1655		8 T.P.I. TOP AND SIDE SEAL FINISH FOR NON-REFILLABLE SERVICE FOR USE WITH METAL AND PLASTIC CLOSURES	