Closure Size & Thread Style Guide

WHEATON®

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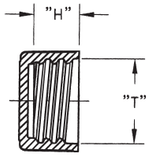

The screw closure industry has not standardized dimensions to the extent that the container industry has, thus it is advantageous to buy both container and screw closure from the same supplier when possible. Similar to the container industry, when a closure finish is designated as 33-400, it means that the nominal diameter measured across the inside of the closure at the opening is approximately 33mm. (See 'T' dimensions on illustration.) The 400 ('H' dimension) designates a specific style of thread. The thread finish of the closure and container must be the same. A container with a 33-400 thread finish should be used with a closure that has a 33-400 thread finish.

Determining Closure Size ('T' Dimension)

To determine closure size, measure the closure opening from one side of the inner wall to the opposite side of the inner wall. Compare this number to the numbers found in the 'T' dimension columns in **Table 1**. Once this number is found in the table, follow the row to the far left to find the "Nominal Diameter" of the closure (33 in the above example).

Determining Thread Style ('H' Dimension)

To determine the specific thread style, measure the depth of the screw closure from the liner surface to the outside edge of the closure. Compare this number to the numbers found in the 'H' dimension columns in Table 1 that appear in the same row as the Nominal Diameter of the closure. Once this number is found in the table, follow the column to the top to find the specific style number (400 in the above example). The dimensions in the table are approximate and will probably be slightly different from what is measured (especially the 'H' dimension due to variations in liner thickness), but should be close enough to allow for the proper determination of the closure size.

Torque for Screw Closures

The integrity of the closure-to-container seal is dependent upon a number of variables, such as the materials of the closure, liner, and container, the sealing surface of the container, and the application torque applied to the closure. The most important of these is the application torque. If the closure is applied too loosely, the contents could leak, especially during shipping. If the closure is applied too tightly, it may be too difficult to remove, or the container could break during application.

Table 2 offers some suggested torques that should provide an adequate seal for most applications. It is recommended that proper tests be performed to determine the optimum torque for the application. The most practical way to check the tightness is to measure the removal torque after the closure has been on the container for about 5 minutes. The removal torque should closely approximate the application torque. The minimum removal torque noted in the table should be maintained after a 24 hour period.

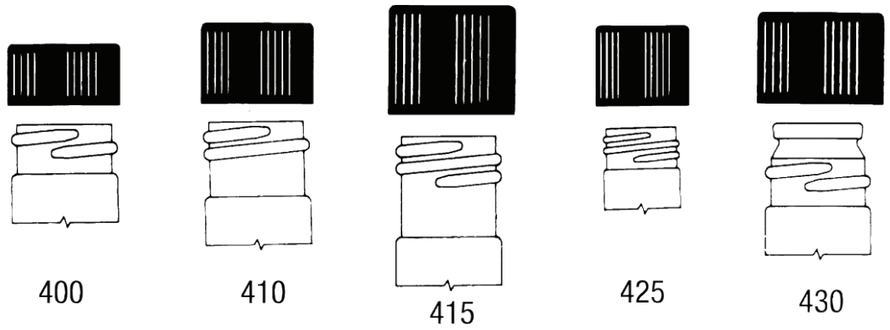

Table 1. Closure Thread Finish Dimensions (Dimensions are in millimeters)

Nominal Dia (mm)	400 'T'	400 'H'	410 'T'	410 'H'	415 'T'	415 'H'	425 'T'	425 'H'	430 'T'	430 'H'
8	—	—	—	—	—	—	9.14	6.22	—	—
10	—	—	—	—	—	—	10.54	6.48	—	—
13	—	—	—	—	13.21	10.92	13.21	7.11	—	—
15	—	—	—	—	14.86	13.59	14.86	7.11	—	—
18	18.03	9.14	18.03	12.70	18.03	15.11	—	—	18.03	15.37
20	20.07	9.14	20.07	13.46	20.07	18.29	—	—	20.07	15.37
22	22.10	9.14	22.10	14.22	22.10	20.70	—	—	22.10	15.37
24	24.00	9.91	24.00	15.75	24.00	23.75	—	—	24.00	16.51
28	27.81	9.91	27.81	17.40	27.81	26.92	—	—	27.81	18.42
30	28.70	9.91	—	—	—	—	—	—	28.70	19.30
33	32.26	9.91	—	—	—	—	—	—	32.26	19.69
35	34.80	9.91	—	—	—	—	—	—	—	—
38	37.59	9.91	—	—	—	—	—	—	37.59	23.88
40	40.39	9.91	—	—	—	—	—	—	—	—
43	42.16	9.91	—	—	—	—	—	—	—	—
45	44.45	9.91	—	—	—	—	—	—	—	—
48	47.63	9.91	—	—	—	—	—	—	—	—
51	50.16	9.91	—	—	—	—	—	—	—	—
53	52.71	9.91	—	—	—	—	—	—	—	—
58	56.64	9.91	—	—	—	—	—	—	—	—
60	59.69	9.91	—	—	—	—	—	—	—	—
63	62.74	9.91	—	—	—	—	—	—	—	—
66	65.53	9.91	—	—	—	—	—	—	—	—
70	69.72	9.91	—	—	—	—	—	—	—	—
75	74.17	9.91	—	—	—	—	—	—	—	—
77	77.22	11.94	—	—	—	—	—	—	—	—
83	83.19	11.94	—	—	—	—	—	—	—	—
89	89.41	13.08	—	—	—	—	—	—	—	—
100	100.20	14.73	—	—	—	—	—	—	—	—
110	110.23	14.73	—	—	—	—	—	—	—	—
120	120.27	17.14	—	—	—	—	—	—	—	—

Table 2. Suggested Torques for Closures (in-lb)

	Phenolic / Urea Closure on Glass Container		Phenolic / Urea Closure on Plastic Container		PP / PE Closure on Glass Container		PP / PE Closure on Plastic Container	
Closure mm	Application Torque	Min Removal Torque	Application Torque	Min Removal Torque	Application Torque	Min Removal Torque	Application Torque	Min Removal Torque
15	8	4	6	3	12	7	8	4
18	9	5	7	4	13	8	9	5
20	10	5	8	4	15	9	10	5
22	11	6	9	5	17	10	11	5
24	12	6	10	5	18	11	12	6
28	14	7	12	6	21	12	14	7
33	18	9	15	7	24	14	17	8
38	20	10	17	7	29	17	19	9
43	22	11	18	9	33	20	22	11
48	24	12	20	10	36	22	24	12
58	28	14	24	12	44	26	29	14
70	35	18	28	14	52	32	35	17
89	45	22	36	18	65	40	45	22
100	50	25	40	20	75	45	50	25

Although the information in this chart was acquired from reputable sources, it should only be used as a guide in determining the proper application torque. WHEATON accepts no responsibility for the accuracy of this data or for any consequences resulting from its use.