



**UNITED
TECHNOLOGIES
CARRIER**

Commercial Division
Carrier Corporation

BULLETIN: CA-SB-17-78-30

DATE: 6/12/78

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SERVICE BULLETIN

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SUBJECT:

17 SERIES WATER BOX COVER WEIGHTS

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PURPOSE

To provide for rigging purposes the weights of 17 Series water box covers.

MACHINES AFFECTED

All 17 Series machines except 17CA's which use 19 Series heat exchangers.

INFORMATION

Rigging weights for non-standard water box covers can be calculated from Figure 1. Formulas are given for circular, elliptical and rectangular covers. If a certain cover does not conform to these shapes, the weight may be slightly over-estimated by assuming a rectangular shape.

Always use rigging weights with a safety factor added.



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Table 3. 17DA Cooler Waterbox Cover Weights

Cooler Size	psig (kPa)	Marine Type Water Box				Nozzle-in-Head Water Box			
		Nozzle End		Plain End		Nozzle End		Plain End	
		Design Pressure				Design Pressure			
		150 (1034)	300 (2068)	150 (1034)	300 (2068)	150 (1034)	300 (2068)	150 (1034)	300 (2068)
61, 63	lb (kg)	1650 (748)	2350 (1066)	1130 (513)	1580 (717)	1320 (599)	1810 (821)	1130 (513)	1580 (717)
65, 67, 651, 671	lb (kg)	1975 (896)	2705 (1227)	1390 (631)	1910 (866)	1630 (739)	2220 (1007)	1390 (630)	1910 (866)
71, 73	lb (kg)	2340 (1061)	3160 (1433)	1570 (712)	2170 (984)	1870 (848)	2560 (1161)	1570 (712)	2170 (984)
75	lb (kg)	2795 (1268)	3850 (1746)	1780 (807)	2410 (1093)	2020 (916)	2840 (1288)	1780 (807)	2410 (1093)
81	lb (kg)	3250 (1474)	4450 (2019)	1840 (835)	2640 (1197)	2180 (989)	3180 (1442)	1840 (835)	2640 (1197)
83	lb (kg)	4485 (2034)	6180 (2803)	2880 (1306)	4000 (1814)	3320 (1506)	4550 (2064)	2880 (1306)	4000 (1814)
85	lb (kg)	4950 (2245)	6950 (3152)	3210 (1456)	4400 (1996)	3640 (1651)	5000 (2268)	3210 (1456)	4400 (1996)
87	lb (kg)	5600 (2540)	7140 (3239)	3430 (1556)	4890 (2218)	3910 (1774)	5520 (2504)	3430 (1556)	4890 (2218)

Table 4. 17DA Condenser Waterbox Cover Weights

Condenser Size	psig (kPa)	Marine Type Water Box				Nozzle-in-Head Water Box			
		Nozzle End		Plain End		Nozzle End		Plain End	
		Design Pressure				Design Pressure			
		150 (1034)	300 (2068)	150 (1034)	300 (2068)	150 (1034)	300 (2068)	150 (1034)	300 (2068)
61, 63	lb (kg)	1650 (748)	2350 (1066)	1130 (513)	1580 (717)	1510 (685)	2090 (948)	1130 (513)	1580 (717)
65, 67, 651, 671	lb (kg)	2340 (1061)	3160 (1433)	1570 (713)	2170 (984)	1960 (889)	2750 (1247)	1570 (713)	2170 (984)
71, 73	lb (kg)	2795 (1268)	3850 (1746)	1780 (807)	2410 (1093)	2180 (989)	2980 (1352)	1780 (807)	2410 (1093)
75	lb (kg)	3250 (1474)	4450 (2019)	1840 (835)	2640 (1197)	2320 (1052)	3330 (1511)	1840 (835)	2640 (1197)
81	lb (kg)	3870 (1755)	5500 (2495)	2530 (1148)	3440 (1560)	3010 (1365)	4120 (1869)	2530 (1148)	3440 (1560)
83	lb (kg)	4485 (2034)	6180 (2803)	2880 (1306)	4000 (1814)	3540 (1606)	4840 (2195)	2880 (1306)	4000 (1814)
85	lb (kg)	4950 (2245)	6950 (3153)	3210 (1456)	4400 (1996)	3800 (1724)	5360 (2431)	3210 (1456)	4400 (1996)
87	lb (kg)	5600 (2540)	8060 (3656)	3430 (1556)	4890 (2218)	4050 (1837)	5850 (2654)	3430 (1556)	4890 (2218)



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Table 5. 17CB Water Box Cover Weights

Unit Size		Each Water Box Cover	
		Cooler	Condenser
1300	1b (kg)	1033 (469)	964 (437)
1400	1b	1343	1336
1500	(kg)	(609)	(606)
1600			
1800	1b	1446	1570
2000	(kg)	(656)	(712)

Table 6. Standard 17D, H, & Q Cooler Water Box Cover Weights

Cooler Size	Cover Weight		Cooler Size	Cover Weight	
	(lb)	(kg)		(lb)	(kg)
17D3.5, 4	150	68	17H11, 12.5, 13.5	1700	771
4.5	Special		15	1800	817
5	170	77	17.5, 20	3100	1406
5.5, 6	290	132	22.5, 25, 27.5	4630	2100
6.5	Special		30-35	5300	2404
7	360	163	40-45	3100	1406
8	390	177	50-55	3520	1597
8.6	Special		17Q3.5, 4	150	68
9	490	222	4.5, 5	170	77
9.5	Special		5.5, 6	290	132
10, 11	890	404	6.5, 7	360	163
12, 13	1800	817	8	390	177
14	Special		8.6, 9	490	222
			9.5, 10	650	295
			10.3, 11, 12	925	420
			13	1860	844

Table 7. Standard 17R & L Water Box Cover Weights

Condenser Size	Cover Weight		Condenser Size	Cover Weight	
	(lb)	(kg)		(lb)	(kg)
17R3, 3.5, 4	225	102	17L11	1300	590
4.5, 5	235	107	17L12.5, 13.5, 15	1700	771
5.5, 6	275	125	17L17.5, 20	3100	1406
6.5, 7	330	150	17L22.5, 25, 27.5	4630	2100
8	460	209	17L30-35	5300	2404
9	555	252	17L40-45	3100	1406
10	720	327	17L50-55	3520	1597
10.5, 11, 12, 13 Short	900	408			
13 Long	1440	653			

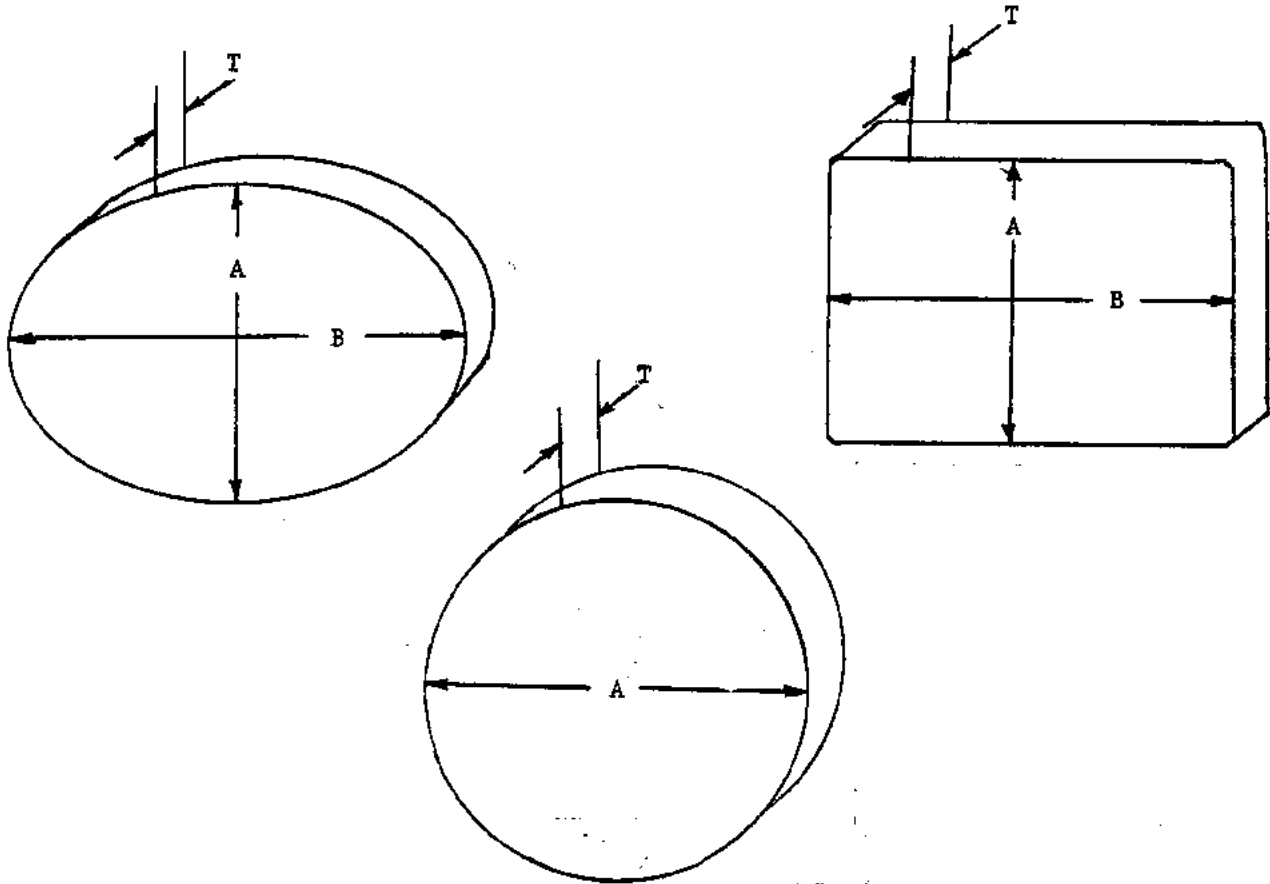


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Weight = Volume × Density

Density: Cast Iron = 0.256 lb/in.³ (7.09 g/cm³)

Steel = 0.283 lb/in.³ (7.83 g/cm³)

Brass = 0.320 lb/in.³ (8.86 g/cm³)

Volume:

Ellipse: $\frac{\pi}{4} (A \times B \times T) = 0.785(A \times B \times T)$

Rectangle: $(A \times B \times T) =$

Circle: $\frac{\pi}{4} (A^2 \times T) = 0.785(A^2 \times T)$

EXAMPLE: A steel elliptical cover 60" wide, 30" high, 2" thick:

Volume = 0.785(30 × 60 × 2) = 2826 in.³

Weight = 2826 × 0.283 = 789 lb (358 kg)

Fig. 1. Water Box Cover Weight Calculations