

# CAP TUBE COMPUTER (MODEL CTC3)

## INTRODUCTION

SUPCO has been the pioneer of cap tube replacement charts and articles on cap tube systems since 1954. The Cap Tube Computer was developed as an answer to the many questions and problems relating to the replacement of defective cap tubes.

## THE CTC3 HAS 3 PROGRAMS

**Program 1: Select Cap Tube by Inside Diameter.** The CTC3 can replace a cap tube by substituting another tube with a different I.D. (inside diameter) with the same flow rate as the original tube. Cap tube inside diameter sizes: from .026 to .086 (.66mm – 2.18mm). Lengths from 15" to 144" (38cm – 366cm).

**Program 2: Select Cap Tube by Horse Power:** The CTC3 recommends cap tube sizes for units ranging from 1/8 HP to 5 HP, from single feed to six feed for all applications and 4 refrigerants.

**Program 3: Temperature/Pressure:** The CTC3 has the charts for 12 refrigerants.

## INSTRUCTIONS

- (1) Install a 9-volt Alkaline battery, Fig. 1— or use optional power adapter. (See specs).
- (2) Fig.2 shows the operating switches.
- (3) The Display adjustment regulates the contrast in the display screen.
- (4) Pressing ENTER will put the display figures into the computer.
- (5) Pressing UP or DOWN will either change the display to another program, or raise/lower the numbered item in the display.

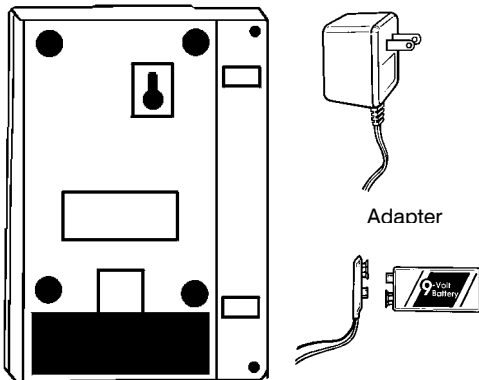


Figure 1

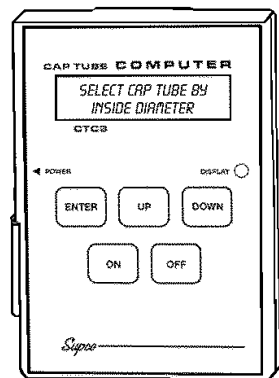


Figure 2

## SELECT CAP TUBE BY INSIDE DIAMETER

### **Problem:**

Suppose you have a defective cap tube that has a .049 I.D. and is 54" long, but the only replacement cap tube that you can find has a .052 I.D. **What should the length of the new cap tube be, that will have the same flow rate as the original tube?**

### **Solution:**

Press **ON** and hold until Display shows: **Select Cap Tube by Inside Diameter.**

Press **Enter** — Program is entered into the computer.

Display shows **Old Cap tube .026 I.D.** You want .049.

Press **UP** until display shows **.049** (If you go beyond .049, press down).

Press **Enter** — .049 is entered in the computer.

Display shows **Old tube length 16"**. You want 54".

Press **UP** until display shows 54".

Press **Enter** — Old I.D. and length are in the computer.

Display shows **New Inside Diameter .026**. You want .052.

Press **UP** until display shows .052.

Press **Enter**— Display shows Old Cap Tube .049 x 54". New Cap Tube .052 x 75".

### **Problem Solved!**

### **NOTE:**

When you want to use a cap tube that has a larger I.D. than the original, the new tube will be longer in order to have the same flow rate. If the new length is longer than 144", the CTC3 will flash the signal that you **Try Another I.D.** make your next choice a smaller I.D.

If you want to use a cap tube that has a smaller I.D than the original, the new length will be shorter than the original tube. If the new length is shorter than 15", the CTC3 will flash **Try Another I.D.**, make your next choice a larger I.D.

## SELECT CAP TUBE BY HORSE POWER

### **Problem:**

Suppose you need to find the I.D. and length of cap tubes for a 3 HP R22 central air system that has 2 cap tubes.

### **Solution:**

Press **ON** — Display shows **Select Cap Tube by Inside Diameter.**

Press **UP** — Display shows **Select Cap Tube by Horse Power.**

Press **Enter** — Program is now in computer.

Display shows **Select Feed—Single.**

Press **UP** — Display shows **Double Feed (2).**

Press **Enter** — Display shows flashing 1/2 HP. You want 2 HP.

**NOTE:** The display always shows the cap tube size for the specifications that are on the screen. As you change the HP, refrigerant and application, the cap tube sizes will also change. When you have made your final selection, the correct cap tube size is automatically shown on the display.

- Press **UP** — Until display flashes **2 HP**.
  - Press **Enter** — Display flashes **R12**. You want R22.
  - Press **UP** — Until **R22** appears on the display.
  - Press **Enter** — Display flashes **Low** (temperature). You want High temperature.
  - Press **UP** — Until **High** flashes on the display
- The solution is displayed — **65" x .064 for each cap tube.**

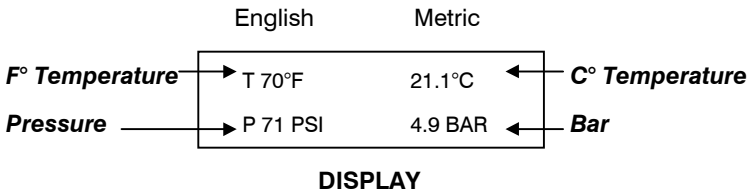
**Problem solved!**

**Problem:**

You want the Pressure/Temperature Chart for Refrigerant 134a.

**Solution:**

- Press **ON** — Display shows: **Select Cap Tube by Inside Diameter.**
- Press **UP** — Display shows: **Select Cap Tube by Horse Power.**
- Press **UP** — Display shows: **Temperature/Pressure Charts.**
- Press **Enter** — Program is now in computer. Display Shows: **R12.**
- Press **UP** — Until **R134a** appears in the display.
- Press **Enter** — The display will show both F°/PSI and C°/Bar. When pressure is zero or lower, display will read in inches and mm of vacuum.



**Note:**

The following charts are listed in consecutive order:

- R12s**
- R22**
- R134a**
- R401a Liquid**
- R401a Vapor**
- R401b Liquid**
- R401b Vapor**
- R402a**
- R402b**
- R404a**
- R502**
- R507**

## SPECIFICATIONS

Compute I. D. sizes from ... Compute Lengths from ...	.026 - .086 (.66mm - 2.18mm) 15" to 144" long. (38cm - 366cm)
Choose Cap Tube by	Horsepower - 1/8 H.P. - 5 H.P. Single Feed - Six Feed Refrigerant - R12 - R22 - R134 - R502
Temperature Pressure Charts for 12 Refrigerants -	R12, R401a Liquid, R401b Liquid, R402a, R404a, R22, R401a Vapor, R402b R502, R507, R134a,
Primary Power Source -	9V Alkaline battery for 48 hours of operation (Not included).
Alternate Power Source (Not included)	115 Volt 50/60 Hz Power adapter 230 Volt 50/60 Hz Power adapter 230 Volt 50/60 Hz Power adapter
Automatic Shut off	Approximately 5 minutes
Display	Alphanumeric Backlit LCD, 16 characters x 2 lines
Dimensions	5 1/8 x 3 1/2 x 1 1/2 — (130mm x 89mm x 38mm)
Weight	13 ounces — (369 grams)
Carrying Case)	Vinyl — (Included
Temperature/Pressure Charts read in	Fahrenheit and PSI — Celsius and Bar

## AVAILABLE CAPILLARY TUBES FROM SUPCO

Part No.	I. D. Inches	O. D. Inches	I.D. (mm)	O.D. (mm)
BC1	.031	x .081	(0.787)	x (2.06)
BC2	.040	x .093	(1.016)	x (2.36)
BC3	.052	x .093	(1.321)	x (2.36)
BC4	.064	x .125	(1.630)	x (3.18)
BC5	.028	x .071	(0.711)	x (1.80)

CAP TUBE LENGTH					
Inches	CM	Inches	CM	Inches	CM
15	38	60	152	105	267
16	41	61	155	106	269
17	43	62	157	107	272
18	46	63	160	108	274
19	48	64	163	109	277
20	51	65	165	110	279
21	53	66	168	111	282
22	56	67	170	112	284
23	58	68	173	113	287
24	61	69	175	114	290
25	64	70	178	115	292
26	66	71	180	116	295
27	69	72	183	117	297
28	71	73	185	118	300
29	74	74	188	119	302
30	76	75	191	120	305
31	79	76	193	121	307
32	81	77	196	122	310
33	84	78	198	123	312
34	86	79	201	124	315
35	89	80	203	125	318
36	91	81	206	126	320
37	94	82	208	127	323
38	97	83	211	128	325
39	99	84	213	129	328
40	102	85	216	130	330
41	104	86	218	131	333
42	107	87	221	132	335
43	109	88	224	133	338
44	112	89	226	134	340
45	114	90	229	135	343
46	117	91	231	136	345
47	119	92	234	137	348
48	122	93	236	138	351
49	124	94	239	139	353
50	127	95	241	140	356
51	130	96	244	141	358
52	132	97	246	142	361
53	135	98	249	143	363
54	137	99	251	144	366
55	140	100	254		
56	142	101	257		
57	145	102	259		
58	147	103	262		
59	150	104	264		

<b>CAP TUBE I.D.</b>			
<b>Inches</b>	<b>MM</b>	<b>Inches</b>	<b>MM</b>
0.026	0.66	0.056	1.42
0.027	0.69	0.057	1.45
0.028	0.71	0.058	1.47
0.029	0.74	0.059	1.50
0.030	0.76	0.060	1.52
0.031	0.79	0.061	1.55
0.032	0.81	0.062	1.57
0.033	0.84	0.063	1.60
0.034	0.86	0.064	1.63
0.035	0.89	0.065	1.65
0.036	0.91	0.066	1.68
0.037	0.94	0.067	1.70
0.038	0.97	0.068	1.73
0.039	0.99	0.069	1.75
0.040	1.02	0.070	1.78
0.041	1.04	0.071	1.80
0.042	1.07	0.072	1.83
0.043	1.09	0.073	1.85
0.044	1.12	0.074	1.88
0.045	1.14	0.075	1.91
0.046	1.17	0.076	1.93
0.047	1.19	0.077	1.96
0.048	1.22	0.078	1.98
0.049	1.24	0.079	2.01
0.050	1.27	0.080	2.03
0.051	1.30	0.081	2.06
0.052	1.32	0.082	2.08
0.053	1.35	0.083	2.11
0.054	1.37	0.084	2.13
0.055	1.40	0.085	2.16
		0.086	2.18