

TABLE 2. CIRCULAR EQUIVALENTS OF RECTANGULAR DUCTS FOR EQUAL FRICTION AND CAPACITY (CONTINUED)

Dimensions in Inches																
SIDE RECTANGULAR DUCT	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
6	6.6															
7	7.1	7.7														
8	7.5	8.2	8.8													
9	8.0	8.6	9.3	9.9												
10	8.4	9.1	9.8	10.4	10.9											
11	8.8	9.5	10.2	10.8	11.4	12.0										
12	9.1	9.9	10.7	11.3	11.9	12.5	13.1									
13	9.5	10.3	11.1	11.8	12.4	13.0	13.6	14.2								
14	9.8	10.7	11.5	12.2	12.9	13.5	14.2	14.7	15.3							
15	10.1	11.0	11.8	12.6	13.3	14.0	14.6	15.3	15.8	16.4						
16	10.4	11.4	12.2	13.0	13.7	14.4	15.1	15.7	16.3	16.9	17.5					
17	10.7	11.7	12.5	13.4	14.1	14.9	15.5	16.1	16.8	17.4	18.0	18.6				
18	11.0	11.9	12.9	13.7	14.5	15.3	16.0	16.6	17.3	17.9	18.5	19.1	19.7			
19	11.2	12.2	13.2	14.1	14.9	15.6	16.4	17.1	17.8	18.4	19.0	19.6	20.2	20.8		
20	11.5	12.5	13.5	14.4	15.2	15.9	16.8	17.5	18.2	18.8	19.5	20.1	20.7	21.3		
22	12.0	13.1	14.1	15.0	15.9	16.7	17.6	18.3	19.1	19.7	20.4	21.0	21.7	22.3		
24	12.4	13.6	14.6	15.6	16.6	17.5	18.3	19.1	19.8	20.6	21.3	21.9	22.6	23.2		
26	12.8	14.1	15.2	16.2	17.2	18.1	19.0	19.8	20.6	21.4	22.1	22.8	23.5	24.1		
28	13.2	14.5	15.6	16.7	17.7	18.7	19.6	20.5	21.3	22.1	22.9	23.6	24.4	25.0		
30	13.6	14.9	16.1	17.2	18.3	19.3	20.2	21.1	22.0	22.9	23.7	24.4	25.2	25.9		
32	14.0	15.3	16.5	17.7	18.8	19.8	20.8	21.8	22.7	23.6	24.4	25.2	26.0	26.7		
34	14.4	15.7	17.0	18.2	19.3	20.4	21.4	22.4	23.3	24.2	25.1	25.9	26.7	27.5		
36	14.7	16.1	17.4	18.6	19.8	20.9	21.9	23.0	23.9	24.8	25.8	26.6	27.4	28.3		
38	15.0	16.4	17.8	19.0	20.3	21.4	22.5	23.5	24.5	25.4	26.4	27.3	28.1	29.0		
40	15.3	16.8	18.2	19.4	20.7	21.9	23.0	24.0	25.1	26.0	27.0	27.9	28.8	29.7		
42	15.6	17.1	18.5	19.8	21.1	22.3	23.4	24.5	25.6	26.6	27.6	28.5	29.4	30.4		
44	15.9	17.5	18.9	20.2	21.5	22.7	23.9	25.0	26.1	27.2	28.2	29.1	30.0	31.0		
46	16.2	17.8	19.2	20.6	21.9	23.2	24.3	25.5	26.7	27.7	28.7	29.7	30.6	31.6		
48	16.5	18.1	19.6	20.9	22.3	23.6	24.8	26.0	27.2	28.2	29.2	30.2	31.2	32.2		
50	16.8	18.4	19.9	21.3	22.7	24.0	25.2	26.4	27.6	28.7	29.8	30.8	31.8	32.8		
52	17.0	18.7	20.2	21.6	23.1	24.4	25.6	26.8	28.1	29.2	30.3	31.4	32.4	33.4		
54	17.3	19.0	20.5	22.0	23.4	24.8	26.1	27.3	28.5	29.7	30.8	31.9	32.9	33.9		
56	17.6	19.3	20.9	22.4	23.8	25.2	26.5	27.7	28.9	30.1	31.2	32.4	33.4	34.5		
58	17.8	19.5	21.1	22.7	24.2	25.5	26.9	28.2	29.3	30.5	31.7	32.9	33.9	35.0		
60	18.1	19.8	21.4	23.0	24.5	25.8	27.3	28.7	29.8	31.0	32.2	33.4	34.5	35.5		
62	18.3	20.1	21.7	23.3	24.8	26.2	27.6	29.0	30.2	31.4	32.6	33.8	35.0	36.0		
64	18.6	20.3	22.0	23.6	25.2	26.5	27.9	29.3	30.6	31.8	33.1	34.2	35.5	36.5		
66	18.8	20.6	22.3	23.9	25.5	26.9	28.3	29.7	31.0	32.2	33.5	34.7	35.9	37.0		
68	19.0	20.8	22.5	24.2	25.8	27.3	28.7	30.1	31.4	32.6	33.9	35.1	36.3	37.5		
70	19.2	21.1	22.8	24.5	26.1	27.6	29.1	30.4	31.8	33.1	34.3	35.6	36.8	37.9		

DYNAMIC (SHOCK) LOSSES

Any sudden change in the direction or magnitude of the velocity of the air flow causes a greater loss in pressure than would occur in steady flow through a straight duct of uniform cross-section and the same length. Although all shock losses may be considered as caused by changes in the

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SIDE RECTANGULAR DUCT	Dimensions in Inches																
	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52
30	21.9	24.1	26.3	28.5	30.7	32.9	35.1	37.3	39.5	41.7	43.9	46.1	48.3	50.5	52.7	54.9	57.1
32	22.9	25.1	27.3	29.5	31.7	33.9	36.1	38.3	40.5	42.7	44.9	47.1	49.3	51.5	53.7	55.9	58.1
34	23.9	26.1	28.3	30.5	32.7	34.9	37.1	39.3	41.5	43.7	45.9	48.1	50.3	52.5	54.7	56.9	59.1
36	24.9	27.1	29.3	31.5	33.7	35.9	38.1	40.3	42.5	44.7	46.9	49.1	51.3	53.5	55.7	57.9	60.1
38	25.9	28.1	30.3	32.5	34.7	36.9	39.1	41.3	43.5	45.7	47.9	50.1	52.3	54.5	56.7	58.9	61.1
40	26.9	29.1	31.3	33.5	35.7	37.9	40.1	42.3	44.5	46.7	48.9	51.1	53.3	55.5	57.7	59.9	62.1
42	27.9	30.1	32.3	34.5	36.7	38.9	41.1	43.3	45.5	47.7	49.9	52.1	54.3	56.5	58.7	60.9	63.1
44	28.9	31.1	33.3	35.5	37.7	39.9	42.1	44.3	46.5	48.7	50.9	53.1	55.3	57.5	59.7	61.9	64.1
46	29.9	32.1	34.3	36.5	38.7	40.9	43.1	45.3	47.5	49.7	51.9	54.1	56.3	58.5	60.7	62.9	65.1
48	30.9	33.1	35.3	37.5	39.7	41.9	44.1	46.3	48.5	50.7	52.9	55.1	57.3	59.5	61.7	63.9	66.1
50	31.9	34.1	36.3	38.5	40.7	42.9	45.1	47.3	49.5	51.7	53.9	56.1	58.3	60.5	62.7	64.9	67.1
52	32.9	35.1	37.3	39.5	41.7	43.9	46.1	48.3	50.5	52.7	54.9	57.1	59.3	61.5	63.7	65.9	68.1
54	33.9	36.1	38.3	40.5	42.7	44.9	47.1	49.3	51.5	53.7	55.9	58.1	60.3	62.5	64.7	66.9	69.1
56	34.9	37.1	39.3	41.5	43.7	45.9	48.1	50.3	52.5	54.7	56.9	59.1	61.3	63.5	65.7	67.9	70.1
58	35.9	38.1	40.3	42.5	44.7	46.9	49.1	51.3	53.5	55.7	57.9	60.1	62.3	64.5	66.7	68.9	71.1
60	36.9	39.1	41.3	43.5	45.7	47.9	50.1	52.3	54.5	56.7	58.9	61.1	63.3	65.5	67.7	69.9	72.1
62	37.9	40.1	42.3	44.5	46.7	48.9	51.1	53.3	55.5	57.7	59.9	62.1	64.3	66.5	68.7	70.9	73.1
64	38.9	41.1	43.3	45.5	47.7	49.9	52.1	54.3	56.5	58.7	60.9	63.1	65.3	67.5	69.7	71.9	74.1
66	39.9	42.1	44.3	46.5	48.7	50.9	53.1	55.3	57.5	59.7	61.9	64.1	66.3	68.5	70.7	72.9	75.1
68	40.9	43.1	45.3	47.5	49.7	51.9	54.1	56.3	58.5	60.7	62.9	65.1	67.3	69.5	71.7	73.9	76.1
70	41.9	44.1	46.3	48.5	50.7	52.9	55.1	57.3	59.5	61.7	63.9	66.1	68.3	70.5	72.7	74.9	77.1
72	42.9	45.1	47.3	49.5	51.7	53.9	56.1	58.3	60.5	62.7	64.9	67.1	69.3	71.5	73.7	75.9	78.1
74	43.9	46.1	48.3	50.5	52.7	54.9	57.1	59.3	61.5	63.7	65.9	68.1	70.3	72.5	74.7	76.9	79.1
76	44.9	47.1	49.3	51.5	53.7	55.9	58.1	60.3	62.5	64.7	66.9	69.1	71.3	73.5	75.7	77.9	80.1
78	45.9	48.1	50.3	52.5	54.7	56.9	59.1	61.3	63.5	65.7	67.9	70.1	72.3	74.5	76.7	78.9	81.1
80	46.9	49.1	51.3	53.5	55.7	57.9	60.1	62.3	64.5	66.7	68.9	71.1	73.3	75.5	77.7	79.9	82.1
82	47.9	50.1	52.3	54.5	56.7	58.9	61.1	63.3	65.5	67.7	69.9	72.1	74.3	76.5	78.7	80.9	83.1
84	48.9	51.1	53.3	55.5	57.7	59.9	62.1	64.3	66.5	68.7	70.9	73.1	75.3	77.5	79.7	81.9	84.1
86	49.9	52.1	54.3	56.5	58.7	60.9	63.1	65.3	67.5	69.7	71.9	74.1	76.3	78.5	80.7	82.9	85.1
88	50.9	53.1	55.3	57.5	59.7	61.9	64.1	66.3	68.5	70.7	72.9	75.1	77.3	79.5	81.7	83.9	86.1
90	51.9	54.1	56.3	58.5	60.7	62.9	65.1	67.3	69.5	71.7	73.9	76.1	78.3	80.5	82.7	84.9	87.1
92	52.9	55.1	57.3	59.5	61.7	63.9	66.1	68.3	70.5	72.7	74.9	77.1	79.3	81.5	83.7	85.9	88.1
94	53.9	56.1	58.3	60.5	62.7	64.9	67.1	69.3	71.5	73.7	75.9	78.1	80.3	82.5	84.7	86.9	89.1
96	54.9	57.1	59.3	61.5	63.7	65.9	68.1	70.3	72.5	74.7	76.9	79.1	81.3	83.5	85.7	87.9	90.1