

Fundamentals of POWER PLANT ENGINEERING

by

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Dedicated to my wife

Carolyn Perkins Remp

and to my son

George E. Remp, Jr.

ERRATA AND REVISIONS
FUNDAMENTALS OF POWER PLANT ENGINEERING
by
GEORGE E. REMP

Page 9, first line after Table I: "load" should read "demand."

Page 10, second line in solution of Example 1: "lload" should read "demand."

Page 11, equation in 3rd line from bottom of page: "5.3" should read "5.9."

Page 37, last paragraph on page should read:

Make a block meter rate which will recover the fixed element in the first 8 kwh per customer per month; the customer element in the next 15 kwh per customer per month; and the energy and profit elements from the excess over 23 kwh per customer per month.

Page 39, load table in Example 4: "11.2" in hours from 6 - 7 and 7 - 8 AM should read "12.2."

Page 39, 15th line from bottom of page: Annual fuel cost "\$363" should read "\$3630."

Page 39, 10th line from bottom of page: Total annual energy element "\$10803" should read "\$14070."

Page 40, section E of Example 4 should read:

E. Block meter rate:

First block:

$$\text{rate} = \frac{\$18730}{12(8000)} = \$0.195/\text{kwh for first 8 kwh}$$

Second block:

$$\text{rate} = \frac{\$27855}{12(15000)} = \$0.155/\text{kwh for next 15 kwh}$$

(continued next page)

Third block:

$$\text{rate} = \frac{\$14070 + \$15750}{12[\frac{365(1653)}{12} - 23000]} = \$0.091/\text{kwh for excess over 23 kwh}$$

Page 41, section B of Example 5: Total annual energy element "\$10803" should read "\$14070."

Page 41, section E of Example 5 should read:

E. Block meter rate:

First block:

$$\text{rate} = \frac{\$19148}{12(8000)} = \$0.199/\text{kwh for first 8 kwh}$$

Second block:

$$\text{rate} = \frac{\$28235}{12(15000)} = \$0.157/\text{kwh for next 15 kwh}$$

Third block:

$$\text{rate} = \frac{\$14070 + \$15750}{12(27300)} = \$0.091/\text{kwh for excess over 23 kwh}$$

Page 43, 10th line from bottom of page: Machine shops "7 AM to 5 PM" should read "8 AM to 5 PM."

Page 44, last paragraph should read:

- (e) Set up a block meter rate which will recover the fixed element in the first 30, the customer element in the next 40 and the energy and profit elements in the excess over 70 kwh per customer per month.

Page 46, Figure IV-2: Designations of points $5_a'$ and 5_b should be reversed.

Page 98, solution of Example 9: Last term in denominator of expression for U, " $\frac{0.75}{0.652} [\frac{1}{3000}]$ " should read " $\frac{0.75}{0.652} [\frac{1}{1615}]$ "

Page 115, 5th line from bottom of page: "on of the" should read "one of the."

Page 136, solution of Example 18: Last term in equation for M_{gd} , "0.025" should read "0.038."

Page 150, solution of Example 20: Numerator of equation for S_H , "497" should read "407" and "0.24[535 - 70]" should read "0.24[535 - 70][14.82]." Add the following note:
See Example 24 for determination of $M_{aa} = 14.82$.

Page 161, 5th line from bottom of page: " $29(12)/4.5$ " should read " $20(12)/4.5$ ".

Page 162, solution of Example 22-A beginning at the third line from the top of the page should read:

If the superheater is disposed in two of three boiler passes, each pass will be 20 ft wide by 6.67 ft deep. Then the area for gas flow between the superheater tubes will be $(53 - 1)(4.5 - 2)(6.67)/12 = 72.3 \text{ sq ft.}$

The mass flow of gas between the tubes will be:

$$v_g = \frac{291000}{3600(72.3)} = 1.12 \text{ lbs/sec/sq ft}$$

and, $h_g = \frac{0.41(1.12)^{0.585} (2048)^{0.315}}{(2.0/12)^{0.415}} = 10.12$

Then, the overall coefficient of heat transfer is:

$$U = (0.90) \frac{1}{\frac{1}{10.12} + \frac{4.0}{2.0 + 1.67} \left[\frac{0.165}{12(30)} + \frac{2.0}{1.67} \frac{1}{236} \right]} = 8.65$$

Superheater area is:

$$A = \frac{50,600,000}{8.65(860)} = 6800 \text{ sq ft}$$

Each foot of superheater tube has an area of $2\pi/12 = 0.523 \text{ sq ft}$. There will be $6800/0.523 = 13000 \text{ linear feet}$ of tube, and the length of each element will be $13000/53 = 246 \text{ feet}$.

Page 186, solution of Example 26-A: Viscosity "z = 0.025" should read "z = 0.022" and Reynolds' number "r = 1,485,000" should read "r = 1,690,000."

Page 188, solution of Example 26-B, add at top of page:

$$\Delta h = 0.745 \frac{(0.041)(682)(2.91)^2}{3.548} = 49.5 \text{ ft of oil}$$

Page 207, Example 30, add the following:

Note: The above method of expressing entrance and exit losses is often used. Another method would be to express the entrance and exit losses as equivalent lengths of straight pipe added to the fittings, etc., when calculating the friction losses.

Page 239, 12th line from bottom of page: "states in" should read "stated in."

Page 246, equation for draft produced by a stack should read:

$$h = 0.254 B H \left(\frac{1}{T_a} - \frac{1}{T_g} \right) - 1.49 \times 10^{-4} \frac{f H W_g^2}{\rho D_i} g$$

where: W_g = weight of flue gas, lb per hr

"f = 0.0013" for steel stacks should read "f = 0.013"
 "f = 0.0018" for brick lined stacks should read
 "f = 0.018."

Page 248, last part of solution of Example 34 should read:

Then, by trial in the equation for stacks:

$$0.6 = C.00384 H - 43.4 \frac{H}{D_i}$$

H	160	170	180	190	200	210
D _i	13.60	10.70	9.68	9.11	8.76	8.50
HD _i	2180	1810	1740	1730	1750	1785
D _i /H	0.085	0.063	0.054	0.048	0.044	0.041

It can be seen that the product HD_i has reached a minimum at a stack height of 190 ft. This stack height by chance produces a diameter which falls within the stability range for the parameter D_i/H.

PREFACE

This book is the outgrowth of the author's experience in operating power plants and in teaching power plant engineering to students in mechanical, electrical and chemical engineering. The principal portion of the material is confined to steam power plants and is presented in what the author has found to be a logical sequence, beginning with a study of load curves and power plant economics and progressing through vapor cycles and a detailed examination of the fundamental principles of the various plant components. Chapters are added, as a matter of interest, on the subjects of the economics of load division and Diesel-electric, hydro-electric and gas turbine power plants. No attempt is made to treat the subject of power plant wiring, as this subject properly belongs to the field of the electrical engineer.

The presentation of the material in this book is based on the assumption that it will be presented as a one-semester course, and that the student is familiar with the fundamentals of engineering thermodynamics. The author prefers the project method of presentation of problems to the student because he has found that the method has the advantage of making it possible to integrate the problems into a whole which has meaning to the student. Examples are given in the text in sufficient quantity and detail to guide the student in the execution of the projects. Only one series of projects is given in the text as an aid to the instructor in preparing additional projects from materials out of his own experience.

In order to hew to the line of fundamentals, it has been found necessary to say little about the minor details of design and operation, because these only serve to obscure the job at hand, which is to give a broad picture of power plant engineering in a limited time. It is expected that the instructor will make free use of visual aids, such as motion pictures and plant inspection trips, to supplement and clarify the presentation in the text. A bibliography of selected references is given at the end of each chapter for the benefit of those students who would delve more deeply into this extremely important and intensely interesting subject.

It is a pleasure for the author to acknowledge with thanks the encouragement and assistance of Professors Newton C. Ebaugh, John A. Dent and Paul C. Hoffman of the Mechanical Engineering Department of the College of Engineering of the University of Florida; Mr. Robert B. Cowan, Engineer-Manager of the Utilities Department of the City of Jacksonville, Florida; and Mr. J. H. White, Vice-President of the Florida Power and Light Company of Miami, Florida. Thanks are also due to Mr. L. N. Rowley, Executive Editor of *Power*, for permission to use many of the illustrations which originally appeared in that excellent magazine, and to Mr. L. K. Gaventa for his capable aid in making the many drawings necessary in a work of this type.

The author wishes to thank the many manufacturers and engineers who have contributed illustrations and information. An effort has been made to see that proper credit lines are attached.

George E. Remp

Gainesville, Florida
July, 1949

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TABLE XVII
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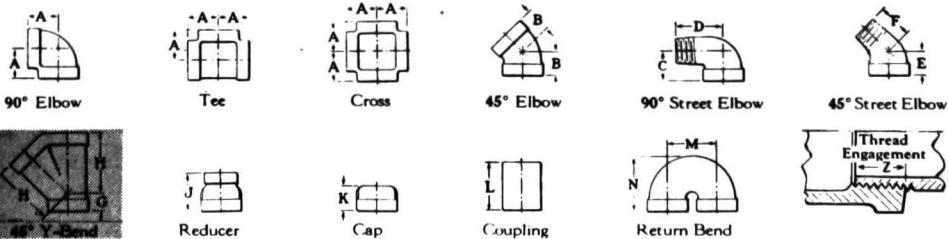
300-Pound Malleable Iron Fittings

WORKING PRESSURES

300 pounds steam or oil, 550° F.

$\frac{1}{4}$ to 1-inch — 2000 pounds cold water, oil, or gas, non-shock
 $\frac{1}{2}$ to 2-inch — 1500 pounds cold water, oil, or gas, non-shock
 $\frac{3}{4}$ and 3-inch — 1000 pounds cold water, oil, or gas, non-shock

Dimensions, in Inches



APPENDIX

Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
A - Center to end	15/16	1 1/16	1 1/4	1 7/16	1 5/8	1 15/16	2 1/8	2 1/2	2 19/16	3 5/8
B - Center to end, 45° Elbows	13/16	7/8	1	1 1/8	1 5/16	1 1/2	1 11/16	2	2 1/4	2 1/2
C - Center to end, 90° Street Elbows	13/16	1 5/16	1 1/4	1 7/16	1 5/8	1 15/16	2 1/8	2 1/2	2 15/16	3 5/8
D - Center to end, 90° Street Elbows	17/16	1 5/8	2	2 3/16	2 9/16	2 7/8	3 1/8	3 11/16	4 1/2	5 1/8
E - Center to end, 45° Street Elbows	13/16	1 5/16	1	1 1/8	1 5/16	1 1/2	1 11/16	2		
F - Center to end, 45° Street Elbows	13/16	1 5/16	1 3/8	1 9/16	1 13/16	2 1/8	2 5/16	2 11/16		
G - Center to end, 45° Y-Bends			3/4	7/8		1 1/8	1 1/4	1 9/16	1 3/4	2
H - Center to end, 45° Y-Bends			2	2 5/8	3 1/4	3 15/16	4 1/2	5 1/4	5 5/8	6 7/8
J - End to end, Reducers			17/16	1 11/16	1 3/4	2	2 3/8	2 11/16	3 3/16	3 11/16
K - Height, Caps	25/32	7/8	1 1/16	1 1/4	1 3/8	1 1/2	1 11/16	1 13/16	2 1/8	2 1/4
L - End to end, Couplings	1 1/8	1 5/8	1 1/8	2 1/8	2 5/8	2 7/8	2 7/8	3 5/8	4 1/8	4 1/8
Z - Thread Engagement	3/8	3/8	1/2	9/16	11/16	11/16	11/16	3/4	1 5/16	1

Return Bends

Size	1	1	1	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2	1 1/2	2	2	2	2	
M - Center to center	1 1/4	2 1/2	3	2 1/4	2 1/2	3	3 1/2	4	6	6	3	3 1/2	6	8	4	3	4
N - Height	2 7/8	3 1/4	3 1/2	3 9/16	3 11/16	3 15/16	4 1/2	4 1/2	6	6	4 1/2	4 1/2	5 1/8	5 7/8	6 1/8	7 1/8	

TABLE XVII
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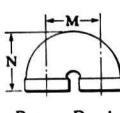
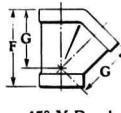
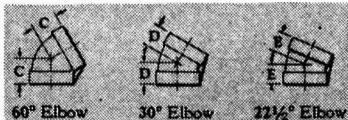
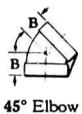
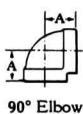
Standard Cast Iron Fittings

WORKING PRESSURES

125 pounds steam

175 pounds cold water, oil, or gas, non-shock

Dimensions, in Inches



Size	A	B	C	D	E	F	G	J	K	H	Z
1/4	13/16	3/4									3/8
5/16	15/16	13/16									5/8
1/2	1 1/4	7/8	1	1 3/16	3/4	2 1/4	1 1/2				1/2
3/4	1 1/2	1	1 1/2	1 5/16	7/8	3	2 1/4	1 1/2			9/16
1	1 1/2	1 1/4	1	1	1	3 1/2	2 3/4	*1 1/8			11/16
1 1/4	1 3/4	1 5/16	1	1 3/4	1 1/4	4 1/4	3 1/4	2 1/4	2 1/4		11/16
1 1/2	1 1/2	1 7/16	1 1/4	1 7/16	1 1/4	4 7/8	3 13/16	2 1/4	2 1/4		11/16
2	2 1/4	11/16	1 3/4	1 1/4	1	5 3/4	4 1/2	2 7/16	2 7/16		3/4
2 1/2	2 11/16	115/16	2	1 15/16	1 1/4	6 3/4	5 3/16	2 5/8	2 11/16		15/16
3	3 1/8	2 3/16	2 1/2	1 15/16	1 1/4	7 7/8	6 1/2	2 7/16	2 7/16		1
3 1/2	3 7/16	2 3/8	2 1/2	1 15/16	1 1/4	8 7/8	6 1/2	3 1/4	3 1/4		11/16
4	3 3/4	2 5/8	3	2 5/8	2 1/16	9 3/4	7 5/8	3 3/8	3 3/8	2 1/16	1 1/8
5	4 1/2	3 1/16	3 1/4	2 5/8	2 1/16	11 1/8	9 1/4	3 7/8	3 7/8	2 1/16	1 1/4
6	5 1/8	3 7/16	4 1/16	2 7/8	2 7/16	13 1/8	10 3/8	4 4/8	4 4/8	2 5/8	1 5/16
8	6 9/16	4 1/4				16 1/16	13 3/8	5 1/4	5 1/4	3 1/16	1 1/16

Return Bends											
Close Pattern			Open Pattern			Wide Pattern					
Size	M	N	Size	M	N	Size	M	N	Size	M	N
1/2	1 1/4	123/32	3/4	1 7/8	27/32	1	3	3	3	4	3 1/2
5/8	1 1/2	2 1/32	1	2 1/2	21 1/16	1	4	4	4	5	4 1/2
1	1 3/4	2 3/32	1 1/4	3	3 39/32	1	5	5	5	6	4 1/2
1 1/4	2 3/4	289/32	1 1/2	3 1/2	3 3/4	1	6	6	6	7	5 1/2
1 1/2	2 1/2	3 1/4	2	4 1/2	41 1/32	1	8	8	8	9	6 1/2
2	3 1/4	331/32	2 1/2	5 1/2	57/16	1 1/4	4	3 3/4	4	5	7 1/2
3 1/2	3 3/4	4 1/8	3	6 1/2	65/16	1 1/4	6	4 3/4	4	5	8 1/2
3	4 1/4	5 5/16	4	7 7/8	77/16	1 1/4	5	4 1/4	4	5	7 1/2
4	6	6 1/16							1 1/2	6	5
									1 1/2	6	5
									1 1/2	6	5
									2	6	5 5/16

TABLE XVII
continued

Malleable Iron Unions and Union Fittings

WORKING PRESSURES

150 pounds steam

300 pounds cold water, oil, gas or gasoline, non-shock



Union
Female



Union
Male and Female



90° Elbow
Female Union



90° Elbow
Male Union



Tee
Female Union on Run

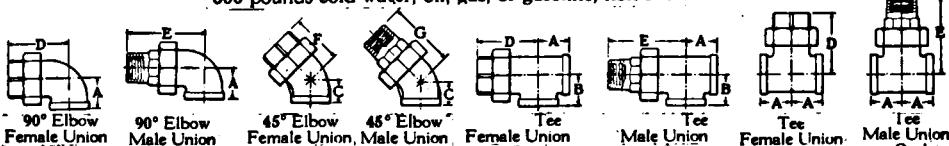


Tee
Male Union on Run

Size	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{4}$	3
A	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{11}{16}$	$1\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{9}{16}$	$2\frac{3}{8}$	$2\frac{9}{16}$	$3\frac{1}{4}$	$3\frac{9}{16}$
B	$2\frac{3}{8}$	$2\frac{3}{8}$	$2\frac{3}{8}$	3	$3\frac{5}{16}$	$3\frac{3}{8}$	$3\frac{11}{16}$	$4\frac{1}{4}$	$4\frac{11}{16}$	$5\frac{1}{4}$
C	$1\frac{9}{16}$	$1\frac{9}{16}$	$1\frac{1}{8}$	$1\frac{5}{16}$	$1\frac{1}{8}$	$1\frac{3}{8}$	$1\frac{11}{16}$	$2\frac{1}{4}$		
D	$1\frac{11}{16}$	$1\frac{1}{8}$	$2\frac{1}{8}$	$2\frac{7}{16}$	$2\frac{7}{16}$	$3\frac{3}{16}$	$3\frac{3}{8}$	$3\frac{7}{16}$		
E	$2\frac{7}{16}$	$2\frac{7}{16}$	3	$3\frac{3}{16}$	$3\frac{11}{16}$	$4\frac{7}{16}$	$4\frac{7}{16}$	$5\frac{1}{2}$		

300 pounds steam, 550° F.

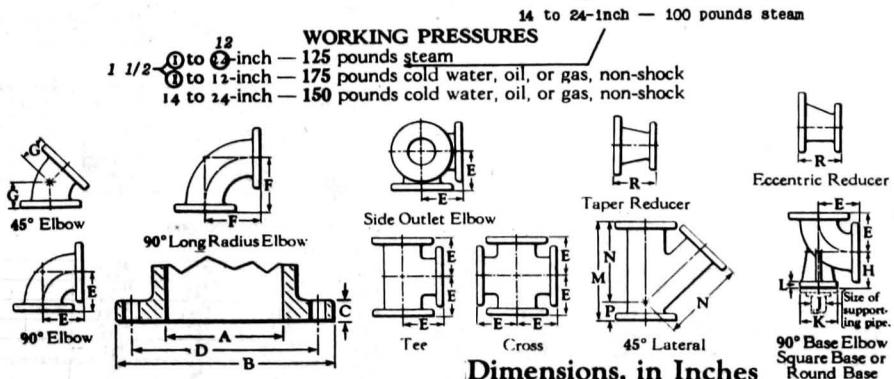
600 pounds cold water, oil, gas, or gasoline, non-shock



Dimensions, in Inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{4}$	3	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$
A	$1\frac{1}{16}$	$1\frac{1}{16}$	$1\frac{1}{4}$	$1\frac{1}{16}$	$1\frac{1}{8}$	$1\frac{11}{16}$	$2\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{9}{16}$	$3\frac{1}{8}$	$1\frac{1}{16}$	$1\frac{1}{4}$	$1\frac{1}{16}$
B	$1\frac{1}{16}$	$1\frac{1}{16}$	$1\frac{1}{4}$	$1\frac{1}{16}$	$1\frac{1}{8}$	$1\frac{11}{16}$	$2\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{9}{16}$	$3\frac{1}{8}$	$1\frac{1}{16}$	$1\frac{1}{4}$	$1\frac{1}{16}$
C	$1\frac{3}{16}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{16}$	$1\frac{1}{2}$	$1\frac{11}{16}$	$2\frac{1}{4}$					
D	2	$2\frac{1}{4}$	$2\frac{7}{16}$	$2\frac{7}{16}$	$3\frac{3}{16}$	$3\frac{11}{16}$	$3\frac{3}{8}$	$4\frac{1}{4}$	$5\frac{1}{16}$	$5\frac{11}{16}$	$2\frac{3}{4}$	$2\frac{7}{16}$	3
E	$2\frac{9}{16}$	$2\frac{7}{16}$	$3\frac{3}{8}$	$4\frac{1}{16}$	$4\frac{1}{8}$	$4\frac{1}{8}$	$5\frac{1}{8}$	$6\frac{1}{16}$	$7\frac{1}{16}$	$3\frac{11}{16}$	$3\frac{3}{8}$	$3\frac{11}{16}$	$3\frac{11}{16}$
F	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{11}{16}$	$2\frac{7}{16}$	$2\frac{7}{16}$	$3\frac{3}{16}$	$3\frac{11}{16}$	$4\frac{3}{16}$					
G	$2\frac{3}{16}$	$2\frac{7}{16}$	$2\frac{11}{16}$	$3\frac{1}{16}$	$3\frac{7}{16}$	$4\frac{1}{8}$	$4\frac{9}{16}$	$5\frac{5}{16}$					

TABLE XVII
continued

125-Pound Cast Iron Flanged Fittings



Dimensions, in Inches

Size	A	B	C	D	No. of bolts	Dia. of bolts	E	E	F	G	H	J	K	L	M	N	P	R
1 1/2	1 1/2	5	9/16	3 1/8	4	1/2	4	8	6	2 1/4	3 1/2	1	4 1/4	1 1/8	9	7	2	
2	2	6	5/8	4 1/4	4	5/8	4 1/2	9	6 1/2	2 1/2	4	1 1/4	4 1/2	2	10 1/2	8	2 1/2	
2 1/2	2 1/2	7	11/16	5 1/2	4	5/8	5	10	7	3	4 1/2	1 1/4	4 1/2	1	12	9 1/2	2 1/2	5 1/2
3	3	7 1/2	3/4	6	4	5/8	5 1/2	11	7 3/4	3	4 1/2	1 1/4	5	9/16	13	10	3	6
3 1/2	3 1/2	8 1/2	13/16	7	8	5/8	6	12	8 1/2	3 1/2	5 1/2	1 1/4	5	9/16	14 1/2	11 1/2	3	6 1/2
4	4	9	15/16	7 1/2	8	5/8	6 1/2	13	9	4	5 1/2	2	6	5/8	15	12	3	7
5	5	10	15/16	8 1/2	8	3/4	7 1/2	15	10 1/2	4 1/2	6 1/4	2 1/2	7	1 1/8	17	13 1/2	3 1/2	8
6	6	11	1	9 1/2	8	3/4	8	16	11 1/2	5	7	2 1/2	7	1 1/8	18	14 1/2	3 1/2	9
8	8	13 1/2	1 1/8	11 1/4	8	3/4	9	18	14	5 1/2	8 1/2	4	9	1 1/8	22	17 1/2	4 1/2	11
10	10	16	13/16	14 1/4	12	7/8	11	22	16 1/2	6 1/2	9 1/4	4	9	1 1/8	25 1/2	20 1/2	5	12
12	12	19	1 1/4	17	12	7/8	12	24	19	7 1/2	11 1/4	6	11	1	30	24 1/2	5 1/2	14
14	14	21	1 3/8	18 3/4	12	1	14	28	21 1/2	7 1/2	12 1/2	6	11	1	33	27	6	16
16	16	23 1/2	17/16	21 1/4	16	1	15	30	24	8	13 3/4	6	11	1	36 1/2	30	6 1/4	18
18	18	25	19/16	22 3/4	16	1 1/8	16 1/2	33	26 1/2	8 1/2	15	8	13 1/2	1 1/8	39	32	7	19
20	20	27 1/2	117/16	25	20	1 1/8	18	36	29	9 1/2	16	8	13 3/4	1 1/8	43	38	8	20
24	24	32	1 1/8	29 1/2	20	1 1/4	22	44	34	11	18 1/4	8	13 3/4	1 1/8	49 1/2	40 1/2	9	24

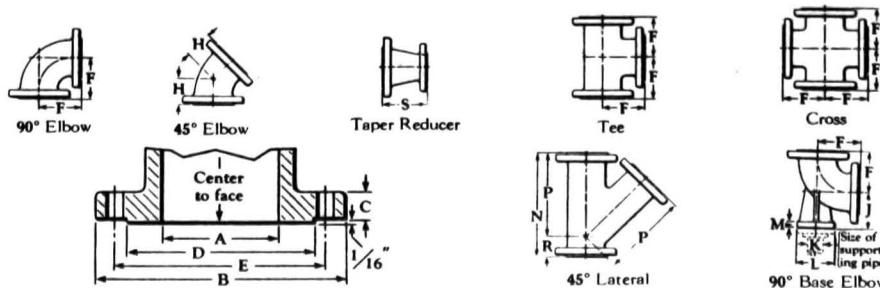
TABLE XVII
continued

250-Pound Cast Iron Flanged Fittings

WORKING PRESSURES

250 pounds steam

400 pounds cold water, oil, or gas, non-shock



Dimensions, in Inches

Size	A	B	C	D	E	No. of bolts	Dia. of bolts	Dimensions, in Inches											
								F	FF	G	H	J	K	L	M	N	P	R	S
2	2	6 1/2	7/8	43/16	5	8	5/8	5	10	6 1/2	3	4 1/2	1 1/2	5 1/4	2	11 1/4	9	2 1/2	5/8
2 1/2	2 1/2	7 1/2	1	41/16	5 5/8	8	3/4	5 1/2	11	7	3 1/2	4 1/2	1 1/2	5 1/4	2	13	10 1/2	2 1/2	5 1/2
3	3	8 1/4	1 1/8	511/16	6 5/8	8	3/4	6	12	7 3/4	3 1/4	5 1/2	1 1/2	6 1/8	1 1/4	14	11	3	6
3 1/2	3 1/2	9	13/16	6 5/16	7 1/4	8	3/4	6 1/2	13	8 1/2	4	5 5/8	1 1/2	6 1/8	1 1/4	15 1/2	12 1/2	3	6 1/2
4	4	10	1 1/4	6 15/16	7 7/8	8	3/4	7	14	9	4 1/2	6	2	6 1/2	7/8	16 1/2	13 1/2	3	7
5	5	11	1 3/8	8 5/16	9 1/4	8	3/4	8	16	10 1/4	5	6 3/4	2 1/2	7 1/2	1	18 1/2	15	3 1/2	8
6	6	12 1/2	1 7/16	9 11/16	10 5/8	12	3/4	8 1/2	17	11 1/2	5 1/2	7 1/2	2 1/2	7 1/2	1	21 1/2	17 1/2	4	9
8	8	15	1 5/8	11 15/16	13	12	7/8	10	20	14	6	9	4	10	1 1/4	25 1/2	20 1/2	5	11
10	10	17 1/2	1 7/8	14 1/16	15 1/4	16	1	11 1/2	23	16 1/2	7	10 1/2	4	10	1 1/4	29 1/2	24	5 1/2	12
12	12	20 1/2	2	16 7/16	17 3/4	16	1 1/8	13	26	19	8	12	6	12 1/2	1 1/2	33 1/2	27 1/4	6	14

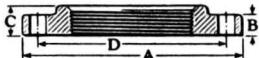
TABLE XVII
continued

Cast Iron Flanges

125-Pound 250-Pound

WORKING PRESSURES

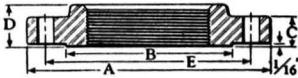
- 1 to 12-inch — 125 pounds steam
- 14 to 24-inch — 100 pounds steam
- 1 to 12-inch — 175 pounds cold water, oil, or gas, non-shock
- 14 to 24-inch — 150 pounds cold water, oil, or gas, non-shock



Size of pipe Inches	Dimensions, in Inches					
	A	B	C	D	No. of Bolts	Dia. of Bolts
1	4 1/4	7/16	11 1/16	3 1/8	4	1/2
1 1/4	4 5/8	1/2	13 3/16	3 1/2	4	1/2
1 1/2	5	9 1/16	7/8	3 7/8	4	1/2
2	6	5/8	1	4 3/4	4	5/8
2 1/2	7	1 1/16	13 3/16	5 1/2	4	5/8
3	7 1/2	3/4	1 1/4	6	4	5/8
3 1/2	8 1/2	1 3/16	1 1/4	7	8	5/8
4	9	1 5/16	1 5/16	7 1/2	8	5/8
5	10	1 5/16	17/16	8 1/2	8	3/4
6	11	1	19/16	9 1/2	8	3/4
8	13 1/2	1 1/8	1 3/4	11 3/4	8	3/4
10	16	1 3/16	115/16	14 1/4	12	7/8
12	19	1 1/4	23/16	17	12	7/8
14 OD	21	1 3/8	2 1/4	18 3/4	12	1
16 OD	23 1/2	17/16	2 1/2	21 1/4	16	1
18 OD	25	1 9/16	21 1/16	22 3/4	16	1 1/8
20 OD	27 1/2	1 11/16	2 7/8	25	20	1 1/8
24 OD	32	1 7/8	3 1/4	29 1/2	20	1 1/4

WORKING PRESSURES

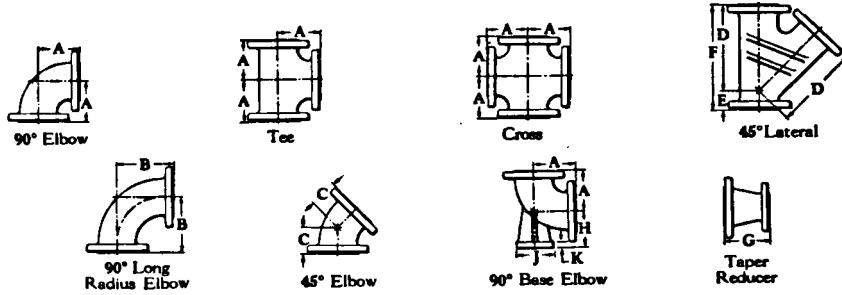
- 250 pounds steam
- 400 pounds cold water, oil, or gas, non-shock



A	Dimensions, in Inches					
	B	C	D	E	No. of Bolts	Dia. of Bolts
4 1/4	21 1/16	11 1/16	7/8	3 1/2	4	5/8
5 1/4	31 1/16	3 1/4	1	1 1/8	4	5/8
6 1/2	43 1/16	3 9/16	13 1/16	1 1/4	5	8
7 1/2	41 5/16	1	17/16	5 7/8	8	3/4
8 1/4	51 1/16	11 1/8	1 9/16	6 9/16	8	3/4
9	65 1/16	13 1/16	1 5/8	7 1/4	8	3/4
10	61 5/16	1 1/4	1 3/4	7 7/8	8	3/4
11	85 1/16	1 9/16	1 7/8	9 1/4	8	3/4
12 1/2	91 1/16	17/16	2	10 5/8	12	3/4
15	111 5/16	1 9/16	2 3/16	13	12	7/8
17 1/2	141 1/16	17/8	2 3/8	15 1/4	16	1
20 1/2	167/16	2	2 9/16	17 3/4	16	1 1/8
23	181 1/16	2 1/4	2 1/8	20 1/4	20	1 1/4
25 1/4	211 1/16	2 1/4	2 7/8	22 1/4	20	1 1/4
28	236 1/16	2 9/16	3 1/4	24 1/4	24	1 1/4
30 1/4	255 1/16	2 1/2	3 9/16	27	24	1 1/4
36	304 1/16	2 3/4	3 11/16	32	24	1 1/4

TABLE XVII
continued

Cast Steel Flanged Fittings Dimensions, in Inches



Class	Size	A	B	C	D	E	F	G	H	J	K
150 Pound	1	3 1/2	5	1 3/4	6 5/8	1 3/8	7 1/4				
	1 1/4	3 3/4	5 1/2	2	6 1/4	1 3/8	8				
	1 1/2	4	6	2 1/4	7	2	9				
	2	4 1/2	6 1/2	2 1/2	8	2 1/2	10 1/2	6	4 1/2	4 1/2	7/8
	2 1/2	5	7	3	9 1/2	2 1/2	12	6 1/4	4 1/2	4 1/2	1/8
	3	5 1/2	7 3/4	3	10	3	13	6	4 1/2	5	7/8
	3 1/2	6	6 1/2	3 1/4	11 1/4	3	14 1/2	6 1/2	5 1/4	6	7/8
	4	6 1/2	9	4	12	3	15	7	5 1/4	6	7/8
	5	7 1/2	10 1/4	4 1/2	13 1/4	3 1/2	17	8	6 1/4	7	1 1/16
	6	8	11 1/2	5	14 1/4	3 1/2	18	9	7	7	1 1/16
	8	9	14	5 1/2	17 1/2	4 1/2	22	11	8 3/8	9	1 5/16
	10	11	16 1/2	6 1/2	20 1/4	5	25 1/4	12	9 3/4	9	1 5/16
	12	12	19	7 1/2	24 1/4	6 1/2	30	14	11 1/4	11	1
	14	14	21 1/2	7 1/2	27	6	33	16	12 1/4	11	1
	16	15	24	8	30	6 1/2	36 1/4	18	13 3/8	11	1
	18	16 1/2	26 1/2	8 1/2	32	7	39	19	15	13 1/2	1 1/8
	20	18	29	9 1/2	35	8	43	20	16	13 1/2	1 1/8
	24	22	34	11	40 1/4	9	49 1/2	24	18 1/4	13 1/2	1 1/8
300 Pound	1	4	5	2 1/4	6 1/2	2	8 1/2	4 1/2			
	1 1/4	4 1/4	5 1/2	2 1/2	7 1/4	2 1/4	9 1/2	4 1/2			
	1 1/2	4 1/2	6	2 3/4	8 1/2	2 1/2	11	4 1/2			
	2	5	6 1/2	3	9	2 1/2	11 1/2	5	4 1/2	5 1/4	7/8
	2 1/2	5 1/4	7	3 1/4	10 1/4	2 1/4	13	5 1/4	4 1/2	5 1/4	7/8
	3	6	7 3/4	3 1/2	11	3	14	6	5 1/4	6 1/8	1 1/16
	3 1/2	6 1/2	8 1/2	4	12 1/2	3	15 1/4	6 1/2	5 1/4	6 1/8	1 1/16
	4	7	9	4 1/2	13 1/4	3	16 1/2	7	6	6 1/2	7/8
	5	8	10 1/4	5	15	3 1/4	18 1/2	8	6 1/4	7 1/2	1
	6	8 1/2	11 1/2	5 1/2	17 1/4	4	21 1/2	9	7 1/2	7 1/2	1
	8	10	14	6	20 1/2	5	25 1/2	11	9	10	1 1/4
	10	11 1/2	16 1/2	7	24	3 1/4	29 1/2	12	10 1/2	10	1 1/4
	12	13	19	8	27 1/4	6	33 1/2	14	12	12 1/2	1 1/16

TABLE XVI
continued

Cast Steel Flanged Fittings

Dimensions, in Inches (Cont.)

Class	Size	A	C	D	E	F	G
600 Pound	$\frac{1}{2}$	$3\frac{1}{4}$	2	$5\frac{1}{4}$	$1\frac{1}{4}$	$7\frac{1}{4}$	5
	$\frac{3}{4}$	$3\frac{3}{4}$	$2\frac{1}{2}$	$6\frac{1}{4}$	2	$8\frac{1}{4}$	5
	1	$4\frac{1}{4}$	$2\frac{1}{2}$	$7\frac{1}{4}$	$2\frac{1}{4}$	$9\frac{1}{4}$	5
	$1\frac{1}{4}$	$4\frac{1}{2}$	$2\frac{3}{4}$	8	$2\frac{1}{4}$	$10\frac{1}{4}$	5
	$1\frac{1}{2}$	$4\frac{3}{4}$	3	9	$2\frac{3}{4}$	$11\frac{1}{4}$	5
	2	$5\frac{3}{4}$	$4\frac{1}{4}$	$10\frac{1}{4}$	$3\frac{1}{2}$	$13\frac{3}{4}$	6
	$2\frac{1}{2}$	$6\frac{1}{2}$	$4\frac{1}{2}$	$11\frac{1}{2}$	$3\frac{1}{2}$	15	$6\frac{1}{4}$
	3	7	5	$12\frac{1}{4}$	4	$16\frac{1}{4}$	$7\frac{1}{4}$
	$3\frac{1}{2}$	$7\frac{1}{2}$	$5\frac{1}{2}$	14	$4\frac{1}{2}$	$18\frac{1}{4}$	$7\frac{1}{4}$
	4	$8\frac{1}{2}$	6	$16\frac{1}{4}$	$4\frac{1}{2}$	21	$8\frac{1}{4}$
	5	10	7	$19\frac{1}{4}$	6	$25\frac{1}{4}$	$10\frac{1}{4}$
900 Pound	6	11	$7\frac{1}{2}$	21	$6\frac{1}{2}$	$27\frac{1}{4}$	$11\frac{1}{4}$
	8	13	$8\frac{1}{2}$	$24\frac{1}{4}$	7	$31\frac{1}{4}$	$13\frac{1}{4}$
	10	$15\frac{1}{2}$	$9\frac{1}{2}$	$29\frac{1}{4}$	8	$37\frac{1}{4}$	$15\frac{1}{4}$
	12	$16\frac{1}{2}$	10	$31\frac{1}{4}$	$8\frac{1}{2}$	40	$16\frac{1}{4}$
	3	$7\frac{1}{2}$	$5\frac{1}{2}$	$14\frac{1}{4}$	$4\frac{1}{2}$	19	$7\frac{1}{4}$
	$3\frac{1}{2}$	$8\frac{1}{2}$	6	$16\frac{1}{4}$	$4\frac{1}{2}$	21	$8\frac{1}{4}$
	4	9	$6\frac{1}{2}$	$17\frac{1}{4}$	$5\frac{1}{2}$	23	$9\frac{1}{4}$
	5	11	$7\frac{1}{2}$	21	$6\frac{1}{2}$	$27\frac{1}{4}$	$11\frac{1}{4}$
	6	12	8	$22\frac{1}{2}$	$6\frac{1}{2}$	29	$12\frac{1}{4}$
	8	$14\frac{1}{2}$	9	$27\frac{1}{4}$	$7\frac{1}{2}$	38	$14\frac{1}{4}$

FORGED STEEL SOCKET WELDING FITTINGS

DIMENSIONS, IN INCHES
 (For Standard and Extra Strong Fittings)

WORKING PRESSURES					
Pounds per Square Inch			Non-Shock		
Temp.	Crane Carbon Steel Fittings		No. 4 Carbon- Molybdenum Steel Fittings (Made to order)		
	Stand- ard	Extra Strong	Stand- ard	Stand- ard	Extra Strong
100	2000	3000	2000	2000	3000
150	1900	2850	1900	1900	2850
200	1800	2700	1800	1800	2700
250	1700	2550	1700	1700	2550
300	1600	2400	1600	1600	2400
350	1500	2250	1500	1500	2250
400	1400	2100	1400	1400	2100
450	1300	1950	1300	1300	1950
500	1200	1800	1200	1200	1800
550	1120	1680	1150	1150	1725
600	1040	1560	1100	1100	1650
650	960	1440	1050	1050	1575
700	880	1320	1000	1000	1500
750	800	1200	950	950	1425
800	740	1100	900	900	1350
850	670	1000	850	850	1275
900	600	900	800	800	1200
950	530	795	640	640	960
1000	380	570	540	540	810

Class	Size	A	C	D	E	F	G
1500 Pound	1½	6	4½	11	31½	14½	5½
	2	7½	4½	13½	4	17½	7½
	2½	8½	5½	15½	4½	19½	8½
	3	9½	6½	17½	5	22½	9½
	3½	9½	6½	18½	5½	23½	9½
	4	10½	7½	19½	6	25½	10½
	5	13½	8½	23½	7½	30½	13½
	6	13½	9½	24½	8½	33	14½
	8	16½	18½	29½	9½	39	17
	½	5½					
2500 Pound	¾	5½					
	1	6½	4				
	1½	6½	4½				
	1½	7½	4½				
	2	8½	5½	15½	5½	20½	9½
	2½	10	6½	17½	5½	23	10½
	3	11½	7½	19½	6½	26½	11½
	4	13½	8½	23	7½	30½	13½
	5	15½	10	27½	9½	36½	15½
	6	18	11½	31½	10½	41½	18
	8	20½	12½	35½	11½	47	20½
	10	25	16	43½	14½	58	25½
	12	28	17½	49½	16½	65½	29

DIMENSIONS, IN INCHES
(For Standard and Extra Strong Fittings)

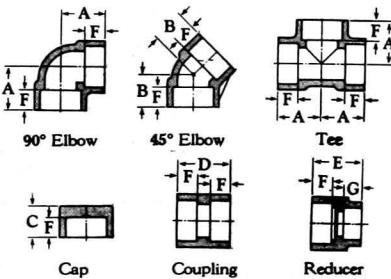
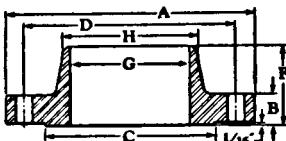
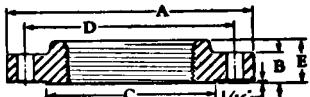
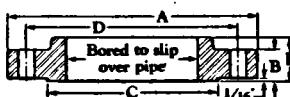


TABLE XVII
continued

Forged Steel Flanges

Dimensions, in Inches

Welding Neck Flange
.150 and 300-PoundScrewed Flange
.150 and 300-PoundSlip-On Welding Flange
.150 and 300-Pound

Class	Pipe Size	Bolts No. Dia.									
		A	B	C	D	B	F	G	H		
150 Pound	1	4 1/4	5 1/8	2	3 1/4	4	1/2	3/8	2 3/16	1.05	1.32
	1 1/4	4 5/8	5/8	2 1/2	3 1/2	4	1/2	13/16	2 1/4	1.38	1.66
	1 1/2	5	11/16	2 7/8	3 1/4	4	1/2	7/8	2 7/16	1.61	1.90
	2	6	3/4	3 3/8	4 1/2	4	5/8	1	2 1/2	2.07	2.38
	2 1/2	7	7/8	4 1/4	5 1/2	4	5/8	1 1/8	2 2/8	2.47	2.88
	3	7 1/2	15/16	5	6	4	5/8	1 3/8	2 1/4	3.07	3.50
	3 1/2	8 1/2	1 1/8	8 1/2	7	8	5/8	1 1/4	2 3/16	3.55	4.00
	4	9	15/16	6 1/2	7 1/2	8	5/8	1 1/8	3	4.03	4.50
	5	10	15/16	7 5/8	8 1/2	8	5/8	1 1/8	3 1/2	5.05	5.56
	6	11	1	8 1/4	9 1/2	8	3/4	1 1/8	3 1/2	6.07	6.63
	8	13 1/2	1 1/8	10 1/8	11 1/4	8	3/4	1 1/4	4	7.98	8.63
	10	16	1 3/8	12 3/8	14 1/4	12	7/8	1 1/8	4	10.02	10.75
	12	19	1 1/4	15	17	12	7/8	2 3/16	4 1/2	12.00	12.75
	14 OD	21	1 1/8	16 1/4	18 1/4	12	1	2 1/4	5	14.00	
	16 OD	23 1/2	17/16	18 1/2	21 1/8	16	1	2 1/2	Bore	16.00	
	18 OD	25	1 1/8	21	22 1/4	16	1 1/8	2 1/4	5 1/2	as or ordered	18.00
	20 OD	27 1/2	11 1/8	23	25	20	1 1/8	2 1/2	5 11/16	20.00	
	24 OD	32	1 1/8	27 1/2	29 1/2	20	1 1/8	3 1/4	6	24.00	
300 Pound	1	4 1/8	11/16	2	3 1/4	4	5/8	1 1/8	2 7/16	1.05	1.32
	1 1/4	5 1/8	3/4	2 1/2	3 7/8	4	5/8	1 1/8	2 7/16	1.38	1.66
	1 1/2	6 1/8	13/16	2 7/8	4 1/2	4	5/8	1 1/8	2 11/16	1.61	1.90
	2	6 1/2	7/8	3 3/8	5	8	5/8	1 1/8	2 1/2	2.07	2.38
	2 1/2	7 1/2	1	4 1/8	5 1/2	8	5/8	1 1/8	3	2.47	2.88
	3	8 1/4	1 1/8	5	6 1/2	8	5/8	1 1/8	3 1/4	3.07	3.50
	3 1/2	9	13/16	8 1/2	7 1/2	8	5/8	1 1/4	3 1/4	3.55	4.00
	4	10	1 1/4	6 1/2	7 7/8	8	5/8	1 1/8	3 1/4	4.03	4.50
	5	11	1 1/8	7 5/8	9 1/4	8	5/8	2	3 7/8	5.05	5.56
	6	12 1/2	1 1/8	8 1/2	10 1/8	12	5/8	2 1/8	3 7/8	6.07	6.63
	8	15	1 1/8	10 1/8	13	12	7/8	2 7/8	4 1/2	7.98	8.63
	10	17 1/2	1 1/8	12 3/8	15 1/4	16	1	2 1/2	4 1/2	10.02	10.75
	12	20 1/2	2	15	17 1/4	16	1 1/8	2 7/8	5 1/8	12.00	12.75

TABLE XVII
continued
Forged Steel Flanges
Dimensions, in Inches (Cont.)

Class	Pipe Size	A	B	C	D	Bolts No. | Dia.	E	F	G	H	
600 Pound	1/2	3 3/4	7/16	1 1/8	2 5/8	4	1/2	7/8	25/16	2 1/16	0.84
	5/8	4 1/8	5/16	11 1/16	3 1/4	4	5/8	1	2 1/2	2 1/4	1.05
	1	4 7/8	11 1/16	2	3 1/4	4	5/8	1 1/8	21 1/16	2 7/16	1.32
	1 1/4	5 1/4	13 1/16	2 1/2	3 1/8	4	5/8	1 1/8	2 7/16	2 7/16	1.66
	1 1/2	6 1/4	7/16	2 7/8	4 1/2	4	3/4	1 1/4	3	2 3/4	1.90
	2	6 1/2	1	3 5/8	5	8	7/8	1 1/8	3 1/8	2 7/8	2.38
	2 1/2	7 1/2	1 1/8	4 1/8	5 1/8	8	3/4	1 1/8	3 3/8	3 1/8	2.88
	3	8 1/4	1 1/8	5	6 1/8	8	3/4	1 1/8	3 1/8	3 1/8	3.50
	3 1/2	9	1 1/8	5 1/8	7 1/4	8	7/8	1 15/16	3 1/8	3 1/8	4.08
	4	10 1/4	1 1/2	6 7/8	8 1/2	8	7/8	2 1/4	4 1/4	4	4.50
900 Pound	5	13	1 3/8	7 5/8	10 1/2	8	1	2 3/8	4 3/8	4 1/2	5.56
	6	14	1 1/8	8 1/8	11 1/2	12	1	2 5/8	4 7/8	4 5/8	6.63
	8	16 1/2	2 3/8	10 1/8	13 1/8	12	1 1/8	3	5 1/8	5 1/8	8.63
	10	20	2 1/2	12 3/8	17	16	1 1/8	3 3/8	6 1/4	6	10.75
	12	22	2 5/8	15	19 1/4	20	1 1/4	3 3/8	6 1/4	6 1/4	12.75
	3	9 1/4	1 1/2	5	7 1/2	8	7/8	2 1/2	4 1/4	4	3.50
	3 1/2	16 1/2	1 1/8	5 1/8	8 1/8	8	1	2 5/16	4 1/8	4 1/8	4.00
	4	11 1/2	1 3/8	6 7/8	9 1/2	8	1 1/8	2 1/2	4 3/8	4 1/2	4.50
1500 Pound	5	13 3/4	2	7 5/8	11	8	1 1/4	3 1/4	5 1/4	5	5.56
	6	15	2 3/8	8 1/8	12 1/8	12	1 1/8	3 3/8	5 1/8	5 1/2	6.63
	8	18 1/2	2 1/2	10 5/8	15 1/2	12	1 3/8	4	6 5/8	6 5/8	8.63
	1 1/2	7	1 1/8	2 7/8	4 7/8	4	1	1 3/8	3 1/2	3 1/4	1.90
	2	8 1/4	1 1/2	3 5/8	6 1/2	8	7/8	2 1/4	4 1/4	4	2.38
	2 1/2	9 5/8	1 1/8	4 1/8	7 1/2	8	1	2 1/2	4 3/8	4 1/8	2.88
	3	10 1/2	1 1/8	5	8	8	1 1/8	2 1/2	4 7/8	4 7/8	3.50
	3 1/2	11	2	5 1/8	8 1/8	8	1 1/8	3 1/8	5	4 1/8	4.08
2500 Pound	4	12 1/4	2 1/8	6 7/8	9 1/2	8	1 1/4	3 5/16	5 1/8	4 1/8	4.50
	5	14 3/4	2 7/8	7 5/8	11 1/2	8	1 1/2	4 1/8	6 3/8	6 1/8	5.56
	6	15 1/2	3 1/4	8 1/8	12 1/2	12	1 3/8	4 11/16	7	6 3/8	6.63
	8	19	3 5/8	10 1/8	15 1/2	12	1 5/8	5 5/8	8 3/8	8 3/8	8.63
	1/2	5 1/4	13 1/16	1 3/8	3 1/4	4	3/4	1 15/16	3 1/8	2 7/8	0.84
	5/8	5 1/2	1 1/4	11 1/16	3 1/4	4	2 1/16	3 1/8	3 1/8	1.05	
	1	6 1/4	1 3/8	2 4/8	4	1	7/8	1 1/8	3 3/4	3 1/4	1.32
	1 1/4	7 1/4	1 1/2	2 1/2	5 1/8	4	1	21 1/16	4	3 3/4	1.66
Slip-On Welding Flanges	1 1/2	8	1 3/8	2 7/8	5 1/4	4	1 1/8	2 3/8	4 5/8	4 5/8	1.90
	2	9 1/4	2	3 5/8	6 3/4	8	1	2 3/8	5 1/8	5	2.38
	2 1/2	10 1/2	2 1/4	4 1/8	7 3/4	8	1 1/8	3 1/8	5 7/8	5 7/8	2.88
	3	12	2 5/8	5	9	8	1 1/4	3 3/8	6 7/8	6 7/8	3.50
	4	14	3	6 3/8	10 3/4	8	1 1/4	4 1/4	7 3/8	7 1/2	4.50
	5	16 1/2	3 3/8	7 5/8	12 3/4	8	1 3/4	5 1/8	9 1/4	9	5.56
	6	19	4 1/4	8 1/8	14 1/4	8	2	6	11	10 1/4	6.63
	8	21 3/4	5	10 1/8	17 1/4	12	2	7	12 3/4	12 1/2	8.63
600, 900, 1500, and 2100-Pound	10	26 1/2	6 1/2	12 3/4	21 1/4	12	2 1/2	9	16 1/4	16 1/2	10.75
	12	30	7 1/4	15	24 3/8	12	2 3/4	10	18 1/2	18 1/4	12.75

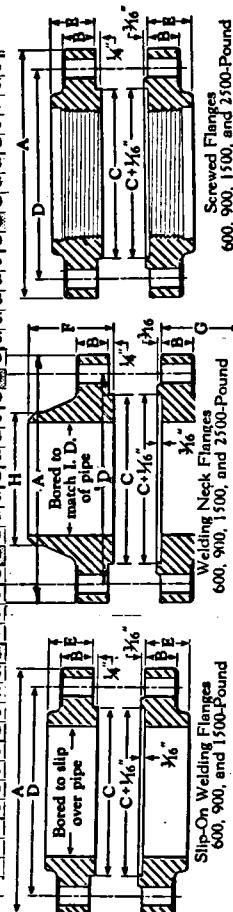
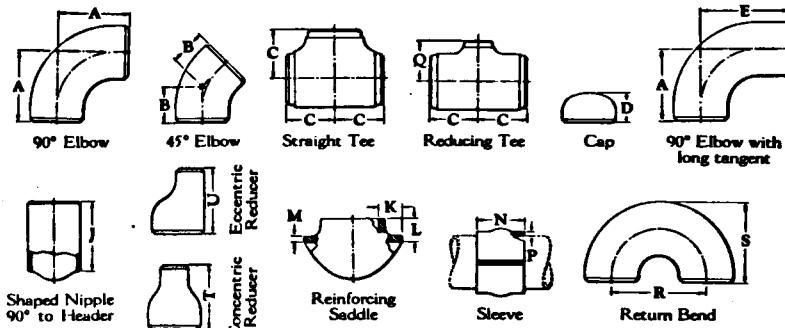


TABLE XVII
continued

Steel Butt-Welding Fittings

Dimensions, in Inches

Standard and Extra Strong Fittings have the same outside dimensions.



Elbows, Straight Tees, Caps, Nipples, Saddles, and Sleeves

Size	A	B	C	D	E	J	K	L	M	N	P
3/8	1 1/8	7/8	1 1/2	1 1/2	...	...	...	...	...	...	...
1	1 1/2	1	1 1/2	1 1/2	...	...	...	...	...	...	...
1 1/4	1 1/2	1	1 1/2	1 1/2	6	...	...	...	...	...	...
1 1/2	2 1/4	2 1/4	1 1/2	6	...	...	...	...	...	...	...
2	3	1 1/8	2 1/2	1 1/2	4 1/4	6	1 1/4	1/2	3	1/4	...
2 1/2	3 3/8	1 1/4	2 1/2	1 1/4	6	6	1 1/4	1/2	3	1/4	...
3	4 1/2	7	3 3/4	2	5 3/4	6	2	1 1/2	1/2	3	1/4
3 3/8	5 1/2	3 1/4	3 3/4	3 3/4	6 3/4	6	2 1/2	1 1/2	3 1/4	9 1/4	...
4	6	2 1/2	4 1/8	2 1/2	7 1/2	6	2	2	1 1/2	2 1/2	1/2
5	7 1/2	3 1/4	4 7/8	3	9	8	2	2	1 1/2	5	3/8
6	9	3 3/8	5 5/8	3 1/2	10 3/4	8	2 1/4	2 1/4	1 1/2	6	3/8
8	12	5	7	4	13 3/4	8	3	3	1 1/2	8	1/2
10	15	6 1/4	8 1/4	5	17	10	3 1/2	3 1/2	5	10	1/2
12	18	7 1/2	10	6	20 1/2	10	4	4	5	12	1/2
14 OD	16	7 3/4	...	6 1/2	...	4	4	5	14	1 1/2	...
16 OD	18	8 1/2	...	7	...	4	4	5	16	1 1/2	...
18 OD	20	9 1/2	...	8	...	4	4	5	18	1 1/2	...
20 OD	25	...	...	9	...	5	5	5	20	1 1/2	...
24 OD	30	...	...	10 1/2	...	5	5	5	24	1 1/2	...

Return Bends

Size of pipe	R	S
1	3	2 3/16
1 1/4	2 1/2	2 5/16
1 1/2	3 3/4	2 3/4
1 1/2	3	2 11/16
1 1/2	4 1/2	3 1/4
2	4	3 7/16
2	6	4 1/16
2 1/2	7 1/2	5 5/16
3	6	5
3	9	6 1/16
3 1/4	10 1/2	7 1/4
4	8	6 1/2
4	12	8 1/4
5	15	10 5/16
6	18	12 13/16
8	24	16 5/16
10	30	20 3/16
12	36	24 3/16

Reducing Tees

Size	C	Q	U	Size	C	Q	Size	T	U	Size	T	U	Size	T	U
1 1/4 x 1 1/4 x 3/4	1 1/8	1 1/8	4 x 4 x 3	4 1/4	3 3/8	1 1/4 x 3/4	2	2	3 x 2 1/2	6 x 5	6 x 4	1 1/4 x 3/4	3 1/2	5 1/2	5 1/2
1 1/2 x 1 1/2 x 1 1/2	2 1/4	2 1/4	4 x 4 x 2 1/2	4 1/2	3 3/8	1 1/2 x 1 1/2	3	2	3 x 2	6 x 4	6 x 4	1 1/2 x 1 1/2	3 1/2	5 1/2	5 1/2
1 1/2 x 1 1/2 x 1	2 1/4	2 1/4	4 x 4 x 2	4 1/2	3 3/8	1 1/2 x 1	2 1/2	2 1/2	3 x 1 1/2	6 x 3	6 x 3	1 1/2 x 1	3	5	5
1 1/2 x 1 1/2 x 1/2	2 1/4	2 1/4	5 x 5 x 4	4 7/8	4 5/8	1 1/2 x 1/2	2	2	4 x 3	6 x 2	6 x 2	1 1/2 x 1/2	4	8 x 6	8 x 6
2 x 2 x 1 1/2	2 1/2	2 1/2	5 x 5 x 3	4 7/8	4 5/8	2 x 1 1/2	2	2	4 x 2	8 x 5	8 x 5	2 x 1 1/2	3	8 x 4	6
2 x 2 x 1 1/4	2 1/4	2 1/4	5 x 5 x 2 1/4	4 7/8	4 5/8	2 x 1 1/4	3	3	4 x 2	8 x 4	8 x 4	2 x 1 1/4	3	10 x 6	6
2 x 2 x 1 1/2	2 1/4	2 1/4	6 x 6 x 5	5 7/8	5 7/8	2 x 1	5	5	5 x 4	10 x 6	10 x 6	2 x 1	5	10 x 5	7
2 1/2 x 2 1/2 x 2	3	2 3/4	6 x 6 x 4	5 7/8	5 7/8	2 1/2 x 2	3	3	5 x 3	10 x 6	10 x 6	2 1/2 x 2	5	10 x 5	7
2 1/2 x 2 1/2 x 1 1/2	3	2 3/4	6 x 6 x 3	5 7/8	5 7/8	2 1/2 x 1 1/2	3 1/2	3 1/2	5 x 2 1/2	10 x 4	10 x 4	2 1/2 x 1 1/2	5	12 x 10	8
2 1/2 x 2 1/2 x 1 1/4	3	2 3/4	6 x 6 x 2 1/2	5 7/8	5 7/8	2 1/2 x 1 1/4	3 1/2	3 1/2	5 x 2 1/2	12 x 8	12 x 8	2 1/2 x 1 1/4	5	12 x 6	8
3 x 3 x 2 1/2	3 3/4	3 3/4	8 x 8 x 6	7	6 5/8	3 x 2 1/2	8 1/2	8 1/2	8 x 5	12 x 6	12 x 6	3 x 2 1/2	8	8	8
3 x 3 x 2	3 3/4	3	8 x 8 x 4	7	6 5/8	3 x 2	8 1/2	8 1/2	8 x 4	12 x 6	12 x 6	3 x 2	8	8	8
3 x 3 x 2 1/2	3 3/4	3	10 x 10 x 8	8 1/2	8	3 x 2	10	9 1/2	10 x 6	12 x 6	12 x 6	3 x 2	10	8	8
3 x 3 x 2 1/2	3 3/4	3	12 x 12 x 10	10	9 1/2	3 x 2	12	12	12 x 8	12 x 6	12 x 6	3 x 2	12	8	8
3 x 3 x 2 1/2	3 3/4	3	12 x 12 x 8	10	9	3 x 2	12	12	12 x 6	12 x 6	12 x 6	3 x 2	12	8	8
3 x 3 x 2 1/2	3 3/4	3	12 x 12 x 6	10	8	3 x 2	12	12	12 x 4	12 x 6	12 x 6	3 x 2	12	8	8

TABLE XVII
continued

Standard Types of Pipe Bends

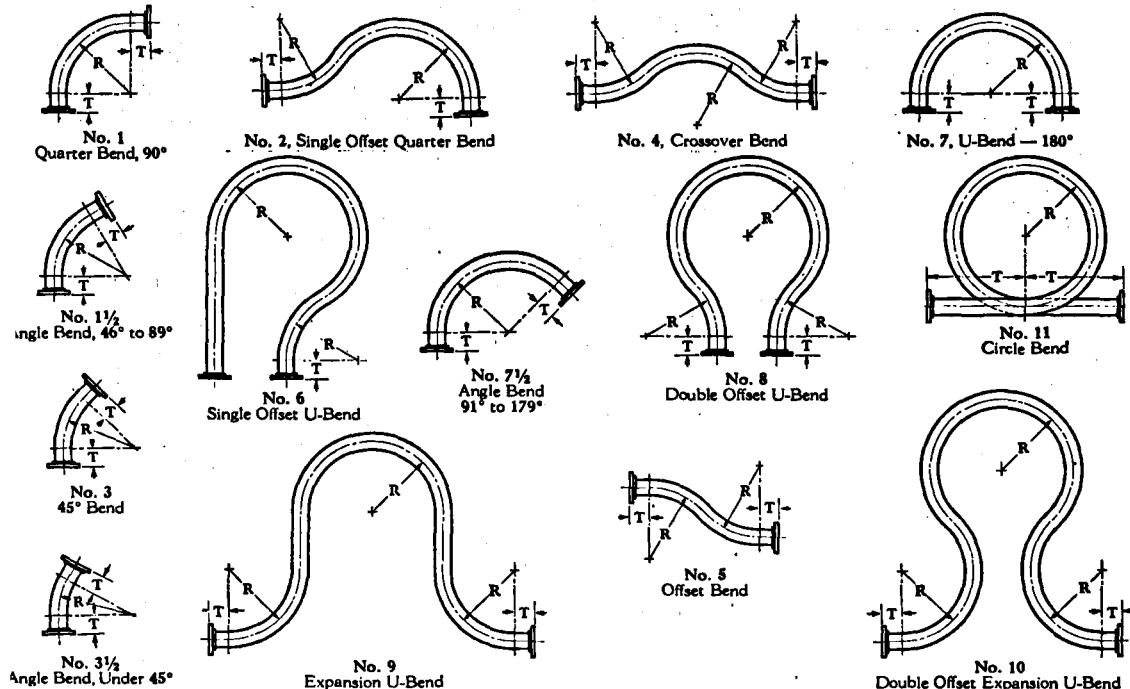


TABLE XVII
continued
Standard Types of Pipe Bends

Radii and Tangents of Pipe Bends, in Inches

Size of Pipe	Column "A"		Column "B"								Column "C"	
	R Minimum Recommended Radius Steel or Genuine Wrought Iron Pipe		R Shortest Radii to which pipe can be bent								T Minimum Length of Tangent	
	Steel Pipe Only				Genuine Wrought Iron Pipe				Steel or Genuine Wrought Iron Pipe Standard or Extra Strong Weight			
	Stand- ard Weight Pipe	Extra Strong Weight Pipe	Stand- ard Weight Pipe	Extra Strong Weight Pipe	Stand- ard Weight Pipe	Extra Strong Weight Pipe	Stand- ard Weight Pipe	Extra Strong Weight Pipe	Stand- ard Weight Pipe	Extra Strong Weight Pipe	Threaded Ends or Screwed, or Welded Flanges	Cranelap Joints
1/4	1 1/4				1 1/4	1					1	
5/8	1 7/8				1 1/4	1 1/4					1 1/4	
1/2	2 1/2				1 1/2	2	2 1/2	3	2		1 1/2	2
3/4	3 3/4				1 3/4	3	3	3	3		1 3/4	2
1	5				2	1 1/4	4	4	4		2	2
1 1/4	6 1/4				2 1/4	1 3/4	4	4	5		2	2 1/2
1 1/2	7 1/2				2 1/2	2	5	5	6		2 1/2	3
2	10				3	2 1/2	6	6	8		3	4
2 1/2	12 1/2				5	4 1/4	10	10	10		4	5
3	15				8	6	12	12	12		4	6
3 1/2	17 1/4				10	8	12	12	14		5	6
4	20				12	10	14	14	16		5	6
5	25				18	14	18	14	20		6	7
6	30				22	15	22	15	26		7	7
8	40				30	23	30	23	30		9	8
10	50				36	30	36	30	36		12	10
12	60				46	36	46	36	46		14	10
*14 OD	70				60	48	60	48	60		16	14
*16 OD	96				80	60	80	60	80		18	16
*18 OD	108				90	66	90	66	90		18	18
*20 OD	120				100	72	100	72	100		18	18
*24 OD	144				144	108	144	108	144		18	20

*For sizes 14-inch O.D. and larger, the radii shown are based upon pipe with a wall thickness of $\frac{3}{8}$ -inch or lighter under the "Standard Weight Pipe" column, and a wall thickness of $\frac{5}{8}$ -inch or heavier under the "Extra Strong Weight Pipe" column.

TABLE XXIV

**FORMULAS AND MOLECULAR AND EQUIVALENT WEIGHTS OF
SUBSTANCES FREQUENTLY APPEARING IN THE CHEMISTRY
OF WATER CONDITIONING**

<i>Substance</i>	<i>Formula</i>	<i>Weight of Molecule or Radical</i>	<i>Eq. Wt.</i>
Aluminum	Al	27.0	9.00
Aluminum chloride (crystal)	AlCl ₃	133.0	44.33
Aluminum chloride (anhydrous)	AlCl ₃ · 6H ₂ O	241.0	80.33
Aluminum sulphate (crystal)	Al ₂ (SO ₄) ₃ · 18H ₂ O	666.4	111.06
Aluminum sulphate (anhydrous)	Al ₂ (SO ₄) ₃	342.1	57.01
Ammonia	NH ₃	17.0	17.00
Ammonium alum	Al ₂ (SO ₄) ₃ (NH ₄) ₂ SO ₄ · 24H ₂ O	906.6	151.10
Potassium alum	Al ₂ (SO ₄) ₃ K ₂ SO ₄ · 24H ₂ O	948.8	158.13
Aluminum hydrate	Al(OH) ₃	78.0	26.00
Ammonium chloride	NH ₄ Cl	53.5	53.50
Ammonium (ion)	NH ₄ ⁺	18.0	18.00
Ammonia water	NH ₃ OH	35.1	35.10
*Alumina	Al ₂ O ₃	102.0	17.00
Sodium aluminate	Na ₂ Al ₂ O ₄	164.0	27.33
Ammonium sulphate	(NH ₄) ₂ SO ₄	132.0	66.00
Barium	Ba	137.4	68.70
Barium carbonate	BaCO ₃	197.4	98.70
Barium chloride	BaCl ₂ · 2H ₂ O	244.3	122.15
Barium sulphate	BaSO ₄	233.4	116.70
Barium hydrate	Ba(OH) ₂	171.0	85.50
Barium oxide	BaO	153.0	76.50
Calcium	Ca	40.1	20.05
Calcium bicarbonate	Ca(HCO ₃) ₂	162.1	81.05
Calcium carbonate	CaCO ₃	100.1	50.05
Calcium chloride	CaCl ₂	111.0	55.50
Calcium hydrate (pure)	Ca(OH) ₂	74.1	37.05
Calcium hydrate (90%)	Ca(OH) ₂	....	41.10
Calcium oxide (pure)	CaO	56.1	28.05
Calcium oxide (90%)	CaO	....	31.17
Calcium sulphate (anhydrous)	CaSO ₄	136.2	68.08
Calcium sulphate (gypsum)	CaSO ₄ · 2H ₂ O	172.2	861.0
Calcium nitrate	Ca(NO ₃) ₂	164.1	82.05
Calcium phosphate	Ca ₃ (PO ₄) ₂	310.3	51.71
Carbon	C	12.0	3.00
Chloride (gas)	Cl ₂	70.9	35.45

Courtesy of the Cochrane Corp.

TABLE XXIV
continued

Substance	Formula	Weight of Molecule or Radical	Eq. Wt.
Copper	Cu	63.6	31.80
Copper sulphate	CuSO ₄	160.0	80.00
Iron (ferric)	Fe'''	55.8	18.60
Iron (ferrous)	Fe''	55.8	27.90
*Ferric oxide	Fe ₂ O ₃	159.6	26.60
*Iron oxide and alumina	Fe ₂ O ₃	109.0	18.20
Ferrous sulphate (copperas)	FeSO ₄ · 7H ₂ O	278.0	139.00
Ferric chloride	FeCl ₃	162.0	54.00
Ferric hydrate	Fe(OH) ₃	107.0	35.66
Ferric sulphate	Fe ₂ (SO ₄) ₃	400.0	66.66
Ferrous carbonate	FeCO ₃	116.0	58.00
Ferrous hydrate	Fe(OH) ₂	89.9	44.95
Ferrous oxide	FeO	71.8	35.90
Fluorine (gas)	F ₂	19.0	19.00
Hydrogen (gas)	H ₂	2.02	1.01
Hydrogen sulphide (gas)	H ₂ S	34.1	.....
Lead	Pb	207.0	103.50
Magnesium	Mg	24.3	12.15
Magnesium oxide	MgO	40.3	20.15
Magnesium bicarbonate	Mg(HCO ₃) ₂	146.3	73.15
Magnesium carbonate	MgCO ₃	84.3	42.15
Magnesium chloride	MgCl ₂	95.2	47.60
Magnesium hydrate	Mg(OH) ₂	58.3	29.15
Magnesium nitrate	Mg(NO ₃) ₂	148.3	74.15
Magnesium phosphate	Mg ₃ (PO ₄) ₂	263.0	43.83
Magnesium sulphate	MgSO ₄	120.4	60.20
Nitrogen (gas)	N ₂	28.0	.....
Oxygen (gas)	O ₂	32.0	8.00
Potassium	K	39.1	39.10
Potassium carbonate	K ₂ CO ₃	138.0	69.00
Potassium chloride	KCl	74.6	74.60
Potassium hydrate	KOH	56.1	56.10
Potassium iodide	KI	166.0	166.00
Potassium nitrate	KNO ₃	101.0	101.00
Potassium oxide	K ₂ O	94.2	47.10
Potassium permanganate	KMnO ₄	158.0	158.00
Potassium sulphate	K ₂ SO ₄	174.0	87.00
Silicon	Si	28.1	7.03
Silver	Ag	108.0	108.00
Silver chloride	AgCl	143.3	143.30
Silver nitrate	AgNO ₃	169.9	169.90
Silica	SiO ₂	60.1	30.05
Sodium	Na	23.0	23.00
Sodium bicarbonate	NaHCO ₃	84.0	44.00

TABLE XXIV
continued

Substance	Formula	Weight of Molecule or Radical	Eq. Wt.
Sodium carbonate	Na ₂ CO ₃	106.0	53.00
Sodium chloride	NaCl	58.5	58.50
Sodium hydrate	NaOH	40.0	40.00
Sodium nitrate	NaNO ₃	85.0	85.00
Sodium oxide	Na ₂ O	62.0	31.00
Sodium sulphite	Na ₂ SO ₃	126.0	63.00
Sulphur dioxide (gas)	SO ₂	64.1	32.05
Trisodium phosphate	Na ₃ PO ₄ · 12H ₂ O (18.7% P ₂ O ₅)	380.2	126.73
Trisodium phosphate (anhydrous)	Na ₃ PO ₄ (43.3% P ₂ O ₅)	164.0	54.66
Disodium phosphate	Na ₂ HPO ₄ · 12H ₂ O (19.8% P ₂ O ₅)	358.2	119.40
Disodium phosphate (anhydrous)	Na ₂ HPO ₄ (50.0% P ₂ O ₅)	142.0	47.33
Monosodium phosphate	NaH ₂ PO ₄ · H ₂ O (51.4% P ₂ O ₅)	138.1	46.03
Monosodium phosphate (anhydrous)	NaH ₂ PO ₄ (59.1% P ₂ O ₅)	120.1	40.03
Metaphosphate (Hagan)	NaPO ₃ (69.5% P ₂ O ₅)	102.0	34.00
Sodium sulphate	Na ₂ SO ₄	142.0	71.00
Water	H ₂ O	18.0	9.00
ACID RADICALS			
Bicarbonate	HCO ₃	61.0	61.00
Carbonate	CO ₃	60.0	30.00
Carbon dioxide	CO ₂	44.0	22.00
Chloride	Cl	35.46	35.46
Nitrate	NO ₃	62.0	62.00
Hydrate	OH	17.0	17.00
Phosphate	PO ₄	95.0	31.66
Phosphorous oxide	P ₂ O ₅	142.0	23.67
Sulphate	SO ₄	96.06	48.03
Sulphite	SO ₃	80.1	40.05
ACIDS			
Hydrogen	H ₂	2.0	1.00
Acetic acid	CH ₃ CO ₂	60.0	60.00
Carbonic acid	H ₂ CO ₃	62.0	31.00
Hydrochloric acid	HCl	36.46	36.46
Phosphoric acid	H ₃ PO ₄	98.0	32.67
Sulphuric acid	H ₂ SO ₄	98.1	49.05
Nitric acid	HNO ₃	63.0	63.00
Sulphurous acid	H ₂ SO ₃	82.1	41.05

* Al₂O₃ and Fe₂O₃ are commonly reported together as R₂O₃, which for purpose of computation is given a mol. wt. of 109 and eq. wt. of 18.2 on the basis of 88% Al₂O₃ and 12% Fe₂O₃.

TABLE XXV

STEAM TABLES

Courtesy of Combustion Engineering-Superheater, Inc.

Saturated Steam Temperature Table

Temp. Fahr. t °	Absolute Pressure Lb. per Sq. In. 32 F.	Specific Volume				ENTHALPY				ENTROPY				Temp. Fahr. t °
		Sat. Liquid v _l	Evp. v _e	Sat. Vapor v _s	Sat. Liquid h _l	Evp. h _e	Sat. Vapor h _s	Sat. Liquid s _l	Evp. s _e	Sat. Vapor s _s	Sat. Liquid s _l	Evp. s _e	Sat. Vapor s _s	
82	0.0896	0.1906	0.01602	3305.7	2305.7	0	1075.1	1075.1	0	2.1955	2.1955	0	2.1955	82
84	0.0961	0.1957	0.01602	3060.4	3060.4	2.01	1074.0	1076.0	0.0041	2.1755	2.1755	0.0041	2.1755	84
86	0.1041	0.2120	0.01602	2836.6	2836.6	4.03	1072.9	1076.9	0.0082	2.1645	2.1727	0.0082	2.1727	86
88	0.1126	0.2292	0.01602	2632.2	2632.2	9.04	1071.7	1077.7	0.0122	2.1533	2.1655	0.0122	2.1655	88
90	0.1217	0.2478	0.01602	2445.1	2445.1	18.05	1070.5	1078.6	0.0162	2.1423	2.1585	0.0162	2.1585	90
92	0.1315	0.2677	0.01602	2271.8	2271.8	30.06	1069.3	1079.4	0.0203	2.1314	2.1517	0.0203	2.1517	92
94	0.1420	0.2891	0.01603	2112.3	2112.3	52.08	1068.2	1090.3	0.0242	2.1207	2.1449	0.0242	2.1449	94
96	0.1533	0.3119	0.01603	1965.5	1965.5	84.07	1067.1	1081.3	0.0282	2.1103	2.1384	0.0282	2.1384	96
98	0.1652	0.3364	0.01603	1829.9	1829.9	16.07	1065.9	1082.0	0.0322	2.0995	2.1317	0.0322	2.1317	98
100	0.1780	0.3624	0.01602	1704.9	1704.9	18.07	1064.8	1082.9	0.0361	2.0891	2.1252*	0.0361	2.1252*	100
102	0.1918	0.3905	0.01603	1588.4	1588.4	30.07	1063.6	1083.7	0.0400	2.0786	2.1186	0.0400	2.1186	102
104	0.2063	0.4200	0.01603	1482.4	1482.4	52.07	1062.5	1084.6	0.0439	2.0684	2.1123	0.0439	2.1123	104
106	0.2219	0.4518	0.01603	1383.5	1383.5	84.07	1061.4	1085.5	0.0478	2.0583	2.1060	0.0478	2.1060	106
108	0.2384	0.4854	0.01603	1292.7	1292.7	18.07	1060.3	1088.3	0.0517	2.0479	2.0996	0.0517	2.0996	108
110	0.2561	0.5214	0.01603	1208.1	1208.1	28.07	1059.1	1087.2	0.0555	2.0379	2.0934	0.0555	2.0934	110
112	0.2749	0.5597	0.01604	1129.7	1129.7	30.06	1057.9	1088.0	0.0594	2.0278	2.0872	0.0594	2.0872	112
114	0.2949	0.6004	0.01604	1057.1	1057.1	32.06	1056.8	1088.9	0.0632	2.0180	2.0812	0.0632	2.0812	114
116	0.3162	0.6438	0.01604	989.5	989.5	34.06	1055.7	1089.8	0.0670	2.0083	2.0753	0.0670	2.0753	116
118	0.3388	0.6895	0.01605	927.0	927.0	36.06	1054.5	1090.5	0.0708	1.9983	2.0691	0.0708	2.0691	118
120	0.3628	0.7387	0.01605	868.8	868.8	38.05	1053.4	1091.5	0.0745	1.9887	2.0633	0.0745	2.0633	120
122	0.3863	0.7906	0.01605	814.9	814.9	40.04	1052.3	1092.3	0.0783	1.9792	2.0575	0.0783	2.0575	122
124	0.4153	0.8456	0.01605	764.7	764.7	42.04	1051.3	1093.2	0.0820	1.9697	2.0517	0.0820	2.0517	124
126	0.4440	0.9040	0.01607	718.0	718.0	44.03	1050.1	1094.1	0.0858	1.9603	2.0461	0.0858	2.0461	126
128	0.4744	0.9659	0.01607	674.6	674.6	46.03	1048.9	1094.9	0.0893	1.9503	2.0408	0.0893	2.0408	128
130	0.5067	1.032	0.01607	633.7	633.7	48.02	1047.8	1095.8	0.0932	1.9415	2.0347	0.0932	2.0347	130
132	0.5400	1.101	0.01608	595.8	595.8	50.02	1046.6	1096.8	0.0969	1.9321	2.0290	0.0969	2.0290	132
134	0.5772	1.175	0.01608	560.4	560.4	52.01	1045.5	1097.5	0.1006	1.9230	2.0236	0.1006	2.0236	134
136	0.6158	1.253	0.01608	527.6	527.6	54.01	1044.4	1098.4	0.1042	1.9139	2.0181	0.1042	2.0181	136
138	0.6555	1.335	0.01608	497.0	497.0	56.00	1043.3	1099.3	0.1078	1.9047	2.0126	0.1078	2.0126	138
140	0.6980	1.421	0.01610	468.6	468.6	58.00	1042.1	1100.1	0.1115	1.8958	2.0073	0.1115	2.0073	140
142	0.7429	1.518	0.01611	441.7	441.7	59.99	1040.9	1100.9	0.1151	1.8867	2.0018	0.1151	2.0018	142
144	0.7902	1.609	0.01611	416.7	416.7	61.98	1038.9	1101.8	0.1187	1.8779	1.9966	0.1187	1.9966	144
146	0.8403	1.711	0.01612	393.2	393.2	63.98	1038.7	1102.7	0.1223	1.8692	1.9915	0.1223	1.9915	146
148	0.8930	1.818	0.01612	371.3	371.3	65.98	1037.6	1103.5	0.1258	1.8604	1.9863	0.1258	1.9863	148
150	0.9487	1.932	0.01613	350.8	350.8	67.97	1036.4	1104.4	0.1295	1.8517	1.9812	0.1295	1.9812	150
152	1.0072	2.051	0.01614	331.5	331.5	69.96	1035.2	1105.2	0.1330	1.8430	1.9760	0.1330	1.9760	152
154	1.0686	2.176	0.01614	313.5	313.5	71.95	1034.1	1106.1	0.1366	1.8345	1.9711	0.1366	1.9711	154
156	1.1338	2.308	0.01615	296.5	296.5	73.94	1033.0	1107.0	0.1401	1.8261	1.9662	0.1401	1.9662	156
158	1.2020	2.447	0.01615	280.7	280.7	75.94	1032.0	1107.9	0.1436	1.8179	1.9615	0.1436	1.9615	158
160	1.2774	2.594	0.01617	265.7	265.7	77.94	1030.9	1108.8	0.1471	1.8096	1.9567	0.1471	1.9567	160
162	1.3550	2.746	0.01617	251.6	251.6	79.93	1029.7	1109.6	0.1506	1.8012	1.9518	0.1506	1.9518	162
164	1.4329	2.906	0.01618	238.5	238.5	81.93	1028.6	1110.5	0.1541	1.7930	1.9471	0.1541	1.9471	164
166	1.5119	3.076	0.01619	226.2	226.2	83.92	1027.5	1111.4	0.1576	1.7845	1.9426	0.1576	1.9426	166
168	1.6000	3.256	0.01620	214.5	214.5	85.92	1026.4	1112.3	0.1610	1.7767	1.9377	0.1610	1.9377	168
170	1.6992	3.445	0.01620	203.65	203.65	87.91	1025.3	1113.2	0.1645	1.7687	1.9332	0.1645	1.9332	170
172	1.7988	3.640	0.01621	193.16	193.16	89.91	1024.1	1114.0	0.1679	1.7606	1.9285	0.1679	1.9285	172
174	1.8986	3.846	0.01622	183.44	183.44	91.90	1023.0	1114.9	0.1714	1.7526	1.9240	0.1714	1.9240	174
176	1.9984	4.062	0.01622	174.26	174.26	93.89	1021.8	1115.7	0.1748	1.7446	1.9194	0.1748	1.9194	176
178	2.106	4.306	0.01630	165.70	165.72	95.89	1020.7	1116.6	0.1783	1.7368	1.9156	0.1783	1.9156	178
180	2.221	4.552	0.01622	157.55	157.57	97.89	1019.5	1117.4	0.1816	1.7289	1.9105	0.1816	1.9105	180
182	2.3423	4.770	0.01626	149.53	149.56	99.89	1018.3	1118.2	0.1849	1.7210	1.9058	0.1849	1.9058	182
184	2.470	5.029	0.01626	142.50	142.61	101.89	1017.2	1119.1	0.1883	1.7134	1.9017	0.1883	1.9017	184
186	2.603	5.300	0.01627	133.73	133.75	103.88	1016.0	1119.9	0.1917	1.7056	1.8973	0.1917	1.8973	186
188	2.742	5.583	0.01628	126.26	126.28	105.88	1014.9	1120.8	0.1950	1.6980	1.8930	0.1950	1.8930	188
190	2.887	5.878	0.01634	97.18	97.30	107.89	1013.7	1121.6	0.1984	1.6904	1.8888	0.1984	1.8888	190
192	3.039	6.167	0.01630	117.37	117.39	109.88	1012.5	1122.4	0.2017	1.6828	1.8845	0.2017	1.8845	192
194	3.199	6.411	0.01631	111.85	111.90	111.88	1011.3	1123.2	0.2050	1.6752	1.8802	0.2050	1.8802	194
196	3.363	6.647	0.01632	106.72	106.74	113.88	1010.2	1124.1	0.2083	1.6678	1.8761	0.2083	1.8761	196
198	3.530	7.100	0.01633	101.82	101.94	115.87	1009.0	1124.9	0.2116	1.6604	1.8729	0.2116	1.8729	198
200	3.716	7.506	0.01634	97.18	97.30	117.87	1007.8	1125.7	0.2148	1.6530	1.8678	0.2148	1.8678	200
202	3.904	7.946	0.01635	92.79	92.81	119.87	1006.7	1126.6	0.2181	1.6456	1.8639	0.2181	1.8639	202
204	4.100	8.348	0.01636	88.63	88.64	121.87	1005.5	1127.4	0.2214	1.6384	1.8598	0.2214	1.8598	204
206	4.306	8.765	0.01637	84.94	84.96	123.87	1004.4	1128.3	0.2247	1.6313	1.8560	0.2247	1.8560	206
208	4.516	9.199	0.01638	80.98	80.99	125.87	1003.3	1129.1	0.2279	1.6241	1.8520	0.2279	1.8520	208
210	4.739	9.649	0.01639	77.37	77.39	127.87	1002.0	1129.9	0.2311	1.6169	1.8480	0.2311	1.8480	210
212	4.970	10.12	0.01640	74.00	74.02	129.88	1000.8	1130.7	0.2343	1.6096	1.8441	0.2343	1.8441	212
214	5.210	10.61	0.01642	70.79	70.81	131.88	999.7	1131.6	0.2376	1.6029	1.8403	0.2376	1.8403	214
216	5.460	11.12	0.01643	67.76	67.78	133.88	998.5	1132.4	0.2406	1.5958	1.8366	0.2406	1.8366	216
218	5.730	11.65	0.01644	64.87	64.89	135.88	997.3	1133.2	0.2438	1.5888	1.8327	0.2438	1.8327	218

TABLE XXV

continued

Saturated Steam: Temperature Table—(Continued)

Temp. Fahr. t	ABSOLUTE PRESSURE			SPECIFIC VOLUME			ENTHALPY			ENTROPY			Temp. Fahr. t
	Lb. per Sq. In. p	In. Hg. 32 F.	Sat. Liquid v _l	Sat. Evap. v _e	Sat. Vapor v _v	Sat. Liquid h _l	Sat. Evap. h _e	Sat. Vapor h _v	Sat. Liquid s _l	Sat. Evap. s _e	Sat. Vapor s _v		
170	5.990	12.20	0.01645	62.12	62.14	137.89	996.1	1134.0	0.2471	1.5319	1.6200	170	
172	6.272	12.77	0.01640	59.50	59.52	139.89	995.0	1134.9	0.2503	1.5751	1.6254	172	
174	6.565	13.37	0.01647	57.01	57.03	141.89	993.8	1135.7	0.2535	1.5683	1.6218	174	
176	6.869	13.99	0.01648	54.64	54.66	143.90	992.6	1136.5	0.2566	1.5615	1.6181	176	
178	7.164	14.63	0.01650	52.39	52.41	145.90	991.4	1137.3	0.2598	1.5547	1.6143	178	
180	7.510	15.29	0.01651	50.28	50.28	147.91	990.2	1138.1	0.2629	1.5479	1.6108	180	
182	7.849	15.98	0.01652	48.22	48.24	149.92	989.0	1138.9	0.2661	1.5412	1.6073	182	
184	8.201	16.70	0.01653	46.28	46.30	151.92	987.8	1139.7	0.2692	1.5346	1.6038	184	
186	8.566	17.44	0.01654	44.43	44.45	153.93	986.6	1140.5	0.2723	1.5280	1.6003	186	
188	8.944	18.21	0.01656	42.67	42.69	155.94	985.3	1141.3	0.2754	1.5213	1.7967	188	
190	9.336	19.01	0.01657	40.99	41.01	157.95	984.1	1142.1	0.2785	1.5147	1.7932	190	
192	9.744	19.84	0.01658	39.38	39.40	159.95	982.8	1142.8	0.2816	1.5081	1.7897	192	
194	10.168	20.70	0.01659	37.84	37.86	161.96	981.5	1143.5	0.2847	1.5015	1.7862	194	
196	10.605	21.59	0.01661	36.38	36.40	163.97	980.3	1144.3	0.2877	1.4951	1.7828	196	
198	11.057	22.51	0.01662	34.98	35.00	165.98	979.0	1145.0	0.2908	1.4885	1.7793	198	
200	11.525	23.46	0.01663	33.65	33.67	167.99	977.8	1145.8	0.2938	1.4822	1.7760	200	
202	12.010	24.45	0.01665	32.37	32.39	170.01	976.6	1146.6	0.2969	1.4759	1.7723	202	
204	12.512	25.47	0.01666	31.15	31.17	172.02	975.3	1147.3	0.2999	1.4695	1.7694	204	
206	13.031	26.53	0.01667	29.99	30.01	174.03	974.1	1148.1	0.3029	1.4633	1.7662	206	
208	13.568	27.62	0.01669	28.88	28.90	176.04	972.8	1148.8	0.3059	1.4570	1.7629	208	
210	14.123	28.75	0.01670	27.81	27.83	178.06	971.5	1149.6	0.3090	1.4507	1.7597	210	
212	14.696	29.92	0.01672	26.81	26.83	180.07	970.3	1150.4	0.3120	1.4446	1.7566	212	
214	15.591	31.12	0.01674	25.35	25.37	183.10	968.3	1151.4	0.3165	1.4352	1.7517	214	
216	17.188	32.37	0.01677	23.14	23.16	185.14	965.2	1153.3	0.3239	1.4201	1.7440	216	
218	18.915	33.65	0.01681	21.15	21.17	193.18	961.9	1155.1	0.3313	1.4049	1.7362	218	
220	20.78	34.98	0.01684	19.371	19.388	198.22	958.7	1156.0	0.3386	1.3900	1.7285	220	
222	22.80	36.38	0.01688	17.761	17.778	203.28	955.3	1158.5	0.3459	1.3751	1.7210	222	
224	24.97	38.54	0.01692	16.307	16.324	206.34	952.1	1160.4	0.3531	1.3607	1.7138	224	
226	27.31	40.78	0.01696	15.010	15.027	213.41	948.7	1162.1	0.3604	1.3462	1.7056	226	
228	29.82	43.04	0.01700	13.824	13.841	218.48	945.3	1163.8	0.3675	1.3320	1.6995	228	
230	32.53	45.33	0.01704	12.735	12.752	223.56	942.0	1165.6	0.3747	1.3181	1.6928	230	
232	35.43	47.64	0.01709	11.754	11.771	225.65	938.6	1167.3	0.3817	1.3042	1.6859	232	
234	38.54	50.00	0.01713	10.861	10.878	233.74	935.2	1169.0	0.3888	1.2908	1.6794	234	
236	41.85	52.37	0.01717	10.053	10.070	238.86	931.8	1170.8	0.3958	1.2770	1.6728	236	
238	45.40	55.00	0.01721	9.313	9.330	243.94	928.2	1172.1	0.4027	1.2634	1.6661	238	
240	49.20	57.75	0.01726	8.634	8.651	249.06	924.6	1173.7	0.4096	1.2500	1.6596	240	
242	53.25	60.55	0.01731	8.015	8.032	254.18	921.0	1175.2	0.4165	1.2368	1.6533	242	
244	57.55	63.40	0.01735	7.448	7.465	259.31	917.4	1176.7	0.4234	1.2237	1.6471	244	
246	62.13	66.30	0.01740	6.931	6.948	264.45	913.7	1178.2	0.4302	1.2107	1.6409	246	
248	67.01	70.25	0.01745	6.454	6.471	266.60	910.1	1179.7	0.4370	1.1980	1.6350	248	
250	72.18	74.25	0.01750	6.014	6.032	274.76	906.3	1181.1	0.4437	1.1852	1.6289	250	
252	77.68	78.75	0.01755	5.610	5.628	279.92	902.6	1182.5	0.4505	1.1727	1.6232	252	
254	83.50	80.30	0.01760	5.239	5.257	285.10	898.8	1183.9	0.4571	1.1587	1.6158	254	
256	89.65	86.00	0.01765	4.897	4.915	290.29	895.0	1185.3	0.4637	1.1479	1.6116	256	
258	96.16	92.75	0.01771	4.583	4.601	295.49	891.1	1186.6	0.4703	1.1356	1.6059	258	
260	103.03	99.50	0.01776	4.292	4.310	300.69	887.1	1187.8	0.4769	1.1234	1.6003	260	
262	110.31	107.25	0.01782	4.021	4.039	305.91	883.2	1189.1	0.4835	1.1114	1.5949	262	
264	117.99	115.75	0.01788	3.771	3.789	311.14	879.2	1190.3	0.4900	1.0994	1.5894	264	
266	126.10	123.50	0.01793	3.539	3.557	316.38	875.1	1191.5	0.4966	1.0875	1.5841	266	
268	134.82	132.25	0.01799	3.324	3.342	321.64	871.0	1192.6	0.5030	1.0757	1.5787	268	
270	143.58	141.00	0.01805	3.126	3.144	326.91	866.8	1193.7	0.5094	1.0640	1.5734	270	
272	153.01	150.40	0.01811	2.940	2.958	332.19	862.5	1194.7	0.5159	1.0522	1.5681	272	
274	162.93	160.75	0.01817	2.768	2.786	337.48	858.2	1195.7	0.5223	1.0406	1.5629	274	
276	173.33	171.25	0.01823	2.607	2.625	342.79	853.8	1196.6	0.5286	1.0291	1.5577	276	
278	184.23	182.25	0.01830	2.458	2.476	348.11	849.4	1197.5	0.5350	1.0176	1.5526	278	
280	195.70	193.75	0.01836	2.318	2.336	353.45	844.9	1198.4	0.5413	1.0062	1.5475	280	
282	207.71	205.75	0.01843	2.189	2.207	358.80	840.4	1199.2	0.5476	0.9949	1.5425	282	
284	220.29	218.25	0.01850	2.064	2.083	364.17	835.7	1199.9	0.5540	0.9835	1.5375	284	
286	233.47	231.25	0.01857	1.952	1.968	369.56	831.0	1200.6	0.5602	0.9723	1.5325	286	
288	247.26	245.00	0.01864	1.846	1.8632	374.97	826.2	1201.2	0.5664	0.9610	1.5274	288	
290	261.67	259.25	0.01871	1.745	1.7632	380.40	821.4	1201.8	0.5727	0.9499	1.5226	290	
292	276.72	274.25	0.01878	1.6508	1.6696	385.83	816.6	1202.4	0.5789	0.9390	1.5179	292	
294	292.44	290.00	0.01886	1.5630	1.5819	391.30	811.7	1203.0	0.5851	0.9280	1.5131	294	
296	308.82	306.25	0.01894	1.4906	1.4995	396.78	806.7	1203.5	0.5912	0.9170	1.5082	296	
298	325.91	323.25	0.01902	1.4031	1.4221	402.28	801.6	1203.9	0.5974	0.9061	1.5035	298	
300	343.71	340.30	0.01910	1.3303	1.3494	407.80	795.6	1204.3	0.6036	0.8953	1.4986	300	
302	362.27	358.75	0.01918	1.2617	1.2809	413.35	791.2	1204.6	0.6097	0.8843	1.4940	302	
304	381.59	377.25	0.01926	1.1973	1.2166	418.91	785.9	1204.8	0.6159	0.8735	1.4894	304	
306	401.70	397.25	0.01934	1.1367	1.1560	424.49	780.4	1204.9	0.6220	0.8626	1.4846	306	
308	422.61	417.75	0.01943	1.0796	1.0990	430.11	774.9	1205.0	0.6281	0.8518	1.4799	308	
310	444.35	439.50	0.0195	1.0256	1.0451	435.74	769.3	1205.0	0.6342	0.8410	1.4752	310	
312	466.97	461.75	0.0196	0.9745	0.9941	441.42	763.6	1205.0	0.6403	0.8303	1.4706	312	
314	490.43	484.75	0.0197	0.9262	0.9459	447.10	757.8	1204.9	0.6463	0.8195	1.4658	314	
316	514.70	508.75	0.0198	0.8808	0.9006	452.84	751.9	1204.7	0.6524	0.8085	1.4612	316	
318	539.90	533.25	0.0199	0.8379	0.8578	458.59	745.9	1204.5	0.6585	0.7980	1.4565	318	

TABLE XXV
continued

Saturated Steam: Temperature Table—(Concluded)

Temp. Fahr. °	Abs. Press. Lb./Sq. In. P	SPECIFIC VOLUME			ENTHALPY			ENTROPY			Temp. Fahr. °
		Sat. Liquid v _l	Sat. Evap. v _e	Sat. Vapor v _v	Sat. Liquid h _l	Sat. Evap. h _e	Sat. Vapor h _v	Sat. Liquid s _l	Sat. Evap. s _e	Sat. Vapor s _v	
500	566.12	0.0200	0.7972	0.8172	464.37	739.8	1204.2	0.6646	0.7873	1.4519	500
505	593.28	0.0201	0.7585	0.7756	470.18	733.6	1203.8	0.6706	0.7766	1.4472	505
510	621.44	0.0202	0.7219	0.7421	476.01	727.3	1203.3	0.6767	0.7658	1.4425	510
515	650.59	0.0203	0.6872	0.7075	481.90	720.8	1202.7	0.6827	0.7550	1.4377	515
520	680.80	0.0204	0.6544	0.6748	487.80	714.2	1202.0	0.6888	0.7442	1.4330	520
525	712.10	0.0205	0.6230	0.6436	493.8	707.5	1201.3	0.6949	0.7334	1.4283	525
530	744.55	0.0207	0.5932	0.6139	499.8	700.6	1200.6	0.7009	0.7225	1.4234	530
535	777.96	0.0209	0.5651	0.5859	505.8	693.6	1199.4	0.7070	0.7116	1.4186	535
540	812.48	0.0209	0.5382	0.5591	511.9	686.5	1198.4	0.7132	0.7007	1.4139	540
545	846.37	0.0210	0.5128	0.5338	518.0	679.2	1197.3	0.7192	0.6898	1.4090	545
550	885.20	0.0212	0.4885	0.5097	524.2	671.9	1196.1	0.7263	0.6799	1.4045	550
555	923.45	0.0213	0.4654	0.4867	530.4	664.6	1194.8	0.7314	0.6679	1.3993	555
560	962.80	0.0214	0.4433	0.4647	536.6	656.7	1193.3	0.7375	0.6560	1.3944	560
565	1003.6	0.0216	0.4222	0.4438	542.9	648.9	1191.8	0.7436	0.6450	1.3895	565
570	1045.6	0.0218	0.4021	0.4239	549.3	640.9	1190.2	0.7496	0.6347	1.3845	570
575	1088.8	0.0219	0.3830	0.4049	555.7	632.6	1188.3	0.7559	0.6234	1.3793	575
580	1132.4	0.0221	0.3648	0.3869	562.2	624.1	1186.3	0.7622	0.6120	1.3742	580
585	1179.3	0.0222	0.3472	0.3694	568.8	615.4	1184.2	0.7684	0.6008	1.3690	585
590	1226.7	0.0224	0.3304	0.3528	575.4	606.5	1181.9	0.7737	0.5890	1.3637	590
595	1275.7	0.0226	0.3143	0.3369	582.1	597.4	1179.6	0.7810	0.5774	1.3584	595
600	1326.1	0.0228	0.2989	0.3217	588.9	588.1	1177.0	0.7872	0.5656	1.3528	600
605	1378.1	0.0230	0.2840	0.3070	595.7	578.6	1174.3	0.7936	0.5538	1.3474	605
610	1431.6	0.0232	0.2699	0.2931	602.6	568.8	1171.6	0.8000	0.5419	1.3419	610
615	1486.5	0.0234	0.2563	0.2797	609.7	558.7	1168.4	0.8065	0.5297	1.3362	615
620	1543.2	0.0236	0.2432	0.2668	616.8	548.4	1165.3	0.8130	0.5175	1.3305	620
625	1601.5	0.0239	0.2306	0.2545	624.1	537.7	1161.8	0.8196	0.5050	1.3246	625
630	1661.6	0.0241	0.2185	0.2426	631.5	526.6	1158.1	0.8263	0.4923	1.3186	630
635	1723.6	0.0244	0.2068	0.2312	638.9	515.8	1154.2	0.8330	0.4795	1.3125	635
640	1787.0	0.0247	0.1955	0.2202	646.5	503.7	1150.2	0.8396	0.4666	1.3063	640
645	1852.4	0.0250	0.1845	0.2095	654.3	491.8	1145.8	0.8467	0.4531	1.3005	645
650	1919.8	0.0253	0.1740	0.1993	662.2	478.8	1141.0	0.8537	0.4394	1.2931	650
655	1989.0	0.0256	0.1638	0.1894	670.4	465.5	1135.9	0.8609	0.4252	1.2861	655
660	2060.3	0.0260	0.1539	0.1799	678.7	452.0	1130.7	0.8681	0.4110	1.2791	660
665	2133.5	0.0264	0.1441	0.1705	687.8	437.6	1124.9	0.8756	0.3961	1.2717	665
670	2206.8	0.0268	0.1348	0.1616	696.0	422.7	1118.7	0.8832	0.3809	1.2641	670
675	2286.4	0.0273	0.1256	0.1529	705.2	407.0	1112.2	0.8910	0.3651	1.2561	675
680	2366.2	0.0278	0.1167	0.1445	714.4	390.5	1104.9	0.8991	0.3488	1.2479	680
685	2448.0	0.0283	0.1079	0.1362	724.5	372.1	1096.6	0.9074	0.3306	1.2382	685
690	2532.4	0.0290	0.0991	0.1281	734.6	353.3	1087.9	0.9161	0.3127	1.2286	690
695	2619.2	0.0297	0.0904	0.1201	745.8	332.8	1078.3	0.9253	0.2933	1.2186	695
700	2708.4	0.0306	0.0810	0.1115	757.3	310.0	1067.2	0.9352	0.2730	1.2072	700
705	2800.4	0.0316	0.0716	0.1032	770.1	284.5	1054.6	0.9456	0.2485	1.1944	705
710	2895.0	0.0328	0.0617	0.0945	784.2	254.0	1039.1	0.9579	0.2217	1.1790	710
715	2992.7	0.0345	0.0511	0.0856	801.3	219.1	1020.4	0.9720	0.1907	1.1617	715
720	3094.1	0.0360	0.0389	0.0758	823.9	171.7	995.6	0.9904	0.1481	1.1385	720
725	3196.1	0.0440	0.0157	0.0507	870.2	77.6	947.8	1.0305	0.0661	1.0966	725
730.54°	3206.2	0.0641	0	0.0641	916.3	0	910.3	1.0645	0	1.0645	730.54°

* Critical temperature

TABLE XXV

continued

Saturated Steam: Pressure Table

Abs. Press. Lb./Sq. In. P	Temp. Fahr. t	SPECIFIC VOLUME			ENTHALPY			ENTROPY			Abs. Press. Lb./Sq. In. P
		Sat. Liquid V _l	Evap. V _v	Sat. Vapor V _v	Sat. Liquid h _l	Evap. h _v	Sat. Vapor h _v	Sat. Liquid s _l	Evap. s _v	Sat. Vapor s _v	
0.0006	32.00	0.01602	3305.7	3305.7	0	1075.1	1075.1	0	2.1865	2.1865	0.0086
0.125	40.9	0.01603	225.8	2383.7	8.74	1070.2	1078.9	0.0176	2.1388	2.1564	0.125
0.250	59.31	0.01603	225.8	2383.7	16.9	1075.9	1084.9	0.0244	2.0956	2.1056	0.250
0.500	79.58	0.01607	641.71	641.73	47.60	1048.0	1095.6	0.0924	1.9743	2.0138	0.500
1	101.76	0.01614	333.77	333.79	69.72	1035.5	1105.2	0.1326	1.8443	1.9769	1
5	162.25	0.01641	73.584	73.600	130.13	1000.7	1130.8	0.2347	1.6090	1.8437	5
10	193.21	0.01659	38.445	38.462	161.17	982.1	1143.3	0.2834	1.5042	1.7876	10
14.695	212.00	0.01672	26.811	26.828	180.07	970.3	1150.4	0.3120	1.4446	1.7566	14.695
18	213.03	0.01672	26.303	26.320	181.11	969.9	1150.7	0.3135	1.4413	1.7548	18
20	227.96	0.01683	20.093	20.110	198.16	959.9	1156.1	0.3356	1.3959	1.7315	20
25	250.34	0.01700	13.746	13.763	218.83	945.2	1164.0	0.3680	1.3312	1.6992	25
30	267.24	0.01715	10.489	10.506	236.02	933.7	1169.7	0.3919	1.2844	1.6763	30
35	281.01	0.01727	8.503	8.522	250.09	923.9	1174.0	0.4110	1.2473	1.6583	35
40	292.71	0.01738	7.162	7.179	262.10	915.4	1177.5	0.4271	1.2166	1.6437	40
50	302.99	0.01748	6.193	6.210	272.61	907.9	1180.5	0.4409	1.1903	1.6314	50
60	312.03	0.01757	5.456	5.476	282.02	901.1	1183.1	0.4532	1.1677	1.6209	60
70	320.27	0.01766	4.890	290.48	295.07	894.8	1185.4	0.4641	1.1472	1.6113	70
100	327.83	0.01774	4.415	4.433	298.43	893.9	1197.3	0.4741	1.1287	1.6028	100
110	334.79	0.01782	4.032	4.050	305.69	883.3	1199.0	0.4832	1.1118	1.5950	110
120	341.26	0.01789	3.710	3.728	312.46	878.1	1200.6	0.4916	1.0963	1.5879	120
130	347.31	0.01796	3.437	3.455	318.81	873.2	1202.2	0.4995	1.0820	1.5815	130
140	353.03	0.01803	3.202	3.220	324.83	869.5	1203.3	0.5069	1.0686	1.5755	140
150	358.43	0.01809	2.998	3.016	330.53	863.9	1204.4	0.5138	1.0560	1.5696	150
160	363.55	0.01815	2.816	2.834	335.95	856.6	1205.5	0.5204	1.0442	1.5646	160
170	368.42	0.01821	2.656	2.674	341.11	852.5	1206.3	0.5266	1.0327	1.5593	170
180	373.08	0.01827	2.514	2.532	346.07	851.1	1207.2	0.5325	1.0220	1.5545	180
190	377.55	0.01833	2.386	2.404	350.63	847.2	1208.0	0.5382	1.0119	1.5501	190
200	381.82	0.01839	2.270	2.288	355.40	843.3	1209.7	0.5436	1.0021	1.5457	200
210	385.93	0.01844	2.165	2.183	359.80	836.9	1209.4	0.5488	0.9929	1.5417	210
220	389.89	0.01850	2.067	2.086	364.05	835.8	1209.9	0.5538	0.9838	1.5376	220
230	393.70	0.01855	1.9803	1.9989	368.16	832.2	1204.0	0.5585	0.9752	1.5337	230
240	397.40	0.01860	1.8990	1.9176	372.16	828.7	1209.0	0.5632	0.9669	1.5301	240
250	400.97	0.01866	1.8244	1.8431	376.04	825.4	1204.1	0.5677	0.9590	1.5267	250
260	404.43	0.01870	1.7555	1.7742	379.78	822.4	1201.8	0.5720	0.9513	1.5233	260
270	407.9	0.01875	1.6913	1.7101	383.45	819.8	1202.2	0.5762	0.9439	1.5206	270
280	411.06	0.01880	1.6310	1.6504	386.99	815.8	1202.5	0.5802	0.9356	1.5177	280
290	414.24	0.01885	1.5758	1.5947	390.47	812.4	1202.9	0.5841	0.9296	1.5137	290
300	417.33	0.01890	1.5237	1.5428	393.85	809.3	1203.2	0.5879	0.9228	1.5107	300
340	431.71	0.01912	1.3064	1.3255	409.70	794.7	1204.4	0.6057	0.8915	1.4972	340
400	444.58	.0193	1.1416	1.1609	424.02	789.0	1204.9	0.6215	0.8635	1.4850	400
450	456.27	0.0195	1.0123	1.0318	437.18	767.8	1205.0	0.6357	0.8382	1.4739	450
500	467.00	0.0197	0.9077	0.9274	449.40	755.5	1204.9	0.6488	0.8153	1.4641	500
550	476.94	0.0199	0.8127	0.8416	460.85	743.8	1204.4	0.6609	0.7939	1.4548	550
600	486.01	0.0201	0.7305	0.7675	471.59	731.0	1203.6	0.6730	0.7740	1.4460	600
650	494.90	0.0203	0.6798	0.7092	481.73	721.0	1202.7	0.6828	0.7553	1.4379	650
700	503.09	0.0205	0.6347	0.6532	491.49	710.1	1201.6	0.6925	0.7376	1.4301	700
750	510.83	0.0207	0.5884	0.6091	500.8	699.4	1200.2	0.7019	0.7206	1.4225	750
800	518.20	0.0209	0.5476	0.5685	509.7	689.1	1198.8	0.7103	0.7047	1.4155	800
850	525.23	0.0210	0.5116	0.5326	518.3	678.9	1197.2	0.7194	0.6893	1.4097	850
900	531.94	0.0212	0.4794	0.5006	526.8	669.0	1195.6	0.7276	0.6748	1.4022	900
940	538.38	0.0214	0.4503	0.4717	534.6	659.2	1193.8	0.7355	0.6605	1.3960	940
1000	544.56	0.0216	0.4240	0.4456	542.4	649.5	1191.9	0.7431	0.6468	1.3899	1000
1040	550.52	0.0218	0.4001	0.4219	550.0	640.0	1190.0	0.7504	0.6335	1.3839	1050
1100	556.26	0.0219	0.3783	0.4002	557.4	630.4	1187.8	0.7575	0.6205	1.3780	1100
1160	561.81	0.0221	0.3583	0.3804	564.6	621.0	1185.6	0.7644	0.6079	1.3723	1160
1200	567.19	0.0223	0.3397	0.3620	571.7	611.5	1183.2	0.7712	0.5955	1.3667	1200
1250	572.39	0.0225	0.3226	0.3453	578.6	602.2	1180.8	0.7777	0.5835	1.3612	1250
1300	577.43	0.0227	0.3067	0.3294	585.4	592.9	1184.8	0.7840	0.5714	1.3557	1300
1350	582.32	0.0229	0.2918	0.3117	591.7	587.7	1179.8	0.7902	0.5602	1.3496	1350
1400	587.07	0.0231	0.2780	0.3011	598.6	574.6	1173.3	0.7963	0.5489	1.3452	1400
1440	591.70	0.0233	0.2652	0.2885	603.0	565.5	1170.5	0.8022	0.5379	1.3401	1440
1500	596.20	0.0235	0.2530	0.2765	611.4	556.3	1167.7	0.8081	0.5269	1.3350	1500
1600	600.59	0.0237	0.2416	0.2653	617.7	547.1	1164.8	0.8138	0.5160	1.3298	1550
1640	604.87	0.0239	0.2309	0.2549	623.9	538.0	1161.9	0.8195	0.5054	1.3249	1600
1680	609.05	0.0241	0.2207	0.2449	630.0	528.8	1158.8	0.8250	0.4948	1.3198	1680
1720	613.20	0.0243	0.2124	0.2344	636.4	519.4	1156.7	0.8307	0.4842	1.3147	1720
1780	617.11	0.0245	0.2020	0.2265	642.1	510.4	1152.5	0.8359	0.4740	1.3099	1750
1800	621.00	0.0247	0.1933	0.2180	649.0	501.3	1149.3	0.8412	0.4639	1.3051	1800
1850	624.82	0.0249	0.1850	0.2099	653.9	492.0	1145.9	0.8465	0.4537	1.3002	1850
1900	628.55	0.0252	0.1770	0.2022	659.9	482.5	1142.4	0.8517	0.4434	1.2951	1900
1940	632.20	0.0254	0.1695	0.1949	665.8	473.0	1138.9	0.8569	0.4332	1.2901	1940
2000	635.78	0.0257	0.1622	0.1879	671.7	463.5	1135.2	0.8620	0.4231	1.2851	2000
2100	642.47	0.0259	0.1486	0.1748	683.4	444.2	1127.6	0.8722	0.4029	1.2751	2100
2140	647.42	0.0261	0.1359	0.1626	695.0	424.4	1120.4	0.8823	0.3826	1.2649	2100
2180	655.87	0.0274	0.1240	0.1514	706.7	404.3	1111.0	0.8923	0.3624	1.2547	2100
2240	662.09	0.0280	0.1130	0.1410	718.5	392.9	1101.4	0.9025	0.3413	1.2438	2100
2280	668.10	0.0287	0.1026	0.1313	730.7	360.3	1091.0	0.9127	0.3195	1.2322	2100
2300	673.91	0.0295	0.0924	0.1219	743.1	337.0	1090.1	0.9223	0.2973	1.2205	2100
2700	679.54	0.0305	0.0818	0.1123	756.1	312.2	1068.3	0.9342	0.2740	1.2082	2100
2800	684.98	0.0316	0.0703	0.1032	767.0	284.6	1059.1	0.9442	0.2540	1.1944	2100
2900	690.26	0.0327	0.0604	0.0941	776.2	259.9	1038.1	0.9586	0.2199	1.1785	2100
2900	695.37	0.0348	0.0503	0.0849	802.6	216.7	1019.3	0.9331	0.1876	1.1607	3000
3100	700.29	0.0372	0.0390	0.0752	824.6	169.4	994.0	0.9916	0.1460	1.1376	3100
3200	705.04	0.0443	0.0153	0.0596	871.3	75.3	946.0	1.0311	0.0647	1.0958	3200
3200.2*	705.34	0.0541	0	0.0541	910.3	0	910.3	1.0645	0	1.0645	3200.2*

* Critical pressure

TABLE XXV
continued

Superheated Steam

Abs. Press. lb./sq. in.		Sat.	Sat.	TEMPERATURE—DEGREES FAHRENHEIT																	
		Water	Steam	300°	350°	300°	350°	400°	450°	500°	550°	600°	650°	700°	750°	800°	850°	900°	950°	1000°	1050°
1 (101.76)	Sb	98.24	148.24	198.24	248.24	298.24	348.24	398.24	448.24	498.24	548.24	598.24	648.24	708.24	758.24	808.24	858.24	908.24	958.24	1008.24	
	v	0.0161	333.79	392.5	422.5	452.1	482.1	511.7	541.8	571.3	630.9	690.6	750.2	809.8	869.4	929.0	988.6	1048.2	1107.8	1167.4	
	a	0.1326	1.9769	2.0491	2.0822	2.1128	2.1420	2.1694	2.2026	2.2206	2.2731	2.3107	2.3512	2.3892	2.4251	2.4592	2.4915				
8 (162.25)	Sb	37.75	87.75	137.75	187.75	237.75	287.75	337.75	387.75	437.75	537.75	637.75	737.75	837.75	937.75	1037.75					
	v	0.0164	73.600	78.17	84.24	90.21	96.26	102.19	108.23	114.16	120.11	138.05	149.99	161.91	173.83	185.80	197.72				
	a	0.2347	1.8437	1.8710	1.9043	1.9349	1.9642	1.9920	2.0182	2.0429	2.0894	2.1333	2.1738	2.2118	2.2478	2.2826	2.3146				
10 (192.21)	Sb	6.79	56.79	106.79	156.79	206.79	256.79	306.79	356.79	406.79	506.79	606.79	706.79	806.79	906.79	1006.79					
	v	0.0166	38.482	38.88	40.28	41.68	43.08	44.48	45.88	47.28	48.68	49.98	51.28	52.58	53.88	55.18	56.48	57.78	59.08	59.38	
	b	161.17	1143.3	1144.7	1170.2	1192.8	1210.0	1233.3	1262.5	1285.8	1323.3	1381.6	1420.6	1480.5	1531.2	1582.8	1635.2				
14.696 (212.00)	Sb	88.00	88.00	138.00	188.00	238.00	288.00	338.00	388.00	438.00	588.00	688.00	788.00	888.00	988.00						
	v	0.0167	26.828	28.44	30.52	32.61	34.65	36.73	38.75	42.83	46.91	50.97	55.03	59.09	63.19	67.25					
	b	180.07	1150.4	1169.2	1192.0	1215.4	1238.9	1262.1	1285.4	1330.0	1381.4	1430.5	1480.4	1531.1	1582.7	1635.1					
18 (213.03)	Sb	36.97	89.97	136.97	186.97	236.97	286.97	336.97	386.97	436.97	586.97	686.97	786.97	886.97	986.97						
	v	0.0167	26.320	27.88	29.90	31.94	33.95	35.98	37.97	41.98	45.97	49.95	53.93	57.91	61.91	65.89					
	b	181.11	1150.7	1169.2	1192.0	1215.4	1238.9	1262.1	1285.4	1330.0	1381.4	1430.5	1480.4	1531.1	1582.7	1635.1					
22 (227.96)	Sb	88.00	88.00	138.00	188.00	238.00	288.00	338.00	388.00	438.00	588.00	688.00	788.00	888.00	988.00						
	v	0.0168	20.110	28.64	30.52	32.61	34.65	36.73	38.75	42.83	46.91	50.97	55.03	59.09	63.19	67.25					
	b	196.16	1156.1	1168.0	1191.0	1214.1	1238.4	1261.0	1285.0	1332.7	1381.2	1430.3	1480.2	1531.0	1582.6	1635.1					
26 (240.07)	Sb	36.97	89.97	136.97	186.97	236.97	286.97	336.97	386.97	436.97	586.97	686.97	786.97	886.97	986.97						
	v	0.0169	26.320	27.88	29.90	31.94	33.95	35.98	37.97	41.98	45.97	49.95	53.93	57.91	61.91	65.89					
	b	181.11	1150.7	1169.2	1192.0	1215.4	1238.9	1262.1	1285.4	1330.0	1381.4	1430.5	1480.4	1531.1	1582.7	1635.1					
30 (250.34)	Sb	88.00	88.00	138.00	188.00	238.00	288.00	338.00	388.00	438.00	588.00	688.00	788.00	888.00	988.00						
	v	0.0170	13.763	20.81	22.36	23.91	25.43	26.95	28.45	31.46	34.46	37.44	40.43	43.42	46.43	49.41					
	b	136.50	1173.1	1186.0	1190.2	1214.1	1237.9	1261.1	1284.6	1322.7	1381.2	1430.3	1480.2	1531.0	1582.6	1635.1					
34 (260.07)	Sb	9.93	59.93	109.93	159.93	209.93	259.93	309.93	359.93	409.93	559.93	659.93	759.93	859.93	959.93						
	v	0.0169	16.321	16.58	17.84	19.08	20.30	21.53	22.73	23.15	25.55	29.94	32.33	34.73	37.14	39.52					
	b	204.41	1160.4	1168.8	1190.2	1214.1	1237.9	1261.1	1284.6	1322.7	1381.2	1430.3	1480.0	1530.9	1582.5	1635.0					
38 (260.34)	Sb	49.66	99.66	149.66	199.66	249.66	299.66	349.66	399.66	449.66	549.66	649.66	749.66	849.66	949.66						
	v	0.0170	13.763	14.82	15.87	16.89	17.91	18.92	20.94	22.94	24.94	26.93	28.93	30.94	32.93						
	b	218.83	1164.0	1189.2	1213.4	1237.6	1260.6	1284.2	1322.1	1380.8	1429.9	1479.9	1530.8	1581.4	1634.9						
42 (259.28)	Sb	40.73	90.72	140.72	190.72	240.72	290.72	340.72	390.72	440.72	540.72	640.72	740.72	840.72	940.72						
	v	0.0171	11.907	12.66	13.57	14.53	15.33	16.20	17.94	19.66	21.36	23.08	24.79	26.52	28.22						
	b	227.92	1167.0	1188.2	1212.7	1236.9	1260.1	1283.8	1319.1	1360.8	1429.8	1479.8	1530.7	1582.3	1634.8						
46 (267.24)	Sb	82.76	82.76	132.76	182.76	232.76	282.76	332.76	382.76	432.76	532.76	632.76	732.76	832.76	932.76						
	v	0.0172	10.506	11.04	11.84	12.62	13.40	14.16	15.88	17.19	18.69	20.18	21.68	23.28	24.69						
	b	236.02	1169.7	1187.1	1211.3	1236.4	1259.6	1283.4	1310.6	1360.4	1429.6	1479.6	1530.6	1582.2	1634.8						
50 (274.45)	Sb	25.55	75.55	125.55	175.55	225.55	275.55	325.55	375.55	425.55	525.55	625.55	725.55	825.55	925.55						
	v	0.0172	9.408	0.785	10.50	11.20	11.89	12.57	13.93	15.27	16.60	17.94	19.27	20.62	21.95						
	b	243.38	1172.0	1185.9	1211.1	1235.8	1259.1	1283.0	1313.1	1380.1	1429.4	1479.4	1530.5	1582.1	1634.7						
54 (281.01)	Sb	18.99	68.99	118.99	168.99	218.99	268.99	318.99	368.99	418.99	518.99	618.99	718.99	818.99	918.99						
	v	0.0173	8.522	8.777	9.430	10.08	10.69	11.30	12.53	13.74	14.93	16.14	17.34	18.55	19.75						
	b	250.09	1174.0	1184.8	1210.3	1235.2	1258.6	1282.6	1310.1	1379.9	1429.3	1479.3	1530.4	1582.0	1634.8						
58 (287.07)	Sb	12.93	62.93	112.93	162.93	212.93	262.93	312.93	362.93	412.93	512.93	612.93	712.93	812.93	912.93						
	v	0.0173	7.792	7.959	8.533	9.103	9.703	10.28	11.38	12.48	13.57	14.67	15.76	16.86	17.95						
	b	256.30	1175.6	1183.2	1209.4	1234.6	1258.2	1282.2	1320.3	1370.7	1429.1	1479.2	1530.3	1581.9	1634.5						
62 (292.71)	Sb	7.29	57.29	107.29	157.29	207.29	257.29	307.29	357.29	407.29	507.29	607.29	707.29	807.29	907.29						
	v	0.0174	7.179	7.260	7.821	8.353	8.882	9.398	10.42	11.44	12.44	13.44	14.44	15.45	16.45						
	b	262.10	1177.5	1184.8	1207.6	1233.4	1257.2	1281.4	1330.1	1379.3	1428.8	1478.8	1530.1	1581.7	1634.4						
66 (297.97)	Sb	2.03	52.03	102.03	152.03	202.03	252.03	302.03	352.03	402.03	502.03	602.03	702.03	802.03	902.03						
	v	0.0174	6.654	6.674	7.202	7.696	8.187	8.665	9.614	10.55	11.48	12.40	13.33	14.28	15.19						
	b	267.51	1179.1	1180.4	1207.6	1233.4	1257.2	1281.4	1330.1	1379.3	1428.8	1478.8	1530.1	1581.6	1634.3						
70 (307.60)	Sb	1.631	1.6738	1.7047	1.7316	1.7575	1.7807	1.8300	1.8896	1.9378	1.9741	2.0063	2.0410								
	v	0.0175	6.210	6.644	7.076	7.492	8.319	9.133	9.938	10.74	11.54	12.37	13.24	14.10							
	b	272.61	1180.5	1205.8	1232.2	1256.2	1280.6	1329.6	1378.6	1428.4	1478.6	1530.6	1581.6	1634.3							
74 (307.60)	Sb	47.08	97.08	147.08	197.08	247.08	297.08	347.08	397.08	447.08	597.08	697.08	797.08	897.08	997.08						
	v	0.0175	6.210	6.644	7.076	7.492	8.319	9.133	9.938	10.74	11.54	12.37	13.24	14.10							
	b	272.64	1181.9	1205.8	1232.2	1256.2	1280.6	1329.6	1378.6	1428.4	1478.6	1530.6	1581.6	1634.3							
78 (307.60)	Sb	47.40	92.40	142.40	192.40	242.40	292.40	342.40	392.40	442.40	592.40	692.40	792.4								

TABLE XXV
continued

Superheated Steam—(Continued)

Abs. Press. Lb./Sq. In.	Sat. (Sat. Temp.)	Sat. Water	Sat. Steam	Temperature— DEGREES FAHRENHEIT	340°	360°	380°	400°	420°	440°	460°	480°	500°	520°	540°	560°	580°	600°	700°	800°	900°	1000°	1100°	1200°
(312.03)	Sb	27.97	47.97	67.97	87.97	107.97	127.97	147.97	167.97	187.97	207.97	227.97	247.97	267.97	287.97	307.97	487.97	537.97	587.97	637.97	787.97	837.97	937.97	
	v	0.0178	5.476	5.720	5.889	6.055	6.217	6.384	6.623	7.015	7.793	8.558	9.313	10.07	10.82	11.56	12.33							
	s	0.4532-1.6209	1.6424	1.6560	1.6684	1.6804	1.6905	1.7071	1.7339	1.7824	1.8268	1.8679	1.9062	1.9426	1.9764	2.0095								
(316.25)	Sb	23.75	43.75	63.75	83.75	103.75	123.75	143.75	163.75	183.75	203.75	223.75	243.75	263.75	283.75	303.75	483.75	533.75	583.75	633.75	783.75	833.75	933.75	
	v	0.0178	5.169	5.368	5.528	5.685	5.839	5.995	6.226	6.504	7.329	8.050	8.762	9.472	10.18	10.90	11.61							
	s	0.4587	1.6159	1.6339	1.6481	1.6608	1.6728	1.6831	1.7003	1.7266	1.7754	1.8198	1.8609	1.8992	1.9357	1.9694	2.0026							
(320.27)	Sb	19.73	39.73	59.73	79.73	99.73	129.73	179.73	279.73	379.73	479.73	579.73	679.73	779.73	879.73									
	v	0.0177	4.898	5.055	5.208	5.357	5.504	5.653	5.869	6.220	6.916	7.599	8.272	8.943	9.626	10.29	10.96							
	s	0.4641	1.6113	1.6264	1.6408	1.6538	1.6658	1.6763	1.6938	1.7200	1.7689	1.8134	1.8546	1.8921	1.9308	1.9664	2.0024							
(324.13)	Sb	15.87	35.87	55.87	75.87	95.87	125.87	175.87	275.87	375.87	475.87	575.87	675.87	775.87	875.87									
	v	0.0177	4.653	4.773	4.921	5.063	5.205	5.346	5.552	5.886	6.547	7.195	7.834	8.481	9.117	9.751	10.38							
	s	0.4692	1.6070	1.6191	1.6339	1.6472	1.6593	1.6700	1.6874	1.7138	1.7621	1.8073	1.8485	1.8860	1.9234	1.9574	1.9904							
(327.83)	Sb	12.17	32.17	52.17	72.17	92.17	122.17	172.17	272.17	372.17	472.17	572.17	672.17	772.17	872.17									
	v	0.0177	4.433	4.520	4.650	4.801	4.936	5.079	5.266	5.569	6.217	6.836	7.448	8.055	8.659	9.282	9.882							
	s	0.4741	1.6028	1.6124	1.6273	1.6409	1.6545	1.6614	1.6784	1.7030	1.7568	1.8015	1.8428	1.8814	1.9177	1.9520	1.9847							
(331.38)	Sb	8.62	28.62	48.62	68.62	88.62	118.62	168.62	268.62	368.62	468.62	568.62	668.62	768.62	868.62									
	v	0.0178	4.232	4.294	4.429	4.562	4.691	4.820	5.007	5.316	5.916	6.507	7.090	7.670	8.245	8.819	9.391							
	s	0.4787	1.5988	1.6058	1.6208	1.6344	1.6466	1.6580	1.6753	1.7020	1.7511	1.7960	1.8372	1.8757	1.9122	1.9463	1.9791							
(334.79)	Sb	5.21	25.21	45.21	65.21	85.21	115.21	165.21	265.21	365.21	465.21	565.21	665.21	765.21	865.21									
	v	0.0178	4.050	4.084	4.217	4.345	4.469	4.592	4.773	5.069	5.643	6.208	6.765	7.319	8.69	9.417	9.863							
	s	0.4832	1.5950	1.5990	1.6140	1.6248	1.6410	1.6525	1.6698	1.7460	1.7903	1.8321	1.8705	1.9072	1.9414	1.9742								
(338.08)	Sb	21.92	41.92	61.92	81.92	111.92	161.92	261.92	361.92	461.92	561.92	661.92	761.92	861.92										
	v	0.0179	3.882	4.022	4.146	4.266	4.394	4.521	4.773	5.069	5.643	6.208	6.765	7.319	8.69	9.417	9.863							
	s	0.4875	1.5915	1.6038	1.6215	1.6388	1.6541	1.6658	1.6821	1.7273	1.7751	1.8217	1.8631	1.9023	1.9368	1.9693								
(341.26)	Sb	18.74	38.74	58.74	78.74	108.74	158.74	258.74	358.74	458.74	558.74	658.74	758.74	858.74										
	v	0.0170	3.728	3.845	3.963	4.079	4.194	4.361	4.631	5.165	5.685	6.197	6.705	7.210	7.713	8.215								
	s	0.4910	1.5879	1.6246	1.6417	1.6592	1.6863	1.7359	1.7809	1.8223	1.8608	1.8974	1.9317	1.9646										
(344.34)	Sb	15.66	35.66	55.66	75.66	105.66	155.66	255.66	355.66	455.66	555.66	655.66	755.66	855.66										
	v	0.0179	3.586	3.680	3.798	3.908	4.019	4.181	4.445	4.954	5.454	5.947	6.435	6.920	7.403	7.885								
	s	0.4956	1.5846	1.6193	1.6319	1.6425	1.6544	1.6654	1.6831	1.7314	1.7764	1.8179	1.8565	1.8931	1.9274	1.9603								
(347.31)	Sb	12.69	32.69	52.69	72.69	102.69	152.69	252.69	352.69	452.69	552.69	652.69	752.69	852.69										
	v	0.0180	3.455	3.528	3.641	3.750	3.857	4.013	4.268	4.760	5.242	5.718	6.186	6.653	7.117	7.591								
	s	0.4995	1.5815	1.6018	1.6212	1.6326	1.6430	1.6525	1.6729	1.7275	1.7718	1.8134	1.8524	1.8887	1.9233	1.9559								
(350.21)	Sb	9.79	29.79	49.79	69.79	99.79	149.79	249.79	349.79	449.79	549.79	649.79	749.79	849.79										
	v	0.0180	3.333	3.388	3.497	3.603	3.707	3.859	4.105	4.580	5.045	5.502	5.955	6.405	6.853	7.303								
	s	0.5032	1.5784	1.6192	1.6217	1.6227	1.6238	1.6249	1.6274	1.6325	1.6379	1.6426	1.6476	1.6526	1.6578	1.6632								
(353.03)	Sb	6.97	26.97	46.97	66.97	96.97	146.97	246.97	346.97	446.97	546.97	646.97	746.97	846.97										
	v	0.0180	3.220	3.258	3.364	3.467	3.567	3.715	3.954	4.413	4.862	5.303	5.741	6.157	6.607	7.037								
	s	0.5069	1.5755	1.5813	1.5965	1.6097	1.6225	1.6400	1.6630	1.6813	1.7183	1.7561	1.7851	1.8104	1.8437	1.8804	1.9147	1.9476						
(355.76)	Sb	4.24	24.24	44.24	64.24	94.24	144.24	244.24	344.24	444.24	544.24	644.24	744.24	844.24										
	v	0.0181	3.114	3.136	3.240	3.340	3.438	3.531	3.827	4.257	4.692	5.119	5.541	5.961	6.378	6.794								
	s	0.5104	1.5726	1.5897	1.6095	1.6209	1.6232	1.6248	1.6274	1.6325	1.6375	1.6425	1.6476	1.6526	1.6578	1.6630	1.6935	1.9435						
(358.43)	Sb	21.57	41.57	61.57	91.57	141.57	214.57	341.57	441.57	541.57	641.57	741.57	841.57											
	v	0.0181	3.016	3.124	3.221	3.317	3.436	3.681	4.112	4.533	4.946	5.355	5.781	6.164	6.587									
	s	0.5138	1.5698	1.5865	1.6002	1.6132	1.6319	1.6598	1.7101	1.7534	1.7970	1.8357	1.8724	1.9068	1.9397									
(361.02)	Sb	18.98	38.98	58.98	88.98	128.98	238.98	338.98	438.98	538.98	638.98	738.98	838.98											
	v	0.0181	2.021	3.015	3.110	3.203	3.340	3.558	3.976	4.384	4.785	5.181	5.574	5.968	6.354									
	s	0.5172	1.5671	1.5818	1.5958	1.6091	1.6279	1.6558	1.7062	1.7516	1.7933	1.8322	1.8688	1.9034	1.9361									
(362.55)	Sb	16.45	36.45	56.45	86.45	136.45	236.45	336.45	436.45	536.45	636.45	736.45	836.45											
	v	0.0182	2.834	2.913	3.006	3.097	3.230	3.442	3.649	3.842	4.042	4.633	5.018	5.398	5.777	6.155								
	s	0.5204	1.5646	1.5772	1.6197	1.6218	1.6230	1.6246	1.6261	1.6274	1.6276	1.6282	1.6287	1.6299	1.6304	1.6308	1.6328							

Sb = superheat, deg. F.

v = specific volume, cu. ft. per lb.

h = enthalpy, B.t.u. per lb.

s = entropy, B.t.u. per deg. F. per lb.

TABLE XXV
continued

Superheated Steam—(Continued)

Abs. Press. Lb./sq. in.	Sat.	Sat.	TEMPERATURE—DEGREES FAHRENHEIT	400°	420°	440°	460°	480°	500°	520°	540°	560°	580°	600°	620°	640°	660°	680°	700°	720°	740°	760°	780°	800°	820°	840°	860°	880°	900°	920°	940°	960°	980°	1000°	1020°	1040°	1060°		
(Sat. Temp.)	Water	Steam																																					
	Sh		33.99	53.99	73.99	93.99	113.99	133.99	183.99	233.99	233.99	433.99	533.99	633.99	733.99	833.99																							
166	v	0.0182	2.752	2.909	2.997	3.084	3.170	3.251	3.334	3.333	3.729	4.114	4.491	4.864	5.234	5.601	5.967																						
(366.01)	b	338.55	1195.9	1217.4	1229.3	1241.1	1251.8	1262.4	1272.8	1298.3	1323.8	1374.5	1425.0	1475.9	1527.8	1579.7	1632.7	n	0.5236	1.6619	1.5874	1.6011	1.6144	1.6262	1.6376	1.0464	1.6747	1.6991	1.7448	1.7865	1.8234	1.8622	1.8966	1.9295					
	Sh		31.58	51.58	71.58	91.58	111.58	131.58	181.58	231.58	231.58	431.58	531.58	631.58	731.58	831.58																							
176	v	0.0182	2.674	2.816	2.903	2.984	3.071	3.151	3.232	3.426	3.617	3.991	4.357	4.720	5.079	5.438	5.791																						
(368.42)	b	341.11	1196.3	1216.5	1228.4	1240.5	1251.3	1261.8	1272.3	1298.2	1323.5	1374.2	1424.9	1475.7	1527.6	1579.6	1632.7	n	0.5266	1.5593	1.5832	1.5969	1.6105	1.6224	1.6337	1.6448	1.6711	1.6955	1.7412	1.7831	1.8587	1.8931	1.9261						
	Sh		29.23	49.23	69.23	89.23	109.23	129.23	179.23	229.23	329.23	429.23	529.23	629.23	729.23	829.23	929.23																						
176	v	0.0182	2.001	2.730	2.816	2.897	2.979	3.057	3.136	3.325	3.510	3.875	4.231	4.584	4.932	5.279	5.625																						
(370.77)	b	343.61	1196.7	1215.6	1227.6	1239.9	1250.8	1261.3	1271.9	1297.8	1323.2	1374.0	1424.7	1475.6	1527.5	1579.6	1632.6	n	0.5296	1.5563	1.5793	1.5931	1.6069	1.6189	1.6302	1.6414	1.6677	1.6922	1.7380	1.7799	1.8188	1.8553	1.8897	1.9227					
	Sh		26.92	46.92	66.92	86.92	106.92	126.92	176.92	226.92	326.92	426.92	526.92	626.92	726.92	826.92	926.92																						
196	v	0.0183	2.532	2.648	2.731	2.812	2.892	2.968	3.045	3.229	3.410	3.765	4.112	4.455	4.794	5.132	5.468																						
(373.08)	b	340.07	1197.2	1214.8	1228.2	1239.7	1250.2	1260.8	1271.5	1297.4	1322.8	1373.7	1424.5	1475.5	1527.4	1579.4	1632.5	n	0.5325	1.5545	1.5751	1.5891	1.6030	1.6151	1.6265	1.6378	1.6641	1.6886	1.7345	1.7765	1.8154	1.8522	1.8866	1.9196					
	Sh		24.66	44.66	64.66	84.66	104.66	124.66	174.66	224.66	324.66	424.66	524.66	624.66	724.66	824.66	924.66																						
188	v	0.0183	2.466	2.570	2.651	2.731	2.809	2.884	2.958	3.139	3.381	3.661	3.999	4.333	4.694	5.032	5.319																						
(375.34)	b	348.47	1197.6	1213.7	1226.0	1238.4	1240.6	1260.3	1271.0	1297.4	1322.4	1373.4	1424.3	1475.3	1527.3	1579.3	1632.4	n	0.5354	1.5522	1.5712	1.5853	1.6002	1.6118	1.6230	1.6343	1.6611	1.6883	1.7312	1.7733	1.8122	1.8491	1.8835	1.9165					
	Sh		22.45	42.45	62.45	82.45	102.45	122.45	172.45	222.45	322.45	422.45	522.45	622.45	722.45	822.45	922.45																						
196	v	0.0183	2.404	2.500	2.576	2.651	2.731	2.804	2.877	3.033	3.225	3.522	3.833	4.218	4.540	4.860	5.179																						
(377.55)	b	350.83	1198.0	1212.7	1225.1	1237.7	1249.0	1259.8	1270.5	1296.6	1322.1	1373.1	1424.1	1475.2	1527.1	1579.2	1632.3	n	0.5382	1.5501	1.5674	1.5817	1.5959	1.6083	1.6199	1.6312	1.6657	1.6823	1.7282	1.7703	1.8093	1.8461	1.8806	1.9136					
	Sh		20.30	40.30	60.30	80.30	100.30	120.30	170.30	220.30	320.30	420.30	520.30	620.30	720.30	820.30	920.30																						
198	v	0.0184	2.344	2.422	2.505	2.581	2.654	2.728	2.799	3.140	3.470	3.791	4.108	4.423	4.735	5.046	5.358																						
(379.70)	b	353.13	1198.4	1211.7	1224.2	1237.0	1248.1	1259.3	1270.0	1296.2	1321.8	1372.9	1423.9	1475.0	1527.0	1579.1	1632.2	n	0.5409	1.5479	1.5630	1.5780	1.5924	1.6044	1.6166	1.6279	1.6545	1.6792	1.7252	1.7673	1.8063	1.8432	1.8777	1.9107					
	Sh		18.18	38.18	58.18	78.18	98.18	118.18	168.18	218.18	318.18	418.18	518.18	618.18	718.18	818.18	918.18																						
200	v	0.0184	2.288	2.360	2.437	2.512	2.585	2.656	2.728	2.895	3.059	3.381	3.697	4.005	4.311	4.616	4.919																						
(381.82)	b	355.40	1198.7	1210.8	1223.7	1236.3	1247.9	1258.7	1269.4	1295.6	1321.4	1372.5	1423.9	1474.9	1526.8	1579.0	1632.1	n	0.5430	1.5475	1.5748	1.5869	1.6017	1.6133	1.6245	1.6651	1.6761	1.7221	1.7646	1.8035	1.8402	1.8749	1.9079						
	Sh		16.11	31.11	51.11	71.11	91.11	111.11	161.11	211.11	311.11	411.11	511.11	611.11	711.11	811.11	911.11																						
206	v	0.0184	2.235	2.307	2.372	2.446	2.518	2.587	2.656	2.821	2.982	3.297	3.604	3.906	4.205	4.502	4.798																						
(383.90)	b	357.61	1199.0	1209.7	1222.5	1235.4	1247.1	1259.2	1269.0	1295.4	1321.0	1372.4	1423.5	1474.7	1526.7	1579.3	1632.1	n	0.5462	1.5436	1.5581	1.5709	1.5821	1.6026	1.6484	1.6731	1.7194	1.7616	1.8007	1.8377	1.8722	1.9052							
	Sh		14.07	34.07	54.07	74.07	94.07	114.07	164.07	214.07	314.07	414.07	514.07	614.07	714.07	814.07	914.07																						
210	v	0.0184	2.183	2.237	2.311	2.394	2.454	2.522	2.589	2.751	2.909	3.216	3.516	3.812	4.104	4.395	4.683																						
(386.93)	b	359.80	1199.6	1208.8	1224.1	1234.7	1246.5	1257.1	1268.5	1295.0	1320.7	1373.1	1423.3	1474.8	1526.8	1578.8	1632.0	n	0.5448	1.5417	1.5527	1.5621	1.5671	1.6071	1.6454	1.6702	1.7165	1.7588	1.8349	1.8695	1.9025								
	Sh		12.07	32.07	52.07	72.07	92.07	112.07	162.07	212.07	312.07	412.07	512.07	612.07	712.07	812.07	912.07																						
218	v	0.0185	2.134	2.200	2.252	2.324	2.393	2.460	2.526	2.685	2.839	3.140	3.433	3.722	4.008	4.292	4.574																						
(387.93)	b	361.95	1199.6	1207.8	1221.0	1234.0	1245.9	1257.3	1268.0	1294.6	1320.4	1371.9	1423.1	1474.4	1526.5	1578.7	1631.9	n	0.5512	1.5505	1.5643	1.5789	1.5920	1.6042	1.6675	1.7139	1.7562	1.7954	1.8324	1.8670	1.9000								
	Sh		10.11	30.11	50.11	70.11	90.11	110.11	160.11	210.11	310.11	410.11	510.11	610.11	710.11	810.11	910.11																						
226	v	0.0185	2.086	2.151	2.212	2.282	2.350	2.418	2.487	2.556	2.708	2.957	3.208	3.456	3.637	3.816	4.000	4.189																					
(388.70)	b	364.03	1199.9	1208.5	1223.0	1235.1	1245.2	1256.7	1265.7	1294.1	1320.0	1371.6	1422.9	1474.2	1526.0	1578.6	1631.8	n	0.5538	1.5537	1.5581	1.5624	1.5671	1.6013	1.6547	1.7027	1.7493	1.7856	1.8224	1.8564	1.8923								
	Sh		8.19	28.19	48.19</																																		

TABLE XXV
continued

Superheated Steam—(Continued)

Abs. Press. Lb./Sq. In.	Sat.	Sat.	TEMPERATURE—DEGREES FAHRENHEIT	430°	440°	450°	460°	500°	520°	540°	560°	580°	600°	700°	800°	900°	1000°	1100°	1200°
(Sat. Temp.)	Water	Steam																	
250	v 0.0187	1.8431	1.9065	1.9711	2.0334	2.0932	2.1515	2.2085	2.2920	2.4272	2.6897	2.9444	3.1049	3.4416	3.6867	3.9299			
(400.97)	b 376.04	1201.6	1214.6	1228.3	1241.0	1253.2	1264.7	1274.5	1291.6	1317.9	1370.0	1421.7	1473.3	1525.8	1578.0	1631.2			
	s 0.5677	1.5267	1.5419	1.5573	1.5713	1.5844	1.5965	1.6066	1.6238	1.6492	1.6961	1.7388	1.7782	1.8153	1.8500	1.8831			
Sh		17.29	37.29	57.29	77.29	97.29	117.29	147.29	197.29	297.29	397.29	497.29	597.29	697.29	797.29				
255	v 0.0187	1.8079	1.8684	1.9286	1.9899	2.0489	2.1065	2.1626	2.2447	2.3778	2.6354	2.8855	3.1313	3.3733	3.6164	3.8524			
(402.71)	b 377.91	1201.6	1213.7	1227.5	1240.3	1252.6	1264.2	1274.3	1291.2	1317.5	1369.8	1421.5	1473.2	1525.5	1577.9	1631.2			
	s 0.5698	1.5249	1.5388	1.5543	1.5684	1.5816	1.5938	1.6041	1.6212	1.6464	1.6937	1.7364	1.7750	1.8130	1.8477	1.8808			
Sh		15.57	35.57	55.57	75.57	95.57	115.57	145.57	195.57	295.57	395.57	495.57	595.57	695.57	795.57				
260	v 0.0187	1.7742	1.8246	1.8876	1.9482	2.0063	2.0631	2.1185	2.1991	2.3299	2.5833	2.8289	3.0701	3.3077	3.5437	3.7778			
(404.43)	b 379.78	1201.8	1212.8	1226.1	1239.5	1252.8	1263.8	1273.8	1290.8	1317.1	1369.5	1421.3	1473.0	1525.0	1577.8	1631.1			
	s 0.5720	1.5233	1.5359	1.5514	1.5656	1.5790	1.5912	1.6017	1.6188	1.6442	1.6914	1.7342	1.7737	1.8109	1.8456	1.8787			
Sh		12.88	33.88	53.88	73.88	93.88	113.88	143.88	193.88	293.88	393.88	492.88	593.88	693.88	793.88				
265	v 0.0187	1.7418	1.7858	1.8491	1.9080	1.9654	2.0213	2.0759	2.1554	2.2840	2.5331	2.7744	3.0114	3.2446	3.4761	3.7061			
(406.12)	b 381.62	1202.0	1211.9	1225.7	1238.7	1252.1	1263.0	1273.4	1290.4	1316.8	1369.3	1421.1	1472.9	1525.3	1577.7	1631.1			
	s 0.5741	1.5217	1.5330	1.5485	1.5628	1.5762	1.5886	1.5993	1.6164	1.6419	1.6892	1.7320	1.7715	1.8087	1.8434	1.8765			
Sh		12.21	32.21	52.21	72.21	92.21	112.21	142.21	192.21	292.21	392.21	492.21	592.21	692.21	792.21				
270	v 0.0188	1.7101	1.7466	1.8101	1.8692	1.9259	1.9810	2.0350	2.1131	2.2394	2.4847	2.7219	2.9548	3.1838	3.4112	3.6370			
(407.79)	b 383.43	1202.2	1211.0	1224.5	1236.0	1250.6	1262.5	1273.0	1290.0	1316.4	1369.0	1420.9	1472.7	1525.1	1577.6	1631.0			
	s 0.5761	1.5200	1.5301	1.5457	1.5601	1.5738	1.5861	1.6140	1.6395	1.6869	1.7298	1.7694	1.8065	1.8431	1.8744				
Sh		10.56	30.56	50.56	70.56	90.56	110.56	140.56	190.56	290.56	390.56	490.56	590.56	690.56	790.56				
275	v 0.0188	1.6798	1.7127	1.7735	1.8318	1.8879	1.9422	1.9956	2.0725	2.1973	2.4382	2.6714	2.9002	3.1253	3.3488	3.5704			
(409.44)	b 385.22	1202.3	1210.0	1224.1	1237.3	1250.0	1262.0	1272.6	1289.5	1316.1	1368.7	1420.7	1472.6	1525.0	1577.5	1630.8			
	s 0.5782	1.5183	1.5271	1.5429	1.5574	1.5711	1.5837	1.5946	1.6116	1.6373	1.6847	1.7277	1.7673	1.8045	1.8393	1.8724			
Sh		8.94	28.94	48.94	68.94	88.94	108.94	138.94	188.94	288.94	388.94	488.94	588.94	688.94	788.94				
280	v 0.0188	1.6504	1.6780	1.7381	1.7957	1.8512	1.9048	1.9573	2.0334	2.1582	2.3932	2.6226	2.8475	3.0688	3.2883	3.5062			
(411.06)	b 386.99	1202.5	1209.0	1223.0	1236.5	1249.4	1261.5	1272.2	1289.1	1315.7	1368.5	1420.5	1472.4	1524.9	1577.4	1630.8			
	s 0.5802	1.5167	1.5241	1.5401	1.5547	1.5686	1.5813	1.5923	1.6093	1.6350	1.6826	2.56	1.7653	1.8024	1.8372	1.8703			
Sh		7.34	27.34	47.34	67.34	87.34	107.34	137.34	187.34	287.34	387.34	487.34	587.34	687.34	787.34				
285	v 0.0188	1.6322	1.6446	1.7040	1.7617	1.8157	1.8697	1.9207	1.9955	2.1165	2.3495	2.5756	2.8068	3.0343	3.2300	3.4443			
(412.66)	b 388.74	1202.7	1209.7	1222.3	1235.6	1248.7	1260.9	1271.8	1288.6	1315.4	1363.2	1420.3	1472.2	1524.7	1577.3	1630.7			
	s 0.5822	1.5153	1.5214	1.5375	1.5521	1.5662	1.5790	1.6071	1.6330	1.6606	1.6866	1.7237	1.7633	1.8003	1.8333	1.8684			
Sh		5.76	25.76	45.76	65.76	85.76	105.76	135.76	185.76	285.76	385.76	485.76	585.76	685.76	785.76				
290	v 0.0188	1.5947	1.6122	1.6710	1.7273	1.7815	1.8338	1.8853	1.9590	2.0783	2.3090	2.5302	2.7478	2.9618	3.1738	3.3944			
(414.24)	b 390.47	1202.9	1207.0	1221.4	1234.8	1248.0	1262.4	1274.1	1288.2	1315.0	1367.9	1420.1	1472.1	1524.6	1577.2	1630.6			
	s 0.5841	1.5137	1.5184	1.5344	1.5493	1.5635	1.5763	1.5879	1.6048	1.6307	1.6784	1.7215	1.7614	1.7984	1.8332	1.8663			
Sh		4.20	24.20	44.20	64.20	84.20	104.20	134.20	184.20	284.20	384.20	484.20	584.20	684.20	784.20				
295	v 0.0189	1.5584	1.5809	1.6391	1.6948	1.7464	1.8001	1.8510	1.9238	2.0413	2.2677	2.4633	2.7004	2.9163	3.1195	3.3195			
(415.80)	b 392.17	1203.0	1206.1	1220.5	1247.4	1258.0	1278.0	1297.8	1317.4	1341.7	1367.1	1419.7	1472.0	1524.3	1577.1	1630.5			
	s 0.5861	1.5122	1.5157	1.5319	1.5467	1.5611	1.5742	1.5857	1.6026	1.6284	1.6763	1.7195	1.7591	1.7963	1.8313	1.8644			
Sh		2.67	22.67	42.67	62.67	82.67	102.67	132.67	182.67	282.67	382.67	482.67	582.67	682.67	782.67				
300	v 0.0189	1.5426	1.5506	1.6082	1.6634	1.7164	1.7677	1.8173	1.8896	2.0056	2.2286	2.4447	2.6547	2.8634	3.0670	3.2707			
(417.33)	b 393.85	1203.2	1205.2	1219.5	1233.4	1246.6	1259.2	1270.8	1287.4	1314.4	1367.4	1419.7	1471.3	1524.5	1577.0	1630.4			
	s 0.5879	1.5107	1.5130	1.5291	1.5443	1.5585	1.5718	1.5834	1.6004	1.6265	1.6742	1.7175	1.7572	1.7945	1.8294	1.8625			
Sh		19.65	39.65	59.65	79.65	99.65	129.65	179.65	279.65	379.65	479.65	579.65	679.65	779.65					
310	v 0.0189	1.4973	1.5495	1.6036	1.6555	1.7054	1.7546	1.8246	1.9375	2.1573	2.3631	2.5675	2.7682	2.9671	3.1545				
(420.35)	b 397.16	1201.5	1217.8	1231.5	1245.3	1258.0	1269.6	1284.6	1313.5	1366.9	1419.3	1471.5	1521.1	1576.8	1630.3				
	s 0.5917	1.5079	1.5240	1.5391	1.5539	1.5673	1.5793	1.5962	1.6224	1.6705	1.7138	1.7530	1.7930	1.8238	1.8590				
Sh		16.71	36.71	56.71	76.71	96.71	126.71	176.71	276.71	376.71	476.71	576.71	676.71	776.71					
320	v 0.0190	1.4479	1.4943	1.5473	1.5982	1.6472	1.6954	1.7637	1.8737	2.0844	2.2874	2.4857	2.6804	2.8753	3.0643				
(422.29)	b 400.40	1203.8	1216.0	1229.9	1244.0	1256.6	1268.6	1285.6	1312.8	1363.6	1418.9	1471.2	1523.8	1576.6	1630.1				
	s 0.5935	1.5053	1.5180	1.5342	1.5494	1.5629	1.5751	1.5922	1.6184	1.6667	1.7102	1.7504	1.7878	1.8224	1.8556				
Sh		13.84	33.84	53.84	73.84	93.84	123.84	173.84	273.84	373.84	473.84	573.84	673.84	773.84					
325	v 0.0190	1.4048	1.4494	1.4938	1.5409	1.5872	1.6255	1.7573	1.9572	2.1493	2.3368	2.5206	2.7027	2.8931					
(426.16)	b 403.56	1204.0	1214.1	1228.2	1242.9	1256.6	1268.6	1284.7	1313.4	1365.2	1418.0	1470.8	1520.5	1576.7	1630.0				
	s 0.5988	1.5023	1.5136	1.5291	1.5445	1.5582	1.5707	1.5879	1.6144	1.6628	1.7053	1.7463	1.7837	1.8187	1.8520				
Sh		11.04	31.04	51.04	71.04	91.04	121.04	171.04	271.04	371.04	471.04	571.04	671.04	771.04					
330	v 0.0191	1.3640	1.4093	1.4496	1.4938	1.5409	1.5872	1.6255	1.7573	2.1493	2.3368	2.5206	2.7027	2.8931					
(428.96)	b 406.65	1204.2	1212.5	1228.6	1241.0	1254.2	1266.6	1283.8	1311.4	1365.2	1418.0	1470.5	1523.5	1576.2	1629.8				
	s 0.6023	1.4997	1.5088	1.5243	1.5399	1.5538	1.5666	1.5839	1.6106	1.6591	1.7027	1.7428	1.7802	1.8153	1.8485				
Sh		8.29	28.29	48.29	68.29	88.29	118.29	168.29	268.29	368.29	468.29	568.29	669.29	769.29					
335	v 0.0191	1.3255	1.3707	1.4140	1.4600	1.4923	1.5377	1.6018	1.7041	1.8981	2.0863	2.2687	2.4473	2.6247	2.8000				
(431.71)	b 409.70																		

TABLE XXV
continued

Superheated Steam—(Continued)

Abs. Press. lb./sq. in.	Sat. Water	Sat. Steam	TEMPERATURES—DEGREES FAHRENHEIT	460°	480°	500°	520°	540°	560°	580°	600°	620°	640°	660°	680°	700°	720°	740°	760°	780°	800°	820°	840°	860°	880°	900°	920°	940°	960°	980°	1000°	1100°	1200°	1300°		
			S _b	22.99	42.99	62.99	82.99	102.99	122.99	142.99	162.99	262.99	362.99	462.99	562.99	662.99	762.99	862.99	962.99	782.99																
370	v 0.0102	1.2545	1.3111	1.3579	1.4028	1.4486	1.4881	1.5286	1.5675	1.6063	1.7921	1.9703	2.1435	2.3131	2.4809	2.6471																				
(437.01)	b 415.58	1204.6	1221.4	1236.5	1250.7	1263.4	1275.2	1286.7	1298.3	1309.1	1363.6	1416.8	1469.8	1522.5	1575.6	1629.2																				
	s 0.6122	1.4921	1.5106	1.5268	1.5412	1.5548	1.5667	1.5781	1.5894	1.5997	1.6488	1.6928	1.7331	1.7706	1.8058	1.8391																				
			S _b	20.41	40.41	60.41	80.41	100.41	120.41	140.41	160.41	260.41	360.41	460.41	560.41	660.41	760.41																			
380	v 0.0103	1.2217	1.2711	1.3173	1.3614	1.4045	1.4452	1.4850	1.5232	1.5612	1.7428	1.9168	2.0959	2.2512	2.4148	2.5768																				
(439.59)	b 416.45	1204.7	1219.8	1235.0	1248.8	1262.3	1274.2	1286.0	1297.5	1308.4	1363.0	1416.4	1469.2	1522.5	1575.6	1629.1																				
	s 0.6164	1.4897	1.5063	1.5226	1.5371	1.5610	1.5630	1.5747	1.5859	1.5963	1.6455	1.6894	1.7209	1.7675	1.8027	1.8361																				
			S _b	17.89	37.89	57.89	77.89	97.89	117.89	137.89	157.89	257.89	357.89	457.89	557.89	657.89	757.89																			
390	v 0.0103	1.1904	1.2332	1.2788	1.3222	1.3647	1.4046	1.4436	1.4812	1.5184	1.6961	1.8661	2.031	2.1925	2.3521	2.5101																				
(442.11)	b 421.27	1204.8	1218.0	1233.4	1247.4	1261.2	1273.2	1285.1	1296.7	1307.7	1362.5	1416.0	1468.9	1522.0	1575.2	1628.0																				
	s 0.6184	1.4872	1.5017	1.5183	1.5530	1.5747	1.5993	1.6243	1.6585	1.6893	1.6933	1.6833	1.7240	1.7615	1.7963	1.8324																				
			S _b	15.42	35.42	55.42	75.42	95.42	115.42	135.42	155.42	255.42	355.42	455.42	555.42	655.42	755.42																			
400	v 0.0103	1.1609	1.1972	1.2422	1.2849	1.3269	1.3660	1.4042	1.4413	1.4777	1.6522	1.8179	1.9796	2.1367	2.2926	2.4475																				
(444.58)	b 424.02	1204.9	1216.5	1231.6	1245.9	1259.9	1272.4	1284.3	1295.8	1307.0	1362.1	1415.5	1468.6	1521.5	1574.8	1628.5																				
	s 0.6215	1.4850	1.4977	1.5140	1.5290	1.5434	1.5561	1.5678	1.5790	1.5897	1.6393	1.6833	1.7240	1.7615	1.7963	1.8324																				
			S _b	13.00	33.00	53.00	73.00	93.00	113.00	133.00	153.00	253.00	353.00	453.00	553.00	653.00	753.00																			
410	v 0.0104	1.1327	1.1628	1.2071	1.2494	1.2906	1.3291	1.3661	1.4033	1.4390	1.6093	1.7722	1.9297	2.0887	2.2350	2.3864																				
(447.00)	b 426.74	1205.0	1214.6	1230.2	1244.5	1258.8	1271.2	1283.5	1295.1	1306.2	1361.4	1415.1	1468.3	1521.4	1574.8	1628.5																				
	s 0.6244	1.4828	1.4993	1.5101	1.5252	1.5399	1.5524	1.5648	1.5759	1.5865	1.6382	1.6806	1.7212	1.7589	1.7945	1.8327	1.8717																			
			S _b	10.62	30.62	50.62	70.62	90.62	110.62	130.62	150.62	250.62	350.62	450.62	550.62	650.62	750.62																			
420	v 0.0104	1.1058	1.1300	1.1738	1.2156	1.2561	1.2942	1.3312	1.3671	1.4021	1.5693	1.7285	1.8826	2.0332	2.1819	2.3290																				
(449.88)	b 429.42	1205.0	1213.0	1228.6	1243.1	1257.5	1270.2	1282.6	1294.3	1305.4	1360.8	1414.6	1468.0	1521.6	1574.8	1628.4																				
	s 0.6272	1.4805	1.4892	1.5000	1.5213	1.5361	1.5489	1.5612	1.5726	1.5832	1.6331	1.6776	1.7184	1.7501	1.7891	1.8249																				
			S _b	8.28	28.28	48.28	68.28	88.28	108.28	128.28	148.28	248.28	348.28	448.28	548.28	648.28	748.28																			
430	v 0.0105	1.0800	1.0986	1.1419	1.1834	1.2233	1.2607	1.2972	1.3328	1.3670	1.5309	1.6386	1.7377	1.8377	1.9350	1.9850	2.1035	2.2742																		
(451.72)	b 432.05	1205.0	1211.2	1227.0	1241.7	1253.6	1269.1	1281.8	1293.5	1304.6	1360.3	1414.2	1467.6	1520.9	1574.4	1628.2																				
	s 0.6302	1.4782	1.4850	1.5020	1.5170	1.5326	1.5455	1.5581	1.5695	1.6030	1.6743	1.7478	1.7156	1.7534	1.7884	1.8222																				
			S _b	5.99	25.99	45.99	65.99	85.99	105.99	125.99	145.99	245.99	345.99	445.99	545.99	645.99	745.99																			
440	v 0.0105	1.0554	1.0688	1.1116	1.1524	1.1918	1.2388	1.2848	1.3334	1.3943	1.4043	1.5921	1.7559	1.8951	2.0345	2.1720																				
(454.01)	b 434.63	1205.0	1209.8	1225.3	1240.2	1255.0	1266.0	1280.9	1292.6	1303.9	1359.7	1413.8	1467.3	1520.6	1574.1	1628.0																				
	s 0.6330	1.4762	1.4812	1.4981	1.5138	1.5222	1.5367	1.5511	1.5632	1.5740	1.6607	1.6275	1.6722	1.7130	1.7508	1.7862	1.8197																			
			S _b	8.73	23.73	43.73	63.73	83.73	103.73	123.73	143.73	243.73	343.73	443.73	543.73	643.73	743.73																			
450	v 0.0105	1.0318	1.0401	1.0824	1.1236	1.1617	1.1982	1.2337	1.2681	1.3013	1.4593	1.6092	1.7559	1.8951	2.0345	2.1720																				
(456.27)	b 437.18	1205.0	1207.3	1223.7	1238.7	1253.8	1269.9	1280.0	1291.8	1303.1	1356.9	1413.4	1467.0	1520.3	1573.0	1627.8																				
	s 0.6357	1.4739	1.4771	1.4941	1.5090	1.5255	1.5387	1.5511	1.5632	1.5740	1.6607	1.6218	1.6694	1.7103	1.7481	1.7830	1.8171																			
			S _b	21.32	41.32	61.32	81.32	101.32	121.32	141.32	241.32	341.32	441.32	541.32	641.32	741.32																				
460	v 0.0106	1.0092	1.0045	1.0468	1.0946	1.1329	1.1690	1.2038	1.2378	1.2708	1.4258	1.5729	1.7147	1.8530	1.9896	2.1235																				
(458.48)	b 439.69	1205.0	1218.6	1234.9	1249.8	1265.5	1281.2	1297.0	1312.0	1327.4	1380.9	1437.5	1496.0	1549.5	1573.3	1627.5																				
	s 0.6384	1.4719	1.4841	1.5002	1.5151	1.5288	1.5423	1.5539	1.5650	1.5761	1.6612	1.6212	1.6612	1.7023	1.7402	1.7758	1.8093																			
			S _b	17.20	37.20	57.20	77.20	97.20	117.20	137.20	237.20	337.20	437.20	537.20	637.20	737.20																				
470	v 0.0106	0.9944	0.9931	1.0374	1.0814	1.1220	1.1548	1.1860	1.2186	1.2509	1.4094	1.5575	1.7127	1.8659	1.9997	2.1337																				
(472.80)	b 444.60	1205.0	1218.6	1234.9	1249.8	1265.5	1281.2	1297.0	1312.0	1327.4	1380.9	1437.5	1496.0	1549.5	1573.3	1627.5																				
	s 0.6438	1.4670	1.4818	1.4959	1.5097	1.5236	1.54																													

TABLE XXV
continued

Superheated Steam—(Continued)

Abs. Press. Lb./Sq. In.	Sat. Water	Sat. Steam	TEMPERATURE—DEGREES FAHRENHEIT														
			500°	520°	540°	560°	580°	600°	650°	700°	750°	800°	900°	1000°			
540 (475.02)	Sh v 0.0199	0.8576	0.9051	0.9401	0.9736	1.0054	1.0363	1.0653	1.1356	1.2025	1.2671	1.3309	1.4535	1.5727	1.6833	1.8056	
	h 458.62	1204.5	1225.0	1241.4	1256.1	1270.7	1283.8	1290.0	1325.6	1354.0	1382.1	1409.6	1403.9	1517.8	1572.0	1626.2	
	s 0.6385	1.4363	1.4781	1.4950	1.5098	1.5243	1.5370	1.5486	1.5739	1.6009	1.6246	1.6469	1.6884	1.7266	1.7625	1.7962	
550 (476.94)	Sh v 0.0199	0.8416	0.8851	0.9198	0.9530	0.9846	1.0151	1.0441	1.1132	1.1791	1.2428	1.3052	1.4262	1.5434	1.6590	1.7724	
	h 406.83	1204.4	1223.4	1240.0	1254.8	1269.6	1282.9	1295.2	1324.9	1353.5	1381.6	1409.2	1463.6	1517.5	1571.7	1626.0	
	s 0.6609	1.4343	1.4748	1.4919	1.5068	1.5215	1.5344	1.5461	1.5735	1.5987	1.6224	1.6447	1.6862	1.7244	1.7607	1.7940	
560 (478.85)	Sh v 0.0200	0.8253	0.8659	0.9033	0.9332	0.9644	0.9947	1.0233	1.0917	1.1568	1.2193	1.2810	1.3998	1.5151	1.6288	1.7403	
	h 463.04	1204.3	1221.8	1238.5	1253.5	1269.5	1282.0	1294.4	1324.2	1352.9	1381.1	1408.7	1463.2	1517.2	1571.5	1625.8	
	s 0.6632	1.4330	1.4714	1.4886	1.5033	1.5187	1.5319	1.5435	1.5711	1.5964	1.6202	1.6425	1.6841	1.7224	1.7584	1.7921	
570 (480.73)	Sh v 0.0200	0.8114	0.8472	0.8814	0.9141	0.9450	0.9749	1.0033	1.0708	1.1348	1.1966	1.2575	1.3744	1.4879	1.5998	1.7093	
	h 465.22	1204.1	1220.9	1236.9	1252.2	1267.3	1281.0	1293.5	1323.5	1352.3	1380.6	1408.3	1462.9	1517.0	1571.3	1625.6	
	s 0.6655	1.4512	1.4881	1.4953	1.5008	1.5156	1.5291	1.5410	1.5686	1.5940	1.6179	1.6403	1.6820	1.7204	1.7564	1.7901	
580 (482.58)	Sh v 0.0201	0.7968	0.8291	0.8631	0.8956	0.9263	0.9558	0.9839	1.0506	1.1137	1.1747	1.2347	1.3498	1.4616	1.5714	1.6794	
	h 467.37	1204.0	1218.6	1235.5	1250.9	1266.1	1280.0	1292.6	1322.8	1351.6	1380.0	1407.8	1462.5	1516.7	1571.0	1625.4	
	s 0.6677	1.4494	1.4648	1.4822	1.4978	1.5128	1.5264	1.5384	1.5602	1.5916	1.6150	1.6381	1.6709	1.7183	1.7534	1.7881	
590 (484.41)	Sh v 0.0201	0.7681	0.8116	0.8485	0.8778	0.9082	0.9373	0.9653	1.0310	1.0934	1.1535	1.2128	1.3262	1.4360	1.5442	1.6505	1.7559
	h 469.50	1203.8	1217.0	1234.0	1246.0	1265.0	1278.9	1291.8	1322.1	1351.1	1379.5	1407.4	1462.2	1516.4	1570.8	1623.3	
	s 0.6699	1.4477	1.4719	1.4941	1.5010	1.5236	1.5359	1.5503	1.5894	1.6134	1.6380	1.6778	1.7122	1.7522	1.7861		
600 (486.21)	Sh v 0.0201	0.7785	0.7945	0.8284	0.8605	0.8907	0.9194	0.9471	1.0123	1.0738	1.1332	1.1915	1.3032	1.4115	1.5179	1.6224	
	h 471.59	1203.6	1215.6	1232.5	1248.3	1263.7	1278.1	1290.9	1321.4	1350.5	1379.0	1407.0	1461.8	1516.0	1570.5	1625.0	
	s 0.6721	1.4460	1.4588	1.4760	1.4920	1.5072	1.5212	1.5334	1.5615	1.5871	1.6112	1.6339	1.6757	1.7141	1.7502	1.7841	
610 (487.99)	Sh v 0.0202	0.7565	0.7780	0.8120	0.8436	0.8730	0.9026	0.9342	1.0021	1.0620	1.1201	1.1802	1.2809	1.3878	1.4928	1.5964	
	h 473.67	1203.5	1213.6	1230.9	1246.9	1262.5	1276.8	1290.0	1320.6	1350.0	1378.5	1406.5	1461.5	1515.8	1570.3	1624.9	
	s 0.6743	1.4444	1.4552	1.4728	1.4890	1.5044	1.5183	1.5309	1.5591	1.5850	1.6093	1.6318	1.6738	1.7123	1.7484	1.7823	
620 (489.75)	Sh v 0.0202	0.7438	0.7632	0.7903	0.8214	0.8516	0.8816	0.9127	0.9794	1.0384	1.0943	1.1505	1.2545	1.3643	1.4677	1.5707	
	h 475.72	1203.3	1212.2	1229.5	1245.5	1261.3	1275.6	1288.1	1319.9	1349.3	1377.9	1404.1	1461.2	1515.5	1570.1	1624.7	
	s 0.6764	1.4427	1.4527	1.4698	1.4880	1.5016	1.5157	1.5284	1.5588	1.5827	1.6068	1.6296	1.6717	1.7102	1.7464	1.7803	
630 (491.49)	Sh v 0.0202	0.7316	0.7466	0.7802	0.8107	0.8413	0.8694	0.8963	0.9595	1.0187	1.0757	1.1312	1.2387	1.3423	1.4445	1.5449	
	h 477.75	1203.1	1210.6	1227.8	1244.1	1260.1	1274.7	1288.3	1319.2	1348.7	1377.4	1405.7	1460.8	1515.2	1569.9	1624.5	
	s 0.6785	1.4410	1.4488	1.4665	1.4830	1.4988	1.5130	1.5260	1.5545	1.5805	1.6047	1.6276	1.6697	1.7083	1.7445	1.7784	
640 (493.21)	Sh v 0.0203	0.7217	0.7317	0.7651	0.7963	0.8258	0.8537	0.8804	0.9429	1.0015	1.0578	1.1124	1.2187	1.3210	1.4213	1.5193	
	h 479.79	1202.9	1209.0	1226.3	1242.7	1258.9	1273.6	1287.4	1318.5	1348.2	1378.6	1405.2	1460.5	1515.0	1569.7	1624.3	
	s 0.6806	1.4394	1.4450	1.4636	1.4802	1.4962	1.5105	1.5230	1.5523	1.5785	1.6028	1.6296	1.6717	1.7102	1.7467	1.7803	
650 (494.90)	Sh v 0.0203	0.7082	0.7171	0.7500	0.7816	0.8107	0.8394	0.8684	0.9359	1.0044	1.0578	1.1124	1.2187	1.3210	1.4213	1.5193	
	h 481.73	1202.7	1207.3	1224.8	1241.3	1257.6	1272.5	1296.5	1317.8	1347.8	1376.3	1404.7	1460.1	1514.7	1569.4	1624.1	
	s 0.6826	1.4379	1.4427	1.4607	1.4774	1.4935	1.5080	1.5213	1.5501	1.5764	1.6006	1.6238	1.6704	1.7048	1.7448	1.7748	
660 (496.58)	Sh v 0.0204	0.6969	0.7031	0.7361	0.7672	0.7902	0.8237	0.8499	0.9132	0.9686	1.0234	1.0769	1.1803	1.2797	1.3774	1.4727	
	h 483.77	1202.5	1205.7	1223.2	1240.0	1256.4	1271.4	1285.5	1317.1	1347.0	1375.8	1404.3	1459.7	1514.4	1569.2	1624.0	
	s 0.6847	1.4363	1.4393	1.4578	1.4746	1.4908	1.5054	1.5188	1.5472	1.5742	1.5985	1.6216	1.6639	1.7027	1.7390	1.7730	
670 (498.23)	Sh v 0.0204	0.6861	0.6939	0.7224	0.7534	0.7838	0.8093	0.8354	0.8963	0.9527	1.0072	1.0599	1.1617	1.2600	1.3560	1.4503	
	h 485.61	1202.3	1204.0	1221.7	1238.7	1253.1	1270.2	1284.5	1310.6	1346.3	1375.3	1403.9	1459.4	1514.9	1569.0	1623.8	
	s 0.6867	1.4349	1.4367	1.4549	1.4743	1.4933	1.5080	1.5166	1.5435	1.5703	1.5947	1.6179	1.6603	1.7012	1.7376	1.7716	
680 (499.87)	Sh v 0.0204	0.6757	0.6829	0.7037	0.7363	0.7683	0.7954	0.8212	0.8814	0.9375	0.9912	1.0432	1.1440	1.2408	1.3357	1.4283	
	h 487.64	1202.1	1202.2	1227.3	1253.9	1269.1	1283.6	1315.6	1345.8	1374.7	1403.4	1459.0	1513.8	1568.7	1623.6		
	s 0.6886	1.4332	1.4419	1.4549	1.4743	1.4936	1.5084	1.5162	1.5437	1.5703	1.5947	1.6179	1.6603	1.7092	1.7438	1.7769	
690 (501.49)	Sh v 0.0205	0.6632	0.6695	0.7263	0.7549	0.7818	0.8075	0.8675	0.9225	0.9758	1.0272	1.1267	1.2223	1.3162	1.4075		
	h 489.58	1201.8	1218.5	1235.8	1252.5	1269.0	1282.7	1314.9	1345.1	1374.2	1402.8	1458.7	1513.6	1568.5	1623.4		
	s 0.6906	1.4316	1.4488	1.4682	1.4828	1.4978	1.5118	1.5381	1.5681	1.5927	1.6150	1.6580	1.6975	1.7339	1.7760		
heat, deg. F.			h = enthalpy, B.t.u. per lb.														
hc volume, cu. ft. per lb.			s = entropy, B.t.u. per deg. F. per lb.														

TABLE XXV
continued

Superheated Steam—(Continued)

Atm. Press. Lb./sq. in.	Sat. Water (Sat. Temp.)	Sat. Steam 880°	TEMPERATURE—DEGREES FAHRENHEIT	840°	860°	880°	900°	920°	940°	960°	980°	1000°	1020°	1040°	1060°	1080°	
			S _b	12.99	32.99	52.99	72.99	92.99	112.99	142.99	192.99	242.99	292.99	342.99	492.99	592.99	692.99
788	v 0.0206	0.6314	0.6524	0.6827	0.7109	0.7373	0.7624	0.7804	0.8203	0.8740	0.9250	0.9745	1.0097	1.1612	1.2511	1.3383	
(607.01)	b 496.2	1200.0	1212.8	1230.9	1248.0	1264.0	1279.1	1293.8	1312.3	1343.0	1372.3	1401.3	1457.4	1512.5	1567.7	1622.7	
	s 0.6973	1.4263	1.4356	1.4561	1.4737	1.4892	1.5030	1.5173	1.5342	1.5612	1.5859	1.6094	1.6522	1.6913	1.7279	1.7621	
			S _b	9.17	20.17	49.17	69.17	89.17	109.17	139.17	189.17	239.17	289.17	389.17	489.17	589.17	689.17
790	v 0.0207	0.6091	0.6237	0.6538	0.6818	0.7080	0.7326	0.7561	0.7898	0.8419	0.8918	0.9399	1.0326	1.1212	1.2078	1.2928	
(510.83)	b 500.8	1200.2	1208.8	1227.4	1244.9	1261.0	1276.6	1291.4	1310.5	1341.5	1371.0	1400.2	1456.5	1511.8	1567.1	1622.3	
	s 0.7019	1.4225	1.4313	1.4501	1.4674	1.4830	1.4979	1.5117	1.5291	1.5564	1.5813	1.6044	1.6479	1.6871	1.7237	1.7580	
			S _b	5.43	25.43	45.43	65.43	105.43	135.43	185.43	235.43	285.43	385.43	485.43	585.43	685.43	
798	v 0.0208	0.5882	0.5969	0.6268	0.6545	0.6803	0.7047	0.7278	0.7607	0.8119	0.8606	0.9073	0.9977	1.0838	1.1674	1.2505	
(514.87)	b 505.3	1199.5	1204.7	1223.7	1241.5	1258.2	1271.0	1289.0	1308.6	1340.9	1369.7	1399.0	1453.6	1511.1	1566.8	1621.8	
	s 0.7064	1.4189	1.4242	1.4434	1.4610	1.4772	1.4902	1.5062	1.5318	1.5769	1.6000	1.6438	1.7204	1.7543			
			S _b	1.80	21.80	41.80	61.80	81.80	101.80	131.80	181.80	231.80	281.80	381.80	481.80	581.80	681.80
800	v 0.0209	0.5885	0.5971	0.6103	0.6288	0.6545	0.6785	0.7013	0.7333	0.7830	0.8313	0.8770	0.9648	1.0486	1.1302	1.2105	
(518.20)	b 509.7	1198.8	1200.3	1220.0	1238.2	1255.3	1271.4	1286.5	1306.8	1338.4	1368.5	1397.8	1454.9	1510.5	1566.0	1621.4	
	s 0.7108	1.4155	1.4170	1.4368	1.4549	1.4715	1.4861	1.5009	1.5194	1.5473	1.5727	1.5968	1.6400	1.6794	1.7162	1.7506	
			S _b	18.25	38.25	58.25	78.25	98.25	128.25	178.25	228.25	278.25	378.25	478.25	578.25	678.25	
808	v 0.0210	0.5500	0.5645	0.6040	0.6300	0.6539	0.6783	0.7081	0.7573	0.8038	0.8483	0.9338	1.0155	1.0950	1.1727		
(521.75)	b 514.0	1199.0	1216.1	1234.9	1252.1	1268.5	1284.0	1304.8	1326.8	1367.0	1396.6	1453.8	1509.7	1565.4	1620.6		
	s 0.7152	1.4121	1.4304	1.4490	1.4657	1.4813	1.4958	1.5148	1.5430	1.5685	1.5925	1.6362	1.6758	1.7127	1.7471		
			S _b	14.77	34.77	54.77	74.77	94.77	124.77	174.77	224.77	274.77	374.77	474.77	574.77	674.77	
808	v 0.0210	0.5326	0.5545	0.5817	0.6070	0.6306	0.6528	0.6841	0.7232	0.7779	0.8213	0.9048	0.9845	1.0619	1.1375		
(523.28)	b 518.3	1197.2	1212.4	1231.5	1249.1	1265.7	1281.4	1302.9	1332.5	1365.7	1395.4	1452.8	1509.0	1564.3	1620.4		
	s 0.7194	1.4087	1.4240	1.4460	1.4735	1.4905	1.5101	1.5384	1.5643	1.5884	1.6321	1.6720	1.7094	1.7433			
			S _b	11.38	31.38	51.38	71.38	91.38	121.38	171.38	221.38	271.38	371.38	471.38	571.38	671.38	
818	v 0.0211	0.5162	0.5327	0.5601	0.5851	0.6085	0.6305	0.6615	0.7087	0.7535	0.7960	0.8773	0.9554	1.0306	1.1043		
(526.62)	b 522.6	1196.4	1208.4	1228.0	1246.0	1263.0	1279.0	1309.0	1335.3	1364.6	1394.2	1451.9	1508.3	1564.3	1619.9		
	s 0.7238	1.4086	1.4177	1.4371	1.4546	1.4708	1.4858	1.5058	1.5345	1.5606	1.5847	1.6287	1.6687	1.7058	1.7403		
			S _b	8.06	28.06	48.06	68.06	88.06	118.06	168.06	218.06	268.06	368.06	468.06	568.06	668.06	
820	v 0.0212	0.5008	0.5123	0.5394	0.5644	0.5876	0.6094	0.6399	0.6666	0.7034	0.7720	0.8518	0.9277	1.0010	1.0727		
(531.94)	b 526.6	1195.6	1204.0	1224.2	1242.6	1260.0	1276.5	1298.6	1318.1	1363.0	1392.9	1451.1	1507.8	1563.7	1619.3		
	s 0.7276	1.4022	1.4106	1.4306	1.4484	1.4649	1.4803	1.5004	1.5296	1.5559	1.5801	1.6245	1.6647	1.7017	1.7362		
			S _b	4.80	24.80	44.80	64.80	84.80	114.80	164.80	214.80	284.80	364.80	464.80	564.80	664.80	
828	v 0.0213	0.4858	0.4927	0.5199	0.5448	0.5678	0.5894	0.6196	0.6655	0.6705	0.7085	0.7494	0.8272	0.9014	0.9731	1.0432	
(536.90)	b 530.6	1194.7	1200.0	1220.8	1239.6	1257.0	1273.6	1296.7	1330.2	1361.7	1391.7	1450.0	1506.9	1563.1	1619.9		
	s 0.7316	1.3991	1.4044	1.4250	1.4433	1.4599	1.4757	1.4965	1.5266	1.5526	1.5769	1.6210	1.6618	1.6994	1.7337		
			S _b	1.62	21.62	41.62	61.62	81.62	111.62	161.62	211.62	261.62	361.62	461.62	561.62	661.62	
830	v 0.0214	0.4717	0.4741	0.5014	0.5262	0.5491	0.5705	0.6004	0.6456	0.6727	0.7037	0.8039	0.8768	0.9465	1.0148		
(538.38)	b 534.0	1193.8	1195.8	1217.0	1234.1	1251.3	1271.3	1294.5	1326.5	1360.3	1390.5	1449.1	1508.1	1562.6	1618.5		
	s 0.7353	1.3960	1.3980	1.4190	1.4378	1.4547	1.4708	1.4920	1.5220	1.5488	1.5733	1.6180	1.6584	1.6958	1.7303		
			S _b	18.50	38.50	58.50	78.50	108.50	158.50	208.50	258.50	358.50	458.50	558.50	658.50		
878	v 0.0215	0.4583	0.4833	0.5083	0.5311	0.5524	0.5820	0.6264	0.6680	0.7073	0.7820	0.8533	0.9216	0.9880	1.0542		
(541.50)	b 538.5	1192.9	1213.0	1233.0	1251.2	1268.7	1292.1	1326.7	1358.8	1389.2	1448.2	1505.4	1562.0	1619.0			
	s 0.7393	1.3929	1.4120	1.4322	1.4493	1.4655	1.4873	1.5176	1.5449	1.5695	1.6142	1.6551	1.6920	1.7274			
			S _b	15.44	35.44	55.44	75.44	105.44	155.44	205.44	255.44	355.44	455.44	555.44	655.44		
1000	v 0.0216	0.4456	0.4914	0.5141	0.5351	0.5639	0.6085	0.6492	0.6879	0.7611	0.8308	0.8974	0.9624				
(544.56)	b 542.4	1191.9	1208.8	1229.4	1248.2	1265.8	1289.6	1324.9	1357.2	1388.0	1447.3	1504.7	1561.3	1617.5			
	s 0.7431	1.3890	1.4066	1.4266	1.4445	1.4610	1.4827	1.5138	1.5411	1.5660	1.6113	1.6320	1.6895	1.7244			
			S _b	12.43	32.43	52.43	72.43	102.43	152.43	202.43	252.43	352.43	452.43	552.43	652.43		
1028	v 0.0217	0.4334	0.4498	0.4751	0.4978	0.5184	0.5479	0.5913	0.6314	0.6695	0.7413	0.8095	0.8746				
(547.67)	b 546.1	1191.0	1204.5	1225.1	1242.5	1263.0	1287.6	1323.1	1357.1	1386.8	1446.8	1504.1	1560.0	1617.0			
	s 0.7468	1.3871	1.4004	1.4212	1.4396	1.4562	1.4787	1.5100	1.5373	1.5627	1.6083	1.6491	1.6861	1.7216			
			S _b	9.48	29.48	49.48	69.48	99.48	149.48	199.48	249.48	349.48	449.48	549.48	649.48		
1040	v 0.0218	0.4219	0.4345	0.4622	0.5031	0.5320	0.5620	0.5916	0.5980	0.6349	0.7042	0.7696	0.8322	0.8933			
(550.52)	b 550.0	1190.0	1205.5	1222.4	1241.9	1260.2	1285.1	1321.3	1354.2	1385.6	1445.4	1503.4	1560.0	1616.5			
	s 0.7504	1.3839	1.3942	1.4155	1.4341	1.4512	1.4739	1.5020	1.5300	1.5555	1.6015	1.6428	1.6824	1.7126			
			S _b	6.58	26.58	46.58	66.58	96.58	146.58	196.58	246.58	346.58	446.58	546.58	646.58		
1070	v 0.0219	0.4106	0.4195	0.4446	0.4672	0.4879	0.5169	0.5592	0.5980	0.6349	0.7042	0.7696	0.8322	0.8933			
(553.43)	b 553.7	1188.9	1196.8	1215.8	1235.8	1257.2	1282.8	1319.4	1352.6	1384.1	1444.8	1502.5	1559.3	1616.9			
	s 0.7540	1.3810	1.3883	1.4000	1.4229	1.4464	1.4698	1.5020	1.5300	1.5555	1.6015	1.6428	1.6838	1.7126			
			S _b	3.74	23.74	43.74	63.74	93.74	143.74	193.74	243.74	343.74	443.74	543.74	643.74		
1100	v 0.0219	0.4002	0.4054	0.4304	0.4530	0.4734	0.5027	0.5445	0.5828	0.6190	0.6871	0.7511	0.8125	0.8724			
(556.30)	b 557.4	1187.8	1192.8	1214.8	1235.6	1254.5	1280.6	1317.8	1351.3	1383.0	1443.8	1501.7	1558.7	1616.5			
	s 0.7575	1.3790	1.3892	1.4044	1.4241	1.4416	1.4656	1.4988	1.5267	1.5523	1.5988	1.6776	1.7126				
			S _b	20.93	40.93	60.93	90.93	140.93	190.93	240.93	340.93	440.93	540.93	640.93			
1126	v 0.0220	0.3908	0.4167	0.4329	0.4598	0.4853	0.5301	0.5678	0.6038	0.6439	0.7042	0.7696	0.8322	0.8933			
(560.07)	b 561.0	1186.7	1192.8	1213.8	1235.1	1251.5	1277.7	1315.9	1349.8	1381.7	1442.6	1506.0	1558.2	1614.9			
	s 0.7610	1.3752	1.3991	1.4100	1.4370	1.4610	1.4946	1.5231	1.5598	1.6047	1.6528						

TABLE XXV
continued

Superheated Steam (Continued)

Abs. Press. Lb./Sq. In.	In.	Sat.	Sat.	TEMPERATURE—DEGREES FAHRENHEIT	680°	600°	620°	640°	660°	680°	700°	720°	750°	800°	800°	1000°	1100°	1200°
1180	v 0.0221	0.3804	0.4035	0.4259	0.4468	0.4659	0.4839	0.5005	0.5165	0.5317	0.5537	0.5889	0.6549	0.7166	0.7760	0.8333		
(561.81)	b 564.6	1185.6	1207.4	1228.7	1248.6	1266.9	1284.4	1299.5	1314.1	1327.9	1346.1	1380.4	1441.7	1500.2	1557.8	1615.5		
	s 0.7644	1.3723	1.3934	1.4137	1.4323	1.4491	1.4669	1.4831	1.4910	1.5024	1.5197	1.5458	1.5926	1.6341	1.6723	1.7075		
1178	v 0.0222	0.3710	0.3911	0.4133	0.4333	0.4530	0.4708	0.4874	0.5032	0.5183	0.5400	0.5747	0.6398	0.7005	0.7609	0.8249		
(564.54)	b 565.2	1184.4	1203.6	1225.4	1245.4	1264.6	1281.5	1297.2	1310.3	1324.4	1345.0	1377.7	1439.5	1499.0	1556.8	1613.6		
	s 0.7678	1.3694	1.3880	1.4088	1.4272	1.4451	1.4603	1.4743	1.4872	1.4991	1.5161	1.5425	1.5890	1.6313	1.6694	1.7048		
1200	v 0.0223	0.3620	0.3793	0.4013	0.4219	0.4408	0.4585	0.4750	0.4907	0.5058	0.5271	0.5613	0.6251	0.6853	0.7423	0.7975		
(567.19)	b 571.7	1183.2	1200.2	1222.1	1242.8	1261.5	1279.2	1293.3	1310.3	1324.4	1345.0	1377.7	1439.5	1499.0	1556.8	1613.6		
	s 0.7771	1.3367	1.3831	1.4040	1.4232	1.4405	1.4565	1.4707	1.4838	1.4958	1.5131	1.5395	1.5867	1.6289	1.6871	1.7025		
1225	v 0.0224	0.3534	0.3669	0.3895	0.4102	0.4290	0.4466	0.4631	0.4786	0.4934	0.5146	0.5483	0.6113	0.6702	0.7264	0.7808		
(569.82)	b 575.1	1182.0	1195.8	1218.6	1239.7	1258.8	1276.7	1293.3	1308.3	1322.7	1343.3	1376.4	1438.9	1498.0	1556.0	1613.0		
	s 0.7745	1.3640	1.3771	1.3900	1.4184	1.4363	1.4524	1.4671	1.4802	1.4923	1.5097	1.5368	1.5840	1.6262	1.6644	1.7000		
1250	v 0.0225	0.3453	0.3540	0.3732	0.3991	0.4177	0.4364	0.4517	0.4672	0.4817	0.5027	0.5360	0.5959	0.6558	0.7113	0.7644		
(572.39)	b 578.6	1180.8	1190.9	1215.0	1236.7	1256.0	1274.5	1291.2	1306.6	1321.0	1341.9	1372.2	1436.1	1495.2	1553.0	1612.6		
	s 0.7777	1.3612	1.3710	1.3939	1.4142	1.4319	1.4486	1.4634	1.4768	1.4891	1.5066	1.5335	1.5813	1.6235	1.6620	1.6975		
1275	v 0.0226	0.3371	0.3437	0.3672	0.3881	0.4068	0.4244	0.4408	0.4560	0.4705	0.4912	0.5241	0.5852	0.6420	0.6966	0.7488		
(574.93)	b 582.0	1179.5	1186.5	1211.2	1233.5	1253.3	1272.4	1289.0	1304.6	1319.4	1340.3	1373.9	1436.7	1496.3	1554.7	1612.0		
	s 0.7809	1.3584	1.3651	1.3887	1.4093	1.4277	1.4445	1.4598	1.4732	1.4858	1.5033	1.5301	1.5785	1.6201	1.6594	1.6950		
1300	v 0.0227	0.3294	0.3329	0.3567	0.3778	0.3965	0.4140	0.4301	0.4453	0.4598	0.4803	0.5127	0.5730	0.6290	0.6820	0.7340		
(577.43)	b 585.4	1178.3	1182.3	1207.7	1230.6	1256.0	1286.8	1287.0	1302.8	1317.8	1338.9	1372.6	1435.8	1495.7	1554.2	1611.6		
	s 0.7840	1.3557	1.3593	1.3837	1.4040	1.4235	1.4406	1.4560	1.4698	1.4828	1.5002	1.5275	1.5758	1.6183	1.6570	1.6926		
1325	v 0.0228	0.3220	0.3363	0.3603	0.3881	0.4068	0.4244	0.4408	0.4560	0.4705	0.4912	0.5241	0.5852	0.6420	0.6966	0.7488		
(579.89)	b 588.7	1177.0	1203.8	1247.8	1267.0	1285.0	1300.8	1315.9	1337.3	1371.2	1434.8	1494.9	1553.4	1611.0				
	s 0.7871	1.3530	1.3785	1.4002	1.4193	1.4365	1.4527	1.4663	1.4792	1.4971	1.5244	1.5731	1.6158	1.6545	1.6903			
1350	v 0.0229	0.3147	0.3363	0.3576	0.3766	0.3940	0.4105	0.4252	0.4393	0.4594	0.4803	0.5127	0.5730	0.6290	0.6820	0.7340		
(582.32)	b 592.1	1175.8	1200.0	1223.8	1245.0	1264.8	1283.2	1299.1	1314.2	1335.8	1370.0	1433.8	1494.3	1552.8	1610.6			
	s 0.7902	1.3504	1.3734	1.3957	1.4151	1.4328	1.4492	1.4631	1.4760	1.4941	1.5218	1.5705	1.6134	1.6521	1.6881			
1375	v 0.0230	0.3078	0.3266	0.3480	0.3670	0.3847	0.4007	0.4154	0.4295	0.4494	0.4608	0.5387	0.5922	0.6432	0.6922			
(584.71)	b 595.3	1174.5	1195.8	1220.2	1242.0	1262.1	1280.7	1312.3	1334.1	1368.6	1432.8	1493.2	1552.0	1609.9				
	s 0.7932	1.3477	1.3680	1.4108	1.4286	1.4453	1.4593	1.4728	1.4868	1.5018	1.5578	1.6107	1.6498	1.6858				
1400	v 0.0231	0.3011	0.3363	0.3576	0.3766	0.3940	0.4105	0.4252	0.4393	0.4594	0.4811	0.5497	0.6042	0.6650	0.7070			
(587.07)	b 598.6	1173.2	1191.8	1216.9	1239.2	1260.1	1278.2	1294.9	1310.6	1332.8	1367.4	1431.9	1492.7	1551.7	1609.6			
	s 0.7963	1.3452	1.3629	1.3863	1.4068	1.4256	1.4416	1.4698	1.4838	1.5162	1.5654	1.6084	1.6476	1.6836				
1425	v 0.0232	0.2947	0.3266	0.3480	0.3670	0.3881	0.4046	0.4203	0.4401	0.4711	0.5283	0.5811	0.6313	0.6875				
(589.40)	b 601.8	1171.8	1187.3	1213.2	1236.2	1257.3	1275.8	1292.9	1306.8	1311.1	1349.7	1431.0	1491.8	1551.0	1609.1			
	s 0.7992	1.3425	1.3576	1.3814	1.4025	1.4215	1.4379	1.4626	1.4850	1.5134	1.5629	1.6081	1.6453	1.6814				
1450	v 0.0233	0.2885	0.2991	0.3211	0.3405	0.3589	0.3739	0.3885	0.4025	0.4220	0.4524	0.5082	0.5597	0.6083	0.6552			
(591.70)	b 605.0	1170.5	1183.2	1209.7	1233.1	1254.3	1273.5	1290.6	1307.0	1329.7	1364.8	1430.1	1491.3	1550.4	1608.6			
	s 0.8022	1.3401	1.3522	1.3769	1.3984	1.4173	1.4345	1.4634	1.4822	1.5108	1.5606	1.6041	1.6432	1.6794				
1475	v 0.0234	0.2824	0.2993	0.3126	0.3318	0.3495	0.3654	0.3801	0.3939	0.4129	0.4435	0.4988	0.5493	0.5973	0.6439			
(593.07)	b 608.2	1169.1	1178.7	1206.2	1229.7	1251.5	1271.0	1288.4	1305.0	1327.4	1363.5	1429.1	1490.3	1549.8	1608.4			
	s 0.8052	1.3375	1.3466	1.3776	1.3939	1.4135	1.4308	1.4601	1.4789	1.5081	1.5582	1.6016	1.6410	1.6774				
1500	v 0.0235	0.2765	0.2817	0.3044	0.3233	0.3413	0.3573	0.3721	0.3886	0.4042	0.4349	0.4894	0.5399	0.5869	0.6332			
(596.20)	b 611.4	1167.7	1174.2	1202.5	1226.4	1248.5	1268.6	1288.5	1303.0	1325.4	1362.1	1428.1	1498.9	1549.3	1608.4			
	s 0.8081	1.3350	1.3411	1.3676	1.3895	1.4094	1.4272	1.4431	1.4569	1.4757	1.5054	1.5558	1.5995	1.6390	1.6757			
1525	v 0.0236	0.2708	0.2962	0.3158	0.3335	0.3495	0.3642	0.3777	0.3985	0.4285	0.4604	0.5299	0.5788	0.6218				
(598.41)	b 614.5	1166.2	1198.6	1223.5	1245.8	1266.2	1284.7	1301.2	1324.1	1360.7	1427.0	1488.9	1548.6	1607.4				
	s 0.8109	1.3323	1.3626	1.3855	1.4055	1.4236	1.4397	1.4538	1.4734	1.5028	1.5532	1.5971	1.6367	1.6732				
1550	v 0.0237	0.2653	0.2992	0.3211	0.3420	0.3567	0.3702	0.3841	0.4018	0.4218	0.4519	0.4917	0.5416	0.5915	0.6413			
(600.59)	b 617.7	1164.8	1194.5	1220.5	1243.3	1264.0	1282.7	1300.6	1320.3	1350.0	1426.2	1485.3	1548.2	1607.3				
	s 0.8138	1.3298	1.3576	1.3814	1.4020	1.4203	1.4363	1.4510	1.4706	1.5001	1.5511	1.5931	1.6348	1.6713				

Sh = superheat, deg. F.

v = specific volume, cu. ft. per lb.

h = enthalpy, B.t.u. per lb.

s = entropy, B.t.u. per deg. F. per lb.

TABLE XXV
continued

Superheated Steam—(Continued)

Abs. Press. Lb./sq. in.	Sat.	Sat.	TEMPERATURE—DEGREES FAHRENHEIT (Sat. Temp.)	Water	Steam	650°	660°	680°	700°	720°	740°	760°	780°	800°	900°	1000°	1100°	1200°
1875 (602.74)	b	17.26	37.26	57.26	77.26	97.26	117.26	137.26	157.26	177.26	197.26	297.26	397.26	497.26	597.26			
	v	0.0238	0.2599	0.2804	0.3008	0.3188	0.3345	0.3492	0.3627	0.3755	0.3877	0.3993	0.4105	0.4633	0.5117	0.5573	0.6010	
	b	620.8	1163.4	1190.3	1216.9	1240.3	1261.3	1280.5	1297.6	1313.5	1328.5	1343.5	1357.8	1424.9	1487.3	1547.4	1606.2	
	s	0.8166	1.3273	1.3524	1.3764	1.3979	1.4165	1.4322	1.4478	1.4612	1.4738	1.4858	1.4972	1.5485	1.5927	1.6325	1.6691	
1880 (604.87)	b	15.13	35.13	55.13	75.13	95.13	115.13	135.13	155.13	175.13	195.13	295.13	395.13	495.13	595.13			
	v	0.0239	0.2548	0.2730	0.2933	0.3114	0.3274	0.3421	0.3555	0.3682	0.3802	0.3919	0.4031	0.4554	0.5032	0.5482	0.5914	
	b	623.9	1161.9	1186.3	1213.7	1237.6	1258.9	1278.4	1295.7	1311.8	1327.8	1342.2	1356.7	1424.1	1486.8	1547.0	1605.8	
	s	0.8195	1.3249	1.3477	1.3723	1.3943	1.4121	1.4302	1.4449	1.4573	1.4634	1.4750	1.4865	1.5365	1.5909	1.6303	1.6674	
1885 (606.97)	b	13.03	33.03	53.03	73.03	93.03	113.03	133.03	153.03	173.03	193.03	293.03	393.03	493.03	593.03			
	v	0.0240	0.2497	0.2656	0.2864	0.3044	0.3203	0.3348	0.3484	0.3610	0.3729	0.3845	0.3957	0.4474	0.4948	0.5391	0.5816	
	b	627.0	1160.4	1182.1	1210.2	1234.5	1256.2	1275.8	1293.5	1310.0	1325.6	1340.6	1355.2	1423.0	1486.0	1546.3	1605.2	
	s	0.8222	1.3222	1.3425	1.3681	1.3902	1.4098	1.4264	1.4416	1.4555	1.4683	1.4806	1.4922	1.5440	1.5887	1.6287	1.6652	
1890 (609.05)	b	10.65	30.95	60.95	70.95	90.95	110.95	130.95	150.95	170.95	190.95	290.95	390.95	490.95	590.95			
	v	0.0241	0.2448	0.2658	0.2794	0.2978	0.3138	0.3280	0.3417	0.3542	0.3661	0.3778	0.3887	0.4399	0.4867	0.5305	0.5724	
	b	630.0	1158.8	1177.6	1206.8	1231.7	1253.7	1273.8	1291.8	1308.4	1324.1	1339.3	1354.0	1422.1	1485.3	1545.7	1604.7	
	s	0.8250	1.3198	1.3378	1.3641	1.3808	1.4060	1.4233	1.4389	1.4528	1.4658	1.4782	1.4899	1.5420	1.5867	1.6268	1.6634	
1895 (611.10)	b	8.90	28.90	48.90	68.90	88.90	108.90	128.90	148.90	168.90	188.90	288.90	388.90	488.90	588.90			
	v	0.0242	0.2401	0.2511	0.2724	0.2909	0.3069	0.3214	0.3350	0.3474	0.3592	0.3706	0.3817	0.4324	0.4787	0.5220	0.5634	
	b	633.1	1157.2	1173.1	1203.2	1228.7	1251.0	1271.5	1289.7	1306.4	1322.2	1337.5	1352.5	1420.9	1484.4	1545.0	1604.1	
	s	0.8278	1.3173	1.3321	1.3591	1.3827	1.4044	1.4203	1.4358	1.4499	1.4629	1.4754	1.4874	1.5396	1.5846	1.6246	1.6615	
1900 (613.12)	b	6.68	26.88	46.88	66.88	86.88	106.88	126.88	146.88	166.88	186.88	286.88	386.88	486.88	586.88			
	v	0.0243	0.2354	0.2441	0.2659	0.2844	0.3008	0.3152	0.3286	0.3411	0.3528	0.3641	0.3750	0.4254	0.4711	0.5139	0.5549	
	b	636.1	1155.7	1168.1	1194.4	1224.7	1248.4	1269.4	1287.8	1304.7	1320.7	1336.2	1351.2	1420.1	1483.7	1544.4	1603.9	
	s	0.8304	1.3147	1.3262	1.3549	1.3788	1.3987	1.4170	1.4327	1.4469	1.4602	1.4728	1.4848	1.5374	1.5825	1.6227	1.6597	
1905 (615.12)	b	4.87	24.87	44.87	64.87	84.87	104.87	124.87	144.87	164.87	184.87	284.87	384.87	484.87	584.87			
	v	0.0244	0.2309	0.2384	0.2593	0.2780	0.2943	0.3086	0.3222	0.3346	0.3463	0.3575	0.3684	0.4183	0.4636	0.5058	0.5464	
	b	639.1	1154.1	1165.1	1195.2	1222.4	1245.8	1266.2	1285.5	1302.7	1318.9	1334.5	1349.5	1419.0	1482.9	1543.7	1603.4	
	s	0.8332	1.3124	1.3228	1.3505	1.3747	1.3954	1.4136	1.4298	1.4441	1.4575	1.4702	1.4822	1.5352	1.5808	1.6204	1.6579	
1908 (617.11)	b	3.89	22.89	42.89	62.89	82.89	102.89	122.89	142.89	162.89	182.89	282.89	382.89	482.89	582.89			
	v	0.0245	0.2265	0.2329	0.2529	0.2718	0.2882	0.3028	0.3162	0.3285	0.3402	0.3514	0.3622	0.4116	0.4554	0.4982	0.5383	
	b	642.1	1152.5	1162.0	1191.0	1219.2	1243.1	1264.5	1283.6	1300.9	1317.4	1333.1	1348.3	1418.1	1481.1	1543.3	1603.0	
	s	0.8359	1.3099	1.3187	1.3460	1.3708	1.3919	1.4105	1.4269	1.4414	1.4550	1.4678	1.4800	1.5333	1.5780	1.6192	1.6562	
1915 (619.07)	b	20.93	40.93	60.93	80.93	100.93	120.93	140.93	160.93	180.93	200.93	280.93	380.93	480.93	580.93			
	v	0.0246	0.2222	0.2465	0.2657	0.2822	0.2968	0.3102	0.3225	0.3340	0.3452	0.3559	0.4049	0.4493	0.4904	0.5302		
	b	645.0	1150.9	1162.0	1196.0	1216.0	1240.4	1262.1	1281.5	1302.9	1315.5	1331.5	1346.8	1416.9	1481.3	1542.5	1602.3	
	s	0.8388	1.3076	1.3414	1.3669	1.3885	1.4074	1.4239	1.4387	1.4523	1.4653	1.4775	1.5311	1.5767	1.6173	1.6544		
1920 (621.00)	b	19.00	39.00	59.00	79.00	99.00	119.00	139.00	159.00	179.00	199.00	279.00	379.00	479.00	579.00			
	v	0.0247	0.2180	0.2405	0.2598	0.2764	0.2912	0.3045	0.3168	0.3283	0.3393	0.3499	0.3988	0.4425	0.4843	0.5224		
	b	648.0	1149.3	1183.7	1212.7	1237.6	1259.8	1279.6	1297.4	1313.9	1329.9	1345.3	1416.0	1480.6	1542.0	1601.8		
	s	0.8412	1.3051	1.3367	1.3628	1.3848	1.4041	1.4211	1.4360	1.4497	1.4627	1.4750	1.5290	1.5748	1.6155	1.6526		
1925 (622.02)	b	17.08	37.08	57.08	77.08	97.08	117.08	137.08	157.08	177.08	197.08	277.08	377.08	477.08	577.08			
	v	0.0248	0.2190	0.2430	0.2708	0.2855	0.2981	0.3112	0.3225	0.3335	0.3441	0.3542	0.3924	0.4357	0.4763	0.5147		
	b	650.9	1147.7	1179.5	1209.4	1234.9	1257.3	1277.8	1295.6	1312.2	1328.3	1343.9	1413.0	1479.3	1541.3	1601.1		
	s	0.8439	1.3026	1.3319	1.3626	1.3845	1.4074	1.4239	1.4387	1.4523	1.4653	1.4775	1.5311	1.5767	1.6173	1.6544		
1930 (624.03)	b	15.18	35.18	55.18	75.18	95.18	115.18	135.18	155.18	175.18	195.18	275.18	375.18	475.18	575.18			
	v	0.0249	0.2099	0.2285	0.2482	0.2651	0.2799	0.2936	0.3056	0.3170	0.3279	0.3384	0.3863	0.4293	0.4695	0.5075		
	b	653.9	1145.9	1175.1	1205.8	1231.8	1254.5	1275.6	1293.5	1310.8	1326.7	1342.4	1413.9	1479.0	1540.8	1600.8		
	s	0.8465	1.3002	1.3265	1.3574	1.3776	1.3978	1.4154	1.4305	1.4455	1.4577	1.4703	1.5248	1.5710	1.6120	1.6492		
1935 (626.09)	b	13.31	33.31	53.31	73.31	93.31	113.31	133.31	153.31	173.31	193.31	273.31	373.31	473.31	573.31			
	v	0.0251	0.2060	0.2225	0.2427	0.2597	0.2748	0.2882	0.2991	0.3112	0.3224	0.3324	0.3804	0.4229	0.4626	0.5003		
	b	656.0	1144.2	1170.5	1202.3	1229.5	1252.3	1273.5	1291.8	1306.7	1322.7	1340.8	1412.9	1478.0	1540.2	1601.3		
	s	0.8491	1.2977	1.3218	1.3504	1.3741	1.3943	1.4124	1.4278	1.4418	1.4532	1.4677	1.5227	1.5689	1.6101	1.6475		
1940 (628.55)	b	11.45	31.45	51.45	71.45	91.45	111.45	131.45	151.45	171.45	191.45	271.45	371.45	471.45	571.45			
	v	0.0252	0.2022	0.2165	0.2371	0.2543	0.2694	0.2828	0.2950	0.3063	0.3171	0.3274	0.3747	0.4170	0.4562	0.4934		
	b	659.0	1142.4	1165.6	1198.2	1229.5	1249.4	1271.0	1297.7	1307.0	1321.8	1337.8	1411.9	1477.5	1539.7	1599.8		
	s	0.8517	1.2951	1.3163	1.3462	1.3702	1.3910	1.4091	1.4249	1.4392	1.4526	1.4654	1.5207	1.5632	1.6084	1.6457		
1945 (630.38)	b	9.62	29.62	49.62	69.62	89.62	109.62	129.62	149.62	169.62	189.62	269.62	369.62	469.62	569.62			
	v	0.0253	0.1985	0.2107	0.2317	0.2491	0.2642	0.2776	0.2898	0.3010	0.3118	0.3221	0.3690	0.4109	0.4497	0.4848		
	b	662.8	1140.6	1160.9	1195.0	1223.1	1247.3	1268.7	1287.7	1305.1	1321.8	1337.8	1410.7	1476.6	1538.9	1599.0		
	s	0.8543	1.2904	1.3056	1.3376	1.3630	1.3846	1.4031	1.4194	1.4339	1.4476	1.4604	1.5163	1.5635	1.6048	1.6424		
1950 (632.20)	b	7.80	27.80	47.80	67.80	87.80	107.80	127.80	147.80	167.80	187.80	267.80	367.80	467.80	567.80			
	v	0.0254	0.1949	0.2049	0.2231	0.2359	0.2592	0.2726	0.2848	0.2960	0.3067	0.3170	0.3636	0.4052	0.4436	0		

TABLE XXV

continued

Superheated Steam—(Continued)

Abs. Press. Lb./Sq. In.	Sat. (Sat. Temp.)	Sat. Water	Steam	TEMPERATURE—DEGREES FAHRENHEIT	22° 44° 60° 75° 80° 85° 90° 95° 100° 110° 120°												
2000 (635.78)	v 0.0257 b 0.6717 s 0.8020	0.1879 1.1352 1.2851	0.2162 1.1837 1.3289	44.22 124.3 1.3560	84.22 124.0 1.3783	104.22 126.4 1.3975	124.22 128.1 1.4138	144.22 128.9 1.4285	164.22 131.6 1.4422	184.22 133.7 1.4552	214.22 134.8 1.4677	234.22 134.8 1.4851	264.22 137.1 1.5122	464.22 140.7 1.5592	564.22 153.8 1.6015	654.22 159.6 1.6335	
2025 (637.54)	v 0.0258 b 0.6747 s 0.8046	0.1843 1.1332 1.2828	0.2112 1.1211 1.3246	42.46 121.1 1.3524	82.46 123.6 1.3752	102.46 125.9 1.3947	122.46 127.9 1.4114	142.46 129.7 1.4281	162.46 130.4 1.4450	182.46 134.8 1.4634	212.46 137.0 1.4832	232.46 140.6 1.5013	262.46 142.8 1.5582	362.46 145.2 1.5862	462.46 153.7 1.6001	562.46 159.1 1.6380	
2050 (639.29)	v 0.0259 b 0.6776 s 0.8061	0.1812 1.1314 1.2800	0.2062 1.1207 1.3191	40.71 120.7 1.3483	80.71 125.6 1.3717	100.71 125.9 1.3916	120.71 127.9 1.4083	140.71 129.9 1.4233	160.71 131.3 1.4404	180.71 134.4 1.4608	210.71 137.0 1.4784	230.71 140.6 1.5082	260.71 142.8 1.5562	360.71 145.2 1.5892	460.71 153.7 1.6061	560.71 159.7 1.6362	
2075 (641.02)	v 0.0261 b 0.6805 s 0.8097	0.1780 1.1295 1.2770	0.2013 1.2043 1.3154	38.98 121.6 1.3445	78.98 123.6 1.3682	98.98 125.2 1.3884	118.98 127.5 1.4028	138.98 129.0 1.4250	158.98 130.4 1.4463	178.98 134.4 1.4668	208.98 137.3 1.4868	228.98 140.6 1.5058	258.98 143.8 1.5546	358.98 147.2 1.5967	458.98 153.7 1.6348	558.98 159.7 1.6330	
2100 (642.73)	v 0.0262 b 0.6834 s 0.8122	0.1748 1.1276 1.2751	0.2152 1.2043 1.3108	37.27 120.6 1.3401	75.27 122.8 1.3643	97.27 125.2 1.3844	117.27 127.0 1.4023	137.27 129.0 1.4232	157.27 134.6 1.4458	177.27 134.2 1.4674	197.27 137.4 1.4740	217.27 140.6 1.5027	237.27 143.8 1.5525	357.27 147.7 1.5947	457.27 153.7 1.6330	557.27 159.7 1.6330	
2125 (644.43)	v 0.0263 b 0.6863 s 0.8147	0.1716 1.1256 1.2726	0.2189 1.2058 1.3060	35.57 122.5 1.3364	75.57 125.7 1.3620	95.57 127.5 1.3894	115.57 129.0 1.4151	135.57 130.4 1.4294	155.57 134.2 1.4430	175.57 137.4 1.4559	195.57 140.6 1.4740	215.57 143.8 1.5011	235.57 147.2 1.5505	355.57 145.7 1.5929	455.57 151.2 1.6311	555.57 157.7 1.6310	
2150 (646.11)	v 0.0264 b 0.6892 s 0.8177	0.1685 1.1255 1.2727	0.2064 0.2225 1.3015	33.89 121.8 1.3326	53.89 122.7 1.3578	73.89 124.7 1.3797	93.89 126.7 1.4129	113.89 128.1 1.4372	133.89 134.4 1.4548	153.89 134.2 1.4743	173.89 134.4 1.4959	193.89 137.4 1.5101	213.89 140.6 1.5505	233.89 143.8 1.5918	353.89 147.2 1.6300	453.89 153.7 1.6300	553.89 159.7 1.6300
2175 (647.77)	v 0.0266 b 0.6920 s 0.8196	0.1655 1.1215 1.2676	0.2018 0.2182 1.3284	32.23 118.9 1.3271	52.23 119.7 1.3454	72.23 122.7 1.3654	92.23 124.7 1.3760	112.23 126.5 1.3971	132.23 128.1 1.4150	152.23 132.7 1.4220	172.23 134.2 1.4430	192.23 137.4 1.4559	212.23 140.6 1.4740	232.23 143.8 1.5071	352.23 145.7 1.5492	452.23 153.7 1.6288	552.23 159.7 1.6288
2200 (649.42)	v 0.0267 b 0.6951 s 0.8224	0.1626 1.1194 1.2649	0.1773 0.1972 1.2336	30.58 118.0 1.2336	50.58 119.3 1.2504	70.58 121.2 1.2734	90.58 123.2 1.2950	110.58 125.2 1.3172	130.58 128.6 1.3393	150.58 132.6 1.3632	170.58 134.2 1.3821	190.58 136.2 1.4015	210.58 138.2 1.4200	230.58 140.6 1.4432	350.58 145.7 1.5884	450.58 153.7 1.6269	550.58 159.7 1.6269
2225 (651.06)	v 0.0269 b 0.6979 s 0.8248	0.1597 1.1177 1.2625	0.1727 0.1931 1.2301	29.94 117.9 1.2301	48.94 119.3 1.2472	69.94 120.7 1.2621	89.94 122.7 1.2710	109.94 124.7 1.2870	129.94 126.7 1.3029	149.94 131.9 1.3159	169.94 133.6 1.3326	189.94 135.2 1.3498	209.94 137.4 1.3670	229.94 140.6 1.3841	349.94 146.7 1.5197	449.94 153.7 1.6197	549.94 159.7 1.6197
2250 (652.67)	v 0.0270 b 0.7008 s 0.8273	0.1569 1.1153 1.2673	0.1792 0.1939 1.2372	28.34 117.2 1.2372	46.34 119.2 1.2527	67.34 120.7 1.2672	86.34 122.7 1.2822	106.34 124.7 1.2972	126.34 126.7 1.3121	146.34 130.4 1.3291	166.34 132.1 1.3451	186.34 134.2 1.3611	206.34 137.4 1.3771	226.34 140.6 1.3944	346.34 146.7 1.5264	446.34 153.7 1.6255	546.34 159.7 1.6255
2275 (654.27)	v 0.0272 b 0.7038 s 0.8298	0.1542 1.1132 1.2573	0.1800 0.1948 1.2371	26.73 117.4 1.2316	44.73 118.9 1.2518	65.73 120.5 1.2682	85.73 122.5 1.2830	105.73 124.5 1.2985	125.73 126.5 1.3163	145.73 133.5 1.3335	165.73 135.2 1.3529	185.73 137.4 1.3676	205.73 140.6 1.3861	225.73 143.8 1.4041	345.73 146.7 1.5372	445.73 153.7 1.6255	545.73 159.7 1.6255
2300 (655.87)	v 0.0274 b 0.7067 s 0.8325	0.1514 1.1110 1.2547	0.1869 0.2055 1.2307	25.14 116.9 1.2307	43.14 118.9 1.2472	63.14 119.9 1.2636	83.14 121.9 1.2782	103.14 123.9 1.2955	123.14 125.9 1.3147	143.14 126.5 1.3321	163.14 133.5 1.3511	183.14 135.2 1.3676	203.14 137.4 1.3841	223.14 140.6 1.4022	343.14 146.7 1.5294	443.14 153.7 1.6254	543.14 159.7 1.6254
2325 (656.57)	v 0.0275 b 0.7097 s 0.8352	0.1488 1.1088 1.2573	0.1849 0.2018 1.2311	23.55 116.8 1.2311	41.55 118.8 1.2454	61.55 119.8 1.2630	81.55 121.8 1.2782	101.55 123.8 1.2950	121.55 125.8 1.3142	141.55 126.5 1.3321	161.55 133.5 1.3501	181.55 135.2 1.3661	201.55 137.4 1.3821	221.55 140.6 1.4007	341.55 146.7 1.5297	441.55 153.7 1.6254	541.55 159.7 1.6254
2350 (657.74)	v 0.0275 b 0.7126 s 0.8382	0.1460 1.1065 1.2521	0.1824 0.2046 1.2307	22.86 116.1 1.2307	40.86 117.1 1.2451	59.86 118.1 1.2620	82.86 120.1 1.2774	102.86 122.1 1.2954	122.86 124.5 1.3132	142.86 126.5 1.3321	162.86 133.5 1.3506	182.86 135.2 1.3661	202.86 137.4 1.3820	222.86 140.6 1.4027	342.86 146.7 1.5297	442.86 153.7 1.6254	542.86 159.7 1.6254
2375 (658.57)	v 0.0276 b 0.7156 s 0.8408	0.1436 1.1040 1.2521	0.1806 0.2024 1.2308	22.26 115.8 1.2308	39.26 116.9 1.2452	56.26 117.9 1.2623	82.26 120.9 1.2773	102.26 123.9 1.2953	122.26 125.9 1.3131	142.26 126.5 1.3322	162.26 133.5 1.3506	182.26 135.2 1.3661	202.26 137.4 1.3820	222.26 140.6 1.4027	342.26 146.7 1.5297	442.26 153.7 1.6254	542.26 159.7 1.6254
2400 (659.00)	v 0.0277 b 0.7186 s 0.8424	0.1410 1.1045 1.2521	0.1789 0.2044 1.2308	21.00 115.7 1.2308	38.00 116.9 1.2451	51.00 117.9 1.2624	81.00 120.9 1.2774	101.00 123.9 1.2954	121.00 125.9 1.3132	141.00 126.5 1.3323	161.00 133.5 1.3507	181.00 135.2 1.3661	201.00 137.4 1.3820	221.00 140.6 1.4027	341.00 146.7 1.5297	441.00 153.7 1.6254	541.00 159.7 1.6254
2425 (660.55)	v 0.0278 b 0.7216 s 0.8448	0.1402 1.1046 1.2521	0.1774 0.2034 1.2308	20.36 115.6 1.2308	37.36 116.7 1.2452	49.36 117.6 1.2625	79.36 120.6 1.2775	99.36 123.6 1.2955	119.36 125.6 1.3132	139.36 126.5 1.3324	159.36 133.5 1.3508	179.36 135.2 1.3661	199.36 137.4 1.3820	219.36 140.6 1.4027	340.36 146.7 1.5297	440.36 153.7 1.6254	540.36 159.7 1.6254
2450 (662.09)	v 0.0279 b 0.7246 s 0.8474	0.1388 1.1047 1.2521	0.1761 0.2024 1.2308	19.45 115.6 1.2308	36.45 116.7 1.2452	47.45 117.6 1.2625	77.45 120.6 1.2775	97.45 123.6 1.2955	117.45 125.6 1.3132	137.45 126.5 1.3324	157.45 133.5 1.3508	177.45 135.2 1.3661	197.45 137.4 1.3820	217.45 140.6 1.4027	339.45 146.7 1.5297	439.45 153.7 1.6254	539.45 159.7 1.6254
2475 (663.57)	v 0.0280 b 0.7274 s 0.8502	0.1364 1.1048 1.2521	0.1749 0.2014 1.2308	18.71 115.5 1.2308	35.91 116.7 1.2452	45.91 117.6 1.2625	75.91 120.6 1.2775	95.91 123.6 1.2955	115.91 125.6 1.3132	135.91 126.5 1.3324	155.91 133.5 1.3508	175.91 135.2 1.3661	195.91 137.4 1.3820	215.91 140.6 1.4027	337.91 146.7 1.5297	437.91 153.7 1.6254	537.91 159.7 1.6254
2500 (665.00)	v 0.0281 b 0.7304 s 0.8528	0.1340 1.1050 1.2521	0.1736 0.2004 1.2308	18.06 115.4 1.2308	35.40 116.6 1.2452	44.06 117.6 1.2625	74.06 120.6 1.2775	94.06 123.6 1.2955	114.06 125.6 1.3132	134.06 126.5 1.3324	154.06 133.5 1.3508	174.06 135.2 1.3661	194.06 137.4 1.3820	214.06 140.6 1.4027	337.00 146.7 1.5297	437.00 153.7 1.6254	537.00 159.7 1.6254
2525 (666.57)	v 0.0282 b 0.7334 s 0.8552	0.1316 1.1051 1.2521	0.1723 0.2004 1.2308	17.41 115.3 1.2308	34.81 116.6 1.2452	42.41 117.6 1.2625	72.41 120.6 1.2775	92.41 123.6 1.2955	112.41 125.6 1.3132	132.41 126.5 1.3324	152.41 133.5 1.3508	172.41 135.2 1.3661	192.41 137.4 1.3820	212.41 140.6 1.4027	336.00 146.7 1.5297	436.00 153.7 1.6254	536.00 159.7 1.6254
2550 (668.00)	v 0.0283 b 0.7364 s 0.8578	0.1292 1.1052 1.2521	0.1712 0.2004 1.2308	16.77 115.2 1.2308	34.21 116.7 1.2452	40.21 117.6 1.2625	71.21 120.6 1.2775	91.21 123.6 1.2955	111.21 125.6 1.3132	131.21 126.5 1.3324	151.21 133.5 1.3508	171.21 135.2 1.3661	191.21 137.4 1.3820	211.21 140.6 1.4027	335.00 146.7 1.5297	435.00 153.7 1.6254	535.00 159.7 1.6254
2575 (669.57)	v 0.0284 b 0.7394 s 0.8602	0.1268 1.1053 1.2521	0.1701 0.2004<br														

APPENDIX

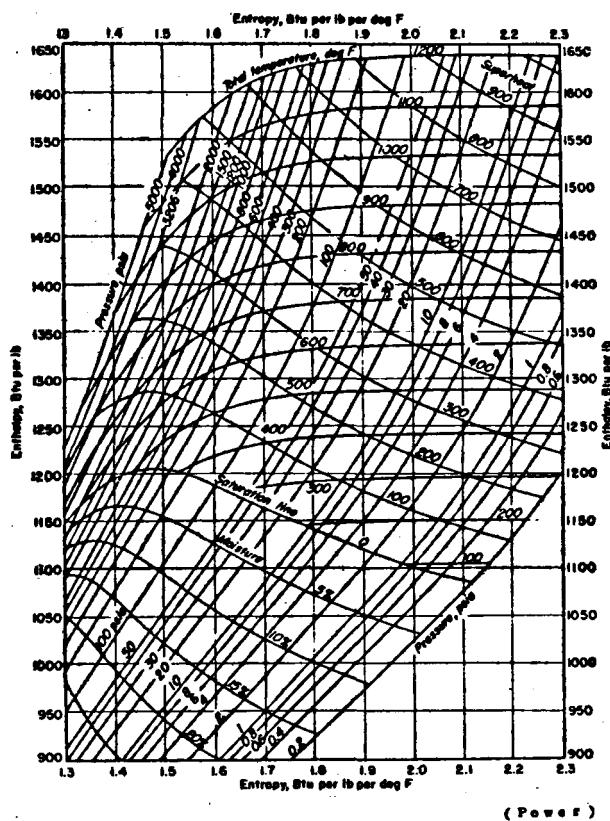
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TABLE XXV
continued

Superheated Steam—(Concluded)

Abs. Press. Lb./Sq. In.	Bat. (Sat. Temp.)	Bat. Water	Steam	TEMPERATURE—DEGREES FAHRENHEIT	680°	700°	720°	740°	760°	780°	800°	820°	840°	860°	880°	900°	920°	940°	960°	980°	1000°	1100°	1200°
9480	v 0.0283	0.1360	0.1567	0.1750	0.1902	0.2032	0.2147	0.2250	0.2347	0.2440	0.2569	0.2766	0.2954	0.3130	0.3458	0.3764	0.4082	0.4400	0.4718	0.5036	0.5354	0.5672	
(665.12)	b 724.6	1096.3	1142.3	1181.3	1212.9	1239.5	1262.8	1283.5	1302.9	1321.4	1347.1	1386.3	1423.8	1459.0	1525.6	1588.9	1652.3	1715.0	1777.7	1839.4	1892.1	1945.4	
	s 0.9076	1.2381	1.2767	1.3127	1.3397	1.3620	1.3818	1.4136	1.4361	1.4282	1.4481	1.4774	1.5045	1.5290	1.5732	1.6125	1.6567	1.6960	1.7354	1.7747	1.8140	1.8533	1.8926
	Bh			11.00	31.90	51.90	71.90	91.90	111.90	131.90	151.90	181.90	231.90	281.90	331.90	431.90	531.90	631.90	731.90	831.90	931.90	1031.90	
9500	v 0.0287	0.1313	0.1488	0.1680	0.1834	0.1967	0.2083	0.2188	0.2285	0.2375	0.2503	0.2700	0.2884	0.3058	0.3381	0.3683	0.4005	0.4328	0.4651	0.4974	0.5308	0.5631	0.5959
(666.10)	b 730.7	1091.0	1131.9	1173.9	1206.8	1234.5	1258.6	1280.1	1299.9	1318.3	1344.2	1384.3	1421.8	1457.3	1524.2	1587.9	1652.8	1716.3	1779.8	1842.3	1905.8	1969.3	2032.8
	s 0.9127	1.2322	1.2683	1.3045	1.3329	1.3562	1.3761	1.3936	1.4091	1.4240	1.4440	1.4740	1.5011	1.5258	1.5701	1.6097	1.6434	1.6771	1.7108	1.7445	1.7782	1.8119	1.8456
	Bh			6.97	28.97	48.97	68.97	88.97	108.97	128.97	148.97	178.97	228.97	278.97	328.97	428.97	528.97	628.97	728.97	828.97	928.97	1028.97	1128.97
9550	v 0.0291	0.1264	0.1408	0.1608	0.1788	0.1902	0.2020	0.2125	0.2223	0.2315	0.2440	0.2634	0.2817	0.2989	0.3308	0.3604	0.3902	0.4200	0.4500	0.4800	0.5100	0.5400	0.5700
(671.03)	b 736.7	1085.0	1120.0	1164.0	1198.7	1228.9	1254.0	1276.0	1296.5	1315.6	1341.8	1381.8	1419.8	1455.6	1522.9	1588.7	1655.6	1722.9	1790.0	1857.3	1924.2	1991.0	2057.8
	s 0.9179	1.2265	1.2568	1.2857	1.3237	1.3502	1.3704	1.3888	1.4052	1.4202	1.4402	1.4704	1.4979	1.5228	1.5674	1.6070	1.6421	1.6786	1.7151	1.7516	1.7881	1.8246	1.8612
	Bh			6.09	26.09	46.09	66.09	86.09	106.09	120.09	146.09	176.09	226.09	276.09	326.09	426.09	526.09	626.09	726.09	826.09	926.09	1026.09	1126.09
9600	v 0.0295	0.1219	0.1323	0.1541	0.1706	0.1842	0.1961	0.2066	0.2164	0.2256	0.2388	0.2573	0.2754	0.2924	0.3237	0.3530	0.3829	0.4132	0.4425	0.4718	0.5011	0.5304	0.5607
(672.91)	b 743.1	1080.1	1106.0	1157.0	1194.0	1223.9	1249.7	1272.2	1293.1	1312.6	1338.9	1379.7	1418.1	1454.2	1512.1	1583.8	1651.9	1721.4	1790.8	1858.7	1924.2	1991.0	2057.8
	s 0.9223	1.2205	1.2433	1.2677	1.3193	1.3444	1.3657	1.3840	1.4001	1.4161	1.4364	1.4676	1.4947	1.5199	1.5495	1.5644	1.5944	1.6243	1.6542	1.6841	1.7140	1.7439	1.7738
	Bh			3.25	23.25	43.25	63.25	83.25	103.25	123.25	143.25	173.25	223.25	273.25	323.25	423.25	523.25	623.25	723.25	823.25	923.25	1023.25	1123.25
9650	v 0.0300	0.1173	0.1235	0.1469	0.1640	0.1782	0.1903	0.2009	0.2108	0.2204	0.2322	0.2461	0.2600	0.2739	0.3131	0.3439	0.3737	0.4035	0.4333	0.4631	0.4929	0.5227	0.5525
(676.75)	b 749.5	1074.6	1090.1	1146.8	1184.6	1218.3	1245.1	1268.3	1289.9	1306.9	1336.2	1377.5	1415.9	1452.2	1510.8	1584.7	1653.1	1721.4	1790.8	1858.7	1924.2	1991.0	2057.8
	s 0.9287	1.2147	1.2284	1.2777	1.3116	1.3384	1.3606	1.3794	1.3967	1.4125	1.4328	1.4637	1.4914	1.5167	1.5418	1.5618	1.5816	1.6101	1.6399	1.6698	1.6996	1.7294	1.7592
	Bh			20.46	40.46	60.46	80.46	100.46	120.46	140.46	170.46	210.46	250.46	270.46	320.46	420.46	520.46	620.46	720.46	820.46	920.46	1020.46	1120.46
9700	v 0.0308	0.1123	0.1318	0.1516	0.1725	0.1846	0.1954	0.2052	0.2147	0.2249	0.2458	0.2632	0.2798	0.3105	0.3389	0.3673	0.3957	0.4241	0.4525	0.4809	0.5093	0.5377	0.5661
(679.04)	b 756.1	1068.3	1137.5	1179.7	1213.0	1240.3	1264.5	1286.5	1307.2	1334.0	1375.7	1414.0	1450.5	1519.2	1583.8	1653.1	1721.4	1790.8	1858.7	1924.2	1991.0	2057.8	
	s 0.9342	1.2082	1.2404	1.2855	1.3352	1.3550	1.3747	1.3944	1.4136	1.4325	1.4517	1.4704	1.4991	1.5278	1.5566	1.5853	1.6141	1.6429	1.6717	1.7005	1.7293	1.7581	1.7869
	Bh			17.72	37.72	57.72	77.72	97.72	117.72	137.72	167.72	177.72	217.72	267.72	317.72	417.72	517.72	617.72	717.72	817.72	917.72	1017.72	1117.72
9750	v 0.0310	0.1077	0.1292	0.1500	0.1704	0.1902	0.2000	0.2094	0.2215	0.2402	0.2576	0.2740	0.3043	0.3322	0.3601	0.3879	0.4158	0.4437	0.4716	0.5002	0.5281	0.5560	0.5839
(682.28)	b 763.0	1061.8	1121.7	1172.2	1207.4	1230.0	1260.8	1283.0	1304.2	1334.1	1373.4	1412.2	1449.2	1518.0	1582.8	1652.6	1721.4	1790.8	1858.7	1924.2	1991.0	2057.8	
	s 0.9399	1.2016	1.2583	1.2969	1.3265	1.3501	1.3703	1.3981	1.4048	1.4258	1.4572	1.4853	1.5110	1.5556	1.5969	1.6356	1.6743	1.7122	1.7509	1.7887	1.8274	1.8661	1.9054
	Bh			15.07	35.02	55.02	75.02	95.02	115.02	135.02	165.02	215.02	265.02	315.02	415.02	515.02	615.02	715.02	815.02	915.02	1015.02	1115.02	1215.02
9800	v 0.0318	0.1032	0.1267	0.1461	0.1615	0.1741	0.1851	0.1956	0.2045	0.2164	0.2351	0.2521	0.2685	0.2853	0.3028	0.3205	0.3382	0.3559	0.3736	0.3913	0.4090	0.4267	0.4444
(684.98)	b 770.0	1054.8	1115.9	1161.5	1201.5	1231.3	1257.0	1279.8	1301.7	1329.3	1371.3	1410.4	1447.9	1517.0	1581.9	1651.8	1721.4	1790.8	1858.7	1924.2	1991.0	2057.8	
	s 0.9458	1.1944	1.2476	1.2892	1.3203	1.3449	1.3658	1.3840	1.4013	1.4226	1.4542	1.4852	1.5084	1.5474	1.5864	1.6252	1.6642	1.7030	1.7418	1.7796	1.8184	1.8574	1.8962
	Bh			12.35	32.35	52.35	72.35	92.35	112.35	132.35	162.35	212.35	262.35	312.35	412.35	512.35	612.35	712.35	812.35	912.35	1012.35	1112.35	1212.35
9850	v 0.0322	0.0986	0.1198	0.1404	0.1563	0.1700	0.1851	0.1956	0.2049	0.2250	0.2458	0.2659	0.2858	0.3057	0.3256	0.3455	0.3654	0.3853	0.4052	0.4251	0.4450	0.4649	0.4848
(687.65)	b 777.5	1046.6	1103.5	1156.6	1195.8	1226.8	1252.9	1276.9	1296.4	1324.8	1361.9	1408.7	1447.0	1516.8	1581.7	1651.6	1721.4	1790.8	1858.7	1924.2	1991.0	2057.8	
	s 0.9521	1.1864	1.2359	1.2813	1.3143	1.3397	1.3611	1.3803	1.3973	1.4192	1.4507	1.4795	1.5055	1.5355	1.5653	1.5953	1.6253	1.6641	1.7029	1.7417	1.7805	1.8193	1.8581
	Bh			9.74	29.74	49.74	69.74	89.74	109.74	129.74	159.74	209.74	259.74	309.74	409.74	509.74	609.74	709.74	809.74	909.74	1009.74	1109.74	1209.74
9900	v 0.0329	0.0941	0.1126	0.1348	0.1511	0.1641	0.1754	0.1855	0.1949	0.2046	0.2248	0.2448	0.2648	0.2848	0.3048	0.3248	0.3448	0.3648	0.3848	0.4048	0.4248	0.4448	0.4648
(690.26)	b 785.2	1038.1	1089.2	1148.3	1189.5	1221.0	1249.1	1273.3	1295.7	1324.2	1367.1	1406.9	1444.8	1514.8	1580.2	1650.2	1721.4	1790.8	1858.7	1924.2	1991.0	2057.8	
	s 0.9586	1.1785	1.2228	1.2733	1.3080	1.3442	1.3656	1.3861	1.3939	1.4159	1.4507	1.4767	1.5032	1.5302	1.5592	1.5892	1.6181	1.6571	1.6960	1.7349	1.7738	1.8127	1.8516
	Bh			7.17	27.17	47.17	67.17	87.17	107.17	127.17	157.17	207.17	257.17	307.17	407.17	507.17	607.17	707.17	807.17	907.17	1007.17	1107.17	1207.17
9950	v 0.0337	0.0895	0.1032	0.1292	0.1460	0.1593	0.1708	0.1809	0.1902	0.2023	0.2269	0.2527	0.2787	0.2987	0.3281	0.3581	0.3881	0.4181	0.4481	0.4781	0.5081	0.5381	0.5681
(692.83)	b 793.6	1028.9	1073.2	1139.5	1176.4	1214.0	1240.6	1266.0	1289.0	1312.7	1349.5	1386.4	1421.7	1458.5	1513.2	1581.9	1651.6	1721.4	1790.8	1858.7	1924.2	1991.0	2057.8
	s 0.9655	1.1697	1.2087	1.2647	1.3014	1.3230	1.3474	1.3677	1.3858	1.4049	1.4416	1.4711	1.4978	1.5276	1.5574	1.5872	1.6171	1.6468	1.6763	1.7052	1.7341	1.7630	1.8029
	Bh			4.63	24.63	44.63	64.63	84.63	104.63	124.63	154.63	204.63	254.63	304.63	404.63	504.63	604.63	704.63	804.63	904.63	1004.63	1104.63	1204.63
10000	v 0.0346	0.0849	0.0972	0.1236	0.1410	0.1532	0.1636	0.1729	0.1830	0.1924	0.2024	0.2187	0.2341	0.2505	0.2669	0.2833	0.3007	0.3171	0.3335				

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Mollier Diagram for Steam



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