ENGINE S-3.





Engine Book

Steam Engines

Gas Engines

One "

U.S. NATIONAL MUSEUM
FROM
CHARLES T. MAIN, INC.
BOSTON, MASS.
MAY 1962

SMITHSONIAN
LIBRARY

MSS
1706 B
SCDIRB

① Simple Engines. Misc.

Thy whole Formula. "Allis"

Gas Engines. Allis & Misc.

Oil Engines.

Price Lists. Allis 1905.

② Comps Engines Misc.

Engines Economy.
Misc Notes.

① Foundations & Comparative Data
"
② Misc

DSI

SIMPLE
MISC

C-COMPOUND
DIR. CONN.
"D C"

1890 Frames & Engines

ENGINE SIZES.	NUMBER OF BRICK REQUIRED.			CUBIC FEET OF STONE REQUIRED.			HOL
	MAIN FOUNDATION	BACK BEARING	TOTAL	MAIN FOUNDATION	BACK BEARING	TOTAL	DIAMETER
12x30	12,700	4,495	17,195	121	30.5	151.5	2½″
12x36	14,130	4,495	18,625	121	30.5	151.5	2½″
14x36	14,120	4,515	18,635	121.5	28.5	150	2½″
14x42	15,570	4,515	20,085	121.5	28.5	150	2½″
16x36	16,740	6,400	23,140	138	35	173	2½″
16x42	18,290	6,400	24,690	138	35	173	2½″
18x36	19,430	8,760	28,190	166	34	200	2½″
18x42	21,680	8,760	30,440	166	34	200	2½″
18x48	23,580	8,760	32,340	166	34	200	2½″
20x42	21,210	8,500	29,710	212	60	272	3″
20x48	24,960	9,150	34,110	212	60	272	3″
20x60	29,360	9,150	38,510	212	60	272	3″
22x42	27,500	10,600	38,100	225	60	285	3″
22x48	29,600	10,600	40,200	225	60	285	3″
22x60	34,700	10,600	45,300	225	60	285	3″
24x48	36,110	12,890	49,000	264.5	71	335.5	3″
24x60	41,900	12,890	54,790	264.5	71	335.5	3″
26x48	40,000	13,690	53,690	347.5	71	418.5	3″
26x60	47,800	13,690	61,490	347.5	71	418.5	3″
28x48	48,890	14,200	63,090	418	100	518	3″
28x60	56,640	14,200	70,840	418	100	518	3″
30x48	52,320	18,750	71,070	489	105	594	3″
30x60	60,220	18,750	78,970	489	105	594	3″
32x48	57,890	19,245	77,135	540.5	115.5	656	3½″
32x60	67,690	19,245	86,935	540.5	115.5	656	3½″
32x72	75,690	19,245	94,935	540.5	115.5	656	3½″
34x48	63,550	24,845	88,395	537.5	115.5	653	3½″
34x60	73,550	24,845	98,395	537.5	115.5	653	3½″
34x72	81,750	24,845	106,595	537.5	115.5	653	3½″
36x48	74,480	30,800	105,280	601	140	741	3½″
36x60	83,480	30,800	114,280	601	140	741	3½″
36x72	92,980	30,800	123,780	601	140	741	3½″
38x60	98,000	31,370	129,400	601	133	774	3½″
38x72	110,000	31,370	141,400	601	133	774	3½″
40x60	106,000	33,690	139,700	649	171	820	4½″
40x72	117,000	33,690	150,700	649	171	820	4½″
40x84	130,000	33,690	163,700	649	171	820	4½″
42x60	106,000	33,575	139,600	693	182.5	875.5	4½″
42x72	117,000	33,575	150,600	693	182.5	875.5	4½″
42x84	130,000	33,575	163,600	693	182.5	875.5	4½″
44x60	127,500	45,375	172,900	829	192.5	1021.5	4½″
44x72	142,000	45,375	187,400	829	192.5	1021.5	4½″
44x84	156,000	45,375	201,400	829	192.5	1021.5	4½″
46x60	127,000	45,375	172,400	829	192.5	1021.5	4½″
46x72	142,000	45,375	187,400	829	192.5	1021.5	4½″
46x84	156,000	45,375	201,400	829	192.5	1021.5	4½″
48x60	132,000	43,850	175,900	862	215	1077	5″
48x72	144,000	43,850	187,900	862	215	1077	5″
48x84	158,000	43,850	201,900	862	215	1077	5″

THE EDW. P. ALLIS COMPANY, MILWAUKEE, WIS.

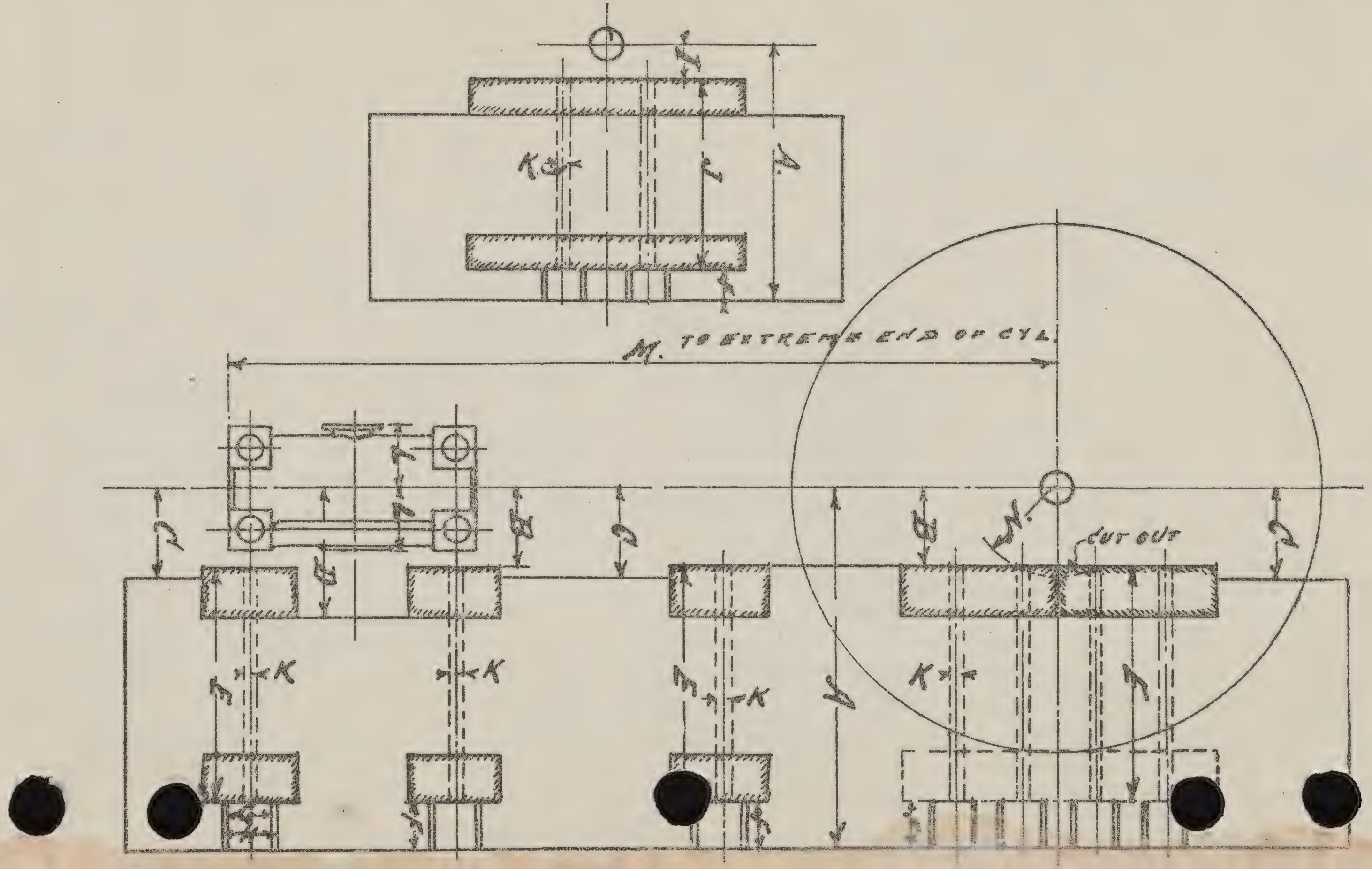
ENGINE SIZES.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
32x48	16″	28″	11¼″	5′10″	8″	54″	46½″	48¾″	4½″	30″	2″	2 ″	27½″	2½″	30″	28′
32x60	16″	28″	11¼″	6′10″	8″	54″	46½″	48¾″	4½″	30″	2″	2 ″	27½″	2½″	30″	28′
32x72	16″	28″	11¼″	7′10″	8″	54″	46½″	48¾″	4½″	30″	2″	2 ″	27½″	2½″	30″	28′
34x48	17″	28″	11 ″	6′	8½″	54″	47½″	48¾″	5″	32″	2¼″	2¼″	27½″	2½″	30″	28′
34x60	17″	28″	11 ″	7′	8½″	54″	47½″	48¾″	5″	32″	2¼″	2¼″	27½″	2½″	30″	28′
34x72	17″	28″	11 ″	8′	8½″	54″	47½″	48¾″	5″	32″	2¼″	2¼″	27½″	2½″	30″	28′
36x48	18″	32″	12½″	6′	9″	60″	48½″	54¾″	5″	32″	2¼″	2¼″	26½″	2½″	34″	32′
36x60	18″	32″	12½″	7′	9″	60″	48½″	54¾″	5″	32″	2¼″	2¼″	26½″	2½″	34″	32′
36x72	18″	32″	12½″	8′	9″	60″	48½″	54¾″	5″	32″	2¼″	2¼″	26½″	2½″	34″	32′

GIRDER FRAME ENGINE

THE EDW. P. ALLIS COMPANY MILWAUKEE, WIS.

ENGINE SIZES	NUMBER OF BRICK.			CUBIC FEET OF DRESSED STONE.			DRILLING.	
	IN MAIN FOUNDATION.	IN BACK BEARING.	IN WHOLE FOUNDATION.	IN MAIN FOUNDATION.	IN BACK BEARING.	IN WHOLE FOUNDATION.	DIAMETER OF HOLES.	TOTAL LENG HOLE IN IN
8x24	5,126	2,926	8,052	25	8	33	2″	120
10x30	7,964	3,454	11,418	28.5	8.5	37	2½″	120
12x30	12,254	4,202	16,456	41	15	56	2½″	149
12x36	13,134	4,202	17,336	41	15	56	2½″	149
14x36	14,432	4,730	19,162	91	29	120	2½″	265
14x42	16,082	4,730	20,812	91	29	120	2½″	265
16x36	16,720	6,556	23,276	98	30	128	2½″	284
16x42	18,238	6,556	24,794	98	30	128	2½″	284
18x36	20,124	9,680	29,804	121.5	35	156.5	3″	288
18x42	22,550	9,680	32,230	121.5	35	156.5	3″	288
18x48	24,332	9,680	34,012	121.5	35	156.5	3″	288
20x42	23,870	10,230	34,100	151	50	201	3″	324
20x48	25,542	10,230	35,772	151	50	201	3″	324
20x60	29,390	10,230	39,620	151	50	201	3″	324
22x42	28,798	11,748	40,546	165	60	225	3″	328
22x48	30,998	11,748	42,746	165	60	225	3″	328
22x60	35,518	11,748	47,266	165	60	225	3″	328
24x42	34,830	14,410	49,240	173.5	60	233.5	3″	328
24x48	38,281	14,410	52,691	173.5	60	233.5	3″	328
24x60	47,220	14,410	61,630	173.5	60	233.5	3″	328
26x48	42,196	15,136	57,332	261	75	336	3″	440
26x60	50,267	15,136	65,403	261	75	336	3″	440
28x48	53,878	15,862	69,740	284	86	370	3″	436
28x60	59,576	15,862	79,506	284	86	370	3″	436
30x48	57,841	19,930	77,771	375	105	480	3″	504
30x60	65,983	19,930	85,913	375	105	480	3″	504
32x48	57,841	19,930	77,771	375	105	480	3½″	504
32x60	65,983	19,930	85,913	375	105	480	3½″	504

"1890" FRAME ENGINE



LIST OF FOUNDATION STONES AND PLATES.

ENGINE SIZES.	TOP STONES.	C. I. PLATES.
8	2 | Stones 4′0″×16″×12″ 2 | " 4′6″×20″×12″ 1 | " 2′6″×29″×12″ Price	6 | Plates 14″× 8″× 1¼″ 2 | " 24″× 8″× 1¼″ 1¼″ cored holes. Price
10	2 | Stones 4′6″×18″×12″ 2 | " 5′0″×20″×12″ 1 | " 30″×30″×12″ Price	6 | Plates 16″×10″× 1½″ 2 | " 30″×10″× 1½″ 1¾″ cored holes. Price
12	3 | Stones 5′6″×20″×14″ 1 | " 5′6″×20″×18½″ 1 | " 36″×30″×14″ Price	6 | Plates 18″×12″× 1¾″ 2 | " 30″×12″× 1¾″ 1¾″ cored holes. Price

ENGINE SIZES.	TOP STONES.	BOTTOM STONES.
14	2 | Stones 6′0″×20″×14″ 1 | " 6′0″×24″×14″ 1 | " 6′0″×24″×16½″ 1 | " 3′3″×36″×14″ Price	2 | Stones 6′0″×20″×12″ 2 | " 6′0″×24″×12″ 1 | " 3′3″×36″×12″ | Price
16	3 | Stones 6′0″×20″×16″ 1 | " 6′0″×24″×16″ 1 | " 6′0″×24″×18″ Price	3 | Stones 6′0″×20″×12″ 2 | " 6′0″×24″×12″ | Price
18	4 | Stones 6′6″×24″×16″ 1 | " 6′6″×24″×20″ Price	5 | Stones 6′6″×24″×12″ Price
20	3 | Stones 6′6″×24″×18″ 1 | " 7′0″×30″×18″ 1 | " 7′0″×30″×20″ Price	3 | Stones 6′6″×24″×14″ 2 | " 7′0″×30″×14″ | Price
22	3 | Stones 7′×24″×18″ 1 | " 8′×30″×18″ 1 | " 8′×30″×22″ Price	3 | Stones 7′0″×24″×14″ 2 | " 8′0″×30″×14″ | Price
24	3 | Stones 7′6″×24″×18″ 1 | " 8′0″×30″×18″ 1 | " 8′0″×30″×22″ Price	3 | Stones 7′6″×24″×14″ 2 | " 8′0″×30″×14″ | Price
26	3 | Stones 8′×30″×20″ 1 | " 9′×36″×20″ 1 | " 9′×30″×24″ Price	3 | Stones 8′×30″×16″ 1 | " 9′×36″×16″ 1 | " 9′×30″×16″ Price
28	3 | Stones 9′×30″×20″ 1 | " 9′×36″×20″ 1 | " 9′×36″×22″ Price	3 | Stones 9′×30″×16″ 2 | " 9′×36″×16″ | Price
30	1 | Stone 10′×42″×24″ 1 | " 10′×36″×24″ 1 | " 9′×36″×24″ 2 | " 9′×30″×24″ Price	1 | Stone 10′×42″×18″ 1 | " 10′×36″×18″ 1 | " 9′×36″×18″ 2 | " 9′×30″×18″ Price
32	1 | Stone 10′×42″×24″ 1 | " 10′×36″×24″ 1 | " 9′×36″×24″ 2 | " 9′×30″×24″	1 | Stone 10′×42″×18″ 1 | " 10′×36″×18″ 1 | " 9′×36″×18″ 2 | " 9′×30″×18″

GIRDER FRAME ENGINE

THE EDW. P. ALLIS COMPANY, MILWAUKEE, WIS.

GINE IZES	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
8x24	4″	9″	3″	1⅛″	16½″	24″		2½″	13½″	8″	9″	1″	22″	1¾″	2¼″		
0x30	5″	10″	4″	1½″	19″	25¼″	25¼″	2½″	13½″	10″	10″	1″	25″	2¼″	3″	1½″	1¾″
2x30	6″	12″	4¾″	1¾″	22″	28½″	28½″	3″	15½″	12″	12″	1″	25″	2¾″	3½″	1½″	1¾″
2x36	6″	12″	4¾″	1¾″	22″	28½″	28½″	3″	15½″	12″	12″	1″	25″	2¾″	3½″	1½″	1¾″
4x36	7″	13″	5½″	2″	24⅛″	30″	30″	3″	15½″	13″	12″	1″	25″	3¼″	4″	1½″	1¾″
4x42	7″	13″	5½″	2″	24⅛″	30″	30″	3″	15½″	13″	12″	1″	25″	3¼″	4″	1½″	1¾″
6x36	8″	14″	6″	2⅛″	25⅞″	35⅛″	31⅛″	3½″	17½″	16″	13″	1 1⁄16″	27″	3½″	4¼″	1½″	1¾″
6x42	8″	14″	6″	2⅛″	25⅞″	35⅛″	31⅛″	3½″	17½″	16″	13″	1 1⁄16″	27″	3½″	4¼″	1½″	1¾″
8x36	9″	15″	6½″	2¼″	27⅝″	2′ 8⅞″	2′ 8⅞″	3¾″	20½″	18″	15″	1 5⁄16″	30″	3⅝″	4½″	1½″	2″
8x42	9″	15″	6½″	2¼″	27⅝″	2′ 8⅞″	2′ 8⅞″	3¾″	20½″	18″	15″	1 5⁄16″	30″	3⅝″	4½″	1½″	2″
8x48	9″	15″	6½″	2¼″	27⅝″	2′ 8⅞″	2′ 8⅞″	3¾″	20½″	18″	15″	1 5⁄16″	30″	3⅝″	4½″	1½″	2″
0x42	9½″	17″	7¾″	2½″	31¼″	3′ 2⅜″	2′ 9⅞″	3¾″	20½″	18″	16″	1 9⁄16″	30″	4″	5″	1½″	2″
0x48	9½″	17″	7¾″	2½″	31¼″	3′ 2⅜″	2′ 9⅞″	3¾″	20½″	18″	16″	1 9⁄16″	30″	4″	5″	1½″	2″
0x60	9½″	17″	7¾″	2½″	31¼″	3′ 2⅜″	2′ 9⅞″	3¾″	20½″	18″	16″	1 9⁄16″	30″	4″	5″	1½″	2″
2x42	10″	20″	8¼″	2¾″	35¼″	3′ 4¼″	35¾″	3¾″	20½″	18″	16″	1 9⁄16″	32″	4⅜″	5½″	1½″	2″
2x48	10″	20″	8¼″	2¾″	35¼″	3′ 4¼″	35¾″	3¾″	20½″	18″	16″	1 9⁄16″	32″	4⅜″	5½″	1½″	2″
2x60	10″	20″	8¼″	2¾″	35¼″	3′ 4¼″	35¾″	3¾″	20½″	18″	16″	1 9⁄16″	32″	4⅜″	5½″	1½″	2″
4x42	11″	20″	8″	3″	35¼″	3′ 7⅜″	3′ 2⅜″	4″	26″	20″	20″	1 11⁄16″	32″	4⅞″	6″	1⅝″	2″
4x48	11″	20″	8″	3″	35¼″	3′ 7⅜″	3′ 2⅜″	4″	26″	20″	20″	1 11⁄16″	32″	4⅞″	6″	1⅝″	2″
4x60	11″	20″	8″	3″	35¼″	3′ 7⅜″	3′ 2⅜″	4″	26″	20″	20″	1 11⁄16″	32″	4⅞″	6″	1⅝″	2″
6x48	12″	22″	9¼″	3¼″	3′ 3″	3′ 8½″	3′ 3½″	4″	26″	20″	23″	1 ¾″	34″	5¼″	6½″	1⅝″	2″
6x60	12″	22″	9¼″	3¼″	3′ 3″	3′ 8½″	3′ 3½″	4″	26″	20″	23″	1 ¾″	34″	5¼″	6½″	1⅝″	2″
8x48	13″	22″	9″	3½″	3′ 3″	3′10½″	3′ 5½″	4″	26″	20″	23″	1 ¾″	34″	5¾″	7″	1¾″	2″
8x60	13″	22″	9″	3½″	3′ 3″	3′10½″	3′ 5½″	4″	26″	20″	23″	1 ¾″	34″	5¾″	7″	1¾″	2″
0x48	14″	24″	10¼″	3¾″	3′ 6½″	4′ 0½″	3′ 7½″	4″	29″	24″	25″	2 3⁄16″	34½″	[illegible]	[illegible]	2″	2″
0x60	14″	24″	[illegible]	[illegible]	3′ 6½″	4′ 0½″	3′ 7½″	4″	29″	24″	25″	2 3⁄16″	34½″	[illegible]	[illegible]	2″	2″
8x48	14″	24″	10″	4″	3′ 6½″	3′10½″	3′10½″	4″	29″	24″	25″	2 3⁄16″	34½″	7″	8″	2″	2″
8x60	14″	24″	10″	4″	3′ 6½″	3′10½″	3′10½″	4″	29″	24″	25″	2 3⁄16″	34½″	7″	8″	2″	2″

Engine Erecting -

7/98 - Kettle Creek - 15 + 30 & 30 .

300 HP McG & Ley Jacket Engine -

Chatham Iron Works

158 hrs @ .40 63.40

Expenses. 89.27

Total 152.67

Actual working time 88 hours.

DSI

Engine Repairs -

4/6/91 Westinghouse 250 HP.
in Brooklyn Commuter Plant
Bore 2 Cylinders 20" x 16"
with new rings. £150.00

Engines Foundations.

Steamship Engines. Atlanta Gas-Fir Gas Plant.

Cylinder	HP	Brick M.	Cement Bbls	Sand Yds
10" x 18"	30	3000	3	3
11 x 18	40	3000	3	3
12 x 20	50	5000	5	5
14 x 20	75	5000	5	5

Engines Enumerated.

Syracuse 5/99. Vertical, 23×46×30", 150 H.P. Enumerated for 2 Vertical Engines Belted Type 1000 H.P. each $7000 =

= 350 per H.P.

3/98 for 1 Vert. Engine 1000 H.P. Boiler

2725.00

= 2.72 per H.P.

Shakespeare, O. C. 1897. Horizontal Engine Belted - 22×42×48". 80 r.p.m. 650 H.P. 171' high. 185 M Brick 400 bbl. Cement + Coal =

2857.00

= 4.40 per H.P.

Engine Foundations -

Paris - July 1900.

Otto Engine.

Excavation.	346 cub yds @ 40¢ yd	5.80
Concrete.	78 " " " 25 ¢ "	19.50
Brick.	4200 M @ 15. M	63.00
		87.70

Little Rock. 8-25-98.

15 x 30 x 30 Mc Intosh, Patent Eng

325 Lbs Q. E. Cement 150 ¢/bbl.

Flemming's Estimate.

50 yds Stone Exc. @ 1.00		50.00
35 " Concrete @ 6.00		210.00
		260.00
Actual Cost		204.23

= .41 per cent

Corliss Engines. 1891.

65 H.P. 90 R.P.M. 10' Wheel.

T.W. & E. Co. Ft. Wayne

Makers.	Size	Weight	Price	Price per H.P.
Phil. Eng. Works	12 x 26	17530	1400.	
Sioux City. Eng Wks.	"	20000	1300.	
Erma & Fearless	"	16500	1550.	
Hamilton	"	17800	1570.	
Cooper	"	18500	1400.	
Rheem	"	14300	1800.	
Allis	12 x 30		1380	
Harrison & Tully	"		1400	
Fishkill	"		1525	
Harrisburg	"	16000	1400	
Corliss	"	16000	1750	
Watson	"	13500	1550	
Henry & Phillips	12 x 28	18900	1436	
Enright	14 x 24	16800	1600	
Watts. Campbell.	14 x 32		1850	
Wetherill	14 x 30	22000	1850	
Whitehall	14 x 30		1600	

Sheet 6

Corliss Engine

Both for Bertier 11.29.02 Laurie Engine Co
17"x36" - 2 Engines 90 r.p.m. Belted -
wheel 16'x25" weight 16000 lbs Engine 29000 lbs.
125 # Steam. Price 2350.00
Cap Stones 150.00

other bids - on 16x36

Laurie.	29000 lbs	$2200 = 76		estimate 16000 lbs
Lane Bodley	28500	2035	71.	17000 lbs
Rice & Sargent	50000	4600	92	20000 lbs
Cooper	43500	2650	59	14000 lbs
"	34200	2120	62	"
Hamilton	27000	1775	65	15000 lbs
Murray	29500	2156	76	17500 lbs
Otis	74000	3700	50	10000 lbs
Shearman	Wheels 12'x22" 26500	1600	60	
Bates "	30000	1647	55	10000 lbs
Jewett "	29600	1850		17000 lbs

$\frac{1}{2}$ | $\frac{5}{16}$ | $\frac{3}{32}$ | $\frac{1}{64}$

AKRON CORLISS ENGINES.

WEBSTER, CAMP & LANE MACHINE CO.

AKRON, OHIO.

Discount 20%

Bore.	Stroke.	Revolutions	Ind. H.P. Stm 80# ¼ cut	Ind. H.P. 80# ½ cut	Ind. H.P. 80# ¾ cut	Fly-wheel dia.	" face. in.	" wght. lbs.	Shaft dia.	Shaft to floor	Centre shaft to back cyl'd.	Calculated Total wright.	Price.
						ft.	in.	lbs					
10	30	90	38	46	54	9	12	4500	6			10800	
12	30	98	54	66	77	9	16	5500	6			15300	
12	36	85	62	75	88	10	18	6600	6½			17400	
14	36	85	84	102	120	10	20	8000	6½			19500	
14	42	80	92	112	131	12	20	9000	7½			24000	
16	42	78	118	143	168	12	24	11000	7½			27500	
18	42	75	144	174	204	14	24	13000	8½	30¼		31000	
18	48	70	153	186	218	16	24	15000	8½	30¼	20 ft.	38000	
20	42	70	165	200	235	16	26	16000	10	30¼		40000	
20	48	70	189	229	269	16	28	18000	10	30¼	20 ft.	44000	
20	60	65	219	266	312	18	30	19000	10	30¼		50000	
22	42	70	200	243	285	16	30	21000	10	30¼	18 ft.	47000	
22	48	65	208	252	296	16	34	22000	11	30¼		57000	
22	60	65	266	322	378	18	36	23000	11	30¼		64000	
24	48	65	252	306	359	18	38	24000	11	34		63000	
24	60	62	301	365	428	18	44	30000	12	34		67000	
26	48	62	283	343	403	18	42	29000	13	34		66000	
26	60	60	342	415	487	20	48	34000	13	34			
28	48	60	318	385	452	20	44	30000	13				
28	60	60	397	481	565	22	50	36000	14				
30	60	60	456	553	649	24	52	38000	15				
32	60	60	519	629	738	24	60	42000	15				

1892-94

4681-7621

ENGINES CORLISS 1891

ANGLE ENGINES		RECIPROCATING			ROTATIVE ENGINES.	
12 × 24	$1300.00	12 × 30	60	$1450.00	8 × 24	$700.00
14 × 24	1400					
14 × 30	1800	14 × 30	75	1700	10 × 24	800.
16 × 36	2200					
17 × 36	2500	16 × 36	100	2100	11 × 24	900.
18 × 36	2600					
20 × 36	2700	18 × 36	125	2400	12 × 30	1050.
20 × 42	2900					
22 × 42	3100	18 × 42	140	2600	13 × 30	1150.
24 × 42	3400					
24 × 48	4500	20 × 48	200	3500	14 × 30.	1250.
26 × 48	5100					
28 × 48	5800	22 × 48	275	3800	16 × 36	1550.
28 × 60	7500					
30 × 60	9800	24 × 60	350	4500	18 × 42	1800.
					18 × 42	2000
					20 × 42	3000
					9 × 16 × 24	$1000
					12 × 22 × 30	2000
					14 × 28 × 36	2450
					16 × 30 × 42	4200
					18 × 32 × 42	4500

GIRDER FRAME ENGINES

REV.	C.Y.C.H. PINS	REGULAR JOURNAL	STANDARD WEIGHT	WHEEL D	WHEEL F	SHIPPING WEIGHT	LIST PRICES	GIRDER SIZES
100	1 3/4 x 2 1/4	4 x 9	2300	7	11	6800	891	8 x 24
90	2 1/4 x 3	5 x 10	4300	8	13	10900	1050	10 x 30
90	2 3/4 x 3 1/2	6 x 12	5700	9	15	14600	1208	12 x 30
85	2 3/4 x 3 1/2	6 x 12	6300	10	17	15400	1257	12 x 36
85	3 1/4 x 4	7 x 13	8900	10	19	20900	1428	14 x 36
82	3 1/4 x 4	7 x 13	8900	12	19	21400	1516	14 x 42
82	3 1/2 x 4 1/4	8 x 14	10000	12	21	24500	1594	16 x 36
78	3 1/2 x 4 1/4	8 x 14	11800	12	23	27000	1700	16 x 42
80	3 5/8 x 4 1/2	9 x 15	13000	12	25	29000	1926	18 x 36
78	3 5/8 x 4 1/2	9 x 15	13300	14	23	31800	1967	18 x 42
75	3 5/8 x 4 1/2	9 x 15	15300	15	25	35900	2080	18 x 48
75	4 x 5	9 1/2 x 17	16600	15	25	38800	2223	20 x 42
72	4 x 5	9 1/2 x 17	18700	16	27	42300	2334	20 x 48
65	4 x 5	9 1/2 x 17	24400	16	31	45000		20 x 60
75	4 3/8 x 5 1/2	10 x 20	18000	16	29	47000	2563	22 x 42
72	4 3/8 x 5 1/2	10 x 20	23100	16	33	51100	2856	22 x 48
65	4 3/8 x 5 1/2	10 x 20	26300	18	35	55000		22 x 60
70	4 7/8 x 6	11 x 20	27000	18	42	61000	3300	24 x 48

For this Section
Atlas Statement No. 1904-1905
Reversible
Sheets Eng No 1 To Eng No 1 Inclusive - Profile Scales E -
Asking rates 25% to 5% — 20% To 20 + 10%

1904-1915 Rates are admin 75% 80% of 1913-15 rates

Stechers Lithographic Co. Rochester

Simple Heavy duty Engine 100 r.p.m. 450 HP.
22" x 42"

	45000	5600.
wheel 27000 lbs @ 5	27000	1350
	72000	6950
Less		
30 x 10 =		4378.50
Fgt 72000 lbs @ .25		1800
		4548.50
300 Kw Generator 220 Volts		5925.
Fgt 57000 lbs @ .20		104
		6029.00
		10688.

Say $10700.00 see My offic card 11/18/04

$\frac{4378.}{72000} = 6.1$

Burgess Sulphite Fibre Co Berlin NH

Engines for D.C. to 200 Kws Alternator

Single Cylinder 18"x36"
110 lbs steam 120 rpm
wheel 18000 lbs Total wgt 50000. 3800-

do 20"x36"
100 lbs steam 100 rpm
wheel 20000 lbs Total wgt 58000 4200-

Cross Compound 12"x24"x36"
175 lbs steam 120 rpm
wheel 18000 lbs Total 71000 lbs 5700-

do 14x28x36
175 lbs steam 100 rpm
wheel 20000 lbs Total 83000 lbs 6500-

all For 13 cars Berlin NH.

guaranteed at 110 lbs steam & no back pressure

1/4 load		26 lbs steam per	I.H.P.	hr		
1	"	24	"	"	"	
3/4	"	25	"	"	"	
1/2	"	27½	"	"	"	

guaranteed at 125 lbs steam & 26" Vacuum

1/4 load		14½	lbs steam per	I.H.P.	hr		
1	"	16	"	"	"	"	"
3/4	"	15½	"	"	"	"	"
1/2	"	19	"	"	"	"	"

Burgess Sulphite Fibre Co from New York Cards

Engine 20"x36" - 100 rpms 5050.
Wheel 20000 lbs (on 1½") @ ½ 1000.
6550.
less 30+10% 2238.
3812.
R.R. & S.P. 30
Frt on 58000 lbs @ .33 192 4034
say 4200.00
delivery 60 days.

Engine 14+28x36 - 100 rpms 8550.
Wheel 20000 lbs @ ½ 1000
9550
less 30+10% 3533
6017
60
R.R. & S.P. 274 6351
Frt 83000 lbs @ .33
say 6500.
delivery 90 days.

PLY
WHEEL

AIR
COMPRESSORS

SET NO. 3103

SHEET NO. 2135

SUPERSEDING SHEET No. 2049

SEPTEMBER, 1909

DATA.

FLY WHEEL FORMULA

FLY WHEEL FORMULA NO. 1
FOR ENGINES FOR GENERAL POWER PURPOSES

GENERAL FORMULA $$Wr^2 = \frac{10^6 \ HP \ F \ Z}{N^3}$$

W—Weight of Wheel.
HP—Indicated Horse Power of Engine.
F—Factor depending on Type of Engine.
Z—Factor depending on Service.
r—Radius of Gyration of Wheel—Approx. 0.4 Dia.
N—Number of Revolutions per Minute.

TYPE OF ENGINE	F
Horizontal Single	15
Vertical Single	25
Horizontal Tandem Compound	13
Vertical Tandem Compound	21
Horizontal Twin or Cross Compound	10
Vertical Twin or Cross Compound	13
Horizontal Twin Tandem Compound	6
Vertical Twin Tandem Compound	10
Horizontal-Vertical Compound	13
Twin Horizontal-Vertical Compound	10

Z	SERVICE
	(This factor varies between the limits given below. The more fluctuating the load, the higher the factor to be used.)
40	Saw Mills and Paper Mills.
40—50	General Manufacturing.
50	Flour Mills.
100	Cotton Mills.
100—150	Rolling Mills.

FLY WHEEL FORMULA NO. 2

FOR ENGINES BELTED TO DIRECT OR ALTERNATING CURRENT GENERATORS

GENERAL FORMULA $$Wr^2 = \frac{10^6 \ HP \ F \ Z}{N^3}$$

W—Weight of Wheel.
HP—Indicated Horse Power of Engine.
F—Factor depending on Type of Engine.
Z—Factor depending on Service.
r—Radius of Gyration of Wheel—Approx. 0.4 Diameter.
N—Number of Revolutions per Minute.

TYPE OF ENGINE	F
Horizontal Single	15
Vertical Single	25
Horizontal Tandem Compound	13
Vertical Tandem Compound	21
Horizontal Twin or Cross Compound	10
Vertical Twin or Cross Compound	13
Horizontal Twin Tandem Compound	6
Vertical Twin Tandem Compound	10
Horizontal-Vertical Compound	13
Twin Horizontal-Vertical Compound	10

Z	SERVICE
	(This factor varies between the limits given below. The more fluctuating the load, the higher the factor to be used.)
100–150	Direct Current Belted Generators.
100–150	25 cycle Belted Generators.
100–150	Lighting or Power Load.
150–200	Lighting combined with Fluctuating Power Load.
	For 60 cycle Belted Generators: not driving Rotary Converters and not running in parallel
175–225	Lighting or Power Load.
200–250	Lighting combined with Fluctuating Power Load.
	For 60 cycle Belted Generators driving Rotary Converters or running in parallel.

NOTE:—The term GR^2 should be neglected with Belted Generators, as this value has been taken into account in the factors.

DATA.

FLY WHEEL FORMULA

SEPTEMBER, 1909

SHEET NO. 2135A

FLY WHEEL FORMULA NO. 3

FOR ENGINES DIRECT CONNECTED TO D. C. GENERATORS OR A. C. GENERATORS, NOT DRIVING ROTARY CONVERTERS AND NOT RUNNING IN PARALLEL

GENERAL FORMULA $$Wr^2 + GR^2 = \frac{10^6 \ HP \ F \ Z}{N^3}$$

W—Weight of Wheel.
G—Weight of Rotor.
HP—Indicated Horse Power of Engine
F—Factor depending on Type of Engine.
N—Number of Revolutions per Minute.
Z—Factor depending on Service.
r—Radius of Gyration of Wheel—Approx. 0.4 Dia.
R—Radius of Gyration of Rotor—Approx. 0.35 Dia. for type AI Machines and approx. 0.28 Dia. for type I Machines.

TYPE OF ENGINE	F.
Horizontal Single	15
Vertical Single	25
Horizontal Tandem Compound	13
Vertical Tandem Compound	21
Horizontal Twin or Cross Compound	10
Vertical Twin or Cross Compound	13
Horizontal Twin Tandem Compound	6
Vertical Twin Tandem Compound	10
Horizontal-Vertical Compound	13
Twin Horizontal-Vertical Compound	10

Z **SERVICE**

(The factor varies between limits given below. The more fluctuating the load, the higher the factor to be used.)

125—175	Lighting or Power.
175—225	Lighting combined with Fluctuating Power Load.
200—300	Street Railway Work and Extremely Fluctuating Loads.

FLY WHEEL FORMULA

SEPTEMBER, 1909

SHEET NO. 2136

DATA.

SET NO. 308

FLY WHEEL FORMULA NO. 4

FOR ENGINES DIRECT CONNECTED TO D. C. GENERATORS OR A. C. GENERATORS NOT DRIVING ROTARY CONVERTERS AND NOT RUNNING IN PARALLEL

WEIGHT = Indicated Horse Power of Engine at Normal Load × **N.**

Lighting, Power or General Manufacturing—Multiply Weight by 0.7
Lighting combined with Fluctuating Power Load—Multiply Weight by 1. to 1.25
Street Railway Work and Extremely Fluctuating Loads—Multiply Weight by 1.25 to 1.5

(Tables of Factor N given on Sheets No. 2149 and 2150.)

ENGINE TYPE	LETTER
Horizontal Single	A
Vertical Single	B
Horizontal Twin or Cross Compound. Vertical Twin Tandem Compound. Twin Horizontal-Vertical Compound.	C
Horizontal Tandem Compound. Vertical Twin or Cross Compound. Horizontal-Vertical Compound.	D
Vertical Tandem Compound	E
Horizontal Twin Tandem Compound	F

NOTE:—This Table is based on the assumption that $GR^2 = \frac{1}{10}Wr^2$. If GR^2 of Generator is known use Formula No. 3

SUPERSEDING SHEET NOS. 2050-1

SEPTEMBER, 1909

FLY WHEEL FORMULA

DATA.

SHEET NO. 2136A

SET NO. 3018

SHEET NO. 2149

FLY WHEEL FORMULA

SUPERSEDING SHEETS 2137 AND 2138 — SEPTEMBER, 1909

Data

TABLE OF FACTOR "N" FOR USE WITH FLY WHEEL FORMULA NO. 4

Diam. of Wheel	10						11						12						13					
Rev.	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
75	400	667	267	347	560	160	330	552	221	286	463	132	278	463	185	241	390	111	237	395	158	205	332	95
80	329	550	220	285	462	132	273	455	183	236	382	109	229	382	153	199	321	92	195	326	130	169	274	78
85	274	459	184	238	385	110	227	379	153	197	318	91	192	319	128	166	267	76	163	271	109	141	229	65
90	231	386	154	201	324	93	192	319	129	166	267	76	161	268	107	139	225	65	138	229	92	119	193	55
95	196	328	131	170	275	78	163	271	110	141	228	65	137	229	91	119	192	55	117	194	77	101	163	47
100	168	282	112	147	236	68	139	232	94	121	195	56	117	195	78	102	164	47	101	166	67	86	140	40
105	146	243	97	126	204	58	121	201	81	104	168	49	102	169	67	88	142	40	86	144	58	75	121	34
110	127	211	85	110	177	50	104	175	70	91	147	42	88	147	58	76	123	35	76	125	50	65	105	30
115	111	185	74	96	156	45	92	153	61	79	129	37	77	129	51	67	108	31	67	110	44	57	92	26
120	98	163	65	85	137	39	81	135	54	70	112	32	68	113	45	59	95	27	58	96	39	50	81	23
125	86	144	58	75	121	34	71	119	48	62	100	29	60	100	40	52	84	24	51	85	34	44	72	21
130	76	128	51	67	107	31	63	106	42	55	89	25	53	89	36	46	75	22	46	76	31	40	64	18
135	68	114	46	59	96	27	57	94	38	49	79	23	48	79	32	41	67	19	40	68	27	35	57	16
140	61	103	41	53	85	24	51	85	34	44	71	21	42	71	29	37	59	17	....	....	....	....	....	...
145	55	92	37	48	77	22	46	76	31	40	64	18	39	64	26	33	54	15	....	....	....	....	....	...
150	49	84	33	43	70	20	41	69	29	36	58	16	35	58	23	30	49	14	....	....	....	....	....	...

TABLE OF FACTOR "N" FOR USE WITH FLY WHEEL FORMULA NO. 4—CONTINUED

Dia. of Wheel	14						15						16					
Revolutions	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
75	204	341	136	177	286	82	178	296	118	154	249	71	156	260	104	135	218	62
80	168	281	112	146	236	67	147	244	97	127	205	59	129	214	85	112	179	51
85	140	234	94	121	196	57	122	203	81	105	171	49	107	179	71	93	149	42
90	118	197	78	102	166	48	103	172	68	89	144	41	90	150	60	78	126	36
95	101	167	67	87	140	40	87	146	58	76	122	35	76	128	51	67	107	31
100	86	144	58	75	121	34	76	125	50	65	105	30	66	110	44	57	92	26
105	75	124	49	65	104	30	65	108	43	56	91	26	57	94	38	49	79	23
110	65	108	43	56	91	26	57	94	38	49	79	23	49	83	33	43	69	20
115	57	94	38	49	79	23	50	82	32	42	69	20	...	...	...	...	...	..
120	49	83	33	43	70	20	43	72	29	38	60	17	...	...	...	...	...	..
125	45	74	30	38	62	18	...	...	...	...	...	...	...	...	...	...	...	..

SEPTEMBER, 1909

FLY WHEEL FORMULA

FLY WHEEL FORMULA

SUPERSEDING SHEET NO. 2139

SEPTEMBER, 1909

TABLE OF FACTOR "N" FOR USE WITH FLY WHEEL FORMULA NO. 4—CONTINUED

Diam. of Wheel	18						19						20						22					
Rev.	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
60	241	402	161	209	338	96	217	361	144	188	304	87	195	326	130	169	274	78	161	270	108	140	226	65
65	190	316	127	165	266	76	171	284	113	148	239	68	154	256	103	133	215	61	127	212	85	111	178	51
70	152	253	102	131	212	60	137	227	91	119	192	54	123	205	82	106	172	49	102	170	67	88	142	40
75	123	205	83	107	173	49	111	184	74	96	156	44	100	166	67	86	140	40	83	139	55	72	116	33
80	102	169	68	88	142	40	92	152	61	79	129	37	83	138	55	71	115	33	67	113	46	59	95	27
85	85	141	57	74	119	34	76	127	50	66	107	31	68	114	46	59	96	28	57	94	38	49	79	22
90	71	119	48	62	100	29	64	107	42	56	90	25	58	96	39	50	81	23	....	....	....	....	....	...
95	60	101	40	52	85	24	55	91	36	48	76	22	49	82	33	42	69	20	....	....	....	....	....	...
100	52	86	35	45	73	21	47	78	31	40	66	19	42	70	28	37	59	17	....	....	....	....	....	...

SET NO. 308

TABLE OF FACTOR "N" FOR USE WITH FLY WHEEL FORMULA NO. 4—CONTINUED

Dia. of Wheel	24						25						28					
Revolutions	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
60	136	226	91	118	191	54	125	208	83	108	175	50	100	166	66	86	140	40
65	107	178	71	93	149	42	98	164	65	85	138	39	78	131	52	68	110	31
70	85	142	58	74	120	34	78	131	52	68	110	31	63	104	42	54	88	25
75	69	116	47	60	97	28	64	106	42	56	89	25	51	85	34	44	71	21
80	58	95	39	49	80	23	53	88	35	46	74	21	.....	.....	.....	.....	.....	.....

Data

FLY WHEEL FORMULA

SEPTEMBER, 1909

SHEET NO. 2150A

FLY WHEEL FORMULA NO. 5

FOR ENGINES DIRECT CONNECTED TO A. C. GENERATORS DRIVING ROTARY CONVERTERS OR RUNNING IN PARALLEL

GENERAL FORMULA $$Wr^2 + GR^2 = \frac{10^8 \ KW \sim L}{N^4}$$

W—Weight of Wheel.
G—Weight of Rotor.
~—Number of Cycles per Second.
KW—Kilowatts at 100% P. F., no deductions to be made for lower P. F.
L—Factor depending on Type of Engine and Service and varying between the limits given, the more fluctuating the load the higher the factor to be used.

r—Radius of Gyration of Wheel—Approx. 0.4 Dia.
R—Radius of Gyration of Rotor—Approx. 0.35 Dia.
N—Number of Revolutions per Minute.

TYPE OF ENGINE	L
Horizontal Single	150–190
Vertical Single	180–225
Horizontal Twin or Cross Compound Twin Horizontal-Vertical Compound Horizontal Twin Tandem Compound	105–132
Vertical Twin or Cross Compound Horizontal Tandem Compound Twin Vertical Tandem Compound Horizontal-Vertical Compound	120–150

In case this formula gives lighter wheels for engines direct connected to 25 cycle Generators than the Formula No. 3 for D. C. direct connected Generators, use the latter and its factors.

For 25 or 60 cycle Generators not driving Rotary Converters and not running in parallel, use Formula No. 3 and factors as for D. C. Generators.

FLY WHEEL FORMULA

SEPTEMBER, 1909

SET NO. 808

Data

FLY WHEEL FORMULA NO. 6

FOR ENGINES DIRECT CONNECTED TO 60 CYCLE GENERATORS DRIVING ROTARY CONVERTERS OR RUNNING IN PARALLEL

WEIGHT = KW AT 100% PF × N.

N { Lighting or Power or General Manufacturing, use Factor I.
Lighting combined with Fluctuating Power Load, use Factor II.
Street Railway Work with Extremely Fluctuating Load, use Factor III.

(Tables of Factor N given on Sheets No. 2141 and 2142)

TYPE OF ENGINE	LETTER
Horizontal Single	A
Vertical Single	B
Horizontal Twin or Cross Compound Twin Horizontal-Vertical Compound Horizontal Twin Tandem Compound	C
Vertical Twin or Cross Compound Twin Vertical Tandem Compound Horizontal-Vertical Compound Horizontal Tandem Compound	D

NOTE:—This Table is based on the assumption that $GR^2 = \frac{1}{10}\ Wr^2$. If GR^2 of Generator is known, use Formula No. 5.

For Engines direct connected to 60 cycle Generators not driving Rotary Converters and not running in parallel, use Formula No. 4.

SET NO. 3003

TABLE OF FACTOR "N" FOR USE WITH FLY WHEEL FORMULA NO. 6

R. P. M.		75				82				90				100			
Diam.	Factor	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
10	I	1600	1918	1118	1280	1121	1343	783	896	772	924	540	618	506	607	354	406
	II	1792	2148	1252	1434	1256	1504	877	1004	865	1035	605	692	567	680	396	455
	III	2000	2400	1398	1600	1401	1679	979	1120	965	1155	675	773	633	759	443	508
11	I	1323	1588	925	1056	926	1113	648	740	638	766	447	510	419	503	293	334
	II	1482	1779	1036	1183	1037	1247	726	829	715	858	501	571	469	563	328	374
	III	1654	1985	1156	1320	1158	1391	810	925	797	958	559	638	524	629	366	418
12	I	1110	1334	778	887	776	934	545	622	535	643	376	428	351	422	246	281
	II	1243	1494	871	993	869	1046	610	697	599	720	421	479	393	473	276	315
	III	1388	1668	973	1109	970	1168	681	778	669	804	470	535	439	528	308	351
13	I	947	1137	663	757	663	796	464	530	457	549	320	366	300	360	210	239
	II	1061	1273	743	848	743	892	520	594	512	615	358	410	336	403	235	268
	III	1184	1421	829	946	829	995	580	663	571	686	400	458	375	450	263	299
14	I	816	981	572	653	571	687	400	458	394	474	276	315	258	310	181	207
	II	914	1099	641	731	640	769	448	513	441	531	309	353	289	347	203	232
	III	1020	1226	715	816	714	859	500	573	493	593	345	394	323	388	226	259
15	I	712	854	498	569	498	598	349	399	343	412	240	275	225	270	158	180
	II	797	956	558	637	558	670	391	447	384	461	269	308	252	302	177	202
	III	890	1068	623	711	623	748	436	499	429	515	300	344	281	338	198	225

SEPTEMBER, 1909

FLY WHEEL FORMULA

SHEET NO. 2141

Data

FLY WHEEL FORMULA

TABLE OF FACTOR "N" FOR USE WITH FLY WHEEL FORMULA NO. 6—Continued

R. P. M.		106				116				120				150			
Diam.	Factor	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
10	I	401	481	280	321	279	335	195	224	244	293	171	196	100	120	70	80
	II	449	539	314	360	312	375	218	251	273	328	192	220	112	134	78	90
	III	501	601	350	401	349	419	244	280	305	366	214	245	125	150	88	100
11	I	331	398	232	265	231	277	162	185	202	243	141	161	83	99	58	66
	II	371	446	260	297	259	310	181	207	226	272	158	180	93	111	65	74
	III	414	498	290	331	289	346	203	231	253	304	176	201	104	124	73	83
12	I	278	334	195	222	194	233	136	155	170	204	119	136	70	83	49	56
	II	311	374	218	249	217	261	152	174	190	228	133	152	78	93	55	63
	III	348	418	244	278	243	291	170	194	213	255	149	170	88	104	61	70
13	I	237	285	166	190	165	198	116	132	145	174	101	116	.....	.....	.....	.....
	II	265	319	186	213	185	222	130	148	162	195	113	130	.....	.....	.....	.....
	III	296	356	208	238	206	248	145	165	181	218	126	145	.....	.....	.....	.....
14	I	204	246	143	164	143	171	100	114	125	150	87	100	.....	.....	.....	.....
	II	228	276	160	184	160	192	112	128	140	168	97	112	.....	.....	.....	.....
	III	255	308	179	205	179	214	125	143	156	188	109	125	.....	.....	.....	.....
15	I	178	214	125	143	125	149	87	100	109	131	76	87	.....	.....	.....	.....
	II	199	240	140	160	140	167	97	112	122	147	85	97	.....	.....	.....	.....
	III	223	268	156	179	156	186	109	125	136	164	95	109	.....	.....	.....	.....

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FLY WHEEL FORMULA

TABLE OF FACTOR "N" FOR USE WITH FLY WHEEL FORMULA NO. 6—Continued

R. P. M.		75				82				90				100				106			
Dia.	F'ct'r	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	C	C	D
16	I	625	750	437	500	437	525	306	350	301	362	211	241	198	237	138	158	157	188	110	125
	II	700	840	489	560	489	588	343	392	337	405	236	270	222	265	155	177	176	211	123	140
	III	781	938	546	625	546	656	383	438	376	453	264	301	248	296	173	198	196	235	138	156
18	I	494	593	346	395	346	417	242	277	238	286	167	191	156	188	110	125	.....	.....	.....	.....
	II	553	664	388	442	388	467	271	310	267	320	187	214	175	211	123	140	.....	.....	.....	.....
	III	618	741	433	494	433	521	303	346	298	358	209	239	195	235	138	156	.....	.....	.....	.....
19	I	443	533	310	354	310	373	217	247	213	257	150	171	140	169	98	112	.....	.....	.....	.....
	II	496	597	347	396	347	418	243	277	239	288	168	192	157	189	110	125	.....	.....	.....	.....
	III	554	666	388	443	388	466	271	309	266	321	188	214	175	211	123	140	.....	.....	.....	.....
20	I	400	480	280	320	280	336	196	224	193	232	135	155	.....	.....	.....	.....	.....	.....	.....	.....
	II	448	538	314	358	314	376	220	251	216	260	151	174	.....	.....	.....	.....	.....	.....	.....	.....
	III	500	600	350	400	350	420	245	280	241	290	169	194	.....	.....	.....	.....	.....	.....	.....	.....
22	I	330	397	231	264	231	278	162	185	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	II	370	445	259	296	259	311	181	207	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	III	412	496	289	330	289	348	203	231	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	I	278	334	194	222	195	234	136	156	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	II	311	374	217	249	218	262	152	175	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	III	348	418	243	278	244	293	170	195	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	I	256	307	179	205	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	II	287	344	200	230	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	III	320	384	224	256	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	I	204	245	143	163	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	II	228	274	160	183	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	III	255	306	179	204	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

SEPTEMBER, 1909

Data

SET NO. 308

FLY WHEEL FORMULA

FLY WHEEL FORMULA NO. 7

FOR ENGINES DIRECT CONNECTED TO 25 CYCLE A. C. GENERATORS WHICH HAVE ROTARY CONVERTERS ON THE LINE OR WHICH HAVE TO RUN IN PARALLEL

WEIGHT = KW AT 100% P.F. × N.

N { Lighting, Power or General Manufacturing, use Factor I.
Lighting combined with Fluctuating Power Load, use Factor II.
Street Railway Work and Extremely Fluctuating Load, use Factor III.

(TABLES OF FACTOR N GIVEN ON SHEETS 2144 AND 2145)

TYPE OF ENGINE	LETTER
Horizontal Single	A
Vertical Single	B
Horizontal Twin or Cross Compound Twin Horizontal Vertical Compound Horizontal Twin Tandem Compound	C
Vertical Twin or Cross Compound Twin Vertical Tandem Compound Horizontal-Vertical Compound Horizontal Tandem Compound	D

For Engines driving 25 cycle Generators which have no Rotary Converters on the line and do not have to run in parallel, use Formula No. 4.

NOTE:—This Table is based on the assumption that $GR^2 = \frac{1}{10} Wr^2$. If GR^2 of Generator is known, use Formula No. 5.

SEPTEMBER, 1909

SET NO. 3018

Data

SET NO. 2000

SHEET NO. 2144

FLY WHEEL FORMULA

TABLE OF FACTOR "N" FOR USE WITH FLY WHEEL FORMULA NO. 7

R. P. M.		75				80				83				88			
Diam.	Factor	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
10	I	666	1110	467	532	516	858	361	412	443	738	305	349	351	585	246	281
	II	666	1110	467	605	539	898	384	500	483	804	344	447	405	676	288	374
	III	818	1365	581	754	674	1122	479	622	603	1005	428	557	507	844	360	468
		980	1635	698	907	808	1345	576	748	724	1206	514	668	607	1012	432	562
11	I	551	917	386	440	426	708	298	340	367	612	257	293	291	485	193	221
	II	551	917	386	500	444	739	317	411	398	664	284	369	334	558	239	310
	III	678	1130	481	624	559	930	397	516	500	833	355	462	420	700	298	388
		812	1355	577	749	668	1113	475	617	598	997	426	554	502	836	357	464
12	I	463	771	324	370	358	596	250	285	308	513	216	247	244	407	171	195
	II	463	771	324	420	374	623	266	346	335	559	238	309	281	469	200	260
	III	569	947	404	524	468	779	332	431	420	700	298	388	352	587	250	325
		683	1138	484	628	563	937	398	517	505	842	356	463	422	704	300	390
13	I	394	657	276	315	304	506	213	243	263	438	184	210	208	346	146	166
	II	394	657	276	357	320	533	226	294	286	477	203	264	240	400	170	221
	III	485	809	344	447	400	666	283	367	357	596	254	330	300	500	213	277
		582	970	413	536	480	800	340	442	430	717	305	397	360	600	256	332
14	I	340	567	238	272	263	438	184	210	227	378	159	182	180	300	126	144
	II	340	567	238	309	275	458	196	255	246	410	176	229	207	346	148	192
	III	418	697	297	386	345	575	245	318	308	514	219	285	259	432	184	239
		502	837	356	462	414	690	293	381	370	617	262	341	311	519	220	286
15	I	296	494	208	237	229	381	161	184	198	330	138	158	156	260	110	126
	II	296	494	208	269	240	400	170	221	215	358	153	199	180	300	128	166
	III	365	609	259	336	301	502	213	277	269	449	191	248	226	376	161	209
		437	728	310	402	361	602	255	331	323	538	229	298	270	450	192	249
16	I	260	433	182	208	201	334	141	161	174	290	122	140	138	230	96	110
	II	260	433	182	236	211	352	150	195	188	314	134	174	158	263	113	147
	III	320	534	227	295	263	438	187	243	236	394	168	218	198	330	141	183
		384	640	272	353	316	527	224	291	283	472	201	261	238	397	168	218

SEPTEMBER, 1909

Data

FLY WHEEL FORMULA

TABLE OF FACTOR "N" FOR USE WITH FLY WHEEL FORMULA NO. 7—Continued

R. P. M.		94				107				125				150			
Diam.	Factor	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
10	I	270	450	189	216	161	268	113	146	99	165	70	70	57	95	41	53
	II	332	554	237	308	225	375	161	209	141	235	100	130	81	135	58	75
	III	415	692	295	383	282	470	200	260	177	295	125	162	102	170	72	93
		498	830	354	460	338	563	240	312	212	353	151	196	122	203	87	113
11	I	224	374	156	179	132	222	93	121	82	136	58	75	47	78	34	44
	II	274	457	195	253	186	310	132	171	117	195	83	108	67	112	48	62
	III	344	524	244	317	233	388	166	215	146	243	104	135	84	140	60	78
		412	686	292	380	279	465	198	257	175	291	125	162	101	168	72	93
12	I	188	313	131	150	112	187	78	101	69	115	49	64	40	67	28	36
	II	230	384	164	213	156	260	111	144	98	163	70	91	57	95	40	52
	III	289	483	205	266	196	326	139	180	123	205	87	113	71	118	50	65
		347	578	246	320	235	392	167	217	148	246	104	135	85	142	60	78
13	I	160	267	112	128	96	160	67	86	59	98	42	55	.....	.....	.....	.....
	II	197	329	140	182	133	222	95	123	84	140	59	77	.....	.....	.....	.....
	III	246	411	174	226	167	278	119	155	104	173	74	96	.....	.....	.....	.....
		295	492	210	273	200	333	142	184	126	210	89	116	.....	.....	.....	.....
14	I	138	230	96	110	82	137	57	74	51	85	36	47	.....	.....	.....	.....
	II	170	283	121	157	115	191	82	107	72	120	52	68	.....	.....	.....	.....
	III	212	354	151	196	144	240	102	132	90	150	64	83	.....	.....	.....	.....
		255	426	181	235	173	288	123	160	108	180	77	100	.....	.....	.....	.....
15	I	121	202	84	96	72	120	50	65	.....	.....	.....	.....	.....	.....	.....	.....
	II	148	246	105	137	100	167	71	92	.....	.....	.....	.....	.....	.....	.....	.....
	III	186	310	132	172	126	210	89	115	.....	.....	.....	.....	.....	.....	.....	.....
		222	370	157	204	151	251	107	139	.....	.....	.....	.....	.....	.....	.....	.....
16	I	106	177	74	85	63	105	44	57	.....	.....	.....	.....	.....	.....	.....	.....
	II	130	217	92	120	88	146	63	82	.....	.....	.....	.....	.....	.....	.....	.....
	III	162	270	115	150	110	183	78	101	.....	.....	.....	.....	.....	.....	.....	.....
		195	325	138	180	132	220	94	122	.....	.....	.....	.....	.....	.....	.....	.....

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SET NO. 308

SHEET NO. 2145

FLY WHEEL FORMULA

Data

TABLE OF FACTOR "N" FOR USE WITH FLY WHEEL FORMULA NO. 7

R. P. M.		75				80				83				88				94			
Dia.	Factor	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
18	I	206	343	144	165	159	264	112	128	137	228	96	110	109	182	76	87	84	140	58	66
	II	206	343	144	186	166	277	118	153	149	248	105	137	125	208	89	116	103	172	72	94
	III	252	421	179	233	208	346	147	191	186	310	132	172	156	260	111	144	128	214	91	118
		304	508	215	279	251	418	177	230	225	375	159	207	188	313	133	173	155	259	109	142
19	I	184	308	129	148	142	236	100	114	123	205	86	98	98	163	68	78	75	125	52	60
	II	184	308	129	168	149	248	106	138	134	223	95	123	112	187	80	104	92	153	65	85
	III	227	379	161	209	187	312	133	173	168	280	119	155	141	235	100	130	116	193	82	107
		272	454	193	250	224	373	159	207	201	335	142	185	168	280	120	156	138	230	98	127
20	I	167	278	117	133	129	215	91	104	111	185	78	89	88	147	62	71	68	113	47	54
	II	167	278	117	151	134	223	95	123	120	200	85	111	101	168	72	94	83	139	59	77
	III	205	342	145	188	169	282	119	155	151	252	107	139	127	212	90	117	104	173	74	96
		246	410	174	226	203	338	143	186	181	302	128	166	152	253	108	141	125	209	88	114
22	I	138	230	96	110	107	178	74	85	92	153	64	73	.....	.....	.....	.....	.....	.....	.....	.....
	II	138	230	96	125	112	187	79	103	100	167	71	92	.....	.....	.....	.....	.....	.....	.....	.....
	III	169	282	120	156	139	232	99	129	125	208	88	114	.....	.....	.....	.....	.....	.....	.....	.....
		203	338	144	187	167	278	119	155	150	250	106	138	.....	.....	.....	.....	.....	.....	.....	.....
24	I	116	193	81	92	90	150	63	72	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	II	116	193	81	105	93	155	67	87	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	III	142	237	101	131	117	195	83	108	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		171	285	121	157	141	235	100	130	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	I	107	178	75	85	83	138	58	66	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	II	107	178	75	97	86	143	62	81	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	III	131	219	93	121	108	180	77	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		157	262	112	146	129	215	92	120	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	I	85	142	60	68	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	II	85	142	60	78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	III	104	174	74	96	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		126	210	89	116	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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FLY WHEEL RIM SPEED

RIM SPEED OF WHEELS IN FEET PER MINUTE

R. P. M. / Wheel Dia.	40	50	60	70	75	80	85	90	94	100	107	110	115	120	125	130	135	140	145	150
10′	1260	1570	1890	2200	2360	2510	2670	2830	2950	3140	3360	3460	3610	3770	3930	4080	4240	4400	4560	4720
11′	1380	1730	2070	2420	2590	2770	2940	3110	3250	3460	3700	3800	3980	4150	4320	4490	4670	4840	5010	5180
12′	1510	1890	2260	2640	2830	3020	3200	3390	3540	3770	4030	4150	4340	4520	4710	4900	5090	5280	5470	5660
13′	1630	2040	2450	2860	3060	3270	3470	3680	3840	4080	4370	4490	4700	4900	5110	5310	5510	5720	5920	6130
14′	1760	2200	2640	3080	3300	3520	3740	3960	4130	4400	4710	4840	5060	5280	5500	5720	5940	6160	6380	6600
15′	1890	2360	2830	3300	3530	3770	4010	4240	4430	4710	5040	5180	5420	5660	5890	6130	6360	6600	6840	7070
16′	2010	2510	3020	3520	3770	4020	4270	4520	4730	5030	5380	5530	5780	6030	6280	6540	6790	7040	.....	.....
18′	2260	2830	3390	3960	4240	4520	4810	5090	5320	5660	6050	6220	6500	6790	7070	7350	.....	.....	.....	.....
20′	2510	3140	3770	4400	4710	5030	5340	5660	5910	6280	6720	6910	7230	.....						
22′	2770	3460	4150	4840	5180	5530	5880	6220	6500	6910										
24′	3020	3770	4520	5280	5660	6030	6410	6790	7090	.....										
25′	3140	3930	4710	5500	5890	6280	6680	7070	....	.....										
26′	3270	4080	4900	5720	6130	6540	6940	....	....	.....										
28′	3520	4400	5280	6160	6600	7040	....	....	....	.....										
30′	3770	4710	5660	6600	7070	....	....	....	....	.....										

Stroke of Engine	Largest Dia. of Wheel Permissable
24″	10′
30″	12′
36″	15′
42″	18′
48″	24′

Min. Wgts. of Sq. Rim Wheels

Diameter	Weight	Max. Bore
10′ Halves	7500	11″
11′ “	9000	12″
12′ “	12000	13″
14′ “	17000	15″
15′ “	20000	16″
16′ “	24000	17″
18′ “	30000	18″
20′ “	40000	20″
16′ Seg.	26000	18″
18′ “	38000	20″
20′ “	50000	22″
22′ “	63000	26″
24′ “	75000	26″

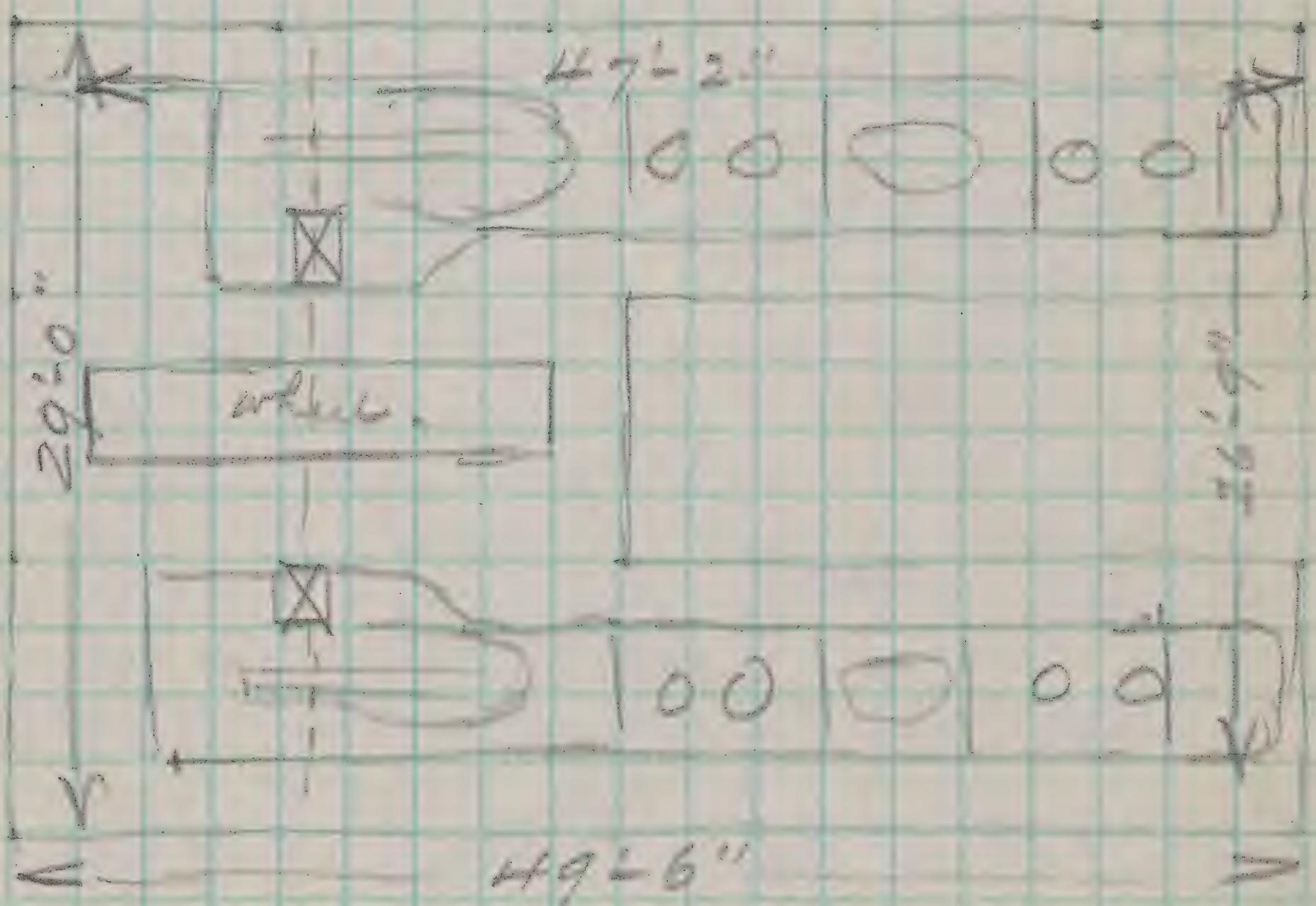
SEPTEMBER, 1909

SET NO. 308

Data

GAS
ENGINES

6/17/19 Gas. Eugene Unit
Herbert S. Kinnear - 75 State St.
1000 KVS max 80% p.f. Single phase
110 Volts. 150 RPM.
Air and gas mixt. 50°F
Locate as per Dec Lett.
300 BTU Gas.
2 Units
27" x 36" Lentz tandem engines.
@ 120000 ft cub. = 120 HP units
580.000 ft.
Price Outfit - include { All piping to Cylinders
End of Foundations -
Engines & Generators, Belts Equip
Cotton, Estlf Removable Mattress
And Starting Outfit.
Will Furnish
10 Jo moulds for 2 Units.
Wheels 18' dia.



Foundations 10' deep
Bottom of Pit 2'-10" above floor line

Gas Engine - 6/18.19

Racine Gas Tractor Co.

790 Cub. 10 7/8 overall for 2 hrs only.

Tandem 4 Cycle double acting

2 Cylinders 27" x 36" - 150 B.H.P.

Weighs 85 000 lbs. air start tires 14' 80"

Drive 18' dia. - 40000 lbs.

28,000 lbs. & 56000 #

Air Start. 30 cub ft Compressor

10 HP gasoline Engine

150 Gal Air tank - 10000 # 1500 #

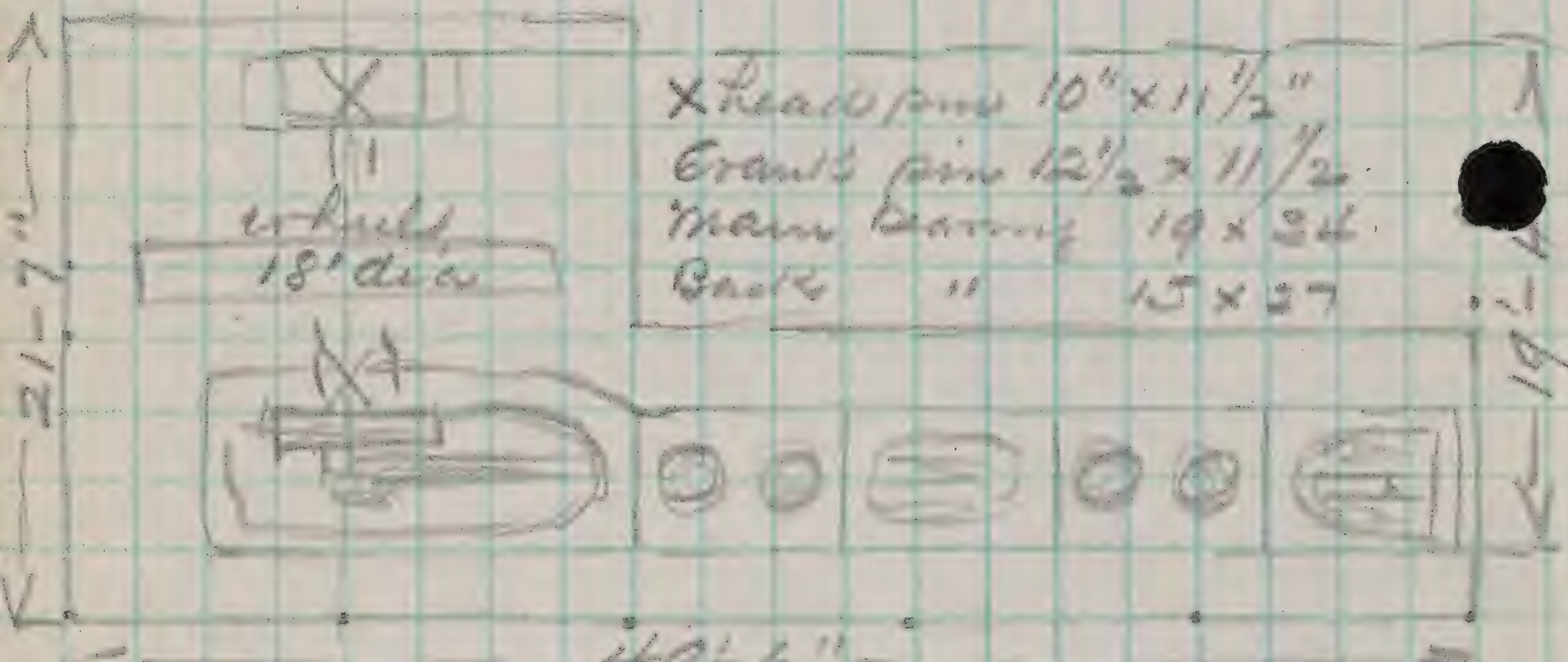
Gasoline tank Pump 2" Type S

40 ft 2nd motor 110 450

Tank 50 ft 950

1455

4405



Foundations 10 ft deep -

Center line Engine 2'-10" above floor line

Allis Chalmers Gas Engines.

Cylinders Size	No	rating Kw	BHP	RPM	Wheel dia	Wheel wgt	Price	Wgt with wheel	
20 x 30	2	250	400	180	11	30000	17000	150000	37 x 16
20 x 30	4	500	800	180	11	30000	30000	260000	37 x 21
24 x 36	2	375	550	150	13	60000	22000	220000	45 x 17
24 x 36	4	750	1100	150	13	60000	40000	375000	45 x 22
34 x 48	2	750	1000	107	18	100000	37500	450000	59 x 22
34 x 48	4	1500	2000	107	18	100000	65000	725000	59 x 28

Allis Chalmers Mfg. Co.

These prices are for engine & wheel & do not include Generator.
for 60~ work add 4'-6" dia. wheel. Wheels made of cast steel. Basement required 8'-0"
all engines will develope about 25% over load.
Add about 5% of engine price for all gas, exhaust air & water piping connections etc.

Standard guarantees. full load 11000 BTU per BHP hr
1/2 " 11000 "
1/4 " 19000 "

12-1-09.

Gas Engines Installations

J. J. Keun Elec Corbin. Power.

2 - 24x36 Tandem Engines
2 400 KW Generators
3ϕ 60~ 3300V
WPK - 500000# price Tested 50000.

All erected in Atkinson Ken. with all auxiliaries, Switch Gearing $6200

Gas comes natural gas fuels.

Produces 2# pressure tapped by Blowers one with Each Unit

Cooling Engines one to uses Producer gas instead of Natural with Each 500 KW

Gas Engine Problem Repairs 1% on Total investment

Water requires 10 gall. per BHP per hr. If cooling Towers is used 60% of producer water and 90% Engine water can be used

Engine is same as for Steam Eng. for Each capacity. Efficiency is 50% more.

Station Helps about same as for Steam Plant

1 Chief Engineer 2 oilers
2 Watchers " 2 Producer men
24 hours attendance 2 - 12 hour shifts -

Gas Engines -

Find out the B.T.U per cu ft of gas and also the temp at which B.T.U are figured

Gas Engines

Estimate of Power Required.

Engines & Blowers, &c. Stand.	
Batteries, Casings.	7,873 ft
Pipework, "	1,870 ft
Cranes.	300.00
Electric Wiring, Motors	765.67
Extra Items	401.45
	£ 11,210.12

Gas Engines £6 2000 Kilowatts

Cranes	2046.67
Engines	1381.63
Pipework	343.10
Foundations	287.45
Erection	213.50
	£ 4271.15

Cost per unit per Kilowatt £ .0021

Total " " " " .0181

Riverside Gas Engines – Double Acting – Apl. 1908 –

HP	Cylinders –		R.P.M.	Weight –	Price –	
300	2	18 x 24	160	55000	9500.	Single cylinder double acting
400	2	20 x 28	140	80000	12800.	
500	2	22 x 30	135	98000	15500.	
600	4	18 x 24	160	112000	16400	
800	4	20 x 28	140	154000	24800	
1000	4	22 x 30	135	190000	30000	

Guarantee on B.T.U. Consumption

Load Factor	Single Cylinder	Double Cylinder	Four Cylinder
100	11500	11200	11000
75	12500	12000	11800
50	14000	13500	13000
35	18000	16000	15500

Jan 11. 08

Not Selected for Test Report

Gas Engine Alternating 3 Units 20000 [W] 23000 [W]

Electric Driving Equipment 20000 [W] 20000 [W]

34000

9" x 32" Engine 150 H.P.

Rated Capacity 500 B.H.P.

Max " 600 "

Crank Pin 11" dia x 10" long

Cranks 18" dia 60000 [lb]

Boilers Coal as Fuel 30 Efficiency 8700 BTU

Boy Mfg Engine

Thermal Efficiency 26.2%

8500 BTU per B.H.P.

B.H.P.	K.W.	Cylinders		R.P.M.	Combined weight lbs.	Price $	Main Bearing dia x length	crank-pin dia x length	Floor Space length x width
350	225	2	20 x 26	180	196000	20000	14" x 26"		32' x 14'-6"
500	325	2	24 x 32	150	240000	25000	19"	11"	
700	450	4	20 x 26	180					
750	500	2	32 x 42	110					53'-6" x 21'-2"
1000	650	4	24 x 32	150	400000	42000	17" x 32		
1500	1000	4	32 x 42	110		70000			53'-6" x 28'-0"
2500	1600	2	42 x 54	83⅓					
5000	2000	4	42 x 54	"	Eng only - 1,500,000	Eng only 170000	30" x 54"	20"	69' x 35'
5000	3200	4	44 x 54	"					

Gas and Electric Units

GAS ENGINE DATA

JUNE, 1910

HAND OF ENGINE

It is very important to know the HAND of a gas engine before the order can be entered and work commenced. It is often immaterial to the customer, especially in new installations, whether his engines are RIGHT or LEFT HAND.

We are building a large number of different sizes on stock orders and we give below a list of our standard TANDEM gas engines, and the HAND of each size on which we can make quick delivery.

Quick Delivery on these Sizes:

18 x 24	Tandem	Left Hand
21 x 30	"	Right "
24 x 36	"	" "
27 x 36	"	" "
34 x 48	"	" "

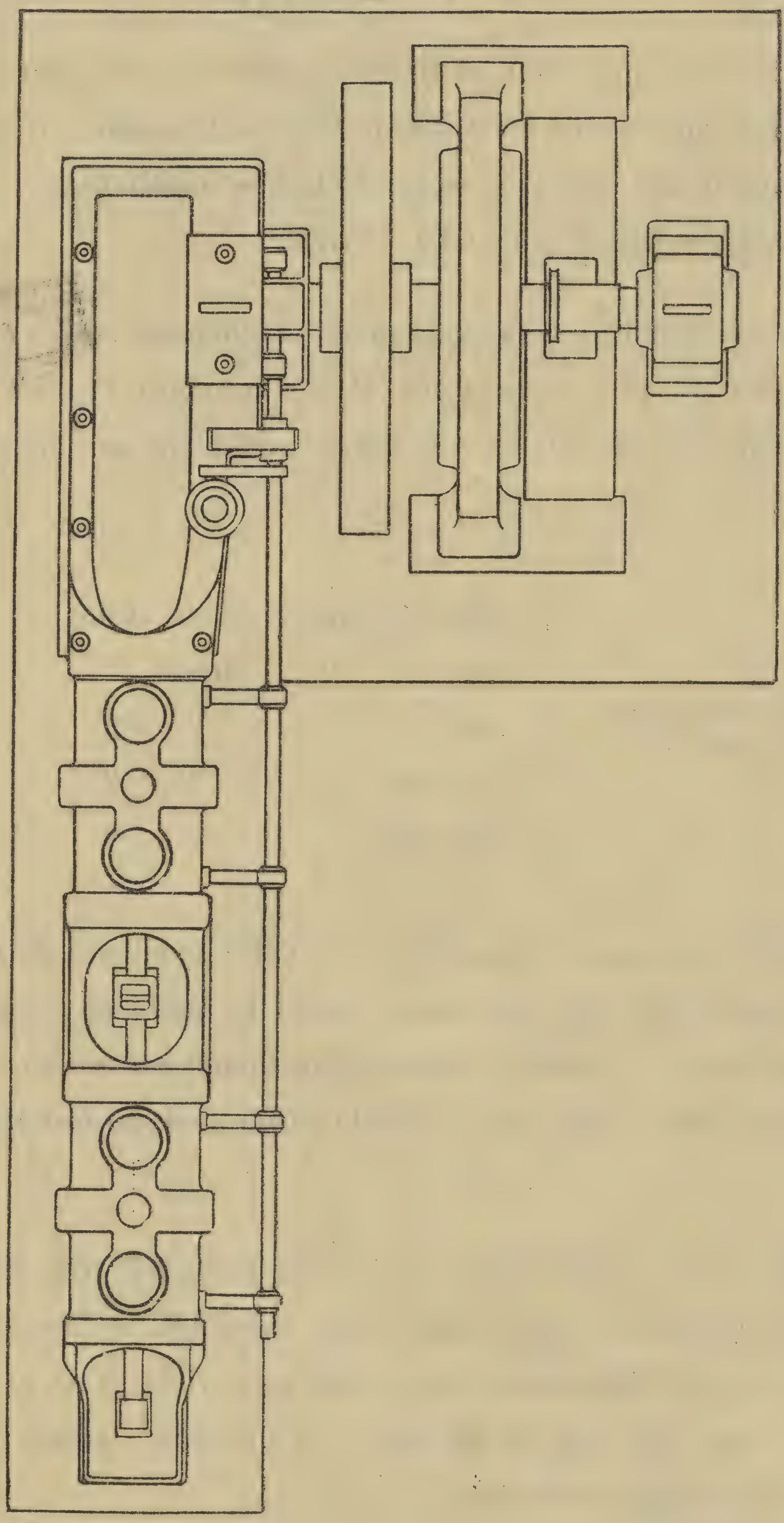
Rough castings for engines of opposite hand are carried in stock but delivery on these sizes cannot be made as soon as on our stock sizes. Therefore the salesman should endeavor as far as possible to sell engines whose HAND corresponds to those carried in stock.

The hand of a gas engine can be told in the following manner. Standing at the tail guide and facing the shaft, if the power is delivered to the right, the engine is said to be right hand, as shown in the cut on the back of the page. If the power is delivered to the left the engine is left hand.

See Cut on Back of Sheet.

GAS ENGINE DATA

JUNE, 1910



TAIL GUIDE

GAS ENGINE DATA

FEBRUARY, 1910

GUARANTEES

When supplied with clean gas whose heat value is uniform and whose average hydrogen content is not more than 15%, we will guarantee these engines to use not more than

9,500 effective B.T.U. per B.H.P. hour at 1¼ load.
10,000 " " " " " " full load.
12,000 " " " " " " ¾ load.
17,500 " " " " " " ½ load.

In making a guarantee based on pounds of coal per K. W. hour, certain conditions, which vary in each installation, must be known. These are the station load factor, the number of operating hours per day, kind of coal, its analysis and heat value and the producer efficiency. For example: With an engine operating under full load conditions, ten hours per day, using bituminous coal whose heat value is 13,000 B.T.U. per pound, allowing, say, 65% producer efficiency and 10% for standby loss, we can guarantee a K. W. hour at the switchboard on two pounds of coal. This represents between 25 and 30% thermal efficiency in the gas engine.

10,000 B.T.U. required by engine per B.H.P. hour at full load.
15,000 B.T.U. required by engine per K. W. hour at full load.
65% producer efficiency.
23,100 B.T.U. required by producer per K.W. hour at full load.
10% standby loss.
25,400 B.T.U. total B.T.U. required by producer per K.W. Hr. at full load.
13,000 B.T.U. per pound of coal.
1.95 lbs. of coal per K. W. hour at the switchboard.

The guarantees as given are on a liberal basis and under test conditions could be considerably reduced. They should not, however, be included in any proposal, for each proposition possesses different features and requires individual attention. Guarantees based on pounds of coal per K. W. hour must in each case come from the Milwaukee Office.

GAS ENGINE DATA

FEBRUARY, 1910

RATING

The gas engine ratings as given in the Gas Engine Price Sheets are based on producer gas. With natural gas these ratings can be increased approximately 10%.

Our engines are of such a design that they will operate on gases of widely different heat values. Engines designed to operate on producer gas may be changed temporarily to operate on other gases (except blast furnace and water gas) without any change except in the regulating valve, which change can be made in a very short time, and with very little additional expense. Blast furnace gas and water gas require a special type of valve gear. A permanent change will, however, require a different compression, which would be effected by altering the distance between the piston and cylinder head.

Gas engine ratings are always on a BRAKE HORSE POWER basis and should not be confused with steam engine ratings, which are almost invariably on an INDICATED HORSE POWER basis. For this reason it is always important to know whether the inquiry is for BRAKE HORSE POWER or for INDICATED HORSE POWER.

The ratings given in these tables are on a basis which allows us to guarantee a maximum continuous overload of 15% with clean gas of average B. T. U. value and a maximum overload up to 25% as long as its heat value is constant. Many builders rate their engines at the maximum capacity, which power can only be developed under the most favorable test conditions. A comparison of gas engine ratings should always be made on cylinder volumes and piston speeds. The piston speeds given in these tables are based on what we consider good practice, and while our engines as built will operate on higher piston speeds, we believe that the speeds as adopted are conservative and good engineering practice.

GAS ENGINE DATA

FEBRUARY, 1910

PRODUCERS

Producers are rated in B. H. P. and are based on the gas engine rating. A complete producer plant will cost about $20.00 per H. P., delivered and erected. The amount of cooling water required by an anthracite producer is about 2 gals. per B. H. P. hour. A producer using bituminous coal will take between 4 and 5 gals. per B. H. P. hour. About 60% of this water can be recovered by means of a settling basin.

Producer efficiencies, (including power for auxiliaries).:—

Using anthracite coal, 70 to 75%;

Using bituminous coal, 65 to 70%.

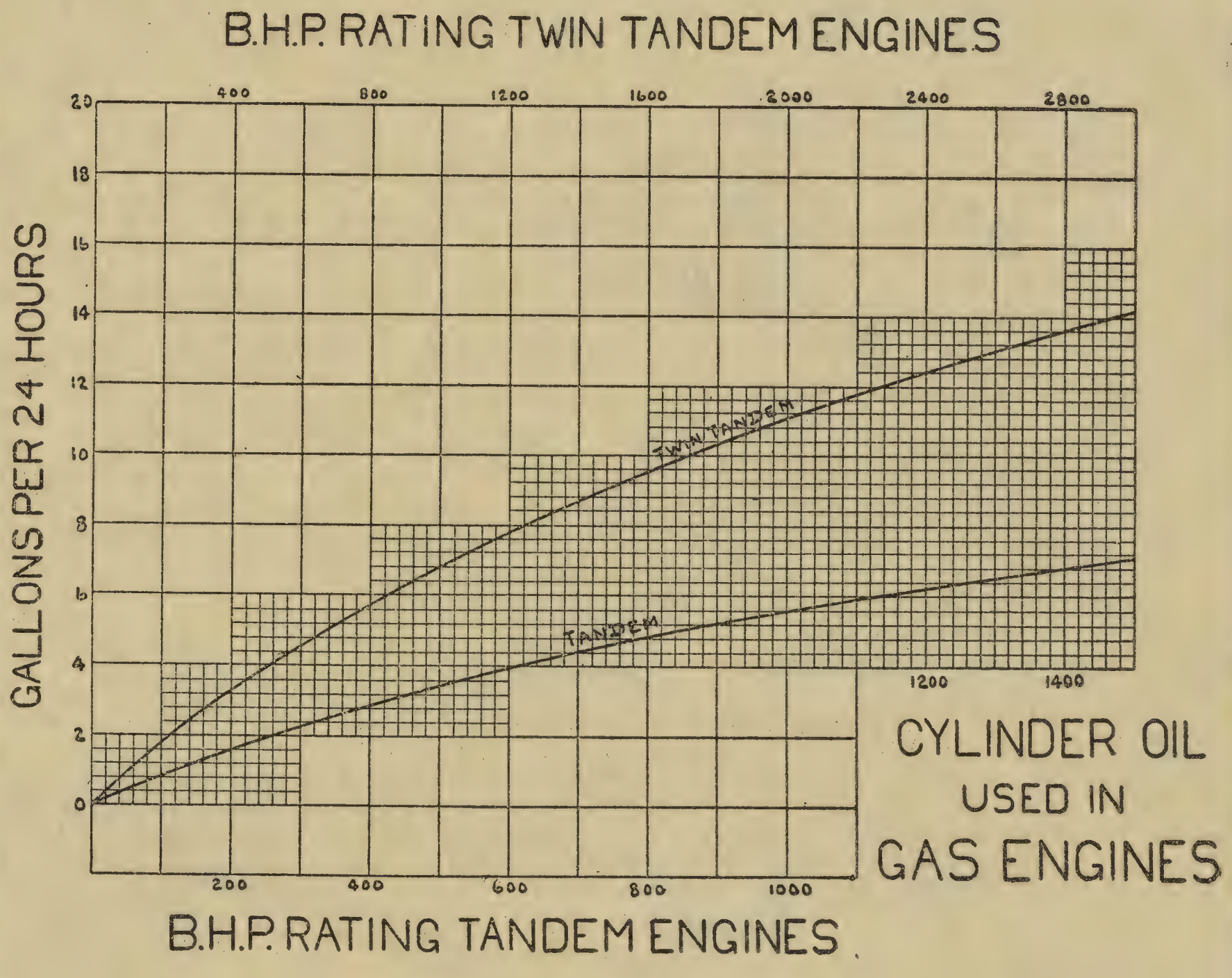
The above producer information is given as general data and should not be used in making up estimates or guarantees. We will, whenever necessary, furnish a complete plant, consisting of the engine, generator and producer outfit, and make a guarantee based on pounds of coal required per K. W. hour at the switchboard.

GAS ENGINE DATA

AUGUST, 1910

CYLINDER OIL FOR GAS ENGINES

The quantity of cylinder oil used in a gas engine depends on its quality, the best results being obtained with a pure high grade oil. The curves given below are based on actual results and represent the average cylinder oil consumption of our engines operating at this time. They are based on full load conditions and include not only the oil used in the engine cylinder, but also the oil used on the piston rods and exhaust valves. In several installations of our engines operating at the present time the average oil consumption is less than we give in the curve.



GAS ENGINES

HORSE POWERS AT VARIOUS ALTITUDES

MAY, 1910

ALTITUDES

The gas engine ratings as given in our price book are based on installing the units at sea level.

It is very evident that at a point 1000 feet above sea level, the weight of a cubic foot of free air is less than at sea level, assuming constant temperature.

Also the heat value of a cubic foot of gas at 1000 feet altitude is less than at sea level, assuming constant temperature and gases whose analyses are identical.

The rating of a gas engine decreases approximately in the same ratio as the change in the barometer for different altitudes, including a slight correction for a lower mechanical efficiency.

The friction of a gas engine can be assumed as being practically constant at all loads. Inasmuch as the load on a gas engine decreases at higher elevations, and the friction is constant, the higher the elevation, the lower the mechanical efficiency.

EXAMPLE:

An 18 x 24 Tandem Engine at 200 R. P. M., using producer gas is rated at 300 B. H. P., good for a continuous overload of 15%. This rating is at sea level and using a gas of not less than 125 B. T. U. per cu. ft. at 62° F. and 30″ mercury.

If this unit were installed at 5000′ altitude, the rating would be determined as follows:

From the curve we find the factor .782 corresponding to an elevation of 5000 ft.

300 B. H. P. x .782 = 235 B. H. P.

This unit should be rated at 235 B. H. P. at 5000 ft. altitude and is good for a continuous overload of 15%.

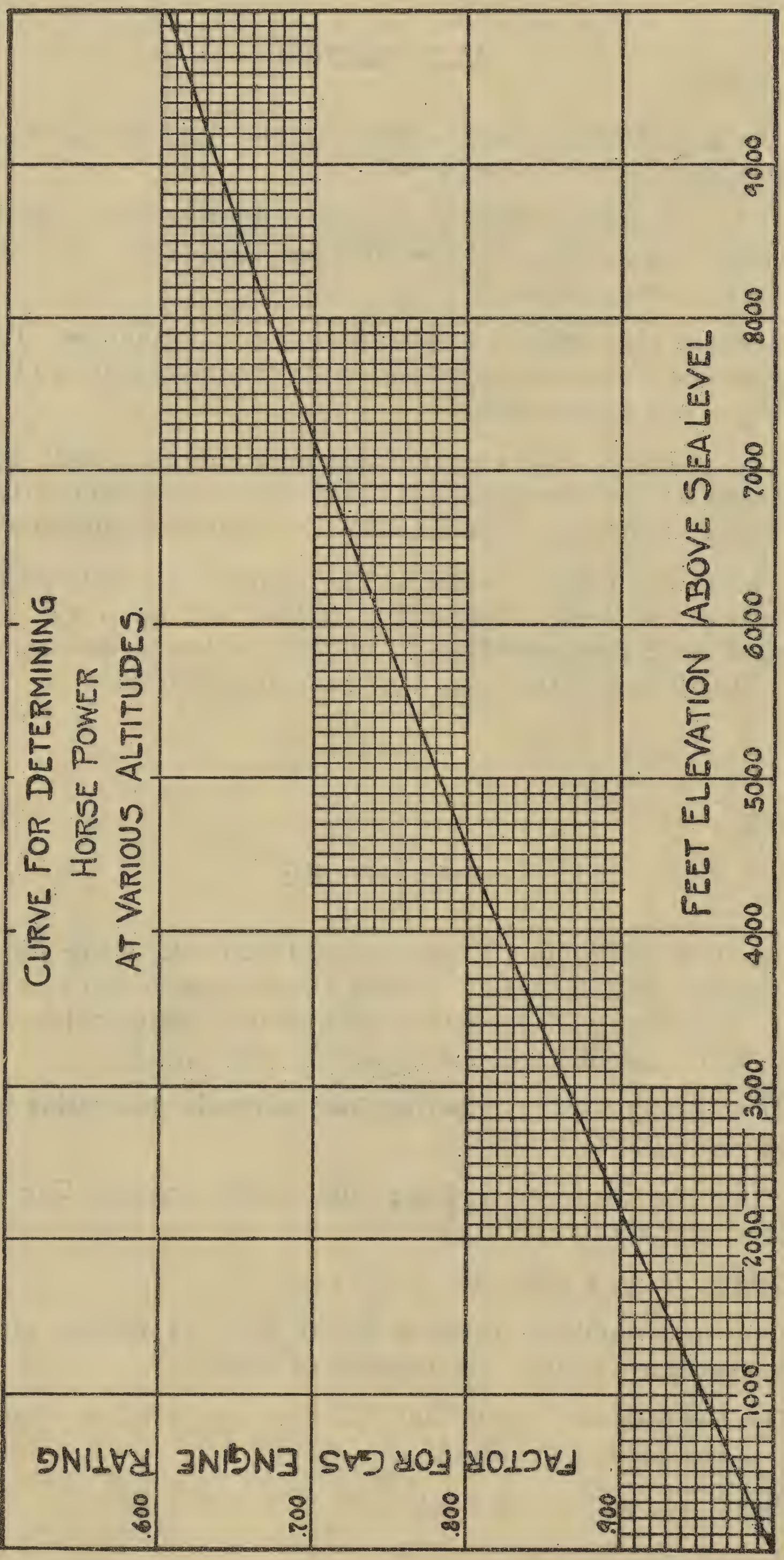
NOTE:—For altitudes up to 800 ft. above sea-level, no change is made in our gas engine rating.

See Curve on back of sheet.

GAS ENGINES

HORSE POWERS AT VAROIUS ALTITUDES

MAY, 1910



GAS ENGINE UNITS

DIRECT CONNECTED

TANDEM HORIZONTAL GAS ENGINES

Direct Connected to Type "AI" Alternators — 25 Cycles — 2 or 3 Phase — 2200 Volts

CAPACITY		SIZE OF ENGINE		ENGINE, GENERATOR, WHEEL*		GENERATOR DATA AT 85% POWER FACTOR								
							Efficiencies at 85% P. F.				Heating at 85% P. F.			
K.W.	RPM	Diam.	Stroke	Shipping Weight	List Price	Frame Size	Full Load	¾ Load	½ Load	Exciter K.W. (120 Volt)	Full Load 24 Hrs	1¼ Load 2 Hrs.	Regulation 85% P. F.	Excitation Amp. 85% P. F.
200	214	18″	24″	125,000	$17000	AI 14– 60– 9	91.5	90.0	87.5	10	40	55	21	80
300	187½	21″	30″	190,000	24000	AI 16– 72–10	91.5	90.0	87.0	13	40	55	22	105
400	150	24″	36″	265,000	30000	AI 20– 96–10	93.4	93.0	92.0	17½	40	55	15	140
500	150	27″	36″	325,000	36000	AI 20– 96–12	93.5	93.0	92.0	20	40	55	22	160
750	107	34″	48″	580,000	54000	AI 28–130–12	93.0	92.6	91.0	27½	40	55	21	230

ENGINE DATA

SIZE		PRODUCER GAS RATING B. H. P.			WHEEL			MAIN BEARING		CRANK PIN		LARGEST AND HEAVIEST PIECE (FRAME)				FLOOR SPACE WITH GENERATOR	
Dia.	Stroke	Normal	Max. Continuous Overload	Max. Peak Overload	Dia.	Material	Weight	Dia. (In.)	Lgth (In.)	Dia. (In.)	Lgth (In.)	Length	Width	Height	Weight	Length	Width
18″	24″	300	350	375	9′	C.I.	15,000	12	20	8	7½	11′- 7″	4′-5″	4′-1″	10,000	32′	15′
21″	30″	450	525	565	10′	C.I.	30,000	14½	25	9½	8½	14′- 5″	5′-5″	5′-2″	22,000	37′	16′
24″	36″	600	700	750	13′	C.I.	35,000	17	29	11	10	16′- 6″	6′-4″	5′-9″	35,000	46′	17½′
27″	36″	750	875	940	13′	C.I.	40,000	19	34	12½	11½	17′- 6″	7′-0″	6′-0″	40,000	46′	18′
34″	48″	1125	1300	1400	22′	C.S.	85,000	24	42	15	14	21′-11″	8′-8″	7′-6″	85,000	60′	23′

*Price and Weight include Engine, Generator, Wheel and Piping. (See specification Form No. 2153.)
Prices are F. O. B. Point of Shipment.

FEBRUARY, 1910

SET NO. 208

TWIN TANDEM HORIZONTAL GAS ENGINES

Direct Connected to Type "AI" Alternators — 25 Cycles — 2 or 3 Phase — 2200 Volts

CAPACITY		SIZE OF ENGINE		ENGINE, GENERATOR, WHEEL*		GENERATOR DATA AT 85% POWER FACTOR								
							Efficiencies at 85% P. F.			Exciter K.W. (120 Volt)	Heating at 85% P. F.		Regulation 85% P. F.	Excitation Amp. 85% P. F.
K.W.	RPM	Diam.	Stroke	Shipping Weight	List Price	Frame Size	Full Load	¾ Load	½ Load		Full Load 24 Hrs	1¼ Load 2 Hrs.		
400	214	18″	24″	205,000	$29000	AI 14–75–11	92.0	90.5	88.5	15	40	55	22	125
600	187½	21″	30″	315,000	41000	AI 16–90–11½	93.2	92.5	91.7	20	40	55	22	145
800	150	24″	36″	450,000	55000	AI 20–108–13	93.0	92.5	91.0	27½	40	55	22	215
1000	150	27″	36″	550,000	65000	AI 20–108–16	93.0	92.6	91.0	30	40	55	22	250
1500	107	34″	48″	1000,000	95000	AI 28–150–18	92.7	92.3	91.0	45	40	55	24	340

ENGINE DATA

SIZE		PRODUCER GAS RATING B. H. P.			WHEEL			MAIN BEARING		CRANK PIN		LARGEST AND HEAVIEST PIECE (FRAME)				FLOOR SPACE WITH GENERATOR	
Dia.	Stroke	Normal	Max. Continuous Overload	Max. Peak Overload	Dia.	Material	Weight	Dia. (In.)	Lgth (In.)	Dia. (In.)	Lgth (In.)	Length	Width	Height	Weight	Length	Width
18″	24″	600	700	750	9′	C.I.	15,000	12	20	8	7½	11′- 7″	4′-5″	4′-1″	10,000	32′	18′
21″	30″	900	1050	1150	10′	C.I.	30,000	14½	25	9½	8½	14′- 5″	5′-5″	5′-2″	22,000	36′	22′
24″	36″	1200	1400	1500	18′	C.S.	35,000	17	29	11	10	16′- 6″	6′-4″	5′-9″	35,000	46′	23½′
27″	36″	1500	1750	1900	18′	C.S.	40,000	19	34	12½	11½	17′- 6″	7′-0″	6′-0″	40,000	46′	24′
34″	48″	2250	2600	2800	18′	C.I.	85,000	24	42	15	14	21′-11″	8′-8″	7′-6″	85,000	60′	30′

*Price and Weight include Engine, Generator, Wheel and Piping. (See specification Form No. 2153.)
Prices are F. O. B. Point of Shipment.

GAS ENGINE UNITS
DIRECT CONNECTED

FEBRUARY, 1910

SHEET NO. 2173A

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SET NO. 208

SHEET NO. 2207

GAS ENGINE UNITS
DIRECT CONNECTED

SUPERSEDING SHEET NO. 2174

MARCH, 1912

TANDEM HORIZONTAL GAS ENGINE UNITS
2 Cylinder Engines, Direct Connected to 60 Cycle, 2 or 3 Phase, 2300 Volt Alternators

Rated Capacity K.W. at 80% P. F.	R.P.M.	Overload Capacity in Per Cent.		ENGINE, GENERATOR AND WHEEL			GENERATOR DATA						
		* Natural Gas	† Producer Gas	Catalog Number	Shipping Weight	List Price	Frame Size	Amps. Excitation at 80% P.F.	Exciter K. W. (120 volt)	Regulation at 80% P.F.	Heating at 80% P.F. Full Load 24 Hrs.	Heating at 80% P.F. 1¼ Load 2 Hrs.
200	200	20	10	85001	110000	$32750	AI36- 80- 7	100	12	23	40	55
300	180	25	15	85002	165000	45625	AI40-100-10	140	17½	24	40	55
400	150	22½	15	85003	255000	62125	AI48-108-10	135	16½	22	40	55
500	150	25	17½	85004	325000	75750	AI48-120- 9¾	160	20	21	35	50
750	100	17½	15	85005	635000	104500	AI72-180- 8½	240	30	23	40	55

DATA

Rated Capacity K. W.	ENGINE DATA									UNIT DATA				
	Cylinder Size		Fly-Wheel			Main Bearing		Crank Pin		Dimensions Largest Piece		Wgt. of Heaviest Piece (Frame)	Floor Space Required	
	Diam.	Stroke	Diam.	Material	Weight	Diam.	Length	Diam.	Length	Width	Height		Length	Width
200	18″	24″	13′	C. Steel	12000	12″	20″	8″	7½″	54″	112″	10000	32′- 7″	13′-9″
300	21″	30″	15′	C. Steel	20000	14½″	25″	9½″	8½″	66″	100″	22000	39′- 6″	15′-9″
400	24″	36″	18′	C. Steel	35000	17″	29″	11″	10″	78″	96″	35000	45′-10″	17′-5″
500	27″	36″	18′	C. Steel	50000	19″	34″	12½″	11½″	90″	120″	40000	47′- 2″	19′-3″
750	34″	48″	18′	C. Iron	120000	24″	42″	15″	14″	108″	114″	85000	60′- 1″	22′-8″

Prices cover Engine (as per specification Form No. 1000), Flywheel and Generator F. O. B. Milwaukee, Wisconsin.

* Effective heat value not less than 900 B.T.U. per cubic foot. † Effective heat value not less than 135 B.T.U. per cubic foot. Capacity and economy guarantees for each specific inquiry must in all cases be taken from price sheets 2209, 2210, 2211, 2212 and 2213.

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TWIN-TANDEM—HORIZONTAL GAS ENGINE UNITS

4 Cylinder Engines, Direct Connected to 60 cycle, 2 or 3 phase, 2300 volt Alternators

Rated Capacity K.W. at 80% P. F.	R.P.M	Overload Capacity in Per Cent.		ENGINE, GENERATOR AND WHEEL			GENERATOR DATA					
		* Natural Gas	† Producer Gas	Catalog Number	Shipping Weight	List Price	Frame Size	Amps. Excitation at 80% P.F.	Exciter K. W. (120 volts)	Regulation at 80 % P.F.	Heating at 80 % P.F. Full Load 24 Hrs.	Heating at 80 % P.F. 1¼ Load 2 Hrs.
400	200	20	10	85006	190000	$60250	AI36- 80-10½	170	20	23	40	55
600	180	25	15	85007	295000	84125	AI40-108- 9¼	180	22½	23	40	55
800	150	22½	15	85008	480000	115000	AI48-150- 9	210	25	24	40	55
1000	150	25	17½	85009	600000	138750	AI48-150-11	230	27½	24	40	55
1500	100	17½	15	85010	1065000	191250	AI72-216-10	235	37½	24	40	55

DATA

Rated Capacity K. W	ENGINE DATA									UNIT DATA				
	Cylinder Size		Fly-Wheel			Main Bearing		Crank Pin		Dimensions Largest Piece		Weightof Heaviest Piece (Frame)	Floor Space Required	
	Diam.	Stroke	D iam.	Material	Weight	Diam.	Length	Diam.	Length	Width	Height		Length	Width
400	18″	24″	13′	C. Steel	25000	12″	20″	8″	7½″	54″	112″	10000	32′- 7″	17′-11″
600	21″	30″	15′	C. Steel	40000	14½″	25″	9½″	8½″	66″	80″	22000	39′- 6″	21′- 7″
800	24″	36″	18′	C. Steel	65000	17″	29″	11″	10″	78″	136″	35000	46′- 6″	23′- 0″
1000	27″	36″	18′	C. Steel	75000	19″	34″	12½″	11½″	90″	136″	40000	47′-11″	24′-10″
1500	34″	48″	26′	C. Steel	120000	24″	42″	15″	14″	108″	138″	85000	62′- 2″	29′- 0″

Prices cover Engine (as per specification, Form No. 1000), Fly-wheel and Generator, F. O. B. Milwaukee, Wisconsin.

* Effective heat value not less than 900 B.T.U. per cubic foot. † Effective heat value not less than 135 B.T.U. per cubic foot. Capacity and Economy Guarantees for each specific inquiry must, in all cases, be taken from Price Sheets 2209, 2210, 2211, 2212 and 2213.

GAS ENGINE UNITS
DIRECT CONNECTED

MARCH, 1912

SHEET No. 2207A

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SET NO. 5a 8

SHEET NO. 2208

GAS ENGINE UNITS
DIRECT CONNECTED

SUPERSEDING SHEET NO. 2172

MARCH, 1912

TANDEM HORIZONTAL GAS ENGINE UNITS

2 Cylinder Engines, Direct Connected to Type "I" 240 Volt D. C. Generators

Rated Capacity K. W.	R.P.M.	Overload Capacity in Per Cent.		ENGINE, GENERATOR AND WHEEL			GENERATOR DATA				
		* Natural Gas	† Producer Gas	Catalog Number	Shipping Weight	List Price	Frame Size	Heating Full Load–24 Hrs. Windings	Heating Full Load–24 Hrs. Commutator	Heating 1¼ Load–2 Hrs. Windings	Heating 1¼ Load–2 Hrs. Commutator
200	200	20	10	85011	120000	$33000	I 6–40–11 B	40°C.	45°C.	55°C.	60°C.
300	180	25	15	85012	170000	45250	I10–52–12 B	40°C.	45°C.	55°C.	60°C.
400	150	22½	15	85013	260000	61500	I10–66–11½B	40°C.	45°C.	55°C.	60°C.
500	150	25	17½	85014	335000	74500	I10–66–12½B	40°C.	45°C.	55°C.	60°C.
750	100	17½	15	85015	610000	113500	I16–96–15½A	40°C.	45°C.	55°C.	60°C.

DATA

Rated Capacity K. W.	ENGINE DATA									UNIT DATA				
	Cylinder Size		Fly-Wheel			Main Bearing		Crank Pin		Dimensions Largest Piece		Wgt. of Heaviest Piece (Frame)	Floor Space Required	
	Diam.	Stroke	Diam.	Material	Weight	Diam.	Length	Diam.	Length	Width	Height		Length	Width
200	18″	24″	10′	C. Iron	17000	12″	20″	8″	7½″	54″	64″	10000	30′- 7″	13′-7″
300	21″	30″	11′	C. Iron	25000	14½″	25″	9½″	8½″	66″	64″	22000	37′- 0″	15′-2″
400	24″	36″	13′	C. Iron	30000	17″	29″	11″	10″	78″	84″	35000	43′- 4″	17′-3″
500	27″	36″	13′	C. Iron	40000	19″	34″	12½″	11½″	90″	84″	40000	44′- 8″	19′-5″
750	34″	48″	22′	C. Steel	85000	24″	42″	15″	14″	108″	125″	85000	59′-11″	22′-3″

Prices cover Engine (as per specification, Form No. 1000), Fly-wheel and Generator, F. O. B. Milwaukee, Wisconsin.

* Effective heat value not less than 900 B.T.U. per cubic foot. † Effective heat value not less than 135 B.T.U. per cubic foot. Capacity and Economy Guarantees for each specific inquiry must, in all cases, be taken from Price Sheets 2209, 2210, 2211, 2212 and 2213.

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TWIN TANDEM HORIZONAL GAS ENGINE UNITS

Four-Cylinder Engines, Direct Connected to Type "I" 240 Volt D. C. Generators

Rated Capacity K. W.	R.P.M.	Overload Capacity in Per Cent.		ENGINE, GENERATOR AND WHEEL			GENERATOR DATA				
								Heating Full Load–24 Hrs.		Heating 1¼ Load–2 Hrs.	
		* Natural Gas	† Producer Gas	Catalog Number	Shipping Weight	List Price	Frame Size	Windings	Commutator	Windings	Commutator
400	200	20	10	85016	190000	$59750	I10– 60–12 B	35°C.	35°C.	45°C.	45°C.
600	180	25	15	85017	300000	82000	I12– 66–13½A	40°C.	45°C.	55°C.	60°C.
800	150	22½	15	85018	470000	117250	I14– 96–11 B	35°C.	40°C.	45°C.	50°C.
1000	150	25	17½	85019	600000	140750	IC16– 96–15½	40°C.	45°C.	50°C.	55°C.
1500	100	17½	15	85020	1045000	191250	IC20–120–17	40°C.	45°C.	55°C.	60°C.

DATA

Rated Capacity K. W.	ENGINE DATA									UNIT DATA				
	Cylinder Size		Fly-Wheel			Main Bearing		Crank Pin		Dimensions Largest Piece		Wgt. of Heaviest Piece (Frame)	Floor Space Required	
	Diam.	Stroke	Diam.	Material	Weight	Diam.	Length	Diam.	Length	Width	Height		Length	Width
400	18″	24″	10′	C. Iron	17000	12″	20″	8″	7½″	54″	114″	10000	30′- 7″	17′- 8″
600	21″	30″	11′	C. Iron	25000	14½″	25″	9½″	8½″	66″	72″	22000	37′-10″	21′- 6″
800	24″	36″	18′	C. Steel	35000	17″	29″	11″	10″	78″	100″	35000	45′-10″	22′-11″
1000	27″	36″	18′	C. Steel	40000	19″	34″	12½″	11½″	90″	112″	40000	47′- 2″	25′- 0″
1500	34″	48″	18′	C. Iron	85000	24″	42″	15″	14″	108″	124″	85000	58′- 5″	30′- 6″

Prices cover Engine (as per specification Form No. 1000), Flywheel and Generator F. O. B. Milwaukee, Wisconsin.

* Effective heat value not less than 900 B.T.U. per cubic foot. †Effective heat value not less than 135 B.T.U. per cubic foot. Capacity and economy guarantees for each specific inquiry must in all cases be taken from price sheets 2209, 2210, 2211, 2212 and 2213.

GAS ENGINE UNITS
DIRECT CONNECTED

MARCH, 1912

SHEET NO. 2208A

GAS ENGINES
RATINGS AND ECONOMY GUARANTEES
JUNE, 1912

18" X 24" TANDEM GAS ENGINE—200 R. P. M.
For Twin Tandem Engines Double the Rated Capacity

KIND OF GAS	RATINGS AND ECONOMY GUARANTEES	ALTITUDE AT WHICH GAS ENGINE IS TO BE INSTALLED									
		Sea Level		1000		2000		3000		4000	
		B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.
Producer Gas 110 to 134 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	300	200	300	200	285	190	270	185	255	175
	Overload Capacity	5%	5%	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10000	14800	10000	14800	10000	14900	10400	15200	10700	15800
	B.T.U. per B.H.P. and K.W. Hour — ¾	12000	17800	12000	17800	12000	18100	12500	18400	12900	19100
	B.T.U. per B.H.P. and K.W. Hour — ½	16000	24300	16000	24300	16000	24600	16700	25200	17400	26200
Producer Gas 135 to 180 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	300	200	300	200	290	195	275	190	265	180
	Overload Capacity	7½%	10%	2½%	5%	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10000	14800	10000	14800	10000	14800	10200	14900	10500	15500
	B.T.U. per B.H.P. and K.W. Hour — ¾	12000	17800	12000	17800	12000	17800	12300	18100	12600	18700
	B.T.U. per B.H.P. and K.W. Hour — ½	16000	24300	16000	24300	16000	24300	16400	24600	16900	25600
Illuminating Gas 600 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	300	200	300	200	300	200	300	200	285	195
	Overload Capacity	15%	17½%	10%	12½%	5%	7½%	None	2½%	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10500	15500	10500	15500	10500	15500	10500	15500	10500	15500
	B.T.U. per B.H.P. and K.W. Hour — ¾	12700	18800	12700	18800	12700	18800	12700	18800	12700	18800
	B.T.U. per B.H.P. and K.W. Hour — ½	17000	25800	17000	25800	17000	25800	17000	25800	17000	25800
Natural Gas 900 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	300	200	300	200	300	200	300	200	290	200
	Overload Capacity	17½%	20%	12½%	15%	7½%	10%	2½%	5%	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10500	15500	10500	15500	10500	15500	10500	15500	10500	15500
	B.T.U. per B.H.P. and K.W. Hour — ¾	12700	18800	12700	18800	12700	18800	12700	18800	12700	18800
	B.T.U. per B.H.P. and K.W. Hour — ½	17000	25800	17000	25800	17000	25800	17000	25800	17000	25800

For altitudes up to 750 feet above sea level use sea level ratings and guarantees. All other altitudes cover a range of from 750 feet below to 250 above the altitude given in the table. The low heat values given for the different gases are referred to 62° F. and 30" of mercury. The economy guarantees are all based upon the low heat value of the gas. The K. W. ratings and guarantees are based upon the generators listed on Price Sheets 2207 and 2208.

SET NO. 308

18" X 24" TANDEM GAS ENGINE—200 R. P. M.

For Twin Tandem Engines Double the Rated Capacity

KIND OF GAS	RATINGS AND ECONOMY GUARANTEES	ALTITUDE AT WHICH GAS ENGINE IS TO BE INSTALLED									
		5000		6000		7000		8000		9000	
		B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.
Producer Gas 110 to 134 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	245	165	230	155	220	150	210	140	200	135
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	11000	16200	11400	17000	11800	17400	12200	18100	12600	18600
	B.T.U. per B.H.P. and K.W. Hour — ¾	13300	19900	13900	20800	14400	21200	14900	22200	15400	23000
	B.T.U. per B.H.P. and K.W. Hour — ½	17900	27400	18900	28800	19500	29600	20300	31200	21100	32200
Producer Gas 135 to 180 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	250	170	240	160	225	155	215	145	205	140
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10900	16100	11200	16700	11600	17000	12000	17700	12400	18200
	B.T.U. per B.H.P. and K.W. Hour — ¾	13100	19400	13500	20300	14100	20800	14600	21800	15100	22200
	B.T.U. per B.H.P. and K.W. Hour — ½	17700	26800	18200	28000	19200	28800	19900	30300	20700	31200
Illuminating Gas 600 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	270	185	255	175	245	165	230	155	220	150
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10900	15900	11300	16500	11600	17100	12100	18000	12400	18300
	B.T.U. per B.H.P. and K.W. Hour — ¾	13200	19400	13700	20200	14100	21100	14800	22000	15200	22600
	B.T.U. per B.H.P. and K.W. Hour — ½	17800	26700	18500	27900	19100	29300	20100	30600	20900	31600
Natural Gas 900 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	280	190	265	180	250	170	240	160	225	155
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10600	15600	11000	16200	11400	16800	11700	17600	12300	17900
	B.T.U. per B.H.P. and K.W. Hour — ¾	12900	19200	13300	19700	13900	20600	14300	21500	15000	22000
	B.T.U. per B.H.P. and K.W. Hour — ½	17300	26200	18000	27300	18800	28500	19400	29900	20500	30600

For altitudes up to 750 feet above sea level use sea level ratings and guarantees. All other altitudes cover a range of from 750 feet below to 250 above the altitude given in the table. The low heat values given for the different gases are referred to 62° F. and 30" of mercury. The economy guarantees are all based upon the low heat value of the gas. The K. W. ratings and guarantees are based upon the generators listed on Price Sheets 2207 and 2208.

GAS ENGINES
RATINGS AND ECONOMY GUARANTEES
JUNE, 1912

21" X 30" TANDEM GAS ENGINE—180 R. P. M.
For Twin Tandem Engines Double the Rated Capacity

KIND OF GAS	RATINGS AND ECONOMY GUARANTEES	ALTITUDE AT WHICH GAS ENGINE IS TO BE INSTALLED									
		Sea Level		1000		2000		3000		4000	
		B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.
Producer Gas 110 to 134 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	450	300	450	300	450	300	425	290	405	275
	Overload Capacity	10%	12½%	5%	7½%	None	2½%	None	None	None	None
	B.T.U. per Rated	10000	14700	10000	14700	10000	14700	10200	15000	10500	15600
	B.H.P. and ¾	12000	17900	12000	17900	12000	17900	12300	18400	12700	19000
	K.W. Hour ½	16000	24100	16000	24100	16000	24100	16400	24700	17000	25700
Producer Gas 135 to 180 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	450	300	450	300	450	300	435	300	415	285
	Overload Capacity	12½%	15%	7½%	10%	2½%	5%	None	None	None	None
	B.T.U. per Rated	10000	14700	10000	14700	10000	14700	10100	14700	10400	15100
	B.H.P. and ¾	12000	17900	12000	17900	12000	17900	12100	17900	12500	18500
	K.W. Hour ½	16000	24100	16000	24100	16000	24100	16100	24100	16700	25000
Illuminating Gas 600 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	450	300	450	300	450	300	450	300	440	300
	Overload Capacity	17½%	20%	12½%	15%	7½%	10%	2½%	5%	None	None
	B.T.U. per Rated	10500	15400	10500	15400	10500	15400	10500	15400	10500	15400
	B.H.P. and ¾	12700	19000	12700	19000	12700	19000	12700	19000	12700	19000
	K.W. Hour ½	17000	25600	17000	25600	17000	25600	17000	25600	17000	25600
Natural Gas 900 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	450	300	450	300	450	300	450	300	450	300
	Overload Capacity	20%	25%	15%	20%	10%	12½%	5%	7½%	None	2½%
	B.T.U. per Rated	10500	15400	10500	15400	10500	15400	10500	15400	10500	15400
	B.H.P. and ¾	12700	19000	12700	19000	12700	19000	12700	19000	12700	19000
	K.W. Hour ½	17000	25600	17000	25600	17000	25600	17000	25600	17000	25600

For altitudes up to 750 feet above sea level use sea level ratings and guarantees. All other altitudes cover a range of from 750 feet below to 250 above the altitude given in the table. The low heat values given for the different gases are referred to 62° F. and 30" of mercury. The economy guarantees are all based upon the low heat value of the gas. The K. W. ratings and guarantees are based upon the generators listed on Price Sheets 2207 and 2208.

SET NO. 30 8

21″ X 30″ TANDEM GAS ENGINE—180 R. P. M.

For Twin Tandem Engines Double the Rated Capacity

KIND OF GAS	RATINGS AND ECONOMY GUARANTEES	ALTITUDE AT WHICH GAS ENGINE IS TO BE INSTALLED									
		5000		6000		7000		8000		9000	
		B.H.P.	K.W.	B.H.Pl	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.
Producer Gas 110 to 134 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	385	265	365	250	350	235	330	225	315	215
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10900	15900	11200	16400	11600	17200	12000	17600	12400	18200
	B.T.U. per B.H.P. and K.W. Hour — ¾	13100	19400	13600	20300	14000	21200	14600	21900	15100	22700
	B.T.U. per B.H.P. and K.W. Hour — ½	17700	26500	18400	27700	19000	29000	20000	30100	20700	31200
Producer Gas 135 to 180 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	395	270	375	255	355	245	340	230	320	220
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10700	15700	11100	16300	11400	16800	11800	17300	12200	17900
	B.T.U. per B.H.P. and K.W. Hour — ¾	12900	19300	13400	20000	13900	20600	14300	21500	15000	22200
	B.T.U. per B.H.P. and K.W. Hour — ½	17300	26000	18100	27200	18800	28100	19500	29500	20500	30600
Illuminating Gas 600 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	415	285	395	270	375	255	360	245	340	230
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10900	15900	11200	16500	11600	17000	11900	17600	12400	18400
	B.T.U. per B.H.P. and K.W. Hour — ¾	13200	19700	13600	20300	14200	21200	14600	21800	15200	22800
	B.T.U. per B.H.P. and K.W. Hour — ½	17800	26600	18400	27800	19200	29000	19900	29900	20800	31400
Natural Gas 900 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	430	290	410	275	390	265	370	250	350	235
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10600	15700	11000	16300	11300	16700	11700	17300	12200	18100
	B.T.U. per B.H.P. and K.W. Hour — ¾	12900	19300	13300	20100	13800	20600	14300	21500	14900	22500
	B.T.U. per B.H.P. and K.W. Hour — ½	17300	26200	18000	27400	18600	28100	19400	29500	20300	31000

For altitudes up to 750 feet above sea level use sea level ratings and guarantees. All other altitudes cover a range of from 750 feet below to 250 above the altitude given in the table. The low heat values given for the different gases are referred to 62° F. and 30″ of mercury. The economy guarantees are all based upon the low heat value of the gas. The K. W. ratings and guarantees are based upon the generators listed on Price Sheets 2207 and 2208.

GAS ENGINES
RATINGS AND ECONOMY GUARANTEES

JUNE, 1912.

SET NO. 308

24" X 36" TANDEM GAS ENGINE—150 R. P. M.
For Twin Tandem Engines Double the Rated Capacity

KIND OF GAS	RATINGS AND ECONOMY GUARANTEES	ALTITUDE AT WHICH GAS ENGINE IS TO BE INSTALLED									
		Sea Level		1000		2000		3000		4000	
		B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.
Producer Gas 110 to 134 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	600	400	600	400	600	400	575	390	545	370
	Overload Capacity	10%	12½%	5%	7½%	None	2½%	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10000	14600	10000	14600	10000	14600	10000	14800	10400	15200
	B.T.U. per B.H.P. and K.W. Hour — ¾	12000	17800	12000	17800	12000	17800	12000	17900	12500	18500
	B.T.U. per B.H.P. and K.W. Hour — ½	16000	24400	16000	24400	16000	24400	16000	24600	16700	25600
Producer Gas 135 to 180 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	600	400	600	400	600	400	590	400	560	385
	Overload Capacity	12½%	15%	7½%	10%	2½%	5%	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10000	14600	10000	14600	10000	14600	10000	14600	10200	14900
	B.T.U. per B.H.P. and K.W. Hour — ¾	12000	17800	12000	17800	12000	17800	12000	17800	12200	18100
	B.T.U. per B.H.P. and K.W. Hour — ½	16000	24400	16000	24400	16000	24400	16000	24400	16300	24900
Illuminating Gas 600 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	600	400	600	400	600	400	600	400	575	395
	Overload Capacity	15%	17½%	10%	12½%	5%	7½%	None	2½%	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10500	15400	10500	15400	10500	15400	10500	15400	10500	15400
	B.T.U. per B.H.P. and K.W. Hour — ¾	12700	18800	12700	18800	12700	18800	12700	18800	12700	18800
	B.T.U. per B.H.P. and K.W. Hour — ½	17000	25900	17000	25900	17000	25900	17000	25900	17000	25900
Natural Gas 900 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	600	400	600	400	600	400	600	400	590	400
	Overload Capacity	20%	22½%	15%	17½%	10%	12½%	5%	7½%	None	2½%
	B.T.U. per B.H.P. and K.W. Hour — Rated	10500	15400	10500	15400	10500	15400	10500	15400	10500	15400
	B.T.U. per B.H.P. and K.W. Hour — ¾	12700	18800	12700	18800	12700	18800	12700	18800	12700	18800
	B.T.U. per B.H.P. and K.W. Hour — ½	17000	25900	17000	25900	17000	25900	17000	25900	17000	25900

For altitudes up to 750 feet above sea level use sea level ratings and guarantees. All other altitudes cover a range of from 750 feet below to 250 above the altitude given in the table. The low heat values given for the different gases are referred to 62° F. and 30" of mercury. The economy guarantees are all based upon the low heat value of the gas. The K. W. ratings and guarantees are based upon the generators listed on Price Sheets 2207 and 2208.

24″ X 36″ TANDEM GAS ENGINE—150 R. P. M.

For Twin Tandem Engines Double the Rated Capacity

KIND OF GAS	RATINGS AND ECONOMY GUARANTEES	ALTITUDE AT WHICH GAS ENGINE IS TO BE INSTALLED									
		5000		6000		7000		8000		9000	
		B.H.P.	K.W.	B.H.P. 495	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.
Producer Gas 110 to 134 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	520	355		335	470	320	445	305	425	290
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10700	15600	11000	16200	11400	16700	11800	17200	12100	17800
	¾	12900	19100	13300	19800	13800	20400	14400	21300	14800	22000
	½	17300	26400	18000	27600	18700	28700	19500	29700	20200	31000
Producer Gas 135 to 180 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	535	365	505	345	480	330	455	310	435	295
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10500	15400	10900	15900	11200	16400	11600	17100	12000	17700
	¾	12600	18800	13100	19500	13600	20100	14100	21000	14600	21700
	½	16900	25900	17700	27000	18400	28100	19200	29400	19900	30500
Illuminating Gas 600 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	545	375	520	355	495	340	470	320	445	305
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10900	15900	11200	16400	11600	17000	12000	17500	12500	18100
	¾	13200	19500	13600	20100	14100	20800	14700	21700	15200	22500
	½	17800	27000	18400	28200	19100	29100	20000	30500	20800	31700
Natural Gas 900 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	565	385	535	365	510	350	485	330	460	315
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10600	15700	11000	16100	11300	16500	11700	17300	12200	17800
	¾	12900	19100	13300	19800	13800	20400	14300	21300	14800	21900
	½	17300	26500	18000	27600	18700	28500	19400	29900	20300	31000

For altitudes up to 750 feet above sea level use sea level ratings and guarantees. All other altitudes cover a range of from 750 feet below to 250 above the altitude given in the table. The low heat values given for the different gases are referred to 62° F. and 30″ of mercury. The economy guarantees are all based upon the low heat value of the gas. The K W. ratings and guarantees are based upon the generators listed on Price Sheets 2207 and 2208.

GAS ENGINES
RATINGS AND ECONOMY GUARANTEES
JUNE, 1912

SHEET NO. 2211A

GAS ENGINES
RATINGS AND ECONOMY GUARANTEES

JUNE, 1912

SET NO. 20 & 30

27" X 36" TANDEM GAS ENGINE—150 R. P. M.
For Twin Tandem Engines Double the Rated Capacity.

KIND OF GAS	RATINGS AND ECONOMY GUARANTEES	ALTITUDE AT WHICH GAS ENGINE IS TO BE INSTALLED									
		Sea Level		1000		2000		3000		4000	
		B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.
Producer Gas 110 to 134 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	750	500	750	500	750	500	715	495	680	470
	Overload Capacity	10%	15%	5%	10%	None	5%	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10000	14400	10000	14400	10000	14400	10000	14600	10400	15000
	B.T.U. per B.H.P. and K.W. Hour — ¾	12000	17500	12000	17500	12000	17500	12000	17600	12500	18200
	B.T.U. per B.H.P. and K.W. Hour — ½	16000	23800	16000	23800	16000	23800	16000	23900	16700	25000
Producer Gas 135 to 180 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	750	500	750	500	750	500	735	500	695	485
	Overload Capacity	12½%	17½%	7½%	12½%	2½%	7½%	None	2½%	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10000	14400	10000	14400	10000	14400	10000	14400	10200	14700
	B.T.U. per B.H.P. and K.W. Hour — ¾	12000	17500	12000	17500	12000	17500	12000	17500	12300	17900
	B.T.U. per B.H.P. and K.W. Hour — ½	16000	23800	16000	23800	16000	23800	16000	23800	16400	24400
Illuminating Gas 600 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	750	500	750	500	750	500	750	500	715	500
	Overload Capacity	15%	20%	10%	15%	5%	10%	None	5%	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10500	15100	10500	15100	10500	15100	10500	15100	10500	15100
	B.T.U. per B.H.P. and K.W. Hour — ¾	12700	18500	12700	18500	12700	18500	12700	18500	12700	18500
	B.T.U. per B.H.P. and K.W. Hour — ½	17000	25300	17000	25300	17000	25300	17000	25300	17000	25300
Natural Gas 900 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	750	500	750	500	750	500	750	500	735	500
	Overload Capacity	20%	25%	15%	17½%	7½%	12½%	2½%	7½%	None	2½%
	B.T.U. per B.H.P. and K.W. Hour — Rated	10500	15100	10500	15100	10500	15100	10500	15100	10500	15100
	B.T.U. per B.H.P. and K.W. Hour — ¾	12700	18500	12700	18500	12700	18500	12700	18500	12700	18500
	B.T.U. per B.H.P. and K.W. Hour — ½	17000	25300	17000	25300	17000	25300	17000	25300	17000	25300

For altitudes up to 750 feet above sea level use sea level ratings and guarantees. All other altitudes cover a range of from 750 feet below to 250 above the altitude given in the table. The low heat values given for the different gases are referred to 62° F. and 30" of mercury. The economy guarantees are all based upon the low heat value of the gas. The K. W. ratings and guarantees are based upon the generators listed on Price Sheets 2207 and 2208.

27″ X 36″ TANDEM GAS ENGINE—150 R. P. M.

For Twin Tandem Engines Double the Rated Capacity.

KIND OF GAS	RATINGS AND ECONOMY GUARANTEES	ALTITUDE AT WHICH GAS ENGINE IS TO BE INSTALLED									
		5000		6000		7000		8000		9000	
		B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.
Producer Gas 110 to 134 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	650	450	615	425	585	405	555	385	525	365
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10700	15400	11000	16000	11400	16400	11800	17000	12200	17600
	B.T.U. per B.H.P. and K.W. Hour — ¾	12900	18800	13300	19500	13800	20200	14400	21000	14900	21800
	B.T.U. per B.H.P. and K.W. Hour — ½	17300	25700	18000	26900	18700	28000	19500	29100	20400	30300
Producer Gas 135 to 180 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	665	460	630	440	600	420	570	400	540	375
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10500	15100	10900	15600	11200	16100	11600	16600	12000	17300
	B.T.U. per B.H.P. and K.W. Hour — ¾	12600	18500	13100	19100	13600	19600	14100	20400	14600	21200
	B.T.U. per B.H.P. and K.W. Hour — ½	16900	25300	17700	26200	18300	27200	19100	28200	19900	29700
Illuminating Gas 600 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	680	475	650	450	615	430	585	405	555	385
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10900	15700	11200	16100	11600	16700	12000	17300	12400	18000
	B.T.U. per B.H.P. and K.W. Hour — ¾	13200	19200	13600	19800	14100	20500	14700	21400	15200	22100
	B.T.U. per B.H.P. and K.W. Hour — ½	17700	26300	18400	27300	19200	28400	20000	29700	20800	31000
Natural Gas 900 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	700	490	665	465	630	440	600	420	570	400
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10700	15300	11000	15800	11400	16400	11800	17000	12200	17600
	B.T.U. per B.H.P. and K.W. Hour — ¾	12900	18800	13400	19400	13900	20100	14400	20800	15000	21500
	B.T.U. per B.H.P. and K.W. Hour — ½	17400	25700	18000	26800	18800	28000	19600	29000	20400	30000

For altitudes up to 750 feet above sea level use sea level ratings and guarantees. All other altitudes cover a range of from 750 feet below to 250 above the altitude given in the table. The low heat values given for the different gases are referred to 62° F. and 30″ of mercury. The economy guarantees are all based upon the low heat value of the gas. The K. W. ratings and guarantees are based upon the generators listed on Price Sheets 2207 and 2208.

GAS ENGINES
RATINGS AND ECONOMY GUARANTEES
JUNE, 1912

SHEET NO. 2212A

GAS ENGINES
RATINGS AND ECONOMY GUARANTEES
JUNE, 1912

SET NO. 348

34" X 48" TANDEM GAS ENGINE—100 R. P. M.
For Twin Tandem Engines Double the Rated Capacity.

KIND OF GAS	RATINGS AND ECONOMY GUARANTEES	ALTITUDE AT WHICH GAS ENGINE IS TO BE INSTALLED									
		Sea Level		1000		2000		3000		4000	
		B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.
Producer Gas 110 to 134 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	1100	750	1100	750	1080	750	1030	715	980	680
	Overload Capacity	7½ %	10 %	2½ %	5 %	None	None	None	None	None	None
	B.T.U. per Rated	10000	14400	10000	14400	10000	14400	10000	14400	10200	14600
	B.H.P. and ¾	12000	17500	12000	17500	12000	17500	12000	17500	12200	17900
	K.W. Hour ½	16000	23500	16000	23500	16000	23500	16000	23500	16300	24100
Producer Gas 135 to 180 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	1100	750	1100	750	1100	750	1060	740	1000	700
	Overload Capacity	10 %	15 %	5 %	7½ %	None	2½ %	None	None	None	None
	B.T.U. per Rated	10000	14400	10000	14400	10000	14400	10000	14400	10100	14500
	B.H.P. and ¾	12000	17500	12000	17500	12000	17500	12000	17500	12100	17600
	K.W. Hour ½	16000	23500	16000	23500	16000	23500	16000	23500	16100	23600
Illuminating Gas 600 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	1100	750	1100	750	1100	750	1060	740	1000	700
	Overload Capacity	10 %	15 %	5 %	7½ %	None	2½ %	None	None	None	None
	B.T.U. per Rated	10500	15100	10500	15100	10500	15100	10500	15100	10600	15200
	B.H.P. and ¾	12700	18500	12700	18500	12700	18500	12700	18500	12800	18600
	K.W. Hour ½	17000	25000	17000	25000	17000	25000	17000	25000	17100	25100
Natural Gas 900 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	1100	750	1100	750	1100	750	1090	750	1030	720
	Overload Capacity	15 %	17½ %	10 %	10 %	5 %	5 %	None	None	None	None
	B.T.U. per Rated	10500	15100	10500	15100	10500	15100	10500	15100	10500	15100
	B.H.P. and ¾	12700	18500	12700	18500	12700	18500	12700	18500	12700	18500
	K.W. Hour ½	17000	25000	17000	25000	17000	25000	17000	25000	17000	25000

For altitudes up to 750 feet above sea level use sea level ratings and guarantees. All other altitudes cover a range of from 750 feet below to 250 above the altitude given in the table. The low heat values given for the different gases are referred to 62° F. and 30" of mercury. The economy guarantees are all based upon the low heat value of the gas. The K. W. ratings and guarantees are based upon the generators listed on Price Sheets 2207 and 2208.

34″ X 48″ TANDEM GAS ENGINE—100 R. P. M.

For Twin Tandem Engines Double the Rated Capacity.

KIND OF GAS	RATINGS AND ECONOMY GUARANTEES	ALTITUDE AT WHICH GAS ENGINE IS TO BE INSTALLED									
		5000		6000		7000		8000		9000	
		B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.	B.H.P.	K.W.
Producer Gas 110 to 134 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	930	650	880	615	840	585	800	560	760	530
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10500	15100	10900	15600	11200	16000	11600	16600	12000	17200
	B.T.U. per B.H.P. and K.W. Hour — ¾	12600	18300	13200	19100	13600	19800	14000	20400	14600	21200
	B.T.U. per B.H.P. and K.W. Hour — ½	17000	25000	17700	26000	18300	27000	19000	27900	19800	29300
Producer Gas 135 to 180 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	960	670	910	635	860	605	820	575	780	545
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10300	14800	10600	15400	11000	15800	11400	16200	11800	16800
	B.T.U. per B.H.P. and K.W. Hour — ¾	12400	18100	12800	18800	13400	19400	13800	20100	14300	20800
	B.T.U. per B.H.P. and K.W. Hour — ½	16600	24400	17200	25400	18000	26300	18700	27300	19500	28500
Illuminating Gas 600 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	960	670	910	635	860	605	820	575	780	545
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10800	15600	11200	16100	11600	16600	12000	17100	12400	17800
	B.T.U. per B.H.P. and K.W. Hour — ¾	13100	19100	13600	19800	14200	20500	14600	21200	15200	22100
	B.T.U. per B.H.P. and K.W. Hour — ½	17700	26000	18400	27000	19200	28100	19900	29300	20800	30400
Natural Gas 900 B. T. U. Per Cu. Ft. Low Heat Value	Rated Capacity	980	685	930	655	890	620	840	590	800	560
	Overload Capacity	None	None	None	None	None	None	None	None	None	None
	B.T.U. per B.H.P. and K.W. Hour — Rated	10700	15400	11000	15800	11300	16400	11800	16900	12200	17500
	B.T.U. per B.H.P. and K.W. Hour — ¾	12900	18800	13400	19400	13800	20100	14400	21000	14900	21700
	B.T.U. per B.H.P. and K.W. Hour — ½	17400	25600	18000	26500	18700	27500	19500	28700	20300	29800

For altitudes up to 750 feet above sea level use sea level ratings and guarantees. All other altitudes cover a range of from 750 feet below to 250 above the altitude given in the table. The low heat values given for the different gases are referred to 62° F. and 30″ of mercury. The economy guarantees are all based upon the low heat value of the gas. The K. W. ratings and guarantees are based upon the generators listed on Price Sheets 2207 and 2208.

GAS ENGINES
RATINGS AND ECONOMY GUARANTEES
JUNE, 1912

SHEET NO. 2213A

GAS ENGINES

A. C. GENERATOR DATA

FEBRUARY, 1910

SET No. 2183

ALTERNATING CURRENT GENERATOR DATA AT 100% POWER FACTOR— 2 OR 3 PHASE, 25 CYCLES, 2200 VOLTS

DIRECT CONNECTED TO TANDEM TWO CYLINDER GAS ENGINES

K. W.	R. P. M.	Frame Size	EFFICIENCY AT 100 PER CENT. POWER FACTOR			HEATING AT 100 PER CENT. POWER FACTOR		Regulation 100% P.F.	Excitation 100% P.F.	Exciter K. W. (120 volts)
			Full Load	¾ Load	½ Load	Full Load 24 Hrs.	1¼ Load 2 Hrs.			
200	214	AI 14- 60- 9	94.	93.6	90.4	35	50	7	65	10
300	187½	AI 16- 72-10	94.	93.5	90.	35	50	8	85	13
400	150	AI 20- 96-10	95.	94.7	93.	35	50	6	100	17½
500	150	AI 20- 96-12	95.	94.7	93.5	35	50	8	110	20
750	107	AI 28-130-12	96.	95.8	95.	35	50	8	175	27½

DIRECT CONNECTED TO TWIN TANDEM FOUR CYLINDER GAS ENGINES

K. W.	R. P. M.	Frame Size	EFFICIENCY AT 100 PER CENT. POWER FACTOR			HEATING AT 100 PER CENT. POWER FACTOR		Regulation 100% P.F.	Excitation 100% P.F.	Exciter K. W. (120 volts)
			Full Load	¾ Load	½ Load	Full Load 24 Hrs.	1¼ Load 2 Hrs.			
400	214	AI 14- 75-11	94.3	93.7	90.5	35	50	8	90	15
600	187½	AI 16- 90-11½	95.2	94.5	93.	35	50	8	110	20
800	150	AI 20-108-13	96.	95.7	94.8	35	50	8	160	27½
1000	150	AI 20-108-16	96.	95.8	94.8	35	50	8	190	30
1500	107	AI 28-150-18	96.	95.	92.	35	50	7	270	45

ALTERNATING CURRENT GENERATOR DATA AT 100% POWER FACTOR— 2 OR 3 PHASE, 60 CYCLES, 2200 VOLTS

DIRECT CONNECTED TO TANDEM, TWO CYLINDER GAS ENGINES

K. W.	R. P. M.	Frame Size	EFFICIENCY AT 100 PER CENT. POWER FACTOR			HEATING AT 100 PER CENT. POWER FACTOR		Regulation 100% P.F.	Excitation 100% P.F.	Exciter K. W. (120volts)
			Full Load	¾ Load	½ Load	Full Load 24 Hrs.	1¼ Load 2 Hrs.			
200	200	AI 36– 80– 7	94.	93.7	90.6	35	45	7	65	12
300	180	AI 40–100– 7½	94.	93.7	90.6	35	45	8	70	15
400	150	AI 48–108–10	94.	93.	90.5	35	50	8	100	16
500	150	AI 48–108–10	94.4	93.7	92.0	40	50	9	95	15
750	100	AI 72–180– 7	95.	94.6	93.0	35	50	7	165	30

DIRECT CONNECTED TO TWIN TANDEM, FOUR CYLINDER GAS ENGINES

K. W.	R. P. M.	Frame Size	EFFICIENCY AT 100 PER CENT. POWER FACTOR			HEATING AT 100 PER CENT. POWER FACTOR		Regulation 100% P.F.	Excitation 100% P.F.	Exciter K. W. (120volts)
			Full Load	¾ Load	½ Load	Full Load 24 Hrs.	1¼ Load 2 Hrs.			
400	200	AI 36–108– 8	94.	93.	90.5	35	50	7	115	15
600	180	AI 40–133– 6¾	95.3	94.7	93.5	35	45	7	130	20
800	150	AI 48–152– 7½	95.	94.5	92.0	35	50	7	140	22½
1000	150	AI 48–152– 9	95.5	95.	93.0	35	50	7	145	25
1500	100	AI 72–180–12½	94.5	94.	92.5	35	50	8	300	45

GAS ENGINES
A. C. GENERATOR DATA
FEBRUARY, 1910

GAS ENGINE UNITS

DIMENSIONS

FEBRUARY, 1910

DIMENSIONS OF SINGLE TANDEM GAS ENGINES—DIRECT CONNECTED

(See Cut on Back of Sheet.)

Size	*A	†B	C	D	E	F	G	H	J	K	L	M	N 25 cycle & D.C.	N 60 cycle
18″x24″	30′- 7″	3′-9″	2′- 8″	7′-0″	16′-9″	22″	13′-0″	4′-9″	33′-2″	26′-1″	6′-6″	3′-4″	9′-0″	13′-0″
21″x30″	37′- 0″	4′-9″	2′- 8″	8′-0″	18′-9″	2′- 2½″	14′-6″	5′-6″	39′-9″	32′-0″	7′-3″	4′-2″	10′-0″	15′-0″
24″x36″	43′- 4″	5′-4″	2′- 8″	9′-0″	20′-3″	2′- 8½″	15′-4″	6′-0″	45′-4″	36′-10″	8′-0″	4′-6″	13′-0″	18′-0″
27″x36″	44′- 8″	5′-9″	2′-10″	10′-0″	22′-0″	2′-11″	16′-8″	6′-5″	48′-0″	38′-2″	8′-6″	4′-9″	13′-0″	18′-0″
34″x48″	59′-11″	6′-8″	3′- 0″	13′-0″	24′-6″	3′- 4½″	19′-3″	7′-7″	60′-3″	48′-11″	10′-6″	5′-9″	22′-0″	18′-0″

*Dimension "A" is given for 25 cycle and direct current units. For 60 cycle units, change by one half the difference in wheel diameters.

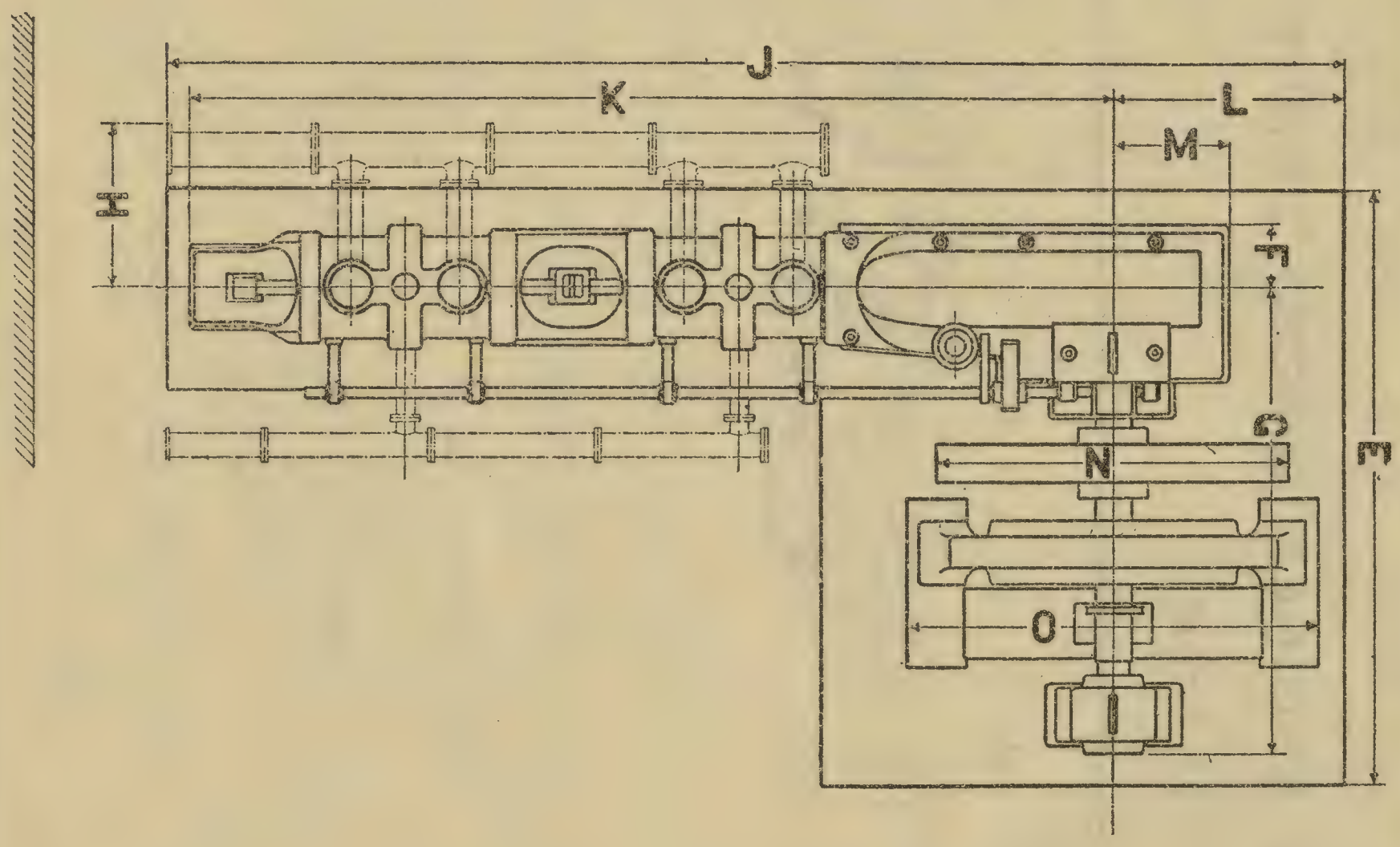
†Dimension "B" is space required for removal of Piston and Rod.

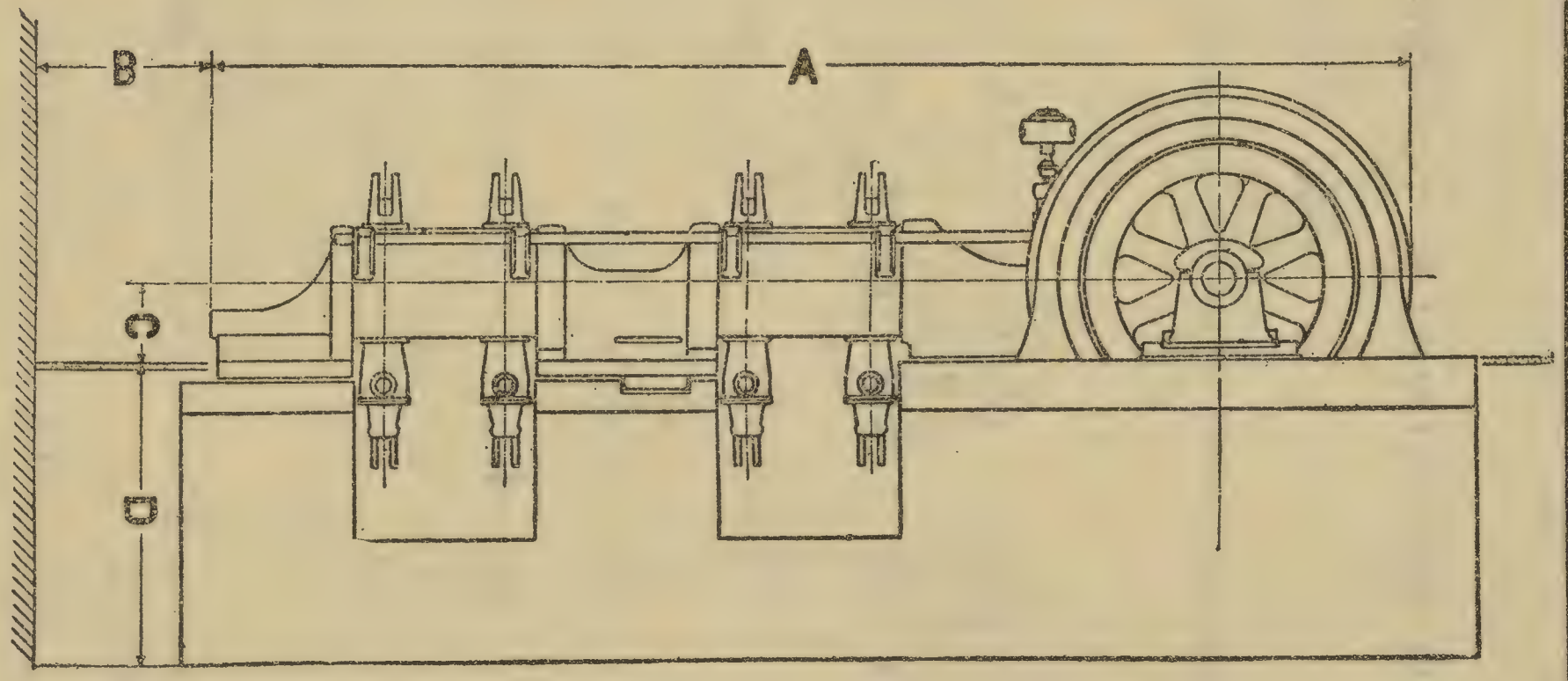
SET NO. 3068

GAS ENGINE UNITS

DIMENSIONS

FEBRUARY, 1910





SINGLE TANDEM GAS ENGINE

DIRECT CONNECTED

GAS ENGINE UNITS

DIMENSIONS

FEBRUARY, 1910

DIMENSIONS OF TWIN TANDEM GAS ENGINES—DIRECT CONNECTED

(See Cut on Back of Page.)

Size	A*	†B	C	D	E	F	G	H	J	K	L	M	N 25 Cycle & D.C.	N 60 cycle
18″x24″	31′- 2″	3′-9″	2′- 8″	7′-0″	20′-6″	22″	15′-0″	4′-9″	34′-8″	26′-1″	8′-0″	3′-4″	9′-0″	13′-0″
21″x30″	38′-10″	4′-9″	2′- 8″	8′-0″	23′-6″	2′- 2½″	17′-0″	5′-6″	42′-0″	32′- 0″	9′-6″	4′-2″	10′-0″	15′-0″
24″x36″	45′-10″	5′-4″	2′- 8″	9′-0″	26′-0″	2′- 8½″	18′-6″	6′-0″	47′-10″	36′-10″	10′-6″	4′-6″	18′-0″	18′-0″
27″x36″	47′-6″	5′-9″	2′-10″	10′-0″	28′-0″	2′-11″	20′-0″	6′-5″	50′-6″	38′-2″	11′-0″	4′-9″	18′-0″	18′-0″
34″x48″	60′-7″	6′-8″	3′- 0″	13′-0″	33′-0″	3′- 4½″	24′-0″	7′-7″	62′-3″	48′-11″	12′-6″	5′-9″	18′-0″	26′-0″

*Dimension "A" is given for 25 cycle and direct current units. For 60 cycles units, add one half the difference in wheel diameters.

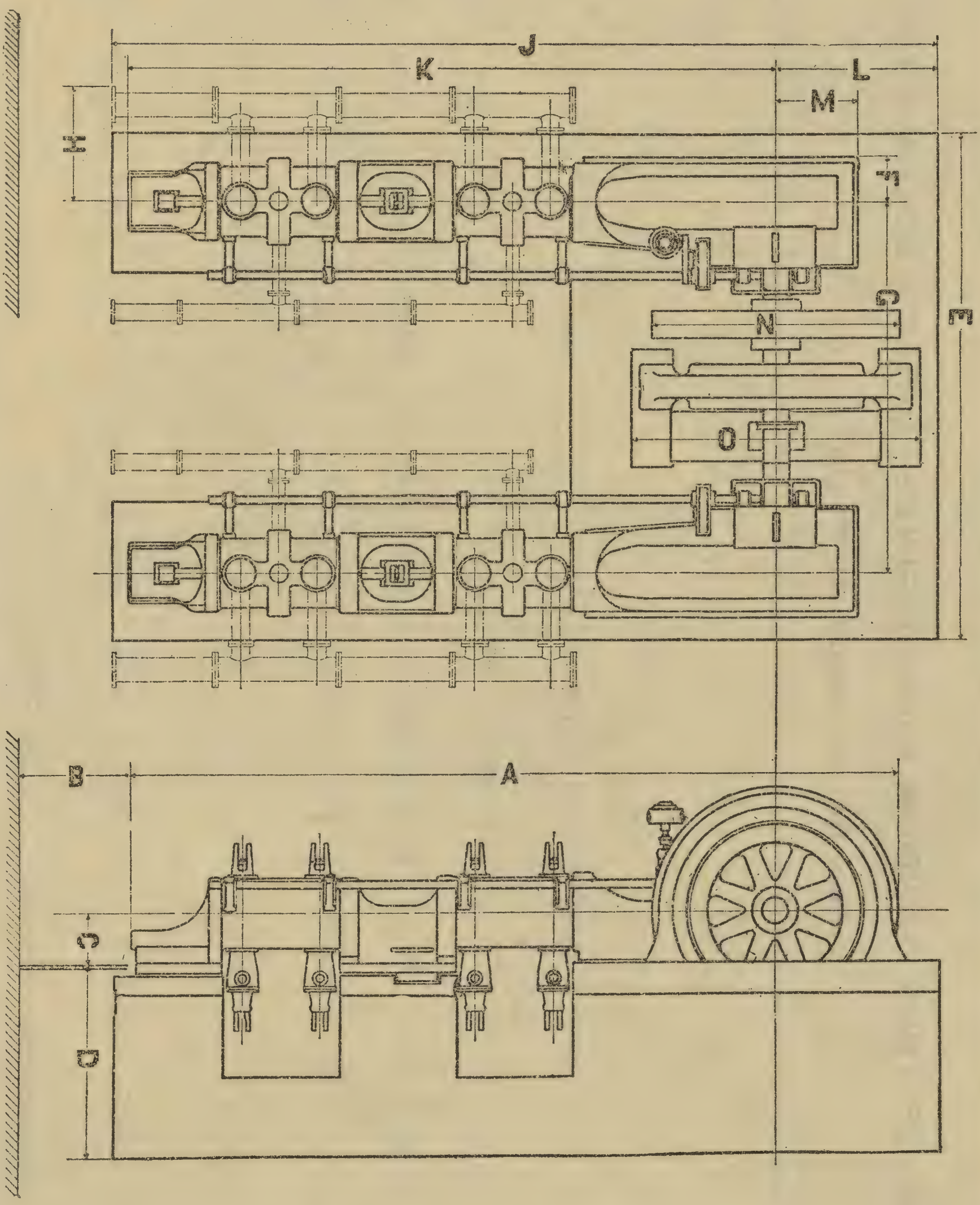
†Dimension "B" is space required for removal of Piston and Rod.

SET NO. 806

GAS ENGINE UNITS

DIMENSIONS

FEBRUARY, 1910



TWIN TANDEM GAS ENGINE

DIRECT CONNECTED

GAS ENGINE DATA

SUPERSEDING SHEET NO. 2179 AUGUST, 1910

COOLING WATER

Cooling water should be comparatively clean and free from acid, mud and scale forming impurities. Where economy in the use of cooling water is necessary, most of this cooling water can be recovered by means of a cooling tower or by spraying. The average loss should not exceed 10 per cent.

Assuming an inlet temperature of 75 ° F., and a discharge temperature of 140 ° F., the gas engine, will require not to exceed 10 gallons of water per B.H.P. hour. This figure is based on the following table.

Inlet Temp. F.	Discharge Temp. F.	Gal. per B.H.P.H.
50	140°	6.5
55	140°	7.0
60	140°	7.5
65	140°	8.0
70	140°	8.5
75	140°	10.
80	140°	10.5
85	140°	11.0
90	140°	12.5
95	140°	13.5
100	140°	15.0

Therefore, for inlet temperature up to and including 75° F., 10 gal. per B.H.P.H. may be specified. Inlet temperature above 75° will require the number of gallons shown in the table.

GAS ENGINE DATA

AUGUST, 1910

COOLING WATER

Our 18 x 24 and 21 x 30 gas engines must be furnished with a cooling water at a pressure from 65 to 70 lbs. for pistons and rods. This high pressure is due to the high rotative speeds of these engines. In 24 inch engine and larger, the pressure need not exceed 45 lbs. for the pistons and rods.

A pressure of 30 lbs. would be suitable for all other parts of all sizes of engines, and theoretically, we would use a high pressure for the pistons and rods, and a lower pressure for the jackets, heads and exhaust valves.

We have furnished two or three pumps with different size water cylinders, so that the different pressures could be furnished. We found in operation, however, that the pumps were not satisfactory, that the piping was complicated and that the slight saving in power, which was theoretically possible, was not apparent in actual practice. We have therefore, decided to have engines furnished with water at one pressure only; this pressure to be 65 to 70 lbs. for our 18 x 24 and 21 x 30, and 45 lbs. for 24 inch and larger.

GAS ENGINE COOLING WATER AND COOLING WATER PUMPS

SUPERSEDING SHEET NOS. 2167 AND 2187 MARCH, 1913

The cylinder walls, cylinder heads, pistons, piston rods, exhaust valves and exhaust valve chambers of our gas engines have thorough provision for water cooling.

To insure proper circulation, water must be supplied at a pressure of not less than 50 lbs. per square inch. It should be free from acid and sediment.

Not to exceed 10 gallons of water per B. H. P. hour (referred to rated capacity of engine) is required when the inlet water temperature is 75 deg. F. or lower and the discharge temperature 140 deg. F., as recommended by us.

If the inlet temperature is above 75 deg. F., engines will require not to exceed the following amounts:

Inlet Temp. Deg. F.	Disch. Temp. Deg. F.	Gals. per B.H.P. Hr.
80	140	11
85	140	12
90	140	13
95	140	14
100	140	15

COOLING WATER PUMPS

In selecting a pump for circulating cooling water, it is advisable to allow about 20% above the actual requirement as given above. For example, if the inlet temperature is 75 deg., figure on 12 gals per B.H.P. Hr.

The following pumps are all designed to discharge against a pressure of 50 lbs. gauge.

Triplex pumps are single acting plunger pumps, and prices and weights for motor-driven pumps include double reduction gearing and suitable extended base for mounting motor.

Centrifugal pumps are of our own make.

All motors are standard 60 cycle, polyphase, constant speed, induction motors, type "AN".

The 5, 7½, and 10 H. P. motors can be wound for 110, 220, 440 or 550 volts; balance for 220, 440 or 550 volts only.

TRIPLEX PUMPS

Cap. Gals. Per Min.	Speed of Pump	H. P. of Motor	Motor-Driven Pumps			Belt-Driven Pumps		
			Speed of Motor	Weight of Pump and Motor	List Price of Pump and Motor	Size of Pulley	Wgt.	List Price
60	50	5	1150	2200	$290	18 x 4	1300	$160
90	50	7½	1150	2600	390	18 x 4	1400	200
120	50	7½	1150	3300	440	20 x 5	2150	240
145	50	10	1150	3600	510	20 x 5	2250	265
180	45	10	1150	5800	665	28 x 6	4100	405
230	45	15	1150	7200	780	30 x 6	5200	480
260	40	15	1150	7800	825	30 x 6	5700	515

CENTRIFUGAL PUMPS

Size of Pump	Cap. Gals. Per Min.	Speed	H.P. of Motor	Wgt. Pump and Motor	List Price Pump and Motor
4″	320	1730	30	3000	$515
5″	650	1730	50	3900	625
6″	1400	860	100	5700	*950

*If 220 volt motor, add $50 net, to price.

SET NO. 308

GAS ENGINES
OILING APPARATUS

JULY, 1910

GRAVITY OILING SYSTEM
See Cut on Back of Sheet.

FOR ONE TANDEM UNIT

Size of Engine	Rated Horse Power	Capacity Filter Gallons	Capacity Storage Tank Gallons	Capacity Auxiliary Tank Gallons	Total Shipping Weight	LIST PRICE
18 x 24	300	100	150	75	800	**$165 00**
21 x 30	450	150	250	125	1200	**220 00**
24 x 36	600	200	300	150	1500	**265 00**
27 x 36	750	250	400	200	1700	**350 00**
34 x 48	1100	350	500	250	2100	**450 00**

FOR ONE TWIN TANDEM OR TWO TWIN TANDEM UNITS

18 x 24	600	200	300	150	1500	**$265 00**
21 x 30	900	300	500	250	2100	**400 00**
24 x 36	1200	400	600	300	2500	**485 00**
27 x 36	1500	500	800	400	3100	**655 00**
34 x 48	2200	700	1000	500	4000	**780 00**

The above prices are for filter and tanks only, no pipe or fittings being included. Add 5% to net prices for sufficient iron pipe and fittings to connect Gravity System to manifolds at end of engine foundation as shown in cut.

The capacities as given for the auxiliary tank, filter and storage tank allow the use of a liberal quantity of oil for the pins, bearings and guides thereby eliminating possibility of overheating.

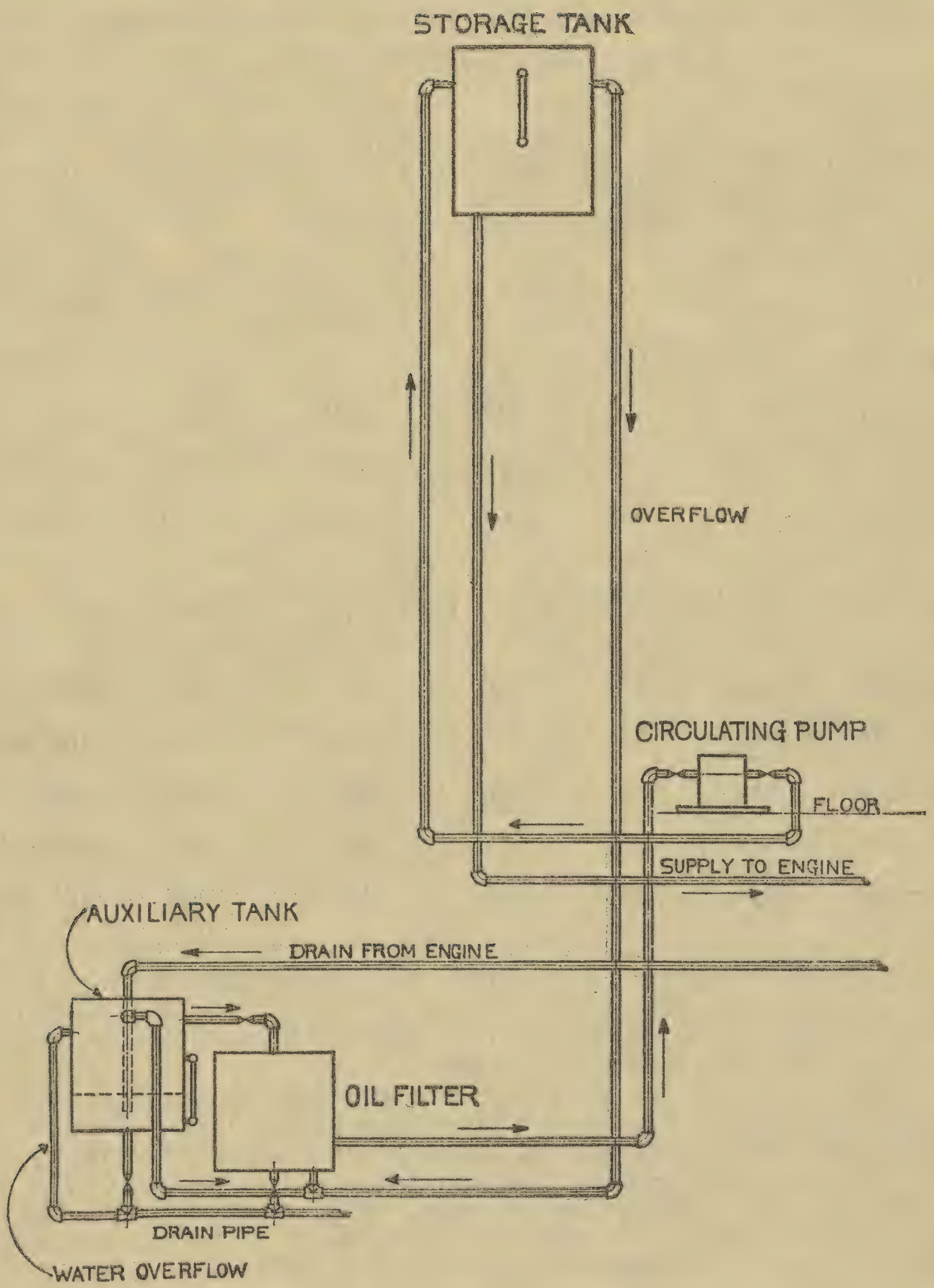
The oil in this system (see cut) drains to the auxiliary tank, which is partly filled with water. This tank removes the water from the oil, also the heavier particles of foreign matter thereby greatly increasing the capacity of the filter.

From the auxiliary tank, the oil flows to the filter which consists of one or more units.

From the filter the oil is pumped to the storage tank by a small plunger pump driven from engine lay shaft. This pump is included with the engine unless otherwise specified.

The capacity of the storage tank is sufficient to supply the engine four or five hours under ordinary operating conditions. The gravity tank should be supplied with an overflow pipe as shown in the cut.

(SEE CUT ON BACK OF SHEET).


STORAGE TANK
OVERFLOW
CIRCULATING PUMP
FLOOR
SUPPLY TO ENGINE
AUXILIARY TANK
DRAIN FROM ENGINE
OIL FILTER
DRAIN PIPE
WATER OVERFLOW

GAS ENGINES

AIR STARTING OUTFITS

SET NO. 3083

AIR STARTING OUTFITS FOR GAS ENGINES

TANDEM GAS ENGINES—TWO CYLINDERS

SIZE OF ENGINE		COMPRESSORS					GASOLINE ENGINE			AIR STORAGE TANKS				* SETS COMPLETE		† MOTOR BASE AND GEARS FOR DIRECT CONNECTED MOTOR-DRIVEN OUTFITS		
Dia.	Stroke	Approximate Size of Cylinders	Cu. Ft. per Min.	RPM	Wgt.	List Price	H.P.	Wgt.	List Price	No.	Cu. Ft.	Wgt.	List Price	Wgt.	List Price	H.P. of Motor	Wgt.	List Price
18″	24″	6⅛ & 3x5	15	175	1100	$235	5	2000	$295	1	60	2400	$190	5500	$ 720	4	300	$ 80
21″	30″	6⅛ & 3x5	15	175	1100	235	5	2000	295	1	60	2400	190	5500	720	4	300	80
24″	36″	8 & 4x6	30	175	1700	310	10	3000	500	1	100	3600	250	8300	1060	7½	400	110
27″	36″	8 & 4x6	30	175	1700	310	10	3000	500	1	150	4700	340	9400	1150	7½	400	110
34″	48″	10 & 5x8	60	165	2700	480	20	6500	920	2	100	7200	500	16400	1900	15	750	150

TWIN TANDEM GAS ENGINES—FOUR CYLINDERS

SIZE OF ENGINE		COMPRESSORS					GASOLINE ENGINE			AIR STORAGE TANKS				* SETS COMPLETE		†MOTOR BASE AND GEARS FOR DIRECT CONNECTED MOTOR-DRIVEN OUTFITS		
Dia.	Stroke	Approximate Size of Cylinders	Cu. Ft. per Min.	RPM	Wgt.	List Price	H.P.	Wgt.	List Price	No.	Cu. Ft.	Wgt.	List Price	Wgt.	List Price	H.P. of Motor	Wgt.	List Price
18″	24″	6⅛ & 3x 5	15	175	1100	$235	5	2000	$ 295	1	60	2400	$ 190	5500	$ 720	4	300	$ 80
21″	30″	8 & 4x 6	30	175	1700	310	10	3000	500	1	100	3600	250	8300	1060	7½	400	110
24″	36″	8 & 4x 6	30	175	1700	310	10	3000	500	1	150	4700	340	9400	1150	7½	400	110
27″	36″	10 & 5x 8	60	165	2700	480	20	6500	920	2	100	7200	500	16400	1900	15	750	150
34″	48″	12 & 6x10	100	153	4600	725	35	9000	1700	3	150	14100	1025	27700	3450	25	1000	220

*Price and Weight include Compressor, Engine and Tank. If motor-driven air starting outfit is desired, deduct price of Gasoline Engine, and add price of a suitable belted motor. †For direct connected motor driven outfit, also add for motor base and gears.

GAS ENGINE DATA

FEBRUARY, 1910

AIR STARTING

Large gas engines require compressed air at 200 lbs. pressure for starting service.

The compressor and air storage tanks are built for a working pressure of 250 lbs.

For the satisfactory operation of any gas engine plant it is essential to have a supply of compressed air at **ALL** times and for this reason the air compressors are usually driven by gasoline engines.

A motor driven air compressor is more economical and can be installed for less money, but we would only recommend such an installation where there is a current available at **ALL** times from an outside source.

The compressors are of the single acting two stage type, with an intercooler placed above the cylinders. They can be arranged for either belt or motor drive.

The engines for driving the compressors usually use gasoline for fuel but can be furnished for any other standard fuel which is available.

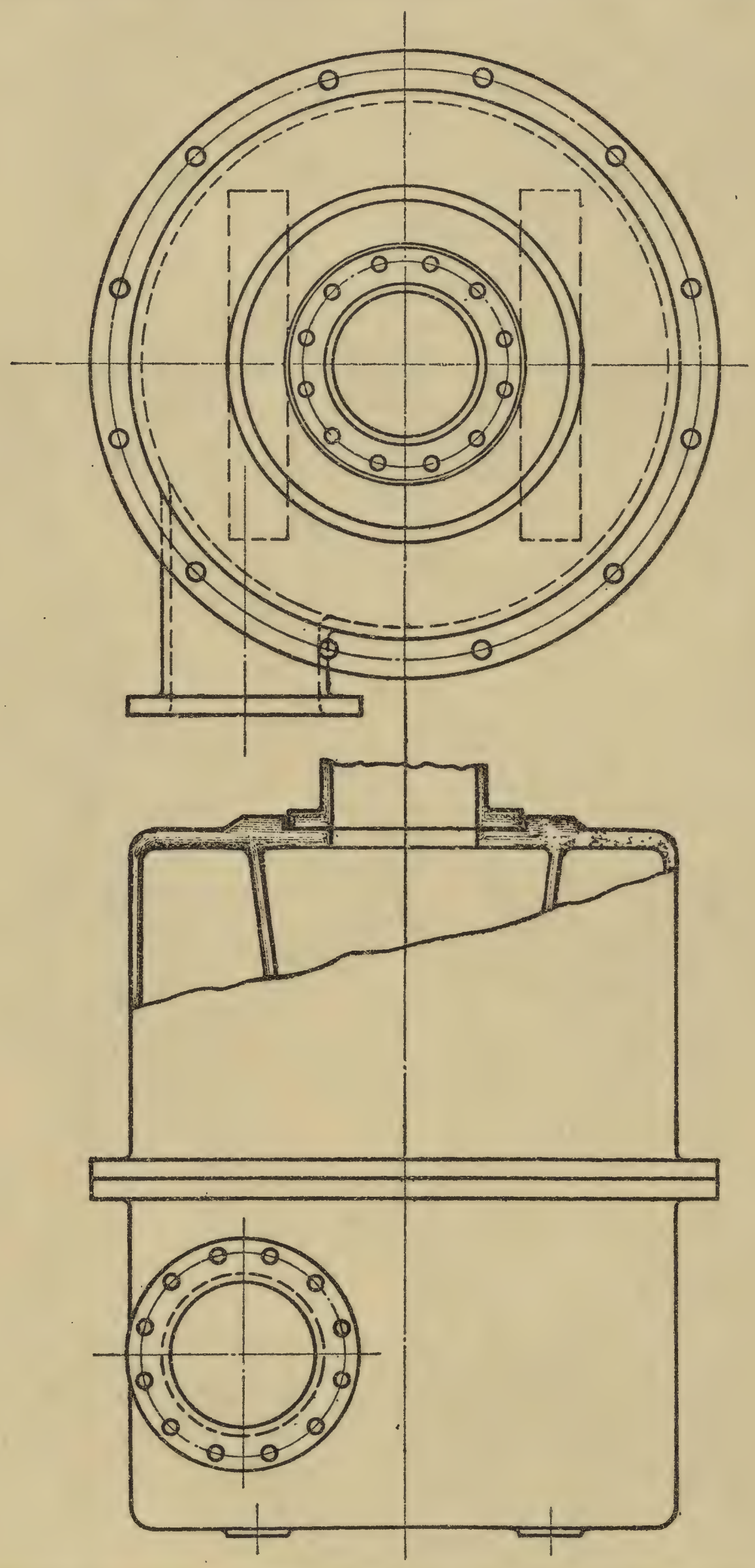
The air storage tanks are of ample capacity for the engines and if care is exercised in starting, very little compressed air will be needed.

If there is a **CONSTANT** supply of compressed air at the plant used principally for other purposes and of not less than 100 lbs. pressure, no additional compressor need be installed for our engine will start with air at this lower pressure altho requiring more of it.

CB 7/0

GAS ENGINES
MUFFLERS

MARCH, 1910



Size of Engine	Weight	*LIST PRICE	No. of Sections
18 x 24	2800	$175	2
21 x 30	3000	190	2
24 x 36	4000	235	3
27 x 36	5500	325	2
34 x 48	7500	440	3

*Price given for Tandem Unit.
For Twin Tandem Unit give price for two Mufflers.
Connection to Engine Exhaust Line is made at lower Flange, the Exhaust Outlet is at the top Flange.

SET NO. 308

GAS ENGINE DATA

DECEMBER, 1911

GASOMETERS

The gas pressure regulator or gasometer shown on the opposite side of this sheet is designed for use in connection with gas engines sold to operate on natural or illuminating gas.

This gas is ordinarily available under a pressure varying from less than 1 lb. to as high as 5 lbs. per square inch, whereas good practice dictates that the gas entering the mixing chamber of the engine shall be at approximately atmospheric pressure.

The function of the gasometer is to effect such a reduction of pressure as may be necessary for satisfactory operation and to regulate the pressure automatically.

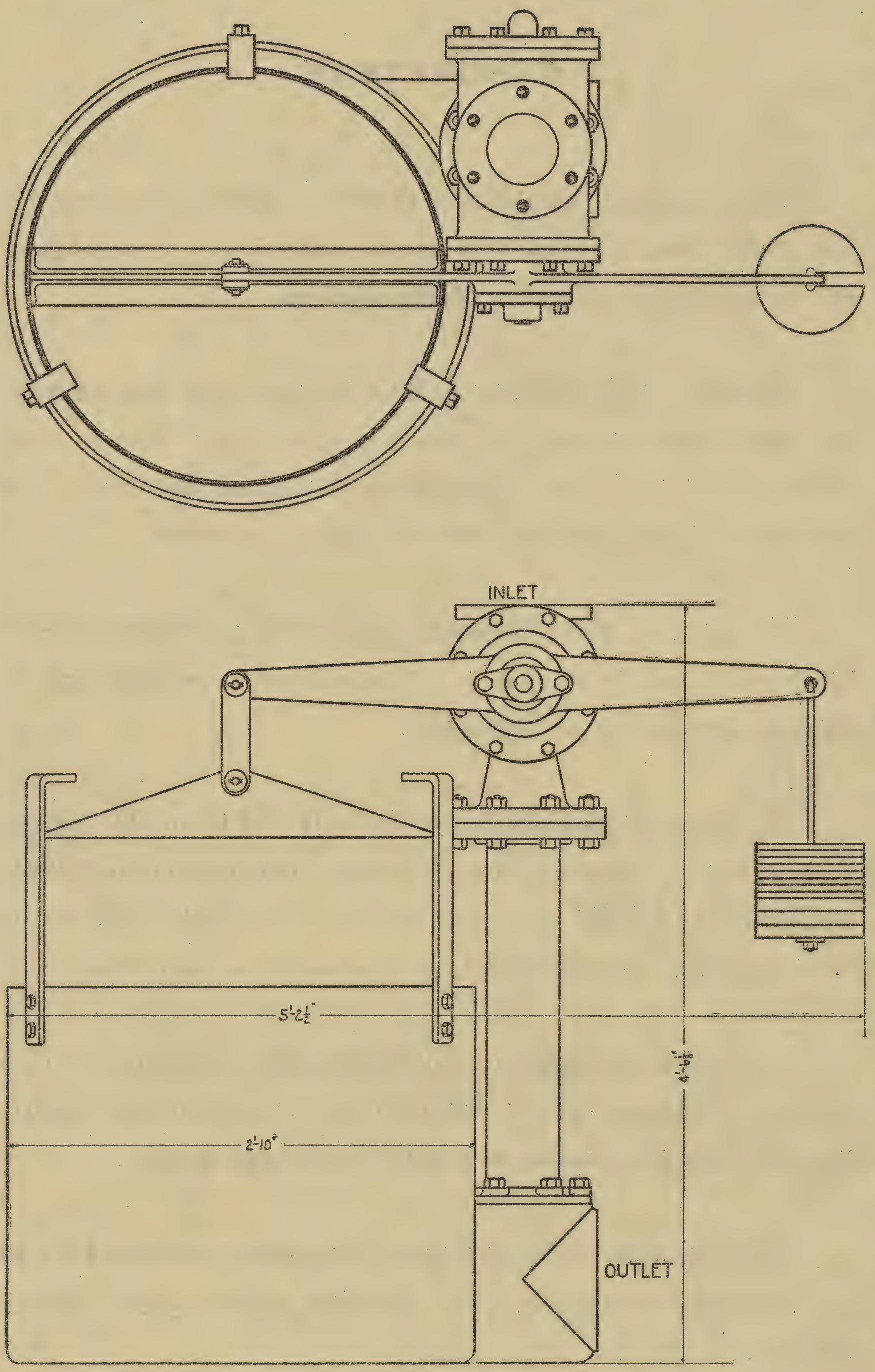
The gasometer is built in one size only and is suitable for use with any of our single or twin tandem gas engines from the 18″x24″ tandem to the 34″x48″ twin tandem. Where more than one unit is to be installed we recommend one gasometer to each unit.

We offer the gasometer for sale only in connection with our own engines. Orders should be accompanied by definite information regarding the gas pressure available at purchaser's plant.

Net

Minimum price of the gasometer complete as shown is **$275.00** F. O. B. cars Milwaukee, Wis., shipping weight approximately 2000 lbs.

(SEE CUT ON BACK OF SHEET)


INLET
5'-2½"
2'-10"
4'-6⅞"
OUTLET

GAS ENGINES

PIPING

SUPERSEDING SHEET NO. 2182 JULY, 1910

PIPING

Our Standard Gas Engine specification covers all air, gas, water and oil piping, up to end of foundation ready for Purchaser's connections; also the exhaust nozzles. Prices on exhaust mains to connect to the exhaust nozzles and extending to end of foundations are given in the price sheets.

We are also prepared to furnish any additional gas or exhaust piping, mufflers, gas regulators, etc.

In writing for prices on piping please give the approximate length of pipe required.

See back of Sheet for data and prices.

PIPING FOR GAS ENGINES

TANDEM—TWO CYLINDER—GAS ENGINES

SIZE OF ENGINE		SIZE OF PURCHASERS CONNECTIONS							AIR, GAS, WATER, OIL PIPING AND EXHAUST NOZZLES*		EXHAUST MAIN† (TO END OF FOUNDATION)	
Diam.	Stroke	Oil		Water		Air for Starting	Gas	Exh'st	Weight	List Price	Weight	List Price
		Supply	Drain	Supply	Drain							
18″	24″	1¼″	1½″	3″	4″	2″	6″	10″	1750	$350	2250	$120
21″	30″	1¼″	1½″	3″	4″	2″	8″	12″	2750	450	2750	170
24″	36″	1½″	2″	3½″	4½″	2½″	9″	14″	5000	590	5000	240
27″	36″	1½″	2″	4″	5″	2½″	10″	16″	6500	650	6000	290
34″	48″	2″	2½″	4½″	6″	3″	18″	24″	12000	1180	12000	590

TWIN TANDEM—FOUR CYLINDER—GAS ENGINES

SIZE OF ENGINE		SIZE OF PURCHASERS CONNECTIONS							AIR, GAS, WATR, OIL PIPING AND EXHAUST NOZZLES*		EXHAUST MAIN† (TO END OF FOUNDATION)	
Diam.	Stroke	Oil		Water		Air for Starting	Gas	Exh'st	Weight	List Price	Weight	Llst Price
		Supply	Drain	Supply	Drain							
18″	24″	1¼″	1½″	3″	4″	2″	6″	10″	3500	$700	4500	$240
21″	30″	1¼″	1½″	3″	4″	2″	8″	12″	5500	900	5500	340
24″	36″	1½″	2″	3½″	4½″	2½″	9″	14″	10000	1180	10000	480
27″	36″	1½″	2″	2″	5″	2½″	10″	16″	12500	1300	12500	580
34″	48″	2″	2½″	4½″	6″	3″	18″	24″	24000	2360	24000	1180

Piping for Twin Tandem Gas Engines consists of Two Mains, one for each side.
*Price for all Air, Gas, Water and Oil Piping and Exhaust Nozzles. (See Standard Gas Engine specification) is inluded in Engine Price. If same is not desired, above price should be deducted from Engine Price. †If Exhaust Main is desired, add above price to Engine Price. All prices are F. O. B. Point of Shipment.

SUPERSEDING SHEET NO. 2176A

GAS ENGINES
PIPING

JULY, 1910

SHEET NO. 2166A

GAS ENGINES

COOLING WATER PUMPS

SUPERSEDING SHEET NO. 2176 AUGUST, 1910

TRIPLEX PUMPS FOR 70 POUNDS PRESSURE

Cap. Galls. Per Min.	Speed of Pump	H.P. of Motor 160 ft. Head	MOTOR DRIVEN PUMPS			BELT DRIVEN PUMPS		
			Speed of Motor	Weight of Pump & Motor	List Price Pump & Motor	Size of Pulley	Weight	List Price
60	39	5	1150	2900	$ 420	18x4	2000	$220
90	37	7½	1150	4000	600	18x4	2700	295
120	49	10	1150	4200	630	18x4	2700	295
180	45	15	1150	6600	875	24x5	4500	495
240	37	20	1150	8600	1100	28x6	6500	640
270	42	20	1150	8600	1100	28x6	6500	640
360	44	25	1150	10300	1170	30x8	7500	690

Motors are standard 60 cycle, low voltage, induction, Type "AN".

CENTRIFUGAL PUMPS FOR 45 POUNDS PRESSURE

Size of Pump	Capacity of Pump G.P.M.	Head in Feet	Speed R.P.M.	H.P. of Motor	Weight of Pump and Motor	List Price Pump & Motor
3″	250	105	1730	15	2300	$650
4″	450	105	1730	30	2900	690
5″	850	105	1730	45	3900	810
6″	2000	105	1730	110	6300	1200

Use these pumps for installations of 24x36, 27x36, 34x48 units only.
Motors are standard 60 cycle, low voltage, induction, Type "AN".

DATA

The triplex pumps are of the single acting type with double reduction gearing and prices have been given on both direct connected motor driven units and on belt driven units.

The centrifugal pumps are of our own manufacture and in all installations of 24 x 36—27 x 36—34 x 48 units, we would recommend their use. From our price books it is quite evident that the saving effected in using centrifugal pumps instead of triplex pumps is considerable.

It is necessary to carry the following pressures on the cooling water used in our gas engines:—

Size of Engine.....	18 x 24	21 x 30	24 x 36	27 x 36	34 x 48
Pressure Lbs.....	70	70	45	45	45
Type of Pump.....	Triplex	Triplex	Centrif.	Centrif.	Centrif.

ESTIMATED COSTS OF A STEAM PLANT AND A GAS-ENGINE STATION.

In a recent report upon the power situation in a large manufacturing plant, Mr. F. W. Dean, of Boston, submitted estimates of the cost of installation and operation of a 1000-hp steam-electric plant and a 600-kw gas-engine installation, with electric generating equipment. The steam plant cost was as shown in the accompanying table.

INSTALLATION COST ESTIMATE 1000-HP STEAM STATION.

Engine and condenser, $20 per horse-power	$20,000
Foundations, $5.50 per horse-power	5,500
Generators, $12 per horse-power	12,000
Boilers, $7.50 per horse-power	7,500
Smoke flue, 75 cents per horse-power	750
Chimney, $2.50 per horse-power	2,500
Heater, $1 per horse-power	1,000
Pumps, 50 cents per horse-power	500
Buildings, $20 per horse-power	20,000
Total cost	$69,750

The cost per horse-power is thus $69.50. The annual cost of operation was figured as follows, assuming 310 days of operation at nine hours per day:

The fuel consumption was based upon a steam plant consuming 1.75 lb. of coal per hp-hour, with a steady load during the hours of service.

The installation cost of a gas-producer electric plant consisting of two 300-kw generators and engines, with anthracite producers, was figured at $67,500, which Mr. Dean considered substantially equivalent to a plant of 1000 indicated hp. The

gas engines were to be of the horizontal, double-acting type, and the generators were taken as 220-volt, 60-cycle machines, with two exciters included. The installation cost was estimated as given below.

The total fuel consumption was figured at 1786 tons for the year at a cost of $2.25 per ton in the locality where the

ANNUAL OPERATING COST PER HORSE-POWER, STEAM PLANT.

Fixed charges, 13 per cent of $69.75	$9.07
Attendance	3.21
Oil, waste and supplies	.21
Fuel, 2,241 tons, at $2.75 per horse-power	6.71
Total	$19.19

plant was situated. As with the steam plant operation for nine hours per day at steady load and for 310 days per year was as-

INSTALLATION COST OF 600-KW GAS-ENGINE PLANT.

Two gas engines	$21,000
Two 300-kw generators	6,600
Two exciter sets	3,000
Two anthracite producers	7,700
Freight and erection	3,800
Foundations	1,1[illegible]
Buildings	20,[illegible]
Contingencies	4,3[illegible]
Total	$67,500

sumed. In view of the resulting close annual cost of the two plants, per horse-power, the report concluded with the recom-

ESTIMATED COST OF OPERATION, GAS-PLANT.

Fixed charges on plant, 14 per cent of $57.50 (per horse-power)	$9.45
Attendance per horse-power per year	3.21
Oil, waste and supplies	.50
Coal, 2 lbs. per kw-hour, including stand-by losses	4.02
Total	$17.18

mendation that the establishment install the steam plant on account of its greater reliability and the more common experience which it has enjoyed.

TABLE I.

FEB 10 1910

Total Pounds of Coal as Fired per Electrical Horse-Power per Hour Developed at the Switchboard, for both Steam and Producer-Gas Plants.

Fuel used.	Locality.	Steam.	Producer gas.	Ratio.
Alabama No. 2	Carbon Hill	4.29	1.71	2.51
Colorado No. 1	Lafayette	6.04	2.14	2.82
Florida (peat) No. 1	Orlando	..	3.03	..
Illinois No. 3	Marion	4.74	1.93	2.46
Illinois No. 4	Troy	5.47	2.01	2.72
Illinois No. 6	Coffeen	6.28	2.02	3.11
Illinois No. 7	Collinsville	5.21	2.41	2.16
Illinois No. 8	Paisley	6.26	1.98	3.16
Illinois No. 9	Staunton	5.22	2.01	2.59
Illinois No. 10	West Frankfort	4.88	1.59	3.07
Illinois No. 11	Carterville	4.35	1.37	3.18
Illinois No. 13	Benton	4.17	1.74	2.40
Illinois No. 14	Springfield	5.27	1.79	2.94
Illinois No. 15	Centralia	4.61	1.80	2.56
Illinois No. 16	Herrin	4.24	1.81	2.34
Illinois No. 18	La Salle	4.53	1.74	2.61
Illinois No. 19	Zeigler	4.09	1.47	2.78
Indiana No. 1	Mildred	4.95	2.17	2.28
Indiana No. 2	Boonville	4.78	1.68	2.85
Indiana No. 3	Boonville	4.92	1.97	2.50
Indiana No. 5	Hymera	4.74	1.51	3.14
Indiana No. 6	Hymera	4.78	1.94	2.46
Indiana No. 7	Littles	4.09	1.65	2.66
Indiana No. 8	Terre Haute	4.52	1.61	2.81
Indiana No. 9	Macksville	4.63	1.84	2.52
Indiana No. 11	Dugger	4.37	1.73	2.53
Indian Territory No. 1	Henryetta	4.37	1.92	2.28
Indian Territory No. 4	Lehigh	4.95	1.57	3.15
Iowa No. 2	Marion County	5.82	2.07	2.81
Kansas No. 5	West Mineral	4.11	1.57	2.62
Kentucky No. 1	Straight Creek	3.72	1.41	2.64
Kentucky No. 3	Earlington	4.58	2.05	2.24
Kentucky No. 5	Big Black Mountain	3.54	1.39	2.55
Kentucky No. 6	Paintsville	3.68	1.33	2.77
Kentucky No. 7	Central City	4.36	1.65	2.64
Missouri No. 2	Bevier	5.44	1.94	2.80
Montana No. 1	Red Lodge	..	2.54	..
North Dakota No. 1	Lehigh	10.09	2.82	3.87
North Dakota No. 2	Williston	..	3.80	..
North Dakota No. 2	Williston	..	2.83	..
North Dakota No. 3	Wilton	8.46	3.24	2.61
Ohio No. 3	Shawnee	4.27	1.51	2.83
Ohio No. 4	Bradley	3.98	1.34	2.97
Ohio No. 5	Bush Run	3.96	1.26	3.14
Ohio No. 6	Neffs	4.00	1.30	3.08
Ohio No. 7	Danford	4.16	1.67	2.49
Ohio No. 8	Dixie	4.25	1.56	2.72
Ohio No. 9	Clarion	3.91	1.43	2.73
Pennsylvania No. 4	Greensburg	3.63	1.42	2.56
Pennsylvania No. 5	Ellsworth	3.52	1.28	2.75
Pennsylvania No. 6	East Millsboro	3.83	1.23	3.11
Pennsylvania No. 7	Ligonier	3.88	1.68	2.31
Pennsylvania No. 8	Ehrenfeld	3.43	1.28	2.68
Pennsylvania No. 10	Bruce	3.55	1.32	2.69
Texas No. 1	Crockett	..	3.34	..
Texas No. 2	Hoyt	..	2.58	..
Virginia No. 1	Crab Orchard	3.66	1.53	2.39
Virginia No. 2	Crab Orchard	3.58	1.38	2.59
Virginia No. 3	Toms Creek	3.57	1.21	2.95
Virginia No. 4	Darby	3.56	1.31	2.72
West Virginia No. 1	Kingmont	3.98	1.60	2.49
West Virginia No. 4	Bretz	3.71	1.32	2.81
West Virginia No. 7	Sun	3.65	1.50	2.44
West Virginia No. 8	Ansted	3.83	1.82	2.10
West Virginia No. 9	Powellton	3.58	1.43	2.50
West Virginia No. 12	Big Sandy	3.59	1.53	2.35
West Virginia No. 13	Page	3.45	1.04	3.32
West Virginia No. 14	Page	3.41	1.10	3.10
West Virginia No. 18	Glen Alum	3.43	1.20	2.86
West Virginia No. 20	Acme	3.46	1.31	2.64
Wyoming No. 2	Cambria	6.64	2.28	2.91
Wyoming No. 2	Cambria	5.64	2.28	2.47
Wyoming No. 3	Aladdin	5.35	2.04	2.62
Brazil No. 1	Porto Alegre	6.43	2.60	2.47

Average ratio, coal as fired per brake-horse-power hour under boiler to coal as fired per brake-horse-power hour in producer.....	2.7
Maximum ratio, coal as fired per brake-horse-power hour under boiler to coal as fired per brake-horse-power hour in producer.....	3.7
Minimum ratio, coal as fired per brake-horse-power hour under boiler to coal as fired per brake-horse-power hour in producer.....	1.8
Average ratio, lignite and subbituminous coal as fired per brake-horse-power hour under boiler to lignite as fired per brake-horse-power hour in producer.....	2.7
Maximum ratio, lignite and subbituminous coal as fired per brake-horse-power hour under boiler to lignite as fired per brake-horse-power hour in producer.....	2.9
Minimum ratio, lignite and subbituminous coal as fired per brake-horse-power hour under boiler to lignite as fired per brake-horse-power hour in producer.....	2.2
Average ratio, peat as fired per brake-horse-power hour under boiler to peat as fired per brake-horse-power hour in producer.....	2.3

FEB 10 1910

TABLE II.

Cost per Horse-Power of Producer-Gas Installations.

Horse-power.	Gas producer and engine erected, exclusive of foundations.	Gas producer and engine erected, including foundations.	Complete plant, exclusive of buildings.*	Complete plant, including buildings.*
20	$105.00	$108.50	....	....
25	62.50	....	....	....
25	115.00	....	....	....
50	86.00	....	....	....
60	69.50	74.50	....	....
75	75.00	....	....	....
75	86.50	....	....	....
80	62.00	....	....	....
100	67.00	....	....	....
110	60.50	68.00	....	....
110	62.50	....	....	....
125	65.00	....	....	....
125	90.00	....	$100.00	....
150	70.00	....	....	....
200	67.00	....	....	....
250	65.00	68.00	79.00	$93.00
300	58.00	....	....	....
500	....	....	84.40	....
1000	55.50	....	69.50	79.50
2000	46.00	47.50	56.50	63.50
2800	....	....	....	76.00
4000	....	....	....	69.00
4000	....	....	....	72.00
4000	....	....	....	77.50
4800	....	....	....	72.00
4800	....	....	....	79.50
5500	....	....	....	70.00

* Includes producer, engine, electric generator, piping and auxiliaries all erected, with suitable foundations.

FEB 10 1910

TABLE III.—COST OF PRODUCER-GAS ENGINES.

Horse-power.	Cost f.o.b. factory.	Cost of erecting.	Foundation, Cubic feet.	Cost of foundation.	Cost of engine erected, including foundation.	—Cost per horse-power— F.o.b. factory.	Erected, not including foundation.	Erected, including foundation.
20	$1,100	....	...	$50	$1,150	$55.00	....	....
55	....	....	...	...	2,400	....	....	$43.70
60	2,800	....	350	105	....	46.70	....	....
60	2,900	....	...	150	....	48.40	....	....
75	3,610	$175	375	150	3,933	48.10	$50.50	52.40
80	....	....	...	...	3,300	....	....	41.20
80	3,400	....	...	...	....	42.50	....	....
80	3,250	....	...	...	....	40.70	....	....
80	3,830	....	...	...	....	47.90	....	....
85	4,150	....	...	...	....	48.90	....	....
85	3,550	....	...	...	....	41.80	....	....
100	4,300	....	...	...	....	43.00	....	....
100	4,925	....	...	...	....	49.25	....	....
110	4,950	....	...	225	....	45.00	....	....
110	4,960	....	...	...	....	45.10	....	....
110	5,100	....	...	...	....	46.30	....	....
112	4,200	....	...	...	....	37.50	....	....
125	5,450	....	...	...	....	43.60	....	....
130	5,250	....	...	...	....	40.40	....	....
135	6,600	....	...	...	....	48.90	....	....
150	6,200	....	...	...	....	41.30	....	....
160	5,500	....	...	...	....	34.40	....	....
160	6,100	150	2,000	520	6,770	38.10	39.00	42.30
185	7,800	....	...	...	....	42.20	....	....
210	8,600	....	...	...	....	40.90	....	....
250	6,650	150	2,160	560	7,360	26.60	27.20	29.40
300	10.500	....	...	...	....	35.00	....	....
400	12,000	....	...	...	....	30.00	....	....
400	12,800	....	...	...	....	32.00	....	....
600	17,400	....	...	...	....	29.00	....	....
1,000	33,750	300	...	...	....	33.75	34.00	....
2,000	64,850	875	5,400	1,400	67,125	32.43	32.86	33.56

REMIND
710

Oil Engines

SHEET NO. 2354

Set No.

OIL ENGINE UNITS

Direct Connected

December, 1919

ALLIS-CHALMERS OIL ENGINES

60 Cycle; 80 % Power Factor; 2 or 3 Phase; 240, 480 or 2300 Volts.

UNIT									ENGINE													
(a) Rating (Sea Level)		R.P.M.	Engine		Type	Engine, Generator and Wheel			Wheel (Cast Iron)		Bearings				Pins				Largest Piece		Heaviest Piece
											Main		Back		Crank		Piston				
K.V.A.	K.W.		Dia.	Str.		Catalog Number	Ship'g Wgt.	List Price	Dia.	Wgt.	Diam.	Length	Diam.	Length	Diam.	Length	Diam.	Length	Width	Height	
113	× 90	257	14	21	Duplex	80501	53000	$21960.	8	13000	8½	12	6½	12	8½	7	5¼	7	102	79	20500
144	115	225	16	24	Duplex	80502	70000	26670.	9	15000	9½	14	8	14	9½	8	6	8	112	82	26500
169	×135	200	18	27	Duplex	80503	97000	32070.	10	20000	11	15	8	14	11	9	6¾	9	125	93	36000
219	175	225	16	24	Triplex	80504	96000	38510.	9	15000	9½	14	8	14	9½	8	6	8	127	82	36000
225	180	257	14	21	Twin Duplex	80505	88000	40790.	8	13000	8½	12	...	...	8½	7	5¼	7	102	79	20500
287	230	225	16	24	Twin Duplex	80506	120000	49670.	9	15000	9½	14	...	...	9½	8	6	8	112	82	26500
337	270	200	18	27	Twin Duplex	80507	158000	57590.	10	20000	11	15	...	...	11	9	6¾	9	125	93	36000
437	×350	225	16	24	Twin Triplex	80508	176000	75150.	9	15000	9½	15	...	...	9½	8	6	8	127	82	36000

* 3φ only

GENERATOR										
(b) Rating		Frame	(c) Efficiencies			Weights		(d) Excitation		
K.V.A.	K.W.		1	¾	½	Rotor	Ship'g	Amp.	K.W.	Add Cat.
113	90	AI-28-39-7¾	86.2	84.8	81.5	1800	5000	50	6	~~33380~~ 46119
144	115	AI-32-52-7	87.0	85.2	81.0	2800	7600	80	10	~~33385~~ 46127
169	135	AI-36-65-6⅜	88.0	86.0	80.0	3600	10100	95	12	~~33389~~ 46138
219	175	AI-32-52-8¾	89.0	88.0	84.8	3300	8800	95	12	~~33389~~ "
225	180	AI-28-52-8	89.4	88.4	85.4	3050	8500	90	11½	~~33389~~ "
287	230	AI-32-~~72-7~~52-11	89.0	87.5	85.0	4900	14400	130	17	~~33397~~ "
337	270	AI-36-65-8¼	91.3	90.4	88.0	4200	11700	110	14	~~33389~~ "
437	350	AI-32-72-8¾	90.0	89.7	86.3	5750	15800	150	19	33397 46149

(a) Specify this rating for variable load, with 10 % overload for 2 hours only. For continuous loading such as Flour Mill, Cement Mill, Pump, etc. Rating must be reduced 10 % and overload omitted.
(b) Temperature Rise by thermometer 50°C., (Rotor and Stator.)
(c) In accordance with A. I. E. E. Rules.
(d) If exciter included add $200.00 to List and 1500 pounds for engine pulley.

ALLIS-CHALMERS OIL ENGINES
BELTED TYPE

Cat. No.	* Rating (Sea Level)		Engine		Type	Engine and Wheel		Wheel (Cast Iron)		Belt Pulley (Inches)		Bearings				Pins				Largest Piece		Heaviest Piece
												Main		Back		Crank		Piston				
	B.H.P.	R.P.M.	Dia.	Str.		Ship'g Wgt.	List Price	Dia	Wgt.	Dia.	Face	Diam.	Length	Diam.	Length	Diam.	Length	Diam.	Length	Width	Height	
80001	70	257	14	21	Single	37000	$14820.	8	13000	72	10	8½	12	6½	12	8½	7	5¼	7	66	79	12500
80002	85	225	16	24	Single	47000	17850.	9	15000	72	12	9½	14	8	14	9½	8	6	8	73	82	16000
80003	140	257	14	21	Duplex	50000	19620.	8	13000	72	16	8½	12	6½	12	8½	7	5¼	7	102	79	20500
80004	170	225	16	24	Duplex	65000	23640.	9	15000	72	21	9½	14	8	14	9½	8	6	8	112	82	26500
80005	200	200	18	27	Duplex	90000	28320.	10	20000	84	25	11	15	8	14	11	9	6¾	9	125	93	36000
80006	255	225	16	24	Triplex	90000	34990.	9	15000	72	32	9½	14	8	14	9½	8	6	8	127	82	36000
80007	280	257	14	21	Twin Duplex	82000	36990.	8	13000	72	27	8½	12	...	...	8½	7	5¼	7	102	79	20500
80008	340	225	16	24	Twin Duplex	108000	44240.	9	15000	72	39	9½	14	...	...	9½	8	6	8	112	82	26500
80009	400	200	18	27	Twin Duplex	150000	52750.	10	20000	84	49	11	15	...	...	11	9	6¾	9	125	93	36000
80010	510	225	16	24	Twin Triplex	165000	69080.	9	15000	72	64	9½	14	...	...	9½	8	6	8	127	82	36000

* Specify this rating for variable load, with 10% overload for 2 hours only. For continuous loading such as Flour Mill, Cement Mill, Pump, Etc., Rating must be reduced 10% and overload omitted.

OIL ENGINE UNITS
Belted

December, 1919

SHEET NO. 2354A

Set No.

SHEET NO. 2412

OIL ENGINES
RATINGS AND ECONOMIES
November, 1920

ALLIS-CHALMERS OIL ENGINES
* Ratings and Economy Guarantees

Size of Engine	TYPE	ALTITUDE AT WHICH ENGINE IS TO BE INSTALLED														
		Sea Level to 990′	1000′ to 1990′	2000′ to 2990′	3000′ to 3990′	4000′ to 4990′	5000′ to 5990′	6000′ to 6990′	7000′ to 7990′	8000′ to 8990′	9000′ to 9990′	10000′ to 10990′	11000′ to 11990′	12000′ to 12990′	13000′ to 13990′	14000′ to 15000′
		B. H. P. FULL LOAD RATING														
14″x21″ 257 R.P.M.	Single Cylinder	70	65	62	59	57	54	51	49	47	45	43	41	39	37	35
	Duplex	140	130	125	119	114	108	102	98	94	90	86	82	78	75	70
	Twin Duplex	280	260	250	238	228	216	204	196	188	180	172	165	156	150	140
16″x24″ 225 R.P.M.	Single Cylinder	85	85	81	77	73	70	67	64	61	58	55	53	50	48	45
	Duplex	170	170	162	154	146	140	134	128	122	116	110	106	100	96	90
	Twin Duplex	340	340	324	308	292	280	268	256	244	232	220	212	200	192	180
	Triplex	255	255	243	231	219	210	201	192	183	174	165	159	150	144	135
	Twin Triplex	510	510	486	462	438	420	402	384	366	348	330	318	300	288	270
18″x27″ 200 R.P.M.	Duplex	200	200	200	196	186	178	170	162	154	146	140	134	128	122	115
	Twin Duplex	400	400	400	392	372	356	340	324	308	292	280	268	256	244	230
		POUNDS OF 18500 B. T. U. FUEL OIL PER B. H. P. H.														
Fuel consumption All Sizes	Full Load.....	.45	.45	.45	.45	.46	.46	.47	.47	.48	.49	.50	.51	.52	.53	.54
	¾ Load.....	.47	.48	.48	.49	.50	.51	.52	.53	.55	.56	.58	.60	.62	.64	.67
	½ Load.....	.56	.58	.60	.62	.64	.66	.68	.71	.73	.76	.79	.82	.85	.89	.95

* Reduce above rating 10 % when Engine is to operate under a continuous load such as Flour mill, Cement Mill, Pump, Etc.

OIL ENGINES
RATINGS AND ECONOMIES

November, 1920

ECONOMY—The economy guarantees given on the reverse side of this sheet are based on .45 lbs. of 18500 B. T. U. oil per B. H. P. Hr. at sea level. This allows 8325 B.T.U. per B. H. P. H. which is equivalent to a thermal efficiency of slightly over 30 %. Some of our competitors make lower guarantees than this and we have secured lower fuel consumptions on the test floor, but we prefer to be conservative and make guarantees which can be obtained under commercial conditions of service.

In this connection we would call your attention to the fact that some builders make their guarantees on the basis of 18000 B. T. U. or 19000 B. T. U. per pound fuel oil and in addition call for a "tolerance" of 5 to 10 % to allow for possible errors in tests. Therefore, in comparing the guarantees it is essential to have the B. T. U. specified for the oil and to know whether the guarantee is positive or subject to a plus and minus "tolerance."

THERMAL EFFICIENCY—If an engine uses .45 lbs. of 18500 B. T. U. fuel oil per B. H. P. hour, the thermal efficiency may be worked out as follows:

45 x 18,500 B. T. U. = 8325 B. T. U. Per B. H. P. hour.

$$\frac{\text{2545(theoretical B.T.U. per B.H.P. hr)}}{\text{8325 (B.T.U. required.)}} = 30.5\,\%$$ Thermal efficiency

COST OF FUEL OIL—Assuming a fuel oil of 18 deg. Baumé at $1.00 per standard barrel of 42 gallons, the fuel cost per B. H. P. and K. W hour would work out as follows:

1 Bbl.	= 42 Gals.	=331 lbs.	(18 Deg. oil)	=	$1.00
	1 "	=7.9 lbs.	"	=	.0238
		1.0 lbs.	"	=	.003
1 BHPH	=	.45 lbs.		=	.0014
1 KWH	=	.67 lbs.		=	.0021

Oil Engines. (Small) Sheet 1.29.20

1/21/20. Chicago Pneumatic Tool Co
30 HP Horizontal Engine 12" x 12"
300 R.P.M.
Net $600 ± Gross 1010 #
F.A.S. Headlines. # 1934. =
per H.P. 64.50
" lb. .22½

Peterbilt Engine Co. Portland Me.
32 HP. 7½ x 8" Horizontal
450 R.P.M.
Net 2350 Gross 2750
F.O.B. Portland. # 1785.
per H.P. 56¢
" lb. .76¢

above from A.B. Smith
Portland Maine
39 Commercial St. Nfy.
Phone 5140.

June 1900.

Maker		HP	rpm	Wgt	Price Total	Price HP	Price lb
Westinghouse	1	33	300	9600	1898.	57.52	.202
Otto	2	30		10,600	1249.	41.60	.117
de la Vergne.	3	32			1912.		
Springfield	4	30	175	9500	960.	32.00	
Cornell.	5	"	200	5600	1170.	39.00	
Pierce.	6	"	"	9500	850.	28.33	
Weber.	7	"		8360	1080.	36.22	
Columbus.	8	"	180	8000	650.	21.66	.081
Backus	9	25	160	8400	875.	35.00	
Foos.	10	32	185	9000	1033.		
Modern.	11						

lbs water per HP hr. #1 + #4 40 lbs
" #3 80-120 #
" #5 24-40 #

HP	rpm	Wgt	Price Total	Price HP	Price lb
50	290	13800	2573.	50.42	.181
60			2520.	42.00	
50			2610.	52.20	
"			1440.	28.80	
"		9775	1640.	32.80	
50		15600	1800.	3600	
"		12000	1050.	21.00	
50		16000	1500.	30.00	
"			1450.	29.00	

74° Baumé Gasoline per HP per hr
#1, 4, 5 + 10 - 1 pint.
#2, 6, 7 + 9 - 1/10 gall.
#3 - 1/6 of 150° Kerosene -

Gasoline Engines.

Gas or Gasoline Engines.

with air pump & starter.

Maker.	Size.	Price		No. Cyls.	H.P.
		Net cash	per H.P.		
Nash.	11/00	50		1	½
		60			
		75			
Westinghouse	"	50		½ 11x12	2
		65		3 11x12	
		75		3	
Otto.	"	50		1	½

for Ames, Neb.

	1/2 H.P.	1	2	2	1
	1 H.P.	1	2	2	1
	2 H.P.	1	2	2	1
	3 H.P.	1	2	2	1
	4 H.P.	1	2	2	1
	5 H.P.	1	2	2	1
	6 H.P.	1	2	2	1
	7 H.P.	1	2	2	1
	8 H.P.	1	2	2	1
	9 H.P.	1	2	2	1
	10 H.P.	1	2	2	1
	12 H.P.	1	2	2	1
	15 H.P.	1	2	2	1
	20 H.P.	1	2	2	1
	25 H.P.	1	2	2	1
	30 H.P.	1	2	2	1
	40 H.P.	1	2	2	1
	50 H.P.	1	2	2	1
	60 H.P.	1	2	2	1
	75 H.P.	1	2	2	1
	100 H.P.	1	2	2	1
	125 H.P.	1	2	2	1
	150 H.P.	1	2	2	1
	175 H.P.	1	2	2	1
	200 H.P.	1	2	2	1
	250 H.P.	1	2	2	1
	300 H.P.	1	2	2	1
	350 H.P.	1	2	2	1
	400 H.P.	1	2	2	1
	450 H.P.	1	2	2	1
	500 H.P.	1	2	2	1

SET NO. 2 3

NOTES

Prices and Weights are for complete sets F. O. B. Milwaukee, Wisconsin, boxed for domestic shipment.

Complete Sets—Sets are assembled complete and consist of compound wound generator mounted on the same base and coupled to Falk standard throttling governor kerosene engine.

Generators are supplied with field rheostats for back of board mounting.

Engines for sets of 3½ K. W. and larger are provided with two outside fuel tanks and 144 feet of fuel pipe, one cooling tank with necessary pipe and connections, one muffler and ten feet of muffler pipe, one set of batteries and one tool box with set of tools.

Engines for 10 K. W. sets and larger are regularly furnished with a wipe oil lubricating system at the crank shaft.

The 1½ K. W. and 1¾ K. W. sets are self-contained having fuel tank in the base and muffler attached to the cylinder. A cooling tank with the necessary pipe and fittings, one set of batteries, tool box and set of tools are supplied.

Additions for Magnetos, Wipe or Force Feed Oilers are given for these accessories when ordered as a part of the engine, but are not to be used as separate selling prices.

Compounding—The standard compounding of generators from no load to full load is 120-125 volts or 240-250 volts. Generators for flat compounding, 125-125 volts or 250-250 volts will be furnished, if specified, without change in price.

Voltage Limits—Generators will deliver their rated current in amperes at any voltage within the following limits: 125 volt generators, between 110 and 125 volts: 250 volt generators, between 220 and 250 volts.

Shunt Wound Generators will be furnished at the same price as compound.

KEROSENE ENGINE GENERATOR SETS

TYPE "KI" GENERATORS—125 OR 250 VOLTS THE FALK CO'S. KEROSENE ENGINES

CATALOG NUMBER	GENERATORS					ENGINE		COMPLETE SET		*ADDITIONS—NET RETAIL PRICES		
	K. W.	Amperes 125 Volts	Amperes 250 Volts	R. P. M.	Frame Number	H. P.	Size	Net Retail Price	Boxed Weight	Magneto	Wipe Oilers	Force Feed Oilers
27035	1½	12	6	600	KI– 3	3	4 x 5½	$ 335	1140	$20 00	$10 00	$25 00
27036	1¾	14	7	600	KI– 4	3½	4 x 5½	360	1240	20 00	10 00	25 00
27037	3½	28	14	450	KI– 5	6	5½x 7	615	2650	22 00	10 00	25 00
27038	4½	36	18	475	KI– 6	7½	5½x 8	660	3080	22 00	10 00	25 00
27039	7½	60	30	460	KI– 7	12	6¾x 9	880	4750	24 00	10 00	25 00
27040	10	80	40	390	KI– 8	18	7½x12	1180	6580	25 00	†	25 00
27041	14	112	56	375	KI– 9	22½	8½x12	1470	7750	25 00	†	32 00
27042	15	120	60	385	KI– 9	25	8½x12	1500	8100	25 00	†	32 00
27043	18	144	72	285	KI–10	30	10¼x15	2000	10850	28 00	†	32 00

Read Carefully Notes on Sheet No. 770.

* These are not to be used as separate selling prices.

† Wipe oilers are regularly supplied as a part of the standard equipment for engines of this size.

SET NO. 3d f

Oil Consumption 1⅛ pints HPhr.

NOTES

Prices and Weights are for complete sets F. O. B. Milwaukee, Wisconsin, boxed for domestic shipment.

Complete Sets—Sets are assembled complete and consist of compound wound generator mounted on the same base and coupled to Falk standard throttling governor kerosene engine.

Generators are supplied with field rheostats for back of board mounting.

Engines for sets of 3½ K. W. and larger are provided with two outside fuel tanks and 144 feet of fuel pipe, one cooling tank with necessary pipe and connections, one muffler and ten feet of muffler pipe, one set of batteries and one tool box with set of tools.

Engines for 10 K. W. sets and larger are regularly furnished with a wipe oil lubricating system at the crank shaft.

The 1½ K. W. and 1¾ K. W. sets are self-contained having fuel tank in the base and muffler attached to the cylinder. A cooling tank with the necessary pipe and fittings, one set of batteries, tool box and set of tools are supplied.

Additions for Magnetos, Wipe or Force Feed Oilers are given for these accessories when ordered as a part of the engine, but are not to be used as separate selling prices.

Compounding—The standard compounding of generators from no load to full load is 120-125 volts or 240-250 volts. Generators for flat compounding, 125-125 volts or 250-250 volts will be furnished, if specified, without change in price.

Voltage Limits—Generators will deliver their rated current in amperes at any voltage within the following limits: 125 volt generators, between 110 and 125 volts: 250 volt generators, between 220 and 250 volts.

Shunt Wound Generators will be furnished at the same price as compound.

KEROSENE ENGINE GENERATOR SETS

TYPE "KI" GENERATORS—125 OR 250 VOLTS THE FALK CO'S. KEROSENE ENGINES

CATALOG NUMBER	GENERATORS					ENGINE		COMPLETE SET		*ADDITIONS—NET RETAIL PRICES		
	K. W.	Amperes 125 Volts	Amperes 250 Volts	R. P. M.	Frame Number	H. P.	Size	Net Retail Price	Boxed Weight	Magneto	Wipe Oilers	Force Feed Oilers
27035	1½	12	6	600	KI- 3	3	4 x 5½	$ 335	1140	$20 00	$10 00	$25 00
27036	1¾	14	7	600	KI- 4	3½	4 x 5½	360	1240	20 00	10 00	25 00
27037	3½	28	14	450	KI- 5	6	5½x 7	615	2650	22 00	10 00	25 00
27038	4½	36	18	475	KI- 6	7½	5½x 8	660	3080	22 00	10 00	25 00
27039	7½	60	30	460	KI- 7	12	6¾x 9	880	4750	24 00	10 00	25 00
27040	10	80	40	390	KI- 8	18	7½x12	1180	6580	25 00	†	25 00
27041	14	112	56	375	KI- 9	22½	8½x12	1470	7750	25 00	†	32 00
27042	15	120	60	385	KI- 9	25	8½x12	1500	8100	25 00	†	32 00
27043	18	144	72	285	KI-10	30	10¼x15	2000	10850	28 00	†	32 00

Read Carefully Notes on Sheet No. 770.

Net - CT - CT+B

* These are not to be used as separate selling prices.

† Wipe oilers are regularly supplied as a part of the standard equipment for engines of this size.

FALK KEROSENE ENGINE SETS

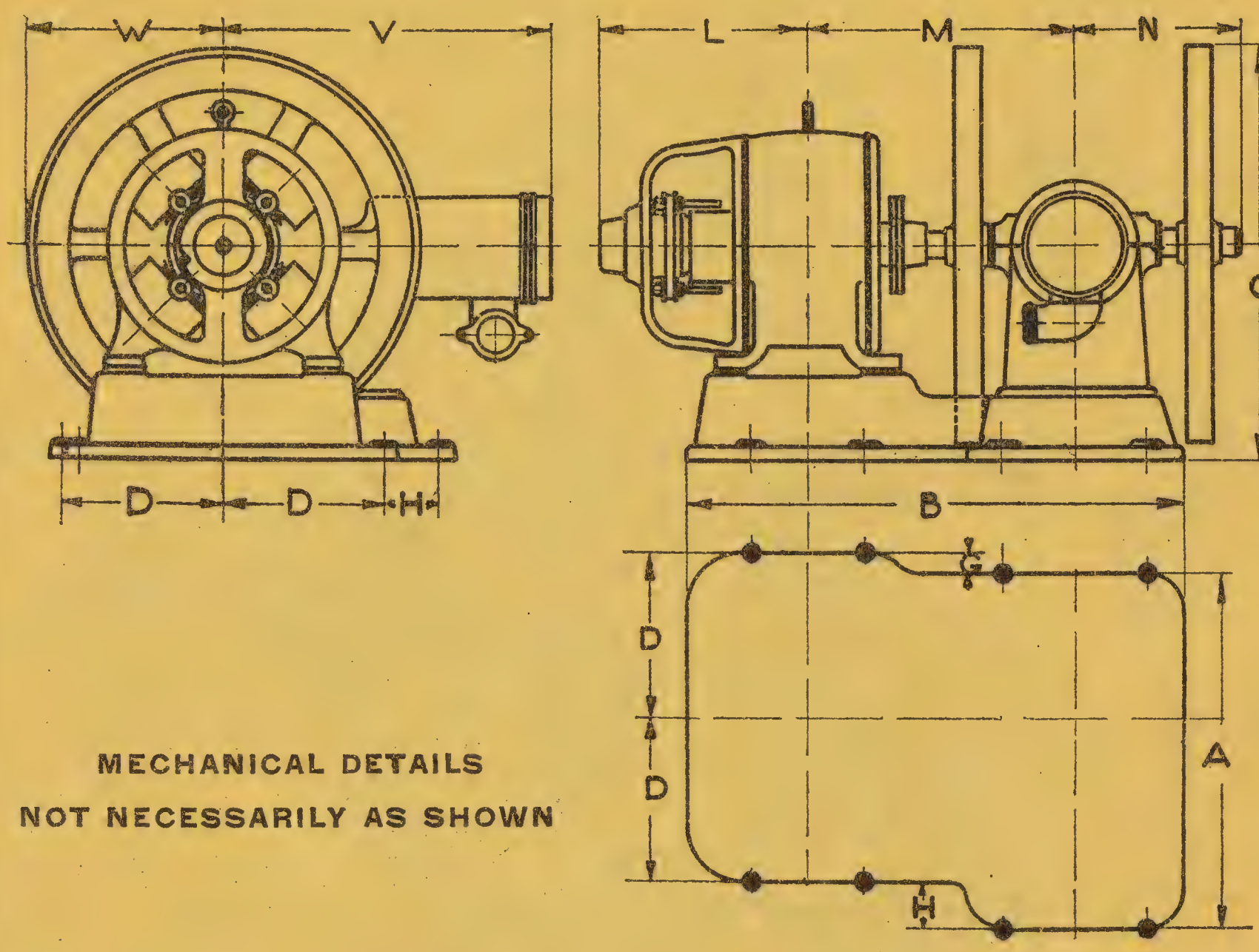
BULLOCK WORKS, JANUARY, 1914

SHEET NO. 770A

FALK KEROSENE ENGINE SETS

APPROXIMATE DIMENSIONS

BULLOCK WORKS, JANUARY, 1914

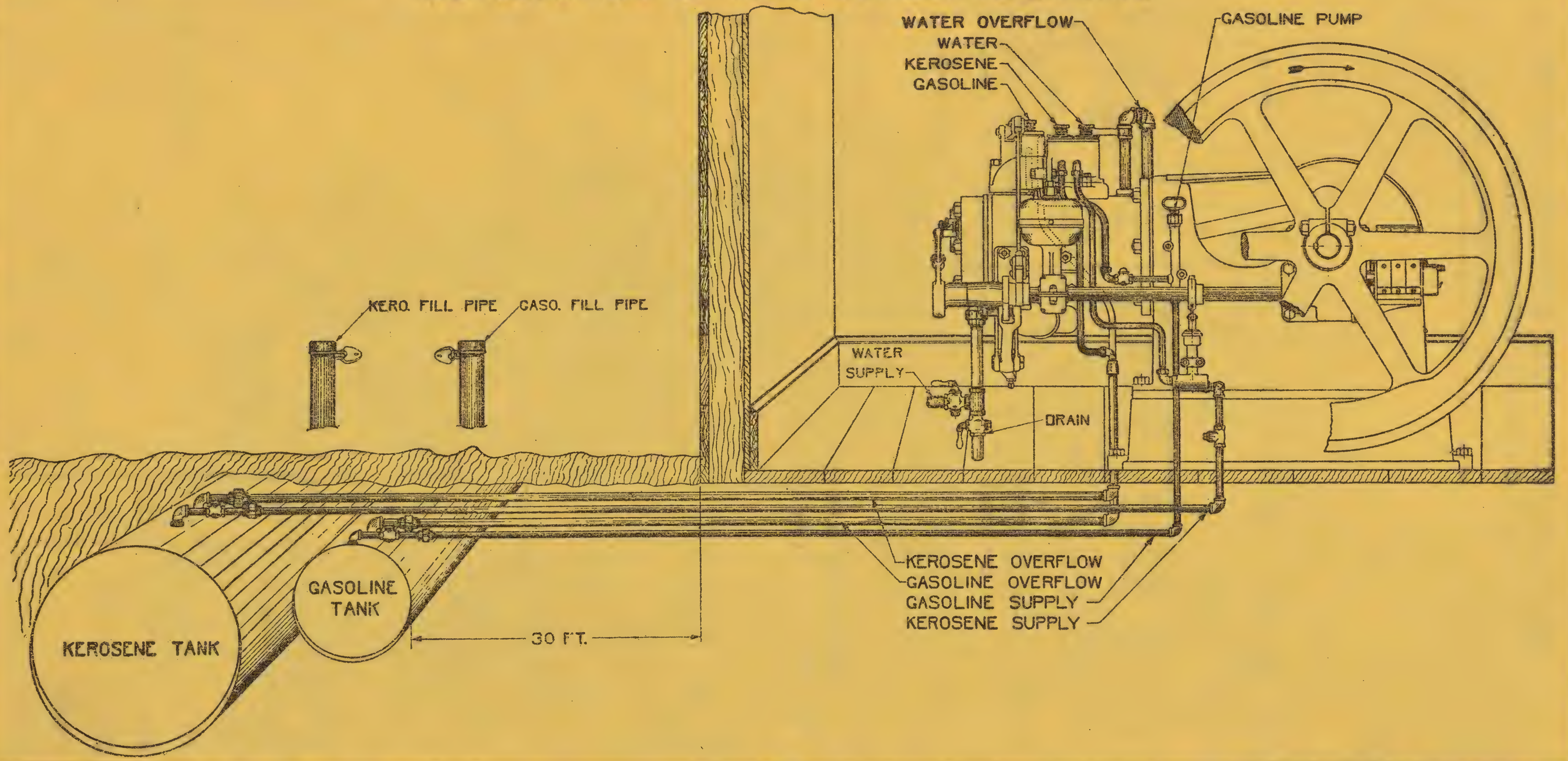


MECHANICAL DETAILS
NOT NECESSARILY AS SHOWN

CAT. NO.	DIMENSIONS IN INCHES										
	A	B	C	D	G	H	L	M	N	V	W
27035	25¾	34⅞	25¾	10⅛	....	5½	15⅛	19 3/16	12	23¾	11
27036	27⅜	34¾	25¾	11¾	....	3⅞	15⅞	18½	12	23¾	11
27037	32½	44⅞	36½	14½	1⅝	5⅛	17⅝	24⅛	15	31¼	17½
27038	32½	47¼	36½	15½	2⅝	4⅛	19¼	25¾	15	34¼	17½
27039	43⅝	55¼	44	17¾	....	8⅛	22¾	28 13/16	18½	38¾	21
27040	54	63⅛	51	18¾	2⅞	13⅝	24⅜	34⅝	22	49¾	24
27041	54	65	51	21⅝	....	10¾	29½	35⅝	22	50¾	24
27042	54	65	51	21⅝	....	10¾	29½	35⅝	22	50¾	24
27043	65½	80⅞	64	25¼	....	15	32½	45⅞	28½	61⅝	30

SET NO. 308

INSTALLATION OF FALK KEROSENE ENGINE



SHEET NO. 771A

SIMPLE
BELTED

RELIANCE

~~Standard~~ Reynolds Corliss Engines

1904–1905

List of Sizes, Horse Powers, Weights and Prices

Size		Rev. per Min.	Indicated Horse Power												Band Wheel			Main Bearing		Center of Shaft to Back Cylinder Head	Center of Shaft above Foundation	Total including Band Wheel	
			80 lbs.		90 lbs.		100 lbs.		120 lbs.		130 lbs.		150 lbs.										
Diameter	Stroke		1-5	¼	1-5	¼	1-5	¼	1-5	¼	1-5	¼	1-5	¼	Diameter	Face	Weight	Diameter	Length			Wgt.	Price
10″	24″	130	42	52	50	58	56	66	68	80	74	88	88	100	8′	12″	4200	5″	10″	11′ 2″	18″	14000	$1850.00
12	24	130	62	76	70	84	80	96	98	115	105	125	125	145	9	15	4400	6	13	11 3	18	19000	2100.00
14	24	130	84	100	98	115	110	130	135	160	145	170	170	195	9	19	5900	7	13	11 5	18	22000	2450.00
16	30	120	130	155	145	170	165	195	200	240	220	255	255	290	11	23	7400	8	15	13 11	21	29000	2800.00
18	30	120	160	195	185	215	210	245	255	300	280	325	325	370	11	31	8800	9	15	14 1	21	32000	3150.00
20	36	110	220	265	250	295	285	335	345	410	375	440	440	505	12	40	13000	10	20	16 6	25	42000	3750.00
22	36	110	265	320	305	355	340	405	420	495	455	535	535	610	12	48	18000	11	20	16 8	25	49000	4300.00

RELIANCE

Twin ~~Standard~~ Reynolds Corliss Engines

16″	30″	120	260	310	290	340	330	390	400	480	440	510	510	580	12′	40″	13000	8″	15″	13′ 11″	21″	54000	$5300.00
18	30	120	320	390	370	430	420	490	510	600	560	650	650	740	12	48	18000	9	15	14 1	21	61000	6075.00
20	36	110	440	530	500	590	570	670	690	820	750	880	880	1010	14	58	27000	10	20	16 6	25	82000	7300.00
22	36	110	530	640	610	710	680	810	840	990	910	1070	1070	1220	14	68	29000	11	20	16 8	25	87000	7950.00

3046 3040

ENG 1

1905

Allis-Chalmers Rocking Valve Engines

LIST OF SIZES, HORSE POWERS, WEIGHTS AND PRICES

Size		Revolutions per Minute	Horse Power at 50 lbs. M. E. P.	Band Wheel			Main Bearing		Center of Shaft to Back Cylinder Head	Center of Shaft above Foundation	Total including Band Wheel	
Diam.	Stroke			Diam.	Face	Weight	Diam.	Length			Weight	Price
18"	30"	120	231	11'	23"	7400	8"	15"	13' 11"	21"	25000	$2650.00
20	30	120	286	11	31	8800	9	15	14 1	21	28000	2925.00
22	36	110	380	12	40	13000	10	20	16 6	25	39000	3475.00
24	36	110	452	12	48	18000	11	20	16 8	25	46000	4000.00

Twin Allis-Chalmers Rocking Valve Engines

18"	30"	120	460	12'	40"	13000	8"	15"	13' 11"	21"	46000	$5050.00
20	30	120	570	12	48	18000	9	15	14 1	21	53000	5700.00
22	36	110	760	14	58	27000	10	20	16 6	25	76000	6825.00
24	36	110	900	14	68	29000	11	20	16 8	25	81000	7425.00

ENG 2

Reynolds Corliss Heavy Duty Engines — List of Sizes, Horse Powers, Weights and Prices

Size		Rev. per Min.	Indicated Horse Power												Band Wheel			Main Bearing		Center of Shaft to Back Cylinder Head	Center of Shaft above Foundation	Total including Band Wheel	
			80 lbs.		90 lbs.		100 lbs.		110 lbs.		125 lbs.		140 lbs.											
Diameter	Stroke		1-5	¼	1-5	¼	1-5	¼	1-5	¼	1-5	¼	1-5	¼	Diameter	Face	Weight	Diameter	Length			Wgt.	Price
12″	30″	90	54	65	62	74	69	83	77	89	89	102	101	116	9′	15″	5700	6″	13″	14′ 0″	25″	22000	$2220.00
12	36	85	61	73	70	84	78	94	87	101	101	116	114	131	10	17	6300	6	13	16 3	25	22700	2280.00
14	36	85	83	100	95	114	107	128	119	138	137	158	126	179	10	21	8900	7	13	16 4	25	27800	2660.00
14	42	82	93	112	107	128	120	144	134	155	154	178	175	201	12	21	8900	7	13	18 7	25	28000	2740.00
16	36	82	105	126	120	144	135	162	150	174	173	200	197	226	12	23	10000	8	15	16 8	30	33800	3090.00
16	42	78	116	139	133	159	150	179	167	193	192	221	218	250	12	27	11800	8	15	18 11	30	37700	3280.00
18	36	80	129	155	148	177	166	199	186	215	214	246	243	279	12	29	13000	9	15	16 10	30	40000	3470.00
18	42	78	147	176	168	202	189	227	211	245	244	281	276	317	14	29	13500	9	15	19 1	30	41200	3610.00
18	48	75	162	195	185	222	208	249	232	269	268	308	303	348	15	31	15700	9	15	21 4	30	45700	3920.00
20	42	75	175	210	200	240	225	270	250	290	289	333	328	376	15	35	16700	10	20	19 5	33	54000	4200.00
20	48	72	192	230	219	263	246	296	275	318	317	365	360	412	16	37	18700	10	20	21 8	33	58500	4380.00
22	42	75	211	254	242	290	271	326	303	351	350	403	396	455	16	39	21000	11	20	19 6	33	59400	4750.00
22	48	72	232	278	265	318	298	358	333	385	385	443	436	500	16	42	23000	11	20	21 9	33	63400	4910.00
24	48	70	268	322	307	368	345	414	385	446	444	511	503	577	18	42	27000	12	22	22 2	35	76600	5800.00
24	60	65	311	374	356	427	401	481	448	518	515	594	584	671	20	42	28500	12	22	26 8	35	81500	6100.00
26	48	70	315	378	360	432	405	486	452	523	521	600	590	677	18	48	38000	13	22	22 2	35	94000	6720.00
26	60	65	366	439	418	502	470	564	525	608	602	693	682	784	20	52	46500	13	22	26 8	35	106500	7680.00
28	48	68	355	426	406	487	457	548	510	590	588	677	666	765	20	50	45000	14	24	22 7	37	110500	8250.00
28	60	65	424	509	485	582	545	654	609	705	700	807	794	912	20	66	52000	14	24	27 1	37	122000	8950.00
30	48	68	407	489	466	559	524	629	585	678	674	776	764	877	20	60	49000	15	24	22 10	37	124000	8850.00
30	60	62	464	557	531	637	597	717	667	772	770	886	872	1000	24	60	56500	15	24	27 4	37	135600	10700.00
30	72	55	494	593	565	678	635	762	710	822	817	942	925	1062	24	72	60000	15	24	32 0	37	143000	12150.00
32	48	65	443	532	507	608	570	684	637	737	734	845	832	955	24	52	54500	16	28	23 2	39	142500	11200.00
32	60	62	529	634	604	725	680	816	759	878	875	1007	990	1137	24	68	59500	16	28	27 8	39	154000	12200.00
32	72	55	563	675	643	772	723	868	808	935	931	1073	1055	1211	24	80	88000	16	28	32 2	39	187000	15200.00

ENG 3

Reynolds Corliss Heavy Duty Engines

LIST OF SIZES, HORSE POWERS, WEIGHTS AND PRICES

Size		Rev. per Min.	Indicated Horse Power												Band Wheel.			Main Bearing		Center of Shaft to Back Cylinder Head		Center of Shaft above Foundation	Total including Band Wheel	
			80 lbs.		90 lbs.		100 lbs.		110 lbs.		125 lbs.		140 lbs.											
Diameter	Stroke		1-5	¼	1-5	¼	1-5	¼	1-5	¼	1-5	¼	1-5	¼	Diameter	Face	Weight	Diameter	Length				Wgt.	Price
34″	48″	65	500	600	572	686	644	772	719	833	828	954	938	1077	24′	62″	58000	17″	28″	23′	3″	39″	156000	$11600.00
34	60	62	597	716	682	818	767	920	857	992	987	1137	1118	1284	24	76	87500	17	28	27	9	39	191500	14600.00
34	72	55	635	762	726	871	817	980	913	1056	1051	1211	1191	1367	24	90	96000	17	28	32	3	39	205000	16800.00
36	48	62	535	642	611	749	688	825	769	890	886	1020	1003	1152	24	68	59500	18	32	23	6	41	171500	13100.00
36	60	62	669	803	765	918	860	1032	961	1112	1107	1275	1254	1440	24	84	93000	18	32	28	0	41	212000	16400.00
36	72	55	711	853	814	977	916	1099	1023	1184	1178	1357	1335	1532	26	92	100000	18	32	32	6	41	224000	18600.00
38	60	60	722	866	824	1007	928	1113	1037	1200	1183	1363	1340	1539	26	....	94000	19	32	28	1	41	220000	17600.00
40	48	70	746	895	852	1044	959	1150	1072	1240	1235	1422	1399	1605	24	....	90000	20	36	25	5	43	228500	17200.00
40	60	62	826	991	944	1133	1062	1274	1187	1373	1367	1574	1548	1777	24	....	102000	20	36	28	6	43	249000	20000.00
40	72	55	879	1055	1005	1206	1130	1356	1264	1462	1455	1676	1648	1892	26	....	120000	20	36	33	0	43	273500	22800.00
42	48	70	822	987	940	1151	1057	1269	1182	1367	1361	1567	1541	1770	26	....	93000	21	36	25	6	43	239500	18300.00
42	60	62	910	1092	1041	1249	1171	1405	1308	1514	1507	1736	1707	1960	26	....	114000	21	36	28	7	43	268000	22000.00
42	72	55	969	1163	1108	1330	1246	1496	1393	1612	1604	1847	1817	2086	26	....	126000	21	36	33	1	43	290000	24500.00
48	60	62	1190	1428	1360	1632	1530	1835	1710	1978	1969	2268	2230	2560	26	....	132000	24	42	29	6	49	344000	28200.00
48	72	55	1266	1520	1447	1737	1628	1954	1820	2106	2096	2414	2375	2726	26	....	180000	24	42	34	0	49	402000	33300.00

Reynolds
Corliss Heavy Duty Engines

Extras for *Single Cylinder* Engines, see pages Eng. 3 and 4

Size		Double Eccentric	Crank Oil Guard	Foundation Plates					
				Cylin. only		Cyl. & Slide		Entire Engine	
Diameter	Stroke	Price	Price	Wt.	Price	Wt.	Price	Wt.	Price
12"	30"	$200.00	$45.00	1300	$ 61.00	2700	$130.00	5000	$235.00
12	36	200.00	45.00	1450	68.00	3000	140.00	5500	260.00
14	36	200.00	45.00	1500	71.00	3050	145.00	5700	270.00
14	42	250.00	45.00	1600	75.00	3300	155.00	6300	300.00
16	36	250.00	45.00	1500	71.00	3300	155.00	6000	280.00
16	42	250.00	45.00	1650	78.00	3450	165.00	6600	310.00
18	36	250.00	45.00	1750	83.00	3700	175.00	6550	310.00
18	42	250.00	45.00	1900	90.00	4000	190.00	7250	340.00
18	48	250.00	45.00	2100	100.00	4250	200.00	8000	380.00
20	42	250.00	50.00	1950	92.00	4100	195.00	7600	360.00
20	48	250.00	50.00	2100	100.00	4500	210.00	8500	400.00
22	42	250.00	50.00	2050	97.00	4500	210.00	8200	390.00
22	48	250.00	50.00	2200	104.00	4800	225.00	9000	425.00
24	48	325.00	50.00	2350	110.00	5300	250.00	10000	470.00
24	60	325.00	50.00	2700	130.00	6000	280.00	11700	550.00
26	48	325.00	60.00	2600	125.00	5500	260.00	10200	480.00
26	60	325.00	60.00	3000	140.00	6200	290.00	11880	560.00
28	48	350.00	60.00	2900	135.00	6300	300.00	11600	550.00
28	60	350.00	60.00	3300	155.00	7100	335.00	13500	640.00
30	48	350.00	60.00	3000	140.00	6450	305.00	11750	555.00
30	60	350.00	60.00	3350	160.00	7250	340.00	13650	645.00
30	72	350.00	60.00	3750	180.00	8100	380.00	15500	730.00
32	48	400.00	70.00	3250	155.00	7300	345.00	13600	640.00
32	60	400.00	70.00	3700	175.00	8250	390.00	15700	740.00
32	72	400.00	70.00	4200	200.00	9150	430.00	17800	840.00
34	48	400 00	70.00	3700	175.00	8350	395.00	15400	730.00
34	60	400.00	70.00	4200	200.00	9400	445.00	17800	840.00
34	72	400.00	70.00	4700	220.00	10400	490.00	20200	950.00
36	48	450.00	70.00	3800	180.00	8850	420.00	16300	770.00
36	60	450.00	70.00	4400	210.00	10000	470.00	18800	890.00
36	72	450.00	70.00	5000	235.00	11000	520.00	21300	1000.00
38	60	450.00	75.00	.....	.....	.....	.....	.....	.....
40	48	450.00	75.00	.....	.....	.....	.....	.....	.....
40	60	450.00	75.00	.....	.....	.....	.....	.....	.....
40	72	450.00	75.00	.....	.....	.....	.....	.....	.....
42	48	500.00	85.00	.....	.....	.....	.....	.....	.....
42	60	500.00	85.00	.....	.....	.....	.....	.....	.....
42	72	500.00	85.00	.....	.....	.....	.....	.....	.....
48	60	500.00	85.00	.....	.....	.....	.....	.....	.....
48	72	500.00	85.00	.....	.....	.....	.....	.....	.....

Reynolds
Corliss Heavy Duty Engines

Remarks concerning ***Single Cylinder*** Engines

See pages Eng. 3, 4 and 5

PRICES..... Are based on standard size pins and journals, thus 16″x42″ Engines, Pins 4″x4″, Journals 8″x15″

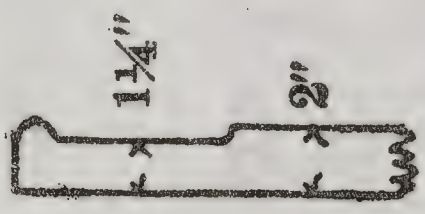
WHEELS..... Are based on 400 feet of one-inch belt per minute = one Horse Power on all sizes up to and including 24″x60″ Engines.
Larger sizes are based on 350 feet per minute.

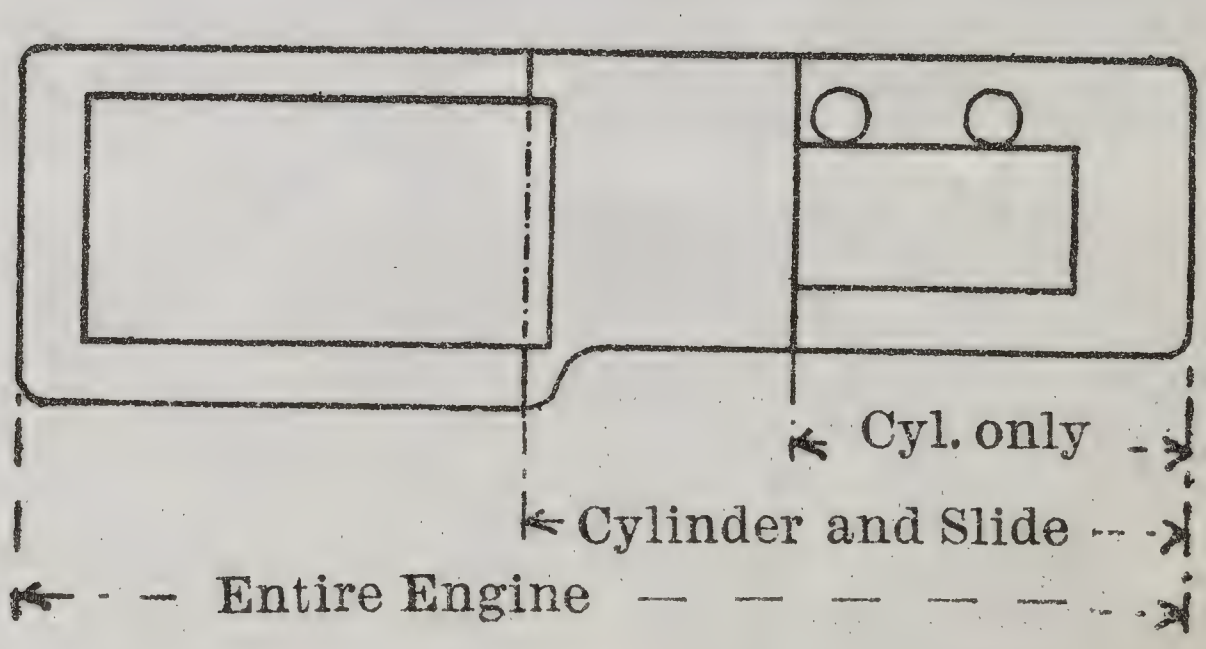
WHEELS.... 10 ft. diameter are in one piece.
Over 10 feet and under 21 ft. in halves.
Over 20 feet in segments.
All wheels (in halves) over 42″ face have two sets of arms.
All wheels (in segments) over 72″ face have two sets of arms.

WHEELS..... Price per pound.

	Solid.	In Halves.	In Segments.
Belt Wheels.....	4½ cts.	5 cts.	6¼ cts.
Rope "	6	6¼	7½
Square Rim Wheels	5	5	5½

FOUNDATION PLATES..... Price is based on 1¼″ thickness in body and 2″ at boss. As per sketch below.





Reynolds Corliss Single Cylinder DIRECT CONNECTED Heavy Duty Engines

PRICES. ..... Include double eccentrics, double ported valves, crank and eccentric oil guards, valves in cylinder, but no steam or exhaust pipes or flanges.

WHEELS..... See page Eng. 6.

FOUNDATION PLATES. See pages Eng. 5 and 6.

STEAM PRESSURE. Engines are designed for a pressure not to exceed 150 lbs. If pressure is greater, use larger work and corresponding price.

PACKING..... Packing for piston rods and valve stems not included in price.

OIL GUARD.. Crank oil guard includes extension to cover connecting rod.

GENERATOR.. Foundation bolts, armature keys and pressing armature on shaft not included in price.

ENGINE						EXTRAS						
Size		Crank and Cross-head Pins	Main Bearing		Engine Without Wheel	Steel Crosshead	Belt Rider	Safety Stop Valve Only	Foot Under Slide	Valves in Head	Steam Jacket	Electric Controller
Diam.	Stroke		Dia.	Lgth.	Wgt. Price							
12"	36"	3½x3½	7"	13"	21000 $3250.00	$10.00	$100.00	$150.00	$100.00	$425.00	$250.00	$200.00
14	36	4 x4	8	15	25000 3750.00	10.00	100.00	150.00	100.00	425.00	250.00	200.00
16	36	4½x4½	9	15	28000 4150.00	10.00	100.00	150.00	110.00	450.00	300.00	200.00
18	36	5 x5	10	20	32000 4550.00	10.00	100.00	150.00	110.00	450.00	350.00	200.00
20	36	5½x5½	11	20	38000 5050.00	10.00	100.00	150.00	120.00	475.00	350.00	200.00
20	42	5½x5½	11	20	41000 5300.00	10.00	100.00	150.00	120.00	475.00	350.00	200.00
22	42	6 x6	12	22	45000 5600.00	10.00	100.00	150.00	120.00	475.00	450.00	200.00
24	42	6½x6½	15	26	56000 6600.00	10.00	100.00	200.00	135.00	500.00	450.00	200.00
24	48	6½x6½	15	26	58000 6750.00	10.00	100.00	200.00	135.00	500.00	450.00	200.00
26	48	7 x7	16	28	64000 7300.00	10.00	100.00	200.00	135.00	500.00	500.00	200.00
28	48	7½x7½	17	30	76000 8550.00	10.00	100.00	200.00	160.00	500.00	500.00	200.00
30	48	8 x8	17	30	86000 9400.00	10.00	100.00	200.00	160.00	500.00	600.00	200.00
32	48	9 x9	18	36	100000 10500.00	10.00	100.00	200.00	210.00	525.00	600.00	200.00

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TAND & CROSS
COMPOUND
BELTED

Reynolds Corliss BELTED Cross Compound

Heavy Duty Engines

Remarks referring to page Eng. 8

PRICES. ..... Include double eccentric on low pressure cylinder. Double valve ports on both cylinders. Valves in cylinders. Piping between receiver and cylinders arranged for both sides to work together. No steam or exhaust pipe or flanges included.

WHEELS..... See page Eng. 6 for price per lb. on wheels of different types.

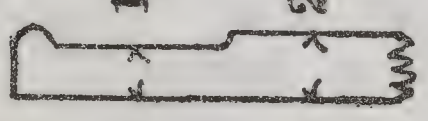
STEAM PRESSURE.... Engines are designed for steam pressure not to exceed 150 lbs. If pressure is greater use larger work and corresponding price.

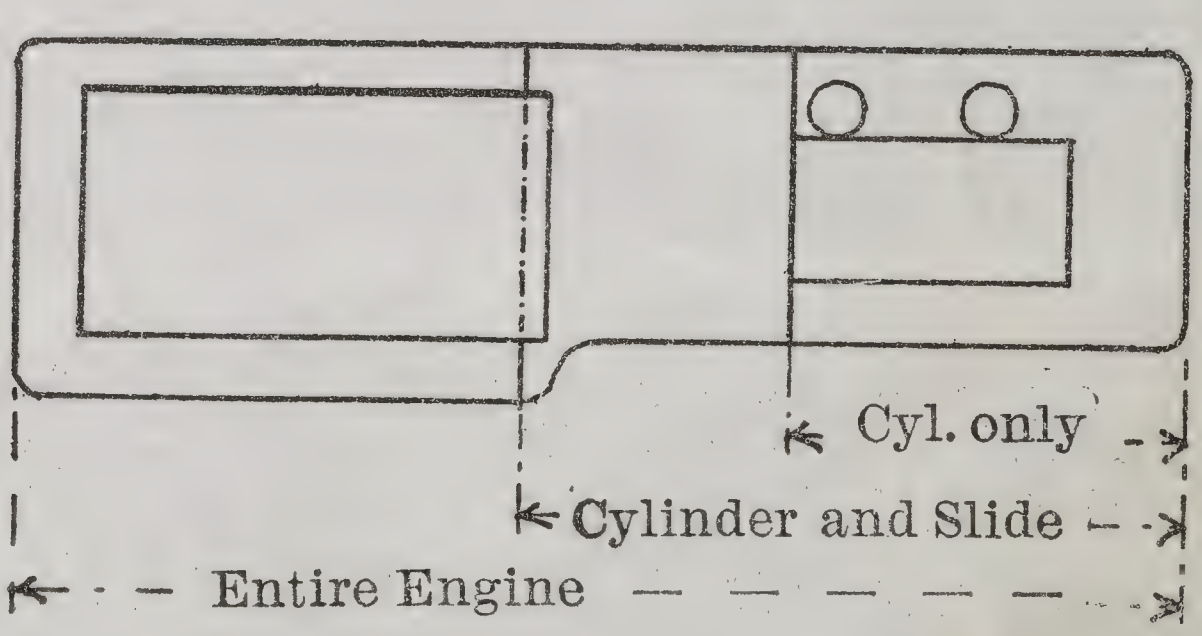
PACKING..... No packing for piston rods or valve stems included in price.

CYLINDERS .. If ratio of cylinders is changed, add or deduct $70.00 per inch list for each inch of diameter.

OIL GUARDS. Price of crank oil guard includes extension to cover connecting rod.

FOUNDATION PLATE. ..... Price is based on 1¼" thickness in body and 2" at boss, as per sketch below.





Reynolds Corliss BELTED Cross Compound Heavy Duty Engines

List of Sizes, Weights and Prices of *Engines*

Diam. H.P.	Diam. L.P.	Stroke	Crank and Cross-head Pins	Main Bear-ings	Approx. Size Wheels Usually Furnished			Engine without Wheel	
					Dia.	Face	Wgt.	Wgt.	Price
			Inches						
12	24	36	3½ x 3½	7x13	14'	23"	12000	45000	$5940.00
14	28	36	4 x 4	8x15	14	31	13000	46000	6450.00
14	28	42	4 x 4	8x15	14	35	13500	50000	6750.00
16	32	36	4½ x 4½	9x15	16	35	16000	58000	7700.00
16	32	42	4½ x 4½	9x15	16	42	18000	62000	8200.00
18	36	36	5 x 5	10x20	16	44	28000	65000	8410.00
18	36	42	5 x 5	10x20	16	52	29500	68000	8800.00
18	36	48	5 x 5	10x20	16	58	33000	74000	9100.00
20	40	42	5½ x 5½	11x20	18	56	39000	92000	10600.00
20	40	48	5½ x 5½	11x20	18	64	41500	95000	11000.00
22	44	42	6 x 6	12x22	18	68	43000	97000	11100.00
22	44	48	6 x 6	12x22	18	78	45000	100000	11400.00
24	48	48	6½ x 6½	13x22	20	82	60000	115000	13820.00
24	48	60	6½ x 6½	13x22	20	96	63000	120000	14450.00
26	52	48	7 x 7	14x24	20	96	63000	125000	14500.00
26	52	60	7 x 7	14x24	24	100	100000	135000	15000.00
28	56	48	7½ x 7½	16x28	24	92	93000	180000	17650.00
28	56	60	7½ x 7½	16x28	24	106	105000	190000	18700.00
30	60	48	8 x 8	17x28	24	94	94000	200000	19200.00
30	60	60	8 x 8	17x28	24	116	115000	210000	20000.00
32	64	60	9 x 9	18x32	26	....	120000	230000	24800.00
34	68	60	9½ x 9½	19x32	26	....	132000	260000	26300.00
36	72	60	10 x10	21x38	26	....	180000	280000	29300.00
38	76	60	10½ x10½	22x38	26	....	188000	300000	32000.00
40	80	60	11 x11	23x38	26	....	195000	310000	35500.00

List of Weights and Prices of *Extras*

Dbl. Eccent. H. P. Cyl.	Oil Guards		Steel Cross Head	Valves in Cylinder Head		Steam Jackets		Governors		Foundation Plates					
	Crank	Eccen-tric		H.P.	L.P.	H.P.	L.P.	Auxil'y. & Safety Stop	Belt Rider	Cylinders Only		Cylinders and Slides.		Entire Engine	
										Wgt.	Price	Wgt.	Price	Wgt.	Price
$250.	$150.	$200.	$15.	$425.	$500.	$250.	$450.	$325.	$100.	4000	$190.	7000	$330.	12200	$580.
250.	150.	200.	15.	425.	500.	250.	500.	325.	100.	4200	200.	7300	340.	12700	600.
250.	150.	200.	15.	425.	500.	250.	500.	325.	100.	4500	210.	8000	380.	14000	660.
250.	150.	200.	15.	450.	525.	300.	600.	325.	100.	4300	200.	8000	380.	13400	630.
250.	150.	200.	15.	450.	525.	300.	600.	325.	100.	4600	220.	8300	390.	14300	670.
250.	150.	200.	15.	450.	550.	350.	600.	325.	100.	4800	230.	8900	420.	14900	700.
250.	150.	200.	15.	450.	550.	350.	600.	325.	100.	5300	250.	9500	450.	16100	760.
250.	150.	200.	15.	450.	550.	350.	600.	325.	100.	5800	270.	10000	470.	17400	820.
250.	200.	240.	15.	475.	550.	350.	600.	325.	100.	5500	260.	9700	460.	16800	790.
250.	200.	240.	15.	475.	550.	350.	600.	325.	100.	5900	280.	11000	520.	19000	900.
250.	200.	240.	20.	475.	600.	450.	650.	400.	100.	5800	270.	10900	520.	18300	860.
250.	200.	240.	20.	475.	600.	450.	650.	400.	100.	6200	290.	11600	550.	20000	940.
325.	200.	240.	20.	500.	600.	450.	650.	400.	100.	6500	310.	12700	600.	22000	1050.
325.	200.	240.	20.	500.	600.	450.	650.	400.	100.	7000	330.	14500	680.	26000	1220.
325.	225.	250.	20.	500.	625.	500.	650.	400.	100.	6800	320.	13200	620.	22600	1070.
325.	225.	250.	20.	500.	625.	500.	650.	400.	100.	8100	380.	15000	710.	26400	1250.
350.	225.	250.	20.	500.	625.	500.	700.	475.	100.	8100	380.	15200	720.	25800	1230.
350.	225.	250.	20.	500.	625.	500.	700.	475.	100.	9200	440.	17000	800.	30000	1400.
350.	225.	250.	20.	500.	650.	600.	700.	475.	100.	8100	380.	15500	730.	26100	1250.
350.	225.	250.	20.	500.	650.	600.	700.	475.	100.	9400	450.	17500	830.	30000	1400.
400.	250.	275.	25.	525.	650.	600.	800.	475.	100.	9900	470.	20000	940.	34800	1650.
400.	250.	275.	25.	525.	700.	600.	800.	550.	100.	11700	550.	22600	1070.	38600	1820.
450.	250.	275.	25.	550.	700.	600.	800.	550.	100.	13200	620.	24000	1160.	42000	2000.
450.	260.	300.	25.	550.	725.	600.	800.	550.	100.	15000	710.	27000	1270.	47000	2200.
450.	260.	300.	25.	550.	750.	600.	800.	550.	100.	18000	850.	33000	1550.	57000	2700.

Reynolds Corliss DIRECT CONNECTED Cross Compound Heavy Duty Engines

List of Sizes, Weights and Prices of *Engines*							List of Weights and Prices of *Extras*															
Diam. H. P.	Diam. L. P.	Stroke	Crank and Cross-head Pins	Main Bearing	Engine Without Wheel		Steel Cross Heads	Valves in Cylinder Head		Steam Jacket		Governors			Foot under Slides	Foundation Plates						
																Cylinders Only		Cylinders and Slides		Entire Engine	
					Wgt.	Price		H.P.	L.P.	H.P.	L.P.	Auxiliary & Safety Stop	Belt Rider	Electric Controller		Wgt.	Price	Wgt.	Price	Wgt.	Price
12"	24"	30"	4"x 4"	10"x19"	50000	$7250.00	$15.	$425.	$500.	$250.	$450.	$325.	$100.	$200.	$200.	4000	$190.	7000	$330.	12200	$580.
12	24	36	4 x 4	10 x19	53000	7400.00	15.	425.	500.	250.	450.	325.	100.	200.	200.	4000	190.	7000	330.	12200	580.
14	28	30	4½x 4½	11 x20	58000	8350.00	15.	425.	500.	250.	500.	325.	100.	200.	200.	4200	200.	7300	340.	12700	600.
14	28	36	4½x 4½	11 x20	63000	8550.00	15.	425.	500.	250.	500.	325.	100.	200.	200.	4500	210.	8000	380.	14000	660.
16	32	36	5 x 5	12 x20	72000	10000.00	15.	450.	525.	300.	600.	335.	100.	200.	220.	4300	200.	8000	380.	13400	630.
16	32	42	5 x 5	12 x20	77000	10360.00	15.	450.	525.	300.	600.	325.	100.	200.	220.	4600	220.	8300	390.	14300	670.
18	36	36	5½x 5½	15 x26	91000	11550.00	15.	450.	550.	350.	600.	325.	100.	200.	220.	4800	230.	8900	420.	14900	700.
18	36	42	5½x 5½	15 x26	95000	11800.00	15.	450.	550.	350.	600.	325.	100.	200.	220.	5300	250.	9500	450.	16100	760.
18	36	48	5½x 5½	16 x28	115000	13200.00	15.	450.	550.	350.	600.	325.	100.	200.	220.	5800	270.	10000	470.	17400	820.
20	40	42	6 x 6	17 x30	116000	13700.00	15.	475.	550.	350.	600.	325.	100.	200.	240.	5500	260.	9700	460.	16800	790.
20	40	48	6 x 6	17 x30	130000	14300.00	15.	475.	550.	350.	600.	325.	100.	200.	240.	5900	280.	11000	520.	19000	900.
22	44	42	6½x 6½	17 x30	143000	15100.00	20.	475.	600.	450.	650.	400.	100.	200.	240.	5800	270.	10900	520.	18300	860.
22	44	48	6½x 6½	17 x30	150000	15850.00	20.	475.	600.	450.	650.	400.	100.	200.	240.	6200	290.	11600	550.	20000	940.
24	48	48	7 x 7	18 x36	160000	18900.00	20.	500.	600.	450.	650.	400.	100.	200.	270.	6500	310.	12700	600.	22000	1050.
26	52	48	7½x 7½	20 x36	190000	21300.00	20.	500.	625.	500.	650.	400.	100.	200.	270.	6800	320.	13200	620.	22600	1070.
26	52	60	7½x 7½	22 x40	225000	25800.00	20.	500.	625.	500.	650.	400.	100.	200.	270.	8100	380.	15000	710.	26400	1250.
28	56	48	8 x 8	22 x40	240000	26400.00	20.	500.	625.	500.	700.	475.	100.	200.	320.	8100	380.	15200	720.	25800	1230.
28	56	60	8 x 8	22 x40	254000	28600.00	20.	500.	625.	500.	700.	475.	100.	200.	320.	9200	440.	17000	800.	30000	1400.
30	60	48	9 x 9	23 x42	276000	30600.00	20.	500.	650.	600.	700.	475.	100.	200.	320.	8100	380.	15500	730.	26100	1250.
30	60	60	9 x 9	23 x42	300000	33400.00	20.	500.	650.	600.	700.	475.	100.	200.	320.	9400	450.	17500	830.	30000	1400.
32	64	60	10 x10	24 x48	370000	38700.00	25.	525.	650.	600.	800.	475.	100.	200.	420.	9900	470.	20000	940.	34800	1650.
34	68	60	10½x10½	26 x48	385000	42500.00	25.	525.	700.	600.	800.	500.	100.	200.	420.	11700	550.	22600	1070.	38600	1820.
36	72	60	11 x11	28 x48	400000	48500.00	25.	550.	700.	600.	800.	500.	100.	200.	550.	13200	620.	24000	1160.	42000	2000.

Reynolds Corliss DIRECT CONNECTED Cross Compound

Heavy Duty Engines

Remarks referring to page Eng. 10

PRICES ..... Include double eccentrics on high and low pressure cylinders. Double ported valves. Crank and eccentric oil guards. Valves in cylinder. Piping between receiver and cylinders arranged for both sides to work together. No steam or exhaust pipe or flanges included.

WHEELS..... See page Eng. 6 for price per lb. on wheels of different types.

STEAM PRESSURE ... Engines are designed for steam pressure not to exceed 150 lbs. If pressure is greater use larger work and corresponding price.

PACKING..... No packing for piston rods or valve stems included in price.

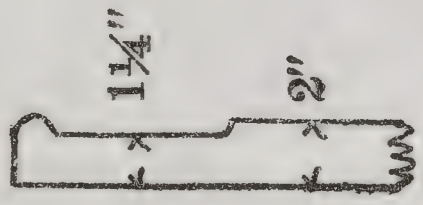
CYLINDERS .. If ratio of cylinders is changed, add or deduct $70.00 per inch list for each inch of diameter.

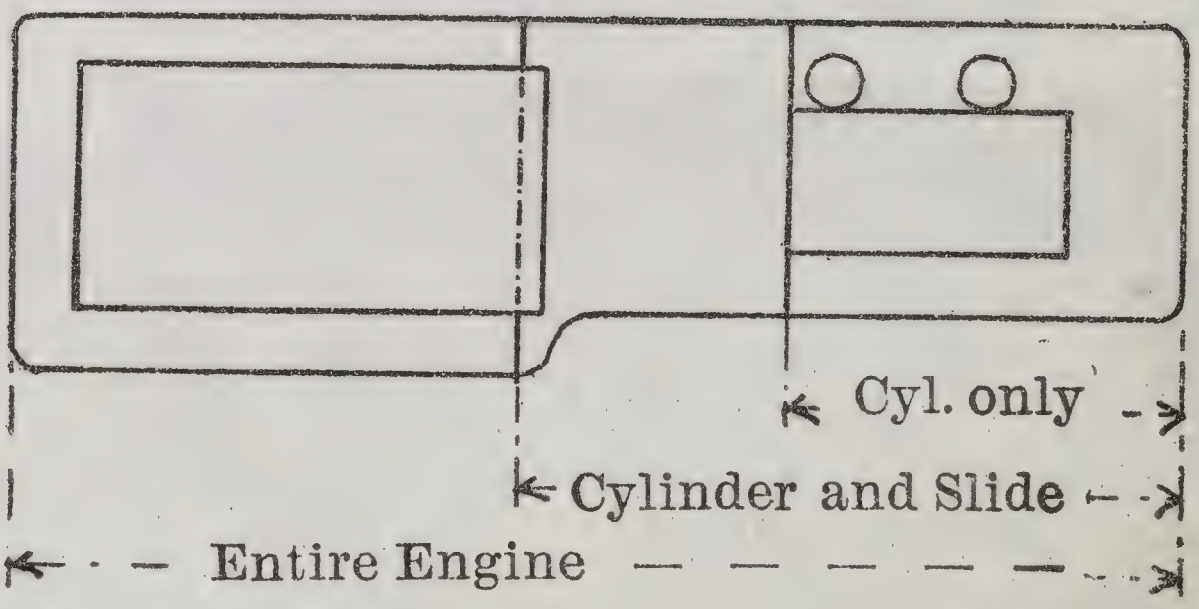
OIL GUARDS. Price of crank oil guard includes extension to cover connecting rod.

SHAFTS ..... For all direct connected engines with journals 24" dia. and larger, the price includes hollow forged shaft. If solid shaft is desired, deduct $1600.00 from list price.

GENERATOR.. Generator foundation bolts, armature keys and pressing armature on shaft not included in price of engine.

FOUNDATION PLATES ..... Price is based on 1¼" thickness in body and 2" at boss, as per sketch below.





Reynolds Corliss BELTED Tandem Compound Heavy Duty Engines

ENGINES						EXTRAS															
Size	Crank and Cross-head Pins	Main Bear-ings		Engine Without Wheel		Steel Crosshead	Valves in Head		Steam Jacket		Oil Guard		Governor		Foundation Plates						
															Cylinder Only		Cylinder and Slide		Entire Engine	
		Diam.	Length	Weight	Price		H. P.	L. P.	H. P.	L. P.	Crank	Eccentric	Auxiliary and Safety Stop	Belt Rider	Wgt.	Price	Wgt.	Price	Wgt.	Price
10"20"x 30"	4" x4"	8"	15"	32000	$4350.00	$10.	$400.	$450.	$250	$450.	$ 75.	$100.	$325.	$100.	4000	$190.	5400	$260.	8000	$380.
10 20 x 36	4 x4	8	15	33000	4450.00	10.	400.	450.	250.	450.	75.	100.	325.	100.	4200	200.	5800	280.	8500	400.
12 24 x 30	4½x4½	9	15	38000	5150.00	10.	425.	500.	250.	450.	75.	100.	325.	100.	4700	220.	6600	310.	9300	440.
12 24 x 36	4½x4½	9	15	40000	5350.00	10.	425.	500.	250.	450.	75.	100.	325.	100.	5000	240.	7000	330.	9900	470.
14 28 x 36	5 x5	10	20	47000	6100.00	10.	425.	500.	250.	500.	100.	120.	325.	100.	5200	250.	6900	330.	10200	480.
14 28 x 42	5 x5	10	20	50000	6300.00	10.	425.	500.	250.	500.	100.	120.	325.	100.	5500	260.	7300	350.	10800	510.
16 32 x 36	6 x6	11	22	57500	7150.00	10.	450.	525.	300.	600.	100.	120.	325.	100.	5300	250.	8200	390.	12600	600.
16 32 x 42	6 x6	11	22	60000	7350.00	10.	450.	525.	300.	600.	100.	120.	325.	100.	5600	270.	8600	410.	13300	630.
18 36 x 36	7 x7	13	22	68000	7900.00	10.	450.	550.	350.	600.	115.	125.	325.	100.	5800	280.	9200	440.	14300	680.
18 36 x 42	7 x7	13	22	70000	8150.00	10.	450.	550.	350.	600.	115.	125.	325.	100.	6300	300.	9700	460.	15000	710.
20 40 x 42	7½x7½	14	24	86000	9900.00	10.	475.	550.	350.	600.	115.	125.	325.	100.	6500	310.	9900	470.	15300	730.
20 40 x 48	7½x7½	14	24	90000	10100.00	10.	475.	550.	350.	600.	115.	125.	325.	100.	6900	330.	10400	500.	16000	760.
22 44 x 42	8 x8	15	24	90000	10300.00	10.	475.	600.	450.	650.	125.	140.	400.	100.	6800	320.	10600	500.	16800	800.
22 44 x 48	8 x8	15	24	95000	10600.00	10.	475.	600.	450.	650.	125.	140.	400.	100.	7200	340.	11200	530.	17500	830.
24 48 x 42	9 x9	17	28	113000	12500.00	10.	500.	600.	450.	650.	125.	140.	400.	100.	7500	360.	12400	590.	19600	930.
24 48 x 48	9 x9	17	28	118000	12900.00	10.	500.	600.	450.	650.	125.	140.	400.	100.	8000	380.	13000	620.	20400	1000.

Reynolds Corliss BELTED Tandem Compound Heavy Duty Engines

Remarks referring to page Eng. 12

PRICES ..... Include double eccentric on low pressure cylinder. Double valve ports on both cylinders. Valves in cylinders. Piping between receiver and cylinders arranged for both sides to work together. No steam or exhaust pipe or flanges included.

WHEELS..... See page Eng. 6 for price per lb. on wheels of different types.

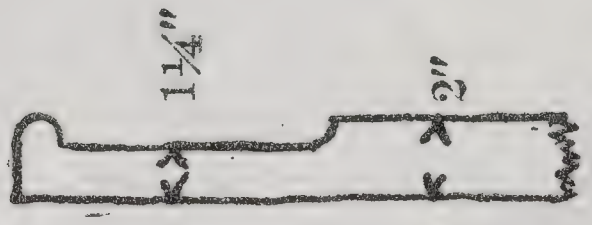
STEAM PRESSURE ... Engines are designed for a pressure not to exceed 150 lbs. If pressure is greater, use larger work and corresponding price.

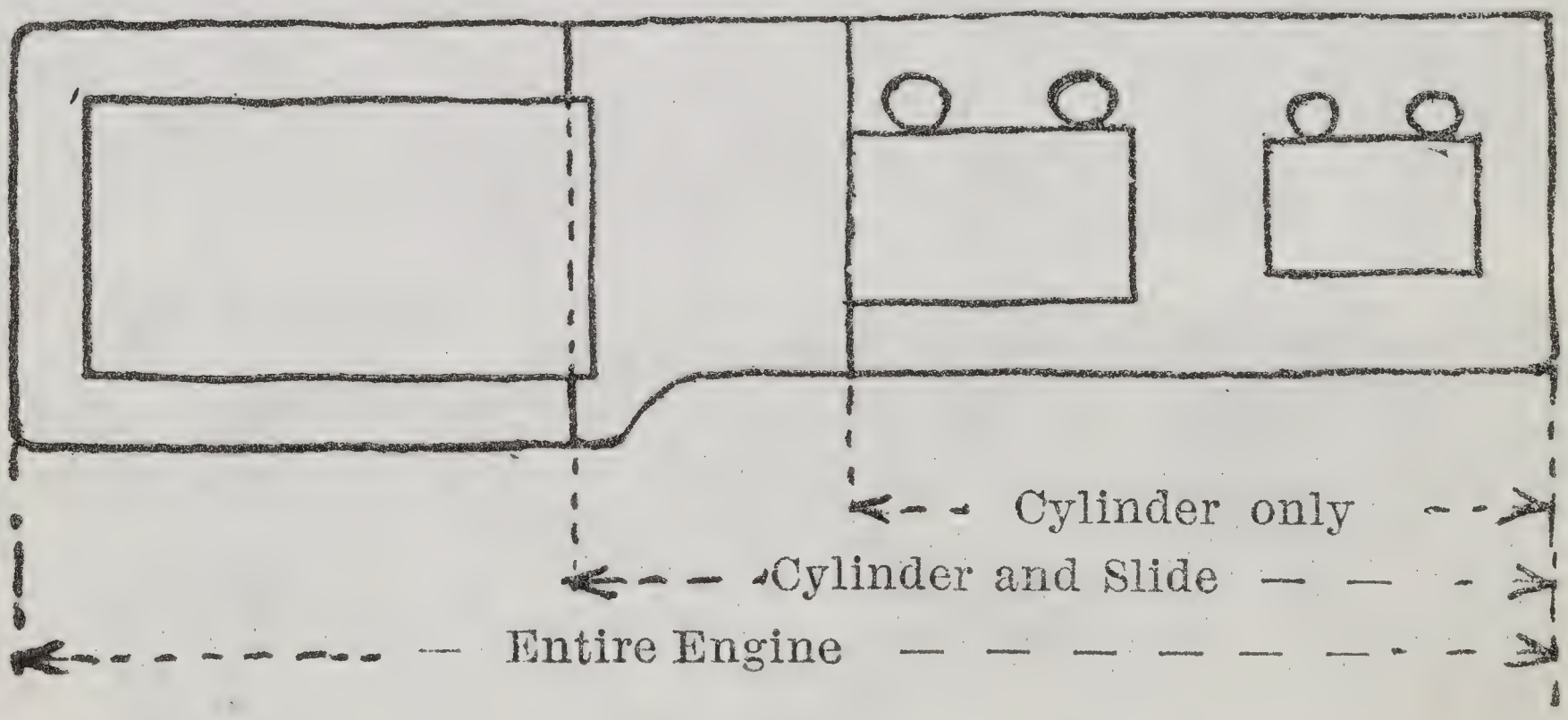
PACKING..... Packing for piston rods and valve stems not included in price.

CYLINDERS .. If ratio of cylinders is changed, add or deduct $70.00 per inch list for each inch in diameter.

OIL GUARDS. Price of crank oil guard includes extension to cover connecting rod.

FOUNDATION PLATES ..... Price is based on 1¼" thickness in body and 2" at boss, as per sketch below.





Reynolds Corliss Tandem Compound DIRECT CONNECTED Heavy Duty Engines

ENGINES						EXTRAS													
Size	Crank and Cross-head Pins	Main Bear-ings		Engine Without Wheel		Steel Crosshead	Valves in Head		Steam Jacket		Governor			Foot under Slide	Foundation Plates					
															Cylinder Only		Cylinder and Slide		Entire Engine	
		Diam.	Length	Weight	Price		H. P.	L. P.	H. P.	L. P.	Auxiliary and Safety Stop	Belt Rider	Electric Controller		Wgt.	Price	Wgt.	Price	Wgt.	Price
10"20"x 30"	4" x4"	9"	15"	48000	$5750.00	$10.	$400.	$450	$250	$450.	$325.	$100.	$200.	$100.	4000	$190.	5400	$260.	8000	$380.
10 20 x 36	4 x4	9	15	50000	6000.00	10.	400.	450.	250.	450.	325.	100.	200.	100.	4200	200.	5800	280.	8500	400.
12 24 x 30	4½x4½	10	19	53000	6750.00	10.	425.	500.	250.	450.	325.	100.	200.	100.	4700	220.	6600	310.	9300	440.
12 24 x 36	4½x4½	10	19	55000	7000.00	10.	425.	500.	250.	450.	325.	100.	200.	100.	5000	240.	7000	330.	9900	470.
14 28 x 36	5 x5	11	20	65000	8000.00	10.	425.	500.	250.	500.	325.	100.	200.	110.	5200	250.	6900	330.	10200	480.
14 28 x 42	5 x5	11	20	68000	8300.00	10.	425.	500.	250.	500.	325.	100.	200.	110.	5500	260.	7300	350.	10800	510.
16 32 x 36	6 x6	12	20	77000	9400.00	10.	450.	525.	300.	600.	325.	100.	200.	120.	5300	250.	8200	390.	12600	600.
16 32 x 42	6 x6	12	20	80000	9750.00	10.	450.	525.	300.	600.	325.	100.	200.	120.	5600	270.	8600	410.	13300	630.
18 36 x 36	7 x7	15	26	94000	10800.00	10.	450.	550.	350.	600.	325.	100.	200.	135.	5800	280.	9200	440.	14300	680.
18 36 x 42	7 x7	15	26	97500	11200.00	10.	450.	550.	350.	600.	325.	100.	200.	135.	6300	300.	9700	460.	15000	710.
20 40 x 42	7½x7½	17	30	117000	12900.00	10.	475.	550.	350.	600.	325.	100.	200.	135.	6500	310.	9900	470.	15300	730.
20 40 x 48	7½x7½	17	30	120000	13500.00	10.	475.	550.	350.	600.	325.	100.	200.	135.	6900	330.	10400	500.	16000	760.
22 44 x 42	8 x8	17	30	135000	14200.00	10.	475.	600.	450.	650.	400.	100.	200.	160.	6800	320.	10600	500.	16800	800.
22 44 x 48	8 x8	17	30	138000	14900.00	10.	475.	600.	450.	650.	400.	100.	200.	160.	7200	340.	11200	530.	17500	830.
24 48 x 42	9 x9	18	36	165000	17250.00	10.	500.	600.	450.	650.	400.	100.	200.	160.	7500	360.	12400	590.	19600	930.
24 48 x 48	9 x9	18	36	170000	17750.00	10.	500.	600.	450.	650.	400.	100.	200.	160.	8000	380.	13000	620.	20400	1000.

Reynolds Corliss Tandem Compound DIRECT CONNECTED Heavy Duty Engines

Remarks referring to page Eng. 14

PRICES ..... Include double eccentrics on high and low pressure cylinders, double valve ports on both cylinders, crank and eccentric oil guards, valves in cylinders, piping between cylinders and receiver arranged for both sides to work together. No steam on exhaust pipes of flanges.

WHEELS..... See page Eng. 6 for price per lb. on wheels of different types.

STEAM PRESSURE ... Engines are designed for a pressure not to exceed 150 lbs. If pressure is greater, use larger work and corresponding price.

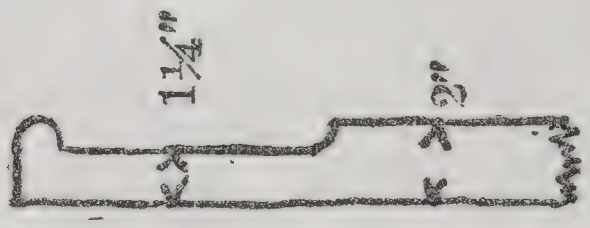
PACKING..... Packing for piston rods and valve stems not included in price.

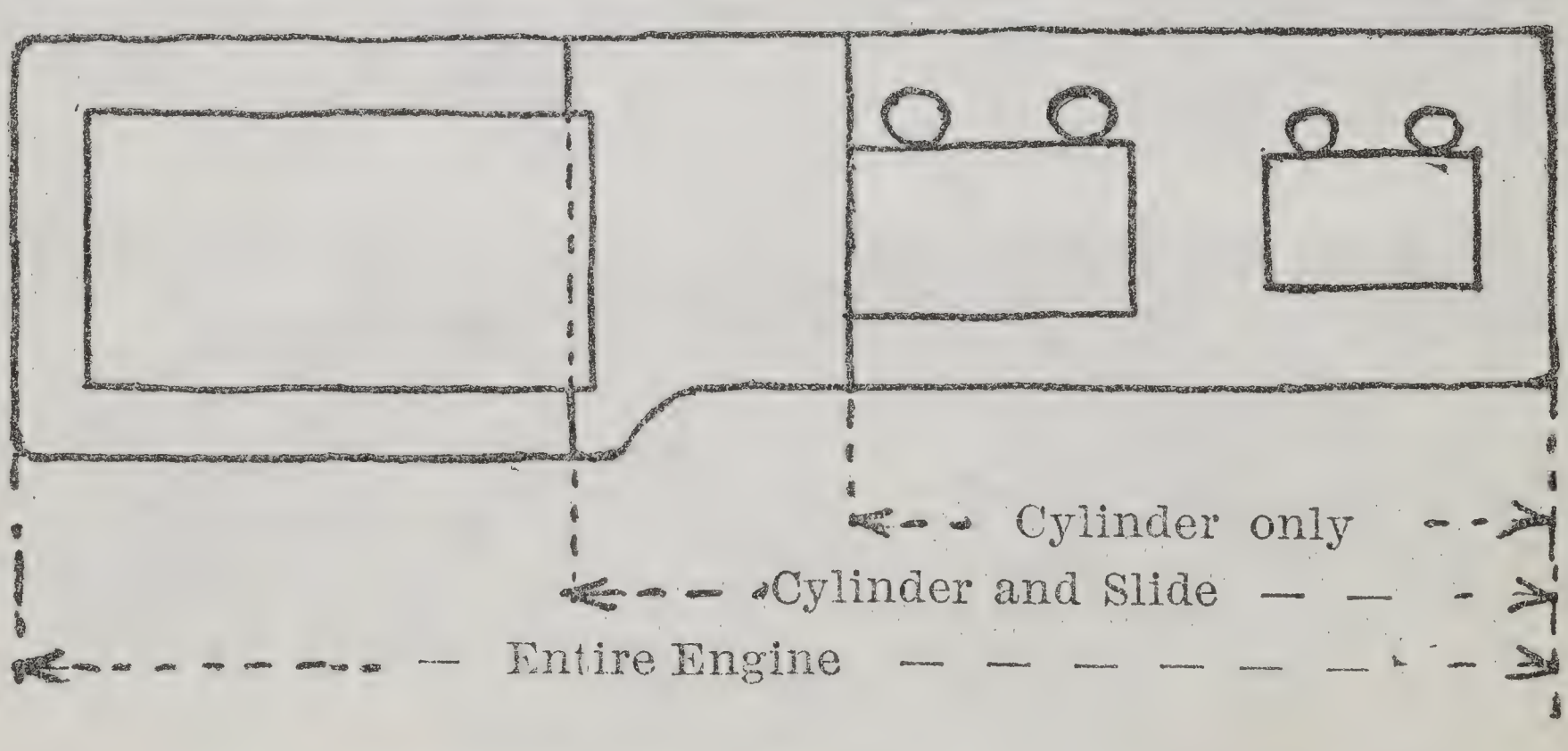
CYLINDERS .. If ratio of cylinders is changed, add or deduct $70.00 per inch list for each inch in diameter.

OIL GUARDS. Crank oil guard has extension to cover connecting rod.

GENERATOR.. Foundation bolts for generator, armature keys and pressing armature on shaft not inclnded in price.

FOUNDATION PLATES ..... Price is based on 1¼" thickness in body and 2" at boss, as per sketch below.





VERT
C. C.
B

Reynolds Corliss BELTED Cross Compound Vertical Engines

PRICES ..... Include double eccentric on low pressure cylinder. Double valve ports on both cylinders. Valves in cylinders. Piping between receiver and cylinders arranged for both sides to work together. No steam or exhaust pipe or flanges included.

WHEELS..... See page Eng. 6 for price per lb. on different types of wheels.

STEAM PRESSURE. Engines are designed for pressure not to exceed 150 lbs. If pressure is greater, use larger work and corresponding price.

PACKING..... Packing for piston rods or valve stems not included in price.

CYLINDERS .. If ratio of cylinders is changed, add or deduct $70.00 per inch list for each inch in diameter.

ENGINES						EXTRAS								
Size	Crank and Cross-head Pins	Main Bearings		Engine Without Wheel		Double Eccentric H. P. Cylinder	Steel Crosshead	Valves in Head		Steam Jackets		Oil Guards		Governor	
		Diam.	Length	Weight	Price			H. P.	L. P	H. P.	L. P.	Crank	Eccen.	Auxiliary & Safety Stop	Belt Rider
14"28" x 36"	4" x4"	8"	15"	80000	$11300.00	$250.	$15.	$425.	$500.	$250.	$500.	$150.	$200.	$325.	$100.
16 32 x 36	4½x4½	9	15	86000	12600.00	250.	15.	450.	525.	300.	600.	150.	200.	325.	100.
16 32 x 42	4½x4½	9	15	92000	13650.00	250.	15.	450.	525.	300.	600.	150.	200.	325.	100.
18 36 x 36	5 x5	10	20	108000	13800.00	250.	15.	450.	550.	350.	600.	150.	200.	325.	100.
18 36 x 42	5 x5	10	20	113000	14900.00	250.	15.	450.	550.	350.	600.	150.	200.	325.	100.
20 40 x 36	5½x5½	11	20	116000	14500.00	250.	15.	475.	550.	350.	600.	200.	240.	325.	100.
20 40 x 42	5½x5½	11	20	120000	15600.00	250.	15.	475.	550.	350.	600.	200.	240.	325.	100.
22 44 x 36	6 x6	12	22	135000	15850.00	250.	20.	475.	600.	450.	650.	200.	240.	400.	100.
22 44 x 42	6 x6	12	22	140000	17400.00	250.	20.	475.	600.	450.	650.	200.	240.	400.	100.
24 48 x 42	6½x6½	13	22	160000	19000.00	325.	20.	500.	600.	450.	650.	200.	240.	400.	100.
24 48 x 48	6½x6½	13	22	165000	20200.00	325.	20.	500.	600.	450.	650.	200.	240.	400.	100.
26 52 x 42	7 x7	14	24	180000	20400.00	325.	20.	500.	625.	500.	650.	225.	250.	400.	100.
28 52 x 48	7 x7	14	24	190000	22200.00	325.	20.	500.	625.	500.	650.	225.	250.	400.	100.
28 56 x 42	7½x7½	16	28	195000	22000.00	350.	20.	500.	625.	500.	700.	225.	250.	475.	100.
28 56 x 48	7½x7½	16	28	200000	24000.00	350.	20.	500.	625.	500.	700.	225.	250.	475.	100.
30 60 x 48	8 x8	17	28	220000	26400.00	350.	20.	500.	650.	600.	700.	225.	250.	475.	100.
30 60 x 60	8 x8	17	28	230000	28200.00	350.	20.	500.	650.	600.	700.	225.	250.	475.	100.

Reynolds Corliss Cross Compound DIRECT CONNECTED Vertical Engines

STANDARD ENGINES

PRICES..... Include double eccentrics on high and low pressure cylinders, double ported valves, crank and eccentric oil guards, valves in cylinders, piping between receiver and cylinders arranged for both sides to work together, no steam or exhaust pipes or flanges.

WHEELS..... See page Eng. 6 for price per lb. on different types of wheels.

STEAM PRESSURE Engines are designed for pressure not to exceed 150 lbs. If pressure is greater, use larger work and corresponding price.

PACKING..... Packing for piston rods or valve stems not included in price.

CYLINDERS.. If ratio of cylinders is changed, add or deduct $70.00 per inch list for each inch of diameter.

SHAFT ..... All direct connected Engines with journals 24" dia. and larger, price includes hollow forged shaft. If solid shaft is desired, deduct $1600.00 from list price.

GENERATOR.. Foundation bolts for generator, armature keys and pressing armature on shaft not included in price.

ENGINES				EXTRAS							
Size	Crank and Cross-head Pins	Main Bearing Dia.	Main Bearing Lgth.	Steel Crosshead	Valves in Head H.P.	Valves in Head L.P.	Steam Jacket H.P.	Steam Jacket L.P.	Governors Aux'y & Safety Stop	Governors Belt Rider	Governors Electric Control
14"28" x 36"	4½" x 4½"	11"	20"	$15.	$425.	$500.	$250.	$500.	$325.	$100.	$200.
16 32 x 36	5 x 5	12	20	15.	450.	525.	300.	600.	325.	100.	200.
16 32 x 42	5 x 5	12	20	15.	450.	525.	300.	600.	325.	100.	200.
18 36 x 36	5½ x 5½	15	26	15.	450.	550.	350.	600.	325.	100.	200.
18 36 x 42	5½ x 5½	15	26	15.	450.	550.	350.	600.	325.	100.	200.
20 40 x 36	6 x 6	17	30	15.	475.	550.	350.	600.	325.	100.	200.
20 40 x 42	6 x 6	17	30	15.	475.	550.	350.	600.	325.	100.	200.
22 44 x 36	6½ x 6½	17	30	15.	475.	600.	450.	650.	400.	100.	200.
22 44 x 42	6½ x 6½	17	30	15.	475.	600.	450.	650.	400.	100.	200.
24 48 x 42	7 x 7	18	36	15.	500.	600.	450.	650.	400.	100.	200.
24 48 x 48	7 x 7	18	36	20.	500.	600.	450.	650.	400.	100.	200.
26 52 x 42	7½ x 7½	20	36	20.	500.	625.	500.	650.	400.	100.	200.
26 52 x 48	7½ x 7½	20	36	20.	500.	625.	500.	650.	400.	100.	200.
28 56 x 42	8 x 8	22	40	20.	500.	625.	500.	700.	475.	100.	200.
28 56 x 48	8 x 8	22	40	20.	500.	625.	500.	700.	475.	100.	200.
30 60 x 48	8½ x 8½	23	42	20.	500.	650.	600.	700.	475.	100.	200.
30 60 x 60	8½ x 8½	23	42	20.	500.	650.	600.	700.	475.	100.	200.
32 64 x 48	10 x10	24	48	25.	525.	650.	600.	800.	475.	100.	200.
32 64 x 60	10 x10	24	48	25.	525.	650.	600.	800.	475.	100.	200.
34 68 x 48	10½ x10½	26	48	25.	550.	700.	600.	800.	500.	100.	200.
34 68 x 60	10½ x10½	26	48	25.	550.	700.	600.	800.	500.	100.	200.
36 72 x 48	11 x11	28	48	25.	550.	700.	600.	800.	500.	100.	200.
36 72 x 60	11 x11	28	48	25.	550.	700.	600.	800.	500.	100.	200.
40 80 x 48	11 x11	28	56	25.	550.	700.	600.	900.	600.	100.	200.
40 80 x 60	11 x11	28	56	25.	550.	700.	600.	900.	600.	100.	200.

Size	Engine Without Wheel Wgt.	Engine Without Wheel Price
14"28" x 36"	105000	$14100.00
16 32 x 36	115000	15400.00
16 32 x 42	122000	16500.00
18 36 x 36	143000	18400.00
18 36 x 42	150000	19500.00
20 40 x 36	155000	19900.00
20 40 x 42	160000	20100.00
22 44 x 36	180000	20400.00
22 44 x 42	187000	22001.00
24 48 x 42	210000	23903.00
24 48 x 48	220000	25300.00
26 52 x 42	240000	25400.00
26 52 x 48	250000	27300.00
28 56 x 42	260000	27000.00
28 56 x 48	270000	29000.00
30 60 x 48	280000	31400.00
30 60 x 60	290000	33300.00
32 64 x 48	410000	47700.00
32 64 x 60	420000	50000.00
34 68 x 48	425000	49500.00
34 68 x 60	440000	51800.00
36 72 x 48	440000	52000.00
36 72 x 60	455000	55000.00
40 80 x 48	450000	53500.00
40 80 x 60	460000	56000.00

COMP.
MISC.

CONDENSERS

Sept 19

Steam Engines dated.

Fitchburg. Steam Engine Co. 5/2/10
12 x 24 x 24 @ 167 R.P.M. tandem.
175# Steam 26" vac
best economy. 175 to 220 H.P
" " now condensing 200 H.P
3/4 of ld carried by High pressure cyl
1/4 " " " " Low " "

5/5/10

Limit of works for this Engine
about 350 to 400 H.P.

F. Fosdick.

Notes from Field Engineering 3-2-1893.

(Cost Delivered & Set up.)

Belted. Vert. Comp, non-Cond. Sizes 200 to 750 HP. Cost per HP appx $21.50
" " " with Condensers " " " " " " " " 24.50
Hor. Corn. " " Non-Cond for 2 Generators same size " " " " 23.00
" " " " with Condensers " " " " " " " " 26.00
Economy Non-Cond. 22" Steam per HP hr.
" Cond. 16.5 " " " " " "

McIntosh & Seymour.
11/98. 15 x 30 x 30 — 150 #psi. 750 HP. $11700.00 " " " " 15.60
Bids for Syracuse, NY. Vert. Cross Comp. Cond. 150 #psi 1000 HP.
3/98. Wm Sodd. Co 24 x 44 x 33 $22,25.00 } 13.25
" " " Condenser 2075.00 } = 15300.00 15.30
McIntosh & Sey. 23 x 46 x 30 11650.00 11.65
at. 18 c.o. 966 HP at. 6 c.o. 1515 HP wgt 175000#
8" Steam & 20" exhaust.
Cost (.066 per lb.)
Foundation Cost $2725.00 or 2.72 per HP

Engines - Vertical.

Misc prices and Comparisons.

Estimates

Tight @ .56 per 100.

Erect @ $10 M. Two dozen for Carpenters

Nails @ 8 ℔

Engines -

Tandem Corliss - F.O.B. New York 1896

	RPM.	HP.	Wheel		
12 x 24 x 36	85	150	18x23	3320.	22.13
16 x 32 x 42	82	300	18x33	4860.	16.20
20 x 40 x 48	80	500	20x50	6910.	13.82
26 x 52 x 48	76	800	22x50	9775.	12.22

1898	22 x 42 x 48		500	22x42	8000.	16.00

Rated as 80 to 125 lbs steam 1/5 to 1/4 cut off

	16" x 36"	107-214	12' x 21"	1600
	18 x 42	150-300	14 x 25	2100
	24 x 42	250-500	16 x 33	5035

[illegible] 12 x 36 x 42 90 [illegible] [illegible]

[illegible] 22 x 40 x 48 80 Corliss 12000.

[illegible] 22 x 40 x 48 50 " 7500.

[illegible] 22 x 42 x 48 85 10070

[illegible] 22 x 42 x 48 7650

[illegible] 18 x 36 x 42 75 5940

[illegible] Steam & Steel Wheel for 5 B.C. Boilers for Mills Lee Tak.

28 x 52 Corliss $5500.00

18 x 42 " 3650.00

1903

ENGINES, VERTICAL. H.P.

NAME OF MAKER	SIZE	WEIGHTS	DELIVERY MONTHS	ECONOMY	TOTAL PRICE	PRICE PER H.P	PRICE PER LB
Brown	32 x 64 x 54	550000	5		38000.00		6.91
Hamilton	32 x 64 x 54		6-8		41750.00		
Allis-Chalmers	34 x 68 x 48	600000	6½	13	42500.00		7.09
McIntosh	32 x 64 x 54	600000	Dec.		44760.00		7.46
Filer-Stowell	32 x 64 x 54	675000	9½	13.7	52775.00		7.81
Specifications	32 x 64 x 54						

	WHEEL		JOURNALS		SHAFT	WRIST PIN		CRANK PIN		PISTON ROD		X-HEAD	PIPES	
	DIA.	WGT.	DIA.	LGH.	DIA.	DIA.	LGH.	DIA.	LGH.	H.P. DIA.	L.P. DIA.	AREA	STM.	EX.
Brown	18'	125000	26	48	29	10	11½	11½	11½					
Hamilton	16'	"	"	"	"	10	11½	11½	11½				10	20
Allis-Chalmers	18'	"	"	"	"	11	11	12½	11	6	8	540	12	24
McIntosh	18'	"	"	"	"	10½	10½	12½	10½	6		525	14	26
Filer-Stowell	18'	140000	"	"	"	9	13	11	12	7	8	620	12	24
Specifications	18'	125000	26	48	29	10	11½	11½	11½					

ENGINES, CORLISS. H.P. 2500

1903

NAME MAKER	SIZE	WEIGHT	DELIVERY MONTHS	ECONOMY	TOTAL PRICE	PRICE PER H.P.	PRICE PER LB.
COOPER	32 x 64 x 54	510000	6	13½	32000.00	12.80	6.28
HAMILTON	" " "		4-5		33000.00		
BASS	" " "		5-6		33500.00		
BROWN	" " "	530000	5		36000.00		6.79
McINTOSH	" " "	530000	DEC.		40375.00	16.40	7.62
WESTINGHOUSE	" " "	525000	8	13¼	40965.00		7.81
ALLIS-CHALMERS	32 x 68 x 48	535000	6½	14	41100.00		7.69
RICE-SARGENT	32 x 62 x 54	530000			42500.00	17.00	8.02
FILER-STOWELL	32 x 64 x 54	575000	6½	13.7	45275.00	18.11	7.87
SPECIFICATIONS	32 x 64 x 54						

	WHEEL		JOURNALS		SHAFT	WRIST PIN		CRANK PIN		PISTON ROD		CROSS HEAD AREA	PIPES	
	DIA.	WGT.	DIA.	LGH.	DIA.	DIA.	LGH.	DIA.	LGH.	H.P. DIA.	L.P. DIA.		STM.	EX.
COOPER	18	125000	26	48	29	11	11	12	11					
HAMILTON	16	"	"	"	"	10	11½	11½	11½				10	20
BASS														
BROWN	18	125000	26	48	29	10	11½	11½	11½					
Mc INTOSH	"	"	"	"	"	10	10½	12½	10¼	7	8	540	14	26
WESTINGHOUSE	"	"	24	46	27	9¼	10¾	11¾	11¾	7	7		12	24
ALLIS-CHALMERS	"	"	26	48	29	11	11	12	11	6	8	540	11	24
RICE-SARGENT	"	"	24	42	28	9	11	12	12			445	11	24
FILER-STOWELL	"	140000	26	48	29	9	13	11	12	7	8	620	11	24
SPECIFICATIONS	18	125000	26	48	29	10	11½	11½	11½					

Will Cut

S. M. Patterson Prov Pascoag Reg leo

26"x52"x48" - 94 r.p.m.	21300		21300
Wheel 120000 @ 5½	6600		6600
Sole plates	330		27900.
And gov + stop	400		
Valves in head	625	29245	
30 40 %		10820	
		18425	
And pipe + relief valves	100		
Richardson oil pumps	50	150	
42 x 16 Reynolds			
Jet Condenser	5100		
20%	1020	4080	
Engine 190000 lbs			
Jet wheel 120000 "			
Cond 55000 "			
Sole Plates 9000 "			
374000 @ 35	1308		
Erecting 187 tons @ 10.00	1870		
Extra shaft @ 3.00	561		
Main 60 days @ 8.00	480	4719	26874
Windage			1500
"			680
			29054

on $58106. for 2 units
Made final price $61108.00

guarantee 13½ lbs Steam
1500 HP on 31 lbs M.E.P terms of bus.

Rochester Syracuse and Eastern.

Vertical cross comps D.C. Engine from 1500 Kws Allis
sold to Columbus, Buckeye & Newark. Tiffin to Vail 11/5/04

34 & 68 x 48 - 94 rpm	38900.
Freight 550,000 lbs	885. +
Erecting including mains	1715. +
	41500.

bid authorized from Dyer 33000.00 FOB Mill

Height to top of governor 31' to top of cyl 29'
Length parallel to shafts 34'
Width 23'
Regulation 2½% from min to max load
Guaranteed with 150 lbs steam & 26" vac
13 lbs steam per I.H.P. when working 2300 H.P.

main journal	26" d x 48" l
Shaft at center	29" "
cross head pin	11" " x 11" "
crank pin	12" " 11" "
H.P. piston rod	6" "
L.P. " "	8" "
area cross head slide	540 sq"
Throttle	12" "
Low press Ex opening	26" "
wgt wheel 125000	lbs
dia "	20'
wgt engine 425 000	

Quoted
To R.A. Dyer Jr. 2 engines del erected
$84000.

S.14

Plymouth Elec. Lgt Co - 125# Steam - 26" Fly -

1 - 14"x30"x30" Release C.C.S.V. Eng.
wheel 12'0" x 2000# - 91 R.P.M.
Ewells pulley -

1 - 3 Strand - 2300' 6 or 3 Gauge. R.P.M.
Self Insulating Belts -
Milletts Patent. Min. 90 ft. 1/3000 # 1/1583.50 # 1583.50

1 - 17 Kw Bettis exciter 300 # 430.00
1 - Elec Tester pamphlet 1100 267.00
Freight - 12000 # 440.00
Plans - 250.00
Grand Total 12970.50
Allis - 1257.50

1 - 18"x36"x30" Plain C.C. Eng
wheel 20000# 11x20 bearings - 150 # R.P.M.
5"x5" plates - 8760.00
1 - 3 Strand Cotton belting 2300' 6 or 3 4300 # 1300.00
Belt Lacing - 8-13"
Cost 12700#
Freight allowance to Bettis Rail regular.

Delivery Charges 3-25-26

Allowance for Unit 600 gal Unit

Supervision 12 x 12 Engine 277.00

Engineering.

Fuel 240 Gallons 16 cts 38.40

GS 22-30 Cu Ft Unit 300.00

Set in Erecting Co. 60.00

Boiler Feeders 10 Unit 11 Horse 1040 200.00

Set in Erecting 7.00

207.00

Main Engine 12 x 12 1500.00

Governor Gear 250.00

Fly Wheel Engine 300.00

Water Gear 162 Lbs @ 5 cts = 300.00

Pulley Engine 10 Unit 207.00

Main 2 1/2 Unit 805.00

Shafting 10 Journals 2512.00

Shafting 7 Coupling 1350.00 3862.00

Add Engineering 433273.00

1000.00

34273.00

Fig. letter 88

Gloucester Elec Rly Co. 12.15.08.
Engines only for 4 sets G.E. Motors.

Speed.	120	100
Cylinders.	18 × 38 × 36	18 × 38 × 42
Wheel dia	15'	15'
" wgt	45000	50000
Main gear	14 × 24	15 × 26
Pins.	5½ × 5½	5½ × 5½
Eccentrics.	Single	Double
Valve Gear.	Long travel	Long travel.
Steam Pressure	125	125
Vacuum	26	26
Economy.		
Steam per hr. 1/2 mile	12.9	14.8
" " 3/4 "	14.21	14.3
" " 1 "	14.8	14.9
" " 1¼ "	16.4	16.9
Max. Spd 125	1143	1210
" " 115	1046	1015
Min. Spd 15	532	534
" " 11.5	533	517
Starting wgt	65000	65000
Regulation	1320	1438
Min.	980	1030
% Heating.	3.6%	3.5%

Truck Estimates. Jany 1909.

	500 Lbs		1000 Lbs	
Type	Horiz	Vert	Horiz	Vert
Size	18×38×36	18×38×36	26×54×48	26×52×48
Speed	125	125	95	95
Journals	11×20	15×26	18×36	20×36
Power	5½×5½	6½×6½	7½×7½	8½×8½
Wheel D.	15'	15'	20	20
" Weight	20000	26000	50000	65000
Gear.	Enclosed	Enclosed	Enclosed	Enclosed
Current, Volts	$12.72.15 direct 240	$12.72.15 direct 240	$20.120.14 direct 240	$20.120.14 direct 240
Total weight	19000	27000	43000.	57000.
Reg.	17618.	24814.	39600.	43408.
Mine.	17372.	19490.	29613.	36392.
Coil C.	30'-0"	19'-9"	32'-0"	31'-6"
Width	22'-0	15'-0	28-6	20-0
Height.	10'-0	19-0	13-0	24-0
	22-16 Type B Wheels 14×16×20 Vertical pump 5500# Mine	$1230 $1025	50-24 Type B Wheels 8" Duplex pump 6×6 with Engine 11000# Mine	$2345.00 1600.

~~S 12~~ Mk 12th.
Newton Rud Boilers. 12'0"0 D. 12'0"0 B.

22x 36 x 42 Engines - 125 R.P.M.
Wheels 14' - 35600 lbs.
Journal 15"x 26 Pins. 6½ x 6½
Double eccentric & long range gear.
Weight Engines 171000 lbs.
600 K.W. 600 volt Generators
Type - F - 15246.

Weight Generator 93000 lbs
Total Weight. 264000 "

Regular 21596
Flow 1920

" 9/8 Setting Rear Tandem Rods.

Screws will creep 1/2 6" per Rev.

Saw'd Plants. 2-9-09.
Engines & Steel Plate.

25"x48" Horz. Cond. 90 rpm. Hoefer Gov.
Gearing 17"x30" - Pins 3"x7"
Wheels 16' dia 72000#.
600 Ihp 24# dry steam per Ihp hr.
Steam pressure 125#.
Cleareance 3.25% - Clutches 5% - Full la
Steam pipe 7" Exhaust 9"
Tables & Hoisting heads.

22"x42" Horz Cond. 100 rpm. Hoefer Gov.
Gearing 16"x36" - Pins 6"x6"
Wheels 16' dia 40000 lbs.
450 Ihp. 24# dry steam.
Clearance 3.6% Single 11 1/2% Full load
Steam pipe 8" Exhaust 9"
Tables & Hoisting heads.
Weight 76000#

18"x42" Horz Cond. 100 rpm Hoefer Gov.
Gearing 12"x22" Pins 5"x5"
Wheels 16' 28000#.
310 Ihp 25.3# dry steam.
Clearance 3.75 Single 6% Full load.
Steam pipe 6" dia Exhaust 7"
Weight 54000#

Geo. F. West Press York Lgt Heat & Pr Co
State Mutual Bldg Portland Me.
1908 Plant for Biddeford.

20×40×42		13700.	
60000 lb wheel @ 5¢		3000.	
Valves in low. p. head		550	
Sole plates for cyls		260	
		17510	
30+10 % say 1/3		5836	11784
Mgt —			
Engine	116000		
wheel	60000	181500	
plate	5500		580
Cyl valves & ma pipe			80
Erecting 83 hrs @ 10.00			830
Plan 30 days @ 8.00		240	1730. 13514.
Alternator Sockets & Plates —			
		7000	
Erecting		500	
Switch		600	
Fgt 51600 lbs		150	8250.
			21764

Steam turbine 70000.
Superheater
Extra Condenser
Steam driven Exciter
Guarantee turbine 2 lbs bom Kwh
" Engine 19½ " " "

5/15

Ex 15-40)

Detroit Edison Co. 1945

20×42×42 A.D. G.E.D.C.	13500	1370.
17' wheel 60000 in service	6500	2925.
Steel cross header		40.
Double Eccentric	1000	400.
		1439.
Steel side rods (main) forging	12000	720.
Cylinder re boring and liners	400	300.
Side rod 18×32 finished	4000	500.
Equipment dynamic aux		30.
Pedestal pedestal brace		25.
Rebuilt with 4" Metallic packing		123.
	22,000	1622.
Weight 376.00 excess 1100.		1476
		17798.
All other Misc. Items		
600 lbs A.C. Alternator 500	5000	700
Total weight		25
387.00 excess 900.		375
		7853
		$ 25401.00
22½ Lbs Metric Excess	4000	870
387 Total		27
		897
Boiler Steel Jacket	4000	1600
387		85
Excess @ 300 per ton		690
Main		500
Total.		1775

Electric Supply & Wiring Co

4-3-08.

600 lbs Steam Turning — 16000 lbs

Coal @ 17/- = £5.
Erecting Charge 30/- 6 0 0
Plan 5 0 0
Bolts — 1 5 0

Add further Sets £ 17 2 0.
" Belting Etc 13 0 0
" Nuts " 2 0 7
" Boiler Turning. 6 9 6
3263

£ 25261.
1500.
£ 26761.

Engineers —

Note Scrap for Sale —
Foundations —
Building —

12. 1908

Beams arrived at Ry. Station.

[illegible] weight 175#

24"

[illegible] motor 600 V

[illegible] 5

Main engine 1800 HP 28×60×60

Generator 1500 Kw Alternat. 90 ~ per

wheels 20' dia 150000#

Pinion 8×8 Bearing 22"×40

Shaft on wheels 25" dia

9" shaft 32" Between Centers.

Thrust shaft 8×8 30×40

Foundation " 12000 cu ft of

Engine F.O.B. cars 20000.

Generator 16500

Motor Engine Exciter set 2000

Economy 20# per Kwhr

" per H.P. hr 1/2 load 19#

1/2 " 14.4

3/4 " 13.25

1 " 13.

1 1/4 " 13.4

1 1/2 " 15.3

13.45

11.00

1.35

Wgt generator shaft 162000#

Springfield Stn Co. - Apr 4, 07 -

90 Tonnes

40x80x48 Vertical Cross Comp.		57150.00	660000#				
Valves @ 3½ ft	(150 ft head)	5600.00	160000#				
Double Extra Tube		490.00					
Cylinder 0 ft		600.00		54264.			
2 Richardson Oil pumps				150.			
2 Crosby Indicators				150			
Pressure oil gages				50.			
Emergency Pump driven from main Cooling (3) →				50.			
Compressing Return Cylinder.			20000	1600.			
Steam Separator & Trap				350.			
Indicator piping &c				30.			
Pipg on 6000 cub ft @ 36¢				2200			
Erecting Engineer -				1000			
				62508.			
2½% reduction on 54264.00		61152.00					
General Electric D.C. R. 3177		33047.00					
2 Exciters 600 R.P.M.		94199.00					

= 62750.00

670,000	4½% off =	54500	1520	26	#87	100 R.P.M. to driving Connects to 800 KW Generator -
	2000 KW	3200.00	16.00	14		
		8 6500	44.00	41.		
	2500 -		22.	20		
			13	11		
			31.	31.		

Wire Work for Substation -

44,500 V 48 Cross Arms #50 -			
Wire 60 000#			
Long span take up			
Four Insulators Pins			
Indicating Relay	310000#	1953.00	
Reducing motor			
Cylinder relay motor			
Metallic packing -			
165 ft of Line Wire Jumpers in main		330.	
Miscellaneous Apparatus -		300.	
2 Set Cranks Frames			
1 " Main Bearing Shells	7500#	805	
1 Cross Head Shoe			
Piping Oil cups to Pump Line		75	
Pipg 3½ - cut & @ 60¢		2032	
Erecting 15 T/ma @ 8.00		1240	
" Engineer		370	
		24686.	

6.3

Eurimulti Enclosed

Kerwin. Aug 12. 09.

Eurimulti Enclosed 250 v 3 ø 12500 ~

H.P.	£	£	
750	985000	98280.	
1000	1100000	110340.	45.
1600	1760000	176400.	
2000	2040000	204750	41
3000	3240000	324000.	40

Eurimulti Open Type [illegible]

1000	[illegible]	[illegible]
1600	[illegible]	[illegible]
2000	[illegible]	[illegible]

Steam Engines

30 & 60 x 60 Twins. Fore. Vert. 75 RPM.
Wheel 28' dia x 14,000 #
Main journal 32" x 60"
Pressure. 300 lbs & 22-200-14
600 to 650 volts 4620 amps
Fuel Oil Natural 35° Bau: 1½ Gal per HP Hour

Economy.	Rated	Full	¾	½
	90	95.5	94.9	93.

Total weight generators 470 000 #
" " Parts 142 000 "
Radius of gyration 86"
Total weight Engine 1,240,000 #
Price $ 130,000.
Steam Cylinders Aug. 27, 07.
Each Generator 1875 KW 3000 KW
Overload Capacity 150% hour 300% 60.

42 & 86 x 60 Single. Fore. Vert. 75 R.P.M.
Wheel 28' dia 270 000 #
Main journal 32 x 66 Pressure 200 x 12 x 14 x hand
Same Overall.
Total weight 1,260 000 #
Price 130,000 $
Each Generator 850 KW 3000 KW
Overload Capacity 75% 1 hour " "

42 & 86 x 60 Tandem Compound 75 R.P.M.
other details same as above Pressure 180 x 13 / 13
Total weight 1,240 000 #
Price $ 119 000

2 Corliss Engines 1500 KW 3000 KW 25 ~
Steam used Generator Full ¾ ½
105000 # 150. 14 600 Load 93.5 %
12 000 " 87%
Galley 7.09.

Engine & Generator Units.

Capacity		500	500	800
Speed.		900	1200	
Size Cyl.		22"x18"x18"	22"x18"x18"	30"x30"x18"
Wheel.		20'x6000#	14'x5000#	20'x6500
Generator		D 32-W-12	D 20-W-12	I-W-10E-15
K x V x Volts		25-3-6600	25-3-6600	
Amps per ϕ		70	70	
Heating. % load		100 125	100 125	
		5%		
Heating. Time		35 45	40 55	
Excitation.	D.C.	100 85	100 85	
	Amps.	60-100	170-220	
	Volts	5%		
Regulation.	D.C.	100 85	100 85	
	%	7-17	8-19	
Efficiency.	¼ load	75	93%	
	½ "	84	93.5	
	¾ "	92.5	90.	
Steam x Exhaust				8" x 20"
Steam and Exhaust		10" Distributing		
		15" "		
		36" Area		
Cost Engine & Gen.				25,000
" Foundation	"	32000	24000	40000
" Erection	"	7600	6500	10000
" Duct	"	33,000	28500	40000
Regulator.		27407.	23790.	35000
Setting.		22205.	21310.	28725
		Boilers 12-17-08	Boilers 12-17-08	Steam Co 4-16-09

Electric Furnace 17-B

1440 Watts	Volts Line to Line	Volts Line to Neutral	1440 Volts
1200 Watts	214.9	124.1	124.1
800 "	210.2	121.5	121.5
600	211.1	121.8	121.8
400	214.1	123.6	123.6
200	216.6	125.1	125.1

Motor Load 15000 Rpm 1470
Max 9.25

Generator SD
X Amps = 4.5
Max Power Load 180
Thermal Efficiency 74%

Gen 15000 Eng 20200 35900
13600 15700 30900

S 18. a

Engineering Units.

General	1000 Kw
Speed	90
Size Cyl.	26 x 32 x 42
Size Cyl.	24" x 120000
Guided	
General	01.80-110-10
No & volts	60-2-2200
amps per ø	228
Testing Voltage	100 150
Of	90 100
(1) assy hi pot	94 2
Exciter - Of	100 80
amps	220 500
Cos	
Regulators Of	100 50
"	7 300
Switchgear - Volts	9113
Amps	9113
"	9130
"	9130
1 "	9130
1½ "	9130
1½ "	9130

Switchgear Est
Wiring Instl
" Elec Instl
Unit " "

8500
9350
2000

Erection 2287.

Test Electrician 5240.
Erect & Test 3420

Engine Reg Mtrl 23805 2000
General " Mtrl 1095 8928
Total Reg Mtrl 34755 28928
Ref Pulp 12-16.05

* MSPO
139800

4 Turbine Units — El Paso — $18-19

600 Kw —
1800

Gen Unit 200 KW
525

$4000.

Gen Unit 1000.
Switching Gear 1050
Misc Equipment 300

Auto Dial 250

$7000.

3 19-a

25 ~ 3 ϕ A. C. Co Steam Turbines.

Capacity	1000	
Speed.	1500	
Volts	6600	
Current per ϕ	88	
Heating % load	100	150
" pf		
hrs run × hrs failed	24	2
temp rise	40	55
Excitation pf	100 %	
amps	150	175
Volts		
Regulation pf		
%	10	20
Diam. Armature	7' 0"	8' 0"
Length x Diam. Pole face	20½ x 7'-0"	
Weight.		
Net wgt.	108000	
Ship. "	119000	
Wgt of pole pieces	31000	
" " other.	12200	
Diam. x Face.	150"	38"
Strap joints ½	24.25	
Width	21.6	
Thickness	20.9	
100% load	21.25	

Big Sil Pinnacle

Diam. 9'

Pitch Circle

Diam. 8'

2 bolts

60 degrees.

Pinnacle

Sil.

26 bolts

2 3/4 ϕ

Bolt Holes

12-16-20

S 19-13

Engines & Electrical Boilers & Pipework

12-17-08.

2 RH USV US - 94 Blades		
800 KW - 250 V DC Electric	336000.	£2205.
2 Set - Electric Governor with		
8 x 9 Shakers Engine.	7000	12 13
Gen Electric Panels.	2000	650
Setting up panels Erecting Etc		581
work.	345,000.	24653
750 KW Duplex Set 36		1282
Exciter, 170 Kw Set 5.40		1008
Plant 30 days @ 10		30 0
		27179.

Steamer "Seattle" Trials 1907

For 1500 tons 60 rs basis.

Horiz. Vertical. 26 x 56 x 48 100 R.P.M.

Cyl. Engines. £60 000

Shafts. 18" d. 150 000

2500 IHP £30,000 £34000.

£13.60 per IHP

7.8 " Lb.

Steam 180 lbs 28"

Generating £157,000 £23,900

£4967. 16 oz per Lbs.

15 £ per Lb. 57,900

587000

9.8 £ per £ 39 oz per Lbs

Quartermain Trials of 9/1915

32 x 64 x 48 @ 100 R.P.M.

2000 - 2,500 IHP 400,000 Lbs.

Shafts 150,000 "

450 000. £3150.00

7£ per £ £2.60 per IHP

Generating 1500 Kws 13000£

60 ~ 4450.

29 oz

Smith & Webster El Paso. Mr Little $20.
12-12-06.

Plan Furnish & Install 60 ~ 3 ϕ 2300 V.
1800 R.P.M. To deliver -
1000 KW Continuously 40° rise
1500 " 2 hours 55° rise
2000 " momentarily.
Regulation 10 & 25
Excitation 110 amps 3 W = amps.
on 80% of wire drawn 1000 KW continuously
55° rise and 25% overload 2 hours
60° rise.

Steam 150# 26" Superheat 100°
Steam Consumption -

Steam	Dry	Saturated Steam 100 to 10		100° Superheat 100 to 80	
1/4	750	21.7	31.8	29.7	29.5
1/2	500	23.0	23.1	22.9	23.0
3/4	750	22.6	22.7	20.7	20.8
Full	1000	21.8	21.9	19.7	19.8
1 1/2	1500	22.9		20.1	19.6

Length 29'-0" Width 6'-9" Height 7'-3"
Steam Pipe 9" dia Exhaust 32"
Net weight 85000 #
Ship " 95000 #
Unit will carry 1000 KW more continuously
150# steam 150° also high pressure set.

(for) Engine test see 07-11)

S 20-a

Steam Auxiliaries. Engine Room. 12-16-08

Eng. Rm.

10½ x 12 x 18 H.D. C.C. Engine - Forward
Tandem 22"x40" Rise 7½ x 7½ - 210000 ± 1660 lbs. 10 ft.
24" Cast Steel Steam Segment 120000 ± 7200. 5800.

1000 K.W. A.C. 60-180-10. 2300 V. Generator 60 x 3 ø. 93500 ± 1090 lbs. 8928.
Exciter 220 amps 100 ½ H.P. 300 amps 80 % 10 K.W.
Regulator. 7½ H.P. 220 %
Heating - 37° C Continuously 150 % Load Rise 50 % H.P. 37°
Power Factor 100 %.

Switchboard Office 1st Floor.

150# Steam	26" Exc.	150 - 26" - 100° Sup.	150 # 18" B.P.
Exhaust - Eng.	1350.	1150	1350
" Pipe Line	3520.		2020

0.0 in Vacuum. 27.5" % at normal load 14.10 Sat. P.

Steam Consumption # per K.W.H.

Load.	Abt P.		Saturated Steam		100° Superheat.	
	P 100	60	100	60	100	60
¼	51.0	43.0	17.1	18.7	14.7	15.1
½	82.7	68.6	14.3	15.3	12.5	13.1
¾	116.5	96.0	13.4	13.8	12.1	12.2
Full	147.0	123.6	13.4	13.3	12.4	12.1
1¼	221.0	182.5	14.6	13.8	14.0	13.0

Area admission pipe Abt P 10 %
" Exhaust " Sat P 10.6 % of Cyl. areas
Sat P 13.9 "
Sat P 14½ " " " "

Weights Efficiency -
¼ ½ ¾ Full 1¼ 1½ Load.
94.3. 92.3. 95.0. 95.3. 95.5. 94.5 %
Floor Space used 37-6" x 28-8"
Shipping weight 46,500 ±

Power Plant - El Paso 1916-06.

Engine Units

16 Vert x 4P Engines	2000.	1660	1421.
24' Fly wheels.	2000.	720.	576.
Steam oil Piping & Governors		230.	180.
1. Set Mains complete		240	240
2 " x Head Headers	500	90	72
2 " " Crank "		100	80
Reducing Valve Header	500	340	270
Miscell Safety Valves		100	100
1 x Head Stop		40	32
Indicator Piping		26	26
Reducing Motions		87	87
Cyl Relief valves		76	76
Electric Controlling	500	170	170
Heads Packing Glands Each Cyl.		68	68
Metallic packing Piston Rods		206	206
	370100#	26132.	22107
1000 Kw A.C. Generators	93500	10950.	8098
	464000#	37082.	31205
Cyl Oil Pump & Line		248	200
Erecting @ 2%		2480	2480
Eng Units 10500# price 2.87½		45352.	36285

Turbine Units

1000 K.W. Turbines -	24750. 21200.	94000#	21800.
Oil Pump & Piping.			750.
Miscellaneous Piping & Valves.			1000.
Freight to El Paso.			1500
Erecting 40 lbs @ 20¢			2450.

Turb Units the same.

$20-C

Smelter, El Paso — Mill Letter 1.23.09

28 x 56 x 48. Ingersoll Vertical Engine
100 ? rpm
Drive 19' dia 85000#
Forced 22 x 36 - Dia 8½ x 8' 3"

1000 Kw D.C. Generator, 600 Volts
@ 16.120.12.
Heated 35° y 75° C.
13500# 1500

Total weight of Mach 465000#
Foundations " " 41625.
Piping " " 37900.

Sinta Rosalia El Paso Engine –
1000 Kw 60 ~ 25 ~ 48 – 90 Hours –

Load	SHP 100 PF	SHP 90 PF	Stations Test 100 PF	Stations Test 90 PF	Stations – Sept 100° 20 Min 100 PF	Stations – Sept 100° 20 Min 90 PF
¼	675	630	17.1	18.7	14.7	15.1
½	827	686	14.8	15.3	13.5	13.1
¾	1165	960	13.4	13.8	12.1	12.7
1	1510	1736	13.4	13.3	12.4	12.1
1¼						
1½	2210	1875	14.6	13.8	14.0	13.0

5 21

K 21-a

American Woolen Co.

12'23.08

400 KVA Turbines 40 ~ 3 ϕ 600 V.

270000# 72500.00

65800.00

$69000.

Fgh @ 36¢ $972. Erech @ 10.00 $1350. Mau @ 10.00 $600. 2922.

$71922.

69000

Can sell for

2 units @ $69000.-

Can sell for 138000.

8000 KW. Turbines 40 ~

470000# 131000#

123000.+ 126000.00

Fgh 36¢ = 16921. Erech @ 8.00 1880. Mau @ 10 900. 44721

$130472

Can sell for $128000.

Engines.

100 Hp Tapia 4 260 r.p.m.

16x14 Cy. T. Engine. 3000#

Price delivered. 3141.00

75 Hp Tapia 4 275 r.p.m.

12x12 Cy. T. Engine. 2200#

Price delivered. 2478.00

100 Hp Mietz Erath. 1800#

Price delivered 2202.00

65 Hp Mietz Erath. 1100#

Price delivered 1891.00

$ 21.10.

American Woolen Co. 9-12-08.

150 # Steam 28" vac.
Manila Tan Style.
Series Arrangt. Vertical Engine.
44 x 88 x 60. 80 Revs. 770 Revs.
5400 HP 1/4 Co. 12600 HP 1/2 Co.
1,250,000 # - $100000.00
4500.00
6250.00
Coal @ 3.6
Ashes @ 10.00
Saved $ 10,750.00
Min HP 13.20

add for tail rod. $80.00
" Jet, double ec & Independent - 2800.00
" Steam-jet Dealers units
Fully Installed. 4500.00
4300

Change HP 6 mo. Eff. wks etc.

	150 # Steam 28" vac	Coal 1.50 Ashes
Series		
8400 HP	12.5 #	11.0 #
12600 "	13.6 #	12.0 #

7500 HP

38 x 76 x 54 - 100 Revs 1,050,000 $ 6300.00
Good Mech Eff of Engine = 6400
Type Quantity. 520000 5200.00
Elec Mill Lighting 12.3 lbs. 1,600,000. 14200.00
Coal @ 3.6 5760.
Erect Engine 5000.
" Steam 300.
Main. 1000.
Contingency. 1500.
Saved 11.0 7.8 per HP 15460.00
Used. 7.00 per KVA. = 8.75 per HP 10.75 per HP

Units 175 " 2200 " " 9 per HP

(over)

$44 \times 85 \times 60$ $5'' \text{ Stroke} \times 2 \times 80 =$

$1520^{\square''}$ $6082^{\square''}$ 800 ft per min.

$$\frac{\text{Wt. G.P.} \times 6082 \times 800}{33000} = \frac{4400 \text{ ft lbs}}{\text{sec}}$$

$$\frac{100,000}{8500 \text{ ft lbs}} = 11.80 \text{ per HP but no wheels.}$$

$$\frac{100 \text{ cu in}}{17500 \text{ cu in}} = 8^{\text{th}} \text{ per HP wheels required by this}$$

$$\frac{1050}{8500} = .127 \text{ per HP}$$

$38 \times 76 \times .5$ cu in $= 4\frac{1}{2}'' \times 2 = 9 \times 100 = 900$ ft per min

$1134 \div 4536$

$$\frac{3 \times 4536 \times 800}{33000} = \frac{3700 \text{ lbs}}{\text{sec}}$$

$8000 \text{ KVA} \times 80\% \text{ pf} = 6400 \text{ kw} \times 1.34 = 8000 \text{ HP}$

$8000 \div 1.04 \times .92 = 9300 \text{ HP}$

Run W.G.P. up to Eng 35 M

Full Engines 9000 HP

S 22

Steel-T60 Mill Letter 12/12/08 - 12/25/08 x 12.1.08

Class	Cond.	Non. Cond.	Terbinite.	60.3
Speed	120	120	3600	
Cylinders	14 x 30 x 36	16 x 26 x 36		
Stroke dia.	15'	15'		
" capy.	23000#	23000#		
Cycle Sec.	4:10	4:10		
Engr. Gauge.	"	"		
Ec. Pulley.	"	"		
Big Gear	300 Tee	300 Tee	300 Tee	
" Pinion	60 3 600	60 3 600	60 x 3 # 600	
Eccentric				
Pitman				
Cross Head.				
D.T.	100	100	100	
Steam	16.5"	16.5"	16.5 16.5 16.5	
Vac.	26"	1½ Bolt	28" 27" 26"	
Steam. ½	35.0	38.6	28. 29.1 30.7	
" 3/4	31.0	31.8	25.1 26.5 27.8	
Steam. 1	30.45	30.1	23.6 25.0 26.7	
1¼	30.75	29.4	24.1 25.4 26.8	
Disch. cap'y	136000#	134000#	38000#	
Horse Power				
Feed.	12.4.11.	12.3.30.	11.6.32.	11.6.0.
Tubes.	1023.	9874.	8000.	
" Dia. Ext.	3½"	3½"	3½" 3½" 3½"	
" % Brass Ms.	19%	19%	19%	

25 W Lamp F. Ave Detroit No. 9/1907 (Colonial)

Three Wire Fit. 36 x 72 x 60 75 [illegible]

Will Make Four Sizes This No

4000 units 120" Main

3000 " 120 " "

6000 " 160 " "

Wheels 25' diam x 17,500 lbs.

Total wgt 1,000,000 lbs Price $6000.

Will do Business in Varieties over 27,500" Cities.

Three Phase Gen. 36 x 72 x 48 [illegible]

2500 H.P. at 125 Revolutions

Wheels 18' diam = 12,000 #

Total wgt 36,000 # $3500.

Will show to Council - Will [illegible]

[illegible]

[illegible]

30" x 48"

120 Rated

With 15' Dome

Total wgt 23000 #

21000 #

7.18.06.

Steam Turbine & Engine.

Type and size of unit.	Steam.	Pressure lbs	Superheat °F	Vacuum	lbs steam per Kw hour Load- 1/2	3/4	1	1 1/2	A.C.Co.
Turbine 750	Saturated	150		28"		21.75	20.50		"
" 750	Superheated	150	100	28"	21.2	19.6	18.5	19.6	"
Engine 750		150		26"			16.5		"
Turbine 800	Superheated	150	100	28"	20.7		18.4	18.8	G.E.Co.

Engine economy based of 14 lbs steam per I.H.P.
taking engine efficiency at 93% and combined
windage and generator efficiency at 91%
then .93 × 91 = .8463 combined efficiency to sw-b'd.

Engine Tests - Cleveland Engineering Laboratory

75 cu in	RPM.	Full	3/4	1/2
3500 cu ft	45	96.25	95.25	94
2000 "	83⅓	95.15	94.5	93
450	94	95	94.3	92.5
800	"	94.7	94	93.5
1000	"	95.	94.2	92.5

60 cu in
1000 cu ft 90 Hours

1/4	1/2	3/4	Full	1½	1/2
91.3	94.3	95	95.3	95	94.5

ECOLE NV
ANNEX

REL
TWIN
B

Small - Engine Economy -

Corliss Gearing Co. - April 1909.

100 lbs Rich's sep. 100# Steam pressure.

200 R.P.M. 70# Back pressure.

			No H.P
Ames Engine			
Center Crank	17 x 16	155 H.P	
"	18 x 16	174 "	
Side "	17 x 18	179 "	213 H.P
Shatbuck Engine			
Fig. 4 Vert. Cross Cpl	18 x 17	179 "	218 H.P

Guarantee when Exhaust to atmosphere -

Steam Consumption in lbs per H.P.

Load	1/2	3/4	Full	1 1/4
Ames 16"	30	28 1/4	27 1/4	28 1/2
" 18"	30	28	27	28

Note -

For each 1/2 lb back pressure add 1/2 lb to the Steam Consumption per H.P.

Guarantee with 10# Back Pressure -

Steam Consumption in lbs per H.P.

Load	1/2	3/4	Full	1 1/4
Ames 18"	35	33	32 1/2	33
Shatbuck 17"	32 1/2	30 3/4	30	30 3/4

Formula Engine
7 1/2 x 60 Gearing

130# edge 26" dia
" " 16 # abv C.L.

Heavy Construction —

1 1/4	12.5	21.0
1	13.9	20.8
3/4	14.3	22.6
1/2	15.9	21.6

Wire 150# gauge 4 to 1 Gears
140 " " 3 to 1 "

Ratio 4.7 to 1

ENGINEER - S-1

U.S. NATIONAL MUSEUM
FROM
CHARLES T. MAIN, INC.
BOSTON, MASS.
MAY 1962

DIRECT CONNECTED ENGINE UNITS
ALLIS-CHALMERS SIMPLE ENGINES WITH 60 CYCLE TYPE "AI" ALTERNATORS OR 240 VOLT TYPE "I" GENERATORS

SPECIFICATIONS

GENERATOR—Both the alternating and direct current generators are our standard engine type machines and full data for them as well as for the engines is given on the Price Sheets covering the complete units.

EXCITER—Prices, weights, etc. do not include exciters nor exciter driving pulleys. A suitable exciter for each case may be selected from the electrical price sheets. For exciter driving pulley see paragraph under this subject.

CYLINDER—Has both the steam and exhaust valves double ported and so placed as to reduce clearance to a minimum. The valves are in the cylinder barrel and the cylinder is not steam jacketed. When cylinder relief valves are specified, the two exhaust back bonnets are drilled and tapped to receive them. Relief valves are considered as extras and not included in list prices for units.

CYLINDER SOLE-PLATE—Cylinder is provided with heavy cast iron sole-plate with beaded edge, extending out under the valve gear to catch the drips. The vacuum pots are bolted to the sole-plate.

LAGGING & COVERING—The cylinder is covered with magnesia blocks to prevent heat radiation and is neatly lagged with planished sheet steel held in place by polished steel bands. The back cylinder head is concealed by sheet steel cover, matching cylinder lagging.

PISTON—All pistons up to and including 20″ in diameter are of the box type with two snap rings. Above this size they are of the built-up type with one adjustable junk ring, follower, and two snap rings.

VALVE GEAR—But one type of valve gear is made, it being of the double eccentric long range type, permitting a maximum cut-off of ¾ stroke under governor control. Wrist plate is used for exhaust valves only, the steam valves being driven direct from eccentric. Steam valves only are provided with disconnecting device for operating by hand. Bonnets are of the round pattern.

GOVERNOR—This is of the high speed, single tension spring type enclosed in a stationary cast iron case, preventing oil throwing and being dust proof. The governor has its own oil pump keeping bearings flooded at all times. Belt rider safety stop is furnished, also a hand operated weight and arm by means of which engine speed may be varied while in operation to facilitate synchronizing.

FRAME—This is one piece heavy duty "Tangye" construction with bearing surface on foundation its entire length. Beaded flange is provided around the base for catching drips. The frame is of unusually massive construction, especially the main bearing jaws. Guides are bored.

MAIN BEARING—Lower shell has spherical seat in frame, giving automatic alignment required by settling of foundations, etc. Upper shell is cast integral with cap. Both quarter boxes are provided with wedge adjustment, the adjusting bolts being brought out through the cap. Bearing is lined with babbitt metal.

CROSSHEAD—This is of exceptionally heavy construction and of cast iron. Pin is held in place by cap fastened with four tap bolts easily removed. Shoes are provided with two studs for adjusting and are faced with babbitt metal.

CRANK—This is of the counterbalanced fan-tail type of cast iron with pin forced in and riveted over. Fan-tail construction gives much better counter-balancing effect than the old type disc. Its appearance is not objectionable and neither is it dangerous as it is entirely enclosed in the oil guard.

CONNECTING ROD—This is of solid end type, forged solid of open hearth steel with ends slotted out to receive bronze boxes of special composition. Crosshead brasses 8x9½ and above are babbitt lined, while the smaller sizes are solid. All crank pin boxes are babbitt lined. The adjustment for connecting rod boxes is on opposite sides of the pins to keep rod length constant. Connecting rod is 5½ cranks center to center of pins. (over)

DIRECT CONNECTED ENGINE UNITS
ALLIS-CHALMERS SIMPLE ENGINES WITH 60 CYCLE TYPE "AI" ALTERNATORS OR 240 VOLT TYPE "I" GENERATORS

SHAFT—All shafts are forged in our own shops of especially selected open hearth steel. The diameter through the wheel and generator is increased 2″ above that of the **MAIN** bearing due to the heavier weights to be carried and the longer centers required by the direct connected unit. In most cases the main bearing is larger than the outboard bearing as its burden is of course greater.

GENERATOR KEY—This is included in prices for complete units.

WHEEL—This is of the square rim type in halves, with barring holes cast in the rim. From the price sheets it will be seen that two sets of wheels are given for the alternating current units—one set for parallel operation and the other for non-parallel operation. The requirements of each case will govern the selection of the proper wheel. All are figured for a steady lighting and power load such as is usually found in the ordinary manufacturing plant.

EXCITER PULLEY—Prices do not include exciter pulleys and when required they may be added at **$80.00 NET** and 1500 lbs. approximate weight. These figures cover our standard arrangement consisting of a crowned rim in halves with a flange on the inside bolted to lugs cast on the arms of the fly wheel. This requires least possible space.

BACK BEARING—This is of the pedestal type in two parts, cap and base, both lined with babbitt. This bearing does not have adjustable shells but a sole-plate is furnished, which gives horizontal adjustment by means of set screws and vertical adjustment by inserting shims between the bottom of the bearing and the plate. An oil guard is fastened to the generator side of the back bearing to prevent oil from creeping along the shaft to the generator and wheel. A receptacle is cast on the opposite side of the pedestal to catch the drips from the outside of the bearing.

OIL GUARDS—Engines are provided with sheet steel crank, eccentric and slide oil guards. The crank guard is extended to the guide and completely encloses connecting rod and crank. Large double doors are fitted in the side of the guard of sufficient area to permit of adjusting or removing the crank pin boxes. These doors have wire netting panels which give ample air circulation and at the same time prevent the throwing of oil from moving parts on to the floor, etc. The slide guard also is provided with screen sections. The eccentric oil guard is fastened to the frame and arranged to catch drips from the outside of the main bearing. It is provided with a door for inspection purposes.

FOUNDATION BOLTS—A full set of foundation bolts and washers is included for both engine and generator.

FITTINGS—Each cylinder is provided with mechanically operated force feed lubricator driven from valve gear. 24″ cylinders and below have pumps of one quart capacity, larger of one half gallon.

Eccentrics and crosshead are provided with telescopic oilers and the crank pin with a centrifugal center oiler.

All principal bearings are furnished with pressure type sight feed oil cups of liberal capacity, smaller bearings are provided with small brass oil cups and valve gear parts with oil holes for hand oiling.

Each cylinder is fitted with indicator piping including angle valves and three way cock and prices include same.

Such wrenches as are necessary for parts requiring adjustment are included.

No packing of any kind is included for piston rod and valve stems. No steam nor exhaust companion flanges are included, nor steam gauges of any description.

DELIVERY & ERECTION—All prices are F.O.B. Factory, and include the complete unit consisting of engine, wheel and generator with field rheostat (no exciter nor exciter driving pulley). Freight to destination and erection charges are not included and must be added when required. Add extra for export boxing.

[illegible]

See Specn 2344	2245
Date March 1919.	January 1913
312 KVA	✓
250 KW	✓
120 lbs/sq"	✓
150 # Steam	✓
18" x 36"	18 x 36
74000 #	82000
Price £16060 00	[illegible]
dis 30%	dis 60%
Net £11250.	9000.00

[illegible]

Weight 200000 #

SIMPLE
DIR. CONN.
"AC" 150R. P. M.

Sheet No. 2446

DIRECT CONNECTED ENGINE UNITS
ALTERNATING CURRENT GENERATORS
120 and 150 R. P. M.

Supersedes Sheet No. 2344

August, 1922

ALLIS-CHALMERS SIMPLE CORLISS ENGINES
120 and 150 R. P. M.; 80% Power Factor; 60 Cycle, 3 Phase; 240, 480, 600 or 2300 Volts.

UNIT								ENGINE																			
Rating		Steam Pressure (Gauge)	Engine		Engine, Generator and Wheel (No Exciter or Pulley)			Wheel (Parallel Operation)		Pins				Bearings				Weight Heaviest Piece (Frame)	Largest Piece		Cross-Head Shoes		Diameters			
										Cross		Crank		Main		Back											
K.W.	R.P.M.	Lbs.	Dia.	Str.	Catalog Number	Shipping Weight	List Price	Dia.	Weight	Diam.	Length	Diam.	Length	Diam.	Length	Diam.	Length		Width	Height	Width	Length	Piston Rod	Connect. Rod (Smallest)	Steam	Exhaust
175	150	150	14	30	82015	44600	$ 8240.00	11	12000	3½	4½	4½	3½	7	14	7	13	5000	36	42	4½	12	2 11/16	2¼	5	6
175	150	125	14	30	82016	44600	8240.00	11	12000	3½	4½	4½	3½	7	14	7	13	5000	36	42	4½	12	2 11/16	2¼	5	6
250	150	150	16	36	82017	59100	9950.00	12	14000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3¼	5	6
250	150	125	16	36	82018	59100	9950.00	12	14000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3¼	5	6
300	150	150	16	36	82019	63100	10510.00	12	17000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3¼	5	6
300	150	125	18	36	82020	64100	10640.00	12	17000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3¼	6	7
400	150	150	18	36	82021	70150	11580.00	12	20000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3¼	6	7
400	150	125	20	36	82022	71150	11700.00	12	20000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	4⅛	3¼	7	8
500	150	150	22	36	82023	91700	13920.00	12	25000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	4⅛	8	9
500	150	125	22	36	82024	91700	13920.00	12	25000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	4⅛	8	9
400	120	150	20	42	82025	98800	14250.00	15	26000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	4⅛	7	8
400	120	125	20	42	82026	98800	14250.00	15	26000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	4⅛	7	8
600	120	150	22	42	82027	123800	16750.00	16	35000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	4⅛	8	9
600	120	125	24	42	82028	126300	17000.00	16	35000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4½	4⅛	8	9
750	120	150	26	42	82029	156500	21040.00	16	43000	7	8½	8½	7½	15	28	13	24	16000	60	60	10	24½	4⅞	4⅞	9	10
750	120	125	26	42	82030	156500	21040.00	16	43000	7	8½	8½	7½	15	28	13	24	16000	60	60	10	24½	4⅞	4⅞	9	10

GENERATOR											
Rating			Catalog Number	Efficiencies			Excitation			Weights	
K.V.A.	K.W.	R.P.M.		1	¾	½	K.W.	Amps.	Catalog	Rotor	Shipping
220	175	150	20846 20711	87.0	86.5	84.7	14	110	46137	4650	13100
312	250	150	47 20712	88.0	87.5	85.8	17	135	46137	5150	14350
375	300	150	48 20713	89.3	88.4	86.6	18	144	46149	5850	15350
500	400	150	49 20714	90.6	90.2	89.0	19½	155	46149	6600	17400
625	500	150	50 20715	91.7	91.2	89.7	18	140	46149	7000	20200
500	400	120	54 20718	89.8	89.2	87.1	21	165	46149	10000	24800
750	600	120	55 20719	93.0	92.6	91.5	20	160	46149	14600	38800
937	750	120	56 20720	93.0	92.6	91.5	23	184	46159	16500	43000

ENGINE
Specifications per regular forms. If Exciter included add $200 to List and 1500 pounds for Engine Pulley.

GENERATOR
Specifications per regular forms, see Catalogs.

Direct Connected Engine Units

Alternating Current Generators

120 and 150 R.P.M. **August, 1922**

STEAM CONSUMPTION GUARANTEES

UNIT KW	UNIT RPM	Engine Dia.	Engine Str.	Steam Pressure (gauge)	Back Pressure (gauge)	Vacuum	FULL LOAD K.W.	FULL LOAD I.H.P.	FULL LOAD M.E.P.	FULL LOAD % Cut off	FULL LOAD Lbs. per I.H.P. Hour	FULL LOAD Lbs. per K.W. Hour	¾ LOAD K.W.	¾ LOAD I.H.P.	¾ LOAD M.E.P.	¾ LOAD % Cut off	¾ LOAD Lbs. per I.H.P. Hour	¾ LOAD Lbs. per K.W. Hour	½ LOAD K.W.	½ LOAD I.H.P.	½ LOAD M.E.P.	½ LOAD % Cut off	½ LOAD Lbs. per I.H.P. Hour	½ LOAD Lbs. per K.W. Hour
175	150	14	30	150	...	26	175	288	84.0	23	18.4	30.2	131	221	64.2	14	17.8	29.2	88	157	45.8	8	18.4	30.1
175	150	14	30	150	1½	26	175	288	84.0	31	22.1	36.4	131	221	64.2	21	20.8	34.2	88	157	45.8	14	22.1	35.3
175	150	14	30	125	...	26	175	288	84.0	32	19.9	32.6	131	221	64.2	11	18.4	31.1	88	157	45.8	11	18.4	31.1
175	150	14	30	125	1½	...	175	288	84.0	44	26.0	42.7	131	221	64.2	28	22.6	38.3	88	157	45.8	18	22.6	38.3
250	150	16	36	150	...	26	250	406	75.5	18	18.1	29.3	188	312	58.5	12	17.9	29.8	125	219	58.8	6	18.9	29.8
250	150	16	36	150	1½	...	250	406	75.5	27	21.5	35.0	188	312	58.5	19	20.8	34.6	125	219	58.8	12	22.1	34.6
250	150	16	36	125	...	26	250	406	75.5	26	19.1	31.0	188	312	58.5	16	18.7	30.5	125	219	58.8	9	18.7	30.5
250	150	16	36	125	1½	...	250	406	75.5	36	24.1	39.0	188	312	58.5	25	22.6	36.9	125	219	58.8	16	22.6	36.9
300	150	16	36	150	...	26	300	480	89.5	26	18.7	30.0	225	370	69.0	8	18.1	29.4	150	262	49.0	8	18.1	29.4
300	150	16	36	150	1½	...	300	480	89.5	34	22.8	36.5	225	370	69.0	15	21.2	34.4	150	262	49.0	15	21.2	34.4
300	150	18	36	125	...	26	300	480	70.5	22	18.7	30.0	225	370	54.5	8	18.8	30.0	150	262	38.5	8	18.8	30.0
300	150	18	36	125	1½	...	300	480	70.5	32	23.3	37.3	225	370	54.5	15	23.0	36.9	150	262	38.5	15	23.0	36.9
400	150	18	36	150	...	26	400	630	92.5	28	18.9	29.7	300	483	71.0	9	18.0	29.0	200	340	50.0	9	18.0	29.0
400	150	18	36	150	1½	...	400	630	92.5	36	23.3	36.7	300	483	71.0	15	21.1	33.8	200	340	50.0	15	21.1	33.8
400	150	20	36	125	...	26	400	630	75.3	26	19.1	30.0	300	483	57.8	9	18.7	30.0	200	340	40.8	9	18.7	30.0
400	150	20	36	125	1½	...	400	630	75.3	36	24.0	37.8	300	483	57.8	16	22.6	36.2	200	340	40.8	16	22.6	36.2
500	150	22	36	150	...	26	500	779	76.5	19	18.1	28.2	375	598	59.0	7	18.6	29.0	250	422	41.5	7	18.6	29.0
500	150	22	36	150	1½	...	500	779	76.5	27	21.3	33.2	375	598	59.0	12	22.1	34.4	250	422	41.5	12	22.1	34.4
500	150	22	36	125	...	26	500	779	76.5	26	19.0	29.5	375	598	59.0	9	18.4	28.7	250	422	41.5	9	18.4	28.7
500	150	22	36	125	1½	...	500	779	76.5	37	24.2	37.5	375	598	59.0	16	22.3	34.8	250	422	41.5	16	22.3	34.8
400	120	20	42	150	...	26	400	637	81.5	22	18.3	29.3	300	489	62.8	10	18.0	28.8	200	347	44.5	10	18.0	28.8
400	120	20	42	150	1½	...	400	637	81.5	29	21.8	34.8	300	489	62.8	16	21.0	34.2	200	347	44.5	16	21.0	34.2
400	120	20	42	125	...	26	400	637	81.5	30	19.6	31.2	300	489	62.8	10	18.5	29.6	200	347	44.5	10	18.5	29.6
400	120	20	42	125	1½	...	400	637	81.5	41	25.8	41.2	300	489	62.8	17	22.3	35.7	200	347	44.5	17	22.3	35.7
600	120	22	42	150	...	26	600	920	97.0	30	19.3	29.5	450	706	74.5	10	18.0	27.6	300	495	52.5	10	18.0	27.6
600	120	22	42	150	1½	...	600	920	97.0	40	24.2	37.0	450	706	74.5	16	21.0	32.2	300	495	52.5	16	21.0	32.2
600	120	24	42	125	...	26	600	920	81.5	29	19.6	30.2	450	706	62.5	10	18.5	28.4	300	495	44.0	10	18.5	28.4
600	120	24	42	125	1½	...	600	920	81.5	41	25.4	38.9	450	706	62.5	17	22.3	34.3	300	495	44.0	17	22.3	34.3
750	120	26	42	150	...	26	750	1150	86.5	24	18.5	28.4	563	886	66.8	13	18.2	28.2	375	620	46.7	8	18.2	28.2
750	120	26	42	150	1½	...	750	1150	86.5	32	22.4	34.3	563	886	66.8	20	21.5	33.2	375	620	46.7	14	21.5	33.2
750	120	26	42	125	...	26	750	1150	86.5	35	20.2	31.0	563	886	66.8	20	18.5	28.5	375	620	46.7	11	18.5	28.5
750	120	26	42	125	1½	...	750	1150	86.5	47	27.0	41.4	563	886	66.8	30	22.8	35.1	375	620	46.7	19	22.1	34.0

Tests #18
May 26, 19

30% on X–X
25 " X–O

SHEET NO. 2344

Set No. 2-AE 2

ALLIS-CHALMERS SIMPLE CORLISS ENGINES

120 and 150 R. P. M.; 80% Power Factor; 60 Cycle; 2 or 3 Phase; 240, 480 or 2300 Volts

Direct Connected Engine Units

Alternating Current Generators

120 and 150 R. P. M.

March, 1919

UNIT									ENGINE																	
(a) Rating (Maximum)			Steam Pressure Gauge	Engine Condens-ing or Non-Condens'g		Engine, Generator and Wheel (No Exciter or Pulley			(b) Wheel (Parallel Operation)		Pins (Inches)				Bearings (Inches)				Wgt. Heaviest Piece (Frame)	Largest Piece (Ins.)		Cross-head Shoes (Ins.)		Diameters (Ins.)			
											Cross head		Crank		Main		Back							Piston Rod	Connect. Rod Smallest Dia.	Steam	Exhaust
KVA	KW	RPM	Lbs.	Dia.	Str.	Cat. No.	Shipp. Wgt.	List Price	Dia.	Wgt.	Diam.	Length	Diam.	Length	Diam.	Length	Diam.	Length		Width	Height	Width	Length				
220	175	150	150	14	30	82001	45000	$12050	11	12000	3½	4½	4½	3½	7	14	7	13	5000	36	42	4½	12	2 11/16	2¼	5	6
220	175	150	125	14	30	82002	45000	12050	11	12000	3½	4½	4½	3½	7	14	7	13	5000	36	42	4½	12	2 11/16	2¼	5	6
312	250	150	150	16	36	82003	58500	14170	12	14000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	5	6
312	250	150	125	16	36	82004	58500	14170	12	14000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	5	6
312	250	120	150	18	36	82005	74000	16060	14	20000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	6	7
312	250	120	125	18	36	82006	74000	16060	14	20000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	6	7
500	400	150	150	18	36	82007	73000	16280	12	20000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	6	7
500	400	150	125	20	36	82008	74000	16400	12	20000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	4⅛	3	7	8
500	400	120	150	20	42	82009	99000	19900	15	26000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	3⅞	7	8
500	400	120	125	20	42	82010	99000	19900	15	26000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	3⅞	7	8
700	560	120	150	22	42	82011	120500	22500	16	33000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	3⅞	8	9
700	560	120	125	24	42	82012	123000	22790	16	33000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅞	3⅞	8	9
937	750	120	150	26	42	82013	154500	28980	16	43000	7	8½	8½	7½	15	28	13	24	16000	60	60	10	24½	4⅞	4⅝	9	10
937	750	120	125	28	42	82014	157000	29350	16	43000	7	8½	8½	7½	15	28	13	24	16000	60	60	10	24½	5½	4⅝	10	12

GENERATOR										
(c) Rating (Max.)			Frame Number	(d) Efficiencies			Excitation (120 Volts)			Weights	
KVA	KW	RPM		1	¾	½	KW	Amps.	Add (e) Cat. No.	Net Rotor	Shipping
220	175	150	87B	88.1	86.5	83.8	12	95	33307	4800	13400
312	250	150	87B	88.7	88.3	86.7	16	125	33316	4800	13400
312	250	120	106B	88.0	87.5	85.2	19	150	33316	8700	21000
500	400	150	87C	90.0	89.7	87.9	19	150	33316	6200	20000
500	400	120	106D	89.8	89.2	87.1	21	165	33316	10400	24800
700	560	120	128B	91.5	91.2	89.7	22½	170	33316	14200	37400
937	750	120	128D	91.7	91.3	89.9	24	190	33322	15800	41000

(a) This is Maximum Output and there is no Overload Capacity.

(b) Same Wheel for Non-Parallel Operation.

(c) Temperature Rise by Themometer 50° on rotor and stator.

(d) In accordance with A. I. E. E. Rules

(e) If Exciter included add $200 to List and 1500 pounds for Engine Pulley.

STEAM CONSUMPTION GUARANTEES

UNIT								FULL LOAD						¾ LOAD						½ LOAD					
KVA	KW	RPM	Engine Dia.	Engine Str.	Steam Pressure (gauge)	Back Pressure (gauge)	Vacuum (Inches)	K.W.	I.H.P.	M.E.P.	Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	M.E.P.	Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	M.E.P.	Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour
220	175	150	14	30	150	...	26	175	289	84.1	23	18.8	31.0	131	227	66.1	15	18.4	31.9	87	163	47.5	9	19.0	35.4
220	175	150	14	30	150	1½	..	175	289	84.1	31	22.5	37.2	131	227	66.1	22	21.4	37.1	87	163	47.4	14	22.2	41.4
220	175	150	14	30	125	...	26	175	289	84.1	31	20.3	33.5	131	227	66.1	21	19.2	33.2	87	163	47.4	12	19.2	35.8
220	175	150	14	30	125	1½	..	175	289	84.1	43	26.5	43.8	131	227	66.1	29	23.4	40.5	87	163	46.9	19	23.0	42.9
312	250	150	16	36	150	...	26	250	404	75.4	19	18.4	29.7	188	311	58.1	12	18.4	30.5	125	220	41.1	7	19.7	34.7
312	250	150	16	36	150	1½	..	250	404	75.4	26	21.6	34.8	188	311	58.1	18	21.4	35.6	125	220	41.1	12	22.9	40.3
312	250	150	16	36	125	...	26	250	404	75.4	26	19.4	31.4	188	311	58.1	17	18.9	31.3	125	220	41.1	10	19.4	34.2
312	250	150	16	36	125	1½	..	250	404	75.4	35	24.5	39.6	188	311	58.1	24	22.8	37.8	125	220	41.1	16	23.5	41.4
312	250	120	18	36	150	...	26	250	408	74.8	19	18.3	30.0	188	314	57.6	12	18.4	30.8	125	224	41.0	7	19.4	34.8
312	250	120	18	36	150	1½	..	250	408	74.8	26	21.6	35.2	188	314	57.6	18	21.4	35.9	125	224	41.0	12	22.9	41.1
312	250	120	18	36	125	...	26	250	408	74.8	25	19.3	31.6	188	314	57.6	16	18.8	31.6	125	224	41.0	10	19.4	34.9
312	250	120	18	36	125	1½	..	250	408	74.8	35	24.3	39.7	188	314	57.6	24	22.8	38.2	125	224	41.0	16	23.5	42.1
500	400	150	18	36	150	...	26	400	637	93.5	27	19.3	30.8	300	490	71.8	17	18.5	30.2	200	346	50.8	10	18.8	32.5
500	400	150	18	36	150	1½	..	400	637	93.5	37	23.9	38.1	300	490	71.8	24	21.6	35.3	200	346	50.8	15	21.9	37.9
500	400	150	20	36	125	...	26	400	637	76.0	26	19.4	31.0	300	490	58.4	17	18.9	30.9	200	346	41.2	10	19.4	33.7
500	400	150	20	36	125	1½	..	400	637	76.0	36	24.4	38.9	300	490	58.4	25	22.8	37.2	200	346	41.2	16	23.4	40.6
500	400	120	20	42	150	...	26	400	636	81.2	21	18.6	29.6	300	490	62.6	14	18.3	30.0	200	347	44.4	8	19.1	33.2
500	400	120	20	42	150	1½	..	400	636	81.2	29	22.2	35.3	300	490	62.6	20	21.4	35.0	200	347	44.4	13	22.5	39.1
500	400	120	20	42	125	...	26	400	636	81.2	29	19.9	31.6	300	490	62.6	19	18.9	30.9	200	347	44.4	11	19.2	33.4
500	400	120	20	42	125	1½	..	400	636	81.2	40	25.7	41.0	300	490	62.6	27	23.0	37.6	200	347	44.4	17	23.1	40.1
700	560	120	22	42	150	...	26	560	872	91.7	26	19.2	29.9	420	669	70.4	17	18.4	29.4	280	471	49.5	10	18.8	31.6
700	560	120	22	42	150	1½	..	560	872	91.7	36	23.6	36.7	420	669	70.4	24	21.5	34.3	280	471	49.5	15	21.9	36.9
700	560	120	24	42	125	...	26	560	872	77.4	27	19.5	30.3	420	669	59.3	18	18.8	30.0	280	471	41.8	10	19.3	32.6
700	560	120	24	42	125	1½	..	560	872	77.4	37	24.8	38.6	420	669	59.3	25	22.7	36.5	280	471	41.8	16	23.4	39.3
937	750	120	26	42	150	...	26	750	1170	87.4	25	18.9	29.5	563	908	67.8	16	18.3	29.4	375	635	47.4	8	19.0	32.2
937	750	120	26	42	150	1½	..	750	1170	87.4	34	23.0	36.0	563	908	67.8	23	21.5	34.7	375	635	47.4	15	22.2	37.6
937	750	120	28	42	125	...	26	750	1170	76.0	26	19.5	30.5	563	908	58.9	17	18.8	30.3	375	635	41.2	10	19.5	33.0
937	750	120	28	42	125	1½	..	750	1170	76.0	36	24.6	38.4	563	908	58.9	26	22.8	36.8	375	635	41.2	17	23.5	39.9

Note:—Use this form with guarantees:—"When this unit is operated with.....pounds gauge steam pressure (dry saturated steam) at the throttle valve and the back pressure of.....pounds gauge or.....inches of vacuum (referred to 30" barometer) at the exhaust nozzle the steam consumption of the engine only will not exceed the following when the unit is developing the even loads specified below."

Direct Connected Engine Units

Alternating Current Generators

120 and 150 R. P. M.

March, 1919

SHEET NO. 2344A

SET NO. 804

SHEET NO. 2336

ALLIS-CHALMERS SIMPLE CORLISS ENGINES

150 R. P. M., 80% POWER FACTOR, 60 CYCLE, 2 OR 3 PHASE, 240, 480 OR 2300 VOLTS

UNIT								ENGINE																	
(a) Rating (Max.)		Steam Pressure (gauge)	Engine Condensor Non-Cond.		Engine, Generator and Wheel (No Exciter or Pulley)			(b) Wheel (Parallel Operation)		Pins (Inches)				Bearings (Inches)				Weight Heaviest Piece (Frame)	Largest Piece (Inches)		Crosshead Shoes (Inches)		Diameters (Inches)			
										Crosshead		Crank		Main		Back									
KVA	KW	Lbs.	Dia.	Str.	Cat. No.	Shipp. Wgt.	List Price	Dia.	Weight	Diam.	Length	Diam.	Length	Diam.	Length	Diam.	Length		Width	Height	Width	Length	Piston Rod	Conct. Rod Smlst. Dia.	Steam	Exhaust
220	176	150	14	30	80853	45500	...	11	12000	3½	4½	4½	3½	7	14	7	13	5000	36	42	4½	12	2 11/16	2¼	5	6
220	176	125	14	30	80854	45500	...	11	12000	3½	4½	4½	3½	7	14	7	13	5000	36	42	4½	12	2 11/16	2¼	5	6
220	176	100	16	30	80855	46500	...	11	12000	3½	4½	4½	3½	7	14	7	13	5000	36	42	4½	12	3⅜	2¼	5	6
312	250	150	16	36	80856	61250	...	12	14000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	5	6
312	250	125	16	36	80857	61250	...	12	14000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	5	6
312	250	100	18	36	80858	63250	...	12	14000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	6	7
470	375	150	18	36	80859	72750	...	12	19000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	6	7
470	375	125	20	36	80860	73750	...	12	19000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	4⅛	3	7	8
470	375	100	22	36	80861	75250	...	12	19000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	4⅛	3	8	9
625	500	150	22	36	80862	100000	...	12	25000	5¾	7	7	6	12	24	11	20	11000	54	54	8	20½	4⅛	3⅞	8	9
625	500	125	22	36	80863	100000	...	12	25000	5¾	7	7	6	12	24	11	20	11000	54	54	8	20½	4⅛	3⅞	8	9
625	500	100	24	36	80864	102500	...	12	25000	5¾	7	7	6	12	24	11	20	11000	54	54	8	20½	4⅞	3⅞	8	9

GENERATOR													
(c) Rating (Maximum)		Frame	(d) Regulation	(e) Efficiencies			Excitation (120 Volts)			Weights			
KVA	KW			1	¾	½	KW	Amp.	Add (f) Cat.No.	Net Rotor	Net Stator	Total Net	Shipping
220	176	AI48-80-5	43	89.3	89.0	87.3	11½	90	33308	4000	6000	12500	14000
312	250	AI48-80-6¾	36	89.4	88.8	86.8	15	125	33308	4700	6500	14000	16500
470	375	AI48-80-10½	42	90.7	90.5	89.0	16½	136	33316	6500	7900	17000	21000
625	500	AI48-80-13½	40	91.2	91.0	89.3	21	175	33316	11000	9500	23000	28500

(a) This is Maximum Output & there is No Overload Capacity.
(b) Same wheel for nonparallel operation.
(c) Temperature rise by thermometer 50° C. (rotor and stator). 24 hour service.
(d) Regulation not to be given unless required.
(e) In accordance with A. I. E. E. rules.
(f) Add $200 to list & 1500 lbs. for engine exciter pulley.

CORLISS ENGINE UNITS

DIRECT CONNECTED

OCTOBER, 1916

STEAM CONSUMPTION GUARANTEES

Unit							Full Load						¾ Load						½ Load					
Rating		Engine		Steam Pressure (gauge)	Back Pressure (gauge)	Vacuum	KW	IHP	MEP	% Cut-off	Lbs. per IHP Hour	Lbs. per KW Hour	KW	IHP	MEP	% Cut-off	Lbs. per IHP Hour	Lbs. per KW Hour	KW	IHP	MEP	% Cut-off	Lbs. per IHP Hour	Lbs. per KW Hour
KVA	KW	Dia.	Str.																					
220	176	14	30	150	1½	..	176	285	83.0	31	22.9	37.1	132	216	63.0	20	21.4	35.1	88	153	45.0	12	21.6	37.6
220	176	14	30	150	...	26	176	285	83.0	23	19.2	31.1	132	216	63.0	14	18.6	30.5	88	153	45.0	8	19.3	33.5
220	176	14	30	125	1½	..	176	285	83.0	44	27.2	44.0	132	216	63.0	27	23.3	38.1	88	153	45.0	16	23.0	40.0
220	176	14	30	125	...	26	176	285	83.0	31	20.3	33.0	132	216	63.0	19	19.3	31.6	88	153	45.0	11	19.6	34.0
220	176	16	30	100	1½	..	176	285	64.0	44	28.5	46.2	132	216	48.0	27	24.8	40.8	88	153	34.0	17	24.6	42.8
220	176	16	30	100	...	26	176	285	64.0	28	20.2	32.8	132	216	48.0	17	19.5	32.0	88	153	34.0	10	20.0	34.8
312	250	16	36	150	1½	..	250	402	75.6	27	21.8	35.2	188	312	58.6	18	21.2	35.3	125	223	42.0	11	21.9	39.0
312	250	16	36	150	...	26	250	402	75.6	19	18.5	29.8	188	312	58.6	12	18.6	31.0	125	223	42.0	7	19.8	35.4
312	250	16	36	125	1½	..	250	402	75.6	37	25.0	40.2	188	312	58.6	24	23.0	38.3	125	223	42.0	15	23.2	41.4
312	250	16	36	125	...	26	250	402	75.6	26	19.8	31.9	188	312	58.6	16	19.1	31.8	125	223	42.0	10	19.7	35.0
312	250	18	36	100	1½	..	250	402	58.7	37	26.7	43.1	188	312	45.0	24	24.5	40.8	125	223	32.5	15	24.8	44.3
312	250	18	36	100	...	26	250	402	58.7	24	19.9	32.1	188	312	45.0	15	19.5	32.4	125	223	32.5	9	20.2	36.0
470	375	18	36	150	1½	..	375	586	86.2	33	22.8	35.7	281	448	66.0	22	21.4	34.1	188	320	47.2	13	21.7	37.0
470	375	18	36	150	...	26	375	586	86.2	24	19.0	29.8	281	448	66.0	15	18.6	29.7	188	320	47.2	8	19.6	33.4
470	375	20	36	125	1½	..	375	586	70.3	33	24.2	38.0	281	448	54.5	22	22.9	36.5	188	320	38.6	14	23.3	39.7
470	375	20	36	125	...	26	375	586	70.3	23	19.2	30.0	281	448	54.5	15	19.1	30.5	188	320	38.6	8	19.9	33.9
470	375	22	36	100	1½	..	375	586	57.9	37	26.3	41.2	281	448	44.3	23	24.4	38.9	188	320	31.6	15	24.8	42.3
470	375	22	36	100	...	26	375	586	57.9	23	19.8	31.0	281	448	44.3	15	19.5	31.0	188	320	31.6	8	20.4	34.8
625	500	22	36	150	1½	..	500	780	76.8	27	21.8	34.0	375	600	59.2	18	21.3	34.1	250	425	41.8	11	22.2	37.9
625	500	22	36	150	...	26	500	780	76.8	20	18.5	28.9	375	600	59.2	12	18.6	29.9	250	425	41.8	7	19.7	33.5
625	500	22	36	125	1½	..	500	780	76.8	37	25.3	39.5	375	600	59.2	24	23.1	37.0	250	425	41.8	15	23.2	39.5
625	500	22	36	125	...	26	500	780	76.8	26	19.7	30.8	375	600	59.2	16	19.1	30.6	250	425	41.8	9	19.7	33.5
625	500	24	36	100	1½	..	500	780	64.3	45	29.0	45.3	375	600	49.1	28	24.8	39.8	250	425	34.6	16	24.6	42.0
625	500	24	36	100	...	26	500	780	64.3	28	20.1	31.4	375	600	49.1	18	19.6	31.5	250	425	34.6	10	20.1	34.3

Note—Use this form with guarantees:—"When this unit is operated with.....pounds gauge steam pressure (dry saturated steam) at the throttle valve and the back pressure of.....pounds gauge or.....inches of vacuum (referred to 30 inch barometer) at the exhaust nozzle the steam consumption of the engine only will not exceed the following when the unit is driving its own exciter and developing the even loads specified below."

CORLISS ENGINE UNITS
DIRECT CONNECTED

OCTOBER, 1916

SHEET NO. 2336A

DIRECT GONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE—"AI" GENERATORS

150 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET 2226 — MAY, 1913

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI48-80-5	150	120	150	2300	4000	6000	12500	14000

Regulation		Efficiencies						*Heating		Field Data		
		P. F. 100			P. F. .80					Exciter 120 Volts	Amps. at P. F.	
P.F. 100	P.F. 80	1	¾	½	1	¾	½	Full Load 24 Hrs.	1¼ Load 2 Hrs.	K. W.	100	80
9	23	93	92.3	91	89	88.8	88	35	50	10	62	82

ENGINE DETAILS

Bearings (Inches)				Pins (Inches)				Wheel				Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Parallel Operation		Non-Parallel Operation					
Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
7	14	7	13	3½	4½	4½	3½	12	12000	10	9000	12-3	33	35	4500

Crosshead Shoes		Diameters (Inches)				
Width Inches	Length Inches	Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
4½	12	12 14 16 ..	$2\frac{11}{16}$ $2\frac{11}{16}$ $3\frac{3}{8}$ ...	2¼ 2¼ 2¼ ..	4 5 5 .	5 6 6 .

GENERATOR 100% P. F., 150 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. (Lbs)	Vac. (Ins.)	I.H.P.	Engine Size Dia. Ins.	Engine Size Stroke Ins.	List Price Unit	Weight Pounds Unit
80533	100	Non-Cond.	1½	..	238	16	30	$11300	47900
80534	125	"	1½	..	238	16	30	11300	47900
80535	150	"	1½	..	238	14	30	11150	46800
80536	100	Cond.	...	26	238	16	30	11300	47900
80537	125	"	...	26	238	14	30	11150	46800
80538	150	"	...	26	238	14	30	11150	46800

GENERATOR 80% P. F., 120 K. W. PARALLEL OPERATION

80539	100	Non-Cond.	1½	..	200	16	30	11300	47900
80540	125	"	1½	..	200	14	30	11150	46800
80541	150	"	1½	..	200	12	30	10925	45700
80542	100	Cond.	...	26	200	14	30	11150	46800
80543	125	"	...	26	200	14	30	11150	46800
80544	150	"	...	26	200	12	30	10925	45700

‡Generator can be wound for standard lower voltage, viz., 240, 480, 600 without extra charge.

If Parallel Operation not required Deduct $50.00, 3000 lbs. Net.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

SET NO. 308

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE—"A" GENERATORS

150 K.V.A., 150 R.P.M., 60 CYCLE, 3 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET 2226A

MAY, 1913

SHEET NO. 2278A

GENERATOR 100% P. F., 150 K. W.

Load			½				¾				1				1¼			
I. H. P.			136				186				238				291			
K. W.			75				112				150				187			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	29.7	13.75	28.	50.8	40.7	20.25	25.9	43.	52.1	29.5	25.9	41.5	63.7	43.	28.1	43.6
125	99	"	29.7	9.5	29.38	53.25	40.7	14.25	24.7	47.	52.1	20.	23.7	37.9	63.7	26.5	23.8	37.1
150	121	"	38.9	10.	25.5	46.25	53.1	15.	23.2	38.4	68.	21.5	22.5	36.	83.1	30.5	23.2	36.1
100	91	Cond.	29.7	7.5	23.35	40.5	40.5	12.5	20.5	34.	52.1	19.	20.2	32.	63.7	28.	21.	32.7
125	113	"	38.9	8.25	21.46	38.9	53.1	13.25	19.8	32.8	68.	21.5	19.8	31.7	83.1	31.25	20.9	32.6
150	134	"	38.9	6.	22.3	40.5	53.1	10.75	20.	33.2	68.	16.	19.1	30.6	83.1	22.	19.2	29.9

GENERATOR 80% P. F., 120 K. W.

I. H. P.			120				159				202				245			
K. W.			60				90				120				150			
100	78	Non-Cond.	24.7	11.25	30.4	56.5	34.	16.	26.8	46.25	43.8	22.75	25.9	43.1	53.8	31.25	26.15	42.8
125	99	"	32.3	10.5	28.5	53.5	44.4	16.	24.6	42.5	57.1	22.5	23.9	39.8	70.2	31.5	24.6	40.25
150	121	"	44.	11.5	25.	46.5	60.5	18.	23.	39.5	78.	27.	23.2	38.3	96.	40.	24.9	40.3
100	91	Cond.	32.3	7.75	22.3	43.	44.4	14.5	20.6	35.4	57.1	22.5	20.6	34.3	70.2	34.25	22.1	36.25
125	113	"	32.3	6.	23.1	43.4	44.4	10.	20.75	35.8	57.1	15.5	19.8	33.	70.2	22.5	19.7	32.2
150	134	"	44.	7.5	21.5	40.5	60.5	13.25	19.8	34.2	77.8	20.	19.4	32.3	95.9	29.	20.2	32.8

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE—"AI" GENERATORS

187 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET NO. 2227 — MAY, 1913

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI48-80-5	187	150	150	2300	4000	6000	12500	14000

Regulation		Efficiencies						*Heating		Field Data		
		P. F. 100			P. F. 80						Amps. at P. F.	
P.F. 100	P.F. 80	1	¾	½	1	¾	½	Full Load 24 Hrs.	1¼ Load 2 Hrs.	Exciter 120 Volts K. W.	100	80
10	26	93.2	92.8	91.5	89.5	89.2	88.5	40	55	10	62	82

ENGINE DETAILS

Bearings (Inches)				Pins (Inches)				Wheel				Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Parallel Operation		Non-Parallel Operation					
Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
7	14	7	13	3½	4½	4½	3½	12	14000	11	9000	13-8 °12-3	33 33	35 35	4900 4500

Crosshead Shoes		Diameters (Inches)				
Width Inches	Length Inches	Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
4½	12	14 16 18	2 11/16 3⅜ 3⅜	2¼ 2¼ 2¼	5 5 6	6 6 7

GENERATOR 100% P. F., 187 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	I.H.P.	Engine Size Dia. Ins.	Engine Size Stroke Ins.	List Price Unit	Weight Unit Pounds
80545	100	Non-Cond.	1½	..	296	18	36	$11850	52650
80546	125	"	1½	..	296	16	36	11625	51600
80547	150	"	1½	..	296	14	36	11500	50300
80548	100	Cond.	...	26	296	16	36	11625	51600
80549	125	"	...	26	296	16	36	11625	51600
80550	150	"	...	26	296	14	36	11500	50300

GENERATOR 80% P. F., 150 K. W. PARALLEL OPERATION

80551	100	Non-Cond.	1½	..	248	16	30	$11375	49850
80552	125	"	1½	..	248	16	30	11375	49850
80553	150	"	1½	..	248	14	30	11225	48750
80554	100	Cond.	...	26	248	16	30	11375	49850
80555	125	"	...	26	248	14	30	11225	48750
80556	150	"	...	26	248	14	30	11225	48750

‡Generator can be wound for Standard lower voltage, viz., 240, 480, 600, without extra charge.

If parallel operation not required deduct **$90.00**, 5000 lbs. net.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

(°) For 30 Inch Stroke Engine.

SET NO. 308

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE—"A" GENERATORS

187 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

MAY, 1913

SHEET NO. 2279A

GENERATOR 100% P. F., 187 K. W.

Load			½				¾				1				1¼			
I. H. P.			168				231				296				363			
K. W.			93.5				140				187				234			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	24.3	11.	30.	54.	32.4	14.75	26.8	44.25	42.8	21.25	25.4	40.3	52.5	30.	25.75	39.9
125	99	"	30.7	10.5	27.35	49.25	42.	15.	24.6	42.25	54.	21.	23.6	37.3	64.3	27.5	23.9	37.
150	121	"	40.	10.25	25.1	45.25	55.	15.75	22.9	37.6	70.5	22.75	22.5	35.7	86.5	32.75	23.4	36.3
100	91	Cond.	30.7	8.	22.	39.6	42.	13.25	20.25	33.4	54.	20.25	20.1	31.8	64.3	28.75	20.4	31.6
125	113	"	30.7	5.	23.4	47.5	42.	9.5	20.7	34.	54.	14.	19.7	31.1	64.3	19.5	19.6	30.4
150	134	"	40.	6.25	22.	39.6	55.	11.25	19.75	32.5	70.5	16.75	19.06	30.2	76.5	23.75	19.25	30.

GENERATOR 80% P. F., 150 K. W.

I. H. P.			144				196				248				308			
K. W.			75				112.5				150				187.5			
100	78	Non-Cond.	30.6	14.5	27.9	51.6	42.	21.5	25.8	44.	54.3	31.5	26.25	43.25	67.5	48.	30.5	49.5
125	99	"	30.6	10.	27.6	51.	42.	15.	24.3	45.5	54.3	21.	23.7	39.	67.5	29.5	24.5	39.6
150	121	"	40.	10.	25.3	46.75	55.	15.5	24.	41.	71.	23.	22.65	37.3	87.5	33.5	23.5	38.
100	91	Cond.	30.6	7.5	22.3	41.25	42.	13.	20.4	34.8	54.3	20.	20.2	33.2	67.5	31.5	21.8	35.3
125	113	"	40.	8.5	21.4	39.6	55.	14.5	19.9	34.	71.	23.	20.	32.9	87.5	35.	21.7	35.
150	134	"	40.	6.5	22.2	41.	55.	11.5	19.9	34.	71.	17.5	19.1	31.4	87.5	24.5	19.5	31.6

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE—"AI" GENERATORS

200 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET NO. 2228 MAY, 1913

GENERATOR

Rating				Weights			
Frame	Kilowatts P. F. 100	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI48-80-6¾	200	150	2300	4700	6500	14000	16500

Regulation	Efficiencies			Heating		Field Data	
P. F. 100	P. F. 100			Full Load 24 Hours	1¼ Load 2 Hours	Exciter 120 Volts	Amps. at P. F.
	1	¾	½			K. W.	100
9	93.5	93.	91.	35	50	12½	75

ENGINE DETAILS

Bearings (Inches)				Pins (Inches)				Wheel				Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Parallel Operation		Non-Parallel Operation					
Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
10	20	9	18	4½	6	6	5	12	15000	11	10000	14-5	43	41	7100

Crosshead Shoes		Diameters (Inches)				
Width Inches	Length Inches	Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
6	16½	14 16 18	$2\frac{11}{16}$ $3\frac{3}{8}$ $3\frac{3}{8}$	3 3 3	5 5 6	6 6 7

†GENERATOR 100% P. F., 200 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	I.H.P.	Engine Size		List Price Unit	Weight Unit Pounds
						Dia. Ins.	Stroke Ins.		
80557	100	Non-Cond.	1½	..	316	18	36	$13525	64450
80558	125	"	1½	..	316	16	36	13100	62000
80559	150	"	1½	..	316	14	36	12900	60900
80560	100	Cond.	...	26	316	16	36	13100	62000
80561	125	"	...	26	316	16	36	13100	62000
80562	150	"	...	26	316	14	36	12900	60900

(†) For Generator 80% Power Factor 160 K. W. see Sheet Number 2281.

‡Generator can be wound for Standard lower voltage, viz., 240, 480, 600, without extra charge.

If parallel operation not required deduct $90.00, 5000 lbs. net.

SET NO. 308

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE—"A" GENERATORS

200 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

MAY, 1913

SHEET NO. 2280A

GENERATOR 100% P. F., 200 K. W.

Load			½				¾				1				1¼			
I. H. P.			182				246				316				386			
K. W.			100				150				200				250			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	26.3	12.	28.	51.	35.6	17.	26.1	42.8	45.6	24.	25.4	40.2	55.7	33.	26.15	40.3
125	99	"	33.3	11.	26.6	48.45	45.	16.25	24.1	39.5	57.7	23.	23.6	37.2	70.5	31.75	24.4	37.5
150	121	"	43.4	11.5	24.5	44.5	58.2	17.	22.7	37.2	75.	25.5	22.70	35.9	92.	36.75	24.	37.
100	91	Cond.	33.3	8.5	21.2	37.2	45.	15.	20.	32.8	57.7	23.	20.25	32.	70.5	34.5	21.9	33.75
125	113	"	33.3	6.5	22.4	40.5	45.	10.5	20.3	33.3	57.7	15.5	19.75	31.2	70.5	23.	19.75	30.4
150	134	"	43.4	7.5	21.3	38.7	58.2	12.5	19.5	32.	75.	18.75	19.1	30.2	92.	26.5	19.65	30.3

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K.W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I.H.P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

DIRECT CONNECTED ENGINE UNITS
ALLIS-CHALMERS ENGINE—"AI" GENERATORS
200 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET NO. 2228 MAY, 1913

GENERATOR

Rating				Weights			
Frame	Kilowatts P. F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI48-80-6¾	160	150	2300	4700	6500	14000	16500

Regulation	Efficiencies			*Heating		Field Data	
P. F. 80	P. F. 80			Full Load 24 Hours	1¼ Load 2 Hours	Exciter 120 Volts K. W.	Amps. at P. F.
	1	¾	½				80
23	90	89.5	88	35	50	12½	100

ENGINE DETAILS

Bearings (Inches)				Pins (Inches)				Wheel				Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Parallel Operation		Non-Parallel Operation					
Dia	Length	Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
9	18	7	13	3½	4½	4½	3½	12	15000	11	10000	12-3	37	35	5000

Crosshead Shoes		Diameters (Inches)				
Width Inches	Length Inches	Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
4½	12	14 16	$2\frac{11}{16}$ $3\frac{3}{8}$	2¼ 2¼	5 5	6 6

† GENERATOR 80% P. F., 160 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	I.H.P.	Engine Size		List Price Unit	Weight Unit Pounds
						Dia. Ins.	Stroke Ins.		
80563	100	Non-Cond.	1½	..	262	16	30	$12450	54350
80564	125	"	1½	..	262	16	30	12450	54350
80565	150	"	1½	..	262	14	30	12300	53250
80566	100	Cond.	...	26	262	16	30	12450	54350
80567	125	"	...	26	262	14	30	12300	53250
80568	150	"	...	26	262	14	30	12300	53250

(†) For Generator at 100% Power Factor 200 K. W. see Sheet Number 2280.
‡Generator can be wound for Standard lower voltage, viz., 240, 480, 600, without extra charge.
If parallel operation not required deduct **$90.00**, 5000 lbs. net.
*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

SET NO. 308

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE—"A" GENERATORS

200 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

MAY, 1913

SHEET NO. 2281A

GENERATOR 80% P. F., 160 K. W.

Load			½				¾				1				1¼			
I. H. P.			148				204				262				322			
K. W.			80				120				160				200			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	32.7	15.	27.3	50.75	44.8	23.5	24.8	42.25	57.5	35.	26.7	43.75	70.5	55.	30.8	49.5
125	99	"	32.7	11.	26.9	50.	44.8	16.	24.3	41.5	57.5	22.5	23.7	38.9	70.5	32.	24.6	39.6
150	121	"	42.5	11.25	24.8	46.	58.3	17.	22.9	39.	75.	25.	22.9	37.6	92.	36.75	24.1	38.8
100	91	Cond.	32.7	8.75	21.8	40.5	44.8	15.	20.3	34.6	57.5	20.	20.45	33.6	70.5	34.5	22.3	35.9
125	113	"	42.5	9.75	21.2	39.4	58.3	16.	19.8	33.8	75.	25.5	20.3	33.3	92.	39.5	22.6	36.4
150	134	"	42.5	7.	21.8	40.5	58.3	12.5	19.7	33.6	75.	18.5	19.2	31.5	92.	26.5	19.85	32.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K.W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I.H.P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE—"AI" GENERATORS

250 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET 2229 — JUNE, 1913

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI48-80-6¾	250	200	150	2300	4700	6500	14000	16500

Regulation		Efficiencies						*Heating		Field Data		
		P. F. 100			P. F. 180					Exciter 120 Volts	Amps. at P. F.	
P.F. 100	P.F. 80	1	¾	½	1	¾	½	Full Load 24 Hrs.	1¼ Load 2 Hrs.	K. W.	100	80
10	26	93.8	93.2	91.2	90.2	90	89.2	40	55	12½	75	100

ENGINE DETAILS

Bearings (Inches)				Pins (Inches)				Wheel				Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Parallel Operation		Non-Parallel Operation					
Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
10	20	9	18	4½	6	6	5	12	19000	12	12000	14-5	43	41	7100

Crosshead Shoes		Diameters (Inches)				
Width Inches	Length Inches	Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
6	16½	14	2 1/16	3	5	6
		16	3⅜	3	5	6
		18	3⅜	3	6	7
		20	4⅛	3	7	8

GENERATOR 100% P. F., 250 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	I.H.P.	Engine Size Dia. Ins.	Engine Size Stroke Ins.	List Price Unit	Weight Pounds Unit
80569	100	Non-Cond.	1½	..	394	20	36	$14050	70100
80570	125	"	1½	..	394	18	36	13725	68500
80571	150	"	1½	..	394	16	36	13300	65700
80572	100	Cond.	...	26	394	18	36	13725	68500
80573	125	"	...	26	394	18	36	13725	68500
80574	150	"	...	26	394	16	36	13300	65700

GENERATOR 80% P. F., 200 K. W. PARALLEL OPERATION

80575	100	Non-Cond.	1½	..	328	18	36	$13725	68500
80576	125	"	1½	..	328	16	36	13300	65700
80577	150	"	1½	..	328	14	36	13100	64800
80578	100	Cond.	...	26	328	16	36	13300	65700
80579	125	"	...	26	328	16	36	13300	65700
80580	150	"	...	26	328	14	36	13100	64800

‡Generator can be wound for Standard lower voltage, viz., 240, 480, 600, without extra charge.

If parallel operation not required deduct $115.00, 7000 lbs. Net.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

SET NO. 308

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE—"A" GENERATORS

250 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET 2229A

JUNE, 1913

SHEET No. 2282A

GENERATOR 100% P. F., 250 K. W.

Load			½				¾				1				1¼			
I. H. P.			225				307				394				481			
K. W.			125				187				250				312			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	26.4	12.	28.25	51.	35.8	17.25	25.75	42.25	46.	24.5	25.2	39.6	56.3	33.5	26.	40.
125	99	"	32.5	10.75	26.3	47.5	44.3	16.	23.8	39.2	56.8	22.5	23.4	36.9	69.5	30.75	24.	37.
150	121	"	41.	10.5	24.4	44.	56.	16.	22.51	36.9	72.	23.5	22.3	35.3	88.	41.5	24.72	38.1
100	91	Cond.	32.5	9.	21.5	38.5	44.3	14.5	20.1	32.9	56.8	22.5	21.2	31.7	69.5	34.	21.7	33.4
125	113	"	32.5	6.5	22.	39.6	44.3	10.5	20.1	32.9	56.8	15.5	19.3	30.5	69.5	22.5	19.5	30.1
150	134	"	41.	6.5	21.5	38.75	56.	11.75	19.37	31.8	72.	17.5	18.9	30.	88.	24.5	19.22	29.6

GENERATOR 80% P. F., 200 K. W.

I. H. P.			183				254				328				405			
K. W.			100				150				200				250			
100	78	Non-Cond.	26.5	12.	28.5	52.2	36.7	17.5	25.9	43.75	47.3	25.25	25.3	41.5	58.5	36.25	26.5	42.8
125	99	"	33.5	11.	26.3	48.2	47.5	17.5	23.8	40.4	59.7	24.	23.6	28.7	74.	35.	24.7	39.9
150	121	"	43.5	11.5	24.3	44.6	60.5	18.	22.5	38.2	78.	27.	22.8	37.3	96.5	40.	24.6	39.7
100	91	Cond.	33.5	9.25	21.3	39.1	47.5	15.5	20.	33.9	59.7	24.5	20.4	33.4	74.	39.	22.6	36.5
125	113	"	33.5	6.5	22.2	40.5	47.5	11.5	19.9	33.7	59.7	17.	19.4	31.8	74.	25.	19.9	32.2
150	134	"	43.5	7.5	21.1	38.6	60.5	13.	19.2	32.2	78.	19.5	18.9	31.	96.5	29.25	19.8	32.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K.W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I.H.P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

DIRECT CONNECTED ENGINE UNITS
ALLIS-CHALMERS ENGINE — "AI" GENERATORS
312 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET 2230 — MAY, 1913

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI48-80-8½	312	250	150	2300	5300	7500	16000	19000

Regulation		Efficiencies						*Heating		Field Data		
		P. F. 100			P. F. 80					Exciter 120 Volts	Amps. at P. F.	
P.F. 100	P.F. 80	1	¾	½	1	¾	½	Full Load 24 Hrs.	1¼ Load 2 Hrs.	K. W.	100	80
10	26	93.8	93.3	91.7	90.5	90.5	89.5	40	55	12	75	100

ENGINE DETAILS

Bearings (Inches)				Pins (Inches)				Wheel				Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Parallel Operation		Non-Parallel Operation					
Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
10	20	9	18	4½	6	6	5	12	23000	12	12000	14-5	43	41	7100

Crosshead Shoes		Diameters (Inches)				
Width Inches	Length Inches	Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
6	16½	16	3⅜	3	5	6
		18	3⅜	3	6	7
		20	4⅛	3	7	8
		22	4⅛	3	8	9

GENERATOR 100% P. F., 312 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	I.H.P.	Engine Size Dia. Ins.	Engine Size Stroke Ins.	List Price Unit	Weight Pounds Unit
80581	100	Non-Cond.	1½	..	485	22	36	$15450	80700
80582	125	"	1½	..	485	20	36	15170	77400
80583	150	"	1½	..	485	18	36	14825	75750
80584	100	Cond.	...	26	485	20	36	15170	77400
80585	125	"	...	26	485	18	36	14825	75750
80586	150	"	...	26	485	16	36	14400	73000

GENERATOR 80% P. F., 250 K. W. PARALLEL OPERATION

80587	100	Non-Cond.	1½	..	403	20	36	$15170	77400
80588	125	"	1½	..	403	18	36	14825	75750
80589	150	"	1½	..	403	16	36	14400	73000
80590	100	Cond.	...	26	403	18	36	14825	75750
80591	125	"	...	26	403	18	36	14825	75750
80592	150	"	...	26	403	16	36	14400	73000

‡Generator can be wound for Standard lower voltage, viz., 240, 480, 600, without extra charge.

If parallel operation not required deduct $175.00, 11000 lbs. Net.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

SET NO. 308

DIRECT CONNECTED ENGINE UNITS
ALLIS-CHALMERS ENGINE — "AI" GENERATORS
312 K. V. A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET 2230A

MAY, 1913

SHEET NO. 2283A

GENERATOR 100% P. F., 312 K. W.

Load			½				¾				1				1¼			
I. H. P.			271				377				485				595			
K. W.			156				234				312				390			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	26.2	11.75	28.3	49.25	36.4	17.5	25.50	41.	46.8	25.	25.1	38.8	57.5	35.	26.1	39.8
125	99	"	31.6	10.25	25.8	45.	44.	15.75	23.4	37.7	56.6	22.	23.1	36.8	69.5	31.	23.4	35.7
150	121	"	38.2	9.75	24.8	43.2	54.5	15.5	22.5	36.2	70.	22.5	22.1	34.2	86.	32.5	23.1	35.2
100	91	Cond.	31.6	8.25	21.2	36.9	44.	14.25	19.75	31.6	56.6	22.	19.9	30.9	69.5	33.5	21.6	32.8
125	113	"	38.2	8.	20.9	36.4	54.5	14.25	19.5	31.3	70.	22.5	19.6	30.4	86.	34.	21.7	33.1
150	134	"	49.5	9.5	20.	34.9	69.	16.25	19.8	30.3	88.5	24.75	19.2	29.75	109.	38.	21.4	32.6

GENERATOR 80% P. F., 250 K. W.

I. H. P.			223				310				403				496			
K. W.			125				187.5				250				312.5			
100	78	Non-Cond.	26.	11.75	28.5	51.	36.2	17.5	25.7	40.8	47.	25.	25.2	40.5	57.	34.5	26.1	41.5
125	99	"	32.2	10.5	25.9	46.2	44.7	16.	23.6	39.	58.5	23.5	23.35	37.6	71.5	32.5	23.7	37.6
150	121	"	40.6	10.5	24.5	43.6	56.5	16.25	22.3	36.9	73.5	24.5	22.4	36.2	90.5	35.	23.61	37.6
100	91	Cond.	32.2	8.5	21.5	38.3	44.7	15.	20.	33.2	58.5	23.	20.25	32.6	71.5	36.	22.1	35.1
125	113	"	32.2	6.	22.25	39.7	44.7	10.5	20.1	33.1	58.5	16.	19.4	31.2	71.5	23.25	19.75	31.4
150	134	"	40.6	6.5	21.5	38.3	56.5	11.75	19.4	32.2	73.5	18.	19.9	30.4	90.5	25.2	19.3	30.7

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K.W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I.H.P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

375 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET NO. 2231 — MAY, 1913

GENERATOR

Rating				Weights			
Frame	Kilowatts P. F. 100	R.P.M.	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI48-80-11	375	150	2300	6300	9000	19000	22500

Efficiencies			Regulation	Heating		Field Data	
P. F. 100			P. F. 100	Full Load 24 Hours	1¼ Load 2 Hours	Exciter 120 Volts	Amps. at P. F.
1	¾	½				K. W.	100
94.	93.3	91.5	10	40	55	17	105

ENGINE DETAILS

Bearings				Pins				Wheel				Heaviest Piece (Frame)			
Main		Out-Board		Cross-head		Crank		Parallel Operation		Non-Parallel Operation		Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia	Wgt.	Dia	Wgt.				
12	24	11	20	5¾	7	7	6	12	27000	12	15000	15–1	51	45	10200

Crosshead Shoes		Diameters (Inches)				
Width Ins.	Length Ins.	Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
8	20½	18 20 22 24	3⅜ 4⅛ 4⅛ 4⅞	3⅞ 3⅞ 3⅞ 3⅞	6 7 8 8	7 8 9 9

† GENERATOR 100% P. F., 375 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	I.H.P.	Engine Size		List Price Unit	Weight Unit Pounds
						Dia.	Stroke		
80501	100	Non-Cond.	1½	..	580	24	36	$17000	100000
80502	125	"	1½	..	580	22	36	16700	97000
80503	150	"	1½	..	580	20	36	16250	94000
80504	100	Cond.	...	26	580	22	36	16700	97000
80505	125	"	...	26	580	20	36	16250	94000
80506	150	"	...	26	580	18	36	16000	92000

‡ Generator can be wound for Standard lower voltage viz., 240, 480, 600, without extra charge.

If parallel operation not required deduct $190.00 12000 pounds net.

† For Generator 80% Power Factor, 300 K. W., see Sheet No. 2273.

SET NO. 308

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES — "AI" GENERATORS

375 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

MAY, 1913

SHEET NO. 2272A

STEAM CONSUMPTION GUARANTEES

GENERATOR 100% P. F., 375 K. W.

Load				½				¾				1				1¼			
K. W.				187				282				375				470			
I. H. P.				327				455				580				715			
Catalog No.	I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P Hour.	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
80501	100	78	Non-Cond.	26.6	12.	28.	49.	36.9	18.	25.5	41.	47.	25.	25.2	39.1	58.	35.5	26.3	40.
80502	125	99	"	31.5	10.5	26.5	46.25	44.	15.75	23.8	38.3	56.	22.	23.25	36.1	69.	30.75	24.	36.5
80503	150	121	"	38.	9.5	24.9	43.5	53.2	15.	22.8	36.7	67.7	21.5	22.1	34.25	83.4	30.8	23.5	35.7
80504	100	91	Cond.	31.5	8.	21.4	37.4	44.	14.5	19.8	31.8	56.	21.5	20.	31.	69.	33.5	21.6	32.8
80505	125	113	"	38.	6.	22.8	39.8	53.2	13.5	19.4	31.2	67.7	21.	19.5	30.2	83.4	31.5	20.7	31.5
80506	150	134	"	47.2	9.	20.2	35.2	65.5	15.	18.9	30.4	83.7	22.5	19.	29.5	103.	34.5	20.6	31.3

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals at power factor given, and does not include power lost in main rheostat, nor to drive the exciter when required. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

375 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET NO. 2231 MAY, 1913

GENERATOR

Rating				Weights			
Frame	Kilowatts P. F. 80	R.P.M.	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI48-80-11	300	150	2300	6300	9000	19000	22500

Efficiencies			Regulation	*Heating		Field Data	
P. F. 80			P. F. 80	Full Load 24 Hours	1¼ Load 2 Hours	Exciter 120 Volts	Amps. at P. F.
1	¾	½				K. W.	80
91.	90.7	89.7	24	40	55	17	150

ENGINE DETAILS

Bearings				Pins				Wheel				Heaviest Piece (Frame)			
Main		Out-Board		Cross-head		Crank		†Parallel Operation		Non-Parallel Operation					
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia	Wgt.	Dia	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
10	20	9	18	4½	6	6	5	12	27000	12	15000	14–5	43	41	7100

Crosshead Shoes		Diameters (Inches)				
Width Ins.	Length Ins.	Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
6	16½	16	3⅜	3	5	6
		18	3⅜	3	6	7
		20	4⅛	3	7	8
		22	4⅛	3	8	9

†GENERATOR 80% P. F., 300 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	I.H.P.	Engine Size		List Price Unit	Weight Unit Pounds
						Dia.	Stroke		
80507	100	Non-Cond.	1½	..	480	22	36	$16350	88000
80508	125	"	1½	..	480	20	36	16075	85000
80509	150	"	1½	..	480	18	36	15700	83000
80510	100	Cond.	...	26	480	20	36	16075	85000
80511	125	"	...	26	480	18	36	15700	83000
80512	150	"	...	26	480	16	36	15320	81000

‡Generator can be wound for Standard lower voltage viz., 240, 480, 600 without extra charge.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

If parallel operation not required deduct $190.00, 12000 pounds net.

†For Generator 100% Power Factor, 375 K. W., see Sheet No. 2272.

SET NO. 308

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES — "AI" GENERATORS

375 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

MAY, 1913

SHEET NO. 2273A

STEAM CONSUMPTION GUARANTEES

GENERATOR 80% P. F., 300 K. W.

Load				½				¾				1				1¼			
K. W.				150				225				300				375			
I. H. P.				266				372				480				595			
Catalog No.	I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
80507	100	78	Non-Cond.	25.6	11.5	28.5	50.5	35.9	17.2	25.8	42.7	46.5	25.	25.	40.	57.5	35.	26.3	41.5
80508	125	99	"	31.	10.2	26.5	47.	43.5	15.2	23.8	39.4	56.3	22.	23.25	37.2	69.5	31.	24.	37.9
80509	150	121	"	37.	9.2	25.	44.5	53.7	15.	22.5	37.2	69.5	22.	22.2	35.5	86.	32.5	23.1	36.5
80510	100	91	Cond.	31.	8.	21.1	37.4	43.5	14.	19.85	32.8	56.5	22.	20.	32.	69.5	33.5	21.5	34.
80511	125	113	"	37.	5.	20.9	37.1	53.7	22.	19.5	32.2	69.5	22.	19.5	31.2	86.	43.5	23.1	36.5
80512	150	134	"	48.5	9.	20.	35.5	68.	16.	18.85	31.2	87.7	24.5	19.2	30.7	108.	37.	21.15	33.4

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals at power factor given, and does not include power lost in main rheostat, nor to drive exciter when required. The I.H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

SIMPLE
DIR. CONN.
"AC"120R.P.M.

ALLIS-CHALMERS SIMPLE CORLISS ENGINES

120 R. P. M., 80% POWER FACTOR, 60 CYCLE, 2 OR 3 PHASE, 240, 480 OR 2300 VOLTS

CORLISS ENGINE UNITS

DIRECT CONNECTED

OCTOBER, 1916

SHEET NO. 2335

SET NO. 304

UNIT								ENGINE																	
(a) Rating (Max.)		Steam Pressure (gauge)	Engine Condens or Non-Cond.		Engine, Generator and Wheel (No Exciter or Pulley)			(b) Wheel (Parallel Operation)		Pins (Inches)				Bearings (Inches)				Weight Heaviest Piece (Frame)	Largest Piece (Inches)		Crosshead Shoes (Inches)		Diameters (Inches)			
										Crosshead		Crank		Main		Back									
KVA	KW	Lbs.	Dia.	Str.	Cat. No.	Shipp. Wgt.	List Price	Dia.	Weight	Diam.	Length	Diam.	Length	Diam.	Length	Diam.	Length		Width	Height	Width	Length	Piston Rod	Conct. Rod Smlst. Dia.	Steam	Exhaust
234	187	150	16	36	80838	67750	.....	13	17000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	5	6
234	187	125	16	36	80839	67750	.....	13	17000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	5	6
234	187	100	18	36	80840	69750	.....	13	17000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	6	7
312	250	150	18	36	80841	76750	.....	14	20000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	6	7
312	250	125	18	36	80842	76750	.....	14	20000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	6	7
312	250	100	20	36	80843	77750	.....	14	20000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	4⅛	3	7	8
470	375	150	20	42	80844	102000	.....	15	26000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	3⅞	7	8
470	375	125	20	42	80845	102000	.....	15	26000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	3⅞	7	8
470	375	100	22	42	80846	104000	.....	15	26000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	3⅞	8	9
700	560	150	22	42	80847	124000	.....	15	38000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	3⅞	8	9
700	560	125	24	42	80848	126500	.....	15	38000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅞	3⅞	8	9
700	560	100	26	42	80849	129000	.....	15	38000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅞	3⅞	9	10
910	725	150	26	42	80850	161000	.....	15	50000	7	8½	8½	7½	15	28	13	24	16000	60	60	10	24½	4⅞	4⅝	9	10
910	725	125	28	42	80851	163500	.....	15	50000	7	8½	8½	7½	15	28	13	24	16000	60	60	10	24½	5½	4⅝	10	12
910	725	100	30	42	80852	166500	.....	15	50000	7	8½	8½	7½	15	28	13	24	16000	60	60	10	24½	5½	4⅝	10	12

GENERATOR													
(c) Rating (Maximum)		Frame	(d) Regulation	(e) Efficiencies			Excitation (120 Volts)			Weights			
KVA	KW			1	¾	½	KW	Amp.	Add (f) Cat. No.	Net Rotor	Net Stator	Total Net	Shipping
234	187	AI60-100-4¾	40	85.2	85.0	83.0	18	142	33316	7000	7300	17000	20000
312	250	AI60-100-6¼	28	86.8	86.0	83.6	19	160	33316	8600	8700	20000	24000
470	375	AI60-100-9½	27	89.5	88.9	86.8	21½	175	33316	10200	10500	23500	28000
700	560	AI60-120-8	32	91.2	90.9	89.3	22½	170	33316	13000	11700	31000	36000
910	725	AI60-120-10	34	91.4	91.1	89.5	25	195	33322	15000	13900	30500	40500

(a) This is Maximum Output & there is No Overload Capacity.
(b) Same wheel for non-parallel operation.
(c) Temperature rise by thermometer 50° C. (rotor and stator).
(d) Regulation not to be given unless required.
(e) In accordance with A. I. E. E. rules.
(f) Add $200 to list & 1500 lbs. for engine exciter pulley.

STEAM CONSUMPTION GUARANTEES

Unit				Steam Pressure (gauge)	Back Pressure (gauge)	Vacuum	Full Load						¾ Load						½ Load					
Rating		Engine					KW	IHP	MEP	% Cut-off	Lbs. per IHP Hour	Lbs. per KW Hour	KW	IHP	MEP	% Cut-off	Lbs. per IHP Hour	Lbs. per KW Hour	KW	IHP	MEP	% Cut-off	Lbs. per IHP Hour	Lbs. per KW Hour
KVA	KW	Dia.	Str.																					
234	187	16	36	150	1½	..	187	314	73.8	26	21.5	36.1	140	242	56.9	17	21.1	36.5	94	174	40.8	11	22.1	41.2
234	187	16	36	150	...	26	187	314	73.8	18	18.5	31.1	140	242	56.9	11	18.7	32.3	94	174	40.8	7	19.9	37.1
234	187	16	36	125	1½	..	187	314	73.8	35	24.8	41.7	140	242	56.9	23	23.9	39.9	94	174	40.8	14	23.3	43.5
234	187	16	36	125	...	26	187	314	73.8	25	19.4	32.8	140	242	56.9	15	19.1	33.0	94	174	40.8	9	19.7	36.7
234	187	18	36	100	1½	..	187	314	58.4	38	26.6	44.8	140	242	44.3	23	24.4	42.1	94	174	31.7	15	24.8	46.2
234	187	18	36	100	...	26	187	314	58.4	24	19.8	33.3	140	242	44.3	15	19.5	33.8	94	174	31.7	9	20.4	38.0
312	250	18	36	150	1½	..	250	415	76.3	27	21.8	36.3	188	318	58.5	18	21.1	35.8	125	229	42.5	11	22.0	40.4
312	250	18	36	150	...	26	250	415	76.3	19	18.5	30.8	188	318	58.5	12	18.6	31.5	125	229	42.5	7	19.6	36.0
312	250	18	36	125	1½	..	250	415	76.3	37	25.4	42.2	188	318	58.5	24	23.1	39.1	125	229	42.5	15	23.2	42.6
312	250	18	36	125	...	26	250	415	76.3	27	19.5	32.4	188	318	58.5	16	19.1	32.5	125	229	42.5	10	19.7	36.2
312	250	20	36	100	1½	..	250	415	61.5	41	27.7	46.1	188	318	47.2	26	24.6	41.7	125	229	33.9	16	24.5	45.0
312	250	20	36	100	...	26	250	415	61.5	26	20.1	33.4	188	318	47.2	16	19.5	33.1	125	229	33.9	10	20.1	37.0
470	375	20	42	150	1½	..	375	600	77.5	28	21.8	35.0	281	461	59.2	18	21.1	34.7	188	329	42.3	11	21.9	38.4
470	375	20	42	150	...	26	375	600	77.5	20	18.6	29.8	281	461	59.2	12	18.5	30.5	188	329	42.3	7	19.7	34.5
470	375	20	42	125	1½	..	375	600	77.5	38	25.5	40.8	281	461	59.2	25	23.1	38.0	188	329	42.3	15	23.0	40.2
470	375	20	42	125	...	26	375	600	77.5	27	19.7	31.6	281	461	59.2	17	19.1	31.5	188	329	42.3	10	19.6	34.4
470	375	22	42	100	1½	..	375	600	62.9	43	28.2	45.2	281	461	48.2	27	24.7	40.5	188	329	34.2	16	24.6	43.1
470	375	22	42	100	...	26	375	600	62.9	28	20.7	33.3	281	461	48.2	17	19.6	32.2	188	329	34.2	10	20.1	35.3
700	560	22	42	150	1½	..	560	865	90.8	37	23.5	36.5	420	661	69.5	23	21.4	33.8	280	464	49.0	14	21.5	35.6
700	560	22	42	150	...	26	560	865	90.8	27	19.4	30.0	420	661	69.5	16	18.6	29.5	280	464	49.0	9	19.1	31.7
700	560	24	42	125	1½	..	560	865	77.0	39	25.6	39.6	420	661	59.0	25	23.1	36.5	280	464	41.3	15	23.1	38.4
700	560	24	42	125	...	26	560	865	77.0	27	19.7	30.5	420	661	59.0	17	19.1	30.3	280	464	41.3	9	19.3	32.0
700	560	26	42	100	1½	..	560	865	65.5	46	29.2	45.2	420	661	49.8	28	25.0	39.5	280	464	35.2	17	24.6	41.0
700	560	26	42	100	...	26	560	865	65.5	29	20.6	32.0	420	661	49.8	18	19.6	30.9	280	464	35.2	10	20.0	33.2
910	725	26	42	150	1½	..	725	1125	85.0	33	22.7	35.4	543	856	64.0	21	21.3	33.6	363	600	45.3	13	21.7	36.0
910	725	26	42	150	...	26	725	1125	85.0	23	19.0	29.6	543	856	64.0	14	18.5	29.1	363	600	45.3	8	19.7	32.7
910	725	28	42	125	1½	..	725	1125	73.8	36	24.8	38.7	543	856	56.0	23	23.0	36.2	363	600	39.2	14	23.2	38.7
910	725	28	42	125	...	26	725	1125	73.8	25	19.5	30.4	543	856	56.0	15	19.1	30.1	363	600	39.2	9	19.9	33.0
910	725	30	42	100	1½	..	725	1125	64.0	45	28.8	45.0	543	856	48.6	27	24.8	39.1	363	600	34.1	16	24.6	40.8
910	725	30	42	100	...	26	725	1125	64.0	29	20.0	31.3	543	856	48.6	17	19.6	30.9	363	600	34.1	10	20.0	33.2

Note—Use this form with guarantees:—"When this unit is operated with .....pounds gauge steam pressure (dry saturated steam) at the throttle valve and the back pressure of.....pounds gauge or.....inches of vacuum (referred to 30 inch barometer) at the exhaust nozzle the steam consumption of the engine only will not exceed the following when the unit is driving its own exciter and developing the even loads specified below."

CORLISS ENGINE UNITS

DIRECT CONNECTED

OCTOBER, 1916

SHEET NO. 2335A

SHEET No. 2219

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE—"AI" GENERATORS

150 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

60 To this date

SEPTEMBER, 1912

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI60-100-4¾	150	120	120	2300	5300	7300	15500	18500

Regulation		Efficiencies						Heating*		Field Data		
		P. F. 100			P. F. 80					Exciter 120 Volts	Amps. at P.F.	
P.F. 100	P.F. 80	1	¾	½	1	¾	½	Full Load 24 Hrs.	1¼ Load 2 Hrs.	K. W.	100	80
9	2~~4~~	91.3	89.9	86.7	87.6	86.4	~~81.5~~ 83.0	35	50	13½	90	116

ENGINE DETAILS

†Bearings (Inches)				Pins (Inches)				Wheel				Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Parallel Operation		Non-Parallel Operation					
Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
9	18	7	13	3½	4½	4½	3½	15	20000	12	12000	13-8	37	35	5100

Crosshead Shoes		Diameters (Inches)				
Width Inches	Length Inches	Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
4½	12	12	$2\frac{11}{16}$	2¼	4	5
		14	$2\frac{11}{16}$	2¼	5	6
		16	$3\frac{3}{8}$	2¼	5	6
		18	$3\frac{3}{8}$	2¼	6	7

GENERATOR 100% P. F., 150 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. (Lbs)	Vac. (Ins)	I.H.P.	Size Dia. Ins.	Size Lgth. Ins.	Price Unit	Weight Pounds
80118	100	Non-Cond.	1½	..	242	18	36	$13200	62350
80119	125	"	1½	..	242	16	36	12950	61350
80120	150	"	1½	..	242	14	36	12825	60350
80121	100	Cond.	...	26	242	16	36	12950	61350
80122	125	"	...	26	242	14	36	12825	60350
80123	150	"	...	26	242	14	36	12825	60350

GENERATOR 80% P. F., 120 K. W. PARALLEL OPERATION

80124	100	Non-Cond.	1½	..	202	16	36	12950	61350
80125	125	"	1½	..	202	14	36	12825	60350
80126	150	"	1½	..	202	14	36	12825	60350
80127	100	Cond.	...	26	202	16	36	12950	61350
80128	125	"	...	26	202	14	36	12825	60350
80129	150	"	...	26	202	12	36	12600	59350

‡Generator can be wound for standard lower voltage, viz., 240, 480, 600 without extra charge. If Parallel Operation not required Deduct $150 and 8400 lbs.

†For Non-Parallel Operation main bearing 7"x14", outboard 7"x13", heaviest piece 13'-8" length, 33" width, 35" high, 4900 pounds.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

SET No. 308

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE — "AI" GENERATORS

150 K.V.A., 120 R.P.M., 60 CYCLE, 3 OR 3 PHASE, 2300 VOLTS

SEPTEMBER, 1912

SHEET No. 2219A

GENERATOR 100% P. F., 150 K. W.

Load			½				¾				1				1¼			
I. H. P.			141				191				242				294			
K. W.			75				112.5				150				187.5			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	25.4	11.5	29.5	45.75	34.4	16.25	26.44	44.90	43.6	22.5	25.54	41.2	53.	30.5	25.84	40.5
125	99	"	32.4	10.5	27.18	51.25	43.6	15.5	24.37	41.3	55.3	21.25	23.69	38.2	67.	29.25	24.07	37.75
150	121	"	42.	11.	24.92	47.	56.9	16.5	22.88	38.8	72.	23.75	22.66	36.6	87.5	33.5	23.54	36.8
100	91	Cond.	32.2	8.5	21.88	41.30	43.6	14.	20.28	34.4	55.3	20.1	20.24	32.6	67.	31.	21.42	23.6
125	113	"	42.	9.25	20.41	38.5	56.9	15.5	19.73	33.5	72.	23.75	20.03	32.2	87.5	35.	21.57	33.8
150	134	"	42.	7.	21.77	41.	56.9	12.	19.45	33.	72.	17.5	19.11	30.8	87.5	24.25	19.69	30.9

GENERATOR 80% P. F., 120 K. W.

I. H. P.			120				159				202				245			
K. W.			60				90				120				150			
100	78	Non-Cond.	27.35	12.5	29.33	58.7	36.25	17.5	26.48	46.8	46.1	24.5	25.79	43.35	55.8	33.25	26.39	43.
125	99	"	35.7	12.	25.64	57.28	47.4	17.5	24.38	43.	60.2	24.5	24.	40.3	73.	34.	24.94	40.7
150	121	"	35.7	9.	26.72	53.44	47.4	13.	24.00	42.4	60.2	18.	22.77	38.2	73.	24.25	22.7	37.
100	91	Cond.	27.35	6.75	23.36	46.72	36.25	10.5	21.19	37.4	46.1	15.5	20.28	34.1	55.8	21.5	20.32	33.1
125	113	"	35.7	7.	22.42	44.84	47.4	11.5	20.51	36.2	60.2	17.	19.76	33.2	73.	24.25	20.2	32.8
150	134	"	48.7	9.25	21.2	42.4	64.5	14.6	19.7	34.8	82.	20.35	19.45	32.7	99.4	31.75	21.	34.3

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS—ENGINE "AI" GENERATORS

187 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

60 Cy. Three Phase

SEPTEMBER, 1912

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. .80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI60-100-4¾	187	150	120	2300	5300	7300	15500	18500

Regulation		Efficiencies						Heating*		Field Data		
		P. F. 100			P. F. .80					Exciter 120 Volts	Amps. at P. F.	
P.F. 100	P.F. .80	1	¾	½	1	¾	½	Full Load 24 Hrs.	1¼ Load 2 Hrs.	K. W.	100	.80
10	27	92	91	88.5	88	87.5	85	40	55	13½	90	116

ENGINE DETAILS

Bearings (Inches)				Pins (Iuches)				Wheel				Heaviest Piece (Frame)			
Main		Out-board		Cross-head		Crank		Parallel Operation		Non-Parallel Operation					
Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
10	20	9	18	4½	6	6	5	15	22000	12	15000	14-5	43	41	7100

Crosshead Shoes		Diameters (Inches)				
Width Inches	Length Inches	Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
6	16½	14	$2\frac{11}{16}$	3	5	6
		16	$3\frac{3}{8}$	3	5	6
		18	$3\frac{3}{8}$	3	6	7
		20	$4\frac{1}{8}$	3	7	8

GENERATOR 100% P. F., 187 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P.	Vac.	I.H.P.	Size Dia. Ins.	Size Lgth. Ins.	Price Unit	Weight Pounds
80130	100	Non-Cond.	1½	..	300	20	36	$14200	72200
80131	125	"	1½	..	300	18	36	13875	70700
80132	150	"	1½	..	300	16	36	13450	68200
80133	100	Cond.	...	26	300	18	36	13875	70700
80134	125	"	...	26	300	16	36	13450	68200
80135	150	"	...	26	300	16	36	13450	68200

GENERATOR 80% P. F., 150 K. W. PARALLEL OPERATION

80136	100	Non-Cond.	1½	..	251	18	36	13875	70700
80137	125	"	1½	..	251	16	36	13450	68200
80138	150	"	1½	..	251	14	36	13225	67250
80139	100	Cond.	...	26	251	18	36	13875	70700
80140	125	"	...	26	251	16	36	13450	68200
80141	150	"	...	26	251	14	36	13225	67250

‡Generator can be wound for standard lower voltage, voz., 240, 480, 600 without extra charge. If Parallel Operation not required Deduct $115 and 7000 lbs.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

SET NO. 308

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE — "AI" GENERATORS

187 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SEPTEMBER, 1912

SHEET No. 2220A

GENERATOR 100% P. F., 187 K. W.

Load			½				¾				1				1¼			
I. H. P.			173				235				300				366			
K. W.			93.5				141				187				234			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	25.3	11.5	29.34	54.1	34.4	16.25	26.28	43.9	43.8	22.75	25.42	40.7	53.5	31.	25.85	40.5
125	99	"	31.2	10.25	27.14	50.1	42.5	15.	24.42	40.8	54.2	21.	23.57	27.85	64.3	27.25	23.71	37.2
150	121	"	39.4	10.	25.30	46.7	53.5	15.	22.98	38.4	68.5	22.	22.45	35.9	83.5	30.75	23.14	36.2
100	91	Cond.	31.2	8.25	22.08	42.1	42.5	13.5	20.20	33.75	54.2	20.5	20.1	32.1	64.3	28.5	20.84	32.6
125	113	"	39.4	8.5	21.16	39.1	53.5	14.	19.84	33.15	68.5	21.5	19.76	31.6	83.5	31.75	20.94	32.8
150	134	"	39.4	6.	22.04	40.6	53.5	10.75	19.67	32.85	68.5	16.25	19.06	30.5	83.5	22.5	19.37	30.4

GENERATOR 80% P. F., 150 K. W.

I. H. P.			144				196				251				308			
K. W.			75				112.5				150				187.5			
100	78	Non-Cond.	26.	11.75	29.28	56.2	35.4	17.	26.24	45.6	45.4	24.	25.54	42.8	55.6	33.	26.24	43.
125	99	"	32.8	10.75	27.	51.9	44.8	16.	24.27	42.3	57.2	22.5	23.69	39.7	70.	31.5	24.37	40.
150	121	"	43.	11.5	24.77	47.5	58.5	17.	22.93	39.9	74.7	25.	22.76	38.2	92.	26.75	24.1	39.5
100	91	Cond.	26.	6.	23.46	45.	35.4	10.	20.97	36.5	45.4	15.	20.	33.5	55.6	21.25	20.11	32.9
125	113	"	32.8	6.	21.7	41.2	44.8	10.25	20.46	35.6	57.2	15.5	19.57	32.8	70.	22.5	19.80	32.45
150	134	"	43.8	7.5	21.50	41.3	58.5	12.5	19.34	33.6	74.7	18.5	19.10	32.2	92.	26.5	20.02	32.8

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE—"AI" GENERATORS

200 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

60

SEPTEMBER, 1912

GENERATOR

Frame	Rating: Kilowatts P.F. 100	Rating: Kilowatts P.F. 80	RPM	‡Volts	Weights: Net Rotor	Weights: Net Stator	Weights: Total Net	Weights: Total Shipping
AI60-100-6¾	200	160	120	2300	6500	8700	18000	22000

Regulation P.F. 100	Regulation P.F. 80	Efficiencies P. F. 100: 1	P. F. 100: ¾	P. F. 100: ½	P. F. .80: 1	P. F. .80: ¾	P. F. .80: ½	Heating* Full Load 24 Hrs.	Heating* 1¼ Load 2 Hrs.	Field Data Exciter 120 Volts K. W.	Field Data Amps. at P. F. 100	Field Data Amps. at P. F. 80
9	24	91.8	90.5	88	88.2	87	84	35	50	17	115	142

ENGINE DETAILS

Bearings (Inches) Main Dia.	Main Length	Outboard Dia.	Outboard Length	Pins (Inches) Crosshead Dia.	Crosshead Length	Crank Dia.	Crank Length	Wheel: Parallel Operation Dia.	Parallel Operation Wgt.	Non-Parallel Operation Dia.	Non-Parallel Operation Wgt.	Heaviest Piece (Frame) Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
10	20	9	18	4½	6	6	5	15	22000	12	15000	14-5	43	41	7100

Crosshead Shoes Width Inches	Crosshead Shoes Length Inches	Diameters (Inches) Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
6	16½	14	2 1/16	3	5	6
		16	3⅜	3	5	6
		18	3⅜	3	6	7
		20	4⅛	3	7	8

GENERATOR 100% P. F., 200 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P.	Vac.	I.H.P.	Size Dia. Ins.	Size Lgth. Ins.	Price Unit	Weight Pounds
80142	100	Non-Cond.	1½	..	321	20	36	$14950	75700
80143	125	"	1½	..	321	18	36	14625	74200
80144	150	"	1½	..	321	16	36	14200	71700
80145	100	Cond.	...	26	321	20	36	14950	75700
80146	125	"	...	26	321	18	36	14625	74200
80147	150	"	...	26	321	16	36	14200	71700

GENERATOR 80% P. F., 160 K. W. PARALLEL OPERATION

80148	100	Non-Cond.	1½	..	268	18	36	14625	74200
80149	125	"	1½	..	268	16	36	14200	71700
80150	150	"	1½	..	268	16	36	14200	71700
80151	100	Cond.	...	26	268	18	36	14625	74200
80152	125	"	...	26	268	16	36	14200	71700
80153	150	"	...	26	268	14	36	13975	70750

‡Generator can be wound for standard lower voltage, viz., 240, 480, 600 without extra charge. If Parallel Operation not required Deduct $115 and 7000 lbs.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE — "A1" GENERATORS

200 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SEPTEMBER, 1912

SHEET NO. 2221A

GENERATOR 100% P. F., 200 K. W.

Load			½				¾				1				1¼			
I. H. P.			186				253				321				392			
K. W.			100				150				200				250			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	27.	12.5	28.35	52.35	37.	18.	25.71	48.35	46.8	25.	25.3	40.6	57.2	34.5	26.2	41.
125	99	"	33.6	11.	26.27	48.8	45.7	16.5	23.86	40.2	58.	23.	23.45	37.6	70.6	32.	24.27	37.95
150	121	"	42.4	11.	24.43	45.45	57.7	16.75	22.59	38.1	73.	24.25	22.45	36.	89.3	34.75	23.55	36.8
100	91	Cond.	27.	6.6	22.63	42.1	37.	10.9	20.57	34.6	46.8	15.75	19.85	31.85	57.2	22.75	20.11	31.42
125	113	"	33.6	6.5	22.1	41.	45.7	10.5	20.1	33.85	58.	16.	19.38	31.1	70.6	23.	19.7	30.8
150	134	"	42.4	7.	21.34	39.7	57.7	12.25	19.5	32.85	73.	18.	18.92	30.4	89.3	25.	19.5	30.5

GENERATOR 80% P. F., 160 K. W.

I. H. P.			156				210				268				327			
K. W.			80				120				160				200			
100	78	Non-Cond.	28.4	13.	28.48	55.4	37.9	18.5	26.09	45.6	48.2	26.	25.65	42.8	59.	37.	26.8	43.8
125	99	"	35.6	12.	26.2	50.8	47.9	17.5	24.12	42.2	61.	25.	23.79	39.7	74.6	35.5	24.95	40.8
150	121	"	35.6	8.75	26.3	50.9	47.9	13.	23.67	40.7	61.	18.	22.50	37.6	74.6	25.	22.63	37.
100	91	Cond.	28.4	7.	22.71	44.2	37.9	11.25	20.42	35.	48.2	16.5	20.	33.4	59.	24.	20.73	33.9
125	113	"	35.6	7.	22.04	42.8	47.9	11.5	20.21	35.4	61.	17.5	19.54	32.6	74.6	25.	20.10	32.85
150	134	"	46.5	8.5	21.17	41.2	62.6	14.	19.47	34.05	79.5	20.5	19.18	32.	97.2	30.	20.20	33.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE — "AI" GENERATORS

60 250 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SEPTEMBER, 1912

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI60-100-6¾	250	200	120	2300	6500	8700	18000	22000

Regulation		Efficiencies						*Heating		Field Data		
P.F. 100	P.F. 80	P. F. 100			P. F. .80			Full Load 24 Hrs.	1¼ Load 2 Hrs.	Exciter 120 Volts	Amps. at P. F.	
		1	¾	½	1	¾	½			K. W.	100	80
10	27	92.5	91.5	89.5	88.5	88	86	40	55	17	115	142

ENGINE DETAILS

Bearings (Inches)				Pins (Iuches)				Wheel				Heaviest Piece (Frame)			
Main		Out-board		Cross-head		Crank		Parallel Operation		Non-Parallel Operation					
Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
10	20	9	18	4½	6	6	5	15	30000	13	18000	14-5	43	41	7100

Crosshead Shoes		Diameters (Inches)				
Width Inches	Length Inches	Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
6	16½	16	3⅜	3	5	6
		18	3⅜	3	6	7
		20	4⅛	3	7	8
		22	4⅛	3	8	9

GENERATOR 100% P. F., 250 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P.	Vac.	I.H.P.	Size Dia. Ins.	Size Lgth. Ins.	Price Unit	Weight Pounds
80154	100	Non-Cond.	1½	..	398	22	36	$15560	86700
80155	125	"	1½	..	398	20	36	15275	83700
80156	150	"	1½	..	398	18	36	14975	82200
80157	100	Cond.	...	26	398	20	36	15275	83700
80158	125	"	...	26	398	18	36	14975	82200
80159	150	"	...	26	398	16	36	14500	79700

GENERATOR 80% P. F., 200 K. W. PARALLEL OPERATION

80160	100	Cond.	1½	..	333	20	36	15275	83700
80161	125	"	1½	..	333	18	36	14975	82200
80162	150	"	1½	..	333	18	36	14975	82200
80163	100	Cond.	...	26	333	20	36	15275	83700
80164	125	"	...	26	333	18	36	14975	82200
80165	150	"	...	26	333	16	36	14500	79700

‡Generator can be wound for standard lower voltage, voz., 240, 480, 600 without extra charge. If Parallel Operation not required Deduct $185.00, 12,000 lbs.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

SET NO. 308

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE — "A" GENERATORS

250 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SEPTEMBER, 1912

SHEET NO. 2222A

GENERATOR 100% P. F., 250 K. W.

Load			½				¾				1				1¼			
I. H. P.			228				311				398				487			
K. W.			125				187				250				312			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	27.5	12.5	28.	51.1	37.6	18.25	25.55	42.5	48.	26.	25.27	40.4	58.8	36.5	26.4	41.25
125	99	"	33.2	11.25	26.15	47.75	45.9	16.75	23.71	39.5	58.	23.	23.35	37.3	71.	32.25	24.23	37.9
150	121	"	41.2	10.5	24.4	44.6	56.2	16.	22.54	37.5	71.8	23.5	22.33	35.6	87.8	41.	23.26	36.3
100	91	Cond.	33.2	9.	21.1	39.5	45.9	15.5	19.85	33.	58.	23.25	20.15	32.1	71.	35.	21.89	34.2
125	113	"	41.2	9.25	20.58	37.6	56.2	15.	19.44	32.4	71.8	23.75	19.75	31.5	87.8	35.	21.5	33.6
150	134	"	52.	10.25	20.	36.5	71.	17.	18.84	31.4	90.8	26.	19.5	31.	111.	39.5	21.7	33.9

GENERATOR 80% P. F., 200 K. W.

I. H. P.			190				258				333				408			
K. W.			100				150				200				250			
100	78	Non-Cond.	27.7	12.75	28.15	53.5	37.7	18.5	25.71	44.5	48.6	26.5	25.3	42.1	59.6	37.5	26.7	43.75
125	99	"	34.3	11.5	25.97	51.25	46.6	17.	23.86	41.25	60.	24.25	23.5	39.2	73.5	34.25	24.67	40.4
150	121	"	34.3	8.5	26.23	50.	46.6	12.5	23.58	40.75	60.	17.75	22.34	37.2	73.5	24.5	22.45	36.8
100	91	Cond.	27.7	6.75	22.53	42.8	37.7	11.	21.42	37.1	48.6	16.75	19.84	33.1	59.6	24.5	20.31	33.2
125	113	"	34.3	6.75	21.86	41.6	46.6	11.	20.	34.6	60.	15.4	19.38	32.3	73.5	24.5	19.9	32.55
150	134	"	43.4	7.5	21.14	40.1	58.8	16.25	19.4	33.6	76.	19.	18.97	31.6	93.	27.	19.6	32.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE—"AI" GENERATORS

312 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET NO. 2223 — JUNE, 1913

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI60-100-9½	312	250	120	2300	8000	10500	21500	26000

Regulation		Efficiencies						*Heating		Field Data		
P.F. 100	P.F. 80	P. F. 100			P. F. .80			Full Load 24 Hrs.	1¼ Load 2 Hrs.	Exciter 120 Volts K. W.	Amps. at P. F.	
		1	¾	½	1	¾	½				100	80
9	24	92.3	90.9	89	89.1	88	85	35	50	20	135	165

ENGINE DETAILS

Bearings (Inches)				Pins (Inches)				Wheel				Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Parallel Operation		Non-Parallel Operation					
Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
12	24	11	20	4½	6	6	5	16	32000	15	20000	16-0	47	41	8000

Crosshead Shoes		Diameters (Inches)				
Width Inches	Length Inches	Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
6	16½	16	3⅜	3	5	6
		18	3⅜	3	6	7
		20	4⅛	3	7	8
		22	4⅛	3	8	9

GENERATOR 100% P. F., 312 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P.	Vac.	I.H.P.	Engine Size Dia. Ins.	Engine Size Stroke Ins.	List Price Unit	Weight Unit Pounds
80599	100	Non-Cond.	1½	..	487	22	42	$17250	100000
80600	125	"	1½	..	487	20	42	16975	96700
80601	150	"	1½	..	487	18	42	16650	95600
80602	100	Cond.	...	26	487	22	42	17250	100000
80603	125	"	...	26	487	20	42	16975	96700
80604	150	"	...	26	487	18	42	16650	95600

GENERATOR 80% P. F., 250 K. W. PARALLEL OPERATION

80605	100	Non-Cond.	1½	..	402	20	42	$16975	96700
80606	125	"	1½	..	402	18	42	16650	95600
80607	150	"	1½	..	402	16	42	16300	92850
80608	100	Cond.	...	26	402	20	42	16975	96700
80609	125	"	...	26	402	18	42	16650	95600
80610	150	"	...	26	402	16	42	16300	92850

‡Generator can be wound for standard lower voltage, viz., 240, 480, 600 without extra charge.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

If Non-Parallel Operation, Deduct 12000 lbs. and $200.00 Net.

SET NO. 308

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINE—"AI" GENERATORS

312 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

JUNE, 1913

SHEET NO. 2285A

GENERATOR 100% P. F., 312 K. W.

Load			½				¾				1				1¼			
I. H. P.			273				380				487				598			
K. W.			156				234				312				390			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	28.25	13.	27.5	48.1	39.3	19.5	25.4	41.2	50.3	28.	25.25	39.4	62.	40.5	27.1	41.6
125	99	"	34.3	11.5	25.5	44.6	47.6	17.5	23.5	33.2	61.	26.	23.3	36.4	74.8	36.	24.6	37.8
150	121	"	42.2	11.	24.	42.	59.8	17.5	21.2	34.4	75.4	26.	22.5	35.2	92.4	37.	23.8	36.5
100	91	Cond.	28.25	7.5	22.	33.5	39.3	12.	20.	32.5	50.3	17.5	19.7	30.7	62.	26.5	20.3	31.2
125	113	"	34.3	7.	21.5	37.6	47.6	12.	19.75	32.1	61.	17.5	19.2	30.	74.8	25.5	19.9	30.6
150	134	"	42.2	7.	20.8	36.6	59.8	13.	19.	30.8	75.4	19.	18.8	29.4	92.4	27.	19.5	30.

GENERATOR 80% P. F., 250 K. W.

I. H. P.			228				314				402				494			
K. W.			125				187				250				312			
100	78	Non-Cond.	28.6	13.	27.5	50.3	39.2	19.5	25.4	42.6	50.3	28.	25.25	40.7	61.8	40.5	27.1	48.
125	99	"	35.4	12.	25.	45.3	48.6	18.5	23.3	39.2	62.	26.	23.4	37.7	76.4	37.5	25.	39.6
150	121	"	44.8	12.	23.6	43.2	61.4	18.5	22.3	37.25	78.4	27.5	22.5	36.2	96.3	40.	24.3	38.5
100	91	Cond.	28.6	7.5	21.8	39.9	39.2	12.	20.1	33.8	50.3	17.5	19.7	31.7	61.8	26.5	20.3	32.2
125	113	"	35.4	7.	21.1	38.6	48.6	12.	19.6	33.	62.	18.	19.2	30.9	76.4	26.5	20.1	31.9
150	134	"	44.6	8.	20.4	37.3	61.4	13.5	18.9	31.8	78.4	20.5	18.75	30.2	96.3	29.	19.9	31.5

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

375 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET NO. 2224 MAY, 1913

GENERATOR

Rating				Weights			
Frame	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI60-100-9½	300	120	2300	8000	10500	21500	26000

Efficiencies P. F. 80			Regulation	*Heating		Field Data	
1	¾	½	P. F. 80	Full Load 24 Hours	1¼ Load 2 Hours	Exciter 120 Volts	Amps. at P. F.
						K. W.	80
89	89	89	27	40	55	20	165

ENGINE DETAILS

Bearings				Pins				Wheel				Heaviest Piece (Frame)			
Main		Out-Board		Cross-head		Crank		Parallel Operation		Non-Parallel Operation					
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia	Wgt.	Dia	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
12	24	11	20	4½	6	6	5	16	38000	15	20000	16–0	47	41	8000

Crosshead Shoes		Diameters (Inches)				
Width Ins.	Length Ins.	Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
6	16½	18 20 22	3⅜ 4⅛ 4⅛	3 3 3	6 7 8	7 8 9

†GENERATOR 80% P. F., 300 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	I.H.P.	Engine Size		List Price Unit	Weight Unit Pounds
						Dia. Ins.	Stroks		
80519	100	Non-Cond.	1½	..	492	22	42	$17565	105000
80520	125	"	1½	..	492	20	42	17300	102000
80521	150	"	1½	..	492	18	42	17000	101000
80522	100	Cond.	...	26	492	22	42	17565	105000
80523	125	"	...	26	492	20	42	17300	102000
80524	150	"	...	26	492	18	42	17000	101000

‡Generator can be wound for standard lower voltage, viz., 240, 480, 600 without extra charge. If Parallel Operation not required Deduct $275.00, 18000 lbs. net.

*NOTE:—At 80% P. F., an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

†For Generator 100% P. F. see sheet No. 2274.

SET NO. 308

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

375 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

MAY, 1913

SHEET NO. 2275A

STEAM CONSUMPTION GUARANTEES

GENERATOR 80% P. F., 300 K. W.

Load				½				¾				1				1¼			
K. W.				150				225				300				375			
I. H. P.				275				378				492				605			
Catalog No.	I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
80519	100	78.	Non-Cond.	28.4	13.	27.5	50.5	39.2	19.5	25.2	42.3	51.	28.5	25.25	41.2	62.5	41.3	27.2	43.8
80520	125	99.	"	34.4	11.5	25.5	46.75	47.3	17.5	23.5	39.5	61.5	25.	23.25	38.	75.7	36.5	24.9	40.25
80521	150	121.	"	42.6	11.	23.9	43.8	58.5	17.	22.2	37.3	76.	26.	22.4	36.6	93.5	38.	23.9	38.6
80522	100	91.	Cond.	28.4	7.	22.	40.5	39.2	12.	20.1	33.8	51.	18.2	19.7	32.2	62.5	27.	20.5	33.2
80523	125	113.	"	34.4	7.5	21.4	39.3	47.3	11.	19.8	33.3	61.5	18.	19.2	31.4	75.7	26.	20.	32.3
80524	150	134.	"	42.6	7.	21.	38.5	58.5	12.5	20.2	34.	76.	19.	18.7	30.6	93.5	27.5	19.5	31.5

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals and does not include power lost in main rheostat nor to drive the exciter when required. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

375 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET NO. 2224 MAY, 1913

GENERATOR

Rating				Weights			
Frame	Kilowatts P. F. 100	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI60-100-9½	375	120	2300	8000	10500	21500	26000

Efficiencies P. F. 100			Regulation	Heating		Field Data	
						Exciter 120 Volts	Amps. at P. F.
1	¾	½	P. F. 100	Full Load 24 Hours	1¼ Load 2 Hours	K. W.	100
93	92	90.5	10	40	55	20	135

ENGINE DETAILS

Bearings				Pins				Wheel				Heaviest Piece (Frame)			
Main		Out-Board		Cross-head		Crank		Parallel Operation		Non-Parallel Operation					
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia	Wgt.	Dia	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
12	24	11	20	5¾	7	7	6	16	38000	15	20000	16–9	51	45	10800

Crosshead Shoes		Diameters (Inches)				
Width Ins.	Length Ins.	Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
8	20½	20 22 24	4⅛ 4⅛ 4⅞	3⅞ 3⅞ 3⅞	7 8 8	8 9 9

†GENERATOR 100% P. F., 375 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	I.H.P.	Engine Size		List Price Unit	Weight Unit Pounds
						Dia. Ins.	Stroke Ins.		
80513	100	Non-Cond.	1½	..	587	24	42	$18325	117500
80514	125	"	1½	..	587	22	42	18050	114800
80515	150	"	1½	..	587	20	42	17700	111800
80516	100	Cond.	...	26	587	24	42	18325	117500
80517	125	"	...	26	587	22	42	18050	114800
80518	150	"	...	26	587	20	42	17700	117500

‡ Generator can be wound for standard lower voltage, viz., 240, 480, 600 without extra charge. If Parallel Operation not required Deduct $275.00, 18000 lbs. net.

† For Generator 80% P. F., See Sheet No. 2275.

SET NO. 388

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES — "AI" GENERATORS

375 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

MAY, 1913

SHEET NO. 2274A

STEAM CONSUMPTION GUARANTEES

GENERATOR 100% P. F., 375 K. W.

Load				½				¾				1				1¼			
K. W.				187				282				375				470			
I. H. P.				329				460				587				720			
Catalog No.	I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
80513	100	78.	Non-Cond.	28.6	13.	27.2	47.8	39.8	19.75	25.1	40.9	51.	28.5	25.2	39.4	62.6	41.5	28.	43.1
80514	125	99.	"	34.4	11.25	25.45	44.8	47.2	17.25	23.35	38.1	60.7	24.75	23.2	36.3	74.4	35.25	24.5	37.7
80515	150	121.	"	41.1	10.5	24.25	42.75	57.5	16.75	22.3	36.4	73.5	24.5	22.25	34.9	90.	35.	23.5	36.1
80516	100	91.	Cond.	28.6	7.	21.7	38.1	39.8	12.25	19.87	32.4	51.	18.25	19.6	30.7	62.6	26.75	20.4	31.1
80517	125	113.	"	34.	6.5	21.3	37.5	47.2	11.5	19.6	32.	60.7	17.5	19.1	30.	74.4	25.	19.7	30.
80518	150	134.	"	41.1	6.75	21.	37.	57.5	12.	19.1	31.1	73.5	18.	18.7	29.2	90.	25.25	19.2	29.6

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals and does not include power lost in main rheostat nor to drive the exciter when required. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

425 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET NO. 2225 JUNE, 1913

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI60-120-8	425	340	120	2300	12200	11700	30000	35000

Regulation		Efficiencies						*Heating		Field Data		
P.F. 100	P.F. 80	P. F. 100			P. F. .80			Full Load 24 Hrs.	1¼ Load 2 Hrs.	Exciter 120 Volts K. W.	Amps. at P. F.	
		1	¾	½	1	¾	½				100	80
8	20	93	91.5	89.5	89	87	83	35	50	18	115	155

ENGINE DETAILS

Bearings (Inches)				Pins (Inches)				Wheel				Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Parallel Operation		Non-Parallel Operation					
Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Length	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
12	24	11	20	5¾	7	7	6	16	40000	15	20000	16-9	51	54	10800

Crosshead Shoes		Diameters (Inches)				
Width Inches	Length Inches	Cylinders	Piston Rod	Conn. Rod Smallest	Steam	Exhaust
8	20½	20	4⅛	3⅞	7	8
		22	4⅛	3⅞	8	9
		24	4⅞	3⅞	8	9
		26	4⅞	3⅞	9	10

GENERATOR 100% P. F., 425 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P.	Vac.	I.H.P.	Engine Size Dia. Ins.	Engine Size Stroke Ins.	List Price Unit	Weight Unit Pounds
80611	100	Non-Cond.	1½	..	658	26	42	$20000	134600
80612	125	"	1½	..	658	24	42	19475	130100
80613	150	"	1½	..	658	22	42	19250	127500
80614	100	Cond.	...	26	658	24	42	19475	130100
10615	125	"	...	26	658	22	42	19250	127500
80616	150	"	...	26	658	22	42	19250	127500

GENERATOR 80% P. F., 340 K. W. PARALLEL OPERATION

80617	100	Non-Cond.	1½	..	550	24	42	$19475	130100
80618	125	"	1½	..	550	22	42	19250	127500
80619	150	"	1½	..	550	20	42	18850	124100
80620	100	Cond.	...	26	550	22	42	19250	127500
80621	125	"	...	26	550	20	42	18850	124100
80622	150	"	...	26	550	20	42	18850	124100

‡Generator can be wound for standard lower voltage, viz., 240, 480, 600 without extra charge.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

If Parallel Operation not required Deduct 20000 lbs., $295.00 dollars, net.

SET NO. 308

DIRECT CONNECTED ENGINE UNITS
ALLIS-CHALMERS ENGINE—"A" GENERATORS
400 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SHEET NO. 2286A

JUNE, 1913

GENERATOR 100% P. F. 425 K. W.

Load			½				¾				1				1¼			
I. H. P.			370				517				658				807			
K. W.			212.5				319				425				531			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	27.5	12.5	27.3	47.5	38.3	19.	25.	40.5	48.8	27.	24.9	38.6	60.	38.	26.4	40.2
125	99	"	32.1	10.5	25.9	45.	45.	16.5	23.4	38.	57.2	22.5	23.	35.7	70.	31.5	23.75	36.1
150	121	"	38.	9.5	24.4	42.4	53.4	15.	22.3	36.2	68.	21.5	21.9	33.9	83.5	30.5	22.7	34.5
100	91	Cond.	32.1	8.5	20.7	36.	45.	15.	19.5	31.6	57.2	22.5	19.9	30.6	70.	33.5	21.5	32.7
125	113	"	38.	8.	20.4	35.5	53.4	14.	19.1	31.	68.	21.5	19.3	29.9	83.5	32.	20.6	31.3
150	134	"	38.	5.5	21.4	37.2	53.4	11.	19.3	31.3	68.	16.	18.6	28.9	83.5	22.5	18.8	28.6

GENERATOR 80% P. F. 340 K. W.

I. H. P.			319				434				550				670			
K. W.			170				255				340				425			
100	78	Non-Cond.	27.8	12.5	27.2	51.	37.7	18.5	25.1	42.7	47.8	26.	24.9	40.4	58.4	36.	26.	41.
125	99	"	33.	11.	25.5	47.8	45.	16.5	23.4	39.8	57.	22.5	23.	37.2	69.3	31.5	23.75	37.5
150	121	"	40.	10.5	24.	45.	54.	15.	22.2	37.7	69.	20.2	22.	35.6	84.	31.	22.7	35.8
100	91	Cond.	33.	9.	20.5	38.	45.	15.	19.5	33.2	57.	22.5	19.8	32.	69.3	33.5	21.3	33.6
125	113	"	40.	8.5	20.25	38.	54.	14.	19.1	32.5	69.	22.	19.3	31.2	84.	32.5	20.6	32.4
150	134	"	40.	6.25	21.	39.4	54.	11.	19.25	32.8	69.	16.5	18.6	30.1	84.	22.5	18.8	29.8

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

SIMPLE
DIR. CONN.
"D C"

Set No. 43

SHEET NO. 2340

Direct Connected Engine Units

Direct Current Generators

150 R. P. M.

March, 1919

ALLIS-CHALMERS SIMPLE CORLISS ENGINES

150 R. P. M., Direct Current Type "IC" Two-Wire, 250 Volt or "ICW" Three-Wire, 125-250 Volt Generators

UNIT							ENGINE																			
(a) Rating (Maximum)	Steam Pressure (gauge)	Engine Condensing or Non-Cond.		(b) Engine, Generator, and Wheel (Two-Wire)			Wheel		Pins (Ins.)				Bearings (Ins.)				Weight Heaviest Piece (Frame)	Largest Piece (Ins.)		Cross-head Shoes (Ins.)		Diameters (Inches)			
									Cross-head		Crank		Main		Back											
K.W.	Lbs.	Dia.	Str.	Cat. No.	Shipp. Wgt.	List Price	Dia.	Wgt.	Diam.	Length	Diam.	Length	Diam.	Len	Diam.	Length		Width	Height	Width	Length	Piston Rod	Connect. Rod Smallest Dia.	Steam	Exhaust
125	150	12	30	81001	44500	$11560	10	9000	3½	4½	4½	3½	7	14	7	13	5000	36	42	4½	12	2 11/16	2¼	4	5
125	125	12	30	81002	44500	11560	10	9000	3½	4½	4½	3½	7	14	7	13	5000	36	42	4½	12	2 11/16	2¼	4	5
200	150	14	36	81003	50500	13840	11	12000	3½	4½	4½	3½	7	14	7	13	5000	36	42	4½	12	2 11/16	2¼	5	6
200	125	14	36	81004	50500	13840	11	12000	3½	4½	4½	3½	7	14	7	13	5000	36	42	4½	12	2 11/16	2¼	5	6
250	150	16	36	81005	70500	16670	12	14000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	5	6
250	125	16	36	81006	70500	16670	12	14000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	5	6
375	150	18	36	81007	83500	19660	12	18000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	6	7
375	125	20	36	81008	84500	19780	12	18000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	4⅛	3	7	8

Prices Cancelled 1/13/21

GENERATOR												
Rating (Max.)	Frame	Heating (Rise)		(c) Efficiencies			Two-Wire			Three-Wire		
								Weights			Extra	
K.W.		Windings	Commutator	1	¾	½	Amp.	Arm.	Shipp.	Amps. Neutral	List Price	
125	6-34-10½	50°C.	60°C.	91.0	91.0	90.2	500	3700	16400	125	$570.00	
200	6-40-11	50°C.	60°C.	91.4	91.4	90.5	800	5500	17200	200	625.00	
250	8-45-11½	50°C.	60°C.	92.3	92.1	91.0	1000	7300	25600	250	630.00	
375	10-52-12	50°C.	60°C.	92.7	92.7	91.7	1500	7700	32400	375	480.00	

(a) This is Maximum Output and there is No Overload Capacity.

(b) Weight and price cover Two-Wire generator—for Three-Wire generator add price given below.

(c) In accordance with A. I. E. E. rules.

Note—For Economies see other side.

STEAM CONSUMPTION GUARANTEES

UNIT						FULL LOAD						¾ LOAD						½ LOAD					
K.W. Rating	Engine Dia.	Engine Str.	Steam Pressure (gauge)	Back Pressure (gauge)	Vacuum	K.W.	I.H.P.	M.E.P.	% Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	M.E.P.	% Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	M.E.P.	% Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour
125	12	30	150	..	26	125	197	78.6	21	18.6	29.3	94	151	60.3	14	18.5	29.7	63	106	42.3	8	19.4	32.8
125	12	30	150	1½	..	125	197	78.6	28	21.9	34.5	94	151	60.3	20	21.5	34.6	63	106	42.3	13	22.8	38.6
125	12	30	125	..	26	125	197	78.6	28	19.6	30.9	94	151	60.3	18	19.1	30.7	63	106	42.3	11	19.5	32.9
125	12	30	125	1½	..	125	197	78.6	39	25.3	40.0	94	151	60.3	26	23.0	37.3	63	106	42.3	17	23.4	40.0
200	14	36	150	..	26	200	311	75.5	20	18.3	28.4	150	238	57.8	13	18.5	29.2	100	166	40.3	7	19.6	32.4
200	14	36	150	1½	..	200	311	75.5	27	21.7	33.7	150	238	57.8	19	21.5	34.1	100	166	40.3	12	23.1	38.3
200	14	36	125	..	26	200	311	75.5	26	19.5	30.3	150	238	57.8	17	19.0	30.1	100	166	40.3	10	19.6	32.5
200	14	36	125	1½	..	200	311	75.5	36	24.5	38.1	150	238	57.8	25	23.9	37.9	100	166	40.3	16	23.6	39.2
250	16	36	150	..	26	250	389	72.6	18	18.4	28.6	188	297	55.5	12	18.5	29.3	125	208	38.8	7	19.8	32.9
250	16	36	150	1½	..	250	389	72.6	25	21.5	33.4	188	297	55.5	18	21.5	34.0	125	208	38.8	12	23.4	38.9
250	16	36	125	..	26	250	389	72.6	25	19.3	29.9	188	297	55.5	16	18.9	29.9	125	208	38.8	9	19.7	32.7
250	16	36	125	1½	..	250	389	72.6	34	24.0	37.3	188	297	55.5	23	22.8	36.1	125	208	38.8	15	23.9	39.7
375	18	36	150	..	26	375	577	84.6	23	18.8	29.0	282	441	64.7	15	18.5	28.9	188	309	45.4	9	19.1	31.4
375	18	36	150	1½	..	375	577	84.6	31	22.6	34.7	282	441	64.7	22	21.5	33.7	188	309	45.4	14	22.5	37.0
375	20	36	125	..	26	375	577	68.9	23	19.0	29.3	282	441	52.6	15	18.9	29.7	188	309	36.9	8	19.9	32.6
375	20	36	125	1½	..	375	577	68.9	31	23.5	36.1	282	441	52.6	22	22.7	35.6	188	309	36.9	14	24.2	39.8

Note:—Use this form with guarantees:—"When this unit is operated with_____pounds gauge steam pressure (dry saturated steam) at the throttle valve and the back pressure of____pounds gauge or____inches of vacuum (referred to 30 inch barometer) at the exhaust nozzle the steam consumption of the engine only will not exceed the following when the unit is developing the even loads specified below."

Direct Connected Engine Units

Direct Current Generators

150 R. P. M.

March, 1919

SHEET NO. 2340A

ALLIS-CHALMERS SIMPLE CORLISS ENGINES

120 and 125 R. P. M. Direct Current Type "IC" Two-Wire, 250 Volt or "ICW" Three-Wire, 125-250 Volt Generators

Set No. 1 10/6 ↓ not c

UNIT

(a) Rating (Maximum) and Speed		Steam Pressure (gauge)	Engine Condensing or Non-Cond.		(b) Engine, Generator, and Wheel (Two-Wire)		
K.W.	RPM	Lbs.	Dia.	Str.	Cat. No.	Shipp. Wgt.	List Price
300	120	150	18	36	81009	85000	$19450
300	120	125	20	36	81010	86000	19570
400	120	150	20	42	81011	107000	22640
400	120	125	20	42	81012	107000	22640
500	125	150	22	42	81013	125000	26350
500	125	125	22	42	81014	125000	26350
750	120	150	26	42	81015	174000	35510
750	120	125	28	42	81016	176500	35840

ENGINE

Wheel		Pins (Ins.)				Bearings (Ins.)				Weight Heaviest Piece (Frame)	Largest Piece (Ins.)		Crosshead Shoes (Ins.)		Diameters (Inches)			
		Crosshead		Crank		Main		Back										
Dia.	Wgt.	Diam.	Length	Diam.	Length	Diam.	Length	Diam.	Length		Width	Height	Width	Length	Piston Rod	Connect. Rod Smallest Dia.	Steam	Exhaust
14	21000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	6	7
14	21000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	4⅛	3	7	8
15	24000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	3⅞	7	8
15	24000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	3⅞	7	8
15	26000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	3⅞	8	9
15	26000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	3⅞	8	9
16	38000	7	8½	8½	7½	15	28	13	24	16000	60	60	10	24½	4⅞	4⅝	9	10
16	38000	7	8½	8½	7½	15	28	13	24	16000	60	60	10	24½	5½	4⅝	10	12

GENERATOR

Then Cancelled 1/12/21

Rating (Max.)	Frame Number	Heating (Rise)		(c) Efficiencies			Two-Wire			Three-Wire	
							Amp.	Weights		Amps. Neutral	Extra
K.W.		Windings	Commutator	1	¾	½		Arm.	Shipp.		List Price
300	10–52–12	50°C.	60°C.	92.5	92.5	91.5	1200	7700	31000	300	$ 900
400	10–60–12	50°C.	60°C.	92.8	92.8	91.7	1600	8400	34500	400	1000
500	10–66–11½	50°C.	60°C.	92.9	92.9	91.9	2000	13500	48500	500	1100
750	12–72–15	50°C.	60°C.	94.1	94.0	93.2	3000	19000	65000	750	1300

(a) This is Maximum Output and there is No Overload Capacity.

(b) Weight and price cover Two-Wire generator—for Three-Wire generator add price given below.

(c) In accordance with A. I. E. E. rules.

Note—For Economies see other side.

Direct Connected Engine Units

Direct Current Generators

120 and 125 R. P. M.

March, 1919

SHEET NO. 2341

Direct Connected Engine Units

Direct Current Generators

120 and 125 R. P. M.

March, 1919

STEAM CONSUMPTION GUARANTEES

UNIT			Steam Pressure (gauge)	Back Pressure (gauge)	Vacuum	FULL LOAD						¾ LOAD						½ LOAD					
K.W. Rating	Engine Dia.	Engine Str.				K.W.	I.H.P.	M.E.P.	% Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	M.E.P.	% Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	M.E.P.	% Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour
300	18	36	150	..	26	300	463	84.8	23	18.9	29.1	225	354	64.9	15	18.5	29.0	150	248	45.5	9	19.1	31.5
300	18	36	150	1½	..	300	463	84.8	31	22.6	34.9	225	354	64.9	22	21.5	33.8	150	248	45.5	14	22.5	37.1
300	20	36	125	..	26	300	463	69.0	23	19.1	29.4	225	354	52.8	15	18.9	29.6	150	248	37.0	8	19.8	32.8
300	20	36	125	1½	..	300	463	69.0	31	23.4	36.1	225	354	52.8	22	22.6	35.4	150	248	37.0	14	24.0	39.7
400	20	42	150	..	26	400	615	78.6	21	18.5	28.5	300	469	59.9	13	18.4	28.7	200	329	42.1	8	19.4	31.8
400	20	42	150	1½	..	400	615	78.6	28	21.9	33.6	300	469	59.9	20	21.5	33.6	200	329	42.1	13	22.8	37.5
400	20	42	125	..	26	400	615	78.6	28	19.7	30.3	300	469	59.9	18	19.0	29.7	200	329	42.1	11	19.4	31.9
400	20	42	125	1½	..	400	615	78.6	38	25.1	38.6	300	469	59.9	25	22.9	35.8	200	329	42.1	17	23.4	38.5
500	22	42	150	..	26	500	766	77.4	20	18.5	28.3	375	585	59.1	13	18.4	28.7	250	409	41.3	7	19.4	31.6
500	22	42	150	1½	..	500	766	77.4	28	21.8	33.3	375	585	59.1	19	21.5	33.4	250	409	41.3	13	22.9	37.5
500	22	42	125	..	26	500	766	77.4	27	19.6	30.0	375	585	59.1	18	18.9	29.5	250	409	41.3	10	19.4	31.8
500	22	42	125	1½	..	500	766	77.4	37	24.8	38.0	375	585	59.1	25	22.9	35.6	250	409	41.3	17	23.5	38.4
750	26	42	150	..	26	750	1131	85.2	24	18.8	28.3	563	865	65.2	15	18.4	28.2	375	603	45.4	9	19.0	30.6
750	26	42	150	1½	..	750	1131	85.2	32	22.6	34.1	563	865	65.2	22	21.5	32.9	375	603	45.4	14	22.4	35.7
750	28	42	125	..	26	750	1131	73.6	25	19.3	29.0	563	865	56.3	18	18.8	28.9	375	603	39.3	10	19.5	31.4
750	28	42	125	1½	..	750	1131	73.6	34	24.1	36.3	563	865	56.3	24	22.8	35.0	375	603	39.3	16	23.7	38.1

Note:—Use this form with guarantees:—"When this unit is operated with_____pounds gauge steam pressure (dry saturated steam) at the throttle valve and the back pressure of____pounds gauge or____inches of vacuum (referred to 30 inch barometer) at the exhaust nozzle the steam consumption of the engine only will not exceed the following when the unit is developing the even loads specified below."

SET NO. 303

ET

ALLIS-CHALMERS CORLISS ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
16-31-9½A	80	150	250	12700	2800	86.7	87.3	87.5	86.0

Temperature Guarantees:—Full load 24 hours 40° C. on windings, 45° C. on commutator; 25% overload for 2 hours, 60° C. on winding, 60° C. on commutator, and 50% overload momentarily without injury.
*Three Wire Generators—Specifications same as above except total shipping weight generator 14,000 pounds.
For General Information see Sheet No. 2212H.
For Three Wire Generators—Add $230.00 net to Net Price and 1300 pounds net to Weight of Unit.

ENGINE DETAILS

Bearings				Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)					Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Width Ins.	Length Ins.	Dia.	Wgt.	Cylinder	Conn.Rod Smallest	Piston Rod	Steam Nozzle	Exhaust Nozzle	Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.													
7	14	7	13	3½	4½	4½	3½	4½	12	9	7500	12	2¼	2 11/16	4	5	10–7	33	35	4100
												14	2¼	2 11/16	5	6				

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size		List (°) Price Unit	Weight Unit
					Dia.	Stroke		
80651H	100	Non-Cond.	1½	..	14	24	$9115	37700
80652H	125	"	1½	..	12	24	8980	36550
80653H	150	"	1½	..	12	24	8980	36550
80654H	100	Cond.	...	26	14	24	9115	37700
80655H	125	"	...	26	12	24	8980	36550
80656H	150	"	...	26	12	24	8980	36550

(†) The wheel listed and included in price is for either a steady lighting or power load. If load is "lighting combined with fluctuating power load" use 10 ft. diameter wheel weighing 10,000 pounds. Add 2,500 pounds, $55.00 dollars net
(°) For three wire generator make addition to net price. Amount given above.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
80 K. W., 150 R. P. M., "D. C." GENERATORS

APRIL, 1914

SHEET NO. 2300-H

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
80 K. W., 150 R. P. M., "D. C." GENERATORS

APRIL, 1914

SHEET NO. 2300-AH

STEAM CONSUMPTION GUARANTEES

Load			½				¾				1				1¼			
K. W.			40				60				80				100			
I. H. P.			75				103				133				166			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	26.7	12.	29.5	54.8	37.	18.	26.4	45.5	47.8	26.	26.2	43.8	59.3	38.	27.8	46.
125	99	"	36.2	12.	26.	48.4	50.3	19.	24.2	41.6	64.6	27.5	24.6	41.	81.	41.5	27.	44.8
150	121	"	36.2	9.	26.1	48.5	50.3	14.	23.7	40.8	64.6	20.	23.	38.4	81.	29.	23.7	39.3
100	91	Cond.	26.7	7.	23.3	43.3	37.	11.	21.1	36.3	47.8	16.5	20.5	34.2	59.3	24.5	21.1	35.
125	113	"	36.2	7.5	21.9	40.8	50.3	12.5	20.3	34.9	64.6	20.	20.1	33.6	81.	30.	21.3	35.3
150	134	"	36.2	5.	22.9	42.5	50.3	9.5	20.6	35.4	64.6	15.	19.6	32.7	81.	21.5	19.7	32.7

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under conditions specified, and do not include that used by the auxiliaries. Generator load is true kilowatt output at the terminals and does not include the power lost in the rheostat. The I. H. P. specified shows power developed in the engine cylinder when generator is delivering the true K. W. output given at the load specified.

SET NO. 201

SHEET NO. 2301-H

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
110 K. W., 150 R. P. M., "D. C." GENERATORS
APRIL, 1914

ALLIS-CHALMERS CORLISS ENGINES
DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I6-34-10½A	110	150	250	15900	3700	88.6	89.3	89.5	88.5

Temperature Guarantees:—Full load 24 hours 40° C. on windings, 45° C. on commutator; 25% overload for 2 hours, 60° C. on windings, 60° C. on commutator, and 50% overload momentarily without injury.
*Three Wire Generators—Specifications same as above except total shipping weight generator 17,300 pounds.
For General Information see Sheet No. 2212H.
For Three Wire Generators—Add $260.00 net to Net Price and 1400 pounds net to Weight of Unit.

ENGINE DETAILS

Bearings				Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)					Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Width Ins.	Length Ins.	Dia.	Wgt.	Cylinder	Conn. Rod Smallest	Piston Rod	Steam Nozzle	Exhaust Nozzle	Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.													
7	14	7	13	3½	4½	4½	3½	4½	12	10	7500	12	2¼	2 11/16	4	5	12–3	33	35	4500
												14	2¼	2 11/16	5	6				

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size		List (°) Price Unit	Weight Unit
					Dia.	Stroke		
80657H	100	Non-Cond.	1½	..	14	30	$10060	44500
80658H	125	"	1½	..	12	30	9930	41400
80659H	150	"	1½	..	12	30	9930	41400
80660H	100	Cond.	...	26	14	30	10060	44500
80661H	125	"	...	26	12	30	9930	41400
80662H	150	"	...	26	12	30	9930	41400

(†) The wheel listed and included in price is for either a steady lighting or power load. If load is "lighting combined with fluctuating power load" use 10 ft. diameter wheel weighing 11,000 pounds. Add 3,500 pounds, $85.00 dollars net.
(°) For three wire generators make addition to net price. Amount given above.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
110 K. W., 150 R. P. M., "D. C." GENERATORS

APRIL, 1914

SHEET NO. 2301-AH

STEAM CONSUMPTION GUARANTEES

Load			½				¾				1				1¼			
K. W.			55				82 5				110				137.5			
I. H. P.			99				138				179				222			
I.S.P.	Max. M.E.P. 75 % Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	28.3	13.	28.2	50.75	39.4	20.	26.2	43.8	51.2	28.5	26.4	43.	63.5	42.5	28.8	46.5
125	99	"	38.5	13.	25.6	46.2	53.8	21.	24.2	40.5	69.8	31.5	25.	40.7	86.5	48.5	28.4	45.8
150	121	"	38.5	9.5	25.6	46.2	53.8	15.	23.4	39.2	69.8	22.5	23.1	37.6	86.5	32.5	24.2	39.
100	91	Cond.	28.3	7.	22.7	41.	39.4	12.	20.8	34.8	51.2	18.5	20.6	33.6	63.5	27.5	21.5	34.7
125	113	"	38.5	8.	21.5	38.7	53.8	14.	20.1	33.7	69.8	22.5	20.4	33.3	86.5	34.	22.1	35.6
150	134	"	38.5	5.8	22.4	40.3	53.8	11.	20.2	33.8	69.8	16.8	19.6	32.	86.5	23.7	19.6	31.6

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under conditions specified, and do not include that used by the auxiliaries. Generator load is true kilowatt output at the terminals and does not include the power lost in the rheostat. The I. H. P. specified shows power developed in the engine cylinder when generator is delivering the true K. W. output given at the load specified.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
160 K. W., 150 R. P. M., "D. C." GENERATORS

APRIL, 1914

ALLIS-CHALMERS CORLISS ENGINES
DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I6-40 11B	160	150	250	16200	5700	90.5	91	90	90

Temperature Guarantees:—Full load 24 hours 40° C. on windings, 45° C. on commutator: 25 % overload for 2 hours, 60° C. on windings, 60° C on commutator, and 50 % overload momentarily without injury.
*Three Wire Generators—Specifications same as above except total shipping weight generator 18,200 pounds.
For General Information see Sheet No. 2212H.
For Three Wire Generators—Add $300.00 net to Net Price and 2,000 pounds net to Weight of Unit.

ENGINE DETAILS

Bearings				Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)					Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank														
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Width Ins.	Length Ins.	Dia.	Wgt.	Cylinder	Conn.Rod Smallest	Piston Rod	Steam Nozzle	Exhaust Nozzle	Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
												14	2¼	2 11/16	5	6				
7	14	7	13	3½	4½	4½	3½	4½	12	11	9000	16	2¼	3⅜	5	6	12–3	33	35	4500

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size		List (°) Price Unit	Weight Unit
					Dia.	Stroke		
80663H	100	Non-Cond.	1½	..	16	30	$11275	46400
80664H	125	"	1½	..	16	30	11275	46400
80665H	150	"	1½	..	14	30	11125	44300
80666H	100	Cond.	...	26	16	30	11275	46400
80667H	125	"	...	26	14	30	11125	44300
80668H	150	"	...	26	14	30	11125	44300

(†) The wheel listed and included in price is for either a steady lighting or power load. If load is "lighting combined with fluctuating power load" use 12 ft. diameter wheel weighing 14,000 pounds. Add 5,000 pounds, $104.00 dollars net.
(°) For three wire generators make addition to net price. Amount given above.

SET NO. 208

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
160 K. W., 150 R. P. M., "D. C." GENERATORS

APRIL, 1914

SHEET NO. 2302-AH

STEAM CONSUMPTION GUARANTEES

Load			½				¾				1				1¼			
K. W.			80				120				160				200			
I. H. P.			138				198				254				314			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	30.3	13.8	27.9	48.3	43.5	22.5	25.8	42.5	55.5	33.5	26.4	41.8	68.5	51.	29.9	47.
125	99	"	30.3	10.	27.7	48.	43.5	15.5	24.5	40.3	55.5	21.5	23.7	37.6	68.5	30.3	24.2	38.
150	121	"	39.5	10.	25.3	43.8	56.5	16.2	22.8	37.5	72.5	24.	22.6	35.8	89.5	35.	23.8	37.4
100	91	Cond.	30.3	8.	22.2	38.4	43.5	14.	20.3	33.4	55.5	21.2	20.2	32.	68.5	32.5	21.6	33.9
125	113	"	39.5	8.5	21.5	37.2	56.5	15.	19.8	32.6	72.5	24.	20.1	31.9	89.5	37.	21.9	34.4
150	134	"	39.5	6.	22.1	38.3	56.5	11.75	19.7	32.5	72.5	18.5	19.1	31.3	89.5	25.2	19.4	30.5

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under conditions specified, and do not include that used by the auxiliaries. Generator load is true kilowatt output at the terminals and does not include the power lost in the rheostat. The I. H. P. specified shows power developed in the engine cylinder when generator is delivering the true K. W. output given at the load specified.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
200 K. W., 150 R. P. M., "D. C." GENERATORS

APRIL, 1914

ALLIS-CHALMERS CORLISS ENGINES
DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I8-45-12A	200	150	250	27600	7700	90.8	91	90	89

Temperature Guarantees:—Full load 24 hours 35° C. on windings, 40° C. on commutator; 25% overload for 2 hours, 50° C. on windings, 55° C. on commutator; 50% overload for 1 hour without injury, and 75% overload momentarily without injury.
*Three Wire Generators—Specifications same as above except total shipping weight generator 29,600 pounds.
For General Information see Sheet No. 2212H.
For Three Wire Generators—Add $350.00 net to Net Price and 2,000 pounds net to Weight of Unit.

ENGINE DETAILS

Bearings				Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)					Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Width Ins.	Length Ins.	Dia.	Wgt.	Cylinder	Conn. Rod Smallest	Piston Rod	Steam Nozzle	Exhaust Nozzle	Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.													
												14	3	2 11/16	5	6				
												16	3	3⅜	5	6				
10	20	9	18	4½	6	6	5	6	16½	12	14000	18	3	3⅜	6	7	14–5	43	41	7100

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size		List (°) Price Unit	Weight Unit
					Dia.	Stroke		
80669H	100	Non-Cond.	1½	..	18	36	$13385	72300
80670H	125	"	1½	..	16	36	13250	69600
80671H	150	"	1½	..	14	36	13140	68600
80672H	100	Cond.	...	26	16	36	13250	69600
80673H	125	"	...	26	16	36	13250	69600
80674H	150	"	...	26	14	36	13140	68600

(†) The wheel listed and included in price is for either a steady lighting or power load, or a "lighting combined with fluctuating power load".

(°) For three wire generators make addition to net price. Amount given above.

SET No. 2303

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
200 K. W., 150 R. P. M., "D. C." GENERATORS

APRIL, 1914

SHEET NO. 2303-AH

STEAM CONSUMPTION GUARANTEES

Load			½				¾				1				1¼			
K. W.			100				150				200				250			
I. H. P.			176				247				317				392			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	25.5	11.5	29.1	51.	35.6	17.	25.8	42.5	45.7	24.2	25.2	40.	57.	34.5	26.1	40.8
125	99	"	32.2	10.5	26.6	46.7	45.	16.25	23.9	39.3	58.	23.	23.5	37.2	71.5	32.5	23.7	37.1
150	121	"	42.	11.	24.6	43.2	58.	17.	22.6	37.6	75.5	25.5	22.6	35.8	93.5	38.	24.4	38.2
100	91	Cond.	32.2	9.	21.5	37.7	45.	15.	20.	32.9	58.	23.	20.3	32.2	71.5	35.7	22.1	34.6
125	113	"	32.2	6.	22.	38.6	45.	10.5	20.	32.9	58.	16.	19.4	30.75	71.5	23.5	19.75	30.9
150	134	"	42.	7.	21.1	37.	58.	12.5	19.3	31.7	75.5	19.	19.	30.1	93.5	27.5	19.6	30.6

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under conditions specified, and do not include that used by the auxiliaries. Generator load is true kilowatt output at the terminals and does not include the power lost in the rheostat. The I. H. P. specified shows power developed in the engine cylinder when generator is delivering the true K. W. output given at the load specified.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
250 K. W., 125 R. P. M., "D. C." GENERATORS

APRIL, 1914

ALLIS-CHALMERS CORLISS ENGINES
DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I10-60-12A	250	125	250	30000	8400	92.8	93	93	92

Temperature Guarantees:—Full load 24 hours 35° C. on windings, 40° C. on commutator: 25% overload for 2 hours, 50° C. on windings, 55° C. on commutator; 50% overload for 1 hour without injury, and 75% overload momentarily without injury.
*Three Wire Generators—Specifications same as above except total shipping weight generator 32,250 pounds.
For General Information see Sheet No. 2212H.
For Three Wire Generators—Add $360.00 net to Net Price and 2,250 pounds net to Weight of Unit.

ENGINE DETAILS

Bearings				Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)					Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Width Ins.	Length Ins.	Dia.	Wgt.	Cylinder	Conn.Rod Smallest	Piston Rod	Steam Nozzle	Exhaust Nozzle	Length Ft. & Ins	Width Inches	Height Inches	Weight Pounds
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.													
10	20	9	18	4½	6	6	5	6	16½	13	17000	16 18 20 22	3 3 3 3	3⅜ 3⅜ 4⅛ 4⅛	5 6 7 8	6 7 8 9	14–5	43	41	7100

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size		List (°) Price Unit	Weight Unit
					Dia.	Stroke		
80675H	100	Non-Cond.	1½	..	22	36	$15320	82700
80676H	125	"	1½	..	20	36	15185	79400
80677H	150	"	1½	..	18	36	15045	77750
80678H	100	Cond.	...	26	20	36	15185	79400
80679H	125	"	...	26	18	36	15045	77750
80680H	150	"	...	26	16	36	14910	75000

(†) The wheel listed and included in price is for either a steady lighting or power load.
If load is "lighting combined with fluctuating power load" use 14 ft. Diameter wheel weighing 19,000 pounds. Add 2,000 pounds, $20.00 dollars net.
(°) For three wire generators make addition to net price Amount given above.

SET NO. 8018

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
250 K. W., 125 R. P. M., "D. C." GENERATORS

APRIL, 1914

SHEET NO. 2304-AH

STEAM CONSUMPTION GUARANTEES

Load			½				¾				1				1¼			
K. W.			125				187.5				250				312.5			
I. H. P.			212				299				388				478			
I.S.P.	Max. M.E.P. 75 % Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	24.5	11.	29.5	50.	34.6	16.5	26.1	41.7	45.	28.6	25.3	39.2	55.5	33.	26.1	40.
125	99	"	29.7	9.5	27.5	46.5	42.	15.	25.3	40.4	54.5	21.	23.5	36.5	67.	29.	24.	37.5
150	121	"	36.7	9.	25.5	43.3	52.	14.5	22.9	36.6	67.5	21.3	22.2	34.4	82.7	30.	22.9	35.
100	91	Cond.	29.7	7.5	21.9	37.1	42.	14.1	20.1	32.1	54.5	20.5	20.1	31.2	67.	31.	21.2	32.4
125	113	"	36.7	7.5	21.4	36.3	52.	13.	19.7	31.4	67.5	21.	19.6	30.4	82.7	31.	20.8	31.8
150	134	"	46.25	8.5	20.75	35.	64.5	14.5	19.1	30.5	85.	23.	19.2	29.75	102.5	33.	20.8	32.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under conditions specified, and do not include that used by the auxiliaries. Generator load is true kilowatt output at the terminals and does not include the power lost in the rheostat. The I. H. P. specified shows power developed in the engine cylinder when generator is delivering the true K. W. output given at the load specified.

SET NO.

ALLIS-CHALMERS CORLISS ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I10-52-12B	260	150	250	28000	7700	91.7	92	92	91

Temperature Guarantees:—Full load 24 hours 35° C. on windings, 40° C. on commutator; 25 % overload for 2 hours, 50° C. on windings, 55° C. on commutator; 50 % overload for 1 hour without injury, and 75 % overload momentarily without injury.
*For Three Wire Generators—Specifications same as above except total shipping weight generator 30,000 pounds.
For General Information see Sheet No. 2212H.
For Three Wire Generators—Add $350.00 net to Net Price and 2,000 pounds net to Weight of Unit.

ENGINE DETAILS

Bearings				Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)					Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Width Ins.	Length Ins.	Dia.	Wgt.	Cylinder	Conn. Rod Smallest	Piston Rod	Steam Nozzle	Exhaust Nozzle	Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.													
10	20	9	18	4½	6	6	5	6	16½	12	15000	16 18 20	3 3 3	3⅜ 3⅜ 4⅛	5 6 7	6 7 8	14–5	43	41	7100

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size		List (°) Price Unit	Weight Unit
					Dia.	Stroke		
80681H	100	Non-Cond.	1½	..	20	36	$14455	75400
80682H	125	"	1½	..	18	36	14318	73750
80683H	150	"	1½	..	16	36	14182	71000
80684H	100	Cond.	...	26	18	36	14318	73750
80685H	125	"	...	26	18	36	14318	73750
80686H	150	"	...	26	16	36	14182	71000

(†) The wheel listed and included in price is for either a steady lighting or power load, or a "lighting combined with fluctuating power load."

(°) For three wire generators make addition to net price. Amount given above.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
260 K. W., 150 R. P. M., "D. C." GENERATORS

APRIL, 1914

SHEET NO. 2305-H

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
260 K. W., 150 R. P. M., "D. C." GENERATORS

APRIL, 1914

SHEET NO. 2305-AH

STEAM CONSUMPTION GUARANTEES

Load			½				¾				1				1¼			
K. W.			130				195				260				325			
I. H. P.			229				314				410				505			
I.S.P.	Max. M.E.P. 75 % Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	26.8	12.	28.	47.8	36.8	17.8	25.5	41.	48.	26.	25.	39.3	59.	37.	26.3	40.7
125	99	"	33.1	11.	25.9	44.3	45.5	16.5	23.6	38.	59.5	24.	23.25	36.5	73.	34.	24.9	38.3
150	121	"	41.7	10.7	24.1	41.25	57.5	16.7	22.3	35.9	75.	25.5	22.3	35.	92.	36.8	23.75	36.7
100	91	Cond.	33.1	9.	20.7	35.4	45.5	15.	19.7	31.7	59.5	24.5	20.3	31.9	73.	37.5	22.3	34.5
125	113	"	33.1	6.5	21.4	36.6	45.5	10.5	19.8	31.9	59.5	16.5	19.2	30.2	73.	24.5	19.7	30.4
150	134	"	41.7	7.	21.1	36.1	57.5	12.	19.3	31.1	75.	18.6	18.8	29.5	92.	26.5	19.4	30.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under conditions specified, and do not include that used by the auxiliaries. Generator load is true kilowatt output at the terminals and does not include the power lost in the rheostat. The I. H. P. specified shows power developed in the engine cylinder when generator is delivering the true K. W. output given at the load specified.

ALLIS-CHALMERS CORLISS ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I10-60-12B	315	150	250	31000	8900	93.2	93.5	93.5	93

Temperature Guarantees:—Full load 24 hours 35° C. on windings, 40° C. on commutator; 25 % overload for 2 hours, 50° C. on windings, 55° C. on commutator; 50 % overload for 1 hour without injury, and 75 % overload momentarily without injury.
*For Three Wire Generators—Specifications same as above except total shipping weight generator 33,200 pounds.
For General Information see Sheet No. 2212H.
For Three Wire Generators—Add $385.00 net to Net Price and 2,200 pounds net to Weight of Unit.

ENGINE DETAILS

Bearings				Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)					Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Width Ins.	Length Ins.	Dia.	Wgt.	Cylinder	Conn. Rod Smallest	Piston Rod	Steam Nozzle	Exhaust Nozzle	Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.													
10	20	9	18	4½	6	6	5	6	16½	12	14000	16 18 20 22	3 3 3 3	3⅜ 3⅜ 4⅛ 4⅛	5 6 7 8	6 7 8 9	14–5	43	41	7100

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size		List (°) Price Unit	Weight Unit
					Dia.	Stroke		
80687H	100	Non-Cond.	1½	..	22	36	$15805	80700
80688H	125	"	1½	..	20	36	15670	77400
80689H	150	"	1½	..	18	36	15535	75750
80690H	100	Cond.	...	26	20	36	15670	77400
80691H	125	"	...	26	18	36	15535	75750
80692H	150	"	...	26	16	36	15397	73000

(†) The wheel listed and included in price is for either a steady lighting or power load.
If load is "lighting combined with fluctuating power load" use 12 ft. diameter wheel weighing 18,000 pounds. Add 4,000 pounds, $78.00 dollars net.
(°) For three wire generators make addition to net price. Amount given above.

DIRECT CONNECTED ENGINE UNITS
ALLIS-CHALMERS ENGINES
315 K. W., 150 R. P. M., "D. C." GENERATORS
APRIL, 1914

SHEET NO. 2306-H

SET NO. 838

STEAM CONSUMPTION GUARANTEES

Load			½				¾				1				1¼			
K. W.			157.5				236				315				393			
I. H. P.			264				373				485				600			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	25.5	11.5	28.6	48.	36.	17.3	25.6	40.5	47.	25.2	25.	38.5	58.	35.5	27.	41.2
125	99	"	30.8	10.	26.7	44.75	43.5	15.5	23.9	37.8	56.5	22.	23.25	35.8	70.	31.5	23.25	36.6
150	121	"	38.2	9.7	24.6	41.2	54.	15.	22.5	35.6	70.	22.5	22.25	34.2	86.5	32.5	22.25	35.4
100	91	Cond.	30.8	6.5	21.2	35.5	43.5	14.	19.8	31.3	56.5	22.	19.9	30.6	70.	34.	21.7	33.1
125	113	"	38.2	8.	20.8	34.8	54.	14.	19.8	31.3	70.	22.5	19.6	30.2	86.5	34.	21.2	32.3
150	134	"	48.	9.	20.1	33.7	68.	16.	18.9	29.9	88.5	24.7	19.2	28.6	109.5	38.	20.9	31.9

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under conditions specified, and do not include that used by the auxiliaries. Generator load is true kilowatt output at the terminals and does not include the power lost in the rheostat. The I. H. P. specified shows power developed in the engine cylinder when generator is delivering the true K. W. output given at the load specified.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
315 K. W., 150 R. P. M., "D. C." GENERATORS

APRIL, 1914

SHEET NO. 2306-AH

ALLIS-CHALMERS CORLISS ENGINES
DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I10-66-11½A	320	125	250	46000	12000	92	92.5	92.5	92

Temperature Guarantees:—Full load 24 hours 35° C. on windings, 40° C. on commutator; 25 % overload for 2 hours, 50° C. on windings, 55° C. on commutator; 50 % overload for 1 hour without injury, and 75 % overload momentarily without injury.
For General Information see Sheet No. 2212H.

ENGINE DETAILS

Bearings				Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)					Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Width Ins.	Length Ins.	Dia.	Wgt.	Cylinder	Conn.Rod Smallest	Piston Rod	Steam Nozzle	Exhaust Nozzle	Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.													
10	20	9	18	4½	6	6	5	6	16½	14	19000	18 20 22	3 3 3	3⅜ 4⅛ 4⅛	6 7 8	7 8 9	16–0	43	41	7600

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size		List (°) Price Unit	Weight Unit
					Dia.	Stroke		
80693H	100	Non-Cond.	1½	..	22	42	$17447	102900
80694H	125	"	1½	..	20	42	17312	99600
80695H	150	"	1½	..	18	42	17175	98500
80696H	100	Cond.	...	26	20	42	17312	99600
80697H	125	"	...	26	18	42	17175	98500
80698H	150	"	...	26	18	42	17175	98500

(†) The wheel listed and included in price is for either a steady lighting or power load.

If load is "lighting combined with fluctuating power load" use 14 ft. diameter wheel weighing 22,000 pounds. Add 3,000 pounds, $65.00 dollars net.

DIRECT CONNECTED ENGINE UNITS
ALLIS-CHALMERS ENGINES
320 K. W., 125 R. P. M., "D. C." GENERATORS
APRIL, 1913

SHEET NO. 2307-H

SET NO. 3014

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
320 K. W., 125 R. P. M., "D. C." GENERATORS

APRIL, 1914

SHEET NO. 2307-AH

STEAM CONSUMPTION GUARANTEES

Load			½				¾				1				1¼			
K. W.			160				240				320				400			
I. H. P.			270				384				498				615			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	26.8	13.	28.	47.3	38.1	18.5	25.4	40.6	49.5	27.	25.1	39.	61.	39.5	26.8	41.25
125	99	"	32.4	10.8	27.1	45.75	46.	16.7	23.6	37.8	59.7	24.	23.1	36.	74.	35.	24.4	37.6
150	121	"	40.2	16.	24.3	41.	58.1	17.	22.1	35.4	74.	25.	22.3	34.7	91.2	36.	23.6	36.4
100	91	Cond.	32.4	8.	21.1	35.6	46.	15.5	19.8	31.7	59.7	24.5	20.2	31.4	74.	38.5	22.4	34.5
125	113	"	40.2	8.5	20.4	34.5	58.1	16.	19.4	31.	74.	25.	19.75	30.7	91.2	38.5	22.	33.9
150	134	"	40.2	6.5	21.3	36.	58.1	12.5	19.2	30.7	74.	18.3	18.8	29.3	91.2	26.	19.3	29.7

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under conditions specified, and do not include that used by the auxiliaries. Generator load is true kilowatt output at the terminals and does not include the power lost in the rheostat. The I. H. P. specified shows power developed in the engine cylinder when generator is delivering the true K. W. output given at the load specified.

ALLIS-CHALMERS CORLISS ENGINES
DIRECT CONNECTED TO TYPE "I" TWO WIRE, 250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I10-66-11½A	350	125	250	46000	12000	92	92.5	92.5	92

Temperature Guarantees:—Full load 24 hours 40° C. on windings, 45° C. on commutator; 25 % overload for 2 hours, 60° C. on windings, 60° C. on commutator; and 50 % overload momentarily without injury.
For General Information see Sheet No. 2212H.

ENGINE DETAILS

Bearings				Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)					Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Width Ins.	Length Ins.	Dia.	Wgt.	Cylinder	Conn.Rod Smallest	Piston Rod	Steam Nozzle	Exhaust Nozzle	Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.													
12	24	11	20	5¾	7	7	6	8	20½	14	20000	20 22 24	3⅞ 3⅞ 3⅞	4⅛ 4⅛ 4⅞	7 8 8	8 9 9	16–9	51	45	10800

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size		List (°)Price Unit	Weight Unit
					Dia.	Stroke		
80699H	100	Non-Cond.	1½	..	24	42	$18797	116600
80700H	125	"	1½	..	22	42	18470	113900
80701H	150	"	1½	..	20	42	18127	110600
80702H	100	Cond.	...	26	22	42	18470	113900
80703H	125	"	...	26	22	42	18470	113900
80704H	150	"	...	26	20	42	18127	110600

(†) The wheel listed and included in price is for either a steady lighting or power load.

If load is "lighting combined with fluctuating power load" use 14 ft. diameter wheel weighing 27,000 pounds. Add 7,000 pounds, $110.00 dollars net.

DIRECT CONNECTED ENGINE UNITS
ALLIS-CHALMERS ENGINES
350 K. W., 125 R. P. M., "D. C." GENERATORS
APRIL, 1914

SHEET NO. 2308-H

SET NO. 304

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
350 K. W., 125 R. P. M., "D. C." GENERATORS

APRIL, 1914

SHEET NO. 2308-AH

STEAM CONSUMPTION GUARANTEES

Load			½				¾				1				1¼			
K. W.			175				262				350				437			
I. H. P.			296				417				545				675			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	24.6	11.	29.	49.	34.7	16.5	25.75	41.	45.4	24.	25.	39.	56.25	33.75	26.	40.
125	99	"	29.4	9.5	27.1	45.75	41.5	14.75	24.1	38.4	54.	21.	23.25	36.1	67.	29.	23.8	36.7
150	121	"	35.6	9.	25.5	43.	50.2	14.	22.9	36.5	65.5	20.2	22.1	34.5	81.2	29.2	22.75	35.
100	91	Cond.	29.4	7.5	21.7	36.7	41.5	13.	20.	31.9	54.	20.5	19.8	30.9	67.	31.	21.2	32.6
125	113	"	29.4	5.	22.5	38.	41.5	9.	20.4	32.6	54.	14.	19.4	30.3	67.	20.5	19.4	29.9
150	134	"	35.6	5.	22.3	37.7	50.2	9.5	19.9	31.7	65.5	15.	18.75	29.2	81.2	21.5	18.9	29.1

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under conditions specified, and do not include that used by the auxiliaries. Generator load is true kilowatt output at the terminals and does not include the power lost in the rheostat. The I. H. P. specified shows power developed in the engine cylinder when generator is delivering the true K. W. output given at the load specified.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
350 K. W., 150 R. P. M., "D. C." GENERATORS

APRIL, 1914

ALLIS-CHALMERS CORLISS ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I10-60-12B	350	150	250	31000	8900	93.2	93.5	93.5	93

Temperature Guarantees:—Full load 24 hours 40° C. on windings, 45° C. on commutator; 25 % overload for 2 hours, 60° C. on windings, 60° C. on commutator; and 50 % overload momentarily without injury.
*For Three Wire Generators—Specifications same as above except total shipping weight Generator 33,200 pounds.
For General Information see Sheet No. 2212H.
For Three Wire Generators—Add $500.00 net to Net Price and 2,200 pounds net to Weight of Unit.

ENGINE DETAILS

Bearings				Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)					Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank														
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Width Ins.	Length Ins.	Dia.	Wgt.	Cylinder	Conn.Rod Smallest	Piston Rod	Steam Nozzle	Exhaust Nozzle	Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
12	24	11	20	5¾	7	7	6	8	20½	12	15000	18 20 22 24	3⅞ 3⅞ 3⅞ 3⅞	3⅜ 4⅛ 4⅛ 4⅞	6 7 8 8	7 8 9 9	15–1	51	45	10200

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size		List (°)Price Unit	Weight Unit
					Dia.	Stroke		
80705H	100	Non-Cond.	1½	..	24	36	$17137	93350
80706H	125	"	1½	..	22	36	16797	90100
80707H	150	"	1½	..	20	36	16455	86800
80708H	100	Cond.	...	26	22	36	16797	90100
80709H	125	"	...	26	20	36	16455	86800
80710H	150	"	...	26	18	36	16195	85800

(†) The wheel listed and included in price is for either a steady lighting or power load. If load is "lighting combined with fluctuating power load" use 12 ft. diameter wheel weighing 20,000 pounds. Add 5,000 pounds, $85.00 dollars net.
(°) For three wire generators make addition to net price. Amount given above.

SET NO. 3 of

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
350 K. W., 150 R. P. M., "D. C." GENERATORS

SHEET NO. 2309-AH

APRIL, 1914

STEAM CONSUMPTION GUARANTEES

Load			½				¾				1				1¼			
K. W.			175				262				350				437			
I. H. P.			293				413				540				665			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	23.8	11.	29.2	49.	33.5	16.	26.	41.	43.7	22.5	25.	38.8	54.	31.5	25.6	38.9
125	99	"	28.3	9.	27.5	46.	40.	14.	25.2	39.8	52.3	20.	23.25	36.	64.3	27.	23.6	35.9
150	121	"	34.2	8.5	25.9	43.5	48.3	13.	23.1	36.5	63.	19.	22.1	34.3	78.	27.	22.5	35.8
100	91	Cond.	28.3	7.	22.	36.9	40.	12.2	20.	31.6	52.3	19.	19.8	30.7	64.3	28.5	20.8	31.6
125	113	"	34.2	6.5	21.6	36.2	48.3	14.	19.7	31.1	63.	19.	19.3	29.9	78.	28.2	20.2	30.7
150	134	"	42.5	7.	21.	35.2	59.5	13.	19.1	30.2	78.	20.	18.75	29.1	96.	29.	19.8	30.1

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under conditions specified, and do not include that used by the auxiliaries. Generator load is true kilowatt output at the terminals and does not include the power lost in the rheostat. The I. H. P. specified shows power developed in the engine cylinder when generator is delivering the true K. W. output given at the load specified.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
400 K. W., 120 R. P. M., "D. C." GENERATORS

APRIL, 1914

SET NO. 808

ALLIS-CHALMERS CORLISS ENGINES
DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I10-66-12½B	400	120	250	54000	14000	92	92.5	92.5	92

Temperature Guarantees:—Full load 24 hours 40° C. on windings, 45° C. on commutator; 25% overload for 2 hours, 60° C. on windings, 60° C. on commutator; and 50% overload momentarily without injury.
*For Three Wire Generators—Specifications same as above except total shipping weight generator 56,500 pounds.
For General Information see Sheet No. 2212H.
For Three Wire Generators—Add $450.00 net to Net Price and 2,500 pounds net to Net Weight of Unit.

ENGINE DETAILS

Bearings				Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)					Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank														
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Width Ins.	Length Ins.	Dia.	Wgt.	Cylinder	Conn.Rod Smallest	Piston Rod	Steam Nozzle	Exhaust Nozzle	Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
12	24	11	20	5¾	7	7	6	8	20½	15	22000	20 22 24 26	3⅞ 3⅞ 3⅞ 3⅞	4⅛ 4⅛ 4⅞ 4⅞	7 8 8 9	8 9 9 10	16–9	51	45	10800

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size		List (°) Price Unit	Weight Unit
					Dia.	Stroke		
80711H	100	Non-Cond.	1½	..	26	42	$20650	131050
80712H	125	"	1½	..	24	42	20300	126600
80713H	150	"	1½	..	22	42	19950	123900
80714H	100	Cond.	...	26	24	42	20300	126600
80715H	125	"	...	26	22	42	19950	123900
80716H	150	"	...	26	20	42	19605	120600

(†) The wheel listed and included in price is for either a steady lighting or power load. If load is "lighting combined with fluctuating power load" use 15 ft. diameter wheel weighing 30,000 pounds. Add 8,000 pounds, $130.00 dollars net.
(°) For three wire generators make addition to net price. Amount given above.

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
400 K. W., 120 R. P. M., "D. C." GENERATORS

SHEET NO. 2310-AH

APRIL, 1914

STEAM CONSUMPTION GUARANTEES

Load			½				¾				1				1¼			
K. W.			200				300				400				500			
I. H. P.			338				428				623				770			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
100	78	Non-Cond.	25.	11.5	28.7	48.5	31.8	15.	26.3	42.	48.5	26.5	25.1	39.2	60.	38.	26.6	41.
125	99	"	28.4	9.	28.3	47.8	37.3	12.7	24.7	39.4	54.1	21.	23.25	36.3	67.	29.	23.8	36.6
150	121	"	35.	8.5	25.6	43.3	44.3	11.75	23.6	37.6	64.5	19.75	23.	35.9	79.5	28.5	22.7	35.
100	91	Cond.	28.4	7.	21.9	37.	37.3	11.	20.2	32.2	54.1	20.5	19.9	31.1	67.	31.	21.2	32.7
125	113	"	35.	7.	21.4	36.2	44.3	10.3	20.1	32.	64.5	19.5	19.3	30.1	79.5	28.5	20.4	31.4
150	134	"	42.5	7.	20.8	35.2	53.5	10.7	19.6	31.2	78.	20.	18.8	29.3	96.5	29.5	19.9	30.5

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under conditions specified, and do not include that used by the auxiliaries. Generator load is true kilowatt output at the terminals and does not include the power lost in the rheostat. The I. H. P. specified shows power developed in the engine cylinder when generator is delivering the true K. W. output given at the load specified.

SET NO.

ALLIS-CHALMERS CORLISS ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I12-72-15B	500	125	250	63500	19300	93.2	93.5	93.5	93

Temperature Guarantees;—Full load 24 hours 35° C. on windings, 40° C. on commutator; 25% overload for 2 hours, 50° C. on windings, 55° C. on commutator; 50% overload 1 hour without injury, and 75% overload momentarily without injury.
*For Three Wire Generators—Specifications same as above except total shipping weight generator 65,500 pounds.
For General Information see Sheet No. 2212H.
For Three Wire Generators—Add $500.00 net to Net Price and 2,000 pounds net to Weight of Unit.

ENGINE DETAILS

Bearings				Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)					Heaviest Piece (Frame)			
Main		Outboard		Crosshead		Crank		Width Ins.	Length Ins.	Dia.	Wgt.	Cylinder	Conn. Rod Smallest	Piston Rod	Steam Nozzle	Exhaust Nozzle	Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
Dia. Ins	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.													
12	24	11	20	5¾	7	7	6	8	20½	15	24000	22 24 26	3⅞ 3⅞ 3⅞	4⅛ 4⅞ 4⅞	8 8 9	9 9 10	16–9	51	45	10800

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size		List (°) Price Unit	Weight Unit
					Dia.	Stroke		
80717H	100	Non-Cond.	1½	..	26	42	$24125	142550
80718H	125	"	1½	..	24	42	23880	138100
80719H	150	"	1½	..	22	42	23540	135400
80720H	100	Cond.	...	26	26	42	24125	142550
80721H	125	"	...	26	24	42	23880	138100
80722H	150	"	...	26	22	42	23540	135400

(†) The wheel listed and included in price is for either a steady lighting or power load. If load is "lighting combined with fluctuating power load" use 15 ft. diameter wheel weighing 32,000 pounds. Add 8,000 pounds, $130.00 dollars net.
(°) For three wire generators make addition to net price. Amount given above.

DIRECT CONNECTED ENGINE UNITS
ALLIS-CHALMERS ENGINES
500 K. W., 125 R. P. M., "D. C." GENERATORS
APRIL, 1914

SHEET NO. 2311-H

DIRECT CONNECTED ENGINE UNITS

ALLIS-CHALMERS ENGINES
500 K. W., 125 R. P. M., "D. C." GENERATORS

SHEET NO. 2311-AH

APRIL, 1914

STEAM CONSUMPTION GUARANTEES

Load			½				¾				1				1¼			
K. W.			250				375				500				625			
I. H. P.			420				593				775				950			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	M.E.P.	% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W Hour
100	78	Non-Cond.	29.9	14.	27.	45.2	42.3	21.5	25.1	39.6	55.	32.5	25.75	39.8	67.5	49.	29.	44.
125	99	"	35.	11.75	25.5	42.7	49.5	18.5	23.3	36.8	65.	27.5	23.6	36.6	79.	39.5	25.4	38.6
150	121	"	41.8	14.5	24.1	40.3	59.	17.	22.3	35.2	76.3	26.	22.4	34.7	94.5	38.7	24.3	36.9
100	91	Cond.	29.9	7.5	21.6	36.1	42.3	14.1	19.9	31.4	55.	20.5	19.9	30.9	67.5	31.	21.	31.9
125	113	"	35.	7.	21.3	35.6	49.5	12.	19.6	31.	65.	19.5	19.3	29.9	79.	28.5	20.2	30.75
150	134	"	41.8	7.	21.	35.2	59.	12.5	19.2	30.4	76.3	19.	18.8	29.2	94.5	28.	19.6	29.8

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under conditions specified, and do not include that used by the auxiliaries. Generator load is true kilowatt output at the terminals and does not include the power lost in the rheostat. The I. H. P. specified shows power developed in the engine cylinder when generator is delivering the true K. W. output given at the load specified.

SET NO. 3 Sip

SHEET NO. 2272-H 2312

SIMPLE DIRECT CONNECTED ENGINEUNITS

ALLIS-CHALMERS ENGINES

TYPE "I" AND "IW" DIRECT CURRENT GENERATORS

APRIL, 1914

DIRECT CURRENT ENGINE TYPE GENERATORS

TYPE "I"—TWO-WIRE, 250 VOLTS **TYPE "IW"—THREE-WIRE, 125-250 VOLTS**

NOTES

Weights, for generators, are the boxed weights for domestic shipment and include field rheostat; for three-wire generators, suitably mounted, slip rings and a set of oil-immersed balance coils are also included.

Compounding—For two-wire generators the standard compounding from no load to full load is 240-250 volts; for three-wire generators standard compounding is 120-240 volts no load, 125-250 volts full load.

Voltage and Speed—They will deliver their normal current in amperes, the speeds remaining the same; at any voltage within the following limits: 250 volt generators, between 220 and 250 volts.

TEMPERATURE GUARANTEES:—

The rise in temperature is measured according to the Standardization Rules of the A. I. E. E.

Three-Wire Generators will deliver their rated K. W. output while carrying an unbalanced current in the neutral equal to 25% of their normal full load current. Under these conditions they will maintain a voltage on either side of the system which will not vary more than 2% from one-half the voltage between line wires.

When ordering, state compounding required.

SIMPLE
CIR. CONN.
"D C"

10/4/23 1% = 20%

ALLIS-CHALMERS CROSS COMPOUND CORLISS ENGINES

120 and 150 R. P. M.; 80% Power Factor; 60 Cycle; 3 Phase; 240, 480, 600 or 2300 Volts.

UNIT									ENGINE																		
Rating		Vacuum Ins. Back Pres. lbs.	Engine 125 to 150 Pounds Gauge Steam			Engine, Generator and Wheel (No Exciter or Pulley)			Wheel (Parallel Operation)		Pins Cross Diam.	Pins Cross Length	Pins Crank Diam.	Pins Crank Length	Main Brgs. Diam.	Main Brgs. Length	Weight Heaviest Piece	Largest Piece Width	Largest Piece Height	Cross-Head Shoes Width	Cross-Head Shoes L'gth	Diameters Piston Rods H.P.	Diameters Piston Rods L.P.	Diameters Con. Rod Smallest	Diameters Steam	Diameters Exhaust
K.W.	R.P.M.		H.P.	L.P.	Str.	Cat. No.	Ship. Weight	List Price	Dia.	Weight																	
250	150	26	12	26	30	82511	82250	$16880.00	11	12000	3½	4½	4½	3½	7	14	6000	36	42	4½	12	2 11/16	3⅜	2¼	4	10
250	150	1½	14	24	30	82512	82250	16880.00	11	12000	3½	4½	4½	3½	7	14	6000	36	42	4½	12	2 11/16	3⅜	2¼	5	9
320	150	26	12	26	36	82513	86350	17630.00	11	12000	3½	4½	4½	3½	7	14	6500	36	42	4½	12	2 11/16	3⅜	2¼	4	10
320	150	1½	14	24	36	82514	86350	17630.00	11	12000	3½	4½	4½	3½	7	14	6500	36	42	4½	12	2 11/16	3⅜	2¼	5	9
400	150	26	14	30	36	82515	110400	20000.00	12	15000	4½	6	6	5	10	20	10000	48	48	6	16½	2 11/16	4⅛	3¼	5	12
400	150	1½	16	26	36	82516	108000	19690.00	12	15000	4½	6	6	5	10	20	8000	48	48	6	16½	3⅜	3⅜	3¼	5	10
500	150	26	16	34	36	82517	121000	21630.00	12	18000	4½	6	6	5	10	20	13000	48	60	6	16½	3⅜	4⅛	3¼	5	14
500	150	1½	18	30	36	82518	119000	21250.00	12	18000	4½	6	6	5	10	20	10000	48	48	6	16½	3⅜	4⅛	3¼	6	12
400	120	26	16	34	36	82519	128800	21920.00	14	22000	4½	6	6	5	10	20	13000	48	60	6	16½	3⅜	4⅛	3¼	5	14
400	120	1½	18	30	36	82520	126800	21540.00	14	22000	4½	6	6	5	10	20	10000	48	48	6	16½	3⅜	4⅛	3¼	6	12
600	120	26	18	38	42	82521	153500	25920.00	15	26000	4½	6	6	5	10	20	15000	54	72	6	16½	3⅜	4⅞	3¼	6	14
600	120	1½	20	34	42	82522	151000	25500.00	15	26000	4½	6	6	5	10	20	13000	54	72	6	16½	4⅛	4⅛	3¼	7	14
750	120	26	20	42	42	82523	192500	32540.00*	16	30000	5¾	7	7	6	12	24	18000	54	72	8	20½	4⅛	9	4⅛	7	16
750	120	1½	22	38	42	82524	185500	31250.00	16	30000	5¾	7	7	6	12	24	15000	54	72	8	20½	4⅛	4⅞	4⅛	8	14
1000	120	26	22	46	42	82525	210000	36850.00*	16	35000	5¾	7	7	6	12	24	23000	60	78	8	20½	4⅛	10	4⅛	8	18
1000	120	1½	26	42	42	82526	206000	36130.00*	16	35000	5¾	7	7	6	12	24	18000	60	72	8	20½	4⅞	9	4⅛	9	16

GENERATOR

Rating			Catalog Number	Efficiencies			Excitation			Weights	
K.V.A.	K.W.	R.P.M.		1	¾	½	K.W.	Amps	Catalog	Rotor	Shipping
312	250	150	20847	88.0	87.5	85.8	17	135	46137	5400	14250
400	320	150	20848	90.7	89.8	88.2	18	144	46149	5850	15350
500	400	150	20849	90.6	90.2	89.0	19½	155	46149	6600	17400
625	500	150	20850	91.7	91.2	89.7	18	140	46149	9600	21000
500	400	120	20854	89.8	89.2	87.1	21	165	46149	10000	24800
750	600	120	20855	93.0	92.6	91.5	20	160	46149	13000	33500
937	750	120	20856	93.0	92.6	91.5	23	184	46159	14600	37500
1250	1000	120	20857	93.0	92.7	91.6	26	208	46159	15500	40000

ENGINE $300.

Specifications per regular forms. If Exciter included add ~~$200~~.00 to list and 1500 pounds for engine pulley.

* Includes Low Pressure tail slide.

GENERATOR

Specifications per regular forms. See catalogs.

DIRECT CONNECTED ENGINE UNITS
ALTERNATING CURRENT GENERATORS
120 and 150 R. P. M.
Supersedes Sheet No. 2447
SEPTEMBER, 1923

Sheet No. 2474

Sheet No. 2474A

Direct Connected Engine Units

Alternating Current Generators

120 and 150 R. P. M. SEPTEMBER, 1923

STEAM CONSUMPTION GUARANTEES

UNIT					Steam Pressure (gauge)	Back Pressure (gauge)	Vacuum	FULL LOAD						¾ LOAD						½ LOAD					
KW	RPM	Engine H.P.	Engine L.P.	Engine Str.				K. W.	I. H. P.	L. P. M. E. P.	H. P. Cut Off	Lbs. per I. H. P. Hour	Lbs. per K. W. Hour	K. W.	I. H. P.	L. P. M. E. P.	H. P. Cut Off	Lbs. per I. H. P. Hour	Lbs. per K. W. Hour	K. W.	I. H. P.	L. P. M. E. P.	H. P. Cut Off	Lbs. per I. H. P. Hour	Lbs. per K. W. Hour
250	150	12	26	30	150	...	26	250	406	34.0	40	13 1	21.3	188	312	26.3	25	12.8	21.3	125	219	18.3	13	13.2	23.2
250	150	14	24	30	150	1½	..	250	406	40.0	42	18.3	29.5	188	312	30.8	31	18.2	30.2	125	219	21.5	22	19.6	34.5
250	150	12	26	30	125	...	26	250	406	34.0	55	14.1	22.3	188	312	26.3	34	13.4	22.3	125	219	18.3	19	13.6	23.9
250	150	14	24	30	125	1½	..	250	406	40.0	54	20.1	32.5	188	312	30.8	39	19.5	32.5	125	219	21.5	28	20.6	36.2
320	150	12	26	36	150	...	26	320	504	35.3	42	13.2	20.9	240	389	27.3	27	12.7	20.6	160	273	19 0	14	13.2	22.6
320	150	14	24	36	150	1½	..	320	504	41.0	43	18.4	29.0	240	389	31.6	32	18.2	29.5	160	273	22.2	23	19.6	33.5
320	150	12	26	36	125	...	26	320	504	35.3	60	14.0	22.2	240	389	27.3	39	13.4	21.7	160	273	19.0	22	13.4	23.0
320	150	14	24	36	125	1½	..	320	504	41.0	56	19.7	31.2	240	389	31.6	41	19.4	31.5	160	273	22.2	29	20.5	35.0
400	150	14	30	36	150	...	26	400	630	33.0	37	13.0	20.5	300	483	25.3	23	12.7	20.5	200	340	17.8	11	13.4	22.7
400	150	16	26	36	150	1½	..	400	630	44.0	42	18.2	28.7	300	483	33.8	30	18.2	29.3	200	340	23.8	20	19.4	32.9
400	150	14	30	36	125	...	26	400	630	33.0	53	13.8	21.7	300	483	25.3	33	13.2	21.3	200	340	17.8	19	13.5	23.0
400	150	16	26	36	125	1½	..	400	630	44.0	56	20.5	32.2	300	483	33.8	40	19.6	31.4	200	340	23.8	27	20.2	34.5
500	150	16	34	36	150	...	26	500	779	31.5	33	12.8	20.0	375	598	24.3	21	12.7	20.3	250	422	17.3	11	13.4	22.7
500	150	18	30	36	150	1½	..	500	779	41.0	41	18.1	28.2	375	598	31.5	29	18.1	28.9	250	422	22.3	21	19.5	32.9
500	150	16	34	36	125	...	26	500	779	31.5	47	13.5	21.0	375	598	24.3	31	13.2	21.1	250	422	17.3	18	13.5	22.8
500	150	18	30	36	125	1½	..	500	779	41.0	53	19.7	30.5	375	598	31.5	38	19.4	31.0	250	422	22.3	27	20.0	33.8
400	120	16	34	36	150	...	26	400	637	32.5	35	12.9	20.5	300	489	25.0	22	12 7	20.6	200	347	17.8	12	13.3	23 1
400	120	18	30	36	150	1½	..	400	637	41.8	42	18.1	28.9	300	489	32.0	31	18.1	29.4	200	347	22.8	21	19.2	33.4
400	120	16	34	36	125	...	26	400	637	32.5	50	13.5	21.5	300	489	25.0	32	13.1	21.4	200	347	17.8	18	13.5	23.4
400	120	18	30	36	125	1½	..	400	637	41.8	54	21.1	32.0	300	489	32.0	39	19.5	31.8	200	347	22.8	27	20.2	35.0
600	120	18	38	42	150	...	26	600	920	32 3	33	12.8	19.7	450	706	24.8	21	12.6	19.8	300	495	17.3	11	13.4	21.9
600	120	20	34	42	150	1½	..	600	920	40.0	42	18.1	27.7	450	706	31.0	31	18.1	28.4	300	495	21.6	22	19.3	31.9
600	120	18	38	42	125	...	26	600	920	32.3	49	13.5	20.5	450	706	24.8	30	13.0	20.3	300	495	17.3	17	13.5	22.1
600	120	20	34	42	125	1½	..	600	920	40.0	53	19.6	30.0	450	706	31.0	39	19.4	30.3	300	495	21.6	27	20.4	33.6
750	120	20	42	42	150	...	26	750	1150	34.3	35	12.9	19.8	563	886	26.3	21	12.7	19.9	375	620	18.5	11	13.2	21.8
750	120	22	38	42	150	1½	..	750	1150	40.3	43	18.0	27.6	563	886	31.0	32	18.0	28.3	375	620	21.5	23	19.4	32.0
750	120	20	42	42	125	...	26	750	1150	34.3	49	13.6	20.9	563	886	26.3	32	13.0	20.5	375	620	18.5	18	13.2	21.9
750	120	22	38	42	125	1½	..	750	1150	40.3	55	19.8	30.3	563	886	31.0	40	19.4	30.5	375	620	21.5	28	20.3	33.5
1000	120	22	46	42	150	...	26	1000	1530	37.6	41	13.2	20.2	750	1175	28.9	25	12.6	19.8	500	821	20.3	13	12.9	21.1
1000	120	26	42	42	150	1½	..	1000	1530	45.0	49	18.6	28.5	750	1175	35.0	36	18.2	28.4	500	821	24.0	25	19.2	31.5
1000	120	22	46	42	125	...	26	1000	1530	37.6	59	13.9	21.3	750	1175	28.9	39	13.0	20.4	500	821	20.3	20	13.0	21.5
1000	120	26	42	42	125	1½	..	1000	1530	45.0	57	20.1	31.0	750	1175	35.0	41	19.6	30.7	500	821	24 0	27	21.5	35.3

ALLIS-CHALMERS CROSS COMPOUND CORLISS ENGINES

120 and 150 R.P.M.; 80% Power Factor; 60 Cycle; 3 Phase; 240,480,600 or 2300 Volts.

DIRECT CONNECTED ENGINE UNITS
ALTERNATING CURRENT GENERATORS

120 and 150 R.P.M.

Supersedes Sheet No. 2343

OCTOBER 1922

Sheet No. 2447

UNIT									ENGINE																		
Rating		Vacuum Back Pres.	Engine 125 to 150 Pounds			Engine, Generator and Wheel (No Exciter or Pulley)			Wheel (Parallel Operation)		Pins				Main Brgs.		Weight Heaviest Piece	Largest Piece		Cross-Head Shoes		Diameters					
											Cross		Crank									Piston Rods		Con. Rod Smallest	Steam	Exhaust	
K.W.	R.P.M.		H.P.	L.P.	Str.	Cat. No.	Ship. Weight	List Price	Dia.	Weight	Diam.	Length	Diam.	Length	Diam.	Length		Width	Height	Width	Length	H.P.	L.P.				
250	150	26	12	26	30	82511	82350	$14750.00	11	12000	3½	4½	4½	3½	7	14	6000	36	42	4½	12	2 11/16	3⅜	2¼	4	10
250	150	1½	14	24	30	82512	81350	14750.00	11	12000	3½	4½	4½	3½	7	14	6000	36	42	4½	12	2 11/16	3⅜	2¼	5	9
300	150	26	12	26	36	82513	103350	16570.00	12	14000	4½	6	6	5	10	20	8000	48	48	6	16½	2 11/16	3⅜	3¼	4	10
300	150	1½	14	24	36	82514	102000	16570.00	12	14000	4½	6	6	5	10	20	8000	48	48	6	16½	2 11/16	3⅜	3¼	5	9
400	150	26	14	30	36	82515	110400	17940.00	12	15000	4½	6	6	5	10	20	10000	48	48	6	16½	2 11/16	4⅛	3¼	5	12
400	150	1½	16	26	36	82516	108000	17630.00	12	15000	4½	6	6	5	10	20	8000	48	48	6	16½	3⅜	3⅜	3¼	5	10
500	150	26	16	34	36	82517	120200	19750.00	12	18000	4½	6	6	5	10	20	13000	48	60	6	16½	3⅜	4⅛	3¼	5	14
500	150	1½	18	30	36	82518	118000	19380.00	12	18000	4½	6	6	5	10	20	10000	48	48	6	16½	3⅜	4⅛	3¼	6	12
400	120	26	16	34	36	82519	128800	19970.00	14	22000	4½	6	6	5	10	20	13000	48	60	6	16½	3⅜	4⅛	3¼	5	14
400	120	1½	18	30	36	82520	127000	19630.00	14	22000	4½	6	6	5	10	20	10000	48	48	6	16½	3⅜	4⅛	3¼	6	12
600	120	26	18	38	42	82521	148800	23700.00	15	26000	4½	6	6	5	10	20	15000	54	72	6	16½	3⅜	4⅛	3¼	6	14
600	120	1½	20	34	42	82522	146000	23250.00	15	26000	4½	6	6	5	10	20	13000	54	72	6	16½	4⅛	4⅛	3¼	7	14
750	120	26	20	42	42	82523	198000	29880.00*	16	30000	5¾	7	7	6	12	24	18000	54	72	8	20½	4⅛	9	4⅛	7	16
750	120	1½	22	38	42	82524	191000	28500.00	16	30000	5¾	7	7	6	12	24	15000	54	72	8	20½	4⅛	4⅞	4⅛	8	14
1000	120	26	22	46	42	82525	216200	33630.00*	16	35000	5¾	7	7	6	12	24	23000	60	78	8	20½	4⅛	10	4⅛	8	18
1000	120	1½	26	42	42	82526	212000	32880.00*	16	35000	5¾	7	7	6	12	24	18000	60	72	8	20½	4⅞	9	4⅛	8	16

GENERATOR										
Rating			Catalog Number	Efficiencies			Excitation			Weights	
K.V.A.	K.W.	R.P.M.		1	¾	½	K.W.	Amps.	Catalog	Rotor	Shipping
312	250	150	20847 ~~20712~~	88.0	87.5	85.8	17	135	46137	5150	14350
375	300	150	48 ~~20713~~	89.3	88.4	86.6	18	144	46149	5850	15350
500	400	150	49 ~~20714~~	90.6	90.2	89.0	19½	155	46149	6600	17400
625	500	150	50 ~~20715~~	91.7	91.2	89.7	18	140	46149	7000	20200
500	400	120	54 ~~20718~~	89.8	89.2	87.1	21	165	46149	10000	24800
750	600	120	55 ~~20719~~	93.0	92.6	91.5	20	160	46149	14600	38900
937	750	120	56 ~~20720~~	93.0	92.6	91.5	23	184	46159	16500	43000
1250	1000	120	57 ~~20721~~	93.0	92.7	91.6	26	208	46159	18800	46200

ENGINE

Specifications per regular forms. If Exciter included add $200.00 to list and 1500 pounds for engine pulley.

* Includes Low Pressure tail slide.

GENERATOR

Specifications per regular forms. See catalogs.

Direct Connected Engine Units

Alternating Current Generators

120 and 150 R.P.M. October, 1922

STEAM CONSUMPTION GUARANTEES

UNIT					Steam Pressure (gauge)	Back Pressure (gauge)	Vacuum	FULL LOAD						¾ LOAD						½ LOAD					
KW	RPM	Engine H.P.	Engine L.P.	Engine Str.				K. W.	I. H. P.	L. P. M. E. P.	H. P. Cut Off	Lbs. per I. H. P. Hour	Lbs. per K. W. Hour	K. W.	I. H. P.	L. P. M. E. P.	H. P. Cut Off	Lbs. per I. H. P. Hour	Lbs. per K. W. Hour	K. W.	I. H. P.	L. P. M. E. P.	H. P. Cut Off	Lbs. per I. H. P. Hour	Lbs. per K. W. Hour
250	150	12	26	30	150	...	26	250	406	34.0	40	13.1	21.3	188	312	26.3	25	12.8	21.3	125	219	18.3	13	13.2	23.2
250	150	14	24	30	150	1½	..	250	406	40.0	42	18.2	29.5	188	312	30.8	31	18.2	30.2	125	219	21.5	22	19.6	34.5
250	150	12	26	30	125	...	26	250	406	34.0	55	14.1	22.3	188	312	26.3	34	13.4	22.3	125	219	18.3	19	13.6	23.9
250	150	14	24	30	125	1½	..	250	406	40.0	54	20.1	32.5	188	312	30.8	39	19.5	32.5	125	219	21.5	28	20.6	36.2
300	150	12	26	36	150	...	26	300	480	33.5	39	13.0	20.8	225	370	25.8	24	12.8	21.0	150	262	18.3	13	13.2	23.0
300	150	14	24	36	150	1½	..	300	480	39.3	41	18.1	28.9	225	370	30.3	31	18.2	29.9	150	262	21.5	22	19.5	34.1
300	150	12	26	36	125	...	26	300	480	33.5	55	14.1	22.5	225	370	25.8	36	13.5	22.2	150	262	18.3	21	13.7	23.8
300	150	14	24	36	125	1½	..	300	480	39.3	53	19.9	31.8	225	370	30.3	38	19.5	32.0	150	262	21.5	27	20.4	35.5
400	150	14	30	36	150	...	26	400	630	33.0	37	13.0	20.5	300	483	25.3	23	12.7	20.5	200	340	17.8	11	13.4	22.7
400	150	16	26	36	150	1½	..	400	630	44.0	42	18.2	28.7	300	483	33.8	30	18.2	29.3	200	340	23.8	20	19.4	32.9
400	150	14	30	36	125	...	26	400	630	33.0	53	13.8	21.7	300	483	25.3	33	13.2	21.3	200	340	17.8	19	13.5	23.0
400	150	16	26	36	125	1½	..	400	630	44.0	56	20.5	32.2	300	483	33.8	40	19.6	31.4	200	340	23.8	27	20.2	34.5
500	150	16	34	36	150	...	26	500	779	31.5	33	12.8	20.0	375	598	24.3	21	12.7	20.3	250	422	17.3	11	13.4	22.7
500	150	18	30	36	150	1½	..	500	779	41.0	41	18.1	28.2	375	598	31.5	29	18.1	28.9	250	422	22.3	21	19.5	32.9
500	150	16	34	36	125	...	26	500	779	31.5	47	13.5	21.0	375	598	24.3	31	13.2	21.1	250	422	17.3	18	13.5	22.8
500	150	18	30	36	125	1½	..	500	779	41.0	53	19.7	30.5	375	598	31.5	38	19.4	31.0	250	422	22.3	27	20.0	33.8
400	120	16	34	36	150	...	26	400	637	32.5	35	12.9	20.5	300	489	25.0	22	12.7	20.6	200	347	17.8	12	13.3	23.1
400	120	18	30	36	150	1½	..	400	637	41.8	42	18.1	28.9	300	489	32.0	31	18.1	29.4	200	347	22.8	21	19.2	33.4
400	120	16	34	36	125	...	26	400	637	32.5	50	13.5	21.5	300	489	25.0	32	13.1	21.4	200	347	17.8	18	13.5	23.4
400	120	18	30	36	125	1½	..	400	637	41.8	54	21.1	32.0	300	489	32.0	39	19.5	31.8	200	347	22.8	27	20.2	35.0
600	120	18	38	42	150	...	26	600	920	32.3	33	12.8	19.7	450	706	24.8	21	12.6	19.8	300	495	17.3	11	13.4	21.9
600	120	20	34	42	150	1½	..	600	920	40.0	42	18.1	27.7	450	706	31.0	31	18.1	28.4	300	495	21.6	22	19.3	31.9
600	120	18	38	42	125	...	26	600	920	32.3	49	13.5	20.5	450	706	24.8	30	13.0	20.3	300	495	17.3	17	13.5	22.1
600	120	20	34	42	125	1½	..	600	920	40.0	53	19.6	30.0	450	706	31.0	39	19.4	30.3	300	495	21.6	27	20.4	33.6
750	120	20	42	42	150	...	26	750	1150	34.3	35	12.9	19.8	563	886	26.3	21	12.7	19.9	375	620	18.5	11	13.2	21.8
750	120	22	38	42	150	1½	..	750	1150	40.3	43	18.0	27.6	563	886	31.0	32	18.0	28.3	375	620	21.5	23	19.4	32.0
750	120	20	42	42	125	...	26	750	1150	34.3	49	13.6	20.9	563	886	26.3	32	13.0	20.5	375	620	18.5	18	13.2	21.9
750	120	22	38	42	125	1½	..	750	1150	40.3	55	19.8	30.3	563	886	31.0	40	19.4	30.5	375	620	21.5	28	20.3	33.5
1000	120	22	46	42	150	...	26	1000	1530	37.6	41	13.2	20.2	750	1175	28.9	25	12.6	19.8	500	821	20.3	13	12.9	21.1
1000	120	26	42	42	150	1½	..	1000	1530	45.0	49	18.6	28.5	750	1175	35.0	36	18.2	28.4	500	821	24.0	25	19.2	31.5
1000	120	22	46	42	125	...	26	1000	1530	37.0	59	13.9	21.3	750	1175	28.9	39	13.0	20.4	500	821	20.3	20	13.0	21.5
1000	120	26	42	42	125	1½	..	1000	1530	45.0	57	20.1	31.0	750	1175	35.0	41	19.6	30.7	500	821	24.0	27	21.5	35.3

SHEET NO. 2343

Direct Connected Engine Units

Alternating Current Generators

120 and 150 R. P. M.

March, 1919

ALLIS-CHALMERS CROSS COMPOUND CORLISS ENGINES

120 and 150 R. P. M.; 80% Power Factor; 60 Cycle; 2 or 3 Phase; 240, 480 or 2300 Volts

UNIT										ENGINE																	
(a) Rating (Maximum)			Vacuum (Ins.) Back Pres. (Lbs.)	Engine Cylinders 125 to 150 Pounds Steam Gauge			Engine, Generator and Wheel (No Exciter or Pulley)			(b) Wheel (Parallel Operation)		Pins (Ins.)				Main Brgs. (Ins.)		Weight Heaviest Piece	Largest Piece (Ins.)		Cross-head Shoes (Ins.)		Diameters (Inches)				
												Cross-head		Crank									Piston Rods		Connect. Rod Smallest Dia.	Steam	Exhaust
KVA	KW	RPM		HP	LP	Str.	Cat. No.	Shipp. Wgt.	List Price	Dia.	Wgt.	Diam.	Length	Diam.	Length	Diam.	Length		Width	Height	Width	Length	HP	LP			
312	250	150	26	12	24	30	82501	80000	$19930	11	12000	3½	4½	4½	3½	7	14	6000	36	42	4½	12	2 11/16	3⅜	2¼	4	9
312	250	150	1½	14	24	30	82502	80000	19930	11	12000	3½	4½	4½	3½	7	14	6000	36	42	4½	12	2 11/16	3⅜	2¼	5	9
500	400	150	26	14	28	36	82503	111000	23600	12	15000	4½	6	6	5	10	20	8000	48	48	6	16½	2 11/16	3⅜	3	5	12
500	400	150	1½	16	26	36	82504	111000	23600	12	15000	4½	6	6	5	10	20	8000	48	48	6	16½	3⅜	3⅜	3	5	10
500	400	120	26	16	32	36	82505	127000	27070	14	22000	4½	6	6	5	10	20	10000	48	48	6	16½	3⅜	4⅛	3	5	12
500	400	120	1½	18	30	36	82506	127000	27070	14	22000	4½	6	6	5	10	20	10000	48	48	6	16½	3⅜	4⅛	3	6	12
700	560	120	26	18	36	36	82507	149000	30210	15	25000	4½	6	6	5	10	20	13000	48	60	6	16½	3⅜	4⅛	3	6	14
700	560	120	1½	20	34	36	82508	149000	30210	15	25000	4½	6	6	5	10	20	13000	48	60	6	16½	4⅛	4⅛	3	7	14
937	750	120	26	20	40	42	82509	190000	37780	16	30000	5¾	7	7	6	12	24	17500	54	72	8	20½	4⅛	4⅞	3⅞	7	16
937	750	120	1½	22	36	42	82510	185000	36710	16	30000	5¾	7	7	6	12	24	17500	54	72	8	20½	4⅛	4⅛	3⅞	8	14

GENERATOR											
(c) Rating (Maximum)			Frame Number	(d) Efficiencies			Excitation (120 Volts)			Weight	
KVA	KW	RPM		1	¾	½	K.W.	Amps.	ADD(e) Cat. No.	Net Rotor	Shipping
312	250	150	87B	88.7	88.3	86.7	16	125	33316	4800	13400
500	400	150	87C	90.0	89.7	87.9	19	150	33316	6200	20000
500	400	120	106D	89.8	89.2	87.1	21	165	33316	10400	24800
700	560	120	128B	91.5	91.2	89.7	22½	170	33316	14200	37400
937	750	120	128D	91.7	91.3	89.9	24	190	33322	15800	41000

(a) This is Maximum Output and there is No Overload Capacity.

(b) Same Wheel for Non-Parallel Operation.

(c) Temperature Rise by Thermometer 50° C., (Rotor and Stator).

(d) In accordance with A. I. E. E. Rules.

(e) If Exciter included Add $200 to List and 1500 Lbs. for Engine Pulley.

Note:—For Economies see other side.

Set No. 23

Direct Connected Engine Units

Alternating Current Generators

120 and 150 R. P. M.

March, 1919

SHEET NO. 2343A

STEAM CONSUMPTION GUARANTEES

UNIT								FULL LOAD						¾ LOAD						½ LOAD					
KW	PM	Engine HP	Engine LP	Engine Str.	Steam Pressure (gauge)	Back Pressure (gauge)	Vacuum (Ins.)	K.W.	I.H.P.	(L.P.) M.E.P.	H.P. Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	(L.P.) M.E.P.	H.P. Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	(L.P.) M.E.P.	H.P. Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour
250	150	12	24	30	150	..	26	250	407	40.0	42	14.2	23.1	188	313	30.8	26	13.8	23.0	125	222	21.9	14	14.2	25.1
250	150	14	24	30	150	1½	..	250	407	40.0	41	18.7	30.4	188	313	30.8	31	18.8	31.3	125	222	21.9	22	20.3	36.1
250	150	12	24	30	125	..	26	250	407	40.0	61	15.0	24.5	188	313	30.8	38	14.3	23.9	125	222	21.9	22	14.3	25.4
250	150	14	24	30	125	1½	..	250	407	40.0	53	20.2	32.8	188	313	30.8	39	20.0	33.3	125	222	21.9	27	21.6	38.3
400	150	14	28	36	150	..	26	400	639	38.4	39	14.0	22.3	300	492	29.5	25	13.8	22.5	200	348	20.9	13	14.2	24.8
400	150	16	26	36	150	1½	..	400	639	44.6	45	19.0	30.3	300	492	34.3	33	18.7	30.7	200	348	24.3	23	19.7	34.2
400	150	14	28	36	125	..	26	400	639	38.4	57	14.7	23.5	300	492	29.5	36	14.1	23.2	200	348	20.9	20	14.3	24.8
400	150	16	26	36	125	1½	..	400	639	44.6	59	20.7	33.0	300	492	34.3	42	20.0	32.7	200	348	24.3	29	20.8	36.1
400	120	16	32	36	150	..	26	400	640	36.8	37	13.8	22.0	300	493	28.4	23	13.7	22.5	200	350	20.1	12	14.3	25.0
400	120	18	30	36	150	1½	..	400	640	41.8	43	18.7	29.9	300	493	32.2	31	18.7	30.7	200	350	22.9	22	20.0	34.9
400	120	16	32	36	125	..	26	400	640	36.7	52	14.5	23.2	300	493	28.4	34	14.0	23.1	200	350	20.1	19	14.3	25.0
400	120	18	30	36	125	1½	..	400	640	41.8	55	20.2	32.3	300	493	32.2	40	19.9	32.6	200	350	22.9	28	21.1	35.2
560	120	18	36	36	150	..	26	560	876	39.9	42	14.1	22.1	420	673	30.7	26	13.7	21.9	280	475	21.7	12	14.1	23.9
560	120	20	34	36	150	1½	..	560	876	44.6	48	19.0	29.6	420	673	34.2	35	18.7	29.9	280	475	24.2	25	19.7	33.3
560	120	18	36	36	125	..	26	560	876	39.9	60	14.9	23.2	420	673	30.7	38	14.1	22.6	280	475	21.7	21	14.2	24.0
560	120	20	34	36	125	1½	..	560	876	44.6	62	20.5	32.0	420	673	34.2	44	20.0	31.9	280	475	24.2	31	20.8	35.2
750	120	20	40	42	150	..	26	750	1170	36.9	36.	13.7	21.4	563	908	28.6	23.	13.6	21.9	375	635	20.0	11.	14.2	24.1
750	120	22	36	42	150	1½	..	750	1170	46.0	52.	19.2	30.0	563	908	35.6	37.	18.7	30.1	375	635	24.9	26.	19.7	33.4
750	120	20	40	42	125	..	26	750	1170	36.9	52.	14.5	22.7	563	908	28.6	33.	14.0	22.6	375	635	20.0	18.	14.2	24.1
750	120	22	36	42	125	1½	..	750	1170	46.0	60.	20.8	32.5	563	908	35.6	43.	19.9	32.1	375	635	24.9	27.	20.6	34.9

Note:—Use this form with guarantees:—"When this unit is operated with____lbs. gauge steam pressure (dry saturated steam) at the throttle valve and the back pressure of____lbs. gauge or____inches of vacuum (referred to 30" barometer) at the exhaust nozzle the steam consumption of the engine only will not exceed the following when the unit is developing the even loads specified below."

C-COMPOUND
DIR. CONN.
"A C" 150 R.P.M.

ALLIS-CHALMERS CROSS-COMPOUND CORLISS ENGINES

150 R. P. M.; 80% POWER FACTOR: 60 CYCLE: 2 OR 3 PHASE; 240, 480 OR 2300 VOLTS

UNIT

(a) Rating (Max.)		Steam Pressure (gauge)	Vacuum (ins) or BackPres. (Lbs.)	Engine (Cylinders)			Engine, Generator and Wheel (No Exciter or Pulley)			(b) Wheel (Parallel Operation)	
KVA	KW	Lbs.		HP	LP	Str.	Cat. No.	Shipp. Wgt.	List Price	Dia.	Wgt.
312	250	150	26	12	26	30	80881	84000	....	11	12000
312	250	150	1½	14	24	30	80882	84000	....	11	12000
312	250	125	26	12	26	30	80883	84000	....	11	12000
312	250	125	1½	14	24	30	80884	84000	....	11	12000
470	375	150	26	14	28	36	80885	111000	....	12	14000
470	375	150	1½	16	26	36	80886	111000	....	12	14000
470	375	125	26	14	28	36	80887	111000	....	12	14000
470	375	125	1½	16	26	36	80888	111000	....	12	14000
625	500	150	26	16	32	36	80889	125500	....	12	17000
625	500	150	1½	18	30	36	80890	125500	....	12	17000
625	500	125	26	16	32	36	80891	125500	....	12	17000
625	500	125	1½	18	30	36	80892	125500	....	12	17000

ENGINE

Pins (Ins.)				Bearings (Ins.)		Weight Heaviest Piece	Largest Piece (Inches)		Crosshead Shoes (Inches)		Diameters (Inches)				
Crosshead		Crank									Piston Rods		Conct. Rod. Smlst. Dia.	Steam	Exhaust
Diam.	Length	Diam.	Length	Diam.	Length		Width	Height	Width	Length	HP	LP			
3½	4½	4½	3½	7	14	6000	36	42	4½	12	2 11/16	3⅜	2¼	4	10
3½	4½	4½	3½	7	14	6000	36	42	4½	12	2 11/16	3⅜	2¼	5	9
3½	4½	4½	3½	7	14	6000	36	42	4½	12	2 11/16	3⅜	2¼	4	10
3½	4½	4½	3½	7	14	6000	36	42	4½	12	2 11/16	3⅜	2¼	5	9
4½	6	6	5	10	20	8000	48	48	6	16½	2 11/16	3⅜	3	5	12
4½	6	6	5	10	20	8000	48	48	6	16½	3⅜	3⅜	3	5	10
4½	6	6	5	10	20	8000	48	48	6	16½	2 11/16	3⅜	3	5	12
4½	6	6	5	10	20	8000	48	48	6	16½	3⅜	3⅜	3	5	10
4½	6	6	5	10	20	10000	54	48	6	16½	3⅜	4⅛	3	5	12
4½	6	6	5	10	20	10000	54	48	6	16½	3⅜	4⅛	3	6	12
4½	6	6	5	10	20	10000	54	48	6	16½	3⅜	4⅛	3	5	12
4½	6	6	5	10	20	10000	54	48	6	16½	3⅜	4⅛	3	6	12

GENERATOR

(c) Rating (Max.)		Frame	(d) Regulation	(e) Efficiencies			Excitation (120 Volts)			Weights			
KVA	KW			1	¾	½	KW	Amp.	Add (f) Cat.	Net Rotor	Net Stator	Total Net	Shipping
312	250	AI48-80- 6¾	36	89.4	88.8	86.8	15	125	33308	4700	6500	14000	16500
470	375	AI48-80-10½	42	90.7	90.5	89.0	16½	136	33316	6500	7900	17000	21000
625	500	AI48-80-13½	40	91.2	91.0	89.3	21	175	33316	11000	9500	24000	28500

(a) This is Maximum Output and there is No Overload Capacity.
(b) Same wheel for non-parallel operation.
(c) Temperature rise by thermometer 50° C. (rotor and stator).
(d) Regulation not to be given unless required.
(e) In accordance with A. I. E. E. rules.
(f) If exciter included add $200 to list and 1500 lbs. for engine pulley.

CORLISS ENGINE UNITS

DIRECT CONNECTED

DECEMBER, 1916

SHEET NO. 2338

SET NO. 208

STEAM CONSUMPTION GUARANTEES

Unit					Steam Pressure (gauge)	Back Pressure (gauge)	Vacuum	Full Load						¾ Load						½ Load					
Rating		Engine						KW	IHP	(LP) MEP	HP Cut-off	Lbs. per IHP Hour	Lbs. per KW Hour	KW	IHP	(LP) MEP	HP Cut-off	Lbs. per IHP Hour	Lbs. per KW Hour	KW	IHP	(LP) MEP	HP Cut-off	Lbs. per IHP Hour	Lbs. per KW Hour
KVA	KW	HP	LP	Str.																					
312	250	12	26	30	150	...	26	250	405	33.6	38	14.2	23.0	188	317	26.0	25	13.9	23.5	125	227	18.6	14	14.3	26.0
312	250	14	24	30	150	1½	..	250	405	40.3	40	18.5	30.0	188	317	31.2	29	18.6	31.4	125	227	22.3	21	19.9	36.1
312	250	12	26	30	125	...	26	250	405	33.6	51	14.5	23.5	188	317	26.0	33	14.3	24.1	125	227	18.6	19	14.6	26.6
312	250	14	24	30	125	1½	..	250	405	40.3	56	20.0	32.5	188	317	31.2	39	20.0	33.8	125	227	22.3	29	21.2	38.6
470	375	14	28	36	150	...	26	375	595	35.6	37	14.2	22.5	282	459	27.4	22	13.9	22.6	188	325	19.4	13	14.5	25.0
470	375	16	26	36	150	1½	..	375	595	41.4	37	18.7	29.7	282	459	31.9	26	18.6	30.3	188	325	22.6	19	20.0	34.6
470	375	14	28	36	125	...	26	375	595	35.6	49	14.6	23.2	282	459	27.4	30	14.1	22.9	188	325	19.4	17	14.4	25.0
470	375	16	26	36	125	1½	..	375	595	41.4	52	20.3	32.3	282	459	31.9	37	20.0	32.5	188	325	22.6	27	20.9	36.1
625	500	16	32	36	150	...	26	500	787	36.2	38	14.4	22.7	375	605	27.7	24	14.0	22.6	250	429	19.6	13	14.5	24.9
625	500	18	30	36	150	1½	..	500	787	41.6	39	18.5	29.2	375	605	32.0	29	18.6	30.0	250	429	22.8	21	19.9	34.1
625	500	16	32	36	125	...	26	500	787	36.2	51	14.9	23.5	375	605	27.7	31	14.3	23.1	250	429	19.6	17	14.5	24.9
625	500	18	30	36	125	1½	..	500	787	41.6	55	20.3	32.0	375	605	32.0	39	19.9	32.1	250	429	22.8	28	21.3	36.6

Note—Use this form with guarantees:—"When this unit is operated with.....pounds gauge steam pressure (dry saturated steam) at the throttle valve and back pressure of.....pounds gauge or.....inches of vacuum (referred to 30 inch barometer) at the exhaust nozzle the steam consumption of the engine only will not exceed the following when the unit is driving its own exciter and developing the even loads specified below."

CORLISS ENGINE UNITS
DIRECT CONNECTED
DECEMBER, 1916

SHEET NO. 2338A

SHEET NO. 2235

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

250 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

OCTOBER, 1912

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI48-80-6¾	250	200	150	2300	4700	6500	14000	16500

Efficiencies						Regulation		*Heating		Field Data		
P. F. 100			P. F. 80			P.F. 100	P.F. 80	Full Load 24 Hrs.	1¼ Load 2 Hrs.	Exciter 120 Volts K. W.	Amps. at P. F. 100	Amps. at P. F. 80
1	¾	½	1	¾	½							
~~93.5~~ 93.8	~~93~~ 93.2	~~91~~ 91.2	90.2	90.	89.2	10	20	40	55	12½	80	~~110~~ 100

ENGINE DETAILS

†Bearings		Pins				Wheel				Largest Piece			Heaviest Piece
		Crank		Crosshead		Parallel Operation		Non-Parallel Operation					
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
9	18	4½	3½	3½	4½	12	14000	10	9000	12–3	37	35	8950

Crosshead Shoes		Diameters (Inches)						
Width Ins.	Length Ins.	Conn. Rod Smallest Diam.	Cylinder Diam. H.P.	Cylinder Diam. L.P.	High Press. Piston Rod	Low Press. Piston Rod	High Press. Steam	Low Press. Exhaust
4½	12	2¼	12	..	2 11/16	...	4	..
		2¼	14	..	2 11/16	...	5	..
		2¼	16	..	3⅜	...	5	..
		2¼	..	22	...	3⅜	.	9
		2¼	..	24	...	3⅜	.	9
		2¼	..	28	...	3⅜	.	12

GENERATOR 100% P. F., 250 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	Size H.P.	Size L.P.	Size Stroke	Price Unit	Weight Pounds
80274	125	Non-Cond.	1½	..	16	24	30	$19900	88000
80275	150	"	1½	..	14	24	30	19800	87500
80276	125	Cond.	...	26	14	28	30	20000	91000
80277	150	"	...	26	14	28	30	20000	91000

GENERATOR 80% P. F., 200 K. W. PARALLEL OPERATION

80278	125	Non-Cond.	1½	..	16	24	30	19900	88000
80279	150	"	1½	..	14	22	30	19600	84500
80280	125	Cond.	...	26	12	24	30	19700	86000
80281	150	"	...	26	12	24	30	19700	86000

‡Generator can be wound for Standard lower voltage, viz., 240, 480, 600, without extra charge.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

†NOTE:—For Non-parallel operation. Main bearing 7"x14"; largest piece, 12'-3" long, 33" wide, and 35" high, deduct 5800 lbs. $130.00 Net.

SET NO. 308

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"A" GENERATORS

250 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

FOR USE WITH SHEET NO. 2235

MAY, 1913

SHEET NO. 2235A

STEAM CONSUMPTION GUARANTEES

GENERATOR 100% P. F., 250 K. W.

Load				½				¾				1				1¼			
K. W.				125				187				250				312			
I. H. P.				225				307				395				481			
Catalog No.	I.S.P.	Max. M.E.P. 75% Cut Off	Type	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
80274	125	55.7	Non-Cond.	21.9	23.8	25.25	45.25	30.	30.6	22.25	36.5	38.4	39.4	21.6	34.4	47.	51.8	22.25	34.3
80275	150	56.9	"	21.9	21.	21.85	39.2	30.	27.6	19.9	32.7	38.4	36.6	19.5	31.	47.	50.4	20.4	31.4
80276	125	46.5	Cond.	16.1	15.6	15.25	27.3	22.	22.4	14.5	23.8	28.2	32.4	14.7	23.4	34.4	44.8	15.75	24.3
80277	150	56.4	"	16.1	11.2	14.9	26.7	22.	16.8	13.75	22.6	28.2	23.2	13.5	21.5	34.4	31.2	13.75	21.2

GENERATOR 80% P. F., 200 K. W.

K. W.				100				150				200				250			
I. H. P.				183				254				328				405			
80278	125	55.7	Non-Cond.	17.8	20.7	27.65	50.75	24.7	26.1	23.8	40.5	31.9	32.4	22.	36.1	39.4	40.5	21.55	34.7
80279	150	66.5	"	21.2	18.25	23.75	43.5	29.4	23.9	20.75	35.3	38.2	31.	19.7	32.3	47.	39.4	19.75	31.8
80280	125	46.5	Cond.	17.8	17.6	15.	27.5	24.7	26.8	14.55	24.7	31.9	38.8	15.3	25.1	39.4	56.	17.	27.4
80281	150	56.4	"	17.8	12.4	14.4	26.4	24.7	19.6	13.5	23.	31.9	28.	13.7	22.5	39.4	38.4	14.25	23.

* (%) Per cent of stroke in high pressure cylinder. †M.E.P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K.W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I.H.P. specified shows power developed in engine cylinder when generator is delivering the true K.W. output given at the load specified and does not include an allowance for power to drive the exciter.

308

SHEET NO. 2236

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

312 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

OCTOBER, 1912

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI48-80-8½	312	250	150	2300	5300	7500	16000	19000

Efficiencies						Regulation		*Heating		Field Data		
P. F. 100			P. F. 80			P.F. 100	P.F. 80	Full Load 24 Hrs.	1¼ Load 2 Hrs.	Exciter 120 Volts K. W.	Amps. at P. F. 100	Amps. at P. F. 80
1	¾	½	1	¾	½							
93.8	93.3	91.7	90.5	90.5	89.5	10	26	40	55	12	95	100 ~~130~~

ENGINE DETAILS

**Bearings		Pins				Wheel				Largest Piece			Heaviest Piece
Dia. Ins.	Length Ins.	Crank Dia. Ins.	Crank Length Ins.	Crosshead Dia. Ins.	Crosshead Length Ins.	Parallel Operation Dia.	Parallel Operation Wgt.	Non-Parallel Operation Dia.	Non-Parallel Operation Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
9	18	4½	3½	3½	4½	12	16000	11	10000	† 12-3 ° 13-8	37 37	35 35	8950 9450

Crosshead Shoes		Diameters (Inches)							
Width Ins.	Length Ins.	Conn. Rod Smallest Diam.	Cylinder Diam. H.P.	Cylinder Diam. L.P.	High Press. Piston Rod	Low Press. Piston Rod	High Press. Steam	Low Press. Exhaust
4½	12	2¼	14	..	2 11/16	...	5	..
		2¼	16	..	3⅜	...	5	..
		2¼	..	24	...	3⅜	.	9
		2¼	..	26	...	3⅜	.	10
		2¼	..	28	...	3⅜	.	12

GENERATOR 100% P. F., 312 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	Size H.P.	Size L.P.	Size Stroke	Price Unit	Weight Pounds
80282	125	Non-Cond.	1½	..	16	26	36	$21130	96500
80283	150	"	1½	..	14	26	36	21050	95500
80284	125	Cond.	...	26	14	28	36	21175	98000
80285	150	"	...	26	14	28	36	21175	98000

GENERATOR 80% P. F., 250 K. W. PARALLEL OPERATION

80286	125	Non-Cond.	1½	..	16	24	30	20900	93500
80287	150	"	1½	..	14	24	30	20800	92500
80288	125	Cond.	...	26	14	28	30	21000	96000
80289	150	"	...	26	14	28	30	21000	96000

‡Generator can be wound for Standard lower voltage, viz., 240, 480, 600, without extra charge.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

**NOTE:—For Non-parallel operation. Main bearings 7″x14″, largest piece, engine marked (†) length 12′-3″, 33″ wide and 35″ high. Engine marked (°) largest piece 13′-8″ long, 33″ wide and 35″ high.

(†) Engines 30″ stroke, (°) Engines 36″ stroke.

Deductions Non-parallel operation, 36″ stroke, 6800 lbs., **$150.00** Net, 30″ stroke 6800 lbs., **$150.00** Net.

SET NO. 308

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"A" GENERATORS
312 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

FOR USE WITH SHEET NO. 2236

MAY, 1913

SHEET NO. 2236A

STEAM CONSUMPTION GUARANTEES

GENERATOR 100% P. F., 312 K. W.

Load				½				¾				1				1¼			
K. W.				156				234				312				390			
I. H. P.				271				377				485				595			
Catalog No.	I.S.P.	Max. M.E.P. 75% Cut Off	Type	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
80282	125	46.8	Non-Cond.	18.75	23.1	24.4	42.5	26.1	31.	22.1	35.6	33.6	41.2	21.6	33.6	41.	56.1	22.6	34.8
80283	150	49.8	"	18.75	21.35	22.	38.3	26.1	28.7	19.9	32.1	33.6	38.5	19.5	30.3	41.	48.3	20.35	31.3
80284	125	46.5	Cond.	16.1	15.6	15.2	26.45	22.5	23.2	14.45	23.3	29.	34.	14.75	23.	35.5	46.8	16.	24.7
80285	150	56.4	"	16.1	11.2	14.75	25.7	22.5	18.	13.6	21.9	29.	24.4	13.5	21.	35.5	32.4	13.8	21.3

GENERATOR 80% P. F., 250 K. W.

K. W.				125				187.5				250				312.5			
I. H. P.				223				310				403				496			
80286	125	55.7	Non-Cond.	21.7	23.7	25.1	44.75	30.2	30.6	22.2	36.9	39.2	40.5	21.5	34.6	48.	53.6	22.3	35.5
80287	150	56.9	"	21.7	21.	21.8	38.8	30.2	28.2	19.75	32.8	39.2	38.1	19.45	31.3	48.	32.2	20.65	32.9
80288	125	46.5	Cond.	16.	15.6	15.2	27.	22.2	23.2	14.8	24.6	29.	32.	14.75	23.8	35.4	47.	15.9	25.3
80289	150	56.4	"	16.	11.2	14.75	26.3	22.2	18.	13.6	22.6	29.	24.5	13.5	21.75	35.4	32.4	13.8	22.

* (%) Per cent of stroke in high pressure cylinder. †M.E.P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K.W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I.H.P. specified shows power developed in engine cylinder when generator is delivering the true K.W. output given at the load specified and does not include an allowance for power to drive the exciter.

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES — "AI" GENERATORS

375 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET NOS. 2237, 2238, 2251 — MAY, 1913

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI48-80-11	375	300	150	2300	6300	9000	19000	22500

Efficiencies						Regulation		*Heating		Field Data		
P. F. 100			P. F. 80			P.F. 100	P.F. 80	Full Load 24 Hrs.	1¼ Load 2 Hrs.	Exciter 120 Volts K. W.	Amps. at P. F. 100	Amps. at P. F. 80
1	¾	½	1	¾	½							
94	93.3	91.5	91	90.7	89.7	10	24	40	55	17	105	150

ENGINE DETAILS

Bearings		Pins				Wheel				Largest Piece			Heaviest Piece
		Crank		Crosshead		Parallel Operation		Non-Parallel Operation					
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
9	18	4½	3½	3½	4½	12	19000	12	12000	13–8	37	35	11000

Crosshead Shoes		Diameters (Inches)						
Width Ins.	Length Ins.	Conn.Rod Smallest Diam.	Cylinder Diam. H.P.	Cylinder Diam. L.P.	High Press. Piston Rod	Low Press. Piston Rod	High Press. Steam	Low Press. Exhaust
4½	12	2¼	14	..	2 11/16	...	5	..
		2¼	16	..	3⅜	...	5	..
		2¼	18	..	3⅜	...	6	..
		2¼	..	26	...	3⅜	.	10
		2¼	..	28	...	3⅜	.	12
		2¼	..	32	...	4⅛	.	12

GENERATOR 100% P. F., 375 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	Engine Size H.P.	Engine Size L.P.	Engine Size Stroke	List Price Unit	Weight Unit Pounds
80525	125	Non-Cond.	1½	..	18	28	36	$22075	106500
80526	150	"	1½	..	16	26	36	21850	104000
80527	125	Cond.	...	26	16	32	36	22250	109000
80528	150	"	...	26	14	28	36	21900	105000

GENERATOR 80% P. F., 300 K. W. PARALLEL OPERATION

80529	125	Non-Cond.	1½	..	16	26	36	21850	104000
80530	150	"	1½	..	14	26	36	21800	103000
80531	125	Cond.	...	26	14	28	36	21900	105000
80532	150	"	...	26	14	28	36	21900	105000

‡Generator can be wound for Standard lower voltage, viz., 240, 480, 600, without extra charge.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

NOTE:—For Non-parallel operation, main bearing as above, deduct 7000 lbs., $115.00 Net.

SET NO. 308

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS
375 K.V.A., 150 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

MAY, 1913

SHEET NO. 2276A

STEAM CONSUMPTION GUARANTEES

GENERATOR 100% P. F., 375 K. W.

Load				½				¾				1				1¼			
K. W.				187				282				375				470			
I. H. P.				318				447				580				708			
Catalog No.	I.S.P.	Max. M.E.P. 75% Cut Off	Type	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
80525	125	50.1	Non-Cond.	18.9	22.7	24.2	41.25	26.2	29.	22.6	35.8	34.6	39.	21.5	33.	42.2	51.	21.8	32.8
80526	150	61.7	"	22.	19.1	22.4	38.2	31.2	25.	20.1	31.9	40.	34.7	19.3	29.6	49.	45.8	19.5	29.4
80527	125	46.	Cond.	14.5	13.6	15.7	26.8	20.4	20.8	14.5	23.	26.5	29.6	14.4	22.1	32.3	40.	15.3	23.
80528	150	56.4	"	18.9	14.0	14.1	24.1	26.2	20.8	13.5	21.4	34.6	31.2	13.75	21.1	42.2	42.4	14.5	21.8

GENERATOR 80% P. F., 300 K. W.

K. W.				150				225				300				375			
I. H. P.				260				360				480				510			
80529	125	44.5	Non-Cond.	18.	21.2	24.4	42.3	24.9	28.6	22.3	35.75	33.2	39.2	21.6	34.2	40.8	54.	22.6	35.5
80530	150	49.8	"	18.	20.3	22.4	38.9	24.9	27.3	20.2	32.35	33.2	37.8	19.5	30.9	40.8	51.	20.4	32.1
80531	125	46.	Cond.	15.5	14.4	15.3	26.5	21.4	22.	14.5	23.2	28.6	32.8	14.7	23.3	35.2	48.	16.2	25.4
80532	150	56.4	"	15.5	10.8	14.9	25.8	21.4	16.4	13.7	21.9	28.6	24.	13.5	21.4	35.2	32.	13.8	21.6

*(%) Per cent of stroke in high pressure cylinder. †M. E. P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified and does not include an allowance for power to drive the exciter.

C-COMPOUND
DIR. CONN.
"A C" 120 R. P. M.

ALLIS-CHALMERS CROSS-COMPOUND CORLISS ENGINES

120 R. P. M.; 80% POWER FACTOR; 60 CYCLE; 2 OR 3 PHASE; 240, 480, OR 2300 VOLTS

CORLISS ENGINE UNITS

DIRECT CONNECTED

DECEMBER, 1916

SHEET NO. 2337

SET NO. 300

UNIT										ENGINE																		
(a) Rating (Max.)		Steam Pressure (gauge)	Vac. (Ins.) or Back Pres. (lbs.)	Engine (Cylinders)			Engine, Generator and Wheel (No Exciter or Pulley)			(b) Wheel (Parallel Operation)		Pins (Ins.)				Bearings (Ins.)		Weight Heaviest Piece	Largest Piece (Inches)		Crosshead Shoes (Inches)		Diameters (Inches)					
												Crosshead		Crank									Piston Rods		Conct. Rod Smlst. Dia.	Steam	Exhaust
KVA	KW	Lbs.		HP	LP	Str.	Cat. No.	Shipp. Wgt.	List Price	Dia.	Wgt.	Diam.	Length	Diam.	Length	Diam.	Length		Width	Height	Width	Length	HP	LP			
470	375	150	26	16	32	36	80865	128000	....	14	20000	4½	6	6	5	10	20	10000	48	60	6	16½	3⅜	4⅛	3	5	12
470	375	150	1½	18	30	36	80866	128000	....	14	20000	4½	6	6	5	10	20	10000	48	60	6	16½	3⅜	4⅛	3	6	12
470	375	125	26	16	32	36	80867	128000	....	14	20000	4½	6	6	5	10	20	10000	48	60	6	16½	3⅜	4⅛	3	5	12
470	375	125	1½	18	30	36	80868	128000	....	14	20000	4½	6	6	5	10	20	10000	48	60	6	16½	3⅜	4⅛	3	6	12
700	560	150	26	18	36	36	80869	147000	....	15	25000	4½	6	6	5	10	20	13000	48	60	6	16½	3⅜	4⅛	3	6	14
700	560	150	1½	20	34	36	80870	147000	....	15	25000	4½	6	6	5	10	20	13000	48	60	6	16½	4⅛	4⅛	3	7	14
700	560	125	26	18	36	36	80871	147000	....	15	25000	4½	6	6	5	10	20	13000	48	60	6	16½	3⅜	4⅛	3	6	14
700	560	125	1½	22	36	36	80872	149000	....	15	25000	4½	6	6	5	10	20	13000	48	60	6	16½	4⅛	4⅛	3	8	14
910	725	150	26	20	40	42	80873	193500	....	15	35000	5¾	7	7	6	12	24	17500	54	72	8	20½	4⅛	4⅞	3⅞	7	16
910	725	150	1½	22	38	42	80874	193500	....	15	35000	5¾	7	7	6	12	24	17500	54	72	8	20½	4⅛	4⅞	3⅞	8	14
910	725	125	26	20	40	42	80875	193500	....	15	35000	5¾	7	7	6	12	24	17500	54	72	8	20½	4⅛	4⅞	3⅞	7	16
910	725	125	1½	22	38	42	80876	193500	....	15	35000	5¾	7	7	6	12	24	17500	54	72	8	20½	4⅛	4⅞	3⅞	8	14
1060	850	150	26	22	44	42	80877	209000	....	15	38000	5¾	7	7	6	12	24	19000	54	72	8	20½	4⅛	4⅞	3⅞	8	18
1060	850	150	1½	22	38	42	80878	204000	....	15	38000	5¾	7	7	6	12	24	19000	54	72	8	20½	4⅛	4⅞	3⅞	8	14
1060	850	125	26	22	44	42	80879	209000	....	15	38000	5¾	7	7	6	12	24	19000	54	72	8	20½	4⅛	4⅞	3⅞	8	18
1060	850	125	1½	24	40	42	80880	206000	....	15	38000	5¾	7	7	6	12	24	19000	54	72	8	20½	4⅛	4⅞	3⅞	8	16

GENERATOR													
(c) Rating (Max.)		Frame	(d) Regulation	(e) Efficiencies			Excitation (120 Volts)			Weights			
KVA	KW			1	¾	½	KW	Amp.	Add (f) Cat.	Net Rotor	Net Stator	Total Net	Shipping
470	375	AI60-100-9½	27	89.6	88.9	86.8	21½	175	33316	10200	10500	23500	28000
700	560	AI60-120-8	32	91.2	90.9	89.3	22½	170	33316	13000	11700	31000	36000
910	725	AI60-120-10	34	91.4	91.1	89.5	25	195	33322	15000	13900	34000	40500
1060	850	AI60-120-12	34	91.4	91.1	89.5	35	220	33330	16000	16000	36000	44000

(a) This is Maximum Output and there is No Overload Capacity.
(b) Same wheel for non-parallel operation.
(c) Temperature rise by thermometer 50° C. (rotor and stator).
(d) Regulation not to be given unless required.
(e) In accordance with A. I. E. E. rules.
(f) If exciter included add $200 to list and 1500 lbs. for engine pulley.

STEAM CONSUMPTION GUARANTEES

Unit					Steam Pressure (gauge)	Back Pressure (gauge)	Vacuum	Full Load						¾ Load						½ Load					
Rating		Engine						KW	IHP	(LP) MEP	HP Cut-off	Lbs. per IHP Hour	Lbs. per KW Hour	KW	IHP	(LP) MEP	HP Cut-off	Lbs. per IHP Hour	Lbs. per KW Hour	KW	IHP	(LP) MEP	HP Cut-off	Lbs. per IHP Hour	Lbs. per KW Hour
KVA	KW	HP	LP	Str.																					
470	375	16	32	36	150	...	26	375	605	34.8	36	14.3	23.1	282	468	26.8	22	13.9	23.0	188	334	19.2	12	14.5	25.7
470	375	18	30	36	150	1½	..	375	605	40.1	38	18.5	29.9	282	468	31.1	28	19.0	31.4	188	334	22.0	20	20.1	35.7
470	375	16	32	36	125	...	26	375	605	34.8	47	14.8	23.9	282	468	26.8	29	14.2	23.5	188	334	19.2	17	14.5	25.7
470	375	18	30	36	125	1½	..	375	605	40.1	53	20.3	32.7	282	468	31.1	38	19.9	32.9	188	334	22.0	27	21.2	37.7
700	560	18	36	36	150	...	26	560	875	39.6	45	15.0	23.4	420	673	30.4	28	14.0	22.5	280	473	21.3	15	14.3	24.1
700	560	20	34	36	150	1½	..	560	875	44.6	46	18.8	29.3	420	673	34.4	30	18.5	29.6	280	473	24.2	22	19.7	33.2
700	560	18	36	36	125	...	26	560	875	39.6	62	15.2	23.7	420	673	30.4	37	14.4	23.1	280	473	21.3	20	14.3	24.2
700	560	22	36	36	125	1½	..	560	875	39.6	58	20.1	31.5	420	673	30.4	41	19.8	31.7	280	473	21.3	30	20.8	35.1
910	725	20	40	42	150	...	26	725	1135	36.0	38	14.4	22.6	544	868	27.5	23	14.0	22.3	363	621	19.5	13	14.5	24.9
910	725	22	38	42	150	1½	..	725	1135	40.0	40	18.5	29.0	544	868	30.4	29	18.5	29.5	363	621	21.7	21	19.9	34.1
910	725	20	40	42	125	...	26	725	1135	36.0	49	14.8	23.2	544	868	27.5	30	14.4	22.9	363	621	19.5	17	14.6	25.1
910	725	22	38	42	125	1½	..	725	1135	40.0	56	20.2	31.7	544	868	30.4	39	20.0	31.8	363	621	21.7	29	21.2	36.4
1060	850	22	44	42	150	...	26	850	1320	34.3	35	13.7	21.3	638	1010	26.2	22	13.2	20.9	425	707	18.4	12	13.9	23.1
1060	850	22	38	42	150	1½	..	850	1320	46.2	51	19.1	29.6	638	1010	35.2	35	18.6	29.5	425	707	24.6	24	19.5	32.4
1060	850	22	44	42	125	...	26	850	1320	34.3	47	14.4	22.4	638	1010	26.2	28	13.7	21.8	425	707	18.4	15	14.2	23.6
1060	850	24	40	42	125	1½	..	850	1320	41.0	41	20.2	31.4	638	1010	31.5	32	19.8	31.4	425	707	21.5	22	20.9	34.7

Note—Use this form with guarantees:—"When this unit is operated with.....pounds gauge steam pressure (dry saturated steam) at the throttle valve and the back pressure of.....pounds gauge or.....inches of vacuum (referred to 30 inch barometer) at the exhaust nozzle the steam consumption of the engine only will not exceed the following when the unit is driving its own exciter and developing the even loads specified below."

CORLISS ENGINE UNITS

DIRECT CONNECTED

DECEMBER, 1916

SHEET NO. 2337A

SHEET NO. 2254

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

250 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

DECEMBER, 1912

60 To 10 Nos Wire

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI60-100-6¾	250	200	120	2300	6500	8700	18000	22000

Efficiencies						Regulation		*Heating		Field Data		
P. F. 100			P. F. 80			P.F. 100	P.F. 80	Full Load 24 Hrs.	1¼ Load 2 Hrs.	Exciter 120 Volts K. W.	Amps. at P. F. 100	Amps. at P. F. 80
1	¾	½	1	¾	½							
92.5	91.5	89.5	88.5	88	86	10	27	40	55	17	115	142

ENGINE DETAILS

Bearings		Pins				Wheel				Largest Piece			Heaviest Piece
		Crank		Crosshead		Parallel Operation		Non-Parallel Operation					
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
9	18	4½	3½	3½	4½	14	20000	12	12000	13–8	37	35	9450

Crosshead Shoes		Diameters (Inches)						
			Cylinder Diam.					
Width Ins.	Length Ins.	Conn. Rod Smallest Diam.	H.P.	L.P.	High Press. Piston Rod	Low Press. Piston Rod	High Press. Steam	Low Press. Exhaust
4½	12	2¼	12	..	2 11/16	...	4	..
		2¼	14	..	2 11/16	...	5	..
		2¼	16	22	3⅜	3⅜	5	9
		2¼	..	24	...	3⅜	.	9
		2¼	..	28	...	3⅜	.	12

GENERATOR 100% P. F., 250 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	Engine H.P.	Engine L.P.	Engine Stroke	Price Unit	Weight Pounds
80421	125	Non-Cond.	1½	..	16	24	36	$21000	102000
80422	150	"	1½	..	14	24	36	20800	100000
80423	125	Cond.	...	26	14	28	36	21250	104500
80424	150	"	...	26	14	28	36	21250	104500

GENERATOR 80% P. F., 200 K. W. PARALLEL OPERATION

80425	125	Non-Cond.	1½	..	16	24	36	21000	102000
80426	150	"	1½	..	14	22	36	20750	98000
80427	125	Cond.	...	26	12	24	36	20875	99500
80428	150	"	...	26	12	24	36	20875	99500

‡Generator can be wound for Standard lower voltage, viz., 240, 480, 600, without extra charge.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

NOTE:—For Non-parallel operation deduct 8000 lbs. $135.00 Net.

SET NO. 308

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

250 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

FOR USE WITH SHEET No. 2254

MAY, 1913

SHEET NO. 2254A

STEAM CONSUNPTION GUARANTEES

GENERATOR 100% P. F., 250 K. W.

Load				½				¾				1				1¼			
K. W.				125				187				250				312			
I. H. P.				228				311				398				486			
Catalog No.	I.S.P.	Max. M.E.P. 75% Cut Off	Type	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
80421	125	55.7	Non-Cond.	23.15	24.8	24.85	45.5	31.6	32.1	22.25	37.1	40.3	41.6	21.75	34.7	49.2	55.8	22.95	35.8
80422	150	56.9	"	23.15	19.8	22.95	41.9	31.6	24.5	20.6	34.35	40.3	32.7	19.7	31.4	49.2	42.3	19.9	31.1
80423	125	46.5	Cond.	17.	16.	15.3	28.	23.2	24.	14.6	24.30	29.6	34.4	15.	23.9	36.2	48.	16.25	25.4
80424	150	56.4	"	17.	12.4	14.75	26.9	23.2	18.	13.75	22.9	29.6	24.8	13.6	21.7	36.2	33.6	13.95	21.8

GENERATOR 80% P. F., 200 K. W.

K. W.				100				150				200				250			
I. H. P.				190				260				333				410			
80425	125	55.7	Non-Cond.	19.25	21.8	26.85	51.	26.3	26.5	23.5	40.6	33.8	34.2	21.9	36.5	41.	42.5	22.2	36.2
80426	150	66.5	"	22.8	19.25	23.1	43.75	31.3	25.25	21.65	37.5	40.2	32.5	19.7	32.8	49.4	42.3	20.	32.7
80427	125	46.5	Cond.	19.25	19.	15.	28.5	26.3	28.8	14.75	25.5	33.8	43.2	15.8	26.3	41.	60.	17.35	28.35
80428	150	56.4	"	19.25	14.	14.35	27.2	26.3	21.2	13.65	23.6	33.8	30.2	13.9	23.1	41.	40.4	14.40	23.55

* (%) Per cent of stroke in high pressure cylinder. †M.E.P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K.W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I.H.P. specified shows power developed in engine cylinder when generator is delivering the true K.W. output given at the load specified and does not include an allowance for power to drive the exciter.

SHEET NO. 2256 ✓

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

375 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

DECEMBER, 1912

60 to this date

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI60-100-9½	375	300	120	2300	8000	10500	21500	26000

Efficiencies						Regulation		*Heating		Field Data		
P. F. 100			P. F. 80			P.F. 100	P.F. 80	Full Load 24 Hrs.	1¼ Load 2 Hrs.	Exciter 120 Volts	Amps. at P. F.	
1	¾	½	1	¾	½					K. W.	100	80
93	92	90.5	89	89	87	10	27	40	55	20	135	165

ENGINE DETAILS

Bearings		Pins				Wheel				Largest Piece			Heaviest Piece
Dia. Ins.	Length Ins.	Crank Dia. Ins.	Crank Length Ins.	Crosshead Dia. Ins.	Crosshead Length Ins.	Parallel Operation Dia.	Parallel Operation Wgt.	Non-Parallel Operation Dia.	Non-Parallel Operation Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
10	20	6	5	4½	6	15	30000	13	17000	14-5	43	41	11000

Crosshead Shoes		Diameters (Inches)						
Width Ins.	Length Ins.	Conn. Rod Smallest Diam.	Cylinder Diam. H.P.	Cylinder Diam. L.P.	High Press. Piston Rod	Low Press. Piston Rod	High Press. Steam	Low Press. Exhaust
		3	14	..	2 11/16	...	5	..
		3	16	..	3 3/8	...	5	..
		3	18	..	3 3/8	...	6	..
		3	22	..	4 1/8	...	8	..
6	16½	3	..	28	...	3 3/8	.	12
		3	..	30	...	4 1/8	.	12
		3	..	32	...	4 1/8	.	12
		3	..	34	...	4 1/8	.	14
		3	..	36	...	4 1/8	.	14

GENERATOR 100% P. F., 375 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	Engine H.P.	Engine L.P.	Engine Stroke	Price Unit	Weight Pounds
80437	125	Non-Cond.	1½	..	22	36	36	$26075	145600
80438	150	"	1½	..	18	34	36	25775	140500
80439	125	Cond.	...	26	18	36	36	25875	144000
80440	150	"	...	26	18	36	36	25875	144000

GENERATOR 80% P. F., 300 K. W. PARALLEL OPERATION

80441	125	Non-Cond.	1½	..	18	30	36	25450	137000
80442	150	"	1½	..	16	30	36	25050	133500
80443	125	Cond.	...	26	16	32	36	25400	136000
80444	150	"	...	26	14	28	36	24950	130000

‡Generator can be wound for Standard lower voltage, viz., 240, 480, 600, without extra charge.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

NOTE:—For Non-parallel operation deduct 13,000 pounds, $225.00 Net.

SET NO. 308

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"A" GENERATORS

375 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

FOR USE WITH SHEET NO. 2256

MAY, 1913

SHEET NO. 2256A

STEAM CONSUMPTION GUARANTEES

GENERATOR 100% P. F., 375 K. W.

Load				½				¾				1				1¼			
K. W.				187.5				280				375				468			
I. H. P.				330				456				587				720			
Catalog No.	I.S.P.	Max. M.E.P. 75% Cut Off	Type	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
80437	125	44.5	Non-Cond.	14.8	19.25	26.9	47.35	20.55	24.75	23.3	38.	26.5	31.2	21.9	34.3	32.4	39.3	21.65	33.4
80438	150	49.8	"	16.65	16.5	24.35	42.75	23.	21.6	21.25	34.7	29.7	27.8	19.8	31.	36.4	34.8	19.35	29.8
80439	125	46.5	Cond.	14.8	13.6	15.55	27.4	20.55	24.	14.5	23.6	26.5	29.2	14.45	22.6	32.4	40.4	15.25	23.5
80440	150	56.4	"	14.8	10.4	15.1	26.55	20.55	15.2	13.75	22.4	26.5	21.6	13.4	21.	32.4	28.4	13.6	21.

GENERATOR 80% P. F., 300 K. W.

K. W.				150				225				300				375			
I. H. P.				274				379				490				605			
80441	125	44.5	Non-Cond.	17.8	22.3	21.8	39.9	24.6	29.2	22.35	37.7	31.8	38.45	21.6	35.3	39.2	49.5	22.2	35.9
80442	150	49.8	"	17.8	20.6	19.65	36.	24.6	27.3	20.3	34.2	31.8	35.7	19.5	31.9	39.2	47.6	20.	32.3
80443	125	46.5	Cond.	15.6	14.8	15.3	28.	21.5	22.	14.4	24.3	27.9	31.6	14.65	23.95	34.5	44.8	15.9	25.7
80444	150	56.4	"	20.4	15.2	14.	25.6	28.5	24.	13.5	22.8	36.5	34.	13.9	22.7	45.	46.8	14.85	24.

* (%) Per cent of stroke in high pressure cylinder. †M.E.P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K.W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I.H.P. specified shows power developed in engine cylinder when generator is delivering the true K.W. output given at the load specified and does not include an allowance for power to drive the exciter.

SHEET NO. 2258 ✓

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

500 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

DECEMBER, 1912

GENERATOR

Frame	Rating: Kilowatts P.F. 100	Rating: Kilowatts P.F. 80	RPM	‡Volts	Weights: Net Rotor	Weights: Net Stator	Weights: Total Net	Weights: Total Shipping
AI60-120-8	500	400	120	2300	12200	11700	30000	33000 ~~36000~~

Efficiencies: P. F. 100			Efficiencies: P. F. 80			Regulation: P.F. 100	Regulation: P.F. 80	*Heating: Full Load 24 Hrs.	*Heating: 1¼ Load 2 Hrs.	Field Data: Exciter 120 Volts, K. W.	Field Data: Amps. at P. F. 100	Field Data: Amps. at P. F. 80
1	¾	½	1	¾	½							
93.6	92.6	90.7	90	88.5	85	9	22	40	55	18	115	160

ENGINE DETAILS

†Bearings: Dia. Ins.	†Bearings: Length Ins.	Pins: Crank Dia. Ins.	Pins: Crank Length Ins.	Pins: Crosshead Dia. Ins.	Pins: Crosshead Length Ins.	Wheel: Parallel Operation Dia.	Wheel: Parallel Operation Wgt.	Wheel: Non-Parallel Operation Dia.	Wheel: Non-Parallel Operation Wgt.	Largest Piece: Length Ft. & Ins.	Largest Piece: Width Ins.	Largest Piece: Height Ins.	Heaviest Piece: Weight Pounds
12	24	6	5	4½	6	16	34000	13	17000	16–0	47	41	17800

Crosshead Shoes: Width Ins.	Crosshead Shoes: Length Ins.	Diameters (Inches): Conn.Rod Smallest Diam.	Cylinder Diam. H.P.	Cylinder Diam. L.P.	High Press. Piston Rod	Low Press. Piston Rod	High Press. Steam	Low Press. Exhaust
6	16½	3	16	..	3⅜	...	5	..
		3	18	..	3⅜	...	6	..
		3	20	..	4⅛	...	7	..
		3	22	..	4⅛	...	8	..
		3	..	30	...	4⅛	.	12
		3	..	32	...	4⅛	.	12
		3	..	36	...	4⅛	.	14

GENERATOR 100% P. F., 500 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	Engine H.P.	Engine L.P.	Engine Stroke	Price Unit	Weight Pounds
80453	125	Non-Cond.	1½	..	22	36	42	$28000	166000
80454	150	"	1½	..	18	32	42	27500	158500
80455	125	Cond.	...	26	18	36	42	27950	164500
80456	150	"	...	26	18	36	42	27950	164500

GENERATOR 80% P. F., 400 K. W. PARALLEL OPERATION

80457	125	Non-Cond.	1½	..	20	32	42	27575	159500
80458	150	"	1½	..	18	30	42	27425	157300
80459	125	Cond.	...	26	16	32	42	27375	156500
80460	150	"	...	26	16	32	42	27375	156500

‡Generator can be wound for Standard lower voltage, viz., 240, 480, 600, without extra charge.

*NOTE:—At 80 % P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

†NOTE:—For non-parallel operation main bearing 10″x20″; largest piece 16′-0″ long, 43″ wide and 41″ high. Deduct 19,000 lbs., $340.00 Net.

SET NO. 3 of 8

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"A" GENERATORS

500 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

FOR USE WITH SHEET NO. 2258

MAY, 1913

SHEET NO. 2258A

STEAM CONSUMPTION GUARANTEES

GENERATOR 100% P. F., 500 K. W.

Load				½				¾				1				1¼			
K. W.				250				375				500				625			
I. H. P.				428				598				770				995			
Catalog No.	I.S.P.	Max. M.E.P. 75% Cut Off	Type	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
80453	125	44.5	Non-Cond.	16.5	20.9	25.25	43.3	23.1	27.5	22.4	35.7	29.7	35.8	21.4	33.	38.4	50.	21.8	33.
80454	150	56.9	"	20.9	21.5	21.	36.1	29.4	29.9	19.4	31.	37.6	40.25	19.3	29.7	48.6	49.2	22.2	32.1
80455	125	46.5	Cond.	16.5	15.6	14.8	25.4	23.1	24.	14.25	22.7	29.7	34.8	14.7	22.6	38.4	53.2	16.5	25.
80456	150	56.4	"	16.5	12.	14.3	24.6	23.1	17.6	13.4	21.4	29.7	25.2	13.4	20.6	38.4	36.8	14.	21.2

GENERATOR 80% P. F., 400 K. W.

K. W.				200				300				400				500			
I. H. P.				386				501				640				780			
80457	125	50.1	Non-Cond.	18.85	22.5	25.2	4.6	24.5	27.5	22.8	38.1	31.3	35.	21.6	34.6	38.1	44.	22.	34.3
80458	150	61.7	"	21.4	19.85	22.35	40.75	27.7	24.5	20.4	34.1	35.6	31.4	19.4	31.	48.3	46.5	19.65	30.6
80459	125	46.5	Cond.	18.85	18.4	14.	25.6	24.5	26.	14.3	23.9	31.3	38.	15.1	24.2	38.1	52.4	16.45	25.6
80460	150	56.4	"	18.85	9.40	14.	25.6	24.5	19.2	13.4	22.4	31.3	27.2	13.55	21.7	38.1	36.8	14.	21.8

* (%) Per cent of stroke in high pressure cylinder. †M.E.P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K.W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I.H.P. specified shows power developed in engine cylinder when generator is delivering the true K.W. output given at the load specified and does not include an allowance for power to drive the exciter.

SHEET No. 2259 ✓

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

625 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

DECEMBER, 1912

60 To
4-19-13 also 60 To

GENERATOR

Rating				Weights			
Frame	Kilowatts P.F. 100	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI60-136-8½	625	120	2300	14600	16900	38000	44000

Efficiencies			Regulation	Heating*		Field Data	
P. F. 100			P. F. 100	Full Load 24 Hrs.	1¼ Load 2 Hrs.	Exciter 120 Volts	Amps. at P.F.
1	¾	½				K. W.	100
94.4	94·	92.8	9	35	50	20	125

ENGINE DETAILS

Bearings		Pins				Wheel				Largest Piece			Heaviest Piece
Dia. Ins.	Length Ins.	Crank Dia. Ins.	Crank Length Ins.	Crosshead Dia. Ins.	Crosshead Length Ins.	Parallel Operation Dia.	Parallel Operation Wgt.	Non-Parallel Operation Dia.	Non-Parallel Operation Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
12	24	7	6	5¾	7	16	41000	14	20000	16–9	51	45	19000

Crosshead Shoes		Diameters (Inches)						
Width Ins.	Length Ins.	Conn.Rod Smallest Diam.	Cylinder Diam. H.P.	Cylinder Diam. L.P.	High Press. Piston Rod	Low Press. Piston Rod	High Press. Steam	Low Press. Exhaust
8	20½	3⅞	20	..	4⅛	...	7	..
		3⅞	24	..	4⅞	...	8	..
		3⅞	..	38	...	4⅞	.	14
		3⅞	..	40	...	4⅞	.	16

†GENERATOR 100% P. F., 625 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. (Lbs)	Vac. (Ins)	Engine H.P.	Engine L.P.	Engine Stroke	Price Unit	Weight Pounds
80461	125	Non-Cond.	1½	..	24	38	42	$33325	208000
80462	150	"	1½	..	20	38	42	33100	203300
80463	125	Cond.	...	26	20	40	42	33125	204500
80464	150	"	...	26	20	40	42	33125	204500

+1000 ea

†For Generator Rated 80% Power Factor, 500 K. W. See Price Sheet No. 2267.

‡Generator can be wound for standard lower voltage, viz., 240, 480, 600 without extra charge.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

NOTE:—For Non-parallel operation deduct 21000 lbs., $325.00 Net.

SET NO. 348

SHEET No. 2267

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

625 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

DECEMBER, 1912

GENERATOR 4-19-13 — 60 To

Rating				Weights			
Frame	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI60-136-8½	500	120	2300	14600	16900	38000	44000

Efficiencies P. F. 80			Regulation P. F. 80	Heating*		Field Data	
1	¾	½		Full Load 24 Hrs.	1¼ Load 2 Hrs.	Exciter 120 Volts K. W.	Amps. at P.F. 80
92.4	92	91.2	22	35	50	20	175

ENGINE DETAILS

Bearings		Pins				Wheel				Largest Piece			Heaviest Piece
		Crank		Crosshead		Parallel Operation		Non-Parallel Operation					
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
12	24	6	5	4½	6	16	41000	14	20000	16–0	47	41	19000

Crosshead Shoes		Diameters (Inches)						
Width Ins.	Length Ins.	Conn.Rod Smallest Diam.	Cylinder Diam. H.P.	Cylinder Diam. L.P.	High Press. Piston Rod	Low Press. Piston Rod	High Press. Steam	Low Press. Exhaust
6	16½	3	18	..	3⅜	...	6	..
		3	22	..	4⅛	...	8	..
		3	..	32	...	4⅛	.	12
		3	..	36	...	4⅛	.	14

†GENERATOR 80% P. F., 500 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. (Lbs)	Vac. (I ns)	Engine H.P.	Engine L.P.	Engine Stroke	Price Unit	Weight Pounds
80465	125	Non-Cond.	1½	..	22	36	42	$30125	180000
80466	150	"	1½	..	18	32	42	30000	173500
80467	125	Cond.	...	26	18	36	42	29700	179500
80468	150	"	...	26	18	36	42	29700	179500

+1000 00

†For Generator Rated 100 % Power Factor, 625 K. W. See Price Sheet No. ~~2267~~ 2259

‡Generator can be wound for standard lower voltage, viz., 240, 480, 600 without extra charge.

*NOTE:—At 80 % P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

NOTE:—For Non-parallel operation deduct 21000 lbs., $325.00 Net.

SET NO. 318

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

625 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

FOR USE WITH SHEET NOS. 2259 AND 2267

SHEET NOS. 2259A AND 2267A

MAY, 1913

STEAM CONSUMPTION GUARANTEES

GENERATOR 100% P. F., 625 K. W.

Load				½				¾				1				1¼			
K. W.				312				470				625				780			
I. H. P.				524				737				953				1167			
Catalog No.	I.S.P.	Max. M.E.P. 75% Cut Off	Type	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
80461	125	50.	Non-Cond.	18.15	21.8	25.4	42.7	25.5	28.5	22.4	35.2	33.5	37.5	21.4	32.7	40.4	47.5	21.6	32.4
80462	150	49.	"	18.15	18.5	21.7	36.4	25.5	28.	19.8	31.1	33.5	48.5	19.4	29.6	40.4	49.75	20.1	30.2
80463	125	46.	Cond.	16.4	15.6	14.8	24.8	23.	24.	14.25	22.4	29.8	34.8	14.7	22.45	36.4	48.4	16.	24.
89464	150	56.4	"	16.4	12.	14.35	24.1	23.	17.6	13.4	21.1	29.8	25.2	13.4	20.4	36.4	34.	13.75	20.65

GENERATOR 80% P. F., 500 K. W.

K. W.				250				375				500				625			
I. H. P.				426				604				782				970			
80465	125	44.5	Non-Cond.	16.5	20.9	25.3	43.	23.3	27.8	22.3	36.	30.2	36.3	21.4	33.5	37.4	48.	21.7	33.6
80466	150	54.8	"	20.8	21.4	21.1	36.	29.5	29.9	19.35	31.2	38.2	41.4	19.35	30.3	47.4	53.25	21.7	33.6
80467	125	46.5	Cond.	16.5	15.6	14.8	25.2	23.3	24.	14.25	22.95	30.2	36.	14.8	23.2	37.4	51.4	16.3	25.3
80468	150	56.4	"	16.5	12.	14.35	24.4	23.3	14.	13.4	21.6	30.2	25.6	13.4	21.	37.4	35.2	13.85	21.5

* (%) Per cent of stroke in high pressure cylinder. †M.E.P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K.W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I.H.P. specified shows power developed in engine cylinder when generator is delivering the true K.W. output given at the load specified and does not include an allowance for power to drive the exciter.

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

750 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

DECEMBER, 1912

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI60-136-8½	750	600	120	2300	14600	16900	38000	44000

Efficiencies						Regulation		*Heating		Field Data		
P. F. 100			P. F. .80			P.F. 100	P.F. 80	Full Load 24 Hrs.	1¼ Load 2 Hrs.	Exciter 120 Volts K. W.	Amps. at P. F. 100	Amps. at P. F. 80
1	¾	½	1	¾	½							
94.5	94.2	93.5	~~91.7~~ 92.3	92.2	91.5	10	24	40	55	20	125	185

ENGINE DETAILS

†Bearings		Pins				Wheel				Largest Piece			Heaviest Piece
		Crank		Crosshead		Parallel Operation		Non-Parallel Operation					
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
15	28	7	6	5¾	7	16	50000	15	22000	16–9	55	45	24000

Crosshead Shoes		Diameters (Inches)						
			Cylinder Diam.					
Width Ins.	Length Ins.	Conn.Rod Smallest Diam.	H.P.	L.P.	High Press. Piston Rod	Low Press. Piston Rod	High Press. Steam	Low Press. Exhaust
8	20½	3⅞	20	..	4⅛	...	7	..
		3⅞	22	..	4⅛	...	8	..
		3⅞	24	..	4⅞	...	8	..
		3⅞	26	..	4⅞	...	9	..
		3⅞	..	38	...	4⅞	.	14
		3⅞	..	40	...	4⅞	.	16
		3⅞	..	42	...	4⅞	.	16
		3⅞	..	44	...	4⅞	.	18

GENERATOR 100% P. F., 750 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P.	Vac.	Engine H.P.	Engine L.P.	Engine Stroke	Price Unit	Weight Pounds
80469	125	Non-Cond.	1½	..	26	42	42	$34575	224500
80470	150	"	1½	..	22	40	42	34075	218000
80471	125	Cond.	...	26	22	44	42	34450	223000
80472	150	"	...	26	22	44	42	34450	223000

GENERATOR 80% P. F., 600 K. W. PARALLEL OPERATION

80473	125	Non-Cond.	1½	..	24	38	42	34250	220500
80474	150	"	1½	..	20	38	42	34000	216000
80475	125	Cond.	...	26	20	40	42	34075	217500
80476	150	"	...	26	20	40	42	34075	217500

‡Generator can be wound for standard lower voltage, viz., 240, 480, 600 without extra charge.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

†NOTE:—For non-parallel operation main bearing 12″x24″; largest piece 16′-9″ long; 51″ wide and 45″ high. Deduct 31,000 lbs., $525.00 net.

SET NO. 3 of

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

750 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

FOR USE WITH SHEET NO. 2260

MAY, 1913

SHEET NO. 2260A

STEAM CONSUMPTION GUARANTEES

GENERATOR 100% P. F., 750 K. W.

Load				½				¾				1				1¼			
K. W.				375				562				750				937			
I. H. P.				624				881				1142				1407			
Catalog No.	I.S.P.	Max. M.E.P. 75% Cut Off	Type	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
80469	125	50.	Non-Cond.	17.7	21.5	25.8	43.	25.	28.	22.5	35.3	32.4	36.6	21.4	32.6	40.	47.5	21.6	32.5
80470	150	53.	"	19.5	20.2	21.6	36.3	27.5	27.6	19.6	30.8	35.6	37.7	19.2	29.3	42.6	48.2	20.	30.1
80471	125	46.5	Cond.	16.1	15.2	14.9	24.8	22.8	23.2	14.25	22.4	29.5	34.8	14.7	22.4	36.4	48.	16.	24.1
80472	150	56.4	"	16.1	10.	14.4	24.	22.8	17.6	13.4	21.	29.5	24.8	13.4	20.4	36.4	34.	13.8	20.8

GENERATOR 80% P. F., 600 K. W.

K. W.				300				450				600				750			
I. H. P.				510				722				940				1165			
80473	125	50.	Non-Cond.	17.7	21.5	25.8	43.8	25.	28.	22.5	36.1	32.6	36.6	21.4	33.6	40.3	47.5	21.6	33.6
80474	150	49.	"	17.7	20.	22.1	37.6	25.	27.6	19.9	32.	32.6	44.8	19.3	30.6	40.3	49.4	20.1	31.3
80475	125	46.5	Cond.	16.	15.2	14.9	25.3	22.6	23.2	14.25	22.85	29.4	34.8	14.7	23.1	36.4	48.	16.	24.9
80476	150	56.4	"	16.	14.8	13.7	23.3	22.6	17.2	13.45	21.6	29.4	24.8	13.4	21.	36.4	33.6	13.75	21.4

* (%) Per cent of stroke in high pressure cylinder. †M.E.P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K.W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I.H.P. specified shows power developed in engine cylinder when generator is delivering the true K.W. output given at the load specified and does not include an allowance for power to drive the exciter.

SHEET NO. 2287

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

312 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET NO. 2255 — JUNE, 1912

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI60-100-9½	312	250	120	2300	8000	10500	21500	26000

Efficiencies						Regulation		*Heating		Field Data		
P. F. 100			P. F. 80			P.F. 100	P.F. 80	Full Load 24 Hrs.	1¼ Load 2 Hrs.	Exciter 120 Volts K. W.	Amps. at P. F. 100	Amps. at P. F. 80
1	¾	½	1	¾	½							
92.3	90.9	89	89.1	88	85	9	24	35	50	20	135	165

ENGINE DETAILS

Bearings		Pins				Wheel				Largest Piece			Heaviest Piece
		Crank		Crosshead		Parallel Operation		Non-Parallel Operation					
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
9	18	4½	3½	3½	3½	15	24000	12	15000	13-8	37	35	11000

Crosshead Shoes		Diameters (Inches)							
Width Ins.	Length Ins.	Conn.Rod Smallest Diam.	Cylinder Diam. H.P.	Cylinder Diam. L.P.	High Press. Piston Rod	Low Press. Piston Rod	High Press. Steam	Low Press. Exhaust
4½	12	2¼	14	..	2 11/16	...	5	..
		2¼	16	..	3⅜	...	5	..
		2¼	18	..	3⅜	...	6	..
		2¼	..	24	...	3⅜	.	9
		2¼	..	28	...	3⅜	.	12
		2¼	..	30	...	4⅛	.	12
		2¼	..	32	...	4⅛	.	12

GENERATOR 100% P. F., 312 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	Engine Size H.P.	Engine Size L.P.	Engine Size Stroke	Price Unit	Weight Unit Pounds
80623	125	Non-Cond.	1½	..	18	30	36	$22950	116800
80624	150	"	1½	..	16	30	36	22875	116000
80625	125	Cond.	...	26	16	32	36	23075	118500
80626	150	"	...	26	14	28	36	22675	113000

GENERATOR 80% P. F., 250 K. W. PARALLEL OPERATION

80627	125	Non-Cond.	1½	..	16	24	36	22500	110000
80628	150	"	1½	..	14	24	36	22425	109500
80629	125	Cond.	...	26	14	28	36	22675	113000
80630	150	"	...	26	14	28	36	22675	113000

‡Generator can be wound for Standard lower voltage, viz., 240, 480, 600, without extra charge.

*NOTE:—At 80% P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

NOTE:—For Non-parallel operation deduct 9,000 pounds, $150.00 Net.

SET NO.

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"AI" GENERATORS

312 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

JUNE, 1913

SHEET NO. 2287A

STEAM CONSUMPTION GUARANTEES

GENERATOR 100% P. F., 312 K. W.

Load				½				¾				1				1¼			
K. W.				156				234				312				390			
I. H. P.				279				386				493				600			
Catalog No.	I.S.P.	Max. M.E.P. 75% Cut Off	Type	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
80623	125	44.5	Non-Cond.	18.1	22.5	24.3	43.5	25.	29.7	22.	36.3	32.	39.6	21.4	33.8	39.1	51.7	21.9	33.8
80624	150	49.8	"	18.1	20.3	21.9	39.2	25.	27.3	19.9	32.8	32.	36.4	19.3	30.5	39.1	46.5	19.9	30.8
80625	125	46.5	Cond.	15.9	15.2	14.9	26.6	22.	22.4	14.2	23.4	28.2	32.	14.5	22.9	34.2	44.	15.5	23.9
80626	150	56.4	"	20.8	15.6	13.6	24.3	28.7	24.8	13.4	22.1	36.8	35.2	13.8	21.8	44.8	46.4	14.7	22.7

GENERATOR 80% P. F., 250 K. W.

K. W.				125				187				250				312			
I. H. P.				234				320				410				500			
80627	125	55.7	Non-Cond.	22.7	24.7	24.7	46.4	32.4	33.	21.9	37.4	41.5	43.2	21.5	35.2	50.8	60.8	23.5	37.6
80628	150	56.9	"	22.7	21.6	21.4	40.2	32.4	30.5	19.4	33.1	41.5	41.4	19.5	31.9	50.8	58.2	21.6	34.6
80629	125	46.5	Cond.	17.5	13.6	14.8	27.7	23.8	25.2	14.4	24.5	30.5	36.8	15.	24.5	37.2	50.4	16.3	26.
80630	150	56.4	"	17.5	12.8	14.6	27.4	23.8	18.4	13.5	23.	30.5	26.	13.5	22.	37.2	34.8	13.9	22.25

* (%) Per cent of stroke in high pressure cylinder. †M.E.P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K.W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I.H.P. specified shows power developed in engine cylinder when generator is delivering the true K.W. output given at the load specified and does not include an allowance for power to drive the exciter.

SHEET NO. 2288

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES — "AI" GENERATORS

425 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

SUPERSEDING SHEET NO. 2257 — JUNE, 1913

GENERATOR

Rating					Weights			
Frame	Kilowatts P.F. 100	Kilowatts P.F. 80	RPM	‡Volts	Net Rotor	Net Stator	Total Net	Total Shipping
AI60-120-8	425	340	120	2300	12200	11700	30000	35000

Efficiencies						Regulation		*Heating		Field Data		
P. F. 100			P. F. 80			P.F. 100	P.F. 80	Full Load 24 Hrs.	1¼ Load 2 Hrs.	Exciter 120 Volts K. W.	Amps. at P. F. 100	Amps. at P. F. 80
1	¾	½	1	¾	½							
93	91.5	89.5	89	87	83	8	20	35	50	18	115	155

ENGINE DETAILS

Bearings		Pins				Wheel				Largest Piece			Heaviest Piece
		Crank		Crosshead		Parallel Operation		Non-Parallel Operation					
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia.	Wgt.	Dia.	Wgt.	Length Ft. & Ins.	Width Ins.	Height Ins.	Weight Pounds
12	24	6	5	4½	6	16	30000	13	17000	14–5	47	41	16500

Crosshead Shoes		Diameters (Inches)						
Width Ins.	Length Ins.	Conn.Rod Smallest Diam.	Cylinder Diam. H.P.	Cylinder Diam. L.P.	High Press. Piston Rod	Low Press. Piston Rod	High Press. Steam	Low Press. Exhaust
6	16½	3	16	..	3⅜	...	5	..
		3	18	..	3⅜	...	6	..
		3	22		4⅛	...	8	..
		3	..	30	...	4⅛	.	12
		3	..	32	...	4⅛	.	12
		3	..	34	...	4⅛	.	14
		3	..	36	...	4⅛	.	14

GENERATOR 100% P. F., 425 K. W. PARALLEL OPERATION

Catalog No. Unit	I.S.P.	Type	B.P. Lbs.	Vac. Ins.	Engine Size H.P.	Engine Size L.P.	Engine Size Stroke	List Price Unit	Weight Unit Pounds
80631	125	Non-Cond.	1½	..	22	36	36	$27550	157500
80632	150	"	1½	..	18	34	36	27200	152500
80633	125	Cond.	...	26	18	36	36	27425	156000
80634	150	"	...	26	18	36	36	27425	156000

GENERATOR 80% P. F., 320 K. W. PARALLEL OPERATION

80635	125	Non-Cond.	1½	..	18	30	36	26850	146200
80636	150	"	1½	..	16	30	36	26775	145200
80637	125	Cond.	...	26	16	32	36	26940	148000
80638	150	"	..	26	16	32	36	26940	148000

‡Generator can be wound for Standard lower voltage, viz., 240, 480, 600, without extra charge.

*NOTE:—At 80 % P. F. an additional temperature rise of 5° must be allowed on the field windings in excess of above guarantees.

NOTE:—For non-parallel operation, Deduct 13,000 lbs., $215.00 Net.

SET NO. 308

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES—"A" GENERATORS

425 K.V.A., 120 R.P.M., 60 CYCLE, 2 OR 3 PHASE, 2300 VOLTS

JUNE, 1913

SHEET NO. 2288A

STEAM CONSUMPTION GUARANTEES

GENERATOR 100% P. F., 425 K. W.

Load				½				¾				1				1¼			
K. W.				212				319				425				530			
I. H. P.				378				523				665				815			
Catalog No.	I.S.P.	Max. M.E.P. 75% Cut Off	Type	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	†M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
80631	125	44.5	Non-Cond.	17.5	22.	24.5	43.6	23.	27.5	22.4	36.7	30.	36.3	21.4	32.	36.6	45.	21.6	33.2
80632	150	49.8	"	19.	21.	21.5	38.3	26.4	29.4	19.7	32.3	33.6	38.5	19.4	30.5	41.2	51.8	20.2	31.
80633	125	46.5	Cond.	17.5	17.	14.6	26.	23.	24.	14.2	23.25	30.	35.6	14.8	23.2	36.6	49.2	16.1	24.7
80634	150	56.4	"	17.5	12.8	14.1	25.	23.	17.6	13.4	24.25	30.	25.6	13.4	21.	36.6	34.	13.8	21.2

GENERATOR 80% P. F., 340 K. W.

K. W.				170				250				340				425			
I. H. P.				326				431				556				676			
80635	125	44.5	Non-Cond.	21.2	25.3	23.	44.2	28.5	34.	21.5	37.1	36.	44.	21.5	35.2	43.8	65.	23.8	37.8
80636	150	49.8	"	21.2	23.5	20.8	40.	28.5	31.5	19.5	33.6	36.	42.	19.5	32.	43.8	57.4	20.8	33.
80637	125	46.5	Cond.	18.6	18.	14.5	27.8	24.5	26.4	14.25	24.6	31.6	38.4	15.	24.5	38.4	53.2	16.5	26.2
80638	150	56.4	"	18.6	13.6	13.9	26.8	24.5	19.2	13.4	23.1	31.6	27.6	13.5	22.1	38.4	38.	14.	22.25

* (%) Per cent of stroke in high pressure cylinder. †M.E.P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K.W. output at terminals at power factor given and does not include power lost in main rheostat, nor to drive exciter when required. The I.H.P. specified shows power developed in engine cylinder when generator is delivering the true K.W. output given at the load specified and does not include an allowance for power to drive the exciter.

C-COMPOUND
DIR. CONN.
"D C"

Factory Mfg 10,19

Set No. 231

SHEET NO. 2340

ALLIS-CHALMERS SIMPLE CORLISS ENGINES

150 R. P. M., Direct Current Type "IC" Two-Wire, 250 Volt or "ICW" Three-Wire, 125-250 Volt Generators

UNIT							ENGINE																			
(a) Rating (Maximum)	Steam Pressure (gauge)	Engine Condensing or Non-Cond.		(b) Engine, Generator, and Wheel (Two-Wire)			Wheel		Pins (Ins.)				Bearings (Ins.)				Weight Heaviest Piece (Frame)	Largest Piece (Ins.)		Cross-head Shoes (Ins.)		Diameters (Inches)			
									Cross-head		Crank		Main		Back											
K.W.	Lbs.	Dia.	Str.	Cat. No.	Shipp. Wgt.	List Price	Dia.	Wgt.	Diam.	Length	Diam.	Length	Diam.	L n	Diam.	Length		Width	Height	Width	Length	Piston Rod	Connect. Rod Smallest Dia.	Steam	Exhaust
125	150	12	30	81001	44500	$11560	10	9000	3½	4½	4½	3½	7	14	7	13	5000	36	42	4½	12	2 11/16	2¼	4	5
125	125	12	30	81002	44500	11560	10	9000	3½	4½	4½	3½	7	14	7	13	5000	36	42	4½	12	2 11/16	2¼	4	5
200	150	14	36	81003	50500	13840	11	12000	3½	4½	4½	3½	7	14	7	13	5000	36	42	4½	12	2 11/16	2¼	5	6
200	125	14	36	81004	50500	13840	11	12000	3½	4½	4½	3½	7	14	7	13	5000	36	42	4½	12	2 11/16	2¼	5	6
250	150	16	36	81005	70500	16670	12	14000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	5	6
250	125	16	36	81006	70500	16670	12	14000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	5	6
375	150	18	36	81007	83500	19660	12	18000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	6	7
375	125	20	36	81008	84500	19780	12	18000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	4⅛	3	7	8

GENERATOR												
Rating (Max.)	Frame	Heating (Rise)		(c) Efficiencies			Two-Wire			Three-Wire		
								Weights			Extra	
K.W.		Windings	Commutator	1	¾	½	Amp.	Arm.	Shipp.	Amps. Neutral	List Price	
125	6–34–10½	50°C.	60°C.	91.0	91.0	90.2	500	3700	16400	125	$570.00	
200	6–40–11	50°C.	60°C.	91.4	91.4	90.5	800	5500	17200	200	625.00	
250	8–45–11½	50°C.	60°C.	92.3	92.1	91.0	1000	7300	25600	250	630.00	
375	10–52–12	50°C.	60°C.	92.7	92.7	91.7	1500	7700	32400	375	480.00	

(a) This is Maximum Output and there is No Overload Capacity.

(b) Weight and price cover Two-Wire generator—for Three-Wire generator add price given below.

(c) In accordance with A. I. E. E. rules.

Note—For Economies see other side.

Direct Connected Engine Units

150 R. P. M. Direct Current Generators

March, 1919

SHEET NO. 2340A

Direct Connected Engine Units

Direct Current Generators

150 R. P. M.

March, 1919

STEAM CONSUMPTION GUARANTEES

UNIT						FULL LOAD						¾ LOAD						½ LOAD					
K.W. Rating	Engine Dia.	Engine Str.	Steam Pressure (gauge)	Back Pressure (gauge)	Vacuum	K.W.	I.H.P.	M.E.P.	% Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	M.E.P.	% Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	M.E.P.	% Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour
125	12	30	150	..	26	125	197	78.6	21	18.6	29.3	94	151	60.3	14	18.5	29.7	63	106	42.3	8	19.4	32.8
125	12	30	150	1½	..	125	197	78.6	28	21.9	34.5	94	151	60.3	20	21.5	34.6	63	106	42.3	13	22.8	38.6
125	12	30	125	..	26	125	197	78.6	28	19.6	30.9	94	151	60.3	18	19.1	30.7	63	106	42.3	11	19.5	32.9
125	12	30	125	1½	..	125	197	78.6	39	25.3	40.0	94	151	60.3	26	23.0	37.3	63	106	42.3	17	23.4	40.0
200	14	36	150	..	26	200	311	75.5	20	18.3	28.4	150	238	57.8	13	18.5	29.2	100	166	40.3	7	19.6	32.4
200	14	36	150	1½	..	200	311	75.5	27	21.7	33.7	150	238	57.8	19	21.5	34.1	100	166	40.3	12	23.1	38.3
200	14	36	125	..	26	200	311	75.5	26	19.5	30.3	150	238	57.8	17	19.0	30.1	100	166	40.3	10	19.6	32.5
200	14	36	125	1½	..	200	311	75.5	36	24.5	38.1	150	238	57.8	25	23.9	37.9	100	166	40.3	16	23.6	39.2
250	16	36	150	..	26	250	389	72.6	18	18.4	28.6	188	297	55.5	12	18.5	29.3	125	208	38.8	7	19.8	32.9
250	16	36	150	1½	..	250	389	72.6	25	21.5	33.4	188	297	55.5	18	21.5	34.0	125	208	38.8	12	23.4	38.9
250	16	36	125	..	26	250	389	72.6	25	19.3	29.9	188	297	55.5	16	18.9	29.9	125	208	38.8	9	19.7	32.7
250	16	36	125	1½	..	250	389	72.6	34	24.0	37.3	188	297	55.5	23	22.8	36.1	125	208	38.8	15	23.9	39.7
375	18	36	150	..	26	375	577	84.6	23	18.8	29.0	282	441	64.7	15	18.5	28.9	188	309	45.4	9	19.1	31.4
375	18	36	150	1½	..	375	577	84.6	31	22.6	34.7	282	441	64.7	22	21.5	33.7	188	309	45.4	14	22.5	37.0
375	20	36	125	..	26	375	577	68.9	23	19.0	29.3	282	441	52.6	15	18.9	29.7	188	309	36.9	8	19.9	32.6
375	20	36	125	1½	..	375	577	68.9	31	23.5	36.1	282	441	52.6	22	22.7	35.6	188	309	36.9	14	24.2	39.8

Note:—Use this form with guarantees:—"When this unit is operated with_____pounds gauge steam pressure (dry saturated steam) at the throttle valve and the back pressure of____pounds gauge or____inches of vacuum (referred to 30 inch barometer) at the exhaust nozzle the steam consumption of the engine only will not exceed the following when the unit is developing the even loads specified below."

Letter # 17 May 10.19

Set No. 233 1

SHEET NO. 2341

ALLIS-CHALMERS SIMPLE CORLISS ENGINES

120 and 125 R. P. M. Direct Current Type "IC" Two-Wire, 250 Volt or "ICW" Three-Wire, 125-250 Volt Generators

UNIT								ENGINE																			
(a) Rating (Maximum) and Speed		Steam Pressure (gauge)	Engine Condensing or Non-Cond.		(b) Engine, Generator, and Wheel (Two-Wire)			Wheel		Pins (Ins.)				Bearings (Ins.)				Weight Heaviest Piece (Frame)	Largest Piece (Ins.)		Cross-head Shoes (Ins.)		Diameters (Inches)			
										Cross-head		Crank		Main		Back											
K.W.	RPM	Lbs.	Dia.	Str.	Cat. No.	Shipp. Wgt.	List Price	Dia.	Wgt.	Diam.	Length	Diam.	Length	Diam.	Length	Diam.	Length		Width	Height	Width	Length	Piston Rod	Connect. Rod Smallest Dia.	Steam	Exhaust.
300	120	150	18	36	81009	85000	$19450	14	21000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	3⅜	3	6	7
300	120	125	20	36	81010	86000	19570	14	21000	4½	6	6	5	10	20	9	18	7500	48	48	6	16½	4⅓	3	7	8
400	120	150	20	42	81011	107000	22640	15	24000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	3⅞	7	8
400	120	125	20	42	81012	107000	22640	15	24000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	3⅞	7	8
500	125	150	22	42	81013	125000	26350	15	26000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	3⅞	8	9
500	125	125	22	42	81014	125000	26350	15	26000	5¾	7	7	6	12	24	11	20	12000	54	54	8	20½	4⅛	3⅞	8	9
750	120	150	26	42	81015	174000	35510	16	38000	7	8½	8½	7½	15	28	13	24	16000	60	60	10	24½	4⅞	4⅝	9	10
750	120	125	28	42	81016	176500	35840	16	38000	7	8½	8½	7½	15	28	13	24	16000	60	60	10	24½	5½	4⅝	10	12

GENERATOR											
Rating (Max.)	Frame Number	Heating (Rise)		(c) Efficiencies			Two-Wire			Three-Wire	
								Weights			Extra
K.W.		Windings	Commutator	1	¾	½	Amp.	Arm.	Shipp.	Amps. Neutral	List Price
300	10–52–12	50°C.	60°C.	92.5	92.5	91.5	1200	7700	31000	300	$ 900
400	10–60–12	50°C.	60°C.	92.8	92.8	91.7	1600	8400	34500	400	1000
500	10–66–11½	50°C.	60°C.	92.9	92.9	91.9	2000	13500	48500	500	1100
750	12–72–15	50°C.	60°C.	94.1	94.0	93.2	3000	19000	65000	750	1800

(a) This is Maximum Output and there is No Overload Capacity.

(b) Weight and price cover Two-Wire generator—for Three-Wire generator add price given below.

(c) In accordance with A. I. E. E. rules.

Note—For Economies see other side.

Direct Connected Engine Units

Direct Current Generators

120 and 125 R. P. M.

March, 1919

Direct Connected Engine Units

Direct Current Generators

120 and 125 R. P. M.

March, 1919

STEAM CONSUMPTION GUARANTEES

UNIT						FULL LOAD						¾ LOAD						½ LOAD					
K.W. Rating	Engine Dia.	Engine Str.	Steam Pressure (gauge)	Back Pressure (gauge)	Vacuum	K.W.	I.H.P.	M.E.P.	% Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	M.E.P.	% Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	M.E.P.	% Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour
300	18	36	150	..	26	300	463	84.8	23	18.9	29.1	225	354	64.9	15	18.5	29.0	150	248	45.5	9	19.1	31.5
300	18	36	150	1½	..	300	463	84.8	31	22.6	34.9	225	354	64.9	22	21.5	33.8	150	248	45.5	14	22.5	37.1
300	20	36	125	..	26	300	463	69.0	23	19.1	29.4	225	354	52.8	15	18.9	29.6	150	248	37.0	8	19.8	32.8
300	20	36	125	1½	..	300	463	69.0	31	23.4	36.1	225	354	52.8	22	22.6	35.4	150	248	37.0	14	24.0	39.7
400	20	42	150	..	26	400	615	78.6	21	18.5	28.5	300	469	59.9	13	18.4	28.7	200	329	42.1	8	19.4	31.8
400	20	42	150	1½	..	400	615	78.6	28	21.9	33.6	300	469	59.9	20	21.5	33.6	200	329	42.1	13	22.8	37.5
400	20	42	125	..	26	400	615	78.6	28	19.7	30.3	300	469	59.9	18	19.0	29.7	200	329	42.1	11	19.4	31.9
400	20	42	125	1½	..	400	615	78.6	38	25.1	38.6	300	469	59.9	25	22.9	35.8	200	329	42.1	17	23.4	38.5
500	22	42	150	..	26	500	766	77.4	20	18.5	28.3	375	585	59.1	13	18.4	28.7	250	409	41.3	7	19.4	31.6
500	22	42	150	1½	..	500	766	77.4	28	21.8	33.3	375	585	59.1	19	21.5	33.4	250	409	41.3	13	22.9	37.5
500	22	42	125	..	26	500	766	77.4	27	19.6	30.0	375	585	59.1	18	18.9	29.5	250	409	41.3	10	19.4	31.8
500	22	42	125	1½	..	500	766	77.4	37	24.8	38.0	375	585	59.1	25	22.9	35.6	250	409	41.3	17	23.5	38.4
750	26	42	150	..	26	750	1131	85.2	24	18.8	28.3	563	865	65.2	15	18.4	28.2	375	603	45.4	9	19.0	30.6
750	26	42	150	1½	..	750	1131	85.2	32	22.6	34.1	563	865	65.2	22	21.5	32.9	375	603	45.4	14	22.4	35.7
750	28	42	125	..	26	750	1131	73.6	25	19.3	29.0	563	865	56.3	18	18.8	28.9	375	603	39.3	10	19.5	31.4
750	28	42	125	1½	..	750	1131	73.6	34	24.1	36.3	563	865	56.3	24	22.8	35.0	375	603	39.3	16	23.7	38.1

Note:—Use this form with guarantees:—"When this unit is operated with_____pounds gauge steam pressure (dry saturated steam) at the throttle valve and the back pressure of____pounds gauge or____inches of vacuum (referred to 30 inch barometer) at the exhaust nozzle the steam consumption of the engine only will not exceed the following when the unit is developing the even loads specified below."

ALLIS-CHALMERS CROSS COMPOUND CORLISS ENGINES

120-125-150 R. P. M. Direct Current Type "IC" Two-Wire, 250 Volt or "ICW" Three-Wire, 125-250 Volt Generators

UNIT									ENGINE																			
(a) Rating (Maximum)		Vacuum (Ins.) Back Pres. (Lbs.)	(b) Engine Cylinders 125 to 150 Pounds Steam Gauge			(c) Engine, Generator and Wheel (Two-Wire)			Wheel		Pins (Ins.)				Main Br'gs. (Ins.)		Weight Heaviest Piece	Largest Piece (Ins.)		Cross-head Shoes (Ins.)		Diameters (Inches)					
											Cross-head		Crank									Piston Rods		Connect. Rod Smallest Dia.	Steam	Exhaust
K.W.	RPM		HP	LP	Str.	Cat No.	Shipp. Wgt.	List Price	Dia.	Wgt.	Diam.	Length	Diam.	Length	Diam.	Length		Width	Height	Width	Length	HP	LP			
250	150	26	12	24	30	81501	92000	$22430	11	12000	$3\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$3\frac{1}{2}$	7	14	6000	36	42	$4\frac{1}{2}$	12	$2\frac{11}{16}$	$3\frac{3}{8}$	$2\frac{1}{4}$	4	9
250	150	$1\frac{1}{2}$	14	24	30	81502	92000	22430	11	12000	$3\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$3\frac{1}{2}$	7	14	6000	36	42	$4\frac{1}{2}$	12	$2\frac{11}{16}$	$3\frac{3}{8}$	$2\frac{1}{4}$	5	9
375	150	26	14	28	36	81503	123000	27050	12	14000	$4\frac{1}{2}$	6	6	5	10	20	8000	48	48	6	$16\frac{1}{2}$	$2\frac{11}{16}$	$3\frac{3}{8}$	3	5	12
375	150	$1\frac{1}{2}$	16	26	36	81504	123000	27050	12	14000	$4\frac{1}{2}$	6	6	5	10	20	8000	48	48	6	$16\frac{1}{2}$	$3\frac{3}{8}$	$3\frac{3}{8}$	3	5	10
400	120	26	16	32	36	81505	134000	29730	14	19000	$4\frac{1}{2}$	6	6	5	10	20	10000	48	48	6	$16\frac{1}{2}$	$3\frac{3}{8}$	$4\frac{1}{8}$	3	5	12
400	120	$1\frac{1}{2}$	18	30	36	81506	134000	29730	14	19000	$4\frac{1}{2}$	6	6	5	10	20	10000	48	48	6	$16\frac{1}{2}$	$3\frac{3}{8}$	$4\frac{1}{8}$	3	6	12
500	125	26	18	36	36	81507	155000	34190	14	20000	$4\frac{1}{2}$	6	6	5	10	20	13000	48	60	6	$16\frac{1}{2}$	$3\frac{3}{8}$	$4\frac{1}{8}$	3	6	14
500	125	$1\frac{1}{2}$	20	34	36	81508	155000	34190	14	20000	$4\frac{1}{2}$	6	6	5	10	20	13000	48	60	6	$16\frac{1}{2}$	$4\frac{1}{8}$	$4\frac{1}{8}$	3	7	14
750	120	26	20	40	42	81509	209000	44310	16	26000	$5\frac{3}{4}$	7	7	6	12	24	17500	54	72	8	$20\frac{1}{2}$	$4\frac{1}{8}$	$4\frac{7}{8}$	$3\frac{7}{8}$	7	16
750	120	$1\frac{1}{2}$	20	34	42	81510	202000	42880	16	26000	$5\frac{3}{4}$	7	7	6	12	24	17500	54	72	8	$20\frac{1}{2}$	$4\frac{1}{8}$	$4\frac{1}{8}$	$3\frac{7}{8}$	7	14

Price Cancelled 1/20

GENERATOR												
Rating (Max.)	Frame	Heating (Rise)		(d) Efficiencies			Two-Wire			Three-Wire	
		Windings	Commutator				Amps.	Weights		Amps. Neutral	List Price
K.W.				1	¾	½		Arm.	Shipp.		
250	8-45-11½	50°C.	60°C.	92.3	92.1	91.0	1000	7300	25600	250	$630
375	10-52-12	50°C.	60°C.	92.7	92.7	91.7	1500	7700	32400	375	480
400	10-60-12	50°C.	60°C.	92.8	92.8	91.7	1600	8400	34500	400	1000
500	10-66-11½	50°C.	60°C.	92.9	92.9	91.9	2000	13500	48500	500	1120
750	12-72-15	50°C.	60°C.	94.1	94.0	93.2	3000	19000	65000	750	1800

(a) This is Maximum Output and there is No Overload Capacity.

(b) For 750 K.W. Unit with 125 lbs. gauge Steam non-condensing make High Pressure Cylinder 22" diameter and Low Pressure Cylinder 36" dia. and add $370 to List.

(c) Weight and Price cover two-wire Generator. For 3-wire Generator add Price given below.

(d) In accordance with A. I. E. E. rules.

Note:—For Economies see other side.

Direct Connected Engine Units

Direct Current Generators

120-125-150 R. P. M.

April, 1919

SHEET NO. 2342

Set No. 47

STEAM CONSUMPTION GUARANTEES

UNIT							FULL LOAD						¾ LOAD						½ LOAD					
Rating K.W.	Engine HP	Engine LP	Engine Str.	Steam Pressure (gauge)	Back Pressure (gauge)	Vacuum (Ins.)	K.W.	I.H.P.	(L.P.) M.E.P.	H.P. Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	(L.P.) M.E.P.	H.P. Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	(L.P.) M.E.P.	H.P. Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour
250	12	24	30	150	..	26	250	389	38.3	39.	14.03	21.85	187.5	297	29.2	24.	13.76	21.78	125	208	20.4	12.5	14.33	23.85
250	14	24	30	150	1½	..	250	389	38.3	39.5	18.55	28.85	187.5	297	29.2	29.5	18.85	29.85	125	208	20.4	20.5	20.85	34.65
250	12	24	30	125	..	26	250	389	38.25	55.5	14.85	23.10	187.5	297	29.2	34.5	14.25	22.55	125	208	20.45	19.5	14.45	24.05
250	14	24	30	125	1½	..	250	389	38.3	51.	19.88	30.95	187.5	297	29.2	37.	20.10	31.85	125	208	20.5	26.	22.05	36.65
375	14	28	36	150	..	26	375	577	34.7	32.	13.69	21.05	281.2	441	26.5	19.5	13.69	21.45	187.5	309	18.6	9.5	14.58	24.05
375	16	26	36	150	1½	..	375	577	40.2	39.	18.63	28.65	281.2	441	30.7	28.5	18.73	29.35	187.5	309	21.55	20.	20.33	33.45
375	14	28	36	125	..	26	375	577	34.65	46.0	14.38	22.15	281.2	441	26.5	29.5	14.08	22.10	187.5	309	18.55	16.	14.63	24.10
375	16	26	36	125	1½	..	375	577	40.2	51.	20.08	30.85	281.2	441	30.7	36.5	19.88	31.20	187.5	309	21.6	25.5	21.48	35.40
400	16	32	36	150	..	26	400	615	35.3	33.5	13.62	21.05	300	469	26.9	20.5	13.61	21.3	200	329	18.9	10.0	14.43	23.75
400	18	30	36	150	1½	..	400	615	40.2	40.0	18.62	28.60	300	469	30.65	29.0	18.72	29.25	200	329	21.5	20.5	20.27	33.35
400	16	32	36	125	..	26	400	615	35.35	48.0	14.32	22.0	300	469	26.9	30.0	13.94	21.8	200	329	18.9	16.5	14.42	23.75
400	18	30	36	125	1½	..	400	615	40.2	52.0	20.06	30.8	300	469	30.6	37.0	19.88	31.10	200	329	21.5	25.5	21.5	35.35
500	18	36	36	150	..	26	500	766	33.5	30.5	13.52	20.7	375	585	25.6	18.5	13.60	21.20	250	409	17.9	9.0	14.62	23.9
500	20	34	36	150	1½	..	500	766	37.4	38.5	18.45	28.3	375	585	28.55	28.5	18.85	29.4	250	409	20.0	20.5	20.95	34.30
500	18	36	36	125	..	26	500	766	33.5	44.5	14.10	21.6	375	585	25.6	28.0	13.9	21.7	250	409	17.8	15.0	14.6	23.9
500	20	34	36	125	1½	..	500	766	37.4	49.5	19.85	30.4	375	585	28.55	36.0	20.0	31.20	250	409	20.0	25.5	20.6	33.70
750	20	40	42	150	..	26	750	1131	35.7	34.5	13.6	20.5	562.5	865	27.3	20.5	13.51	20.75	375	603	19.0	10.5	14.33	23.05
750	20	34	42	150	1½	..	750	1131	49.3	54.0	19.43	29.25	562.5	865	37.7	40.0	18.72	28.75	375	603	26.3	26.5	19.29	31.00
750	20	40	42	125	..	26	750	1131	35.6	48.5	14.25	21.5	562.5	865	27.25	32.5	13.85	21.3	375	603	19.0	16.5	14.30	23.0
750	22	36	42	125	1½	..	750	1131	44.2	58.0	20.5	30.9	562.5	865	33.8	41.0	19.82	30.40	375	603	23.6	28.0	20.80	33.40

Note:—Use this form with guarantees:—"When this unit is operated with____lbs. gauge steam pressure (dry saturated steam) at the throttle valve and the back pressure of____lbs. gauge or____inches of vacuum (referred to 30" barometer) at the exhaust nozzle the steam consumption of the engine only will not exceed the following when the unit is developing the even loads specified below."

Direct Connected Engine Units

Direct Current Generators

120-125-150 R. P. M.

April, 1919

SHEET NO. 2342A

Bulletin #17
May 10, 1919.

ALLIS-CHALMERS CROSS COMPOUND CORLISS ENGINES

120-125-150 R. P. M. Direct Current Type "IC" Two-Wire, 250 Volt or "ICW" Three-Wire, 125-250 Volt Generators

UNIT

(a) Rating (Maximum) K.W.	RPM	Vacuum (Ins.) Back Pres. (Lbs.)	(b) Engine Cylinders 125 to 150 Pounds Steam Gauge HP	LP	Str.	(c) Engine, Generator and Wheel (Two-Wire) Cat No.	Shipp. Wgt.	List Price
250	150	26	12	24	30	81501	92000	$22430
250	150	1½	14	24	30	81502	92000	22430
375	150	26	14	28	36	81503	123000	27050
375	150	1½	16	26	36	81504	123000	27050
400	120	26	16	32	36	81505	134000	29730
400	120	1½	18	30	36	81506	134000	29730
500	125	26	18	36	36	81507	155000	34190
500	125	1½	20	34	36	81508	155000	34190
750	120	26	20	40	42	81509	209000	44310
750	120	1½	20	34	42	81510	202000	42880

ENGINE

Wheel Dia.	Wheel Wgt.	Pins (Ins.) Crosshead Diam.	Crosshead Length	Crank Diam.	Crank Length	Main Br'gs. (Ins.) Diam.	Main Br'gs. (Ins.) Length	Weight Heaviest Piece	Largest Piece (Ins.) Width	Largest Piece (Ins.) Height	Crosshead Shoes (Ins.) Width	Crosshead Shoes (Ins.) Length	Diameters (Inches) Piston Rods HP	Piston Rods LP	Connect. Rod Smallest Dia.	Steam	Exhaust
11	12000	3½	4½	4½	3½	7	14	6000	36	42	4½	12	2 11/16	3⅜	2¼	4	9
11	12000	3½	4½	4½	3½	7	14	6000	36	42	4½	12	2 11/16	3⅜	2¼	5	9
12	14000	4½	6	6	5	10	20	8000	48	48	6	16½	2 11/16	3⅜	3	5	12
12	14000	4½	6	6	5	10	20	8000	48	48	6	16½	3⅜	3⅜	3	5	10
14	19000	4½	6	6	5	10	20	10000	48	48	6	16½	3⅜	4⅛	3	5	12
14	19000	4½	6	6	5	10	20	10000	48	48	6	16½	3⅜	4⅛	3	6	12
14	20000	4½	6	6	5	10	20	13000	48	60	6	16½	3⅜	4⅛	3	6	14
14	20000	4½	6	6	5	10	20	13000	48	60	6	16½	4⅛	4⅛	3	7	14
16	26000	5¾	7	7	6	12	24	17500	54	72	8	20½	4⅛	4⅞	3⅞	7	16
16	26000	5¾	7	7	6	12	24	17500	54	72	8	20½	4⅛	4⅛	3⅞	7	14

GENERATOR

Rating (Max.) K.W.	Frame	Heating (Rise) Windings	Heating (Rise) Commutator	(d) Efficiencies 1	¾	½	Two-Wire Amps.	Two-Wire Weights Arm.	Two-Wire Weights Shipp.	Three-Wire Amps. Neutral	Three-Wire List Price
250	8-45-11½	50°C.	60°C.	92.3	92.1	91.0	1000	7300	25600	250	$630
375	10-52-12	50°C.	60°C.	92.7	92.7	91.7	1500	7700	32400	375	480
400	10-60-12	50°C.	60°C.	92.8	92.8	91.7	1600	8400	34500	400	1000
500	10-66-11½	50°C.	60°C.	92.9	92.9	91.9	2000	13500	48500	500	1120
750	12-72-15	50°C.	60°C.	94.1	94.0	93.2	3000	19000	65000	750	1800

(a) This is Maximum Output and there is No Overload Capacity.

(b) For 750 K.W. Unit with 125 lbs. gauge Steam non-condensing make High Pressure Cylinder 22" diameter and Low Pressure Cylinder 36" dia. and add $370 to List.

(c) Weight and Price cover two-wire Generator. For 3-wire Generator add Price given below.

(d) In accordance with A. I. E. E. rules.

Note:—For Economies see other side.

Direct Connected Engine Units

Direct Current Generators

120-125-150 R. P. M.

April, 1919

SHEET NO. 2342

Set No. 231

Direct Connected Engine Units

Direct Current Generators

120-125-150 R. P. M.

April, 1919

SHEET NO. 2342A

STEAM CONSUMPTION GUARANTEES

UNIT				Steam Pressure (gauge)	Back Pressure (gauge)	Vacuum (Ins.)	FULL LOAD						¾ LOAD						½ LOAD					
Rating K.W.	Engine						K.W.	I.H.P.	(L.P.) M.E.P.	H.P. Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	(L.P.) M.E.P.	H.P. Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour	K.W.	I.H.P.	(L.P.) M.E.P.	H.P. Cutoff	Lbs. per I.H.P. Hour	Lbs. per K.W. Hour
	HP	LP	Str.																					
250	12	24	30	150	..	26	250	389	38.3	39.	14.03	21.85	187.5	297	29.2	24.	13.76	21.78	125	208	20.4	12.5	14.33	23.85
250	14	24	30	150	1½	..	250	389	38.3	39.5	18.55	28.85	187.5	297	29.2	29.5	18.85	29.85	125	208	20.4	20.5	20.85	34.65
250	12	24	30	125	..	26	250	389	38.25	55.5	14.85	23.10	187.5	297	29.2	34.5	14.25	22.55	125	208	20.45	19.5	14.45	24.05
250	14	24	30	125	1½	..	250	389	38.3	51.	19.88	30.95	187.5	297	29.2	37.	20.10	31.85	125	208	20.5	26.	22.05	36.65
375	14	28	36	150	..	26	375	577	34.7	32.	13.69	21.05	281.2	441	26.5	19.5	13.69	21.45	187.5	309	18.6	9.5	14.58	24.05
375	16	26	36	150	1½	..	375	577	40.2	39.	18.63	28.65	281.2	441	30.7	28.5	18.73	29.35	187.5	309	21.55	20.	20.33	33.45
375	14	28	36	125	..	26	375	577	34.65	46.0	14.38	22.15	281.2	441	26.5	29.5	14.08	22.10	187.5	309	18.55	16.	14.63	24.10
375	16	26	36	125	1½	..	375	577	40.2	51.	20.08	30.85	281.2	441	30.7	36.5	19.88	31.20	187.5	309	21.6	25.5	21.48	35.40
400	16	32	36	150	..	26	400	615	35.3	33.5	13.68	21.05	300	469	26.9	20.5	13.61	21.3	200	329	18.9	10.0	14.43	23.75
400	18	30	36	150	1½	..	400	615	40.2	40.0	18.62	28.60	300	469	30.65	29.0	18.72	29.25	200	329	21.5	20.5	20.27	33.35
400	16	32	36	125	..	26	400	615	35.35	48.0	14.32	22.0	300	469	26.9	30.0	13.94	21.8	200	329	18.9	16.5	14.42	23.75
400	18	30	36	125	1½	..	400	615	40.2	52.0	20.06	30.8	300	469	30.6	37.0	19.88	31.10	200	329	21.5	25.5	21.5	35.35
500	18	36	36	150	..	26	500	766	33.5	30.5	13.52	20.7	375	585	25.6	18.5	13.60	21.20	250	409	17.9	9.0	14.62	23.9
500	20	34	36	150	1½	..	500	766	37.4	38.5	18.45	28.3	375	585	28.55	28.5	18.85	29.4	250	409	20.0	20.5	20.95	34.30
500	18	36	36	125	..	26	500	766	33.5	44.5	14.10	21.6	375	585	25.6	28.0	13.9	21.7	250	409	17.8	15.0	14.6	23.9
500	20	34	36	125	1½	..	500	766	37.4	49.5	19.85	30.4	375	585	28.55	36.0	20.0	31.20	250	409	20.0	25.5	20.6	33.70
750	20	40	42	150	..	26	750	1131	35.7	34.5	13.6	20.5	562.5	865	27.3	20.5	13.51	20.75	375	603	19.0	10.5	14.33	23.05
750	20	34	42	150	1½	..	750	1131	49.3	54.0	19.43	29.25	562.5	865	37.7	40.0	18.72	28.75	375	603	26.3	26.5	19.29	31.00
750	20	40	42	125	..	26	750	1131	35.6	48.5	14.25	21.5	562.5	865	27.25	32.5	13.85	21.3	375	603	19.0	16.5	14.30	23.0
750	22	36	42	125	1½	..	750	1131	44.2	58.0	20.5	30.9	562.5	865	33.8	41.0	19.82	30.40	375	603	23.6	28.0	20.80	33.40

Note:—Use this form with guarantees:—"When this unit is operated with____lbs. gauge steam pressure (dry saturated steam) at the throttle valve and the back pressure of____lbs. gauge or____inches of vacuum (referred to 30" barometer) at the exhaust nozzle the steam consumption of the engine only will not exceed the following when the unit is developing the even loads specified below."

ALLIS-CHALMERS CORLISS ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I10-60-12A	250	125	250	30000	8400	92.8	93	93	92

Temperature Guarantees:—Full load 24 hours 35° C. on windings, 40° C. on commutator; 25 % overload for 2 hours, 50° C. on windings; 55° C. on commutator; 50 % overload one hour without injury, 75 % overload momentarily without injury.
*Three Wire Generators:—Specifications as above except total shipping weight Generator 32250 pounds.
For General Information see Sheet No. 2320M.
For Three Wire Generator—Add **$360.00** net to Net Price and 2250 pounds net to Net Weight.

ENGINE DETAILS

Bearings		Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)						Largest Piece			Heaviest Piece
		Crosshead		Crank						Cylinders		Conn.Rod Smallest	Piston Rod		Steam Nozzle	Exhaust Nozzle				
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Width Ins.	Length Ins.	Dia.	Wgt.	H.P.	L.P.		H.P.	L.P.			Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
										14	..	2¼	2 11/16	...	5	..				
										16	..	2¼	3⅜	...	5	..				
						4½	12	12	14000	..	24	2¼	...	3⅜	..	9				
9	18	3½	4½	4½	3½					..	28	2¼	...	3⅜	..	12	13–8	37	35	9450

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size			List (°) Price Unit	Weight Unit
					H.P.	L.P.	Stroke		
80723M	125	Non-Cond.	1½	..	16	24	36	$22067	105000
80724M	150	"	1½	..	14	24	36	21805	104000
80725M	125	Cond.	...	26	14	28	36	22205	107500
80726M	150	"	...	26	14	28	36	22205	107500

(†) The wheel listed and included in price is for either a steady lighting or power load.
If load is "lighting combined with fluctuating power load" use 13 ft. diameter wheel weighing 16,000 pounds. Add 2,000 pounds, $45.00 dollars net.
(°) For three wire generators make addition to net price. Amount given above.

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES
250 K. W., 125 R. P. M., "D. C." GENERATORS

JUNE, 1914

SET NO. 308

ALLIS-CHALMERS CROSS COMPOUND ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" AND "IW" GENERATOR, 250 VOLTS

GENERATOR 250 K. W.

Load			½				¾				1				1¼			
K. W.			125				187.5				250				312.5			
I. H. P.			212				299				388				478			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
125	55.7	Non-Cond.	20.6	23.	25.3	43.	29.1	30.2	22.1	35.2	37.8	39.7	21.3	33.	46.5	51.	21.9	33.5
150	56.9	"	20.6	19.2	21.9	37.2	29.1	26.5	19.7	31.4	37.8	36.	19.2	29.8	46.5	48.5	20.1	30.7
125	46.5	Cond.	15.2	14.4	15.1	25.6	21.4	22.0	14.25	22.7	27.7	31.6	14.5	22.5	34.3	44.	15.6	23.9
150	56.4	"	15.2	10.4	14.7	24.9	21.4	16.4	13.4	21.4	27.7	22.8	13.3	20.6	34.3	30.8	13.6	20.8

*(%) Percent of stroke in high pressure cylinder. †M. E. P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals and does not include power lost in main rheostat. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified.

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES

250 K. W., 125 R. P. M., "D. C." GENERATORS

JUNE, 1914

SHEET NO. 2313-MA

SET NO. 8 & 9

SHEET NO. 2314-M

ALLIS-CHALMERS CORLISS ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I10-52-12B	260	150	250	28000	7700	91.7	92	92	91

Temperature Guarantees:—Full load 24 hours, 35° C. on windings, 40° C. on commutator; 25% overload for 2 hours, 50° C. on windings, 55° C. on commutator; 50% overload for one hour without injury and 75% overload momentarily without injury.
***For Three Wire Generators:**—Specifications same as above except total shipping weight Generator 30000 pounds.
For Three Wire Generators—Add **$350.00** net to Net Price and 2000 pounds net to Weight of Units.

ENGINE DETAILS

Bearings		Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)						Largest Piece			Heaviest Piece
		Crosshead		Crank						Cylinders		Conn. Rod Smallest	Piston Rod		Steam Nozzle	Exhaust Nozzle			
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Width Ins.	Length Ins.	Dia.	Wgt.	H.P.	L.P.		H.P.	L.P.			Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
										14	..	2¼	2 11/16	...	5	..				
										16	..	2¼	3⅜	...	5	..				
						4½	12	10	11000	..	24	2¼	...	3⅜	..	9				
9	18	3½	4½	4½	3½					..	28	2¼	...	3⅜	..	12	12–3	37	35	8950

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size			List (°) Price Unit	Weight Unit
					H.P.	L.P.	Stroke		
80727M	125	Non-Cond.	1½	..	16	24	30	$20755	97000
80728M	150	"	1½	..	14	24	30	20492	96000
80729M	125	Cond.	...	26	14	28	30	21017	100500
80730M	150	"	...	26	14	28	30	21017	100500

(†) The wheel listed and included in price is for either a steady lighting or power load.
If load is "lighting combined with fluctuating power load" use 12 ft. diameter wheel weighing 14,000 pounds. Add 3,000 pounds, **$62.00** dollars net.
(°) For three wire generators make addition to net price. Amount given above.

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES
260 K. W., 150 R. P. M., "D. C." GENERATORS

JUNE, 1914

ALLIS-CHALMERS CROSS COMPOUND ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" AND "IW" GENERATOR, 250 VOLTS

GENERATOR 260 K. W.

Load			½				¾				1				1¼			
K. W.			130				195				260				325			
I. H. P.			229				314				410				505			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
125	55.7	Non-Cond.	21.4	23.4	24.8	42.5	30.6	31.3	21.8	35.1	40.	41.5	21.3	33.5	49.	56.	22.5	34.8
150	56.9	"	21.4	20.	21.5	36.8	30.6	28.5	19.5	31.4	40.	38.5	19.3	30.3	49.	53.75	20.8	32.2
125	46.5	Cond.	16.4	15.6	14.8	25.3	22.4	23.2	14.2	22.9	29.3	34.	14.7	23.1	36.2	48.4	16.	24.7
150	56.4	"	16.4	11.6	14.3	24.5	22.4	17.	13.5	21.8	29.3	24.8	13.4	21.	36.2	33.6	13.7	21.2

*(%) Percent of stroke in high pressure cylinder. †M. E. P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals and does not include power lost in main rheostat. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified.

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES

260 K. W., 150 R. P. M., "D. C." GENERATORS

JUNE, 1914

SHEET NO. 2314-MA

SET NO. 308

SHEET NO. 2315-M

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES

315 K. W., 150 R. P. M., "D. C." GENERATORS

JUNE, 1914

ALLIS-CHALMERS CORLISS ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I10-60-12B	315	150	250	31000	8900	93.2	93.5	93.5	93

Temperature Guarantees:—Full load 24 hours, 35° C on windings, 40° C. on commutator; 25 % overload for 2 hours, 50° C. on windings, 55° C. on commutator; 50 % overload one hour without injury, and 75 % overload momentarily without injury.
***For Three Wire Generators:**—Specifications same as above except total shipping weight Generator 33200 pounds.
For General Information see Sheet No. 2320M.
For Three Wire Generators:—Add **$385.00** net to Net Price and 2200 pounds net to Net Weight Unit.

ENGINE DETAILS

Bearings		Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)						Largest Piece			Heaviest Piece
		Crosshead		Crank						Cylinders		Conn.Rod Smallest	Piston Rod		Steam Nozzle	Exhaust Nozzle				
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Width Ins.	Length Ins.	Dia.	Wgt.	H.P.	L.P.		H.P.	L.P.			Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
										14	..	2¼	2 11/16	...	5	..				
										16	..	2¼	3⅜	...	5	..				
						4½	12	11	11000	..	26	2¼	...	3⅜	..	10				
9	18	3½	4½	4½	3½					..	28	2¼	...	3⅜	..	12	13–8	37	35	9450

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size			List (°) Price Unit	Weight Unit
					H.P.	L.P.	Stroke		
80731M	125	Non-Cond.	1½	..	16	26	36	$22792	105500
80732M	150	"	1½	..	14	26	36	22550	104500
80733M	125	Cond.	...	26	14	28	36	22792	105500
80734M	150	"	...	26	14	28	36	22792	105500

(†) The wheel listed and included in price is for either a steady lighting or power load.
If load is "lighting combined with fluctuating power load" use 12 ft. diameter wheel weighing 14,000 pounds. Add 3,000 pounds, **$62.00** dollars net.
(°) For three wire generators make addition to net price. Amount given above.

ALLIS-CHALMERS CROSS COMPOUND ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" AND "IW" GENERATOR, 250 VOLTS

GENERATOR 315 K. W.

Load			½				¾				1				1¼			
K. W.			157.5				236				315				393			
I. H. P.			264				373				485				600			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
125	44.5	Non-Cond.	21.9	25.4	22.7	38.	25.8	29.7	21.9	34.6	33.7	39.5	21.4	33.	41.5	55.	22.6	34.5
150	49.8	"	21.9	24.5	20.6	34.5	25.8	28.7	19.8	31.3	33.7	38.5	19.3	29.7	41.5	52.5	20.3	31.
125	46.5	Cond.	15.75	14.8	14.9	25.	22.3	22.8	14.2	22.4	28.9	34.	14.6	22.5	35.8	47.6	15.9	24.25
150	56.4	"	15.75	11.2	14.5	24.3	22.3	16.4	13.5	21.5	28.9	24.4	13.4	20.6	35.8	33.2	13.75	21.

*(%) Percent of stroke in high pressure cylinder. †M. E. P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals and does not include power lost in main rheostat. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified.

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES

315 K. W., 150 R. P. M., "D. C." GENERATORS

JUNE, 1914

SHEET NO. 2315-MA

ALLIS-CHALMERS CORLISS ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I10-66-11½A	320	125	250	46000	12000	92	92.5	92.5	92

Temperature Guarantees:—Full load 24 hours, 35° C. on windings, 40° C. on commutator; 25% overload for 2 hours, 50° C. on windings, 55° C. on commutator; 50% overload one hour without injury and 75% overload momentarily without injury.
For General Information see Sheet No. 2320M.

ENGINE DETAILS

Bearings		Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)						Largest Piece			Heaviest Piece
		Crosshead		Crank						Cylinders		Conn. Rod Smallest	Piston Rod		Steam Nozzle	Exhaust Nozzle				
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Width Ins.	Length Ins.	Dia.	Wgt.	H.P.	L.P.		H.P.	L.P.			Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
										14	..	2¼	2 11/16	...	5	..				
										16	..	2¼	3⅜	...	5	..				
										18	..	2¼	3⅜	...	6	..				
						4½	12	12	16000	..	28	2¼	...	3⅜	..	12				
9	18	3½	4½	4½	3½					..	30	2¼	...	4⅛	..	12	13–8	37	35	9450
										..	32	2¼	...	4⅛	..	12				

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size			List (°) Price Unit	Weight Unit
					H.P.	L.P.	Stroke		
80735M	125	Non-Cond.	1½	..	18	30	36	$25105	128500
80736M	150	"	1½	..	16	30	36	24842	127500
80737M	125	Cond.	...	26	16	32	36	25105	128500
80738M	150	"	...	26	14	38	36	24317	125500

(†) The wheel listed and included in price is for either a steady lighting or power load.
If load is "lighting combined with fluctuating power load" use 13 ft. diameter wheel weighing 19,000 pounds. Add 3,000 pounds, $40.00 dollars net.

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES
320 K. W., 125 R. P. M., "D. C." GENERATORS

JUNE, 1914

SHEET NO. 2316-M

SET NO. 308

ALLIS-CHALMERS CROSS COMPOUND ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" GENERATOR, 250 VOLTS

GENERATOR 320 K. W.

Load			½				¾				1				1¼			
K. W.			160				240				320				400			
I. H. P.			270				384				498				615			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
125	44.5	Non-Cond.	16.8	21.4	25.2	42.5	23.9	28.	22.2	35.5	31.2	37.9	21.4	33.3	38.3	47.8	21.8	33.6
150	49.8	"	16.8	19.6	22.6	38.2	23.9	26.2	20.2	32.3	31.2	35.	19.3	30.	38.3	46.25	19.75	30.4
125	46.5	Cond.	14.8	14.	15.3	25.8	21.	21.2	14.3	22.9	27.3	30.8	14.4	22.4	33.6	42.8	15.4	23.7
150	56.4	"	19.3	14.	13.8	23.3	27.4	22.4	13.3	21.3	35.6	32.8	13.7	21.3	43.	43.6	14.5	22.4

*(%) Percent of stroke in high pressure cylinder. †M. E. P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals and does not include power lost in main rheostat. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified.

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES

320 K. W., 125 R. P. M., "D. C." GENERATORS

JUNE, 1914

SHEET NO. 2316-MA

SET NO. 306

SHEET NO. 2317-M

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES

350 K. W., 150 R. P. M., "D. C." GENERATORS

JUNE, 1914

ALLIS-CHALMERS CORLISS ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I10-60-12B	350	150	250	31000	8900	93.2	93.5	93.5	93

Temperature Guarantees:—Full load 24 hours, 40° C. on windings, 45° C. on commutator; 25% overload for 2 hours, 60° C. on windings, 60° C. on commutator; and 50% overload momentarily without injury.

*For Three Wire Generators—Specifications same as above except total shipping weight Generator 33200 pounds.

For General Information see Sheet No. 2320M.

For Three Wire Generators—Add **$500.00** net to Net Price and 2200 pounds net to Weight of Unit.

ENGINE DETAILS

Bearings		Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)						Largest Piece			Heaviest Piece
		Crosshead		Crank						Cylinders		Conn. Rod Smallest	Piston Rod		Steam Nozzle	Exhaust Nozzle				
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Width Ins.	Length Ins.	Dia.	Wgt.	H.P.	L.P.		H.P.	L.P.			Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
9	18	3½	4½	4½	3½	4½	12	12	14000	14 16 18	.. .. .. 26 28 32	2¼ 2¼ 2¼ 2¼ 2¼ 2¼	2 11/16 3 3/8 3 3/8	... ... 3 3/8 3 3/8 4 1/8	5 5 6	.. .. .. 10 12 12	13–8	37	35	9450

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size H.P.	Size L.P.	Size Stroke	List (°) Price Unit	Weight Unit
80739M	125	Non-Cond.	1½	..	18	28	36	$23480	110500
80740M	150	"	1½	..	16	26	36	22955	108500
80741M	125	Cond.	...	26	16	32	36	23730	111500
80742M	150	"	...	26	14	28	36	22955	108500

(†) The wheel listed and included in price is for either a steady lighting or power load, or "lighting combined with fluctuating power load."

(°) For three wire generators make addition to net price. Amount given above.

ALLIS-CHALMERS CROSS COMPOUND ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" AND "IW" GENERATOR, 250 VOLTS

GENERATOR 350 K. W.

Load			½				¾				1				1¼			
K. W.			175				262				350				437			
I. H. P.			293				413				540				665			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
125	50.1	Non-Cond.	17.5	23.	27.6	46.25	24.7	29.	23.4	37.	32.2	36.2	21.7	33.7	39.6	45.5	21.3	32.4
150	61.7	"	20.3	16.3	22.	36.8	28.6	23.3	19.7	31.2	37.4	31.5	19.2	29.8	46.	43.	20.	30.4
125	46.5	Cond.	13.4	12.4	15.9	26.6	18.9	18.8	14.3	22.6	24.6	26.4	14.2	22.	30.3	36.4	14.8	22.5
150	56.4	"	17.5	12.8	14.1	23.6	24.7	19.2	13.4	21.2	32.2	28.	13.5	20.9	39.6	38.4	14.1	21.5

*(%) Percent of stroke in high pressure cylinder. †M. E. P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit, only operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals and does not include power lost in main rheostat. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified.

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES

350 K. W., 150 R. P. M., "D. C." GENERATORS

JUNE, 1914

SHEET NO. 2317-MA

SET NO. 398

SHEET NO. 2318-M

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES

400 K. W., 120 R. P. M., "D. C." GENERATORS

JUNE, 1914

ALLIS-CHALMERS CORLISS ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I10-66-12½B	400	120	250	54000	14000	92	92.5	92.5	92

Temperature Guarantees:—Full load 24 hours, 40° C. on windings, 45° C. on commutator; 25 % overload for 2 hours, 60° C. on windings, 60° C. on commutator; and 50 % overload momentarily without injury.
*For Three Wire Generators—Specifications same as above except total shipping weight Generator 56500 pounds.
For General Information see Sheet No. 2320M.
For Three Wire Generators—Add $450.00 net to Net Price and 2500 pounds to net Weight of Unit.

ENGINE DETAILS

Bearings		Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)					Largest Piece			Heaviest Piece
		Crosshead		Crank						Cylinders		Conn. Rod Smallest	Piston Rod		Steam Nozzle	Exhaust Nozzle			
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Width Ins.	Length Ins.	Dia.	Wgt.	H.P.	L.P.		H.P.	L.P.			Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
										16	..	3	3⅜	...	5	..				
										18	..	3	3⅜	...	6	..				
										20	..	3	4⅛	...	7	..				
						6	16½	13	19000	..	30	3	...	4⅛	..	12				
10	20	4½	6	6	5					..	32	3	...	4⅛	..	12	16–0	43	41	11000

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size			List (°) Price Unit	Weight Unit
					H.P.	L.P.	Stroke		
80743M	125	Non-Cond.	1½	..	20	32	42	$26952	158500
80744M	150	"	1½	..	18	30	42	26415	156500
80745M	125	Cond.	...	26	16	32	42	26415	156500
80746M	150	"	...	26	16	32	42	26415	156500

(†) The wheel listed and included in price is for either a steady lighting or power load.
If load is "lighting combined with fluctuating power load" use 15 ft. diameter wheel weighing 20,000 pounds. Add 1,000 pounds, $25.00 dollars net.
(°) For three wire generators make addition to net price. Amount given above.

ALLIS-CHALMERS CROSS COMPOUND ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" AND "IW" GENERATOR, 250 VOLTS

GENERATOR 400 K. W.

Load			½				¾				1				1¼			
K. W.			200				300				400				500			
I. H. P.			338				428				623				770			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
125	50.1	Non-Cond.	16.5	15.	25.2	42.5	20.9	23.2	23.	36.7	30.2	33.1	21.4	33.4	39.6	44.	21.7	33.4
150	61.7	"	18.8	16.7	22.8	38.5	23.6	20.	20.8	33.2	34.2	30.	19.4	30.3	42.8	40.	19.5	30.
125	46.5	Cond.	16.5	15.6	14.8	25.	20.9	21.2	14.3	22.8	30.2	36.	14.8	23.1	39.6	56.4	16.9	26.
150	56.4	"	16.5	11.6	14.3	24.2	20.9	15.6	13.6	21.7	30.2	25.2	13.4	20.9	39.6	38.4	14.1	21.7

*(%) Percent of stroke in high pressure cylinder. †M. E. P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals and does not include power lost in main rheostat. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified.

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES

400 K. W., 120 R. P. M., "D. C." GENERATORS

JUNE, 1914

SHEET NO. 2318-MA

SET NO. 308

SHEET NO. 2319-M

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES

500 K. W., 125 R. P. M., "D. C." GENERATORS

JUNE, 1914

ALLIS-CHALMERS CORLISS ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" TWO WIRE, 250 VOLT OR *"IW" THREE WIRE, 125-250 VOLT GENERATORS

Frame	Rating			Weights		Efficiencies			
	K. W.	R. P. M.	Volts	Shipping	Armature Net	1¼ Load	Full Load	¾ Load	½ Load
I12-72-15B	500	125	250	63500	193000	93.2	93.5	93.5	93

Temperature Guarantees:—Full load 24 hours, 35° C. on windings, 40° C. on commutator; 25% overload for 2 hours, 50° C. on windings, 55° C. on commutator; 50% overload one hour without injury and 75% overload momentarily without injury.
***For Three Wire Generators**—Specifications same as above except total shipping weight Generator 65500 pounds.
For General Information see Sheet No. 2320M.
For Three Wire Generators—Add **$500.00** net to Net Price and 2000 pounds net to Weight of Unit.

ENGINE DETAILS

Bearings		Pins				Crosshead Shoes		Wheel (†)		Diameters (Inches)						Largest Piece			Heaviest Piece
		Crosshead		Crank						Cylinders		Conn. Rod Smallest	Piston Rod		Steam Nozzle	Exhaust Nozzle	Length Ft. & Ins.	Width Inches	Height Inches	Weight Pounds
Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Dia. Ins.	Length Ins.	Width Ins.	Length Ins.	Dia.	Wgt.	H.P.	L.P.		H.P.	L.P.						
										18	..	3	3⅜	...	6	..				
										22	..	3	4⅛	...	8	..				
						6	16½	14	19000	..	32	3	...	4⅛	..	12				
12	24	4½	6	6	5					..	36	3	...	4⅛	..	14	16–0	47	41	17800

Catalog No. Unit	I. S. P. Gauge	Type	B. P. Lbs. Gauge	Vac. Ins.	Size			List (°) Price Unit	Weight Unit
					H.P.	L.P.	Stroke		
80747M	125	Non-Cond.	1½	..	22	36	42	$31897	173000
80748M	150	"	1½	..	18	32	42	30847	169000
80749M	125	Cond.	...	26	18	36	42	31397	171000
80750M	150	"	...	26	18	36	42	31397	171000

(†) The wheel listed and included in price is for either a steady lighting or power load. If load is "lighting combined with fluctuating power load" use 14 ft. diameter wheel weighing 22,000 pounds. Add 3,000 pounds, **$65.00** dollars net.

(°) For three wire generators make addition to net price. Amount given above.

ALLIS-CHALMERS CROSS COMPOUND ENGINES

DIRECT CONNECTED TO D. C. TYPE "I" AND "IW"" GENERATOR, 250 VOLTS

GENERATOR 500 K. W.

Load			½				¾				1				1¼			
K. W.			250				375				500				625			
I. H. P.			420				593				775				950			
I.S.P.	Max. M.E.P. 75% Cut Off	Type	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour	† M.E.P.	*% Cut Off	Lbs. I.H.P. Hour	Lbs. K.W. Hour
125	44.5	Non-Cond.	15.6	20.	26.	43.5	22.1	26.4	22.7	36.9	28.75	34.4	21.5	33.3	35.25	44.	21.5	32.7
150	56.9	"	19.7	15.8	22.3	37.4	27.8	27.	19.8	31.3	36.4	37.2	19.2	29.8	44.5	48.5	19.7	30.
125	46.5	Cond.	15.6	14.8	15.	25.2	22.1	23.2	14.2	22.4	28.75	33.2	14.6	22.6	35.25	46.4	15.7	23.9
150	56.4	"	15.6	11.2	14.6	24.5	22.1	16.8	13.5	21.4	28.75	24.	13.3	20.6	35.25	32.4	13.7	20.8

*(%) Percent of stroke in high pressure cylinder. †M. E. P. referred to low pressure cylinder.

NOTE:—The steam consumption guarantees include the consumption of dry steam by the main unit only, operating under the conditions specified, and do not include that used by auxiliaries. Generator load is true K. W. output at terminals and does not include power lost in main rheostat. The I. H. P. specified shows power developed in engine cylinder when generator is delivering the true K. W. output given at the load specified.

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES

500 K. W., 125 R. P. M., "D. C." GENERATORS

JUNE, 1914

SHEET NO. 2319-MA

SET NO. 3088

SHEET NO. 2320-M

CROSS COMPOUND DIRECT CONNECTED UNITS

ALLIS-CHALMERS ENGINES

TYPE "I" AND "IW" DIRECT CURRENT GENERATORS

JUNE, 1914

DIRECT CURRENT ENGINE TYPE GENERATORS

TYPE "I"—TWO-WIRE, 250 VOLTS **TYPE "IW"—THREE-WIRE, 125-250 VOLTS**

NOTES

Weights, for generators, are the boxed weight for domestic shipment and include field rheostat; for three-wire generators, suitably mounted, slip rings and a set of oil-immersed balance coils are also included.

Compounding—For two-wire generators the standard compounding from no load to full load is 240-250 volts; for three-wire generators standard compounding is 120-240 volts no load, 125-250 volts full load.

Voltage and Speed—They will deliver their normal current in amperes, the speeds remaining the same; at any voltage within the following limits: 250 volt generators, between 220 and 250 volts.

TEMPERATURE GUARANTEES:—

The rise in temperature is measured according to the Standardization Rules of the A. I. E. E.

Three-Wire Generators will deliver their rated K. W. output while carrying an unbalanced current in the neutral equal to 25% of their normal full load current. Under these conditions they will maintain a voltage on either side of the system which will not vary more than 2% from one-half the voltage between line wires.

When ordering, state compounding required.

CONDENSERS

SET No. 43

GX 20

DIRECT CONNECTED ENGINE UNITS

RELIANCE ENGINES TYPE "I" GENERATORS

SUPERSEDING SHEET No. 359

MAY 1907

SHEET NO. 2104 Rel. D. C. Eng. Set

RELIANCE ENGINES DIRECT CONNECTED TO D. C. TYPE "I" GENERATORS
90 TO 130 LBS. STEAM NON-CONDENSING

CAPACITY		ENGINE		GENERATOR, ENGINE, WHEEL				GENERATOR									
				120 VOLTS		240 VOLTS		120 VOLTS				240 VOLTS					
										EFFICIENCY					EFFICIENCY	
K.W.	R.P.M.	Diam.	Stroke	Price	Wgt.	Price	Wgt.	FRAME	Full Load	¾ Load	½ Load	FRAME	Full Load	¾ Load	½ Load
50	150	10	24	$7580	29700	$7480	29600	I 6 31 9½	89.	88.5	88.	I 6 31 9½	88.	88.2	87.8
75	150	12	24	8540	35400	8440	35200	I 6 31 12½	88.4	89.3	88.7	I 6 31 12½	89.	90.	89.5
100	150	14	24	9820	45300	9700	45000	†I 6 40 10	90.4	90.8	89.7	†I 6 40 10	91.	91.5	90.5
125	150	14	30	10300	48900	10180	48600	I 6 40 10	90.6	91.	90.4	I 6 40 10	91.2	91.7	91.2
150	150	16	30	12180	55100	12060	64800	I 10 45 9	91.5	92.	91.5	I 6 40 11	91.5	92.	91.5
175	150	18	30	13380	63200	13260	71700	I 10 45 12	91.9	91.8	91.2	I 6 45 12	92.5	92.5	92.
200	125	18	36	15040	78100	15460	86600	I 8 45 15½	91.9	91.8	91.2	I 6 45 15½	92.5	92.5	92.
250	120	20	36	18640	102700	18580	102200	†I 10 66 11½	92.4	92.4	91.2	†I 10 66 11½	93.	93.1	92.
300	120	22	36	19800	108900	19680	108400	I 10 66 11½	92.5	92.5	91.2	I 10 66 11½	93.1	93.2	92.
350	120	24	36	24580	131200	22420	142700	I 16 78 11½	92.7	92.5	91.2	I 8 66 15	93.3	93.2	92.
400	110	26	36	26860	151300	26620	153800	I 16 78 16	92.7	92.5	91.3	*I 12 72 15	93.3	93.2	92.1

Prices are for set complete, F. O. B. Milwaukee, Wis., including Foundation Bolts, Keys, pressing Armature on Shaft, and Engine as described on Price Sheet No. 2015, viz.: Reliance Direct Connected Engine Data Sheet.

GENERATOR HEATING GUARANTEES

CAPACITY	FULL LOAD			25 PER CENT. OVERLOAD		
	Hours Duration	Rise in Windings	Rise on Commutator	Hours Duration	Rise in Windings	Rise on Commutator
Generators Marked †.....	24	35°	35°	24	40°	45°
Generators Marked *.....	24	35°	40°	2	45°	50°
All Other Generators.....	24	40°	45°	2	50°	55°

Eng. Set

DIRECT CONNECTED ENGINE UNITS

RELIANCE ENGINES
TYPE "I" GENERATORS

SUPERSEDING SHEET NO. 359A

MAY 1907

SHEET NO. 2104A

ENGINE DATA

90 TO 130 LBS. STEAM NON-CONDENSING

ENGINE		WHEEL		JOURNAL		PINS		Diam. of Shaft in Wheel	Piston Rod	Conn. Rod Body Smallest Diam.	Diam. of Steam Nozzle	Diam. of Exh't Nozzle	LARGEST PIECE			Heaviest Piece
Diam.	Stroke	Diam.	Weight	Diam.	L'ngth	Diam.	L'ngth						L'ngth	Width	Heig't	Weight
10	24	8′	5000	5″	10″	2½″	2½″	7″	1 15/16″	1¾″	3″	4″	9′ 6″	3′ 0″	6′ 0″	4000
12	24	9′	6000	6″	13″	3″	3″	8″	2 3/16″	2¼″	4″	5″	10′ 0″	3′ 0″	6′ 0″	6500
14	24	9′	8000	7″	13″	3½″	3½″	8½″	2 11/16″	2½″	5″	6″	10′ 0″	3′ 0″	6′ 0″	8000
14	30	10′	9000	7″	13″	3½″	3½″	9½″	2 11/16″	2½″	5″	6″	12′ 1″	3′ 10″	7′ 0″	9000
16	30	11′	9000	8″	18″	4″	4″	9½″	2 13/16″	2⅞″	5″	6″	12′ 1″	3′ 10″	7′ 0″	10000
18	30	12′	12000	9″	18″	4½″	4½″	10½″	3 3/16″	3¼″	6″	7″	12′ 1″	3′ 10″	7′ 0″	12000
18	36	13′	14000	9″	18″	4½″	4½″	11½″	3 3/16″	3¼″	6″	7″	13′ 10″	4′ 9″	8′ 6″	13000
20	36	14′	17000	10″	20″	5″	5″	12½″	3⅜″	3⅝″	7″	8″	15′ 0″	4′ 9″	8′ 6″	20000
22	36	14′	20000	11″	20″	5½″	5½″	13″	3⅞″	4″	8″	9″	15′ 0″	4′ 9″	8′ 6″	21000
24	36	14′	22000	12″	24″	6½″	6½″	15″	4⅜″	4⅝″	8″	9″	16′ 0″	4′ 9″	8′ 6″	30000
26	36	15′	28000	13″	24″	7″	7″	15″	4⅞″	5″	9″	10″	16′ 0″	4′ 9″	8′ 6″	35000

REYNOLDS RELIANCE CROSS COMPOUND ENGINES
DIRECT CONNECTED TO TYPE "I" D. C. GENERATOR
120 TO 150 LBS. STEAM

CAPACITY		ENGINE			GENERATOR, ENGINE, WHEEL				GENERATOR								
					120 VOLT		240 VOLT		120 VOLT				240 VOLT				
										Efficiency				Efficiency		
K.W.	R P M	H. P.	L. P.	Stroke	List Price	Wgt.	List Price	Wgt.	Frame	Full Load	¾ Load	½ Load	Frame	Full Load	¾ Load	½ Load
200	125	14	28	30	$21240	109100	$21660	117650	I 8 45 15½	91.9	91.8	91.2	I 6 45 15½	92.5	92.5	92.
250	120	16	32	30	26620	130500	26560	130000	†I 10 66 11½	92.4	92.4	91.2	†I 10 66 11½	93.	93.1	92.
300	120	16	32	36	27240	138300	27120	137800	I 10 66 11½	92.5	92.5	91.2	I 10 66 11½	93.1	93.2	92.
400	110	18	36	36	33080	171800	32840	174300	I 16 78 16	92.7	92.5	91.3	*I 12 72 15	93.3	93.2	92.1
500	100	20	40	42	42920	230800	40380	236300	I 20 96 13½	92.6	92.6	91.2	I 14 96 11	93.1	93.1	91.9
600	100	22	44	42	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Prices are for set complete, F. O. B. Milwaukee, Wis., including Foundation Bolts, Keys, pressing Armature on Shaft, and Engine as described on Price Sheet No. 2098, viz.: Reliance Cross Compound Direct Connected Engine Data Sheet.

GENERATOR HEATING GUARANTEES

CAPACITY	FULL LOAD			25 PER CENT. OVERLOAD		
	Hours Duration	Rise in Windings	Rise on Commutator	Hours Duration	Rise in Windings	Rise on Commutator
Generators marked †.....	24	35°	35°	24	40°	45°
Generators marked *.....	24	35°	40°	2	45°	50°
All Other Generators.....	24	40°	45°	2	50°	55°

DIRECT CONNECTED ENGINE UNITS
RELIANCE CR. COMP. ENGINE
TYPE "I" GENERATOR

MAY 1907

Sets

DIRECT CONNECTED ENGINE UNITS

RELIANCE CR. COMP. ENGINE
TYPE "I" GENERATOR

MAY 1907

ENGINE DATA
120 TO 150 LBS. STEAM

ENGINE			WHEEL		JOURNAL		Heaviest Piece	LARGEST PIECE			PISTON ROD		Connecting Rod Body Smallest Diameter	Diameter H. P. Steam Nozzle	Diameter L. P. Exhaust Nozzle	PINS		Diameter Shaft in Wheel
H.P.	L.P.	Stroke	Dia.	Wgt.	Dia.	Lgth.	Wgt.	Hgt.	Width	Lgth.	H. P.	L. P.				Dia.	Lgth.	
14	28	30	12′	12000	8″	15″	6000	6′ 6″	3′ 9″	14′ 6″	2 11/16″	3 3/16″	2 7/8″	5″	12″	4″	4″	10″
16	32	30	12′	14000	9″	18″	7000	6′ 6″	3′ 5″	15′ 6″	2 13/16″	3 5/8″	3 1/4″	5″	12″	4 1/2″	4 1/2″	11″
16	32	36	14′	17000	9″	18″	8500	7′ 6″	3′ 11″	15′ 6″	2 13/16″	3 5/8″	3 1/4″	5″	12″	4 1/2″	4 1/2″	11″
18	36	36	14′	21000	11″	20″	10500	7′ 6″	3′ 11″	15′ 10″	3 3/16″	3 7/8″	3 5/8″	6″	14″	5″	5″	13″
20	40	42	16′	32000	13″	24″	16500	8′ 0″	4′ 9″	17′ 0″	3 3/8″	4 3/8″	4″	7″	15″	5 1/2″	5 1/2″	15″
22	44	42	16′	37000	15″	24″	18500	8′ 0″	4′ 9″	18′ 6″	3 7/8″	4 5/8″	4 3/8″	8″	16″	6″	6″	17″

GX

REYNOLDS HEAVY DUTY CROSS COMPOUND ENGINES DIRECT CONNECTED TO TYPE "I" D. C. GENERATOR 120 TO 150 LBS. STEAM

CAPACITY		ENGINE			GENERATOR, ENGINE, WHEEL				GENERATOR							
					120 VOLT		240 VOLT		120 VOLT				240 VOLT			
										Efficiency				Efficiencies		
K.W.	RPM	H. P.	L. P.	Stroke	List Price	Wgt.	List Price	Wgt.	Frame	Full Load	¾ Load	½ Load	Frame	Full Load	¾ Load	½ Load
200	125	14	28	30	$22800	116500	$23220	125000	I 8 45 15½	91.9	91.8	91.2	I 6 45 15½	92.5	92.5	92.
250	120	16	32	30	27980	145500	27920	145000	†I 10 66 11½	92.4	92.4	91.2	†I 10 66 11½	93.	93.1	92.
300	120	16	32	36	28680	154000	28560	153500	I 10 66 11½	92.5	92.5	91.2	I 10 66 11½	93.1	93.2	92.
400	110	18	36	36	35020	182500	34780	185000	I 16 78 16	92.7	92.5	91.3	*I 12 72 15	93.3	93.2	92.1
500	100	20	40	42	45280	244500	42740	250000	I 20 96 13½	92.6	92.6	91.2	I 14 96 11	93.1	93.1	91.9
600	100	22	44	42	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Prices are for set complete, F. O. B. Milwaukee, Wis., including Foundation Bolts, Keys, pressing Armature on Shaft, and Engine as described on Price Sheet No. 2024, viz.: Heavy Duty Cross Compound Direct Connected Engine Data Sheet.

GENERATOR HEATING GUARANTEES

CAPACITY	FULL LOAD			25 PER CENT. OVERLOAD		
	Hours Duration	Rise in Windings	Rise on Commutator	Hours Duration	Rise in Windings	Rise on Commutator
Generators marked †.....	24	35°	35°	24	40°	45°
Generators marked *.....	24	35°	40°	2	45°	50°
All Other Generators.....	24	40°	45°	2	50°	55°

DIRECT CONNECTED ENGINE UNITS

HEAVY DUTY CR. COMP. ENGINE
TYPE "I" GENERATOR

JULY 1907

SHEET NO. 2116

SET NO. 43

5 sets

DIRECT CONNECTED ENGINE UNITS

HEAVY DUTY CR. COMP. ENGINE
TYPE "I" GENERATOR

JULY 1907

SHEET NO. 2416B

ENGINE DATA
120 TO 150 LBS. STEAM

ENGINE			WHEEL		JOURNAL		PINS		Diameter of Shaft in Wheel	PISTON ROD		Connecting Rod Body Smallest Diameter	Diameter H. P. Steam Nozzle	Diameter L. P. Exhaust Nozzle	LARGEST PIECE			Heaviest Piece
H.P.	L.P.	St'ke	Dia.	Wgt.	Dia.	Lgth.	Dia.	Lgth.		H.P.	L.P.				Lgth.	Width	Hgt.	Wgt.
14	28	30	12′	12000	8″	15″	4½″	4½″	10″	2 11/16″	3 3/16″	3¼″	5″	12″	8′ 9″	4′ 8″	7′ 0″	8500
16	32	30	12′	14000	9″	18″	5″	5″	11″	2 13/16″	3⅝″	3⅝″	5″	12″	10′ 0″	4′ 8″	8′ 6″	8700
16	32	36	14′	17000	9″	18″	5″	5″	11″	2 13/16″	3⅝″	3⅝″	5″	12″	10′ 0″	4′ 8″	8′ 6″	8700
18	36	36	14′	21000	11″	20″	5½″	5½″	13″	3 3/16″	3⅞″	4″	6″	14″	10′ 0″	5′ 9″	8′ 6″	12000
20	40	42	16′	32000	13″	24″	6″	6″	15″	3⅜″	4⅜″	4⅜″	7″	15″	12′ 0″	6′ 3″	10′ 0″	16500
22	44	42	16′	37000	15″	24″	6½″	6½″	17″	3⅞″	4⅝″	4⅝″	8″	16″	12′ 0″	6′ 6″	10′ 0″	18500

SET NO. 43

DIRECT CONNECTED ENGINE UNITS

RELIANCE CR. COMP. ENGINES

TYPE "AI" ALTERNATORS

SHEET NO. 2094

MAY 1907

Sets

REYNOLDS RELIANCE CROSS COMPOUND ENGINES
DIRECT CONNECTED TO TYPE "AI" ALTERNATORS 25 CYCLES 2 OR 3 PHASE
120 TO 150 LBS. STEAM

CAPACITY			ENGINE			GENERATOR ENGINE & WHEEL		GENERATOR DATA					
								FRAME	EFFICIENCY			HEATING	
K. W.	R.P.M.	Volts	H. P.	L. P.	Stroke	List Price	Weight		Full Load	¾ Load	½ Load	Full Load 24 Hours	25% Over-load 2 Hours
300	125	2300	16″	32″	36″	$25980	125300	AI 24 96 7½	93.0	92.0	89.5	40°	50°
400	125	2300	18″	36″	36″	29180	149300	AI 24 96 9	93.0	92.0	90.0	35°	45°
500	107	2300	20″	40″	42″	35280	201800	AI 28 100 12	95.0	94.0	92.0	40°	50°
600	107	2300	22″	44″	42″	40180	231000	AI 28 130 10	95.0	94.0	92.0	35°	45°

Prices are for set complete F. O. B. Milwaukee, Wis., including Foundation Bolts, Keys, Pressing Armature on shaft, and Engine as described on Price Sheet No. 2098, viz.: Reliance Cross Compound Direct Connected Engine Data Sheet.

ENGINE DATA

ENGINE			WHEEL		JOURNAL		PINS		Diam. Shaft in Wheel	PISTON RODS		Conn. Rod Body Smallest Dia.	Diam. H. P. Steam Nozzle	Diam. L. P. Exhaust Nozzle	LARGEST PIECE			Heaviest Piece
H.P.	L.P.	Stroke	Dia.	Wgt.	Dia.	Lgth.	Dia.	Lgth.		H.P.	L.P.				Lgth.	Width	Hgt.	Wgt.
16	32	36	14′	17000	9″	18″	4½″	4½″	11″	2 13/16″	3⅝″	3¼″	5″	12″	15′ 6″	3′ 11″	7′ 6″	8500
18	36	36	14′	21000	11″	20″	5″	5″	13″	3 3/16″	3⅞″	3⅝″	6″	14″	15′ 10″	3′ 11″	7′ 6″	10500
20	40	42	16′	32000	13″	24″	5½″	5½″	15″	3⅜″	4⅜″	4″	7″	15″	17′ 0″	4′ 9″	8′ 0″	16500
22	44	42	16″	37000	15″	24″	6″	6″	17″	3⅞″	4⅝″	4⅜″	8″	16″	18′ 6″	4′ 9″	8′ 0″	18500

GX

REYNOLDS HEAVY DUTY CROSS COMPOUND ENGINES
DIRECT CONNECTED TO TYPE "AI" ALTERNATORS 25 CYCLE 2 OR 3 PHASE
120 TO 150 LBS. STEAM

CAPACITY			ENGINE			GENERATOR ENGINE & WHEEL		GENERATOR DATA					
								FRAME	EFFICIENCY			HEATING	
K.W.	R.P.M.	Volts	H. P.	L. P.	Stroke	List Price	Weight		Full Load	¾ Load	½ Load	Full Load 24 Hours	25% Over-load 2 Hours
300	125	2300	16″	32″	36″	$27420	141000	AI 24 96 7½	93.0	92.0	89.5	40°	50°
400	125	2300	18″	36″	36″	31120	160000	AI 24 96 9	93.0	92.0	90.0	35°	45°
500	107	2300	20″	40″	42″	37640	215500	AI 28 100 12	95.0	94.0	92.0	40°	50°
600	107	2300	22″	44″	42″	42840	241000	AI 28 130 10	95.0	94.0	92.0	35°	45°

Prices are for set complete F. O. B. Milwaukee, Wis., including Foundation Bolts, Keys, Pressing Armature on shaft, and Engine as described on Price Sheet No. 2024, viz.: Heavy Duty Cross Compound Direct Connected Engine Data Sheet.

ENGINE DATA

ENGINE			WHEEL		JOURNAL		PINS		Dia. of Shaft in Wheel	PISTON RODS		Conn. Rod Body Smallest Dia.	Diam. H. P. Steam Nozzle	Diam. L. P. Exhaust Nozzle	LARGEST PIECE			Heav-iest Piece
H.P.	L.P.	St'ke	Dia.	Wgt.	Dia.	Lgth.	Dia.	Lgth.		H.P.	L.P.				Lgth.	Width	Hgt.	Wgt.
16	32	36	14′	17000	9″	18″	5″	5″	11″	$2\frac{13}{16}$″	3⅝″	3⅝″	5″	12″	10′ 0″	4′ 8″	8′ 6″	8700
18	36	36	14′	21000	11″	20″	5½″	5½″	13″	$3\frac{3}{16}$″	3⅞″	4″	6″	14″	10′ 0″	5′ 9″	8′ 6″	12000
20	40	42	16′	32000	13″	24″	6″	6″	15″	3⅜″	4⅜″	4⅜″	7″	15″	12′ 0″	6′ 3″	10′ 0″	16500
22	44	42	16′	37000	15″	24″	6½″	6½″	17″	3⅞″	4⅝″	4⅝″	8″	16″	12′ 0″	6′ 6″	10′ 0″	18500

DIRECT CONNECTED ENGINE UNITS
HEAVY DUTY CR. COMP. ENGINES
TYPE "AI" ALTERNATORS

JULY 1907

SHEET NO. 2115

SET No. 43

Sets

HEAVY DUTY "AI" ALTERNATORS
DIRECT CONNECTED ENGINE UNITS

H. H. West Company
Milwaukee