

COUNTERBALANCE EFFECT AT POLISH ROD WITH #8495-B CRANKS

STRUCTURE UNBALANCE OF 700# INCLUDED BELOW

	<u>With #95 Main &amp; Filler Weights</u>		<u>With #78 Main &amp; Filler Weights</u>	
	<u>Pounds</u>	<u>Pounds</u>	<u>Pounds</u>	<u>Pounds</u>
	<u>CBE</u>	<u>Actual Weight</u>	<u>CBE</u>	<u>Actual Weight</u>
	<u>@</u>	<u>of</u>	<u>@</u>	<u>of</u>
	<u>100" Stroke</u>	<u>Counterweights</u>	<u>100" Stroke</u>	<u>Counterweights</u>
Crank Only	7,350		7,350	
Crank Plus 1 Main Weight	9,210	1,170	8,620	795
Crank Plus 2 Main Weights	11,070	2,340	9,880	1,590
Crank Plus 3 Main Weights	12,930	3,510	11,150	2,385
Crank Plus 4 Main Weights	14,790	4,680	12,410	3,180
Crank Plus 4 Main Weights and 1 Filler Weight	15,570	5,175	13,050	3,585
Crank Plus 4 Main Weights and 2 Filler Weights	16,350	5,670	13,690	3,990
Crank Plus 4 Main Weights and 3 Filler Weights	17,120	6,165	14,330	4,395
Crank Plus 4 Main Weights and 4 Filler Weights	17,900	6,600	14,970	4,800
Crank Plus 4 Main Weights and 5 Filler Weights	18,680	7,155	15,610	5,205
Crank Plus 4 Main Weights and 6 Filler Weights	19,460	7,650	16,250	5,610
Crank Plus 4 Main Weights and 7 Filler Weights	20,230	8,145	16,880	6,015
Crank Plus 4 Main Weights and 8 Filler Weights	21,010	8,640	17,520	6,420
Crank Plus 4 Main Weights and 9 Filler Weights	21,790	9,135	18,160	6,825
Crank Plus 4 Main Weights and 10 Filler Weights	22,570	9,630	18,800	7,230
Crank Plus 4 Main Weights and 11 Filler Weights	23,340	10,125	19,430	7,635
Crank Plus 4 Main Weights and 12 Filler Weights	24,120	10,620	20,070	8,040
Crank Plus 4 Main Weights and 13 Filler Weights	24,900	11,115	20,710	8,445
Crank Plus 4 Main Weights and 14 Filler Weights	25,680	11,610	21,350	8,850
Crank Plus 4 Main Weights and 15 Filler Weights	26,460	12,105	21,990	9,255
Crank Plus 4 Main Weights and 16 Filler Weights	27,240	12,600	22,630	9,660

COUNTERBALANCE EFFECT AT POLISH ROD AT MAXIMUM STROKE  
AS WEIGHTS ARE MOVED TOWARD CRANKSHAFT FROM END OF CRANK

## STRUCTURE UNBALANCE OF 700# INCLUDED BELOW

Distance of Counterweights From Crank End	4 Main Weights Only #95	4 Main and 4 Filler Wts. #95	4 Main and 8 Filler Wts. #95	4 Main and 16 Filler Wts. #95	1 Filler Weight Only #95
0"	14,790	17,900	21,010	27,240	780
6"	14,230	17,110	19,970	25,730	720
12"	13,670	16,320	18,940	24,220	660
18"	13,100	15,520	17,900	22,700	600
24"	12,540	14,730	16,860	21,190	540
30"	11,980	13,940	15,830	19,680	490
36"	11,420	13,150	14,790	18,170	430
42"	10,860	12,360	13,750	16,660	370
48"	10,290	11,560	12,710	15,140	310
54"	9,730	10,770	11,680	13,630	250
60" (Max.)	9,170	9,980	10,640	12,120	190

Distance of Counterweights From Crank End	4 Main Weights Only #78	4 Main and 4 Filler Wts. #78	4 Main and 8 Filler Wts. #78	4 Main and 16 Filler Wts. #78	1 Filler Weight Only #78
0"	12,410	14,970	17,520	22,630	640
6"	12,030	14,390	16,750	21,470	590
12"	11,650	13,820	15,980	20,310	540
18"	11,260	13,240	15,210	19,150	490
24"	10,880	12,670	14,440	17,990	440
30"	10,500	12,090	13,670	16,830	390
36"	10,120	11,510	12,900	15,670	350
42"	9,740	10,940	12,130	14,520	300
48"	9,350	10,360	11,360	13,360	250
54"	8,970	9,790	10,590	12,200	200
60"	8,590	9,210	9,820	11,040	150
62"	8,470	9,020	9,560	10,650	140

For 85" Stroke Multiply Above CBE Values By 1.16

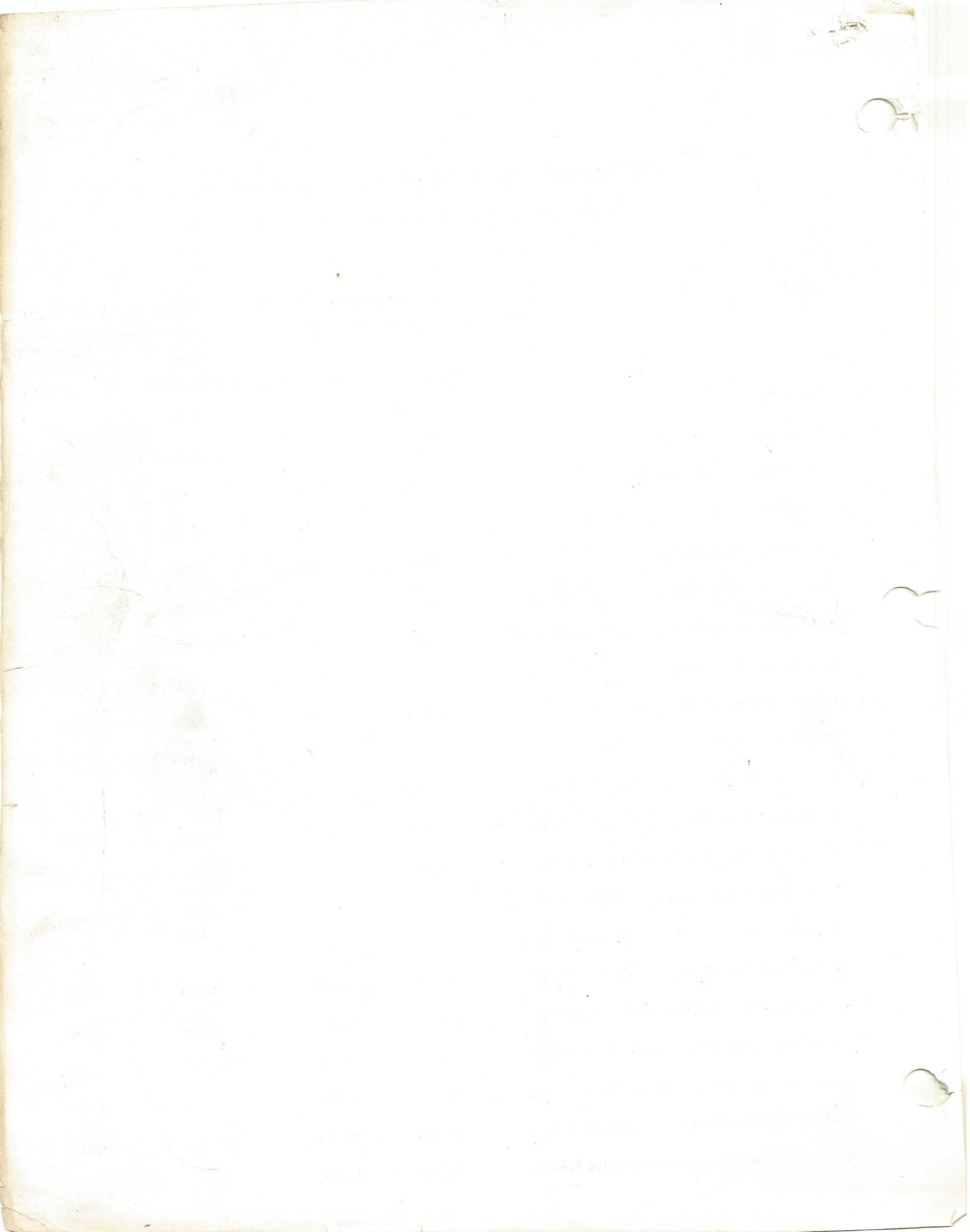
For 70" Stroke Multiply Above CBE Values by 1.38

For 56" Stroke Multiply Above CBE Values by 1.72

COUNTERBALANCE EFFECT AT POLISH ROD WITH #8495-B CRANKS

STRUCTURE UNBALANCE OF 200# INCLUDED BELOW

	<u>With #95 Main &amp; Filler Weights</u>		<u>With #78 Main &amp; Filler Weights</u>	
	<u>Pounds</u>	<u>Pounds</u>	<u>Pounds</u>	<u>Pounds</u>
	<u>CBE</u> <u>@</u> <u>120" Stroke</u>	<u>Actual Weight</u> <u>of</u> <u>Counterweights</u>	<u>CBE</u> <u>@</u> <u>120" Stroke</u>	<u>Actual Weight</u> <u>of</u> <u>Counterweights</u>
Cranks Only	5,740		5,740	
Cranks Plus 1 Main Weight	7,290	1,170	6,790	795
Cranks Plus 2 Main Weights	8,840	2,340	7,850	1,590
Cranks Plus 3 Main Weights	10,380	3,510	8,900	2,385
Cranks Plus 4 Main Weights	11,930	4,680	9,950	3,180
Cranks Plus 4 Main Weights and 1 Filler Weight	12,580	5,175	10,480	3,585
Cranks Plus 4 Main Weights and 2 Filler Weights	13,230	5,670	11,020	3,990
Cranks Plus 4 Main Weights and 3 Filler Weights	13,870	6,165	11,550	4,395
Cranks Plus 4 Main Weights and 4 Filler Weights	14,520	6,600	12,080	4,800
Cranks Plus 4 Main Weights and 5 Filler Weights	15,170	7,155	12,610	5,205
Cranks Plus 4 Main Weights and 6 Filler Weights	15,820	7,650	13,140	5,610
Cranks Plus 4 Main Weights and 7 Filler Weights	16,440	8,145	13,670	6,015
Cranks Plus 4 Main Weights and 8 Filler Weights	17,110	8,640	14,200	6,420
Cranks Plus 4 Main Weights and 9 Filler Weights	17,760	9,135	14,730	6,825
Cranks Plus 4 Main Weights and 10 Filler Weights	18,410	9,630	15,270	7,230
Cranks Plus 4 Main Weights and 11 Filler Weights	19,050	10,125	15,800	7,635
Cranks Plus 4 Main Weights and 12 Filler Weights	19,700	10,620	16,330	8,040
Cranks Plus 4 Main Weights and 13 Filler Weights	20,350	11,115	16,860	8,445
Cranks Plus 4 Main Weights and 14 Filler Weights	21,000	11,610	17,390	8,850
Cranks Plus 4 Main Weights and 15 Filler Weights	21,650	12,015	17,920	9,255
Cranks Plus 4 Main Weights and 16 Filler Weights	22,300	12,600	18,450	9,660



*Sturley*

BETHLEHEM STEEL COMPANY  
Supply Division

INDEX AND CONTROL SHEET

BETHLEHEM BG PUMPING UNITS

PARTS LISTS

<u>Parts</u> <u>Bulletin No.</u>	<u>Description</u>
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PUMPING UNIT MODELS

(Each Parts Bulletin Pages 1 through 6)

*PB-114BG-3.1	114-143BG-74 114-173BG-74
*PB-160BG-3.1	160-173BG-74
*PB-160BG-4.1	160-200BG-74
*PB-160BG-5.1	160-173BG-86 160-212BG-86
*PB-228BG-1.1	228-173BG-74
*PB-228BG-3.1	228-246BG-74 228-246BG-86
*PB-228BG-6.1	228-212BG-100 228-256BG-100
*PB-320BG-2.1	320-256BG-100
*PB-320BG-3.1	320-256BG-120
*PB-456BG-4.1	456-256BG-120
*PB-456BG-8.1	456-304BG-144
*PB-640BG-4.1	640-304BG-144

\*Denotes sheets attached.

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