

Bethlehem PUMPING UNITS

ENGINEERING DATA

456 API SIZE

456,000 In. Lbs. API Peak Torque Pumping Units

GEAR REDUCER DATA

OPTIONAL ITEMS

API Reducer Size	456	Dual Zone Polished Rod Hanger
API Peak Torque @ 20 SPM	456,000 in. lbs.	Triple Zone Polished Rod Hanger
Gear Ratio, Double Reduction	29.04 to 1	Wide Main Base (Portable Type)
Crankshaft Dia.	7"	Crank Guard Rails
V-Belt Sheave - Pitch Dia.	Std. 34" 6D or 8C	Power Assemblies for: Single Cylinder Engines,
	Alternate 47.5", Max. 51.4"	Hi-speed Engines, Electric Motors—
Diameter of Reducer Hi-Speed Shaft	3 $\frac{3}{8}$ "	Elevated or Ground Level.
Distance, Centerline Unit to Centerline Drive	20 $\frac{3}{4}$ "	
Gear Reducer Oil Capacity, U. S. Gal.	55	

STRUCTURE DATA

API Structure Size	365-120	304-120	256-120	
Unit Designation	456-365-120	456-304-120	456-256-120	
API Structure Capacity, lbs.	36,500	30,400	25,600	
Length of Strokes, in.	120, 105, 90, 74	120, 102, 85, 67	120, 102, 85, 67	
Walking Beam Size	30" @ 190#	30" @ 172#	27" @ 160#	
Saddle Bearing Type	BUSHING TYPE, FACTORY LUBRICATED			
Projected Area, sq. in.	150	125	125	
Tail Bearing Type	BRONZE TYPE, FACTORY LUBRICATED			
Projected Area, sq. in.	80	80	60	
Wrist Pin Bearing - Type	SPHERICAL ROLLER BEARING, FACTORY LUBRICATED, TAPERED PIN, REMOVED HYDRAULICALLY			
Size	1SL	2SL	2SL	
Pitman Size, Pipe O. D.	5" x Heavy	4" x Heavy	4" x Heavy	
Wireline Hanger	1 $\frac{1}{4}$ " x 34"-0"	1 $\frac{1}{4}$ " x 29'-0"	1 $\frac{1}{8}$ " x 29"-0"	
Cranks	94110-B	8495-B	8495-B	
Structure Unbalance, lbs.	750	25	200	

COUNTERBALANCE DATA

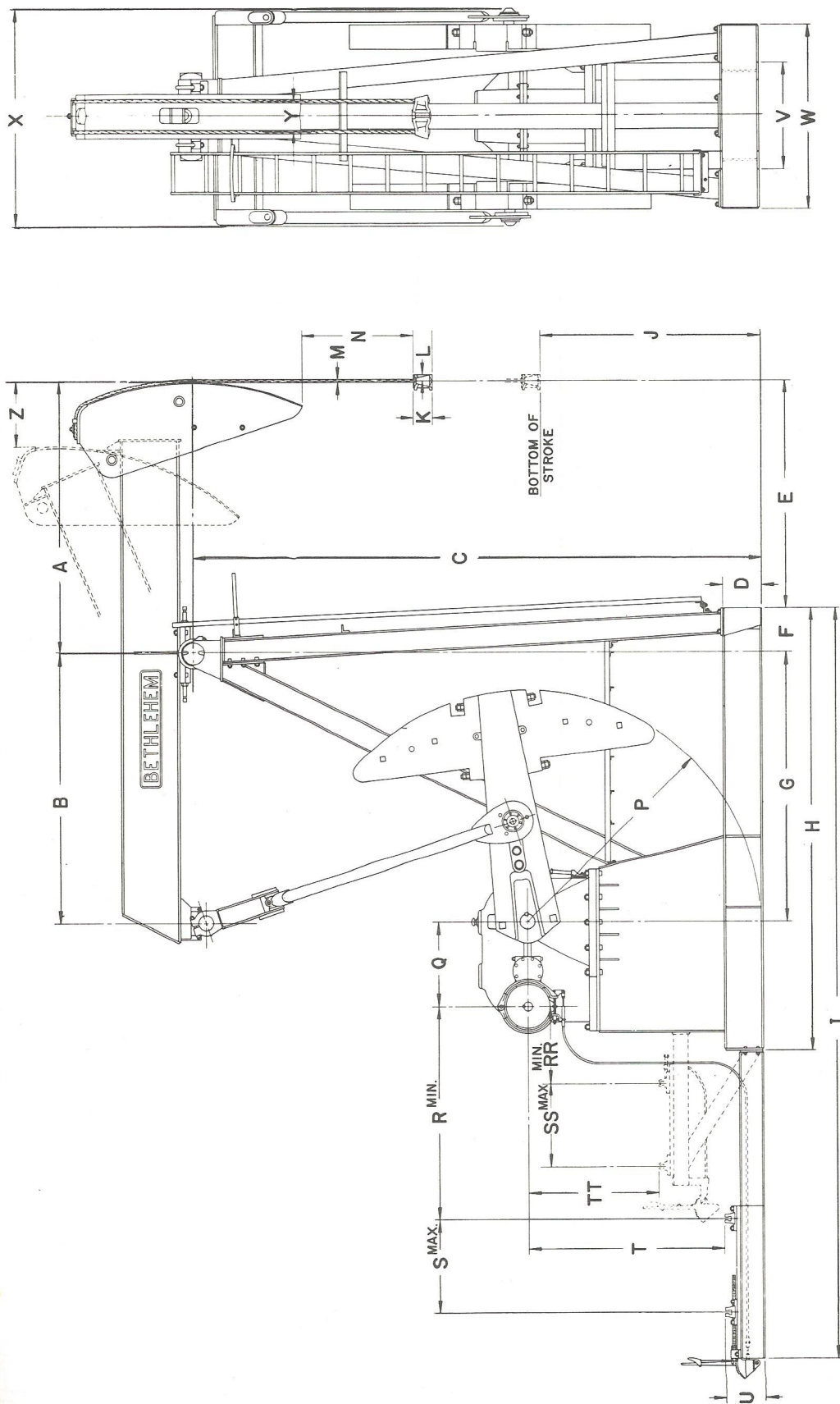
Pounds of effective counterbalance at Polished Rod at Maximum Stroke, Includes Structure Unbalance.

Cranks Only	8,530	5,565	5,740	
4 No. 95 Main Weights	15,810	11,755	11,930	
4 No. 95 Filler Weights	18,860	14,345	14,520	
8 No. 95 Filler Weights	21,910	16,935	17,110	
12 No. 95 Filler Weights	24,960	19,525	19,700	
14 No. 95 Filler Weights	26,485	20,825	21,000	
16 No. 95 Filler Weights	28,010			
One Only Filler Weight	760	650	650	
4 No. 78 Main Weights	13,470	9,775	9,950	
4 No. 78 Filler Weights	15,970	11,905	12,080	
8 No. 78 Filler Weights	18,470	14,025	14,200	
12 No. 78 Filler Weights	20,970	16,155	16,330	
14 No. 78 Filler Weights	22,220	17,215	17,390	
16 No. 78 Filler Weights	23,470			
One Only Filler Weight	625	530	530	
4 No. Main Weights				
4 No. Filler Weights				
8 No. Filler Weights				
12 No. Filler Weights				
One Only Filler Weight				

Bethlehem PUMPING UNITS

DIMENSIONAL DATA

456,000 In. Lbs. Peak Torque Pumping Units



Unit	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z	RR	SS	TT
304-144																												
253-144																												
365-120	12'-8"	10'-0"	22'-0 1/2"	16"	10'-7"	25"	10'-0"	16'-10 1/2"	27'-5"	80 1/2"	7 1/2"	2 1/2"	1 1/4"	51 1/2"	110"	38 3/8"	89 3/8"	48 1/2"	93"	18"	46 3/4"	6'-8"	8'-3 1/4"	12"	33"	30"	37 3/4"	66 1/2"
304-120	12'-11"	9'-3"	19'-4 1/2"	"	11'-5"	18"	9'-3"	15'-6 1/2"	24'-10"	"	"	"	"	22"	95"	"	74 1/2"	"	78"	"	"	6'-3 3/4"	8'-1 3/4"	"	34"	"	"	51 1/2"
256-120	"	"	"	"	"	"	"	"	"	80"	"	"	1 1/8"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
213-120																												
365-100																												
298-100																												
256-100																												
298-86																												

Note: Dimensions I, R, S and T are for Hi-speed Engine Only.