



Maximizer[®] Pumping Units



Introduction

Increase production and reduce energy costs with the efficient design of our Maximizer unit. Clients can be confident knowing that each product is designed to exceed the latest API Specification 11E and is backed by the API Specification Q1 Quality Assurance Program.

The Maximizer unit goes beyond conventional geometry, which typically divides the crank rotation evenly with 180° on the upstroke and downstroke. The improved conventional geometry of the Maximizer unit makes it one of the most versatile products on the market. This surface unit devotes a full 186° of its clockwise crank rotation to the upstroke to maximize production.

Maximizer Pumping Units

Features, Advantages, and Benefits

- The Maximizer unit can be run in both directions, with a polished rod motion that is favorable to both steel or fiberglass rods.
- An improved phase I geometry design increases production, saves energy, and reduces operating costs.
- The API approved double-helical involute gear design is the most efficient form of gear reduction and provides greater longevity.
- Gravity-fed positive oiling system lubricates at speeds as low as one stroke per minute without additional modification or parts required.
- The unit can be set on a two-point foundation, saving concrete costs and installation time.

Gear Reducer

The Maximizer pumping unit has a two-piece reducer case and bolt-on crank arm attachment, each of which can be easily and quickly changed in the field, reducing costly downtime.

- Inside the gearbox is a precisely engineered gear train featuring tough, rugged, double-reduction, double-helical, involute gear design.
- Strong 42CrMo heat-treated alloy steel pinions and ductile iron gears, machined to precise tolerances and assembled in-house, result in optimal fit and high efficiency.
- Anti-friction bearings provide higher efficiency.
- Each bearing is set in a carrier for ease of removal and installation.
- The smooth and efficient gear reducer reduces noise and vibration, and every gearbox is thoroughly factory tested.
- The unique gearbox lubrication system provides an ample supply of oil to each bearing, regardless of rotational direction or pumping speed, and lubricates at speeds as low as one stroke per minute without modification.
- The positive stop pawl of the high-capacity industrial brakes can be engaged with notches in the brake drum for added safety.
- All components are designed to exceed API Specification 11E and backed by API Specification Q1 Quality Assurance Program.
- The gear reducer is available in sizes 57 through 1824.

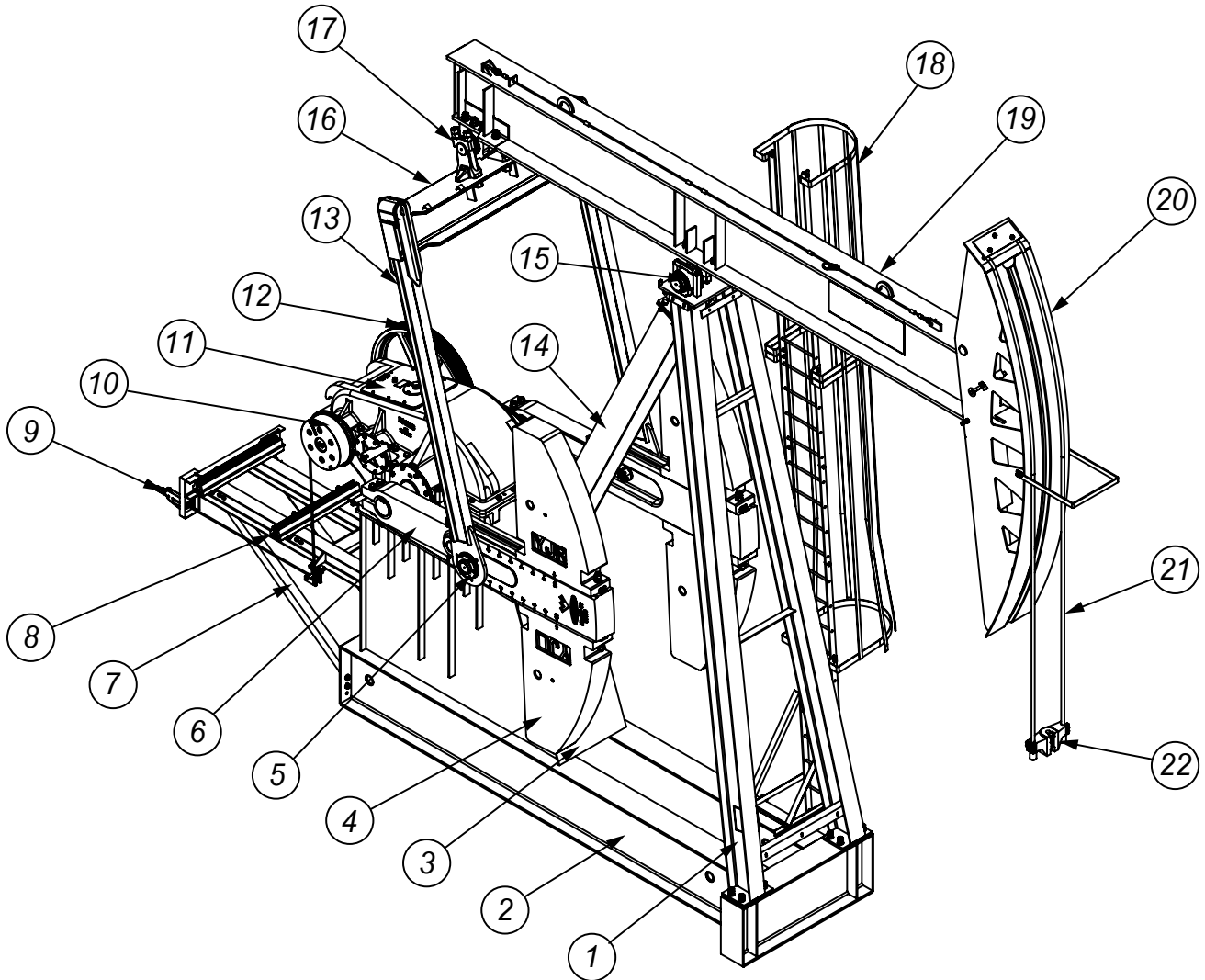
Structural Bearings

- Anti-friction bearings on the Maximizer unit enhance drive efficiency and require minimal maintenance with reliable performance.
- All Maximizer units have high-efficiency roller bearings.
- Crank pin bearings are self-aligning, spherical roller bearings with a one-piece outer race that eliminates the need for field adjustment.
- All units use tapered roller bearings in the center and equalizer bearing assemblies.
- The upper Pitman connection used on all Maximizer units is uniquely designed for easy assembly and minimal maintenance.



Maximizer Pumping Units

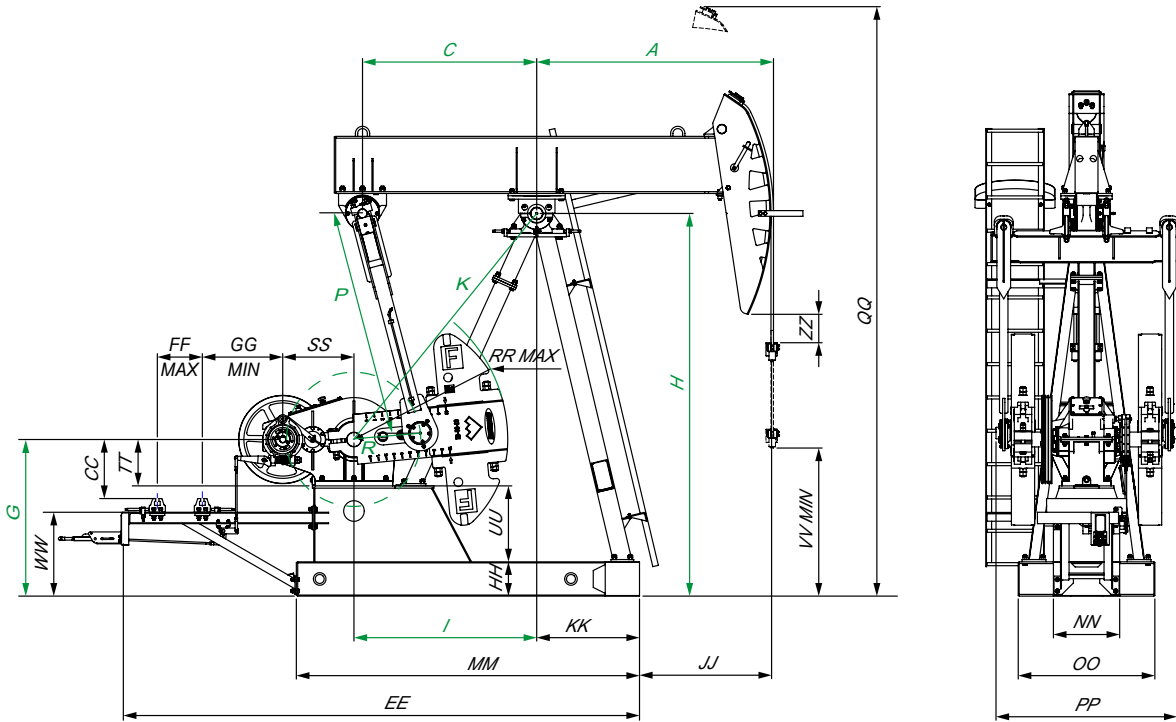
Parts Identification



Maximizer Pumping Units

1	Sampson post A-leg	9	Brake lever	16	Equalizer beam
2	Main frame	10	Brake assembly	17	Equalizer bearing assembly
3	Reducer sub-base	11	Gear reducer	18	Sampson post ladder
4	Counterweights	12	Reducer sheave	19	Walking beam
5	Crank pin assembly	13	Pitman arm	20	Horsehead
6	Crank	14	Sampson post support leg	21	Wireline
7	High-mount base extension	15	Center bearing assembly	22	Polish rod hanger
8	Motor rails				

Maximizer Pumping Units



CO Dimensional Data with API Dimensions

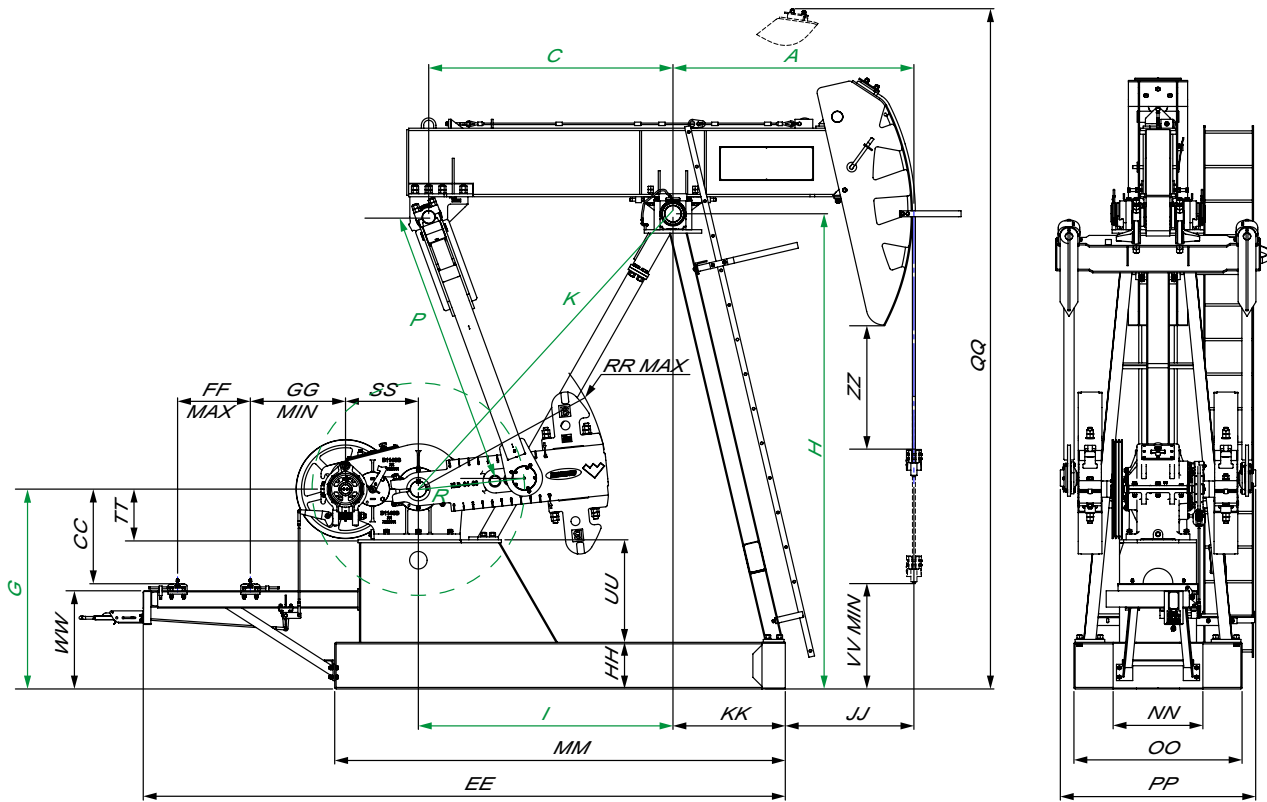
Size	API Dimensional Data (in.)							
	A	C	G	H	I	K	P	R
57-109-48	60.88	60.00	53.98	131.88	63.00	35.44	78.27	23.00
80-109-48	60.88	60.00	53.98	131.88	63.00	35.44	78.27	23.00
57-76-54	68.50	60.00	53.98	131.88	63.00	35.44	78.27	23.00
80-133-54	68.50	60.00	53.98	131.88	63.00	35.44	78.27	23.00
80-119-64	81.19	60.00	53.98	131.88	63.00	35.44	78.27	23.00

Size	Dimensional Data (in.)									
	CC	EE	FF MAX	GG MIN	HH	JJ	KK	MM	NN	OO
57-109-48	20.38	134.72	15.00	26.25	11.81	25.44	35.44	118.25	22.81	47.06
80-109-48	20.38	134.72	15.00	26.25	11.81	25.44	35.44	118.25	22.81	47.06
57-76-54	20.38	134.72	15.00	26.25	11.81	33.06	35.44	118.25	22.81	47.06
80-133-54	20.38	134.72	15.00	26.25	11.81	33.06	35.44	118.25	22.81	47.06
80-119-64	20.38	134.72	15.00	26.25	11.81	45.75	35.44	118.25	22.81	47.06

Size	Dimensional Data (in.)								
	PP	QQ	RR MAX	SS	TT	UU	VV MIN	WW	ZZ
57-109-48	62.44	183.39	53.00	24.55	16.00	26.19	59.44	28.88	15.16
80-109-48	62.44	183.39	53.00	24.55	16.00	26.19	59.44	28.88	15.16
57-76-54	62.44	188.59	53.00	24.55	16.00	26.19	48.81	28.88	14.68
80-133-54	62.44	188.59	53.00	24.55	16.00	26.19	48.81	28.88	14.68
80-119-64	62.44	196.63	53.00	24.55	16.00	26.19	48.81	28.88	9.75



Maximizer Pumping Units



Maximizer Pumping Units

CA Dimensional Data with API Dimensions

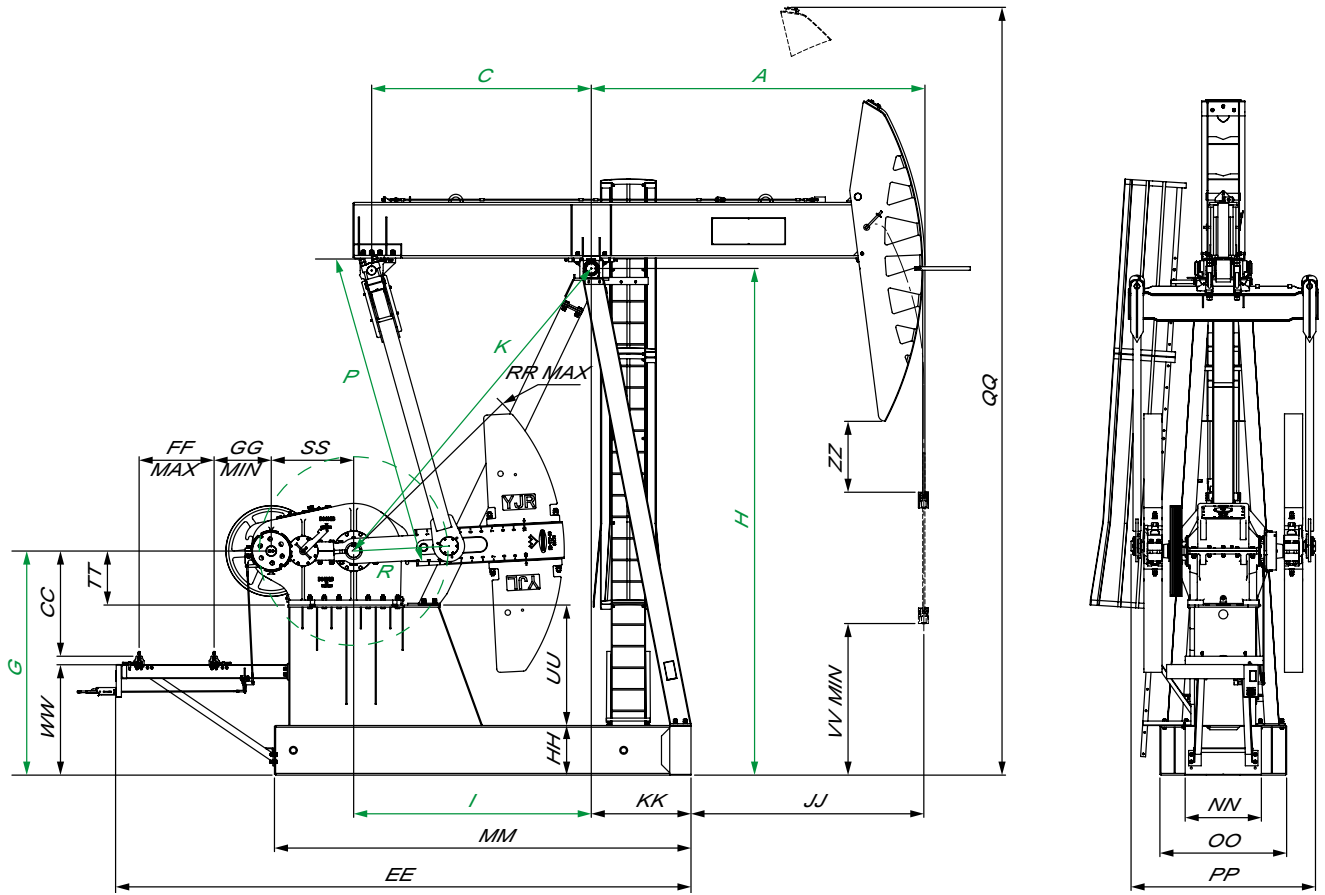
Size	API Dimensional Data (in.)							
	A	C	G	H	I	K	P	R
114-143-64 114-173-64	81.38	92.50	67.50	160.50	86.00	126.67	93.88	36.00
114-143-74	81.38	82.50	67.50	160.50	86.00	126.67	93.88	36.00
114-119-86	94.50	82.50	67.50	160.50	86.00	126.67	93.88	36.00
114-119-100	110.00	82.50	67.50	160.50	86.00	126.67	93.88	36.00

Size	Dimensional Data (in.)									
	CC	EE	FF MAX	GG MIN	HH	JJ	KK	MM	NN	OO
114-143-64 114-173-64	31.96	152.19	33.00	25.50	15.75	43.44	37.94	152.19	30.31	56.75
114-143-74	31.96	152.19	33.00	25.50	15.75	43.44	37.94	152.19	30.31	56.75
114-119-86	31.96	152.19	33.00	25.50	15.75	56.56	37.94	152.19	30.31	56.75
114-119-100	31.96	152.19	33.00	25.50	15.75	72.06	37.94	152.19	30.31	56.75

Size	Dimensional Data (in.)								
	PP	QQ	RR MAX	SS	TT	UU	VV MIN	WW	ZZ
114-143-64 114-173-64	66.00	227.75	64.00	24.60	17.13	34.63	38.31	25.19	42.88
114-143-74	66.00	230.50	64.00	24.60	17.13	34.63	34.63	25.19	41.88
114-119-86	66.00	241.00	64.00	24.60	17.13	34.63	36.44	25.19	28.88
114-119-100	66.00	254.00	64.00	24.60	17.13	34.63	36.81	25.19	14.38

Maximizer Pumping Units

Maximizer
Pumping Units





Maximizer Pumping Units

6TC, 5TC, 4TC, and 3TC Dimensional Data with API Dimensions

Family	Size	API Dimensional Data (in.)								Dimensional Data (in.)																		
		A	C	G	H	I	K	P	R	CC	EE	FF MAX	GG MIN	HH	JJ	KK	MM	NN	OO	PP	QQ	RR MAX	SS	TT	UU	VV MIN	WW	ZZ
6TC	640-365-192	211.00	121.50	121.28	314.31	132.00	233.85	194.50	53.00	60.00		58.50	19.13	27.56	149.63	61.38	195.38	42.31	83.13	99.38	490.00	117.00	45.79	30.00	63.75	86.31	61.63	31.50
	912-365-192	211.00	121.50	121.28	314.31	132.00	233.85	194.50	53.00	60.00		58.50	19.13	27.56	149.63	61.38	195.38	42.31	83.13	107.38	490.00	117.00	45.79	30.00	63.75	86.31	61.63	31.50
	912-427-168	184.75	121.50	121.28	314.31	132.00	233.85	194.50	53.00	60.00		58.50	19.13	27.56	123.63	61.38	195.38	42.31	83.13	107.38	466.63	117.00	45.79	30.00	63.75	84.88	61.63	51.75
	1280-365-192	211.00	121.50	124.28	314.31	132.00	231.38	191.50	53.00	63.50		55.75	29.00	27.56	149.63	61.38	310.25	52.31	83.13	117.00	488.50	117.00	52.54	33.00	63.75	84.88	61.56	29.13
	1824-427-216	211.00	121.50	127.28	314.31	132.00	228.92	189.00	59.00	65.75		51.13	26.75	27.56	149.63	61.38	310.25	52.31	83.13	131.00	500.00	117.00	58.86	36.00	63.75	52.25	61.56	34.13
5TC	912-305-192	211.00	122.00	124.49	281.50	132.00	205.10	159.00	53.00	58.50	370.88	71.00	57.00	27.56	155.65	55.38	231.38	42.33	70.38	105.50	455.00	117.00	45.79	30.00	66.94	53.25	61.65	29.25
	912-365-168	184.75	122.00	124.49	281.50	132.00	233.90	159.00	53.00	58.50	370.88	71.00	57.00	27.56	129.33	55.44	231.38	42.33	70.38	105.50	433.65	117.00	45.79	30.00	66.94	63.88	61.65	39.38
	912-427-144	158.38	122.00	124.49	281.50	132.00	205.10	159.00	53.00	58.50	370.88	71.00	57.00	27.56	103.00	55.38	231.38	42.33	70.38	105.50	412.65	117.00	45.79	30.00	66.94	93.13	61.65	34.38
	912-365-144	158.38	122.00	124.49	281.50	132.00	205.10	159.00	53.00	58.50	370.88	71.00	57.00	27.56	103.00	55.38	231.38	42.33	70.38	105.50	413.38	117.00	45.79	30.00	66.94	93.13	61.65	34.25
	640-305-192	211.00	122.00	124.49	281.50	132.00	205.10	159.00	53.00	58.50	370.88	71.00	57.00	27.56	155.65	55.38	231.38	42.33	70.38	102.50	456.13	117.00	45.79	30.00	66.94	53.25	61.65	29.25
	640-365-168	184.75	122.00	124.49	281.50	132.00	205.10	159.00	53.00	58.50	370.88	71.00	57.00	27.56	129.33	55.44	231.38	42.33	70.38	101.65	433.65	117.00	45.79	30.00	66.94	63.88	61.65	39.38
	640-305-168	184.75	122.00	124.49	281.50	132.00	205.10	159.00	53.00	58.50	370.88	71.00	57.00	27.56	129.33	55.44	231.38	42.33	70.38	101.65	433.13	117.00	45.79	30.00	66.94	63.88	61.65	39.38
	640-365-144	158.38	122.00	124.49	281.50	132.00	205.10	159.00	53.00	58.50	370.88	71.00	57.00	27.56	103.00	55.38	231.38	42.33	70.38	101.56	413.38	117.00	45.79	30.00	66.94	93.13	61.65	33.65
	640-305-144	158.38	122.00	124.49	281.50	132.00	205.10	159.00	53.00	58.50	370.88	71.00	57.00	27.56	103.00	55.38	231.38	42.33	70.38	101.56	412.50	117.00	45.79	30.00	66.94	93.13	61.65	34.25
	640-305-120	132.00	122.00	124.49	281.50	132.00	205.10	159.00	53.00	58.50	370.88	71.00	57.00	27.56	76.65	55.38	231.38	42.33	70.38	101.56	391.50	117.00	45.79	30.00	66.94	93.69	61.65	57.88
	456-305-168	184.75	122.00	124.49	281.50	132.00	206.60	161.00	53.00	56.50	370.88	71.00	62.50	27.56	129.33	55.44	231.38	42.33	70.38	90.56	433.50	117.00	39.92	28.00	66.94	63.81	61.65	39.38
	456-365-144	158.38	122.00	122.49	281.50	132.00	206.60	161.00	53.00	56.50	370.88	71.00	62.50	27.56	103.00	55.38	231.38	42.33	70.38	90.56	412.50	117.00	39.92	28.00	66.94	93.13	61.65	34.25
456-305-144	158.38	122.00	122.49	281.50	132.00	206.60	161.00	53.00	56.50	370.88	71.00	62.50	27.56	103.00	55.38	231.38	42.33	70.38	90.56	412.50	117.00	39.92	28.00	66.94	93.13	61.65	30.88	
4TC	456-256-144	158.38	99.13	107.03	254.00	110.00	183.60	147.63	43.00	52.50	331.88	71.00	58.00	23.65	115.25	43.13	191.75	37.81	68.00	89.94	386.65	99.00	39.92	28.00	55.44	67.81	49.94	34.38
	456-365-120	132.00	122.00	122.49	281.50	132.00	206.60	161.00	53.00	56.50	370.88	71.00	62.50	27.56	76.65	55.38	231.38	42.33	70.38	90.56	391.50	117.00	39.92	28.00	66.94	92.88	61.65	58.65
	456-305-120	132.00	99.13	107.03	254.00	110.00	183.60	147.63	43.00	52.50	331.88	71.00	58.00	23.65	92.88	43.13	191.75	37.81	68.00	89.94	363.75	99.00	39.92	28.00	55.44	67.19	49.94	57.88
	456-256-120	132.00	99.13	107.03	254.00	110.00	183.60	147.63	43.00	52.50	331.88	71.00	58.00	23.65	92.88	43.13	191.75	37.81	68.00	89.94	364.88	99.00	39.92	28.00	55.44	67.19	49.94	57.88
	320-256-144	158.38	99.13	103.03	254.00	110.00	186.80	151.50	43.00	48.50	331.88	71.00	62.50	23.65	115.25	43.13	191.75	37.81	68.00	85.33	386.75	99.00	35.67	24.00	55.44	68.25	49.94	34.75
	320-213-144	158.38	99.13	103.03	254.00	110.00	186.80	151.50	43.00	48.50	331.88	71.00	62.50	23.65	115.25	43.13	191.75	37.81	68.00	85.33	386.75	99.00	35.67	24.00	55.44	68.25	49.94	34.00
	320-305-120	132.00	99.13	103.03	254.00	110.00	186.80	151.50	43.00	48.50	331.88	71.00	62.50	23.65	92.88	43.13	191.75	37.81	68.00	85.33	365.38	99.00	35.67	24.00	55.44	67.33	49.94	59.13
	320-256-120	132.00	99.13	103.03	254.00	110.00	186.80	151.50	43.00	48.50	331.88	71.00	62.50	23.65	92.88	43.13	191.75	37.81	68.00	85.33	365.38	99.00	35.67	24.00	55.44	67.33	49.94	59.25
	320-305-100	110.00	99.13	103.03	254.00	110.00	186.80	151.50	43.00	48.50	331.88	71.00	62.50	23.65	66.88	43.13	191.75	37.81	68.00	85.33	347.25	99.00	35.67	24.00	55.44	64.88	49.94	56.75
	228-213-120	132.00	99.13	103.03	254.00	110.00	186.80	151.50	43.00	48.50	331.88	71.00	64.50	23.65	92.88	43.13	191.75	37.81	68.00	77.69	365.38	99.00	33.31	24.00	55.44	67.33	49.94	58.65
228-213-100	110.00	99.13	103.03	254.00	110.00	186.80	151.50	43.00	48.50	331.88	71.00	64.50	23.65	66.88	43.13	191.75	37.81	68.00	77.69	347.25	99.00	33.31	24.00	55.44	64.88	49.94	80.75	
3TC	228-246-86	94.50	83.00	83.12	212.00	90.13	157.30	128.00	36.00	36.88	316.50	71.00	60.00	17.69	53.25	41.25	168.00	33.00	60.00	73.50	293.13	76.00	33.31	24.00	41.44	53.56	43.13	66.65
	160-173-100	110.00	83.00	79.12	212.00	90.13	160.60	132.00	36.00	32.88	316.50	71.00	62.00	17.69	68.75	41.25	168.00	33.00	60.00	64.50	306.75	76.00	30.20	20.00	41.44	54.44	43.13	51.25
	160-173-86	94.50	83.00	79.12	212.00	90.13	160.60	132.00	36.00	32.88	316.50	71.00	62.00	17.69	53.25	41.25	168.00	33.00	60.00	64.50	414.50	76.00	30.20	20.00	41.44	53.56	43.13	65.88
	160-200-74	81.38	83.00	79.12	212.00	90.13	160.60	132.00	36.00	32.88	316.50	71.00	62.00	17.69	40.06	41.33	168.00	33.00	60.00	64.50	282.88	76.00	30.20	20.00	41.44	51.50	43.13	79.63
	160-143-64	81.38	94.00	79.12	212.00	90.13	160.60	132.00	36.00	32.88	316.50	71.00	74.00	17.69	40.06	41.33	168.00	33.00	60.00	64.50	279.88	76.00	30.20	20.00	41.44	55.25	159.00	79.63



Maximizer Pumping Units

Specifications

API Size	Maximum Polished Rod Capacity (lb)	Standard Strokes—Fourth Stroke Optional (in.)	Torque Factor at 90°—Fourth Stroke Optional (in.)	Wireline Size (in.)	Wireline Center (in.)
144-143-064	14,300	64, 56, 46	30, 26, 22	1.00 × 286.00	12.00
114-173-064	17,300	64, 56, 46	30, 26, 22	1.00 × 286.00	12.00
114-143-074	14,300	74, 63, 52	35, 30, 26	1.00 × 286.00	12.00
114-119-086	11,900	86, 73, 61	40, 35, 30	1.00 × 286.00	12.00
114-119-100	11,900	100, 85, 71	47, 41, 34	1.00 × 286.00	12.00
160-143-064	14,300	64, 55, 46	31, 26, 22	1.00 × 360.00	12.00
160-200-074	20,000	74, 63, 52	35, 30, 25	1.00 × 360.00	12.00
160-173-086	17,300	86, 73, 61	41, 35, 29	1.00 × 360.00	12.00
160-173-100	17,300	100, 85, 71	47, 41, 34	1.00 × 360.00	12.00
228-246-086	24,600	86, 73, 61	41, 35, 29	1.00 × 360.00	12.00
228-213-100	21,300	100, 86, 73	47, 41, 35	1.25 × 420.00	12.00
228-213-120	21,300	120, 103, 87	57, 50, 43	1.25 × 420.00	16.00
320-305-100	30,500	100, 86, 73	47, 41, 35	1.25 × 420.00	12.00
320-305-120	30,500	120, 103, 87	57, 50, 43	1.25 × 420.00	16.00
320-256-120	25,600	120, 103, 87	57, 50, 43	1.25 × 420.00	16.00
320-213-144	21,300	144, 124, 105	68, 60, 51	1.25 × 420.00	16.00
320-256-144	25,600	144, 124, 105	68, 60, 51	1.25 × 420.00	16.00
456-256-120	25,600	120, 103, 87	57, 50, 43	1.25 × 420.00	16.00
456-305-120	30,500	120, 103, 87	57, 50, 43	1.25 × 420.00	16.00
456-365-120	36,500	120, 103, 86	57, 50, 42	1.25 × 420.00	16.00
456-256-144	25,600	144, 124, 105	68, 60, 51	1.25 × 420.00	16.00
456-305-144	30,500	144, 123, 104	68, 59, 51	1.25 × 420.00	16.00
456-365-144	36,500	144, 123, 104	68, 59, 51	1.25 × 420.00	16.00
456-305-168	30,500	168, 144, 121	80, 69, 59	1.25 × 480.00	16.00
640-305-120	30,500	120, 103, 86	57, 50, 42	1.25 × 420.00	16.00
640-305-144	30,500	144, 123, 104	68, 59, 51	1.25 × 420.00	16.00
640-365-144	36,500	144, 123, 104	68, 59, 51	1.25 × 420.00	16.00
640-305-168	30,500	168, 144, 121	80, 69, 59	1.25 × 480.00	16.00
640-365-168	36,500	168, 144, 121	80, 69, 59	1.25 × 480.00	16.00
640-365-192	36,500	192, 165, 138	91, 80, 68	1.25 × 504.00	16.00
912-365-144	36,500	144, 123, 104	68, 59, 51	1.25 × 420.00	16.00
912-427-144	42,700	144, 123, 104	68, 59, 51	1.25 × 420.00	16.00
912-365-168	36,500	168, 144, 121	80, 69, 59	1.25 × 480.00	16.00
912-427-168	42,700	168, 144, 121	80, 70, 59	1.25 × 504.00	16.00
912-305-192	30,500	192, 164, 138	91, 79, 67	1.25 × 504.00	16.00
912-365-192	36,500	192, 165, 138	92, 80, 68	1.25 × 504.00	16.00
1280-365-192	36,500	192, 165, 139	92, 80, 68	1.25 × 504.00	16.00
1824-427-216	42,700	216, 188, 161	102, 90, 78	1.25 × 564.00	16.00

Maximum Effective Counterbalance*

Calculate ECB for other crank arm positions using the Effective Counterbalance Chart. When selecting counterweights, the value in the table must be equal to or greater than the required counterbalance.

API Size	Structural imbalance	Crank number	Crank only	4-B	4-D	4-F	4-H	4-J	4-L	4-N	4-P		
80-119-64	232	KB-53-23	2870	5040	5760	6430	7000	7760	8320	9310	9860		
			3890	6880	7890	8810	9600	10660	11440	12800	13560		
			6260	11190	12840	14350	15660	17400	18680	20930	22180		
API Size	Structural imbalance	Crank number	Crank only	4-B	4-D	4-F	4-H	4-J	4-L	4-N	4-P	4-R	
114-143-64	1117	KLB-64-36	3520	6310	7270	8200	9010	10070	10890	12390	13190		
			3860	7060	8160	9220	10150	11360	12300	14020	14930		
			4360	8130	9430	10670	11770	13200	14310	16330	17410		
114-143-74	843	KLB-64-36	2930	5370	6210	7010	7720	8640	9350	10660	11360	13080	
			3250	6050	7020	7940	8760	9820	10640	12150	12950	14930	
			3700	7020	8160	9260	10230	11490	12460	14240	15190	17540	
114-119-86	461	KLB-64-36	2260	4360	5080	5770	6380	7180	7790	8920	9510	11000	
			2530	4950	5780	6570	7280	8190	8900	10200	10880	12590	
			2920	5780	6760	7710	8540	9630	10460	12000	12820	14840	
114-119-100	98	KLB-64-36	1640	3440	4060	4660	5180	5870	6390	7360	7870	9150	
			1880	3950	4670	5350	5950	6740	7350	8460	9050	10520	
			2210	4670	5510	6320	7040	7970	8690	10010	10710	12450	
API Size	Structural imbalance	Crank number	Crank only	4-B	4-D	4-F	4-H	4-J	4-L	4-N	4-P	4-PJ	4-RJ
160-143-64	1371	KB-76-36	7070	10370	11520	12660	13670						
			7950	11760	13090	14400	15560						
			9180	13700	15280	16830	18210						
160-173-86	657	KB-76-36	4940	7430	8290	9150	9910	10880	11660	13110	13860	14310	16390
			5620	8490	9490	10480	11360	12490	13390	15070	15940	16450	18870
			6560	9980	11170	12340	13390	14730	15800	17800	18830	19450	22320
160-200-74	1044	KB-76-36	6020	8910	9910	10900	11790	12920	13820	15510	16380	16900	19320
			6810	10140	11310	12450	13470	14790	15830	17780	18790	19390	22190
			7900	11870	13250	14610	15830	17390	18630	20950	22150	22860	26200

*At the polished rod at maximum stroke, in pounds



Maximizer Pumping Units

Maximum Effective Counterbalance* (continued)

Calculate ECB for other crank arm positions using the Effective Counterbalance Chart.

When selecting counterweights, the value in the table must be equal to or greater than the required counterbalance.

API Size	Structural imbalance	Crank number	Crank only	4-B	4-D	4-F	4-H	4-J	4-L	4-N	4-P	4-PJ	4-RJ	4-XJ
228-213-100	1504	KB-99-43	10040	12930	13960	15010	15960	17160	18140	20030		20980		
			11260	14570	15750	16950	18030	19410	20530	22690		23770		
			12920	16790	18170	19570	20840	22450	23760	26280		27550		
228-213-120	559	KB-99-43	7670	10080	10940	11810	12600	13610	14420	16000	16790	16790	18770	
			8690	11450	12430	13430	14330	15480	16410	18210	19120	19110	21380	
			10070	13300	14450	15610	16670	18010	19100	21210	22270	22260	24920	
228-246-86	684	KB-76-36	4970	7460	8330	9180	9940	10920	11690	13140		14340	16430	22220
			5650	8520	9520	10510	11390	12520	13420	15100		16490	18900	25600
			6590	10000	11200	12370	13420	14760	15830	17830		19480	22350	30310
API Size	Structural imbalance	Crank number	Crank only	4-B	4-D	4-F	4-H	4-J	4-L	4-N	4-PJ	4-RJ	4-XJ	
320-213-144	-180	KB-99-43	5750	7760	8470	9200	9860	10690	11370	12680	13340	15000	20230	
			6600	8900	9710	10540	11300	12250	13030	14530	15280	17180	23160	
			7750	10440	11390	12370	13250	14370	15280	17030	17910	20120	27120	
320-256-120	608	KB-99-43	7720	10130	10990	11860	12650	13660	14470	16040	16830	18820	25100	
			8740	11500	12480	13480	14380	15530	16460	18260	19160	21430	28610	
			10120	13350	14500	15660	16720	18060	19150	21260	22310	24970	33360	
320-256-144	-180	KB-99-43	5750	7760	8470	9200	9860	10690	11370	12680	13340	15000	20230	
			6600	8900	9710	10540	11300	12250	13030	14530	15280	17180	23160	
			7750	10440	11390	12370	13250	14370	15280	17030	17910	20120	27120	
320-305-100	1586	KB-99-43	10120	13020	14050	15090	16040	17240	18220	20110	21060	23440	30970	
			11350	14660	15830	17030	18110	19490	20610	22770	23850	26580	35190	
			13000	16870	18250	19650	20920	22530	23840	26360	27630	30820	40890	
320-305-120	608	KB-99-43	7720	10130	10990	11860	12650	13660	14470	16040	16830	18820	25100	
			8740	11500	12480	13480	14380	15530	16460	18260	19160	21430	28610	
			10120	13350	14500	15660	16720	18060	19150	21260	22310	24970	33360	

*At the polished rod at maximum stroke, in pounds

Maximizer Pumping Units

Maximum Effective Counterbalance* (continued)

Calculate ECB for other crank arm positions using the Effective Counterbalance Chart.

When selecting counterweights, the value in the table must be equal to or greater than the required counterbalance.

API Size	Structural imbalance	Crank number	Crank only	4-B	4-D	4-F	4-H	4-J	4-L	4-N	4-PJ	4-RJ	4-XJ
456-256-120	613	KB-99-43	7730	10140	11000	11870	12660	13660	14480	16050	16840	18830	25100
			8740	11500	12480	13480	14390	15530	16470	18260	19170	21440	28610
			10130	13350	14500	15670	16720	18060	19160	21260	22320	24970	33370
456-256-144	-142	KB-99-43	5780	7800	8510	9240	9900	10730	11410	12720	13380	15040	20270
			6630	8930	9750	10580	11340	12290	13070	14570	15320	17210	23190
			7790	10470	11430	12400	13280	14400	15310	17070	17950	20160	27150
456-305-120	613	KB-99-43	7730	10140	11000	11870	12660	13660	14480	16050	16840	18830	25100
			8740	11500	12480	13480	14390	15530	16470	18260	19170	21440	28610
			10130	13350	14500	15670	16720	18060	19160	21260	22320	24970	33370
456-305-144	534	KB-117-53	8610	11060	11940	12850	13680	14730	15590	17280	17890	19890	26610
			9790	12610	13620	14660	15620	16820	17810	19740	20440	22740	30440
			11430	14740	15930	17150	18280	19690	20850	23120	23950	26650	35710
456-305-168	-470	KB-117-53	6450	8550	9310	10090	10800	11700	12440	14410	16120	21880	28480
			7470	9880	10750	11640	12460	13490	14340	16600	18560	25170	32740
			8870	11710	12730	13780	14740	15950	16950	19610	21920	29690	38590
456-365-120	1483	KB-117-53	11170	14110	15170	16260	17260	18520	19550	21570	22310	24710	32770
			12590	15970	17190	18440	19580	21020	22210	24530	25370	28120	37370
			14550	18530	19950	21430	22770	24470	25860	28590	29580	32820	43690
456-356-144	534	KB-117-53	8610	11060	11940	12850	13680	14730	15590	17280	17890	19890	26610
			9790	12610	13620	14660	15620	16820	17810	19740	20440	22740	30440
			11430	14740	15930	17150	18280	19690	20850	23120	23950	26650	35710

*At the polished rod at maximum stroke, in pounds



Maximizer Pumping Units

Maximum Effective Counterbalance* (continued)

Calculate ECB for other crank arm positions using the Effective Counterbalance Chart.

When selecting counterweights, the value in the table must be equal to or greater than the required counterbalance.

API Size	Structural imbalance	Crank number	Crank only	4-B	4-D	4-F	4-H	4-J	4-L	4-N	4-P	4-PJ	4-RJ	4-XJ	4-YJ	4-ZJ	4-1ZJ		
640-305-120	1594	KB-117-53	11280	14230	15290	16380	17380	18630	19670	21690	22690	22430	24820						
			12710	16090	17300	18550	19700	21140	22320	24640	25790	25490	28240						
			14660	18640	20070	21540	22880	24580	25980	28700	30060	29700	32930						
640-305-144	612	KB-117-53	8690	11140	12020	12930	13760	14810	15680	17360		17970	19970	26690					
			9870	12690	13700	14740	15700	16900	17890	19820		20530	22820	30520					
			11510	14820	16010	17230	18360	19770	20930	23200		24030	26730	35790					
640-305-168	-401	KB-117-53	6520	8620	9380	10160	10870	11770	12510			14480	16190	21950	28560				
			7540	9950	10820	11710	12530	13560	14410			16670	18630	25240	32810				
			8940	11780	12800	13850	14810	16020	17020			19680	21990	29760	38660				
640-305-192	-1080	KB-117-53	4980	6820	7480	8170	8790	9580				11950	13450	18490	24270	29850			
			5870	7980	8740	9530	10240	11140				13870	15590	21370	28000	34390			
			7100	9580	10470	11400	12240	13300				16500	18520	25320	33120	40640			
640-365-144	612	KB-117-53	8690	11140	12020	12930	13760	14810	15680			17970	19970	26690	34390				
			9870	12690	13700	14740	15700	16900	17890			20530	22820	30520	39360				
			11510	14820	16010	17230	18360	19770	20930			24030	26730	35790	46180				
640-365-168	-479	KB-117-53	6440	8550	9300	10080		11690	12430			14400	16120	21880	28480	34840			
			7460	9870	10740	11640		13480	14330			16590	18560	25160	32730	40030			
			8860	11700	12720	13770		15940	16940			19600	21910	29680	38580	47170			
640-365-192	-761	KC-117-53	6770	8570		9880		11250	11880			13570	15040	19950	25570	30980	34530		
			7890	9960		11460		13040	13770			15710	17390	23030	29490	35700	39780		
			9420	11860		13630		15490	16340			18630	20610	27250	34850	42170	46970		

*At the polished rod at maximum stroke, in pounds

Maximizer Pumping Units

Maximum Effective Counterbalance* (continued)

Calculate ECB for other crank arm positions using the Effective Counterbalance Chart.

When selecting counterweights, the value in the table must be equal to or greater than the required counterbalance.

API Size	Structural imbalance	Crank number	Crank only	4-B	4-D	4-F	4-H	4-J	4-L	4-PJ	4-RJ	4-XJ	4-YJ	4-ZJ	4-1ZJ
912-305-192	-1068	KB-117-53	4990	6830	7500	8180		9590	10240	11960	13460	18510	24290	29860	
			5880	8000	8760	9540		11160	11900	13880	15600	21380	28010	34400	
			7110	9590	10490	11410		13310	14180	16510	18530	25340	33130	40650	
912-365-144	650	KB-117-53	8720	11180	12060	12970	13800	14850	15710	18010	20010	26730	34430		
			9910	12730	13740	14780	15740	16940	17930	20560	22860	30560	39400		
			11540	14850	16050	17270	18390	19810	20970	24070	26770	35830	46220		
912-365-168	-449	KB-117-53	6470	8580	9330	10110		11720	12460	14430	16150	21910	28510	34870	
			7490	9900	10770	11670		13510	14360	16620	18590	25190	32760	40060	
			8890	11730	12750	13800		15970	16970	19630	21940	29710	38610	47200	
912-365-192	-713	KC-117-53	6820	8620		9930		11300	11930	13620	15090	19990	25620	31030	34580
			7940	10000		11510		13090	13810	15760	17440	23080	29540	35750	39830
			9470	11900		13680		15540	16390	18680	20660	27290	34900	42210	47020
912-427-144	432	KB-117-53	8510		11840	12750	13580	14630	15500	17790	19790	26510	34210	41640	
			9690		13520	14560	15520	16720	17710	20350	22640	30340	39180	47690	
			11330		15830	17050	18180	19590	20750	23850	26550	35610	46000	56020	
912-427-168	13	KC-117-53	8610	10670		12170		13730	14450	16390	18060	23660	30090	36260	40320
			9890	12250		13970		15780	16600	18820	20750	27180	34560	41660	46310
			11650	14420		16450		18570	19550	22160	24420	32000	40690	49040	54520

API Size	Structural imbalance	Crank number	Crank only	4-B	4-F	4-J	4-L	4-PJ	4-RJ	4-XJ	4-YJ	4-ZJ	4-1ZJ
1280-365-192	-640	KC-117-53	6890	8690	10000	11380	12010	13700	15160	20070	25700	31110	34660
			8010	10080	11590	13160	13890	15830	17510	23150	29610	35830	39910
			9540	11980	13750	15610	16460	18750	20730	27370	34980	42290	47090

API Size	Structural imbalance	Crank number	Crank only	4-B	4-F	4-J	4-L	4-PJ	4-RJ	4-XJ	4-YJ	4-ZJ	4-1ZJ
1824-427-216	-1234	KC-117-59	5750	7370	8550	9790	10360	11880	13200	17620	22690	27570	30760
			6650	8490	9820	11220	11860	13580	15080	20070	25800	31310	34920
			7860	9970	11510	13120	13860	15840	17560	23320	29920	36260	40430

*At the polished rod at maximum stroke, in pounds



Maximizer Pumping Units

Gear Reducers

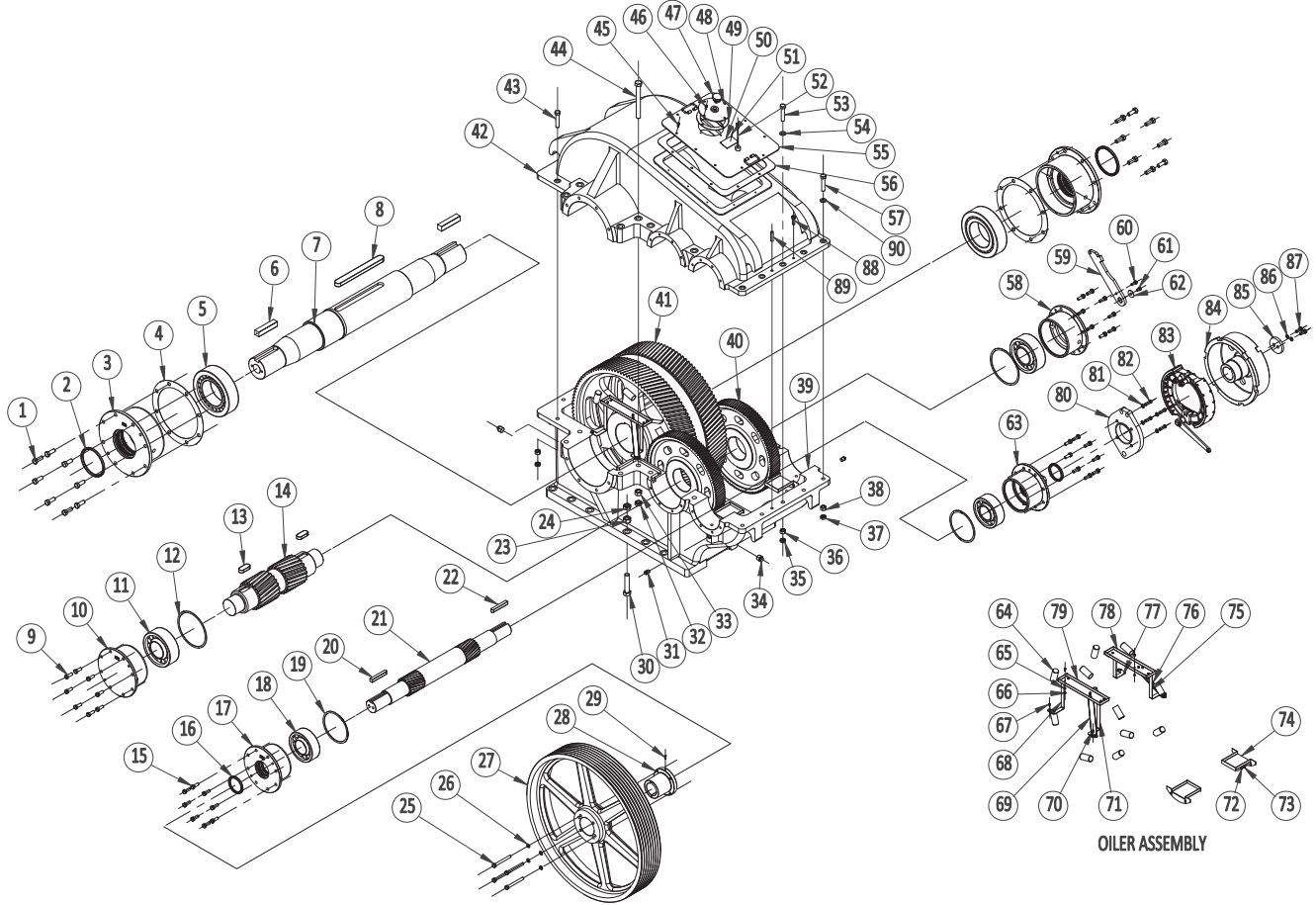
Technical Data

Model Size	Torque Rating (in.-lb)	Gear Ratio	Crank Shaft Diameter Conventional (in.)	Sheave Bore Diameter (in.)	Sheave Size Belt Section/ Pitch Diameter (in.)	Oil Capacity	
						(gal)	(l)
1824	1,824,000	28.333:1	9.00	5.50	12C/58	173	786
1280	1,280,000	28.05:1	9.00	5.00	10C/50	141	641
912 (6TC)	912,000	31.49:1	7.75	4.25	8C/50	121	550
912	912,000	31.49:1	7.25	4.25	8C/50	121	550
640 (6TC)	640,000	31.49:1	7.75	4.25	6C/50	111	505
640	640,000	31.49:1	7.25	4.25	6C/50	111	505
456	456,000	28.396:1	7.25	3.62	5C/50	80	364
320	320,000	30.72:1	7.25	3.50	4C/44	48	218
228	228,000	30.227:1	6.00	3.13	3C/36	43	195
160	160,000	29.21:1	6.00	2.94	3C/36	22	100
114	114,000	29.2837:1	5.50	2.25	3C/33	16	73
80	80,000	31.24:1	5.00	2.19	3C/30	9	41
57	57,000	31.24:1	5.00	1.81	2C/30	9	41

Maximizer Pumping Units

Parts Identification

Maximizer Gear Reducer (for illustration purposes only)





Maximizer Pumping Units

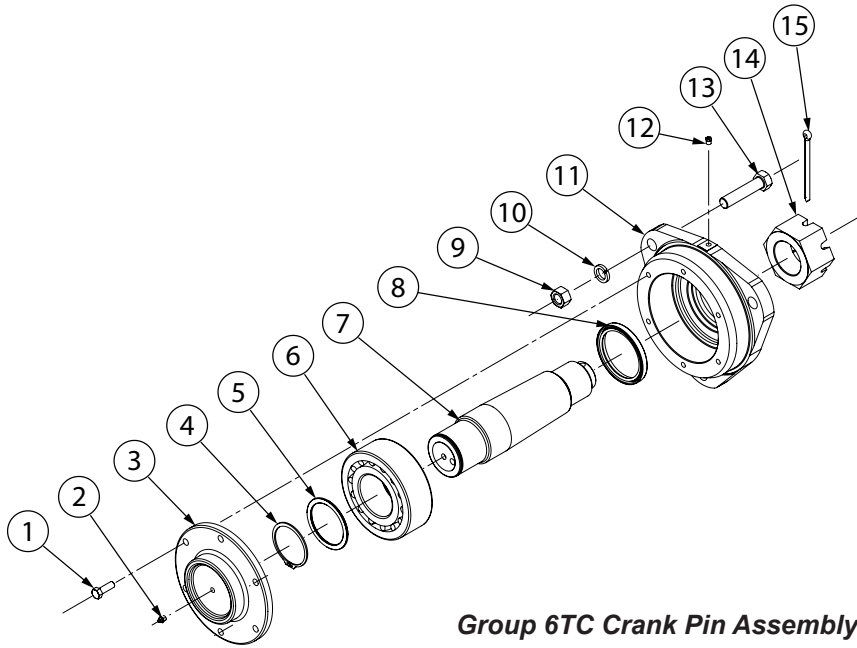
1	Hex bolt	31	Square head plug	61	Hex bolt
2	Seal	32	Jam hex nut	62	Plate
3	Low-speed bearing housing	33	Hex nut	63	High-speed housing (RH)
4	Shim	34	Square head plug	64	Oil cup
5	Bearing	35	Jam hex nut	65	Flat washer
6	Crank arm key	36	Hex nut	66	Hex nut
7	Low-speed shaft	37	Jam hex nut	67	Hex bolt
8	Key	38	Hex nut	68	Plate (LH)
9	Hex bolt	39	Gear case, lower half	69	Plate (LH)
10	Intermediate-speed housing (LH)	40	High-speed gear	70	Slotted panhead screw
11	Bearing	41	Low-speed gear	71	Plate (LH)
12	Retaining ring	42	Gear case, upper half	72	Hex bolt
13	Key	43	Hex bolt	73	Flat washer
14	Intermediate-speed pinion	44	Hex bolt	74	High-speed oil tray
15	Hex bolt	45	Hex bolt	75	Plate (RH)
16	Seal	46	Hex bolt	76	Plate (RH)
17	High-speed housing (LH)	47	Breather	77	Plate (RH)
18	Bearing	49	Gear case inspection cover	78	Oil tray (RH)
19	Retaining ring	49	Oil resistant, polyethylene gasket	79	Oil tray (LH)
20	Reducer sheave key	50	Reducer nameplate	80	Backing plate
21	High-speed pinion	51	Drive screws	81	Lock washer
22	Brake key	52	Dipstick	82	Socket head screw
23	Hex nut	53	Hex bolt	83	Brake support assembly
24	Jam hex nut	54	Flat washer	84	Brake drum
25	Hex bolt	55	Gear case inspection cover	85	High-speed pinion cover
26	Lock washer	56	Oil resistant, polyethylene gasket	86	Lock washer
27	Sheave	57	Hex bolt	87	Hex bolt
28	QD hub	58	Intermediate-speed housing (RH)	88	Hex bolt
29	Slotted flat screw	59	Pawl	89	Taper pin
30	Hex bolt	60	Hex bolt	90	

Maximizer Pumping Units

Components

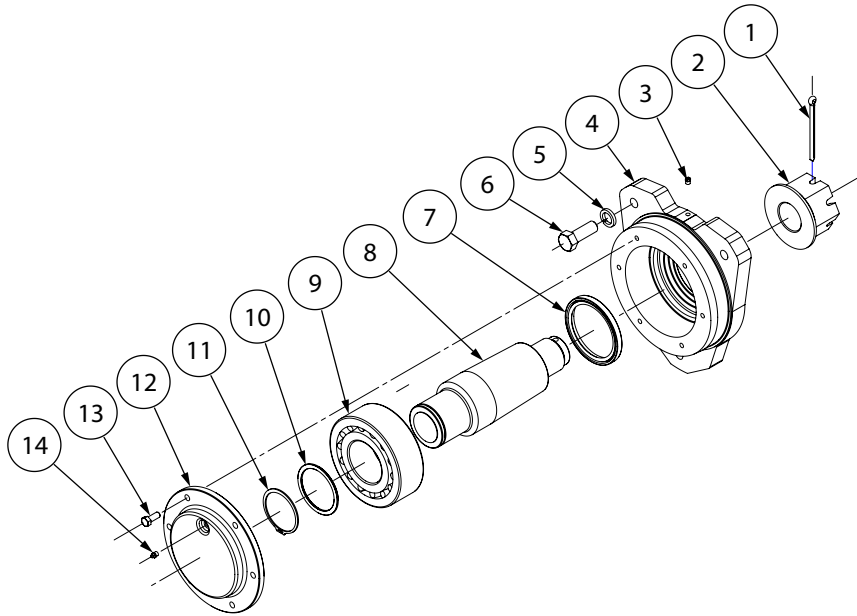
Crank Pin Assembly

Group CO (57 and 80), CA, 3TC, 4TC, and 5TC Crank Pin Assembly



1	Hex bolt
2	Grease fitting
3	Crank pin cover
4	Retaining ring
5	Support washer
6	Bearing
7	Crank pin
8	Oil Seal
9	Hex nut
10	Lock washer
11	Crank pin housing
12	Relief fitting
13	Hex bolt
14	Crank pin nut
15	Cotter pin

Group 6TC Crank Pin Assembly



1	Cotter pin
2	Crank pin nut
3	Relief fitting
4	Crank pin housing
5	Lock washer
6	Hex bolt
7	Oil seal
8	Crank pin
9	Bearing
10	Support washer
11	Retaining ring
12	Crank pin cover
13	Hex bolt
14	Grease fitting

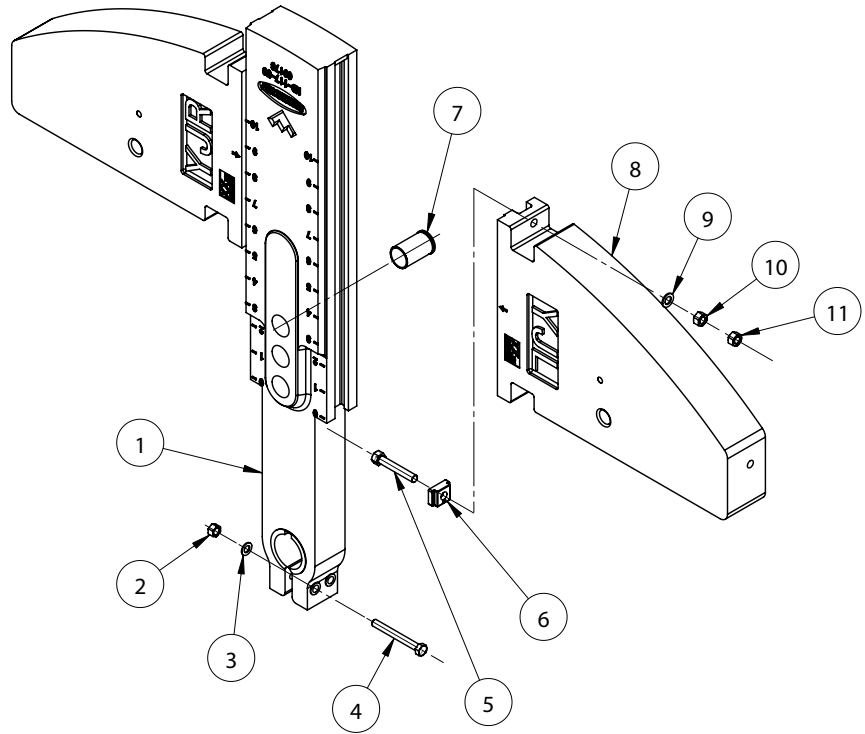


Maximizer Pumping Units

Crank and Counterbalance

Group CO, CA, 3TC, 4TC, 5TC, and 6TC Crank and Counterbalance

1	Crank
2	Hex nut
3	Flat washer
4	Hex bolt
5	Hex bolt
6	Tee slot adapter cast
7	Precision tapered insert (PTI)
8	Counterweight
9	Flat washer
10	Hex nut
11	Hex nut



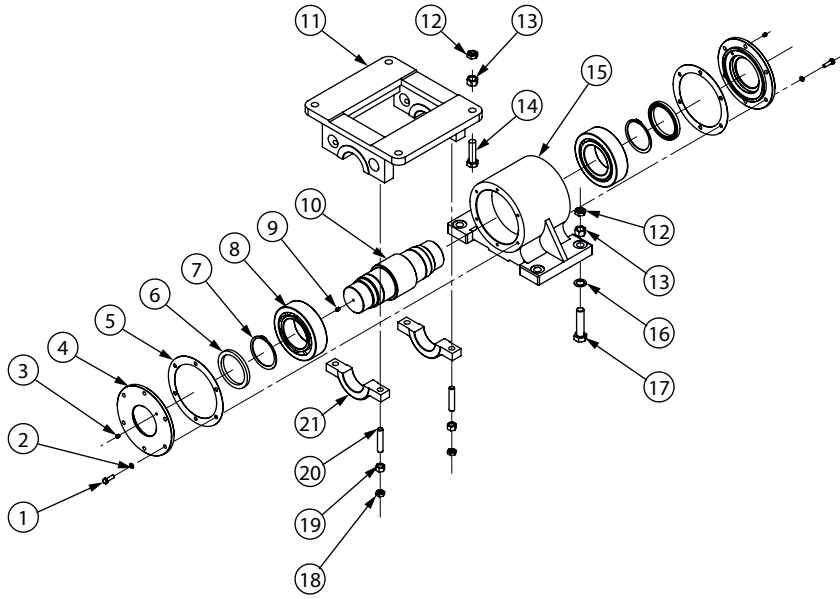
Maximizer Pumping Units

Maximizer Pumping Units

Maximizer
Pumping Units

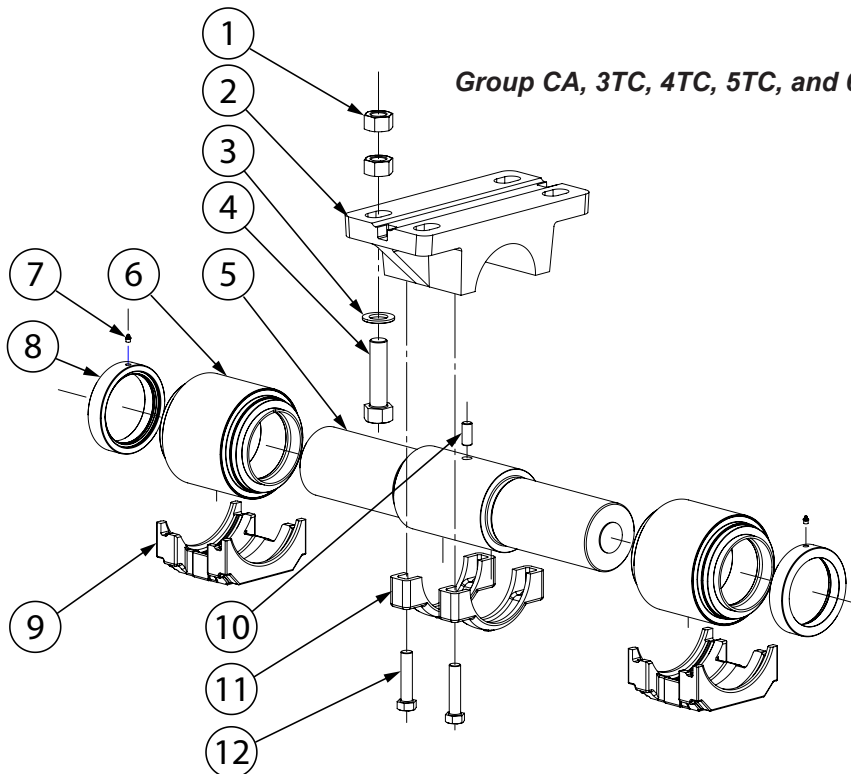
Center Bearing Assembly

Group CO Center Bearing



1	Hex bolt
2	Lock washer
3	Relief fitting
4	Center bearing cover
5	Shim
6	Oil seal
7	Retaining ring
8	Bearing
9	Grease fitting
10	Shaft
11	Trunnion
12	Jam hex nut
13	Hex nut
14	Hex bolt
15	Center bearing housing
16	Flat washer
18	Jam hex nut
19	Hex nut
20	Stud bolt
21	Trunnion clamp

Group CA, 3TC, 4TC, 5TC, and 6TC Center Bearing



1	Hex nut
2	Trunnion
3	Flat washer
4	Hex bolt
5	Shaft
6	Bearing
7	Grease fitting
8	Retainer ring
9	Pedestal adaptor
10	Dowel pin
11	Trunnion clamp
12	Hex nut

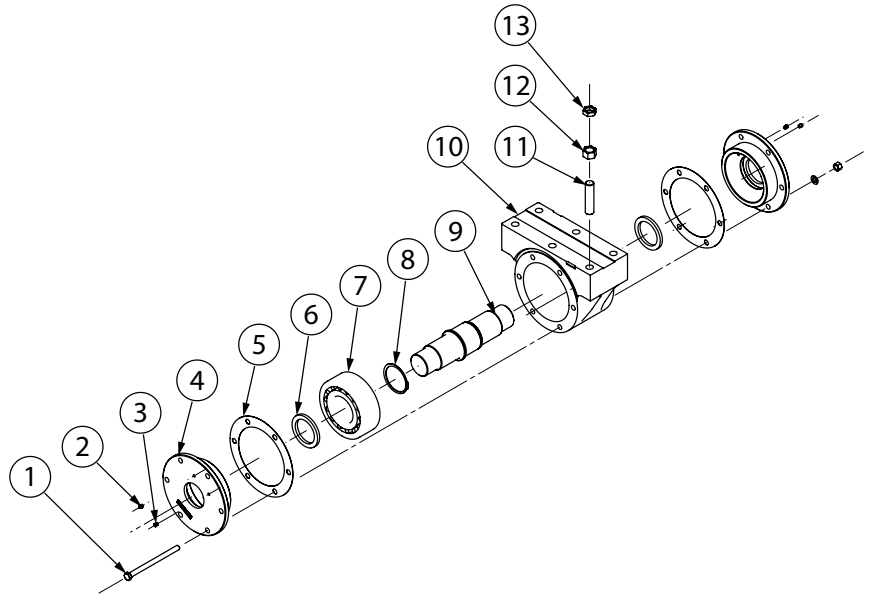


Maximizer Pumping Units

Equalizer Bearing Assembly

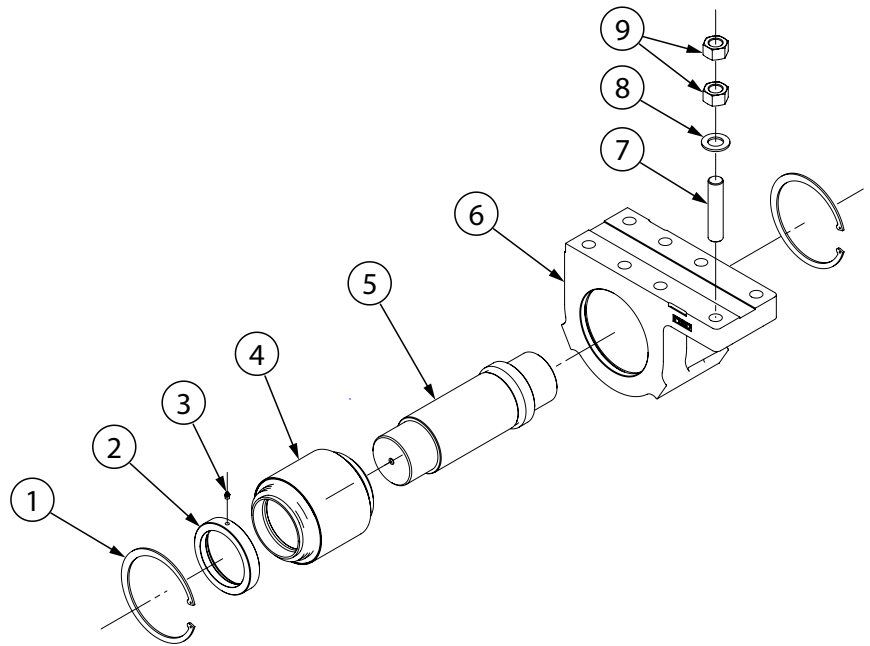
Group CO Equalizer Bearing

1	Hex bolt
2	Grease fitting
3	Relief fitting
4	Equalizer bearing cover
5	Shim
6	Oil seal
7	Bearing
8	Retaining ring
9	Shaft
10	Equalizer bearing housing
11	Stud bolt
12	Hex nut
13	Jam hex nut



Group CA, 3TC, 4TC, 5TC, and 6TC Equalizer Bearing

1	Retaining ring
2	Retainer ring
3	Grease fitting
4	Bearing
5	Shaft
6	Equalizer bearing housing
7	Stud bolt
8	Flat washer
9	Hex nut



Maximizer
Pumping Units