

# Low Profile (Strapjack®) Pumping Units



## Introduction

### Rod Pumping for Low-Clearance Applications and Visually Sensitive Areas

The StrapJack pumping unit combines maximum stroke length and minimum height requirements for continuous operation in low-clearance areas such as under active irrigation systems. With its low-profile design, this unit is uniquely suited for special applications where visibility should be minimized, such as in parks and residential areas.

### Engineered for Safety and Economy

The StrapJack unit carrier bar remains above the base of the skid at the bottom of the downstroke. This configuration means wellhead cellars can be much shallower and in some cases unnecessary. Where a cellar is required, it is often less than 4 ft (1.2 m) deep, eliminating the confined entry designation and saving considerable maintenance expense.

### Easy Installation and Maintenance

The StrapJack unit ships pre-assembled for fast, easy setup and installation. A folding Sampson post assembly simplifies well maintenance. By removing a pin on the third leg and disconnecting the carrier bar from the polished rod, the Sampson post and roller assembly can be quickly and easily folded back, away from the wellhead. This helps maximize work space and safety during pulling or servicing operations.

### Applications

- Low-clearance installations
- Highly visible areas

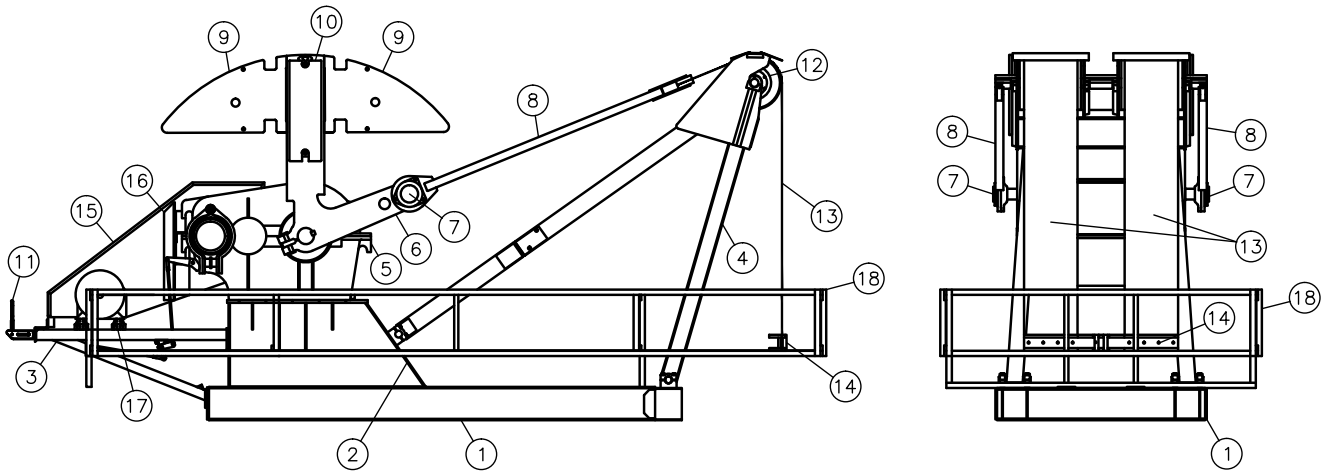
### Advantages and Benefits

- Low-profile design is suitable for low-clearance applications, such as rod pumping under sprinkler systems.
- Low visibility contributes to positive relationships with landowners.
- Low-profile design often eliminates the need and costs of a cellar, alleviating risks associated with gas collection and confined entry.
- Equal upstroke/downstroke velocities result in the same geometry in both directions for smooth, consistent operation.
- Unit operates without a horsehead, reducing visual impact.
- Ships fully assembled for easy transport and fast setup.
- Sampson post third leg folds for easy well servicing.



# Low Profile (Strapjack) Pumping Units

## Parts Identification



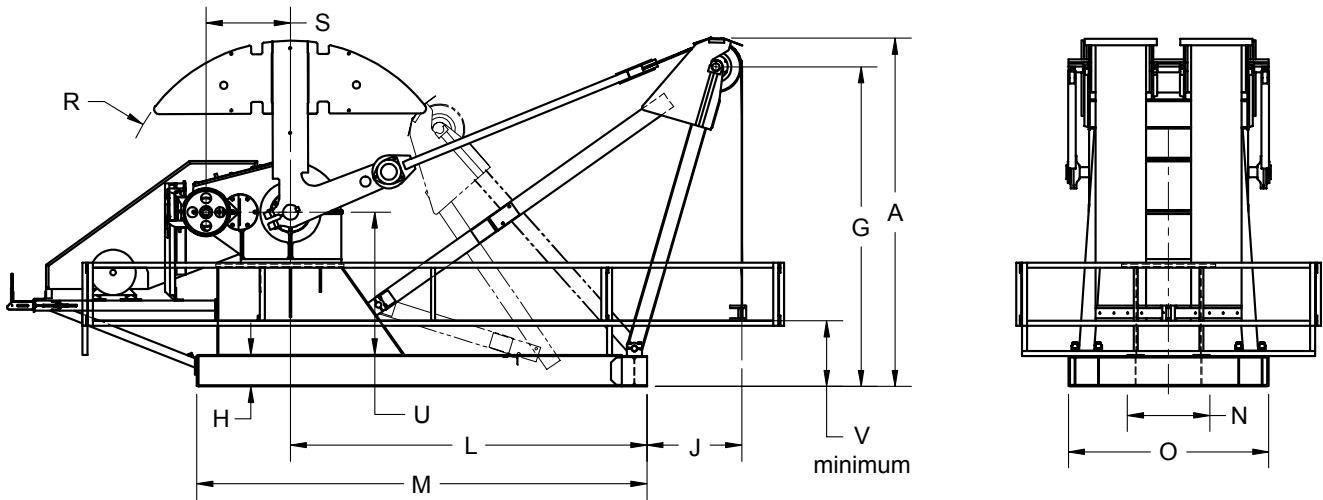
1 Frame	7 Crank pin assembly	13 Bridge belt assembly
2 Sub-base	8 Equalizer/pitman assembly	14 Bridge assembly
3 Prime mover extension	9 Master and auxiliary counterweights	15 Belt guard assembly
4 Sampson post assembly	10 Auxiliary side counterweights	16 Belt guard mounting bracket
5 Reducer assembly	11 Unit brake assembly	17 Prime mover slide rail assembly
6 Crank	12 Roller drum assembly	18 Crank guard assembly



Low Profile (Strapjack)  
Pumping Units

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## Pumping Units



Group	Size	Dimensional Data (in.)													
		A	G	H	J	L	M*	M-WF*	N	O	O-WF*	R	S	U	V
2.1	114-173-54	96.00	84.00	10.19	31.69	87.13	117.00	216.89	22.00	66.75	83.25	47.50	24.60	38.19	16.13
	160-173-54	96.00	84.00	10.19	31.69	87.13	126.13	216.89	22.00	66.75	83.25	47.50	30.20	38.19	16.13
3.2	160-246-74	120.00	108.44	12.50	32.31	120.75	157.69	279.00	32.50	79.25	91.00	59.50	30.20	48.00	18.00
	228-246-74	120.00	108.44	12.50	32.31	120.75	157.69	279.00	32.50	79.25	93.50	59.50	30.20	48.00	18.00
	228-246-84	138.00	126.56	12.50	37.50	141.06	178.06	308.25	32.50	79.25	101.00	68.00	33.31	56.50	26.00
	320-246-74	120.00	108.44	12.50	32.31	120.75	157.69	279.00	32.50	79.25	101.00	59.50	30.20	48.00	18.00
	320-246-84	138.00	126.56	12.50	37.50	141.06	178.06	308.25	32.50	79.25	101.00	68.00	33.31	56.50	26.00

WF=Wide frame option.

\*Dimensions can vary depending on end user's prime mover requirements.



## Low Profile (Strapjack) Pumping Units

### Effective Counterbalance\*

Unit	114-173-54 160-173-54	160-200-74 228-246-74 320-246-74	228-246-84 320-264-84
Crank number	SC47-27	SC59-37	SC68-42
Counterweights	SJ-1	SJ-2	SJ-3
	<b>ECB</b>	<b>ECB</b>	<b>ECB</b>
Crank only	1670	1730	2270
Crank, MW**	5810	6200	9070
Crank, MW, 4 AW†	6580	6940	10280
Crank, MW, 8 AW	7380	7700	11520
Crank, MW, 12 AW	8160	8430	12730
Crank, MW, 16 AW	8940	9160	13940
Crank, MW, 20 AW	9710	9890	15150
Crank, MW, 24 AW	10490	10620	16410
Crank, MW, 28 AW	11270	11350	17620
Crank, MW, 32 AW	12090	12082	18840
Crank, MW, 36 AW		12860	
Crank, MW, 40 AW		13590	
Crank, MW, 32 AW, 2 SW††	12360	13840	19130
Crank, MW, 32 AW, 4 SW	12640	14090	19420
Crank, MW, 32 AW, 6 SW	12920	14340	19720
Crank, MW, 32 AW, 8 SW	13193	14590	20010
Crank, MW, 32 AW, 10 SW	13430	14840	20300
Crank, MW, 32 AW, 12 SW	13750	15090	20600
Crank, MW, 32 AW, 14 SW	14024	15340	20890
Crank, MW, 32 AW, 16 SW	14300	15590	21180
Crank, MW, 32 AW, 18 SW		15840	
Crank, MW, 32 AW, 20 SW		16090	
Maximum recommended moment – 114-173-54	14300		
Maximum recommended moment – 160-173-54	12360		
Maximum recommended moment – 160-200-74		15590	
Maximum recommended moment – 228-246-74		18060	
Maximum recommended moment – 320-246-74		15370	
Maximum recommended moment – 228-246-84			21184
Maximum recommended moment – 320-246-84			18431

\*In pounds

\*\*Master weight

†Auxiliary weight

††Side weight

# Low Profile (Strapjack) Pumping Units

## Gear Reducer

### Technical Data

Double-helical, double-reduction, involute gear reducer data

Model Size	Torque Rating	Gear Ratio	Bore (in.)	Sheave Dimensions (in.)							Oil Capacity		Crankshaft Diameter (in.)
	in.-lb										(gal)	(l)	
D114GB	114,000	29.28	2.25	20-3C	24-3C	30-3C	33-3C				14	53	5
D160GB	160,000	29.21	2.94	20-3C	24-3C	30-3C	36-3C				19	72	6
D228GB	228,000	30.22	3.13	20-4C	24-4C	30-4C	36-3C				33	125	6
D320GB	320,000	30.72	3.50	24-5C	30-5C	36-4C	44-4C	22-3D	27-3D	33-3D	43	143	7.25



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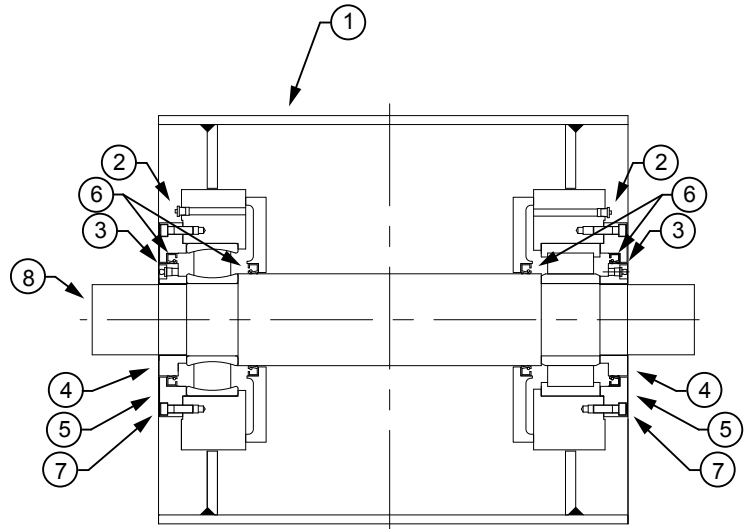
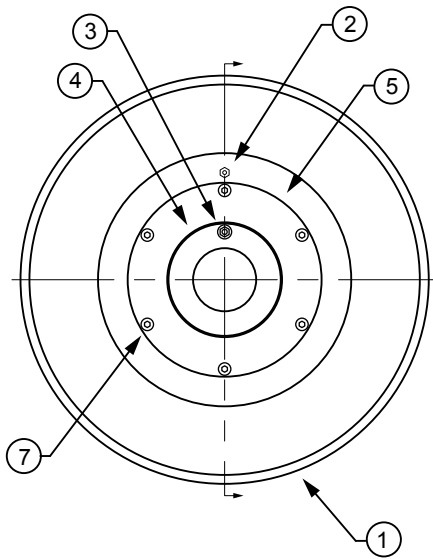


# Low Profile (Strapjack) Pumping Units

## Components

### Head Roller Assembly

1	Head roller with bearing housing
2	Lube relief fitting
3	Lube inlet fitting
4	Bearing retaining ring
5	Housing cover
6	Seals
7	Cap screws
8	Shaft



# Low Profile (Strapjack®) Pumping Units

## Crank Arm Assembly

- 1 Crank arm bolting hardware
- 2 Master counterweight bolting hardware, T-slot adapters, bolts, nuts, and washers
- 3 Machined crank arm (right side shown, left side identical but opposite)
- 4 Machined crank arm
- 5 Tapered insert

