

# Pump Jacks

## MODEL ZA PUMP JACK INSTALLATION INSTRUCTIONS

Figures 1 and 2 show all the Monitor ZA Pump Jack parts. The parts are arranged in order as they would be assembled. For clarity, the key numbers shown in Figures 1 and 2 are also used in the following installation instructions.

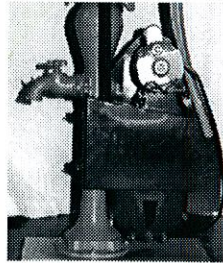
### TO INSTALL YOUR ZA PUMP JACK:

- Unpack carefully, laying parts on platform or canvas.
- Pick out the two clamps (56) and the four 3/8" x 4-1/2" bolts (55). With the head of the bolt inserted in slots on jack case place the jack on the pump stand with lug resting on bottom flange of pump. Put on clamps, line jack up with pump rod and tighten bolts.
- Tighten pulley (25) and shaft (17).
- Adjust space between motor mounting bars (33 & 36) to fit motor. Bolt motor to bars using four 5/16" x 1-1/4" bolts (22) with washers (35) and hex nuts (34).
- Put on bolts (28). Loosen bolts (22) fastening motor to mounts (33 & 36) and shift motor so that belt or belts (28) run in the middle of the jack pulley. Tighten bolts.
- Loosen bolt (31) and raise near motor mount (36) to tighten belt or belts. Proper tightness is just tight enough to prevent slipping, the equivalent of "hand tight," EXCESSIVE BELT WEAR OCCURS IF BELTS ARE TOO TIGHT.
- TURN JACK OVER A FEW TIMES BY HAND AND CHECK FOR SMOOTH OPERATION.
- Remove top oil plug (4) and fill case with 2 quarts of #10W oil. The proper amount of oil will fill case to bottom of hole for oil plug. Replace oil plug.
- Remove breather plug (20) from case inspection hole. Check to see if motor runs pulley in direction indicated on case, and also on the pulley by arrow. IMPORTANT: NO OIL IS PUMPED IF MOTOR RUNS PULLEY OPPOSITE FROM DIRECTION OF ARROW. Start motor, and after one minute has elapsed oil should be observed through case inspection hole, dripping down into rocker arm (13) inside case. If this is observed, jack is oiling properly. Replace plug.
- Place pumping angles (42) on pumping arms (37), sharp edges out. Place flat washer (45) on pumping arm pin. Put snap ring (46) in place.
- Run jack by hand to top of stroke, so that pumping arms are at the highest position they will go.
- Lift pump rod to top of stroke. Lower 1 inch.

- Insert two bolts 7/16" x 1-1/2" (48), threaded ends out into ends of crosshead (50). Select holes in pumping angles in line with, or most nearly in line with hole in pump rod, which is in position after Step 12. Bolt crosshead (50) to pumping angles, and connect to pump.
- TURN JACK OVER SEVERAL TIMES BY HAND TO SEE THAT WELL CYLINDER IS RUNNING FREE, AND ALL PARTS HAVE CLEARANCE. START MOTOR, AND CHECK TO SEE THAT JACK PULLEY IS RUNNING IN DIRECTION INDICATED BY ARROW. CHECK TO SEE THAT ALL PIPE PLUGS HAVE BEEN REPLACED.
- Start pumping. Your Monitor ZA Pump Jack is now properly installed. IMPORTANT. After several days of operation, check the pumping arm bolts to be sure they are tight.

### LUBRICATION

Your Jack has a fine lubrication system and under normal use with a drain and refill every 700 hours, your Monitor Jack will give efficient, quiet service for many years. Use S.A.E. No. 10W oil in the winter and S.A.E. No. 30W oil in summer. Change oftener under severe conditions., Dirty oil may tend to plug lower bearing drain holes resulting in oil leaking out shaft ends. Disassemble case and clean holes.



ZA installed ready to operate



Crosshead Assembly

### Capacity & Maximum Lift Table for Monitor ZA PowerSaver Pump Jack (For Open Tank Installation)

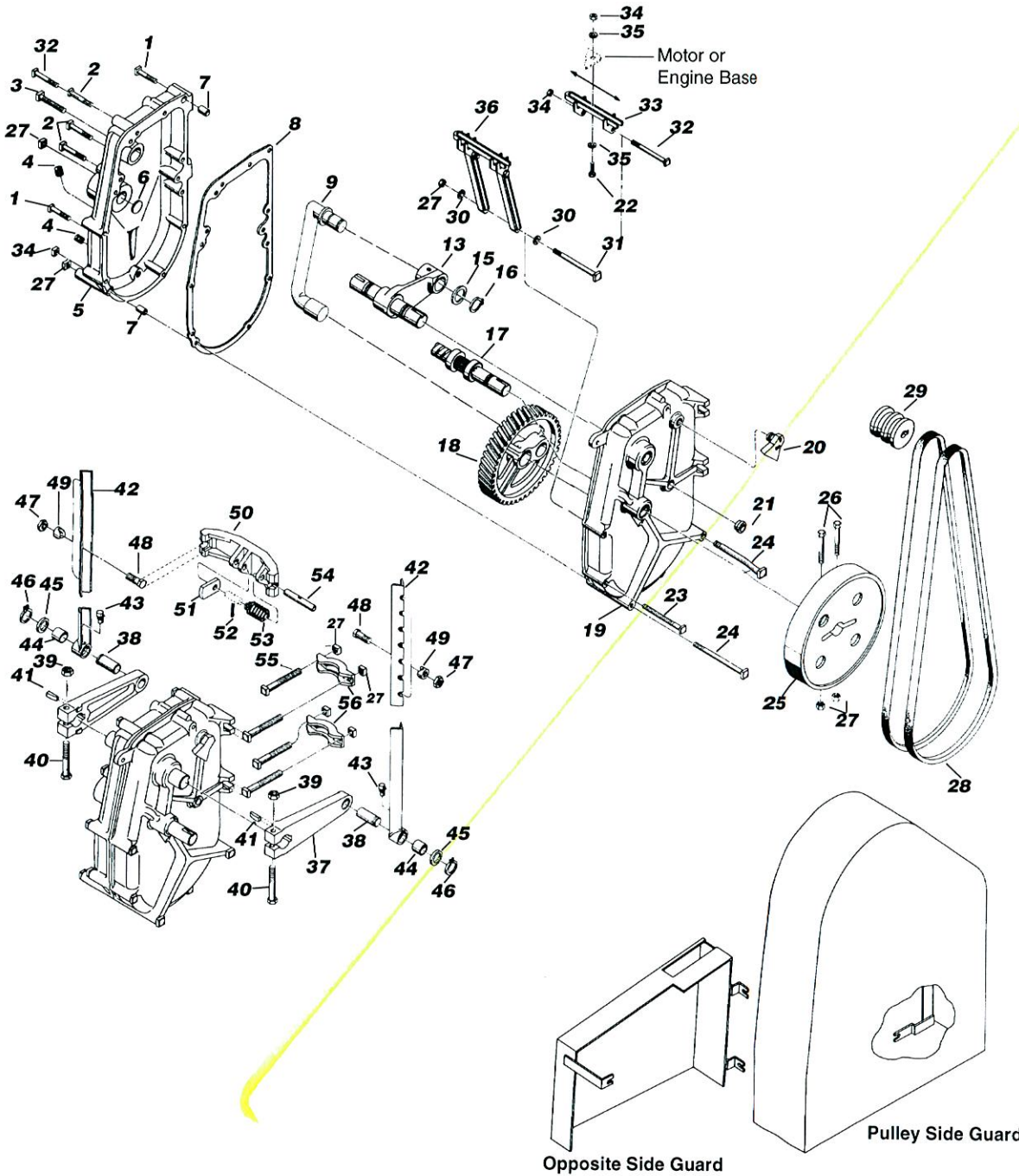
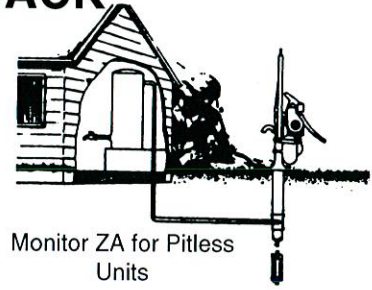
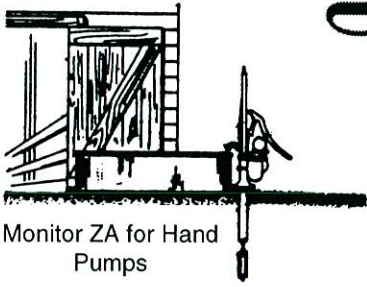
Specifications for the chart below are: Stroke: 6 inches, 42/minute; Pump Rod Load: 1500 lbs. maximum; Gear Ratio: 9 to 1; Jack Pulley: 11-1/2 inches; Motor Pulley: 2- 3/4 inches; Pump Rod Diameter: 7/16 inches; Service Factor on Electric Motor: 1.0.

Cyl. Dia.	Cap. @ 100% Cyl. Eff. Gal/Hr	Cap. @ 80% Cyl. Eff. Gal/Hr	RECOMMENDED MAXIMUM LIFT IN FEET (SYSTEM EFFICIENCY 80%)					
			1/3 HP	1/2 HP	3/4 HP	1 HP	1-1/2 HP	2 HP
1-11/16	146	117	79	118	177	237	355	473
1-3/4	157	126	75	113	169	226	339	451
1-7/8	181	144	68	103	154	205	308	410
2	206	165	62	94	140	187	281	374
2-1/4	260	208	52	78	117	157	235	313
2-1/2	321	257	44	66	99	133	199	265
2-3/4	389	311	38	57	85	114	170	227
3	463	370	33	49	73	98	147	196



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Item	Qty	Description	Ord. No.
1	2	Hex Head Bolt 5/16"-18NC x 2-1/4"	ZA84
2	3	Hex Head Bolt 5/16"-18NC x 2-3/4"	ZA83
3	1	Hex Head Bolt 3/8"-16NC x 3"	ZA76
4	2	Socket Head Pipe Plug-3/8"-18NPT	ZA285
5	1	Gear Case Assembly (Inc. #6 & #7)	ZA39
6	1	Viscosity Pump Plug	ZA23
7	2	Dowel Bushing	ZA57
8	1	Gear Case Gasket	ZA333
9	1	Pitman Assembly	ZA54
13	1	Rocker Arm & Shaft Assby	ZA27
15	1	Pitman Washer	ZA32
16	1	Snap Ring	ZA64
17	1	Pinion Shaft & Thrust Collar Assby	ZA30
18	1	Gear	ZA8
19	1	Gear Case Assby (Inc. #21)	ZA416
20	1	Breather Plug	ZA225
21	1	Gear Case Plug	ZA16
22	4	Hex Head Bolt 5/16"-18NC x 1-1/4"	ZA264
	4	Hex Head Bolt 5/16"-18NC x 1-3/4"	ZA429
23	1	Bolt 5/16"-18NC x 4-1/2"	ZA79
24	2	Bolt 3/8"-16NC x 6"	ZA834
25	1	Flat Pulley for 14ZA, 18ZA & 20ZA (Inc. #26 & #27)	ZA383
	1	V-Pulley for 15ZA & 21ZA	ZA224
26	2	Hex Head Bolt, 3/8"-16NC x 2-1/2"	PS93
27	9	Hex Nut, 3/8"-16NC	UB17
28	1	V-Belt for 15ZA & 21ZA	ZA60
	2	V-Belts for 14ZA, 18ZA & 20ZA	ZA61
29	1	Motor Sheave for 14ZA	444PC
	1	Motor Sheave for 20ZA & 21ZA	38JE
	1	Motor Sheave for 15ZA	130PC
	1	Motor Sheave for 18ZA	469PC
30	2	Washer 7/8" O.D. x 13/32" I.D.	JE36
31	1	Bolt 3/8-16NC x 6-1/2" L.	ZA162
32	2	Bolt 5/16"-18NC x 5-1/2"	ZA77
33	1	Motor Mounting Hinge	ZA327
34	4	Hex Nut 5/16"-18NC	PC434
35	8	Washer 3/8" I.D. x 3/4" O.D.	JE34
36	1	Rear Motor Mount Assembly	ZA321
37	2	Pumping Arm Assby, 6" Stroke (Inc. #38, 39 & 40)	ZA24
	2	Pumping Arm Assby, 8" Stroke (Inc. #38, #39 & #40)	ZA25
38	2	Wrist Pin	ZA22
39	2	Stop Nut, 7/16"-20 NF	ZA532
40	2	Hex Head Bolt, 7/16"-20 NF x 3-1/4"	ZA602

Item	Qty	Description	Ord. No.
41	2	Key, Pumping Arm Shaft	ZA63
42	2	Pumping Angles Assby. (Inc. #43 & 44) Pair of pumping angles	ZA12 90ZA
43	2	Oiler	ZA246
44	2	Pumping Angle Bushing	ZA6
45	2	Wrist Pin Washer	E80
46	2	Snap Ring	ZA70
47	2	Hex Nut, 7/16"-14NC	PJ50
48	2	Hex Head Bolt, 7/16"-14NC x 1-1/2"	ZA86A
49	2	Notched Adapter Collar	ZA26
50	1	Crosshead Assby. (Inc. #51,52 53 & 54)	ZA28
51	1	Crosshead Pin Handle	ZA21
52	1	Cotter Pin	ZA80
53	1	Crosshead Pin Spring	ZA20
54	1	Crosshead Pin	ZA19
55	4	Machine Bolt 3/8" -16NC x 4-1/2"	ZA69
56	2	Mounting Clamp	ZA1

### WARRANTY STATEMENT

Baker warrants the goods manufactured by it to be free from defects in material or workmanship under normal use or service, for a period of one year from date of shipment.

This warranty does not apply to goods or parts not manufactured by Baker, instead Baker's obligation for these goods or parts is limited to the actual warranty extended to Baker by the manufacturer.

All warranties herein are void and do not apply if: 1) the goods or parts have been altered or repaired by others; 2) the goods have not been installed or used in accordance with any applicable instructions or limitations provided by Baker, or the manufacturer of the good or part; 3) the goods or parts have not been installed or used in accordance with the goods' or parts' normal use and service; or 4) the goods are used in nuclear facility applications.

