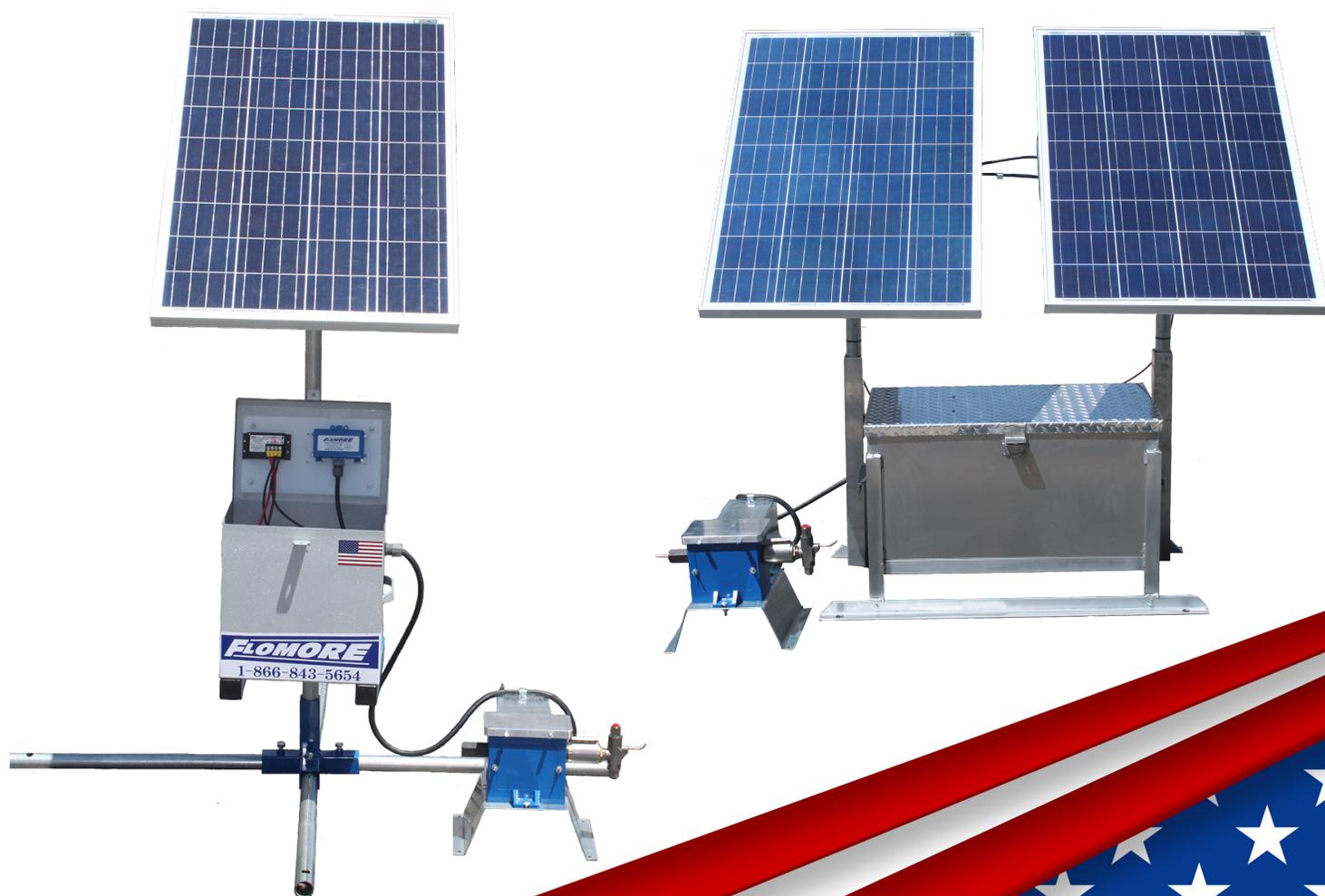


FLOMORE

Different By Design

3000 Series Solar Injector

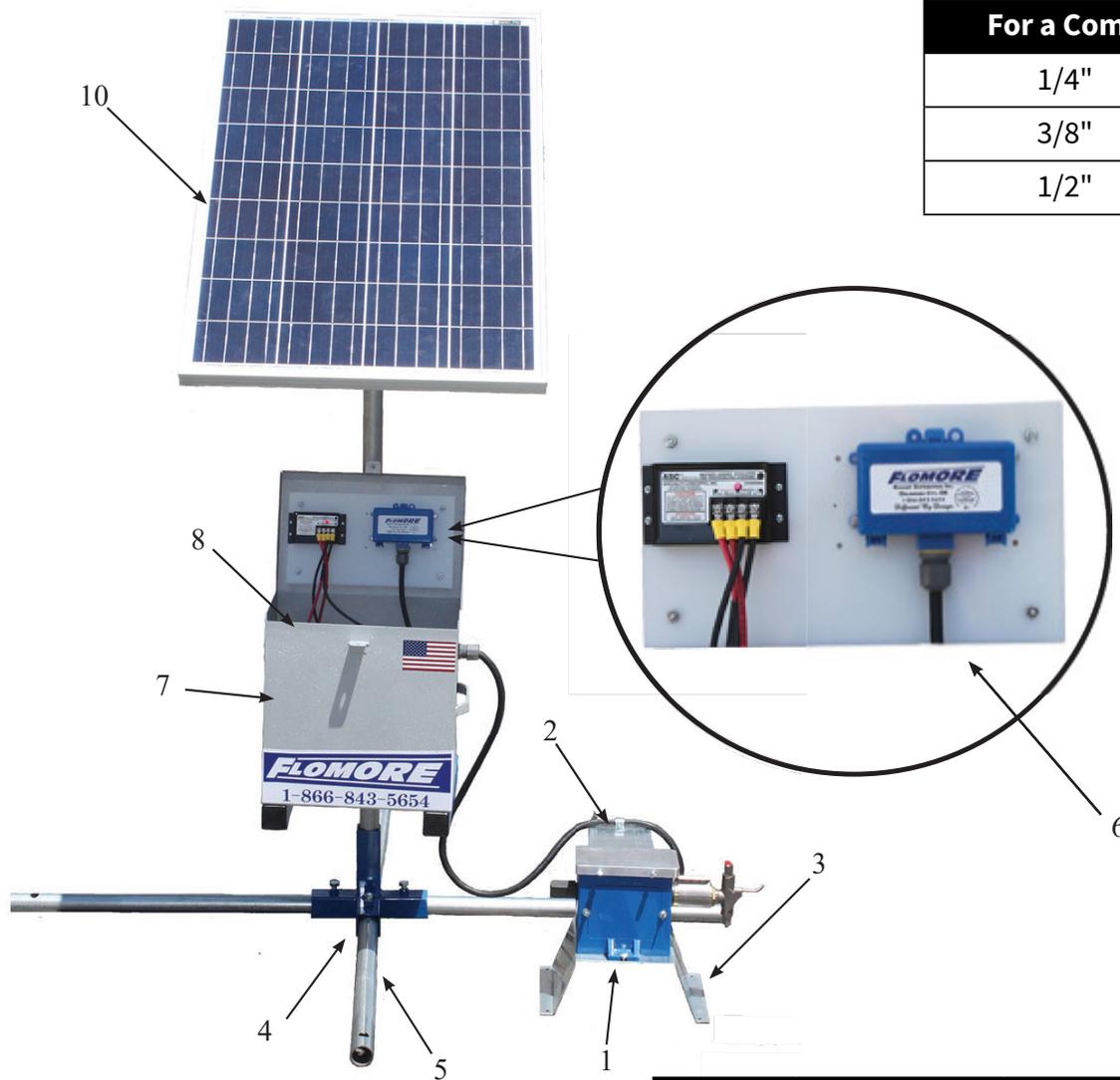




Maintenance Instructions to Inspect and Replace Plunger Packing

1. Turn off the pump. Isolate injection point from back flow or pressure.
2. Remove suction & discharge lines. (Caution: Pressure might be trapped inside head or lines.)
3. Loosen packing gland nut, then slide the nut back from the head.
4. Depending on pump model, loosen the brass jam nut from the yoke or body. You can now unscrew and remove the head body.
5. Remove packing gland from head if needed. This might remain on the plunger nut.
6. Inspect the plunger for wear. If the plunger needs to be replaced, remove the plunger pin and slide the plunger out. Insert the new plunger and reinstall the pin. (If plunger is good, move to step 7.)
7. Remove the plunger packing with a pick or small screwdriver. (Take note of packing orientation for reinstall.)
8. Inspect the throat of the head body for pitting and wear. Replace if needed.
9. Install new plunger packing one ring at a time, ensuring that each ring is seated flush.
10. Reinstall the packing gland. Insert the head onto the plunger and yoke. Thread the head back into the yoke until the jam nut touches. Align body into correct vertical position and tighten the jam nut securely. (Head should not be able to spin.)
11. Reinstall the packing gland nut until it makes contact with the packing. Apply an additional 1/4" turn into the packing.
12. Reinstall the suction and discharge lines. Open injection point valve and check for leaks.
13. Turn on the pump. Open the priming valve to bleed air from the suction lines and head. Confirm the pump is pumping and check for leaks.
14. Adjust the plunger packing as needed. Run the pump for 15 minutes and check for packing nut contact. If loose, tighten nut 1/4" at a time. (Make sure to bleed the head before making packing adjustments.)

3000 Series Solar Injector



For a Complete Pump as Shown	
1/4"	30-01SS
3/8"	30-03SS
1/2"	30-05SS

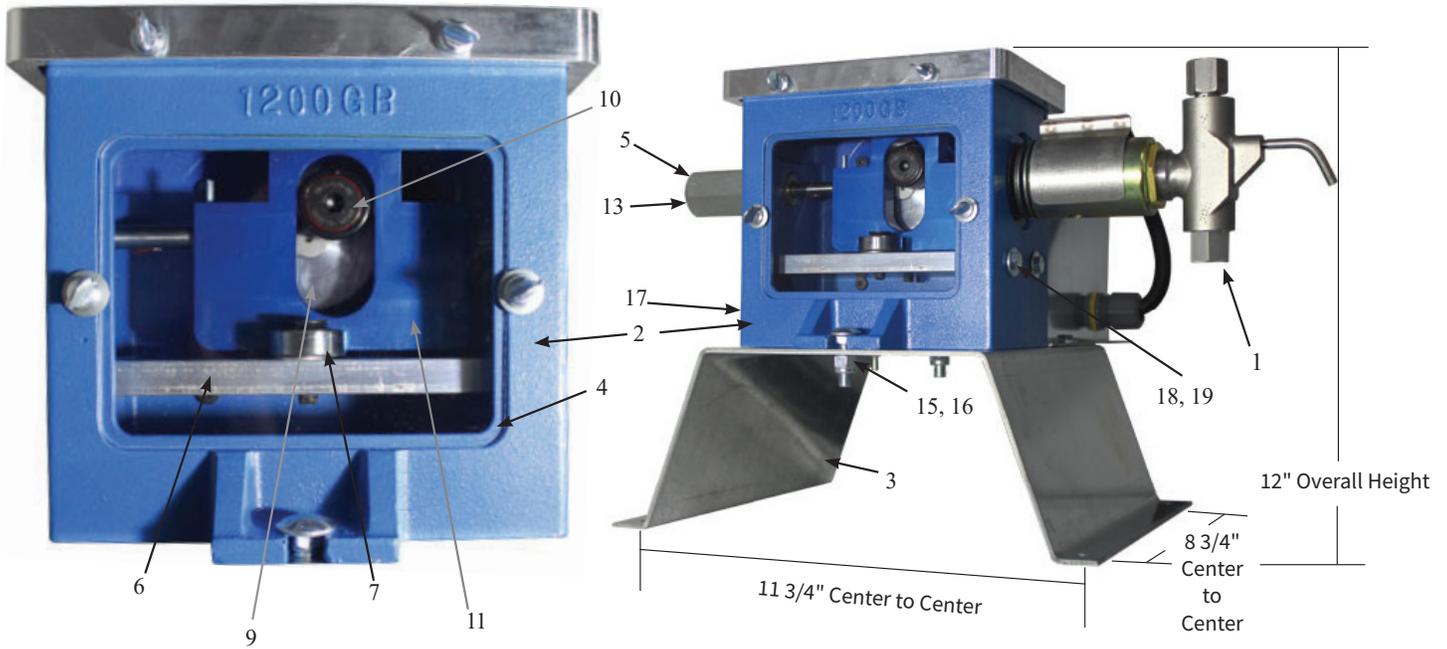
Solar Power Injector with Stand

***Flomore Does Not Warranty Batteries or Electric Motors**

Item #	Part #	Description
1	3000 Series	Solar Injector
2	S-1212HD	Heavy Duty Electric Motor
3	SP-0001B	Power Solar Box Base
4	SP-0005W	5 - Way Base
5	SP-0100	Solar Injector Stand
6	S-0004	12/12 Solar Charge Regulator
	SP-0032	Basic Solar Timer with Wires
7	S-0200	Solar Battery Box with Electronics
8	SP-0010	Battery (located inside battery box)
10	S-0079	100 Watt Industrial Solar Panel

Note: Solar Panel Must Always Face South

Solar Injector Pump Body



Parts List

Item #	Part #			# Req.	Description	Material
	1/4"	3/8"	1/2"			
1	C-1578	C-1579	C-1580	1	Head Assembly	Ductile Iron
	C-1582	C-1583	C-1584			Stainless Steel
2		SP-0091		1	Solar Pump Body	Aluminum
3		SP-0001B		1	Power Box Solar Base	Galvanized Steel
4		SP-0001S		1	Power Box Viewing Shield	Acrylic
5		SP-0022		1	Solar Guide Body	1018 Nickel Plate
6		SP-0005		1	Alignment Bar	Black Acetal (Delrin)
7		SP-0002B		2	Solar Power Hub Bearings	Steel
8		SP-0002.02		1	Power Hub Set Screw	Steel
9		SP-0011		1	Power Hub Less Bearing	Aluminum
10		SP-0002CF		1	Power Hub Bearing	Steel
11		SP-0008		1	Crosshead	1018 Carbon Steel
12		A-0290		2	Plunger Pin	Steel
13		SP-0021		1	Guide Rod	17-4 Stainless Steel
14		SP-0010.01		4	Motor Mounting Bolt	Steel
15		S-0038		2	Carriage Bolt	Steel
16		S-0037		2	Nylon Lock Nut	Steel
17		A-0138		1	Pipe Plug	Zinc Plated Steel
18		A-0163		4	Hex Head Bolt	Zinc Plated Steel
19		A-0167		4	Flat Washer	Zinc Plated Steel

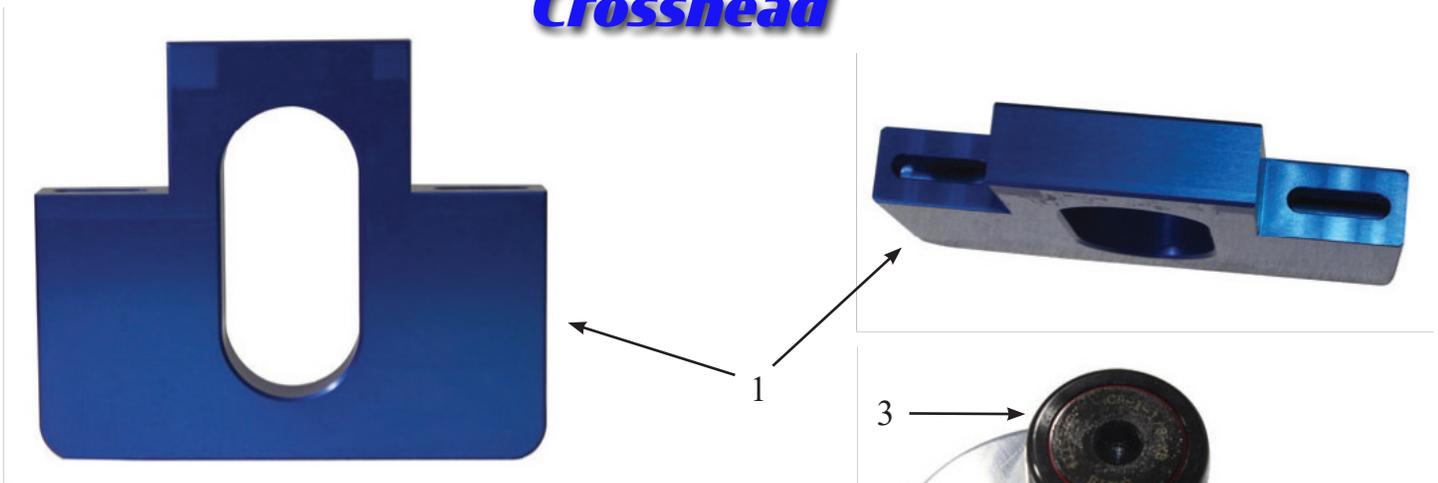
Power End Components

"Smooth Operator"

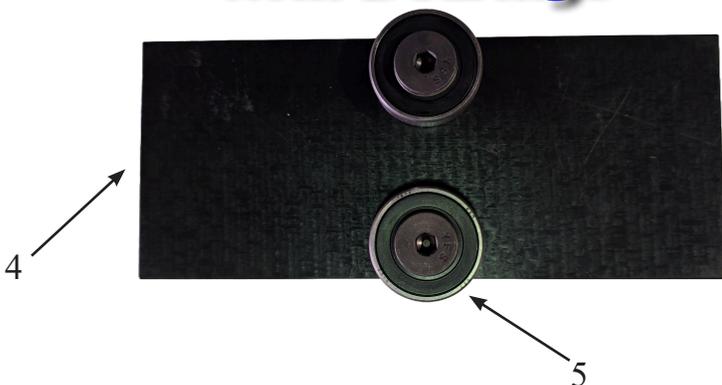
These three POWER END COMPONENTS create a back and forth motion making the 3000 Solar Series injector a POSITIVE DISPLACEMENT PUMP. As the plunger goes forward, fluid is discharged from the head assembly. The hub assembly is connected to the DC motor. As the motor turns the hub assembly, the bearing is placed eccentrically causing a back and forth motion to the crosshead. The bottom bar assembly keeps the crosshead in a straight, linear motion. The straight motion on the crosshead creates less stress on the motor, which then draws less voltage from the battery. All bearings are sealed, needing no grease. The crosshead has three potential plunger pin placements, long stroke, medium stroke, and short stroke. This creates flexibility to pump volumes from 1 pint up to 45 gallons per day with a single head assembly.

<i>Item #</i>	<i>Part #</i>	<i>Description</i>	<i>Material</i>
1	SP-0008	Crosshead	Steel
2	SP-0011	Hub	Aluminum
3	SP-0002CF	Power Hub Cam Follower with Bolt	Steel
4	SP-0005	Bottom Alignment Bar	Black Acetal (Delrin)
5	SP-0002B	Bearing - Sealed	Steel
6	SP-0002	Power Hub Less Bearing	Steel

Crosshead



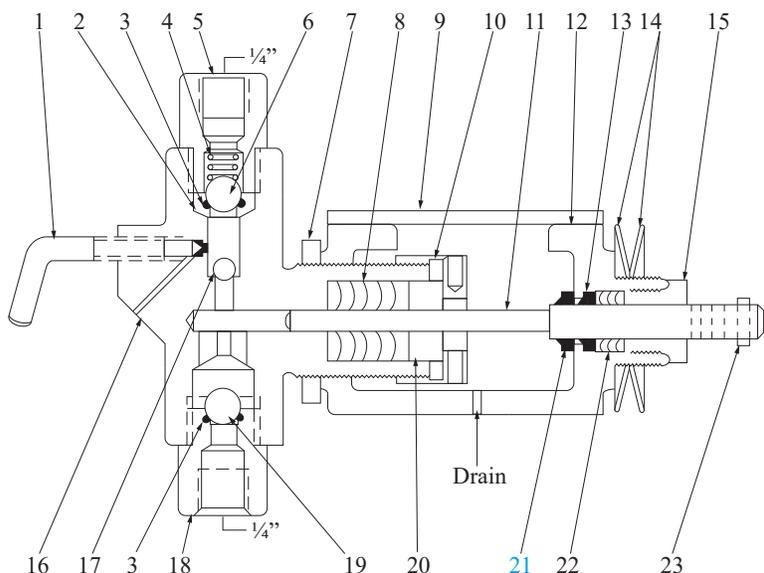
Bottom Alignment Bar with Bearings



Hub with Bearing

Injector Head

Alternate Construction

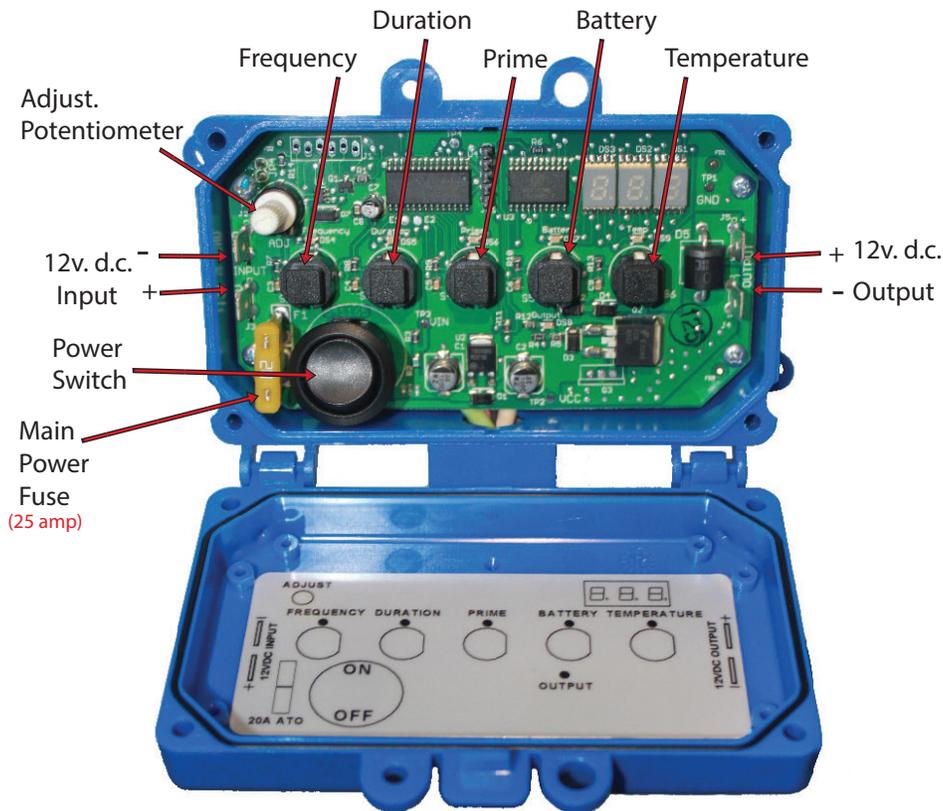


Item #	Part #	Description	Material
2	A-0806	Top Seat Assembly (Metal to Metal)	303 Stainless Steel
	B-0843	Top Seat Assembly (Viton)	
3	A-2580	O-Ring	Viton
8	A-4102	1/4" Plunger Packing	Viton
	A-1642		Teflon
	A-2295		Hard
	A-4101	3/8" Plunger Packing	Viton
	A-1234		Teflon
	A-1875	Hard	
	A-4103	1/2" Plunger Packing	Viton
	A-1012		Teflon
A-1874	Hard		
11	B-1175-C	1/4" Ceramic Plunger	◆
	B-1176-C	3/8" Ceramic Plunger	
	B-1177-C	1/2" Ceramic Plunger	
18	A-0771	Bottom Seat Assembly (Metal to Metal)	303 Stainless Steel
	B-0844	Bottom Seat Assembly (Viton)	
19	A-0053	1/2" Ball	316 Stainless Steel

Standard Construction

Item #	Part #			# Req.	Description	Material
	1/4"	3/8"	1/2"			
1		A-1497		1	Priming Valve	303 Stainless Steel
*2		B-0737		1	Top Seat Assembly	303 Stainless Steel
*3		A-0479		1	O-Ring	Buna-N
4		A-0077		1	Ball Check Spring	316 Stainless Steel
5		A-1496		1	Top Bushing	302 Stainless Steel
6		A-0054		1	3/8" Large Top Ball	316 Stainless Steel
7		A-0225		1	Yoke Lock Nut	Brass
*8	A-1461	A-1456	A-0959	1	Plunger Packing Set	Buna-N
9		C-1604		1	Yoke Cover	303 Stainless Steel
10		A-4104		1	Plunger Packing Nut Gland	303 Stainless Steel
*11	B-1175	B-1176	B-1177	1	Plunger	17-4 pH Stainless Steel
12		B-1173		1	Yoke	Malleable Iron
13		A-4095		1	Plunger Wiper Ring	Buna-N
14		A-4256		3	Belleville Washer	302 Stainless Steel
15		A-4094		1	Yoke Packing Nut	Brass
17		A-0126		1	1/4" Small Top Ball	316 Stainless Steel
*18		B-0736		1	Bottom Seat	303 Stainless Steel
*19		A-0054		1	3/8" Large Top Ball	316 Stainless Steel
20	A-1463	A-0957	A-1219	1	Plunger Packing Gland	303 Stainless Steel
21		A-4095		1	Wiper Drip Ring	Buna-N
22		A-4127		1	Yoke Packing Set	Buna-N

SS3 Basic Timer



Terms and Adjustments:

Frequency - Adjustable from 1 to 10; measured in cycles per minute.

Duration - Adjustable from 1 to 5; measured in seconds.

Prime - Adjustable from 10 to 120; measured in seconds.

Battery - Adjustable from 9.0 to 12.5; measured in Volts.

Temperature - Adjustable from 0 to 50; measured in degrees Fahrenheit.

Low Level - The point at which functionality will cease in order to preserve battery.

High Temperature - When the measured temperature is above this point, the controller will not operate.

SS3 Basic Timer Instructions

1. Turn on power switch.
2. To adjust Frequency, Duration, Battery, and Temperature: Press and hold the corresponding button until the yellow light blinks rapidly. While holding the button, adjust the potentiometer until the desired setting is reached. When the desired setting is reached, release the button.
3. To prime the pump, wait for the pump to kick on and then hold the prime button until the yellow lights blink rapidly. Release the button 1 second after it blinks rapidly. You can adjust the priming time by holding the button until it blinks rapidly and then adjusting the timer using the potentiometer just as you would the other settings.

3000 Series Solar Pump 1/4" Head Performance Data

Chart ratings listed below in Gallons per Day for single head
Double Head assemblies available

PSI	Cycles per Minute	Seconds On														
		1			2			3			4			5		
		Stroke			Stroke			Stroke			Stroke			Stroke		
		S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
0	1	.25	.50	.75	.50	.75	1	.75	1	1.50	.75	1.25	1.75	1	1.75	2.25
1000		.25	.50	.75	.50	.75	1	.50	.75	1.50	.50	.50	1.50	.75	1.50	1.75
2000		.25	.50	.75	.25	.50	.75	.50	.75	1	.50	1	1.50	.75	1.25	1.75
3000		.25	.50	.75	.25	.50	.75	.50	.75	1	.50	1	1.50	.50	1.25	1.75
4000		.25	.25	.50	.25	.50	.75	.33	.63	1	.38	.75	1.25	.50	1	1.25
0	2	.50	.50	1	.50	1.25	1.75	1	2.25	2.50	1.25	2.25	3.25	1.50	3	4.25
1000		.25	.50	1	.50	1	1.50	.75	1.25	1.75	1	2	3	1.25	2.50	4
2000		.25	.50	1	.50	1	1.50	.75	1.25	2	.75	2	3	1.25	2.50	3.50
3000		.25	.50	1	.50	1	1.50	.75	1.25	2	.75	2	3	1.25	2.50	3.75
4000		.25	.50	1	.50	1	1.50	.75	1.25	2	.75	2	2.75	1.25	2.50	3.50
0	3	.75	1	1.50	1.25	2	2.75	2.75	3.75	4.25	2.50	4	5	3.25	5.25	7.25
1000		.50	1	1.50	1	1.50	2.75	1.50	2.75	4	2	3.50	5	2.50	4.25	7.50
2000		.50	.75	1.25	1	1.50	2.50	1.25	2.75	3.75	1.50	3.25	4.75	2	4	6
3000		.50	.75	1.25	.75	1.25	2.25	1	2	3.25	1	2.50	4.50	1.50	3.25	5
4000		.25	.75	1	.50	1.25	2.25	.75	1.75	3	1	2.50	4	1.50	2.25	5
0	4	.75	1	1.75	1.50	2.50	3.50	2	3.50	5.25	2.75	4.75	6.50	3.75	6	8.50
1000		.75	1	1.75	1.25	2	3.25	1.75	3.25	4.50	2.25	4.25	6	2.75	5.25	8
2000		.75	1	1.75	1	2	3	1.50	2.75	4.25	2	4	5.25	2.50	4.50	7
3000		.50	1	1.50	1	1.75	3	1.50	2.75	4	2	3.75	5.75	2.50	4.50	7
4000		.50	1	1.50	1	1.75	3	1.50	2.75	4	2	3.75	4	2	4	6



1 Battery + 1 Solar Panel



2 Batteries + 1 Solar Panel

Stroke Key: S = Short Stroke M = Medium Stroke L = Long Stroke

All test results were calculated in Oklahoma City in the month of October 2018.

All tests were performed with a constant 14.1 battery voltage.

Results may vary with higher or lower battery charge in the field.

3000 Series Solar Pump

3/8" Head Performance Data

Chart ratings listed below in Gallons per Day for single head

Double Head assemblies available

PSI		Cycles per Minute		Seconds On														
				1			2			3			4			5		
				Stroke			Stroke			Stroke			Stroke			Stroke		
				S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
0	1	1	1	1.50	1.50	2	2.50	2	3	3.75	2.25	3	4.75	3	4	5.5		
500		.75	1	1.50	1	1.75	2.25	1.75	2.25	3.50	2.25	3	4.50	3	3.50	5.5		
1000		.75	1	1.50	1	1.75	2.25	1.75	2.50	3.25	1.75	2.50	3	2.75	3.50	5		
1500		.75	1	1.25	1	1.75	2	1.50	2.25	3	1.50	2.25	3	2.50	3.50	5		
2000		.50	1	1	1	1.50	2	1.50	2	2.75	1.75	2.75	3.75	2.25	3.50	5		
3000		.25	1	1	1	1.50	2	1	2	2.75	1.50	2.50	3	2	3	4.25		
0	2	1.50	2	2.50	2.50	3.75	5	3.75	5.50	7.75	5	7	8	6	9	12.50		
500		1.50	2	2.50	2.50	3.25	5	3.50	5	7	5	7	8	6	9	11		
1000		1.25	2	2.50	2	3	4.25	3.25	4.50	6.50	4	6.50	8	5	8	10.50		
1500		1.25	2	2.50	2	3	4.25	3.25	4.50	6.50	4	6.50	8	5	8	10		
2000		1.25	2	2.50	2	3	4.25	3.25	4.50	6.50	4	6	8	5	7	10		
3000		1.25	2	2	2	3	4.25	3	4.50	6	3.75	6	8	4.75	7.75	10		
0	3	2.25	3	4.75	4	6	8.75	5.50	7.50	11.50	7.50	10.50	13.75	9	12.75	16		
500		2	3	4.50	4	5	7	5	7.50	11	7	10	13	9	12	16		
1000		1.50	3	4.25	3.50	4.75	6.75	5	7.50	10	6.25	9.75	13	8	11.50	16		
1500		1.50	3	4	3	4.75	6.50	5	7.50	10	6.25	8.50	13	8	11	16		
2000		1.50	3	3.75	3	4.75	6.25	5	7.50	9.75	6.25	9.50	13	8	11	16		
3000		1.50	3	3.50	2.75	4.50	6.25	4.50	6.50	9	5.75	9.25	12	7	10	15		
0	4	3.25	4.75	6.25	5.75	10.25	11.75	7.75	11.50	15	10	17	20	12.50	20	25		
500		3	4	6	5	9	10	7	11	14	10	15	19	12	17	23		
1000		2.75	4.25	5.50	4.75	6.25	8.50	7	9.50	13	9	12.25	18	11	15	22		
1500		2.75	4.25	5	4.75	6.25	8.50	7	9.50	13	9	12	18	11	15	21		
2000		2.75	4.25	5	4.50	6.25	8.50	6.50	9.50	12.50	8.25	12	18	10.50	15	20		
3000		2.25	3.25	4.50	3.75	5.75	8.50	5.75	8.50	11	7.50	12	15.50	8.75	14.25	19.50		

1 Battery + 1 Solar Panel 2 Batteries + 1 Solar Panel

Stroke Key: S = Short Stroke M = Medium Stroke L = Long Stroke

All test results were calculated in Oklahoma City in the month of October 2018.

All tests were performed with a constant 14.1 battery voltage.

Results may vary with higher or lower battery charge in the field.

3000 Series Solar Pump

1/2" Head Performance Data

Chart ratings listed below in Gallons per Day for single head
****Double Head assemblies available****

PSI	Cycles per Minute	Seconds On														
		1			2			3			4			5		
		Stroke			Stroke			Stroke			Stroke			Stroke		
		S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
0	1	1.50	2	2.75	2.75	4.25	5.25	3.75	5.25	7	5	6.50	8.75	6.25	9	11
500		1.50	2	2.75	2.50	3	4	3	4	6	4.50	6.25	8.50	5	7.25	9.75
1000		1.25	1.75	2	2	2.75	4	2.50	4	5	3.75	5	6.50	4	6	8
1500		1.25	1.50	2	2	3	4	3.25	5	6.50	4.50	5.75	7.50	4	5.75	7.50
2000		1	1.50	1.75	1.50	2	2.50	2.50	3.75	4	3	4.75	6	4	5.50	7
0	2	2.50	4	5.50	4	7.25	8	5.75	10.25	14	7.75	12	16.50	10	14	20
500		2.50	4	5.50	4	6	8	5.50	9	12	7.75	11	16	10	14	19
1000		2.25	3.75	5.25	3.75	5.50	8	5.50	8.50	10.75	7.75	10.50	16	9.50	13.50	18.50
1500		2.25	3	4	3.75	5.50	8	5.50	8	10.50	7.25	10.50	14.50	9	13	18
2000		2.25	2.75	3.75	3.50	5.50	7.50	5.50	7.50	10.50	7.25	10.25	13	8.50	13	17
0	3	5	6.25	8	7.75	11	14.25	10.50	14.50	20	13.50	18	25	16	24	33
500		4.25	6	7	6	9.50	13	9.50	13	17	12	18	23	15	22	30
1000		3.75	5.25	5.75	5.75	8.75	12	8.75	12.50	15.75	11.25	17.25	21	14	20	27
1500		3.75	5	5.25	5.50	8	12	8	12	15.50	11	17	21	13	19	27
2000		3.75	4.50	5.25	5.50	8	11.50	7.75	11.25	15.50	11	16	21	13	19	27
0	4	5.50	8	11	8.75	14	19.50	13	19	27	17	25	35	20	32	45
500		5	8	10	8	13	18	12	18	25	16	24	33	20	29	41
1000		5	7	9	8	12	16	11	18	22	15	23	32	20	27	37
1500		5	6	8	8	11.50	15	11	16	21	14	22	29	18	26	36
2000		4.25	5.75	7.50	7.50	11.50	15	10.50	15	20	14	21	26	17	26	36

1 Battery + 1 Solar Panel

2 Batteries + 1 Solar Panel

Stroke Key: S = Short Stroke M = Medium Stroke L = Long Stroke

All test results were calculated in Oklahoma City in the month of October 2018.

All tests were performed with a constant 14.1 battery voltage.

Results may vary with higher or lower battery charge in the field.

Installation and Maintenance

Installation

1. Plan ahead for proper mounting, pump location is very important. Position the pump to provide efficient routing of suction, discharge lines, and electric service. Avoid long suction lines and provide for a flooded suction whenever possible.
2. Pump fluid line connections operate best when there is a minimum restriction to the medium flow.
3. Install the proper electrical starters and disconnect switches. It is recommended that a solid mounting surface be used. Take advantage of factory installed holes in the base plate for securing the pump.

Fluid End

All fluid connections , both suction and discharge, should be sealed tight. Fluid end connections are 1/4" NPT. The suction connection is at the bottom of the fluid end and the discharge connection is at the top.

Start Up

1. Open the priming valve on the fluid end assembly and start the pump motor.
2. Allow the pump to run until a clear stream with no bubbles comes out of the priming valve.
3. Close the priming valve.
4. Check the packing for proper sealing. If it leaks, stop the pump and make necessary adjustments.

Maintenance

1. Check periodically (minimum once per month) and apply small amount of grease to the cam bearing and to the crosshead areas that cycle through the linear bearings.
2. Check the packing regularly. If leakage is observed, stop the pump.
3. Make small adjustments by turning the gland nut.
4. Restart the pump but do not overtighten the packing as this will reduce the packing life.

** For further assistance please call our Oklahoma City facility at (405) 843-5654

Product Representatives

Patterson Equipment Sales, Inc.

1610 S. Regal Ave.
Odessa, TX 79763
(432) 332-3345
Chad Patterson
chad@pattersononequipsalesinc.com
Britt Vickers
britt@pattersononequipsalesinc.com

JB Sales Solutions, LLC

218 Gleneagles Circle
Broussard, LA 70518
(337)280-3157
Bruce Cardon
bcardon@jb-salessolutions.com
www.jb-salessolutions.com

MCM Industrial Solutions, LLC.

25112 167th Ave. SE
Covington, WA 98042
(253) 350-4878
Mike Maresh
mike@mcmindustrialsolutions.com

Rocky Mountain Oilfield Warehouse

Casper Location

414 South Elm St.
Casper, WY 82601
(307) 266-2260
Phillip Cooper
sales@rmow.com

Fort Morgan Location

731 Burlington Ave.
Fort Morgan, CO 80701
(970) 867-2778
Jeremy Horton
Jeremyh@rmow.com

Rock Springs Location

2901 Killpecker Drive
Rock Springs, WY 82901
(304) 382-2076
Kevin Wright
Kevinw@rmow.com

Product Representatives

Rep Sales, Inc.

Olney Location

1124 S. Whittle Ave.
Olney, IL 62450
1 (800) 274-2003
Jim Mowrey
jim@repsales.net

Midvale Location

3545 Brightwood Rd. SE
Midvale, OH 44653
(740) 922-1557
Nadine Liggett

Pump Service Dealers

M&M Equipment Company

P.O. Box 1293
Great Bend, KS 67530
(620) 792-3162
Mike Johnson
mkj@mandmequipment.com

Moores Pump & Services, Inc.

P.O. Box 746
Broussard, LA 70518
(337) 837-2794
Scotty Roy
sroy@moorespump.com

Pruitt Production Service

P.O. Box 808
Giddings, TX 78942
(979) 542-5104
Jay Pruitt
pruittproduction@pruittpsi.com

RDM Equipment Co, Inc.

P.O. Box 169
1141 Mechanicsburg Rd.
Wooster, OH 44691
(330) 264-8808
Joel@RDMEquipment.com

RKT Operating, LLC.

211 Industrial Dr.
Longview, TX 75602
(903) 686-0284
Keith Tidwell
Lee Hampton

Speed Specialty

3010 Kermit Highway
Odessa, TX 79764
(432) 333-2711
Dean Kyer
support@speedspecialtyodtx.com

Pump Service Dealers

T&J Valve

Johnny Fowler - Owner

Artesia Location

412 E. Main
Artesia, NM 88210
(575) 746-2287

Big Lake Location

55 W. 11th St.
Big Lake, TX 76932
(325) 884-1024

Big Spring Location

700 E. 3rd
Big Spring, TX 79720
(432) 606-5090

Carlsbad Location

425 S. Main
Carlsbad, NM 88220
(575) 706-0013

Hobbs Location

1306 W. Broadway St.
Hobbs, NM 88240
(575)393-8019

San Angelo Location

5798 Old Christoval Rd.
San Angelo, TX 76904
(325) 716-1506

Odessa Location

1313 W. 2nd St.
Odessa, TX 79763
(325) 812-5137

Vesco Supply Company

Brian Hogue - Owner
www.vesco-inc.com
vesco@reagan.com

Woodward Location

211 48th St.
Woodward, OK 73801
(580) 256-2569

Watonga Location

210 W. Russworm Dr.
Watonga, OK 73772
(580) 623-5547

Liberal Location

6501 North Hwy 83
Liberal, KS 67905
(620) 624-8318

Canadian Location

10919 U.S. Highway 60
Canadian, TX 79014
(803) 323-8323

Zimco Instrumentation

11141 15 Street NE
Calgary, AB T3K 0Z5
Ron Becker - General Manager
(403) 253-8320
ron.becker@zimco.ca
Curtis Anheliger - Inside Sales
(403) 253-8320 ext. 244
curtis.anheliger@zimco.ca

Houma Valve Service

1909 Coteau Road
Houma, LA 70364
(985) 879-3594
Richard Bergeron
Houmavalve@teche.net
www.houmavalve.com

Notes



Different By Design

Corporate Office

Richart Distributors, Inc.
3415 S. I-35 Service Rd.
Oklahoma City, OK 73129
(405) 843-5654

Rex Haymaker - Executive VP
Cell: (405) 206-4807
Rex.Haymaker@flomore.com

North Dakota

533 East Villard Suite B
Dickinson, ND 58601
(701) 483-8267

Robert Olson
(701) 226-7814
roberto@rmow.com

Contact Us

Byron Guinn
Senior Sales Consultant
(405) 843-5654
byron.guinn@flomore.com

Matt Duncan
Production Manager
(405) 843-5654
matt.duncan@flomore.com

Scott "Coach" Mick
Outside Sales/Business Development
Office: (405) 843-5654
Cell: (405) 343-7322
scott.mick@flomore.com

Chris Smith
Purchasing Manager/Inventory Control
(405) 843-5654
chris.smith@flomore.com



www.flomore.com