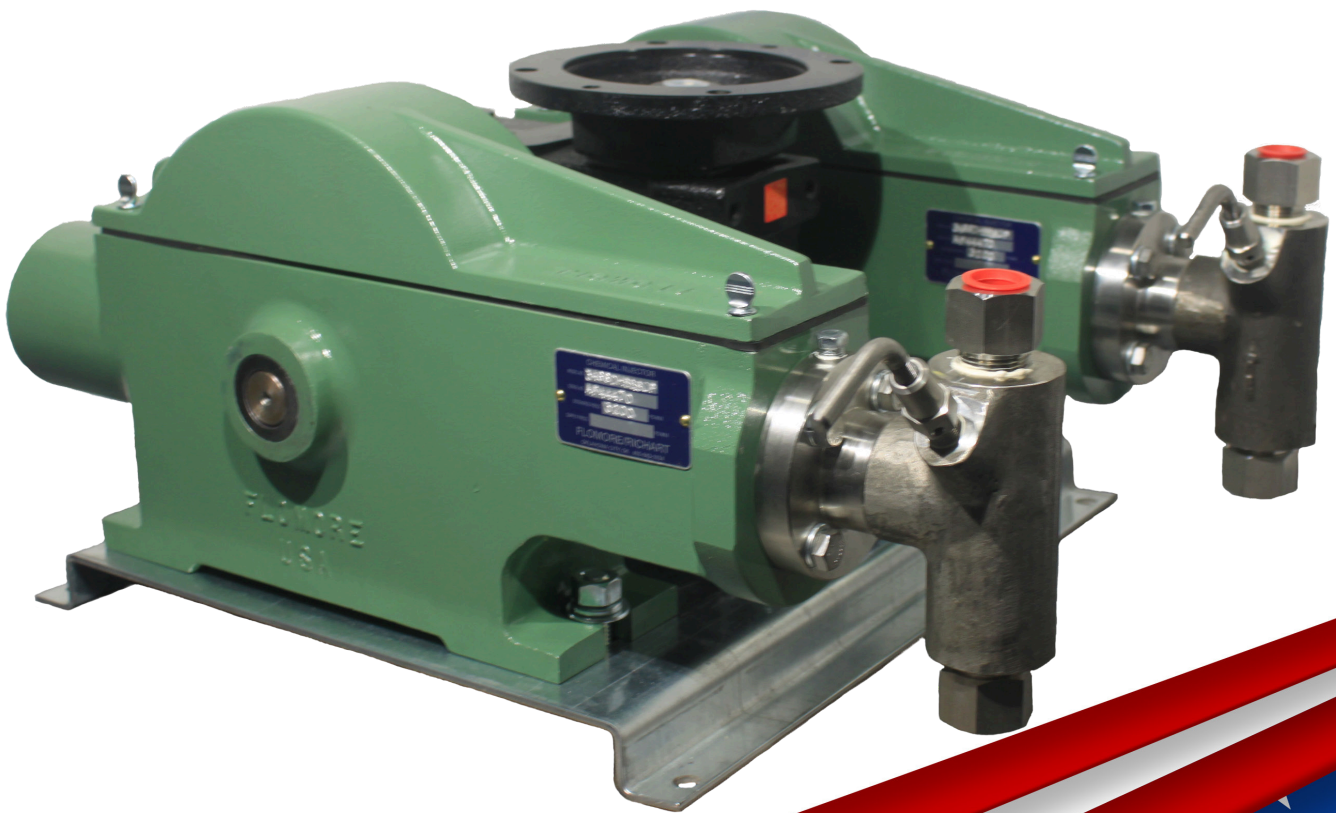




Different By Design

3400 Series Injector

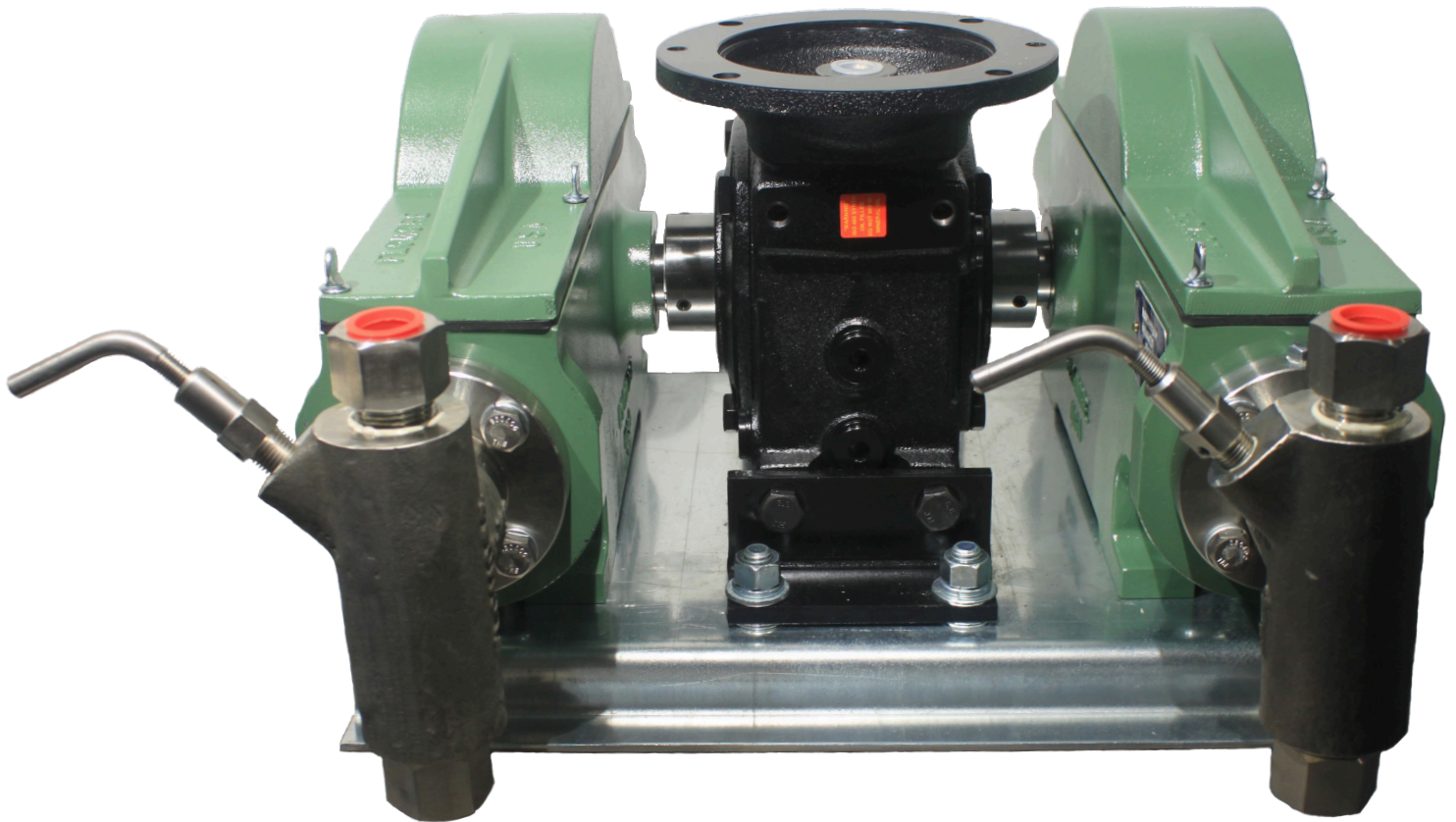




Maintenance Instructions to Inspect and Replace Plunger Packing

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.)

3400 Series Injector



3400 Series Features

Oilless Drive Unit

Recommended: 1 Horsepower Motor (Sold Separately)
(2HP Optional, 1 or 3 phase, TEFC or Explosion Proof)

Available in 2 stroke rates: 30 or 60 Strokes Per Minute

Multiple plunger sizes available: 3/8", 1/2", 3/4", 1", 1 1/4"

Stroke Adjustable to Desired Flow Rate

Maximum Discharge Pressure = 7500 psi with 3/8" plunger

Max Volume = 880 GPD with 1 1/4" plunger

Installation and Operating Instructions

1. The location of the pump is important:
 - Long suction lines should be avoided.
 - Flooded suction must be provided as much as possible.
 - A line check should be installed at the pump discharge connection and injection point.
 - Electrical starters and disconnect switches should be installed properly.
 - The pump must be mounted to a solid surface.
 - Minimize restrictions to media flow in all connecting lines.
2. Ensure suction and discharge connections are sealed tight. (“Suction” connection is located at the bottom of the fluid end, “discharge” is located at the top.)
3. Utilizing proper electrical service, make connections to the conduit.
4. Verify stroke adjustment knob for maximum stroke length.
5. Evacuate any air in the suction lines by opening the priming valve on each head assembly.
6. Turn the power on. Turn off the pump immediately if you hear any abnormal sounds, as this may cause damage to the pump.
7. While priming the fluid end, watch pump operation for any problems or issues. Pump operation should be smooth.
8. Once all the air has been cleared from the suction line, close the priming valve.
9. Stop the pump if the packing does not seal properly. If needed, adjust the packing and start the pump again.
10. Set the stroke adjustment knob for the desired flow rate, then tighten the adjustment knob set screw to lock the setting in place.

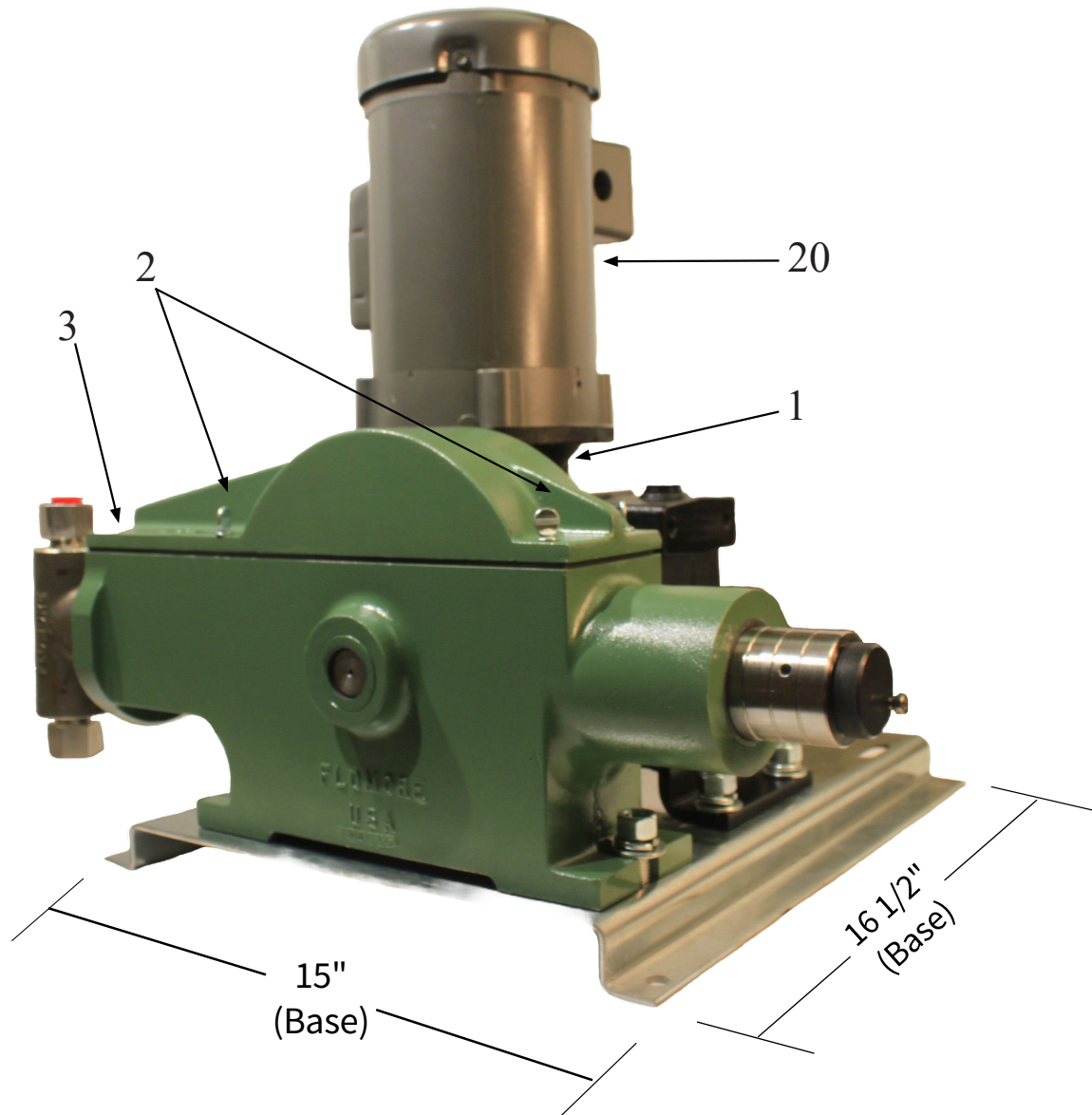
Preventive Maintenance

1. Examine the pump operation periodically, applying a small amount of grease to the cam bearing and crosshead areas that cycle through linear bearings.
2. Packing should be checked regularly for signs of leaking. If leaking, turn the pump off and slightly tighten the gland nut making sure to not overtighten. Overtightening the gland nut will shorten the life of the packing.

Troubleshooting

1. Motor is not running.
 - Motor stalled.
 - Maximum discharge pressure was reached.
 - Circuit breaker or fuse not working properly.
 - Motor is overheated.
2. Pump not stroking.
 - Stroke adjustment screw has backed out.
 - Broken drive clip, plunger not fastened into crosshead.
 - Cam not engaged on the drive shaft.
 - Crosshead in a bind – adjust stroke adjuster.
3. No fluid movement
 - Check for packing leak.
 - Discharge valve seats may not be seating properly.
 - Suction valves not seating – Flow gauge moving back and forth at the same level.
 - Air trapped in fluid injection head. Reprime the pump using the priming valve.
 - Blockage in suction or discharge line.

3400 Series Power End



Overall Dimensions

<i>Item</i>	<i>Length</i>	<i>Width</i>	<i>Height</i>
Simplex (No Motor)	16 1/2"	24 1/2"	10"
Simplex w/ Motor	16 1/2"	24 1/2"	Varies by Motor
Duplex (No Motor)	16 1/2"	24 1/2"	10"
Duplex w/ Motor	16 1/2"	24 1/2"	Varies by Motor
Quadplex (No Motor)	31 1/2"	24 1/2"	10"
Quadplex w/ Motor	31 1/2"	24 1/2"	Varies by Motor

3400 Series Power End

Performance Data

Model #	Plunger Size	Strokes Per Minute	Maximum Discharge Pressure	Gallons Per Day	
				Minimum	Maximum
34-33SS	3/8"	30	7500	2	18
34-63SS		60		3.5	35
34-35SS	1/2"	30	4000	7	70
34-65SS		60		14	138
34-36SS	3/4"	30	3200	16.5	165
34-66SS		60		33	330
34-37SS	1"	30	1000	28	280
34-67SS		60		56	560
34-38SS	1 1/4"	30	500	44	440
34-38SS		60		88	880

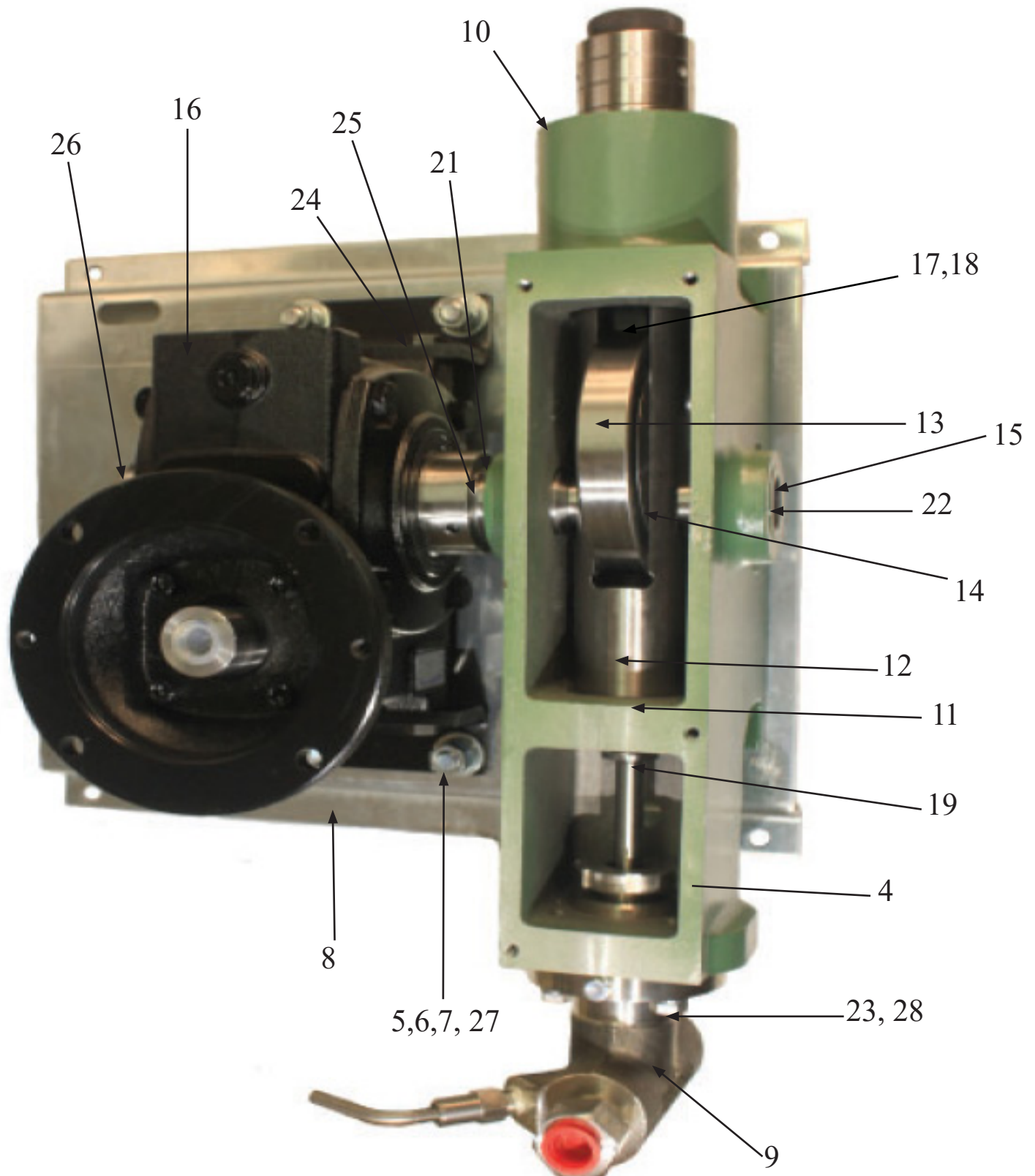
Injector Type	Weight (lbs.)
Simplex	80
Simplex with Motor	130
Duplex	120
Duplex with Motor	175
Quadplex	201
Quadplex with Motor	255

Injector Weight

Parts List

Item #	Part #	# Req.	Description	Material
1	C-2150	1	Cover	Aluminum
2	A-0136	4	Thumb Screw	Plated Steel
3	B-1647	1	Cover Gasket	Nitrile
20	A-6766	1	1HP Explosion Proof Electric Motor	▲

3400 Series Injector

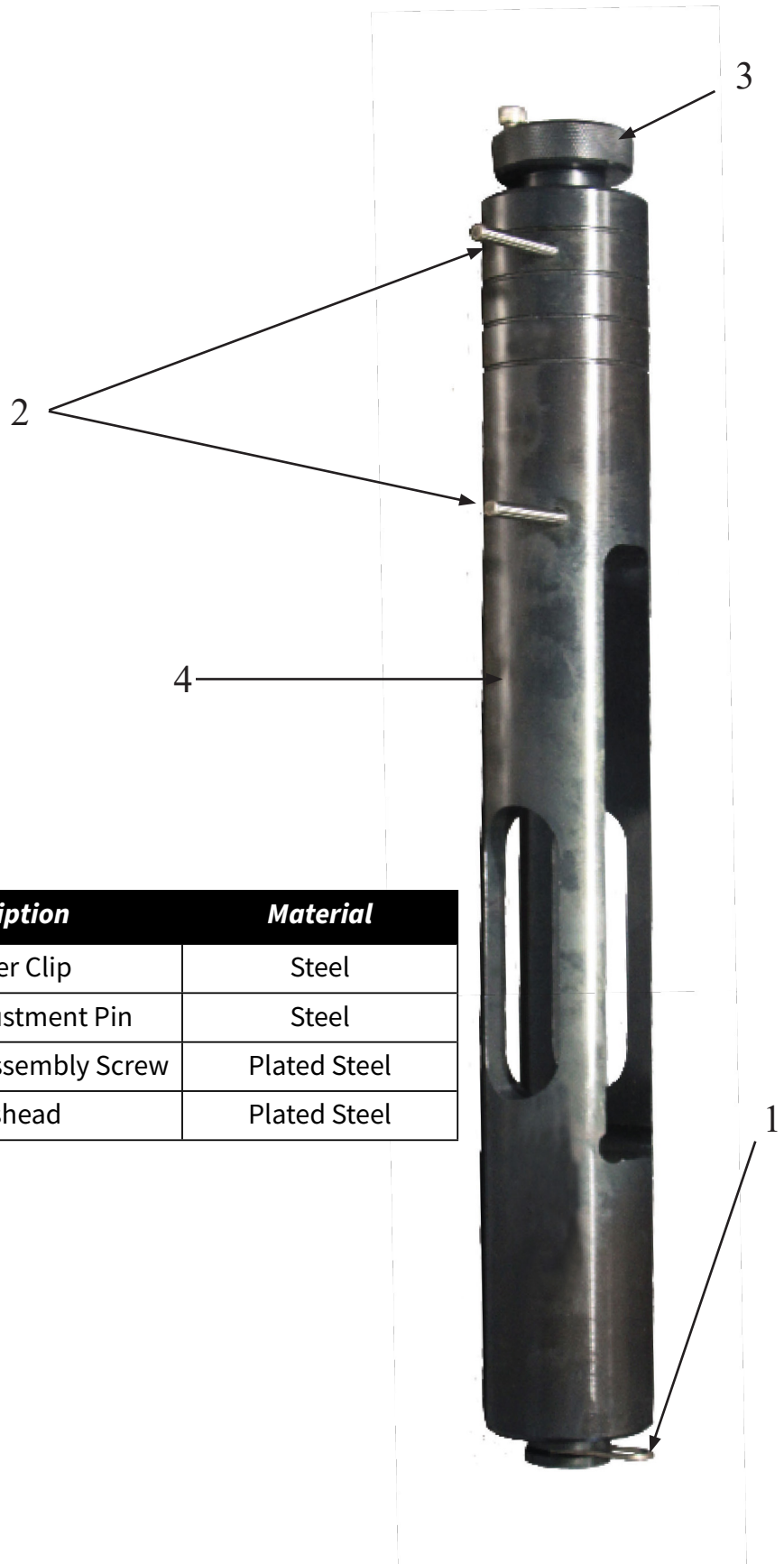


3400 Series Injector

Parts List

Item #	Part #	#Req.	Description	Material
1	C-2150	1	Cover	Aluminum
2	A-0136	4	Thumb Screw	Plated Steel
3	B-1647	1	Cover Gasket	Nitrile
4	D-0528	1	Pump Housing	Aluminum
5	A-6440	6	Hex Bolt	Plated Steel
6	S-0010F.3	6	Hex Nut	Plated Steel
7	B-0316-5	16	Flat Washer	Plated Steel
8	C-2165	1	Base Plate	Plated Steel
9	See Page 12	1	Head Assembly	Various
10	A-6474	1	Sleeve Bearing	▲
11	A-6473	1	Sleeve Bearing	▲
12	C-2152	1	Crosshead	Plated Steel
13	B-1646	1	Cam Assembly (1 Key)	Steel
	B-1746	1	Cam Assembly (2 Key)	
14	A-6470	1	Driveshaft Key	Steel
15	A-6476	1	Driveshaft Bearing	▲
16	B-1648	1	30 SPM Gear Reducer	▲
	B-1649	1	60 SPM Gear Reducer	▲
17	A-6471	1	Stroke Adjustment Shaft	Plated Steel
18	A-6477	1	Stroke Adjustment Screw	Steel
19	A-6573	1	Drive Clip	Steel
20	A-6766	1	1 HP Explosion Proof Electric Motor	▲
21	A-6475	1	Driveshaft Bearing	▲
22	C-2231	1	Driveshaft - Duplex	Steel
	C-2173	1	Driveshaft - Simplex	Steel
23	A-4452	4	Hex Bolt	Stainless Steel
24	A-6442	4	Hex Bolt	Plated Steel
25	A-6443	1	Snap Ring	304 Stainless Steel
26	A-6494	1	Shaft Key for Gear Reducer	Plated Steel
27	A-6441	6	Lock Washer	Plated Steel
28	A-0459	4	Lock Washer	Plated Steel

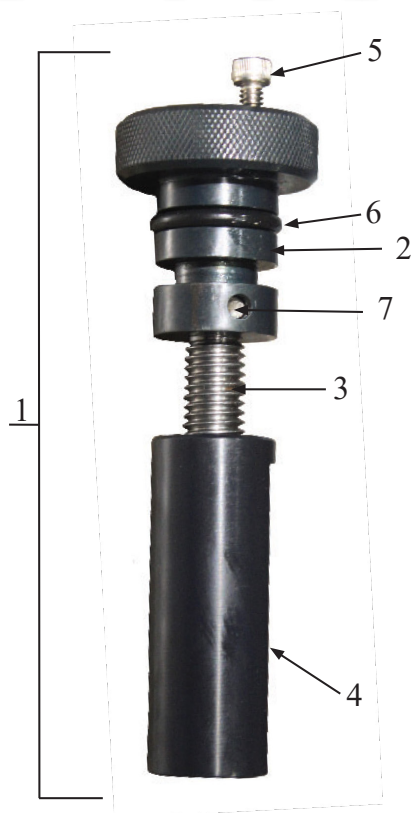
3400 Series Components



C-2152 Crosshead

Item #	Part #	Description	Material
1	A-6573	Plunger Clip	Steel
2	A-6479	Stroke Adjustment Pin	Steel
3	A-7158	Adjustment Assembly Screw	Plated Steel
4	C-2152	Crosshead	Plated Steel

3400 Series Components



A-7158 Adjuster Assembly (See Left)

Item #	Part #	Description	Material
1	A-7158	Adjustment Screw Assembly	Plated Steel
2	A-6477	Stroke Adjustment Knob	Plated Steel
3	A-6472	Stroke Adjustment Screw	Steel
4	A-6471	Stroke Adjustment Shaft	Plated Steel
5	A-6480	Adjustment Knob Set Screw	Stainless Steel
6	A-7204	Adjustment Screw O-Ring	Buna
7	A-6478	Adjustment Screw Pin	Steel

B-1646 Cam Assembly Simplex

Item #	Part #	Description	Material
1	B-1645	Drive Cam	Steel
2	A-6463	Cam Bearing	



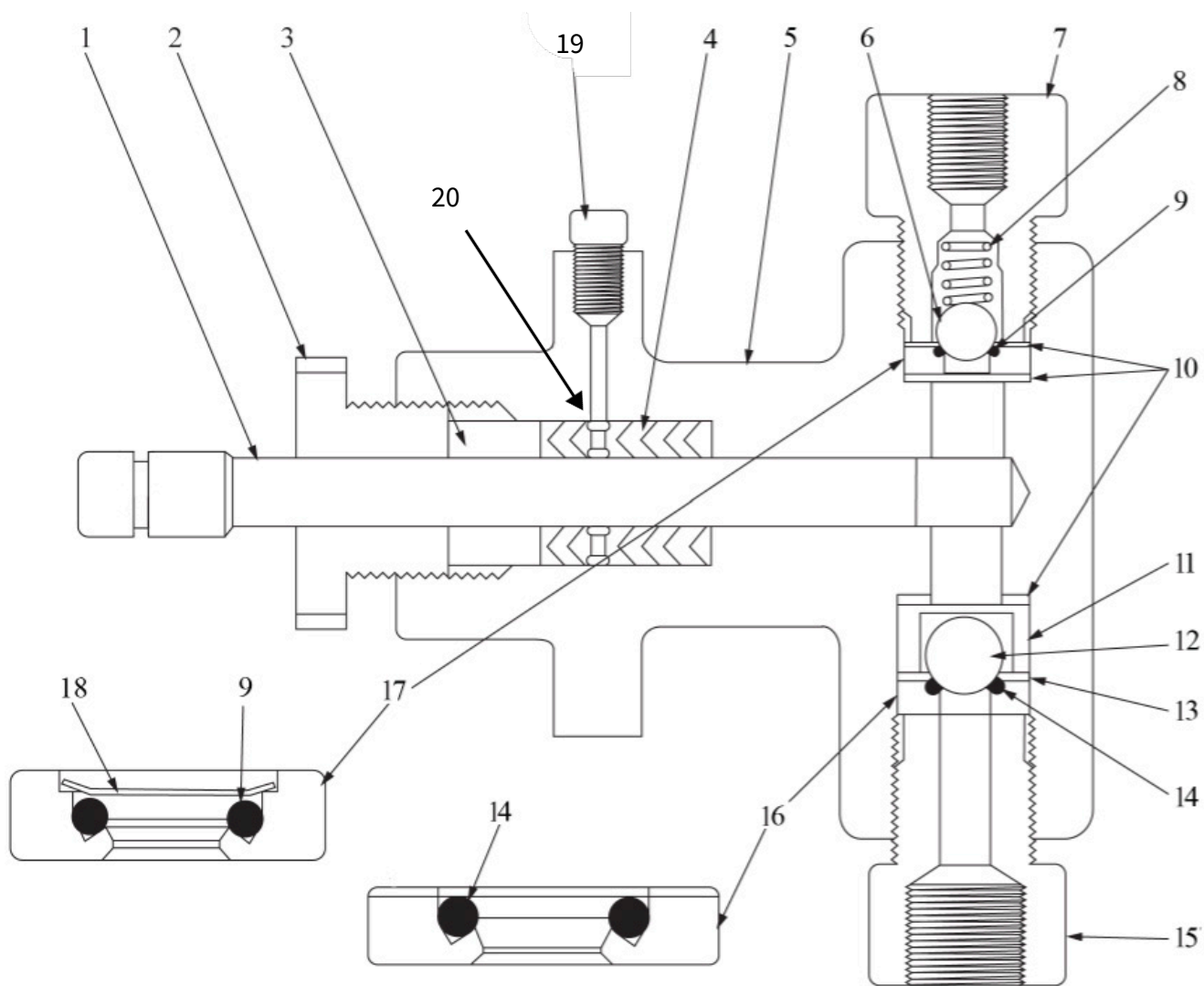
B-1746 Cam Assembly Duplex

Item #	Part #	Description	Material
1	B-1782	Drive Cam (2-Key)	Steel
2	A-6463	Cam Bearing	



Injector Head

(For 3/8", 1/2", 3/4", 1", and 1 1/4" Heads)



Packing Options

<i>Material</i>							
<i>Size</i>	<i>Buna</i>	<i>Viton</i>	<i>Teflon</i>	<i>Tef/Bun</i>	<i>Tef/Vit</i>	<i>Hard</i>	<i>SDP</i>
3/8"	A-1456	A-4101	A-1234	A-1455	A-1463	A-1875	A-7172
1/2"	A-0959	A-4103	A-1012	A-0958	A-0961	A-1874	A-7173
3/4"	A-2771	A-4657	A-2988	A-2888	A-2989	A-2772	A-7174
1"	A-0050	A-4658	A-1013	A-1017	A-4659	A-4135	A-7175
1 1/4"	A-0405	A-4480	A-1014	A-1015	A-4409	A-4133	A-7176

Injector Head

Ductile Iron Head Parts List

Item #	Part #					# Req.	Description	Material
	3/8"	1/2"	3/4"	1"	1 1/4"			
	C-2161	C-2162	C-2146	C-2147	C-2148	1	Head Assembly	Stainless Steel with Stainless Steel Trim
1	A-6498	A-6499	A-6459	A-6460	A-6461	1	Plunger	Armalooy - 17.4 pH Stainless Steel
2	D-0375	D-0500	D-0750	D-1000	A-0403	1	Packing Gland Nut	304 Stainless Steel Plated Steel
3	A-0957	A-1219	A-2769	A-0043	A-0404	1	Packing Gland	304 Stainless Steel
*4	A-1456	A-0959	A-2771	A-0050	A-0405	1	Plunger Packing (STD)	Buna-N
5	C-0147	C-0140	C-0340	C-0138	C-0135	1	Head Body	Stainless Steel
6	A-0054					1	Discharge Check Ball	316 Stainless Steel
7	A-2456					1	Discharge Bushing	304 Stainless Steel
8	A-0077					1	Check Ball Spring	316 Stainless Steel
*9	A-2097					1	Discharge O-Ring	Buna-N
10	A-2350					3	Gasket	304 Stainless Steel
11	A-0444					1	Ball Cage	17.4 pH Stainless Steel
12	A-0054	A-0053				1	Suction Check Ball	316 Stainless Steel
13	A-2350	A-2338				1	Gasket	304 Stainless Steel
*14	A-2097	A-0612				1	Suction O-Ring	Buna-N
15	A-2455					1	Suction Bushing	304 Stainless Steel
16	B-0698					1	Suction Seat Assembly	304 Stainless Steel
17	B-0368					1	Discharge Seat Assembly	304 Stainless Steel
18	A-3523					1	Retaining Ring	304 Stainless Steel
19	A-0516					1	Pipe Plug	Zinc Plated Steel
20	A-0742	A-0447	A-2770	A-0448	▲	1	Lantern Ring	303 Stainless Steel

Recommended Spare Parts in Green

Alternate Components Available

Alternate Components

Item #	Part #	Description	Material
9	A-2336	O-Ring	Viton
	A-7115-110	O-Ring	SDP
11	A-2184	O-Ring (1/2" - 1 1/4")	Viton
	A-2336	O-Ring (1/4" & 3/8")	
	A-7115-111	O-Ring	SDP

Product Suggestion : Hard packing for 3000 PSI and above

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