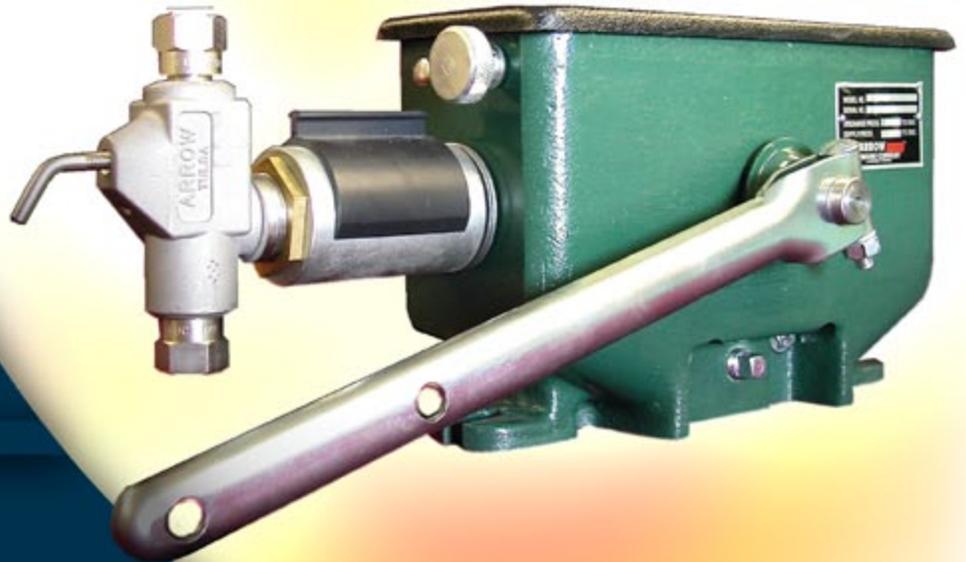


10 CHEMICAL PUMP



CP10-RP-S-APR12



ARROW ENGINE COMPANY
a TRIMAS company

In 1955 Arrow Engine Company opened for business, beginning the tradition of providing premium service and exceptional products to the oil & gas industry, as well as the industrial engine market, throughout the world.

Arrow is a part of the Engineered Components segment formed by TriMas Corporation. Headquartered in Bloomfield Hills, Michigan, TriMas Corporation (NASDAQ- TRS) provides engineered and applied products for growing markets worldwide. TriMas Corporation is organized into the following reportable segments: Packaging, Energy, Aerospace & Defense, Engineered Components, Cequent North America, and Cequent Asia Pacific. With almost a billion dollars in sales, TriMas Corporation has approximately 4,000 employees at over 60 different facilities in 11 countries.

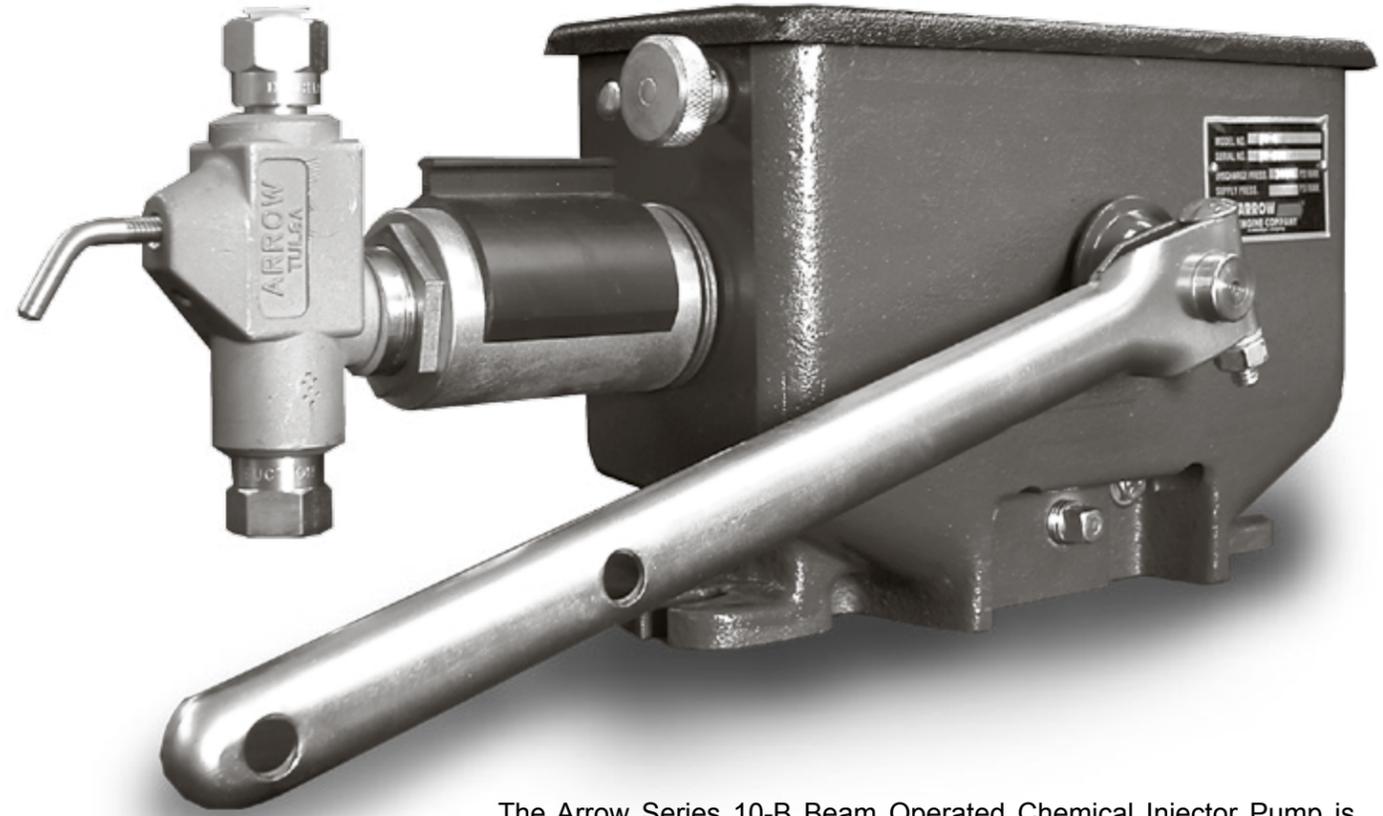
With a consistent focus on our customers' needs, striving to help them grow their business, and producing the most reliable equipment and parts in the industry, Arrow has forged a 55-year tradition of excellence.



10 SERIES

PERFORMANCE & SPECS

The Arrow Series 10 Beam Chemical Pump provides a reliable and versatile means of injecting chemicals under any operating conditions. It was designed for the injection of de-emulsifiers, solvents, corrosion inhibitors, scale inhibitors, lubricants and other chemicals for operation on a beam pumped well. The Arrow Series 10-B Chemical Injectors are positive displacement type pumps powered by direct connection with rod, 1/4" pipe or cable to the walking beam or rod line. The cam mechanism is housed in a precision-bored, heavy cast iron case and runs submerged in oil for long life. The unit pumps on the upstroke of the walking beam then returns to its set position on the downstroke.

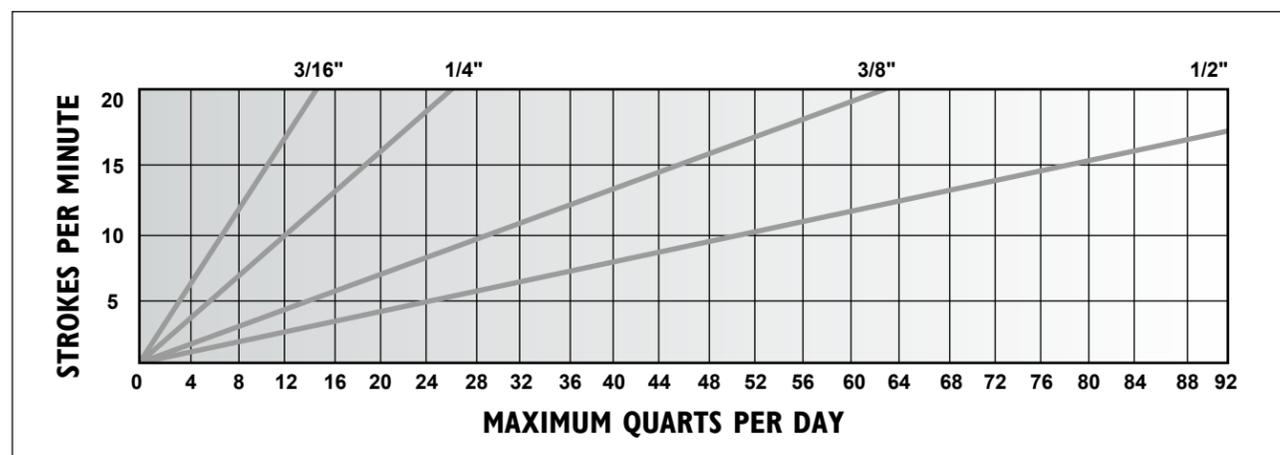


The Arrow Series 10-B Beam Operated Chemical Injector Pump is available in either single or double head configurations with steel (standard) or 316 stainless steel heads for corrosion protection. The Arrow Beam Pump is normally located at the base of the Sampson post on the pump jack and mechanically connected to the walking beam with the ASA-700 beam clamp assembly furnished with each pump.

CAPACITY DATA

	PLUNGER	MAXIMUM DISCHARGE PRESSURE	MODEL NO.	QUARTS/DAY
SINGLE HEAD UNIT	3/16"	3000 PSI	10-B	12
	1/4"	3000 PSI	10-B	22
	3/8"	3000 PSI	10-B	55
	1/2"	1500 PSI	10-B	92
DOUBLE HEAD UNIT	3/16"	3000 PSI	10-2B	24
	1/4"	3000 PSI	10-2B	44
	3/8"	3000 PSI	10-2B	110
	1/2"	1500 PSI	10-2B	184

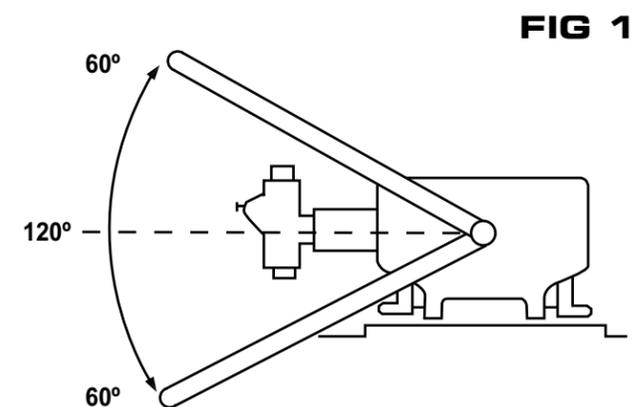
VOLUMETRIC CONVERSION



INSTALLATION

When installing the Arrow Series 10 Beam Operated Chemical Injector, care must be taken to be sure the suction side of the injection head will be flooded with the chemical that is being injected. The beam pump must be located so the operating lever can move to a point at least 3" below the base of the case and have ample clearance above the pump (approximately 16") for full travel of the lever (fig.1.) Back the stroke adjustment off completely to allow the striker plate (ASA-4034-BA) movement. This reduces the compression of 232-96 (232-46 for two heads) plunger return spring.

INSTALLATION



- 1** Remove pump from carton and inspect for possible damage in transit from factory. If the pump has been damaged in transit, file claim with the carrier.
- 2** Bolt holes are provided for a permanent mounting (fig 2.)
- 3** Connect the suction line to bottom of pump head. If a reservoir is furnished with the pump, the suction line is already connected.
- 4** Connect the discharge line (5/16" copper tubing will suffice). An ASA-675 stainless steel line check is provided. This valve should be installed as close to the point of injection as possible. Note the arrow in the check valve indicated the direction of the flow. The top connection on the pump head is the outlet and has 1/4" female pipe thread connection.
- 5** Connect ASB-67 lever to the power source as follows:
 - a. Attach ASA-538 Knuckle Assembly to outer hole of ASB-67 lever.
 - b. Locate a point on the walking beam where there is 16 1/4" of travel. Attach the ASA-700 beam clamp at this exact spot and there will be 1" of plunger stroke. If less than 1" of stroke is needed, turn the stroke adjusting screw to the necessary setting.
 - c. A 3.8" OD rod, pipe or a cable (usually 10' or 12' is required for an oilfield walking beam pump). Attach an ASA-700 beam clamp to the walking beam. Insert rod, pipe or cable in the ASA-538 connecting knuckle on the ASB-67 lever arm. Tighten set screws to secure position of rod or pipe

ROLL PIN PLACEMENT

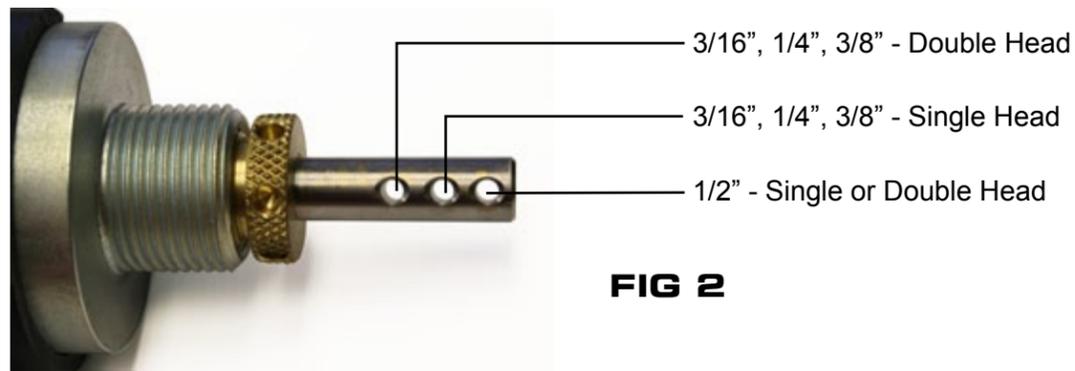


FIG 2

1	Open ASA-1497 priming valve.
2	Manually operate ASB-67 lever arm until the pump discharges fluid without air bubbles in the chemical stream.
3	Close ASA-1497 valve for normal operation.
4	Start primer mover.
5	Make visual check of plunger drip; use ASA-315 gland wrench included in package to slowly tighten gland to prevent excess drippage. DO NOT OVER TIGHTEN plunger packing. A couple of drops of fluid per minute during break-in is beneficial. After one or two days operation, readjust packing to eliminate dripping.

OPERATION

Pump volume is adjusted simply by changing the plunger stroke length. With the outside stroke adjusting knob 205-46, turn to right to decrease pump volume and left to increase pump volume. For good pump operation, the pump head, the fluid discharge line, and all other fittings up to the line check should be thoroughly purged of all air bubbles. Check pump action by opening ASA-1497 priming valve.

HEAD REPLACEMENT & ADDITION

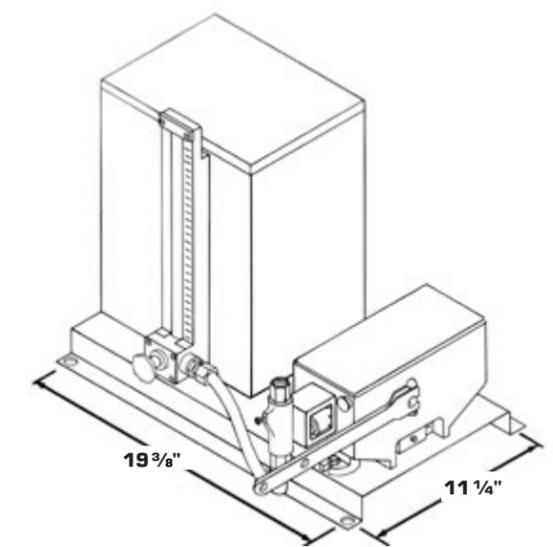
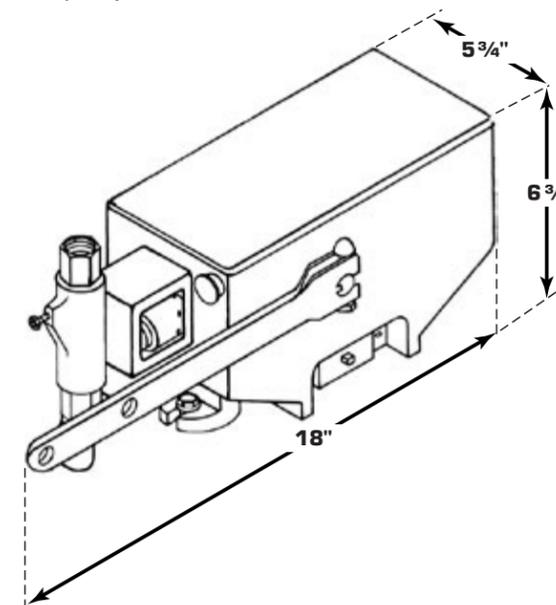
1	Pull the plunger from the yoke and head assembly.
2	Place the ASA-1227-BA spring retainer on the ASA-4045 plunger connector.
3	Insert the plunger into the hole in the plunger connector and line up the cross drilled hole in the plunger pin through the plunger connector and center hole of the plunger. See FIG 2.
4	Place the 232-96 (232-46 for two heads) spring over the plunger and by compressing the spring, insert fluid end of plunger through the 1" hole in the end of the case and have the plunger connector far enough down the strike plate for the plunger to be horizontal with the case.
5	Carefully insert the plunger in the yoke and injector head assembly and screw the yoke into the case. Special care should be taken with the 3/16" plunger as it is more susceptible to damage by bending the 3/16" end.
6	Tighten yoke with a wrench.

DIMENSIONS & SHIPPING WEIGHT

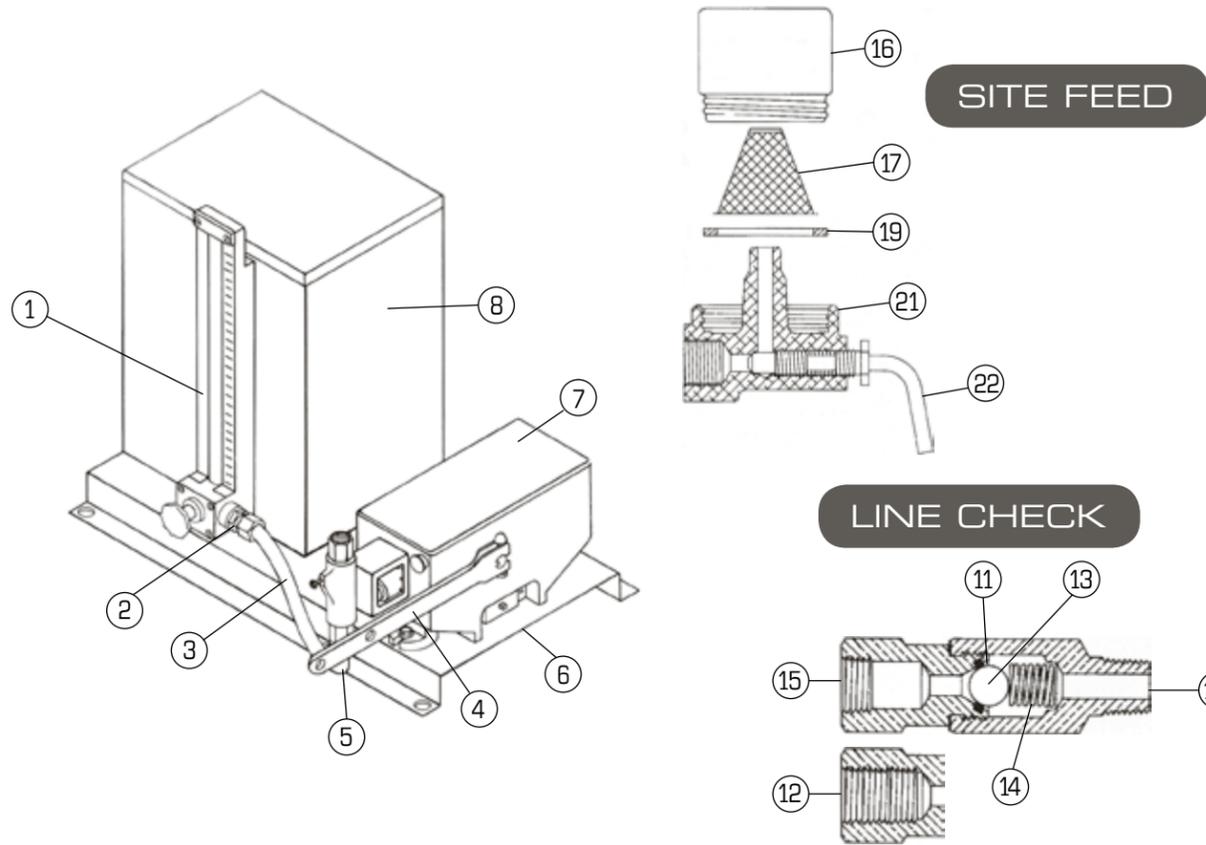
Shipping Weight* – 31lbs

Carton Dimensions* – 21" x 13" x 10"

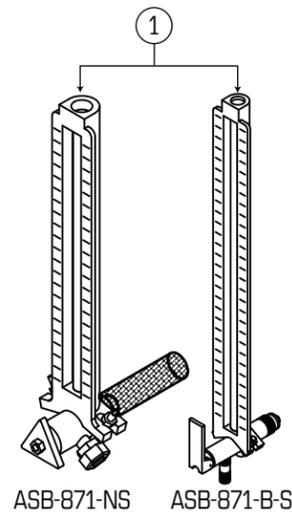
*Pump only, without tank.



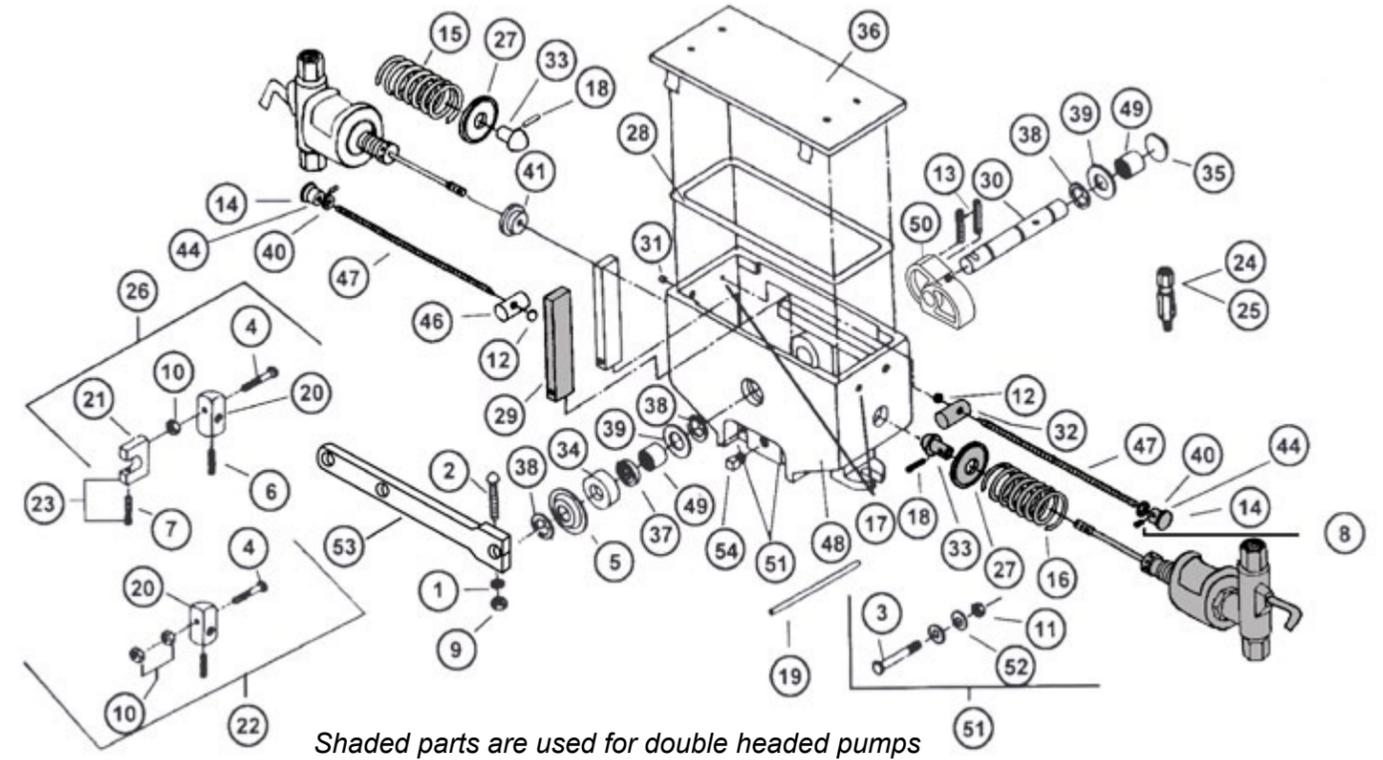
BEAM PUMP, TANK & BASE ASSEMBLY



ITEM NO	PART NO	DESCRIPTION	SINGLE TANK QTY	DOUBLE TANK QTY
1	ASB-871-NS	Tank Gauge, Tubings, Fittings	1	2
	ASB-871-B-S	Tank Gauge, Tubings, Fittings	1	2
2	ASA-3118	Connector	1	2
3	ASA-4112-BA	Tubing 3/8 x 12", Fittings	1	2
4	ASB-67	Lever Arm	1	1
5	ASA-3116	Elbow	1	2
6	ASA-4199-BA	Base, Stand	1	2
7	ASA-4301-BA	Beam Pump Case	1	1
8	ASA-664	Reservoir	1	2
10	ASA-1296	Outlet End	1	
11	ASA-2597	O-Ring, Buna	1	1
11	ASA-2580	O-Ring, Viton	1	
12	ASA-1297	Inlet End	1	
13	ASA-54	Steel Ball, 3/8"	1	
14	ASA-391	Spring	1	
15	ASA-675	Line Check, SS	1	
15	ASA-676	Line Check, Brass	1	
16	ASA-98	Bowl	1	1
17	ASA-206	Strainer	1	2
18	ASA-302	Strainer Bushing Assembly (not shown)	1	2
19	ASA-104	Gasket	1	2
20	ASA-306	Gasket, Sight Forward Assembly (not shown)	1	2
21	ASA-39	Body	1	1
22	ASA-101	Shutoff	1	1



SINGLE HEAD BEAM PUMP ASSEMBLY

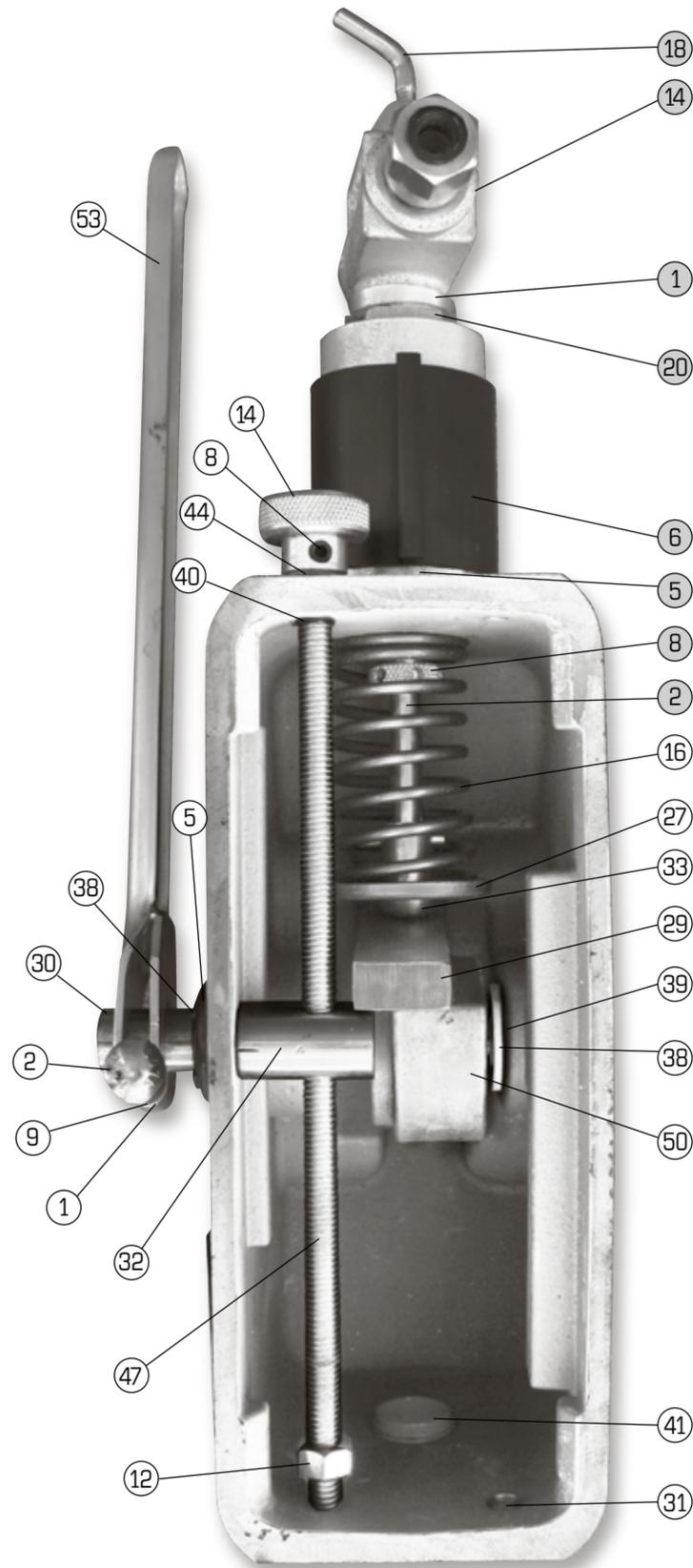


ITEM NO	PART NO	DESCRIPTION	SINGLE HEAD		DOUBLE HEAD	
			QTY	QTY	QTY	QTY
1	1A-5/16	Plated Lockwasher	1	1		
2	3A-5/1618x2	Carriage Bolt	1	1		
3	7A-1/420x23/4	Capscrew Hex Hd	2	2		
4	7A-3/816x2	Capscrew Hex Hd	1	1		
5	11-739	Exh Viv SP Retainer	1	1		
6	15A-5/1618x11/4	Set Screw Sq Hd				
7	15A-3/816x11/2	Set Screw Sq Hd				
8	19A-1/428x1/4	Set Screw Socket Hd	1	2		
9	25A-5/1618	Nut Heavy Hex	1	1		
10	25A-3/186	Nut Heavy Hex				
11	29A-1/420	Nut Finished Hex	1	1		
12	29A-3/816	Nut Finished Hex	1	2		
13	41A-3/16x11/2	Roll Pin	1	1		
14	205-46	Gov Adj Knob	1	2		
15	232-46	Outer Valve Spring		2		
16	232-96	Outer Valve Spring	1			
17	262-C-46	Expansion Plug	2	2		
18	ASA-290	Pin	1	2		
19	ASA-315*	Gland Wrench	1	2		
20	ASA-409	Connecting Knuckle				
21	ASA-423	Beam Clamp				
22	ASA-538	Knuckle Assembly	1	1		
23	ASA-547	Beam Clamp Assembly				
24	ASA-675*	Line Check, SS	1	2		
25	ASA-676*	Line Check, Brass	1	2		
26	ASA-700	Beam Clamp Assy 1200	1	1		
27	ASA-1227-BA	Spring Retainer	1	2		
28	ASA-1232	Gasket			1	1
29	ASA-4034-BA	Striker Plate			1	2
30	ASA-4035-BA	Shaft			1	
31	ASA-4039-BA	Hole Plug			1	
32	ASA-4041-BA	Stroke Stop w/Mark			1	
33	ASA-4045-BA	Plunger Connector			1	2
34	ASA-4046-BA	Wiper 3/4"			1	1
35	ASA-4045-BA	Expansion Plug			1	1
36	ASA-4055-M-BA	Housing Cover Assy			1	1
37	ASA-4058-BA	Oil Seal			1	1
38	ASA-4062-BA	Truarc Ring			3	3
39	ASA-4066-BA	Teflon Washer			3	3
40	ASA-4068-BA	Truarc Ring			1	2
41	ASA-4341-BA	Plastic Plug			1	
44	ASA-5014-BA	O-Ring			1	2
46	ASA-4124-BA	Stroke Stop				1
47	ASA-4195-BA	Adjusting Screw			1	2
48	ASA-4301-BA	Beam Pump Case			1	1
49	ASA-4320-BA	Bushing			2	2
50	ASA-4088-BA	Cam			1	1
51	ASA-4324-BA	Shaft Assy			2	2
52	ASA-4324-2-BA	Washer			4	4
53	ASB-67	Lever Arm			1	1
54	PF4-1/4	1/4" Sq Hd Pipe Plug			1	1

* One gland wrench per pump and one line check per fluid end furnished with each pump.

SINGLE HEAD BEAM PUMP ASSEMBLY

ITEM NO	PART NO	DESCRIPTION
Item numbers below correspond to chart on page 9		
1	1A-5/16	Plated Lockwasher
2	3A-5/1618x2	Carriage Bolt
5	11-739	Exh Vlv Sp Retainer
8	19A-1/428x1/4	Set Screw Socket Hd
9	25A-5/1618	Nut Heavy Hex
12	29A-3/816	Nut Finished Hex
14	205-46	Gov Adj Knob
16	232-96	Outer Valve Spring
27	ASA-1227-BA	Spring Retainer
29	ASA-4034-BA	Striker Plate
30	ASA-4035-BA	Shaft
31	ASA-4039-BA	Hole Plug
32	ASA-4041-BA	Stroke Stop w/Mark
33	ASA-4045-BA	Plunger Connector
38	ASA-4062-BA	Truarc Ring
39	ASA-4066-BA	Teflon Washwer
40	ASA-4068-BA	Truarc Ring
41	ASA-4341-BA	Plastic Plug
44	ASA-5014-BA	O-Ring
47	ASA-4195-BA	Adjusting Screw
50	ASA-4088-BA	Cam
53	ASB-67	Lever Arm
Item numbers below correspond to head assembly chart on pages 12-13		
1	ASC-2040	Head Body 3/16" SS
2	ASB-1471	Plunger 3/16"
5	ASB-1173	Yoke
6	ASC-1604	Yoke Cover
8	ASA-4094	Yoke Packing Nut
14	ASA-1496	Top Bushing Inj Hd
18	ASA-1497	Priming Valve
20	ASA-225	Injection Head Lock



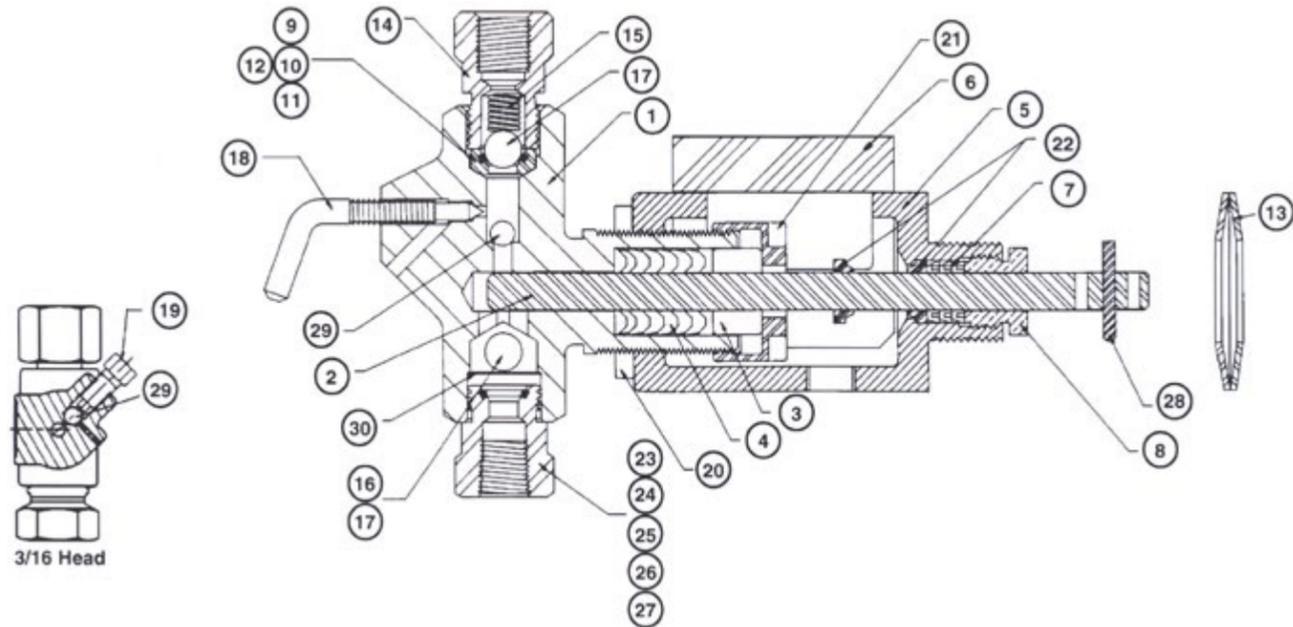
Head repair kits shown on page 16.

10-B PUMP LESS HEAD

PART NO	DESCRIPTION	QTY
11-739	Retainer, Exhaust Valve Spring	1
1A-5/16	Lockwasher Plated	1
3A-5/1618X2	Bolt Carriage	1
205-46	Gov Adj Knob	1
232-96	Spring, Valve	1
25A-5/1618	Nut Hx Heavy	1
262-C-46	Expansion Plug	2
29A-1/420	Nut Hx Finished Zinc Plated	2
29A-3/816	Nut Hx Finished	1
41A-3/16X11/2	Pin Roll	1
ANP-33	Nameplate Chemical Pump Name	1
ASA-315	Wrench, Gland	1
ASA-538	Knuckle Assembly	1
ASA-700	Clamp Beam Assembly 1200	1
ASA-1227-BA	Retainer, Spring	1
ASA-4034-BA	Plate, Striker	1
ASA-4035-BA	Shaft	1
ASA-4039-BA	Plug Hole	1
ASA-4041-BA	Stop, Stroke	1
ASA-4045-BA	Connector, Plunger	1
ASA-4046-BA	Wiper 3/4"	1
ASA-4050-BA	Plg Expansion	1
ASA-4055-M-BA	Housing Cover Assembly	1
ASA-4058-BA	Seal Oil	1
ASA-4062-BA	Ring Truarc	3
ASA-4066-BA	Washer, Thrust	3
ASA-4068-BA	Ring Truarc	1
ASA-4087-BA	Screw, Nameplate	2
ASA-4195-BA	Screw, Stroke Adjusting	1
ASA-4301-BA	Housing, 10-Series Pump	1
ASA-4324-2-BA	Washer 1/4 x 9/16" Bonded Neoprene	4
ASA-4341-BA	Plastic Plug F/10-B	1
ASA-5014-BA	O-Ring Viton	1
ASB-67	Arm, Lever	1
PF4-1/4	Plug Sq Hd Pipe	1
ASA-1855	Tag, Warning	1
1A-1/4	Lockwasher Plated	2
7A-1/420X23/4	Capscrew Hx Hd	2
ASA-4088-BA	Cam Assembly	1



HEAD ASSEMBLY

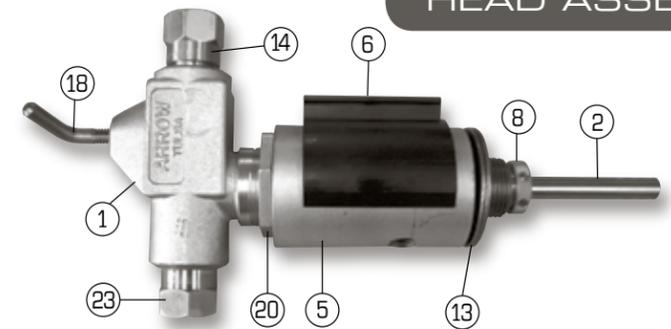


ITEM NO	PART NO	DESCRIPTION	3/16"		1/4"		3/8"		1/2"		MATERIAL CONSTRUCTION
			S*	D	S	D	S	D	S	D	
	ASC-2041	Head Assy 3/16" SS	X								SS
	ASC-1582	Head Assy 1/4" SS			X						SS
	ASC-1578	Head Assy 1/4" Carbon Steel				X					Carbon Steel
	ASC-1583	Head Assy 3/8" SS					X				SS
	ASC-1579	Head Assy 3/8" Carbon Steel					X				Carbon Steel
	ASC-1584	Head Assy 1/2" SS						X			SS
	ASC-1550	Head Assy 1/2" Carbon Steel							X		Carbon Steel
1	ASC-2040	Head Body 3/16" SS	X								SS
	ASC-291	Head Body 1/4" SS		X							SS
	ASC-425	Head Body 3/8" SS			X						SS
	ASB-349	Head Body 1/2" SS					X				SS
	ASC-275	Head Body 1/4" Carbon Steel			X						Carbon Steel
	ASC-276	Head Body 3/8" Carbon Steel				X					Carbon Steel
	ASC-272	Head Body 1/2" Carbon Steel						X			Carbon Steel
2	ASB-1471	3/16" Plunger	X								17-4 PH Stainless
	ASB-1175	1/4" Plunger		X	X						17-4 PH Stainless
	ASB-1176	3/8" Plunger			X	X					17-4 PH Stainless
	ASB-1177	1/2" Plunger					X	X			17-4 PH Stainless
3	ASA-5642	Packing Gland 3/16"	X								SS
	ASA-1463	Packing Gland 1/4"		X	X						SS
	ASA-957	Packing Gland 3/8"			X	X					SS
	ASA-1219	Packing Gland 1/2"					X	X			SS
4	ASA-3969	Plunger Packing 3/16" Buna-N	X								Buna
	ASA-1461	Plunger Packing 1/4" Buna-N		X	X						Buna
	ASA-1456	Plunger Packing 3/8" Buna-N			X	X					Buna
	ASA-959	Plunger Packing 1/2" Buna-N					X	X			Buna

* Not available for double tank.

HEAD ASSEMBLY

ITEM NO	PART NO	DESCRIPTION
1	ASC-2040	Head Body 3/16" SS *
2	ASB-1471	3/16" Plunger *
5	ASB-1173	Yoke
6	ASC-1604	Yoke Cover
8	ASA-4094	Yoke Packing Nut
13	ASA-4256	Washers (2)
14	ASA-1496	Top Bushing Inj Hd
18	ASA-1497	Priming Valve
20	ASA-225	Injection Head Lock
23	ASB-736	Btm Bushing w/O-Ring *



* Different sizes and/or styles available. See chart for details

ITEM NO	PART NO	DESCRIPTION	3/16"		1/4"		3/8"		1/2"		MATERIAL CONSTRUCTION
			S*	D	S	D	S	D	S	D	
4	ASA-3966	Plunger Packing 3/16" Teflon	X								Teflon
	ASA-1642	Plunger Packing 1/4" Teflon			X	X					Teflon
	ASA-1234	Plunger Packing 3/8" Teflon					X	X			Teflon
	ASA-1012	Plunger Packing 1/2" Teflon							X	X	Teflon
4	ASA-3967	Plunger Packing 3/16" Viton	X								Viton
	ASA-4102	Plunger Packing 1/4" Viton			X	X					Viton
	ASA-4101	Plunger Packing 3/8" Viton					X	X			Viton
	ASA-4103	Plunger Packing 1/2" Viton							X	X	Viton
4	ASA-3948	Plunger Packing 3/16" Hard	X								Hard
	ASA-2295	Plunger Packing 1/4" Hard			X	X					Hard
	ASA-1875	Plunger Packing 3/8" Hard					X	X			Hard
	ASA-1874	Plunger Packing 1/2" Hard							X	X	Hard
5	ASB-1173	Yoke	X	X	X	X	X	X	X	X	Ductile Iron
6	ASC-1604	Yoke Cover	X	X	X	X	X	X	X	X	Plastic
7	ASA-4127	Yoke Packing	X	X	X	X	X	X	X	X	Buna/Rubber
8	ASA-4094	Yoke Packing Nut	X	X	X	X	X	X	X	X	Brass
9	ASA-806	Seat Metal-to-Metal		X	X	X	X	X	X	X	SS
10	ASB-737	Seat w/Viton O-Ring		X	X	X	X	X	X	X	SS
11	ASB-737-O	Seat w/Buna-N O-Ring		X	X	X	X	X	X	X	SS
12	ASB-737-TFE	Seat w/Teflon O-Ring	X	X	X	X	X	X	X	X	Teflon
13	ASA-4256	Washer (2)	X	X	X	X	X	X	X	X	Steel
14	ASA-1496	Top Bushing Inj Hd		X	X	X	X	X	X	X	SS
15	ASA-77	Spring		X	X	X	X	X	X	X	SS
16	ASA-53	Steel Ball 1/2" (used only with ASA-771)									SS
17	ASA-54	SS Ball 3/8"		X	X	X	X	X	X	X	SS
18	ASA-1497	Priming Valve		X	X	X	X	X	X	X	SS
19	ASA-5462	Priming Valve 3/16" Hd	X								SS
20	ASA-225	Injection Head Lock	X	X	X	X	X	X	X	X	Brass
21	ASA-1220	Packing Gland Nut	X	X	X	X	X	X	X	X	SS
22	ASA-4095	Wiper Drip Buna-N (2)	X	X	X	X	X	X	X	X	Buna
23	ASB-736	Btm Bushing w/Viton O-Ring		X	X	X	X	X	X	X	SS
24	ASB-736-O	Btm Bushing w/Buna-N O-Ring		X	X	X	X	X	X	X	SS
25	ASA-771	Btm Bushing Metal-to-Metal		X	X	X	X	X	X	X	SS
26	ASA-1216	Btm Bushing 3/16" Hd	X		X						303 Stainless
27	ASB-736-TFE	Btm Bushing w/Teflon O-Ring		X	X	X	X	X	X	X	Teflon
28	ASA-290	Pin	X	X	X	X	X	X	X	X	Steel
29	ASA-126	Steel Ball 1/4"		X	X	X	X	X	X	X	SS

* Not available for double tank.

ORDERING INFORMATION

When ordering pump, give description as follows:

1. **BASE PUMP:** Start with base pump model number and number of heads.

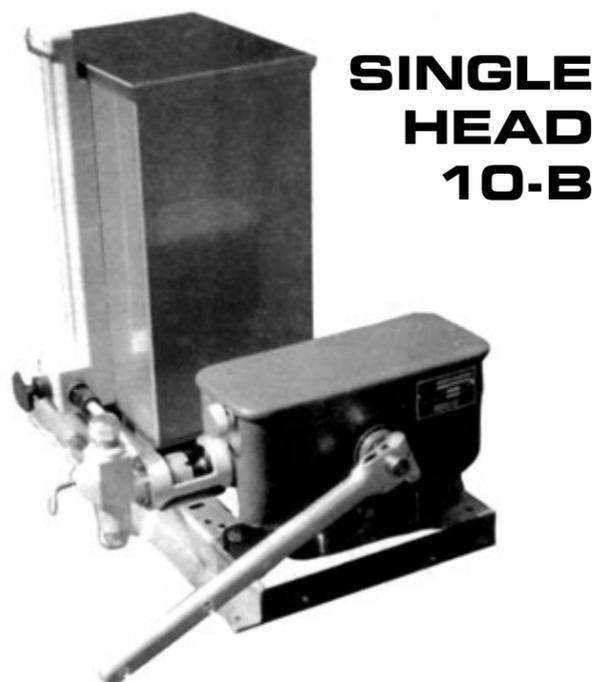
DESCRIPTION	MODEL NUMBER
Single Head	10-B
Dual Head	10-2B

2. **PLUNGER SIZE:** Add plunger size number.

PLUNGER SIZE	NUMBER
3/16"	1.5
1/4"	2
3/8"	3
1/2"	4

3. **HEAD MATERIAL:** Add head material letter.

MATERIAL	LETTER
Stainless Steel	S
Steel	D



SINGLE HEAD 10-B



DUAL HEAD 10-2B

MODEL DESIGNATION

10-2B4D

Indicates **BASE PUMP** model number and number of fluid ends.

Indicates **PLUNGER SIZE**.

Indicates **HEAD MATERIAL**.

EXAMPLE:

For a Series 10, dual head, beam pump with 3/8" plunger, stainless steel head:

Order number is: 10-2B3S

LUBRICATION

The Arrow Series 10 Beam Operated Chemical Injector Pump must have the case filled with oil before it is put into service. Use an all-weather motor oil grade 10W30. The oil level should be held to just below the stroke adjusting screw.

INJECTOR HEAD

The positive displacement fluid end is virtually trouble free, easy to maintain, and has stainless steel trim standard. The built-in priming valve aids in priming, checking pump action and catching chemical samples. External packing gland and protective felt wiper protect plunger from sand, dirt, and other damaging elements. The box assembly is heavy cast iron for maximum rigidity and has a plastic lid and rigid steel lever arm. The injector head can be easily removed for cleaning and maintenance. An additional injector head can be installed if more volume is required or if there is a need to pump dissimilar fluids.

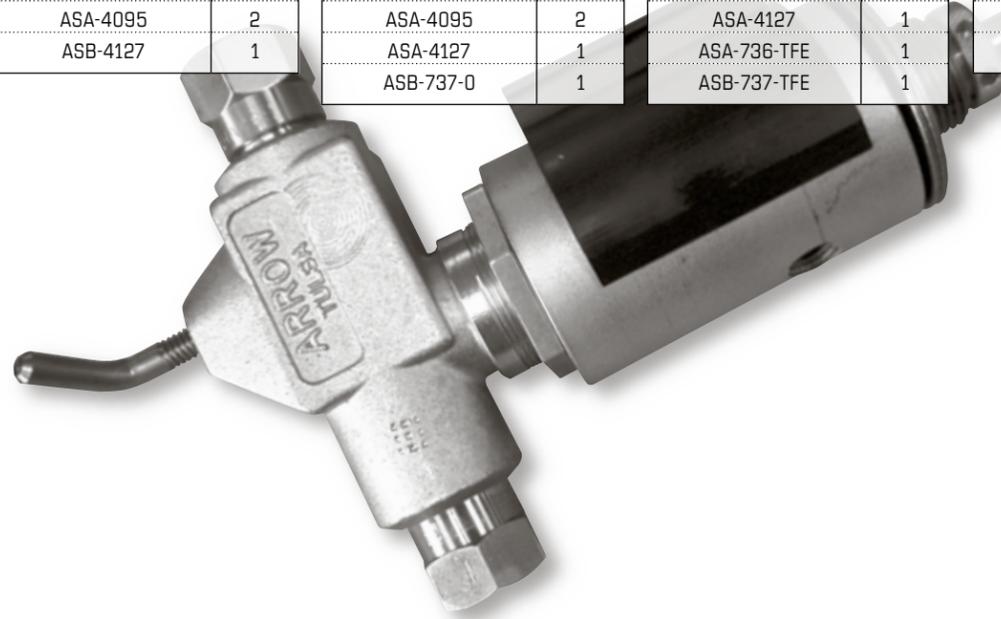
TROUBLESHOOTING

SYMPTOM	CORRECTIVE ACTION
Injector head not pumping chemicals.	1 Check level of chemical in container.
	2 Check the screen in the tank or barren gauge. To do this, remove the tubing connector at the suction end of the head, and fluid should flow from the tubing.
	3 Check bottom bushing first, then top. Clean debris or replace seats. Reinstall.
	4 Inspect the conditions of the o-ring seats. If worn, they need to be replaced.
Pump fails to push the plunger into the injector head.	1 Check the lever (p/n ASB-67) for damage and whether it is able to turn the camshaft (p/n ASA-4035-BA).
The lever is turning the shaft, but the cam is not moving.	1 Roll Pin (p/n 41A-3/16X11/2) has been sheared and needs to be replaced.
The spring (p/n 232-96) does not turn the plunger on each stroke.	1 Plunger packing nut is over tightened, or packing has swelled by aromatic chemicals or paraffin solvents and should be loosened with the packing gland wrench provided.

HEAD REPAIR KITS

ASA-9001		ASA-9001-TFE		ASA-9002-S		ASA-9003	
PART NO	QTY	PART NO	QTY	PART NO	QTY	PART NO	QTY
ASA-54	2	ASA-54	2	ASA-53	1	ASA-54	2
ASA-77	1	ASA-77	1	ASA-77	1	ASA-77	1
ASA-126	1	ASA-126	1	ASA-126	1	ASA-126	1
ASA-290	1	ASA-290	1	ASA-290	1	ASA-290	1
ASA-1461	1	ASA-1642	1	ASA-806	1	ASA-959	1
ASA-2597	1	ASA-4095	2	ASA-1456	1	ASA-2597	1
ASA-4095	2	ASA-4127	1	ASA-4095	2	ASA-4095	2
ASA-4127	1	ASA-736-TFE	1	ASA-4127	1	ASA-4127	1
ASB-737-0	1	ASA-737-TFE	1	ASB-737-0	1	ASB-737-0	1

ASA-9001-S		ASA-9002		ASA-9002-TFE		ASA-9003-S	
PART NO	QTY	PART NO	QTY	PART NO	QTY	PART NO	QTY
ASA-53	1	ASA-54	2	ASA-54	2	ASA-53	1
ASA-77	1	ASA-77	1	ASA-77	1	ASA-77	1
ASA-126	1	ASA-126	1	ASA-126	1	ASA-126	1
ASA-290	1	ASA-290	1	ASA-290	1	ASA-290	1
ASA-806	1	ASA-1456	1	ASA-1234	1	ASA-806	1
ASA-1461	1	ASA-2597	1	ASA-4095	2	ASA-959	1
ASA-4095	2	ASA-4095	2	ASA-4127	1	ASA-4095	2
ASB-4127	1	ASA-4127	1	ASA-736-TFE	1	ASA-4127	1
		ASB-737-0	1	ASB-737-TFE	1		

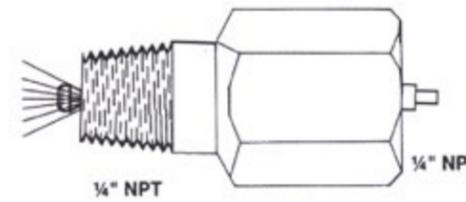


Accessories

The standard injector heads have steel bodies with stainless steel trim. A 316 stainless steel head assembly is available as an option. Teflon packing and metal-to-metal seats are available as alternatives to standard injector head parts at no additional cost when specified on new pumps. Buna-N O-ring type resilient check seats are standard on all heads.

AM-0001 ATOMIZER

FEATURES



- ▶ Makes chemical more effective by breaking it up at point of injection
- ▶ Accelerates the mixing of liquids or promotes atomization of liquid into gas
- ▶ Use for line check or as a backup for line check
- ▶ All stainless steel construction

Team up the AM-0001 Atomizer with an Arrow Chemical Pump for the best possible combination.



LINE CHECKS

FEATURES

- ▶ Available in 1/4" brass (ASA-676) 3000 psi max working pressure
- ▶ Available in 1/4" stainless steel (ASA-675) 6000 psi max working pressure
- ▶ Available in 1/2" stainless steel (ASB-283) 6000 psi max working pressure



A line check should be installed in the discharge line as close to the point of injection as possible to prevent backup and contamination of chemical.

TANK PLUGS

- ▶ Patch and/or permanently repair holes in storage tanks
- ▶ Fills a puncture or opening with a permanent and durable seal

PART NO.	DESCRIPTION
1/4-TP	1/4" Tank Plug
3/8-TP	3/8" Tank Plug
1/2-TP	1/2" Tank Plug



TANK PATCHES

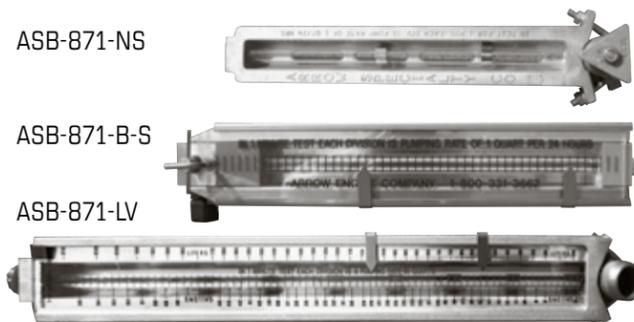
- ▶ Special heat treated, shear proof, solid hinge pin
- ▶ Wetted parts, heavy duty cadmium plated
- ▶ Thick 1/8" neoprene gaskets
- ▶ Installation is easy with only a screwdriver & wrench
- ▶ Patches a 3/4" to 2" hole



PART NO.	DESCRIPTION
ASST-TP	(6) 1/4", (6) 3/8", & (2) 1/2" Tank Plugs
AS-316	Tank Patch w/Lever Operation
AS-317	Vertical Application Toggle-Type Patch

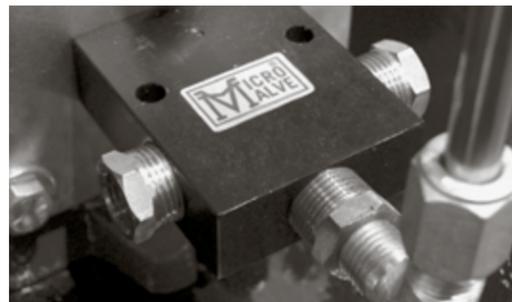
GAUGES

PART NO.	DESCRIPTION
ASB-871-NS	Tank gauge for a 5-gal tank (new style)
ASB-871-B-S	Tank gauge for a 5-gallon tank
ASB-871-LV	Barrel gauge for a 55-gallon barrel



MICRO VALVE

- ▶ Trouble free Microvalve replaces ASA-4147 lapped disk
- ▶ Operates slowly one stroke every two minutes to twenty strokes per minute.
- ▶ Kit available to convert existing pumps part number ASB-446-MV
- ▶ Complete pump with Microvalve



Replace the Pilot Valve Assembly in your 5100Series TXT or Older 510 Arrow Pump with the new Microvalve Assembly

CHEMICAL PUMP AND CHEMICAL PUMP PARTS WARRANTY

I. TERMS OF EXPRESS LIMITED WARRANTY

Arrow Engine Company warrants that it will repair or replace, at its election and expense, a chemical pump or chemical pump part (hereinafter referred to as "Products") manufactured by Arrow Engine Company, which proves to have had a defect in material or workmanship. All warranty work must be pre-approved by Arrow Engine Company.

II. TERM LIMITATIONS OF EXPRESS LIMITED WARRANTY

This coverage shall commence upon shipment of Product and shall expire 1 year after ship date.

III. ARROW ENGINE COMPANY'S RESPONSIBILITIES UNDER THE EXPRESS LIMITED WARRANTY

Arrow Engine Company shall be responsible for:

- The repair or replacement, at Arrow Engine Company's election, of covered product and all reasonable labor required regarding a warranted failure during the express limited warranty and term. All such labor shall be provided by Arrow Engine Company's authorized contractor or distributor.
- Reasonable and necessary travel (total mileage not to exceed 300 miles) and expenses incurred by Arrow Engine Company's authorized contractors or distributor. Additional mileage and/or travel by air, water or land will need preauthorization from Arrow Engine Company.
- Replacement of lubricating oil, coolant, filter elements, or other normal maintenance items that are contaminated and/or damaged as a direct result of a warranted failure.

NOTWITHSTANDING THE FOREGOING, ARROW ENGINE COMPANY SHALL NOT BE RESPONSIBLE FOR LABOR COSTS ASSOCIATED WITH WARRANTY CLAIMS.

IV. OWNER/ DISTRIBUTOR/ CONTRACTOR'S RESPONSIBILITIES UNDER THE EXPRESS LIMITED WARRANTY

Owner shall be responsible for:

- The operation and maintenance of the Product within the guidelines established by Arrow Engine Company.
- Making the Product available to Arrow Engine Company or authorized contractors or distributors for any warranty repair, during normal business hours.
- All additional costs incurred for premium or overtime labor, should owner request that repairs be made on a premium overtime schedule.
- All costs incurred as the result of removal or reinstallation of the Product as may be required to effect any warranted repair.
- All administrative costs and expenses resulting from a warranted failure.
- Any costs of transportation, towing, repair facilities, or associated costs.
- Loss of revenue and loss of/or damage to real and/or personal property.
- All warranty work must be pre-approved by Arrow Engine Company
- Warranted repairs not to exceed 50% of the product replacement cost without prior approval from Arrow Engine Company. Replacement cost equates to distributor net price from factory.

V. LIMITATION OF ARROW ENGINE COMPANY'S OBLIGATIONS

The obligations of Arrow Engine Company under this express limited warranty shall be waived and voided, and Arrow Engine Company shall not, thereafter, be responsible for:

- Any failure resulting from owner or operator abuse or neglect, including but not by way of limitation, any operation, installation, application, or maintenance practice not in accordance with guidelines or specifications established by Arrow Engine Company; or
- Any failure resulting from unauthorized modifications or repairs of the Products or;
- Any failure resulting from overload, overspeed, overheat, accident, improper storage; or
- Failure of owner, contractor or distributor to promptly provide notice of a claimed defect. All warranty claims must be authorized, documented and submitted within 30 days of the failure date while under the warranty period; or
- Failure of Products for which Arrow Engine Company did not receive properly completed start-up reports; or
- Repairs of a covered failure performed with non-genuine Arrow Engine Company parts; or
- Repairs of a covered failure performed by non-authorized contractors or distributors; or
- Failure to make Products available to Arrow Engine Company or its authorized representatives, or
- Failure to supply documents such as drawing and specifications relating to the specific application of the Products.

VI. APPLICABILITY AND EXPIRATION

The warranties set out above are extended to all owners in the original chain of distribution. The warranties and obligations of Arrow Engine Company shall expire and be of no further effect upon the dates of expiration of the applicable warranty periods. The foregoing sets forth Arrow Engine Company's only obligations and owners' exclusive remedy for breach of warranty, whether such claims are based on breach of contract, tort (including negligence and strict liability), or other theories, and the foregoing is expressly in lieu of other warranties whatsoever expressed, implied, and statutory, including without limitation, the IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS.

Notwithstanding the preceding, in no event shall Arrow Engine Company be liable for any direct, special, incidental or consequential damages (whether denominated in contract, tort, strict liability, negligence or other theories) arising out of this Agreement or the use of any Products provided under this Agreement. Any action arising hereunder or relating hereto, whether based on breach of contract, tort (including negligence and strict liability), or other theories must be commenced within one (1) year after the cause of action accrues or it shall be barred.

With respect to products not manufactured by Arrow Engine Company, Arrow makes no representations or warranties of whatsoever nature, directly or indirectly, expressed or implied including but not limited to any representations or warranties with respect to suitability, durability, fitness for a particular purpose or merchantability, except to the extent that Arrow can enforce warranties provided by the manufacturers of such parts.

Effective 5/17/06 and supersedes all previously issued warranty.

ARROW MANUFACTURED
**REPLACEMENT
PARTS**

Caterpillar® Engines

G379 G3304
G398 G3306
 G399

Waukesha® Engines

F2895 P9390
F3521 145G/F817
F5108 140G/F554
L5790 WAK/1197
 L7042

Fairbanks Morse® Engines

ZC-118 ZC-503
ZC-208 ZC-739
 ZC-346

Ajax® Engines

5 x 6½
EA-22, 6½ x 8 CMA
EA-30, 7¼ x 8 CMA
E-30, 7½ x 10 CMA
E-42, 8½ x 10 CMA
DP-60, 9½ x 10 CMA
DP-70/80/160, 11 x 14 CMA
DP-115/230, 13¼ x 16

Piston & Rod Assemblies
180
360
600
800

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OEM

C-Series

*C-46 *C-96
*C-66 *C-101
*C-106 *C-255

VR-Series

VR-155 VR-310
VR-220 *VR-330
VR-232 *VR-330CF
*VR-260 VR-265
VR-283 *VR-380

A-Series

*A42 *A54 *A62

K6 Slow Speed Engine

*

Lufkin Engines

L-333 L-1770
*L-795 L-2165

Witte Engines

98 E15 F32
B12 E20 F42

Arrow Chemical Pumps

* 10 Series (beam operated)
* 12 & 13 Series (pneumatic)
* 430 Series (electric)
* 500 & 510 Series (pneumatic)
* Solar Chempump

Gas Compressors

* VRC-2 * VRC-CNG

Gas Products

* Volume Tanks
* Vertical & Horizontal Separators
* Suction Scrubbers
* Meter Runs
* Coalescers
* Skids



ARROW ENGINE COMPANY

2301 East Independence
Tulsa, Oklahoma 74110

toll free 800 331-3662

local 918 583-5711

toll free fax in US & Canada 800 266-1481

fax 918 388-3202

www.arrowengine.com

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