



DESCRIPTION

Texsteam series 3700 chemical injectors are pneumatically powered and designed for handling many types of aqueous solutions and other chemicals. Single or double-headed units with three volume adjustments are available in a wide variety of models. Injection pressure to 1500 psi can be achieved with air or gas pressure as low as 50 psi. Units can be furnished with or without reservoirs (5 or 10 gallon. other sizes available upon request). Texsteam 3700 injectors feature a unitized gas motor and pump. The gas motor operates in an enclosed oil bath. All motor and pump parts are fully protected against dirt and the elements. The 3700 series' efficient ratchet-type mechanism is noted for its long-life and accurate control.

APPLICATIONS

- Blending and proportioning chemical compounds in general process plant operation
- Introducing solvents, de-emulsifiers, desalters and flocculants
- High pressure bearing lubrication
- Injection of methanol into gas pipe-lines
- Lubrication of mechanical seals in pumps and machinery relying upon this type seal
- Water treatment
- Corrosion Inhibitor injection
- Sampling
- Introduction of measured quantities of highly toxic bactericides
- Both low and high-viscosity fluids and non-abrasive slurries can be handled with this pump



GENERAL ASSEMBLY

Outstanding Features - Chemical Injectors

Single and Double Headed Units Available (one tank furnished with each head)

SPRING-LOADED LID on chemical container seals against contamination yet is easily opened.

CHEMICAL RESERVOIR

Choices available: 5 gallon 430 Stainless Steel 5 gallon 316 Stainless Steel 10 gallon 430 Stainless Steel

TANK GAUGE enables an operator to check the pumping rate of any chemical pump in one minute under actual pumping conditions. This ____ simplified procedure eliminates errors resulting from pump and valve leakage.

TB-87 1 for 5 gallon SS tank TB-1285 for 10 gallon SS tank



ACCESSORIES AVAILABLE

include power gas line, gas regulator, regulator gauge, inlet needle valve, line checks, fluid discharge line, and necessary fittings

3 SEPARATE VOLUME ADJUSTMENTS for controlling volume range (see page 5)

POWER UNIT is available without tank and base.

HEAVY GALVANIZED STEEL

BASE with bolt holes for simple and easy mounting

MODELS AVAILABLE

Type 3700 S is designed for operation of low uniform pressures of 50 psi and less. Unitized with five gallon container and single injector head. Furnished with slight feed only...no fittings. Shipping Weight: 55 pounds (packed in cardboard carton).

Type 3700 SL is designed for operation of low uniform pressure of 50 psi or less. Unitized with five gallon container and single injector head. Furnished with level gage and the following fittings: five feet of 5/16" copper tubing with 1/4" flared fitting. 1/4" x 1/2" bushing and 1/4" gas control needle valve for connecting gas supply line: five feet of 5/16" copper tubing with 1/4" flared fitting, 1/4" x 1/2" bushing and 1 /4" high pressure line check for connecting chemical discharge line. *Shipping Weight 58 pounds*.

Type 3700 SH is designed for operation of high or erratic pressures up to 1500 psi. Unitized with five gallon container and single injector head. Furnished with level gage and same fittings as the 3700 SL, plus a regulator with pressure gauge to reduce supply pressure to pump operating requirements. Shipping Weight: 62 pounds.

Type 3700 D is designed for operation of low uniform pressures of 50 psi or less. Unitized with two five-gallon containers and double injector heads. Furnished with level gage only... no fittings. *Shipping weight: 72 pounds.*

Type 3700 DL is designed for operation of low uniform pressures of 50 psi or less. Unitized with two containers and double injector heads. Furnished with same fittings as Type 3700 SL. *Shipping Weight: 77 pounds.*

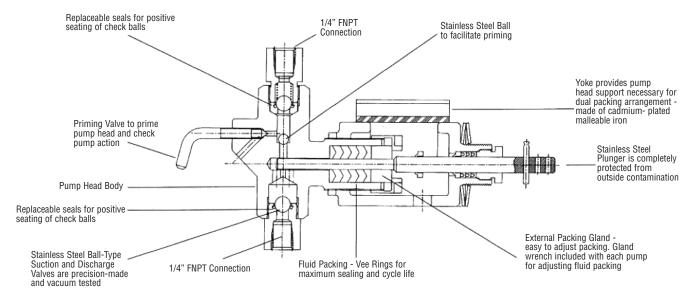
Type 3700 DH is designed for operation of high or erratic pressures up to 1500 psi. Unitized with two containers and double injector heads. Furnished with same fittings as Type 3700 SH. *Shipping Weight: 81 pounds*.





GAS OR AIR POWERED CHEMICAL INJECTORS series 3700

PUMP HEAD



The TXT Pump Head is efficient (horizontal plunger and vertical check valves); virtually trouble-free; easy to maintain stainless steel trim is standard; built-in priming valve to aid in priming and checking pump action; external packing gland; and protective felt wiper to protect plunger from sand, dirt, etc. Available in four different heads to meet your particular need (see page 8).

MODEL DESIGNATION

3701 SHP 1/4"

Always specify plunger size when ordering to insure the correct size is ordered

- Indicates power unit model (without chemical tank). Absence of P indicates chemical injector complete with 5 gallon tank.
- Indicates accessories (H is equipped with regulator, gauge and fittings: Liv equipped with fittings only).
 Absence of H or L indicates no accessories with unit.
- Indicates number of injector heads (S is a single head, D is a double head unit)
- Indicates plunger size (4 is 3/16", 1 is 1/4", 3 is 3/8", 5 is 1/2") Standard Ductile Iron Body with stainless steel trim

Choice of Trim Materials:

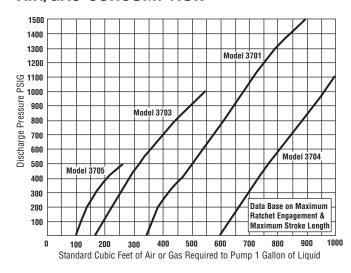
Standard - Ductile Iron Body with stainless steel trim

All Stainless Steel Heads - For models with All Stainless Steel and SS is placed after

model number (3701 SH-SS).

Teflon packing • Metal-to-metal seats • Hastelloy ball checks • Viton Seals

AIR/GAS CONSUMPTION



Optional Level & Rate Setting Gauge

(TB-1128 Carbon Steel) (TB-1129 Stainless Steel) (304SS)

TC-169 Drum Racks -

These racks are constructed of galvanized angle iron to handle a 55-gallon drum. The injector stand is drilled for most TEXSTEAM chemical injectors or pumps. Use of the truck-height rack permits direct, easy loading of the drum. Weight 84 pounds, less pump and drum.





INSTALLATION AND OPERATING INSTRUCTIONS

- Remove pump from carton and inspect for possible damage in transit from factory. The cardboard carton was designed especially for this pump. If the pump has been damaged in transit, file claim with the carrier.
- Bolt holes are provided for a permanent mounting (see drawing for dimensions on page 6). If more detailed information is required, request TXT Blueprint TC-187.
- 3. Install the TA-1497 priming valve (Included with pump, but shipped loose in carton) on the pump head.
- 4. Connect the suction line to pump head.
 - a. If a reservoir is furnished with the pump, the suction line is already connected. Fill the reservoir and open (all the way) the TB-87 1 shut-off assembly. A strainer is furnished as a part of this unit.
 - If a power unit model was purchased, a strainer should be piped into the suction line to prevent sand, rust or other particles which will inure the plunger and foul the check valves.
- 5. Connect the discharge line (5/16" tubing will suffice). A check valve should be installed as close to the point of injection as possible. Note the arrow on the check valve indicating the direction of flow. The top connection on the pump head is the outlet and has a 1/4" female pipe thread connection.
- 6. Connect the power gas line.
 - a. First blow power gas line clean to remove any loose rust particles, slag, sand, etc.
 - b. Consider the pressure requirements of the pump. If the gas supply exceeds 50 PSI (consider erratic pressures), the pump should be equipped with a regulator to reduce the gas pressure to 50 PSI or below. The TXT TB-40 regulator is capable of handling upstream pressures to 1500 PSI.

- Tie-in the gas line to the TA- 193 needle valve or TA-866 inlet bushing.
- 7. Fill the TA-583 box assembly with enough SAE-30 oil to cover the TA-457 bearing (approximately 61/4 pts.) If low ambient temperatures are encountered, a lighter oil such as SAE-10 should be used. Check oil level at regular intervals with TA-946 oil gauge stick.
- 8. Adjust for desired volumes by considering Performance Data (opposite page) and Volume Adjustment (opposite page). If more volume is required the pump head assembly can be changed or converted to a larger plunger size. Or, an additional head can be installed on the opposite side of the TA-583 box assembly by removing the TA-434 guide plug assembly. The TA-883 guide sleeve should also be removed and this can be accomplished with a drift and hammer.
- 9. Start the pump by slowly opening the TA- 193 needle valve. Prime the pump head by opening the TA- 1497 priming valve. After the pump discharges clear fluid without bubbles, close the priming valve for normal operations. At this point make a visual check of the plunger drip. Slowly tighten the gland to prevent excess drippage and waste of chemicals. Do not over-tighten plunger packing. Do not tighten with pressure on head. Keep TA-315 gland wrench handy for future packing adjustment. It may be necessary to readjust the packing the next day. A slight leak during the break-in is beneficial. Sufficient time should be allowed to let the packing "sear-in".

If low volumes are being pumped, the fluid end, the discharge line and all other fittings up to the line check should be thoroughly purged of all air bubbles.

Check pump action by opening TA- 1497 priming valve.

MAINTENANCE INSTRUCTIONS FOR INSPECTION OR REPLACEMENT OF POWER CYLINDER OR PISTON PARTS

(Refer to parts list on page 6)

Shut off the power gas pressure. Unscrew TA-390 cylinder shell. This will expose TA-597 piston assembly and TA-881 piston rod. To replace piston cup TA-867 or tapped washer TA-890, unscrew TA-1211 piston CU retainer. TA-881 piston rod is hex material and is easily removed from TC-28 valve body.

To Inspect Pump Head Parts

Suction and discharge balls and seats can be inspected or replaced without removing pump head from the power unit. To do this it is necessary to disconnect suction and discharge lines at the head and unscrew TA-1496 top bushing and TB-736 bottom bushing.

To Remove Pump Head From Gear Box

- 1. Disconnect suction and discharge line.
- 2. Pull TA-290 pin.
- 3. Entire fluid head can now be unscrewed from gear box.
- 4. Loosen gland nut.
- 5. Pull chemical plunger from head.
- 6. Remove TA-810 packing nut. This gives access to the yoke packing.

7. Loosen TA-225 lock nut. Yoke can then be unscrewed from fluid head (while unscrewing the yoke the gland nut must also be backed-off). At this point, wiper washer, gland nut and packing gland nut can be removed. This gives access to the main plunger packing.

To Replace the TB-47 Gas Hose

Unscrew the hex nut (attached to hose) from TA- 137 half union. Then unscrew TB-47 hose from TA-866 inlet bushing.

To Inspect or Replace TA-457 Ratchet Bearing

First remove TA-434 guide plug assembly. Then remove the pump head from the gear box (in case of double-headed pumps, both heads should be removed). TA-585 cross head assembly can then be lifted out. TA-457 ratchet bearing and TA-458 washer can now be inspected or replaced by removing TA-433 bearing bolt. TB- 139 ratchet assembly can now be lifted out. TA-948 ratchet control can be disconnected from TA-949 ratchet latch and lifted out. TA-312 cross arm assembly can be slipped from under the TA-793 bushing

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3700

and lifted out. TA-455 ratchet pawl, TA-955 pawl spring, TA-576 cotter key and TA-577 washer can now be inspected or replaced. TA-793 bushing can be removed exposing TA-77 ball check spring, TA-579 washer and TB- 136 valve disc for inspection.

To Remove TB-107 Switching Valve

Remove both TA-390 cylinder shells. Unscrew both TA-88 1 piston rods (TA-597 piston assemblies may be left on the TA-88 1 piston rod).

At this point TB- 107 valve and TA-65 flipper arm assembly can be lifted from gear box. TA-508 flipper spring sub-assembly can be replaced by removing TA-168 cotter pin and TA-170 clevis pin.

PRESSURE - VOLUME RANGE CHART

NOTE*- For double-headed units increase maximum volume by two

Plunger	Maximum		Pint per Day Volume		
Size	Pressure	Model	Max.	Min.	
3/16"	3000#	3704	8	.3	
1/4"	1500#	3701	16	.5	
3/8"	1000#	3703	40	.5	
1/2"	500#	3705	70	1	

VOLUME ADJUSTMENT

There are three principal adjustments involved in controlling injector volumes on the Series 3700 chemical injector. They are pointed out in the diagram at right under the headings of Adjustments A, B and C.

Adjustment A:

 Gas valve to control speed or number of strokes per minute of motor.

Adjustment B:

Ratchet control determines number of teeth drive pawl will engage each stroke of motor. Place ratchet latch TA-949 in hole on left to engage maximum number of teeth to pump maximum volume.

Adjustment C:

- 3. First position, long stroke (most. volume).
- 4. Second position medium stroke.
- 5. Third position, short stroke (least volume).

For maximum efficiency at any desired discharge rate, make adjustments in order A-B-C.

To Replace TA-65 Flipper Arm Assembly and Bearing

Remove both TA-166 cap screws and TA-167 washer from the underside of TC-28 valve body. To remove TA-947 bearing insert, loosen TA-107 lock nut. TA-126 valve ball should be inspected and replaced if necessary.

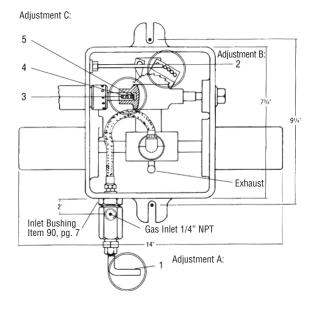
To Remove TB-38 Sight Feed Assembly

Remove TA-322 suction line. Then remove TA-302 strainer bushing assembly and TA-306 gasket from inside TA-664 reservoir. TB-38 sight feed assembly can now be pulled away from TA-664 reservoir assembly.

Cycles	**Ratchet	3/16" Plunger			1/4" Plunger			
Per Min Air Motor	Teeth Engagement		Medium Stroke					
10	1							
20	1							
40	1							
60	1	.3	.6	1.0	.5	1.0	1.8	
80	1	.4	.8	1.3	.7	1.4	2.6	
100	1	.5	1.0	1.6	1.0	2.0	3.4	

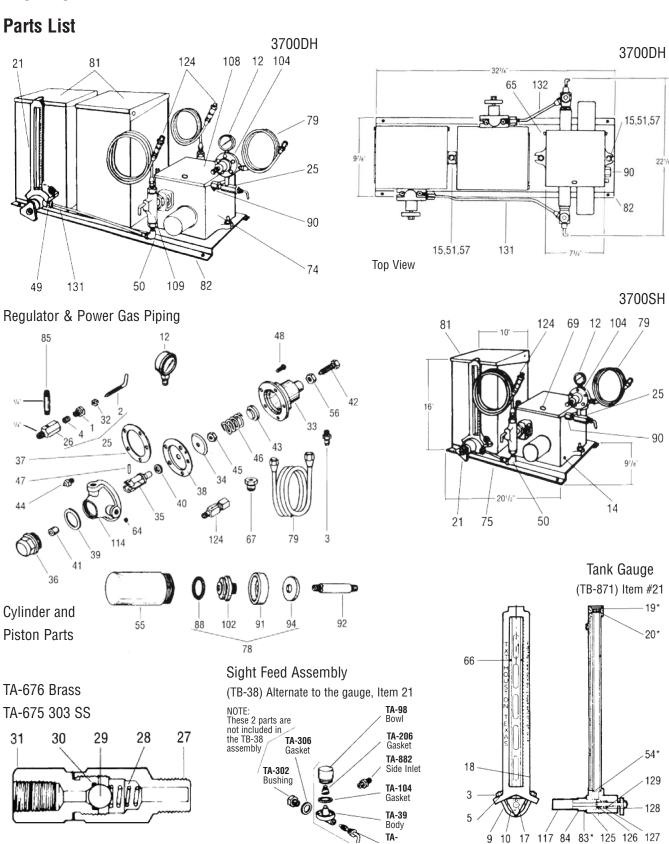
Cycles	**Ratchet	3/8" Plunger			1/2" Plunger		
Per Min Air Motor	Teeth Engagement		Medium Stroke	Long Stroke		Medium Stroke	Long Stroke
20	2	.5	.7	1.0	1.0	1.5	2.0
40	1	.8	1.5	3.0	1.2	3.0	5.3
60	1	1.1	2.6	4.5	2.3	5.0	8.2
80	1	1.7	3.7	6.0	3.2	6.7	10.5
100	1	2.3	4.8	7.7	4.3	6.7	14.0

^{**} Multiply Volume by number of ratchet teeth engaged. Maximum number of teeth is 6.



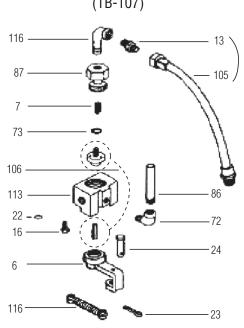


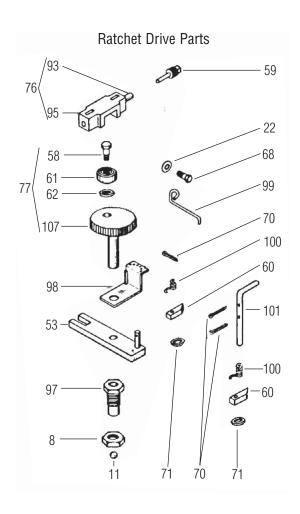
TECHNICAL DATA



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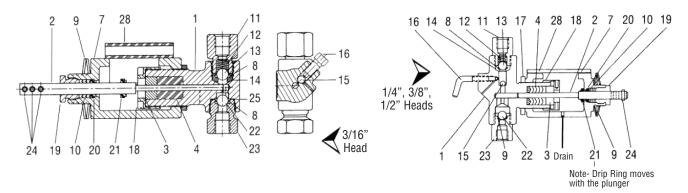


Item	Part No.	Name
1*	TA-11	Gland Nut
2*	TA-13	Stern
3	TA-882	Half Union
4***	TA-23	Packing
5	TA-577	Washer
6	TA-65	Flipper Arm Assy.
7	TA-77	Spring
8	TA-107	Lock Nut
9	TA-3106	U-Bolt
10	TA-3112	Handle Valve
11**	TA-126	Ball
12	TA-129	Pressure Gauge 0-100 psig
13	TA-137	Half Union
14	TA-138	Drain Plug
15	TA-144	Bolt Nut - 3 Reqd.
16	TA-166	Cap Screw
17	TA-164	Nut
18	TC-393	Frame
19	TA-3100	Spring
20	TA-3101	Flat Washer
21	TB-871 TB-1285	Tank Ga 5 gal. SS tank
22	TA-167	Tank Ga 10 gal. SS tank
23	TA-167	Washer Cotter Pin
24	TA-100	Clevis Pin
25	TA-193	Needle Valve & Stem Assy.
26*	TA-194	Needle Valve Body
27	TA-677	Outlet Body
28**	TA-391	Spring
29	TA-54	Ball
30	TA-479	O-Ring- Buna-N
31	TA-678	Inlet Body
32*	TA-195	Needle Valve Nut
33	TA-3110	Bonnet
34	TA-3135	Spring Plate
35	TA-208	Valve Seat Yoke
36	TA-209	End Cap
37**	TA-210	Gasket
38**	TA-211	Diaphragm
39**	TA-212	End Cap Gasket
40	TA-213	Nut Gasket
41**	TA-214	Valve Seat Assembly
42	TA-217	Regulator Adj. Screw
43	TA-3133	Spring Disc
44	TA-219	Screw
45	TA-220	Lock Nut
46**	TA-3111	Adjusting Spring
47**	TA-222	Seat Block Pin
48	TA-223	Screw
49	TA-3118	Connector Half & Comp. Nut
50	TA-3116	Elbow & Comp. Nut
51	TA-300	Washer - 3 Reqd.
53	TA-312	Cross Arm Assembly
54	TA-2184	O-Ring
55	TA-390	Cylinder Shell
56	TA-402	Lock Nut
57	TA-425	Lock Washer - 3 Reqd.
58	TA-433	Bearing Bolt
59	TA-434	Guide Plug Assembly
60**	TA-455	Ratchet Pawl
61	TA-457 TA-458	Ratchet Bearing Washer
62 63**	TA-458	Flipper Spring
03	1M-000	i iippei opiiiig

Item	Part No.	Name				
64**	TA-519	Filter Screen				
65	TA-528	Cover Rivets - 2 Reqd.				
66	TA-2163	O-Ring Buna-N				
67	TA-573	Bushing				
68	TA-574	Latch Bolt				
69	TA-575	Thumb Screw				
70	TA-2598	Cotter Pin				
71	TA-577	Washer				
72	TA-578	Street Elbow				
73	TA-579	Washer				
74	TD-64	Box Assembly				
75**	TB-1584	Base-3700 Single Tank				
76	TA-585	Cross Head Assembly				
77	TA-586	Ratchet Sub-Assembly				
78	TA-597	Piston Assembly				
79	TA-608	Copper Tubing w/Fittings				
81	TA-664	Reservoir, 5 gal, 430SS				
82	TA-665	Base - 3700 Double SS Tanks				
83	TA-3199	O-Ring Viton				
84	TA-3104	Retainer Nut 303SS				
85	TA-674	Nipple				
86	TA-761	Exhaust Nipple				
87	TA-793	Bushing				
88**	TA-808	Cup Spring				
90	TA-866	Inlet Bushing				
91**	TA-867	Piston Cup				
92	TA-881	Piston Rod				
93	TA-883	Guide Sleeve				
94	TA-890	Tapped Washer				
95	TA-939	Cross Head				
97	TA-947	Bearing Insert				
98	TA-948	Ratchet Control				
99	TA-949	Ratchet Latch				
100**	TA-955	Pawl Spring				
101	TA-956	Check Pawl Stud				
102	TA-1211	Cup Retainer (Alum.)				
104	TB-40	Pressure Regulator				
105**	TB-47	Gas Inlet Hose				
106**	TA-4669	Valve Disc & Drive Pin Assy.				
107	TB-139	Ratchet Assembly				
108	TB-206	Injector Box Cover				
109	TO 00	Inject. HdsSee pg. 8				
113	TC-28	Valve Body				
114	TC-29	Regulator Body				
116 117	TA-0578	Street Elbow				
	TA-3103	Strainer				
124	TA-676	Line Check Brass				
125	TA-3115	Valve Body 303 SS				
126	TA-3114	Stem Valve 303 SS				
127 128	TA-3113	Spring 316 SS Washer 303 SS				
	TA-3328	O-Ring Viton				
129	TA-3107					
131 132	TA-3162 TA-3163	Polypropylene Suction Line				
132 TA-3163 Polypropylene Suction Line OPTIONAL PARTS						
81 TA-2057 Reservoir (5 gal. 316SS)						
81	TA-2037 TA-1539	Reservoir (10 gal. 430-2B SS)				
l ° '	TA-1539	Stainless Steel Line Check				
Eol		for TA-675 Line Check				
FUI	TA-1296	Outlet Body End				
\vdash	TA-1290	Inlet Body End				
	TA-1297	Washer				
	1/10/14	**uJIIUI				

- These parts are the needle valve & stem assembly Item #25 Recommended spare parts
- *** Recommended spare part, these parts are the needle valve & stem assembly Item #25

INJECTOR HEADS



PARTS LIST

Plunger Size			3/16"	1/4"		3/8"		1/2"	
Item No.	Material Specification	Material Construction	All Stainless Steel	Ductile w/SS Trim	All Stainless Steel	Ductile w/SS Trim	All Stainless Steel	Ductile w/SS Trim	All Stainless Steel
	Head Assembly No.>>>		TC-2041	TC-1578	TC-1582	TC1579	TC-1583	TC-1580	TC-1584
1	Body		TC-2040	TC-0275	TC-0291	TC-0276	TC-0425	TC-0272	TC-0349
2*	Plunger	17-4PH SS	TB-1471	TB-1175	TB-1175	TB-1176	TB-1176	TB-1177	TB-1177
3	Plunger Packing Gland	303 SS	TA-5642	TA-1463	TA-1463	TA-0957	TA-0957	TA-1219	TA-1219
4*	Plunger Packing Set (Standard)	Buna-N	TA-3969	TA-1461	TA-1461	TA-1456	TA-1456	TA-0959	TA-0959
7	Yolk	Malleable Iron	TB-1173	TB-1173	TB-1173	TB-1173	TB-1173	TB-1173	TB-1173
8	O-Ring (Included in item 23)	Buna-N	TA-0479	TA-0479	TA-0479	TA-0479	TA-0479	TA-0479	TA-0479
9	Belleville Washer (12 Regd)	C. Steel	TA-4256	TA-4256	TA-4256	TA-4256	TA-4256	TA-4256	TA-4256
10*	Yoke Packing Set	Buna-N	TA-4892	TA-4127	TA-4127	TA-4127	TA-4127	TA-4127	TA-4127
11	Top Bushing	302 SS	TA-1496	TA-1496	TA-1496	TA-1496	TA-1496	TA-1496	TA-1496
12*	Ball Check Spring	316 SS	TA-0077	TA-0077	TA-0077	TA-0077	TA-0077	TA-0077	TA-0077
13*	Large Top Ball 3/8"	316 SS	TA-0054	TA-0054	TA-0054	TA-0054	TA-0054	TA-0054	TA-0054
14*	Top Seat-Assembly w/Buna-N "O"-ring	303 SS	TB-0737	TB-0737	TB-0737	TB-0737	TB-0737	TB-0737	TB-0737
15*	Small Top Ball 1/4"	316 SS	TA-0126	TA-0126	TA-0126	TA-0126	TA-0126	TA-0126	TA-0126
16	Priming Valve (Ball & Spring incl. 3/16")	303 SS	TA-5462	TA-1497	TA-1497	TA-1497	TA-1497	TA-1497	TA-1497
17	Lock Nut Yoke	Brass	TA-0225	TA-0225	TA-0225	TA-0225	TA-0225	TA-0225	TA-0225
18	Nut, Plunger Packing Gland	303 SS	TA-4104	TA-4104	TA-4104	TA-4104	TA-4104	TA-4104	TA-4104
19	Nut, Yoke Packing	Brass	TA-4094	TA-4094	TA-4094	TA-4094	TA-4094	TA-4094	TA-4094
20*	Wiper Ring, Plunger	Buna-N	TA-4095	TA-4095	TA-4095	TA-4095	TA-4095	TA-4095	TA-4095
21	Drip-Ring, Plunger	Buna-N	TA-4095	TA-4095	TA-4095	TA-4095	TA-4095	TA-4095	TA-4095
22	Ball, Suction 3/8"	316 SS	TA-0054	TA-0054	TA-0054	TA-0054			
23*	Bottom Seat (w/ Buna-N 'O" Ring)	303 SS	TB-1216	TB-0736	TB-0736	TB-0736	TB-0736	TB-0736T	B-0736
24	Pin Plunger	Carbon Steel	TA-0290	TA-0290	TA-0290	TA-0290	TA-0290	TA-0290	TA-0290
25	Gasket	304 SS	TA-4394			Not Applicable			
26*	0-Ring	Buna-N	NA			Not Applicable			
27*	0-Ring	Buna-N	NA			Not Applicable			
28	Yoke Cover	Plastic	TC-1604	TC-1604	TC-1604	TC-1604	TC-1604	TC-1604	TC-1604
Alte	rnate Parts for Corrosive Service								
4*	Plunger Packing	Viton	TA-3967	TA-4102	TA-4102	TA-4101	TA-4101	TA-4103	TA-4103
	<u> </u>	Teflon	TA-3966	TA-1642	TA-1642	TA-1234	TA-1234	TA-1012	TA-1012
		Hard	TA-3948	TA-2295	TA-2295	TA-1875	TA-1875	TA-1874	TA-1874
8*	0-Rina	Viton	TA-2580	TA-2580	TA-2580	TA-2580	TA-2580	TA-2580	TA-2580
14*	Top Seat-Assembly (Metal-to-Metal)	303 SS	N.A.	TA-0806	TA-0806	TA-0806	TA-0806	TA-0806	TA-0806
22	Ball 1/2" (Use w/ TA-0771, Metal-to-Metal Bottom Seat Only)	316 SS	N.A.	TA-0053	TA-0053	TA-0053	TA-0053	TA-0053	TA-0053
23*	Bottom Seat (Metal-to-Metal)	303 SS	N.A.	TA-0771	TA-0771	TA-0771	TA-0771	TA-0771	TA-0771

^{*}Recommended Spare Parts





Dresser Industrial Products Group

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