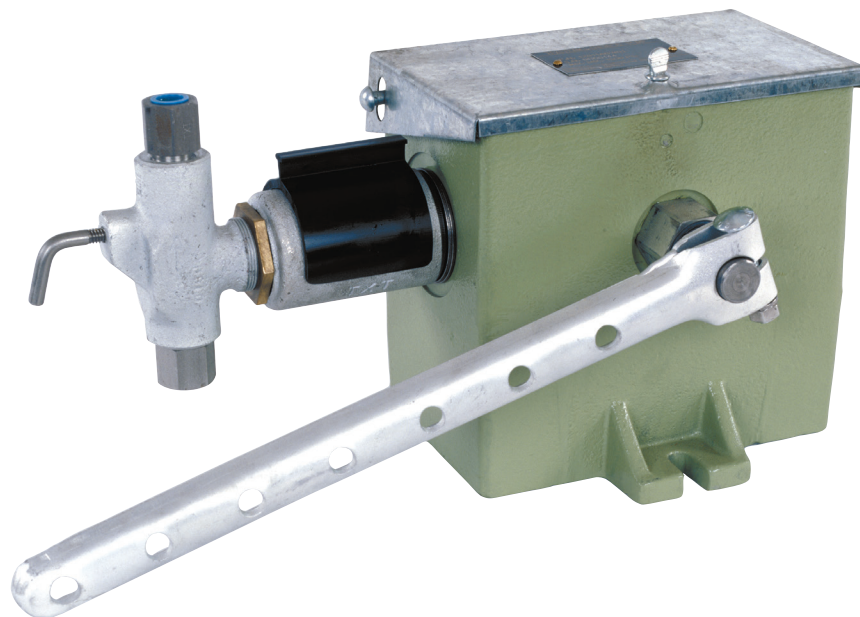


Series 1200

Beam Driven Injection Pump

Description

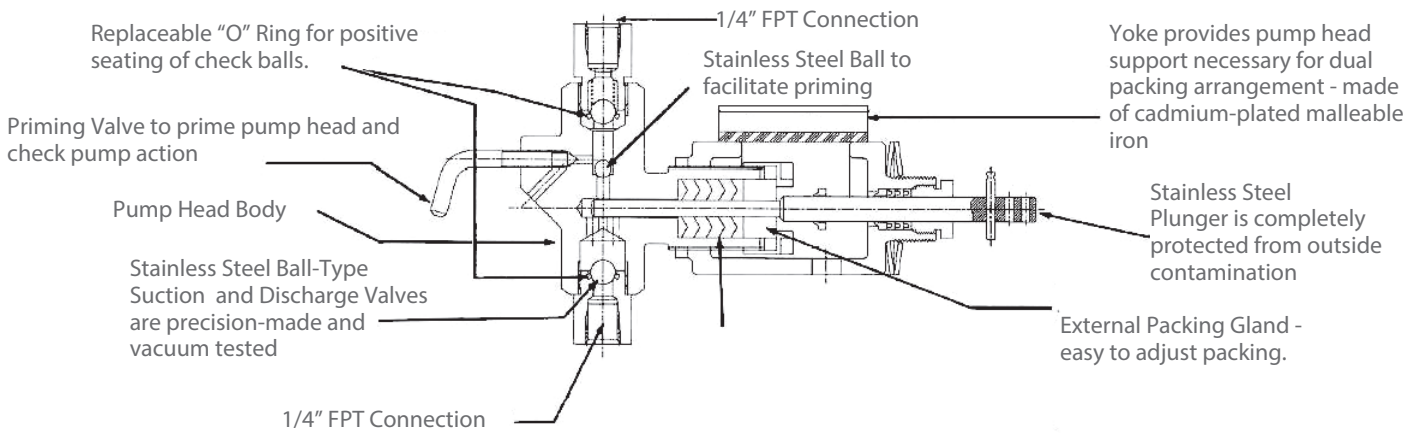
Designed specifically for operation on a beam pumped oil well, TXT 1200 Series Chemical Injectors are positive displacement type pumps powered by direct connection to the movement of a walking beam, rod line or rocker arm. The connection is made by a length of nominal pipe, or a wire line. The unit pumps on the upstroke of the beam action. On the downstroke, the injector arm returns to its set position. The ratchet mechanism is housed in a precision-bored, heavy cast gray iron case and is submerged in oil for long life.



Applications

- Injection of de-emulsifiers, solvents, corrosion inhibitors, scale inhibitors, lubricants and other chemicals
- High pressure bearing lubrication
- Pumping thin or viscous fluids or non-abrasive slurries

Outstanding features of the texsteam series 1200 chemical injectors pump head assembly

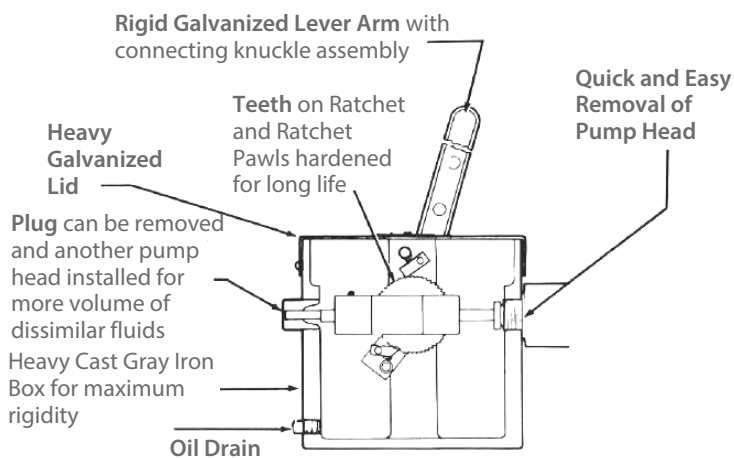


The TXT Pump Head is efficient because of the horizontal plunger and vertical check valves; virtually trouble-free; easy to maintain; has stainless steel trim in standard heads; built-in priming valve to aid in priming, check pump action and catch chemical samples and external packing gland.

The box assembly is heavy cast gray iron for maximum rigidity and has a galvanized lid and rigid galvanized lever arm. The pump head can be easily removed for cleaning and maintenance. An additional pump head can be installed if more volume is required or if there is a need to pump dissimilar fluids.

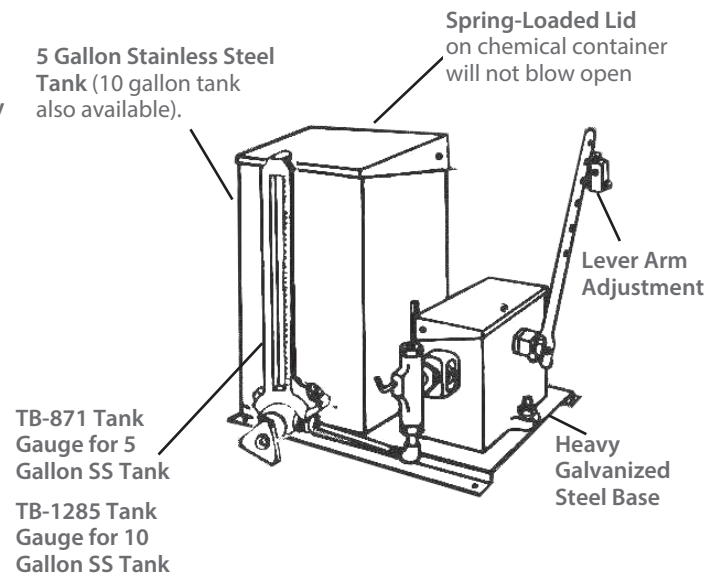
A wide choice of model and plunger sizes is available. The Series 1200 can be supplied with or without unitized chemical tanks or with two mounted tanks or with tanks of various capacity and materials to suit the operating requirements.

BOX ASSEMBLY



Standard (Model 1200)

GENERAL ASSEMBLY



TA-676 1/4" Brass Line Check -furnished with each unit except on 1200 EC Models (not shown on illustration - see pg. 7)

Models available

Standard Model Number

| | |
|--|---------|
| Single Pump Head & Single 5 Gallon Tank (Specify SS or Plastic Tank) | 1203 S |
| Double Pump Head & Double 5 Gallon Tank (Specify SS or Plastic Tanks) | 1203 D |
| Single Pump Head (No Tank or Base) | 1203 SP |
| Double Pump Head (No Tank or Base) | 1203 DP |

Plunger Sizes

Model numbers shown are equipped with 3/8" plunger size. Other sizes available are 1/4", 1/4", and 1/2".

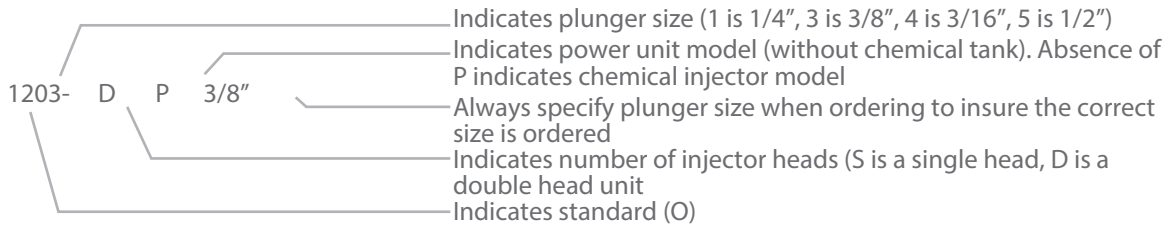
Choice of Material

Ductile Iron Body with stainless steel trim (Standard)
All Stainless Steel Head (Optional)

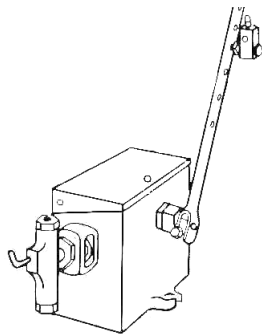
Options Available

Teflon or Viton Packing
Resilient seats (Standard on all heads)
Hastelloy balls
Tanks, five and ten gallon capacity, 430 SS

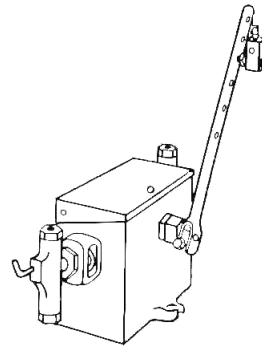
Model designation



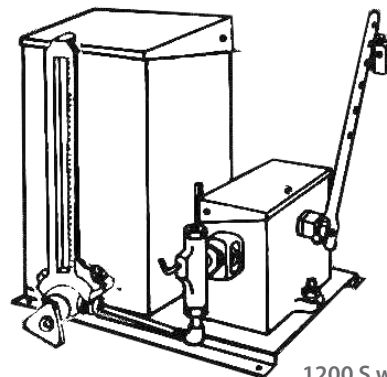
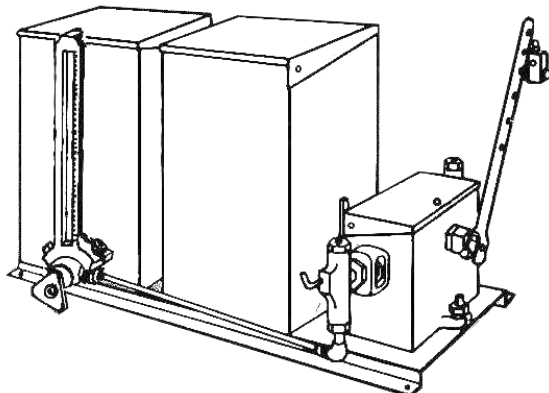
* shipping weights



1200 SP *(26 lbs.)



1200 DP *(30 lbs.)



1200 S with SS Tank *(57 lbs.)

Installation & operating instructions

1. 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.

2. Bolt holes are provided for a permanent mounting (see drawing for dimensions on page 6).

3. Install Item 8 priming valve (included with pump, but shipped loose in carton) on the pump head.

4. Connect the suction line to the 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 tank gauge valve. b. If a power unit model was purchased, a strainer should be piped in to the suction line to prevent sand, rust or other particles which would injure the plunger and foul the check valves.

5. Connect the discharge line (5/16" copper tubing will suffice). A TA-0676 1/4" brass line check is provided. This valve should be installed as close to the point of injection as possible. Note the arrow on the check valve indicates the flow. The top connection on the pump head is the outlet and has a 1/4" female pipe thread connection.

6. Connect lever arm to the power source as follows: (make sure the walking beam pump is turned off)

a. 3/8" OD rod or pipe (usually 10' to 12' is required for an oil field walking beam pump). Attach a TA-700 TXT beam clamp (available from Texsteam) to the power source, such as a walking beam. Insert rod or pipe in the Item 42 beam clamp and the Item 6 connecting knuckle on the lever arm; tighten set screws to secure position of rod or pipe.

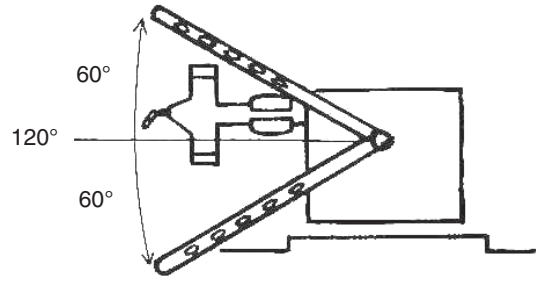
b. Wire line. Simply attach to walking beam and Item 6 connecting knuckle.

7. Fill the Item 25 box assembly with enough SAE-30 oil to cover the Item 40 bearing. If low ambient temperatures are encountered a lighter oil such as SAE-10 should be used. Check oil level at regular intervals.

8. Adjust for desired volume by considering each of the following:

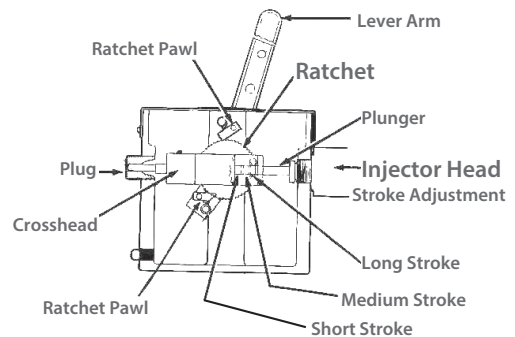
a. Number of strokes of lever arm. The fastest recommended operating speed is 50 strokes per minute. Refer to the volume chart to obtain desired setting of ratchet teeth engagement and stroke length at strokes minute used.

b. Number of ratchet teeth engaged per stroke is dependent upon the travel of the TB-67 lever. With the Item 6 connecting knuckle in the outermost position, a travel of approximately 1" will engage one tooth. A maximum of 19" will engage twenty teeth.



When lever arm cannot travel below the level of the bottom of the base, the maximum teeth engagement will be 10.

c. Adjustment of stroke teeth to short, medium, or long is easily accomplished by positioning of the TA-290 cotter pin in the end of the plunger.



A quick calculation of the preceding three factors (8a, 8b and 8c) and using the performance data chart can predetermine the injection rate before the pump is placed in operation. 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 TB-91 box 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 prime mover and prime the pump head by opening the 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. 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 "seat in."

If low volumes are being pumped, 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 the priming valve.

Performance data

| Plunger Size | Maximum Pressure | Volume Pints per Day | | Model Number |
|--------------|------------------|----------------------|------|--------------|
| | | Min. | Max. | |
| 3/16" | 3000# | .5 | 4.4 | 1204 |
| 1/4" | 1500# | .5 | 7.2 | 1201 |
| 3/8" | 1000# | .5 | 18.0 | 1203 |
| 1/2" | 500# | 1.0 | 30.0 | 1205 |

* For Volumes With Additional Ratchet Teeth Engaged, Multiply These Values By Number of Teeth Engaged.

20 Teeth Maximum Pickup. Minimum Volumes are theoretical only.

| Strokes Min. | Ratchet Teeth Engaged | 3/16" Plunger | | | 1/4" Plunger | | | 3/8" Plunger | | | 1/2" Plunger | | |
|--------------|-----------------------|---------------|-------------|-------------|--------------|-------------|-------------|--------------|-------------|-------------|--------------|-------------|-------------|
| | | Short Stroke | Med. Stroke | Long Stroke | Short Stroke | Med. Stroke | Long Stroke | Short Stroke | Med. Stroke | Long Stroke | Short Stroke | Med. Stroke | Long Stroke |
| 6 | 1 | .02 | .05 | .07 | .04 | .08 | .12 | .10 | .20 | .30 | .17 | .35 | .5 |
| 8 | 1 | .03 | .07 | .10 | .06 | .10 | .16 | .14 | .26 | .40 | .23 | .47 | .7 |
| 10 | 1 | .04 | .08 | .12 | .07 | .13 | .20 | .17 | .33 | .50 | .29 | .59 | .8 |
| 12 | 1 | .05 | .10 | .15 | .08 | .16 | .24 | .20 | .40 | .60 | .35 | .71 | 1.0 |
| 14 | 1 | .06 | .11 | .17 | .10 | .18 | .28 | .24 | .46 | .70 | .40 | .83 | 1.2 |
| 16 | 1 | .07 | .13 | .20 | .11 | .21 | .32 | .27 | .53 | .80 | .46 | .94 | 1.4 |
| 18 | 1 | .08 | .15 | .22 | .13 | .23 | .36 | .31 | .59 | .90 | .52 | 1.06 | 1.5 |

NOTE - For double-headed units, increase maximum volume by two. Series 1200 EC equipped with one head only.

Maintenance instructions for series 1200 beam driven chemical injectors

(Refer to Parts List on Page 6)

To Remove TB-67 Lever

Remove TA-414 lever bolt assembly. TB-67 lever can then be pulled free of TB-66 drive shaft assembly. Upon re-assembly, be sure TA-414 fits into the slot in the end of TB-66 drive shaft assembly.

To Remove TA-536 Crosshead

It is not necessary to remove the pump head from a single-headed unit in order to remove the crosshead if the following steps are taken.

1. Hand operate TB-67 lever until chemical plunger is at its full discharge position.
2. Pull TA-290 pin (disconnecting plunger from TA-536 crosshead).
3. Remove TA-434 guide plug assembly.
4. Hand operate TB-67 lever until fluid plunger is free of TA-536 crosshead. Lift out TA-536 crosshead. To remove TA-536 crosshead from double-headed unit it is necessary to remove one pump head from the gear box.

To Remove TA-337 Ratchet Sub-Assembly

It is necessary to follow the procedure outlined under "To Remove TA-536 Crosshead" and "To Remove TB-67 Lever."

1. After crosshead is removed, TA-537 sub-assembly may be pulled toward center of gear box and lifted out.
2. To remove TA-457 bearing and TA-458 washer from TA-420 ratchet assembly, unscrew TA-433 bearing bolt. To remove TB-66 drive shaft assembly, follow the procedure outlined above.

1. Unscrew the TA-5 199 shaft bearing. TB-66 drive shaft assembly can then be lifted out through the gear box.

Installing TA-5200 shaft seal in TA-5199 shaft bearing:

The TA-5200 seal is pressed into the TA-5199 bearing. When done correctly the garter spring will not be visible on the assembly.

Replacing Ratchet Pawls TA-455 and Ratchet Pawl Springs TA-456

It is necessary to remove TA-537 ratchet sub-assembly.

To Repack Fluid Pump Head

1. Disconnect chemical suction 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-4094 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 Check Discharge Balls, Seats & Springs

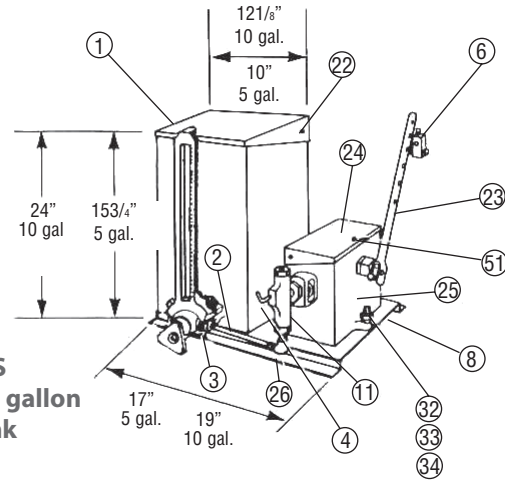
Remove TA-1496 top bushing.

To Check Suction Ball

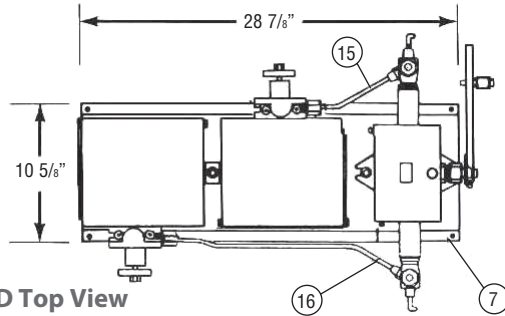
Remove TB-736 bottom bushing (suction seat is integral part of TB-736 suction bushing).

Parts list

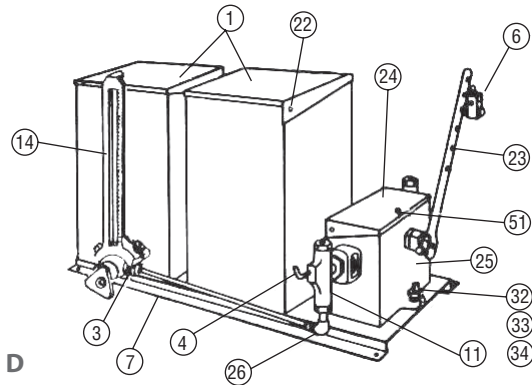
| Item | Part No. | Name |
|------|----------------|--|
| 1 | TA-664 | Reservoir Assy, 5 gal. 430SS |
| | TA-1539 | Reservoir Assy, 10 gal. 304SS |
| 2 | TA-3117 | Suction Line |
| 3 | TA-3118 | Connector compression nut assy. |
| 4 | TA-1497 | Priming Valve |
| 6 | TA-0538 | Connecting Knuckle Assy. |
| 7 | TB-101 | Base for two 5 gal. SS tanks |
| 9 | TA-306 | Gasket |
| 10 | TA-302 | Strainer Bushing Assy. |
| 11 | | Head Assy. (see pg. 8 for parts breakdown) |
| 14 | TB-871 | Tank Gauge Assy. for 5 gal. SS tank |
| | TB-1285 | Tank Gauge Assy. for 10 gal SS tank |
| 15 | TA-3120 | Suction Line |
| 16 | TA-3117 | Suction Line |
| 19 | TA-104 | Bowl Gasket |
| 21 | TA-101 | Shut-off Assy. |
| 22 | TA-1841 | Snap Ring (2 req'd) |
| 23 | TB-67 | Lever Arm |
| 24 | TA-960 | Lid |
| 25 | TB-91 | Box Assy. 1200 |
| 26 | TA-3116 | Elbow Compression Nut Assy. |
| 27 | TA-677 | Outlet Body Brass |
| 28 | TA-391 | Spring |
| 29 | TA-54 | Ball |
| 30 | TA-479 | O-Ring Buna-N |
| | TA-2093 | O-Ring Viton |
| 31 | TA-678 | Inlet Body-Brass |
| 32 | P25-03100-0200 | Nut Qty. (depends on location of usage) |
| 33 | P52-03100-3900 | Lock Washer Qty.(depends on location of usage) |
| 34 | P53-03100-0200 | Washer Qty. (depends on location of usage) |



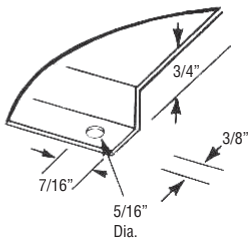
**1200 S
with 5 gallon
SS tank**



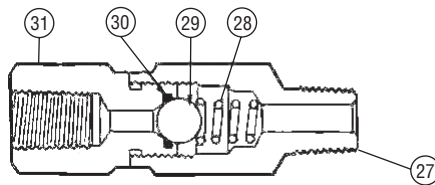
1200 D Top View



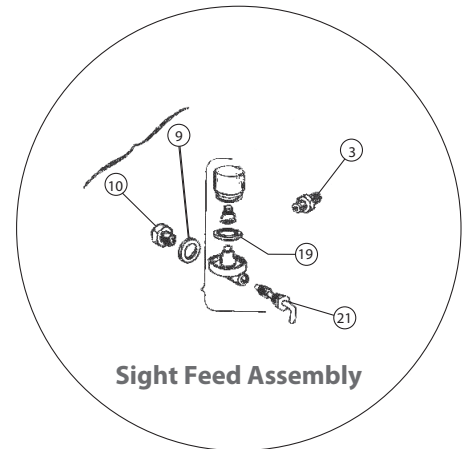
1200 D



**Base Plate
Corner Detail Typical**



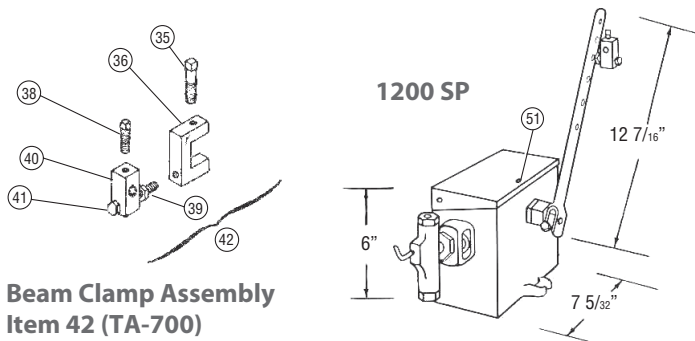
Brass Line Check(TA-676)



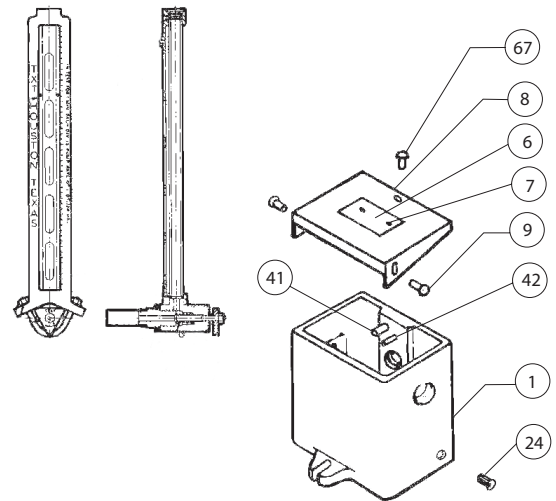
Sight Feed Assembly

Parts list

| Item | Part No. | Name |
|------|-----------------|--------------------|
| 35 | TA-453 | Set Screw |
| 36 | TA-423 | Beam Clamp |
| 38 | TA-452 | Set Screw |
| 39 | P25-037000-0200 | Hex Nut |
| 40 | TA-409 | Connecting Knuckle |
| 41 | TA-438 | Cap Screw |
| 42 | TA-700 | Beam Clamp Assy. |
| 51 | P86-025050-0200 | LID Thumb Screw |



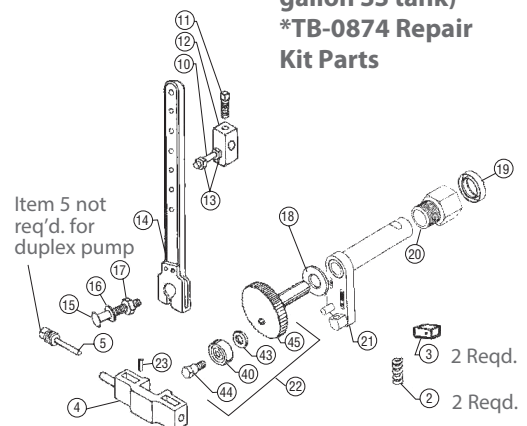
**Beam Clamp Assembly
Item 42 (TA-700)**



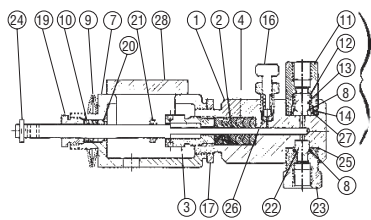
Series 1200 (standard box assembly) Parts list

| Item | Part No. | Name |
|------|-----------------|---------------------------------|
| 1 | TB-91 | Box Ass'y |
| 2 | TA-456 | Pawl Spring (2 req'd) |
| 3 | TA-455 | Pawl (2 req'd) |
| 4 | TA-538 | Cross Head (simplex) |
| | TA-451 | Cross Head (duplex) |
| 5 | TA-434 | Guide Plug Ass'y (simplex only) |
| 6 | GA-3181 | Name Plate |
| 7 | TA-171 | Escutcheon Pin |
| 8 | TA-960 | LID |
| 9 | TA-528 | Rivet |
| 10 | TA-438 | Cap Screw |
| 11 | TA-452 | Set Screw |
| 12 | TA-409 | Knuckle |
| 13 | P25-037000-0200 | Nut |
| 14 | TB-67 | Lever Arm |
| 15 | P23-031200-0200 | Lever Bolt |
| 16 | P52-031000-3900 | Lock Washer |
| 17 | P25-031000-0200 | Nut |
| 18 | TA-4251 | Nylon Washer |
| 19 | TA-5200 | Seal |
| 20 | TA-5199 | Shaft Bearing |
| 21 | TB-66 | Drive Shaft |
| 22 | TA-537 | Ratchet Ass'y |
| 23 | TA-290 | Plunger Pin |
| 24 | P61-025000-8000 | Drain Plug |
| 40 | TA-457 | Ratchet Bearing |
| 41 | TA-988 | Check Pawl Spring Shaft |
| 42 | TA-955 | Check Pawl Shaft |
| 43 | P55-043000-0200 | Cut Washer |
| 44 | TA-433 | Ratchet Bearing Bolt |
| 45 | TA-420 | Ratchet Sub Ass'y |

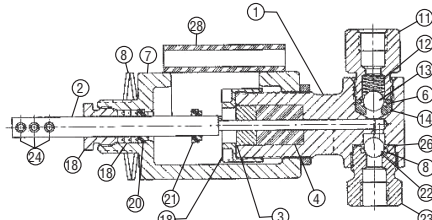
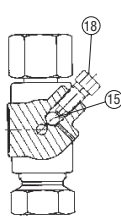
**TB-871 Tank Gauge
(Assembly for five
gallon SS tank)
*TB-0874 Repair
Kit Parts**



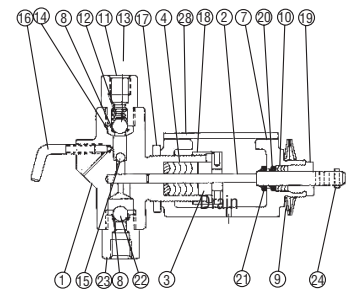
PARTS LIST - INJECTOR HEADS, SERIES 1200 PUMPS



3/16" Head Before 4-1-90



3/16" Head After 4-1-90



Note: Drip Ring Moves With the Plunger
1/4" - 3/8" - 1/2" Heads

| 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 |
| | | | 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 SST | TA-5642 | TA-1463 | TA-1463 | TA-0957 | TA-0957 | TA-1219 | TA-1219 |
| 4* | Plunger Packing Set (std.) | Buna-N | TA-3569 | TA-1461 | TA-1461 | TA-1456 | TA-1456 | TA-0959 | TA-0959 |
| 7 | Yoke | 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 (2 recqd.) | C-Steel | TA-4256 | TA-4256 | TA-4256 | TA-4256 | TA-4256 | TA-4256 | TA-4256 |
| 10* | Yoke Packing Set | Buna-N | TA-1427 | TA-4127 | TA-4127 | TA-4127 | TA-4127 | TA-4127 | TA-4127 |
| 11 | Top Bushing | 302 SST | TA-1496 | TA-1496 | TA-1496 | TA-1496 | TA-1496 | TA-1496 | TA-1496 |
| 12* | Ball Check Spring | 316 SST | TA-0077 | TA-0077 | TA-0077 | TA-0077 | TA-0077 | TA-0077 | TA-0077 |
| 13* | Large Top Ball 3/8" | 316 SST | TA-0054 | TA-0054 | TA-0054 | TA-0054 | TA-0054 | TA-0054 | TA-0054 |
| 14* | Top-Seat Assy. w/Buna-N O-Ring | 303 SST | TB-0737 | TB-0737 | TB-0737 | TB-0737 | TB-0737 | TB-0737 | TB-0737 |
| 15* | Small Top Ball 1/4" | 316 Sst | TA-0126 | TA-0126 | TA-0126 | TA-0126 | TA-0126 | TA-0126 | TA-0126 |
| 16 | Priming Valve (Ball & Spring incl. 3/16") | 303 SST | 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 SST | 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 |
| 22* | Ball, Suction 3/8" | 316 SST | TA-4095 | TA-4095 | TA-4095 | TA-4095 | TA-4095 | TA-4095 | TA-4095 |
| 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-0054 | TA-0054 | TA-0054 | TA-0054 | TA-0054 | TA-0054 | TA-0054 |
| 23* | Bottom Seat (w/Buna-N O-Ring) | 303 SST | TB-1216 | TB-0736 | TB-0736 | TB-0736 | TB-0736 | TB-0736 | TB-0736 |
| 24 | Pin Plugger | Carbon Steel | TA-0290 | TA-0290 | TA-0290 | TA-0290 | TA-0290 | TA-0290 | TA-0290 |
| 25 | Gasket | 304 SST | TA-4394 | | | Not Applicable | | | |
| 26* | O-Ring | Buna-N | NA | | | Not Applicable | | | |
| 27* | O-Ring | Buna-N | | | | | Not Applicable | | |
| 28 | Yoke Cover | Plastic | TC-1604 | TC-1604 | TC-1604 | TC-1604 | TC-1604 | TC-1604 | |
| Alternate Parts for Corrosive Service | | | | | | | | | |
| 4* | Plunger Packing | Viton | TA-3967 | TA-4102 | TA-4102 | TA-4101 | TA-4101 | TA-4103 | TA-4103 |
| | | 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* | O-Ring | Viton | TA-2580 | TA-2580 | TA-2580 | TA-2580 | TA-2580 | TA-2580 | |
| 14* | Top Seat Assem. (Metal-to-Metal) | 303 SST | NA | 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 SST | NA | TA-0053 | TA-0053 | TA-0053 | TA-0053 | TA-0053 | |
| 23* | Bottom Seat (Metal-to-Metal) | NA | TA-0771 | TA-0771 | TA-0771 | TA-0771 | TA-0771 | TA-0771 | |
| 27* | O-Ring | Viton | NA | NA | NA | NA | NA | NA | |

*Recommended Spare Parts

** Ductile Not Available before 4-1-90

Texsteam Pumps

16240 Port Northwest Drive

Houston, TX 77041

T: 832-590-2306

Toll Free: 1-800-945-9898

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Texsteam Pumps Multipoint Injection Controller Brochure NGS.IPG.0054b

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