

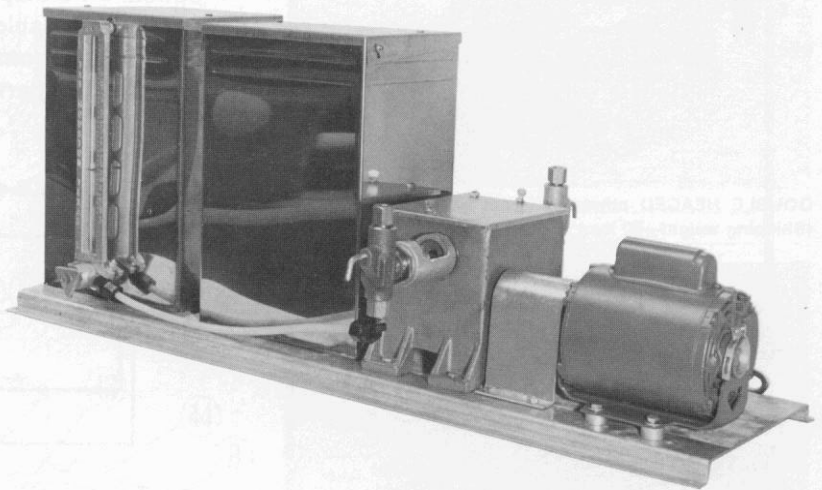
FRED C. GILBERT CO.  
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PIA 20.01  
MAY 1981

# Pump Catalog & Parts List

## SERIES 4200



## ELECTRIC DRIVE CHEMICAL INJECTORS

### FEATURES

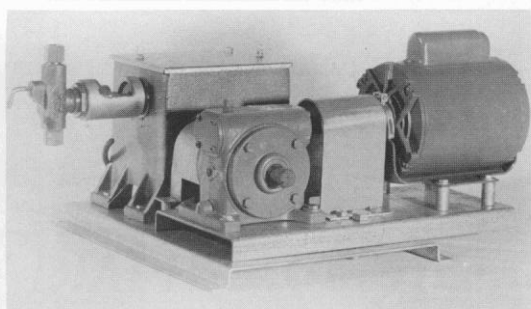
- Integral gear drive and crosshead mechanism in heavy cast iron housing with an optional oil level sight gauge.
- Output gear of high strength alloy iron is supported in a sturdy special bearing arrangement for maximum rigidity to assure extremely long life.
- A special drip-ring feature on the plunger prevents chemical from being conducted into the gear box and contaminating the lubricant.
- A sealed and vented cover prevents entrance of moisture, dirt, and corrosive vapors.
- Choice of liquid ends . . . all interchangeable.
- Multiplex models with up to 8 heads driven by a common motor are available.

### DESCRIPTION

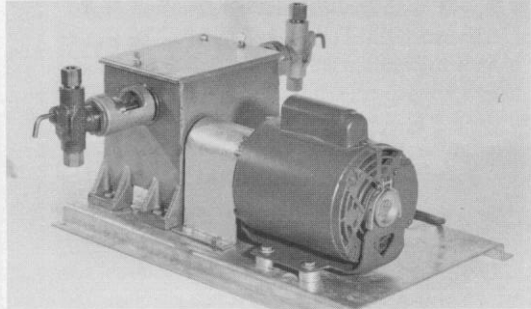
The Series 4200 chemical injectors are electric motor driven, positive displacement pumps utilizing an integral worm gear drive available in three different standard ratios and 4 plunger sizes to provide a wide selection of volumes and pressures from 1¼ GPD up to 80 GPD per head, against pressures from 600 to 3600 psig. An optional 10 to 1 gear reducer, mounted externally, is available for extra low pumping rates from 1¼ gallons per day down to ½ pint per day.

Models with up to eight pumping heads using a common motor are available for multiple injection points or for higher volumes, and capacity can be regulated by manual adjustment of the stroke length while the pump is running.

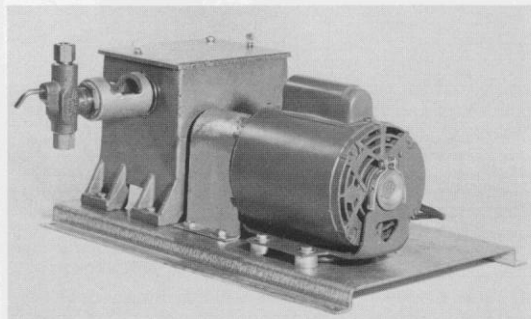
The standard, virtually trouble free packed plunger injector heads have built in priming valves and a drip-ring type barrier that will prevent chemical from being conducted along the plunger and into the gear box. Standard pumps can be furnished with high strength ductile iron or 316 stainless steel liquid ends to handle a wide variety of chemicals used in oil and gas production facilities, pipelines, process plants and other applications where a rugged, easy to maintain proportioning pump is required. Special PVC plastic heads are also available in both packed plunger and diaphragm configuration for highly corrosive chemicals that cannot be handled with the standard heads.



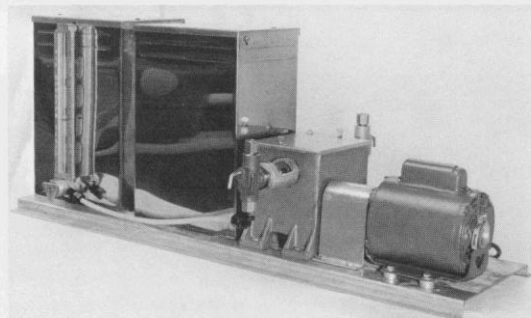
**SINGLE HEAD** power unit with 10:1 gear reducer for volumes down to ½ pint per day.



**DOUBLE HEADED** power unit with electric motor drive. (Shipping weight—80 lbs.)



**SINGLE HEAD** power unit with electric motor drive. (Shipping weight—70 lbs.)



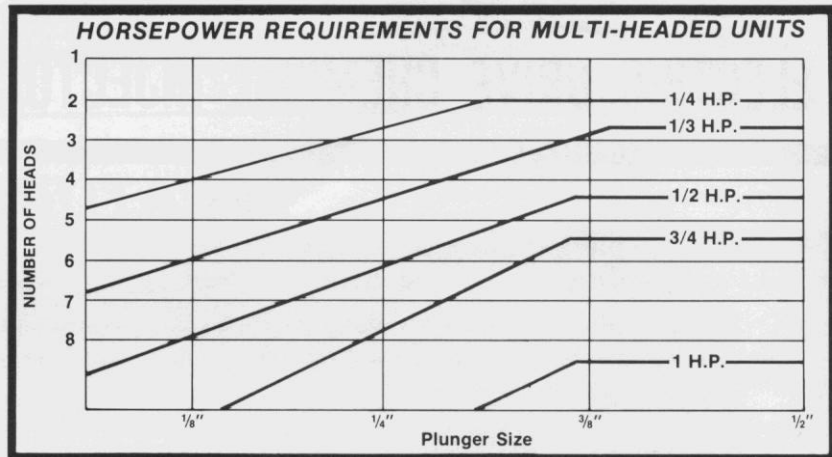
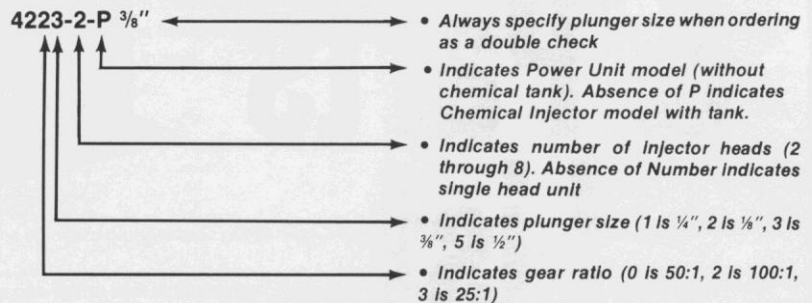
**DOUBLE HEADED** chemical injector with electric motor drive. (Shipping weight—110 lbs.)

## MODELS AVAILABLE

The Texsteam 4200 Series pump is gear-driven and utilizes **electric motors, V-belt, pneumatic motors or gasoline engines** as a power source. **Power units** (less tank) and **chemical injectors** (with tank, suction piping and flow rate gauge) are available with from **one to eight** pumping heads in a choice of gear ratios (**25:1, 50:1 or 100:1**) and plunger sizes (**1/8", 1/4", 3/8" or 1/2"**). Refer to the chart below to determine horsepower requirements for units with multi heads.

A gear reducer ahead of the gear box for low volumes to ½ pt. per day is available. The standard injector heads are supplied with ductile iron cylinders and stainless steel trim. All stainless steel is available as an option. PVC diaphragm and plunger heads for highly corrosive materials are also available. Metal-to-metal seats, Teflon packing, hastelloy ball checks and chrome-plated plungers are available as alternates to standard injector head parts. "O" ring type resilient check seats are standard on all heads.

## MODEL DESIGNATION:



## CAPACITY DATA

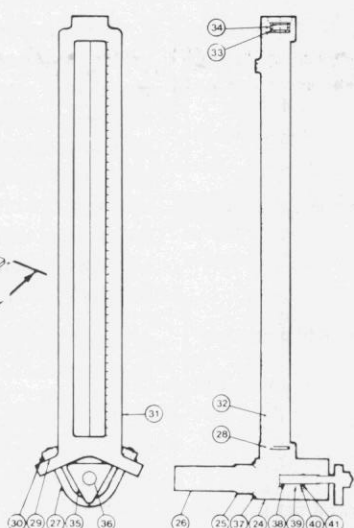
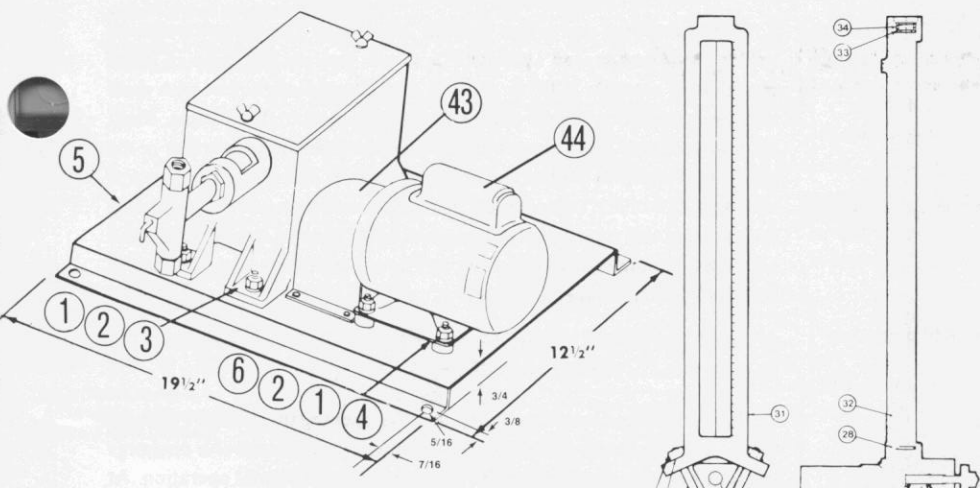
PLUNGER SIZE	MAXIMUM DISCHARGE PRESSURE	MAX. VOLUME (Expressed in U.S. Gallons per day)						MINIMUM VOLUMES ARE 1/10th OF MAXIMUM		
		100:1 RATIO (17.5 SPM)		50:1 RATIO (35 SPM)		25:1 RATIO (70 SPM)		Model No.	MAX. GPD	
		Model No.	MAX. GPD	Model No.	MAX. GPD	Model No.	MAX. GPD			
<b>Single Head Units</b>										
1/8"	3600 PSI	4222	1 ¼	1.04	4202	2 ½	2.08	4232	5	4.15
1/4"	2400 PSI	4221	5	4.15	4201	10	8.3	4231	20	16.6
3/8"	1200 PSI	4223	12	9.96	4203	23	19.09	4233	46	38.18
1/2"	600 PSI	4225	21	17.43	4205	40	33.2	4235	80	66.4
<b>Double Headed Units</b>										
1/8"	3600 PSI	4222-2	2 ½	2.08	4202-2	5	4.15	4232-2	10	8.3
1/4"	2400 PSI	4221-2	10	8.3	4201-2	20	16.6	4231-2	40	33.2
3/8"	1200 PSI	4223-2	24	19.9	4203-2	46	38.18	4233-2	92	76.4
1/2"	600 PSI	4225-2	42	34.86	4205-2	80	66.4	4235-2	160	132.8

Gear box shaft height is 3 1/2" from base to center line of shaft. If a Frame 48 Motor is used, four (4) TA-1692 shims are required. A Frame 56 Motor can be mounted on base without shims.

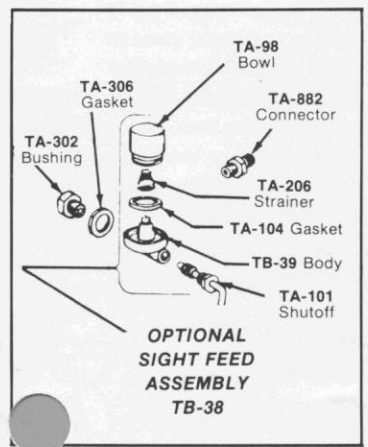
# PARTS LIST

ITEM	PART NO.	NAME
1	TA-164	Hex Nut
2	TA-3303	Lockwasher-1/4" Steel
3	TA-167	Cut Washer
4	TA-1741	Spacer
5	TB-437	Base SH
6	TA-163	Cap Screw
7	TA-3116	Elbow
8	TB-436	Base
9	TA-664	Chemical Tank 430 SS
10	TA-664	Chemical Tank 430 SS
11	TA-425	Lockwasher
12	TA-300	Cut Washer
13	TB-431	Base DH
14	TA-144	Hex Nut
15	TA-677	Outlet Body
*16	TA-391	Spring
*17	TA-54	Ball
*18	TA-2597	O-Ring
19	TA-678	Inlet Body
20	TB-871	Tank Gauge Ass'y
21	TA-3118	Connector
22	TA-3116	Elbow
23	TA-3161	Polypropylene Tube
24	TA-3115	Valve Body
25	TA-3104	Retainer Nut
26	TA-3103	Strainer
27	TA-3106	U-Bolt
28	TA-2184	O-Ring
29	TA-577	Washer
30	TA-164	Nut
31	TC-393	Frame
32	TA-3102	Gauge Glass
33	TA-3101	Flat Washer
34	TA-3100	Spring
35	TA-3112	Handle Valve
36	TA-164	Nut
37	TA-3199	O-Ring
38	TA-3114	Stem Valve
39	TA-3113	Spring
40	TA-3328	Washer
41	TA-3107	O-Ring
42	TA-3162	Polypropylene Tube
43	TB-1167	Coupling Guard
44	TA-2266	1/4 HP, 1 ph, 60 HZ, 115/230 volt, Open D.P.
	TA-2272	1/4 HP, 3 ph, 60 HZ, 230/460 volt Open D.P.
	TA-2264	1/4 HP, 1 ph, 60 HZ, 115/230 volt, TEFC
	TA-2268	1/4 HP, 3 ph, 60 HZ, 230/460 volt, TEFC
	TA-2265	1/4 HP, 1 ph, 60 HZ, 115/230 volt, Ex Proof
	TA-2271	1/4 HP, 3 ph, 60 HZ, 230/460 volt, Ex. Proof

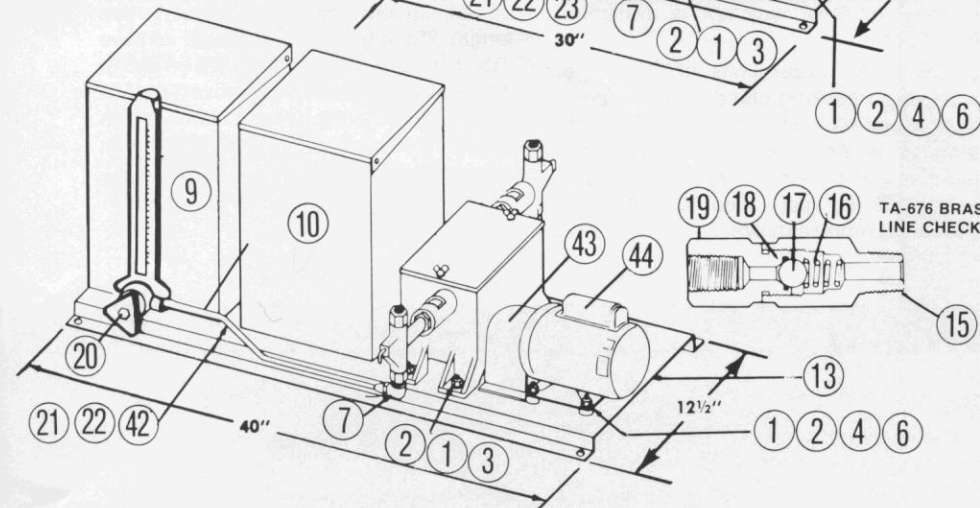
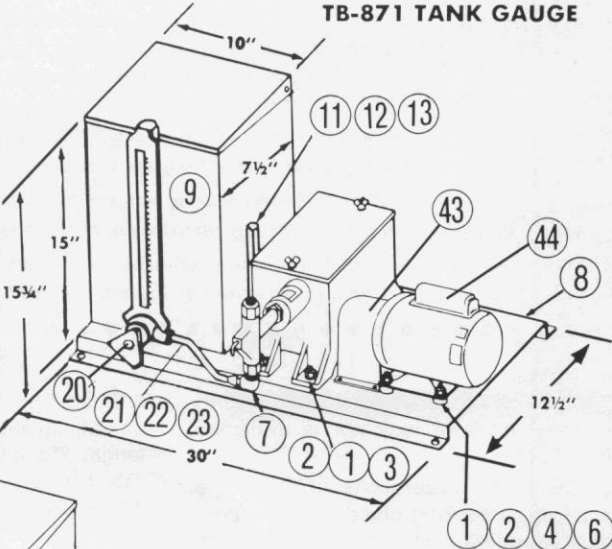
### \* Recommended Spare Parts



**TB-871 TANK GAUGE**



**OPTIONAL SIGHT FEED ASSEMBLY TB-38**



### VOLUMETRIC CONVERSION FACTORS

cc/sec	x	0.95	=	GPH
cc/min	x	0.016	=	GPH
cc/hr	x	0.00026	=	GPH
liters/sec	x	952.0	=	GPH
liters/min	x	15.9	=	GPH
liters/hr	x	0.264	=	GPH
imperial GPM	x	72.0	=	GPH
imperial GPH	x	1.25	=	GPH
ml/sec	x	0.95	=	GPH
ml/min	x	0.016	=	GPH
ml/hr	x	0.00026	=	GPH
m3/hr	x	264.2	=	GPH

### PRESSURE CONVERSION FACTORS

KG/Sq CM	x	14.2	=	PSIG
In. Hg	x	0.49	=	PSIG
In. Water	x	0.036	=	PSIG
Ft. of Water	x	0.43	=	PSIG
Atmospheres	x	14.7	=	PSIA
kPa (Kilo Pascal)	x	.1450	=	PSIG
Mega Pa	x	145.0	=	PSIG

# INSTALLATION

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).

3. Remove the gear box lid and fill gear box with 1½ quarts of a good grade of lubricant. A lubricant tag is attached to the pump with a list of recommended oils. The oil level should be maintained level with the top of the crosshead guide rods, item #24.

4. **Adjust the stroke length** to the desired volume. A full stroke length (1") will pump the maximum volume as shown in the data sheet. For approximately 50% volume use a ½" stroke, etc. Full stroke length for PVC Diaphragm Head is ¼".

5. **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 pump rate setting gauge valve, item #35. A strainer is furnished as a part of this unit.

b. If a **power unit model** (without tank) was purchased, a strainer should be piped into the suction line to prevent sand, rust or other particles from injuring the plunger and fouling the check valves.

6. **Connect the discharge line.** A ¼" 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 direction of flow. The top connection on the pump head is the outlet and has a ¼" female pipe thread connection.

7. **Mount motor** if pump was ordered less motor. The pump input shaft speed should **not exceed 1800 RPM** and will operate the pump in **either direction of rotation** (CW or CCW). After careful alignment with shaft coupling (furnished on all pumps), bolt motor securely in place. Shaft alignment is very important. Misalignment will cause the bearings in the motor and pump as well as the coupling to wear out. Shim the motor if necessary. To check free rotation turn motor and pump over by grasping the coupling and rotating. A minimum of 1/16" spacing should be allowed between coupling ends for expansion. The use of an overload protector in the motor circuit is recommended.

8. Install the TA-1497, item #16, priming valve (included with pump, but shipped loose in carton) on the pump head.

9. Start motor and prime the pump head by opening the TA-1497 priming valve. After the pump discharges fluid through the priming valve discharge without bubbles, slowly close the priming valve for normal operation. At this point make a visual check of the packing drip, and using the TA-315 gland wrench that is included in the package, slowly tighten the gland to prevent excess drippage and waste of chemicals. **Do not overtighten plunger packing.** 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 "seat in." **Do not tighten packing when pump head is under load. (Discharge pressure should be atmospheric.)**

*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 TA-1497 priming valve.*

## OPERATING INSTRUCTIONS

1. **Check oil level in gear box regularly.** An optional oil level indicator is available, item #5.

2. Check for excess chemical leakage around the packing gland. If it is impossible to tighten, replace the packing. If the plunger is badly scored, replace the plunger and packing. If excessive packing failure is experienced, consult your Texsteam representative.

3. Each Texsteam Series 4200 Pump has an adjustment for the required stroke length. To adjust stroke length remove TC-1576 cover; loosen wing nut on end of TA-1924 adjustment bolt; move TA-1595 adjusting nut to the desired stroke length as indicated on TA-1929 scale (maximum stroke 1").

## MAINTENANCE INSTRUCTIONS FOR ELECTRIC DRIVE

### REPLACING SCALE OR STROKE ADJUSTING ASSEMBLY

To replace scale or stroke adjusting assembly remove wing nut and washer, round head screw, and roll pin (holding plunger to stroke adjusting assembly). Then move item #2 crosshead back and replace necessary parts.

### DISASSEMBLY OF THE POWER MECHANISM

1. Disconnect and remove pump head from power unit.
2. Remove item #15 rod retainers and item #14 "O" rings from each end of item #24 bearing rods.
3. Using proper size punch, push bearing rods through item #2 crosshead and out opposite side of gear box.

**TO REMOVE ITEM #28 CROSSHEAD BEARING FROM WORM GEAR**  
Remove item #2 crosshead and lift bearing off item #27 bearing stud.

### TO REMOVE WORM GEAR ITEM #37 AND ITEM #46 BEARING FROM GEAR BOX

1. Remove cap item #36 from bottom of pump.

2. Remove item #48 hex-head machine screw, item #49 spring washer and item #47 bottom thrust washer. You can now remove the worm gear item #37 and item #46 bearing through the top of the housing item #1.

3. Upon replacing be certain the gear roll pin item #30 is located in its proper place — holding the bearing item #46 in proper alignment.

### TO REMOVE THE WORM GEAR AND SHAFT ITEM #12 SHAFT END BEARING and/or OIL SEAL ITEM #9

It is not necessary to remove crosshead, guide rods or worm gear in order to remove the drive shaft and its component parts.

1. Disconnect flexible coupling and remove motor from base. If unit is equipped with container on base, it is best to remove entire gear box from base:

- a. **Remove item #10 truarc ring**
- b. **Remove item #33 pipe plug**  
(opposite side)

2. Insert proper size punch into recess on small end of item #12 shaft (small end under item #10 pipe plug). Carefully drive shaft out through

# GEAR BOX ASSEMBLY

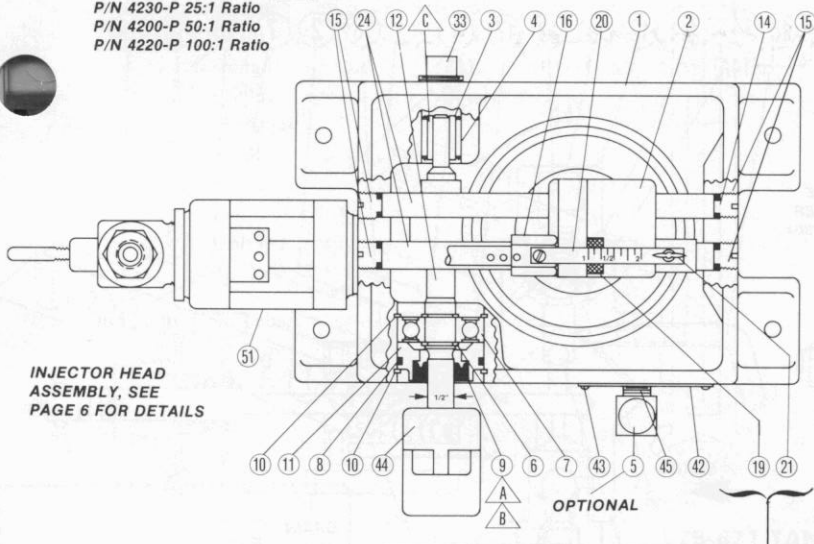
# PARTS LIST

Assembly Part Numbers less Head

P/N 4230-P 25:1 Ratio

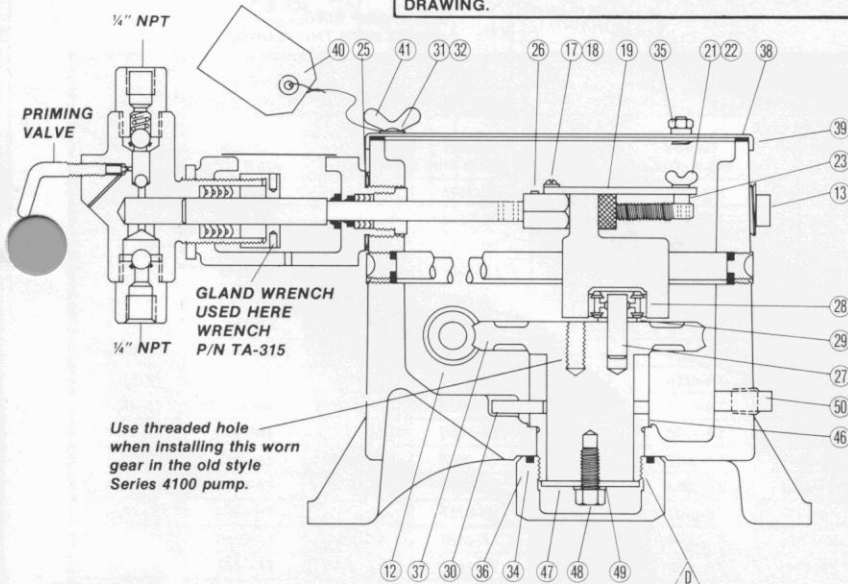
P/N 4200-P 50:1 Ratio

P/N 4220-P 100:1 Ratio



## FLOW RATE ADJUSTMENT

TO ADJUST FLOW RATE, LOOSEN WING NUT (ITEM 21) THEN TURN ADJUSTMENT NUT (ITEM 19) UNTIL THE FRONT EDGE LINES UP WITH DESIRED POSITION ON THE STROKE LENGTH SCALE. THE FRONT EDGE IS SHOWN LINED UP WITH NO. 1 ON THE SCALE IN THIS DRAWING.



ITEM	PART NO.	NO. RECD.	NAME	MATERIAL
▲*	1	TD-0441	1 Housing	Cast Iron
▲*	2	TB-1194	1 Crosshead	Cast Iron
▲*	3	TA-2287	1 Inner Race, Bearing	C. Steel
▲*	4	TA-2286	1 Bearing, Needle	C. Steel
▲*	5	TA-4066	1 Oil Gauge Ass'y. (Optional)	Brass w/Glass Tube
▲*	6	TA-3310	2 Truarc Ring	Carbon Steel
▲*	7	TA-2285	1 6302-2RS SKF Ball Bearing	C. Steel
▲*	8	TA-1961	1 O-Ring	Buna-N
▲*	9	TA-2064	1 Seal	Buna-N
▲*	10	TA-3311	2 Truarc Ring	Carbon Steel
▲*	11	TA-4045	1 Seal Cartridge	C. Steel
▲*	12	TA-1871	1 Worm & Shaft Ass'y. (25:1 Ratio)	C. Steel
▲*	13	TA-2250	1 Worm & Shaft Ass'y. (50:1 Ratio)	C. Steel
▲*	14	TA-1755	1 Worm & Shaft Ass'y. (100:1 Ratio)	C. Steel
▲*	15	TA-3319	1 Pipe Plug	Cast Iron
▲*	16	TA-3849	4 O-Ring	Buna-N
▲*	17	TA-4228	4 Rod Retainer	C. Steel
▲*	18	TA-1924	1 Adjustment Bolt	C. Steel
▲*	19	TA-3312	1 Lockwasher	Stnls. Stl. 304
▲*	20	TA-3313	1 #8-32 Round Hd. Scr. x 3/8" LG.	Cad. Pl.
▲*	21	TA-1595	1 Adjustment Nut	Stnls. Stl. 303
▲*	22	TA-1929	1 Adjustment Scale	C. Steel
▲*	23	TA-3314	1 Wing Screw	C. Steel Cad. Pl.
▲*	24	TA-3315	1 Washers	C. Steel Cad. Pl.
▲*	25	TA-1596	1 Spacer	Stnls. Stl. 302
▲*	26	TA-4229	2 Crosshead Guide Rod	C. Steel
▲*	27	TA-4256	2 Bellville Washer	Stnls. Stl. 302
▲*	28	TA-2328	1 Roll Pin	C. Steel
▲*	29	TA-4064	1 Bearing Stud	C. Steel
▲*	30	TA-4065	1 Bearing, Crosshead	C. Steel
▲*	31	TA-458	1 Washer	C. Steel
▲*	32	TA-2337	1 Roll Pin	Carbon Steel Cad. Pl.
▲*	33	TA-4092	2 1/4" Stat-O-Seal	Buna-N
▲*	34	TA-4093	2 1/4" Gaskets	Neoprene
▲*	35	TA-3309	1 Pipe Plug	Malleable Iron, Galv.
▲*	36	TA-2457	1 O-Ring	Buna-N
▲*	37	TA-4096	1 Relief Fitting	C. Steel
▲*	38	TA-1921	1 Cap	C. Steel
▲*	39	TB-621	1 Worm Gear (25:1 Ratio)	Cast Iron
▲*	40	TB-616	1 Worm Gear (50:1 Ratio)	Cast Iron
▲*	41	TB-623	1 Worm Gear (100:1 Ratio)	Cast Iron
▲*	42	TA-4063	1 Cover Gasket	Neoprene
▲*	43	TC-1576	1 Cover	C. Steel, Galv.
▲*	44	TA-1656	1 Lubrication Instructions	Paper Tag
▲*	45	TA-2970	2 Wing Screw	C. Steel, Cad. Pl.
▲*	46	TA-172	1 Name Plate	Aluminum
▲*	47	TA-171	2 Escutcheon Pin	Brass
▲*	48	TA-1836	1 Coupling 1/2" x 1/2" (48 frame motor)	C. Steel
▲*	49	TA-3325	1 1/4" Nipple	C. Steel, Cad. Pl.
▲*	50	TB-619	1 Bearing, Lower	Ductile Iron
▲*	51	TA-1930	1 Bottom Thrust Washer	C. Steel
▲*	52	TA-2501	1 Machine Screw	C. Steel
▲*	53	TA-459	1 Spring Lockwasher 3/8"	C. Steel
▲*	54	TA-138	1 Pipe Plug	Maleable Iron, Galv.
▲*	55	See Pg. 6	Injector Heads	

# CHEMICAL INJECTOR SERIES 4200

opposite side of housing. Punch size should be small enough so not to drive against item #3 inner race (if it is desirable to remove item #4 needle bearing and item #3 inner race, it should be done after the shaft has been removed).

As the shaft is being driven out, care should be taken to see that the large worm gear turns. This will "walk" or disengage the gear teeth.

As the shaft emerges, from the side of housing, it will force out the oil seal item #9, seal cartridge item #11 and ball bearing item #7.

Withdraw the shaft from pump housing.

In order to remove ball bearing item #7 from shaft, it is necessary to remove one or both truarc rings item #6.

Upon replacing care should be taken to "walk" the two worm gears back together.

Be sure the two truarc rings item #6 are in place: also seal and seal housing are in properly (the seal lips and seal expander spring should face into the pump). Make sure the "O" ring item #8 is in its proper place.

The shaft assembly should be inserted into the pump until shaft bearing item #7 shoulders against the truarc ring item #10 located near the inner edge of the hole into which the shaft is inserted.

## \* Recommended Spare Parts

† Item 44-Alternate Coupling for 56 Frame Motor, P/N TA-1653 1/2" x 3/8"

▲ These parts are directly interchangeable with series 4100 Pumps.

Apply Lubriplate 630 AA to wear surfaces of the following items:

- Guide & Crosshead Bearing Rod surfaces in contact with Crosshead. Worm Teeth & Gear Teeth. Seal Cartridge (Item 11). Worm Gear in contact with Lower Bearing (Item 46). Thrust Washer (Item 47). Surface in contact with Lower Bearing (Item 46).

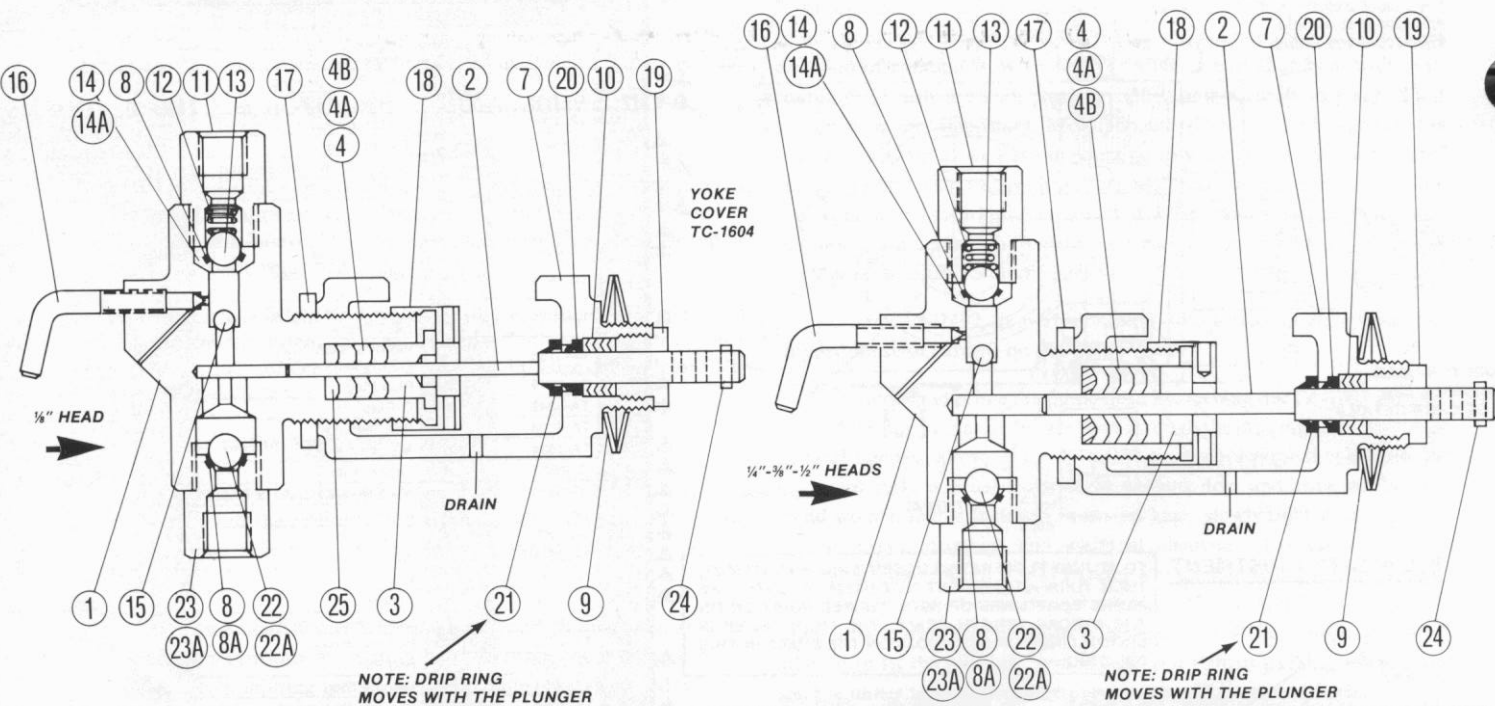
▲ Apply Lubriplate 630 AA between Shaft & Seal Lips.

▲ Assemble Oil Seal flush with end of Cartridge.

▲ Apply Lubriplate 630 AA.

▲ Use Locktite on Threads.

# DUCTILE & ALL STAINLESS STEEL HEADS

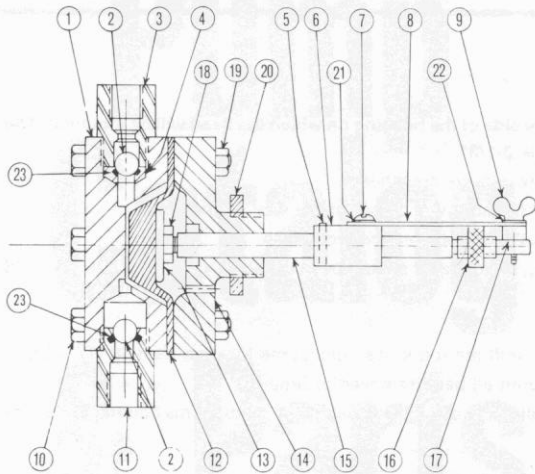


		PARTS LIST									
		Plunger Size ▶	1/8"		1/4"		3/8"		1/2"		
Mat'l. Construction	Item No.	Material Specifications ▶	Ductile	All	Ductile	All	Ductile	All	Ductile	All	
			w/S.S. Trim	Stainless Steel	w/S.S. Trim	Stainless Steel	w/S.S. Trim	Stainless Steel	w/S.S. Trim	Stainless Steel	
		Head Assembly No. ▶	TC-1577	TC-1581	TC-1578	TC-1582	TC-1579	TC-1583	TC-1580	TC-1584	
	▲ 1	Body	TC-0277	TC-0274	TC-0275	TC-0291	TC-0276	TC-0425	TC-0272	TB-0349	
17-4PH	■ * 2	Plunger	TB-1174	TB-1174	TB-1175	TB-1175	TB-1176	TB-1176	TB-1177	TB-1177	
303 SST	● 3	Plunger Packing Gland	TA-4100	TA-4100	TA-1463	TA-1463	TA-0957	TA-0957	TA-1219	TA-1219	
Buna-N	▲ * 4	Plunger Packing Set (Standard)	TA-1342	TA-1342	TA-1461	TA-1461	TA-1456	TA-1456	TA-0959	TA-0959	
Malleable Iron	■ 7	Yoke	TB-1173	TB-1173	TB-1173	TB-1173	TB-1173	TB-1173	TB-1173	TB-1173	
Buna-N	▲ 8	O-Ring	TA-0479	TA-0479	TA-0479	TA-0479	TA-0479	TA-0479	TA-0479	TA-0479	
C. Steel	■ 9	Belleville Washer (2 Req'd.)	TA-4256	TA-4256	TA-4256	TA-4256	TA-4256	TA-4256	TA-4256	TA-4256	
Buna-N	■ * 10	Yoke Packing Set	TA-4127	TA-4127	TA-4127	TA-4127	TA-4127	TA-4127	TA-4127	TA-4127	
302 SST	▲ 11	Bushing Top	TA-1496	TA-1496	TA-1496	TA-1496	TA-1496	TA-1496	TA-1496	TA-1496	
316 SST	▲ * 12	Ball Check Spring	TA-0077	TA-0077	TA-0077	TA-0077	TA-0077	TA-0077	TA-0077	TA-0077	
316 SST	▲ * 13	Large Top Ball 3/8"	TA-0054	TA-0054	TA-0054	TA-0054	TA-0054	TA-0054	TA-0054	TA-0054	
303 SST	▲ * 14	Top Seat-Assembly (w/Buna-N "O" Ring)	TB-0737	TB-0737	TB-0737	TB-0737	TB-0737	TB-0737	TB-0737	TB-0737	
316 SST	▲ * 15	Small Top Ball 1/4"	TA-0126	TA-0126	TA-0126	TA-0126	TA-0126	TA-0126	TA-0126	TA-0126	
303 SST	▲ 16	Priming Valve	TA-1497	TA-1497	TA-1497	TA-1497	TA-1497	TA-1497	TA-1497	TA-1497	
Brass	▲ 17	Nut, Lock-Yoke	TA-0225	TA-0225	TA-0225	TA-0225	TA-0225	TA-0225	TA-0225	TA-0225	
303 SST	▲ 18	Nut, Plunger Packing Gland	TA-4104	TA-4104	TA-4104	TA-4104	TA-4104	TA-4104	TA-4104	TA-4104	
Brass	■ 19	Nut, Yoke Packing	TA-4094	TA-4094	TA-4094	TA-4094	TA-4094	TA-4094	TA-4094	TA-4094	
Buna-N	■ * 20	Wiper Ring, Plunger	TA-4095	TA-4095	TA-4095	TA-4095	TA-4095	TA-4095	TA-4095	TA-4095	
Buna-N	■ 21	Drip Ring, Plunger	TA-4095	TA-4095	TA-4095	TA-4095	TA-4095	TA-4095	TA-4095	TA-4095	
316 SST	▲ * 22	Ball, Suction 3/8"	TA-0054	TA-0054	TA-0054	TA-0054	TA-0054	TA-0054	TA-0054	TA-0054	
303 SST	▲ * 23	Bottom Seat (w/Buna-N "O" Ring)	TB-0736	TB-0736	TB-0736	TB-0736	TB-0736	TB-0736	TB-0736	TB-0736	
Carbon Steel	▲ 24	Pin, Plunger	TA-2328	TA-2328	TA-2328	TA-2328	TA-2328	TA-2328	TA-2328	TA-2328	
303 SST	▲ 25	Adapter, Packing	TA-1339	TA-1339			Not Applicable				
<b>Alternate Parts For Corrosive Service</b>											
Viton	▲ 8A	"O" Ring	TA-2580	TA-2580	TA-2580	TA-2580	TA-2580	TA-2580	TA-2580	TA-2580	
Teflon	▲ * 4A	Plunger Packing Set (Optional Alternate)	TA-2062	TA-2062	TA-1642	TA-1642	TA-1234	TA-1234	TA-1012	TA-1012	
Viton	▲ * 4B	Plunger Packing Set (Optional Alternate)	Not Available		TA-4102	TA-4102	TA-4101	TA-4101	TA-4103	TA-4103	
303 SST	▲ 14A	Top Seat-Assembly (Metal to Metal)	TA-0806	TA-0806	TA-0806	TA-0806	TA-0806	TA-0806	TA-0806	TA-0806	
303 SST	▲ 23A	Bottom Seat (Metal to Metal)	TA-0771	TA-0771	TA-0771	TA-0771	TA-0771	TA-0771	TA-0771	TA-0771	
316 SST	▲ 22A	Ball 1/2" Use w/TA-0771, metal to metal Bottom Seat Only	TA-0053	TA-0053	TA-0053	TA-0053	TA-0053	TA-0053	TA-0053	TA-0053	

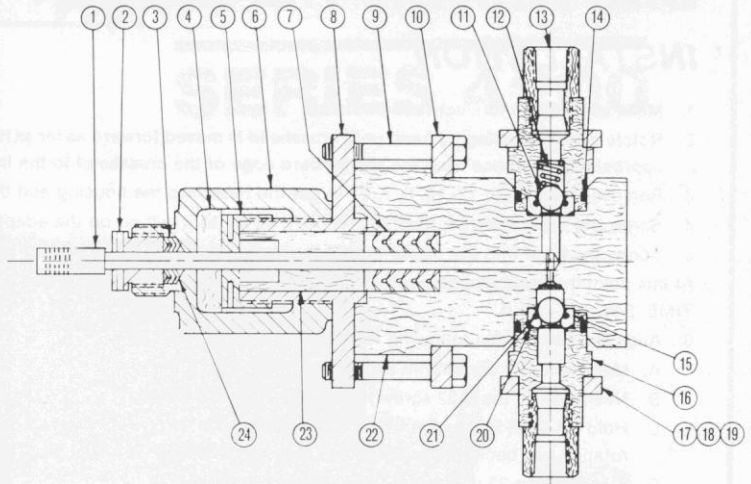
- \* Recommended Spare Parts
  - ▲ Interchangeable with Series 4100 Pump Heads
  - All Items identified with a ■ must be used together to convert old style 4100 heads to new style 4200 heads.
  - Interchangeable with all Series 4100 Pump Heads: EXCEPT 1/8" Head.
- NOTE:** This entire 4200 head and yoke assembly will mount on the old style 4100 gear box.

# PVC PLASTIC HEADS (NOTE: See Page 8 for installation and operation.)

## TB-738 DIAPHRAGM TYPE HEAD (Use on Series 4200 pumps only)



## PLUNGER TYPE HEAD (Use on Series 4200, 1200, 3700 & 5100 pumps)



ITEM NO.	PART NO.	NO. REQD.	NAME	MATERIAL
1	TB-739	1	Pump Body	PVC
*	2	2	Ball 3/8"	Glass
3	TB-740	1	Discharge Bushing	PVC
*	4	1	Seat, Top	PVC
5	TA-2328	1	Pin, Plunger	Steel
6	TA-2533	1	Adjustment Bolt	Steel
7	TA-3313	1	Screw	St. Cad. Plated
8	TA-2538	1	Adj. Scale	Steel
9	TA-3314	1	Wing Screw	Cad. Plated
10	61283P024	6	Cap Screw	Stl. Cad. Plated
*	11	1	Bottom Bushing	PVC
*	12	1	Diaphragm Assy.	Buna-N
13	TA-2534	1	Diaphragm Plate	Steel
14	TB-745	1	Adapter	Steel
15	TA-2535	1	Connecting Rod	Stainless Steel, 303
16	TA-1595	1	Adj. Nut	Steel
17	TA-1596	1	Spacer	Steel
18	TA-259	1	Nut	Brass
19	TA-164	6	Nut	Steel, Cad. Plated
20	TA-107	1	Nut	Brass
21	TA-3312	1	Lock Washer	SST
22	TA-3315	1	Flat Washer	SST
*	23	2	O-Ring	Viton

\* Recommended Spare Parts

ITEM NO.	NAME	NO. REQD.	PLUNGER SIZE			MATERIAL
			1/4"	3/8"	1/2"	
	Head Assy No.		TB-868-7	TB-869-7	TB-870-7	
1	Plunger	1	TA-3095	TA-3096	TA-3075	Hastelloy C
2	Packing Nut	1	TA-842	TA-810	TA-549	Brass
*	Yoke Packing	1	TA-544	TA-541	TA-553	Buna-N
*	Wiper	1	TA-781	TA-780	TA-782	Felt, Wool
5	Gland Nut	1	TA-1220	TA-1220	TA-3086	Stainless Steel, 203 EZ
6	Yoke	1	TA-1457	TA-1457	TA-550	Mall. Iron
*	Packing	1	TA-3091	TA-3084	TA-3088	Teflon
8	Gland	1	TB-863	TB-863	TB-863	Cast Forged Steel
9	Screws	4	61283P024	61283P024	61283P024	Steel, Cad. Plated
10	Flange	1	TA-3083	TA-3083	TA-3083	Carbon Steel
* 11	Ball 3/8"	2	TA-2539	TA-2539	TA-2539	Glass
* 12	Spring	1	61438P017	61438P017	61438P017	Hastelloy C
13	Adapter	2	TA-3081	TA-3081	TA-3081	PVC
14	O-Ring	2	TA-3080	TA-3080	TA-3080	Viton
* 15	Seat	2	TB-741	TB-741	TB-741	PVC
16	Bushing	2	TA-3076	TA-3076	TA-3076	PVC
17	Strap	2	TA-3078	TA-3078	TA-3078	Carbon Steel
18	Retainer	2	TR-3077	TR-3077	TR-3077	Carbon Steel
19	Nut	4	TA-3082	TA-3082	TA-3082	Stainless Steel, 303
20	O-Ring	2	TA-3079	TA-3079	TA-3079	Viton
21	O-Ring	2	TA-2580	TA-2580	TA-2580	Viton
22	Body	1	TB-864	TB-860	TB-861	PVC
23	Gland	1	TA-3090	TA-3085	TA-3087	PVC
24	Spacer	1	TA-841			Brass

\* Recommended Spare Parts

## CAPACITY DATA: PLASTIC HEADS

TYPE HEAD	MAX. DISCH. PSIG	MAXIMUM VOLUME, SINGLE HEAD UNITS, GALLONS/DAY					
		25:1 Ratio		50:1 Ratio		100:1 Ratio	
		60 Hz Motor	50 Hz Motor	60 Hz Motor	50 Hz Motor	60 Hz Motor	50 Hz Motor
Diaphragm	50	160	132.8	80	66.4	40	33.2
Plunger	500 ALL SIZES	Capacities are the same as standard plunger heads at equivalent plunger sizes. See CAPACITY DATA chart on page 2.					

## DIAPHRAGM HEADS

### INSTALLATION

1. Make sure power to electric motor is off.
2. Rotate motor coupling by hand until crosshead is moved forward as far as it will go toward the side of the housing on which the head will be mounted. The approximate distance from the top forward edge of the crosshead to the inside of housing is 2-1/3".
3. Remove items 9, 22, 17, 16, 8, 7, 21 to get the head into the housing and the adjusting screw into the crosshead.
4. Screw the brass locknut, item 20 (TA-107), as far as it will go on the adapter, item 14 (TB-735), so it will be out of the way at this time.
5. Screw the head into the housing until the hexagon part of the adjusting screw, item 16 (TA-2533), touches the crosshead.  
At this point the head probably will not be oriented with the discharge bushing, item 3 (TA-1496), on top, as it should be in service. DO NOT ALIGN AT THIS TIME. See Step No. 6.
6. Align the head in the following manner:
  - A. Make sure the diaphragm screw is screwed into the connecting rod, item 15 (TA-2535), until the rod stops against the locknut, item 18 (TA-259).
  - B. Next, line up the 8-32 screw hole vertical so that the scale can be mounted in place. Mount all parts removed in Step 3.
  - C. Hold TA-2535 Rod and turn the head counter clockwise (facing the front of the head) to align the discharge bushing at the top. This counter clockwise rotation will back the diaphragm screw out of the rod at a maximum of one thread.
  - D. Tighten item 20 (TA-107) screw against the housing.
7. Connect Electric Supply line, suction and discharge lines and start pump.

### OPERATION

The crosshead in the 4200 power unit has a fixed, one inch stroke. The standard plunger type pump head permits the stroke to be adjusted over the entire one inch stroke length without difficulty.

However, the diaphragm in the TB-738 head is designed to operate on a one-fourth inch stroke length. The adjusting screw, item 6 (TA-2533), which is assembled with the TB-738 head has a shortened thread to limit the stroke to one-fourth inch when adjusted correctly. One turn of the TB-738 adjusting nut changes the capacity 25%.

The one-fourth inch movement of the diaphragm is on the "Pull" part of the stroke measured from the neutral position of the diaphragm. In other words, when the diaphragm is in the neutral position, it is also "Full Forward."

## PLUNGER HEADS

### INSTALLATION

To install on the 4200 power unit, remove standard head then screw PVC plunger type head into gear box and tighten. Vertical position of suction and discharge can be aligned by loosening cap screws, item 9, and rotating head to desired position. Retighten cap screws (item 9).

### OPERATION

Operation of the PVC plunger type head is the same as for standard head as described on page 4.

TEXSTEAM



A BRUNSWICK COMPANY