

TECHNICAL BULLETIN

SERIES



2500

CHEMICAL INJECTION PUMPS

PRODUCT FEATURES

- ◆ Maximum discharge pressure:
6,000 PSI (414 bar) w/ 3/16" plunger
- ◆ Maximum volume 139 gallons per day
(528 liters per day) w/ 1/2" plunger
- ◆ Each head is adjustable while running
- ◆ Available simplex, duplex, triplex, or
quadruplex configurations
- ◆ Mix or match head sizes-pump the same or
different chemicals
- ◆ Available in four stroke rates: 15, 30, 60, or
120 strokes per minute
- ◆ Each head is independently coupled-user
friendly in the field
- ◆ 1/2 horsepower motor standard; optional 1
or 3 phase, TEFC or explosion proof; 50 or
60 hertz
- ◆ Available with 3/16", 1/4", 3/8", or 1/2"
plunger
- ◆ Meets or exceeds API 675 specifications
where applicable



The 2500 Series of Texsteam chemical injection pumps are electric driven, positive displacement pumps utilizing C-faced motors and common gear reducers. The gear reducers are available in 15, 30, 60, and 120 strokes per minute configurations. By utilizing even further flexibility of a wide variety of plunger sizes, the 2500 Series can fill many application requirements of different flow and pressures.

The 2500 Series can have up to four, adjustable while running fluid ends, each driven off an eccentric cam gear that requires no oil.

Options:

Ceramic plungers which provide longer packing life and a wide variety of packing designed to meet the demands of many different chemical applications.



MODEL DESIGNATION

25F3-3

NUMBER OF
HEADS

PLUNGER SIZE

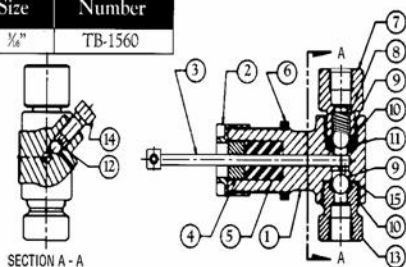
1 — 1/4"
3 — 3/8"
4 — 3/16"
5 — 1/2"

STROKE SPEED

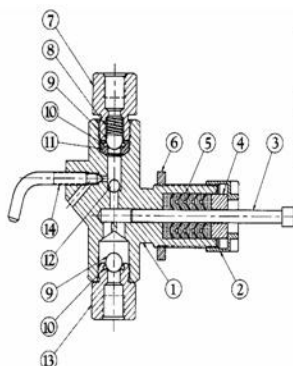
E — 120 SPM
F — 60 SPM
G — 30 SPM
H — 15 SPM

2500 SERIES

Plunger Size	Assembly Number
1/8"	TB-1560



Plunger Size	Assembly Number
1/8"	TB-1557
3/16"	TB-1558
1/4"	TB-1559



Pump Unit Parts List

Item	Part #	Name	Material
1	TB 1483	Cover	ASTM A48 Cast Iron
2	TA 0136	3/4-20 x 1/4 Thumbscrew	Cad Plated Carbon Steel
3	TA 5821	Cover Gasket	Nitrile
4	TC 2048	Housing	ASTM A48 Cast Iron
5	TA 0142	HHCS 1/8-18 x 1.25	Cad Plated Carbon Steel
6	TA 0144	Hex 3/8-18 Nut	Cad Plated Carbon Steel
7	TA 0300	Cut Washer 3/8	Cad Plated Carbon Steel
8	TC 2071	Simplex Base Plate	Galvanized Steel
	TC 2072	Duplex Base Plate	
	TC 2073	Triplex Base Plate	
	TC 2074	Quadraplex Base Plate	
9*	TB 1560	3/8" Head Assembly	316 SS
	TB 1557	1/4" Head Assembly	
	TB 1558	3/16" Head Assembly	
	TB 1559	1/2" Head Assembly	
10	TA 5964	Cross Head Bearing	Nylon
11	TA 5965	Cross Head Bearing	Nylon
12	TA 5966	Screen	SS
13	TB 1542	Cross Head	AISI 4140 Hr Steel
14	TA 5823	Eccentric Cam	C 1018 Steel
15	TA 5830	Roller Bearing	Steel
16	TA 5831	10 - 24 UNC x 1/4 Set Screw	Carbon Steel
17	TA 2824	Woodruff Key	Carbon Steel
18	TA 5832	Sleeve Bearing	Reinforced Steel
19	TA 5826	Shaft Guard	Plastic
20	CF	Reducer	
21	TA 5822	Stroke Adjustor	C1213 C.R.S.
22	TA 5824	Stroke Adjustor Lock Nut	416 SS
23	TA 2825	Adjusting Screw	416 SS
24	TC 2070	Coupling Cover	Plastic
25	TA 1836	Coupling	Steel
26	TA 5937	Key	Steel
27	TA 5937	Key	Steel
28	TA 5950	Tandem Shaft	Steel
29	TA 5953	Drive Clip	Steel
30	CF	Motor 1/2 HP	

*For 1/4" or 1" Head Assembly, consult factory.

Injector Head Parts List

Item	Description	Material	Part Number			
			1/8"	1/4"	3/16"	1/2"
1	Body	SS	TC 2040	TC 0291	TC 0425	TB 0349
2	Gland Nut	303 SS	TA 4104	TA 4104	TA 4104	TA 4104
*3	Plunger	17-4PH	TA 6082	TA 6079	TA 6080	TA 6081
4	Gland	303-SS	TA 5642	TA 1463	TA 0957	TA 1219
*5	Plunger Packing**	Buna-N	TA 3969	TA 1461	TA 1456	TA 0959
		Hard	TA 3948	TA 2295	TA 1875	TA 1874
		Viton	TA 3967	TA 4102	TA 4101	TA 4103
		Teflon	TA 3966	TA 1642	TA 1234	TA 1012
*6	Lock Nut	Brass	TA 0225	TA 0225	TA 0225	TA 0225
7	Top Bushing	303-SS	TA 1496	TA 1496	TA 1496	TA 1496
*8	Ball Check Spring	316-SS	TA 0077	TA 0077	TA 0077	TA 0077
*9	Large Ball 1/8"	316-SS	TA 0054	TA 0054	TA 0054	TA 0054
*10	O-Ring	Buna-N	TA 0479	TA 0479	TA 0479	TA 0479
		Viton	TA 2093	TA 2093	TA 2093	TA 2093
11	Top Check Seat	303-SS	TB 0734	TB 0734	TB 0734	TB 0734
*12	Small Ball 1/8"	316-SS	TA 0126	TA 0126	TA 0126	TA 0126
13	Bottom Bushing	303-SS	TB 1213	TB 1213	TB 1213	TB 1213
14	Priming Valve	303-SS	TA 5462	TA 1497	TA 1497	TA 1497
15	Gasket	304-SS	TA 4394			

* Recommended Spare Parts

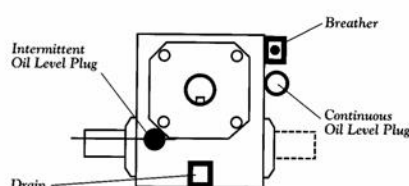
** See table back page

Plunger Size	Material							
	Buna-N		Hard		Viton		Teflon	
	PSIG	Bars	PSIG	Bars	PSIG	Bars	PSIG	Bars
1/8"	3000	(207)	6000	(414)	3500	(345)	3000	(207)
1/4"	2400	(165)	4000	(275)	3500	(240)	2400	(165)
3/16"	1500	(103)	1800	(124)	3500	(240)	1500	(103)
1/2"	1000	(69)	1025	(71)	3500	(240)	1000	(69)

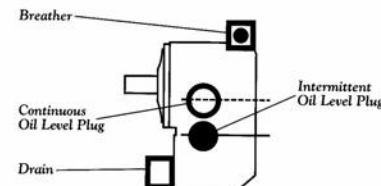
2500 SERIES GEAR REDUCER OIL LEVELS

REDUCER OIL LEVELS

Single Stage C-Mount
(input shaft/output shaft horizontal)



Two Stage - Helical C-Mount
(input shaft horizontal)



REDUCER OIL CHANGE

- Continuous run units: Change every 2,000 hours
- Intermittent units: Change every 2,500 running hours or six months
- Use Mobil cylinder 600 W, or Texaco meriopia 460 for 32°F to 100°F, or Mobil SHC 634 for 0°F to 135°F or an equivalent major oil brand.

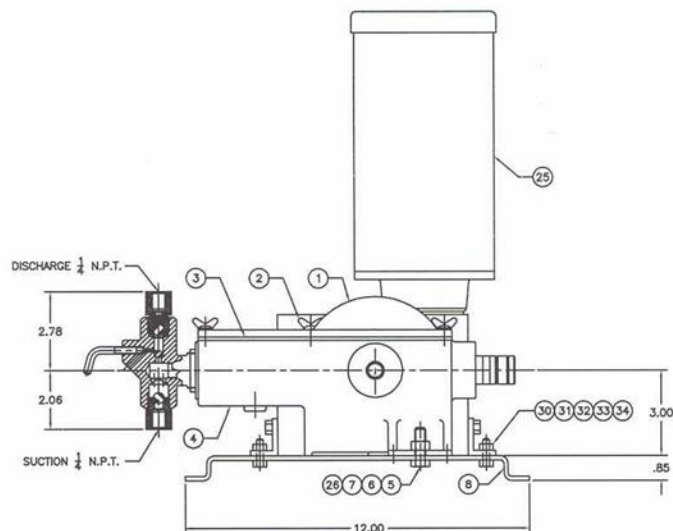
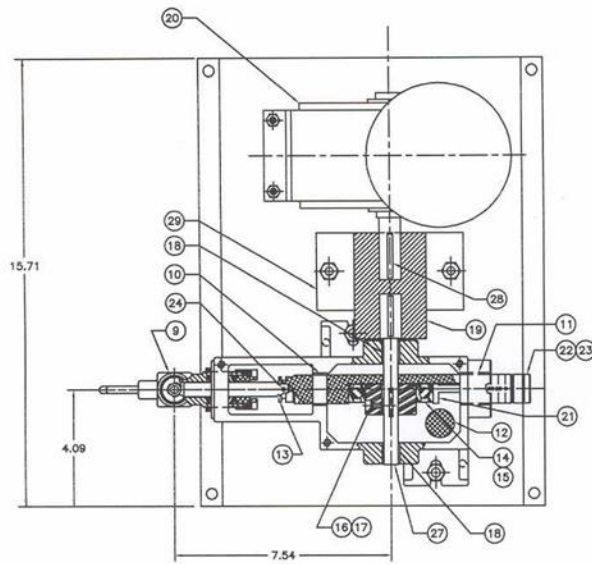
USE INTERMITTENT (OR "HIGH") OIL LEVEL FOR OPERATION OF 30 MIN/HR OR LESS OR FOR INPUT SHAFT SPEED OF 800 RPM OR LESS.

Plunger Size	Strokes per Minute	Maximum Discharge Press PSI (Bars)	Gallons Per Day (Liters)			
			Maximum		Minimum	
1/8"	15	6000 (414)	2.4	(9)	.2	(1)
	30	6000 (414)	4.9	(19)	.5	(2)
	60	6000 (414)	9.8	(37)	1.0	(4)
	120	4000 (275)	18.7	(71)	1.9	(7)
1/4"	15	3200 (221)	4.3	(16)	.4	(2)
	30	4000 (275)	8.6	(33)	.9	(3)
	60	4000 (275)	17.3	(65)	1.7	(7)
	120	2100 (145)	34.6	(131)	3.5	(13)
3/16"	15	1450 (100)	9.8	(37)	1.0	(4)
	30	1800 (124)	19.6	(74)	2.0	(7)
	60	1700 (117)	39.2	(148)	3.9	(15)
	120	950 (65)	78.5	(297)	7.8	(30)
1/2"	15	820 (56)	17.4	(66)	1.7	(7)
	30	1025 (71)	34.8	(88)	3.5	(9)
	60	1000 (70)	69.7	(264)	7.0	(26)
	120	525 (36)	139.5	(528)	13.9	(53)

* For 50 cycle motors multiply above volumes by .8

2500 Series

2500 Simplex

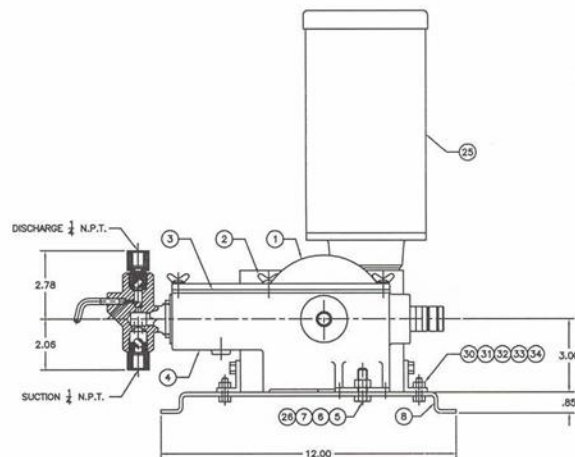
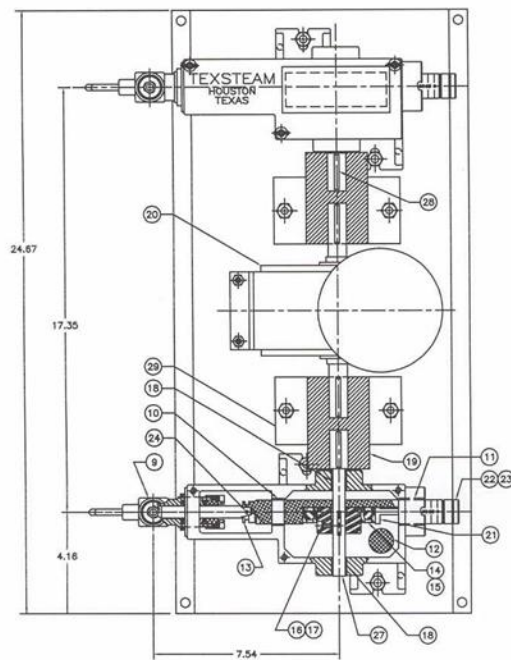


PARTS LIST

ITEM	B/P NO.	NO. REQD.	NAME	MATERIAL
1	TB1483	1	COVER	ASTM A48 C.I.
2	P86-025075-0200	3	THUMBSCR.	CAD PL. C.STL.
3	TA5963	1	GASKET,COVER	NITRILE
4	TC2048	1	HOUSING	ASTM A48 C.I.
5	P01-031125-3900	2	HHCS 5/16-18	SS
6	P25-031000-3900	2	NUT,HEX 5/16-18	CAD PL. C.STL.
7	P53-031000-3900	2	CUT WASHER 5/16	CAD PL. C.STL.
8	TC2180	1	BASE PLATE	GALV. STL.
9	TB0755	1	1/4 SS LP HEAD ASS'Y.	316 SST
10	TA5964	1	CROSS HEAD BEARING	NYLON
11	TA5965	1	CROSS HEAD BEARING	NYLON
12	TA5966	1	SCREEN	SS
13	TB1542	1	CROSS HEAD	AISI 4140 HR STL
14	TA5823	1	ECCENTRIC CAM	C 1018 STL
15	TA5830	1	ROLLER BEARING	STEEL
16	P20-025050-0200	1	ST.SCR.	CARBON STEEL
17	TA6386	1	KEY	CARBON STEEL
18	TA6713	2	SLEEVE BEARING	REINFORCED STL.
19	TA6714	1	COUPLING	STEEL
20	—	1	REDUCER	
21	TA5822	1	STROKE ADJUSTOR	C1213 C.R.S.
22	TA5824	1	LOCK NUT STROKE ADJ.	416 SS
23	TA5825	1	ADJUSTING SCREW	416 SS
24	TA5953	1	DRIVE CLIP	STEEL
25	—	1	MOTOR- 1/2 HP	
26	P52-031000-3900	2	LOCK WASHER 5/16	CAD PL. STL.
27	TB1677	1	DRIVE SHAFT	STEEL
28	TA6720	2	DRIVE SHAFT KEY	STEEL
29	TB1700	1	COUPLING GUARD	PLASTIC
30	P01-037125-3900	4	HHCS 3/8-16	
31	P25-037000-3900	4	NUT HEX 3/8-16	
32	P53-037000-3900	4	CUT WASHER 3/8	
33	P52-037000-3900	4	LOCK WASHER 3/8	
34	TA6716	4	SPACER	

2500 Series

2500 Duplex

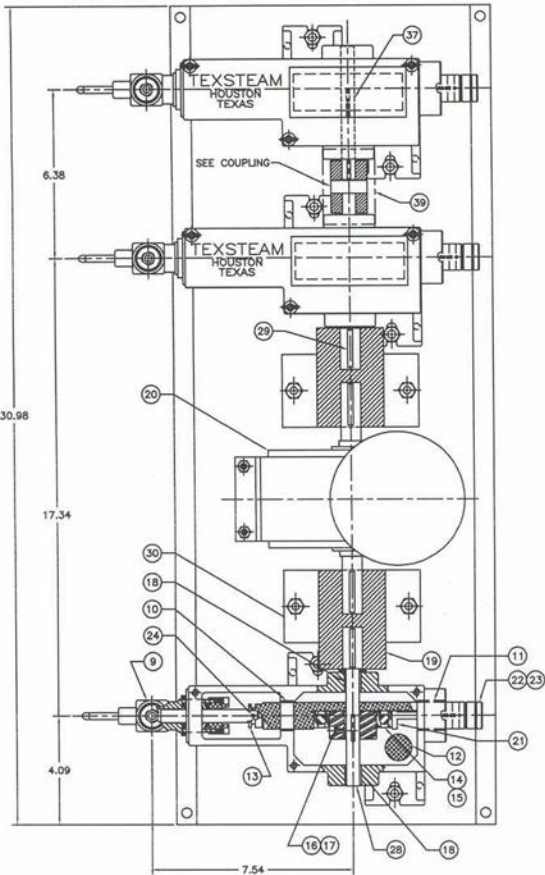


PARTS LIST

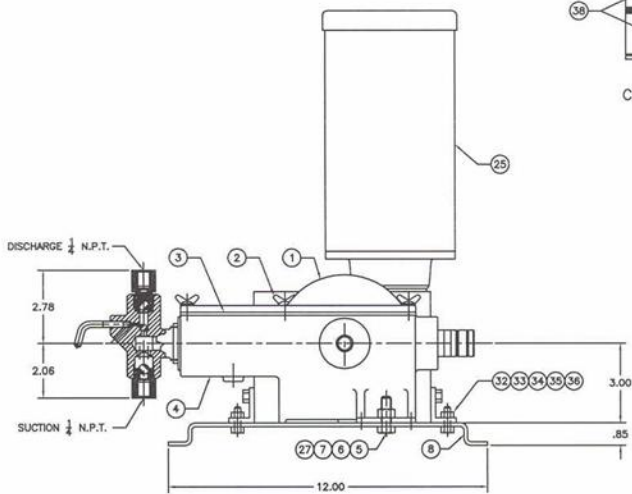
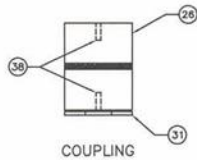
ITEM	S/P NO.	NO. REQD.	NAME	MATERIAL
1	TB1483	2	COVER	ASTM A48 C.I.
2	P86-025075-0200	6	THUMBSCR.	CAD PL. C.STL.
3	TA5963	2	GASKET,COVER	NITRILE
4	TC2048	2	HOUSING	ASTM A48 C.I.
5	P01-031125-3900	4	HHCS 5/16-18	SS
6	P25-031000-3900	4	NUT,HEX 5/16-18	CAD PL. C.STL.
7	P53-031000-3900	4	CUT WASHER 5/16	CAD PL. C.STL.
8	TC2183	1	BASE PLATE	GALV. STL.
9	TB0755	2	1/4 SS LP HEAD ASS'Y.	316 SST
10	TA5964	2	CROSS HEAD BEARING	NYLON
11	TA5965	2	CROSS HEAD BEARING	NYLON
12	TA5966	2	SCREEN	SS
13	TB1542	2	CROSS HEAD	AISI 4140 HR STL
14	TA5823	2	ECCENTRIC CAM	C 1018 STL.
15	TA5830	2	ROLLER BEARING	STEEL
16	P20-025050-0200	2	ST.SCR.	CARBON STEEL
17	TA6386	2	KEY	CARBON STEEL
18	TA6713	4	SLEEVE BEARING	REINFORCED STL.
19	TA6714	2	COUPLING	STEEL
20	—	1	REDUCER	—
21	TA5822	2	STROKE ADJUSTOR	C1213 C.R.S.
22	TA5824	2	LOCK NUT STROKE ADJ.	416 SS
23	TA5825	2	ADJUSTING SCREW	416 SS
24	TA5953	2	DRIVE CLIP	STEEL
25	—	1	MOTOR- 1/2 HP	—
26	P52-031000-3900	4	LOCK WASHER 5/16	CAD PL. STL.
27	TB1677	2	DRIVE SHAFT	STEEL
28	TA6720	4	DRIVE SHAFT KEY	STEEL
29	TB1700	2	COUPLING GUARD	PLASTIC
30	P01-037125-3900	4	HHCS 3/8-16	—
31	P25-037000-3900	4	NUT HEX 3/8-16	—
32	P53-037000-3900	4	CUT WASHER 3/8	—
33	P52-037000-3900	4	LOCK WASHER 3/8	—
34	TA6716	4	SPACER	—

2500 Series

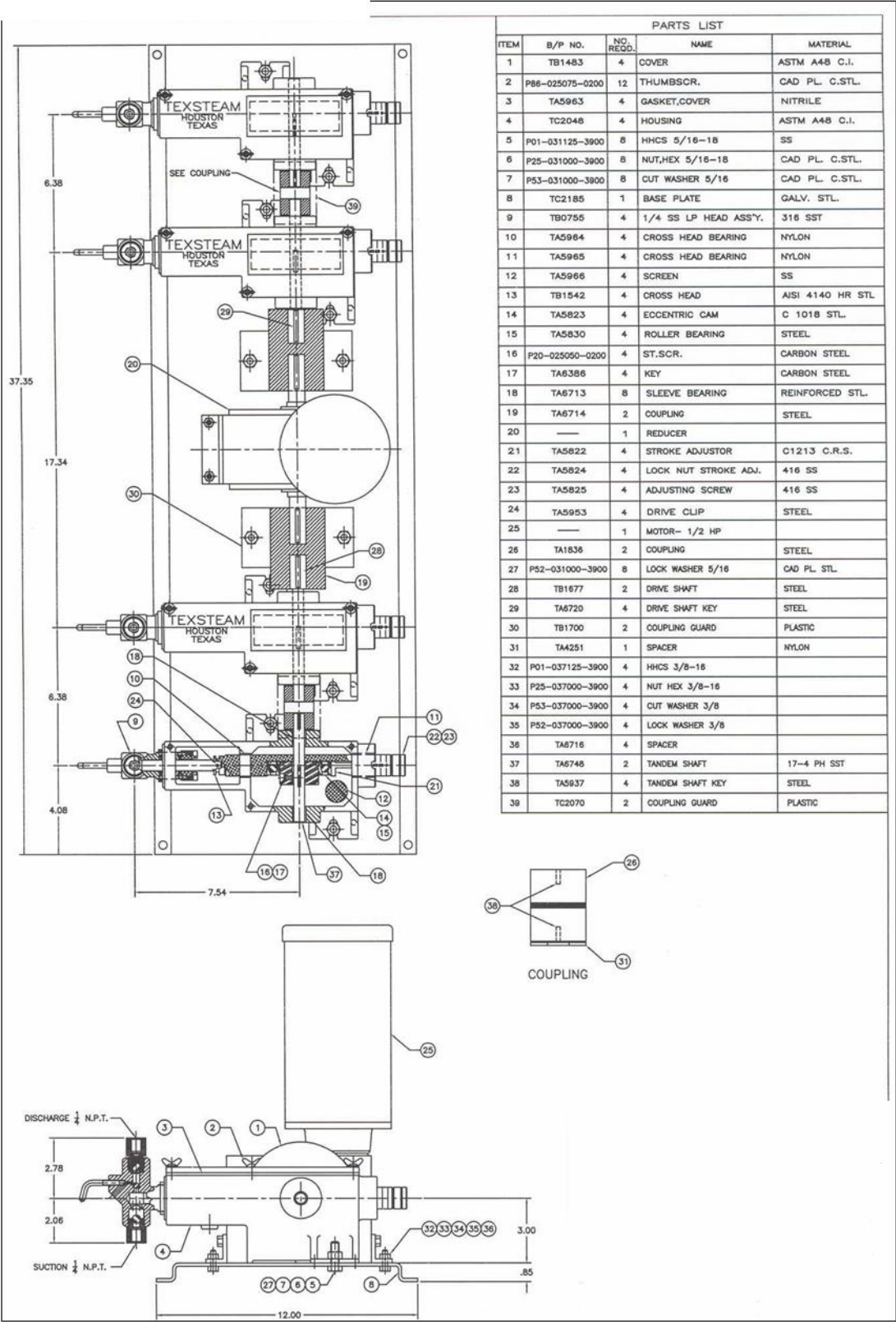
2500 Triplex



PARTS LIST			
ITEM	B/P NO. NO. REGO.	NAME	MATERIAL
1	TB1483	3 COVER	ASTM A48 C.I.
2	P86-025075-0200	9 THUMBSCR.	CAD PL. C.STL.
3	TA5963	3 GASKET, COVER	NITRILE
4	TC2048	3 HOUSING	ASTM A48 C.I.
5	P01-031125-3900	6 HHCS 5/16-18	SS
6	P25-031000-3900	6 NUT, HEX 5/16-18	CAD PL. C.STL.
7	P63-031000-3900	6 CUT WASHER 5/16	CAD PL. C.STL.
8	TC2184	1 BASE PLATE	GALV. STL.
9	TB0755	3 1/4 SS LP HEAD ASS'Y.	316 SST
10	TA5964	3 CROSS HEAD BEARING	NYLON
11	TA5965	3 CROSS HEAD BEARING	NYLON
12	TA5966	3 SCREEN	SS
13	TB1542	3 CROSS HEAD	AISI 4140 HR STL
14	TA5823	3 ECCENTRIC CAM	C 1018 STL.
15	TA5830	3 ROLLER BEARING	STEEL
16	P20-025050-0200	3 ST.SCR.	CARBON STEEL
17	TA6386	3 KEY	CARBON STEEL
18	TA6713	6 SLEEVE BEARING	REINFORCED STL.
19	TA6714	2 COUPLING	STEEL
20	—	1 REDUCER	
21	TA5822	3 STROKE ADJUSTOR	C1213 C.R.S.
22	TA5824	3 LOCK NUT STROKE ADJ.	416 SS
23	TA5825	3 ADJUSTING SCREW	416 SS
24	TA5953	3 DRIVE CLIP	STEEL
25	—	1 MOTOR- 1/2 HP	
26	TA1836	1 COUPLING	STEEL
27	P52-031000-3900	6 LOCK WASHER 5/16	CAD PL. STL.
28	TB1677	2 DRIVE SHAFT	STEEL
29	TA6720	4 DRIVE SHAFT KEY	STEEL
30	TB1700	2 COUPLING GUARD	PLASTIC
31	TA4251	1 SPACER	NYLON
32	P01-037125-3900	4 HHCS 3/8-16	
33	P25-037000-3900	4 NUT HEX 3/8-16	
34	P53-037000-3900	4 CUT WASHER 3/8	
35	P52-037000-3900	4 LOCK WASHER 3/8	
36	TA6716	4 SPACER	
37	TA6748	1 TANDEM SHAFT	17-4 PH SST
38	TA5937	2 TANDEM SHAFT KEY	STEEL
39	TC2070	1 COUPLING GUARD	PLASTIC



2500 Quadruplex



2500 Series

INSTALLATION AND START-UP INSTRUCTIONS

INSTALLATION

PUMP LOCATION-AN IMPORTANT FACTOR

- ⇒ Plan ahead for proper pump mounting-position it to provide for efficient routing of suction and discharge lines, as well as electric service
- ⇒ Avoid long suction lines
- ⇒ Provide for a flooded suction line whenever possible
- ⇒ Pump fluid lines and connections operate best when there is a minimum restriction to the medium flow
- ⇒ Install the proper electrical starters and disconnect switches
- ⇒ It is recommended that a solid mounting support be provided—take advantage of the factory installed holes in the base plate for securing the pump

FLUID END

- ⇒ All fluid connections, both suction and discharge, should be seal tight. Fluid end connections are 1/2" NPT
- ⇒ The suction connection is at the bottom of the fluid end, and the discharge connection is at the top.

MOTOR

- ⇒ A conduit connection is provided at the motor for electrical connections.
- ⇒ Assure the proper electrical service has been provided
- ⇒ Assure all connections are tight, in their proper location, properly grounded, and fused

GEAR REDUCER

- ⇒ Check the oil level of the gear reducer
- ⇒ If the oil level is below the output shaft oil plug, refill to the plug Mobil Cylinder Oil 600W or Texaco Metropia 460
- ⇒ For low temperature applications, use Mobil SHC 634

START UP

- ⇒ Open the priming valve on the fluid end assembly
- ⇒ Start the pump motor
- ⇒ Allow the pump to run until a clear stream of media comes out of the priming valve
- ⇒ Close the priming valve
- ⇒ Check the packing for proper sealing. If it leaks, stop the pump and make the necessary adjustments.
- ⇒ Adjust the stroke adjustment knob to obtain the desired flow rate.

PREVENTIVE MAINTENANCE

- ⇒ Check periodically (minimum once a month) and apply a small amount of grease to the cam bearing and to the crosshead areas that cycle through the linear bearings.
- ⇒ Check the packing regularly. If leakage is observed, stop the pump. Make a small adjustment by turning the gland nut. Restart the pump. (Do not overtighten the packing as this will reduce the packing life and possibly damage the plunger.

It is always important to assure the packing material is compatible with the media being pumped—check for swollen or deteriorated seals.