



PTO POWERBLAST

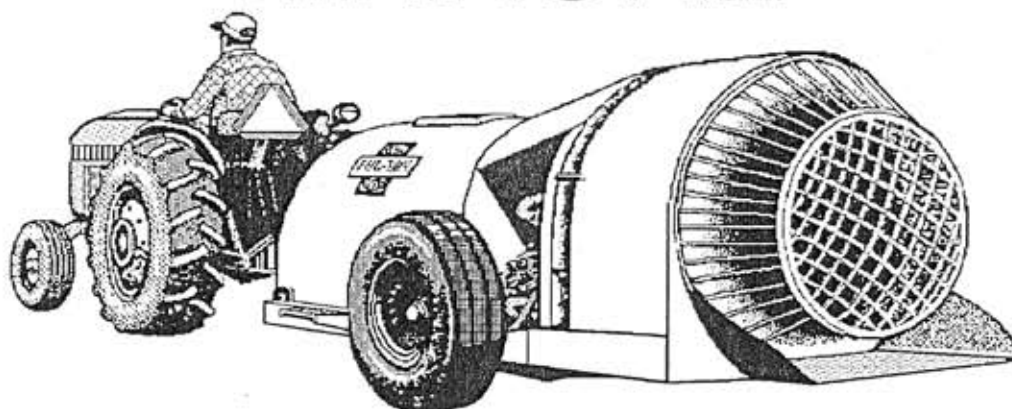


Litho U.S.A.

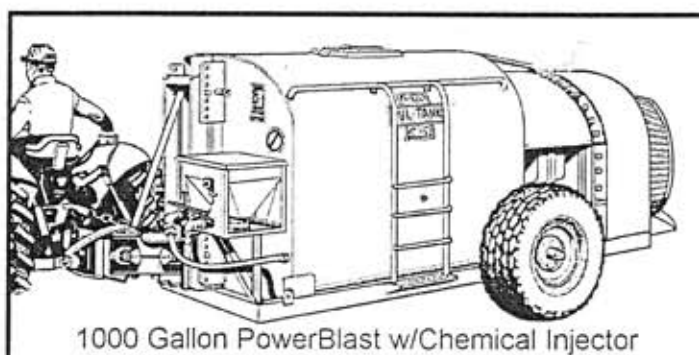
400, 500, 1000 GALLON AIRBLAST SPRAYERS

JULY 12, 2007

MANUAL



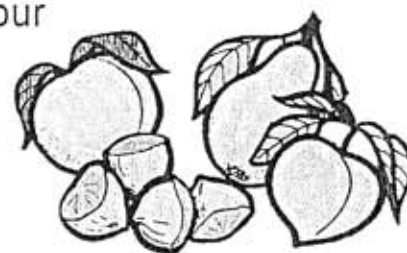
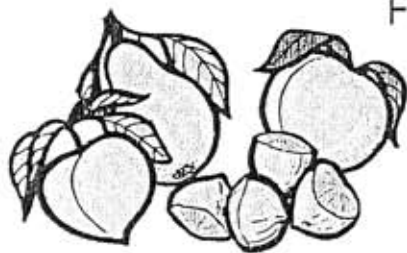
400 GALLON LO-PRO POWERBLAST



1000 Gallon PowerBlast w/Chemical Injector

For any future reference, record your

PowerBlast serial number here



ATTENTION

FOR YOUR SAFETY AND POWERBLAST LONGEVITY, BEFORE BEGINNING INITIAL HOOKUP AND OPERATIONS, READ AND FOLLOW ALL INSTRUCTIONS, ESPECIALLY ALL CAUTION NOTES.

SAFETY DECALS

READ AND UNDERSTAND ALL SAFETY AND MAINTENANCE DECALS LOCATED AT CRUCIAL POINTS ON THE SPRAYER TO PROMOTE SAFETY AND ENHANCE OPERATIONS.

"PLEASE READ YOUR OPERATOR'S MANUAL"



POWERBLAST MAINTENANCE

DAILY - (1.) Check gearbox, maintain oil level. (2.) Grease agitator bearings. (3.) Check strainers often, keep clean. (4.) Visually check agitator chain and fan blades - Keep Clean. (5.) Flush tank and system with water.

SEASONALLY (OR EVERY 100 HRS) - Grease all u-joints and hitch rear bearing. Use a good all-purpose lubricant. "NEVER OVER GREASE"

WINTER STORAGE - Flush tank and system with water, then with oil (leave oil in pump). Lubricate all u-joints, hitch rear bearing and agitator bearings.

* * CAUTION * *

—(READ CAREFULLY BEFORE OPERATING)—

Never operate Powerblast without hitch support chains. Never tamper with tractor hydraulic controls once set. Never engage pto suddenly or with tractor and unit at right angles.

Never accelerate rapidly when coming out of turns.

Never engage electric fan clutch at high rpm's.

Never operate the pump without liquid.

Never engage pto before tank is one quarter (1/4) full.

Pressure and Volume will drop if strainers begin to clog or the pump drive belt begins to slip.

"PLEASE READ YOUR OPERATOR'S MANUAL"

REAR'S MANUFACTURING Eugene, Oregon COMPANY

"HOME OF PUL-TANK AND PAK-TANK SPRAYERS"



+ CAUTION

1. Keep All Shields in Place.
2. Before Servicing, Adjusting or Working on Machine:
Disengage Power,
Shut Off Engine and
Make Sure All Moving
Parts Have Stopped.
3. Do Not Stand Near Machine
When In Operation.



Rear's Mfg. Co.
2140 Prairie Rd.
Eugene, OR 97401

OPERATOR RESPONSIBILITIES

MAINTAIN ALL FASTENERS FOR TIGHTNESS:

WHEEL HUB BOLTS, AXLE CLAMPS, TANK MOUNTS, PUMP MOUNTING BOLTS, GEARBOX MOUNTING BOLTS, STRAINER MOUNTING BOLTS, ETC., ETC.

DAMAGE TO EQUIPMENT DUE TO LOOSE FASTENERS IS THE RESPONSIBILITY OF THE OPERATOR AND NOT COVERED BY WARRANTY.

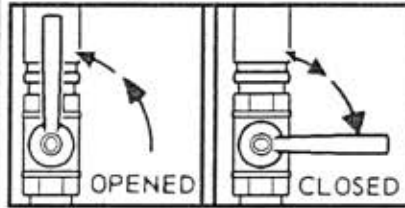
GATES 11M1360 Belt on Standard P.B. Pump Drive
GATES 11M1250 Belt on Lo-Profile P.B. Pump Drive
GATES 11M1120 Belt on Self-Priming Pump Drive

SAFETY DECALS

READ AND UNDERSTAND ALL SAFETY AND MAINTENANCE DECALS LOCATED AT CRUCIAL POINTS ON THE SPRAYER TO PROMOTE SAFETY AND ENHANCE OPERATIONS.

The decal at right applies to units equipped with Rear's Chemical Mixer.

Dump Valve:



KEEP CLOSED

WHEN SPRAYING
NEVER USE TO
REGULATE PRESSURE

Step Pulley: (on pump)

HIGH PRESSURE
(SMALL DIAMETER GROOVE)
LOW PRESSURE
(LARGE DIAMETER GROOVE)

GEARBOX OIL:

Oil Level

Drain Plug

USE CHEVRON
BORATE EP68
LUBRICANT 80WT
or exact equivalent.

REAR'S CHEMICAL MIXER

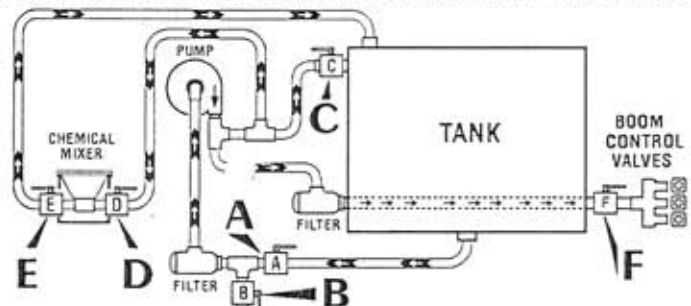


**DO NOT
OPEN THE
"FLOW VALVES"
WITH LID OPEN!**



WITH LID CLOSED, OPEN BOTH
VALVES AT THE SAME TIME.
ONCE FLOW IS ESTABLISHED,
LID MAY BE OPENED TO ADD
CHEMICAL FOR MIXING.

LIQUID SYSTEM OPERATIONS AND FLOW CONTROLS*



OPERATION	FLOW CONTROL VALVES (OPEN OR CLOSED)	
TO FILL (USING UNIT PUMP)	OPEN	B & C
	CLOSE	A, D, & E
TO FILL (USING AUXILLARY PUMP)	OPEN	B & A
	CLOSE	C, D & E
TO BYPASS	OPEN	A & C
	CLOSE	B, D & E
TO SPRAY	OPEN	A & BOOM CONTROLS
	CLOSE	B, C, D & E
TO INJECT	OPEN	A, D & E
	CLOSE	B & C

NOTE: Valve "F" is closed only when boom valves require maintenance.

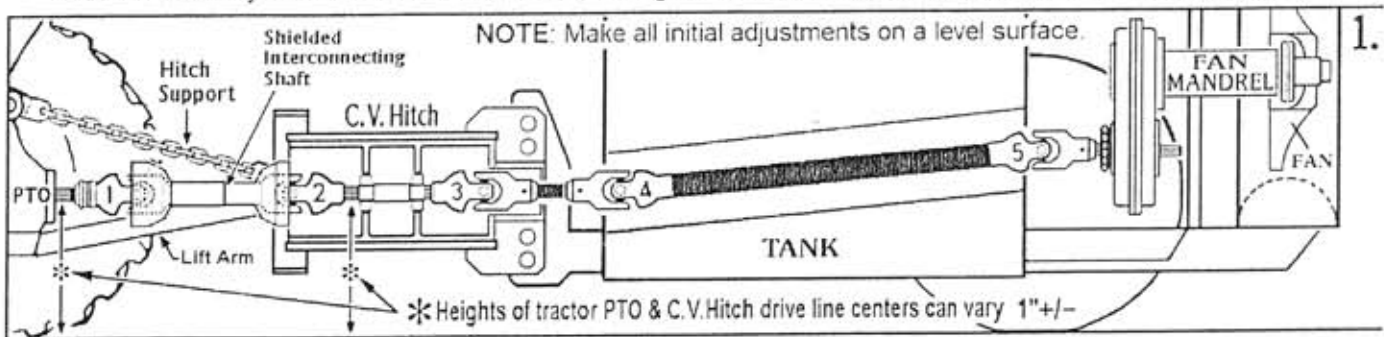
*BASIC ASSEMBLY, SOME SYSTEMS WILL VARY



**THIS UNIT NOT INTENDED
FOR HIGHWAY USE**

INITIAL TRACTOR/POWERBLAST HOOKUP

IMPORTANT: To insure drive train longevity & smooth operations, carefully read & understand all instructions. Read & abide by all **CAUTION** notes before, during & after initial tractor/Powerblast hookup & operations.



ATTENTION: If an **unindexed** interconnecting shaft is ever used, or if any part of the drive train is disassembled, be certain the five (5) u-joints align exactly as shown.

1. Set axle to desired position (Refer to pages 30 & 31).
2. Remove Towing Tongue from C. V. Hitch.
3. Position Powerblast and tractor on a **level** surface.

4. Measure Tractor PTO Center height, Using a Jack, bring C.V. Hitch **Center** to a matching height (+/- 1").

NOTE: If Powerblast is more than one (1") inch **out of level**, adjust CV Hitch as follows:

- A) Block up C.V. hitch
- B) Block wheels
- C) Support tank with jack
- D) Remove four (4) bolts of hitch-mast
- E) Level mast to the appropriate mast holes
- F) Replace bolts

5. Attach tractor lift arms to C.V. Hitch lift pins

6. Adjust C.V. Hitch Support Chains **IEQUALLYI** to links that maintain the closest **horizontal and vertical level center line** between tractor pto shaft and C.V. Hitch shaft. Be positive support chains are equal in length once set in position (see illustrations upper right).

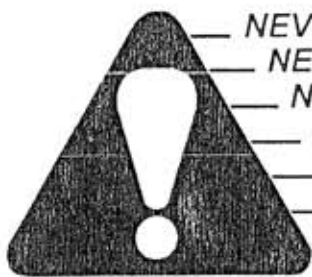
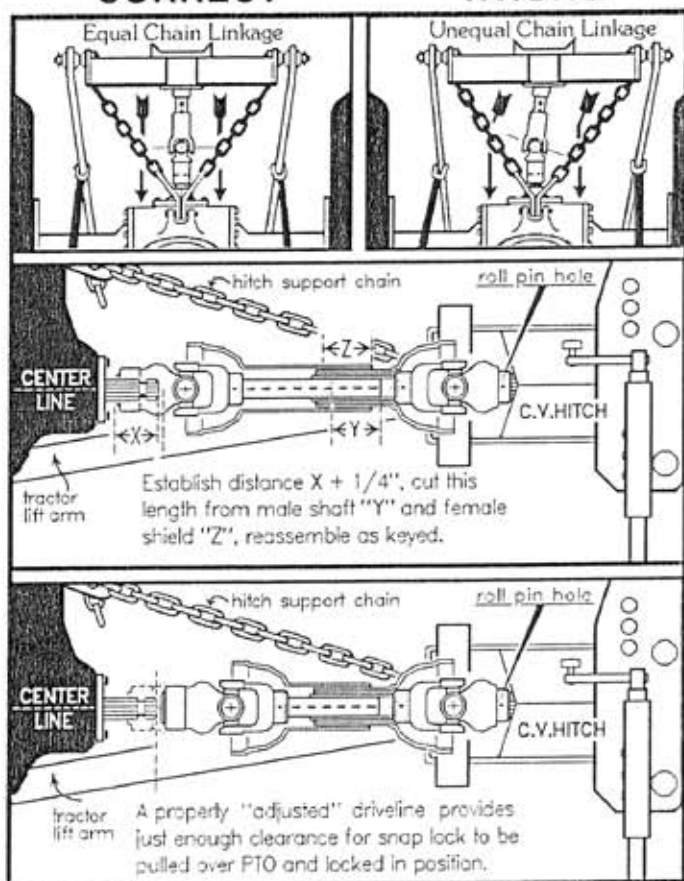
7. Install Shielded PTO Shaft.

DO NOT FORGET TO INSERT THE ROLL PIN.

NOTE: If PTO length requires adjustment, see dealer for an exchange, or follow instructions at right to cut to proper size.

8. Connect Handset, Air and Spray, Control... Be certain positive (+) and negative (-) wires are correctly attached to the tractor's battery.

C.V. HITCH SUPPORT CORRECT WRONG



- **NEVER** engage PTO when tractor & PowerBlast are at right angles. _____
- **NEVER** tamper with tractor hydraulic controls after once set. _____
- **NEVER** operate PowerBlast without hitch support chains. _____
- **NEVER** engage the tractor PTO suddenly. _____
- **NEVER** dis-engage the tractor PTO on turns. _____
- **NEVER** engage the fan clutch at high speed. _____
- **NEVER** run the pump dry. _____

FAN SELECTION

CAUTION - NEVER OPERATE PUMP WITHOUT WATER - CAUTION

FAN SELECTION: To achieve maximum Powerblast performance, fan must, as closely as possible, match tractor H.P. and P.T.O. speed.

CHART #1 POWERBLAST FAN SELECTION

TRACTOR (SUGGESTED) HORSEPOWER	PTO RPM & PUMP PSI FAN NO.*	W/ PUMP BELT IN HIGH RANGE				W/ PUMP BELT IN LOW RANGE			
		P.T.O. 300RPM	120 PSI	P.T.O. 400RPM	133 PSI	P.T.O. 540RPM	120 PSI	P.T.O. 600RPM	150 PSI
		AIR MPH	HP	AIR MPH	HP	AIR MPH	HP	AIR MPH	HP
20 HP	9-18-33	42	3.0	56	7.0	76	17	85	24
25 HP	9-20-33	47	3.5	63	8.0	85	20	95	28
40 HP	9-22-33	50	4.0	67	9.5	90	23	100	32
50 HP	9-25-33	55	5.5	73	13	99	32	110	44
50 HP	9-27-33	58	6.3	77	15	105	36	115	50
60 HP	9-28-33	60	7.0	80	16	107	39	119	53
70 HP	9-30-33	62	8.0	83	18	111	45	123	62
80 HP	9-32-33	65	9.0	87	22	117	54	130	74

*Fan Number is Stamped on Fan Hub

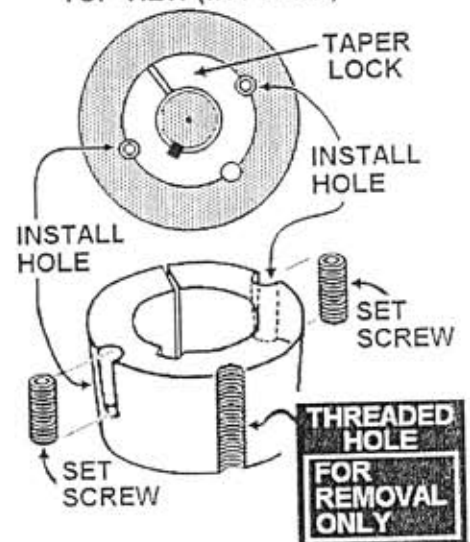
TAPER-LOCK BUSHING INSTALLATION:

Clean shaft, fan hub bore, Taper-lock bore and outside area. Remove all laquer and dirt. Place Taper-lock in hub and match up ihalf holesi (each matched hole threaded hub side only). Oil point and threads of both set-screws and place them loosely in matched holes (threaded hub side only). Be sure the Taper-lock is free within hub. Slip assembly on shaft and locate. Tighten set-screws alternately and evenly until both are pulled up tightly (use pipe on wrench to increase leverage). Using a block or sleeve to avoid damage, hammer against large end of Taper-lock. Screws can now be turned a little more. Snug screws up tightly. Repeat this step until screws no longer turn after hammering. Fill other holes with grease to keep dirt out.

TAPER-LOCK BUSHING REMOVAL:

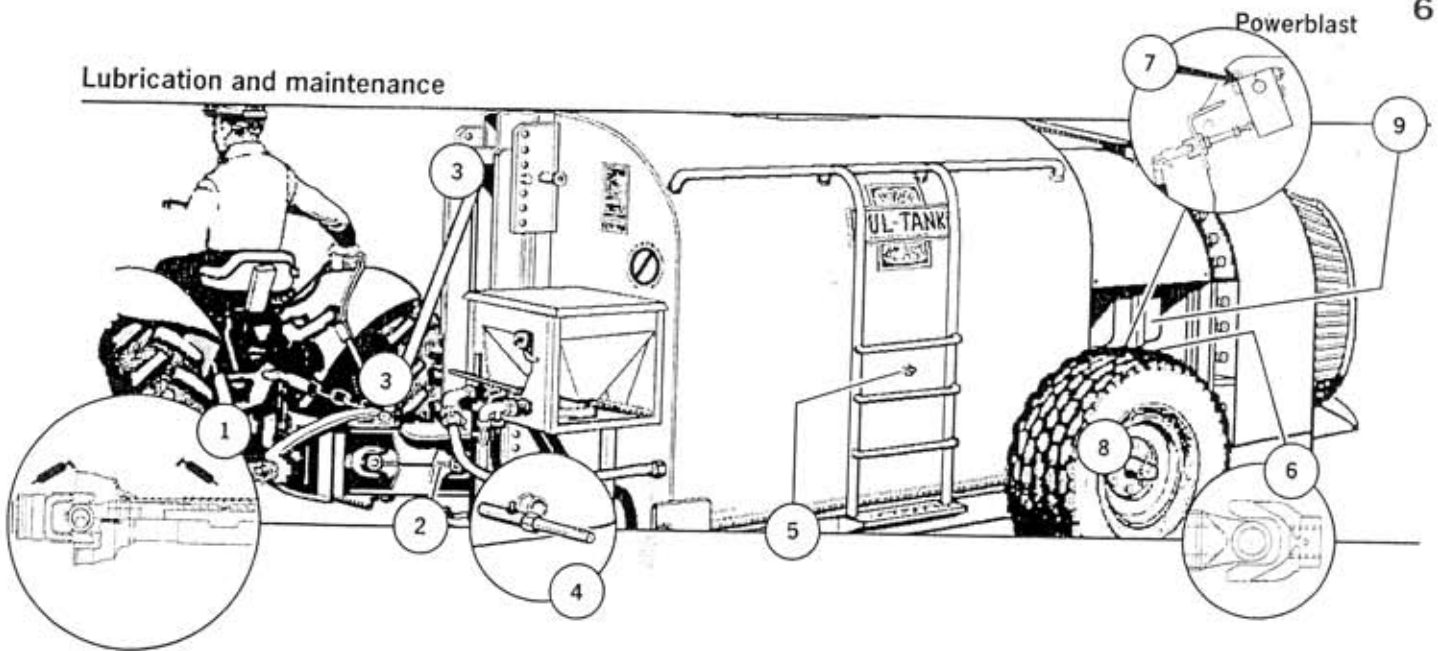
Remove both set-screws, oil points and threads and insert one in hole threaded on iTaper-locki half. Tighten screw until bushing is loosened in hub. if Taper-lock does not loosen immediately - tap hub.

TAPER-LOCK TOP VIEW (IN PLACE)



NOTE: LIBERALLY APPLY ANTI-SEIZE TO SCREWS AND INNER & OUTER TAPER-LOCK CONTACT POINTS TO ASSURE EASY REMOVAL.

Lubrication and maintenance



For first time use, grease all lube points as instructed on the lubrication schedule, below.



All lube points have been made accessible. Lubrication does not require disassembly.



Always use a Lithium base NLGI Grade 2 EP grease. We recommend Texaco Multifak EP2, Shell Alvania 2EP, and Mobil Mobilux EP2.



Use an oil compatible with your gearbox- see the parts page for your gearbox in this manual.

No	Description	Special Instructions	Hours	Pump
1	Tractor driveline	Both crosses and telescoping slip collar	4	1-2
2	CVHitch rear U-Joint	Lube point at cross	4	1-2
3	CVHitch support arm	1 point each end, 1000 gallon units only	40	1-2
4	Agitator bearing, front and rear	1 point each bearing- do not over grease, purges to tank	16	1-2
5	Agitator shaft, center bearing	1000 gallon units only: NOT R7 bearings	16	1-2
6	Thru-tank driveline crosses	Lube point at cross, each end	4	1-2
7	Belt tension pulley bearing*	1 point on bearing housing	16	1-2
8	Wheel hub	1 point each wheel	40	purge
9	Gearbox	Check daily- see gearbox parts page	-	-

*Micro-V drives with auto-tensioner requires no lubrication

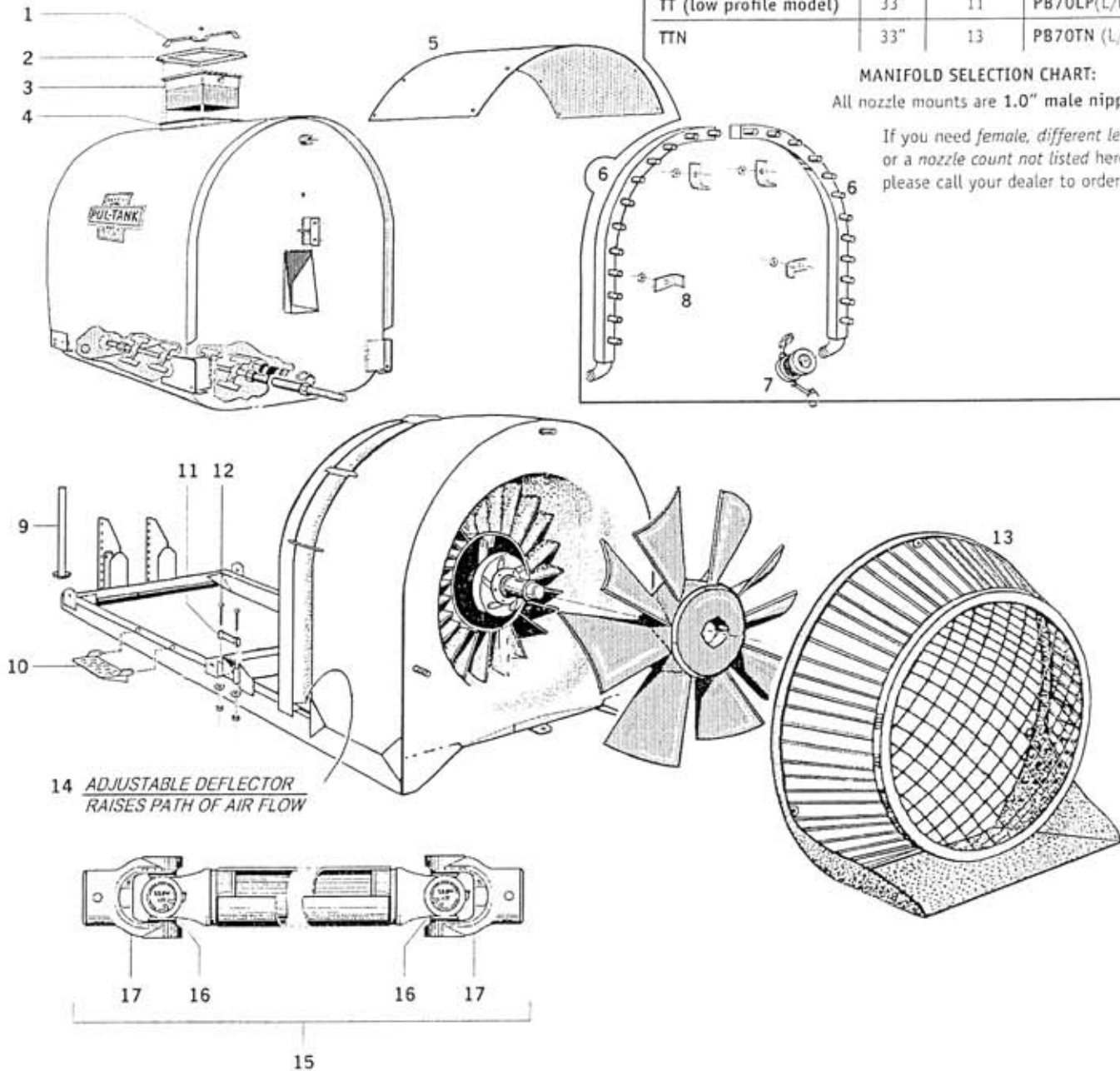
Read this manual completely before operating: follow all safety instructions.

Powerblast model	Fan	# Nozzles	Part N°
Standard 400 - 1000G	33"	12	PB701M(L/R)
Standard 400 - 1000G	33"	13	PB70M(L/R)-BN
Standard 400 - 1000G	38"	13	PB7038(L/R)
Standard 400 - 1000G	38"	15	PB7038(L/R)-15
Standard 400 - 1000G	38"	16	PB7038(L/R)54
TT (low profile model)	33"	11	PB70LP(L/R)
TTN	33"	13	PB70TN (L/R)

MANIFOLD SELECTION CHART:

All nozzle mounts are 1.0" male nipple.

If you need female, different length, or a nozzle count not listed here, please call your dealer to order.



powerblast parts

#	Part N°	Description	Qty	#	Part N°	Description	Qty
1	PBLID-LA	Lid latch	1	11	PL7BR	Axle clamp	2
2	PBLID	Lid, hinged	1	12	O620650CH5	Hex cap bolt, 5/8" x 6-1/2" Gr.5	4
3	PB49SS	Fill basket, stainless steel	1		O62NF	Nut, 5/8" plated	4
4	PBLID-GAS	Lid gasket	1		O62WUSS	Flat washer, 5/8"	4
5	PBHOOD	Common* hood	1	13	PB3FGTG	Fan grill	1
	PBHOODTT	TT model hood	1	14	PBDP4	Adjustable air flow deflector	1
6	see inset			15	DL504	55 series driveline, common*	1
7	ETC075DAL	Quick coupler, 3/4" Fem	2		DL505	55 series driveline, 1000gal units	1
8	PBMC101	Manifold clamp	4	16	55RW	55 series cross kit	2
9	PBJ213	Jack	1	17	Y514	55 series yoke, 17-spline	2
10	PBSTEP	Step	2				

*Common includes all models not otherwise listed.



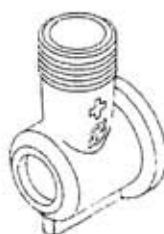
BR2



BR0503



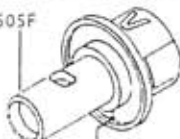
BR0508



- BR05041

BR1 & BR1DC

BR0505F



BR0509

BR0506

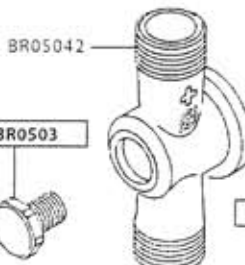
BR0112

BR0209



BR0112

BROS08



BR0503

BR0508

BR0209

BR0112

BR0880

BR0875

BR0801F

BR0509

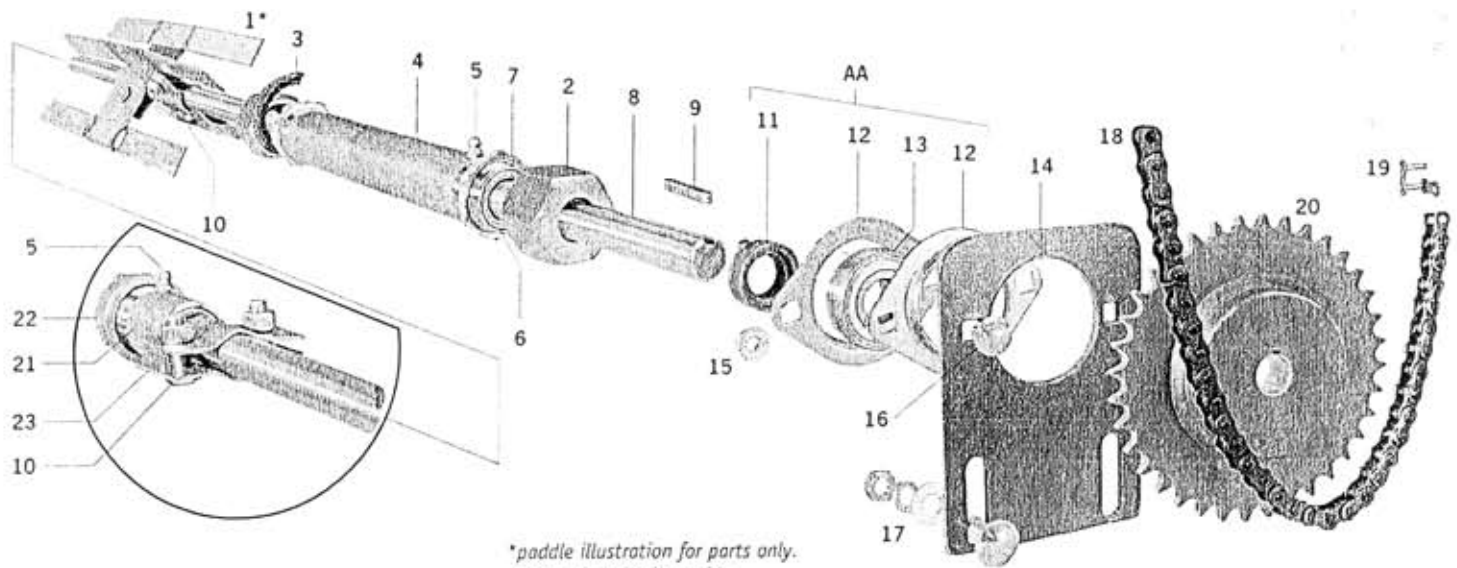
BR0506

BR0112

BR2DC

parts kit for BR1 & BR2

10 Powerblast



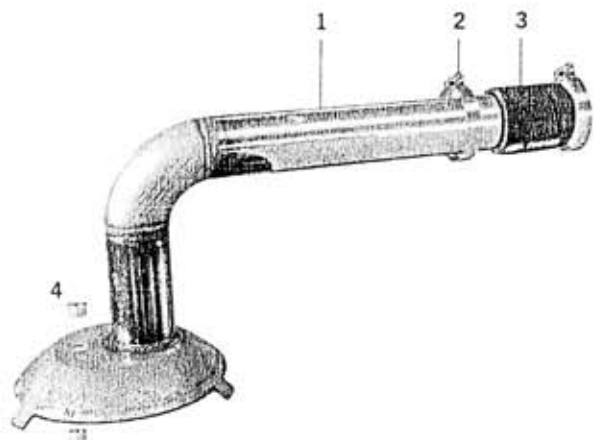
mechanical agitation parts

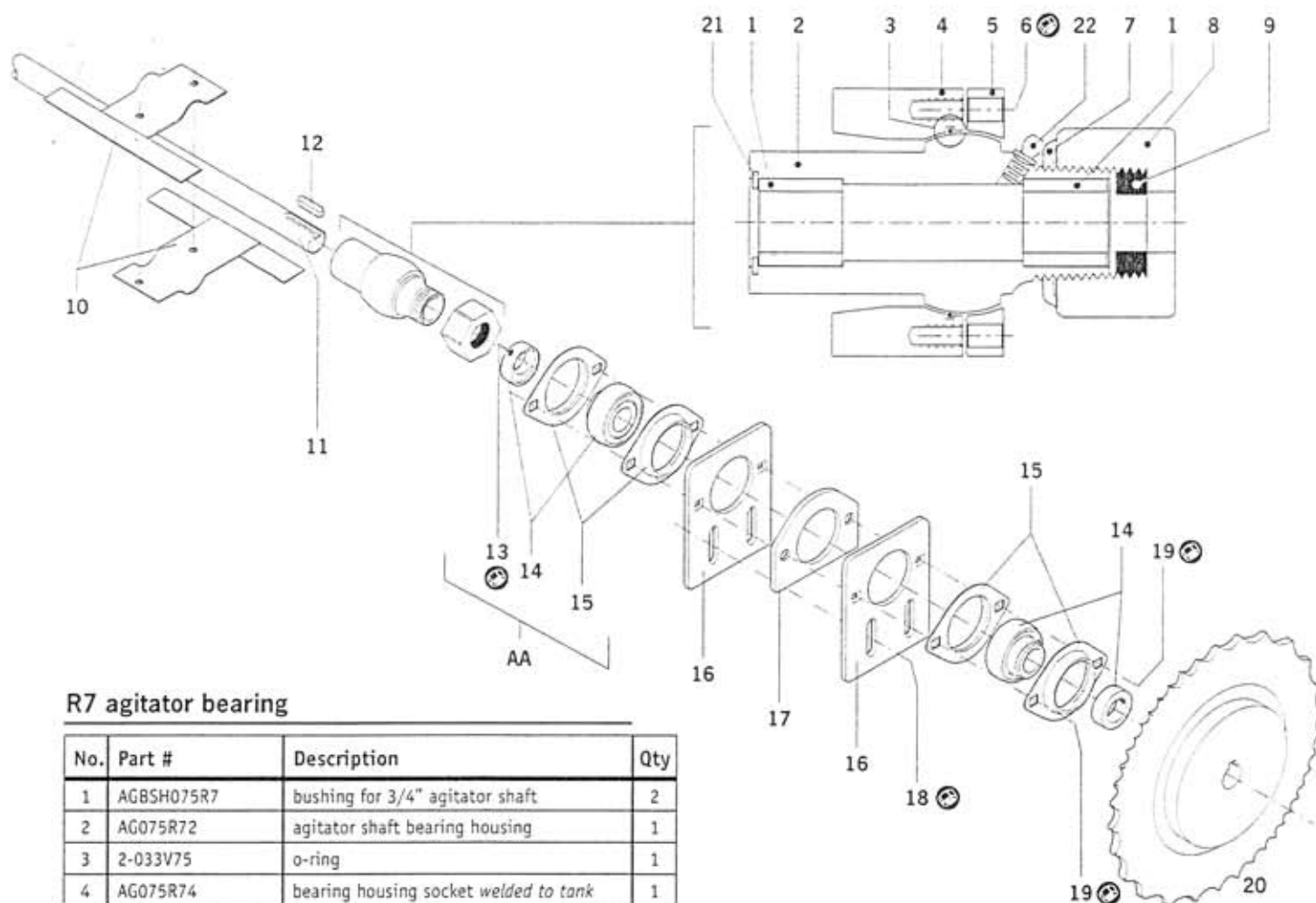
#	Part No	Description	Qty
1	PB50	Large paddles, one complete set	4
2	AG075ESS	Packing nut with packing	2
3	AG025	Packing only, @ 11" each nut	-
4	AG07510	Rear bearing with bushings	1
5	1641-B	1/4"-28 straight zerk	2
6	AGBSH075112	Bronze bushing	4
7	AG075C	3/4" locking ring	2
8	AG07579	Agitator shaft, Common* length: 79"	1
	AG07595	Agitator shaft, TTN model length: 95"	1
	AG075102	Agitator shaft, 1000gal tank length: 102"	1
9	KM0180138	3/16" x 1-3/8" key	1
10	0370100CHSS	Hex cap screw, 3/8" x 1" stainless steel	12
	037NSS	Nut, 3/8" stainless steel	12
11	AGPL075SC	3/4" set collar	1
12	AGPL075A	Agitator bearing mount flange	2
13	RA012RRB	agitator shaft outboard bearing	1
14	AGPL075500	Bearing assembly mount bracket	1
15	031NFLANGE	5/16" serrated nut	2
16	0310075CP	Carriage bolt, 5/16" x 3/4" plated	2
17	0370100CZ	Carriage bolt, 3/8" x 1" plated	2
	037WUSS	Flat washer, 3/8"	2
	037WS	Lock washer, 3/8"	2
	037NSS	Nut, 3/8" stainless steel	2
18	PB40CH-BULK	#40 roller chain, Common* length: 48"	1
		#40 roller chain, TT & TTN model length: 40"	1
19	PB40CH-LINK	#40 roller chain master link	1
20	PB4036075	36 tooth sprocket	1
21	AG07503	Front bearing with bushings	1
22	SSCAP075	Bearing cap	1
23	AG23	Small paddles, one complete set	2
AA	AGOB075F	Complete agitator shaft outboard bearing	

*Common includes all models not otherwise listed.

tank suction parts

No.	Part #	Description	Qty
1	PB53M	suction funnel	1
2	WC6832	No. 32 worm clamp	2
3	PBH012	suction pipe coupling	1
4	037NSS	3/8" nut, stainless steel	2





R7 agitator bearing

No.	Part #	Description	Qty
1	AGBSH075R7	bushing for 3/4" agitator shaft	2
2	AG075R72	agitator shaft bearing housing	1
3	2-033V75	O-ring	1
4	AG075R74	bearing housing socket welded to tank	1
5	AG075R76	agitator bearing housing cap	1
6	0250087CKSS	1/4"-20 x 7/8" stainless steel	4
	025WSSS	1/4" lockwasher, stainless steel	4
7	AG075C	3/4" locking ring	1
8	AG075ESS	packing nut with packing	1
9	AG025	packing only, @ 11" each nut	-
10	PB50	large paddles, one complete set	4
11	AG07579	agitator shaft, common* length 79"	1
	AG07595	agitator shaft, TTN model length 95"	
	AG075102	agitator shaft, 1000 gal length 102"	
12	KM0180138	3/16" x 1 3/8 key	1
13		set screw	-
14	AGPL075SC	3/4" set collar	2
	RA012RRB	outboard bearing, includes set collar	
15	AGPL075A	agitator bearing mount flange	4
16	AGPL075500	outboard bearing mount bracket	2
17		center spacer	1
18		bearing brackets mount fasteners	2
19		bearing flange mount fasteners	2
20	PB4036075	36 tooth sprocket	1
	PB40CH-BULK	#40 roller chain, common* length 48"	1
		#40 roller chain, TT&TTN length 40"	
	PB40CH-LINK	#40 roller chain master link	1
21	RR-100-S02	snap ring	1
22	1641B	zerk (not inside 1000 gallon tank)	1
AA	AG0B075F	complete outboard bearing set	2

*Common includes all models not otherwise listed.

agitator shaft installation, R7 bearing

Clean and degrease agitator bearing sockets 4 on the tank and the outer surface of the bearing housing 2.

Slide the agitator shaft into the tank and slide the R7 bearings onto each end of the agitator shaft.

Apply a bead of *Loctite 635* or *680* around the radius portion of bearing housing 2 and place in position with the housing cap 5 loosely installed.

Rotate the bearings in the tank sockets to spread the *Loctite*. Rotate agitator shaft to align bearings.

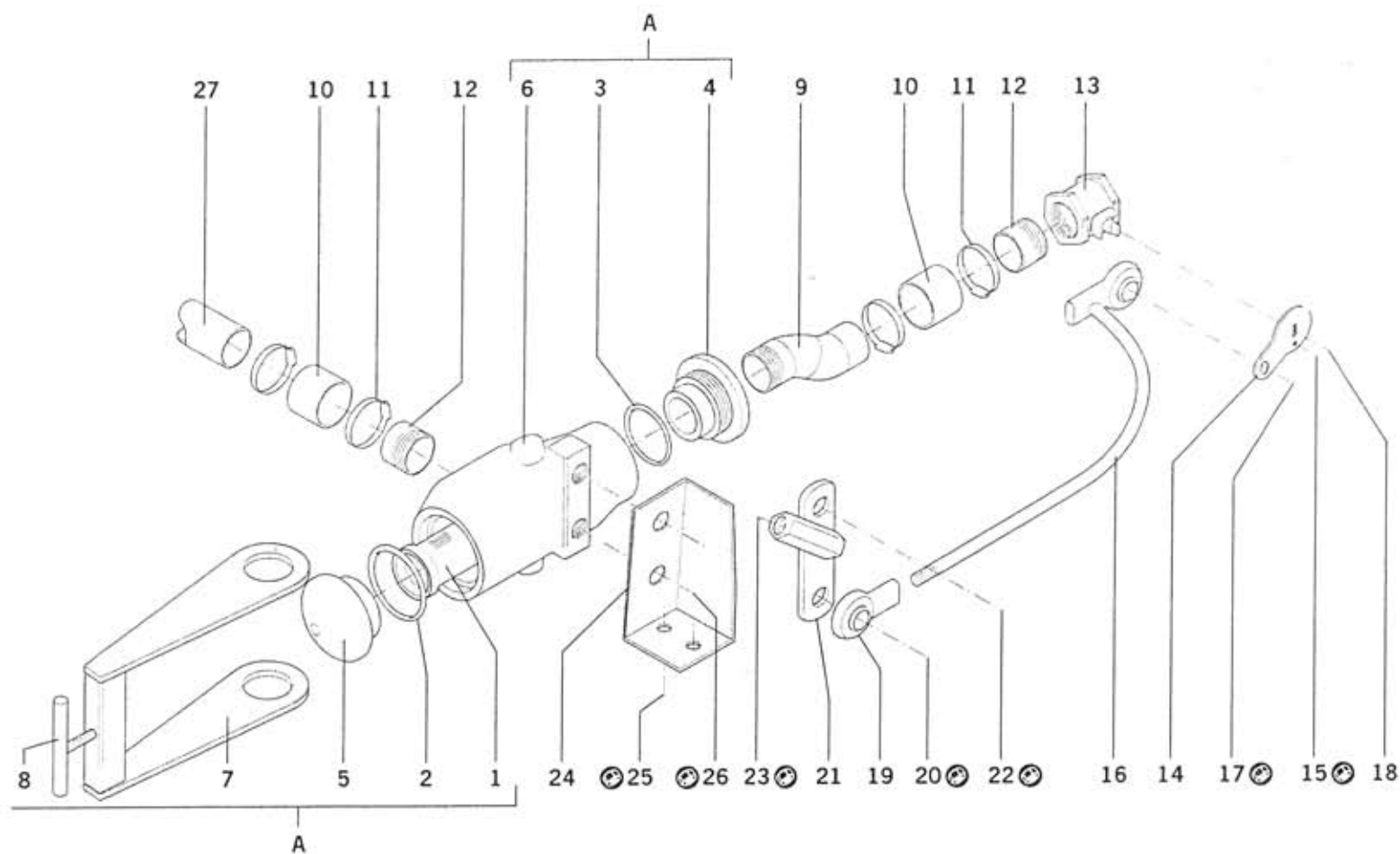
Tighten bearing retainer clamps 5 at each end.

Slide outboard bearing assembly 13-19 onto the agitator shaft. Stack bearing assemblies, mount plates, and center plate as illustrated. Brackets 16 straddle frame mount.

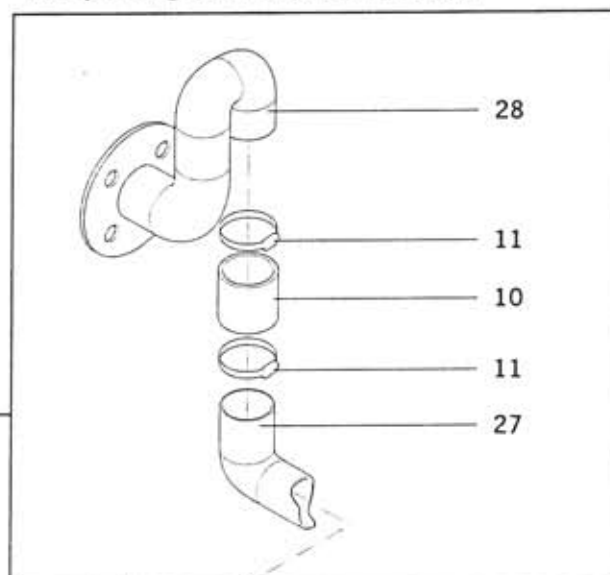
Note: On some machines, the agitator sprockets may not align correctly with this assembly: if needed, replace the the spacer 17 with another bracket 16 and mount the whole assembly on the tank side of the frame mount.

Lock both support collars 14 in the direction of rotation CW as viewed from rear. Tighten setscrews 13.

Install the chain drive, agitator paddles. Tighten the rear packing nut as required to eliminate leakage.

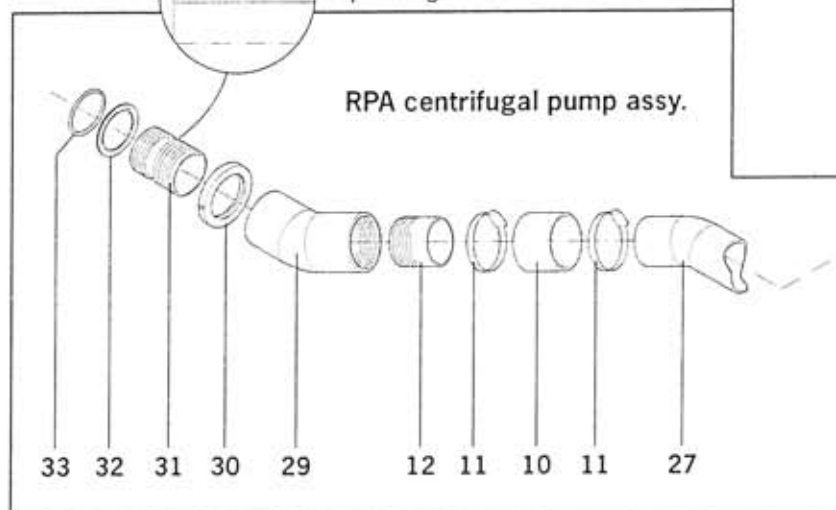


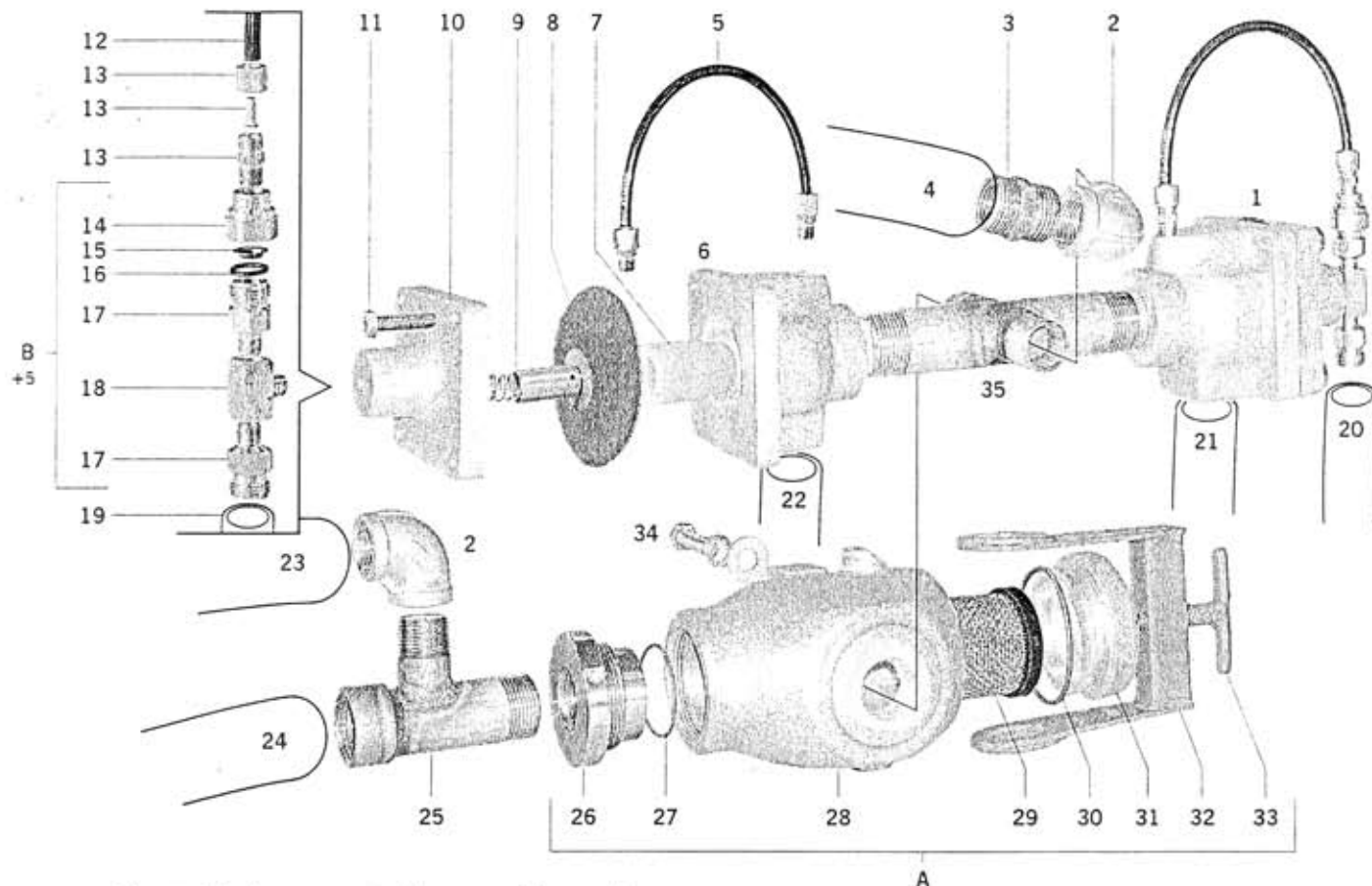
Self-priming centrifugal pump assy.



o-ring on pump side
concave side of backing ring
cups o-ring

RPA centrifugal pump assy.





powerblast discharge strainer and hu-valves

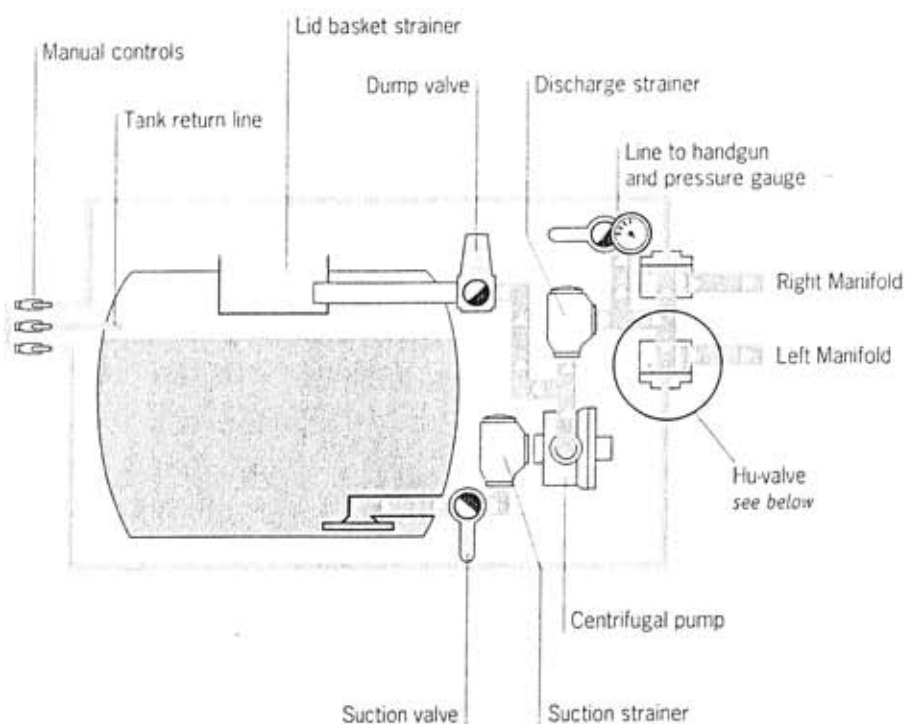
#	Part No	Description	Qty	#	Part No	Description	Qty
1	HUV2100	Complete Hu-Valve assembly	-	21	call	3/4" pvc hose, see chart, below	1
2	SSEL075	3/4" 90° SS elbow	2		HFC75075	3/4" MPT x 3/4" HB, brass	1
3	MGXMP075	3/4" MGHT x 3/4" MIPT adapter	1		ETC075CAL	3/4" female camlock fitting	1
4	call	1/2" pvc hose, see chart, below	1	22	call	3/4" pvc hose, see chart, below	1
	HFB075050	3/4" FGHT x 3/4" HB, brass	2		HFC75075	3/4" MPT x 3/4" HB, brass	1
5	HUV-LOOP	Diaphragm bypass loop	2		ETC075CAL	3/4" female camlock fitting	1
6	HUV1018	Hu-Valve body	2	23	See Dump Valve parts page		1
7	HUV110	Valve seat	2	24	See Pump parts page		1
8	HUV104DV	Viton diaphragm	2	25	MBW102	Dump line manifold	2
9	HUV102G	Plunger	2	26	STHP2100	Strainer adapter, 1" inlet	1
	HUV1055	Plunger spring	2	27	STHP2-140	O-ring	1
10	HUV100C	Hu-Valve cap	2	28	STHP3100	Strainer body, 1" port	1
11	0310125CHSS	Hex cap screw, 5/16" x 1-1/4" stainless steel	8	29	SPST7D	Poly frame screen <i>specify mesh: 24 yellow, 50 blue</i>	1
12	HUVTUBE	1/4" x 9" nylon tube	2	30	11-232	O-ring	1
13	HUV012CB	Brass compression fitting, 1/8" MPT	2	31	STHP1010	Line strainer cap	1
14	4676-1/8	1/8" FPT x female TeeJet adapter	2	32	SPST7GM	Strainer bale	1
15	D6	D-6 orifice, install dish side down	2	33	SPST7H	T-screw	1
16	12-2.5MMN70	O-ring	2	34	0370100CH5	Hex cap screw, 3/8" X 1" Gr.5	2
17	1/8TT	TeeJet body	4		037WS	Lock washer, 3/8"	2
18	HUV012TB	1/8" tee	2		037WUSS	Flat washer, 3/8"	2
19	call	3/8" pvc hose, see chart, below	1	35	MBW103	Hu-Valve strainer manifold	1
	1325	11/16-16UN cap, brass	2	A	SPST7100	Complete discharge strainer <i>specify mesh</i>	
	4251-375	3/8" hose barb, brass	2	B	HUV-EXT	Complete Hu-Valve loop and tee assy kit	
20	call	3/8" pvc hose, see chart, below	1				
	1325	11/16-16UN cap, brass	2				
	4251-375	3/8" hose barb, brass	2				

hose lengths	tunnel lines	models	hose 4	tunnel lines	models	hose 19**	20**	models	hose 21	22
	yes	All	28"	yes	All	20"	4'	Common*	36"	36"
	no	Common*	13'	no	Common*	19'6"	19'6"	Low profile	30"	30"
	no	TTN	?	no	TTN	?	?			
	no	1000 gal.	14'6"	no	1000 gal.	23'	23'			

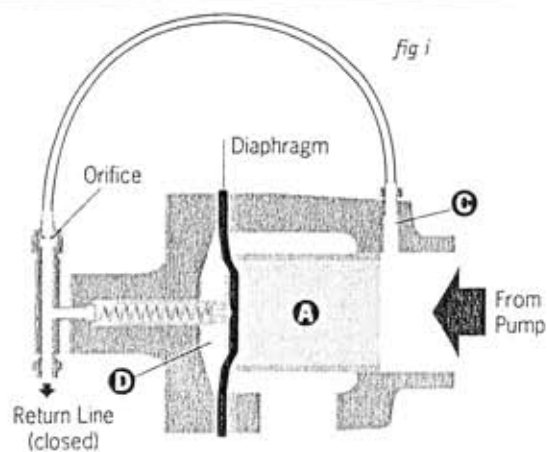
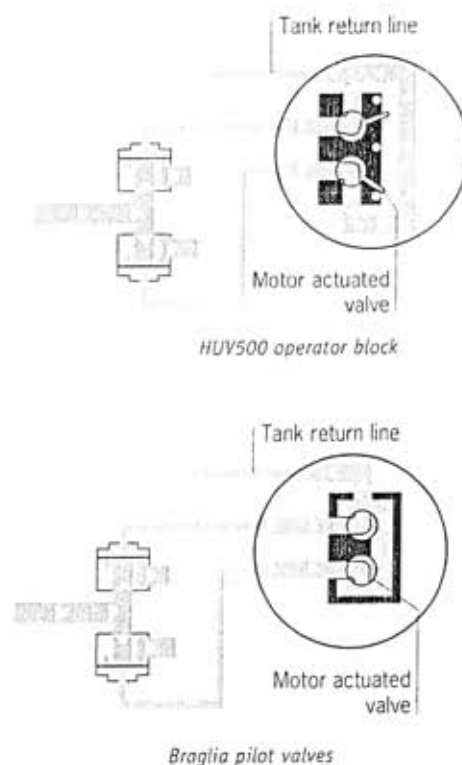
*Common includes all models not otherwise listed.

**If electric valve controls are installed, hoses 19 and 20 are listed on your spray controller parts page.

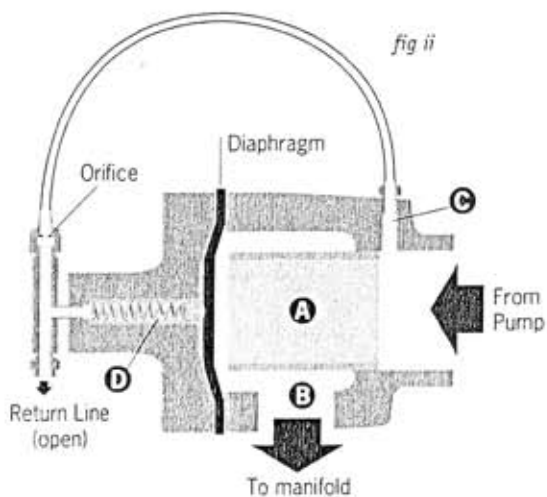
powerblast plumbing



powerblast electric spray controls



In *fig i*, above, the Hu-Valve is closed. You have switched off your manifold using your handset (electric or manual controls) and what this does, quite simply, is close the return line from the Hu-Valve to the tank. When you switch your manifold on, *fig ii*, water from the pump flows into the Hu-Valve and splits into two channels: the majority flows through **A**, into **B**, and on to the manifold; a lesser amount through **C** to the return line. From **C** the water passes through an orifice and back to the tank. It is this return line that feeds chamber **D**. When the return line to the tank is open, the water pressure in chamber **D** is low- lower than



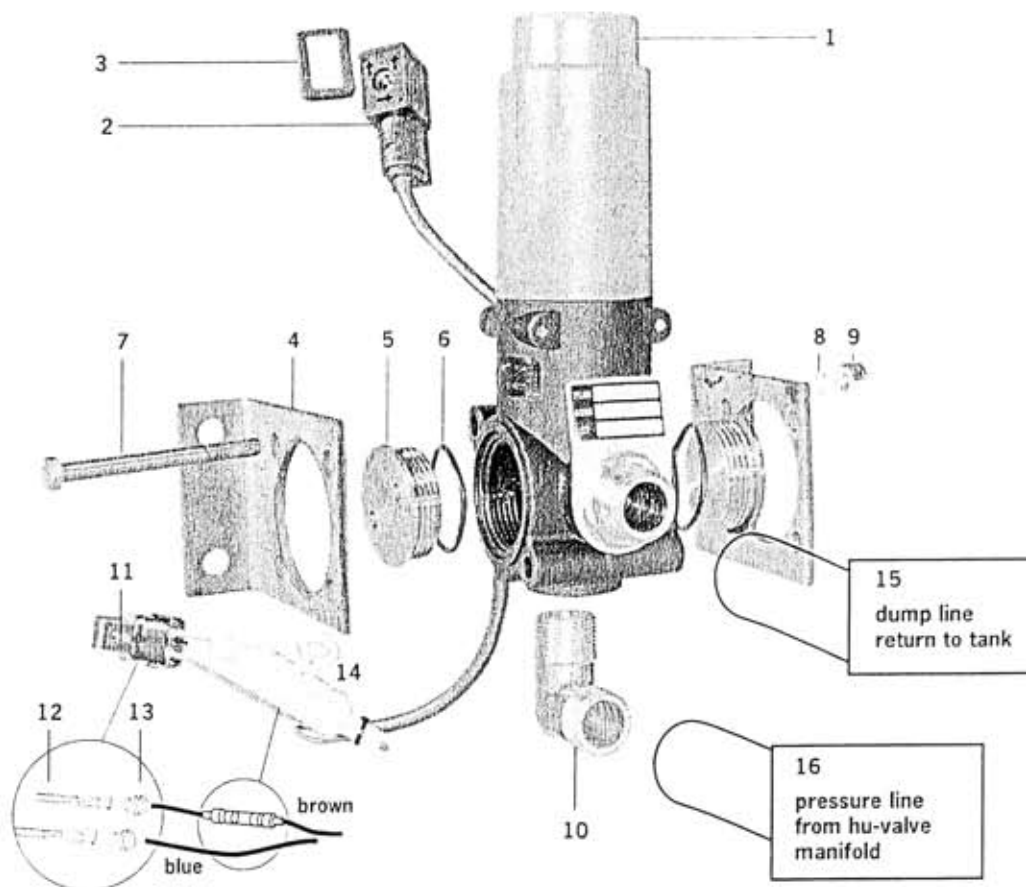
the pressure in chamber **A**, the valve seat. The greater pressure in **A** displaces the diaphragm, *fig ii*, and opens the passage to the manifold: the valve is open.

When you switch your manifold off the return line to the tank is closed, *fig i*, and water backs up into chamber **D**, equalizing the water pressure in **A** and **D**. The diaphragm will close the valve because chamber **D** has a mechanical advantage over **A**: the pressurized surface area of the diaphragm on side **D** is 10 times greater than that of side **A**.

Suction-at-step assembly

No.	Part #	Description	Qty
1	SPST7D16	16 mesh black poly frame screen	1
2	11-232	o-ring	1
3	STHP2-140	o-ring	1
4	STHP2150	strainer adapter, 1-1/2" inlet	1
5	STHP1010	line strainer cap	1
6	STHP3150	strainer body, 1-1/2" port	1
7	SPST7BL	strainer bale, complete with t-screw	1
	SPST7GM	strainer bale	
8	SPST7H	t-screw	1
9	PBES102	strainer inlet drop fitting	1
10	PBH011 (4")	1-7/8" water hose, 4" long	2
11	WC6832	worm clamp, 1-9/16" x 2-1/2"	1
12	TOE 1-1/2X1-1/2	1-1/2" x 1-1/2" SS nipple TOE	2
13	PBSV150	1-1/2" valve, brass	1
14	PBES111	suction valve arm	1
15	0250087CKSS	1/4"-20 x 7/8" stainless steel bolt	1
	025NYSS	1/4" stainless steel nylock nut	2
16	PBES100	suction valve link arm	1
17	0370125CHSS	3/8"-16 x 1-1/4" stainless steel bolt	1
	037WSS	3/8" stainless steel flat washer	1
	037NYSS	3/8" stainless steel nylock nut	1
18		nut, specific to valve	1

No.	Part #	Description	Qty
19	375-24 ROD END	3/8" rod end	1
	037NSS	3/8" stainless steel nut	1
20	0370150CHSS	3/8"-16 x 1-1/4" stainless steel bolt	1
	037WSS	3/8" stainless steel flat washer	2
	037NYSS	3/8" stainless steel nylock nut	1
21	PBES101	suction valve shut-off handle	1
22	0500150CHSS	1/2"-13 x 1-1/2" stainless steel bolt	1
	050WSS	1/2" flat washer	2
	050NYSS	1/2" stainless steel nylock nut	1
23	0370500CH2	3/8" bolt for shut-off handle	1
	037NF	3/8" nut	2
24	PBES110	suction filter mount bracket	1
25	0370100CSS	3/8"-16 x 1" stainless steel carriage bolt	2
	037WS	3/8" lockwasher	2
	037NSS	3/8" stainless steel nut	2
26	0370100CHSS	3/8"-16 x 1" stainless steel bolt	2
	037WSS	3/8" stainless steel flat washer	2
	037WS	3/8" lockwasher	2
27	call	suction line to pump, call with serial #	1
28	PBES108	gooseneck for 500/1000 gal units	
A	SPST7150	complete 1-1/2" strainer, includes #1-8	

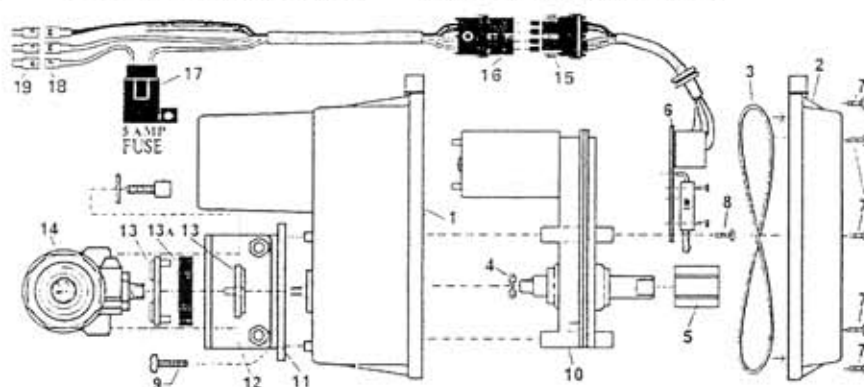


braglia dump valve assembly

#	Part No	Description	Qty	
1	180.1910.19	Braglia valve		
2	180.232.6	Valve signal control cable	1	
3	call	Cable connector gasket	1	
4	180.1610.2R	Braglia valve mount plate	2	
5	180.1702.27B	Port plug	2	
6	2-127	Port plug o-ring	2	
7	0310350CHSS	Hex cap screw, 5/16" x 3-1/2" stainless steel	2	
8	031WS	Lock washer, 5/16"	2	
9	031NY	Nylon insert nut, 5/16" NC	2	
10	170.201.7	Brass elbow, 3/4" MBSP ea. end	1	
11	38043	Waytek quick connect	1	
12	31035	Crimp female connector	2	
13	39000	Connector grommet	2	
14	call	Weatherite fuse casing	1	
	MDL1-1/4	1-1/4A time delay fuse	1	
15	call	3/4" x 26-1/2" pvc hose. 3/4" FBSP x 3/4" FPT	1	dump line to tank
16	call	3/4" x 17" pvc hose. 3/4" FBSP x 3/4" MPT	1	pressure line from hu-valve manifold

ELECTRIC BALL VALVE 12 volt DC/1.5 Amps

3/4" valve: #KZ075 1.0" valve: #KZ100



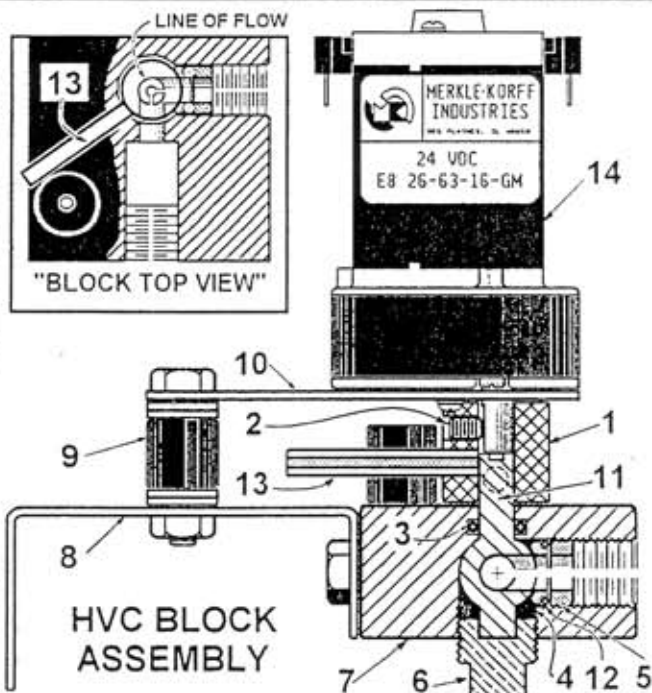
Attention: Consult factory before attempting repair on a unit still under one year warranty. Removing cover may void warranty..

Item	Part No.	Description	Req.
1	KZ138	Case, Lower Motor (poly)	1
2	KZ139	Cover, Top Mtr (poly)	1
3	KZ141	O-Ring, Buna N for Cover	1
4	KZ140	O-Ring, Viton for Mtr Shaft	1
5	KZ122	Cam, Switch	1
6	KZ560	Micro Sw. & Relay w/18"lead	1
7	KZ104	Screw, SS Switch/Mtr	15
8	KX143	Screw, Switch Plate	2
9	KZ144	Bolt, Val. Brkt. Mt. 10-32x1-1/4	2
10	KZ371	Case, 1-1/2 Sec. (Y) Mtr/Gear	1
11	KZ160	Brkt. Mast Mtr Mt.	1
12	KZ129	Coupler, Val. Adapt. Mtr	1
13	KZ166	Coupler, Mtr/Valve	2
13A	KZ165	Nylon Donut	1
14	71-104-01	3/4" Ball Valve	1
	71-105-01	1.0" Ball Valve	1
15	WY38047	Tower Half - Male/hollow Fem.	1
16	WY38046	Shroud Half - Fem./Male Point	1
17	WY46033	Fuse Case (w/WY46253 - 5A fuse)	1
18	1895	Quick Connect, Female	3
19	1894	Quick Connect, Male	3

HVC BLOCK (CUT-A-WAY VIEW)

HUV500KIT			
Item	Part No.	Description	Req.
3.	HUV5112	O-Ring	2
4.	HUV5113	Seat, Teflon	2
5.	HUV5115	Keeper	2
12.	HUV5114	O-Ring Seat	2

HUV510KIT			
Item	Part No.	Description	Req.
1.	HUV5116	Coupler	2
3.	HUV5112	O-Ring	2
4.	HUV5113	Seat, Teflon	2
5.	HUV5115	Keeper	2
6.	HUV5118	Bushing	2
7.	HUV512	Block, HVC	1
11.	HUV5111	Spool	2
12.	HUV5114	O-Ring Seat	2
13.	HUV5117	Roll Pin	2



DAILY MAINTENANCE:

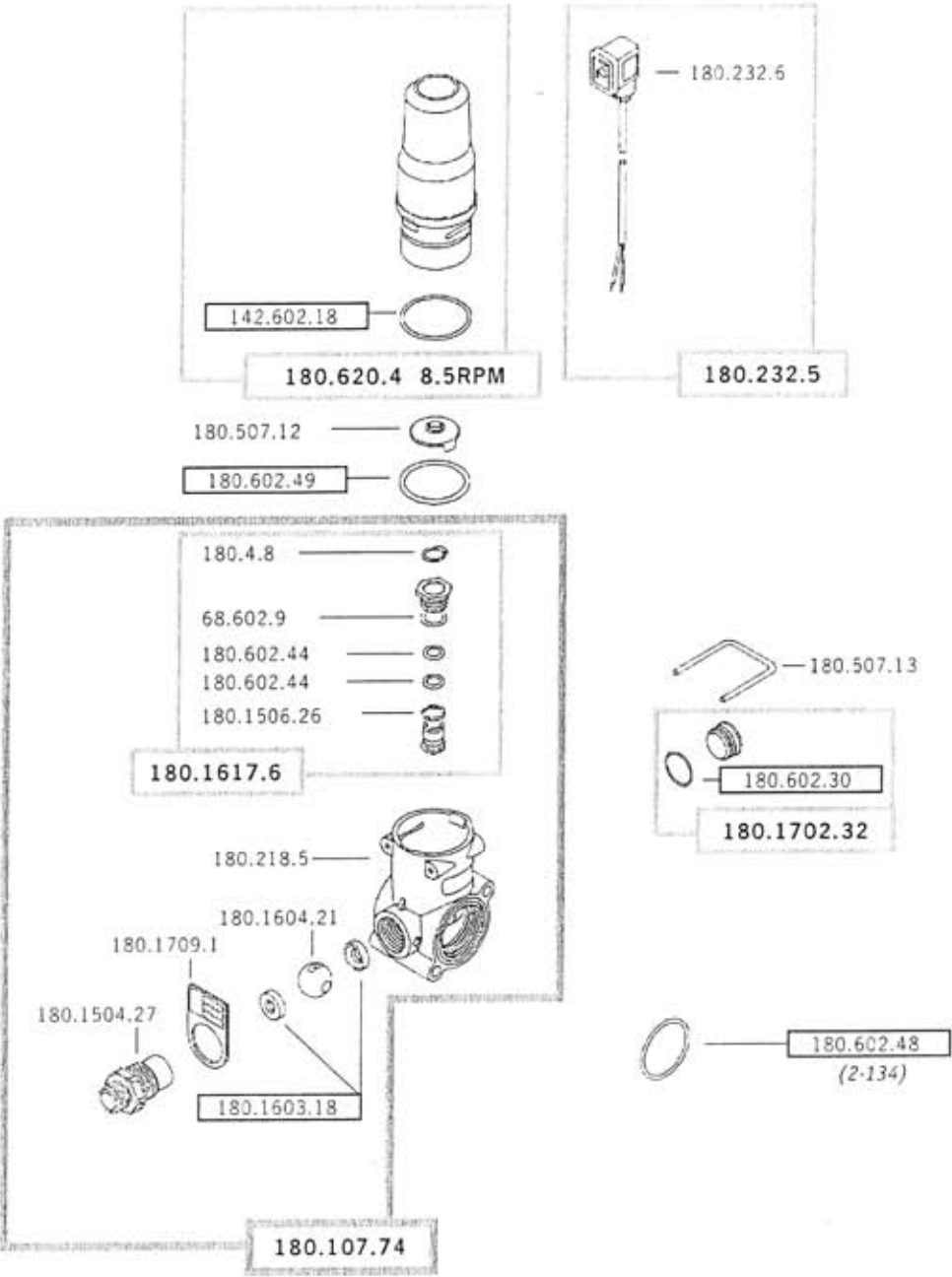
Flush all lines with water while turning spray on and off several times.

SEASONAL STORAGE:

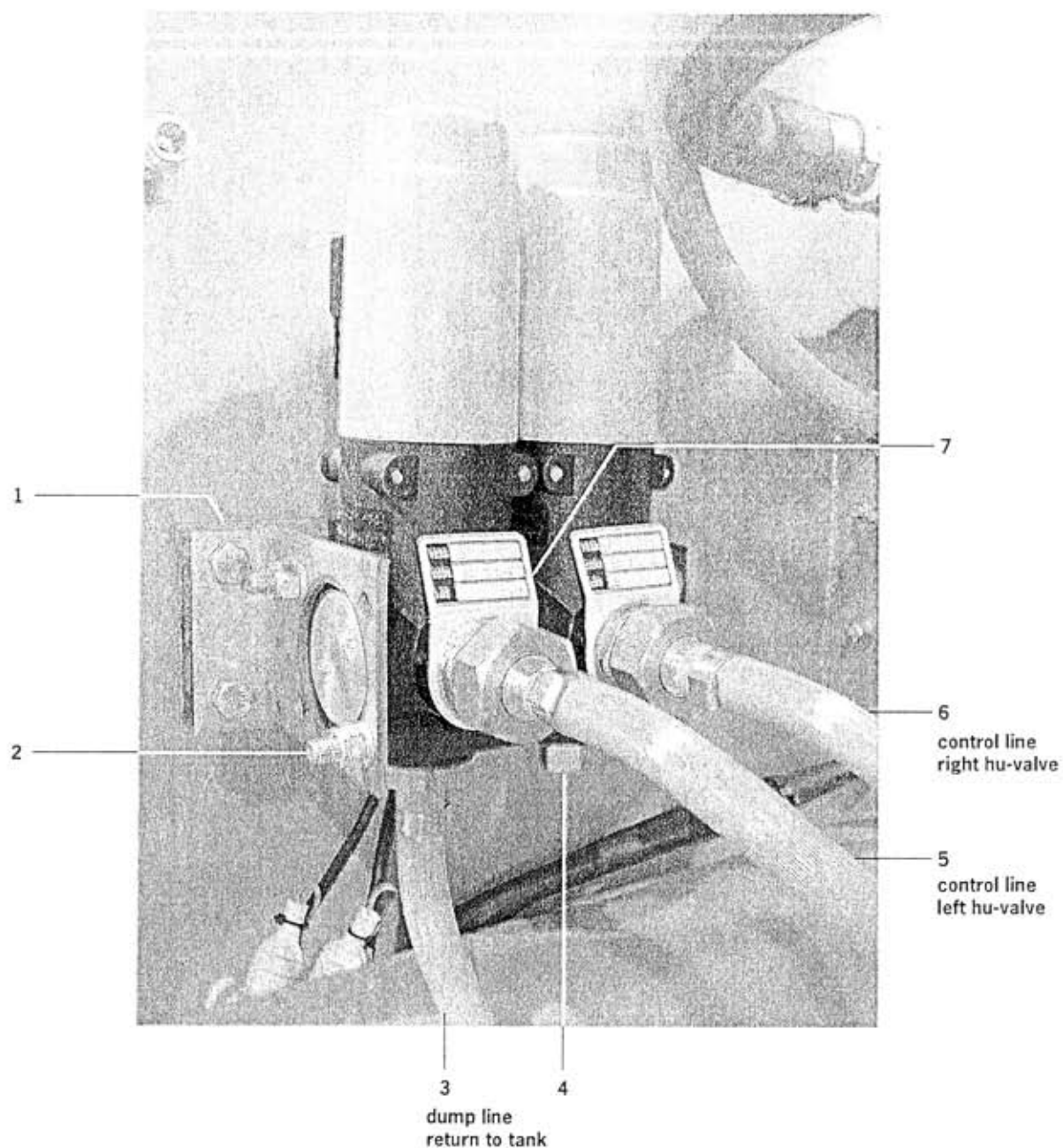
Perform the daily maintenance, then disconnect the vinyl lines and inject oil in the upper and lower chambers of the Hu-Valves and into the operator HVC block. Reconnect the vinyl lines.

TROUBLESHOOTING		
SYMPTOM	PROBLEM	SOLUTION
NO SPRAY WHEN SWITCHED ON	No Liquid	Check Tank, Refill
	Low Pump Pressure	Check & Clean Strainer, Check Pump
	Spool turns freely by hand but not by motor	Check wiring, connections and battery from plug.
SPRAYING CONTINUES WHEN SWITCHED OFF	Line Blockage	Check Hu-valve pilot Line: base to cap for blockage.
	Spool turns freely by hand but not by motor	Check wiring, connections and battery from plug.
	Hu-Valve diaphragm perforated	Disconnect line to valve. If liquid flows from valve, replace the set of three diaphragms
SPRAY CONTINUES WITH HVC SPOOL(S) IN OFF POSITION	Blockage caused coupler (#1) to slip on spool (#11) . putting it out of sync.	Remove motor, position roll pin (#13) and spool incised marks (#11) as shown in "Block Top View" (inset) and tighten set screws (#2)

HVC BLOCK ASSEMBLY PARTS LIST			
Item	Part No.	Description	Req.
1.	HUV5116	Coupler	2
2.	HUV5119	Set Screw	8
3.	HUV5112	O-Ring	2
4.	HUV5113	Seat, Teflon	2
5.	HUV5115	Keeper	2
6.	HUV5118	Bushing	2
7.	HUV512	Block, HVC Operator	1
8.	HUV525	Mount Brkt. Operator Block	1
9.	HUV515	Motor Mount, Apex	3
10.	HUV5202	Bracket, Torque	2
11.	HUV5111	Spool	2
12.	HUV5114	O-Ring Seat	2
13.	HUV5117	Roll Pin	2
14.	HUV5201	Motor	1
15.	HUV529	Shield (not pictured)	1

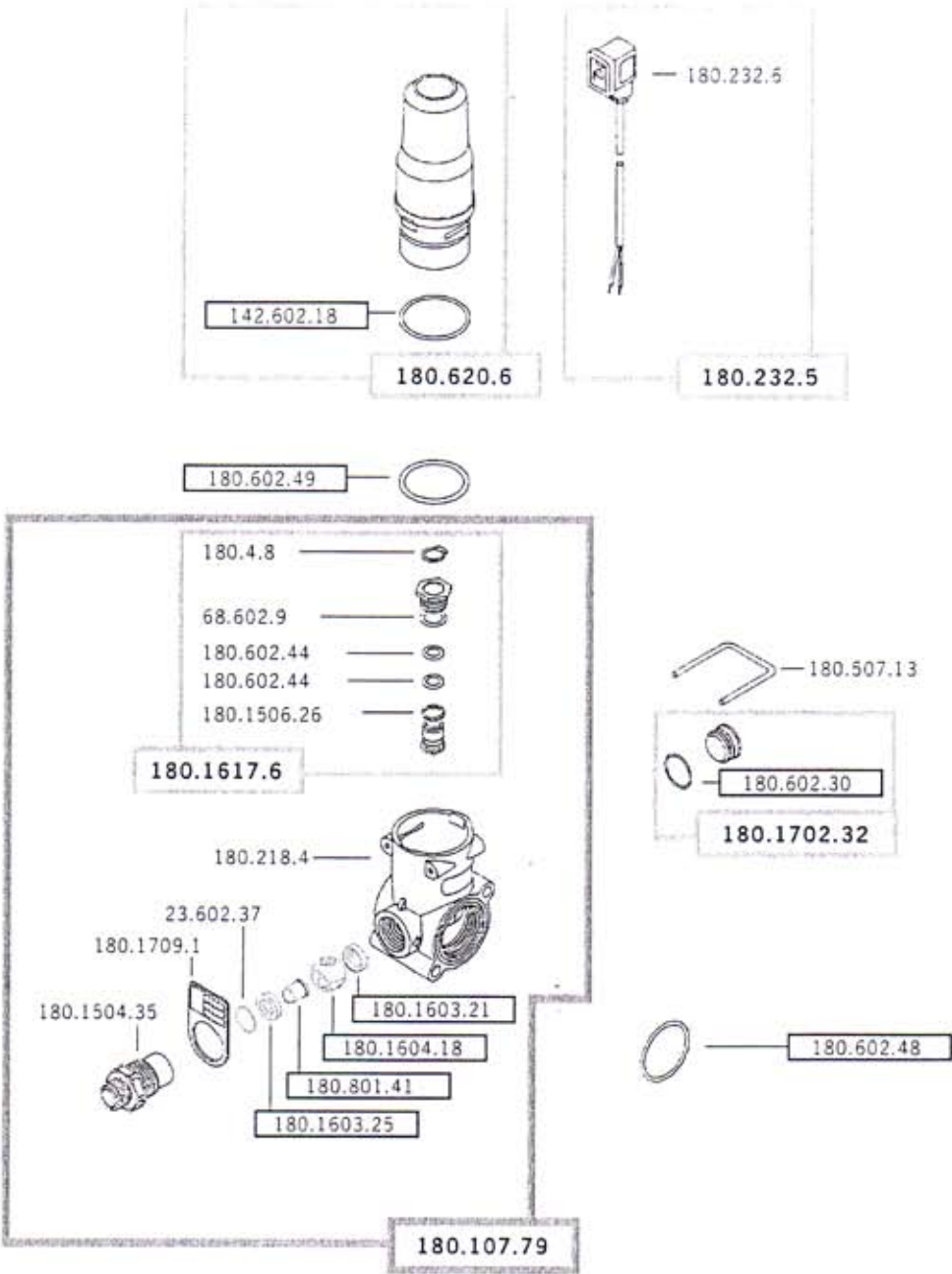


PART NUMBER	individual components	AVAILABLE SPARE PARTS KITS
PART NUMBER	subassembly order number	180.302.31 spare parts kit
PART NUMBER	basic assembly order number	
PART NUMBER	component included in a spare parts kit kits listed, right	

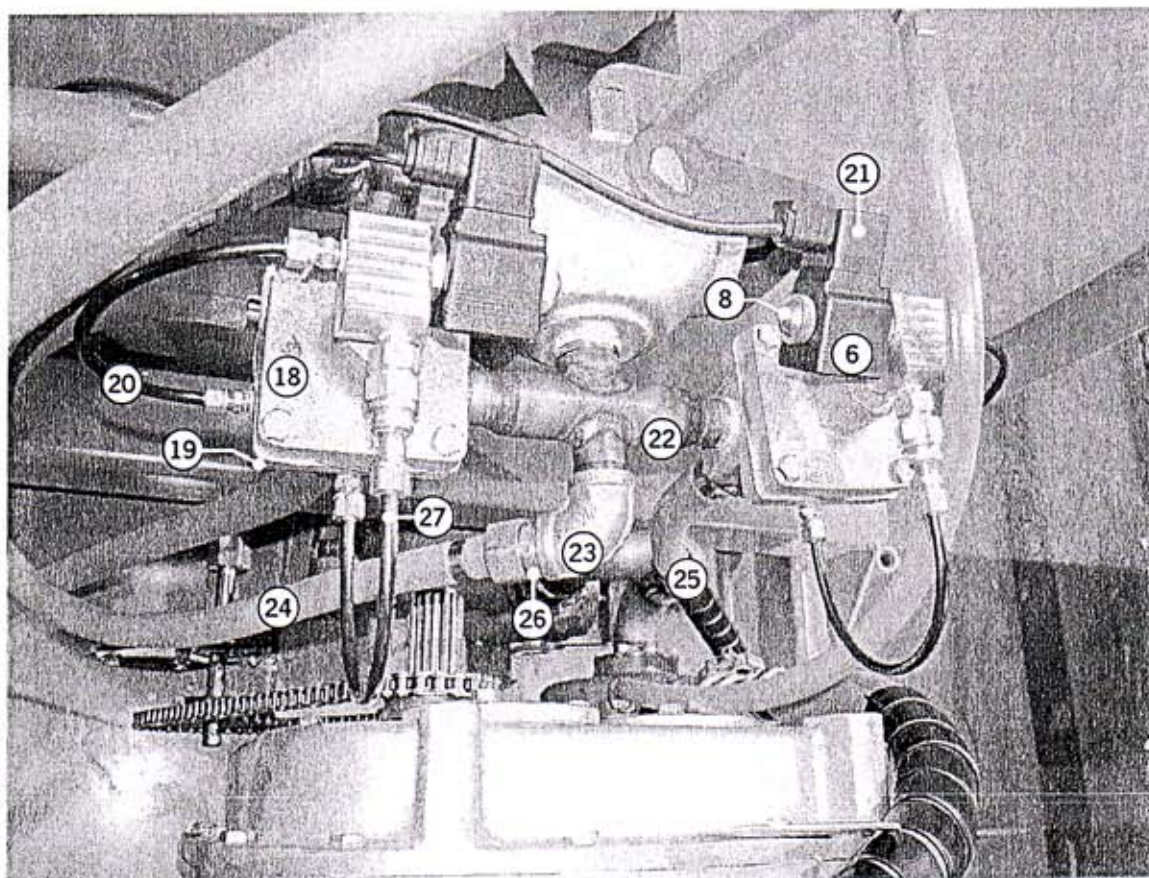
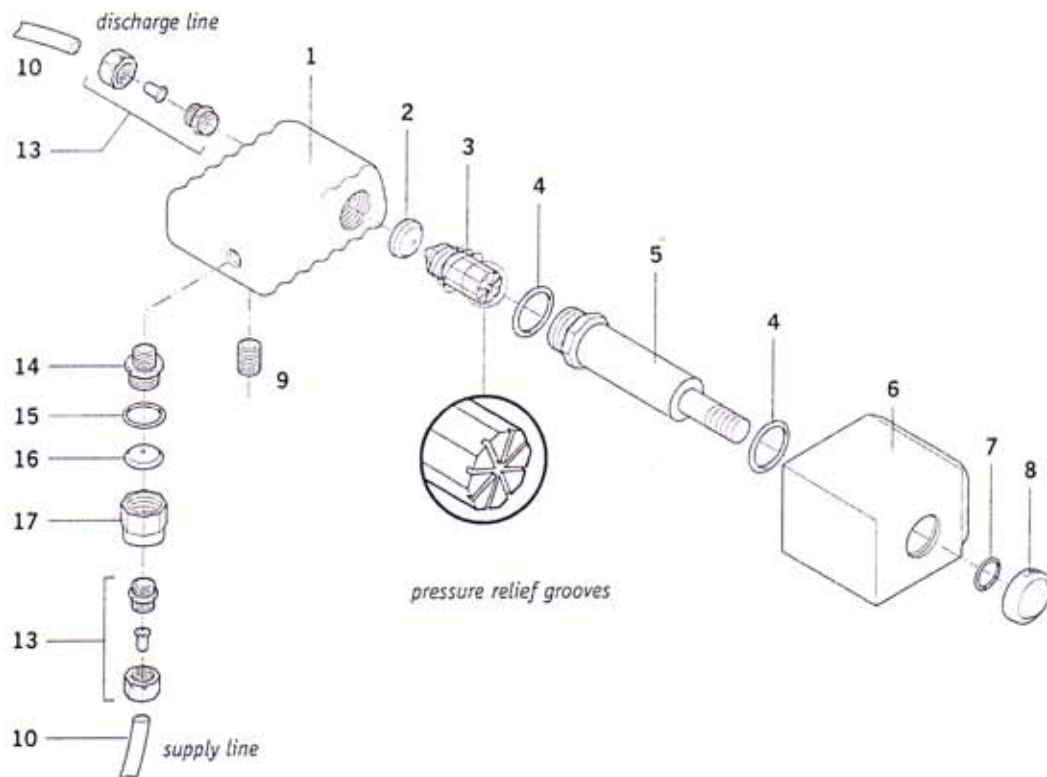


braglia pilot valve assembly only parts unique to pilot assembly are listed. all other parts are listed with the dump valve.

#	Part No	Description	Qty
1	HUV525B	Dual valve mount plate	1
2	0310600CHSS	Hex cap screw, 5/16" x 6" stainless steel	2
3	call	1/2"x 24" pvc hose. 3/4"FBSP x 11/16-16UN	1 <i>relief line to tank. couples to 1/4TT fitting.</i>
4	SSPLG075	Port plug, 3/4" stainless steel	1
5	call	1/2"x 20" pvc hose. 3/4"FBSP x 11/16"FPT	1 <i>control line to left hu-valve</i>
6	call	1/2"x 38" pvc hose. 3/4"FBSP x 11/16"FPT	1 <i>control line to right hu-valve</i>
7	180.602.48	valve body o-ring	1

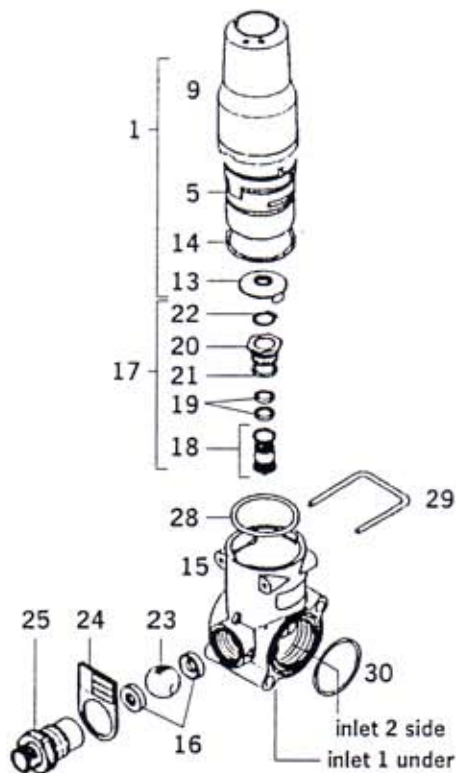


PART NUMBER		AVAILABLE SPARE PARTS KITS	
individual components			
subassembly order number		180.302.33	spare parts kit
basic assembly order number			
component included in a spare parts kit kits listed, right			



*Parts unique to the solenoid hu-valve assembly listed here.
Standard hu-valve assembly found on Powerblast discharge strainer and hu-valves page.

braglia 180.1910.19 repair



valve troubleshooting

Valve doesn't activate.

Check cable connections- look for oxidation and clean.

Check fuse. **ONLY USE 1.25A time delay fuse.**

Repeated fuse blow out.

Disconnect power cable and remove lock 29 with screwdriver.

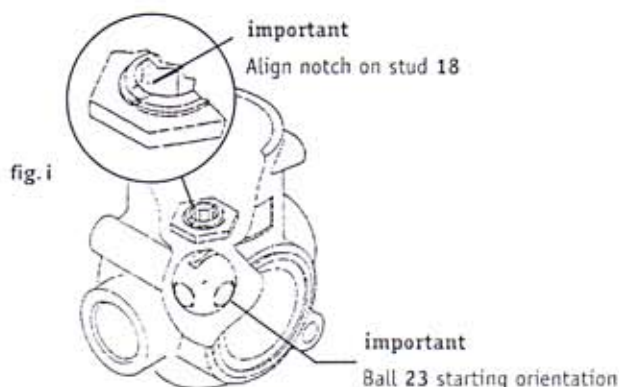
Remove unit 1 from valve body. Take care with O-ring 28.

Check the rotation of ball 23 using Ø10 flat screwdriver inserted in the square of stud 18. If the rotation is not smooth replace seal 16 and ball 23 as instructed above. After checking rotation be sure the notch on stud 18 is aligned as illustrated in *fig. i*, below.

If the rotation of ball 23 is smooth, check the unit 1 by connecting the blue and brown cables to a 12Vdc line. Correct rotation is 90° between microswitches. If unit 1 does not rotate correctly replace the whole unit.

Leakage from seals.

Replace seals using the repair kit 180.302.31. Follow assembly instructions, right.



valve disassembly

Disconnect power supply and remove all lines from valve ports.

Hold the valve firmly on inlet 2 side and remove nipple 25 from valve using a CH32 wrench. Take care of plate 24. When gripping the valve body 15 protect the O-ring seats.

Inspect seal 16 on nipple 25 and replace if necessary.

Remove ball 23 and replace seal 16 on the valve body.

Pull clamp 29 with Ø10 screwdriver.

Remove the gearmotor unit 1 from valve body. Inspect O-rings 14, 28 and replace if necessary.

Use CH24 socket wrench to remove the sub assembly 17.

Remove the lock ring 22 with pliers and pull the stud and washer 18. Check and replace O-rings 19, 21 and stud washer.

Before beginning assembly all parts should be clean and dry- no residual valve assembly

sealants. Lubricate all O-rings and sliding surfaces. Subassemblies should be ready before valve assembly: Nipple/seal 25/16; Drive subassembly 17.

Hold the valve firmly on inlet 2 side and remove nipple 25 from valve using a CH32 wrench. Take care of plate 24. When gripping the valve body 15 protect the O-ring seats.

Assemble and lubricate seal 16 in valve body. Do not damage seal surface.

Apply thread sealant on guide 20 of subassembly 17 and screw the assembly onto the valve body. Using a CH24 wrench, tighten assembly until flush with housing. Use a screwdriver to position the notch on stud 18 as illustrated in *fig. i*, below.

Insert ball 23 on stud 18. Ball should be oriented as in *fig. 1*, below.

Lubricate seal 16 on nipple with waterproof grease. Apply thread sealant on nipple 25.

Position plate 24 and with a CH32 wrench thread nipple 25 with seal 16 into valve until flush with body. **Important: maximum torque 35Nm.**

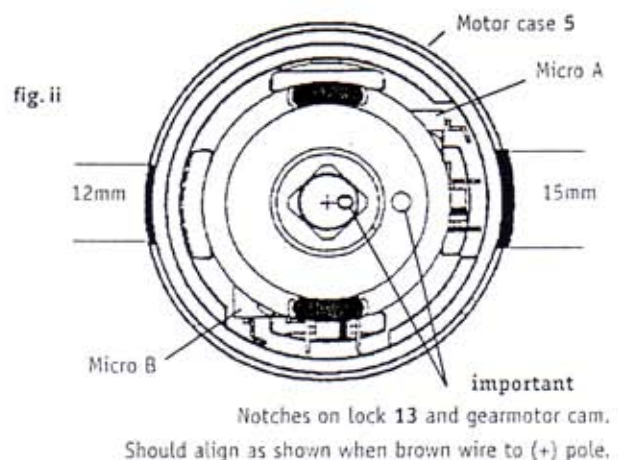
Place O-ring 28 into valve body.

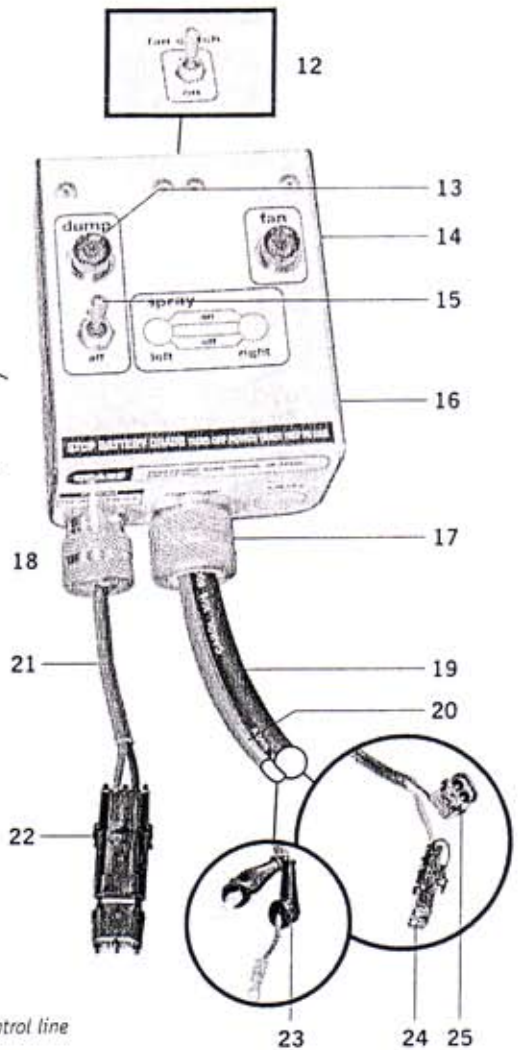
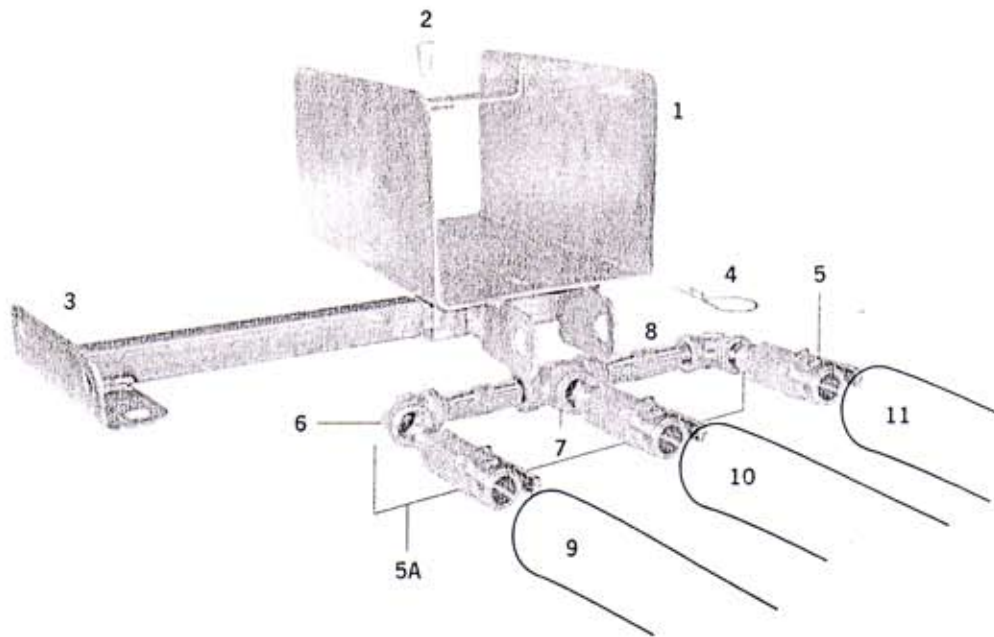
Before gearmotor operation, install 1.25A time delay fuse.

The mark on lock 13 and gearmotor cam must be aligned as illustrated in *fig. ii*. Indicators on casing 5 align with marks on lock and gearmotor.

Lubricate casing 5 and O-ring 14. Insert unit 1 inside the valve body. the cap 9 must install flush against the valve body 15.

Install lock 29. Attach plumbing lines and electrical.





powerblast manual spray control handset

#	Part No	Description	Qty	
1	PBSC-BA	Handset casing	1	
2	0370050	3/8" x 1/2" plated set screw	1	
3	MB1282	Fender mount post	1	
4	CHP3	Cotter hair pin #3	1	
5	V19M	Flow control valve	3	
5A	V19MASSY	Valve control assembly (#5-8 complete)	1	
6	SSEL025	1/4" stainless steel 90° elbow	2	
7	SSTEE025	1/4" stainless steel tee	1	
8	SSN025150	1/4" x 1-1/2" stainless steel nipple	2	
9	call	10' x 3/8" pvc hose	1	left manifold control line
	1325	11/16-16UN cap, brass	1	
	4251-375	3/8" hosebarb for 1325 cap, brass	1	
	EL050F037HB	1/2" FBSP, 3/8" HB elbow, brass	1	
10	call	9' 5" x 1/2" pvc hose	1	line to control both manifolds
	1325	11/16-16UN cap, brass	1	
	4251-500	1/2" hosebarb for 1325 cap, brass	1	
	EL050F050HB	1/2" FBSP, 1/2" HB elbow, brass	1	
11	call	9' 10" x 3/8" pvc hose	1	right manifold control line
	1325	11/16-16UN cap, brass	1	
	4251-375	3/8" hosebarb for 1325 cap, brass	1	
	EL050F037HB	1/2" FBSP, 3/8" HB elbow, brass	1	
12	1NT1-2	Fan clutch power switch	1	
13	PBPLA	Pilot lamp	1	
14	PBPLA	Pilot lamp	1	
15	2NT1-3	Dump switch	1	
16	PBSC-1A	Handset control panel	1	
17	SHC1027	Cable strain relief fitting	1	
18	SHC1022	Cable strain relief fitting	1	
19	see below	16/4 cable	1	dump valve power
20	see below	12/2 cable	1	fan clutch power
21	call	12/2 cable	1	power input
22	38042	Waytek connector	1	connect to battery source
23	MS25171-15	Terminal hood	2	
24	38043	Waytek connector	1	for accessory use
25	38042	Waytek connector	1	connect to dump valve

cable lengths

	19	20
Common Powerblast	24'	26' 9"
TTN Profile	25' 6"	28' 9"
1000 gallon, 33" fan	28' 4"	30' 6"
38" fan units	24'	33'
Tower units	24'	28' 9"

solenoid actuated hu-valve parts

#	Part No	Description	Qty
1	HUV731L	Brass valve selector block, left (pictured)	1
	HUV731R	Brass valve selector block, right	1
2	DCER-8	Ceramic orifice insert, size 8	2
3	HUV740	Actuating needle, complete	2
	HUV7401S	Spring only	
4	HUV741	O-ring	2
5	HUV742	Stem	2
6	HUV72109	Coil	2
7	HUV743	O-ring	2
8	HUV744	Stem cap	2
9	SSN012CLOSE	1/8" x close nipple	2
10	HUVTUBE	1/4" X 9" nylon tube	4
11	HUV745	O-ring	2
13	HUV012CB	Brass compression fitting, 1/8"MPT	4
14	1/8TT	TeeJet body	2
15	12-2.5MMN70	O-ring	2
16	D6	Steel orifice insert, size 6. Install as illustrated.	2
17	4676-1/8	1/8"FPT x female TeeJet adapter	2
18	HUV100C	Hu-valve cap	2
19		Solenoid actuated Hu-valve body, left	1
		Solenoid actuated Hu-valve body, right	1
20	HUV-LOOP	Diaphragm bypass loop, discharge side	2
21	HUV72232	Valve signal control cable	2
22		Strainer manifold	1
23	SSEL075	3/4" 90° SS elbow	1
24		See powerblast discharge strainer and hu-valve parts page	1
25		See powerblast discharge strainer and hu-valve parts page	2
26	MGXMP075	3/4"MGHT X 3/4"MIPT adapter	1
27	HUV-LOOP	Diaphragm bypass loop, supply side	2

do not overtighten retaining screw
seal screw head cavity with silicone

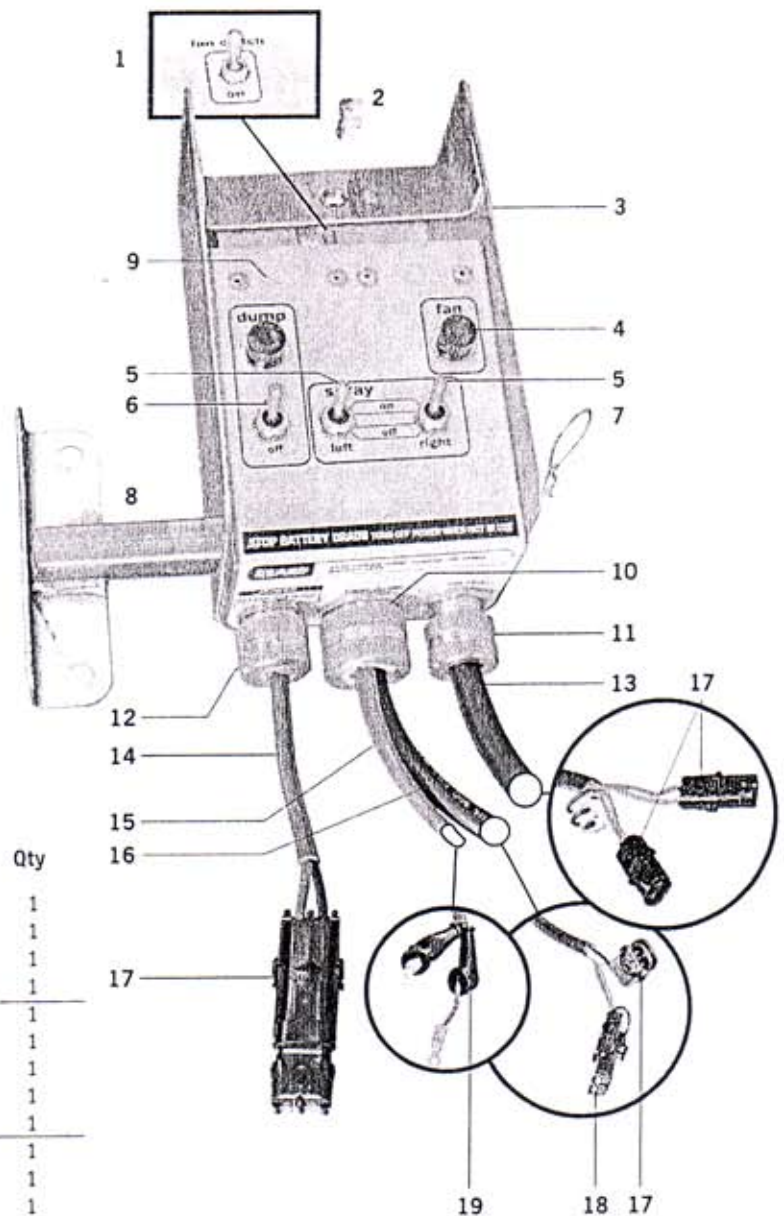
valve troubleshooting

Valve doesn't turn ON.

- 1 Check pump. The valve will not function without system pressure. Check and clean line strainers.
- 2 Check the coil plug **21**. The red light on the plug housing will glow if it is getting power. If the handset master switch is on and the light does not glow, check the wiring.
- 3 If the light on the plug glows, check the coil function **6**. With the tractor engine shut off, cycle the handset valve control switch on and off: listen for the audible *click* sound of the solenoid assembly. If you hear the clicking, skip to the next step. If the valve does not audibly respond, use a steel (not stainless) object to check for magnetism at the stem cap **8**. The stem should be magnetized when switched on- if not, check the wiring or replace the coil.
- 4 If the coil magnetizes properly, the needle **3** is probably stuck. Tapping the brass housing **1** may release the needle. If not, disassemble the coil and stem **5**. Clean the needle, stem cavity and brass housing cavity- all surfaces should be free of debris. Check the ceramic orifice **2**. The orifice should be unobstructed and installed as illustrated. Make certain the needle **3** is installed as illustrated.
- 5 Check the D6 orifice **16** in the bypass loop for wear. Replace if necessary.
- 6 Check if the discharge line **20** is blocked.
- 7 Check if the plunger in the Hu-valve cap **18** is stuck. An assembly diagram for the Hu-valve cap can be found on the *powerblast discharge strainer and hu-valves* parts page.

Valve doesn't turn OFF.

- 1 Check for blockage in supply line **27**. Clean as required.
- 2 Remove the Hu-valve cap **18** from the Hu-valve body **19**. For a list of internal parts for the Hu-valve, refer to the assembly diagram on the *powerblast discharge strainer and hu-valves* parts page. Check for a ruptured diaphragm **HUV104DV**, cracked valve seat **HUV110**, or stuck plunger.
- 3 Check the coil **6** function. With the tractor engine shut off, cycle the handset valve control switch on and off: listen for the audible *click* sound of the solenoid assembly. If you hear the clicking, skip to the next step. If the valve does not audibly respond, use a steel (not stainless) object to check for magnetism at the stem cap **8**. The stem should not be magnetized when switched off. Replace the handset switch if it will not de-magnetize.
- 4 If the coil de-magnetizes properly, the needle **3** is probably stuck. Tapping the brass housing **1** may release the needle. If not, disassemble the coil and stem **5**. Clean the needle, stem cavity and brass housing cavity- all surfaces should be free of debris. Check the ceramic orifice **2** for wear or damage; replace if necessary. Check the needle **3** and spring for wear or damage: the pressure relief grooves, *previous page*, must be unobstructed. Make certain the needle/spring is installed as illustrated. Replace if necessary.



powerblast electric spray control handset

#	Part No	Description	Qty
1	1NT1-2	Fan clutch power switch	1
2	O370050	3/8" x 1/2" plated set screw	1
3	PBSC-1B	Handset casing	1
4	PBPLA	Pilot lamp	1
5	2NT1-7	Spray switch if using Hu-Valve control block	1
	2NT1-3	Spray switch if using Braglia pilot valves	1
6	2NT1-3	Dump switch	1
7	CHP3	Cotter hair pin #3	1
8	MB1282	Fender mount post	1
9	PBSC-1A	Handset control panel	1
10	SHC1027	Cable strain relief fitting	1
11	SHC1023	Cable strain relief fitting	1
12	SHC1022	Cable strain relief fitting	1
13	see below	16/6 cable	1
14	call	12/2 cable	1
15	see below	12/2 cable	1
16	see below	16/4 cable	1
17	38042	Waytek connector	1
18	38043	Waytek connector	1
19	MS25171-15	Terminal hood	2

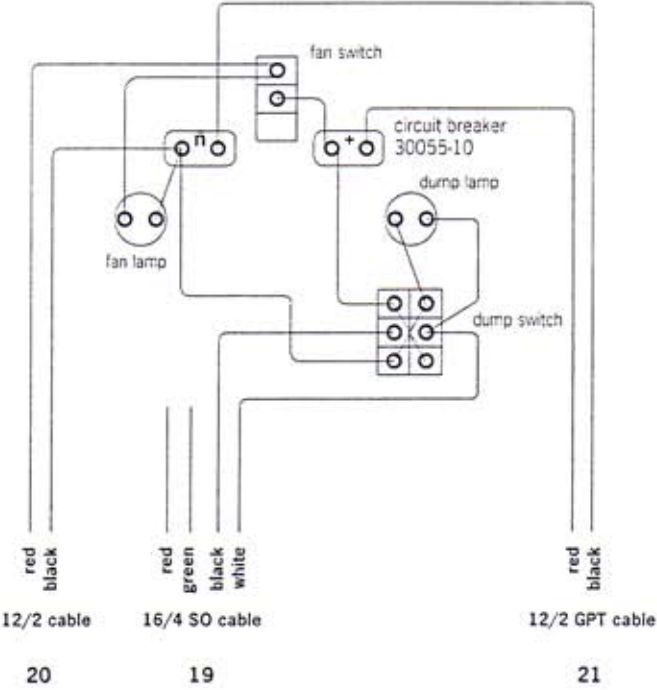
spray valve control
power input
fan clutch power
dump valve power

for accessory use

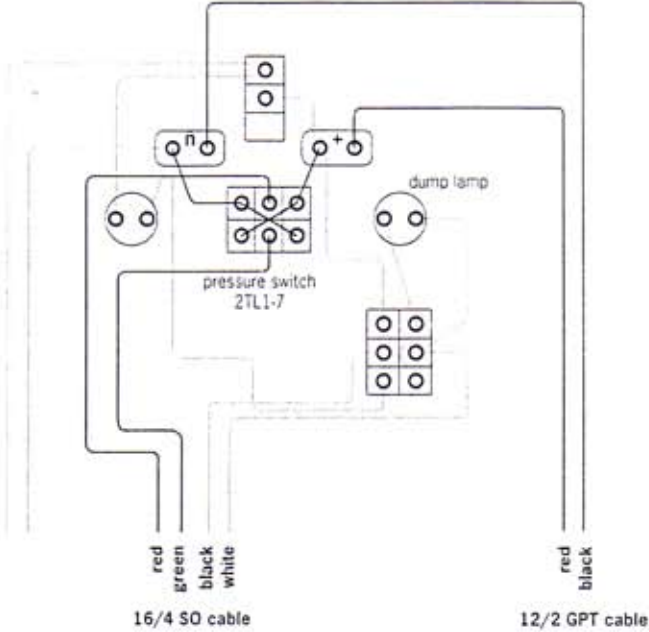
cable lengths

	13	15	16
Common Powerblast	20' 6"	26' 9"	24'
TTN Profile	21' 6"	28' 9"	25' 6"
1000 gallon, 33" fan	24' 6"	30' 6"	28' 4"
38" fan units	20' 6"	33'	24'
Tower units	20' 6"	28' 9"	24'

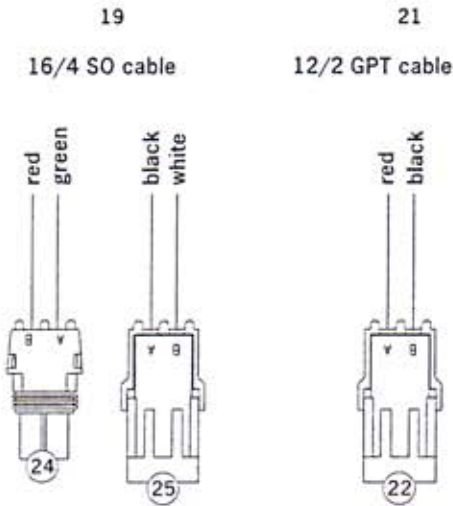
wiring diagram
manual spray controls/electric dump

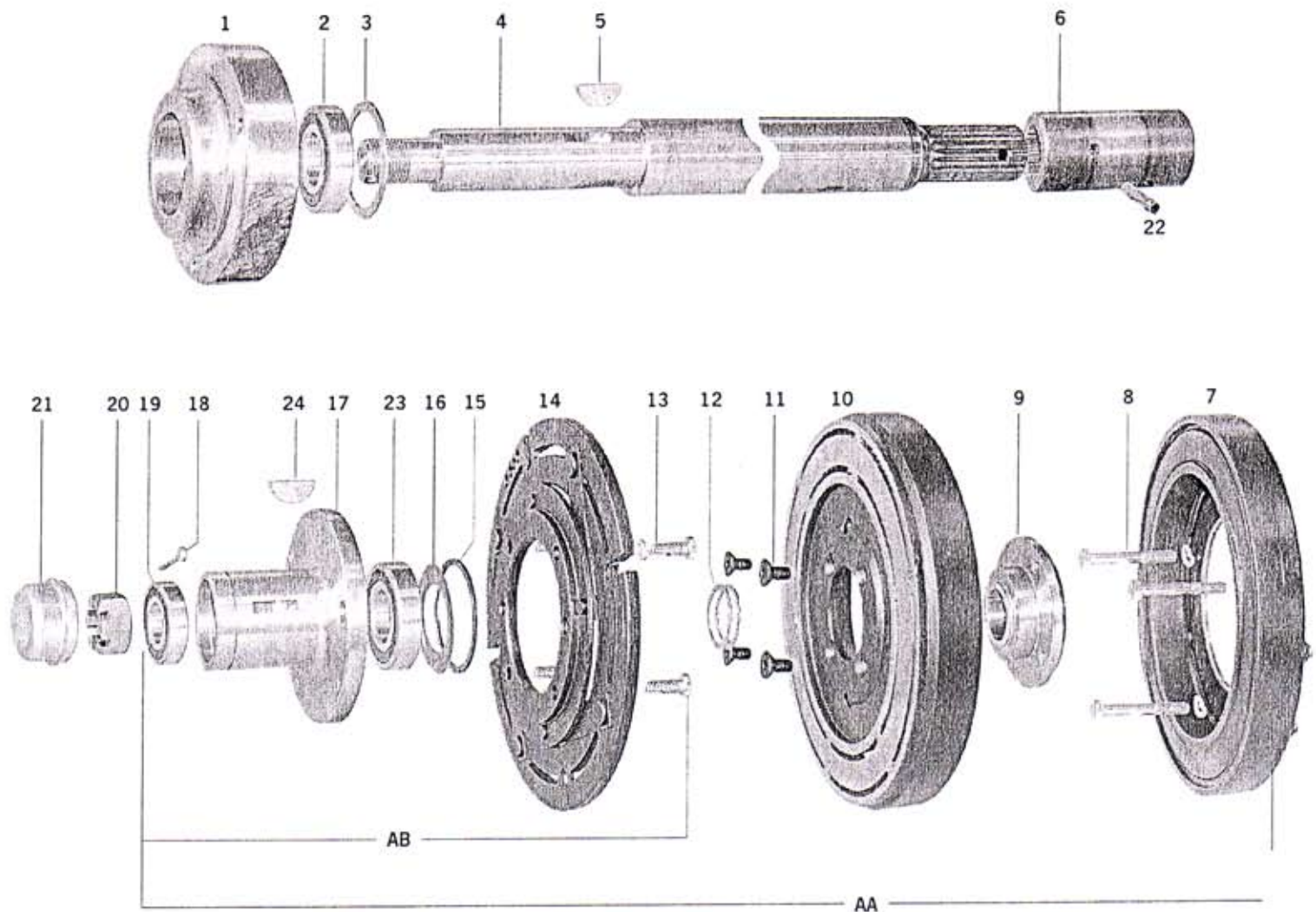


optional pressure adjust switch
requires optional pressure valve kit with plumbing



cable end wiring

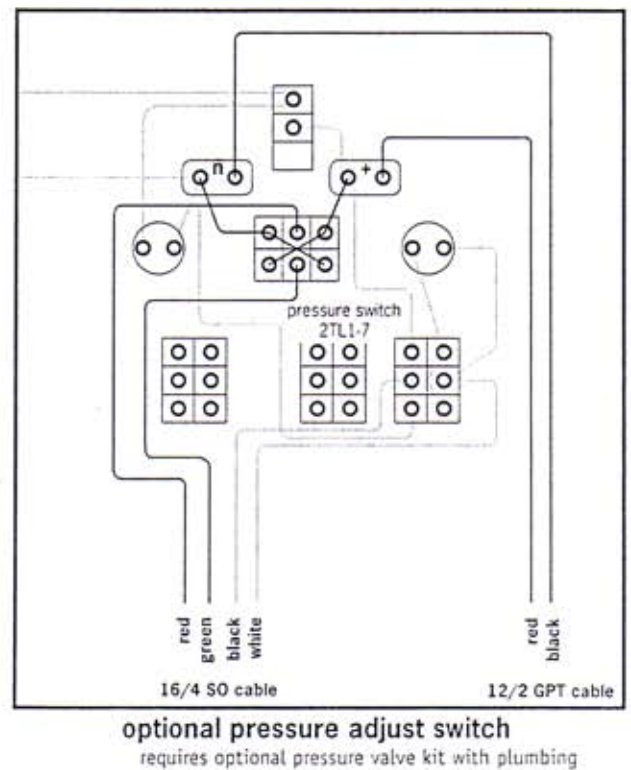
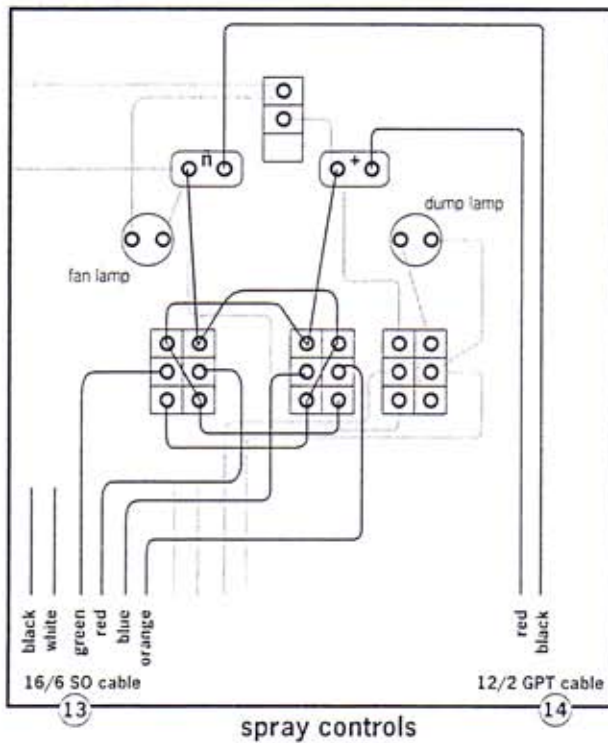
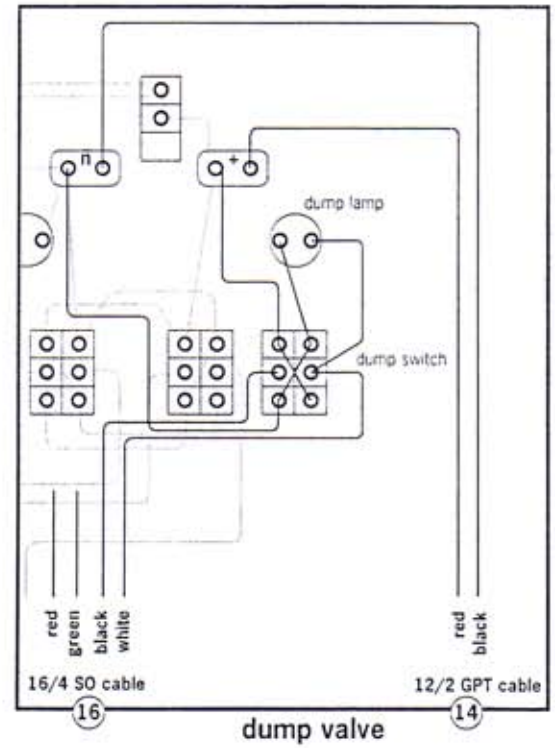
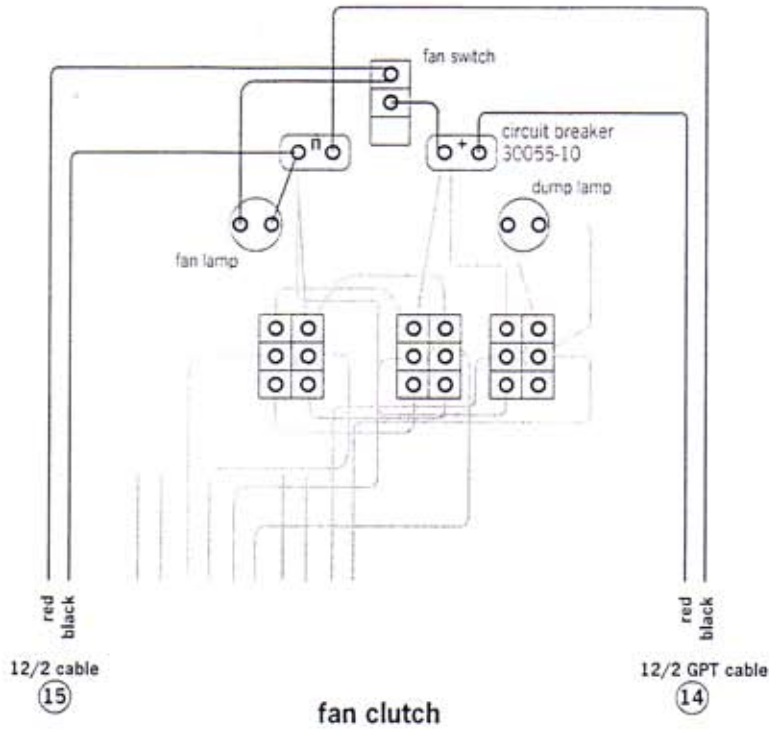




fan clutch and fan shaft assembly

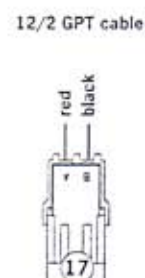
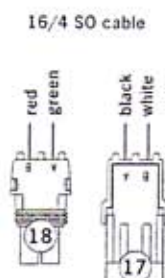
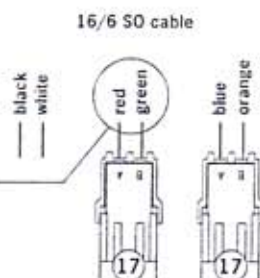
#	33" fan parts	38" fan	Tower models	Description	Qty
1	PB500X	PB500XTW	PB500XTW	Clutch adapter	1
2	6207-2RS	6208-2RS	6208-2RS	Bearing	1
3	PB503	PB503TW	PB503TW	Bearing retainer. Install with bevel on fan side	1
4	PBG027A	PBG027A38	PBG027TW1	Fan shaft	1
			PBG027TW2	Deep tower fan shaft, 54-9/16" long	1
5	KW0310125	KM0310150	KM0310150	Key woodruff on 33", square on others	1
6	M2145	M2145	M2145	21 spline coupling	1
7	PB6801	PB6801	PB6801	Clutch coil	1
8	0310250CH5	0310250CH5	0310250CH5	Hex cap screw, 5/16" x 2-1/2"	3
	031WS	031WS	031WS	Lock washer, 5/16"	3
9	PB501	PB501TW	PB501TW	Rotor hub	1
10	PB6802	PB6802	PB6802	Clutch rotor	1
11	0370075FHA5	0370075FHA5	0370075FHA5	Flat head allen screw, 3/8"-16 x 3/4"	4
12	SHIMPK	SHIMPKTW	SHIMPKTW	Shims- qty. as required	
13	0370100CH5	0370100CH5	0370100CH5	Hex cap screw, 3/8" x 1" Gr.5	4
	037WS	037WS	037WS	Lock washer, 3/8"	4
14	PB6803	PB6803	PB6803	Clutch disc	1
15	RRT283	RRT283	RRT283	Spiral locking ring	1
16	SPGR27-45	PBIN195	PBIN195	Grease retainer	1
17	PB6	PB6TW	PB6TW	Clutch Mandrel	1
18	0180175CP	0180175CP	0180175CP	Cotter pin, 3/16" x 1-3/4"	1
19	6205-2RS	6205-2RS	6205-2RS	Ball Bearing, replaces 30205 roller bearing	1
20	101NSL	101NSL	101NSL	Castle nut, 1" NF	1
21	PB188	PB188	PB188	Dust cap	1
22	0310200RP	0310200RP	0310200RP	Roll pin, 5/16" x 2"	1
23	6207-2RS	6008-2RS	6008-2RS	Bearing	1
24	KW0310125	KW0310125	KW0310125	Woodruff key	1
AA	13179W6	13179W6TW	13179W6TW	Complete clutch assembly, less bolts (#8)	
AB	PB6C	PB6CTW	PB6CTW	Clutch mandrel/disc assembled complete	

wiring diagram electric spray controls/electric dump



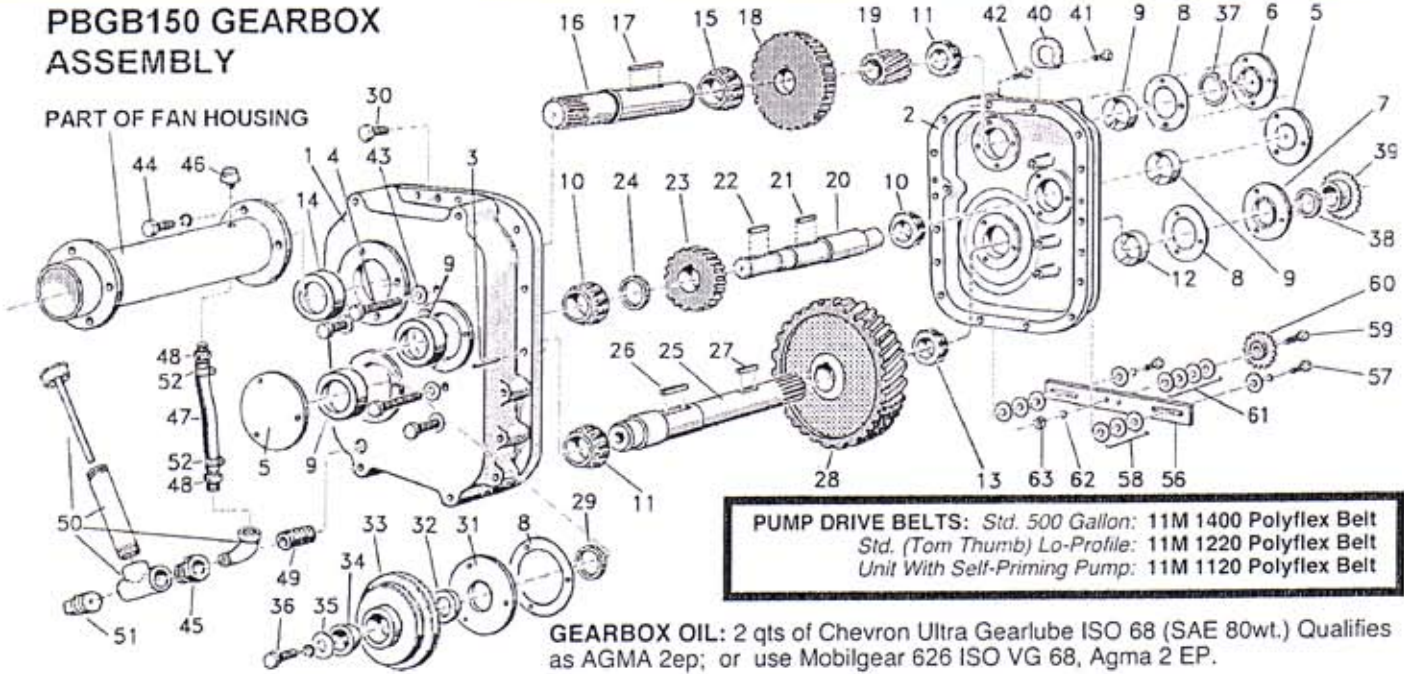
cable end wiring

Cable connections shown here for Rears electric Hu-Valve controls. For Braglia pilot controls, switch red and green in 16/6 SO cable.



POWERBLAST MANUAL

PBGB150 GEARBOX ASSEMBLY



Change oil while warm every 200 hrs or seasonally which ever comes first.

Item	Part No.	Description	Qty
1	PBG008	Case, Rear Half	1
2	PBG009	Case, Front Half	1
3	0310125RP	Pin, 5/16" x 1-1/4" Roll	2
4	0370325CH5	Screw, 3/8-16 x 3-1/4" GR5 Cap	4
	037WUSS	Washer, 3/8 Flat	4
5	PBG001	Follower (Use Anaerobic Sealer)	2
6	PBG003	Follower	1
7	PBG004	Follower	1
8	PBG007	Shims, Bearing Adjusting (Vary in No.)	
9	02820	Cup, Timken	4
10	02875	Cone, Timken	2
11	02877	Cone, Timken	2
12	2735X	Cup, Timken	1
13	2788	Cone, Timken	1
14	3820	Cup, Timken	1
15	3872	Cone, Timken	1
16	PBG010B	Output Shaft, 1-3/8" 21-Spline	1
17	KM0310312	Key, 5/16" x 3-1/8" Bar	1
18	PBG104	Gear, Helical 80-Tooth	1
19	PBG101	Gear, Helical 19-Tooth	1
20	PBG012	Shaft, Accessory	1
21	KM0250125	Key, 1/4" x 1-1/4" Bar	1
22	KM0180175	Key, 3/16" x 1-3/4" Bar	2
23	PBG102	Gear, Helical 44-Tooth	1
24	PBG028	Spacer, .230 Thick	1
25	PBG150	Shaft, Input (17-Spline)	
26	KM0370175	Key, 3/8" x 1-3/4" Bar	1
27	KM0250075	Key, 1/4" x 3/4" Bar	1
28	PBG103	Gear, Helical 73-Tooth	1
29	9876	Seal	1
30	03700100CH5	Cap Screw, 3/8" X 1" Case Jacking	1
31	PBG002	Follower	1
32	PB15AS	Spacer, (Inner bevel faces grbx).355 thick	1
33	PB15A	Pulley, 2-Groove (Belts follow)	1
	11M1400	Belt, Pump Drive (Standard 500gal P.B.)	1

Item	Part No.	Description	Qty
	11M1220	Belt, Pump Drive (Lo-Profile Tom Thumb)	1
	11M1120	Belt, Pump Drive (Self-Priming pump)	1
34	PBTL44A	Hub, Taper	1
35	SPSW-F4	Washer, 1/4" Fender	1
36	0260075CH5	Screw, 1/4-28 x 3/4" GR5 Hex Cap	1
37	5100-137	Snap Ring, Inner	1
38	14807	Seal	1
39	PB1B4021	Sprocket, 1-1/2" Bore 21-Tooth	1
40	PBGLIFT	Lifting Eye	1
41	0370125CH5	Screw, 3/8" x 1-1/4" GR5 Cap	1
42	0370100CH5	Screw, 3/8" x 1" GR5 Cap	13
43	037WUSS	Washer, 3/8" Flat	4
44	0500150CH5	Screw, 1/2" x 1-1/2" NC GR5 Cap	4
45	BSH075025	Bushing, 3/4" to 1/4"	1
46	PBG006A	Breather,	1
47	PBH010	Hose, 1/2"ID x 5/8"OD x 4-1/2" Oil Return	1
48	HFC025050	Barb, 1/2" x 1/4"Threads Hose	2
49	SSNO75CLOSE	Nipple, Close (3/4")	1
50	PBG1716	Dip Stick, 3/4"FGHT	1
	SSNO750600	Nipple, 3/4"MGHT x 3/4"MPT X 6"	1
	SOT075	Side-Outlet-Tee (3/4")	1
	STL45075	Street Elbow, 45° (3/4")	1
51	PLG075	Plug (lower one is oil drain plug) (3/4")	1
52	WC6203	Hose Clamp	2
56	PBG022	Bracket, Idler Sprocket Mt. (Std & LoPro)	1
	PBG022SP	Bracket, Idler Sprkt Mt. (Self-Prime Pump)	1
57	0500150CH5	Screw, 1/2" x 1-1/2"NC Hex Cap	2
58	050WUSS	Washer, 1/2" Flat	8
59	0620250CH5	Screw, 5/8" x 2-1/2" Hex GR5 Cap	1
60	PBG7-40A	Sprocket, Idler (Fafnir 010-4018S AG)	1
	PB40CH	Chain, No.40 (specify Length)	1
61	062WUSS	Washer, 5/8" Flat	4
62	062WS	Washer, 5/8" Lock	1
	062WUSS	Washer, 5/8 Flat (w/Self-prime pump sys.)	1
63	062NF	Nut, 5/8" NC GR5	1

Loctite application

Where instructed, **Red Loctite (271)** or equivalent should be used.
All application surfaces should be cleaned first with **Loctite Primer** or equivalent.
Apply Loctite sparingly.
Apply only where instructed.

clutch assembly

Before beginning assembly, all parts should be clean and dry- *no residual sealants*. Subassemblies should be ready before clutch assembly (instructions follow): Mandrel/Disk AB*; Rotor subassembly 9/10.

Coat the fan shaft splines 4 with anti-seize and slide coupling 6 onto fan shaft and secure with roll pin 22.

Press bearing 2 into adapter 1. Press only on outer race.

Press adapter onto fan shaft 4 as illustrated, right.

Slide bearing retainer 3* onto fan shaft with bevelled face toward the fan. Coat the mandrel tube mating surface of the clutch adapter 1 with anti-seize. Pass the coupled end of the fan shaft assembly into the mandrel tube. Use a mallet to tap the clutch adapter 1 and bearing retainer 3* against the mandrel tube. Align adapter mounting holes with mandrel tube flange.

Align coil 7 bolt holes such that terminal connectors are accessible. Apply anti-seize to bolt threads and install with lockwashers 8.

Tap woodruff key 5 into place on the fan shaft 4.

Install rotor subassembly 9/10 on fan shaft 4. Slide hub 9 onto key 5.

Slide clutch mandrel subassembly AB* onto fan shaft 4.

If 19 is a roller bearing, install bearing cone into clutch mandrel subassembly AB*. Thread castle nut 20 onto fan shaft. Tighten the nut to seat bearings properly. Clutch mandrel subassembly should rotate freely without friction. **Applying excessive force to castle nut can damage bearings.**

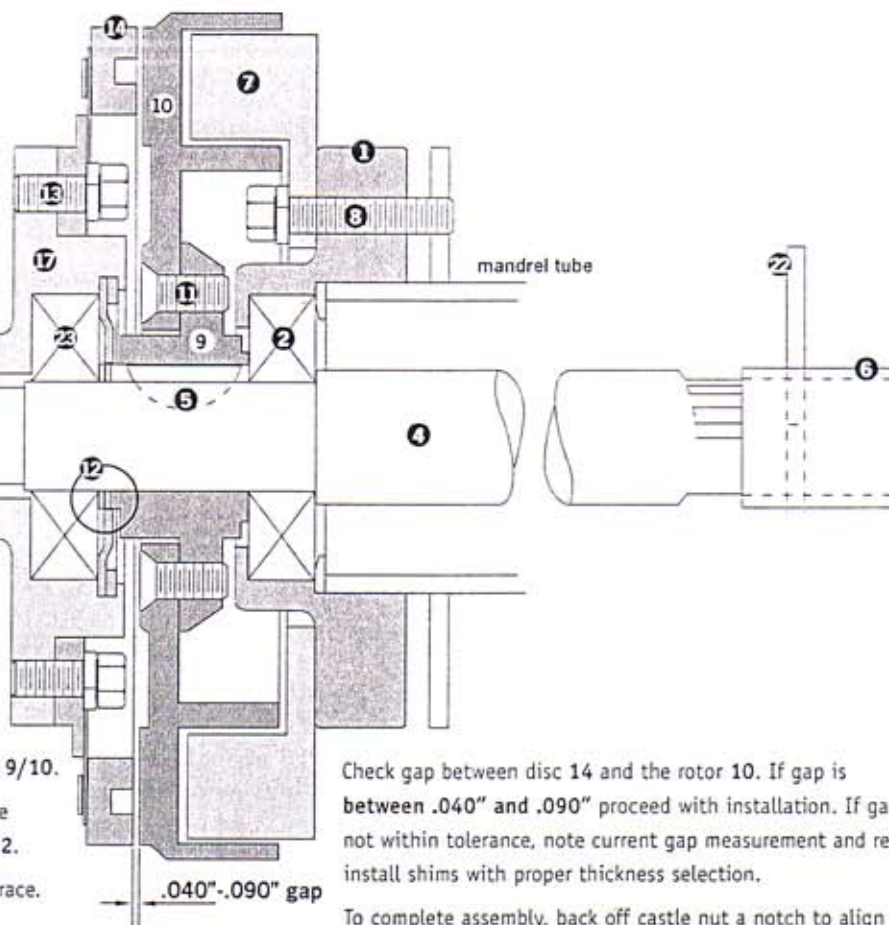
With the clutch assembly properly seated, measure the gap between the clutch disc 14 and the rotor 10. **Important:** For proper operation the gap must be between .040" and .090". If the gap is too tight, note your current gap and select shims 12 to get your desired spacing.

Remove the castle nut 20, (bearing cone 19 if used) and the clutch mandrel subassembly AB*. Apply Loctite to the inner surface of bearings in subassembly AB* (23 & 19 if ball bearing) as instructed in Loctite sidebar.

If you need to install shims 12 to widen the gap between disk and rotor, slide them onto the fan shaft now, against the hub 9.

Reinstall clutch mandrel subassembly AB* as before.

If 19 is a roller bearing, apply Loctite to the inner surface of bearing cone before re-installing. Thread castle nut 20 onto fan shaft as before. With nut tightened, clutch mandrel subassembly should spin freely without friction.



Check gap between disc 14 and the rotor 10. If gap is between .040" and .090" proceed with installation. If gap is not within tolerance, note current gap measurement and re-install shims with proper thickness selection.

To complete assembly, back off castle nut a notch to align with hole in fan shaft. Install cotter pin 18. Tap dust cap 21 into place with a mallet.

mandrel/disc subassembly

Press bearing 19 into clutch mandrel 17. Press only on outer race.

Press bearing 23 into clutch mandrel 17. Press only on outer race.

Install grease retainer 16* with flanged inner diameter away from bearing surface. Install spiral locking ring 15* into groove.

Align disc and mandrel *removal access holes* before bolting together.

Apply Loctite to bolts 13 and use lockwashers to fasten disc to threaded holes in clutch mandrel.

rotor/hub subassembly

To bolt rotor hub 9 to rotor 10, use recessed allen head bolts 11 and apply Loctite to threads. Orient hub and rotor as illustrated, above.

clutch burnishing

Factory clutch installations are followed with a burnishing step: a surface preparation necessary to provide the rated torque of the clutch. The blackened surfaces of disc and rotor are important to this process- do not remove this coating prior to burnishing.

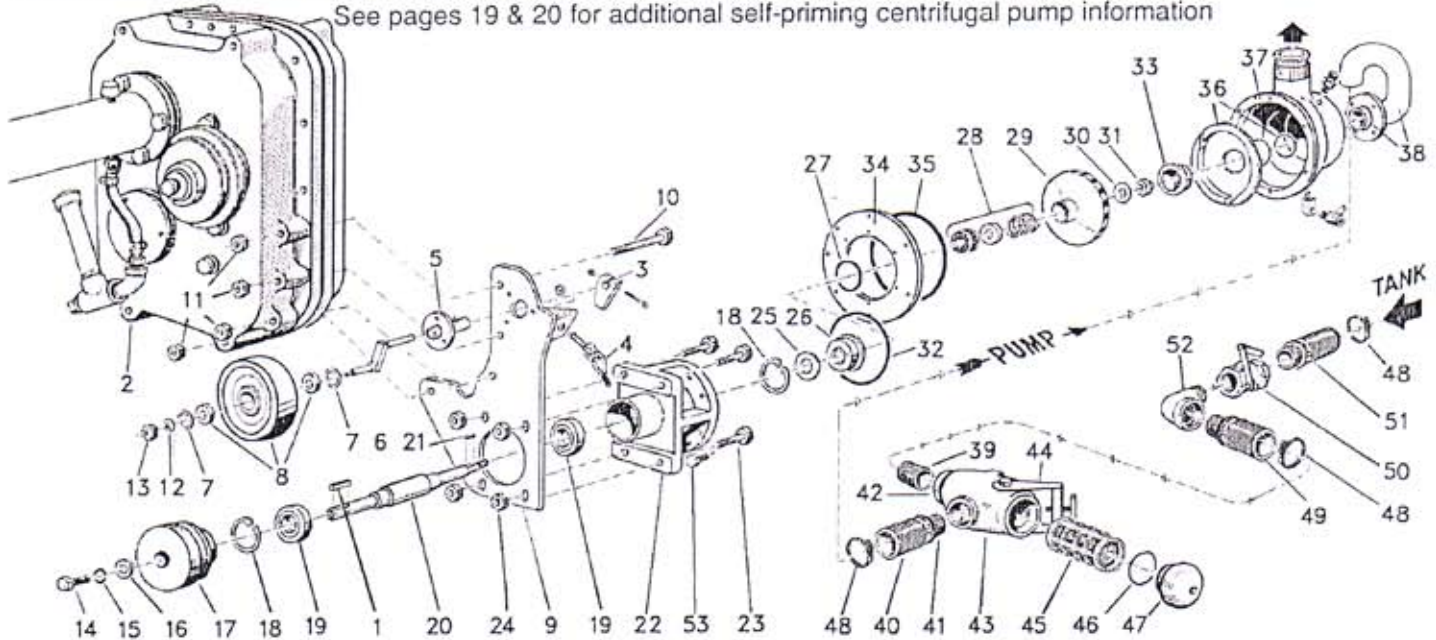
With the fan installed, hook the Powerblast up to your tractor and engage PTO. Maintain an engine speed of 1000-1200RPM.

Cycle the fan clutch on and off 15-20 times over a one minute period (ON cycle is momentary- enough time to engage the clutch; OFF cycle for 2-3 seconds- enough time for deceleration).

* Items included in above illustration, but not numbered.
Number matches item to facing parts breakdown.

SELF-PRIMING CENTRIFUGAL PUMP ASSEMBLY

See pages 19 & 20 for additional self-priming centrifugal pump information



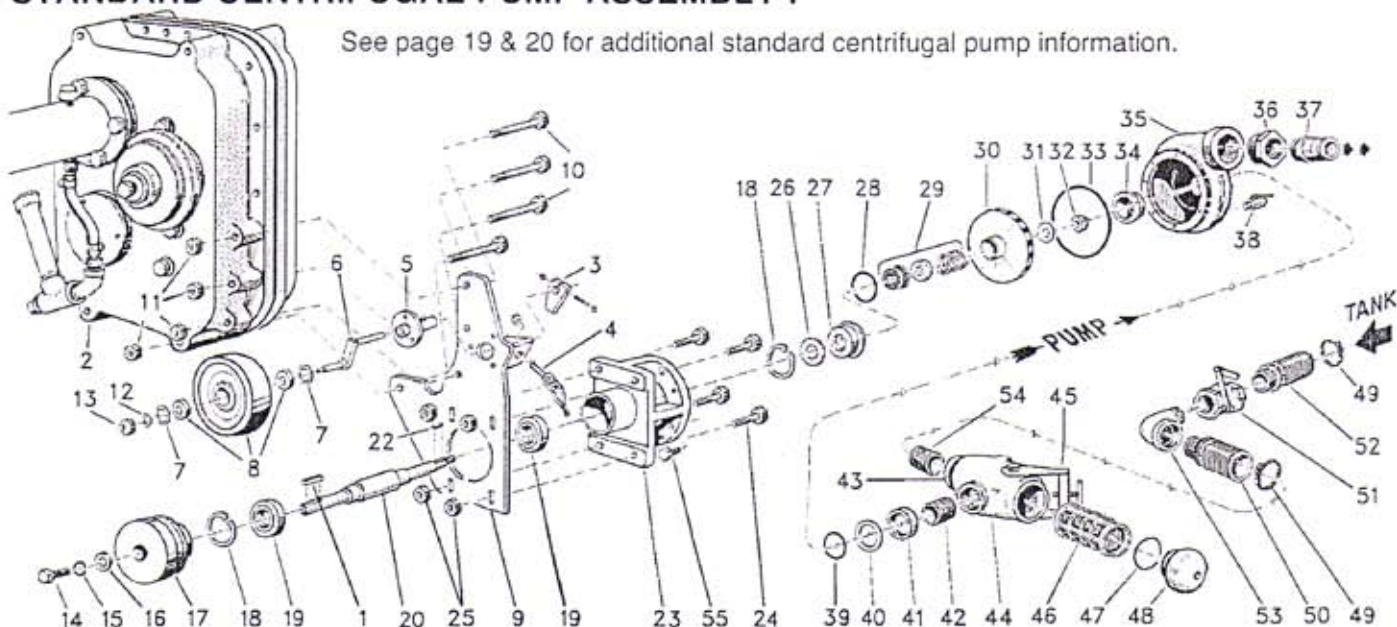
REPLACEMENT SELF-PRIMING PUMP DRIVE BELT: 11M 1120 POLYFLEX

Item	Part No.	Description	Qty
1	SPK3-28	Key, 3/16" x 1-3/4" Bar	2
2	PBGB1	Gearbox	1
3	PBSP7141	Pivot Arm	1
4	PBSP725	Plunger Assembly	1
5	PBSP721	Housing, Idler	1
	BRG140	Bushing, Bronze	2
6	PBSP716	Shaft, Idler	1
7	N5000-187	Snap Ring	2
8	PBSP7151	Pulley, Idler	1
	RMC6204	Bearing, Ball	2
9	PBSP712N	Bracket, Self-priming Pump Mount	1
10	0370250CH2	Screw, 3/8" x 2-1/2" Hex GR2 Cap	4
11	037NF	Nut, 3/8" NC	4
	037WS	Washer, 3/8" Lock	4
12	050WSAE8	Hard Flat Washer, 1/2"SAE	1
13	051NFL	Flex Lock Nut, 1/2"-20 Fine	1
14	0260075CH5	Screw, 1/4" x 3/4" NF GR5 Cap	1
15	025WS	Washer, 1/4" Lock	1
16	SPSWF4	Washer, Special	1
17	RPA-SP	Pulley, Pump Step	1
18	N5000-187	Snap Ring, Inner	2
19	5204	Bearing, Pump Shaft (repl: 204P)	2
20	RPA-SH	Shaft, Pump	1
21	SPK2-8	Key, 1/8" x 5/8" Square	1
22	RPA-PD	Pedestal, Pump	1
23	0370175CH2	Screw, Pedestal 3/8" x 1-3/4" NC Cap	4
24	037NC	Nut, Pump Pedestal 3/8"NC	4
25	RPA-WD	Washer, Plastic Water Deflector	1
26	RPA-SE	Housing, Pump Seal	1
27	11-137	O-Ring, Pump Seal Housing	1
28	1R308	Seal, Pump	1
29	RPA-IM	Impeller, Pump	1
30	RPA-WA	Washer, Special	1
31	RPA-NUT	Nut, 3/8" SS Acorn	1

Item	Part No.	Description	Qty
33	RP5	Wear Ring, Pump Casing	1
34	PBSP803	Back Plate, Self-Priming Pump	1
	0310137CH8	Bolt, 5/16" x 1-3/8" with lock washer	8
35	2-266	O-Ring, Casing Reservoir	1
36	PBSP802	Volute	1
	11-230	O-Ring, Volute	1
37	PBSP801	Casing Reservoir	1
	2202P4-4	Str. Elbow, 90 degree (1/4"mipt x 1/4"fipt)	1
	V19M	Valve, 1/4-Turn Casing Drain	1
	1/4TT	Overflow (Noz. Body x 1/4"mipt)	1
38		Tube, Wide Frame S. S. 1-7/8" Suction	1
		Tube, Narrow Frame S.S. 1-7/8" Suction	1
	11-328	O-Ring, 1-7/8"	1
	0310112CH2	Bolt, 5/16" x 1-1/8" with Lock Washer	4
39	PBN150	Nipple, Narrow Frame Hose Barb x 1-1/2"	1
		Pipe, Wide Frame 1-1/2" x _____	1
40		Hose, 1-7/8" x 2-1/2"	1
41		Nipple, 1-1/2" x Hose Barb	1
42	STHP2150	Adapter, 1-1/2" Inlet	1
43	STHP102150	Case, 1-1/2" Suction Strainer	1
44	SPST7BL	Bale, Suction Strainer	1
45	SPST7D12	Screen, 12 Mesh (see Page #9)	1
46	11-232	O-Ring, Cap	1
47	STHP1010	Cap, Suction Strainer	1
48	WC6832	Clamp, Worm	1
49	PBH012	Hose, 1-7/8" X 2-1/2"	1
	SSTOE150150	Nipple, 1-1/2" X 1-1/2" Suction	1
	WC6832	Clamp, Worm (When replacing Hose)	1
50	PBSV150	Valve, 1-1/2" Brass	1
51	PBH011	Hose, 1-7/8" X 4"	1
	SSTOE150200	Nipple, 1-1/2" X 2" Suction	1
	WC6832	Clamp, Worm (When replacing Hose)	2
52	SSSTL150	Elbow, 1-1/2" Street	1
53	0310087CH8	Screw, 5/16" x 7/8" Gr.8 Plated	8

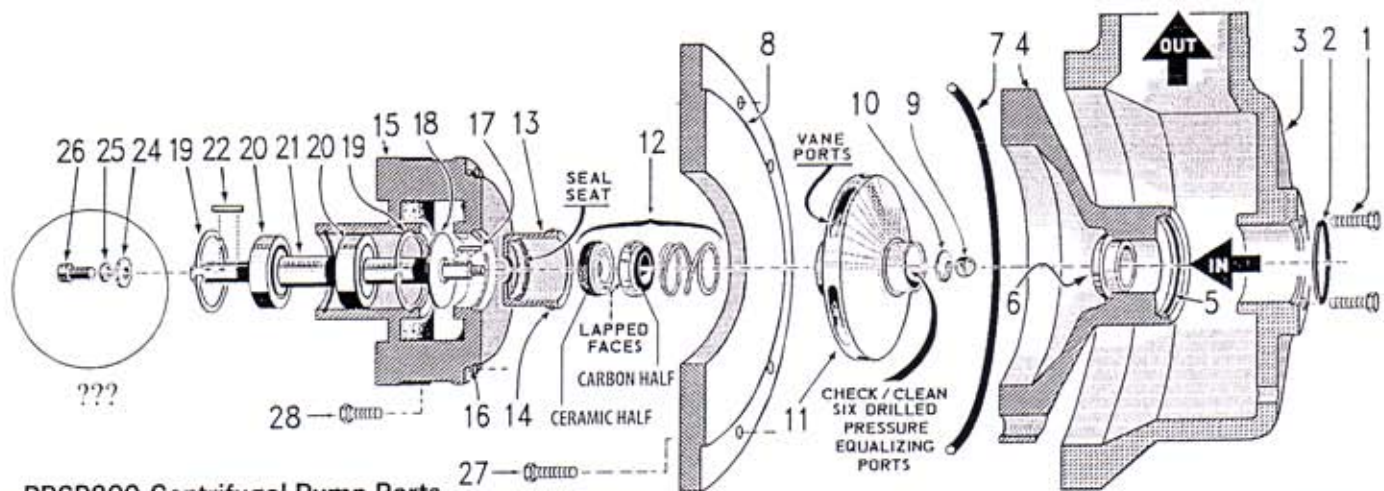
STANDARD CENTRIFUGAL PUMP ASSEMBLY :

See page 19 & 20 for additional standard centrifugal pump information.



Std. 500 Gallon P.B. Pump Drive: 11M 1400 Polyflex Belt
Std. Lo-Profile (Tom Thumb) P.B. Pump Drive: 11M 1220 Polyflex Belt

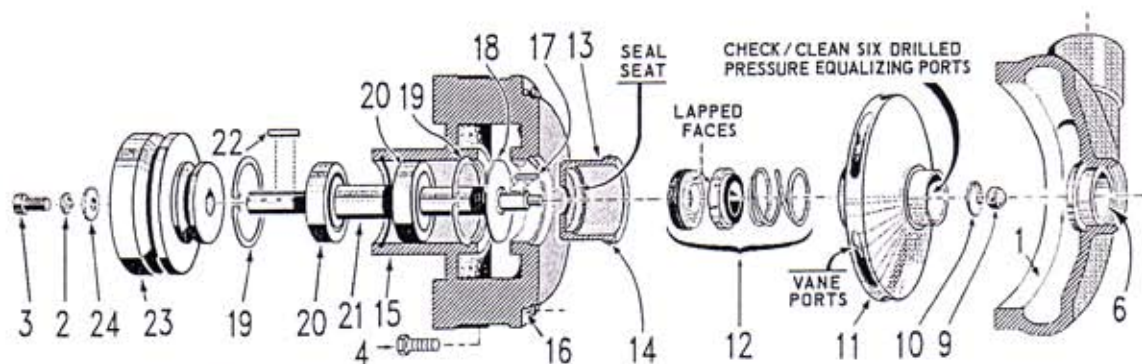
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	SPK3-28	Key, 3/16" x 1-3/4" Bar	2	29	1R308	Seal, Pump	1
2	PBGB1	Gearbox	1	30	RPA-IM	Impeller, Pump	1
3	PBSP7141	Pivot Arm	1	31	RPA-WA	Washer, Special	1
4	PBSP725	Plunger Assembly	1	32	RPA-NUT	Nut, 3/8" SS Acorn	1
5	PBSP721	Housing, Idler	1	33	11-160	O-Ring, Pump Casing Large	1
	BRG140	Bushing, Bronze	2	34	RP5	Wear Ring, Pup Casing	1
6	PBSP716	Shaft, Idler	1	35	RPA-VT	Casing, Pump Volute	1
7	N5000-187	Snap Ring	2	36	BSH125100	Bushing, 1-1/4" x 1"	1
8	PBSP7151	Pulley, Idler	1	37	ETC100FAL	Adapter, 1"Evertite Male to Male	1
	RMC6204	Bearing, Ball	2	38	V19M	Valve, 1/4-Turn Casing Drain	1
9	PBG026N	Bracket, Standard P.B. Pump	1	39	11-224	O-Ring, Jam Nut	1
	PBG026AN	Bracket, Low-Profile P.B. Pump		40	8-327	Ring, Jam Nut Backup	1
10	0370250CH2	Screw, 3/8" x 2-1/2" Hex GR2 Cap	4	41	RPA-JN	Nut, Jam	1
11	037NF	Nut, 3/8" NC	4	42	RPA-CN	Nipple, Special Stainless Steel Close	1
	037WS	Washer, 3/8" Lock	4	43	STHP2150	Adapter, 1-1/2" Inlet	1
12	050WSAE8	Hard Flat Washer, 1/2"SAE	1	44	STHP102150	Case, 1-1/2" Suction Strainer	1
13	051NFL	Flex Lock Nut, 1/2"-20 Fine	1	45	SPST7BL	Bale, Suction Strainer	1
14	0260075CH5	Screw, 1/4" x 3/4" NF GR5 Cap	1	46	SPST7D12	Screen, 12 Mesh (see Page #11)	1
15	025WS	Washer, 1/4" Lock	1	47	11-232	O-Ring, Cap (Viton)	1
16	SPSWF4	Washer, Special	1	48	STHP1010	Cap, Suction Strainer	1
17	RPA-SP	Pulley, Pump Step	1	49	WC6832	Clamp, Worm	1
18	N5000-187	Snap Ring, Inner	2	50	PBH012	Hose, 1-7/8" X 2-1/2"	1
19	6204	Bearing, Pump Shaft (same as 204P)	2		SSTOE150400	Nipple, 1-1/2" X 4" Suction	1
20	RPA-SH	Shaft, Pump	1		WC6832	Clamp, Worm (When replacing Hose)	1
22	SPK2-8	Key, 1/8" x 5/8" Square	1	51	PBSV150	Valve, 1-1/2" Brass	1
23	RPA-PD	Pedestal, Pump	1	52	PBH011	Hose, 1-7/8" X 4"	1
24	0370175CH2	Screw, Pedestal 3/8" x 1-3/4" NC Cap	4		SSTOE150200	Nipple, 1-1/2" X 2" Suction	1
25	037NC	Nut, Pump Pedestal 3/8"NC	4		WC6832	Clamp, Worm (When replacing Hose)	2



PBSP800 Centrifugal Pump Parts

No.	Part #	Description	Qty
	PBSP800	complete self priming centrifugal pump	
1	0310112CH2	5/16"-18 x 1" 1/8 gr.2	4
2	11-328	o-ring	1
3	PBSP801	reservoir	1
4	PBSP802	volute	1
5	11-230	o-ring	1
6	RP5	wear ring	1
7	2-266	o-ring	1
8	PBSP803	back plate	1
9	RPA-NUT	3/8-24 acorn nut, stainless steel	1
10	RPA-WA	washer, special	1
11	RPA-IM	impeller	1
12	1R309	complete seal	1
13	RPA-SE	seal cavity	1

No.	Part #	Description	Qty
14	11-137	o-ring	1
15	RPA-PD	pedestal	1
16	11-160	o-ring	1
17	SPK2-8	square key	1
18	RPA-WD	water deflector	1
19	N5000-187	inner snap ring	2
20	6204-2RS	bearing (204p)	2
21	RPA-SH	drive shaft	1
22	SPK3-20	square key	1
24	SPSW-F4	washer, special	1
25	025WS	1/4" lock washer	1
26	0260075CH5	1/4"-28 x 3/4" gr.5 bolt	1
27	0310137CH8	5/16"-18 x 1-3/8" gr.8 bolt	8
28	0310087CH8	5/16"-18 x 7/8" gr.8 bolt	8



RPA Centrifugal Pump Parts

No.	Part #	Description	Qty
	RPA	complete centrifugal pump	
1	RPA-VT	volute	1
2	025WS	1/4" lock washer	1
3	0260075CH5	1/4"-28 x 3/4" gr.5 bolt	1
4	0310087CH8	5/16"-18 X 7/8" gr.8 bolt	8
6	RP5	wear ring	1
9	RPA-NUT	3/8-24 acorn nut, stainless steel	1
10	RPA-WA	washer, special	1
11	RPA-IM	impeller	1
12	1R309	complete seal	1
13	RPA-SE	seal cavity	1

No.	Part #	Description	Qty
14	11-137	o-ring	1
15	RPA-PD	pedestal	1
16	11-160	o-ring	1
17	SPK2-8	square key	1
18	RPA-WD	water deflector	1
19	N5000-187	inner snap ring	2
20	6204-2RS	bearing (204p)	2
21	RPA-SH	drive shaft	1
22	SPK3-20	square key	1
24	SPSW-F4	washer, special	1

Replace Seal & Pedestal Bearings

NOTICE: If seal 12 or either bearing 20 should fail, replace seal and both bearings at the same time.

Removing seal and bearings:

1. Pull the pump assembly and remove to a clean area. Remove bolts 28, volute/reservoir, and o-ring 16.
2. Remove acorn nut 9 and washer 10. With careful and even pressure, use two flat-head screwdrivers to pry the impeller 11 from the pump shaft.
3. Clean all impeller orifices thoroughly.
4. Remove rear snap ring 19 from pedestal and press the pump shaft and bearings out of the pedestal housing.
5. Press bearings off of the shaft and discard. Examine the shaft for damage or wear. Discard the shaft if corroded or bearing seat wear is evident. Clean shaft of all burrs. Buff scratches with emery cloth. Press new bearings 20 onto prepared smooth shaft.
6. Remove the ceramic seal and seal seat 12 from the seal cavity 13 and discard. Clean the seat and cavity thoroughly. If the seal cavity must be removed for cleaning, press from bottom side to remove. The o-ring 14 may be damaged when extracting the seal cavity: replace if necessary and seat cavity firmly in pedestal.

Install seal and bearings:

1. Press prepared pump shaft, with bearings installed, into the pedestal housing. Be certain the water deflector 18 is in place. Install rear snap ring 19. Tap bearing housing lightly with a hammer to relieve bearing tension.
2. Lubricate seal cavity 13. Hand press stationary ceramic half of seal 12 onto the pump shaft until rubber ring is seated evenly and firmly. Keep lapped face of ceramic seal free of dirt and oil. Lubricate exposed shaft with film of liquid soap or light oil. Hand-press carbon half of seal onto the pump shaft: take care that the lapped faces of the ceramic and carbon halves are clean and free of oil. Press until lapped surfaces meet. Be certain the rotating rubber ring of the carbon seal remains seated properly inside the stainless steel housing.
3. Install new seal spring 12 and cleaned impeller. The spring must seat properly as impeller, key 17, washer 10, are installed and the acorn nut 9 tightened.
4. Re-install o-ring on pedestal 16 and bolt pump assembly back together.

Winterizing Rears Centrifugal Pump

Flush pump and plumbing fully with clean water. Flush again with an RV Antifreeze solution and recirculate. Shut down the pump and leave the solution in the tank and plumbing system.

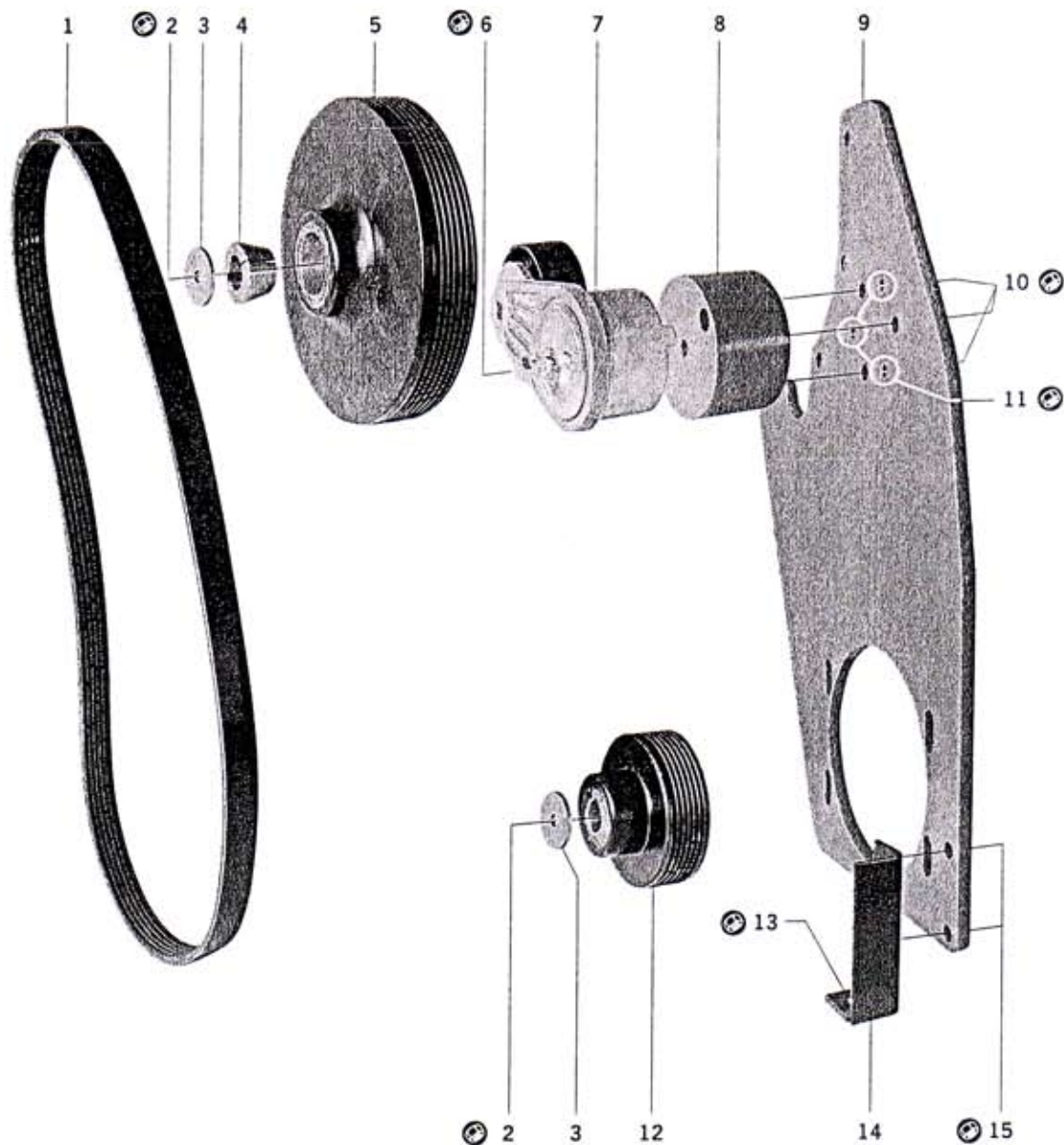
Pump Operation Troubleshooting

Seal Failure- running the pump dry will result in seal failure: excessive foam in tank, an empty tank, clogged suction strainer or closed suction valve will overheat pump seal. The dump valve in spray position during priming cycle will damage the pump seal.

Loose Pump Shaft- worn bearing, replace.

Noisy/Unbalanced Impeller- clogged impeller vane ports will unbalance the impeller. Clean impeller and clear ports with a hooked wire.

Read this manual completely before operating: follow all safety instructions.



Micro-V belt drive parts

No.	Part #	Description	Qty
1	K060557	micro-v belt: RPA plate (9)	1
	K060630	micro-v belt: narrow plate (9)	
2	0260075CH5	1/4\"-28 x 3/4\" gr5 bolt	2
	025WS	1/4\" lockwasher	2
3	SPSW-F4	stainless steel pulley retaining washer	2
4	PBTL44A	tapered hub	1
5	PB15AMV	micro-v drive pulley, 200psi	1
6	0380250CH5	3/8\"-24 x 2-1/2\" gr5 bolt	1
	037WSAE	3/8\" hardened flat washer	1
	037WS	3/8\" lock washer	1
7	38164	belt tensioner	1
8	PBG034	tensioner mount block	1
9	PBSP724	RPA pump plate	1
	PBPM301	narrow pump plate	

No.	Part #	Description	Qty
10	0380100CH5	3/8\"-24 x 1\" gr5 bolt	3
	037WS	3/8\" lock washer	3
11	0370050SET	3/8\"-16 x 1/2\" cup point setscrew	3
12	RPA-MV201	micro-v pump pulley, 200psi	1
13	0500150CH5	1/2\"-13 x 1-1/2\" gr5 bolt	1
	050WUSS	1/2\" flat washer	1
	050WS	1/2\" lock washer	1
14	PB197	pump plate mount bracket	1
15	0370125CH5	3/8\"-16 x 1-1/4\" gr5 bolt	2
	037WUSS	3/8\" flat washer	2
	037WS	3/8\" lock washer	2
	037NF	3/8\" nut	2

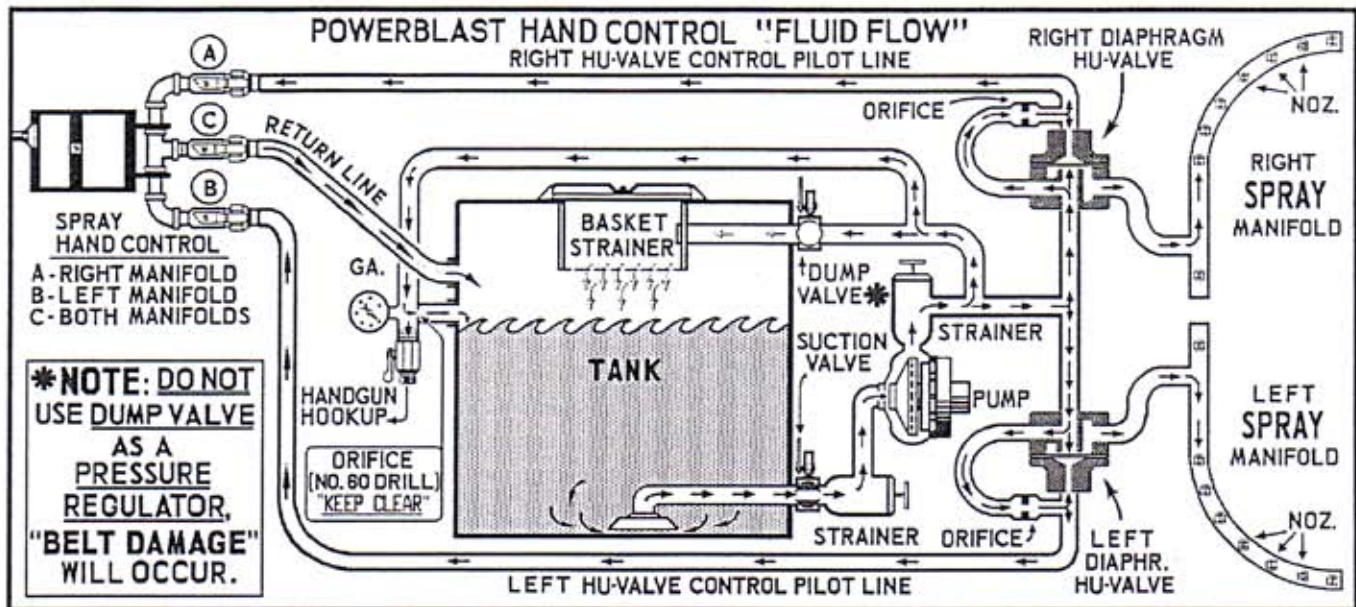
EXCESSIVE PRESSURE DROP TROUBLESHOOTING

IF PRESSURE DROPS EXCESSIVELY WITH SPRAY MANIFOLDS OPEN:

Check the Dump Valve, when spraying keep it closed completely.

Check the Drive Belt of Centrifugal pump for slippage.

Check the Suction Strainer and Discharge Strainer; Clean Screens.



SPRAY MANIFOLD MALFUNCTION TROUBLESHOOTING

SPRAY MANIFOLD FAILURE... WILL NOT OPEN AND SPRAY:

Check Pressure Gauge to insure pressure is up; if not refer to above Pressure Drop Troubleshooting.

Check Hand Control Pilot Line for crimping. Bleed off air at Handgun Hookup Valve.

Check Hand Control Pilot Line for blockage; some chemicals can buildup or effect hose lining, causing restriction. If this is a problem, replace 3/8" hose with 1/2" hose. NOTE: Rinse tank and system daily.

Check Hand Control Return Line for crimping or blockage.

Check Hand Control Valves for blockage or defect.

SPRAY MANIFOLD FAILURE... WILL NOT SHUTOFF:

Check Hu-Valve iOrifice and Tubei for blockage.

Check Hu-Valve for ruptured diaphragm.

**OPTIONAL
ELECTRICAL
HU-VALVES
Information:
Pages 10 & 11**

FAN MALFUNCTION TROUBLESHOOTING

ELECTRIC FAN CLUTCH FAILURE... WILL NOT ENGAGE

Check Clutch Electrical lines for broken wire and/or loose connections.

Check Fan Control Hand Set iCircuit Breakeri and iFan Switchi for malfunction.

Remove Fan, inspect mating surfaces for excessive wear, warping, foreign material

ELECTRIC FAN CLUTCH FAILURE... SLIPS/OVER HEATS:

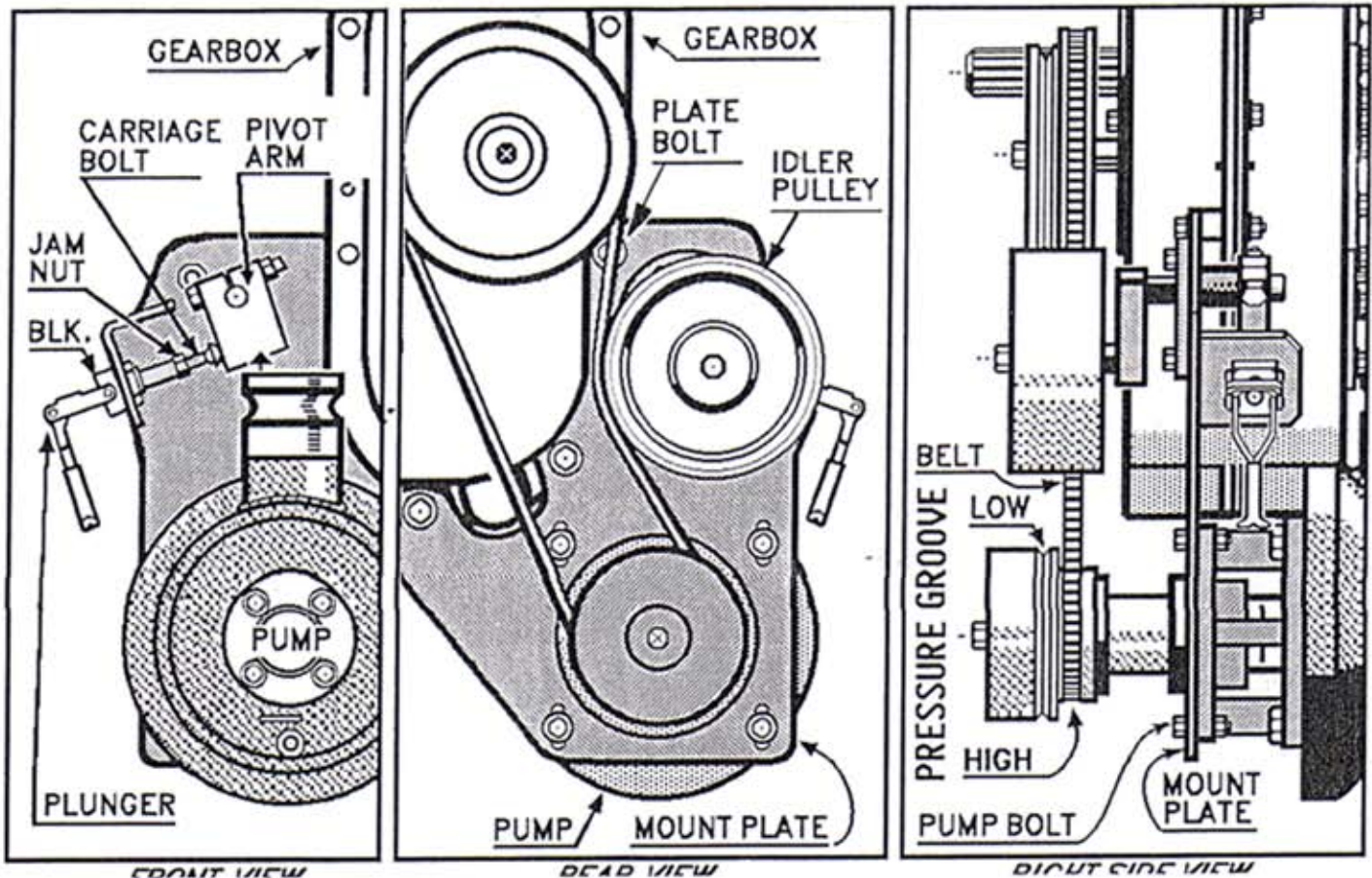
Check Clutch Electrical lines for loose connections, bared and/or chemical corroded wires.

Check for low voltage; should read about 14 volts.

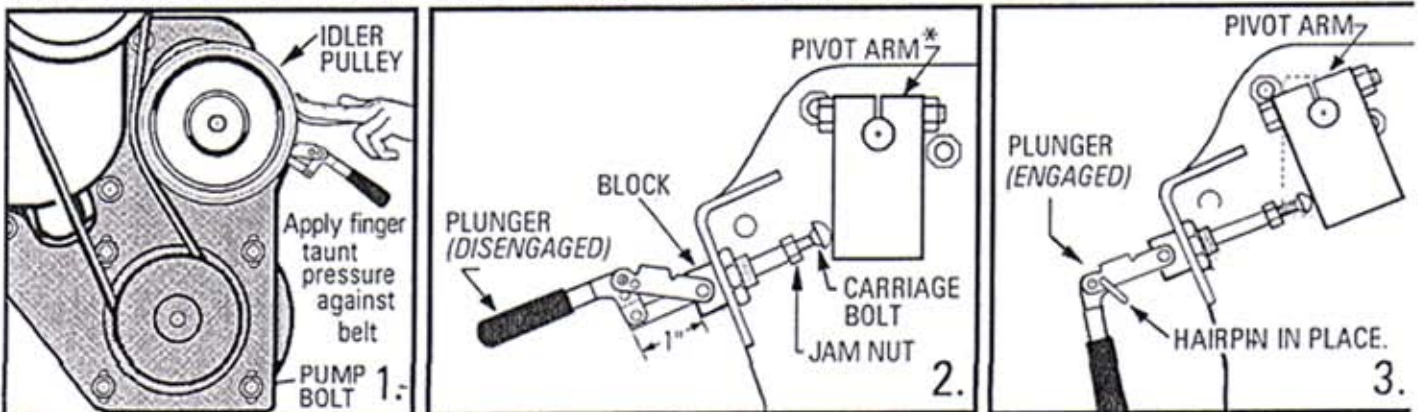
Check Clutch. Remove Fan, inspect immediate wiring and clutch surfaces for excessive wear or burned drive plate. Frequent fan engagement at high rpm's will cause plate damage (Engage at 1000rpm: no more, no less).

FAN OPERATION W/O CLUTCH ELECTRICAL POWER: Remove fan, align clutch pulling holes of driven half with threaded driving half holes. Insert two 3/8"x 2" n.c. bolts and tighten, locking halves together for operation.

REAR'S POWERBLAST-TOWER PUMP AND PULLEY INSTALLATION AND IDLER ADJUSTMENT INSTRUCTIONS



CENTRIFUGAL PUMP DRIVE BELT TENSION ADJUSTMENT:

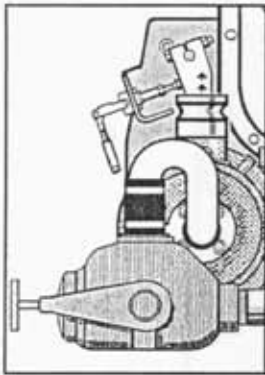


***IMPORTANT:** To begin, Pivot Arm (pic.#2) must be "vertical" while finger taunt pressure is applied to idler pulley (pic.#1). To adjust, raise or lower Pump accordingly.

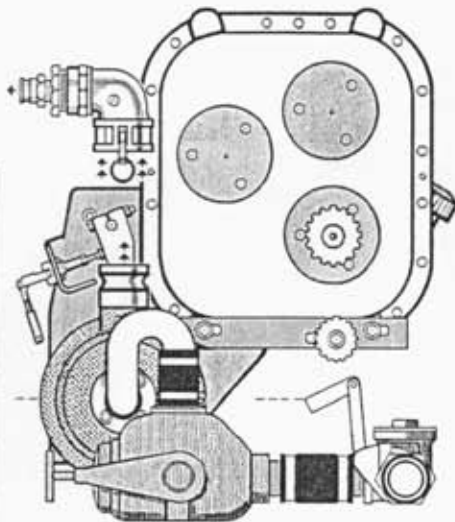
1. Bolt pump/pulley assembly to mount plate.
2. Install belt on inside (high pressure) pulley groove.
3. Disengage plunger and apply finger taunt pressure on idler pulley against belt. Important: pivot arm must be vertical at this point. To adjust, raise or lower pump as required.
4. Maintaining finger taunt pressure on idler pulley, slowly lower plunger until contact is just made with pivot arm. Check distance from block to end of plunger (pic.#2), it must be one (1") inch to provide "proper" tension: to adjust length, loosen jam nut and adjust carriage bolt accordingly. It may take several tries to get this correctly set to 1". Retighten jam nut when finished.
5. Engage plunger to apply established pressure to belt. Insert the hairpin in place to secure plunger lockdown.

POWERBLAST MANUAL

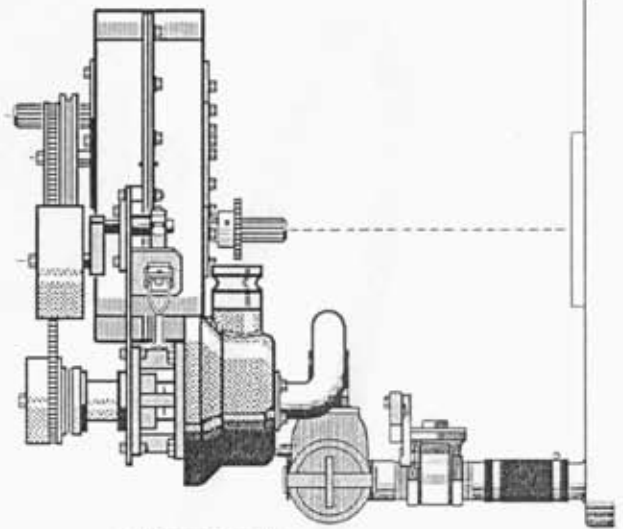
SUCTION ASSEMBLY FOR SELF-PRIMING CENTRIFUGAL PUMP PBSP800



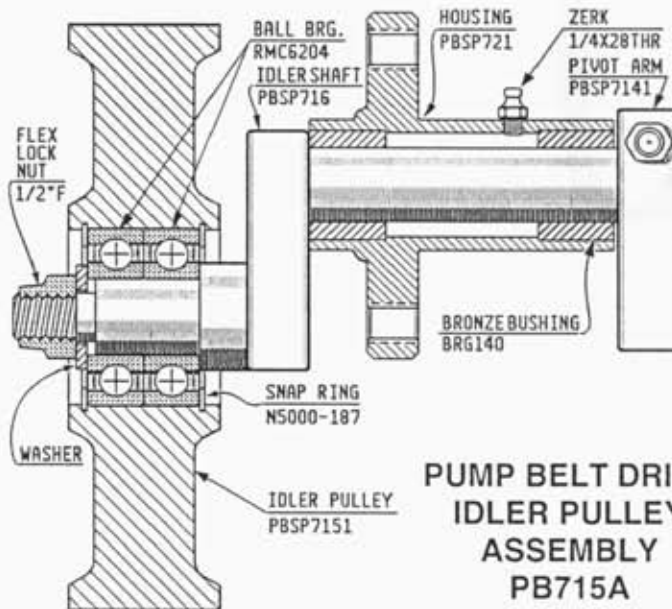
NOTE: Wide Powerblast units use the the outward positioned manifold from pump to strainer.



FRONT VIEW



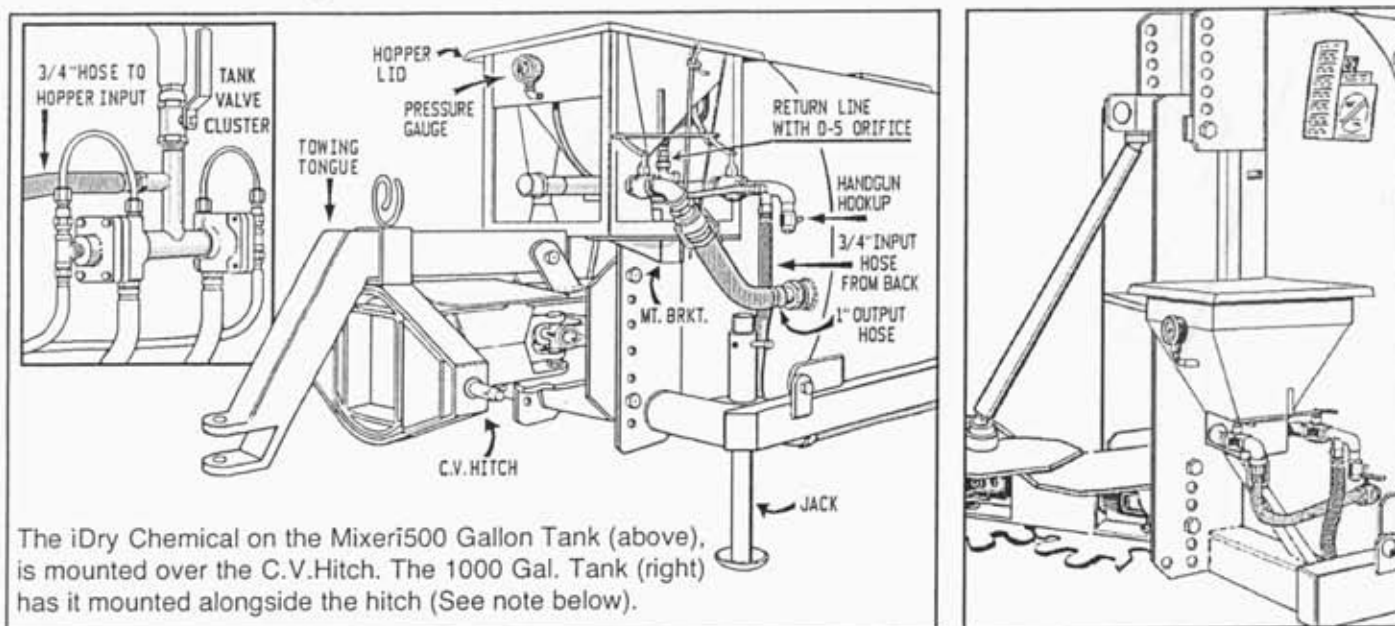
SIDE VIEW



PUMP BELT DRIVE
IDLER PULLEY
ASSEMBLY
PB715A

WET OR DRY CHEMICAL MIXER

(OPTIONAL) FACTORY OR CUSTOMER INSTALLED



The iDry Chemical on the Mixeri500 Gallon Tank (above), is mounted over the C.V.Hitch. The 1000 Gal. Tank (right) has it mounted alongside the hitch (See note below).

CHEMICAL MIXER INSTALLATION

(FACTORY INSTALLED OR CUSTOMER INSTALLED)

- STEP 1.** From front of tank remove pressure gauge/handgun assy., along with 1/2" hose running to tank valve cluster.
- STEP 2.** Attach tank towing tongue as shown to establish chemical mixer clearance. Level Powerblast, blockup front.
- STEP 3.** Bolt the i mount bracketsi finger tight to the chemical mixer. The ihopper lid should be level with, or below tank top. This will prove a snug fit between tongue end and tank front. Level mixer and clamp the mount brackets firmly in place on the C.V.Hitch mount bracket as illustrated above. Weld the chemical mixer's itwo mount bracketsi to the C.V.Hitch mount bracket and tighten chemical mixer mount bolts.
- STEP 4.** Attach the iReturn Line with D-5 orifice in place: Tighten the street elbow to tank where pressure gauge/handgun hookup was removed from. Again, be certain the D-5 orifice is in place.
- STEP 5.** Install the new 3/4" input hose between the chemical mixer and valve cluster and the 1" output hose from chemical mixer to tank as illustrated.
- STEP 6.** Operate system and check all connections for itighti no leak operations.

IMPORTANT CHEMICAL MIXER NOTE

If the Chemical Mixer parts are being ordered, it is important to include the Powerblast TANK SIZE (500 or 1000 gallon) and the Powerblast Serial Number: The 1000 gallon tank Chemical Mixer is narrow in construction.

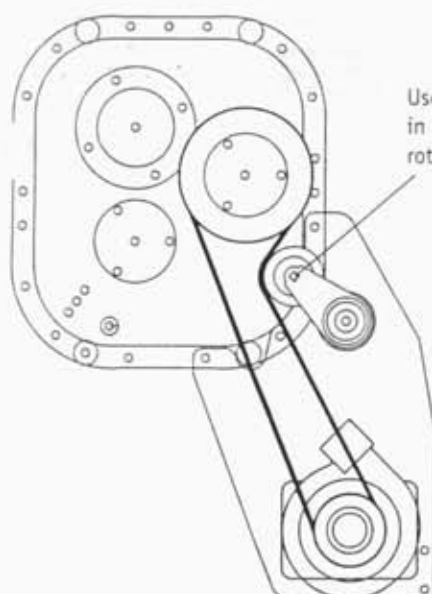


fig. i

Use 3/8" ratchet
in square hole to
rotate tensioner.

Adjust pump in slot
so tensioner has
approximately 2/3
travel remaining

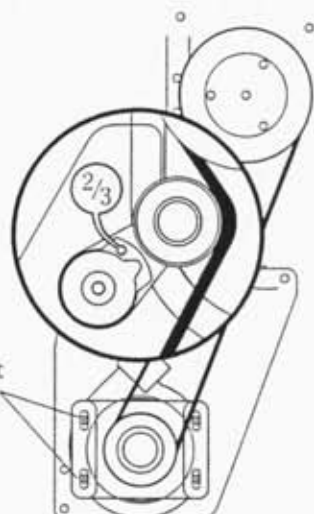


fig. ii

Install new belt
if tensioner stop
bottoms out
when pump is
dropped to lowest
position in slot.

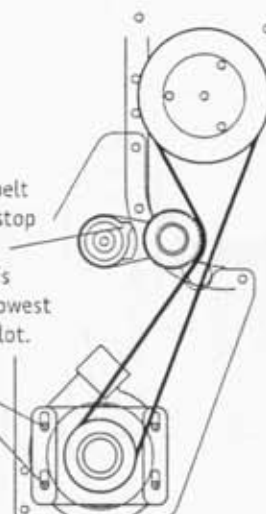


fig. iii

Tensioning the micro-v pump belt

The tensioning mechanism will not need adjustment for the life of a belt, but is designed to maintain tension as the belt stretches. The tensioner indicates when to replace the belt.

Installing a new pump belt, fig. i: Install the belt loosely on the gearbox pulley and pump pulley. Use a 3/8" ratchet (mounted in the square hole indicated) to swing the tensioner arm out of the way and pop the belt into the proper position as illustrated.

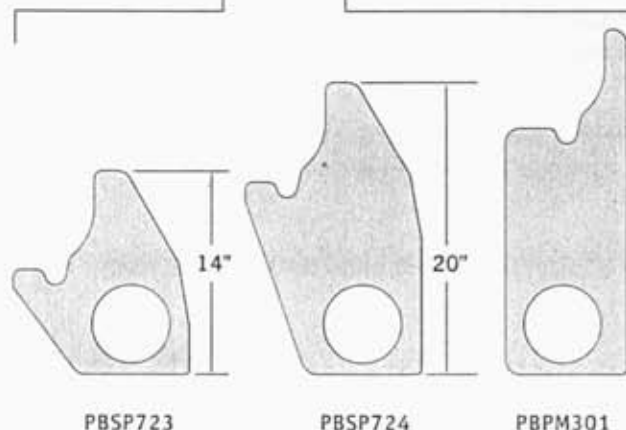
Loosen the pump mount bolts that attach the pump assembly to the pump plate. Watch the belt tension indicator, fig. ii, as you slide the pump in the mount slots. Tighten the pump mount bolts when the tensioner registers approximately 2/3 travel remaining, as illustrated.

Getting the most out of your belt. As the pump belt stretches, the tension arm will rotate to maintain proper tension on the belt. The belt is exhausted when the tension indicator on the tensioner body *bottoms out* (see fig. iii).

As the belt stretches and the indicator nears exhaustion, loosen the pump mount bolts that attach the pump assembly to the pump plate and lower the pump to the bottom of the mount slots on the pump plate. The tension indicator will register more belt life.

Time to get a new belt. If the tension indicator on the tension arm *bottoms out* and the pump is mounted at the bottom of the pump plate mount slot, the belt needs to be replaced. Use a 3/8" ratchet, as described in *pump installation*, above, to swing the tension arm out of the way and remove the belt.

pump	pump plate	clutch	belt number
RPA	PBSP724	no	K060557
RPA	PBSP724	yes	K060532
RPA-SP	PBSP724	no	K060557
RPA-SP	PBSP723	no	K060445
RPA-SP	PBSP723	yes	K060415
RPA-SP	PBPM301	no	K060630



PBSP723

PBSP724

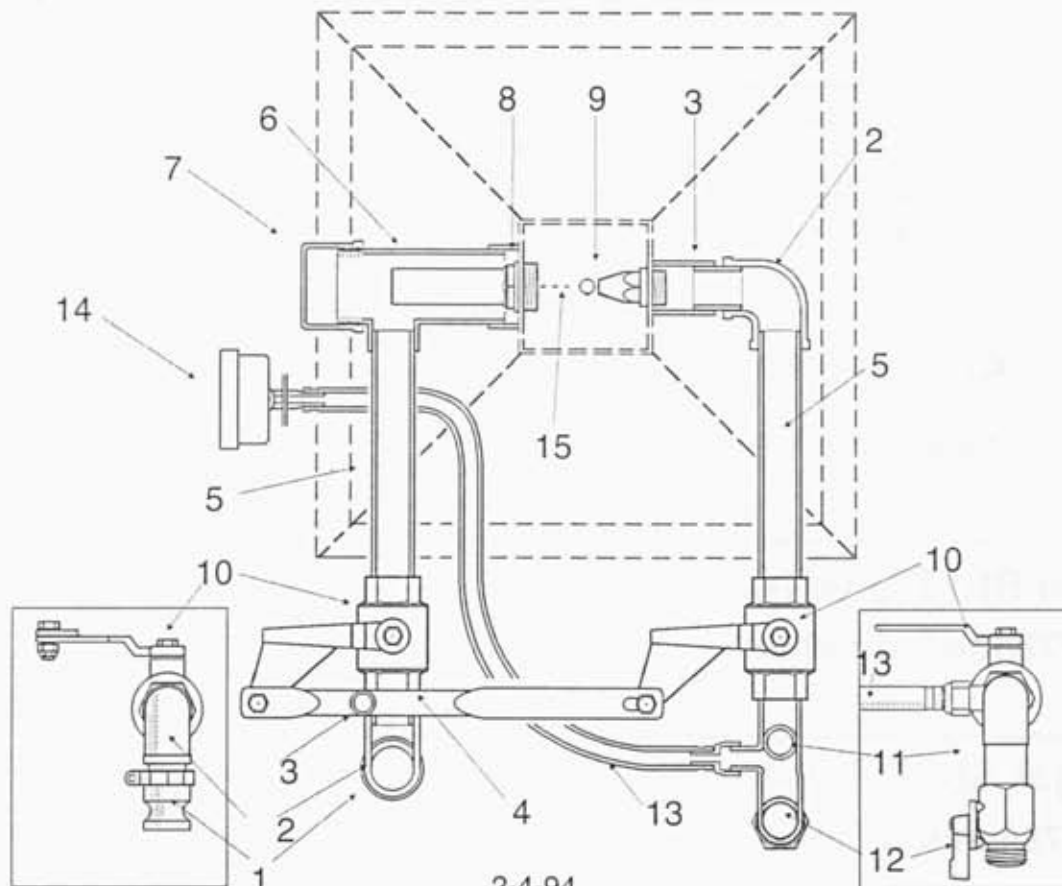
PBPM301

POWERBLAST MANUAL

The Powerblast iOffset Axle has two or more available Ground Clearance positions. Locate your machine below. Reading right, Select a Ground Clearance. In this row, under iRight Side Axle column is the Axle number. If this is your existing axle, using information in Position column, locate illustrated view on next page. This is the position in which to place the Offset Axle to establish selected Ground Clearance.

TIRES, AXLES AND GROUND CLEARANCE FOR STANDARD AND LOW-PROFILE POWERBLAST UNITS				
AXLE/SPINDLE OFFSET POSITION	GR. CLEAR.	RIGHT SIDE AXLE	POSITION	PAN/SPINDLE CTR
1000 gal PB w/21.5x16.1 (758400-8/loaded radius 18.7)	6.95"	AX801B (B) 8/8	6a) UP-HIGH	11.75"
	9.20"	AX801A (A) 8/8	6b) UP-LOW	9.50"
	11.45"	AX801B (B) 8/8	6c) DOWN-HIGH	7.25"
	14.95"	AX801A (A) 8/8	6d) DOWN-LOW	3.75"
500 gal Std PB w/11.25x24 (Q778/loaded radius 21.5)	8.25"	AX403A (B) 8/8	1a) UP-HIGH	13.25"
	9.75"	AX401B (B) 8/8	2a) UP-HIGH	11.75"
	12.00"	AX401A (A) 8/8	2b) UP-LOW	9.50"
	13.35"	AX411 6/6	3a) UP-HIGH	8.25"
	14.13"	AX411 6/6	3b) UP-LOW	7.35"
	15.50"	AX401B (B) 8/8	2c) DOWN-HIGH	7.25"
500 gal Std PB w/16.5x16.1 (Q778/loaded radius 17.6)	17.75"	AX401A (A) 8/8	2d) DOWN-LOW	3.75"
	5.85"	AX401B (B) 8/8	2a) UP-HIGH	11.75"
	8.10"	AX401A (A) 8/8	2b) UP-LOW	9.50"
	9.35"	AX411 6/6	3a) UP-HIGH	8.25"
	10.23"	AX411 6/6	3b) UP-LOW	7.35"
	11.60"	AX401B (B) 8/8	2c) DOWN-HIGH	7.25"
500 gal Std PB w/12.5Lx16 (Q778/loaded radius 15.0)	13.85"	AX401A (A) 8/8	2d) DOWN-LOW	3.75"
	5.50"	AX401A (A) 8/8	2b) UP-LOW	9.50"
	6.75"	AX411 6/6	3a) UP-HIGH	8.25"
	7.63"	AX411 6/6	3b) UP-LOW	7.35"
	9.00"	AX401B (B) 8/8	2c) DOWN-HIGH	7.25"
	11.25"	AX401A (A) 8/8	2d) DOWN-LOW	3.75"
500 gal Std PB w/11Lx15 (Q888/loaded radius 13.6)	4.10"	AX401A (A) 8/8	2b) UP-LOW	9.50"
	5.35"	AX411 6/6	3a) UP-HIGH	8.25"
	6.23"	AX411 6/6	3b) UP-LOW	7.35"
	7.60"	AX401B (B) 8/8	2c) DOWN-HIGH	7.25"
	9.85"	AX401A (A) 8/8	2d) DOWN-LOW	3.75"
400 gal Std PB w/12.5Lx16 (Q778/loaded radius 15.0)	5.50"	AX401A (A) 8/8	2b) UP-LOW	9.50"
	6.75"	AX411 6/6	3a) UP-HIGH	8.25"
	7.63"	AX411 6/6	3b) UP-LOW	7.35"
	9.00"	AX401B (B) 8/8	2c) DOWN-HIGH	7.25"
	11.25"	AX401A (A) 8/8	2d) DOWN-LOW	3.75"
400 gal Std PB w/11Lx15 (Q888/loaded radius 13.6)	5.23"	AX321 6/6	5a) UP-HIGH	8.37"
	6.35"	AX321 6/6	5b) UP-LOW	7.25"
	7.60"	AX311B (B) 8/8	4a) DOWN-HIGH	6.00"
	9.85"	AX311A (A) 8/8	4b) DOWN-LOW	7.25"
400 gal Lo-Pro w/16.5x16.1 (Q778/loaded radius 17.6)	4.60"	AX401B (B) 8/8	2a) UP-HIGH	11.75"
	6.85"	AX401A (A) 8/8	2b) UP-LOW	9.50"
	8.10"	AX411 6/6	3a) UP-HIGH	9.50"
	9.98"	AX411 6/6	3b) UP-LOW	8.62"
	10.35"	AX401B (B) 8/8	2c) DOWN-HIGH	7.25"
	12.60"	AX401A (A) 8/8	2d) DOWN-LOW	3.75"
400 gal Lo-Pro w/12.5Lx16 (Q778/loaded radius 15.0)	4.25"	AX401A (A) 8/8	2b) UP-LOW	9.50"
	5.50"	AX411 6/6	3a) UP-HIGH	9.50"
	6.38"	AX411 6/6	3b) UP-LOW	8.62"
	7.75"	AX401B (B) 8/8	2c) DOWN-HIGH	7.25"
	10.00"	AX401A (A) 8/8	2d) DOWN-LOW	3.75"
400 gal Lo-Pro w/11Lx15 (Q888/loaded radius 13.6)	5.10"	AX321 6/6	5b) UP-LOW	8.50"
	6.35"	AX311B (B) 8/8	4a) DOWN-HIGH	6.00"
	8.60"	AX311A (A) 8/8	4b) DOWN-LOW	5.00"

CHEMICAL MIXER PLUMBING PARTS LIST

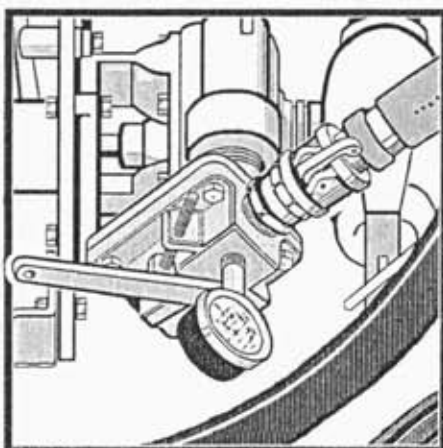


Item	Part No.	Description	Req.
1	ETC100FAL	ADAPTER, EVERTITE (1" MALE)	1
2	SSEL100	ELBOW, STAINLESS STEEL (1")	1
3	SSN100CLOSE	NIPPLE, CLOSE (1")	2
4	NTMX1030	LINK, Stainless Steel Valves Control	1
5	SSN1000900	NIPPLE, STAINLESS STEEL (1" X 9")	2
6	NTMX1020	NIPPLE, SIDEOUTLET (1-1/2" X 6" SS)	1

Item	Part No.	Description	Req.
9	N5A	NOZZLE, Poly. (1-1/8"-12 Thrds)	1
10	NTMX100FP	BALL VALVE, 1" Full Port (handle mod.)	2
11	NTMX1040	MANIFOLD, STAINLESS STEEL	1
12	V75	BALL VALVE (3/4" F X 3/4" F) BRASS	1
13	5PVC037()	HOSE, PRESSURE GA. (specify lgth)	1
14	LFG600	GAUGE, GLYCERIN 600PSI PRESS.	1

IMPORTANT CHEMICAL MIXER NOTE

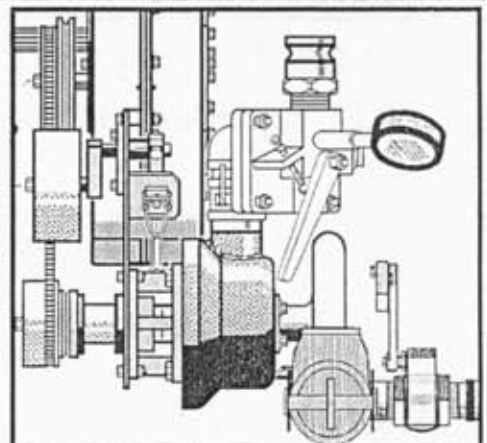
If the Chemical Mixer parts are being ordered, it is important to include the Powerblast TANK SIZE (500 or 1000 gallon) and the Powerblast Serial Number: The 1000 gallon tank Chemical Mixer is narrow in construction.



S&R PRESSURE CONTROL VALVE (OPTIONAL)

Factory or Customer Installed:
Standard Centrifugal pump installation: remove the eight bolts holding Pump iVolute to Pedestal. Rotate Volute horizontally to a position that allows S&R Valve to be properly attached and positioned as illustrated at left.

S&R adaptes to Self-priming Centrifugal pump as illustrated at right.



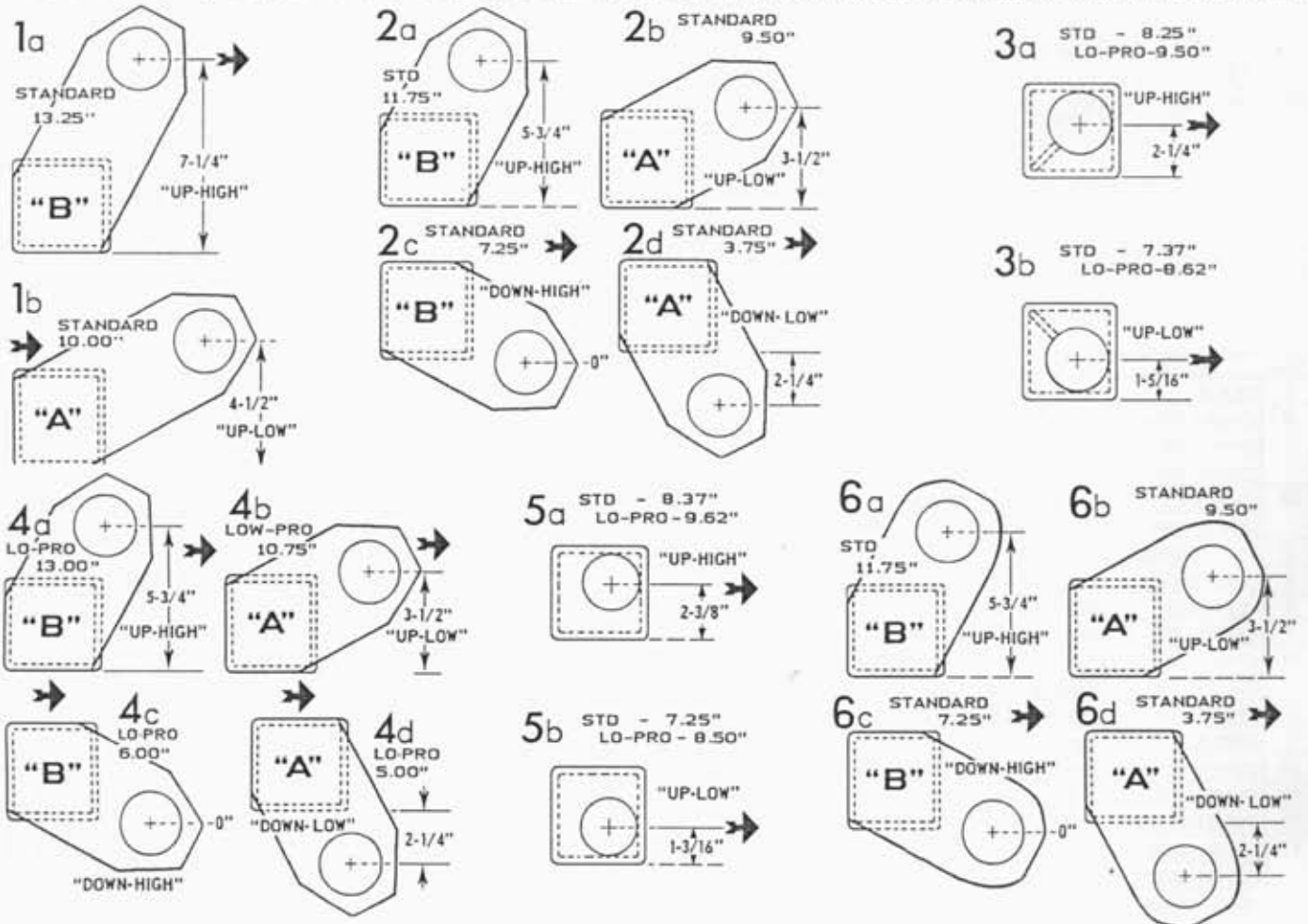
POWERBLAST MANUAL

OFFSET AXLE GROUND CLEARANCE POSITIONS (All views Machine right-arrow forward):

Once iOffset Axle and iGround Clearance have been chosen from previous page, Locate the selected AXLE and POSI-TION from among the illustrated views below.

IMPORTANT: All illustrated views of offset axles are from the right side of the machine *angled forward*. Each set of axles are marked A & B. To maintain the *forward angle* these are interchangeable, side to side, as needed to establish a given ground clearance.

NOTE: Other ground clearances may be established with your existing Offset Axles set by using another size of tires: Locate ianother tire size i on facing page, note iloaded radius. i Next, locate your i present " Offset Axle. In the far right column of this row is the iPan to Spindle Center" distance. Subtract this distance from noted i load radius i the answer is the iGround Clearance i for this set of tires and axle position. **Att.** Any readjustment of Ground Clearance must coincide with readjustment of C.V.Hitch to maintain level drive line.



WHEEL HUB BEARING ASSEMBLIES

SEAL	INNER BRG.	OUTER BRG.
SEAL	CONE CUP	CUP CONE
HUB N°: ➔	Q888: 15" Wheel	Q778: 16"/24" Wheels
SEAL	16289	20148
INNER CONE	JL69310	25520
INNER CUP	JL69349	25590
OUTER CUP	LM67010	25821
OUTER CONE	LM67048	25877

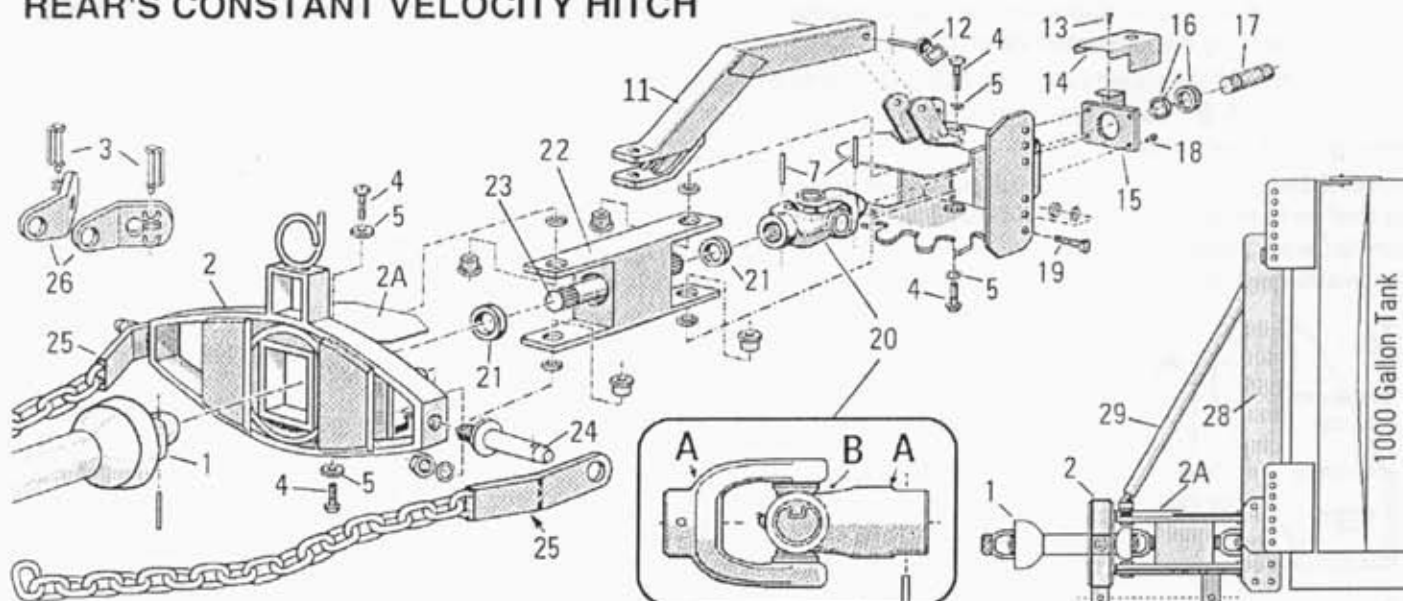
SUGGESTED TIRE INFLATION

TIRE SIZE	TIRE INFLATION CHART	
	MAX. PRESS. (SUGGESTED)	RADIUS (LOADED)
7.60 X 15	36 LBS	13.2
11L X 15	28 LBS	16.6
12.5L X 16	28 LBS	15.0
16.5 X 16.1	28 LBS	17.6
11.25 X 24	28 LBS	21.5
21.5 X 16.1	35 LBS	18.7

11L X 15
13.6" LOADED RADIUS
GROUND LEVEL

Ground Clearance will vary due to load weight, tire pressure and soil density. Consider these factors in determining ground clearance.

REAR'S CONSTANT VELOCITY HITCH



Lube Every 16 Hours of Use: PTO (#1) 3 lube points; CVHitch U-Joint (#20) 1 lube point.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	DL510	Driveline, P.T.O 27-1/2" OAL Closed	1	19	0870200CH5	Bolt, 7/8" x 2" GR5 Hitch Mount	4
2	CVH51-TRN1	Trunion, Std. Drawbar	1		087WS	Washer, Hitch Mount 7/8" Lock	4
	CVH51-TRN1HD	Trunion, H.D. Drawbar (1000Gal tank)	1		087NF	Nut, 7/8" Hitch Mount	4
	CVH41-WP1	Plate, Drawbar Wear (1000Gal tank)	2	20	UJ514/514	U-Joint (parts follow)	1
2A	CVH51-15	Gear Bracket, Standard	1	A	Y514	Yoke	2
	CVH51-15A	Gear Bracket, 1000Gal. H.D.	1	B	CPL55N	Cross Kit	1
3	0310274SNAP	Pin, 5/16" X 2-3/4" Snapper	3	21	CVH51-11	Bearing, Sealed	2
4	0620100CH5	Bolt, 5/8" x 1" NC GR5 C.T.	4	22	CVH51-13ASSY	Center Link W/Bearings & Bushings	1
5	062WUSS	Washer, 5/8" Flat	4		CVH51-5	Bushing, Outer	4
7	0310250RP	Pin, Roll	4		CVH51-6	Bushing, Flanged, Inner	4
11	CVH51-16	Tongue, Cat. 2 Towing, std.	1	23	CVH51-12	Shaft, Splined	1
	CVH51-16H	Tongue, Cat. 2 Towing, for 1000gal tank	1	24	CVH5117-1	Pin, 7/8" Mount	2
12	0750500HP	Pin, 3/4" x 5" Hitch	1		CVH5117-2	Pin, 1-1/8" Mount	2
13	0250050STS	Screw, 1/4" x 1/2" Self Tapping	1		112WS	Washer, 1-1/8" Lock	2
14	CVH51-18	Shield, Output Shaft	1		112NF	Nut, 1-1/8" N.F.	2
15	CVH51-19PB	Bracket, Bearing	1	25	HS43CH	Support, Hitch	2
16	CVH51-11COL	Bearing, 1-1/2" Sealed (w/collar)	1	26	HS42L	Bracket, Left Chain Slack	1
17	CVH51-8035	Shaft, 35MM Splined	1		HS42R	Bracket, Right Chain Slack	1
	CVH51-8055	Shaft, 55MM Splined	1	28	CVH51-144A	Implement Mt for Gear Bracket (1000Gal)	1
18	0500175CH5	Bolt, 1/2" x 1-3/4" GR5	4	29	PBST101	Arm, Hitch H.D. Support (1000Gal)	1
	050NF	Nut, 1/2" (use Lock Washer 050WS)	4				

DL510

27-1/2" OAL PTO DRIVELINE

Y501: 1-3/8" 6-Spl. Q.D.

Y514: 1-1/2" 17-Spline, Pin Drilled
1-11/16-20 Rolled Spl., Telescope

CROSS KIT: 55RW

Used on Pul-Flail and
Powerblast (tractor to C.V.Hitch)

