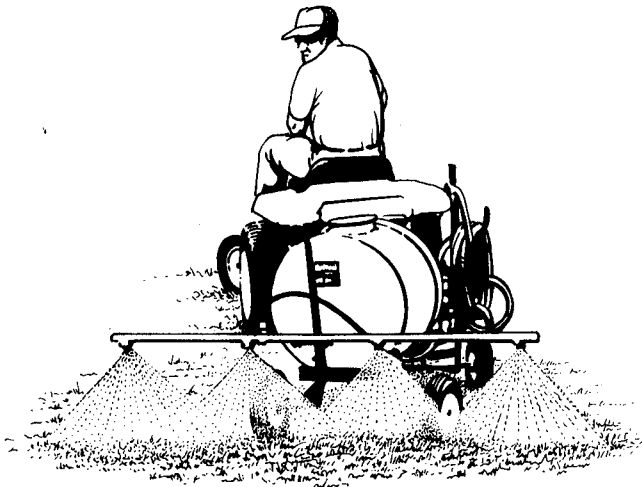


# SPS322T OWNER'S MANUAL



# **SNAPPER**<sup>®</sup>

SNAPPER • 1189 Old Schuylkill Road • PO Box 111 • Parker Ford PA 19457-0111  
Phone No: (215) 495-7181 ••• FAX: (215) 495-5951

FORM SPS322T693

## ASSEMBLY INSTRUCTIONS

Before assembling your sprayer, examine the parts for damage and shortages. If there are parts damaged or missing, file a claim with the dealer from whom you purchased the sprayer to have the parts replaced.

NOTES: In the following instructions the "item number" refers to the number encircled on the drawing.

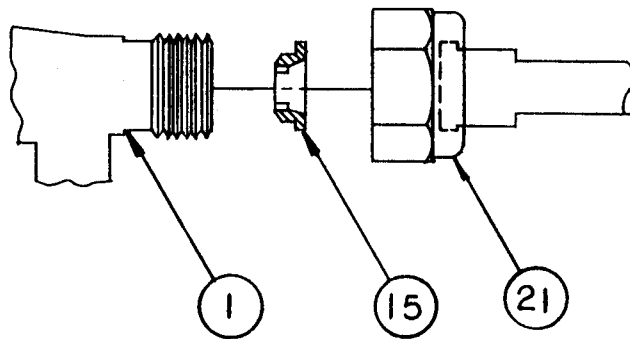
- 1) Attach the axle brackets (item no. 40) to the main frame (item no.1) using the bolts and nuts required (item no's 28 & 6). Install the axle (item no. 2) through the 5/8" holes in the brackets. Do not tighten hardware yet.
- 2) Install the rear wheels (item no. 10) on the axle using the 2 1/4" spacers and push nut caps (item no's 37 & 27). Tighten axle bracket hardware.
- 3) Install the front axle (item no. 33) as shown by inserting the pivot bolt through the hole provided in the front of the main frame. When fastening the two 5/8" nuts and flatwasher (item no's. 34, 17 & 39) do not tighten them so tight as to hinder the front axle from pivoting freely. Tighten the two nuts against each other to lock them in place.
- 4) With the bend up slide the tow hitch (item no. 3) over the ends of the front axle. Install the front wheel spacers (item no. 8) on the front axle before installing the wheels.
- 5) Install the hose rack (item no. 4) as shown on the drawing using the bolts and nuts required. Be sure the "ears" of the rack are on the outside, **NOT** facing in toward the engine. Loop the hose around the ears of the hose rack for convenient storage.
- 6) Take the pump which has been preassembled at the factory, insert the shaft key (item no. 43) in the engine crankshaft keyway. Slide the pump assembly on the engine shaft as far as it will go. No more than 1/2" of the engine shaft should be showing. Loctite and tighten the two set screws (item no. 44) securely.
- 7) Peel off the packing tape on the strainer nipple (item no. 20). Keep the stainless steel strainer inside the nipple while attaching the free end of the suction hose (item no. 15) to it. Make sure there is a garden hose washer in the end of the hose. **DO NOT OVERTIGHTEN THIS CONNECTION** as the washer can be damaged.
- 8) Slide the free end of the return hose (item no. 14) over the nylon elbow (item no. 36) at the bottom front of the tank. Tighten the clamp (item no. 42) by pinching it together securely with pliers. Be sure the return hose is not touching the engine shaft or coupling.
- 9) Coat the threads of the ends of the 25 foot spray hose (item no. 13) with sealing compound. Install the hose in the outlet piping as shown.
- 10) To assemble the spray gun (item no. 9) turn the safety lock off (see drawing no. 100-0120). Point gun up and depress the trigger. Unscrew the valve seat nut and replace it with the brass extension as shown. Be sure the valve seat is placed back in gun with the cone in the direction of the trigger as shown below. Screw on adjustable conejet. Install the spray gun on the other end of the spray hose. Tighten all connections.
- 11) Place the lid in the tank opening and secure by the twist-lock.
- 12) With a small, low cost push type grease gun (**DO NOT USE** air powered or hand lever operated grease gun), grease the pump cam bearing with the zerk provided with molybdenum#2 wheel bearing grease. With a screwdriver or flat tool, apply a generous dab of grease to outer diameter surface of the cam bearing at top and bottom where the bearing contacts the connecting rod.

13) Service the engine as recommended by the engine manufacturer. Read the Operating Instructions carefully before attempting to use your sprayer. **BE SURE TO SERVICE THE ENGINE BEFORE YOU START IT.**

**IMPORTANT CAUTIONS:**

The engine is preset at the factory to run at 1800 rpm. This speed setting should not be changed for any reason. Engine speed beyond 2100 rpm will destroy the pump.

Do not use Calcium Chloride in your sprayer as that will destroy the pump. The spraying of the chemicals Lasso and Xylene will damage the hose. Do not pump chloride, acids or abrasive solutions such as copper salts, soluble copper sulphate, chlorides, mercury, liquids containing sand or other sharp grit suspensions.



## OPERATING TIPS

**IMPORTANT NOTE: Never let the 25' spray hose contact any metal part of the sprayer when operating. Damage to the hose can result. Sprayer hose is not warranted.**

When operating your sprayer always bear one cardinal rule in mind: NEVER RUN THE PUMP DRY FOR MORE THAN ONE MINUTE.

After the initial assembly or if the sprayer has been idle for some time, the pump must be primed by the following procedure:

1. Turn the pressure relief valve adjusting handle counter-clockwise until the internal spring is free (when all spring tension has been removed, the handle will be much easier to turn).
2. Fill the tank about 1/4 full with water.
3. Start the engine and allow the pump to recirculate water back to the tank, thereby forcing air from the pump and lines. The hand gun should be placed in the tank opening and the gun opened to remove all air from the discharge line as well.
4. When the system has been completely primed, turn the relief valve adjusting handle clockwise until the desired pressure or spray pattern is reached.

Your sprayer is now ready for use.

Pay strict attention to the caution labels of chemicals you're using. They aren't put there to scare you or discourage you from using the product - they're put there simply to help you protect yourself, your family, neighbors and property from unnecessary injury or harm. For instance, it's only good common sense that you should wash your face and hands thoroughly after using such products. Even if you've avoided standing down wind when spraying, it's still quite possible you have some of the material on your skin and it's only prudent to wash it off.

The user who takes a few minutes to read and carefully follow the instructions on his spray material will generally observe better results - and obtain them more safely.

Get into the habit of measuring all chemicals carefully and following all label directions exactly.

Regardless of the type of chemicals you're spraying be very cautious on windy days since "drift" can cause unnecessary waste, or worse, spreading the spray where you didn't want it.

Lawns are best treated with a course, drenching spray, one that penetrates to the ground. Trees, shrubs, flowers and vegetables require a fine mist that evenly coats all leaf surfaces.

Proper mixing of wettable powder herbicides in the spray tank is important for uniform application. Start by premixing the herbicide with water in a pail. Half fill the spray tank with water and start the pump so the water will recirculate, then, slowly pour the wettable powder slurry into the tank. Fill the spray tank to the desired water level and spray. Don't leave wettable powder suspensions in the spray tank overnight or vigorous agitation with a paddle will be necessary to resuspend the chemical.

You can calibrate your sprayer easily by catching the discharge from the hand gun in a container such as a gallon bucket and timing how long it takes; thus you'll know that you're spraying at one gallon per minute, for example, and can judge how much insecticide to spray on a fruit tree on this basis.

The pump should be running with the hand gun closed when you add material to the tank; the bypass line then recirculates everything and keeps your solution well agitated.

Emulsion-type liquid sprays can be added directly to the tank.

If the sprayer will be idle for two weeks or more, the pump should be flushed with a small amount of oil or rust inhibitor.

When storing for the winter, the system should be thoroughly drained and the pump protected against freezing. To do this, add one gallon of permanent type antifreeze to the tank. Start the engine and place the hand gun into the tank opening with the gun open. Run or circulate the system for several minutes. Gradually close down the hand gun so that the antifreeze returns back to tank via the return hose.

Leave the antifreeze in the system over the winter. In the spring, completely flush out the entire system with clean water and a small amount of laundry detergent.

Periodically remove and clean the stainless steel strainer in the inlet piping to the pump.

Immediately after each use it's a good idea to clean your sprayer thoroughly with a small amount of laundry detergent in water. If a herbicide has been used, the sprayer should be flushed with a solution of 1 pt. of household ammonia in five gallons of water to neutralize any remaining herbicide.

The most common problem that can occur with your sprayer is clogging of the nozzle or passages. The particle that plugs the small passageway can come from a number of sources such as dust, sand or soil that manage to get in the tank. Improperly mixed wettable powders can lead to lumps, or, if the chemical solutions are allowed to remain in the system for an extended time, crystals can form in the solution.

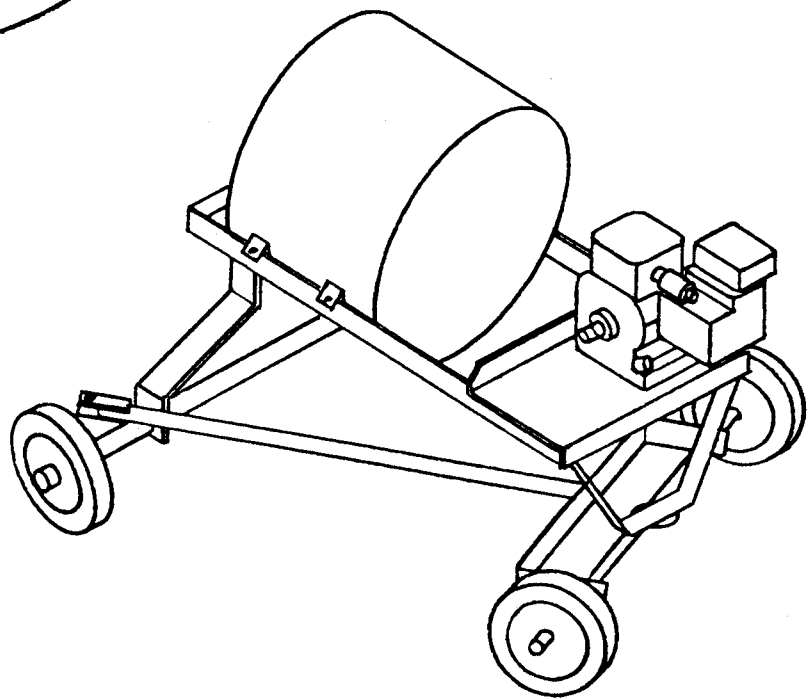
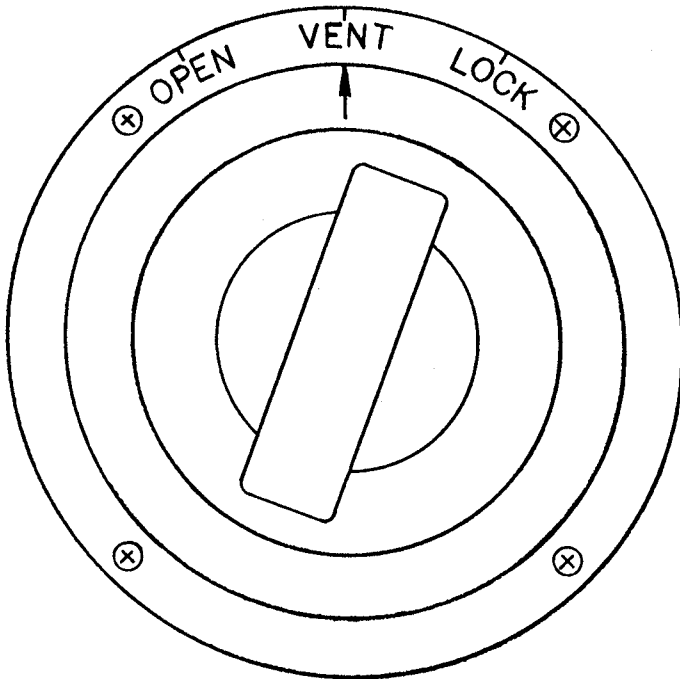
● Never permit the 25' spray hose to rest on the sprayer frame or hose rack during operations. The metal contact will rub through.

## OPERATION OF 3 POSITION LID

**CAUTION:** Improper use of lid can cause damage to the pump and hoses.

Always have lid in the "vent" position when the sprayer is in use. Never have lid in the "lock" position when the sprayer is in use.

When storing or transporting sprayer, keep lid in the "lock" position.



For convenient storage of your 22 Gallon Sprayer, the tow hitch (part #908-0029) can be rotated and rest on the rear axle. See diagram above.

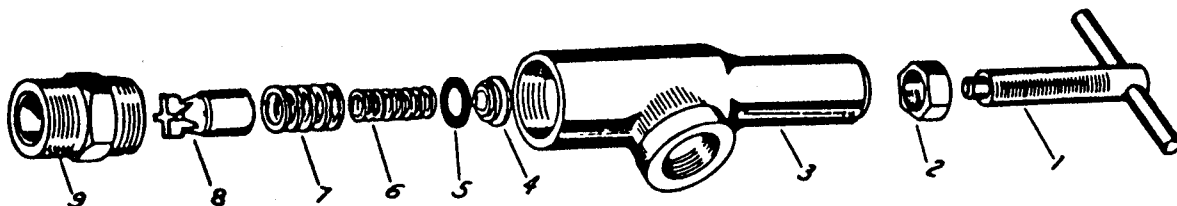


## SPS322T SPRAYER PARTS LIST

ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	108-0066-RD	1	Frame
2	108-0043-1	1	Rear Axle
3	908-0029	1	Tow Hitch
4	108-0025	1	Hose Rack
5	100-0221	1	22 Gallon Tank (includes lid)
5A	108-0090	1	Tank Lid & Ring
6	090-0048	10	5/16-18 Gripco Locknuts
7	100-0003	2	Tank Band
8	500-0012-P	1	Front Wheel Spacer
9	100-0120	1	Spray Gun Kit
9A	100-0101	1	Spray Gun
9B	100-0102	1	Spray Gun Extension
9C	100-0103	1	Inlet Adapter
9D	100-0104	1	Cone Jet
10	703-0012	2	10" Wheel
11	108-0019	1	3HP Engine
12	100-0031	2	Bulk Head Fitting
13	100-0112	1	25' Spray Hose
14	108-0088	1	Return Hose 27 1/2" lg
15	108-0064	1	Suction Hose 18" lg
16	100-0032	1	Nylon Elbow
17	090-0210	1	5/8-11 Hex Nut
18	108-0020	1	Pump
19	108-0068	1	Torque Arm
20	100-0029	1	Strainer Nipple
21	100-0030	1	Strainer
22	100-0094	1	Pressure Relief Valve
23	509-0009	1	Spring
24	100-0135	1	1/2" Service Tee
25	080-0365	1	1/2" x 2" Pipe Nipple
26	100-0011	1	3/4" x 1/2" Reducing Elbow
27	090-0457	4	Push Nut Cap
28	090-0088	2	5/16-18 x 1" HHCS
29	090-0079	2	5/16-18 x 2 1/2" HH Tap Bolt
30	090-0090	4	5/16-18 x 1 1/2" HHCS
31	080-0831	2	Rubber Bumper
32	090-0078	2	5/16-18 x 2" HH Tap Bolt
33	908-0032	1	Front Axle
34	090-0236	1	5/8" Flatwasher
35	090-0233	6	5/16" Flatwasher
36	100-0088	1	Nylon Elbow
37	705-0019-2	2	2 1/4" Lg Spacer
38	090-0032	4	5/16-18 Flex Locknut
39	090-0442	1	5/8-11 Hex Half Nut
40	908-0060	2	Axle Bracket
41	100-0140	1	1/2" Hose Clamp
42	100-0139	1	3/8" Hose Clamp
43	108-0023	1	1/8" x 3/16" x 1" Shaft Key
44	080-0050	2	1/4-28 x 1/4" Set Screw
*Optional Items			
48*	908-0030	1	Pull Handle
49*	500-0041	2	Handle Grip
50*	090-0112	1	3/8-16 x 1 1/2" HHCS
51*	090-0033	1	3/8" Flex Locknut
52*	090-0234	2	3/8" Flatwasher
53*	100-0081	1	Pressure Gauge
54*	100-0136	1	Gauge Damper
55*	080-0021	1	1/2" x 3/8" Bushing
56*	100-0135	1	1/2" Service Tee

## PRESSURE RELIEF VALVE PART NO. 100-0094

Ref. No.	Part No.	Description
1	080-0700	Adj. Screw Assy. 5896 Brass
2	080-0701	Locknut 5898 Brass
3	080-0702	Body 6818-1/2 Brass
4*	080-0703	Spring Retainer 6545 Brass
5*	080-0704	Gasket 5899-BU Buna N
6*	080-0705	Inside Spring 6547-SS
7*	080-0706	Outside Spring 6546-SS
8*	080-0707	Guide Seat 9897 Brass
9*	080-0708	Inlet Adapter 6789 Brass
*	080-0763	Relief Valve Repair Kit Includes These



## AVAILABLE POWER SPRAYER KITS AND ACCESSORIES

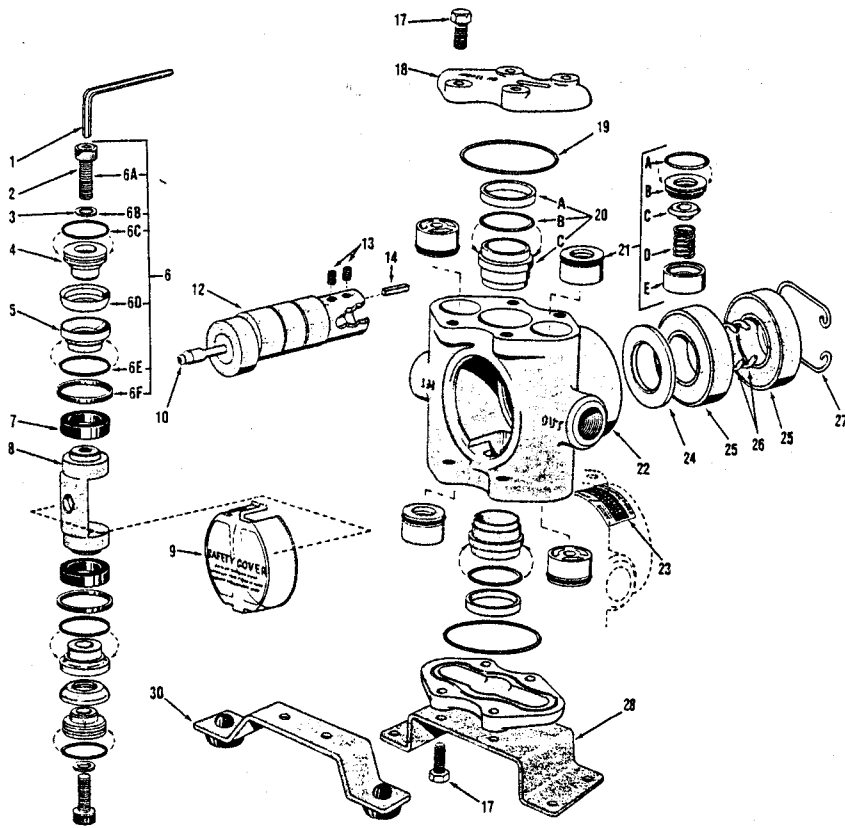
For model PS512 only:

108-0220	Extra 15' Hose Kit
100-0102	Brass Spray Gun Extension

For models PS322TE, PS322T, PS350T, and PS350T-10:

4NB	Four Nozzle Boom Sprays 80"
4NBE	Four Nozzle Boom Sprays 80" (PS322TE only)
6NSB	Six Nozzle Hinged Boom Sprays 120"
8NSB	Eight Nozzle Hinged Boom for Crop Sprays (10 GPM sprayers only)
100-0112	25' High Pressure Hose
100-0112A	50' High Pressure Hose
100-0112B	75' High Pressure Hose
100-0112C	100' High Pressure Hose
108-0092	Pressure Gauge Kit (PS350T-10 only)
108-0084	Pressure Gauge Kit (PS322T & PS350T)
100-0080	Surge Tank
100-0120	Pistol Grip Gun w/Extension
100-0102	Brass Spray Gun Extension only
108-0083	Jet Agitation Kit
108-0082	Handle Kit for PS322T





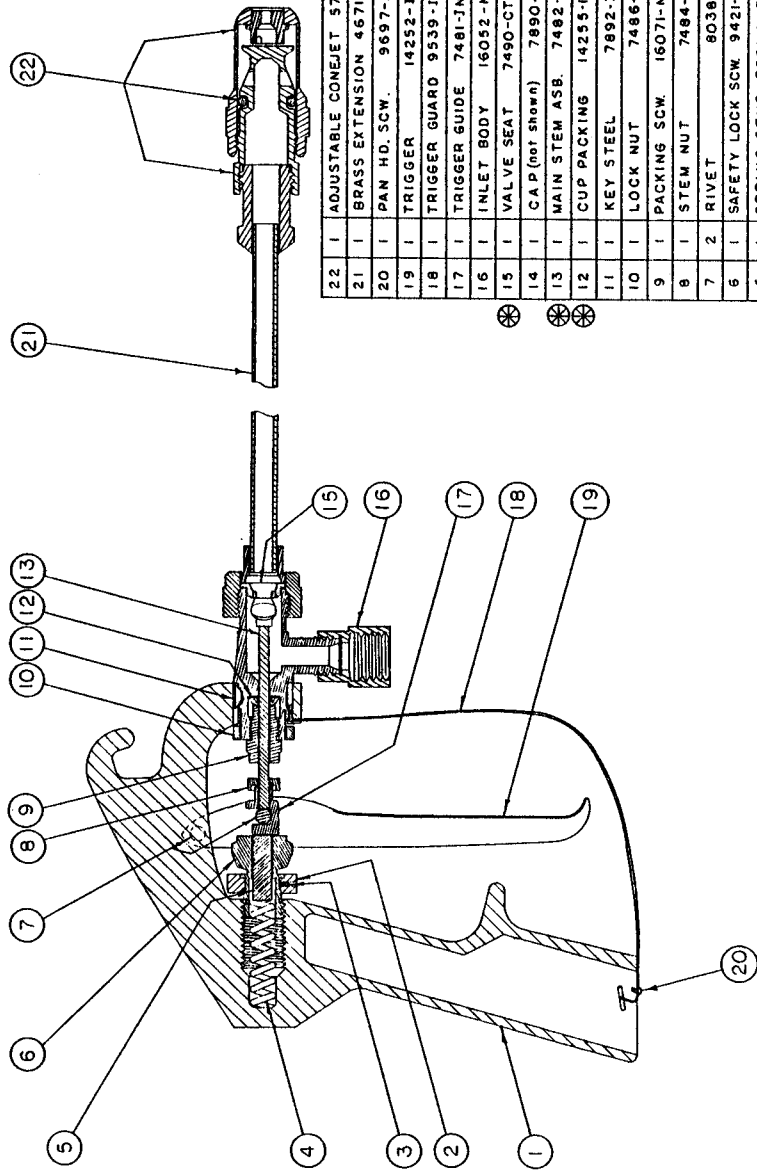
**Hydro Pump Part List**  
 For Units Equipped with  
 Hollow Shaft Pump 108-0020  
 And  
 Solid Shaft Pump 100-0008

Ref. No.	Part No.	Per Pump	Description
1	080-0800	1	Wrench 3020-0001
2	080-0801	2	Piston Cap Screw 2220-0012
3	080-0802	2	Washer 2270-0011
4	080-0804	2	Piston cap Spreader 1830-0017
5	080-0805	2	Cup Backing Plate 1410-0030
*6	080-0803	1	Piston Kit Leather Cups 3430-0007
7	080-0806	2	Piston Guide 1440-0004
8	080-0807	1	Connecting Rod 0502-5300
9	080-0808	1	Safety Cover 0608-5300
10	080-0813	1	Grease Fitting 2405-0006
11	080-0811	1	Crankpin Retainer 1600-0014
**12		1	Crankshaft Hollow Shaft Pump
13	080-0050	2	Set Screw 2230-0017 Hollow Shaft Pump
14	080-0815	1	Spline Key 1610-0011 Hollow Shaft Pump
17	080-0872	8	Cylinder Head Bolts 2210-0062
18	080-0871	2	Cylinder Head 0204-5300C
19	080-0818	2	O-Ring Cylinder Head 1720-0038
20	080-0867	1	Cylinder Sleeve Assy 3430-0209
20AC	080-0820	2	Cylinder Sleeve Assy 3550-0019
20B	080-0819	2	Cylinder Sleeve Ring 1720-0079
21	080-0868	4	Unitized Valve Assy 3430-0197
22	080-0823	1	Body 0100-5300C
23	080-0830	1	Decal 6031-0009
24	080-0824	1	Bearing Shield 2130-0007
25	080-0826	2	Main Ball Bearing 2008-0001
26	080-0827	2	Bearing Ret. Ring (Shaft) 1810-0013
27	080-0869	1	Bearing Ret. Ring (Housing) 1820-0025
28	080-0829	1	Mounting Base 1510-0020
30	108-0068	1	Torque Arm 2820-0028


\*NOTE: STANDARD PUMPS ARE SUPPLIED WITH LEATHER CUPS.  
 FOR LEATHER CUP & GUIDE KIT 3430-0008, which consists of Item #6 and 2 of Item #7  
 USE PART NO. 080-0832.

\*\*FOR COMPLETE CRANKSHAFT ASSY 5500-5330, which consists of Items #10, 11, 12, 13, 14, 24, 25, 26  
 USE PART NO. 080-0810.  
 FOR CRANKSHAFT SUB-ASSEMBLY 5501-5330, which consists of Items #10, 11, 12, 13, 14  
 USE PART NO. 080-0866

REV. 1	REV. 2	REV. 3	REV. 4	REV. 5	REV. 6	REV. 7	REV. 8	REV. 9	REV. 10



22	1	ADJUSTABLE CONEJET	5780	100-0104
21	1	BRASS EXTENSION	4671-24	100-0102
20	1	PAN HD. SCW.	9697-IMP	080-0761
19	1	TRIGGER	14252-IMP	080-0760
18	1	TRIGGER GUARD	9539-IMP	080-0759
17	1	TRIGGER GUIDE	7481-IMP	080-0732
16	1	INLET BODY	16052-NP	080-0758
15	1	VALVE SEAT	7490-CTEF	080-0757
14	1	CAP (not shown)	7890-NP	080-0756
13	1	MAIN STEM ASB.	7482-1	080-0755
12	1	CUP PACKING	14255-1-BU	080-0754
11	1	KEY STEEL	7892-ICP	080-0739
10	1	LOCK NUT	7486-ICP	080-0736
9	1	PACKING SCW.	16071-NP	080-0753
8	1	STEM NUT	7484-IMP	080-0735
7	2	RIVET	8038-ICP	080-0732
6	1	SAFETY LOCK SCW.	9421-IMP	080-0731
5	1	SPRING STUD	7591-ALEF	080-0731
4	1	MAIN SPRING	16053-2-SS	080-0750
3	1	SOCKET HD. SET SCW.	9423-L	080-0749
2	1	SAFETY LOCK CAM	9422-AL	080-0748
1	1	BODY ALUM.	16054-1-AL	080-0747
NO. QTY		DESCRIPTION	PART NO.	

**NOTES**  
 1- ITEMS MARKED WITH  ARE INCLUDED IN SPARE PARTS KIT  
 2- FOR SPARE PARTS KIT ORDER PART NO. 100-0125.

DESIGN	SCALE	DATE	APPROVED BY
TITLE		DRAWN BY	
23H HAND GUN			
DATE	DESCRIPTION	PART NO.	
9-29-87		C-100-0120	

## **CAUTION**

- (1) DO NOT USE THIS SPRAYER UNTIL YOU ARE FAMILIAR WITH THE OWNER'S MANUAL AND OPERATING TIPS.
- (2) ALWAYS WEAR SAFETY GLASSES WHEN SPRAYING.
- (3) USE ONLY HOSE FURNISHED BY MACKISSIC, INC. OR HOSE WHICH HAS 250PSI MINIMUM WORKING PRESSURE/1000PSI BURSTING PRESSURE.
- (4) NEVER ALLOW THE HOSE TO REST OVER THE FRAME ON THE SPRAYER OR DRAG OVER ROUGH SURFACES WHEN SPRAYING.
- (5) CAREFULLY FOLLOW THE WARNINGS AND PROCEDURAL INSTRUCTIONS AS PROVIDED ON THE LABEL OF YOUR SPRAY CHEMICAL.
- (6) AVOID STANDING DOWNWIND WHEN SPRAYING, AND STOP SPRAYING IF THERE IS "DRIFT".
- (7) VERY SPECIAL CLEANING MUST BE DONE WHEN AN INSECTICIDE FOLLOWS A HERBICIDE. REFER TO OPERATING TIPS. THIS IS RISKY, AND SEVERE PLANT DAMAGE MAY RESULT.

Part No. 080-0995

**"CAUTION"**  
ENGINE SPEED SHOULD  
NOT EXCEED 2100 RPM.

Part No. 091-0065

## LIMITED WARRANTY

Any Snapper product found, in the judgment of Snapper, to be defective in material or workmanship, will be repaired or replaced by an Authorized Snapper Service Dealer without charge for parts and labor.

The Snapper product including any defective part must be returned to an Authorized Service Dealer within the warranty period. The expense of delivering the product to the dealer for warranty work and the expense of returning it back to the owner after repair or replacement will be borne by the owner. Snapper's responsibility is limited to making the required repairs or replacements only. No claim of breach of warranty shall be cause for cancellation or rescission of the sales contract of any Snapper product. Proof of purchase will be required by the dealer to substantiate any warranty claim. All warranty work must be performed by an Authorized Service Dealer.

This warranty is limited to five years from the date of original retail purchase for a Snapper product that is used for consumer purposes or 90 days for commercial and rental use.

This warranty does not cover any product that has been subject to misuse, abuse, neglect, negligence, or accident, or that has been operated in any way contrary to or inconsistent with the operating instructions as specified in the owner's manual. The warranty does not apply to any damage to the product that is the result of improper maintenance, or to any product or parts that have not been assembled or installed as specified in the owner's manual.

The warranty does not cover any product that has been altered or modified. In addition, the warranty does not extend to repairs made necessary by normal wear, or by the use of parts or accessories which, in the judgment of Snapper are either incompatible with Snapper products or adversely affect its operation, performance or durability. This warranty does not cover engines, electric starters, batteries, and tires which are warranted separately by their manufacturer and for a different period of time.

Snapper reserves the right to change the design of any product without assuming any obligation to modify any product previously manufactured.

THE DURATION OF THE LIMITED WARRANTY IS FIVE YEARS CONSUMER, 90 DAYS COMMERCIAL AND RENTAL USE. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS LIMITED WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. SNAPPER SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, EXCEPT THE LIMITED WARRANTY DESCRIBED ABOVE, ALL IMPLIED WARRANTIES (MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) ARE SPECIFICALLY DISCLAIMED.

SNAPPER ASSUMES NO RESPONSIBILITY FOR INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES INCLUDING, BUT NOT LIMITED TO, EXPENSE FOR GASOLINE, OIL, EXPENSE OF DELIVERING THE PRODUCT TO AN AUTHORIZED SERVICE DEALER AND EXPENSE OF RETURNING IT BACK TO THE OWNER, MECHANIC'S TRAVEL TIME, TELEPHONE OR TELEGRAM CHARGES, RENTAL OF A LIKE PRODUCT DURING THE TIME WARRANTY REPAIRS ARE BEING PERFORMED, TRAVEL, LOSS OR DAMAGE TO PERSONAL PROPERTY, LOSS OF REVENUE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME OR INCONVENIENCE.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.