



P10 PUMP

Operations and Parts Manual

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WARRANTY

GNC Industries, Inc., products are warranted by GNC Industries, Inc.. GNC Industries, Inc. will repair or replace (at GNC Industries, Inc.'s option) any part or assembly, free of charge, if that part or assembly fails within twenty four months (2 years) from the date of purchase, provided the failure is due to an unmistakable defect in material or workmanship.

No allowance will be made for consequential damage, labor or expenses incurred as the results of a proven defect. In no event will GNC Industries, Inc. be liable for any loss of profits or other consequential damages, even if GNC Industries, Inc. has been advised of the possibility of such damages.

GNC Industries, Inc. assumes no responsibility for accidents or injuries resulting from maintenance or adjustment of product while product is in operation.

Since GNC Industries, Inc. has no control over the operational techniques or chemicals used, GNC Industries, Inc. assumes no liability for the consequences of the use or misuse of any equipment by the Purchaser his employees or others.

Maximum operation speed and pressure is specified in individual and applicable instructions.

GNC Industries, Inc. reserves the right to improve any product without being obligated to provide that change on equipment sold and/or shipped prior to the product change.

Modification of equipment voids all warranties written or implied

SPRAYER START UP

1. Fill the engine with oil according to the engine manufacturer's specifications. (SAE 30).
2. Fill the pump with 30-weight oil, until the oil level is at the full mark on the pump oil sight gauge or dip stick.
3. Check the grease cups (ref # 50) to ensure they are full of grease.
4. Make sure all hoses are properly secured.
5. Make sure there is liquid in the tank.
6. Position the pressure bypass lever (ref # 108) on the pressure regulator in the fully clockwise (up) position. This relieves all pressure and bypasses all the liquid being pumped, back into the tank.
7. Start the engine and set the engine speed at approximately 3200-3400 RPM. ***These use air cooled engines and should be run at full throttle during use.***
8. Close all the discharge valves allowing only the return line into the tank to remain open.
9. Check inside the tank to be sure there is liquid being pumped back into the tank through the return agitator.
10. Unscrew the threaded regulator handle (ref # 101) until it comes out of the regulator. Then put it back and screw it inward four (4) turns only.
11. Place the lever on the pressure regulator (ref # 108) in the fully counter-clockwise (down) position. A slight pressure should register on the pressure gauge.
12. Screw the regulator handle (ref # 101) inward until the desired operating pressure is obtained on the pressure gauge. Then, open all valves to the hose reel and place the spray gun in the open position, spraying back into the tank through the lid. The pressure may drop slightly, but this is normal. If the pressure drops below the desired pressure, adjust the regulator handle (ref #101) inward one (1) turn. If the pressure increases, continue to adjust inward until desired pressure is obtained with the spray gun in the "on" position. When the desired pressure is obtained, you are ready to go to work. **!!! NEVER EXCEED 600 PSI !!!** If the pressure will not go up to the desired operating pressure, do not continue to adjust the regulator screw handle inward.
13. **!! LEAVE THE SPRAY GUN IN THE ON POSITION AND GO TO STEP 15.**
14. Adjust the pressure regulator screw handle in the reverse direction until the pressure starts to drop, and place the pressure regulator bypass lever (ref #108) in the full (up) clockwise position. Then place the spray gun in the off position.
15. Re-check the engine RPM to make sure it is at 3200-3400 RPM.

16. If you had to make any adjustments in step 15 or 16, repeat steps 10 thru 15
17. If you still cannot get the desired operating pressure, change the spray gun tip to the next smaller size, and repeat steps I thru K.
18. If you still cannot get the desired operating pressure, go to the trouble shooting guide (SECTION V.) or call GNC Industries, Inc. at 800-462-2005 or 870-248-9901.

SPRAYER SHUT DOWN AND STORAGE

1. Run the pump until all liquid is pumped out of the system. ***Do not run the pump dry for more than 30 seconds.*** Then shut the engine off and fill the tank with clean, clear water. Pump the tank empty. If the sprayer is going to be stored for several days, the following procedure is recommended:
 2. Put 1 gallon of anti-freeze and 1 gallon of water or equivalent in the tank if temperatures are expected to be below 0 °F. Check the freeze chart of the anti-freeze and add anti-freeze to recommended rating for expected temperatures.
 3. Start the engine and allow the pump to operate just long enough to fill the system with the anti-freeze solution. This is accomplished when only anti-freeze mixture is coming out of the spray gun. Close the spray gun and allow the pump to operate for 1 minute.
 4. Shut the system off and place in storage. This procedure keeps all the valves and other moving parts protected during storage.
 5. When you are ready to use the system again, start the engine and allow the pump to operate until all anti-freeze has been pumped out of the system. Fill the tank with clear water and one bottle of ammonia-based cleaning liquid. Run the pump until this solution has been pumped out. Refill the system with clear water and pump the system dry once more. The spray system is now ready to go to work.

NOTE: The above procedure is highly recommended for sprayers in cold climates as a prevention of freezing and breaking the pump.

STANDARD MAINTENANCE CHECKS

FILLING AND CHANGING LUBRICATION OIL

Take off the oil cap (ref # 4) and fill with 30-weight oil to the full line on the indicator window or dip-stick. It is recommended to change oil every one hundred (100) hours of operation.

GREASE THE CYLINDERS

Each cylinder is equipped with a grease cup to prevent premature plunger and packing wear. Each cup must be filled with grease on the initial starting of the sprayer unit and filled weekly if necessary.

PUMP REPAIR

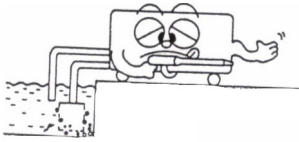
TO REPLACE PUMP PISTON PACKING

1. Unscrew the nuts located underneath the cylinder (ref # 49) and remove the discharge metal/manifold (item #71).
2. Unscrew the bolts (ref # 62) and remove the suction metal/manifold (ref # 60).
3. Unscrew the nuts (ref # 52) that hold the cylinder (ref # 49) on, and then the cylinder (ref # 49) should slide off the pistons.
NOTE: The cylinder (item #49) may require tapping with a non-metallic object to remove. The piston packing is inside the housing.
4. Unscrew the crown nut (ref # 44) with the special wrench supplied with the pump. With your fingers, you can now remove the grease ring (ref # 46) and also the V packing (ref # 47). Make sure to observe the direction of the v-shaped portion of the V packing. Install the new V packing in the same direction. Re-assembly may be accomplished by reversing the procedures.
5. After the pump is re-assembled, tighten the crown nut (ref # 44) with the same special tool used to remove them.
CAUTION: DO NOT OVER TIGHTEN!!
6. After the pump is back in operation, if there is any leakage, a slight tightening of the crown nut (ref # 44) may be necessary.
NOTE: Make sure to repack the grease cups (ref # 50) with grease before placing the pump back in operation.

REPLACING THE SUCTION AND DISCHARGE VALVE ASSEMBLIES

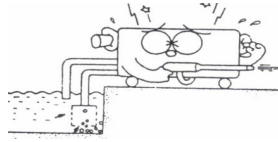
1. Unscrew the nuts located underneath the cylinder (ref # 49) and remove the discharge metal/manifold (ref # 71). Then the valve ass'y (ref # 53) may be removed with a screwdriver.
CAUTION: Careful not to damage the plunger (ref # 26)
2. Unscrew the bolts (ref # 62) and remove the suction metal/manifold (item #60). Then the valve ass'y (ref # 53) may be removed with a screwdriver.
3. Clean the insets where the valves sit to make the new valves seat properly.
4. Reassembly may be accomplished by reversing the disassembly procedure.
NOTE: Suction and discharge valves are the same and both should be replaced at the same time.

Low or Lost Pressure



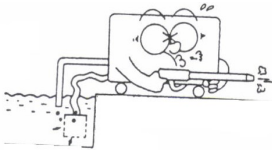
Ref: 1,2, 3, 4, 5, 6, 10,
11, 12, 13, 14, 15, 16

Abnormal Suction



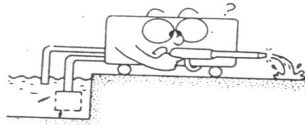
Ref: 2, 3, 6, 7, 8, 11,
15,16

No Liquid at Spray Gun



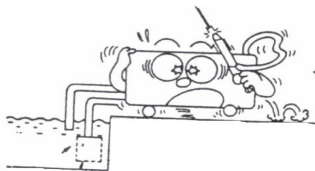
Ref: 2, 11, 14, 15, 16

Abnormal Pump Noise



Ref: 2, 3, 7, 8, 11, 15, 16

Abnormal Vibration



Ref: 9

TROUBLESHOOTING REFERENCE NUMBERS

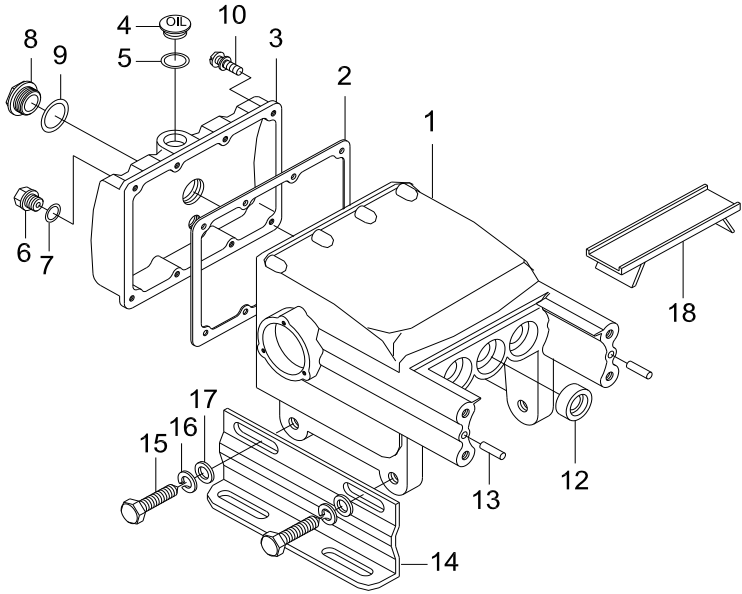
- | | |
|---|--|
| 1. Spray gun tip too large or worn | 9. Pulsation dampening chamber full of water |
| 2. Suction filter clogged | |
| 3. Loose suction line connection | 10. Worn pump valve chamber |
| 4. Malfunctioning pressure gauge | 11. Foreign object in suction line |
| 5. Malfunctioning pressure regulator | 12. Plunger packing worn |
| 6. Worn pump suction and discharge valves | 13. Pump drive belts loose |
| 7. Over speeding the pump | 14. Pressure regulator by-pass valve open |
| 8. Suction line too small | 15. Suction line valve closed |
| | 16. Drive pulley spinning on pump |

REPAIR KITS

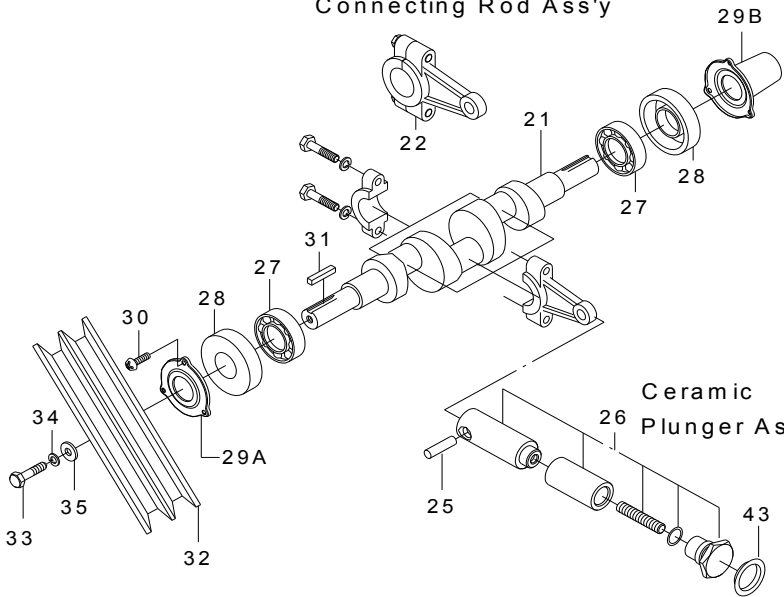
PART #	DESCRIPTION
43-810-200	PRESSURE REGULATOR ASSEMBLY Complete pressure regulator (unassembled)
43-810-250	PRESSURE REGULATOR REBUILD KIT: Upper Metal, Spring, Under Metal, Packing, Spindle Guide, Oil Seal, Box, Spindle, Ball Valve, O-Ring, Ball Valve Seat (ref# 113-119, 121-124)
43-810-325	PACKING REPAIR KIT: 9 V Packings, 3 Crown Nuts, 3 Grease Rings, 3 Water Stopping Rings, 3 Grease Packings (ref# 43-48)
43-810-350 (ref# 53)	VALVE REPAIR KIT: 6 Valves, 6 Seals (Valve Box, Spring Valve, Valve Flat, Valve Seat, Valve Ring, Valve Seal)
43-810-380	PUMP REBUILD KIT: 3 Crown Nuts, 3 Grease Rings, 3 V-Packing, 3 Water Stopping Rings, 3 Grease Packing, 9 Packing, 6 Valves, 6 Seals (ref# 43-48, 53)

REF #	PART #	DESCRIPTION
1	42-810-01	CRANK CASE
2	42-810-02	GASKET, CRANK CASE
3	42-810-03	COVER, CRANK CASE
8 & 9	42-810-04	OIL GAUGE & O-RING
6	42-810-05	PLUG, FUEL DRAIN
7	42-810-06	O-RING
10	42-810-07	SCREW
18	42-810-09	PLUNGER COVER
4	42-810-10	OIL CAP
5	42-810-11	O-RING
13	42-810-12	PIN
14	42-810-13	BED, CRANK CASE
15	42-810-14	BOLT
16	42-810-15	WASHER, SPRING
17	42-810-16	WASHER
21	42-810-21	CRANK SHAFT
22	42-810-22	CONNECTING ROD ASS'Y
25	42-810-25	PLUNGER PIN
26	42-810-26	CERAMIC PLUNGER ASS'Y
27	42-810-27	BEARING
28	42-810-28	OIL SEAL, CRANK SHAFT
29A	42-810-29A	COVER, OIL SEAL - A
29B	42-810-29B	COVER, OIL SEAL - B
30	42-810-30	SCREW
31	42-810-31	KEY
32	42-810-32	PULLEY
33	42-810-33	BOLT
34	42-810-34	WASHER, SPRING
35	42-810-35	WASHER
12	42-810-41	OIL SEAL, PLUNGER

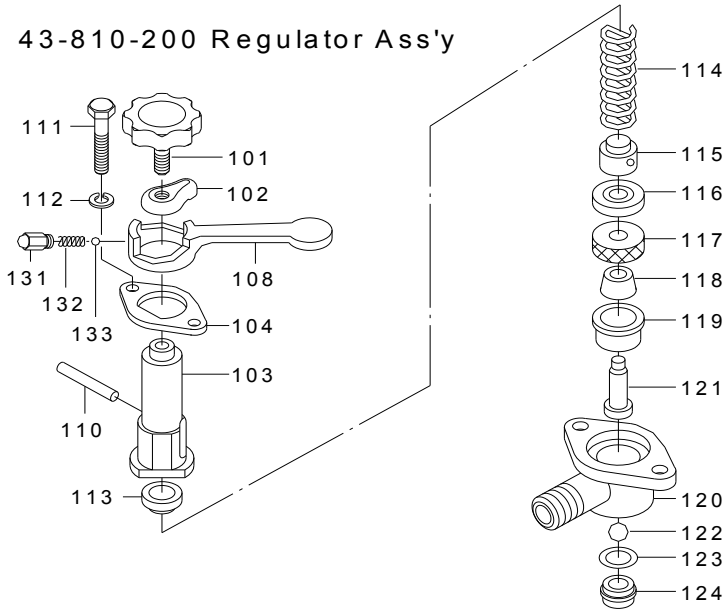
REF #	PART #	DESCRIPTION
43	42-810-43	STOPPING RING, WATER
44	42-810-44	GRAND (Crown Nut)
45	42-810-45	GREASE PACKING
46	42-810-46	GREASE RING
47	42-810-47	V-PACKING
48	42-810-48	V-PACKING SEAT
49	42-810-49	CYLINDER
50	42-810-50	GREASE CUP
51	42-810-51	WASHER, SPRING
52	42-810-52	BOLT
53	42-810-53	VALVE ASSY
54	42-810-54	BOX, VALVE
55	42-810-55	SPRING, VALVE
56	42-810-56	FLAT, VALVE
57	42-810-57	SEAT, VALVE
59	42-810-59	SEAL, VALVE
60	42-810-60	SUCTION METAL
61	42-810-61	WASHER, SPRING
62	42-810-62	BOLT
63	42-810-63	STOPPER, GRAND
64	42-810-64	SCREW
44-50	42-810-65	CYLINDER ASS'Y
69	42-810-69	PLUG, WATER DRAIN
71	42-810-71	DISCHARGE METAL
72	42-810-72	BOLT
74	42-810-74	PACKING
75	42-810-75	AIR CHAMBER
76	42-810-76	WASHER, SPRING
77	42-810-77	PACKING
78	42-810-78	WASHER
79	42-810-79	COUPLING
71,74,75,77-79	42-810-80	DISCHARGE METAL ASS'Y



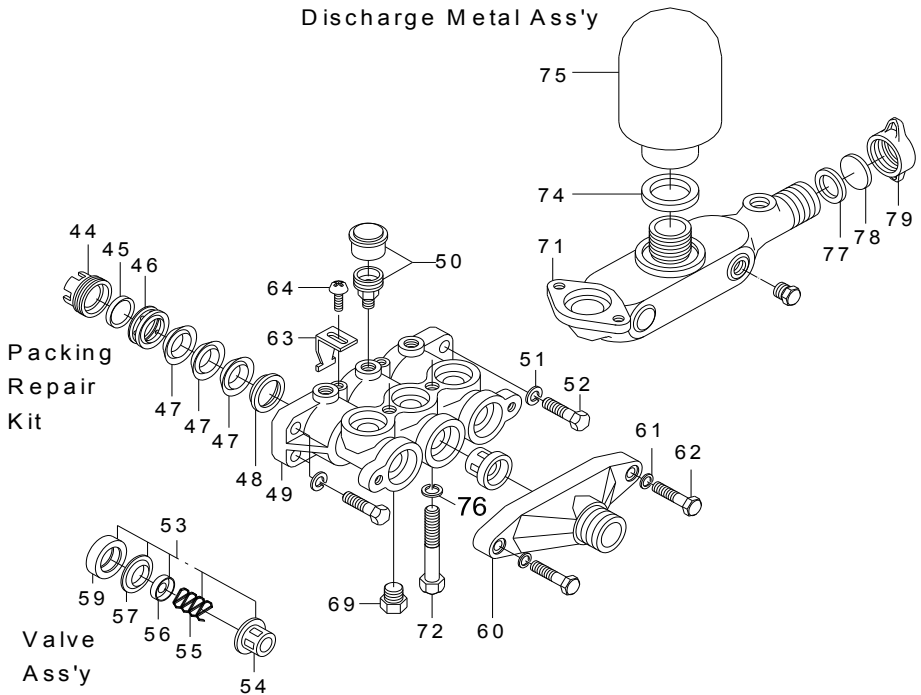
Connecting Rod Ass'y



43-810-200 Regulator Ass'y



42-810-80 Discharge Metal Ass'y





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