

AIR OPERATED INDUSTRIAL PUMPS
RHINO



SUMP PUMP **ASP-20**

**OPERATION &
MAINTENANCE
GUIDE**



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OPERATION: Pumps are rugged dependable pumps designed to give year of satisfactory service, Follow the instructions mentioned here to enhance the life and performance of the pumps.

AIR SUPPLY: Use an air compressor with sufficient CFM (cubic feet per minute) delivery to operate the pump at a pressure of 7 bar.

DAILY BEFORE OPERATION: Disconnect the Air hose and pour in 1 to 2 ounces of recommended oil in to the air inlet and re connect hose after blowing out any accumulated dirt in those line before connection.

LUBRICATION REQUIREMENTS: Always install a line lubricator on the air line as close to the pump as possible, A Filter - Regulator - Lubricator unit (FRL) is strongly recommended. Keep the lubricator bowl topped up with recommended grade of oil and check that the oil is reaching the pump. Before using and after each eight hours service, remove oiler plug (22) and fill reservoir with recommended oil. Periodically remove pipe plug (25) in governor housing (23) and fill cavity with recommended grease. Do not use pressure fittings. If recommended oil is not available, use a turbine or spindle grade oil having a viscosity of 100 - 150 sus at 100% which contains a rust inhibitor.

RECOMMENDED LUBRICANTS AND GREASE:

MANUFACTURE	LUBRICANT EQUIVALENTS FOR AIR MOTORS	GREASE EQUIVALENTS FOR BEARING & GEARING
SHELL	TELLUS 23	ALVANIA EP 2
MOBIL OIL	VETOCITE 10	MOBILEX 47
ESSO	NUTO H 4D	BEACON 2
TEXACO - CALTEX	SPINDURA 22	MUTILAK EP 2
BP POWER PETROLIUM	ENERGOL CS 40	ENTER GREASE LS 3
BURMAH - CASTROL	HYPSPIN AWS 22	SPHEEROF AP2

DISASSEMBLY /ASSEMBLY INSTRUCTIONS: To dis - assemble pump, first unscrew and remove air cock (26) exhaust pipe (48) dis - charge nipple (34), separate impeller housing (28) from motor housing (46) by removing screw (49) and lock washer (50) and separate the motor housing (46) from governor housing (23) by removing screws (55) and spring washer (54) to remove impeller (43) first remove impeller retaining bolt (44) and impeller retaining spacer (40). The motor assembly can now be removed from motor housing (46). Remove the governor body (18) by rotating in clockwise direction - left hand threads from the rotor body (37), remove upper end plate (39) and rotate rotor body (37) with hand to inspect rotor for dirt and for easy rotation. Inspect end play for evidence of scoring and inspect rotor blades (36) for excessive wear and for a face fit in rotor slots. Inspect lower end plate (35) for scoring and inspect ball bearing (47) for free rotation if replacement of lower end plate bearing (47) is necessary, remove cylinder (38) press rotor body (37) and lower end plate bearing (47) press bearing (47) to rotor (37) and replace. Remove the impeller sleeve (32) and inspect seals (01) for wear. To remove these seals (01), first remove upper wear plate screws (45) and wear plate (33), press seals from motor housing (46) when replacing new seals, the inner seal (01) must seat against shoulder of motor housing (46). The outer seal must press flush with motor housing. If removal of lower wear plate (29) is necessary, insert a 6mmdiameter rod (1/4") in to the three holes in the underside of impeller housing (28) and evenly tap the plate out of the housing. When re - assembling the pump, there should be a clearance of 0.15mm(0.007") to 0.3mm(0.012") add the appropriate thickness of shims under the lower wear plate (29). Insure that the shims slots are aligned with the three knockout holes in the impeller housing (28). When assembling motor in to motor housing (46) the upper end plate (39) must protrude above the motor housing (46), between 0.035 mm (0.001") and 0.075 mm (0.003"). If not add shims - similar to wave washers.

MAINTENANCE: ASP-20 sump pumps are designed to meet conditions, which subject them to serve wear, and to the presence of corrosive liquids. A regular maintenance schedule will greatly add to the durability of the pump. We strongly recommended that the lubrication instructions be followed religiously. The housing bolts are to be tightened at regular intervals, especially the first one week of operation. After every 500 hours of use pump should be opened up and worn components replaced if any.

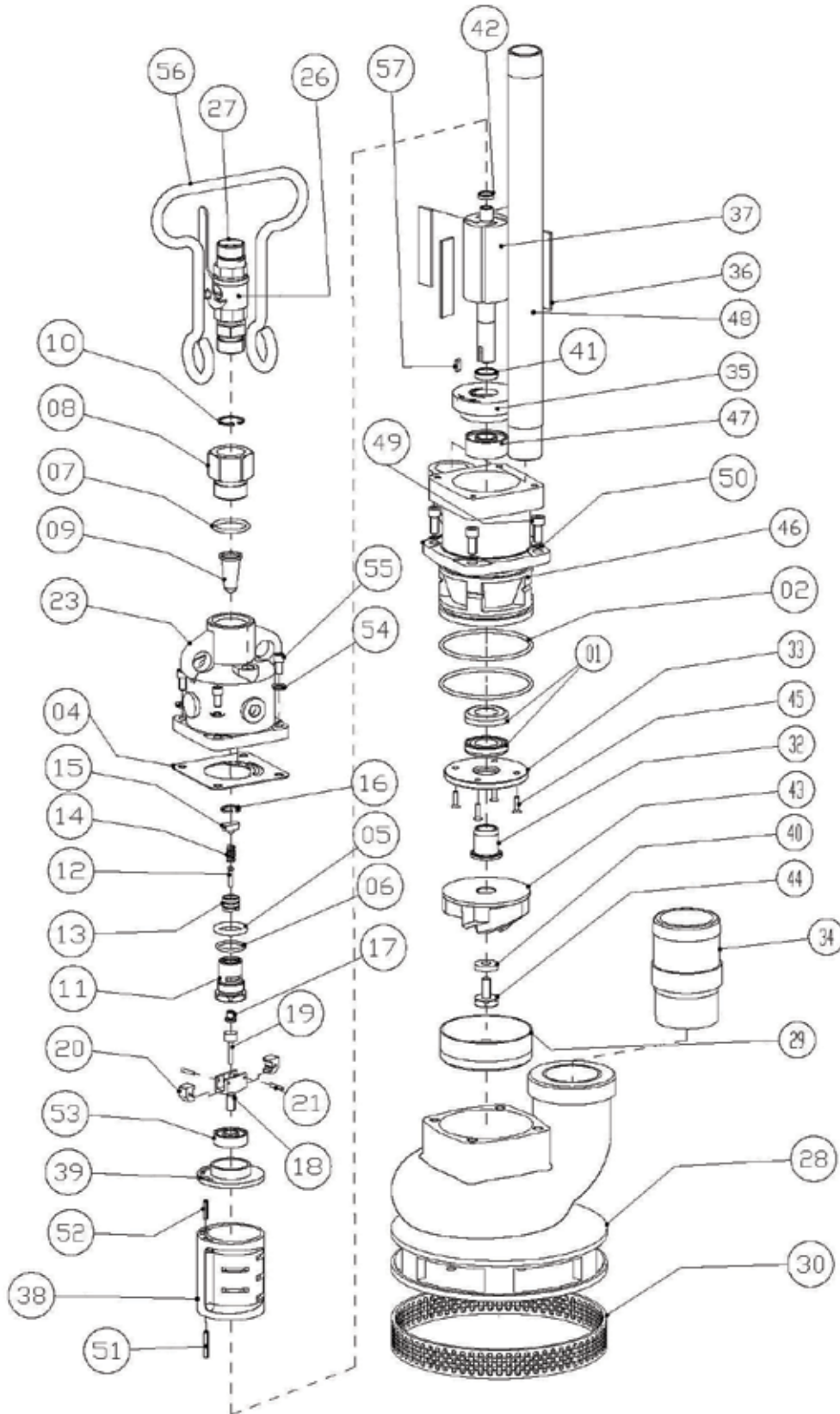
SAFETY INSTRUCTIONS: Never operate the pump over the rated 7 bar pressure. Keep hoses in good condition. Check hoses for wear and ensure that fittings are secure. Accidental disconnection while pump is in use can make the hose whip and can be safety hazard.

STORAGE: When storing sump pump for any length of time precautions should be taken to prevent corrosion and to maintain pump in a serviceable condition

- * Remove discharge and exhaust hose or pipe and run pump out of water to blow out all moisture.
- * Remove air line and pour a small amount of rust resistant oil in live air inlet. Re-connect hose and idle motor a few minutes to carry oil to all internal parts..
- * Remove air hose and plug live air inlet and air exhaust port with corks.
- * Wipe out side of pump with rust resisting oil. Wrap pump in oiled paper and pack in covered box.
- * Store pump in dry place.

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EXPLODED VIEW



SUMP PUMP ASP-20 ASSEMBLY & PART LIST



ILLUS NO.	PART NO.	PART DESCRIPTION	QTY/ TOOL
(A)	KIT OF RUBBER COMPONENTS CONSIST OF		
01	199 90 44	Seal - spindle	2
02	199 40 30	O Ring	2
04	199 40 33	Gasket-Governor housing	1
05	199 40 56	O Ring	1
06	199 40 31	O Ring	1
07	199 40 34	O Ring	1
(B)	AIR INLET BUSHING ASSEMBLY CONSIST OF 199 21 14/A		
07	199 40 34	O Ring	1
08	199 21 14	Air inlet Bushing (bare)	1
09	199 38 28	Air Strainer	1
10	500 90 43	Internal Circlip	1
(C)	GOVERNOR VALVE CAGE ASSEMBLY CONSIST OF 199 25 27/A		
05	199 40 56	O Ring	1
06	199 40 31	O Ring	1
11	199 25 27	Governor valve cage (bare)	1
12	199 21 20	Pin governor valve	1
13	199 21 21	Governor valve	1
14	199 50 40	Spring-governor valve	1
15	199 50 41	Spring-Retainer	1
16	200 40 12	Internal Circlip	1
17	199 21 19	Bushing governor valve pin	1
(D)	GOVERNOR BODY ASSEMBLY CONSIST OF 199 21 24/A		
18	199 21 24	Governor Body(Bare)	1
19	199 21 25	Push Pin	1
20	199 21 22	Governor Weight	2
21	199 50 55	Pin governor weight	2
(F)	AIR COCK ASSEMBLY CONSIST OF 199 90 50/A		
26	199 90 50	Air cock 3/4"	1
27	199 21 57	Male adapter 3/4"	2
(G)	IMPELLER HOUSING ASSEMBLY CONSIST OF 199 05 08/A		
28	199 05 08	Impeller Housing (bare)	1
29	199 05 61	Wear Plate-lower	1
30	199 21 18	Sump screen	1

ILLUS NO.	PART NO.	PART DESCRIPTION	QTY/ TOOL
23	199 05 65	Governor Housing	1
32	199 21 11	Sleeve impeller	1
33	199 21 12	Wear plate upper	1
34	199 21 09	Discharge nipple	1
35	199 05 63	End plate lower	1
36	199 39 29	Rotor blade	4
37	199 21 13	Rotor Body	1
38	199 05 07	Cylinder	1
39	199 05 64	Upper End Plate	1
40	199 21 10	Spacer impeller retainer	1
41	199 21 15	Spacer	1
42	199 21 17	Spacer	1
43	199 05 62	Impeller	1
44	199 90 42	Bolt impeller retaining	1
45	199 90 43	Screw upper wear plate	4
46	199 05 06	Motor housing	1
47	199 50 35	Ball Bearing	1
48	199 90 45	Exhaust pipe	1
49	199 90 46	Bolt motor housing	4
50	199 90 47	Lock washer	4
51	199 50 36	Dowel pin	1
52	199 50 37	Dowel pin	1
53	199 50 38	Ball Bearing	1
54	500 90 48	Spring washer	4
55	199 90 48	Bolt governor housing	4
56	199 21 16	Dead handle	1
57	199 50 39	Rotor Key	1
-	199 81 55	Repair Kit	1

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INTENDED USE Pneumatic sump pumps are intended for used for de watering, transfer of fluids such as clear and sea water, marine emptying of ballast tanks, darning cargo holds and pumping of sea water from bilges and holds.

TECHNICAL DATA

MODEL NO.	ASP-20
Net Weight	21.5Kg
Height	340mm
Minimum opening pump will enter	204mm x 230mm
Air Inlet	¾" NPT
Air consumption	2.7m ³ /min
Fluid out let	2" BSP
Air outlet	1" BSPP