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RIP 4000 ROTARY NOZZLE OPERATING INSTRUCTIONS UP-200-2

NOTE: Before making any changes or repairs to the RIP 4000, depressurize pump and shutdown. Make sure all high pressure hoses or systems are depressurized. Never tighten or loosen any fitting, bolt or nut when pump is energized; severe injury could occur.

Before operating the RIP 4000, make sure all fittings and connections are tight. Any leaks, even minor, should be fixed or repaired before operating the nozzle.

Maximum efficiency of the RIP 4000 depends on the proper setup. The RIP 4000 should operate with 1/2 - 1 pound per minute use of abrasive. Although any abrasive can be used with the RIP 4000, they each have their own characteristics.

Sizing of the media also effects the operation of the nozzle. The RIP 4000 can be vacuum or pressure fed depending on location of the pot and distance. In order to deliver the correct amount of media to the nozzle, the media pot must have an orifice installed. Size of the orifice depends on the media size (mesh) being used. For orifice sizing selection, see chart below.

MEDIA POT ORIFICE SIZE CHART

Mesh	Orifice Size
36	.130/.140
50	.090/.093
80	0.070
120	0.062

The RIP 4000 functions on a vacuum principle, such as a metal cutting head (vacuum induction). All feed hose and connections must be tight to obtain optimum performance from the nozzle. Over feeding or over pressurizing the nozzle will result in premature failure of parts within the nozzle resulting in production loss.

The RIP 4000 is a self aligning nozzle. Water orifice and mixing focal tube should always be aligned for optimum performance and reduce premature parts failure. The unique design of the focusing tube and jewel insures correct alignment at all times.

JEWEL CHANGE OUT:

1. Use locking pin to secure shaft to housing.
2. Use 1/2" socket or wrench to loosen item #7 (focal tube holder) and remove.
3. Remove brass washer #17 and pull out jewel housing #5.
4. Drop in new jewel housing making sure the jewel is aligned with keyslot in shaft.

5. Replace brass washer #17 and insert #7 focal tube housing into shaft and tighten to seat jewel. **Seat jewel to 35-40 ft./lbs.**
6. We recommend pressurizing pump to desired pressure for approximately 10-15 seconds and retightening the focal tube holder before operating. Carbide focal tube can be replaced by tapping on carbide from the front of housing forcing it out from the back. Insert new carbide and slightly tap to secure.

SHAFT AND BEARING REMOVAL:

Refer to Assembly and Parts List Sheet.

For Proper Installation:

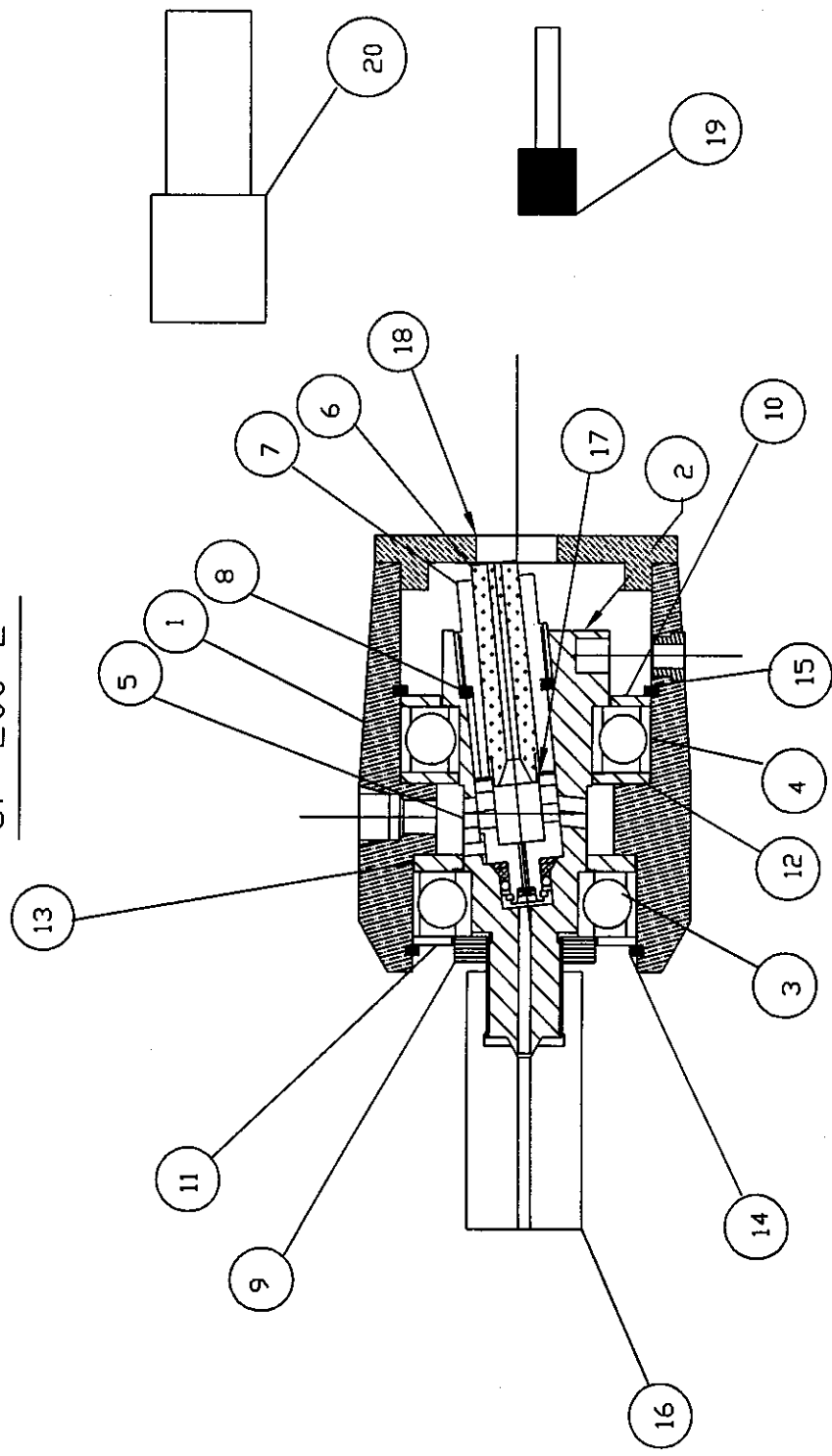
1. Use locking pin to secure shaft and housing to remove #9 locking nut. Shaft can be removed by pushing or tapping it from back to front of housing.
2. Remove snap-rings #14 and #15.
3. Next, remove washer and bearings. Please note that when replacing the bearing washers #12 and #13, always replace them correctly. Each washer has a slight counter bore on one side. Always put the counter bore side facing the bearing.
4. Install bearing, outside washer and snap-rings.
5. Install shaft from the front and tighten locking nut #9. **Do not over tighten nut.**

Always use a stainless steel anti-galling lube such as Universal Mineral's Yellow Lube UP-00003 on all threads.

TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	SOLUTION
Water back-up in feed tube	a. Jewel not seated b. Blown jewel	a. Tighten focal tube nut b. Replace with new jewel
Nozzle Hsg, running hot	Jewel not seated	Tighten focal tube nut
Media flow slugging	a. Wet material b. Wrong size orifice in pot	a. Use dry media b. For proper sizing, see Media Pot Orifice Size Chart above
Rotation slow when pressurized	a. Air motor gyro-gun worn b. Bad bearings c. Over feeding bearings	a. Repair gyro-gun b. Replace bearings c. Lean out grit
Excessive vibration	a. Worn bearings b. RIP brushing in gyro-gun worn	a. Replace b. Replace
Shaft rotation tight after assembly	a. Bent or warped washers b. Washers in backwards	a. Replace b. Put washers in correctly

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 UNIVERSAL MINERALS INC.
 RIP 4000 ROTARY ABRASIVE NOZZLE
 UP-200-2



ITEM	QTY	DESCRIPTION	PART #
10	1	WASHER, FRONT	UP200-09
11	1	WASHER, REAR	UP200-08
12	1	BRG. SHIELD FRONT	UP200-07
13	1	BRG. SHIELD REAR	UP200-06
14	1	SNAP RING REAR	SSR-165
15	1	SNAP RING FRONT	SSR-185
16	1	ADAPTER	CHOICE
17	1	WASHER, JEWEL	UP200-13
18	1	PROTECTOR PLUG	UP200-20
19	1	PIN TIGHTNING, TOOL	UP-016
20	1	TOOL, BEARING REMOVAL	UP200-14

ITEM	QTY	DESCRIPTION	PART #
1	1	HOUSING NOZZLE	UP200-03
2	1	SHAFT	UP200-01C
3	1	BEARING, REAR	FB604
4	1	BEARING, FRONT	FB605
5	1	JEWEL,HSG.	CHOICE
6	1	FOCAL TUBE, CARBIDE	CN-002-100
7	1	HSG., FOCAL TUBE	UP200-04
8	1	O-RING	ER014
9	1	NUT	UP200-11