D.A.D. Dry Air Demand First Stage
Performance Upgrade Procedure

Disassembly

1. Inspect the Performance Upgrade Kit (P/N PK400U) to insure that all components are present. Components that are included in this kit are marked with an asterisk on the back of this sheet.
2. Remove the yoke and nut assembly, Ref# 1 thru 10, using tools P/N 20-157-500 & 20-155-500.
3. Remove and discard O-ring Ref# 9. Replace it with the new one provided in the upgrade kit. Lubricate the new O-ring with Christo-Lub MCG# 111, tool P/N MS150.
4. Remove the saddle Ref# 11.
5. Remove and discard the vent valve Ref# 12, and diaphragm Ref# 13.
6. Remove and discard the schraeder valve, Ref# 17, using tool P/N 12-100-500.
7. Remove and discard the orifice retainer Ref# 14, and O-ring Ref# 15, using tool P/N TL-8MM.
8. Remove the end cap Ref# 32 with tool P/N 200-600-200, and take Ref# 26 thru 31 out of the first stage body.
9. Remove piston assembly from the cap. Remove and discard the high pressure seat, Ref# 28, using the metal end of the straight tipped tool in the tool kit P/N 11-090-500.
10. Remove the orifice assembly, Ref# 16, 18, 19, & 20, using the blunt / soft end of straight tipped tool in the tool kit P/N 11-090-500. Discard Ref# 16, 19 & 20. Keep the belleville washers Ref# 18.

Reassembly

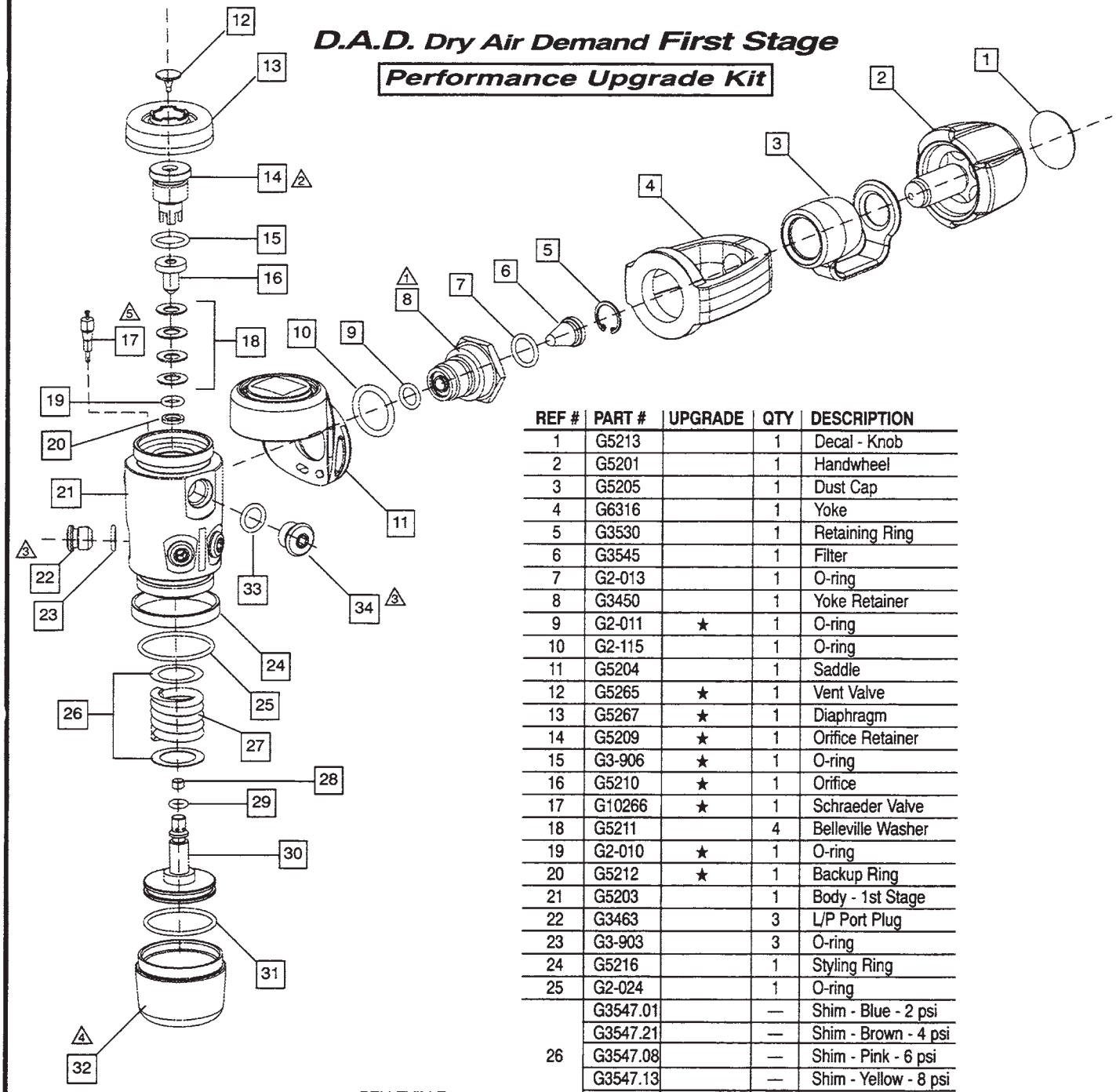
1. Clean & inspect all disassembled parts. Relubricate all O-rings with Christo-Lub MCG# 111, P/N MS150 and reinstall on appropriate parts.
2. Install the new green high pressure seat, Ref# 28, into the piston. Place the seat on a clean flat surface and press down on it with the piston tip until fully seated into position.
3. Insert the piston assembly with O-rings, Ref# 28 thru 31, back into the end cap Ref# 32.
4. Place one shim, Ref# 26, that was removed back into the body Ref# 21.
5. Place the remaining shims on the piston assembly followed by the spring Ref# 27.
6. Verify that the O-ring, Ref# 25, is on the body, and the styling ring, Ref# 24, is on the end cap. Install the end cap, piston assembly, and spring onto the body. Tighten to 120 - 140 in. lbs. of torque.
7. Place the four belleville washers, Ref# 18, onto the new orifice, Ref# 16, in the proper orientation, refer to the diagram on the reverse side of this page.
8. Place the new O-ring, Ref# 19, and the new teflon backup ring, Ref# 20, on top of the belleville washers. The Teflon backup ring should be on top.
9. Install the orifice assembly, Ref# 16, 18, 19, & 20, firmly into the body using the straight tipped tool P/N 11-090-500.
10. Install the new O-ring, Ref# 15, onto the new orifice retainer, Ref# 14, and insert the retainer into the body over the orifice assembly using tool P/N TL-8MM. Tighten to 80 - 100 in. lbs. of torque.
11. Install the new schraeder valve, Ref# 17, into the body using tool P/N 12-100-500.
12. Install the new vent valve, Ref# 12, into the new diaphragm, Ref# 13, and check that it is firmly seated into position.
13. Install the new diaphragm assembly onto the body.
14. Install the yoke and nut assembly, Ref# 1 thru 10, back onto the body using tools P/N 20-157-500 & 20-155-500. Tighten to 23 - 25 ft. lbs. of torque. Do not put the saddle, Ref# 11, onto the first stage at this time.

Final Test & Setup

1. Install the intermediate pressure gauge and second stage adjustment tools, P/N 20-510-100 & 20-500-200, in between the second stage assembly and hose.
2. Place the regulator on a cylinder filled to 3000 psi and open the valve slowly. Turn off the valve if any leaks occur and inspect for the cause.
3. Verify that the intermediate pressure is 140 psi, + or - 5 psi. Cycle the regulator several times to insure that all components are seated and intermediate pressure remains constant. Repeat this test on a cylinder filled to 500 psi. Add or remove shims as needed to acheive the proper intermediate pressure. Use a maximum of three shims.
4. Test the second stage assembly for proper adjustment. Atlas cracking effort 1.2 to 1.4 inches of water column. GS2000 cracking effort 1.0 to 1.4 inches of water column with adjustment knob set at 1 1/2 turns in clockwise.
5. Submerge the pressurized first stage into clean fresh water and inspect for leaks. Lightly press on the diaphragm assembly and verify that bubbles come out of the vent valve and then stop when you release pressure.
6. Depressurize, and dry the regulator. Remove the Intermediate pressure gauge and second stage adjustment tools.
7. Remove the yoke and nut assembly, install the saddle, Ref# 11, and reinstall the yoke & nut assemblies.

D.A.D. Dry Air Demand First Stage

Performance Upgrade Kit



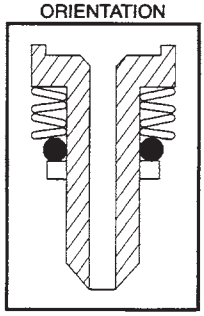
REF #	PART #	UPGRADE	QTY	DESCRIPTION
1	G5213		1	Decal - Knob
2	G5201		1	Handwheel
3	G5205		1	Dust Cap
4	G6316		1	Yoke
5	G3530		1	Retaining Ring
6	G3545		1	Filter
7	G2-013		1	O-ring
8	G3450		1	Yoke Retainer
9	G2-011	★	1	O-ring
10	G2-115		1	O-ring
11	G5204		1	Saddle
12	G5265	★	1	Vent Valve
13	G5267	★	1	Diaphragm
14	G5209	★	1	Orifice Retainer
15	G3-906	★	1	O-ring
16	G5210	★	1	Orifice
17	G10266	★	1	Schraeder Valve
18	G5211		4	Belleville Washer
19	G2-010	★	1	O-ring
20	G5212	★	1	Backup Ring
21	G5203		1	Body - 1st Stage
22	G3463		3	L/P Port Plug
23	G3-903		3	O-ring
24	G5216		1	Styling Ring
25	G2-024		1	O-ring
26	G3547.01		—	Shim - Blue - 2 psi
	G3547.21		—	Shim - Brown - 4 psi
	G3547.08		—	Shim - Pink - 6 psi
	G3547.13		—	Shim - Yellow - 8 psi
	G3547.11		—	Shim - White - 10 psi
27	G5217		1	H/P Spring
28	G5269	★	1	H/P Seat
29	G2-008		1	O-ring
30	G5083		1	Piston
31	G2-023		1	O-ring
32	G5202		1	End Cap
33	G3-904		2	O-ring
34	G3462		2	H/P Port Plug
—	PK400U		—	Service Kit Upgrade

NOTES:

1. 23 - 25 ft. lbs.
2. **80 - 100 in. lbs.**
3. 35 - 40 in. lbs.
4. 120 - 140 in. lbs.
5. 6 - 6.5 in. lbs.

Intermediate Pressure
140 +/- 5 @ 3000 PSI.

BELLEVILLE ORIENTATION



STOP **This kit is used to upgrade the performance of GENESIS D.A.D. First Stage Regulators with serial numbers below 0703758**

GENESIS SCUBA