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Inspection of DESCO Air Hat Parts

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Helmet Shell

Visually check all solder joints for cracking or excess corrosion. Note condition of finish. On painted Air Hats look for any loose or flaking paint.

Base Ring;

Visually and by feel check the interior of the base ring for nicks, scratches, corrosion, or foreign material which could prevent proper sealing. Inspect the front loop and the tail for damage or cracking in the part or joints.

Shell:

Check the shell for dents and gouges. Look over all solder joints for cracking or excessive corrosion. Check the condition of the headpiece retainer screw in the top of the shell.

Snout:

Inspect all solder joints. Especially check the solder joints on video blocks (if equipped). Check the front surface (where window gasket seats) for damage or contamination. Inspect window screw threads.

Air Inlet Elbow:

Check for any cracking in the casting or damage to the threading.

Exhaust Base:

Check for dirt or other accumulation on the flapper valve sealing surface. Check the retaining screw threads. Check the condition of the flapper retainer (spider) in the body.

Insert Ring Assembly

O-ring:

Wash the O-ring in soap and warm water to remove all dirt and contaminants. Do a careful inspection for cuts, nicks, or gouges. Look closely at the glue seam for any evidence of the joint separating.

Neckdam:

When examining for holes pay particular attention to the area where the Neckdam wraps back around to pass under the O-ring. Slightly stretching the material aids in locating holes. Check for wear and stretching at the lower end of the Neckdam where it contacts with the diver's neck.

Shim:

The older gum rubber shims would deteriorate quickly. If the shim has been removed intact from the insert ring, check for deterioration of the shim material. Newer shims are made from synthetic material and should stand up better. Routine checks for contamination and/or damage should still be performed.

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Insert Ring Assembly continued;

Insert Ring:

Carefully inspect the insert ring for dents and nicks. Remove any burrs with very fine sandpaper. Check the ring for evidence of damage, which may have put it out of round. Place the insert ring on a flat surface and check for rocking.

Window Assembly

Window:

Check the window carefully for cracks, scratches, or chips along the edges. Inspect the window gasket sealing surface for dirt or gasket material adhering to it. Acrylic windows are resistant to most chemicals so cleaning with strong detergents should not affect them. Commercial plastic cleaners and scratch removers can be used to remove clouding if care is exercised.

Window Gasket:

Wash the gasket and window with soap and warm water. Carefully inspect the gasket for cuts, cracking, or nicks, and check that the gasket is not gotten hard or soft.

Window Screws:

Check for excessive corrosion or if the screw is bent. Look for cracking where the threads meet the head.

Exhaust Valve Assembly

Single Exhaust Valve:

Generally look over the unit for contamination or damage. Inspect the solder joint where the adjuster cap meets the cover. Look for corrosion or cracking. Check the movement of the plunger in the cover assembly and the action of the spring. Work the adjuster cap as a check for the condition of the cap threads. Excessive play in the operation of the adjuster would warrant further disassembly down to the component parts. Check the condition of the four cover retaining screws. Inspect the base where the flapper valve makes contact for dirt or other contaminants which could affect operation.

Double Exhaust Valve:

Generally look over the unit for contamination or damage. Inspect the solder joint where the adjuster cap meets the top section. Look for corrosion or cracking. Check the movement of the plunger in the top section assembly and the action of the spring. Inspect the threads on the top section adjuster assembly. Work the adjuster cap as a check for the condition of the cap threads. Excessive play in the operation of the adjuster would warrant further disassembly down to the component parts. Check the condition of the plunger in the top section and the flapper guard in the mid section. Look for signs that the flapper valve(s) may be sticking to them. Inspect the base where the flapper valve makes contact for dirt or other contaminants which could affect operation.

O-ring:

Wash the O-ring on soap and warm water. Carefully inspect for cuts and nicks.

Flapper Valve Disk(s):

Check for wear and cracking in the material. Look for signs of physical deterioration of the material such as hardening or softening. Look for signs that the flapper valve may be sticking to the plunger or flapper guard.

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Exhaust Valve Assembly continued;

Body Sections:

Look for signs of damage or corrosion. Look for plating flaking or cracking. Check the flapper valve sealing surface on the mid body for wear or damage. Check the threads in the mid body for dirt or corrosion.

Air Train Assembly

The air train should be pressure tested after reassembly by applying 100psi to the system and using a soap/water mix to check all joints and connections for leakage.

Non-Return Valve(s):

Inspect the body parts for corrosion, wear, or damage. Check the threads for condition. Check for damage to the valve seat. Look for loose plating or corrosion. Check the spring for loss of strength or corrosion. Test for leakage by attaching the Non-Return valve to a low pressure air source (20psi approx.) from the outlet side (1/4"NPT thread) and submerge in container of water. No bubbles should be observed from the inlet side.

Inside Elbow:

Inspect the elbow for corrosion, wear, or damage.

Tube:

Inspect for corrosion, wear, or damage. Look for corrosion at the tube ends and on the ferrules where it can interfere with the seals.

Air Control Valve Inspect for corrosion, wear, or damage. Look inside the valve openings for signs of foreign material or contaminants. If the valve operation seemed loose before disassembly check the valve packing. Check the valve stem for bending.

Air Diffuser Inspect for contamination or damage. Carefully remove the Lambswool into a plastic bag. Inspect the Lambswool for contaminants and foreign material. Check the opening in the body for excessive wear. Look at the body for oil or contaminate saturation.

Clamp and Lock Assembly

Clamps:

Inspect the clamps for corrosion, bends and cracks. Inspect the clamp holes for cracks and wear.

Locks:

Inspect the locks for cracks at the solder joint. Look for bending or twisting in the tab. Check the hole for cracking or wear.

Bolts & Nuts:

Inspect the bolts for corrosion, wear, and bending. Look at the nuts for rounding off and thread corrosion or wear. Try threading the nuts and bolts together to test the threads and the nylon locks on the nuts. If the nuts will not self-lock they should be replaced. If the nylon washers appear to be flattened out replace them.

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Binding Post Assemblies and Communications

Binding Post:

Check the solder joint for cracking. Test the clamp nut for operation. Check for bending. Older binding posts were drilled for inserting the communications wire. If the binding post has this hole look for cracking of the post next to the hole.

Bushings:

Check the bushing for cracks or excessive compression.

Nuts:

Check for rounding off and the general condition of the threads.

Speaker:

Check the speaker for operation using a sound source. Inspect the speaker, wire and terminals for wear, corrosion, or damage.

Speaker Cup:

Check for wear and damage. On new style helmets check the bulkhead fitting or the plug for damage or corrosion. The plug is sealed with plumber's pipe joint compound and the bulkhead fitting is sealed with two part epoxy. Look at the joint for possible leakage.

Communications Pigtail:

If a 2 or 4 wire pigtail is installed check the cable for cracking or wear at the point where the cable enters the bulkhead fitting. Look at the plug for signs of wear or damage to the individual pins and at the seal.

Headpiece Assembly

Band Assembly:

Inspect for corrosion, missing parts, or loose hardware. Check for wear and cracking. Older Air Hats were equipped with headbands made of Brass. These headbands were prone to corrosion. Newer Air Hats have headbands made of food grade plastic which are more flexible and non-corrosive.

Insert:

Check for wear and excessive hardening of the pads. Check the screw fasteners to make sure they are still firmly attached to the pad.

Top & Side Pads:

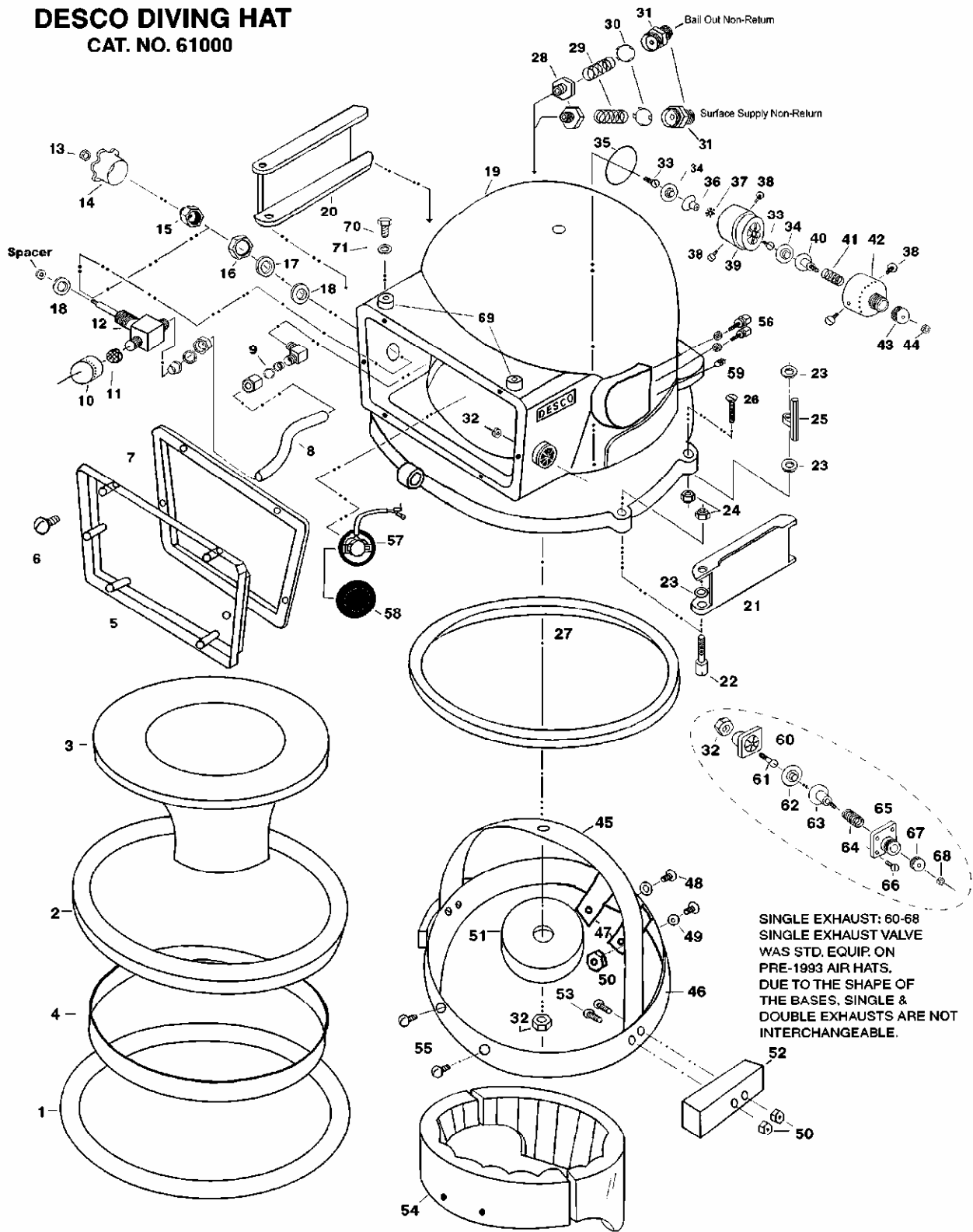
Inspect for wear, compression, or damage. Check that they are still firmly attached to the band.

Safety Rope

Inspect the rope for signs of cuts or chafing. Check the snaps for wear, and operation of the toggle. Look carefully at the rope where it attaches to the snaps.

DESCO DIVING HAT

CAT. NO. 61000



SINGLE EXHAUST: 60-68
 SINGLE EXHAUST VALVE
 WAS STD. EQUIP. ON
 PRE-1993 AIR HATS.
 DUE TO THE SHAPE OF
 THE BASES, SINGLE &
 DOUBLE EXHAUSTS ARE NOT
 INTERCHANGEABLE.

1-3 NECK RING INSERT ASSEMBLY 61050

1.	NECK SEAL O-RING	61054
2.	NECK RING INSERT	61051
3.	NECK DAM	61052
4.	SHIM	61053

5-7 WINDOW ASSEMBLY 61075

5.	WINDOW	61076
6.	WINDOW RETAINING SCREWS	61078
7.	WINDOW GASKET	61077

8-18 AIR INTAKE ASSEMBLY 61125

8.	COPPER TUBE	61127
9.	INSIDE ELBOW	61126
10.	AIR DISTRIBUTOR	61135
11.	LAMBSWOOL	
12.	CONTROL VALVE	61128
13.	VALVE HANDLE NUT	61134
14.	VALVE HANDLE (NEW STYLE)	61133N
15.	VALVE STEM ADAPTER	61132
16.	VALVE RETAINING NUT	61131
17.	BRASS WASHER	61130
18.	LEAD WASHER	61129

19-27 POT & NECK RING ASSEMBLY 61025

19.	POT & NECKRING	61026
20.	NECK RING CLAMP (RIGHT)	61034
21.	NECK RING CLAMP (LEFT)	61035
22.	CLAMP SCREW	61030
23.	CLAMP & LOCK WASHER	61031
24.	CLAMP & LOCK NUT	61032
25.	LOCK	61038
26.	LOCK RETAINING SCREW	61037
27.	NECK RING GASKET	61036

28-31 NON-RETURN VALVE ASS'Y 59091

28.	BODY	53029
29.	SPRING	57029
30.	PLATE	52030
31.	ADAPTER	53079
31.	ADAPTER (BAILOUT)	53079B

32-44 DOUBLE EXHAUST ASSEMBLY 60231

32.	LOCKNUT	53025
33.	SCREW	53037
34.	FLAPPER	56026
35.	O-RING	60234
36.	FLAPPER GUARD	60238
37.	STAR WASHER	60237
38.	SET SCREW 6-32	60235
39.	CENTER SECTION	60233
40.	PLUNGER	53024
41.	SPRING	57029
42.	TOP SECTION	60236
43.	KNURLED CAP	53028
44.	NUT	54016

45-55 HEAD PIECE ASSEMBLY 61100

45.	TOP BAND	61103
46.	HEAD BAND	61101
47.	BACK PLATE	61104
48.	3/8" BRASS SCREW	61108

49.	BRASS FLAT WASHER	61109
50.	BRASS NUT	61110
51.	TOP PAD	61113
52.	SIDE PAD	61112
53.	7/16" BRASS SCREW	61114
54.	INSERT	61106
55.	SCREW	61107

56-59 COMMUNICATIONS 61200

56.	BINDING POST (COMPLETE)	61224
57.	SPEAKER WITH CLIPS	61205
58.	FOAM SPEAKER COVER	61226
59.	1/4" NPT PIPE PLUG	61227

60-68 SINGLE EXHAUST ASSEMBLY 59112T

60.	EXHAUST BASE	51025
61.	SCREW	53037
62.	FLAPPER	53026
63.	PLUNGER	53024
64.	SPRING	27009
65.	COVER	52090
66.	SCREW	54025
67.	CAP	53028
68.	NUT	54058

69-71 VIDEO/LIGHT MOUNTS 61115

69.	VIDEO/LIGHT BLOCK	61115
70.	VIDEO/LIGHT BLOCK BOLT	61116
71.	VIDEO/LIGHT BLOCK WASHER	61117

NOT SHOWN ON EXPLODED VIEW

COMMUNICATIONS

RETAINING SCREW	54009
BINDING POST (COMPLETE)	61203
SPEAKER WITH CLIPS	61204
TELEPHONE CUP	61209
4 WIRE COMM ELBOW	61214
BULKHEAD FITTING	61215
4 WIRE PIGTAIL	61216

MISCELLANEOUS

VALVE HANDLE (OLD STYLE)	61133
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