

PremAire® Cadet Escape Respirator: Advantage® 4000 Facepiece

MAINTENANCE AND REPAIR

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**MINE SAFETY APPLIANCES COMPANY
PITTSBURGH, PENNSYLVANIA, U.S.A. 15230**

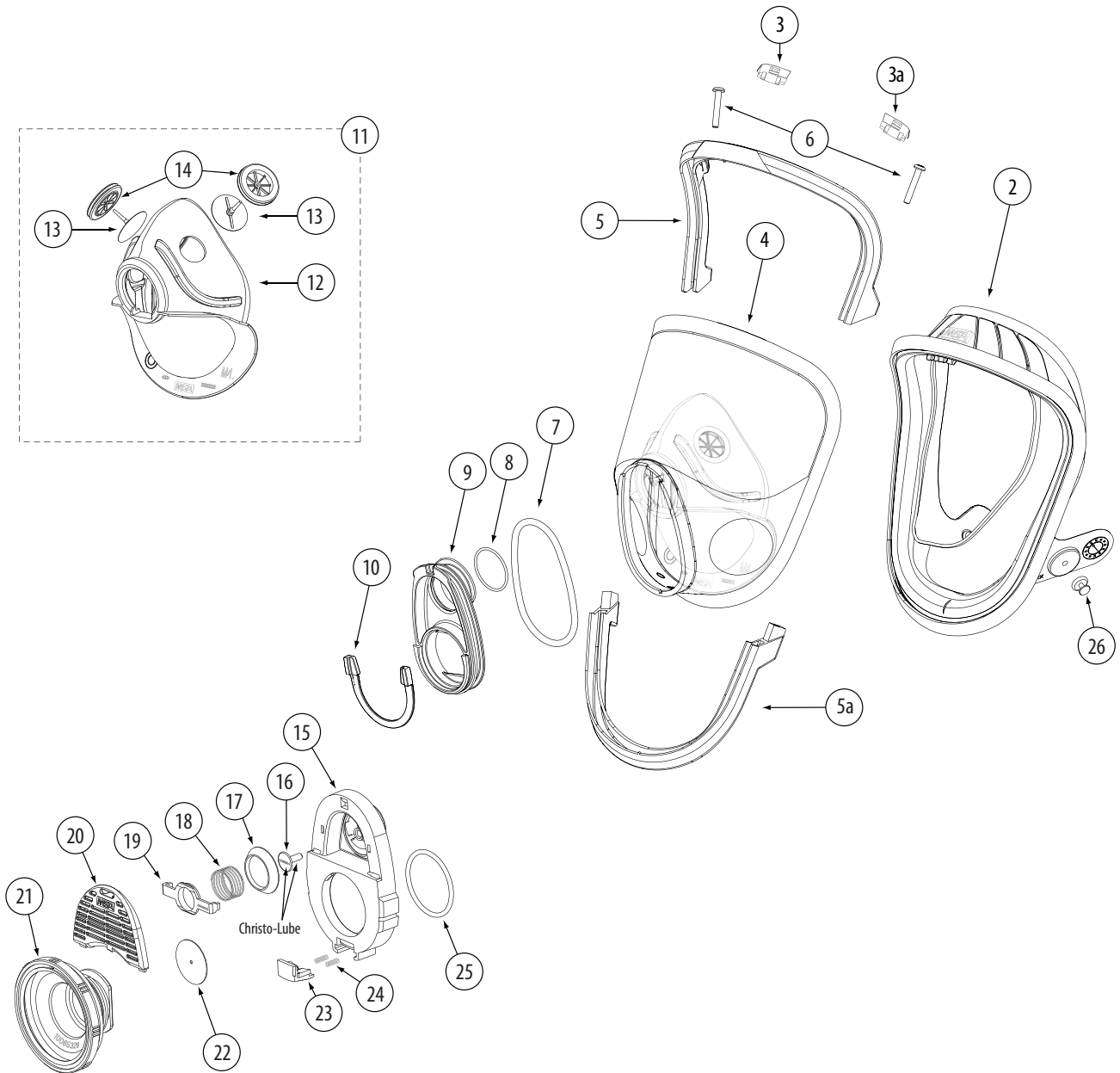
ADVANTAGE 4000 FACEPIECE

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Parts List

Item	P/N	Description
1	10083797	Hycar® Facepiece Assembly, Small
	10083793	Hycar Facepiece Assembly, Medium
	10008301	Hycar Facepiece Assembly, Large
	10083796	Silicone, Facepiece Assembly, Small
	10083792	Silicone, Facepiece Assembly, Medium
2	10083800	Silicone, Facepiece Assembly, Large
	10073455	Hycar Faceblank, Small
	10073459	Hycar Faceblank, Medium
	10073457	Hycar Faceblank, Large
	10083926	Silicon Faceblank, Small
3	10083925	Silicone Faceblank, Medium
	10083927	Silicone Faceblank, Large
3	10028302	Right Adapter Clip
3a	10027774	Left Adapter Clip
4	10074738	Single Port Lens, 4100-H
	10084808	Single Port Lens, 4100-S
5	10073460	Upper Lens Ring
5a	10073461	Lower Lens Ring
6	10026562	Screw (2 req'd)
7	10025297	Housing O-Ring
8	10084819	O-Ring
9	10061973	Inlet Housing
10	10061996	U-Clip
11	10065804	Nosecup Assembly, Small
	10065803	Nosecup Assembly, Medium/Large
12	10065306	Nosecup, Small
	10065305	Nosecup, Medium/Large
13	304787	Inlet Check Valve Disc (2 req'd)
14	491124	Inlet Check Valve Seat (2 req'd)
15	10065329	Component Housing
16	10061994	Stem
17	10061995	Exhalation-valve
18	10081456	Exhalation Spring
19	10061998	Spring Retainer
20	10061974	Exhalation-valve Cover
21	10061978	Push-to-Connect Adapter
22	10065085	Inhalation Valve
23	10061976	Locking Button
24	10065303	Spring (2 req'd)
25	10065301	O-Ring
26	10025288	Head Harness Button (2 req'd)
	10029294	Lens Cover (Not Shown)
	10075903	Cloth Net Head Harness (Not Shown)
	10075901	Silicone Head Harness (Not Shown)
	10107784	Kevlar Net Head Harness (Not Shown)
	604070	Christo-Lube Lubricant (Not Shown)
	465008	Drawstring Bag (Not Shown)

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DISASSEMBLY

Removing the Cloth Head Harness

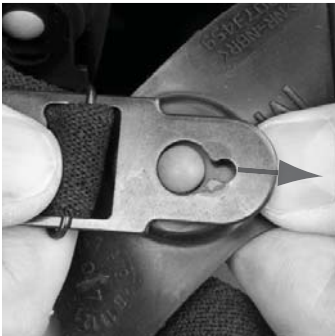
1. Remove the upper straps
 - a. Fold the straps and facepiece rubber against the lens.



- b. Pull the buckles out of the adapter clips.



2. Remove the bottom strap
 - a. Slide the metal tab off the button



- b. Remove the button.

Removing the Adapter Clips

1. Use the blade of a flathead screwdriver to pry the adapter clips from the lens ring.

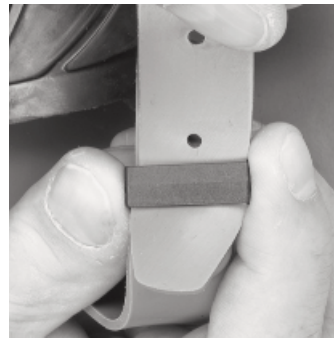


Removing the Silicone Head Harness

1. Pull the top straps from the pre-adjusting button.



2. Pull the straps through the sliders.

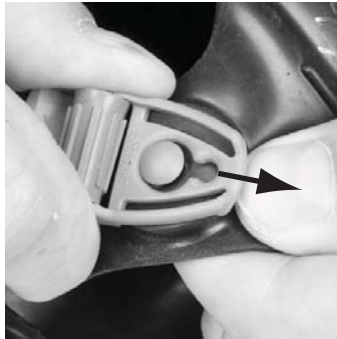


3. Pull the straps through the D-rings.



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4. Push the buckles off the buttons



Removing the Lens Rings and Lens

1. Use a **Phillips screwdriver** to unscrew the lens ring screws.



2. Separate the lens rings.
 - a. Use a flat head screw driver to pry the lens rings apart. Carefully rock the screw driver up and down until you can remove either half by hand.

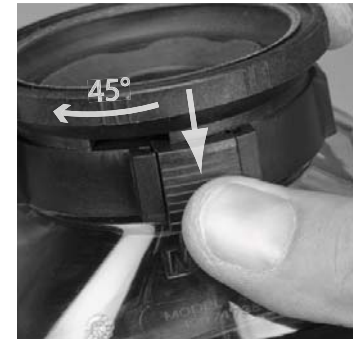


- a. Fold the facepiece blank and remove the lens



Removing the Adapter Assembly

1. Press the locking button and rotate the adapter 45° clockwise.



2. Pull the inlet assembly from the facepiece.



3. Remove and discard the o-ring.



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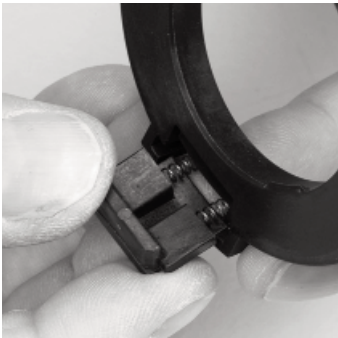
4. Carefully pry open the exhalation-valve cover.



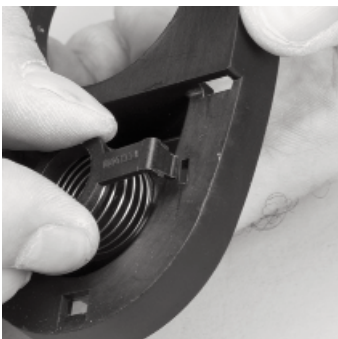
5. Turn the adapter clockwise until loose.
6. Lift and continue turning to remove the adapter.



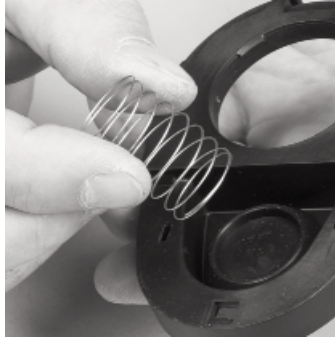
7. Remove the locking button. Be careful not to lose the springs



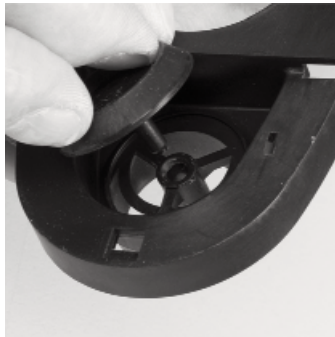
8. Remove the exhalation-valve spring retainer.



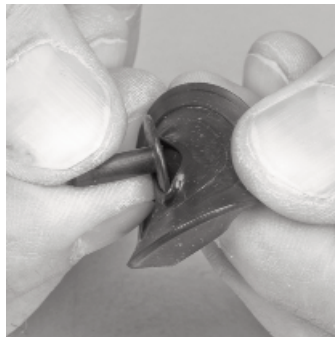
9. Remove the exhalation-valve spring.



10. Remove the exhalation valve.



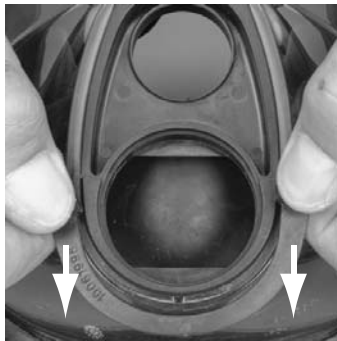
11. Gently pull the inhalation valve from the post.



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Removing the Exhalation-Valve Housing

1. Spread the U-clip and slide it off the facepiece.



2. Carefully push the bottom of the inlet housing to remove it.



3. Remove the nosecup.



4. Use the O-ring removal tool to remove and discard the small O-ring.

Note: Be careful not to scratch the O-ring groove.



5. Remove and discard the large O-ring.



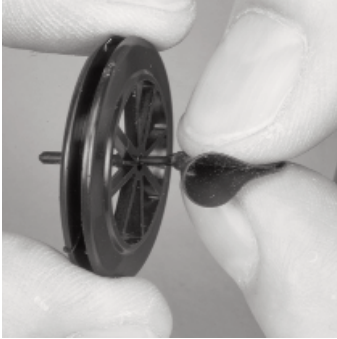
Disassembling the Nosecup

1. From *inside*, gently push the inlet check valves out of the nosecup.



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2. Pull the valve from the valve seat.

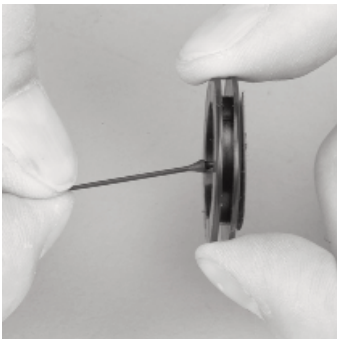


REASSEMBLY

Assembling the Nosecup

Nosecup Assembly, Small	10065804
Nosecup Assembly, Medium/Large	10065803
Nosecup, Small	10065306
Nosecup, Medium/Large	10065305
Inlet Check-Valve Disc (2 req'd)	304787
Inlet Check-Valve Seat (2 req'd)	491124
Christo-Lube	604070

1. Place a small amount of Christo-Lube onto the nosecup inlet-check valve stem.
2. Insert the stem into the valve seat.
- a. Pull the inlet-check valve stem through the inlet-check valve seat until the disk lays flat.



3. Stretch the nosecup around the inlet-check valve seat. Ensure that the nosecup captures the inlet-check valve seat fully.



Assembling the Exhalation Valve Housing

Exhalation Valve Housing	10061973
Housing O-Ring	10025297
O-Ring	10084819

1. Install the new exhalation valve housing O-rings.



Installing the Nosecup

1. Stretch the nosecup over the exhalation valve housing. Ensure that the nosecup captures the exhalation valve housing fully.



Installing the Exhalation Valve Housing and Nosecup

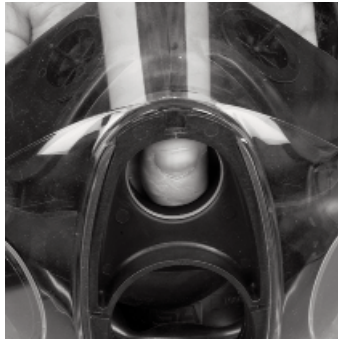
U-Clip	10061996
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1. Install the exhalation valve housing and nosecup.



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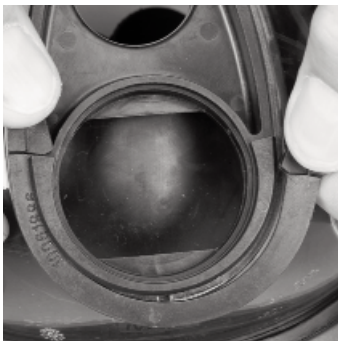
- a. From *inside* the facepiece, press the top of the exhalation valve housing into place.



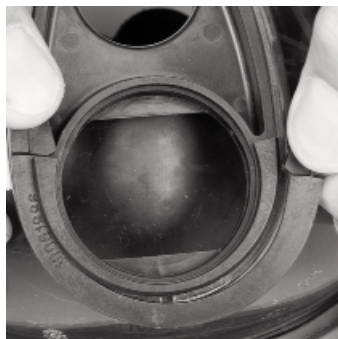
- b. From *outside* the facepiece, pull the bottom of the exhalation valve housing until it snaps into place.



2. Install the U-clip.



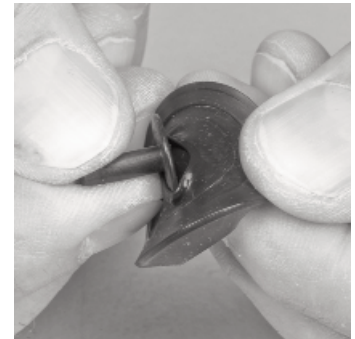
3. Turn the facepiece over and work the bottom of the nosecup under the facepiece seal.



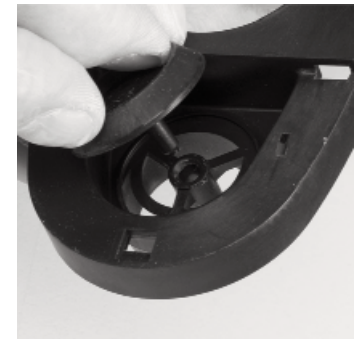
Assembling the Exhalation Valve Housing

Component Housing	10065329
Stem	10061994
Exhalation Valve	10061995
Exhalation Spring	10081456
Spring Retainer	10061998
Exhalation-valve Cover	10061974
Push-to-Connect Adapter	10061978
O-Ring	10065031
Inhalation Valve	10065085
Spring (2 req'd)	10065083
Locking Button	10061976
Christo-Lube	604070

1. Lightly lubricate exhalation valve orifice with Christo-Lube.
2. Carefully stretch the exhalation-valve disc onto the stem.



3. Insert valve stem into the slot.



4. Place exhalation spring onto the spring retainer.
5. Hold the spring and retainer together while placing the other end of the spring onto the valve.

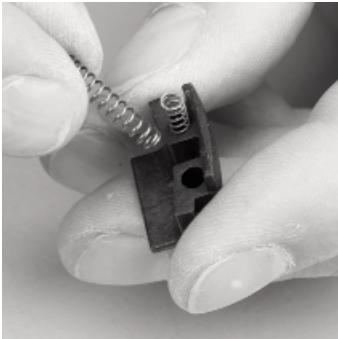


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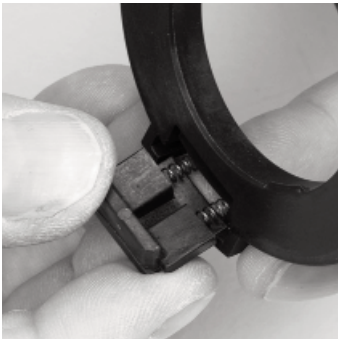
6. Firmly press the retainer into the slots until it engages fully.



7. Push both springs into the button.



8. Install the button.



9. Insert the adapter, press and rotate counter-clockwise until it drops into place.



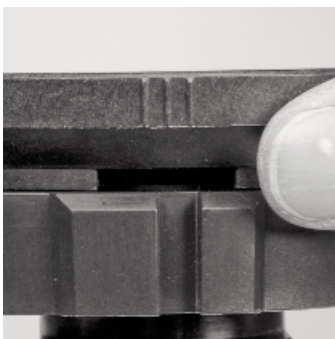
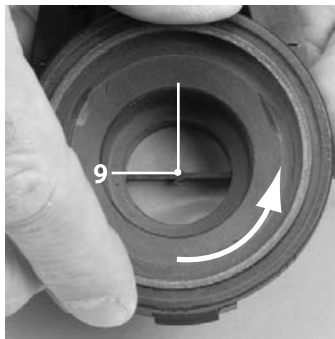
10. Carefully stretch the valve disc onto the post.



11. Install a new O-ring.



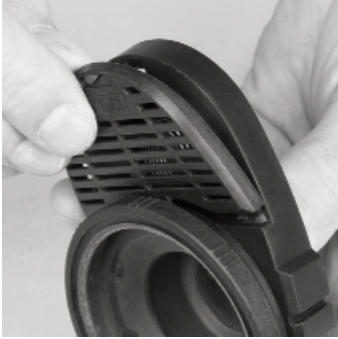
12. Turn the component housing over. Press and rotate the adapter counter-clockwise until the notch (see detail) is at 9 o'clock.



Notch

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13. Install the exhalation-valve cover.



Note: If the exhalation-valve cover does not fit, rotate the adapter clockwise a few degrees and try again.

14. Snap exhalation-valve cover shut.



Installing the Lens

Single Port Lens, 4100-S
Single Port Lens, 4100-H

10084808
10074738

1. Check the groove for dirt or debris that could interfere with a good seal.



2. Align the lens center mark with facepiece centerline and insert the top of the lens into the groove.



4. Ensure that the groove fully captures the lens.

Installing the Lens Rings

Upper Lens Ring
Lower Lens Ring

10073460
10073461

1. Put Phillips head screws into the flanges.



2. Install the top lens ring.



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3. Install the bottom lens ring.



4. Work the lens ring halves onto the blank and insert the screws. Lubricate the lens rings with Snoop.

Note: Be careful not to bend the lens.



5. Use a **Phillips screwdriver** and alternate between the left and the right screws until gaps are closed.



Installing Buttons

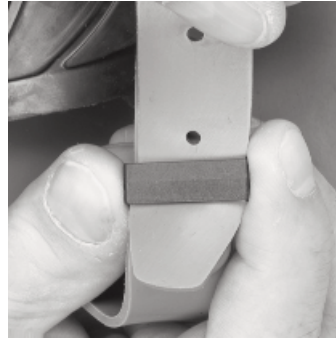
Head Harness Button (2 req'd) **10025288**

1. From the inside, press the rounded end of the button through the hole.

Installing the Silicone Head Harness

Silicone Head Harness **10075901**

1. Pass the top straps through the loops



2. Stretch the straps onto the buttons.



3. Pass the bottom straps through the buckles as shown.



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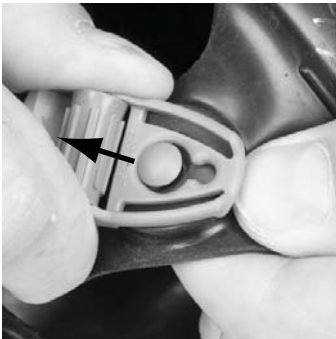
Note: Make sure the ribs are under the part number.



5. Pass the strap back through the buckle.



6. If necessary, install new head harness buttons.
7. Connect the buckle.

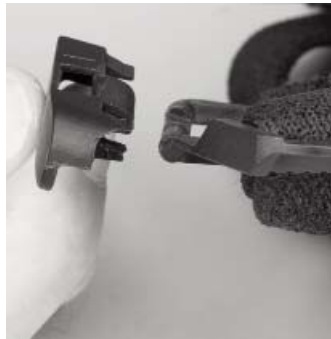


Installing Adapter Clips and the Cloth Head Harness
 Right Adapter **10028302**
 Left Adapter **10027774**
 Cloth Head Harness **10075903**

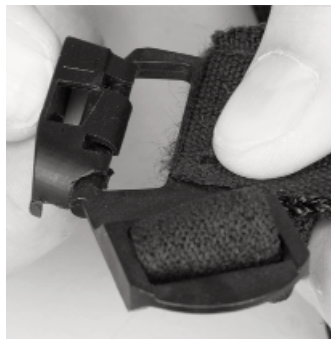
Note: The letters **L** and **R** on the adapter clips identify left and right from the wearer's point of view.



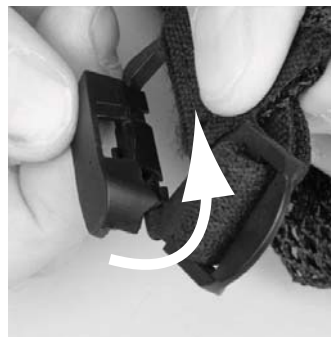
1. Connect the upper straps to the adapter clips.



2. Push the buckles into the adapter clips.



3. Pivot the buckle up to lock it in the clip.



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4. Install the harness and adapter clip.



5. Press the adapter clips onto the lens ring until they engage fully.

