

Ultra Elite[®] Responder[®] Facepiece

MAINTENANCE AND REPAIR

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

ULTRA ELITE RESPONDER FACEPIECE

Replacement Kits

	P/N	Description
Ultra Elite Responder Facepiece	10093924	Small
	10093923	Medium
	10093925	Large
	10093027	Small, CC-ready*
	10093026	Medium, CC-ready*
	10093028	Large, CC-ready*
	10093930	Small, w/ UID, CC- ready*
	10093929	Medium, w/ UID, CC- ready*
	10093931	Large, w/ UID, CC- ready*
	10094029	Small, w/ UID, CC- ready*
	10094028	Medium, w/ UID, CC- ready*
	10094030	Large, w/ UID, CC- ready*
	10093935	304746
10082503		Drinking Tube Connector
304749		Drinking Tube Coupling
	10093937	Internal Drinking Tube
	10093919	Lens Plug (Pack of 5)
	10093920	Component Housing Cover
	10093921	Nosecup, Medium
	10093922	Nosecup, Large
	10093932	Lens Cover Label (Pack of 10)
	10093933	Lens Assembly
	10025295	Lens Receptacle Inhalation Valve Disc
	10093934	Cover Assembly
	10093936	Component Housing Assembly, CC-ready*
	10093938	Component Housing Assembly, CC-ready*
	10024076	ClearCommand Communication System Microphone
	10024077	ClearCommand Communication System Mounting Bracket
	10093945	#6 – 32 Nut (Pack of 10)
	10093939	Pneumatic Nut (Pack of 5)
	10093940	Pneumatic Assembly
	10093941	Pneumatic Piston
	10093942	Pneumatic Spring (Pack of 5)
	10093943	Pneumatic Retainer (Pack of 5)
	10093944	Silicone O-Ring (Pack of 20)
	10086032	Pneumatic Nut Special Tool

* Includes ClearCommand Communication System Microphone

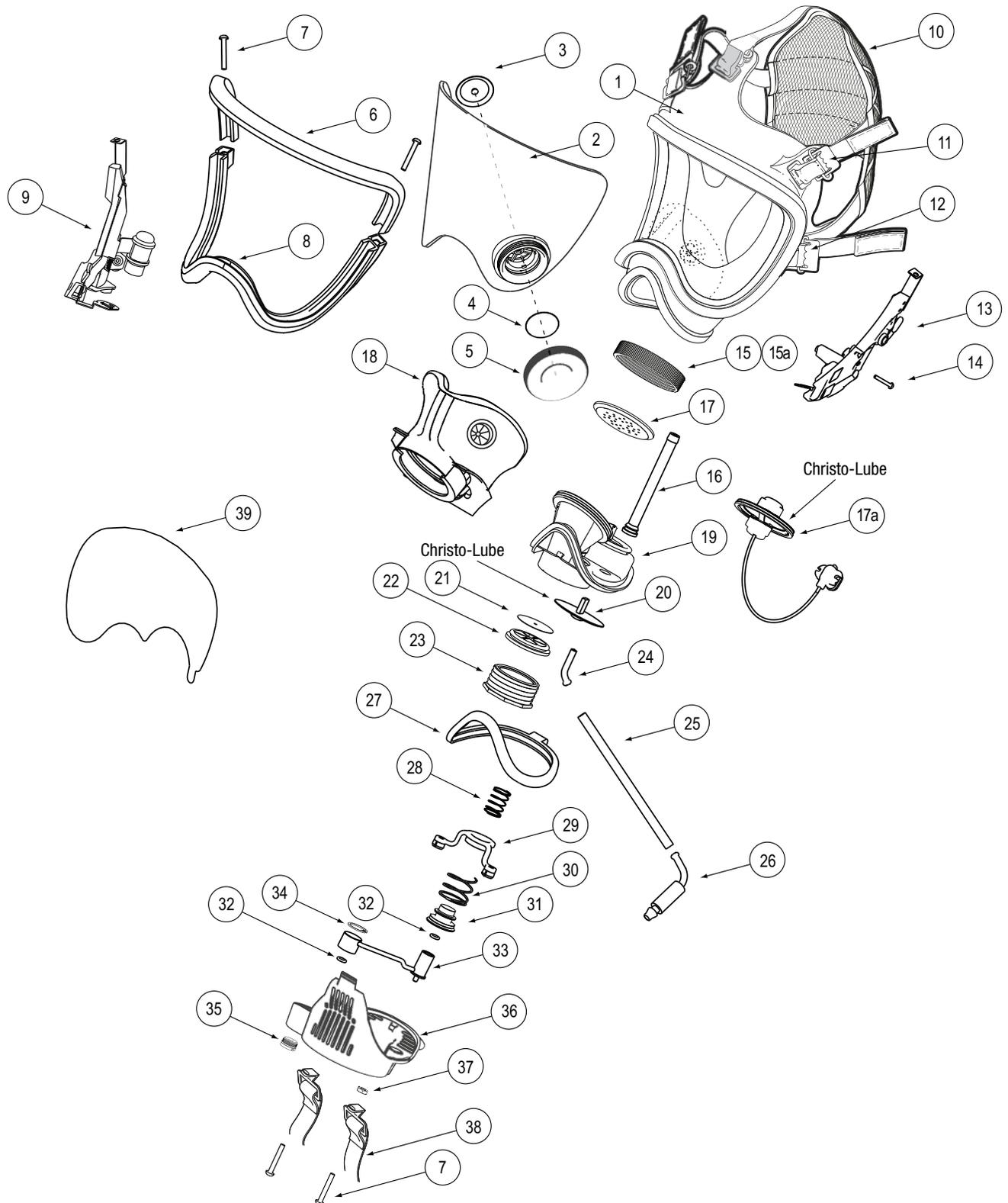
Parts List

Item	P/N	Description
1		Ultra Elite Responder Facepiece
2	10093933	Lens Assembly
3	10025295	Lens Receptacle Inhalation Valve Disc
4	10082477	O-Ring
5	10093919	Lens Port Plug
8	804805	Lower Lens Ring
6	804804	Upper Lens Ring
7	10093945	Screw
9	10083233	HUD Bracket
10	10031102	Speed-ON® Harness Assembly
	10031105	Replacement Pull Straps
11	494297	Buckles (3 Req'd.)
12	804807	Buckle Assembly with D-Ring (2 Req'd.)
13	10024077	ClearCommand Communication System Mounting Bracket
14	10034748	Screw
15	10023505	Gray Speaking Diaphragm Retainer (ClearCommand Communication System)
15a	804808	Black Speaking Diaphragm Retainer
16	10093937	Internal Drinking Tube
17	804809	Speaking Diaphragm
17a	10024076	ClearCommand Communication System Microphone
18	10093921	Nosecup, Medium
	10093922	Nosecup, Large
19	10093936	CC-ready*
	10093938	Component Housing
20	814459	Exhalation Valve
21	804813	Inhalation Valve Disc
22	805011	Valve Spider
23	10033115	Adapter Assembly
24	10082503	Drinking Tube Connector
25	304746	External Drinking Tube
26	304749	Drinking Tube Coupling
27	804811	Component Housing Ring
28	490133	Exhalation Valve Spring
29	10093943	Pneumatic Retainer
30	10093942	Pneumatic Spring
31	10093941	Pneumatic Piston
32	10093994	O-Ring
33	10093940	Pneumatic Assembly
34	10082508	Retaining Ring
35	10093939	Pneumatic Nut
36	10093920	Component Housing Cover
	10093934	Component Housing Cover w/ UID
	10095079	Component Housing Cover
37	10082500	#6 x 32 Nut
38	804829	Neck strap
39	10093932	Lens Cover Label
	604070	Christo-Lube
	10086032	Pneumatic Nut Special Tool

* Includes ClearCommand Communication System Microphone

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Exploded View



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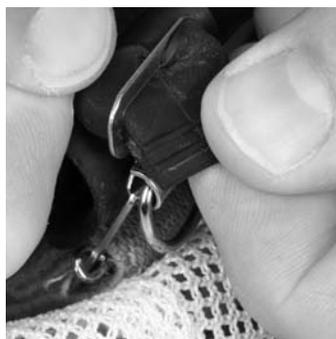
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DISASSEMBLY

Removing the Speed-ON Head Harness

The center strap of the Speed-ON head Harness is stitched permanently to the buckle. To replace the harness:

1. Remove the center strap and buckle.
 - a. Grasp the facepiece lug with one hand and the buckle with the other.



- b. Lift the metal buckle while stretching the facepiece lug.

2. Remove the temple and jaw straps.
 - a. Extend each strap so that the end tab is at the buckle.
 - b. Unlace the straps.

Note: To remove the Speed-ON Head harness with buckles, repeat step 1 on each buckle.

Removing the M7 HUD Mounting Bracket

Note: Clean and disinfect the facepiece before removing and disassembling the component housing. (See **Cleaning and Disinfecting** for instructions.)

1. Remove the screws from the lens rings.



2. Remove the component housing cover. (See **Removing the Component Housing Cover** for instructions.)

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3. Carefully pry the tab off of the boss.



4. Slide the bracket off of the facepiece.



Removing the Lens Ring and Lens Assembly

Note: The lens receptacle on FireHawk M7 Responder Ultra Elite Facepiece is not field-replaceable. If the lens receptacle is damaged or worn, replace the Lens Assembly (P/N 10093933). (See **Installing the Lens and Lens Ring** for instructions.)

1. Use a Philips screwdriver to remove the screws from the lens rings.



2. Remove the lens rings.



3. Pull the lens out of the groove.



Removing the Nosecup

1. Carefully pull the nosecup from the retaining ring.



Removing the Component Housing Cover

1. Remove the external drinking tube assembly from the retainer.



2. Pull the coupling from the external drinking tube.



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3. Use a Phillips screwdriver to remove the two component housing cover screws.



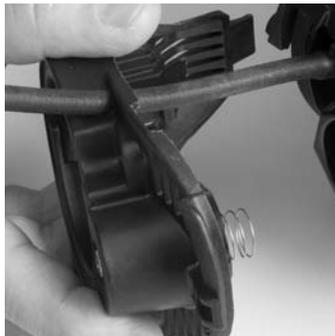
4. Pull the component housing cover from the facepiece.
 - a. Grasp the speaking diaphragm retaining ring with one hand.

- b. Grasp the component housing cover by drinking tube flange with the other.



Note: Be careful not to lose or damage the exhalation valve spring.

5. Pull the drinking tube through the component housing cover.



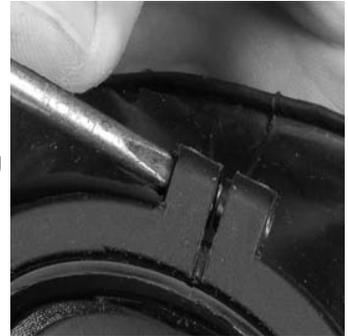
Removing the Exhalation Valve

1. Turn the facepiece so that the exhalation valve is down and allow the valve to fall into your hand.



Removing the Component Housing

1. Remove the component housing cover. (See **Removing the Component Housing Cover** for instructions.)



2. Use a Phillips screwdriver to remove the component housing ring screw.

3. Gently spread the ring to remove it from the facepiece.



4. Pull the facepiece rubber from the component housing.



Disassembling the Component Housing Cover

Removing the Pneumatic Piston

1. Remove the pneumatic retainer.

- a. Release the pneumatic retainer by rocking away from the inlet opening.



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b. Lift the pneumatic retainer out of the component housing cover.



c. Remove the pneumatic spring.



d. Gently remove the exhalation valve spring.



e. Remove the piston.



f. Use the o-ring removal tool to remove the o-ring.



g. Discard the o-ring.

Removing the Pneumatic Assembly

1. Remove the pneumatic tube.

a. Use retaining ring pliers to remove the retaining ring.



b. Use a 5/16" socket to remove the nut.



c. Use the **Pneumatic Nut Special Tool** (P/N 10086032) and a 1/4" socket to remove the pneumatic nut.



d. Remove the pneumatic tube.



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- d. Use the o-ring removal tool to remove the o-ring.



- e. Discard the o-ring.

Disassembling the Component Housing

Removing the Speaking Diaphragm

1. Remove the nose cup.



2. Unscrew and remove the speaking diaphragm retaining ring.



3. Carefully remove the speaking diaphragm.



Removing the External and Internal Drinking Tubes

1. Pull the external drinking tube off of the connector.



2. Pull the internal drinking tube out of the component housing.



3. Pull drinking tube connector out of internal drinking tube.

Removing the Adapter Assembly

1. Remove the inlet adapter.

Note: Use a large adjustable wrench to unscrew the inlet adapter. You can use a piece 1" PVC pipe wrapped with a few winds of electrical tape to prevent the inlet adapter from deforming.



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Removing the Inlet Gasket and Disc Valve

1. Remove the spider gasket.



2. Disassemble the spider gasket.

- a. Stretch the disc off of the stem



Reassembly

Note: Flow test the facepiece on the PosiChek³ after reassembly.

Assembling the Component Housing

Install the valve spider (P/N 805011) and disk valve, speaking diaphragm, drinking tube, and adapter assembly.

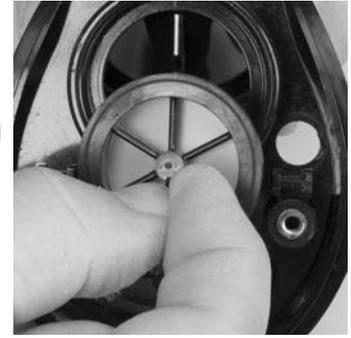
Installing the Inlet Gasket and Disc Valve

1. Gently stretch the valve disc over the stem.



2. Insert the gasket so that the groove captures the housing rim.
 - a. Align the tabbed spoke with the centerline.

Note: Alignment of the tabbed spoke with the centerline provides a visual guide when installing the drinking tube assembly and is not critical to facepiece function.



Note: Ensure that the groove captures the component housing rim. Flex the gasket spider as needed to fully capture the rim. When installed correctly, the gasket lays flat and all of the spokes are straight.

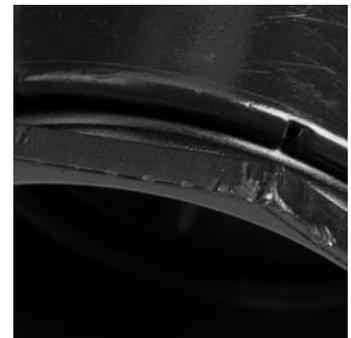


3. Reinstall the adapter assembly.

Installing the Adapter Assembly

1. Screw the adapter into the component housing.

- a. Ensure that the corners of the top flat align with the notches.



Note: You can use a piece 1" PVC pipe wrapped with a few winds of electrical tape to prevent the inlet adapter from deforming while tightening.



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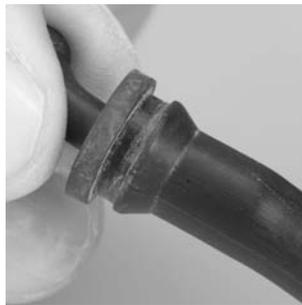
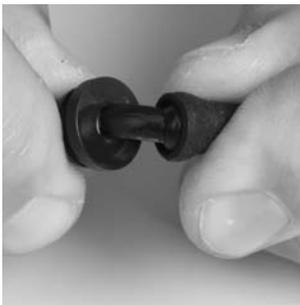
Installing the Internal and External Drinking Tube

External Drinking Tube	P/N 10093935
Internal Drinking Tube	P/N 10093937
Drinking Tube Connector	P/N 10082503

1. Lubricate the long end of the drinking tube connector with Snoop and push it into the internal drinking tube 1/2".

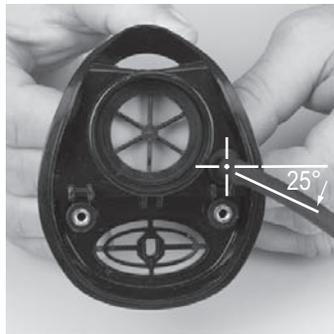


2. Lubricate the barb with Snoop (P/N 600920) and push the drinking tube onto the drinking tube connector 1/2".



3. Pass the internal drinking tube through the component housing.

- a. Angle the drinking tube connector and drinking tube 25° below horizontal.



4. Pull firmly on the internal drinking tube until it seats.



Installing the Speaking Diaphragm

Speaking Diaphragm	P/N 804809
Retaining Ring	P/N 804808

1. With the gasket facing forward (perforations facing the wearer) place the diaphragm in the component housing.



2. Install the retaining ring (P/N 804808) and firmly hand tighten.



Assembling the Component Housing Cover

Installing the Pneumatic Assembly

Pneumatic Assembly	P/N 10093940
Retaining Ring	P/N 10082058
Pneumatic Piston	P/N 10093941
O-Ring	P/N 10093994
Pneumatic Nut	P/N 10093939
Pneumatic Spring	P/N 10093942
Pneumatic Retainer	P/N 10093943
Nut	P/N 10082500
Exhalation Valve Spring	P/N 490133

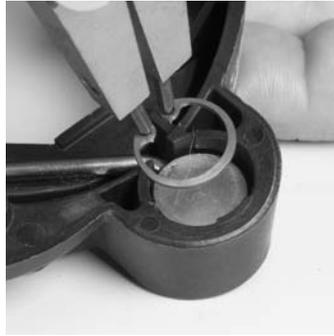
1. Install the pneumatic assembly.



Note: The pneumatic assembly nests easily in the component housing. Take care not to bend or flex the tube when installing the pneumatic assembly.

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- a. Use the retaining ring pliers to install a new retaining ring.



2. Install the nut.

- a. Apply a small amount of Loctite 271 (P/N 26875) to the thread.



- b. Use the inch pound torque wrench and **5/16" socket** to tighten the nut to **6 in lbs.**



- c. Apply a small amount of Christo-Lube (P/N 604070) to a new o-ring.

Note: Use extra care when tightening the pneumatic nut to avoid damage to the pneumatic assembly. **Do not over torque.**

- d. Install the o-ring.



- e. Install the pneumatic nut. Use the **inch pound torque wrench, 1/4" socket, and Pneumatic Nut Special Tool (P/N 10086032)** and tighten to **8 in lbs.**

Note: Special tool (P/N 10086032) shown.



Installing the Pneumatic Piston

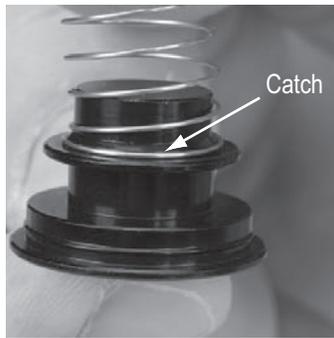
1. Apply a small amount of Christo-Lube (P/N 604070) to a new o-ring.

- a. Install the o-ring.



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- Assemble the exhalation spring onto the piston.



Note: Ensure that the last coil is captured by the catch.

- Install the piston.



- Install the pneumatic spring.



- Install the pneumatic retainer by engaging the hook in the slot and pressing the posts into the holes.



Installing the Component Housing

- Slide the housing into the front of the facepiece.
 - Starting at the top (narrow end) of the housing, work the housing into the groove.

Note: Ensure that the housing is captured completely by the groove and that the centerline marks are aligned.



- Insert the narrow end of the housing ring between the lower lens ring and facepiece housing.



- Align the component housing ring center mark with the facepiece centerline. Lubricate with Snoop (P/N 600920) as needed.



- Start at the narrow end and work the housing ring onto the facepiece.
 - Work down both sides until the ring completely captures the facepiece rubber. Lubricate with Snoop (P/N 600920) as needed.



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5. Moisten the mating surfaces of the facepiece and housing ring with Snoop (P/N 600920).
6. Check by gently squeezing the ring ends together. Bulges or wrinkles indicate that the rubber is not completely captured.
 - a. Rework the ring until there are no bulges or wrinkles.

⚠ WARNING

Bulges or wrinkles indicate that the facepiece rubber is not seated properly. Reinstall the ring so that there are no bulges or wrinkles. Failure to follow this warning can cause the facepiece to leak and result in serious personal injury or death.

7. Use a Phillips screwdriver to tighten the component housing screw.



- a. Make sure the facepiece rubber does not extrude between the component housing ring ends.

Note: On models equipped with ClearCommand Communication System mounting brackets, install the mounting bracket and screw provided. (See **Installing the ClearCommand Communication System Mounting Bracket** for instructions.)

Installing the Exhalation Valve

Exhalation Valve P/N 814459

1. If necessary, assemble the exhalation valve post to the valve disc.
 - a. Lightly lubricate the valve post with Christo-Lube (P/N 604070).

2. Insert the valve post into the slot.



⚠ CAUTION

If facepiece rubber extrudes between the component housing ring ends, loosen the ring, adjust, and reassemble.

Installing the Component Housing Cover

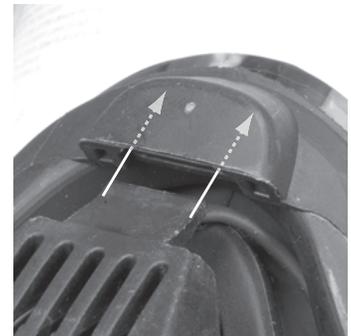
Install the ClearCommand Communication System and M7 HUD mounting brackets. (See **Installing the ClearCommand Communication System Mounting Bracket** and **Installing the M7 HUD Mounting Bracket** for instructions.)

1. Pass the external drinking tube through the component housing cover.



Note: Verify that the exhalation valve is installed.

2. Carefully insert the tab into the slot in the lower lens ring.



3. With one hand inside the facepiece firmly press the component housing and cover together until they lock.



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a. Install Phillips screws and tighten.



4. Install the drinking tube coupling.
a. Lubricate the barb with Snoop (P/N 600920).

b. Insert the coupling into the external drinking tube 1/2".



c. Stow the external drinking tube coupling.



Note: To reduce snag hazards, stow the tube under the flange.



Installing the Nosecup

1. Install the nosecup.

a. Pass the drink tube through the *x-cut* in the nosecup.



b. Stretch the nose cup over the exhalation valve flange.



c. Stretch the nose cup over the retaining ring.



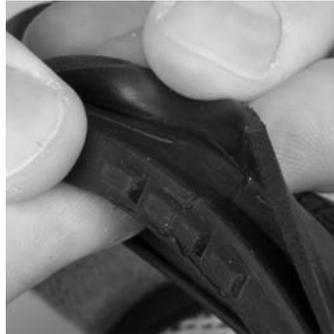
Note: Ensure that the nosecup fully engages the retaining ring.

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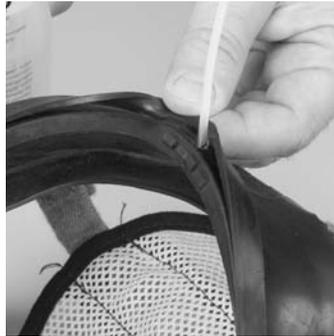
Installing the Lens Assembly and Lens Ring

Lens Assembly P/N 10093933
Lower Lens Ring: P/N 804805
Upper Lens Ring: P/N 804804

1. Remove dirt, lens fragments, or debris from the groove.



2. Lubricate the groove with Snoop (P/N 600920) or properly mixed Confidence Plus cleaner sanitizer solution.



CAUTION

Keep the lens cover (P/N 10093932) on new lenses until facepiece assembly is complete.

3. Align the lens centerline marks (top and bottom) with the facepiece centerline marks.

Note: Verify proper lens selection. NFPA approved lenses bear the Identification Mark "A" at the top center of the lens.

4. Insert the top of the lens into the groove.



5. Work the groove around the lens to seat the lens.



Note: The bottom lens-centerline mark must line up with the bottom facepiece centerline mark.



6. Moisten the mating surfaces of the facepiece and lens ring with Snoop (P/N 600920).



7. Lubricate the lens ring with Snoop (P/N 600920).

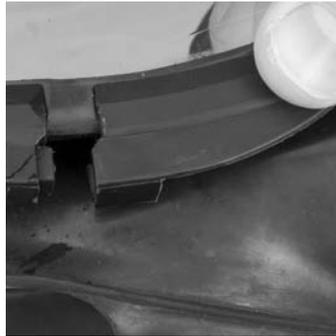


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8. Install the lens ring.



9. Press the ring halves together to mate the ends.



10. Install a screw on each side.
 - a. If the screws do not go in easily, pull them out and try again. Avoid cross threading.
11. Alternate tightening the left and right screws to seat the ring evenly.

⚠ CAUTION

Do not over tighten. Facepiece rubber must not be visible through the joint. If the facepiece rubber is visible, reassemble.

Installing the M7 HUD Mounting Bracket

M7 HUD Mounting Bracket P/N 10083133

Note: Remove the component housing cover before installing the M7 HUD Mounting Bracket (See **Removing the Component Housing** for instructions). If necessary, remove the lens ring screws (See **Removing the Lens Ring and Lens Assembly** for instructions).

1. Slide the bracket assembly onto the facepiece.



- a. Make sure that tab is under the lower lens ring.



2. Reinstall the lens ring screw.



3. Align the screw hole in the lower metal tab with component housing screw hole.



4. Reinstall the component housing cover. (See **Installing the Component Housing Cover** for instructions.)
5. Check alignment and tighten screws.

Installing the Speed-ON Head Harness

Speed-ON Head Harness P/N 10031102

1. Install the crown buckle.

- a. Insert the long tab of the lug into the D-ring.



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2. Pull the entire lug through.



Note: Repeat steps 1 and 2 to install temple, and jaw buckles. (See Kit (P/N 817088) **Head Harness Installation** instructions to attach the harness.)

Lens Receptacle O-Ring

Removing the Lens Receptacle O-Ring

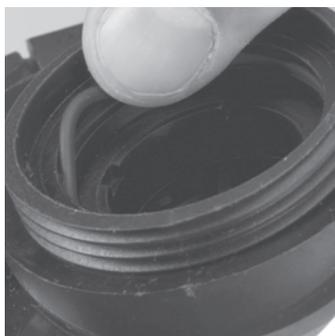
1. Use the o-ring removal tool to remove the lens receptacle o-ring.



Installing the Lens Receptacle O-Ring

O-Ring P/N 10082477

1. Lubricate the o-ring with Christo-Lube (P/N 604070).



2. Install the o-ring.

Lens Receptacle Inhalation Valve

Removing the Lens Receptacle Inhalation Valve

1. Stretch the inhalation valve disc off the post.

Note: Lens assembly removed for illustration purposes only. It is not necessary to remove the lens assembly to remove the Lens Receptacle Inhalation Valve



2. Discard the valve.

Installing the Lens Receptacle Inhalation Valve

Lens Receptacle Inhalation Valve Disc P/N 10025295

1. Hold the nosecup aside.

- a. Carefully push the lens receptacle inhalation valve post disc into the hole.



2. Ensure that the nosecup does not interfere with valve disc operation.



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ClearCommand Communication System

Note: If upgrading from a speaking diaphragm to the ClearCommand Communication System, remove the speaking diaphragm. (See **Removing the Speaking Diaphragm** for instructions.)

Removing the ClearCommand Communication System

Note: It is not necessary to remove and disassemble the component housing to replace the ClearCommand Communication System.

1. Use a Phillips screwdriver to remove the lens ring screw.



2. Use a Phillips screwdriver to remove the component housing ring screw.



3. Remove the component housing cover. (See **Removing the Component Housing Cover** for instructions.)



4. Slide the bracket off of the facepiece.

5. Use a small Phillips screwdriver to disconnect the ClearCommand microphone from the mounting bracket.



6. Remove the nosecup.



7. Unscrew and remove the speaking diaphragm retaining ring.



8. Remove the ClearCommand microphone.



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Installing the ClearCommand Microphone

ClearCommand Microphone P/N 10024076
Retaining Ring P/N 10023505

1. Thread the cable through the component housing.



2. Lightly lubricate the ring of the microphone (P/N10024076) on its receiver side.



3. With the gasket forward place the microphone (P/N 10024076) into the component housing.



4. Install the retaining ring (P/N 10023505) and firmly hand tighten.



5. Install the nose cup.

- a. Stretch the nose cup over the exhalation valve flange.



- b. Stretch the nose cup over the retaining ring.



6. Route the microphone cable over the component housing retaining ring centerline.



7. Assemble the component housing cover. (See **Assembling the Component Housing Cover** for instructions.)



8. Use a small Phillips screwdriver to connect the ClearCommand microphone to the mounting bracket.



9. Use a Phillips screwdriver to tighten the component housing ring screw.

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Installing the ClearCommand Communication System Mounting Bracket

ClearCommand Communication System
Mounting Bracket P/N 10024077

1. Remove the component housing cover. (See **Removing the Component Housing Cover** for instructions.)
2. Slide the bracket onto the facepiece.

a. Align the screw holes.



4. Align the upper tab to the screw holes in the upper lens ring.

a. Use a Phillips screwdriver to tighten the lens ring screw.



5. Install the component housing cover. (See **Installing the Component Housing Cover** for instructions.)

6. Use a Phillips screwdriver to install the component housing ring screw.



Cleaning and Disinfecting

In general, only the facepiece requires cleaning and disinfecting after each use.

Cleaning the Speed-ON Head Harness

Machine wash in warm water (maximum 110°F) with a mild detergent. Allow to air dry. Do not dry clean. Do not bleach or use abrasive cleaners. Do not fold or store when wet.

Cleaning and Disinfecting

Depending on cleaning policy, either a designated person or the user should clean the respirator after each use. ANSI standards suggest user training in cleaning procedures.

Use MSA Confidence Plus® Cleaning Solution (P/N 10009971). It cleans and disinfects in one operation, retains germicidal effectiveness in hard water to inhibit bacteria growth, and will not deteriorate rubber, plastic, glass, or metal parts.

⚠ CAUTION

DO NOT use cleaning substances that can attack the apparatus. DO NOT use alcohol as a germicide because it may deteriorate rubber parts. Cleaning agent residue may irritate the wearer's skin. Rinse thoroughly to remove all traces of cleaning solution.

1. Follow instructions to mix Confidence Plus Cleaning Solution or similar germicidal cleaner.
2. Disconnect the Firehawk M7 Responder regulator.
3. Loosen the thumbscrew and remove the M7 HUD.
4. Wash thoroughly with soft brush or sponge.
5. Submerge in a germicidal solution for the manufacturer's recommended time.
6. Thoroughly rinse the facepiece and components in clean, warm (110°F) water.
7. Clean the exhalation valve by pressing the stem with a blunt object and flushing with clean water.
8. Thoroughly rinse the drinking tube by filling the canteen and draining it through the drinking tube. Repeat as necessary.
9. Allow the facepiece to **thoroughly** air dry away from direct sunlight.

Note: Do not force dry with heat.