

Ultra Elite® Facepiece: AirHawk II® Air Mask

MAINTENANCE AND REPAIR

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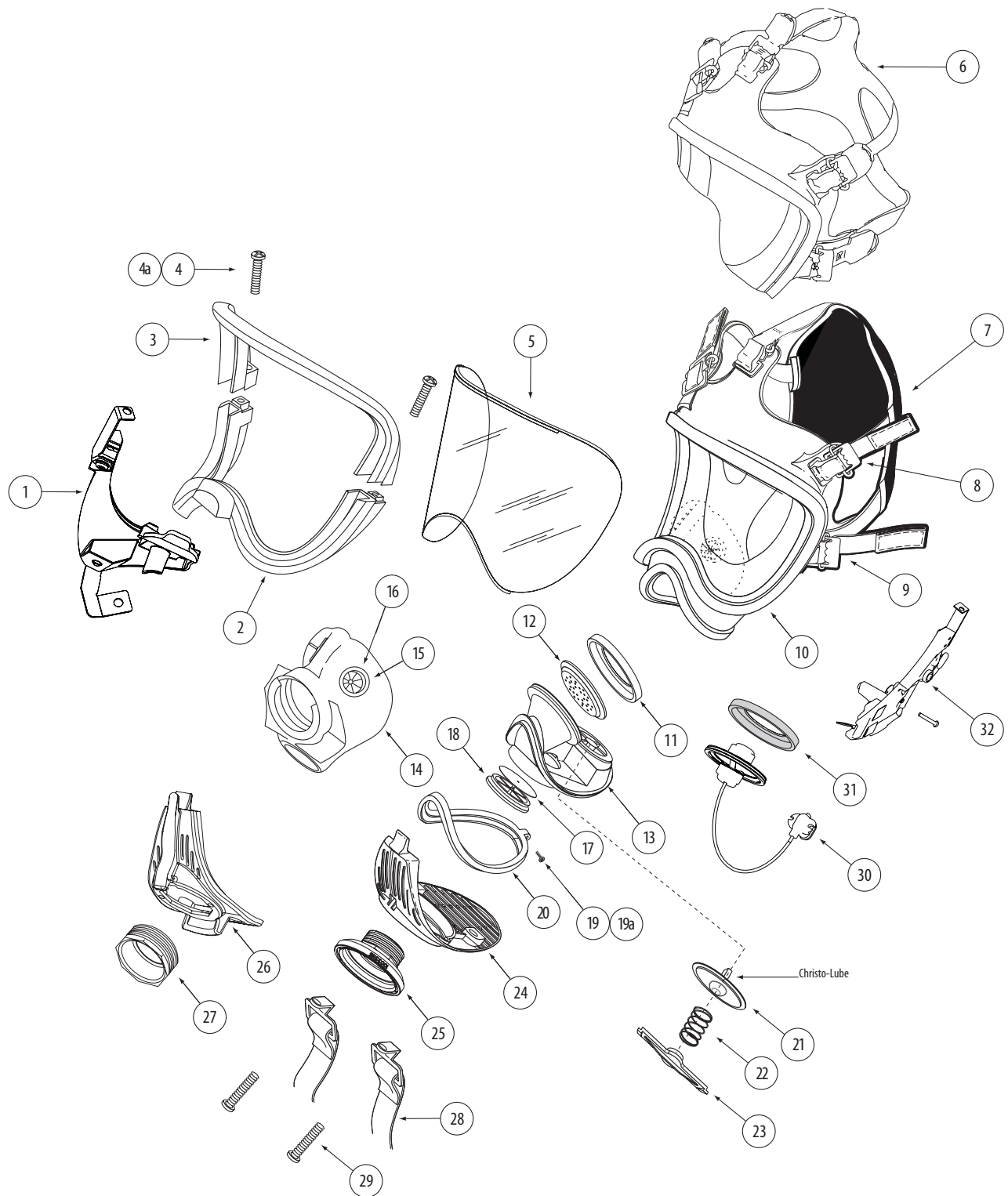
MINE SAFETY APPLIANCES COMPANY
PITTSBURGH, PENNSYLVANIA, U.S.A. 15230

ULTRA ELITE FACEPIECE PARTS LIST

Ultra Elite Facepiece (Complete)		
P/N	Description	
Push to Connect	10084690	Small
	10084822	Small, ClearCommand® Communication System-ready
	10084824	Medium
	10084826	Medium, ClearCommand Communication System-ready
	10084828	Large
	10084830	Large, ClearCommand Communication System-ready
Slide to Connect	10084689	Small
	10084821	Small, ClearCommand Communication System-ready
	10084823	Medium
	10084825	Medium, ClearCommand Communication System-ready
	10084827	Large
	10084829	Large, ClearCommand Communication System-ready
Component Housing Assembly (Complete)		
815604	804808	Speaking Diaphragm Retainer
	804809	Speaking Diaphragm
	815605	Component Housing w/ Exhalation valve
	804813	Inlet Valve Disc
	805011	Valve Spider
Exhalation Valve Retaining Bar Kit		
818107	490133	Spring
	490128	Spring Retainer
Nosecup Assembly (with valves)		
495188	Small/Medium	
495189	Large	

Item	P/N	Description
1	10037386	NightFighter Bracket
2	804805	Lower Lens Ring
3	804804	Upper Lens Ring
4	636955	Screw (2 Req'd)
4a	804806	Screw Kit (2 x 636955)
5	491132	Lens
6	817262	Hycar® Head Harness
7	10031102	Cloth Head Harness Assembly
8	494297	Buckles (3 Req'd.)
9	804807	Buckle Assembly with D-Ring (2 Req'd.)
10	10048814	Hycar Facepiece Blank (Small)
	10048813	Hycar Facepiece Blank (Medium)
	10048815	Hycar Facepiece Blank (Large)
11	804808	Speaking Diaphragm Retainer
12	804809	Speaking Diaphragm
13	815605	Component Housing with Exhalation valve
14	491121	Nosecup Assembly w/ valves, Small/Medium
	491123	Nosecup Assembly w/ valves, Medium
15	804823	Valve Disc (2 Req'd.)
16	804822	Valve Seat (2 Req'd.)
17	804813	Inlet Valve Disc
18	805011	Valve Spider
19	636956	Screw
19a	804812	Screw Kit
20	804811	Component Housing Ring
21	490133	Exhalation Valve
22	814459	Spring
23	490128	Spring Retainer
24	489224	Component Housing Cover (Push-to-Connect)
25	10033115	Push-To-Connect Adapter
26	10034500	Component Housing Cover (Slide-to-Connect)
27	10018621	Slide-To-Connect Adapter
28	804829	Neck strap
29	637070	Screw (2 Req'd.)
30	10024076	ClearCommand Communication System Microphone
31	10023505	Speaking Diaphragm Retainer (CC)
32	10057484	ClearCommand Communication System Mounting Bracket
	600920	Snoop Leak Detector
	604070	Christo Lube Lubricant

ULTRA ELITE FACEPIECE EXPLODED VIEW



ULTRA ELITE FACEPIECE

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DISASSEMBLY

Removing the Head Harness

The center strap of the 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 head harness with buckles, repeat Step 1 on each buckle.

Removing the HUD Mounting Bracket

Note: Clean and disinfect the facepiece before removing 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**)

3. Carefully pry the tab off of the boss.



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- Slide the bracket off of the facepiece.



Removing the Lens and Lens Ring

Note: Remove the adapter assembly and component housing cover. (See **Removing the Component Housing Cover**)

- Remove the screws from the top and bottom lens rings.



- Remove the lens rings.



- Fold the flange back and pull the lens out of the groove.



Removing the Nosecup

- Remove the nosecup.



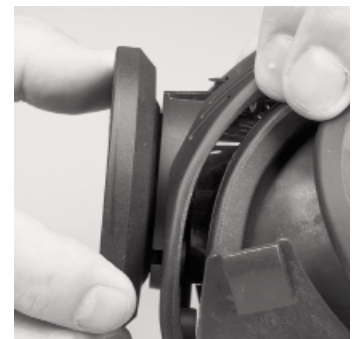
Removing the Component Housing Cover

- Remove the two component housing cover screws, if present, and neck strap. If present, remove the push-to-connect adapter assembly.



Note: If necessary, use a small slot head screwdriver to disengage the cover.

- Unscrew and remove the push-to-connect adapter.



- Remove the component housing cover.



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Removing the Spring, Spring Retainer, and Exhalation Valve

1. Remove and discard the spring retainer.

- a. Slide one end of the retainer out of the slot.



- b. Carefully push the center of the retainer and release the other end.

Note: Be careful not to damage the slots, valve, or valve seat. If the slots, valve, or valve seat are damaged, replace the component housing.

2. Inspect the slots in the component housing for damage or distortion. If damage or distortion is present, replace the component housing.
3. Remove the exhalation valve.

Removing the Speaking Diaphragm

1. Unscrew and remove the speaking diaphragm retaining ring.



2. Carefully remove the speaking diaphragm.



Disassembling the Component Housing

Removing the Adapter Assembly

1. If present, 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.



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 disc valve, speaking diaphragm (P/N 804809), push-to-connect adapter assembly (P/N 10033115), and slide-to-connect adapter assembly (P/N 10018621).

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Installing the Inlet Gasket and Disc Valve

Inlet Valve Disc P/N 804813
Valve Spider P/N 805011

1. Gently stretch the valve disc over the stem.



2. Insert the gasket so that the groove captures the housing rim.

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.

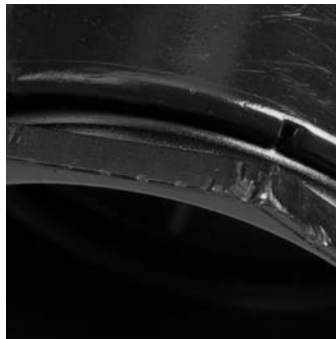


3. Reinstall the adapter assembly.

Installing the Slide-to-Connect 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.



Installing the Speaking Diaphragm

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

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



2. Install the retaining ring and firmly hand-tighten.



Installing the Component Housing

With Exhalation Valve P/N 815605
Snoop Leak Detector P/N 600920

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



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

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



3. Align the component housing ring center mark with the facepiece centerline. Lubricate with Snoop as needed.



4. Start at the narrow end and work the housing ring onto the facepiece.
 - a. Work down both sides until the ring completely captures the facepiece rubber. Lubricate with Snoop as needed.
5. Moisten the mating surfaces of the facepiece and housing ring with Snoop.



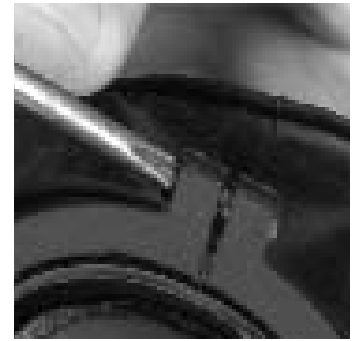
6. Check by gently squeezing the ring ends together. Bulges or wrinkles indicate that the rubber is not completely captured.

- 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 ring screw.

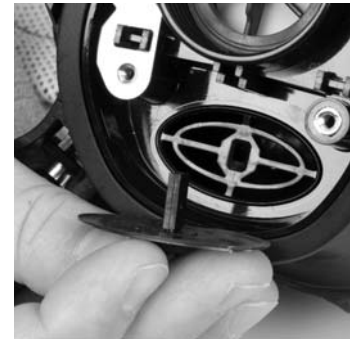


- a. Make sure the facepiece rubber does not extrude between the component housing ring ends.

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, Spring, and Spring Retainer

1. Lightly lubricate the exhalation valve stem with Christo-Lube.



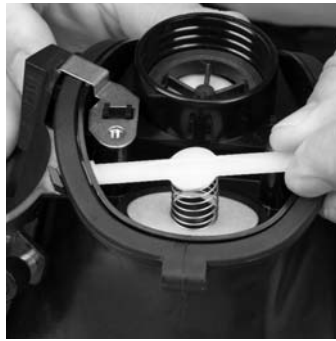
- a. Insert the exhalation valve post into the slot.

2. Place a new spring on the valve.



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3. Insert a new spring retainer.



4. Ensure spring retainer is secure.
 - a. Make sure the retainer is fully engaged in the slots.



- b. Ensure that the spring is centered on the exhalation valve.

Note: If the retainer cannot be secured, replace the component housing.

CAUTION

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

Installing the Component Housing Cover

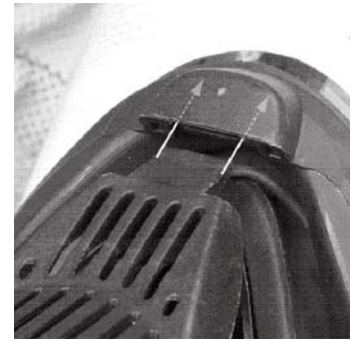
Component Housing Ring	P/N 804811
Component Housing Cover (Push-to-Connect)	P/N 489224
Push-to-Connect Adapter	P/N 10033115

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

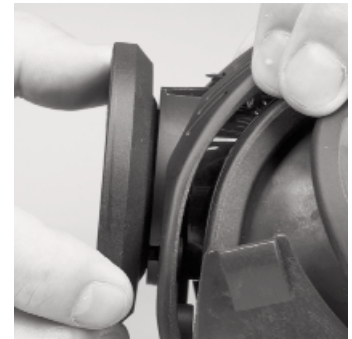
Note: Verify that the exhalation valve is installed.

1. Place the component housing cover over the adapter assembly.

2. Insert the tab on the cover into the slot in the lens ring.



3. Screw the push-to-connect adapter into the component housing.



Note: If necessary, use a small slot head screwdriver to engage the cover.



4. Place the neck strap brackets into the sockets.

- a. Install Phillips screws and tighten.



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Installing the Nosecup

Nosecup Assembly w/ Valves, Small/Medium P/N 491121
Nosecup Assembly w/ Valves, Medium P/N 491123

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



2. Stretch the nose cup over the retaining ring.



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

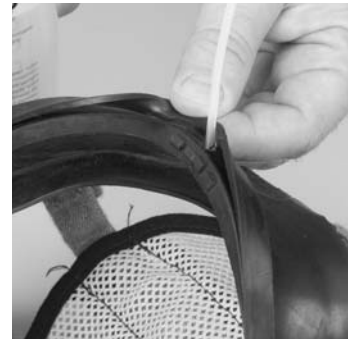
Installing the Lens and Lens Ring

Lens Assembly P/N 491132
Lower Lens Ring P/N 804805
Upper Lens Ring P/N 804804
Snoop P/N 600920

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



2. Lubricate the groove with Snoop 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.

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 center line mark must line up with the bottom facepiece center line mark.



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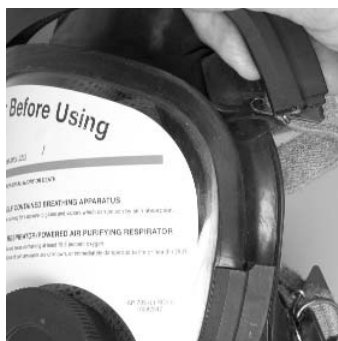
6. Moisten the mating surfaces of the facepiece and lens ring with Snoop.



7. Lubricate the lens ring with Snoop.



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.
12. Don the facepiece.
13. Cycle exhalation valve by inhaling and exhaling six times.

14. Check the face-to-facepiece seal. (See **AirHawk II Air Mask Operation and Instructions P/N 10088650** for instructions)

CAUTION

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

Installing the HUD Mounting Bracket

NightFighter HUD Mounting Bracket

P/N 10083133

Note: Remove the component housing cover before installing the NightFighter 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.

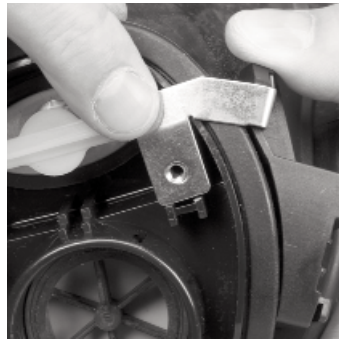


2. Reinstall the lens ring screw.



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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 Head Harness

Hycar Head Harness P/N 817262
Cloth Head Harness P/N 10031102

1. Install the crown buckle.



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

2. Pull the entire lug through.



Note: Repeat steps 1 and 2 to install temple, and jaw buckles.

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.



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7. Unscrew and remove the speaking diaphragm retaining ring.



8. Remove the ClearCommand microphone.



Installing the ClearCommand Microphone

ClearCommand Microphone
Retaining Ring

P/N 10024076
P/N 10023505

1. Thread the cable through the component housing.



2. With the gasket forward place the microphone into the component housing.



3. Install the retaining ring and firmly hand-tighten.



4. Reinstall the nose cup. (See **Installing the Nosecup** for instructions).

5. Route the microphone cable over the component housing retaining ring center line.



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

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



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



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Installing the ClearCommand Communication System Mounting Bracket

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.



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



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



- 4 Use a Phillips screwdriver to tighten the component housing screw.

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

Cleaning and Disinfecting

Confidence Plus® Cleaning Solution

P/N 10009971

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

Cleaning the Head Harness

Machine wash in warm water (maximum 110°F/43°C) 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. 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 second stage regulator.
3. Loosen the thumbscrew and remove the HUD.
4. Remove the ClearCommand Communication System.
5. Wash thoroughly with soft brush or sponge.
6. Submerge in a germicidal solution for the manufacturer's recommended time.
7. Thoroughly rinse the facepiece and components in clean, warm (110°F/43°C) water.
8. Clean the exhalation valve by pressing the stem with a blunt object and flushing with clean water.
9. Allow the facepiece to **thoroughly** air dry away from direct sunlight.

Note: Do not force dry with heat.