

FireHawk® M7 Ultra Elite® Facepiece

MAINTENANCE AND REPAIR

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

FIREHAWK M7 ULTRA ELITE FACEPIECE

Replacement Kits

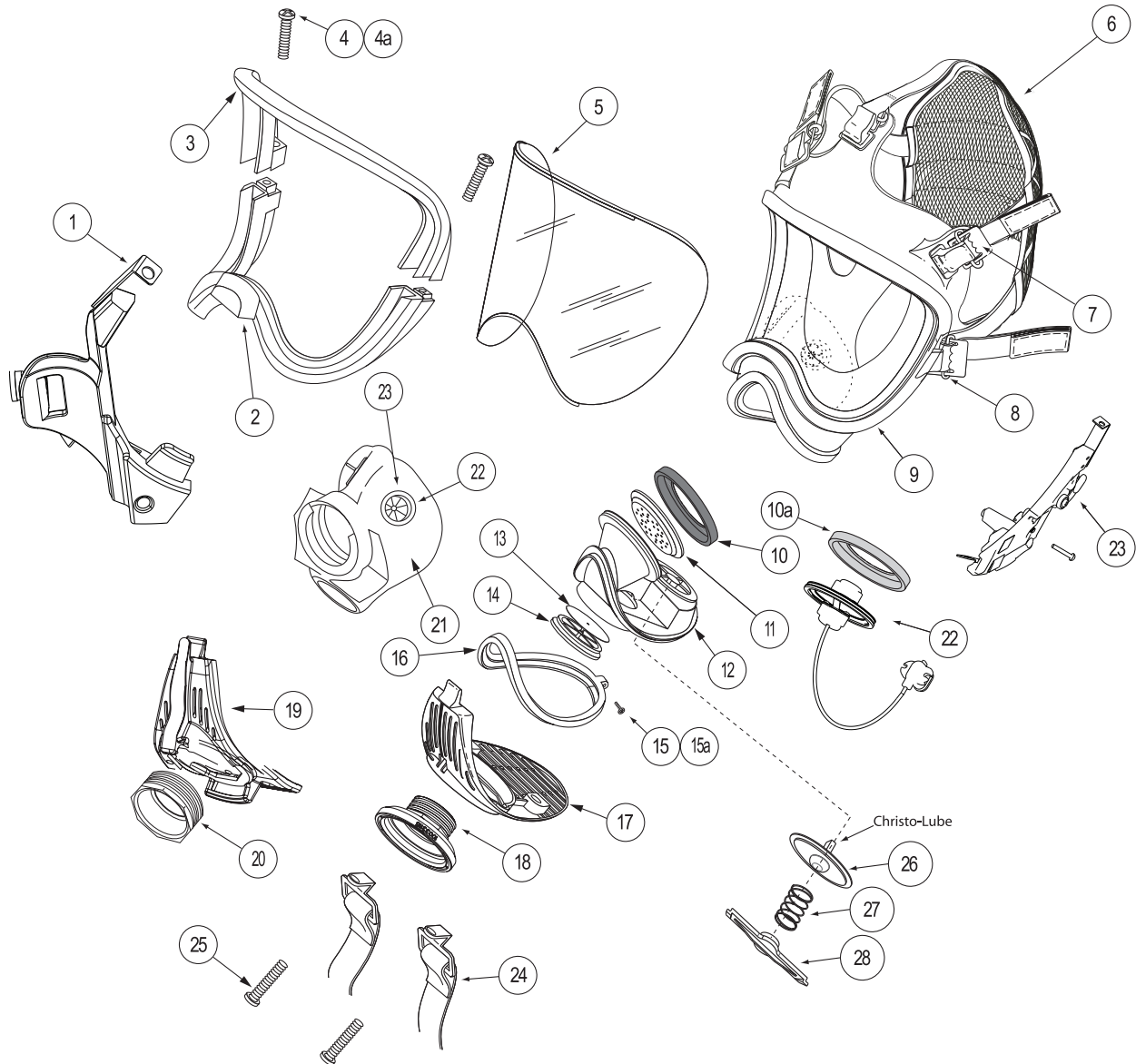
FireHawk M7 Ultra Elite Facepiece (complete)		
	P/N	Description
Push to Connect	10084690	Small
	10084822	Small, ClearCommand® Communication System-ready
	10084824	Medium
	10084826	Medium
	10084828	Large, ClearCommand Communication System-ready
Slide to Connect	10084830	Large, ClearCommand Communication System-ready
	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)		
491121	Small/Medium	
491123	Medium	

Parts List

Item	P/N	Description
1	10083133	HUD Bracket
2	804805	Lower Lens Ring
3	804804	Upper Lens Ring
4	636955	Screw (2 Req'd)
4a	804806	Screw Kit (2 Req'd)
5	805020	Lens Super Hardcoat
6	10031102	Speed-ON® Harness Assembly
6a	817089	Speed-ON Harness Assembly (with 3 Buckles)
6b	817088	Speed-ON Harness Assembly (less Buckles)
7	494297	Buckles (3 Req'd.)
8	804807	Buckle Assembly with D-Ring (2 Req'd.)
9	10048814	Hycar™ Facepiece Blank (Small)
	10048813	Hycar Facepiece Blank (Medium)
	10048815	Hycar Facepiece Blank (Large)
10	804808	Black Speaking Diaphragm Retainer
10a	10023505	Gray Speaking Diaphragm Retainer (ClearCommand Communication System)
11	804809	Speaking Diaphragm
12	815605	Component Housing with Exhalation valve
13	804813	Inlet Valve Disc
14	805011	Valve Spider
15	636956	Screw
15a	804812	Screw Kit
16	804811	Component Housing Ring
17	489224	Component Housing Cover (Push-to-Connect)
18	10033115	Push-To-Connect Adapter
19	10034500	Component Housing Cover (Slide-to-Connect)
20	10018621	Slide-To-Connect Adapter
21	491121	Nosecup Assy w/ valves, Medium
	491123	Nosecup Assy w/ valves, Large
22	804822	Valve Seat (2 Req'd.)
23	804823	Valve Disc (2 Req'd.)
24	804829	Neck strap
25	637070	Screw (2 Req'd.)
26	490133	Exhalation Valve
27	814459	Spring
28	490128	Spring Retainer
	600920	Snoop Leak Detector

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Exploded View



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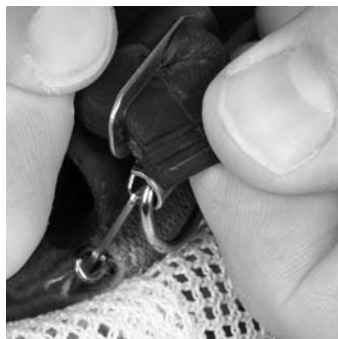
DISASSEMBLY

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 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.

- 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.



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



- Remove the component housing cover.

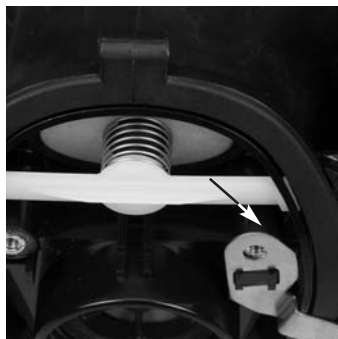


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Removing the Spring, Spring Retainer, and Exhalation Valve

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. 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 disk valve, speaking diaphragm, drinking tube, and adapter assembly.

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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.

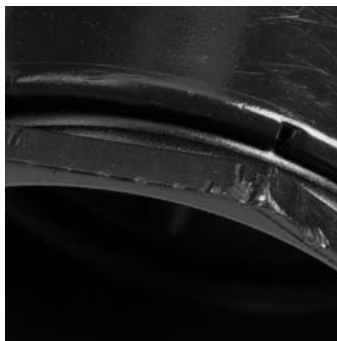
Note: Ensure that the groove captures the component housing rim. Flex the gasket spider as needed to fully capture the rim. When installed correctly, the gasket lays flat and all of the spokes are straight.



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.



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 (P/N 804808) and firmly hand tighten.



Installing the Component Housing

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 (P/N 600920) 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 (P/N 600920) as needed.
5. Moisten the mating surfaces of the facepiece and housing ring with Snoop (P/N 600920).



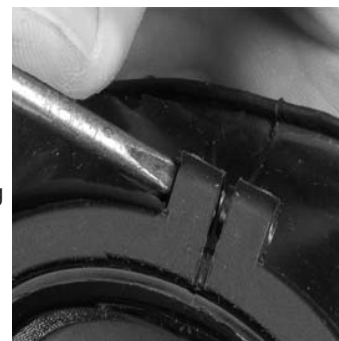
6. Check by gently squeezing the ring ends together. Bulges or wrinkles indicate that the rubber is not completely captured.

- 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 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 P/N 818107

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

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.)

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. Press the cover until it locks.

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



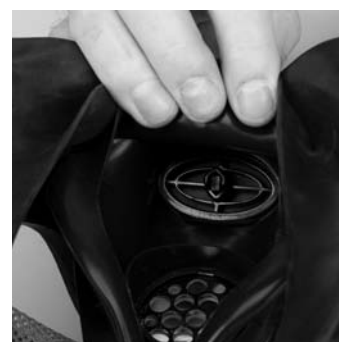
4. Place the neck strap brackets into the sockets.

- a. Install Phillips screws and tighten.



Installing the Nosecup

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



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2. Stretch the nose cup over the retaining ring.



Note: Ensure that the nose cup fully engages the retaining ring.

Installing the Lens 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).

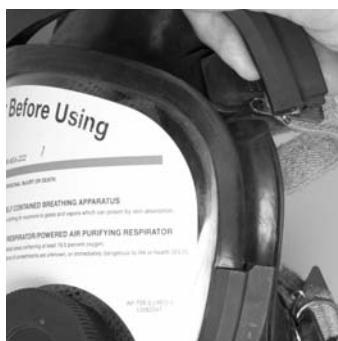


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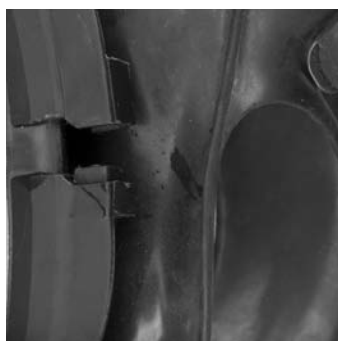
7. Lubricate the lens ring with Snoop (P/N 600920).



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 **FireHawk M7 Air Mask Operation and Instructions P/N 10082858** 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 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.



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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.



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.)

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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- Uncrew and remove the speaking diaphragm retaining ring.



- Remove the ClearCommand microphone.



Installing the ClearCommand Microphone

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

- Thread the cable through the component housing.



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



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



- Reinstall the nosecup (See **Installing the Nosecup** for instructions).

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



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

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



Installing the ClearCommand Communication System Mounting Bracket

ClearCommand Communication System
Mounting Bracket P/N 10024077

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

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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

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.