

# Ultravue<sup>®</sup> Facepiece

MAINTENANCE AND REPAIR

For More Information, call 1-800-MSA-2222 or Visit Our Website at [www.MSAnet.com](http://www.MSAnet.com)

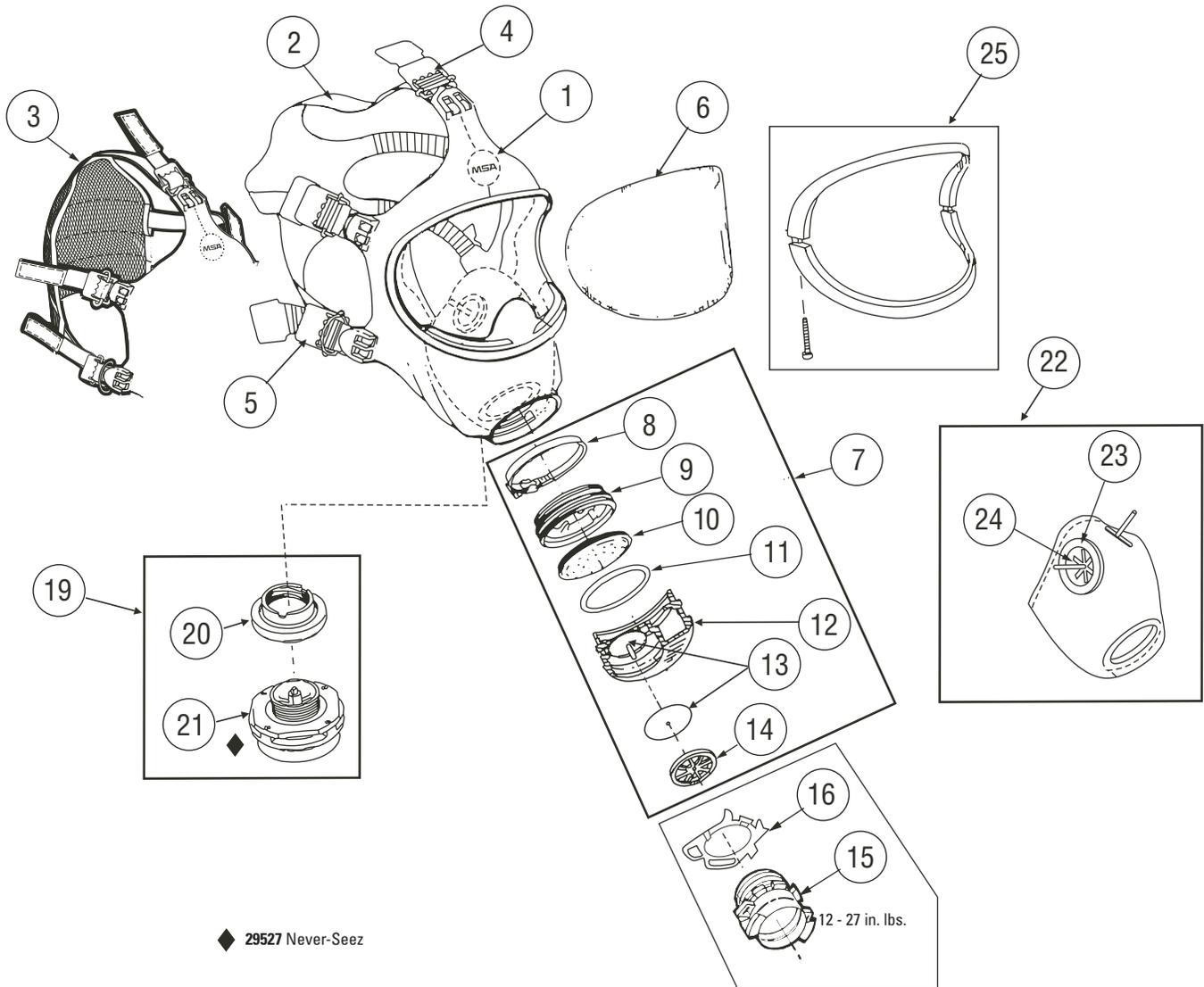


**MINE SAFETY APPLIANCES COMPANY**  
**PITTSBURGH, PENNSYLVANIA, U.S.A. 15230**

<b>ULTRAVUE FACEPIECE COMPONENTS</b>		
<b>Item</b>	<b>Part No.</b>	<b>Description</b>
1	<b>800509</b>	Small, Faceblank Hycar
	<b>800507</b>	Medium, Faceblank Hycar
	<b>800511</b>	Large, Faceblank Hycar
2	<b>817263</b>	Rubber Head Harness
3	<b>817088</b>	SpeeD-ON® Head harness only
4	<b>96662</b>	Buckle Assembly (3 Req'd.)
5	<b>457190</b>	Buckle Assembly with D-Ring (2 Req'd.)
6	<b>801127</b>	Lens, Polycarbonate (with Super Hardcoat)
7	<b>814074</b>	Inlet and Speaking Diaphragm Assembly
8	<b>628210</b>	Clamp
9	<b>96666</b>	Retainer Ring
10	<b>488874</b>	Speaking Diaphragm (flat side toward retainer ring)
11	<b>629935</b>	O-Ring
12	<b>473698</b>	Speaking Diaphragm Housing
13	<b>813103</b>	Inlet Valve
14	<b>491934</b>	Inlet, Valve Body
15	<b>812839</b>	Adapter Assembly, 1/4 Turn — 12 - 27 in. lbs.
16	<b>813154</b>	Retaining Ring
19	<b>461864</b>	Exhalation Valve Assembly (complete)
20	<b>461610</b>	Retaining Nut
21	<b>484678</b>	Exhalation Valve
22	<b>471710</b>	Small, Nosecup Assembly
	<b>471711</b>	Medium, Nosecup Assembly
	<b>471712</b>	Large, Nosecup Assembly
23	<b>804822</b>	Nosecup Valve Seat (2 Req'd.)
24	<b>804823</b>	Nosecup Valve Disc (2 Req'd.)
<b>KITS</b>		
25	<b>471249</b>	Small, Lens Ring (Gray), Kit
	<b>464358</b>	Medium, Lens Ring (Black), Kit
	<b>471250</b>	Large, Lens Ring (Gold). Kit
<b>ACCESSORY</b>		
26	<b>454819</b>	Spectacle Kit (Not Shown)

# Ultravue®

## pressure demand facepiece NFPA



# ULTRAVUE FACEPIECE REPAIR

See the INTRODUCTION Tab section of this binder for required tools.

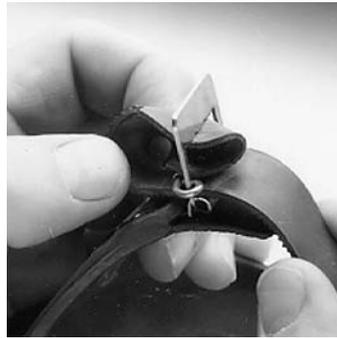
## Facepiece Fit Check

Refer to Users Manual (P/N 10041847)

## RUBBER HEAD HARNESS

1. To remove a damaged head harness from the facepiece, lay the facepiece on a table or other flat surface.
  - a. Pull the back of each buckle away from the head-strap, then pull slightly so the headstrap end-tab is at the buckle.

- b. Fold the end-tab sides together, then pull each end-tab through its buckle.



2. To install a new rubber head harness, lay the new head harness flat. The MSA logo should be right-side up. Pick the head harness up by the strap labeled "FRONT."
  - a. Fold the end-tab sides together.
  - b. Push the headstrap end-tab under the wire roller.
  - c. Pull the wire roller down against the strap.

- d. Re-fold the end-tab and push it through the buckle again, this time passing over the wire roller.



- e. Repeat steps a through d for each remaining strap. Check that the head harness is not twisted.

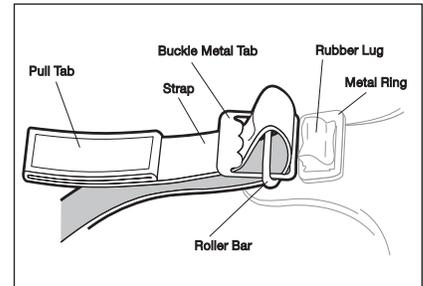


3. Don the facepiece and check the face-to-facepiece seal. Follow the steps in the Facepiece Fit Check.

## SPEED-ON HARNESS

1. Thread the crown, temple, and neck straps into the buckles as follows:
  - a. With folded side down, thread the strap into the bottom section of the buckle under the roller bar.
  - b. Push the roller bar down and thread the end through the top section of the buckle.

- c. Adjust so that the pull-tab extends beyond the buckle metal tab.



**Note:** It is important to have the folded side of the elastic strap face up, so the strap will lay flush against the head when it is pulled tight.

- d. Check that the installed harness straps are not twisted.

**Note:** Neck location buckles have an extra D-ring which is not involved in installation.



### Cleaning The Speed-ON Harness:

Machine wash in warm water (maximum 120 degrees F) with a mild detergent. Dry by squeezing excess water from the harness and hanging in open air. Do not dry clean. Do not bleach or use abrasive cleaners. Do not fold or store when wet.

# ULTRAVUE FACEPIECE REPAIR

## REPLACING LENS AND RING

1. Remove the facepiece lens:

- a. Loosen and remove the screw from each side of the retaining ring.



- b. Remove both retaining ring halves.



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

### CAUTION

Keep the protective papers on the replacement lens until it is completely assembled in the facepiece.

2. Installing the new facepiece lens:

- a. Remove any dirt, lens fragments, or other debris from the groove. Line up the new lens center-line marks (top and bottom) with the facepiece flange center-line marks.



- b. Then insert the lens into the groove. Work the facepiece flange around the lens to seat the lens fully in the groove.
- c. Line up the top lens ring center-line with the facepiece flange center-line mark. Press the ring half in place. Mount the bottom ring half in the same way.
- d. Press the ring halves together at the top and bottom of the facepiece so that the ends mate.
- e. Install a screw on each side.
- f. Start the screws. They should thread easily. If not,

remove and re-install the screws to avoid cross-threading. Maintain hand pressure on both ring halves.

- g. As the ring halves come together, alternate tightening the left and right screws to be sure the ring seats evenly and thoroughly on the flange.

### CAUTION

Do not over-tighten. Rubber must not show between the lens ring ends at the joint. If this happens, reassemble.

- h. Remove all lens protective papers from the new lens.
- i. Don the facepiece and check the face-to-facepiece seal. Follow the steps in the Facepiece Fit Check.
- j. Install a cover lens to protect the facepiece polycarbonate lens during storage.

## SPEAKING DIAPHRAGM HOUSING

1. Loosen the band clamp screw to remove the entire housing (P/N 470039). Remove the clamp and pull the assembly out of the facepiece.



2. To reassemble the entire speaking diaphragm housing in the facepiece:
  - a. Slide the band clamp over the inlet.

- b. Slide the housing assembly into the facepiece. Check that the air ducts in the housing are lined up with the ducts in the facepiece.



- c. Be sure that the assembly is pressed into the facepiece completely.

# ULTRAVUE FACEPIECE REPAIR

d. The band clamp must be positioned so that the screw is at the 5 or 7 o'clock position. The screw-head must be to the left so that it will not rub the facepiece rubber.



e. Tighten the band clamp until the housing is secured. Be sure that the band clamp will not pull the facepiece rubber away from the assembly. Do not over-tighten. If the facepiece rubber "bulges" out through the slots in the clamp, the clamp is too tight and must be loosened and re-tightened.

3. Don the facepiece and check the face-to-facepiece seal. Follow the steps in the Facepiece Fit Check.

## SPEAKING DIAPHRAGM

1. Unscrew the retainer ring, using the facepiece spanner wrench (P/N 461828).



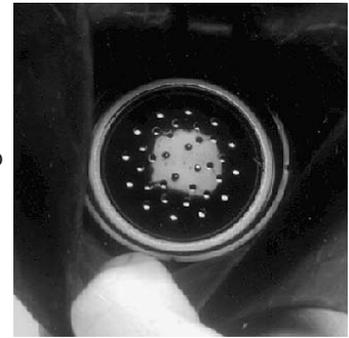
2. Turn the facepiece upside down and shake out the metal speaking diaphragm.
3. Check the speaking diaphragm for damage. Replace it if it is worn or damaged.
4. Check the speaking diaphragm gasket or O-ring. Replace the gasket or O-ring if either is worn or damaged.

### **⚠ WARNING**

**The flat gasket (used on old-style facepieces) and the O-ring (used on the new design) are not interchangeable. Replace the gasket with the P/N 83630 gasket only. Replace the O-ring with the P/N 629935 O-ring only. Failure to follow this warning can cause inhalation of contaminant and result in serious respiratory injury or death.**

5. To reassemble the speaking diaphragm, place the gasket or O-ring in the groove of the speaking diaphragm housing.

6. Place the speaking diaphragm in the housing so that the rolled lip rests on the gasket or O-ring.

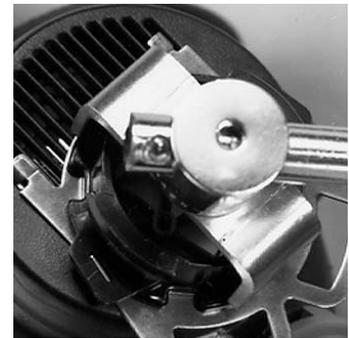


Be sure that the crimped side of the speaking diaphragm is facing up (away from the gasket or o-ring).

7. Replace the retainer ring and tighten, using the spanner wrench.
8. Don the facepiece and check the face-to-facepiece seal. Follow the steps in the Facepiece Fit Check.

## INHALATION DISC VALVE

1. Use the 1/4 turn adapter (P/N 496317) spanner wrench (P/N 496317). Press the adapter slip nut in. Turn the wrench counter-clockwise (left) to unthread the adapter.



2. Lift the neckstrap retaining ring off the housing. Note how the "fingers" line up in the housing.

3. Lift the spider gasket out of the coupling nut housing by its tab.



4. Remove the valve disc from the coupling nut housing. If you cannot grasp the disc with your fingers, use a blunt object, such as a ballpoint pen to lift one edge, then remove the disc. Be careful not to tear the soft disc.
5. Inspect the disc for tears or punctures. The disc should be very soft and pliable. Install a new disc if it is damaged or hardened.

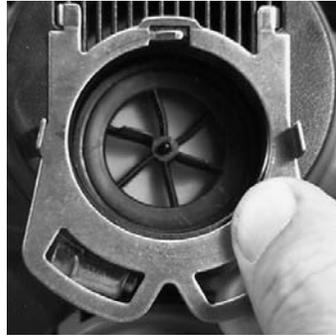
## ULTRAVUE FACEPIECE REPAIR

6. To install the inhalation disc valve:
- Press the valve disc on the pin in the coupling housing.



- Carefully tuck all edges of the disc under the housing lip.

- Replace the spider gasket (tab up) and press it on the pin.



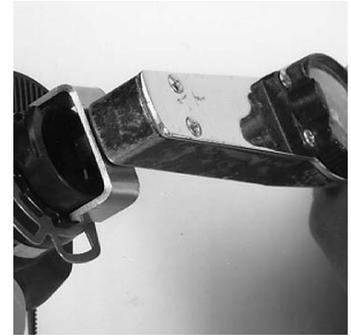
- Place the neckstrap retaining ring on the housing. Line up the "fingers" with the housing.

- Place the locking ring on the adapter.
- Insert the adapter assembly through the hole in the retaining ring. Start to thread the adapter slip nut into the speaking diaphragm housing.

- Turn the adapter so that the bayonets are horizontal. Hand-tighten the slip nut until the two adapter "wings" lock into the two large tabs in the retaining ring. Make sure that each of the two large tabs on the retaining ring is fully seated in both of the slots on the adapter "wings."



- Using the 1/4 turn adapter (P/N 496317) spanner wrench, tighten the adapter slip nut until the slip nut locks into the spring finger on the retaining ring. Continue to tighten the slip nut so that the adapter seals against the spider gasket. The slip nut should be tightened 12-27 in-lb.



- Verify each of the following features:
  - The adapter bayonets are locked into a horizontal orientation and cannot be rotated;
  - The slip nut is threaded completely into the face piece and locked securely; it cannot be rotated;
  - The metal retaining ring is locked into position and cannot be rotated;
  - There is no loose play in the assembly of parts.

### PRESSURE DEMAND EXHALATION VALVE

- Temporarily fold the headstraps back over the front of the facepiece lens.
- Pull the facepiece chin cup out so that you can see the inside of the exhalation valve.

- Use the facepiece spanner wrench to loosen the valve retaining nut.



- Unscrew and remove the retaining nut. Then, grasp the valve cover and gently pull the valve out from the underside of the facepiece.

**Note:** The pressure demand exhalation valve is replaced as a unit. No replacement parts are available. All components of each valve must be maintained as a unit. When cleaning the valve, do not interchange parts.

- Installing the pressure demand exhalation valve in the facepiece:
  - Inspect the facepiece rubber for tears or cracks. Replace the facepiece if it is damaged. Clean the area around the facepiece mounting hole if necessary.

## ULTRAVUE FACEPIECE REPAIR

**Note:** Rub a small amount of Never-Seez (P/N 29527) on the valve threads.

- b. Line up the exhalation valve threads with the facepiece mounting hole. Place one hand inside the facepiece and stretch the hole slightly.
- c. Push the valve threads into the facepiece. Use a "threading" motion to insert the valve until the valve body rests against the facepiece rubber.

**Note:** The "MSA" logo on the exhalation valve cover does not have to be aligned to any special position.

- d. Pull the facepiece chin cup back so that you can see the valve, then thread the retaining nut on.

e. Tighten the retaining nut, using the facepiece spanner wrench (P/N 461828). Reposition the facepiece head harness.

6. Inspect the exhalation valve.
7. Visually inspect the spring to see that it is located properly in its socket.

### CAUTION

**Do not store the facepiece with the head harness stretched over the lens. Doing so may distort the sealing surface and affect the facepiece seal.**

8. Don the facepiece and check the face-to-facepiece seal. Follow the steps in the Facepiece Fit Check.