

# BandMask Hood, Face Seal, Band Keepers and Head Harness

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### 1.1 Adjustments on BandMasks

Unlike our helmets, which have a neck dam that must be sized for the individual diver’s neck, the Kirby Morgan BandMasks® are designed to be adjustable to fit most divers. No special pre-dive adjustment must be made other than securing the spider with the proper tension for the diver’s head.

### 1.2 BandMask Standard Hood and Face Seal

The hood and face seal is fabricated from foam neoprene and open cell foam. The open cell foam forms a comfortable cushion that pushes the sealing surface of the foam neoprene against the diver’s face. This is what keeps the water away from the diver’s face.

The hood incorporates built-in pockets that are open to the interior of the mask frame. These

pockets retain the earphones. It is very easy to remove the earphones for maintenance.

If the standard hood does not fit your head comfortably, other sizes are available from your KMDSI dealer.

### 1.2.1 Inspection of the Hood and Spider on BandMasks

The hood and face seal must not be torn or punctured. The hood must be in good condition with no tears or rips. The face seal must be properly glued to the hood. If it is not, or there are tears in the face seal this will cause the regulator to free flow.

The spider must be in good condition. The rubber must not be torn or cracked.

#### **⚠ WARNING**

**The spider must be in good condition. If it is worn or cracked it could fail during the dive. This could cause the mask to flood or come off the diver's head. This could lead to drowning.**

#### **⚠ WARNING**

**There must be no holes in the face seal. If there are any holes in the face seal the demand regulator will free-flow. This could lead to rapid depletion of the air supply. Death could result.**

### 1.2.2 Sealing Integrity Check

If there is any doubt whether or not the BandMask® is sealing properly, perform the following test prior to diving.

Turn the supply gas off at the dive control system and bleed the umbilical. Pull the nose block device knob all the way out, away from the mask. Have the diver install the mask on their face, but do not fasten the hood. Do not fasten the head harness (spider). With the mask held firmly against their face, there must be a suction on the diver's face when they inhale. This will indicate that the mask is forming a good seal. If there is any leakage the diver must not dive until the source of the leakage has been found and corrected.

## 1.3 Head Harness or "Spider"

The five legged head harness or "spider" is a simple and convenient method of keeping the mask in place against the diver's face. The multiple holes in each leg allow adjustment to fit any size head.

It will be more comfortable if the lower rear or neck area of the spider is as low as possible on the diver's neck. If this lower portion of the spider is too high, it will cause the face seal to push up on the chin causing discomfort.

## 1.4 The Standard Hood and Band Keeper Removal and Replacement

The hood must be removed at the end of each diving day so it can be rinsed and dried. If the hood is not removed, so that it and the mask will dry, mold will grow inside the mask. This can be hazardous to your health.

### Tools required:

- Flat Blade Screwdriver
- Torque Screwdriver w/Flat Blade & Phillips Attachments
- #2 Phillips Screwdriver
- Large Phillips Screwdriver
- RTV Silicone Sealant (Dow Corning® #732)

### 1.4.1 Hood and Face Seal Retainer Bands and Band Keepers General Information

The top and bottom bands fit around the hood and face seal combination, and clamp firmly to the mask frame. Two screws tighten these bands in place.

The patent pending Band Keepers coupled with the hood designed for them, not only prevent any separation of the hood from the mask but also make it impossible for the bands to separate from the mask. Five spider "hooks" consisting of stainless steel posts welded to the retainer bands are located on the top and bottom bands. The top band has three stainless steel posts. The bottom band has two stainless steel posts.

## ⚠ WARNING

**The bands must be tightened properly or the mask frame may separate from the hood and face seal. If this happens the diver can drown and death may result.**

### 1.4.2 Hood, Bands and Band Keeper Attachment Plates Removal

- 1) Remove the top and bottom band keeper attachment plates by removing the screws that mount them. The whisker blocking access to the bottom Band Keeper can be bent back out of the way.
- 2) Loosen the band adjustment screws and take the hood off of the mask frame.
- 3) Remove the earphones from the pockets in the hood and separate the hood from the mask frame.

- 4) Remove the band adjustment screws from the bands and remove the bands from the hood.

When the hood and face seal are both dry, reinstall the hood. If the hood has not dried by the time you must dive again, it may be reinstalled at this time.

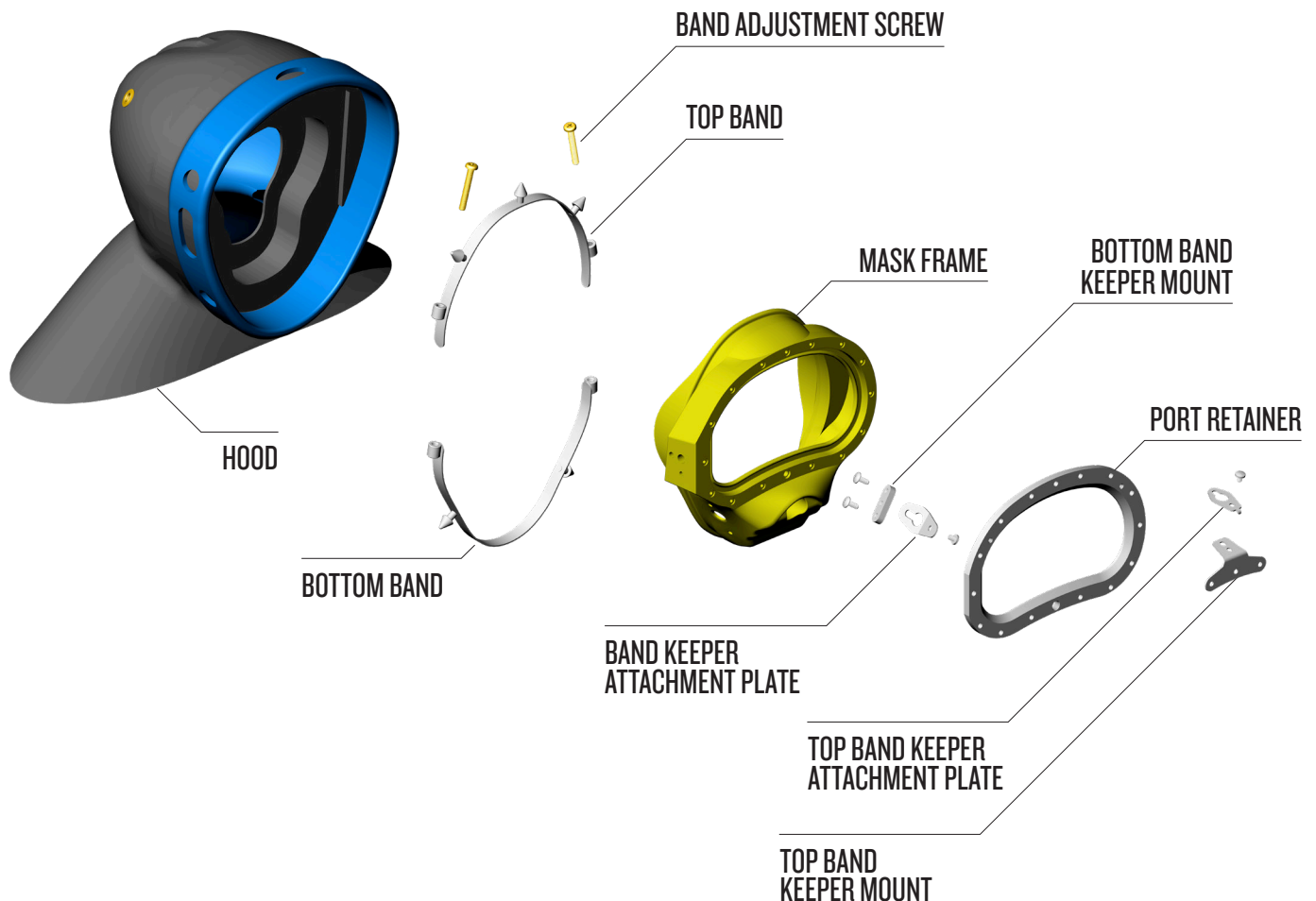
## ⚠ WARNING



**If the hood is not removed after diving and the mask is allowed to stay wet, mold can grow in the inside of the mask, particularly the oral nasal mask and the regulator. This could be hazardous to your health.**

### 1.4.3 Band Keeper Mount Removal and Replacement

- 1) To remove the top band keeper mount, remove the three mounting screws.




*Exploded view of the Band and Band Keeper system on Band Masks.*

2) To install the top band keeper mount, screw it onto the front of the port retainer with screws. Use a torque screwdriver and torque the screws. ALWAYS REFERENCE Appendix Contents, Torque Specs starting on page APNDX-19 in the modular manual to confirm correct torque.

3) To remove the bottom band keeper mount, remove the comfort insert (KMB 18s only) and mounting screws (KMB 18s only), then remove the screws that hold the mount and carefully pry the mount, that is sealed to the mask frame using silicone sealant, from the mask frame.

4) To install the bottom band keeper mount, clean the old silicone sealant from the bottom band keeper mount and the mask frame. Apply an adequate amount of silicone sealant on the back side of the mount and secure it to the outside of the mask frame using the screws. Wipe off any excess silicone sealant.

<b>⚠ WARNING</b>	
	<p><b>Use good ventilation when using RTV sealant. Fumes from this material may irritate your lungs. Read and follow the directions in the MSDS before using this material.</b></p>

<b>⚠ WARNING</b>	
	<p><b>Wear hand protection when using RTV sealant. This material may irritate your skin. Read and follow the directions in the MSDS before using this material</b></p>

#### 1.4.4 Hood and Band Keeper Inspection and Replacement General Information

Inspect the hood, bands, adjustment screws, band keepers and all related parts for damage and/or wear and replace if necessary.

Generally speaking, a used hood will take a “set” and show the signs of compression from the

bands. This set will correspond to the depression in the mask frame where the bands compress the hood.

The screws holding the bands should be torqued. ALWAYS REFERENCE Appendix Contents, Torque Specs starting on page APNDX-19 in the modular manual to confirm correct torque. As hoods age and the cells of the neoprene break down it will be possible to tighten the bands to the point where the bands almost touch.

#### 1.4.5 Hood, Bands and Band Keeper Attachment Plates Installation

- 1) Reinstall the comfort insert (KMB 18's only).
- 2) Feed the bands into the hood through one of the large holes on the sides.



*Feed the bands into the hood.*

- 3) Start the band adjustment screws onto the bands only 2–3 turns.



## ⚠ WARNING



If the hood is not removed after diving and the mask is allowed to stay wet, mold can grow in the inside of the mask, particularly the oral nasal mask and the regulator. This could be hazardous to your health.

4) Place the mask frame face down on a work surface and install the earphones into the earphone pockets in the hood.



*Mount the hood and bands on the mask frame.*

5) Slip the hood and bands onto the mask frame until they are both correctly positioned and centered.

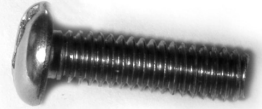
**NOTE:** On the KMB 28s it may be necessary to place the adjustment block part of the band between the side block and the mask frame first before sliding the other side of the hood onto the mask frame.

6) Using a large Phillips screwdriver lightly snug the band adjustment screws onto the mask frame for the moment. Tighten the band adjustment screws equally on each side checking the position of the hood and bands as you tighten.

### Port Retainer Screw



### Band Keeper Screw



### Whisker Screw



*Note that the screws used for the port retainer, band keeper and whisker have a similar appearance, but that all are different lengths. They are not interchangeable.*

7) Place the top band keeper attachment plate over the top, center head harness mount stud on the band and attach it to the mount using the screw. Tighten the screw.

8) To access the bottom band keeper, the exhaust whisker must be moved out of the way. Place the bottom band keeper attachment plate over the lower port side head harness mount stud on the band and attach it to the mount using the screw. Tighten the screw.



*To access the bottom band keeper, the exhaust whisker must be moved out of the way then tighten the bottom band keeper.*

9) Using a torque screwdriver, torque the band adjustment screws. ALWAYS REFERENCE Appendix Contents, Torque

Specs starting on page APNDX-19 in the modular manual to confirm correct torque.



*Tightening the top band keeper.*

#### **1.4.6 Note on discontinued, Old Style Hoods - (#510-510) Pre "Band Keeper" model**

Prior to the BandKeeper style of hood was hood P/N 510-510 that would not accept BandKeepers. When this hood is properly installed, the front edge of the hood must protrude a minimum of  $\frac{1}{4}$  to  $\frac{1}{2}$  inch (6.0-12.0 mm) from beneath the bands all the way around the mask.

KMDSI strongly recommends installing BandKeepers onto any mask without. It is the most secure method of hood attachment for KMB BandMasks.

## **1.5 Replacing the Face Seal**

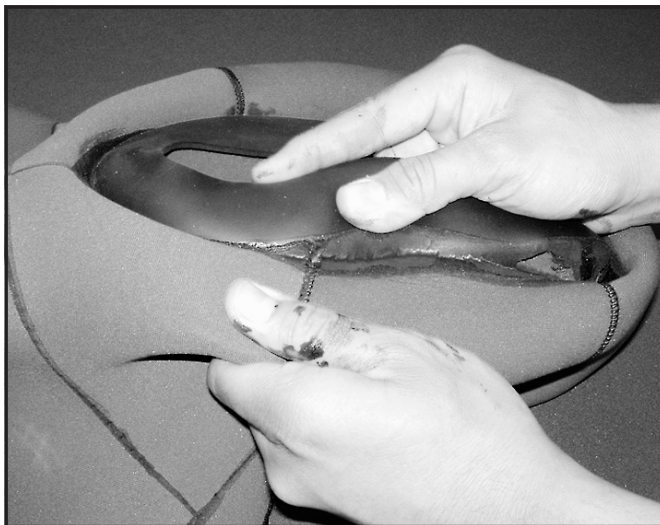
Over time, the face seal on the mask may become worn and need to be replaced. It's possible to replace just the seal, but keep your existing hood provided the hood is in good condition.

#### **Parts and Materials Needed:**

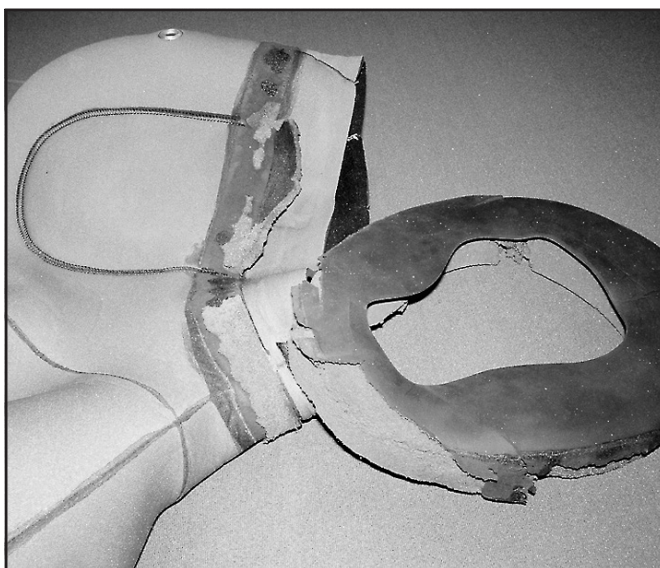
- 510-505 Face Seal, Wetsuit Cement

### **1.5.1 Removing the Old Face Seal**

- 1) The hood must be completely clean and dry before starting the replacement. It must be rinsed thoroughly in fresh water.
- 2) Once the hood and old face seal are dry, turn the hood inside out, and using your thumbs roll the face seal down towards the front and remove.
- 3) Peel off the face seal all the way around the hood. Remove any excess material left behind, especially the foam on the ear pockets.



*Remove the old face seal from the hood.*



*Clean off all remnants of the old face seal.*



### **1.5.2 Pre-Coat the Material**

1) Give the first coat of glue to the edge of the new face seal P/N 510-505.

2) Put the first coat of glue on the hood to the old glue line left behind from the old face seal. Make sure you also pre-coat the ear pockets and the edges around the ear pocket flap.



*Apply glue to the outer edge of the new face seal.*



*Apply glue to the inside of the hood.*



*Pre-coat the ear pockets and edges of the ear pocket flap.*

3) Allow the glue to dry 20–30 minutes.

4) Give a second coat of glue to the same pieces as in Step 2 (except for the ear pocket flap).

5) Let dry for about 5–10 minutes or until the glue is tacky.

### **1.6 Installing the Face Seal**

1) Find the center of the face seal (visually, from top to bottom.)



*The foam side of the face seal must be oriented correctly in relationship to the hood.*

2) Start by attaching the face seal at the chin, with the foam side down and concentrate on join-

ing the inner edge of the face seal to the hood first.

3) Align the seal with the hood at the bottom center, work in the face seal from the bottom center towards the bottom of the ear pockets by pulling out on the hood material.

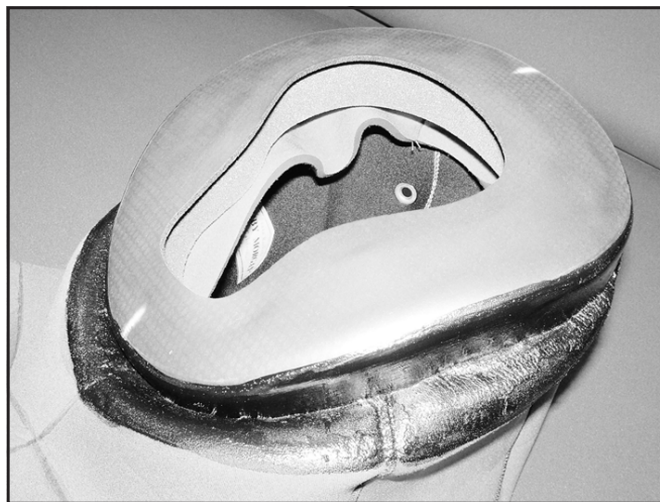


*Start attaching the face seal to the hood at the bottom center of both.*

4) Next, align top center of the face seal and work down towards the bottom of the ear pockets by pulling out on the hood material. Make sure the edge of the face seal is attached all the way around the hood.

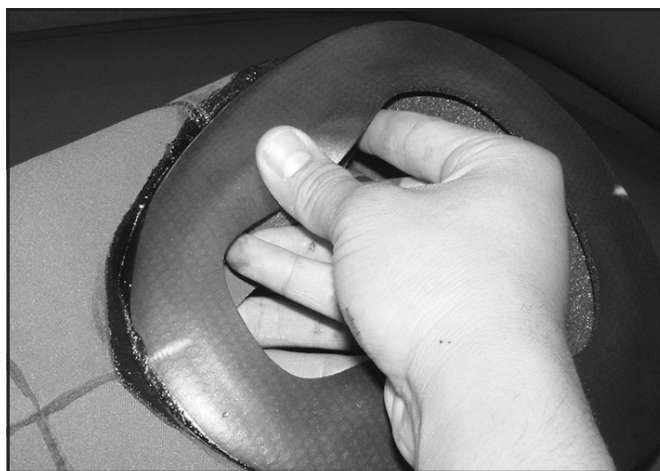


*Aligning the top center of the face seal.*



*The edge of the face seal should be joined all the way around the hood.*

5) Starting at the chin begin to turn the hood right side out by pulling up on the hood material. Make certain that the face seal does not crumple up or have any air bubbles as you pull the hood material towards the top.



*Turn the hood right side out.*

6) Pinch the hood and face seal together all around the front edge of the face seal.

7) Once the face seal is in place with the palm of your hand inside the hood apply pressure to the face seal all around the hood against a hard surface.

8) Pinch all around the inside edge of the face seal.



**⚠ NOTICE**

**Pulling on the face seal during installation, while the glue is tacky, will cause the face seal to crumple up.**

**If this occurs, add a little glue to the crease in the face seal material to re-activate the glue and open it up.**

**Allow more time for the glue to set up and become tacky before attempting again.**

9) Put a coat of glue to the foam where the ear pocket flap will sit, and a second coat of glue to the ear pocket flap making sure you also glue the edges of the ear pocket flap. Let it sit for 5–8 minutes. Wait until it is tacky before you lay it down and pinch it closed.

## 1.7 Band Mask Hood and Molded Face Seal Replacement

### 1.7.1 Removal of the Hood

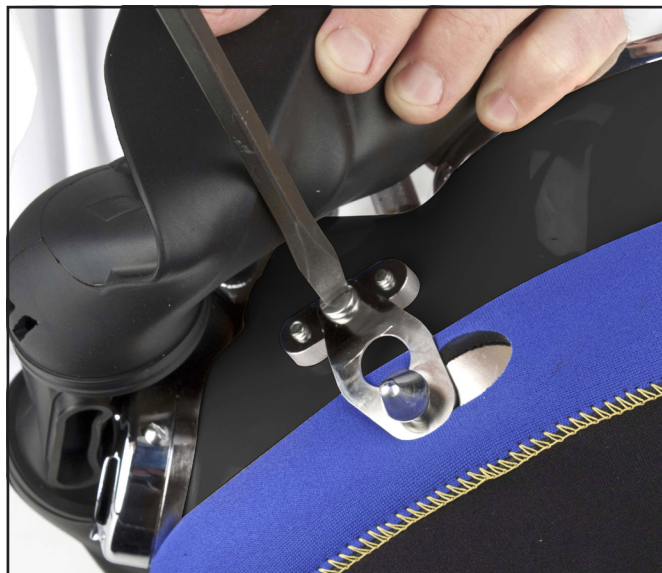
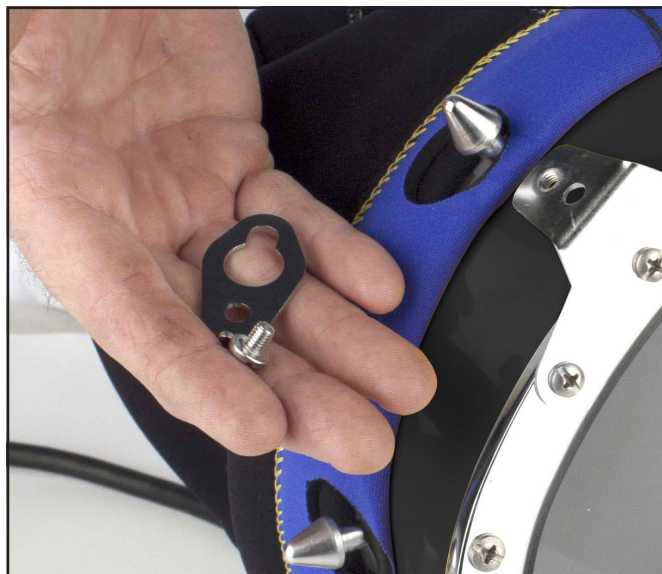
#### Tools Required

- Torque Screwdriver
- Flat Blade Attachment
- Phillips Head Attachment

1) Remove the band keepers.

If your BandMask does not have band keepers, Kirby Morgan highly recommends having them installed. Refer to Bulletin #8 of 2005.

**IMPORTANT:** Be aware that without band keepers, Kirby Morgan Band Masks 18 and 28 DO NOT meet factory specifications.



2) Remove the band adjustment screws. If you are installing a new molded face seal then discard the screws and use the screws included in the kit.



3) Separate the old hood and face seal from the mask frame. Remove the earphones from the pockets in the hood.

4) Remove the top & bottom bands from old hood & face seal assembly.

### 1.7.2 Inspection of the Bands and Associated Components

1) Inspect top and bottom bands, band keepers and all related parts to ensure that they are not damaged, broken, cracked (welds) or bent and are in good working condition.

2) Ensure that all mounting surfaces are clean and free of debris, oils, or greases.

### 1.7.3 Reassembly of the Hood with Molded Face Seal

1) Reinstall the top and bottom bands into the new hood & face seal assembly.



2) Use the bronze band adjustment screws, included in this kit, and start the screws a few threads—just enough to hold the bands together.



3) Install the face seal spacer P/N 520-153 into the molded face seal. (Only the KMB 28 Band Masks require this spacer. KMB 18s do not).





**NOTE:** On the KMB 28, the face seal spacer P/N 520-153 is held in place by being trapped between the molded face seal and mask frame. No screws or glue are needed to hold it in place.

4) Install the hood and molded face seal assembly on the side block side first. Make certain that the threaded side on the lower band is resting behind the emergency valve on the side block assembly.

Starting **FIRST AT THE SIDE BLOCK SIDE**, work the hood and molded face seal around and onto the mask frame. Continue to work the hood and face seal around the mask frame until seated properly.

**NOTE:** Do not completely tighten down the adjustment band screws in this step.



Make certain the bands are over the rubber of



the molded face seal and the neoprene has NOT folded over the rubber.



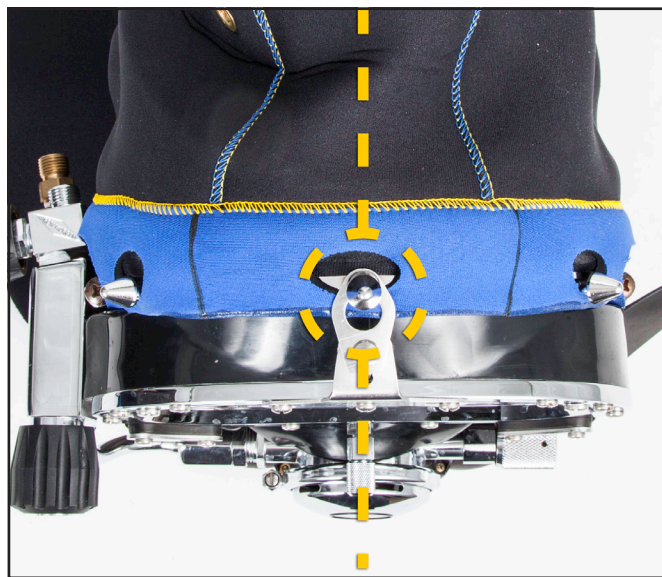
**NOTE:** This will ensure that the hood and face seal are properly aligned and fitted onto the mask frame before tightening the band screws.

The top band keeper attachment and bottom center line on the hood should lineup with the center of the mask.



5) The bands can be slid over to align with the top band keeper.

Start the screws to secure the top and bottom band keeper attachment plates. Torque **ONLY** the top band keeper, leave the bottom band keeper loose for the time being. **ALWAYS REFERENCE** Appendix Contents, Torque Specs starting on page APNDX-19 in the modular manual to confirm correct torque.







6) Using a torque screwdriver with a large Phillips attachment, torque the band screws. **ALWAYS REFERENCE** Appendix Contents, Torque Specs starting on page APNDX-19 in the modular manual to confirm correct torque.

**\* NOTE:** Maximum torque, bands should have no less than an 1/8 inch (3 mm) even gap between the bands. On installation, a marine grade anti-seize may be used on this screw. The screws may need adjustment after several dives.

**OPTIONAL:** For easier access to the lower band keeper, the port whisker wing can be moved.

Remove the screws, spacers and zinc whisker anode or kidney plate holding the port whisker on the mask frame and tuck the whisker wing under the adjustment knob.

7) Using a torque screwdriver with a flat blade attachment, torque the bottom screw securing the band keeper. **ALWAYS REFERENCE** Appendix Contents, Torque Specs starting on page APNDX-19 in the modular manual to confirm correct torque.



If the optional step to move the port whisker wing was followed, untuck the whisker wing, re-install the screws, spacers and zinc whisker anode or kidney plate and torque the screws to 12 inch pounds (1.3 Newton Meters).

8) Reinstall the earphones into the pockets of the new face seal.



**NOTE:** A small amount of pump silicone lubricant or dish soap on the outside of the earphone assemblies will make them easier to install.

9) Reinstall the head harness (spider)

**Post Dive Cleaning, Maintenance and Inspection:** Rinse the hood and face seal thoroughly with fresh water after each use. Air dry

and inspect for damage. Use pump silicone conditioner on the face seal rubber to clean and help protect it.

## 1.8 Replacing a Molded Face Seal

**NOTE:** It is necessary to read the entire instructions and to have a complete understanding of the following procedures before attempting to replace and install a molded Band Mask® face seal.

### Tools Required:

- Neoprene Cement
- Aquaseal® or Equivalent
- 4" × 4" Sand Paper 120 grit
- Isopropyl Alcohol (Rubbing Alcohol)
- (1) Glue Brush
- (1) Aquaseal® Brush or Equivalent
- Paper Towels

### 1.8.1 Removing a Band Mask® Molded Face Seal

- 1) Remove the head harness
- 2) Remove the top and bottom band keepers
- 3) Loosen the band adjustment screws and take the hood off the mask frame.
- 4) Remove the earphones from the pockets in the hood and completely separate the hood from the mask frame.
- 5) Remove the band adjustment screws from the bands and remove the bands from the hood.
- 6) Open the zipper all the way.
- 7) Turn the Band Mask® hood inside out until the inside edge, where the molded rubber material meets the neoprene hood, is visible.



**NOTE:** Delamination is a result of nylon or neoprene layers peeling apart from one another. Step 8) should be done in a slow and steady manner to avoid delaminating or tearing the nylon away from the neoprene, especially around the seams on the hood. Work your way around the hood, peeling in a downward motion towards the front edge of the face seal to complete separation.

8) Begin pulling the face seal away from the hood starting at one of the ear pockets. Peel the face seal in a downward motion towards the front of the face seal, until you break through the last layer of Aquaseal® adhesive.



9) Remove any leftover bits and pieces of face seal or Aquaseal® left behind.



**NOTE:** Keep delamination to a minimum. Small delaminations, should be repaired before setting in the new face seal by re-gluing the seams closed, using two coats of neoprene cement adhesive.



### 1.8.2 Preparing the New Face Seal for Installation

1) Using 120 grit sandpaper, sand a 1 ¼ inch (3.175 cm) wide strip all the way around the outside edge of the face seal. This 1 ¼ inch (3.175 cm) strip will be the mating surface for the neoprene hood



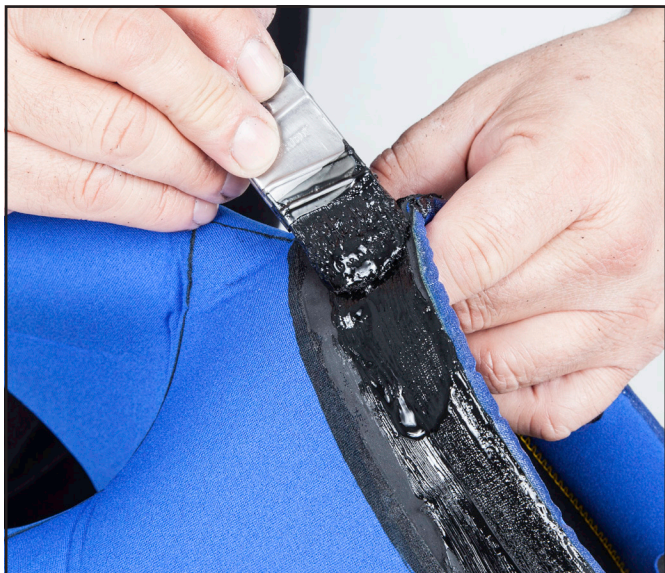
2) Clean up the surface of any residue with alcohol and a paper towel.

3) Apply a pre-coat of neoprene cement to the sanded area of the face seal and let it dry 20–30 minutes.

4) Apply a pre-coat of neoprene cement to the hood. Follow the original glue line left behind af-



ter removing the face seal. Make sure the edges of the glueline are well defined as you apply an even coat of neoprene cement. Let it dry for 20–30 minutes.



2) Apply a second coat of neoprene cement to both the face seal and the hood. Wait approximately 10–15 minutes to let the glue get tacky, before attempting to put them together.

3) Begin fitting together the two parts, starting at the chin. Carefully line up the bottom center of the face seal to the seam on the hood. Concentrate on lining up the front edge of the face seal to the front edge of the hood.

### 1.8.3 Installing a New Molded Face Seal

**HELPFUL HINT-** As you work, always pull out on the hood material and avoid pulling in on the molded face seal. Also follow any creases left behind from the old faceseal to help line it up correctly.

**NOTE:** There are short upraised center lines (bottom & top) on the inside of the face seal to assist you in correctly lining up the hood and face seal.

1) Once the face seal and the hood have dried, right side out the hood. Fold the edge of the hood over so it is rolled onto itself around the face opening (inside out—about three inches (7.62 cm)) you will be able to see the previous glue line around the entire hood.







4) Continue by putting in one side of the face seal, from the chin to the bottom of the ear pocket. Then work in the other side of the face seal from the chin to the bottom of the other ear pocket.



5) Once the bottom portion of the work is done, tuck the ear pockets on the face seal towards the center and finish the top portion. Start at the center and pull outward on the hood material as you fit one side in at time as you did with the bottom portion.

**NOTE:** The hood and face seal combination will naturally right itself and roll out to the correct orientation of being right side out as you join the two materials. Make sure the front edge is in place all around the front of the hood before applying pressure to the edge of the face seal.

6) Use the palm of your hand or a roller against a table top and carefully work your way around the inside of the face seal and toward the neoprene hood.



7) Turn the hood inside out and make sure the seal is all the way around the face seal and there are no creases or air bubbles in the face seal. Right side out the hood and let it dry overnight.



**NOTE:** If you add the Aquaseal® too soon before the neoprene cement completely cures, the glue will reactivate and open up.

#### **THE NEXT DAY:**

8) Apply a coat of Aquaseal® to the front of the hood and face seal combination, along the front

edge of the face seal. Spread the Aquaseal® evenly, making sure it overlaps, from the edge of the face seal onto the hood by about ¼ inch (6.35 mm).



9) Let the Aquaseal® completely dry and cure overnight.

**KIRBY MORGAN<sup>®</sup>**

## HOOD &amp; MOLDED FACE SEAL SIZING GUIDE

## A HOOD SIZING

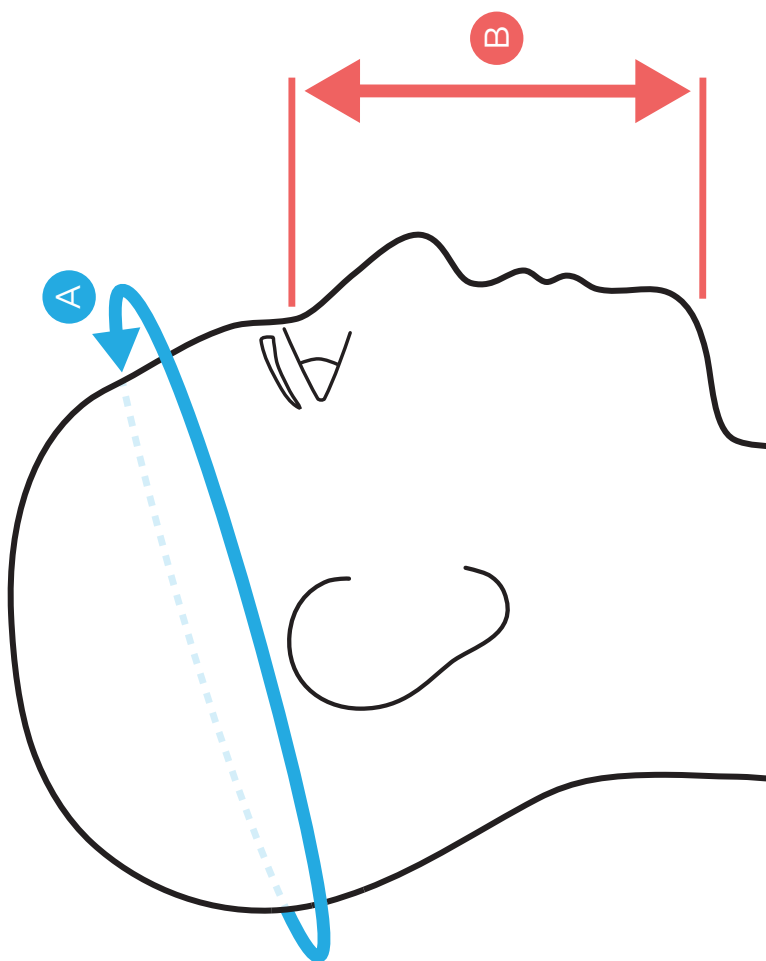
To determine your correct hood size, measure the circumference of your head.

## B FACE SEAL SIZING

To determine your correct face seal size, measure from the bottom of your chin to the bridge of your nose.

## CHART GUIDE

After **A** hood size and **B** face seal size have been taken, use the chart to determine the part number that corresponds with your Band Mask® model KMB-28/KMB-18.



## B FACE SEAL SIZE

HOOD SIZE		A	
SM/MED	LARGE	LESS THAN 23 in 58.4 cm	GREATER THAN 23 in 58.4 cm
		SM/MED HOOD IS NOT AVAILABLE WITH SMALL FACE SEAL	SM/MED HOOD IS NOT AVAILABLE WITH LARGE FACE SEAL
SM/MED	LARGE	LESS THAN 23 in 58.4 cm	GREATER THAN 23 in 58.4 cm
		SM/MED HOOD IS NOT AVAILABLE WITH SMALL FACE SEAL	SM/MED HOOD IS NOT AVAILABLE WITH LARGE FACE SEAL