

# Face Port, Port Retainer and Nose Block

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## 1.1 Face Port


### 1.1.1 General

The face port, or viewing lens, is made of polycarbonate plastic. Small scratches on the exterior are not important, as they tend to disappear underwater. However, the face port is easily replaced by removing the port retainer when reinstalling a new O-ring.

The face port should be replaced anytime cracks are present, anytime nicks and scratches deeper than  $\frac{1}{16}$ " are present, or anytime the condition is questionable.

#### 1.1.1.1 Fogging Prevention

**Prior to the dive, a thin film of anti-fogging solution may be applied to the interior of the polycarbonate face port to help prevent fogging during the dive. Approved solutions include: mild dish soap and other commercially available anti-fogging solutions that are proven safe for use on polycarbonate. Aerosol solutions should NOT be used, as the propellants in some aerosol dispensers can cause damage to the lens.**

<b>⚠ WARNING</b>	
	<p><b>Never use aerosol-propelled sprays near the face port of the helmet or BandMask. The propellant used in these aerosols can invisibly damage the face port and cause it to shatter upon impact from any strong blow. If the face port fails underwater, the helmet will flood and drowning may result.</b></p>

### 1.1.2 Stainless Steel and Brass Port Retainers

The stainless steel port retainer is made of stainless steel like most of the components of the stainless steel helmet. The other port retainers are of chromed or buffed brass. On all, the nose block guide is threaded into the port retainer, and is easily replaced if damaged. Under normal use, the port retainer should never need replacement, unless the chrome has worn off and replacement is desired for cosmetic purposes.

### 1.1.3 Face Port and Port Retainer Removal

#### Tools required:

- 7/16" Open-End Wrench
- 1/4" Flat Blade Attachment on Torque Screw-driver
- Slip Joint Pliers and a Rag or Cloth



Wrap a rag around the nose block knob while removing to prevent chrome damage when turning with pliers.

1. First remove the nose block device knob then the packing nut and slip the O-rings off the nose block shaft.

2. Pull the nose block device out through the interior of the oral nasal mask.

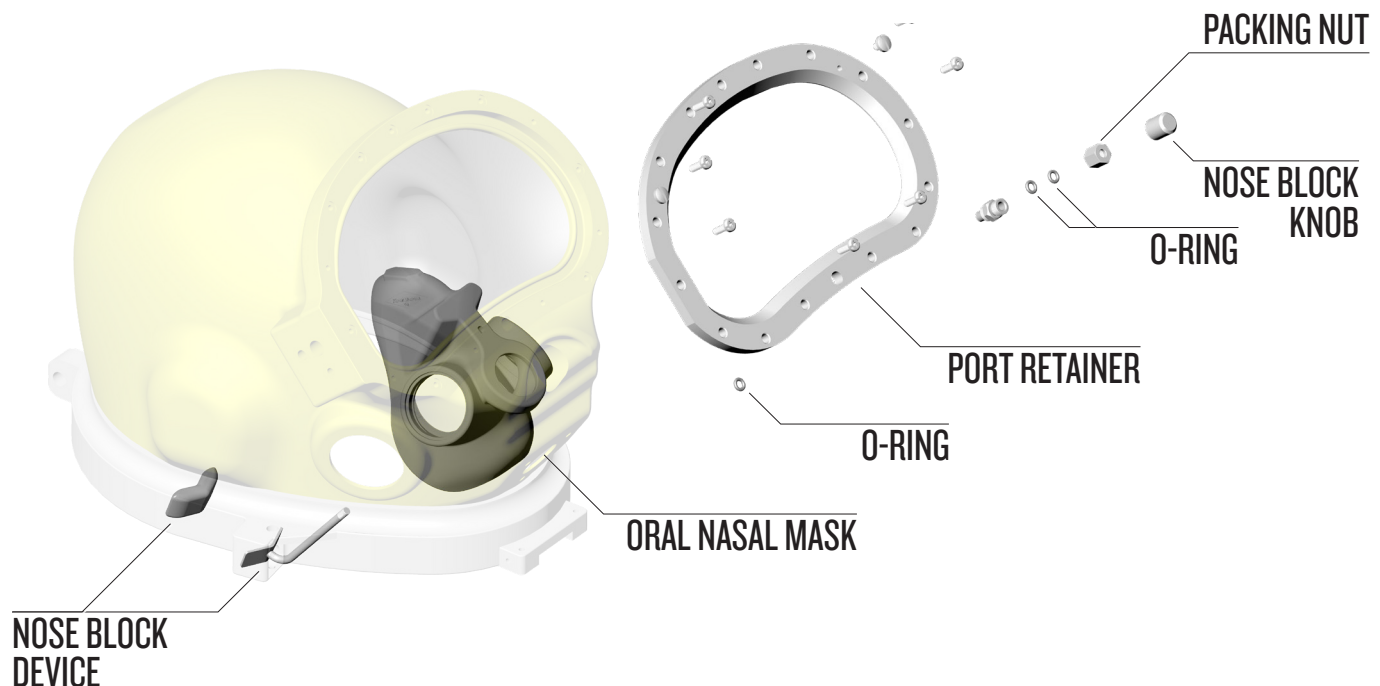
3. Next, unscrew the eleven port retainer screws and four whisker screws with kidney plates (or zinc anodes) and spacers. Pull the retainer clear of the helmet shell.



*Remove the screws that secure the port retainer.*

4. Be sure not to lose the small O-ring that is located on the back side of the port retainer at the nose block device packing.

5. The four whisker spacers must not be misplaced. They will usually be found lodged in the whisker.



*Blowpart of the nose block device and supporting hardware. (Same as found on KMB BandMasks).*



*Do not misplace the whisker spacers.*

6. Remove the old face port and sealing O-ring.



*Remove the port retainer.*



*Remove the face port.*

#### 1.1.4 Face Port and Port Retainer Replacement

1. Clean the face port O-ring groove, carefully inspecting it for any damage or foreign matter.



*Clean the O-ring groove prior to replacing the face port O-ring.*

2. Lightly lubricate the face port O-ring with Christo-Lube® lubricant and replace into its groove in the helmet or BandMask shell. Remove any excess lubricant. The O-ring should not feel slippery or over greased.



## ⚠ WARNING

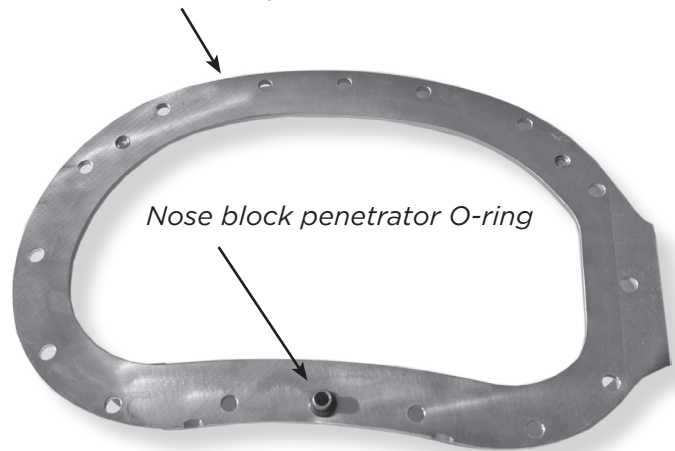
The O-ring used with the face port of the Kirby Morgan masks and helmets is made from a special compound and has unique dimensions. It is a softer durometer O-ring than is commonly available. There are no equivalent O-rings manufactured by other vendors. This O-ring must be replaced with a new KMDSI O-ring. Failure to do so could lead to seal failure resulting in leaks or flooding.



*Lightly lubricate the port O-ring prior to installing it into the face port O-ring groove.*

3. Place the face port into the helmet or mask shell making sure its O-ring is not visible anywhere beyond the edge of the face port.

*Back side of port retainer*



*Be sure to install the O-ring on the back of the port retainer.*

4. Slip the O-ring on the small tube that protrudes from the rear of the port retainer nose block guide.

5. For stainless steel helmets **ONLY**: Place a small amount of Loctite® 248 onto the last two or three threads at the end (end opposite the screw head) of each of the port retainer and whisker screws.

**DO NOT** use Loctite® on fiberglass helmet port retainer and whisker screws.

## ⚠ WARNING

**Avoid any contact between Loctite® and the face port. This can cause the port to fail unexpectedly and drowning could result.**

Place the port retainer onto the helmet or Band-Mask shell, holding it in place against the face port and face port O-ring while the fifteen screws, are all run in loose.



*Place the port retainer on the helmet or mask shell.*

6. Using a torque screwdriver slightly tighten each opposing screw evenly. Start at the center line of the helmet and work outwards in a circular pattern. Repeat this process, one after another, until all screws are evenly torqued. See “Torque Specs” module. After the process the O-ring should now be completely sealed the face port.

### **⚠ WARNING**

**Always be sure to use a torque screwdriver to check the tension of the port retainer screws.**



*Always use a torque screwdriver to check the tension of the port retainer screws.*

When removing then reinstalling the port retainer, it is crucial to follow KMDSI recommended torque specs when tightening the port retainer screws. See “Torque Specs” module.

7. Install the nose block device from the interior

of the oral nasal mask and out through the nose block guide on the port retainer.

8. Slide the two lubricated O-rings onto the shaft of the nose block device.

9. The packing nut is threaded into place followed by the nose block device knob.

10. Tighten the packing nut until some resistance is felt when the nose block device knob is pushed in and out. Tighten the nut until it cannot be loosened by hand, then another half turn. If the nose block device cannot slide in and out, the packing nut is too tight.

11. The nose block device knob should be tightened to the shaft using a padded pair of pliers, while holding the nose block pad on the inside of the helmet.

## **1.1.5 Special Notes Regarding Face Ports**

### **1.1.5.1 Fiberglass Helmet Shells and BandMask Frames**

KMDSI encourages lights and cameras to be mounted using the helmet handle and port side weight if possible. The handle is a convenient location to mount cameras, lights, and other accessories. If the handle is to be drilled to accept any of these items, it must be removed to prevent accidental damage to the helmet shell. A Bracket Kit P/N 525-717 is also available for mounting accessory lights, cameras etc. on the Kirby Morgan 37, 47 or 57.

It's not recommended to use the viewport screw locations on fiberglass helmets and BandMasks to secure mounting brackets of any kind. Using the port insert screw locations may result in added stress which can damage the shell or frame.

**PORT RETAINER SCREW LOCATIONS SHOULD NEVER BE USED to secure brackets.** KMDSI ONLY recommends removing the blanking screws traditionally used for attaching a welding lens.

### **1.1.5.2 Stainless Steel Helmet Shells**

Port retainer screw locations can be used on stainless steel shells.

Screws must be secured in the proper method for securing port retainer screws to stainless steel shells using medium strength thread locker and the specified torque setting. See “Torque Specs”

module. If using Port Retainer screw holes bracket should not exceed  $\frac{5}{64}$ " (2 mm).

Brackets should not exceed  $\frac{5}{64}$ " (2 mm) in thickness if port retainer screw locations are used on a stainless steel shell.

### **⚠ WARNING**

**Screws used should be the appropriate length as to not exceed the thickness of the Port Retainer. Longer screws will damage the helmet shell or frame. This could cause flooding through the port.**

#### 1.1.5.3 Face Ports Not Interchangeable

There are two different face ports available for KMDSI helmets and masks. One port specifically fits the Kirby Morgan helmets and the KMB 18. One port fits only the KMB 28 Band Mask. These two ports are not interchangeable. The face port for the KMB 28 Band Mask is Part #520-128. The KMB 18 BandMask® and all helmets take P/N 520-004 face port



### **⚠ WARNING**

**The face port for all Kirby Morgan helmets and KMB 28 mask are not interchangeable. Do not attempt to use a face port from a KMB 28 in a Kirby Morgan helmet. Although the port will fit into the helmet shell, it will not seal properly. This could lead to flooding of the helmet, resulting in serious personal injury or death.**

### **⚠ WARNING**

**Use only genuine KMDSI face ports. An aftermarket face port's thickness or outer periphery may be incorrect and cause the helmet to flood. It could also be made of inferior materials causing it to fail. This could result in serious injury or death.**

### **⚠ WARNING**



**The face port is very strong. However, certain chemicals will attack the port and weaken it. Some solvents used for grease removal will also attack the port. Use only mild soap solutions to clean the face port. Improper application of cleaning agents may cause the port to fail without warning. This could lead to drowning.**

## 1.2 Nose Block Assembly

### 1.2.1 Nose Block Assembly Removal

#### Tools required:

- Slip Joint Pliers and a Rag or Cloth
- $\frac{7}{16}$ " Open-End Wrench

1. Hold the nose block knob with a pair of pliers padded by a cloth, while unscrewing the nose block device with your hand.
2. After the knob is removed, loosen and remove the packing nut.
3. Slip the two O-rings off the end of the shaft of the nose block device and slide the nose block device out through the oral nasal mask.
4. The padded end of the shaft may be bent with pliers to better fit an individual. A larger pad of rubber can also be glued onto this pad.

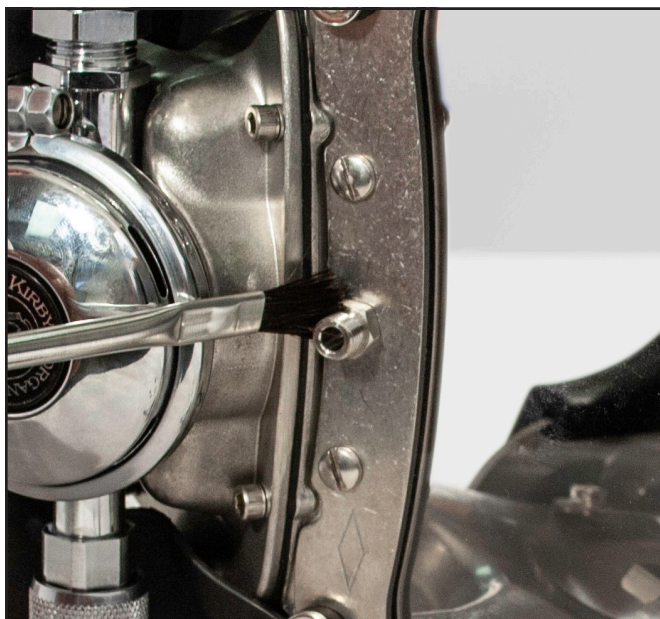


## 1.2.2 Nose Block Device Replacement

### ⚠ CAUTION

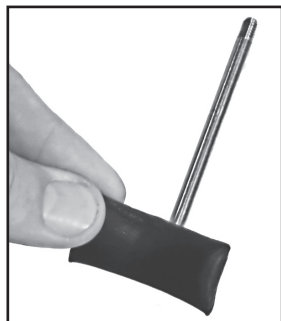
The SL 27® Helmet uses the P/N 545-070 Nose Block, SL 27®. This is the **ONLY** Nose Block that should be used. **DO NOT USE** the P/N 545-015 Nose Block in the SL 27® helmet. Using the incorrect Nose Block could result in minor or moderate injury.

1. Prior to reassembly, lubricate the two O-rings.



*The threads of the nose block penetrator should be lubricated periodically. All of the parts of the nose block device (with the exception of the O-ring that seals on the back side of the port retainer) can be seen here.*

2. Slide the nose block shaft through the oral nasal insert and oral nasal mask then through the helmet and Nose Block Guide (on the Port Retainer).



*Install the nose block device through the interior of the oral nasal mask.*

3. Place both O-rings on the shaft, followed by the packing nut and the knob.

4. Tighten the packing nut until snug. Do not over tighten, as this will make it difficult to slide the nose block device in and out.



*Do not tighten the nose block packing too much or the nose block device will not slide easily.*

5. Tighten the knob with the pliers, padded by a cloth, while holding the padded end with your hand.



*Properly installed nose block device.*