



Kirby Morgan Dive Systems, Inc.®

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Part #525-115 Threaded Insert Test Block Kit

Part #	Description	Qty
430-075	Washer	1
530-045	Screw	1
550-115	Insert Test Block	1

-Threaded Insert Testing Procedure-

The following is Kirby Morgan's approved method for testing the threaded inserts on the Kirby Morgan BandMask®s and fiberglass helmets. Testing of the threaded inserts that accept the screws for the port retainer should be done at least **ONCE A YEAR**. More often if frequent cutting and welding is performed (reference checklists for helmets and Band Mask appendices on Kirby Morgan or Dive Lab websites).

When testing the threaded inserts on a helmet or mask, or when removing and replacing the port retainer, it is crucial that the KMDSI recommended torque specs be followed when tightening the port retainer screws. Any over torquing of a screw can result in serious damage to either the threaded insert or the surrounding fiberglass or plastic in the port area. This can lead to loosening of the port retainer and in extreme instances to flooding of the helmet. This testing procedure is designed to locate any inserts that have been damaged and need replacing. Any replacement/repair of inserts and the surrounding fiberglass must be carried out by a certified technician that has been factory trained specifically in threaded insert repair/replacement. Any other repair/replacement is not authorized by KMDSI and is a potential safety hazard. **NOTE:** Damaged KMB 28 frames or KMB 28 inserts are not repairable/replaceable. This calls for a replacement frame.

One of the main causes of insert damage is the over torquing of the port retainer screws. This can be the final result of poor maintenance of the mask/helmet. Poor maintenance of the O-ring and O-ring groove on the mask/helmet shell can lead to leaks around the port retainer. Overtightening of the retainer will not solve the leak and will damage the fiberglass surrounding the inserts. Be sure that only a KMDSI P/N 510-260 O-ring is used for the seal under the face port. This O-ring is a specially molded soft compound and was designed specifically for this application. Other O-rings, while being approximately the same size, will not perform correctly and can cause leaks in the port area, mistakenly leading to overtightening, causing insert damage.

Definitions:

Port Retainer: The metal frame that holds the port in place against the sealing O-ring of the mask or helmet main shell or frame.

Face Port: The transparent view port that the diver sees through.

Port Retainer Mount Screws: Screws that hold the port retainer to the frame or shell of the mask/helmet.

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Threaded Inserts: The stainless steel, female threaded, inserts that are bonded into the frame or shell of the mask/helmet. These inserts receive the port retainer mounting screws. The port retainer mounting screws hold the port retainer in place. The port retainer holds the face port in place on the mask/helmet frame or shell.

-Port Retainer Insert Testing-

Tools Required:

Adjustable Torque Screwdriver

Insert Test Block, Screw & Washer

Test Procedure:

1. Remove the port retainer, face port and O-ring according to the instructions in the mask/helmet manual.
2. Place the insert testing block over one of the threaded inserts and thread the testing block screw through the washer and hole in the block and into the insert, tightening it hand tight (Fig. B).
3. Prepare to listen and observe the surrounding area as you tighten. Using the Adjustable torque screwdriver, slowly tighten the test block screw to 14 inch pounds. While tightening, observe the insert and surrounding area. The insert should not move at all and there should not be any cracks in the surrounding fiberglass/plastic. Also listen for cracking sounds as you tighten the screw. Any such sounds are an indication that the fiberglass surrounding the insert has been stressed, damaged and should be repaired. KMB 28 frames would require replacement.
4. With the screw tightened, check for cracks around the insert and/or edges of the face port area (Fig. B). If any are found, the area must be repaired, as this is a sign that the insert has been over tightened and has damaged the fiberglass.
5. If, after checking all the inserts, they all pass the 14 inch pound test, replace the O-ring, face port, and port retainer according to the manual instructions and tighten all port retainer screws to **12 INCH POUNDS** with the adjustable torque screwdriver.

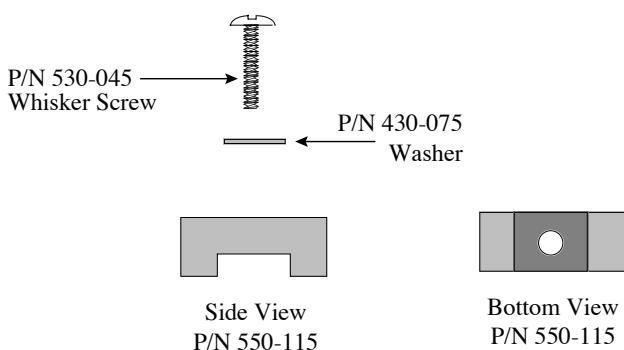


Fig. B

Check for cracks around the outside of the face port area around the inserts.

Fig. A

Insert Testing Block



6. Fig. A is an illustration of the testing block, screw and washer. The block is machined from aluminum stock.