

Fig. 6.41 Removing an O-ring from an "A" regulator hose.

3) Once removed discard, as damage to this O-ring (118a) is unavoidable. Installation of a new O-ring is simple. Wipe with a light silicone grease coating, stretch onto the fitting, and slide until the O-ring (118a) snaps into the groove.

6.8.3 Hose Replacement (117a)

1) Always install the side block (94a) end first, and the regulator inlet nipple (61a) end last. Use a backup wrench on the nipple.

2) Tighten the side block end and tighten the regulator end.

3) Test for leaks prior to use.



Fig. 6.42 Replacing an "A" regulator hose.

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6.9 “B” BENT TUBE ASSEMBLY (119B) (KMB 18B AND 28)

6.9.1 General

The Kirby Morgan Band Mask 18B and 28 bent tube assembly (119b) for gas flow that connects the side block (94b) to the inlet nipple (61b) of the demand regulator assembly (63b). Both ends of the bent tube assembly (119b) disconnect for complete removal.

6.9.2 Removal of the Bent Tube Assembly (119b)

Tools Required:

11/16 inch Open End Attachment on Torque Wrench

7/8 inch Open End Attachment on Torque Wrench

7/8 inch Open End Wrench

1) Always start removal at the side block assembly end. The free swiveling mount nut is unthreaded completely and can slide down the tube.



Fig. 6.43 Always start removal of the bent tube at the side block end of the tube.

2) The regulator (63b) end has a jam nut (61c) that locks the mount nut in place. With one wrench, hold the bent tube mount nut. With another wrench, turn down the jam nut (61c), backing it away from the mount nut. The mount nut can then be rotated until free of the regulator inlet nipple (61b) threads. It can be pushed up on the bent tube.

3) With the two mount nuts free, the bent tube assembly (119b) can be pulled straight out of the regulator inlet nipple (61b). The bent tube assembly (119b) can be rotated back and forth to aid removal. Be careful to only rotate and pull out straight. **DO NOT BEND THE TUBE.**

6.9.3 Inspection of Bent Tube Assembly (119b)

The O-ring (118b) at the regulator end is inspected and replaced if necessary. The Teflon O-ring (116b) at the side block end is inspected and replaced if necessary.

! DANGER: Be sure to use only Kirby Morgan Genuine Parts when repairing your Band Mask. The use of other manufacturer's parts may interfere with the proper performance of your mask and jeopardize your safety.



Fig. 6.44 Inspect the Teflon O-ring on the bent tube and replace if needed.



Fig. 6.45 Replace the O-ring on the bent tube if it is worn.

The bent tube (117b) must be free of dents. If the Band Mask has been used for burning (underwater cutting) jobs, carefully check for erosion of the metal. Replace tube if necessary.

6.9.4 Replacement of the Bent Tube Assembly (119b)

1) It may be necessary to loosen the demand regulator mount nut (8) before installing a new bent tube assembly (119b). This may need to be done for alignment when starting the mount nut onto the side block (94b).

2) After loosening the mount nut (8), lightly lubricate the O-ring with silicone lubricant and push the O-ring end of the bent tube assembly into the regulator inlet nipple (61b). Slide it in until the side block (94b) end is aligned with the threads for the mount nut.



Fig. 6.46 You will probably need to loosen the regulator mount nut to position the bent tube.

3) Be sure the Teflon O-ring (116b) is in place.

4) Start to tighten the bent tube assembly (119b) mount nut on the side block end.

5) Next, tighten the regulator mount nut (8) securing the regulator to the Band Mask frame (17).

6) Start the bent tube mount nut onto the inlet nipple (61b). Run it in **HAND TIGHT ONLY**.

7) Tighten the side block end nut.

8) Hold the nut on the end of the bent tube (117b) with a wrench and tighten the jam nut (61c) to the correct torque against it with another wrench. The jam nut must not be bottomed out against the nipple (61b).



Fig. 6.47 Tightening the jam nut.

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6.10 NOSE BLOCK ASSEMBLY (3 AND 32-34)

6.10.1 Nose Block Assembly Removal

Tools Required:

Slip Joint Pliers

Rag or cloth

7/16 inch Open End Wrench

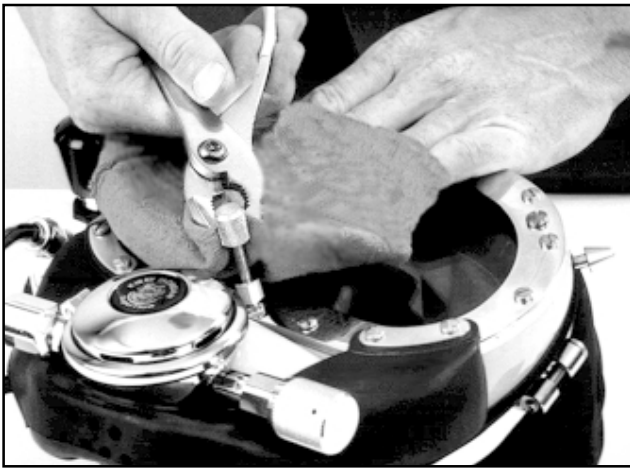


Fig. 6.48 Removal of the nose block knob.

1) Hold the nose block knob (34) with a pair of pliers (padded by a cloth) while unscrewing the nose block device (3) with your other hand inside the mask at the pad end.

2) After the knob (34) is removed, loosen and remove the packing nut (33).

3) Slip the two O-rings (32) off the end of the shaft of the nose block device (3).

4) The pad 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 or stretched into place.

6.10.2 Nose Block Device (3) Replacement

1) Prior to reassembly, lubricate the two O-rings (32) with silicone grease.

2) Slide the shaft (3) through the Band Mask frame (17).

3) Place both O-rings (32) on the shaft (3), followed by the packing nut (33) and the knob (34).



Fig. 6.49 Be sure to reinstall the nose block device O-rings.

4) Tighten the packing nut (33) until snug. **DO NOT OVERTIGHTEN AS THIS WILL MAKE IT DIFFICULT TO SLIDE THE NOSE BLOCK DEVICE IN AND OUT.**

5) Tighten the knob (34) with the pliers while holding the shaft (3) with your hand at the pad end inside the mask.

6.11 BAND MASK FRAME KMB 18A/B

The Band Mask frame (17) on the KMB 18A/B is constructed by hand of fiberglass cloth, fiberglass mat, and fiberglass strands impregnated with polyester resin. It is strong and extremely durable.

A polyester color coat covers the exterior of the unit. Although this color is more durable than paint, it can be scratched and chipped. Light scratches can be removed using automotive rubbing compound and waxing.

! DANGER: Do not attempt to install new thread inserts in the frame for the port retainer screws! If the installation is done improperly, the port retainer can come loose and the Band Mask could flood. This could lead to drowning. Return the Band Mask to DSI for inspection and repair of threaded inserts.

6.12 RUBBER WHISKER (35)

6.12.1 Whisker (35) Removal

Tools Required:

1/4 inch Flat Blade Attachment on Torque Screwdriver

To replace the whisker (35), the regulator must be removed first. See Section 6.14.2 on regulator removal

1) The rubber whisker (35) is removed by stretching and pulling the rubber away from the back of the regulator. A metal cup called the exhaust flange surrounds the rubber exhaust valve (62).

The whisker is held in place by being stretched over the exhaust flange.

2) The whisker (35) is also held on each side of the Band Mask at the port retainer (28). Two screws (38) and one plate (37) hold each side. Complete removal of the whisker (35) is done by removing these screws (38) and plates (37). Take care not to lose the four spacers (36).

3) Before removing the exhaust valve (62), carefully inspect the area around the edges to assure the rubber exhaust valve (62) is in contact with the regulator body (39). The metal cross area of the body (39) under the valve (62) could be slightly bent out resulting in the rubber valve (62) not sealing. If the exhaust valve (62) is high and not sealing, lightly press in on the metal cross. The exhaust valve (62) can remain in place during this. Bend the metal in slightly until the valve (62) seats.

4) The regulator exhaust valve (62) is removed by pulling it out.

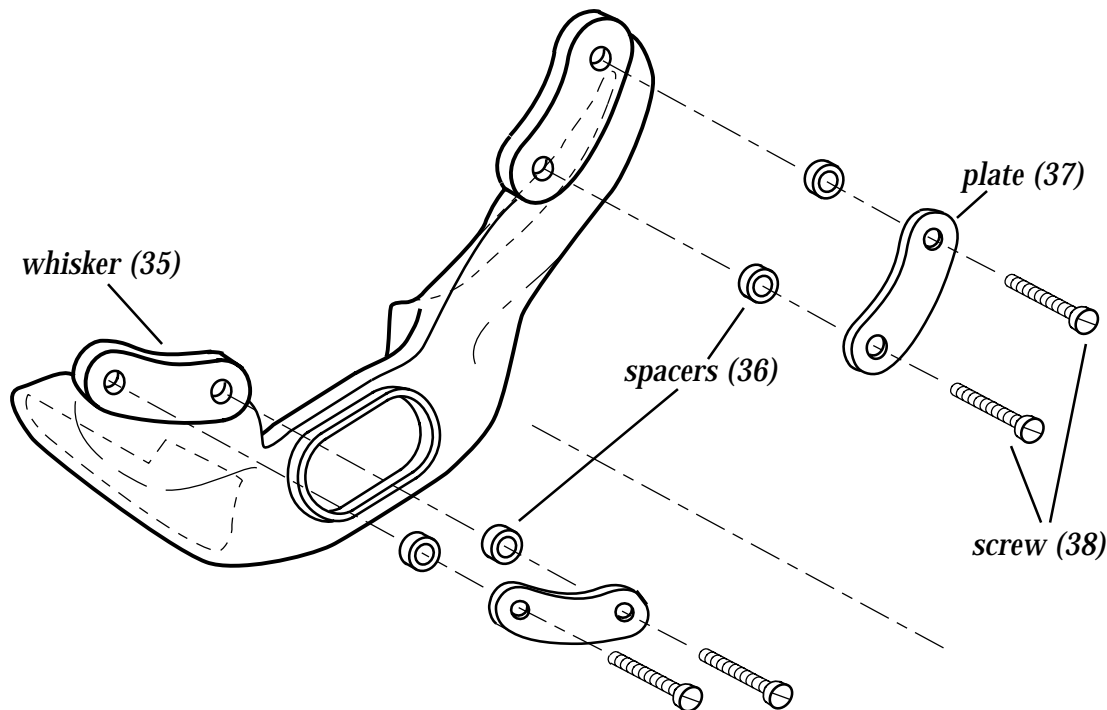


Fig. 6.50 The whisker assembly.



Fig. 6.51 Removing the whisker from the regulator.



Fig. 6.53 Make sure the whisker spacers are in position.



Fig. 6.52 Inspecting the regulator exhaust.

6.12.2 WHISKER REPLACEMENT (35)

1) Replace the regulator exhaust valve (62) by feeding the tail of the new valve into the hole in the center of the body and pulling it through until the stem seats. The excess tail may be trimmed off.

2) Stretch the whisker (35) onto the exhaust flange of the regulator. Note: This step is much easier to do with the regulator removed from the Band Mask frame (17). See Section 6.11.2.

3) Attach the screws (38), plate (37), and spacers (36) on each side of the port retainer (28) and tighten to the correct torque. (see page 89) **Do not overtighten.**



Fig. 6.54 Be sure to tighten the screws that hold the whisker and port to the proper torque settings. The correct setting is 12 inch pounds (13 kg cm). See Appendix 1 for a complete listing of torque specifications.

! DANGER: Always use a torque screwdriver to check the tension of the port retainer screws. Overtightening can cause damage to the threaded inserts in the frame and cause them to loosen. Without the correct tension the port retainer may come loose and the Band Mask could flood. This could lead to drowning.

6. 13 MAIN EXHAUST ASSEMBLY (64-67, 69)

The main exhaust assembly (64-67) is held in place by the three screws (69) that are installed from the inside of the mask frame. Silicone sealant (RTV) is used to seal the main exhaust body (67) to the mask frame (17) on the KMB 18. On the KMB 28 there is no main exhaust body. The seat for the rubber exhaust valve is molded into the mask frame.

6.13.1 Exhaust Valve (66) Removal

Tools Required:
Flat blade screwdriver

- 1) The cover (65) is removed by unscrewing the two screws (64). If the cover is badly dented so that it interferes with the performance of the exhaust valve (66) it must be replaced.
- 2) The valve (66) must be replaced at the slightest sign of deterioration or aging of the rubber. Simply grasp the valve and pull to remove.



Fig. 6.55 The main exhaust valve exposed on the KMB 18.

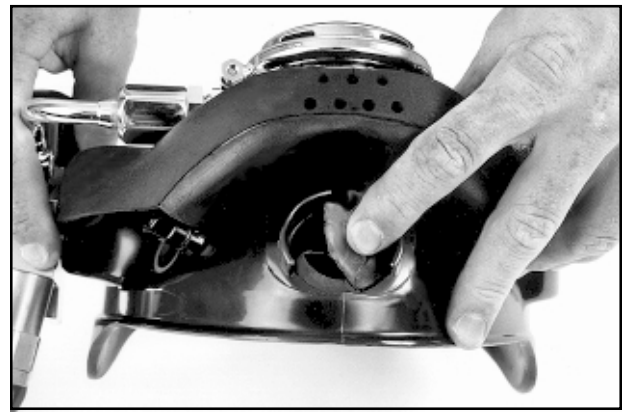


Fig. 6.56 Note how the main exhaust body is molded into the frame on the KMB 28.

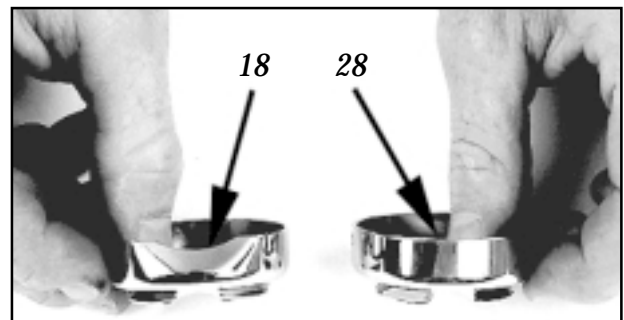


Fig. 6.57 Note the difference between the exhaust covers for the KMB 18 and 28. The cover for the 18 is on the left, while the 28 is on the right.

- 3) Replace the exhaust valve (66) by feeding the tail of the new valve into the hole in the center of the body and pulling it through until the stem seats. The excess tail may be trimmed off.
- 3) The main exhaust body (67) on the KMB 18 should never need servicing, unless the seal is broken between the silicone sealant (RTV) and the body (67) and mask frame (17). On the KMB 28 the main exhaust body is molded into the mask frame.

! CAUTION: Over tightening the exhaust cover screws on the KMB 28 could damage the threads in the exhaust body. This body is not replaceable and could require the replacement of the entire mask frame.

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6.13.2 Main Exhaust Body (67)

Replacement

If the seal is broken between the main exhaust body (67) and mask frame (17) on the KMB 18 the body should be removed and reinstalled.

1) Remove the body (67) by unfastening the three screws (69). Clean off all traces of the silicone sealant from the outside of the mask frame (17) and main exhaust body (67).

2) Apply fresh silicone sealant to the main exhaust body (67) where it contacts the mask frame (17). Take care to prevent any silicone sealant from entering the main body (67) as this would interfere with the proper performance of the main exhaust valve (66).

⚠ DANGER: Be sure to use the correct length screws when mounting the main exhaust cover. Longer screws could obstruct the exhaust and cause the mask to leak. This could lead to drowning. Use only Kirby Morgan Genuine Parts.

3) Position the body (67) on the mask frame (17) and tighten the screws (69) to 13 inch pounds of torque.

6.14 DEMAND REGULATOR ASSEMBLY (63A/B)

6.14.1 General

The regulator system on the Kirby Morgan Band Mask 18A/B is simple and highly reliable. However, inhalation resistance may be high if not maintained properly.

If the regulator does not breathe easily, the diver cannot work hard and will tire rapidly. Simply put: If the demand regulator does not work properly the diver cannot work properly. This makes the maintenance of the demand regulator assembly essential.

For the gas inlet valve and adjustment system to operate properly, the components in the demand regulator **MUST** be in good condition and **MUST** be periodically adjusted internally.

Special tools should be used to work on the regulator. Disassembly, assembly, and adjustment can be done without these tools, but the work is much easier and the adjustment is better if these tools are used. The tools are available together along with a tool pouch. The tool kit with pouch is DSI Part #525-620.



Fig. 6.58 The regulator tool kit DSI #525-620

6.14.2 Demand Regulator Assembly (63A/B) Removal

Tools Required:

- 1 1/4 inch Socket on Torque Wrench
- 1/4 inch Flat Blade Attachment on Torque Screwdriver
- 11/16 Open End Attachment on Torque Wrench
- 13/16 Open End Attachment on Torque Wrench
- 2 ea. 7/8 inch Open End Attachment on Torque Wrench

1) To remove the regulator from the Band Mask, the hose assembly (119a) on the Kirby Morgan Band Mask 18A, or the bent tube assembly (119b) on the Kirby Morgan Band Mask 18B or 28 must be removed first.



Fig. 6.59 Use the proper socket to remove the regulator mount nut.

2) The hose assembly (119a) may be removed from the regulator inlet nipple (61a) only and left attached to the side block assembly (119a). Be sure to use a backup wrench during this operation. The bent tube assembly (120b) must be removed entirely before regulator removal. (See Section 6.9.2).

3) Remove the whisker (35) as per section 6.12.1.

4) The regulator mount nut (8) is removed with the sealing O-ring (7).

5) Now the regulator assembly (63a/b) can be pulled out of the Band Mask.



Fig. 6.60 The regulator mount nut.

6.14.3 Disassembly of the Demand Regulator (63A/B)

Tools Required:

1/4 inch Flat Blade Screwdriver Attachment on Torque Wrench

DSI Regulator Tool Kit, DSI Part #525-620

7/8 inch Open End Attachment on Torque Wrench

3/4 inch Open End Attachment on Torque Wrench

3/32 inch Punch

7/8 inch Open End Wrench

Small Ball Peen Hammer

1) Remove the cover clamp screw (49) and cover clamp (50).

2) Lift the cover (51) off and take out the diaphragm (52). If the purge button is to be replaced, using external retaining ring pliers, remove the retaining ring (51a), spring (51c) and button (51d) from the cover.

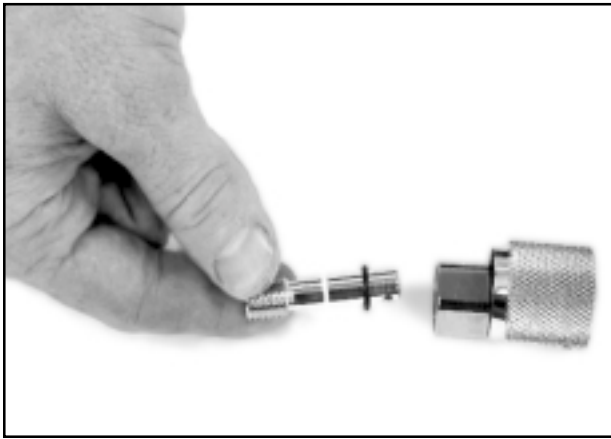


Fig. 6.60 Separating the adjustment knob from the stem.

3) Adjustment knob removal is started by unscrewing the adjustment knob (47) until it stops.

4) The packing nut (46) is now exposed enough to use a wrench on it for removal. As the nut (46) is backed off, unscrew the knob (47), also.

5) The O-ring (45) and washer (44) remain on the shaft (43).

6) If the washer and O-ring need to be replaced, place the adjustment knob (47) on a block of wood and drive the retaining pin (48) out with the 3/32" punch. (see section 5.5.5.1 #3)

7) Tilt the Band Mask so that the spacer (42), spring set (41), and piston (40) fall out of the adjustment shaft tube.

8) If not already done, remove the hose assembly (117a) or bent tube assembly (117b), as per Section 6.8.

9) Depress the roller lever (55) while unscrewing the inlet nipple (61a/b) so as not to scar the seat. Remove the inlet nipple (61a/b) from the regulator body (39).

10) Inside the regulator body (39), remove the nut (53) from the inlet valve (59). The inlet valve (59) must be held to prevent rotation when the nut (53) is being unscrewed. The castle wrench may be used to hold the inlet valve while the nut is unscrewed. Insert the castle wrench into the inlet

nipple and press it onto the inlet valve. Also, the inlet valve holder tool can be used to hold the inlet valve by inserting it through the balance hole in the inlet tube and wedging it against the inlet valve stem. These tools are included in the DSI Tool Kit, DSI Part #525-620.

11) Remove the nut (53) completely. The socket wrench, DSI Part #525-612 can be inserted into the adjustment tube for removal of the nut (53).

12) Tilt the regulator and drop out the inlet valve (59) spring (58), and washer (57).

13) The spacer (54), lever (55), and washer (56) will now fall out of the regulator body (39). The spacer 42, Spring set (41) and piston (40), can be removed from the opposite side of the regulator.

6.14.4 Inspection of Demand Regulator (63a/b) Parts

After the regulator has been disassembled, carefully clean and inspect all parts. If parts show signs of wear or damage they must be replaced, even if it is prior to the recommended replacement interval.

1) Inlet valve (59): Check for rough surface, cuts, and deep depressions. Check the knife edge of the inlet nipple seat (61 a/b) for nicks, dents, or flat spots. Use your fingernail to feel for nicks. Replace the inlet valve and/or inlet nipple if damage is found.

2) Diaphragm (52): Check to determine if rubber has separated from the metal part. Inspect for cracks, pin holes, and pinching of outer edges.

3) O-rings (45, 60, 7): Check for irregularities in the rubber. Check for cracking.

4) Exhaust valve (62): Be sure there is no curling or deformation and that the rubber is in good shape.

5) Inspect the whisker. Replace the whisker (35) if it shows wear or aging. Replace the whisker if it allows bubbles to interfere with visibility.

6) Inspect the regulator body (39). Check the brazed joints for cracks. Make sure that the adjustment tube and inlet tube are in alignment. They can become bent if the mask is dropped. Replace the body if there is any sign of damage. Make sure the outer circumference is round and has no flat areas from damage.

6.14.5 Reassembly of the Demand Regulator (63A/B)

1) Press the head of the inlet valve (59) into the castle wrench (DSI Part #525-618). Load the spring (58) and brass washer (57) onto the inlet valve (59). With the inlet valve securely held, insert it into the inlet tube in the regulator body (39). The shaft of the inlet valve (59) will protrude into the interior of the regulator body (39).

2) Place the washer (56) onto the shaft of the inlet valve (59) rough side towards the regulator body.

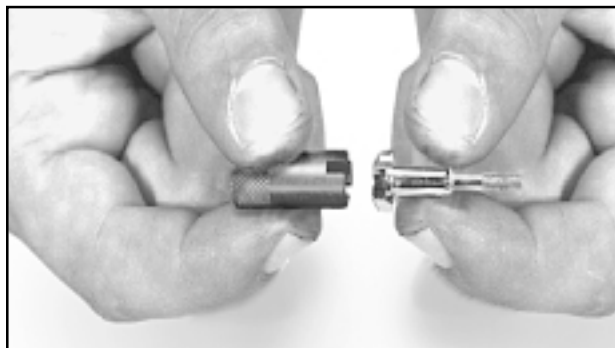


Fig. 6.62 Press the head of the inlet valve (59) into the castle wrench

⚠ CAUTION: This washer (56) is a stamped part. One side is smooth and the other side may have rough edges. Load the washer (56) onto the inlet valve shaft (59), rough side first, so that the rough side will seat against the regulator body (39). The smooth side will be out for the lever (55) to act against. This will assure smoother regulator operation.

3) Place the spacer (54) onto the shaft of the inlet valve (59).

4) Load a new locknut (53) into the socket of the socket wrench from the DSI tool Kit. Insert it through the adjustment shaft tube and run the nut onto the inlet valve stem (59) for approximately two threads to leave room for the installation of the lever (55).

⚠ WARNING: The lock nut (53) must always be replaced if removed from the inlet valve (59). The plastic material that locks the nut from unscrewing is not designed for multiple reuse. If the nut was to come loose this would cause the regulator to reduce flow or supply no air to the diver. Although the diver could still breathe by manually operating the free flow on the side block, this could cause panic.

5) With the inlet valve (59) pushed in, the spacer (54) and washer (56) should be loose on the inlet valve shaft (59).

6) The lever (55) is installed next between the spacer (54) and the washer (56). The lever legs **MUST** be parallel to each other. Use a straight edge to make sure the legs are in line. Bend with pliers if necessary.

7) Hold the inlet valve (59) with the castle wrench and tighten the nut (53) until two threads are visible past the nut (53).



Fig. 6.63 Use the DSI socket wrench to turn the nut on the inlet valve.

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8) While holding the lever (55) down, install the inlet nipple (61a/b) with its O-ring (60) into the regulator body (39) and tighten to correct torque. (see torque specs pg 89)

9) Install the piston (40), spring set (41), and spacer (42) into the adjustment tube of the regulator body (39) as shown in the blow apart drawing. Lubricate this assembly lightly.

10) If you have disassembled the adjustment knob (47), next, slide the washer (44) and the O-ring (45) onto the adjustment shaft (43).

11) Slide the packing nut (46) onto the shaft (43), then slip the knob (47) onto the end of the shaft.

12) Holding the shaft (43), rotate the knob (47) until the pin holes line up.

13) Install the retaining pin (48) by tapping it in with a light hammer until the end of the pin is flush with the knob surface.

14) Thread the adjustment shaft (43) into the tube until the packing nut (46) can be started.

15) Tighten the packing nut (46) to the correct torque (see pg 89). Make sure the adjustment knob (47) is run in simultaneously.



Fig. 6.64 Tighten the packing nut.

16) Check the adjustment knob (47) for free rotation and run in slightly. If the regulator needs adjustment, see Section 5.6 for adjustment.



Fig. 6.65 The adjustment knob must turn freely.

17) Replace the diaphragm (52).

18) If you have disassembled the purge button assembly, install the button (51d) and spring (51c) into the cover (51b) and replace the retaining ring (51a) using external retaining-ring pliers. Note that the flat side of the retaining ring faces away from the face of the button.

19) Screw the clamp (50) back together with the cover in place (51).

20) Stretch the whisker (35) onto the exhaust flange of the regulator.

21) Mount the regulator to the Band Mask frame (17). Make sure the sealing O-ring (7) is in place under the regulator mount nut (8).


22) If the Band Mask is a “B” model, do not tighten the mount nut (8) until after the bent tube assembly (120b) is installed on the regulator, inlet nipple (61b), and the side block body (94b). Tighten the mount nut (8) until the O-ring (7) is compressed and the nut contacts the Band Mask frame. Further tightening will damage the Band Mask frame (17).

23) On the “A” models the regulator mount nut (8) may be tightened before installation of the hose assembly (119a). Use a backup wrench for this operation.

24) Assemble the hose assembly (119a) or bent tube assembly (119b) to the regulator (63a/b) and the side block (93a/b).

25) Attach the screws (38), plates (37) and spacers (36) on each side of the port retainer (28) and tighten to correct torque. (see pg 89)

Do not overtighten.

 **DANGER: Always be sure to use a torque screwdriver to check the tension of the port retainer screws. Overtightening can cause damage to the threaded inserts in the fiberglass frame and cause them to loosen. Without the correct tension the port retainer may come loose and the Band Mask could flood. This could lead to drowning.**

6.14.6 Unexplained Demand Regulator Steady Flow When Underwater

Any leak in the face seal will cause gas to vent out into the water. This causes the demand regulator to steady flow, making up for the vented gas. Even if the adjustment knob (47) is turned in, the leak may continue.

This type of regulator flow may be caused by a tear in the face seal, or if the face seal has separated from the hood. It can easily be repaired with wet suit cement. Both the hood and face seal (2) must be completely clean and dry prior to repairs.

6.15 ORAL NASAL MASK (9)

6.15.1 Oral Nasal Mask (9) Removal

Tools Required:

7/16 inch Open End Wrench

The oral nasal mask (9) is easily replaced.

1) Remove the nose block device (3) first. See Section 6.3.2.

2) Remove the oral nasal microphone (12).

3) The oral nasal mask (9) can then be pulled off the regulator mount nut (8). It is held on by a snap fit.

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6.15.2 Inspection of Oral Nasal Mask (9)

- 1) Inspect the oral nasal mask (9). If it is torn or rotting it must be replaced.
- 2) Inspect the oral nasal valve (5). If it is torn or rotting it must be replaced.

6.15.3 Oral Nasal Mask (9) Replacement

- 1) Snap the oral nasal mask (9) back over the regulator mount nut (8).
- 2) Reinstall the microphone (12).
- 3) Reinstall the nose block device (3) as per Section 6.3.3.

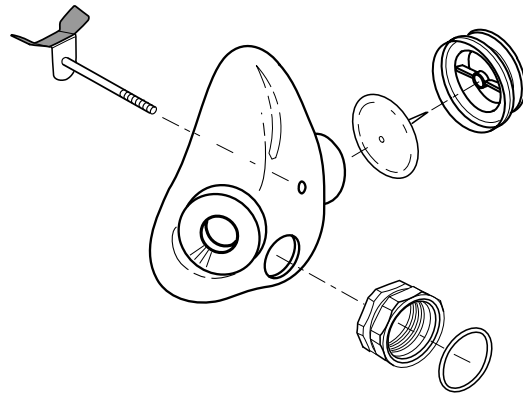


Fig. 6.66 The oral nasal mask.

ACCESSORIES

7.1 INTRODUCTION

This section provides the manufacturer's advice on how to install DSI accessories including the hot water shroud, low pressure inflator hoses, and the weld lens assembly.

7.2 HOT WATER SHROUD INSTALLATION PROCEDURES

The DSI Hot Water Shroud Kit only fits the "B" sideblock. The Hot Water Shroud (DSI Part #525-100) should be used whenever diving in water colder than 35.6 F (2 degrees C). The DSI hot water kit is designed to be integrated with a hot water supply to help maintain breathing gas temperature at an acceptable level for the diver. In addition the hot water reduces the possibility of ice forming in the demand regulator or gas train components. Even with water temperatures of 40 F (4 C) the diver can experience discomfort and severe heat loss through the respiration process. For this reason, DSI recommends installing the hot water shroud when diving in waters colder than 40 F (4 C). Water supply to shroud assembly should be at least 1 gallon (3.7 liters) per minute at a minimum temperature of 105 F (42C). When diving operations are conducted during severe cold surface temperatures a hot water shroud should be used to prevent ice from developing in and on gas train components while the diver is on the surface.

Tools Required:

1/4 inch Flat Blade Attachment on Locking Screwdriver

7/8 inch Open End Attachment on Torque Wrench

11/16 inch Open End Attachment on Torque Wrench

1) Disconnect the bent tube assembly (119b) at the side block end only. Loosen the jam nut (61c) at the regulator. If the bent tube will not swivel, loosen the large nut at the regulator.

2) Remove the locknut (83), spring (84) and free flow knob (85).

3) Remove the locknut (102), spring (101) and auxiliary valve knob (100).

4) Screw the regulator adjustment knob (47) in all the way.

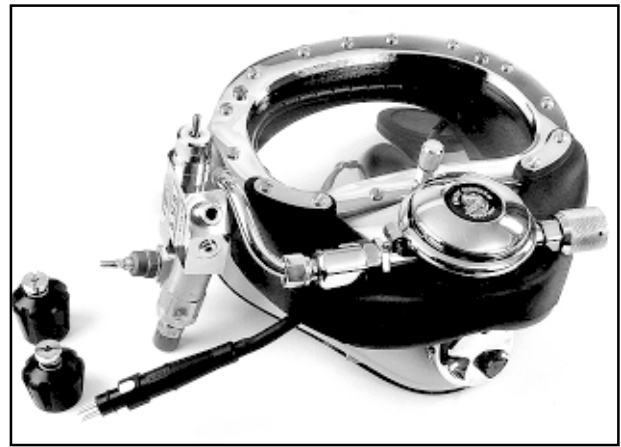


Fig. 7.1 Remove the auxiliary valve and free flow knobs to install the hot water shroud.

5) To install the rubber regulator cover, slide it over the bent tube assembly (119b) and stretch it over the regulator adjustment knob (47).



Fig. 7.2 Install the regulator cover.

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Fig. 7.3 Install the side block cover.

6) Install the rubber side block cover. Start by inserting the one-way valve (104) through the square hole on the back side of the cover. All the other holes will then line up correctly.

7) Slide one of the PVC flanges over the bent tube (119b).

8) Install the second PVC flange in one end of the corrugated tube, (1/4 inch (6.0 mm) of the flange should still show).



Fig. 7.4 Install the PVC flanges.

9) Compress the corrugated tube and slide it over the bent tube (119b). The PVC flange previously installed in the corrugated tube mates with the side block cover.

10) Attach the side block end of the bent tube (119b) to the side block assembly (120b). Tighten with an 11/16 inch wrench.

11) Retighten regulator jam nut (61c). You will need to slide the PVC flange towards the side block.

12) Stretch the corrugated tube over the side block assembly (120b) and regulator cover.

13) Attach the tie wraps over the corrugated tube at the PVC stiffeners and tighten.



Fig. 7.5 Attach the tie wraps.

14) Trim the excess ends from the tie wraps.

15) Reinstall the free flow knob (85), spring (84), and locknut (83).

16) Reinstall the auxiliary valve knob (100), spring (101), and locknut (102).

7.3 LOW PRESSURE INFLATOR HOSE INSTALLATION ON THE “B” SIDEBLOCK ASSEMBLY (120B)

The low pressure inflator system may be used with either conventional buoyancy compensators or dry suit systems. For certain pieces of equipment it may be necessary to use a longer inflator hose than is originally supplied by the manufacturer of the low pressure system. **The low pressure inflator port is not available on “A” masks.**

Tools Required:
5/32 inch Allen Wrench Attachment on Torque Wrench

- 1) Remove the l.p. plug (115) from the side block assembly (120b).

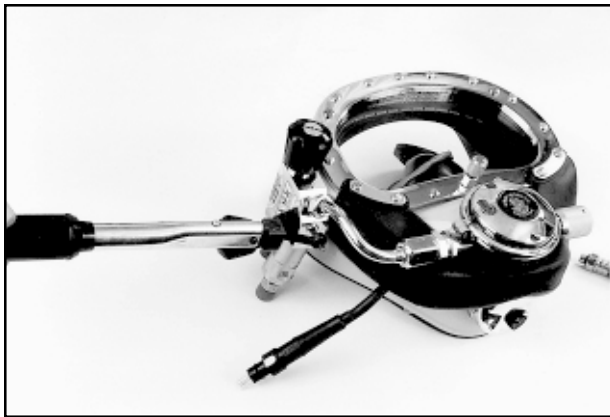


Fig. 7.6 Remove the plug from the side block to install the low pressure hose.

- 2) Check the O-ring on the low pressure whip to be sure it is present and in good condition. Carefully screw the low pressure whip into the side block.
- 3) Tighten fitting to the specifications provided by the dry suit manufacturer. Do not overtighten.
- 4) Pressurize mask and test connection for leaks.

⚠ CAUTION! When using the low pressure port on the side block for attachment of a low pressure hose, a hose with built in flow restriction or the DSI Flow Restrictor Adapter, DSI P/N 555-210 must be used.

7.4 WELD LENS/WELD SHIELD ASSEMBLIES INSTALLATION

Tools Required:

3/8 inch Open End Wrench

1/4 inch Flat Blade Attachment on Torque Screwdriver

- 1) Remove the two plug screws (29) from the port retainer (28).

For the remainder of the part locations refer to the drawing included with the weld lens or weld shield assembly kits respectively.

- 2) Insert the mount screws through the spacer washers and then through the mount ears.

- 3) With the rubber bumpers facing the inside of the helmet (weld lens), install and tighten the two mount screws into the port retainer.

- 4) Tighten the two lock nuts on the ends of the hinge studs (weld lens) so that the welding lens assembly can be flipped up, but not fall down from its own weight. The weld shield is pre-tensioned at the factory

Fig. 7.7 The weld lens assembly.



Fig. 7.8 The weld shield assembly.

⚠ DANGER: Use only the bolts provided with the Weld Lens Kit for installation of the assembly. Longer bolts will damage the mask frame and/or the threaded inserts. This could cause flooding through the port.

7.5 USE OF QUICK-DISCONNECT

A quick-disconnect should be used with all bailout systems. They are available through all DSI dealers. It provides greater convenience on deck while dressing the diver. It also makes it possible to separate the attachment of the bailout from the mask should the diver become entangled underwater.

The quick-disconnect is designed to be installed in any low pressure port of the diver's bailout regulator. The connector splits the hose into two halves, with a male and female connector on each end. The female connector is equipped with a sleeve lock that must be properly aligned before the hose can be disengaged.

One end of the connector is designed to be attached to the auxiliary valve assembly (103), while the other end of the connector is designed to attach to any of the standard low pressure ports on the DSI SuperFlow first stage regulator (or any high performance regulator) used for the bailout supply.



Fig. 7.8 A quick disconnect will make it simpler to hook up your bail-out to your mask.

7.6 MASK CARRYING BAG

To help protect your Kirby Morgan Band Mask the mask carrying bag should be used to transport and store your mask between jobs. The DSI bag is made from extra heavy duty, black, ripstop nylon. The bottom of the bag is padded for additional protection. Grommeted drain holes allow the bag to breathe. The bag is also equipped with large carrying straps and side pockets. ***The bag is not intended for shipping your mask as air cargo.*** The part number for the bag is DSI Part #500-901.



Fig. 7.9 To help protect your mask during travel, use the mask carrying bag.

Appendix 1

Torque Specifications for KMB 18A/B & 28

| Location Number | DSI Part # | Description | Torque: | |
|-----------------|------------|--------------------------------|------------------------------------|-------|
| | | | inch pounds | kg cm |
| 8 | 550-038 | Nut, regulator mount | 100 | 112 |
| 15 | 530-095 | Band screw | 26 | 30 |
| 20 | 530-317 | Nut | 45 | 50 |
| 22 | 530-317 | Nut | 20 | 23 |
| 25 | 530-050 | Screw | 18 | 20 |
| 29 | 530-052 | Screw | 15 | 17 |
| 30 | 530-035 | Screw | 12 | 13 |
| 38 | 530-045 | Screw | 12 | 13 |
| 46 | 550-055 | Packing Nut | 40 after seating | |
| 49 | 530-030 | Screw | 8 | 10 |
| 61a | 550-046 | Inlet Nipple 'A' | 40 | 46 |
| 61b | 550-048 | Inlet Nipple 'B' | 40 | 46 |
| 61c | 550-050 | Jam Nut "B" | 100 | 112 |
| 64 | 530-021 | Screw | 2 | 3 |
| 69 | 530-035 | Screw | 14 | 16 |
| 87 | 550-020 | Bonnet | 100 | 112 |
| 93 | 550-024 | Stud - side block | 50 | 56 |
| 95 | 550-140 | Auxiliary valve body | 3 turns by hand, 3 turns by wrench | |
| 99 | 550-091 | Packing nut | 45 after seating | |
| 104 | 555-195 | One way Valve | 240 | 270 |
| 105 | 555-117 | Inlet adapter to umbilical | 180 | 188 |
| 106 | 505-060 | Seat | 240 | 270 |
| 112 | 505-060 | Body | 240 | 270 |
| 115 | 550-095 | L.P. Plug | 50 | 56 |
| 117a | 555-152 | Regulator hose, side block end | 100 | 112 |
| 117a | 555-152 | Regulator hose, regulator end | 50 | 56 |
| 117b | 555-154 | bent tube assy, side block end | 100 | 112 |

Table of Equivalents

To convert units appearing in Column 1 (left column) into equivalent values in Column 2 (center column), multiply by factor in Column 3. Example: To convert 7 gallons into cubic inches, multiply 7 x 231 = 1617. To convert units appearing in Column 2 (center) into equivalent values of units in Column 1 (left), divide by factor in Column 3. Example: To convert 25 horsepower into Btu per minute, divide 25 by 0.02356 = 1061

| TO CONVERT | INTO | MULTIPLY BY |
|---------------------------|-------------------------|--------------------|
| INTO | TO CONVERT | DIVIDE BY |
| Atmospheres | Feet of Water | 33.9 |
| Atmospheres | Inches of Mercury (Hg) | 29.92 |
| Atmospheres | PSI (LBS per Sq. Inch) | 14.7 |
| BTU | Foot Pounds | 778.3 |
| BTU per hour | Watts | 0.2931 |
| BTU per minute | HorsePower | 0.02356 |
| Celsius (Centigrade) | Fahrenheit | °C x 1.8 + 32 |
| Centimeters | Inches | 0.3937 |
| Cubic Centimeters | Gallons (U.S. Liquid) | 0.0002642 |
| Cubic Centimeters | Liters | 0.0001 |
| Cubic Feet | Cubic Inches | 1728 |
| Cubic Feet | Gallons (U.S. Liquid) | 7.48052 |
| Cubic Inches | Cubic Feet | 0.0005787 |
| Cubic Inches | Gallons (U.S. Liquid) | 0.004329 |
| Days | Seconds | 86.400 |
| Degrees (Angle) | Radians | 0.01745 |
| Feet | Meters | 0.3048 |
| Feet | Miles | 0.0001894 |
| Feet of Water | Atmospheres | 0.0295 |
| Feet of Water | Inches of Mercury (Hg) | 0.8826 |
| Feet of Water | PSI (Lbs per Sq. Inch) | 0.4335 |
| Feet per Minute | Miles per Hour | 0.01136 |
| Feet per Second | Miles per Hour | 0.6818 |
| Foot-Pounds | BTU | 0.001286 |
| Foot-Pounds per Minute | Horsepower | 0.0000303 |
| Foot-Pounds per Second | Horsepower | 0.001818 |
| Gallons (U.S. Liquid) | Cubic Feet | 0.1337 |
| Gallons (U.S. Liquid) | Cubic Inches | 231 |
| Gallons of Water | Pounds of Water | 8.3453 |
| Horsepower | BTU per Minute | 42.44 |
| Horsepower | Foot-Pound per Minute | 33,000 |
| Horsepower | Foot Pounds per Second | 550 |
| Horsepower | Watts | 745.7 |
| Hours | Days | 0.04167 |
| Hours | Weeks | 0.005952 |
| Inches | Centimeters | 2.54 |
| Inches of Mercury (Hg) | Atmospheres | 0.03342 |
| Inches of Mercury (Hg) | Feet of Water | 1.133 |
| Inches of Mercury (Hg) | PSI (Lbs. per Sq. Inch) | 0.4912 |
| Inches of Water | PSI (Lbs. per Sq. Inch) | 0.03613 |
| Liters | Cubic Centimeters | 1000 |
| Liters | Gallons (U.S. Liquid) | 0.2642 |
| Micron | Inches | 0.00004 |
| Miles (Statute) | Feet | 5280 |
| Miles per hour (MPH) | Feet per Minute | 88 |
| Miles per hour | Feet per Second | 1.467 |
| Ounces (Weight) | Pounds | 0.0625 |
| Ounces (Liquid) | Cubic Inches | 1.805 |
| Pints (Liquid) | Quarts (Liquid) | 0.5 |
| Pounds | Grains | 7000 |
| Pounds | Grams | 453.59 |
| Pounds | Ounces | 16 |
| PSI (Pounds per Sq. Inch) | Atmospheres | 0.06804 |
| PSI (Pounds per Sq. Inch) | Feet of Water | 2.307 |
| PSI (Pounds per Sq. Inch) | Inches of Mercury (Hg) | 2.036 |
| Quarts | Gallons | 0.25 |
| Square Feet | Square Inches | 144 |
| Temperature (°F - 32) | Temperature (°C) | 0.5555 |
| Tons (U.S.) | Pounds | 2000 |
| Watts | Horsepower | 0.001341 |