



Kirby Morgan Dive Systems, Inc.®

1430 Jason Way Santa Maria, California 93455

Phone: 805/928-7772 Fax: 805/928-0342

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PART# 525-752

Tri-Valve™ Exhaust

For SL 17 A/B, 17 K, KM 37 & KMB 18/28 Band Masks

Tools needed:

Medium size flat blade screwdriver

Inch Pound Torque screwdriver with medium size flat blade

Small cutting pliers

Needle nose pliers

1 3/8" Socket on Torque Wrench

#1 Phillips head screwdriver

Flat Blade Attachment on Torque Screwdriver

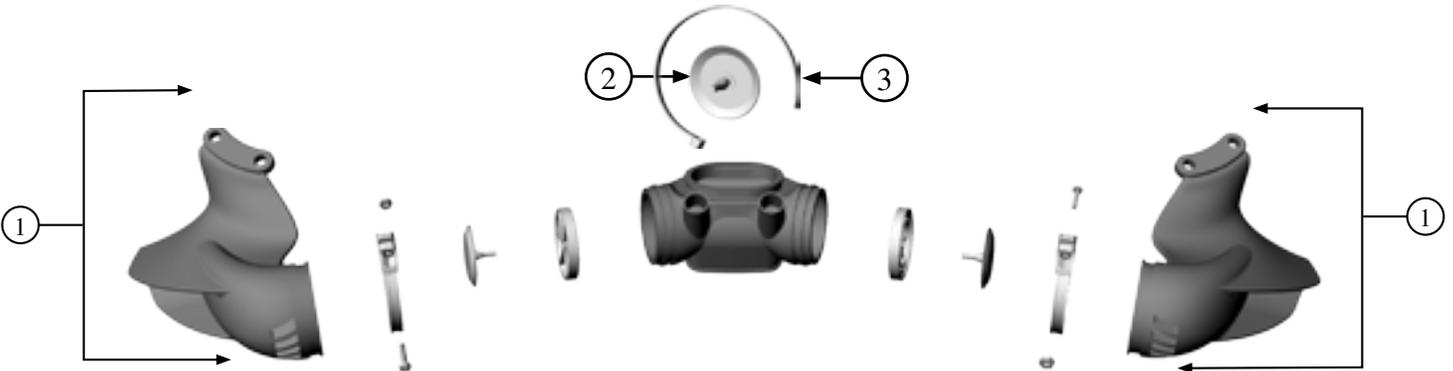
1 1/16" Open End Attachment on Torque Wrench

1 3/16" Open End Attachment on Torque Wrench

7/8" Open End Attachment on Torque Wrench

7/8" Open End Wrench

Loc. #	Part Number	Description	Qty.
1	505-725	Tri-Valve Assembly	1
2	510-552	Exhaust Valve	1
3	520-042	Tie-Wrap	1



NOTE: This Tri-Valve Exhaust System is not physically CE marked. This is done to avoid giving the impression that Pre-CE marked helmets/masks will be considered CE approved when fitted with this exhaust system. Use of this product on helmets/masks bearing a valid CE mark will NOT invalidate that certification mark. EC approval was conducted by SGS United Kingdom Ltd, Unit 202B Worle Parkway, Weston Super Mare BS22 6WA United Kingdom Notified Body 0120.

NOTE: Where country or company policy dictates, the Tri-Valve kit should be installed by a qualified, certified Kirby Morgan technician only. Where policy does not dictate, individuals desiring to perform the installation should call or E-mail KMDSI if in doubt about proper installation exists.

NOTE: It is necessary to remove the regulator from the Helmet or Band Mask™ in order to remove and replace the Tri-Valve™ Exhaust System/Whisker™ and Exhaust Valve.

Demand Regulator Assembly Removal:

1. To Remove the Regulator from the Helmet, P/N 555-154; Bent Tube Assembly or P/N 555-152; Regulator Hose Assembly w/O-Rings ("A" style Side Block) must be removed first. The bent tube assembly must be removed before regulator removal.
2. Remove the Whisker™ / Tri-Valve™ Exhaust System; P/N 525-752 from the Port Retainer; P/N 560-070. The Whisker™/Tri-Valve™ Exhaust System is held on each side of the Helmet/Band Mask™ at the Port Retainer. Two Screws; P/N 530-045, Stand off Spacers; P/N 550-061, and one Plate; P/N 540-015 hold each side. The complete removal of



Figure 1



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the Whisker™ is done by removing the Screws, Spacers and Plate from both sides. **Take care not to lose the four spacers and screws. See Figure 1.**

3. Remove P/N 525-725; Tri-Valve Assembly by stretching it over and off of P/N 505-069; Regulator Exhaust Flange. Removal of a Tri-Valve™ Exhaust System will require the Tie Wrap to be cut off from the Tri-Valve™ Main Body that is attached to the Regulator Exhaust Flange. After removing the Tie Wrap, remove the Tri-Valve™ Main Body by stretching it over and off of the Regulator Exhaust Flange.

Replacing the Regulator Exhaust Valve:

1. Remove the existing Regulator Exhaust Valve; P/N 510-552 by pulling it out of its mount hole. If the Valve tears, make sure that is removed without any valve material left in the inside of the regulator.

NOTE: Before installing the new Valve, ensure that the spokes that hold the exhaust Valve are smooth, even and not bent. Slight bends in the spokes may be removed utilizing slight pressure with a thumb. (Do not bend the spokes in.) The Exhaust Valve seating area should be free of dirt and corrosion to insure the valve can lay flat and seal properly. NEVER lubricate the valve.

2. Remove the Clamp Screw P/N 530-008 and Clamp P/N 520-118
3. Remove P/N 545-018; Cover and P/N 510-553 Diaphragm
4. Install the new Regulator Exhaust Valve by placing the stem of the Valve in through the hole in the hub of the spokes from the outside of the Regulator. Gently, (using needle nose pliers) from the inside of the regulator, pull the stem of the valve through the hole in the hub of the spokes until it pops into its seating area.
5. Reinstall the Diaphragm, Cover, Clamp and Clamp Screw.



Figure 2

Installing the Tri-Valve™ Exhaust System onto the Regulator:

1. The Tri-Valve Main Body opening mates to the Regulator Exhaust Flange. This opening needs to be worked onto the flange. **See Figure 2.**

IMPORTANT NOTE: DO NOT attempt to stretch the whisker onto the regulator flange by pulling on the long part of the whisker. Doing this could possibly loosen or separate the parts. Grasp the main body area of the whisker as shown, while stretching the rubber onto the flange. Make sure that the Tri-Valve Exhaust System is facing the correct direction and is not upside down.



Figure 3

2. Place the Tie Wrap; P/N 520-042 around the Tie-Wrap seating surface and tighten, making sure that the Tie-Wrap end is positioned as shown. **See Figure 3.** Cut off the excess Tie Wrap tail.



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Installing the Regulator with the Tri-Valve™ Exhaust System into the Helmet/Band Mask

1. Place the regulator into the Helmet or Band Mask. Lightly lubricate the sealing O-Ring with Cristo Lube. Install the O-Ring and thread on the Regulator Mount nut.
2. If you have a “B” style Helmet or Band Mask, install the Bent Tube Assembly before tightening the Regulator Mount Nut.
3. If you have an “A” style Helmet or Band Mask, you can attach the Hose Assembly with O-Rings last.
4. With silicone grease, lightly lubricate the O-Ring on the Bent Tube Assembly. Slide the O-Ring end of Bent Tube Assembly into the Regulator Inlet Nipple until the Side Block end is aligned with the threads for the Bent Tube Mount Nut. Clockwise thread the large nut on the Bent Tube Assembly onto the Inlet Nipple 1 or 2 threads. Ensure that the Teflon O-Ring is in place clockwise; and engage the Bent Tube Nut to the Side Block fully until it is hand tight. You may need to rock the Regulator Body and/or the Bent Tube to fully engage Side Block Nut. Next, fully engage (clockwise) the large nut on the Bent Tube into the Regulator Inlet until Hand tight. This will ensure the nut is bottomed on the shoulder on the Bent Tube. Do not tighten further. Loosen the Jam Nut on the Regulator Inlet (counterclockwise), and engage the Jam Nut fully to the large nut on the Bent Tube. Using a 7/8” open end wrench, hold the large nut on the regulator end of the Bent Tube and tighten the Jam Nut against it using a torque wrench with a 7/8” adapter to 100 inch pounds.

Tri-Valve™ Exhaust Valve and Regulator Exhaust Valve Replacement.

NOTE: It is necessary to first remove the regulator and exhaust assembly from the helmet to replace the exhaust valves.

Tri-Valve™ Exhaust Valve Replacement.

- 1) Remove the Tri-Valve™ Assembly
- 2) Using small cutting pliers, carefully cut & remove the two Tie Wraps that hold the Deflector Whiskers™ to the main exhaust body.
- 3) Remove the 2 Exhaust Valve Inserts and Valves. **CAREFULLY NOTE** which side the valves are installed into and which way they face when mounted in the body. They **MUST** be reinstalled facing the same way. *See Figure 4.*
- 4) Install a new exhaust valve into each whisker exhaust valve insert on the correct side by feeding valve tail through hole in center of valve insert and pulling on it until valve is seated

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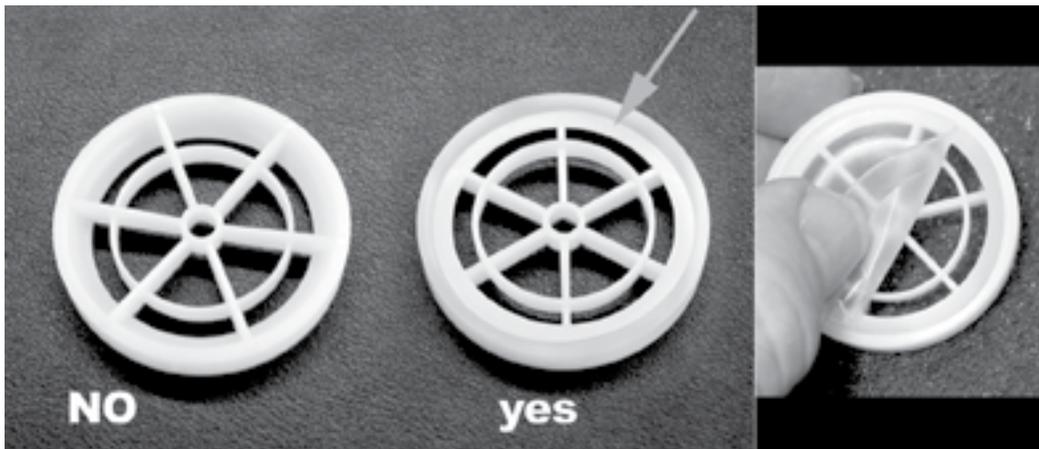
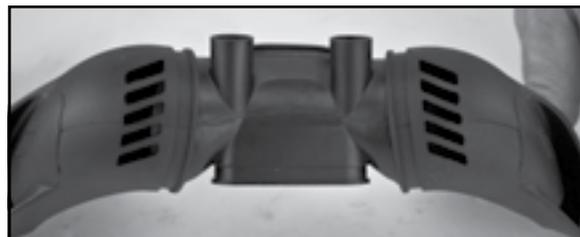


Figure 4

NOTE: The exhaust valve/whisker exhaust valve inserts assembly must be placed into Tri-Valve exhaust main body correctly to provide gas flow in the proper direction. The flow must be from the inside of tri-valve exhaust main body out to the whiskers.

5) Install an exhaust valve/whisker exhaust valve insert assembly into the seating areas on each side of tri-valve exhaust main body.

6) Slide the starboard whisker onto the starboard side of the main body, making sure that you do not dislodge the valve insert assembly from its seating area. The parting line on bottom of the exhaust whiskers should be 5/16" behind parting line on the main body.



7) Repeat this procedure for the Port Side.



**Step facing towards regulator
and screws facing opposite
directions.**

8a) Install the clamps onto each wing, making sure the step side on the clamp will face towards the regulator when finished. You should see where the step will capture the rubber on the end of the wing.

b) Properly re-align the port and starboard wings to the main body.

c) Position the screw/nut block on the clamp, and the wings, so it is easy to access and install the screw and nut. This should be towards the front of the assembly,

d) Insert the screws into the holes of the clamp that provide a slip through fit, then using a Phillips screwdriver, thread the screw into the plastic. Before the screw comes through the plastic, install the hex nut and finish tightening the screw. Tighten only enough to close the 2 ends of the clamp together.



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Regulator Exhaust Valve Replacement.

1. Before removing the regulator exhaust valve, carefully inspect the area around the edges to assure the rubber exhaust valve is in contact with the regulator body. The metal cross area of the body under the valve could be slightly bent out resulting in the valve not sealing. If the exhaust valve is high and not sealing, lightly press in on the metal cross, bending the metal in slightly until the rubber valve seats. Remove the existing Regulator Exhaust Valve by pulling it out of its mount hole. If the Valve tears, make sure that is removed without any valve material is left in the inside of the regulator.

NOTE: Before installing the new Valve, ensure that the spokes that hold the exhaust Valve are smooth, even and not bent. The Exhaust Valve seating area should be free of dirt and corrosion to insure the valve can lay flat and seal properly. NEVER lubricate the valve.

2. Remove the Clamp Screw and Clamp
3. Remove the Cover and the Diaphragm
4. Install the new Regulator Exhaust Valve by placing the stem of the Valve in through the hole in the hub of the spokes from the outside of the Regulator. Gently, (using needle nose pliers) from the inside of the regulator, pull the stem of the valve through the hole in the hub of the spokes until it pops into its seating area.
5. Reinstall the Diaphragm, Cover, Clamp and Clamp Screw.