



KMB 18/28 (BANDMASK) USER/OPERATOR COURSE





KIRBY MORGAN DIVE SYSTEMS INCORPORATED MAINTENANCE AND REPAIR TECHNICIAN TRAINING



- Only selected Dive Lab trained Technicians are authorized to teach the Technicians Course
 - Only Dive Lab authorized Technicians may teach the KMDSI Operator/User Course
 - Course curriculum must be presented within the guidelines set-up in the repair technician's guide and slide show
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- This presentation is available at no charge from www.divelab.com for the use of Kirby Morgan Customers & users of Kirby Morgan Diving Equipment ONLY
 - THIS MATERIAL MAY NOT BE CHANGED OR MODIFIED WITHOUT PERMISSION FROM DIVE LAB



KMB 18/28 (BANDMASK) INTRODUCTION



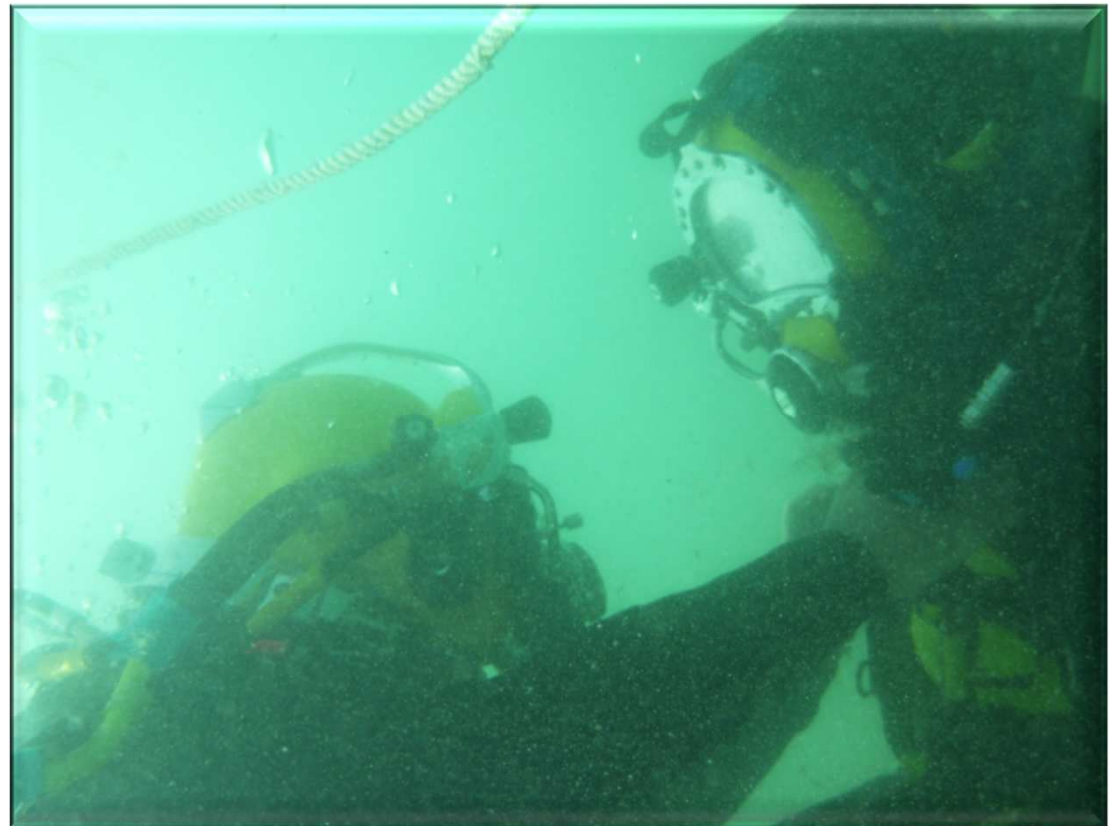
- This course provides guidance on how to use the KMB 18 and 28
- Use of these masks will vary with the type of work and environmental conditions
- The basic procedures of donning and removing masks will be similar for every job



KMB 18/28 (BANDMASK) INTRODUCTION



- This class is intended for divers who have previously been commercially or militarily trained in the use of commercial dive equipment





KMB 18/28 (BANDMASK) INTRODUCTION



- Divers trained in the use of previous Kirby Morgan masks; i.e., KMB 8, 9, 10, Navy MK 1 mask, Navy MK 21 helmet, Navy Mk 22 mask, or SuperLite helmets, will find that KMB 18/28 Band Masks have the breathing system controls located in the same position and operations are similar



KMB 18/28 (BANDMASK) INTRODUCTION



- Demand regulator and side block components are designed to work with pressures as low as 90 psig over bottom when diving to depths of 60 fsw or shallower, and as high as 225 psig O.B. when diving deeper
- This wide operating range allows flexibility when using various gas supply systems



KMB 18/28 (BANDMASK) MAINTENANCE AND INSPECTION



- A2.1 inspection and maintenance should be performed at least annually
- Frequency of maintenance is dictated by condition revealed during daily/monthly inspection
- Monthly inspections determine necessity for overhaul with more accuracy than simply placing a number of hours of use



KMB 18/28 (BANDMASK) MAINTENANCE AND INSPECTION



- Masks being used in polluted waters, or extreme environments, will require more frequent inspection
- KM18/28 band masks should not be used for Polluted/contaminated waters
- Hamlets (KM37) are preferred for Polluted/contaminated waters



KMB 18/28 (BANDMASK) MAINTENANCE AND INSPECTION



- Side block, Regulator are the same as on the KM 37/SL 27, parts are interchangeable
- KMB 28's manufactured before 2004 used small bore super flow regulator (SL 17 Reg)
- Lexan Face port on KMB 28 is smaller, All other KM face ports, port retainers are the same size

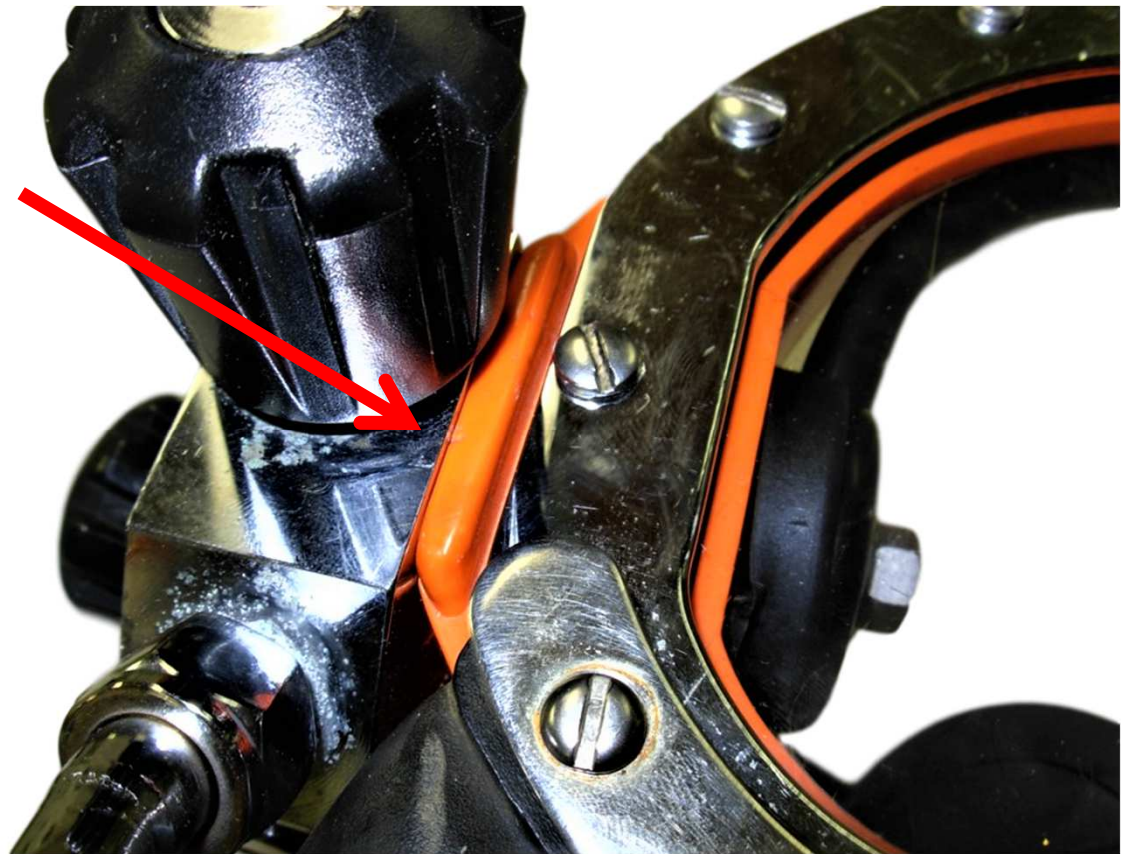


Old Plastic Frame Band Masks



Older KMB 28's, 9's, and 10's use smaller face port retainers

- Tab between side block and port retainer
- Newer face port retainers will NOT fit
- This type of frame is no longer supported and should be removed from service

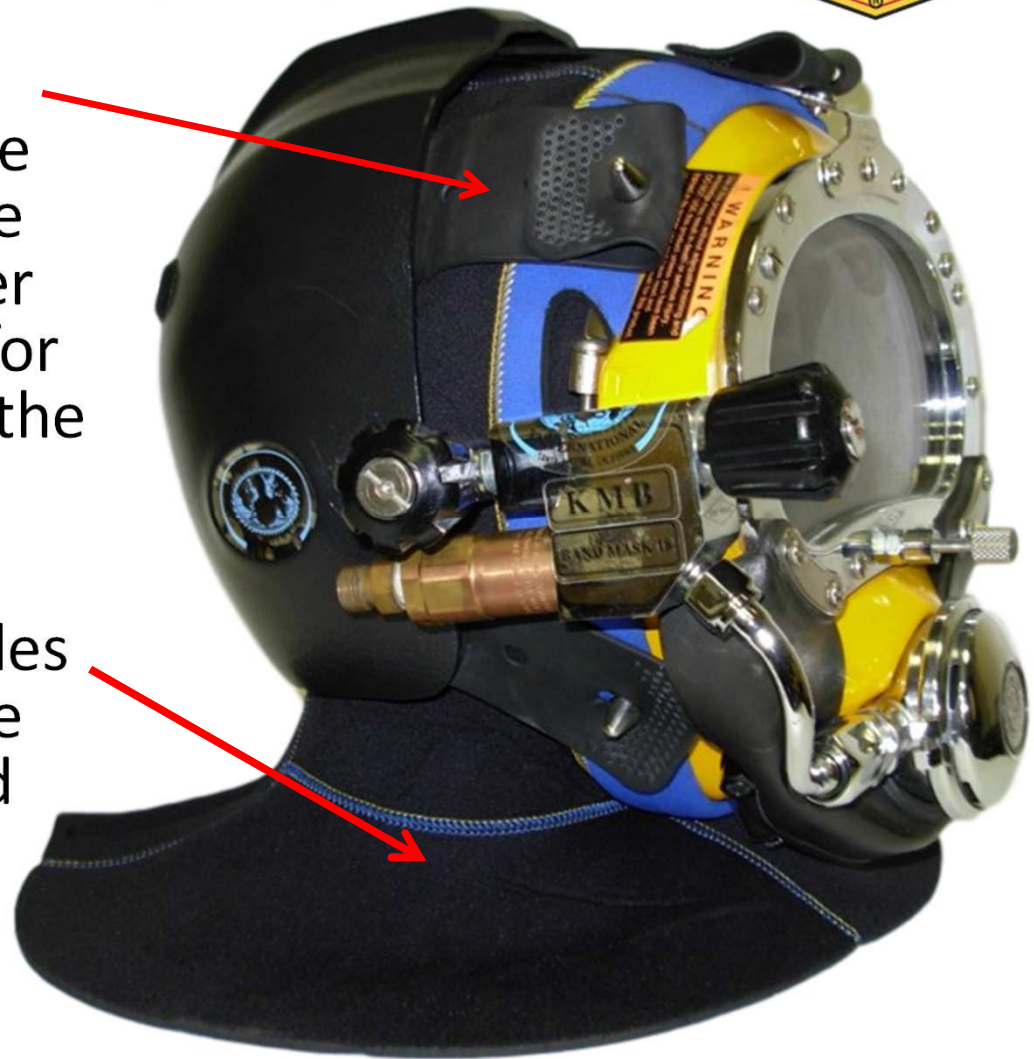




KMB 18/28 FEATURES



- **Head Harness (Spider)** keeps the mask in place on the divers head. The neoprene rubber spider has adjustment holes for varying the tension of the harness
- **Hood/Face Seal** provides the diver a comfortable thermal barrier around his head as well as pockets for earphones

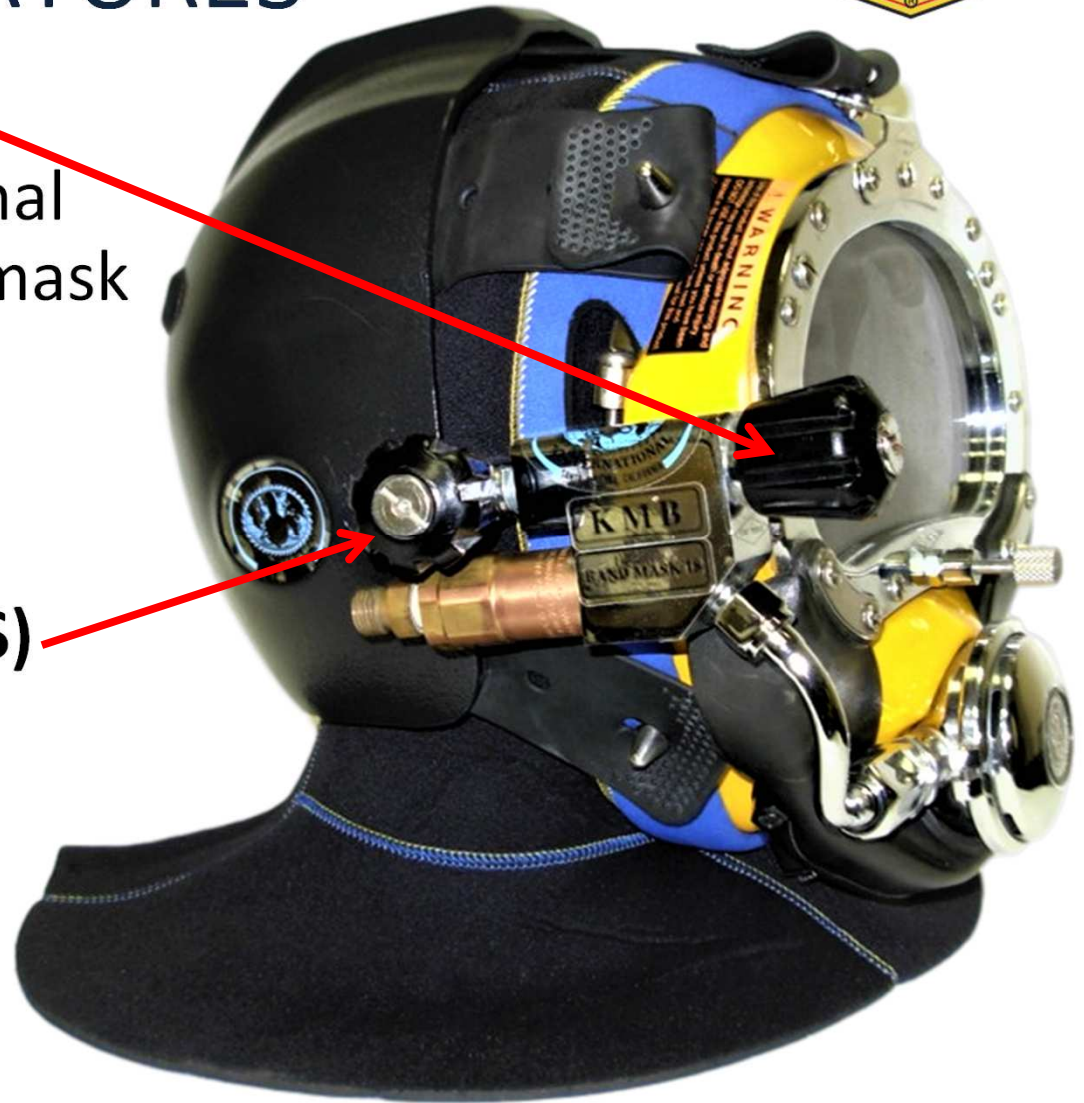




KMB 18/28 FEATURES



- **Steady Flow Valve** provides an additional flow of air into the mask for ventilation and defogging
- **Auxiliary Valve (EGS)** supplies backup breathing gas to the diver

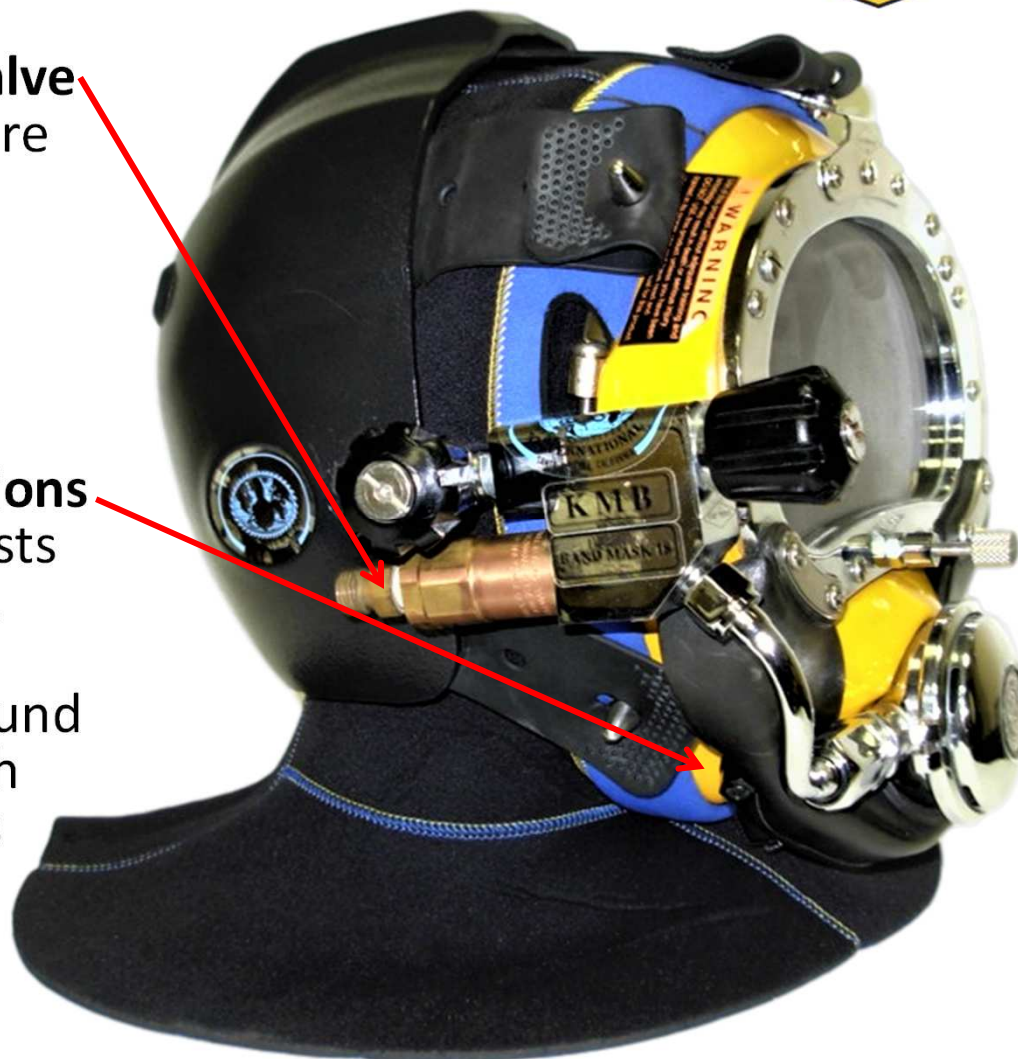




KMB 18/28 FEATURES



- **Gas Supply Non-Return Valve** prevents loss of gas pressure in the event of umbilical damage, preventing a "squeeze"
- **Communications Connections** can be either bare wire posts or a waterproof connector. The waterproof type is recommended when a "round robin" or diver/tender both mics "on" communications system is used





KMB 18/28 FEATURES



- **Tri-Valve Exhaust Whisker** which retrofits to Band Masks, has less breathing resistance than the older single valve exhaust while providing an extremely dry hat





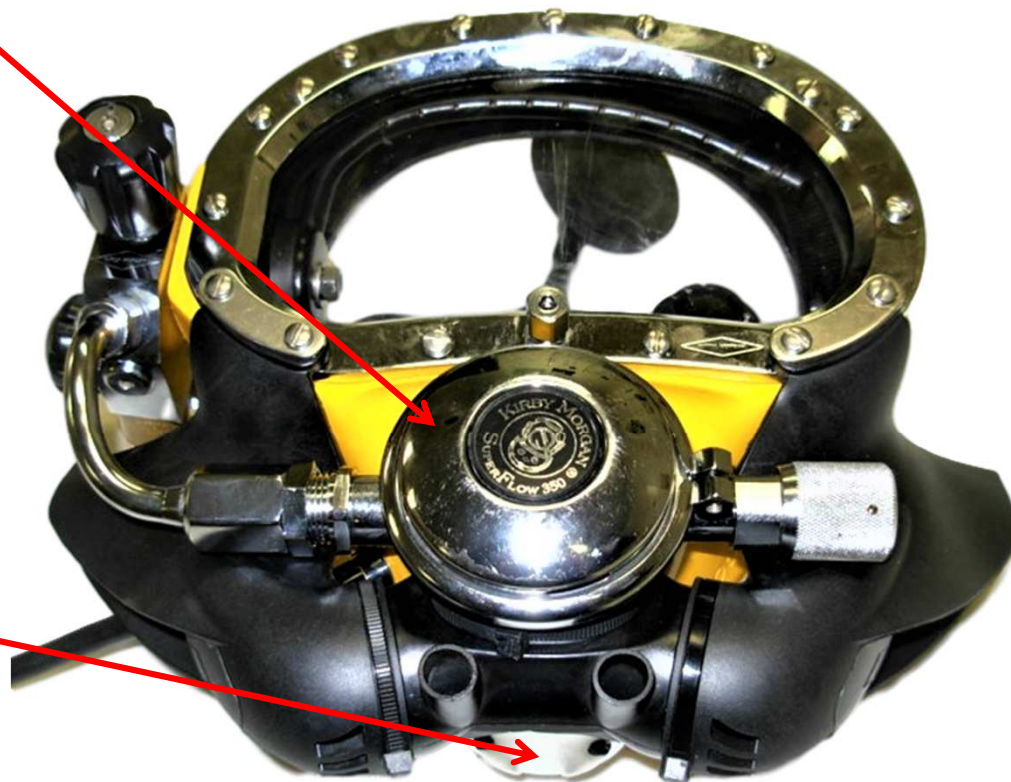
KMB 18/28 FEATURES



- **Demand Regulators**

The SuperFlow350®
KMB 18 and KMB 28
regulator provides
easy breathing for
hard work

- **Water Exhaust**
automatically keeps
water drained from
the mask





KMB 18/28 FEATURES



- **Silicone Oral Nasal Mask** is made of a superior silicone material which is hypo-allergenic
- **Nose Block Device** allows the diver to block the nose to equalize ears





KMB 18/28 Pre-Dive Inspection



- KMB Band Masks are designed 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





KMB 18/28 Custom Hood



Divers with smaller heads:

- A custom made hood can be specially ordered
- Contact your Kirby Morgan dealer for more information on this product





KMB 18/28 Pre-Dive Inspection



- Demand Regulator: Cover assembly should not be dented and the purge button must work
- Bent tube: No dents or kinks in the assembly
- Face Port: Must be in good condition



KMB 18/28

Pre-Dive Inspection



- Spider must be in good condition
- Rubber must not be torn or cracked
- All five legs present





KMB 18/28 Pre-Dive Inspection



- Loosen band screws
- Loosen band keeper screws (if installed)





KMB 18/28 Pre-Dive Inspection



- Remove the Earphones from their pockets in the Hood





KMB 18/28

Pre-Dive Inspection



- Hood and Face seal: Good condition with no tears or rips, tears in the face seal can cause the regulator to free flow
- Face seal must be properly glued to the hood
- Lubricate zipper

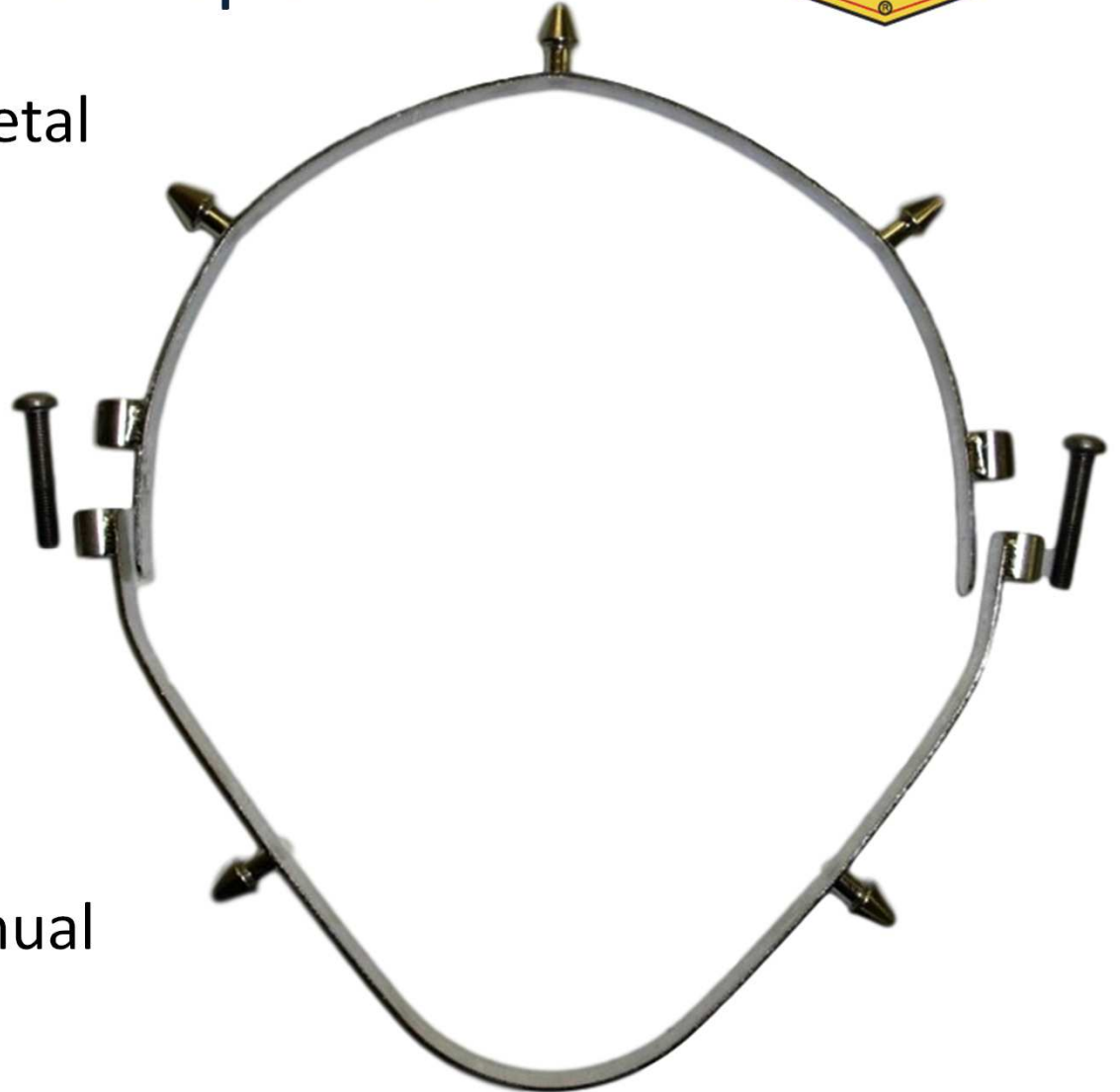




KMB 18/28 Pre-Dive Inspection



- Visually inspect all metal parts of the Band Assembly and band keeper components, including the Band Screws, for damage
- Replace if necessary
- Guidance O & M Manual





KMB 18/28 Pre-Dive Inspection



- Visually inspect mask exterior and interior
- Loose or missing fasteners
- Obvious signs of damage
- Cracks, gouges, and/or depressions





KMB 18/28 FRAME ASSEMBLY



KMB 18 has a Fiberglass frame
with comfort insert

KM 28, KMB 9, 10 and MK 1
frames are made of ABS plastics





KMB 28 FRAME ASSEMBLY



Cracks in KM 28, 9, 10 frames
can not be repaired





KMB 28 FRAME ASSEMBLY



- KMB 28 frames should not be use for extended burning/welding ops
- Face port inserts deteriorate over time due to electrolysis
- Inserts cannot be replaced on plastic frames





KMB 18 FRAME ASSEMBLY



- KMB 18 Frame is repaired the same way as the KM Fiberglass Helmets
- On the KMB 18 any gouges in the fiberglass shell deeper than 1/16" should be repaired





KMB 18 FRAME ASSEMBLY



- Fiberglass and gel coat repairs **MUST** be completed by a technician that has received certification for Helmet Shell repairs by KMDSI or Dive Lab, Inc.
- Any cracks or depressions with fractures must be checked by an Authorized KMDSI Repair Facility



KMB 18/28 MASK ASSEMBLY



- Remove covers from earphones
- Remove microphone from the Oral Nasal Mask
- Inspect and repair/replace as necessary
- Perform a communications check





KMB 18/28 MASK ASSEMBLY



- Remove the Nose Clearing Device, Clean and inspect the Nose Clearing Pad and Shaft
- Inspect Nose Clearing Device, O-Rings
- Inspect Oral Nasal Mask and Oral Nasal Valve as an assembly
- Clean, inspect Mask and Valve Assembly for damage
- Guidance O & M Manual



KMB 18 MASK ASSEMBLY



Remove the Comfort Insert
[KMB-18 only]

Clean and inspect the Comfort
Insert for damage and/or
deterioration





KMB 28 MASK ASSEMBLY



- KMB 28 Only
- When using the molded face seal, the KM 28 uses a small insert

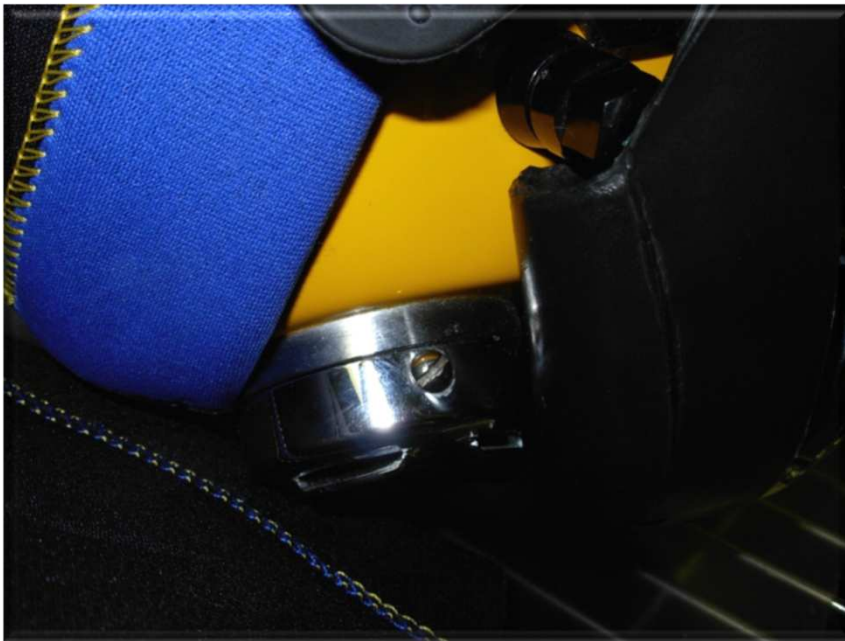




KMB 18 MASK ASSEMBLY



Remove the Main Exhaust Valve
Cover and inspect Main
Exhaust/Dewatering Valve



Inspect Seat for damage and/or
contamination





KMB 28, 9, 10, MK1 (BANDMASK) MASK ASSEMBLY



Water dump valve assemblies
are molded into Plastic frames



If any damage is present it cannot
be repaired (replace frame)





KMB 18/28 MASK ASSEMBLY



Tri-Valve exhaust system will fit
KMB 18, 28, 9, and 10

No frame modifications required





KMB 18/28 Band Keeper Kit



- Introduced in 2003
- Will fit all KMB masks
- Requires new hood
- Bands are inserted into hood



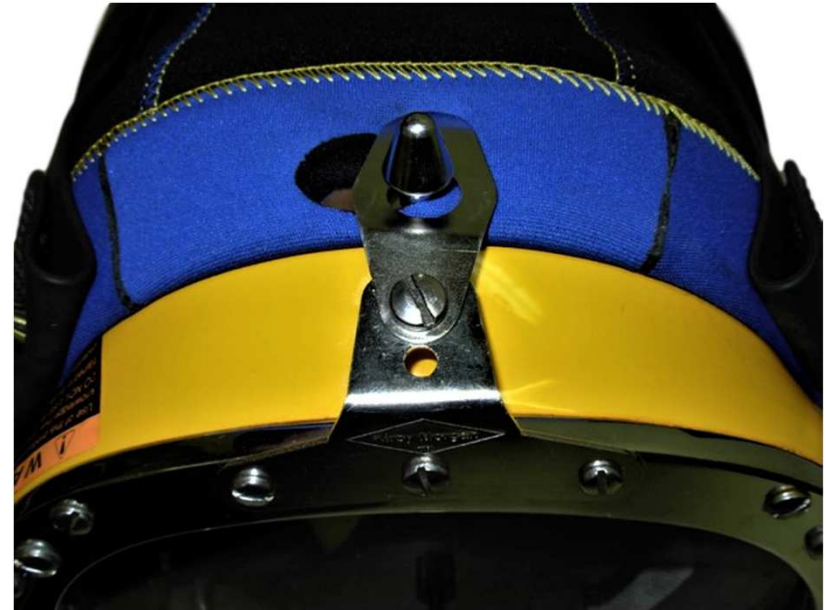
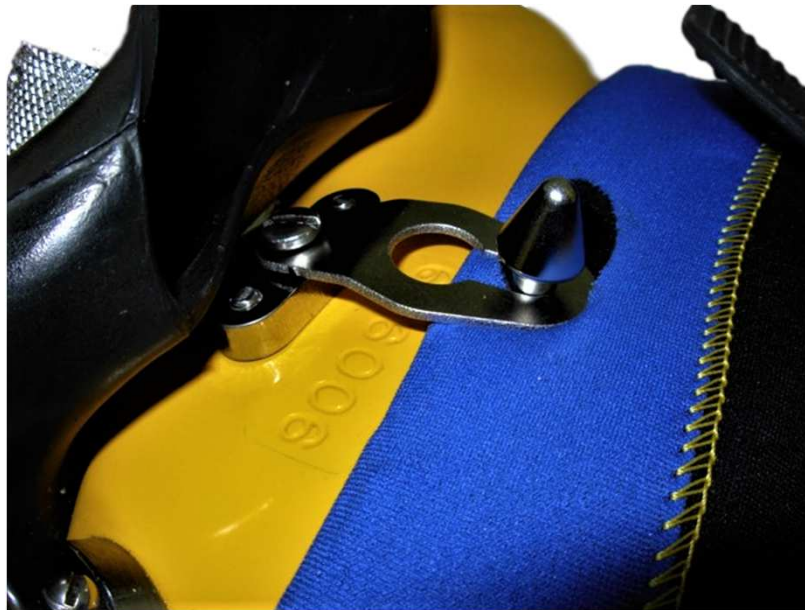


KMB 18/28 Band Keeper Kit



Prevents hood retaining band
from separating from frame

All masks manufactured after
2004 come with kit installed





KMB 18/28 Band Keeper Kit



- KM Technicians should install kits on all band masks manufactured before 2004
- Kit #525-172





KMB 18/28 Ordinal Hood



Oct 2009 KM stopped
manufacturing old style hoods

Old style hoods should be
Replaced





KMB 18/28 Pre-Dive Check all moving parts



- Regulator adjustment knob
- Defogger control knob
- Emergency (EGS) knob
- Nose block device





KMB 18/28 Pre-Dive



- Pre-dive checks on air train are identical to KM helmets
- Connect EGS System
- Main Gas Umbilical
- Connect comms





KMB 18/28 Pre-Dive



- Hold mask to face and check breathing
- Check communications





KMB 18/28

Donning and Removing Mask



- All donning procedures must be done by the diver until he is thoroughly at home with the mask, this will train for familiarity
- Tender must be present to assist the diver and check to ensure that the diver has properly donned his equipment
- It is impossible for the diver to see whether he is properly dressed in once the mask is on



KMB 18/28

Donning and Removing Mask



- Open the regulator adjustment knob and the defogger control knob for a steady flow from both just prior to the diver dressing into the mask





KMB 18/28

Donning and Removing Mask



- With the diver holding the mask, the tender should now connect the quick disconnect fittings for the bailout supply





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Donning and Removing Mask



- To prepare the mask for donning by yourself, close the zipper until only the last six inches are open
- Fasten every “leg” of the spider except the one on the bottom left
- Pick the mask up with both hands and fold the spider over the front of the mask



KMB 18/28

Donning and Removing Mask



- Pull the hood onto your head and close the zipper, taking care not to catch your hair in the zipper
- You will need to support the mask with your right hand as you do this
- Use your left hand to close the zipper



KMB 18/28

Donning and Removing Mask



- While you continue to support the mask with your right hand, use your left hand to fasten the remaining leg of the spider to your left
- As a standby diver, it is essential for you to be able to don your mask yourself during an emergency



KMB 18/28

Donning and Removing Mask



For most divers:

- Mask is most comfortable when the spider is adjusted so that the top three legs of the spider are tighter than the bottom two





KMB 18/28

Donning and Removing Mask



- If you have an “average” size head, the adjustment most divers find comfortable is three holes back on the top three legs, and two holes back on the two bottom legs of the spider





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Donning and Removing Mask



- You may find a different adjustment to be more comfortable depending on the size of your head
- Mask should feel comfortably snug against your face out of the water
- There will be some compression of the face seal when it is adjusted properly



KMB 18/28

Donning and Removing Mask



- The weight of the mask is heavy out of the water, it will be almost unnoticeable underwater
- Your tender may assist you in donning your mask if you prefer
- The procedure is the same as donning by yourself, except that your tender will close the zipper on the hood and fasten the spider



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Donning and Removing Mask



- You will still need to support the weight of the mask while your tender fastens you in
- To help keep the bib of your hood from floating up, you tuck the bib of the hood under your harness



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Testing the Breathing System



- Test the defogger system by turning on and off the defogger control knob (steady-flow)
- Regulator should be adjusted by turning the adjustment knob out until a slight free-flow starts, then back in until the flow just stops



KMB 18/28

Testing the Breathing System



- Demand regulator checked for proper function: breathe in and out
- Inhalation and exhalation effort should be nearly unnoticeable
- Press in on the purge button in the regulator cover: Should produce a strong burst of breathing gas



KMB 18/28 Pre-Dive



- It is the responsibility of the diving supervisor to always ensure that all pre-dive checks have been properly conducted, prior to allowing the diver to enter the water
- For the most current pre-dive checks, consult the Dive Lab web site (www.divelab.com)



KMB 18/28 Summary



- Maintenance & Inspection
- Features
- Pre-Dive inspection

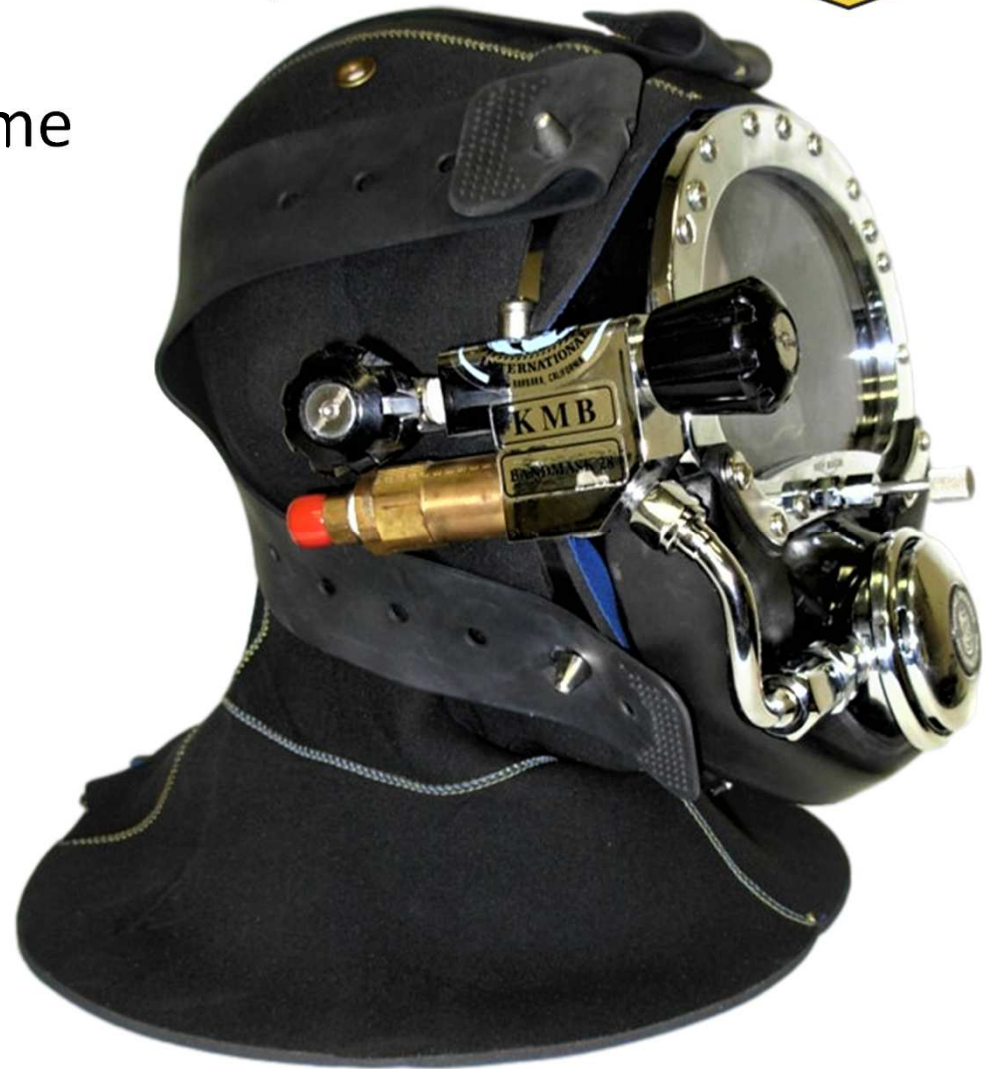




KMB 18/28 Summary



- KMB 18 fiberglass frame
- KMB 28 plastic frame
- Band Keeper Kit
- Donning Mask





KMB 18/28 Questions

