CONTINENTAL NH3 PRODUCTS
INSTALLATION, OPERATION, REPAIR AND MANTINANCE INSTRUCTIONS

PRODUCT SERIES: A-MVD A-SVD

ATTENTION: Please follow all of the instruction in this manual carefully and read the entire manual completely, failure to do so may cause the product to function improperly or fail causing serious injury or death.

CAUTION  **CAUTION**

ANHYDROUS AMMONIA IS AN INHALATION HAZARD AND WILL CAUSE SERIES INJURY OR DEATH. PLEASE USE EXTREME CAUTION WHEN HANDLING IT OR PERFORMING ANY MAINTENANCE ON EQUIPMENT USED FOR ANHYDROUS AMMONIA.

ATTENTION: Before performing any installation, repair or maintenance please follow the instructions below.

1. You must be certified to work with anhydrous ammonia. If you are not please seek out the appropriate agricultural department to attend a class to obtain the proper certification.
2. Wear appropriate safety goggles, gloves and breathing apparatuses.
3. Drain all tanks, hoses and piping of anhydrous ammonia COMPLETELY before removing, installing, performing maintenance or repairing any equipment.
4. Always remove device from service before performing any maintenance or repair
5. have sufficient water near by
6. Obey all local, state and federal laws regarding the handling of anhydrous ammonia

INSTALLATION & OPERATION

1. See following pages for complete installation instructions and operational instructions

MAINTENANCE

1. Check manifold regularly for leaks and wear.
2. If manifold is leaking from any pipe threads try tightening the hose barb and putting more thread sealant on the pipe threads. Be careful not to over tighten because you may crack the casting. If casting cracks see drawing break down a replace appropriate part.
3. If manifold leaks from the ring MVD-3, body MVD-01 or gauge adaptor MVD-7 install a repair kit or replace manifold.

REPAIR

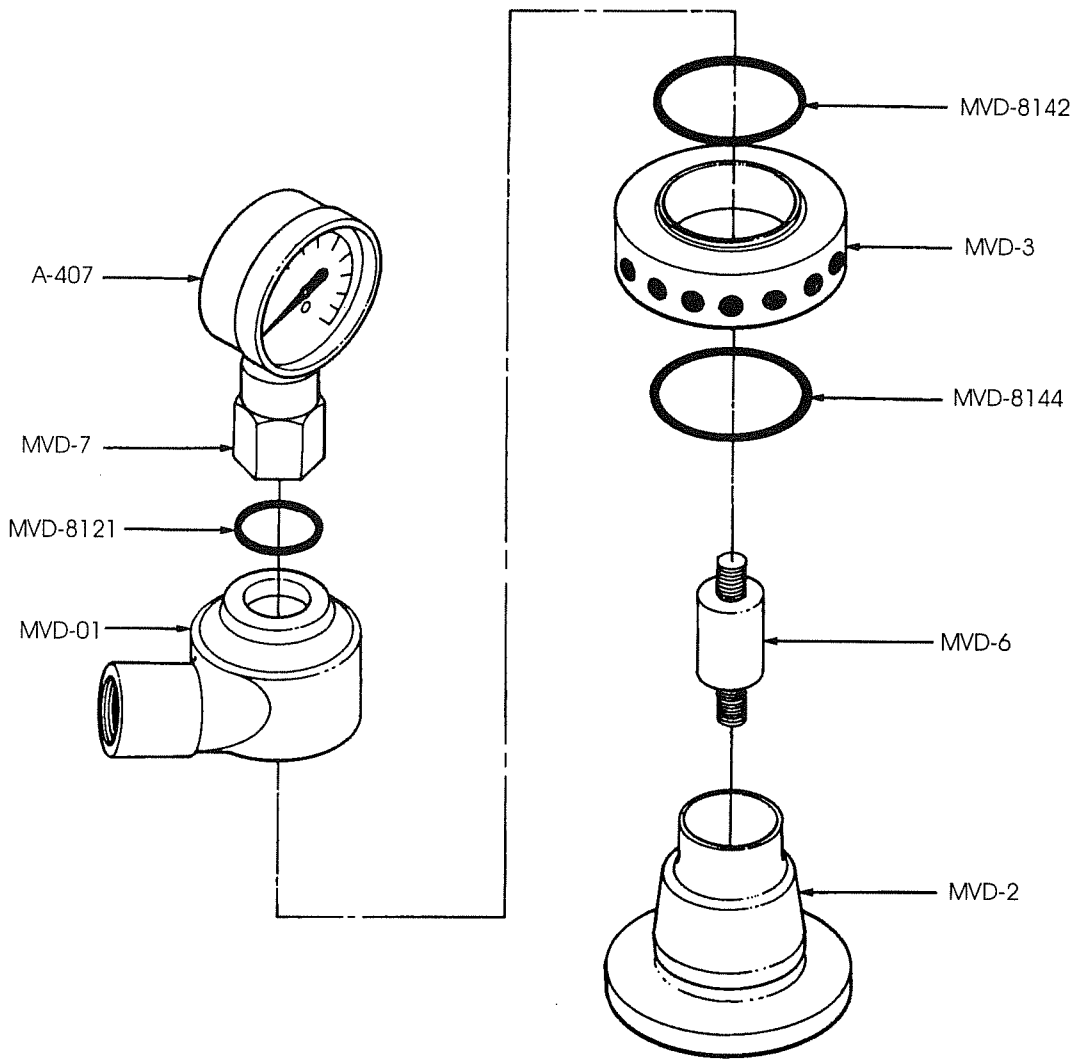
1. Remove valve from service by following the above ATTENTIONS AND CAUTIONS.
2. Remove gauge adaptor MVD-7 from manifold body and replace o-ring MVD- in gauge adaptor
3. Remove upper body MVD-01 and outlet ring MVD-3 and replace the upper o-ring MVD- and lower o-ring MVD- in the MVD-3.
4. Replace MVD-3 onto the lower body MVD-2 with stamping side up and replace the upper body MVD-01 onto the outlet ring MVD-3.
5. Screw on the gauge adaptor MVD-7 onto the stem of the MVD-2 and tighten gently. Do not over tighten because the stem MVD-6 may brake.
6. Reinstall manifold back into service by following the installation instructions.

QUESTIONS CALL 800-537-5642

Catalog Number	Description	List Price	100 Piece Ship Wgt.

A-MVD VERTICAL DAM MANIFOLD REPAIR PARTS

A-407	PRESSURE GAUGE - 150# - 1/4" MPT - 2-1/2" DIAL	50
A-MVD	BODY ONLY	
MVD-01	MANIFOLD BODY	
MVD-2	VERTICAL DAM BODY INCLUDES MVD-6	
MVD-3	DISTRIBUTOR RING 3-16 OUTLETS	
MVD-6	STUD	
MVD-7	GAUGE ADAPTOR	
MVD-8	INLET HOSE BARB 3/4" MPT X 1" HOSE	
MVD-8121	GAUGE ADAPTOR SEAL	
MVD-8142	DISTRIBUTOR RING SEAL (TOP)	
MVD-8144	DISTRIBUTOR RING SEAL (BOTTOM)	
MVD-RK	REPAIR KIT INCLUDES - MVD-8121, MVD-8144, MVD-8142	



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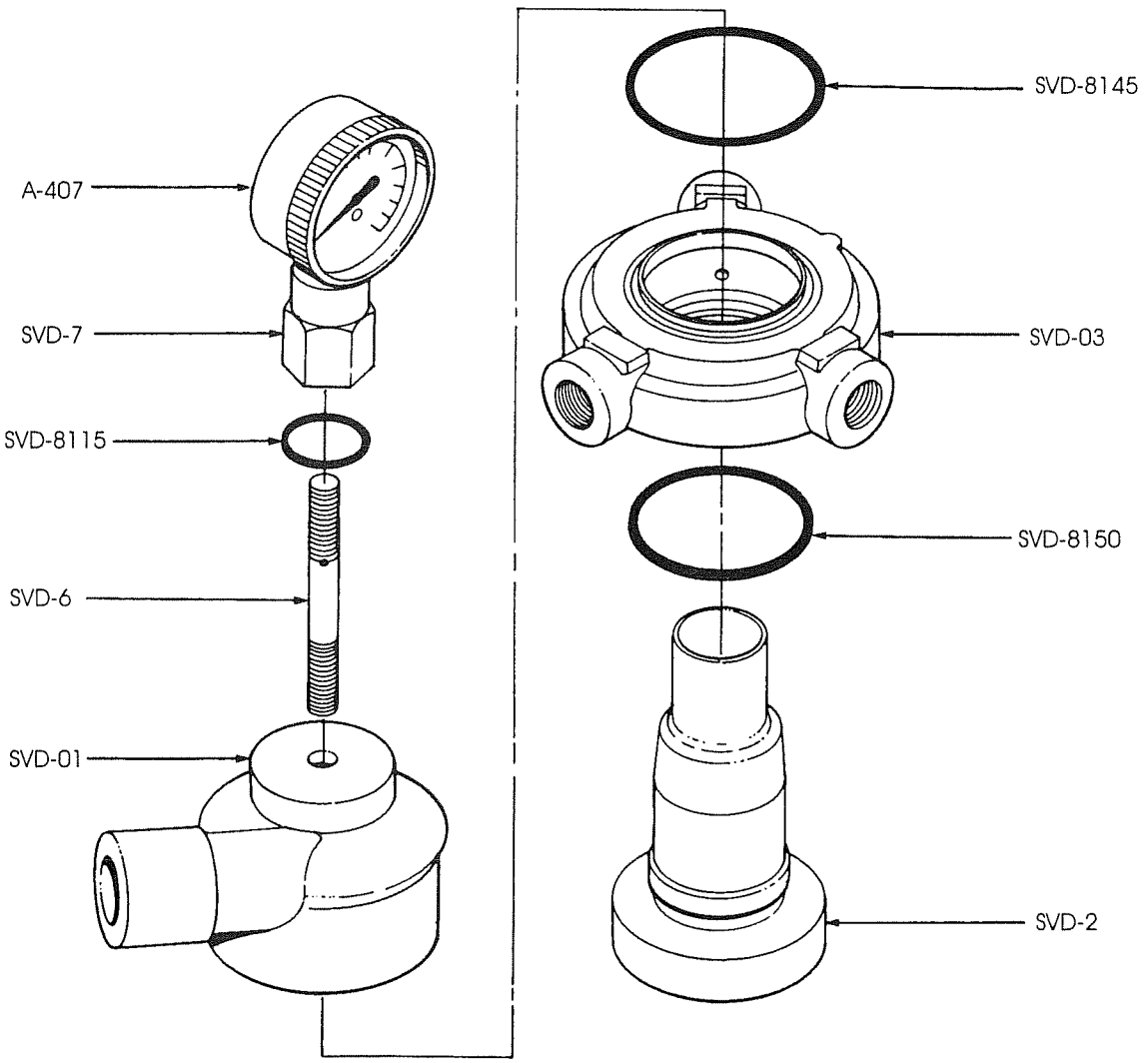
Catalog Number	Description	List Price	100 Piece Ship Wgt.

A-SVD VERTICAL DAM SEPARATOR REPAIR PARTS

A-SVD	SEPARATOR BODY ONLY LESS RING
SVD-01	SEPARATOR BODY
SVD-03	THREE OUTLET DIVIDER RING
SVD-04	FOUR OUTLET DIVIDER RING
SVD-05	FIVE OUTLET DIVIDER RING
SVD-2	SEPARATOR VERTICAL BODY INCLUDES SVD-6
SVD-6	STUD
SVD-7	GAUGE ADAPTOR
SVD-8	OUTLET ORFICED HOSE BARB 1/2" MPT X 1" HOSE
SVD-8115	GAUGE ADAPTOR SEAL
SVD-8149	SEPARATOR RING SEAL (TOP)
SVD-8150	SEPARATOR RING SEAL (BOTTOM)
SVD-9	INLET HOSE BARB 1" MPT X 1" HOSE
SVD-RK	REPAIR KIT, INCLUDES - SVD-8115, SVD-8145, SVD-8150



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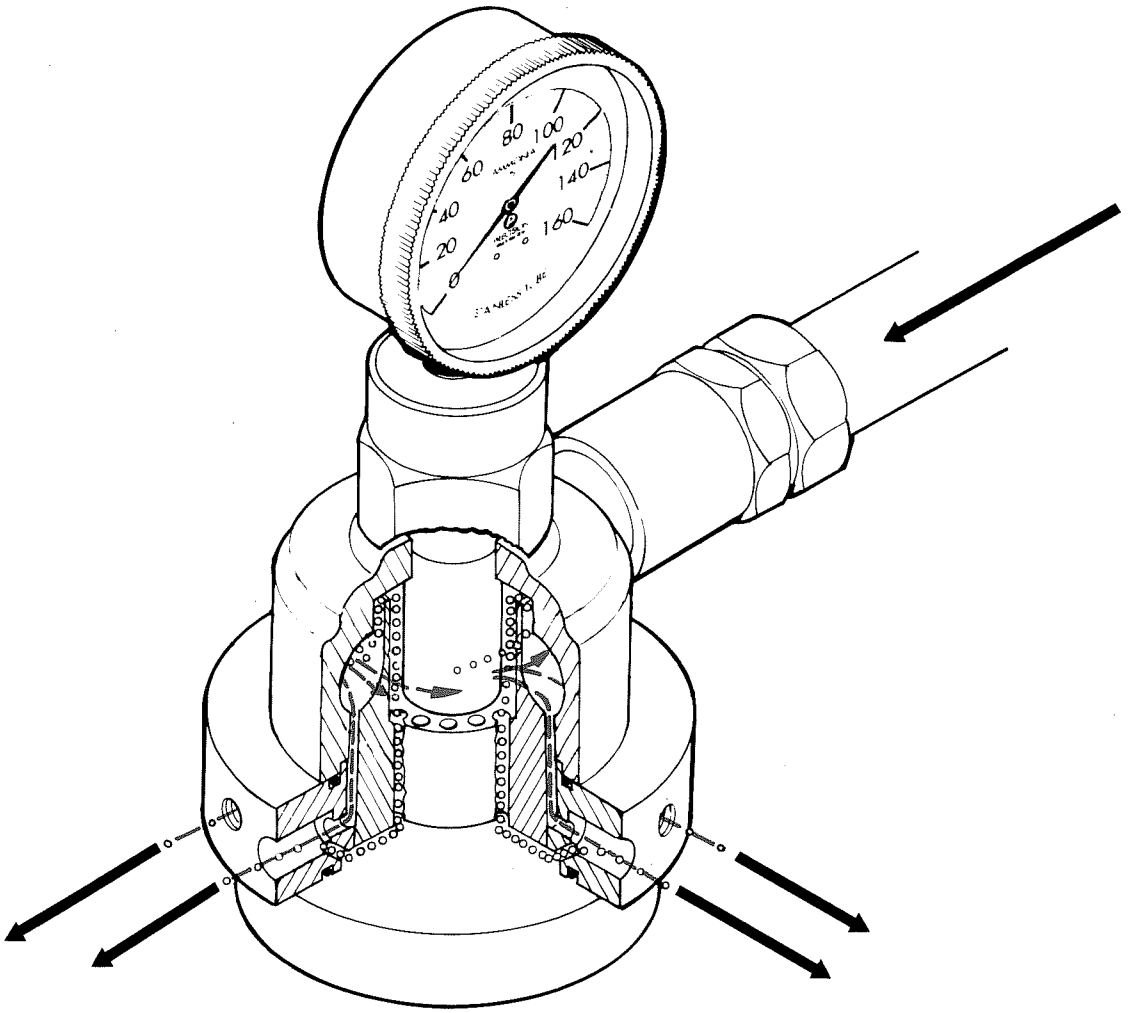
CONTINENTAL NH3 PRODUCTS

INSTALLATION INSTRUCTIONS



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CONTINENTAL NH3 PRODUCTS

Congratulations! You have just purchased the latest design in NH3 distribution manifolds. So what makes the Vertical Dam Manifold system the finest that Continental has ever produced? Well, until now, all manifolds have failed to address the real villain in distribution: VAPOR. The A-MVD manifolds in conjunction with the A-SVD separator effectively deal with the Vapor Villain and thus promote an even distribution of NH3 across the entire swath.

Anhydrous Ammonia, by its very nature, is a mixture of vapor and liquid when it leaves the nurse tank and enters your metering system. For example, tests demonstrate that at 15# of manifold pressure, you could have a resulting vapor volume of 80% to 90% ! This vapor wreaks havoc with distribution. One manifold port may be blocked by the vapor while the next port gets mostly liquid. The net result is that some rows of your field will get too much ammonia while others will get next to none. The VAPOR VILLAIN wants to burn one row of crops and then starve the next!

Continental's revolutionary Vertical Dam concept (patent pending) temporarily separates a substantial amount of vapor from the liquid. This gives the liquid a chance to evenly distribute to each liquid orifice before the separated vapor rejoins it through individual vapor orifices. In this way, the Vapor Villain is effectively neutralized, and an even distribution to each applicator hose is greatly enhanced.

Important information: The higher the manifold pressures (up to 65% of tank pressure) the better. Manifold efficiency peaks at 65% of tank pressure. Surpassing 65% will not produce any better results.

INSTALLATION INSTRUCTIONS

1. Tool bars requiring 2 manifolds can effectively split the ammonia flow by using a 1" 3000# pipe tee.

2. Tool bars requiring 3 or 4 manifolds must use the A-SVD separator to divide the flow into equal parts.

3. Mount the A-MVD manifold(s) and A-SVD separator so that the outlets are on a horizontal plan. Space manifolds as evenly as possible.

4. 1" female NPT swivel connections are provided with each manifold and separator for ease of connection.

5. Continental recommends that 1" reinforced EVA hose with a minimum working pressure of 150 PSI be used to connect the meter to the separator or tee and, also, to connect the tee or separator to the manifolds. Hoses connecting the tee or separator to the manifolds should be of equal lengths.

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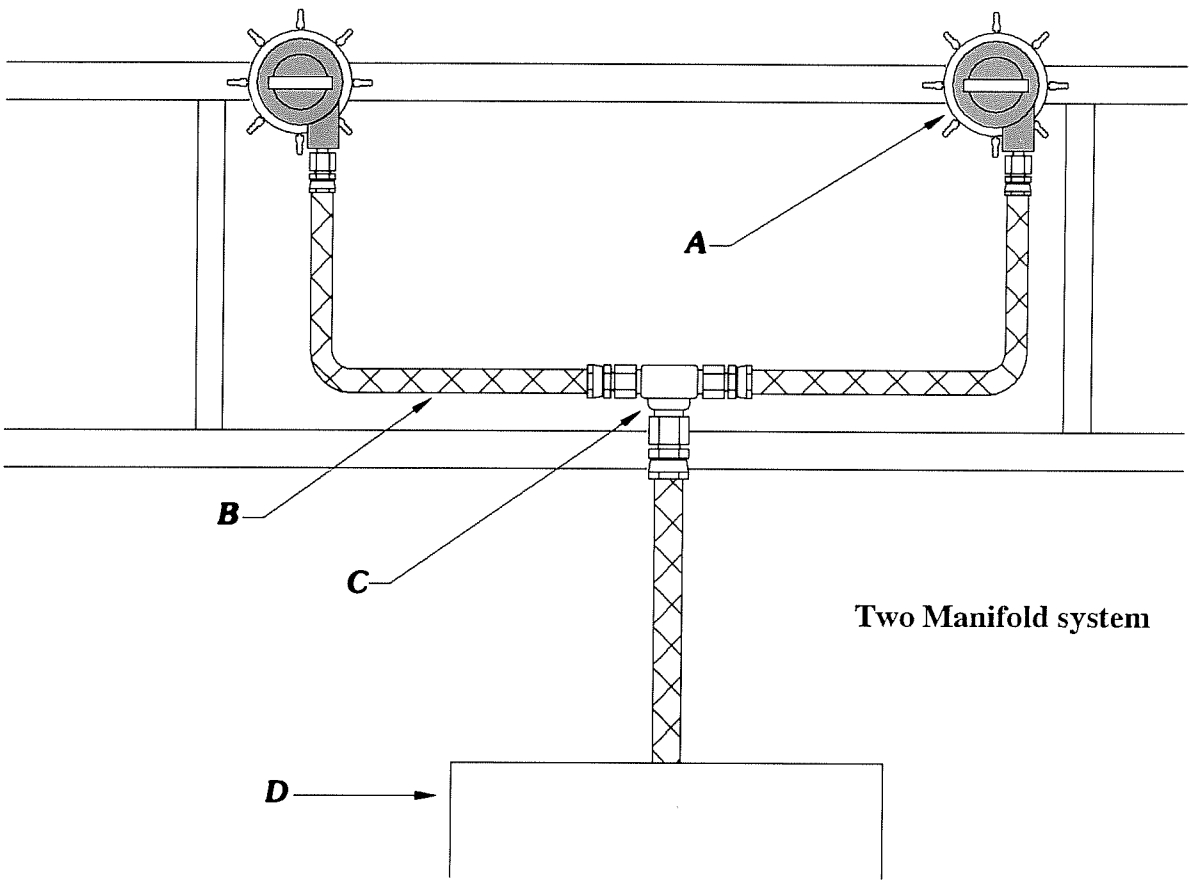
DANGER: Do not install any regulating or shutoff device down stream of the meter. Such a device will trap ammonia in the connecting hoses and cause them to burst and in turn cause severe personal injury or even death!

6. All hoses from the manifolds to the knives should be of equal lengths.



Two Manifold system

(A) A-MVD manifold
(B) 1" reinforced 150 PSI eva hose
(C) 1" pipe tee
(D) Meter

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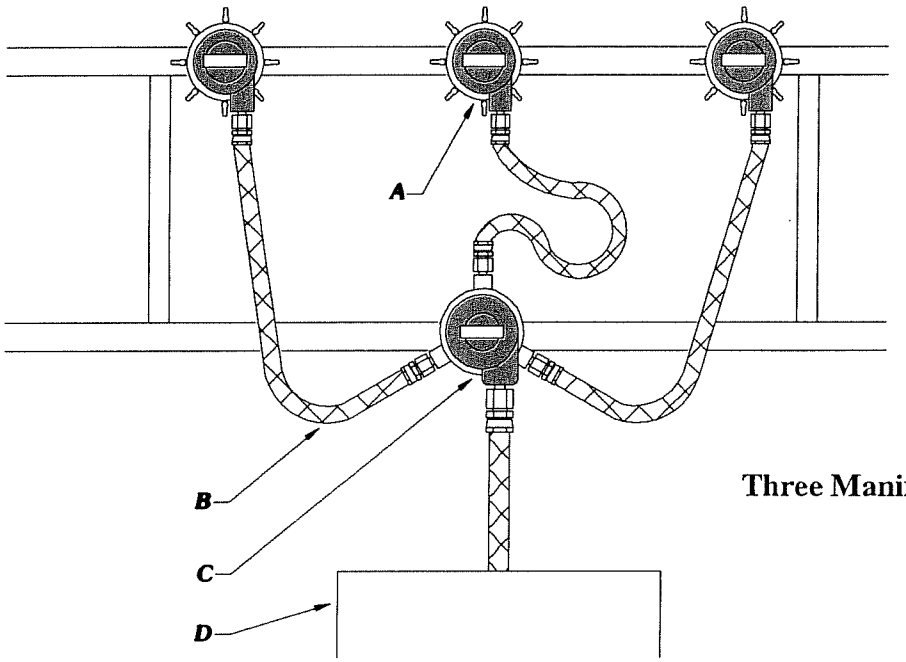
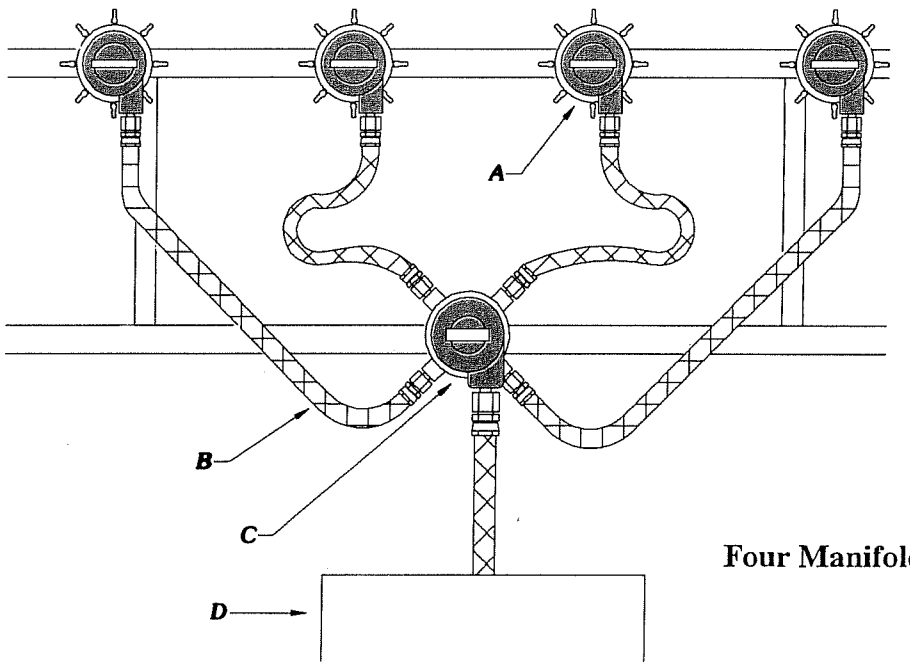


Three Manifold system



Four Manifold system

(A) A-MVD manifold
(B) 1″ reinforced 150 PSI eva hose
(C) A-SVD separator
(D) Meter

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CONTINENTAL
NH3 PRODUCTS

MVD INLET ORIFICE ACCELERATOR SELECTION CHART AND INSTALLATION INSTRUCTIONS

Congratulations and thank you very much for your purchase of our newly redesigned MVD manifold system. The most important change to the MVD has been the addition of the INLET ORIFICE ACCELERATOR BUSHING. This bushing has allowed us to eliminate the need of having to custom build each manifold to fit each application, so you may plug any number of outlets you wish. You now only have to choose between two 16 outlet manifold sizes, large or small, depending on your spacing and it will be capable of handling most if not all of your desired application rates with excellent results. The key to this is the INLET ORIFICE ACCELERATOR BUSHING. By installing the accelerator bushing in the inlet of the MVD at the lower ranges we "accelerate" the ammonia inside the manifold giving us excellent distribution at low and high rates. Below is a chart that will assist you in selecting the proper orifice for your application rate if needed.

First we need to determine which manifold you have. Locate the rate range stamp on the top side of the ring. It should be either **LG** or **SM**.

Secondly we need to determine your lbs N per outlet.
To determine your pounds of N per outlet use the following formula:

Tool bar width in feet X Speed X lbs. N per acre X .1212 = Total lbs N per hour.
Then taking your Total lbs N per hour and dividing it by your number of outlets will get you pounds or N per outlet. For example let's say you purchased an A-MVD-16A201 manifold and you have 37.5 ft. bar with 15 knives traveling at 6 MPH and applying 150 Lbs of N per acre. The formula would be used as follows:
37.5 ft bar X 6 mph X 150 lbs N X .1212 = 4090 lbs N per hour
Then take your lbs N per hour and divide it by your number of knives **4090 / 15 = 272 lbs N per outlet**

Once you have determined your lbs. of N per outlet find the orifice accelerator bushing that correlates with the desired range of N per outlet in the chart below

THIS CHART IS FOR 100 LB TANK PRESSURES
FOR 50 LB TANK PRESSURES REDUCE RATE RANGES BY 25 PERCENT.

Rate stamp	ORIFICE #1	ORIFICE #2	ORIFICE #3	NO ORIFICE NEEDED
SM	20 – 70	70 – 100	N/A	100 – 150
LG	N/A	N/A	130 – 250	250 – UP

Note: The orifices accelerator bushings are stamped on the back side with a number 1, 2, or 3

PLEASE SEE THE FOLLOWING PAGE FOR INSTALLATION INSTRUCTIONS

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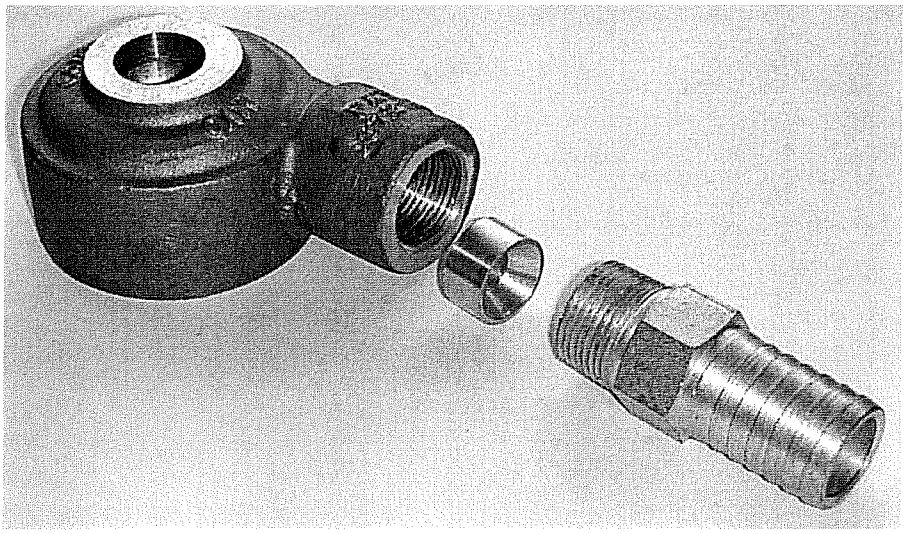
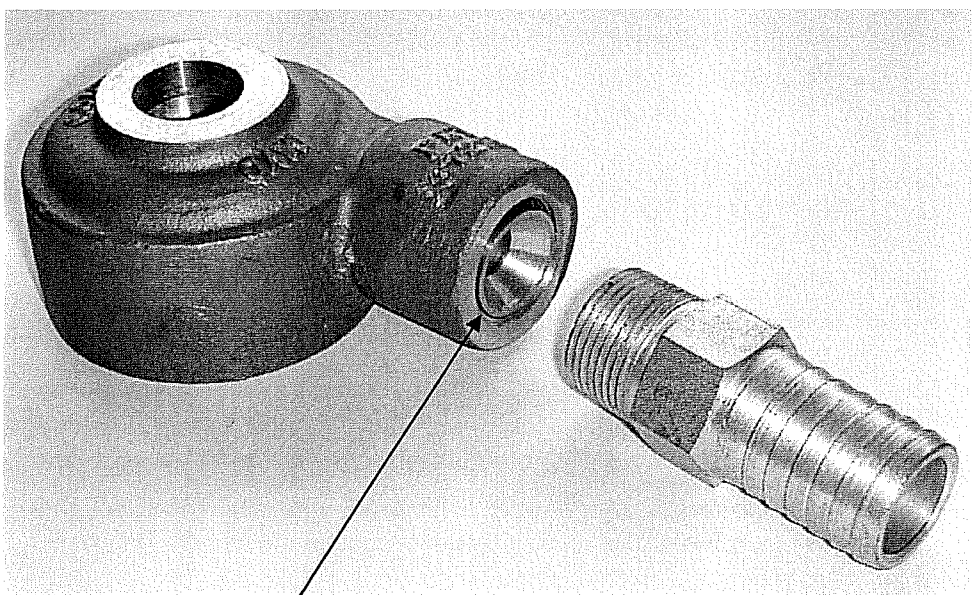
To install the orifice accelerator bushing you need to remove the inlet hose barb as shown in the photo below.



Then insert the bushing as shown in the photo below with the angle portion of the bushing facing the hose barb and replace the inlet hose barb and tighten.



Note direction of accelerator bushing

***NOTE* YOU MAY PLUG ANY NUMBER OF OUTLETS BY REMOVING THE HOSE BARB AND INSTALLING A 1/8" PIPE PLUG. WHEN PLUGGING ANY UNUSED OUTLETS PLEASE SPACE THEM AS EVENLY AS POSSIBLE.**

IF YOU HAVE ANY QUESTIONS PLEASE CONTACT US AT 800-537-5642

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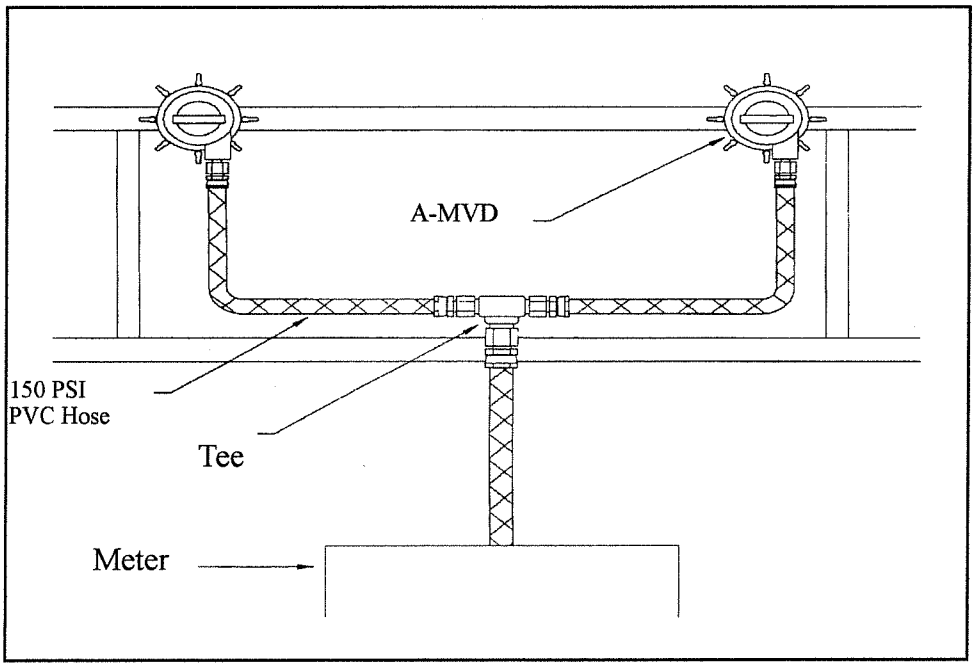
CONTINENTAL NH_3 PRODUCTS

A-MVD Manifold System

WHEN IS A TEE NOT A TEE?

A tee is not a tee when you plumb an A-MVD manifold system incorrectly!!! An Incorrectly plumbed tee will cause one manifold to get as much as 80% while the other will be starved to as little as 20%. Continental NH_3 Products specifically disclaims any express or implied warranty if the A-MVD system is plumbed incorrectly. To avoid such problems, simply follow the diagram below.



A-MVD System with two (2) manifolds and a tee.

See backside for important information and additional warranty information.

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QUESTIONS AND ANSWERS

QUESTION: My applicator system requires a regulating or shutoff device downstream of the meter. What should I do about hose connections?

ANSWER: When there is a shutoff or regulating device downstream of the meter, high pressure ammonia hose or schedule 80 piping must be used between the meter and the device. The ammonia hose must have a minimum working pressure of 350 PSI (1750 PSI burst rating) and be approved for ammonia service.

QUESTION: Can additives in the ammonia deteriorate the aluminum in these manifolds?

ANSWER: Yes! It has been our experience that additives, such as N-Serve, not only corrode aluminum but also leave crystal-like deposits which could eventually clog up the orifices.

To avoid problems, disassemble and thoroughly clean the manifolds at the end of each application season. Some people have had success in keeping the manifolds clean by soaking them in new or used motor oil.

APPLICATORS
APPLYING RATES AT
60 #N OR BELOW
SHOULD RUN AS FAST
AS POSSIBLE

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DISCLAIMER: Continental NH_3 cannot warranty any manifold that has failed due to being clogged up or corroded by additives in the ammonia.

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