

Gas Distribution Manifold *Installation Guide*

Fitting to the Megalodon CCR

The first decision you will need to make is what hoses you will need to run from and to the manifold. All 7 ports in the manifold are 3/8 UNF threads and are the standard thread found on most first stage regulators. Unused ports can be plugged with a standard first stage regulator plug.

The typical installation will require a single supply hose from the on-board Diluent tank first stage to supply gas to the manifold for distribution the outlets. The standard configuration has 2 hoses to supply the ADV and the wing. The outlets will most likely consist of two or more of the following

- Full Face Mask Second Stage Regulator
- Wing Inflator
- ADV
- BOV
- Dry Suit Inflator
- Off-Board Gas inlet

The inlet hose can either be routed through holes in the middle of the wing and brought through it to the front and then up between the wing and the backplate and slightly above the top of the backplate or it can be routed at the rear of the wing if there are no holes to thread the hoses through. Either way works well but the first method is probably the neatest and will not interfere with the wing when it is inflated.

Be sure if you are going to route the inlet hose via the rear of the wing to allow sufficient hose length to clear the wing when inflated and not restrict the wing as it will pull on the hoses and limit the wing volume.

The hose you use as the supply hose should be of the larger diameter hose such as those used to supply a second stage breathing regulator. This will allow sufficient gas flow to the BOV or Full Face Mask second stage regulator. The usual method is to run the hose to the Diluent first stage regulator and route it via whichever path best suits your installation and wing. Then cut the end off the hose, which would normally connect the second stage regulator, at the correct length to mount the manifold in a position slightly above the backplate or slightly above and forward of the inflated wing. Remember to allow for wing inflation if you have decided to route the hose via the back of the wing.



Now the manifold is sitting in position you need to decide the orientation of the hoses and in what order you intend to run them to the various outlets. This is up to the individual and I personally have changed my set up on more than one occasion so think carefully before you start as it will save you shortening hoses you may not be able to use again later when you change your mind!

Attach the hose to your ADV and run it over to the manifold. Screw a reusable hose end into the manifold in the port you intend to use for that hose. It is best when measuring your hoses to put the Meg on the diver, adjust the harness and have a helper lay the hose where it will sit and mark the hose where you will cut it making allowance for the length of the fitting. Be careful to allow a little slack for later adjustment or repositioning the hose. Cut the hose at the mark and also cut a small chamfer on the inner hole in the hose to guide the threaded nipple of the re-usable fitting. Apply a small amount of O2 safe grease to the inside of the hose and the threads on the fitting and screw it all together making sure there is no deformity of the hose after the fitting is securely seated.

Fit the hose and repeat the process for each of the other hoses. It is normal practice to use a slightly smaller diameter hose to supply gas to the wing and dry suit inflator. Be careful that some of the reusable ends are better suited to the larger and smaller diameter hoses and will not fit properly if not correctly matched to the hose.

If you are using a Drager FFM you will need to use the RH end port to supply breathing gas to the APEKS second stage regulator which is fitted to the right hand P'Port in the FFM and use a large diameter hose.

The offboard gas inlet is usually fitted to the far right hand front port on the manifold but can be fitted to any spare port or the LH end port with a 90° swivel elbow if necessary. I have found the best method of attaching the hose to the offboard tank is with 2 shorter hoses fitted with M&J quick disconnects and a check valve and use the large diameter hose here too. If fitted as per the picture this system will allow you to disconnect the hoses whilst both the diluent and offboard tank valves are open. This can be particularly helpful whilst passing the offboard tank back onto the boat after the dive or exchanging tanks during the dive if a buddy requires the use of your gas.



Preferably use 2 hoses with the Quick Disconnects somewhere near the centre. The reasoning behind this is, that it is a lot easier to see the hose if you can bring the connectors into your field of view in order to connect or disconnect them. Having the QD down on the offboard tank first stage is a real pain and extremely difficult to line up when attaching or disconnecting the hose with a limited view of them.

Ultimately the choice is yours as is the choice of connector but I have used this set-up without any trouble.

I have found the optimum length for the manifold inlet hose to be around 66cm and the offboard hose to be around 36cm. Check the orientation of the fittings and the direction of flow on the check valve as it will not work the wrong way around!!

Once you have the hoses made to size and fitted to the manifold use small slices of bicycle inner tube or similar to secure the BOV and the wing inflator hoses and tidy them up. It will also make them less likely to snag when in a confined space.

I hope you find this guide helpful and appreciate any constructive input.

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Lance Robb



Hoses, FFM second stage inlet hose on left. SPG. ADV supply. Manifold inlet hose from stage tank. Wing inflator hose



M&J Quick Disconnect and Check Valve direction of flow is L to R toward the manifold



Stage Tank 1st Stage and hoses. Yellow hose to second stage reg. Black hose with DIN connector for drysuit inflation, MGBP operation or DSMB inflation etc



Reusable hose ends, from Left.

AP Diving, Ideal for larger dia breathing hoses. Unknown brand, similar to the M&J fitting. M&J 3/8 unf and 9/16 unf female. Ideal for smaller dia hoses and some larger dia hoses.