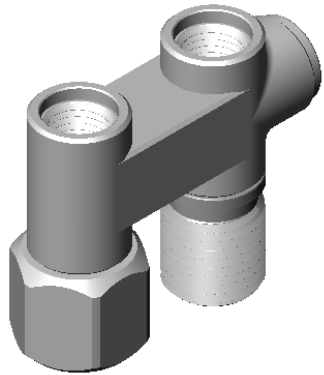


DIVESOFT'S OFF-BOARD MANIFOLD -INTRODUCTION-



Originally conceptualized to address challenges with locating and operating the sliding isolation valve on the Liberty Sidemount CCR's Automatic Diluent Valve (ADV), this multi-use manifold adapter fitting (Part #8440) also allows the diver to reconfigure their rebreather's plumbing for other needs.

It will allow the diver to reorient the sliding isolation valve for both Liberty Sidemount and Backmount improving access, and the additional ports allows streamlining of the hoses to the Diluent Manual Addition Valve (MAV) and/or Bail Out Valve (BOV).

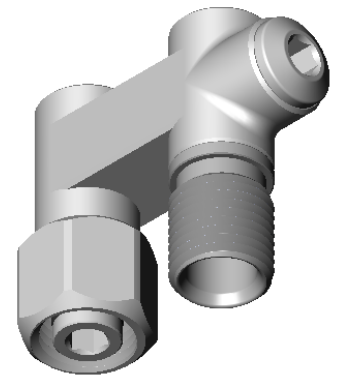
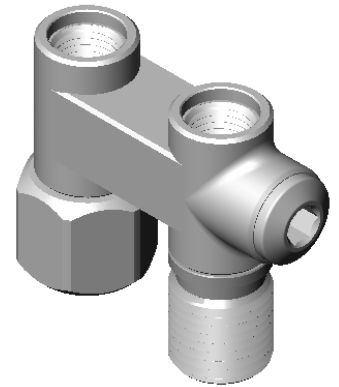
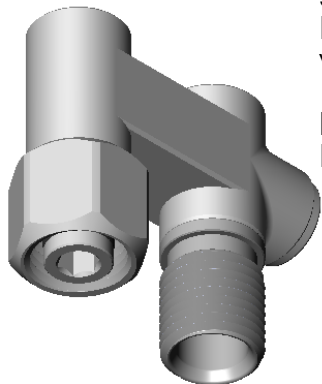
Those divers wishing to add an off-board quick disconnect fitting can easily do so via any available port.

All the ports are 3/8-24 female threaded, so any unused ports are easily plugged, and the 9/16-18 female swivel can be moved from its stock position if desired with a 5mm hex key.

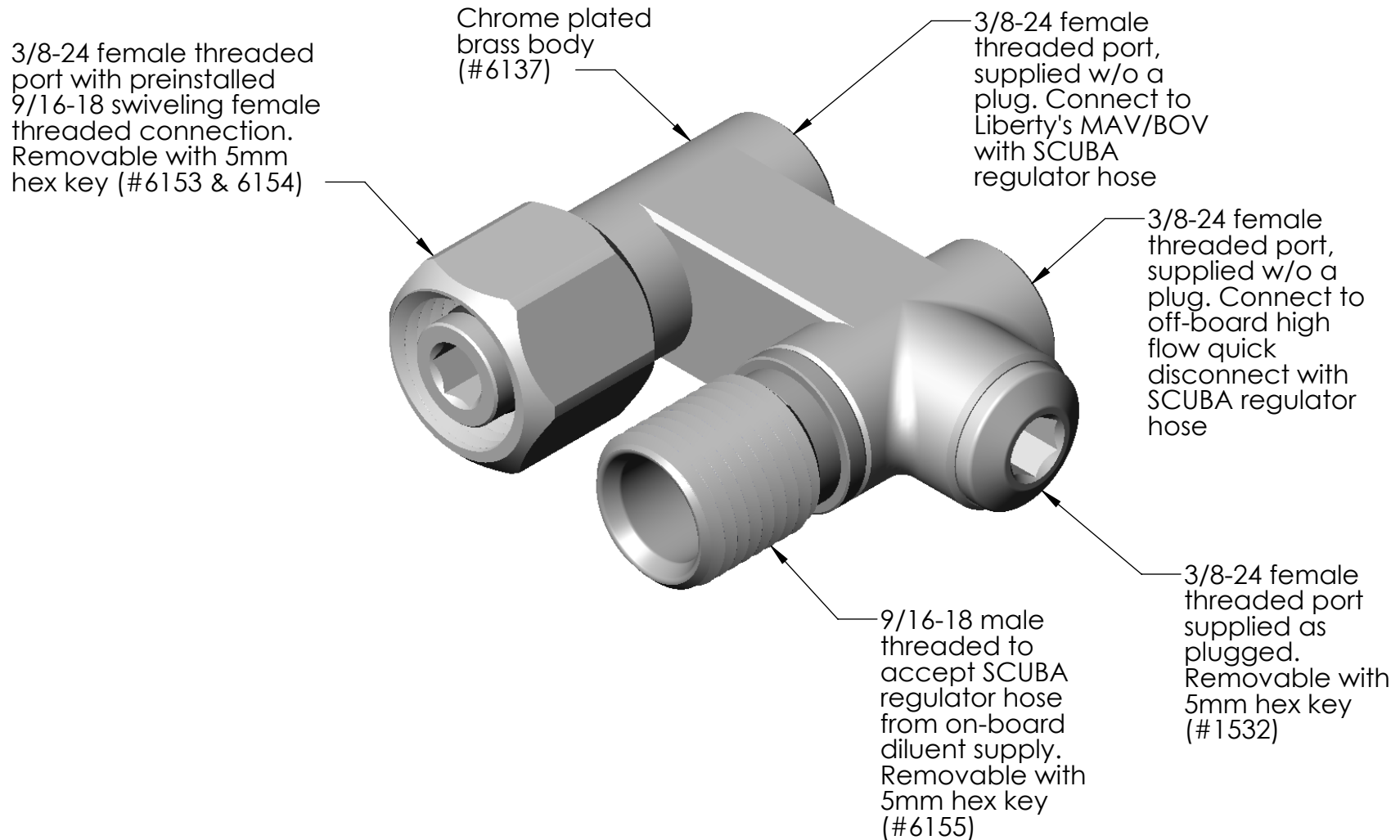
Due to the nature of customizing a rebreather there are too many possibilities to list and changes will require the user to determine what hoses and configurations are required for their use.

We have found a standard "Low Pressure" or "LP" Regulator hose of approximately 508mm / 20in to be the appropriate length when using this on the Liberty Sidemount with the sliding isolation valve for connection to the DIL MAV. For users without the sliding isolation valve on their sidemount units a 560mm / 22in hose works better and a 380mm / 15in hose is suggested for Liberty Backmount. The age and stretch of your corrugated hoses will impact what length hose you select as well.

If using with an off-board quick connector a 305mm/12in hose, and your High Flow QD fitting of choice, is recommended.



DIVESOFT'S OFF-BOARD MANIFOLD -ANATOMY-



DIVESOFT'S OFF-BOARD MANIFOLD -INSTRUCTIONS-

Step 1. Detach the Automatic Diluent Valve's (ADV's) supply hose (C), if not already detached, from the Sliding Isolation Valve (B) and rotate the ADV's Sliding Isolation Valve (B) approximately 180 degrees from it's typical position.

Step 2. Remove the Manual Addition Valve (MAV) supply hose or the Bail Out Valve (BOV) supply hose, not shown, from the onboard Diluent first stage regulator & plug the now open port.

Step 3. Attach the Off-Board Manifold (A) swiveling 9/16-18 threaded female fitting onto the ADV's Sliding Isolation Valve (B).

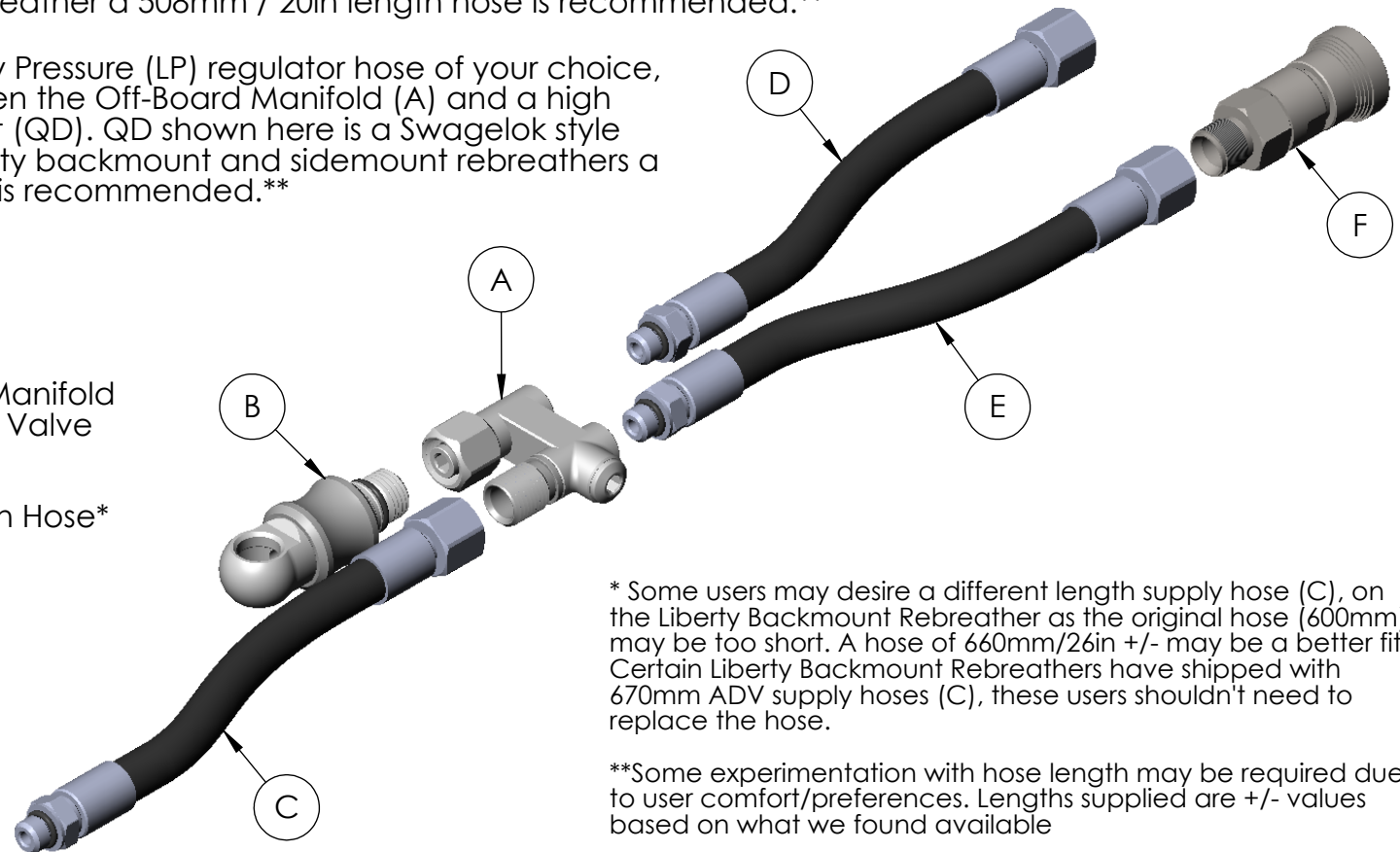
Step 4. Reattach the ADV's Supply Hose (C) to the Off-Board Manifold (A) 9/16-18 male thread.*

Step 5. Install a SCUBA Low Pressure (LP) regulator hose, represented as "D", between the Off-Board Manifold (A) and the MAV or BOV not shown. For the Liberty backmounted rebreather a 380mm / 15in length hose is recommended. For the Liberty sidemount rebreather a 508mm / 20in length hose is recommended.**

Step 6. Install a SCUBA Low Pressure (LP) regulator hose of your choice, represented as "E", between the Off-Board Manifold (A) and a high flow rate quick disconnect (QD). QD shown here is a Swagelok style QC6 (F). For both the Liberty backmount and sidemount rebreathers a 305mm / 12in length hose is recommended.**

- A- Divesoft's Off-Board Manifold
- B- ADV's Sliding Isolation Valve
- C- ADV Supply Hose
- D- MAV Supply Hose*
- E- Off-board Connection Hose*
- F- Quick Disconnect*

*Supplied by the user



* Some users may desire a different length supply hose (C), on the Liberty Backmount Rebreather as the original hose (600mm) may be too short. A hose of 660mm/26in +/- may be a better fit. Certain Liberty Backmount Rebreathers have shipped with 670mm ADV supply hoses (C), these users shouldn't need to replace the hose.

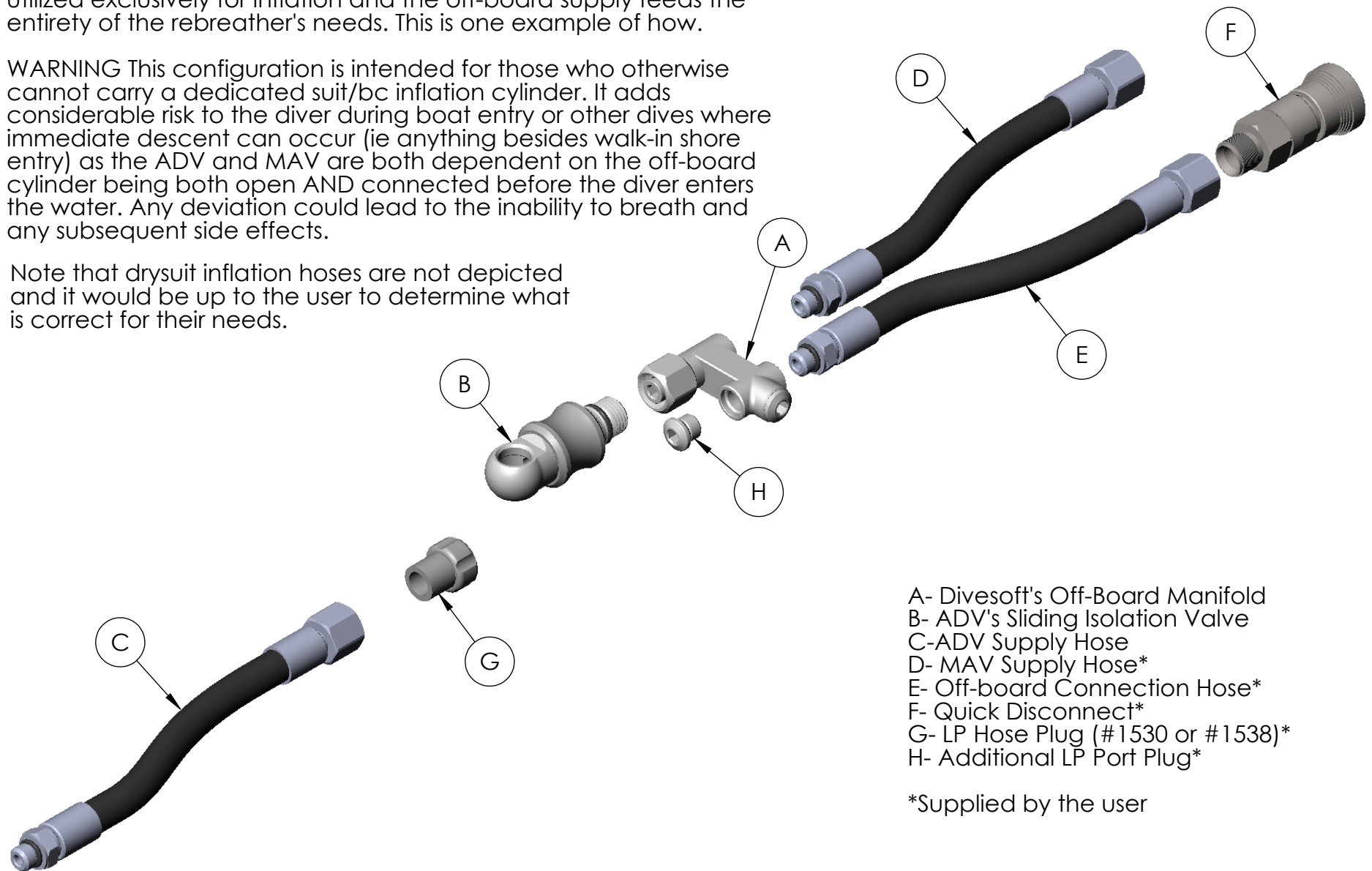
**Some experimentation with hose length may be required due to user comfort/preferences. Lengths supplied are +/- values based on what we found available

DIVESOFT'S OFF-BOARD MANIFOLD -ALTERNATE USES-

Divers utilizing the Off-Board Manifold as intended can easily adjust their configuration for trimix dives where the on-board cylinder is utilized exclusively for inflation and the off-board supply feeds the entirety of the rebreather's needs. This is one example of how.

WARNING This configuration is intended for those who otherwise cannot carry a dedicated suit/bc inflation cylinder. It adds considerable risk to the diver during boat entry or other dives where immediate descent can occur (ie anything besides walk-in shore entry) as the ADV and MAV are both dependent on the off-board cylinder being both open AND connected before the diver enters the water. Any deviation could lead to the inability to breath and any subsequent side effects.

Note that drysuit inflation hoses are not depicted and it would be up to the user to determine what is correct for their needs.



DIVESOFT'S OFF-BOARD MANIFOLD -ALTERNATE USES-

One potential option we found in testing was to use the Off-Board Manifold instead as a splitter for the on-board hoses on Liberty Sidemount to simplify assembly. Simply reconfigure the Off-Board Manifold with a 5mm hex key as shown below. Option "1" or "2" may be better depending on if you have the Axial or Banjo connection, among other factors. Results may vary.

A- Divesoft's Off-Board Manifold
B- Solenoid Supply Hose*
C-MAV Supply Hose*
D-MAV**

*A different length may be required, supplied by the user

**Using a quick disconnect of any type on a solenoid feed is NOT recommended. The risk of debris or salt water entering the lines is drastically increased with these configurations which could inhibit the function of the solenoids or worse.



DIVESOFT'S OFF-BOARD MANIFOLD -WARNINGS & PRECAUTIONS-

It should go without saying that this fitting allows you, the user, to replumb your rebreather from it's original intended, engineered, & tested design. Each and every configuration should be thoroughly planned and if in doubt you should contact your instructor and/or the manufacturer of your rebreather for advice. The use of any plumbing fittings and your choice of hoses, including those originally supplied with your rebreather, will add significant reductions in the potential performance of the regulators.

Use of any quick disconnect system further increases the potential ingress of water/debris into the rebreather's plumbing as well as contributing numerous additional points of failure to the overall system. At the very least this could lead to more frequent service intervals or damaged/corroded components.

In addition, there are important training procedures pertaining to using off-board gas supplies to supply your rebreather. These are including but not limited to ensuring the appropriate gas is utilized for any given depth. Specific valve shut-down procedures may be required depending on the configurations and the gas mixes involved to ensure the correct mix is being utilized and the mixing of gases isn't taking place within the plumbing.

In the event that an on-board cylinder is completely empty and the cylinder valve remains open gas from the off-board cylinder can and will begin to flow into the on-board cylinder up to the intermediate pressure setting of the off-board first stage, typically +/-10bar.

*Configured as in the instructions on page 3 but potentially in other configurations.

Ultimately by using this device you are accepting the risks & responsibility associated with modifying your rebreather, or other life support equipment, from it's original intended and tested configuration. This component's potential benefits need to outweigh the potential & inevitable negative side effects it may present for your specific use case or you shouldn't use it.