1710 NW Independence HWY
Albany, OR 97321
541-990-2485

CO2 Cooling System

Engines with exhaust valves together in the middle of the head are prone to blowing head gaskets in the center due to the tremendous hot spot that develops there. It's standard practice to run a dry block with methanol and except for this one problem on some motors, cooling is not usually an issue. This system allows you put the cooling exactly where it's needed to cure the hot spot problem and not be forced to run water in the block or heads just to solve it.

This system only works with heads incorporating water jackets. A single hole must be drilled in the center of the outside of the head, just BELOW the exhaust ports and into the water jacket.. Don't drill into the exhaust ports! We only want to be inside the water jacket. The goal is to aim the stream of cold CO2 gas right at the back of the center two exhaust ports where they come together and meet the inside floor of the deck surface. This is the hot spot! ¼" NPT holes should be added and the 90 degree "One-Touch" fittings added there.

Lines are then run together and plugged into the "Y" branch fitting supplied. From there, continue a single line to the output of the supplied 12VDC solenoid valve. Finally, a line will connect the input of the electric valve to the regulator on the bottle. A toggle switch (not supplied) should be employed to turn the cooling system on/off as desired.

A good place to start is a regulator output setting of 100 PSI. One of the included bottles (supplied EMPTY) filled with 1 ½ lbs. of CO2 liquid will be adequate for a start-up, burn-out, backup, ¼ mile pass and shut-down. When you come to a quiet stop at the top end return road, you should still hear gas escaping into the heads. If you don't, put more liquid CO2 into the bottles until you do. Don't use a bottle twice! There isn't enough to do two passes per bottle. That's why we supply three bottles…simply swap bottles between rounds, turn the bottle ON before heading to the lanes, remember to turn the switch ON at the starting line and you are golden.

Please find a You-Tube video online demonstrating how to safely fill your bottles! A "Dip-tube/Siphon" type bottle is required to properly fill these bottles using the supplied filling station. These can be purchased or rented from a welding/gas supply shop. Siphon tube type tanks are usually painted red or orange on top to signify that LIQUID will be expelled when you open them due to the dip-tube inside. 20lb or 50lb bottles are available.

CAUTION: Liquid CO2 is COLD and can cause frost-bite injuries. Gloves and eye protection are suggested. Purging bottles is LOUD. Wearing hearing protection!

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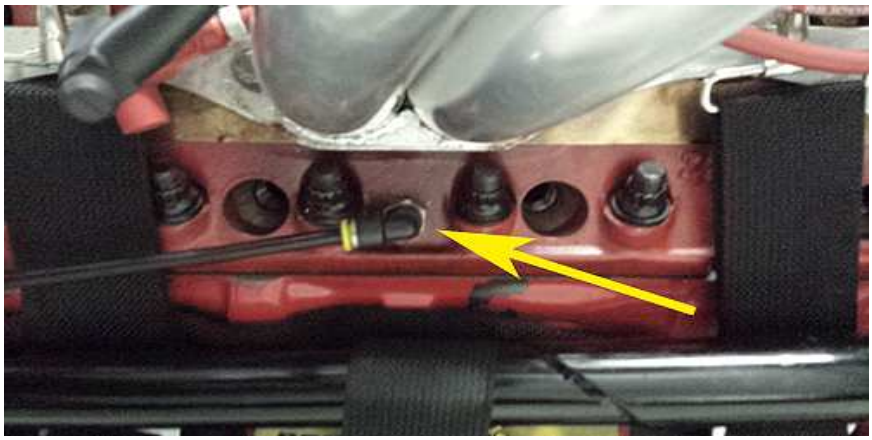
The only safe way to fill a bottle is to weigh it before and during filling. You can only weigh LIQUID, not gas. Hang the bottle from the included scale, put roughly ½ lb. of liquid in it, then release/purge. This will CHILL the bottle so that the liquid won't turn to gas during filling. Once purged, TARE the scale to zero, add 1.5 lbs. of CO2 and close the bottle valve. The bottle must warm up to regular temp before it can be used.

Overfilled bottles can be dangerous! A 2.5 lb. bottle filled to 2.5 lbs. and left in a hot race car trailer can rupture the burst disk and/or explode! Number your bottles and always know how much is in them. Note the empty weight of each bottle is stamped into them around the top.

Here's a great training video for learning how to fill CO2 bottles safely:

http://www.youtube.com/watch?v=pRFK-mcOd3I



Driver's side of engine. ¼" NPT threaded hole for CO2 input into water jacket at hot-spot.