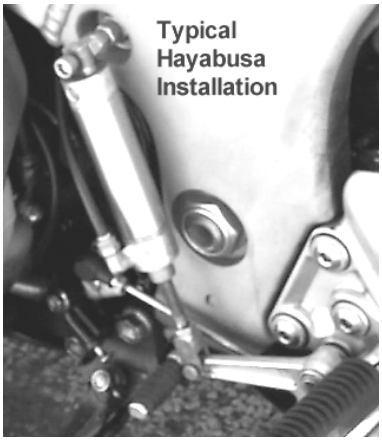
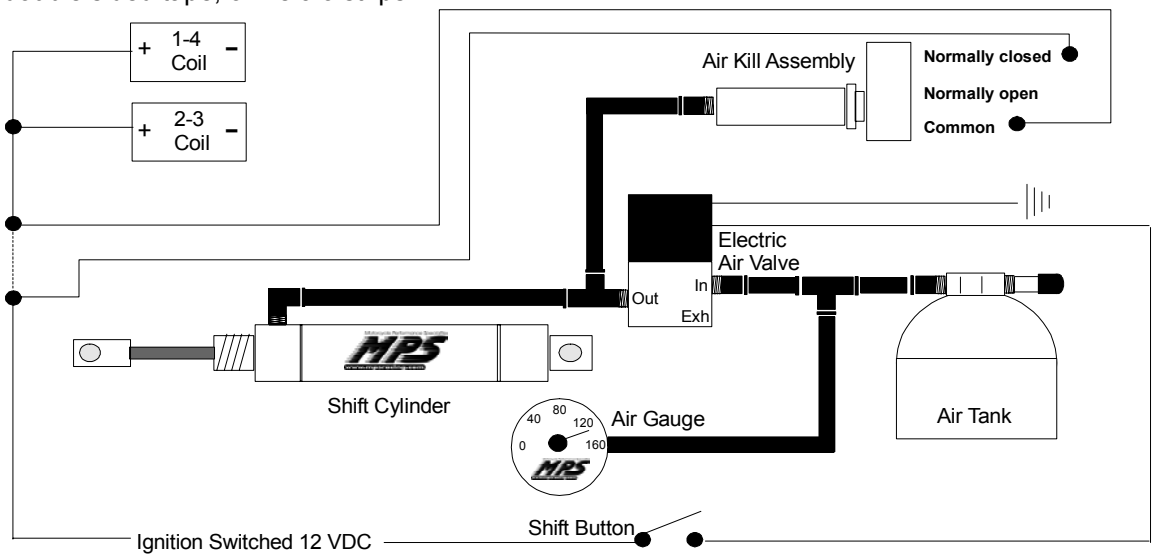
MPS Air Kill Air Shifter Installation Instructions

The first thing to do is remove the seat, fuel tank, and possibly the front fairing if equipped. You will need plenty of room to work.



Mount the Shift Cylinder – There are so many ways to mount an air shift cylinder we cannot cover them all. Basically you want the cylinder mounted so it will pivot freely at the pivot mount without binding. The shift cylinder clevis should be connected to the shifter itself or a bracket attached to the shifter with the provided pin. The clevis should pivot freely at the shift lever. At rest the shift cylinder should be extended to ½ of its total travel. This allows the shift lever to travel both up and down. The shift cylinder should be as close to 90 degrees with the shift lever as possible. The shift cylinder clevis should be attached 2 to 3 inches from the pivot point of the shift lever. Make sure the shift cylinder is in the same vertical plane as the shift lever. The photo should give you a pretty good idea of how things need to be. Remember nothing should bind and the shifter should go through its normal travel just like without the shift cylinder connected. There are some model specific bracket kits available. Check out our web site for available models.

Mount Air Bottle, Air Gauge, Air Kill, & Electric Air Valve – Every brand and model bike is different, so you will need to fabricate your own bottle mounting. Make sure they are fastened securely. The Air Kill & Electric Air Valve can be mounted anywhere using zip ties, double sided tape, or Velcro strips.



Plumbing – Cut one end of the provided ¼" O.D. poly line square with a razor blade. Push the line as far into the fitting as it will go. Pull out to lock the line in place. To remove the line from the fitting, push down on the retaining ring on the fitting and the line. While holding down the retaining ring pull the line out of the fitting. The first line is the supply line and has pressure equal to that of the air tank at all times. It runs from the air tank outlet to the "in" port of the electric air valve. The "exhaust" port on the electric air valve must remain free. The second line is the work line and only has pressure during the shift when the air valve is

open. It runs from the electric air valve "out" port to the shift cylinder. To determine which air cylinder port to use shift the non-running bike from 1st to 2nd gear noting which direction the shift cylinder moved. If it pulled, put the fitting in the port nearest the cylinder clevis. If it pushed, put the fitting in the port closest to the pivot mount. Make sure nothing is in the port that is not used. It must remain free and unobstructed. The Air Kill Assembly air line is connected to the outlet side of the air valve along with the shift cylinder air line. The air gauge is connected via a tee that is placed in the supply air line. You can install the gauge anywhere and run the line from the tee to the gauge. Careful to route the air lines away from high temperatures. Avoid sharp bends to prevent kinks and pinches in the air lines. The air gauge is connected via a tee that is placed in the supply air line. You can install the gauge anywhere and run the line from the tee to the gauge.

Coil Connections - The Air kill is designed to go between the power side of the coil primary leads breaking the power to the coils to kill the motor during shifts. You must cut the power leads that feed power to the coils and wire them to the normally closed terminal of the air kill. Then wire the coils to the common terminal of the air kill.

Electric Air Valve – The Electric Air Valve has two wires. These wires are interchangeable. One needs a ground. The other needs an ignition switched 12 volt power when the shift button is depressed.

Setting Kill Time – Kill time is the amount of time the engine stays dead between gears during a shift. Generally the shorter the kill time the quicker the shift. The proper kill time will vary from bike to bike. Its generally better to start with to much kill time and work your way quicker. The Kill Time is adjusted by drilling the relief hole in the piston inside the air kill assembly. The bigger the hole the quicker the kill time. The hole is currently .028". To adjust for quicker kill time go .001" at a time and try it before drilling any bigger. Too big a hole will cause to quick a kill time and a no shift situation.

Testing The System – With the shift cylinder disconnected and the shifter aired up to 135 psi. We have onboard compressor kits available to conveniently fill the air tank on the fly or high pressure CO2 systems that can shift hundreds of times without refilling. Start the bike. Bring the rpm up to around 3000 rpm and push the shift button. You should hear a slight hesitation in the engine each time you depress the shift button. If you don't hear a hesitation your kill is not correctly wired. Also, the shift cylinder shaft should snap into position. With these preliminary tests done you can put the bike back together and go for a ride! Shift it at lower rpms first to make sure it is in fact operating properly. If you have any more questions we have a Frequently Asked Questions page at our web site as well as the telephone tech support. Thank you for your purchase of this MPS product. All products sold by MPS are for use at closed course competition events and not for use on public streets or highways.