

MPS Auto Shift With Engine Kill 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.

Control Box Mounting – Any spot you can find room away from extreme heat. Try to isolate it from vibration as much as possible. Use the double-sided tape to stick the box to a flat surface.

Electrical Connections – You will need to locate and test a few things on your bike before you start wiring: a good ground, an

ignition switched 12-volt power source, and the ignition coils or tach lead.

Control Box Wiring –Most four cylinder motorcycles use either a individual firing system or a waste spark system. Waste spark is by far the most common. All four-cylinder bikes with only two coils use a waste spark system. MSD Ignitions and Dyna 4000 combine signals from both 1-4 and 2-3 pickup. These Ignitions use the standard unit and will have no outside identifiers and the P/N 1-0238. Bikes with a waste spark systems and no MSD or Dyna 4000 (Dyna S Only) will need the 360 calibrated unit. Harley Davidsons will also use the 360 calibrated model. The 360 calibrated Auto Shifts are identified by the 360 engraved into the box below the wire lead exit. The P/N for these boxes has the 360 as a suffix. (P/N 1-0238-360) The Auto Shift With Kill will not work properly with 4 coil sport bikes. These bikes require a Sport Bike Auto Shift P/N 1-0299 or P/N 1-0299-360.

Red Power & Black Ground Leads – The red wire is connected to a ignition switched 12 volt power source. Do not attach direct to battery! The black wire is connected to a good ground. Preferably, the battery negative post.

White Trigger Lead – The trigger lead senses engine rpm. Refer to the table below for trigger lead connection.

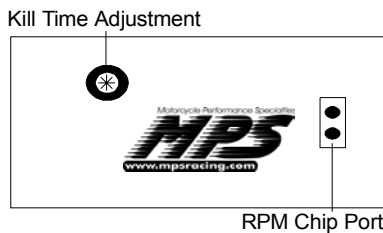
MSD MC-1, MC-2, MC-3, & MC-4	Tach Terminal (male spade on side of box)
Dyna Pro 4000 & Super Pro 4000	Tach Output Lead (green)
Four Cylinder Dyna S Only (360 calibration)	Negative Side Of 1-4 Coil
Stock Four Cylinder (360 calibration)	Negative Side Of 1-4 Coil
Stock Harley Davidson (360 calibration)	Negative Side Of Coil
Single Fire Harley Davidson (360 calibration)	Tach Output Lead Of Ignition

Electric Air Valve & Shift Button – Find the two gray covered two conductor cables coming from the box. One has two bands of heat shrink to identify it as the shift button cable. The plain gray is the air valve cable. Air Valve - Connect the two leads on the air valve to the two wire leads in the plain gray covered air valve cable. It does not matter which leads are connected to which. Shift Button - Connect the common lead on the shift button (red on mps buttons) to either lead in the heat shrink identified gray covered shift button cable. Connect the normally open (green on mps buttons) to the remaining lead in the heat shrink identified gray covered shift button cable. You can also operate the unit by grounding the red lead in the heat shrink identified gray covered cable. This may be helpful to those using the horn button as the shift button.

Brown Kill Leads – The two brown leads kill the engine. Refer to the table below for placement of the two brown kill leads.

Phone: 321.972.8282 – Fax: 321.972.5123
380 Orange Lane – Casselberry, Florida 32707

MSD MC-1, MC-2, MC-3, & MC-4	MSD Brown Kill Wire
	Not Used
Dyna Pro 4000 & Super Pro 4000	Dyna Kill Connector
	Dyna Kill Connector
Four Cylinder Dyna S Only (360 calibration)	1-4 Negative Coil Terminal
	2-3 Negative Coil Terminal
Stock Four Cylinder (360 calibration)	1-4 Negative Coil Terminal
	2-3 Negative Coil Terminal
Stock Harley Davidson (360 calibration)	Coil Negative Terminal
	Not Used
Single Fire Harley Davidson (360 calibration)	Front Coil Negative Terminal
	Rear Coil Negative Terminal



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 too much kill time and work your way quicker. We generally start at around 75 ms. of kill time. The Kill Time is adjusted via a small potentiometer accessed through the grommet on the front of the unit. Using a small screwdriver Carefully turn the pot clockwise to the

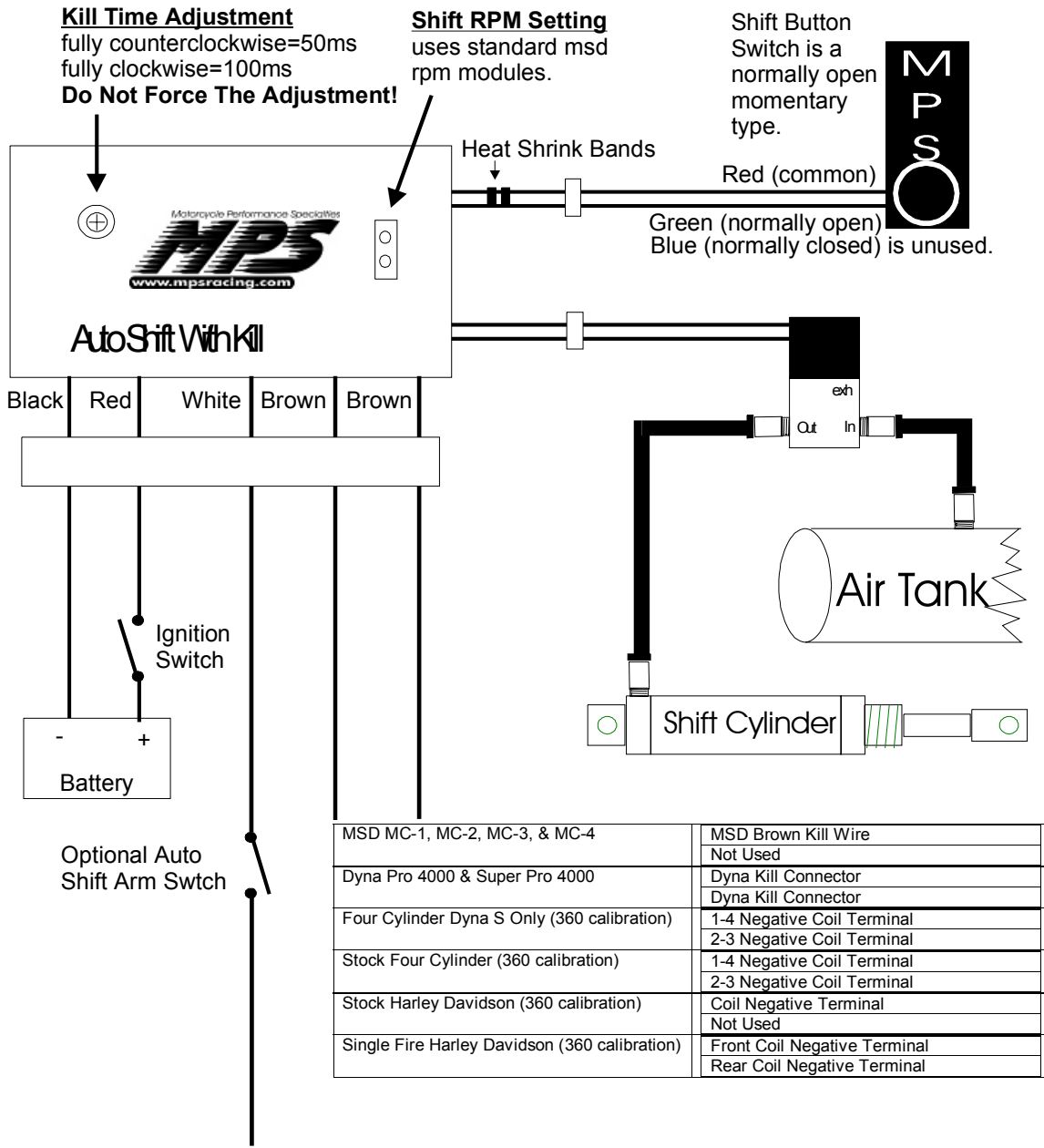
end of its travel. This is 100 ms of kill time. Now, carefully turn the pot screw counterclockwise to the end of its travel. This is 50 ms of kill time. Halfway in between is 75 ms. The pot only goes from 7 o'clock to 5 o'clock so don't force it, they break easily!

Setting Shift Point – The shift point is set using standard MSD RPM Modules or "Chips". The chips simply push into the RPM Chip Port on the Auto Shift With Engine Kill. These are not included, but can be purchased from MPS. They are sold 5 to a package in full 1000 RPM ranges. For example a 10,000 series would include: 10,000, 10,200, 10,400, 10,600, and 10,800 chips.

Testing The System – With no air in the system 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 and the horn sounds the arm switch is in the horn position. If you hear no hesitation the brown wires are probably not hooked up correctly. Once you establish that you have a engine kill when pushing the shift button remove the clevis pin from the shift cylinder and extend the shaft to the end of its travel. Air up the shifter to 120 psi. We also 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. With the engine off and the key on push the shift button. 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. Once you have it operating correctly with the button you can try an auto shifted run. To disarm the auto shift portion remove the rpm chip. The button can be used at any time to short shift the bike.

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.

Wire Diagram For MPS Auto Shift With Built In Kill



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