

Dash Install

I started the project by getting the following items, the one listed is from J&P Cycle. Comes in a kit, you can buy this stuff separately, because you won't need most of the stuff in the kit. But for the cost difference, the kits makes more sense, you can always use extra screws and bolts etc... Not to mention the kits comes complete with all the lights pre-wired, this will come in handy later in the installed, but basically you only need the base, key ignition and the dash you will be fabricating everything else. You will also need a tank bib or make a plate to cover the tank sides where the new dash doesn't cover and have it chromed, bib is much easier. Norm from the V Star forum, one off tank bibs, here is thread of his work, he does very good work and makes one off bibs and other leather products, custom made to your specs. Or the last option, which is what I did, run the 3/4" auto trim down the sides of the dash, coupled with a Harley bib below.

<http://forums.delphiforums.com/yamaha1100/messages?msg=28812.1>

Norm's web Site

<http://www.normscustom.com/>



<http://www.jpccycles.com/ProductDetail.aspx?PID=7300045&source=07harley>

<http://www.jpccycles.com/ProductDetail.aspx?PID=5600010&source=07harley>

The speedo I got was an AutoMeter combination Speed and Tach. Fully electric, and AutoMeter gauges are programmable, and will work with our sensors. This one is from J&P Cycle, I actually got mine from Ebay about \$50 cheaper.

<http://www.jpccycles.com/ProductDetail.aspx?PID=730-648&source=07harley>



Materials - 1/8 x 1" Aluminum bar stock

1/8 x 2" Aluminum bar stock

6 foot of 3/4" wire loom, split cable tubing

4 pin quick connects, Radio Shack models male 274-224, female 274-234

9 pin quick connects, Radio Shack models male 274-229, female 274-239

12 pin quick connects, Radio Shack models male 274-232, female 274-242

Modifying the dash - First thing you need to do is mod the dash to follow the curves of the tank better. Basically you just need to measure about a quarter inch in on the front (towards front of bike) and make a line to the apex of the curve. Illustrated in the picture, I used a standard hack saw, it cuts pretty easy, it is just pot metal. I laid it on its side on my bench with a piece of carpet underneath, I didn't want to clamp it in anyway, to prevent marring. You don't have to worry about the cutting, it will be covered by a rubber strip, supplied in the kit. This picture shows the dash already cut, the paper and line show where the dash used to be. You'll need to do this to both sides.



**Tip: use some tape to cover the rubber boot for the lights, this will keep any metal shavings from getting in the lens area for the idiot lights. Otherwise, you will be doing like I did and taking it apart to clean it out...lol*

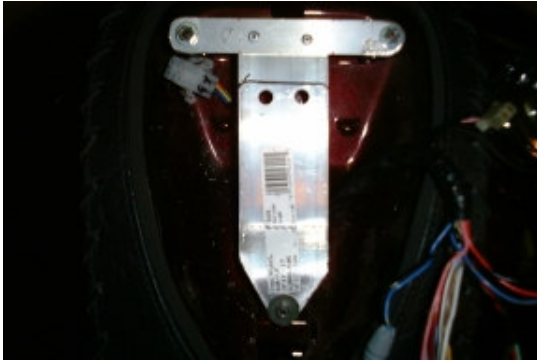
Mounting Bracket - Next step is to make a mounting bracket for the new dash. The first thing is to remove the old dash, speedometer and old bracket. When you remove speedometer and disconnect the wires, it is a good idea to either label the wires or jot down what each wire is on a diagram, you will need that later.

You will find three tabs the old speedometer was attached too. Take the top two and bend them in a little (towards the center of the tank), then bend the post part of the tab, back upright. You will need to do this to clear the inside of the new dash (needs to be far enough to clear, with nuts, and the rubber spacer). Then using 1/8 inch thick by 1 inch aluminum bar cut to length and drill a small hole in each end, to span the top two supports. Place the new bar onto the posts. Pull the rubber from the old supports, place the rubber then a small washer onto the post. (You need the washer so the rubber extends slightly above the shoulder of the supports), you can use the old nuts. Then take a 1/8 inch by two inch aluminum bar cut to length to go from the crossbar you just installed to the bottom post, drill a hole in one end, you will need to put a slight "S" bend in this bar starting from the lower end.



Go about one inch for you first bend, to match the lower post angle, then another inch and back the other way to match the angle of the crossbar already mounted, this bar should go underneath the crossbar. Again use the same procedure you used for the top post with washer and rubber, use the nut and tighten down. If the pieces don't touch, you need to do some tweaking, to get them matched up. Once you do, you will have a "T" support, drill two small hole at the top of the "T" and rivet together.

Now place you base plate and new dash onto the tank, without the speedo, so you can have access to the inside. Mark for the two support hole for the base plate (1/4 inch bolts). Should sit flush onto the two inch bar. These picture show the holes already drilled and bolted. But it is best to put the base plate and dash together to determine the correct location for the bolt holes.

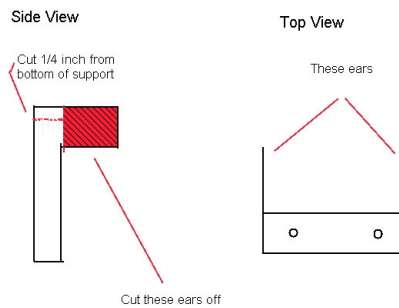


**Tip: Make the holes just a slight bit bigger then needed to allow some adjustment when installing. You can also make some adjustment by grabbing the base plate and bending slightly to adjust angle front to back.*

***Note: To mount the dash to the base plate, you use the open ended (no head) bolt with a nut on both sides of the plate. You need to adjust the bolt in/out until enough to put an acorn nut with dash on can be put on to it.*

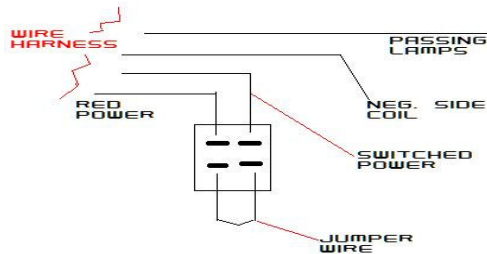


The other mod required is for the support bracket that comes with the speedometer. Since this speedo is a drop in as opposed to mounting to the base plate alla old Harley speedo. We need to mod this bracket a little. First you need to cut off the ears on the bracket to allow it to fit into the dash housing. Then to allow it to not hit the base plate, about 1/4 inch needs to be cut from both sides.



Wiring :

Ignition -You will need to remove the tank and neck cover to gain access to the ignition area. There you will find a four wire RED quick connect coming from the key switch. Unplug this place the key side plug back up inside out of the way, we don't need this anymore. On the other side, make a small three inch or so short piece of wire with a male spade on each end, this will be a jump wire for your kickstand/clutch switch. Plug this into the bottom of the RED quick connect for the blue/black and blue/yellow wire (will be the two small gauge wires). These go to your side stand and clutch switch, bridging these allows them to still work.

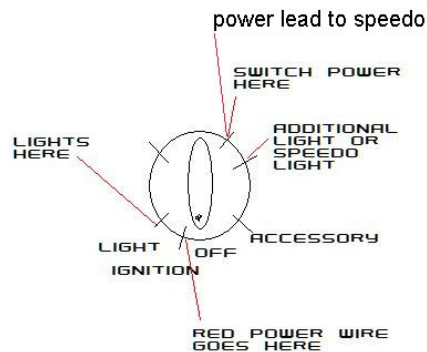


**Note: If you want your pass lamps to work from the new ignition switch, you can run from the headlight bucket down to the neck area to add to the harness we are about to run. Since we will be working with a live hot wire at this point, you can either, disconnect battery now, or simply make up your harness now. Making the harness ahead of time will prevent any mishaps, since the hot wire is protected, and you don't need to fiddle with the battery.*

I used a 3/4 wire loom, it will have four wires in it, Red power, switched power (the blue/red wire), passing lamp, and your tach wire. (Note: if you don't use the speedo/tach combo or want the pass lamp deal, then it will be just two wires). But any ways, go to radio shack or your local electronic shop and get a four wire quick connect. Make a two foot wire harness with wires putting male spades one end and your quick connect on the other. The quick connect end goes in the tanks side, under the frame and let it sit on the airbox for now, then plug in the spades to the RED quick connect. Power and switched power (top two empty spots above the jumper we used), you already have the pass lamp wire from before, and the tach wire. I used a spade splitter, unplug the Neg side of coil (the one on the inside) plug the spade splitter and your new wire and old wire back onto the coil. Put the neck cover and tank back on, the new harness comes up through the hole in the tank.

**Tip: Since the RED plug is no longer weather proof, it is good idea to wrap some electrical tape around this when your done plugging things up prior to putting the neck cover and tank back on.*

On the tank side I made another short wire harness to mate up to the one I just ran from the old ignition. You don't have to do it this way, but taking the tank off is going to be much easier with a four pin quick connect. Here is wiring setup. Two wire run from the switch power post, one from ignition harness we made and an additional wire run to the 12 pin quick connect to speedo that we will make later.



Idiot lights - From the Base Plate here is the pin setup for the idiot lights. I used a Nine pin quick connect from radio shack. Note that the Ground pin 9 will actual contain two ground wires from both the left and the right blinker on the dash side. We also need to run both oil and eng warning from the dash, unfortunately the speedo will ground these inputs, which will cause them to malfunction, it is ok for the high beam since it requires a ground any ways. Utilizing the high beam spot for the eng warning is necessary. High beams will be covered on the speedo.

9 pin quick connect

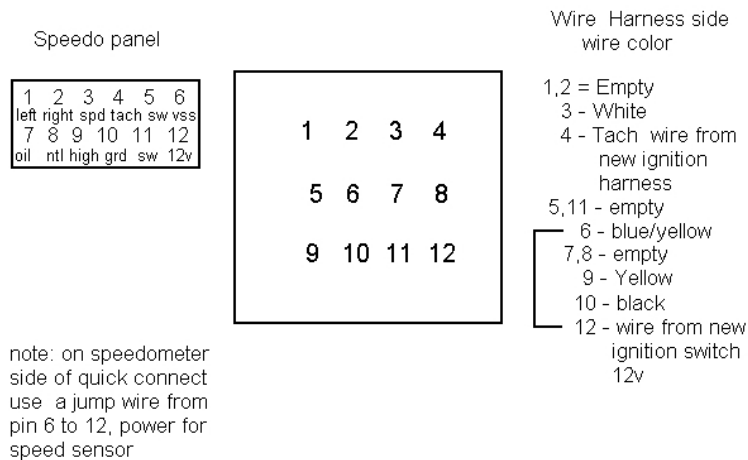
Base Plate side (red/black wire each light)	<table border="0" style="margin: auto;"> <tr> <td style="padding: 5px;">1</td> <td style="padding: 5px;">3</td> <td style="padding: 5px;">5</td> </tr> <tr> <td style="padding: 5px;">2</td> <td style="padding: 5px;">4</td> <td style="padding: 5px;">6</td> </tr> <tr> <td style="padding: 5px;">7</td> <td style="padding: 5px;">8</td> <td style="padding: 5px;">9</td> </tr> </table>	1	3	5	2	4	6	7	8	9	Bike Harness side Wire color
1	3	5									
2	4	6									
7	8	9									
Oil = 1, 2		1 - Blk/Wht									
Neutral = 3, 4		2 - Red/Blk									
Eng warning = 5, 6		3 - Lite Blue									
Left Blink = 7		4 - Brown									
Right Blink = 8		5 - Lite Green									
Ground Left/Right = 9		6 - Red/Blk									
		7 - Dk Brown									
		8 - Green									
		9 - Black									

**Note: New Dash has Oil light, and Engine warning light both idiot lights must be covered. Utilize the high beam spot for one or the other. I am sure some where there is a lens for the eng warn, just haven't found it yet, so for now the blue high beam will have to due. I know if it lights, it is for the Engine Warning.*

Speedometer/Tachometer - To begin speedometer hook up I used a 12 pin connector between the speedo and the bike wire harness. Begin on the bike harness by cutting the pink and black old trip switch wires and taping the ends. You may wonder why we just don't use these for the new speedometer, the problem is the old setup uses the pink wire and black wire which is a ground, the new speedometer according to it's wire diagram does not use a ground for the trip meter. Next cut the red/blue hot wire (this is a constant hot, no good for our new application) and the two blue and black old speedo lights wire, (keep one ground free), and tape the rest and move aside, along with the lite brown for the brake switches. These switches will still work, it just no longer needs to go to the speedometer. We won't need any of these wires.

Power for the new speedo will come from the new ignition switch into pin 12, ground we kept a side from the previous step will go to pin 10. Tach wire pin 4 comes from the new harness we ran for the ignition. You may wonder why I used a 12 pin connect when not all pins are used, mostly this is for future use and the main reason was to avoid plugging the wrong plug into each other, since we have a 4 and 9 pin in use already. This makes it bullet proof so you don't fry your electrical system by inadvertently plugging up the wrong plug. The rest of the wire will go as illustrated.

12 pin connector assignment



**Note: The trip wires are essentially just a momentary push button. I ran mine directly to the speedo and not the quick connect, since it stays with the speedo unit. Any open momentary switch will work. I got this at Alleletronic.com, they have many other style. I mounted in front of dash near the triple tree in the square hole on dash. If you want to fool with it, you can get a small one and put in the hole on the side of the dash, but it has to be very small depth wise, not a lot of room next to speedo. I plug my hole on the side, with a rubber cover from lowes.*

*** Note: Pin 12 has the power lead from the new ignition. Since my four pin connector had an empty spot (tach wire which is now part of this connector). I used that vacant spot in the four pin, and added the wire to the ignition on the other side of the four pin. Just makes it easier if you have to remove the base plate rather then running a single wire from the ignition to this 12 pin connector.*

<http://www.allelectronics.com/cgi-bin/item/PB-143/700325/HD METAL PUSHBUTTON, N.O. MOMENTARY .html>



Here are some pictures of the almost final product, haven't done the trim for the sides yet. Can't decide if I want LED lights, or wood trim or chrome trim.



Here is a picture using the bib setup, I decided I didn't like this look.

