Please do not be intimidated by the length of these instructions. They are written for the "mechanically challenged" to be very descriptive and include many pictures.

Notes

Proper Installation of your new PowerPUC Wheel Lighting Kit accounts for 98% of trouble free operation. It requires more patience than skill. Instructions are broken into 4 parts. Here are some general rules to follow throughout the process:

1) Thoroughly Read directions BEFORE starting.
2) Thoroughly plan your design and layout BEFORE starting the installation
3) Anywhere double-stick is used, the surface must be perfectly clean and adhesive promoter must be used.
4) All wires must be thoroughly secured.
5) Work cleanly and comfortably
6) Be patient
7) If you have a problem or question – STOP!! Email or call us.
8) Pictures are representative only. Your kit and installation may vary slightly.

It is very helpful to do a "dry run" of the installation procedure. In other words, test fit everything BEFORE peeling double stick or making cuts to wires and brackets.

Example: Most installations of the Power Block and PUC Ring are designed to fit on the kickstand side of your bike. Putting them on that side of the bike hides the system from the casual observer and leaves them wondering how it's done. However, on some bikes the presence of an ABS system or axle feature will not allow installation on that side of the bike. In these cases you will need to mount on the non-kickstand side. That is just one example of why a "dry run" is helpful. Finding these things before you start saves time and frustration.

G5 Installation Instructions

PART I: Mounting LEDs

PART II: Using the EZ-Mount Backbone

PART III: PUC Ring Mounting

PART IV: G5 Power Block Mounting

Addendum 1: Alternate method for wiring hollow cored wheels.

PART I

Mounting of your LEDs.

The most important rule is to make sure all LEDs and wires are securely fastened to your wheels. Anywhere two-sided tape is used must be perfectly clean and prepared with the adhesive promoter provided in your kit.

There are almost unlimited ways to mount LEDs on your wheels. The following is the easiest and most common.

Spoke Mounting of LEDs

(Note: Any LEDs mounted to your wheels will not use the quick connectors that most LEDs come with. Remove the quick connectors by cutting the wire about 1" behind the connector.)

"Spoke Mount" does not refer to just wire spokes. Any feature that runs from your hub to outer rim is considered a "spoke". Wire spokes will require small wire-ties or stainless steel safety wire. Other style spokes will require a relatively flat surface that is approximately of the width of the LED strips you will be using.

We suggest mounting LEDs on the leading and / or trailing edges of your spokes. This gives the greatest light dispersion and allows viewing from both sides of the bike.

Examples of “leading” and “trailing” edge mounting of LEDs on spokes.

“Leading” and “trailing” refers to the face of a spoke when the bike is in motion. Looking at the picture below, the LED on the right of the spoke is on the “leading” edge and the LED on the left of the spoke is on the “trailing” edge. Think about it for a minute and it makes sense.

Example of “leading” and “Trailing” edge LED mounting on spokes.

It is important the LED wire be as short and close to the hub (and Backbone) as possible. This minimizes the chance that unrestrained wire can move while riding. (See below picture)

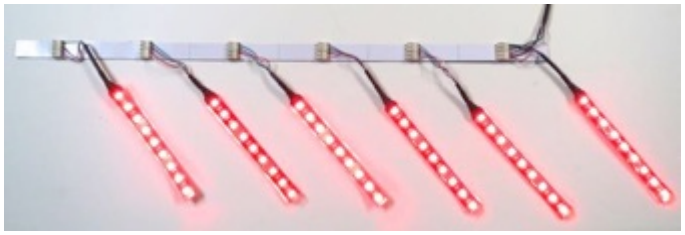
Note minimal wire between the LED and Backbone in the picture above.

Once you understand all of the above, attaching your LEDs is a matter of peel and stick. Make sure all surfaces are perfectly clean and use adhesive promoter. Leave all LED wires long for now.

Info@rawdesigncycles.com
203-425-3214

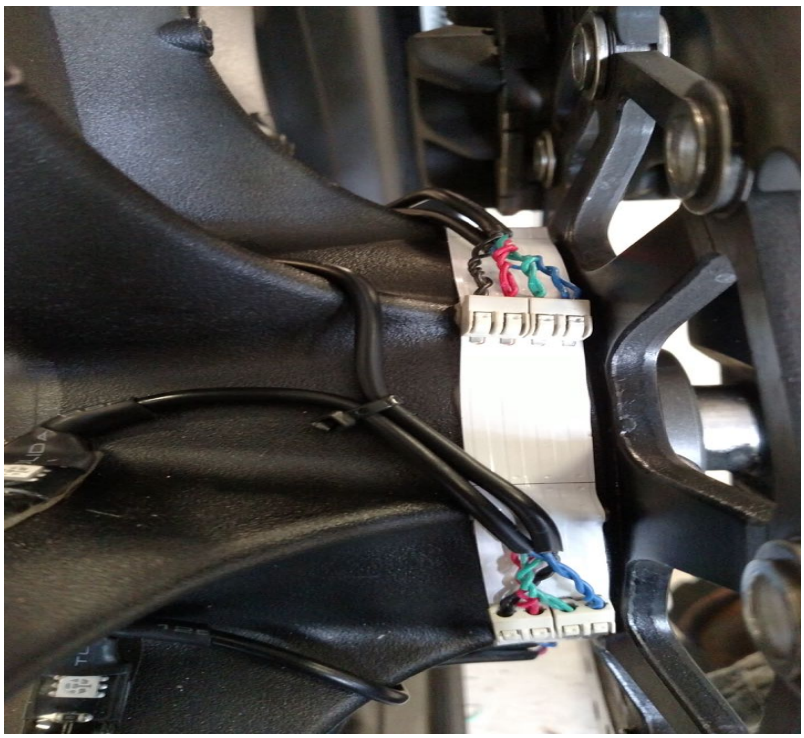
PART II

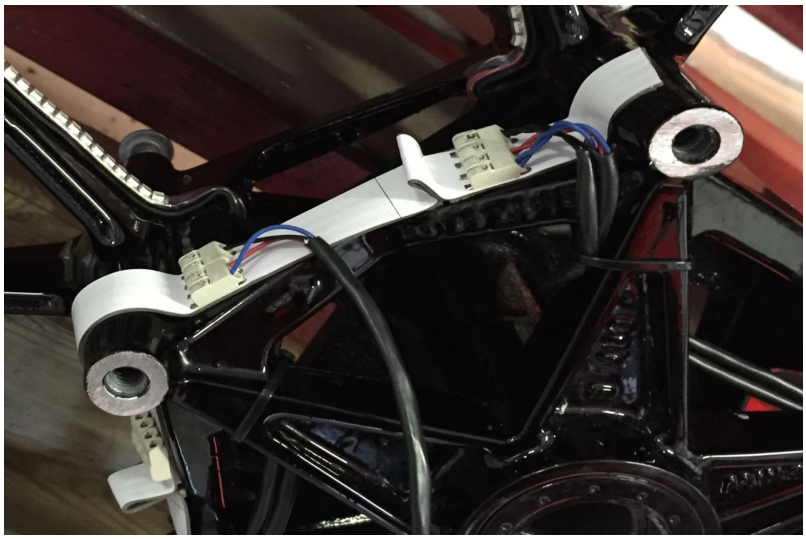
Using the EZ-Wiring Backbone



Now that you have the LEDS mounted on your wheels, our EZ-Wiring Backbone System makes connecting your PowerPUC wheel lights faster and easier. It also allows for endless customization and easy maintenance since any one LED strip can be removed or replaced quickly without affecting the rest of the system. It is attached using pre-applied double-stick tape.

The Backbone is nothing more than a flexible 4-conductor power strip with quick-connectors. Power can be provided to, or from (or both) any of its' connectors. Just keep positive and negative power to their own “lanes” along the strip. (see below piture) We recommend the lane closest to your spokes be used as the negative (-) or ground connection. The other lanes can be used for your positive (+) connections.





Installation example of Backbone and method for shortening distance between connectors. Note how wire colors (+/-) are in the same position on each connector.

Installing Backbone

1. Install Backbone to your wheel hub using attached double-stick. If it is too long, it can be cut at any point, or doubled over on itself. (See above photo)
2. Route LED wires to about where you will make your backbone connection. Use cable ties and mounts as required - neatness counts. The cable mounts should be considered “temporary helpers”

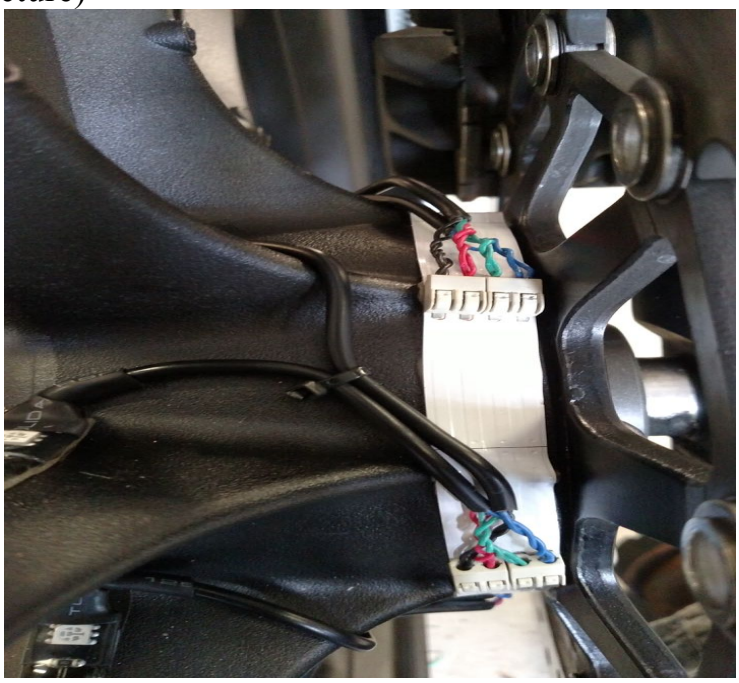
while you lay everything out. Do not depend upon them for long term restraint of wiring.

3. Up to 2 wires can be inserted into each connection point.
4. Remember you will need one connection point for attaching the PUC Ring. You can attach the PUC Ring to the same location as an LED.
5. Cut wires leaving a little slack to work with. You can always cut more latter.

Making LED Connections

(Attach same color wire to same location (Lane) on each connector. Black or white are normally ground wires.)

1. Strip about 1/2-1" off the outer jacket.
2. Strip about 1/4-3/8” from the ends of each wire.
3. Twist the strands tightly. When you are placing two (2) wires into each connection point, twist the stands AND jackets together tightly. (See below picture)

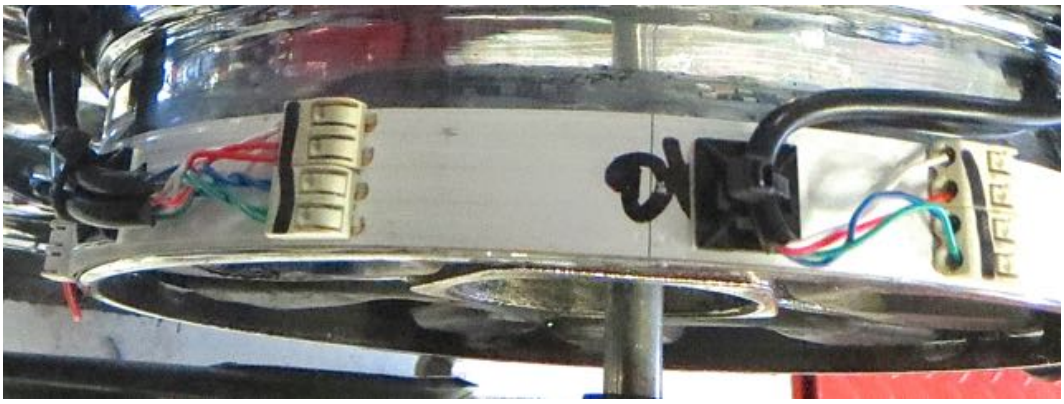
a. 

b. Example installation showing neatness, maintaining lane wiring and twisting of multiple wires into one connection point.

4. Tin wires if you can. (If you have to ask what “tinning” is, forget it.)
5. There are small buttons on the connectors that will depress with a pen, opening up the channels for the wires. DO NOT USE ANYTHING SHARP OR DEPRESS TOO HARD or buttons can break.
6. Before depressing button, push the wire in gently until you feel it stop.

THEN depress button, push inward and you should feel it seat. Release button and give a light tug. You will be surprised how firmly they are held.

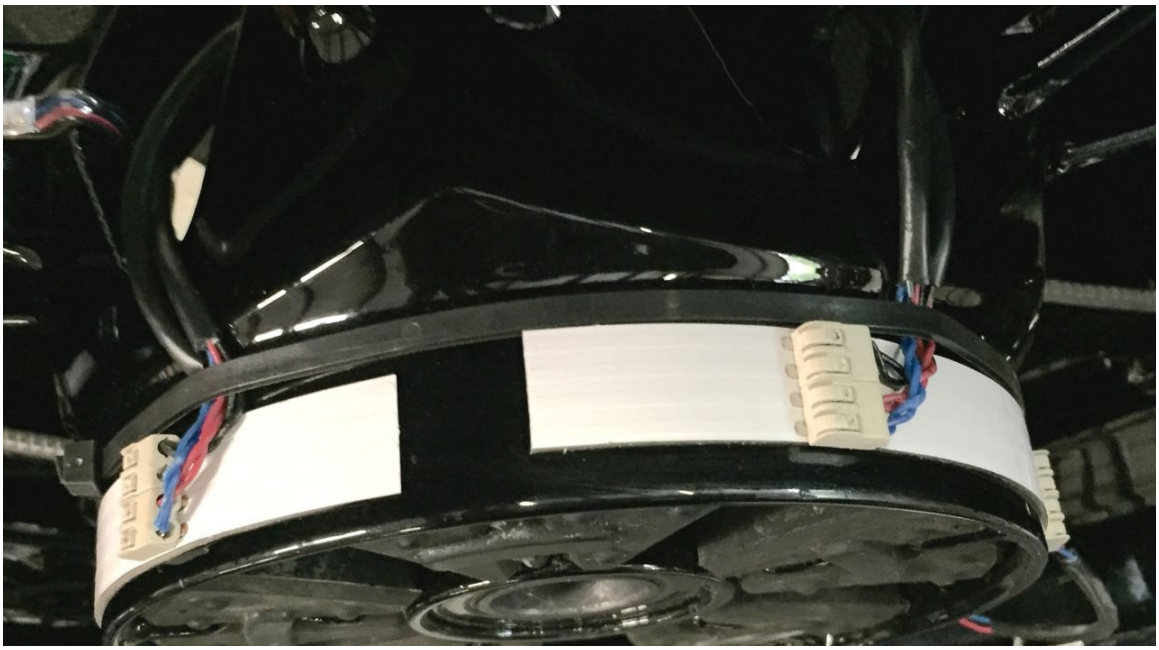
7. If button sticks in the down position, use pen tip to lightly push down AND back. It will return to the starting position.

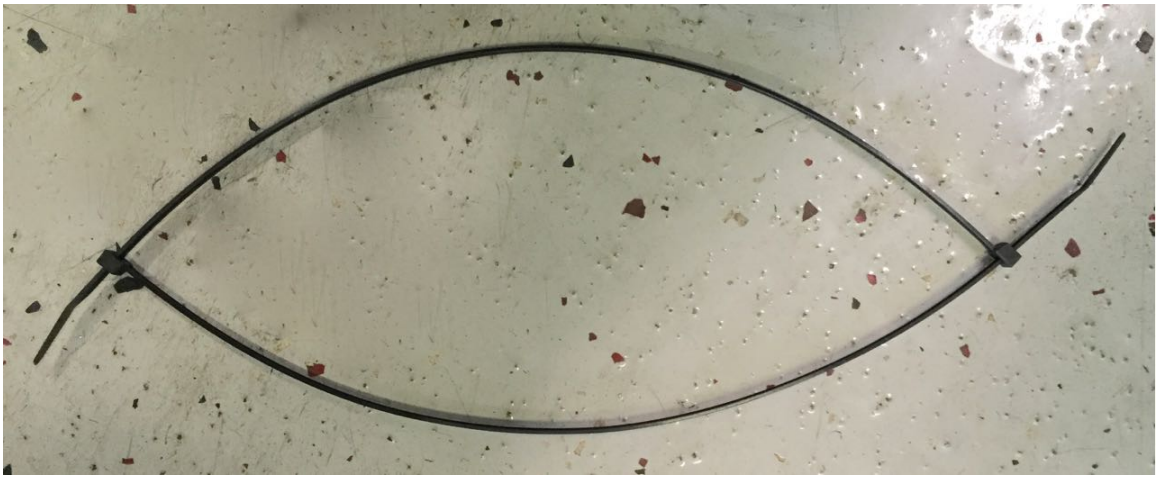


Example installation and use of wire ties and wire tie mounts.

Securing wiring.

- **Use long wire-tie(s) to wrap around hub and secure wires.** (See below picture) Wire ties can be joined together to make longer ones. (See second picture below)





(Joining wire ties)

Please contact us if you are uncertain about these instructions or have any questions.

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Step III

Mounting The PUC Ring

The PUC Ring has 4 electrically conductive silver tracks on its' face. Wires are attached to each of these tracks through the back of the PUC Ring. The wires will connect to your Backbone and provide power to the LEDs. (Basic / Starter Kits do not include Backbone and must we wired direct to LEDs)

Notes

There are several sizes of PUC Rings available in order to fit virtually every bike. Your Ring and/or paperwork will note your Ring size and where it should mount. (Example: " #7 front rotor", "#8 rear sprocket").

Remember our suggestion to do a "dry-run" installation at the beginning of these instructions? This is the most important time to do this. (Some installations require spacers be used to mount your rear PUC Ring. In this case your kit will include an additional instruction note.)

In general, it will be easier to work if you get the wheel slightly off the ground or completely off the bike.

In most cases an industrial grade Velcro (Dual Lock Fasteners) with a double-stick backing is used to mount your PUC Ring. This allows for minor adjustments to make sure the ring is concentric (centered) on the wheel. The Dual Lock fasteners will also act as spacers in applications where the PUC Ring will mount over rotor bolt heads. Just make sure to put the Dual Lock fasteners on the flat surface of the rotor between bolt heads.

Note: Some Suzuki and Yamaha Sport Bikes have very little room between the front rotors and forks. In these cases you will need to use ONLY double stick tape to mount your PUC Ring. Do not use Dual Lock fasteners under this condition. Remove Dual Lock fasteners from Splice plate under this condition.

1) Place PUC Ring around fork / swing arm.

It's very important that the ring be concentric, or centered, on the wheel within about 1/16". On most bikes there is an existing visual feature that will help you with this. It can be an existing bolt pattern, shoulder of some sort, or other feature on the rotor or sprocket. You will have to determine what feature works for you and your bike.

In the picture below, we used the bolt pattern as our guide. It will become fairly apparent what feature you should use on your wheels once you hold the PUC Ring against the wheel. (See below picture)

You should also identify a path for the PUC Ring wire to pass through the rotor / sprocket. There is normally a slot or hole that will make this easy. On very rare occasions (solid rotor) you will need to drill a small hole.

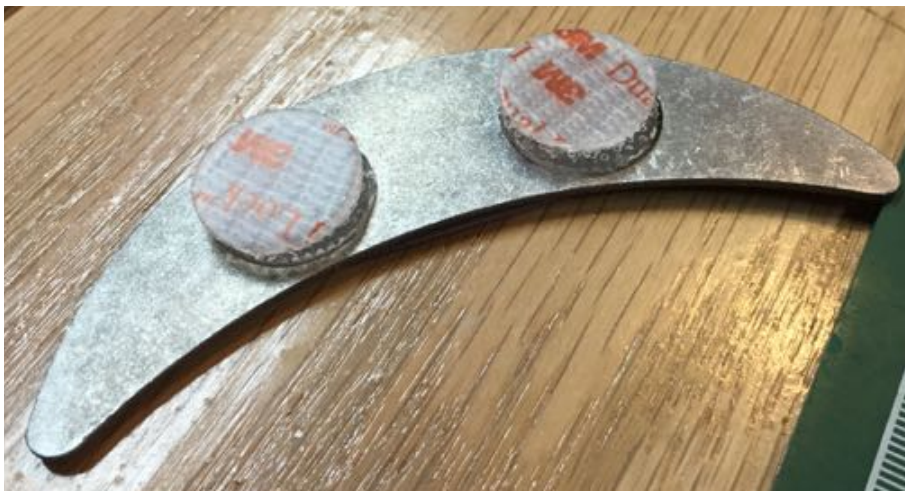
Example installation of PUC Ring.
Note visual use of bolt heads for alignment reference.
Your reference point may be different.

2) Mark Mounting Location

Once you have the alignment feature and wire path identified, use the Rings split to get the ring over the fork or swing arm. Hold the PUC ring against rotor / sprocket using the alignment feature you identified earlier to center it. Mark edges of PUC Ring on rotor / sprocket with pencil or Sharpee so you can put the ring back in the same place latter. This will also allow you to place Dual Lock fasteners on the rotor / sprocket without the PUC Ring in your way. Just let the ring hang on the axle or whatever for now. Do not remove it from bike.

3) Attach Splice Plate

It is important to have the split in the PUC Ring be a smooth surface when installed. The splice plate accomplishes this and includes areas for Dual Lock fasteners. The splice plate is universal for all rings.



Splice Plate with Dual Lock Fasteners

Attaching the splice plate makes removing the ring from the bike (with the wheel on) more difficult. So for this next step it's important you are confident the PUC Ring is the right size and on the correct side of the bike. If you have done your "Dry-run" of the installation and are confident everything is as it should be, it's time to attach the Splice Plate. You are not attaching the Ring to the rotor / sprocket yet, just attaching the splice plate to the Ring.

Using the attached double-stick tape, attach splice plate to back of PUC Ring making sure to center the splice plate over the ring split. (See below picture).

Splice Plate installed on back of PUC Ring. PUC Ring should be on bike before installing.

4) Install Additional Dual Lock Fasteners.

Other than the Dual Locks on the Splice Plate, all other Dual Locks will mount to your rotor / sprocket first.

Once you have attached the splice plate, hold the ring back in the location you marked earlier. Make sure the 2 Dual Lock fasteners on the Splice Plate land on a sufficient surface for mounting and determine 4 more locations on your rotor / sprocket for the remaining Dual Locks – they should be equally spaced around your rotor / sprocket. Once you know where the remaining Dual Locks will mount, clean the rotor / sprocket thoroughly, and use the included adhesive promoter for attaching the Dual Locks. It is best to attach any double-stick tape while the adhesive promoter is still wet on the surface.

It's always best to mount the Dual Lock fasteners as a pair and locked together. Remove the protective film from one side of a Dual Lock pair and apply to the rotor / sprocket in the locations you determined earlier.

The PUC Ring will mount over the rotor bolts in some applications. This is one reason for using the Dual Lock – to allow easy removal of the PUC Ring and access these bolts. When mounted, the Dual Lock will also act as a spacer between the rotor and PUC Ring to clear the bolt heads.

It should now look like pictures below and be perfectly flat, centered and concentric. (Size will vary)

PUC Ring mounted on rotor.

STEP IV

G5 Power Block Mounting

The G5 Power Block and mount are designed to cover a wide range of applications.

Note: Use same procedure for front and rear wheels. The only known exceptions are GSXR and Hyabusa front wheels. Installation for these exceptions are covered at the end of these instructions.

1) Loosen axle to create small space (1/16”) between front fork / swing arm and wheel spacer.

Note small gap created when axle is loosened

2) Determine the proper configuration of the mount for your application. Below are samples of various configurations. Several more are possible depending on how you arrange the parts. Do NOT attach Power Block to mount yet. Leave assembly slightly loose for adjustment.

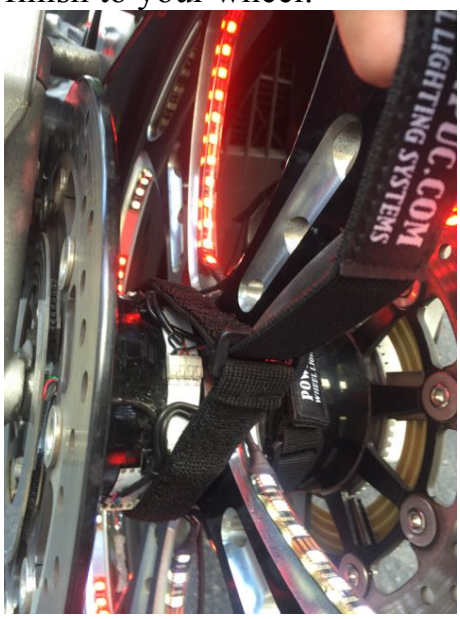


3) Insert "U" section of mount over axle and into gap you created between wheel spacer and front fork or swing arm. If "U" section does not fit over axle, remove ONLY the first section of "U" mount. (Picture shows removal of second section. Second section is only removed for GSXR and BUSA front wheel)
Tighten axle to manufacturer specifications. This will clamp the mount securely.


4) With mount loosely adjusted at farthest position from ring, attach the Power Block to mount.

Adjust mount and Power block. Contact points on Power Block must align with tracks of PUC Ring. Power Block contact points are spring loaded and should be compressed so main body of Power Block is 1/16 – 1/8" away from PUC Ring. Tighten all adjustments. Check axle and adjustment points for proper tightness after first 10 miles of riding and on a regular basis thereafter.

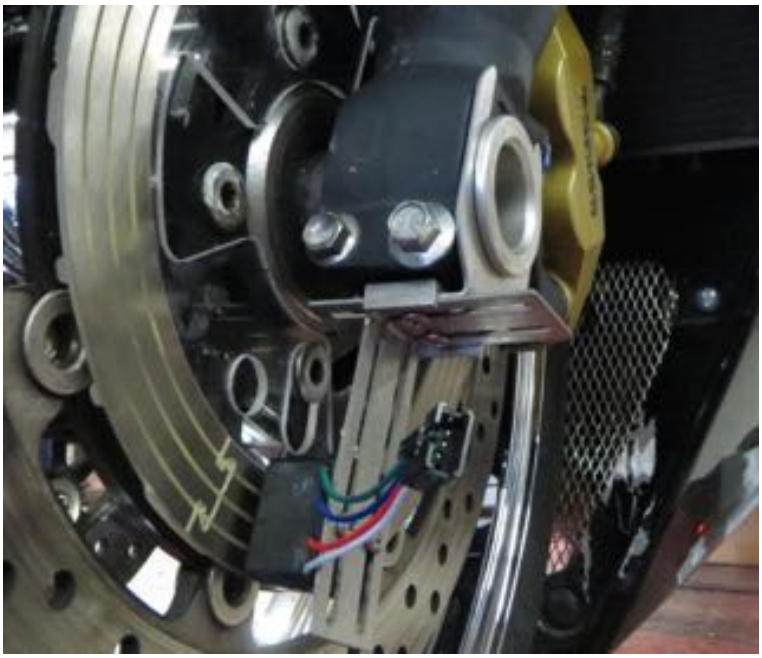
5) Once you have completed your installation and tested, you can now use the Velcro Strap to provide a clean, cosmetic finish to your wheel.



Special Note.

GSXR and BUSA front wheel mount.

Due to the unique front axle design on these bikes, the mount must be attached under the axle flange per the below photo. This may require removal of the second “U” section of the mount. All other procedures remain the same.



We invite you to share your finished creations with us and others by emailing pictures and video to info@rawdesigncycles.com

Enjoy your new PowerPUC System and as always, Ride Safe!

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