

▣ Impedance (Ohms) [From Definition of Terms]

The measured total resistance to current flow, as in "This speaker has an impedance of 4 ohms".

▣ Watts (W) [From Definition of Terms]

A unit of measurement for power output or consumption ( P ), the product of voltage ( V ) and current ( I ) ( Watts = V x I ).

▣ What is the Harley-Davidson part number for that thing I need? [From Frequent Questions]

We get this question all the time, due to the fact that while H-D parts counters will order you any part number you give them, they're also supposed to sell you complete kits, which sometimes include things you don't need.

So here's a list of factory H-D part numbers that we've been gathering over the years:

**2011-Newer 6.5" Leg Lower Speaker Buckets**

Right lower fairing bucket: 57419-11

Left lower fairing bucket: 57410-11

Grills (sold individually): 76000205

Grill mounting screw (sold individually): 10200012

**2006-Newer Saddle Bag Speaker Lids (5" x 7" speakers)**

Right bag lid: 90200613

Left bag lid: 90200612

Right speaker grill: 76000181

Left speaker grill: 76000180

**2010-Newer CVO Road Glide Speaker Mounting Rings (5" x 7" speakers)**

Right side ring (FLTR): 76000185

Left side ring (FLTR): 76000184

**1998-Newer Speaker Grills and Mounting Rings**

1998-Newer Standard Speaker Grill/Spacer, LH or RH (FLHT): 77047-98

1998-Newer Road Glide Speaker Grill/Spacer, RH (FLTR): HD77021-98B

1998-Newer Road Glide Speaker Grill/Spacer, LH (FLTR): HD77022-98B

▣ What kind of tools do I need to do a typical system install? [From Frequent Questions]

Here's a list of tools needed to work in/around your fairing:

T-40 Torx Wrench

T-27 Torx Wrench

T-25 Torx Wrench

1/2" Hand Wrench

7/16" Hand Wrench

3/16" Hex Wrench

P2 Phillips Screw Driver

Wire Crimpers

Wire Strippers

Wire Cutters

▣ Do you guys do installations or custom work at your shop in Fremont? [From Frequent Questions]

Unfortunately at this time we can't offer installation or customization as a service, as we're really set up to design, test, build, and ship our products. Maybe someday though...

▣ What does Sharknose and Batwing mean, and where did the terms come from? [From Frequent Questions]

These are the names given to the 2 touring fairing designs by none other than Harley-Davidson themselves. It's a simple matter of what they look like:

### **Sharknose Fairing**

Looks like the nose of a shark, the fairing used on Road Glides.

### **Batwing Fairing**

Looks like a bat with wings, the fairing used on Electra Glides and Street Glides.

We use this terminology around here because it's usually the only physical difference to deal with when installing an audio system in your fairing, regardless of your specific bike model.

▣ How do I know which OHM rating to use? [From Frequent Questions]

It's not a matter of what sounds best, it's about matching your speakers to the device that's driving them. Every amplifier circuit, even the ones inside radios, is designed for a specific impedance (measured in ohms) at the speaker outputs. And to get the best performance from that amplifier circuit, the speakers it's driving should match the amps design. So 2 ohm speakers don't necessarily sound better than 8 ohm speakers, it's just that they both exist for different amplifier designs.

When connecting speakers directly to a radio, it's the radio's built-in amplifier that should be matched. When connecting speakers to an external or stand-alone amplifier (like ours), it's the amplifier that matters, not the radio.

Here's some information to help determine what your audio equipment is designed to work with properly. This information is intended for reference only, and doesn't necessarily cover all available options.

Year	OEM	Description	Specifications
1996-1997	Radio Sound	H-D Radio/Tape	2CH @ 4 ohm
1998-2003	Radio Sound	H-D Radio/Tape	2CH @ 8 ohm
1998-2003	Radio Sound	H-D Ultra Radio/Tape	4CH @ 8 ohm
2004-2005	Radio Sound	H-D Radio/CD	2CH @ 8 ohm
2004-2005	Radio Sound	H-D Ultra Radio/CD	4CH @ 8 ohm
2004-2005	Radio Sound	H-D CVO Radio/CD	2CH @ 8 ohm 2CH @ 4 ohm
1998-2005	Radio Sound	H-D Add-On Tour-Pak Amplifier	2CH @ 8 ohm
1998-2005	Radio Sound	H-D Ultra Tour-Pak Amplifier	4CH @ 4 ohm
2006-20xx	Harman/Kardon	H-D Radio/CD	4CH @ 2 ohm
2006-20xx	Harman/Kardon	H-D Tour-Pak Amplifier	4CH @ 2 ohm

2003-2012	Hawg Wired	DCS/PSC Series Amplifier	2CH/4CH @ 4 ohm
2012	Hawg Wired	MPS/RS Series Amplifier	2CH/4CH @ 2/4 ohm
2013-20xx	Hawg Wired	DCS Series Amplifier	2CH @ 4 ohm
2013-20xx	Hawg Wired	CS/RS Series Amplifier	2CH @ 2/4 ohm

All this ohms stuff can really get confusing, not to mention annoying, right? The simple rule to remember is this: Where a device is directly connected to a speaker is where you should match the impedance.

▣ What's the difference between coaxial and component speakers? [From Frequent Questions]  
While both are considered 2-way speaker systems, the difference is in how the tweeter and woofer are integrated.

**Coaxial or coax:** Typically the tweeter is mounted on a post that runs through the center of the woofer cone and attaches to the magnet behind. The woofer cone is essentially shaped like a doughnut.

**Component:** Typically the tweeter and woofer are completely separated speakers, allowing the woofer cone to remain whole. In the case of Hawg Wired component speakers, the tweeter and woofer are separate speakers (solid woofer cones), with the tweeter bridge mounted across the woofer.

▣ Installing a Harman/Kardon Radio On A 2005-Older Bike [From Tips and Tricks]  
To install a 2006-newer Harman/Kardon radio on a 1998-2005 bike, there's 3 things to consider; physical mounting/fit, wiring, and calibration (programming).

**Mounting:** The Harman/Kardon radio will fit and mount in exactly the same way as the Radiosound units from 1998-2005, so no problem there. You may need to reroute or relocate some wiring to accommodate a proper fit, but nothing major needs to be changed.

**Wiring:** There's 2 harnesses involved in installing stock H-D radio's; Main and Auxiliary.

- 1) Main Audio Harness (includes power/ground, hand controls, front speaker outputs)
- 2) Auxiliary (overlay) Harness (includes rear speaker outputs, accessory connections for XM, intercom, etc.)

The main audio harness is the same from 1998 through 2009, so for power/ground, front speakers, and hand controls, no wiring changes are needed. This means that if you're installing on a 2 speaker bike without additional options, it's a simple plug and play situation.

The auxiliary harness (also known as the overlay harness) is where the radical differences between 1998-2005 and 2006-2009 occur. If you plan to run rear speakers from the H/K radio, or utilize the Harman/Kardon XM or intercom modules (like Ultra Classics), then you'll need to buy and install the 2006-2009 overlay harness on your 2005 bike. It can be done, but it does involve some work. The best thing to do here is to obtain a copy of both factory wiring diagrams old and new, and locate the power/ground/speaker wire connection points that suit your particular needs best.

**Calibration:** If you can find a Harman/Kardon radio out of a 2006-newer bike that's already functioning, just plug it in, you're done. New Harman/Kardon radios come blank from H-D

however, and currently the dealers are the only ones who can calibrate/program them properly. Check with your local Harley-Davidson dealer to see if they are willing to help get your new radio programmed before you install it on your older bike.

#### ▣ Choosing the right source unit (radio) [From Tips and Tricks]

Here's some things to keep in mind when choosing the right source unit for your bike:

#### **Factory Harley-Davidson Radios**

Pro's:

- Designed with headset and intercom functionality (most models)
- CB, XM\*, and MP3 options available (\*new Harman/Kardon units)
- Built like a tank to survive the brutal motorcycle environment
- Weatherproof and resistant to vibrations
- Display screen is designed for visibility in direct sunlight
- Hard to beat these units in the reliability category

Con's:

- Choice of looks and design style limited to only a few
- Headset, intercom, CB, XM, etc. are integrated; remove it and you lose those functions
- CB\*, XM\*, and MP3 options are very expensive (\*new Harman/Kardon units)
- Lacks power to drive speakers loud at highway speeds without external amplification
- Speaker selection is narrowed to 2/8 ohm only (\*excludes CVO high output units)
- Built like a tank, and heavy as a tank as well

#### **Aftermarket Automotive Radios**

Pro's:

- Wide variety of looks, features, and options to choose from
- Relatively inexpensive compared to factory Harley-Davidson units
- Typically lighter in weight, and physically smaller in design
- Wider speaker selection available (with standard 4 ohm outputs)
- Sony radios can be adapted to your handlebar controls

Con's:

- Headset, intercom and CB are not typically supported
- Built for the mild environment of a car, not weatherproof (excluding marine grade)
- Lacks power to drive speakers loud at highway speeds without external amplification
- Display screen is not typically designed for visibility in direct sunlight
- Many aftermarket units fail after a short time on the road (dirt, water, UV exposure, etc.)

If you want to stick with a factory radio, consider getting one of those new Harman/Kardon H-D radios.

#### **Factory Harley-Davidson Harman/Kardon Radios**

Pro's:

- All the modern features available (MP3, XM, CB, etc.)
- Compatible with your existing intercom and headset equipment
- Built like a tank like its predecessors to endure the harsh environment
- Looks just like a Harley radio should; clean, simple, and black w/ amber display

Con's:

- It's expensive compared to typical aftermarket source units
- The optional modules are expensive too
- You may have to buy an overlay harness (for rear channels, options, etc.)

- You have to find a dealer willing to calibrate (program) it for you using a 2006-newer bike ECU.

Now, if you can get an H/K unit out of a 2006-newer bike that's already functioning, it can be installed in 1998-2005 bikes without re-programming (1996-1997 with our adapter harness as well). New H/K units come blank from H-D however, and currently the dealers are the only ones who can program them. See the FAQ [Installing a Harman/Kardon Radio On A 2005-Older Bike](#) for more information.

If you choose an aftermarket radio, our HUA360 adapter connects your handlebar controls to a Sony, Pioneer, Alpine, Kenwood, JVC, or Clarion source units that incorporate a wired remote or steering wheel interface port. But no matter what you choose, our amplifier systems will work just fine with any source unit, stock or aftermarket, and get you rocking down the road.

#### ▣ Choosing the right speakers [From Tips and Tricks]

Consider the load capabilities of the device you connect your speakers to; radio head unit or amplifier.

#### **Harley Factory Radios:**

For 2005 and older, Harley radios utilize 8 ohm speaker outputs. The new Harman Kardon radios for 2006 and beyond are using 2 ohm speaker outputs. There are also the CVO radios that are both 8 ohm (standard outputs) and 4 ohm (high outputs). Don't mix and match them. Some have been successful at using 4 ohm aftermarket speakers on the old style 8 ohm radios, but it's not recommended and could damage the radio's internal circuitry.

#### **Aftermarket Radios and Amplifiers:**

Most automotive based aftermarket radios utilize 4ohm speaker outputs. It's also the standard impedance for most amplifier systems, including our Hawg Wired amplifiers. And you guessed it; most aftermarket automotive speakers are 4ohm as well.

If you're using your radio without amplifier(s) to drive your speakers, you should match your radio to the speakers. If you're planning to use an amplifier to drive your speakers instead of the radio alone, then you only need to worry about the impedance of the amplifier to the speakers.

Consider the physical design aspects of the type of speakers you want to use.

#### **Coaxial Speakers:**

Pros - Crossover circuitry is typically integrated with the speaker, as well as the tweeter, making installation simple.

Cons - Generally don't sound as good as components and are typically rated lower (RMS).

#### **Component Speakers:**

Pros - Usually the best way to go for audio quality, typically rated higher (RMS).

Cons - Sometimes come with large crossover boxes that can be tricky to fit in the fairing, and usually requires solo tweeter mounting (on the inner fairing or in a gauge hole).

Another thing to consider is the environment your bike spends most of it's time in. If it's garage kept and never out in the rain, weatherproof speakers might not be important to you, opening up car audio options to choose from. But if you ride year round and expect things to get wet once in a while, weatherproof equipment is the way to go. All of our Hawg Wired speakers are weatherproof

designs, as are aftermarket marine speakers.

So, when deciding on a speaker upgrade, keep these things in mind and choose your components accordingly to achieve the best sound possible without damaging your expensive equipment and voiding your warranty(s).

☒ Check your polarity [From Tips and Tricks]

The way speaker wires are marked for polarity (+/-) varies from brand to brand. Red and Black colored wires are typically positive (+) and negative (-) respectively, but when it comes to wire pairs with one stripe, things get messy. Some manufactures use the stripe as positive (+), while others use the stripe as negative (-). Be sure to check the documentation of each component you're dealing with before making connections.