

<http://www.benzworld.org/forums/forums/thread-view.asp?tid=61546&posts=5>

E-code = European code/specification.

For the N.American M-class Bi-Xenons, when the low beam Xenons are off, when you use the flash-to-pass feature, the high beam halogens will illuminate. This is because the Xenons require about 30-60 seconds to warm up and stabilise before they reach full intensity. Usually you only need the flash-to-pass feature for a couple of seconds and hence they are not suitable. When you have the low beam Xenon on, when you use the flash-to-pass feature, the high beam Xenon pattern will be illuminated, however the halogens remain off. When you turn on the high beams, only the high beam Xenon pattern will be illuminated.

With the E-code M-class Bi-Xenons, the halogen high beams will be illuminated regardless. When you turn on high beams, you essentially get the high beam Xenon HID pattern *in addition* to the high beam halogens. You can imagine how much more illumination this is, particularly when you take into account that the '02 halogen headlamps only use the flash-to-pass high beams as their only high beam source!

#### scorchie

(I've had to send several cars in FOUR TIMES for programming, each time being assured that the bixenon setting was set to "PRESENT" and it wasn't...)

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<http://www.benzworld.org/forums/forums/thread-view.asp?tid=33578&posts=21>

#### Drew

Here is what Robert Exconde and I came up with way back.

*Plug:*

12  
34  
56  
7

*In the original wiring outlay, the low beam wire is in position 1. The retrofit requires that this (low beam) wire be moved to the position 2*

*OLD:*

*1 is low beam  
4 is the high beam  
7 is the ground*

*NEW*

*2 is low beam (Xenon power)  
4 is the high beam  
7 is the ground*

<http://www.benzworld.org/forums/forums/thread-view.asp?tid=25824&posts=19>

**Birger**

### **Euro foglight setting - more on Bi-Xenon internals**

No, Drew

I actually didn't have to do anything - Euro-spec (or at least Belgian-spec) ML's have their foglights (and the AUX circuit) wired so that the foglights can be used with all kinds of lighting, ie. city, lo-beam, and hi-beam.

I usually use the FF50's as DRL (this is frowned upon in Germany, but as a matter of fact I translated a proposition for a EU regulation on DRL's a while back, and this allows for foglights used as DRL). With the standard headlamps this has the disadvantage that (like Chris pointed out) the flash-to-pass feature isn't very evident.

With 50 cms between the foglights and the hi-beams you note the flashing.

As regards the internals of the Bi-Xenons, I think there's a hint to how it can be done in Wolfgang's excellent Bi-Xenon document:

'2002 BiXenon internal wiring

```
off
halogen H7 bulb 12V-----o
-----o-----high beam connector
high beam shutter 12V-----o ||
magnet on ||
+--RELAY--+
| |
low beam xenon 12V-----(------+-----low beam connector
|
ground-----+-----ground connector

ground low beam-----good ground
```

This BiXenon lamp can simply be plugged into the standard 3 pin headlamp wiring harness in the ML. The ML's wiring switches on low beams and switches on the highbeam in addition to the low beams when the high beam is activated.

If the low beams are off the relay is in the 'off' position and when turning on the high beam with the 'flash-to-pass' the halogen H7 is turned on.

Alternately, if the low beams are on, the relay is in the 'on' position and when activating the high beams the high beam shutter will be activated.

It should work fine with DRL, and non-DRL systems.

This is as-is with no warranties or guarantees.

## M-Class headlight connector pinouts

All MY2000 M-Classes I checked have these two headlight connectors  
Some versions may not have all of the wires/pins in the connectors

Eight position connector with two rows of four

=====

pin A pink wire low beam  
pin B orange wire range adjustment motor  
pin C blue wire range adjustment motor  
pin D - not used  
pin E tan wire ground  
pin F blue marker lamp (sometimes called city lights)  
pin G white high beam  
pin H gray foglamp

Three position connector with single row of three

=====

pin A tan wire ground  
pin B blue wire standing/parking lamp  
pin C green wire turn signal lamp'

Unfortunately, it's not done just by disconnecting the wire between the low beam supply and the relay - in that way you will obtain halogen-only high beams, which is not the idea!

- but I still think that it might be easier just to hook up an external relay feeding off the hi-beam wire on the adapter. Hopefully, we'll see later this week ;-) )

Birger

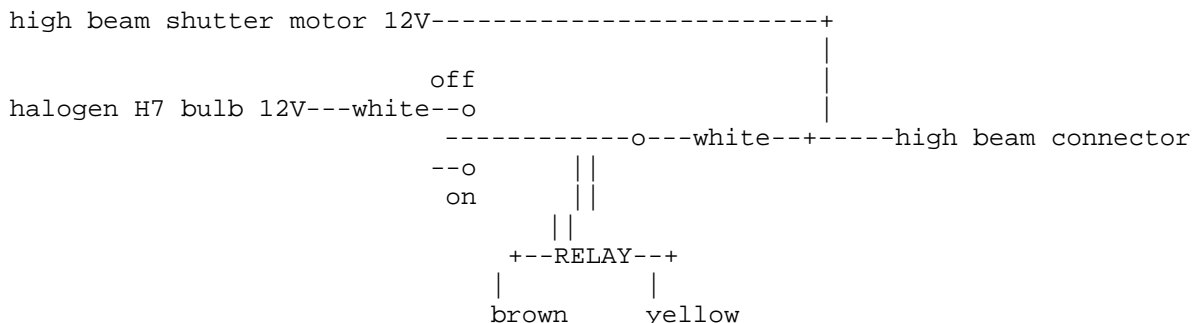
<http://www.whnet.com/4x4/bixenon.txt>

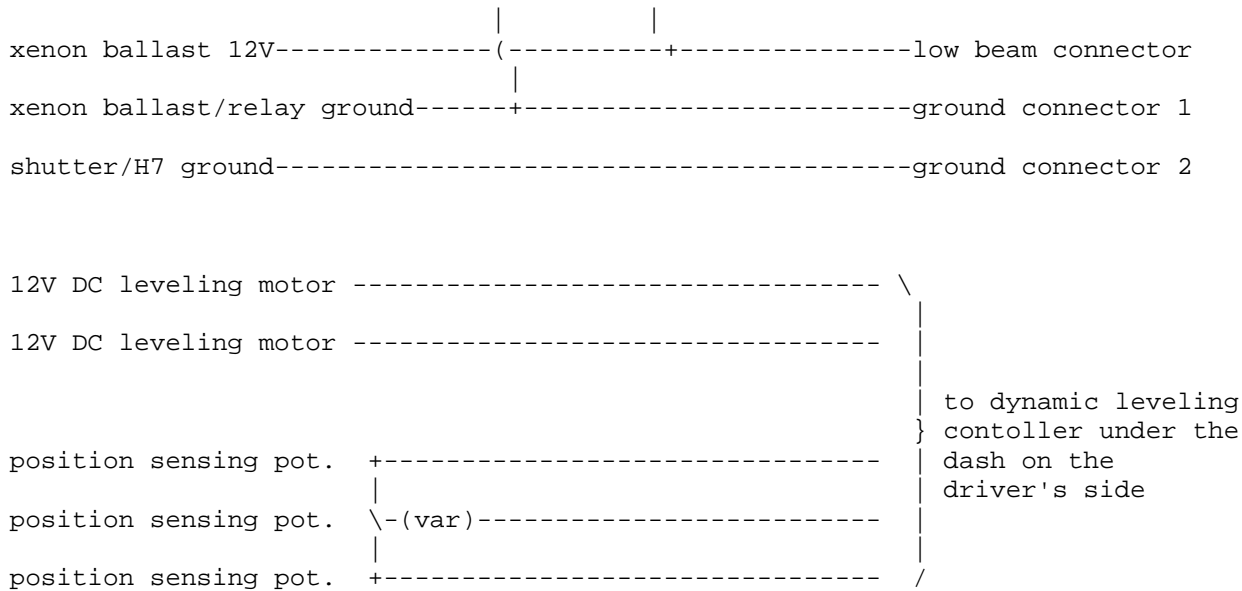
## M-Class BiXenon Headlights

### Circuit diagram

Mercedes M-Class 2002 BiXenon headlight internal wiring

=====





This BiXenon lamp can simply be plugged into the standard 3 pin headlamp wiring harness in the ML (some pins may have to be relocated, depending on version, model year, prior mods etc; or adapter harness). The ML's wiring switches on low beams and switches on the high beam thusly:

- A - If the low beams are OFF when turning the high beams on with "flash-to-pass" stalk the halogen H7 is turned on.
- B - Alternately, if the low beams are ON when activating the high beams the halogen H7 will not be turned on; unless modified by bypassing the relay, pulling off the two white wires, and connecting them.

Works with DRL, and non-DRL systems.

#### M-Class headlight connector pinouts

MY2000 M-Classes without factory HID I checked have these two headlight connectors. Some versions may not have all of the wires/pins.

Eight position connector with two rows of four (ML wiring harness)

=====		
pin A	pink wire	low beam
pin B	orange wire	range adjustment motor (halogen version, manual leveling)
pin C	blue wire	range adjustment motor (halogen version, manual leveling)
pin D	-	not used
pin E	tan wire	ground
pin F	green	parking/standing/city light
pin G	white	high beam
pin H	gray	foglamp

Three position connector with single row of three (ML wiring harness)

=====

pin A	tan wire	ground
pin B	blue wire	parking/standing/city light
pin C	green wire	turn signal lamp

Eight position connector with two rows of four, headlamp dyn leveling  
=====

See Andy Fracica's pictures

As-is with no warranties or guarantees.

### **Birger's photos**

### **Installing Bi-Xenon Headlights on 2003 MY ML by Andy Fracica**

### **shoptalk**

<http://www.benzworld.org/forums/forums/thread-view.asp?tid=17172&posts=10>

### **Birger**

### **Headlamp wiring - and a city light tip**

Hi,

over the past weekend the weather was good enough to get a closer look at the wiring leading to the headlamps of my 270 CDI, and at least the colors to the main plug exactly match what Wolfgang describes in his document [www.whnet.com/4x4/bixenon.txt](http://www.whnet.com/4x4/bixenon.txt), that is:

Eight position connector with two rows of four  
=====

pin A	pink wire	low beam
pin B	orange wire	range adjustment motor
pin C	blue wire	range adjustment motor
pin D	-	not used
pin E	tan wire	ground
pin F	blue wire	marker lamp (sometimes called city lights)
pin G	white wire	high beam
pin H	gray wire	foglamp

I also got a couple of closeup photos, but have not yet had the time to upload them (slow connection at home, and NT here at work = no USB compatibility :-(- maybe tonight I'll get around to it).

However, I'm a little puzzled as to the smaller connector. As you can see from the accompanying photo, I also have three wires leading to this connector; one pink, one green, and one tan. This is a little different from Wolfgang's document:

Three position connector with single row of three

=====

pin A tan wire ground

pin B blue wire standing/parking lamp

pin C green wire turn signal lamp

As you know over here the orange turn indicator bulb has only one filament - I wonder why we still have three wires leading to this connector.

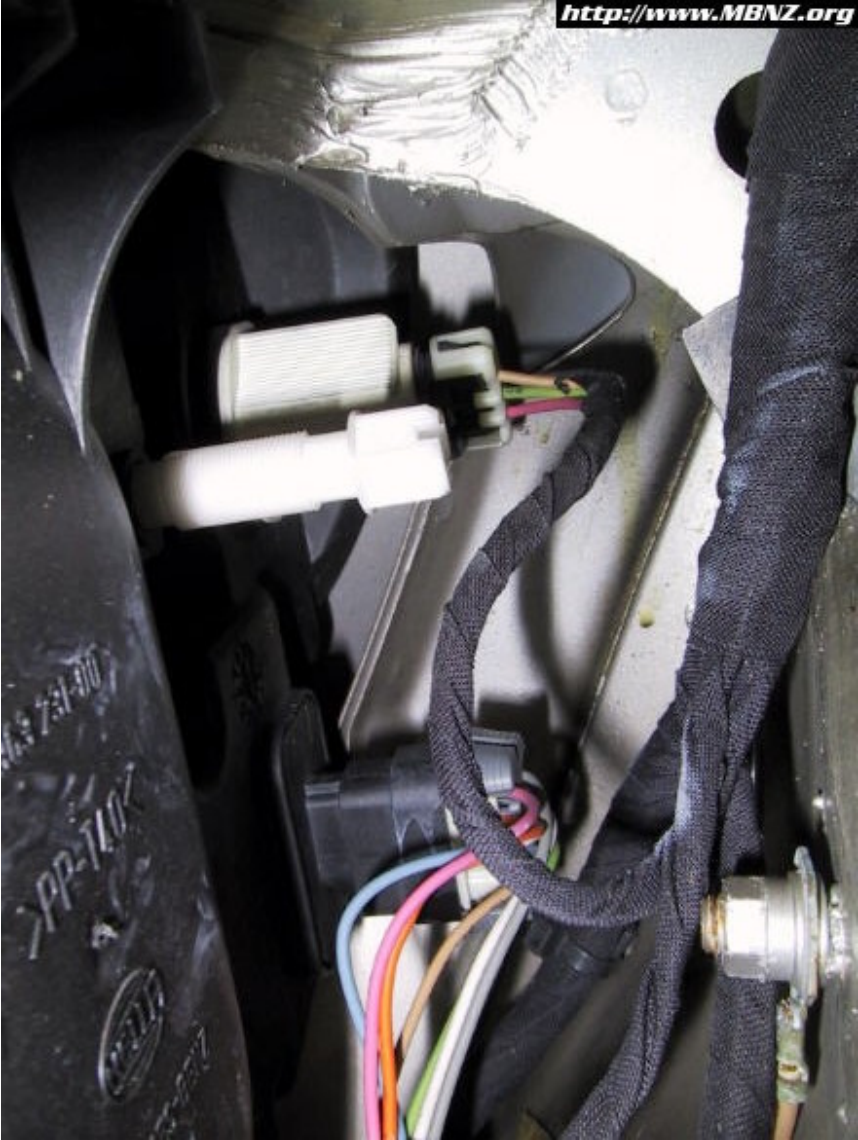
Unfortunately the weather did not permit me to perform any testing with a multimeter to see which of those wires actually carry any current.

To those of you who are considering adding European city lights, but worry about actually drilling into the reflector itself: An alternative placement of the small W5W bulb could be somewhere in the chromed 'extension' of the hi-beam reflector. Of course the effect will not be exactly the same, but it would be feasible, and you would not touch the reflector itself (I've seen it done on NA-specification cars over here). And instead of drilling, as this piece is 'ordinary' plastic, you might consider carefully melting a hole with a small soldering iron - in that way avoiding that something falls into the reflector. To avoid fumes from staining the reflector, use a vacuum cleaner while heating through the plastic.

Drive safely everyone,  
Birger

PS: I'm still considering getting the NA-spec Bi-Xenons from PP if I can get this pinout question solved..... Orange side lamps are as exotic over here as city lights in the US ;-)

has attached this image :



<http://www.benzworld.org/forums/forums/thread-view.asp?tid=16251&posts=2>

**Iwan**

Vehicle:  
Registered: 12/30/1899



**Re: Drew and Iwan - Euro-spec wiring pics**

Birger, my ML came with euro-spec lighting and I have the same wiring as yours. I modified a few wires from the harness (instructions courtesy of Chris K) so the bi-xenons will work with my existing wiring. I had a chance to try the bi-xenons with the adaptors that came with the '02 halogen projectors (from performance products) and they don't work. The bi-xenon feature was not active. From the instructions I received from Chris K, it seems that the wiring for US spec and euro-spec lights are identical. It is the harness receiver in the lights themselves which are different. Regarding the bi-xenons they do not use the manual adjustment like previously but there is another socket in the bi-xenons which should accept harness to activate the auto-leveling system. If you get the euro-spec bi-xenons you should have the 'city lights' built in and it should work with no problem, but since I got the US-spec bi-xenon, they do not have the 'city lights' but rather it is built into the turn signal indicator, so if you turn the headlamp switch one notch forward, the turn signal indicators will illuminate, the bulb is a double filament type which also serves as the turn indicator.

<http://www.danielsternlighting.com/tech/aim/aim.html>

**AndyFracica**

<http://www.benzworld.org/forums/forums/thread-view.asp?tid=1164024&start=1&fid=29>

**Bi-Xenon Leveling Motors - Secrets**

Here is some interesting stuff I learned about the Bi-Xenon leveling motors. I took one apart and discovered its secrets.

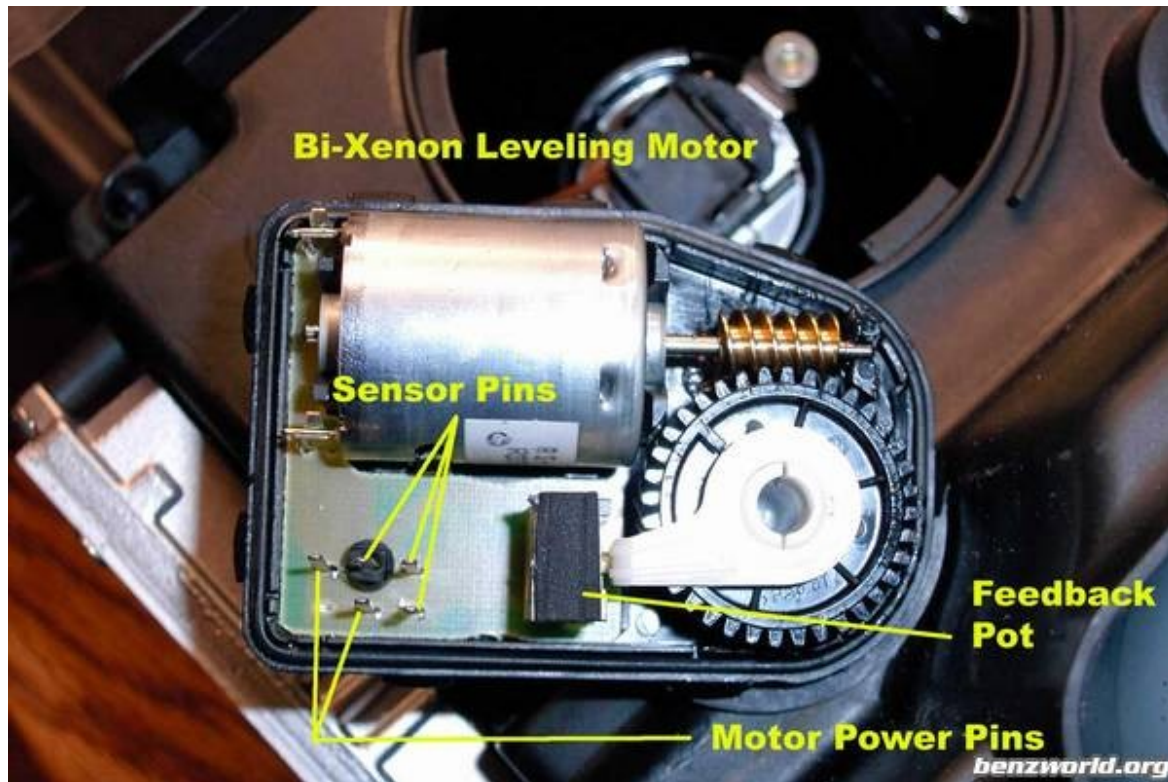
For those of you that fly RC airplanes, the leveling motor is basically one great big servo.

The main components are the motor and a feed back potentiometer. The sensor tells the motor which way to turn and the feedback pot tells the motor when to stop.

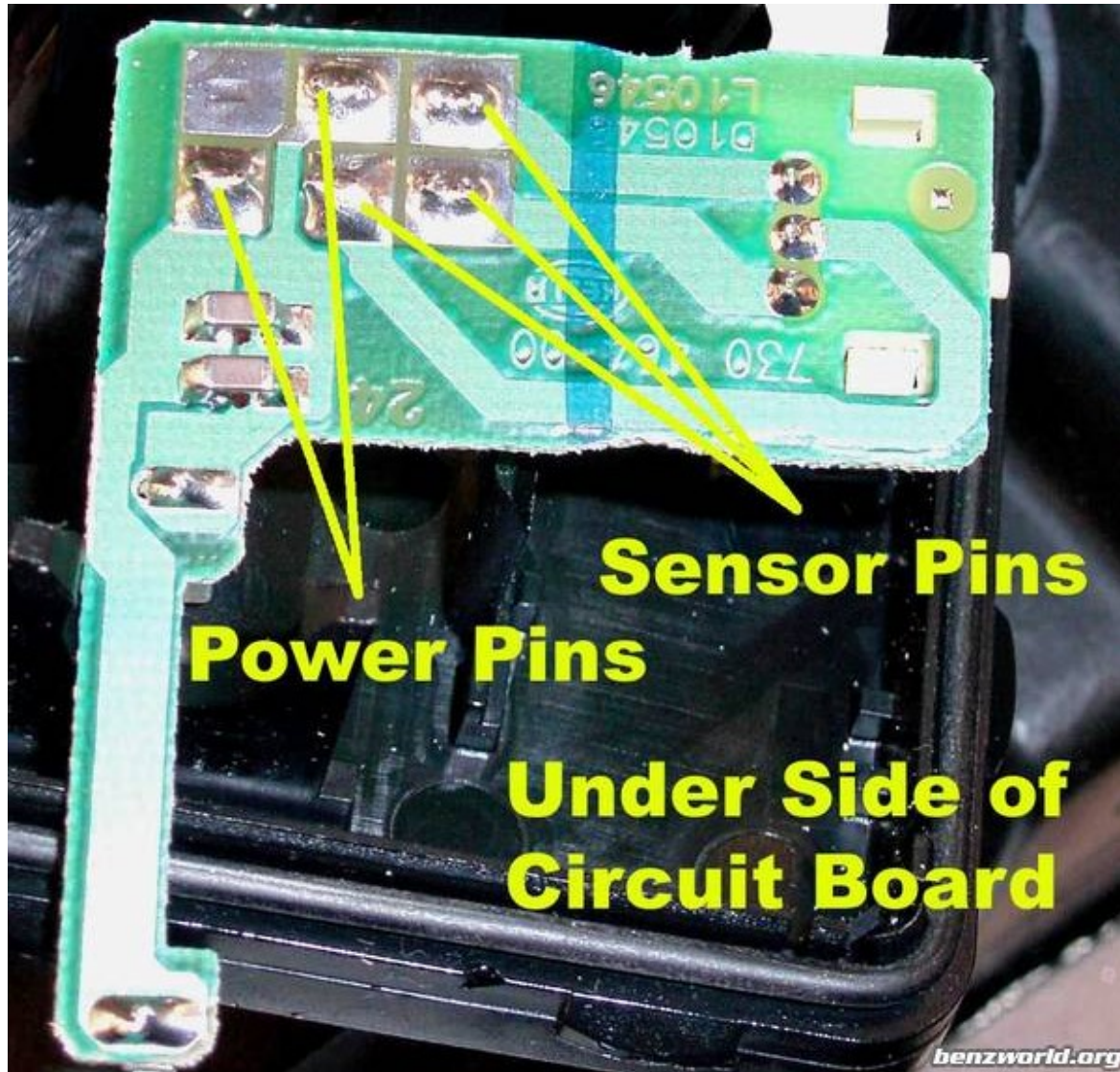
Now here is another interesting fact. a 1-1/2 volt battery will drive the motor, (the higher the voltage the faster the motor will turn, reducing the voltage makes the motor turns slower) reversing the leads reverses the direction of travel. This all has interesting possibilities for those that want to manually control the raising and lowering of the headlights.

Here is a picture with the cover off

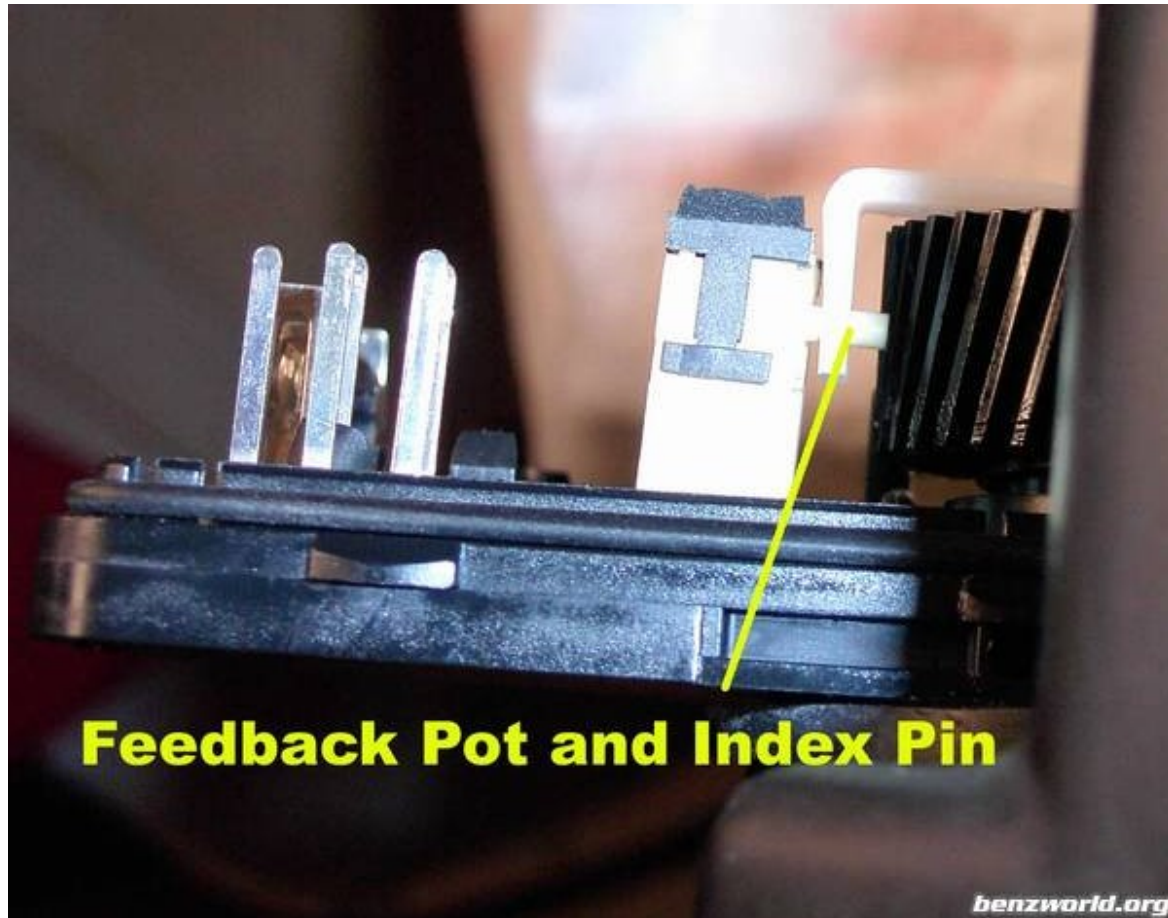




This is a picture of the circuit board showing the tracings and how everything is connected.

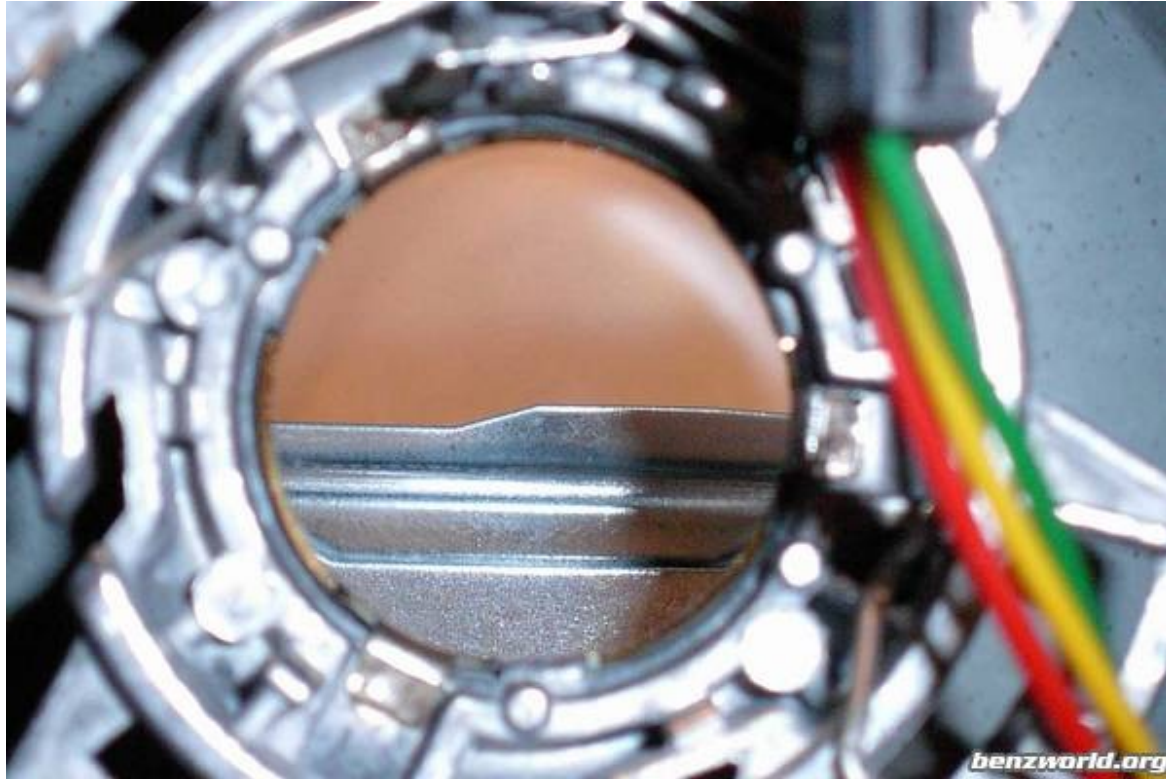


Here is side view showing the index pin attached to the arm on the top of the main gear that raises or lowers the headlight beams:



One last interesting picture. See if you recognize this pattern.





It is the low beam pattern for the bi-xenon headlights.

<http://www.benzworld.org/forums/forums/thread-view.asp?tid=1170204&posts=10>

**AndyFracica**

You don't need the adapters for the 2002 model year.

Attached is my publication for putting bi-xenons in a 2003 ml. Yours will be exactly the same.

<http://www.benzworld.org/publications/pub.asp?id=176>

<http://www.benzworld.org/forums/forums/thread-view.asp?tid=1124754&posts=16>

**scorchie**

Both the Euro-spec and UK-spec headlights have the plate in them to switch the pattern... but only to a "flat" pattern. No switching from RHD to LHD pattern or vice versa.

The pinouts are the same as the US-spec bixenon, however, if you are using a PP adapter, it probably does not pass the city light wiring through (that's why I adapted my headlights instead... the city light wiring is on the original headlight connector).

The corner lamps can be either US-spec or Euro-spec, they plug in the same on the wiring harness, the Euro-spec socket only has two pins (for the indicator) rather than three (for the additional running light).

<http://www.benzworld.org/forums/forums/thread-view.asp?tid=88483&posts=14>

**scorchie**

1998-2001 without HID is wired as follows (colors listed are for the WIRING HARNESS OF THE VEHICLE):

A/pink - low beam  
B/orange - n/c  
C/blue - n/c  
D/none - n/c  
E/brown - ground  
F/green - city/parking/standing  
G/white - high beam  
H/grey - fog light

The MY2002+ bixenon comes wired as follows (colors listed are for the WIRING HARNESS INSIDE THE HEADLIGHT):

A/brown - ground (city/high beam)  
E/brown - ground (low beam)  
F/white - high beam  
G/grey - city light  
H/yellow - low

On the new headlights, pop off the connector and push the pins out, and replace them in their new positions.

pleubner has attached this image :

AR82.10-P-4730GH	Remove/install headlamp unit	13.1.97
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**MODEL** 163.113 /128 /136 /154 /157 /172 /174 /175

1 Cover

2 Bolt

3 Nuts

4 Drift





E1 Left front headlamp unit

E2 Right front headlamp unit

X24 Headlamp wiring harness connector

The diagram illustrates the removal or installation of the front headlamp unit on a Mercedes-Benz vehicle. It shows the headlamp housing (E1/E2) mounted on the front of the car. A cover (1) is shown being removed from the top of the headlamp housing. A bolt (2) is used to secure the headlamp unit. Nuts (3) are used to secure the headlamp unit to the mounting bracket. A drift (4) is used to remove the headlamp unit. The wiring harness connector (X24) is shown connected to the headlamp unit. The diagram includes two circular insets: one showing the cover (1) being removed from the headlamp housing, and another showing the drift (4) being used to remove the headlamp unit. The diagram is labeled with 'benzworld.org' in the bottom right corner.

pleubner has attached this image :

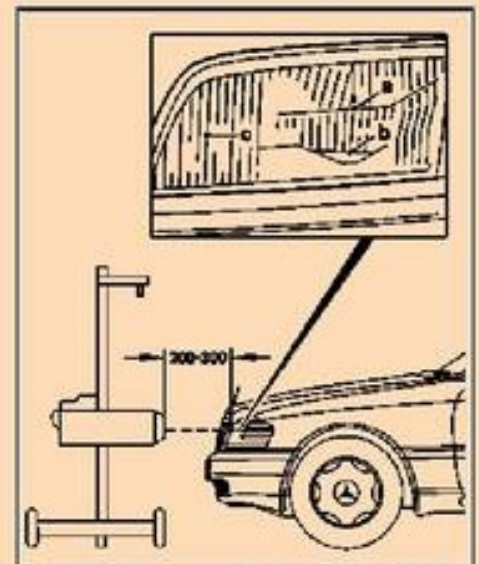
	<b>Remove/Install</b>		
1	Open engine hood		
2	Unlock cover (1) at the clip (arrow A) under the lamp unit and unhook	 <b>Installation:</b> Lock clip again.	
3	Unscrew screw (2)		
4	Unscrew nuts (3).	 <b>Installation:</b> Align the lamp unit so that the distance of the cover to the bumper is even.	
5	Unhook left front headlamp unit (E1) or right front headlamp unit (E2) from the hole (arrow B) using drift (4) and pull forwards		
6	Disconnect headlamp harness connector (X24)		
7	Remove headlamp unit toward front		
8	Install in the reverse order		
9	Perform function check		
10	Check and correct headlamp adjustment		
	Check and correct headlamp adjustment		AP82.10-P-8260GH <b>benzworld.org</b>

pleubner has attached this image :

AP82.10-P-8260GH	Check and correct headlamp adjustment	2.7.97
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## MODEL 163





a=Marking for low beams  
b=Marking for high beams  
c=Marking for fog lamps



**benzworld.org**



pleubner has attached this image :



	Check		
1	Drive vehicle to level surface	<p>The vehicle level must not change when the brakes are applied.</p> <p>Vehicle must be in ready-for-the-road condition (unladen weight, fuel tank full or proper additional weight).</p> <p>Correctly adjust tire pressure.</p> <p>Load driver's seat with 75 kg or a person (except USA)</p>	
2	Align headlamp adjustment tester to vehicle and adjust height according to marking in lens	 <p> Follow the operating instructions for headlamp beam setting equipment exactly</p>	WH58.30-Z-1002-09A
 <b>Danger!</b>  3	<p><b>Risk of accident</b> from vehicle starting off by itself when engine running. <b>Risk of injury</b> suffered in the form of bruises or burns to the hands when reaching in while the engine cranks or runs</p> <p>Run engine and switch on low beam</p>	<p>Secure vehicle to prevent it from moving off by itself.</p> <p>Wear closed and close-fitting work clothes. Do not touch hot or rotating parts.</p>	<div data-bbox="1267 853 1501 887" data-label="Text">AS00.00-Z-0005-01A</div> <div data-bbox="1283 1005 1544 1039" data-label="Text"><b>benzworld.org</b></div>

pleubner has attached this image :



4	Check headlamp range control for proper function	(except USA)  The light beams from both headlamps should change uniformly	
5	Set headlamp range control switch to position 0		
6	Check low beams	Adjust if necessary (except USA)  Due to the common reflector unit, the low beams, high beams and fog lamps are adjusted simultaneously.  US version: ↓  See "Owner's Manual"	AP82.10-P-8260-01A
7	Check high beam adjustment		AP82.10-P-8260-02A
8	Check fog lamps		AP82.10-P-8260-04A

**Commercially available tools (see Workshop Equipment Manual)**

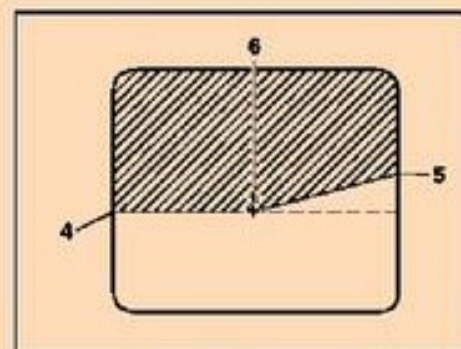
Number	Designation	Make (e.g.)	Order number
WH58.30-Z-1002-09A	Headlamp adjuster	Robert Bosch GmbH Franz Oechsle Str. 4 D-73207 Plochingen, Germany	

[benzworld.org](http://benzworld.org)

pleubner has attached this image :

AP82.10-P-8260-01A	Adjust low beam		
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- 1 When adjusting the height, the light-dark boundary must be aligned with the horizontal separating line (4) of the beam adjuster. When carrying out the lateral adjustment, the breakpoint line (5) must be positioned below the central mark (6) and begin on the horizontal separation line (4).

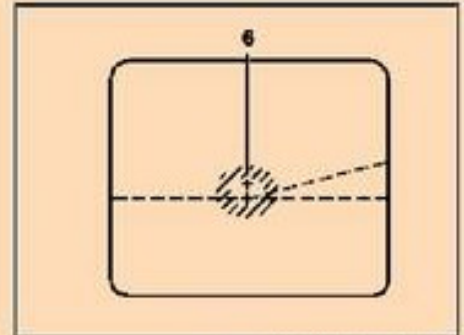


[benzworld.org](http://benzworld.org)

pleubner has attached this image :

AP82.10-P-8260-02A	Check setting of high beam		
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- 1 The center of the light beam must be positioned on the corresponding central mark (6).  
If not: Check that bulb is correctly seated.

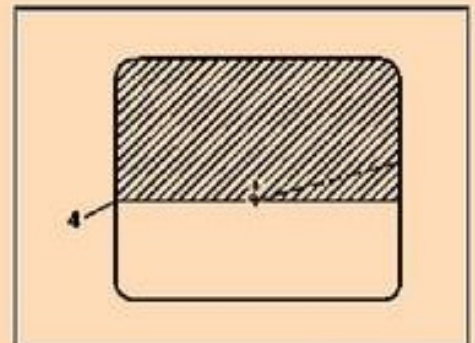


benzworld.org

pleubner has attached this image :

AP82.10-P-8260-04A	Set or inspect fog lamps		
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- 1 The light-dark boundary must be as horizontal as possible at the height of the appropriate dividing line (4), correct if necessary.
- 2 For model 140 sedan as of approx. 03.94, 168 and 202: Check seat of bulb.



P82 10-0205-01

Model 163.113 /154 #A as of 289565,  
163.113 #X as of 754620,  
163.128 /154 /157 /175 except CODE (U49) Styling package

Arrow: Position of adjusting screw



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