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# ULTIMATE SERIES CAR AUDIO SPEAKERS

UP5, UP6, UP35, UP36

UR5i\*, UR6i\*

UR35i\*, UR36i\*

UP2,5, UR2,5, UR1

\* Improved 2006 versions with diecast baskets

## WELCOME

Thank you for buying a DLS ULTIMATE speaker. This manual will show you how to do a correct installation. Please read the entire manual before beginning the installation. Install the speakers yourself if you feel confident with our instructions and if you have the proper tools. The ULTIMATE speakers are our best speaker line but a poor installation job can destroy the final result even from these speakers. So if you feel unsure, turn over the installation job to someone better suited to it.

## INSTALLATION

Mount the speakers in the door or in the dashboard of your car. Normally they will fit in the factory pre-made mounting holes. If you want an improved sound reinforce with a baffle of MDF-board or similar. An installation high up on the door side is to be preferred. An alternative installation is in so called kick panels down on each side of the floor with the speakers facing up- and inwards towards the listener.

For two- or three way speaker systems with separate tweeter an installation of the tweeter close to the bass/mid element is to be preferred. The tweeter can also be installed on the dash-board, or recessed in the door with the accessories in the tweeter box.

It is important to fasten the speakers properly in order to avoid bad sound or rattling.

For speakers with separate filters in boxes or similar it is vital that they are attached properly to the interior of the vehicle to avoid rattling. Don't place them close to the internal wiring of the car, this can cause interference.

Avoid to install filter boxes in the door sides because they can easily be broken because of rattling or moisture. Make sure the cables don't get jammed causing a short circuit to ground. This can damage the output circuits of the head unit or amplifier.

The sealing strip coming with some of the kits can be used for improved sealing between the bass element and the mounting surface.

The tweeter installation for kits with separate tweeter is described on last page, or in the instruction sheet coming with the tweeters.

## SPEAKER ENCLOSURES

If you want to install the speaker in an enclosure the normal size for a closed box is:

5,25" (13 cm) speakers	: 6-8 liters
6,5" (16,5 cm) speakers	: 10-12 liters
8" (20 cm) speakers	: 15-20 liters

These volumes are only a guideline. The volumes can vary between different speakers. Contact your local DLS dealer for more exact information about your specific speaker.

## TWO-WAY SYSTEMS UP5 & UP6

These 2-way systems have a separate UP1C tweeter. The filters are combined lowpass and highpass in a plastic box with selectable tweeter level inside.

On the following pages you can see how to connect the filters.

**The filters must be used, if you connect without them the sound becomes bad and you will destroy the tweeter. You don't have to use the passive crossover if the system is connected to separate amplifiers and an active crossover.**

## THREE-WAY SYSTEMS UP35 & UP36

These 3-way systems have separate UP1C tweeter and UP2,5 midrange. The filter components are mounted in a plastic box with selectable tweeter and midrange level inside.

On the following pages you can see how to connect the filters.

**The filters must be used, if you connect without them the sound becomes bad and you will destroy the tweeter. You don't have to use the passive crossover if the system is connected to separate amplifiers and an active crossover.**

## TWO-WAY SYSTEMS UR5i, UR6i

These 2-way systems have a separate UR1 tweeter. The filters are combined lowpass and highpass in a plastic box with selectable tweeter level inside.

On the following pages you can see how to connect the filters.

**The filters must be used, if you connect without them the sound becomes bad and you will destroy the tweeter. You don't have to use the passive crossover if the system is connected to separate amplifiers and an active crossover.**

## THREE-WAY SYSTEMS UR35i & UR36i

These 3-way systems have separate UR1 tweeter and UR2,5 midrange. The filter components are mounted in a plastic box with selectable tweeter and midrange level inside.

On the following pages you can see how to connect the filters.

**The filters must be used, if you connect without them the sound becomes bad and you will destroy the tweeter. You don't have to use the passive crossover if the system is connected to separate amplifiers and an active crossover.**

# SPEAKER FACTS FOR DLS ULTIMATE SERIES

Model	Woofers	Mid	Tweeter	Nom. power	Max power	Sensitivity	Magnet size	Inst. depth	Mounting hole	Crossover
UP5	13 cm / 5,25"		28 mm / 1,1"	120 W	180 W	89 dB	62 mm / 2,44"	58 mm / 2,28"	120 mm / 4,72"	Separate box Separate box
UP6	16,5 cm / 6,5"		28 mm / 1,1"	150 W	180 W	88 dB	62 mm / 2,44"	63 mm / 2,48"	140 mm / 5,5"	
UP35	13 cm / 5,25"	2,5"	28 mm / 1,1"	120 W	180 W	89 dB	62 mm / 2,44"	58 mm / 2,28"	120 mm / 4,72"	Separate box Separate box
UP36	16,5 cm / 6,5"	2,5"	28 mm / 1,1"	150 W	180 W	88 dB	62 mm / 2,44"	63 mm / 2,48"	140 mm / 5,51"	
UR5i	13 cm / 5,25"		28 mm / 1,1"	80 W	120 W	91 dB	85 mm / 3,35"	62 mm / 2,44"	120 mm / 4,72"	Separate box Separate box
UR6i	16,5 cm / 6,5"		28 mm / 1,1"	100 W	160 W	91 dB	85 mm / 3,35"	65 mm / 2,56"	140 mm / 5,51"	
UR35i	13 cm / 5,25"	2,5"	28 mm / 1,1"	80 W	120 W	91 dB	85 mm / 3,35"	62 mm / 2,44"	120 mm / 4,72"	Separate box Separate box
UR36i	16,5 cm / 6,5"	2,5"	28 mm / 1,1"	100 W	160 W	91 dB	85 mm / 3,35"	65 mm / 2,56"	140 mm / 5,51"	

## RUNNING-IN PERIOD

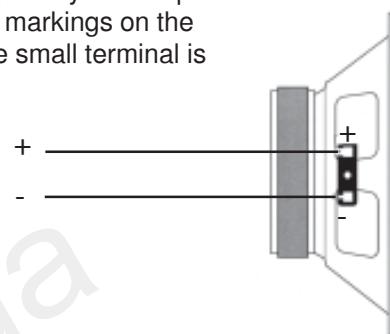
Allow the speakers to play for at least 15-20 hours. After this time the performance is correct.

## SPEAKER PHASING

To be sure to have the correct speaker polarity (phase) you can check this by using a 1,5 Volt battery. Connect a cable from the battery plus-pole to the speaker plus, and a cable from the battery minus to the speaker minus. If the speakers are correctly connected the speaker cone should move outwards on both right and left channel. This check must be made on the cables going from the speakers, to the output terminals of your car stereo or amplifier.

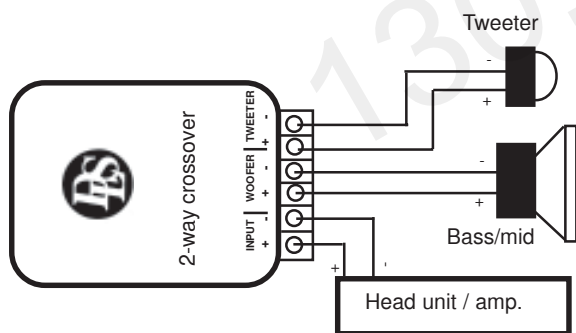
## CONNECTION OF SPEAKERS

Make sure you connect the cables with correct polarity to the speakers. Observe the markings on the terminal. The small terminal is minus.



## FILTER/CROSSOVER INSTALLATIONS

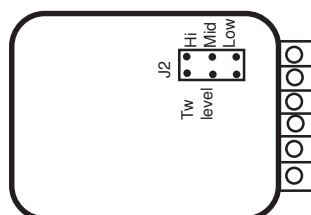
### Filter installation and connection of UP5 & UP6



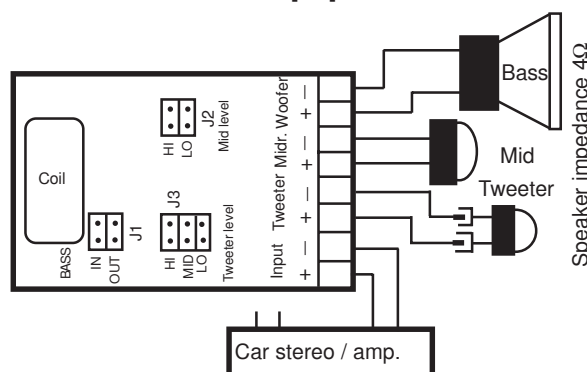
### TWEETER LEVEL: JUMPER J2

Select tweeter level by moving the small jumper J2 inside the filter box.

High level      Mid level      Low level



### Filter installation and connection of UP35 & UP36 3-way systems



The drawing shows the connection of a 3-way system to one channel. The other channel is connected in the same way. The tweeter level is adjustable in three steps, the MID level in two steps:

#### Tweeter level (J3):

High = jumper in HI-position  
Mid = jumper in MID-position  
Low = jumper in LO-position

#### Midrange level J2):

High = jumper in HI-position  
Low = jumper in LO-position

**Jumper J1 is used when you want to run the system without midbass driver. In this case some components inside the filter must be disconnected.**

**Midbass connected:** jumper mounted in IN-position.

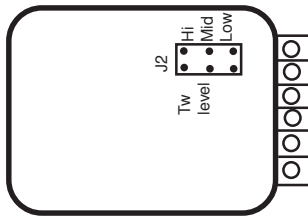
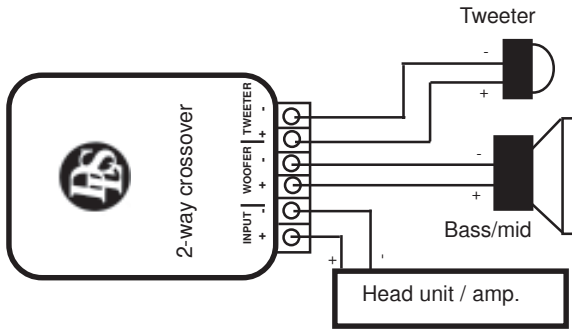
**Midbass disconnected:** jumper mounted in OUT-position.

#### NOTE!

If the system is used together with a subwoofer, test to phase reverse the subwoofer to see what sounds best.

# FILTER/CROSSOVER INSTALLATIONS

## Filter installation and connection of UR5i & UR6i

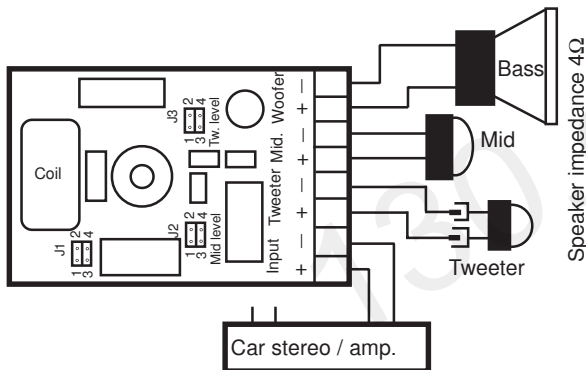


### Jumper setting: TWEETER LEVEL

Select tweeter level by moving the small jumper inside the filter box.

**High level**      **Mid level**      **Low level**

## Filter installation and connection of UR35i & UR36i 3-way systems



The drawing shows the connection of a 3-way system to one channel. The other channel is connected in the same way. The tweeter and mid levels are adjustable in two steps as described below:

### Tweeter level (J3):

High = jumper mounted between pin 1-2.  
Low = jumper mounted between pin 1-3.

### Midrange level (J2):

High = jumper mounted between pin 1-2.  
Low = jumper mounted between pin 1-3.

**Jumper J1 is used when you want to run the system without midbass driver. In this case some components inside the filter must be disconnected.**

**Midbass connected:** jumpers mounted between pin 1-2 & 3-4.

**Midbass disconnected:** jumpers mounted between pin 1-3 & 2-4.

### FACTS DLS UP2.5 MID-DOME

Size	2,5" ( 6,3 cm)
Nom. power (RMS)	90 Watts RMS
Maximum power	160 Watts
Frequency range	400 Hz-8 kHz
Sensitivity	91 dB / W / m
Resonant freq. / Fs	350 Hz
Magnet diameter	65 mm / 2,56"
Outer diameter	100 mm / 3,94"
Mount. depth	25 mm / 1"
Mount. hole	82 mm / 3,23"
Cone	Doped fabric
Voice coil	52 mm / 2" al flat wire

### FACTS DLS UR2.5 MID-DOME

Size	2,5" ( 6,3 cm)
Nom. power (RMS)	90 Watts RMS
Maximum power	160 Watts
Frequency range	400 Hz-8 kHz
Sensitivity	91 dB / W / m
Resonant freq. / Fs	350 Hz
Magnet diameter	85 mm / 3,35"
Outer diameter	100 mm / 3,94"
Mount. depth	36 mm / 1,42"
Mount. hole	82 mm / 3,23"
Cone	Doped fabric
Voice coil	52 mm / 2" al flat wire

### UP2,5 / UR2,5

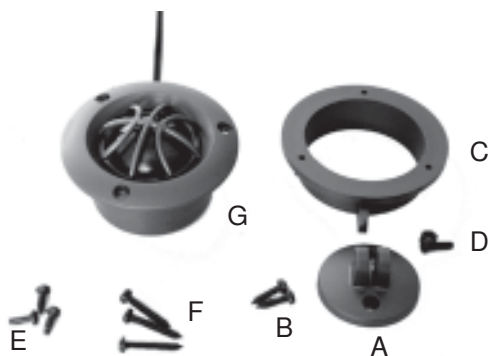
Should be installed high up in the door side or in the dashboard. Normally these speakers don't require any box. When the midrange is mounted high up in the dashboard the mid level becomes high in some vehicles. If so use the low mid level in the filter box. If the level is still too high, connect a 3-5 ohm resistor in series with the + feed.

## TWEETER INSTALLATION UR1

UR1 can be installed on the dashboard or recessed in a doorside. These tweeters are included in the DLS ULTIMATE speaker kits UR5i, UR6i, UR35i and UR36i.

### SURFACE MOUNTING:

Use all accessories coming with the tweeter. Attach the round bottom plate (A) with the screws (B) or double adhesive tape. The fasten the round holder (C) to the bottom plate using the screw and nut (D). The tweeter element (G) is then attached to the holder with three short screws (E).



### RECESSED MOUNTING:

You need a hole with a diameter of 45 mm / 1,77" in the door side. Attach the tweeter element (G) to the door side with the round holder (C) on the back side of the door panel. Use the three long screws (F) to attach the element to the holder. The ring with three holes on the tweeter element can be removed by twisting CCW if you want to install in some other way.

## TWEETER INSTALLATION UP1C

UP1C can be installed on the dashboard with the angled cup or recessed in a doorside with the flush cup. UP1C are included in the UP5i, UP6i, UP35i and UP36i speaker kits.

### SURFACE MOUNTING:

For angled surface mount together with the angled cup: The tweeter element is attached to the cup by fitting the three wings on the angled cup into the tracks of the element and then turn it clockwise. When removing the element from the cup, turn it ccw and lift it up.



### RECESSED MOUNTING:

You need a hole with a diameter of 48 mm / 1,89" in the door side. Put the two metal wings through the two tracks in the center of the cup, just as the picture shows, and attach them with the M4 screw and nut through the center hole. The cup is attached to the door side when the metal wings is pressed to the back side of the door. Put the tweeter element into the cup with the cable going out through the bottom hole. Then attach the element into the cup and turn it clockwise to attach to the cup. When removing the element from the cup, turn it ccw and lift it out.



### FACTS ABOUT DLS UR1 TWEETER

Art.no	10-25401
Size	28 mm
Nom. power (RMS)	50 Watts (80 Watts max)
Freq. range	1 kHz-25 kHz
Sensitivity	93 dB
Fs	900 Hz
Overall dimensions	62 mm / 2,44"
Magnet	28 mm / 1,1" neodymium
Mounting depth	26 mm / 1"
Mounting hole	45 mm / 1,77"
Cone material	Hand treated fabric

### FACTS ABOUT DLS UP1C TWEETER

Size	28 mm / 1,1"
Nom. power (RMS)	50 Watts (80 Watts max)
Freq. range	1,5 kHz-20 kHz
Sensitivity	93 dB
Magnet diameter	28 mm / 1,1"
Mounting depth	18 mm / 0,71"
Mounting hole	48 mm / 1,89"
Cone material	Hand treated fabric

## WARRANTY SERVICE

This speaker is covered by warranty, depending on the conditions in the country where it is sold. If the speaker is returned for service, please include the original dated receipt with the product.



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### Technical Assistance

For technical assistance ask the shop where the product was sold or the distributor in your very country. You can always phone the DLS Helpdesk in Sweden + 46 31 840060 or send an e-mail to info@dls.se. Information can also be found on our WEB-site www.dls.se. We follow a policy of continuous advancement in development. For this reason all or part of specifications & designs may be changed without prior notice.