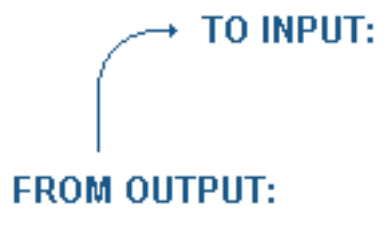






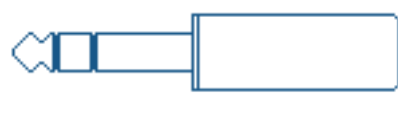
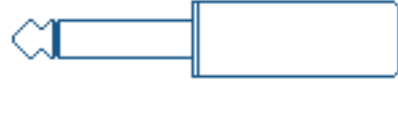
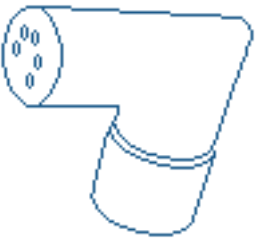


Van den Hul

Audio and Video Cable/Connector Wiring Diagrams for *DIY* purposes

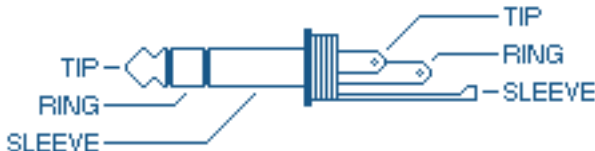
Selection Table:

Other connector types: [Headphones](#) | [S Video](#) | [Scart](#) | [DIN](#) | [Tuchel](#)


 <p>TO INPUT: FROM OUTPUT:</p>				
	Female Balanced XLR to Male Balanced XLR	Female Balanced XLR to Male Unbalanced RCA	Female Balanced XLR to Male Balanced 1/4" (6.3mm) or 3.5mm Jack	Female Balanced XLR to Male Unbalanced 1/4" (6.3mm) or 3.5mm Jack
	Male Unbalanced RCA to Male Balanced XLR	Male Unbalanced RCA to Male Unbalanced RCA	Male Unbalanced RCA to Male Balanced 1/4" (6.3mm) or 3.5mm Jack <hr/> Male Unbalanced RCA to Male Stereo 1/4" (6.3mm) or 3.5mm Jack	Male Unbalanced RCA to Male Unbalanced 1/4" (6.3mm) or 3.5mm Jack
	Male Balanced 1/4" (6.3mm) or 3.5mm Jack to Male Balanced XLR	Male Balanced 1/4" (6.3mm) or 3.5mm Jack to Male Unbalanced RCA <hr/> Male Stereo 1/4" (6.3mm) or 3.5mm Jack to Male Unbalanced RCA	Male Balanced 1/4" (6.3mm) or 3.5mm Jack to Male Balanced 1/4" (6.3mm) or 3.5mm Jack <hr/> Male Stereo 1/4" (6.3mm) or 3.5mm Jack to Male Stereo 1/4" (6.3mm) or 3.5mm Jack	Male Balanced 1/4" (6.3mm) or 3.5mm Jack to Male Unbalanced 1/4" (6.3mm) or 3.5mm Jack <hr/> Male Stereo 1/4" (6.3mm) or 3.5mm Jack to Male Unbalanced 1/4" (6.3mm) or 3.5mm Jack
	Male Unbalanced 1/4" (6.3mm) or 3.5mm Jack to Male Balanced XLR	Male Unbalanced 1/4" (6.3mm) or 3.5mm Jack to Male Unbalanced RCA	Male Unbalanced 1/4" (6.3mm) or 3.5mm Jack to Male Balanced 1/4" (6.3mm) or 3.5mm Jack <hr/> Male Unbalanced 1/4" (6.3mm) or 3.5mm Jack to Male Stereo 1/4" (6.3mm) or 3.5mm Jack	Male Unbalanced 1/4" (6.3mm) or 3.5mm Jack to Male Unbalanced 1/4" (6.3mm) or 3.5mm Jack
	Not Common	Female Tonearm Connector to Male Unbalanced RCA	Not Common	Not Common

Other Connectors (pin designations):

- **Headphones:**

 <p>Male Stereo 1/4" (6.3mm) or 3.5mm Jack</p>	Pin:	Description:
	Tip	Left channel
	Ring	Right channel
	Sleeve	Ground/shield
Available from our accessories range: 1/4" (6.3mm) Jack connectors		
<p>Note: A rule of thumb regarding stereo jack plugs: The Right channel is always at the Ring: I.e. Right = Ring (The plug's configuration being: Tip, Ring, Sleeve). The sleeve of course is always ground/shield: I.e. Sleeve = Shield That leaves the Left channel at the Tip.</p>		

- **S Video:**


 <p>MALE connector solder side view</p>	Pin:	Description:
	1	Ground (Y)
	2	Ground (C)
	3	Y (Luminance = intensity + Sync.)
	4	C (Chrominance = color)
Available from our accessories range: S-VHS video connectors SCART adapter		
Available from our A/V cable range: The S-VHS-2-75 video cable		


- **Scart**

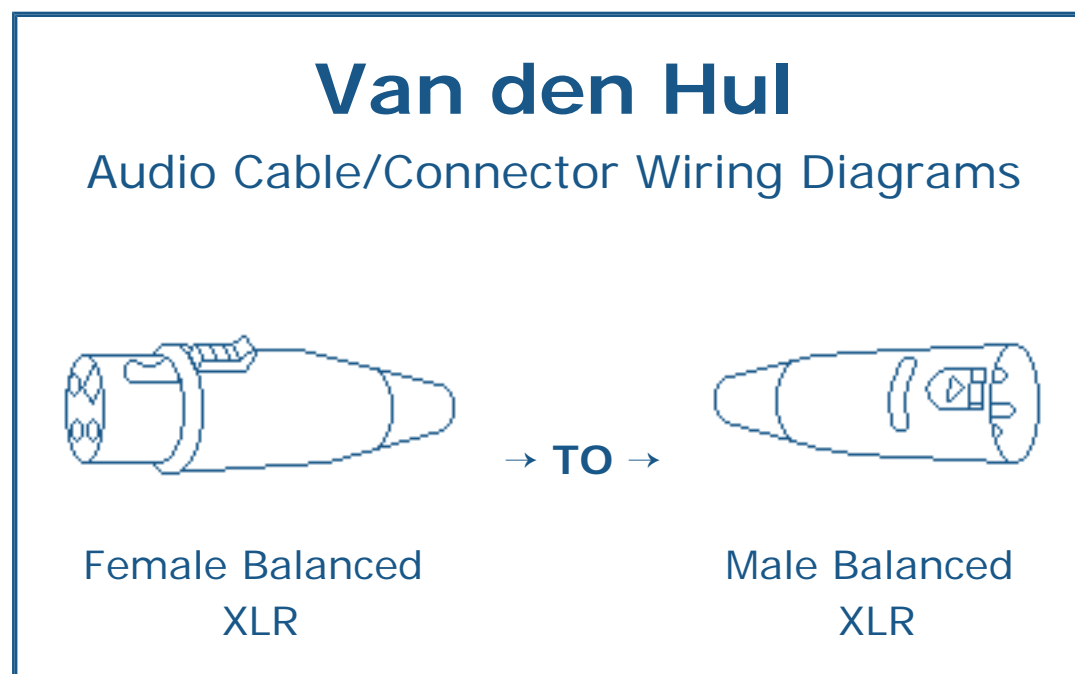
Older Audio Connector types (pin designations):

- **DIN**

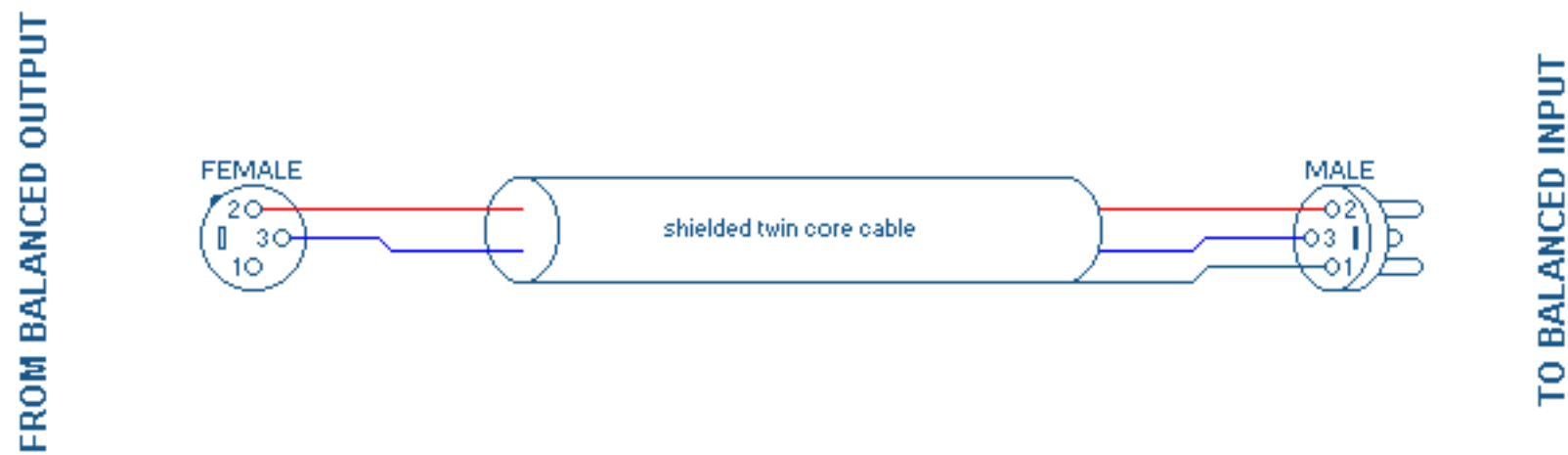
- **Tuchel** (microphone connections):

Large Tuchel (DIN 41624)		
 <p>Solder side view</p>	Pin:	Description:
	1	Signal +
	2	Signal -
	3	Ground

Small Tuchel (DIN 41524)		
 <p>Solder side view</p>	Pin:	Description:
	1	Signal +
	2	Ground
	3	Signal -



Drawn for line level connections; See remarks below.



Remarks:

If the cable is to be used for microphone or non mains powered musical instrument connections, i.e. with low (non line level) signals, the cable shield should also be linked to the signal sending side connector's ground pin. There are two reasons for this:

1. To extend the shielding function to the microphone or instrument's housing.
2. And also with phantom powered condenser microphones: To provide a phantom power supply current return path.

In all other cases (i.e. line level connections) leaving the cable shield disconnected at one side of the cable (drawn above) is safe practice. This to avoid ground loops with non properly internally grounded equipment. If with these "one side disconnected shield" connections RF interference problems are experienced, reconnecting the shield at the side where it was disconnected by means of a series network of a 47 Ohm resistor and a 10 nanoFarad ceramic disc capacitor is advised. Latter may be standardly applied for all balanced line level interconnections.

Reference: *K.R. Fause. Fundamentals of Grounding, Shielding and Interconnection. Journal of the Audio Engineering Society, Vol. 43, No. 6, June 1995, p. 498-516.*

Note: Van den Hul ready made balanced cables standardly have the cable shield connected at both ends allowing correct functionality with microphones and electrical instruments as well as with line level audio and AES/EBU digital connections, latter two assuming properly grounded equipment.

Suitable Van den Hul audio cable types and connectors:

- Whatever your application, [Van den Hul](#)'s broad cable program has the right cable.
- Available from our accessories range:
 - XLR connectors

Connector notes:

- XLR connectors have the following pin designations:
 - Pin 2 = Signal +
 - Pin 3 = Signal –
 - Pin 1 = Ground
- For optimal contact care we recommend our The SOLUTION contact fluid.

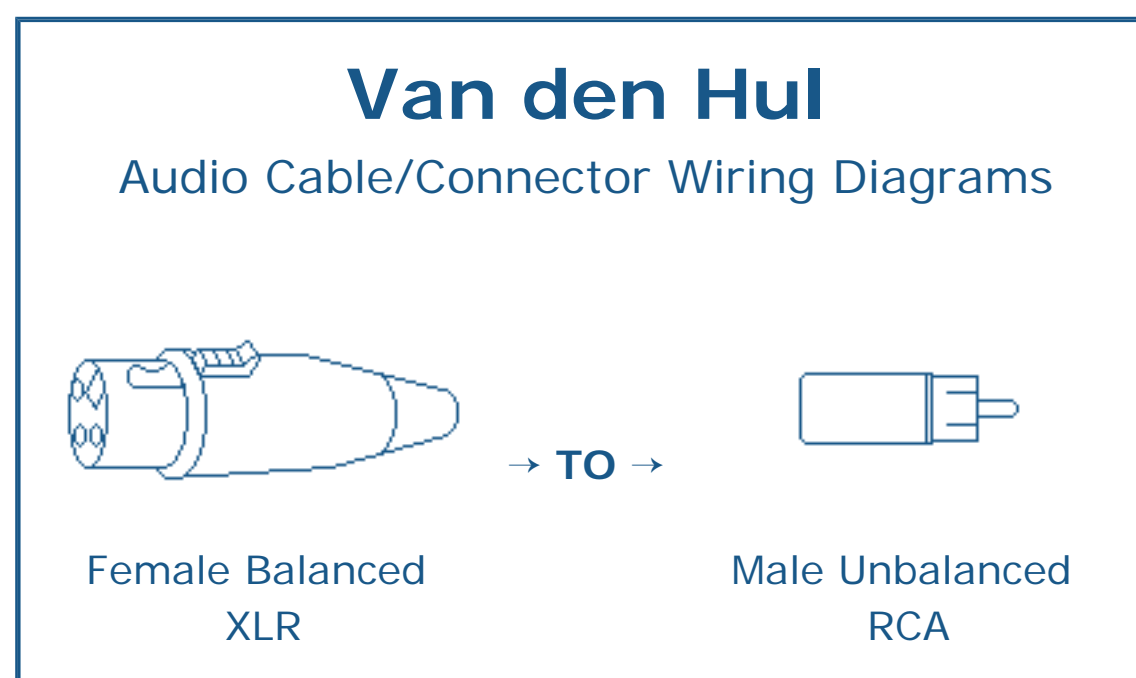


Fig. 1: If the signal source is equipped with a pseudo balanced output stage: (See remarks below).

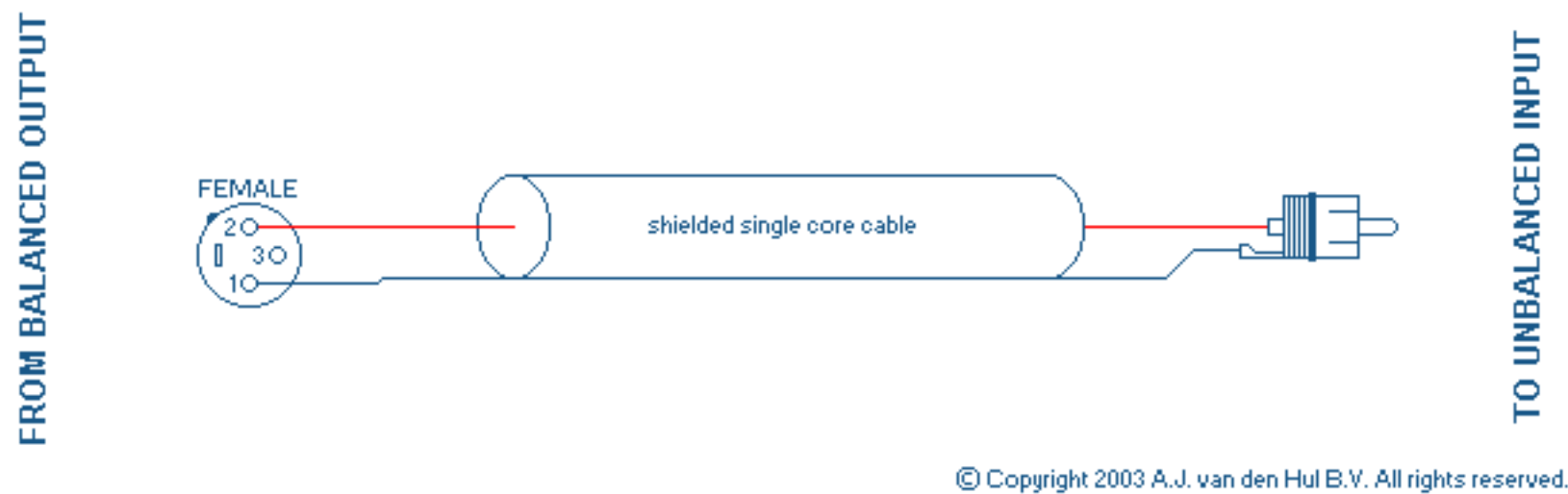


Fig. 2: If the signal source is equipped with a cross coupled output stage: (See remarks below).

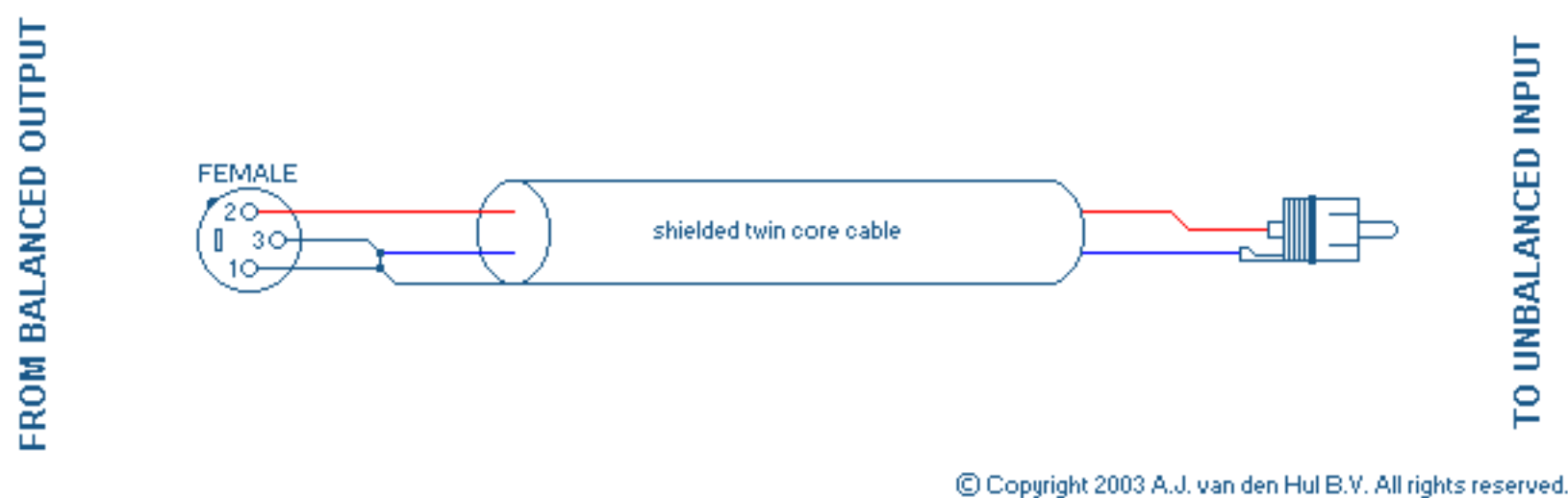
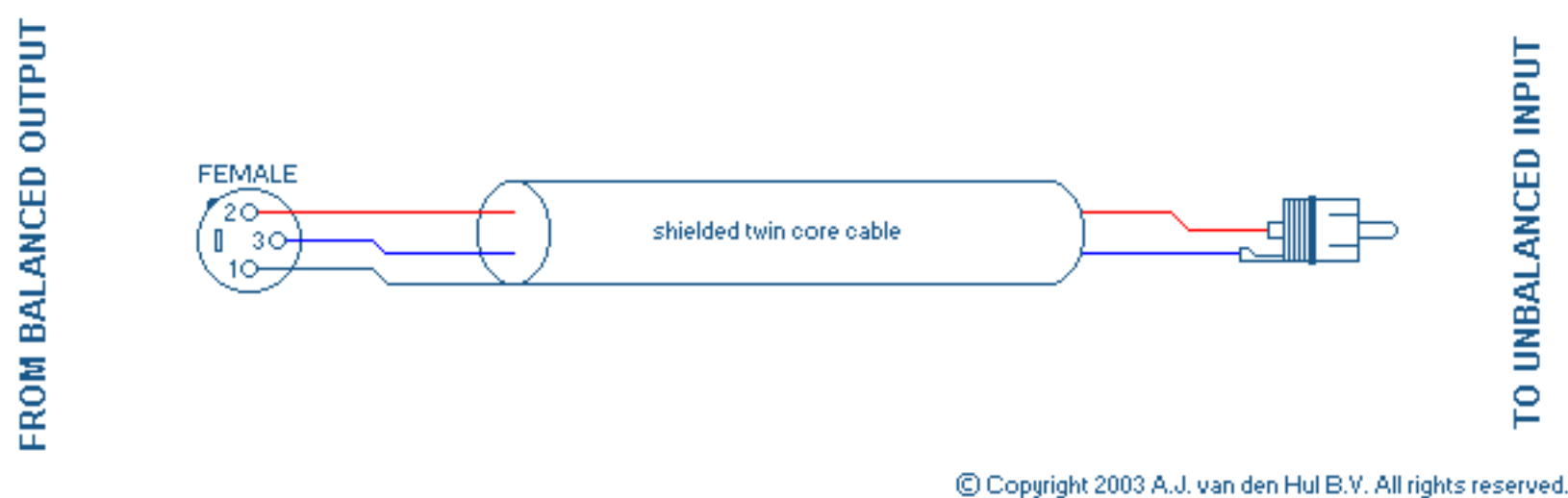


Fig. 3: If the signal source is equipped with an output transformer: (See remarks below).



Remarks:

In wiring a balanced signal source to an unbalanced input, knowing your exact type of balanced output is important. Your equipment's documentation or its supplier should be able provide the answer. Balanced outputs come in different flavours; On the one hand there are the true balanced transformer outputs which are completely galvanically isolated and therefore are the least problematic. On the other hand there are the so-called "transformerless" - also named "electronically balanced" - outputs which nowadays are common on most professional equipment. These transformerless/electronically balanced outputs come in two types:

1. Quite commonly seen is the plain "pseudo balanced" phase/antiphase output, where the equipment's internal unbalanced signal is simply fed to signal + out (XLR pin 2) by means of an opamp buffer and is fed to signal – out (XLR pin 3) simply by means of a polarity inverting opamp. This doesn't implement a

true balanced output and rather can be looked upon as a pair of unbalanced outputs, one being polarity inverted. Here the above Fig. 1's wiring configuration is recommended.

2. Much more sophisticated is the so-called "cross coupled output stage" in which two cross coupled opamps mimic an output transformer. Here the above Fig. 2's wiring configuration is recommended.

Regarding Fig. 2 and Fig. 3:

In case of RF interference, connecting the cable shield to signal ground at the unbalanced signal receiving side's connector through a 10 nanoFarad ceramic disc capacitor will often solve the problem.

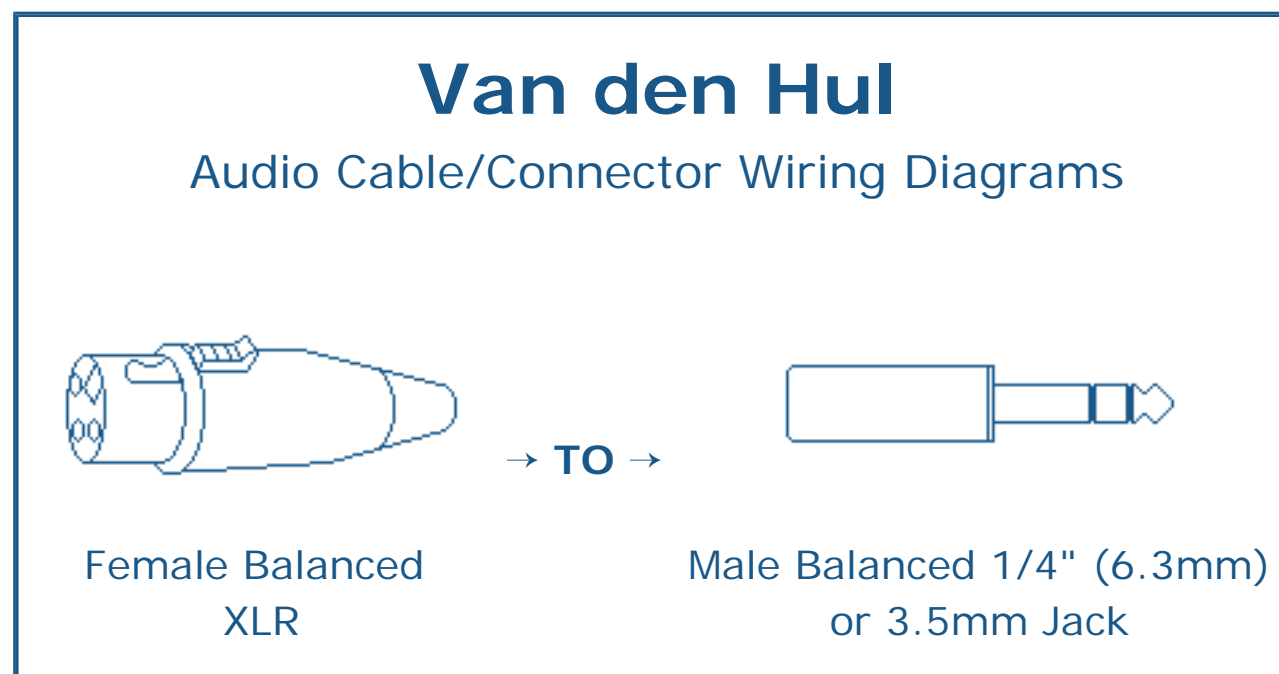
Note: Mixed interconnection of electronically balanced and unbalanced equipment remains prone to hum and noise problems since these two types of signal operation are incompatible. The above provides the recommended simple solutions, though, when problems remain in coupling an electronically balanced output to unbalanced inputs, best is to apply an audio isolation transformer.

Suitable Van den Hul audio cable types and connectors:

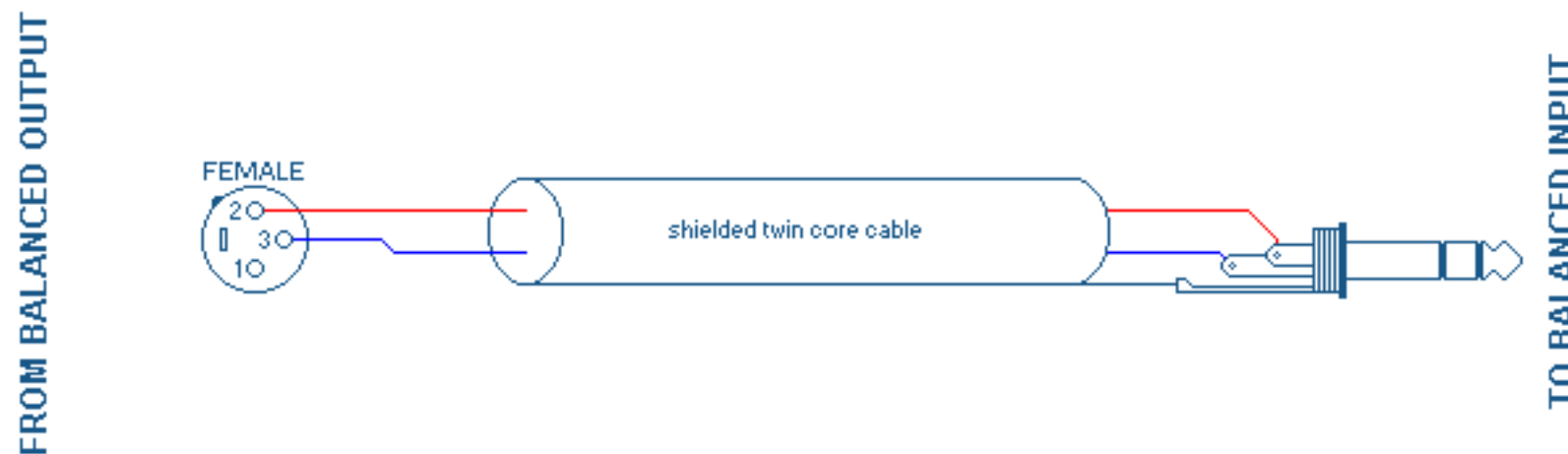
- Whatever your application, [Van den Hul](#)'s broad cable program has the right cable.
- Available from our accessories range:
 - XLR connectors
 - RCA type connectors

Connector notes:

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- RCA type connectors:
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Drawn for line level connections; See remarks below.



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 - Ring = Signal –
 - Sleeve = Ground
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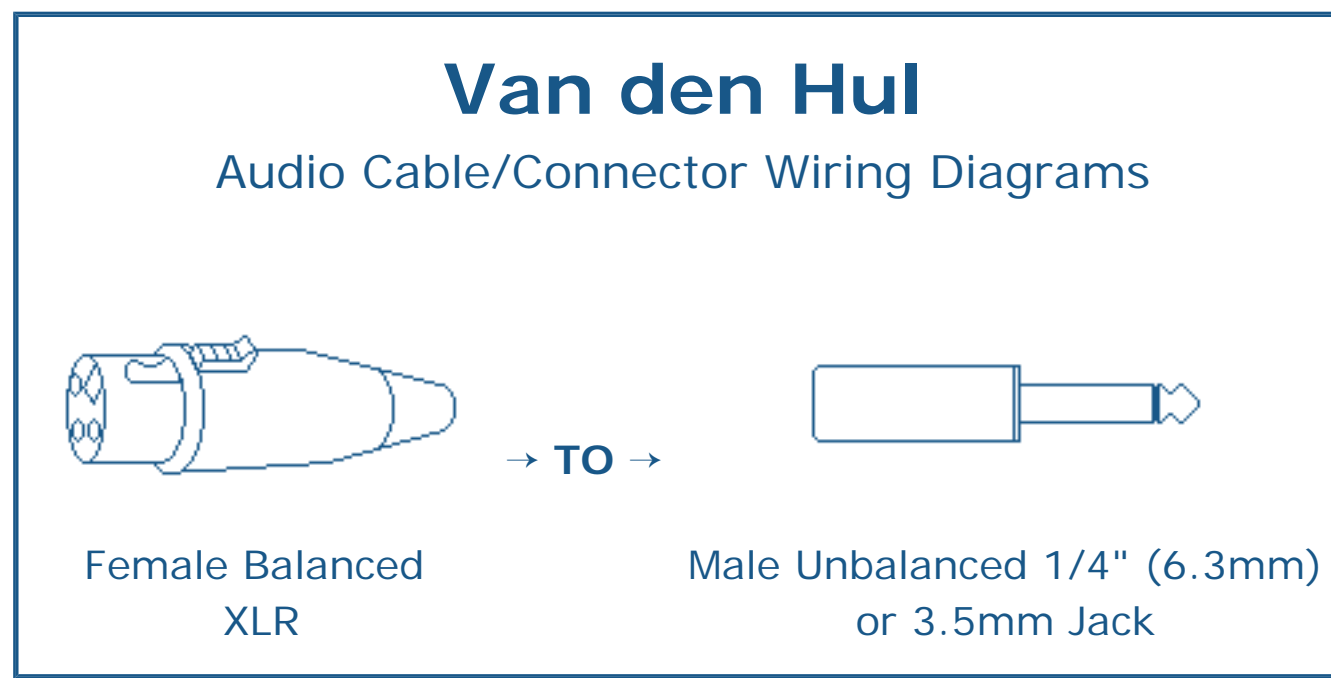


Fig. 1: If the signal source is equipped with a pseudo balanced output stage: (See remarks below).

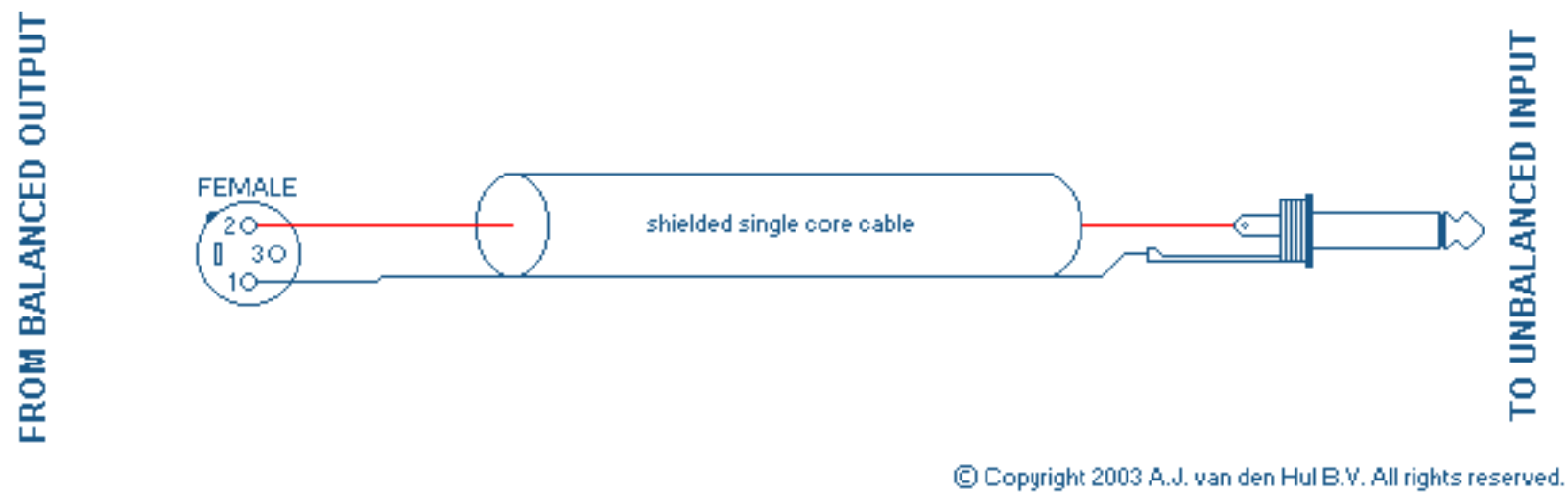


Fig. 2: If the signal source is equipped with a cross coupled output stage: (See remarks below).

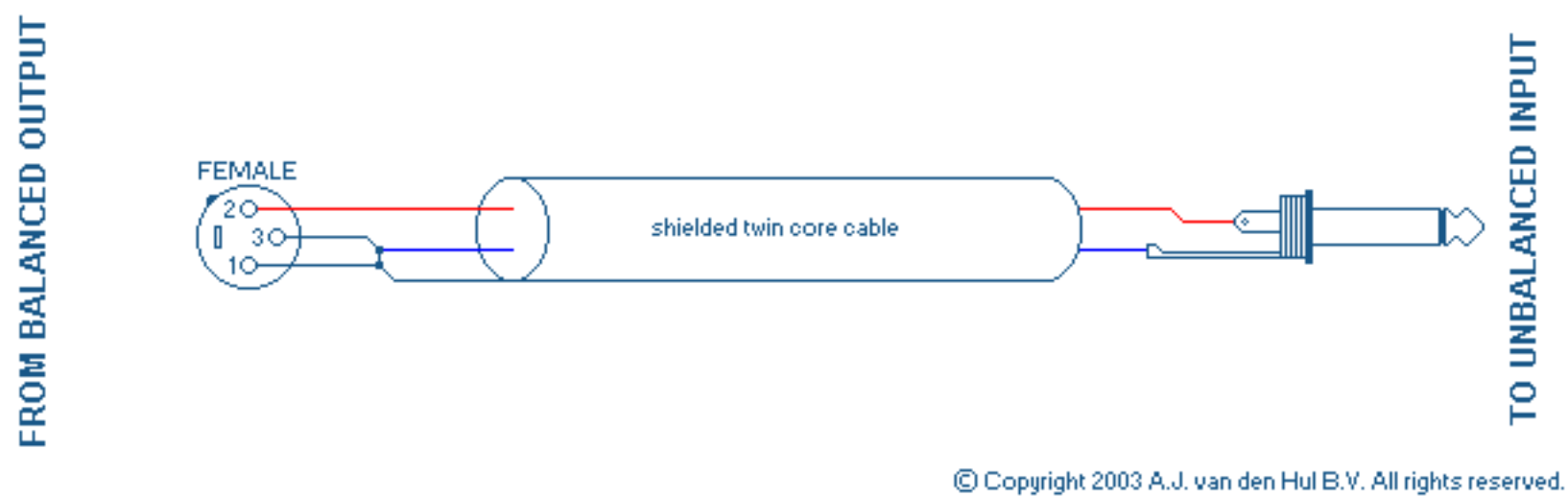
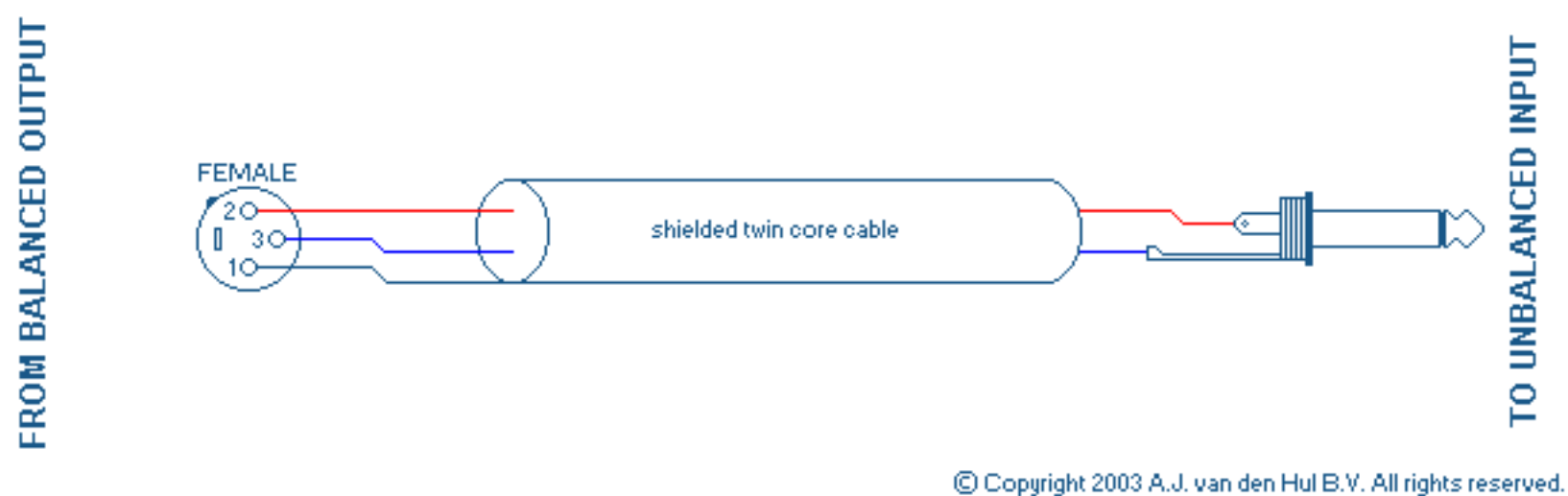


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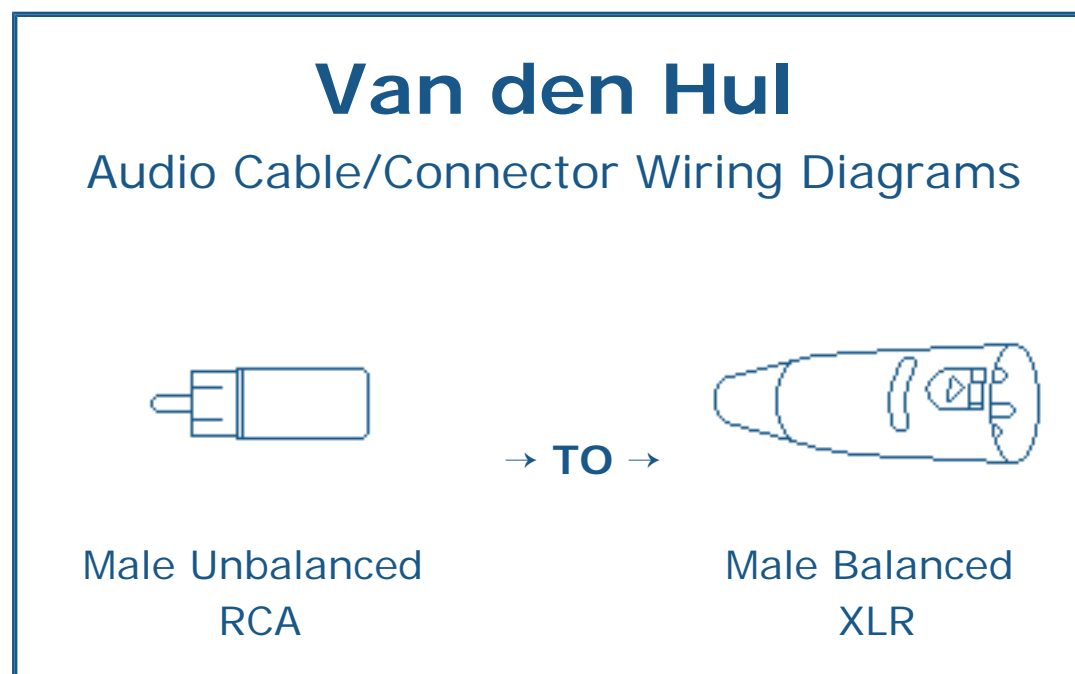
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Suitable Van den Hul audio cable types and connectors:

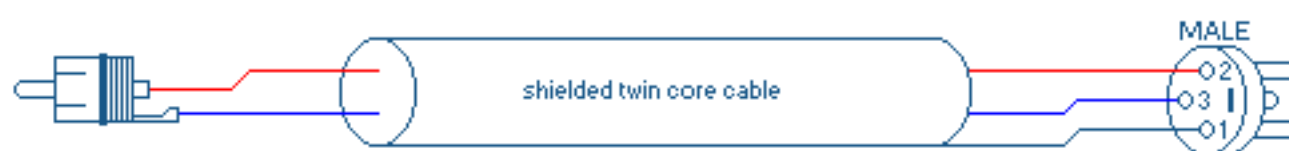
- Whatever your application, [Van den Hul](#)'s broad cable program has the right cable.
- Available from our accessories range:
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 - 1/4" (6.3mm) Jack connectors

Connector notes:

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 - Pin 1 = Ground
- For optimal contact care we recommend our The SOLUTION contact fluid.



FROM UNBALANCED OUTPUT



TO BALANCED INPUT

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Remarks:

The above drawn configuration is recommended. However, with the nowadays common electronically balanced (i.e. non-transformer) inputs, in some cases hum and or RF interference problems can be experienced. In this case the cable shield can be experimentally connected to signal ground at the unbalanced signal source side plug, either directly (in case of hum) or (in case of RF interference) by means of a 10 nanoFarad ceramic disc capacitor or a series network of a 47 Ohm resistor and a 10 nanoFarad ceramic disc capacitor. The best solution is situation dependent.

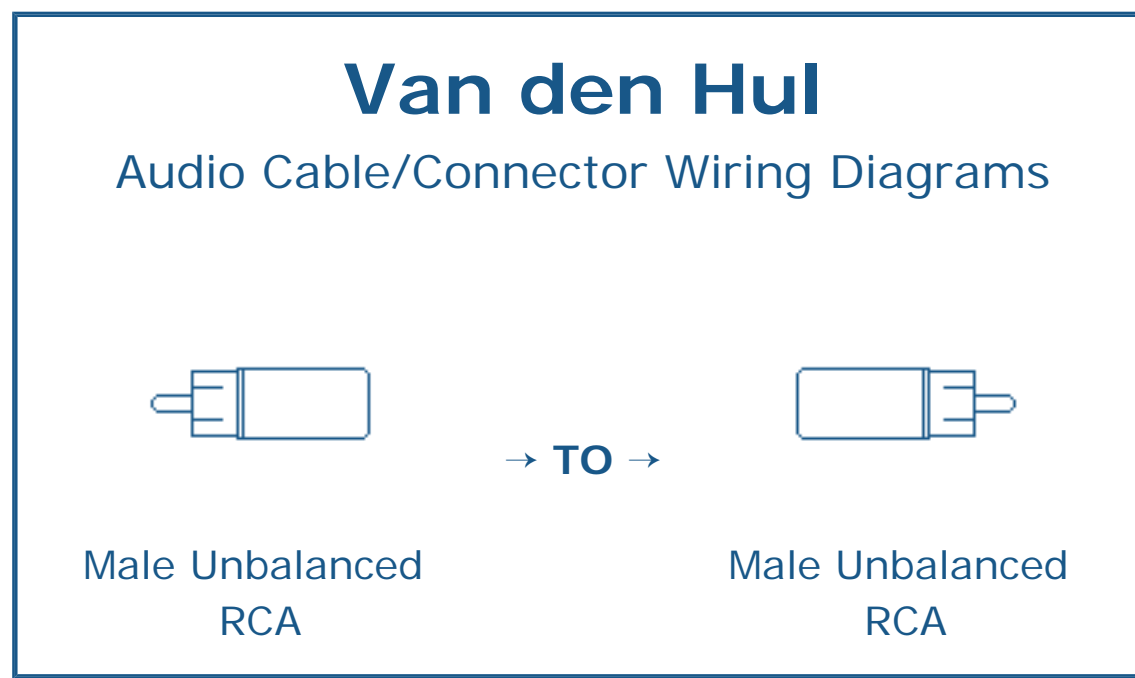
Note: Mixed interconnection of balanced and unbalanced equipment remains prone to hum and noise problems since these two types of signal operation are incompatible. The above diagram is the recommended simple solution, though best is to apply an audio isolation transformer when connecting balanced to unbalanced or vice versa.

Suitable Van den Hul audio cable types and connectors:

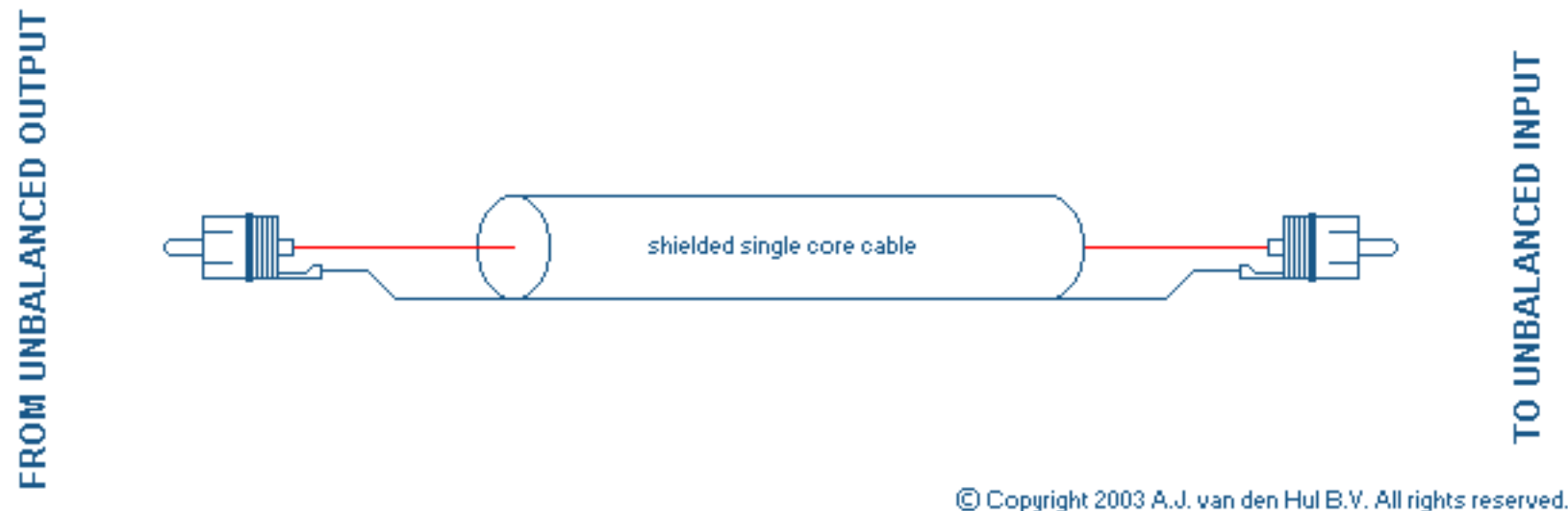
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 - RCA type connectors

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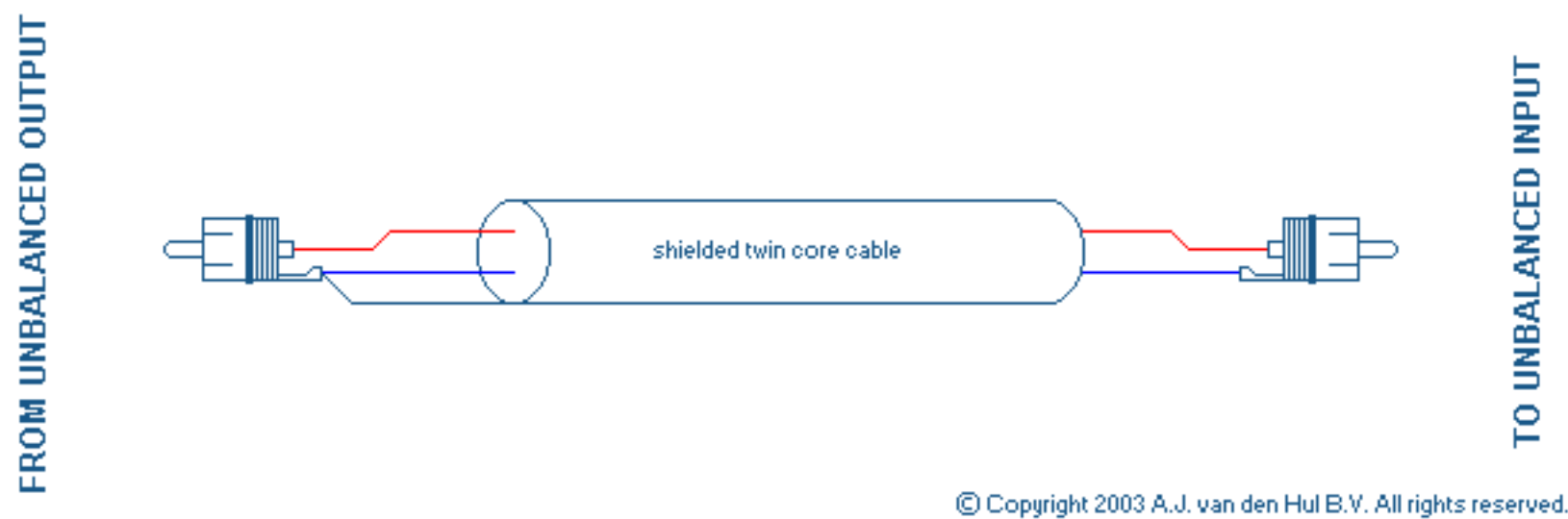
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 - The Left channel's plug is generally colour coded Blue, Black or White.
- For optimal contact care we recommend our The SOLUTION contact fluid.



Using shielded single core cable:



Using shielded twin core cable:



Using shielded twin core cable is recommended:

In this situation the audio signal ground is carried by a dedicated line, which signal current, being separated from the shield, can not easily be interfered with by the shield's noise currents caused by external interference. This advantage especially counts when low (e.g. microphone) signal levels are being transferred and/or long cable lengths are used. (With shielded single core cable on the other hand, the noise signal built up across the shield effectively is in series with (i.e. adds up to) the audio signal).

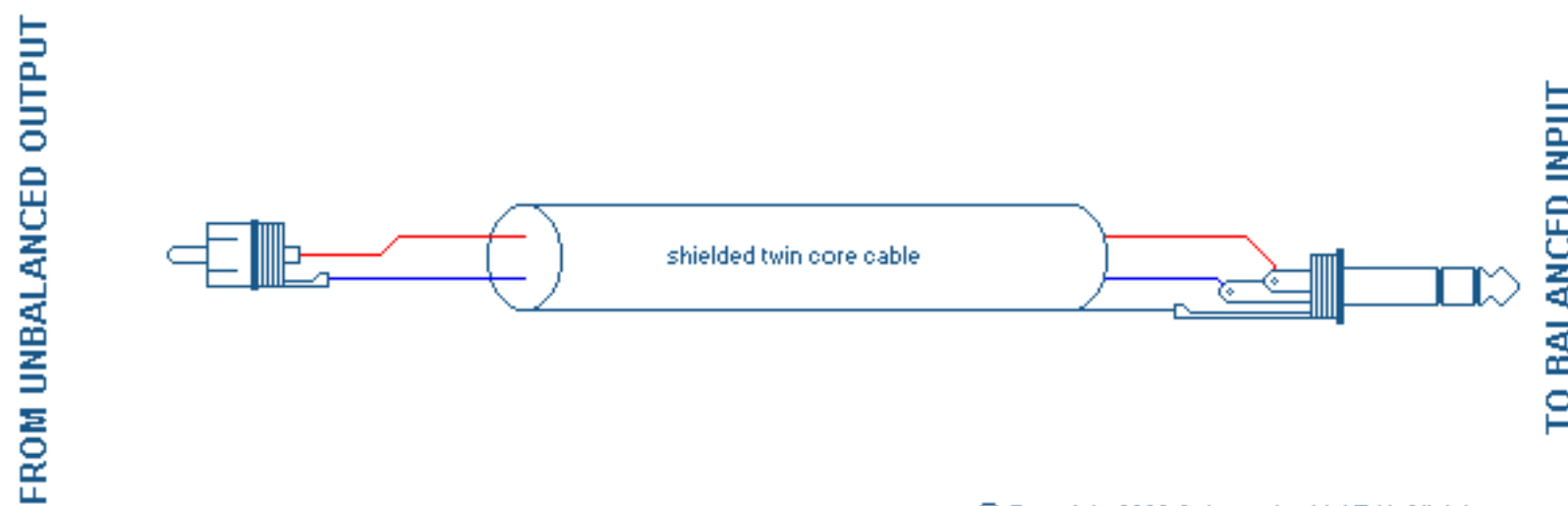
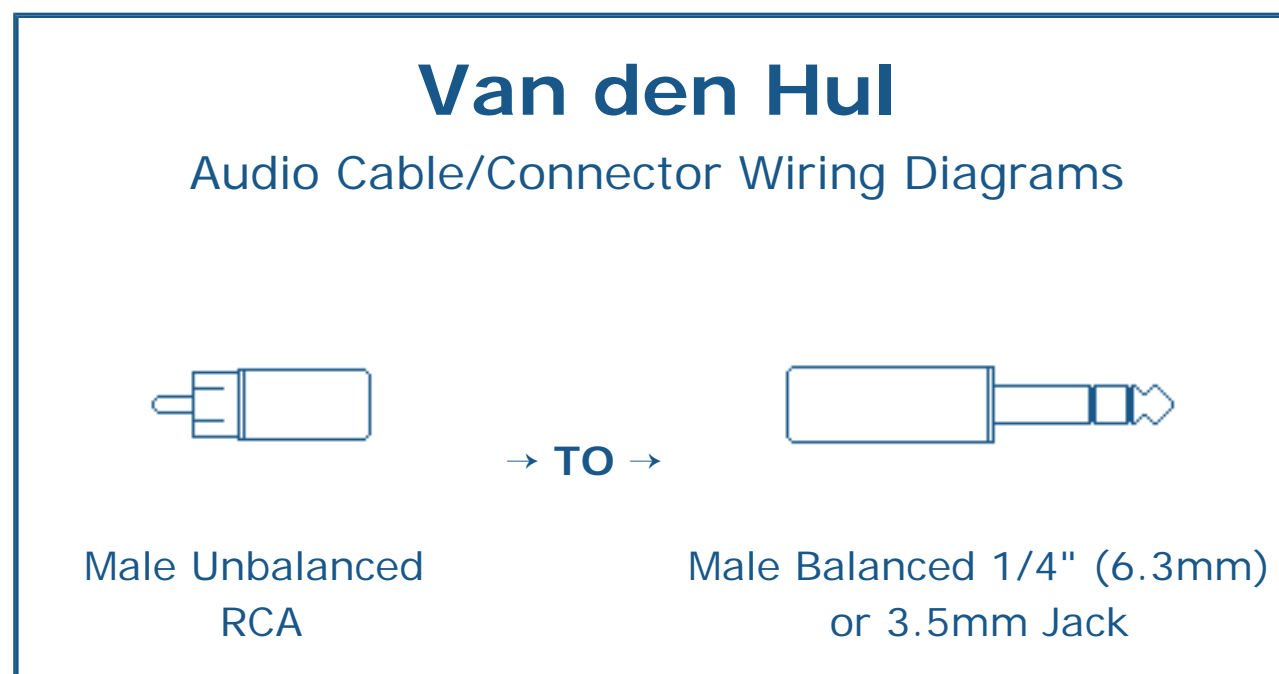
Furthermore, in connecting the shield to ground only at one side of the cable and lifting it at the other side it functions as a true screen: It does not carry any audio signal; It screens the inner conductors and drains away unwanted noise to one location.

Suitable Van den Hul audio cable types and connectors:

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- Available from our accessories range:
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The above drawn configuration is recommended. However, with the nowadays common electronically balanced (i.e. non-transformer) inputs, in some cases hum and or RF interference problems can be experienced. In this case the cable shield can be experimentally connected to signal ground at the unbalanced signal source side plug, either directly (in case of hum) or (in case of RF interference) by means of a 10 nanoFarad ceramic disc capacitor or a series network of a 47 Ohm resistor and a 10 nanoFarad ceramic disc capacitor. The best solution is situation dependent.

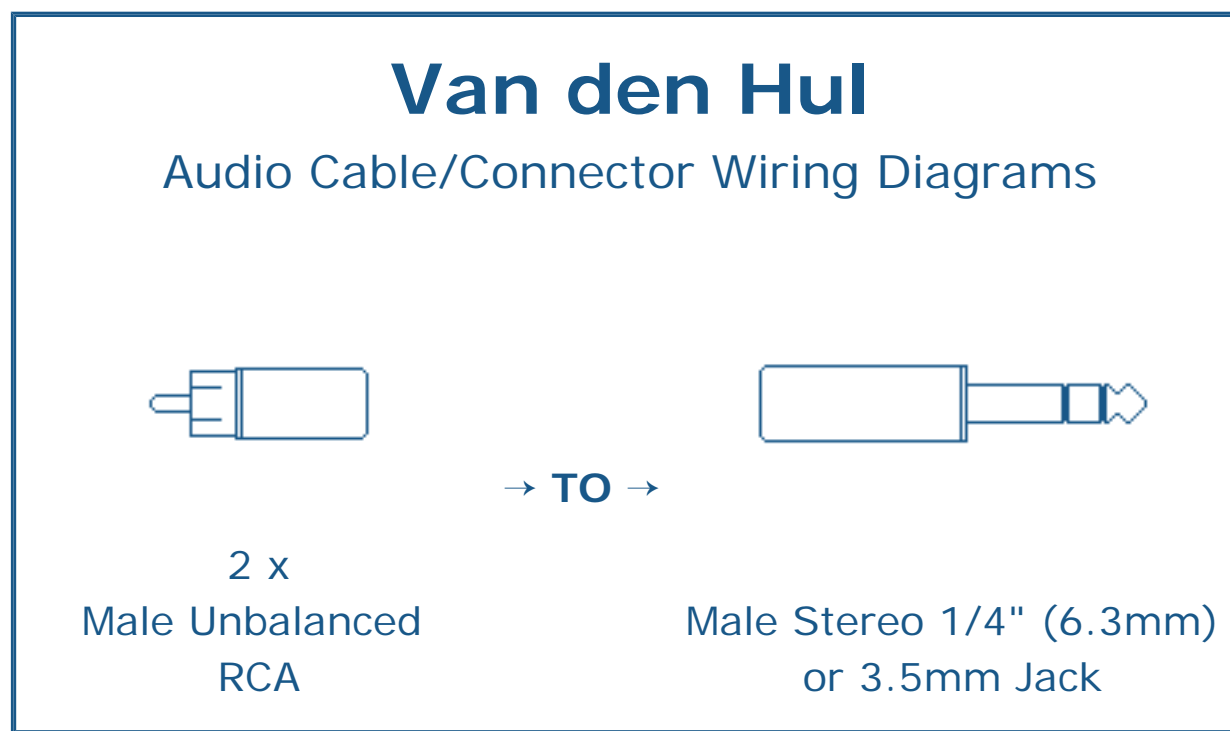
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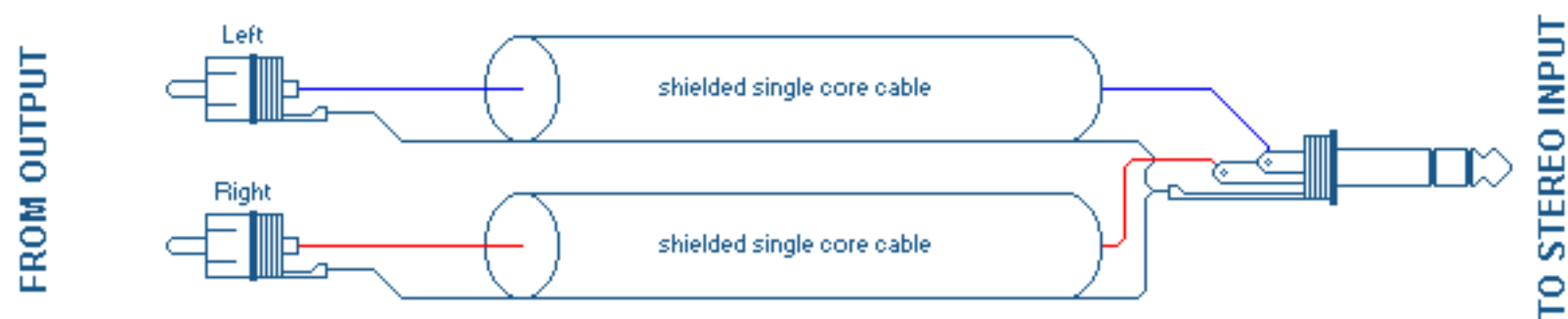
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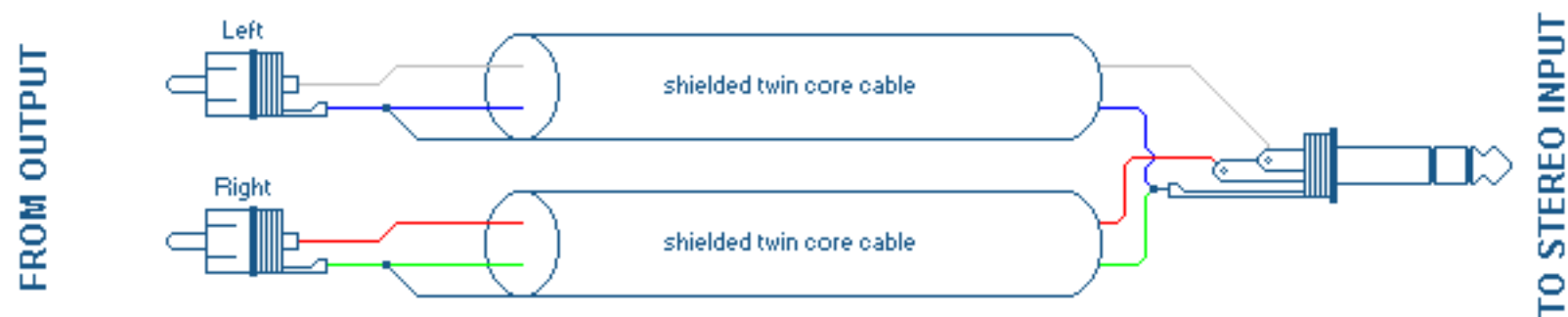


Using shielded single core cable:



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Using shielded twin core cable:



© Copyright 2003 A.J. van den Hul B.V. All rights reserved.

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In this situation the audio signal ground is carried by a dedicated line, which signal current, being separated from the shield, can not easily be interfered with by the shield's noise currents caused by external interference. This advantage especially counts when low (e.g. microphone) signal levels are being transferred and/or long cable lengths are used. (With shielded single core cable on the other hand, the noise signal built up across the shield effectively is in series with (i.e. adds up to) the audio signal).

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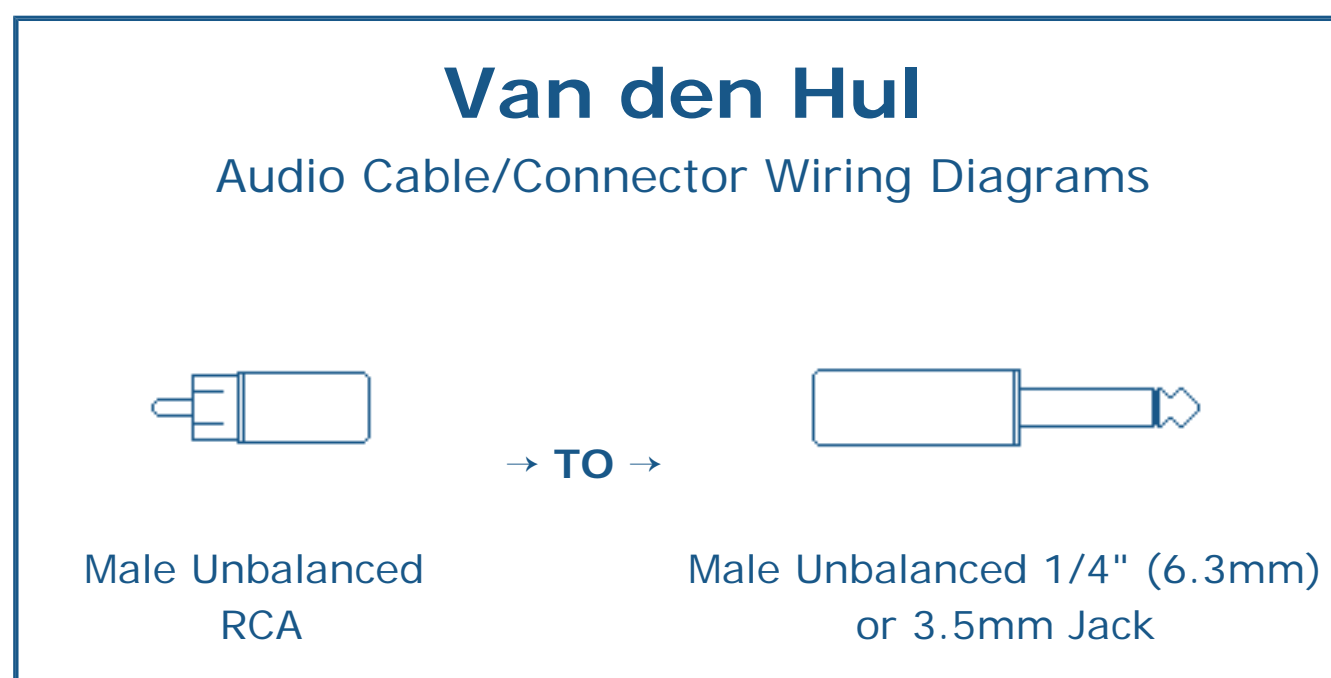
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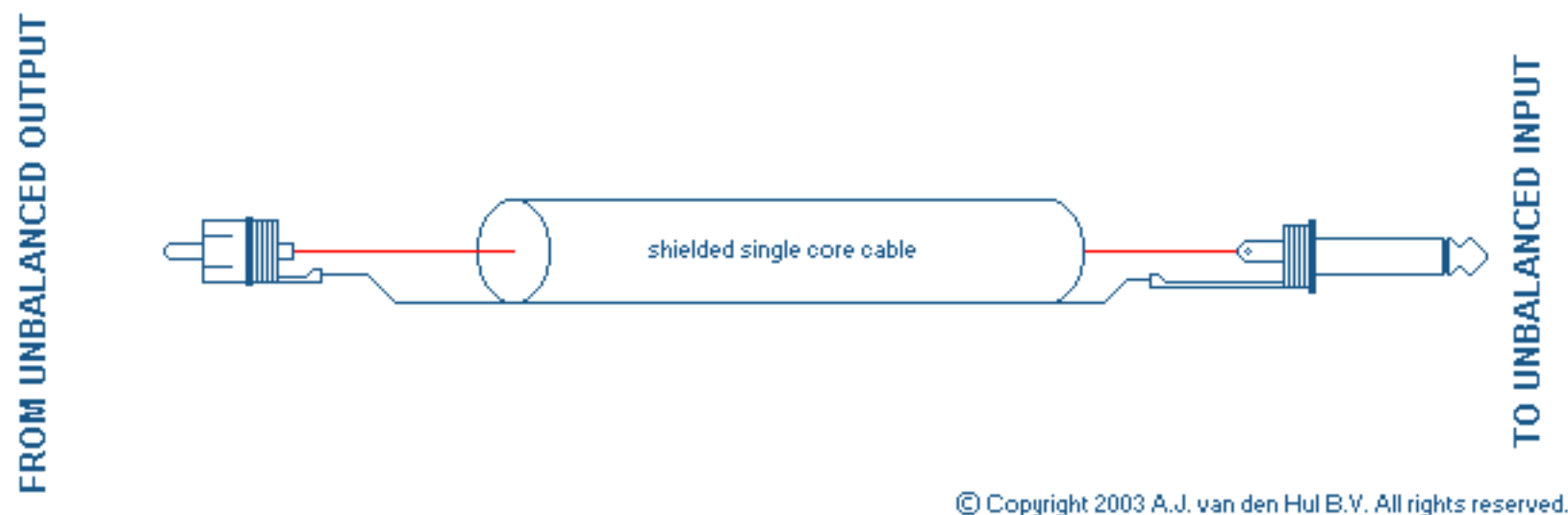
The sleeve of course is always ground/shield: I.e. **S**leeve = **S**hield.

That leaves the Left channel at the Tip.

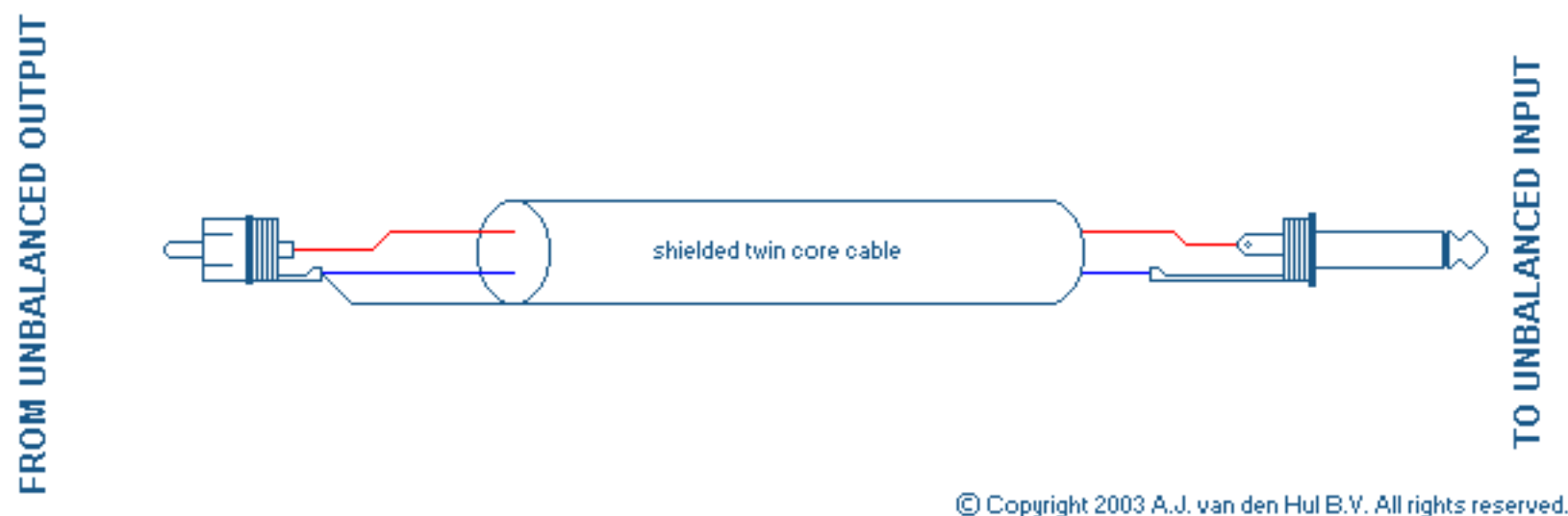
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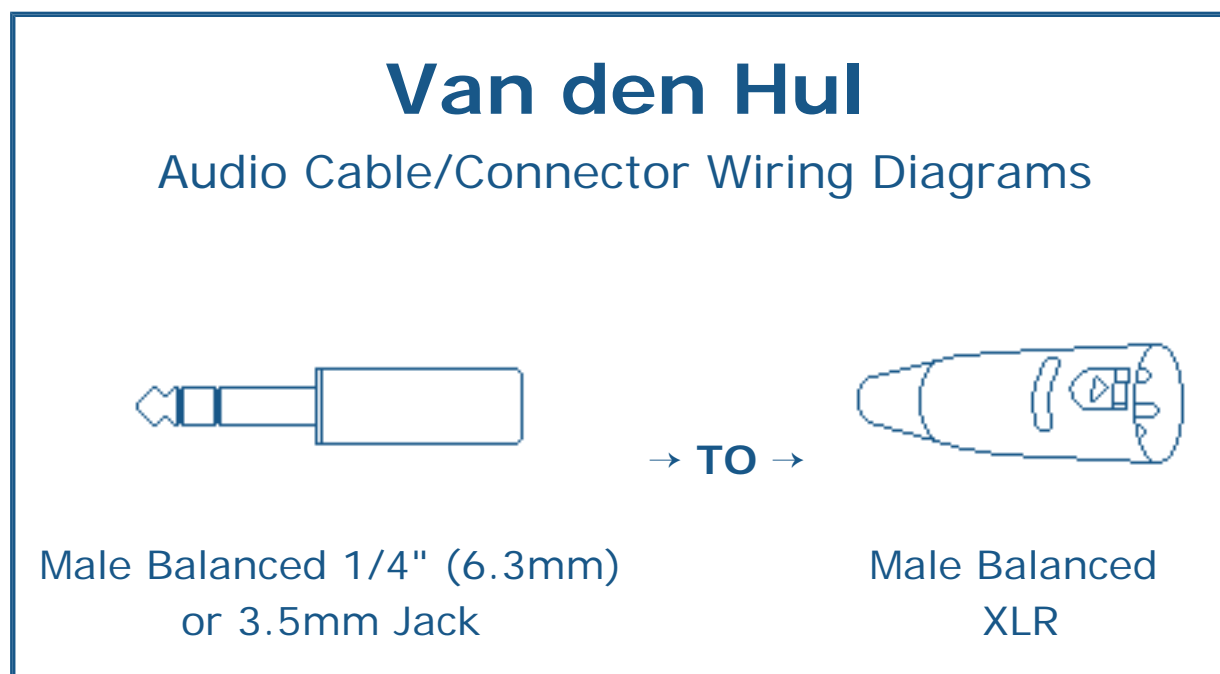
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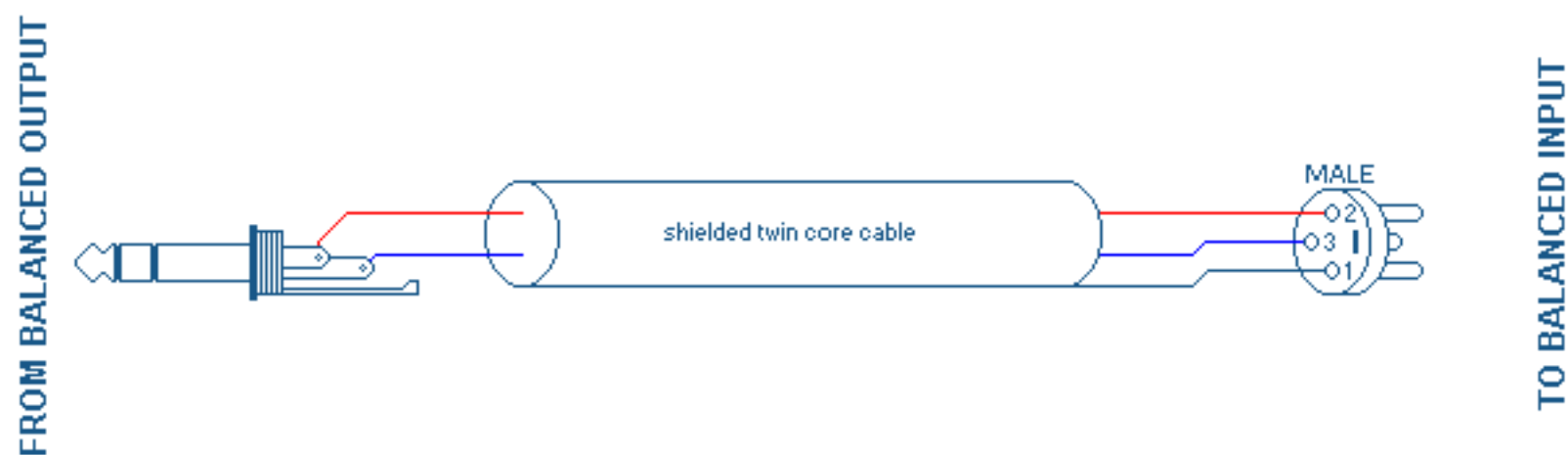
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In all other cases (i.e. line level connections) leaving the cable shield disconnected at one side of the cable (drawn above) is safe practice. This to avoid ground loops with non properly internally grounded equipment. If with these "one side disconnected shield" connections RF interference problems are experienced, reconnecting the shield at the side where it was disconnected by means of a series network of a 47 Ohm resistor and a 10 nanoFarad ceramic disc capacitor is advised. Latter may be standardly applied for all balanced line level interconnections.

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Note: Van den Hul ready made balanced cables standardly have the cable shield connected at both ends allowing correct functionality with microphones and electrical instruments as well as with line level audio and AES/EBU digital connections, latter two assuming properly grounded equipment.

Suitable Van den Hul audio cable types and connectors:

- Whatever your application, [Van den Hul](#)'s broad cable program has the right cable.
- Available from our accessories range:
 - XLR connectors
 - 1/4" (6.3mm) Jack connectors

Connector notes:

- XLR connectors have the following pin designations:
 - Pin 2 = Signal +
 - Pin 3 = Signal -
 - Pin 1 = Ground

- Balanced jack plugs have the following pin designations:
 - Tip = Signal +
 - Ring = Signal –
 - Sleeve = Ground
- For optimal contact care we recommend our The SOLUTION contact fluid.

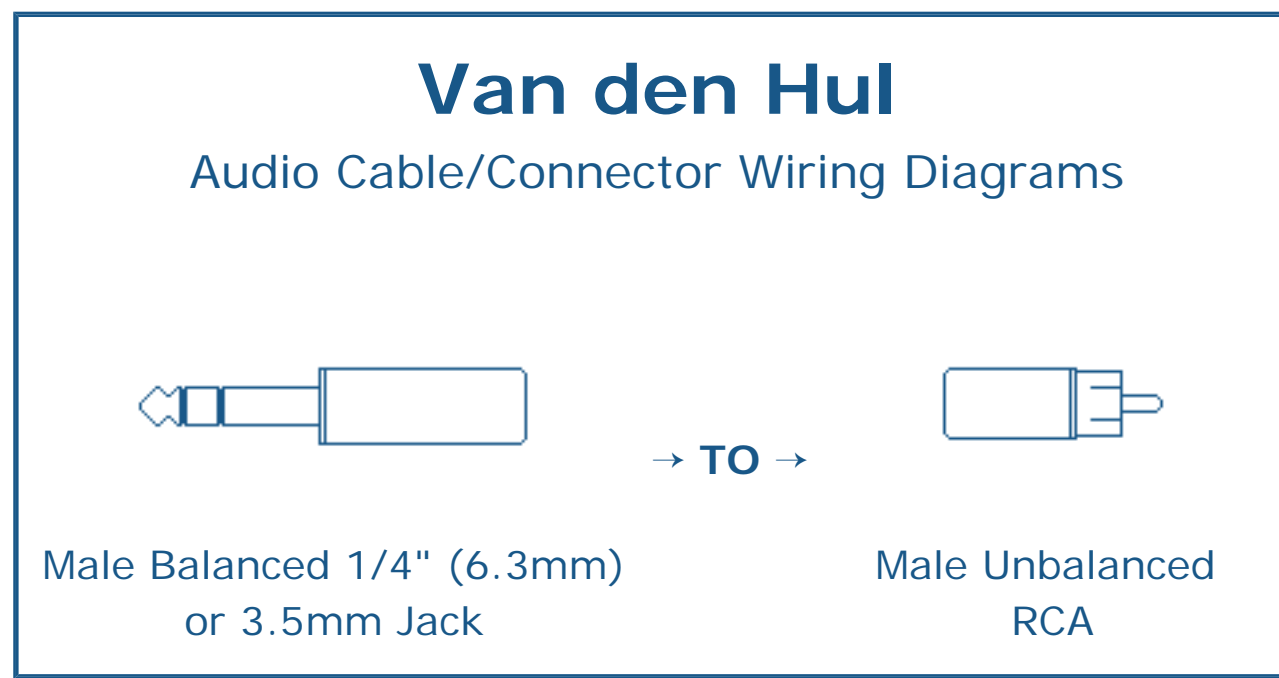


Fig. 1: If the signal source is equipped with a pseudo balanced output stage: (See remarks below).

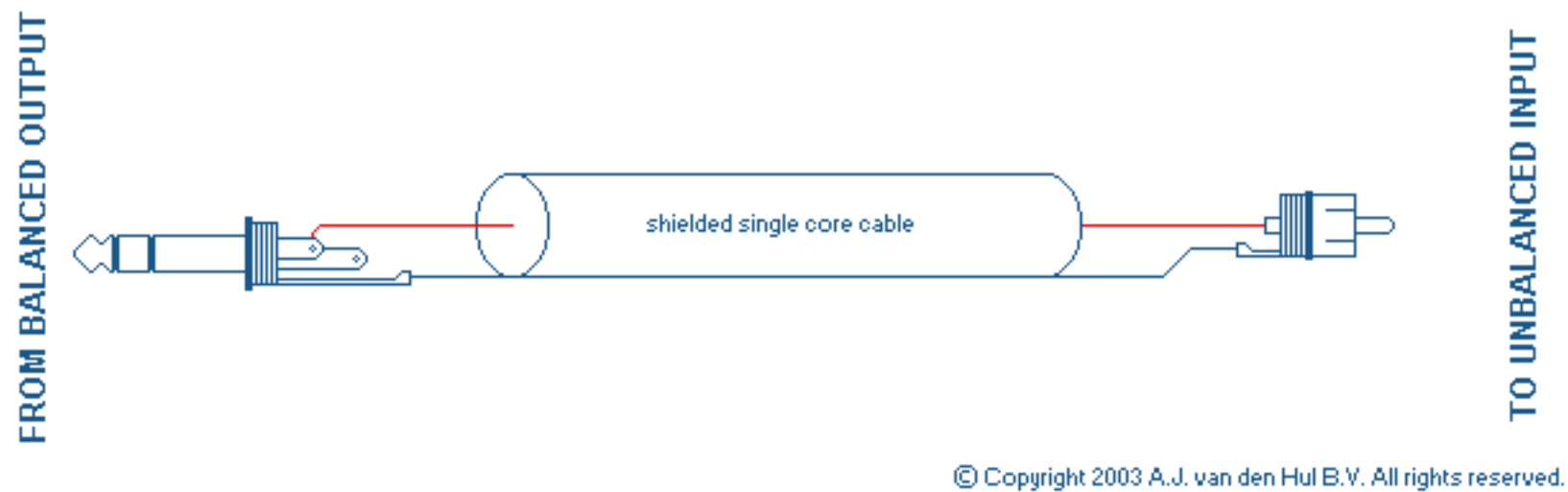


Fig. 2: If the signal source is equipped with a cross coupled output stage: (See remarks below).

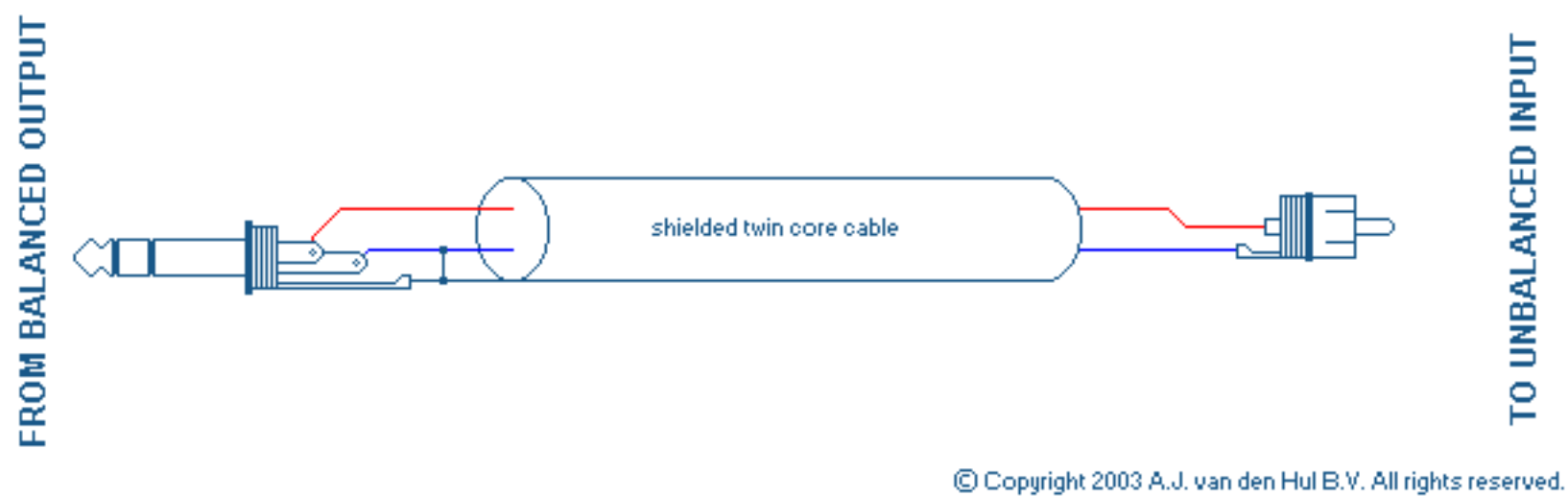
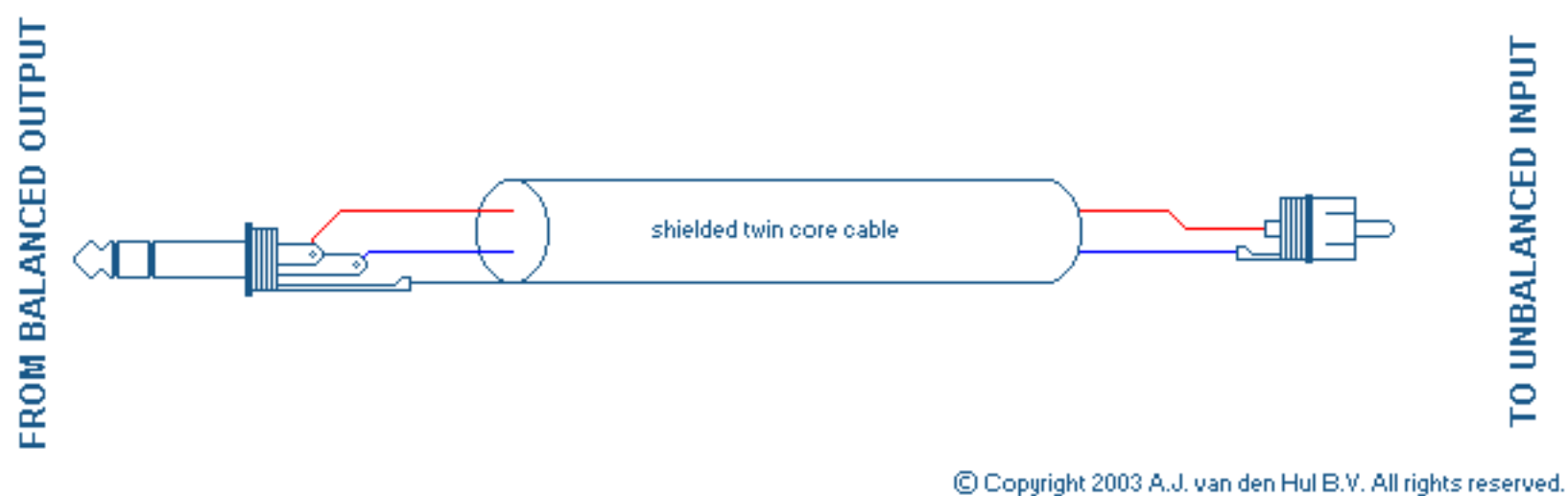


Fig. 3: If the signal source is equipped with an output transformer: (See remarks below).



Remarks:

In wiring a balanced signal source to an unbalanced input, knowing your exact type of balanced output is important. Your equipment's documentation or its supplier should be able provide the answer. Balanced outputs come in different flavours; On the one hand there are the true balanced transformer outputs which are completely galvanically isolated and therefore are the least problematic. On the other hand there are the so-called "transformerless" - also named "electronically balanced" - outputs which nowadays are common on most professional equipment. These transformerless/electronically balanced outputs come in two types:

1. Quite commonly seen is the plain "pseudo balanced" phase/antiphase output, where the equipment's internal unbalanced signal is simply fed to signal + out (XLR pin 2) by means of an opamp buffer and is fed to signal - out (XLR pin 3) simply by means of a polarity inverting opamp. This doesn't implement a

true balanced output and rather can be looked upon as a pair of unbalanced outputs, one being polarity inverted. Here the above Fig. 1's wiring configuration is recommended.

2. Much more sophisticated is the so-called "cross coupled output stage" in which two cross coupled opamps mimic an output transformer. Here the above Fig. 2's wiring configuration is recommended.

Regarding Fig. 2 and Fig. 3:

In case of RF interference, connecting the cable shield to signal ground at the unbalanced signal receiving side's connector through a 10 nanoFarad ceramic disc capacitor will often solve the problem.

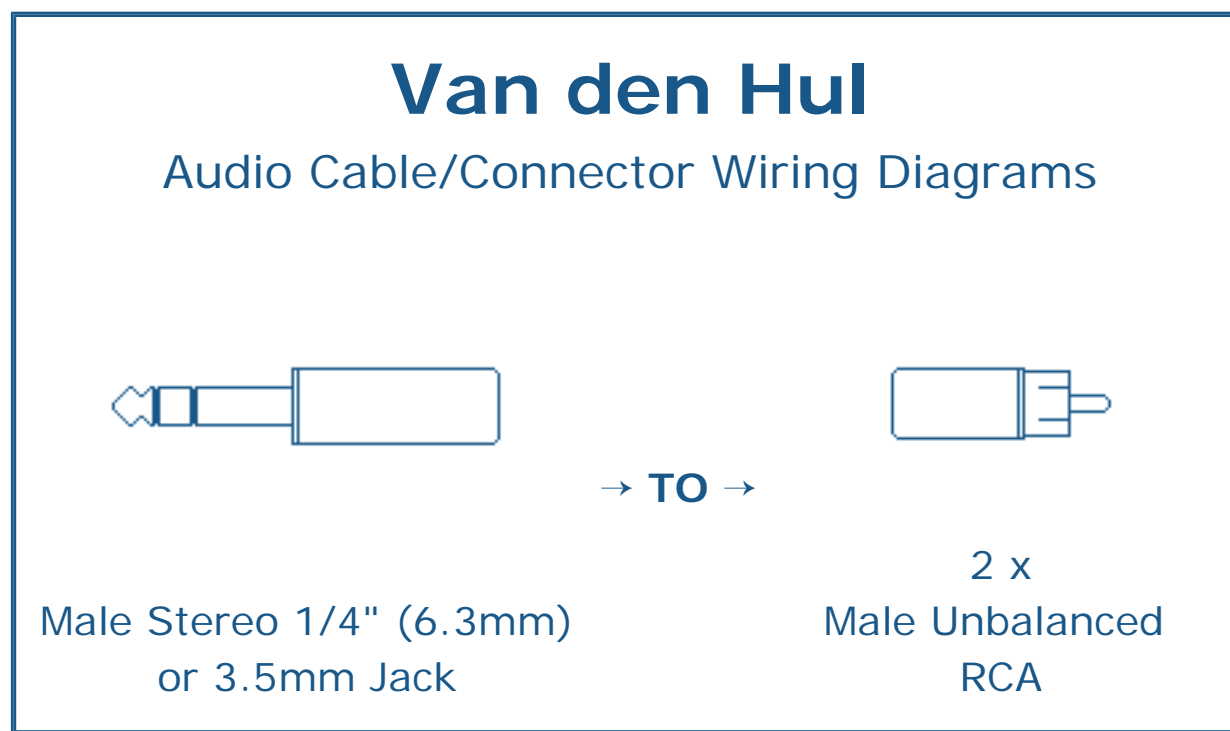
Note: Mixed interconnection of electronically balanced and unbalanced equipment remains prone to hum and noise problems since these two types of signal operation are incompatible. The above provides the recommended simple solutions, though, when problems remain in coupling an electronically balanced output to unbalanced inputs, best is to apply an audio isolation transformer.

Suitable Van den Hul audio cable types and connectors:

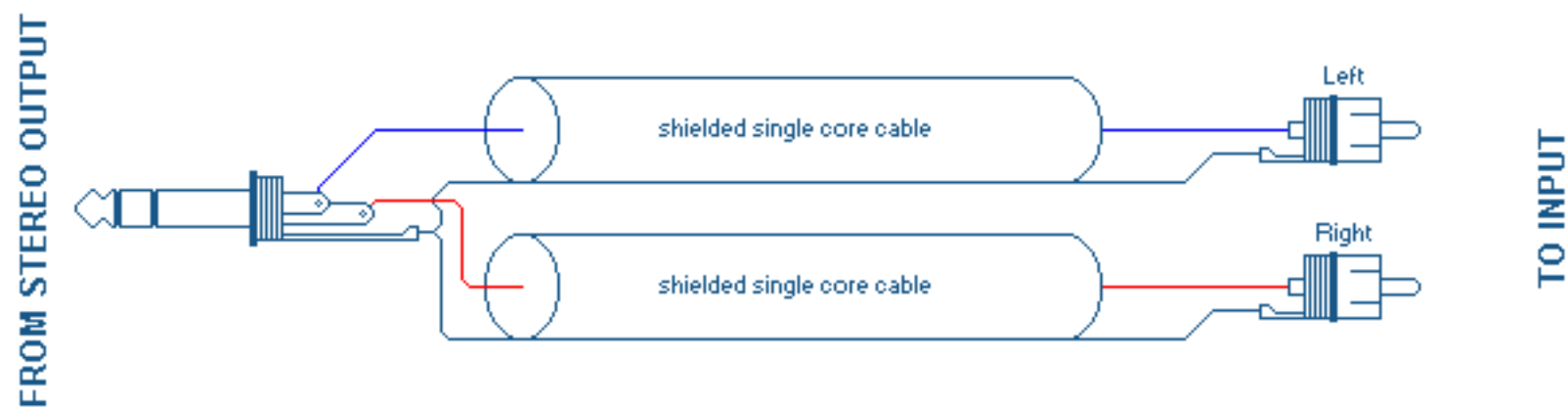
- Whatever your application, [Van den Hul](#)'s broad cable program has the right cable.
- Available from our accessories range:
 - RCA type connectors
 - 1/4" (6.3mm) Jack connectors

Connector notes:

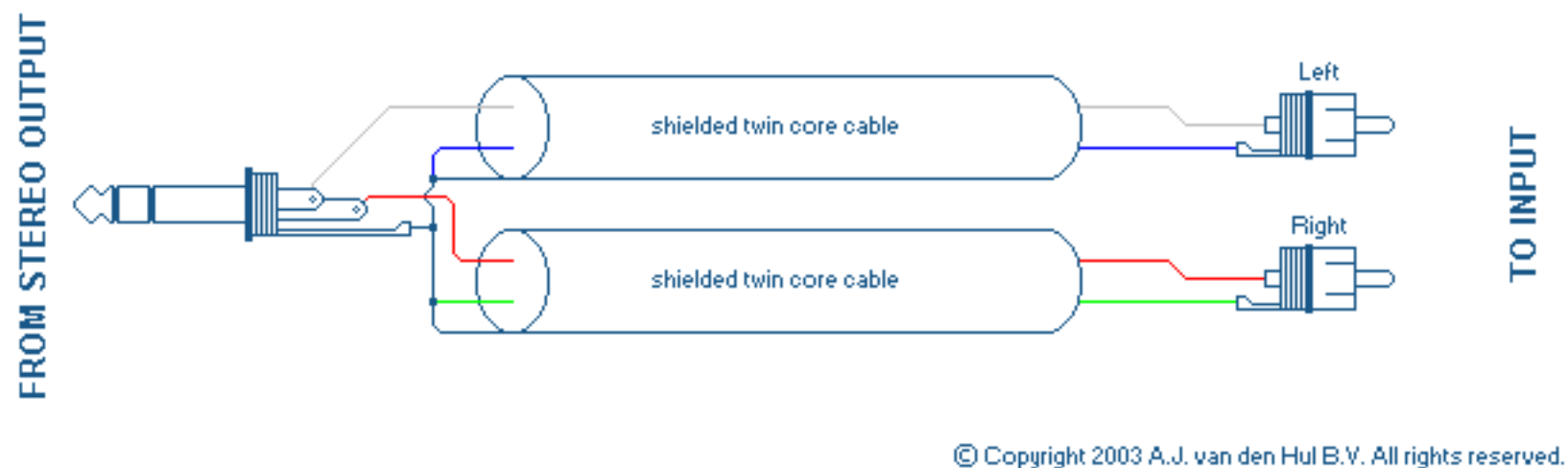
- RCA type connectors:
 - The Right channel is always color coded Red. (Rule of thumb: **R**ight = **R**ed).
 - The Left channel's plug is generally colour coded Blue, Black or White.
- Balanced jack plugs have the following pin designations:
 - Tip = Signal +
 - Ring = Signal -
 - Sleeve = Ground
- For optimal contact care we recommend our The SOLUTION contact fluid.



Using shielded single core cable:



Using shielded twin core cable:



Using shielded twin core cable is recommended:

In this situation the audio signal ground is carried by a dedicated line, which signal current, being separated from the shield, can not easily be interfered with by the shield's noise currents caused by external interference. This advantage especially counts when low (e.g. microphone) signal levels are being transferred and/or long cable lengths are used. (With shielded single core cable on the other hand, the noise signal built up across the shield effectively is in series with (i.e. adds up to) the audio signal).

Furthermore, in connecting the shield to ground only at one side of the cable and lifting it at the other side it functions as a true screen: It does not carry any audio signal; It screens the inner conductors and drains away unwanted noise to one location.

Suitable Van den Hul audio cable types and connectors:

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- Available from our accessories range:
 - RCA type connectors
 - 1/4" (6.3mm) Jack connectors

Connector notes:

- RCA type connectors:

The Right channel is always color coded Red. (Rule of thumb: **R**ight = **R**ed).

The Left channel's plug is generally colour coded Blue, Black or White.

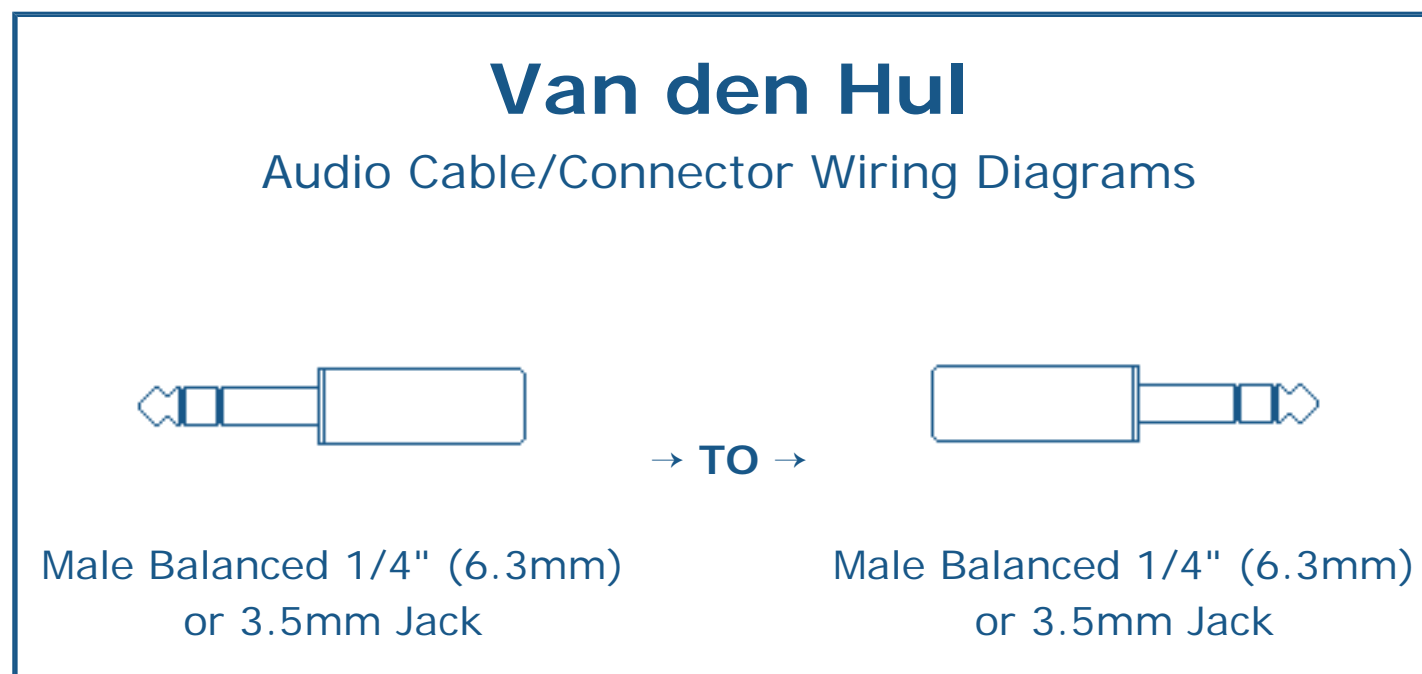
- Stereo jack plugs; A rule of thumb:

The Right channel is always at the Ring: I.e. **R**ight = **R**ing (The plug's configuration being: Tip, Ring, Sleeve).

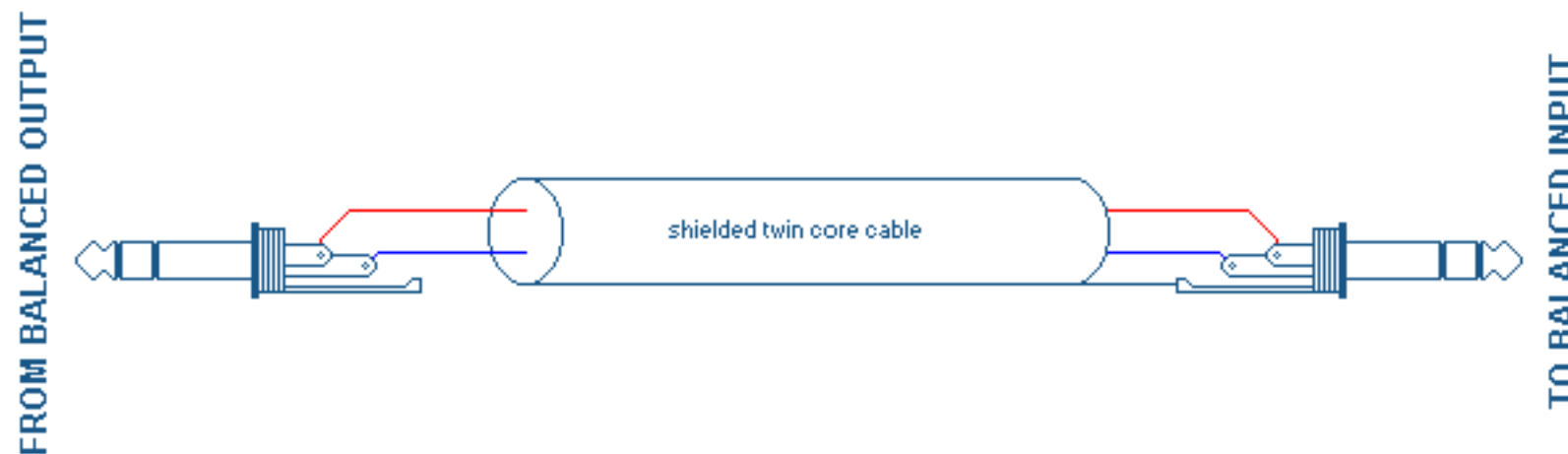
The sleeve of course is always ground/shield: I.e. **S**leeve = **S**hield.

That leaves the Left channel at the Tip.

- For optimal contact care we recommend our The SOLUTION contact fluid.



Drawn for line level connections; See remarks below.



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Remarks:

If the cable is to be used for microphone or non mains powered musical instrument connections, i.e. with low (non line level) signals, the cable shield should also be linked to the signal sending side connector's ground pin. There are two reasons for this:

1. To extend the shielding function to the microphone or instrument's housing.
2. And also with phantom powered condenser microphones: To provide a phantom power supply current return path.

In all other cases (i.e. line level connections) leaving the cable shield disconnected at one side of the cable (drawn above) is safe practice. This to avoid ground loops with non properly internally grounded equipment. If with these "one side disconnected shield" connections RF interference problems are experienced, reconnecting the shield at the side where it was disconnected by means of a series network of a 47 Ohm resistor and a 10 nanoFarad ceramic disc capacitor is advised. Latter may be standardly applied for all balanced line level interconnections.

Reference: *K.R. Fause. Fundamentals of Grounding, Shielding and Interconnection. Journal of the Audio Engineering Society, Vol. 43, No. 6, June 1995, p. 498-516.*

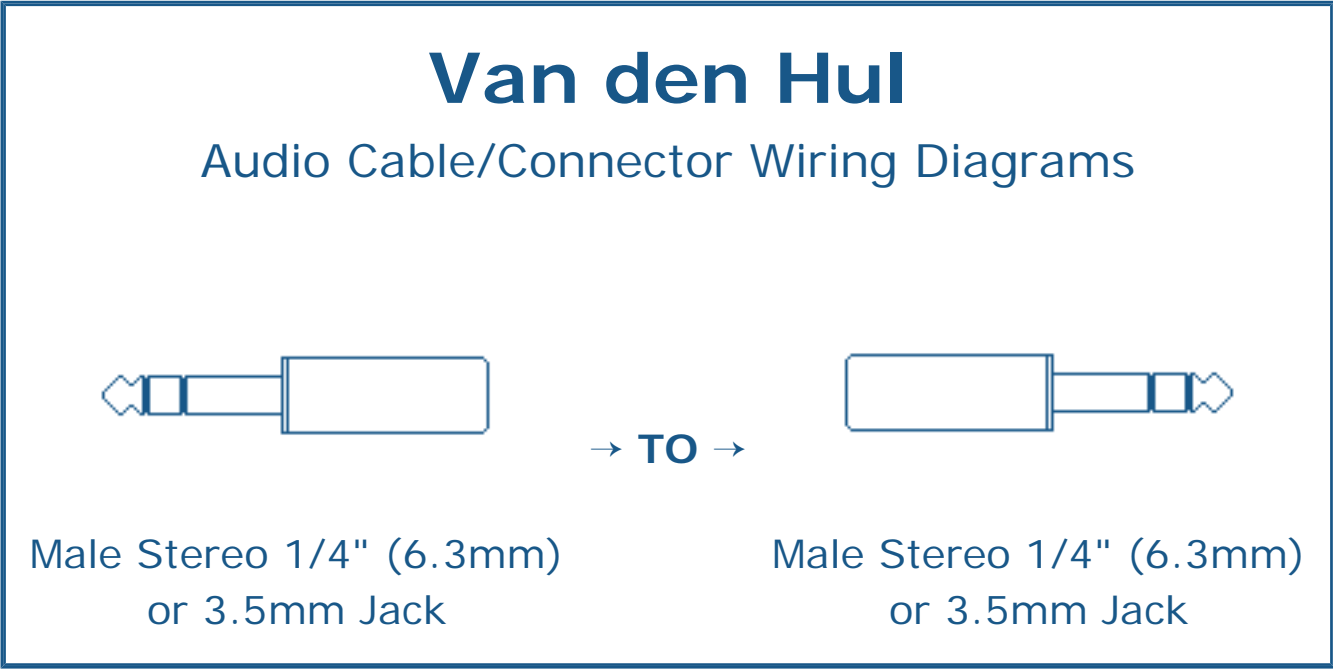
Note: Van den Hul ready made balanced cables standardly have the cable shield connected at both ends allowing correct functionality with microphones and electrical instruments as well as with line level audio and AES/EBU digital connections, latter two assuming properly grounded equipment.

Suitable Van den Hul audio cable types and connectors:

- Whatever your application, [Van den Hul](#)'s broad cable program has the right cable.
- Available from our accessories range:
 - 1/4" (6.3mm) Jack connectors

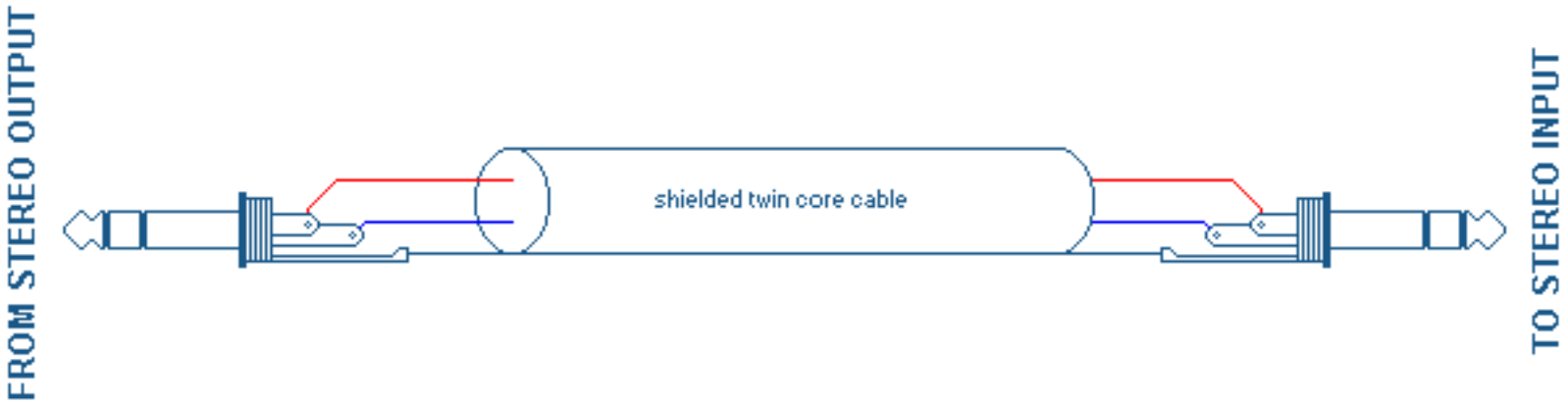
Connector notes:

- Balanced jack plugs have the following pin designations:
 - Tip = Signal +
 - Ring = Signal -
 - Sleeve = Ground
- For optimal contact care we recommend our The SOLUTION contact fluid.



Using shielded twin core cable:

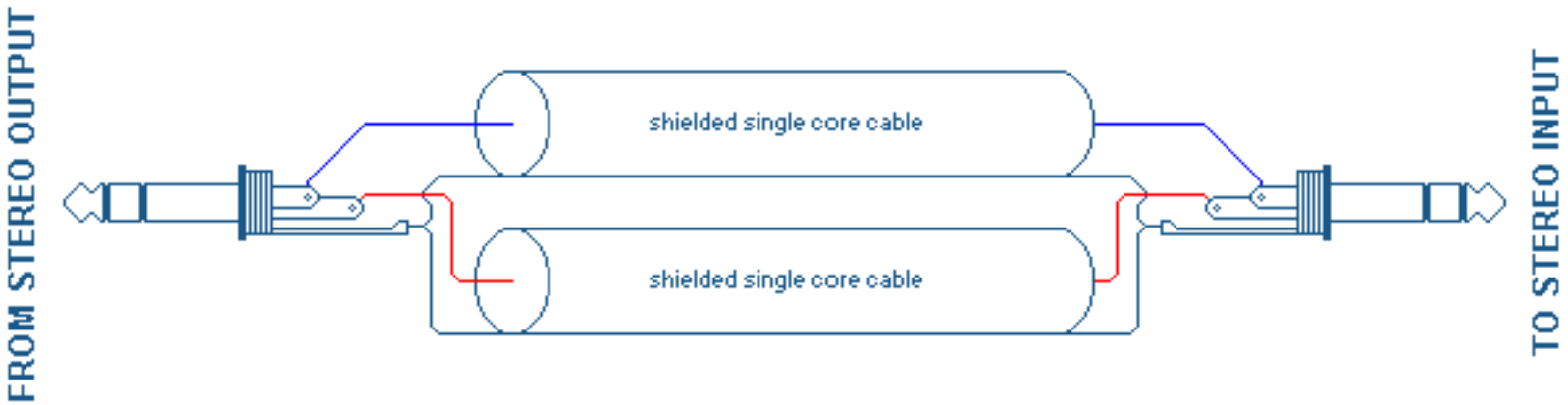
Simplest configuration. (Risk of crosstalk and noise).



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Using shielded single core cable:

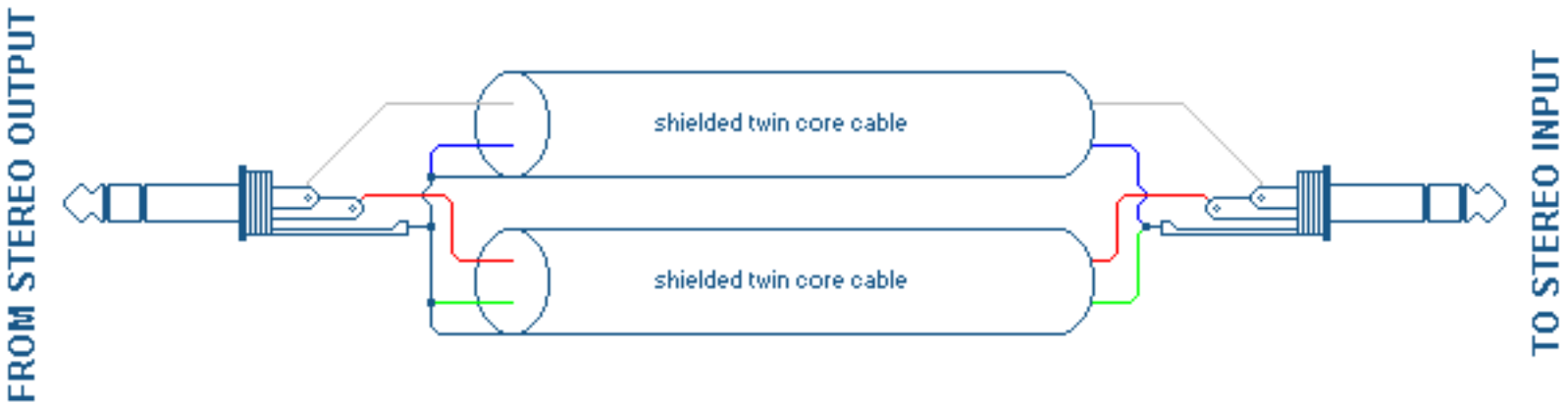
Better configuration. (No crosstalk).



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Using shielded twin core cable:

Best configuration. (No crosstalk. Signal ground and shield separated).



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Remarks:

In the above "Better" and "Best" configurations the risk of crosstalk (especially occurring with longer cable lengths) between the left and right channel is removed by using separate shielded lines for each channel. Additionally, in the indicated "Best" configuration the audio signal ground is carried by a dedicated line, which signal current, being separated from the shield, can not easily be interfered with by the shield's noise currents caused by external interference. This advantage especially counts when low (e.g. microphone) signal levels are being transferred and/or long cable lengths are used. (With the first two indicated configurations on the other hand, the noise signal built up across the shield effectively is in series with (i.e. adds up to) the audio signal).

Furthermore, in connecting the shield to ground only at one side of the cable and lifting it at the other side it functions as a true screen: It does not carry any audio signal; It screens the inner conductors and drains away unwanted noise to one location.

Suitable Van den Hul audio cable types and connectors:

- Whatever your application, [Van den Hul](#)'s broad cable program has the right cable.
- Available from our accessories range:
 - 1/4" (6.3mm) Jack connectors

Connector notes:

- Stereo jack plugs; A rule of thumb:
The Right channel is always at the Ring: I.e. **R**ight = **R**ing (The plug's configuration being: Tip, Ring, Sleeve).
The sleeve of course is always ground/shield: I.e. **S**leeve = **S**hield.
That leaves the Left channel at the Tip.
- For optimal contact care we recommend our The SOLUTION contact fluid.

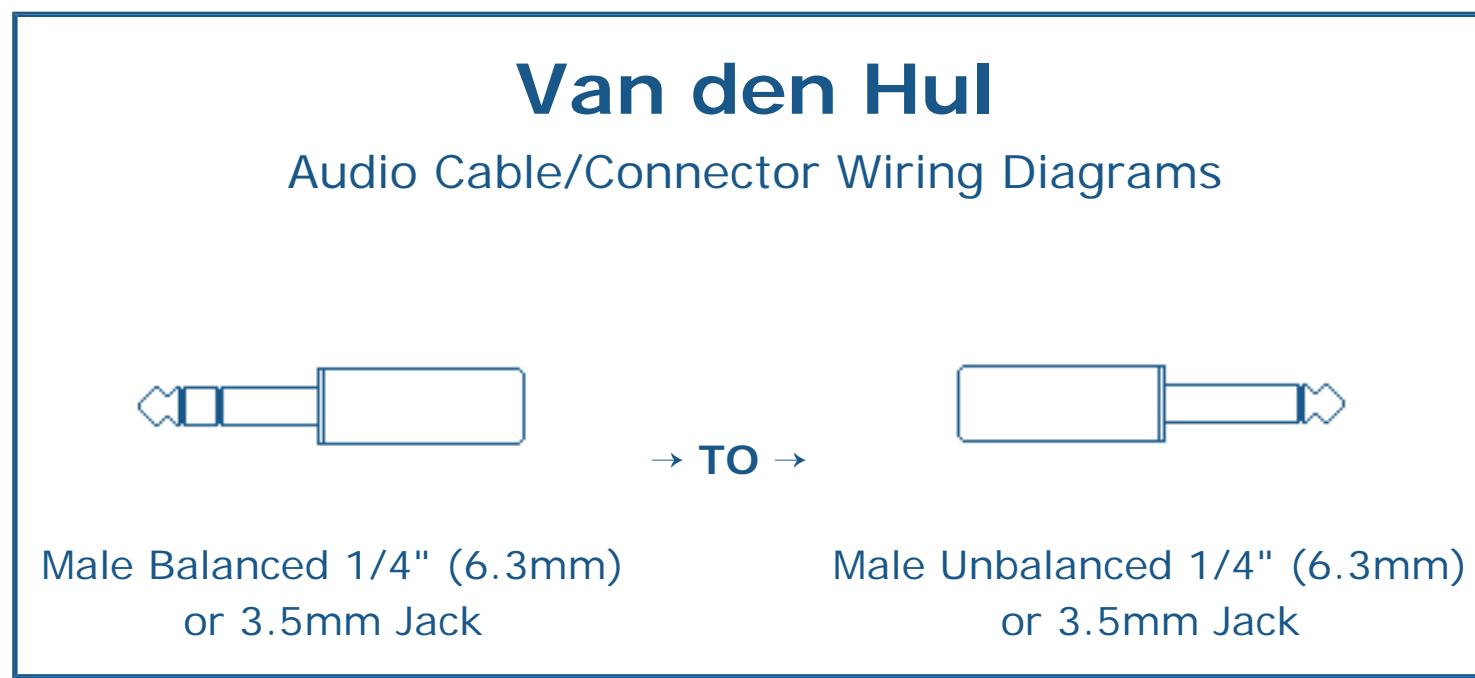


Fig. 1: If the signal source is equipped with a pseudo balanced output stage: (See remarks below).

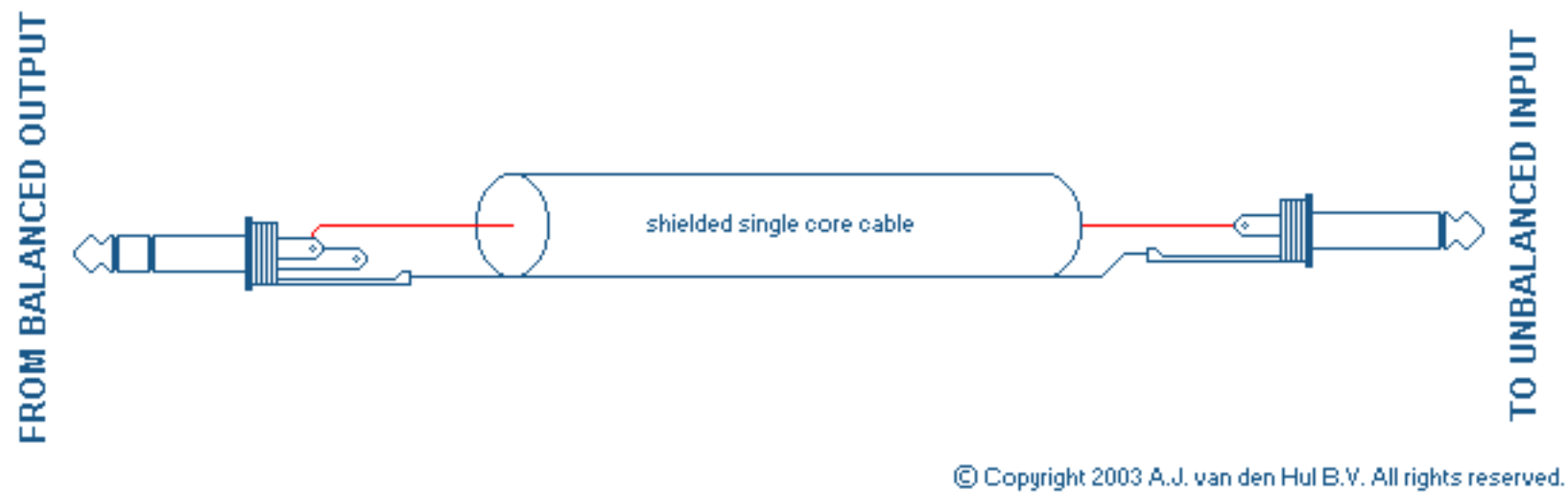


Fig. 2: If the signal source is equipped with a cross coupled output stage: (See remarks below).

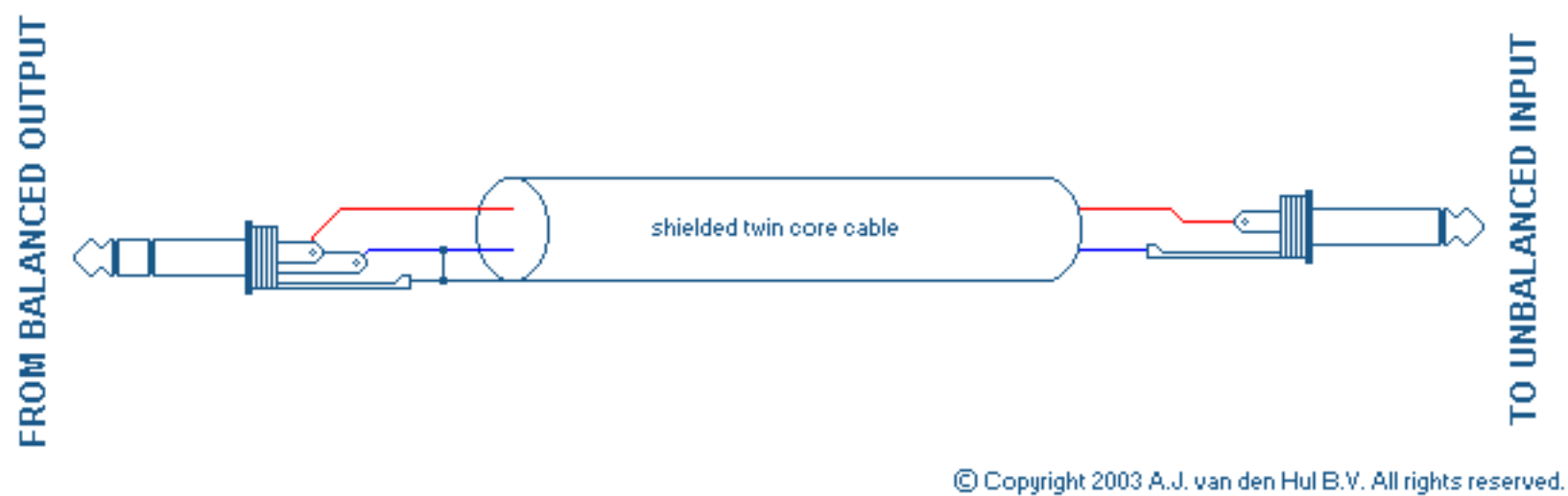
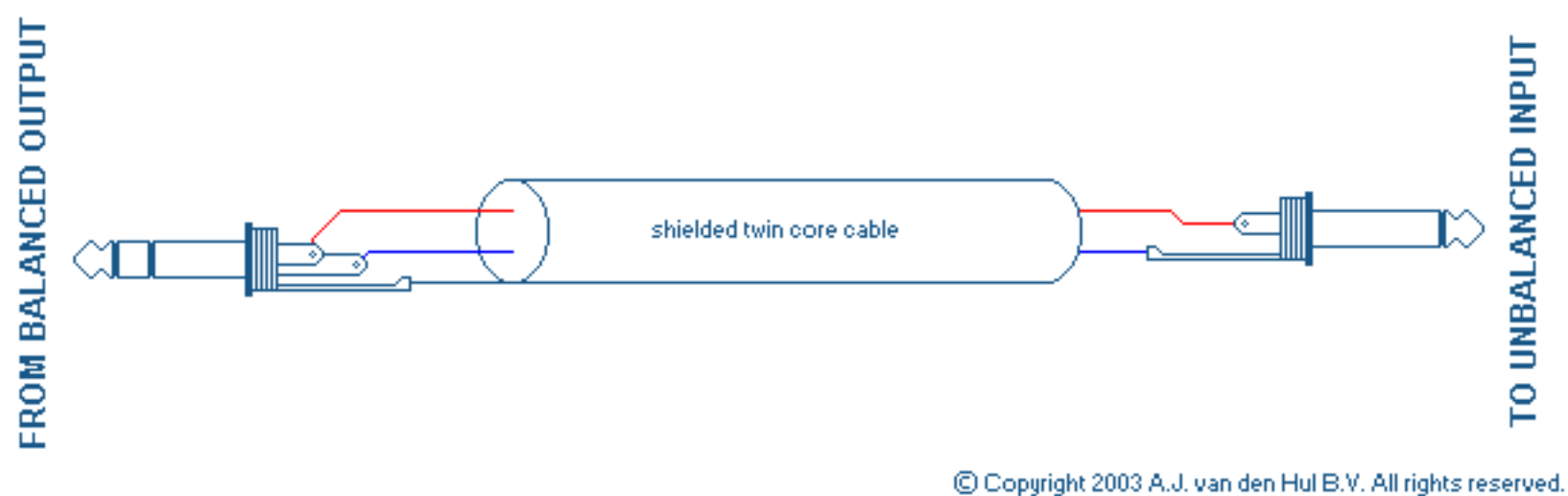


Fig. 3: If the signal source is equipped with an output transformer: (See remarks below).



Remarks:

In wiring a balanced signal source to an unbalanced input, knowing your exact type of balanced output is important. Your equipment's documentation or its supplier should be able provide the answer. Balanced outputs come in different flavours; On the one hand there are the true balanced transformer outputs which are completely galvanically isolated and therefore are the least problematic. On the other hand there are the so-called "transformerless" - also named "electronically balanced" - outputs which nowadays are common on most professional equipment. These transformerless/electronically balanced outputs come in two types:

1. Quite commonly seen is the plain "pseudo balanced" phase/antiphase output, where the equipment's internal unbalanced signal is simply fed to signal + out (XLR pin 2) by means of an opamp buffer and is fed to signal - out (XLR pin 3) simply by means of a polarity inverting opamp. This doesn't implement a

true balanced output and rather can be looked upon as a pair of unbalanced outputs, one being polarity inverted. Here the above Fig. 1's wiring configuration is recommended.

2. Much more sophisticated is the so-called "cross coupled output stage" in which two cross coupled opamps mimic an output transformer. Here the above Fig. 2's wiring configuration is recommended.

Regarding Fig. 2 and Fig. 3:

In case of RF interference, connecting the cable shield to signal ground at the unbalanced signal receiving side's connector through a 10 nanoFarad ceramic disc capacitor will often solve the problem.

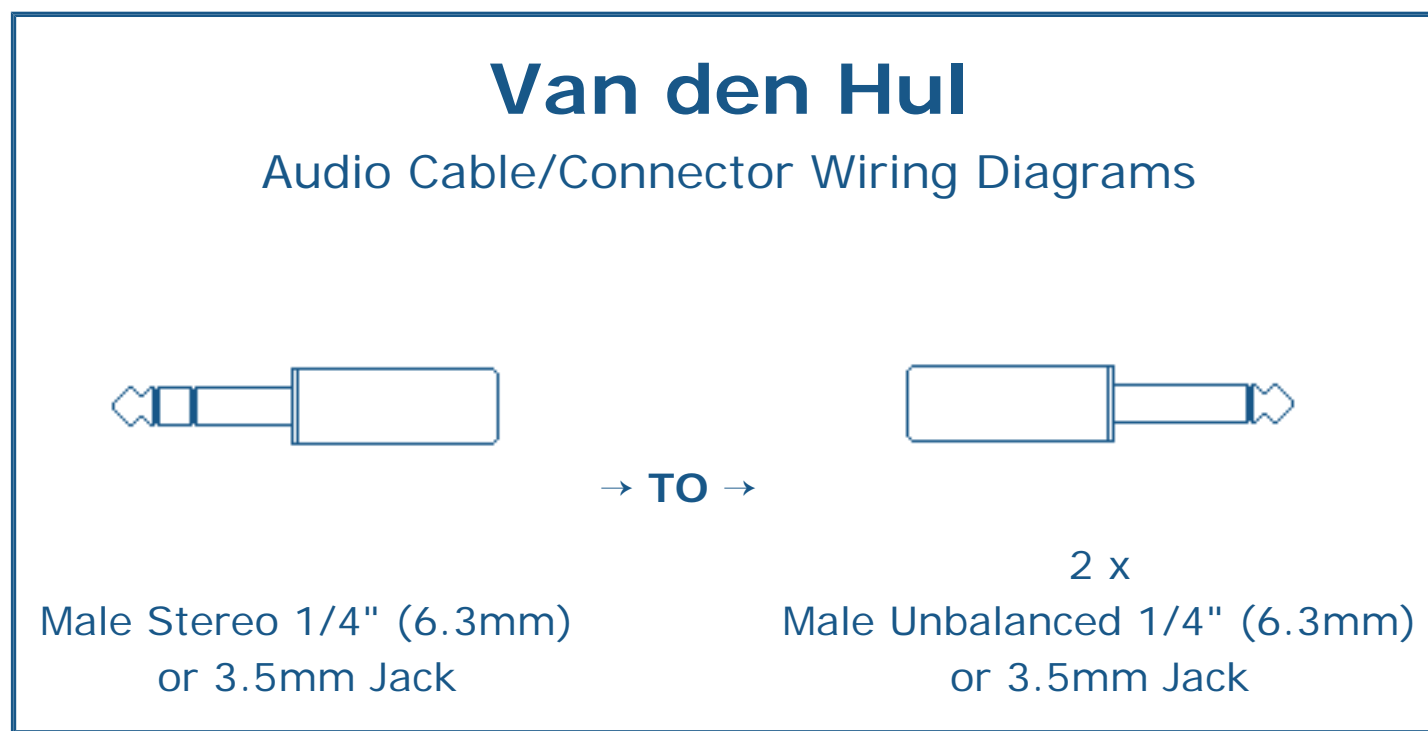
Note: Mixed interconnection of electronically balanced and unbalanced equipment remains prone to hum and noise problems since these two types of signal operation are incompatible. The above provides the recommended simple solutions, though, when problems remain in coupling an electronically balanced output to unbalanced inputs, best is to apply an audio isolation transformer.

Suitable Van den Hul audio cable types and connectors:

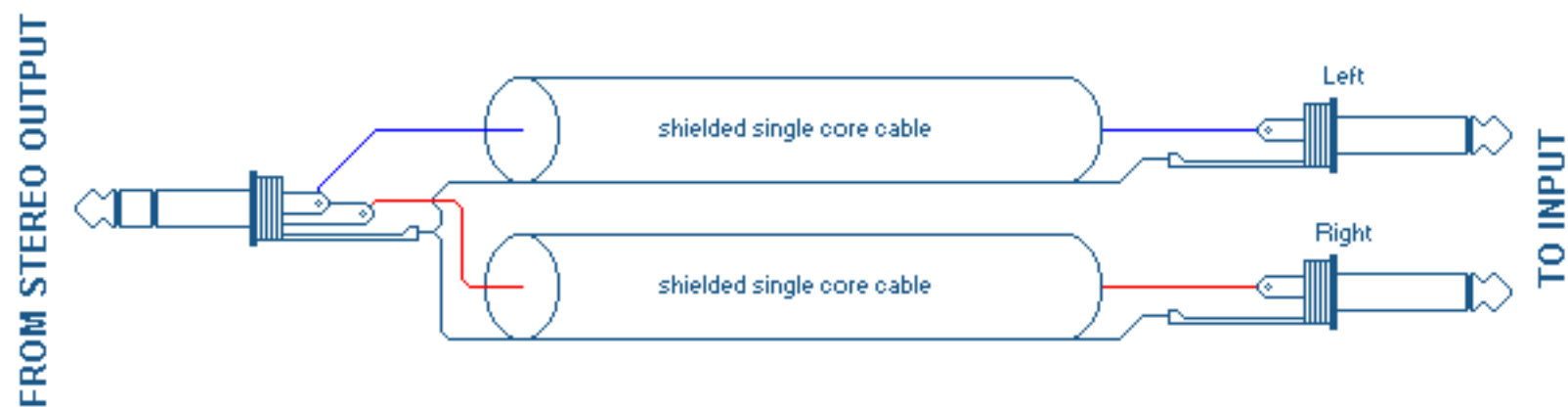
- Whatever your application, [Van den Hul](#)'s broad cable program has the right cable.
- Available from our accessories range:
 - 1/4" (6.3mm) Jack connectors

Connector notes:

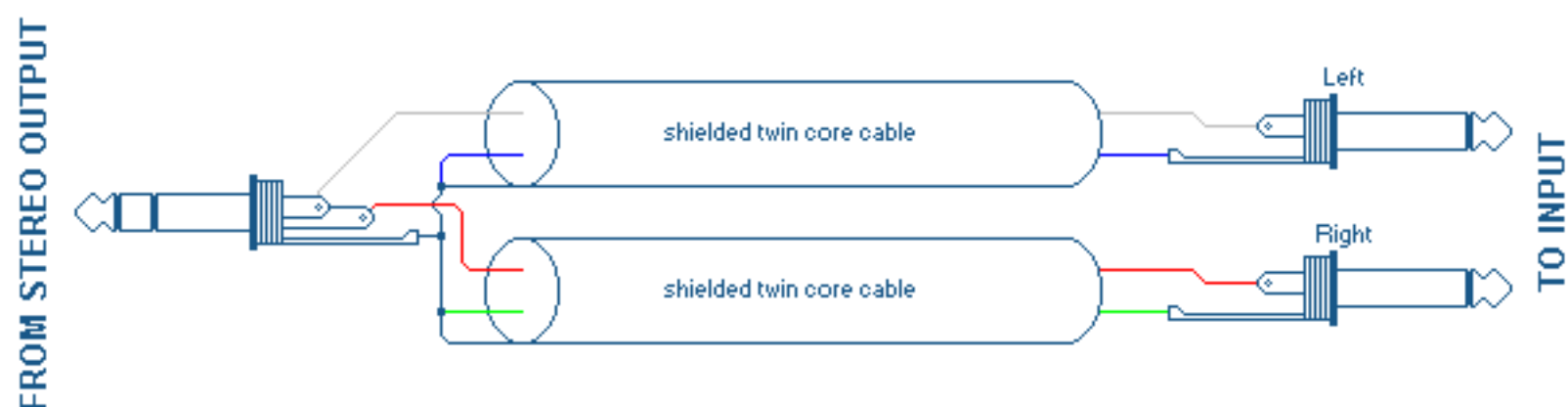
- Balanced jack plugs have the following pin designations:
 - Tip = Signal +
 - Ring = Signal –
 - Sleeve = Ground
- For optimal contact care we recommend our The SOLUTION contact fluid.



Using shielded single core cable:



Using shielded twin core cable:



Using shielded twin core cable is recommended:

In this situation the audio signal ground is carried by a dedicated line, which signal current, being separated from the shield, can not easily be interfered with by the shield's noise currents caused by external interference. This advantage especially counts when low (e.g. microphone) signal levels are being transferred and/or long cable lengths are used. (With shielded single core cable on the other hand, the noise signal built up across the shield effectively is in series with (i.e. adds up to) the audio signal).

Furthermore, in connecting the shield to ground only at one side of the cable and lifting it at the other side it functions as a true screen: It does not carry any audio signal; It screens the inner conductors and drains away unwanted noise to one location.

Suitable Van den Hul audio cable types and connectors:

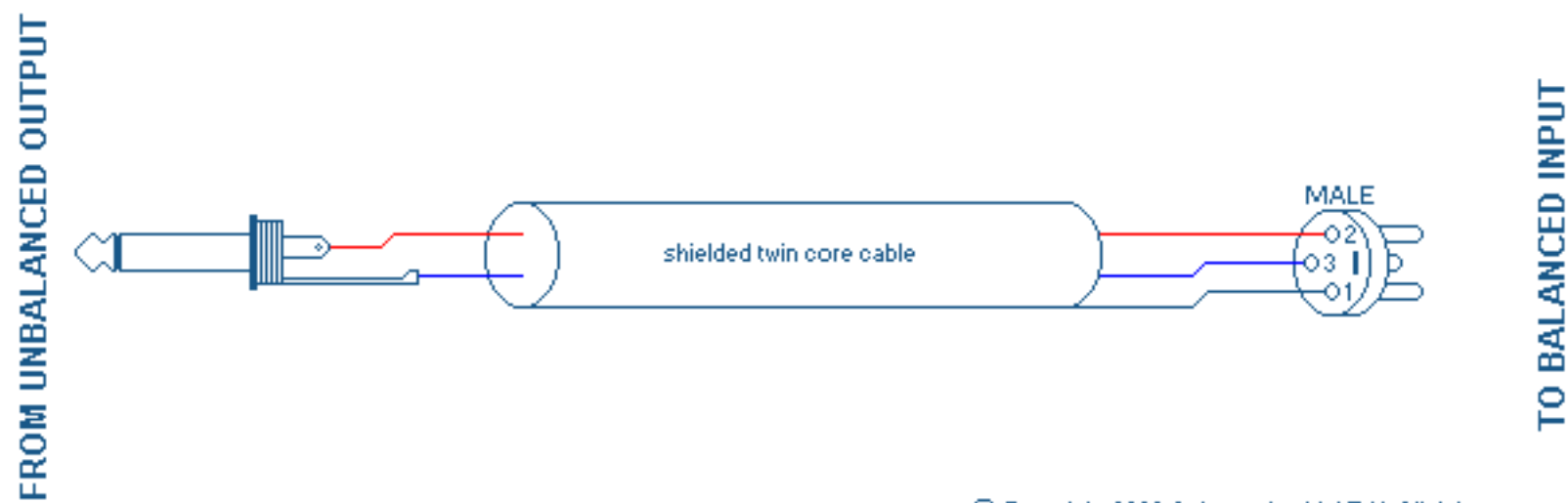
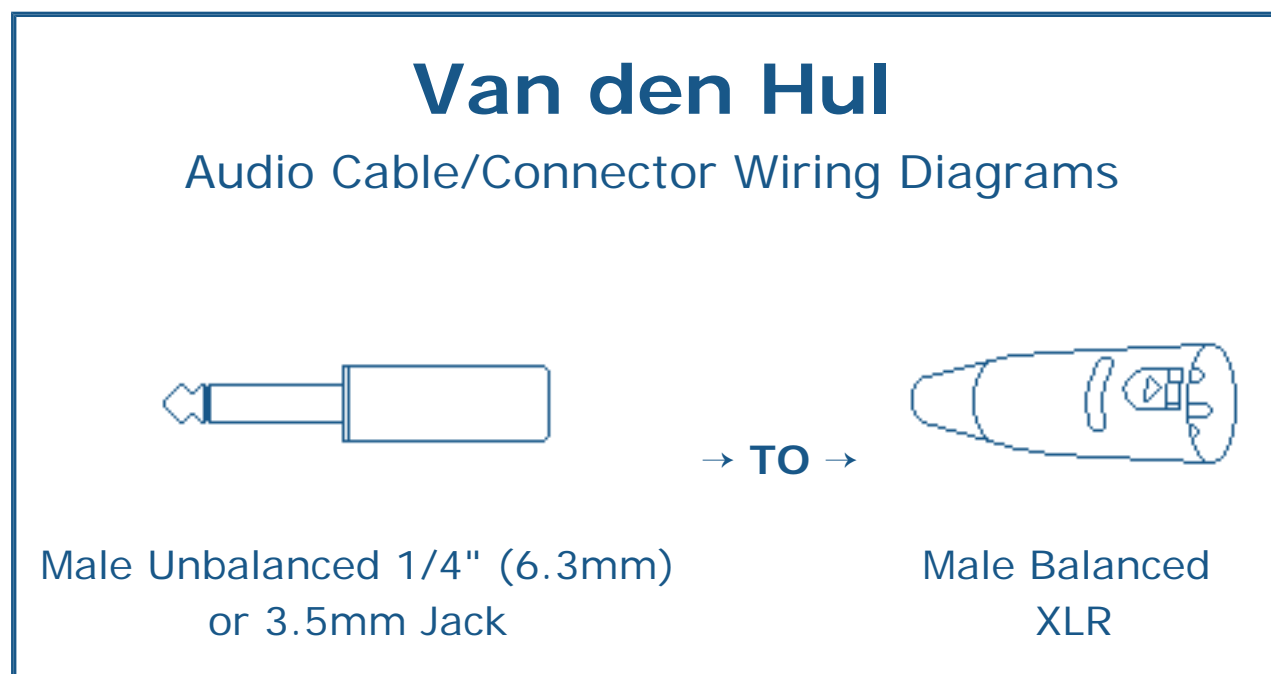
- Whatever your application, [Van den Hul](#)'s broad cable program has the right cable.
- Available from our accessories range:
 - 1/4" (6.3mm) Jack connectors

Connector notes:

- Stereo jack plugs; A rule of thumb:
The Right channel is always at the Ring: I.e. **Right = Ring** (The plug's configuration being: Tip, Ring, Sleeve).

The sleeve of course is always ground/shield: I.e. **S**leeve = **S**hield.
That leaves the Left channel at the Tip.

- For optimal contact care we recommend our The SOLUTION contact fluid.



Remarks:

The above drawn configuration is recommended. However, with the nowadays common electronically balanced (i.e. non-transformer) inputs, in some cases hum and or RF interference problems can be experienced. In this case the cable shield can be experimentally connected to signal ground at the unbalanced signal source side plug, either directly (in case of hum) or (in case of RF interference) by means of a 10 nanoFarad ceramic disc capacitor or a series network of a 47 Ohm resistor and a 10 nanoFarad ceramic disc capacitor. The best solution is situation dependent.

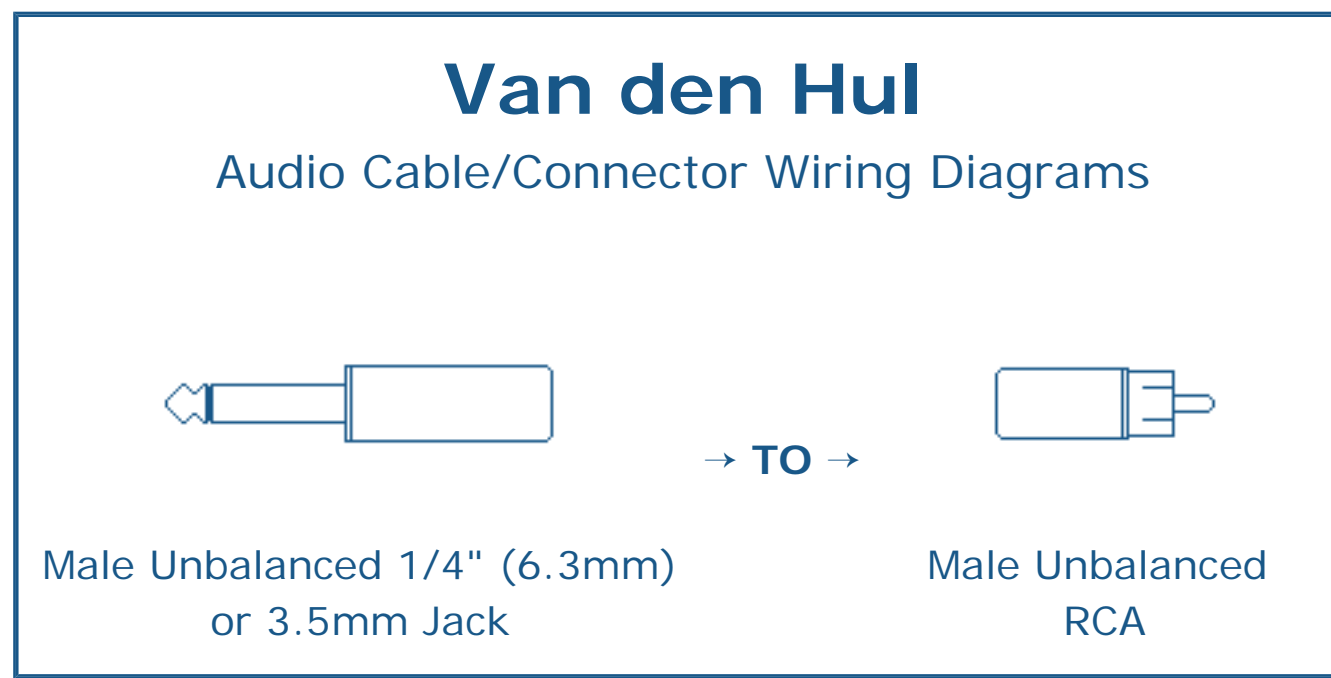
Note: Mixed interconnection of balanced and unbalanced equipment remains prone to hum and noise problems since these two types of signal operation are incompatible. The above diagram is the recommended simple solution, though best is to apply an audio isolation transformer when connecting balanced to unbalanced or vice versa.

Suitable Van den Hul audio cable types and connectors:

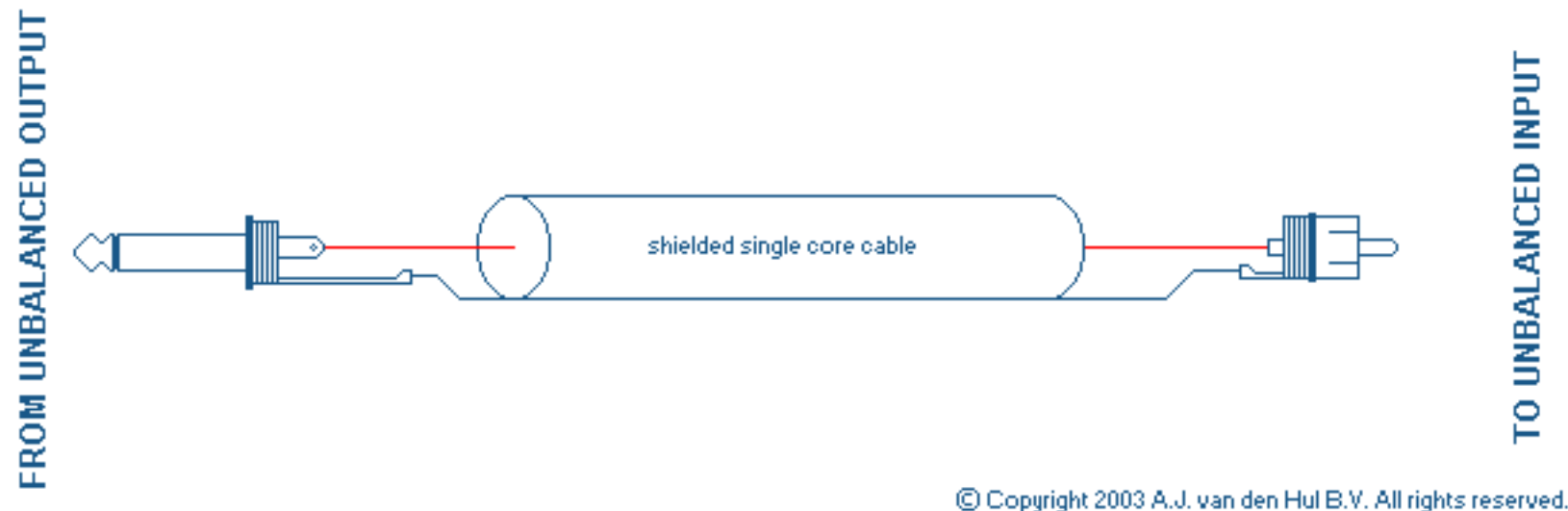
- Whatever your application, [Van den Hul](#)'s broad cable program has the right cable.
- Available from our accessories range:
 - XLR connectors
 - 1/4" (6.3mm) Jack connectors

Connector notes:

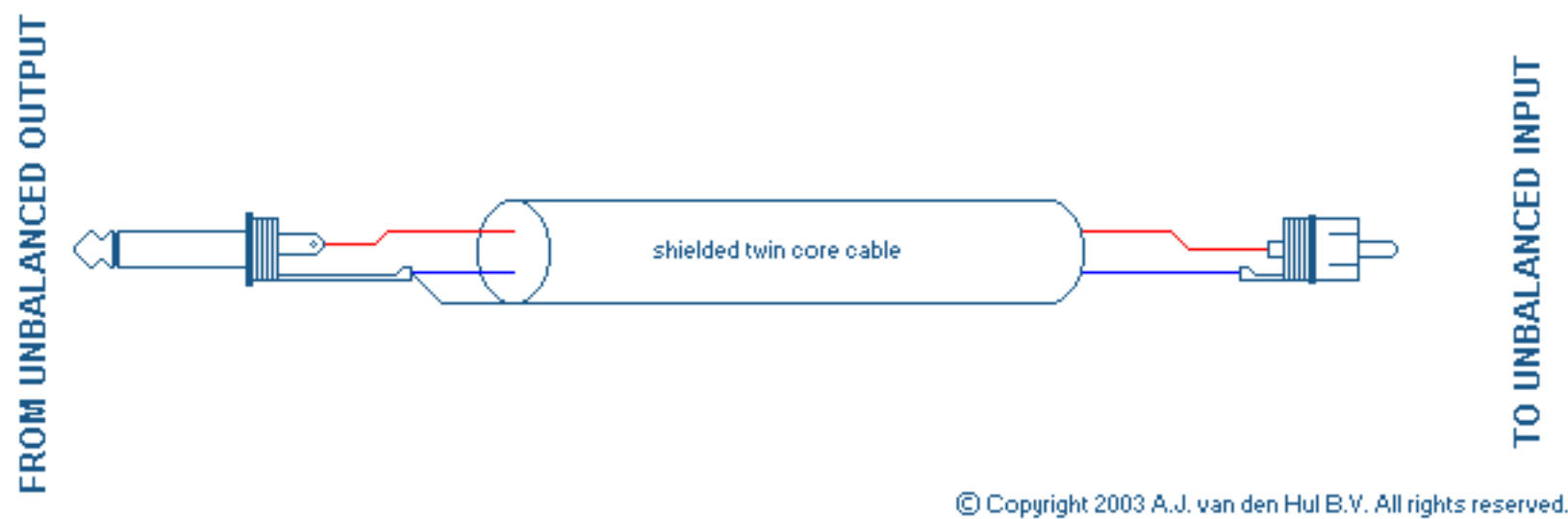
- XLR connectors have the following pin designations:
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 - Pin 3 = Signal -
 - Pin 1 = Ground
- For optimal contact care we recommend our The SOLUTION contact fluid.



Using shielded single core cable:



Using shielded twin core cable:



Using shielded twin core cable is recommended:

In this situation the audio signal ground is carried by a dedicated line, which signal current, being separated from the shield, can not easily be interfered with by the shield's noise currents caused by external interference. This advantage especially counts when low (e.g. microphone) signal levels are being transferred and/or long cable lengths are used. (With shielded single core cable on the other hand, the noise signal built up across the shield effectively is in series with (i.e. adds up to) the audio signal).

Furthermore, in connecting the shield to ground only at one side of the cable and lifting it at the other side it functions as a true screen: It does not carry any audio signal; It screens the inner conductors and drains away unwanted noise to one location.

Suitable Van den Hul audio cable types and connectors:

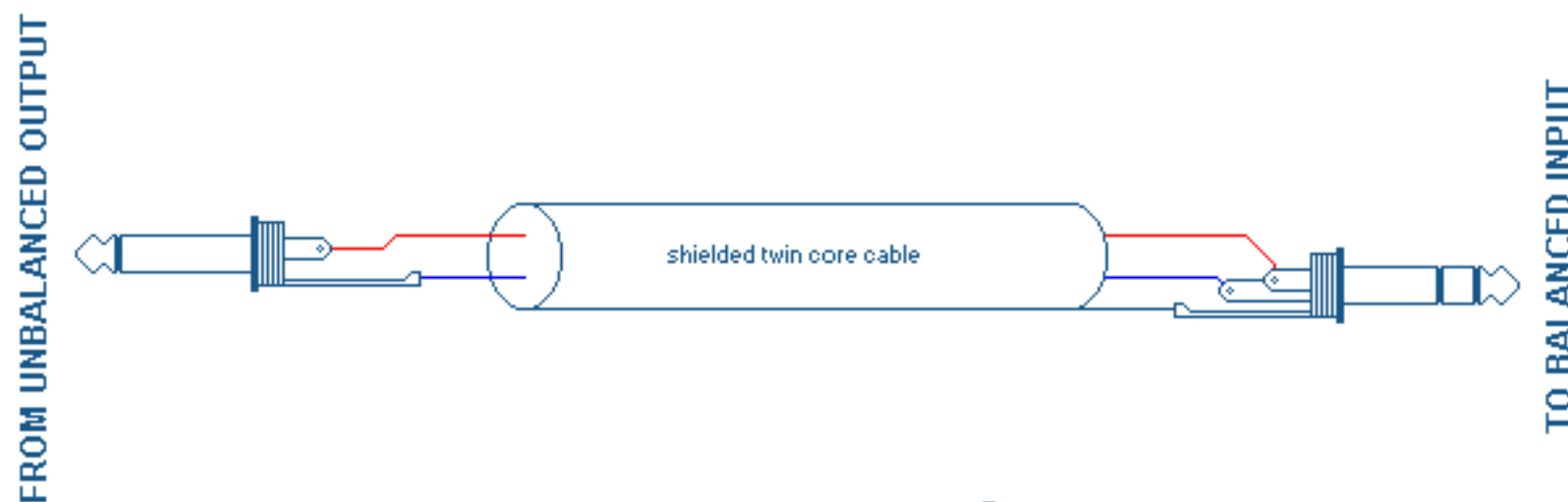
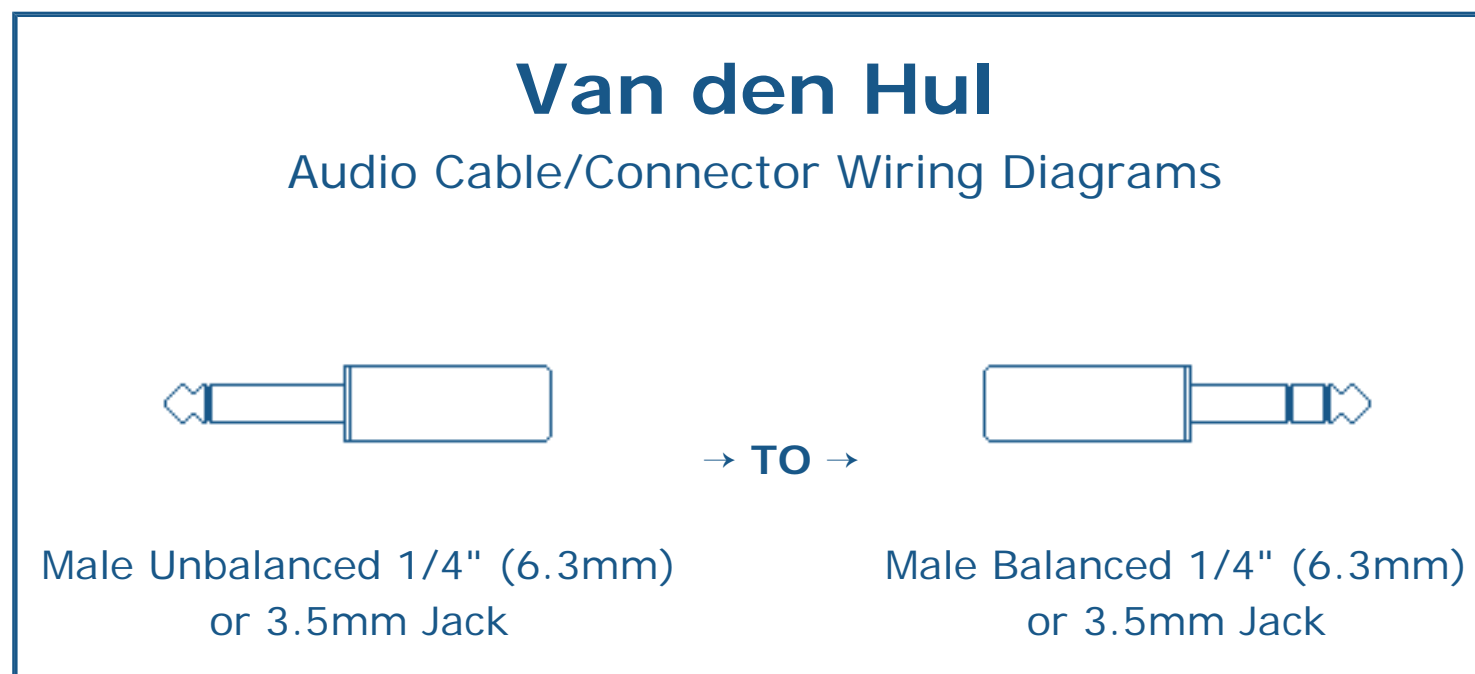
- Whatever your application, [Van den Hul](#)'s broad cable program has the right cable.
- Available from our accessories range:
 - RCA type connectors
 - 1/4" (6.3mm) Jack connectors

Connector notes:

- RCA type connectors:
 - The Right channel is always color coded Red. (Rule of thumb: **R**ight = **R**ed).

The Left channel's plug is generally colour coded Blue, Black or White.

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Remarks:

The above drawn configuration is recommended. However, with the nowadays common electronically balanced (i.e. non-transformer) inputs, in some cases hum and or RF interference problems can be experienced. In this case the cable shield can be experimentally connected to signal ground at the unbalanced signal source side plug, either directly (in case of hum) or (in case of RF interference) by means of a 10 nanoFarad ceramic disc capacitor or a series network of a 47 Ohm resistor and a 10 nanoFarad ceramic disc capacitor. The best solution is situation dependent.

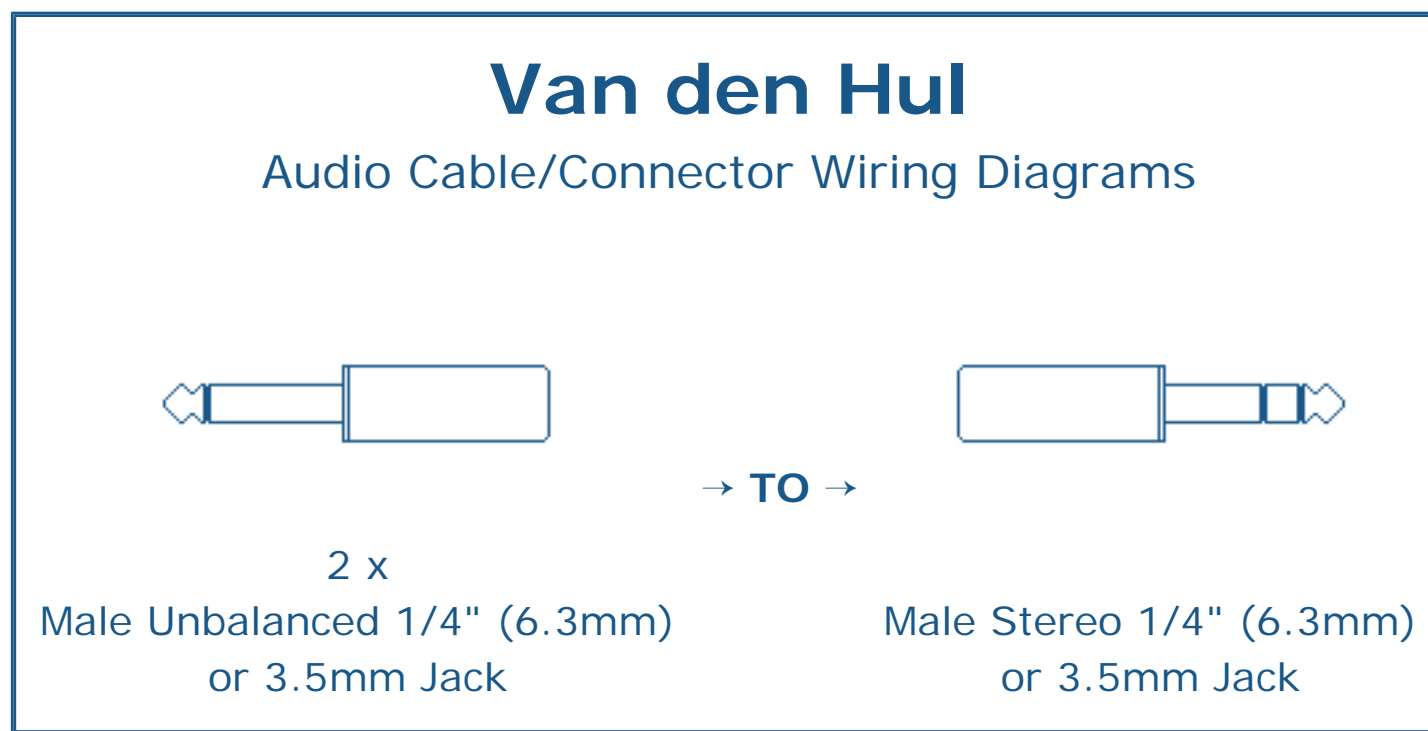
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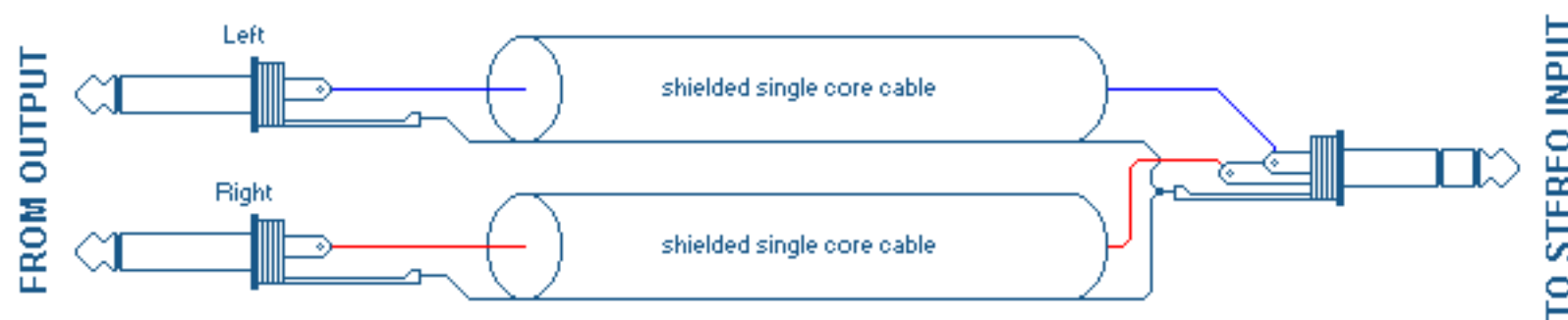
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Connector notes:

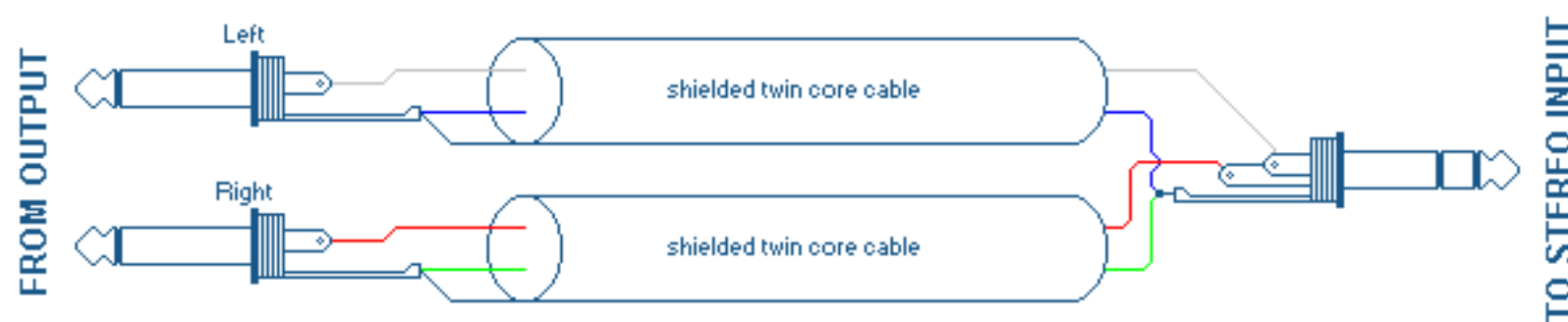
- Balanced jack plugs have the following pin designations:
 - Tip = Signal +
 - Ring = Signal –
 - Sleeve = Ground
- For optimal contact care we recommend our The SOLUTION contact fluid.



Using shielded single core cable:



Using shielded twin core cable:



Using shielded twin core cable is recommended:

In this situation the audio signal ground is carried by a dedicated line, which signal current, being separated from the shield, can not easily be interfered with by the shield's noise currents caused by external interference. This advantage especially counts when low (e.g. microphone) signal levels are being transferred and/or long cable lengths are used. (With shielded single core cable on the other hand, the noise signal built up across the shield effectively is in series with (i.e. adds up to) the audio signal).

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Connector notes:

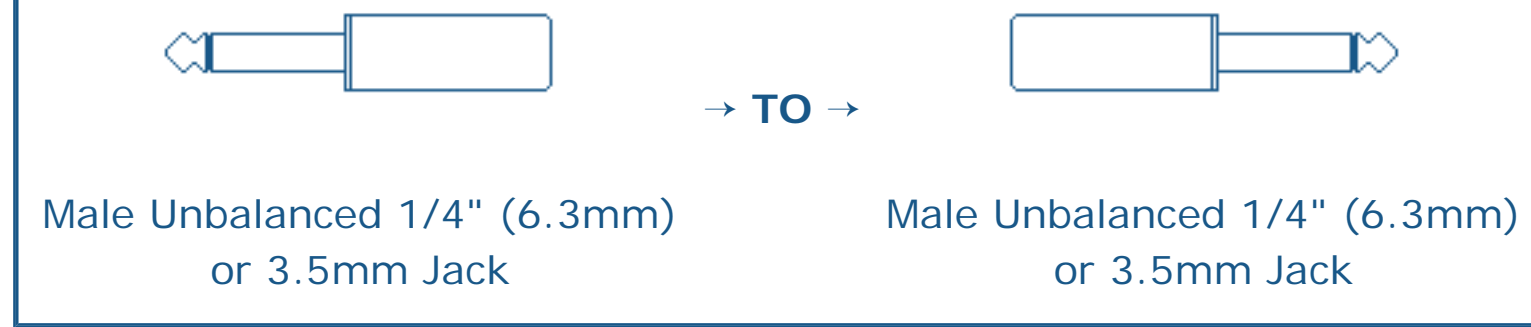
- Stereo jack plugs; A rule of thumb:
The Right channel is always at the Ring: I.e. **Right = Ring** (The plug's configuration being: Tip, Ring, Sleeve).

The sleeve of course is always ground/shield: I.e. **S**leeve = **S**hield.
That leaves the Left channel at the Tip.

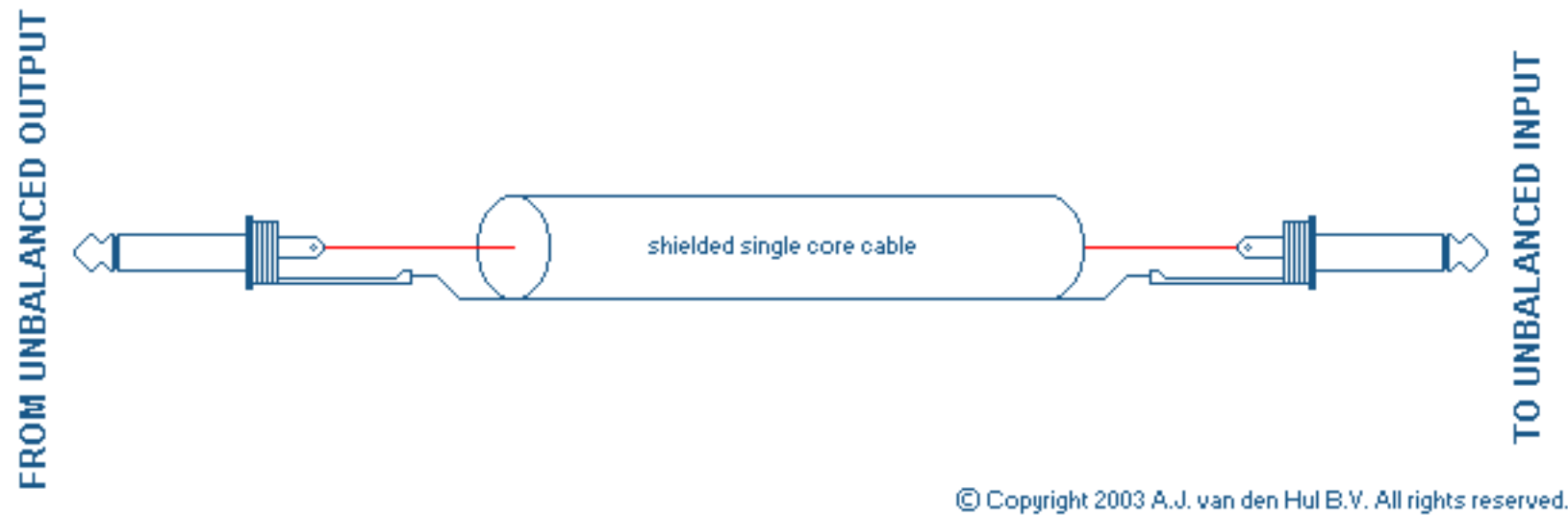
- For optimal contact care we recommend our The SOLUTION contact fluid.

Van den Hul

Audio Cable/Connector Wiring Diagrams

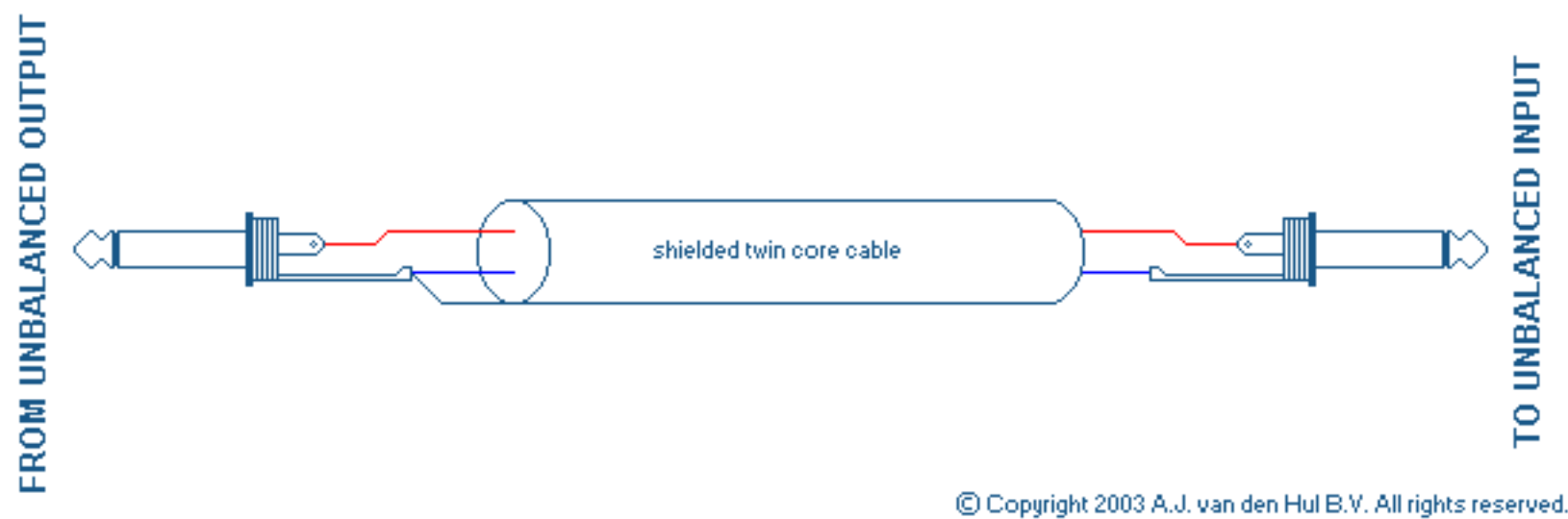


Using shielded single core cable:



Using shielded twin core cable:

Drawn for line level connections. Read note below.



Using shielded twin core cable is recommended:

In this situation the audio signal ground is carried by a dedicated line, which signal current, being separated from the shield, can not easily be interfered with by the shield's noise currents caused by external interference. This advantage especially counts when low (e.g. microphone) signal levels are being transferred and/or long cable lengths are used. (With shielded single core cable on the other hand, the noise signal built up across the shield effectively is in series with (i.e. adds up to) the audio signal).

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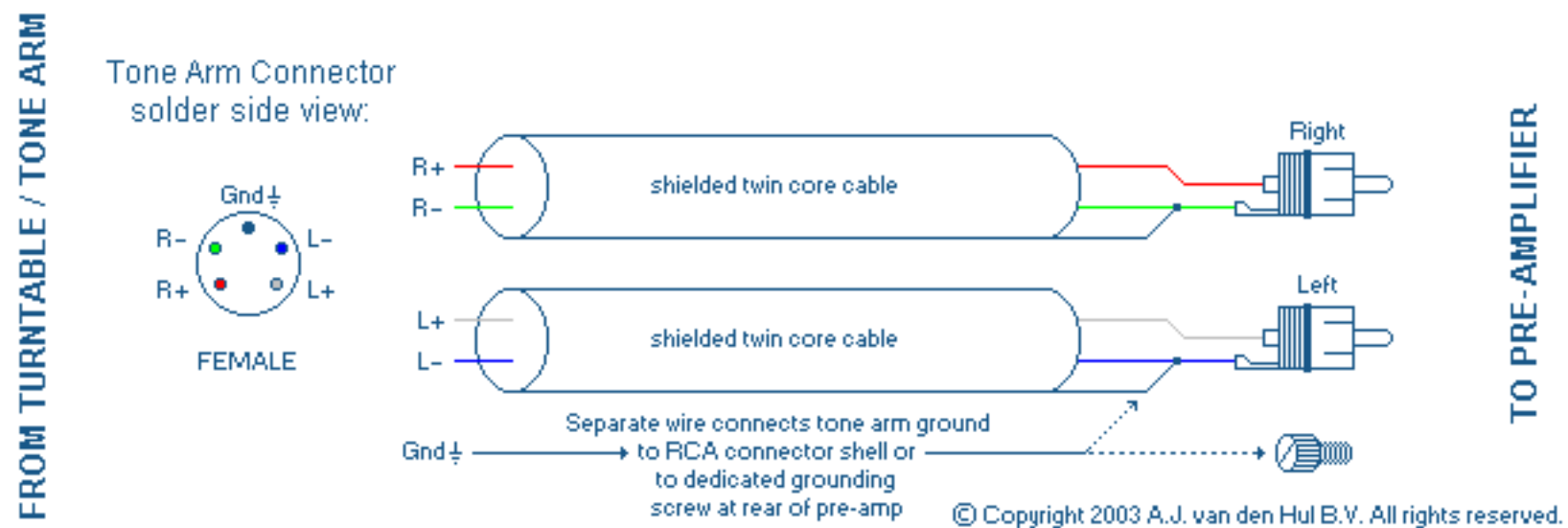
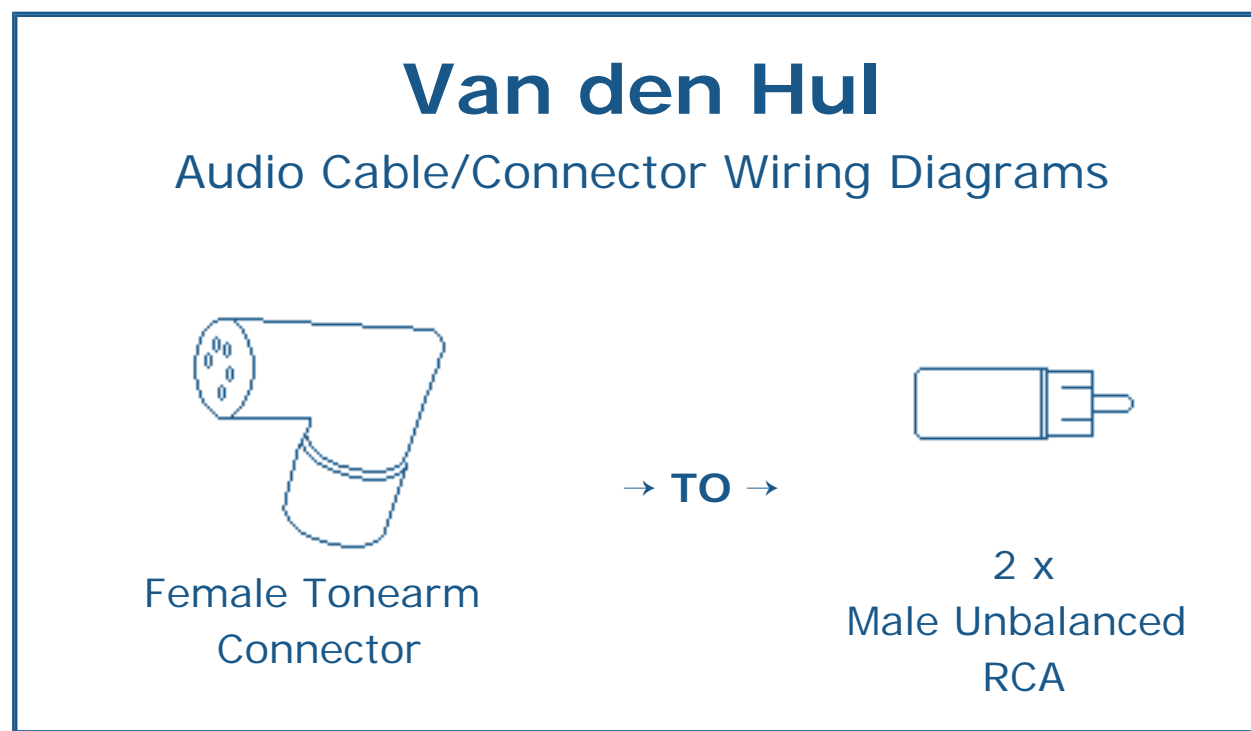
Note: The above second drawing concerns line level connections. However, in case the shielded twin core cable is to be used to hook up non mains-powered musical instruments (i.e. to transfer low/non-line level signals) it is advised to connect the cable shield to ground at the signal receiving end instead of (above drawn) at the instrument end.

Suitable Van den Hul audio cable types and connectors:

- Whatever your application, [Van den Hul](#)'s broad cable program has the right cable.
- Available from our accessories range:
 - 1/4" (6.3mm) Jack connectors

Connector notes:

- For optimal contact care we recommend our The SOLUTION contact fluid.



Remarks:

More background information related to this turntable/tone arm to pre-amplifier wiring configuration and many other phono replay related subjects is available in our website's extensive Phono FAQ.

Suitable Van den Hul audio cable types and connectors:

- Whatever your application, [Van den Hul](#)'s broad cable program has the right cable.
- Available from our accessories range:
 - RCA type connectors
 - Tone arm connector

Connector notes:

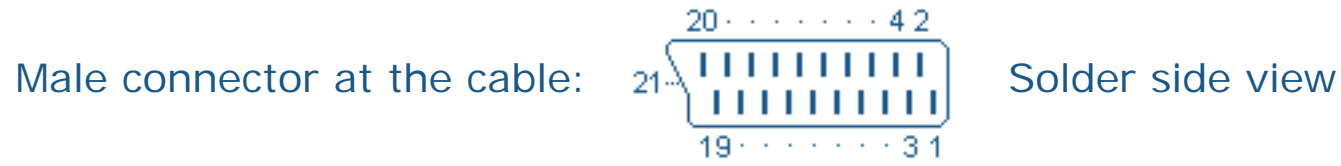
- RCA type connectors:
 - The Right channel is always color coded Red. (Rule of thumb: **R**ight = **R**ed).
 - The Left channel's plug is generally colour coded Blue, Black or White.
- For optimal contact care we recommend our The SOLUTION contact fluid.

Van den Hul

Audio and Video Cable/Connector Wiring Diagrams

Scart A/V Connections

Scart connector pin layout:



Fully wired 21 pole Scart cable:



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Suitable Van den Hul A/V cable types and connectors:


- Our The SCART cable
- Our SCART connector
- Our SCART adapter


Van den Hul

Audio Cable/Connector Wiring Diagrams

5 PIN DIN 180° (DIN41524) Audio Connections

Note: Connector pin numbering below is as viewed at the pin side (not the solder side):

DIN **FEMALE** at the audio device: 

DIN **MALE** at the cable: 

At a(n):	Pin 1 is:	Pin 2 is:	Pin 3 is:	Pin 4 is:	Pin 5 is:
Amplifier / Receiver	L out	Audio ground i.e. Cable screen	L in	R out	R in
Tape recorder	L in		L out	R in	R out
Record player / Pickup			L out		R out
Tuner (and other signal sources not mentioned above)	L out (see *2)		L out (see *1)	R out (see *2)	R out (see *1)
*1: If this signal source is intended to be connected to an amplifier or receiver *2: If this signal source is intended to be connected to a tape recorder					

Remark: The confusion in pin function assignment arises from the fact that in a standard DIN to DIN interconnect cable the pins with the same numbers are connected to each other.

Example: With a male DIN connector plugged into an amplifier, the connector's pin 4 carries the amplifier's right channel output signal. And, for instance, at the connector's pin 3 the left channel from an external signal source enters the amplifier.

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