TP TUBE

User Guide

HI-FI

DMOS

Amplifiere

CLASS D

DSP

300W

500W

CLASS D

DESIGN

Active loudspeaker

WAF

SoundDeny

300W

SoundDeny

160W

Chrome

Chrome

It's almost unnatural that these "sticks" can give the impression of being huge speakers. It's so unrealistic that you won´t believe it until you have experienced it.
Johnny Sørensen

DSP

by TP RADIO

CLASS-D

SoundDeny

300W

CLASS D

HI-FI

DMOS

SoundDeny

DESIGN

160W

WAF

Active speakers by TP RADIO

Amplifiere

Health and safety
Always use an original TP Tube stand if the speaker is to be free-standing.
Otherwise, the speaker may fall over and cause injury.

The sound pressure generated from TP TUBE loudspeakers can cause
hearing damage if the ear is too close to the speaker.
Never play with a high sound pressure when a person's head is less than
1m from a speaker.

Note: TP TUBE speaker is so heavy that it is able to
cause damage to the feet and other body parts if it is dropped.
When you have to deal with heavy objects such as TP TUBE
loudspeakers, make sure to always use proper lifting techniques, bend
your knees and hold back upright and arms as close to your body as
possible.

NOTE: This is a Beta version 1.2-2013 of the userguide and we keep the
rights to change it at any time.

INDEX

Quick Guide

Here's a quick guide to setting up and using TP Tube Series

Your TP Tube, is supplied with an auto function to make installation easy.

1. Place your speakers as described in the user manual.

2. Connect with 230V power cord and audio source with link cables and adapters. Set left and right speakers @ INPUT switch (see page 15)

3. Turn on your audio device. Play music / sound and register that the speakers also powers on. (Blue LED on)

4. Crank up your audio for about 6 seconds. (Be aware that there may be damage to your hearing. Use if necessary earplugs.) Then turn down the listening level again..

Your speakers have now adapted to the source they are connected to, and is now ready for use.
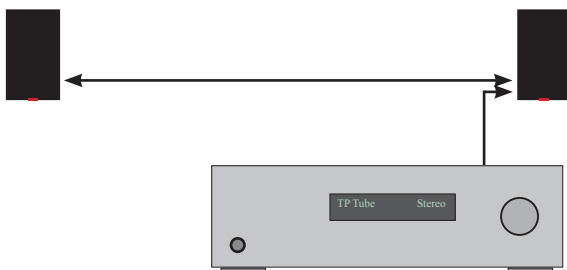
It is recommended to read the user manual carefully and adjust the speaker following its instruction.
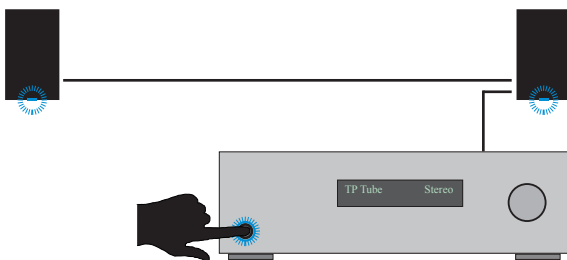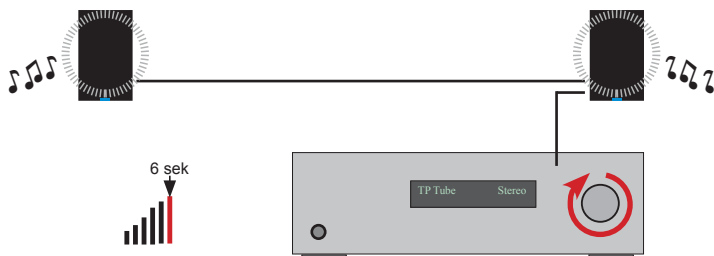
Quick Guide

- **1.**

- **2.**

TP Tube   Stereo

- **3.**

TP Tube   Stereo

- **4.**

TP Tube   Stereo

6 sek

Introduction

Congratulations on your new TP TUBE active speakers.

You have with TP TUBE series acquired an Danish designed- and produced quality product that we hope you will enjoy for many years.

When you unpack your speakers. You must ensure that there are the following contents in each package and that it is not damaged:

• 1 Speaker
• 1 SK-655 Power cord (2 m)
• 1 Key Package / TPlay CD + USB
• 1 User manual

Signal cables, signal adapter, speaker stand is an accessory and must be ordered separately.

Cleaning

If it is necessary to clean the speaker cabinet, use a soft lint-free cloth that has been soaked in water with a bit of normal detergent.

Be careful not to let water into the speaker.
Avoid using a wet cloth on the back panel connectors.
Never use cleansers that contain abrasives, solvents or other chemical deter-gents.

daily use

Once you have set up and adjusted the speakers as described in the instruc-tions on the following pages. Connected to the power source and is ready for use.

fig. 1

TP TUBE enters standby mode automati-cally when not in use and this is shown in the indicator, with a red light

Functions

- **Active speakers**

TP TUBE loudspeakers are active speakers, which means that the amplifiers to equip the speaker units are located inside the cabinet.
In addition to the usual input signal active speakers requires an external power source.

- **Auto power on / off**

TP TUBE loudspeakers are supplied with a built-in "Auto Power On / Off" function. In standby mode, it means that as soon as it detects a signal on the input, the speaker automatically turns On.
This is indicated with blue light in the indicator (Fig. 1).
"Power On" level can be adjusted.
(read more in the section "Customize settings with TPlay")

If there is not detected a signal at the input for more than five minutes, the speakers turns off (go into stand-by mode) automatically.
This is shown with red light in the indicator .. (Fig. 1)

If the speakers are used with B & O "Powerlink" controlled equipment, the TP Tube speakers automatically turns on / off at the same time as the B & O equipment.
-

Functions

- **Active Loudness**

The "active loudness technology" (physiological volume control) used in TP TUBE loudspeakers are unique to these products.
In TP TUBE loudspeakers there are used a very subtle, acoustic natural process that dynamically regulates the amount of "boost" depending on the frequency and level, after the so called Fletcher-Munson curves.
"Active loudness" level can be changed with the included TPlay - CD / USB.
The function can, if desired, be turned off by a switch on the panel on the cabinet rear. (Cable Connections page 13 / fig.2)

- **Auto-leveling input**

TP TUBE loudspeakers can be used with any audio source
(standard line-level professional line level, power amplifier output level.)
With first time use or after "reset", the unique "auto-leveling input" function adjusts the input gain to suit most amplifiers (from 5W and up)
If it is necessary to connect the speakers to a line-level output, the start level is set using the CD / USB.
(read more in the section "Customize settings with TPlay")

- **Limiters**

TP TUBE loudspeakers are protected by a digital limiter, which provides protection of the speaker units from being destroyed by limiting the output level.
This means that it is impossible to destroy the devices, playing too high.

Functions

- **DSP**

Crossover Frequency, physiological volume control, equalizer and limiting features are implemented in a 24-bit Digital Signal Processor.
DSP completes the use of the high efficiency amplifiers used in TP TUBE active speakers.

- **Class D (digital amplifiers)**

Each of the four woofers in TP 500 is powered by its own 100W PWM power amplifier. Class D is a digital amplifier with efficiency up to 90%

In TP 160, the same type of Class D power amplifier is used for both woofer and tweeter unit (an amplifier for each unit). Max. output is set to 80W.

- **DMOS**

A separate 100W DMOS power amplifier drives the tweeter in the TP 500 and TP300.

Functions

- **SoundDeny antitheft system**

"SoundDeny" system is a very effective anti-theft system.
The patent-pending technology ensures that TP TUBE loudspeakers can not be used if stolen.

The system works as follows:
If the power at any time is removed from the TP TUBE loudspeakers for more than 6 hours, the digital electronic locks the speakers and prevent use until a unique Audio key is supplied to the speakers.
The beneficial owner of the speakers can simply play the unique audio tracks from TPlay - CD or the USB from a completely common source and unlock the speakers. (See "Customize settings with TPlay")
If TPlay - CD / USB is kept in a safe place, the speaker can not be used if it is stolen.

If the beneficial owner loses or destroys TPlay CD / USB, then TP Radio provide a copy, under the circumstances that a correct serial number and the purchase can be documented.

- **SOUND**

This switch determines the frequency curve that best fits the location of the speaker in the listening room:

1-   Freestanding - used when the speaker is placed 50 cm or more from a wall and it is not in a corner.

2-   Near the wall - used when the speaker is located less than 50 cm from a wall and it is not in a corner.

3-   Corner used when the speaker is placed in a corner.

Place the speaker

fig. 3
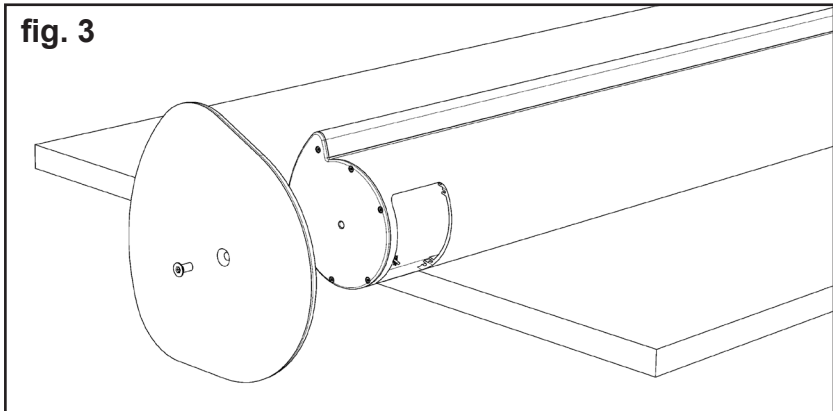
• **Installation of TP TUBE**

TP 500, TP 300 is cleared for use in freestanding mode when the original
TP TUBE stand is mounted. For stability reasons, this stand should always be
used when the loudspeaker is to be detached.
TP 160 has not a requirement for installation of a stand.

1-   Unpac TP TUBE speaker.

2-   A piece of soft protective materials, such as. a small
        blanket or foam material on a solid table that is large
        enough for the speaker to be there.

3-   Lay the speaker on the side of the protective material in such a way
        that the bottom of the loudspeaker protrudes beyond the edge of the
        table. (See Figure 3)

4-   Keep stand (optional - not supplied with the speaker) up towards the
        bottom of the speaker and secure it with the supplied allen screw.

fortsættes...

Place the speaker

5-   Tighten the screw with the supplied Allen-key.

6-   Lift the speaker with both hands and place it
        gently on the floor in an upright position.

Note: Never lie or support the speaker on the front
(Metal grill with black fabric). Use a soft surface if the speaker is on its side - the
painted surface can be scratched by direct contact with a hard surface.

Place the speaker

ou are now ready to place your speakers.

TP TUBE loudspeakers can be placed in an upright position anywhere in the listening room, if you just make sure to place them on a stable and solid material. (TP160 / TP300 can be placed in the vertical, as a center speaker) However, there are other things to be taken into consideration:

- Acoustic - if the speakers are placed in a corner or close up against a wall, you can compensate for this by choosing the right setting with "sound" switch.
  It would be ideal to place TP TUBE loudspeakers free standing with at least 50 cm away from the nearest wall.

- Aesthetic - find out what location that makes it easier to hide the wires.

- The distance to the nearest power outlet. every speaker must be connected to power source.
  With each speaker delivered a 2m long power cord.
  If the distance to the nearest outlet is larger, an extension cord should be used.

- The distance to the sound source
  (Radio + amp / CD player etc.).

- The distance between the speakers

We are always ready to assist with advice and guidance about placement and adjustment

Connections

- **Signal cables / Link Cables / Adaptors**

You can control up to three TP TUBE loudspeakers with the same signal cable. (See: Installing page 14)
This is possible because the signal cable has three paired signal lines, and the two inputs / output connectors makes it possible to connect speakers in series. This solution can simplify cable connections from source to the speakers.

The following cables are available:

- **SK652 Line adapter** - Line level input, 30 cm long, phono plug to the sound source, D-15 female connector at the other end.

- **SK688 Line adapter** - Line level input, 30 cm long, 3.5 Jack at the sound source, D-15 female connector at the other end.

- **SK653 speaker adapter** – Speaker level input, 30 cm long, Stripped and tinned wire to the sound source, D-15 socket on other end.

- **SK654 "Power link" adapter** - (only for B&O systems) Speaker Level input, 30 cm long, DIN plug to the sound source, D-15 female connector at the other end.

- **SK651/1 Extension Cable** 1.0m, D-15 male to D-15 female.

- **SK651/35 Extension Cable** 3.5m, D-15 male to D-15 female.

- **Sk651/10 Extension Cable** 10m, D-15 male to D-15 female.

For accessories and prices, please call or go to www.tptube.dk

Connections

fig. 2
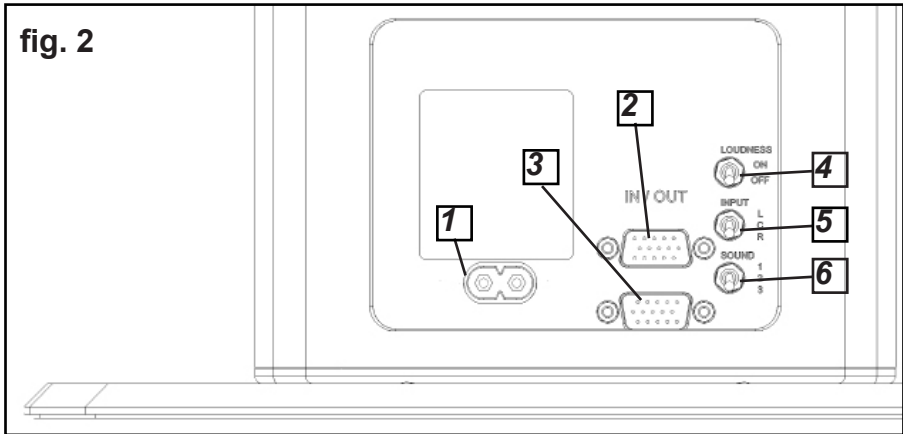
1. 230V
The power cord (SK654) is inserted here.

2 IN
Here you connect the audio source.
Or link cable from the second TP TUBE speaker.

3 OUT
Here you can connect the link cabel to the next TP TUBE speaker.

4. LOUDNESS
This switch turns the "active loudness" function, On or Off

5. INPUT
Sets the speaker to: left, right or center.

6. SOUND
You can with this switch determine location of the speaker in the listening room.

Connect the speaker

Example of Adapter use i a stereo setup
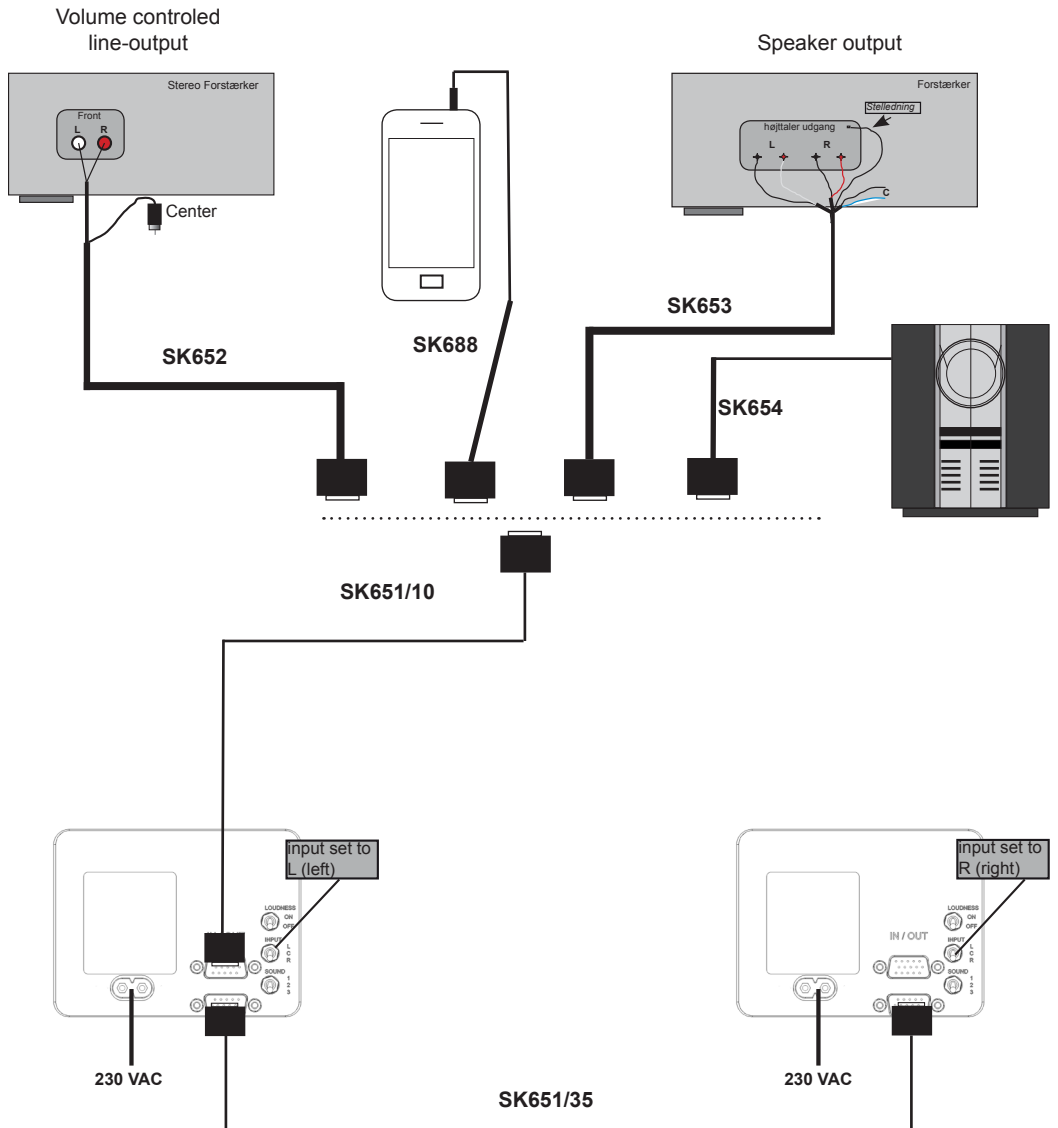
Volume controled
line-output

Speaker output

Stereo Forstærker

Front
L   R

Center

Forstærker

højttaler udgang

Stelledning

L   R

C

SK653

SK688

SK652

SK654

SK651/10

Input set to
L (left)

LOUDNESS
ON
OFF

INPUT
L
C
R

SOUND
1
2
3

Input set to
R (right)

IN / OUT

LOUDNESS
ON
OFF

INPUT
L
C
R

SOUND
1
2
3

230 VAC

230 VAC

SK651/35

Of course it is also possible to connect cables to each speaker individually

Connect the speaker

Eksempel på Stereo installation med forstærker
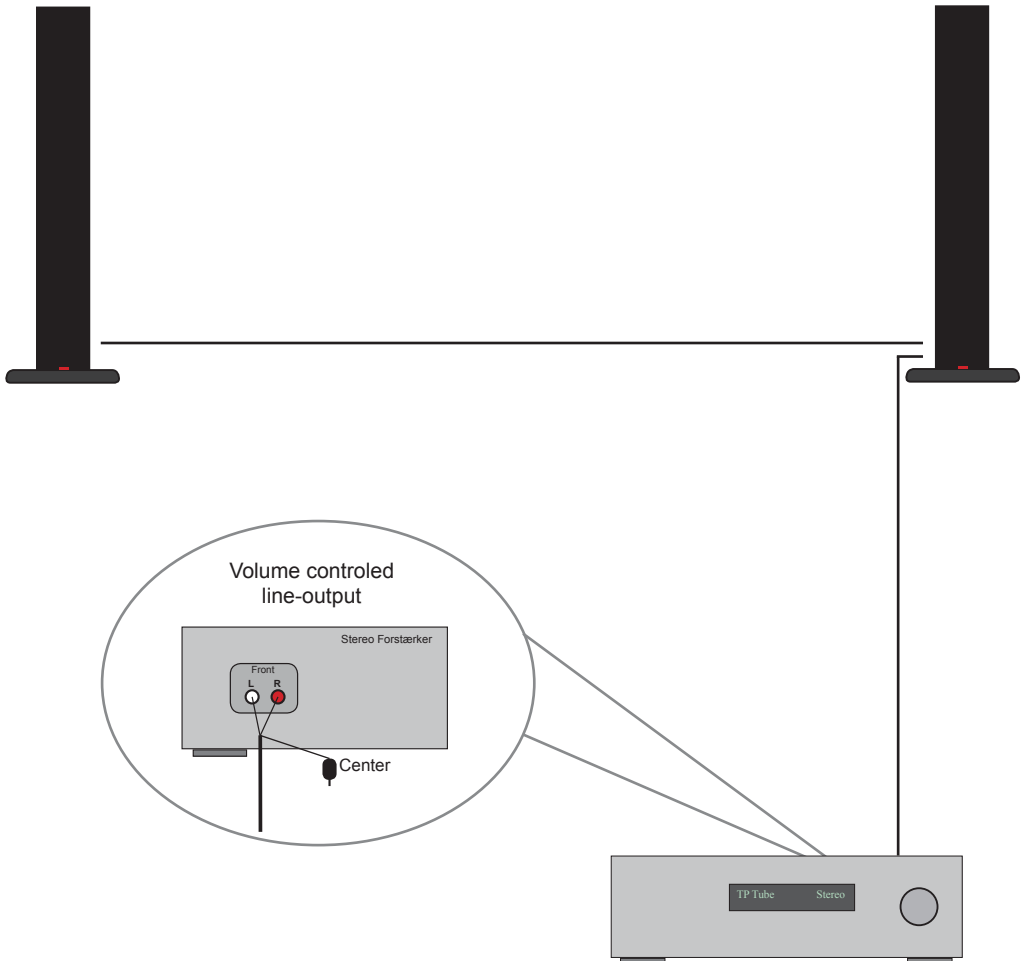
Volume controled
line-output

Stereo Forstærker

Front

L   R

Center

TP Tube   Stereo

Of course it is also possible to connect cables to each speaker individually

Connect the speaker

Example of Stereo installation with AirPlay & DLNA
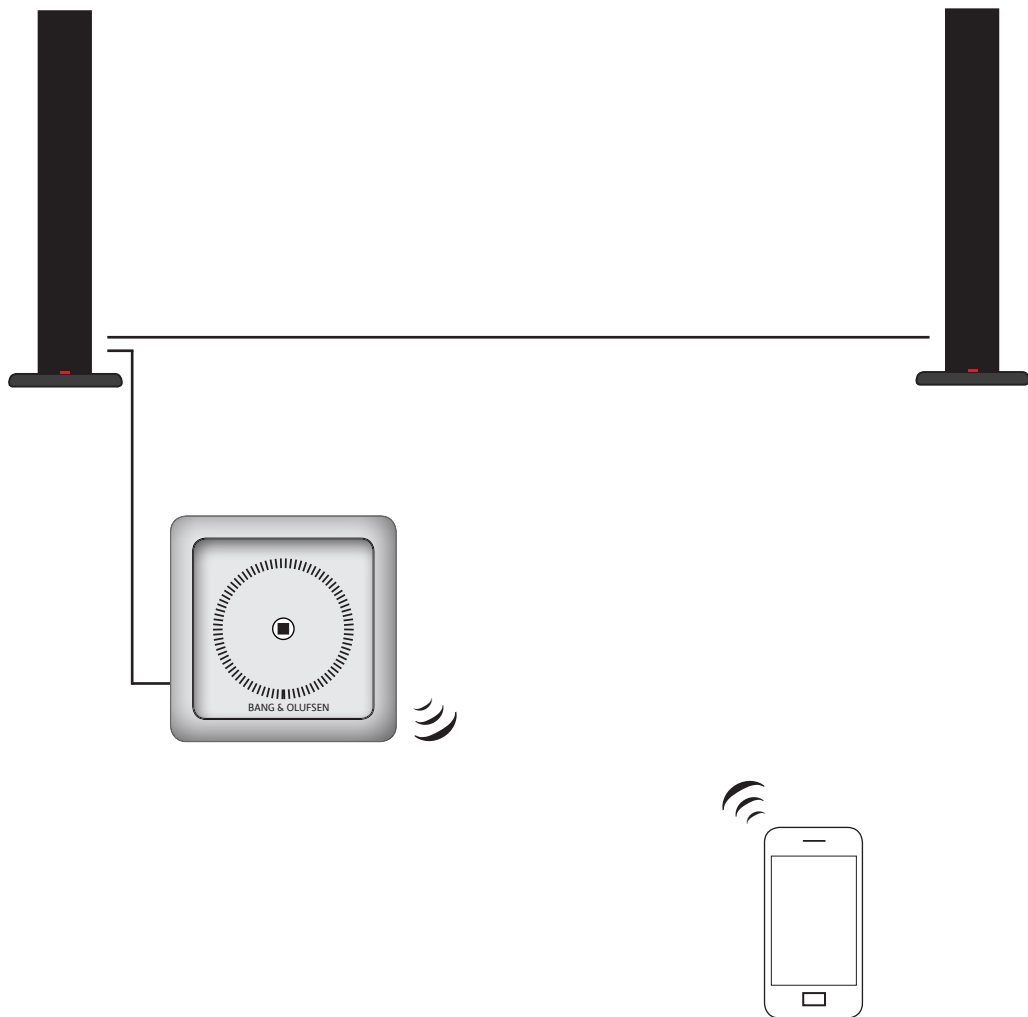
Connect the speaker

Eksempel of Surround installation

Sorround Reciever

Back — L R   Front — L R   C
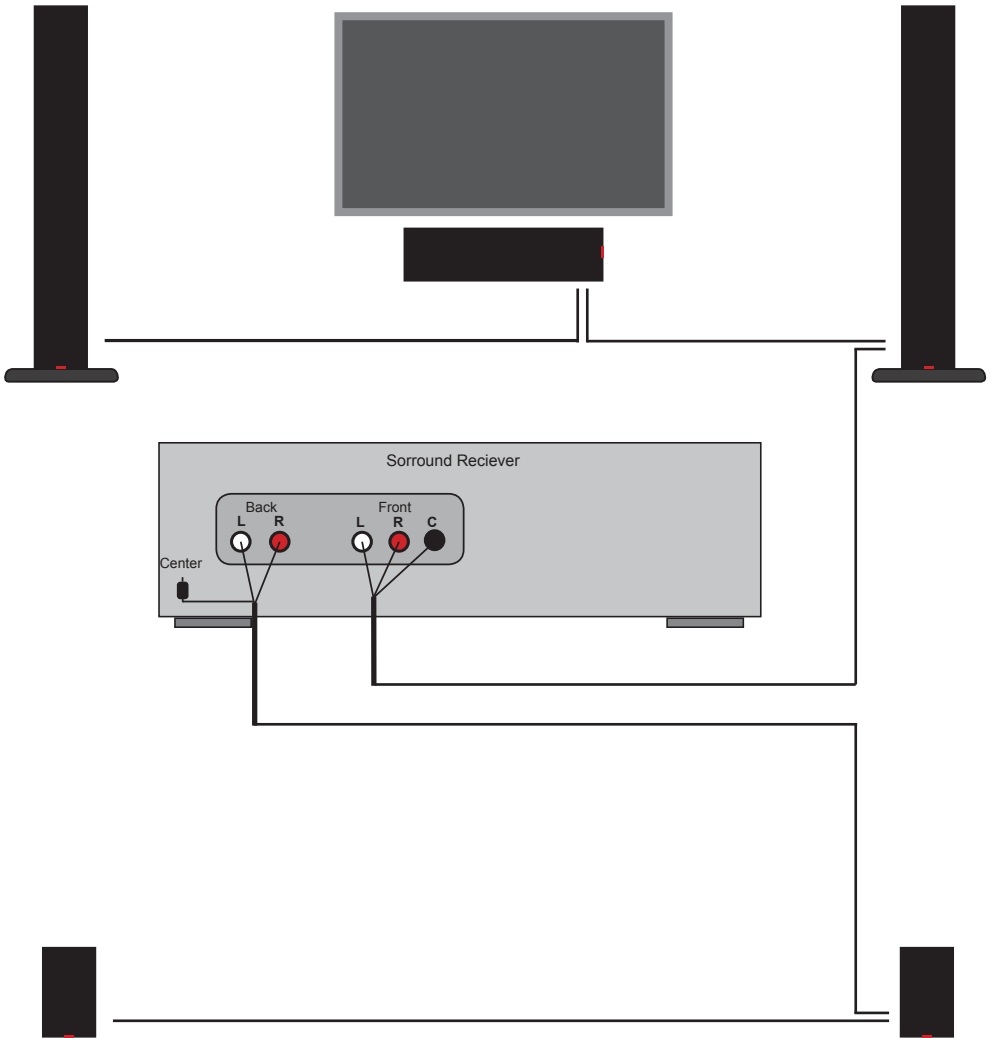
Center

Remember to choose what speaker to play as: L - C - R

The Front indicator

• **ndicator / LED**

On the speaker front bottom center is located a two-color LED indicator.
LED turns red when the loudspeaker is connected to the mains.
LED can be lit or flashing, with the colors red, purple and blue.
When the speaker is used usually led shows the following:

• Constant blue light: The speaker is on

• Steady red: The speaker is in standby.

• Slowly flashing red light: the protective device (Sound Deny) entered ifunktion, and the speaker works only again when protective device is activated or deactivated with TPlay - CD / USB.

When the speaker plays very loud, the LED briefly or
longer intervals change from blue to purple or red.

• If the LED briefly flashes red intermittently, it means that the built-in protection circuit is activated briefly. This does not hurt the speaker. If the LED lights up red more persistent you need to turne down the volume.

• If the LED briefly flashes purple, it means that the signal from the sound source is too strong.
Read the description under "Customize settings with TPlay"

Using TPlay - CD / USB light blinks, see description under
"Customize settings with TPlay"

The Front indicator

On

Standby

Safety/Teach
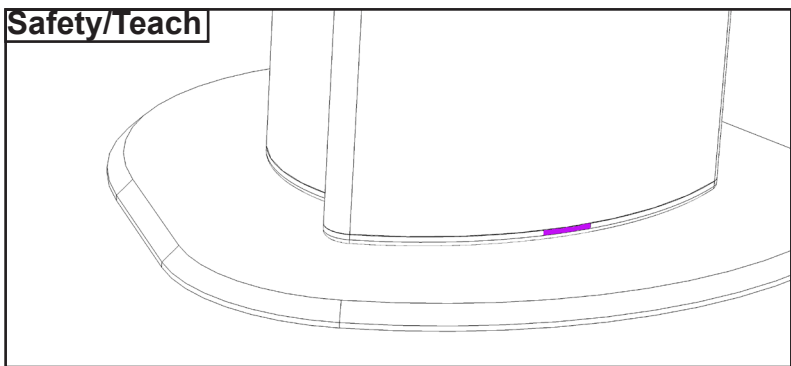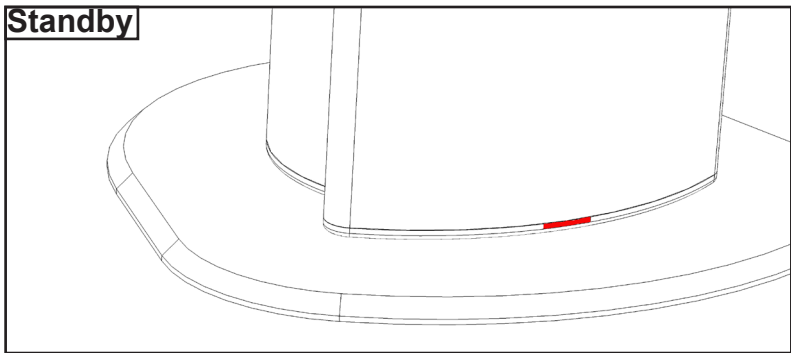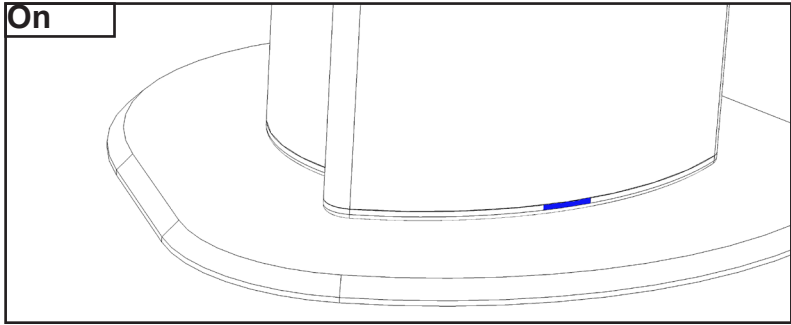
Customize settings with TPlay

Before taking your speakers in use for the first time

- Decide whether to use "Active Loudness" function and set the "loudness" switch then.

- Determine where the speaker is to be placed and set the switch. "Sound"

- Determine whether the speaker is a left, right or center speaker and set "input" switch then.

- You can with TPlay set input level depending on your amp.

- Determine whether you want to use"SoundDeny anti-theft" function

Customize settings with TPlay

• **Info**

The accompanying TPlay - CD / USB contains soundtrack to adjust the speaker properties beyond what is possible with the switches at the rear of the speaker.

The soundtrack is divided such that all even numbers have a "function", while the odd numbers are "empty numbers" that separates the individual functions, so that you can manage to stop playing before the next function starts.
To enable a function to a value simply play the number that gives the desired value. Hi-fi system must be set to normal listening level, and must not be adjusted while the track is playing. Hi-fi system sound setting should be set to neutral.

If the SoundDeny is "activatet", the notes could not be heard, but the function will nevertheless be executed.

The first number (1), is a test tone that can be used to adjust sound level.

All even numbers starting with 2 tones of 6 sec. duration. At the end of the second tone, the LED on the front start flashing purple, indicating that the sound level is in order.
Then there will be rapid succession a series of tones that make up the function itself. If the light at the end of these notes is red for 2 seconds. it meant that there was an error.

In case of failure, you can try increasing or decreasing the volume level a bit and try again.

Note: when adjusting the surround system, it may be necessary to play the "4-stereo" or put the rear speakers as front speakers temporarily, to get sound level enough to get adjustment to work.

Customize settings with TPlay

The function of the audio tracks														
These numbers works on all speakers regardless of serial number										These numbers only works on speaker with the right Serial No.		These numbers works on all speakers regardless of Serial No.		
Reset		Auto power on level		Output level		Input level		BassCut		SoundDeny Anti theft		Loudness level		
2	on	4	low	10	-20dB	**20**	**Auto**	**42**	**normal**	46	ON	50	high	
		6	**normal**	12	-10dB	22	0dBm	44	high	**48**	**OFF**	**52**	**normal**	
		8	high	14	0dB	24	6dBm					54	low	
				16	**+10db**	26	12dBm 1 Watt							
				18	+20dB	28	15dBm 2 Watt							
						30	**18dBm 5 Watt**							
						32	21dBm 10 Watt							
						34	25dBm 25 Watt							
						36	28dBm 50 Watt							
						38	31dBm 100 Watt							
						40	34 dBm 200 Watt							

- *The numbers on the left side of a column is the track number.*

- *Values highlighted in bold / red are initial values after reset.*

- *All odd-numbered tracks are empty.*

Customize settings with TPlay

The following functions can be changed with TPlay:

- **The speakers can be reset to default values.**
- **The speakers automatic On / Off circuits can be adjusted**
- **The speakers volume level can be adjusted**
- **The speakers input sensitivity can be adjusted.**
- **The speakers bassCut can be adjusted.**
- **The speakers SoundDeny can be activated and deactivated.**
- **The speakers loudnes level can be adjusted**

Description of track / features:

1 -   Test Tone to adjust the volume.

2 -   Reset speaker to the factory settings. (see table)

Auto power
When the speaker is made to work with many different hi-fi systems, it may happen that speaker either will not turn off automatically or off by playing very low. Therefore, the sensitivity of the circuit can be changed:

4 -   On-circuit can be set to a lower level, if the speaker turns off at low sound levels.

6 -   On-circuit can be set to normal level. (factory setting)

8 -   On-circuit can be set to a higher level if the speaker does not turn off.

Customize settings with TPlay

Output level

The speaker output volume level can be adjusted depending on the needs.

10 - The output level can be set to never be higher than "room level" (-20db).
Suitable for "children home alone security"

12 - The output level can be set to never being more than "strong room level" (-10db).
Suitable for "children home alone security."

14 - The output level can be set to maximum unregulated level (0dB)
Suitable for general use.

16 - The output level can be set to "power" (+10 db)
Provides higher average level as the speaker Adjust the sound dynamic when played loud.
(factory setting)

18 - The output level can be set to "extra power" (+20 db)
For even higher average level, as the speaker Adjust the sound even more dynamic when played loud.
This option is suitable for large rooms. Or "party"

Customize settings with TPlay

Input level

The speaker is set at the factory to self-adapt to the hi-fi system it is connected. But it may be an advantage to preset speaker's sensitivity, to match the hi-fi system it is connected.
Especially with surround systems it would be good to preset the input sensitivity of the individual speakers.

Although sensitivity is set in advance, the speaker will always regulate down if the level is higher than it has been set.
Normally, all speakers should be set to the same sensitivity, and then fine-tuning of the individual channels is made on the sound system.
The speaker must always be set to the nearest greater value than the output that the sound system is provided for.

An example:

If a surround sytem data is provided to 5 * 35W, all speakers should be set to 50W. The speaker can also be connected to amplifiers with line output level, again, select the next larger level.

Note: If the LED occasionally flashes purple, this indicates that
speaker is set at too low a level.
When this is the case, there will be distortion in the entrance, in the worst cases it can
destroy the speaker, if you play very loud.

Customize settings with TPlay

20 -   input level Auto *(factory setting)*

22 -   input level 0dBm (0,7V rms)

24 -   input level +6 dBm (1,5V rms)

26 -   input level +12 dBm (3V rms) 1 W sinus rms

28 -   input level +15 dBm (4,5V rms) 2 W sinus rms

30 -   input level +18 dBm (6V rms) 5 W sinus rms

32 -   input level +21 dBm (9V rms) 10 W sinus rms

34 -   input level +25 dBm (14V rms) 25 W sinus rms

36 -   input level +28 dBm (20V rms) 50 W sinus rms

38 -   input level +31 dBm (28V rms) 100 W sinus rms

40 -   input level +34 dBm (40V rms) 200 W sinus rms

BassCut
The loudspeaker can be adjusted to work with a subwoofer.
In this setting, the deepest bass tones are removed which instead comes out of the subwoofer.

42 -   BassCut is set to normal (40 Hz) (factory setting)

44 -   BassCut set to high (150 Hz)
        (when there is a subwoofer connected)

Customize settings with TPlay

SoundDeny

This feature only works on the speaker when CD / USB has the same serial number.
Whether the speaker is activated or deactivated, the device is always being unlocked when played.

46 -   The speaker theft activated

48 -   The speaker theft deactivated (factory setting)

Loudness

The speaker is factory set to "normal" loudness function.
Meaning that it provides a mild regulating of the bass and treble.
This position fits the space between 20m2 and 30m2.
If the regulation seems to be too strong, it can be set to low, and vice versa if the regulation seems too weak, it can be set to high.

50 -   Loudness level is set to low

52 -   Loudness level set to normal (factory setting)

54 -   Loudness level is set to high

Documentation

TP TUBE 500

Dimensions:	16.6 x 15.6 x 121 cm
Weight:	18 kg
Cabinet type:	Bass reflex
Cabinet finish:	Painted Aluminium
Standby consumption:	<2W
Supply voltage:	200-260 VAC, 50 Hz*
Power amplifier modules:	5
Amplifier types:	Digital amplifiers for woofers DMOS amplifier for tweeter
Maximum output power:	500W total
Effective frequency range:	50 - 20,000 Hz
Input sensitivity:	700mV to 30V auto-levelling
Woofer size:	4 x 5½ inches
Tweeter size:	1 x 1 inch
Net volume:	15 litres
Auto power-off time:	5 minutes

$C\,C$

TP TUBE 300

Dimensions:	16.6 x 15.6 x 51 cm
Weight:	11 kg
Cabinet type:	Bass reflex
Cabinet finish:	Painted Aluminium
Standby consumption:	<2W
Supply voltage:	200-260 VAC, 50 Hz*
Power amplifier modules:	2
Amplifier types:	Digital amplifier for woofer DMOS amplifier for tweeter
Maximum output power:	300W total
Effective frequency range:	50 - 20,000 Hz
Input sensitivity:	700mV to 30V auto-levelling
Woofer size:	2 x 4 inches
Tweeter size:	1 x 1 inch
Net volume:	5.0 litres
Auto power-off time:	5 minutes

$C\,C$

Documentation

TP TUBE 160

Dimensions:	16.6 x 15.6 x 31 cm
Weight:	8 kg
Cabinet type:	Bass reflex
Cabinet finish:	Painted Aluminium
Standby consumption:	<2W
Supply voltage:	200-260 VAC, 50 Hz*
Power amplifier modules:	2
Amplifier types:	Digital amplifier for woofer
	Digital amplifier for tweeter
Maximum output power:	160W total
Effective frequency range:	55 - 20,000 Hz
Input sensitivity:	700mV to 30V auto-levelling
Woofer size:	1 x 5½ inches
Tweeter size:	1 x 1 inch
Net volume:	2.5 litres
Auto power-off time:	5 minutes

$C \in$

Technical specifications, features and the use thereof are subject to change without notice.

Dokumentation

Declaration of Conformity

Manufacturers Name: TP Radio
Manufacturers Address: Agenavej 37, 2670 Greve Denmark

Declares under our sole responsibility that the Product:

Product description: *Loudspeaker with built-in amplifier
          and power supply*
Type- or Model Names: *TP- Tube 500*
Product variants: *TP- Tube 160/300*

Is in conformity to the Directives and Standards listed below:

89/336/EEC Electromagnetic Compatibility Directive. (EMC)
73/23/EEC Low Voltage Directive. (LVD)

Standards used in the assessment:

•   EN61000-3-2:2001,
•   EN55013:2001
•   EN55020: 2002
•   EN60065: 2001
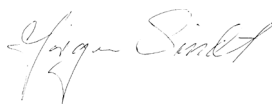
Name: Jørgen Sindt
Position held: Technical Manager
Location: Greve, Denmark
Issue Date: 10 Feb. 2004

Signed:

TP Radio / Agenavej 35-37 / 2670 Greve Denmark.
www.tpradio.dk / +45 4390 6048

Interface / stikforbindelser

The following information is for users who want to interface directly to
TP TUBE speaker control system.
Input connector provides a serial connection used for factory setup /
programming.
In addition to the balanced left, right and center signals, the input terminal
connected to the following:

- On (used for Powerlink control)
- On_n (inverted level on / off control)
- Control (bring same gain to all connected speakers)
- RX (serial data programming)
- TX (serial data programming)
- PWR (+5 V output, only factory use)
- FACT (special function pin, only factory use)

Pin connections are as follows:
1. Centre in +
2. Centre in –
3. ON_N input
4. RX
5. GND
6. Left in +
7. Left in –
8. GND
9. Control
10. TX
11. Right in +
12. Right in –
13. ON
14. PWR
15. Only factory use, warranty lapse if
    the pin is connected.

Your own setup

Remember your adjustment

Once you've tagged your speakers to the desired adjustment, it can be difficult to remember which tracks you have used.

With the form to the right, you can check which tracks you have used and even create multiple lists.

Example, you can create a "normal" list which is your best setup.

And maybe a "party-list" where you raise the output level of +20 dB and change the loudness.

Or a "Children home alone" list, where output level-20dB is used.
The possibilities are many.

	Navn:	NORM	FEST
2 -	Reset	X	X
4 -	Auto power on low		
6 -	Auto power on normal		
8 -	Auto power on high		
10 -	Output level -20dB		
12 -	Output level -10dB		
14 -	Output level 0dB		
16 -	Output level +10dB		
18 -	Output level +20dB		X
20 -	Input level auto		
22 -	Input level 0dBm		X
24 -	Input level 6dBm	X	
26 -	Input level 12dBm 1 Watt		
28 -	Input level 15dBm 2 Watt		
30 -	Input level 18dBm 5 Watt		
32 -	Input level 21dBm 10 Watt		
34 -	Input level 25dBm 25 Watt		
36 -	Input level 28dBm 50 Watt		
38 -	Input level 31dBm 100 Watt		
40 -	Input level 34dBm 200 Watt		
42 -	BassCut normal		
44 -	BassCut high		
46 -	SoundDeny ON	X	
48 -	SoundDeny OFF		X
50 -	Loudness niveau high		
52 -	Loudness niveau medium		
54 -	Loudness niveau low		X

This is only an example

Your own setup

	Name:		
2 -	Reset		
4 -	Auto power on low		
6 -	Auto power on normal		
8 -	Auto power on high		
10 -	Output level -20dB		
12 -	Output level -10dB		
14 -	Output level 0dB		
16 -	Output level +10dB		
18 -	Output level +20dB		
20 -	Input level auto		
22 -	Input level 0dBm		
24 -	Input level 6dBm		
26 -	Input level 12dBm 1 Watt		
28 -	Input level 15dBm 2 Watt		
30 -	Input level 18dBm 5 Watt		
32 -	Input level 21dBm 10 Watt		
34 -	Input level 25dBm 25 Watt		
36 -	Input level 28dBm 50 Watt		
38 -	Input level 31dBm 100 Watt		
40 -	Input level 34dBm 200 Watt		
42 -	BassCut normal		
44 -	BassCut high		
46 -	SoundDeny ON		
48 -	SoundDeny OFF		
50 -	Loudness niveau high		
52 -	Loudness niveau medium		
54	Loudness niveau low		

TP TUBE

TP RADIO **- Agenavej 35-37 - 2670 Greve - Danmark,**
Phone: +45 43 90 60 48
E-Mail info@tptube.dk
www.tptube.dk