## **User's Manual**

DPA D3 Decca Tree

DPA D3c Decca Tree with Integrated Cables

DPA S5 Surround Mount

DPA S5c Surround Mount with Integrated Cables



Surround



# Contents

Product overview	2
General description	
Center Disc	
Suspension Hooks	4
Measuring Tape and Protractor	4
Horizontal adjustment/angle between microphone pairs	
Vertical adjustment/tilt	6
Integrated cable option (included in D3c and S5c)	7
For use as an AB stereo boom	8
For use as D3 Decca Tree	9
For use as S5 Surround Mount	17
Specifications	
Environmental Policy	
Service & Repair	
Other microphone groups	



# Product overview of assembling components

Ref.		Type no.	Product	D3	D3c	<b>S</b> 5	<b>S</b> 5c
A	0	CD5000	Center Disc (w. thread adapter)	1 рс.	1 рс.	1 рс.	1 рс.
В	/	TBH5000	Telescopic Boom with Microphone Holders	3 pcs.	3 pcs.	5 pcs.	5 pcs.
с	/	SEU5000	Short Extension Unit	6 pcs.	6 pcs.	8 pcs.	8 pcs.
D	/	LEU5000	Long Extension Unit	3 pcs.	3 pcs.	9 pcs.	9 pcs.
E	Ò'	DAO 3000 & DAO 5000	Balanced Mic Cable Female XLR - Lemo/Male XLR Adapter, 10 m (33 ft)	-	3 pcs.	-	5 pcs.
F	0	RCD5000	Rear Center Disc	-	-	1 рс.	1 pc.
G	/	TEU5000	Telescopic Extension Unit	-	-	1 рс.	1 рс.
Н	6	MT5000	Measuring Tape	1 рс.	1 рс.	1 рс.	1 рс.
I	Ü	РМН5000	Protractor	1 рс.	1 рс.	1 рс.	1 рс.
J	00	SH5000	Suspension Hook	3 pcs.	3 pcs.	5 pcs.	5 pcs.

# **General description**

The DPA Decca Tree (D3) and Surround Mount (S5) are highly versatile and stylish microphone mounts for two to five microphones. The unique building block design of the D3 and S5 mounts provides extreme flexibility, allowing for numerous configurations while an integrated custom length cable option adds even more value to the product's visual elegance.

In the concert hall, the mount is hardly visible and completely non-light reflective. The mount is equally suitable for fixed installations and mobile setups and can be neatly packed away into the supplied briefcase for easy transportation. Compact and extremely lightweight, the DPA mount is very strong and stable.

Although the array is optimized for use with DPA microphones, it accommodates all microphone holders due to its standard 5/8'' thread, and a broad variety of surround microphone arrays can be set up very neatly. In the Decca Tree configuration, all three microphones can be spaced 60 to 210 cm (2 to 7 ft) apart, either aligned, in a vintage Decca school T-shape, or in an equilateral triangle configuration for optimal balance with a centered fixation point.

#### **Center Disc**

The Center Disc has mounting information inscribed on both sides. Nevertheless, always mount the Center Disc with the opening of the disc downwards for cable outlet.



#### **Suspension Hooks**

Press the "eyes" on the spring together with two fingers and draw the open hook over the Telescopic Boom to the dedicated hook mounting catch. Turn the hook to the desired point and secure it by releasing the spring back to its original state. The wires to the Suspension Hooks should be as vertical as possible. Avoid any bending force to the microphone arms applied by the suspension wires.



#### **Measuring Tape and Protractor**

In order to keep the simple and elegant look of the microphone mount, there are no distance or angle markings on the product (besides the three markings on the Telescopic Booms). Please refer to the descriptions in this manual regarding microphone array spacings or use the enclosed measuring tape to confirm your desired microphone distances. The unique 3D protractor can be mounted on each of the supplied microphone holders to adjust the microphone angle, both horizontally (outer row) and vertically (inner row).





When mounting mics in the shock mount, please note that there is a specially designed protractor for this (supplied with the surround microphone kits).

#### Horizontal adjustment/angle between microphone pairs



Click the protractor on to the cylindrical microphone holder on the Telescopic Boom. The screw on the microphone holder should be visible through the small, round eye in the middle of the protractor. When angling the microphone, the boom will now act as a pointer to the outer row showing the angle difference between the L-C or R-C microphone (when using any forward pointing L and R microphone boom configuration).

Two parallel pointing microphones should therefore read out 00 when using forward pointing microphone boom configurations. When measuring the angle between the LS and RS microphones, the protractor reads out the angle to an imagined center line.



#### Vertical adjustment/tilt

The microphone can be angled up- or downwards, a vertical angle read will make it easy to find the desired inclination:

Click the protractor on to the cylindrical microphone holder on the Telescopic Boom.

The bullet will read out any angle offset at the inner row incorporated by either a twist from the specific microphone arm or by the entire mount.



#### Integrated cable option (included in D3c and S5c)

Disassemble the XLR connection adapter at the male end of the cable.



Put the small Lemo connector into the opening by the microphone holder and push the cable gently through the pipes to the center disc. Then plug the small Lemo connector into the XLR connection adapter.



#### For use as an AB stereo boom

Use the Telescopic Extension Unit as a stereo boom and mount a microphone holder at each end. Attach a third Microphone Holder on the thin tube part of the Telescopic Extension Unit to make it mountable to a microphone stand. The microphone basis can be adjusted from approx. 40 to 60 cm (16 to 24 in). The integrated microphone cables from D3c or S5c can be drawn internally in the boom and to the holder.



# For use as D3 Decca Tree (three microphone array)

For best balancing of the microphone array, the D3 is designed so that the three microphone booms can be mounted at the L, C, and R markings on the "Decca Tree" side of the Center Disc. This offers a 120° angle between the booms and it is possible (but not required) to have the microphones in an equilateral triangle, i.e. equal distance between all three microphones.

Use the Telescopic Booms with microphone holders to change the microphone distance. Each mark on the Telescopic Boom indicates 10 cm (4 in) increments in microphone spacing when extending all three booms.

Depending on recording angle (determined by size and distance to the sound source), spacing between microphones should be adjusted properly.

In the following, a few recommendable solutions for different venues and recording angles are presented.

If you want to know more about recording techniques, please consult our Microphone University at www.dpamicrophones.com.



If placement of the three microphones is desired to be in front of the conductor—and the microphone stand behind—mounting the microphones in L, C, and R marks on the "Surround" side of the Center Disc could be a solution. If using long booms, a counter weight mounted on an extension unit in the "LS RS" marked hole is recommended for better balance.

For better control of long booms in a large array, always start from the Center Disc mounting the Extension Units before the Telescopic Booms. When dismounting, start from the outside with the microphones, then the booms and extension units.

For microphone spacing from 120 to 150 cm (4 to 5 ft) for the microphones to be aligned:

- 1 x A Center Disc
- 3 x B Telescopic Booms with microphone holders
- 2 x D Long Extension Units



For microphone spacing from 60 to 90 cm (2 to 3 ft) in an equilateral triangle:

- 1 x A Center Disc
- 3 x B Telescopic Booms with Microphone Holders



For microphone spacing from 90 to 120 cm (3 to 4 ft) in an equilateral triangle:

- 1 x A Center Disc
- 3 x B Telescopic Booms with Microphone Holders
- 3 x C Short Extension Units



For microphone spacing from 120 - 150 cm (4 to 5 ft) in an equilateral triangle:

- 1 x A Center Disc
- 3 x B Telescopic Booms with Microphone Holders
- 3 x D Long Extension Units



For microphone spacing from 150 to 180 cm (5 to 6 ft) in an equilateral triangle:

- 1 x A Center Disc
- 3 x B Telescopic Booms with Microphone Holders
- 3 x C Short Extension Units
- 3 x D Long Extension Units



For microphone spacing from 180 to 210 cm (6 to 7 ft) in an equilateral triangle:

- 1 x A Center Disc
- 3 x B Telescopic Booms with Microphone Holders
- 6 x C Short Extension Units
- 3 x D Long Extension Units



For a Vintage Decca setup in a T-shape with 2 m (6.6 ft) between Left and Right microphones and 1 m (3.3 ft) between the Center microphone and the LR basis:

- 1 x A Center Disc
- 3 x B Telescopic Booms with Microphone Holders
- 4 x C Short Extension Units (only for Left and Right)
- 2 x D Long Extension Units (only for Left and Right)



# For use as S5 Surround Mount (five microphone array)

The possibilities with the S5 are numerous due to the extreme flexibility of the S5 kit. All microphone spacings from 60 to 200 cm (2 to 7 ft) are possible between all five microphones, with a variable front-to-rear distance from 60 to 250 cm (2 to 8.2 ft) depending on the boom lengths.

In the following, a few recommendable solutions for different venues and recording angles are presented. Please note that some arrays are heavy and should only be used as a suspended setup with the Suspension Hook solution.

If you want to know more about recording techniques, please consult our Microphone University at www.dpamicrophones.com.



Portable Surround Array:

- 1 x A Center Disc
- $5 \times B$  Telescopic Booms with Microphone Holders
- 1 x F Rear Center Disc
- 1 x G Telescopic Extension Unit



Attach an optional Microphone Holder (UA0962) to the Telescopic Extension Unit.



This will make it possible to mount a number of Extension Units as an array boom pole. Only use this solution if the array is not too big, since the angling option will not hold too much bending force.



60 - 90 cm (2 - 3 ft) spacing between L-C-R and LS-RS

- 1 x A Center Disc
- 5 x B Telescopic Booms with Microphone Holders
- 1 x C Short Extension Unit (for 90 cm center boom)
- 1 x D Long Extension Unit
- 1 x F Rear Center Disc
- 1 x G Telescopic Extension Unit



90 - 120 cm (3 - 4 ft) spacing between L-C-R and LS-RS

- 1 x A Center Disc
- 5 x B Telescopic Booms with Microphone Holders
- 4 x C Short Extension Units
- 1 x C Short Extension Unit (for 120 cm on center boom)
- 1 x F Rear Center Disc
- 1 x G Telescopic Extension Unit



120 - 150 cm (4 - 5 ft) spacing between L-C-R and LS-RS

- 1 x A Center Disc
- 5 x B Telescopic Booms with Microphone Holders
- 1 x C Short Extension Unit (for 150 cm on center boom)
- 7 x D Long Extension Units
- 1 x F Rear Center Disc
- 1 x G Telescopic Extension Unit



- 150 180 cm (5 6 ft) spacing between L-C-R and LS-RS
- 1 x A Center Disc
- $5 \times B$  Telescopic Booms with Microphone Holders
- 4 x C Short Extension Units
- 1 x C Short Extension Unit (for 180 cm on center boom)
- 8 x D Long Extension Units
- 1 x F Rear Center Disc
- 1 x G Telescopic Extension Unit



180 - 200 cm (6 - 7 ft) spacing between L-C-R and LS-RS

- 1 x A Center Disc
- 5 x B Telescopic Booms with Microphone Holders
- 8 x C Short Extension Units
- 9 x D Long Extension Units
- 1 x F Rear Center Disc
- 1 x G Telescopic Extension Unit



Large Decca Tree Front, Largely Spaced Cardioids Rear (5006-11 Surround Microphone Kit). Spacing between L-C-R: 200 cm (6.6 ft) Spacing between LS-RS: 200 cm (6.6 ft) Spacing between LR-LSRS: 150 cm (4.9 ft)

- 1 x A Center Disc
- 5 x B Telescopic Booms with Microphone Holders
- 8 x C Short Extension Units
- 9 x D Long Extension Units
- 1 x F Rear Center Disc
- 1 x G Telescopic Extension Unit



Use the DPA 5006-11 Surround Microphone Kit to make a configuration with matched 4006-TL omnis in the front and backwards faced 4011-TL cardioids for the rear channels. Consider using the L50B Acoustic Pressure Equalizers for the distinctive vintage Decca sound character and angling the cardiods upwards for more height information.

Five omnis with Small Decca Tree Front and spaced omnis far rear (5006 Surround Microphone Kit). Spacing between L-C-R: 100 cm (3.3 ft) Spacing between LS-RS: 100 cm (3.3 ft) Spacing between LR-LSRS: 250 cm (8.2 ft)

- 1 x A Center Disc
- 5 x B Telescopic Booms with Microphone Holders
- 4 x C Short Extension Units
- 6 x D Long Extension Units
- 1 x F Rear Center Disc
- 1 x G Telescopic Extension Unit



Use the 5006 4006-TL Surround Microphone Kit to make a configuration with matched 4006-TL omnis—consider using the L50B Acoustic Pressure Equalizers for the distinctive vintage Decca sound character.

An array of this size should only be used as a suspended setup with the Suspension Hook solution. If using microphone stands, it is necessary to use two stands—one on each center disc—to stabilize the long rear extension boom.

Five omnis with vintage T-shaped Decca Tree front and spaced omnis far rear (5006 Surround Microphone Kit).

Spacing between L-R: 200 cm (6.6 ft)

Spacing between LR-C: 100 cm (3.3 ft)

Spacing between LS-RS: 100 cm (3.3 ft)

Spacing between LR-LSRS: 250 cm (8.2 ft)

- 1 x A Center Disc
- 5 x B Telescopic Booms with Microphone Holders
- 6 x C Short Extension Units
- 9 x D Long Extension Units
- 1 x F Rear Center Disc
- 1 x G Telescopic Extension Unit



An array of this size should only be used as a suspended setup with the Suspension Hook solution. If using microphone stands, it is necessary to use two stands—one on each center disc—to stabilize the long rear extension boom.

Five wide cardioids (5015 Surround Microphone Kit) for use in the WCSA Wide Cardioid Surround Array developed by Mikkel Nymand, DPA Microphones. Spacing between L-C and R-C: 70 cm (2.3 ft) Spacing between LR-C: 20 cm (0.7 ft) Spacing between LS-RS: 150 cm (5 ft) Spacing between LR-LSRS: 150 cm (5 ft)

- 1 x A Center Disc
- 5 x B Telescopic Booms with Microphone Holders
- 1 x C Short Extension Units
- 5 x D Long Extension Units
- 1 x F Rear Center Disc
- 1 x G Telescopic Extension Unit



Five omnis, equidistant (5006 Surround Microphone Kit) for use in a Polyhymnia Array. The microphones are spaced equally from a center point, the Center Disc. Up to 160 cm (52 ft) distance from the center point is possible with the S5 kit.

- 1 x A Center Disc
- 5 x B Telescopic Booms with Microphone Holders
- 8 x C Short Extension Units
- 9 x D Long Extension Units
- 1 x F Rear Center Disc
- 1 x G Telescopic Extension Unit



#### Other commonly used microphone arrays:

### OCT (Optimized Cardioid Triangle) by Günther Theile

Spacing between LR: 60-90 cm (2-3 ft) Spacing between C-LR: 40 cm (1,3 ft)

- 1 x A Center Disc
- 5 x B Telescopic Booms with Microphone Holders
- 2 x C Short Extension Units
- 1 x F Rear Center Disc
- 1 x G Telescopic Extension Unit



For OCT surround an optional CD5000 is required

#### Hamasaki Square, by Kimio Hamasaki, NHK, Japan

- 1 x A Center Disc
- 4 x B Telescopic Booms with Microphone Holders
- 9 x D Long Extension Units
- 1 x F Rear Center Disc
- 1 x G Telescopic Extension Unit



## Fukada Tree, by Akira Fukada, NHK, Japan

- 1 x A Center Disc
- 5 x B Telescopic Booms with Microphone Holders
- 7 x C Short Extension Units
- 9 x D Long Extension Units
- 1 x F Rear Center Disc
- 1 x G Telescopic Extension Unit



# **S**pecifications

	D3	S5
Color:	Black	Black
Material:	Alu, steel	Alu, steel
Weight w. microphone holders:	1,300 g (46 oz)	2,500 g (88 oz)
incl. briefcase:	4,300 g (9.5 lbs)	5,500 g (12 lbs)

Threads: 5/8", Center Discs with thread adapters for 3/8"
Microphone spacings: Continuously variable 60 - 210 cm (2 - 7 ft)
Cables: Female XLR - Lemo/male XLR adapter. Length: 10 m (33 ft) Custom lengths can be ordered

#### Maintenance

If the booms get dirty or lightly scratched, polish them with vaseline oil on a lint-free cloth.

#### Accessories available

D3X	Upgrade Kit from D3 to S5
DAO3000	Three Cables and Adapters for D3, 10 m (33 ft)
DAO5000	Five Cables and Adapters for S5, 10 m (33 ft)
DAO5000-Y	Cable for Integration to D3/S5, 10 m (33 ft), L (yellow)
DAO5000-O	Cable for Integration to D3/S5, 10 m (33 ft), C (orange)
DAO5000-R	Cable for Integration to D3/S5, 10 m (33 ft), R (red)
DAO5000-B	Cable for Integration to D3/S5, 10 m (33 ft), LS (blue)
DAO5000-G	Cable for Integration to D3/S5, 10 m (33 ft), RS (green)
DAD5000	Lemo/male XLR adapter
CD5000	Center Disc
RCD5000	Rear Center Disc
TBH5000	Telescopic Boom with Microphone Holders
SEU5000	Short Extension Unit
LEU5000	Long Extension Unit
TEU5000	Telescopic Extension Unit
PMH5000	Protractor for Microphone Holder
PSM5000	Protractor for Shock Mount
SH5000	Suspension Hook
MT5000	Measuring Tape
UA0962	Microphone Holder for Integrated Cable in D3/S5
UA0898	Shock Mount for Integrated Cable in D3/S5

#### For use with:

5006 4006-TL Surround Microphone Kit:

- 5 x 4006-TL Omnidirectional Microphones, P48, Transformerless
- 5 x L50B Acoustic Pressure Equalizers, 50 mm (1.97 in) Ball

#### 5006-11 4006-TL/4011-TL Surround Microphone Kit:

- 3 x 4006-TL Omnidirectional Microphones, P48, Transformerless
- 3 x L50B Acoustic Pressure Equalizers, 50 mm (1.97 in) Ball
- 2 x 4011-TL Cardioid Microphones, P48
- 2 x UA0898 Shock Mounts for Integrated Cable in D3/S5

5015 4015-TL Surround Microphone Kit:

- 5 x 4015-TL Wide Cardioid Microphones, P48
- 5 x UA0898 Shock Mounts for Integrated Cable in D3/S5

#### **Environmental Policy**

DPA Microphones A/S is proud to be known as a "green" company. It is company policy to produce all products in accordance with the best ecological practices to preserve the environment we are all a part of. Consequently, it is DPA's aim to cooperate with both national and international legislative bodies to fulfil the requirements and recommendations set out in environmental standards and directives.

Throughout DPA's conduct and in its design of new products, the company pursues solutions that have minimal impact on the ecology and are in line with the latest legislative requirements (at present directive 9002/95/EC) at the time a new product is introduced to the market. These requirements are not only valid for DPA but also its suppliers.

With respect to waste disposal, DPA fully complies with the WEEE directive (9002/96/ EC) and will adhere to any amendments and subsequent requirements. From 1 January 2006, all DPA products that require a return for upgrading and/or reuse have been provided with a "waste" label. This means that at the end of its usable life, the product may be returned to the local DPA representative who will return it to DPA for disposal under the national legislation program. Furthermore, DPA guarantees that any DPA product purchased after 1 January 2000 will be covered by the same program to ensure that end users have adequate means to dispose of obsolete DPA products.



#### Service & Repair

All products from DPA Microphones are covered by a two-year limited warranty on both mechanical functionality and documented specifications as long as the items are not mistreated, abused, or modified in any way. Invoices are required as warranty registration documents in case of a claim.

Find your nearest DPA representative on our website, www.dpamicrophones.com, or send e-mail to info@dpamicrophones.com.

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#### Other microphone groups

DPA Large Diaphragm Microphones are top-of-the-range one-inch capsule omni microphones. When choosing the right microphone for a particular application, it is important to consider the diaphragm size. With their transparency and neutral character, DPA's large diaphragm microphones are ideal for use with vocals, strings, or other acoustic instruments with a high dynamic range.



DPA Standard Microphones are high quality studio microphones comprised of omnis, cardioids, and wide cardioids. Featuring stylish slim housing and distinctive grid, these mics are designed for sonic integrity in any venue. DPA's audio philosophy is based on the notion of zero sound coloration, and the complete and honest accuracy of these microphones is unequalled.



DPA Compact Microphones are the smaller cousins of the standard microphones and are also available as omni, cardioid, and wide cardioid models. They are especially valuable for low profile use together with DPA's elegantly designed stands, mounts, and holders for the close-miking of instruments, as table and podium mics, and as reinforcement mics in live performance venues. The compact microphones combine the trademark DPA sound with aesthetic and functional design solutions.





**DPA 4090 Series** are instrument microphones for studio recording and live performance. Discreet and versatile, these microphones are characterized by a natural and open sound. They are made specifically to suit the needs of musicians as well as the rigors of the stage. The flat frequency response of the 4090 and 4091 furthermore enable FOH engineers to use these microphones for sound system alignment.



**DPA Hydrophone** offers professional recording under extreme conditions. The DPA 8011 Hydrophone is the only high-quality, 48 V Phantom-powered, underwater omnidirectional microphone in the world which has been specially designed to handle high SPLs and high static ambient pressure in fluids. It is the optimum choice for professional sound recordings under water, in extreme humidity, in gas-filled rooms, or under other extreme conditions. Excellent for film and sporting events.



Miniature Microphones and Miniature Microphone Headbands are perfect for theaters, television, and close-miking instrument applications. They have a neutral character with great detail and resolution. Tailored to handle heat, humidity, and sweat as well as wind and popping, the miniature mics are completely undetectable and extremely rugged and reliable on stage.



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