



## SPECIAL FEATURES:

DIAMOND STYLUS

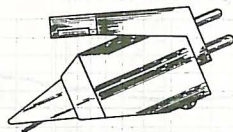
15° VERTICAL ANGLE

DIN 45 500  
HI-FI STANDARD

15° HIGH-COMPLIANCE  
STEREO PICK-UP  
CARTRIDGE

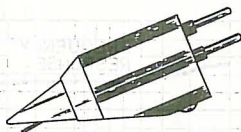
### SP 14 and SP 14A Data

The B & O cartridges SP 14 and SP 14 A are low impedance moving iron pick-ups for high fidelity reproduction of stereo and mono gramophone records.



#### SP 14, TYPE 5431

For high quality record changers and pick-up arms mounted on transcription turntables.



#### SP 14A, TYPE 5432

For B&O grammophones Beogram 1000\* , 1200, 1500\* , 1800 and 3000\*.

\*Counterweight on pick-up arm to be readjusted.

### DIAMOND STYLII

The cartridges are fitted with highly polished diamond stylii mounted on low mass cantilevers to give very low effective tip mass. The moving parts are critically damped, and this factor together with a high compliance, allows low stylus pressures to be used for reproduction.

These features are very important, as only a pick-up designed to track at low stylus pressure will protect your records from wear.

A clear protecting cover over the cantilever allows the user to see the stylus and position the pick-up precisely on the record without guesswork.

### MICRO-CROSS

A symmetrical micro-cross armature picks up signals from the record with excellent separation, and the balanced push-pull magnetic circuit and pick-up coils ensure very low distortion, and cancellation of external magnetic fields resulting in very low hum pick-up.

### 15° VERTICAL ANGLE

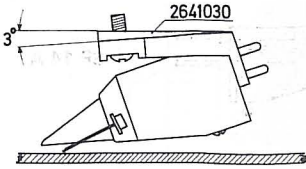
The SP 14 and SP 14A are constructed to reproduce at the standard 15° vertical tracking angle, which in conjunction with a correctly cut gramophone record, ensures very low intermodulation distortion.

### DIN 45 500

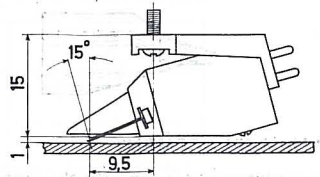
SP 14 and SP 14 A exceed all specifications required by the high-fidelity standard DIN 45 500.

## INSTALLATION OF THE SP 14 INTO THE PICK-UP ARM

The bracket is designed for standard pick-up arms with 7/16 to 1/2 in. between mounting screws.



Mounting in a record changer pick-up arm



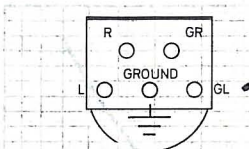
Mounting in a transcription arm

The pick-up is supplied with a small wedge to be used if necessary when mounted in record-changer pick-up arms. As the records stack the pick-up arm will track in a lower and higher position, and on some record-changers the pick-up may touch the records with its back edge. The result is obvious. The wedge tilts the pick-up 3° forwards, so that the vertical tracking angle is 18° on the first record on the turntable, 15° on the fifth and 12° on the tenth. The deviation from the standard 15° vertical tracking angle is thus kept at a minimum under all conditions.

If the pick-up is mounted in a transcription pick-up arm the wedge is easily lifted off and the pick-up then tracks at the correct 15° angle.

## CONNECTION TO AMPLIFIER

The SP 14 is constructed for connection to a preamplifier with a balanced input.



- L: LEFT HOT
- GL: LEFT GROUND
- R: RIGHT HOT
- GR: RIGHT GROUND
- ⏏: SEPARATE EARTH PIN

The four leads should be connected to the four outer contacts as shown, and the screen to the earth terminal in the centre.

In the case of an unbalanced preamplifier (or a pick-up arm with four leads), connect hot leads to L and R, and earthy leads or screens to GL and GR.

In this case a shorting spring supplied (2812013) should be connected between earth (centre) and GL.

In the case of only one common screen (pick-up arm with three leads) connect hot leads as above, and common screen to the earth contact. In this case shorting springs should be connected from the earth contact to both GL and GR.

## STYLUS PRESSURE

(tracking force)

Recommended stylus pressure is 2 grammes.

If a record is warped, eccentric or otherwise defective, it may be necessary to increase the stylus pressure to 2.5 grammes.

Max. stylus pressure is 3 grammes.

## SP 14 and SP 14A WITH SPHERICAL DIAMOND STYLUS

The selected tip radius gives good contact with both groove walls on both stereo and mono records, and will not run along the bottom of the groove.

### TECHNICAL DATA

SP 14, TYPE 5431

SP 14A, TYPE 5432

Stylus:

Radius of curvature:

Frequency response:

Channel separation:

Difference between channels:

Compliance:

Stylus pressure:

Output voltage:

Load:

Vertical tracking angle:

Weight:

Mounting:

Diamond

15  $\mu$ , spherical

20-16000 Hz  $\pm$  2,5 dB

Better than 20 dB at 1000 Hz

Less than 2 dB

Min. 15 X 10<sup>-6</sup> cm/dyne

2 grammes (3 grammes max.)

1 mV/cm/sec.

(5 mV average from music record)

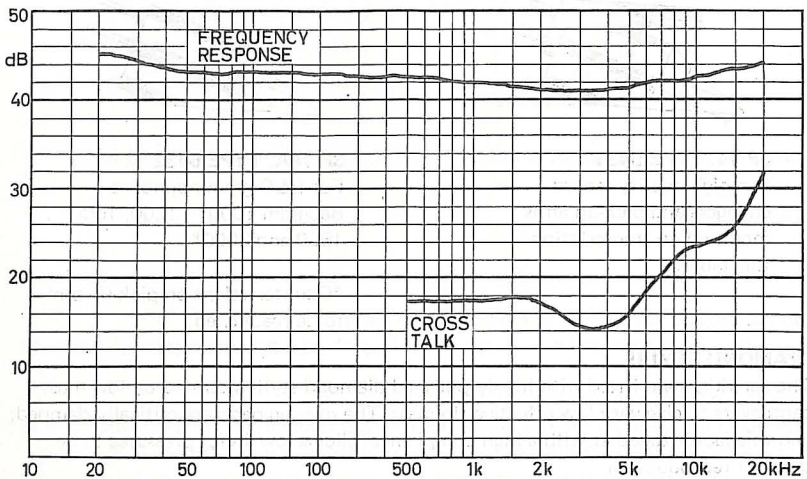
47 k ohms

15°

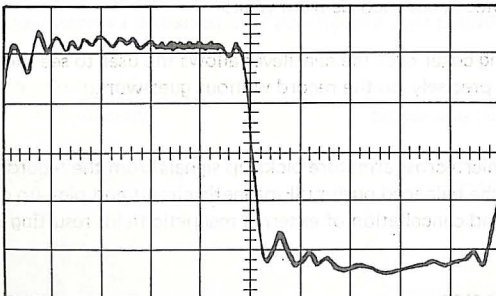
8,5 grammes

1/2 in. standard

Distance from mounting screws to stylus tip 9.5 mm (3/8 in.)



Test Record: Brüel & Kjaer QR 2009

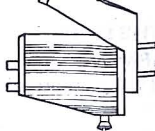
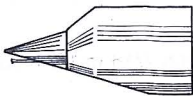


1000 Hz square wave Test Record: CBS STR 111

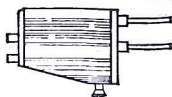
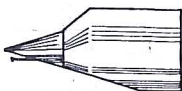
### STYLUS DURABILITY

The diamond stylus is made of selected material and has exemplary wearing qualities.

However, it is recommended that the stylus is regularly examined in a microscope, e.g. twice a year.



SP 14



SP 14 A

## STYLUS REPLACEMENT

Stylus replacement is exceedingly simple and is accomplished as follows:

Using a screwdriver, loosen the screw under the pick-up cartridge. Pull the outer cylinder, in which the stylus assembly is housed, off the pick-up cartridge. Push on a new outer cylinder and stylus assembly. Be sure to push the new outer cylinder and stylus assembly home before tightening the screw.

**Please note that only a genuine B & O replacement stylus manufactured by B & O will assure you of correct performance from your cartridge and preserve your valuable record collection from wear.**

## REPLACEMENT STYLUS FOR ORIGINAL DATA

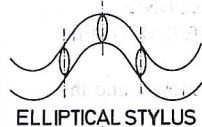
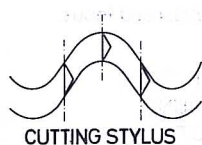
Type: 5435 15  $\mu$  spherical, compliance  $15 \times 10^{-6}$  cm/dyne.

## UPGRADING THE CARTRIDGE DATA

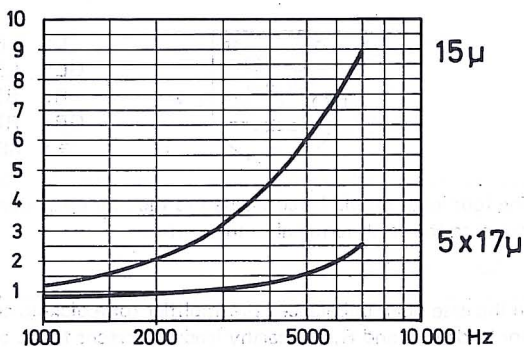
When replacing the stylus unit the cartridge may be upgraded if the pick-up arm is of sufficiently good quality. This is done by mounting one of the two following stylus units and thereby obtaining better tracking and lower distortion at high frequencies.

Type 5430, (5 X 17)  $\mu$  elliptical, naked diamond; compliance  $25 \times 10^{-6}$  cm/dyne.

Type 5429, 15  $\mu$  spherical, naked diamond; compliance  $25 \times 10^{-6}$  cm/dyne.



% Distortion



Test Record: Westrex 1A

## ELLIPTICAL DIAMOND STYLUS - TYPE 5430

The elliptical stylus is a highly polished pure naked diamond mounted directly in the cantilever (as opposed to a diamond tip mounted in a steel, brass or aluminium bush, which is in turn mounted in the cantilever). This gives lower weight, and a polished surface on which dust has little chance to settle.

The smaller radius of an elliptical stylus, at the point where it touches the record, makes it easier to follow the intricate patterns cut into the record. Further, the contact points follow the cutting stylus contact points more closely (which is a knife edge) reducing distortion, phase shift and pinch effect.

In addition, the SP 12, as well as enhancing the quality of reproduction, will also ensure that the maximum care is taken of your valuable records.