

VINYL RECORDS SPECIFICATIONS AND INFORMATION of production to TAKT Sp. z o.o.

1. VINYL RECORDS SEPCIFICATIONS AND INFORMATION

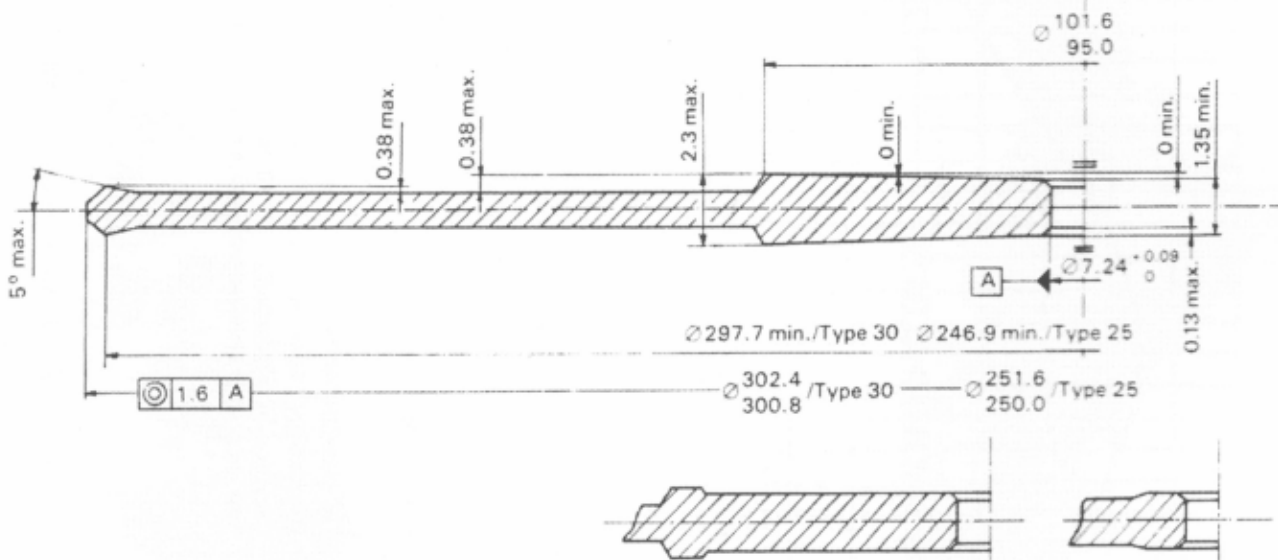
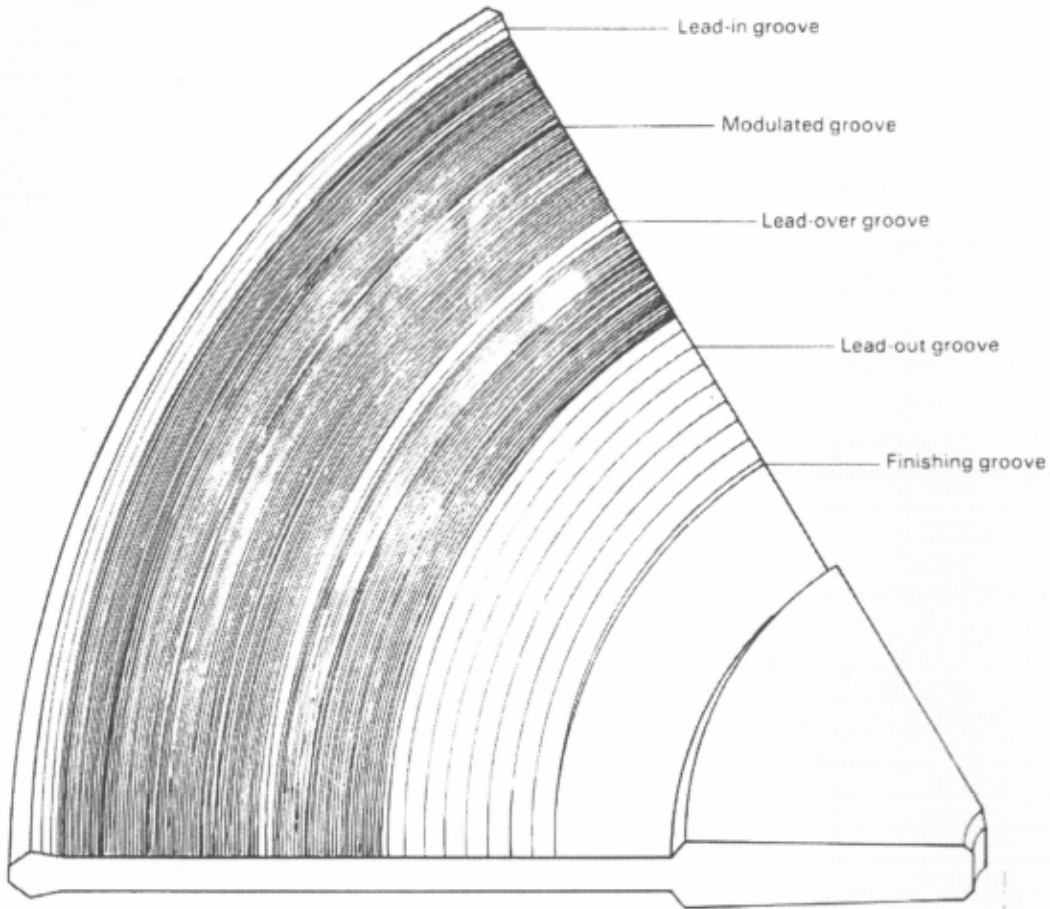
A phonograph record is an analog audio storage medium in the form of a modulated spiral groove on a flat vinyl disc. The standard is that audio is recorded on the two sides of the plate in two channels (stereo).

A disc produced by TAKT is compatible with the Standards for Stereophonic Disc Records document issued by RIAA in 1963.

A disc offered by TAKT is made of polyvinyl chloride that meets the specific requirements of the phonographic industry. The standard color is black, although there is the possibility of pressing discs of a different color.

To avoid production delays and additional costs, we recommend preparing the materials strictly according to the specifications described in this document. Properly prepared materials will allow faster production. In some cases, materials which do not meet the specifications described below may be rejected.

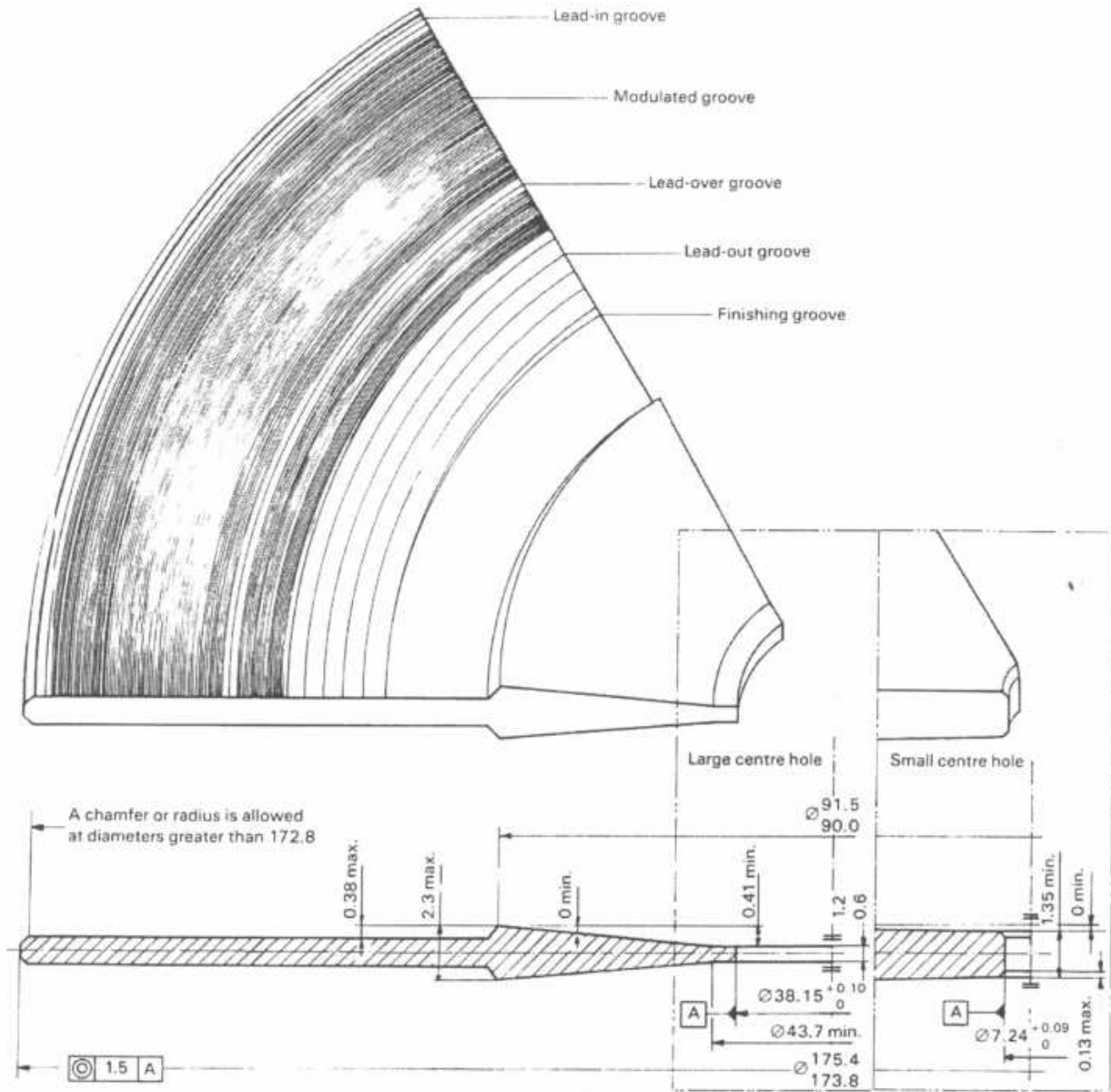
The drawings below depict vinyl diameter sizes of 7", 10" i 12" (Figure 1, Figure 2, source: British Standard Specification for Analogue audio disc records and reproducing equipment, BS 7063:1989, IEC 98:1987).



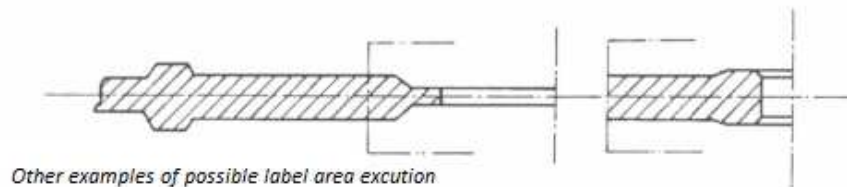
Dimensions in millimetres

Other examples of possible label area execution

FIG. 1. Record type 12" and 10"



Dimensions in millimetres



Notes 1. - A small centre hole disk may have an optional push-out centre that, when removed, leaves the large centre hole dimensions. Both configurations should fulfill the requirements of the diagram.

2. - An optional push-out centre should have a closed structure within a diameter of 16 mm concentric with the centre hole.

FIG. 2. Record type 7"

2. MASTERING AND A STAMPER PRODUCTION

TAKT provides premastering and mastering services at the highest level quality. Audio material is recorded according to industry standards onto the lacquer (lacquer mastering). This is done on the Neumann AM32B device. A lacquer disc is cut by a record cutting machine. This groove lacquer is then galvanized which creates a metal record master. The master is then used to create a stamper which is the accurate negative of the original recording. A phonographic record, unlike a CD, has two sides, therefore, there is a need to make two lacquer discs and two stampers.

TAKT does not offer engravings on discs.

To prepare the correct master the maximum playing time recommended for each side cannot be exceeded. Extended recording time lowers the sound quality. Moreover, requirements for higher quality levels of recordings reduce the length of playback time. (See the chart below regarding recommended time for the formats of vinyl records offered by TAKT).

TAKT offers the following records:

NAME	DIAMETER IN INCHES	REVOLUTIONS PER MINUTE	SUGGESTED PLAY TIMES PER SIDE	COMMON USAGE
LP (Long Play)	12" (30cm)	33 $\frac{1}{3}$	19'30"	Albums
Maxi-single	12" (30cm)	45	14'30"	Pop music, disco
Single	7" (17cm)	45	5'00"	Singles
EP (Extended Play)	7" (17cm)	33 $\frac{1}{3}$	6'30"	Singles (Extended Play)

Playback time depends on the dynamics of sounds, frequency of play and other factors resulting from the nature of vinyl records and facilities used for their production.

Recommendations:

- Demanding sound tracks should be placed at the beginning of the side, not its' end. Playback conditions worsen closer to the center of a record. In other words, important works should be positioned closer to the outer edge of the disc. The worst possible format for playback quality is the one of the diameter of 7", recorded at a speed of 33rpm. The playback is worsened as the linear speed of the record decreases as the needle stylus approaches the center. This affects the sound and worsens high frequencies changing its characteristics. The quality will depend then on technical capabilities of playback devices.

- The use of sound editing equipment may make the recording sound unnatural. Their transcription may cause changes during playback. This is due to the limitations of analog mechanical recording.
- It is advisable to check the master using a master phase correlation meter (the scale cannot be below the level of 0. The correct values should be in the range 0-1). A frequency meter assures that the signal does not contain unnecessarily high values of a frequency lower than 40Hz and high frequencies exceeding the value of 16kHz.
- The lowest frequencies of a sound zone whose values are below 300Hz must be in-phase (The correlation rate must be as close to the value of 1 as possible).
- The following information must be enclosed with the master:
 - the track list (list of titles) in required sequence, including hidden and bonus tracks
 - the individual play times of tracks
 - side separation (side A, side B)

The standard track-list includes the Visual Marker Track/Time - the visual breaks between tracks. If the customer does not want to place VMT, it should be marked on the Purchase Order.

NOTE! Pauses between tracks should be included in the sent files (they should be built into the material). Any interference into the material (including adding pauses, equalizing pauses) must be agreed with TAKT. If the Purchase Order or e-mails do not include any information about the above, the ordered material will be pressed according to the original files sent to TAKT.

ATTENTION!

Please thoroughly check and label masters before sending them - the number of tracks, their sequence, titles and times must be the same in description of all components - master, label, printing parts.

- Folders and files transmitted via Internet must be clearly marked indicating the information regarding the component they are including. The information about the sent materials via courier or transmitting them to the FTP server must be provided to the Sales Department of TAKT.
- Any claims relating to the final product, caused by errors and defects of source materials will not be considered.
- If it is necessary that our technicians have to make any changes or improvements (regarding the sequence of tracks, skipping some tracks, compilations), please mark such options on the PO form and include the information on the label describing the master.

3. FORMATS FOR THE DELIVERY OF THE MASTER

We recommend the uncompressed files such as:

- **WAV**
- **AIFF**

These files allow to keep the highest audio fidelity.

We also accept digital audio formats such as:

- **FLAC**
- **CD-audio**
- **DDP image files**

We do not recommend transferring high compression files because it changes the characteristics of sound (MP3 or OGG).

The materials transferred to TAKT must comply with copyright requirements. TAKT ensures data security in accordance with Copyright and Related Rights Act

4. CARRIER OF THE SOURCE MATERIALS

The source materials can be delivered to TAKT by:

- **Transmission by the Internet/ FTP and Aspera servers (recommended)**
- **Transmission to Dropbox or WeTransfer servers**
- **Delivery of memory sticks and cards**
- **CD, DVD audio**

If you transfer files electronically (FTP, ASpera, dropbox etc.) MD5 checksum is required to be generated in advance. The sum needs to be uploaded together with the materials transmitted to the server.

To get the access to TAKT's servers (Aspera, FTP) contact our Sales Department or Customer Service Office.