

## 1. Types of vinyl

Vinyl records are mechanically produced analogue sound storage mediums. The sound and dimensional parameters are based according to the standard IEC 98 publication in its 3rd edition in 1987.

Vinyl records are classified according to the combination of playback speed and diameter into the following categories:

Code	Diameter (inch/ cm)	Rpm	Designated registration letter
LP	12" / 30 cm	33	E
MP	10" / 25 cm	33	F
SP	7" / 17,5 cm	45	H
MAXI SINGLE	12" / 30 cm	45	M
MAXI SINGLE	10" / 25 cm	45	N
EP	7" / 17,5 cm	33	O

In addition to the above mentioned products, there are also different types of records which differ in weight (standard and "heavy"), colour, designer labels (picture disc) or shape (shaped vinyl). These may not conform to the standard specifications published in IEC 98.

### Recording times and choice of vinyl records

Each side of a record carries a spiral groove with 2 channels (stereo). The groove begins at the edge of the record and ends within a specified diameter from the centre, where the groove closes within itself. Any request involving a different geometrical groove order needs to be specifically defined as a planned difference from the IEC 98 norm. The playing time of a record is limited to the frequency and dynamics of the sound, amount reproduced in stereo and various other characteristics of the sound signal. The table below can be used as an orientation of playing times. If the playing time per side does not exceed the timings mentioned, the cutting level is usually only limited according to parameters of the cutting machine and playback conditions. If the playing time is longer than the recommended times in the table, it is possible that the signal requested to be cut could exceed the recording area. In this case, it is necessary to lower the cutting level or to choose a suitable compromise.

### **Suggested maximal playing times (in minutes)**

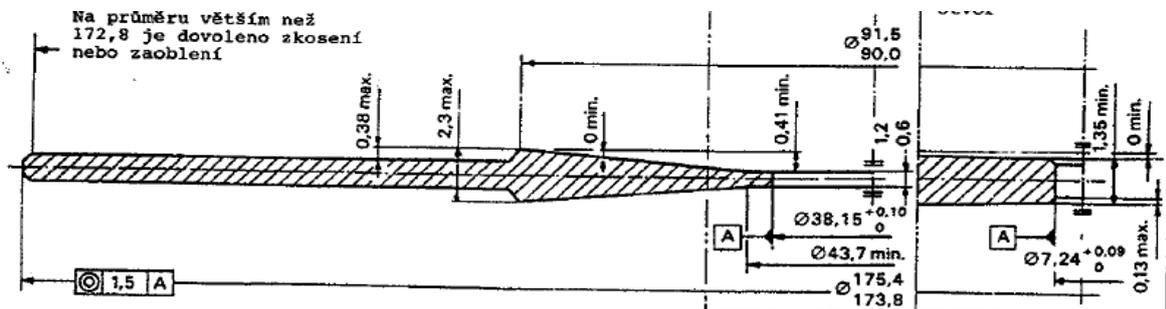
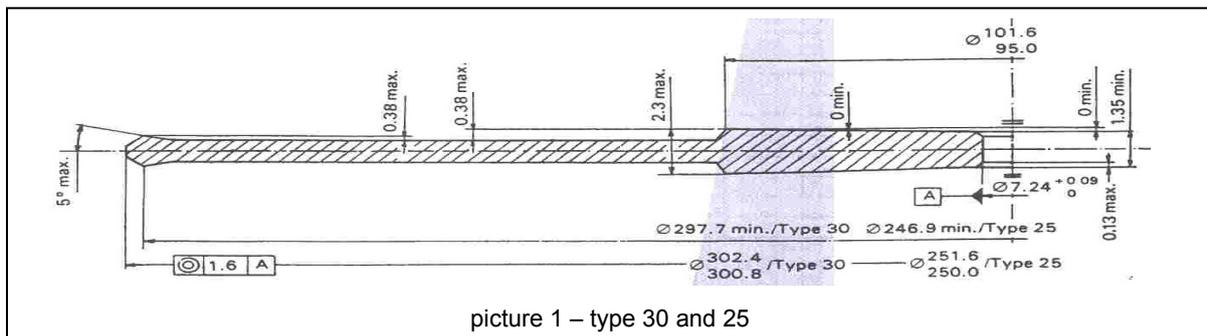
Vinyl size	33 rpm	45 rpm
7"	6,5 (we do not recommend)	5
10"	13,5	10
12"	19,5	14,5

For a more clear orientation between the track markings, it is possible to cut a silent transmission groove, keeping in mind that this transmission groove decreases the recordable area of the medium.

Before choosing the format of the record, you must take the total playback time and physical principles of playback into consideration. According to this, the worst suitable format is the 7" EP cut at 33 RPM (which we don't recommend, because this format has the lowest circumference speed during playback in the centre area of the record).

### Mechanical parameters of vinyl

The measurements of vinyl records are based on the IEC 98 norm. Record dimensions 12", 10" and 7" are valid for standard weight vinyl in the diagram below.



Other parameters not included in these figures are:

1. Flatness of the records - For 7" records, the deformation in the recorded area cannot exceed the area of the record with a maximum thickness (2.3mm) on a diameter of 90mm (91.5mm). When placed directly on a flat surface, the warping tolerance at the edge of the vinyl is max. 1,5mm for 12" and 10" records.
2. Eccentricity of the spiral groove cannot be more than 0,2mm.

### Heavy vinyl

Records with a diameter of 17,5cm and 30cm are manufactured in 2 different weight classes: „standard“ and „heavy“. Records with a diameter of 25cm are manufactured in standard weight only.

Diameter	Standard weight	Heavy weight
7"	42 g	70 g *
10"	110 g	Not produced
12"	140 g	180 g

\*) This type of record is only produced with a small centre hole (the other types can be also produced with a big centre hole)

All types of records and weights are within  $\pm 10\text{g}$ , apart from 17,5cm standard weight, which has a tolerance of  $\pm 7\text{g}$ .

Please note: Heavy vinyl may deteriorate the acoustic properties of the recording, for example, by causing increased crackling. These degraded acoustic properties cannot be subject to claim.

### **Coloured vinyl**

Records are normally produced in standard black vinyl, other colours can, however, also be combined. The colour of the records is based according to the manufacturer's samples and/or according to the customer's special request. In the case of a special request, it is important to supply either a colour sample or provide the PMS number of the colour requested. The manufacturer is working with a tolerance during the manufacturing of coloured records based on supplied samples. This tolerance must be taken into consideration. The tolerance is required due to limited technological possibilities of coloured plastic materials. Two colour combinations (black w/ transparent splatters) and 2 colour configurations (transparent colour in black colour) are not suitable because the colour effect is lost when the transparent colour disappears in the black colour. Another unsuitable format is 7" heavy vinyl with splatters. The quality of coloured and multicoloured records, especially those made from solid colours, may have worse acoustic properties when compared to standard black records. The main problem is an increased amount of hiss especially in the lead-in and lead-out grooves, but also at the place where two different colours meet on the face of the record. Transparent records have better sound quality than solid records.

Please note: Coloured vinyl records (non-transparent or fluorescent pigments in particular) may deteriorate the acoustic properties of the recording, for example, especially causing increased noise. The worst quality is at ultra clear (super clear) vinyl, which does not contain PVC at all and the quality of these records is worse. These degraded acoustic properties cannot be subject to claim.

- **One coloured records**

a) These are all colours that we stock as standard colours.

1. solid WHITE
2. solid YELLOW
3. solid RED
4. solid ORANGE
5. solid BLUE
6. semitransparent BROWN

7. solid GREEN
8. solid GREY
9. transparent GREEN
10. transparent YELLOW
11. transparent RED
12. transparent PURPLE
13. transparent BLUE
14. transparent CLEAR
15. ULTRA CLEAR
16. solid GOLD
17. solid SILVER
18. solid BRONZE

b) Specific colours – we are also capable of making special colours in accordance with a Pantone colour reference. We cannot guarantee an exact colour match but we create a colour that is as close as possible to your chosen colour. It is not possible to make a claim due to the fact that the colour doesn't match exactly, this is a non standard process where we do all that we can to make the colour as close as possible. Some colours are only possible to make in either transparent or solid versions, please ask for advice when choosing a colour.

- **Coloured records with speckles (= splatters)**

The base colour can be either solid or transparent, however the speckles must be chosen from one of the solid colours from the standard range of colours.

Please note: It is not possible to manufacture heavy 7" records with speckles.

- **Two coloured records – half/half**

Can be made from a combination of both transparent and solid colours.

- **Two coloured records – colour in colour**

When we press the record in this fashion we get a random effect of a colour within a colour. We cannot guarantee that the smaller puck will be visible on the other side of the record.

Please note: It is not possible to make 7" records using this technology and effect.

- **Two coloured records – side A / side B**

This type of record is always made from solid colours. The effect is totally random on both sides of the record.

- **Three coloured records – approximately 120° segments**

This type of record can be made of a combination of both solid and transparent colours. The maximum amount of records that can be manufactured using this effect is 300 units.

## **Picture Disc (PD)**

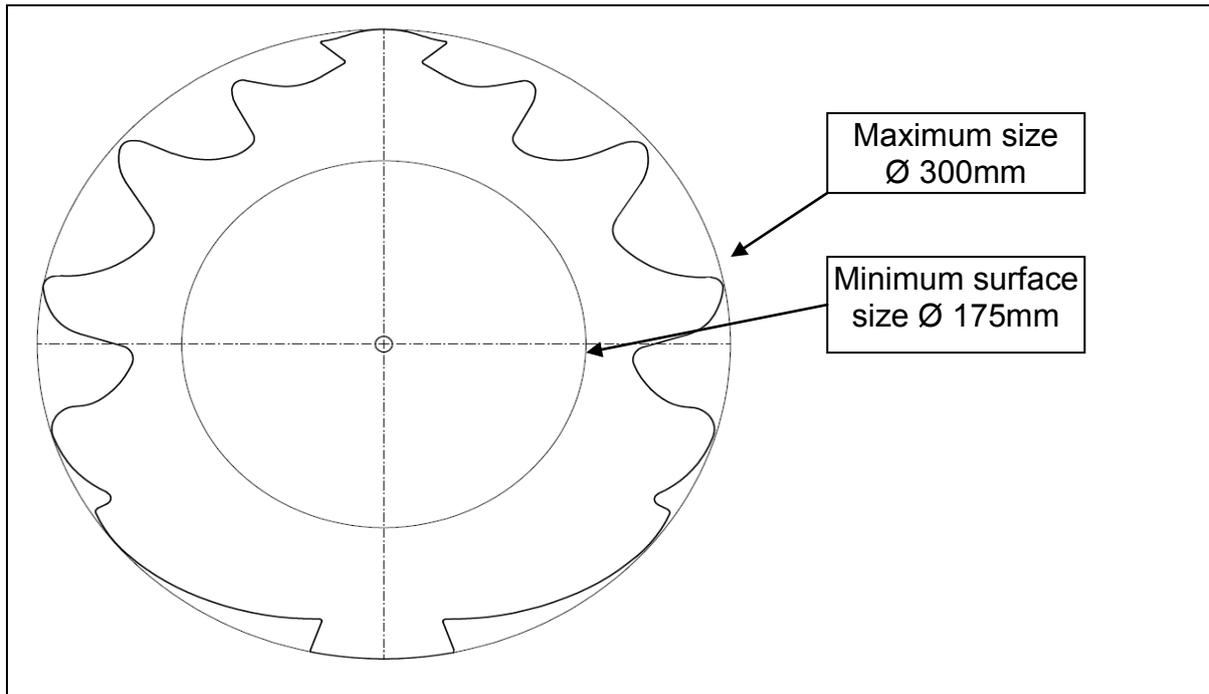
Picture discs are vinyl records which have a printed label on both sides with a plastic foil covering the entire surface area and grooves pressed into the plastic foil. In the case that a one sided record is requested; only one side of the picture disc will be cut. The other side can be "mirrored" (smooth surface with no recording), but there must be a "silent groove" (groove without signal). 1 sided picture discs are offered, but uncommon. The label is printed from both sides and the recording is pressed on 1 side of the record and covered by plastic foil. The opposite side of the label is visible through the vinyl material on the opposite side of the picture disc. These types of picture discs are prone to warping more than others and do not comply with the flatness parameters mentioned above.

Please note: Picture Discs may deteriorate the acoustic properties of the recording, for example, causing especially increased noise and static. These degraded acoustic properties cannot be subject to claim. When printing with a standard raster, images may appear distorted due to the interference phenomenon known as the moiré effect (interference between grooves and printed label raster). The intensity is based on the character of the printed motive. It is not possible to remove this phenomenon by any technologies implemented by the manufacturer and cannot be subject to claim. Exceeding of the flatness parameters cannot be subject to claim on 1 sided picture discs.

## **Shaped Vinyl**

Shaped vinyl are records which are shaped into various geometric shapes using a cutting tool. The shapes are determined based on drawings submitted by the customer. When a special shape is requested, it is important to choose a suitable format (either 12" or 10") due to the fact that the record must have 175mm of recording area available (as in the picture below). The raw material for shaped records can either be standard black or a coloured 10" or 12" vinyl in standard or heavy weight. In the case that a shaped picture disc is requested, the picture disc label must be 2-3mm smaller than the requested final shape size. The only shaped picture disc option available is a 1 sided picture disc where warping occurs and flatness parameters are not met.

Please note: A limited recording area results in a limited playback area. Exceeding the flatness parameter on a single sided shaped pic LPs cannot be subject to claim.



### **Test Pressings**

Test pressings (usually 5-10 copies) can be produced upon request. The difference between test pressings and the full production is that test pressings come with white centre labels. Test pressings are sent to the customer for approval and are for approving the acoustic quality of the record only. Claims against other defects will not be accepted. The approved sample is used as a standard for assessing the acoustic quality of the complete production.

### **Labelling**

Every record is required to have its own matrix number in the central area of the record. This matrix number is indicating what type of record the recording has been pressed on. This matrix number is generated from a series of numbers and a letter. This letter is indicating the type of carrier. Behind this letter is a number which indicates which side of the record it is (1=A, 2=B).