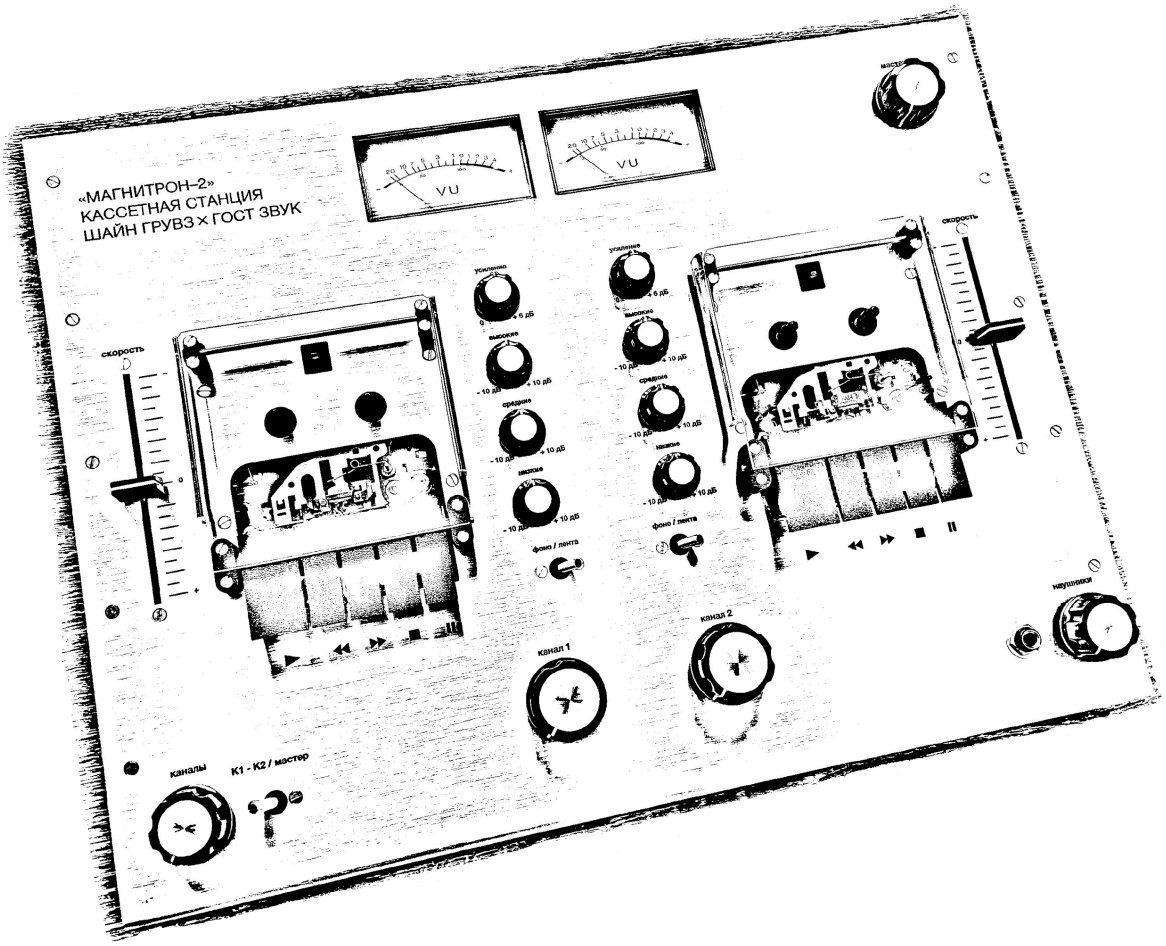
MAGNITRON – 2

Cassette Station by SHINE GROOVES x GOST ZVUK

User Manual 2.0



Yekaterinburg 2026

1. Device Description

Magnitron-2 is a dual cassette deck with a tape winding system and tape speed control, a two-channel mixing console with a three-band equalizer for each channel, and the ability to connect external audio sources (vinyl record players, digital CD/MP3 players).

2. Technical Information

2.1 Tape Transport Mechanism

- Tape speed in the central position of the speed control: 4.76 cm/s.
- Deviation of tape speed from nominal value no more than ±2%.
- Speed control range: ±50%.
- Number of tracks during playback: 2 (Stereo).
- Playback frequency range, Hz:

Type I	40 – 14000
Type II	40 – 17000
Type IV	30 – 21000
Flutter coefficient	0.05 – 0.1%

2.2 Mixer Panel

- Number of channels: 2 (switchable - 2 line, 2 with phono preamp).
- Equalizer: 3 bands per channel with additional boost.
- Preview is done via headphones, with smooth switching between [1] and [2] channel, as well as between [Preview] and [Master] modes.
- Control: rotary single-turn controls.

2.3 Inputs and Outputs

1× Master output, stereo	2× RCA
1× Recording output, stereo	2× RCA
2× Line input, stereo	2× RCA
2× PHONO input, stereo	2× RCA
1× Headphone output, stereo	6.3 JACK

2.4 Indication

The device is equipped with needle indicators with calibration capability (performed by an engineer). The indication displays the sum (mix) of the first and second deck in stereo mode (displaying the audio signal level of the left and right channels). The [Master] control does not affect the indication and does not affect the [Record] output level.

2.5 Power Supply

- AC 200-230V 50/60Hz
- Dimensions (mm): 492×386×123
- Weight (kg): 8

3. General Instructions

3.1 The device requires careful and proper handling. To ensure that your device maintains its characteristics for a long time, please carefully read all sections of this manual before use.

3.2 After transporting the device in winter conditions or storing it in a cold room, it must be warmed up at room temperature for four hours before turning it on. The device can be operated at temperatures from -5° to +45° and relative humidity up to 80%. Do not use the device under direct sunlight.

3.3 When powered by AC mains, the device contains life-threatening voltage. Users are strictly prohibited from opening the device when the power cord plug is connected to the mains. During long breaks in operation, be sure to unplug the device from the mains.

3.4 Powering on the device. Before turning on, all tape transport control buttons must be in the released position. If the device is connected to an external power amplifier or active speaker systems, to avoid damaging the speakers, the [Master] control must be set to minimum position.

3.5 One of the reasons for deterioration in playback quality is contamination of the magnetic heads, so it is recommended to periodically clean the magnetic heads and parts in contact with the magnetic tape (heads, rollers, guides).

To clean the heads and pinch roller:

a) disconnect the device power,

b) remove the cassette,

c) clean the working surfaces of the heads and guides with a soft cloth or cotton swab moistened with isopropyl alcohol. The pinch roller should preferably be cleaned with a soft cloth or cotton swab moistened with warm water. Do not allow alcohol to get on the external parts of the device.

3.6 If the tape is wound unevenly on the cassette reel (in steps), slow rewinding or jerky playback may occur, up to a complete stop. Uneven winding of the magnetic tape can be eliminated by fast-forwarding at least twice in both directions.

3.7 Cassettes with magnetic tape should be stored at room temperature, protected from electric and magnetic fields, high humidity and sharp temperature fluctuations.

3.8 Not allowed long-term storage with the [Play] button pressed.

To avoid deformation of the pinch roller and other rubber parts of the device, all tape transport control modes should be disengaged.

4. Dust Covers

This device is equipped with dust covers for the tape transport mechanisms. If necessary, the covers can be removed by pulling left (right) and up from the mounting elements side. Installation of covers is done in reverse order until a characteristic click. It is recommended to close the covers of the tape transport mechanisms during long-term storage to prevent dust from entering the device. Before first use, remove protective films from the covers if present. Example of storage with closed covers (Fig. 1).

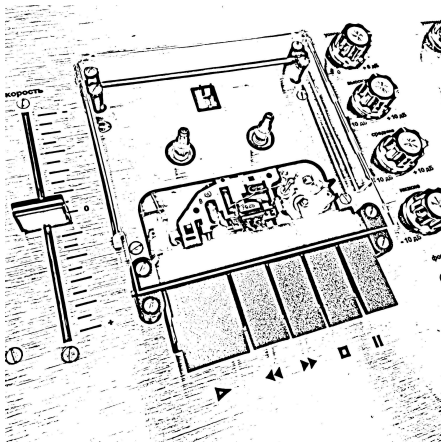


Fig. 1

5. Cassette Operations

5.1 Cassette Installation

Check the position of the tape transport control buttons - all buttons must be in the released position. Follow the steps: (Fig. 2, 3, 4)

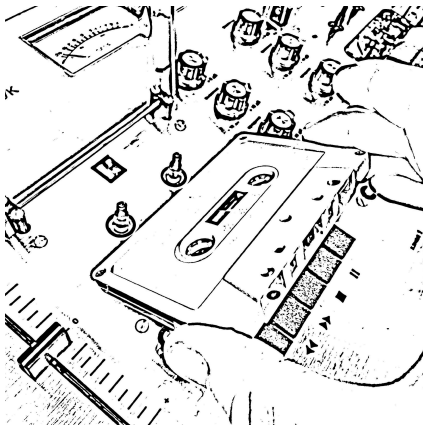


Fig. 2

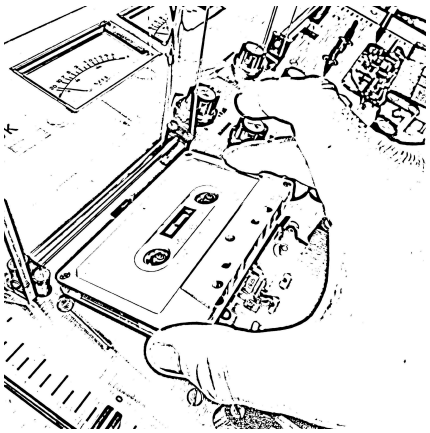


Fig.3

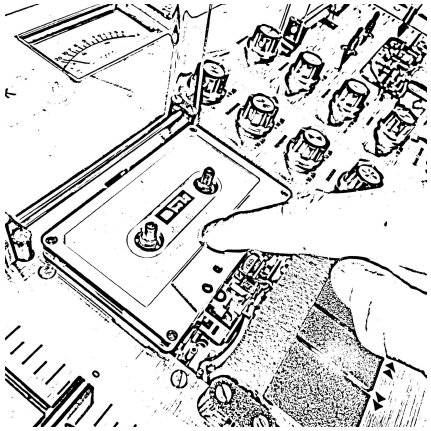


Fig. 4

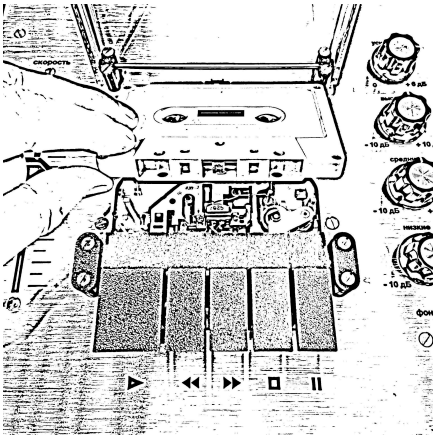


Fig. 5

5.2 Cassette Removal

Turn off all tape transport control modes and pull the cassette towards you from the bottom (Fig.5). Removing the cassette during playback is not allowed.

6. Quick-Release Tape Control Discs

Magnitron-2 comes with removable discs that allow you to search for a specific musical fragment on the magnetic tape, as well as synchronize the rhythmic component in music between the first and second deck.

a) Before first use, remove the protective film from the discs if present.

b) Install the discs on the take-up and supply spindles on top of the cassette.

c) To find a specific musical fragment on the cassette, do the following: in [Play] mode press the [Pause] button, then rotate the left and right discs in the desired direction, press the [Pause] button again - playback will continue.

Quick-release tape control discs - view (Fig. 6, 7)

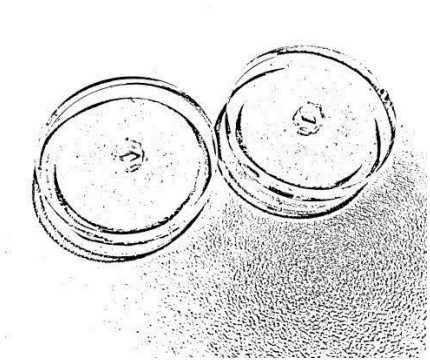


Fig. 6

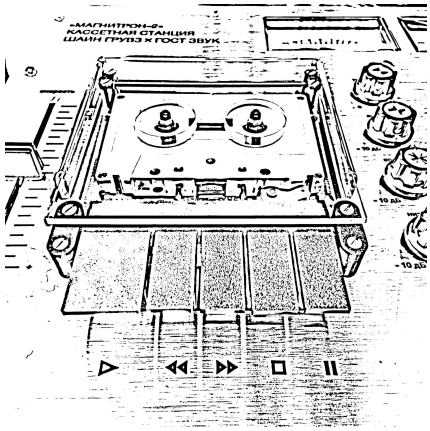


Fig. 7

Examples of working with quick-release discs: (Fig. 8, 9, 10)

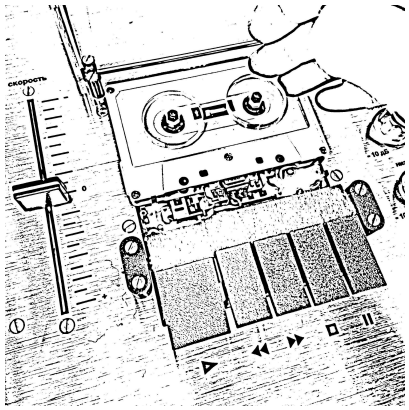


Fig. 8

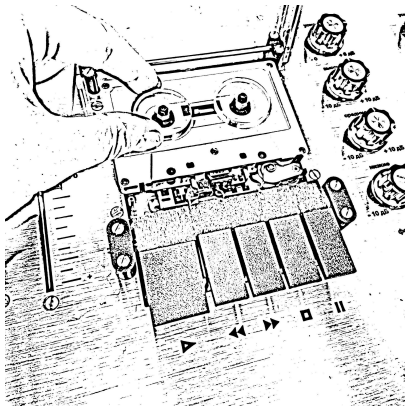


Fig. 9

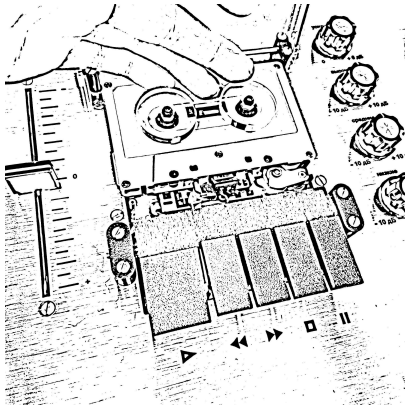


Fig. 10

Please remember that you are working with thin magnetic tape and careless handling can damage it!

7. Information and Tips

7.1 Magnetic Tapes. Classification for reference.

Type I (Fe, Normal) – tapes with gamma-ferric oxide magnetic powder with coercivity Hc = 300 - 350 Oe.

Type II (Cr, High) – tapes with chromium dioxide magnetic powder, Hc = 450 - 500 Oe.

Type III (FeCr) – tapes with two working layers: a layer with gamma-ferric oxide + a layer with chromium dioxide.

Type IV (Metal) - tapes with metal magnetic powder, Hc = 1000 - 1200 Oe.

In other words, the higher the tape type, the higher the signal-to-noise ratio and recording quality. Most modern tapes are manufactured with significant cost-cutting in technology. They have a thin magnetic layer, and the tape itself is transparent when backlit. Such tapes have low sensitivity, low maximum recording level and narrow dynamic range, as well as high noise levels. However, not all modern tapes are of low quality.

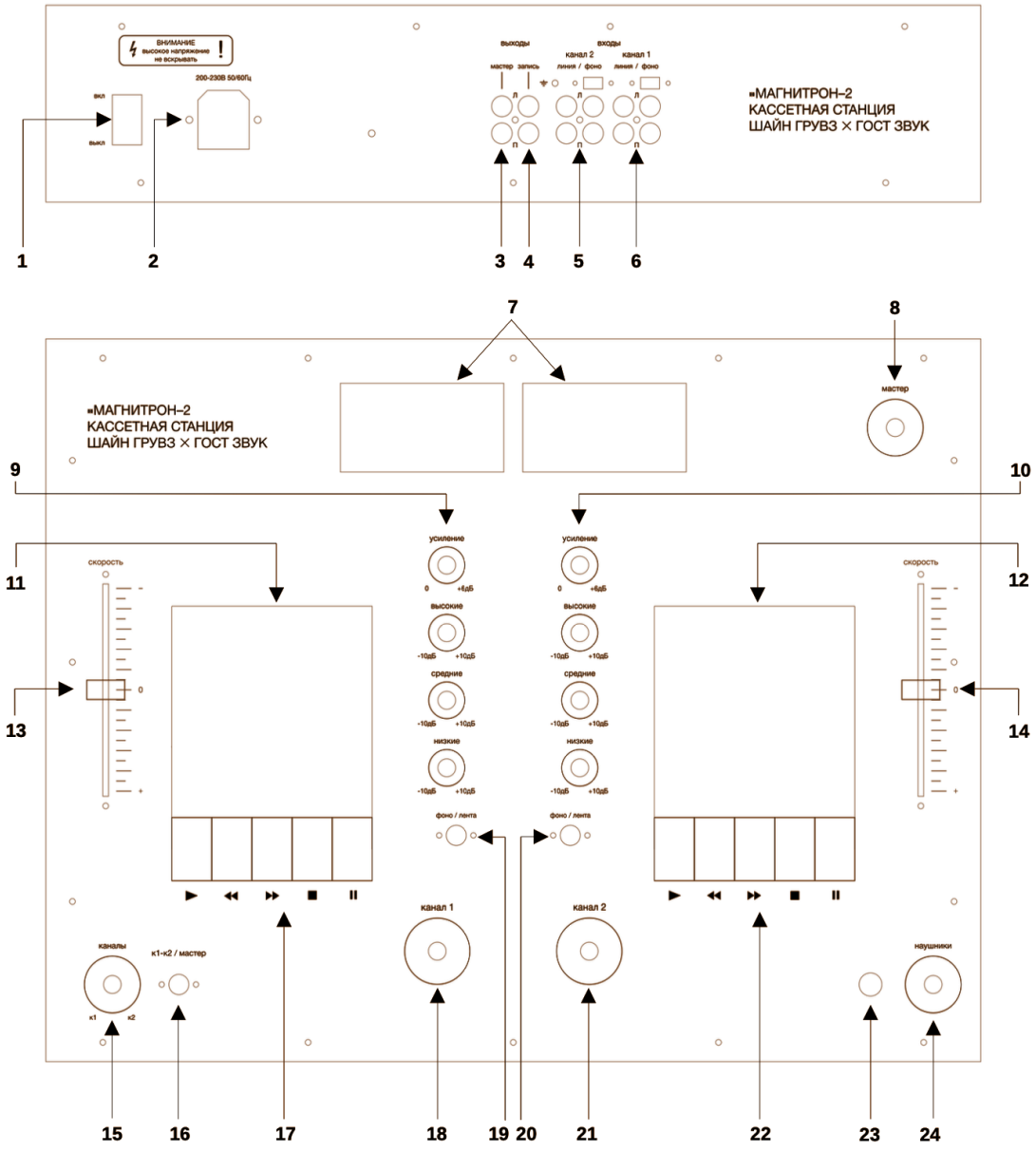
7.2 Pre-recorded Cassettes.

It is important that the device on which the recording was made was properly calibrated using the original reference tape; only then can recordings be made on it. The following parameters are calibrated on the device: magnetic head azimuth, record-playback path adjustment, frequency response, speed.

MAGNITRON-2 is calibrated using the original reference tape and is designed to play properly recorded phonograms.

Example: a cassette recorded on a device plays perfectly on the same device. Playing this same cassette on another device results in poor sound quality. Conclusion: one of the two devices has incorrect azimuth alignment, and which one requires determination using a reference calibration tape.

8. Controls



1. Mains power switch

2. Mains power socket

3. [Master] output

4. [Record] output

5. [Line] and [Phono] inputs of the second channel

6. [Line] and [Phono] inputs of the first channel

7. Needle indicators for left and right channels

8. [Master] output level control

9. Tone control block for the first channel

10. Tone control block for the second channel

11. Tape transport mechanism of the first deck

12. Tape transport mechanism of the second deck

13. Speed control for the first deck

14. Speed control for the second deck

15. Preview level control for the first and second channels

16. Preview source selector

17. Tape transport control block for the first deck

18. Volume control for the first channel

19. [Phono / Tape] switch for the first channel

20. [Phono / Tape] switch for the second channel

21. Volume control for the second channel

22. Tape transport control block for the second deck

23. Headphone jack

24. [Headphones] output level control

Dear owner, we are always open to feedback.

You can send your questions and suggestions to our email:

magnitron.station@gmail.com