

- 8. Use only additional devices and accessories recommended by the manufacturer. Disconnect the device from mains in case of thunder-storm or when the device is not in use for prolonged time.
- 9. All works related to the device repair must be done only by qualified service personnel.
- 10. **WARNING!** All service instructions are intended only for qualified personnel in order to avoid electric shock; do not carry out any repair works which are not described in the instruction manual. Repair works must be carried out only by qualified experts.

**Contents**

<b>Important instructions</b>	<b>1</b>
<b>Complete set</b>	<b>1</b>
<b>Introduction</b>	<b>2</b>
Before you start	2
<b>Specifications</b>	<b>2</b>
Power adapter low-voltage contacts arrangement	2
<b>Controls</b>	<b>3</b>
Front panel	3
Rear panel	3
Only for qualified service personnel	3
Tube replacement	3
<b>Connections and switching</b>	<b>3</b>
<b>Block diagram</b>	<b>4</b>
<b>References</b>	<b>4</b>

**IMPORTANT INSTRUCTIONS!**  
 NON-OBSERVANCE OF THE FOLLOWING INSTRUCTIONS CAN CAUSE DAMAGE OF THE DEVICE. THE DAMAGES RESULTED BY NON-OBSERVANCE OF THESE INSTRUCTIONS MAKE THE WARRANTY VOID.

- **After transportation or storage of the product under negative temperatures, before switching the device on it is necessary to leave the device under room temperature in its original package for AT LEAST 2 hours!**
- **To connect the guitar preamp to other devices use only the cables intended for such connections.**
- **You must not use other cables types such as speaker, etc.**

**SWITCHING ON the guitar preamp:**

- **Switch the device on ONLY AFTER YOU HAVE DONE all audio connections!**
- **Before connecting the preamp to mains make sure that the case, the connecting cable and the of the power adapter have no damages such as cuts, cracks, dents, etc. and are operational.**
- **To switch the preamp on first insert the low-voltage connector of the power adapter into corresponding jack on the rear panel of the guitar preamp and only then plug the adapter into the mains outlet.**

**SWITCHING OFF the guitar preamp:**

- **To switch the preamp off first disconnect the power adapter from mains and then disconnect its low-voltage connector from the jack on the rear panel of the guitar preamp.**

**COMPLETE SET**


The complete set includes:


1. The guitar preamp	1
2. Power adapter	1
3. Instruction manual	1
4. Packaging	1
5. Warranty card	1

**Safety precautions**

**CAUTION! Risk of electric shock! Danger!** Even after disconnection from mains the internal circuits can be up to 500 Volts live. In order to avoid electric shock you must not remove the cover the rear panel of the device. There are no user serviceable parts inside. Repair of the device can be carried out only by qualified experts. If the device is not used it must be disconnected from mains.  
**WARNING!** In order to avoid fire or electric shock the device must not be exposed to rain or moisture. Do not let water or other liquid get inside the device. Do not place vessels such as vases filled with liquid on top of the device.



 **This symbol indicates the presence of non-insulated dangerous voltage inside the device and the danger of electric shock.**

 **This symbol indicates important information related to the device maintenance and servicing contained in the accompanying documentation.**

Please read the instruction manual very carefully.

1. **Keep the user's guide at hand.**
2. **Pay attention to warnings.**
3. **Follow all instructions related to device operation.**
4. **To clean the device, use only a dry cloth having disconnected the device from mains prior to that.**
5. **You must not block or cover vent slots. When installing the device, follow the instructions provided by the manufacturer.**
6. **Do not place the device near heat sources, keep it from direct sunlight.**
7. **Lay the mains cable so that it is not stepped on and avoid its contact with sharp corners, etc. If you use the plug or outlet for switching the device off they should be easily accessible.**

## INTRODUCTION

The SS-20 guitar preamp is intended for use in studio and live performances. **The principle and the motto of this device: it is the TUBE that sounds in SS-20, but the transistors do their best to make it sound in all its beauty and originality not by limiting but helping the TUBE!** In order to make tube drivers fully open under the "hottest" conditions they need huge amplitude - a hundred and more volts. The dynamic behavior characteristic to authentic tube preamps have been realized in SS-20 due to the omission of op amp which normally limits the signal in the preliminary amplification sector to 20 – 250 V, and application of special drivers capable of up to 250V amplitude and possessing the nonlinearity similar to 12AX7 triode. In this way we have managed to realize the complete delivery of guitar signal avoiding usual hybrid "stiffness" as well as to give SS-20 its peculiar characteristic sound.

The special attention was given to the clean channel - there we also tried to provide the maximum guitar signal dynamics simultaneously forming soft "nonlinearity" inherent in vacuum triodes drivers. It also allowed us to avoid both "stiffness" and "refinement" which are often found in hybrid devices having CLEAN-channel.

When building the internal preamp structure we were guided by the principle of maximum use of amplification and nonlinear transformation of the tube sector of the device. Thus, the semi-conductor part of a hybrid practically does not participate in limitation process (except for preamp use in LEAD mode with Gain LEAD level of over 7) and the entire spectrum is formed by the tube part of the preamp.

### Architecture and features of SS-20 guitar pedal:

- ✓ Unique hybrid circuitry.
- ✓ Two full-potential channels: CLEAN and DRIVE with the possibility of DRIVE channel operating in two basic modes: the mode of moderate sensitivity (CRUNCH), the mode of high sensitivity (LEAD).
- ✓ CLEAN channel has a separate tone-volume controls unit and adjustments of sensitivity and output level.
- ✓ DRIVE channel has separate tone-volume controls and adjustments of sensitivity and output level.
- ✓ Sequential break (LOOP).
- ✓ Possibility of operation with specialized guitar amplifiers (OUTPUT) and mixers or linear power amplifiers (OUTCAB.EMUL.).

**LEAD** channel is designed for modern, extremely aggressive sounds for players who use both standard and lowered tuning. Carefully calculated spectral and tone balances of the channel are good for modern "punch" and bright flageolets and extreme readability fast licks. Thus, the channel can be used both for aggressive rhythm parts and for brightly outlined solos.

**CRUNCH** channel is distinguished by lesser overall sensitivity but possesses high universality. The user can choose using PRE-EQ switch for one of the three variants of preliminary signal correction having different tone balance between the lowest and highest frequencies which allows to use the channel both for "rhythm" and "solo". The wide adjustment range of sensitivity in combination with expanded possibilities of target tone adjustments results in the sound starting from light airy crunch to dense and bright Lead channel-like heavy sounding.

**CLEAN** channel is designed for classical clean sound with graceful light limitation in the mode of the maximum sensitivity and crystal cleanliness and brightness within the zone of moderate sensitivity value. It has separate controls of sensitivity and output level.

### Before you start

For the purpose of transportation the device was carefully packed by the manufacturer. However, if cardboard packaging is damaged, it is necessary to check the device for the presence of external damages.

- **In case of damages do not send the device to us, but inform the seller and transport agency since otherwise you lose the right to damage compensation.**
- **In order to avoid damages during storage and transportation always use original packaging.**
- **Do not allow children to play with the device and packaging materials.**
- **Please recycle all packaging materials in the way harmless to environment.**
- **In order to avoid the device overheating provide sufficient air flow, do not cover and do not place it near other heat-generating devices.**
- **Operating the device next to powerful radio transmitters and sources of high-frequency signals can lead to significant sound distortion. In this case increase the distance between the device and the transmitter and use the screened cables for all interconnections.**

## WARNING!

**Please be aware that high sound volume can harm your hearing and / or to damage the speakers of your PA system. Before switching the device on turn the controls "VOLUME" into extreme left position (counter-clockwise). Always try to adhere to moderate level of volume.**

## Specifications

<b>Tubes</b>		
12AX7 (ECC-83)		1
<b>INPUT</b>		
Impedance		1,0 M Ohm
Sensitivity		-10dB
<b>RETURN</b>		
Impedance		1,0 M Ohm
Sensitivity		-10dB
<b>OUTPUT</b>		
Output impedance		10k Ohm
Output signal level		+10dB
<b>OUT CAB.EMUL.</b>		
Output impedance		10k Ohm
Output signal level		-10dB
<b>SEND</b>		
Output impedance		10k Ohm
Output signal level		-10dB
<b>Power supply</b>		
Voltage		DC 12V
Current		0,5A
<b>Power adapter</b>		
Voltage		DC 12V
Current		1,25A
<b>Dimensions / Weight</b>		
NET dimensions (WxHxD). (Without power adapter)		119x57x103 mm
NET weight (without power adapter)		0,52 kg
GROSS dimensions (WxHxD).		About 206x83x140mm.
GROSS weight		About 0,78 kg



**Use only auxiliary devices and accessories recommended by the manufacturer.**

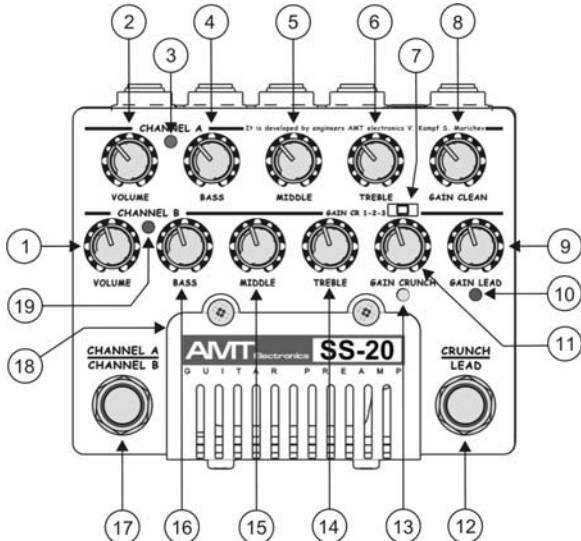
Arrangement of contacts in a low-voltage socket of the adapter.

Расположение контактов на низковольтном разъёме сетевого адаптера.



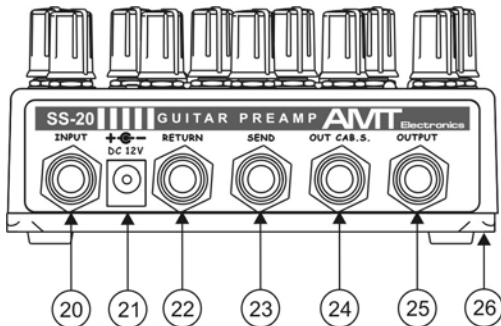
## CONTROLS

### Front panel



1. **VOLUME** control of channel **B**. Determines the volume level of DRIVE channel.
2. **VOLUME** control of channel **A**. Determines the volume level of CLEAN channel.
3. Channel **A** CLEAN indicator.
4. **BASS** control of channel **A**. Sets the low-frequency range of CLEAN channel.
5. **MIDDLE** control of channel **A**. Sets the mid-frequency range of CLEAN channel.
6. **TREBLE** control of channel **A**. Sets the high-frequency range of CLEAN channel.
7. **GAIN CR** switch for step change of tube driver frequency characteristics of B channel (DRIVE) in CRUNCH mode.
8. **GAIN CLEAN** control of channel A. Sets the sensitivity level of CLEAN channel.
9. **GAIN LEAD** control of **B** channel. Sets DRIVE channel sensitivity level in LEAD mode.
10. **B** channel DRIVE indicator in **LEAD** mode.
11. **GAIN CRUNCH** control of **B** channel. Sets DRIVE channel sensitivity level in CRUNCH mode.
12. **CRUNCH / LEAD** footswitch for switching between CRUNCH and LEAD modes in DRIVE mode.
13. **B** channel DRIVE indicator in **CRUNCH** mode.
14. **TREBLE** control of channel **B**. Sets DRIVE channel high-frequency response.
15. **MIDDLE** control of channel **B**. Sets DRIVE channel mid-frequency response.
16. **BASS** control of channel **B**. Sets DRIVE channel low-frequency response.
17. **CHANNEL A / CHANNEL B** footswitch for switching between CLEAN and DRIVE channels.
18. Top tube protective cover.
19. **B** DRIVE channel indicator.

### Rear panel



20. **INPUT** for guitar connection.
21. **DC 12V** jack for power adapter connection.
22. **RETURN** input for connection of external effect unit (-10dB).
23. **SEND** output for signal sending to external effect unit (-10dB).
24. **OUT CAB.EMUL.** for connection to Line input of mixing console.
25. **OUTPUT** to amplifier.
26. Bottom cover of the guitar preamp.



**WARNING! All cable connections must be made ONLY WITH GUITAR PREAMP SWITCHED OFF!**

### For qualified personnel only

#### DANGER! High voltage!



Even after disconnection from mains the internal circuits can be up to 500 Volts live. In order to avoid electric shock you must not remove the cover the rear panel of the device. There are no user serviceable parts inside. Repair of the device can be carried out only by qualified experts. If the device is not used it must be disconnected from mains.



The preamp circuitry is powered by high-tension current. To avoid damages or injuries caused by fire or short-circuit do not let any foreign objects or liquids inside the device.

### Tube replacement

Tube replacement procedure:

1. Remove top tube protective cover (part 18) by unscrewing 4 (four) fastening screws.
2. Remove bottom cover of the guitar preamp (part 26) by unscrewing 4 (four) fastening screws.
3. Remove old tube.
4. Replace it with new tube.
5. Replace bottom cover and top tube protective cover of the guitar preamp.

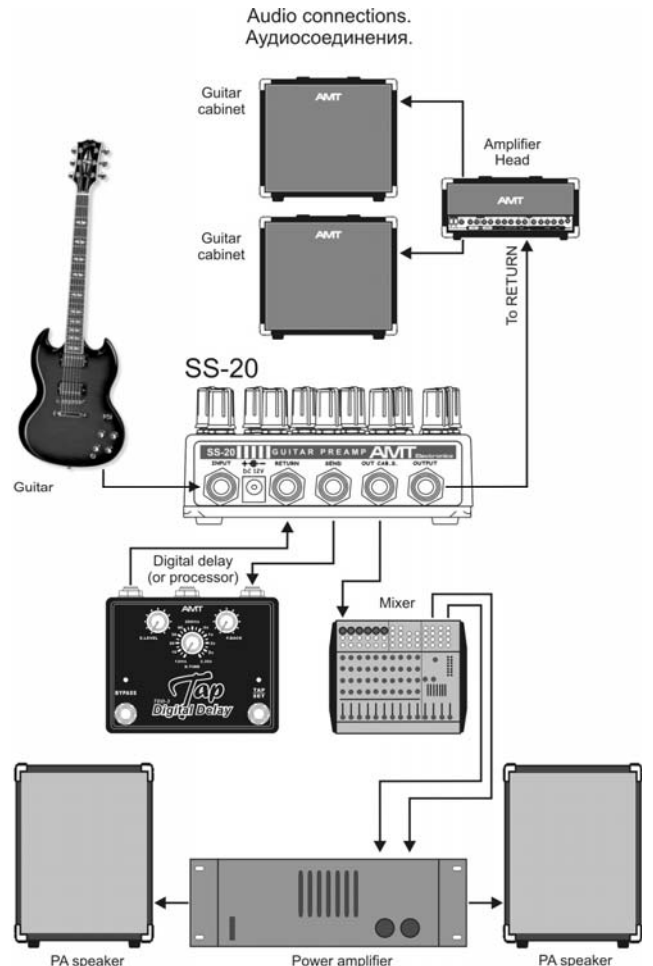
For replacement use only the tubes recommended by the manufacturer.



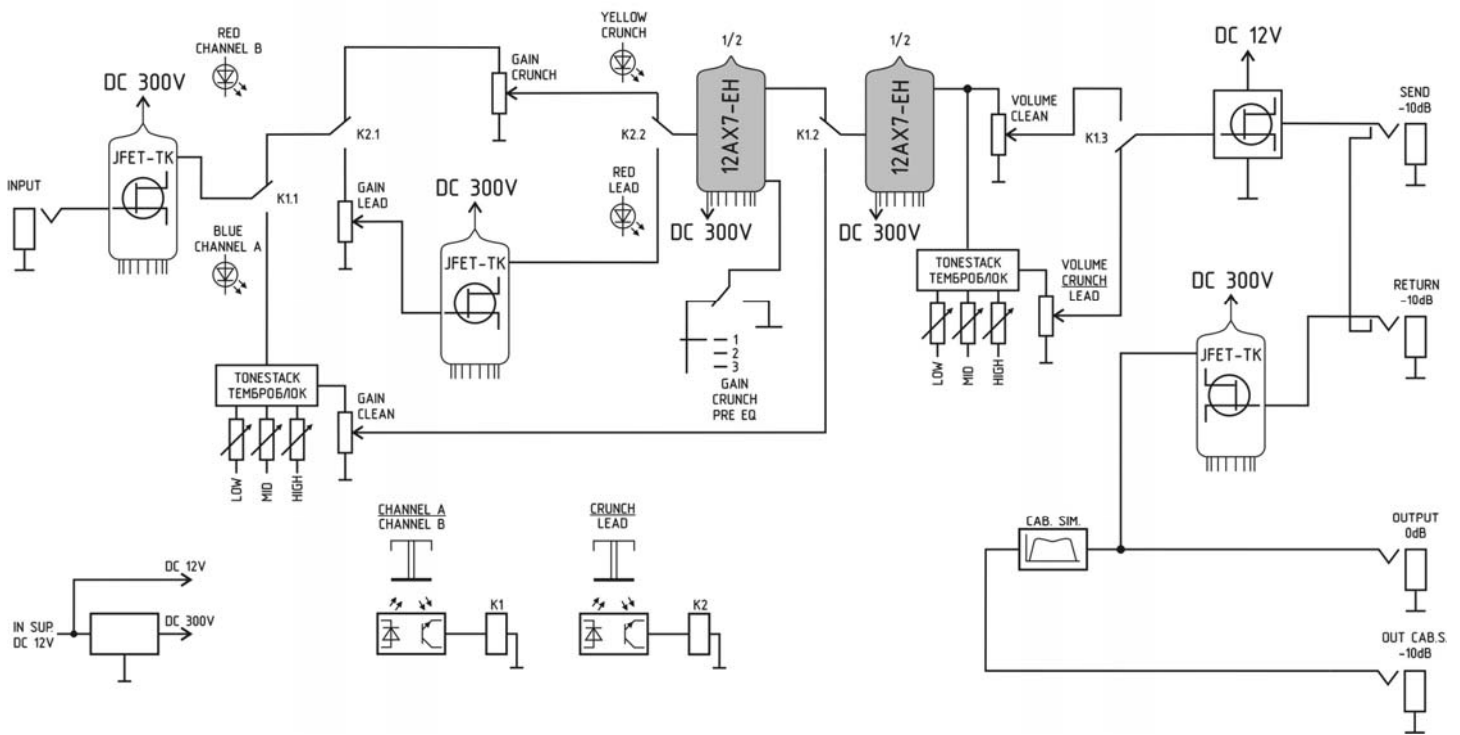
### AUDIO CONNECTIONS AND SWITCHING.

**WARNING! All cable connections must be made ONLY WITH GUITAR PREAMP SWITCHED OFF!**

The diagram of possible audio connections of the preamp with external units.



**SS-20** Block-diagram.  
**SS-20** Блок-схема.



AMT Electronics has the right without any prior notice to bring changes in the design and exterior of the device which in no way will worsen its consumer value. Therefore, the specifications and the exterior view of the product might differ from the ones shown in this manual.