

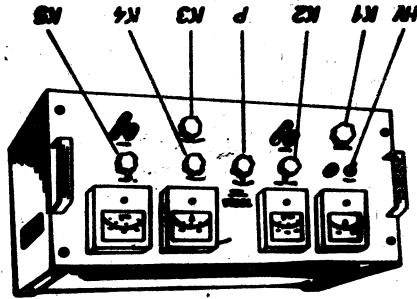


**TM 583**



The stabilized rectifier TESIA TM 583 is a source of d.c. control-  
 table within the range of 0 - 560 V. The voltage is divided into  
 three ranges which can be selected with the switch "P". In the po-  
 sition I and III of this switch the apparatus delivers one voltage  
 from one circuit, whereas in the position II of the switch "P" two  
 independent voltages from two circuits can be drawn. In any selec-  
 ted position of the switch the delivered stabilized current can be  
 continuously controlled with the knobs  $K_1$  and  $K_2$ . The rectifiers  
 voltmeters register the voltages. Two milliamperes indicate the  
 intensity of the delivered current or of both independent currents  
 (as appropriate).

Fig. 1.



(Instruction for use)

STABILIZED RECTIFIER TESIA TM 583

The apparatus contains two independent stabilized current sources. On the left side of the panel are the control of one rectifier, on the right side are the controls of the other. The switch "P" in the middle of the panel is common for both power sources and determines their connection. On the left side of the panel are also the mains switch, common for both parts, and pilot lamp indicating whether the apparatus is in operation.

The milliammeter on the left has a part of its scale printed in a bright colour. If the pointer moves to this part of the scale during operation the range must be changed with the switch  $K_2$ , otherwise the delivered current would not be stabilized. The switch  $K_2$  has two positions for the selection of the intensity range: 0 - 75 mA and 75 - 150 mA. Under this switch are three binding posts. The two upper ones are marked "+" and "-" (the polarity of the output d.c.). The third post is connected to the chassis of the apparatus and it must be earthed. The shorting link attached to the third binding post serves for the earthing of any of the output terminals (the "+" or "-" pole of the delivered d.c.).

The controls on the right side of the panel are arranged in a similar manner. Under the voltmeter which has two scales (one 0 - 300 V, the other 0 - 600 V), is the range switch  $K_4$ . The output terminals are marked 560 V and are fitted with a shorting link in the same manner as the terminals on the left side of the apparatus.

The stabilized rectifier TM 583 is one of the TESLA measuring instruments for laboratory use, which are designed as independent panel units suitable for several combinations. Together with other similar units this source of power can be fitted into a permanent rack after the removal of the wooden sides.

#### Accessories

Spare fuses and a mains connector cord are supplied with each apparatus.

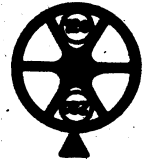




Before the mains switch is put into the "ON" position the controls  $K_2$  and  $K_3$  must be switched to 0 - 75 mA.

Before the mains switch is put into the "ON" position the controls special security measures will have to be adhered to. Should the rectifier operate without an earth connection to earth. Any of the binding posts marked "↑" can be connected to the power supply unless the apparatus is properly connected. The mains cord should not be connected to the back panel of the apparatus are also the

Fig. 2.



On the back panel of the apparatus are also the mains fuses, the d.c. fuses, and the recessed mains connection. The securing metal strip holding the switch must be replaced after each change of the knob's position. Pushing it back firmly to ensure perfect connection. points to the available a.c. voltage, and then turning it until the red triangle above the switch is in the correct position. The mains voltage can be selected by pulling out the knob of the switch, and then ascertain that the mains change over switch (fitted on the back panel) is in the correct position. The mains voltage can be selected by pulling out the knob of the switch, and then

Mains connection

KOVO IMD., PRAHE, CZECHOSLOVAKIA

The stabilised rectifier is tested and sealed in the factory. Each apparatus is warranted free from defects in material and workmanship. Under this guarantee the makers obligation is limited to repairing this apparatus if it proves to be defective within one year after shipment, provided the seals have not been broken. Should it become necessary to return the rectifier to the makers for repairs, ensure good and careful packing and address the shipment to:

Guarantee

## Operation

### WARNING!

Do not switch on the apparatus unless the controls  $K_2$  and  $K_3$  are turned to the left, (to the smaller current range), otherwise the tubes of the rectifier would be endangered.

### Voltage selection

According to the required voltage, the connection of both parts of the apparatus can be selected with the switch "P". This switch has three positions determining 3 appropriate voltages.

In position I. the max. d.c. voltage is 150 V  
in position II. two independent voltages 130 - 290 V can be drawn  
in position III. the max. voltage is controllable between 250 and 560 V.

### Position I.

Half of the apparatus (the right-hand rectifier) delivers the stabilized d.c., whilst the remaining part (the rectifier on the left) supplies an auxiliary voltage to the former. The rectifier on the right stabilizes the resulting current. The measuring instruments on the left side of the panel are not in operation and the output is led to the binding posts on the right side. The instruments on the right side register the load. Only in this position of the switch "P" can the output d.c. become as low as a few volts only, without disturbing the stabilisation.

The output control is divided between the knobs  $K_2$  and  $K_1$ . The stabilising action of the rectifier is independent of the position of these controls. As long as the load does not exceed 75 mA the controls  $K_2$  and  $K_3$  remain turned to the left. Only at a higher load will it be necessary to change the position of  $K_3$  to the right.





It is important to operate the stabilized rectifier in such a manner that the output current does not differ from the range indicated and selected by the switches  $K_1$  or  $K_2$ . Whenever the pointer of one milliammeter registers a load outside the permissible range (note the two colours of the scale), the position of the appropriate range selecting switch  $K_1$  or  $K_2$  must be changed immediately, otherwise the tubes of the apparatus would be endangered through overload.

Remarks

Both rectifiers are connected in series and the output voltage is balanced d.c. is connected to the binding posts on the right and registered on the right-hand instruments. The output voltage is controlled with the knobs  $K_1$  and  $K_2$ . The stabilization is independent of the load distribution between both parts of the apparatus. It is best not to set either of the controls  $K_1$  or  $K_2$  in an extreme position.

Position III.

Both rectifiers work independently and each stabilizes the produced d.c. Therefore, it is possible to draw from the apparatus two different currents entirely independent of each other, each within the range 150 - 280 V. The output of the left-hand rectifier - registered on the instruments on the left - is connected to the left terminals. The output of the right-hand rectifier - registered on the instruments on the right - is connected to the right-hand terminals. As long as the load do not exceed 75 ma the knobs  $K_1$  and  $K_2$  remain turned to the left. If a higher current is required the appropriate switch must be turned to the right.

Position II.

TECHNICAL DATA

Voltage ranges:

Switch position I 0 - 150 V, internal resistance of the source 10 ohms  
Switch position II 2 x (150 - 280 V), internal resistance of each source 25 ohms  
Switch position III 250 - 560 V, internal resistance of the source 25 ohms

Current ranges:

0 - 75 mA, 75 - 150 mA

Tubes:

4x AZ12  
4x 4654  
2x 6AC7  
2x STV 150/20

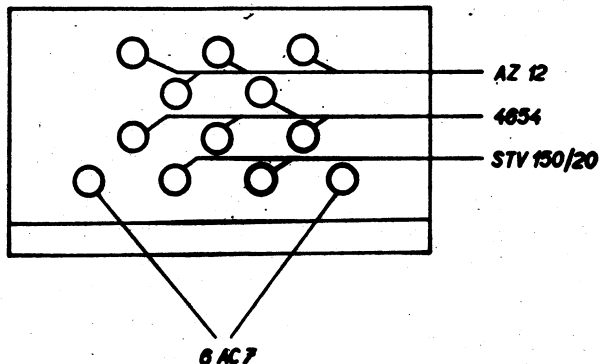
The tubes can be exchanged if necessary without disturbing the calibration of the instrument fitted on the panel.

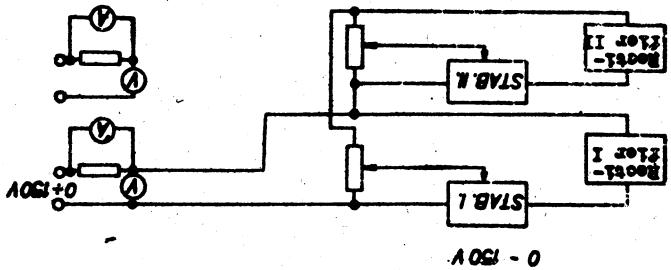
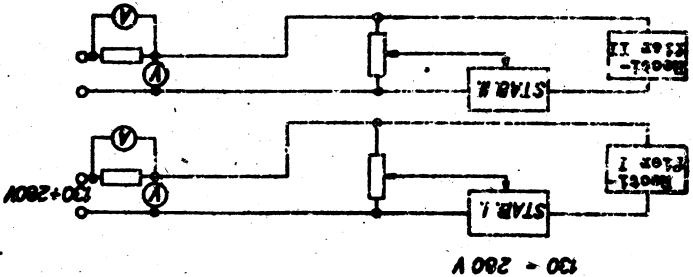
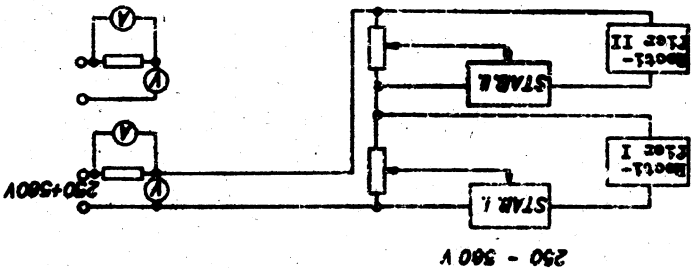
Dimensions:

width 490 mm  
height 185 mm  
depth 340 mm

Weight:

30 kg







R 1	-	0.1 M $\Omega$ /2 W	R 19	-	50,000	$\Omega$ /50 W	
R 2	-	0.1 M $\Omega$ /2 W	R 20	-	20,000	$\Omega$ /12 W	
R 3	-	0.1 M $\Omega$ /2 W	R 21	-	0.5 M $\Omega$		
R 4	-	0.1 M $\Omega$ /2 W	R 22	-	32,000	$\Omega$ /4 W	
R 5	-	0.1 M $\Omega$ /2 W	R 23	-	25,000	$\Omega$ /4 W	
R 6	-	0.1 M $\Omega$ /2 W	R 24	-	15,000	$\Omega$ /2 W	
R 7	-	0.1 M $\Omega$ /2 W	R 31	-	32,000	$\Omega$ /12 W	
R 9	-	5,000	$\Omega$ /50 W	R 32	-	32,000	$\Omega$ /12 W
R 10	-	20,000	$\Omega$ /12 W	R 33	-	2.5 M $\Omega$	
R 11	-	0.3 M $\Omega$		R 34	-	2.5 M $\Omega$	
R 12	-	32,000	$\Omega$ /2 W	R 35	-	10,000	$\Omega$ /6 W
R 13	-	25,000	$\Omega$ /4 W	R 36	-	10,000	$\Omega$ /6 W
R 14	-	16,000	$\Omega$ /2 W				
C 1	-	32	$\mu$ F/450 V	C 7	-	32	$\mu$ F/450 V
C 2	-	32	$\mu$ F/450 V	C 8	-	32	$\mu$ F/450 V
C 3	-	32	$\mu$ F/450 V	C 9	-	1000	pF
C 4	-	32	$\mu$ F/450 V	C 10	-	1000	pF
C 5	-	32	$\mu$ F/450 V	C 11	-	0.1	$\mu$ F/1000 V
C 6	-	32	$\mu$ F/450 V	C 12	-	0.1	$\mu$ F/1000 V

vyp. (vypínač) = switch  
 pravý zdroj = right source  
 levý zdroj = left source  
 otáčení do prava = turning to right  
 otáčení do leva = turning to left

Measuring points:      1 E = 625 V ; I = 22 mA  
                                   2 E = 625 V ; I = 22 mA  
                                   3 = 4 E = 125 V

To measure with the potentiometer "Voltage" turned to the right.  
 The switch "P" in the II. position.  
 The voltage in the points 3 = 4 measure against cathode-ray tube  
 6AC7.

With potentiometers R 31 and R 32 set the voltage.





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TM 583

REMARKS:

**TESLA**

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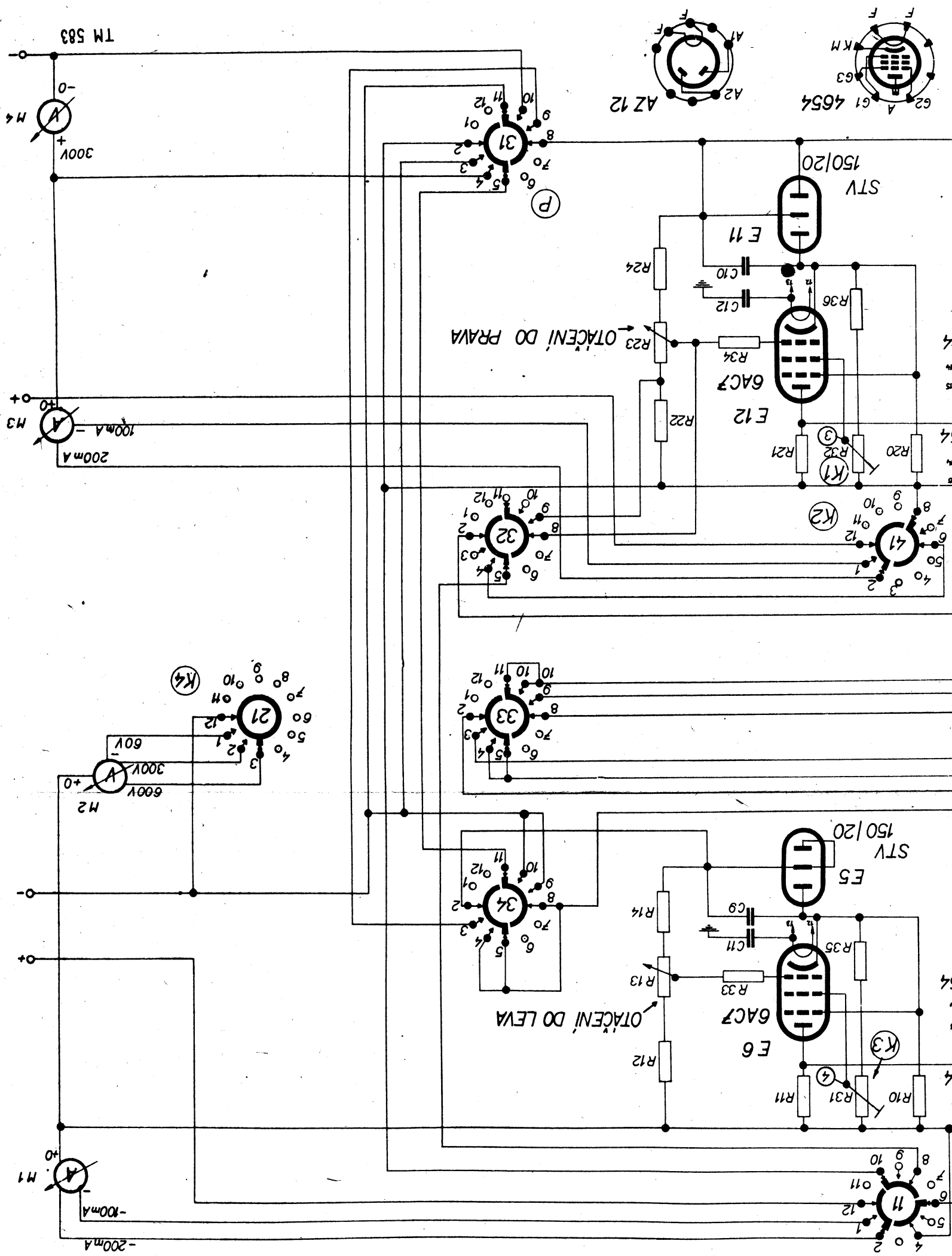


(P)

7

8

9



TM 583

AZ 12

61 4654

OTÁČENÍ DO PRAVA

OTÁČENÍ DO LEVA

