

TH 41

A.C. MAINS TRIODE HEPTODE

Heater Voltage	RATING.							
Heater Current (Amps.) 1-3 Heptode.	Heater Voltage	•••	•••	•••	•••		•••	4.0
Heptode. Maximum Anode Voltage		s.)			•••	•••	•••	1.3
Maximum Anode Voltage 250 Maximum Screen Voltage 250 *Mutual Conductance (mA/V) 3·1 *Taken at Ea=250; Es=100; EgI-2; Eg=0. 150 Maximum Anode Voltage 150 Maximum Peak Anode Current (mA) 15 *Amplification Factor 16 *Mutual Conductance (mA/V) 5·3 *TYPICAL OPERATION. Heptode. 5·3 Anode Voltage 250 Screen Voltage 100 Grid Bias -3 Anode Current (mA) 3·0 Screen Current (mA) 3·0 Screen Current (mA) 3·0 Screen Current (mA) 3·0 Anode Current (mA) 9·0 Screen Current (mA) 10 Working GI-E Capacity (Hot) 10 Hetterodyne Volts (peak) 9·0 Working GI-E Capacity (Hot) 10 *Es=250) (Peak Carrier Volts) 10 *Conversion Conductance (Eg-43; Es=250) 10 *For 5 per cent. Total Audio Harmonic Distortion at 60 per cent. modulation. 10		,						
Maximum Screen Voltage		age		• • • •	•••			250
*Mutual Conductance (mĀ/V)					•••			250
*Taken at Ea=250; Es=100; EgI-2; Eg=0. Triode. Maximum Anode Voltage				•••		•••		3.1
Maximum Anode Voltage			Es == 100); Egl	—2; E	g=0		
Maximum Peak Anode Current (mA) 15 *Amplification Factor 16 *Mutual Conductance (mA/V) 5.3 *Taken at Ea=100; Eg.=0 5.3 TYPICAL OPERATION. 5.3 Heptode. 250 250 Anode Voltage 100 100 Grid Bias -3 -2.5 Anode Current (mA) 3.0 3.8 Screen Current (mA) 6.0 7.5 Conversion Conductance (μA/V) 750 870 Anode A.C. Resistance (megohms) 1-6 1.2 Heterodyne Volts (peak) 9.0 9.0 Working G.J.E. Capacity (Hot) (μμF.) 12.2 *Maximum Input Signal Handling Capacity (Eg=-43; 10 *Conversion Conductance (Eg-43; Es=250) (μA/V) (approx.) 3 *For 5 per cent. Total Audio Harmonic Distortion at 60 per cent. modulation. Triode. 80 Anode Voltage 80 Anode Voltage 9.25 μμF. *Anode to Earth 11.25 μμF. *Grid to Earth 9.25 μμF. *Anode to Grid 0.00005 μμF. Triode. *An	Triode.			_		-		
*Amplification Factor *Mutual Conductance (mA/V)	Maximum Anode Volt	age					•••	150
*Amplification Factor *Mutual Conductance (mA/V)	Maximum Peak Anode	Curren	t (mA)		•••		•••	1.5
*Mutual Conductance (mA/V) *Taken at Ea=100; Eg.=0 TYPICAL OPERATION. Heptode. Anode Voltage					•••		•••	16
TYPICAL OPERATION. Heptode. Anode Voltage 250 250 Screen Voltage 100 100 Grid Bias 3-0 3-8 Screen Current (mA) 3-0 3-8 Screen Current (mA) 6-0 7-5 Conversion Conductance (μ A/V) 750 870 Anode A.C. Resistance (megohms) 1-6 1-2 Heterodyne Volts (peak) 9-0 9-0 Working G1-E Capacity (Hot) (μ \muF.) 12-2 *Maximum Input Signal Handling Capacity (Eg= -43; 10 *Conversion Conductance (Eg-43; Es=250) (μ A/V) 10 *Conversion Conductance (Eg-43; Es=250) (μ A/V) 3 *For 5 per cent. Total Audio Harmonic Distortion at 60 per cent. 3 modulation. 80 Anode Voltage 80 Anode Voltage 80 Anode Voltage 80 Anode Current (mA) 4 to 5 INTER-ELECTRODE CAPACITIES. Heptode. *Anode to Earth *Anode to Earth (less G0 to A0) 3-5 μ F. *Grid to Earth (less G0 to A0) 10-5 μ F.		mA/V)					•••	5⋅3
Heptode.	*Ta	ken at E	a == 100	; Eg.=	≈ 0			
Heptode.	TYPICAL OPERATION	l.		-				
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Screen Voltage							250	250
Grid Bias		•••	•••	•••				
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Conversion Conductance $(\mu A/V)$				•••				
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*Maximum Input Signal Handling Capacity (Eg= -43; Es= 250) (Peak Carrier Volts)			iii.			-		7.0
Es=250 (Peak Carrier Volts) 10							12 2	
*Conversion Conductance (Eg—43; Es=250) (μΑ/V)	Fs=250) (Peak Carr	ier Volts) Cabo		·6— ·	٠.,		10
(approx.) 3 *For 5 per cent. Total Audio Harmonic Distortion at 60 per cent. modulation. 80 per cent. Triode. Anode Voltage 80 per cent. Mode of the section and the remaining earthy potential electrodes. *Anode Current (mA) 4 to 5 iNTER-ELECTRODE CAPACITIES. Heptode. 11·25 μμF. *Anode to Earth 9·25 μμF. Anode to Grid 0·0005 μμF. Triode. *Anode to Earth (less G0 to A0) 3·5 μμF. *Grid to Earth (less G0 to A0) 10·5 μμF. Anode to Grid 2·4 μμF. *"Earth" denotes the electrodes of any second valve section and the remaining earthy potential electrodes of the section under measurement, H and M joined to cathode. DIMENSIONS. Maximum Overall Length 108 mm.	*Conversion Conductar	ice (Eg-	43 : E	s = 250) (uA/	ν̈́)		
*For 5 per cent. Total Audio Harmonic Distortion at 60 per cent. modulation. Triode. Anode Voltage					, (pa)			3
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INTER-ELECTRODE CAPACITIES. Heptode. *Anode to Earth							4	to 5
Heptode.*Anode to Earth11·25 $\mu\mu$ F.*Grid to Earth9·25 $\mu\mu$ F.Anode to Grid0·0005 μ F.Triode.*Anode to Earth (less G0 to A0)3·5 $\mu\mu$ F.*Grid to Earth (less G0 to A0)10·5 $\mu\mu$ F.Anode to Grid2·4 $\mu\mu$ F.*"Earth" denotes the electrodes of any second valve section and the remaining earthy potential electrodes of the section under measurement, H and M joined to cathode.DIMENSIONS.Maximum Overall Length108 mm.	• •		IEC					
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*Grid to Earth 9.25 $\mu\mu$ F. Anode to Grid 0.0005 $\mu\mu$ F. Triode. *Anode to Earth (less G0 to A0) 3.5 $\mu\mu$ F. *Grid to Earth (less G0 to A0) 10.5 $\mu\mu$ F. Anode to Grid 2.4 $\mu\mu$ F. *"Earth" denotes the electrodes of any second valve section and the remaining earthy potential electrodes of the section under measurement, H and M joined to cathode. DIMENSIONS. Maximum Overall Length 108 mm.							11.25	E
Anode to Grid $0.0005~\mu\mu$ F. Triode. *Anode to Earth (less G0 to A0) $3.5~\mu\mu$ F. *Grid to Earth (less G0 to A0) $10.5~\mu\mu$ F. Anode to Grid $2.4~\mu\mu$ F. *"Earth" denotes the electrodes of any second valve section and the remaining earthy potential electrodes of the section under measurement, H and M joined to cathode. DIMENSIONS. Maximum Overall Length		•••	•••				9.25	$\mu\mu$.
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*Grid to Earth (less G0 to A0) $10.5~\mu\mu$ F. Anode to Grid $2.4~\mu\mu$ F. *" Earth " denotes the electrodes of any second valve section and the remaining earthy potential electrodes of the section under measurement, H and M joined to cathode. DIMENSIONS. Maximum Overall Length							2.5	
Anode to Grid 2.4 \(\mu\mu\mu\mu\mu\mu\mathre{\pi}\). *"Earth" denotes the electrodes of any second valve section and the remaining earthy potential electrodes of the section under measurement, H and M joined to cathode. DIMENSIONS. Maximum Overall Length							10.5	$\mu\mu\Gamma$
*" Earth " denotes the electrodes of any second valve section and the remaining earthy potential electrodes of the section under measurement, H and M joined to cathode. DIMENSIONS. Maximum Overall Length								
remaining earthy potential electrodes of the section under measurement, H and M joined to cathode. DIMENSIONS. Maximum Overall Length 108 mm.							4' 7 	$\mu \mu r$.
H and M joined to cathode. DIMENSIONS. Maximum Overall Length 108 mm.	*" Earth " denotes the el	ectrodes	or an	secor	ig valv	e sec	cion an	g the
DIMENSIONS. Maximum Overall Length 108 mm.		electrod	es of t	tie sect	มอน นท	agt. I	neasure	ment,
Maximum Overall Length i08 mm.								
Transferrance and the second s	•							
Maximum Diameter 32 mm.	DIMENSIONS.							
	DIMENSIONS.		•••	•••	•••			



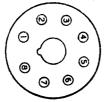
GENERAL.

The TH.41 is a triode heptode frequency changer for use in A.C. mains receivers. It has been specially designed to meet the requirements of all-wave receivers, and the inter-reaction between the input and the oscillator circuit has been reduced to a minimum. A high conversion conductance is provided with a large initial grid bias, thus ensuring that no grid current is taken on the short wave bands. The characteristics have been so designed as to provide large signal handling capacity with low cross modulation and low harmonic response. The valve is of small dimensions and is fitted with a Mazda Octal base, the connexions to which are given below.

APPLICATION.

The triode oscillator should be used with a parafeed tuned anode circuit and the component values required are given in the circuit shown. If any trouble is experienced with "squegging" at the highest frequency the grid leak resistance may be reduced to 25,000 ohms. On the short wave bands the mean anode current of the triode would be of the order of 4 to 4.5 milliamps, while on the medium and long waves the current taken by the triode will be of the order of 3 to 3.5 milliamps. An average heterodyne voltage of 9 to 10 volts peak is required at the grid of the triode. The value of the grid resistance R3 will depend very largely on the design of the coils and the effect of stray capacities across the grid of the triode. On the short wave band this resistance is usually of the order of 50 to 60 ohms. The peak anode current of the triode should never be allowed to exceed 15 mA. If parasitic oscillations are generated, these may be stopped by connecting a small resistance (R6) of 2.5 to 5 ohms close to the screen pin.

BASING.

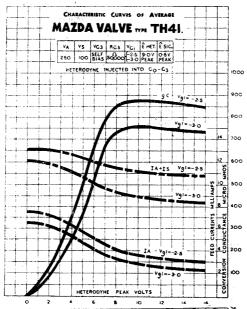


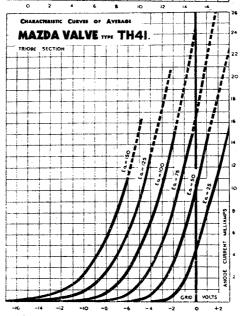
- Pin No. I. Heater.
 - 2. Cathode.
 - 3. Heptode Anode.
 - 4. Oscillator Anode.
 - 5. Oscillator Grid.
 - 6. Metallising.
 - 7. Heptode Screen.
 - 8. Heater.

Top Cap. Heptode Control Grid.

Viewed from the free end of the base.

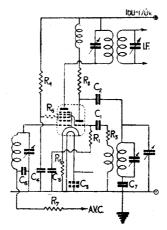








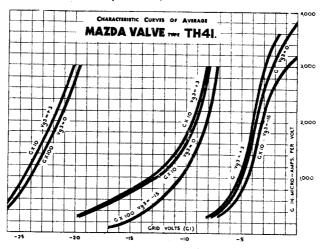
SUGGESTED CIRCUIT DIAGRAM USING TH41



Values of the components in the circuit diagram :-

nez or	the components in	the circuit diagram :	
R.I.	50,000 ohms.	C.I.	•0001 mfd.
R.2.	40,000 ohms.	C.2.	·0001 mfd.
R.3.	See above.	C, 3 .	∙01 mfd.
R.4.	25,000 ohms.	C. 4 .	0·1—0·5 mfd.
R.5.	230—160 ohms.	C.5.	0·10·5 mfd.

R.5. 230—160 ohms. R.6. 2.5—5 ohms (see above).



Matda Radio Valves are, manufactured in Great Britain for the British Thomson-Houston Co., Ltd., London and Rugby, and distributed by THE EDISON SWAN ELECTRIC CO., LTD. 155, CHARING CROSS ROAD, LONDON, W.C.2.