

# E R T

## SERVICE CHART 1810

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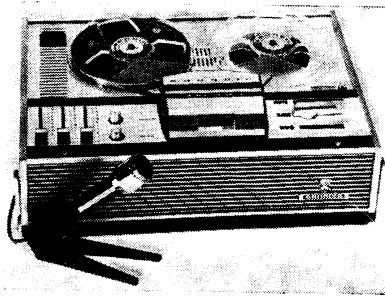
**G**RUNDIG TK121 is a fully transistorised two track tape recorder with an output power capability of 4W.

It features studio-type slider controls for volume, tone, and record level, and an illuminated moving coil recording level meter.

The single lever selector has an illuminated panel to indicate stop, start or fast wind and the tape position indicator is digital with press button reset.

**Mains.** 110-115V and 220-230V 50Hz.

**Transistors.** TR1 BC 384B-C, TR2 BC 382B, TR3 BC 183B-G, TR4 BC 182B, TR5 BC 182B, TR6 9654-03697, TR7 9654-01697, TR8 9654-01697, TR9 9654-



Appearance of Grundig TK121 complete with GDM 313 microphone

08497, TR10 BC 183C. Alternative types: TR1 BC 109B, BC 109C, BC 239B, BC 239C, TR2 BC 107B, BC 237B, TR3 BC 183C-G, BC 108C, BC 238C, TR4 BC 107B, BC 237B, TR5 BC 107B, BC 237B.

**Diodes.** D1.

**Rectifiers.** D2 0820-307-97, D3 B60 C100.

**Fuses.** F1 630mA, F2 1.6A, F3 100mA, F4 630mA.

**Pilot lamps.** Two 7V 1W.

**Tape speed.** 3½ in. per second.

**Tracks.** Two.

**Frequency response.** 40-12500Hz.

# GRUNDIG TK121

## Two track tape recorder

**Wow and flutter.** ±0.2 per cent.

**Maximum spool diameter.** 5½ in.

**Output.** 4W.

**Speaker.** 7¼ × 3¾ in. elliptical 4ohm impedance.

**Bias frequency.** Between limits 64.5 and 73kHz.

**Erase.** AC.

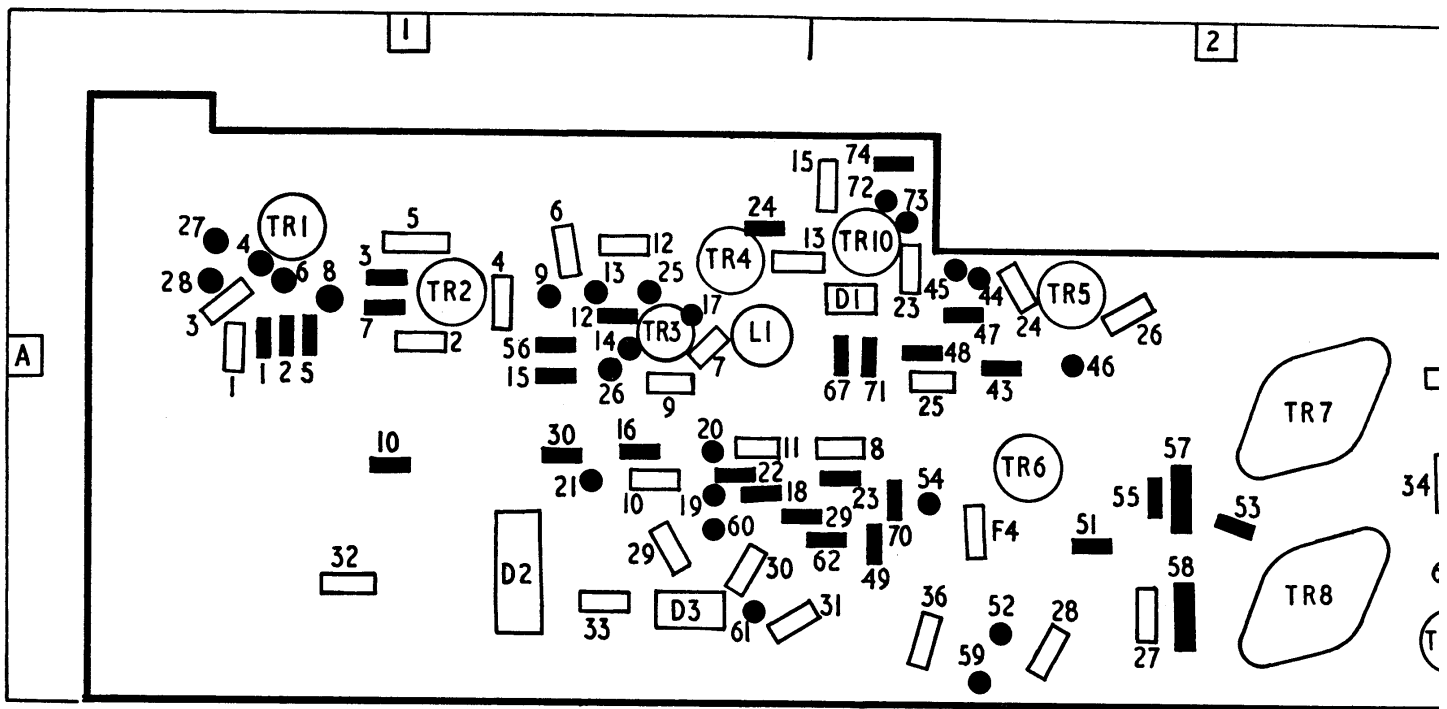
**Level meter.** Moving coil.

**Tape position indicator.** Digital.

**Deck.** Grundig.

**Microphone.** Grundig GDM 313.

Main circuit panel viewed from foil side showing component locations



**Inputs.** Microphone 1mV, radio/gram pick-up 500Kohm via Grundig SL30R lead, radio diode 1mV/150Kohm.

**Outlet.** External amplifier 500mV/50Kohm.

**Dimensions.** 15¼ × 11¼ × 6¼in.

**Weight.** 17¼lb.

**Price.** £57.35.

**Manufacturer.** Grundig (Great Britain) Ltd.

**Service department.** Newlands Park, Sydenham, London, SE26. Tel: 01-778 2211.

**DISMANTLING**

**Case top removal.** Unscrew and remove five screws located on, and securing top, remove handle and handle fixing screws. Unscrew lid of fuse compartment—in rear, then pull off selector knob and slider knobs. The case top may now be lifted off.

**Base removal.** Unscrew and remove the four screws located in the base, thread mains lead through opening of lead storage compartment. The base may now be lifted off.

**Access to foil side of panel.** Remove case top then loosen the four screws securing panel screen. Unhook screen from keyhole slots.

To remove panel completely, unhook panel chassis bracket from underside of deck then unscrew and remove the panel chassis fixing screws. Tilt out amplifier panel complete with slider panel.

**SERVICE NOTES**

**Removal and adjustment of heads.** Remove head bridge to change heads—two screws one at each end of mounting bridge. To adjust, use alignment tape—Grundig 462/3. Adjust head azimuth by screw—third from left on bridge assembly including bridge fixing screw. Never tighten azimuth screw excessively. Important: Unless it is imperative to do so never remove the four screws securing the complete mechanical assembly.

**Drive belt replacement.** Remove top and base then unscrew and remove the screws securing the flywheel bearing plate. Remove bearing plate and wipe end of flywheel spindle clean. Lift both belts over the spindle then remove them from the top.

**Motor pulley fuse ring—See illustration.** Fuse ring A melts under overload and the motor free-wheels. To replace fuse ring—obtainable from Grundig—remove circlip B. Note: All parts are under spring tension. Remove remains of old fuse ring and replace, then reassemble as shown in illustration.

**Clutch friction.** Friction too high—place felt discs nearer clutch centre. Too small—place discs nearer periphery. Felt discs may be located asymmetrically. Reverse or replace worn discs.

**Output stage quiescent current.** Switch machine to playback and pause, volume control to zero. Replace F4 with a milliammeter—internal resistance less than 20ohm. With speaker or 4ohm dummy load in circuit adjust R50 for 50mA through meter.

**HF bias adjustment.** Set machine to record and pause. Connect a capacitive potential divider—Grundig VST24—across record play head or erase head. Adjust C37 for the following voltage levels, depending on head colour codes: red/red 54V, white/white 61V, black/black 68V.

At least 37V should be across the erase head. If below this figure rotate C37 by 180 deg. Bias oscillator frequency should be between 64.5 and 73kHz.

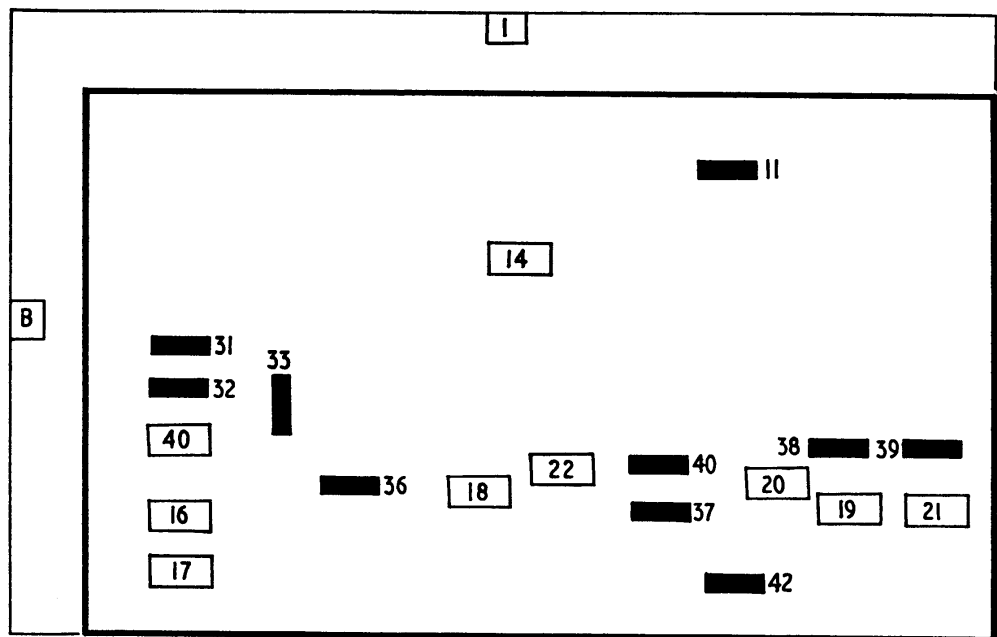
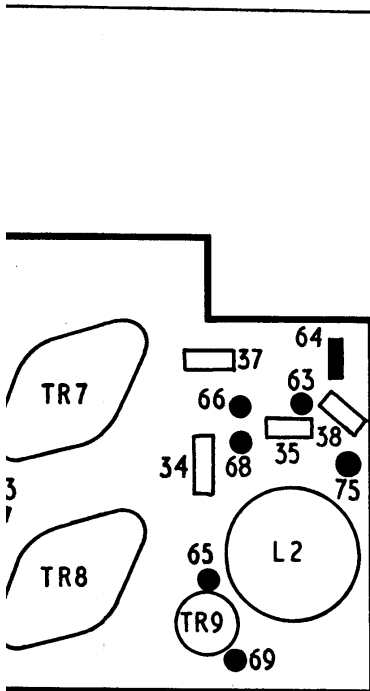
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Slider sub panel assembly viewed from component side



**E R T**  
**SERVICE CHART**  
**1810**  
**GRUNDIG TK121**

# Vintage Service Data CD-Rom

Supplement to Electrical and Radio Trading, September 23, 1971

**Head current and recording level meter.** Set machine to record and pause. Short circuit erase head and connect a 100ohm resistor across record head. Feed in a 333Hz signal via a potential divider of 1Kohm/10ohm to pins 1-2 of microphone socket.

Set record level, R11, to maximum and adjust signal generator output level to produce 6V—measured with an electronic voltmeter—at junction C13/C40/R32. Connect a mille-voltmeter across the record head and adjust R34 for a measured 8.5mV.

Note input signal level—this is full recording level. Remove short circuit from

erase head and with 6V at C13/C40/R32 junction adjust R74 so that level meter pointer coincides with Mark 7 on dial.

**Frequency response via tape.** Connect a signal generator via a 1Kohm/10ohm potential divider to pin 1-2 of microphone socket and an AC mille-voltmeter to pins 3-2 of radio socket.

Using a blank section of standard DIN tape record frequencies as follows: 1kHz, 40Hz and 12.5 kHz input level down 20dB i.e. 1/10th full level.

Playback levels, referred to 1kHz to be within limits  $\pm 1 - 4$ dB at 40Hz and  $+ 1.3 - 6.7$ dB at 12.5kHz.

**Distortion factor.** Record a 333Hz signal as described under frequency response. Grundig advise using a distortion factor bridge KMZ333. The output level of a full level recording must be at least 500mV.

The third harmonic distortion factor should not exceed 5 per cent. If 5 per cent is exceeded, reduce the head current by adjusting R64. If the distortion factor is below 5 per cent, increase the head current.

These adjustments should be carried out after all repairs to the electrical section to retain the signal to noise ratio and frequency response.

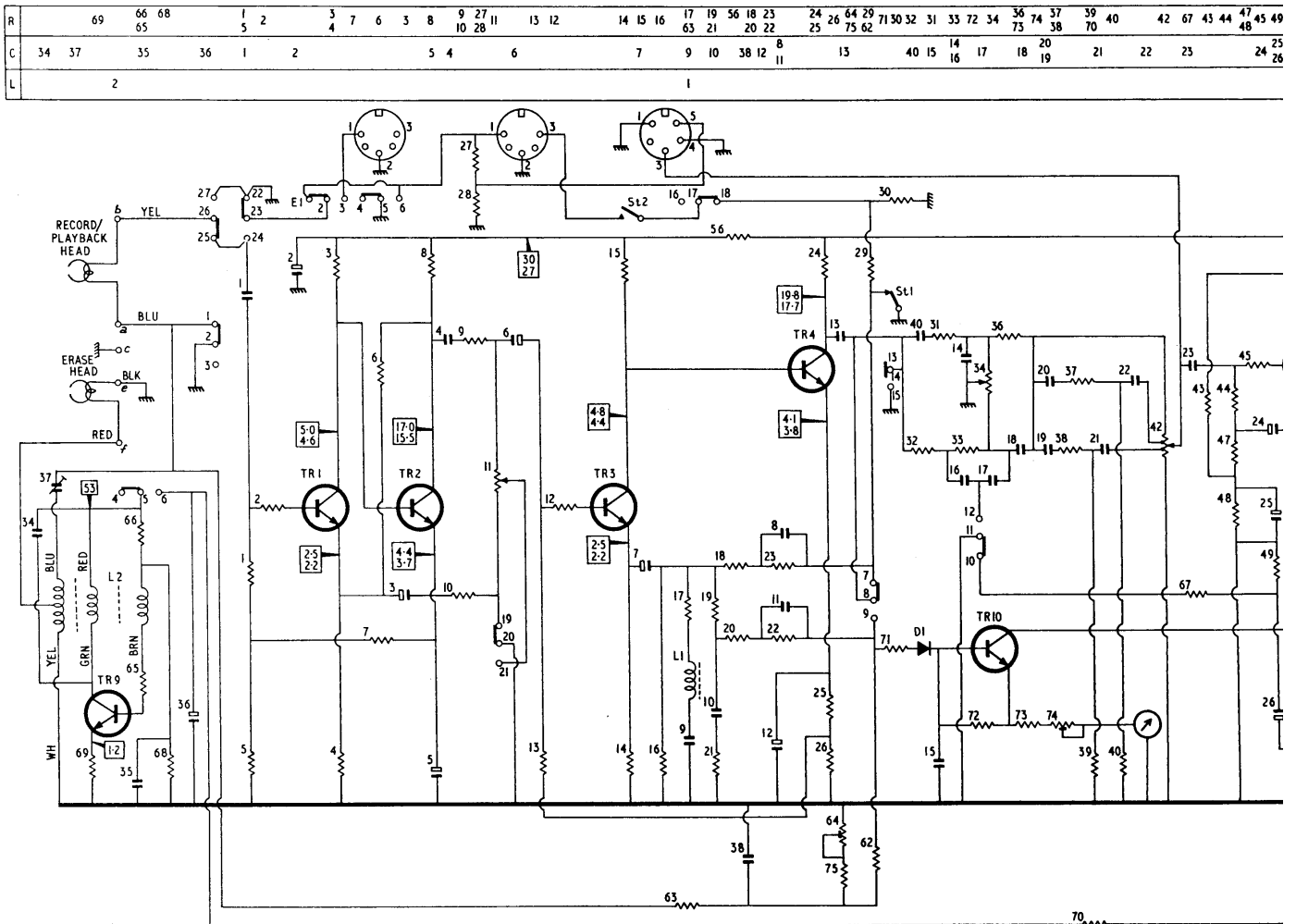
### RESISTORS

R1	120K	R19	47K	A1	R40	5K6	B1	R61	1K	A1	C3	10µF	A1	C23	
R2	220	A1	R20	180K	A1	R42	100K	B1	R62	22K	A1	C4	470KpF	A1	C24
R3	220K	A1	R21	10K	A1	R43	22K	A2	R63	27K	A2	C5	250µF	A1	C25
R4	10K	A1	R22	470K	A1	R44	10K	A2	R64	1M	A2	C6	22µF	A1	C26
R5	820	A1	R23	180K	A2	R45	2K2	A2	R65	120	A2	C7	10µF	A1	C27
R6	100K	A1	R24	4K7	A1	R46	2K2	A2	R66	68K	A2	C8	6K8pF	A2	C28
R7	330	A1	R25	220	A1	R47	10K	A2	R67	1K	A2	C9	5K6pF	A1	C29
R8	3K3	A1	R26	750	A1	R48	24K	A2	R68	33	A2	C10	1KpF	A1	C30
R9	15K	A1	R27	82K	A1	R49	39	A2	R69	56	A2	C11	10KpF	A1	C31
R10	820	A1	R28	1K	A1	R50	25	A2	R70	220	A2	C12	250µF	A1	C32
R11	25K	B1	R29	68K	A1	R51	10	A2	R71	33K	A2	C13	330KpF	A1	C33
R12	220	A1	R30	22K	A1	R52	240	A2	R72	2M2	A2	C14	2K2pF	B1	C34
R13	120K	A1	R31	68K	B1	R53	25	A2	R73	12K	A2	C15	150KpF	A1	C35
R14	8K2	A1	R32	33K	B1	R54	470	A2	R74	25K	A2	C16	3K3pF	B1	C36
R15	82K	A1	R33	33K	B1	R55	1K	A2	R75	24K	A2	C17	2K2pF	B1	C37
R16	3K3	A1	R34	100K	B1	R56	2K2	A1				C18	2K2pF	B1	C38
R17	1K1	A1	R35	47K	B1	R57	0.47	A2				C19	2K2pF	B1	C39
R18	18K	A1	R36	27K	B1	R58	0.47	A2				C20	4K7pF	B1	C40
		A1	R37	100K	B1	R59	120	A2				C21	68KpF	B1	
		A1	R38	2K4	B1	R60	1K5	A1				C22	33KpF	B1	

### CAPACITORS

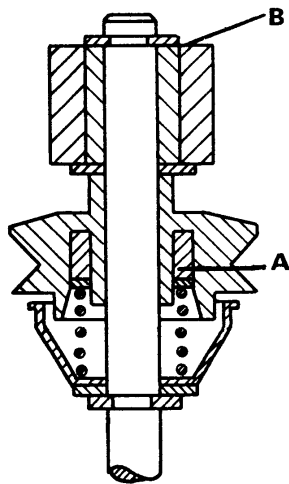
C1	470KpF	A1
C2	50µF	A1

Circuit diagram for TK121. Socket identities left to right are: Microphone, diode and external :



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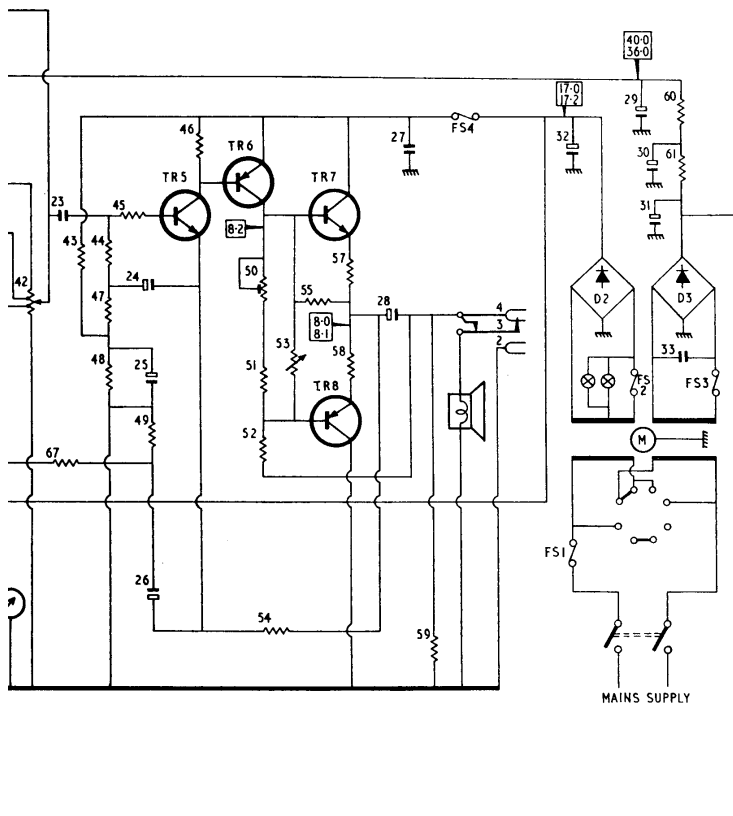


Motor pulley assembly. Fuse ring A melts under overload. B, circlip.

AI	C23	470KpF	A2
AI	C24	4.7µF	A2
AI	C25	22µF	A2
AI	C26	250µF	A2
AI	C27	100KpF	A2
A2	C28	1000µF	A2
AI	C29	50µF	AI
AI	C30	50µF	AI
AI	C31	51µF	AI
AI	C32	2500µF	AI
AI	C33	1µF	AI
BI	C34	33KpF	A2
AI	C35	100KpF	A2
BI	C36	25µF	A2
BI	C37	60pF	A2
BI	C38	390pF	A2
BI	C40	15KpF	BI
BI			
BI			

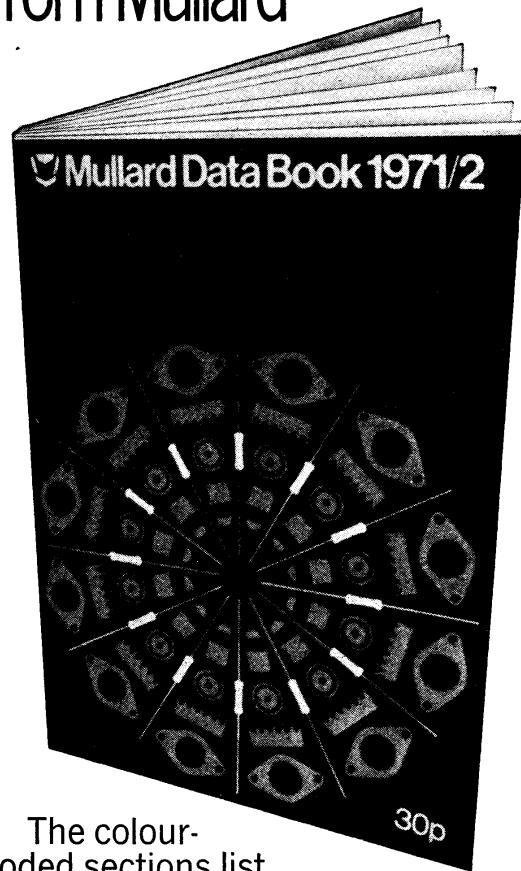
e and external amplifier.

42	67	43	44	47	45	49	46	50	52	53	55	57	59	60			
				48				51	54			58		61			
22	23		24	25	26							28	27	32	29	30	33



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