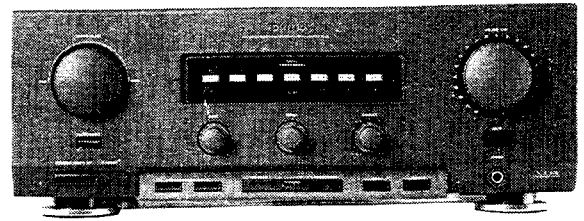


Service  
Service  
Service



# Service Manual

TABLE OF CONTENTS	page
Specification	1
Connections and controls	2
Adjustment	3
Semiconductor layout	4, 13
Schematic diagrams and parts location	5-12, 14-28
Exploded view and parts list	29-31
Electrical parts list	31, 32

**(GB)**

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

**(NL)**

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

**(F)**

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

**(D)**

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

**(I)**

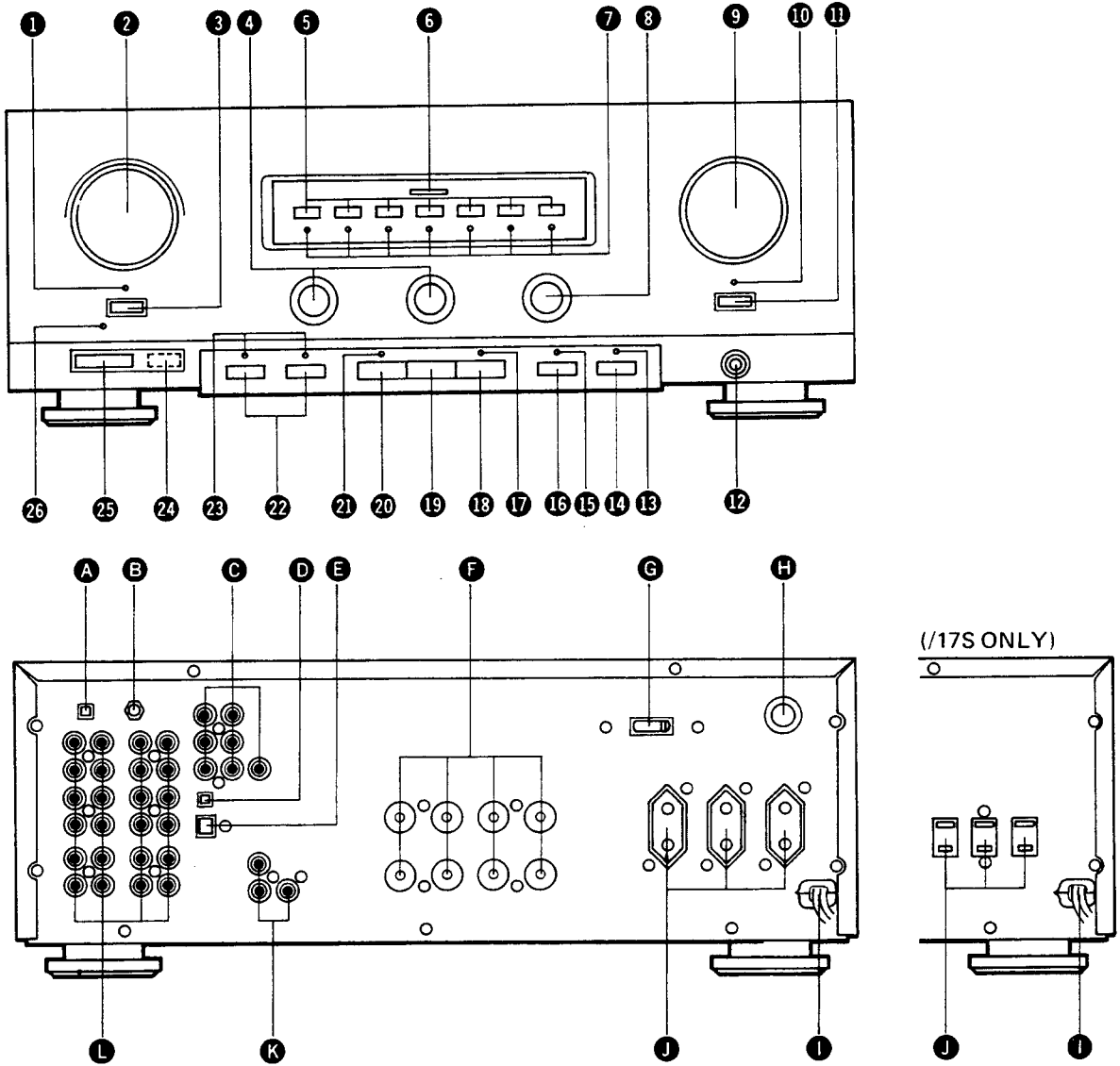
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

## SPECIFICATION

General	Nominal value	Typical value
Mains voltage	: 220V ~ (/00S), 120/220/240V ~ (/01S) : 240V ~ (/05S), 120V ~ (/17S)	: 220V ~ (/00S), 120/220/240V ~ (/01S) : 240V ~ (/05S), 120V ~ (/17S)
Mains frequency	: 50 Hz (/00S/05S), 50/60 Hz (/01S), 60 Hz (/17S)	: 50 Hz (/00S/05S), 50/60 Hz (/01S), 60 Hz (/17S)
Power consumption	: 420W	: 420W
Dimensions (WxHxD)	: 435 x 146 x 380 mm	: 435 x 146 x 380 mm
Weight	: 10 kg	: 10 kg
<b>Amplifier</b>		
Output power	: 100W in 8Ω (IEC)	: 103W in 8Ω (IEC)
Distortion T.H.D.	: ≤ 0.09% at 1 kHz : ≤ 0.7% at 63 Hz – 12.5 kHz } (IEC) : ≤ 0.09% at 60/7000 Hz 4:1	: ≤ 0.05% at 1 kHz : ≤ 0.05% at 63 Hz – 12.5 kHz } (IEC) : ≤ 0.05% at 60/7000 Hz 4:1
Intermodulation		
Frequency characteristic		
Phono input } tone control	: from 20 Hz – 20 kHz ±1 dB (IEC/RIAA)	: from 20 Hz – 20 kHz ±0.5 dB (IEC/RIAA)
Other inputs } neutral	: from 10 Hz – 45 kHz ±1 dB	: from 10 Hz – 50 kHz ±1 dB
Bass control	: at 100 Hz +10 dB to –10 dB ±2 dB	: at 100 Hz +10 dB to –10 dB
Treble control	: at 10 kHz +10 dB to –10 dB ±2 dB	: at 10 kHz +10 dB to –10 dB
Loudness	: at 100 Hz +6 dB ±2 dB } –30dB position : at 10 kHz +4 dB ±1.5 dB }	: at 100 Hz +6 dB } –30dB position : at 10 kHz +4 dB }
Signal/noise ratio weighted (A-curve)		
Phono input (MM)	: for 1W output ≥ 75 dB (IHF)	: for 1W output ≥ 80 dB (IHF)
(MC)	: for 1W output ≥ 64 dB (IHF)	: for 1W output ≥ 70 dB (IHF)
Other inputs	: for 1W output ≥ 83 dB (IHF)	: for 1W output ≥ 86 dB (IHF)
Channel separation	: at 1000 Hz ≥ 45 dB : at 250 Hz – 10 kHz ≥ 40 dB	: at 1000 Hz ≥ 60 dB : at 250 Hz – 10 kHz ≥ 45 dB
Input sensitivity/Input impedance		
Audio		
Phono (MM)	: 2.5 mV/47 kΩ	: 2.5 mV/47 kΩ
(MC)	: 250 μV/100Ω	: 250 μV/100Ω
High level (Analogue)	: 150 mV/17 kΩ	: 150 mV/22 kΩ
High level (Digital)	: 250 mVp-p/75Ω (IEC985)	: 200 mVp-p/75Ω (IEC985)
Output level/Output impedance		
DCC/VCR/Tape/CDR/Processor (Analogue)	: 280 mV/600Ω (Phono 5 mV 1 kHz input)	: 280 mV/400Ω (Phono 5 mV 1 kHz input)
DCC/DSP (Digital)	: 500 mVp-p/75Ω (IEC985)	: 500 mVp-p/75Ω (IEC985)

Note  
/17S: FA950PBK01

CONNECTIONS AND CONTROLS

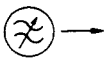







- |    |                         |            |    |                       |                          |
|----|-------------------------|------------|----|-----------------------|--------------------------|
| 1  | Auto select indicator   | D461       | 24 | IR sensor             | J431                     |
| 2  | Source select switch    | S475       | 25 | Power/standby switch  | (/00S/01S/05S) S301      |
| 3  | Auto select switch      | S467       |    |                       | (/17S) S302              |
| 4  | Tone control            | R521, R522 | 26 | Standby indicator     | D463                     |
| 5  | Function indicator      | V482~V488  | A  | Phono selector        | S551                     |
| 6  | Digital indicator       | V481       | B  | Ground terminal       | J014                     |
| 7  | Rec. out indicator      | D471~D477  | C  | Digital input/output  | J402, J403               |
| 8  | Balance control         | R523       | D  | CD opt./coax. switch  | S292                     |
| 9  | Volume control          | R546       | E  | CD optical input      | J401                     |
| 10 | Mute indicator          | D481       | F  | Speakers output       | J262, J263               |
| 11 | Mute switch             | S471       | G  | Voltage selector      | (/01S only) S411         |
| 12 | Headphone socket        | J501       | H  | Fuse holder           | (/01S only) J012         |
| 13 | Loudness indicator      | D466       | I  | Mains cord            | W015                     |
| 14 | Loudness switch         | S465       | J  | AC outlet             | (/00S/01S/05S) J221~J223 |
| 15 | Mono indicator          | D465       |    |                       | (/17S) J225              |
| 16 | Mono switch             | S463       | K  | System control socket | J251, J253               |
| 17 | Source direct indicator | D464       | L  | Analogue input/output | J561, J562, J571, J572   |
| 18 | Source direct switch    | S461       |    |                       |                          |
| 19 | Processed indicator     | D478, D479 |    |                       |                          |
| 20 | Rec. select switch      | S466       |    |                       |                          |
| 21 | Rec. select indicator   | D462       |    |                       |                          |
| 22 | Speakers switch         | S462, S464 |    |                       |                          |
| 23 | Speakers indicator      | D467, D468 |    |                       |                          |

Note  
/17S: FA950PBK01

**ADJUSTMENT**

**Idling Current**

SK... SWITCH	 SIGNAL	 TO	 VOLUME	 ADJUST	 OSCILLOSCOPE	 D.C. METER INDICATOR
			Min.	Lch R323		Lch TP1 (+), TP3 (-) DC 15 mV (41.7 mA)
				Rch R324		Rch TP2 (+), TP4 (-) DC 15 mA (41.7 mA)

**(GB) Notes:**

- 1 minute after the power has been switched ON, adjust to read 15 mV DC.
- If the heat-sink temperature is higher than the ambient temperature, switch the power OFF, and leave the unit until the heat-sink temperature falls equal to or below the ambient temperature before proceeding to the idling current adjustment.

**(D) Anmerkungen:**

- 1 Minute nach Einschalten der Spannungsversorgung so einstellen, daß 15 mV Gleichstrom angezeigt wird.
- Wenn die Temperatur des Kühlkörpers höher ist als die Umgebungstemperatur, die Spannungsversorgung ausschalten und warten, bis die Temperatur des Kühlkörpers gleich der oder niedriger als die Umgebungstemperatur wird, bevor die Ruhestrom-Einstellung durchgeführt wird.

**(F) Remarques:**

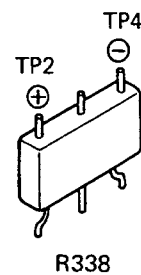
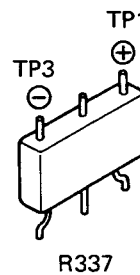
- 1 minute après avoir fourni l'alimentation, ajuster pour lire 15 mV CC.
- Si la température de la plaque de refroidissement est supérieure à la température ambiante, couper l'alimentation et laisser l'appareil jusqu'à ce que la température de la plaque de refroidissement soit égale ou inférieure à la température ambiante avant de passer à l'ajustement du courant déwatté.
















**(I) Note:**

- Fate in modo de ottenere un valore di 15 mV di c.c. un minuto dopo l'accensione.
- Se la temperatura degli organi di dispersione del calore è superiore a quella dell'ambiente, spegnete l'unità e lasciatela raffreddare sino a che la sua temperatura non diviene uguale o inferiore a quella ambiente, quindi procedete con la regolazione della corrente a riposo.

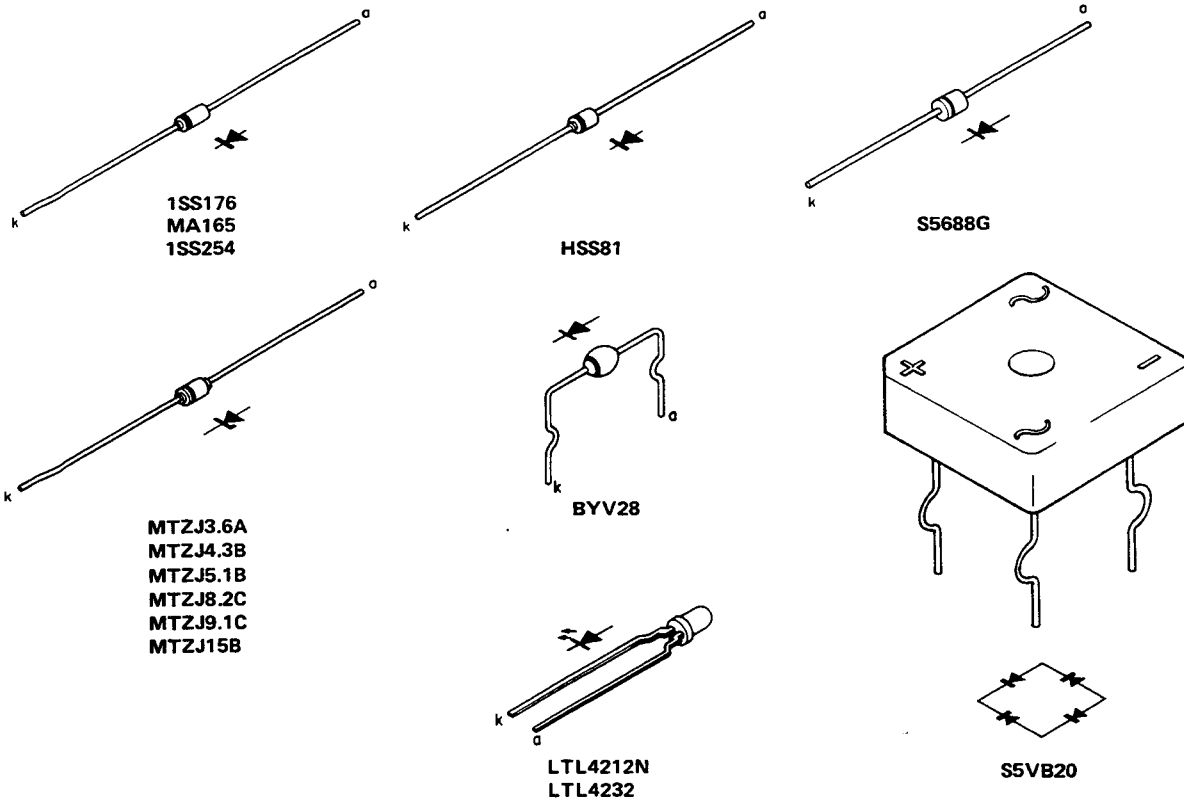
**(NL) Opmerkingen:**

- Maak de instelling zodanig dat 15 mV gelijkstroom aangegeven wordt na 1 minuut nadat de spanning ingeschakeld wordt.
- Als de temperatuur van de warmteput hoger is dan de omringende temperatuur, schakel dan de spanning uit totdat de temperatuur van de warmteput gelijk is aan of lager is dan de omringende temperatuur alvorens over te gaan tot aanpassen op de stationaire stroom.



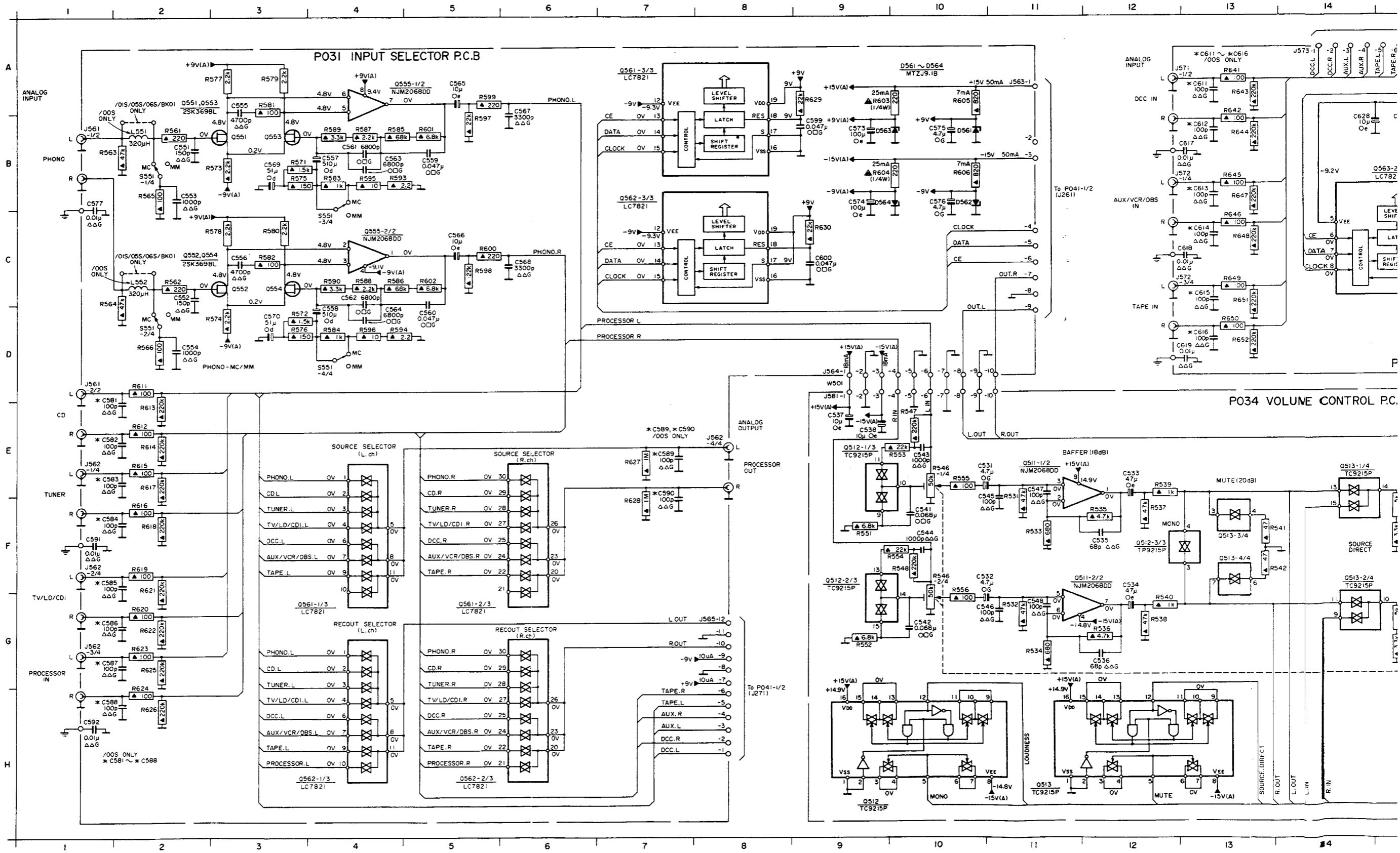
	Carbon film 0.125 W or 0.2 W	70°C	5%		Ceramic plate Tuning $\leq 120$ pF NP.0 2% Others -20/+80%	*a = 2.5 V b = 3.15 V or 4 V c = 6.3 V d = 10 V e = 16 V f = 25 V g = 40 V h = 63 V j = 100 V l = 125 V m = 150 V n = 160 V q = 200 V r = 250 V s = 300 V t = 350 V u = 400 V v = 500 V w = 630 V x = 1000 V A = 1.6 V B = 6 V C = 12 V D = 15 V E = 20 V F = 35 V G = 50 V H = 75 V I = 80 V
	Carbon film 0.25 W or 0.33 W	70°C	5%		Polyester flat foil 10%	
	Metal film 0.25 W or 0.33 W	70°C	5%		Metalized polyester flat film 10%	
	Carbon film 0.5 W	70°C	5%		Polyester flat foil small size (Mylar) 10%	
	Carbon film 0.67 W	70°C	5%		Polysterene film/foil 1%	
	Carbon film 1 W or 1.15 W	70°C	5%		Tubular ceramic	
					Miniature single	
					Subminiature tantalum $\pm 20\%$	
 Chip component						

SEMICONDUCTOR LAYOUT

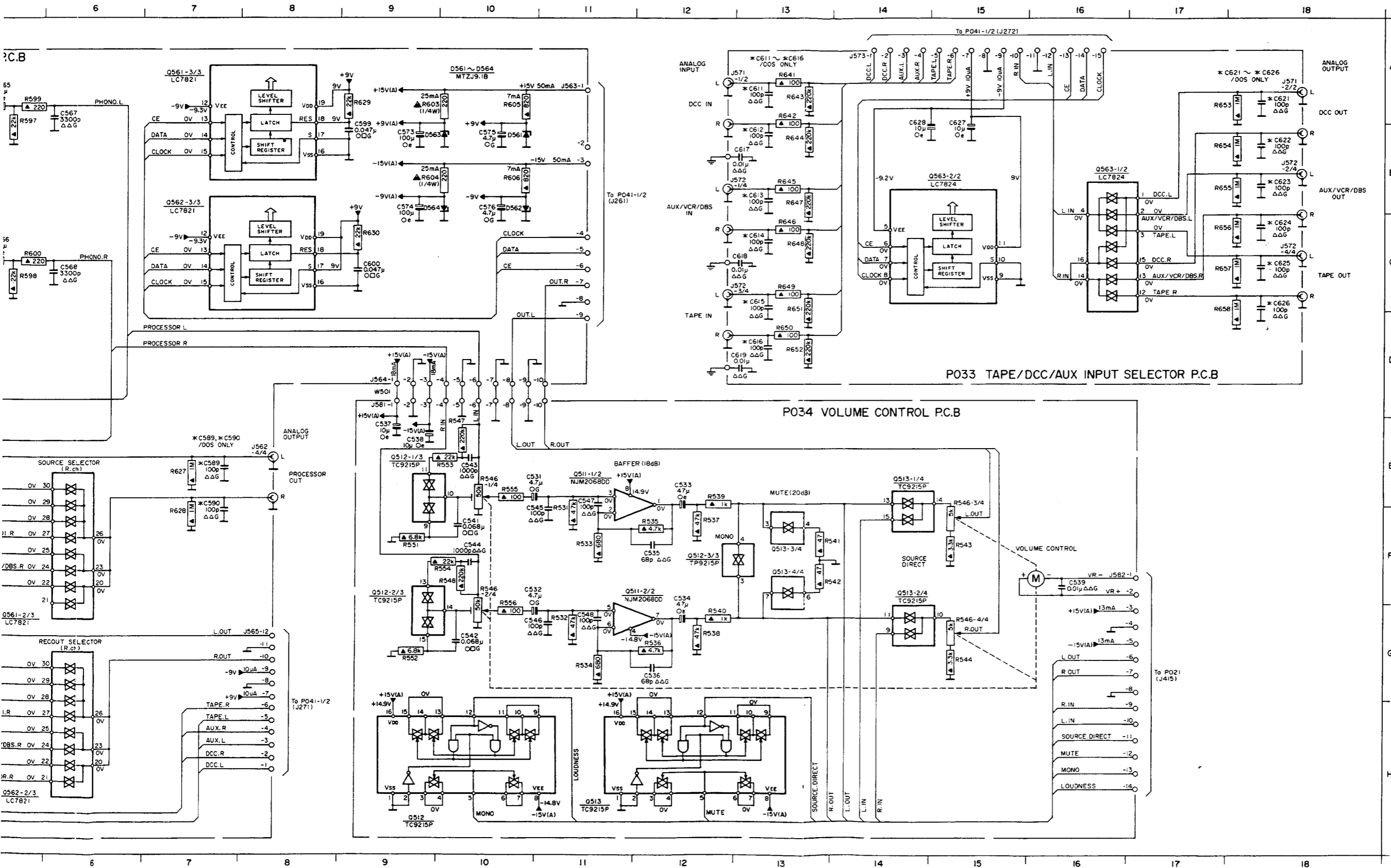


SCHEMATIC DIAGRAM AND PARTS LOCATION

C531 E10	C542 G10	C554 D2	C564 D4	C576 B10	C589 E7	C615 C13	C626 C18	J562 E8	L552 C2	Q513 H11	R562 B7	R536 G12	R546 F10	R556 G10	R574 D3	R584 D4	R596 D4	R606 B10	R620 G2	R630 C9	R650 D13	S551 C4
C532 E10	C543 E10	C555 A3	C565 A5	C577 B1	C590 F7	C616 D13	C627 A15	J562 F11	Q511 E11	Q551 B3	R562 H4	R537 F12	R546 F15	R551 B2	R575 B3	R585 B4	R597 B5	R611 D2	R621 F25	R641 A13	R651 D13	S551 D2
C533 E10	C544 F10	C556 C3	C566 C5	C578 B1	C591 F11	C617 B13	C628 A14	J562 G1	Q512 F12	Q552 C3	R562 H5	R538 G12	R546 G15	R552 C2	R576 D3	R586 C4	R598 C5	R612 E2	R622 G2	R642 A13	R652 D13	S551 D4
C534 E10	C545 F10	C557 B4	C567 A6	C579 B1	C592 E1	C618 C13	D561 B10	J571 A13	Q512 F12	Q553 B3	R563 B15	R539 F11	R547 E10	R553 B1	R577 A3	R587 B4	R599 A5	R613 E2	R623 G2	R643 A13	R653 A17	
C535 F12	C546 G10	C558 D4	C568 C6	C583 E1	C599 B9	C619 D13	D562 B10	J571 A18	Q512 F12	Q554 C3	R563 B16	R540 F12	R547 E10	R554 C1	R578 C3	R588 C4	R600 C5	R614 E2	R624 G2	R644 B13	R654 B17	
C536 G12	C547 F11	C559 B5	C569 B3	C584 F1	C600 C9	C621 A18	D563 B9	J572 B13	Q512 F12	Q555 A4	R564 B17	R541 F13	R548 F10	R555 B2	R579 A4	R589 B4	R601 B5	R615 E2	R625 G2	R645 B13	R655 B17	
C537 E9	C548 G11	C560 D5	C570 D3	C585 F1	C611 A13	C622 B18	D564 B9	J572 B18	Q512 F12	Q556 A4	R565 B18	R542 F13	R549 F10	R556 G9	R580 C3	R590 C4	R602 C5	R616 E2	R626 H2	R646 C13	R656 C17	
C538 E9	C549 G11	C561 B2	C571 D3	C586 G1	C612 B13	C623 B18	D565 B9	J572 C12	Q513 F14	Q556 A4	R566 B18	R543 F13	R549 F10	R557 B3	R581 A3	R593 B4	R603 A9	R617 E2	R627 H2	R647 B13	R657 C17	
C539 F16	C550 C2	C562 C4	C572 B9	C587 G1	C613 B13	C624 C18	D566 B1	J572 C18	Q513 F14	Q557 A4	R567 B18	R544 F15	R549 F10	R558 D3	R582 C3	R594 D4	R604 B9	R618 F2	R628 F7	R648 C13	R658 C17	
C541 F10	C553 B2	C565 B4	C575 B10	C588 H1	C614 C13	C625 C18	D567 D1	L551 E12	Q513 G14	Q557 A4	R568 B18	R545 F15	R549 F10	R559 B3	R583 B4	R595 B4	R605 A10	R619 F2	R629 A9	R649 C13	R659 B2	



L552	C2	Q513	H1	R562	B7	R536	G12	R546	F10	R556	G10	R574	D3	R584	D4	R596	D4	R606	B10	R620	G2	R630	C9	R650	D13	S551	C4
Q511	E11	Q551	B3	R562	H4	R537	F12	R546	F15	R561	B2	R575	B3	R585	B4	R597	B5	R611	D2	R621	F2	R641	A13	R651	D13	S551	D2
Q512	F12	Q552	C3	R562	H5	R538	G12	R547	F10	R562	C2	R576	D3	R586	C4	R598	C5	R612	E2	R622	G2	R642	B13	R652	D13	S551	D4
Q512	F12	Q553	B3	R563	B15	R539	F12	R547	F10	R563	B1	R577	A3	R587	B4	R599	A5	R613	F2	R623	G2	R643	A13	R653	A17		
Q512	F12	Q554	C3	R563	B16	R540	G12	R548	F10	R564	C1	R578	A3	R588	C4	R600	C5	R614	F2	R624	G2	R644	B13	R654	A17		
Q512	F12	Q555	A4	R563	B16	R541	F13	R548	F10	R565	B2	R579	A3	R589	C4	R601	B5	R615	F2	R625	G2	R645	B13	R655	B17		
Q513	H9	Q556	A4	R563	B16	R542	F13	R549	F10	R566	B2	R580	A3	R590	C4	R602	C5	R616	F2	R626	H2	R646	C13	R656	C17		
Q513	H9	Q557	A4	R563	B16	R543	F13	R549	F10	R567	B3	R581	A3	R591	A5	R603	A9	R617	F2	R627	E7	R647	B13	R657	D17		
Q513	H9	Q558	A4	R563	B16	R544	F13	R549	F10	R568	B3	R582	C3	R594	D4	R604	B9	R618	F2	R628	F7	R648	C13	R658	C17		
Q513	H9	Q559	A4	R563	B16	R545	F13	R549	F10	R569	B3	R583	B4	R595	B4	R605	A10	R619	F2	R629	A9	R649	C13	S551	B2		

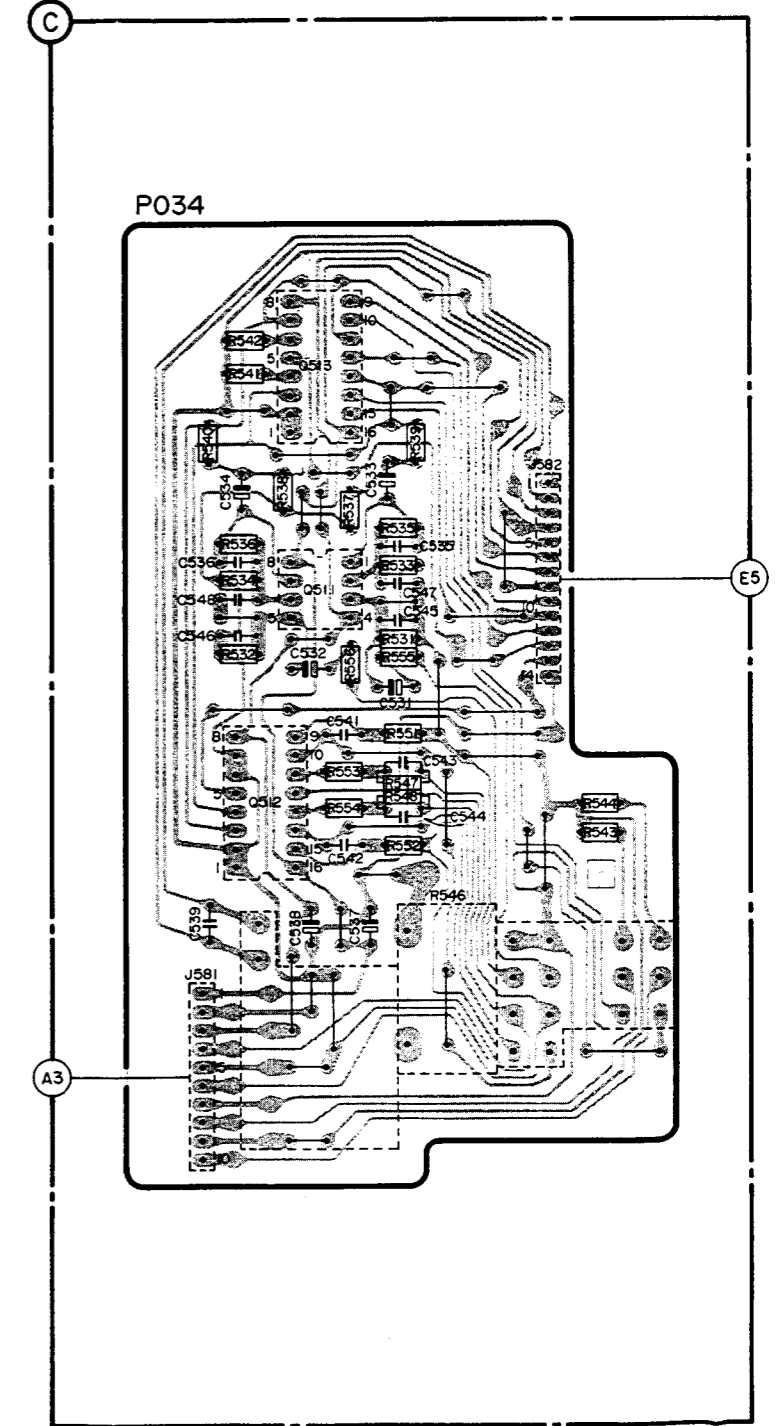
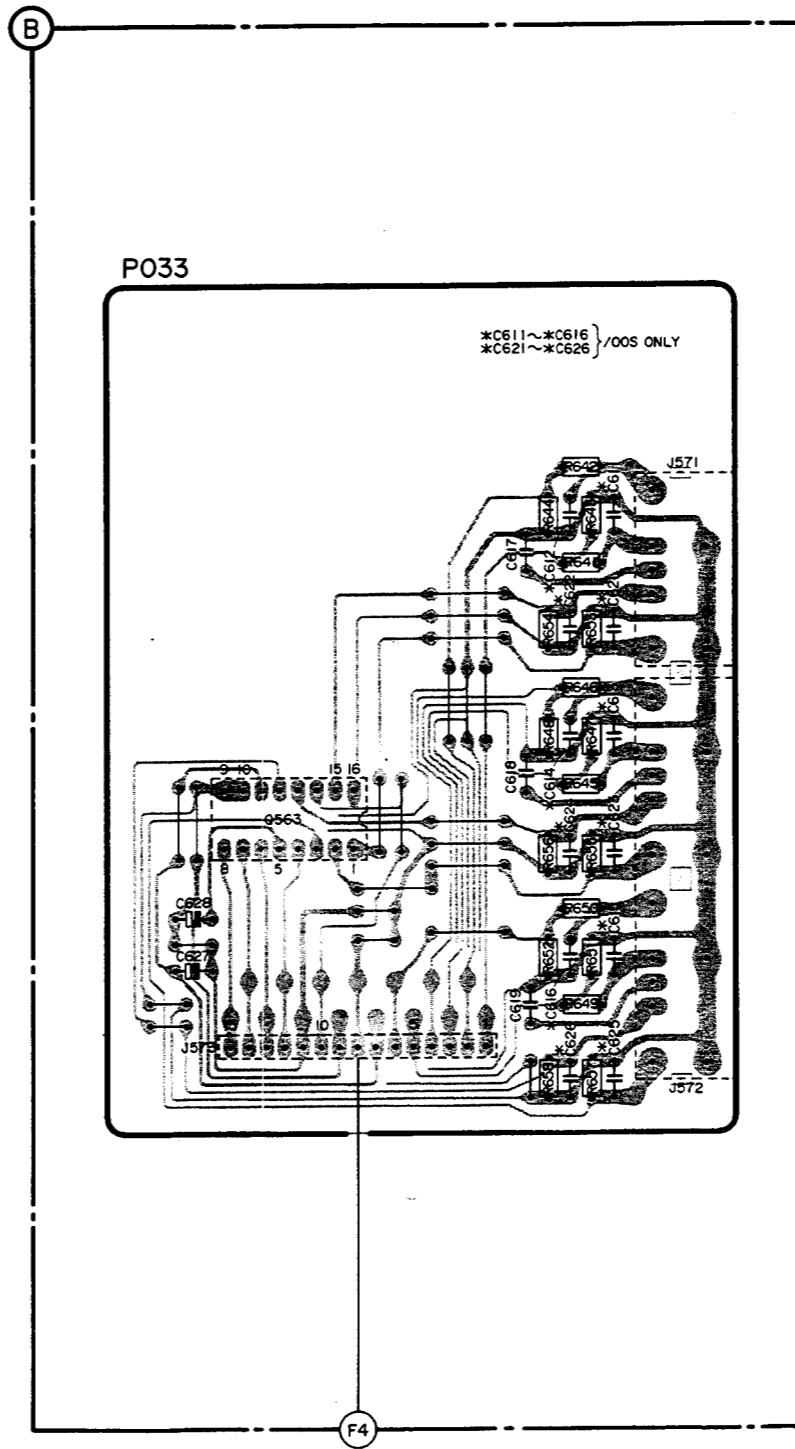
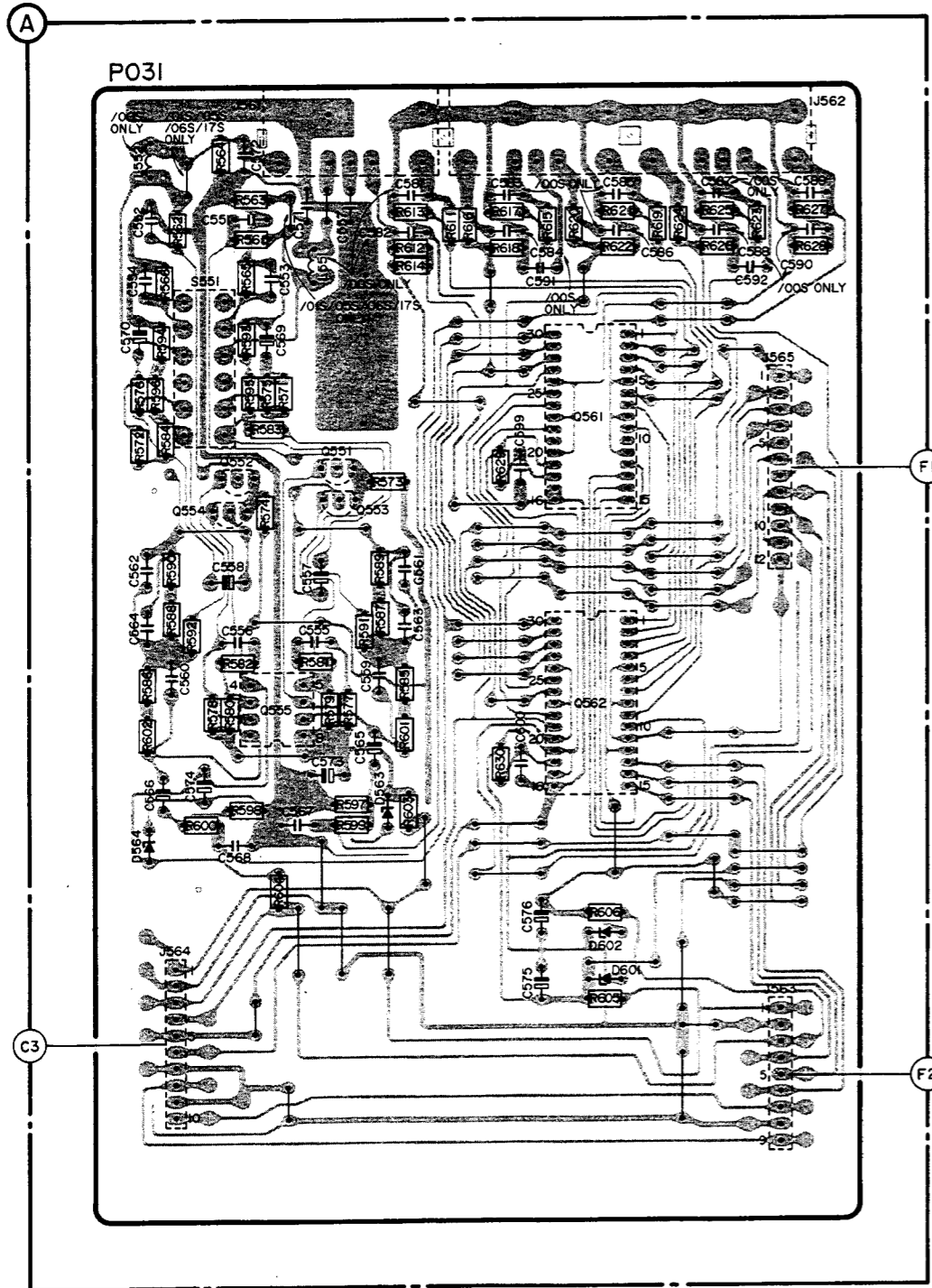


P034 VOLUME CONTROL P.C.B

P033 TAPE/DCC/AUX INPUT SELECTOR P.C.B

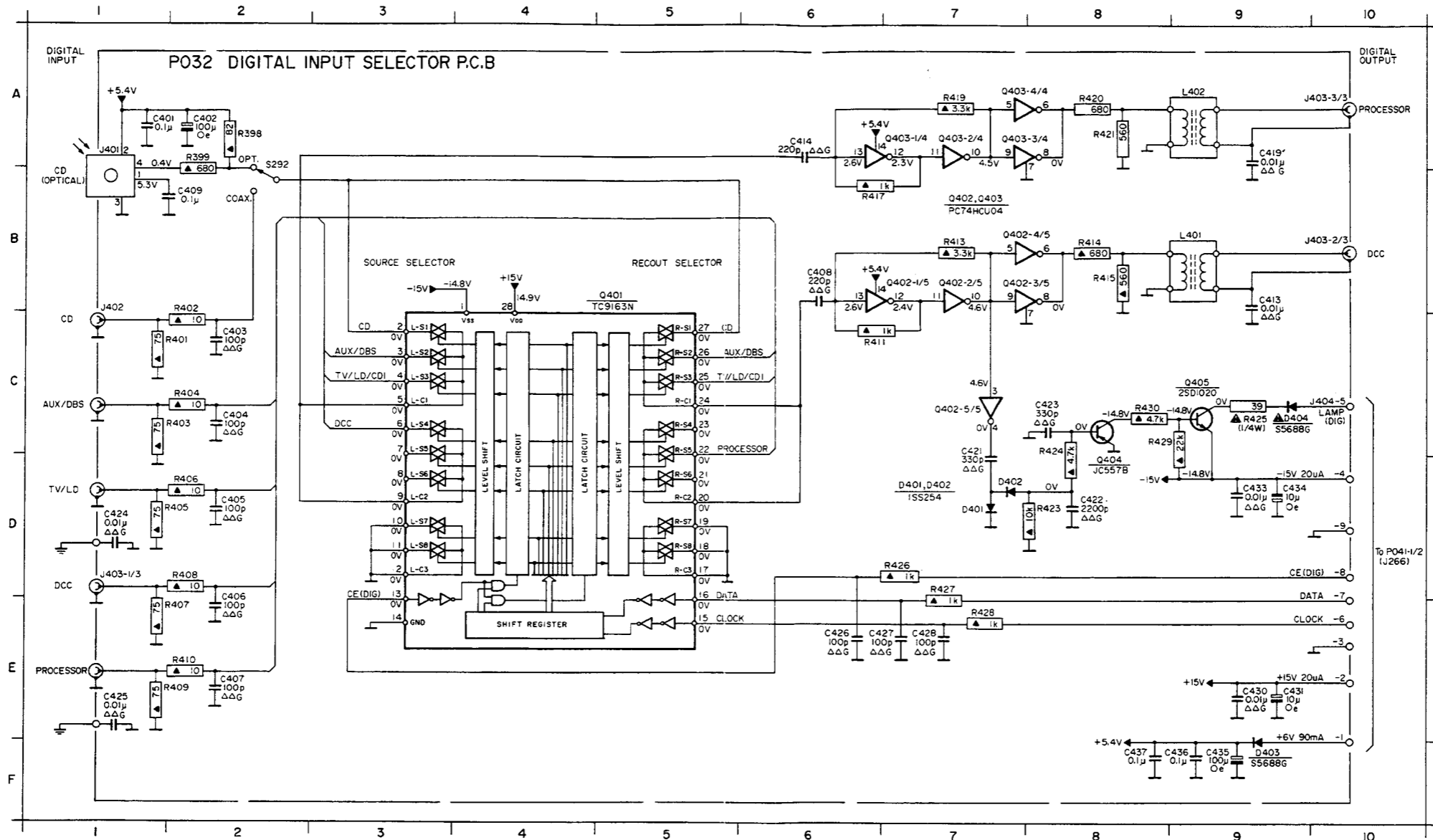
R	R576 R596 R594 R561~R566 R593 R595 R575 R571 R573 R611~R614 R615~R618 R619~R620 R623~R628	R641~R658	R540~R542 R537~R539	R
	R572 R584 R590 R588 R592 R583 R574 R591 R589 R587 R629 R606		R531~R536 R556 R555 R544	
	R586 R602 R597~R600 R604 R577~R582 R585 R601 R603 R630 R605		R551~R554 R546~R548 R543	
C	C570 C554 C552 C551 C572 C569 C553 C571 C557 C581~C584 C591 C585~C588 C592 C590 C589	C611~C619	C533~C536 C545~C548	C
	C562 C564 C558 C556 C557 C555 C561 C563 C599 C628	C621~C626	C532 C531	
	C566 C560 C574 C568 C567 C573 C565 C559 C600 C576 C575 C627		C539 C538 C537 C541~C544	
D	D564 D563 D602 D601			D
Q	Q554 Q552 Q555 Q551 Q553 Q561 Q562 Q563		Q512 Q513 Q511	Q
L-S	L552 S551 L551			L-S

SOLDER SIDE VIEW



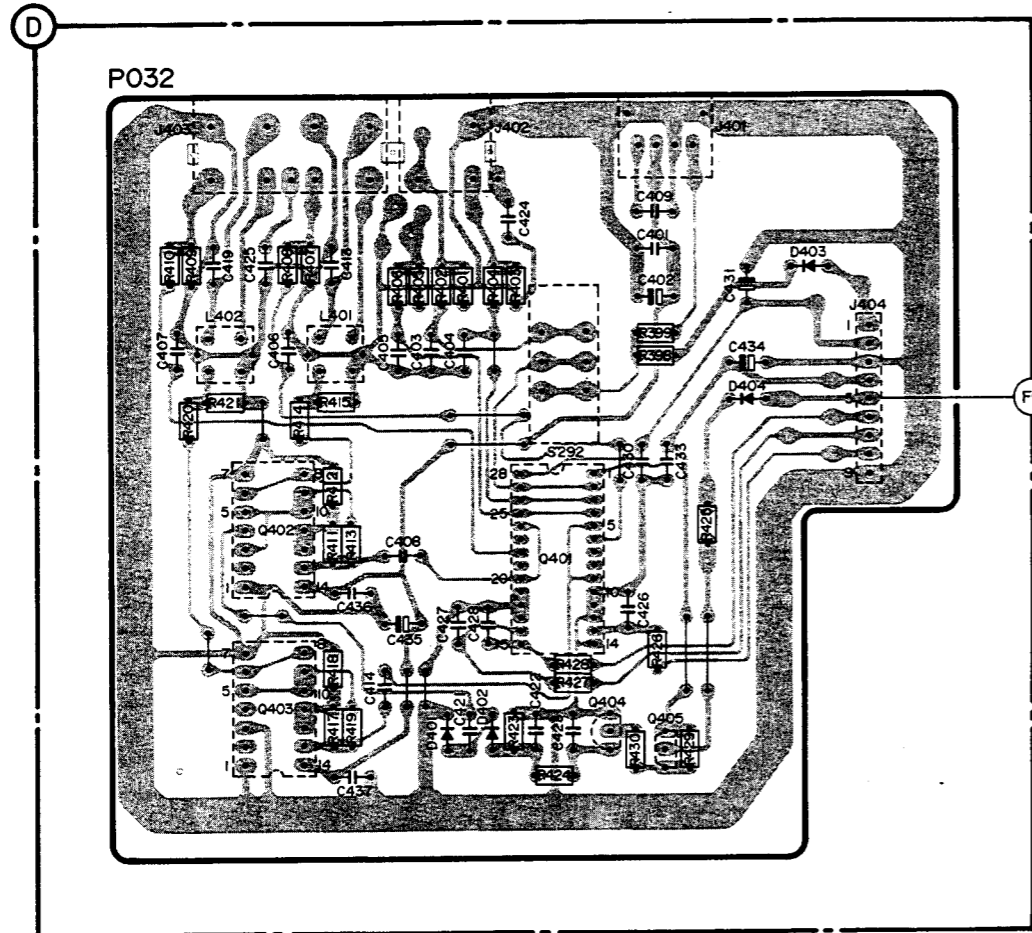


C401 A1	C414 A6	C430 E9	D402 D7	Q402 B7	R404 C2	R415 B8	R428 E7
C402 A2	C419 A9	C431 E9	D403 F9	Q402 C7	R405 D5	R417 B6	R429 C8
C403 C2	C421 C7	C433 D9	D404 C9	Q403 A7	R406 D2	R419 A7	R430 C3
C404 C2	C422 D8	C434 D9	J401 A1	Q404 D8	R407 E2	R420 A8	S292 A2
C405 D2	C423 C8	C435 F9	J402 B1	Q405 C9	R408 D2	R421 A8	
C406 D2	C424 D1	C436 F9	J403 A10	R398 A2	R409 E2	R423 D8	
C407 E2	C425 E1	C437 F8	J403 B10	R399 A2	R410 E2	R424 C8	
C408 E6	C426 E6	D401 D7	L401 B2	R401 C2	R411 C6	R425 C9	
C409 B2	C427 E6		L402 A9	R402 B2	R413 B7	R426 D7	
C413 B9	C428 E7		Q401 B5	R403 C2	R414 B8	R427 D7	

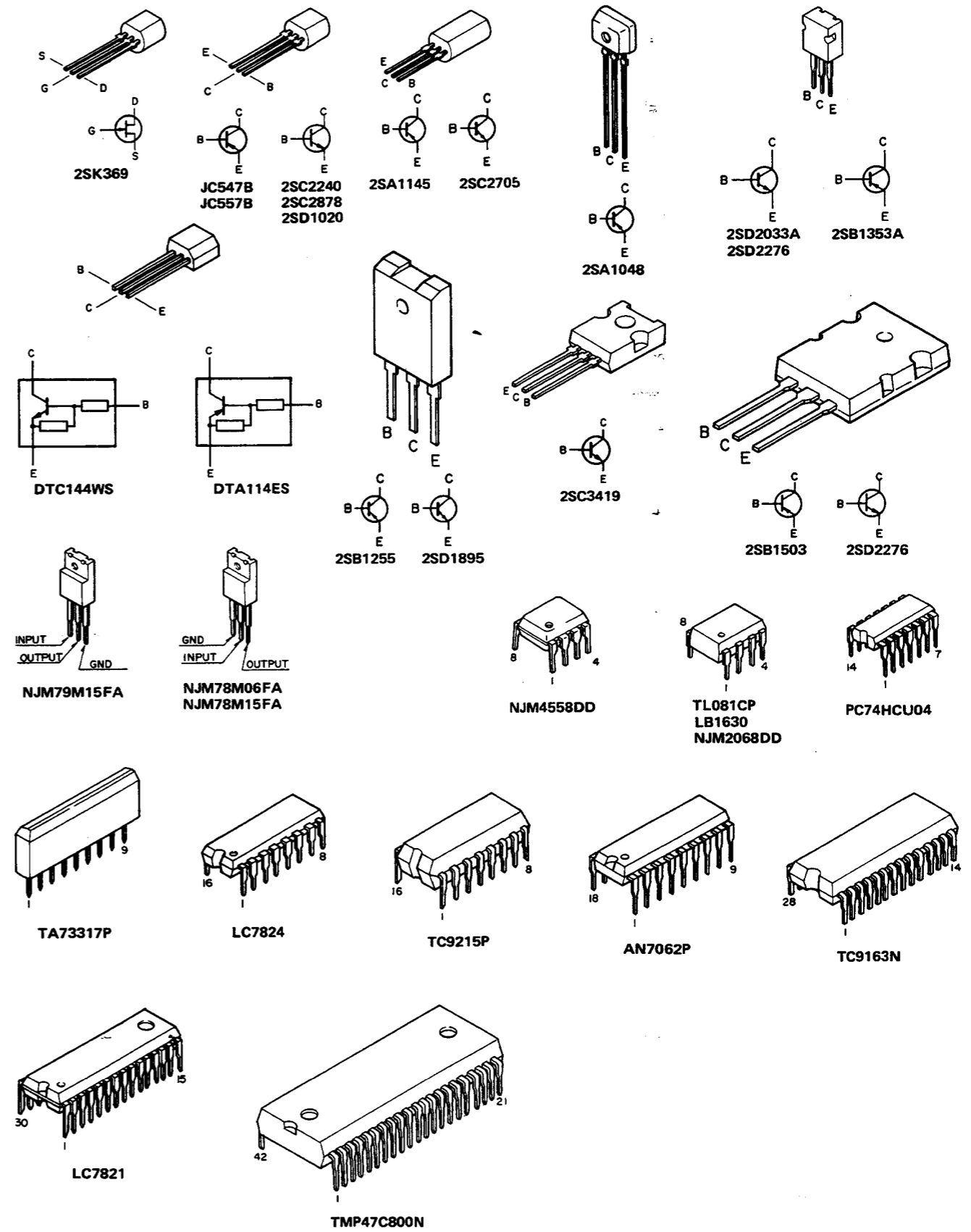


R	R410 R409	R408 R407	R401~R406	R428 R427	R399 R398	R
C	C407	C419 C425 C406	C413 C405 C403 C404	C424	C409 C401 C402 C431 C434	C
D		D401 D402		D404 D403		D
Q	Q402 Q403		Q401 Q404 Q405			Q
L-S	L402 L401		S292			L-S

SOLDER SIDE VIEW

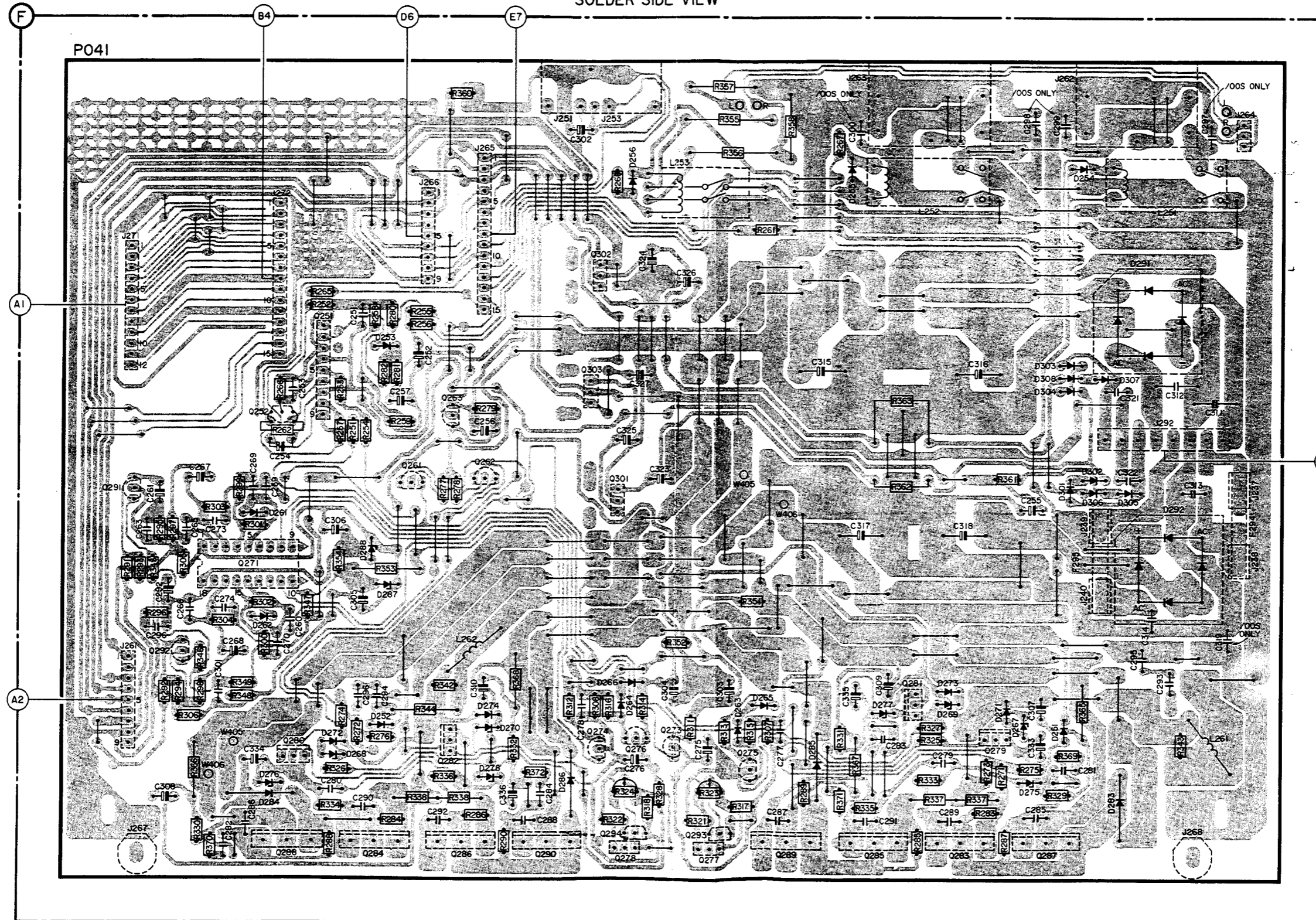


SEMICONDUCTOR LAYOUT

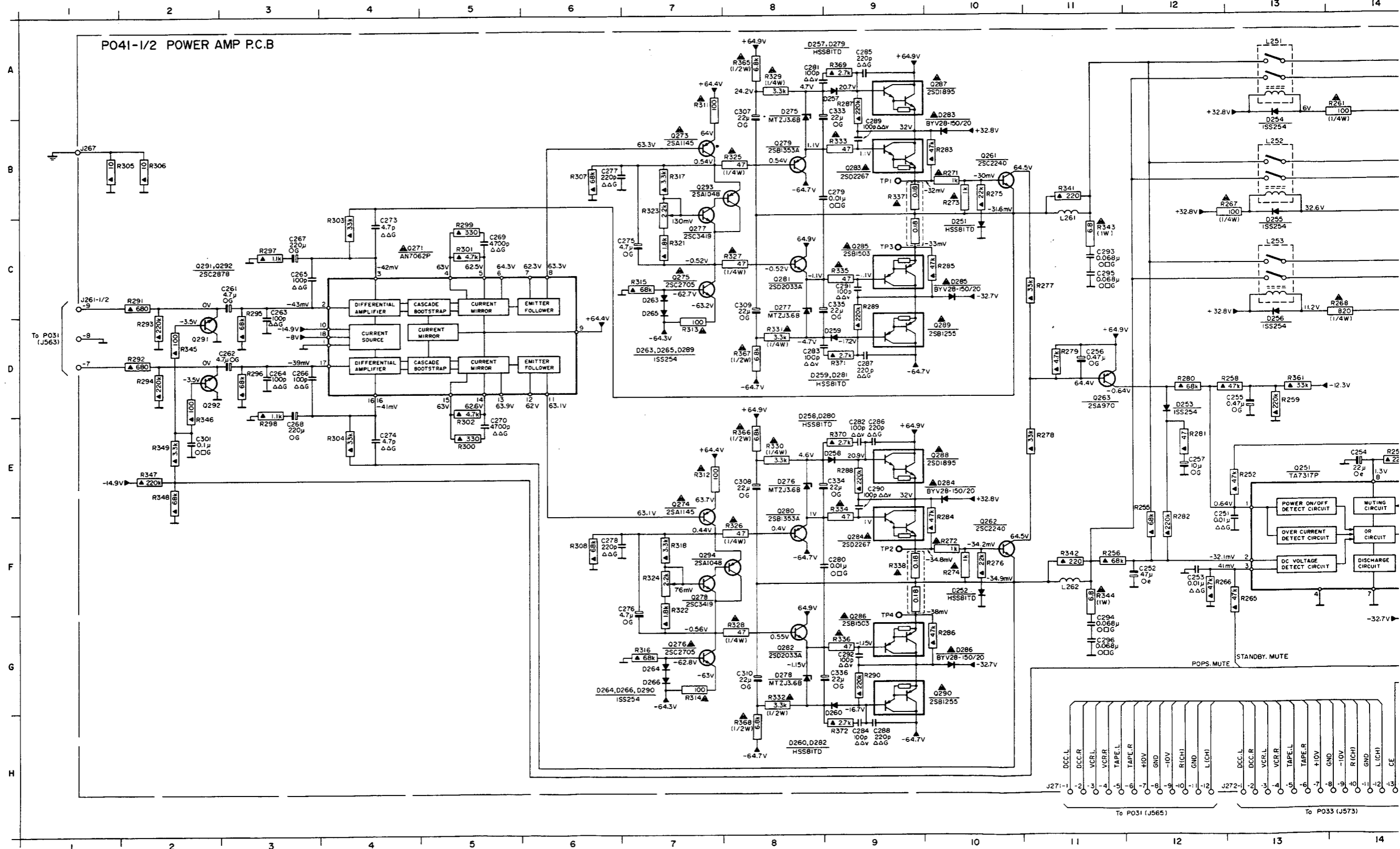


R	R262 R266 R265 R251~R259 R280~R282 R342 R360 R368 R312 R268 R314 R352 R355~R357 R358 R267 R363 R362 R327 R361	R
	R345 R366 R346 R299 R354 R326 R274 R272 R276 R353 R344 R277~R279 R332 R316 R318 R311 R313 R317 R315 R261 R331 R367 R325 R273 R271 R275 R365	
C	C263 C261 C265 C267 C273 C269 C254 C253 C251 C257 C252 C256 C302 C323~C327 C277 C315 C317 C309 C283 C279 C318 C316 C255 C307 C298 C299 C321 C312 C297	C
	C296 C292 C266 C301 C274 C268 C259 C260 C306 C305 C308 C282 C286 C334 C270 C280 C290 C296 C294 C292 C310 C336 C288 C284 C278 C276 C304 C275 C303 C287 C335 C291 C289 C285 C333 C281 C295 C293 C319	
D	D262 D261 D276 D284 D272 D268 D252 D288 D253 D287 D274 D270 D266 D256 D278 D286 D264 D263 D265 D285 D277 D269 D267 D275 D251 D283	D
Q	Q291 Q292 Q271 Q252 Q288 Q280 Q251 Q284 Q261 Q263 Q282 Q286 Q262 Q290 Q301~Q303 Q294 Q273~Q278 Q293 Q289 Q285 Q281 Q283 Q279 Q287	Q
F-L	L262 L253 L252 L295 L251 L261 F294	F-L

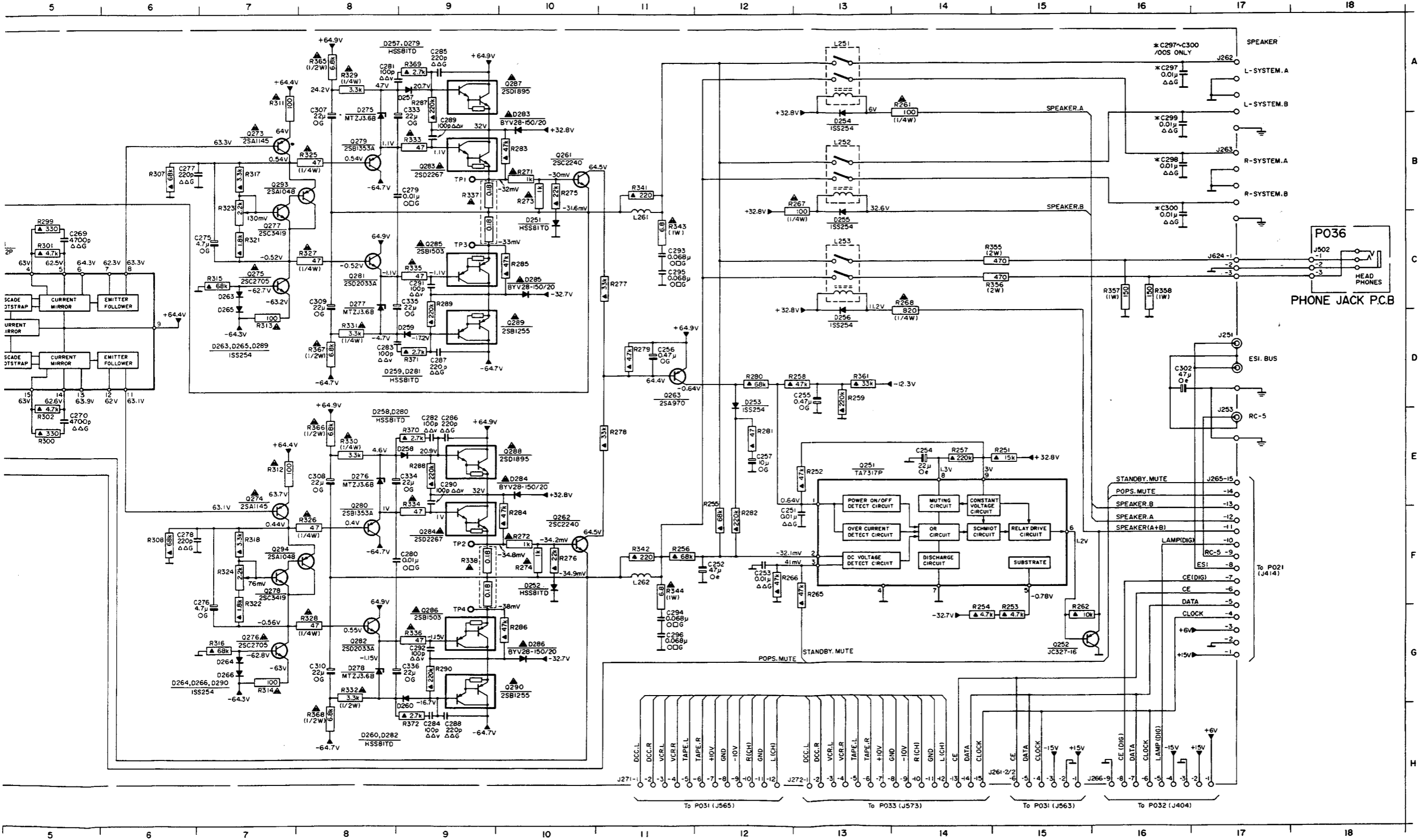
SOLDER SIDE VIEW



C251 F12	C264 D3	C276 G7	C286 E9	C296 G11	C310 G8	D256 D13	D276 E8	L261 C11	Q275 C7	Q285 G9	R251 E15	R262 G15	R276 F10	R286 G10	R296 D3	R306 B2	R318 F7	R330 E8	R342 F11	R357 C16	R372 H9
C252 F12	C265 D3	C277 B6	C287 D9	C297 A16	C311 A9	D257 A9	D277 C8	L262 F11	Q276 G7	Q286 G9	R252 E13	R263 F13	R277 C11	R287 B9	R297 C3	R307 B6	R321 G7	R331 D8	R343 F11	R358 C16	
C253 F12	C266 D3	C278 F6	C288 H9	C298 B16	C312 A9	D258 E9	D278 B8	L263 G15	Q277 C7	Q287 A10	R253 G15	R264 F12	R278 E11	R288 E9	R298 C3	R308 F6	R322 G7	R332 G8	R344 F11	R359 A5	
C254 E14	C267 C3	C279 B9	C289 B9	C299 B16	C313 A9	D259 D9	D279 B10	Q252 G15	Q278 F7	Q288 A10	R254 G14	R265 B13	R279 D11	R289 C9	R299 C9	R309 C9	R311 A7	R323 G7	R333 B9	R345 F11	R360 E8
C255 D13	C268 C3	C280 F9	C290 E9	C300 C16	C314 A9	D260 H9	D284 B10	Q253 G15	Q279 B8	Q289 A10	R255 G14	R266 C14	R280 D10	R290 C9	R301 C9	R312 E7	R324 F7	R334 B9	R346 F11	R361 D13	R373 H9
C256 D11	C269 C3	C281 A8	C291 C9	C301 E2	C315 A9	D261 C7	D285 C10	Q254 G15	Q280 F8	Q290 G10	R256 F11	R267 B14	R281 F12	R291 C2	R302 C2	R313 D7	R325 F7	R335 C9	R347 F11	R362 D8	
C257 E12	C270 C3	C282 E9	C292 C9	C302 D16	C316 A9	D262 C7	D286 C10	Q255 G15	Q281 C8	Q291 D2	R257 E14	R268 F10	R282 F12	R292 D2	R303 C4	R314 G7	R326 F8	R336 G9	R348 F11	R363 E8	
C261 C3	C273 C4	C283 D8	C293 C11	C307 A8	C308 E8	D263 D7	L251 A13	Q271 C4	Q282 G8	Q292 D2	R258 D12	R273 B10	R283 B10	R293 D2	R304 C4	R315 C7	R327 C8	R337 B9	R349 F11	R364 A5	
C262 D3	C274 E4	C284 H9	C294 G11	C308 E8	D254 B13	D264 C7	L252 B13	Q272 B7	Q283 B9	Q293 D2	R259 D12	R274 F10	R284 C10	R294 C2	R305 B2	R316 G7	R328 G8	R338 F9	R350 F11	R365 A5	
C263 C3	C275 C7	C285 A9	C295 C11	C309 C8	D255 C13	D275 A8	L253 C13	Q273 B7	Q284 F9	Q294 D2	R261 A14	R275 B10	R285 C10	R295 C3	R305 B2	R317 B7	R329 A8	R339 F9	R351 F11	R366 D8	

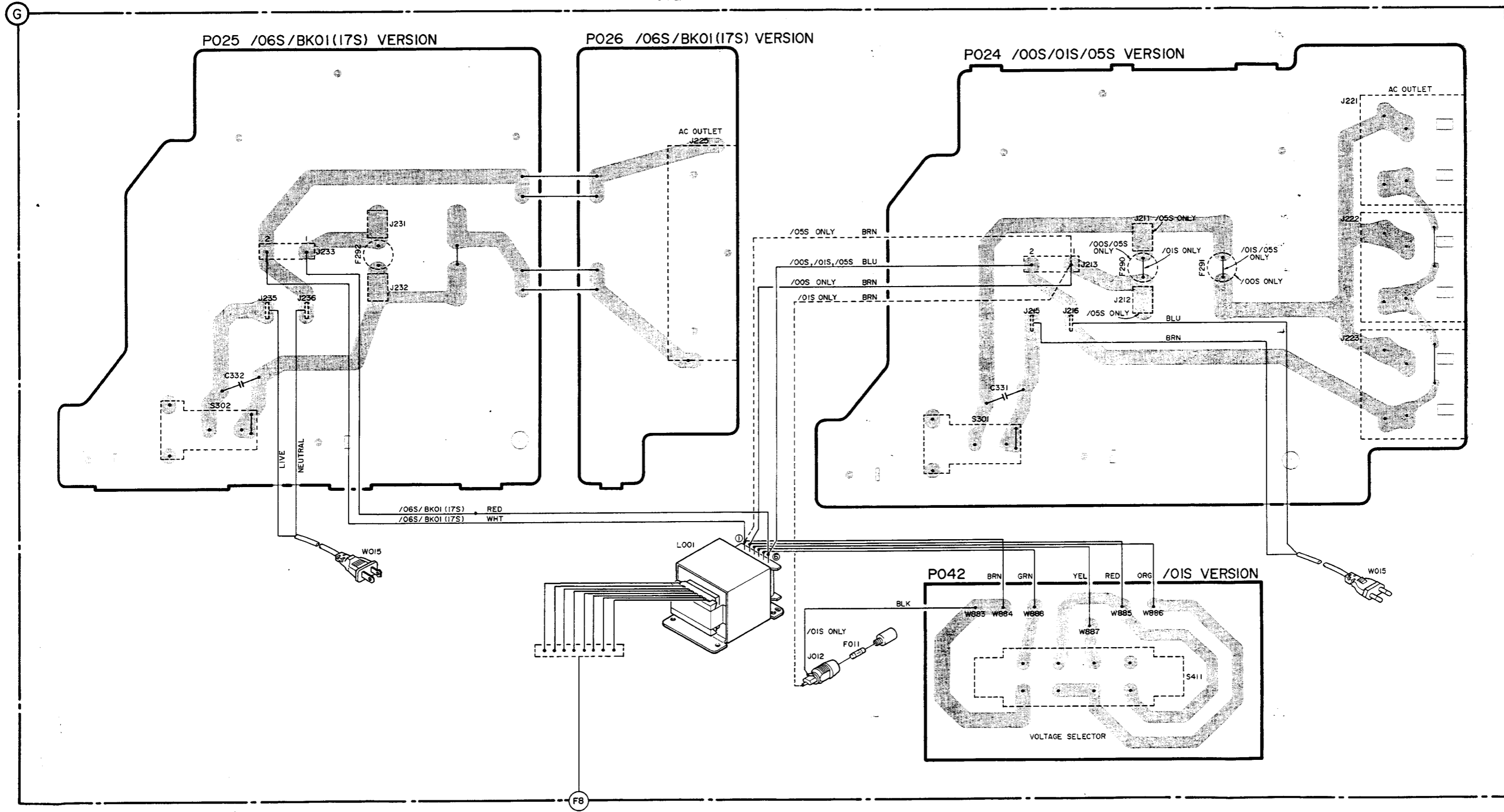


L261 C11	Q275 C7	Q285 C9	R251 E15	R262 G15	R276 F10	R286 G10	R296 D3	R306 B2	R318 F7	R330 E8	R342 F11	R357 C16	R372 H9
L282 F11	Q276 C7	Q286 G9	R252 E13	R265 F13	R277 C11	R287 B9	R297 C3	R307 B6	R321 C7	R331 D8	R343 F11	R358 C16	
Q251 E13	Q277 C7	Q287 A10	R253 G15	R266 F12	R278 E11	R288 E9	R298 E3	R308 F6	R322 G7	R332 G8	R344 F11	R361 D13	
Q252 G15	Q278 F7	Q288 E10	R254 G14	R267 B13	R279 D11	R289 C9	R299 C5	R311 A7	R323 C7	R333 B9	R345 F11	R365 A8	
Q261 F10	Q279 B8	Q289 D10	R256 F11	R268 C14	R280 C13	R290 C9	R300 E5	R312 E7	R324 F7	R334 F9	R346 F11	R366 F9	
Q262 F10	Q280 F8	Q290 G10	R257 F11	R269 B10	R281 E12	R291 C2	R301 E5	R313 D17	R325 B8	R335 C9	R347 F11	R367 D8	
Q263 D11	Q281 C8	Q291 D2	R257 F10	R272 F10	R282 E12	R292 E2	R302 E5	R314 G7	R326 F8	R336 C9	R348 F11	R368 H8	
Q271 C4	Q282 G8	Q292 D2	R258 D12	R273 B10	R283 B10	R293 D2	R303 C4	R315 C7	R327 C8	R337 B9	R349 F11	R369 A9	
Q273 B7	Q283 B9	Q293 B7	R259 D13	R274 F10	R284 F10	R294 D2	R304 F4	R316 G7	R328 C8	R338 F9	R350 F11	R370 E9	
Q274 E7	Q284 F9	Q294 F7	R261 A14	R275 B10	R285 C10	R295 C2	R305 B2	R317 B7	R329 A8	R339 F9	R351 F11	R371 D9	

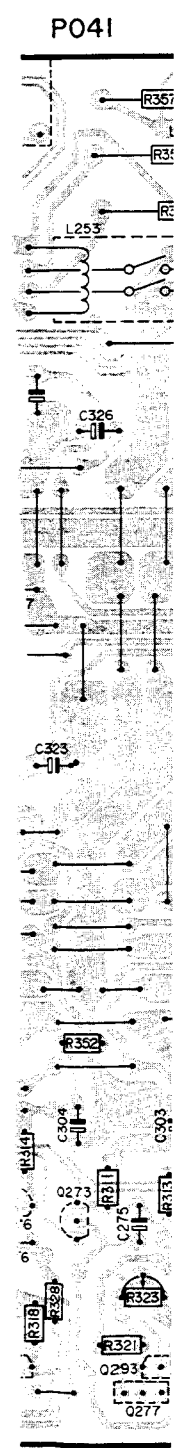


C	C332			C331			C
F-L-S	S302	F292	L001	F011	S301	F290	F-L-S

SOLDER SIDE VIEW



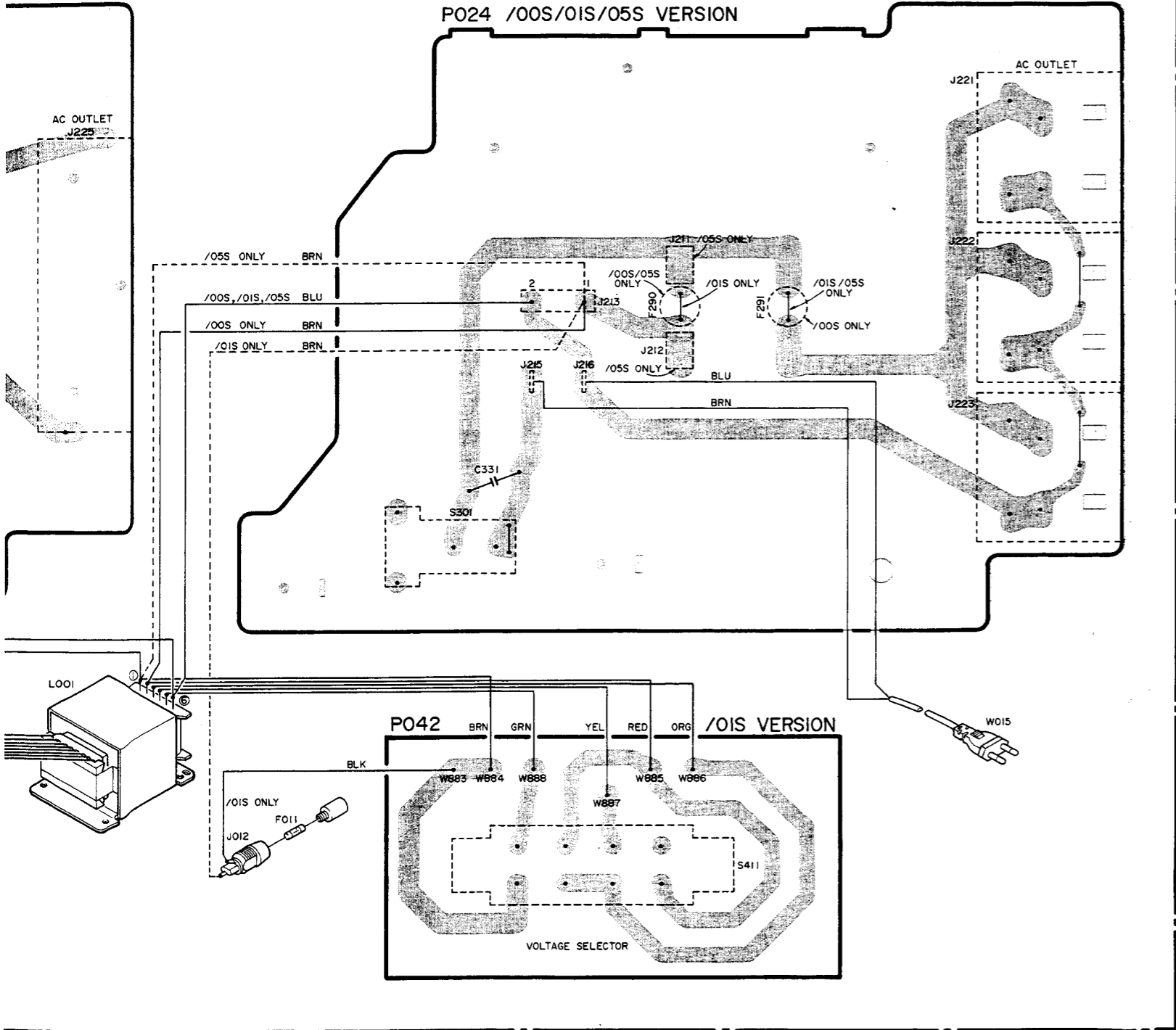
R352	R355~
R311	R313
R328	R321 R323
~C327	
C304	C275 C30
~Q278	Q293
L253	



C331		C
L001	F011	F-L-S
S301	F290	
S411	F291	

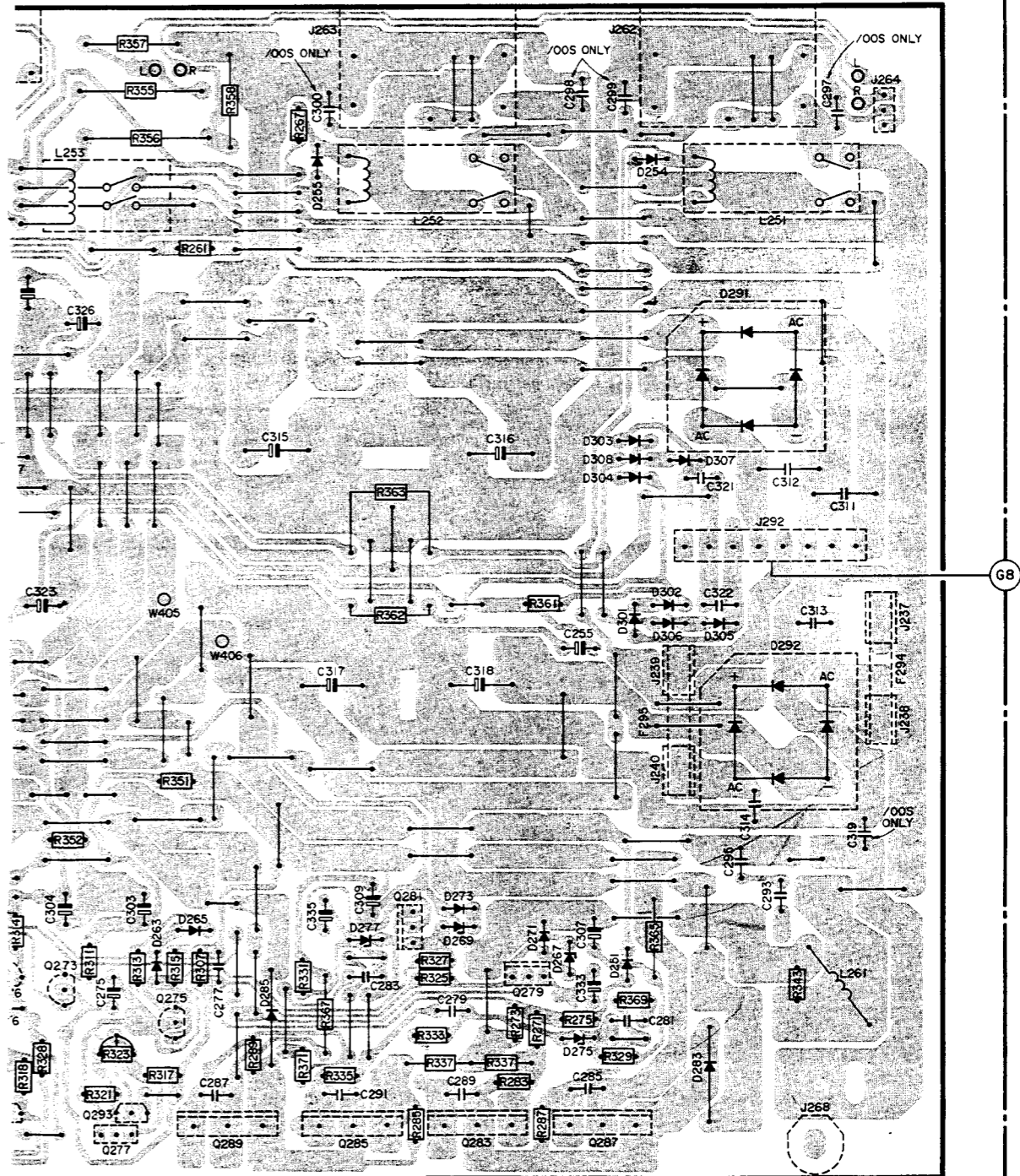
SOLDER SIDE VIEW

06S/BK01 (17S) VERSION

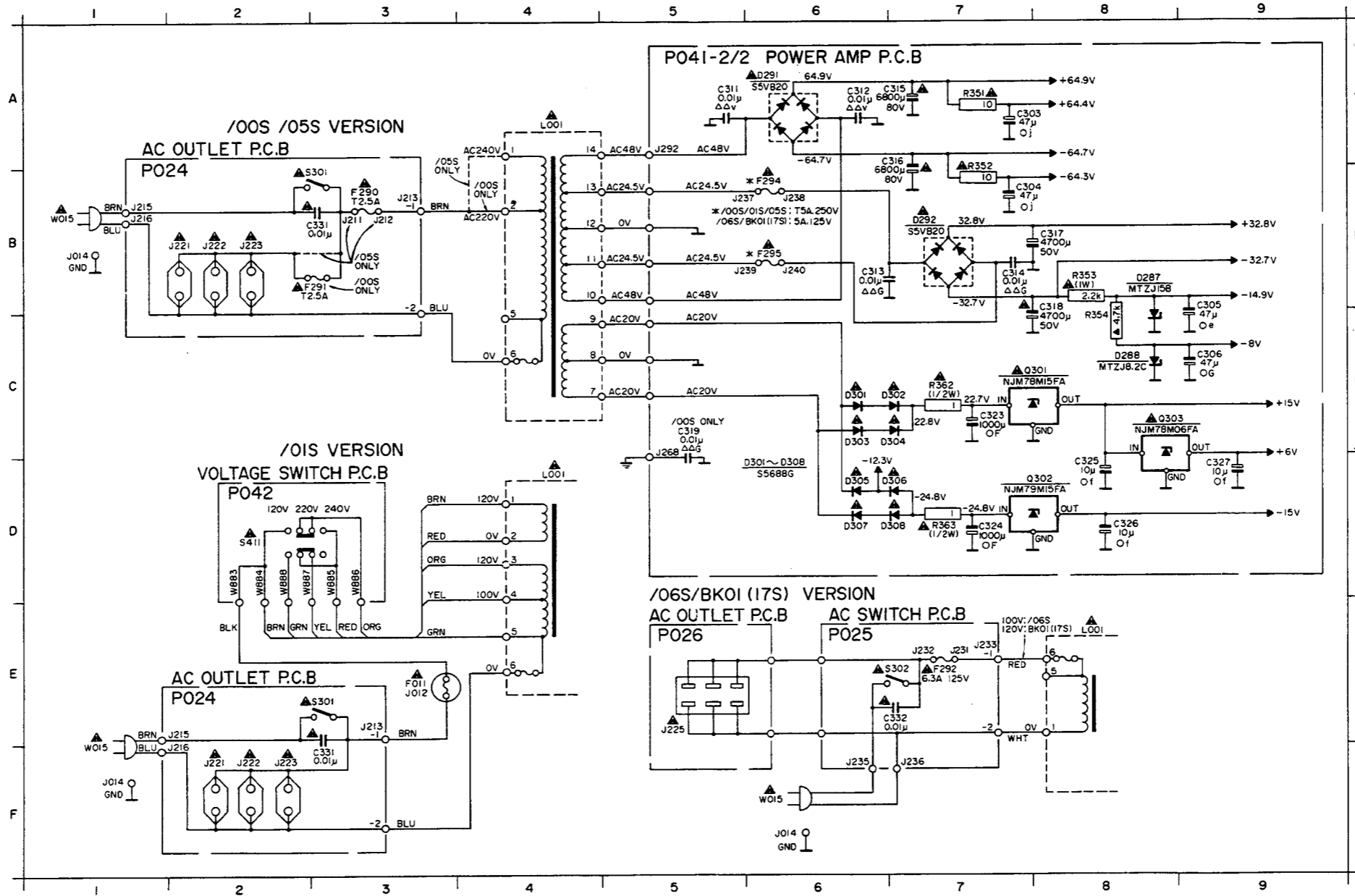


R352	R355~R357	R358	R267	R363	R362	R327	R361	
R311	R313	R317	R315	R261	R331	R367	R325	R273
R271	R275	R365						
R328	R321	R323	R351	R307	R289	R371	R335	R285
R333	R337	R283	R287	R329	R369			R343
~C327			C300	C298	C299	C321	C312	C297
C304	C275	C303	C287	C335	C291	C269	C285	C333
C281	C295	C293	C319					
	D263	D265	D285	D255	D273	D271	D301~D308	D254
	D291	D292						
~Q278	Q293	Q289	Q285	Q281	Q283	Q279	Q287	
L253				L252		F295		L251
								L261
								F294
								F-L

P041



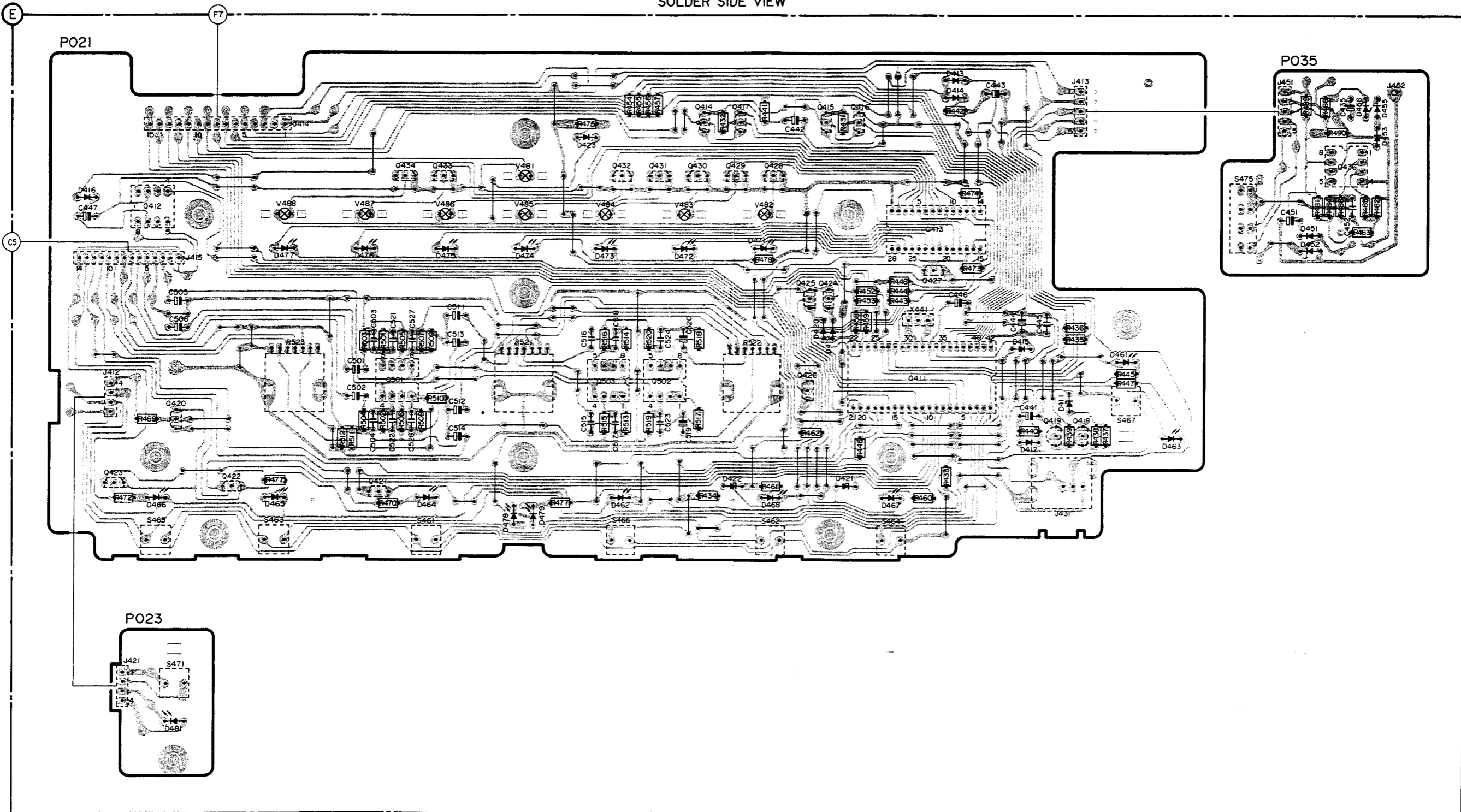
C303 A7	C317 B8	C332 E7	C306 D7	J221 B2	L001 D4	R363 D7	J237 B6
C304 B7	C318 B8	D287 B8	D307 D6	J221 E2	L001 E8	S301 B3	J238 B6
C305 B9	C319 C5	D288 C8	D308 D7	J222 B2	Q301 C7	S301 E3	J239 B6
C306 C9	C323 C7	D291 A6	F011 E3	J222 F2	Q302 D7	S302 E6	J240 B6
C311 A5	C324 D7	D292 B7	F290 B5	J223 B2	Q303 C8	S411 D2	
C312 A6	C325 D8	D301 C6	F291 B5	J223 F2	R351 A7	W015 B1	
C315 B6	C326 D8	D302 C7	F292 E7	J225 E6	R352 B7	W015 E1	
C314 B7	C327 D9	D303 C6	F294 B6	J231 E7	R353 B8	W015 F6	
C315 A7	C331 B3	D304 C7	F295 B6	J232 E7	R354 C9	J211 B3	
C316 A7	C331 E7	D305 D6	J012 E5	L001 A4	R362 C7	J212 B3	



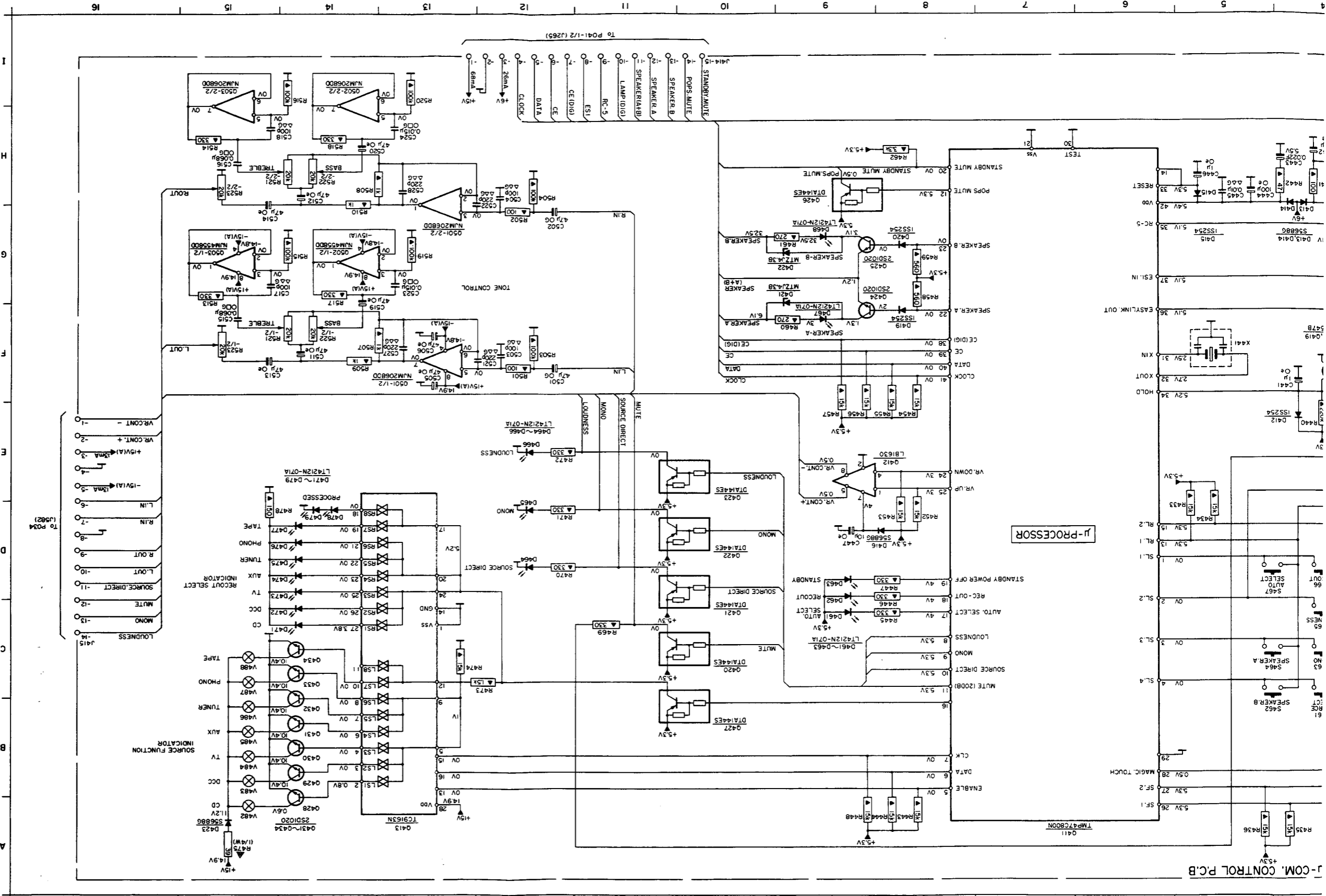


R	R469	R523	R503 R501 R505~R510	R521	R475 R516 R514 R454~R457 R520 R518 R432 R441 R478	R431 R452 R453 R448 R444 R443 R442 R474	R436 R435	R445 R447	R489 R488 R490	R						
C	C447	C505	C501~C504 C521 C527 C511~C514	C522 C528	C515~C518 C524 C520	C442	C443	C444 C441 C445	C451 C452	C						
D	D416	D477	D476	D475	D474	D423 D473	D472	D471	D420 D419	D413 D414	D415	D461	D451 D452	D456 D455	D453	D
Q	Q412 Q420	Q422	Q421 Q501 Q434 Q433	Q432 Q431 Q430 Q414 Q429 Q417 Q428 Q424~Q426 Q415 Q416	Q411 Q427 Q413	Q419 Q418	Q436	Q								
S-V-X	S465 S471	S463 V488	V487	S461 V486	V481 V485	V484 S466	V483	V482 S462	S464 X441	S467	S475	S-V-X				

SOLDER SIDE VIEW

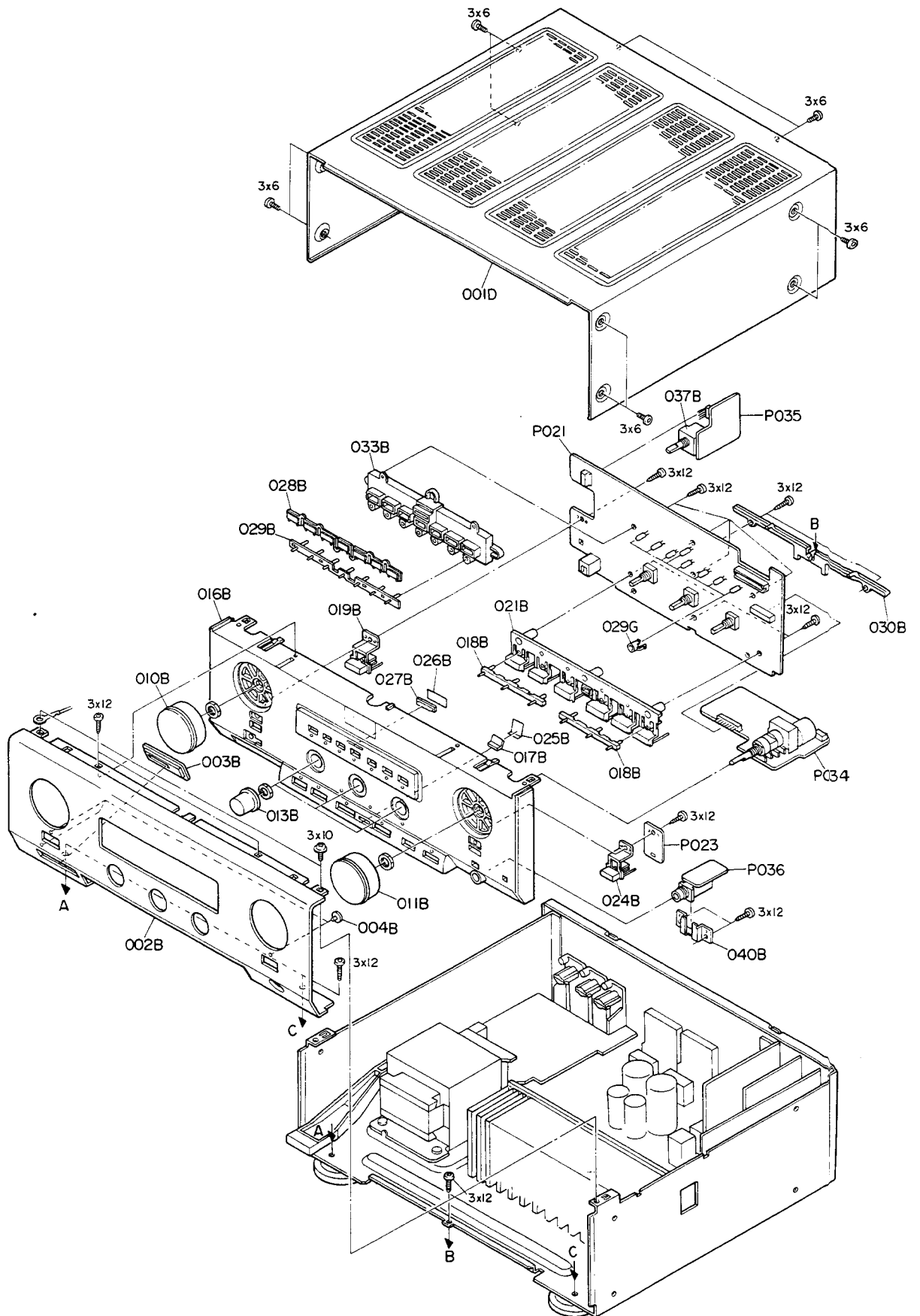


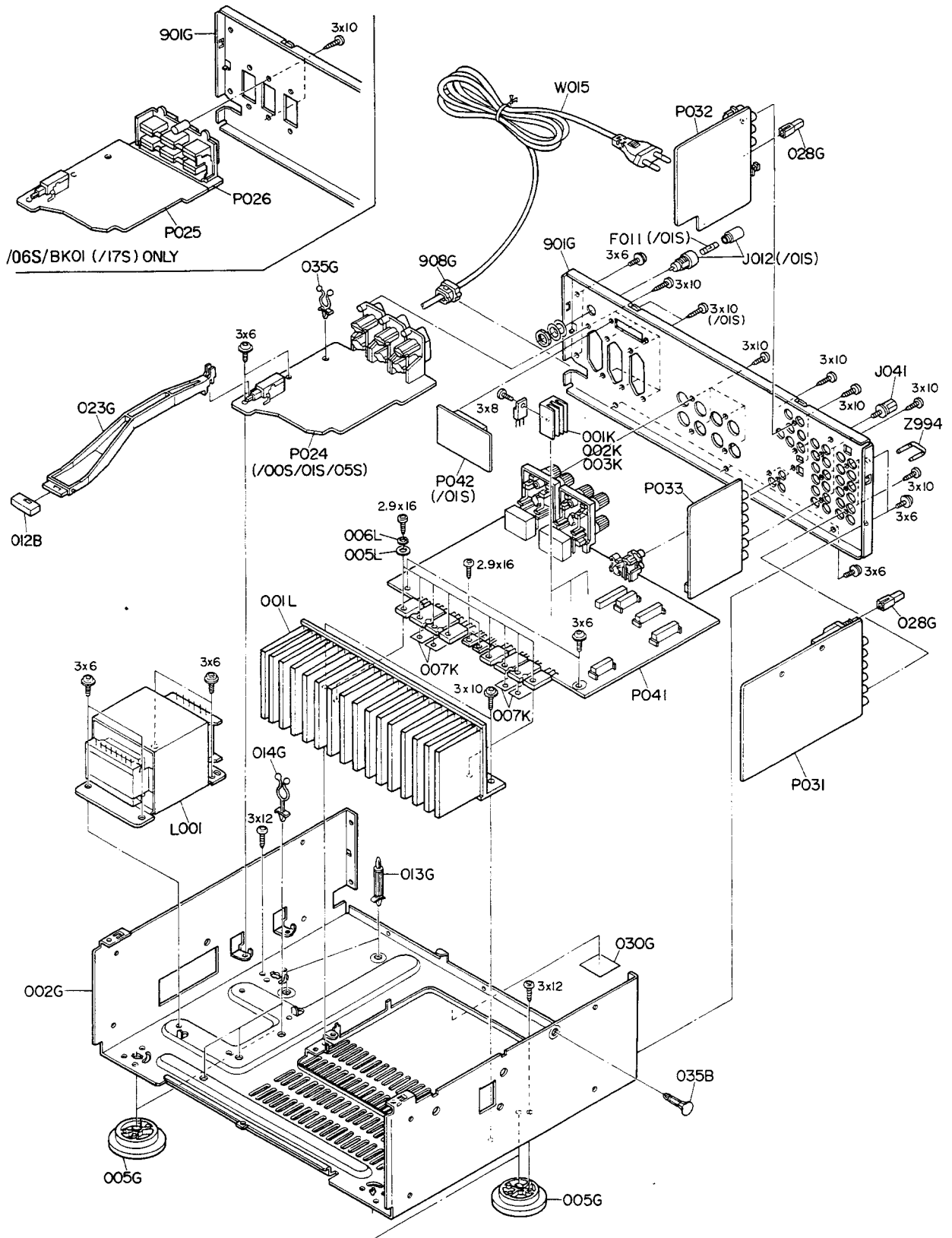



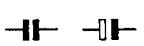




0414	G2	0424	G8	R433	O5
0415	F2	0425	G8	R434	O5
0416	F2	0426	G8	R435	E9
0417	H3	0427	B10	R436	E9
0418	F4	0428	A14	R437	F9
0419	F4	0429	B14	R438	F9
0420	C10	0430	G15	R439	F4
0421	O10	0431	L15	R440	E4
0422	O10	0432	B14	R441	H4
0423	E10	0433	G4	R442	H4
0424	G2	0434	C14	R443	O5
0425	G8	0435	L15	R444	F4
0426	G8	0436	G14	R445	F4
0427	B10	0437	A14	R446	B2
0428	A14	0438	F14	R447	B2
0429	B14	0439	G15	R448	B2
0430	G15	0440	F4	R449	B2
0431	L15	0441	H4	R450	H14
0432	B14	0442	H4	R501	F15
0433	G4	0443	C14	R502	F15
0434	C14	0444	O5	R503	F15
0435	L15	0445	F4	R504	F14
0436	G14	0446	F4	R505	H14
0437	A14	0447	B8	R506	H14
0438	H9	0448	F9	R507	H14
0439	H9	0449	F9	R508	H14
0440	F4	0450	G15	R509	F14
0441	F4	0451	L15	R510	F14
0442	H4	0452	B14	R511	F15
0443	O5	0453	L15	R512	F15
0444	O5	0454	F4	R513	F15
0445	O5	0455	G8	R514	F15
0446	O5	0456	G8	R515	F15
0447	O5	0457	B10	R516	F14
0448	H9	0458	H9	R517	G14
0449	H9	0459	H9	R518	G14
0450	F4	0460	F9	R519	G14
0451	F13	0461	A15	R520	F15
0452	F13	0462	C12	R521	F15
0453	O5	0463	O12	R522	F15
0454	O5	0464	E12	R523	F15
0455	E9	0465	E12	R524	F15
0456	E9	0466	D12	R525	F15
0457	E9	0467	D12	R526	F15
0458	E8	0468	H8	R527	F15
0459	E8	0469	H8	R528	F15
0460	D8	0470	D12	R529	F15
0461	D8	0471	D12	R530	F15
0462	D8	0472	D12	R531	F15
0463	C8	0473	C12	R532	F15
0464	C8	0474	C12	R533	F15
0465	C8	0475	A15	R534	F15
0466	C8	0476	A15	R535	F15
0467	C8	0477	A15	R536	F15
0468	C8	0478	D15	R537	F15
0469	C8	0479	D15	R538	F15
0470	D12	0480	H14	R539	F14
0471	D12	0481	H14	R540	F14
0472	E12	0482	H14	R541	F14
0473	E12	0483	H14	R542	F14
0474	E12	0484	H14	R543	F14
0475	A15	0485	H14	R544	F14
0476	A15	0486	H14	R545	F14
0477	A15	0487	H14	R546	F14
0478	D15	0488	H14	R547	F15
0479	D15	0489	H14	R548	F15
0480	H14	0490	F14	R549	F15
0481	H14	0491	F14	R550	F15
0482	H14	0492	F14	R551	F15
0483	H14	0493	F14	R552	F15
0484	H14	0494	F14	R553	F15
0485	H14	0495	F14	R554	F15
0486	H14	0496	F14	R555	F15
0487	H14	0497	F14	R556	F15
0488	H14	0498	F14	R557	F15
0489	H14	0499	F14	R558	F15
0490	F14	0500	F14	R559	F15

EXPLODED VIEW AND PARTS LIST







			
Q251	4822 209 83312	TA7317P	C315, C316 4822 124 80234 Cap. elect 6800 μF 80V
Q271	4822 209 83732	AN7062P	C317, C318 4822 124 41603 Cap. elect 4700 μF 50V
Q301	4822 209 82829	NJM78M15FA	C443 4822 124 23295 Cap. big elect 0.022 μF 5.5V
Q302	4822 209 61526	NJM79M15FA	C557, C558 4822 124 22279 Cap. big elect. 510 μF 10V
Q303	4822 209 62423	NJM78M06FA	C569, C570 4822 124 22278 Cap. big elect. 51 μF 10V
Q401	4822 209 83784	IC9163N	
Q402, Q403	4822 209 31539	PC74HCU04	
Q411	4822 209 31541	TMP47C800N	
Q412	4822 209 73287	LB1630	
Q413	4822 209 83784	TC9163N	
Q436	5322 130 42216	TL081CP	
Q501	4822 209 73064	NJM2068DD	
Q502, Q503	4822 209 83631	NJM4558DD	
Q511	4822 209 73064	NJM2068DD	
Q512, Q513	4822 209 62784	TC9215P	
Q555	4822 209 73064	NJM2068DD	
Q561, Q562	4822 209 72748	LC7821	
Q563	4822 209 31538	LC7824	
			
L251, L252	4822 280 70354	Relay speaker	S292 4822 276 20519 OPT/COAX
L253	4822 280 20196	Relay phone	S301 4822 276 13285 Power /00S/01S/05S
L261, L262	4822 157 63085	Air coil SPK	S302 4822 276 13285 Power BK01
L401, L402	4822 148 81268	Pulse transformer 100 μH	S461÷S467 4822 276 13213 Functions
L551, L552	4822 156 11019	Choke coil 320 μH /00S	S471 4822 276 13213 Mute
			S475 4822 273 20368 Source Select
			S551 4822 276 20468 MM/MC
			<b>MISCELLANEOUS</b>
			F290 4822 253 30396 Fuse 2.5A 250V /00S
			F290 4822 253 30398 Fuse 2.5A 250V /05S
			F291 4822 253 30396 Fuse 2.5A 250V /00S
			F292 4822 253 30399 Fuse 6.3A 125V BK01
			F294 4822 253 30397 Fuse 5A 250V /00S/01S/05S
			F294 4822 253 30335 Fuse 5A 125V BK01
			F295 4822 253 30397 Fuse 5A 250V /00S/01S/05S
			F295 4822 253 30335 Fuse 5A 125V BK01
			J211 4822 256 30329 Jack fuse clip /05S
			J212 4822 267 30978 Jack fuse clip /05S
			J221÷J223 4822 267 31194 Jack AC Outlet /00S/01S
			J221÷J223 4822 265 20588 Jack AC Outlet /05S
			J225 4822 265 20589 Jack AC Outlet BK01
			J231 4822 256 30329 Jack fuse clip BK01
			J232 4822 267 30978 Jack fuse clip BK01
			J237 4822 256 30329 Jack fuse clip
			J238 4822 267 30978 Jack fuse clip
			J239 4822 256 30329 Jack fuse clip
			J240 4822 267 30978 Jack fuse clip
			J262, J263 4822 290 81517 Terminal SPK /00S/01S/05S
			J262, J263 4822 290 81518 Terminal SPK BK01
			J431 4822 130 81254 Photo unit (PIU520X
			J501 4822 265 20555 Jack headphone
			J571 4822 265 20558 Terminal RCA pin 4P
			V481÷488 4822 134 41116 Lamp 75 mA 12V
			X441 4822 242 73696 Ceramic resonator, 8.00 MHz
R261, R267	4822 115 90167	Res. fuse 100E 1/4W	
R268	4822 116 83919	Res. fuse 820E 1/4W	
R271÷R274	4822 052 10102	Res. 1K 1/6W	
R311÷R314	4822 052 10102	Res. 1K 1/6W	
R323, R324	4822 100 20681	Res. trimmer 2.2k (B)	
R325÷R328	4822 115 90167	Res. fuse 100E 1/4W	
R329÷R332	4822 050 23322	Res. 3.3k 1/4W	
R333÷R336	4822 052 10479	Res. 47E 1/6W	
R337, R338	4822 116 82049	Res. 0.18E 3W	
R343, R344	4822 053 10688	Res. 6.8E 1W	
R351, R352	4822 052 10109	Res. 10E 1/6W	
R353	4822 053 10222	Res. 2.2k 1W	
R355, R356	4822 053 11471	Res. 470E 2W	
R357, R358	4822 053 10151	Res. 150E 1W	
R362, R363	4822 050 21108	Res. 1E 1/2W	
R365÷R368	4822 116 83918	Res. 6.8k 1/2W	
R425, R475	4822 116 90241	Res. fusible 390E 1/4W	
R489	4822 050 24701	Res. 4700E 1/4W	
R521	4822 101 30794	Potm. treble 20k	
R522	4822 101 30794	Potm. bass 20k	
R523	4822 101 30795	Potm. bal. 20k	
R546	4822 101 30796	Potm. volume 50k/5k	
R577÷R580	4822 050 22212	Res. 2.21k 1/6W	
R603, R604	4822 113 90141	Res. fuse 220E 1/4W	

ELECTRICAL PARTS LIST

002B	4822 218 10468	Front panel
003B	4822 381 11347	Lens, sensor
004B	4822 381 11346	Lens, ESI/PWR/MUT
010B	4822 413 41727	Knob, source select
011B	4822 413 41728	Knob, volume
012B	4822 462 71808	Cap, power button
013B	4822 413 41729	Knob, B/T/BAL
016B	4822 464 90746	Chassis, front
017B	4822 381 11348	Lens, process
018B	4822 381 11344	Lens, function
019B	4822 410 62051	Button, auto select
021B	4822 410 62049	Button, function
024B	4822 410 62051	Button, muting
027B	4822 381 11342	Lens, digital
028B	4822 381 11343	Lens, function lamp
029B	4822 381 11345	Lens, function LED
005G	4822 462 41888	Leg
013G	4822 466 93075	Support
023G	4822 404 60747	Link, power
028G	4822 412 20506	Knob, phono
908G	4822 532 60948	Bushing, AC cord
F011	4822 253 30398	Fuse, T2.5A 250V /01S
J012	4822 256 30233	Jack, fuse holder /01S
L001	4822 146 21678	Power transformer /00S/05S
	4822 146 21679	Power transformer /01S
	4822 146 21681	Power transformer BK01
001T	4822 736 21465	User manual /00S/01S/05S
	4822 736 21466	User manual BK01

			
Q261, Q262	4822 130 43233	2SC2240	
Q263	4822 130 42951	2SA970	
Q273, Q274	4822 130 42999	2SA1145	
Q275, Q276	4822 130 43283	2SC2705	
Q277, Q278	4822 130 60117	2SC3419(Y)	
Q279, Q280	4822 130 62334	2SB1353A(E)	
Q281, Q282	4822 130 62335	2SD2033A(E)	
Q283, Q284	4822 130 62738	2SD2276	
Q285, Q286	4822 130 62737	2SB1503	
Q287, Q288	4822 130 62954	2SD1895	
Q289, Q290	4822 130 63089	2SB1255	
Q291, Q292	4822 130 43819	2SC2878(B)	
Q293, Q294	4822 130 60107	2SA1048(Y)	
Q404	4822 130 62386	JC557B	
Q405	4822 130 63091	2SD1020(F)	
Q414, Q415	4822 130 42682	DTA144ES	
Q416, Q417	4822 130 62797	DTC144WS	
Q418, Q419	4822 130 62295	JC547B	
Q420÷Q423	4822 130 42682	DTA144ES	
Q424÷Q425	4822 130 63091	2SD1020(F)	
Q426, Q427	4822 130 42682	DTA144ES	
Q428÷Q434	4822 130 63091	2SD1020(F)	
Q551÷Q554	4822 130 42839	2SK369BL	
			
D251, D252	4822 130 80837	HSS81	
D253÷D256	4822 130 33305	1SS176 (MA165, 1SS254)	
D263÷D266	4822 130 33305	1SS176 (MA165, 1SS254)	
D267÷D270	4822 130 80317	MTZJ5.1B	
D271÷D274	4822 130 33305	1SS176 (MA165, 1SS254)	
D275÷D278	4822 130 80316	MTZJ3.6A	
D279÷D282	4822 130 80837	HSS81	
D283÷D286	4822 130 83095	BYV28	
D287	4822 130 80322	MTZJ15B	
D288	4822 130 80273	MTZJ8.2C	
D291, D292	4822 130 30984	S5VB20	
D301÷D308	4822 130 80839	S5688G	
D401, D402	4822 130 33305	1SS176(MA165, 1SS254)	
D403, D404	4822 130 80839	S5688G	
D411	4822 130 31554	MTZJ4.3B	
D412	4822 130 33305	1SS176 (MA165, 1SS254)	
D413, D414	4822 130 80839	S5688G	
D415	4822 130 33305	1SS176 (MA165, 1SS254)	
D416	4822 130 80839	S5688G	
D419, D420	4822 130 33305	1SS176 (MA165, 1SS254)	
D421, D422	4822 130 31554	MTZJ4.3B	
D423	4822 130 80839	S5688G	
D451, D452	4822 130 80837	HSS81	
D453, D455	4822 130 33305	1SS176 (MA165, 1SS254)	
D456	4822 130 33305	1SS176 (MA165, 1SS254)	
D461÷D468	4822 130 82978	L.E.D. LTL-4212N-071A	
D471÷D479	4822 130 82978	L.E.D. LTL-4212N-071A	
D481	4822 130 82978	L.E.D. LTL-4212N-071A	
D561÷D564	4822 130 80319	MTZJ9.1C	