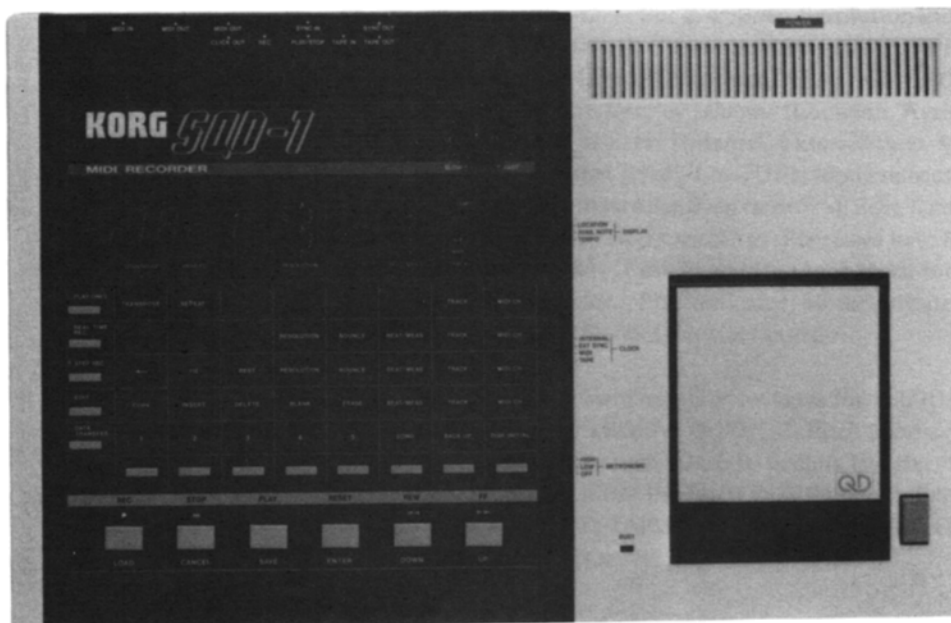


MIDI RECORDER

SQD-1



SERVICE MANUAL

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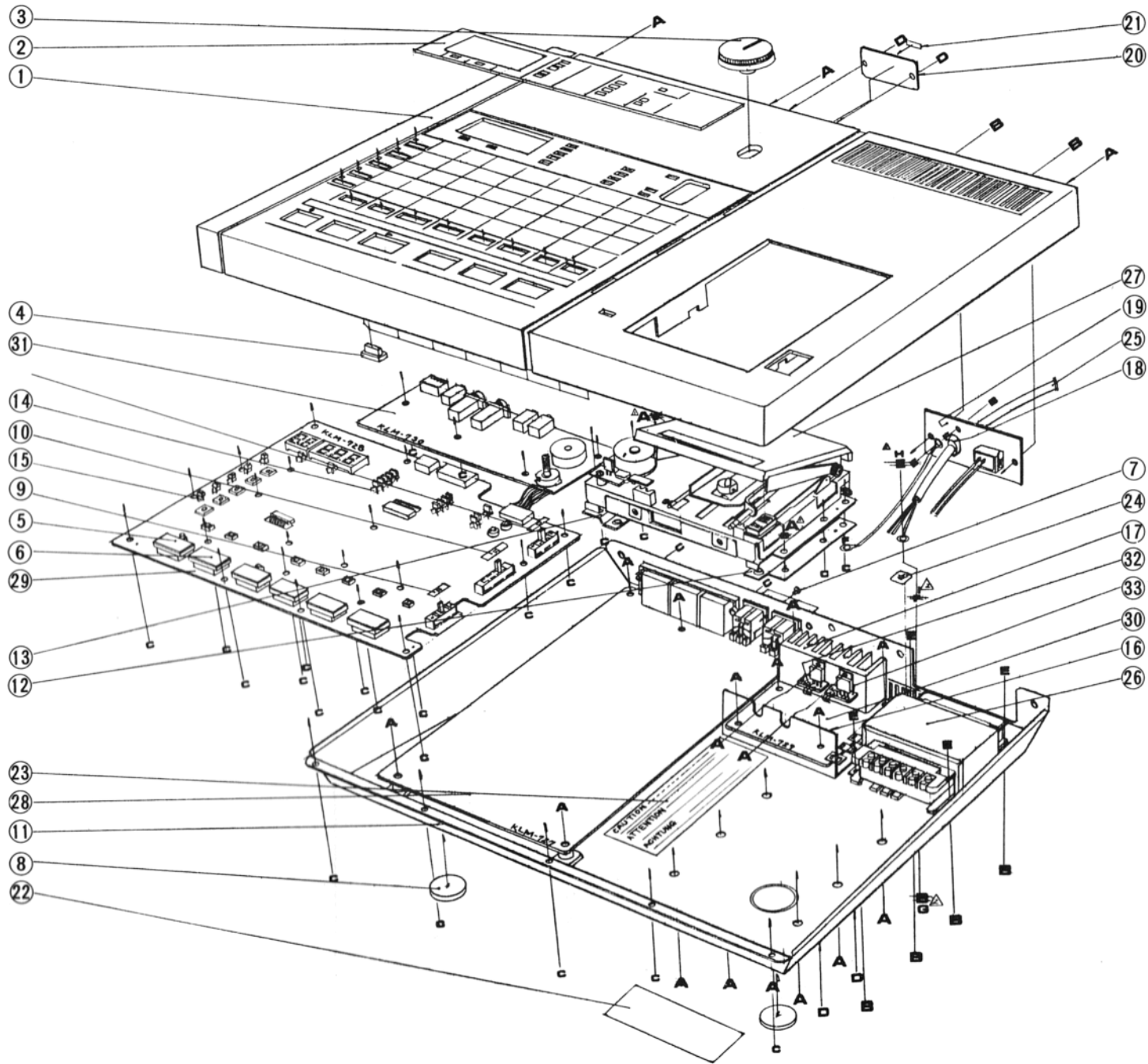
KEIO ELECTRONIC LABORATORY CORPORATION
TOKYO/JAPAN

1. SPECIFICATIONS

- Memory capacity About 15,000 notes (about 7,500 notes when velocity is recorded).
- Quick disk storage capacity 30,000 notes or more (using both sides).
- Recording tracks 2-Track system (Main track has multi-channel recording capability).
- Recording methods Real time, Step.
- Control panel 5-column LED display; Track indicator (MAIN SUB); Beats/measure indicator (2~5: 2/4~8/4); Resolution indicator (♩, ♪, ♫, ♮, HIGH); Repeat indicator (ON, OFF); Transpose indicator (ON, OFF); Tempo control (♩ =35~230, adjustable); Tempo indicator; Display selector (Location, Available notes, Tempo); Clock selector (Internal, External sync, MIDI Tape); Metronome switch (High, Low, Off); Mode selector keys (Play only, Real time recording, Step recording, Edit, Data transfer); Record/load key; Stop/cancel key; Play/save key; Reset/enter key; Rewind/down key; Fast-forward/up key; Multi-function keys x 8; Recording indicator; Play indicator; Mode indicator; Quick Disk Busy indicator; Quick Disk eject button.
- Rear panel MIDI Function switches (DIP switches for 1. MIDI out: Mix/internal; 2. Key velocity: On/Off; 3. Pitch bend control change: On/Off; 4. After-touch: On/Off; 5. Data transfer: Disk/MIDI). Connectors for MIDI IN; MIDI OUT/MIX x 2; DIN SYNC IN; DIN SYNC OUT; TAPE SYNC IN; TAPE SYNC OUT; CLICK OUT; PLAY/STOP; REC.
- Dimensions 403(W) x 74(H) x 260(D) mm.
- Weight 3.6 kg.
- Power consumption 20W.
- Supplied accessories Sync/midi cables x 2; Quick Disks x 5.
- Optional Accessories PS-1 Pedal switch; S-2 Dual foot switch; QD-10 Quick Disk 10-pack; MIDI cables (7m, 10m, 12m); SYNC/MIDI cables (1.5m, 3m, 5m); Mini plug cord; Mini connection plug; HC-1 Hard case.

* Specifications and design are subject to change without notice for improvement.

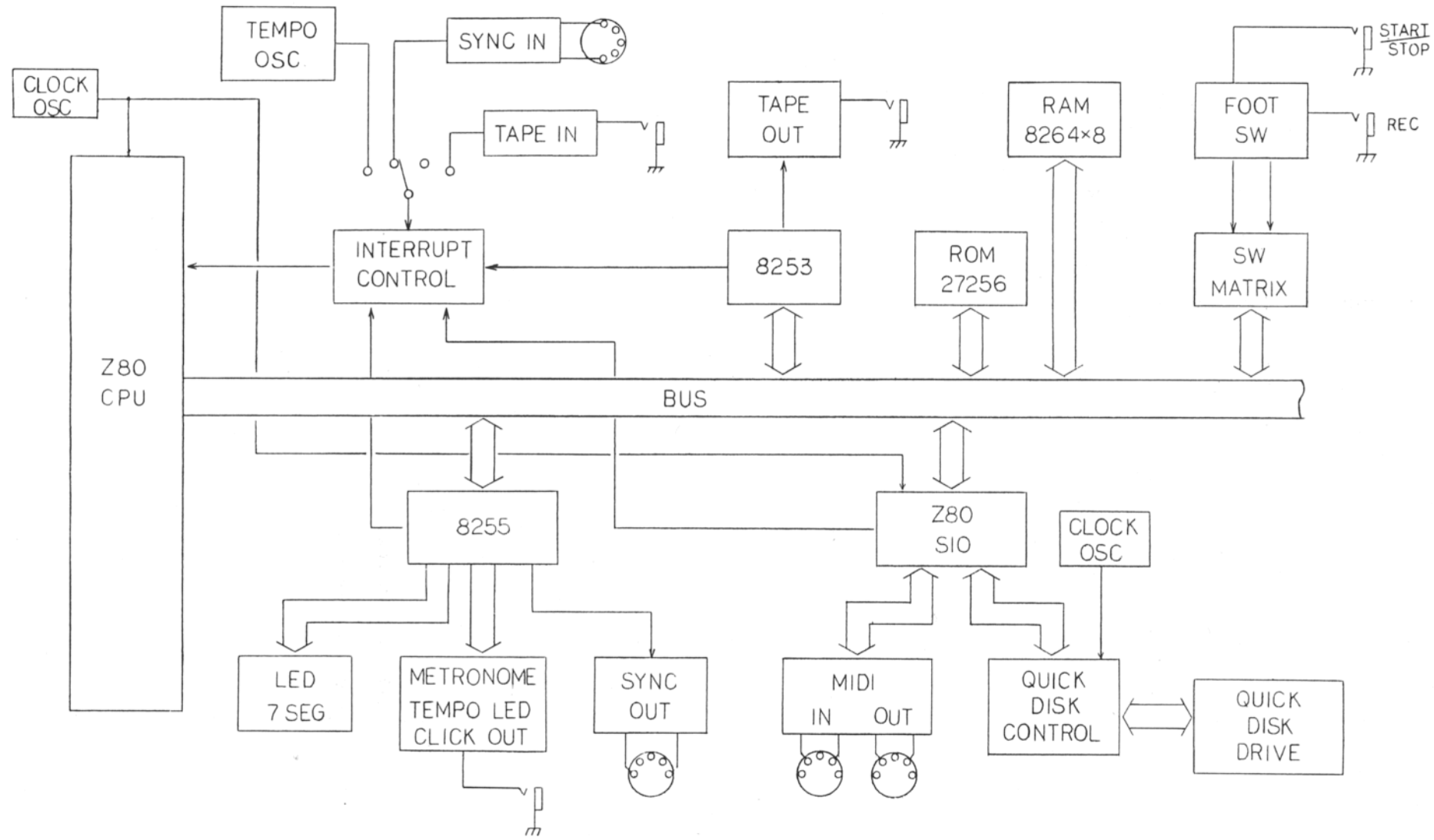
2. STRUCTURAL DIAGRAM



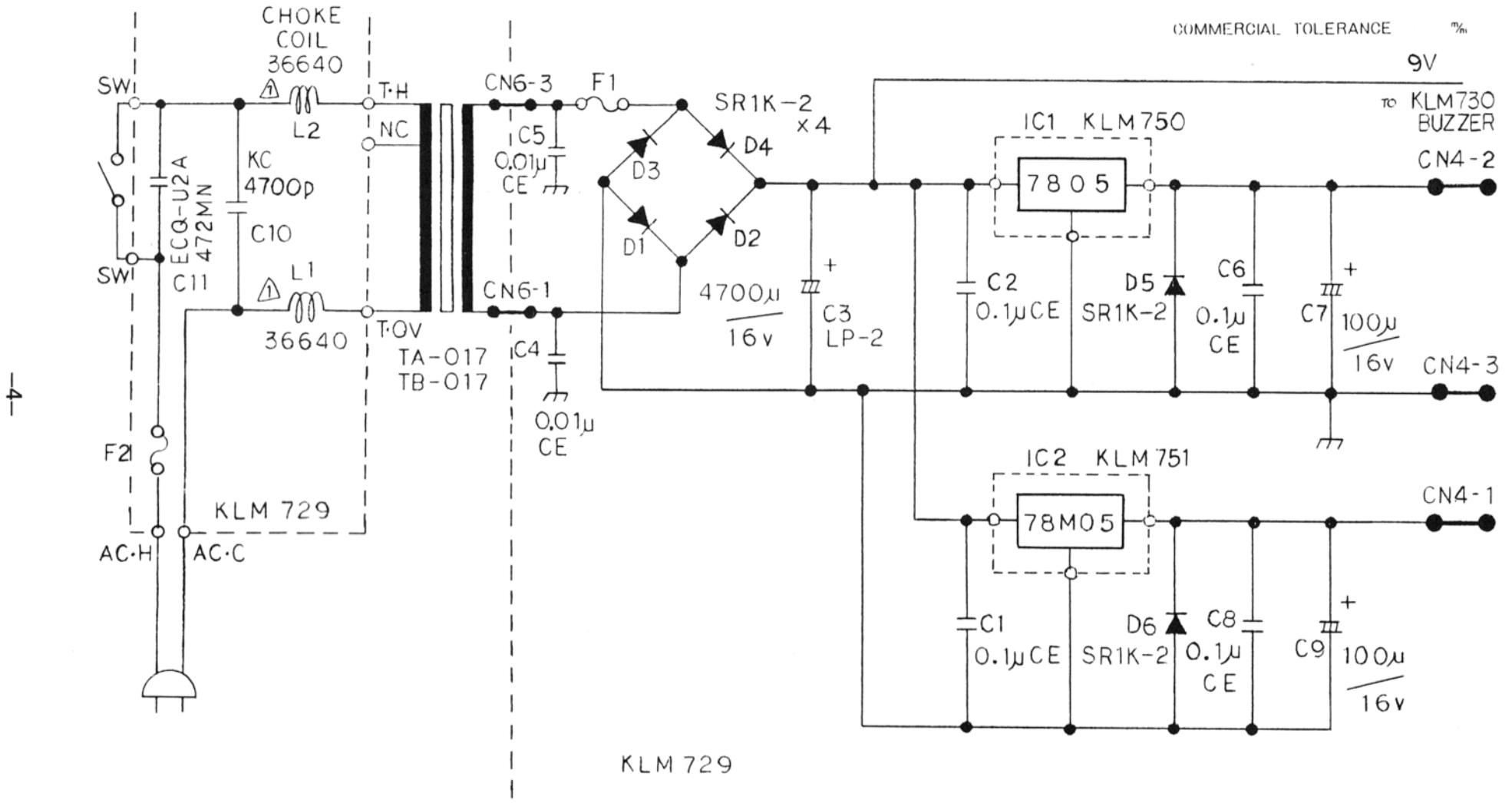
PART No.	PART NAME	PART CODE
1	UPPER CASE	64620500
2	DISPLAY COVER	63001300
3	TEMPO VR KNOB	62015000
4	PUSH SW KNOB GRAY	62014400
5	PUSH SW KNOB RED	62014501
6	PUSH SW KNOB BLUE	62014500
7	PLASTIC REVET FOR DIN JACK	54011000
8	RUBBER FEED	50008700
9	SLIDE SW MASK	55006500
10	SLIDE SW MASK	55007400
11	LOWER CASE	64071400
12	METAL FITTING OF QD (R)	64071300
13	METAL FITTING OF QD (L)	64071301
14	LED HOLDER X-TYPE	57504000
15	SPEACER No. 5	57504200
16	SHIELDING SHEET	63001400
17	HEAT SINK	56003200
18	AC CORD BUSHING	54000300 ~
19	METAL FITTING OF POWER SW	64071500 ~
20	NAME PLATE	68600700 ~
21	SERIAL NUMBER SEAL	
22	CAUTION SELA	58023700
23	FUSE CAUTION	58001800
24	GND SEAL	58001900
25	AC CORD	80000201 ~
26	POWER TRANSFORMER	40009500 ~
27	QUICK DISK DRIVE UNIT	43500100
28	PC BOARD KLM-728	34072700
29	PC BOARD KLM-728	34072800
30	PC BOARD KLM-729	34072900
31	PC BOARD KLM-730	34073000
32	PC BOARD KLM-751	
33	PC BOARD KLM-751	

SCREWS NUTS WASHERS		
PART No.	PART NAME	PART CODE
A	FE B BZMC 3x6	70560306
B	FE B BZMC 3x8	70560308
C	PLAX B BZMC 3x8	74560308
D	TP 2G B BZMC 3x8	72560308
E	FHN ZMC 3	77030300
F	TWU ZMC 3	78430300
G	FF B BZMC 4x8	70560408 ~
H	FHN ZMC 4	77030400 ~
I	TWU ZMC 4	78430400 ~

3. BLOCK DIAGRAM



4. CIRCUIT DIAGRAM



KLM 729

ADDRESS BUS

DATA BUS

D7 D6 D5 D4 D3 D2 D1 D0

IC17 2725E

IC18 8253

IC19 1/6 HC04

IC20 3/6LS565

IC21 LS244

IC22 1/4LS52

IC23 1/6LS04

IC24 1/6LS04

IC25 1/4LS52

IC26 1/2LS93

IC27 1/6LS04

IC28 1/6LS04

IC29 1/6LS04

IC30 1/6LS04

IC31 1/6LS04

IC32 1/6LS04

IC33 1/6LS04

IC34 1/6LS04

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IC272 1/6LS04

IC273 1/6LS04

IC274 1/6LS04

IC275 1/6LS04

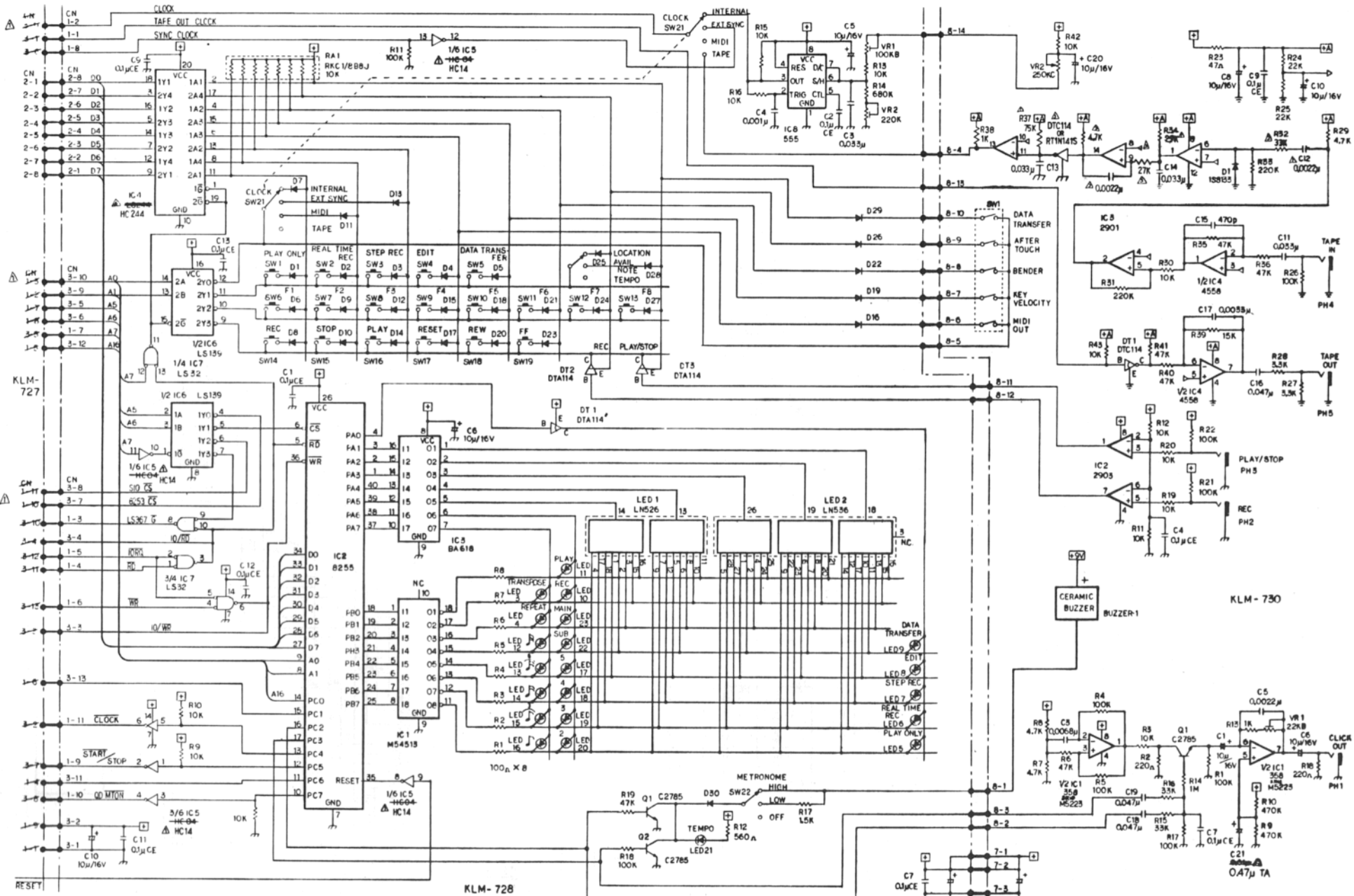
IC276 1/6LS04

IC277 1/6LS04

IC278 1/6LS04

IC279 1/6LS04

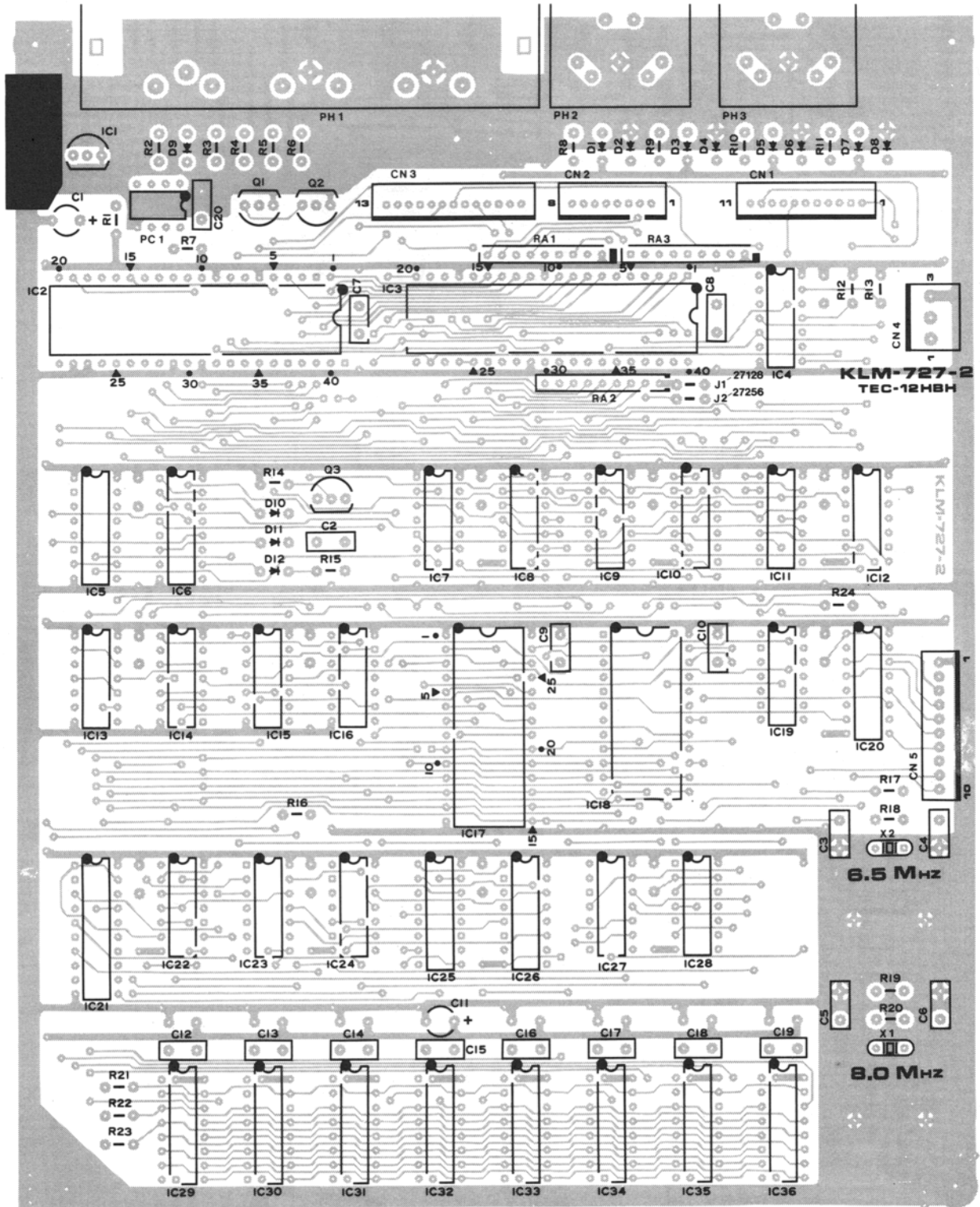
IC280 1/6LS04



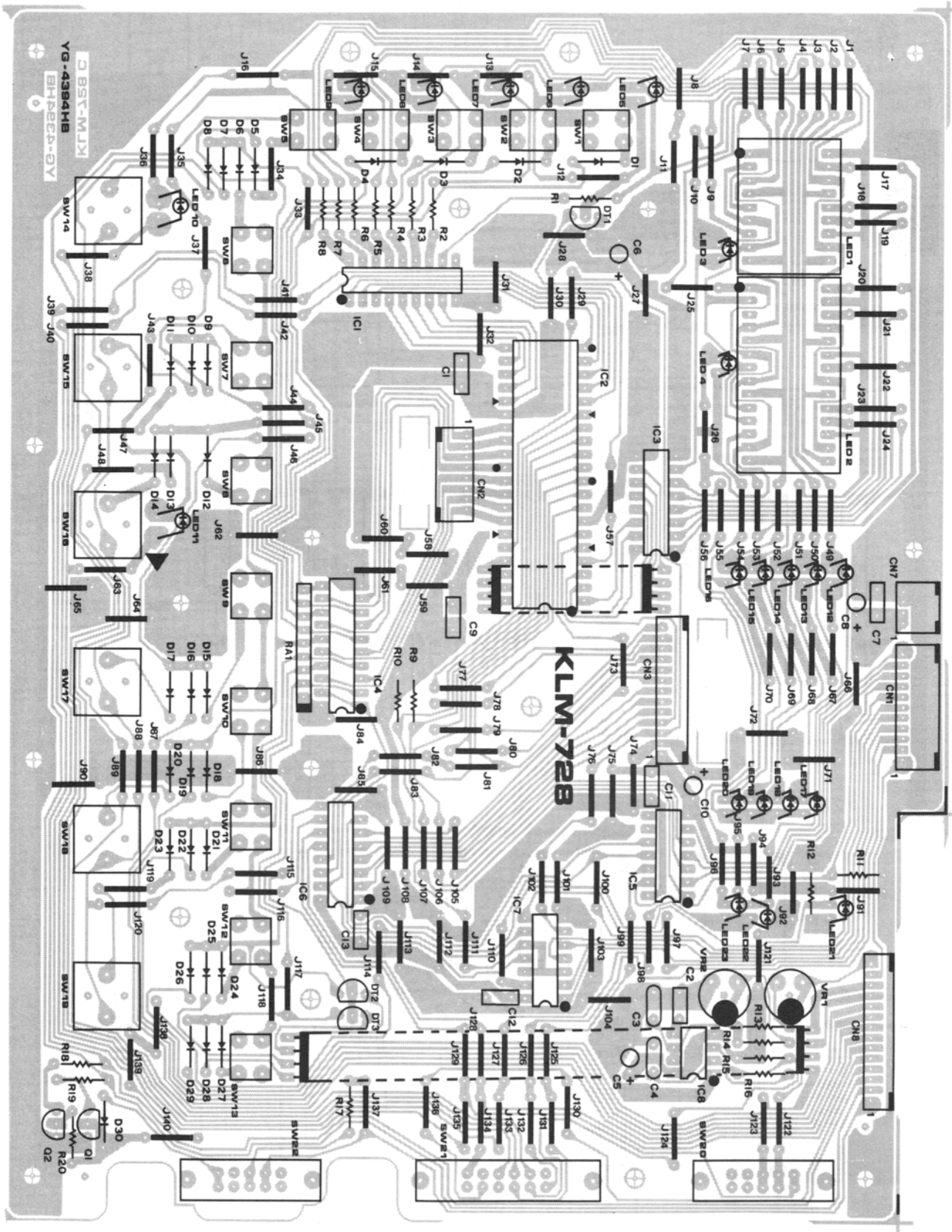
- △ ; MODIFICATION
- ① HC04 → HC14
- ② TAPE SYNC CIRCUIT
- ③ TAPE SYNC CIRCUIT
- ④ LS244 → HC244
- ⑤ 0.01μ → 0.47μ

5. PC BOARD

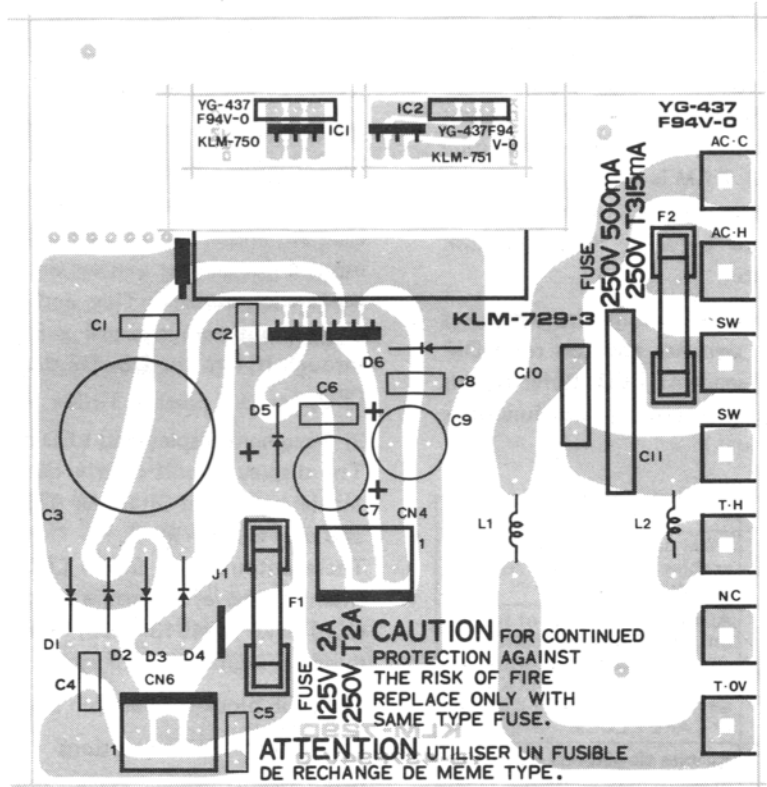
KLM-727 MAIN BOARD



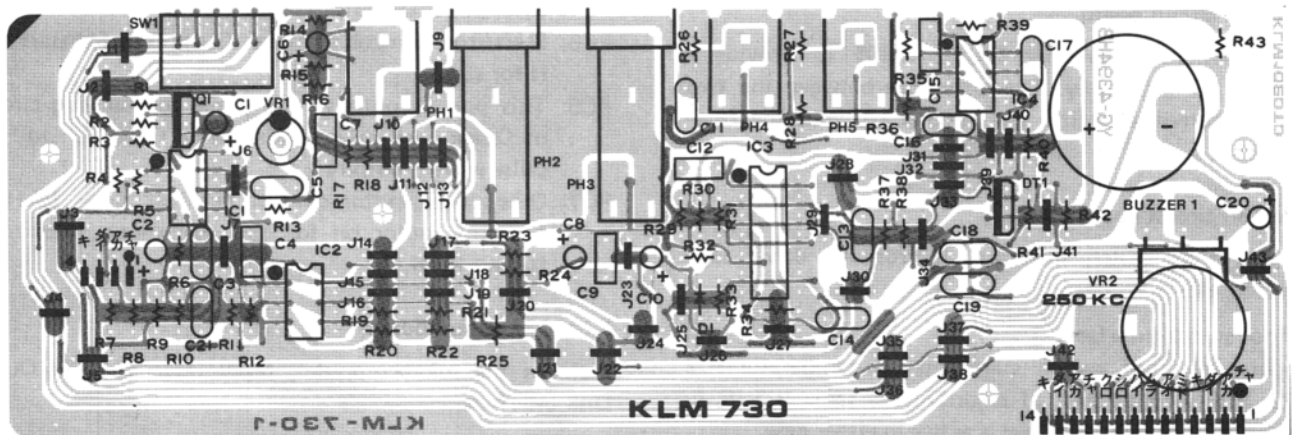
KLM-728 PANEL BOARD



KLM-729



KLM-730



6. CIRCUIT DESCRIPTION

FUNCTION DESCRIPTION

The SQD-1 is a MIDI sequencer equipped with a Quick Disk drive. MIDI data (note data, program change data, key pressure data, bend data, etc.) from a MIDI keyboard or other MIDI source is converted from serial to parallel by a CPU (Z80) controlled Z80 SIO (serial input output controller) and stored sequentially as 8-bit parallel data in dynamic RAM (IC29—IC36). RAM is volatile memory so the Quick Disk is used for more permanent storage; data reading and writing operations between RAM and disk are performed under CPU control.

The KEY input section (front panel controls) comprises 19 function switches, 3 slide switches and (on rear) DIP switches, and uses a 5-digit 7-segment LED. Refer to this LED display when operating the unit. (Most functions are covered in the owner's manual.)

KEY	Mode	Function
PLAY ONLY	Playback	RAM data sent out MIDI; enables transpose and repeat functions.
REAL TIME REC	Real time recording	Allows specification of BEAT/MEAS, TRACK, and MIDI channel. Records according to INT CLOCK, EXT CLOCK, SYNC CLOCK, MIDI CLOCK, or TAPE CLOCK.
STEP REC	Step write recording	Enables tie and rest recording in addition to above real time recording capabilities.
EDIT	Editing	Copy, insert, delete, blank, erase and other functions.
DATA TRANSFER	Quick Disk load and save operations	Disk initialization, backup, song list, load, and save modes.

CIRCUIT DESCRIPTIONS

KLM-729 circuit board

Uses 3-terminal regulators 7805, 78M05 to provide a stabilized power supply. The difference between the two is in the current capacity. The 7805 is 1A while the 78M-05 is 0.5A.

KLM-730 circuit board

Includes foot switch interface, metronome drive, tape interface, etc.

1) Foot switch interface:

Synchronizes foot switch start/stop via comparator IC2 (1, 2, 3 pins) with start of recording via same IC2 (5, 6, 7 pins). "L" (low output level is active in either case).

2) Tape sync interface:

Used to record clock signal on tape and to operate the SQD-1 according to clock signal read from tape. Uses op amp integrator and comparator for waveform shaping.

3) Metronome drive:

KLM-728 programmable peripheral interface 8225 (IC2) receives strong beat and weak beat pulses from port 2 and port 3 respectively, according to which the ceramic buzzer (buzzer 1) generates the metronome sounds.

At the same time, this also controls a click generator gate formed of an op amp (IC1) and transistor (Q1), producing a click output that is synchronized with the metronome sound.

KLM-728 circuit board

Includes the switch input matrix, 7-segment display and LED drive circuit.

1) Switch input matrix:

Uses A0 and A1 of the A0—A16 address bus for the 2-line input 4-line output address decoder LS139 (IC6) supplying the switch matrix. This and octal buffer LS244 (IC4) 8-line input comprise a 4 x 8 matrix. Switch data passes through IC4 to the D0—D7 data bus for processing by the CPU.

2) 7-segment display and LED drive circuit:

The display circuit matrix uses output from the programmable peripheral interface 8225 (IC2) port A (PA0—PA7) and port B (PB0—PB7).

These output ports enable LED indication of switch status (item (1) above) according to data bus D0—D7 data. BA618 (IC3) and M54513 (IC3) comprise the LED driver for dynamic illumination of each LED.

See 8255 block diagram pin configuration.

Port C (PC0—PC7) functions

PC0: This terminal goes from L to H (low to high) when the number of written notes exceeds 7500 (half the 15,000 note capacity). This works as address signal A16 which increases memory area.

PC1: Output an H to L pulse for REAL TIME REC START, operating the interrupt control circuit (KLM-727). STEP REC is H to L, likewise.

PC2: Metronome strong beat pulse output.

PC3: Metronome weak beat pulse output.

PC4: Sync out clock output.

PC5: Start/stop control terminal. Outputs L for start and H for stop.

PC6: This port is output reset signal to receiving circuit of Quick Disk drive, under being reset "L" to "H" pulse wave is output.

PC7: Quick Disk motor control terminal. Goes to H to turn the motor on for disk operations. Goes to L to turn it off.

KLM-727 circuit board

Includes the microcomputer, MIDI interface, and Quick Disk interface.

1) Microcomputer circuit:

The CPU is a Z80 (μ PD-780-1 compatible) which controls all SQD-1 functions according to programs in EPROM. ROM is 256K EPROM which holds the system programs. RAM is 64K, made up of eight 64K bit dynamic RAM chips which store user data.

2) MIDI interface circuit:

Uses Z80 SIO (IC2) TXDB and RDB terminals as well as inversion buffer LS04 and photocoupler PC-1. This Z80 SIO is programmed to convert MIDI data from serial to parallel.

3) Quick Disk interface:

As the Z80 SIO (IC2) is programmed to handle control signal input/output, the following concerns the A channel signal needed for the Quick Disk drive.

CTSA (input): Quick Disk WRPR (write protect) signal input. H for read only, L for write enable.

RTSA (output): Output to Quick Disk WRGA (write gate). L turns WRGA on and enables clock output to TXCA.

DCDA (input): Quick Disk MDST (media set) input. L sets media.

TXDA (output): Data signal to Quick Disk.

TXCA (input): 101.5625kHz transmission clock. (TXDA sampling uses the trailing edge of this clock signal).

RXDA (input): Data received from Quick Disk.

RXCA (input): Reception clock (RXDA is sampled at the trailing edge of this clock signal).

7. CHECK AND ADJUSTMENT PROCEDURE

CHECK PROCEDURE

1. Reset check

1) Confirm that the display shows "HELLO" and that the PLAY ONLY LED, the TRACK MAIN LED (red) and SUB LED (green) are the only LEDs that are illuminated when the power is turned on.

2) Press the PLAY ONLY key.

Confirm the following:

When the DISPLAY slide switch is at the LOCATION setting, the display should show END.

When the DISPLAY slide switch is at the AVAIL NOTE setting, the display should show 15250.

When the DISPLAY slide switch is at the TEMPO setting, the display should indicate within the range 30–35 with the TEMPO control knob set to the minimum (SLOW) position; 120–160 with the TEMPO knob at the center position; and 236–250 at the maximum (FAST) setting.

NOTE: The display may fluctuate a bit (though less than the range listed above) but this has no influence on the actual tempo. The actual tempo does not fluctuate.

2. Switch operation and LED display check

1) PLAY ONLY MODE

(1) Key transpose function

Press the PLAY ONLY key so that its LED illuminates. Then press the TRANSPOSE key and confirm that the display shows TrP. 0.

Next, while keeping the TRANSPOSE key depressed, press the UP key and DOWN key (separately), confirming that the display changes over a range of TrP. -5 Trp. 6.

Return the display to Trp. 0.

(2) REPEAT function

Turn on the REPEAT key (the second key from the left, above the cancel key) and confirm that the REPEAT LED illuminates.

2) REAL TIME REC MODE

(1) RESOLUTION function

Select the REAL TIME REC mode. Hold down the RESOLUTION key (fourth from left) and press the UP and then the DOWN keys, confirming that you can make each of the RESOLUTION LEDs illuminate. (Afterwards, use these keys to make all the RESOLUTION LEDs turn off.)

(2) BEAT/MEAS function

Hold down the BEAT/MEAS key and press the UP and DOWN keys, confirming that each of the BEAT/MEAS LEDs illuminates. (After completion, set BEAT/MEAS to 4.)

(3) TRACK function

Hold down the TRACK key and press the UP and DOWN keys to select the track, confirming that the MAIN (red) and SUB (green) LEDs illuminate. (Afterwards, set TRACK to MAIN.)

(4) MIDI CH

Hold down the MIDI CH key and press the UP and DOWN keys, confirming that the displayed MIDI channel changes from ALL, to 1, to 2, and so on, all the way up to 16. (EPROM No. 85067 is used for the addition of ALL. See owner's manual for details.)

3) STEP REC MODE

Select the STEP REC mode.

Set the METRONOME slide switch to the HIGH position. Press the REC key and confirm that the REC LED illuminates and that the DISPLAY shows STArT. Next, press the REST key and confirm that a metronome sound is generated and that the display shows 1.1.

Finally, press the STOP key and confirm that the display shows END.

4) DATA TRANSFER MODE

(1) Checking Quick Disk operation

Insert a diskette having one song written on it. (So that the SonG list shows 1...)

(2) Press the DATA TRANSFER key so that its LED illuminates. The display should show TrPnS.

(3) Load function check

Press the LOAD key so that the display shows LoAd. Next, hold down the Number 1 key (so the display shows LoAd. 1) and at the same time press the ENTER key.

Confirm that the BUSY LED illuminates (to confirm disk access) and then goes out after a few seconds and that the display shows LoAd. 1.

(4) Save function check

Confirm that the display shows SAvE when you press the SAVE key. Now hold down the number 3 key (so the display shows SAvE. 3) and press the ENTER key.

As with the load operation, the BUSY LED should illuminate to confirm disk access and a few seconds later the display should show SAvE. 2. (SonG list should produce 1, 2...)

(5) Disk delete function check

Hold down the CANCEL key (so the display shows dEL 7.) and press the ENTER key, confirming that the BUSY LED illuminates and after a few seconds the display shows En 1SH.

Next, hold down the SONG key (so the display shows SonG) and press the ENTER key. The display should show 1... (In other words, song number 2 should have been deleted.)

CHECK AND ADJUSTMENT PROCEDURE

1. System Clock check

Connect a frequency counter to the 6-pin of IC3 (CPU) on the KLM-727 board. Confirm a reading within the range of 3.96–4.04 MHz.

NOTE: IC28 LS393 divides the 8MHz oscillator frequency to obtain the system clock.

2. Quick Disk drive clock check

Connect a frequency counter to the 1-pin of IC27 (LS393) on the KLM-727 board. Confirm a reading of 6.37–6.67 MHz.

3. TEMPO frequency check and adjustment

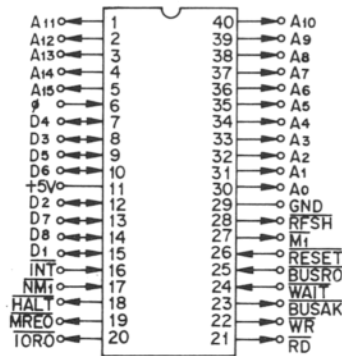
Connect a frequency counter to KLM-727 R11 (SYNC OUT) and check the TEMPO clock.

1) Turn the TEMPO control knob to the maximum FAST position and confirm a reading of 190–192Hz. Adjust VR1 if necessary.

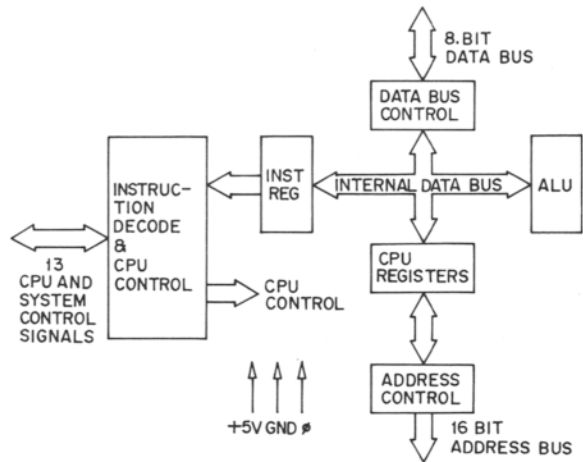
2) Turn the TEMPO control knob to the minimum SLOW position and confirm a reading of 25–26Hz. Adjust VR2 if necessary.

8. REFERENCE DATA

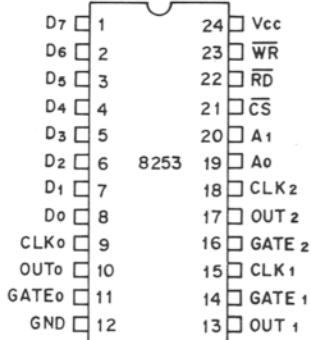
**IC7801C-1 PIN CONFIGURATION
8-BIT MICROPROCESSOR**



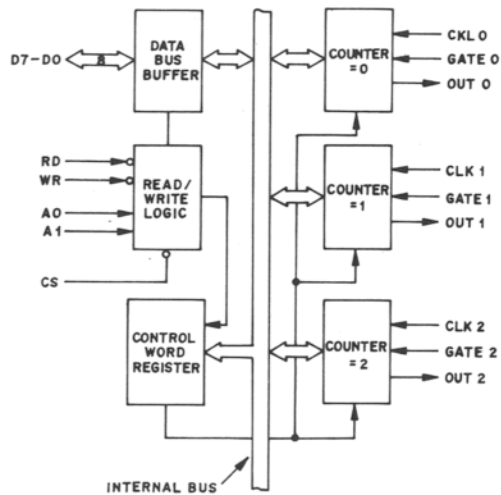
BLOCK DIAGRAM



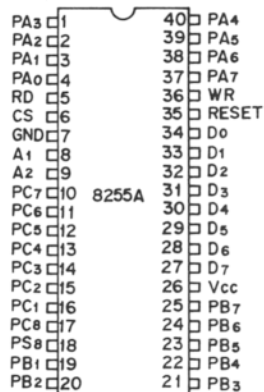
**IC8253-5 PIN CONFIGURATION
PROGRAMMABLE INTERVAL TIMER**



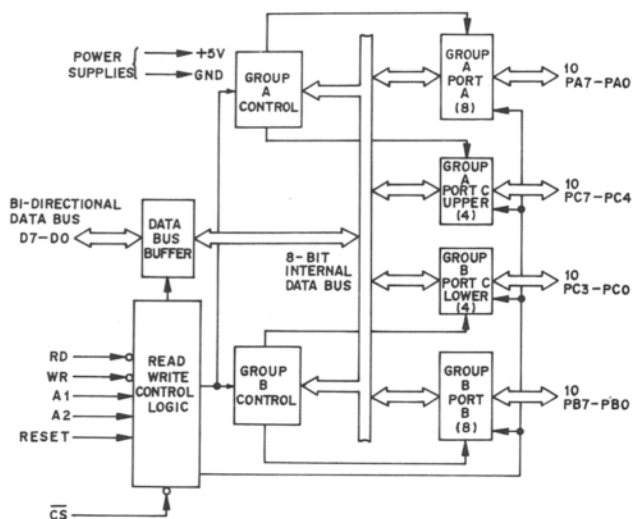
BLOCK DIAGRAM



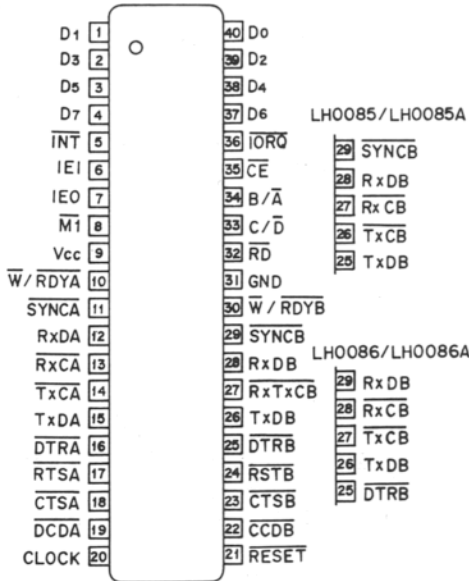
**IC8255A-5 PIN CONFIGURATION
PROGRAMMABLE PERIPHERAL
INTERFACE**



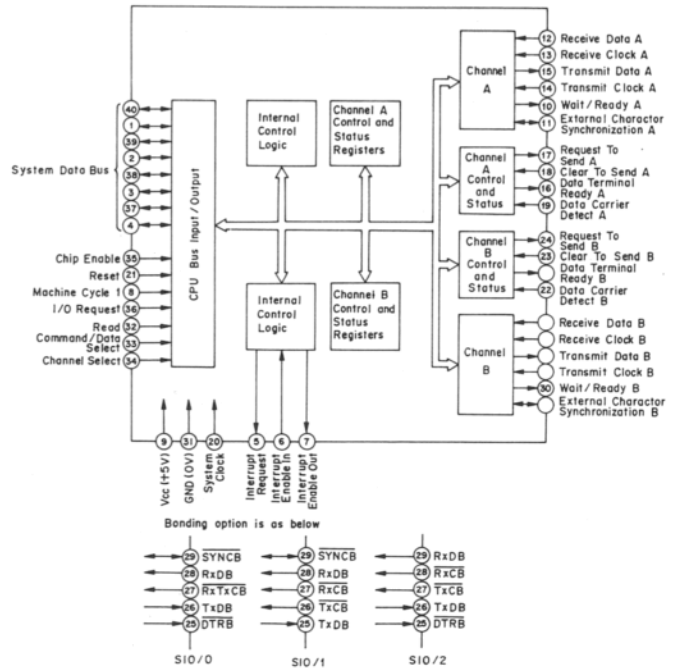
BLOCK DIAGRAM



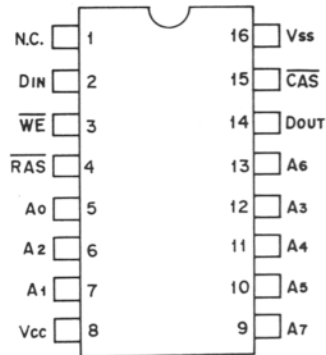
LH0084 PIN CONFIGURATION SERIAL INPUT/OUTPUT CONTROLLER



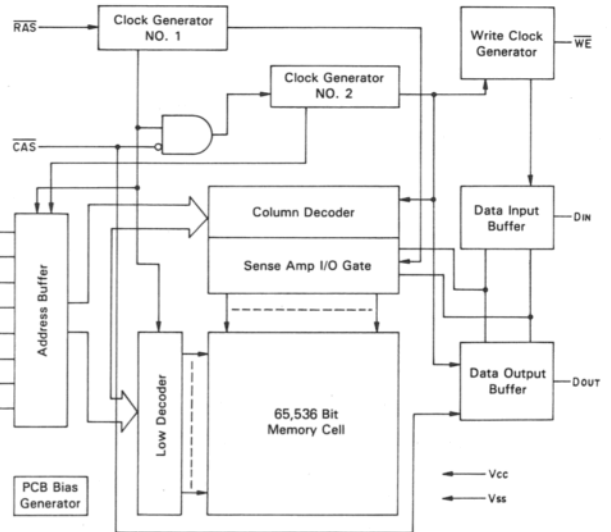
BLOCK DIAGRAM



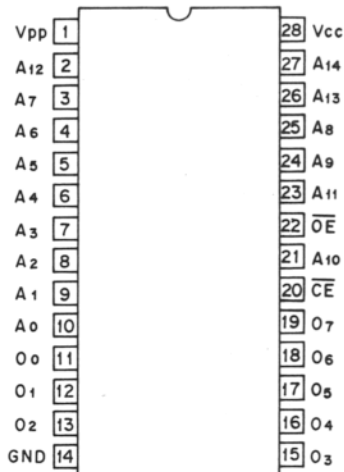
MB8264 PIN CONFIGURATION 65536-BIT DYNAMIC RANDOM ACCESS MEMORY



BLOCK DIAGRAM



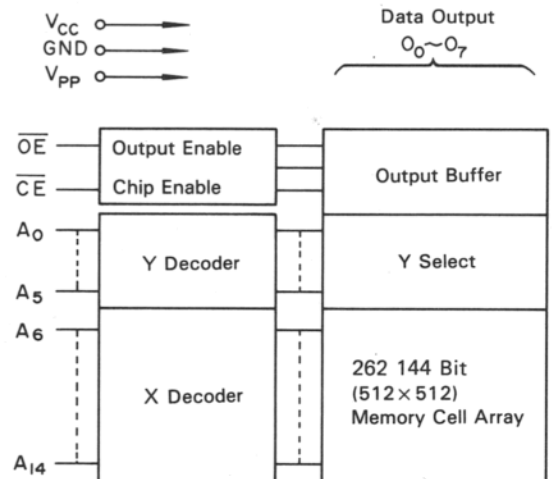
EPROM 27256 PIN CONFIGURATION



PIN NAMES

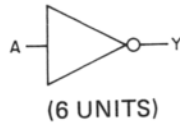
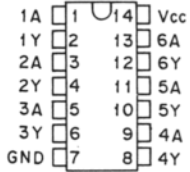
A ₀ ~ A ₁₄	Address input
O ₀ ~ O ₇	Data output
\overline{CE}	Chip enable input
Vcc	Power supply
Vpp	Program power supply
GND	Ground

BLOCK DIAGRAM

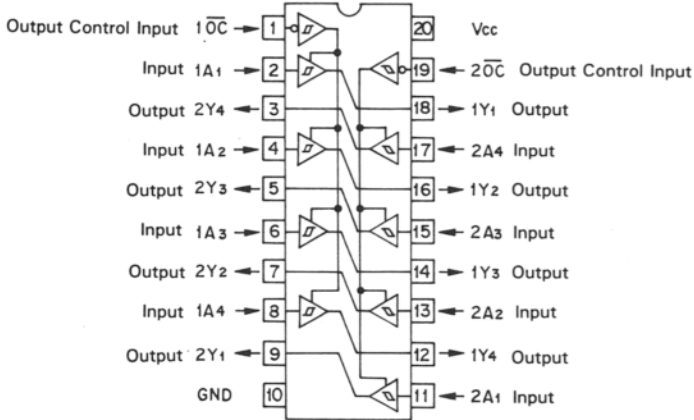


**74HCU04 PIN CONFIGURATION
HEX INVERTER**

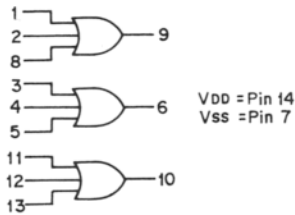
SN54HCU04... J PACKAGE
SN74HCU04... J OR N PACKAGE
(TOP VIEW)



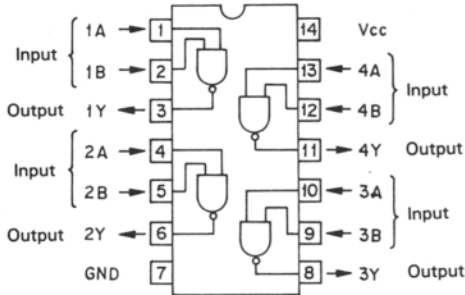
**HC244 PIN CONFIGURATION
OCTAL BUFFER WITH 3-STATE OUTPUT**



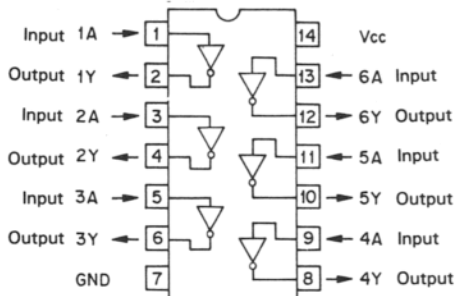
**14075 LOGIC DIAGRAM
TRIPLE 3-INPUT "OR" GATE**



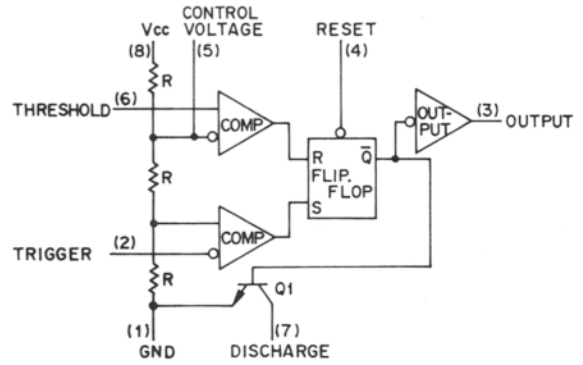
**LS00 PIN CONFIGURATION
QUADRUPLE 2-INPUT POSITIVE
NAND GATE**



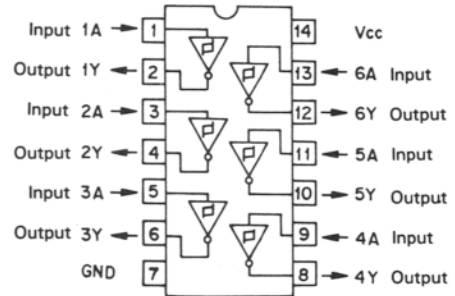
**LS04 PIN CONFIGURATION
HEX INVERTER**



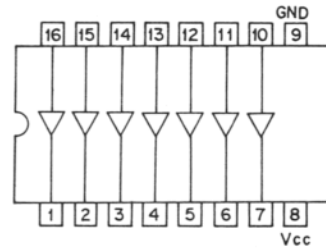
**555 BLOCK DIAGRAM
PRECISION TIMER**



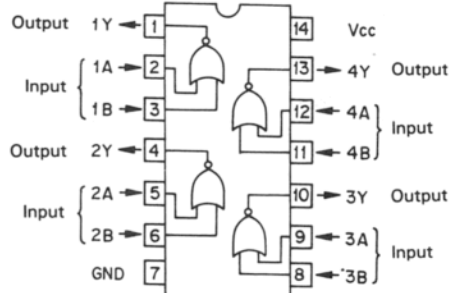
**HC14 PIN CONFIGURATION
HEX SCHMITT TRIGGER INVERTER**



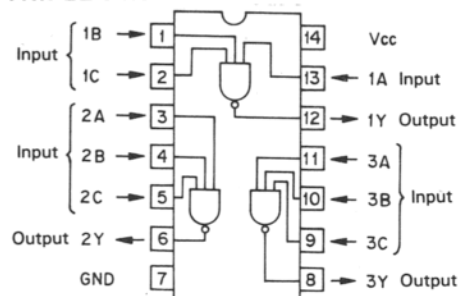
**BA618 PIN CONFIGURATION
LED DRIVER**



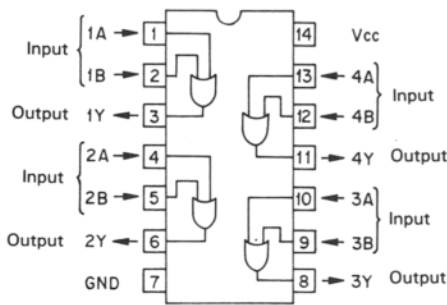
**LS02 PIN CONFIGURATION
QUADRUPLE 2-INPUT POSITIVE
NOR GATE**



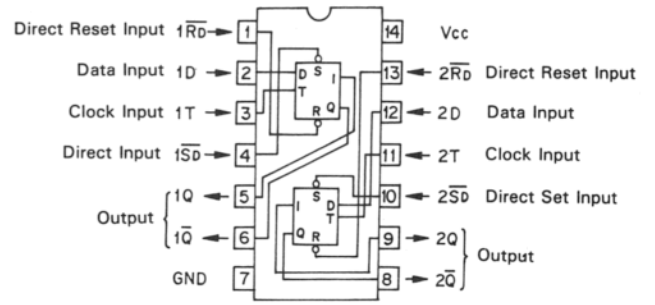
**LS10 PIN CONFIGURATION
TRIPLE 3-INPUT POSITIVE NAND GATE**



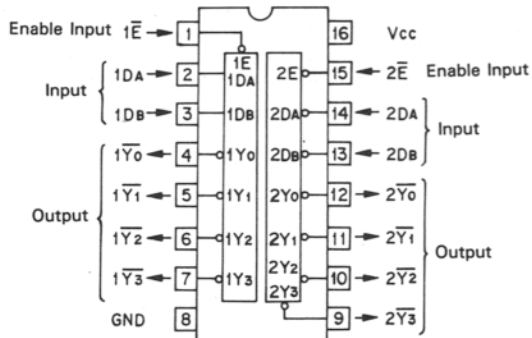
**LS32 PIN CONFIGURATION
QUADRUPLE 2-INPUT POSITIVE
OR GATE**



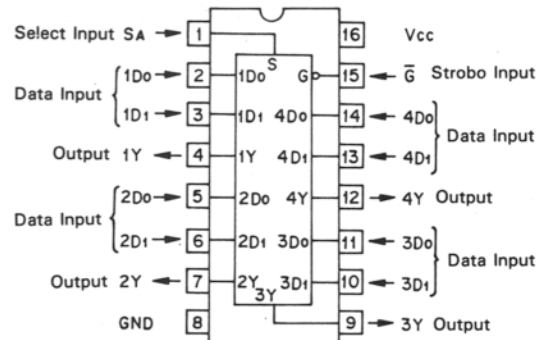
**LS74 PIN CONFIGURATION
DUAL D-TYPE EDGE-TRIGGERED
FLIP FLOP WITH SET AND RESET**



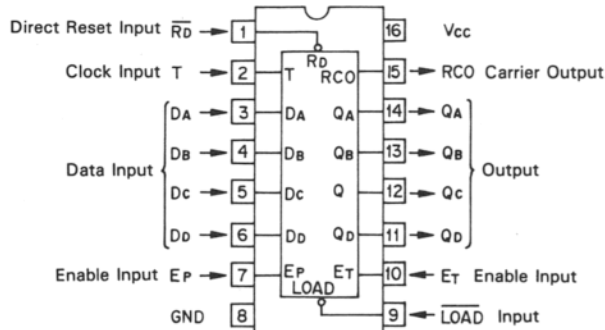
**LS139 PIN CONFIGURATION
DUAL 2-LINE
DECODER/MULTIPLEXER**



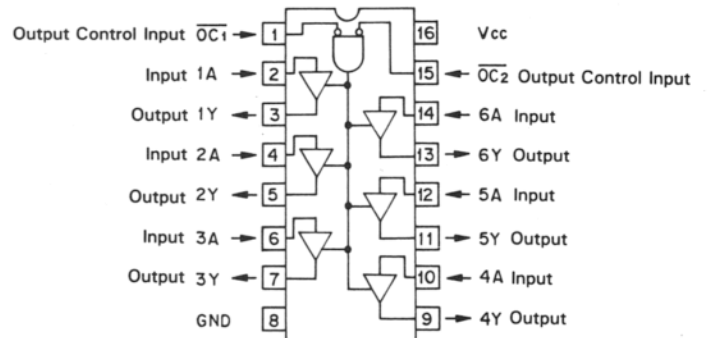
**LS157 PIN CONFIGURATION
QUADRUPLE 2-LINE TO 1-LINE DATA
SELECTOR/MULTIPLEXER**



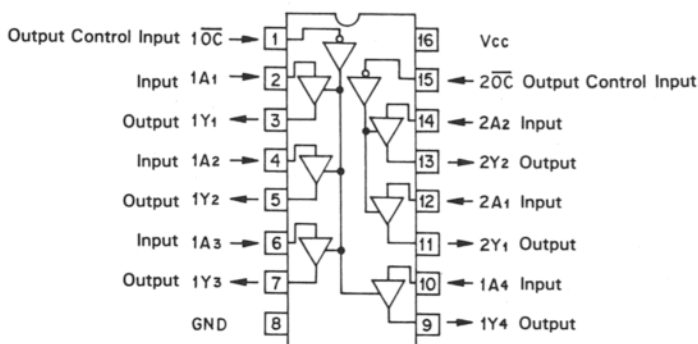
**LS161 PIN CONFIGURATION
SYNCHRONOUS PRESETTABLE 4-BIT
BINARY COUNTER WITH DIRECT RESET**



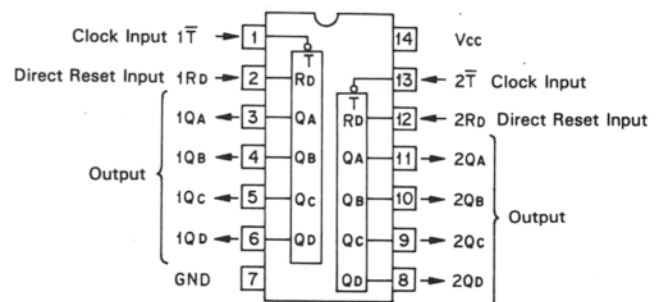
**LS365 PIN CONFIGURATION
HEX BUS DRIVER WITH 3-STATE
OUTPUT**



**LS367 PIN CONFIGURATION
HEX BUS DRIVER WITH 3-STATE
OUTPUT**



**LS393 PIN CONFIGURATION
DUAL 4-BIT BINARY COUNTER**



9. PARTS LIST

PARTS CODE	PARTS NAME SPECIFICATIONS	P.C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
CARBON RESISTORs				
10009000	Y 0Ω	KLM-729		2
10016447	1/6JY 4.7K	KLM-730		1
10016527	1/6JY 27K			1
10113510	S1/4JT 10K	KLM-728		1
10413310	S1/4JY TP 100Ω			8
10413356	S1/4JY TP 560Ω			1
10413415	S1/4JY TP 1.5K			2
10413510	S1/4JY TP 10K			5
10413547	S1/4JY TP 47K			1
10413610	S1/4JY TP 100K			2
10413668	S1/4JY TP 680K			1
10416000	1/6JTP 0Ω	KLM-727		1
10416000	1/6JTP 0Ω	KLM-730		42
10416247	1/6JTP 47Ω			1
10416310	1/6JTP 100Ω	KLM-727		3
10416322	1/6JTP 220Ω			5
10416322	1/6JTP 220Ω	KLM-730		2
10416347	1/6JTP 470Ω	KLM-727		4
10416375	1/6JTP 750Ω			1
10416410	1/6JTP 1.0K			3
10416410	1/6JTP 1.0K	KLM-730		2
10416433	1/6JTP 3.3K			2
10416447	1/6JTP 4.7K			3
10416510	1/6JTP 10K	KLM-727		5
10416510	1/6JTP 10K	KLM-730		8
10416515	1/6JTP 15K			1
10416522	1/6JTP 22K			2
10416527	1/6JTP 27K			1
10416533	1/6JTP 33K			3
10416547	1/6JTP 47K			5
10416575	1/6JTP 75K			1
10416610	1/6JTP 100K	KLM-727		1
10416610	1/6JTP 100K	KLM-730		7
10416622	1/6JTP 220K			2
10416647	1/6JTP 470K			2
10416710	1/6JTP 1.0Ω	KLM-727		2
10416710	1/6JTP 1.0Ω	KLM-730		1
BLOCK RESISTORs				
13508422	RKC1/8B8J 2.2K	KLM-727		1
13508510	RKC1/8B8J 10K			2
13508510	RKC1/8B8J 10K	KLM-728		1

PARTS CODE	PARTS NAME SPECIFICATIONS	P.C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
MYLAR CAPACITORs				
20023422	50V 0.0022μF	KLM-730		1
20402410	50V 0.001μF	KLM-728		1
20402422	50V 0.0022μF	KLM-730		2
20402433	50V 0.0033μF			1
20402468	50V 0.0068μF			1
20402533	50V 0.033μF	KLM-728		1
20402533	50V 0.033μF	KLM-730		3
20402547	50V 0.047μF			3
CERAMIC CAPACITORs				
21355100	50V 0.01μF	KLM-729		2
21356100	25V 0.1μF			4
21374470	DE7150F 472Ω VA1-K			1
21452100	50V 10pF TP	KLM-727		3
21452470	50V 47pF TP			1
21452560	50V 56pF TP			1
21453470	50V 470pF TP	KLM-730		1
21456100	25V 0.1μF TP	KLM-727		13
21456100	25V 0.1μF TP	KLM-728		7
21456100	25V 0.1μF TP	KLM-730		3
SPARK KILLER				
21900600	ECQ-U2A473MN	KLM-729		1
TANTALUM CAPACITOR				
22425047	35V 0.47μF	KLM-730		1
ELECTROLYTIC CAPACITORs				
23507310	16V 100μF	KLM-729		2
23907447	16V 4700μF			1
25403210	16V 10μF	KLM-727		2
25403210	16V 10μF	KLM-730		6
25453210	16V 10μF	KLM-728		4
TRANSISTORs				
30420070	2SC2785	KLM-727		1
30420070	2SC2785	KLM-728		2
30420070	2SC2785	KLM-730		1

PARTS CODE	PARTS NAME SPECIFICATIONS	P.C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
DIGITAL TRANSISTORS				
30430010	DTA-114N	KLM-728		3
30430020	DTC-114N	KLM-727		2
30430020	DTC-114N	KLM-730		2
30900400	DTC-114N			
DIODES				
31001500	SR1K-2	KLM-729		6
31400100	1S1555	KLM-728		30
31401300	1SS-133	KLM-727		12
31401300	1SS-133	KLM-730		1
LEDs				
31203600	SLP-178C	KLM-728		13
31203700	SLP-278C			1
31205400	SLP-175B			5
31205500	SLP-276B			1
31205600	LN526RA			1
31205700	LN536RAMR			1
31205800	SLC-22VR (3)			1
ICs				
32001042	μPD-8253C-5	KLM-727		1
32001043	μPD-8255AC-5	KLM-728		1
32001068	μPD74HCU04C	KLM-727		1
32001088	μPD27256D			1
32001089	74HC14C			1
32001089	74HC14C	KLM-728		1
32001092	μPD74HC4075C	KLM-727		1
32004096	74HC244	KLM-728		1
32007003	BA-618			1
32009001	NJM-4558D-V	KLM-730		1
32009011	NJM-7805 A	KLM-729		1
32009014	NJM-2901 N	KLM-730		1
32009015	NJM-2903 D			1
32009019	NJM-555 D	KLM-728		1
32009032	NJM-78M05A	KLM-729		1
32011003	M-74LS00	KLM-727		1
32011004	M-74LS04			1
32011006	M-74LS32			2
32011006	M-74LS32	KLM-728		1
32011007	M-74LS74	KLM-727		6
32011008	M-74LS139	KLM-728		1

PARTS CODE	PARTS NAME SPECIFICATIONS	P.C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
32011011	M-74LS393	KLM-727		2
32011024	M-5223	KLM-730		1
32011025	M-54513P	KLM-728		1
32011030	M74LS157P	KLM-727		2
32011050	M74LS02P			1
32011057	M74LS10P			1
32011058	M74LS161			1
32011059	M74LS365			1
32011060	M74LS367			1
32012007	MB-8264A-15			8
32013002	LH0080A			1
32013005	LH0084A			1
32023005	S-8054HN			1
PHOTO COUPLER				
33001000	TLP-552	KLM-727		1
CERAMIC OSCILLATORS				
33501800	KBR-8.0MHz	KLM-727		1
33502100	KBR-6.5MHz			1
P.C. BOARDS				
34072700	KLM-727	KLM-727		1
34072800	KLM-728	KLM-728		1
34072900	KLM-729	KLM-729		1
34073000	KLM-730	KLM-730		1
SEMI FIXED VRs				
35201322	H1051A 22KB	KLM-730		1
35201410	H1051A 100KB	KLM-728		1
35201422	H1051A 220KB			1
VR				
36018600	K161B002W-250KC	KLM-730		1
SLIDE SWs				
37305600	SSY-023	KLM-728		2
37305700	SSY-024			1

PARTS CODE	PARTS NAME SPECIFICATIONS	P.C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
POWER SW				
37506600	WK-2A44			1
KEYBOARD SW				
37506900	KMR-V01AV	KLM-728		6
DIP SW				
37507200	KYS-6	KLM-730		1
TACT SW				
37507900	KHH-10910	KLM-728		13
POWER TRANSFORMERs				
40009500	TA-017		100V	1
40009500	TA-017		UNI	1
40009500	TA-017		JAM	1
40009500	TA-017		117 2P	1
40009600	TB-017		220 GE	1
40009600	TB-017		220 SE	1
40009600	TB-017		240 AF	1
40009600	TB-017		240 AU	1
40009600	TB-017		DEMKO	1
40009600	TB-017		SEMKO	1
40009600	TB-017		NEMKO	1
40009600	TB-017		240 GE	1
40009600	TB-017		GAF	1
40009600	TB-017		FIMKO	1
40009600	TB-017		240 RME	1
40009600	TB-017		VDE	1
CERAMIC BUZZER				
41501100		KLM-730		1
QUICK DISK DRIVE				
43500100	R69-5020			1
QUICK DISK				
43500200	DQ2			5

PARTS CODE	PARTS NAME SPECIFICATIONS	P.C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
DIN JACK				
45402500	TCS4650-01-1111	KLM-727		2
PHONE JACKs				
45404400	YKB21-5010	KLM-730		2
45404500	YKB21-5029			3
FUSEs				
46402401	125V 2.5A UL		100V	1
46402401	125V 2.5A UL		UNI	1
46402401	125V 2.5A UL		JAM	1
46402401	125V 2.5A UL		117 2P	1
46412003	250V 1.0A UL		100V	1
46412003	250V 1.0A UL		UNI	1
46412003	250V 1.0A UL		JAM	1
46412003	250V 1.0A UL		117 2P	1
46461501	250V T315MA		220 GE	1
46461501	250V T315MA		220 SE	1
46461501	250V T315MA		240 AF	1
46461501	250V T315MA		240 AU	1
46461501	250V T315MA		DEMKO	1
46461501	250V T315MA		SEMKO	1
46461501	250V T315MA		NEMKO	1
46461501	250V T315MA		240 GE	1
46461501	250V T315MA		GAF	1
46461501	250V T315MA		FIMKO	1
46461501	250V T315MA		240 RME	1
46461501	250V T315MA		VDE	1
46462301	250V T2.0A		220 GE	1
46462301	250V T2.0A		220 SE	1
46462301	250V T2.0A		240 AF	1
46462301	250V T2.0A		240 AU	1
46462301	250V T2.0A		DEMKO	1
46462301	250V T2.0A		SEMKO	1
46462301	250V T2.0A		NEMKO	1
46462301	250V T2.0A		240 GE	1
46462301	250V T2.0A		GAF	1
46462301	250V T2.0A		FIMKO	1
46462301	250V T2.0A		240 RME	1
46462301	250V T2.0A		VDE	1
HARNESSEs				
47052000	HNS-420			1

PARTS CODE	PARTS NAME SPECIFICATIONS	P.C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
47052600	HNS-426			1
47052700	HNS-427	KLM-728	KLM-728	1
47052800	HNS-428			1
47052900	HNS-429			1
47053000	HNS-430	KLM-730	KLM-730	1
CONNECTORs				
47150300	B3P-VH	KLM-727		1
47150300	B3P-VH	KLM-729		2
47170400	B4B-PH	KLM-730		1
47170800	B8B-PH	KLM-727		1
47171100	B11B-PH			1
47171300	B13B-PH			1
47270400	S4B-PH	KLM-728		1
47271100	S11B-PH			1
47271400	S14B-PH			1
IC SOCKET				
48001282	28P DICA-28CT1	KLM-727		1
DIN JACK SOCKET				
48010180	(X3) M-1704	KLM-727		1
CONNECTOR (FR QUICK DISK)				
48010220		KLM-727		1
RUBBER FEET				
50008700				4
FUSE HOLDERs				
51501600	S-N5053 #01	KLM-729		4
BUSHINGs				
54000300	SR-4K-4		100V	1
54000300	SR-4K-4		UNI	1
54000300	SR-4K-4		117 2P	1
54000400	SR-5P-4		240 AU	1
54000500	SR-6W-1		220 GE	1
54000500	SR-6W-1		220 SE	1
54000500	SR-6W-1		240 AF	1

PARTS CODE	PARTS NAME SPECIFICATIONS	P.C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
54000500	SR-6W-1		DEMKO	1
54000500	SR-6W-1		SEMKO	1
54000500	SR-6W-1		NEMKO	1
54000500	SR-6W-1		240 GE	1
54000500	SR-6W-1		GAF	1
54000500	SR-6W-1		FIMKO	1
54000500	SR-6W-1		240 RME	1
54000500	SR-6W-1		VDE	1
54000501	SR-6N3-4		JAM	1
WIRE BANDs				
54007200	PLT-1M			11
CORD BAND				
54007600	NO.113 BLACK			1
PLASTIC REVITs FOR DIN JACK				
54011000				6
JUMPER CORD				
54510150	SMV2JB7/0.16x4x11	KLM-728		1
54510160	SMV2JB7/0.16x4x43			1
54510170	SMV2JB7/0.16x3x40	KLM-729		2
SLIDE SW MASKs				
55006500				2
55007400				1
HEAT SINK				
56003200				1
LED HOLDERs				
57504000	X-TYPE NO.4 5.8MΩ	KLM-728		15
SPACERs				
47504200	NO.5 L=5.3			6

PARTS CODE	PARTS NAME SPECIFICATIONS	P.C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
GND SEALs				
58001900			220 GE	1
58001900			220 SE	1
58001900			240 AF	1
58001900			240 AU	1
58001900			DEMKO	1
58001900			SEMKO	1
58001900			NEMKO	1
58001900			240 GE	1
58001900			GAF	1
58001900			FIMKO	1
58001900			240 RME	1
58001900			VDE	1
FUSE SEALs				
58003001	250VT2A		220 GE	1
58003001	250VT2A		220 SE	1
58003001	250VT2A		240 AF	1
58003001	250VT2A		240 AU	1
58003001	250VT2A		DEMKO	1
58003001	250VT2A		SEMKO	1
58003001	250VT2A		NEMKO	1
58003001	250VT2A		240 GE	1
58003001	250VT2A		GAF	1
58003001	250VT2A		FIMKO	1
58003001	250VT2A		240 RME	1
58003001	250VT2A		VDE	1
AC CORDs				
60000102	KE-1044B PVC.75		100V	1
60000201	SPT-2 18AWG SU426-58		UNI	1
60000201	SPT-2 18AWG SU426-58		117 2P	1
60000301	C1 (SU429-58)		220 GE	1
60000301	C1 (SU429-58)		DEMKO	1
60000301	C1 (SU429-58)		SEMKO	1
60000301	C1 (SU429-58)		NEMKO	1
60000301	C1 (SU429-58)		240 GE	1
60000301	C1 (SU429-58)		FIMKO	1
60000301	C1 (SU429-58)		240 RME	1
60000301	C1 (SU429-58)		VDE	1
60000401	SAA (SU428-58) 3X.75		240 AU	1
60000501	BS PLUG (SU431A-58)		240 AF	1

PARTS CODE	PARTS NAME SPECIFICATIONS	P.C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
60000901	SEV (SU430-58)		220 SE	1
60001301	KP-4819D GTCE-3.75		GAF	1
60002000	SJT (SU338-56) 18/3MM		JAM	1
SYNC/MIDI CABLE				
60202300	1M WHT			2
PUSH SW KNOBs				
62014400	B-4 GRY			13
62014500	NO.3			5
62014501	NO.4			1
TEMPO VR KNOB				
62015000	BLK			1
DISPLAY COVER				
63001300				1
SHIELDING SHEET				
63001400				1
METAL FITTINGs OF QUICK DISK				
64071300	R			1
64071301	L			1
LOWER CASE				
64071400				1
METAL FITTINGs OF SW				
64071500	NO.1		100V	1
64071500	NO.1		UNI	1
64071500	NO.1		117 2P	1
64071500	NO.1		220 GE	1
64071500	NO.1		220 SE	1
64071500	NO.1		240 AF	1
64071500	NO.1		240 AU	1

PARTS CODE	PARTS NAME SPECIFICATIONS	P.C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
64071500	NO.1		DEMKO	1
64071500	NO.1		SEMKO	1
64071500	NO.1		NEMKO	1
64071500	NO.1		240 GE	1
64071500	NO.1		GAF	1
64071500	NO.1		FIMKO	1
64071500	NO.1		240 RME	1
64071500	NO.1		VDE	1
64071501	NO.2		JAM	1
UPPER CASE				
64620500				1
LUGs				
67201200	3 N-3			2
67201600	3 N-3		JAM	1
67201600	3 N-3		220 GE	1
67201600	3 N-3		220 SE	1
67201600	3 N-3		240 AF	1
67201600	3 N-3		240 AU	1
67201600	3 N-3		DEMKO	1
67201600	3 N-3		SEMKO	1
67201600	3 N-3		NEMKO	1
67201600	3 N-3		240 GE	1
67201600	3 N-3		GAF	1
67201600	3 N-3		FIMKO	1
NAME PLATEs				
68600700			UNI	1
68600700			JAM	1
68600700			117 2P	1
68600700			220 GE	1
68600700			220 SE	1
68600700			240 AF	1
68600700			240 AU	1
68600700			240 GE	1
68600700			GAF	1
68600700			240 RME	1
68600700			VDE	1
68600900	S		DEMKO	1
68600900	S		SEMKO	1
68600900	S		NEMKO	1
68600900	S		FIMKO	1

PARTS CODE	PARTS NAME SPECIFICATIONS	P.C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
SCREWS				
70560306	FE B BZMC 3x6			22
70560308	FE B BZMC 3x8			7
70560408	FE B BZMC 4x8		JAM	1
70560408	FE B BZMC 4x8		220 GE	1
70560408	FE B BZMC 4x8		220 SE	1
70560408	FE B BZMC 4x8		240 AF	1
70560408	FE B BZMC 4x8		240 AU	1
70560408	FE B BZMC 4x8		DEMKO	1
70560408	FE B BZMC 4x8		SEMKO	1
70560408	FE B BZMC 4x8		NEMKO	1
70560408	FE B BZMC 4x8		240 GE	1
70560408	FE B BZMC 4x8		GAF	1
70560408	FE B BZMC 4x8		FIMKO	1
72560308	TP2G B BZMC 3x8			4
74560308	PLAX B BZMC 3x8			34
NUTs				
77030300	FHN ZMC 3			5
77030400	FHN ZMC 4		JAM	1
77030400	FHN ZMC 4		220 GE	1
77030400	FHN ZMC 4		220 SE	1
77030400	FHN ZMC 4		240 AF	1
77030400	FHN ZMC 4		240 AU	1
77030400	FHN ZMC 4		DEMKO	1
77030400	FHN ZMC 4		SEMKO	1
77030400	FHN ZMC 4		NEMKO	1
77030400	FHN ZMC 4		240 GE	1
77030400	FHN ZMC 4		GAF	1
77030400	FHN ZMC 4		FIMKO	1
WASHERs				
78430300	TWU ZMC 3			4
78430400	TWU ZMC 4		JAM	1
78430400	TWU ZMC 4		220 GE	1
78430400	TWU ZMC 4		220 SE	1
78430400	TWU ZMC 4		240 AF	1
78430400	TWU ZMC 4		240 AU	1
78430400	TWU ZMC 4		DEMKO	1
78430400	TWU ZMC 4		SEMKO	1
78430400	TWU ZMC 4		NEMKO	1
78430400	TWU ZMC 4		240 GE	1
78430400	TWU ZMC 4		GAF	1
78430400	TWU ZMC 4		FIMKO	1

MEMO

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