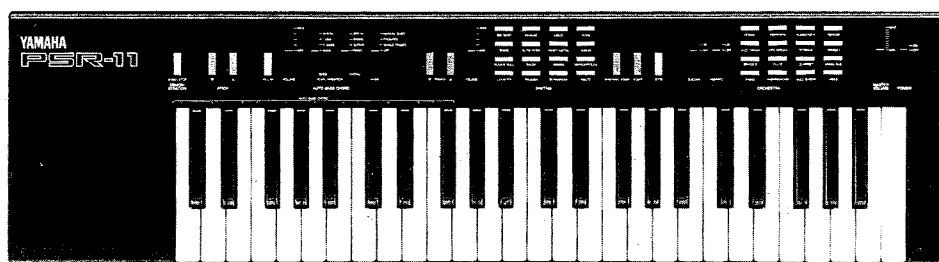


PORTATONE PSR-11

SERVICE MANUAL



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IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

SPECIFICATIONS (総合仕様)

Keyboard

49 keys (C₁-C₅)

Orchestra Voices

Cosmic, Popsynth, Funksynth, Percus, Jazz Organ, Pipe Organ, Strings, Brass 1, Brass 2, Flute, Clarinet, Music Box, Piano, Harpsichord, Jazz Guitar, Vibes

Effects

Sustain, Vibrato

Rhythm Section

Big Band, Reggae, Disco, Pops, Swing, Slow Rock, Heavy Metal, 16 Beat, Rock'n'Roll, Salsa, Samba, March/Polka, Country, Rhumba, Bossanova, Waltz
Controls: Tempo, Volume, Synchro Start, Start, Stop, Fill-In, Tempo Light

Auto Bass Chord Section

Mode Selector: Single Finger, Fingered, Manual Bass, Off
Chord Voices: Synth, Brass, Guitar, Piano
Bass Voices: Synth, Tuba, Electric Bass, Bass Volume

Demonstration Music

Keys: C₁, D₁, E₁, F₁, G₁, A₁, B₁, C₂, Start/Stop

Pitch Control

±50 cents

Other Controls And Indicators

Power Switch, Power-on Light, Master Volume

Auxiliary Jacks

Headphones, Aux Out/Expression Pedal, DC 9 - 12V In

Main Amplifier

2.5W (RMS)

Speaker

12cm (4-3/4") (4 ohms)

Rated Voltage

DC 9V (Six SUM-1, "D" size, R-20 or equivalent batteries), AC Power Adaptor (PA-4/PA-1) or Car Battery Adaptor (CA-1)

Dimensions (W × D × H)

863mm × 236mm × 71mm
(31" × 9-1/4" × 2-3/4")

Weight

4.7kg (10-1/3 lbs.)

鍵盤

一段鍵盤 49鍵(C₁~C₅)

音色スイッチ

コズミック
ポップシンセ
ファンクシンセ
パーカス
ジャズオルガン
パイプオルガン
ストリングス
プラス 1
プラス 2
フルート
クラリネット
ミュージックボックス
ピアノ
ハーブシコード
ジャズギター
パイプ

音色効果

サステインスイッチ
ビブラートスイッチ

リズムスイッチ

ビッグバンド
レゲエ
ディスコ
ポップス
スウィング
スローロック
ヘビーメタル
16ビート
ロックンロール
サルサ
サンバ
マーチ/ポルカ
カントリー
ルンバ
ボサノバ
ワルツ
(リズムコントロール)
シンクロススタートスイッチ
スタートスイッチ
ストップスイッチ
フィルインスイッチ
テンポアップスイッチ
テンポダウンスイッチ
テンポランプ
リズムボリューム

オートベースコード

モードレバー
ベースボイスバリエーションレバー
コードボイスバリエーションレバー
オートベースコードボリューム

デモンストレーション

スタート/ストップスイッチ

その他のコントロール

パワースイッチ
パイロットランプ
マスターボリューム
ピッチアップスイッチ
ピッチダウンスイッチ

メインアンプ

2.5W × 1

スピーカー

12cm (4 Ω) × 1

定格電源

DC9V: 単1乾電池6個
電源アダプター(PA-1)

消費電力

電源アダプター使用時/4.5W
乾電池使用時/2.0W
(電池寿命: 通常演奏で15時間以上)

付属端子

AUX. OUT/EXP. PEDAL JACK
DC9V-12V IN JACK
HEADPHONES JACK

寸法・外装

本体材質: スチロール樹脂
間口: 863mm
奥行: 236mm
高さ: 71mm
重量: 4.7kg

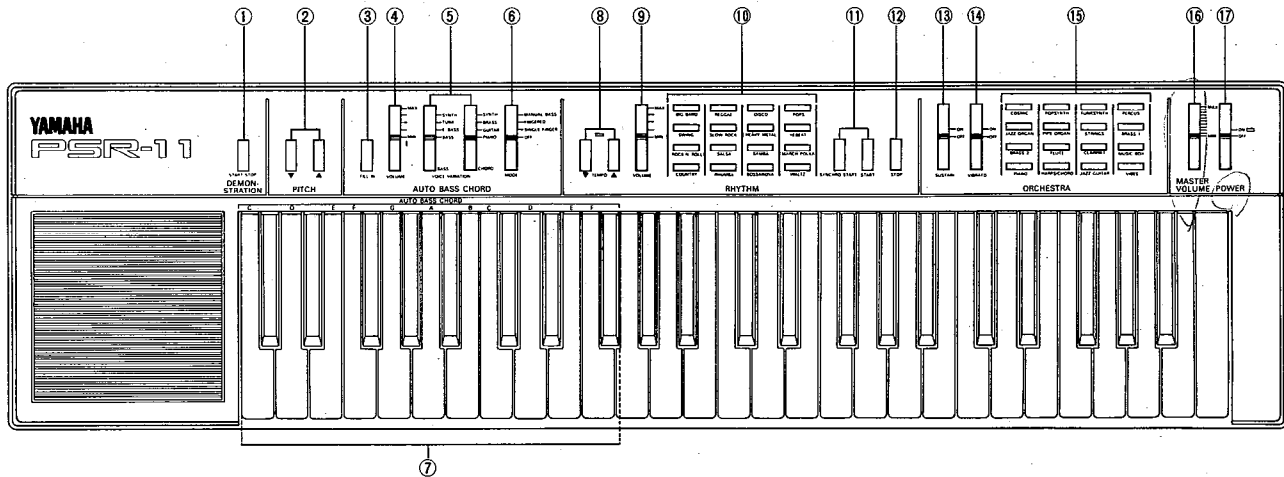
付属品

電源アダプター(PA-1)

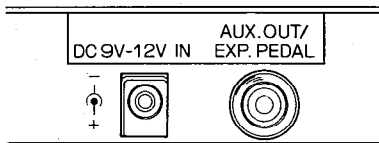
PSR-11

PANEL LAYOUT (パネルレイアウト)

● Front Panel (フロントパネル)



● Rear Panel (リアパネル)

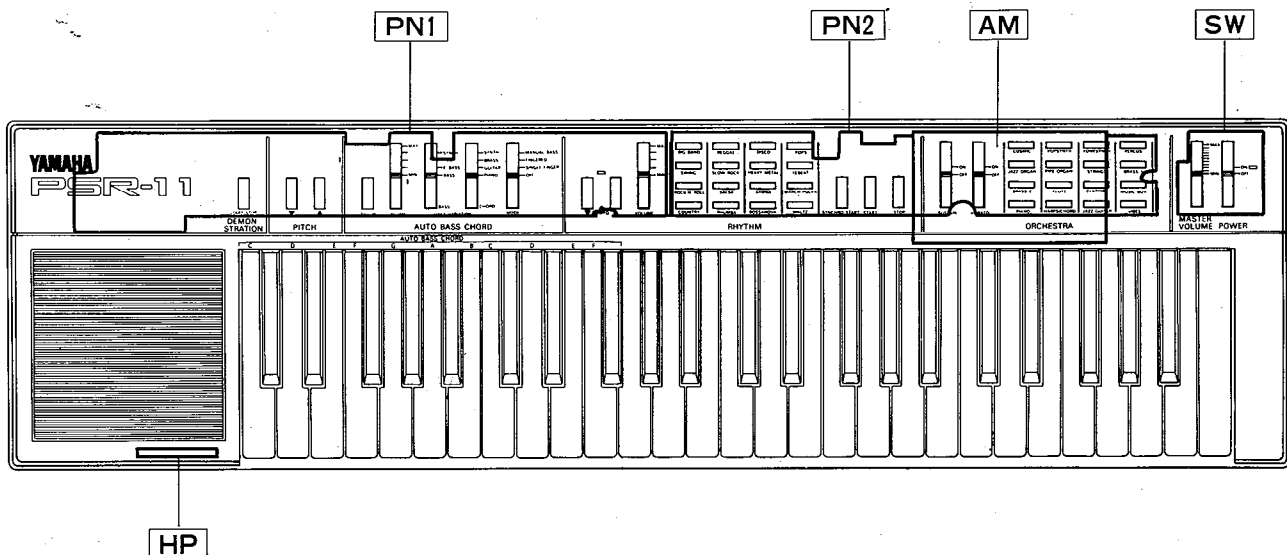


● Headphones (ヘッドフォン)

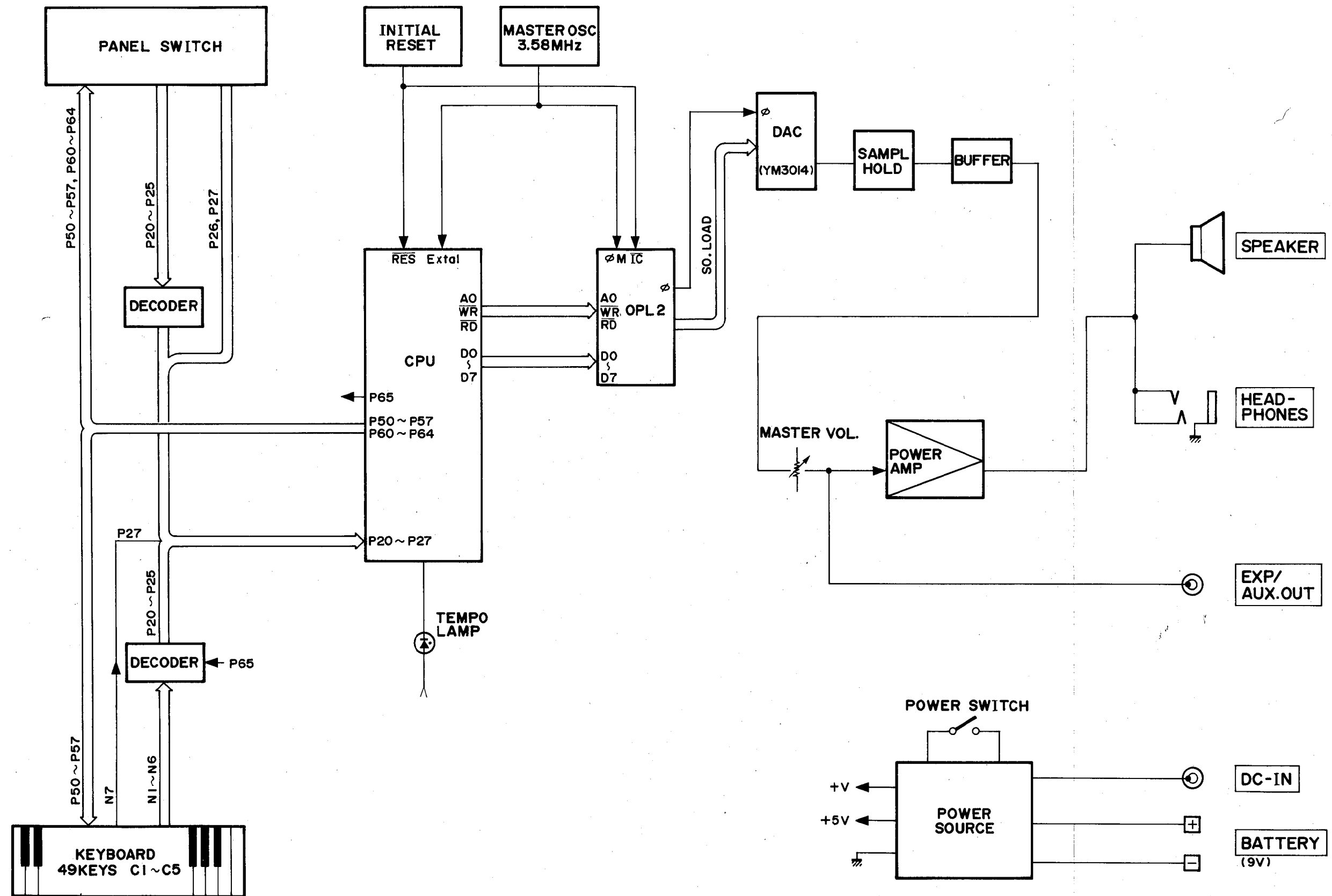


- ① Demonstration Start/Stop
- ② Pitch controls
- ③ Fill-In
- ④ Auto Bass Chord Volume
- ⑤ Bass & Chord Voice selectors
- ⑥ Auto Bass Chord Mode selector
- ⑦ Auto Bass Chord key section
- ⑧ Tempo controls
- ⑨ Rhythm volume
- ⑩ Rhythm selectors
- ⑪ Synchro Start and Start
- ⑫ Stop
- ⑬ Sustain On/Off
- ⑭ Vibrato On/Off
- ⑮ Orchestra Voice selectors
- ⑯ Master Volume
- ⑰ Power switch

CIRCUIT BOARD LAYOUT (ユニットレイアウト)



■BLOCK DIAGRAM (ブロック図)



LSI DATA TABLE

HD63B01Y0A72P CPU

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	Vss		Ground	33	Vcc	O	DC Supply (+5V)
2	XTAL		Clock (8MHz)	34	P47	O	
3	EXTAL			35	P46	O	
4	MP0		Mode program	36	P45	O	
5	MP1			37	P44	O	Port 4
6	RES		Reset	38	P43	O	
7	STBY		Stand-by mode signal	39	P42	O	
8	NMI		Non-maskable interrupt	40	P41	O	
9	P20	I/O		41	P40	O	
10	P21	I/O		42	Vss		Ground
11	P22	I/O		43	P17	O	
12	P23	I/O	Port 2	44	P16	O	
13	P24	I/O		45	P15	O	
14	P25	I/O		46	P14	O	Port 1
15	P26	I/O		47	P13	O	
16	P27	I/O		48	P12	O	
17	P50			49	P11	O	
18	P51			50	P10	O	
19	P52			51	P37	I/O	
20	P53		Port 5	52	P36	I/O	
21	P54			53	P35	I/O	
22	P55			54	P34	I/O	Port 3
23	P56			55	P33	I/O	
24	P57			56	P32	I/O	
25	P60	I/O		57	P31	I/O	
26	P61	I/O		58	P30	I/O	
27	P62	I/O		59	P74	O	
28	P63	I/O	Port 6	60	P73	O	
29	P64	I/O		61	P72	O	Port 7
30	P65	I/O		62	P71	O	
31	P66	I/O		63	P70	O	
32	P67	I/O		64	E	I	Enable

Mode Program

	MP0	MP1
Mode 1	H	L
Mode 2	L	H
Mode 3	H	H

Port

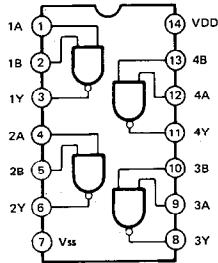
	Mode 1, 2	Mode 3
Port 1	Address bus (A0 ~ A7)	O Port
Port 2	I/O Port	I/O Port
Port 3	Data bus (D0 ~ D7)	I/O Port
Port 4	Address bus (A8 ~ A15)	O Port
Port 5	I/O Port	I Port
Port 6	I/O Port	I/O Port
Port 7	RD, WR, R/W, LIR, BA	O Port

YM3014 DAC

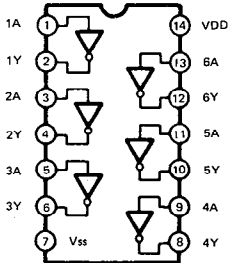
PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	VDD		DC supply	5	ϕ	I	Clock
2	OUT	O	Analog signal output	6	GND		Ground
3	LOAD	I	Sample and hold	7	RB	O	Bias-R
4	SD	I	Serial data input	8	MP	I	Middle point 1/2 VDD Bias

IC BLOCK DIAGRAM

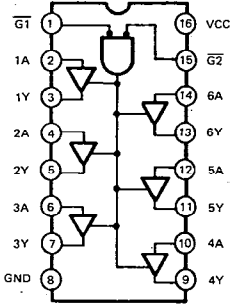
40H000P (iG08070)
Quad 2 Input NAND



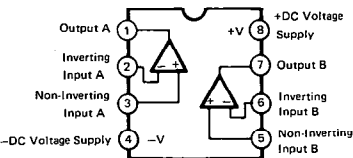
40H004P (iG05100)
Hex Inverter



TC74HC365P (iR03650)
Drivers

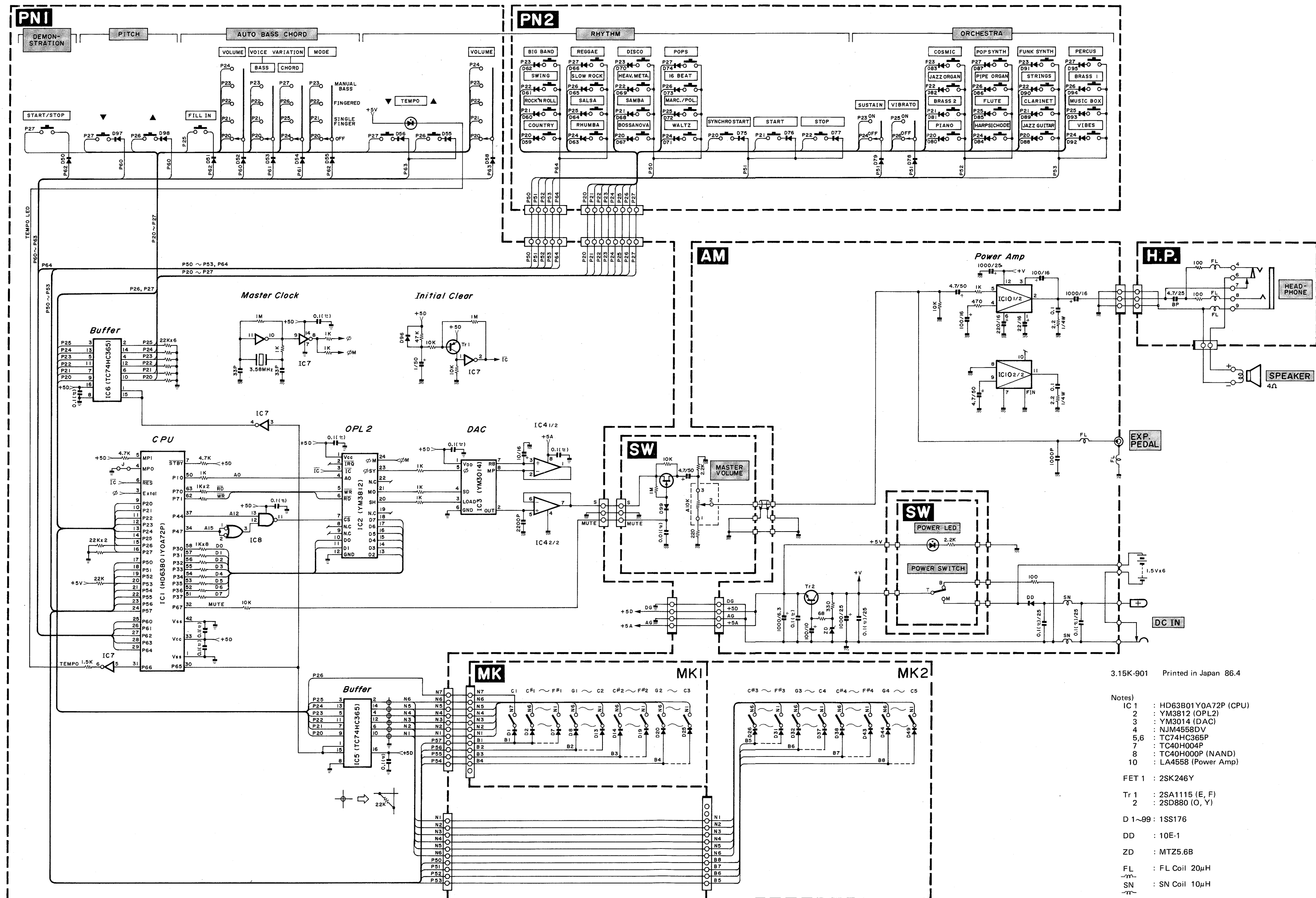


NJM4558DV (iG00139)
Dual Operational Amplifier



PSR-11 OVERALL CIRCUIT DIAGRAM

001269



3.15K-901 Printed in Japan 86.4

Notes:
 IC 1 : HD63B01Y0A72P (CPU)
 2 : YM3812 (OPL2)
 3 : YM3014 (DAC)
 4 : NJM4558DV
 5,6 : TC74HC365P
 7 : TC40H004P
 8 : TC40H000P (NAND)
 10 : LA4558 (Power Amp)

FET 1 : 2SK246Y
 Tr 1 : 2SA1115 (E, F)
 2 : 2SD880 (O, Y)
 D 1~99 : 1SS176
 DD : 10E-1
 ZD : MTZ5.6B
 FL : FL Coil 20μH
 SN : SN Coil 10μH